

SUP

PROJECT ID:

8120-01-70

COUNTY:

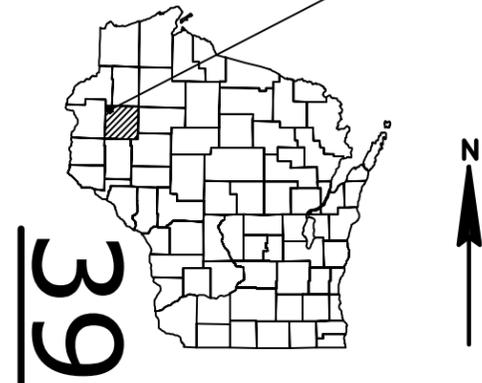
BARRON

NOVEMBER 2021
ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details (Includes Erosion Control)
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 = 122

PROJECT LOCATION



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

C CUMBERLAND, ELM STREET

HAY RIVER FLOWAGE B-03-0212

STH 48

BARRON COUNTY

STATE PROJECT NUMBER
8120-01-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8120-01-70	WIS 2022030	1

DESIGN DESIGNATION

A.A.D.T.	2017	=	5,400
A.A.D.T.	2043	=	6,100
D.H.V.		=	665
D.D.		=	60/40
T.		=	11.3%
DESIGN SPEED		=	50 MPH
ESALS		=	1,400,000

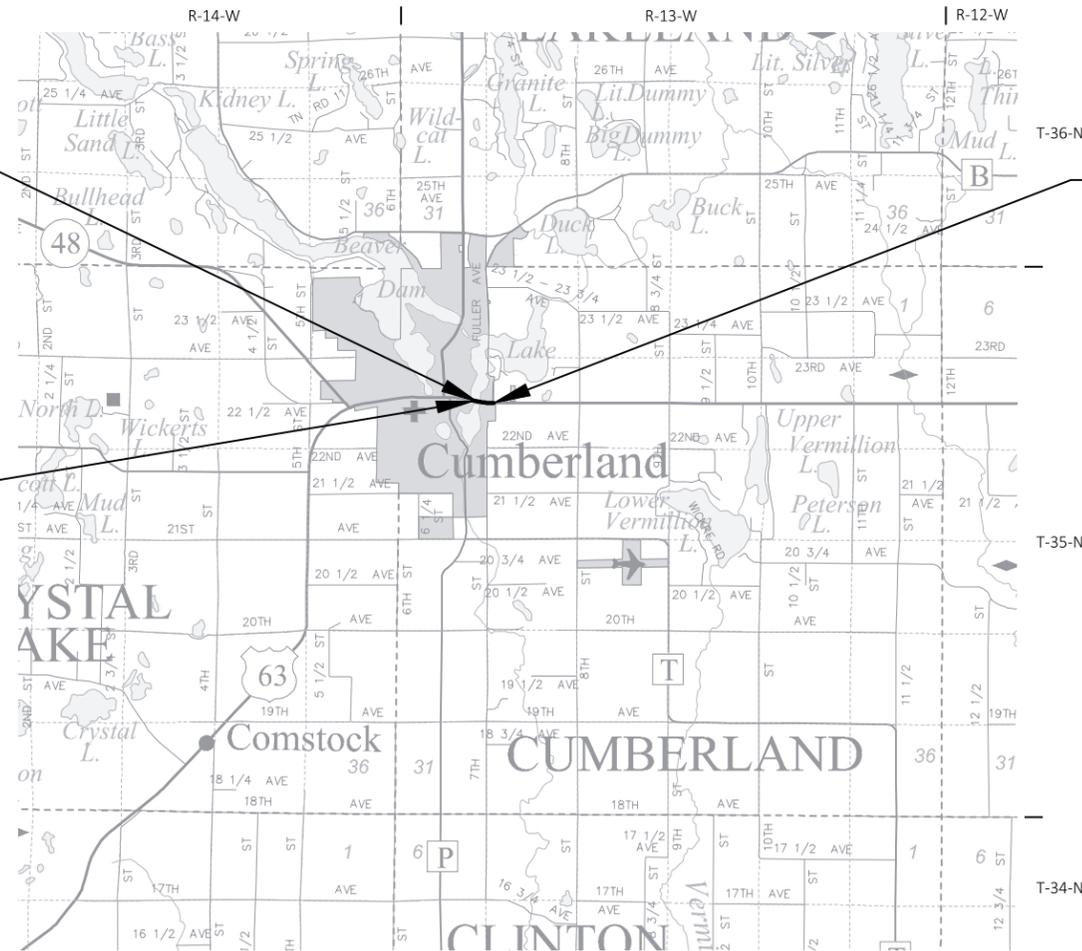
CONVENTIONAL SYMBOLS

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	

BEGIN PROJECT 8120-01-70
STA 6+63
Y = 145,364.16
X = 263,305.69

END PROJECT 8120-01-70
STA 13+28
Y = 145,255.61
X = 263,961.31



LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 0.126 MI

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

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12B.

ORIGINAL PLANS PREPARED BY



ENGINEERING | ARCHITECTURE | SURVEYING
FUNDING | PLANNING | ENVIRONMENTAL
11 E Marshall Street, Rice Lake WI 54868
(715) 234-1009 www.msa-ps.com



7/14/2021

DATE: _____ (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	Surveyor	WISDOT
Designer	MSA PROFESSIONAL SERVICES, INC	
Project Manager	MATT DICKENSON	
Regional Examiner	TOU YANG	
Regional Supervisor	JEFFREY OLSON	

APPROVED FOR THE DEPARTMENT
DATE: 7/19/2021 *Matthew J Dickenson*
(Signature)

E

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS OR DESIGNATED RIPRAP AREAS, SHALL BE FERTILIZED, SEEDED, AND COVERED WITH EROSION MATTING AS DIRECTED BY THE ENGINEER.

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

R/W IS APPROXIMATED ON PLAN SHEETS BASED ON AS-BUILT PLAN AND PLAT DATA.

PROJECT CONTACTS

WISCONSIN DNR

DNR NORTHERN REGION HEADQUARTERS
 AMY CRONK
 810 WEST MAPLE STREET
 SPOONER, WI 54801
 PHONE: 715-635-4229
 EMAIL: AMY.CRONK@WISCONSIN.GOV

WISDOT PROJECT MANAGER

WISDOT - NW REGION
 MATT DICKENSON
 1701 NORTH 4TH STREET
 SUPERIOR, WI 54880
 PHONE: 715-395-3022
 EMAIL: MATTHEW.DICKENSON@DOT.WI.GOV

CITY OF CUMBERLAND

CLERK - TREASURER
 JULIE KESSLER
 920 1ST AVENUE
 CUMBERLAND, WI 54829
 PHONE: 715-822-2752
 EMAIL: CLERK@CITYOFCUMBERLAND.NET

UTILITY CONTACTS

GAS

WE ENERGIES
 STEVEN CHAVERS
 104 WEST SOUTH STREET
 RICE LAKE, WI 54868
 OFFICE: 715-234-9605
 CELL: 715-213-4327
 EMAIL: STEVEN.CHAVERS@WE-ENERGIES.COM

ELECTRIC

CUMBERLAND MUNICIPAL UTILITY
 DEAN BERGRSTROM
 1265 2ND AVENUE
 CUMBERLAND, WI 54829
 OFFICE: 715-822-2595
 CELL: 715-822-2595
 EMAIL: DEAN@CMUTILITY.COM

ELECTRIC

BARRON ELECTRIC COOPERATIVE
 JEFF NELSON
 1434 N STH 25
 BARRON, WI 54812
 OFFICE: 715-537-3171
 CELL: 715-418-1167
 EMAIL: JNELSON@BARRONELECTRIC.COM

COMMUNICATIONS

CHARTER COMMUNICATIONS
 JAMEY OLDEEN
 2304 SOUTH MAIN STREET
 RICE LAKE, WI 54868
 OFFICE: 715-719-0561
 CELL: 715-651-7448
 EMAIL: JAMEY.OLDEEN@CHARTER.COM

COMMUNICATIONS

CENTURYLINK
 MICHAEL VANDEN BOS
 2426 75TH AVENUE
 OSCEOLA, WI 54020
 OFFICE: 608-716-5962
 CELL: 715-292-4278
 EMAIL: MIKE.VANDENBOS@LUMEN.COM

SEWER & WATER

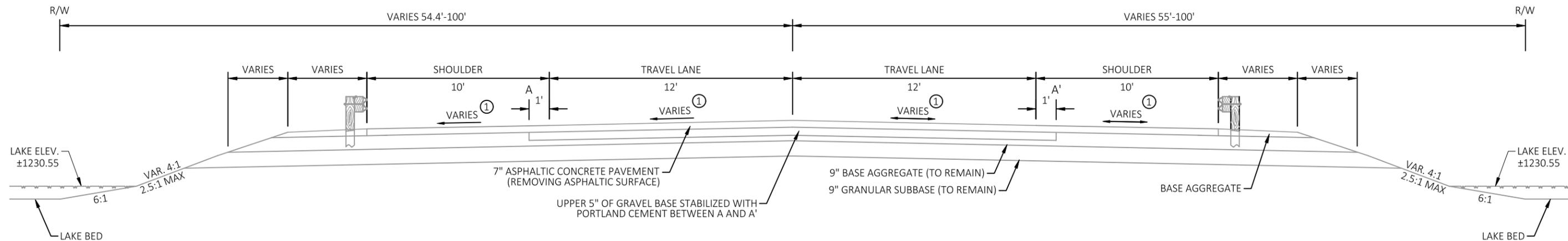
CUMBERLAND MUNICIPAL UTILITY
 DEAN BERGRSTROM
 1265 2ND AVENUE
 CUMBERLAND, WI 54829
 OFFICE: 715-822-2595
 CELL: 715-671-8072
 EMAIL: DEAN@CMUTILITY.COM

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									
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:						.40 - .60						
ASPHALT						.70 - .95						
CONCRETE						.80 - .95						
BRICK						.70 - .80						
DRIVES, WALKS						.75 - .85						
ROOFS						.75 - .95						
GRAVEL ROADS, SHOULDERS						.40 - .60						

TOTAL PROJECT AREA = 2.88 ACRES
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.19 ACRES



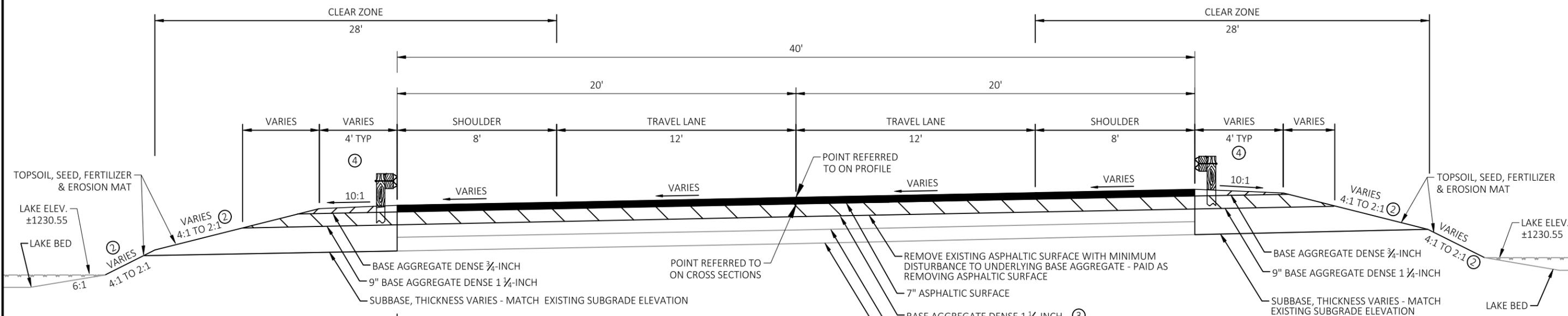


NOTES

① EXISTING SUPER ELEVATION (S.E.) = 2.7%

EXISTING TYPICAL SECTION

STH 48
STA. 6+63 - STA. 13+28



FINISHED TYPICAL SECTION

STH 48
STA. 6+63 - STA. 9+81
STA. 10+19 - STA. 13+28

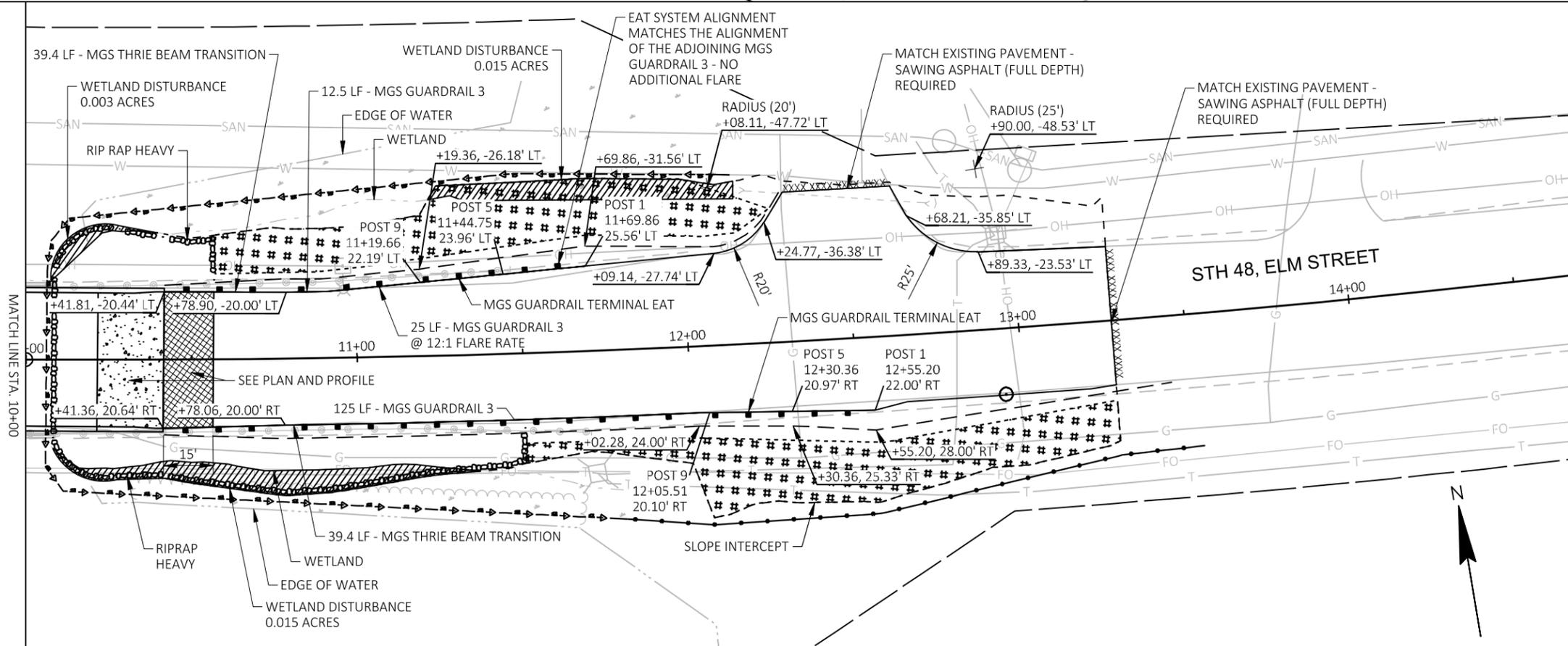
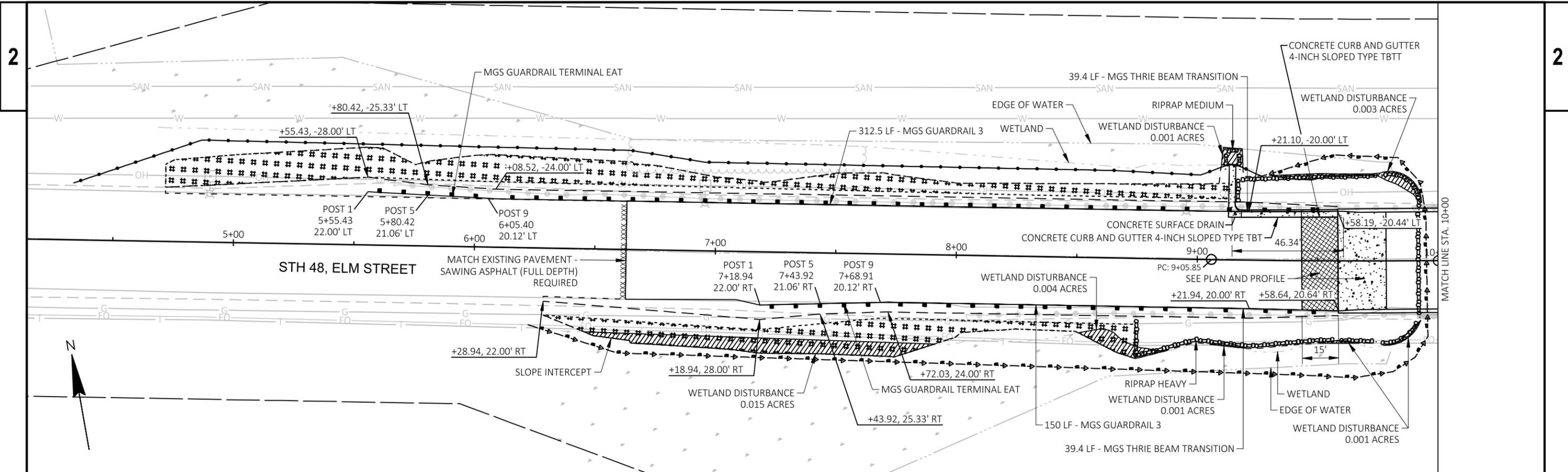
NOTES

- ② RIPRAP HEAVY FOR 2:1 SLOPES. SEE CONSTRUCTION DETAILS & ROADWAY PLAN LOCATIONS.
- ③ DEPTH VARIES 0-15". ADD BASE AGGREGATE DENSE 1 1/4-INCH OVER EXISTING BASE AGGREGATE TO THE PLAN BASE AGGREGATE SURFACE ELEVATION (SEE CROSS SECTIONS). PLACE 9" OF BASE AGGREGATE DENSE 1 1/4-INCH OVER 9" OF SUBBASE IN STRUCTURE EXCAVATION LOCATIONS.
- ④ 2' MINIMUM BEHIND POSTS - SEE DETAIL DRAWING. MATCH EXISTING SHOULDER WIDTH AT LOCATIONS WITHOUT GUARD RAIL - 1' MINIMUM.

SUPER ELEVATION DATA

PC STA	PT STA	Radius (FT)	NC	FC	RC	FS	FS	RC	FC	NC	Max Super (%)
09+05.85	16+83.84	3820	08+18.85	08+67.18	09+15.52	09+25.18	16+64.51	16+74.17	17+22.51	17+70.84	2.4%

NC = NORMAL CROWN
FC = FLAT ON HIGH SIDE OF SUPER AND -2% ON LOW SIDE OF SUPER
RC = REVERSE CROWN
FS = FULL SUPER



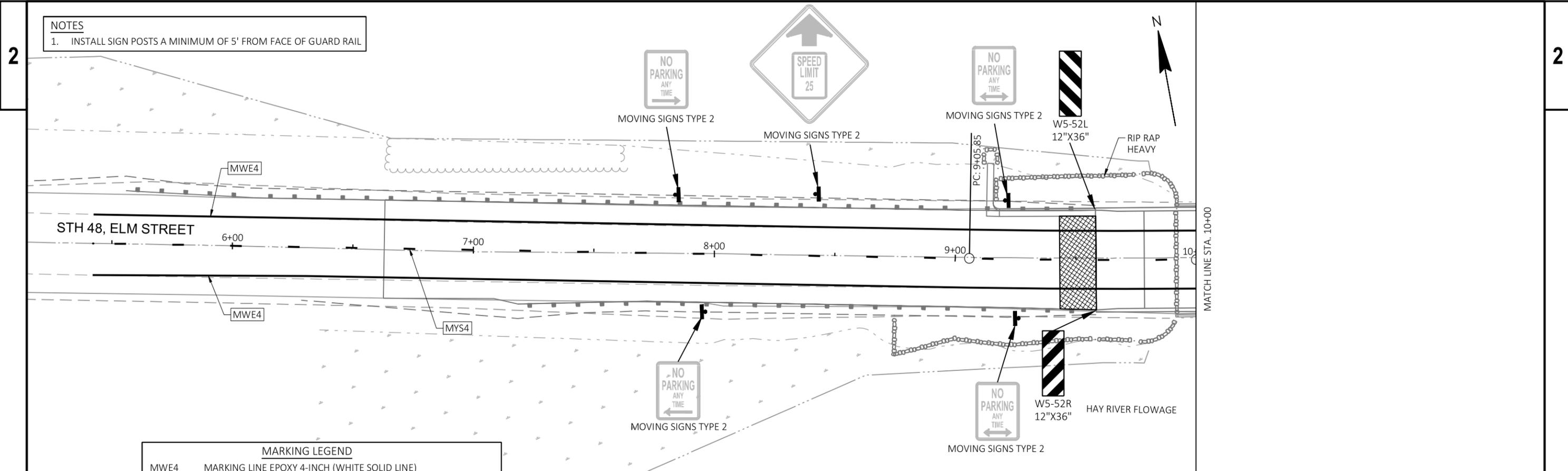
LEGEND

#####	EROSION MAT CLASS I, TYPE B (URBAN)
—●—●—●—	SILT FENCE
—○—○—○—	RIP RAP OR STONE DITCH CHECK
- - - - -	SLOPE INTERCEPT
←-←-←-←	TURBIDITY BARRIER

NOTES

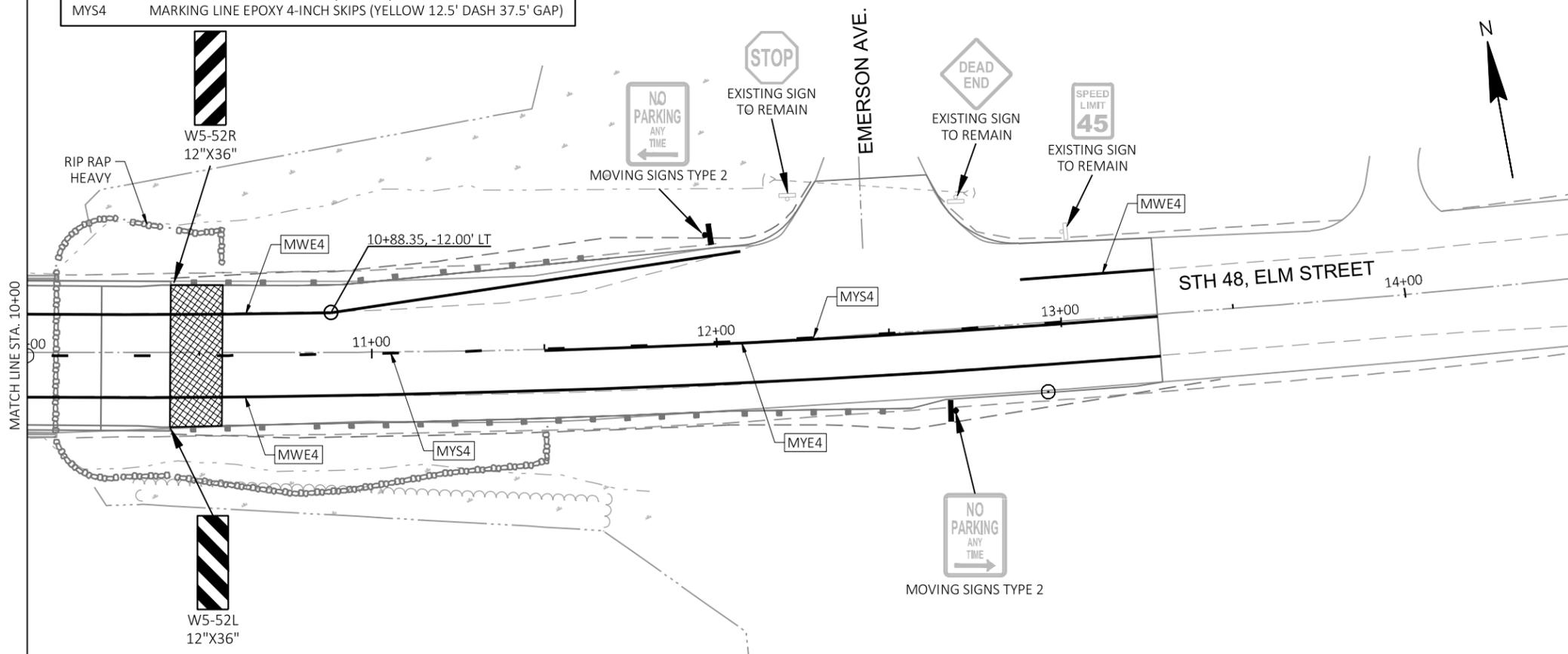
STATION AND OFFSETS FOR MGS GUARDRAIL POSTS ARE TO THE FACE OF RAIL AT THE CENTER OF THE POST AND ARE INTENDED FOR GRADING PURPOSES. SEE STANDARD DETAIL DRAWING - MIDWEST GUARDRAIL SYSTEM (MGS) EAT.

NOTES
 1. INSTALL SIGN POSTS A MINIMUM OF 5' FROM FACE OF GUARD RAIL



MARKING LEGEND

MWE4	MARKING LINE EPOXY 4-INCH (WHITE SOLID LINE)
MYE4	MARKING LINE EPOXY 4-INCH (YELLOW)
MYS4	MARKING LINE EPOXY 4-INCH SKIPS (YELLOW 12.5' DASH 37.5' GAP)



PROJECT NO: 8120-01-70

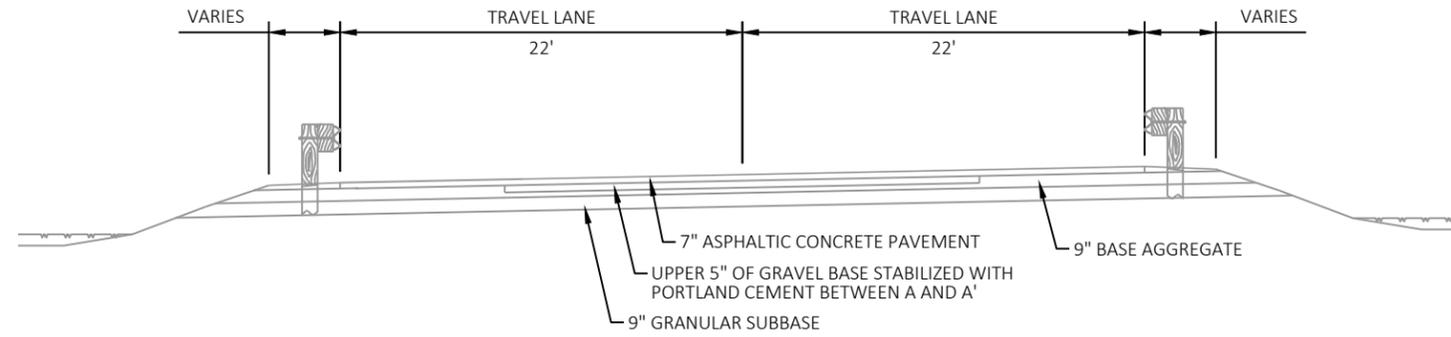
HWY: STH 48

COUNTY: BARRON

PAVEMENT MARKING AND SIGNING

SHEET

E

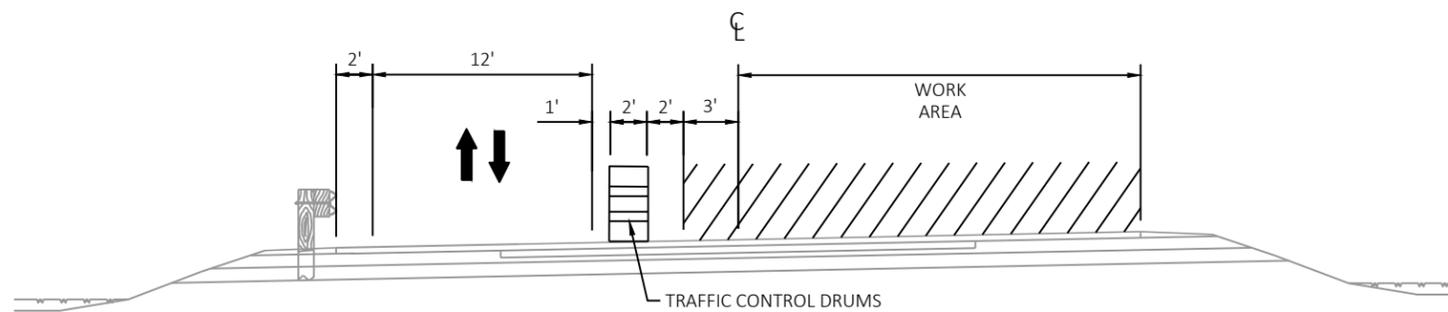


TRAFFIC CONTROL - STAGE 1

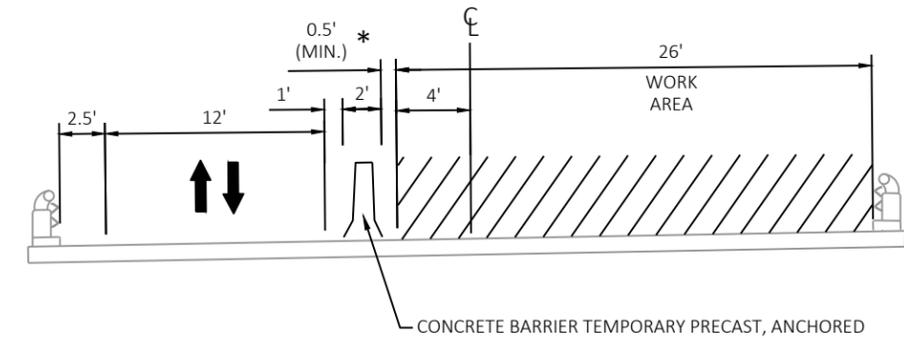
STH 48 LOOKING EAST

STAGE 1 NOTES:

1. LANE CLOSURES SHALL FOLLOW STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION".
2. SET UP TRAFFIC CONTROL STAGE 1 INCLUDING WIDTH RESTRICTION SIGNING, TEMPORARY SIGNALS, CONCRETE BARRIER, AND TEMPORARY PAVEMENT MARKINGS.



TRANSITION AREA, BUFFER SPACE, AND LANE CLOSURE



WORK AREA ON BRIDGE B-03-212

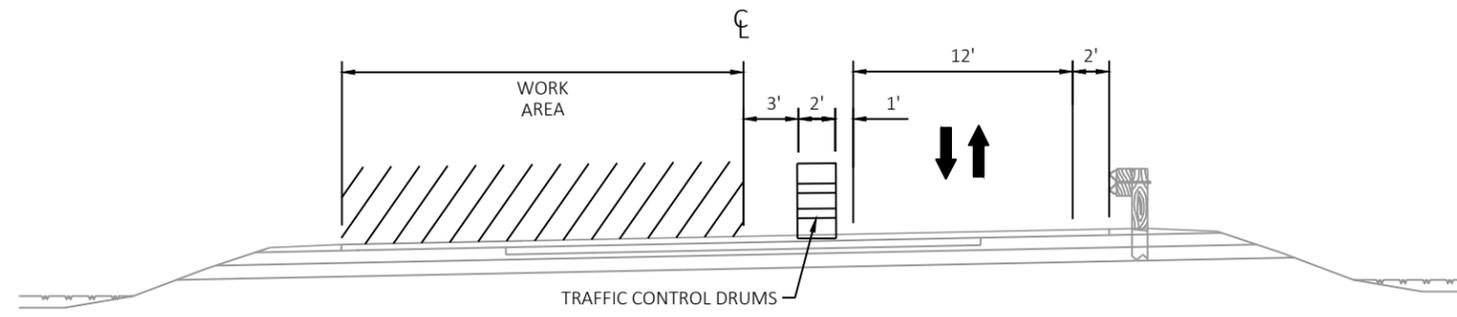
- NOTES:**
- * SEE STANDARD DETAIL DRAWING "CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" FOR CLEARANCE REQUIREMENTS".

TRAFFIC CONTROL - STAGE 2

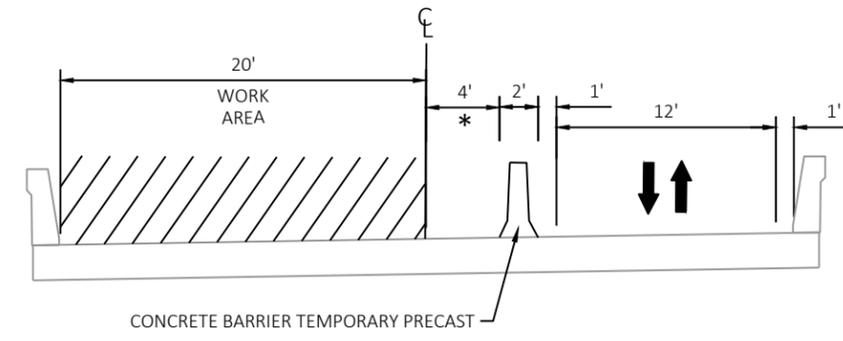
STH 48 LOOKING EAST

STAGE 2 NOTES:

1. SEE PLAN SHEET "TRAFFIC CONTROL STAGE 2"
2. CONSTRUCT SOUTH HALF OF BRIDGE B-03-212. THE EXISTING CULVERT MAY BE SAWED AND REMOVED TO 2' RT OF THE REFERENCE LINE.



TRANSITION AREA, BUFFER SPACE, AND LANE CLOSURE



WORK AREA ON BRIDGE B-03-212

NOTES:
 * SEE STANDARD DETAIL DRAWING "CONCRETE BARRIER TEMPORARY PRECAST, 12'-6\"

TRAFFIC CONTROL - STAGE 3

STH 48 LOOKING EAST

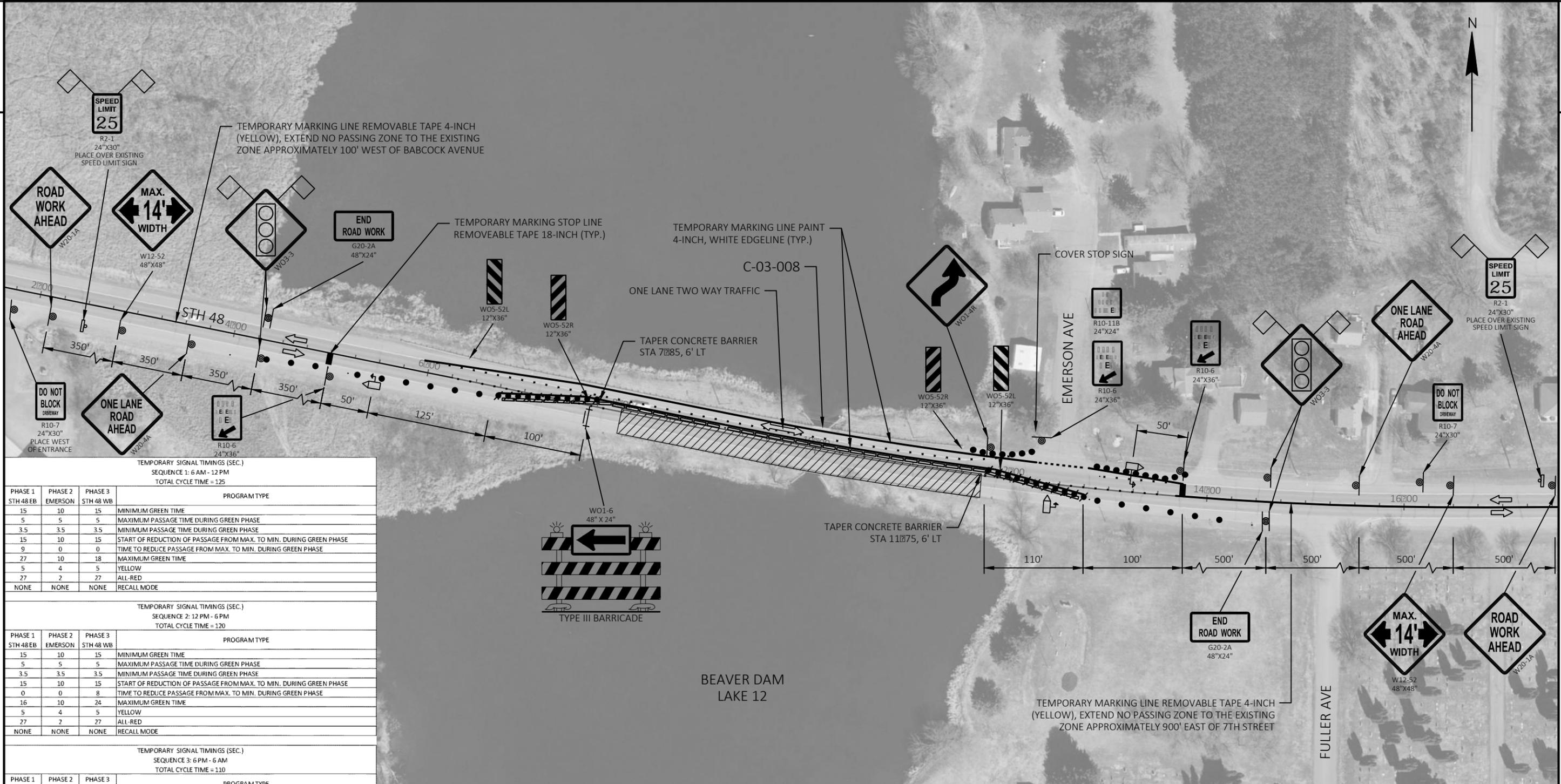
STAGE 3 NOTES:

1. SEE PLAN SHEET "TRAFFIC CONTROL STAGE 3"
2. CONSTRUCT NORTH HALF OF BRIDGE B-03-212 AND STH 48. MAINTAIN A MINIMUM 4' WIDTH OF BRIDGE DECK OR PAVEMENT BEHIND CONCRETE BARRIER TEMPORARY PRECAST ADJACENT TO ALL DROP-OFFS GREATER THAN 6"

TRAFFIC CONTROL STAGE 4

(NOT SHOWN)

COMPLETE FINAL PAVEMENT REMOVAL, PAVEMENT SURFACING AND MARKINGS UNDER ONE-LANE, TWO-WAY OPERATION UTILIZING FLAGGERS. SEE STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION".



TEMPORARY SIGNAL TIMINGS (SEC.)
SEQUENCE 1: 6 AM - 12 PM
TOTAL CYCLE TIME = 125

PHASE 1 STH 48 EB	PHASE 2 EMERSON	PHASE 3 STH 48 WB	PROGRAM TYPE
15	10	15	MINIMUM GREEN TIME
5	5	5	MAXIMUM PASSAGE TIME DURING GREEN PHASE
3.5	3.5	3.5	MINIMUM PASSAGE TIME DURING GREEN PHASE
15	10	15	START OF REDUCTION OF PASSAGE FROM MAX. TO MIN. DURING GREEN PHASE
9	0	0	TIME TO REDUCE PASSAGE FROM MAX. TO MIN. DURING GREEN PHASE
27	10	18	MAXIMUM GREEN TIME
5	4	5	YELLOW
27	2	27	ALL-RED
NONE	NONE	NONE	RECALL MODE

TEMPORARY SIGNAL TIMINGS (SEC.)
SEQUENCE 2: 12 PM - 6 PM
TOTAL CYCLE TIME = 120

PHASE 1 STH 48 EB	PHASE 2 EMERSON	PHASE 3 STH 48 WB	PROGRAM TYPE
15	10	15	MINIMUM GREEN TIME
5	5	5	MAXIMUM PASSAGE TIME DURING GREEN PHASE
3.5	3.5	3.5	MINIMUM PASSAGE TIME DURING GREEN PHASE
15	10	15	START OF REDUCTION OF PASSAGE FROM MAX. TO MIN. DURING GREEN PHASE
0	0	8	TIME TO REDUCE PASSAGE FROM MAX. TO MIN. DURING GREEN PHASE
16	10	24	MAXIMUM GREEN TIME
5	4	5	YELLOW
27	2	27	ALL-RED
NONE	NONE	NONE	RECALL MODE

TEMPORARY SIGNAL TIMINGS (SEC.)
SEQUENCE 3: 6 PM - 6 AM
TOTAL CYCLE TIME = 110

PHASE 1 STH 48 EB	PHASE 2 EMERSON	PHASE 3 STH 48 WB	PROGRAM TYPE
15	10	15	MINIMUM GREEN TIME
5	5	5	MAXIMUM PASSAGE TIME DURING GREEN PHASE
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15	10	15	MAXIMUM GREEN TIME
5	4	5	YELLOW
27	2	27	ALL-RED
NONE	NONE	NONE	RECALL MODE

NOTES:
IF NO CALLS ARE PRESENT FOR EMERSON, THE PHASE SHALL BE SKIPPED

CONTRACTOR SHALL REVIEW SIGNALS AFTER PROGRAMMING TO ASSURE THERE ARE NOT CONFLICTING MOVEMENTS.

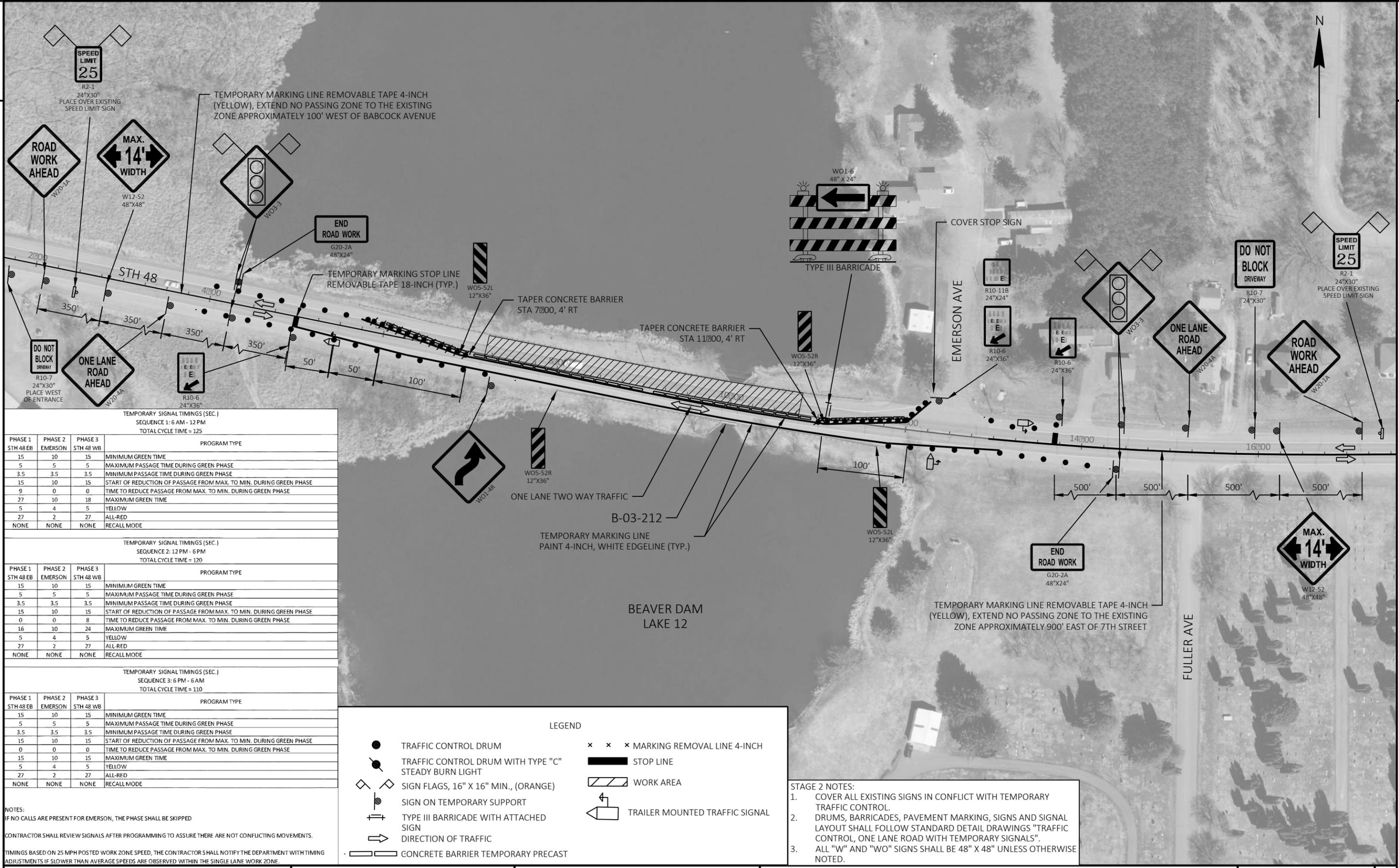
TIMINGS BASED ON 25 MPH POSTED WORK ZONE SPEED, THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT WITH TIMING ADJUSTMENTS IF SLOWER THAN AVERAGE SPEEDS ARE OBSERVED WITHIN THE SINGLE LANE WORK ZONE.

LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ◇ SIGN FLAGS, 16" X 16" MIN., (ORANGE)
- ⊙ SIGN ON TEMPORARY SUPPORT
- ≡ TYPE III BARRICADE WITH ATTACHED SIGN
- ➔ DIRECTION OF TRAFFIC
- ▭ CONCRETE BARRIER TEMPORARY PRECAST
- × × × MARKING REMOVAL LINE 4-INCH
- ▬ STOP LINE
- ▨ WORK AREA
- ⬅ TRAILER MOUNTED TRAFFIC SIGNAL

STAGE 2 NOTES:

- COVER ALL EXISTING SIGNS IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL.
- DRUMS, BARRICADES, PAVEMENT MARKING, SIGNS AND SIGNAL LAYOUT SHALL FOLLOW STANDARD DETAIL DRAWINGS "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS".
- ALL "W" AND "WO" SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED.



TEMPORARY SIGNAL TIMINGS (SEC.)
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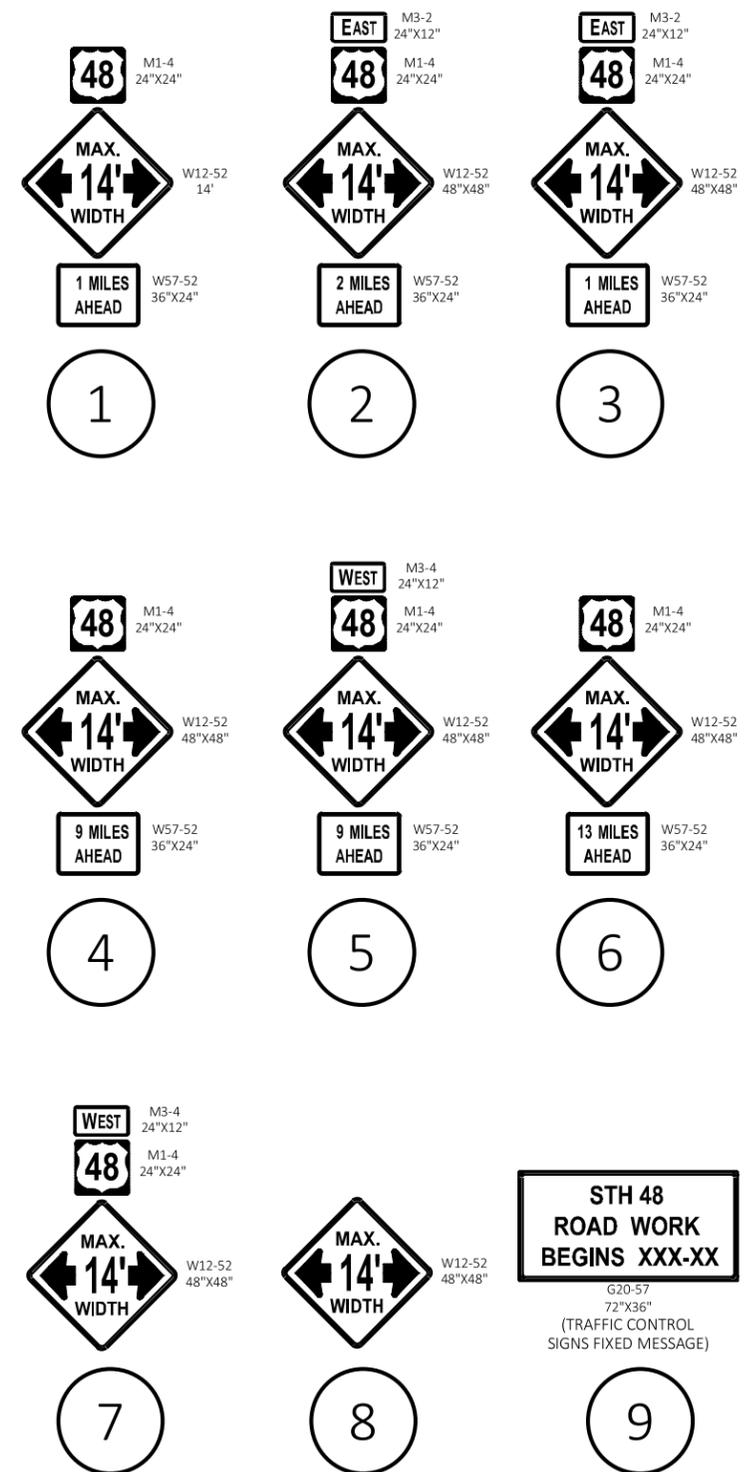
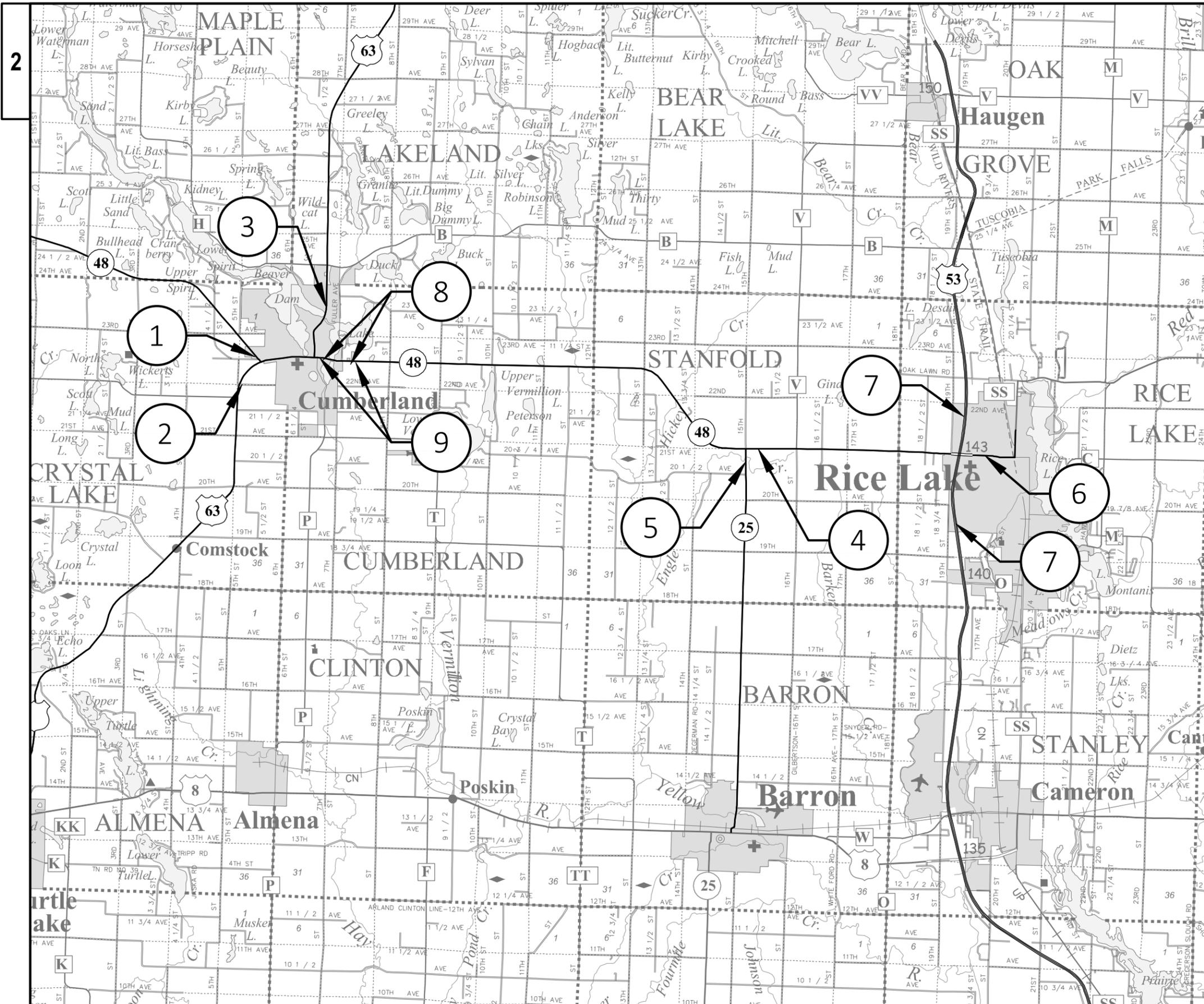
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LEGEND

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- × × × MARKING REMOVAL LINE 4-INCH
- ▬ STOP LINE
- ▨ WORK AREA
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STH 48 ROAD WORK BEGINS XXX-XX
 G20-57 72"x36"
 (TRAFFIC CONTROL SIGNS FIXED MESSAGE)

Estimate Of Quantities

8120-01-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. C-03-0008	EACH	1.000	1.000
0004	204.0110	Removing Asphaltic Surface	SY	2,990.000	2,990.000
0006	204.0165	Removing Guardrail	LF	952.000	952.000
0008	205.0100	Excavation Common	CY	644.000	644.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-03-0212	LS	1.000	1.000
0012	210.1500	Backfill Structure Type A	TON	350.000	350.000
0014	213.0100	Finishing Roadway (project) 01. 8120-01-70	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	320.000	320.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,139.000	2,139.000
0020	415.0410	Concrete Pavement Approach Slab	SY	135.000	135.000
0022	416.1010	Concrete Surface Drains	CY	1.500	1.500
0024	455.0605	Tack Coat	GAL	375.000	375.000
0026	465.0105	Asphaltic Surface	TON	1,060.000	1,060.000
0028	502.0100	Concrete Masonry Bridges	CY	394.000	394.000
0030	502.3200	Protective Surface Treatment	SY	396.000	396.000
0032	502.3210	Pigmented Surface Sealer	SY	83.000	83.000
0034	505.0400	Bar Steel Reinforcement HS Structures	LB	6,575.000	6,575.000
0036	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	55,575.000	55,575.000
0038	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	400.000	400.000
0040	505.0908	Bar Couplers No. 8	EACH	38.000	38.000
0042	511.1200	Temporary Shoring (structure) 01. B-03-0212	SF	1,200.000	1,200.000
0044	516.0500	Rubberized Membrane Waterproofing	SY	28.000	28.000
0046	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,200.000	1,200.000
0048	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	30.000	30.000
0050	601.0590	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT	LF	15.000	15.000
0052	603.8000	Concrete Barrier Temporary Precast Delivered	LF	602.000	602.000
0054	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,204.000	1,204.000
0056	603.8500	Anchoring Concrete Barrier Temporary Precast	LF	206.000	206.000
0058	606.0200	Riprap Medium	CY	4.000	4.000
0060	606.0300	Riprap Heavy	CY	490.000	490.000
0062	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	220.000	220.000
0064	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0066	614.2300	MGS Guardrail 3	LF	625.000	625.000
0068	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0070	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0072	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8120-01-70	EACH	1.000	1.000
0074	619.1000	Mobilization	EACH	1.000	1.000
0076	624.0100	Water	MGAL	33.000	33.000
0078	625.0100	Topsoil	SY	1,325.000	1,325.000
0080	628.1504	Silt Fence	LF	680.000	680.000
0082	628.1520	Silt Fence Maintenance	LF	680.000	680.000
0084	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0086	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0088	628.2008	Erosion Mat Urban Class I Type B	SY	1,325.000	1,325.000
0090	628.6005	Turbidity Barriers	SY	1,080.000	1,080.000
0092	628.7570	Rock Bags	EACH	120.000	120.000
0094	629.0210	Fertilizer Type B	CWT	0.850	0.850
0096	630.0130	Seeding Mixture No. 30	LB	27.000	27.000
0098	630.0200	Seeding Temporary	LB	37.000	37.000

Estimate Of Quantities

8120-01-70

Line	Item	Item Description	Unit	Total	Qty
0100	630.0500	Seed Water	MGAL	15.100	15.100
0102	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0104	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0106	638.2102	Moving Signs Type II	EACH	8.000	8.000
0108	638.4000	Moving Small Sign Supports	EACH	8.000	8.000
0110	642.5001	Field Office Type B	EACH	1.000	1.000
0112	643.0300	Traffic Control Drums	DAY	4,800.000	4,800.000
0114	643.0420	Traffic Control Barricades Type III	DAY	80.000	80.000
0116	643.0705	Traffic Control Warning Lights Type A	DAY	160.000	160.000
0118	643.0715	Traffic Control Warning Lights Type C	DAY	1,920.000	1,920.000
0120	643.0900	Traffic Control Signs	DAY	4,420.000	4,420.000
0122	643.0920	Traffic Control Covering Signs Type II	EACH	1.000	1.000
0124	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0126	643.5000	Traffic Control	EACH	1.000	1.000
0128	645.0111	Geotextile Type DF Schedule A	SY	90.000	90.000
0130	645.0120	Geotextile Type HR	SY	740.000	740.000
0132	646.1020	Marking Line Epoxy 4-Inch	LF	1,866.000	1,866.000
0134	646.9000	Marking Removal Line 4-Inch	LF	2,445.000	2,445.000
0136	649.0105	Temporary Marking Line Paint 4-Inch	LF	3,210.000	3,210.000
0138	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	2,300.000	2,300.000
0140	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	24.000	24.000
0142	650.4500	Construction Staking Subgrade	LF	550.000	550.000
0144	650.5000	Construction Staking Base	LF	550.000	550.000
0146	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	45.000	45.000
0148	650.6500	Construction Staking Structure Layout (structure) 01. B-03-0212	LS	1.000	1.000
0150	650.7000	Construction Staking Concrete Pavement	LF	70.000	70.000
0152	650.9910	Construction Staking Supplemental Control (project) 01. 8120-01-70	LS	1.000	1.000
0154	650.9920	Construction Staking Slope Stakes	LF	809.000	809.000
0156	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-03-0212	LS	1.000	1.000
0158	690.0150	Sawing Asphalt	LF	116.000	116.000
0160	715.0502	Incentive Strength Concrete Structures	DOL	2,364.000	2,364.000
0162	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0164	999.2000.S	Installing and Maintaining Bird Deterrent System (Station) 01. STA 10+00	EACH	1.000	1.000
0166	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0168	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0170	SPV.0195	Special 01. Select Crushed Material For Travel Corridor	TON	30.000	30.000

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3

204.0110 REMOVING ASPHALTIC SURFACE				204.0165 REMOVING GUARDRAIL				205.0100							REMARKS					
STATION	TO	STATION	SY	STATION	TO	STATION	LOCATION	LF	STATION	TO	STATION	LOCATION	EXCAVATION COMMON CY	(1) UNUSABLE MATERIAL CY		(2)AVAILABLE MATERIAL CY	UNEXPANDED FILL CY	(3)EXPANDED FILL CY	(4)MASS ORDINATE (+/-) CY	
6+63	-	9+79	1,401	5+60	-	11+45	LT	585	5+00	-	9+77	LT & RT	457	131	326	124	155	171		
10+21	-	13+28	1,589	8+05	-	11+72	RT	367	10+22	-	13+28	LT & RT	187	147	40	361	451	-304		
									9+77	-	10+39	LT & RT	--	--	480	--	--	480	STRUCTURE EXCAVATION	
TOTAL 0010			2,990	TOTAL 0010				952	TOTAL 0010				644							

- (1) EXISTING ASPHALT IS ASSUMED UNUSABLE MATERIAL
- (2) AVAILABLE MATERIAL AT STURCUTRE EXCAVATION= 75% OF THE ROAD CORE EXCAVATION BETWEEN OLD AND NEW STRUCTURES
- (3) EXPANDED FILL FACTOR = 1.25
- (4) THE MASS ORDINATE + OR - QUANTITY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

305.0110 BASE AGGREGATE DENSE 3/4-INCH							305.0120 BASE AGGREGATE DENSE 1 1/4-INCH		624.0100 WATER		415.0410 CONCRETE PAVEMENT APPROACH SLAB				416.1010 CONCRETE SURFACE DRAINS		601.0588 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT		601.0590 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT	
STATION	TO	STATION	LOCATION	TON	TON	MGAL	STATION	TO	STATION	LOCATION	SY	STATION	TO	STATION	LOCATION	CY	LF	LF	LF	
5+00	-	9+77	LT & RT	174	822	15	9+43	-	9+58		65	9+13	-	9+58	LT	--	30	15		
10+22	-	13+25	LT & RT	146	1,047	18	10+42	-	10+57		70			9+13	LT	1.5	--	--		
TOTAL 0010				320	1,869	33	TOTAL 0010				135	TOTAL 0010				1.5	30	15		

455.0605 TACK COAT						465.0105 ASPHALTIC SURFACE		603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED			603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED			603.8500 ANCHORING CONCRETE BARRIER TEMPORARY PRECAST			614.2300 MGS GUARDRAIL 3		614.2500 MGS THRIE BEAM TRANSITION		614.2610 MGS GUARDRAIL TERMINAL EAT	
STATION	TO	STATION	LOCATION	GAL	TON	LOCATION	LF	LF	LF	STATION	TO	STATION	LOCATION	LF	LF	LF	LF	LF	EACH			
6+63	-	9+58	MAINLINE	175	494	STAGE 2	602	602	103	5+55	-	9+58	LT	312.5	39.4	1						
10+42	-	13+28	MAINLINE	200	566	STAGE 3	--	602	103	7+19	-	9+58	RT	150	39.4	1						
TOTAL 0010				375	1,060	TOTAL 0010			602	1,204	206	TOTAL 0010				625	157.6	4				

				625.0100	628.1905	628.1910	628.2008	629.0210	630.0130	630.0200	630.0500
				TOPSOIL	MOBILIZATIONS	MOBILIZATIONS	EROSION MAT	FERTILIZER	SEEDING	SEEDING	SEED WATER
				SY	EROSION	EROSION	URBAN CLASS I	TYPE B	MIXTURE	TEMPORARY	MGAL
STATION	TO	STATION	LOCATION	EACH	CONTROL	CONTROL	TYPE B	CWT	NO. 30	LB	LB
PROJECT				--	5	3	--	--	--	--	--
5+00	-	9+43	LT	406	--	--	406	0.26	8	11	4.6
6+29	-	9+43	RT	248	--	--	248	0.16	5	7	2.8
10+56	-	12+31	LT	296	--	--	296	0.19	6	8	3.4
11+50	-	13+28	RT	280	--	--	280	0.18	6	8	3.2
12+63	-	13+28	LT	95	--	--	95	0.06	2	3	1.1
TOTAL 0010				1,325	5	3	1,325	0.85	27	37	15.1

				628.1504	628.1520	628.6005	628.7570		
				SILT FENCE	MAINTENANCE	TURBIDITY	ROCK BAGS	REMARKS	
STATION	TO	STATION	LOCATION	LF	LF	SY	EACH		
5+00	-	9+25	LT	500	500	--	--		
6+23	-	9+95	RT	--	--	450	--	INCLUDES TO THE CL OF WEST ABUTMENT	
9+26	-	9+95	LT	--	--	115	--	INCLUDES TO THE CL OF WEST ABUTMENT	
10+06	-	11+80	RT	--	--	230	--	INCLUDES TO THE CL OF EAST ABUTMENT	
10+06	-	12+15	LT	--	--	265	--	INCLUDES TO THE CL OF EAST ABUTMENT	
11+80	-	13+28	RT	180	180	--	--		
UNDISTRIBUTED				--	--	20	--		
UNDISTRIBUTED				--	--	--	120	USED FOR SILT FENCE RELIEF AS NECESSARY	
TOTAL 0010				680	680	1,080	120		

				634.0612	637.2230	638.2102	638.4000		
				POSTS WOOD	SIGNS TYPE II	MOVING SIGNS	MOVING SMALL	REMARKS	
STATION	LOCATION	SIGN CODE	SIZE	4X6-INCH X	REFLECTIVE F	TYPE II	SIGN SUPPORTS		
				12-FT	SF	EACH	EACH		
				EACH					
7+84	LT	--	--	--	--	1	1	NO PARKING	
7+96	RT	--	--	--	--	1	1	NO PARKING	
8+42	LT	--	--	--	--	1	1	REDUCED SPEED LIMIT	
9+20	LT	--	--	--	--	1	1	NO PARKING	
9+25	RT	--	--	--	--	1	1	NO PARKING	
9+58	LT	W5-52L	12" X 36"	1	3.0	--	--	OBJECT MARKER	
9+58	RT	W5-52R	12" X 36"	1	3.0	--	--	OBJECT MARKER	
10+42	LT	W5-52L	12" X 36"	1	3.0	--	--	OBJECT MARKER	
10+42	RT	W5-52R	12" X 36"	1	3.0	--	--	OBJECT MARKER	
12+00	LT	--	--	--	--	1	1	NO PARKING	
12+67	RT	--	--	--	--	1	1	NO PARKING	
--	RT	--	--	--	--	1	1	NO PASSING ZONE	
TOTAL 0010				4	12	8	8		

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STATION	TO	STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	606.0300 RIPRAP HEAVY* CY	645.0120 GEOTEXTILE TYPE HR* SY
8+75	-	9+92	RT	--	87	130
		9+14	LT	4	--	5
9+16	-	9+92	LT	--	43	63
10+08	-	10+57	LT	--	19	27
10+08	-	11+50	RT	--	131	195
		UNDISTRIBUTED		--	--	10
TOTAL 0010				4	280	430

*ADDITIONAL QUANTITIES SHOWN IN STRUCTURE PLANS

LOCATION	DURATION DAY	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	643.5000 TRAFFIC CONTROL EACH	REMARKS
PROJECT	--	--	--	--	--	--	--	36	1	G20-57 SIGNS TO BE PLACED AT PROJECT TERMINI 10 DAYS PRIOR TO CONSTRUCTION AND REMOVED WHEN CONSTRUCTION BEGINS.
STAGE 1	5	--	--	--	--	60	--	--	--	
STAGE 2	40	2,480	40	80	960	2,120	--	--	--	
STAGE 2	--	--	--	--	--	--	1	--	--	1 CYCLE FOR STAGES 2 AND 3. STOP SIGN AT EMERSON AVENUE.
STAGE 3	40	2,320	40	80	960	2,120	--	--	--	
STAGE 4	10	--	--	--	--	120	--	--	--	
TOTAL 0010		4,800	80	160	1,920	4,420	1	36	1	

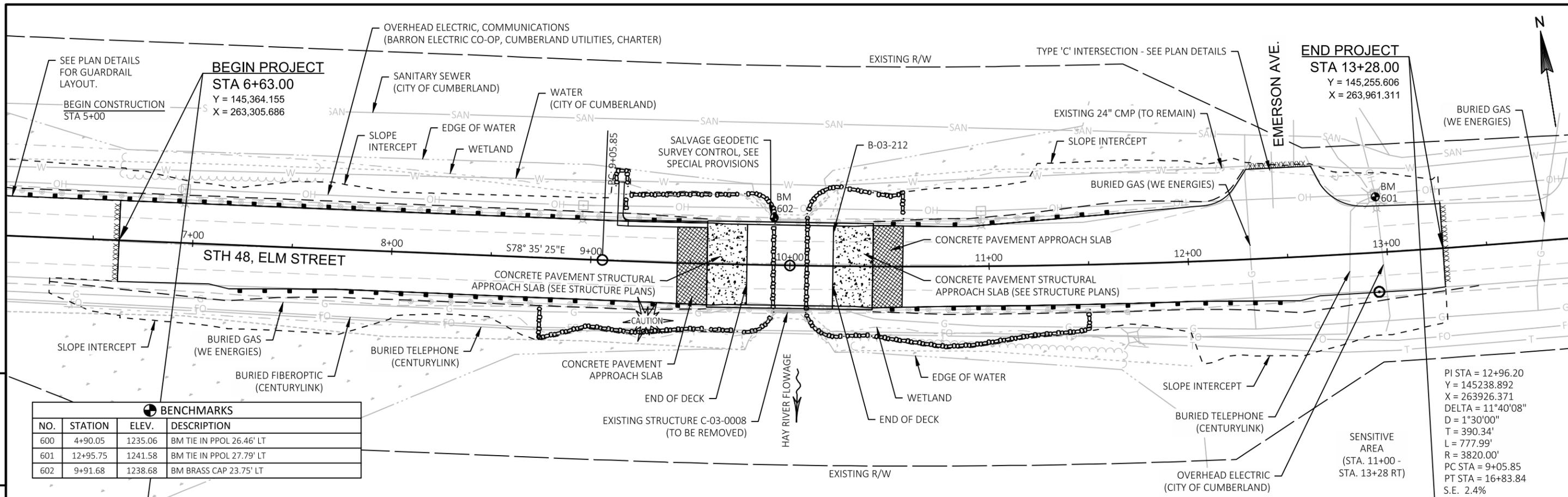
STATION	TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH	
				WHITE LF	YELLOW LF
5+42	-	12+08	LT	666	--
5+42	-	13+28	CL	--	375
5+42	-	13+28	RT	787	--
12+89	-	13+28	LT	39	--
TOTAL 0010				1,866	

LOCATION	646.9000 MARKING REMOVAL LINE 4-INCH LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH LF	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH LF	649.0850 TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH LF	REMARKS
STAGE 2	720	1,400	--	24	WHITE WITHIN LANE SHIFT
STAGE 2	325	--	--	--	YELLOW WITHIN LANE SHIFT
STAGE 2	--	--	2,300	--	YELLOW OUTSIDE LANE SHIFT
STAGE 3	1,400	1,810	--	--	WHITE WITHIN LANE SHIFT
TOTAL 0010		2,445	3,210	2,300	24

STATION	TO	STATION	LOCATION	661.0100 TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (B-03-0212) LS
6+63	-	13+28	PROJECT	1
TOTAL 0010				1

STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND LF	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	650.6500.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE B-03- 0212) LS	650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT 8120-01- 70) LS
			PROJECT 8120-01-70	--	--	--	--	--	1	1
4+75	-	9+78	LT	--	--	--	500	--	--	--
6+63	-	9+81	LT & RT	280	280	--	--	--	--	--
9+13	-	9+58	LT	--	--	45	--	--	--	--
9+58	-	10+42	LT & RT	--	--	--	70	--	--	--
10+19	-	13+28	LT & RT	270	270	--	--	309	--	--
TOTAL 0010				550	550	45	70	809	1	1

STATION	LOCATION	690.0150 SAWING ASPHALT LF
6+63	LT & RT	43
--	EMERSON AVENUE	30
13+28	LT & RT	43
TOTAL 0010		116



BEGIN PROJECT
STA 6+63.00
Y = 145,364.155
X = 263,305.686

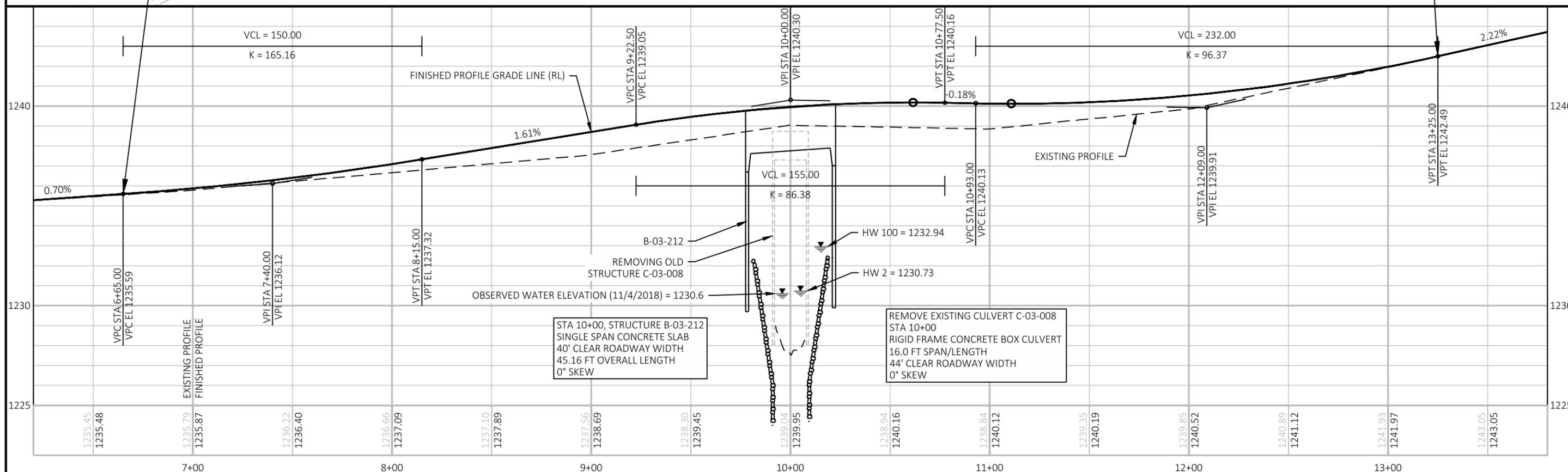
END PROJECT
STA 13+28.00
Y = 145,255.606
X = 263,961.311

STH 48, ELM STREET

BENCHMARKS

NO.	STATION	ELEV.	DESCRIPTION
600	4+90.05	1235.06	BM TIE IN PPOL 26.46' LT
601	12+95.75	1241.58	BM TIE IN PPOL 27.79' LT
602	9+91.68	1238.68	BM BRASS CAP 23.75' LT

PI STA = 12+96.20
Y = 145238.892
X = 263926.371
DELTA = 11°40'08"
D = 1°30'00"
T = 390.34'
L = 777.99'
R = 3820.00'
PC STA = 9+05.85
PT STA = 16+83.84
S.E. 2.4%

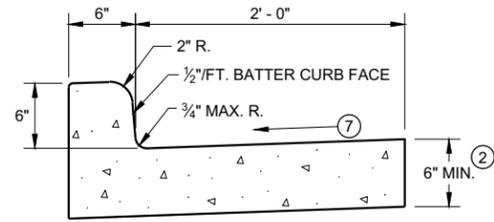


STA 10+00, STRUCTURE B-03-212
SINGLE SPAN CONCRETE SLAB
40' CLEAR ROADWAY WIDTH
45.16 FT OVERALL LENGTH
0° SKEW

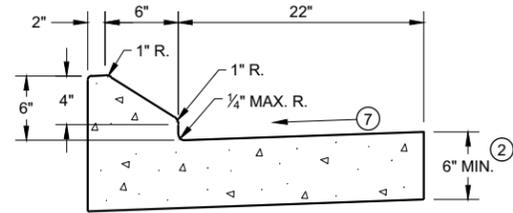
REMOVE EXISTING CULVERT C-03-008
STA 10+00
RIGID FRAME CONCRETE BOX CULVERT
16.0 FT SPAN/LENGTH
44' CLEAR ROADWAY WIDTH
0° SKEW

Standard Detail Drawing List

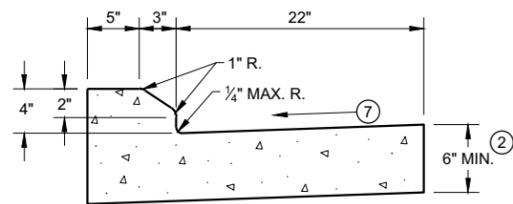
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-07A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E11-02	TURBIDITY BARRIER
09G02-05A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13B02-09B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
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)
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-08B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D31-03	TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY
15D33-06	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



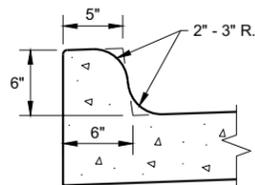
TYPES A^① & D



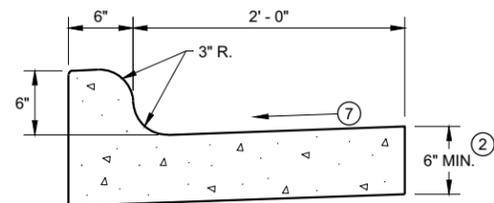
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

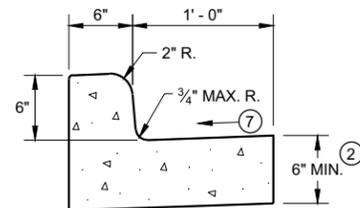


TYPES K^① & L
(OPTIONAL CURB SHAPE)



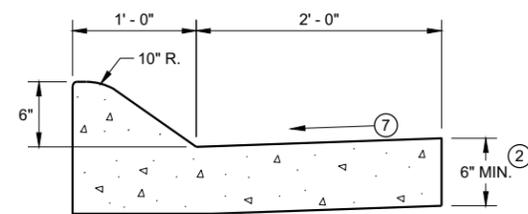
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

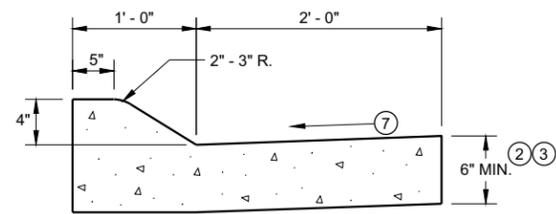


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

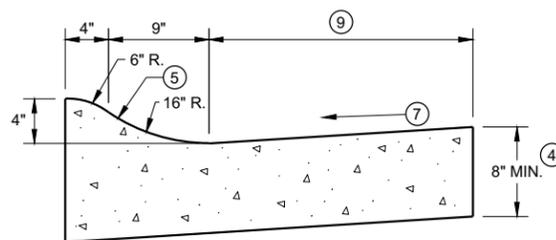


6" SLOPED CURB TYPES A^① & D



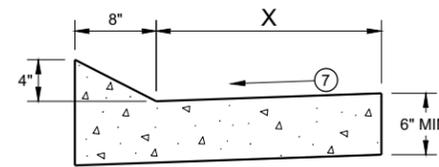
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

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

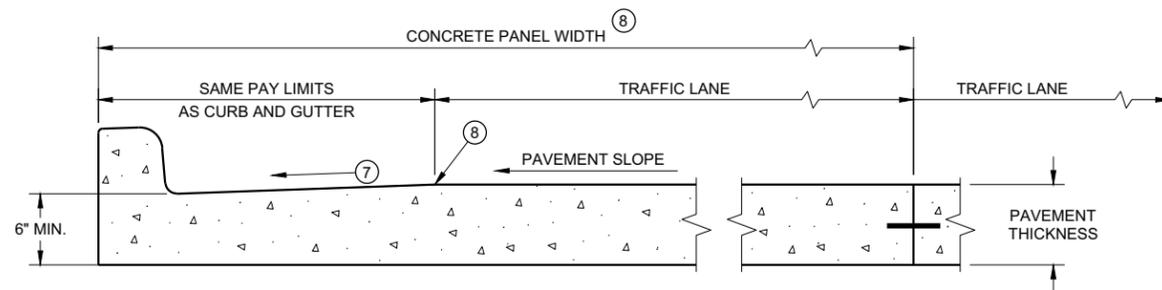


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

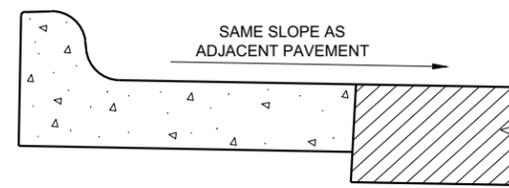
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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.

