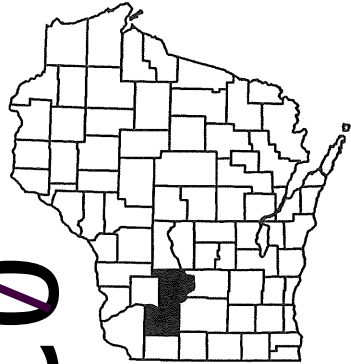


ORDER OF SHEETS

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

TOTAL SHEETS = 96



DESIGN DESIGNATION

A.A.D.T.	2015	=	3650
A.A.D.T.	2040	=	4500
D.H.V.		=	16.2
D.D.		=	N/A
T.		=	17.2%
DESIGN SPEED		=	60
ESALS		=	1,500,000

CONVENTIONAL SYMBOLS

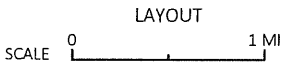
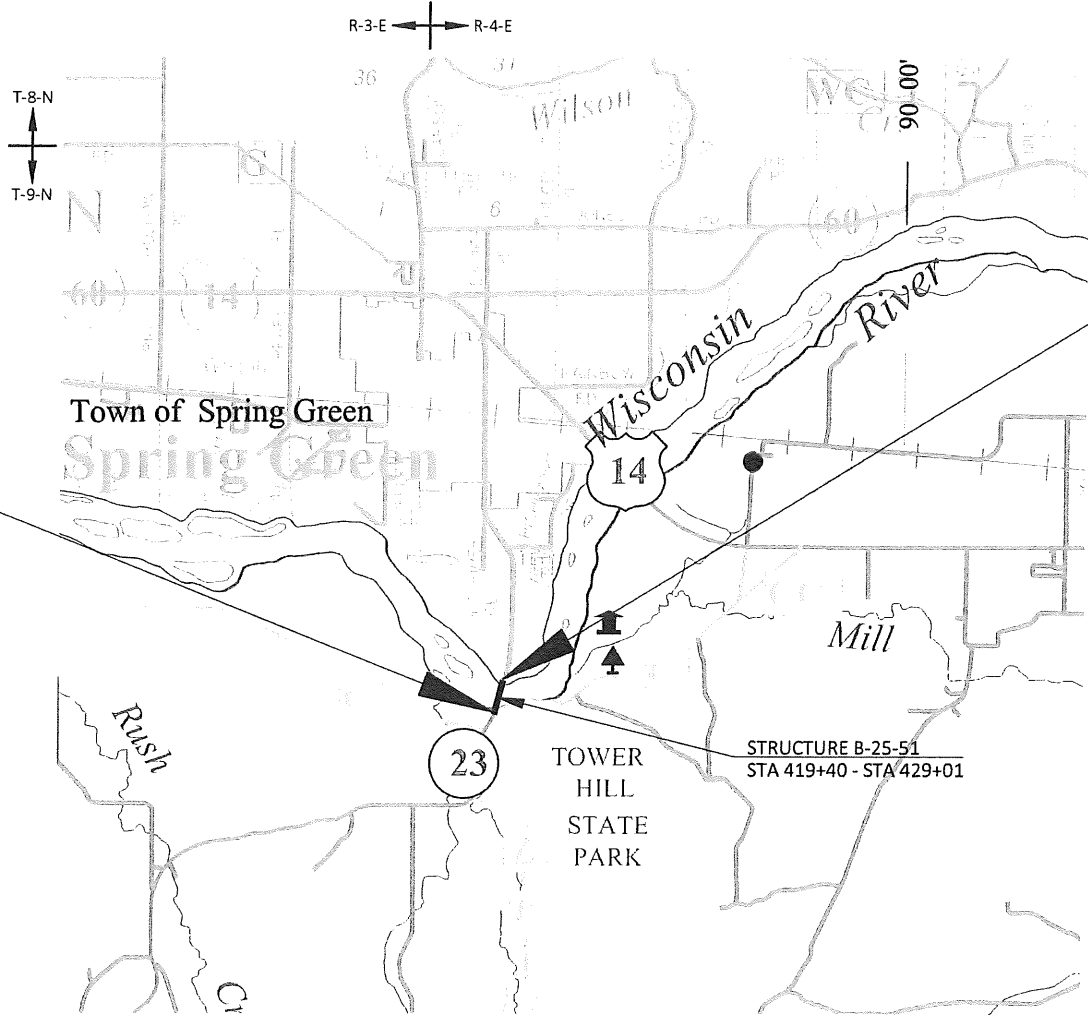
PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

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	

	ROCK
	LABEL
	95.36
	E
	FO
	G
	SAN
	SS
	T
	W

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
MINERAL POINT - SPRING GREEN
(WISCONSIN RIVER STRUCTURE B-25-0051)
STH 23
SAUK COUNTY

STATE PROJECT NUMBER
5255-01-81



TOTAL NET LENGTH OF CENTERLINE = 0.220 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, SAUK 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.

ELEVATION SHOWN ON THIS PLAN ARE REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD (2012.)

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5255-01-81	WISC 2020345	1

ORIGINAL PLANS PREPARED BY

BAXTER WOODMAN



DATE 1-24-2020 Scott G. Ahles
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	The Excelsior Group, LLC
Designer	BAXTER & WOODMAN
Project Manager	JIM SIMPSON
Regional Examiner	SW REGION
Regional Supervisor	KURT JOHNSON

APPROVED FOR THE DEPARTMENT
DATE 01-24-2020 [Signature]
(Signature)

2

CONVENTIONAL ABBREVIATIONS

ACCESS POINT/ DRIVEWAY CONNECTION	AP	RELEASE OF RIGHTS REMAINING	ROR REM.
ACCESS RIGHTS	AR	RIGHT-OF-WAY	R/W
ACRES	AC.	SECTION	SEC.
AND OTHERS	ET.AL.	STATION	STA.
CENTERLINE	C/L	TEMPORARY LIMITED EASEMENT	TLE
CERTIFIED SURVEY MAP	CSM	VOLUME	V.
CORNER	COR.		
DOCUMENT	DOC.		
EASEMENT	EASE.		
HIGHWAY EASEMENT	H.E.		
LAND CONTRACT	LC		
MONUMENT	MON.		
PAGE	P.		
PERMANENT LIMITED EASEMENT	PLE		
PROPERTY LINE	PL		
RECORDED AS	(100')		
REFERENCE LINE	R/L		

GENERAL NOTES

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

COORDINATES AND BEARINGS ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), SAUK COUNTY.

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE, AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION. EXACT LOCATIONS FOR EBS WILL BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEEDING MIXTURE NO. 20), AND EROSION MATTED (CLASS I TYPE B) AS DIRECTED BY THE ENGINEER. ALL POST CONSTRUCTION WET AREAS SHALL BE SEEDED WITH MIXTURE NO. 20. DO NOT APPLY FERTILIZER WITHIN 20 FEET OF THE WISCONSIN RIVER.

MULCH ALL MAINLINE SLOPES AS DIRECTED BY THE ENGINEER IN THE FIELD.

FILL EXPANSION IS VARIABLE AND ESTIMATED AT 25%

ADJUST DITCH GRADING AS NECESSARY TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 2012 (NAVD 2012)

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

THE LOCATION OF ALL PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD PRIOR TO PLACEMENT.

ASPHALTIC SURFACE WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

5.5" ASPHALTIC SURFACE SHALL BE PLACED IN TWO LAYERS. 3" LOWER LAYER, 2.5" UPPER LAYER.

APPLY TACK COAT AT A RATE OF 0.05 GAL/SY BETWEEN LAYERS OF ASPHALTIC SURFACE.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, PASSING OR PARKING LANE.

EROSION CONTROL MATTING TO BE INSTALLED USING PROPER STAPLE PATTERN AS DESCRIBED BY THE WISCONSIN EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL)

CONTACTS

WISCONSIN DEPARTMENT OF TRANSPORTATION

WISDOT PROJECT MANAGER
JIM SIMPSON
2101 WRIGHT STREET
MADISON, WI, 53704
PHONE:(608) 246-5628
EMAIL:Jim.Simpson@dot.wi.gov

WDNR LIASON

STATE OF WISCONSIN
DNR SERVICE CENTER
ANDY BARTA
3911 FISH HATCHERY ROAD
FITCHBURG, WI, 53711
PHONE: (608) 275-3308
EMAIL: Andrew.Barta@wisconsin.gov

DESIGN CONSULTANT

BAXTER & WOODMAN
SCOTT AHLES
115 S. 84TH ST, SUITE 175
MILWAUKEE, WI, 53214
PHONE: (815) 444-3387
EMAIL: Sahles@baxterwoodman.com

UTILITIES

TELEPHONE

FRONTIER
RUSS RYAN
118 DIVISION ST.
PLYMOUTH, WI 53073
PHONE:(920) 583-3275
EMAIL:Russell.w.ryan@ftr.com

COMMUNICATIONS

WINDSTREAM KDL
ERIC BECKER
314 N. DANZ AVE.
GREEN BAY, WI 54302
PHONE:(920) 461-9825
EMAIL:Eric.Becker@windstream.com

COMMUNICATIONS

CHARTER
LUKAS LACROSSE
2701 DANIELS ST.
MADISON, WI 53718
PHONE: (608) 709-1562 X41562
EMAIL:Lukas.LaCrosse@charter.com

DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

PROJECT NO: 5255-01-81

HWY: STH-23

COUNTY: IOWA, SAUK

GENERAL NOTES

SHEET

E

FILE NAME : I:\CRYSTAL LAKE\WIDOT\161314\CADD-SURVEY\STH-23\SHEETSP\AN\020101-GN.DWG

LAYOUT NAME - Gen Notes

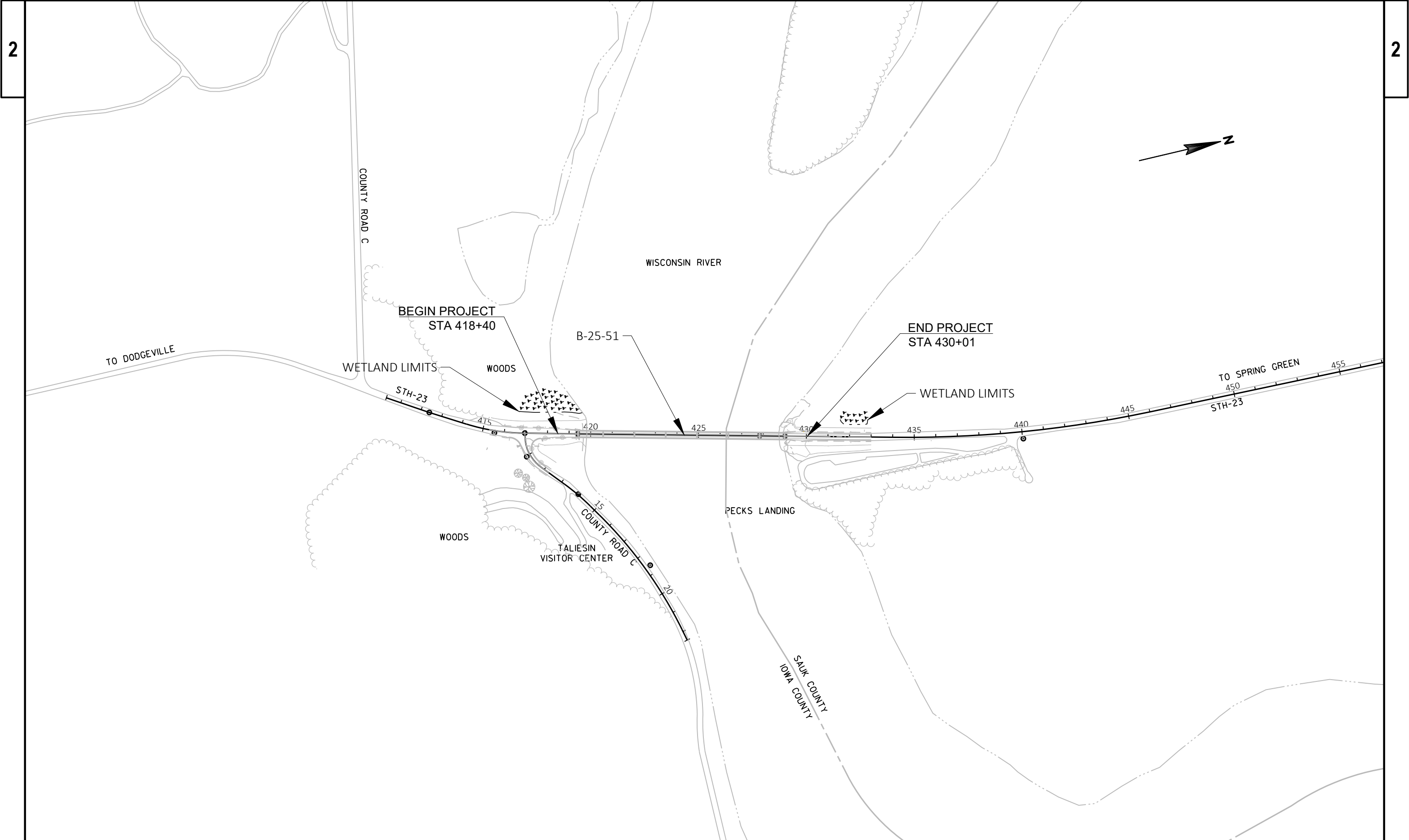
PLOT DATE : 4/30/2020 8:50 AM

PLOT BY : ELIZABETH LODZINSKI

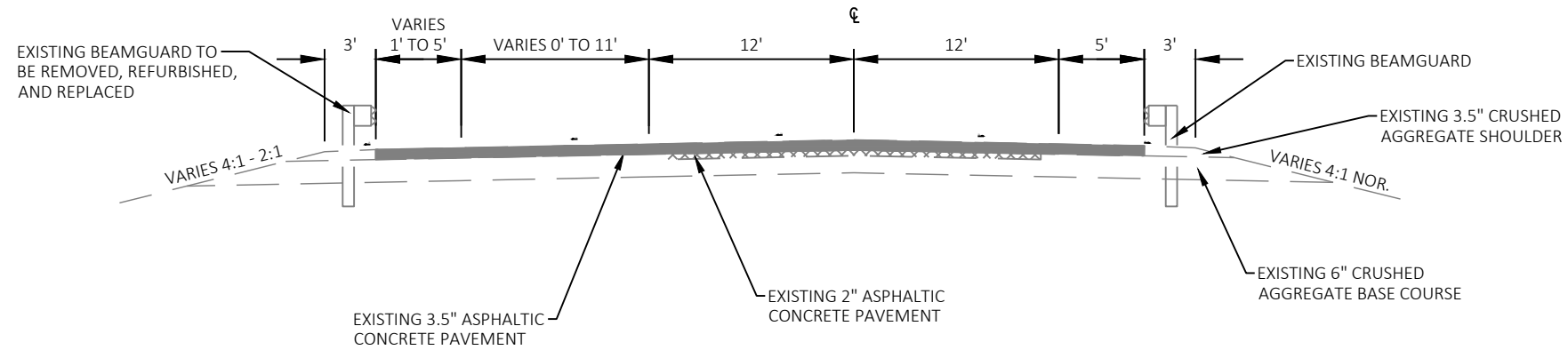
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 42

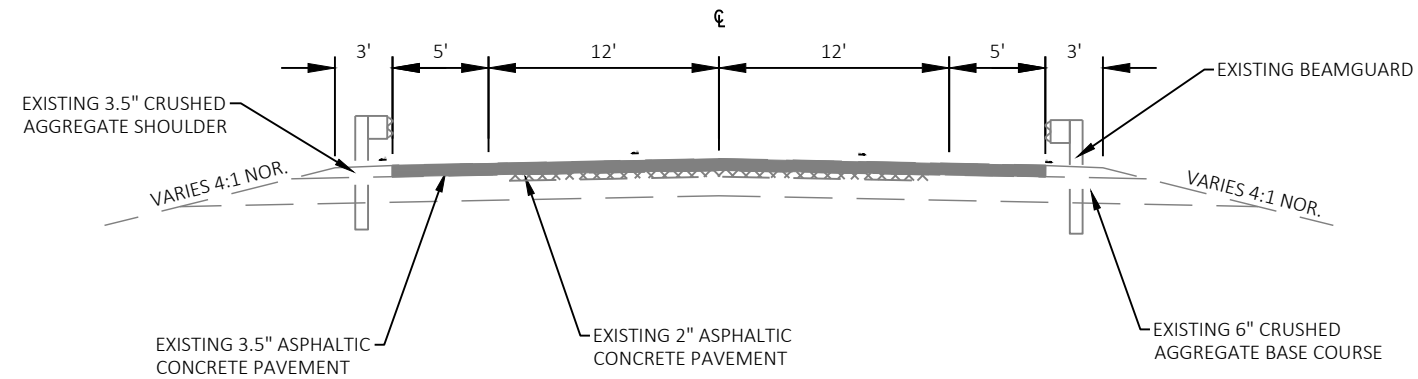


PROJECT NO: 5255-01-81	HWY: STH-23	COUNTY: IOWA, SAUK	PROJECT OVERVIEW	SHEET	E
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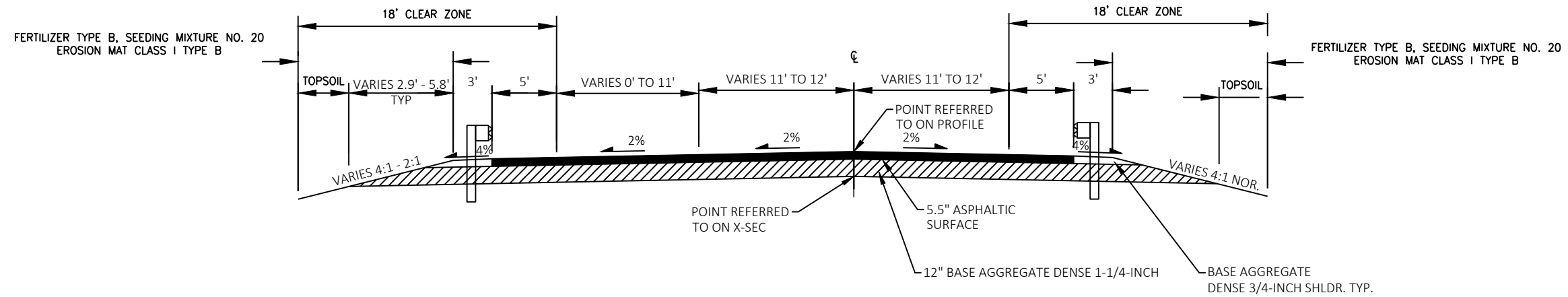
EXISTING TYPICAL SECTION

STH-23
STA 418+40 TO STA 419+40



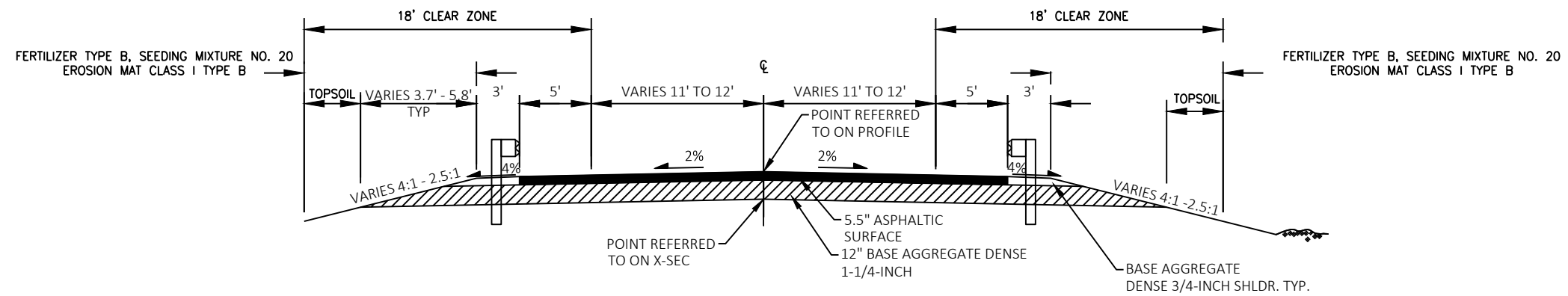
EXISTING TYPICAL SECTION

STH-23
STA 429+01 TO STA 430+01



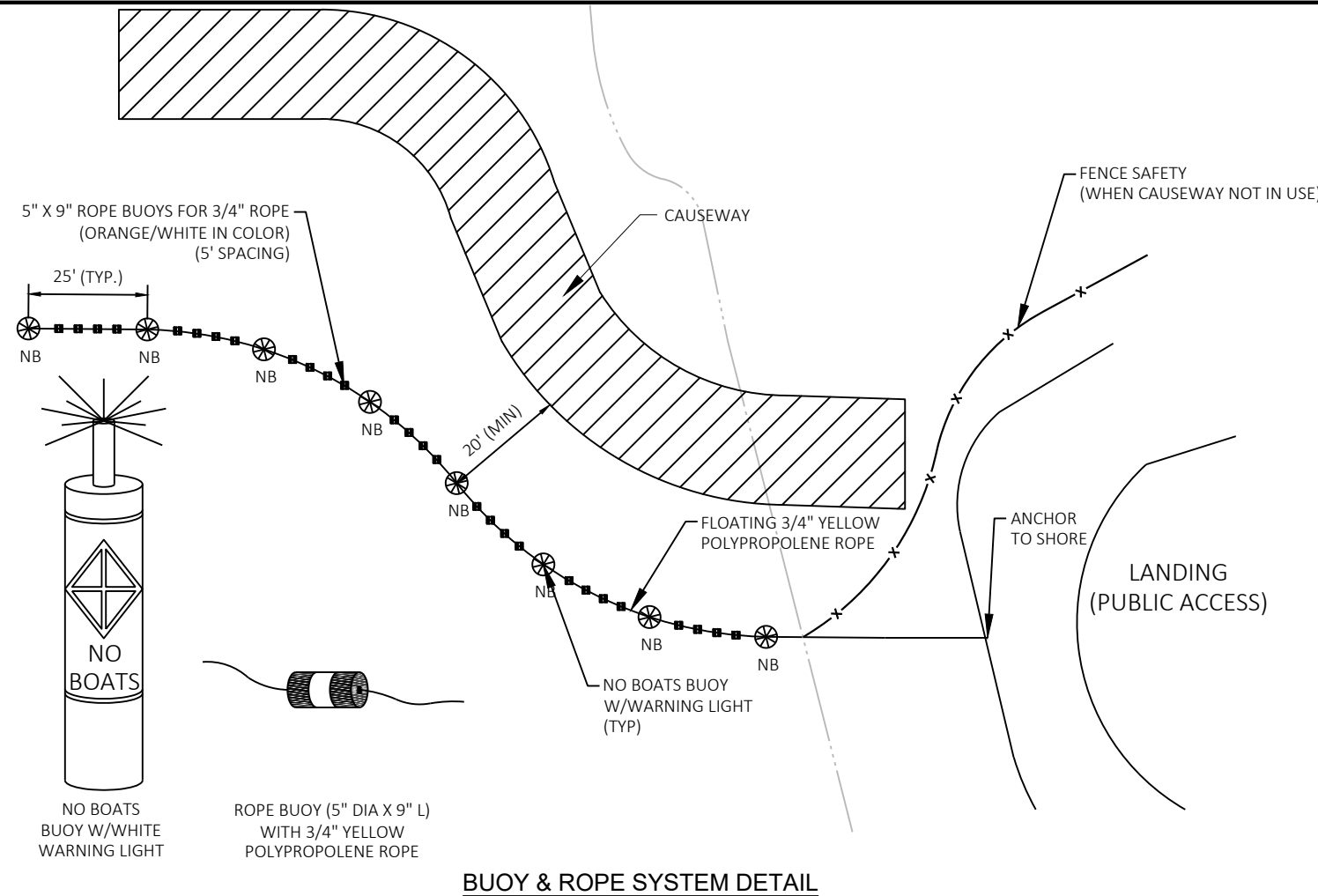
PROPOSED TYPICAL SECTION

STH-23
STA 418+40 TO STA 419+24.9



PROPOSED TYPICAL SECTION

STH-23
STA 429+15.85 TO STA 430+01

**NOTE:**

WDNR HAS AGREED TO THE USE OF A CONSTRUCTION CAUSEWAY FROM PECK'S LANDING.

THIS IS A CONCEPTUAL DESIGN, THE DESIGN, HYDRAULIC MODELING, AND PERMITTING IS THE CONTRACTOR'S RESPONSIBILITY.

WDNR HAS TENTATIVELY AGREED TO THE USE OF PECK'S LANDING ACCESS ROAD FOR CONSTRUCTION ACCESS. THE ACCESS ROAD WILL CONTINUE TO BE OPEN FOR PUBLIC USE.

CONTRACTOR TO OBTAIN ALL PERMITS SHOULD THESE OPTIONS BE UTILIZED.

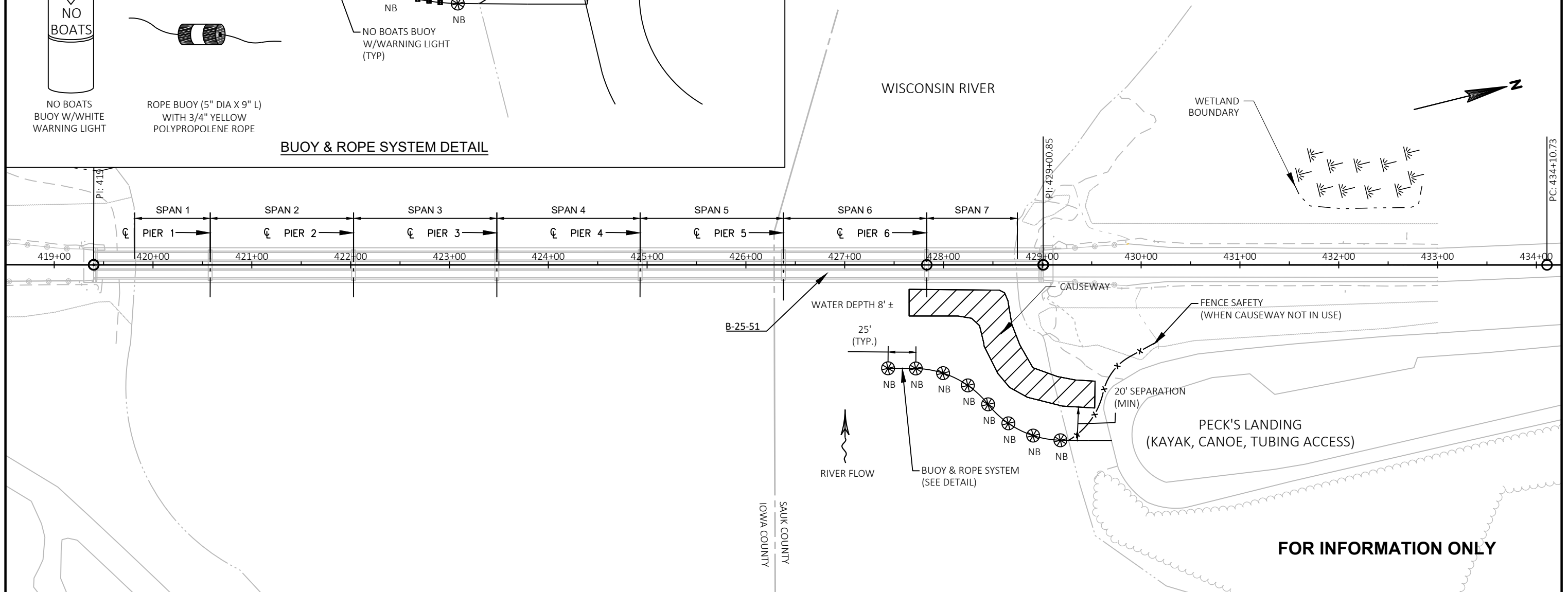
ALL COSTS OF DEVELOPING, DESIGNING, CONSTRUCTING, AND REMOVALS ASSOCIATED WITH THE CAUSEWAY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH NO REIMBURSEMENT FROM THE DEPARTMENT OF TRANSPORTATION.

IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN A LAND USE AGREEMENT FROM THE WDNR.

CONTRACTOR SHALL PROVIDE SAFE SEPARATION OF CONTRACTOR'S OPERATIONS AND PUBLIC USAGE OF PECK'S LANDING.

NO STORAGE OF EQUIPMENT, MATERIALS, OR VEHICLES IS ALLOWED AT PECK'S LANDING.

MAINTAIN ACCESS TO RIVER FOR PUBLIC USAGE AT ALL TIMES.

**FOR INFORMATION ONLY**

PROJECT NO: 5255-01-81

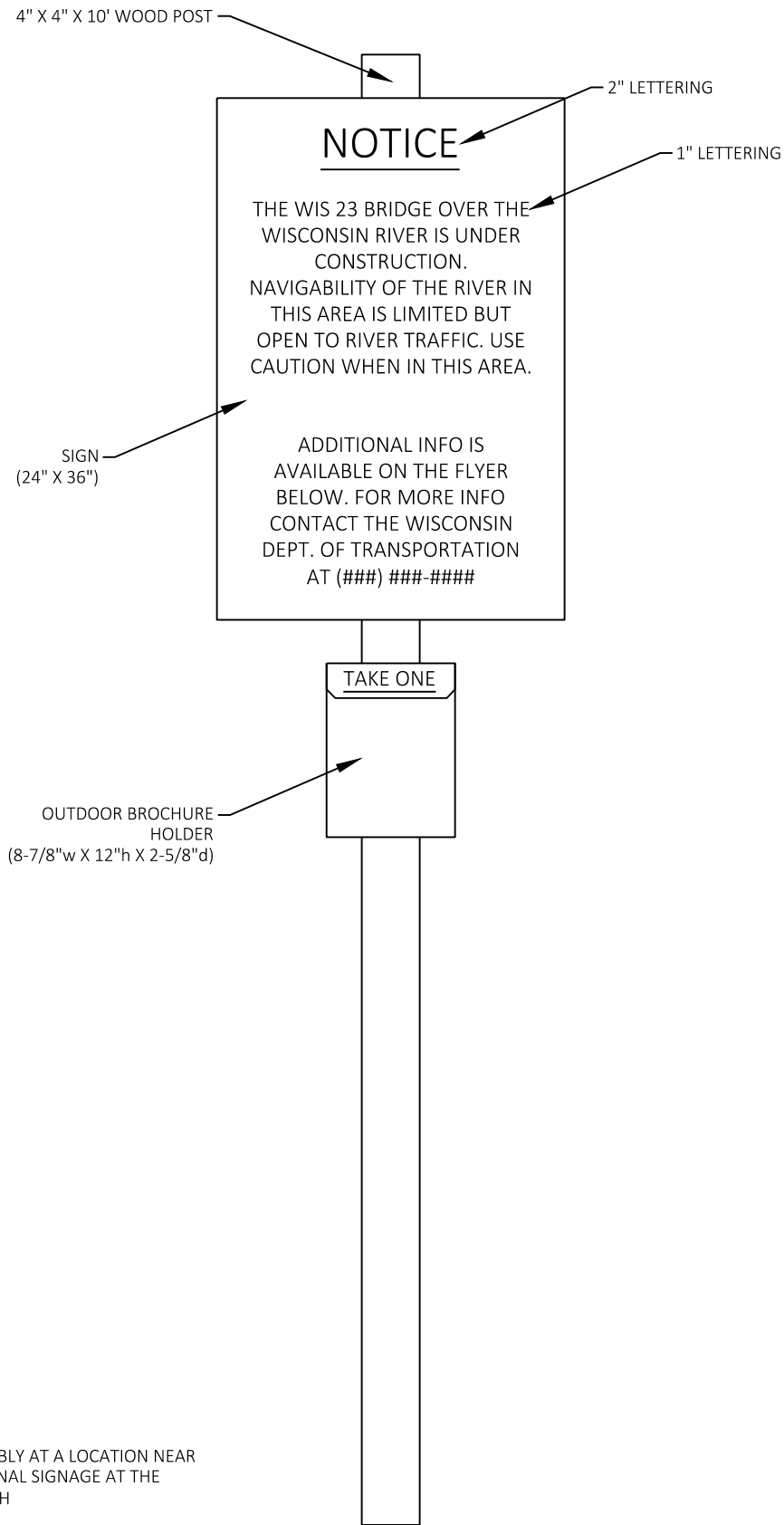
HWY: STH-23

COUNTY: IOWA, SAUK

CONSTRUCTION DETAILS

SHEET

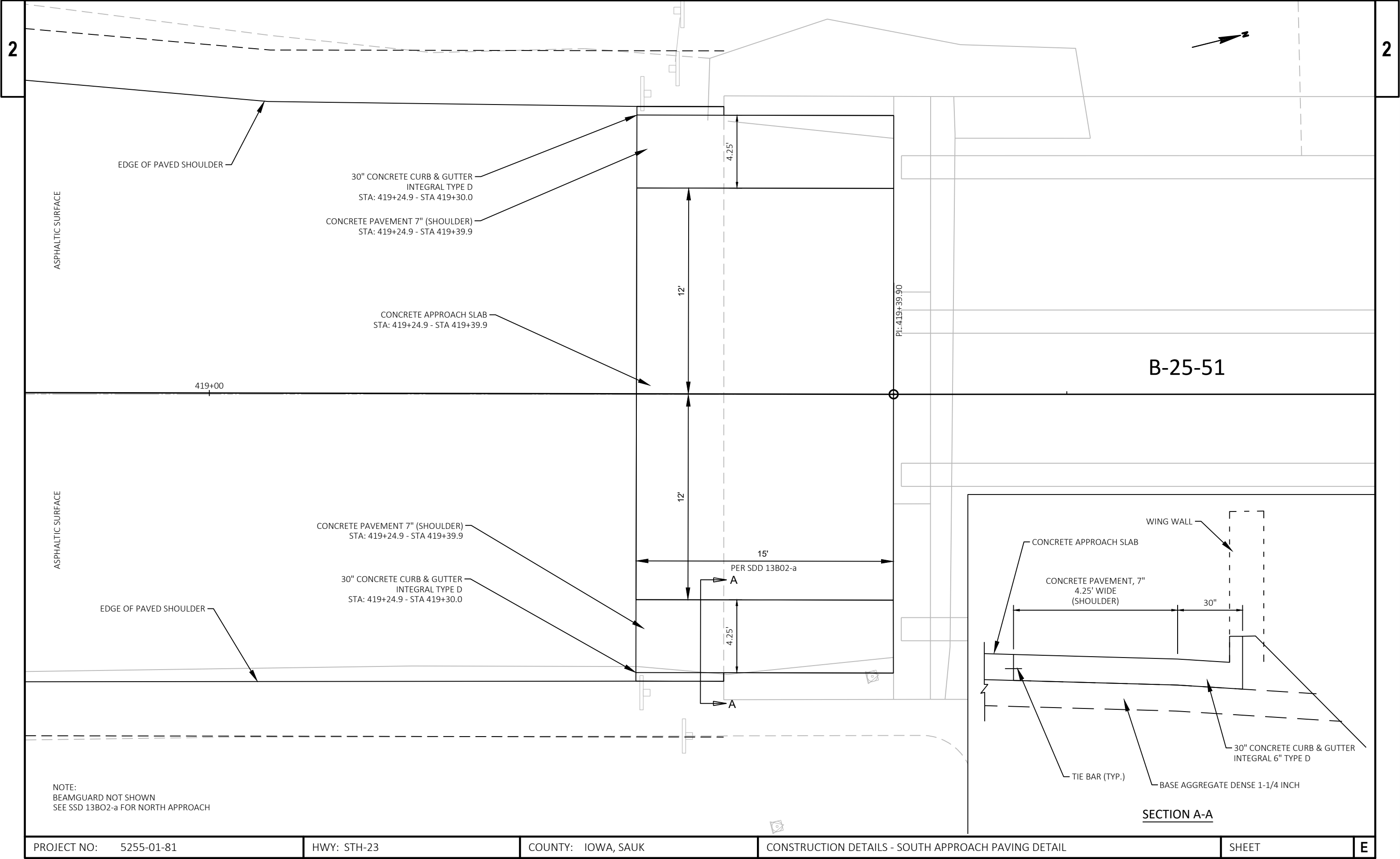
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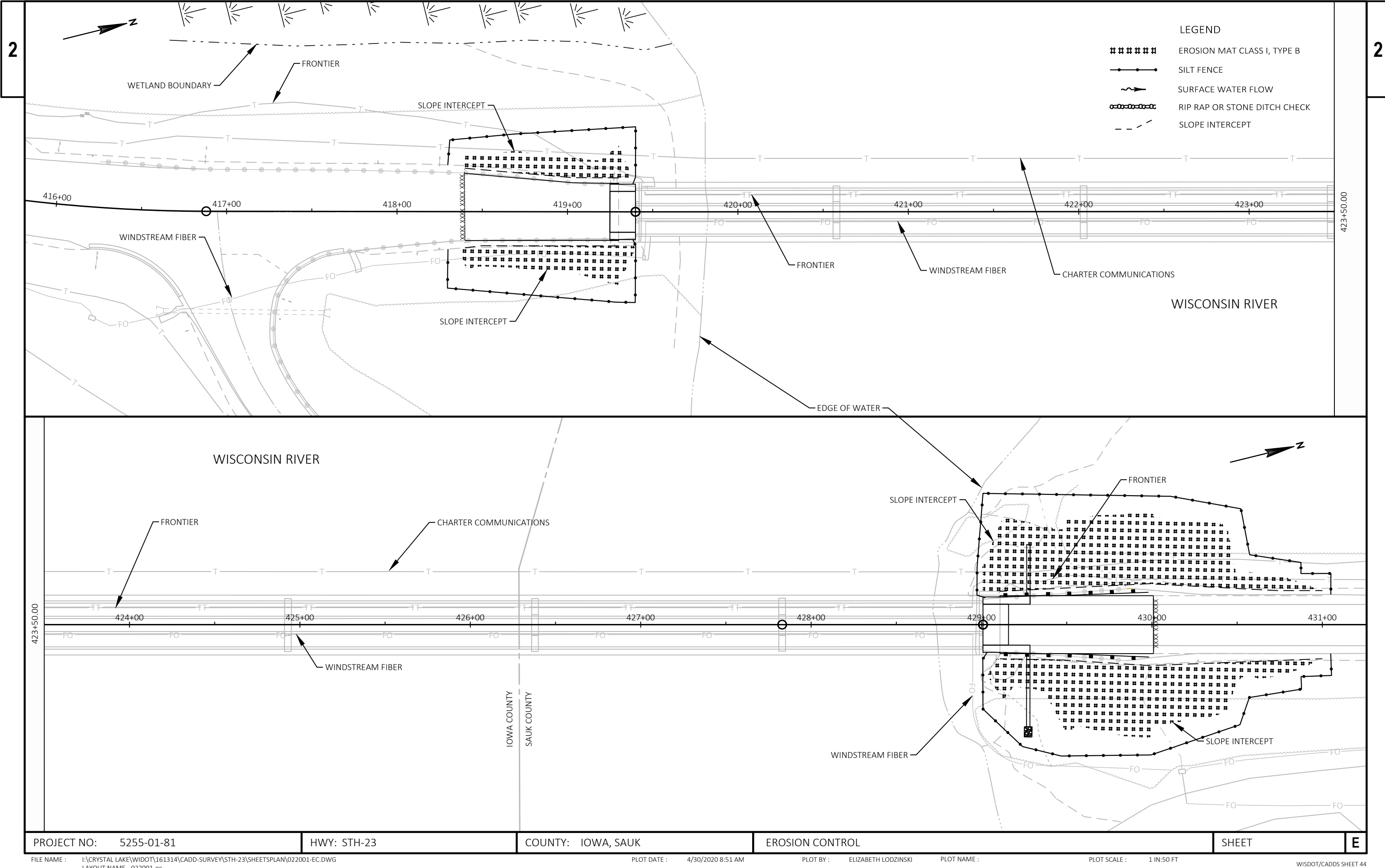


NOTE: INSTALL SIGN ASSEMBLY AT A LOCATION NEAR
OTHER INFORMATIONAL SIGNAGE AT THE
BOAT/CANOE LAUNCH

SIGNS SHALL BE ORANGE REFLECTIVE
BACKGROUND WITH BLACK LETTERING

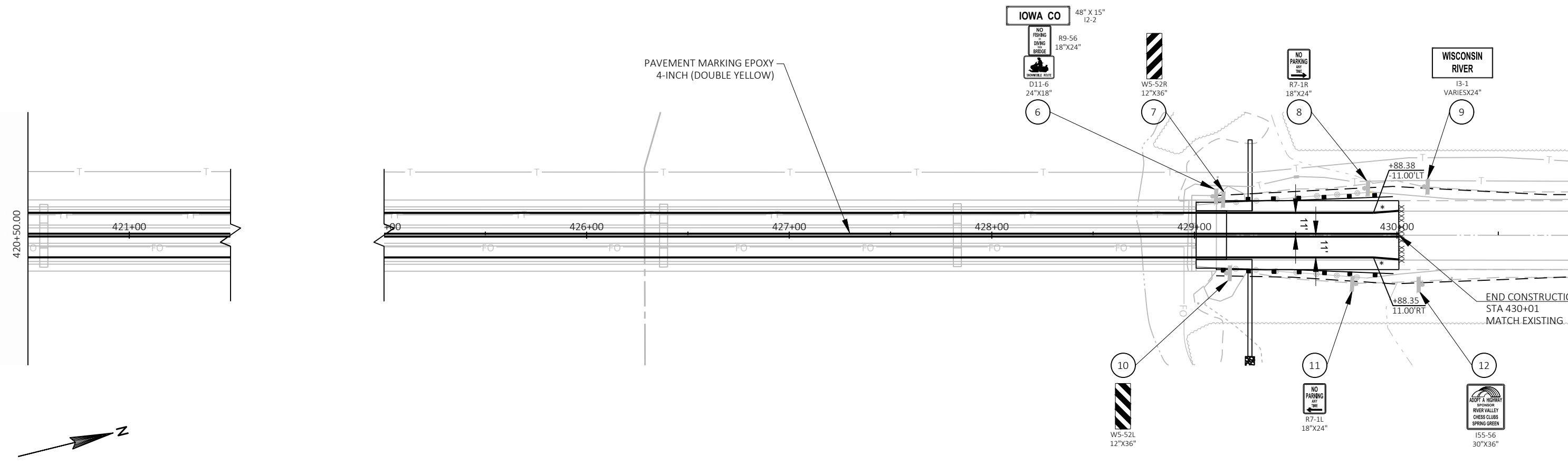
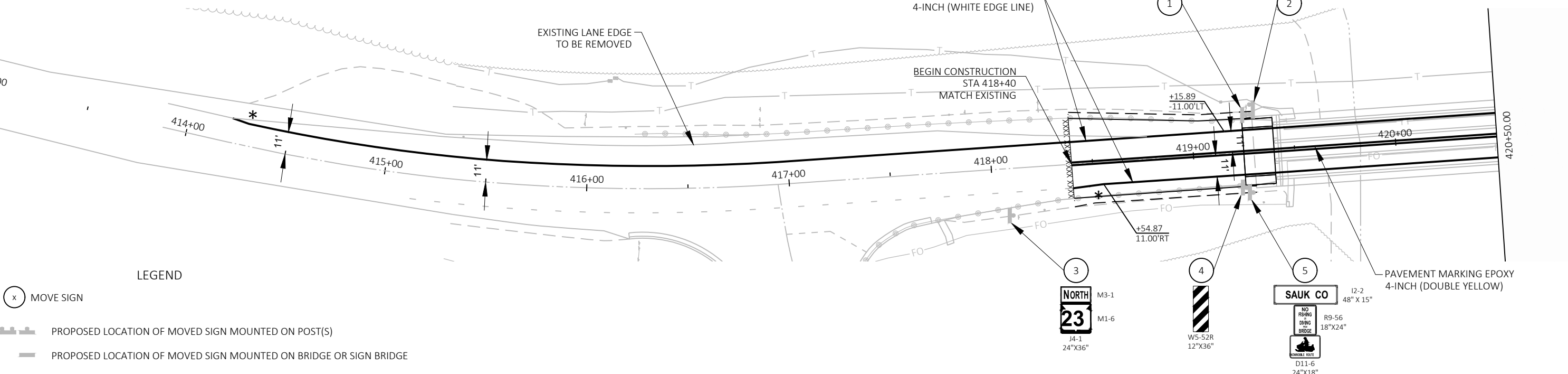
RIVER CONSTRUCTION
NOTIFICATION SIGN DETAIL
NTS





NOTE: PERMANENT SIGN LOCATIONS ARE APPROXIMATE,
FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO
DETAILS AND THE MUTCD.

* TRANSITION EDGE LINE TO MATCH EXISTING IN 15-FEET



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

WISDOT/CADDS SHEET 44



DETOUR PLAN LEGEND

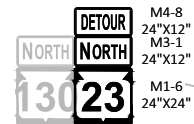
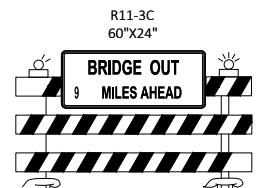
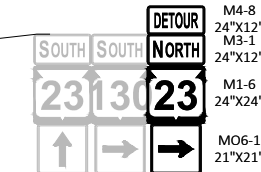
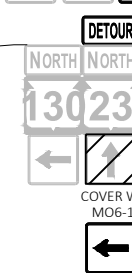
	SIGN ON TEMPORARY SUPPORT
	SIGN ON PERMANENT SUPPORT (EXISTING/PROPOSED)
	TYPE III BARRICADE (WITH/WITHOUT SIGN)
	WORK SPACE
	TRAFFIC CONTROL COVERING SIGNS
	TYPE I, OR TYPE II (BLANK ORANGE PANEL TYPICAL FOR ALL COVERING)
	TRAFFIC FLOW/DETOUR ROUTE

HUNTER HOLLOW RD

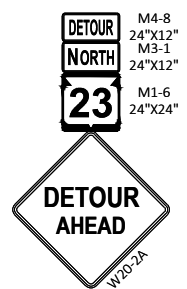
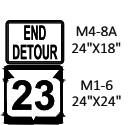
FLOYD RD

NELSON RD

130

M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"R11-3C
60"x24"M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"
MO6-1
21"x21"M4-8
24"x12"M4-8A
24"x18"END
DETOUR

23

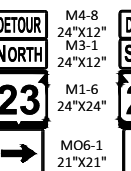
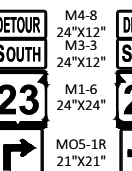
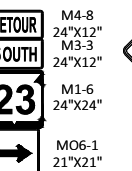
M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"M4-8A
24"x18"
M1-6
24"x24"M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"
MO5-1L
21"x21"

A

G

I

J

M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"
MO6-1
21"x21"M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"
MO5-1R
21"x21"M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"
MO6-1
21"x21"M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"
MO5-1R
21"x21"M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"
MO6-1
21"x21"

K

L

M

P

Q



W12-2

DETOUR

M4-8
24"x12"

S

PROJECT NO: 5255-01-81

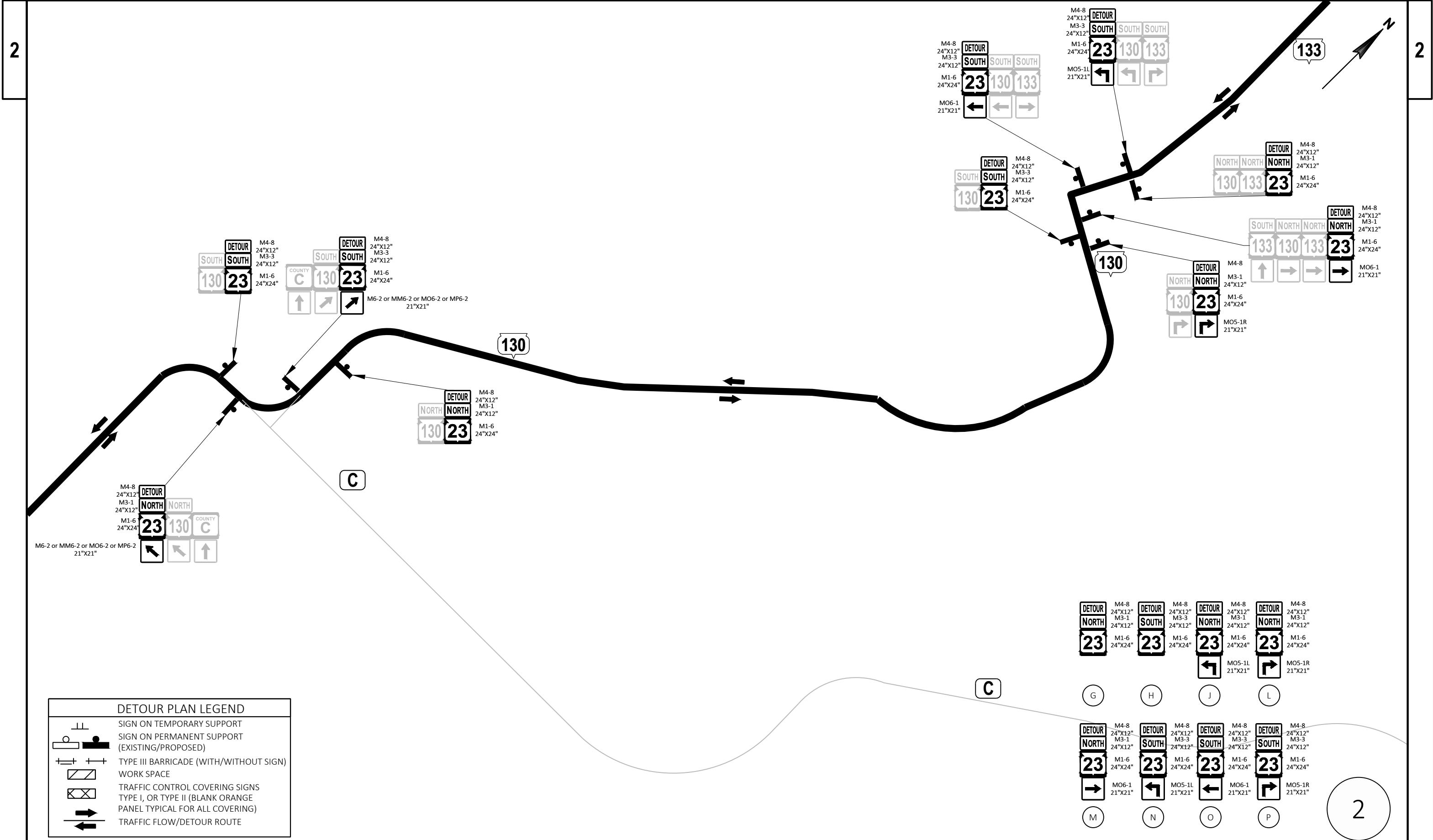
HWY: STH-23

COUNTY: IOWA, SAUK

DETOUR PLAN

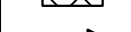
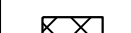
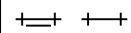
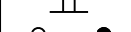
SHEET

E



LONE ROCK

DETOUR PLAN LEGEND



SIGN ON TEMPORARY SUPPORT
SIGN ON PERMANENT SUPPORT
(EXISTING/PROPOSED)
TYPE III BARRICADE (WITH/WITHOUT SIGN)
WORK SPACE
TRAFFIC CONTROL COVERING SIGNS
TYPE I, OR TYPE II (BLANK ORANGE)
PANEL TYPICAL FOR ALL COVERING
TRAFFIC FLOW/DETOUR ROUTE





NOTE:
ALL BUOYS SHALL BE CYLINDRICAL IN SHAPE, A MINIMUM OF 36-INCHES ABOVE THE WATER LINE, AND A MINIMUM 7-INCHES IN DIAMETER.

ALL LETTERING SHALL BE IN BLACK.

NO WAKE BUOYS SHALL BE WHITE WITH AN 11-INCH DIAMETER ORANGE CIRCLE.

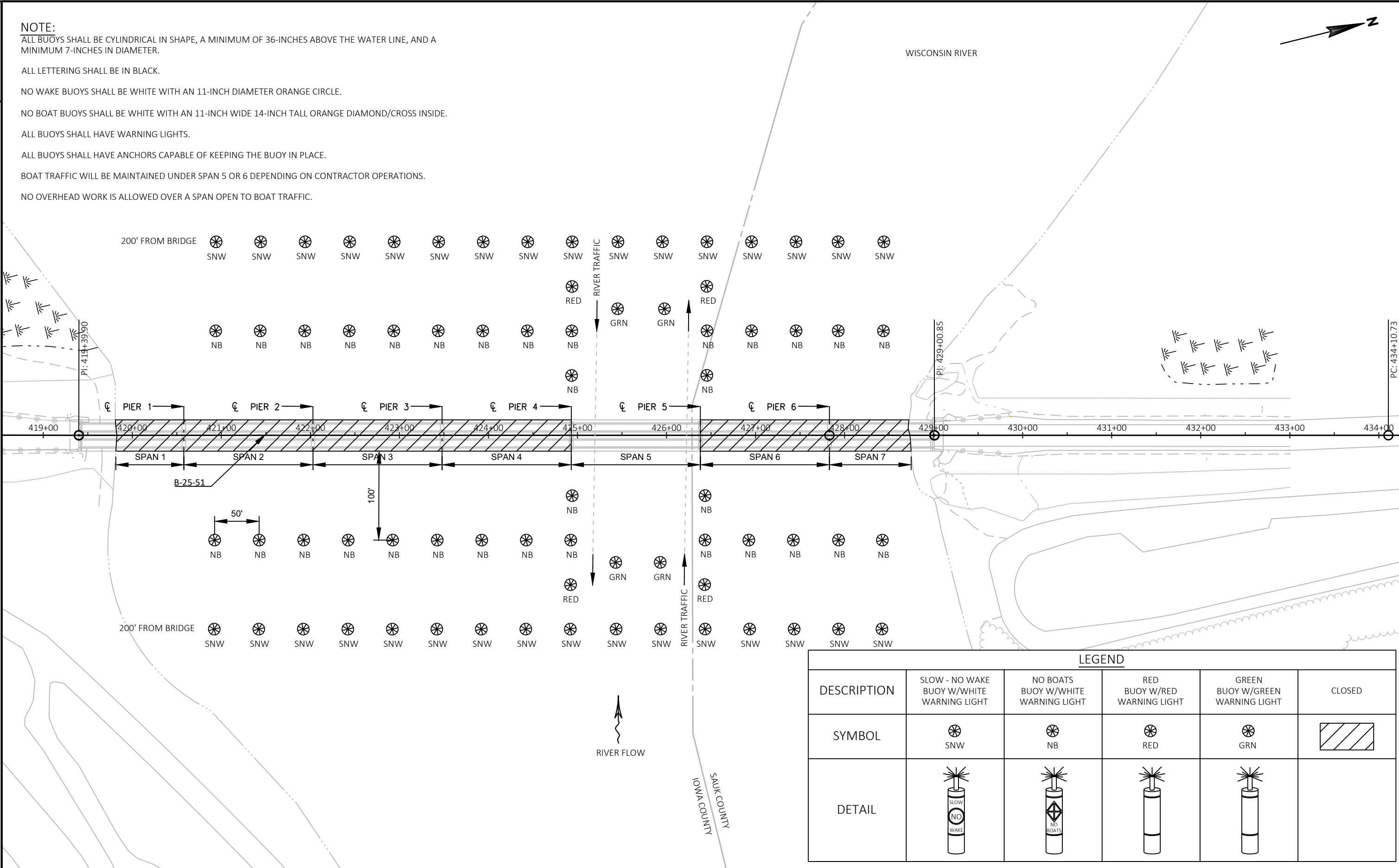
NO BOAT BUOYS SHALL BE WHITE WITH AN 11-INCH WIDE 14-INCH TALL ORANGE DIAMOND/CROSS INSIDE.

ALL BUOYS SHALL HAVE WARNING LIGHTS.

ALL BUOYS SHALL HAVE ANCHORS CAPABLE OF KEEPING THE BUOY IN PLACE.