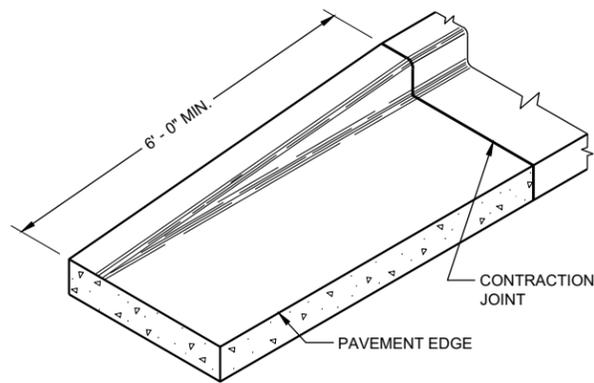
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

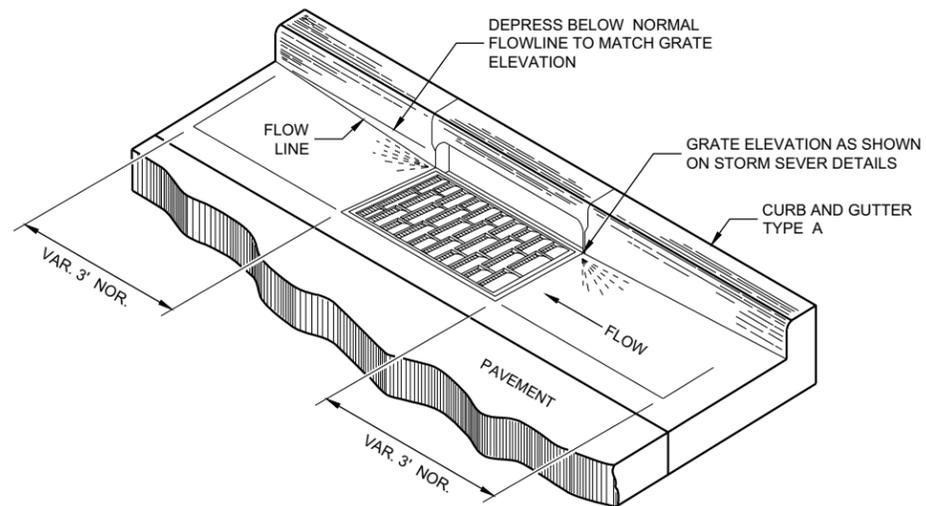
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH 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

6

6



END SECTION CURB AND GUTTER



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

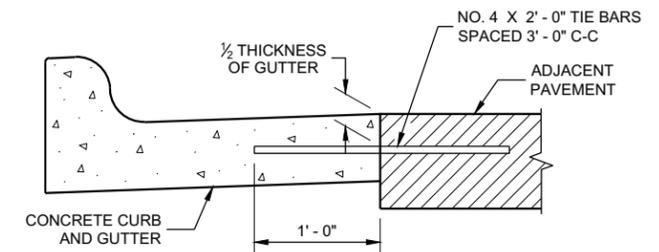
GENERAL NOTES

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

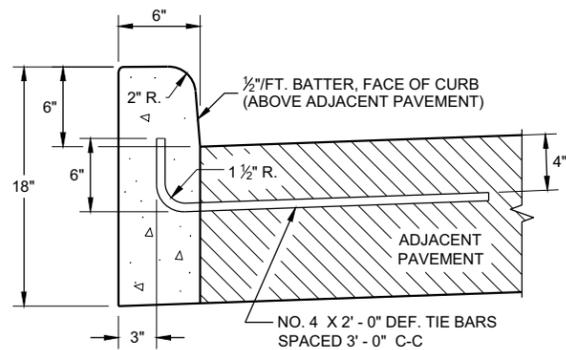
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

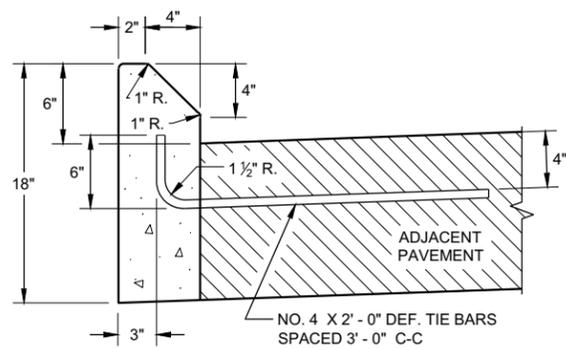
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL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



TYPICAL TIE BAR LOCATION ①

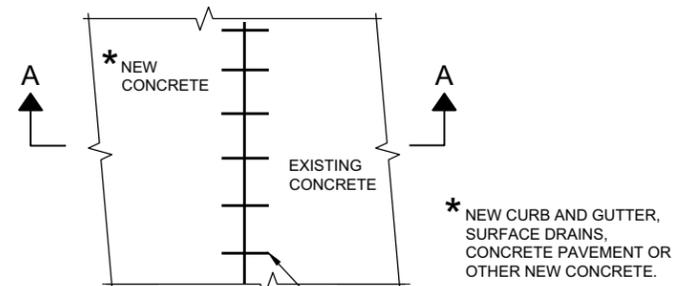


TYPES A ① & D

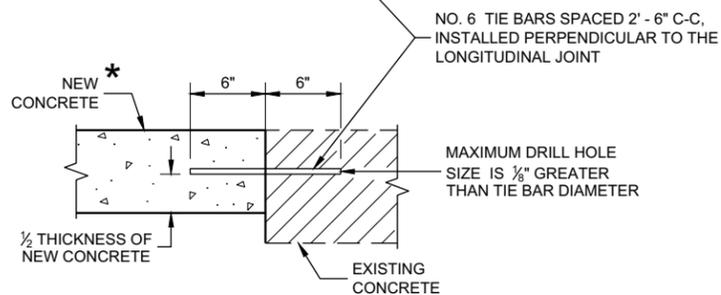


TYPES G ① & J

CONCRETE CURB

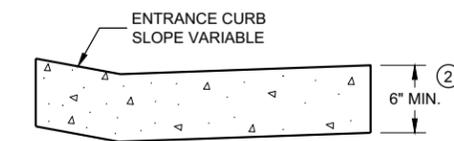


PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB ⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

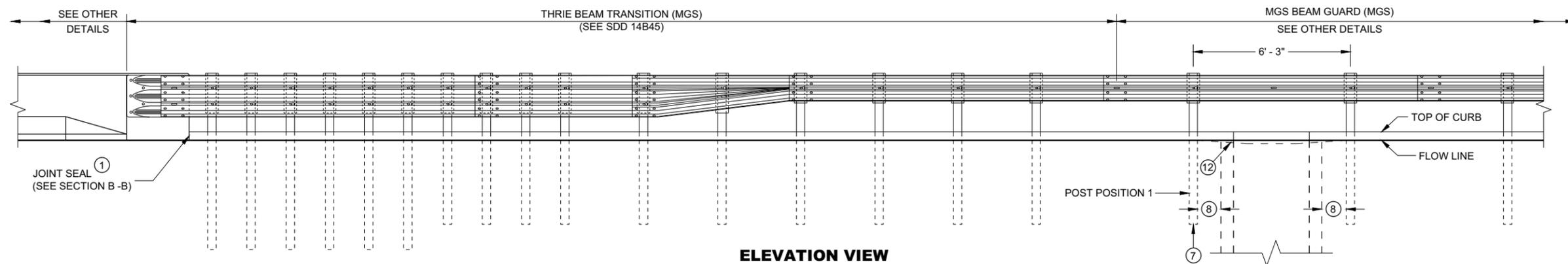
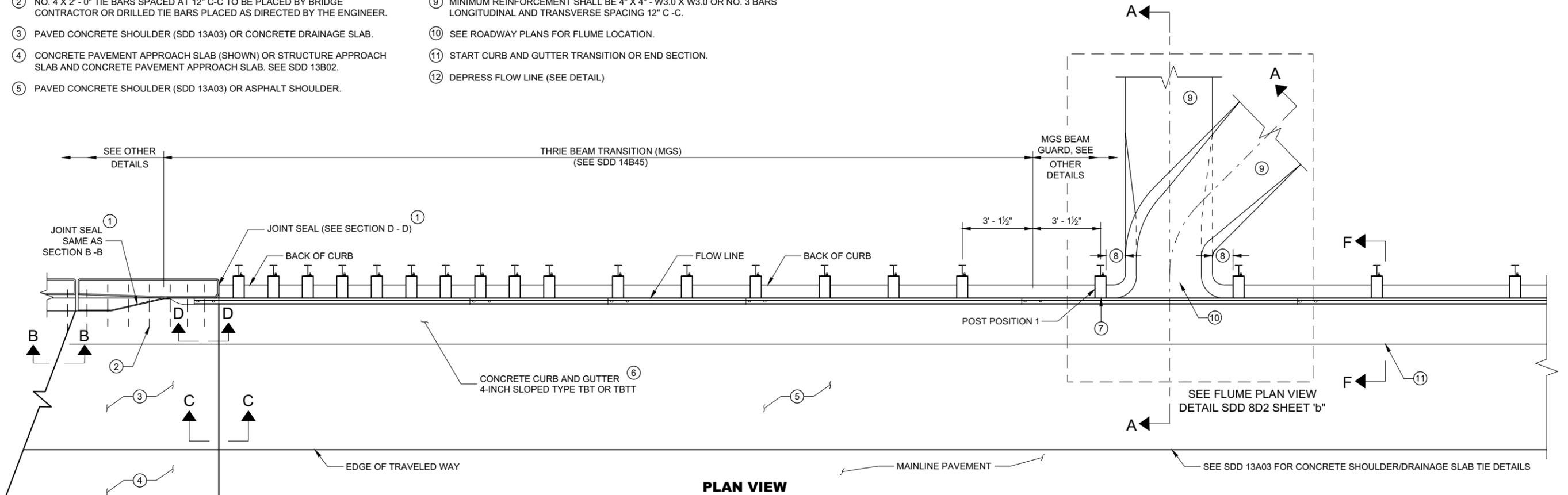
GENERAL NOTES

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

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)



**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

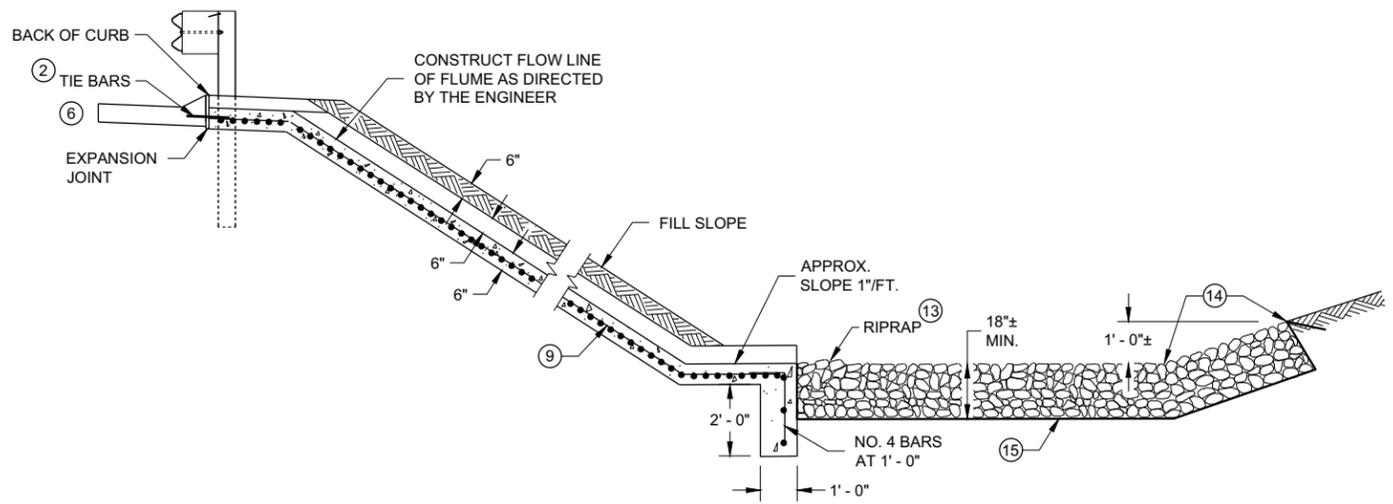
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D02 - 07a

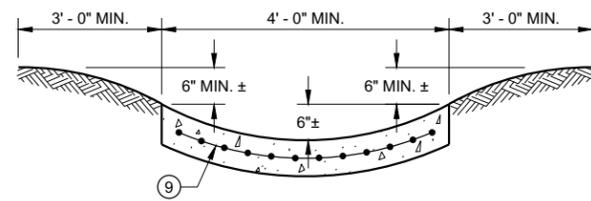
SDD 08D02 - 07a

6

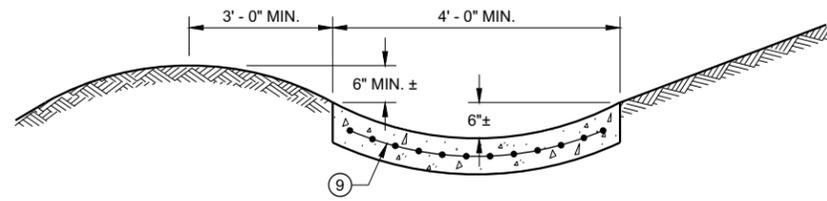
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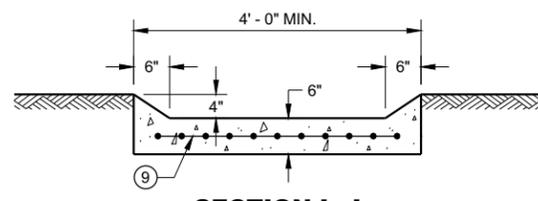
SECTION A - A



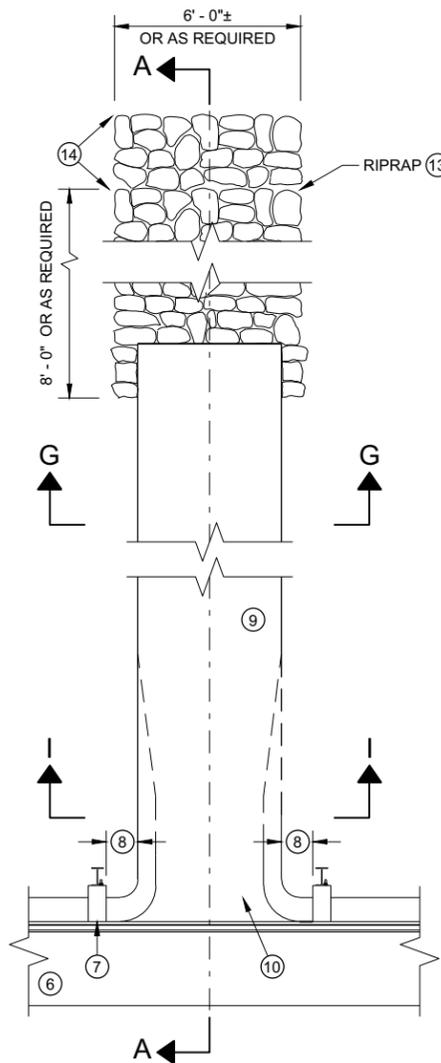
SECTION G - G



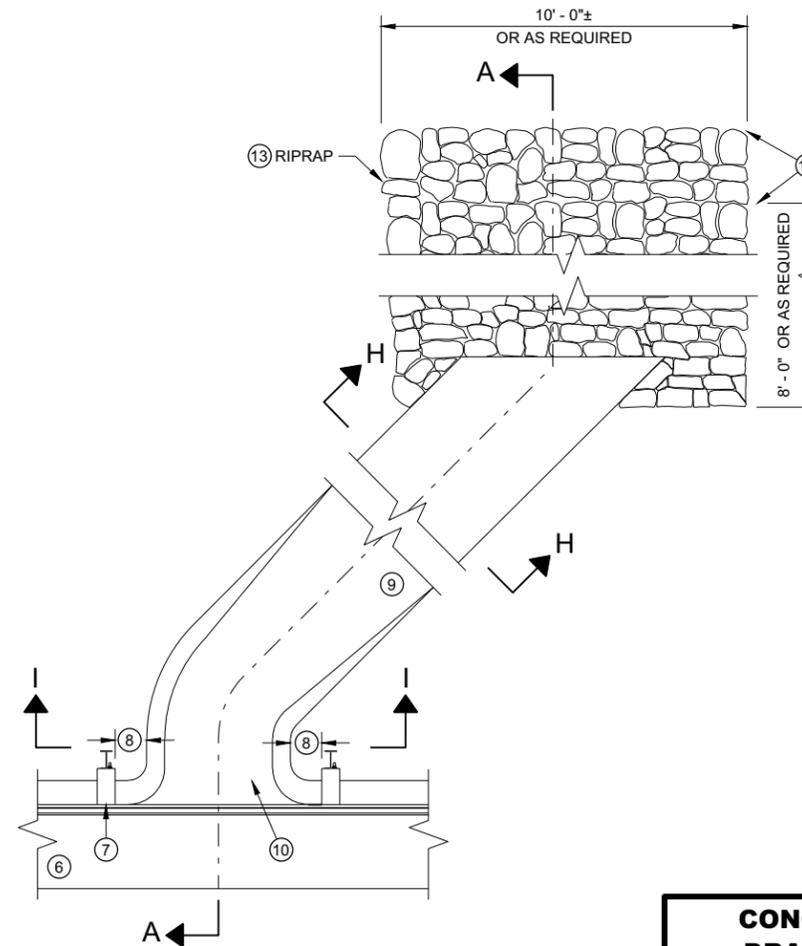
SECTION H - H



SECTION I - I



PLAN VIEW PERPENDICULAR FLUME



PLAN 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.

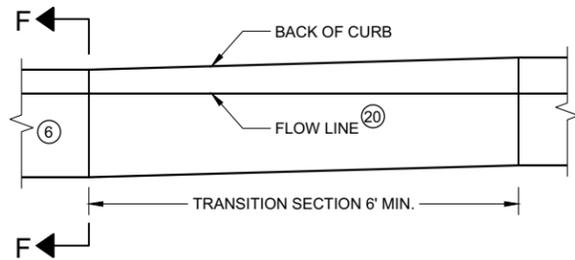
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 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 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.

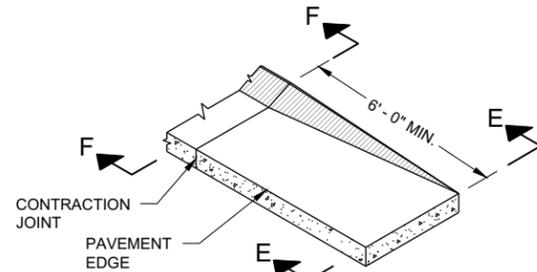
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C -C.
- ⑩ SEE ROADWAY PLANS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

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

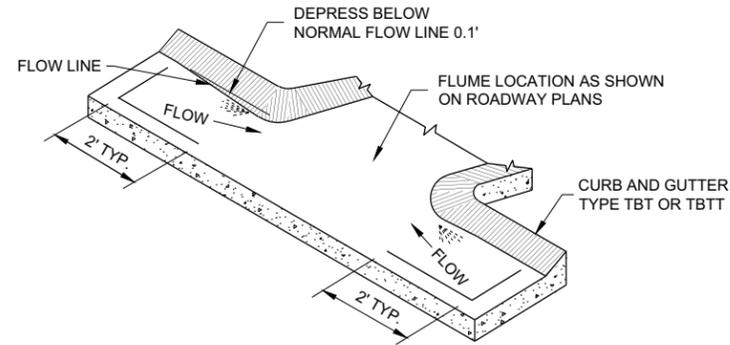
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**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**



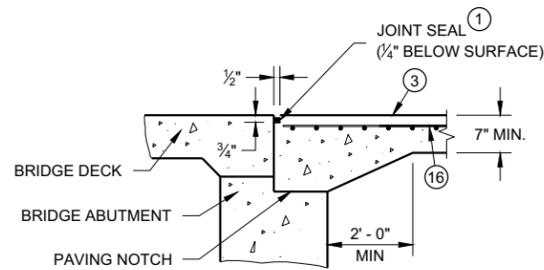
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**

GENERAL NOTES

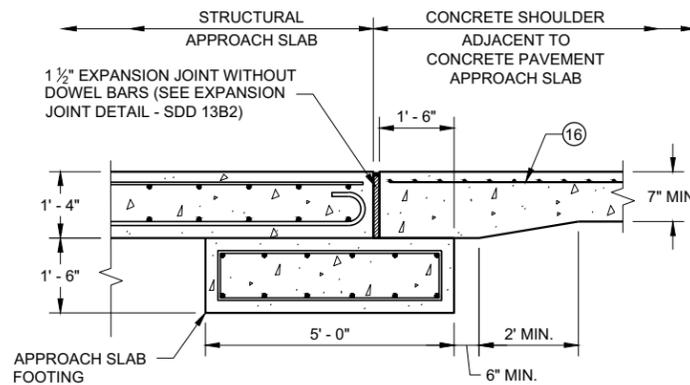
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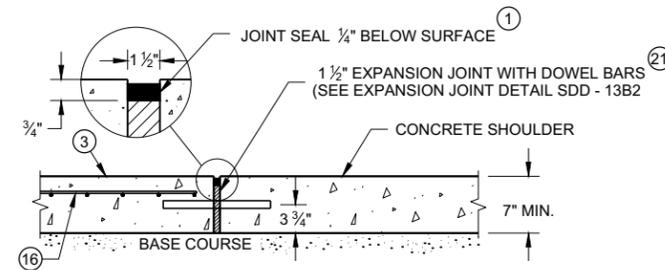
- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
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- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR 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)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.
- ⑯ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑰ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑱ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑲ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑳ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ㉑ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.



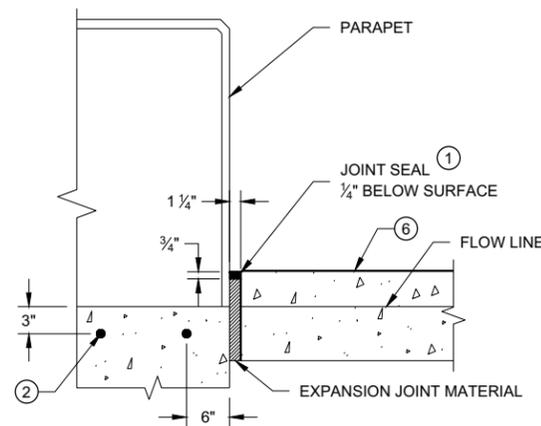
SECTION B-B



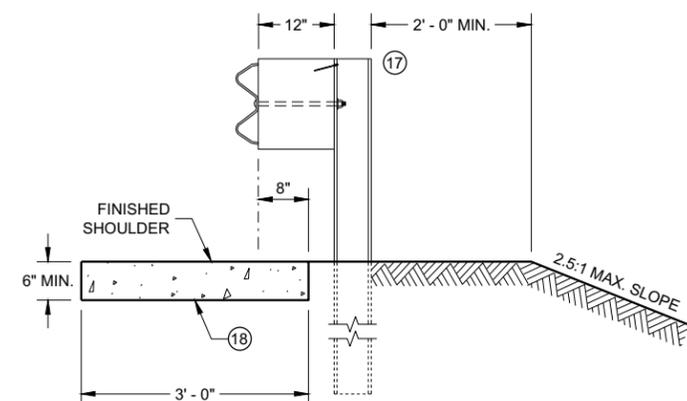
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



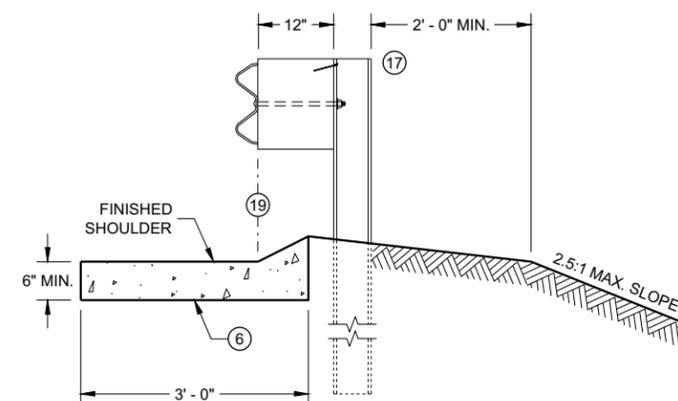
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

6

6

SDD08D02 - 07C

SDD08D02 - 07C

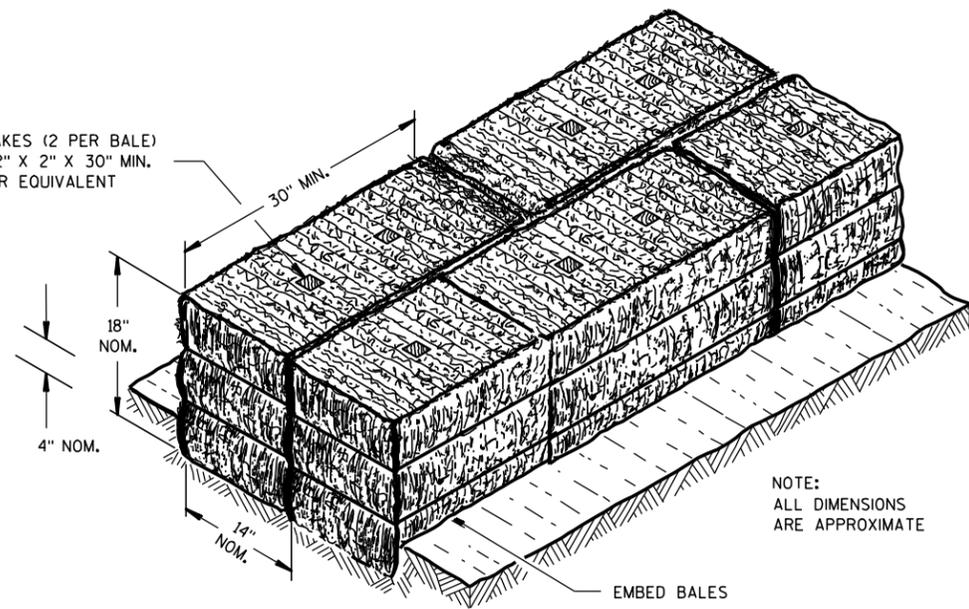
**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

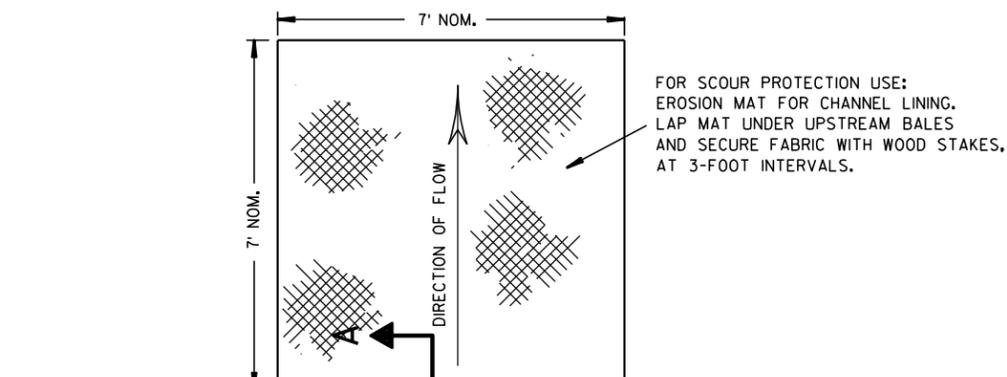
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



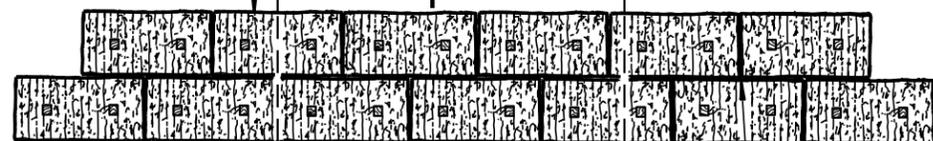
NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A



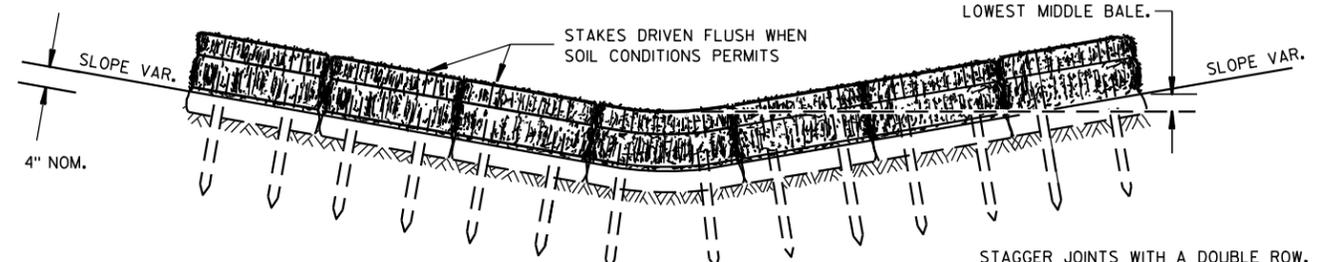
FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.



STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

PLAN VIEW

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



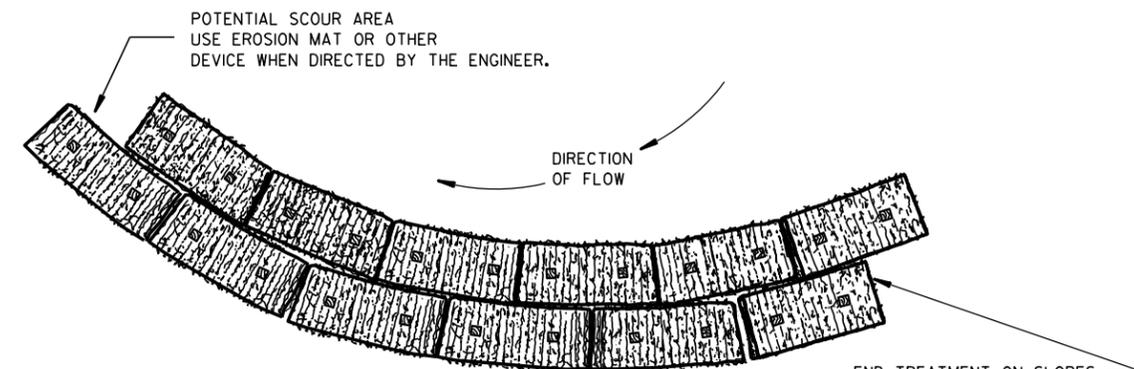
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

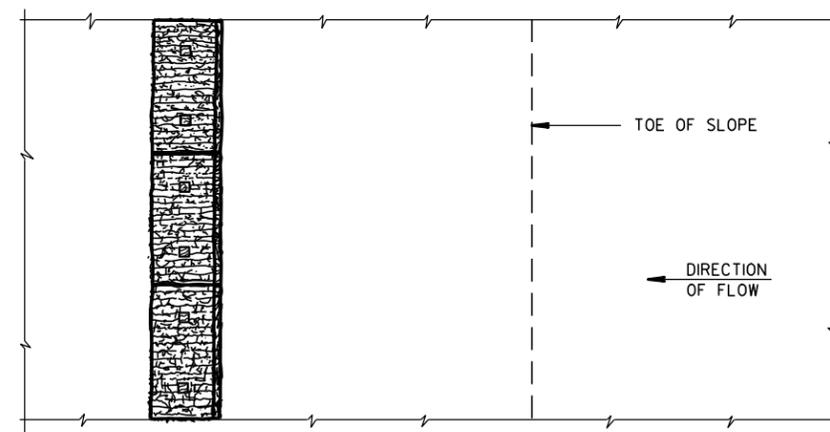
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

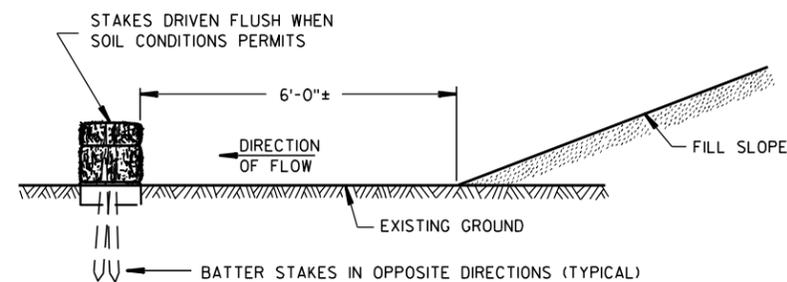


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

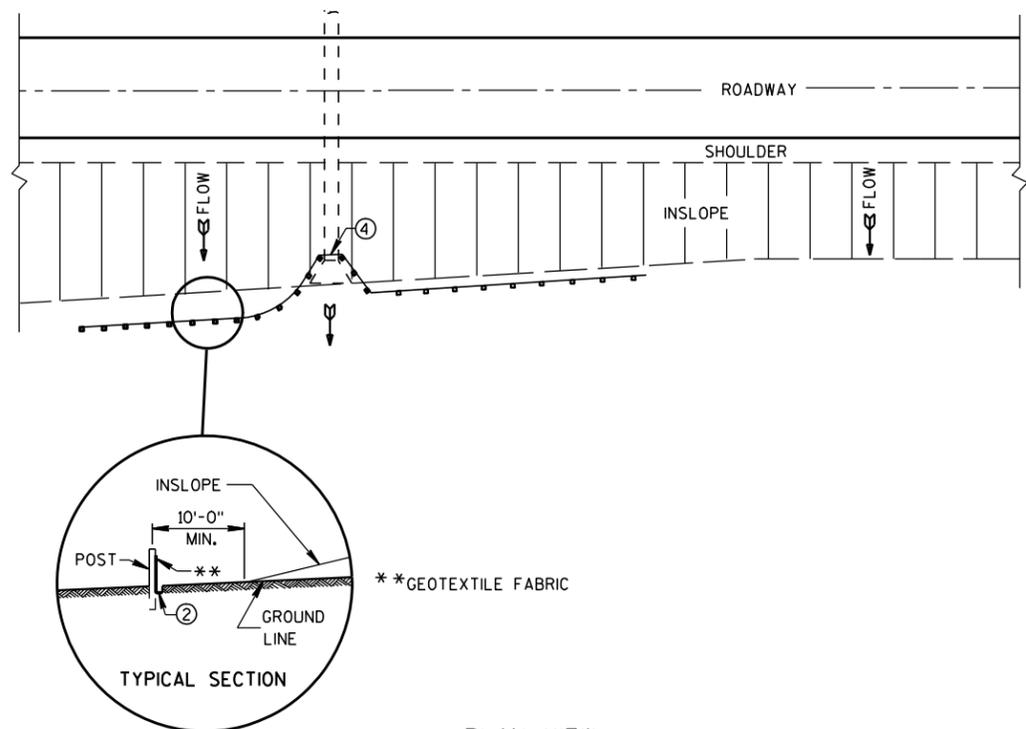
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

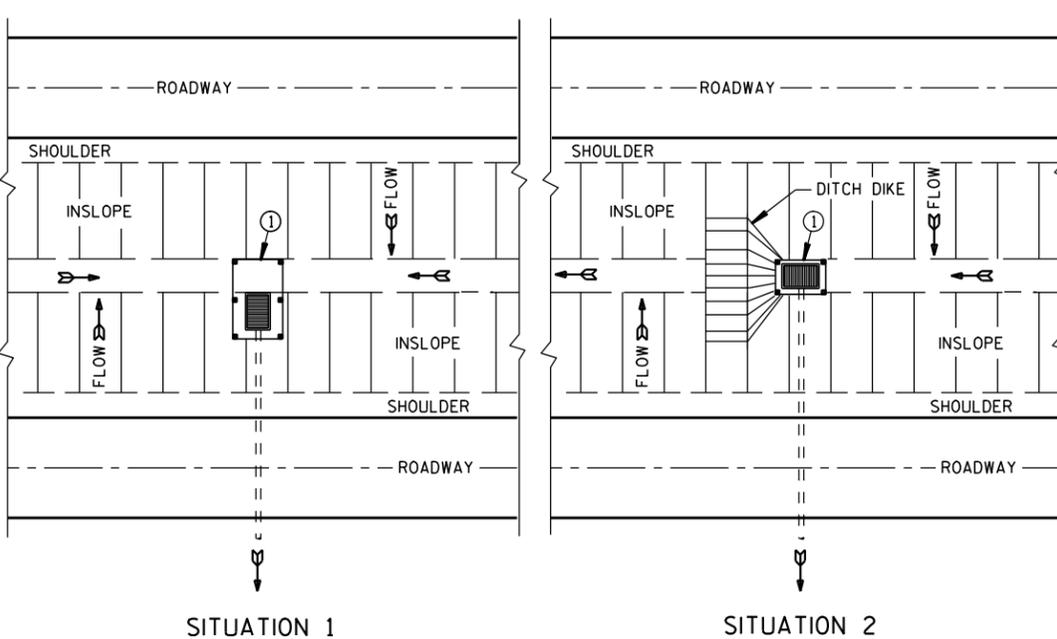
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

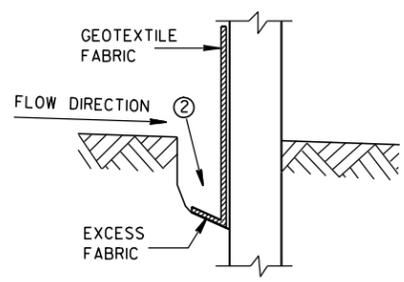


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

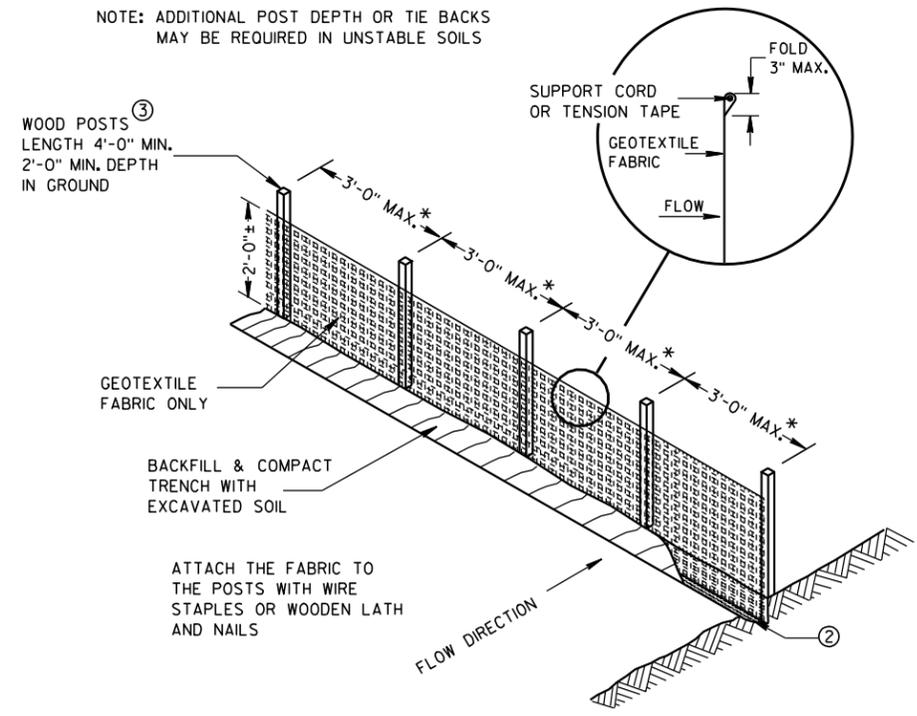
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



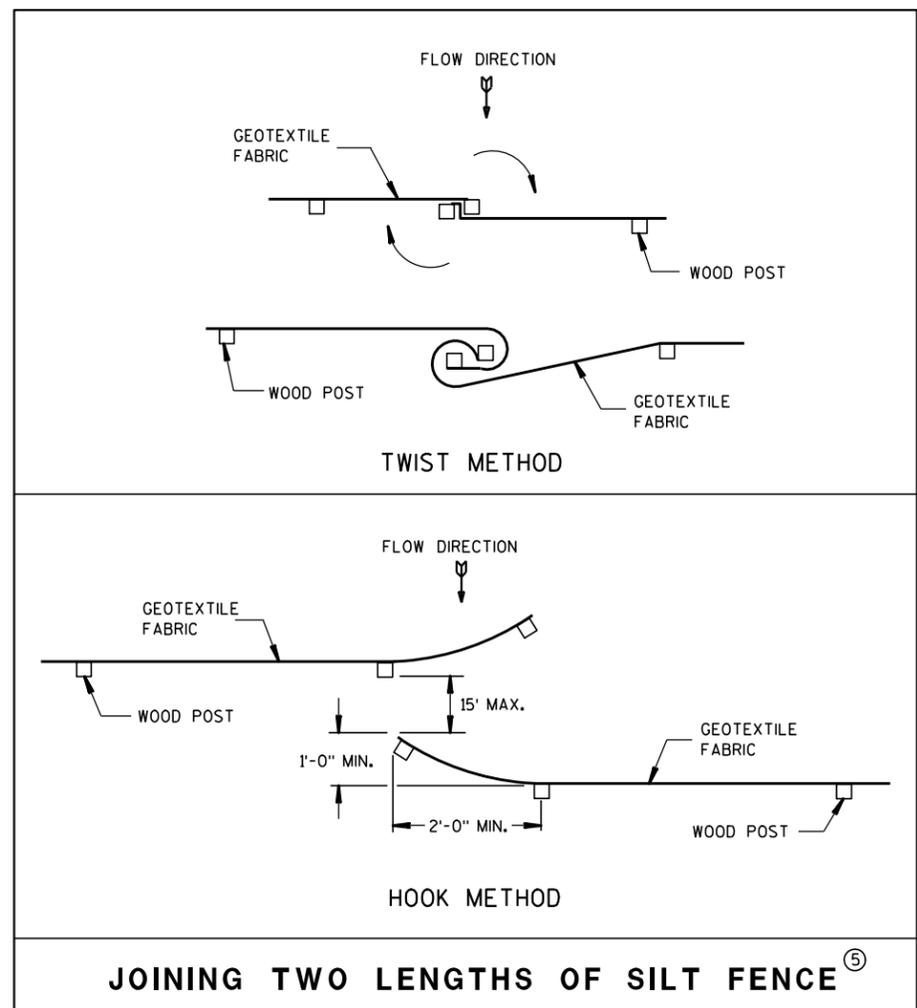
TRENCH DETAIL

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

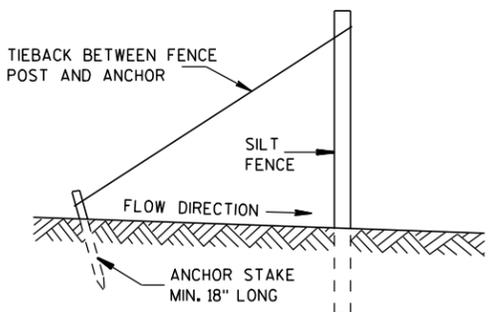


* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

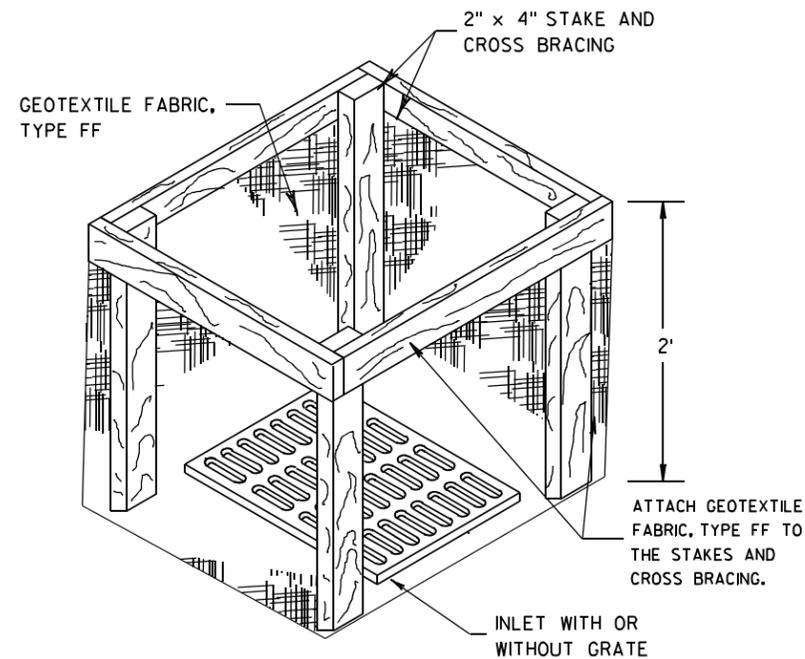
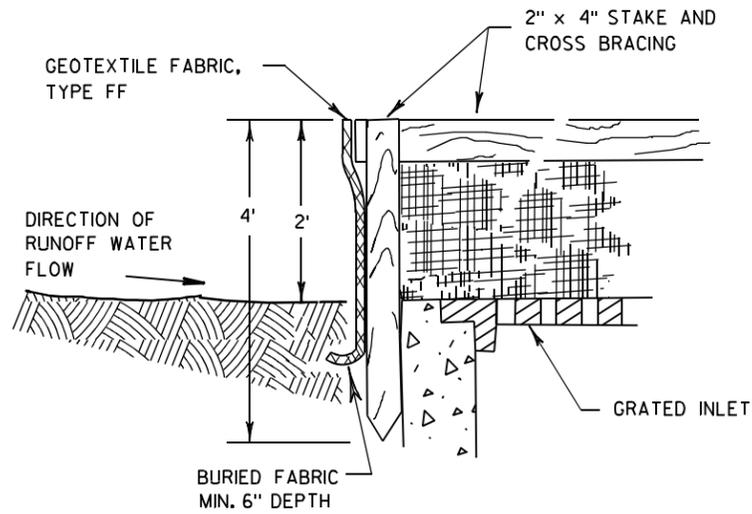


JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

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



INLET PROTECTION, TYPE A

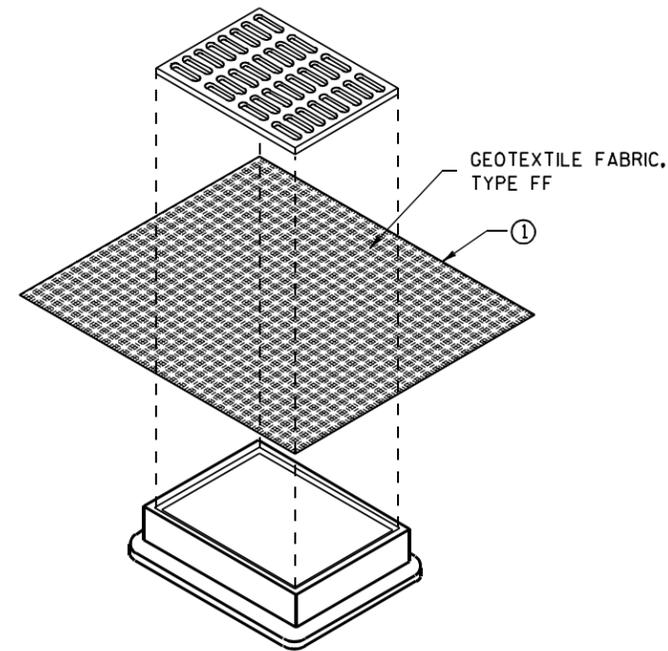
GENERAL NOTES

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

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

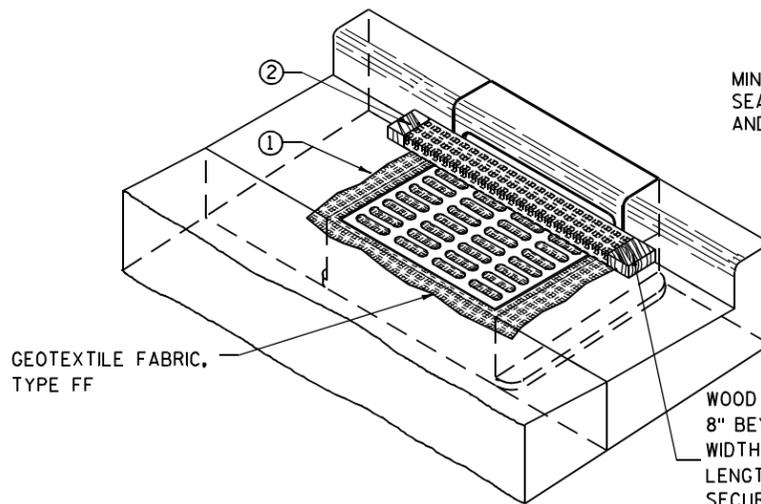
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

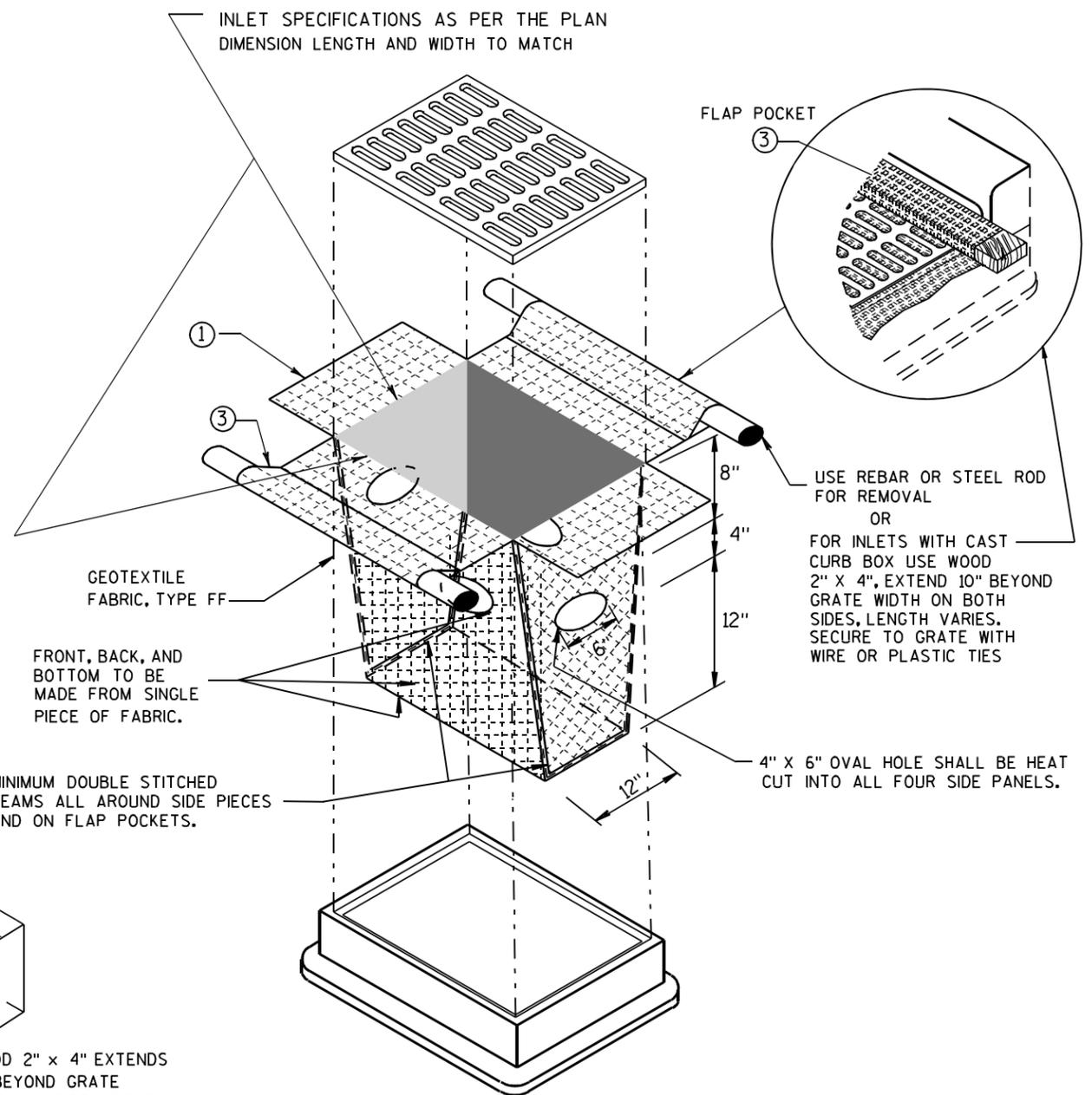
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

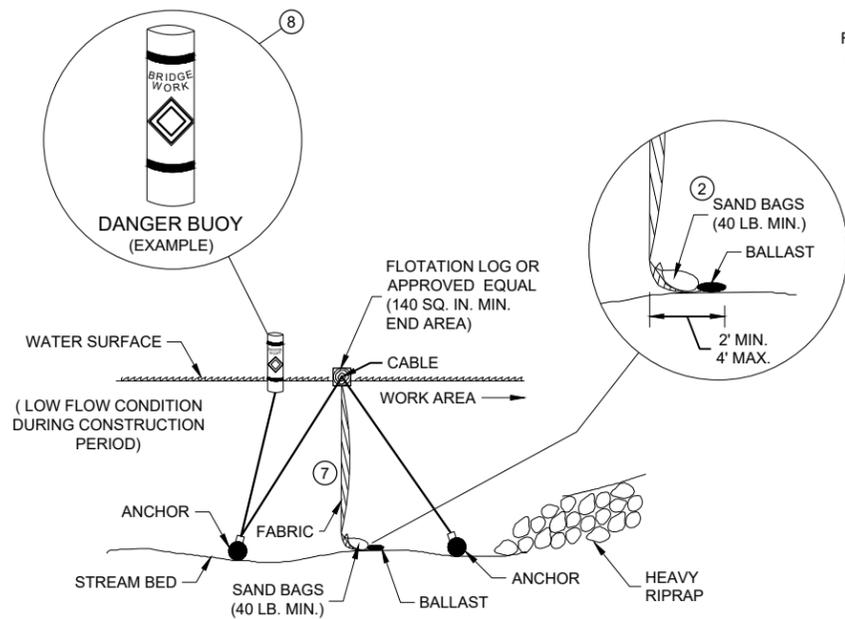
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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



INLET PROTECTION, TYPE D

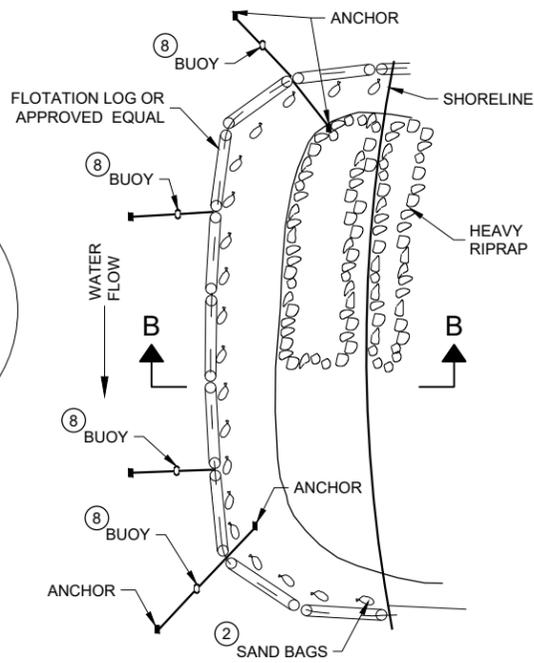
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

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

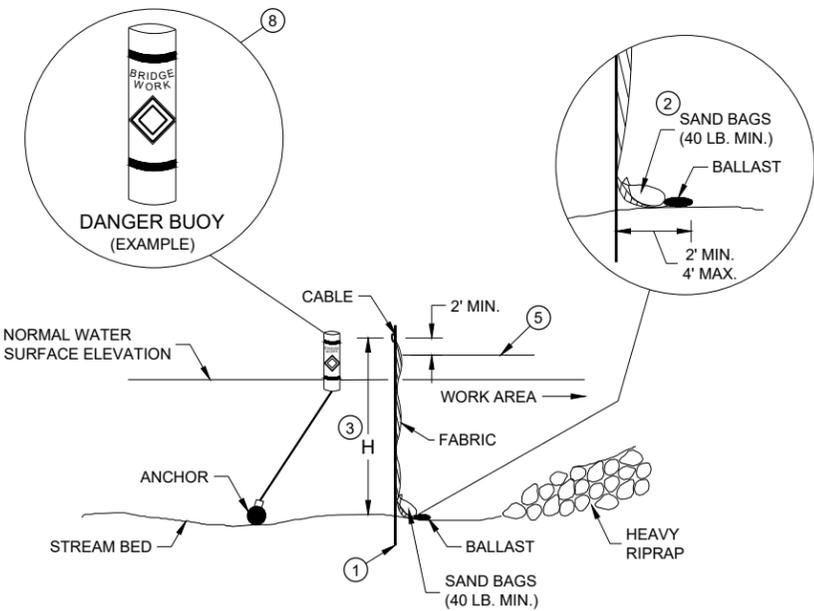


SECTION B - B

**TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6**

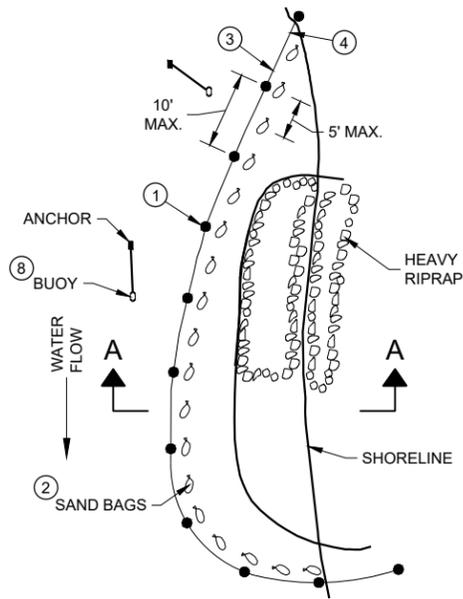


PLAN VIEW



SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW

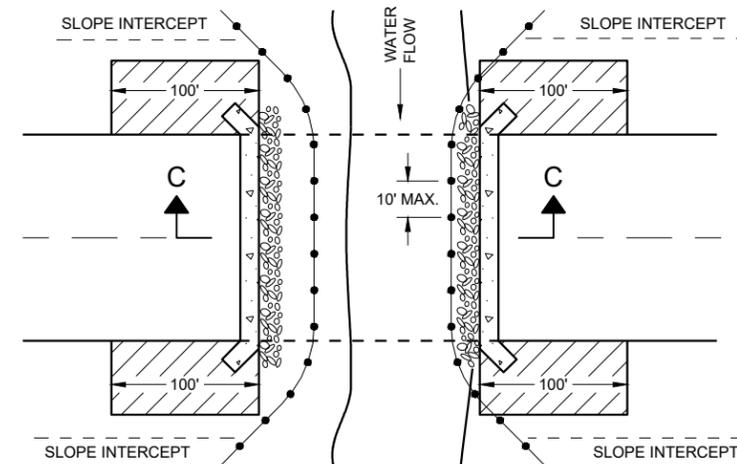
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

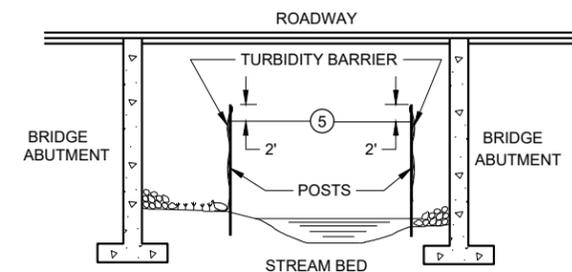
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

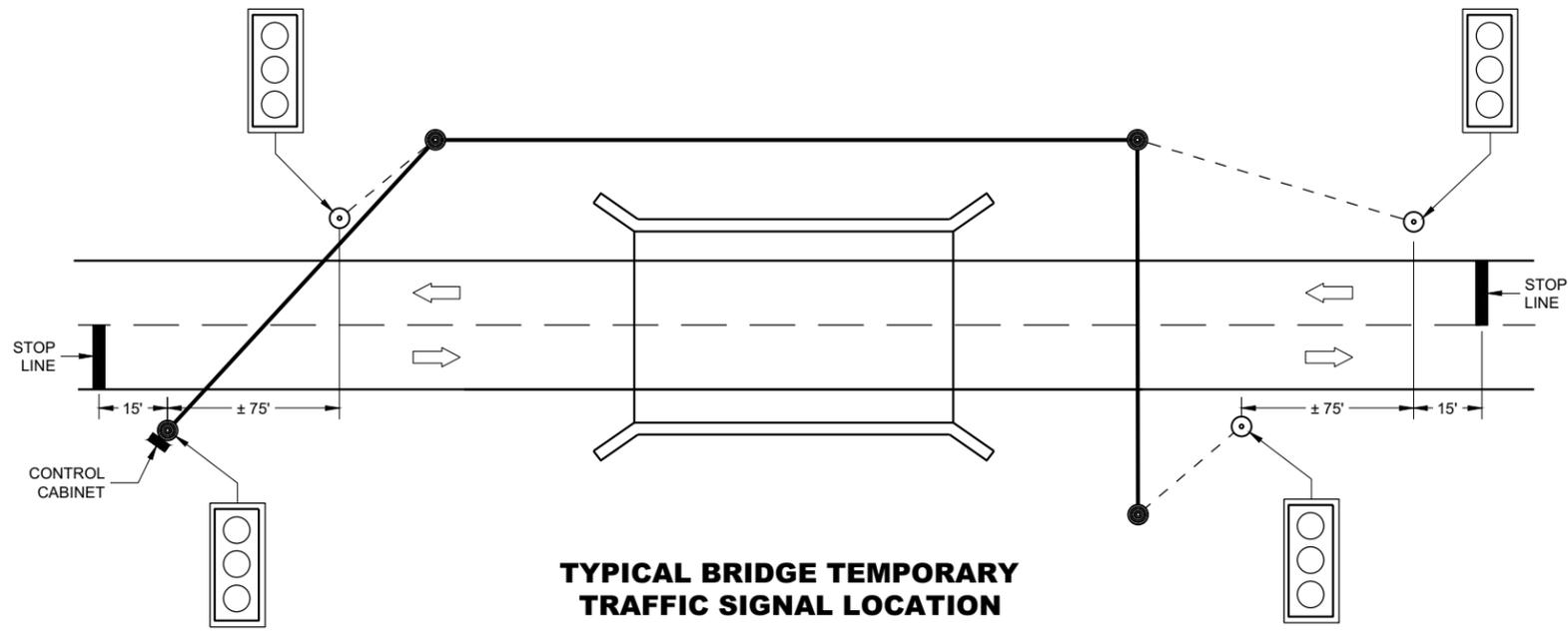
**TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES**

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

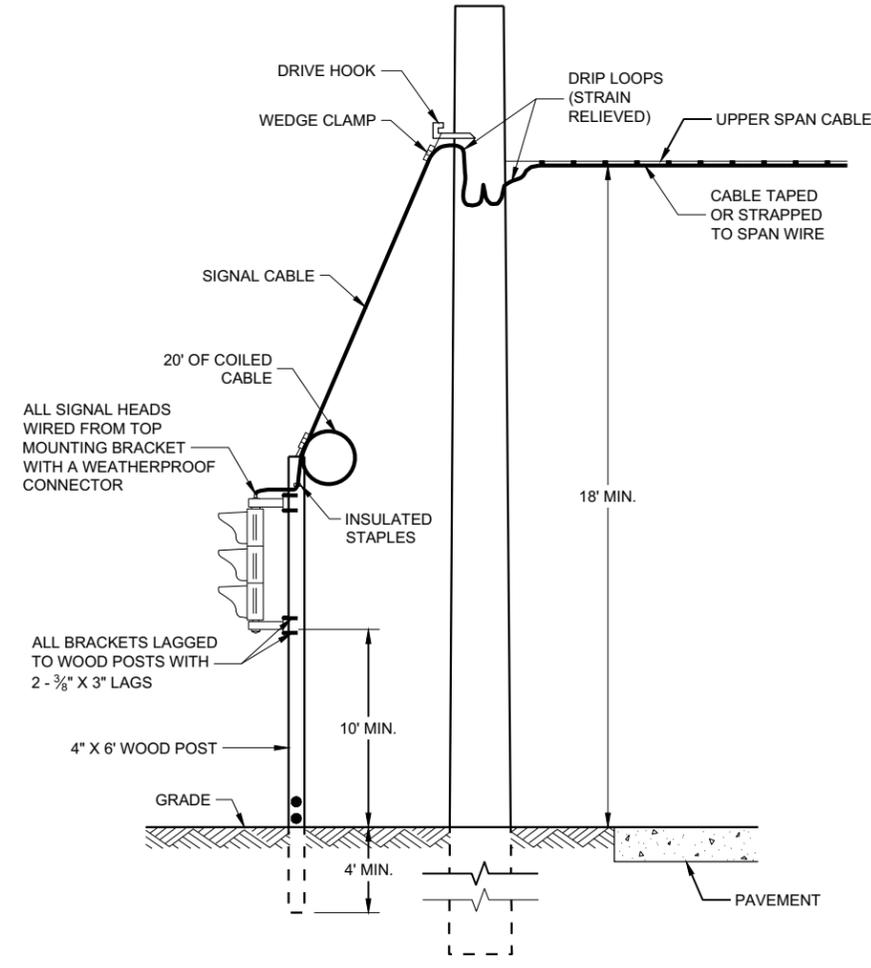
LEGEND

- WOOD POLE (NON-BREAKAWAY)
- WOOD POST (BREAKAWAY)
- - - SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER

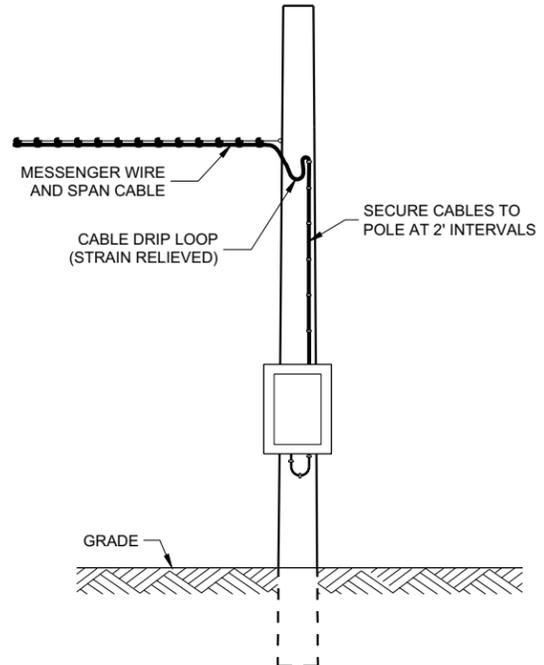
➔ DIRECTION OF TRAFFIC

GENERAL NOTES

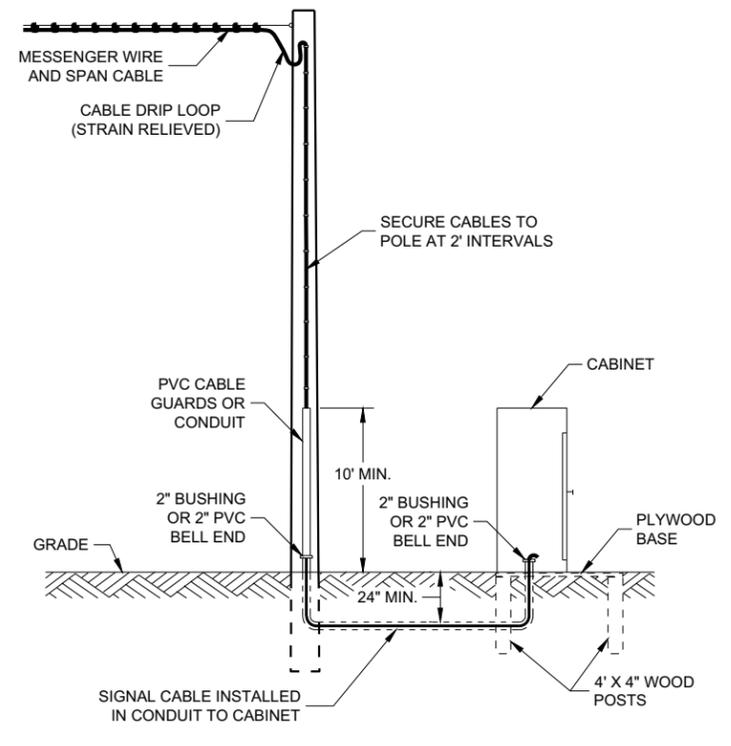
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAY BE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.
- WHEN UTILITY POLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.
- WOOD POLES (NON-BREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAM GUARD, ETC.).
- WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.
- VERTICAL CLEARANCE ETC. PER NEC.
- TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.
- EACH TRAFFIC SIGNAL SHALL HAVE A BACKPLATE.
- SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15D33.



TYPICAL DROP TO TRAFFIC SIGNAL FACE



POLE MOUNT CABINET INSTALLATION



GROUND MOUNT CABINET INSTALLATION

MINIMUM POLE LENGTHS	CLASS	POLE BURIAL DEPTHS
25'	V	5'
30'	V	6'
35'	IV	7'
40'	IV	8'
45'	IV	9'

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE*
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/CURBS	2 FT

* NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Ahmet Demirelek
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6

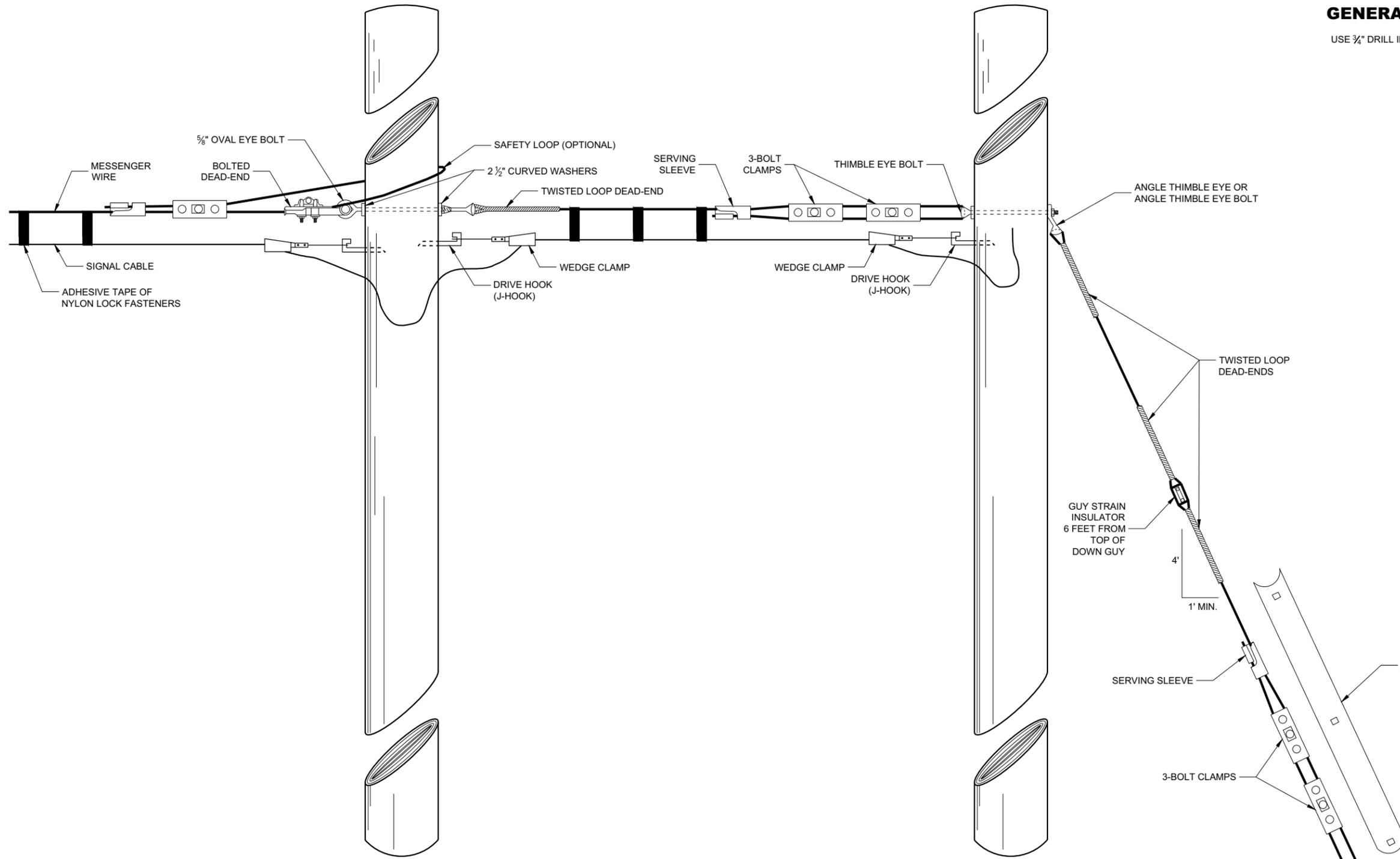
6

SDD09G02 - 05a

SDD09G02 - 05a

GENERAL NOTES

USE 3/4" DRILL IN WOOD POLE TO PROVIDE FOR 5/8" BOLTS.



SPAN WIRE POLE

GUY POLE

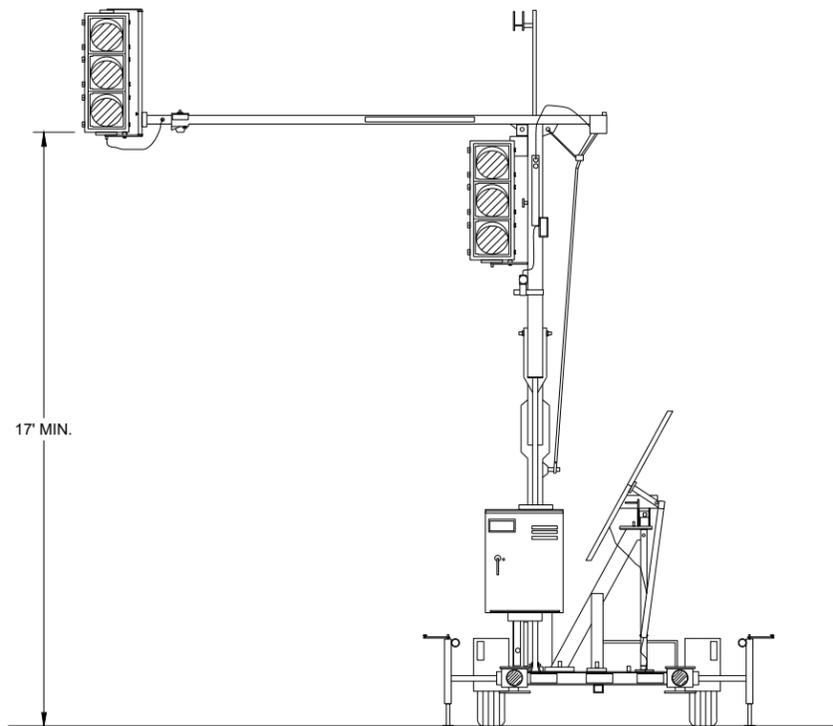
TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2015 /S/ Ahmet Demerbilek
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

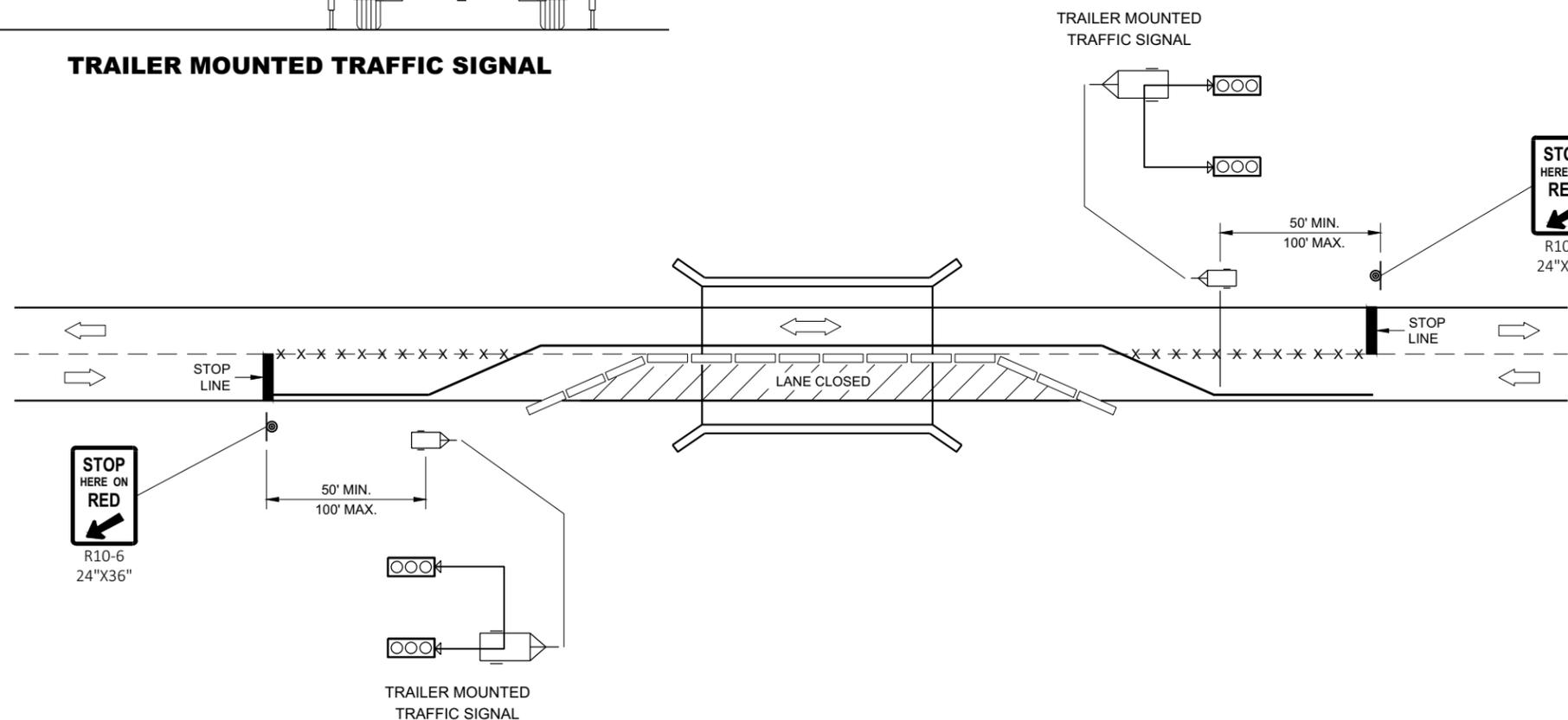


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15D33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

-  POST MOUNTED SIGN
-  TEMPORARY PRECAST CONCRETE BARRIER
-  TRAILER MOUNTED TRAFFIC SIGNAL
-  REMOVE PAVEMENT MARKINGS
-  DIRECTION OF TRAFFIC

6

6

SDD09G02 - 05c

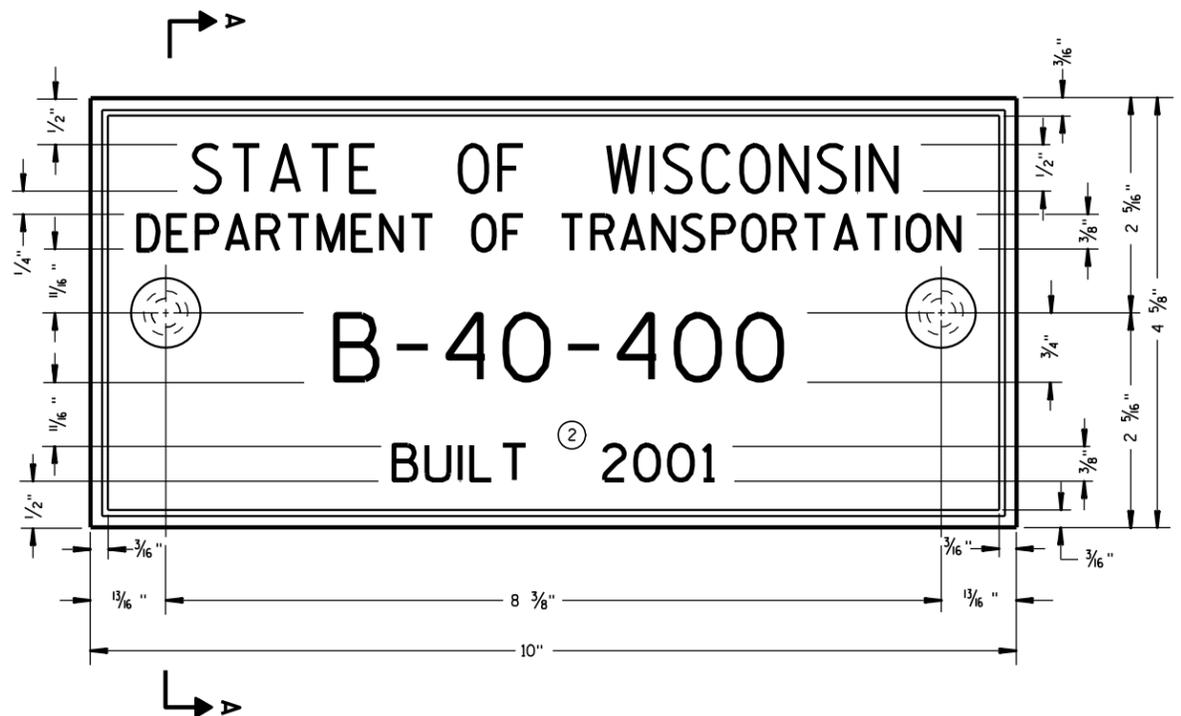
SDD09G02 - 05c

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2015 /S/ Ahmet Demerbilek
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



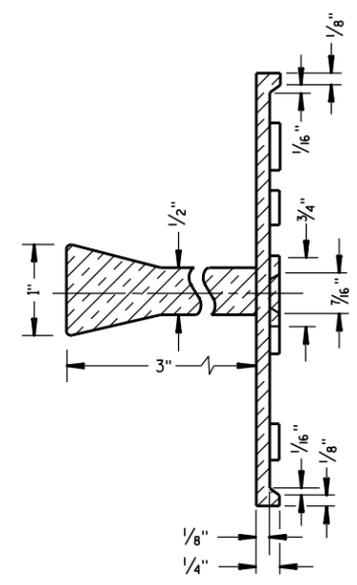
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

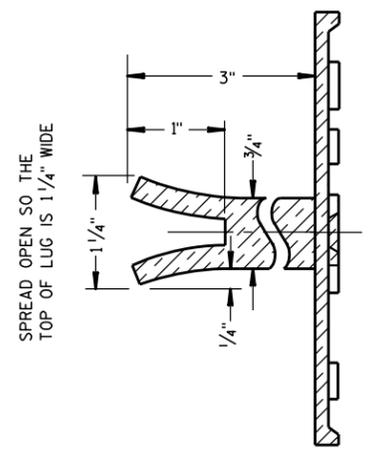
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

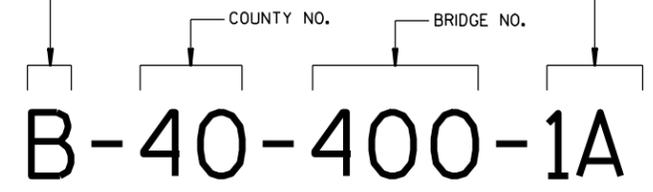
6

6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

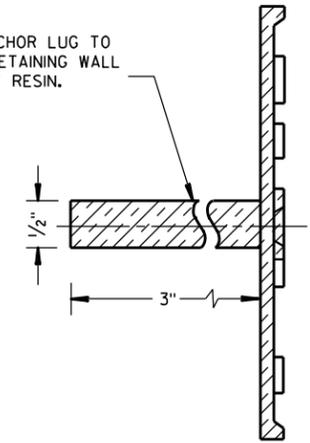
B = BRIDGE
C = CULVERT
R = RETAINING WALL

UNIT NO. FOR MULTIPLE
UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

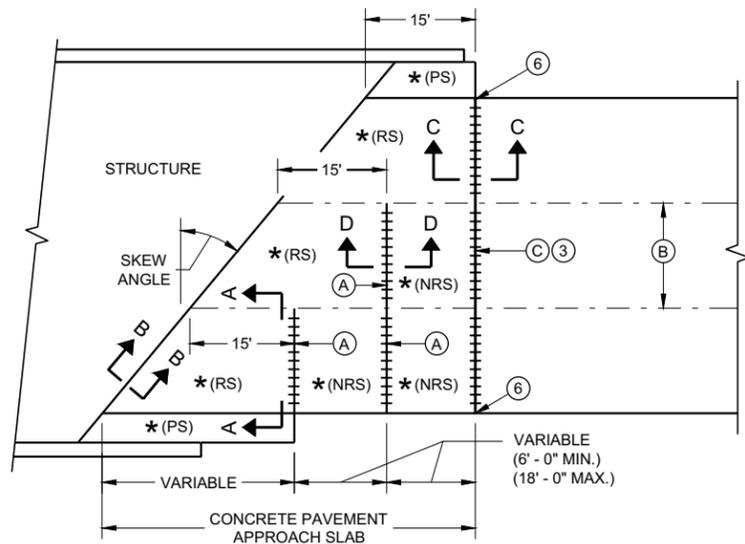


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

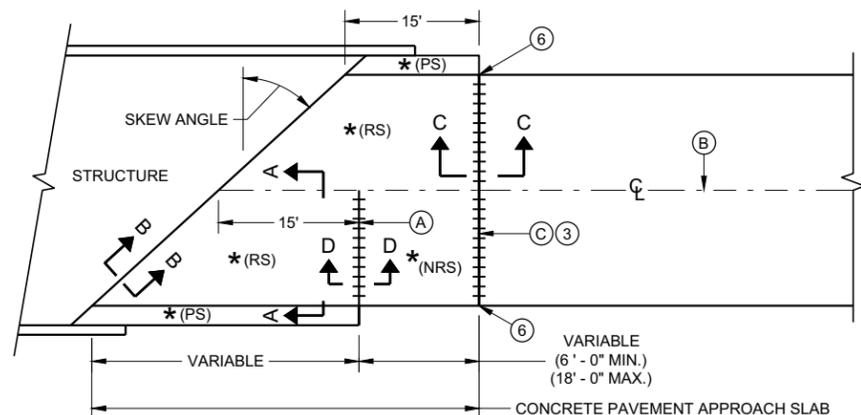
S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

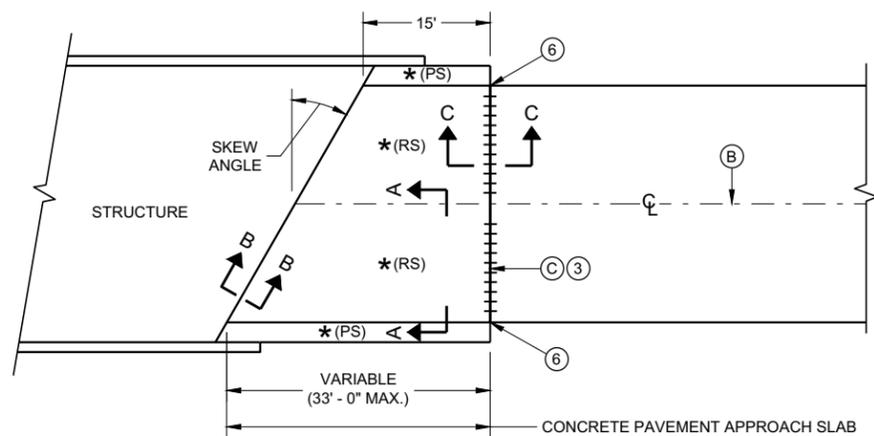
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



**SKewed Approach
(Pavement More Than Two Lanes)**

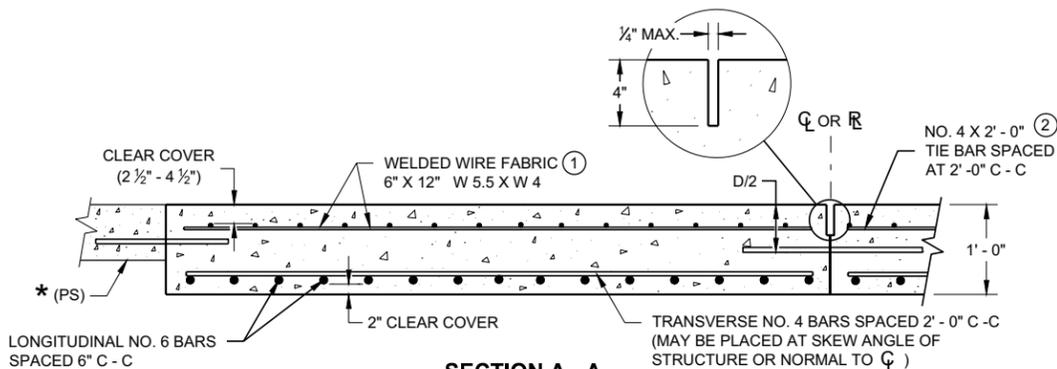


**Skews > 20°
(Pavement Width ≤ 30')**

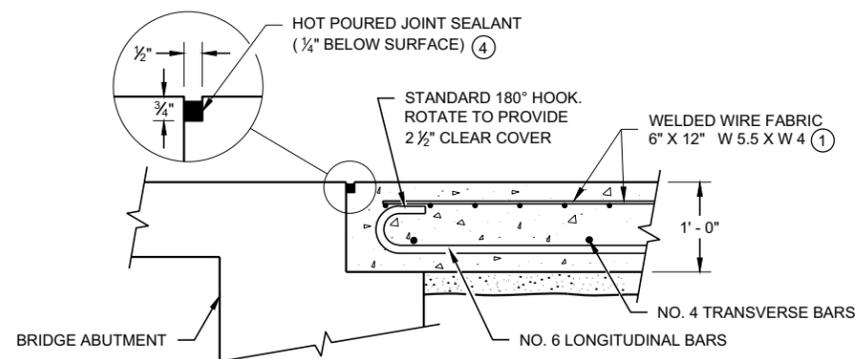


**Skews ≤ 20°
(Pavement Width ≤ 30')**
Approach Slab and Adjacent Pavement

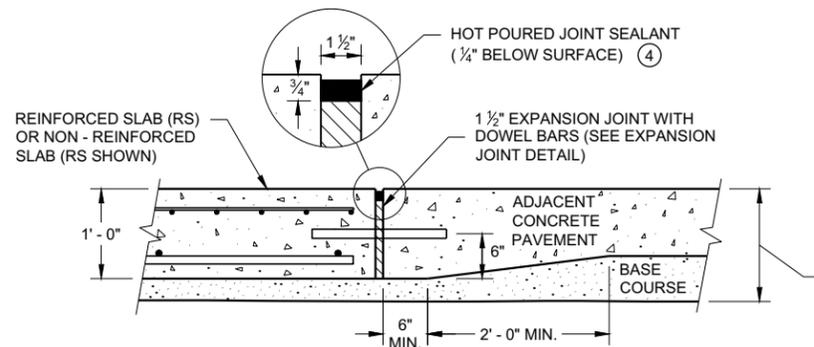
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



**SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT**



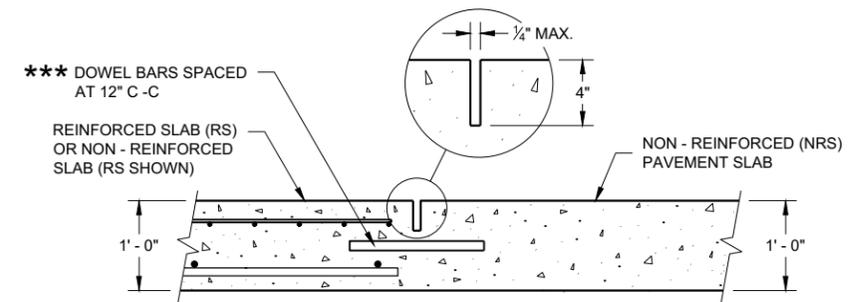
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

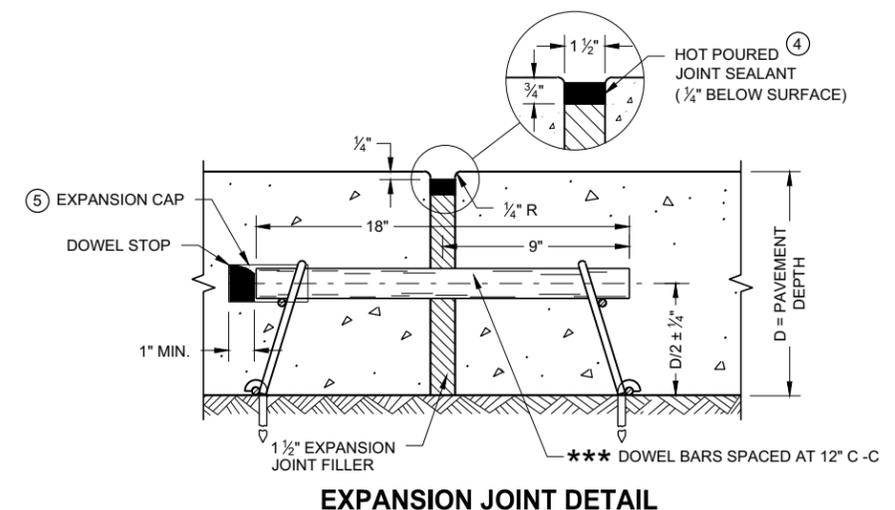
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- (A) STANDARD CONTRACTION JOINT NORMAL TO C-C OR B-B.
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO C-C OR B-B.



**SECTION D - D
CONTRACTION JOINT**



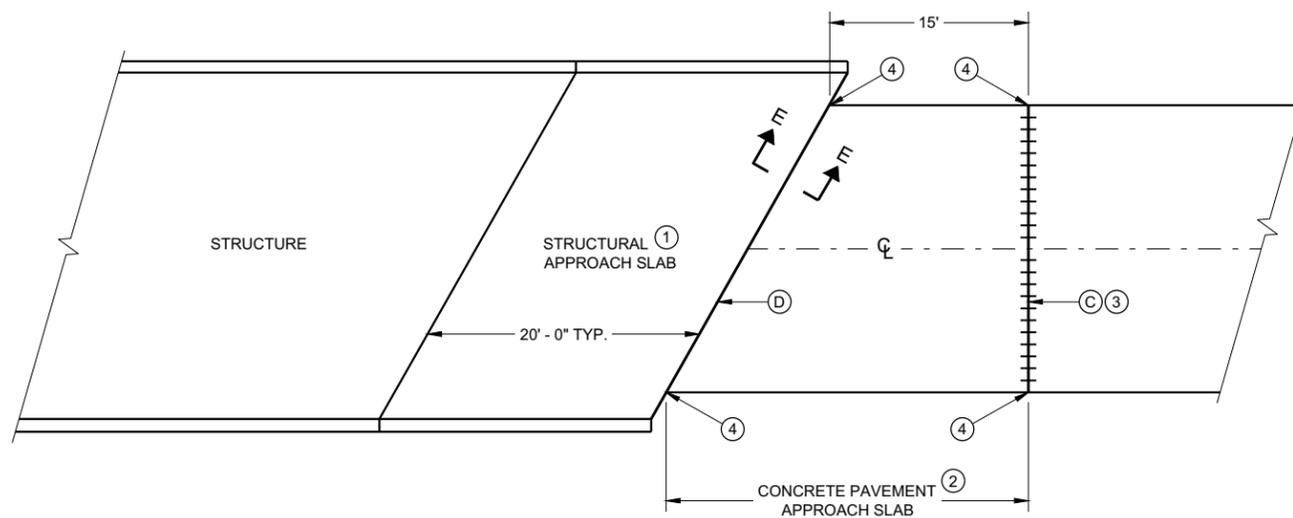
EXPANSION JOINT DETAIL

**CONCRETE PAVEMENT
APPROACH SLAB**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE DATE PAVEMENT SUPERVISOR

FHWA

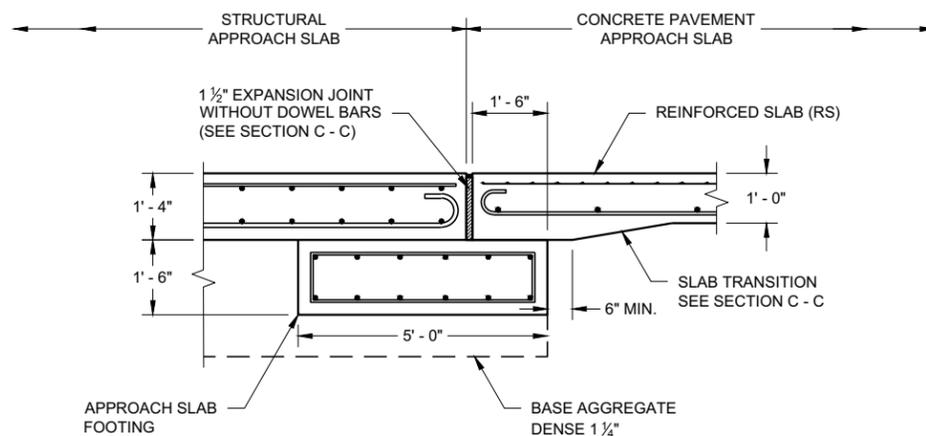


GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

- ① SEE BRIDGE PLAN.
- ② CONFORM TO SDD 13B02 SHEET A FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- Ⓒ 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO CL OR RL .
- Ⓓ 1 ½" EXPANSION JOINT (NO DOWELS)

BRIDGE APPROACHES



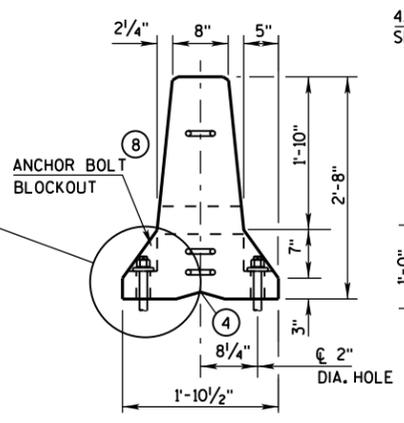
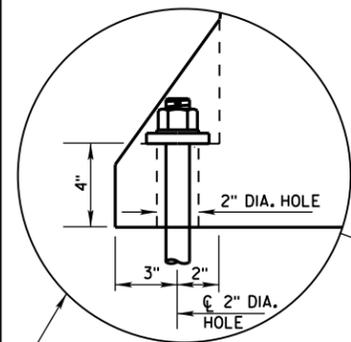
**SECTION E - E
FOOTING DETAIL
STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH**

**STRUCTURAL APPROACH SLAB
AND CONCRETE PAVEMENT
APPROACH SLAB**

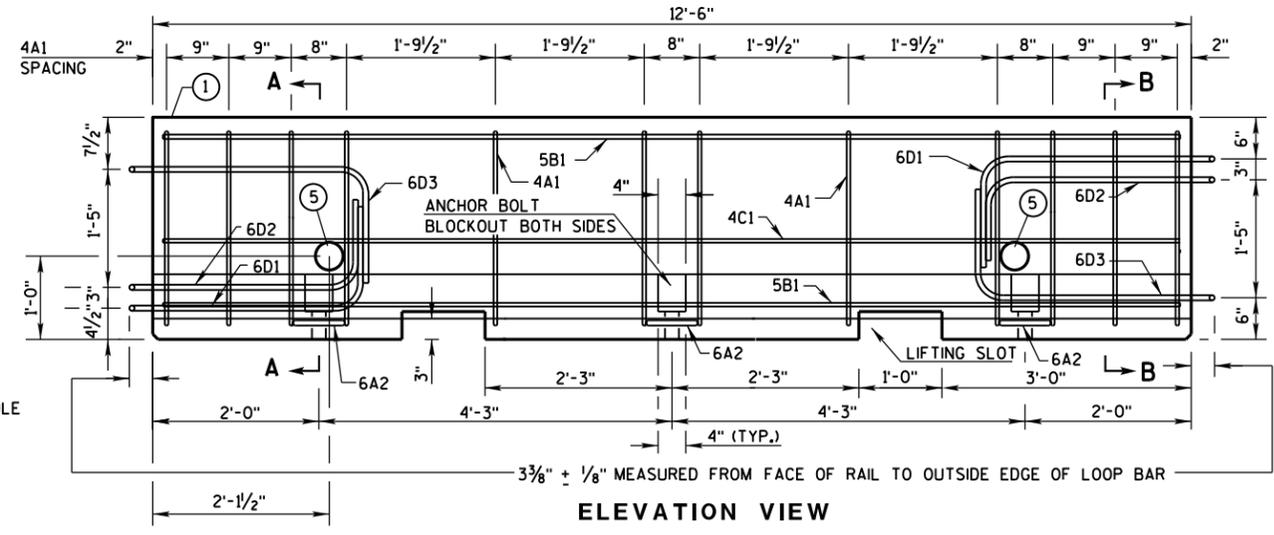
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR

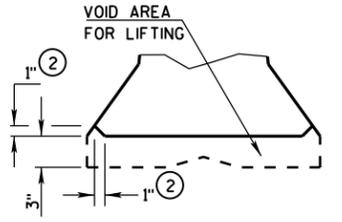
FHWA



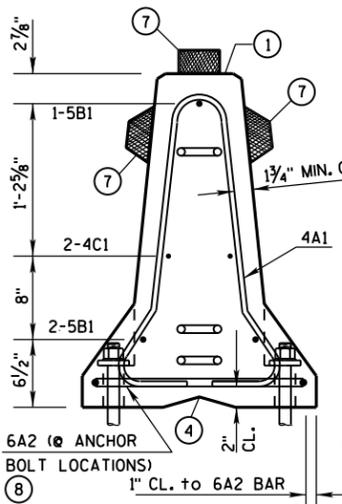
END VIEW



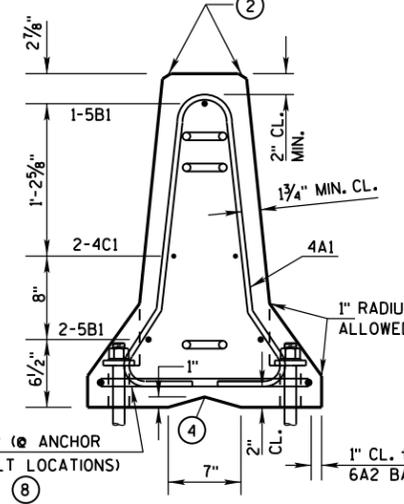
ELEVATION VIEW



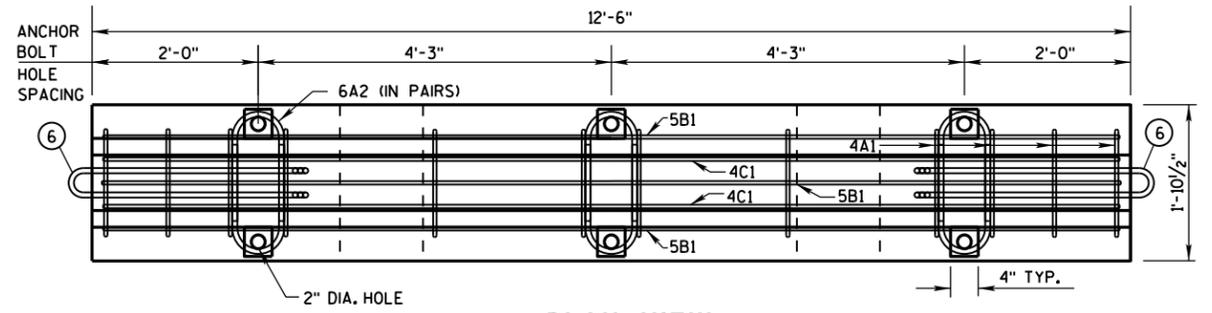
**DETAIL "B"
LIFTING SLOT DETAIL**



**SECTION A-A
(STIRRUP PLACEMENT)**



**SECTION B-B
(STIRRUP PLACEMENT)**



PLAN VIEW

DETAILS OF BARRIER SECTION

GENERAL NOTES

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

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

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

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

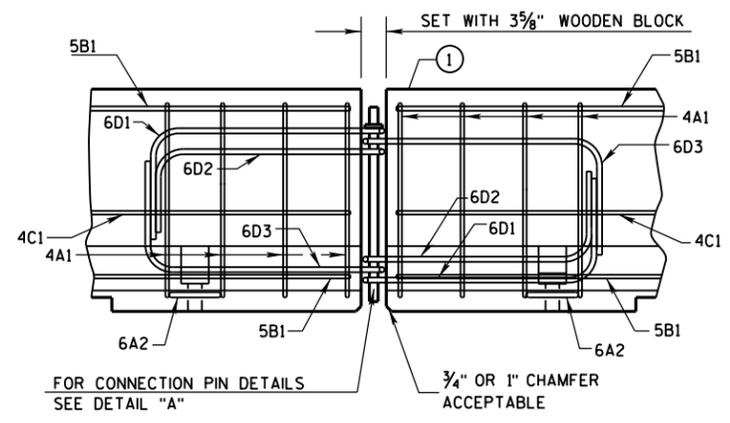
CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

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

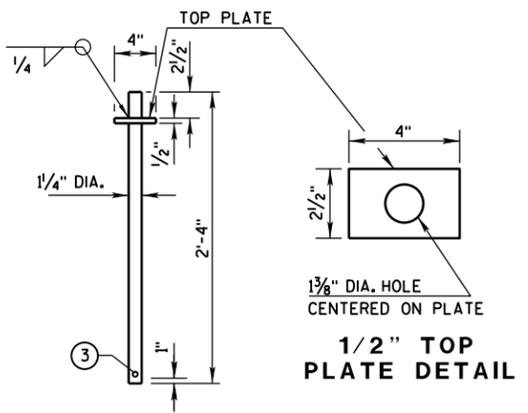
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
a. TYPE: WICBTP
b. MANUFACTURER
c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- ④ "V" NOTCH IS OPTIONAL.
- ⑤ THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- ⑥ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- ⑦ USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- ⑧ SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.
- ⑨ 1" CHAMFER OPTIONAL.

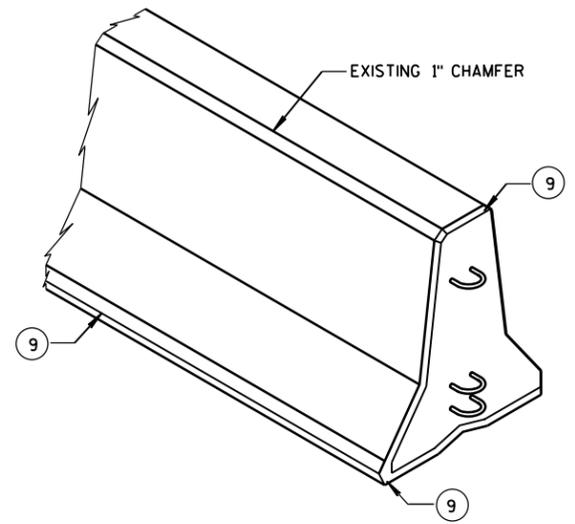
f'c = 4,000 psi



DETAILS OF BARRIER CONNECTION



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



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

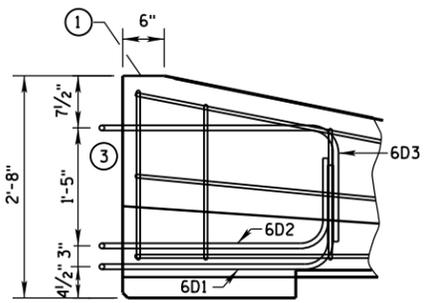
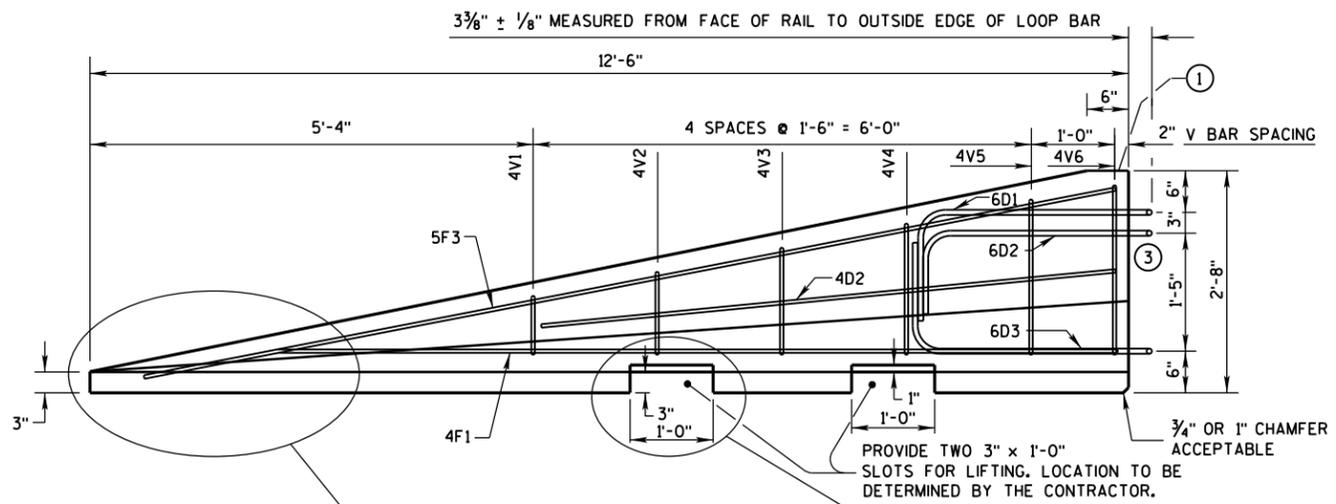
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

S.D.D. 14 B 7-15a

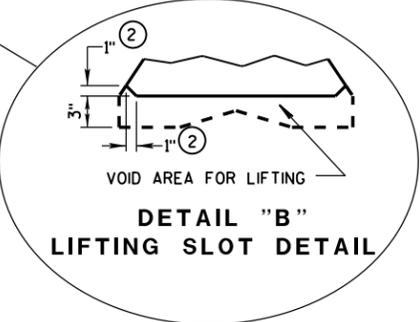
S.D.D. 14 B 7-15a



GENERAL NOTES

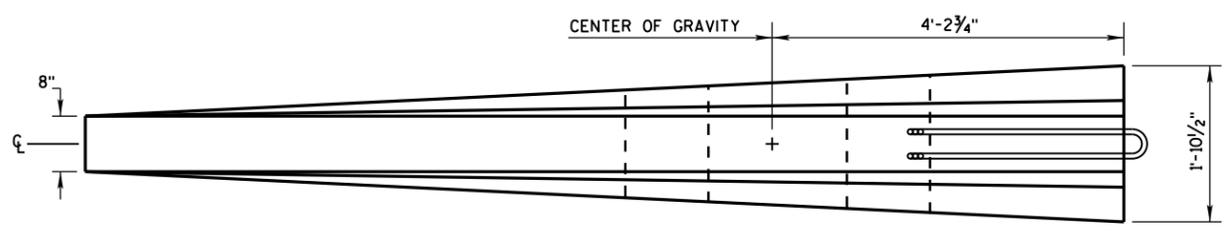
- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

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

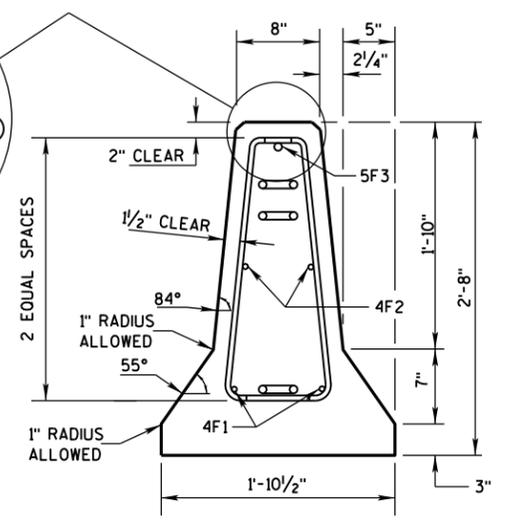
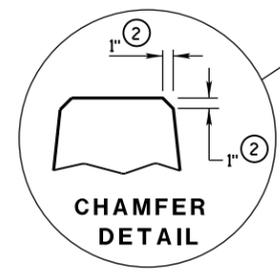


SIDE ELEVATION
 (FOR CONNECTION TO LEFT END OF BARRIER)

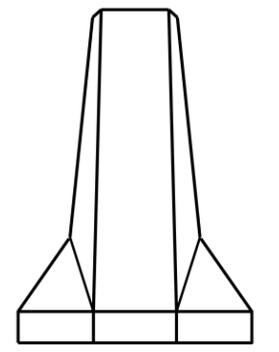
SEE DETAIL "C", BENT BAR DETAIL



PLAN VIEW

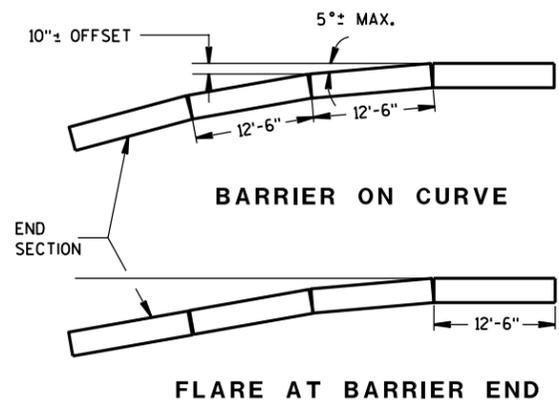


END SECTION



FRONT ELEVATION

DETAILS OF BARRIER TAPER SECTION



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

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

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

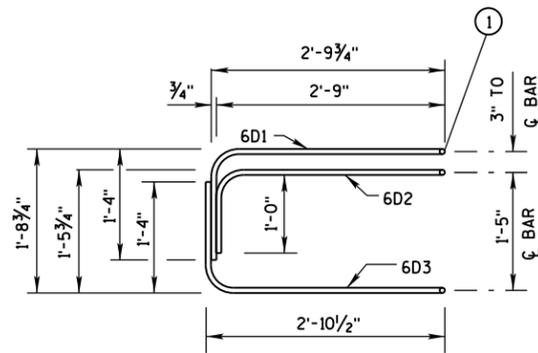
① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

**BARRIER TAPER SECTION
BILL OF MATERIALS**

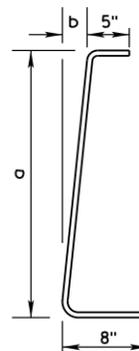
(PER 12'-6" BARRIER TAPER SECTION)

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

LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"

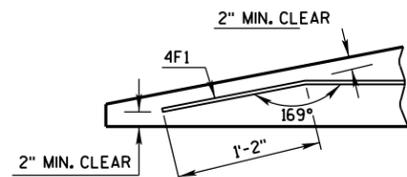


**ELEVATION
LOOP BAR ASSEMBLY**



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

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY



**DETAIL "C"
BENT BAR DETAIL**

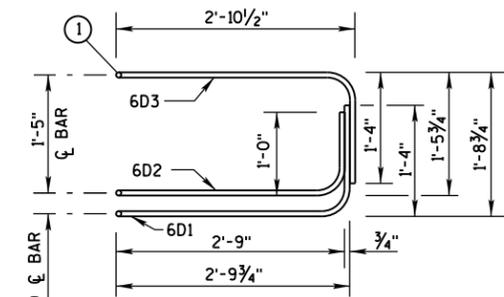
TAPER BARRIER SECTION

**BARRIER SECTION
BILL OF MATERIALS**

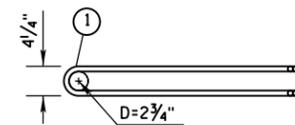
(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"

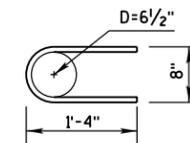
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



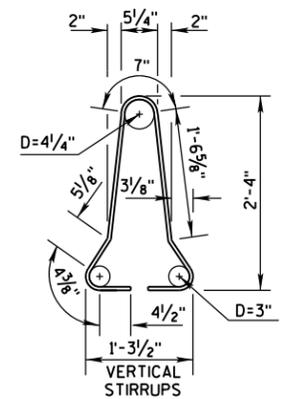
ELEVATION VIEW



**PLAN VIEW
LOOP BAR ASSEMBLY**
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2

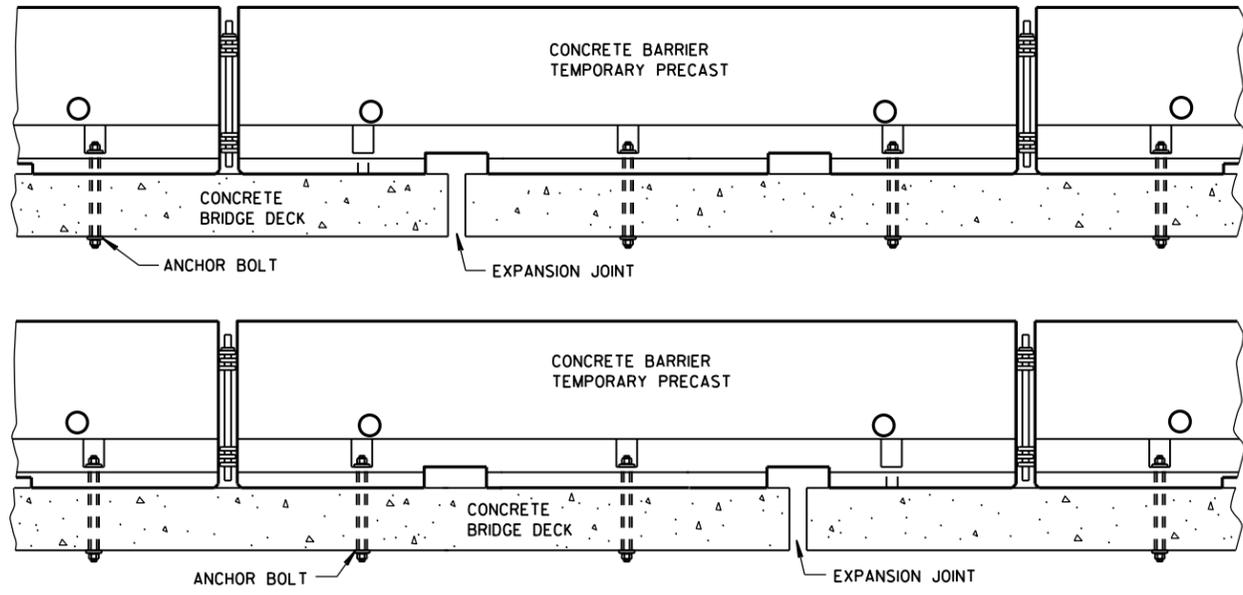


4A1

BARRIER SECTION

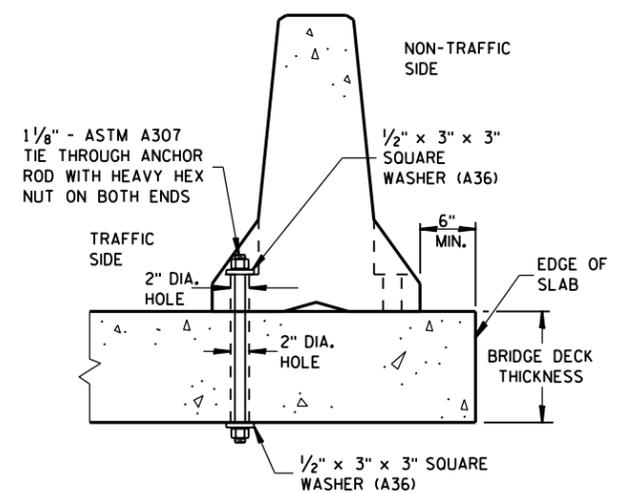
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



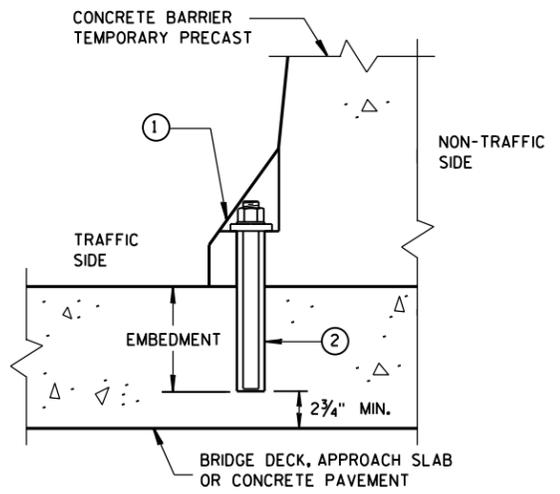
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



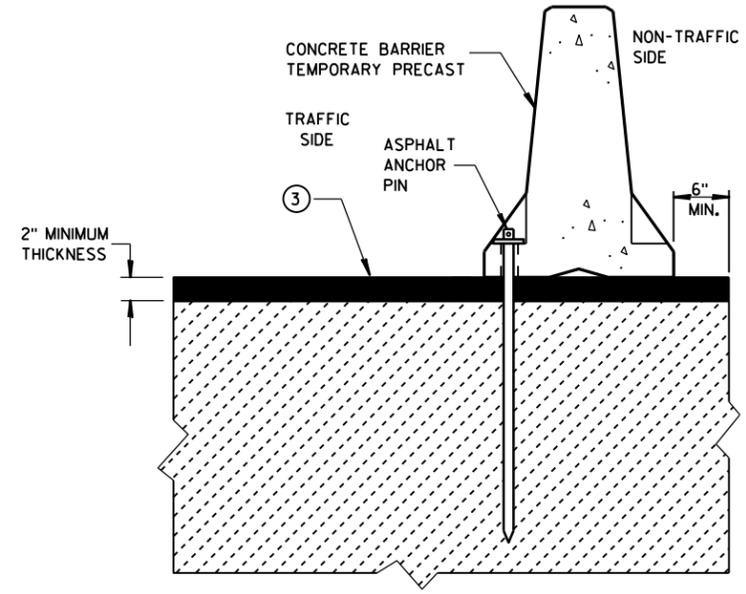
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

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

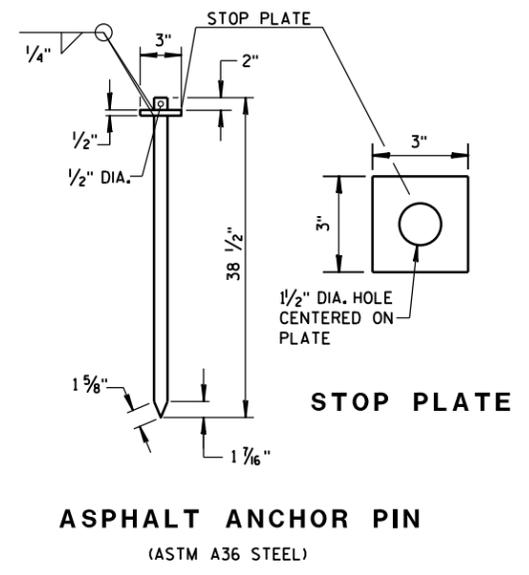


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



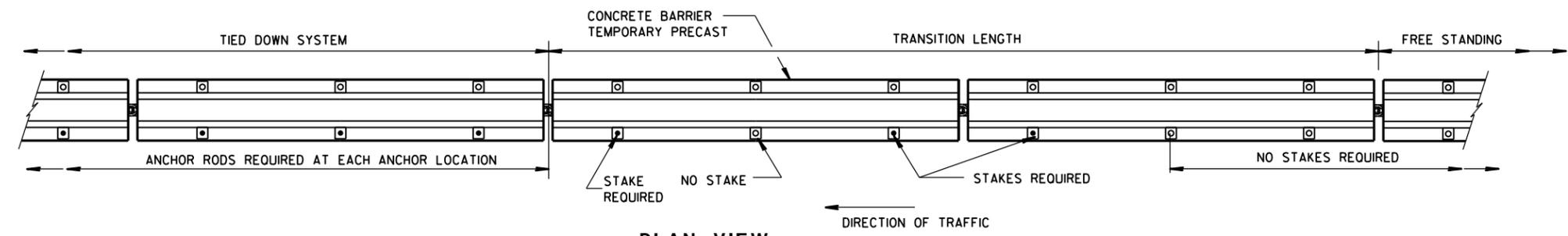
ASPHALT ANCHOR PIN (ASTM A36 STEEL)

GENERAL NOTES

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

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

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

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

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

6

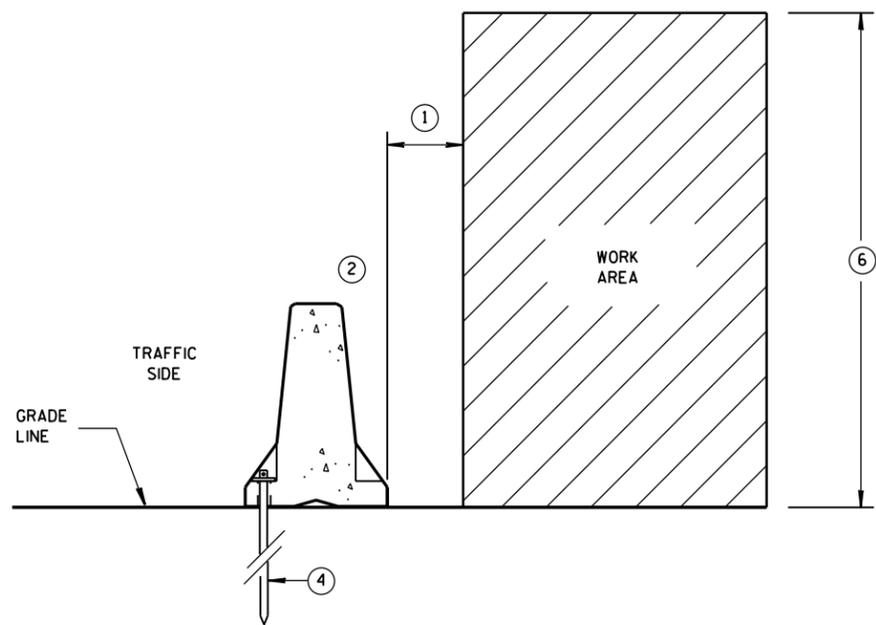
6

S.D.D. 14 B 7-15d

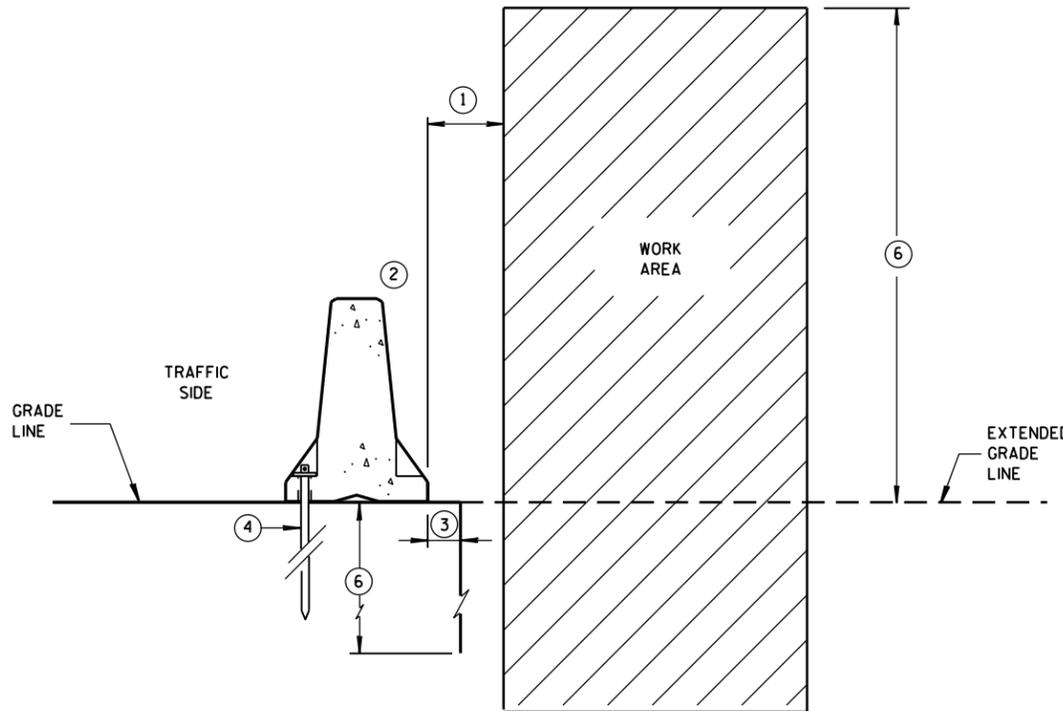
S.D.D. 14 B 7-15d

GENERAL NOTES

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

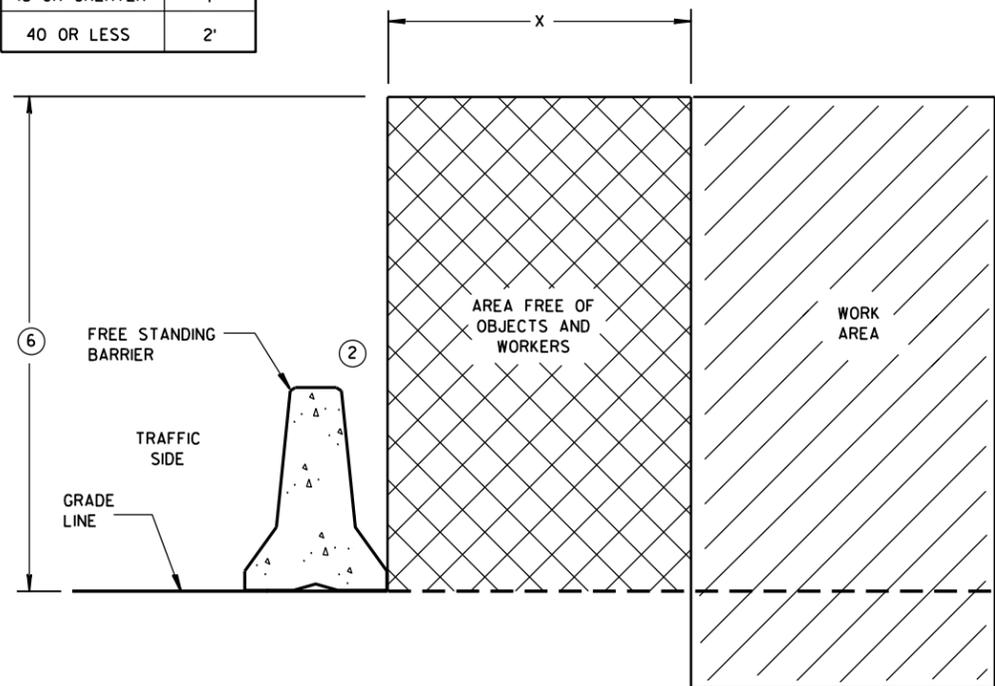


ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

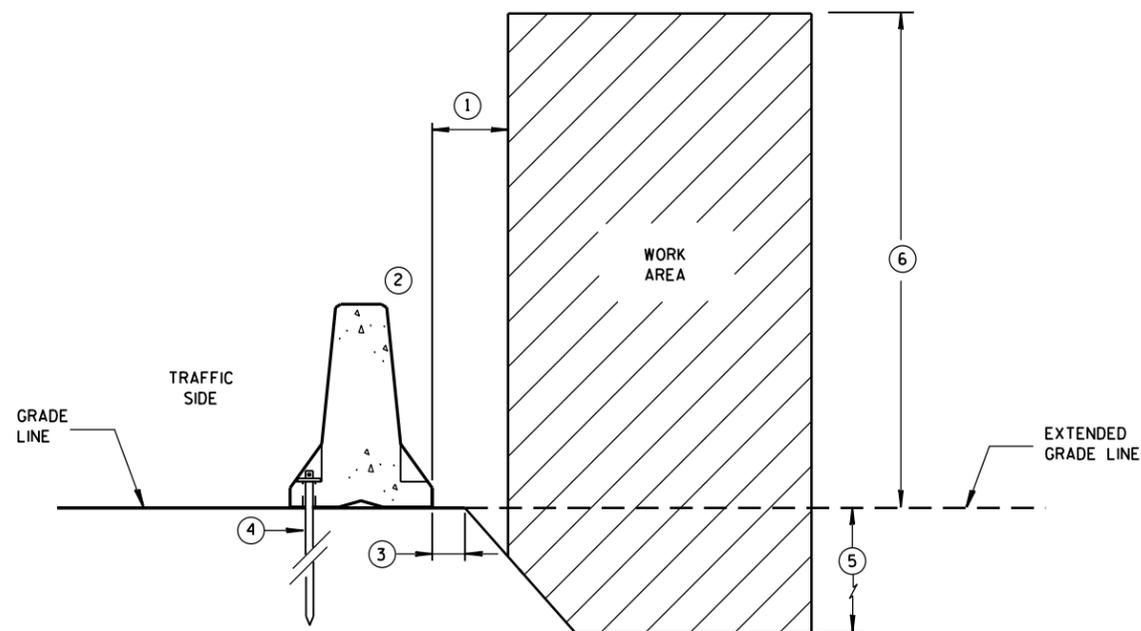


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

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



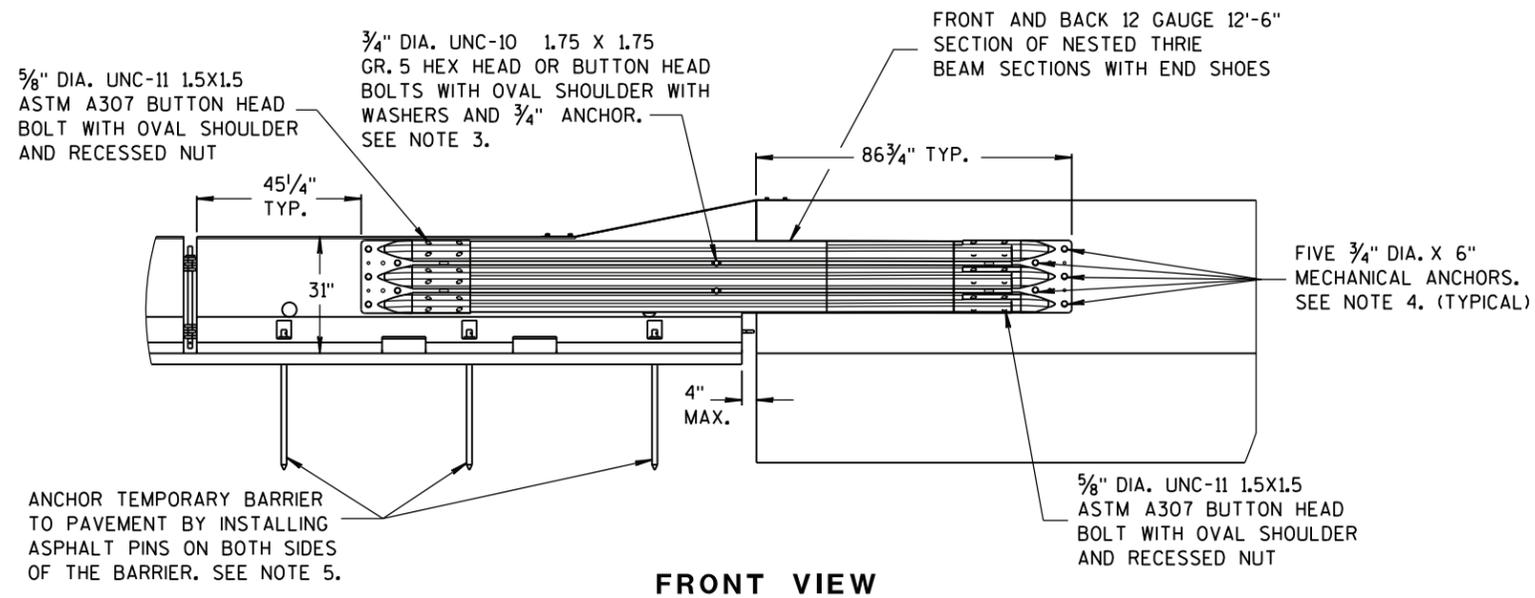
FREE STANDING BARRIER SPACE REQUIREMENTS



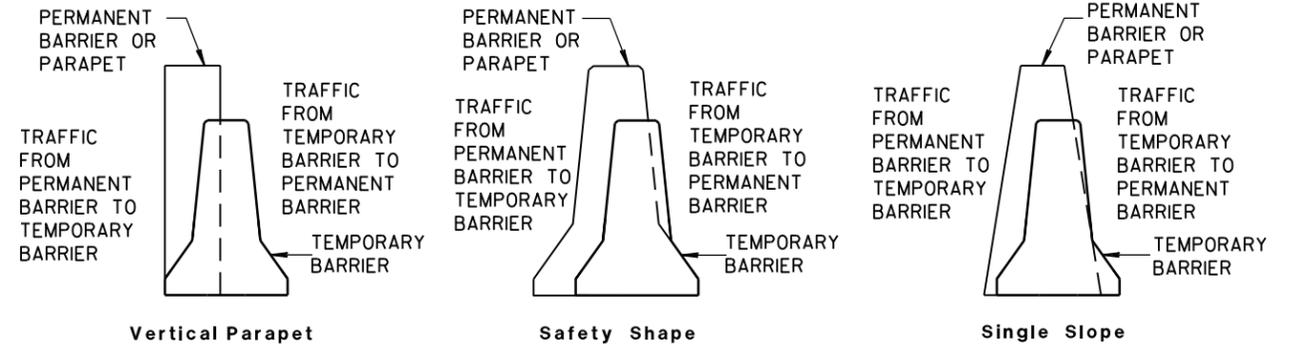
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

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

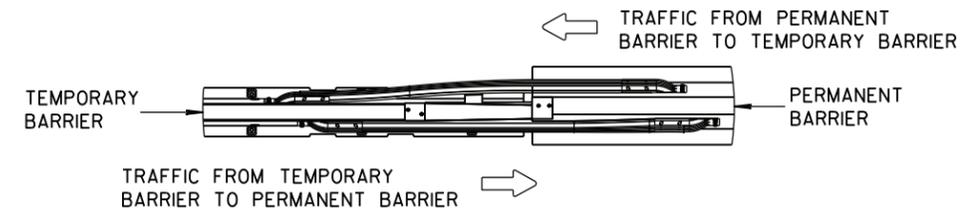
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FRONT VIEW

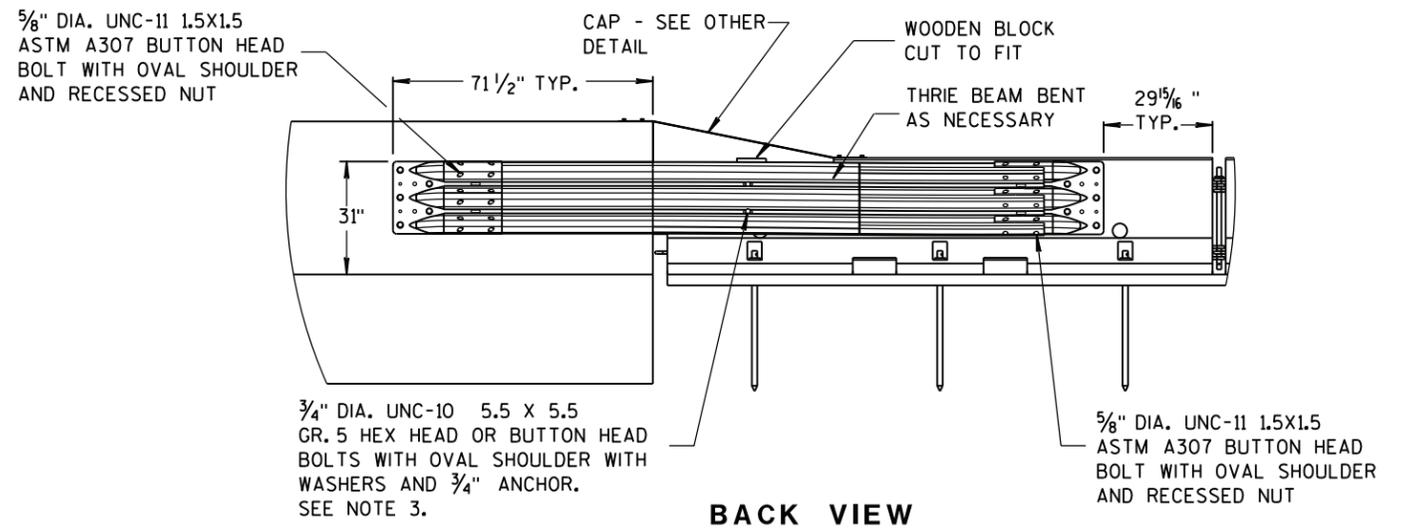


TEMPORARY BARRIER PLACEMENT FOR TRANSITION TO TIED DOWN SYSTEM

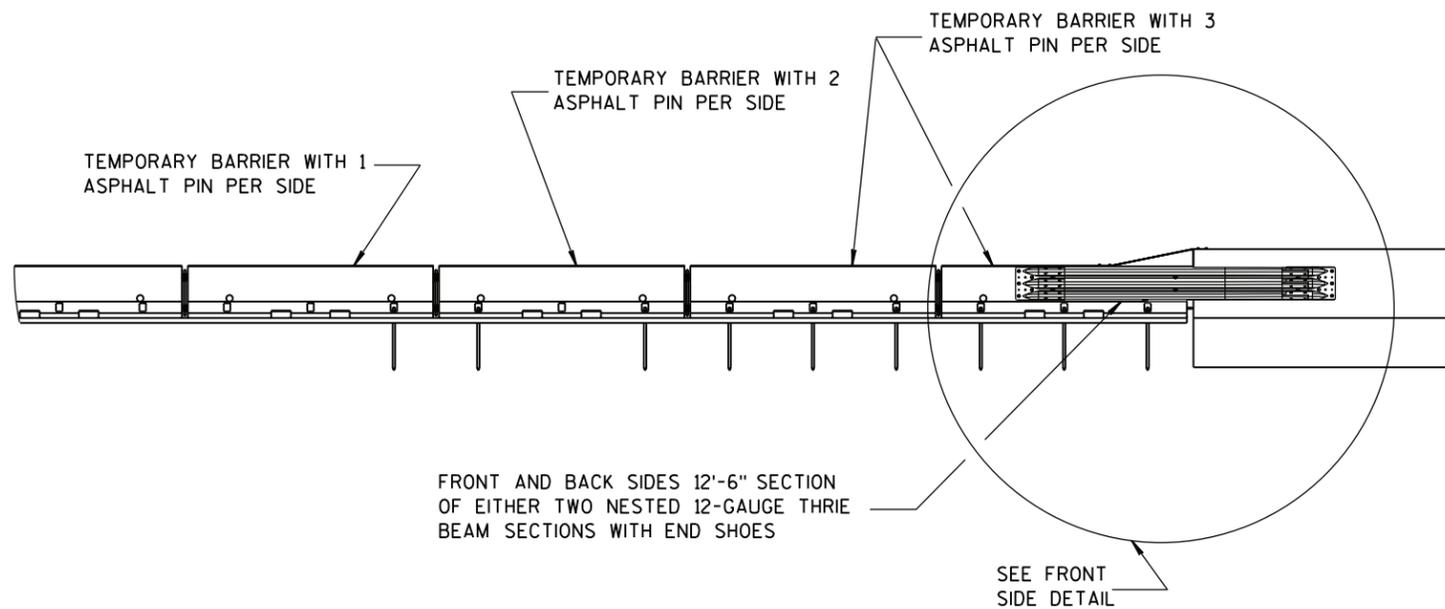


NOTES

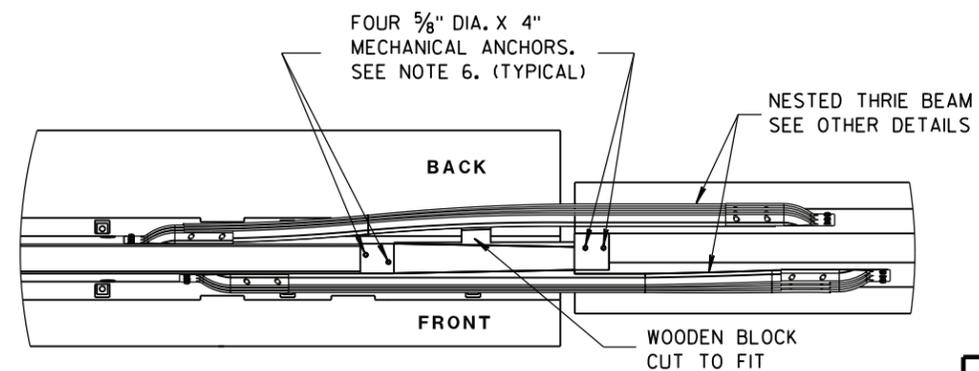
- NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS REGARDLESS OF TRAFFIC.
- CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
 - THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
 - MINIMUM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



BACK VIEW



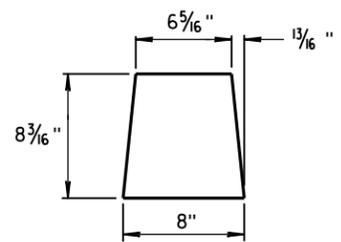
FRONT VIEW



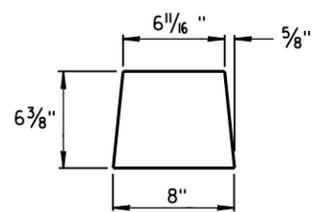
PLAN VIEW

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

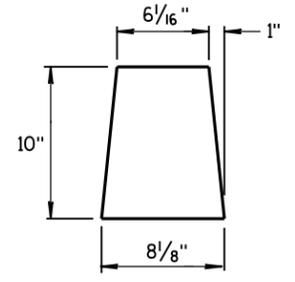
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



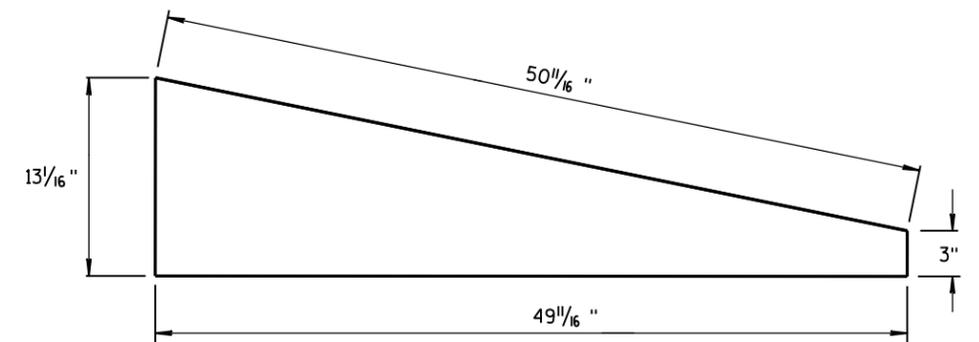
GUSSET 1



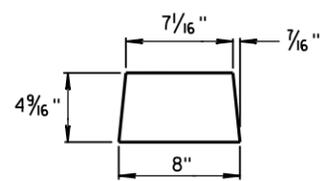
GUSSET 2



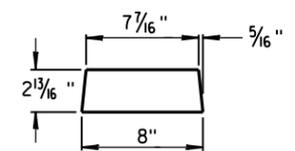
END PLATE



SIDE PLATE

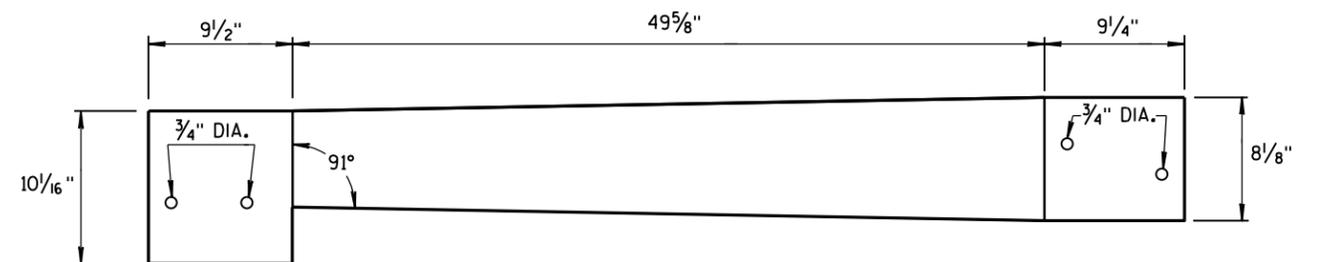


GUSSET 3

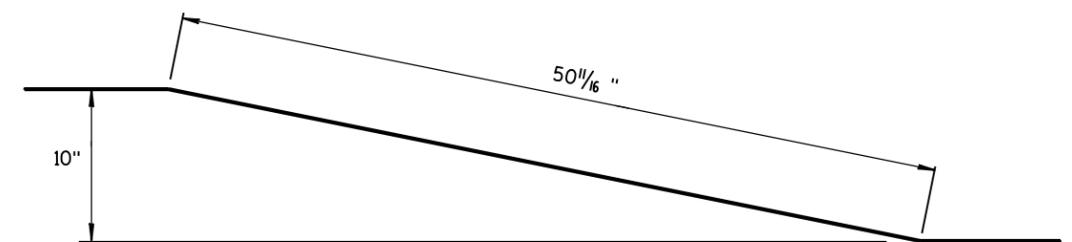


GUSSET 4

GUSSETS

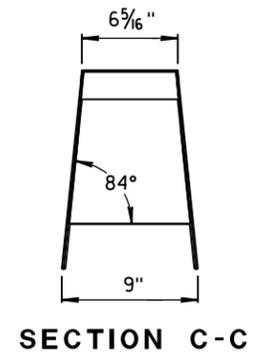
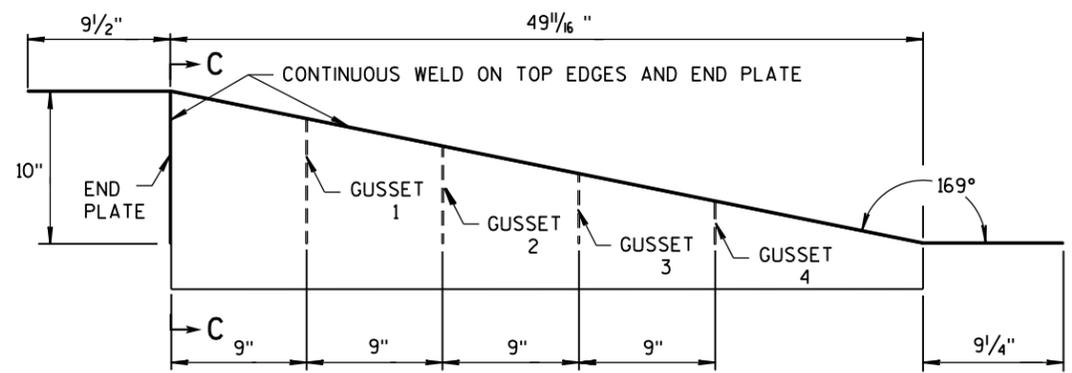
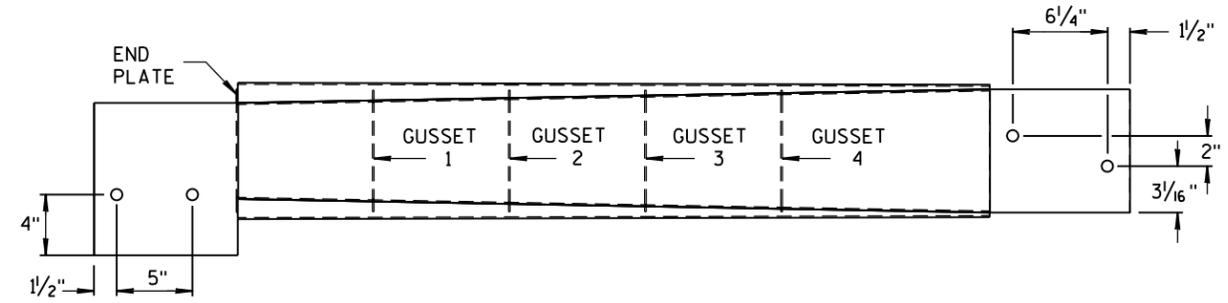


TOP PLATE



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

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



SECTION C-C

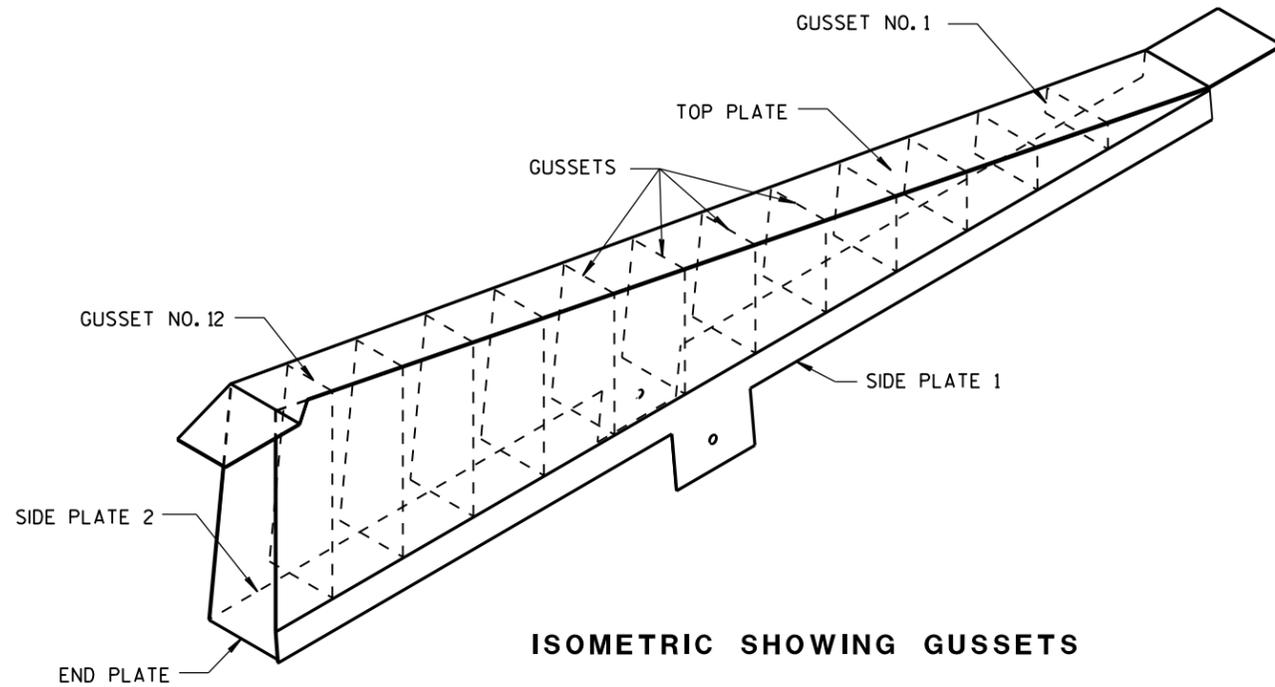
NOTES

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

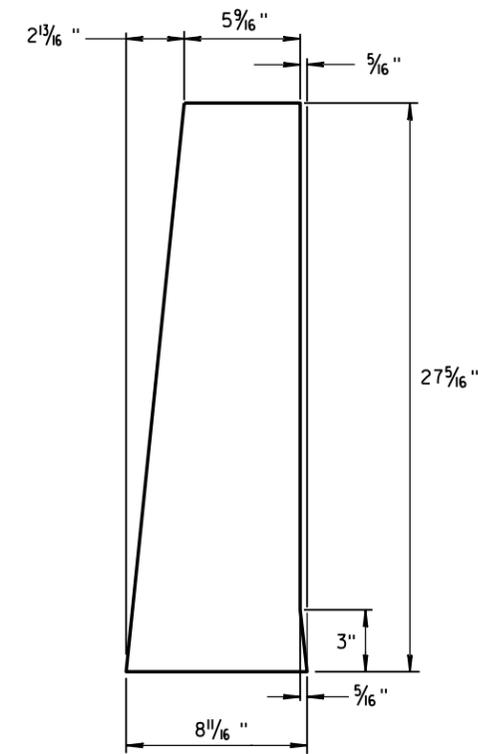
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

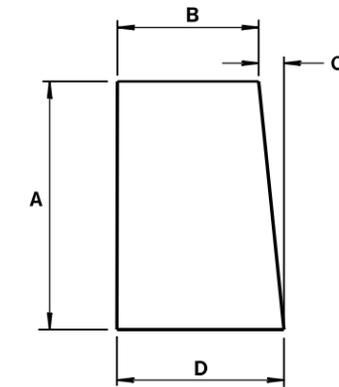


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



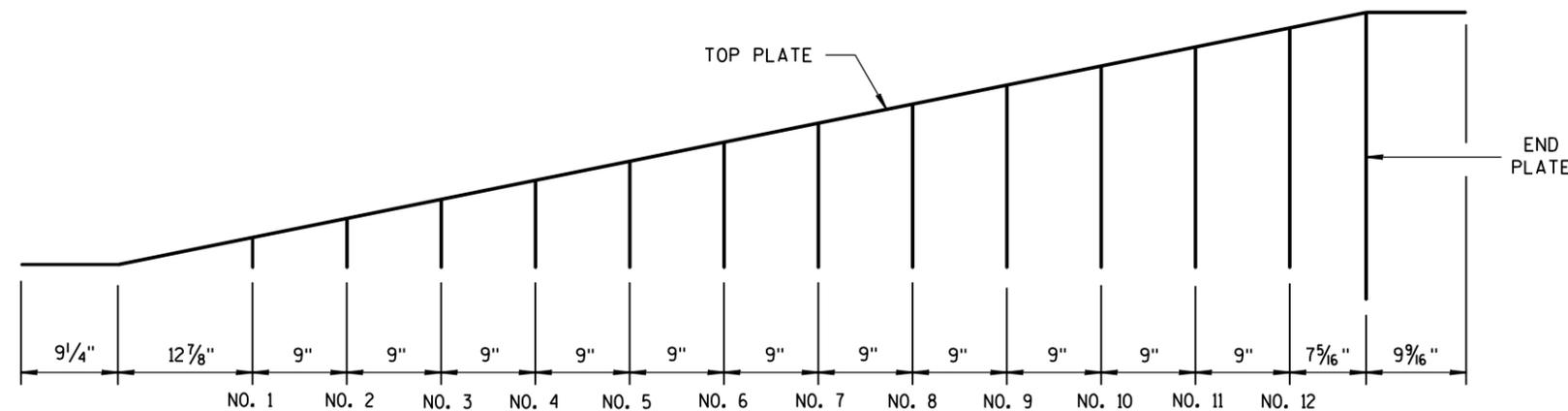
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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

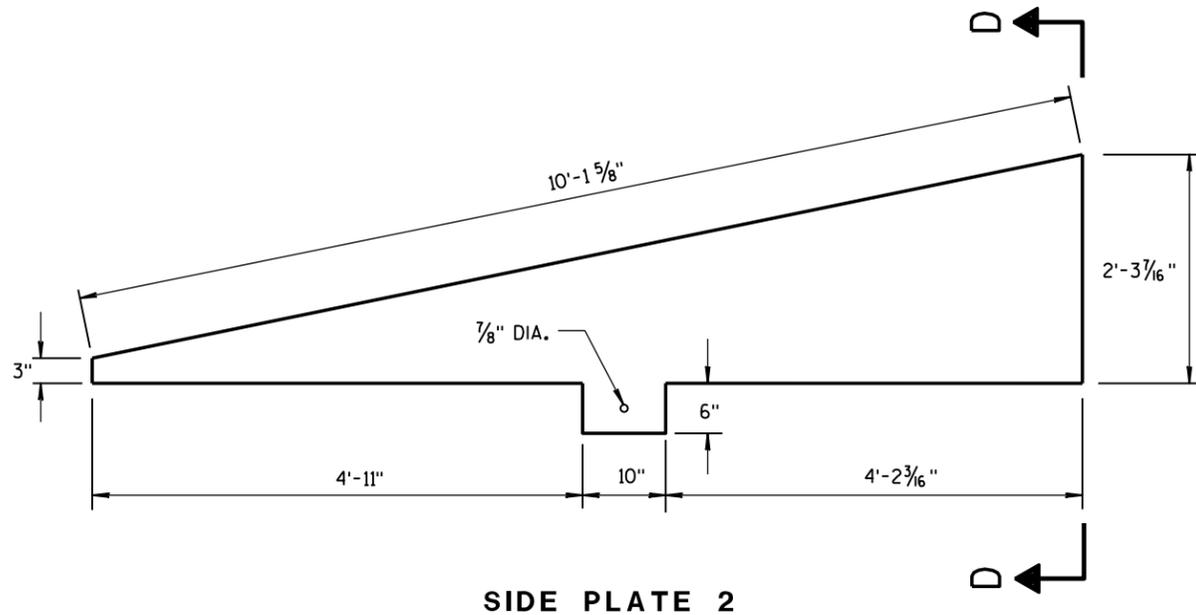


GUSSET LOCATION

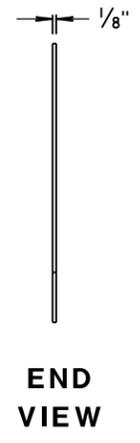
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

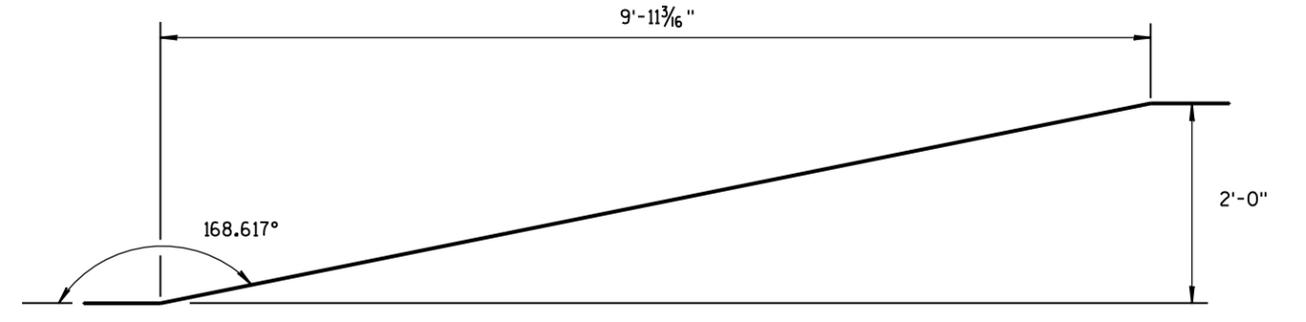
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



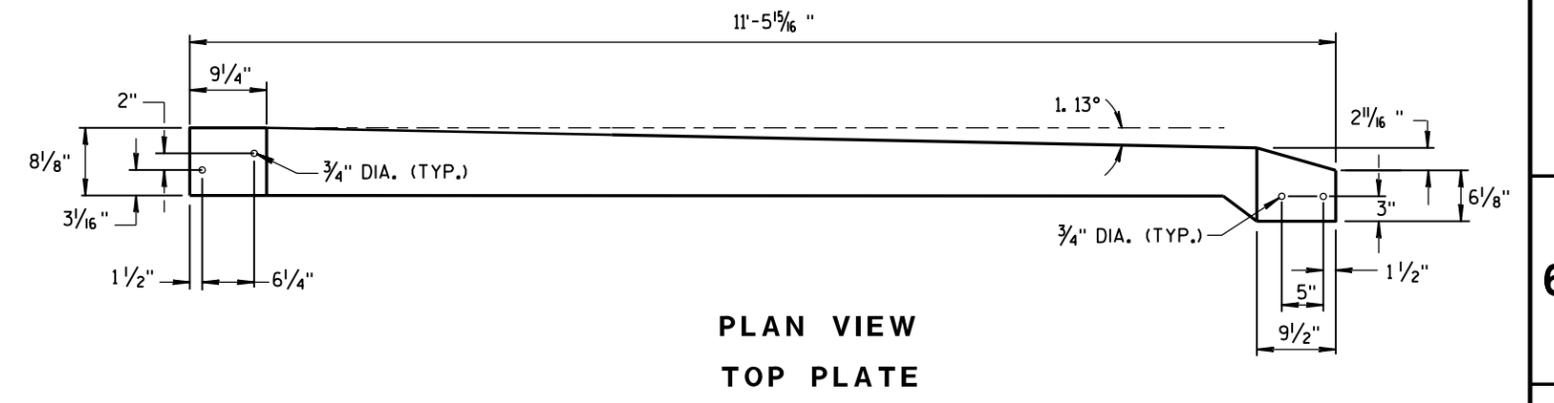
SIDE PLATE 2



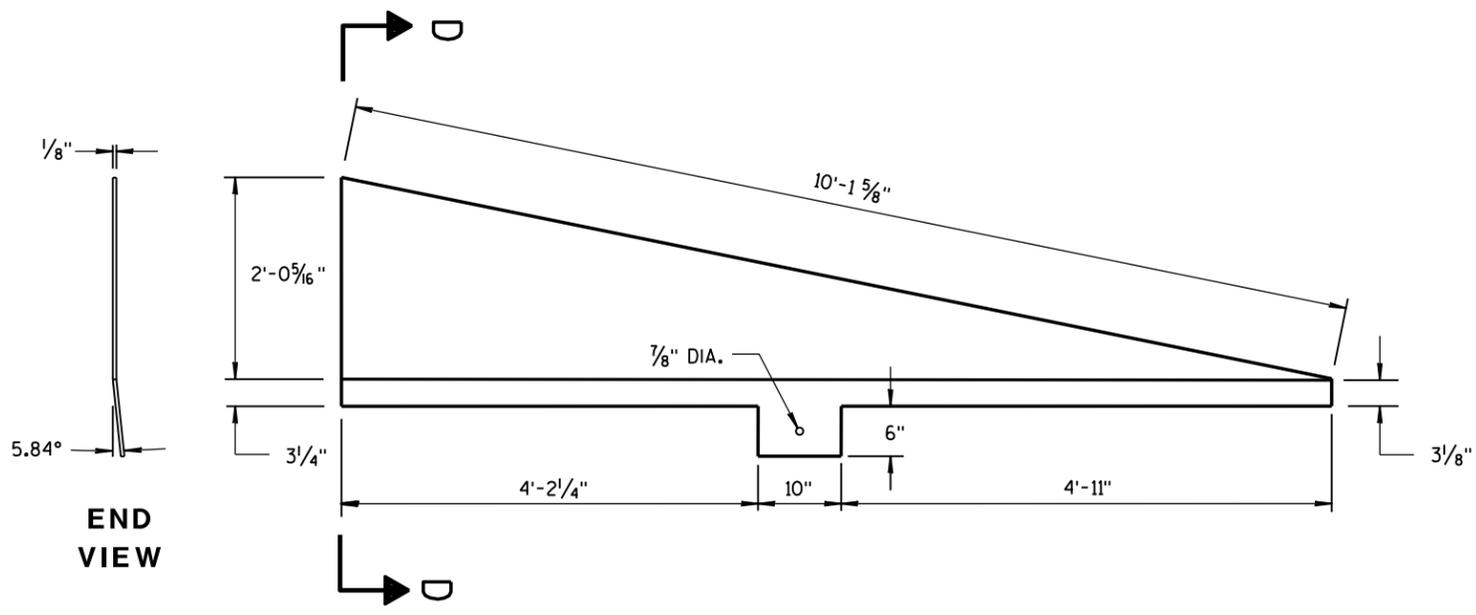
END VIEW



**SIDE VIEW
TOP PLATE**



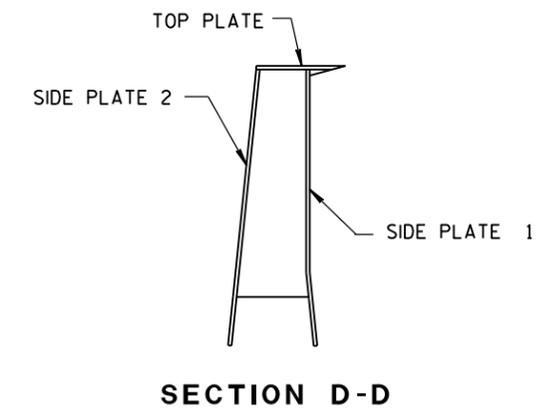
**PLAN VIEW
TOP PLATE**



SIDE PLATE 1



END VIEW



SECTION D-D

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

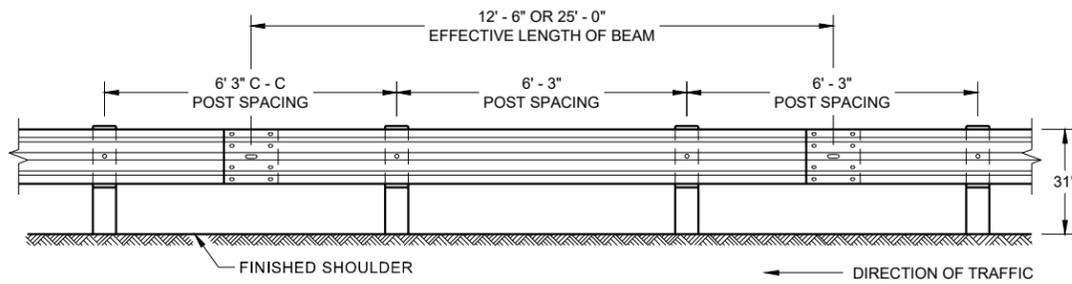
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARD DEVELOPMENT UNIT SUPERVISOR
FHWA	

6

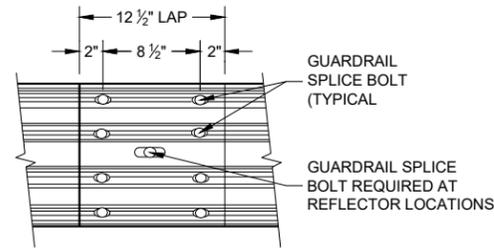
6

S.D.D. 14 B 7-15i

S.D.D. 14 B 7-15i



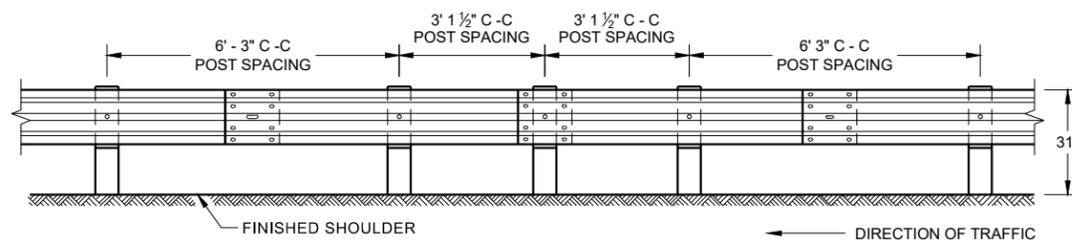
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



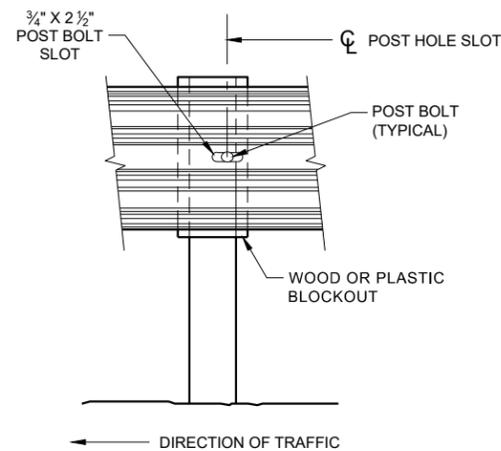
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

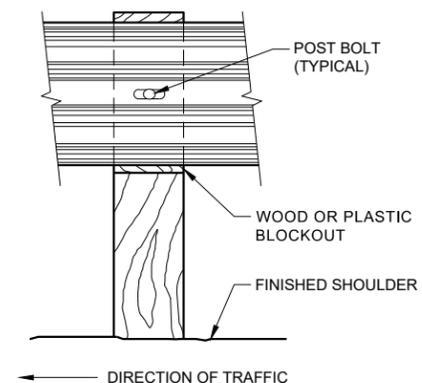
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



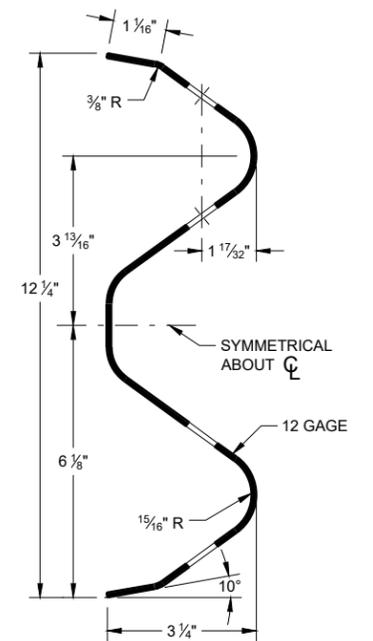
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



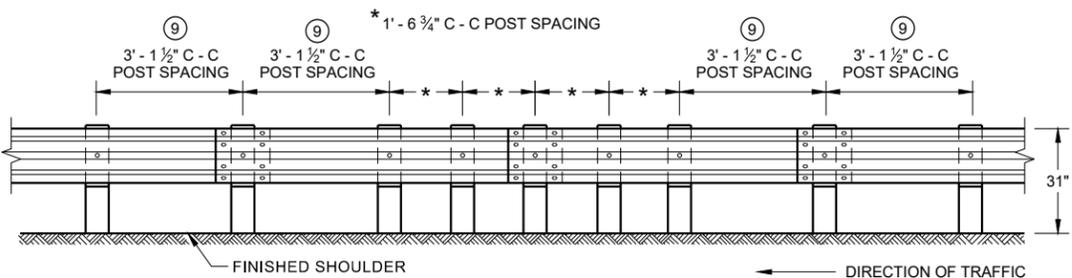
FRONT VIEW AT STEEL POST



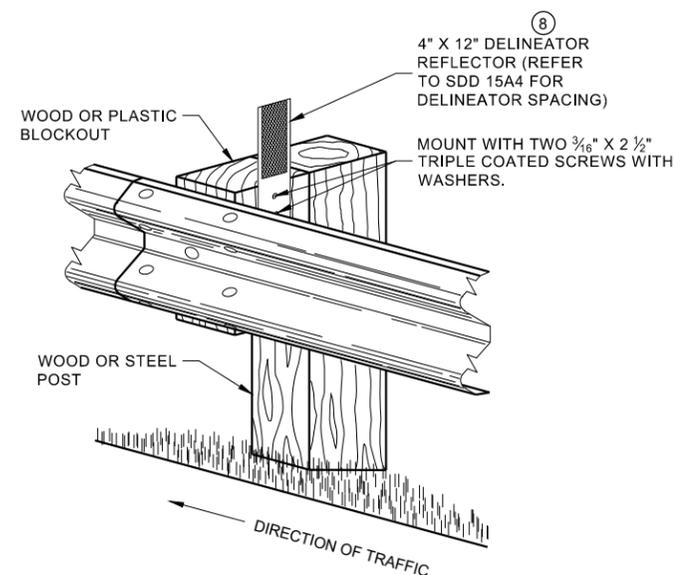
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

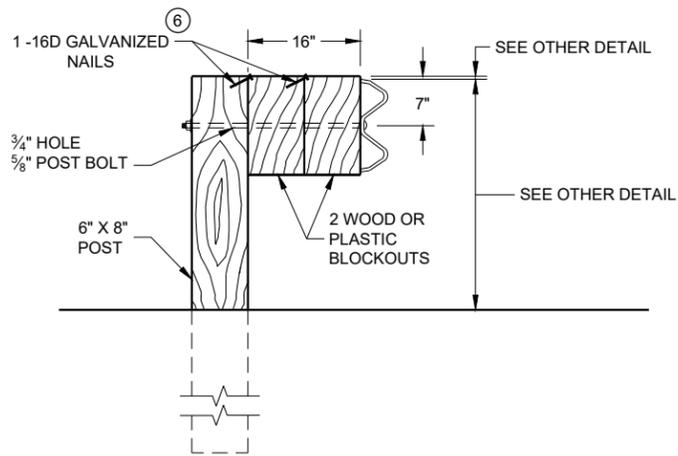
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

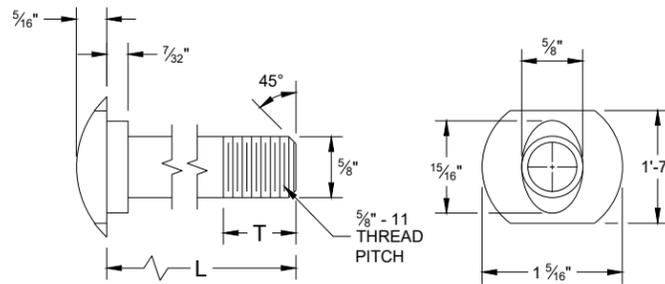


DETAIL FOR 16" BLOCKOUT DEPTH

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.