BOAT TRAFFIC WILL BE MAINTAINED UNDER SPAN 5 OR 6 DEPENDING ON CONTRACTOR OPERATIONS.

NO OVERHEAD WORK IS ALLOWED OVER A SPAN OPEN TO BOAT TRAFFIC.



LEGEND					
DESCRIPTION	SLOW - NO WAKE BUOY W/WHITE WARNING LIGHT	NO BOATS BUOY W/WHITE WARNING LIGHT	RED BUOY W/RED WARNING LIGHT	GREEN BUOY W/GREEN WARNING LIGHT	CLOSED
SYMBOL					
DETAIL					

NOTE:
ALL BUOYS SHALL BE CYLINDRICAL IN SHAPE, A MINIMUM OF 36-INCHES ABOVE THE WATER LINE, AND A MINIMUM 7-INCHES IN DIAMETER.

ALL LETTERING SHALL BE IN BLACK.

NO WAKE BUOYS SHALL BE WHITE WITH AN 11-INCH DIAMETER ORANGE CIRCLE.

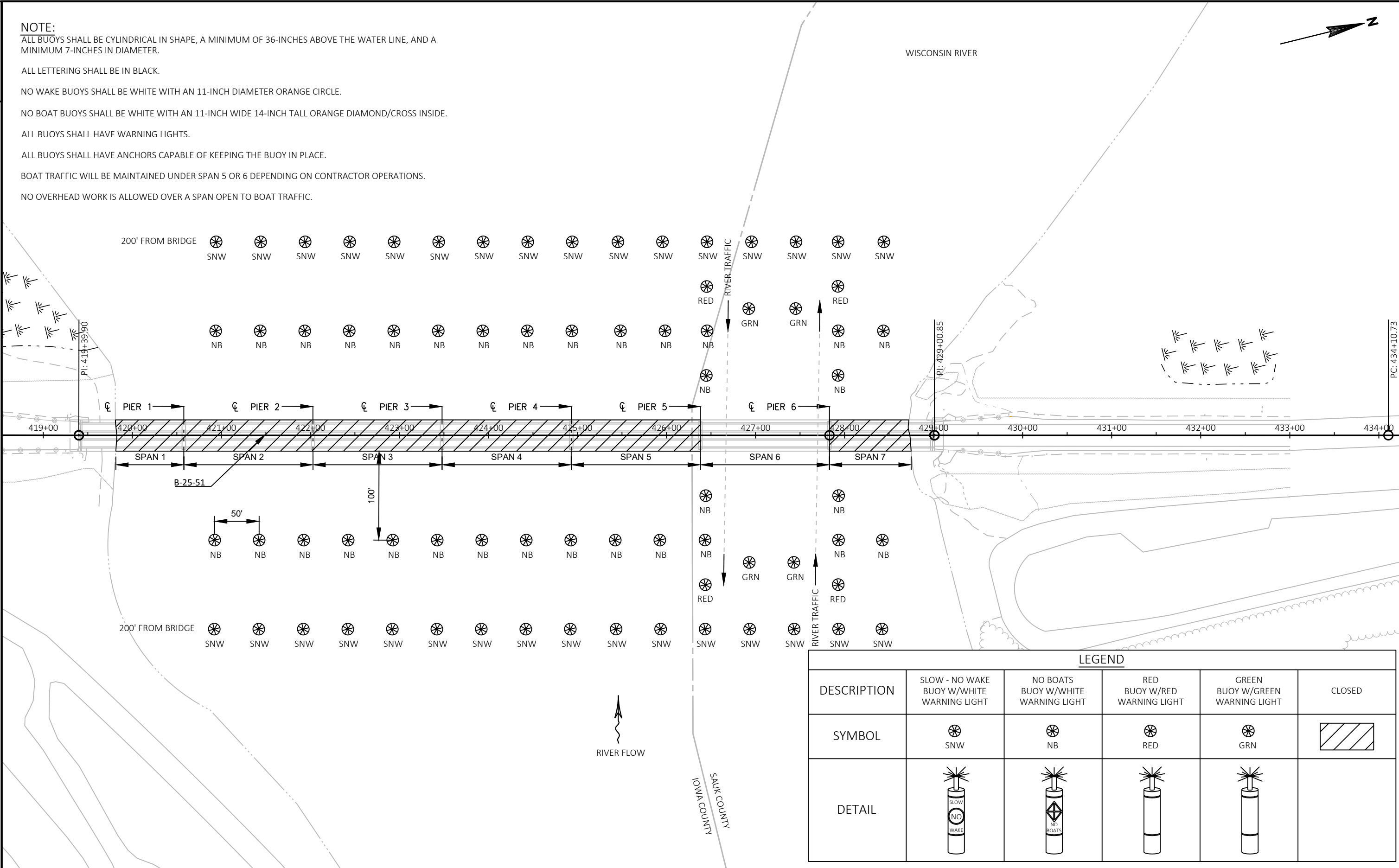
NO BOAT BUOYS SHALL BE WHITE WITH AN 11-INCH WIDE 14-INCH TALL ORANGE DIAMOND/CROSS INSIDE.

ALL BUOYS SHALL HAVE WARNING LIGHTS.

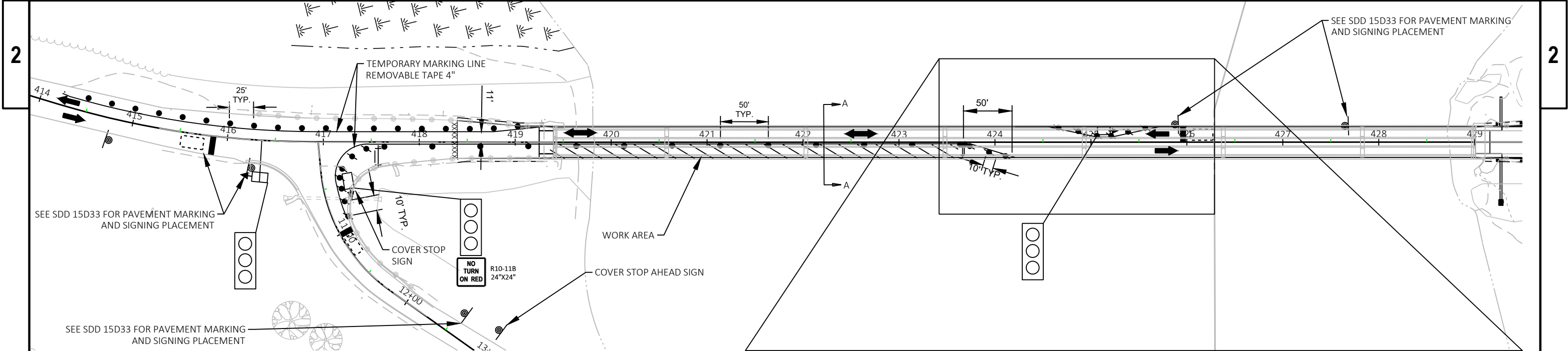
ALL BUOYS SHALL HAVE ANCHORS CAPABLE OF KEEPING THE BUOY IN PLACE.

BOAT TRAFFIC WILL BE MAINTAINED UNDER SPAN 5 OR 6 DEPENDING ON CONTRACTOR OPERATIONS.

NO OVERHEAD WORK IS ALLOWED OVER A SPAN OPEN TO BOAT TRAFFIC.



LEGEND					
DESCRIPTION	SLOW - NO WAKE BUOY W/WHITE WARNING LIGHT	NO BOATS BUOY W/WHITE WARNING LIGHT	RED BUOY W/RED WARNING LIGHT	GREEN BUOY W/GREEN WARNING LIGHT	CLOSED
SYMBOL	SNW	NB	RED	GRN	
DETAIL					



Temporary Signal Timing Plan

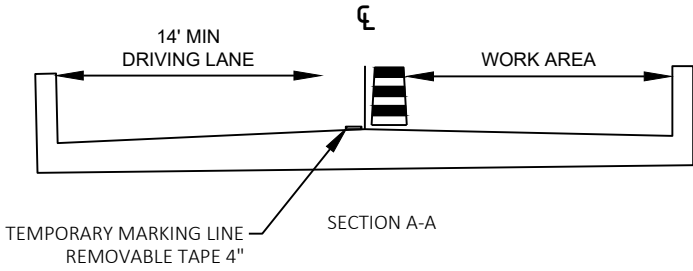
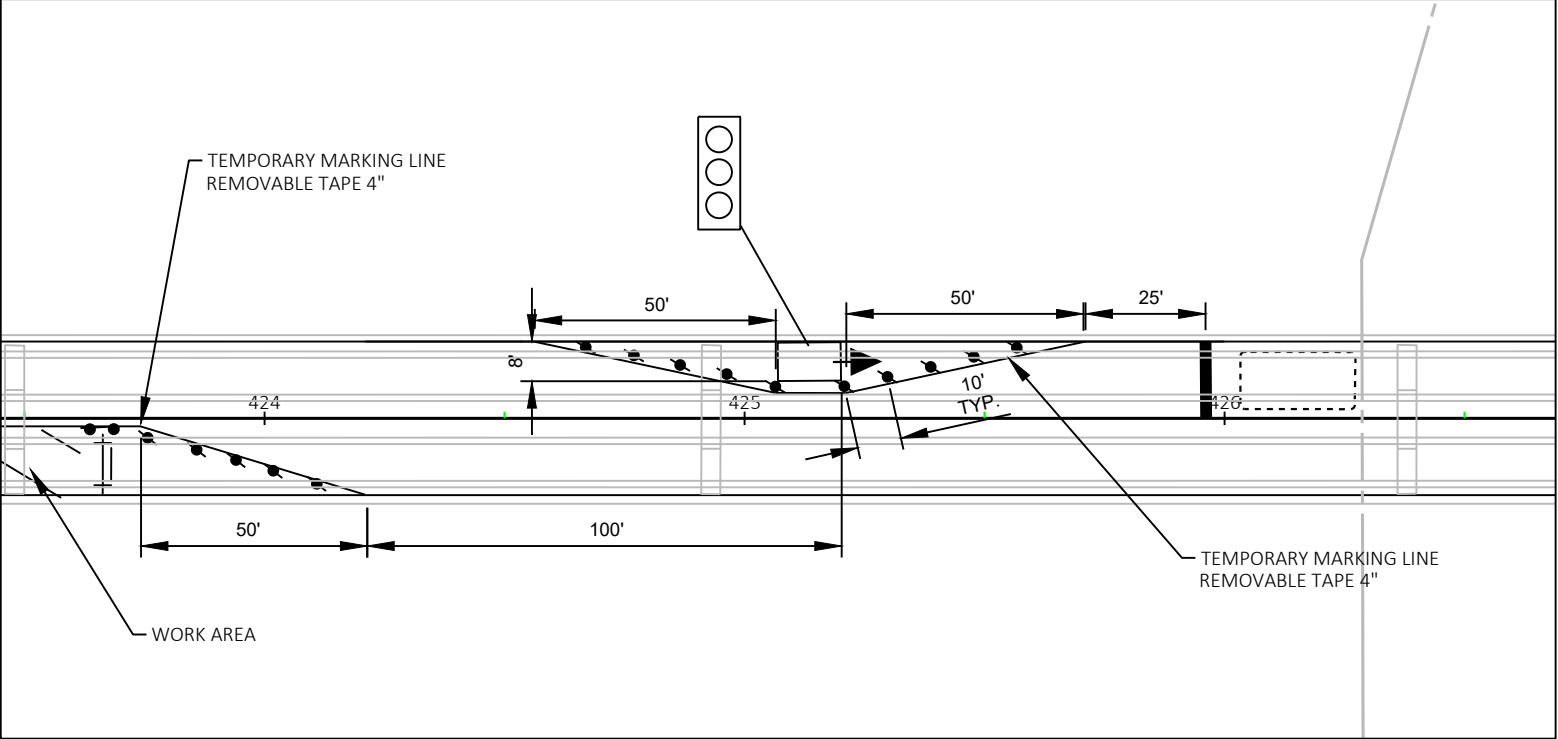
Project ID: 5255-01-81
Intersection: STH 23 & CTH C
Location: B-25-0051 (Wisconsin River Crossing)
Condition: Construction S2/P1
Operational Mode: Fully Actuated

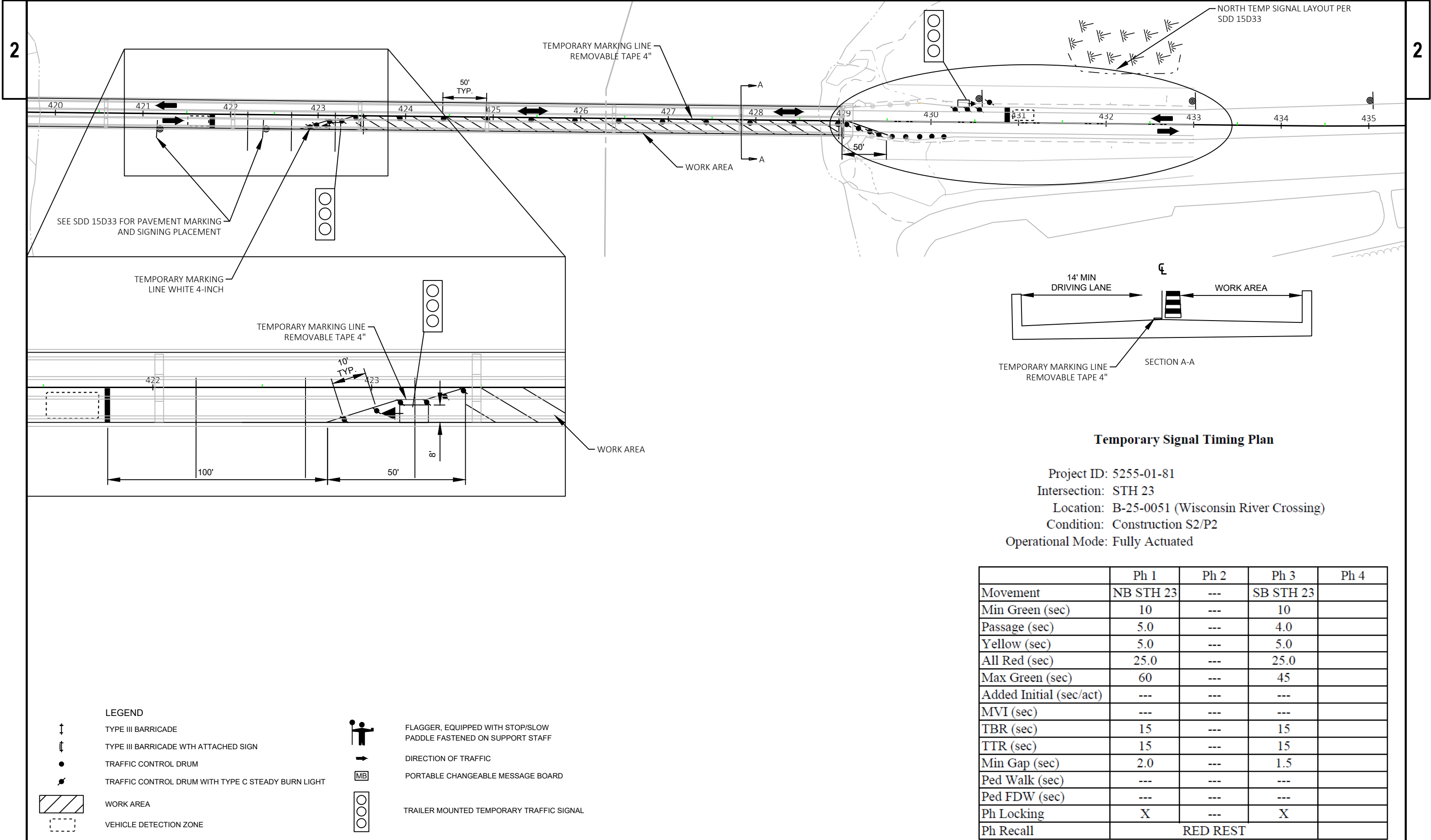
	Ph 1	Ph 2	Ph 3	Ph 4
Movement	NB STH 23	WB CTH C	SB STH 23	
Min Green (sec)	10	7	10	
Passage (sec)	5.0	2.0	5.0	
Yellow (sec)	5.0	4.0	5.0	
All Red (sec)	30.0	2.0	30.0	
Max Green (sec)	50	25	50	
Added Initial (sec/act)	---	---	---	
MVI (sec)	---	---	---	
TBR (sec)	15	---	15	
TTR (sec)	15	---	15	
Min Gap (sec)	2.0	---	2.0	
Ped Walk (sec)	---	---	---	
Ped FDW (sec)	---	---	---	
Ph Locking	X	X	X	
Ph Recall	MIN	---	MIN	

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- WORK AREA
- VEHICLE DETECTION ZONE

- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- TRAILER MOUNTED TEMPORARY TRAFFIC SIGNAL

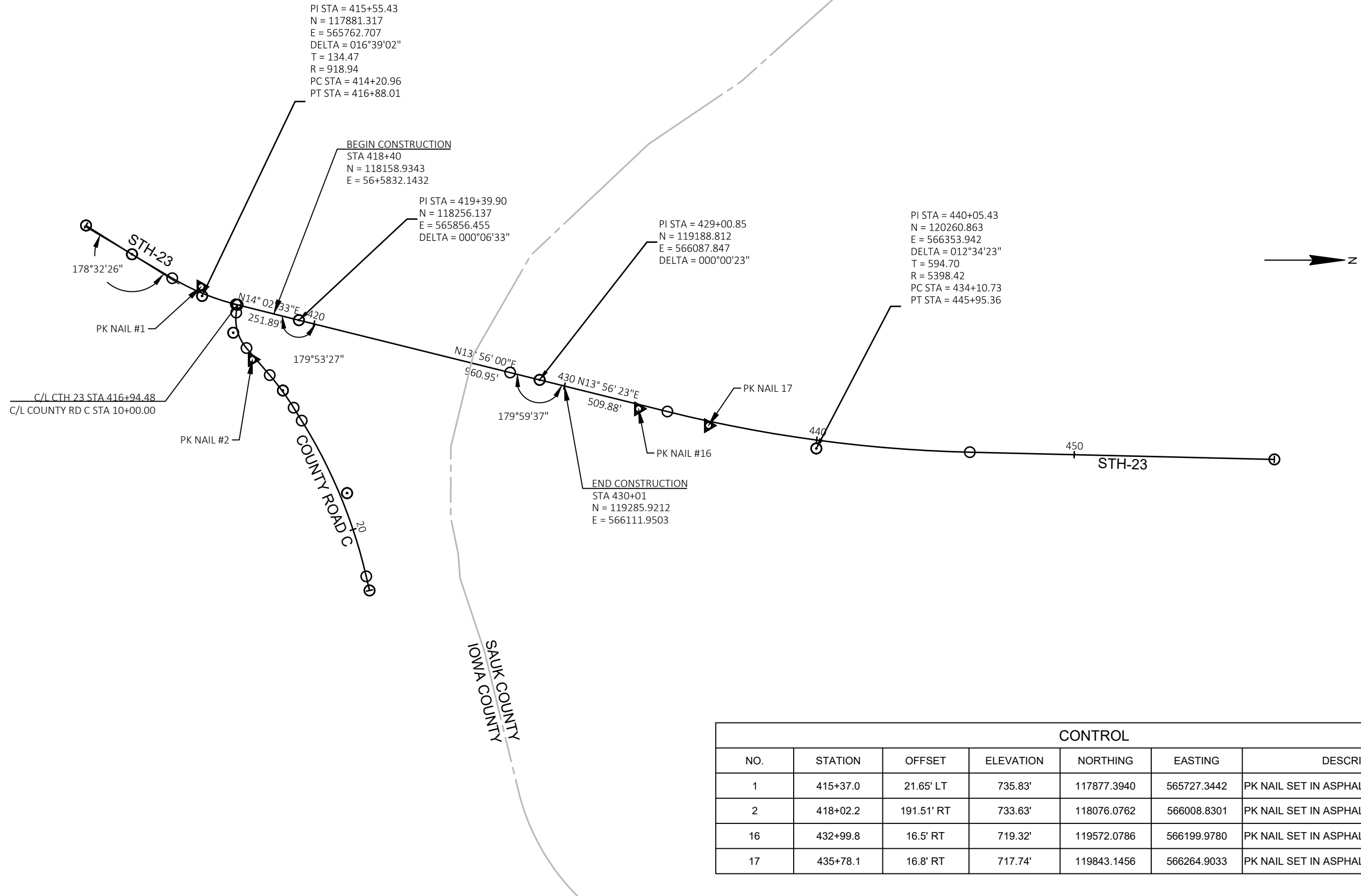




Temporary Signal Timing Plan

Project ID: 5255-01-81
Intersection: STH 23
Location: B-25-0051 (Wisconsin River Crossing)
Condition: Construction S2/P2
Operational Mode: Fully Actuated

	Ph 1	Ph 2	Ph 3	Ph 4
Movement	NB STH 23	---	SB STH 23	
Min Green (sec)	10	---	10	
Passage (sec)	5.0	---	4.0	
Yellow (sec)	5.0	---	5.0	
All Red (sec)	25.0	---	25.0	
Max Green (sec)	60	---	45	
Added Initial (sec/act)	---	---	---	
MVI (sec)	---	---	---	
TBR (sec)	15	---	15	
TTR (sec)	15	---	15	
Min Gap (sec)	2.0	---	1.5	
Ped Walk (sec)	---	---	---	
Ped FDW (sec)	---	---	---	
Ph Locking	X	---	X	
Ph Recall	RED REST			



Estimate Of Quantities

5255-01-81					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0210.S	Abatement of Asbestos Containing Material (structure) 01. B-25-0051	LS	1.000	1.000
0008	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 419+41	LS	1.000	1.000
0010	204.0165	Removing Guardrail	LF	180.000	180.000
0012	205.0100	Excavation Common	CY	469.000	469.000
0014	206.1000	Excavation for Structures Bridges (structure) 01. B-25-0051	LS	1.000	1.000
0016	208.0100	Borrow	CY	81.000	81.000
0018	213.0100	Finishing Roadway (project) 01. 5255-01-81	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	50.000	50.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	579.000	579.000
0024	415.0070	Concrete Pavement 7-Inch	SY	15.000	15.000
0026	415.0410	Concrete Pavement Approach Slab	SY	80.000	80.000
0028	416.1010	Concrete Surface Drains	CY	8.000	8.000
0030	455.0605	Tack Coat	GAL	32.000	32.000
0032	465.0105	Asphaltic Surface	TON	203.000	203.000
0034	502.0100	Concrete Masonry Bridges	CY	1,262.000	1,262.000
0036	502.3101	Expansion Device	LF	66.000	66.000
0038	502.3111.S	Expansion Device Modular	LF	33.000	33.000
0040	502.3200	Protective Surface Treatment	SY	3,480.000	3,480.000
0042	502.3210	Pigmented Surface Sealer	SY	950.000	950.000
0044	502.4205	Adhesive Anchors No. 5 Bar	EACH	142.000	142.000
0046	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	288,725.000	288,725.000
0048	506.0105	Structural Steel Carbon	LB	140.000	140.000
0050	506.0605	Structural Steel HS	LB	10.000	10.000
0052	506.6000	Bearing Assemblies Expansion (structure) 01. B-25-0051	EACH	8.000	8.000
0054	506.7050.S	Removing Bearings (structure) 01. B-25-0051	EACH	8.000	8.000
0056	509.1500	Concrete Surface Repair	SF	45.000	45.000
0058	514.0445	Floor Drains Type GC	EACH	16.000	16.000
0060	516.0500	Rubberized Membrane Waterproofing	SY	6.000	6.000
0062	517.0900.S	Preparation and Coating of Top Flanges (structure) 01. B-25-0051	LS	1.000	1.000
0064	517.1010.S	Concrete Staining (structure) 01. B-25-0051	SF	15,200.000	15,200.000
0066	517.1800.S	Structure Repainting Recycled Abrasive (structure) 01. B-25-0051	LS	1.000	1.000
0068	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 01. B-25-0051	LS	1.000	1.000

Estimate Of Quantities

5255-01-81

Line	Item	Item Description	Unit	Total	Qty
0070	517.6001.S	Portable Decontamination Facility	EACH	1.000	1.000
0072	601.0452	Concrete Curb & Gutter Integral 30-Inch Type D	LF	15.000	15.000
0074	606.0200	Riprap Medium	CY	1.000	1.000
0076	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0078	614.2500	MGS Thrie Beam Transition	LF	80.000	80.000
0080	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0082	616.0700.S	Fence Safety	LF	700.000	700.000
0084	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5255-01-81	EACH	1.000	1.000
0086	619.1000	Mobilization	EACH	1.000	1.000
0088	624.0100	Water	MGAL	12.000	12.000
0090	625.0100	Topsoil	SY	1,774.000	1,774.000
0092	628.1104	Erosion Bales	EACH	50.000	50.000
0094	628.1504	Silt Fence	LF	1,150.000	1,150.000
0096	628.1520	Silt Fence Maintenance	LF	1,150.000	1,150.000
0098	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0100	628.1910	Mobilizations Emergency Erosion Control	EACH	10.000	10.000
0102	628.2004	Erosion Mat Class I Type B	SY	1,881.000	1,881.000
0104	629.0210	Fertilizer Type B	CWT	0.900	0.900
0106	630.0120	Seeding Mixture No. 20	LB	51.000	51.000
0108	630.0500	Seed Water	MGAL	34.000	34.000
0110	638.2102	Moving Signs Type II	EACH	16.000	16.000
0112	642.5201	Field Office Type C	EACH	1.000	1.000
0114	643.0300	Traffic Control Drums	DAY	4,474.000	4,474.000
0116	643.0420	Traffic Control Barricades Type III	DAY	2,420.000	2,420.000
0118	643.0705	Traffic Control Warning Lights Type A	DAY	4,840.000	4,840.000
0120	643.0715	Traffic Control Warning Lights Type C	DAY	1,686.000	1,686.000
0122	643.0900	Traffic Control Signs	DAY	23,291.000	23,291.000
0124	643.0920	Traffic Control Covering Signs Type II	EACH	23.000	23.000
0126	643.1050	Traffic Control Signs PCMS	DAY	21.000	21.000
0128	643.5000	Traffic Control	EACH	1.000	1.000
0130	645.0130	Geotextile Type R	SY	3.000	3.000
0132	646.1020	Marking Line Epoxy 4-Inch	LF	5,060.000	5,060.000
0134	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	1,820.000	1,820.000
0136	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	36.000	36.000
0138	650.4500	Construction Staking Subgrade	LF	200.000	200.000
0140	650.5000	Construction Staking Base	LF	200.000	200.000
0142	650.6500	Construction Staking Structure Layout (structure) 01. B-25-0051	LS	1.000	1.000
0144	650.9910	Construction Staking Supplemental Control (project) 01.	LS	1.000	1.000

Estimate Of Quantities

5255-01-81					
Line	Item	Item Description	Unit	Total	Qty
5255-01-81					
0146	650.9920	Construction Staking Slope Stakes	LF	400.000	400.000
0148	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-25-0051	LS	1.000	1.000
0150	661.0300	Generators	DAY	263.000	263.000
0152	690.0150	Sawing Asphalt	LF	83.000	83.000
0154	715.0415	Incentive Strength Concrete Pavement	DOL	47.500	47.500
0156	715.0502	Incentive Strength Concrete Structures	DOL	12,620.000	12,620.000
0158	SPV.0045	Special 01. Waterway Buoys	DAY	18,864.000	18,864.000
0160	SPV.0060	Special 01. River Construction Notification Sign	EACH	6.000	6.000
0162	SPV.0060	Special 02. River Bottom Scanning Survey Structure B-25-51	EACH	1.000	1.000
0164	SPV.0090	Special 01. Salvage and Reinstall Beam Guard	LF	180.000	180.000
0166	SPV.0090	Special 02. Steel Plate Beam Guard Duplex Coated	LF	180.000	180.000
0168	SPV.0105	Special 01. Reset Existing Bearings	LS	1.000	1.000