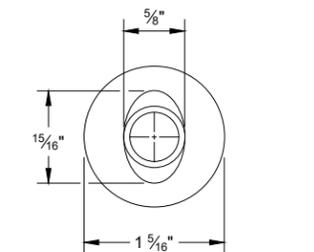
NOTE:

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.

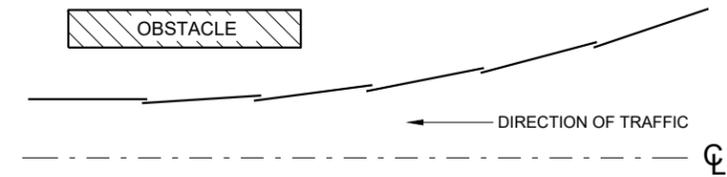


POST BOLT TABLE

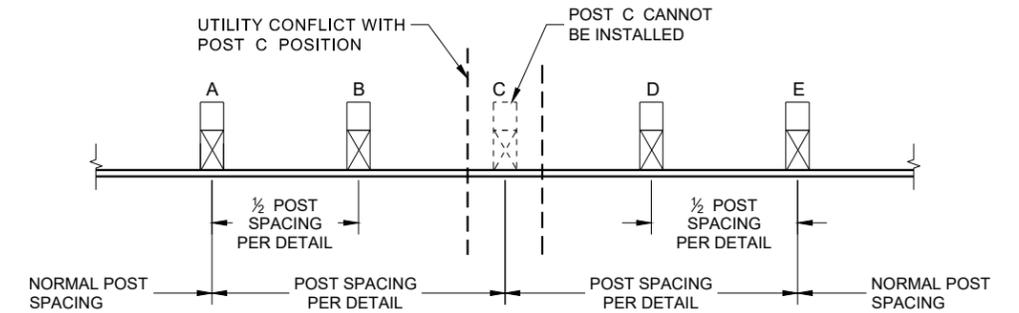
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



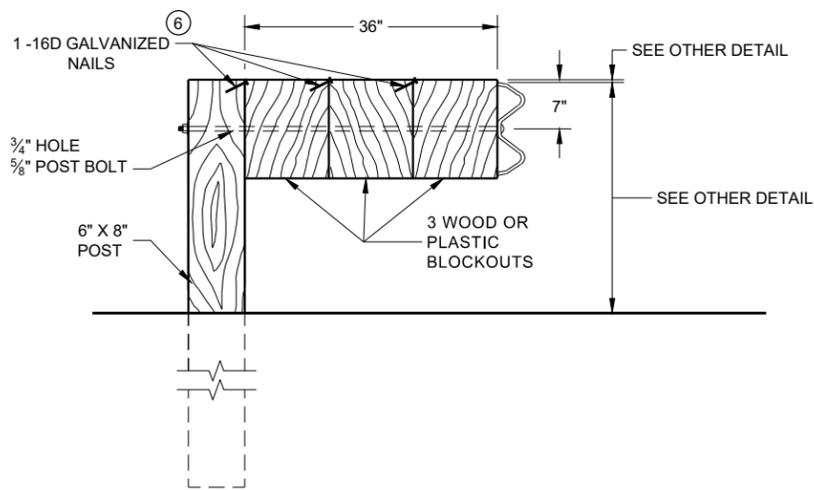
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

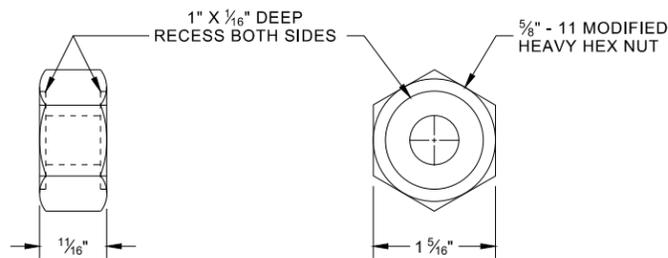


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

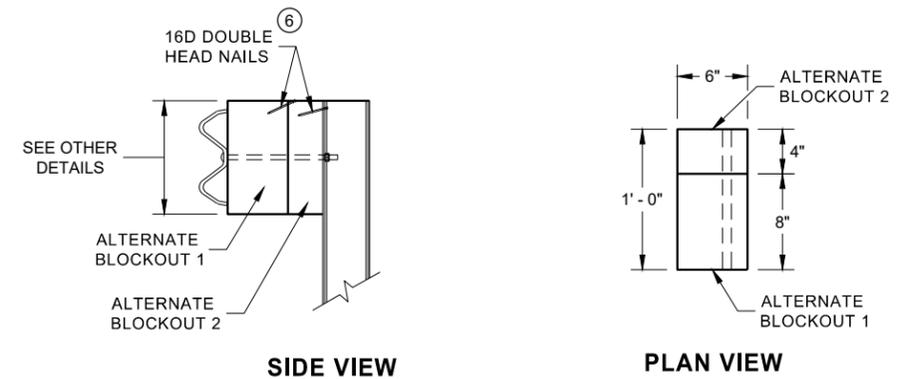


DETAIL FOR 36" BLOCKOUT DEPTH

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



**POST BOLT, SPLICE BOLT
AND RECESS NUT**

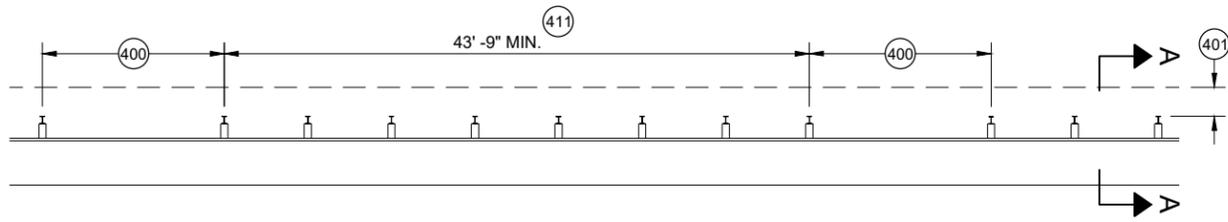


**ALTERNATE WOOD
BLOCKOUT DETAIL**

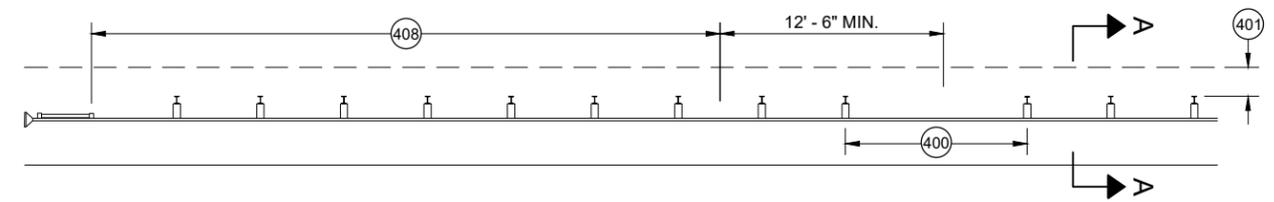
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

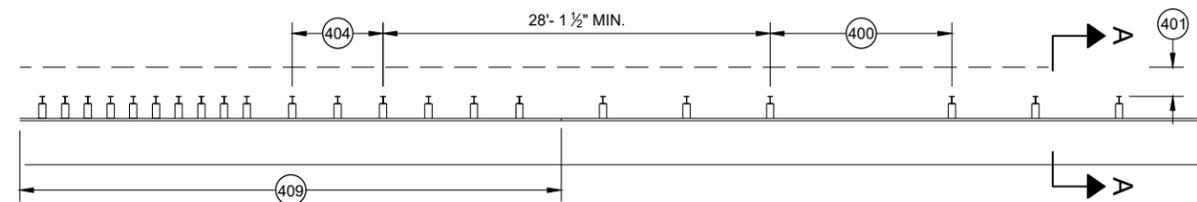
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



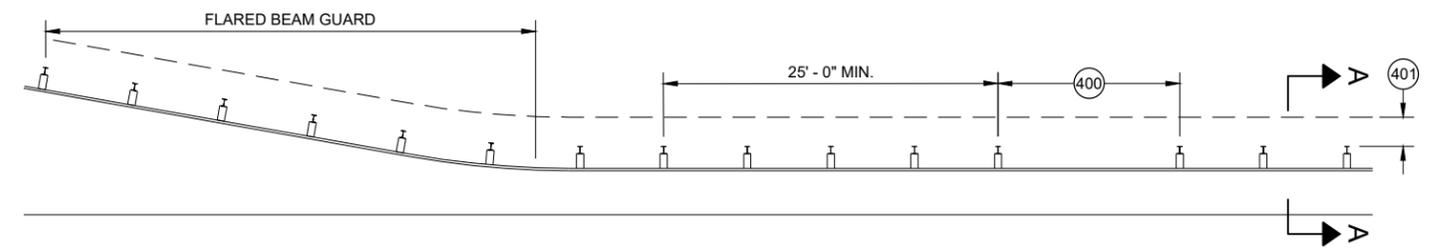
MISSING POST IN MGS GUARDRAIL



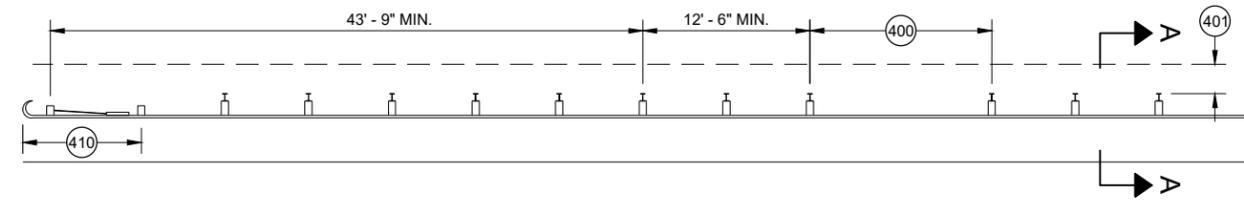
MISSING POST IN MGS GUARDRAIL NEAR EAT



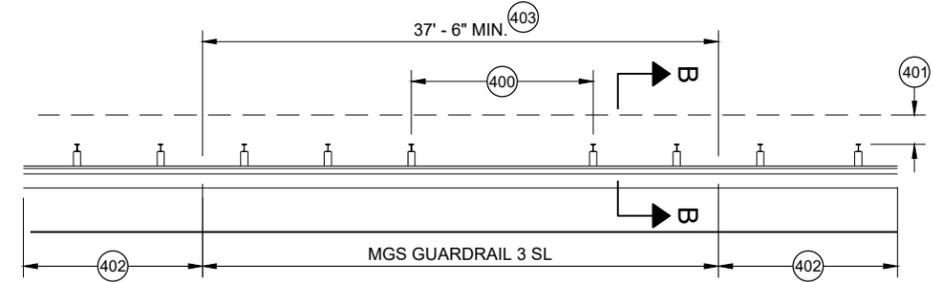
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

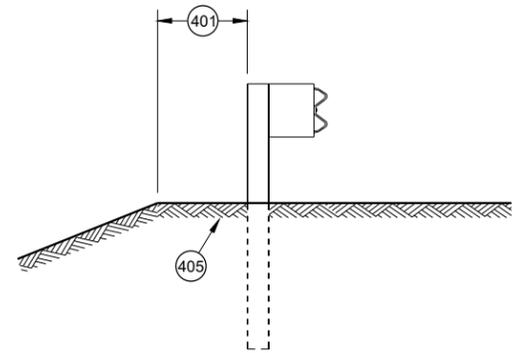


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

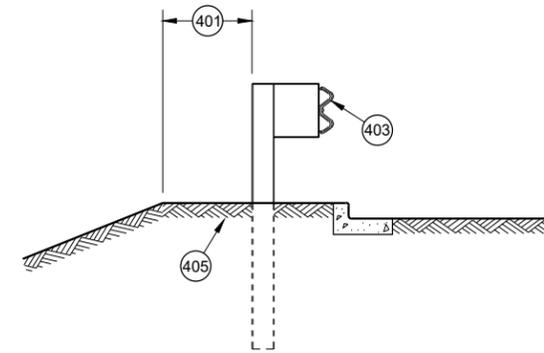


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 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
<small>FHWA</small>	

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE 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.

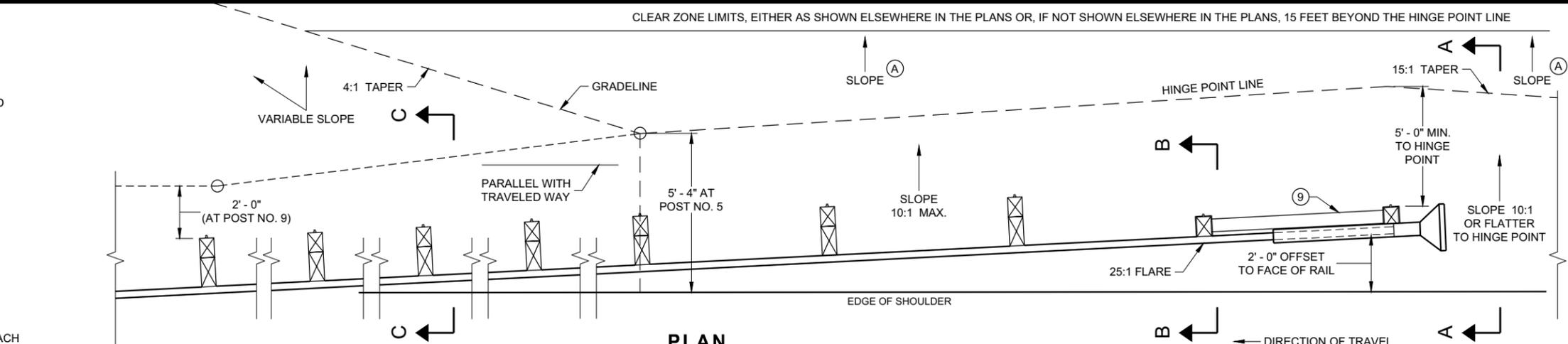
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

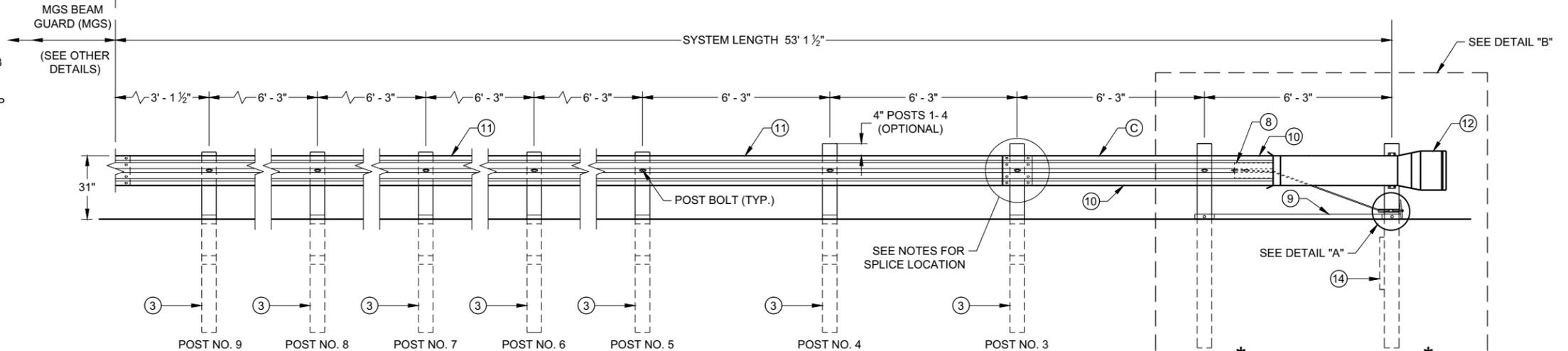
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

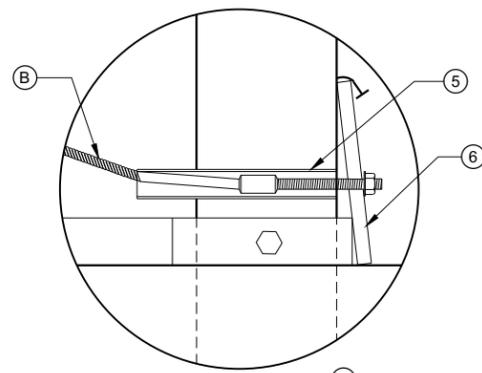
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



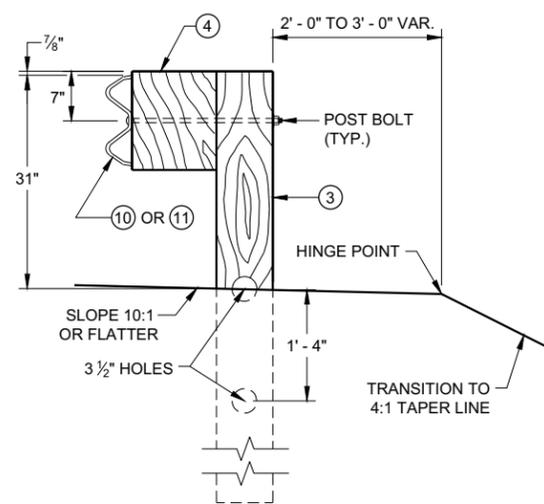
PLAN



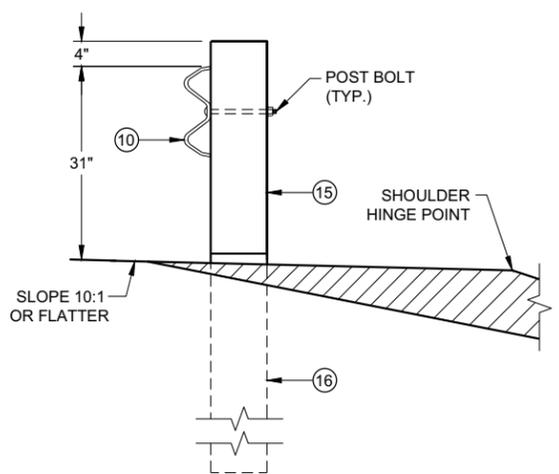
ELEVATION



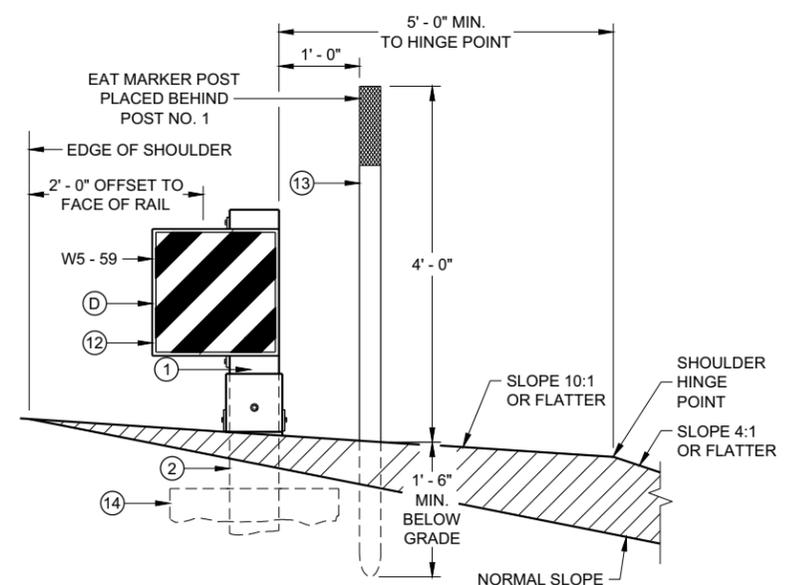
DETAIL "A"



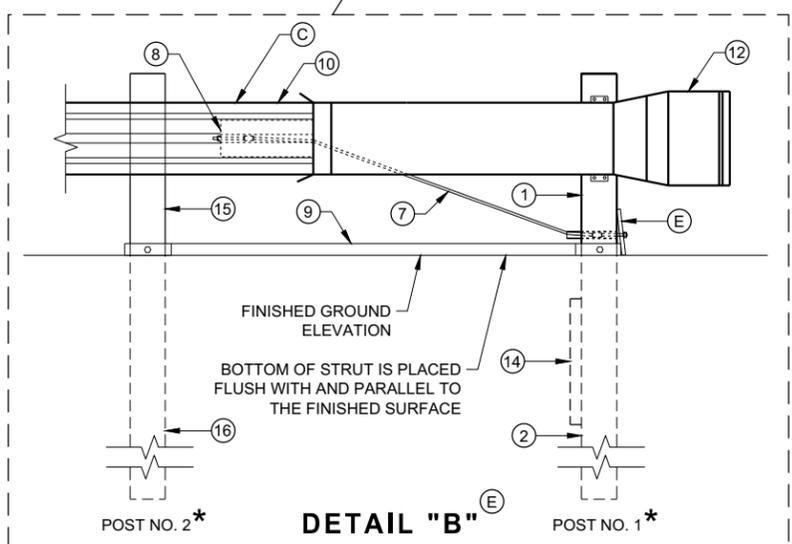
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B
TYPICAL AT POST NO. 2***



**SECTION A - A
TYPICAL AT POST NO. 1***



DETAIL "B"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

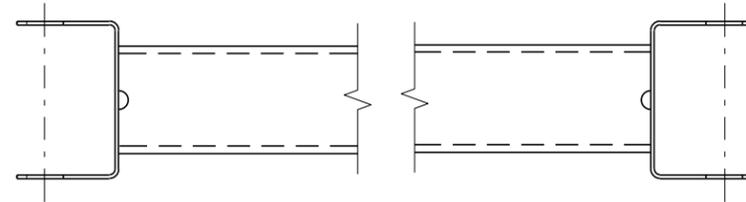
6

SDD 14B44 - 04a

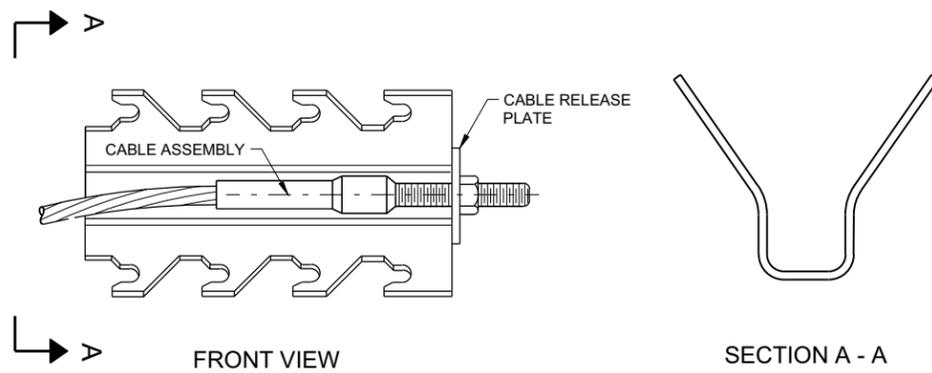
SDD 14B44 - 04a

BILL OF MATERIALS

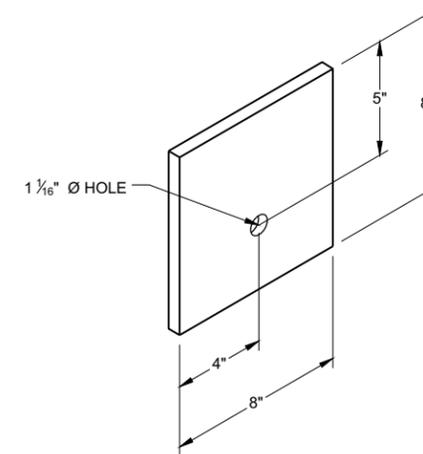
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



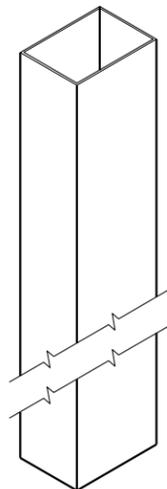
GENERIC GROUND STRUT ⑨ ⑤



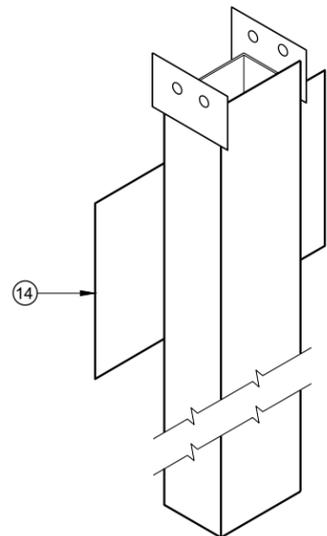
GENERIC ANCHOR CABLE BOX ⑨ ⑤



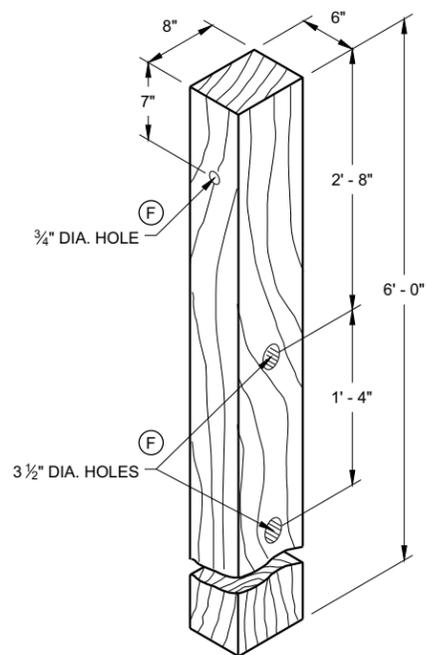
BEARING PLATE ⑥ ⑤



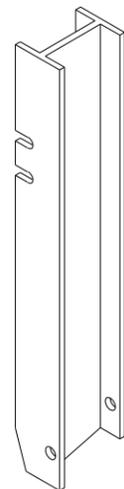
UPPER POST NO. 1 ⁽¹⁾ (E)



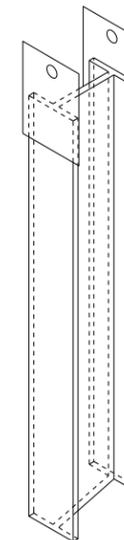
LOWER POST NO. 1 ⁽²⁾ (E)



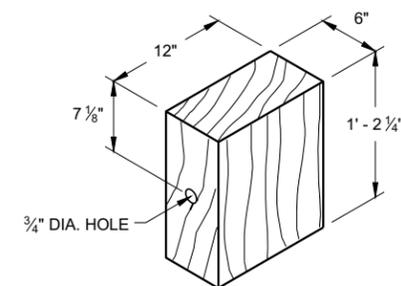
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

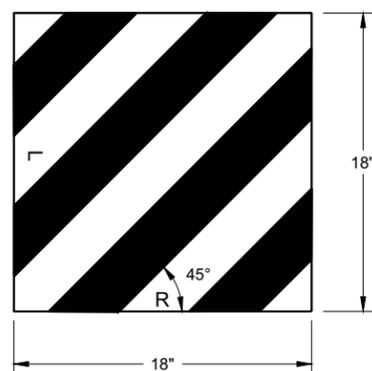


LOWER POST NO. 2 ⁽¹⁶⁾ (E)

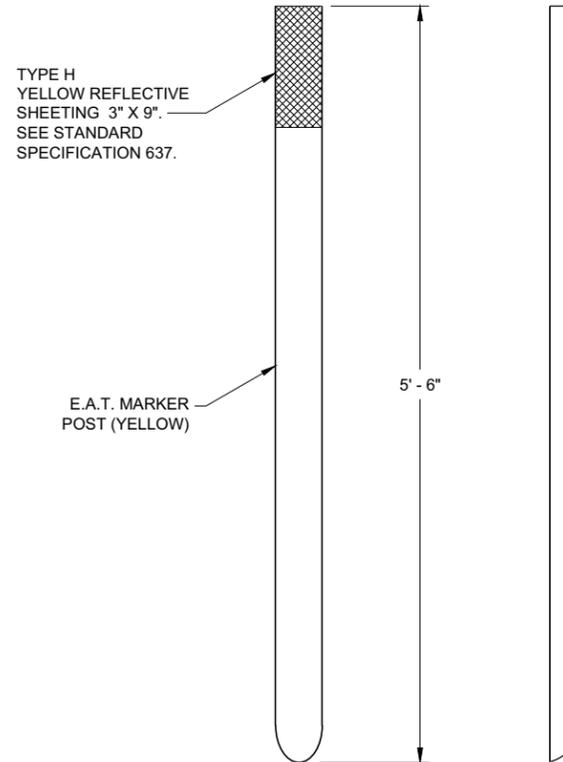


WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

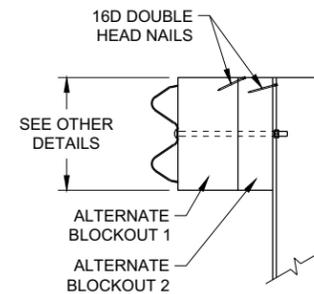
6



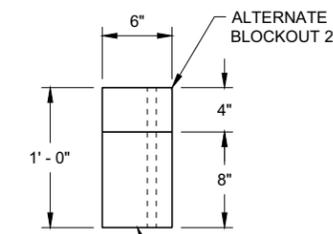
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

6

SDD 14B44 - 04c

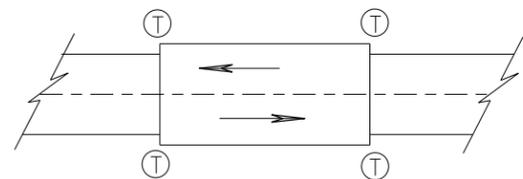
SDD 14B44 - 04c

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

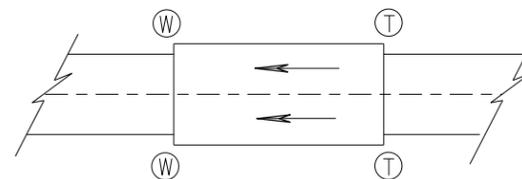
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓜ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

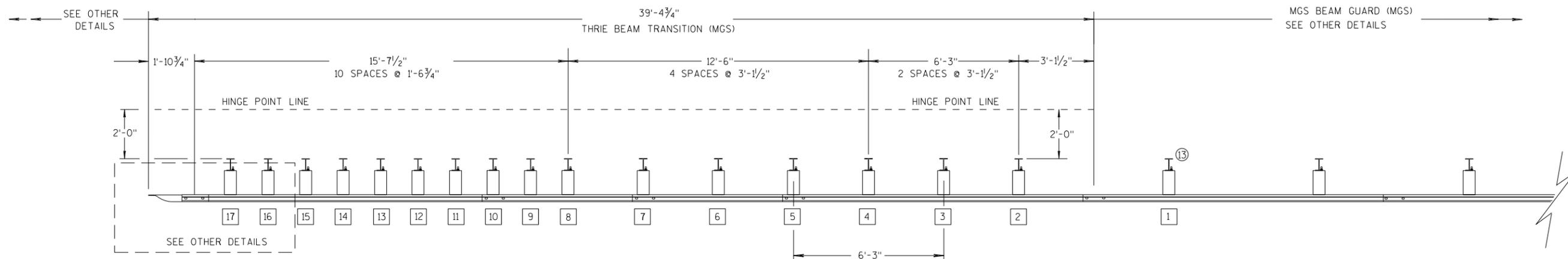
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

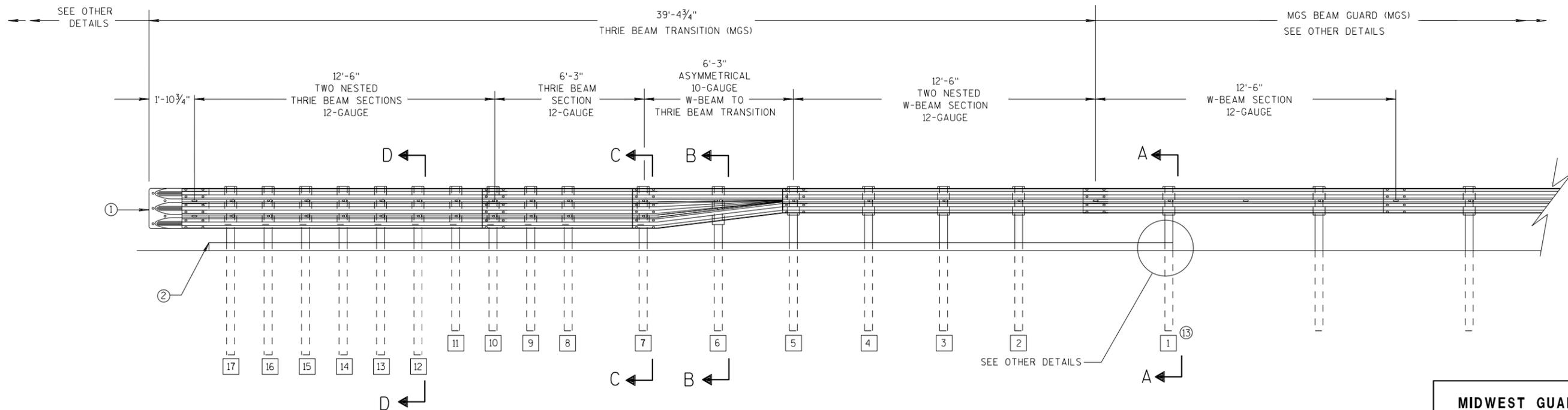
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

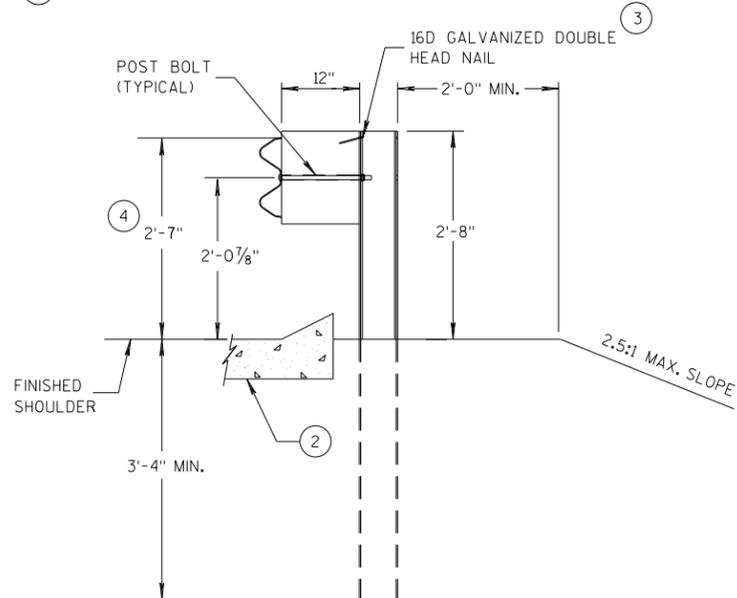
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

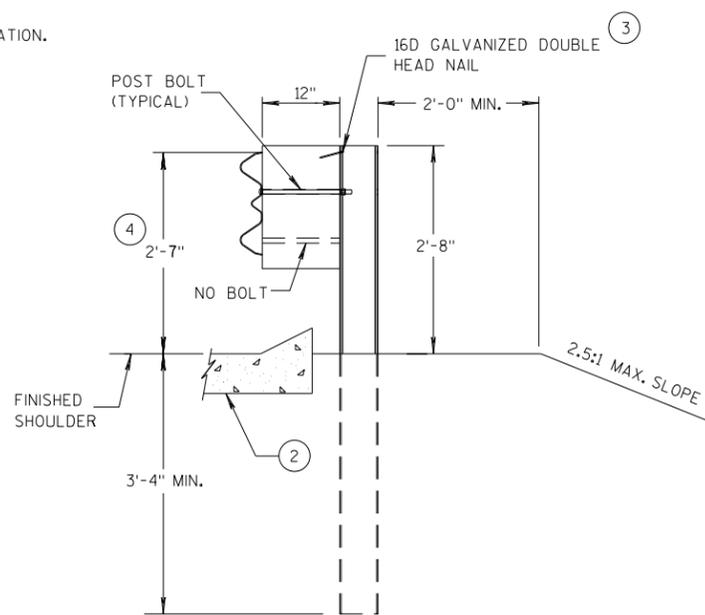
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

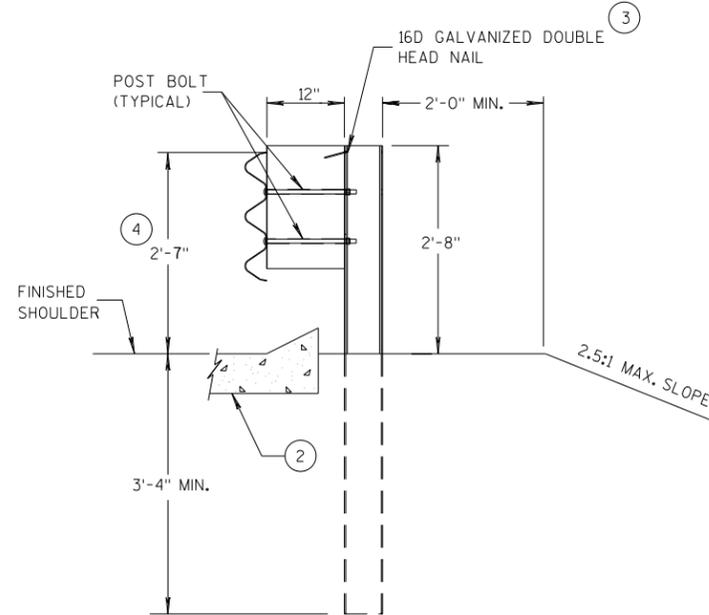
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



**SECTION C-C
POSTS 7-11**

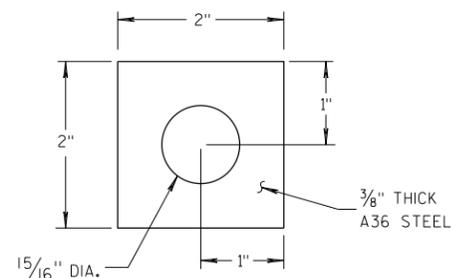
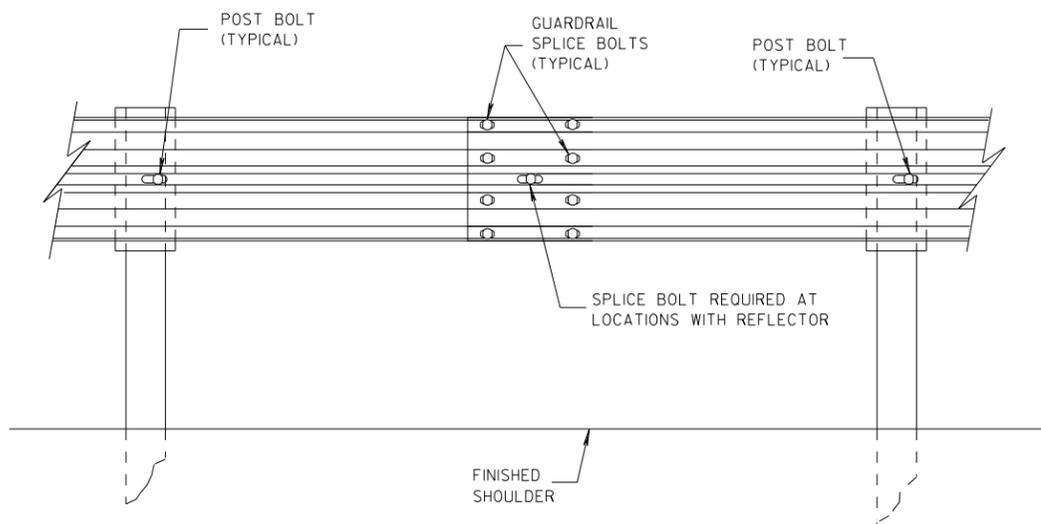
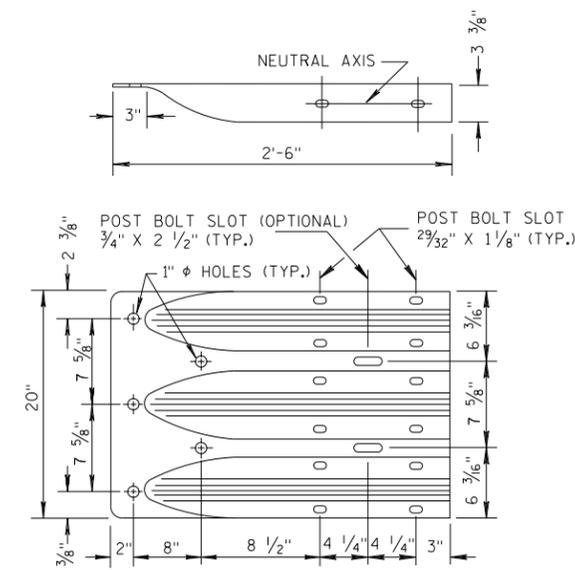


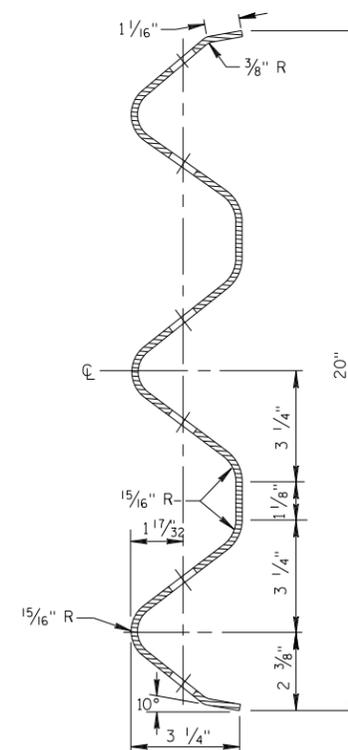
PLATE WASHER DETAIL



SPLICE DETAIL



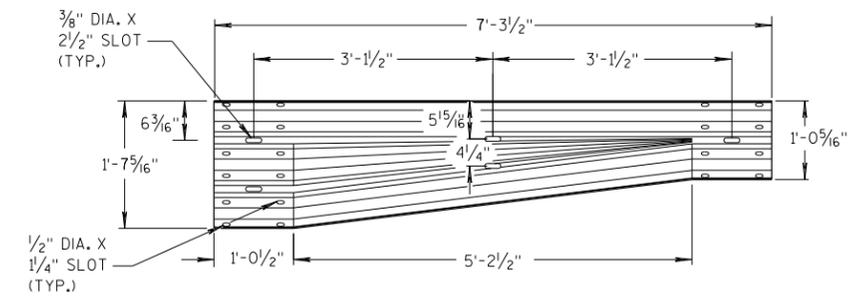
**THRIE BEAM
TERMINAL CONNECTOR**



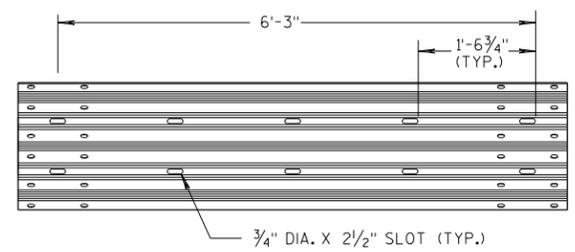
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

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

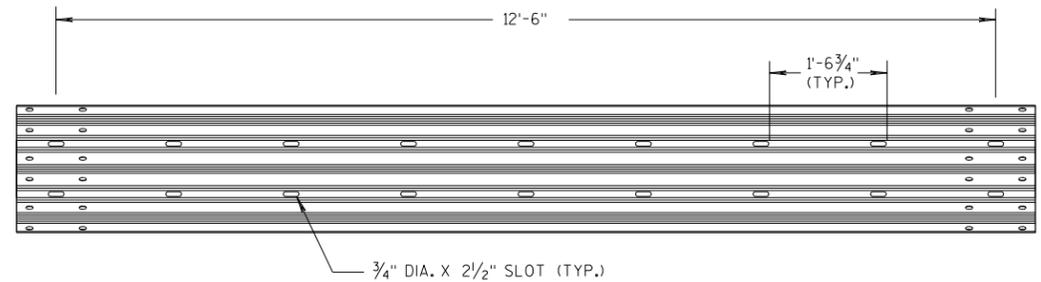
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



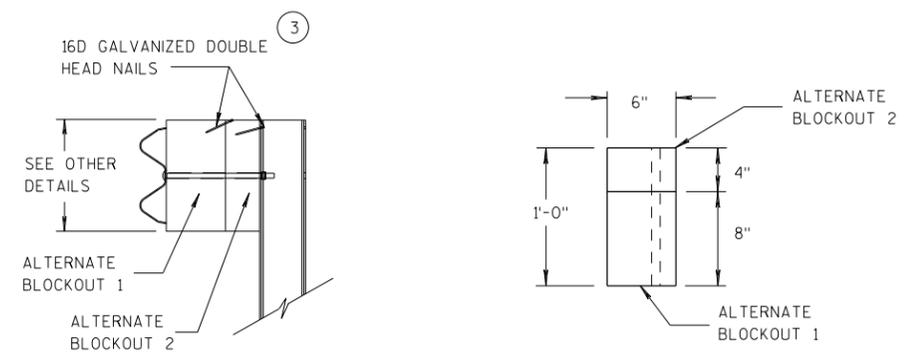
W-BEAM TO THRIE BEAM TRANSITION SECTION



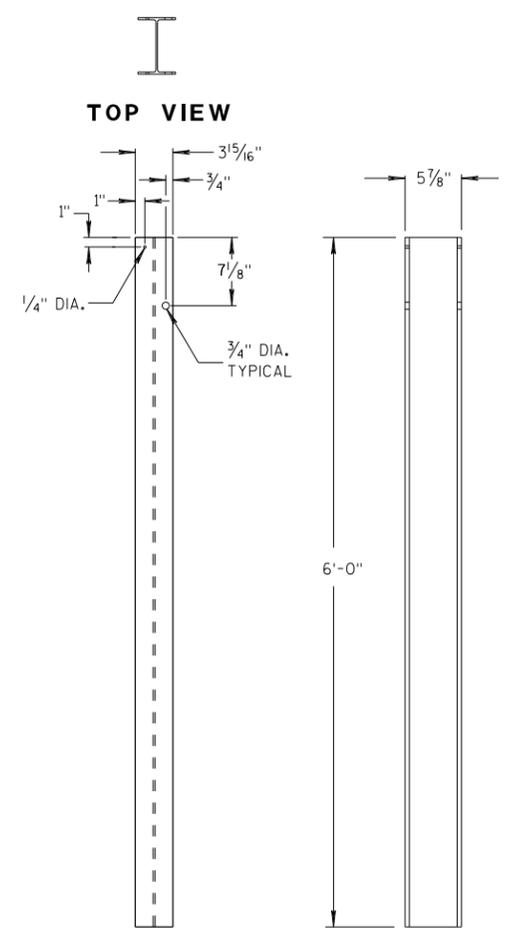
6'-3\"/>



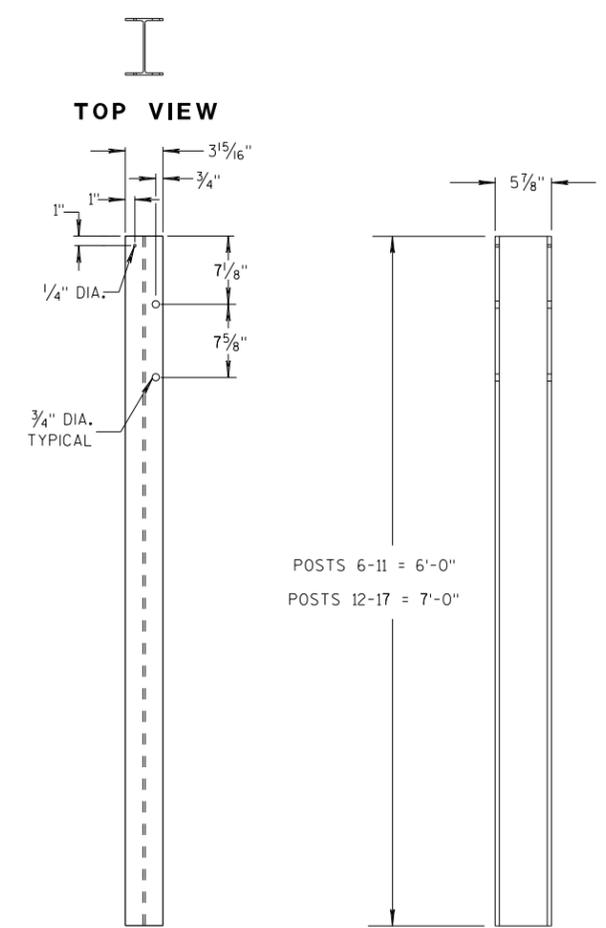
12'-6\"/>



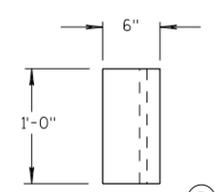
ALTERNATE WOOD BLOCKOUT DETAIL



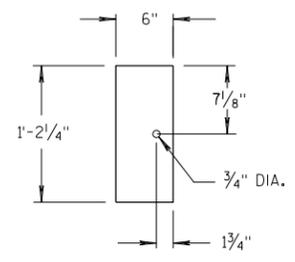
STEEL POSTS 1-5



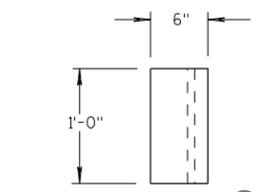
STEEL POSTS 6-17



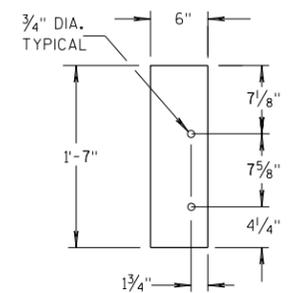
TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 1-5**



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)**

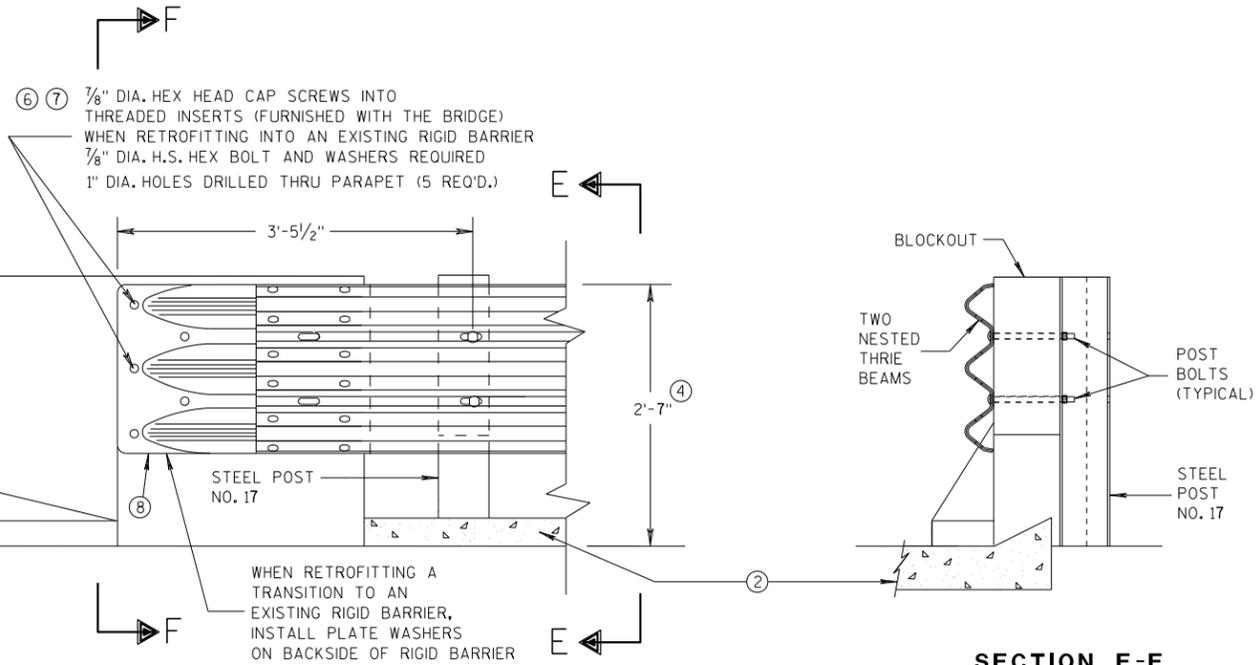
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

S.D.D. 14 B 45-5c

S.D.D. 14 B 45-5c



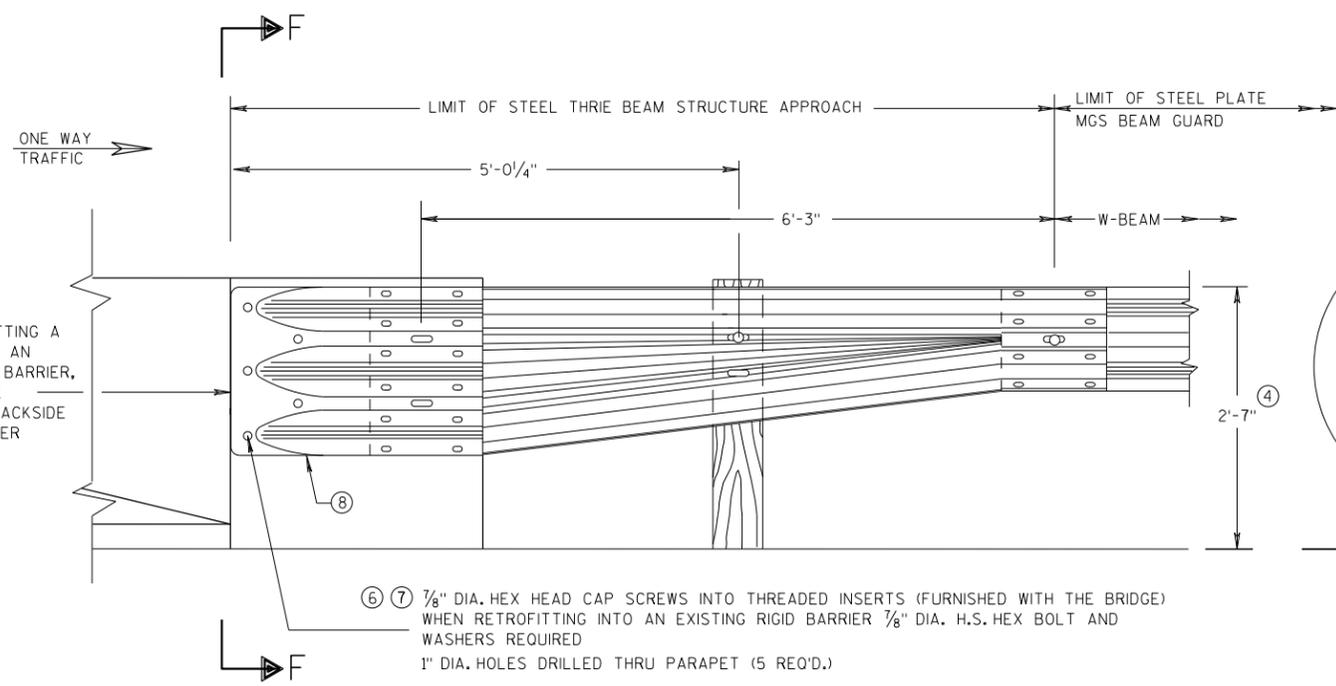
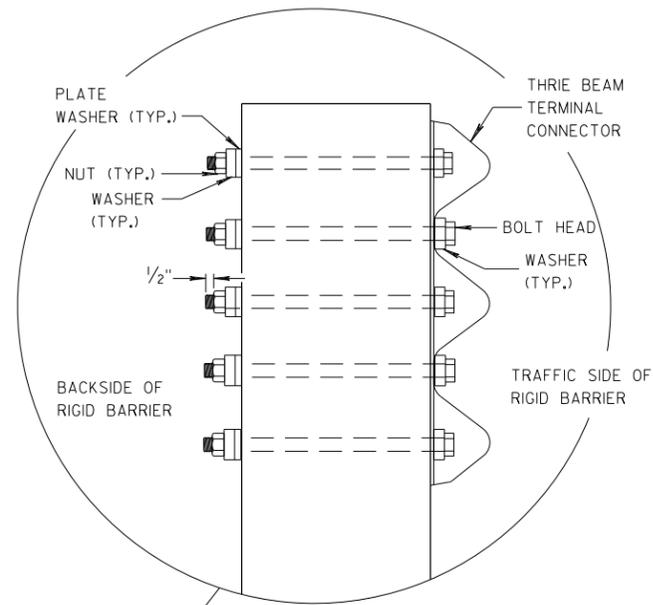
FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

SECTION E-E

GENERAL NOTES

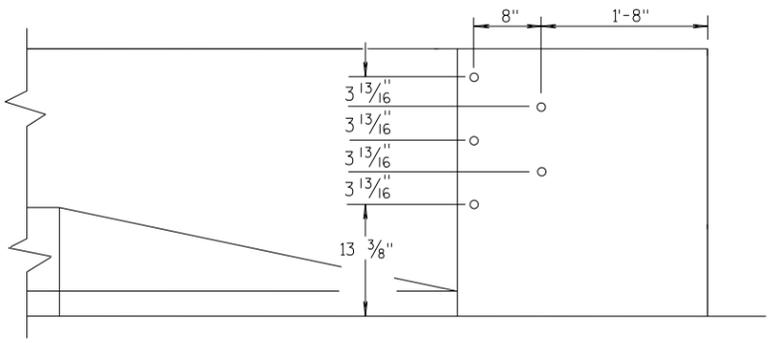
- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- (4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- (6) DRILLING BOLT HOLES THROUGH THE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



FRONT VIEW

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

SECTION F-F



DRILL HOLE LOCATION

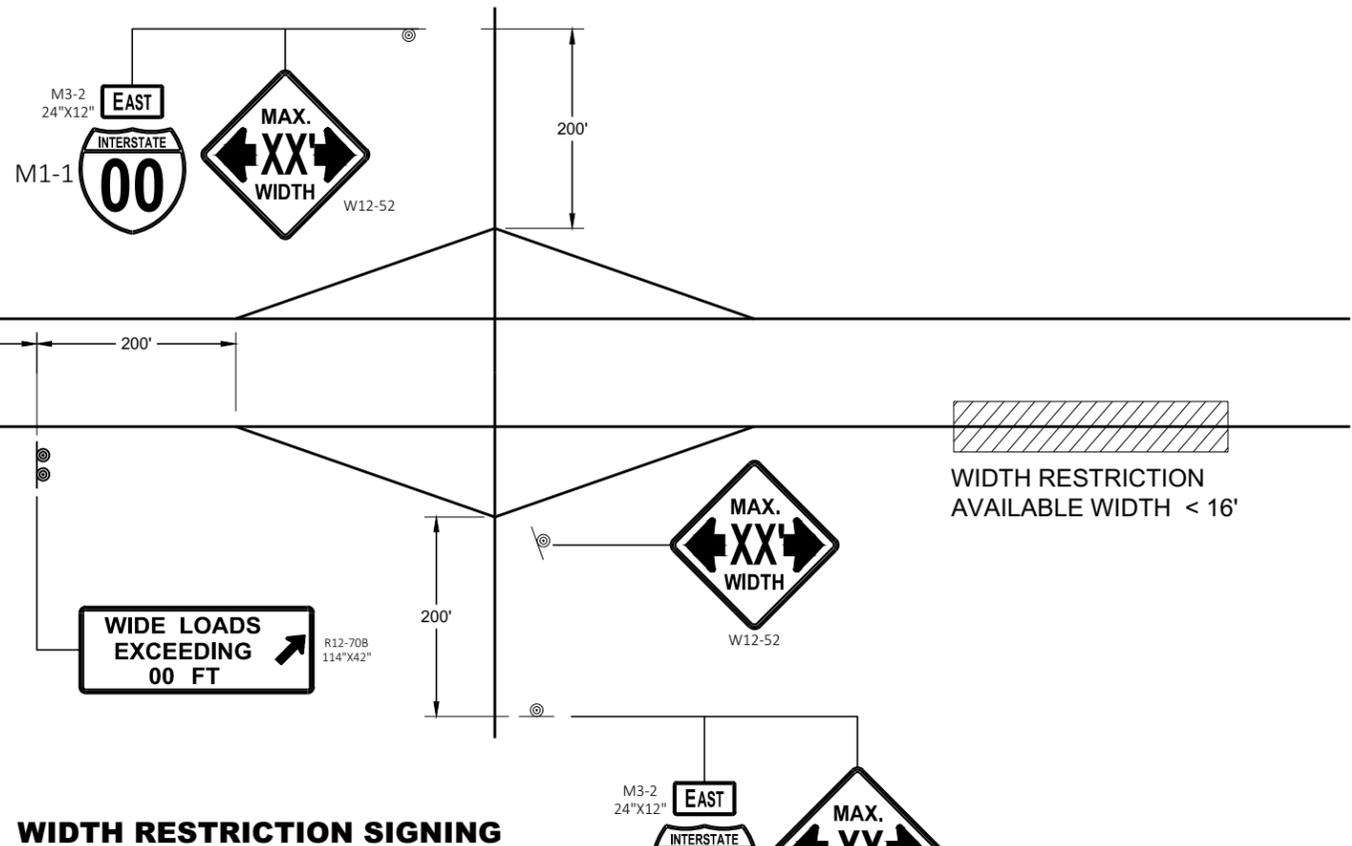
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

6

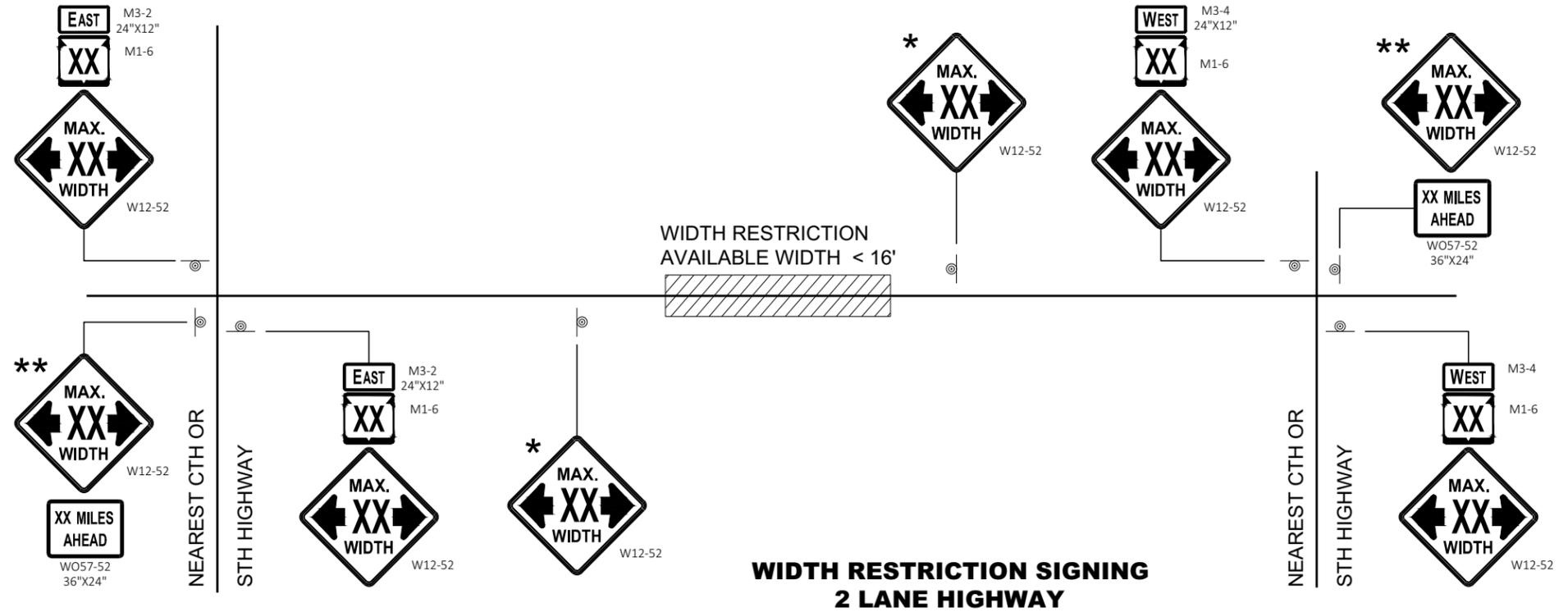
6

S.D.D. 14 B 45-5d

S.D.D. 14 B 45-5d



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.



WIDTH ON SIGN TO BE APPROX. 1 - FOOT LESS THAN AVAILABLE WIDTH

ADVANCED WIDTH RESTRICTION SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

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

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

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

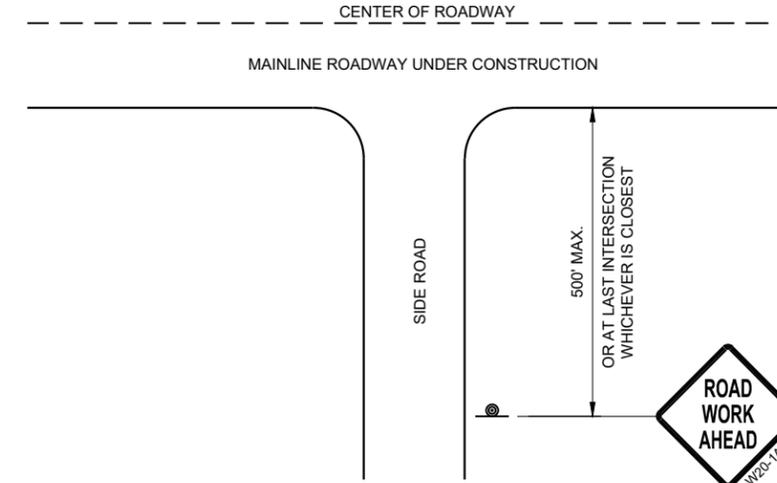
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

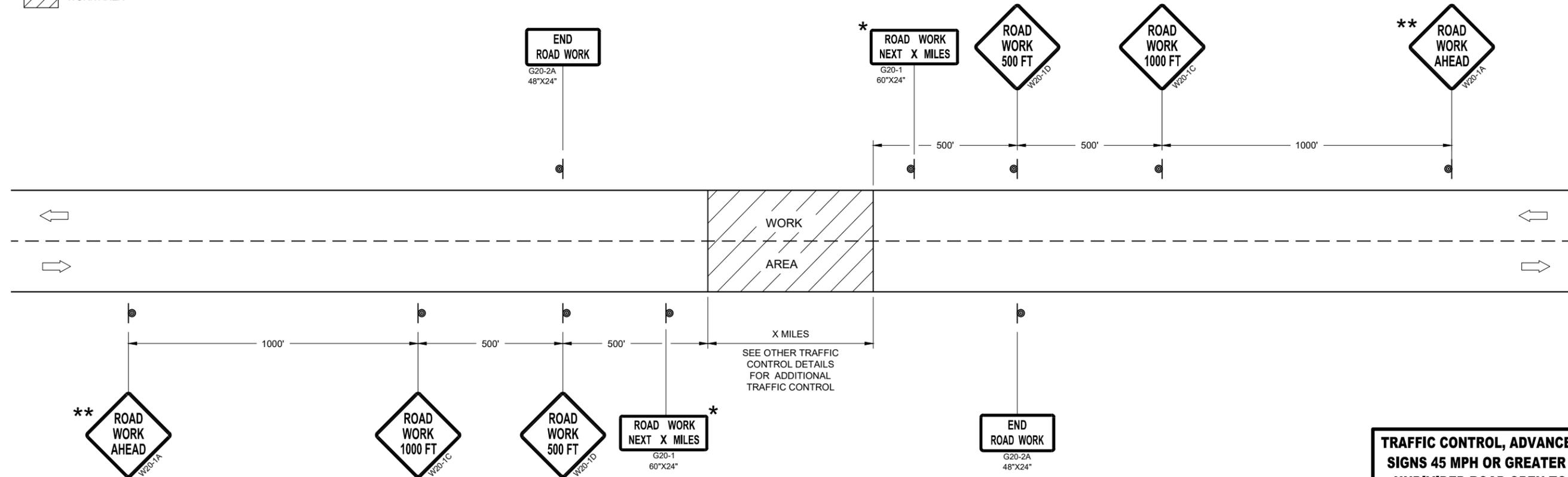
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



**TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL**



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

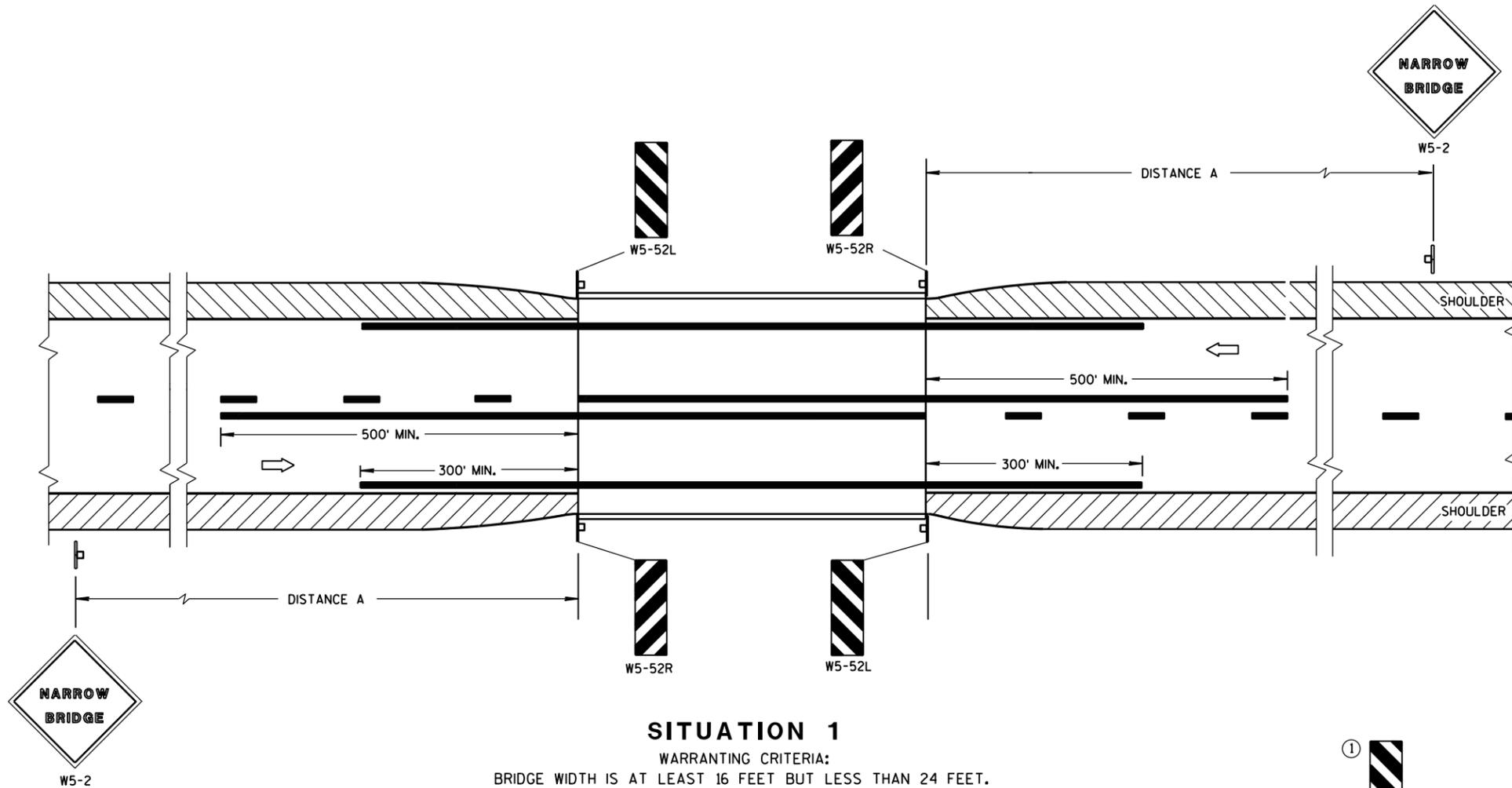
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

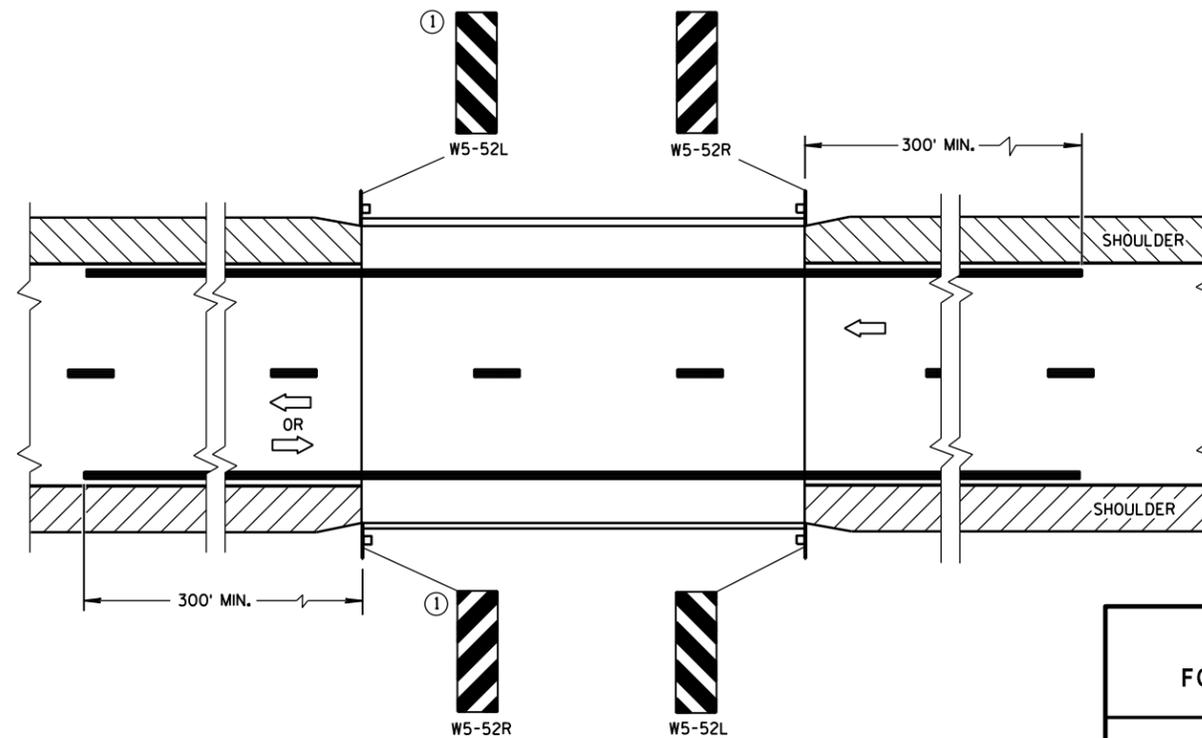
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



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.

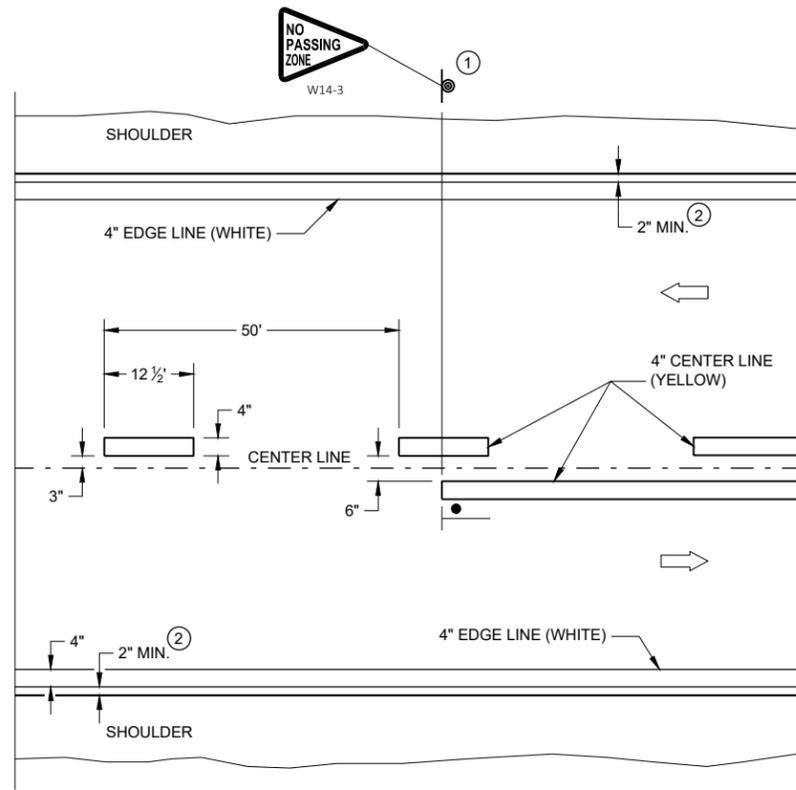
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

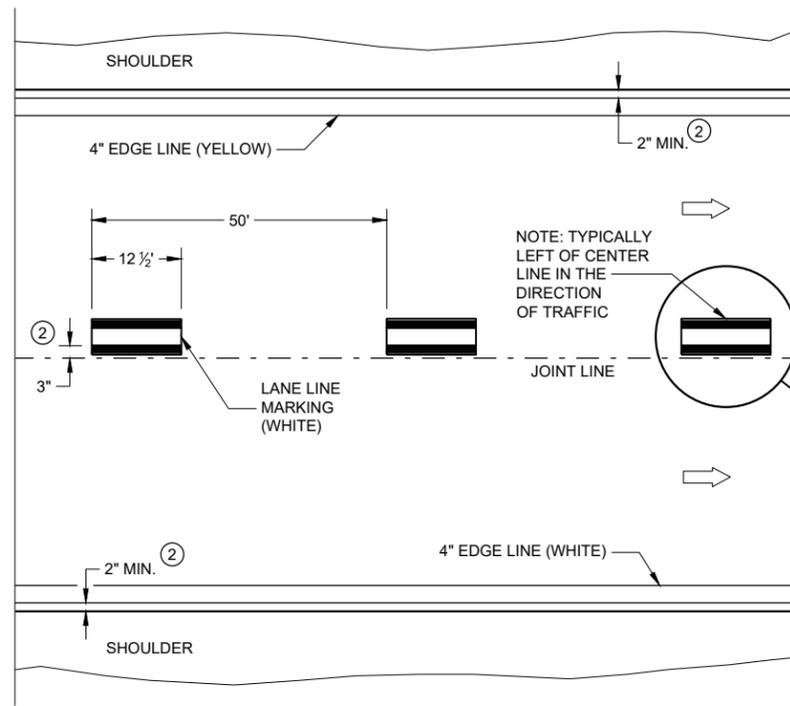
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

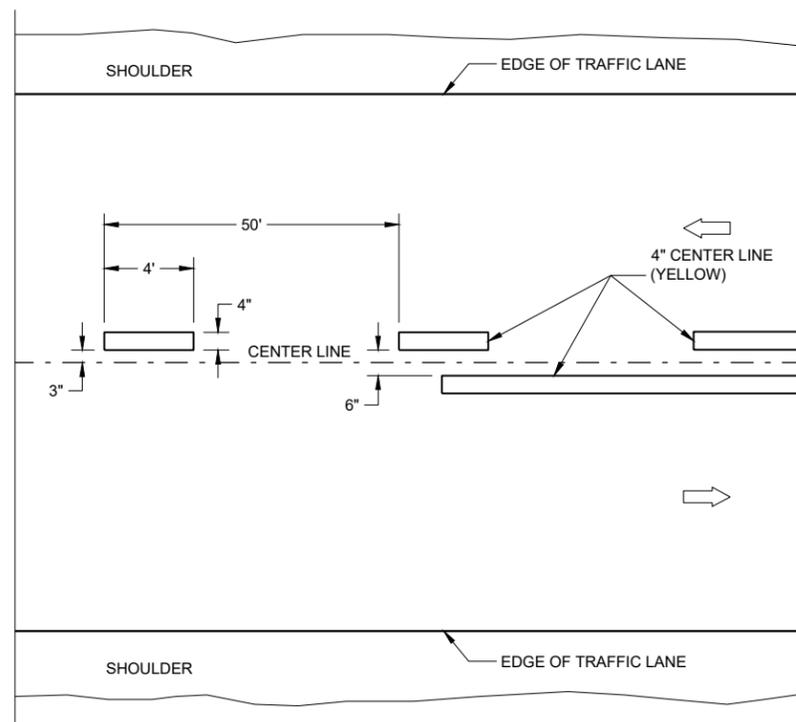


TWO WAY TRAFFIC

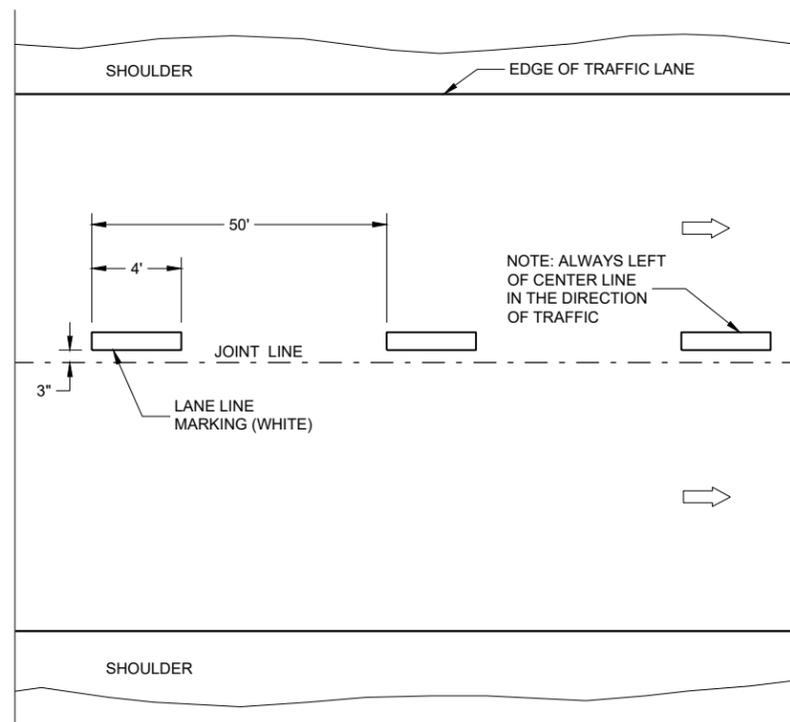


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

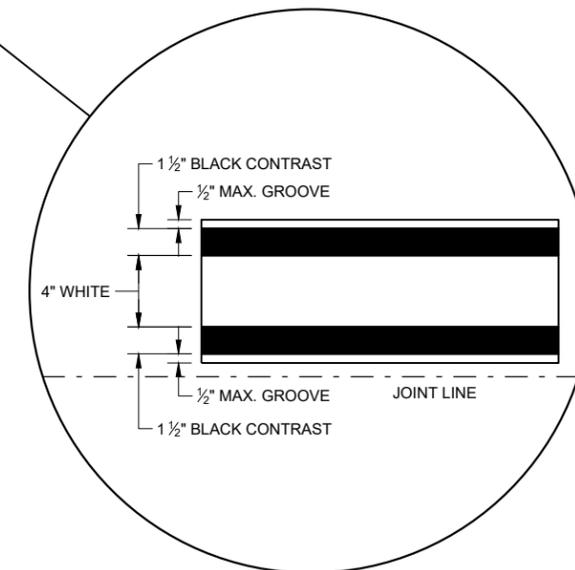
GENERAL NOTES

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

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

LEGEND

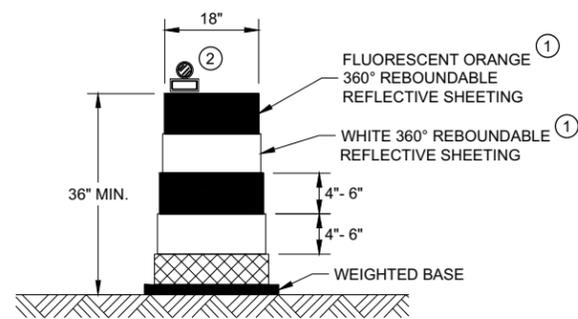
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



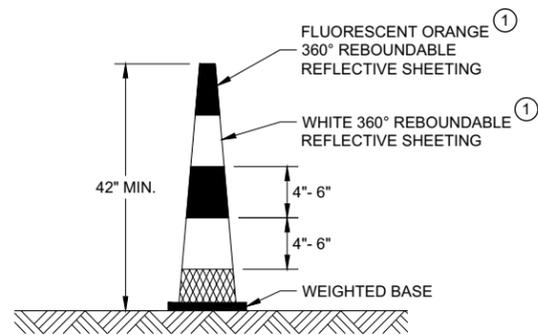
**LONGITUDINAL MARKING
(MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

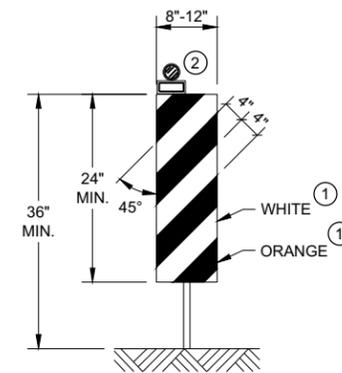


DRUM



42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

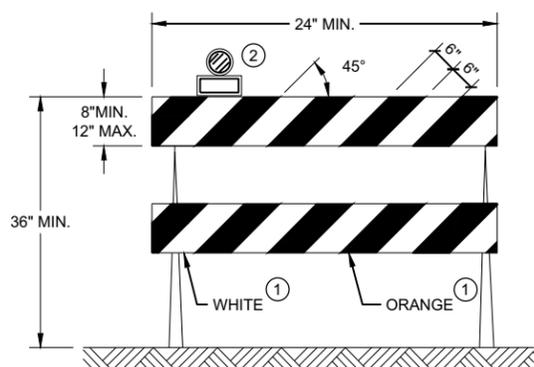


VERTICAL PANEL

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

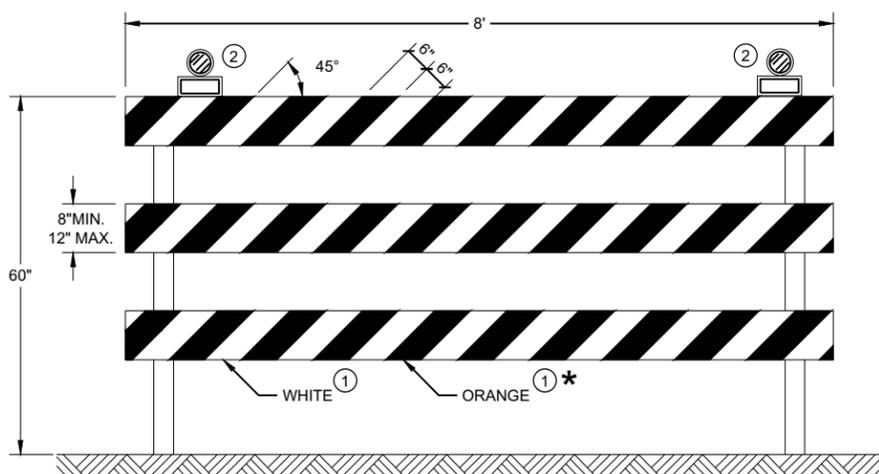
GENERAL NOTES

- 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.



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.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

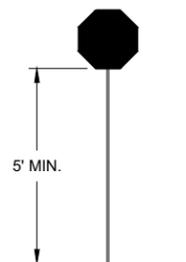
WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

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

TEMPORARY PORTABLE RUMBLE STRIPS

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



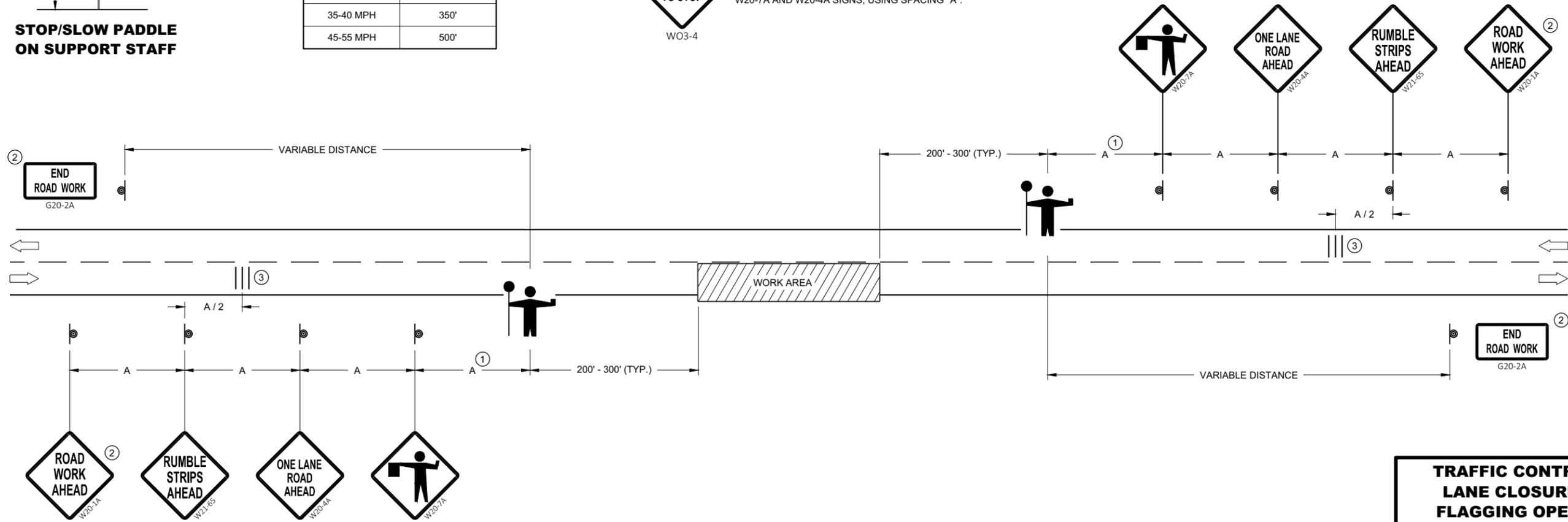
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

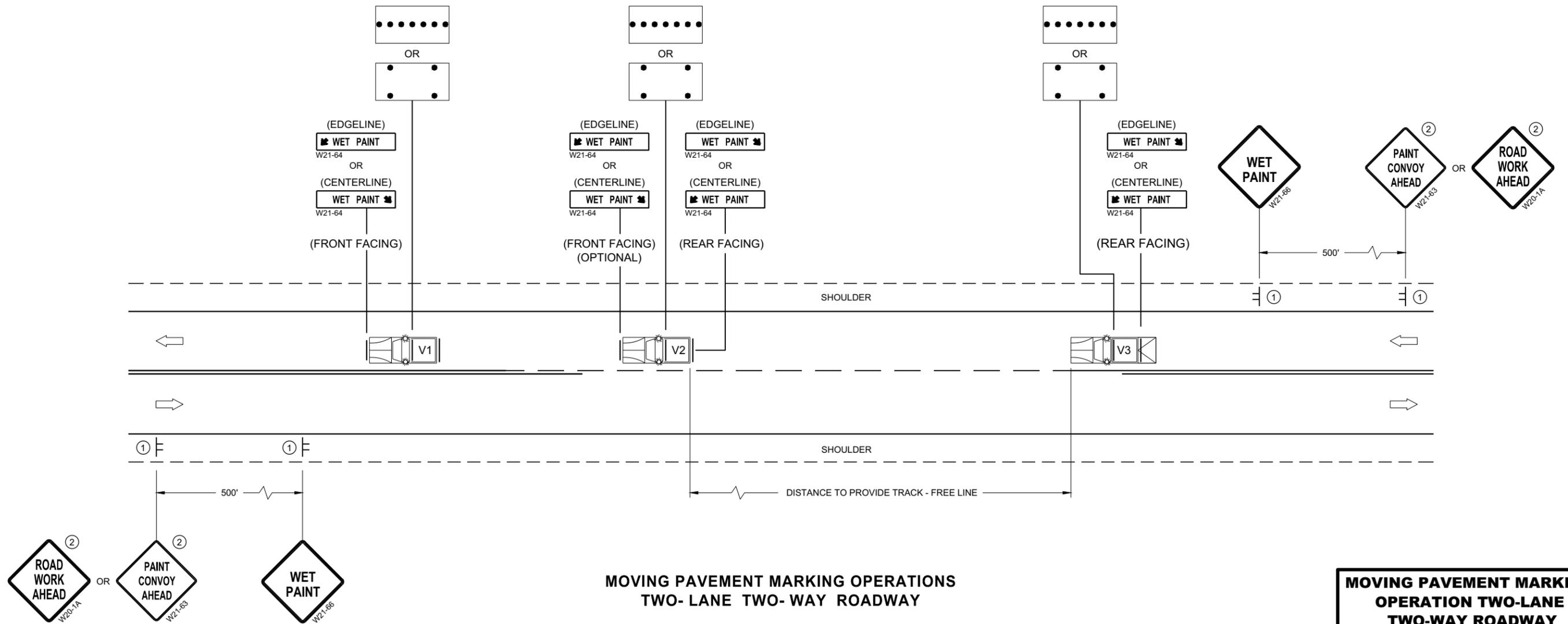
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

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

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

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**MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY**

SDD 15C19 - 06a

SDD 15C19 - 06a

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2019 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

LEGEND

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

GENERAL NOTES

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

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

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

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

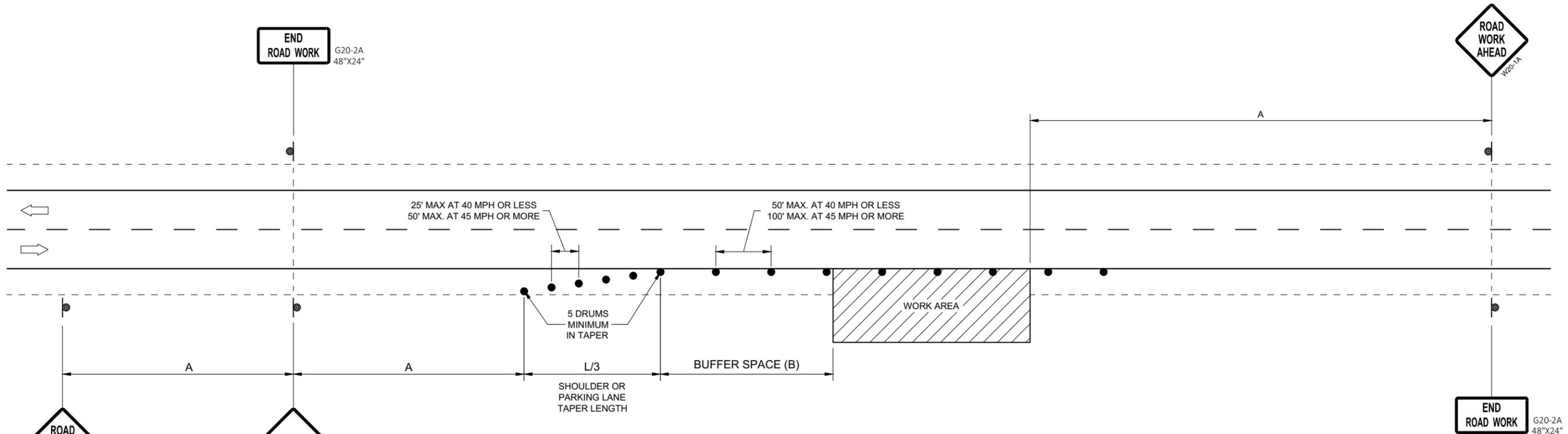
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

6

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OR
IF TRAFFIC CONTROL DEVICES
ENCROACH ONTO TRAVELED WAY, USE

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

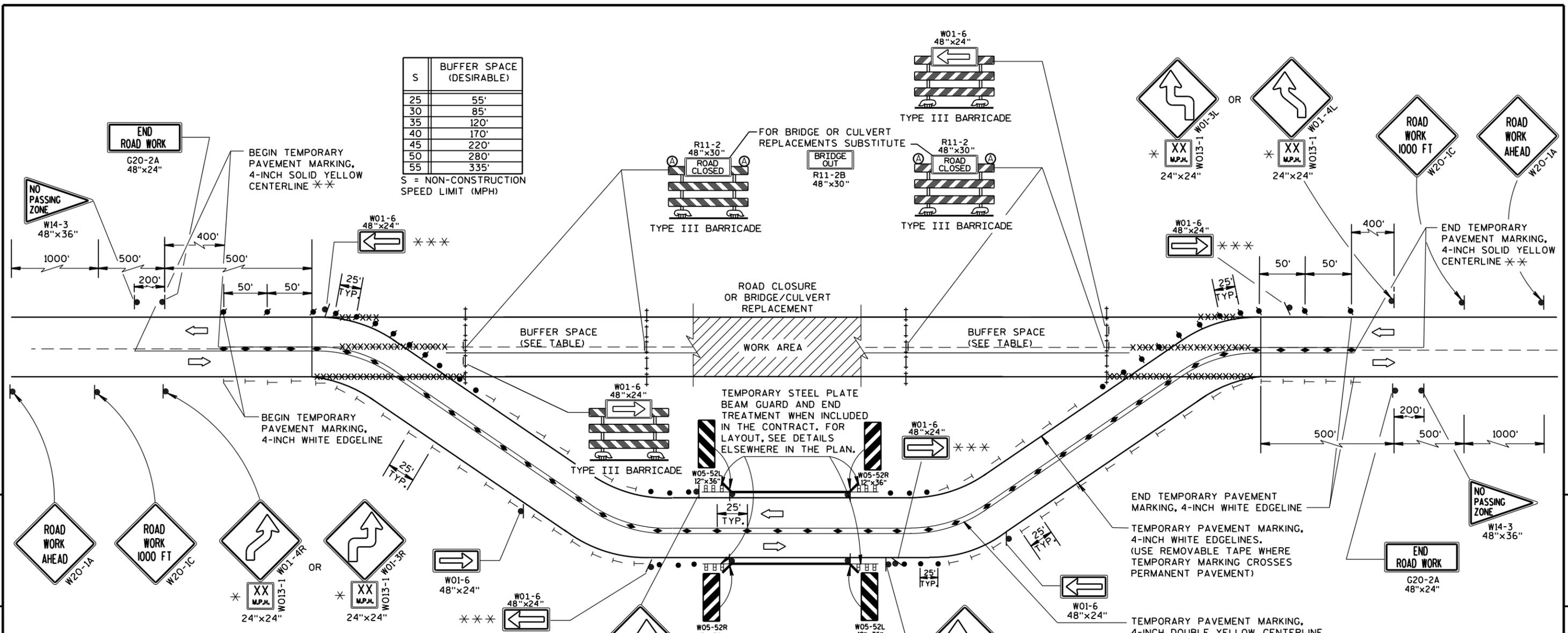
FHWA

SDD 15D28 - 04

SDD 15D28 - 04

S	BUFFER SPACE (DESIRABLE)
25	55'
30	85'
35	120'
40	170'
45	220'
50	280'
55	335'

S = NON-CONSTRUCTION SPEED LIMIT (MPH)



GENERAL NOTES

- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.
- THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.
- "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.
- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED.
- EQUIPMENT, VEHICLES, OR MATERIAL SHOULD NOT BE STORED IN BUFFER SPACE.
- * IF ADVISORY SPEED IS GREATER THAN 30 MPH, USE THE W01-4 SIGN. IF ADVISORY SPEED IS 30 MPH OR LESS, USE THE W01-3 SIGN.
- ** WHEN THE DISTANCE TO/FROM THE NEXT CLOSEST NO-PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.
- *** OMIT THESE W01-6 SIGNS IF THE ADVISORY SPEED OF THE CURVE IS GREATER THAN 30 MPH.

LEGEND

- SIGN ON PERMANENT SUPPORT
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY-BURN LIGHT
- TRAFFIC CONTROL DRUM
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- TEMPORARY DELINEATOR, (WHITE) (SINGLE DELINEATOR)
- ◆ TEMPORARY RAISED PAVEMENT MARKERS (TWO-WAY YELLOW)
- XXX REMOVE PAVEMENT MARKING
- ➡ DIRECTION OF TRAFFIC
- ▬▬▬ TEMPORARY STEEL PLATE BEAM GUARD AND END TREATMENT
- ▨ WORK AREA

TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

6

S.D.D. 15 D 31-3

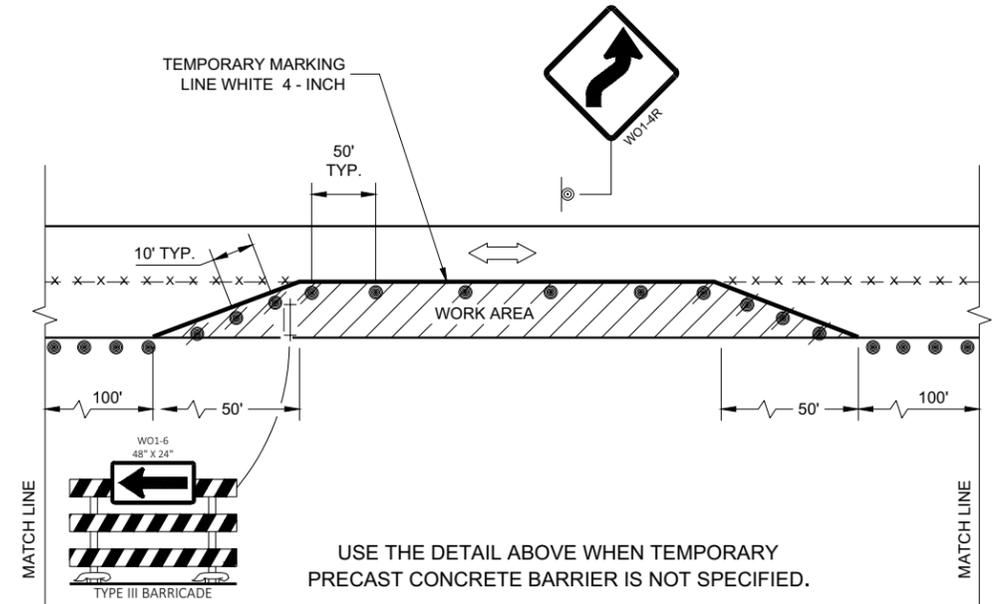
S.D.D. 15 D 31-3

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
- TEMPORARY SIGNAL. SEE SDD 09G02 FOR EXACT PLACEMENT

GENERAL NOTES

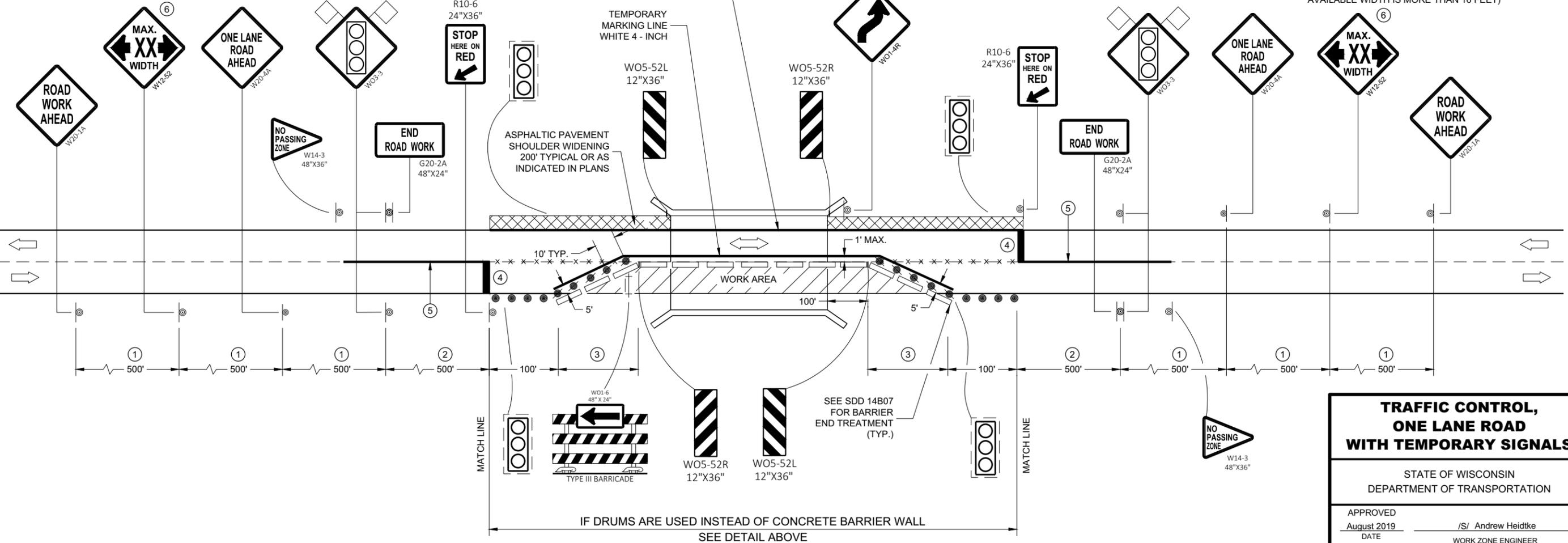
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING 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.
- PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.
- ① 500 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.
 - ② USE 300 FOOT SPACING IF THE PRE - CONSTRUCTION REGULATORY SPEED IS 35 MPH OR LESS.
 - ③ DIMENSION DETERMINED BY CBTP TAPER FROM EDGE LINE TO TANGENT SECTION OF THE ROAD.
 - ④ TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18 - INCH.
 - ⑤ 700 FOOT TEMPORARY MARKING LINE, DOUBLE YELLOW 4 - INCH . 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.
 - ⑥ SEE SDD 15C02 - SHEET "F" FOR ADVANCED WIDTH RESTRICTION SIGNING.



TEMPORARY MARKING LINE WHITE 4 - INCH (STOPLINE TO STOPLINE). REMOVE EXISTING EDGELINE AND OFFSET THE TEMPORARY EDGELINE IF THE DISTANCE FROM THE EDGELINE TO CONCRETE BARRIER WALL IS LESS THAN 9 FEET.

WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET)

WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET)

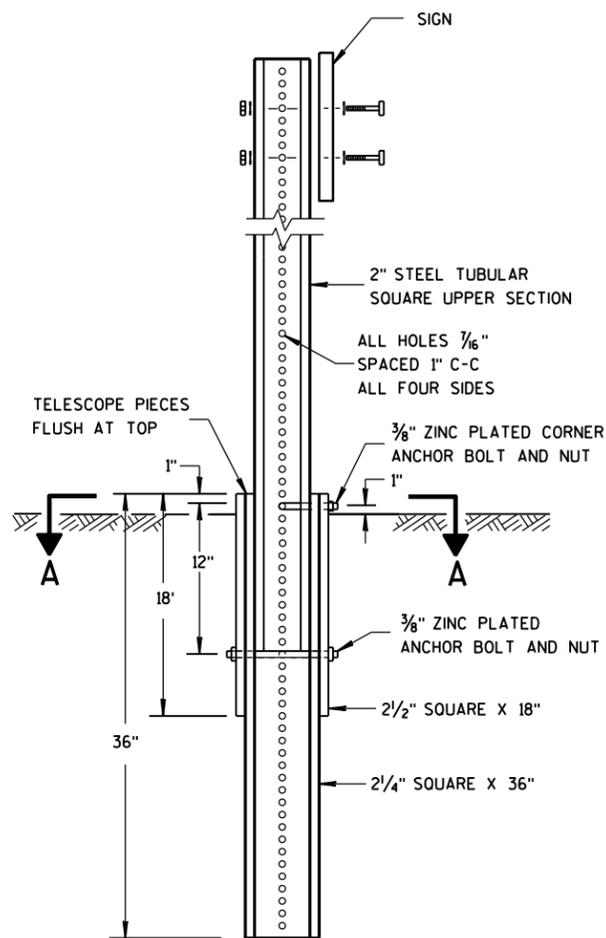


**TRAFFIC CONTROL,
ONE LANE ROAD
WITH TEMPORARY SIGNALS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED _____
August 2019 /S/ Andrew Heidtke
DATE DATE WORK ZONE ENGINEER

FHWA



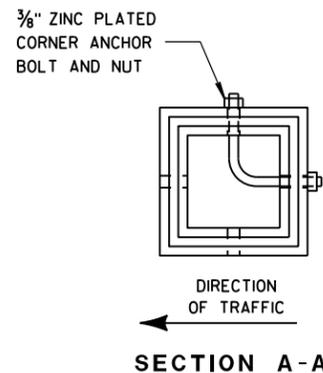
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

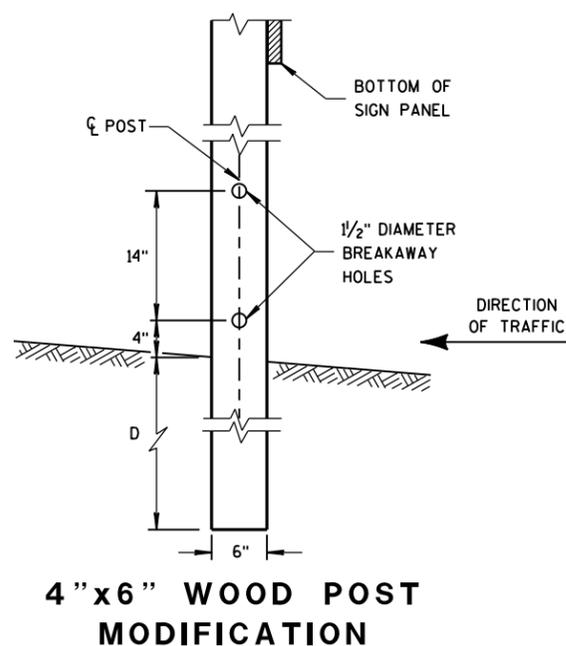
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

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

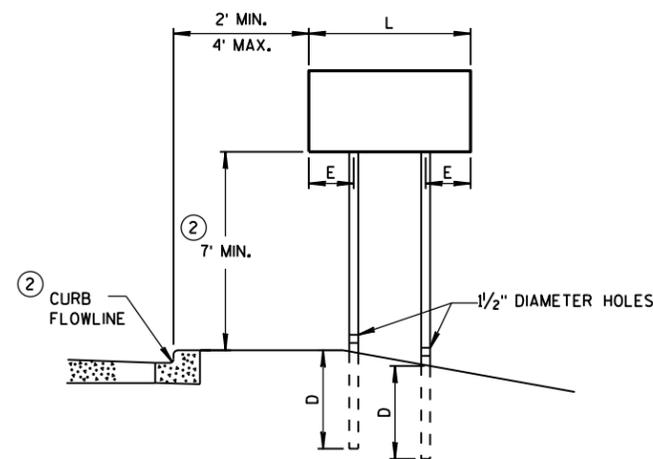
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



SECTION A-A



4" X 6" WOOD POST MODIFICATION

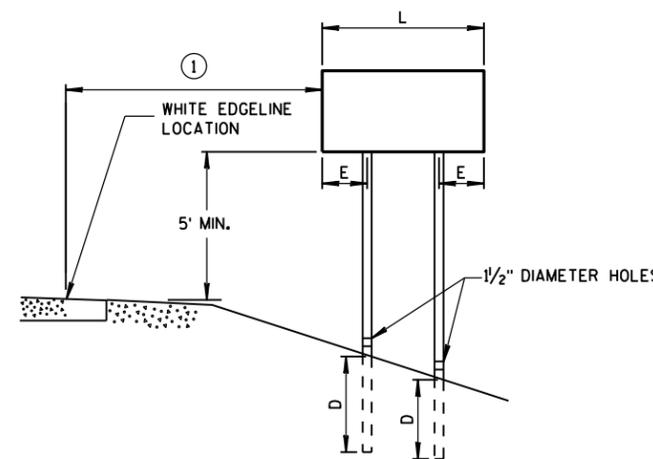


URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST EMBEDMENT DEPTH

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



RURAL AREA

4" X 6" WOOD POST

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

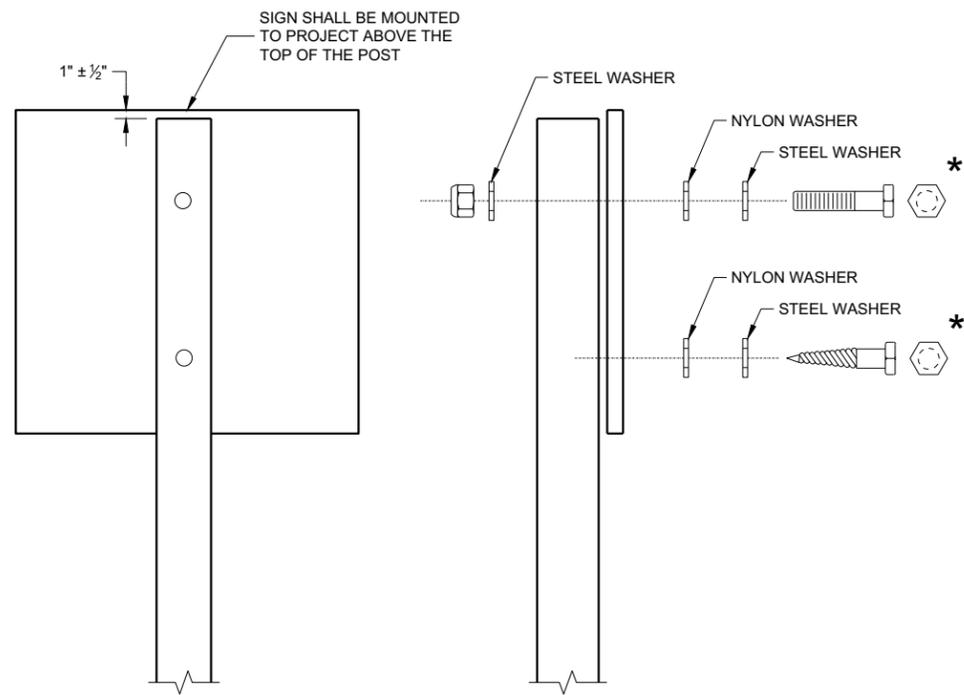
SEE NOTE ③

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

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

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

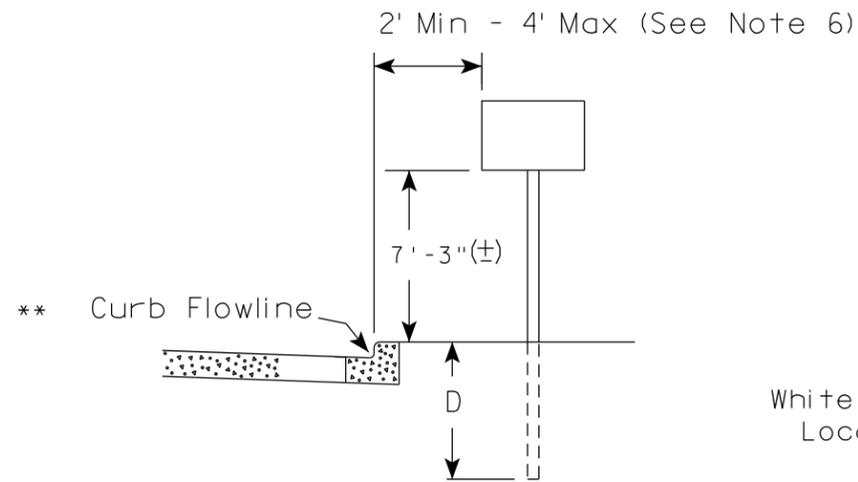
SQUARE STEEL POST (2" x 2")
 MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS
 RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
 BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
 GRIP RANGE 0.042 - 0.375 INCH

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

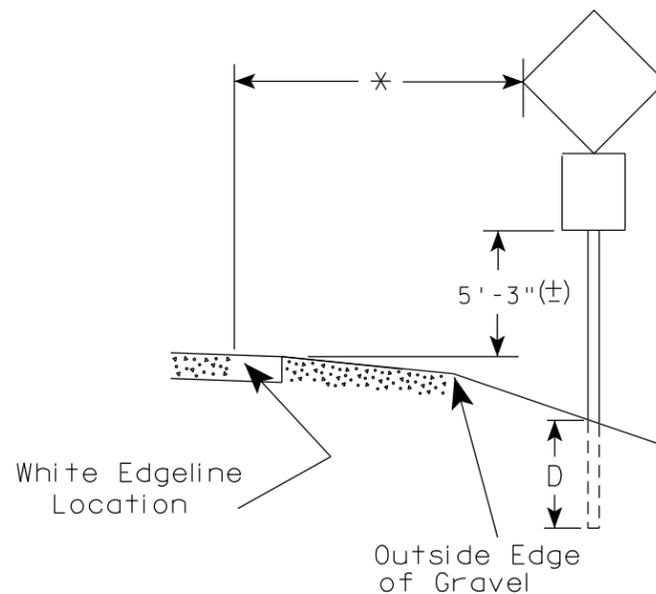
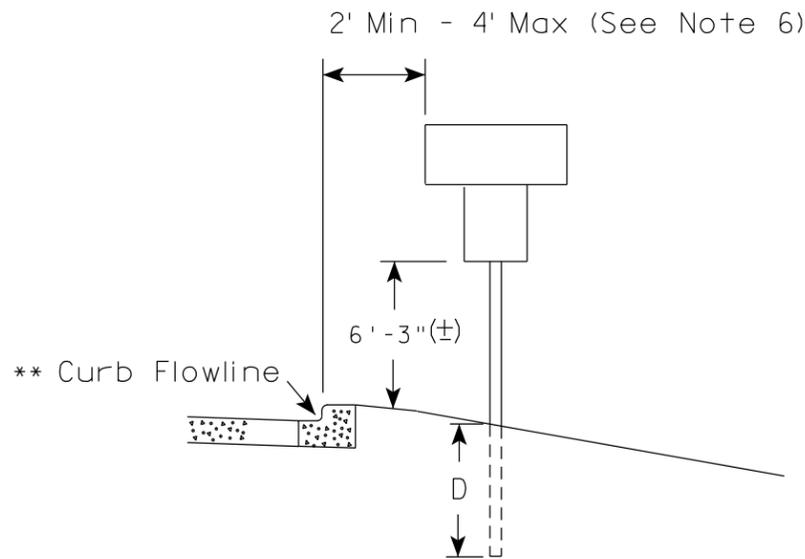
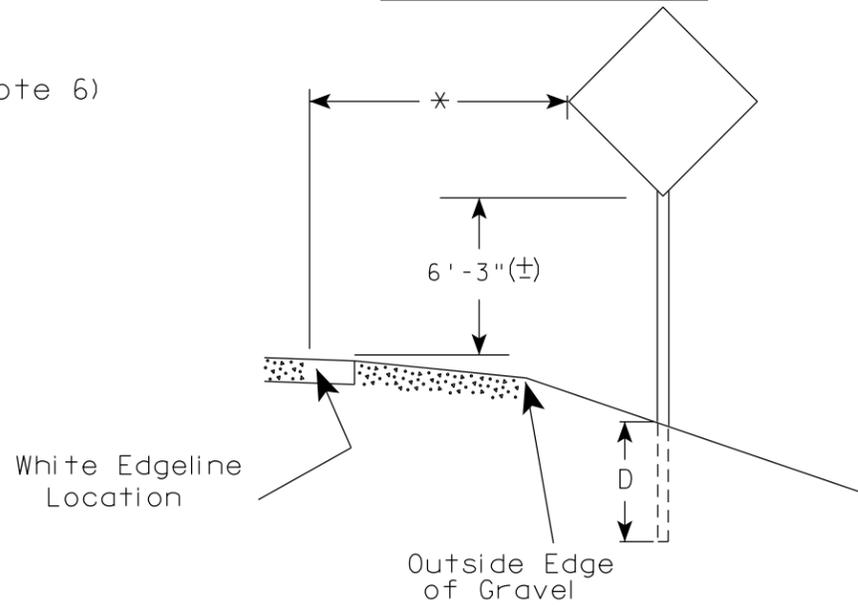
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

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

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

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

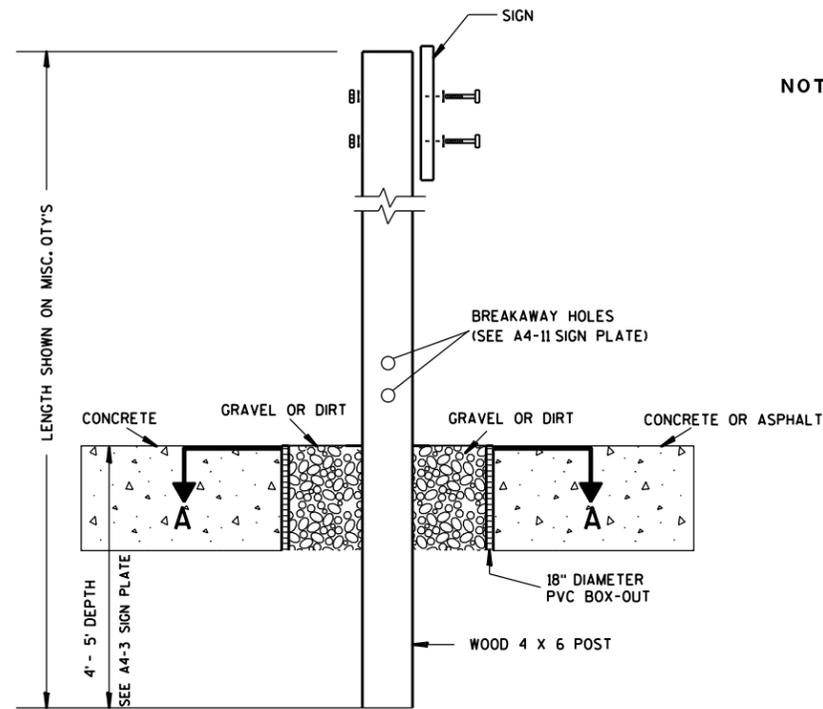
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

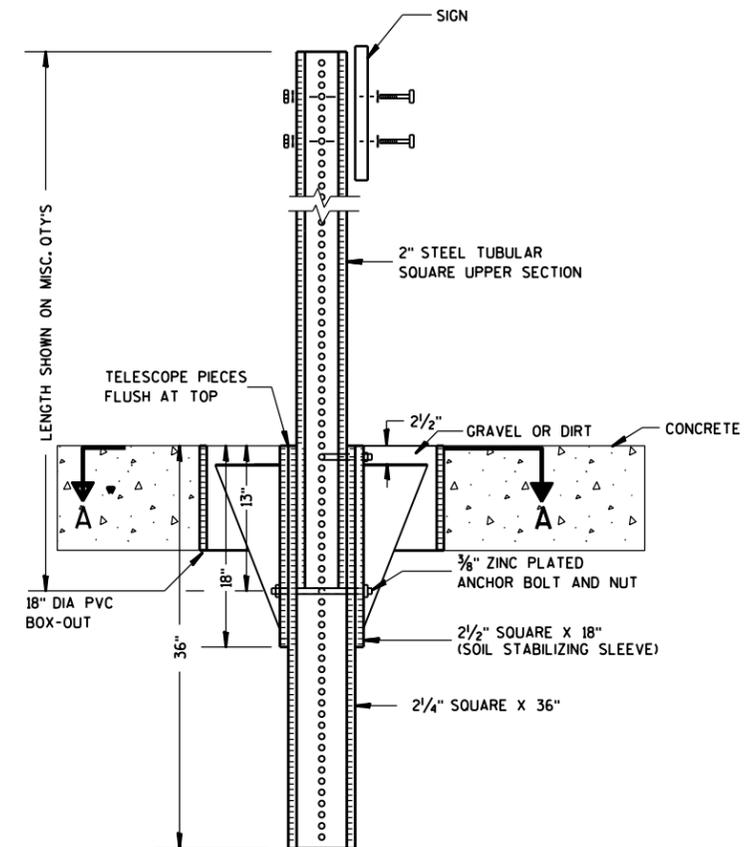
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

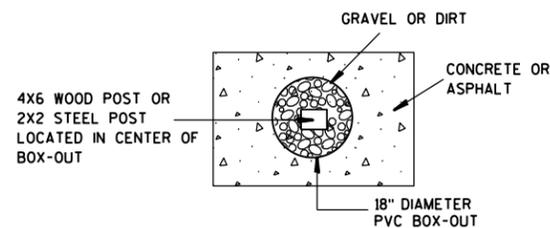
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

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

WISCONSIN DEPT OF TRANSPORTATION

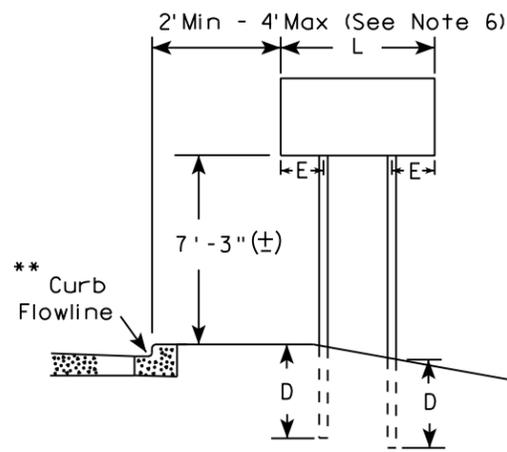
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

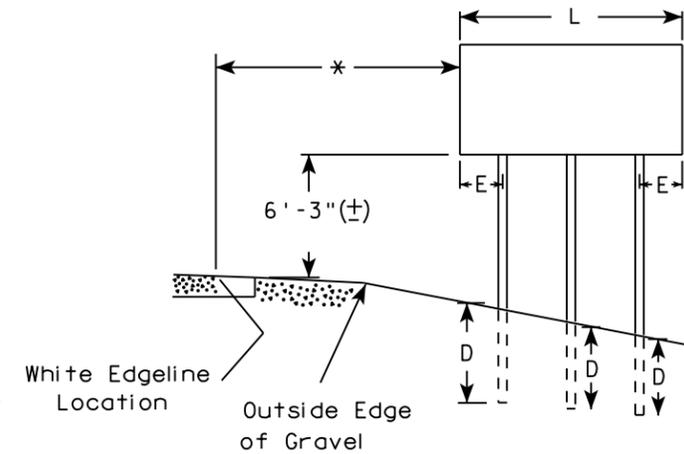
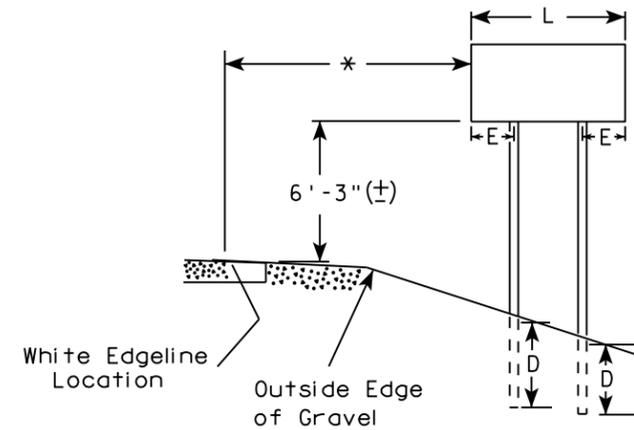
GENERAL NOTES

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" (±).

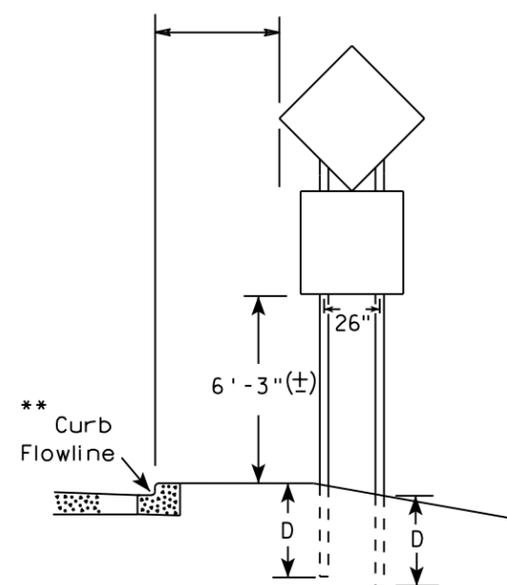
URBAN AREA



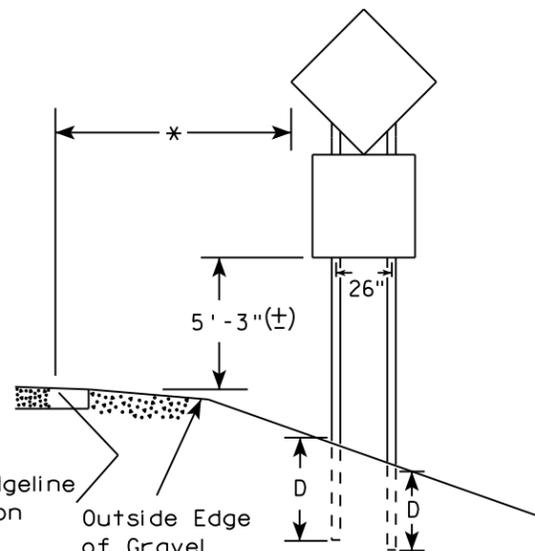
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

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

POST EMBEDMENT DEPTH

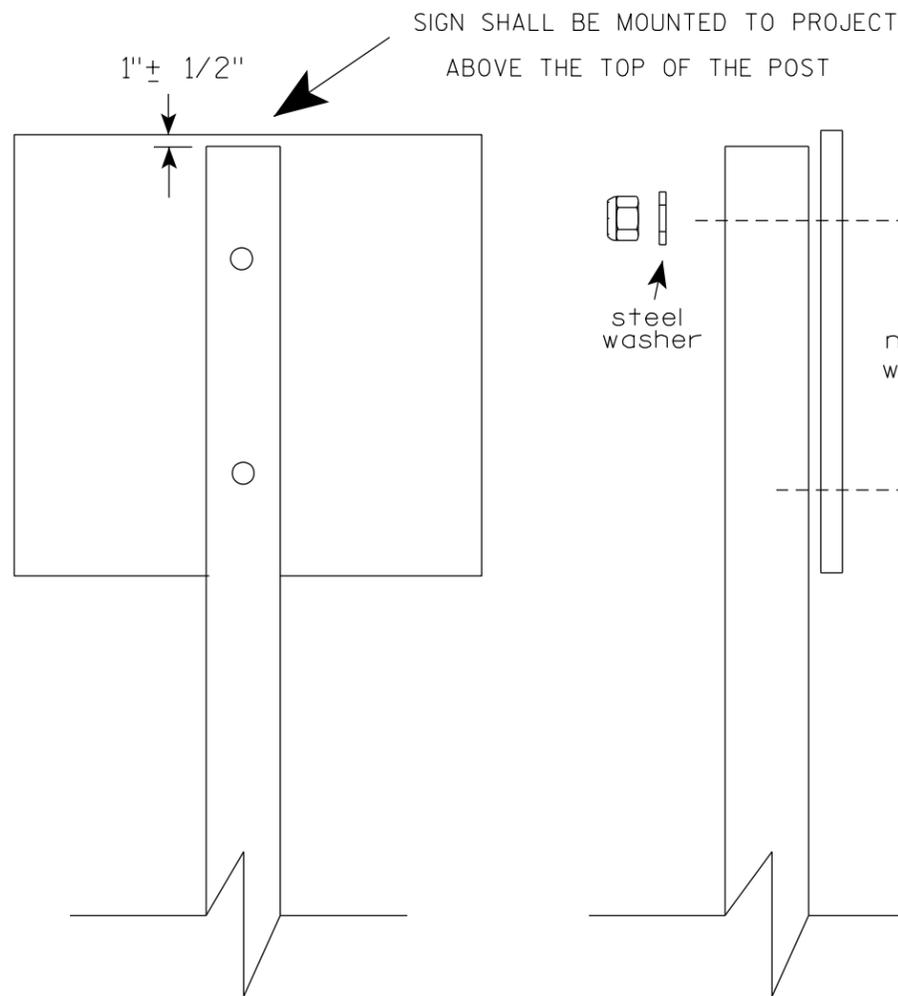
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

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

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

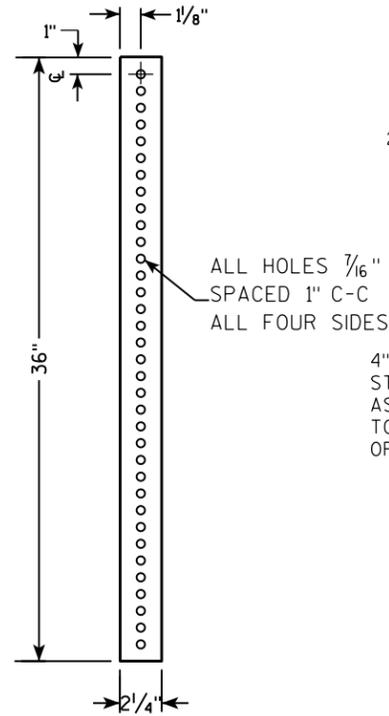
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE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

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

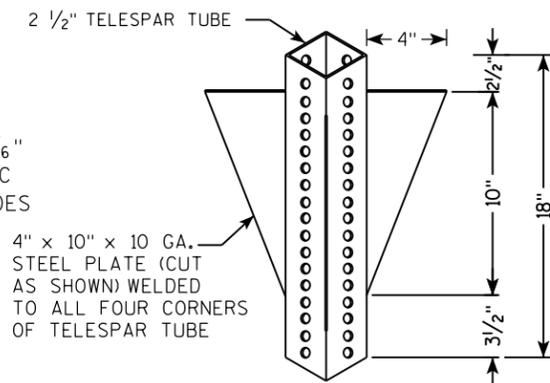
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

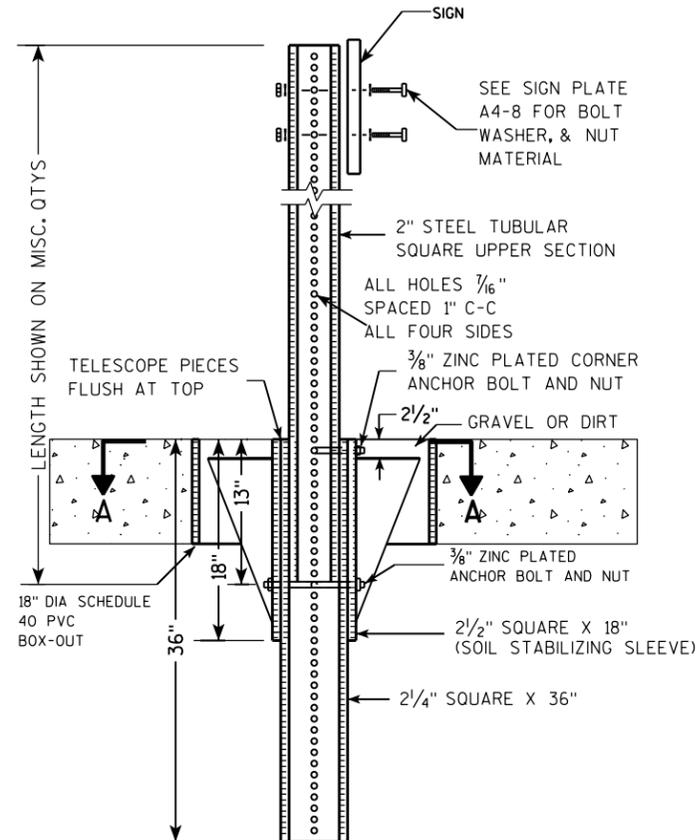
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



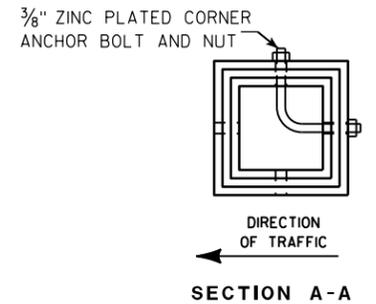
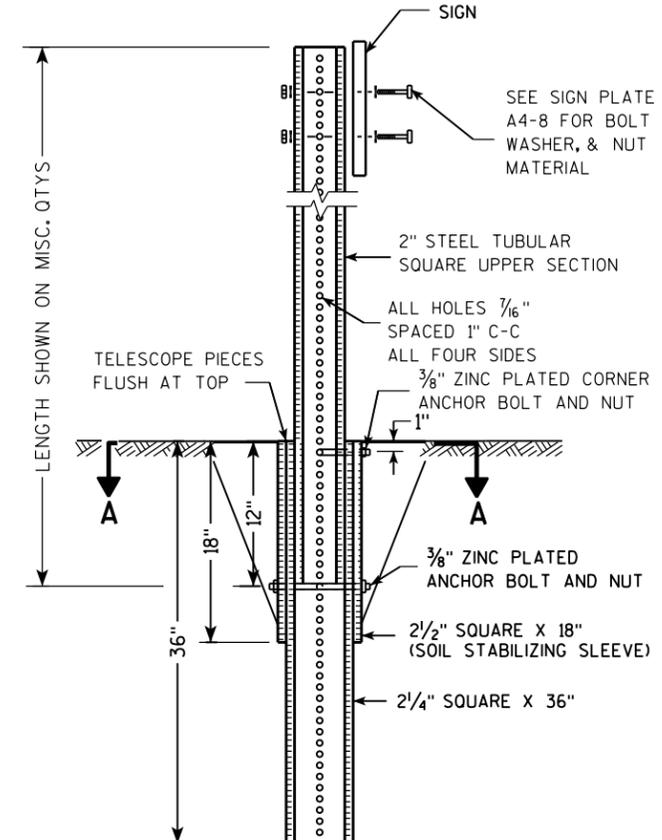
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



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



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



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

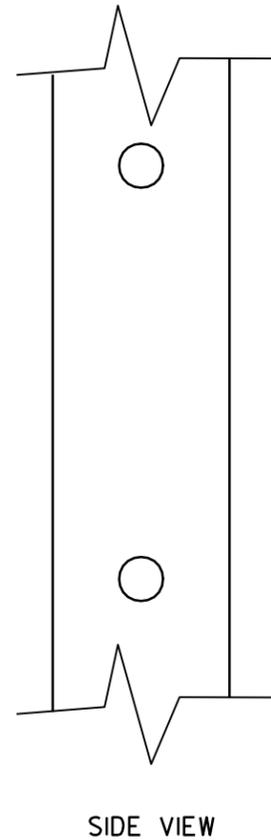
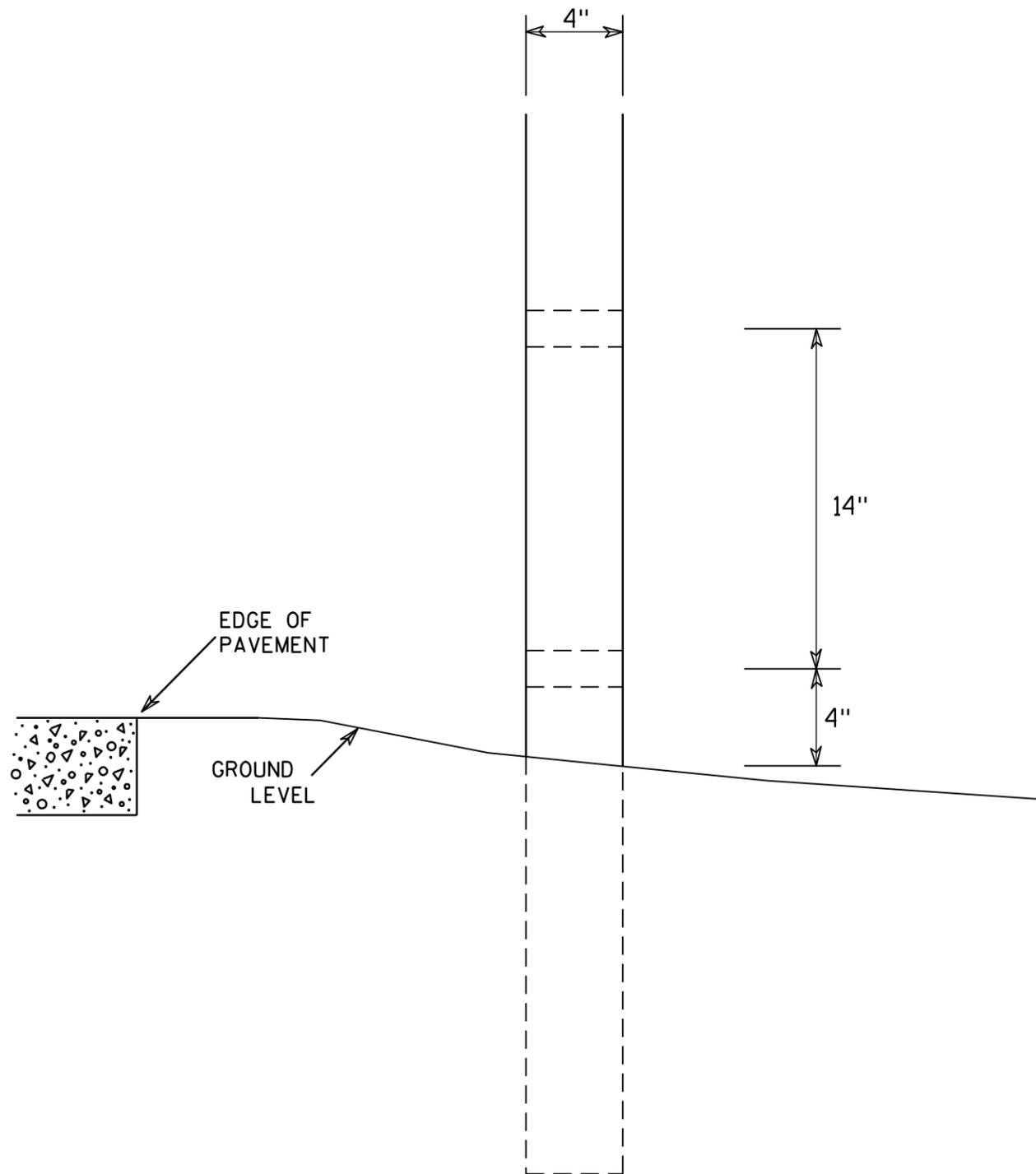
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



GENERAL NOTES

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

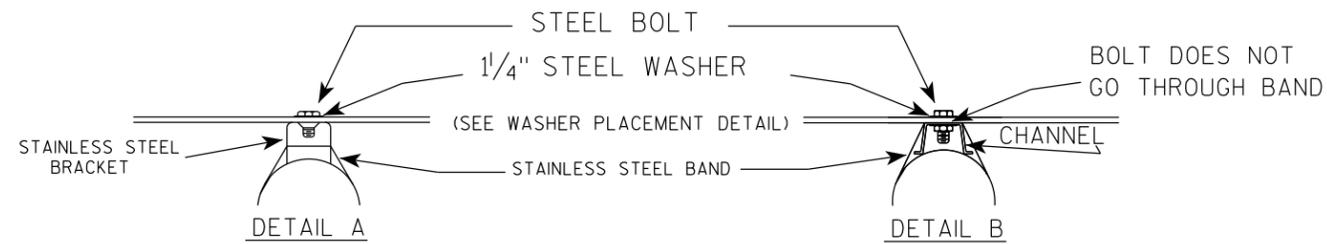
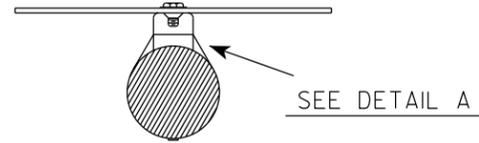
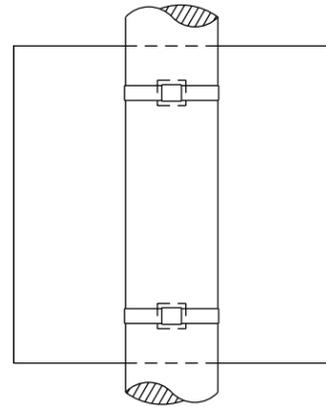
7

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4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

BANDING

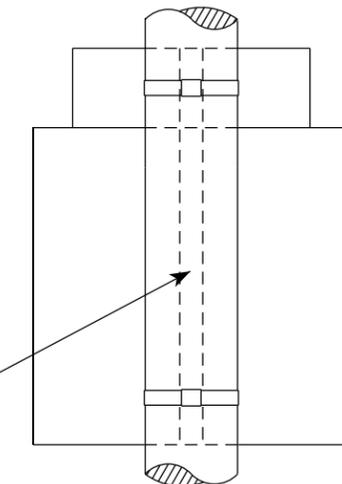
SINGLE SIGN



GENERAL NOTES

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

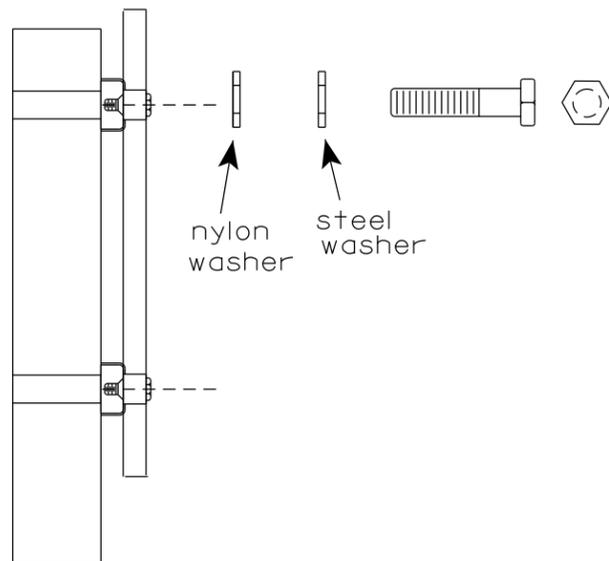
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

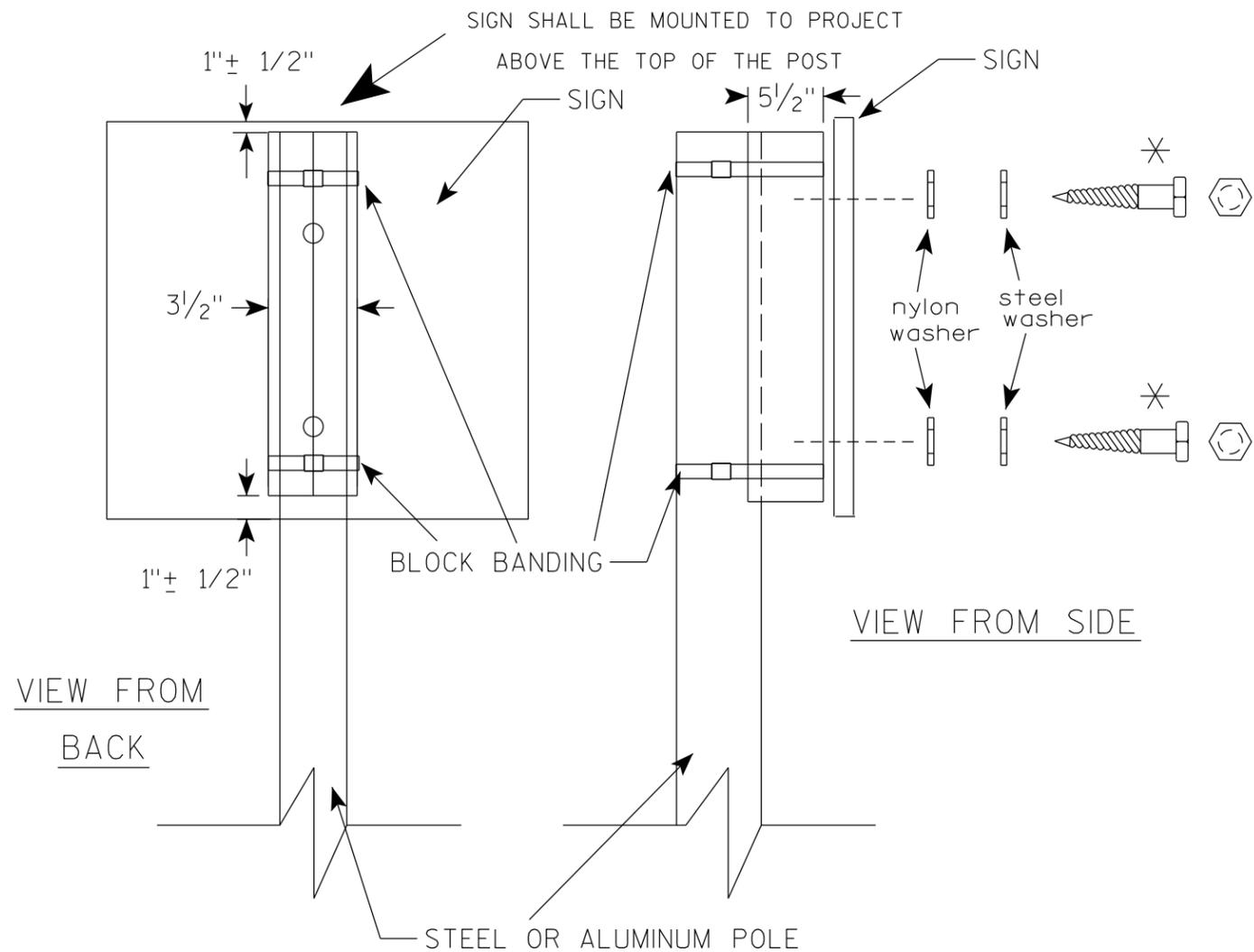


WASHER PLACEMENT



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

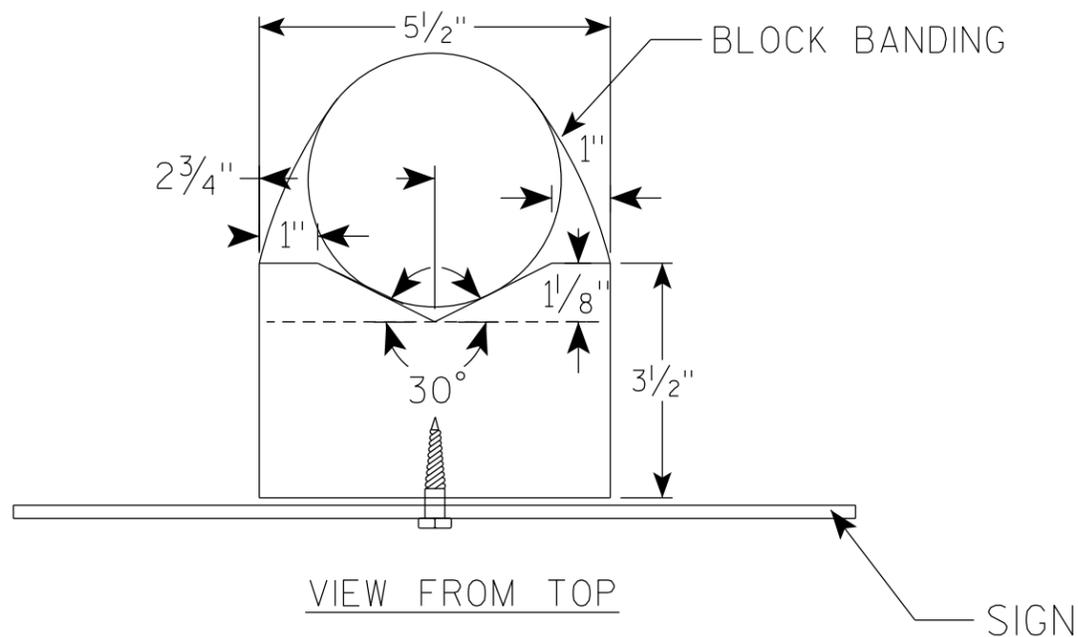
STANDARD SIGN
SIGN BANDING DETAILS
WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

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

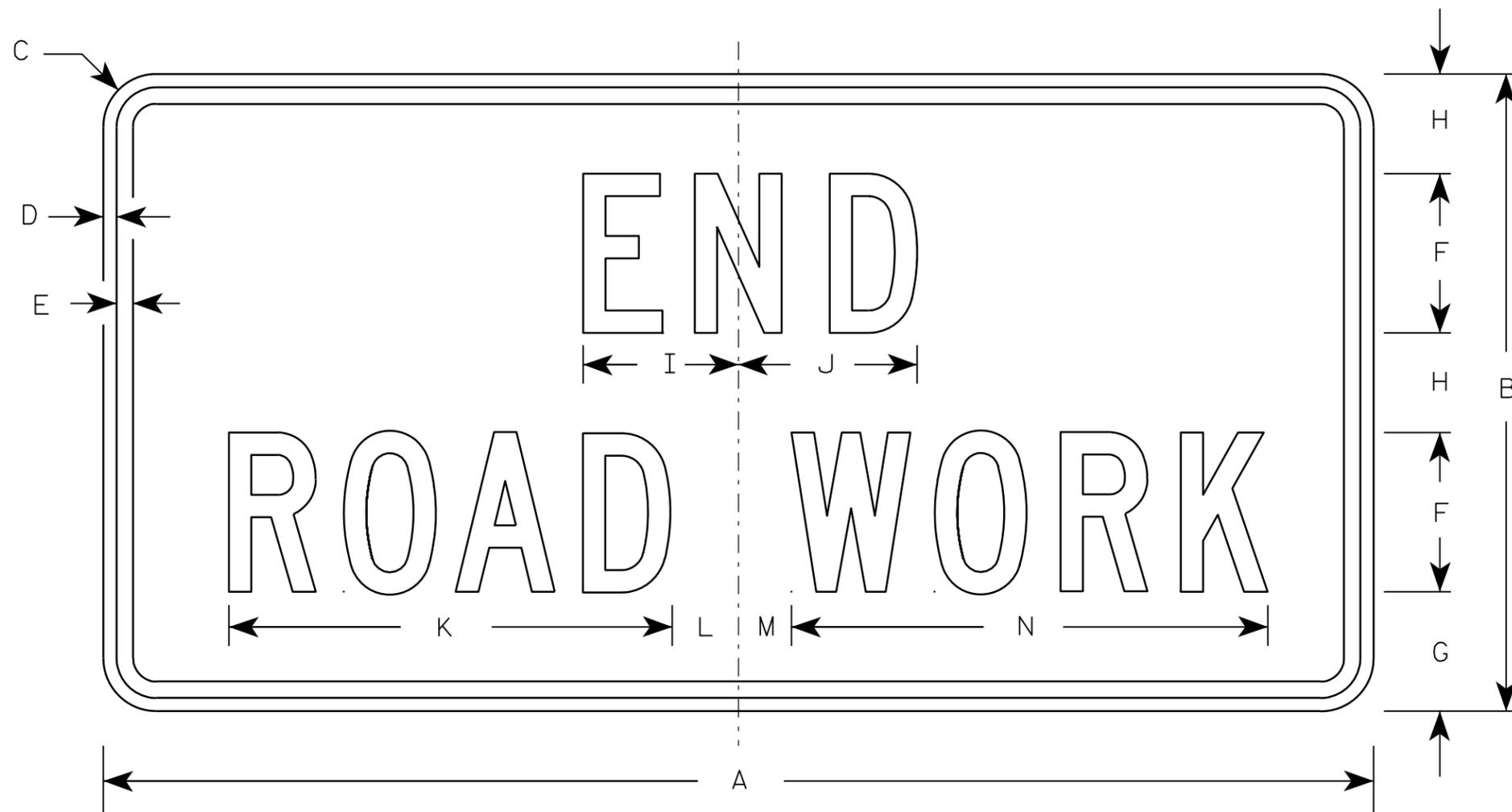
✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE <u>6/10/19</u>	PLATE NO. <u>A5-10.2</u>

NOTES

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



G20-2A

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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

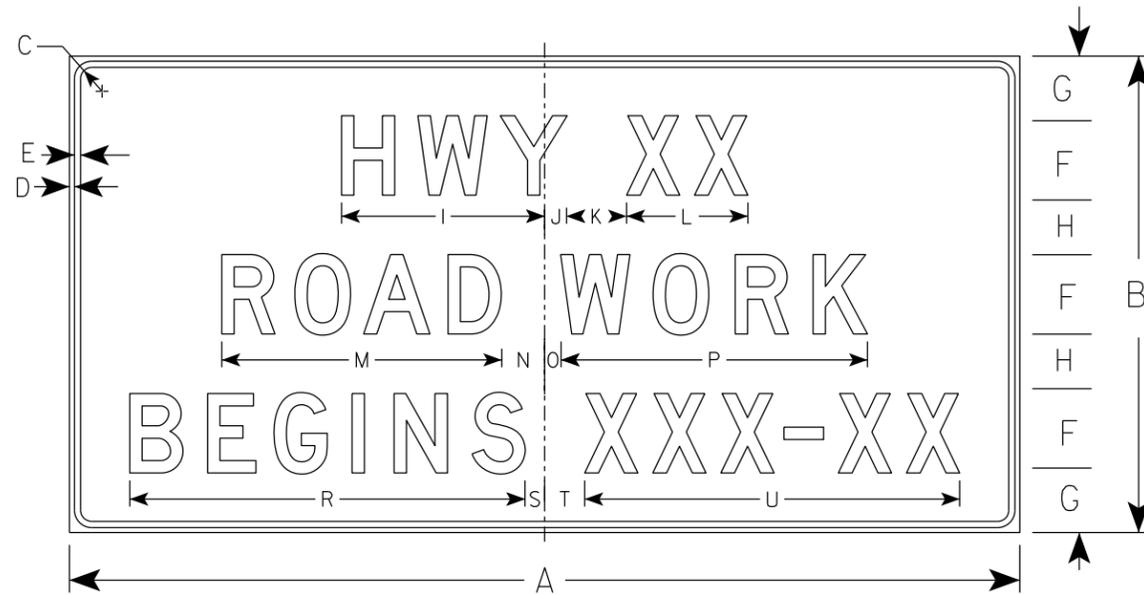
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5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

STANDARD SIGN G20-2A	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/30/09	PLATE NO. G20-2A.8

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

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



G20-57

7

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

STANDARD SIGN
G20-57

WISCONSIN DEPT OF TRANSPORTATION

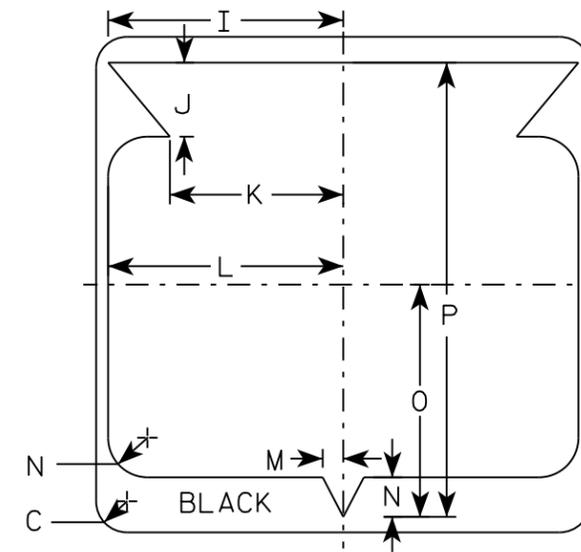
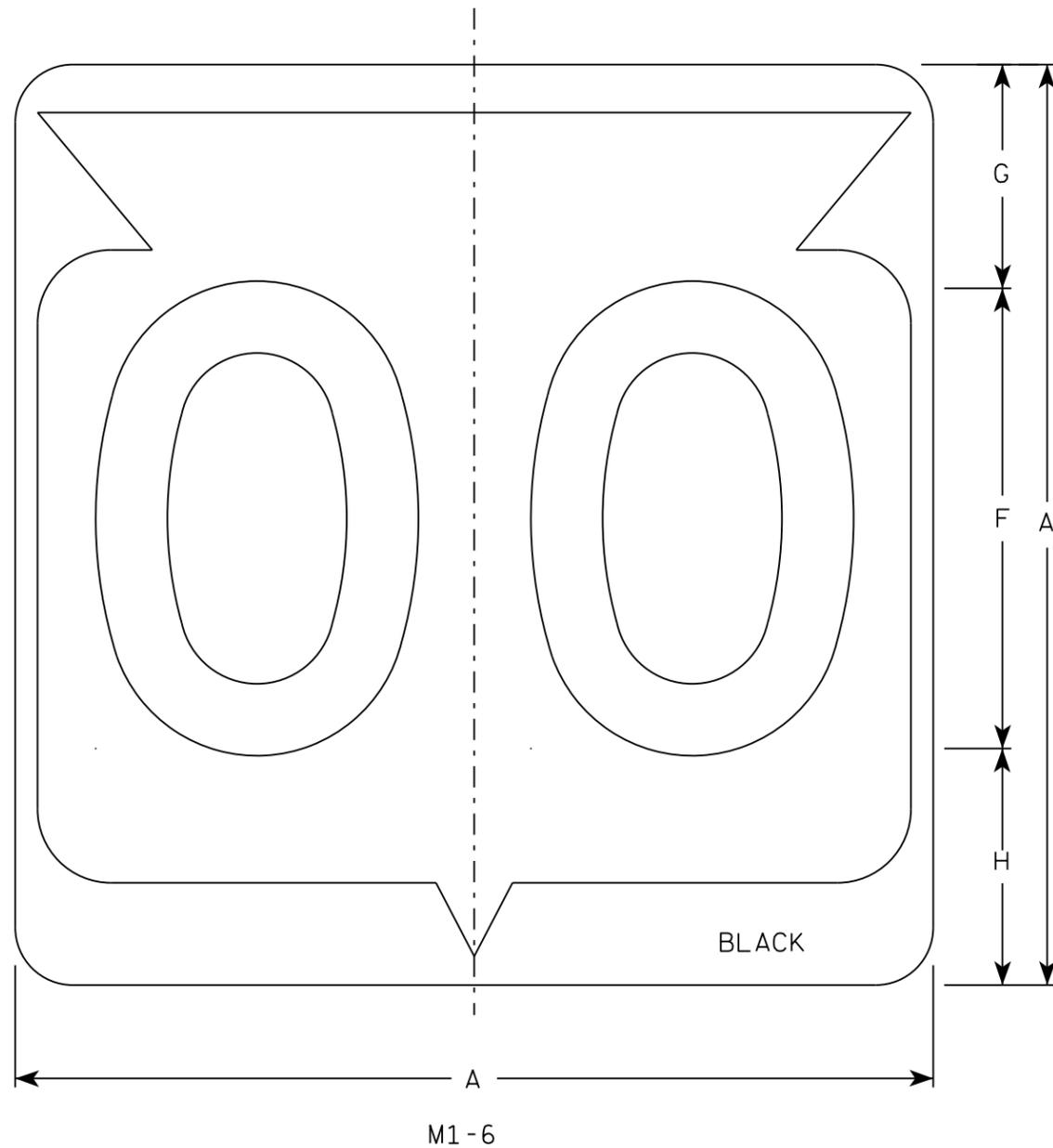
APPROVED *Matthew R Rauch*
For State Traffic Engineer

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

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

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



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

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

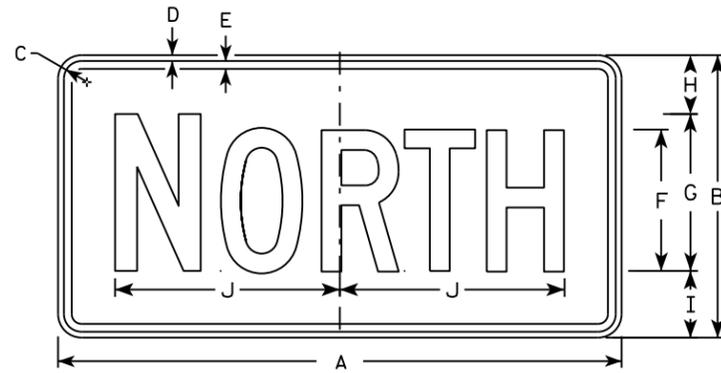
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

7

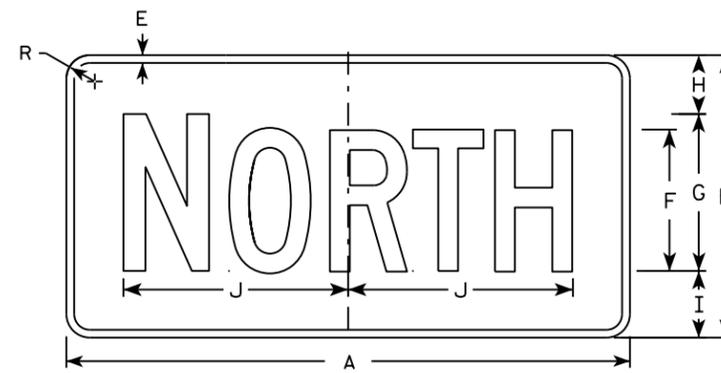
7

NOTES

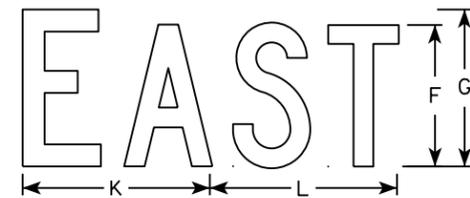
- All Signs Type II - Type H
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4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