Division	From / To Station	Location	Common Excavation (1) (item # 205.0100)		Salvaged / Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (6)	Mass Ordinate + / - (7)	Waste	Borrow (item #208.0100)	Comment:
			Cut (2)	EBS Excavation (3)								
1	418+40.10 to 419+29.90	STH 23 - South Segment	210	-	50	160	4	5	155			
			-	-	-	-	-	-	-			
			-	-	-	-	-	-	-			
Division 1 Subtotal			210	-	50	160	4	5	155			
2	429+10.82 to 430+77.45	STH 23 - North Segment	259	-	86	173	327	409	-236			
			-	-	-	-	-	-	-			
			-	-	-	-	-	-	-			
Division 2 Subtotal			259	-	86	173	327	409	-236		81	
Grand Total			469	-	136	333	331	414	-81	-	81	
Total Common Exc			469									

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unusable Pavement Material is included in Cut.
- 3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusuable Pavement Material
- 6) Expanded Fill. Factor = 1.25
- 7) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

FINISHING ROADWAY						
213.0100.01 FINISHING ROADWAY (PROJECT) (01. 5255-01-81)						
CATEGORY	STATION	TO	STATION	LOCATION	EACH	REMARKS
0010	418+40	-	430+01	Project 5255-01-81	1	
TOTAL 0010					1	

CLEARING & GRUBBING						
201.0105 201.0205 CLEARING GRUBBING						
CATEGORY	STATION	TO	STATION	LOCATION	STA	STA
0010	429+01	-	430+01	CTH 23 - North Segment	1	1
0010	418+40	-	419+40	CTH 23 -South Segment	1	1
TOTAL 0010					2	2

ASPHALTIC ITEMS						
455.0605 465.0105 TACK COAT ASPHALTIC						
CATEGORY	STATION	TO	STATION	LOCATION	GAL	TON
0010	429+01	-	430+01	CTH 23 - North Segment	15	97
0010	418+40	-	419+40	CTH 23 -South Segment	17	106
TOTAL 0010					32	203

BASE AGGREGATE							
305.0110 305.0120 624.0100 BASE BASE AGGREGATE AGGREGATE							
CATEGORY	STATION	TO	STATION	LOCATION	DENSE 3/4-INCH TON	DENSE 1 1/4- INCH TON	WATER MGAL
0010	429+01	-	430+01	CTH 23 - North Segment	25	282	6
0010	418+40	-	419+40	CTH 23 -South Segment	25	297	6
TOTAL 0010					50	579	12

CONCRETE ITEMS							
415.0070 415.0410 416.1010 601.0452 CONCRETE CONCRETE CONCRETE CONCRETE CURB PAVEMENT PAVEMENT SURFACE DRAINS & GUTTER							
CATEGORY	STATION	TO	STATION	LOCATION	7-INCH SY	APPROACH SLAB SY	INTEGRAL 30- INCH TYPE D CY
0010	429+01	-	430+01	CTH 23 - North Segment	-	40	8
0010	418+40	-	419+40	CTH 23 -South Segment	15	40	-
TOTAL 0010					15	80	15

RIPRAP							
606.0200 645.0130 RIPRAP MEDIUM GEOTEXTILE TYPE R							
CATEGORY	STATION	TO	STATION	LOCATION	CY	SY	REMARKS
0010	429+01	-	430+01	CTH 23 - North Segment	1	3	
0010	418+40	-	419+40	CTH 23 -South Segment	-	-	Discharge to existing riprap
TOTAL 0010					1	3	

GUARDRAIL										
					204.0165	614.2500	614.2610	SPV.0090.01	SPV.0090.02	
					REMOVING	MGS THRIE	MGS GUARDRAIL	SPECIAL (01.	SPECIAL (02. STEEL	
					GUARDRAIL	BEAM	TERMINAL EAT	SALVAGE AND	PLATE BEAM GUARD	
					LF	TRANSITION	EACH	REINSTALL BEAM	DUPLEX COATED)	
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	EACH	LF	LF	REMARKS
0010	429+09	-	429+98	CTH 23 - North Segment	180	80	2	-	180	
0010	418+40	-	419+30	CTH 23 -South Segment	-	-	-	180	-	
TOTAL 0010					180	80	2	180	180	

FENCE SAFETY						
616.0700.S FENCE SAFETY						
CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	-			Peck's Landing	200	Use if construction causeway is utilized
0010	-			Undistributed	500	
				TOTAL 0010	700	

MOBILIZATION						
619.1000 MOBILIZATION						
CATEGORY	STATION	TO	STATION	LOCATION	EACH	REMARKS
0010	418+40	-	430+01	Project 5255-01-81	1	
					TOTAL 0010	1

MAINTENANCE & REPAIR										
618.0100.01 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) (01. 5255-01-81)										
CATEGORY	STATION	TO	STATION	LOCATION	EACH	REMARKS				
0010	418+40	-	430+01	Project 5255-01-81	1					
TOTAL 0010					1					

EROSION CONTROL													
				625.0100	628.1104	628.1504	628.1520	628.1905	628.1910	628.2004	629.0210	630.0120	630.0500
				TOPSOIL	EROSION BALES	SILT FENCE	SILT FENCE	MOBILIZATIONS	MOBILIZATIONS	EROSION MAT	FERTILIZER	SEEDING	SEED WATER
				SY	EACH	LF	LF	EROSION	EROSION	CLASS I TYPE B	TYPE B	MIXTURE NO. 20	MGAL
CATEGORY	STATION	TO	STATION	LOCATION				CONTROL	CONTROL	SY	CWT	LB	
0010	429+01	-	430+01	CTH 23 - North Segment	266	-	590	-	-	291	0.2	8	7
0010	418+40	-	419+40	CTH 23 -South Segment	1,153	-	330	-	-	1,214	0.7	33	27
				Undistributed	355	50	230	1	10	376	-	10	-
TOTAL 0010					1,774	50	1,150	1	10	1,881	0.9	51	34

TYPE II PERMANENT SIGNING								
SIGN NO.	SIGN CODE	SIGN MESSAGE	TYPE II SIGN NO.		638.2102	REMARKS		
			SIZE		MOVING SIGNS		MOUNT ON SAME	
			W	X	H		TYPE II	POST AS
			IN	X	IN	EACH	SIGN #	
1	W5-52L		12	X	36	1	-	
2	D7-53L		54	X	36	1	-	
3	J4-1		24	X	36	1	-	
4	W5-52R		12	X	36	1	-	
5	I2-2		48	X	15	1	5	
5	R9-56		18	X	24	1	5	
5	D11-6		24	X	18	1	5	
6	I2-2		48	X	15	1	6	
6	R9-56		18	X	24	1	6	
6	D11-6		24	X	18	1	6	
7	W5-52R		12	X	36	1	-	
8	R7-1R		18	X	24	1	-	
9	I3-1	48	X	24	1	-		
10	W5-52L	12	X	36	1	-		
11	R7-1L	18	X	24	1	-		
12	I55-56	30	X	36	1	-		
TOTAL						16		

PAVEMENT MARKINGS

CATEGORY	STATION	TO	STATION	LOCATION	646.1020		649.0150	649.0850	REMARKS
					MARKING LINE EPOXY 4-INCH		TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH	
					[WHITE]	[YELLOW]	[WHITE]	[WHITE]	
					LF	LF	LF	LF	
0010	418+40	-	430+01	Project 5255-01-81	2,738	2,322	1,820	36	
				SUBTOTAL 0010	2,738	2,322	1,820	36	
				TOTAL 0010	5,060		1,820	36	

FIELD OFFICE

CATEGORY	STATION	TO	STATION	LOCATION	642.5201 FIELD OFFICE TYPE C EACH		REMARKS
0010	418+40	-	430+01	Project 5255-01-81	1		
				TOTAL 0010	1		

TRAFFIC CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	DURATION DAY	643.0300		643.0420		643.0705		643.0715		643.0900		643.0920		643.1050		643.5000		SPV.0045.01		SPV.0060.01		REMARKS
						TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL SIGNS		TRAFFIC COVERING SIGNS TYPE II		TRAFFIC CONTROL SIGNS PCMS		TRAFFIC CONTROL		SPECIAL (01. WATERWAY BUOYS)		SPECIAL (01. RIVER CONSTRUCTION NOTIFICATION SIGN)		
						EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	
0010	418+40	-	430+01	DETOUR ROUTE: STAGE 1	130	-	-	17	2,210	34	4,420	-	-	163	21,190	21	-	-	-	-	-	-	-	-	-	COVERING SIGNS WILL REQUIRE ONE CYCLE
0010	418+40	-	430+01	TEMP SIGNAL: STAGE 2, PHASE 1	53	54	2,862	2	106	4	212	22	1,166	21	1,113	2	-	-	-	-	-	-	-	-	-	COVERING SIGNS WILL REQUIRE ONE CYCLE
0010	418+40	-	430+01	TEMP SIGNAL: STAGE 2, PHASE 2	52	31	1,612	2	104	4	208	10	520	19	988	-	-	-	-	-	-	-	-	-	-	
0010	418+40	-	430+01	RIVER TRAFFIC: STAGE 1 & 2	262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	18,864	6				
0010	418+40	-	430+01	PROJECT 5255-01-81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-		
0010	409+00			STH 23 - STA 409+00 RT	7	-	-	-	-	-	-	-	-	-	-	-	1	7	-	-	-	-	-	-		
0010	440+00			STH 23 - STA 440+00 LT	7	-	-	-	-	-	-	-	-	-	-	-	1	7	-	-	-	-	-	-		
0010	12+00			CTH C - STA 12+00 LT	7	-	-	-	-	-	-	-	-	-	-	-	1	7	-	-	-	-	-	-		
TOTAL 0010						4,474		2,420		4,840		1,686		23,291		23		21		1		18,864		6		

CONSTRUCTION STAKING

						650.4500 CONSTRUCTION STAKING SUBGRADE	650.5000 CONSTRUCTION STAKING BASE	650.9920 CONSTRUCTION STAKING SLOPE STAKES	650.6500.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-25-51)	650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 5255-01-81)		
CATEGORY	STATION	TO	STATION	LOCATION		LF	LF	LF	LS	LS	REMARKS	
0010	429+01	-	430+01	CTH 23 - North Segment		100	100	200	-	-		
0010	418+40	-	419+40	CTH 23 -South Segment		100	100	200	-	-		
0010	418+40	-	430+01	Project 5255-01-81		-	-	-	1	1		
TOTAL 0010						200	200	400	1	1		

TRAFFIC SIGNALS

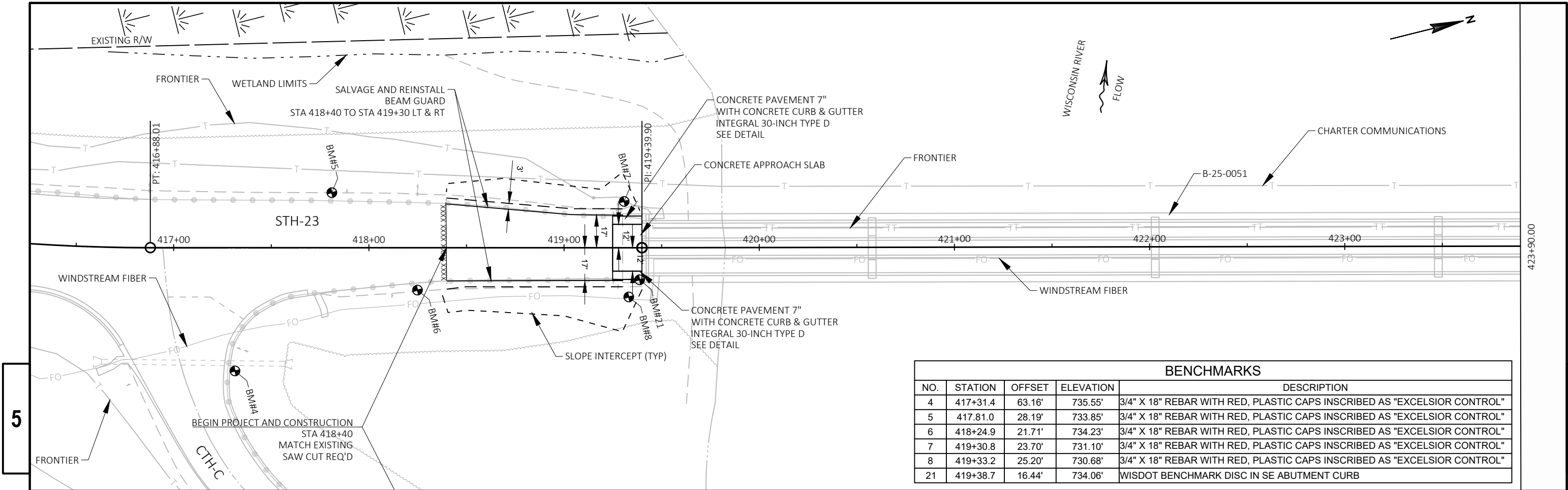
						661.0100.01 TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE) (01. B-25-51)	661.0300 GENERATORS		
CATEGORY	STATION	TO	STATION	LOCATION		LS	DAY	REMARKS	
0010	418+40	-	430+01	CTH 23 -South Segment		1	263		
TOTAL 0010						1	263		

RIVER BOTTOM SCANNING SURVEY

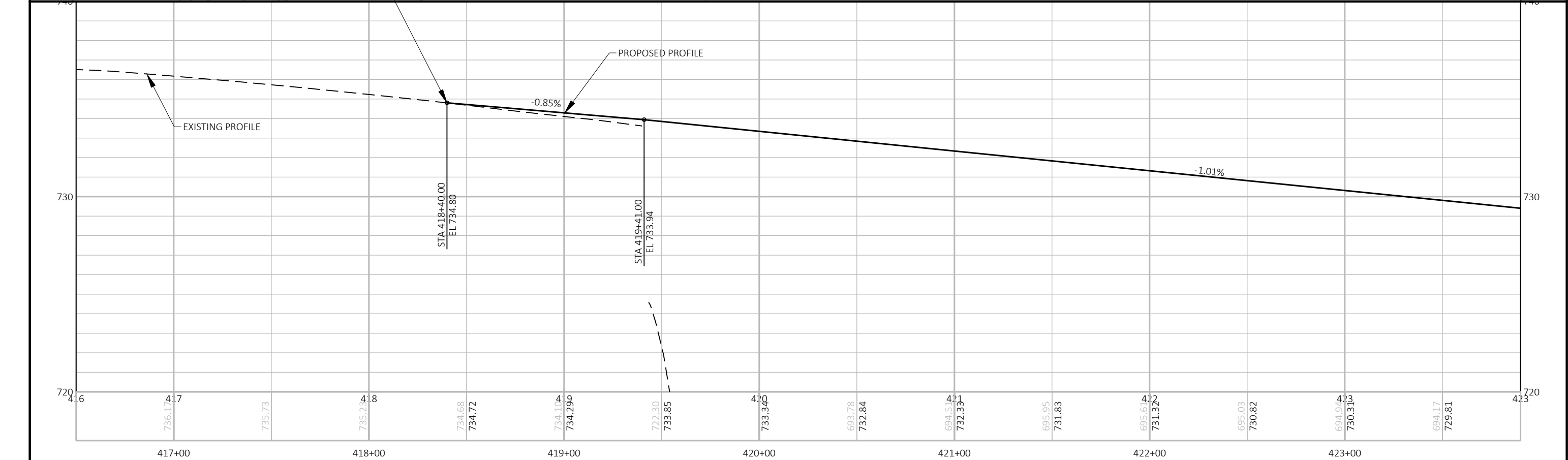
						SPV.0060.02 SPECIAL (02. RIVER BOTTOM SCANNING SURVEY STRUCTURE B-25-51)		
CATEGORY	STATION	TO	STATION	LOCATION		EACH	REMARKS	
0010	418+40	-	430+01	Project 5255-01-81		1		
TOTAL 0010						1		

SAWCUTS

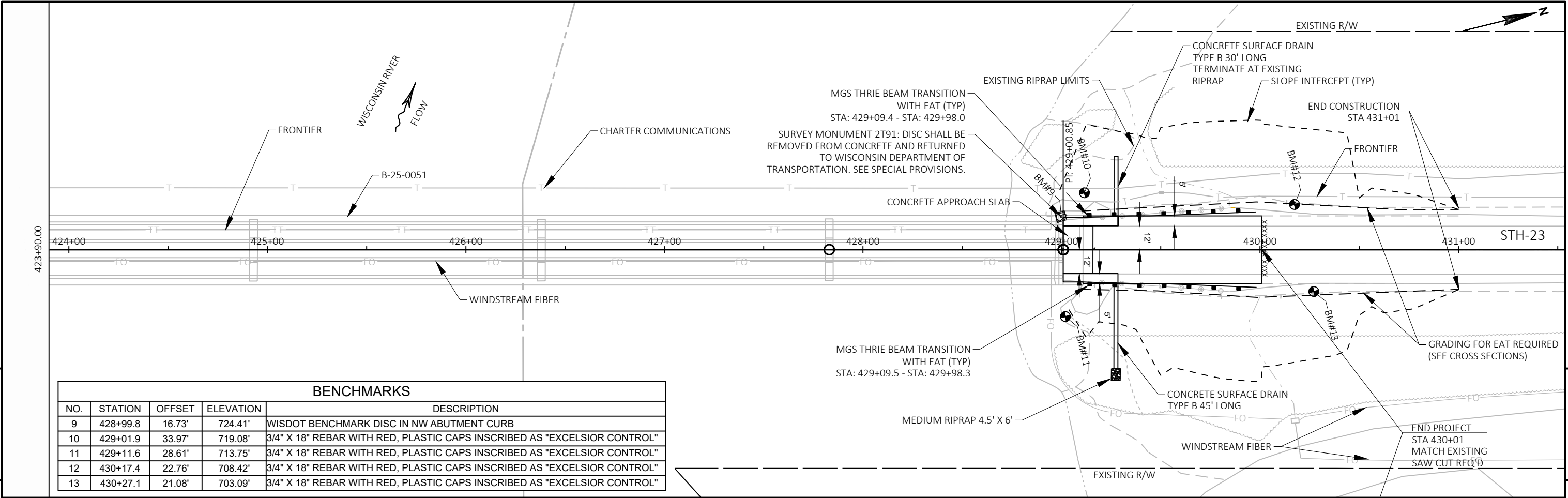
						690.0150 SAWING ASPHALT		
CATEGORY	STATION	TO	STATION	LOCATION		LF	REMARKS	
0010	429+01	-	430+01	CTH 23 - North Segment		40		
0010	418+40	-	419+40	CTH 23 -South Segment		43		
TOTAL 0010						83		



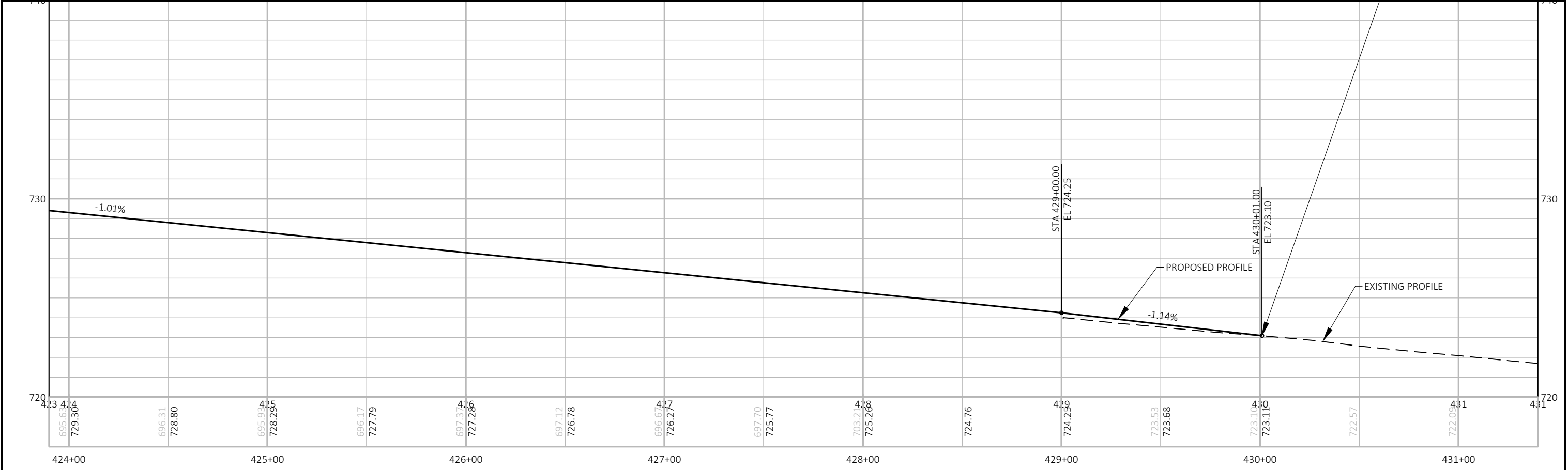
BENCHMARKS					
NO.	STATION	OFFSET	ELEVATION	DESCRIPTION	
4	417+31.4	63.16'	735.55'	3/4" X 18" REBAR WITH RED, PLASTIC CAPS INSCRIBED AS "EXCELSIOR CONTROL"	
5	417.81.0	28.19'	733.85'	3/4" X 18" REBAR WITH RED, PLASTIC CAPS INSCRIBED AS "EXCELSIOR CONTROL"	
6	418+24.9	21.71'	734.23'	3/4" X 18" REBAR WITH RED, PLASTIC CAPS INSCRIBED AS "EXCELSIOR CONTROL"	
7	419+30.8	23.70'	731.10'	3/4" X 18" REBAR WITH RED, PLASTIC CAPS INSCRIBED AS "EXCELSIOR CONTROL"	
8	419+33.2	25.20'	730.68'	3/4" X 18" REBAR WITH RED, PLASTIC CAPS INSCRIBED AS "EXCELSIOR CONTROL"	
21	419+38.7	16.44'	734.06'	WISDOT BENCHMARK DISC IN SE ABUTMENT CURB	



PROJECT NO: 5255-01-81	HWY: STH-23	COUNTY: IOWA, SAUK	PLAN AND PROFILE: BEGINNING OF PROJECT TO STA. 423+90	SHEET	E
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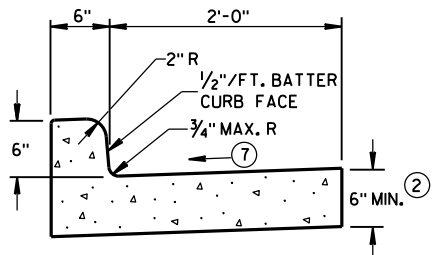


BENCHMARKS				
NO.	STATION	OFFSET	ELEVATION	DESCRIPTION
9	428+99.8	16.73'	724.41'	WISDOT BENCHMARK DISC IN NW ABUTMENT CURB
10	429+01.9	33.97'	719.08'	3/4" X 18" REBAR WITH RED, PLASTIC CAPS INSCRIBED AS "EXCELSIOR CONTROL"
11	429+11.6	28.61'	713.75'	3/4" X 18" REBAR WITH RED, PLASTIC CAPS INSCRIBED AS "EXCELSIOR CONTROL"
12	430+17.4	22.76'	708.42'	3/4" X 18" REBAR WITH RED, PLASTIC CAPS INSCRIBED AS "EXCELSIOR CONTROL"
13	430+27.1	21.08'	703.09'	3/4" X 18" REBAR WITH RED, PLASTIC CAPS INSCRIBED AS "EXCELSIOR CONTROL"

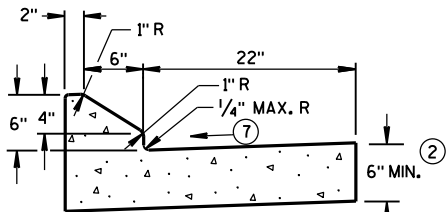


Standard Detail Drawing List

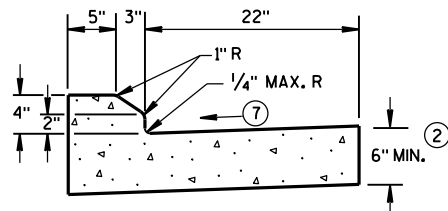
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
09G02-05A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
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
13C19-01	HMA LONGITUDINAL JOINTS
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-07C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D33-06	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



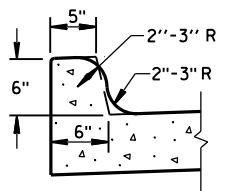
TYPES A^① & D



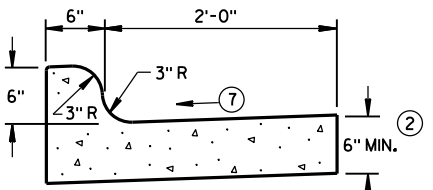
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

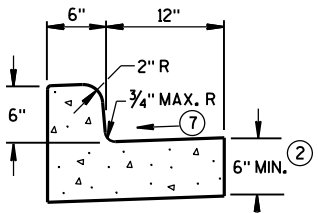


TYPES K^① & L
(OPTIONAL CURB SHAPE)



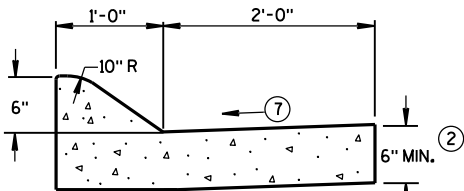
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

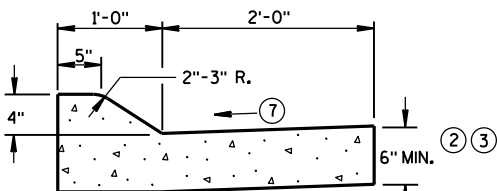


TYPES A^① & D

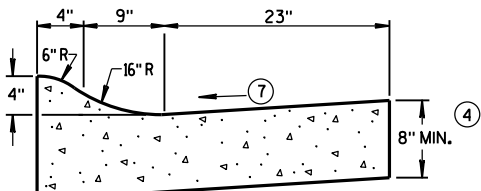
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

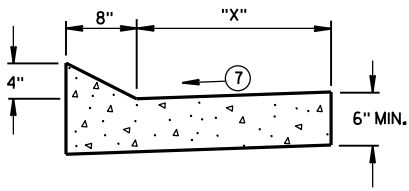


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

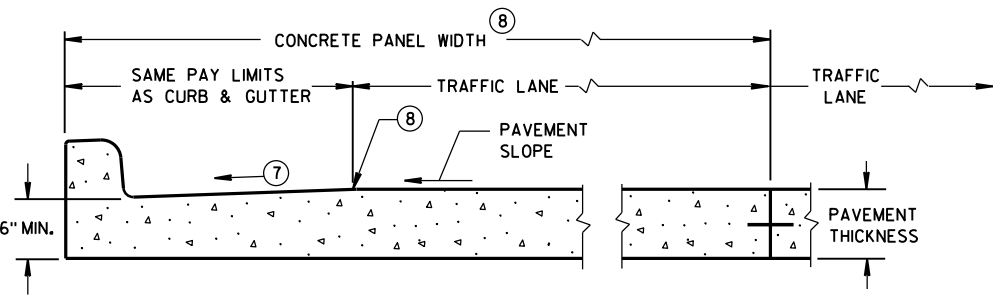
CONCRETE CURB & GUTTER 36"



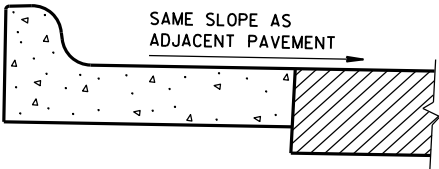
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

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



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



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

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS 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 & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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 GUTTER 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 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.