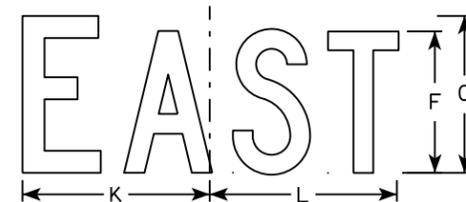
M3-1
MM3-1
MP3-1



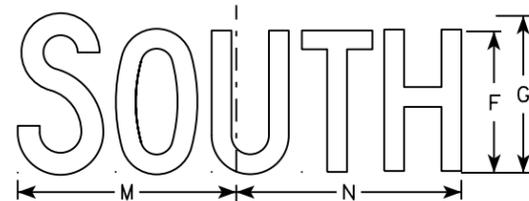
MB3-1
MK3-1
MN3-1



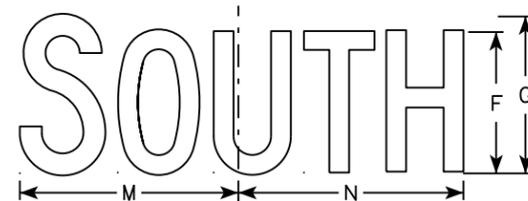
M3-2
MM3-2
MP3-2



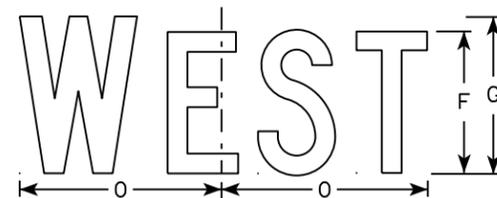
MB3-2
MK3-2
MN3-2



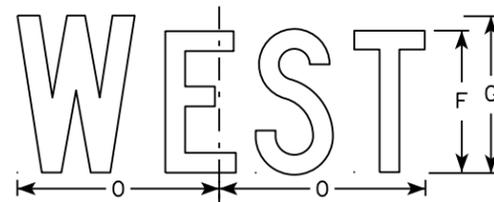
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

7

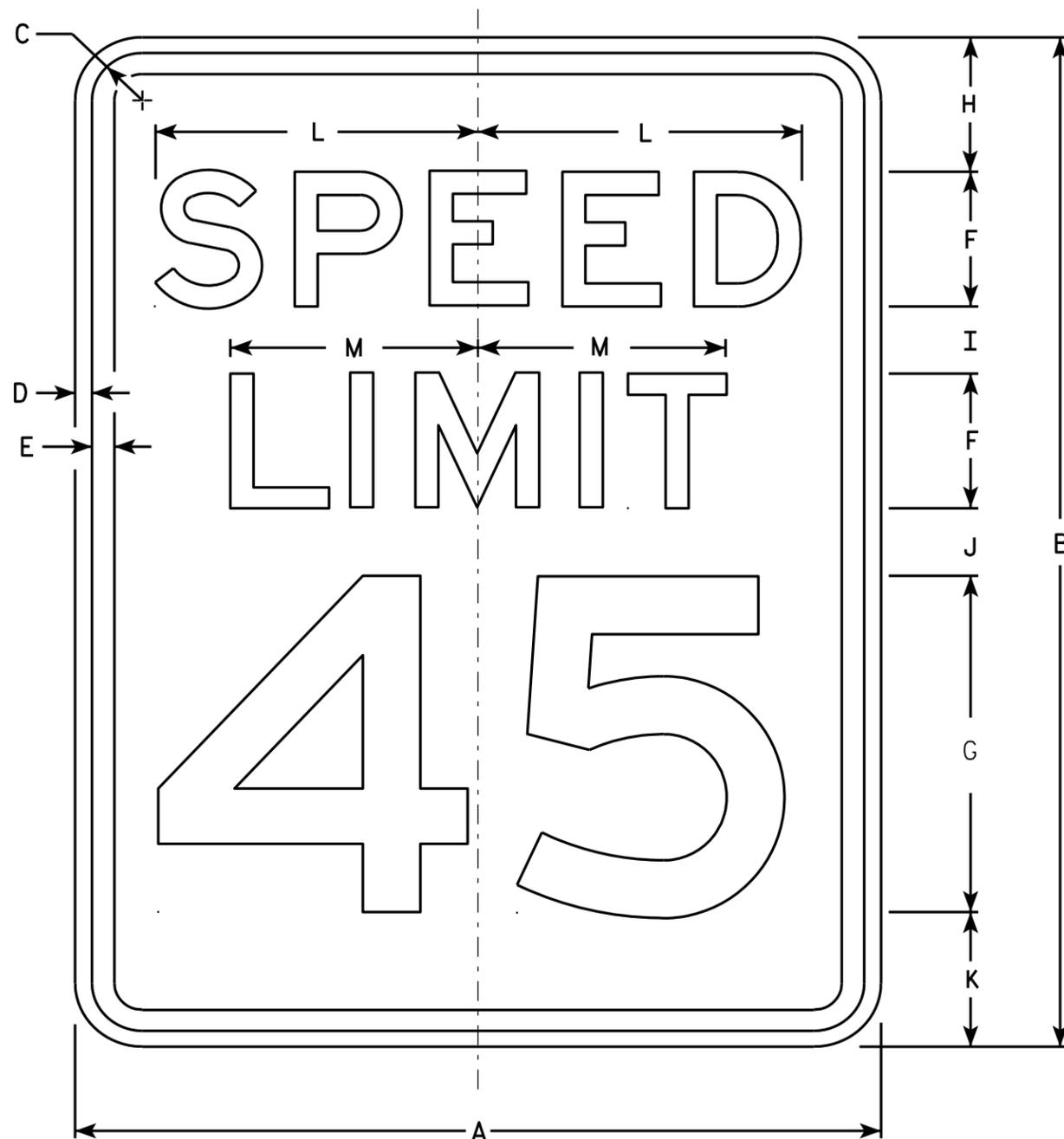
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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

STANDARD SIGNS
M3-1 thru M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

7

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	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

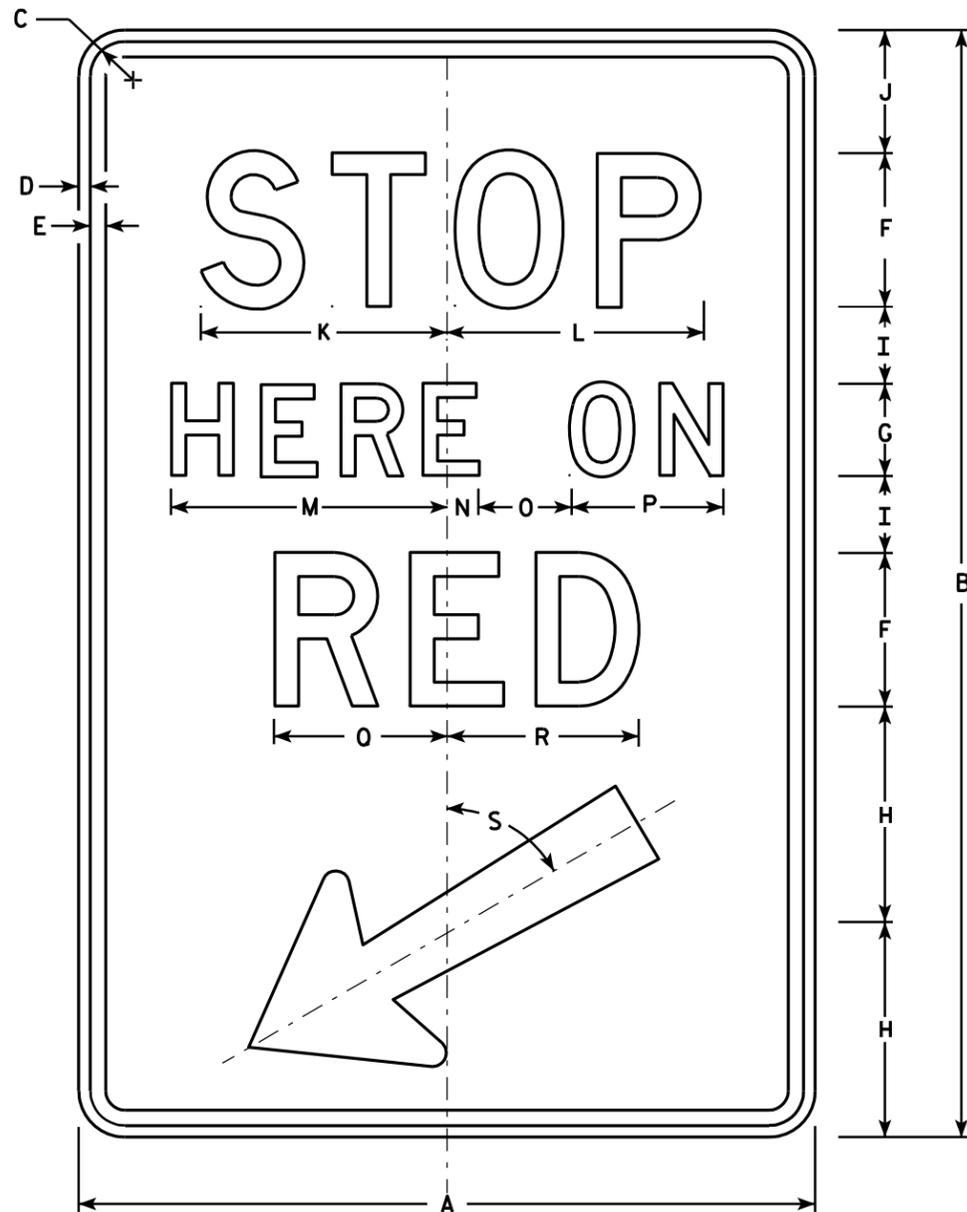
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

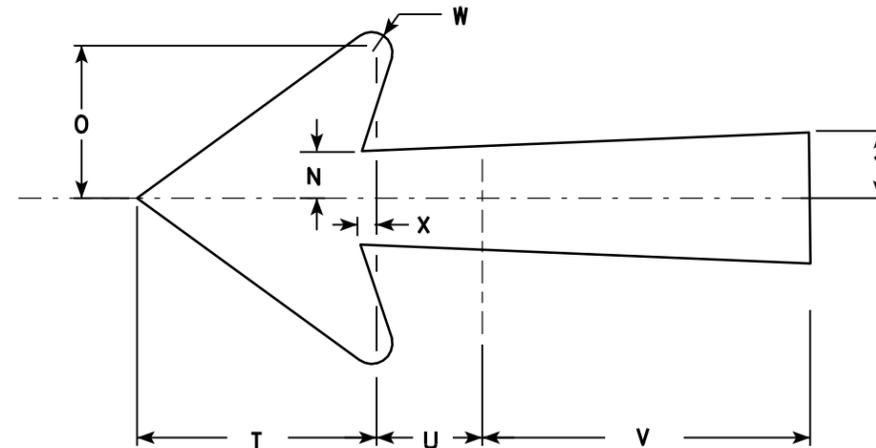
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



R10-6

NOTES

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



Arrow Detail

7

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																											
2S	24	36	1 1/8	3/8	1/2	5	3	7	2 1/2	4	8	8 3/8	9	1	3	5	5 5/8	6 1/4	60°	5 1/4	2 1/4	7 1/8	1/2	3/8	1 3/8	6.0	
2M	24	36	1 1/8	3/8	1/2	5	3	7	2 1/2	4	8	8 3/8	9	1	3	5	5 5/8	6 1/4	60°	5 1/4	2 1/4	7 1/8	1/2	3/8	1 3/8	6.0	
3																											
4																											
5																											

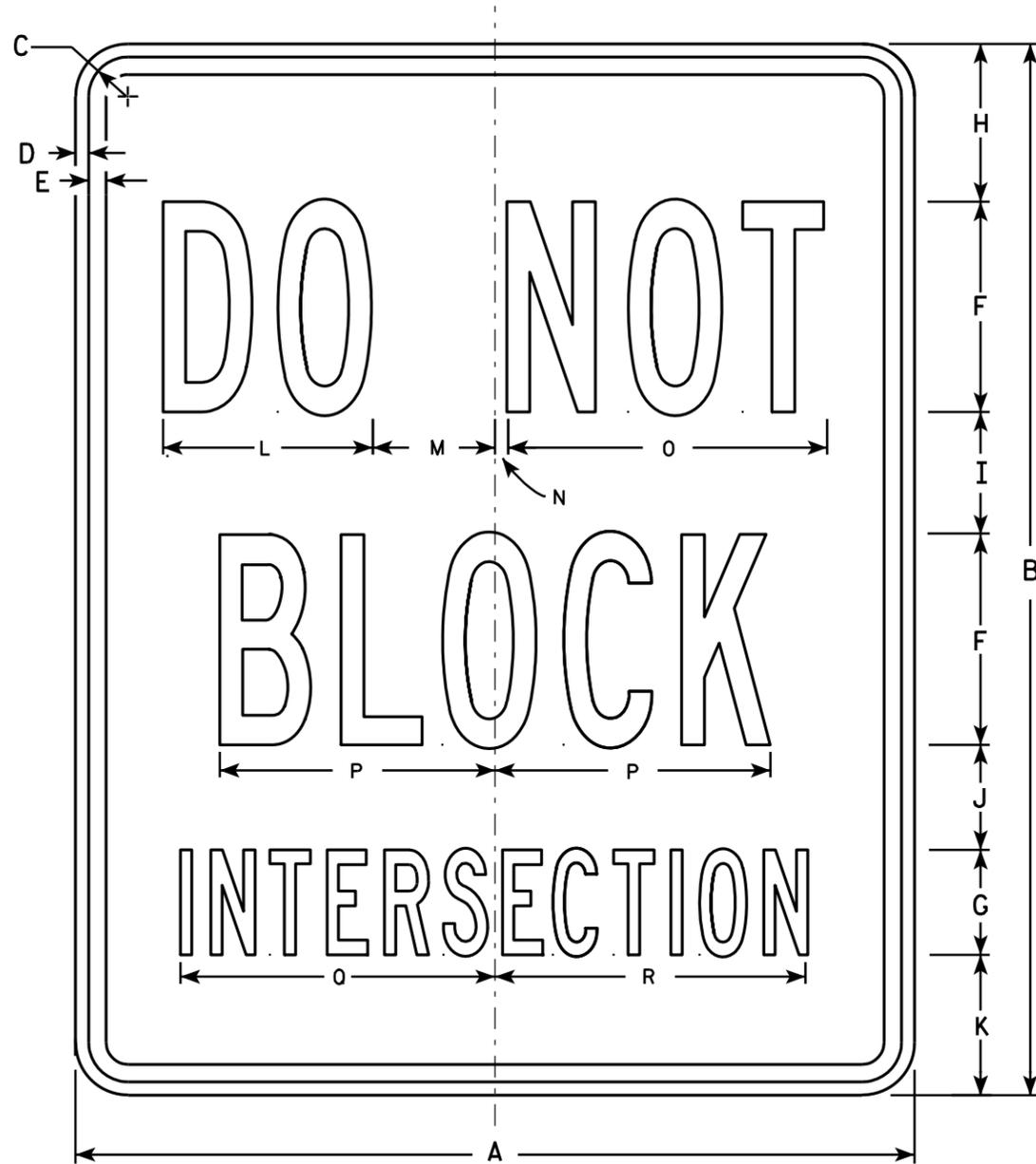
STANDARD SIGN
R10-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/5/11 PLATE NO. R10-6.6

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



R10-7

NOTES

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

7

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																											
2S	24	30	1 1/8	3/8	1/2	6	3	4 1/2	3 1/2	3	4	6	3 1/2	3/8	9 1/8	7 7/8	9	8 7/8									5.0
2M	24	30	1 1/8	3/8	1/2	6	3	4 1/2	3 1/2	3	4	6	3 1/2	3/8	9 1/8	7 7/8	9	8 7/8									5.0
3	36	48	1 3/8	1/2	5/8	10	5	7	5 1/4	4 1/2	6 1/4	10	5 5/8	1/2	15 1/8	13 1/8	15	14 7/8									12.0
4																											
5																											

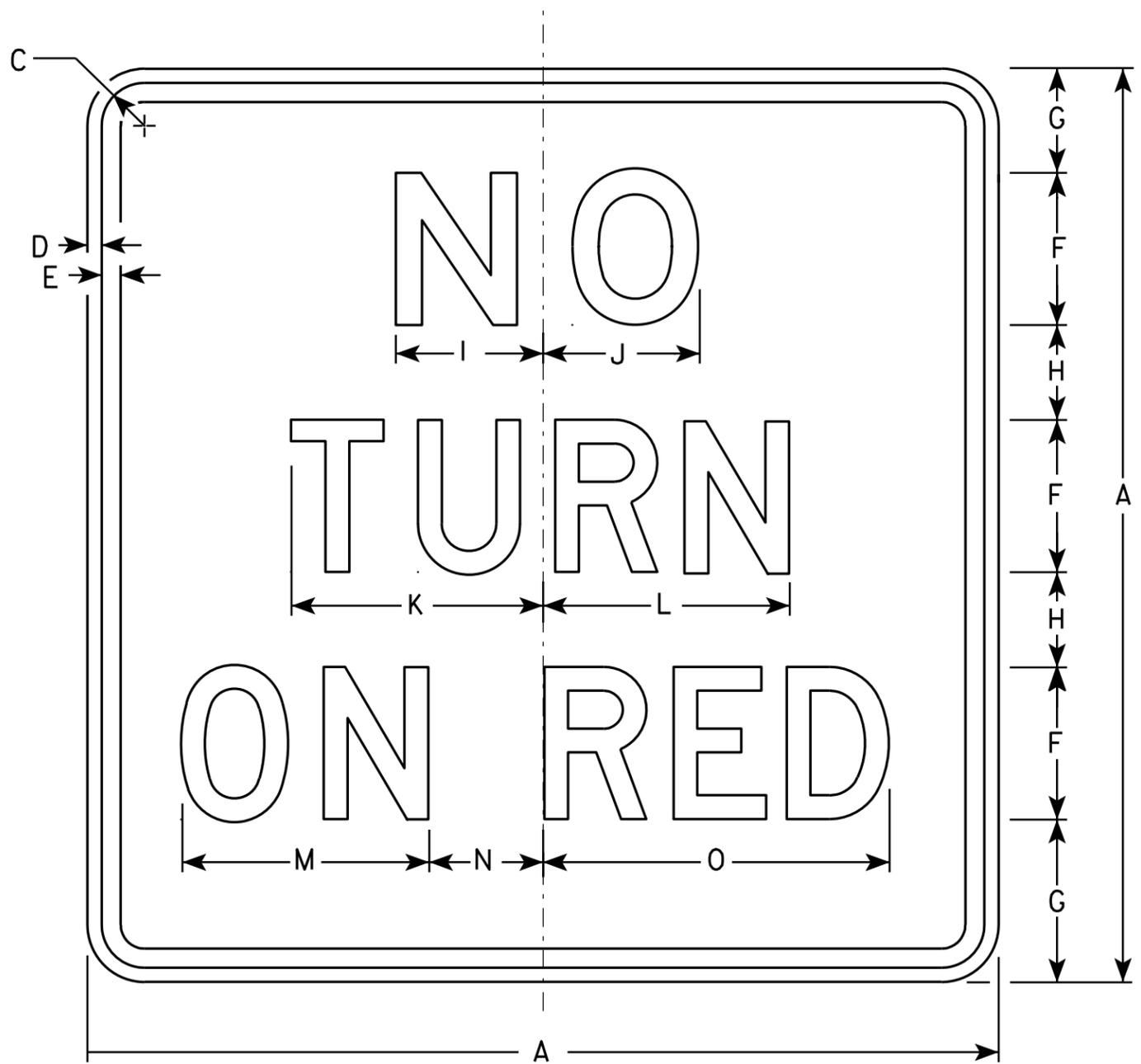
STANDARD SIGN
R10-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/5/11 PLATE NO. R10-7.5

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - See Note 5.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series E.
Lines 2 and 3 are Series D.

R10-11B

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18		1 1/8	3/8	3/8	3	2 3/4	1 3/4	3	3 1/8	5	4 7/8	5 1/4	1 7/8	7 1/8												2.25
2S	24		1 1/8	3/8	1/2	4	3 1/2	2 1/2	3 7/8	4 1/8	6 5/8	6 1/2	6 1/2	3	9 1/8												4.0
2M	24		1 1/8	3/8	1/2	4	3 1/2	2 1/2	3 7/8	4 1/8	6 5/8	6 1/2	6 1/2	3	9 1/8												4.0
3	30		1 3/8	1/2	5/8	5	4 1/2	3	4 7/8	5 1/4	8 1/4	8 1/8	7 3/4	4 1/8	11 7/8												6.25
4																											
5																											

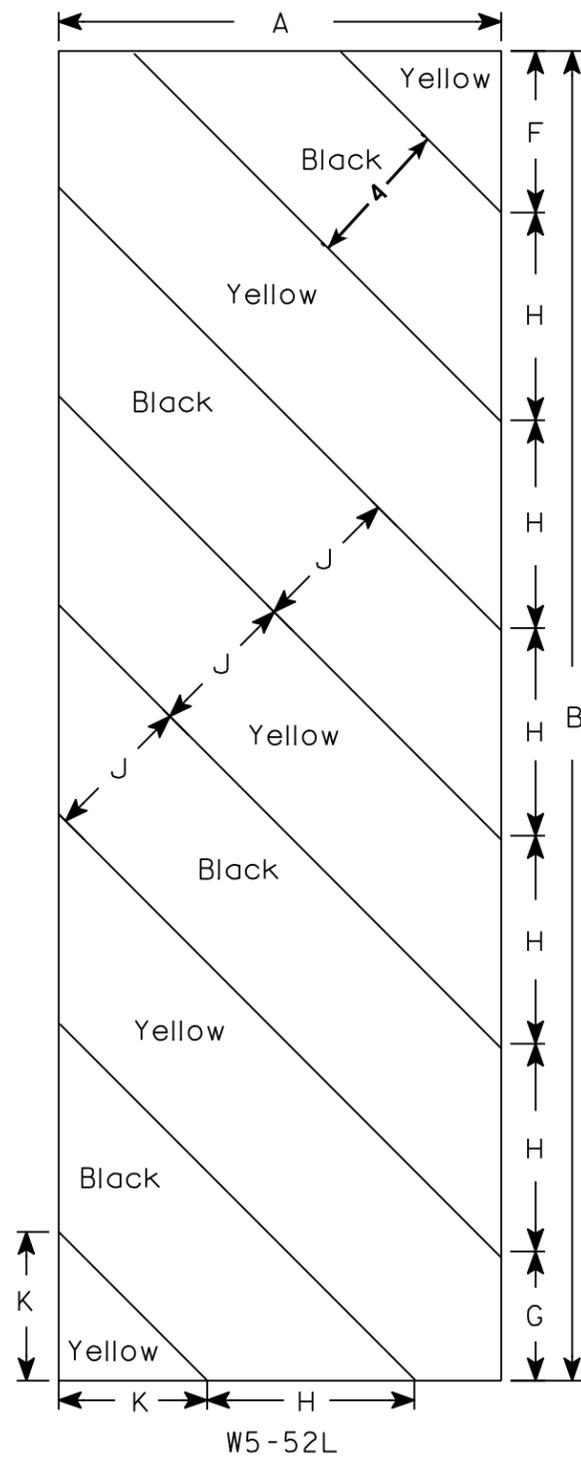
STANDARD SIGN
R10-11B

WISCONSIN DEPT OF TRANSPORTATION

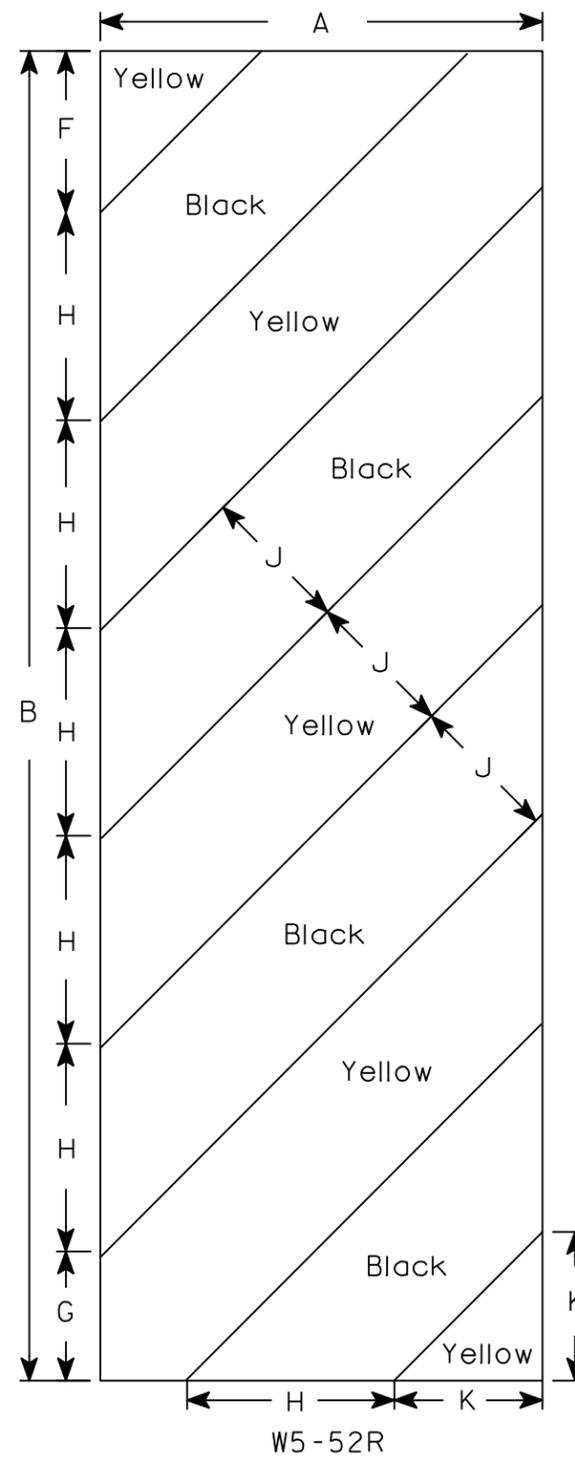
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/5/11 PLATE NO. R10-11B.4

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



W5-52L



W5-52R

NOTES

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

7

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																											
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																											

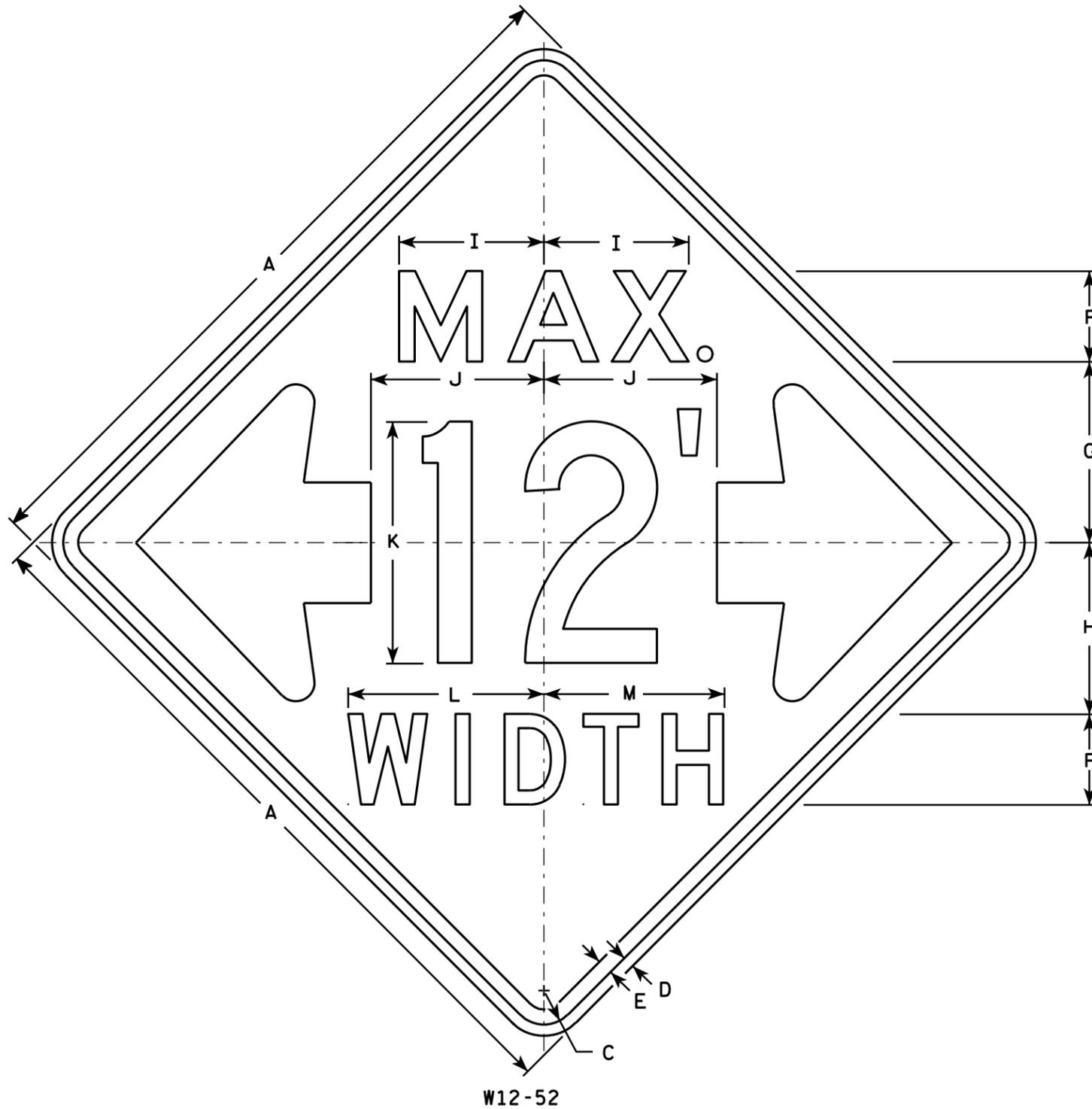
STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

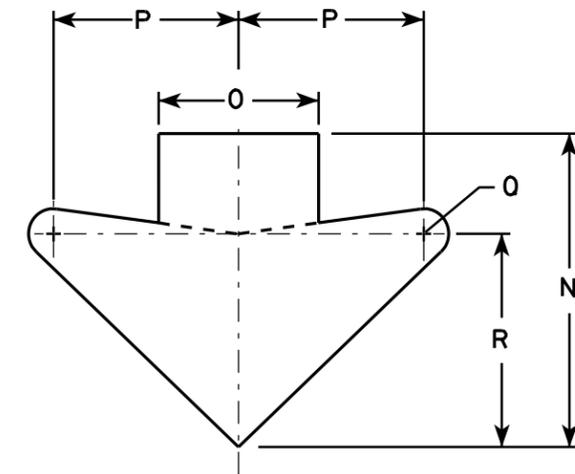
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



W12-52

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The top line is series E, the numerals are series C, and the bottom line is series D.
6. 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

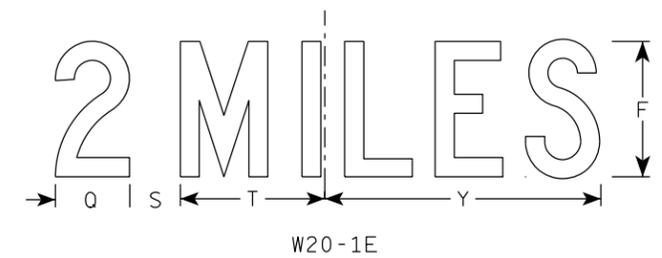
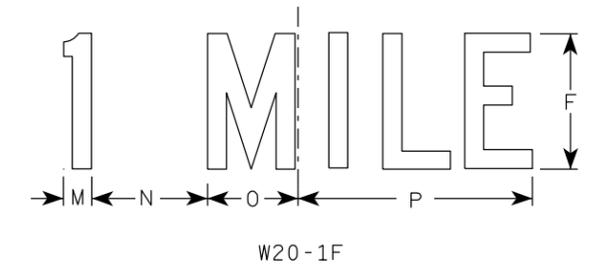
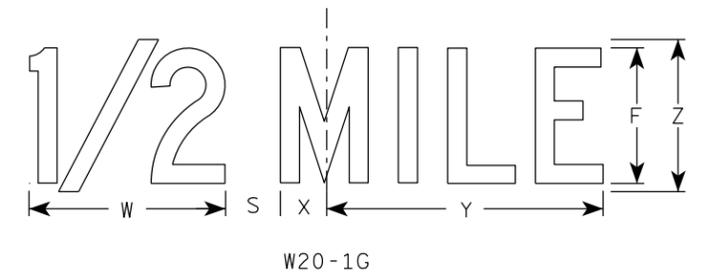
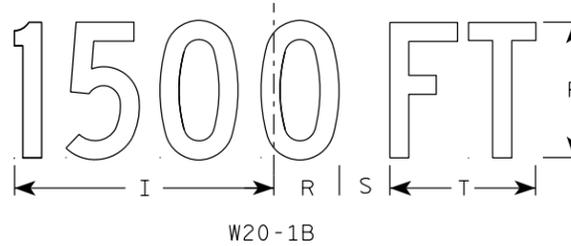
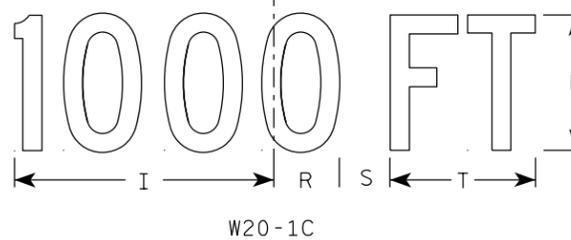
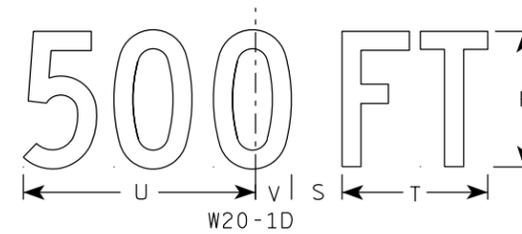
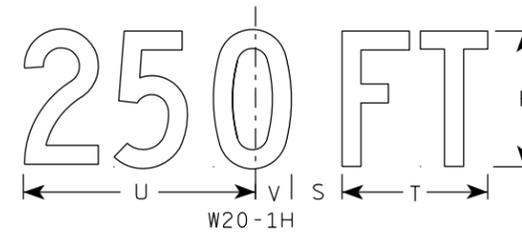
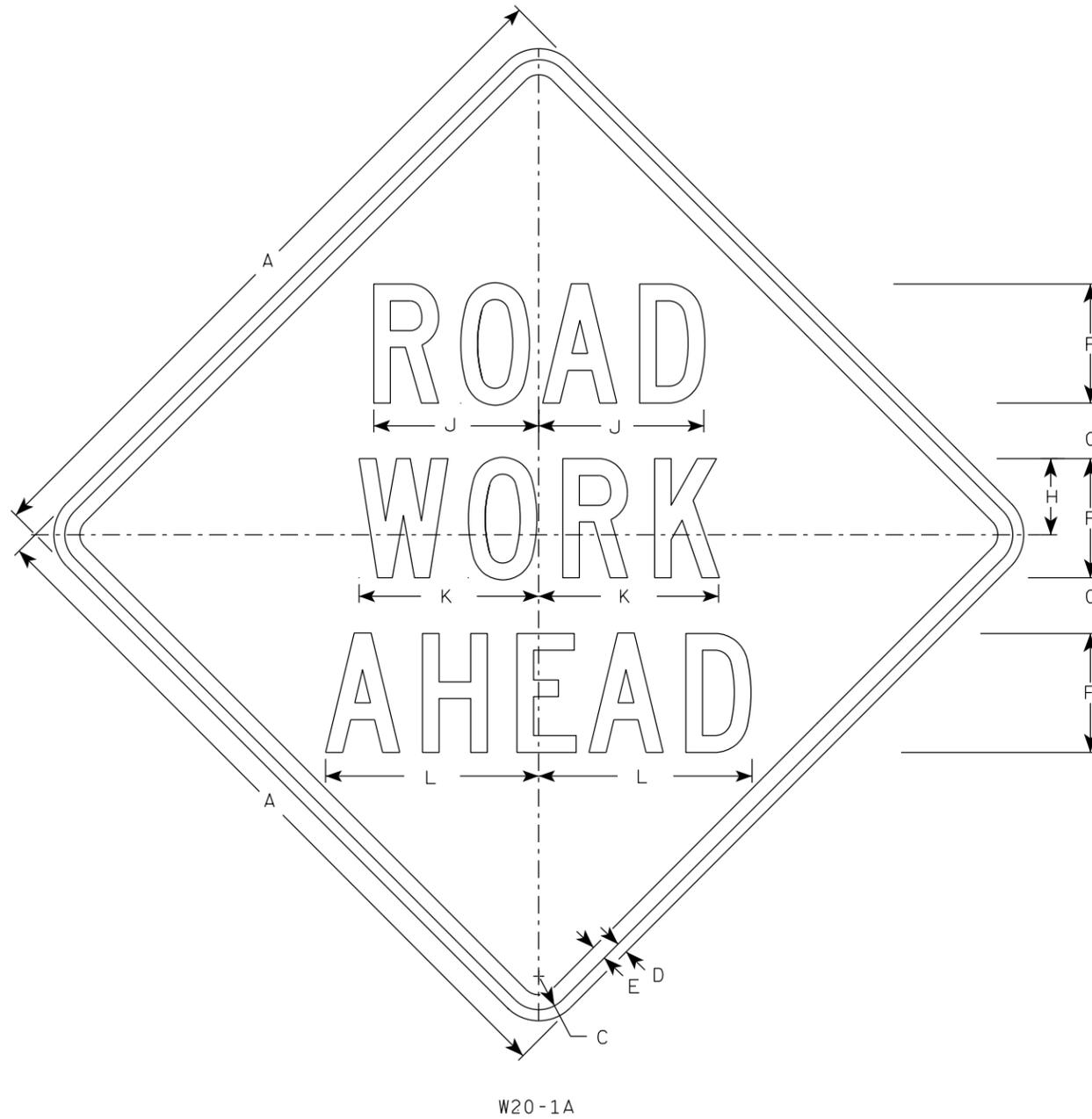
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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.



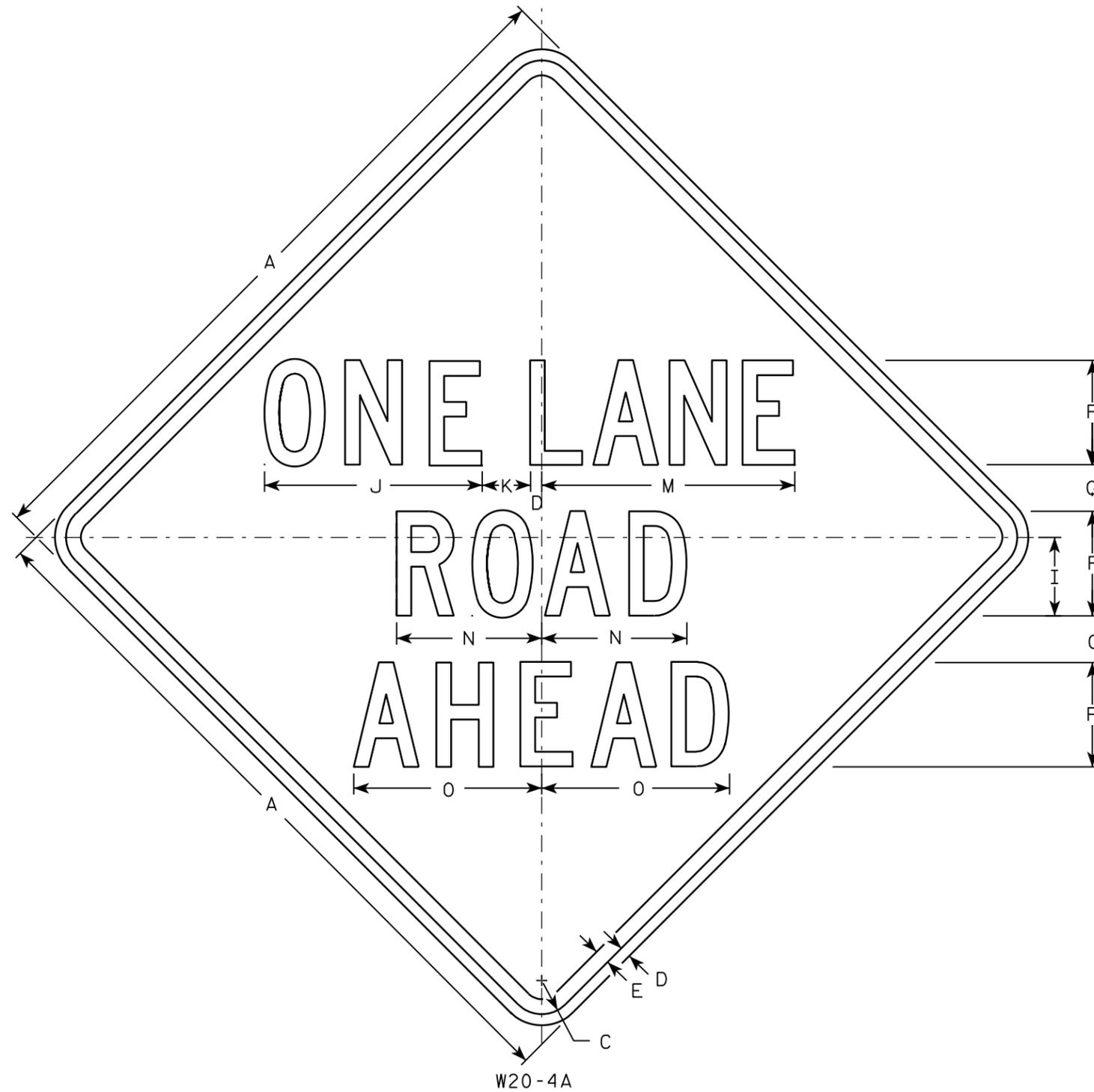
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8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

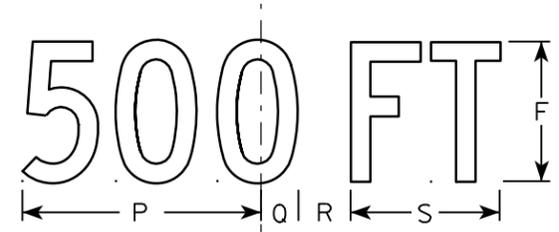
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

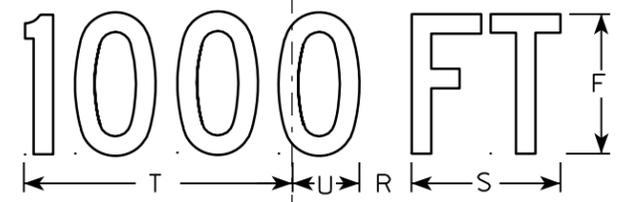
DATE 3/25/2020 PLATE NO. W20-1.11



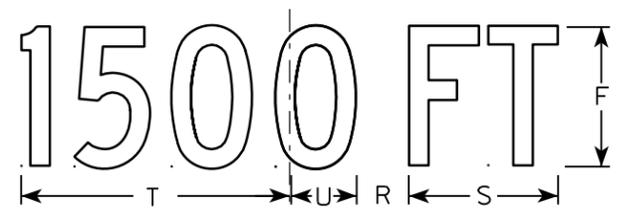
W20-4A



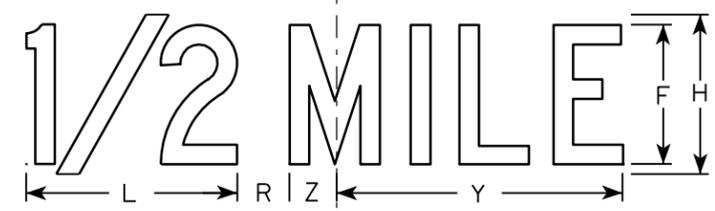
W20-4D



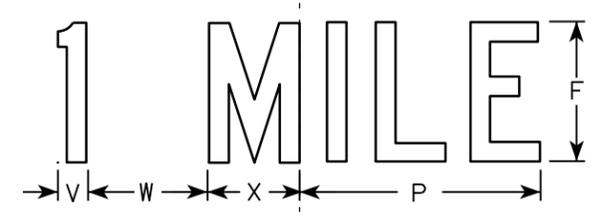
W20-4C



W20-4B



W20-4G



W20-4F

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.

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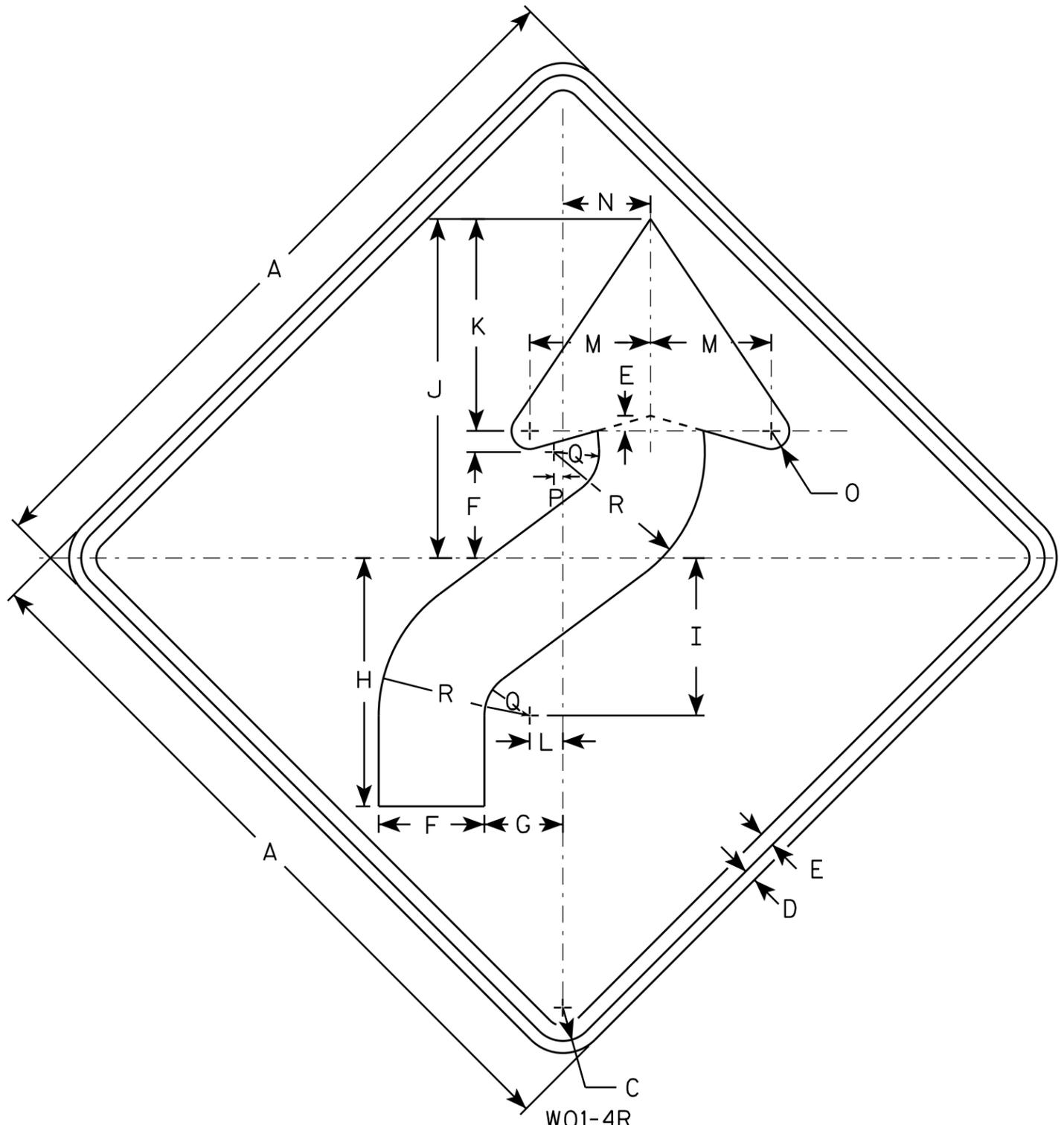
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13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

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W01-4R

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

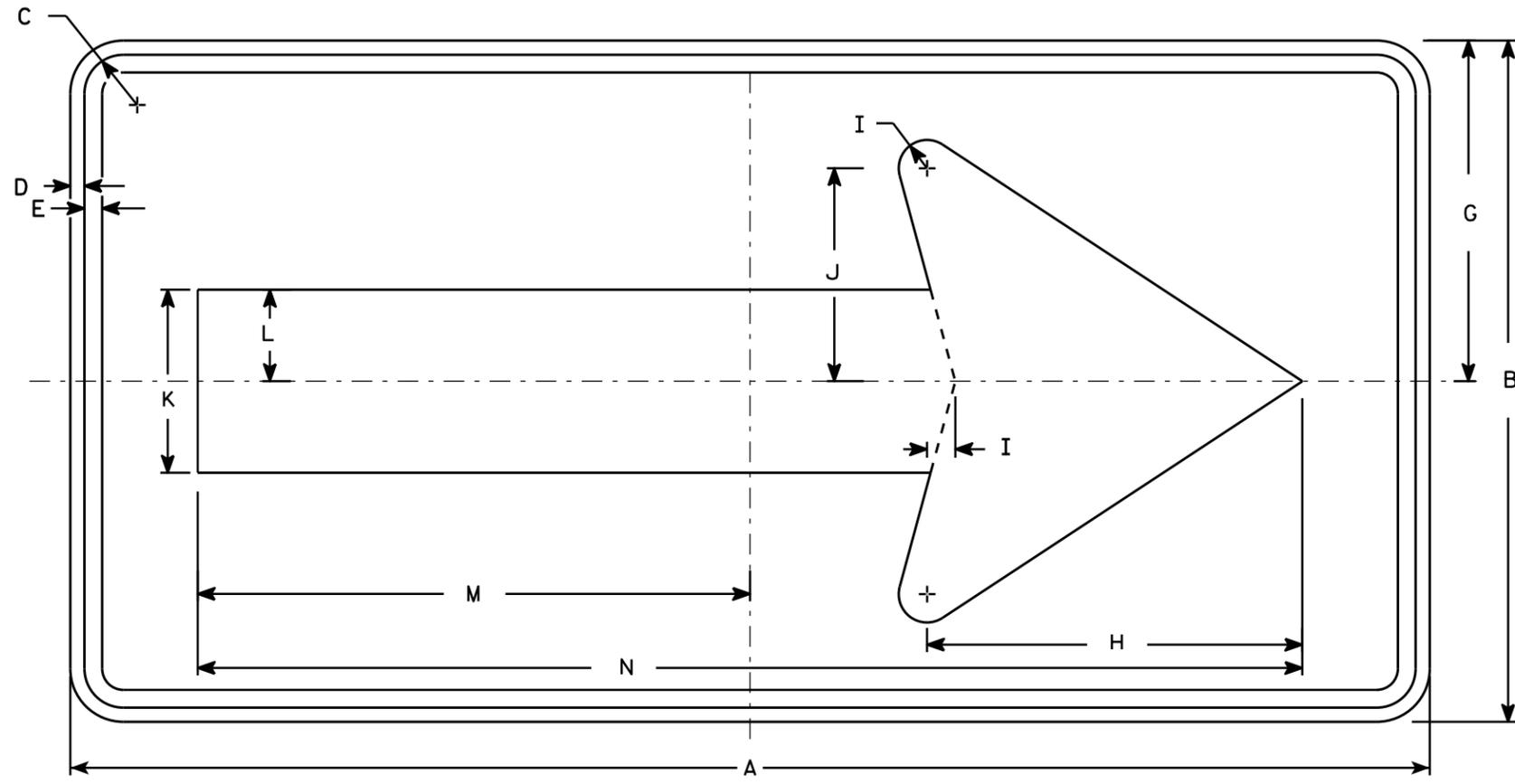
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

7

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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

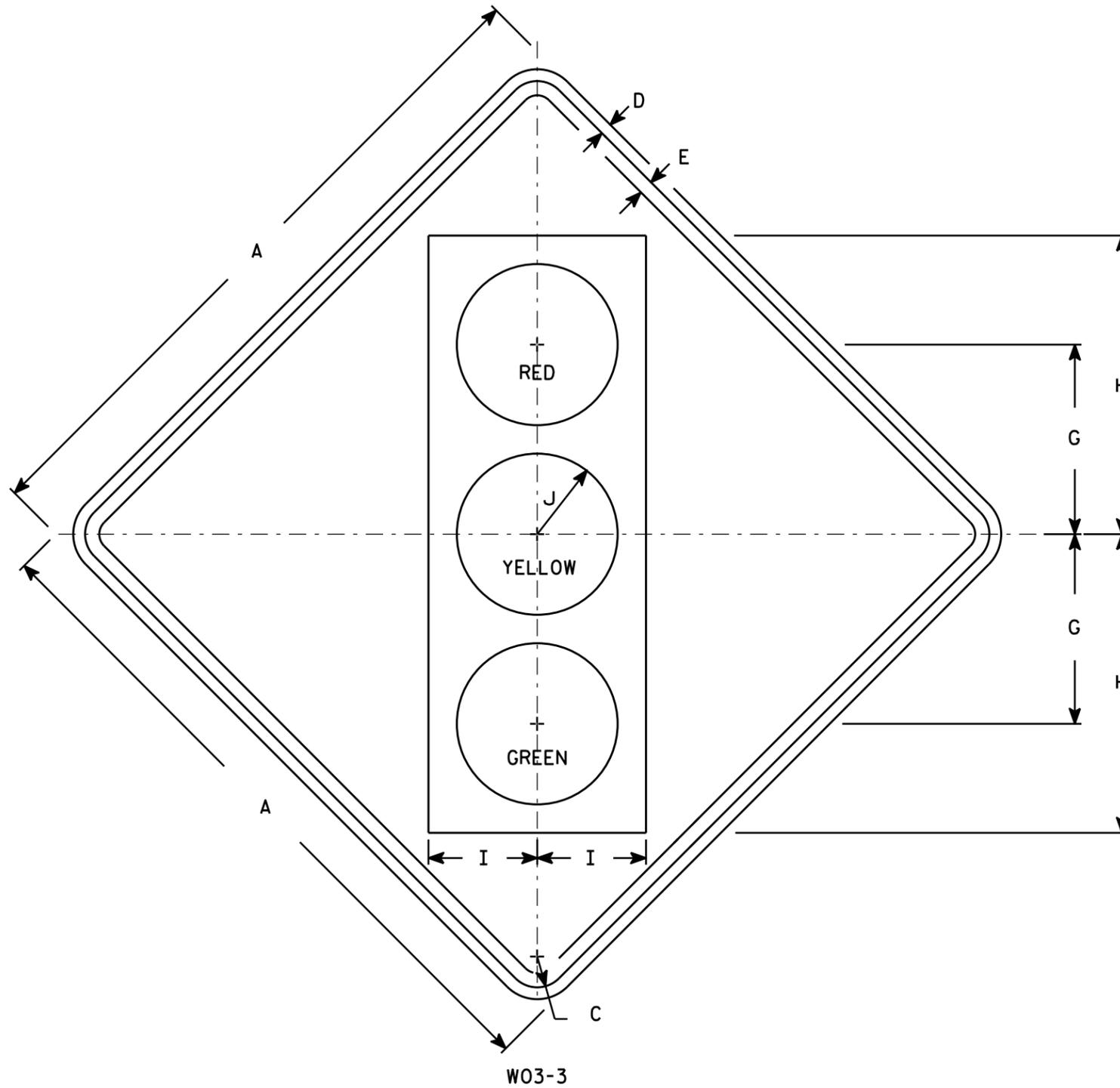
STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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 - 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

7

7

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

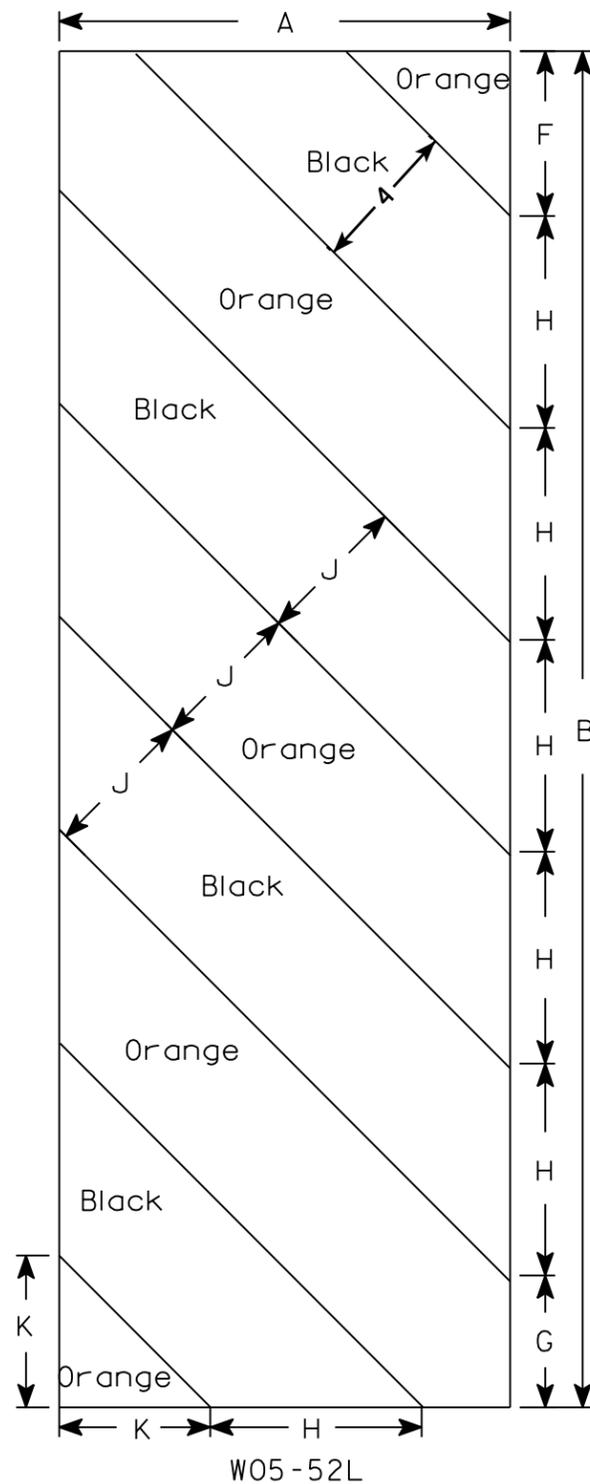
STANDARD SIGN
W03-3

WISCONSIN DEPT OF TRANSPORTATION

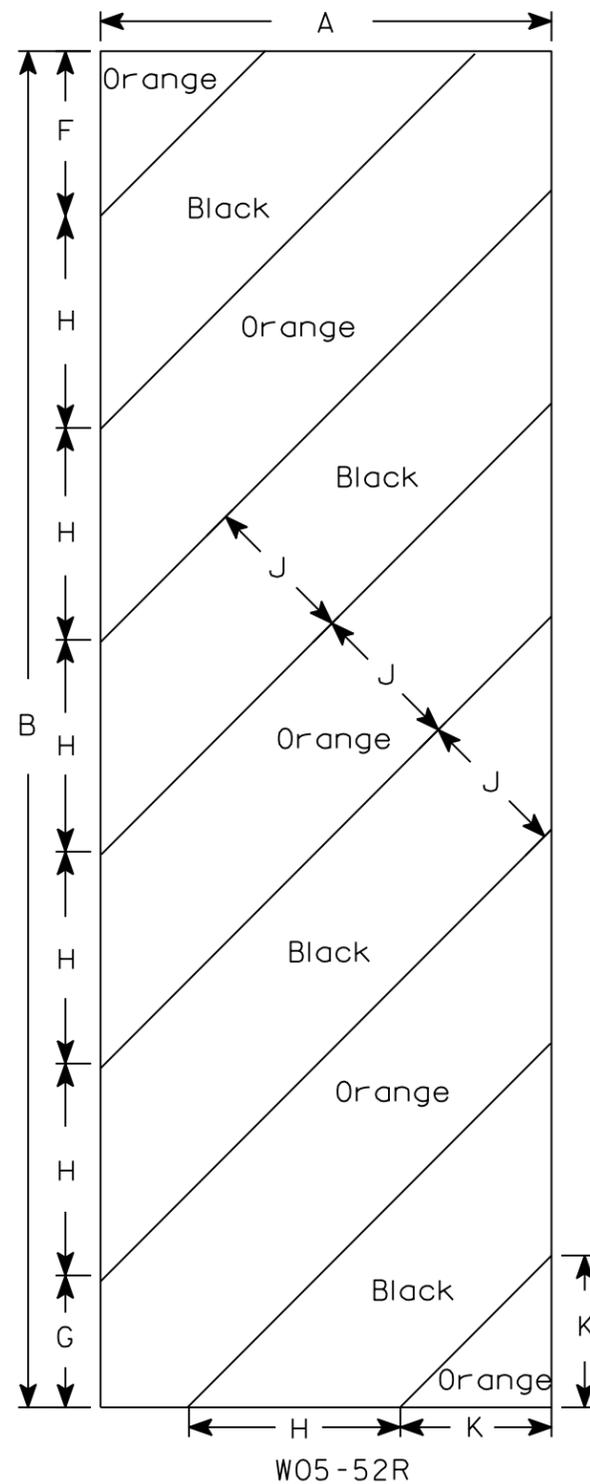
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



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.

7

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																											
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

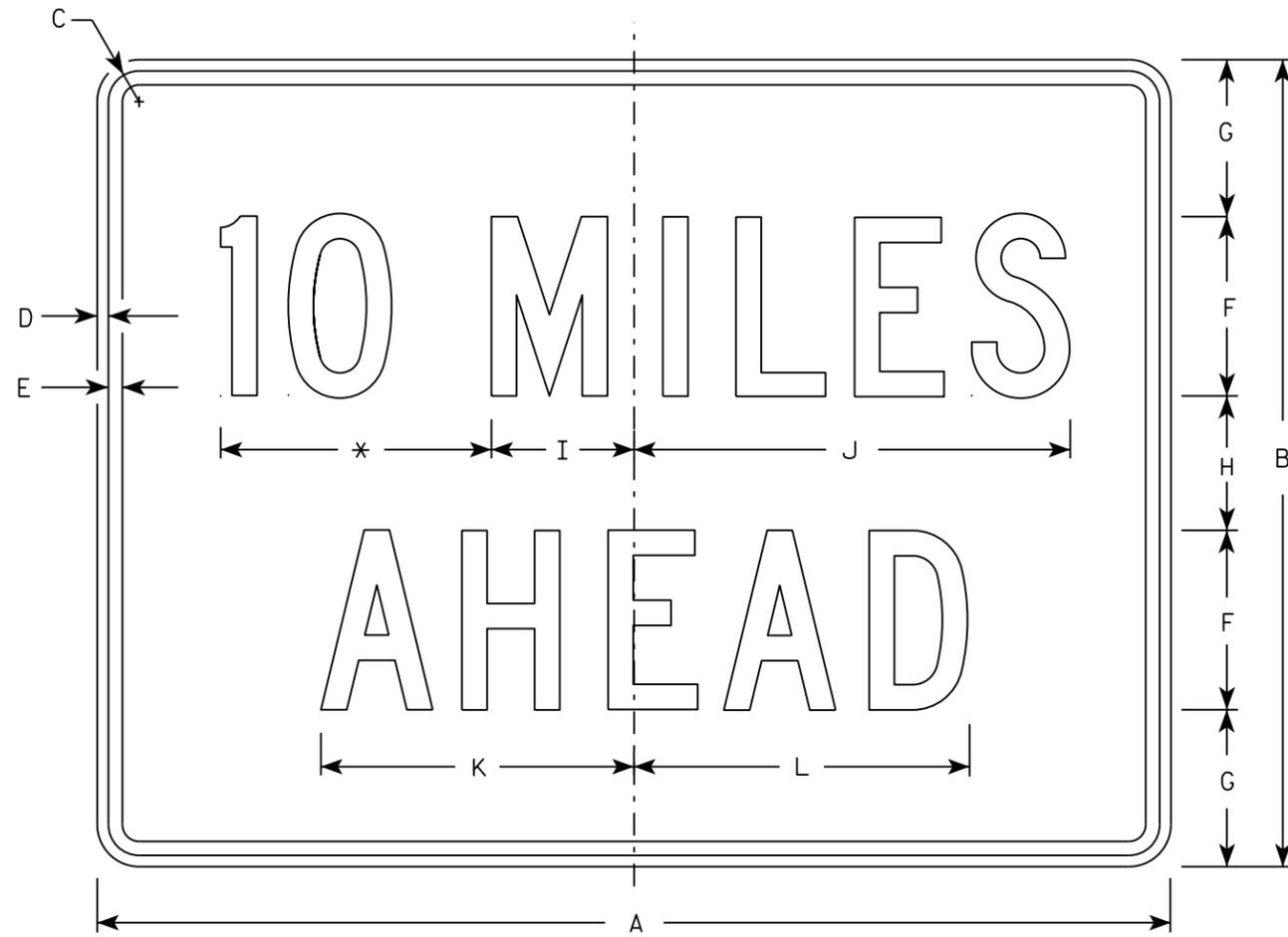
APPROVED *Matthew R Raub*
for State Traffic Engineer

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

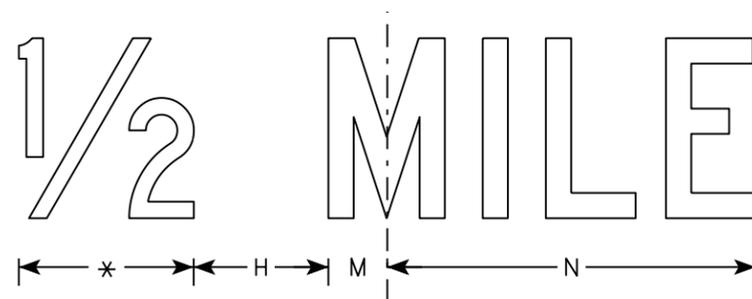
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

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.
5. Substitute appropriate numerals to the nearest quarter mile and optically adjust spacing to achieve proper balance.



W057-52



* See note 5

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

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W057-52.2

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
 INVENTORY RATING FACTOR: RF = 1.14
 OPERATING RATING FACTOR: RF = 1.49
 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:
 SUPERSTRUCTURE & STRUCTURAL APPROACH SLAB — $f'_c = 4,000$ P.S.I.
 ALL OTHER — $f'_c = 3,500$ P.S.I.

BAR STEEL REINFORCEMENT:

GRADE 60 — $f_y = 60,000$ P.S.I.
 STAINLESS, GRADE 60 — $f_y = 60,000$ P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 75 FEET LONG AT BOTH ABUTMENTS.

** 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

$Q_{100} = 441$ C.F.S.
 $VEL_{100} = 3.4$ F.P.S.
 $HW_{100} = EL. 1232.94$
 WATERWAY AREA = 129 SQ. FT.
 DRAINAGE AREA = 30.2 SQ. MI.
 ROADWAY OVERTOPPING = N/A
 SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

$Q_2 = 200$ C.F.S.
 $VEL_2 = 3.3$ F.P.S.
 $HW_2 = EL. 1230.73$

TRAFFIC VOLUME

STH 48
 ADT = 6100 (2043)
 R.D.S. = 50 M.P.H.

CURVE DATA

STH 48
 $P.I. = 12+96.20$
 $\Delta = 11^\circ 40' 08"$
 $D = 1^\circ 30' 00"$
 $T = 390.34'$
 $L = 777.99'$
 $R = 3820.00'$
 $S.E. = 2.4\%$
 $P.C. = 9+05.85$
 $P.T. = 16+83.84$

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. CONSTRUCTION STAGING DETAILS
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT
6. WEST ABUTMENT DETAILS
7. EAST ABUTMENT
8. EAST ABUTMENT DETAILS
9. SUPERSTRUCTURE CROSS SECTIONS 1
10. SUPERSTRUCTURE CROSS SECTION 2
11. SUPERSTRUCTURE PLAN
12. SUPERSTRUCTURE LONGITUDINAL SECTION
13. STRUCTURAL APPROACH SLABS
14. STRUCTURAL APPROACH SLABS CROSS SECTION
15. SINGLE SLOPE PARAPET 42SS
16. SUPERSTRUCTURE & APPROACH SLAB BAR DETAILS

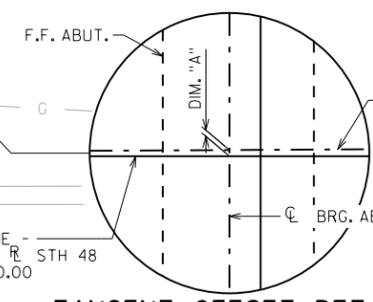
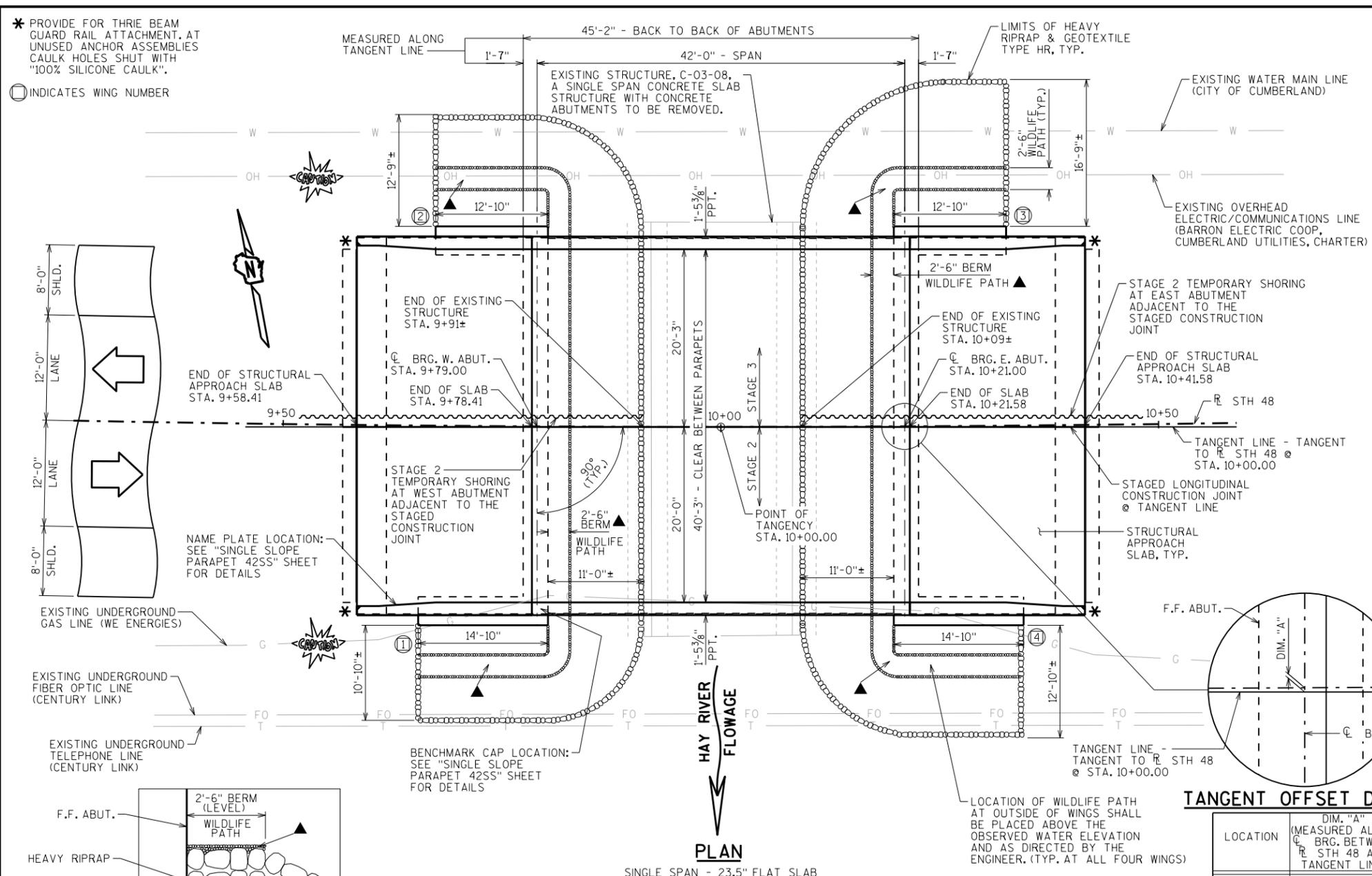
STRUCTURE DESIGN CONTACTS:

STACIE WEIS (608) 261-6109
 DOMINIQUE BECHLE (608) 261-8205

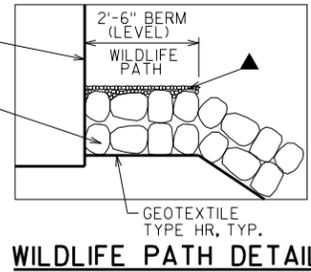
NO.	DATE	REVISION	BY
			
ACCEPTED		DATE	
CHIEF STRUCTURES DESIGN ENGINEER		09/30/21	
STRUCTURE B-03-212			
STH 48 OVER HAY RIVER FLOWAGE			
COUNTY	BARRON	CITY	CUMBERLAND
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS		
DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
SEW	MJK	JPH	SEW
GENERAL PLAN			SHEET 1 OF 16

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

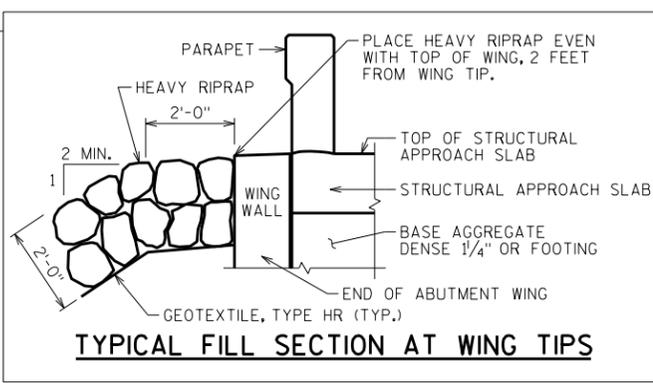
⊙ INDICATES WING NUMBER



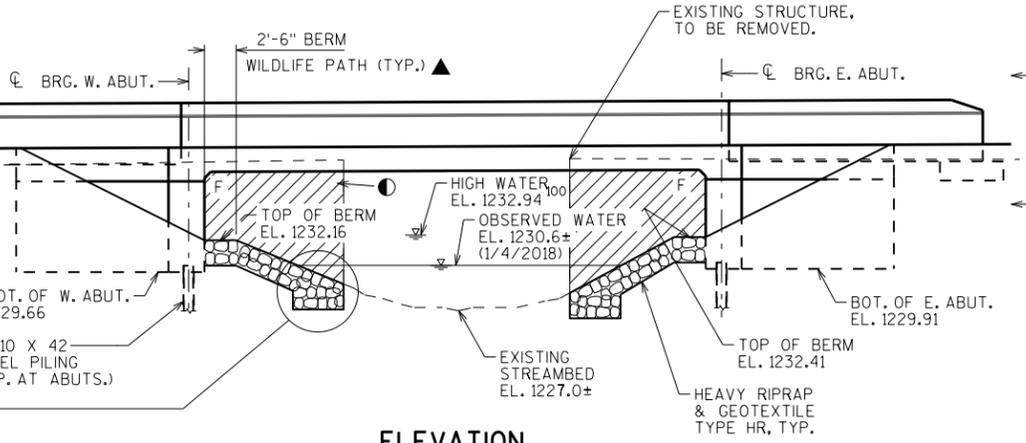
LOCATION	DIM. "A" (MEASURED ALONG C. BRG. BETWEEN R. STH 48 AND TANGENT LINE)
W. ABUT.	0 3/4"
E. ABUT.	0 3/4"



WILDLIFE PATH DETAIL

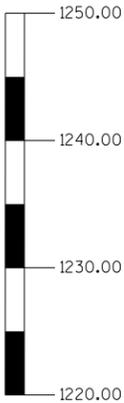


TYPICAL FILL SECTION AT WING TIPS



ELEVATION

NORMAL TO STREAM - LOOKING NORTH (UPSTREAM)

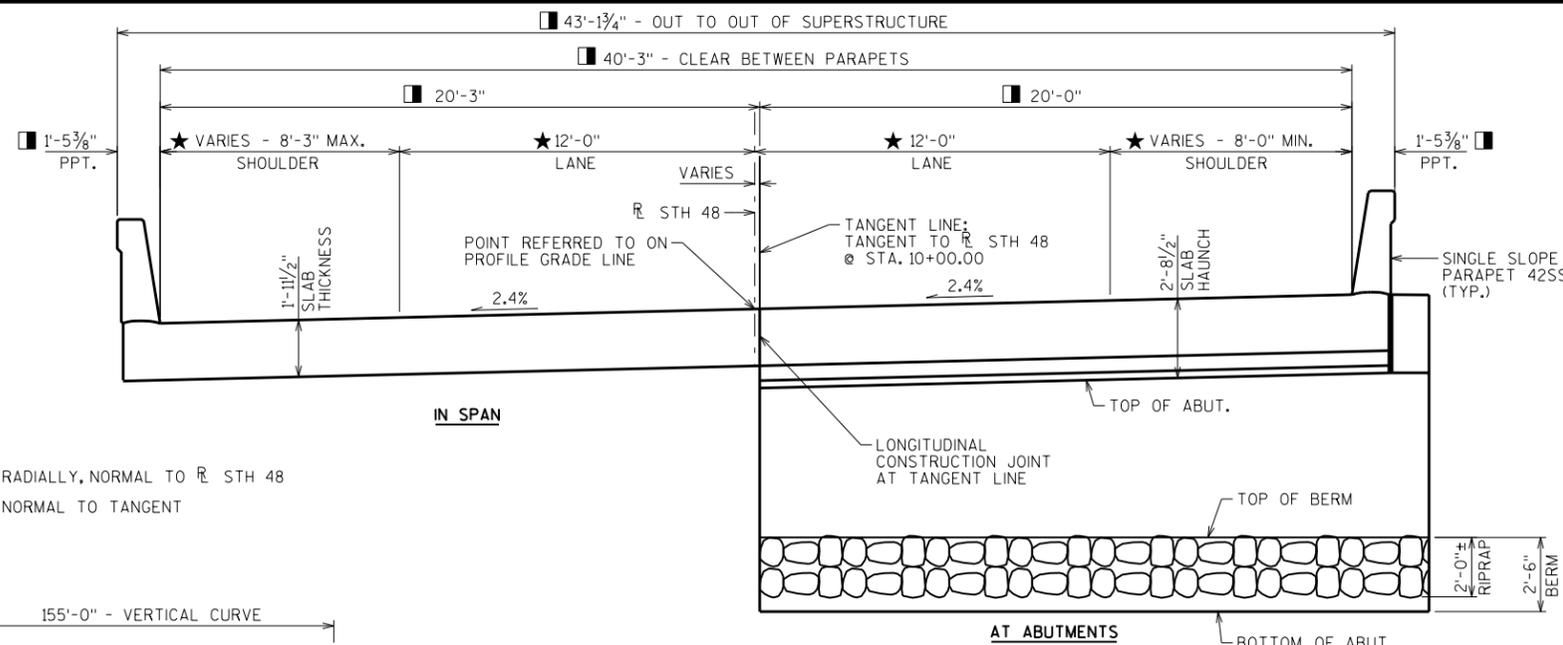


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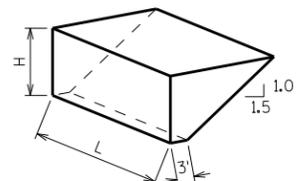
8

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.
- 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. ALSO EXCLUDED IS THE "BASE AGGREGATE DENSE 1 1/4-INCH" AS DETAILED ON THE STRUCTURAL APPROACH SLAB SHEETS.
- 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.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF SLAB AND APPROACH SLAB SURFACES AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENTS.
- PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON STRUCTURAL APPROACH SLABS.
- 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.
- AT ABUTMENTS, HP 12X53 STEEL PILING MAY BE USED IN LIEU OF HP 10X42 STEEL PILING. PAYMENT SHALL BE BASED ON BID PRICE FOR HP 10X42 STEEL PILING.
- THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-03-212".
- AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
- SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
- THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" IS REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.
- ALL VOIDS BETWEEN HEAVY RIPRAP IN WILDLIFE PATH SHALL BE FILLED USING SELECT CRUSHED MATERIAL. WORK SHALL BE PAID FOR UNDER "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR".



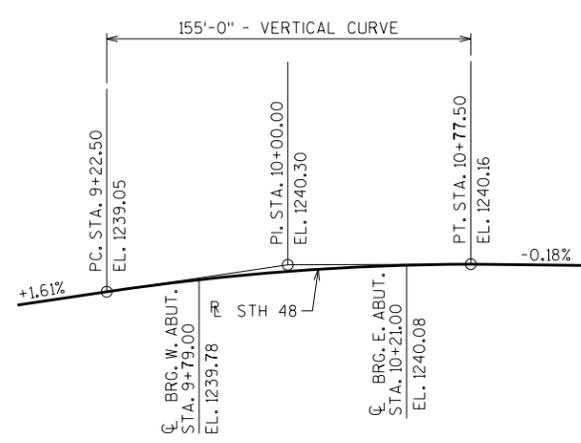
CROSS SECTION THRU STRUCTURE
(LOOKING EAST)



ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

- L = OUT TO OUT OF ABUTMENT, 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)
- $V_{CF} = (L)(3.0')(H) + (L)(0.5')(1.5H)(H)$
- $V_{CY} = V_{CF} (EF) / 27$
- $V_{TON} = V_{CY} (2.0)$

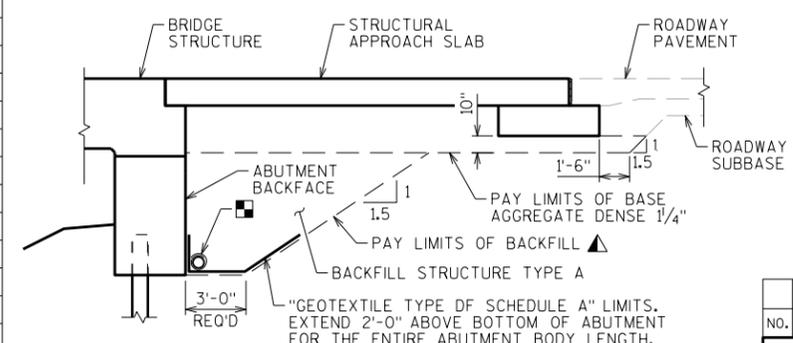
- ★ MEASURED RADially, NORMAL TO R STH 48
- ▬ MEASURED NORMAL TO TANGENT



PROFILE GRADE LINE - STH 48

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	W. STRUCT. APP. SLAB	WEST ABUT.	EAST ABUT.	E. STRUCT. APP. SLAB	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (C-03-08)	EACH	—	—	—	—	—	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-03-212	LS	—	—	—	—	—	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	—	—	175	175	—	350
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	—	135	—	—	135	270
502.0100	CONCRETE MASONRY BRIDGES	CY	156	60	59	59	60	394
502.3200	PROTECTIVE SURFACE TREATMENT	SY	216	90	—	—	90	396
502.3210	PIGMENTED SURFACE SEALER	SY	43	20	—	—	20	83
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	—	—	3,285	3,290	—	6,575
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	31,435	10,265	1,800	1,810	10,265	55,575
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	400	—	—	—	—	400
505.0908	BAR COUPLERS NO. 8	EACH	—	12	7	7	12	38
511.1200	TEMPORARY SHORING B-03-212	SF	—	—	600	600	—	1,200
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	—	14	14	—	28
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	—	—	600	600	—	1,200
606.0300	RIPRAP HEAVY	CY	—	—	100	110	—	210
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	—	—	110	110	—	220
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	—	—	—	—	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	—	—	45	45	—	90
645.0120	GEOTEXTILE TYPE HR	SY	—	—	150	160	—	310
SPV.0195	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	—	—	15	15	—	30
	NON-BID ITEMS							
	FILLER	SIZE	—	—	—	—	—	1/2", 3/4", 1 1/2"



TYPICAL SECTION THRU ABUTMENT

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL 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. PIPE UNDERDRAIN TO DISCHARGE NO LOWER THAN EL. 1231.60.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-03-212			
DRAWN BY JPH		PLANS CHECKED SEW	
CROSS SECTION & QUANTITIES			SHEET 2
			91

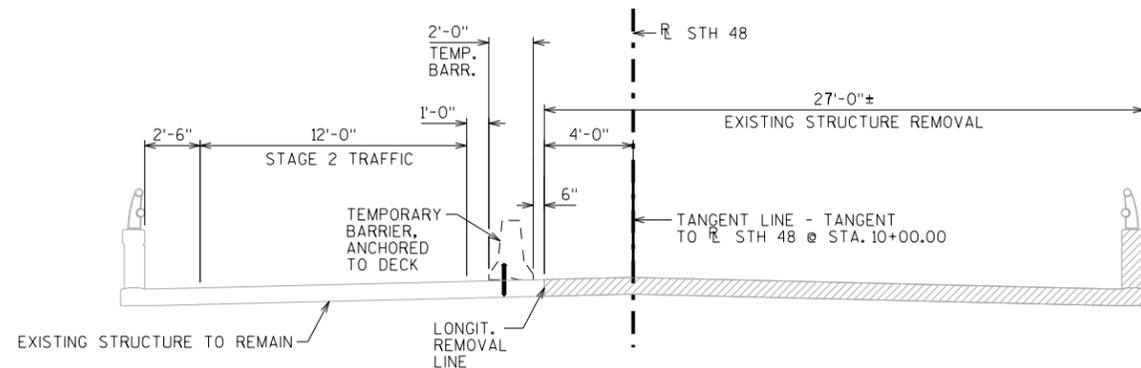
NOTES:

ALL DIMENSIONS MEASURED NORMAL TO THE TANGENT LINE.

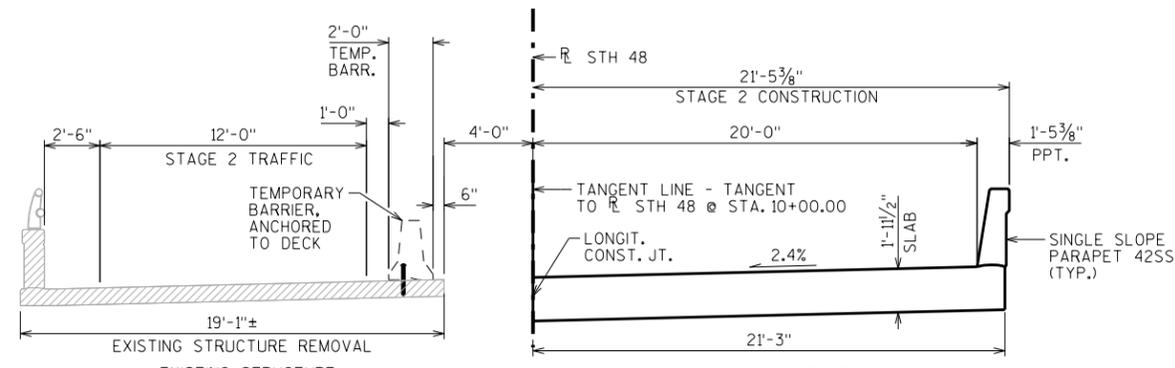
▨ INDICATES EXISTING STRUCTURE REMOVAL

TEMPORARY BARRIER PAID FOR UNDER ROADWAY BID ITEMS.

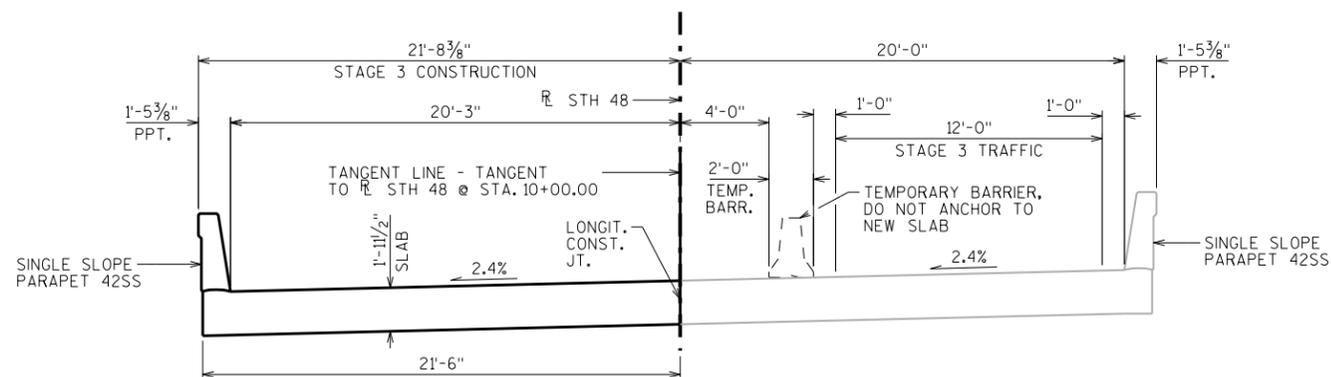
SLAB SUPPORTING FALSEWORK FROM STAGE 2 CONSTRUCTION MUST REMAIN IN PLACE UNTIL THE COMPLETION OF THE ENTIRE WIDTH OF THE SLAB AT THE END OF STAGE 3 CONSTRUCTION. DO NOT RELEASE ANY FALSEWORK UNTIL STAGE 3 PORTION OF THE SLAB HAS CURED AND REACHED THE 28 DAY COMPRESSIVE STRENGTH, F'C, SPECIFIED IN THE PLANS.



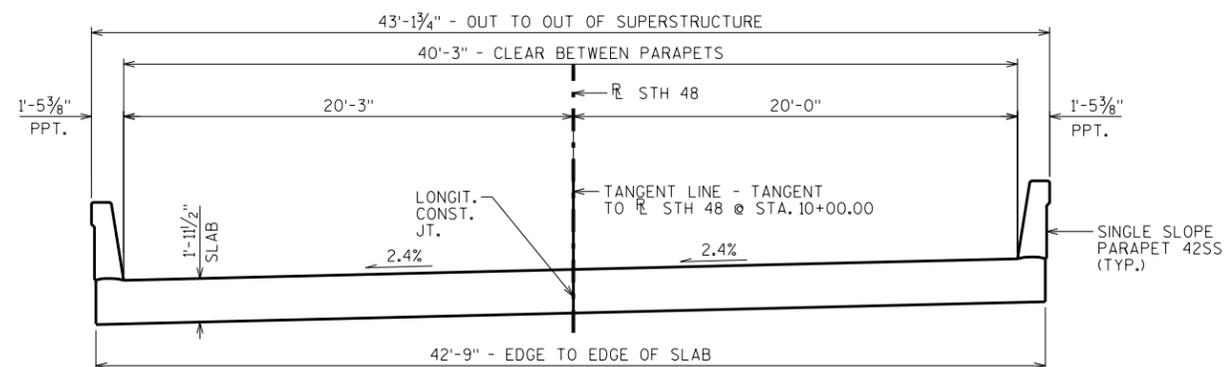
STAGE 2 REMOVAL
LOOKING EAST



STAGE 2 CONSTRUCTION
LOOKING EAST



STAGE 3 CONSTRUCTION
LOOKING EAST



CROSS SECTION THRU STRUCTURE
LOOKING EAST

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-03-212			
DRAWN BY JPH		PLANS CK'D. SEW	
CONSTRUCTION STAGING DETAILS			SHEET 3
			92

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	12/02/2020	145288	263605
2	12/08/2020	145288	263660

BORINGS COMPLETED BY: WISDOT
 REPORT COMPLETED BY: WISDOT
 ALL COORDINATES REFERENCED TO WCCS NAD 83(91) BARRON COUNTY
 COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT

HAY RIVER
FLOWAGE

STATE PROJECT NUMBER
8120-01-70

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META

LEGEND OF BORING

ST (1) (2)
0.25 17

F-C
COBBLE OR BOULDER
WEATHERED LIMESTONE
CORE RUN #1 - 24'-29'
REC=80%, ROD=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

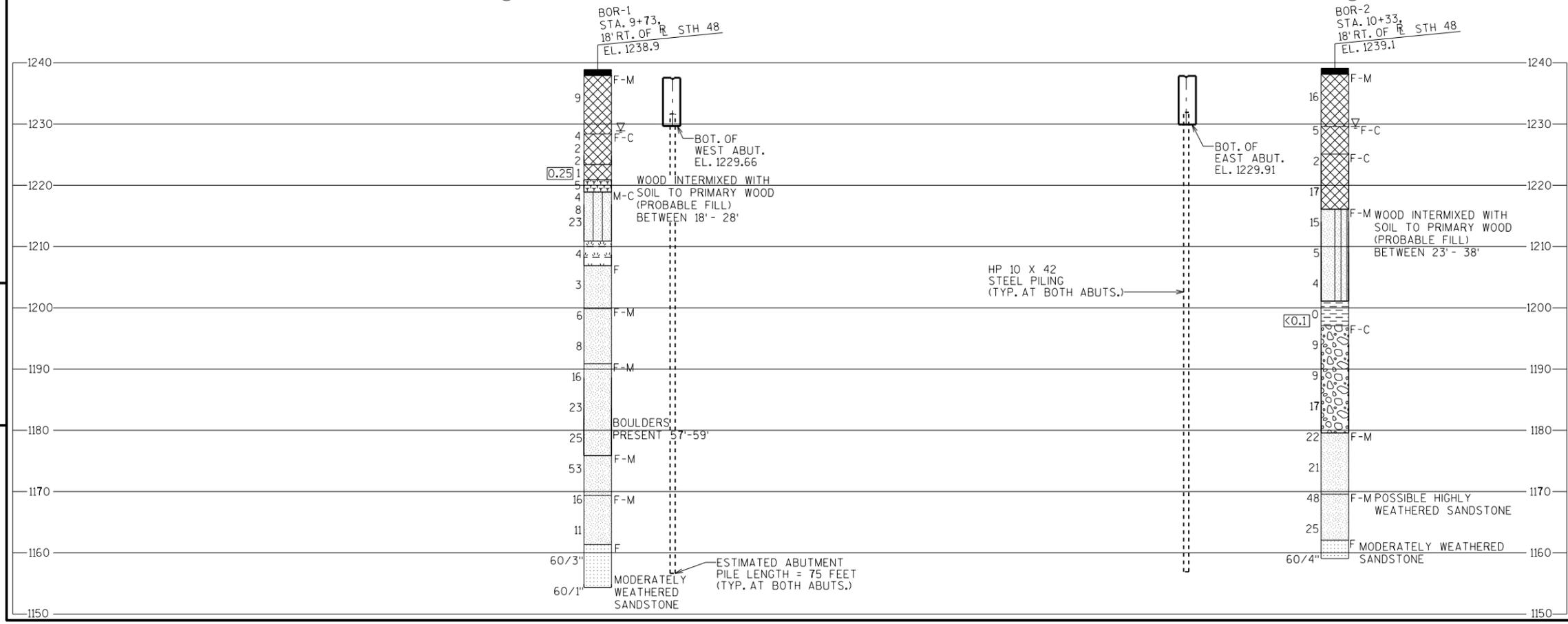
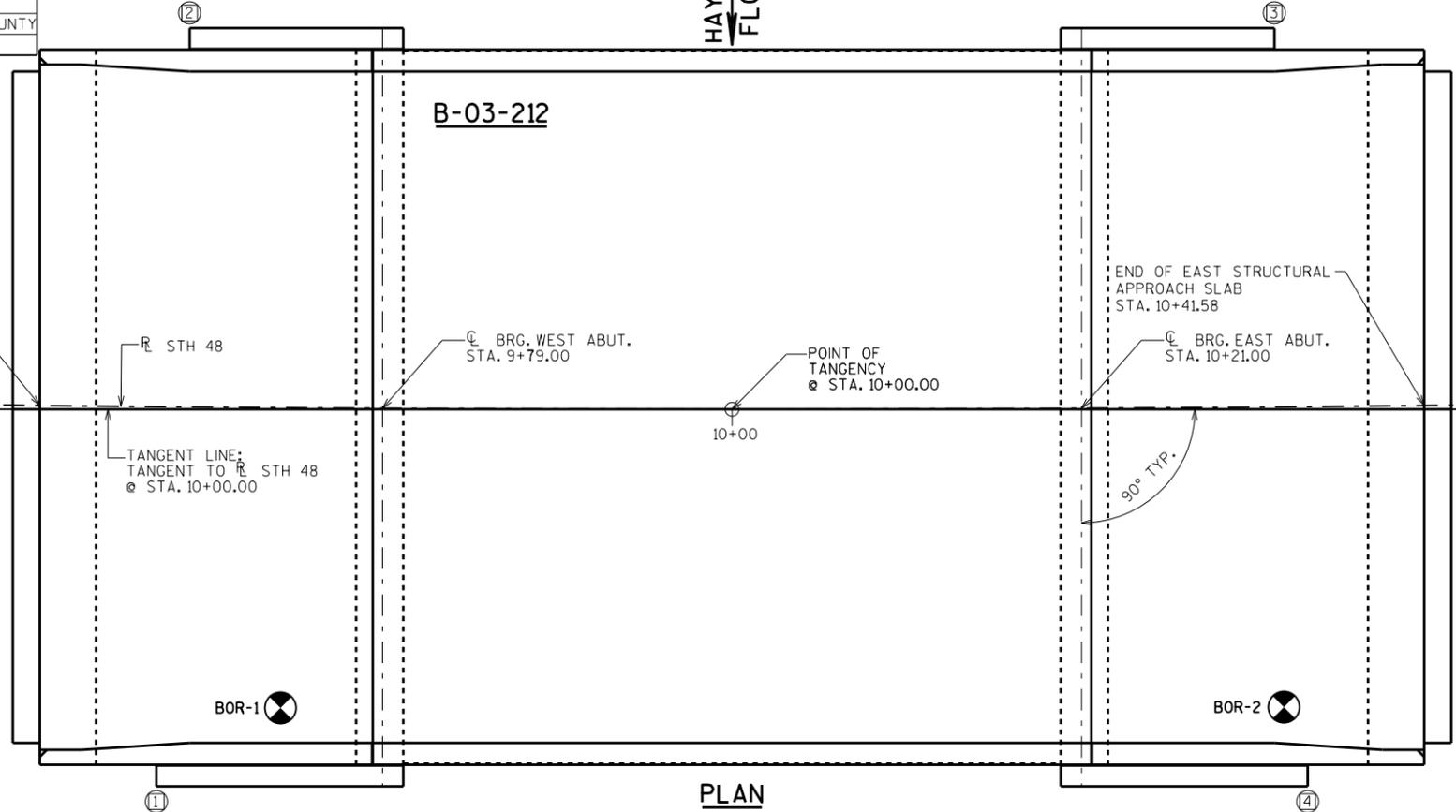
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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-03-212			
DRAWN BY JPH		PLANS CK'D. SEW	
SUBSURFACE EXPLORATION			SHEET 4
			93

WING NUMBERS

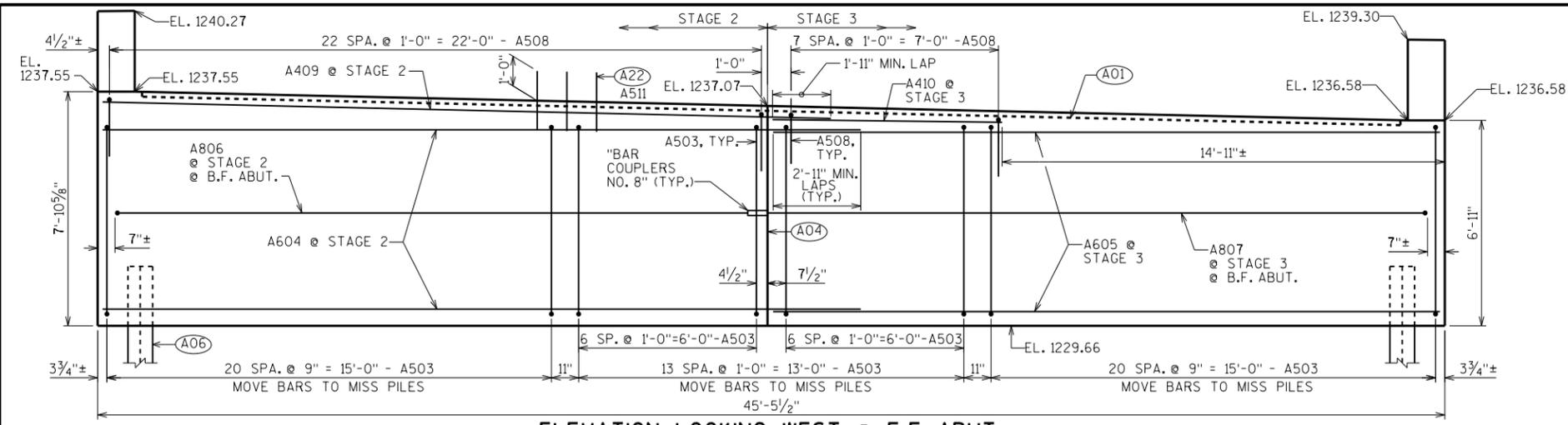
END OF WEST STRUCTURAL APPROACH SLAB STA. 9+58.41



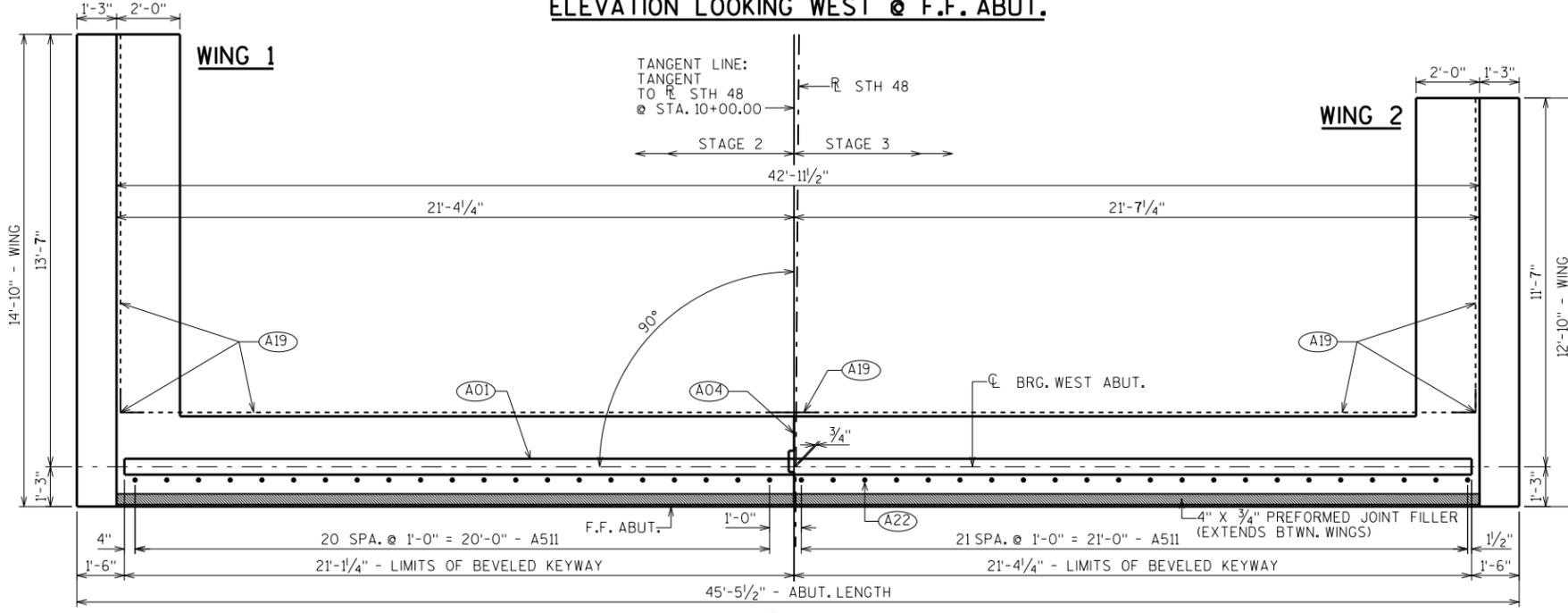
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8

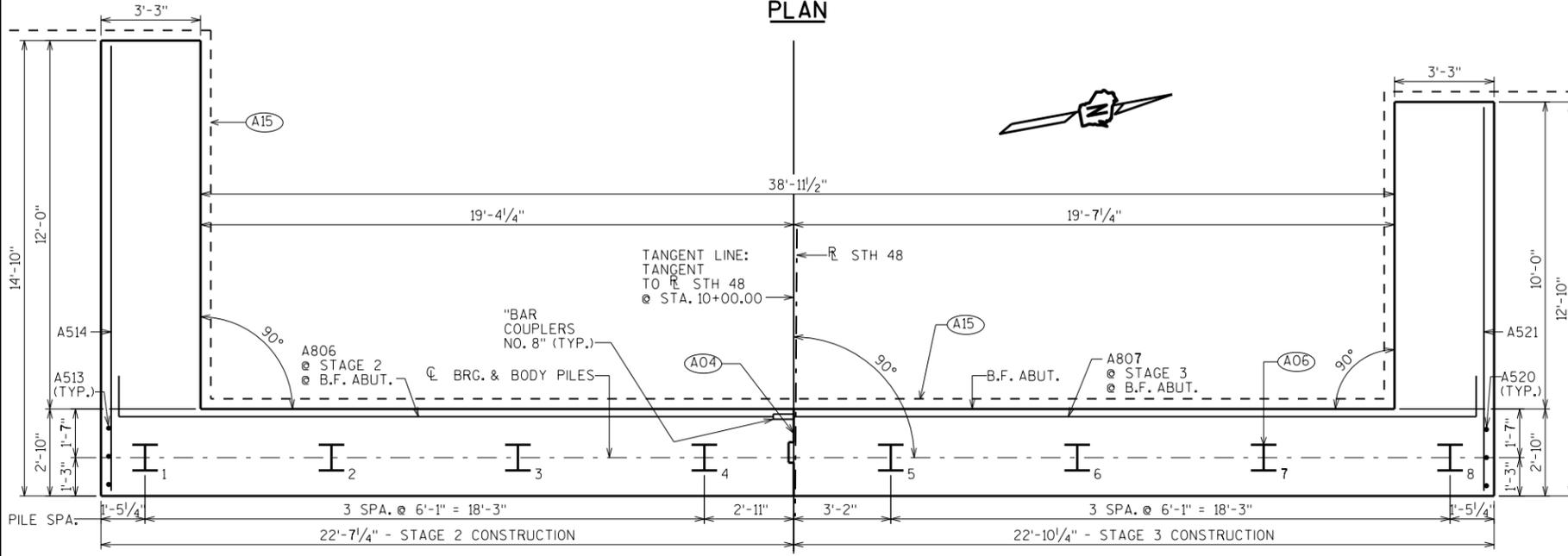
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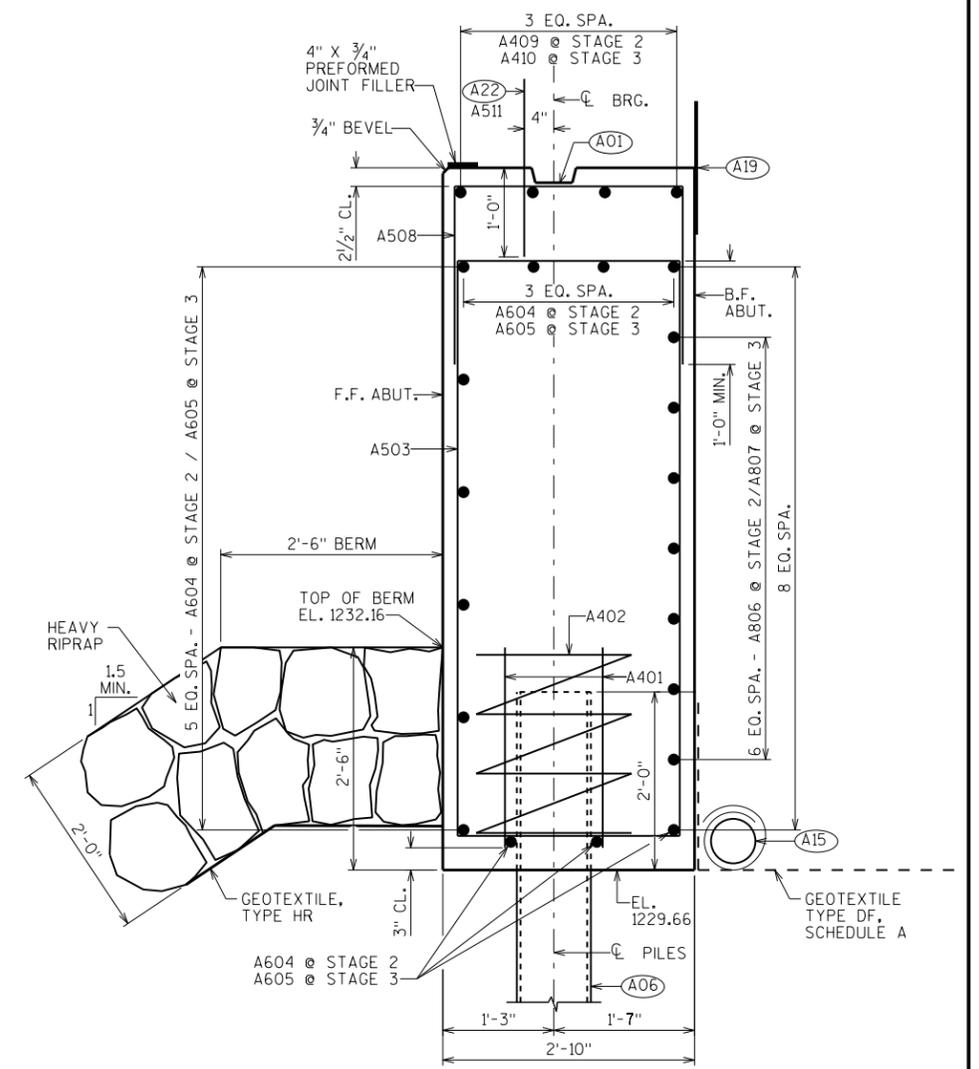
ELEVATION LOOKING WEST @ F.F. ABUT.



PLAN



PILE PLAN



SECTION THRU BODY

- (A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2" x 6".
- (A04) VERTICAL STAGED CONSTRUCTION JOINT AT TANGENT LINE: KEYWAY FORMED BY A BEVELED 2" x 8". 3/4" "V" GROOVE @ THE FRONT FACE AND 18" RMW @ BACKFACE.
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 75 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. SEE "PILE DETAILS" ON NEXT SHEET.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED. PIPE UNDERDRAIN TO DISCHARGE NO LOWER THAN EL. 1231.60.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) A511 BARS @ 1'-0" SPA. AT TOP OF ABUT. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NOTE:
ALL HORIZONTAL DIMENSIONS ARE TAKEN NORMAL TO THE TANGENT LINE UNLESS NOTED OTHERWISE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-03-212

DRAWN BY JPH PLANS CKD. SEW

WEST ABUTMENT

SHEET 5

94

8

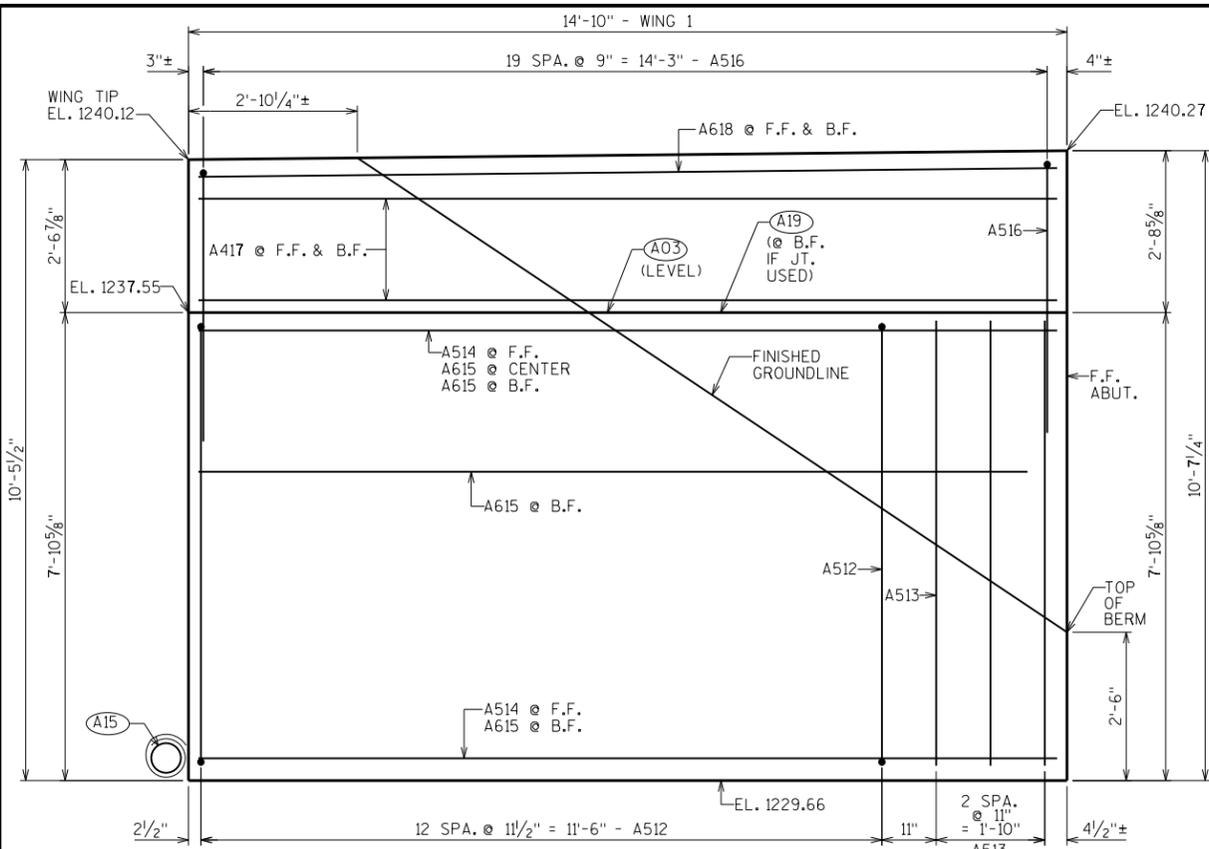
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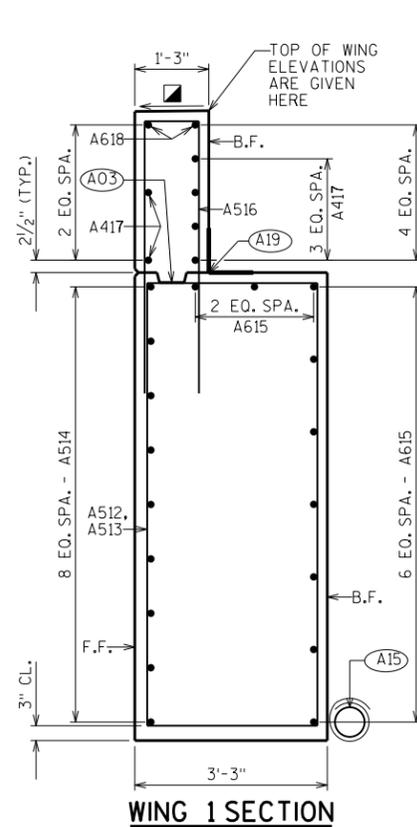
BILL OF BARS

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

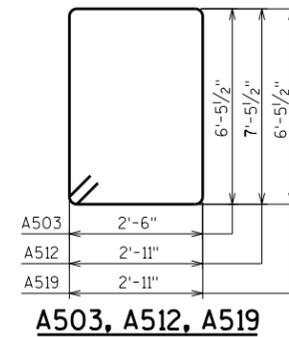
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A401		16	2'-3"		BODY-BOTTOM-2 PER BODY PILE-VERTICAL
A402		8	28'-0"	X	BODY-BOT.-SPIRAL-1 PER BODY PILE-VERT.
A503		56	18'-7"	X	BODY-STIRRUPS-VERT.
A604		12	25'-7"		BODY-HORIZONTAL-STAGE 2
A605		12	22'-6"		BODY-HORIZONTAL-STAGE 3
A806	(S01)	7	23'-2"	X	BODY-HORIZONTAL-B.F.-STAGE 2
A807	(S01)	7	23'-5"	X	BODY-HORIZONTAL-B.F.-STAGE 3
A508		31	6'-3"	X	BODY-TOP-VERT.-AT SOUTH END
A409		4	24'-7"		BODY-TOP-HORIZ.-STAGE 2
A410		4	7'-9"		BODY-TOP-HORIZ.-STAGE 3
A511	X	43	2'-0"		BODY-TOP-VERT.-DOWEL BAR
A512	X	13	21'-5"	X	WING 1-BOT.-STIRRUP-VERT.
A513	X	3	7'-6"		WING 1-BOT.-VERT.-F.F-AT BODY END
A514	X	9	14'-6"		WING 1-BOT.-HORIZONTAL-F.F.
A615	X	9	14'-0"		WING 1-BOT.-HORIZONTAL-B.F. & CENTER
A516	X	38	9'-10"	X	WINGS 1&2-TOP-VERTICAL
A417	X	6	14'-6"		WING 1-TOP-HORIZONTAL-B.F. & F.F.
A618	X	2	14'-6"		WING 1-TOP-HORIZONTAL-B.F. & F.F.
A519	X	11	19'-5"	X	WING 2-BOT.-STIRRUP-VERT.
A520	X	3	6'-6"		WING 2-BOT.-VERT.-F.F-AT BODY END
A521	X	8	12'-6"		WING 2-BOT.-HORIZONTAL-F.F.
A622	X	8	12'-0"		WING 2-BOT.-HORIZONTAL-B.F. & CENTER
A423	X	6	12'-6"		WING 2-TOP-HORIZONTAL-B.F. & F.F.
A624	X	2	12'-6"		WING 2-TOP-HORIZONTAL-B.F. & F.F.



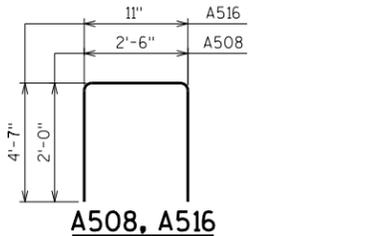
WING 1 ELEVATION LOOKING @ F.F. WING



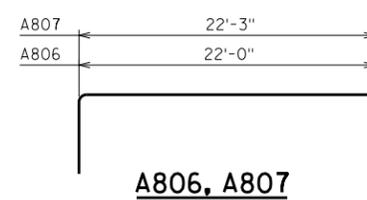
WING 1 SECTION



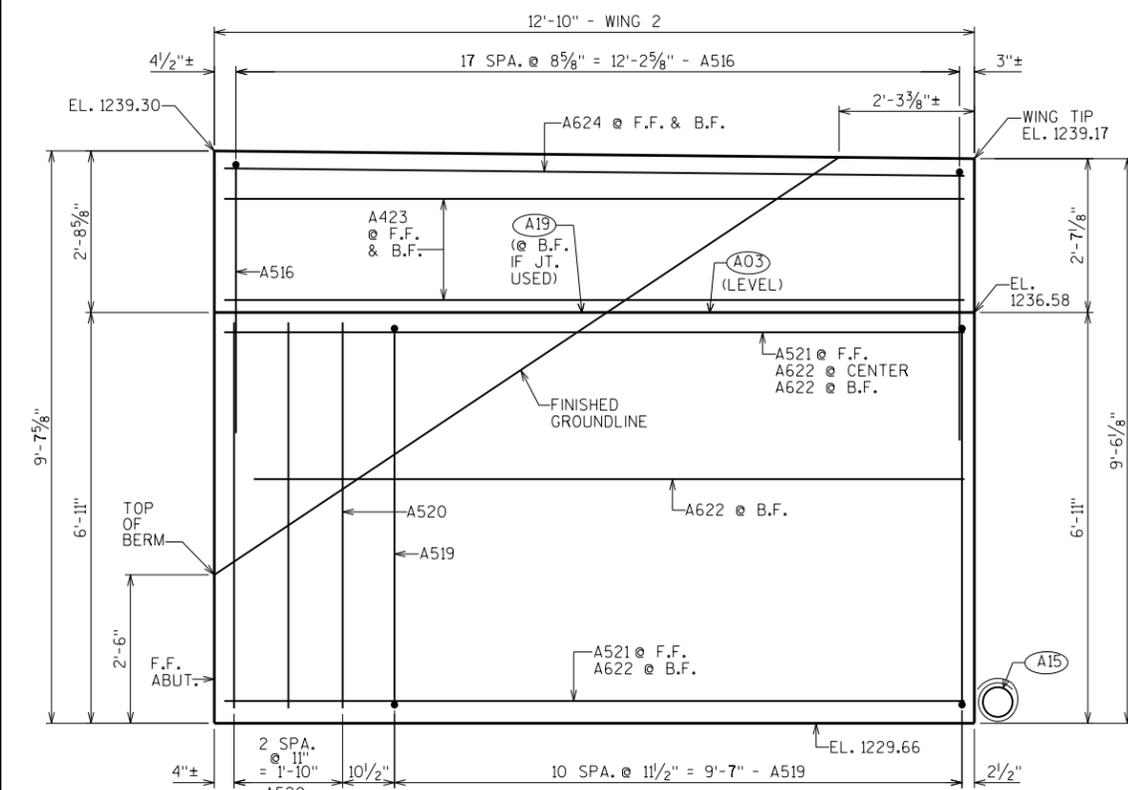
A503, A512, A519



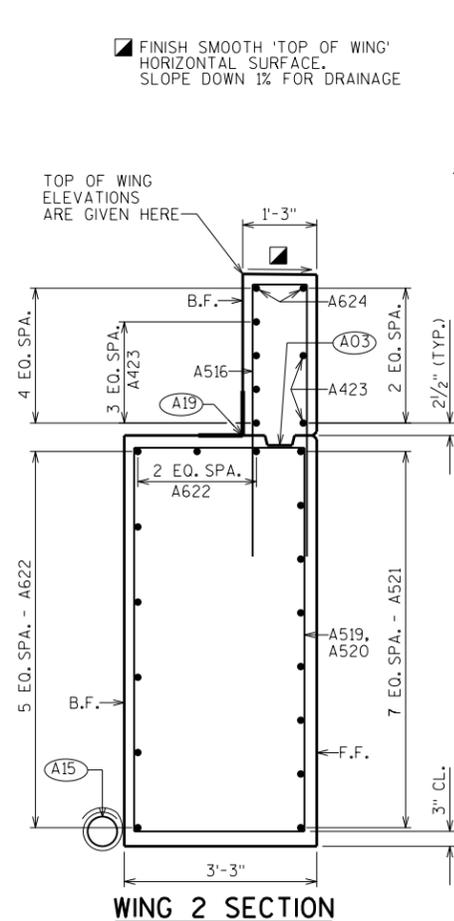
A508, A516



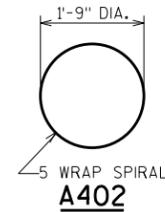
A806, A807



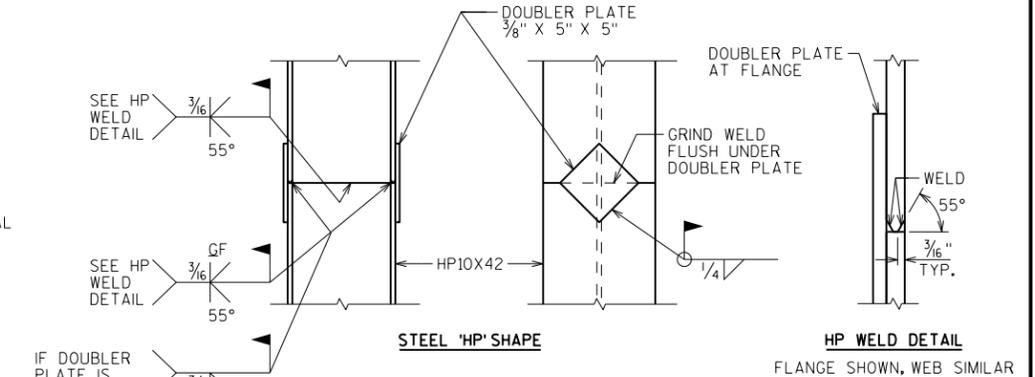
WING 2 ELEVATION LOOKING @ F.F. WING



WING 2 SECTION

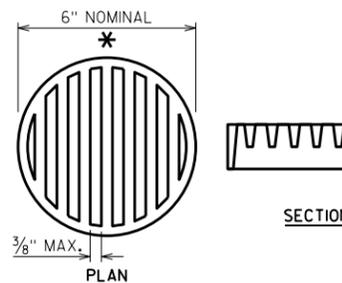


A402



PILE DETAILS

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" x 6", (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED. PIPE UNDERDRAIN TO DISCHARGE NO LOWER THAN EL. 1231.60.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (S01) BAR COUPLERS USED. BAR LENGTH COMPUTED TO STAGED LONGIT. JOINT & SHALL BE MODIFIED IF REQUIRED TO THE BAR COUPLER MANUFACTURER'S RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED.



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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

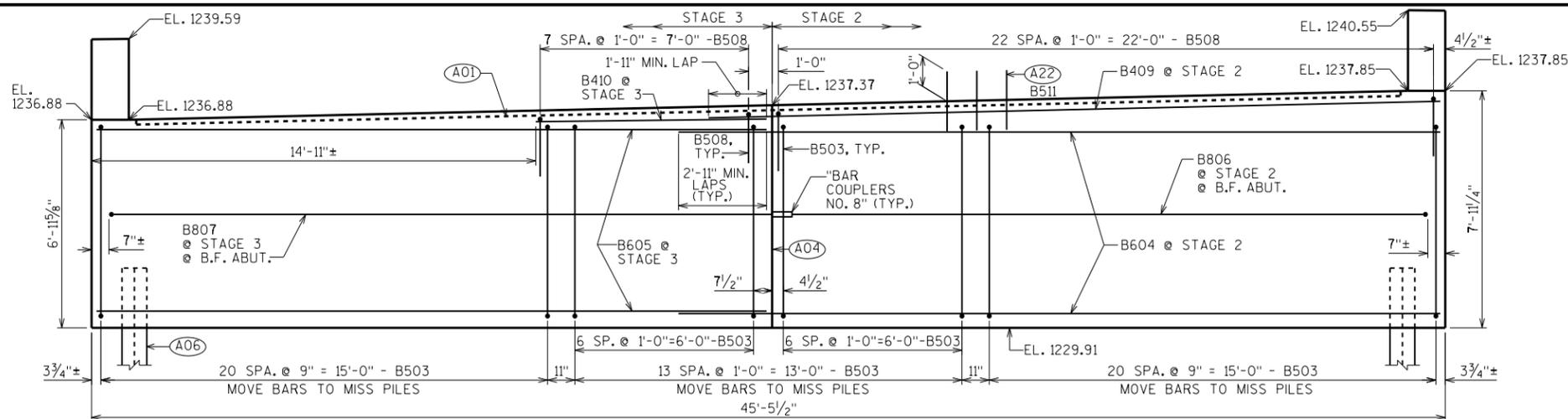
STRUCTURE B-03-212

DRAWN BY JPH PLANS CK'D. SEW

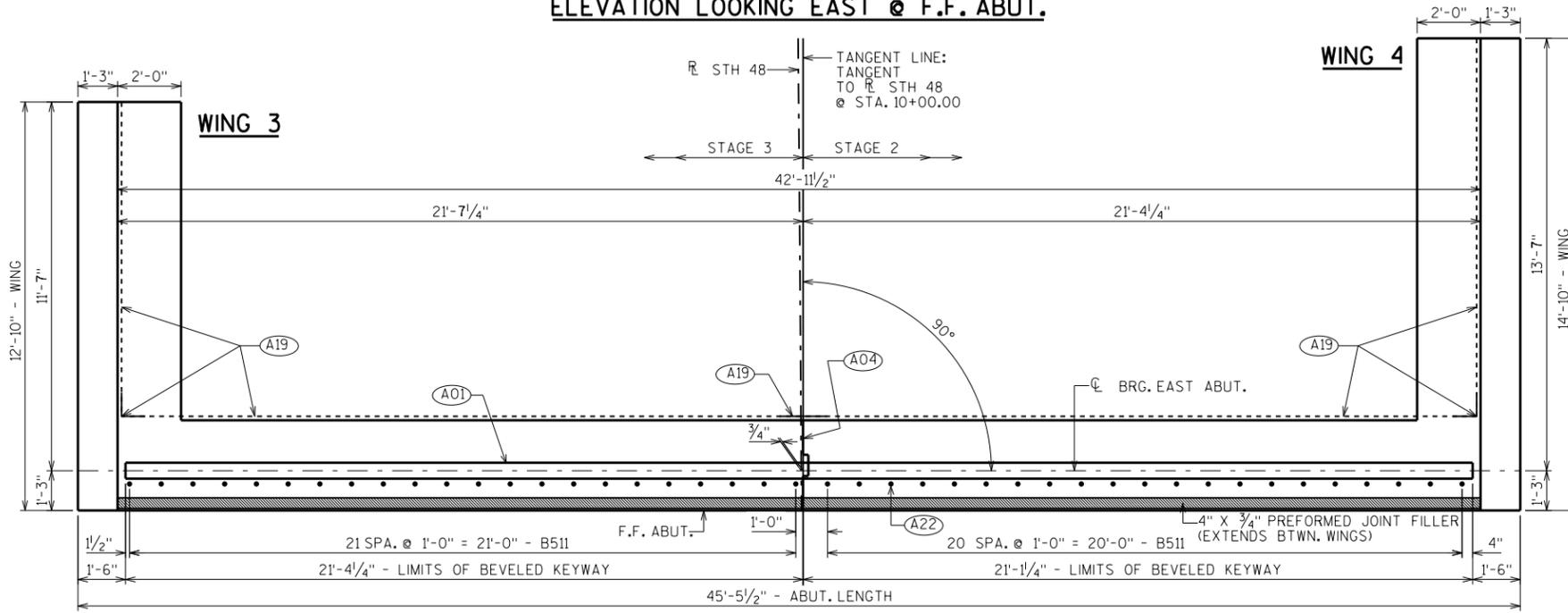
WEST ABUTMENT DETAILS

SHEET 6

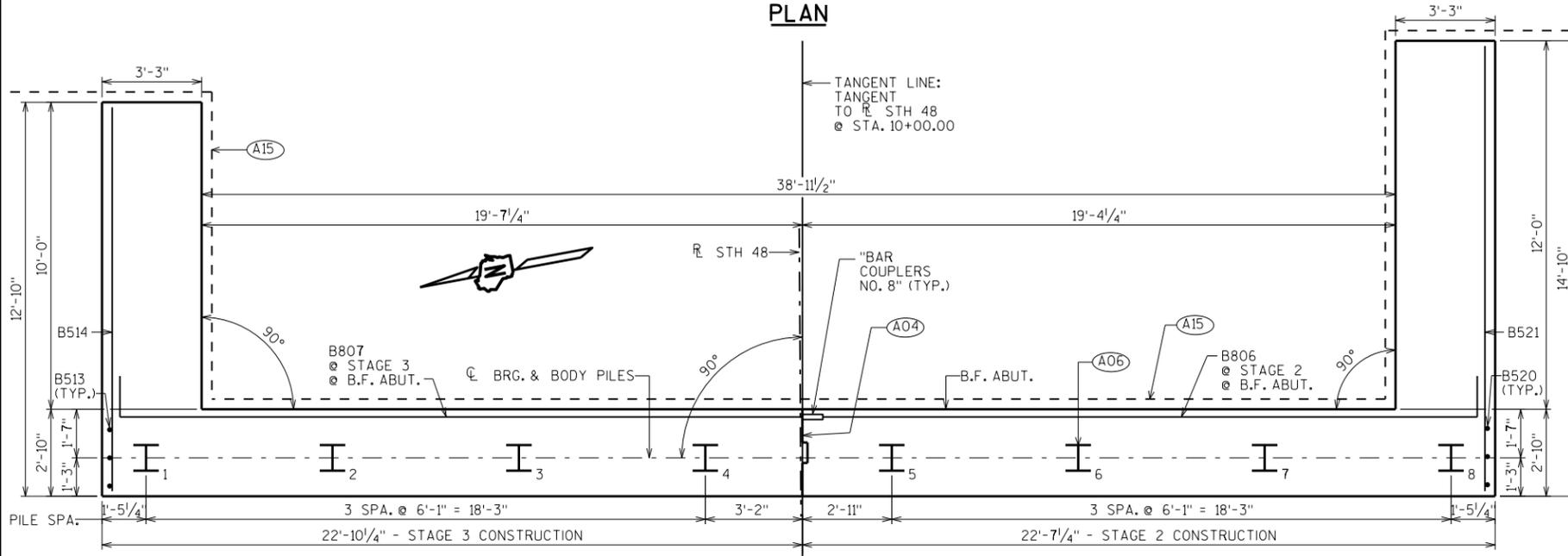
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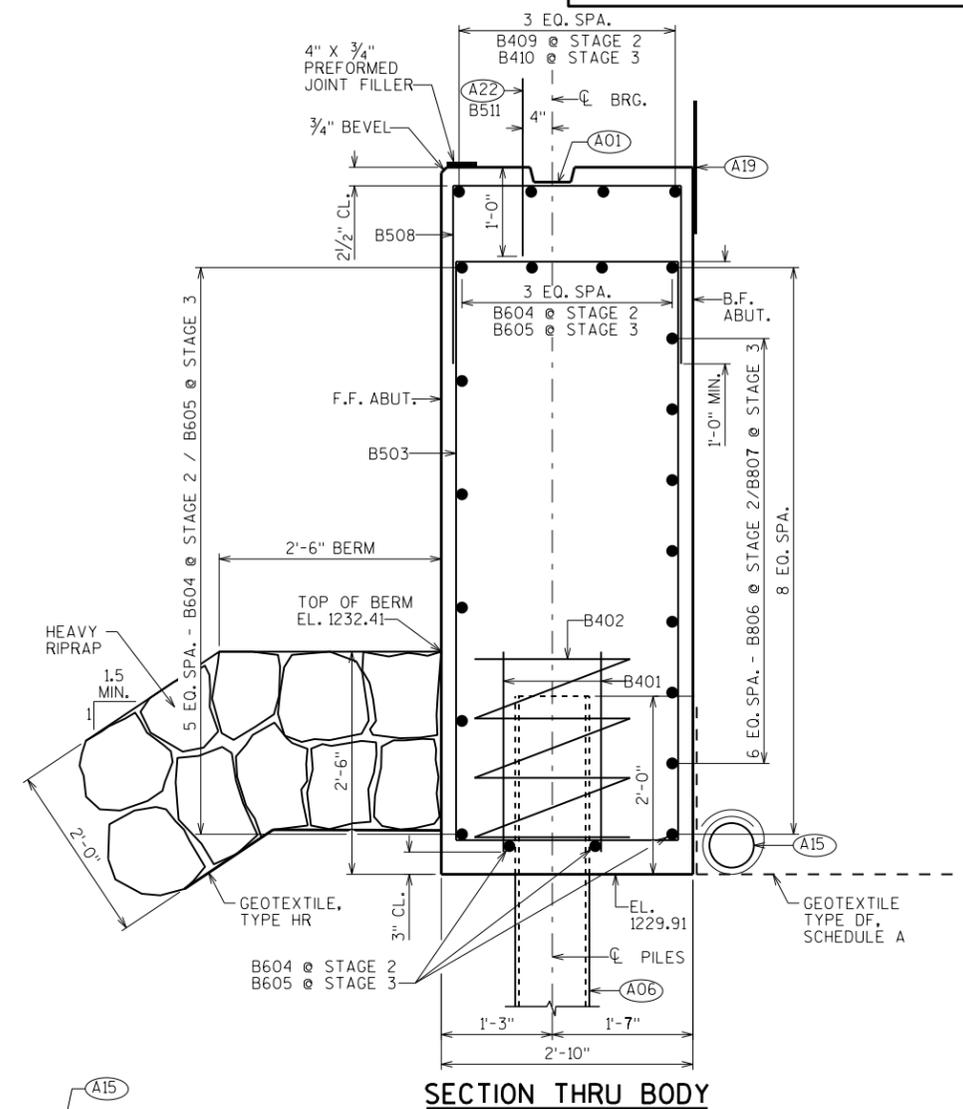
ELEVATION LOOKING EAST @ F.F. ABUT.



PLAN



PILE PLAN



SECTION THRU BODY

- (A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2" x 6".
- (A04) VERTICAL STAGED CONSTRUCTION JOINT AT TANGENT LINE: KEYWAY FORMED BY A BEVELED 2" x 8". 3/4" "V" GROOVE @ THE FRONT FACE AND 18" RMW @ BACKFACE.
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 75 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. SEE "PILE DETAILS" ON NEXT SHEET.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED. PIPE UNDERDRAIN TO DISCHARGE NO LOWER THAN EL. 1231.60.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) B511 BARS @ 1'-0" SPA. AT TOP OF ABUT. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NOTE:
ALL HORIZONTAL DIMENSIONS ARE TAKEN NORMAL TO THE TANGENT LINE UNLESS NOTED OTHERWISE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-03-212			
DRAWN BY JPH		PLANS CK'D. SEW	
EAST ABUTMENT			SHEET 7
			96

8

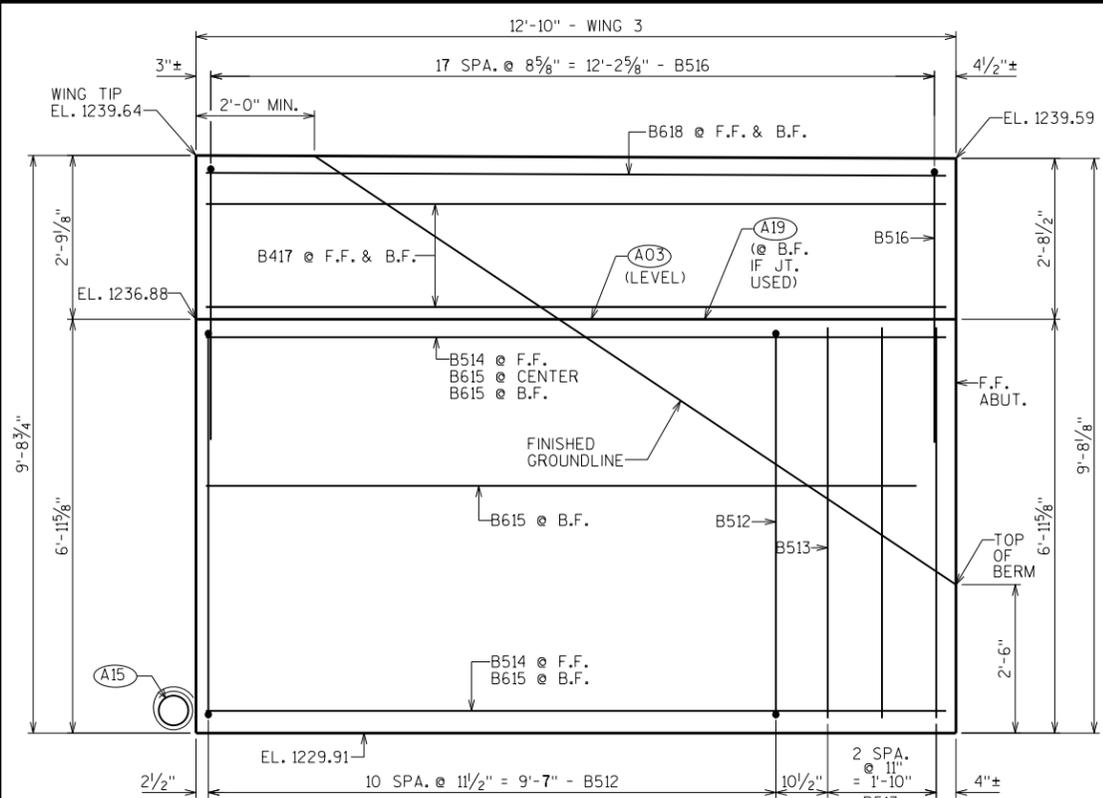
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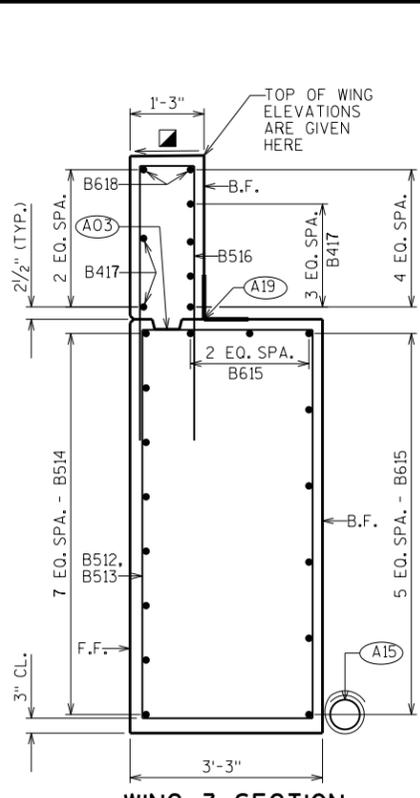
BILL OF BARS

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

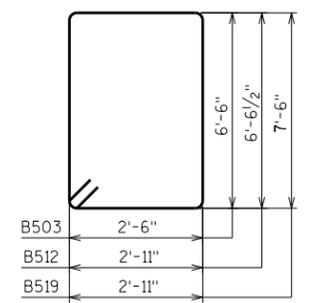
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B401		16	2'-3"		BODY-BOTTOM-2 PER BODY PILE-VERTICAL
B402		8	28'-0"	X	BODY-BOT.-SPIRAL-1 PER BODY PILE-VERT.
B503		56	18'-8"	X	BODY-STIRRUPS-VERT.
B604		12	25'-7"		BODY-HORIZONTAL-STAGE 2
B605		12	22'-6"		BODY-HORIZONTAL-STAGE 3
(S01) B806		7	23'-2"	X	BODY-HORIZONTAL-B.F.-STAGE 2
(S01) B807		7	23'-5"	X	BODY-HORIZONTAL-B.F.-STAGE 3
B508		31	6'-3"	X	BODY-TOP-VERT.-AT SOUTH END
B409		4	24'-7"		BODY-TOP-HORIZ.-STAGE 2
B410		4	7'-9"		BODY-TOP-HORIZ.-STAGE 3
B511	X	43	2'-0"		BODY-TOP-VERT.-DOWEL BAR
B512	X	11	19'-7"	X	WING 3-BOT.-STIRRUP-VERT.
B513	X	3	6'-7"		WING 3-BOT.-VERT.-F.F.-AT BODY END
B514	X	8	12'-6"		WING 3-BOT.-HORIZONTAL-F.F.
B615	X	8	12'-0"		WING 3-BOT.-HORIZONTAL-B.F. & CENTER
B516	X	38	9'-11"	X	WINGS 3&4-TOP-VERTICAL
B417	X	6	12'-6"		WING 3-TOP-HORIZONTAL-B.F. & F.F.
B618	X	2	12'-6"		WING 3-TOP-HORIZONTAL-B.F. & F.F.
B519	X	13	21'-6"	X	WING 4-BOT.-STIRRUP-VERT.
B520	X	3	7'-6"		WING 4-BOT.-VERT.-F.F.-AT BODY END
B521	X	9	14'-6"		WING 4-BOT.-HORIZONTAL-F.F.
B622	X	9	14'-0"		WING 4-BOT.-HORIZONTAL-B.F. & CENTER
B423	X	6	14'-6"		WING 4-TOP-HORIZONTAL-B.F. & F.F.
B624	X	2	14'-6"		WING 4-TOP-HORIZONTAL-B.F. & F.F.



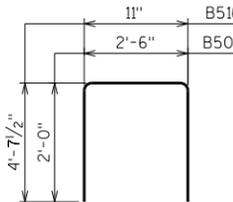
WING 3 ELEVATION LOOKING @ F.F. WING



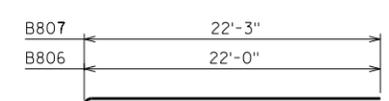
WING 3 SECTION



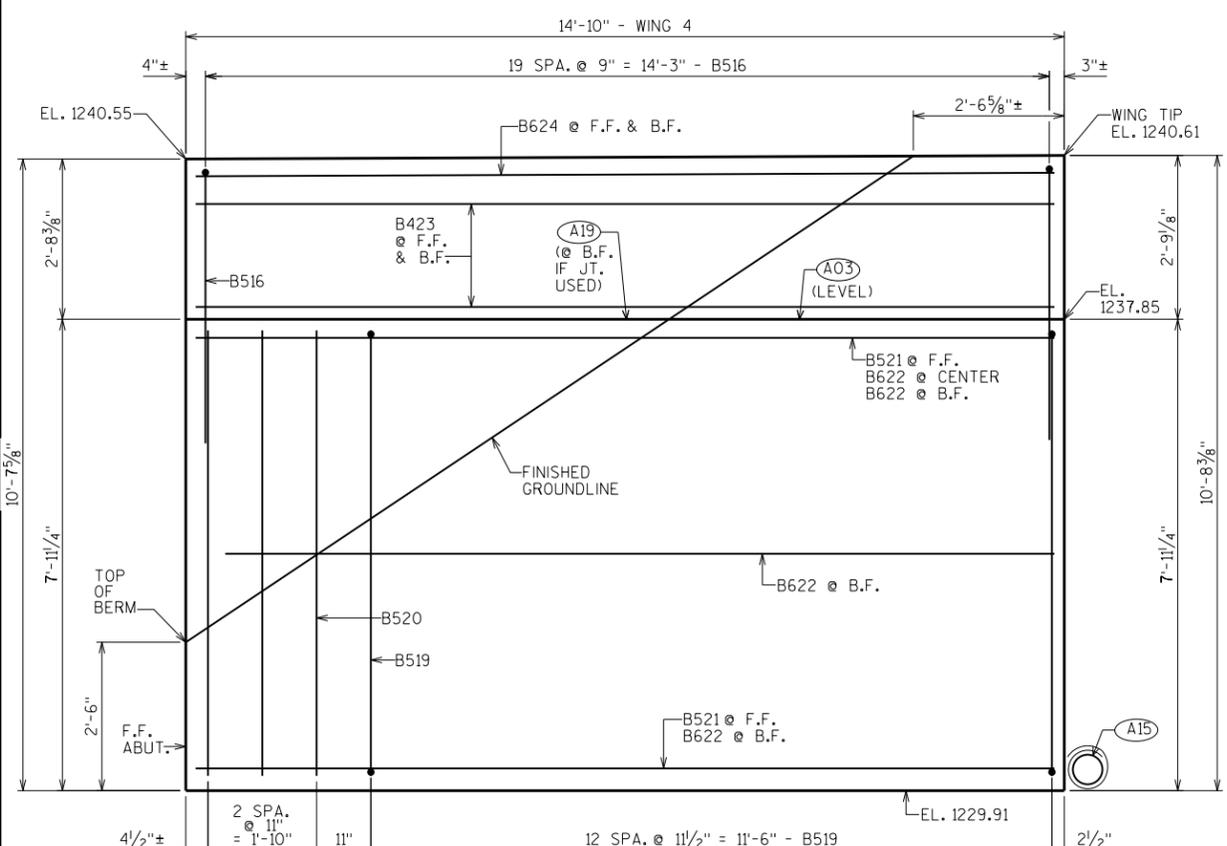
B503, B512, B519



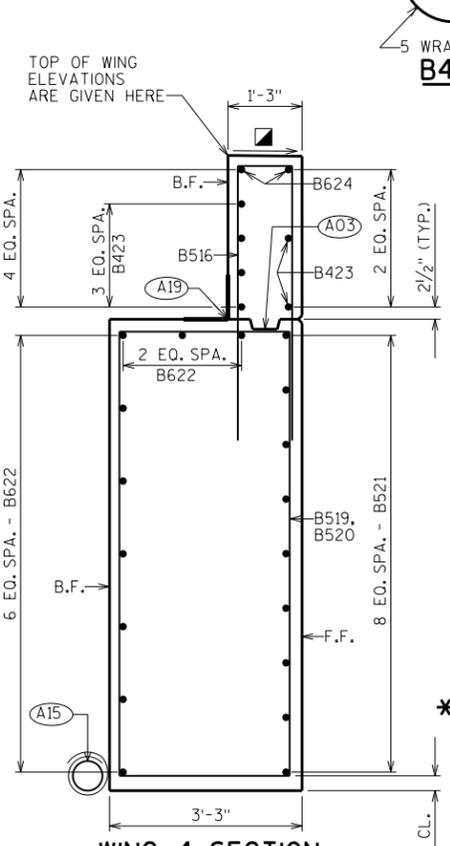
B508, B516



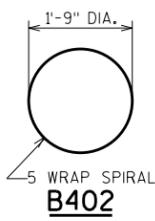
B806, B807



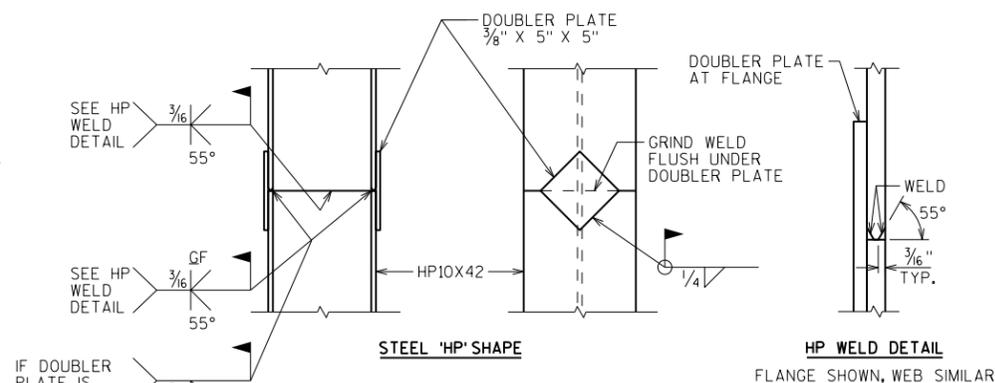
WING 4 ELEVATION LOOKING @ F.F. WING



WING 4 SECTION

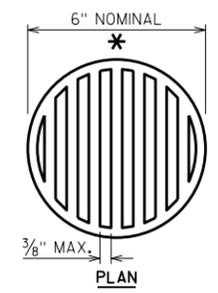


B402



PILE DETAILS

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" x 6". (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED. PIPE UNDERDRAIN TO DISCHARGE NO LOWER THAN EL. 1231.60.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (S01) BAR COUPLERS USED. BAR LENGTH COMPUTED TO STAGED LONGIT. JOINT & SHALL BE MODIFIED IF REQUIRED TO THE BAR COUPLER MANUFACTURER'S RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED.



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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

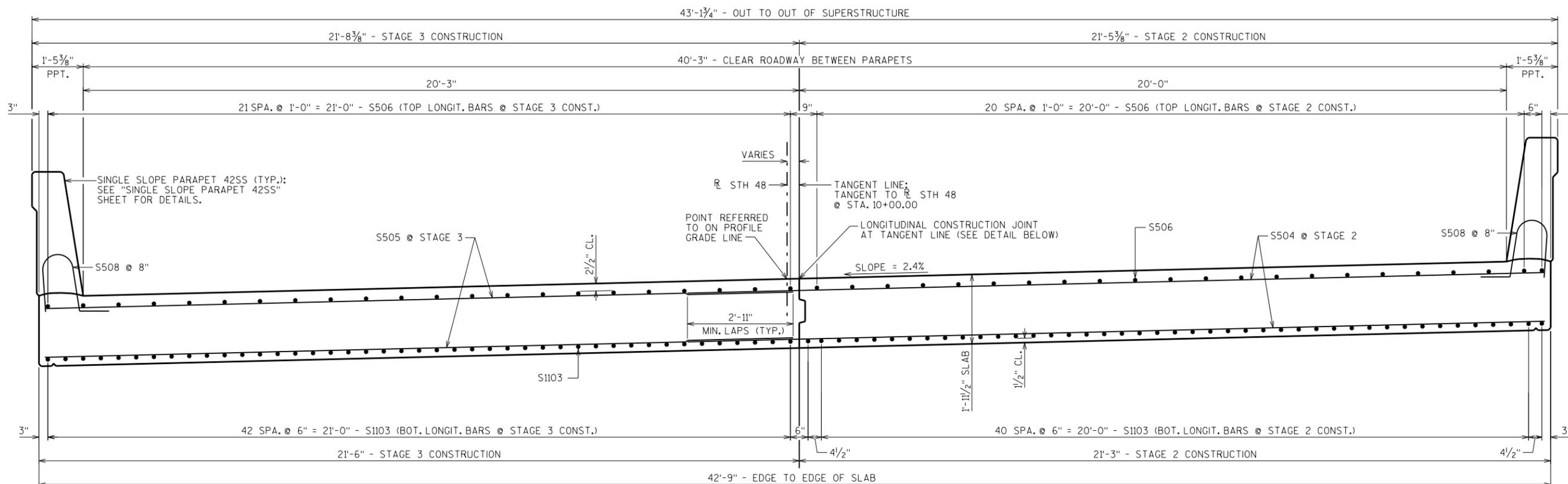
STRUCTURE B-03-212

DRAWN BY JPH PLANS CKD. SEW

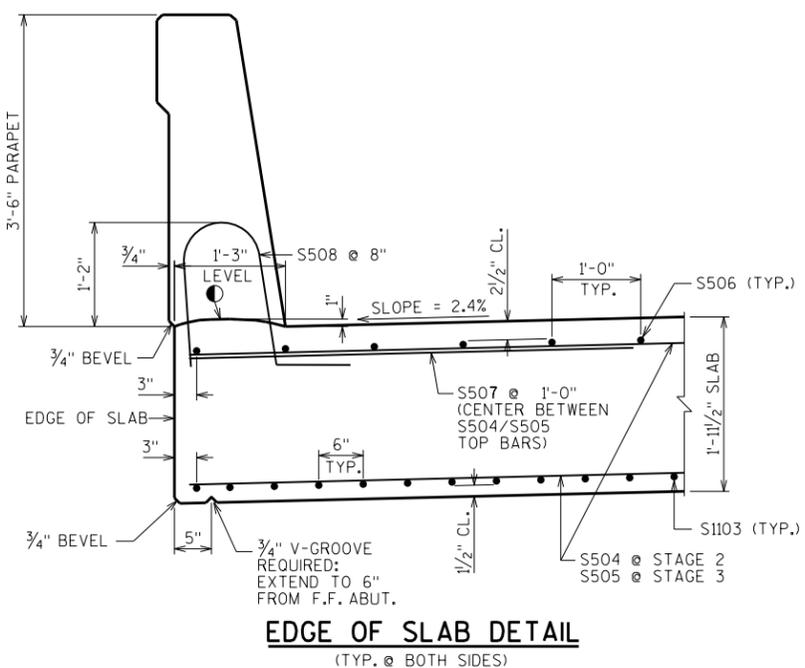
EAST ABUTMENT DETAILS

SHEET 8

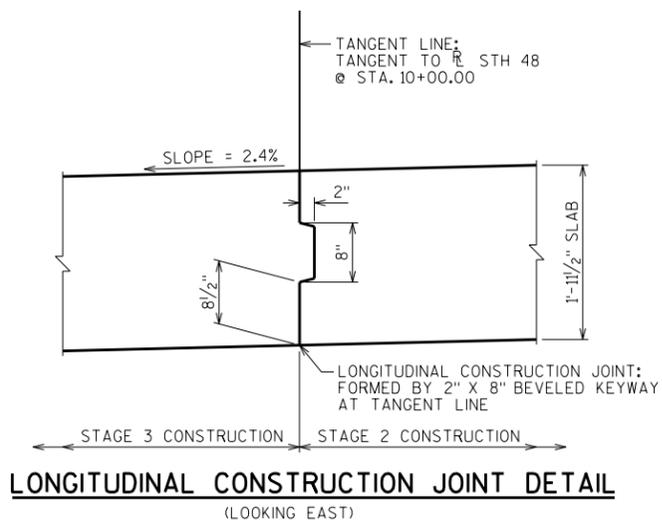
97



CROSS SECTION THRU BRIDGE LOOKING EAST - SHOWING STAGED CONSTRUCTION



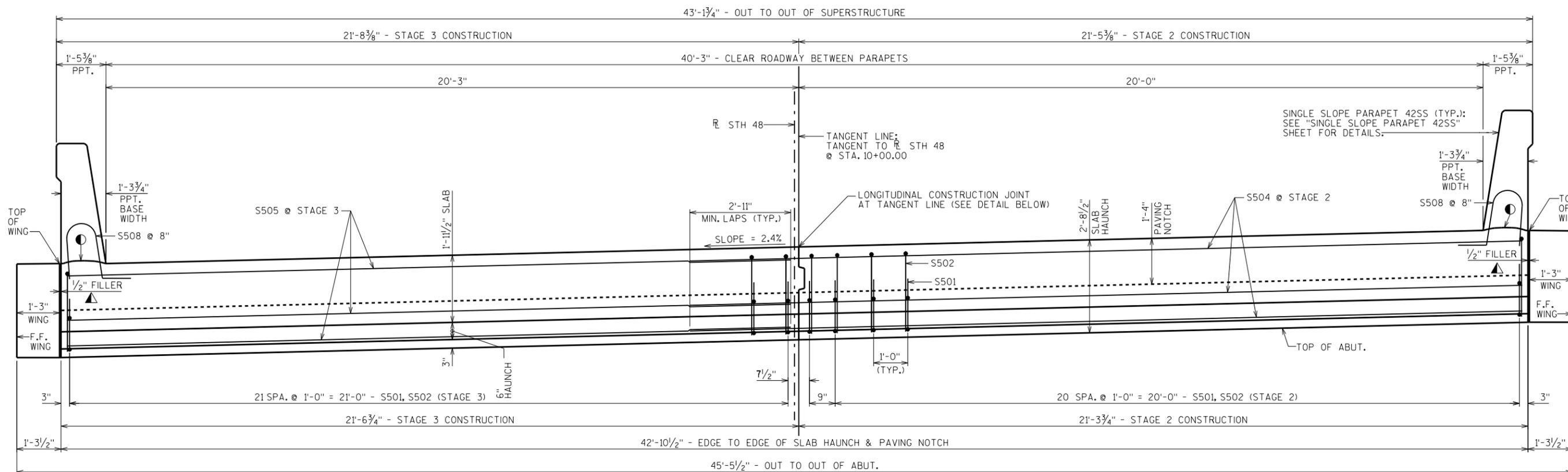
EDGE OF SLAB DETAIL
(TYP. @ BOTH SIDES)



LONGITUDINAL CONSTRUCTION JOINT DETAIL
(LOOKING EAST)

● HORIZ. CONST. JOINT: STRIKE OFF AND LEAVE ROUGH AS SHOWN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-03-212			
DRAWN BY		JPH	PLANS CKD. SEW
SUPERSTRUCTURE CROSS SECTIONS 1			SHEET 9
			98



CROSS SECTION THRU BRIDGE AT ABUTMENTS LOOKING EAST - SHOWING STAGED CONSTRUCTION

(EAST ABUTMENT SHOWN, WEST ABUTMENT SIMILAR - SLAB REINFORCEMENT NOT SHOWN)

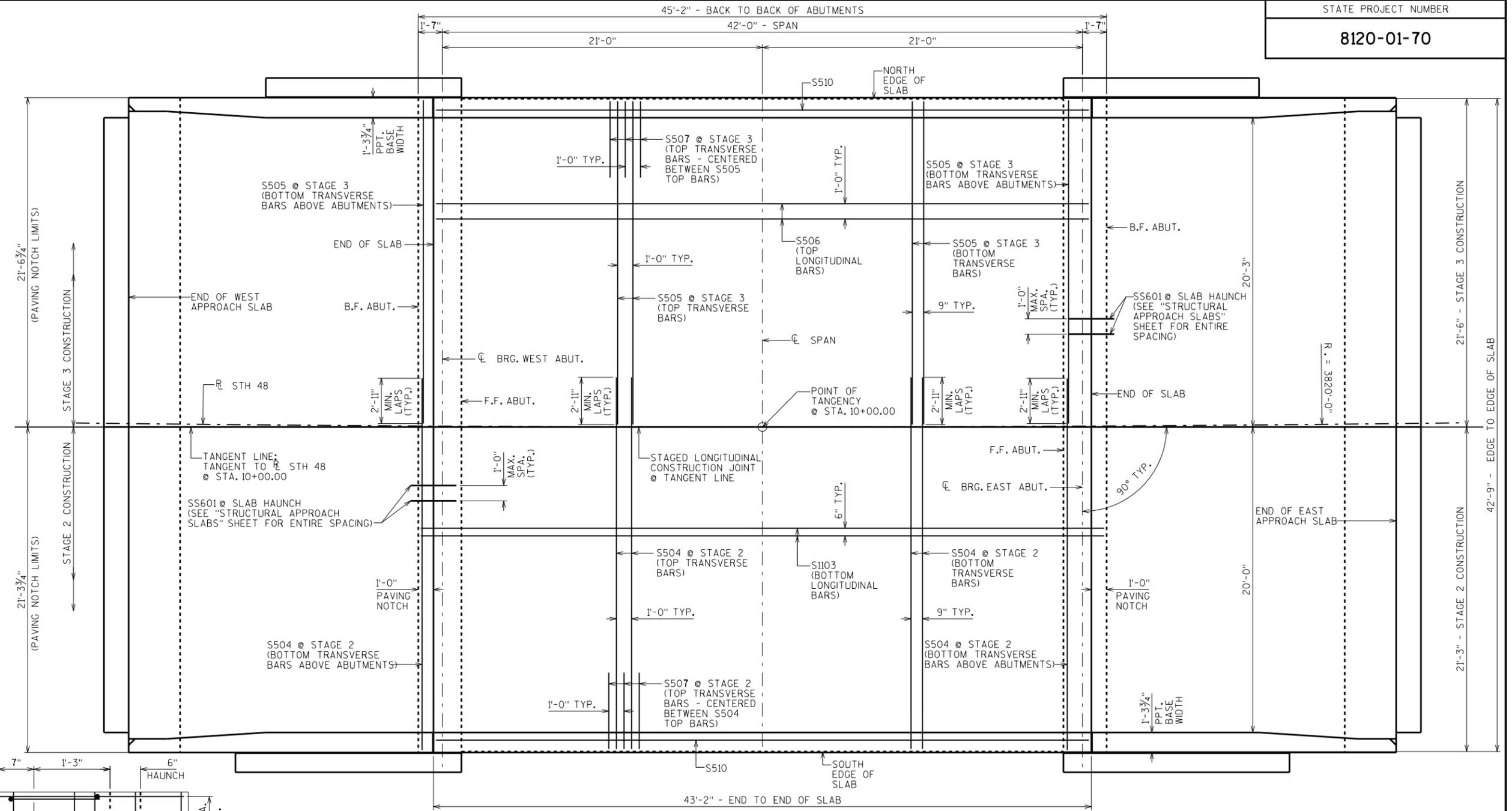
8

▲ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

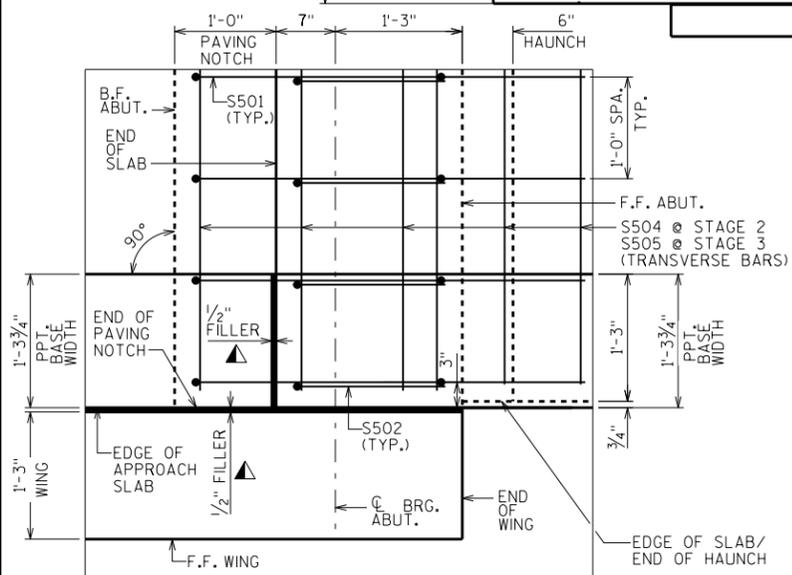
● HORIZ. CONST. JOINT: STRIKE OFF AND LEAVE ROUGH AS SHOWN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-03-212			
DRAWN BY		JPH	PLANS CK'D. SEW
SUPERSTRUCTURE CROSS SECTION 2			SHEET 10
			99

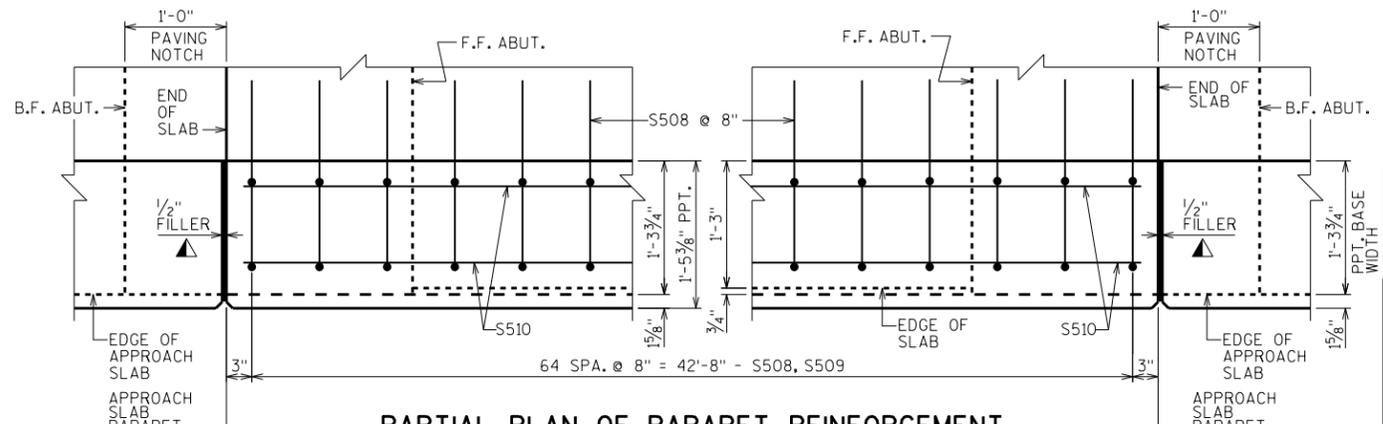
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PLAN



TYPICAL CORNER DETAIL AT ALL FOUR WING CORNERS (PLAN VIEW)



PARTIAL PLAN OF PARAPET REINFORCEMENT

(TYP. @ BOTH SIDES)

▲ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

NO.	DATE	REVISION	BY

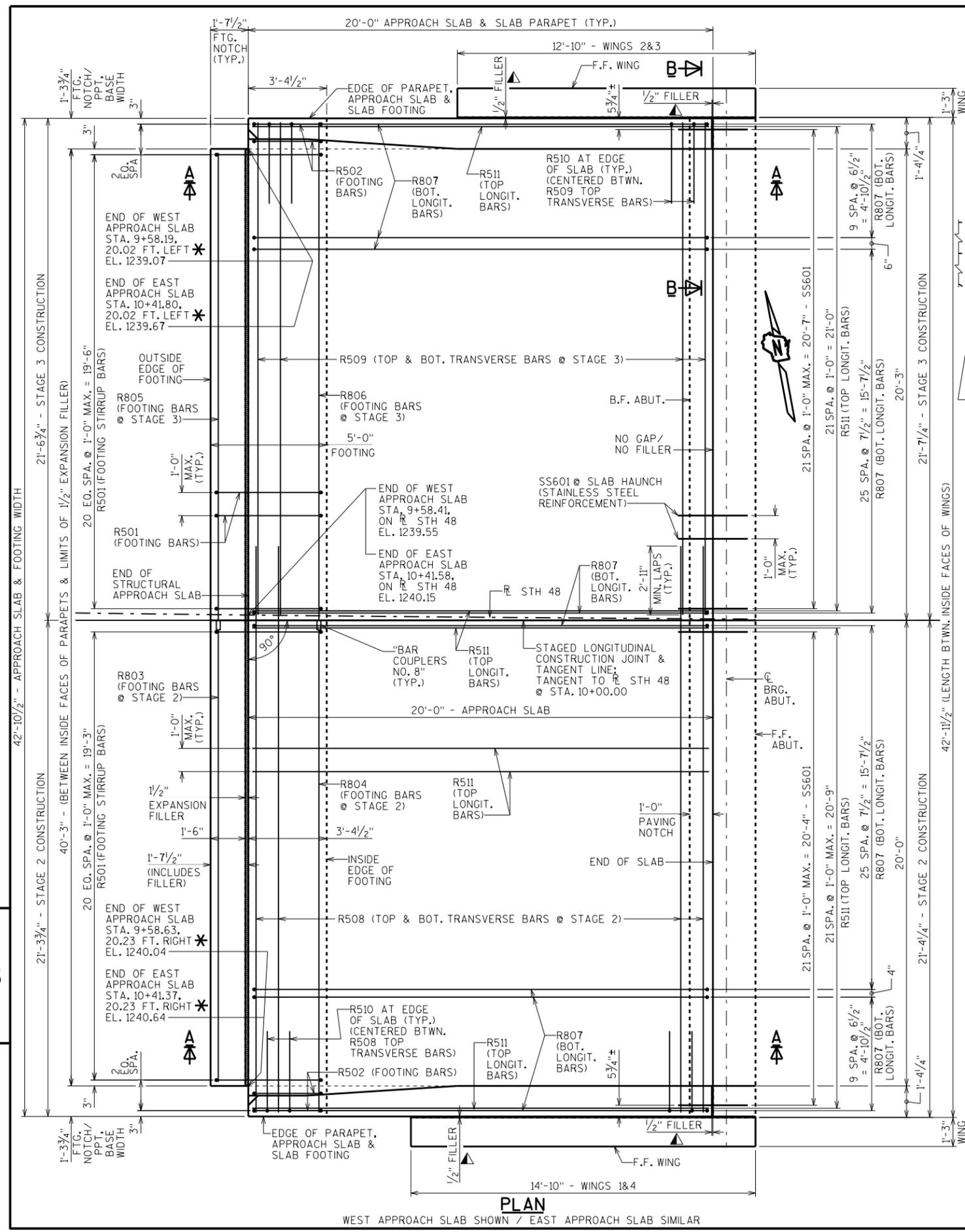
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-03-212

DRAWN BY JPH PLANS CKD. SEW

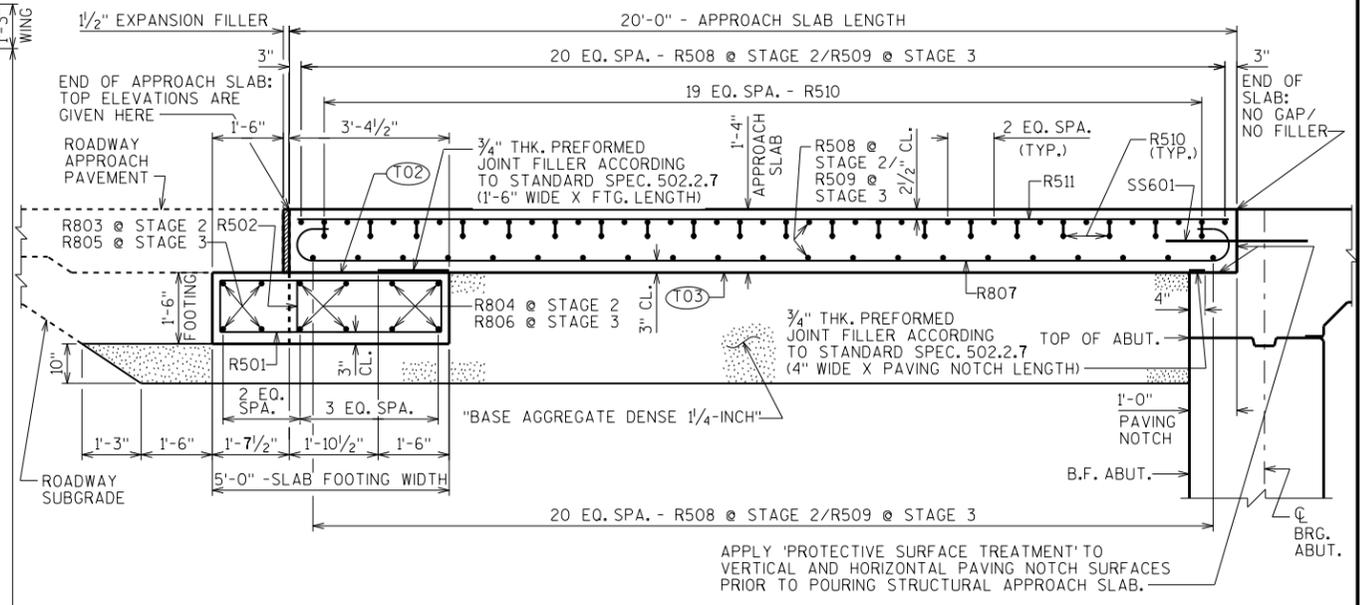
SUPERSTRUCTURE PLAN

SHEET 11

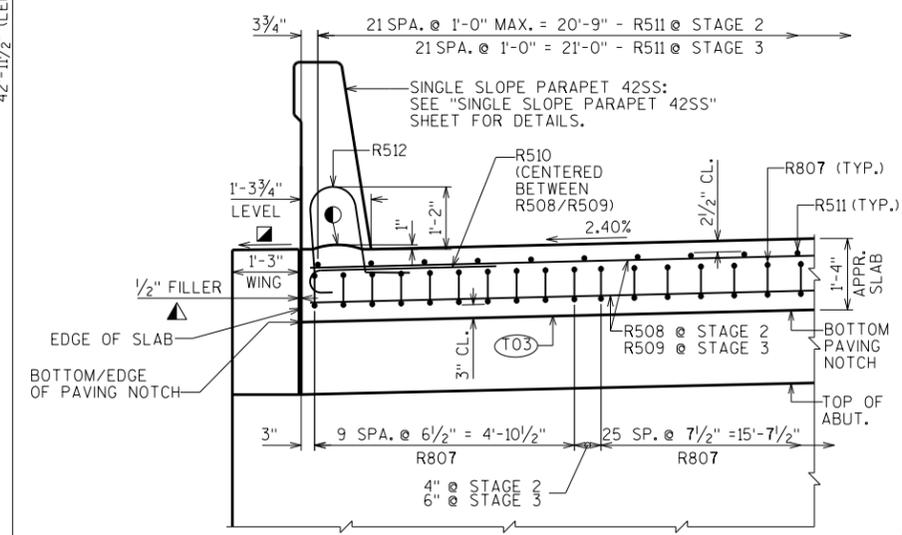


PLAN

WEST APPROACH SLAB SHOWN / EAST APPROACH SLAB SIMILAR



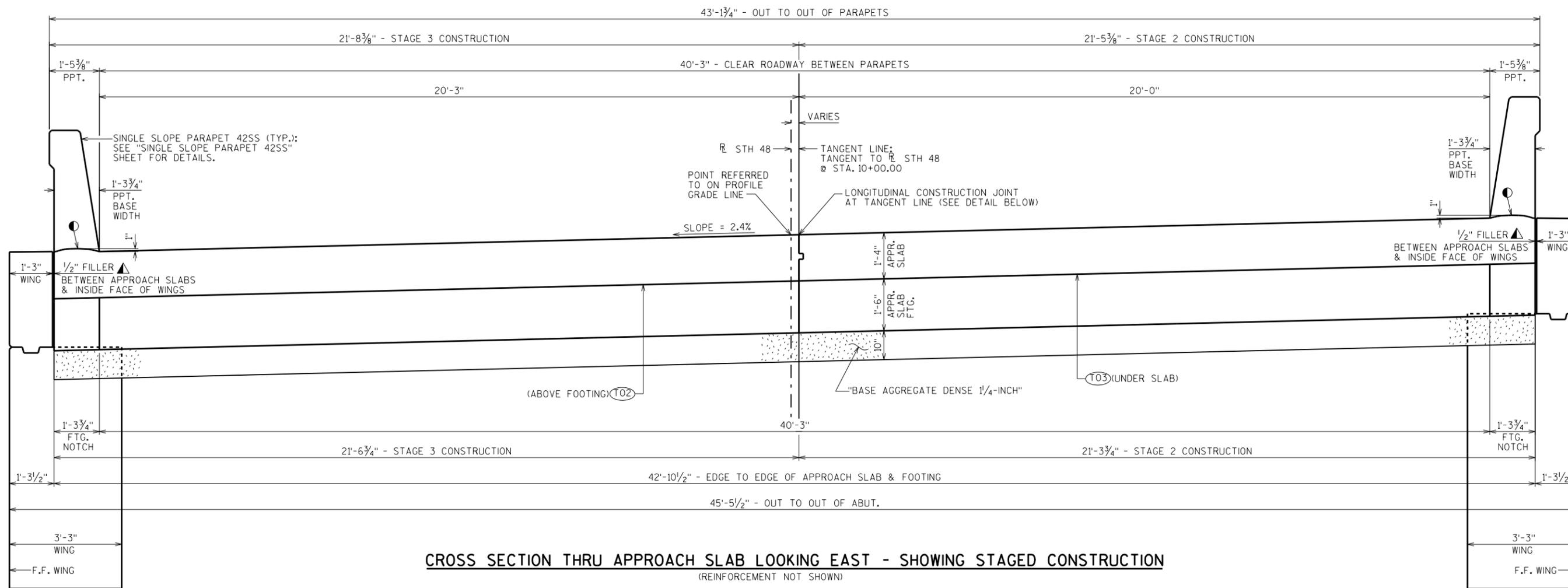
SECTION A-A THRU APPROACH SLAB
WEST APPROACH SLAB SHOWN / EAST APPROACH SLAB SIMILAR



SECTION B-B (EDGE OF SLAB DETAIL)
WING 2 CORNER SHOWN / OTHER CORNERS SIMILAR

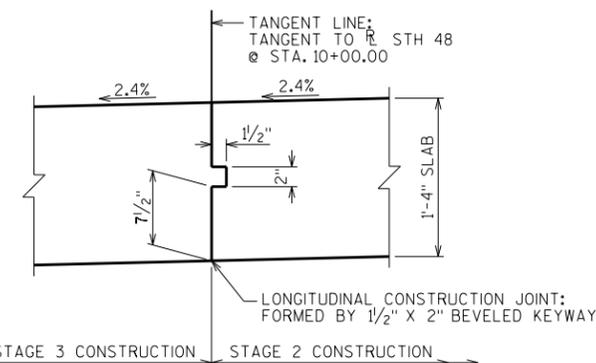
- NOTE:
ALL HORIZONTAL DIMENSIONS ARE TAKEN NORMAL TO THE TANGENT LINE UNLESS NOTED OTHERWISE.
- * OFFSETS TAKEN NORMAL TO R STH 48
 - FINISH SMOOTH TOP OF CONCRETE HORIZONTAL SURFACE. SLOPE DOWN 1% FOR DRAINAGE
 - HORIZ. CONST. JOINT: STRIKE OFF AND LEAVE ROUGH AS SHOWN
 - ▲ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
 - (T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE FOOTING.
 - (T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-03-212			
DRAWN BY JPH		PLANS CK'D. SEW	
STRUCTURAL APPROACH SLABS		SHEET 13	



CROSS SECTION THRU APPROACH SLAB LOOKING EAST - SHOWING STAGED CONSTRUCTION

(REINFORCEMENT NOT SHOWN)



LONGITUDINAL CONSTRUCTION JOINT DETAIL

(LOOKING EAST)

- (T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE FOOTING.
- (T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.