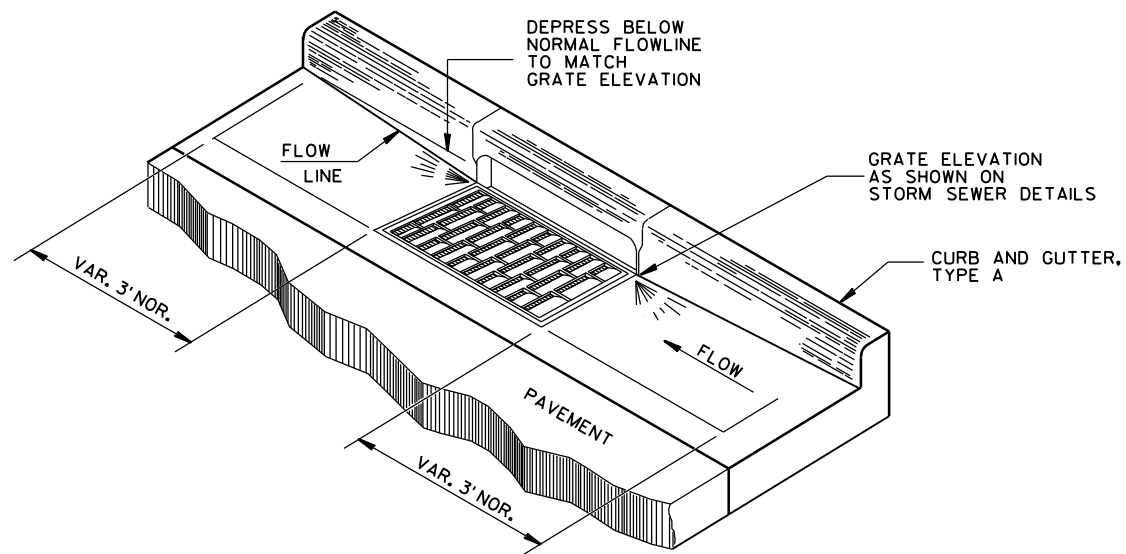
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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

* BIKE LANE IS NOT SHOWN.

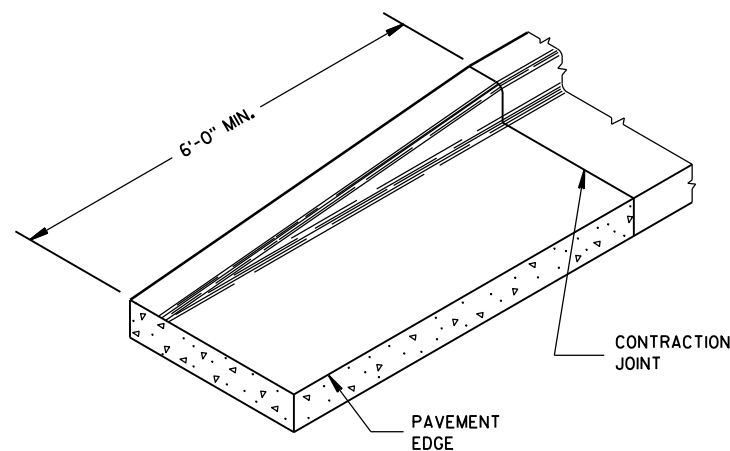
CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

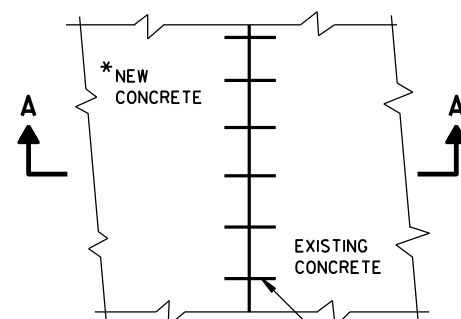


DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

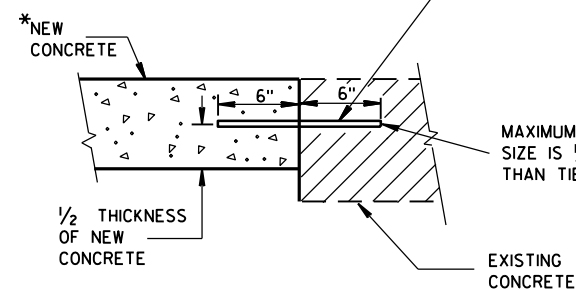


END SECTION CURB & GUTTER



PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.



**SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT**

NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT.

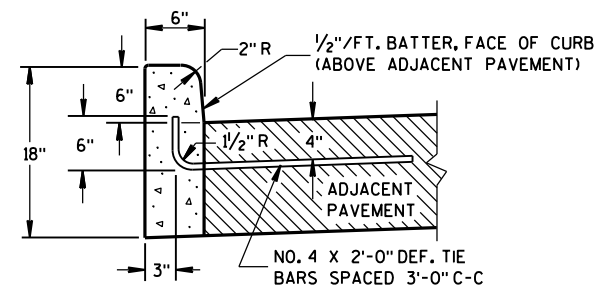
GENERAL NOTES

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

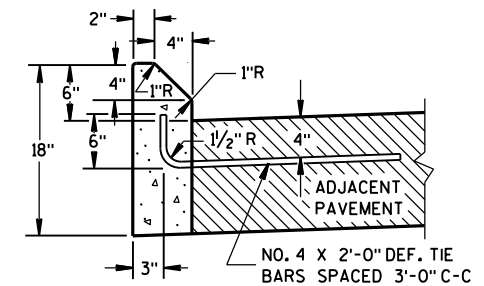
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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 GUTTER 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 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

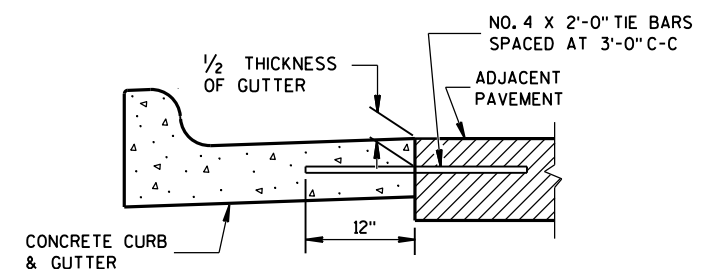


TYPES A^① & D

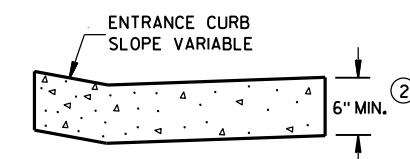


TYPES G^① & J

CONCRETE CURB



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2017

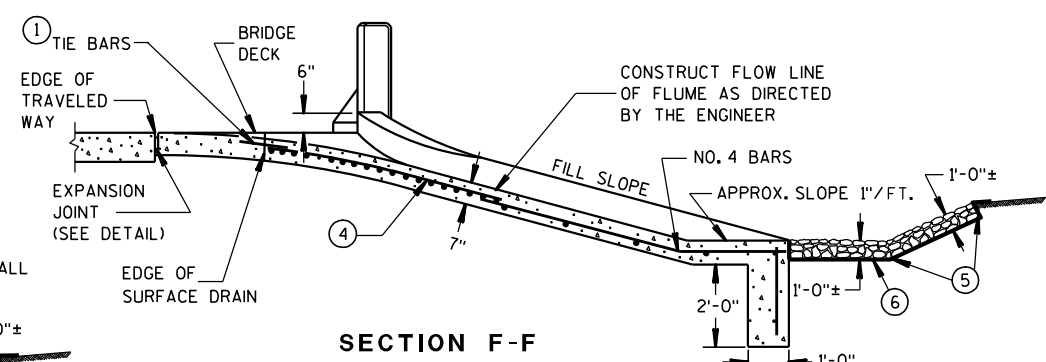
DATE

FHWA

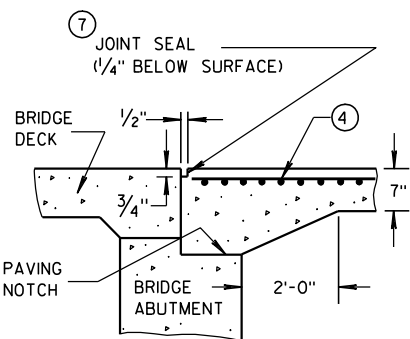
/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

UNIT SUPERVISOR

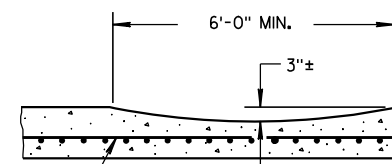


SECTION F-F

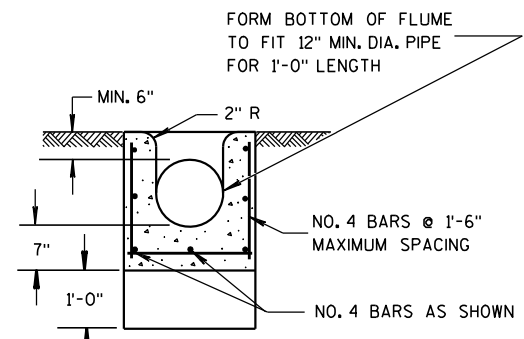


EXPANSION JOINT DETAIL

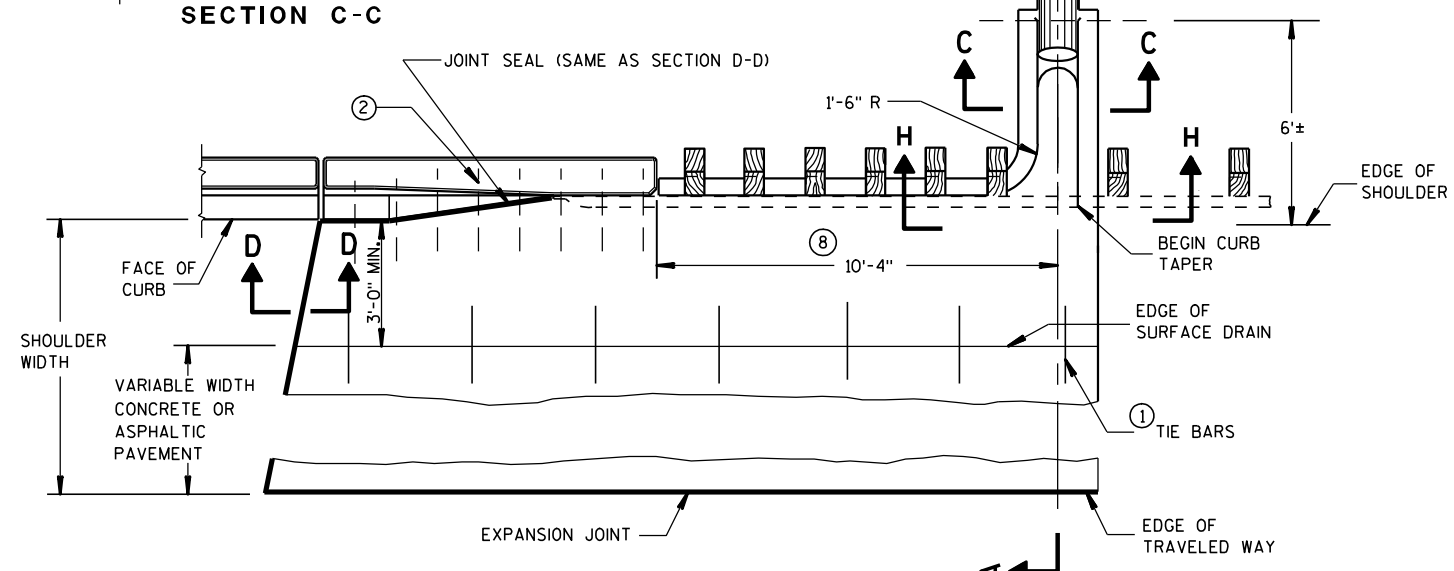
SECTION H-H



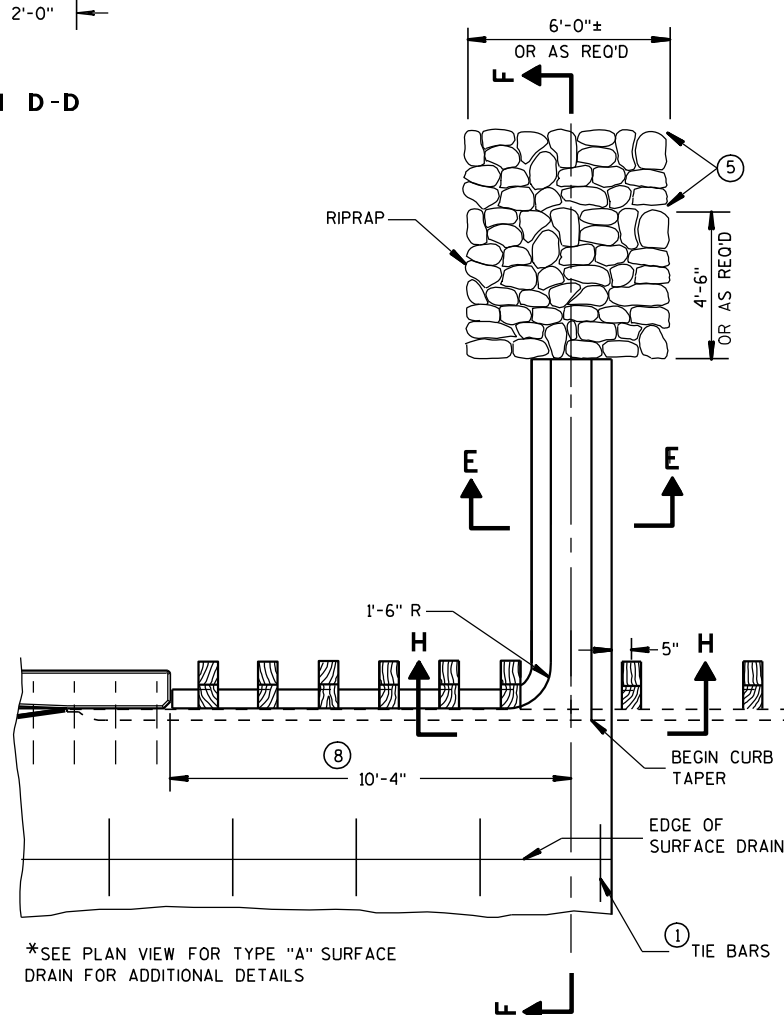
SECTION D-D



SECTION C-C



PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



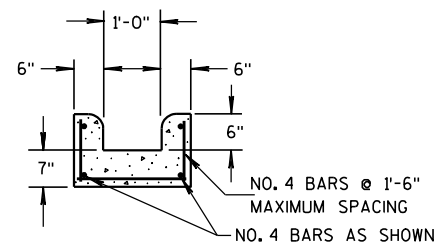
* PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

GENERAL NOTES

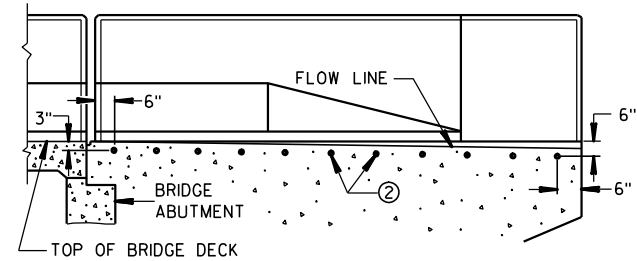
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.
- ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑤ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑥ GEOTEXTILE FABRIC, TYPE 'R'
- ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
- ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1/2".



SECTION E-E



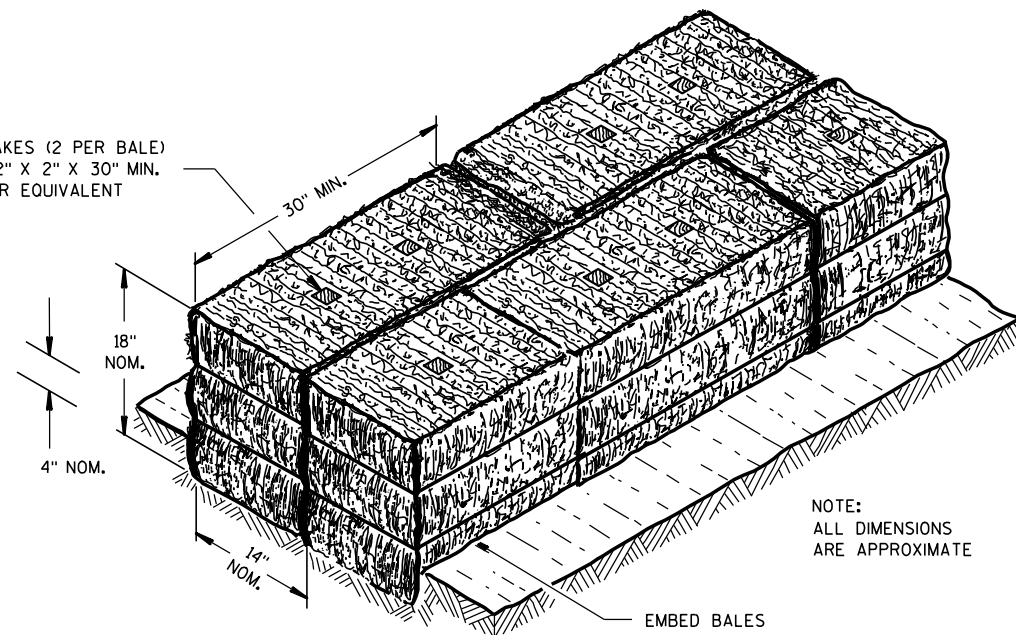
LOCATION OF TIE BARS IN WINGWALL

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

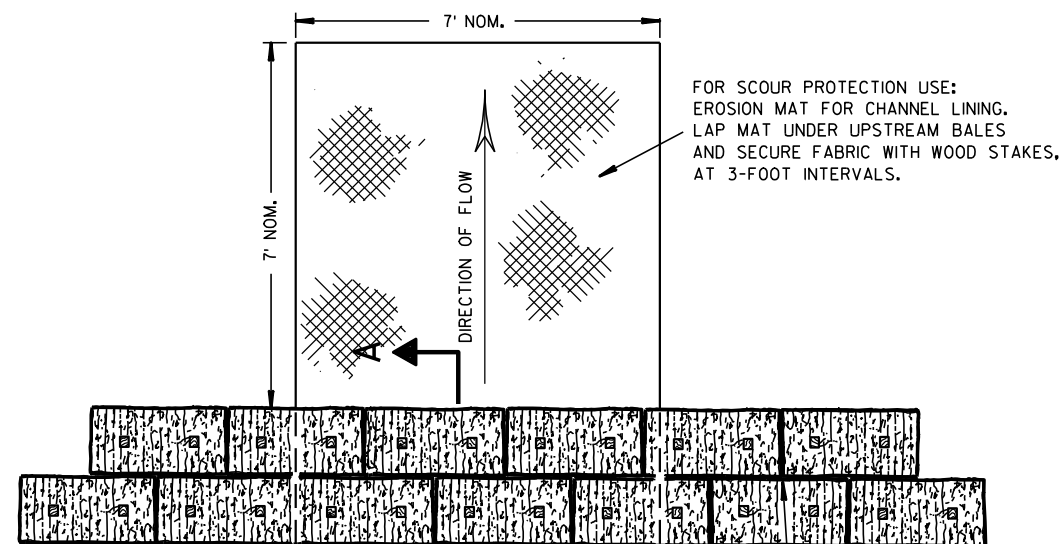
APPROVED
9/4/08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

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



SECTION A-A

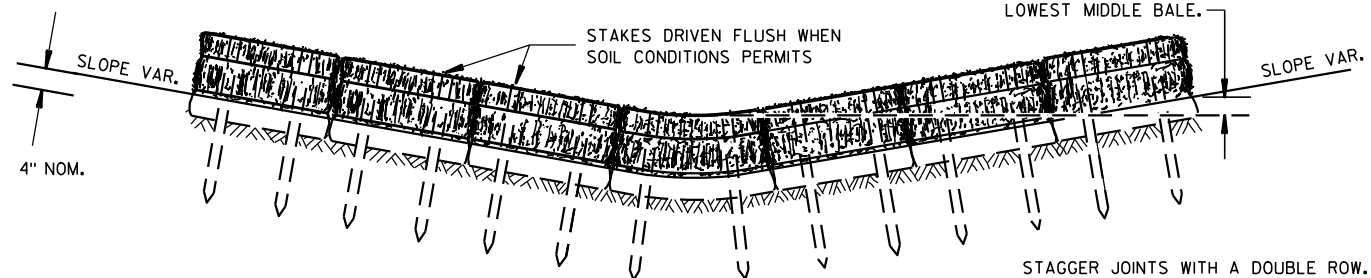
NOTE:
ALL DIMENSIONS
ARE APPROXIMATE



PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

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



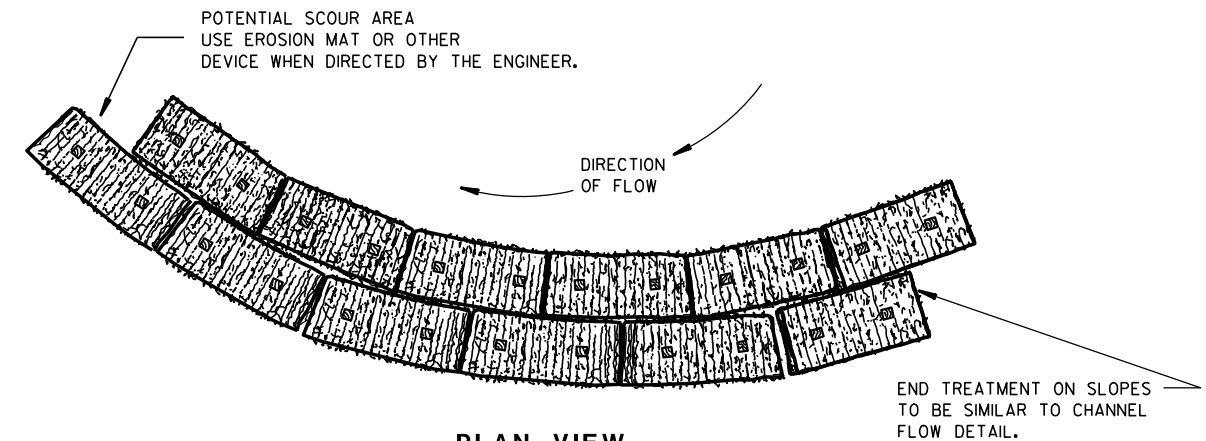
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

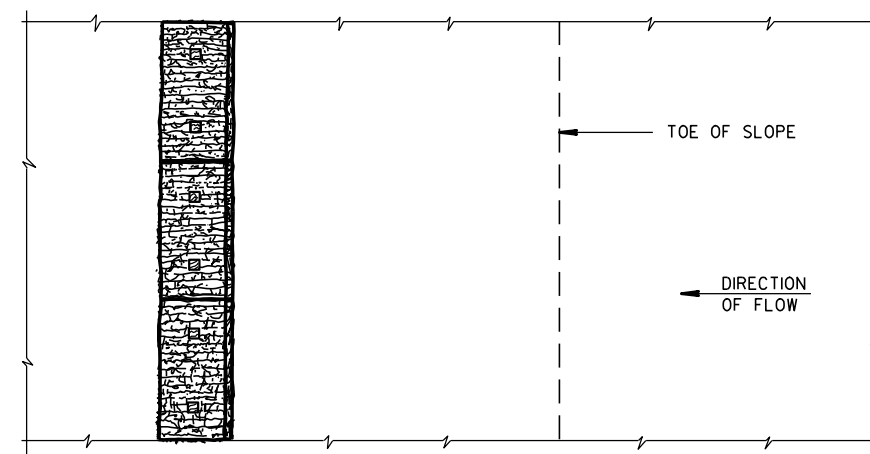
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

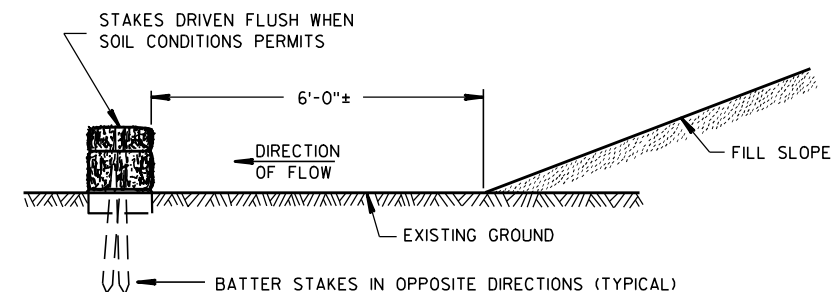


PLAN VIEW

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

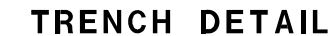
6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

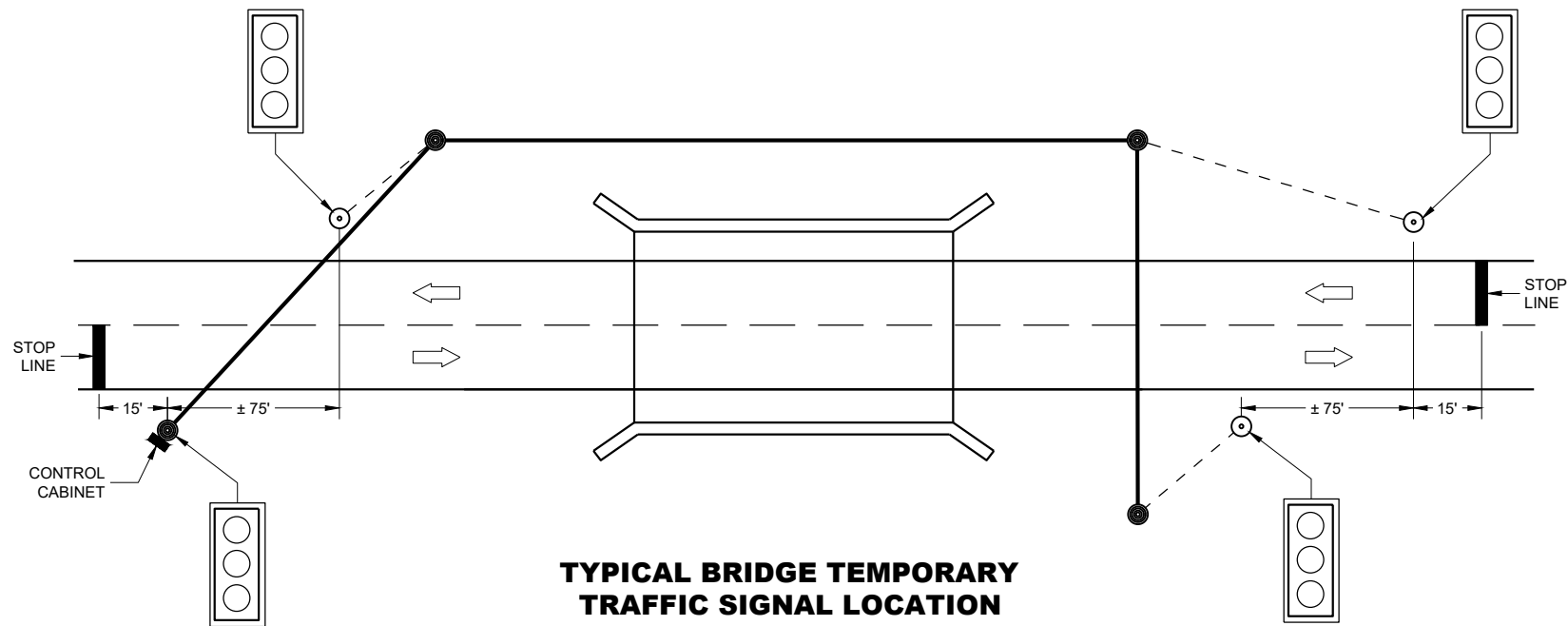
FHWA



- 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 1½" X 1½" 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.



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>4-29-05</u> DATE	<u>/S/ Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER



TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

- WOOD POLE (NON-BREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- DIRECTION OF TRAFFIC
- LED TRAFFIC SIGNAL WITH BACKPLATE

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.).

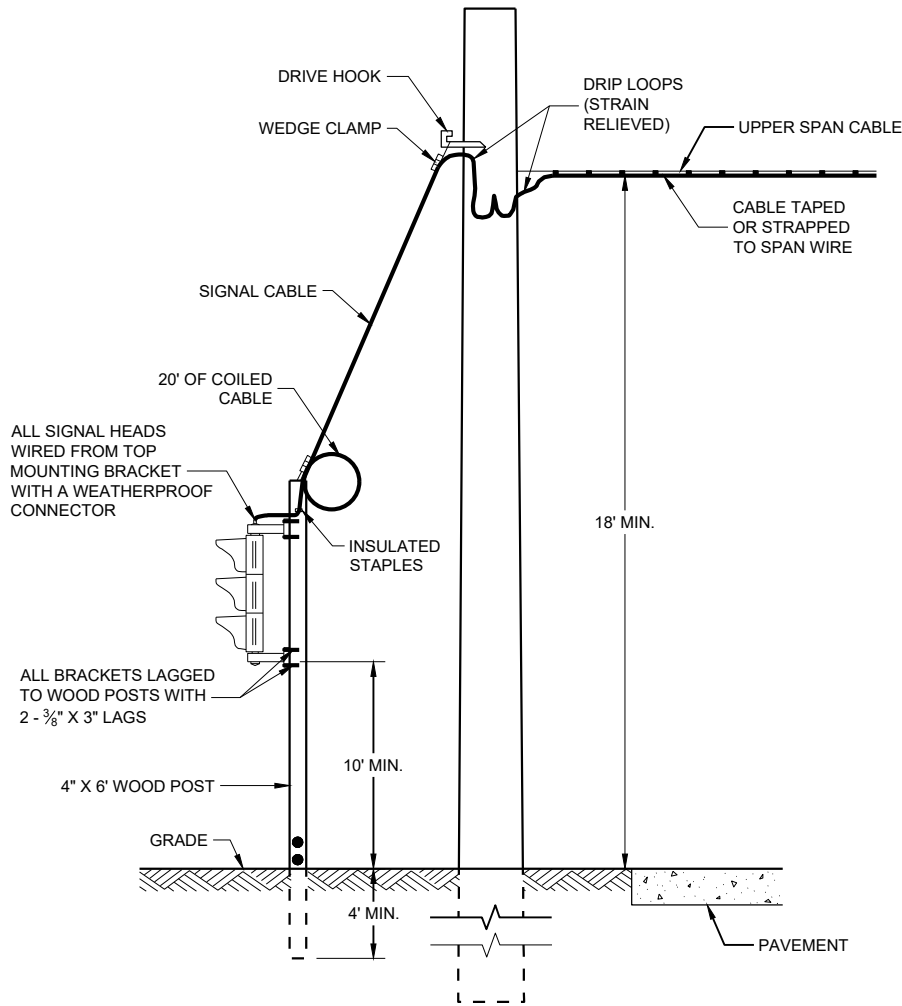
WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

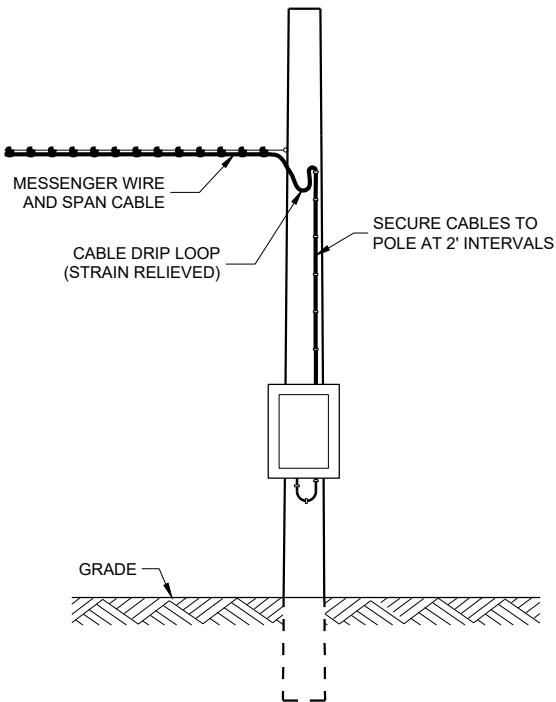
TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

EACH TRAFFIC SIGNAL SHALL HAVE A BACKPLATE.

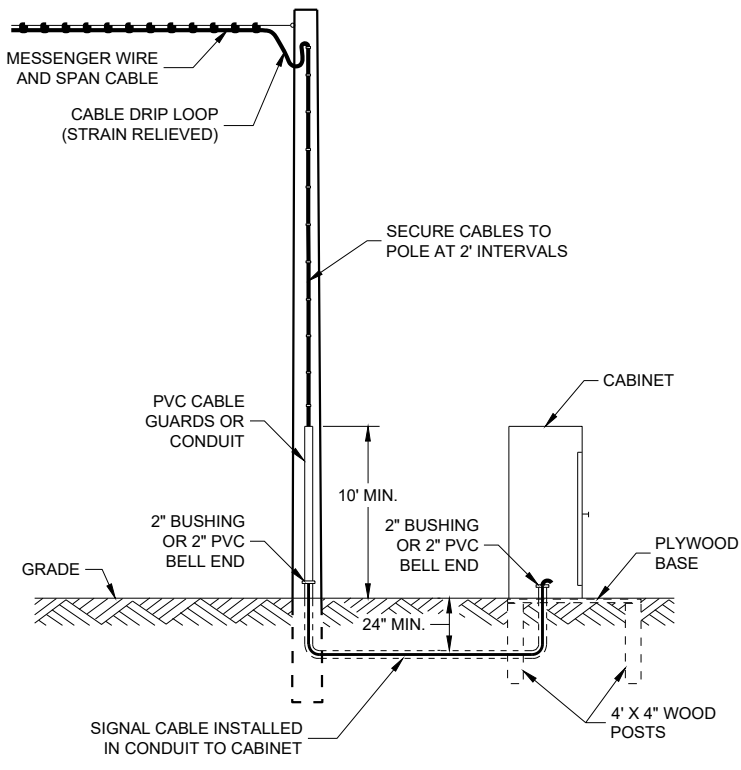
SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15D33.



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'

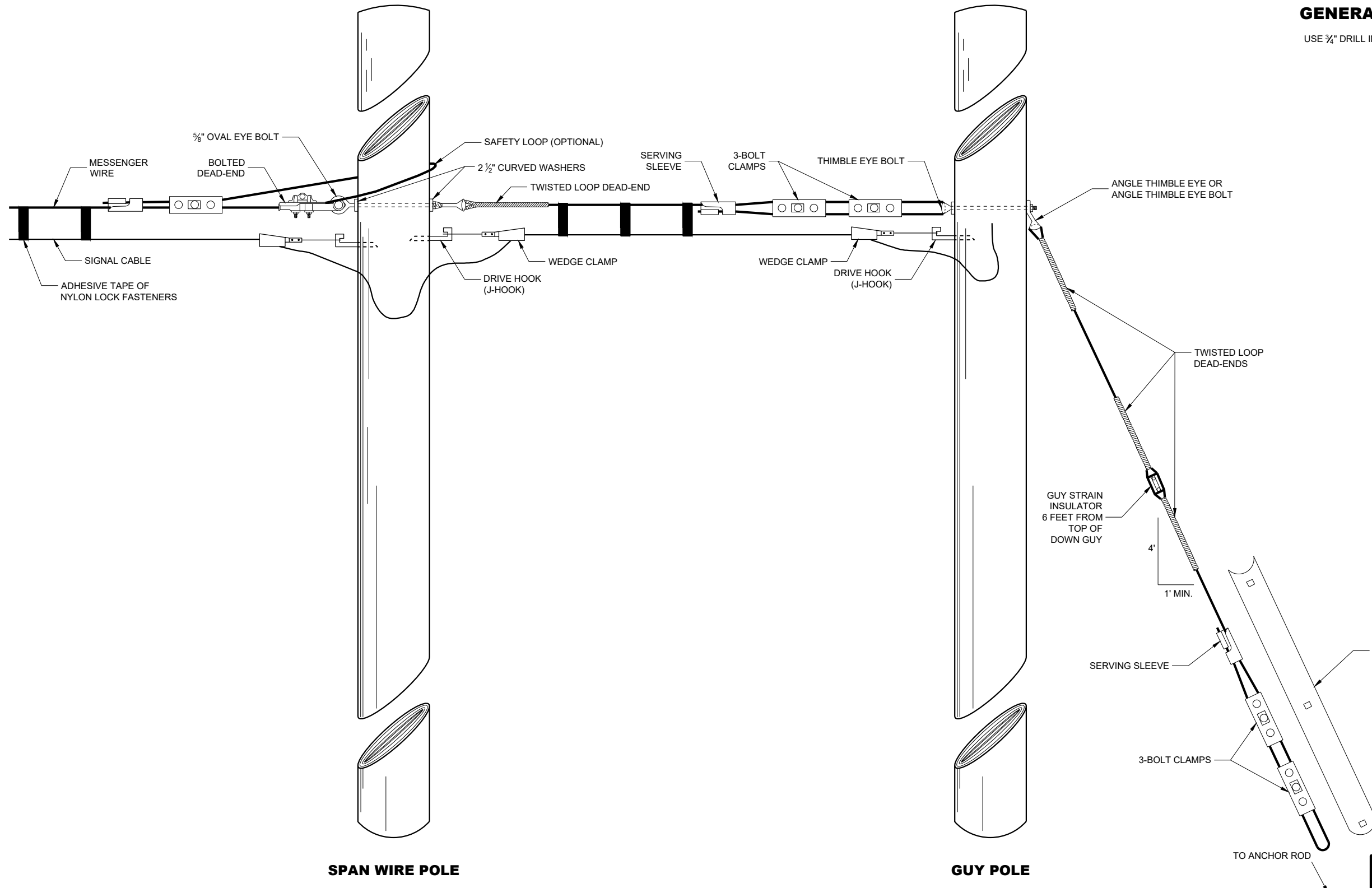
OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE*
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/CURBS	2 FT

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

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE /S/ Ahmet Demirbilek
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



GENERAL NOTES

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

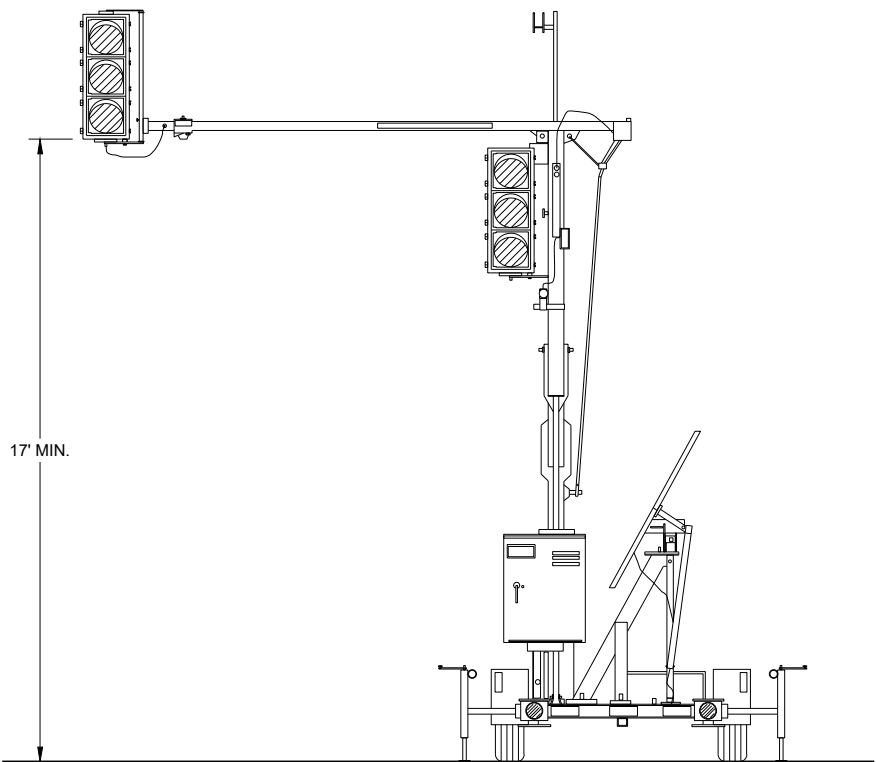
TYPICAL DEAD-ENDINGS OR GUYING

**BRIDGE TEMPORARY TRAFFIC
SIGNAL INSTALLATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

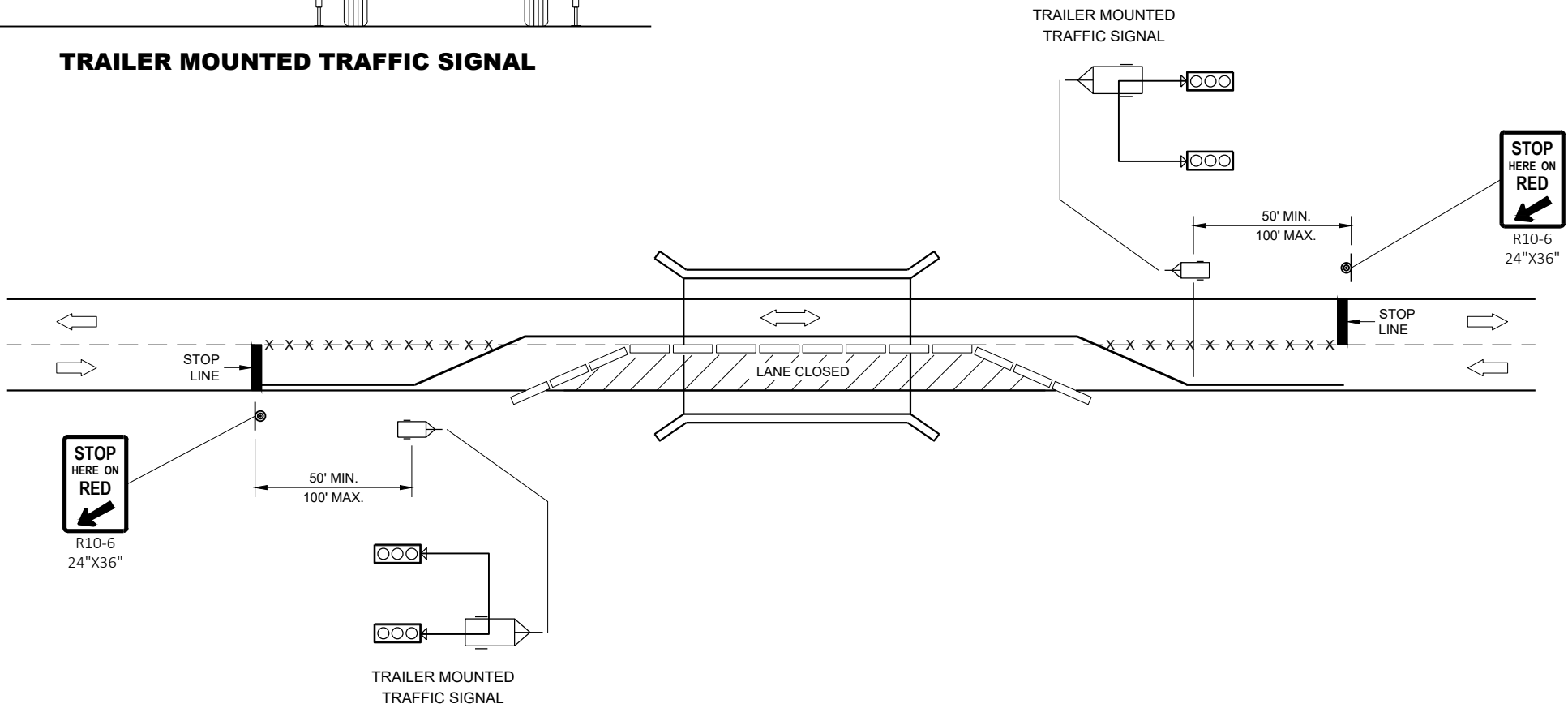


TRAILER MOUNTED TRAFFIC SIGNAL

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

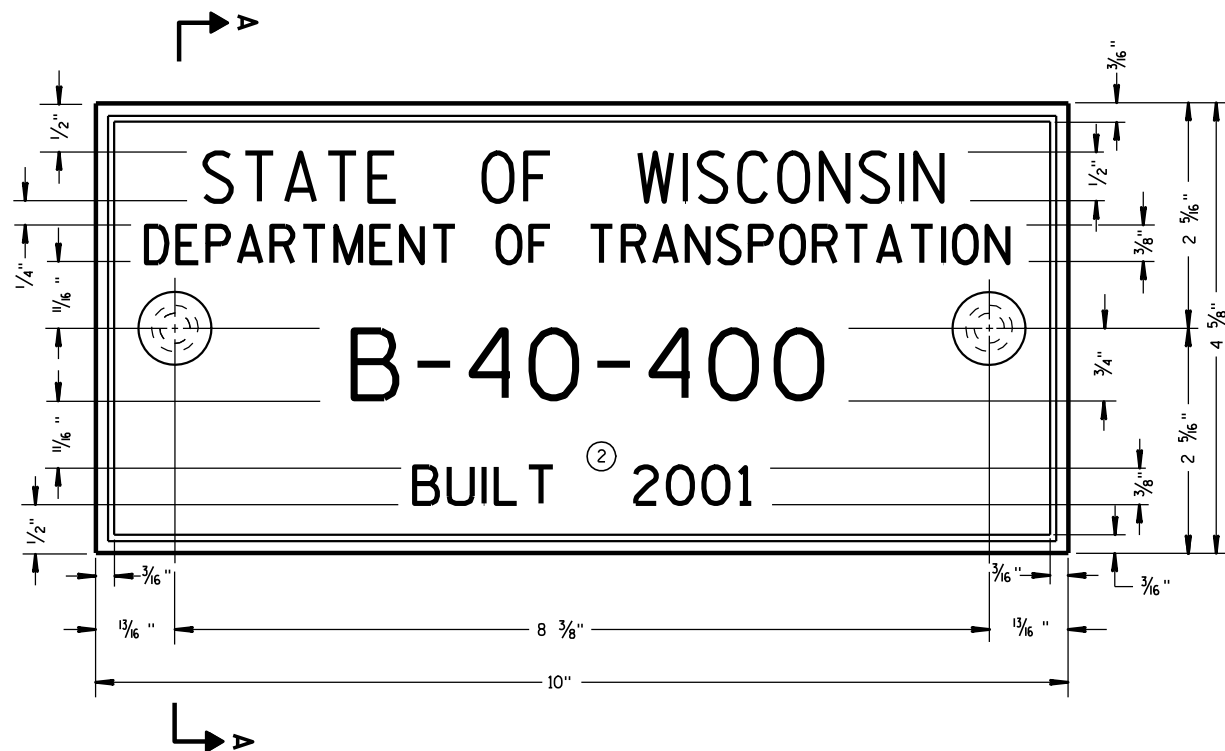
LEGEND

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

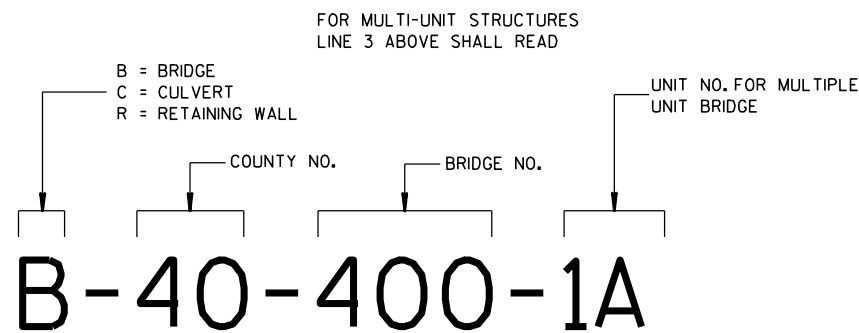
BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



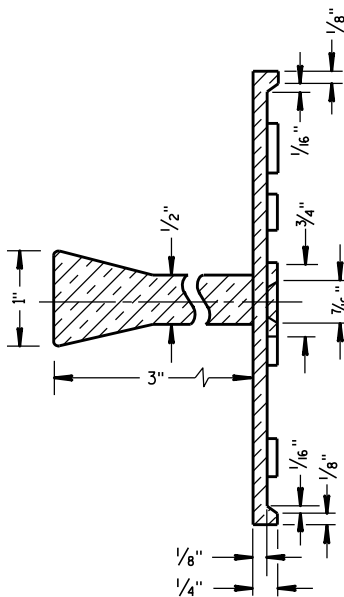
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

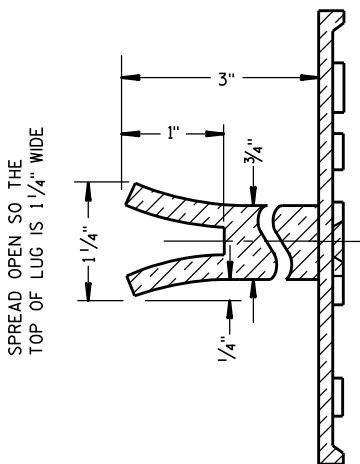
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

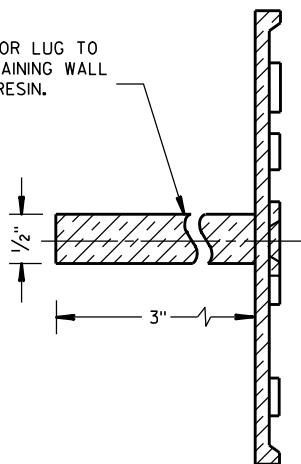


SECTION A-A



ALTERNATE LUG

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

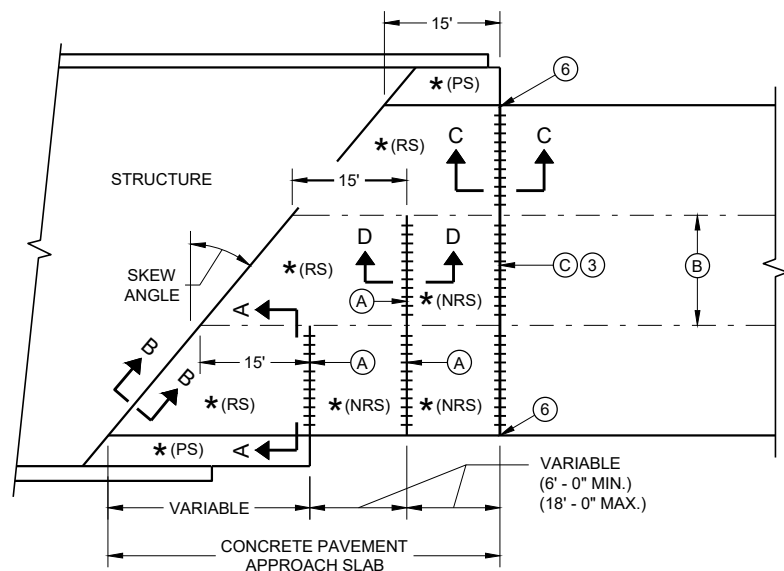


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

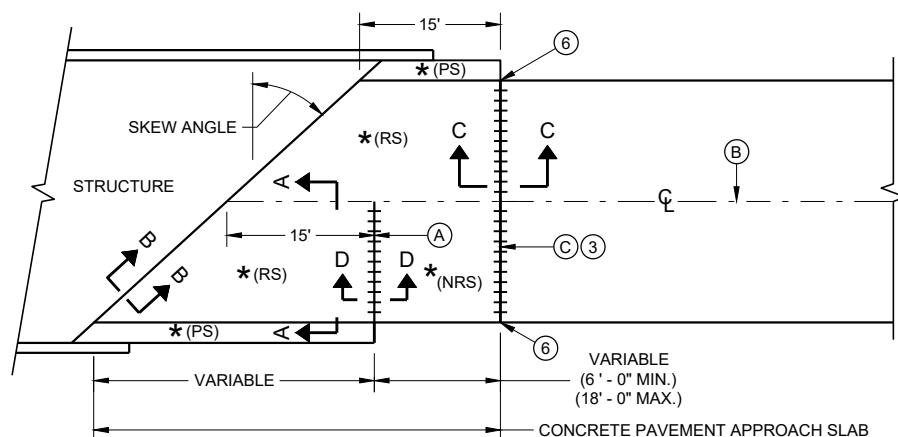
**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

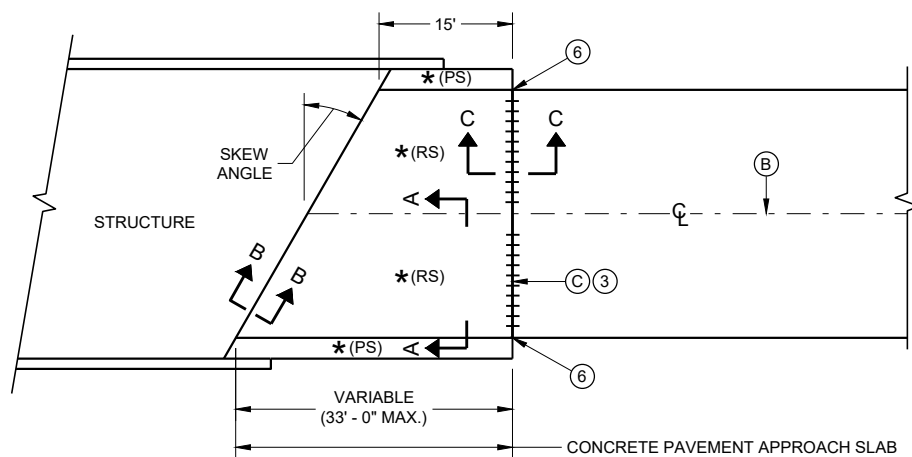
APPROVED
3/26/10
DATE
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA



**SKewed APPROACH
(PAVEMENT MORE THAN TWO LANES)**



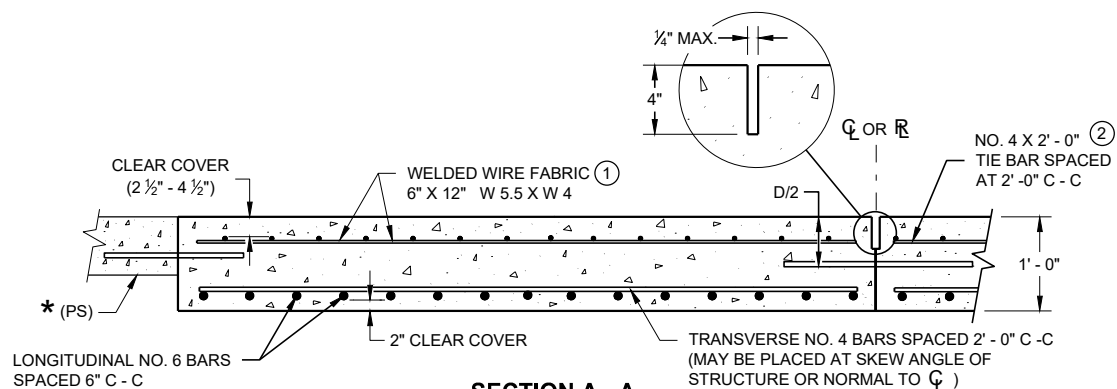
**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**



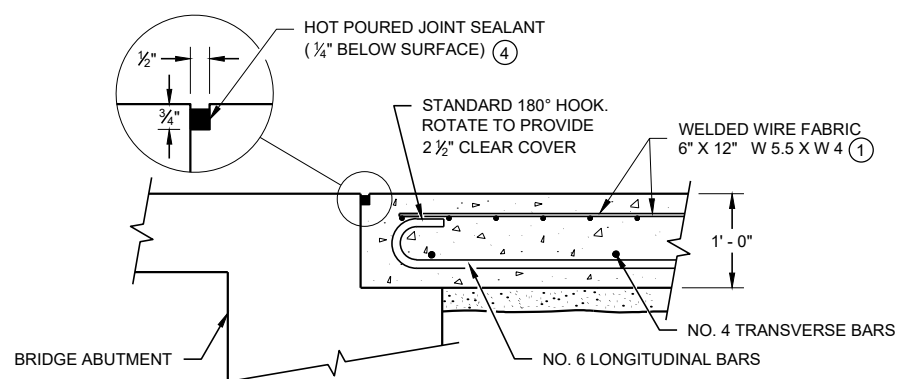
**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**

APPROACH SLAB AND ADJACENT PAVEMENT

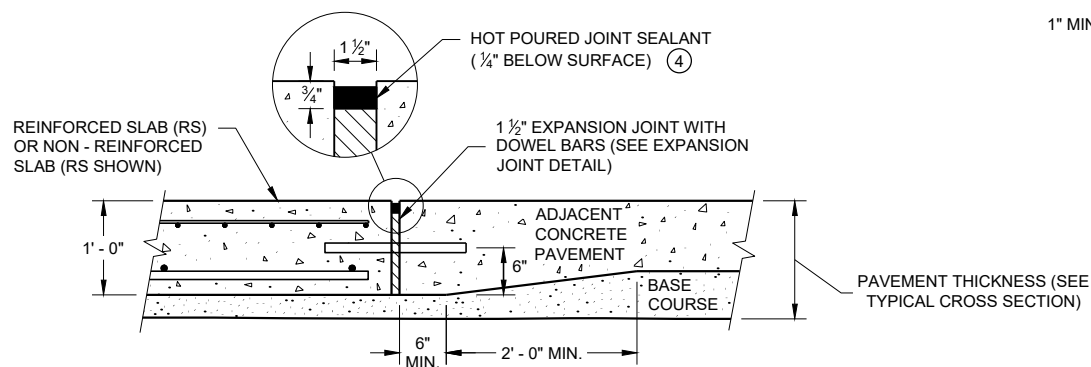
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



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



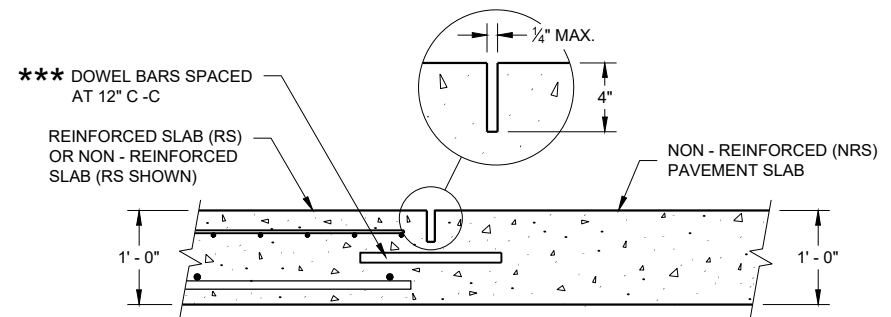
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

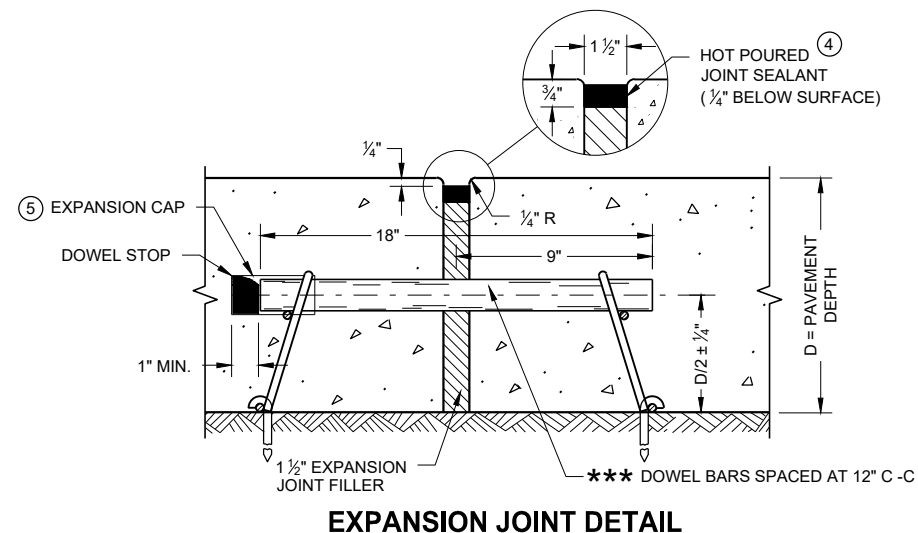
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

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 $\mathcal{C}$ OR $\mathcal{R}$.
- B STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- C 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.