● HORIZ. CONST. JOINT: STRIKE OFF AND LEAVE ROUGH AS SHOWN

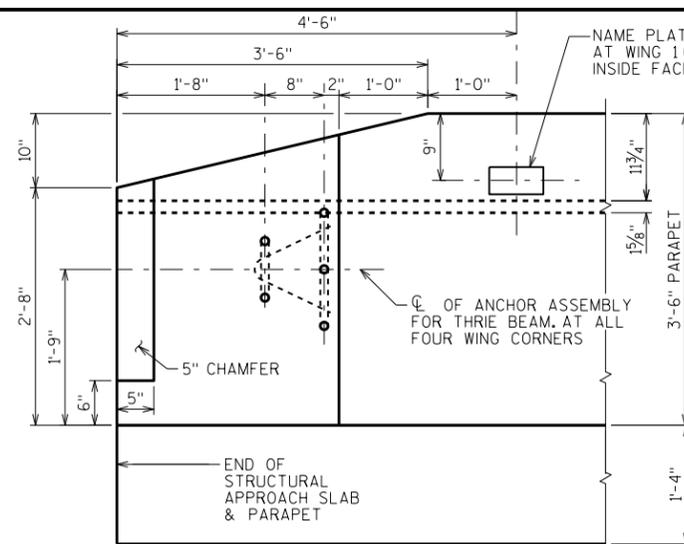
▲ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-03-212			
DRAWN BY		JPH	PLANS CK'D. SEW
STRUCTURAL APPROACH SLABS CROSS SECTION			SHEET 14

8

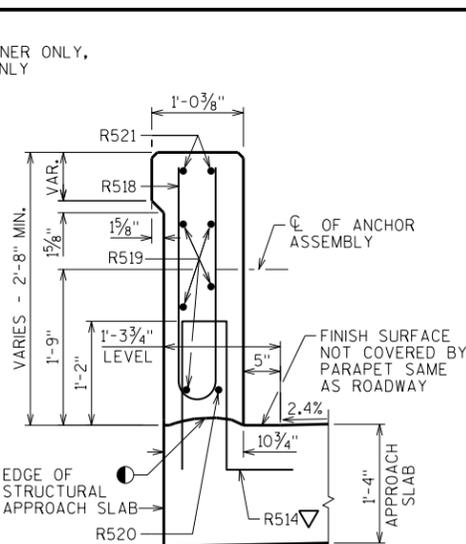
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SCALE = 1:50

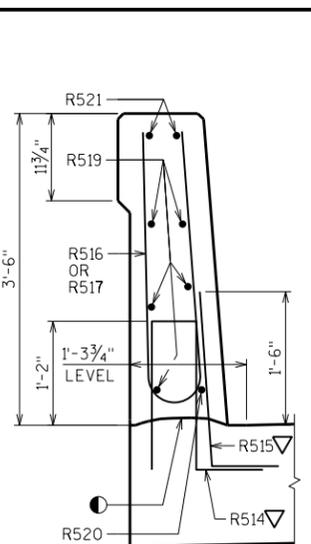


PARAPET END TREATMENT DETAIL

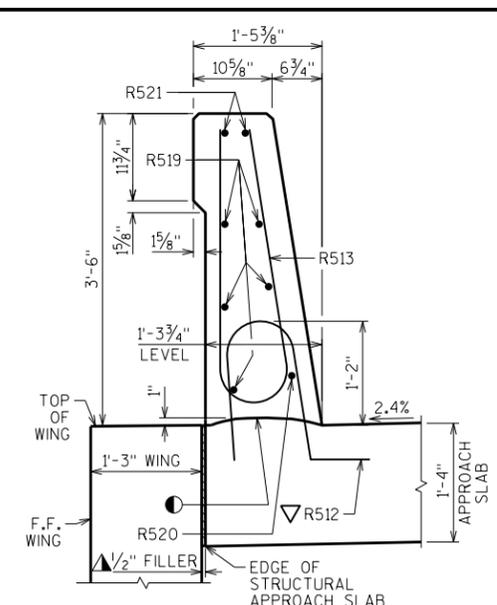
LOOKING AT INSIDE FACE OF PARAPET



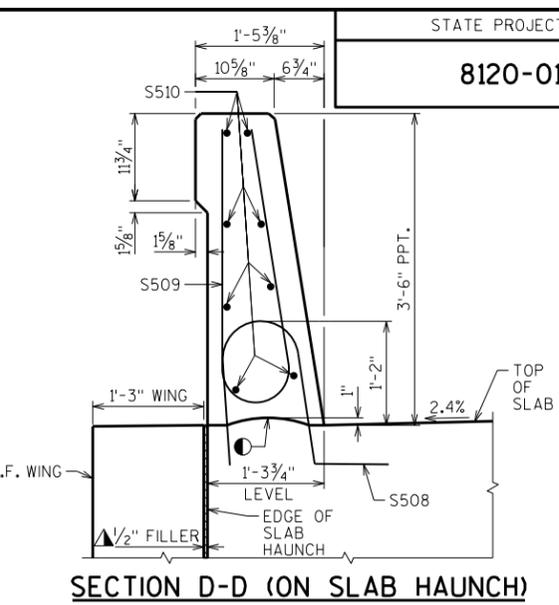
SECTION A-A



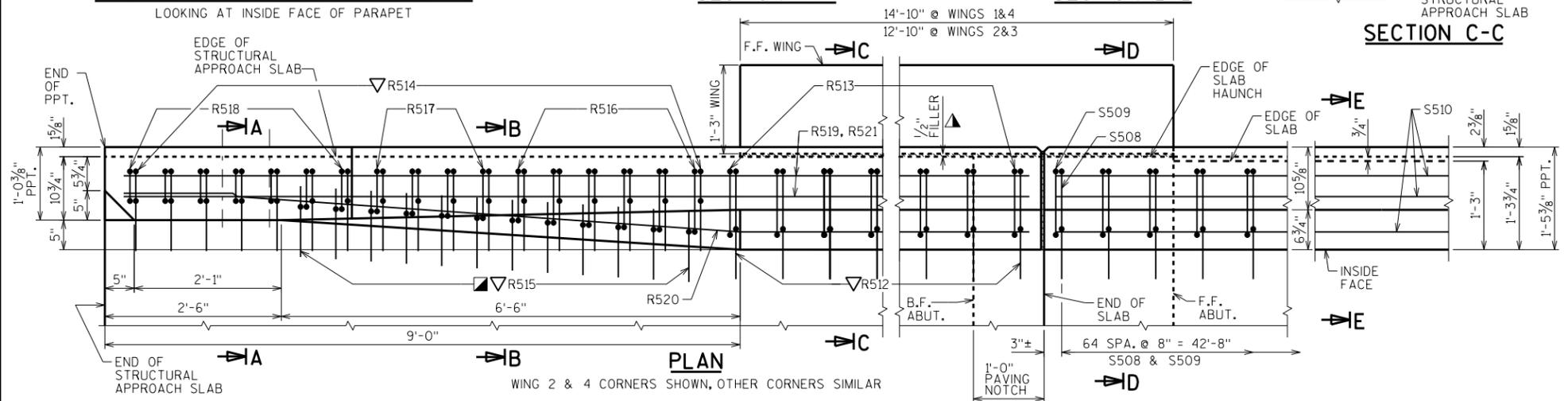
SECTION B-B



SECTION C-C

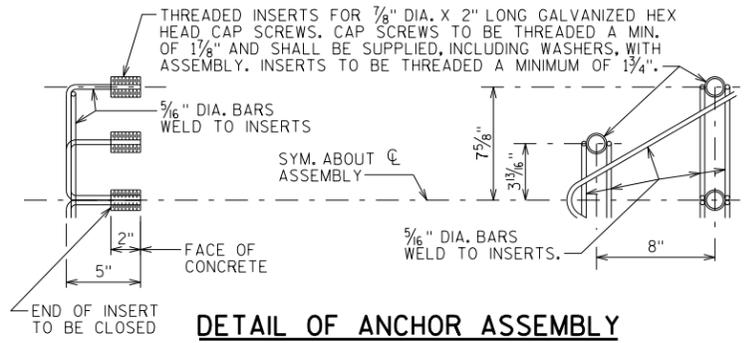


SECTION D-D (ON SLAB HAUNCH)



PLAN

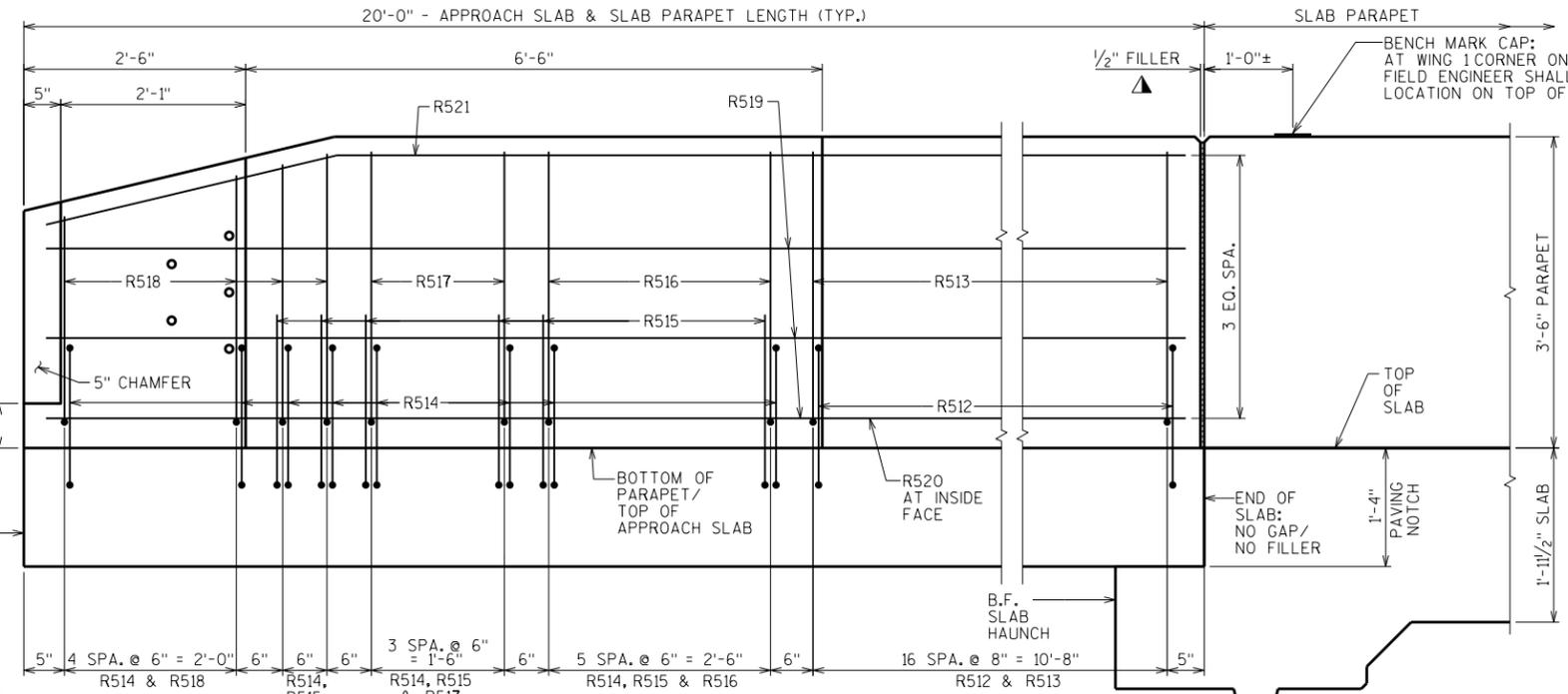
WING 2 & 4 CORNERS SHOWN, OTHER CORNERS SIMILAR



DETAIL OF ANCHOR ASSEMBLY

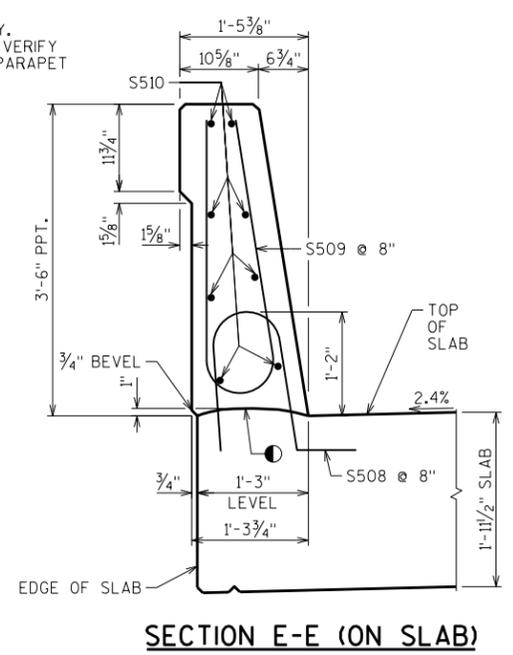
NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.



INSIDE ELEVATION

WING 2 & 4 CORNERS SHOWN, OTHER CORNERS SIMILAR (APPROACH SLAB FOOTING NOT SHOWN FOR CLARITY)



SECTION E-E (ON SLAB)

NOTE: FOR THE PARAPET 'BILL OF BARS' & 'BAR DETAILS' SEE THE 'SUPERSTRUCTURE & APPROACH SLAB BAR DETAILS' SHEET.

▲ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

● HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

■ USE CARE TO PLACE R515 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R512, R514, AND R515 PARAPET BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-03-212			
DRAWN BY JPH		PLANS CK'D. SEW	
SINGLE SLOPE PARAPET 42SS		SHEET 15	

BILL OF BARS FOR STRUCTURAL APPROACH SLABS

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

BAR MARK	COAT	NO. REQUIRED, WEST SLAB	EAST SLAB	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	42	42	12'-2"	X		FOOTING-VERTICAL-LONGITUDINAL-STIRRUP BAR-BETWEEN PARAPETS
R502	X	4	4	8'-11"	X		FOOTING-VERTICAL-LONGITUDINAL-STIRRUP BAR-AT ENDS ONLY
(S01) R803	X	4	4	19'-10"			FOOTING-TOP & BOTTOM-HORIZONTAL-TRANSVERSE-AT OUTSIDE FACE-STAGE 2
(S01) R804	X	8	8	21'-2"			FOOTING-TOP & BOTTOM-HORIZONTAL-TRANSVERSE-AT INSIDE FACE-STAGE 2
(S01) R805	X	4	4	20'-1"			FOOTING-TOP & BOTTOM-HORIZONTAL-TRANSVERSE-AT OUTSIDE FACE-STAGE 3
(S01) R806	X	8	8	21'-5"			FOOTING-TOP & BOTTOM-HORIZONTAL-TRANSVERSE-AT INSIDE FACE-STAGE 3
R807	X	72	72	21'-6"	X		SLAB-BOTTOM-VERTICAL-LONGITUDINAL
R508	X	42	42	24'-4"			SLAB-TOP & BOTTOM-HORIZONTAL-TRANSVERSE-STAGE 2
R509	X	42	42	21'-2"			SLAB-TOP & BOTTOM-HORIZONTAL-TRANSVERSE-STAGE 3
R510	X	40	40	4'-1"	X		SLAB-TOP-VERTICAL-TRANSVERSE-AT BOTH EDGES
R511	X	44	44	19'-8"			SLAB-TOP-HORIZONTAL-LONGITUDINAL
R512	X	34	34	4'-5"	X		PARAPETS/SLAB-VERTICAL-TRANSVERSE-AT ALL FOUR PPT. ENDS
R513	X	34	34	6'-8"	X		PARAPETS-VERTICAL-TRANSVERSE-AT ALL FOUR PPT. ENDS
R514	X	34	34	4'-4"	X		PARAPETS/SLAB-VERTICAL-TRANSVERSE-AT ALL FOUR PPT. ENDS
R515	X	24	24	2'-9"	X		PARAPETS/SLAB-INSIDE FACE-VERTICAL-TRANSVERSE-AT ALL FOUR PPT. ENDS
R516	X	12	12	6'-6"	X		PARAPETS-VERTICAL-TRANSVERSE-AT ALL FOUR PPT. ENDS
R517	X	8	8	6'-5"	X		PARAPETS-END-VERTICAL-TRANSVERSE-AT ALL FOUR PPT. ENDS
R518	X	14	14	5'-8"	X	▲	PARAPETS-END TAPER-VERTICAL-TRANSVERSE-AT ALL FOUR PPT. ENDS
R519	X	10	10	19'-6"			PARAPETS-BOTH FACES-HORIZONTAL-LONGITUDINAL-AT ALL FOUR PPT. ENDS
R520	X	2	2	19'-6"	X		PARAPETS-BOT.-INSIDE FACE-HORIZONTAL-LONGITUDINAL-AT ALL FOUR PPT. ENDS
R521	X	4	4	19'-6"	X		PARAPETS-TOP-BOTH FACES-VERTICAL-LONGITUDINAL-AT ALL FOUR PPT. ENDS

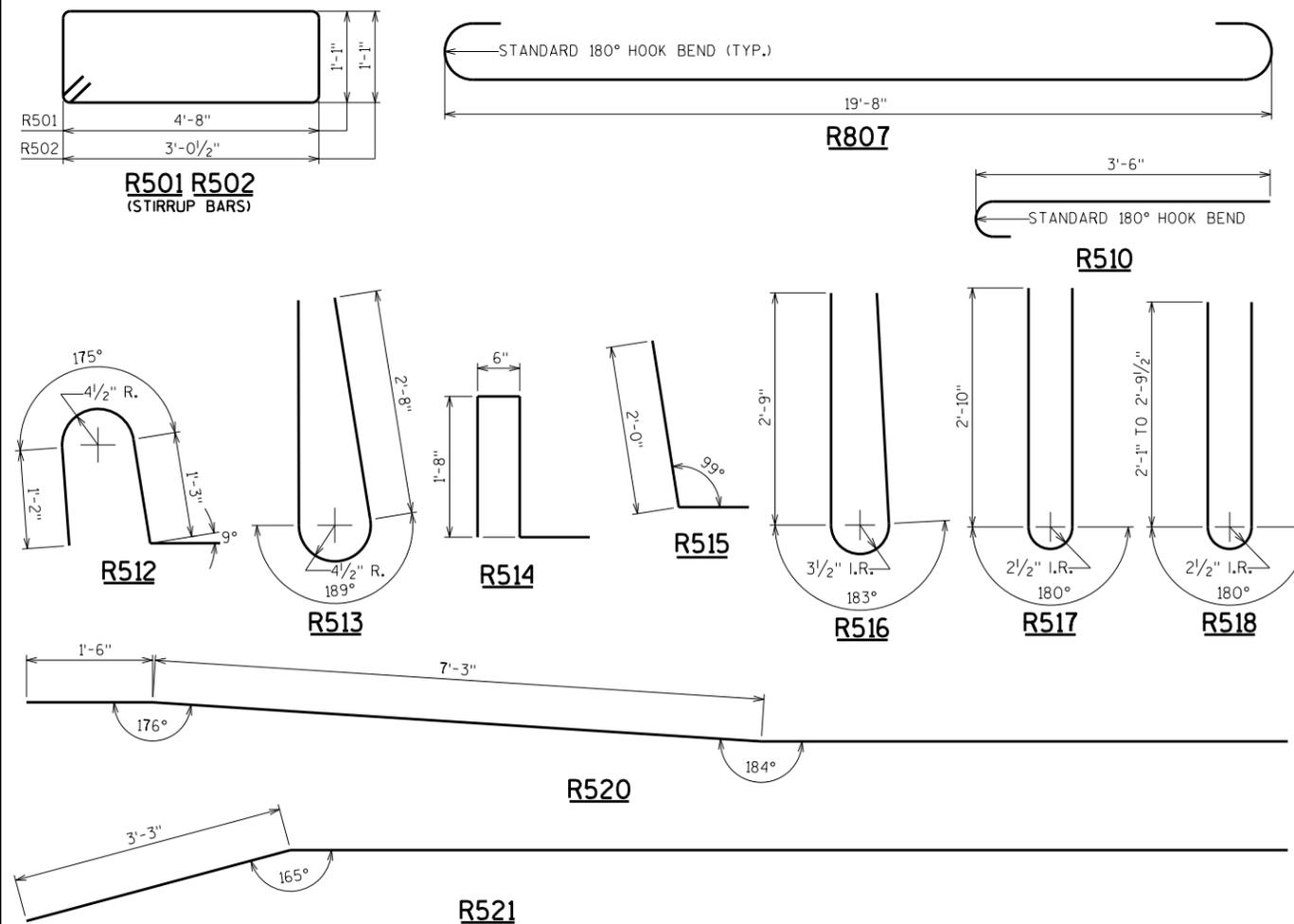
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL BAR LENGTHS.

(S01) BAR COUPLERS USED. BAR LENGTH COMPUTED TO STAGED LONGITUDINAL CONSTRUCTION JOINT AND SHALL BE MODIFIED IF REQUIRED TO THE BAR COUPLER MANUFACTURER'S RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED.

BAR SERIES TABLE

BAR MARK	NUMBER REQUIRED	TOTAL BAR LENGTH
R518	4 SERIES OF 7 BARS	4'-11" TO 6'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY.



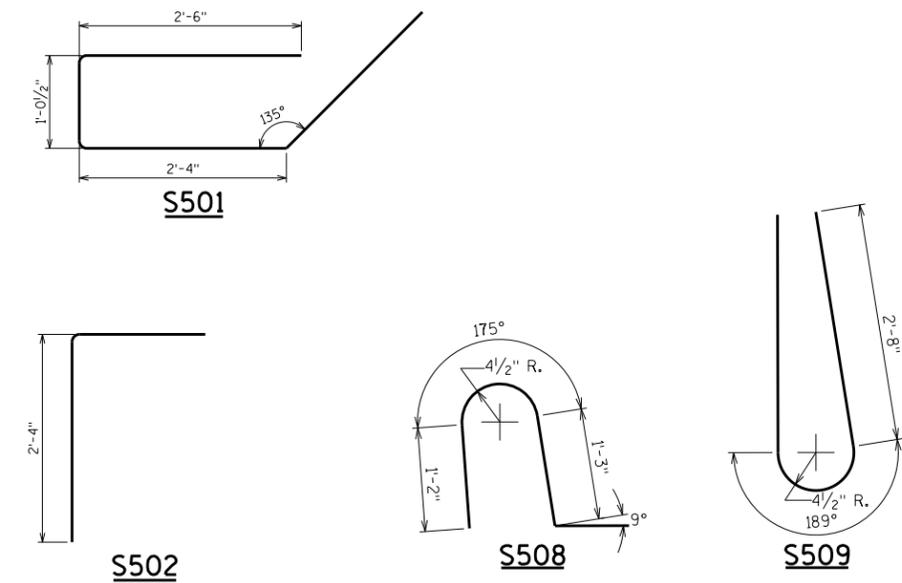
BILL OF BARS FOR SUPERSTRUCTURE

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	X	88	7'-9"	X	SLAB HAUNCH-BOTTOM-LONGITUDINAL-VERTICAL-AT BOTH ENDS OF SLAB
S502	X	88	3'-9"	X	SLAB HAUNCH-TOP-LONGIT.-VERT.-AT BOTH ENDS OF SLAB
S1103	X	86	44'-10"		SLAB-BOT.-LONGIT.-HORIZONTAL
S504	X	111	24'-3"		SLAB & SLAB HAUNCH-TOP & BOT.-TRANSVERSE-HORIZONTAL-STAGE 2
S505	X	111	21'-2"		SLAB & SLAB HAUNCH-TOP & BOT.-TRANSVERSE-HORIZONTAL-STAGE 3
S506	X	44	42'-10"		SLAB-TOP-LONGIT.-HORIZONTAL
S507	X	86	5'-0"		SLAB-TOP-TRANSVERSE-HORIZ.-AT BOTH EDGES OF SLAB
S508	X	130	4'-5"	X	PARAPETS/SLAB-VERTICAL-TRANSVERSE-AT BOTH SIDES
S509	X	130	6'-8"	X	PARAPETS-VERTICAL-TRANSVERSE-AT BOTH SIDES
S510	X	16	42'-10"		PARAPETS-BOTH FACES-HORIZ.-LONGIT.-AT BOTH SIDES

SS601		88	3'-0"		SLAB HAUNCH/APPROACH SLAB-HORIZ.-LONGIT.-AT PAVING NOTCHES
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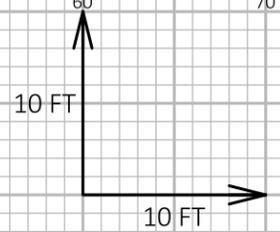
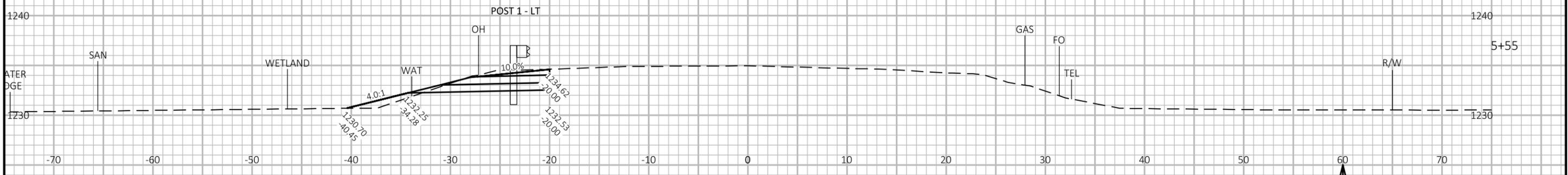
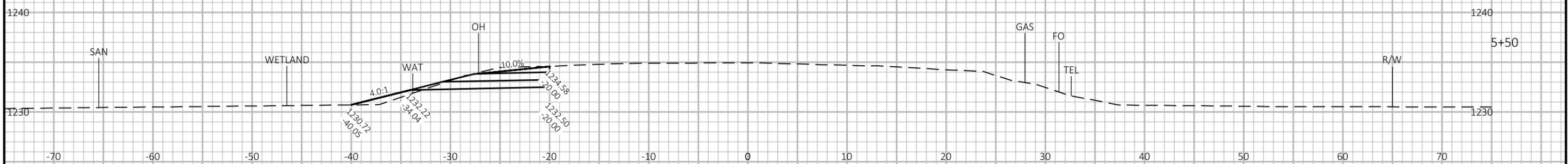
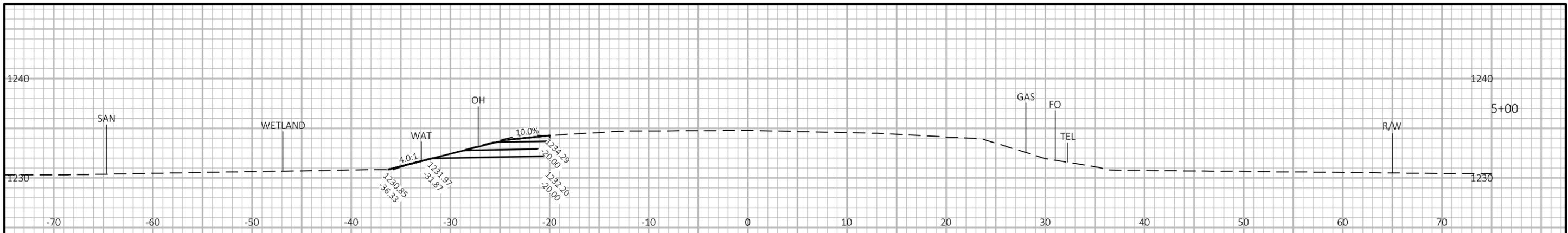
↑ STAINLESS STEEL REINFORCEMENT



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-03-212			
DRAWN BY JPH		PLANS CHECKED SEW	
SUPERSTRUCTURE & APPROACH SLAB BAR DETAILS			SHEET 16

SCALE = 1:00

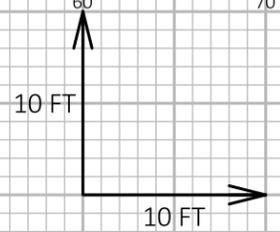
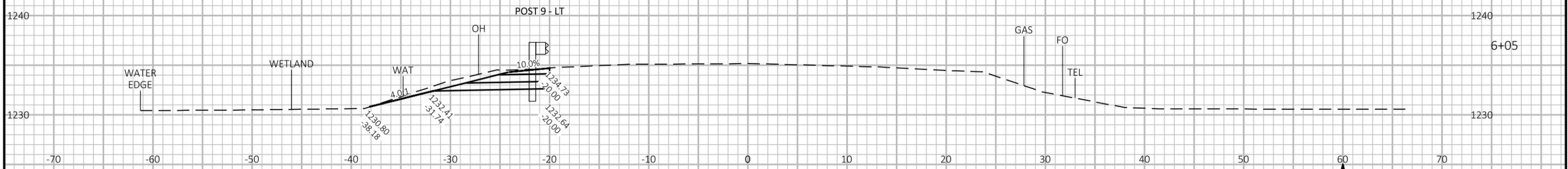
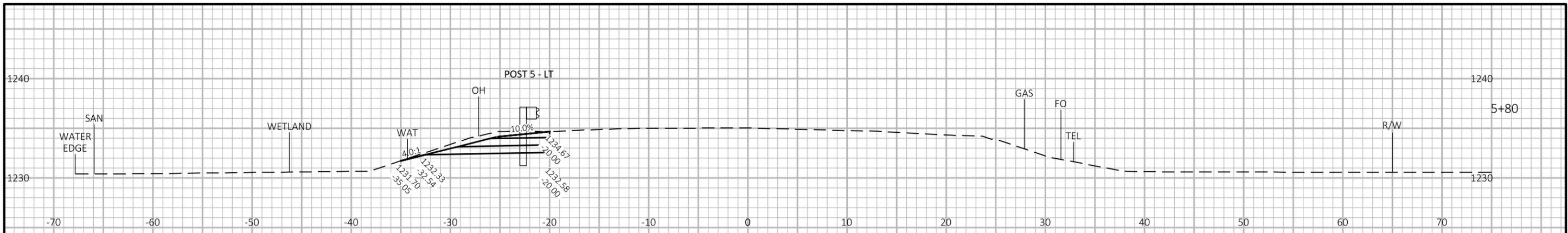
Station	Cut Area (Sq.ft.)	Cut Volume (Cu.yd.)	Reusable Volume (Cu.yd.)	Fill Area (Sq.ft.)	Fill Volume (Cu.yd.)	Cum. Cut Vol. (Cu.yd.)	Cum. Reusable Vol. (Cu.yd.)	Cum. Fill Vol. (Cu.yd.)	Cum. Net Vol. (Cu.yd.)
5+00.00	16.07	0	0	0.29	0	0	0	0	0
5+50.00	19.26	32.71	32.71	2.98	3.02	32.71	32.71	3.02	29.69
6+05.25	20.44	40.62	40.62	0	3.04	73.33	73.33	6.06	67.27
6+63.00	54.57	80.22	80.22	20.63	3.55	153.55	153.55	9.76	143.79
7+00.00	49.57	71.36	71.36	4.38	5.27	224.91	224.91	15.31	209.77
7+50.00	44.22	86.84	86.84	3.37	7.18	311.75	311.75	22.31	289.44
8+00.00	32.5	71.03	71.03	0.11	3.22	382.78	382.78	25.53	357.25
8+50.00	10.66	39.97	39.97	8.76	8.21	422.75	422.75	33.75	389
9+00.00	3.03	12.68	12.68	34.03	39.62	435.43	435.43	73.37	362.06
9+50.00	6.73	9.04	9.04	13.46	43.97	444.47	444.47	117.34	327.13
9+72.00	24.78	12.84	12.84	3.56	6.93	457.3	457.3	124.27	333.03
10+28.00	36.18	63.23	63.23	0	3.69	520.53	520.53	127.96	392.57
10+50.00	5.46	16.97	16.97	21.92	8.93	537.5	537.5	136.89	400.6
11+00.00	1.94	6.86	6.86	51.17	67.68	544.35	544.35	204.57	339.78
11+50.000	6.11	7.45	7.45	49.2	92.93	551.81	551.81	297.51	254.3
12+00.000	5.3	10.57	10.57	53.74	95.31	562.37	562.37	392.82	169.55
12+50.000	13.23	17.16	17.16	18.24	66.65	579.53	579.53	459.47	120.07
13+00.000	29.03	39.13	39.13	3.03	19.7	618.67	618.67	479.16	139.5
13+28.000	19.55	25.19	25.19	7.98	5.71	643.85	643.85	484.88	158.98
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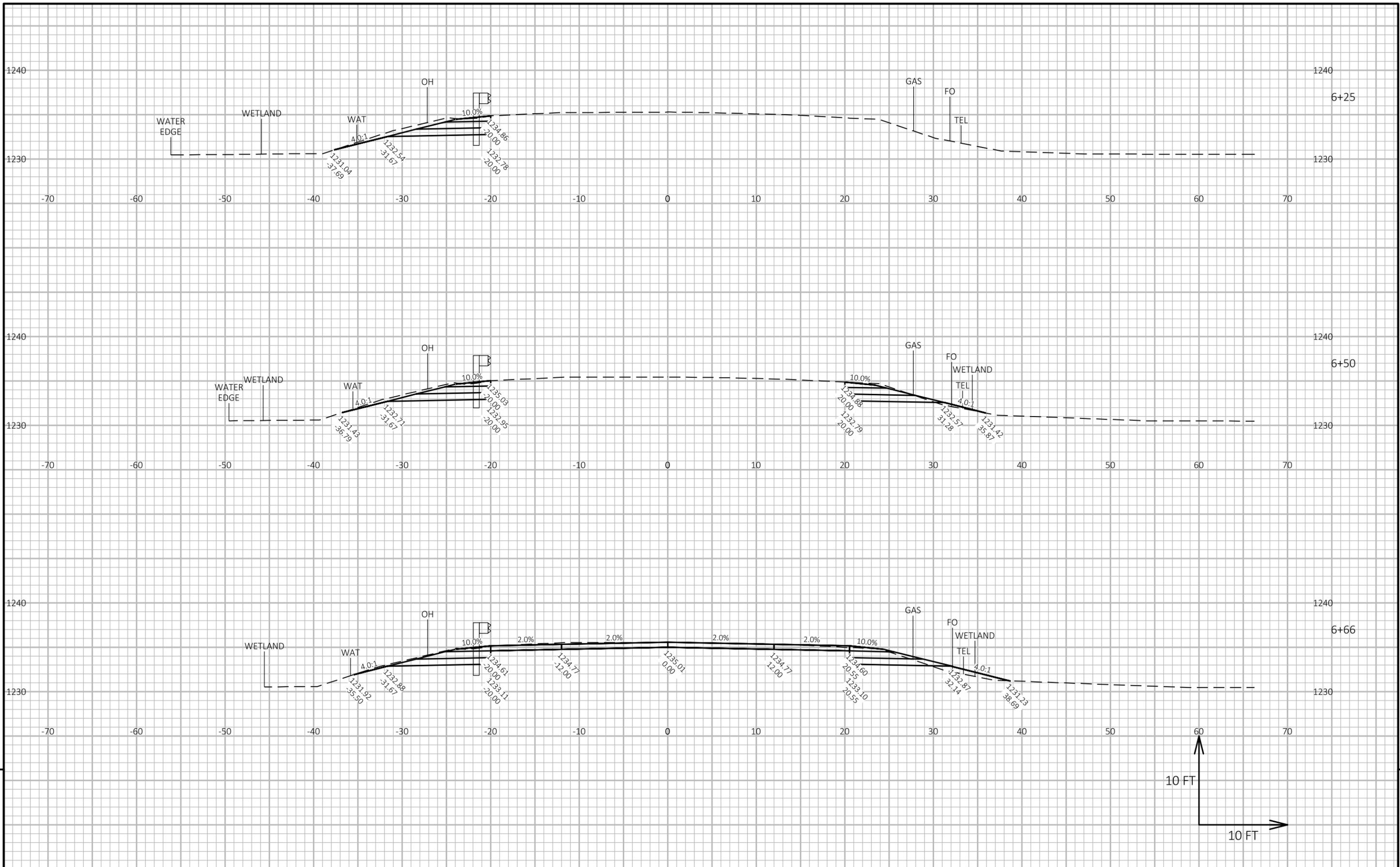


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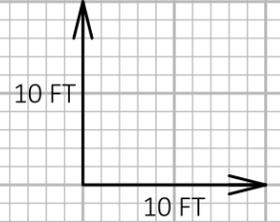
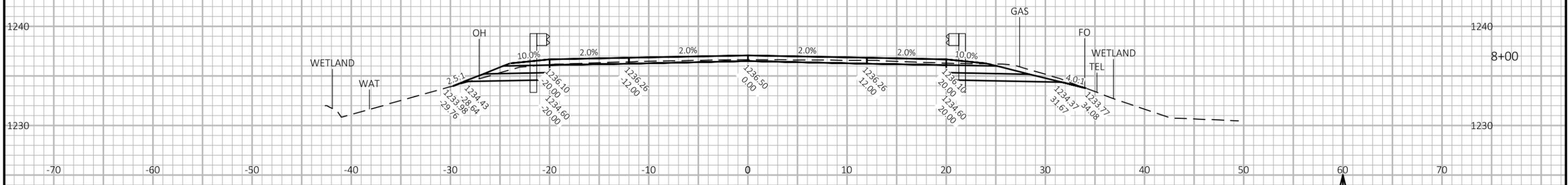
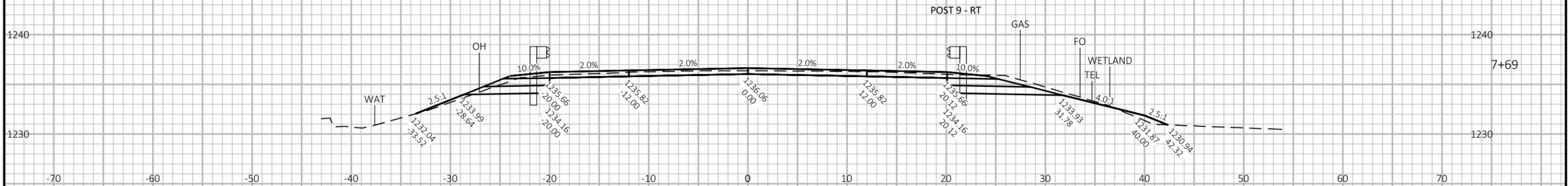
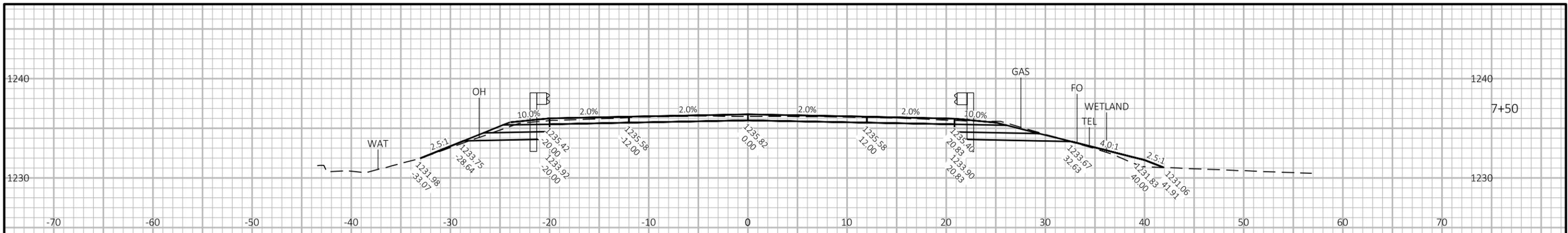


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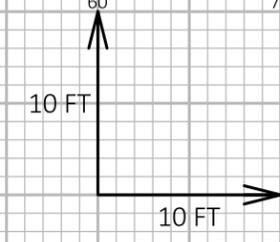
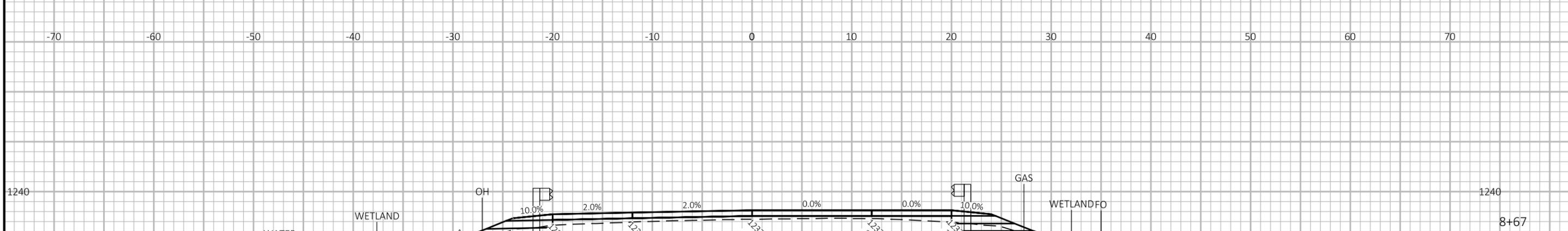
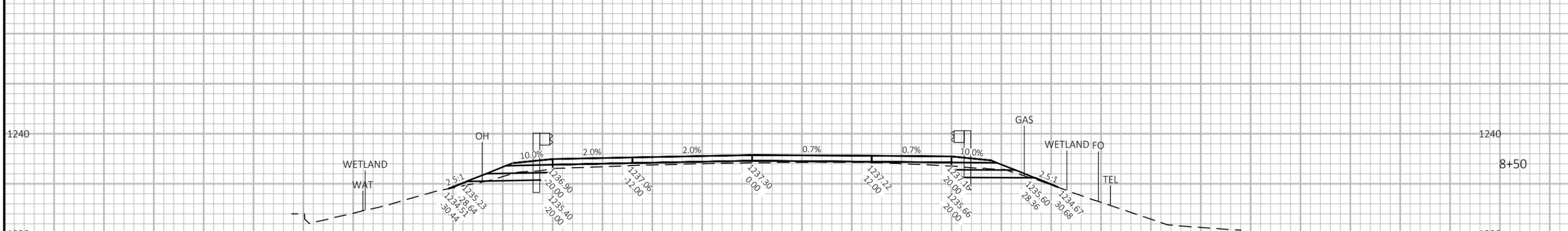
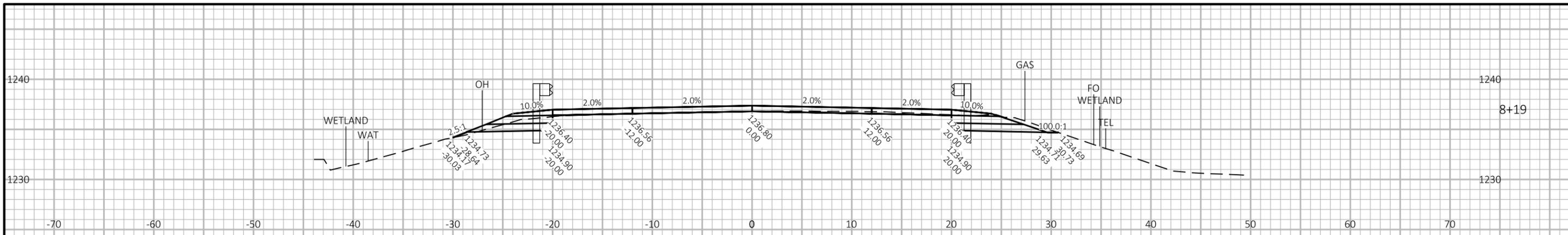


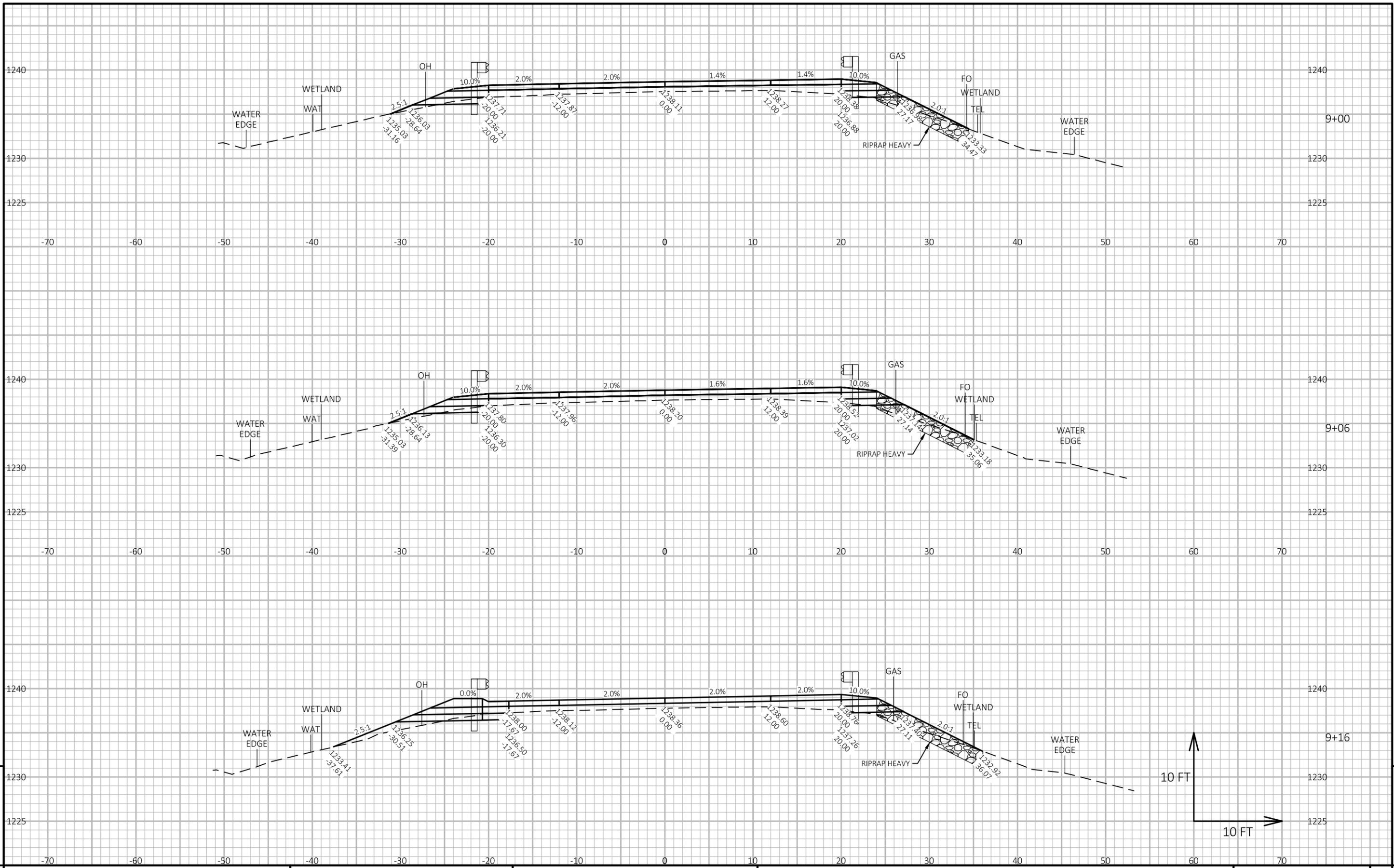
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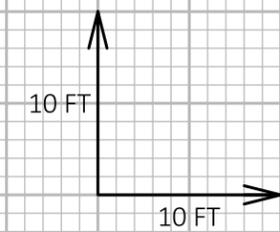
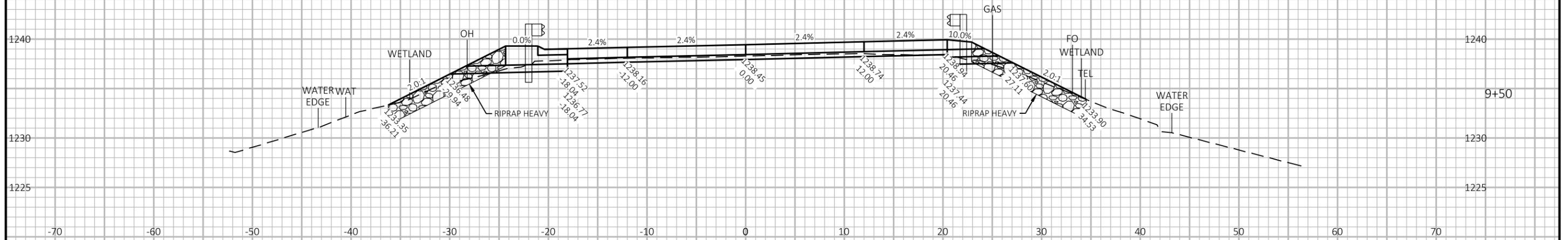
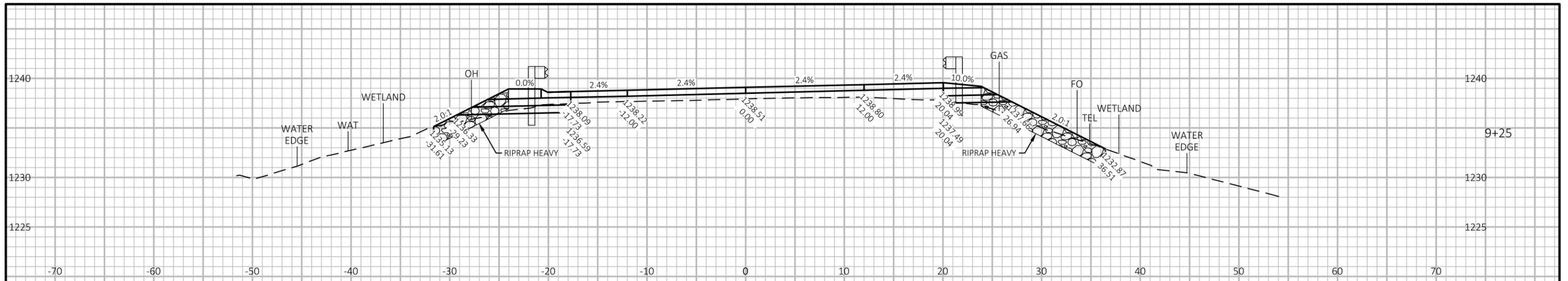
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CROSS SECTIONS: STH 48

SHEET

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PROJECT NO: 8120-01-70

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COUNTY: BARRON

CROSS SECTIONS: STH 48

SHEET

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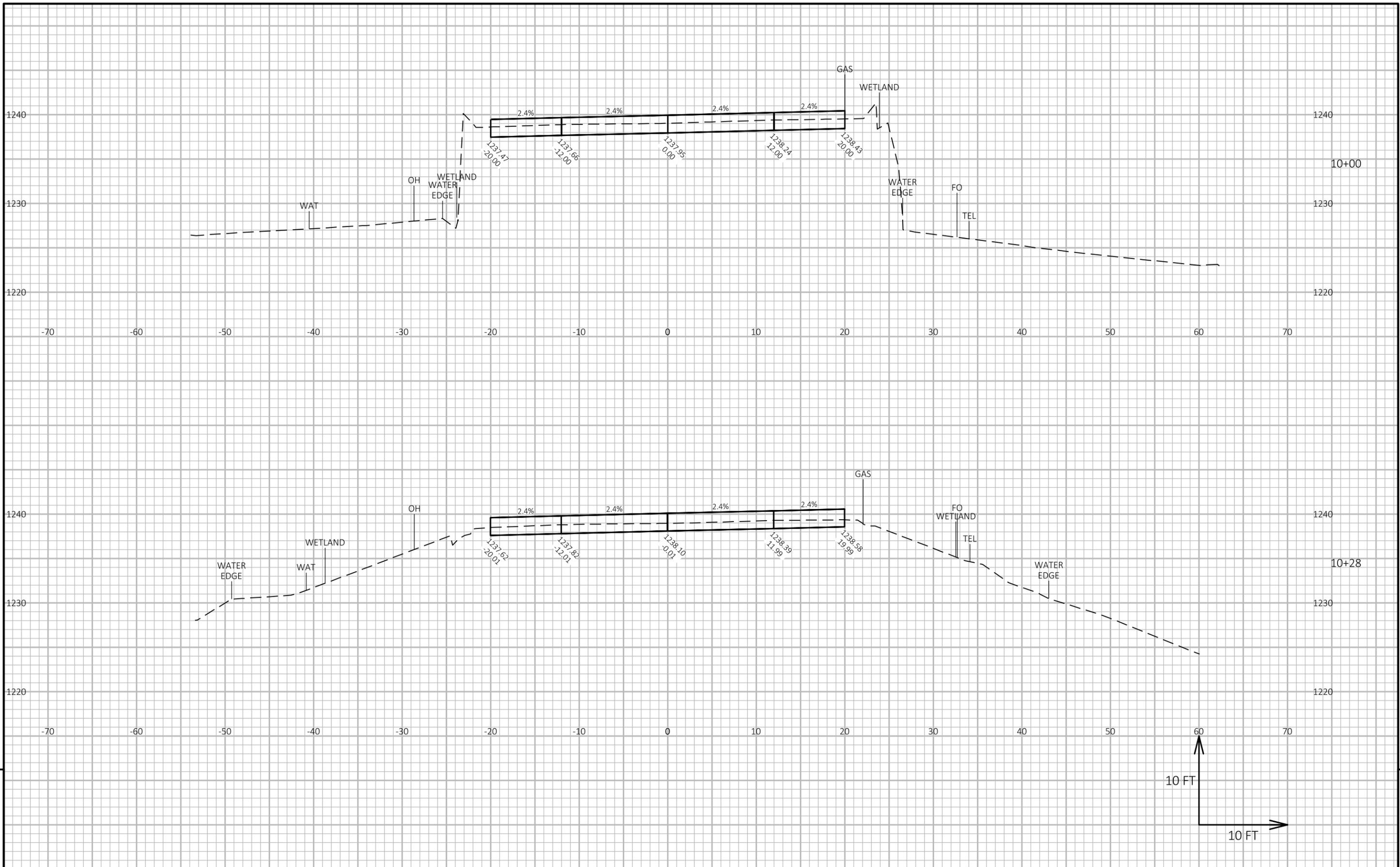
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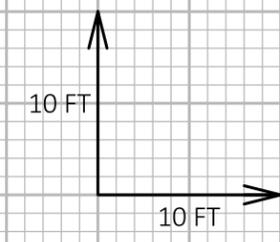
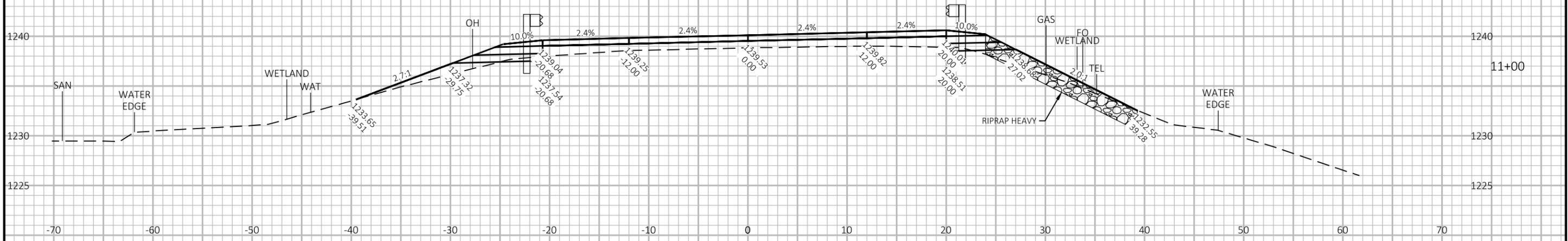
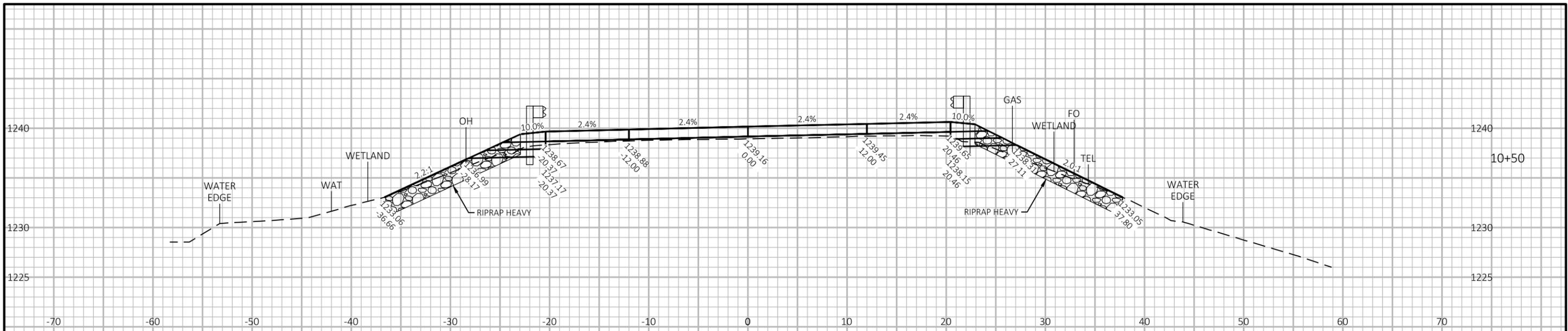


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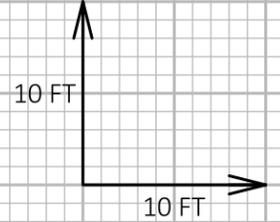
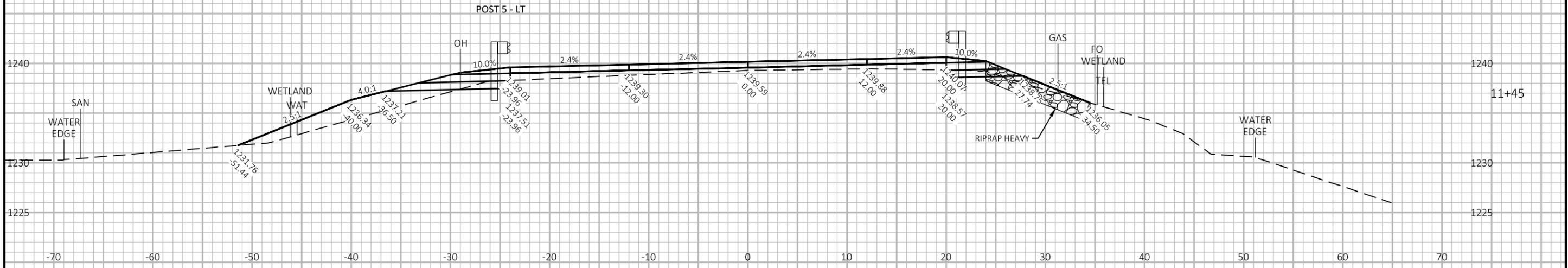
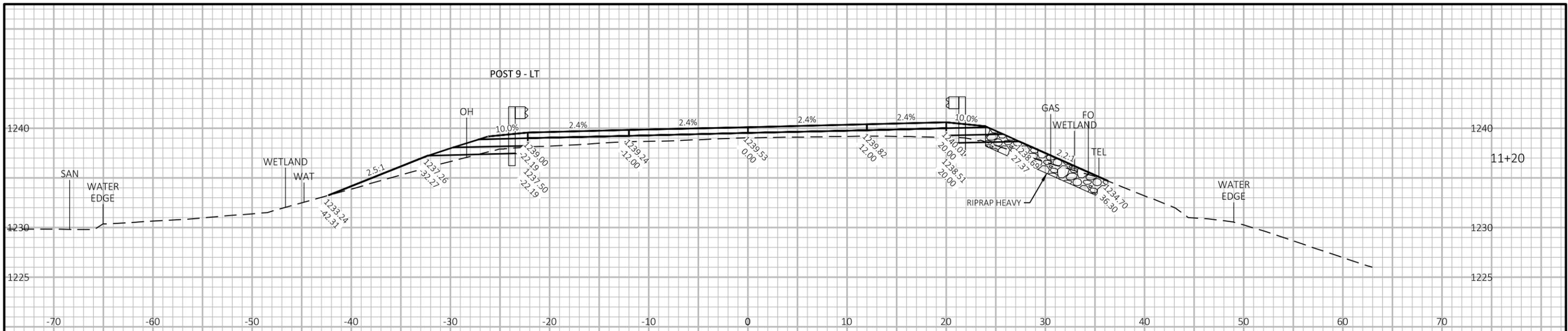
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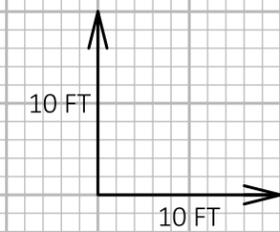
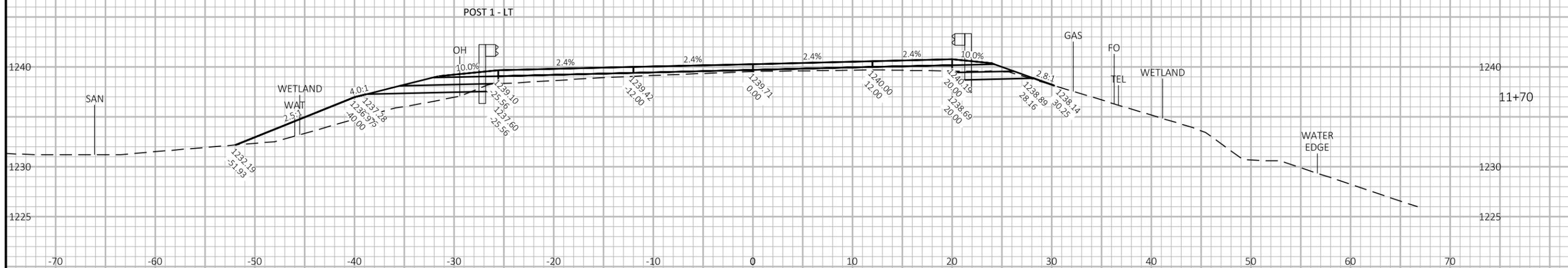
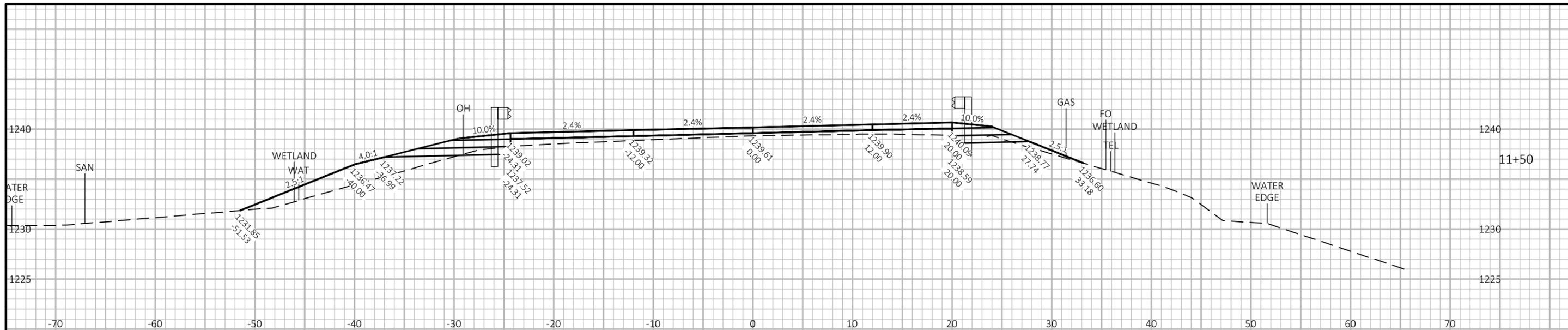
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PROJECT NO: 8120-01-70	HWY: STH 48	COUNTY: BARRON	CROSS SECTIONS: STH 48	SHEET	E
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PROJECT NO: 8120-01-70

HWY: STH 48

COUNTY: BARRON

CROSS SECTIONS: STH 48

SHEET

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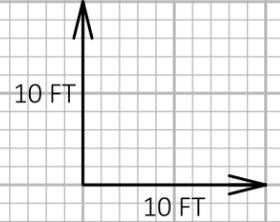
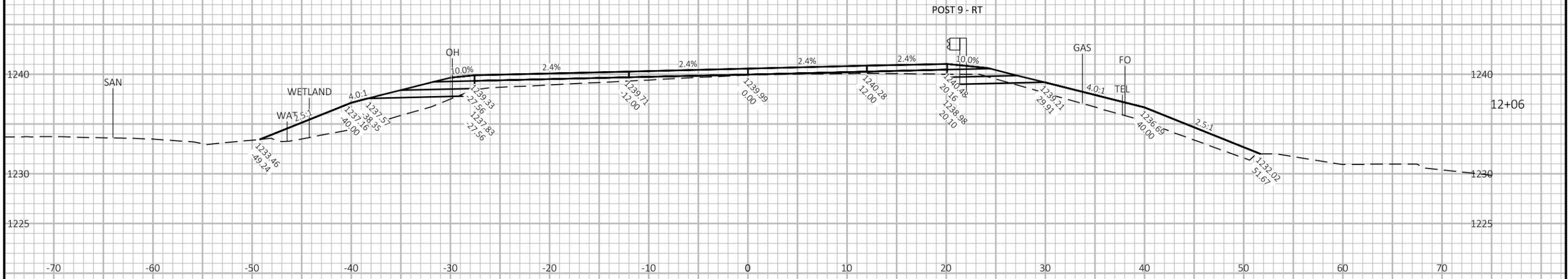
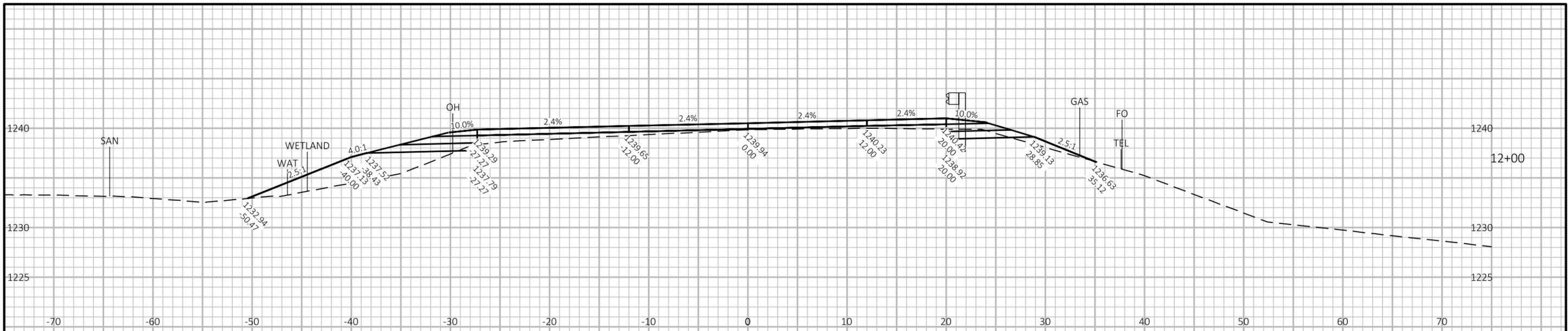
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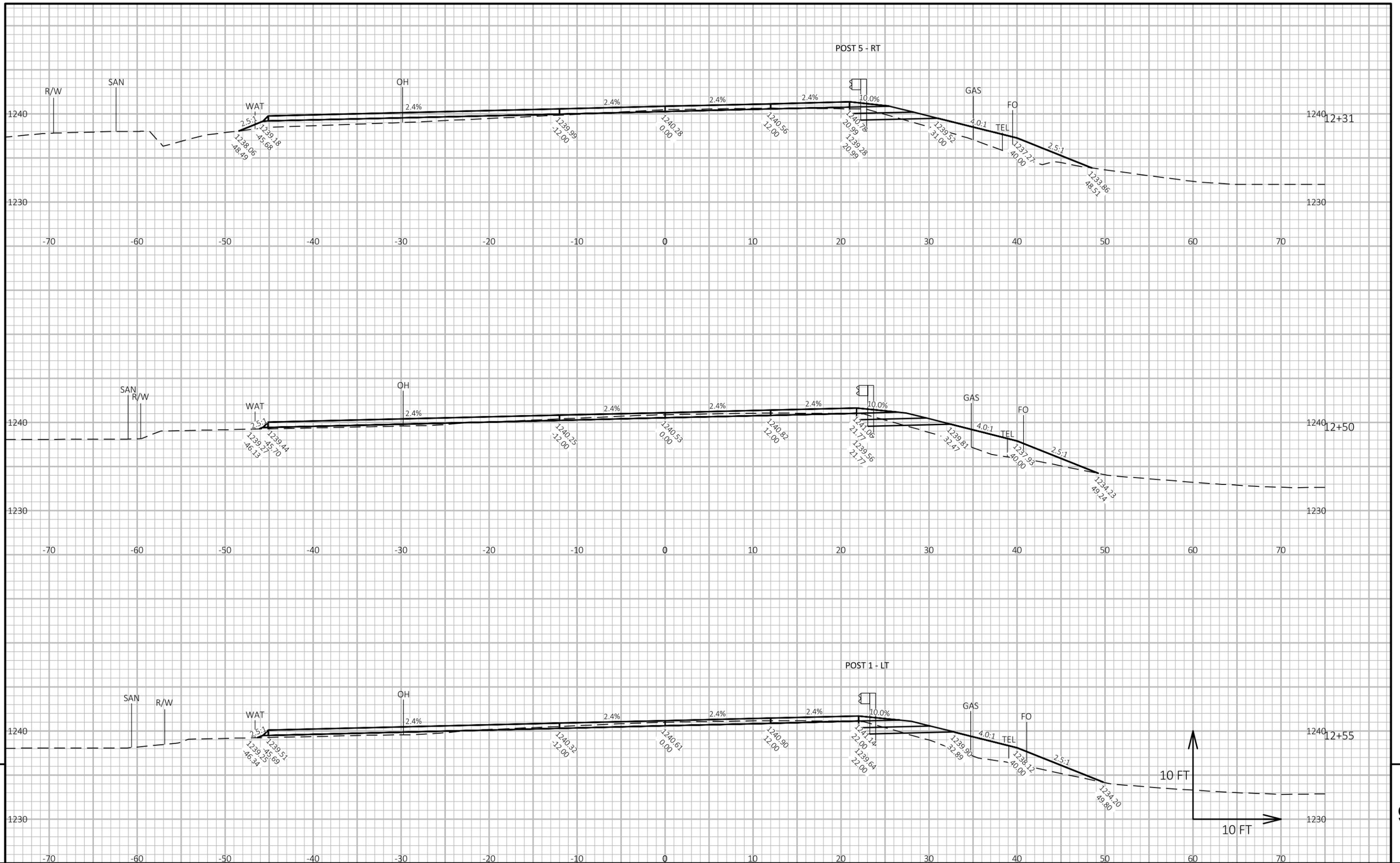
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PROJECT NO: 8120-01-70	HWY: STH 48	COUNTY: BARRON	CROSS SECTIONS: STH 48	SHEET E
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PROJECT NO: 8120-01-70

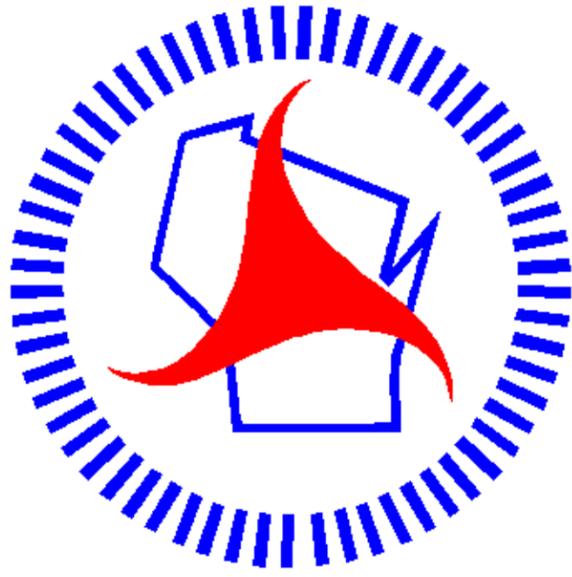
HWY: STH 48

COUNTY: BARRON

CROSS SECTIONS: STH 48

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