**SECTION D - D
CONTRACTION JOINT**



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

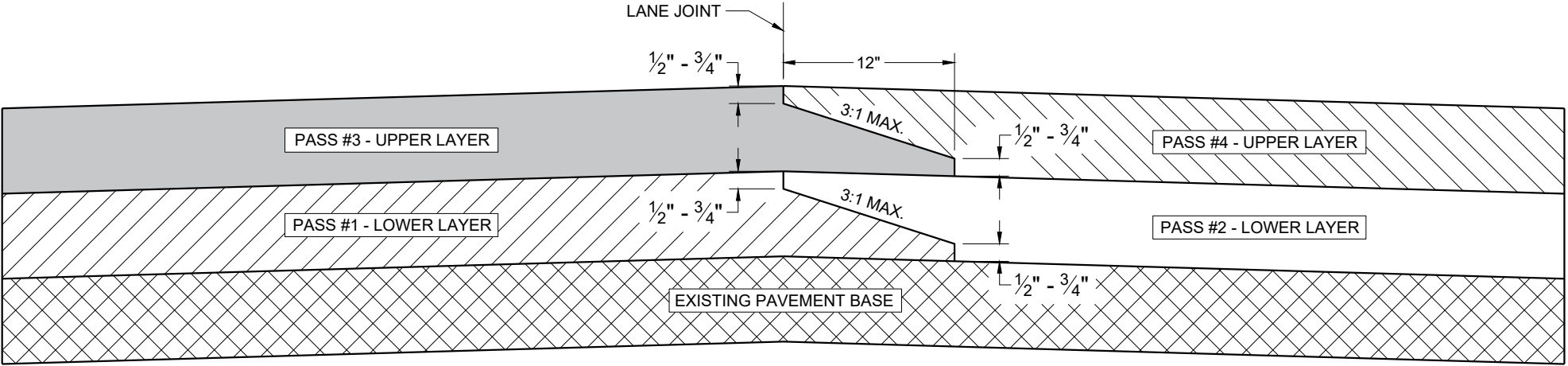
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

CONFORM TO STANDARD SPECIFICATION 450.3.2.8



TYPICAL PAVEMENT CROSS SECTION
OF NOTCHED WEDGE LONGITUDINAL JOINTS

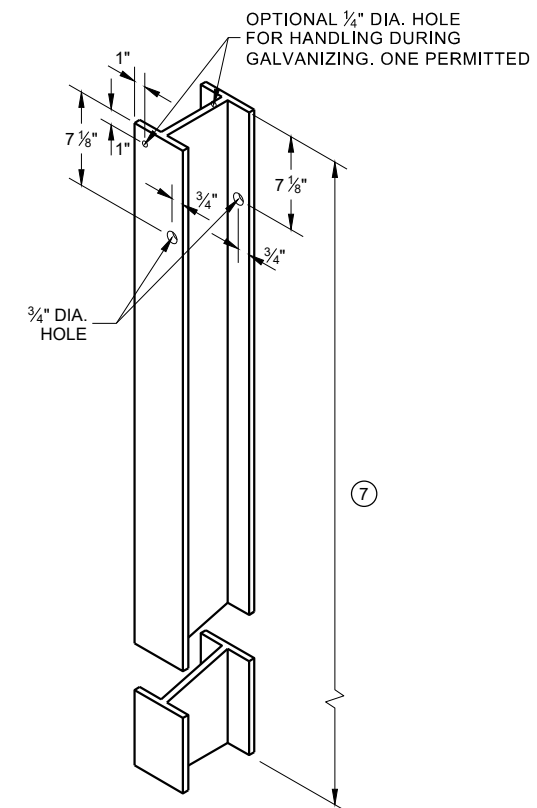
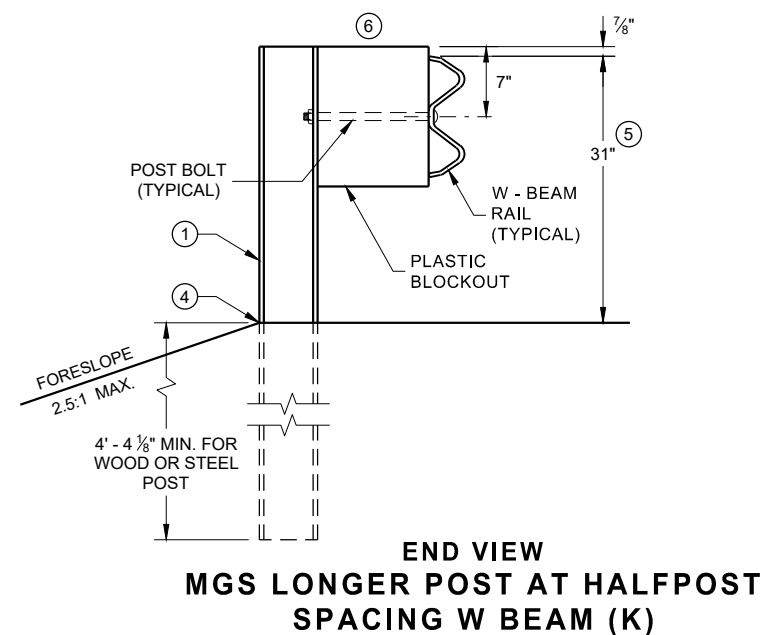
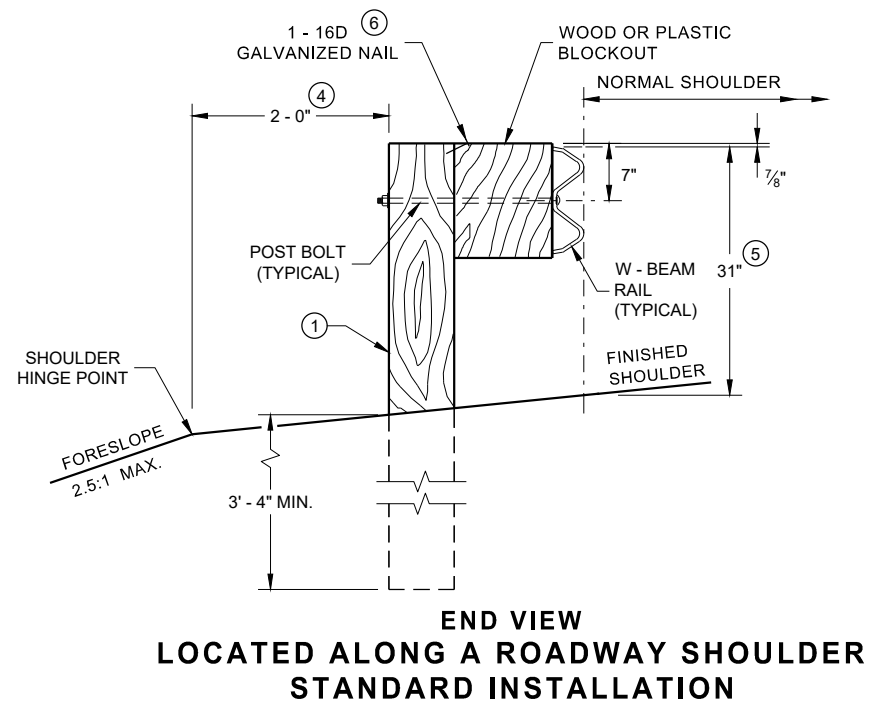
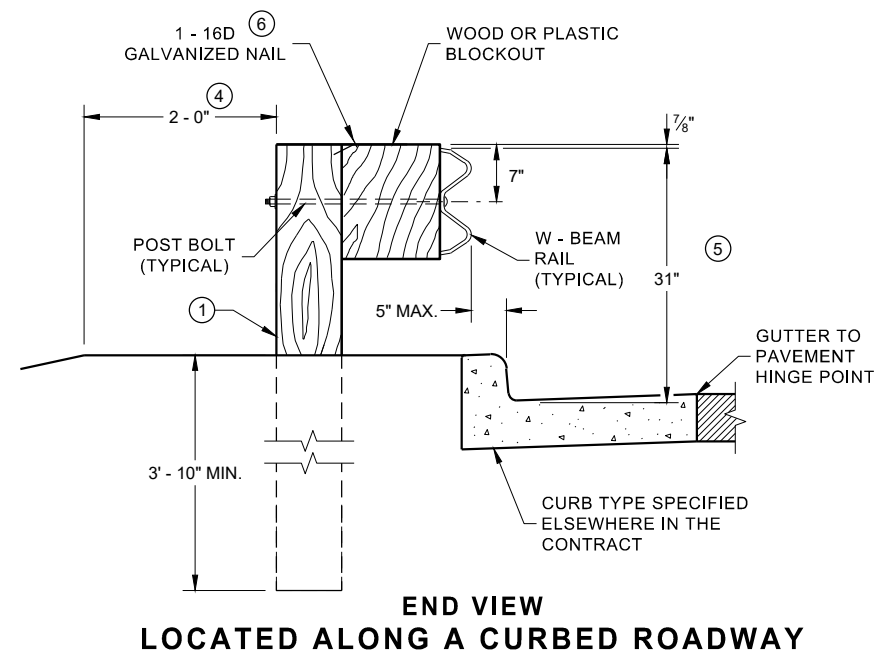
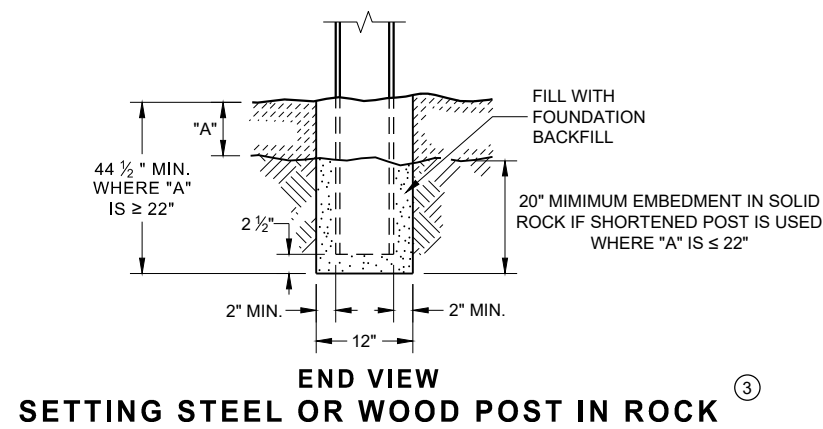
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

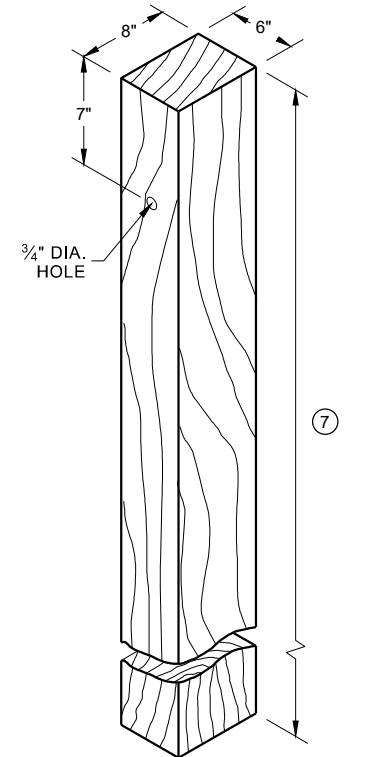
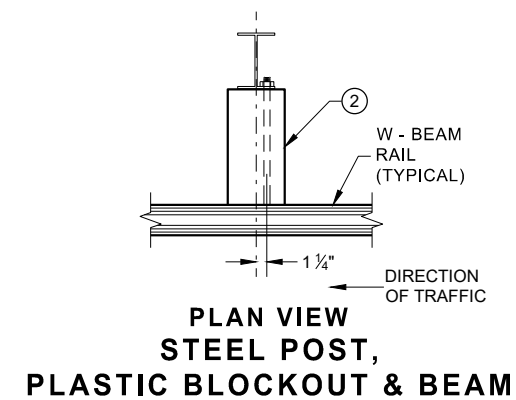
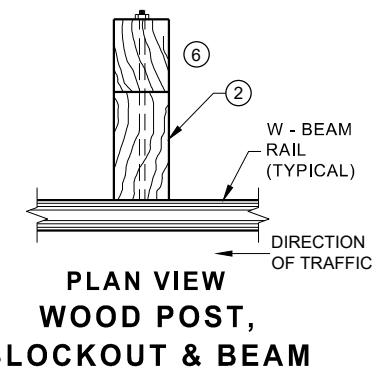
APPROVED
May 2019 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER

FHWA

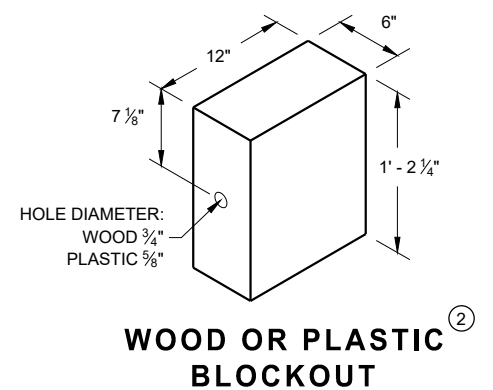
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL.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

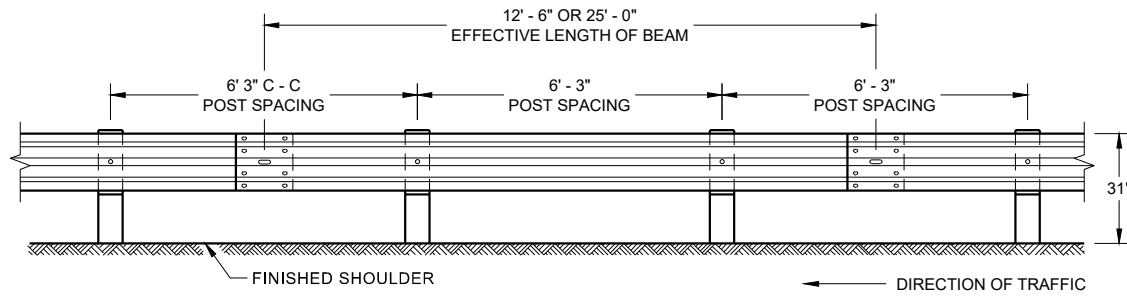


**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

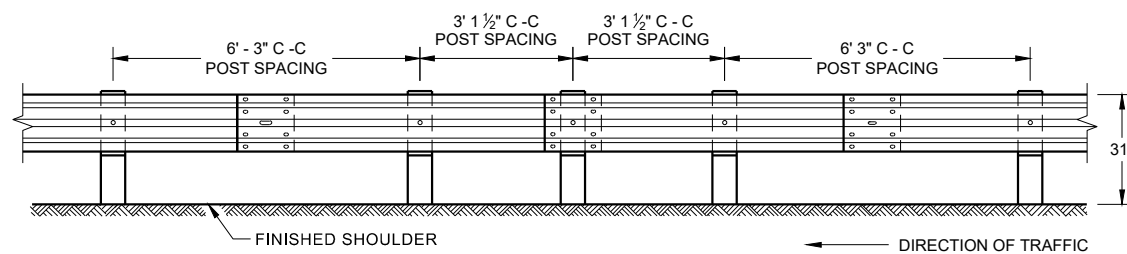


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

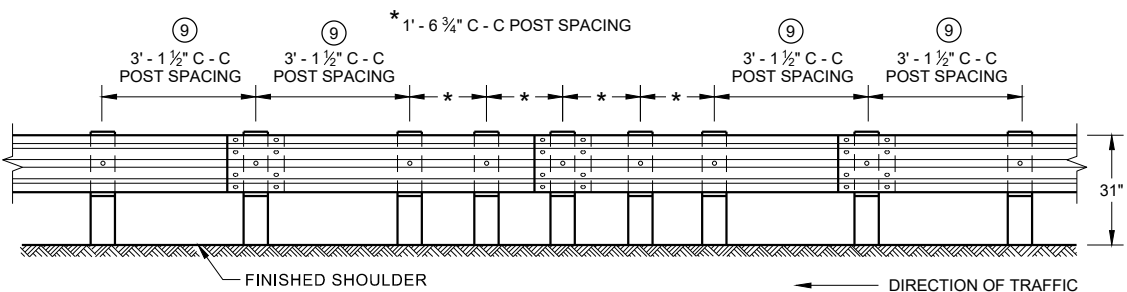




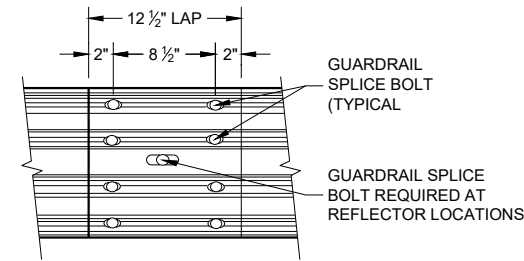
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



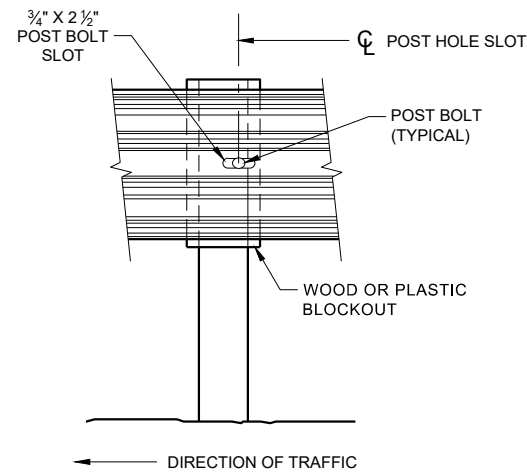
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



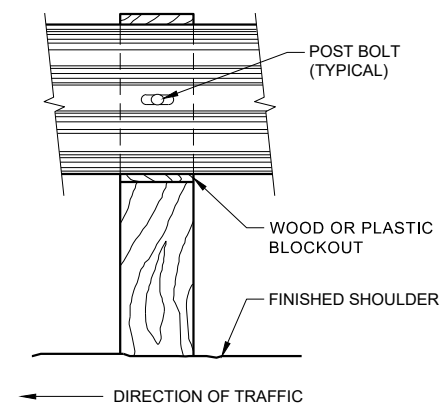
**FRONT VIEW
QUARTER POST SPACING (QS)**



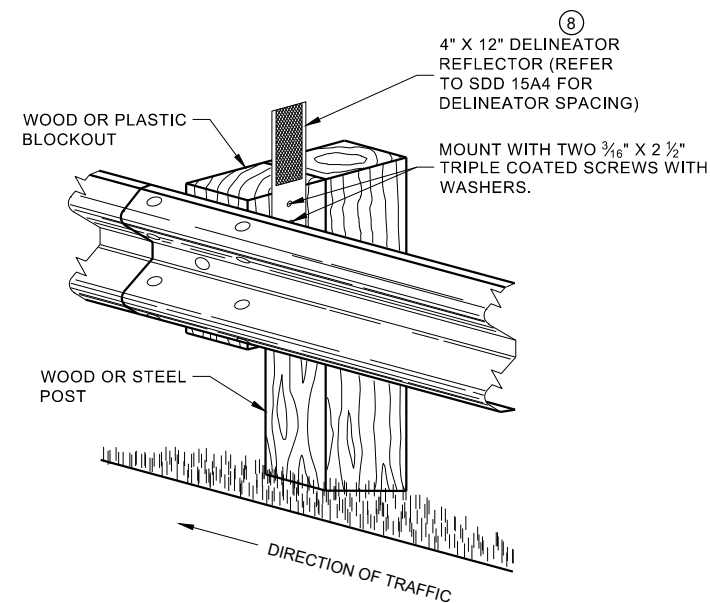
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



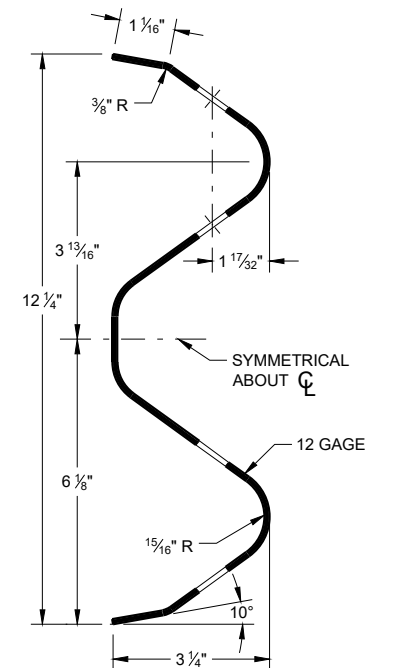
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

POST BOLTS ARE A 3/4" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

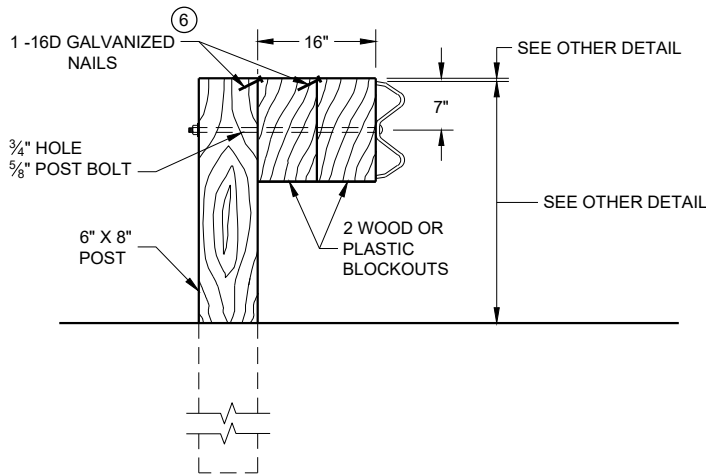
GUARD RAIL SPLICE BOLTS ARE A 3/4" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

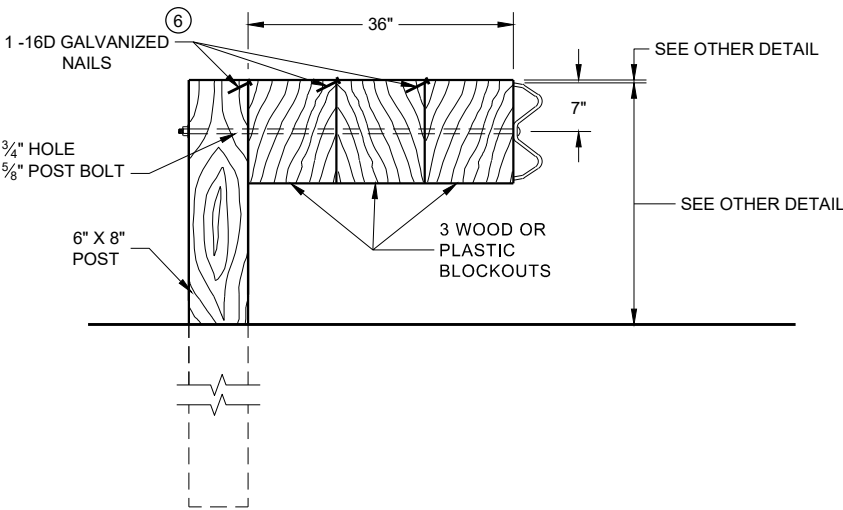
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

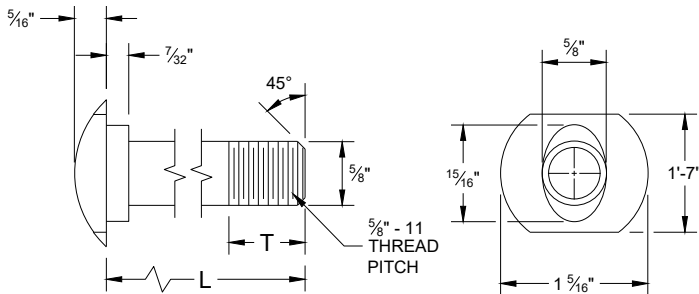
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

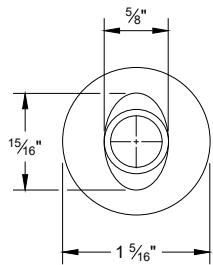
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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

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

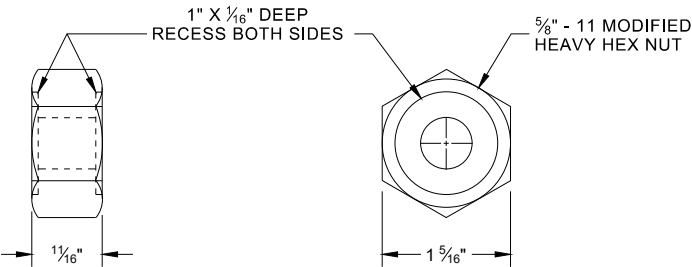


POST BOLT TABLE

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

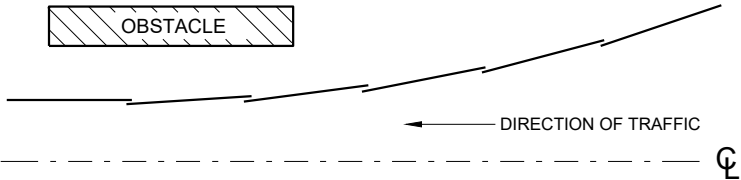


ALTERNATE BOLT HEAD

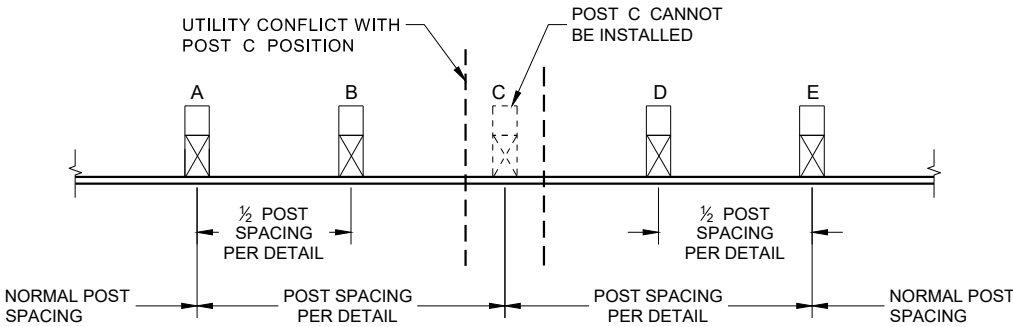


POST BOLT, SPLICE BOLT AND RECESS NUT

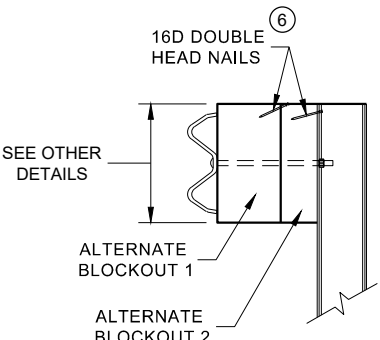
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



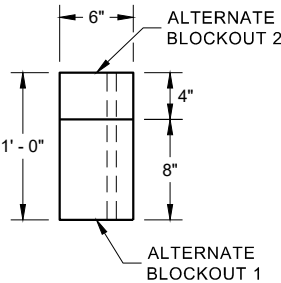
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

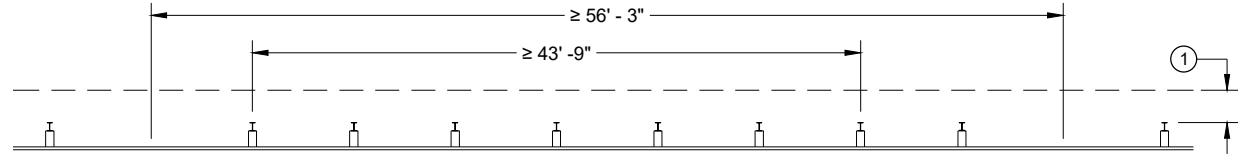


PLAN VIEW

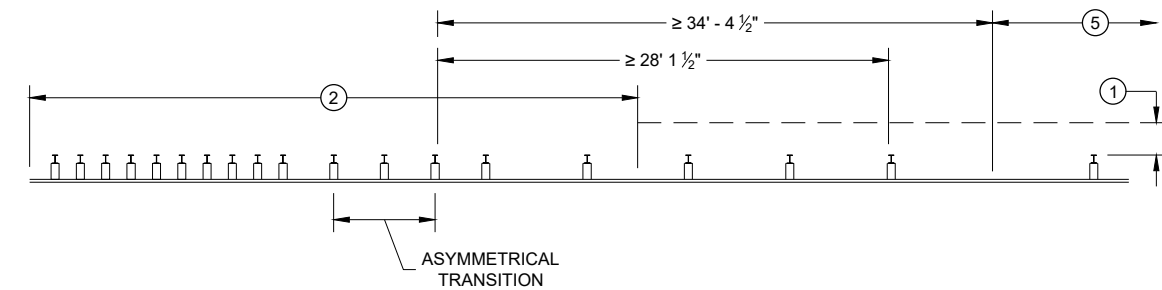
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

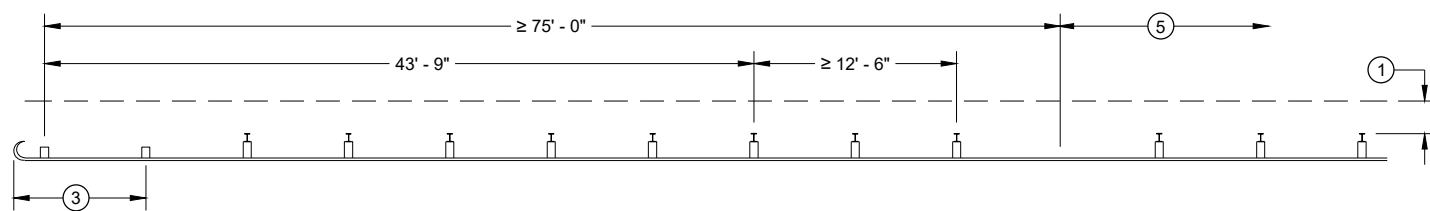
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



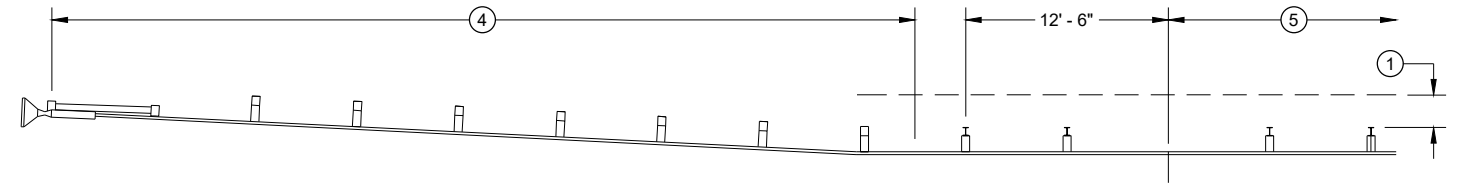
MISSING POST IN NORMAL BEAM GUARD RUN



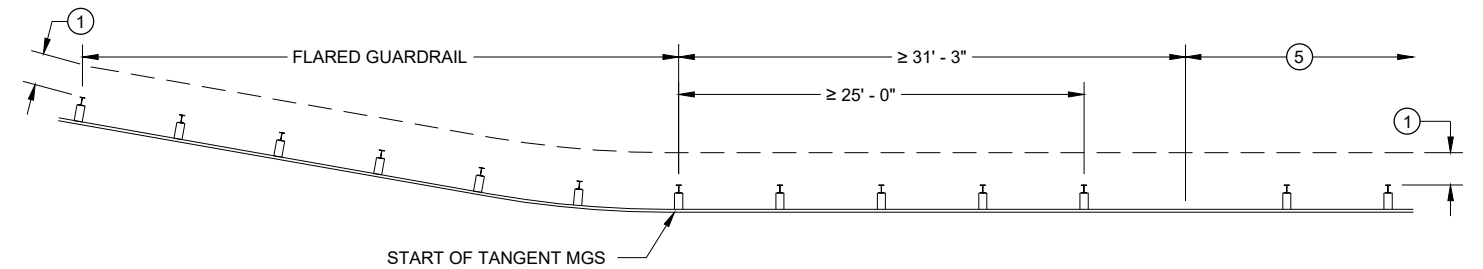
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



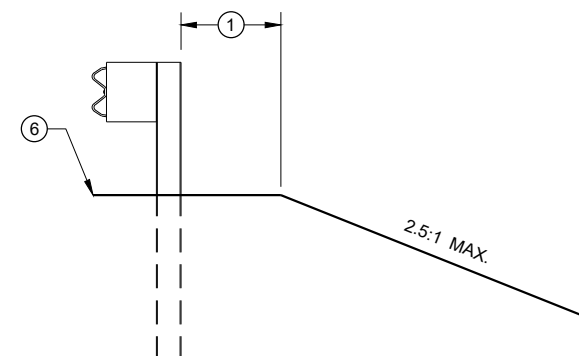
MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

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

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
 - (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
 - (C) DIFFERENT 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.

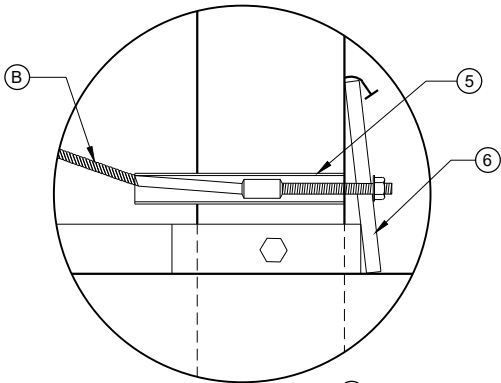
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

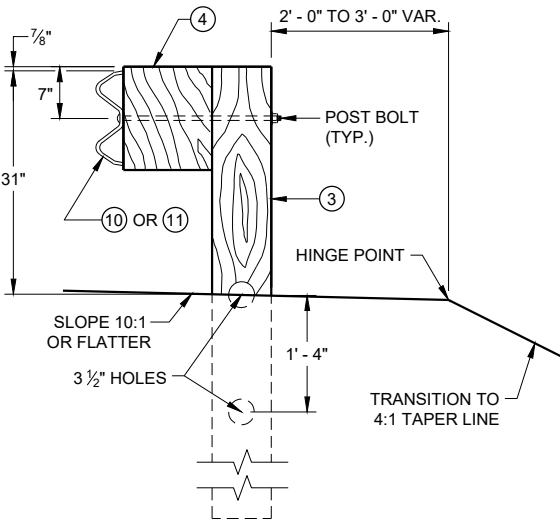
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

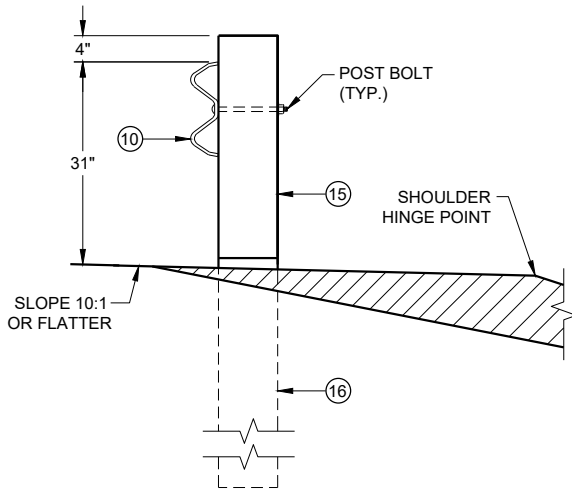
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



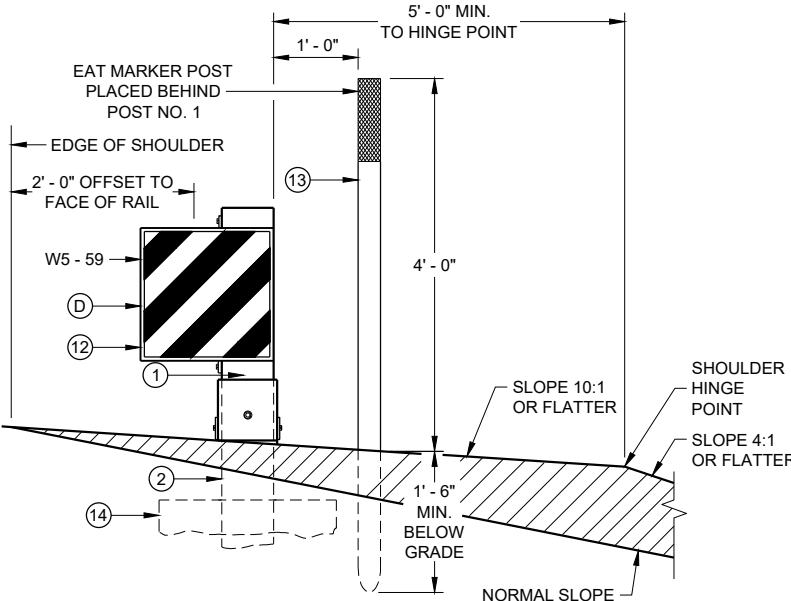
DETAIL "A"



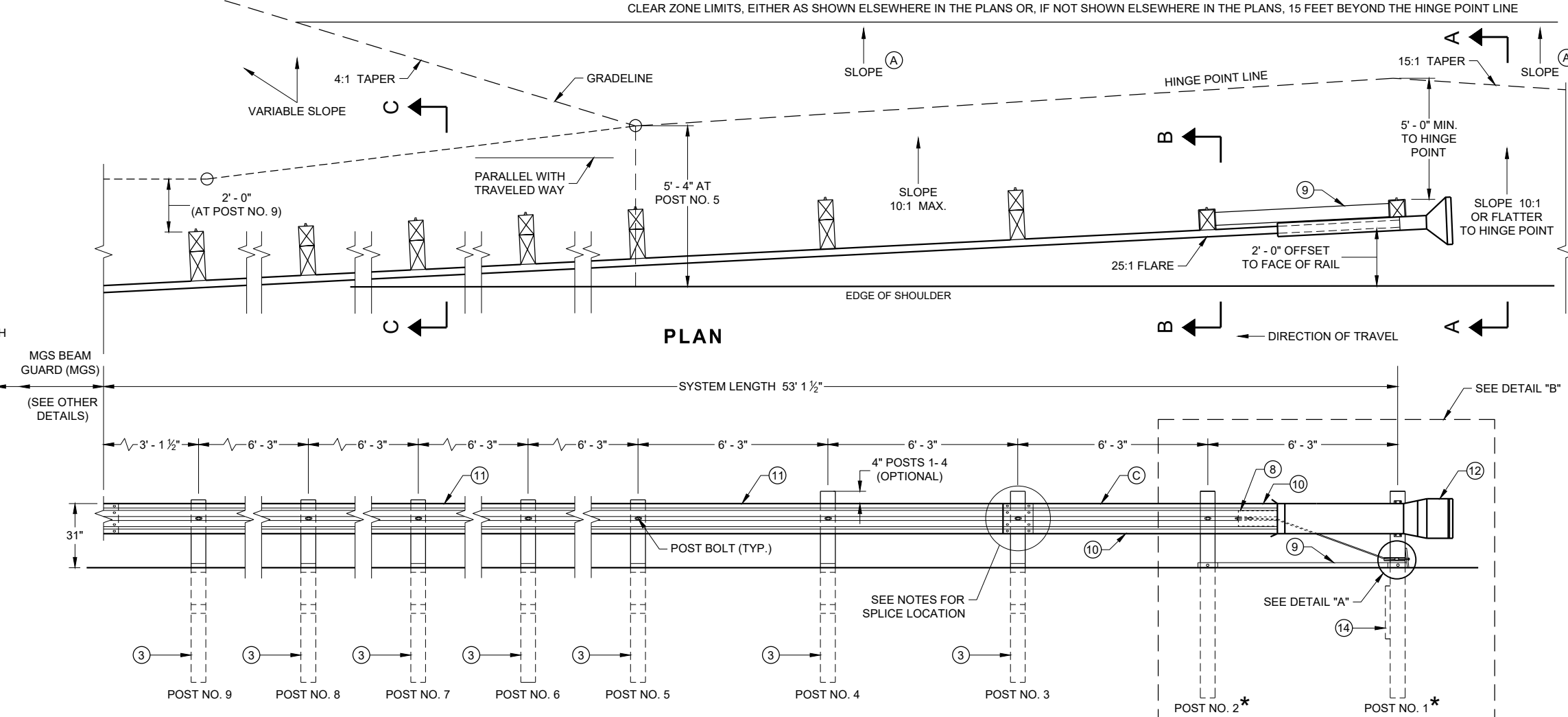
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*

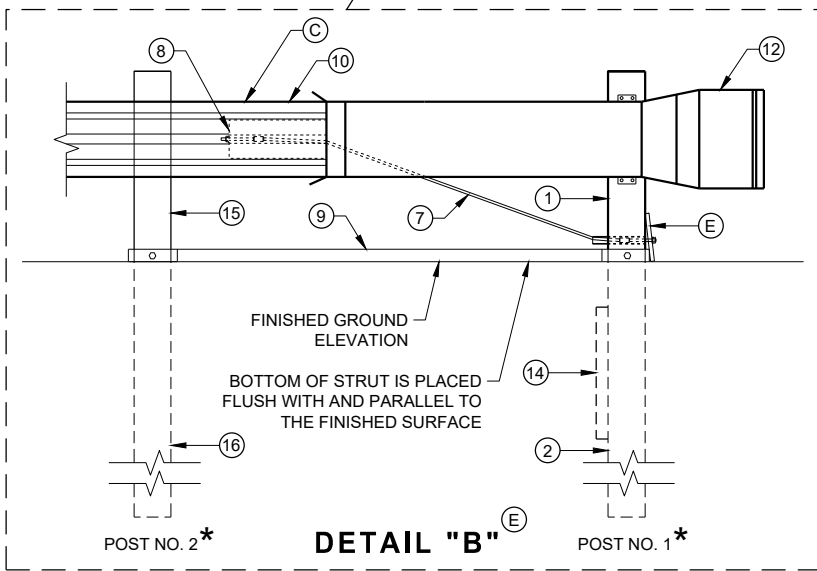


SECTION A - A
TYPICAL AT POST NO. 1*



PLAN

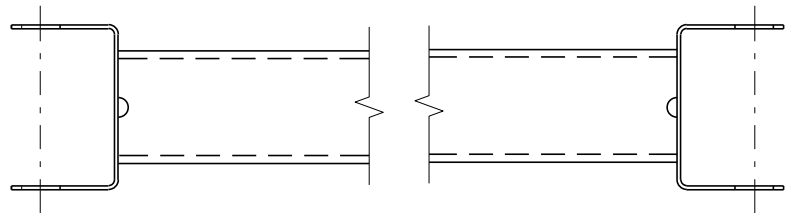
ELEVATION



DETAIL "B"

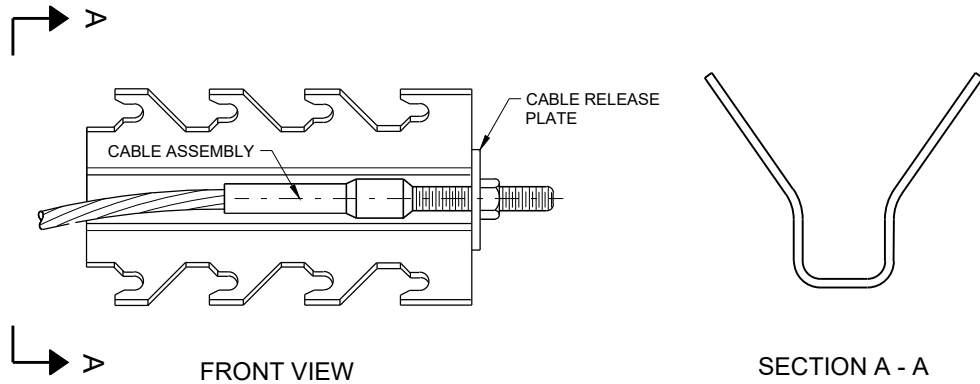
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

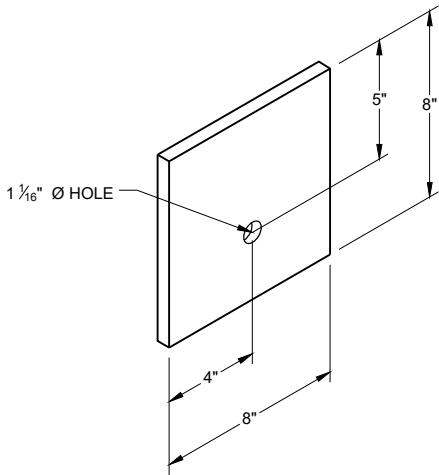


GENERIC GROUND STRUT^⑨ [Ⓔ]

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



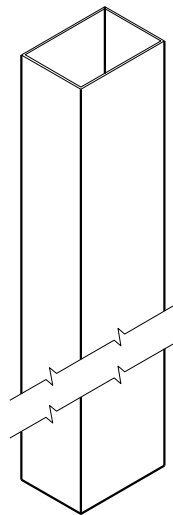
GENERIC ANCHOR CABLE BOX^⑨ [Ⓔ]



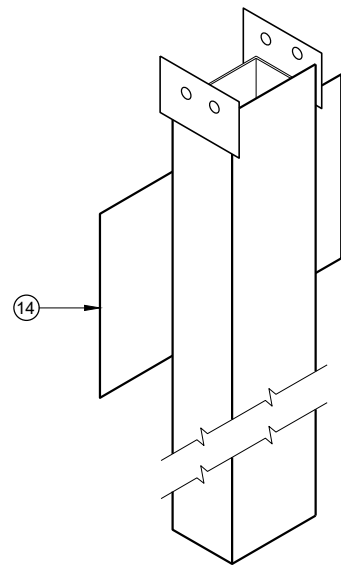
BEARING PLATE^⑥ [Ⓔ]

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

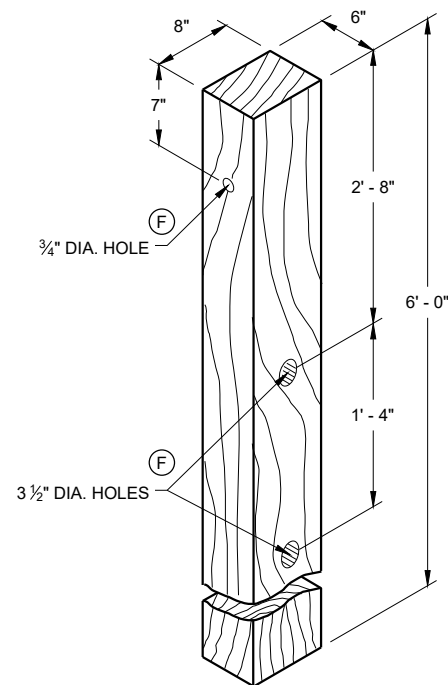
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



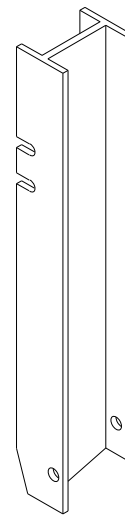
UPPER POST NO. 1 ⁽¹⁾ (E)



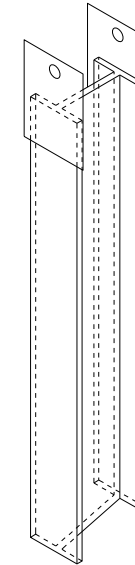
LOWER POST NO. 1 ⁽²⁾ (E)



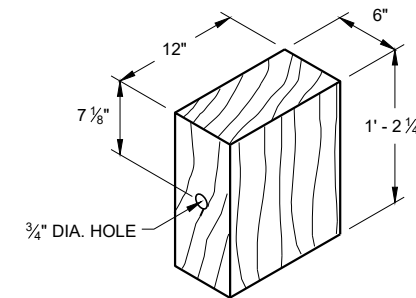
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



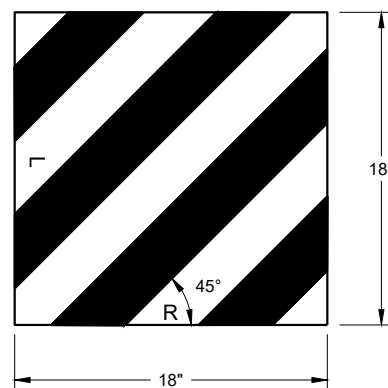
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



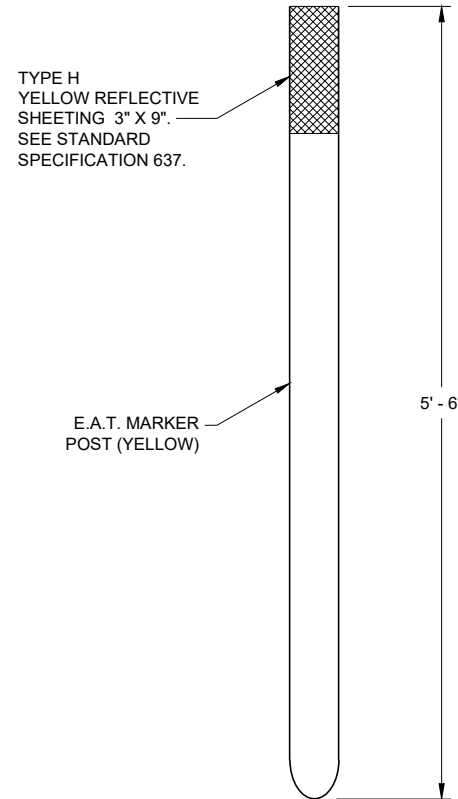
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



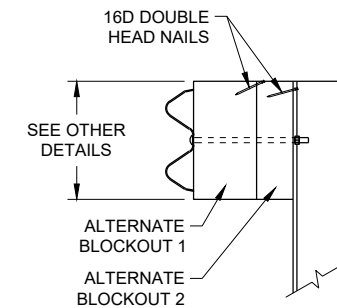
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



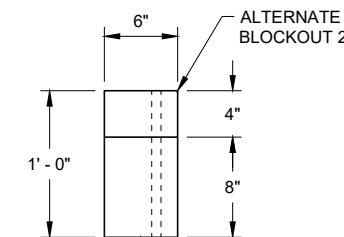
REFLECTIVE SHEETING DETAIL ^(E)



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



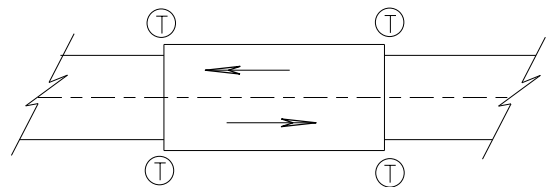
SIDE VIEW



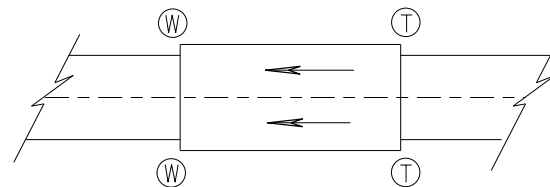
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

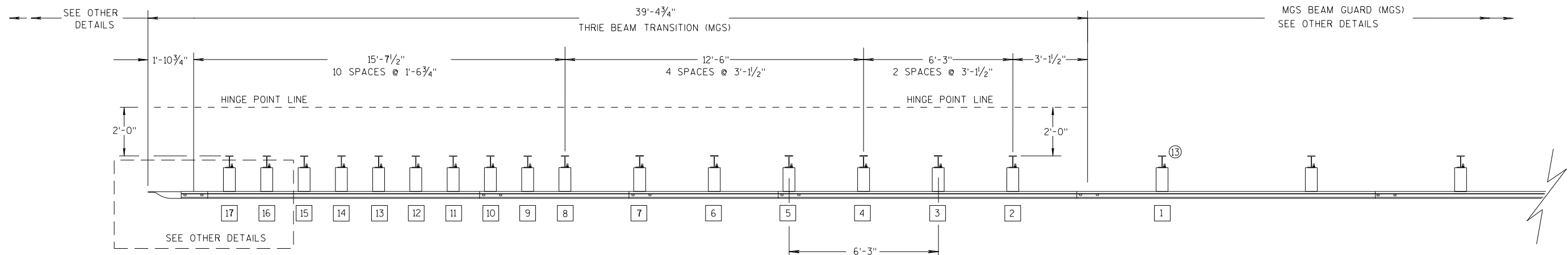
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

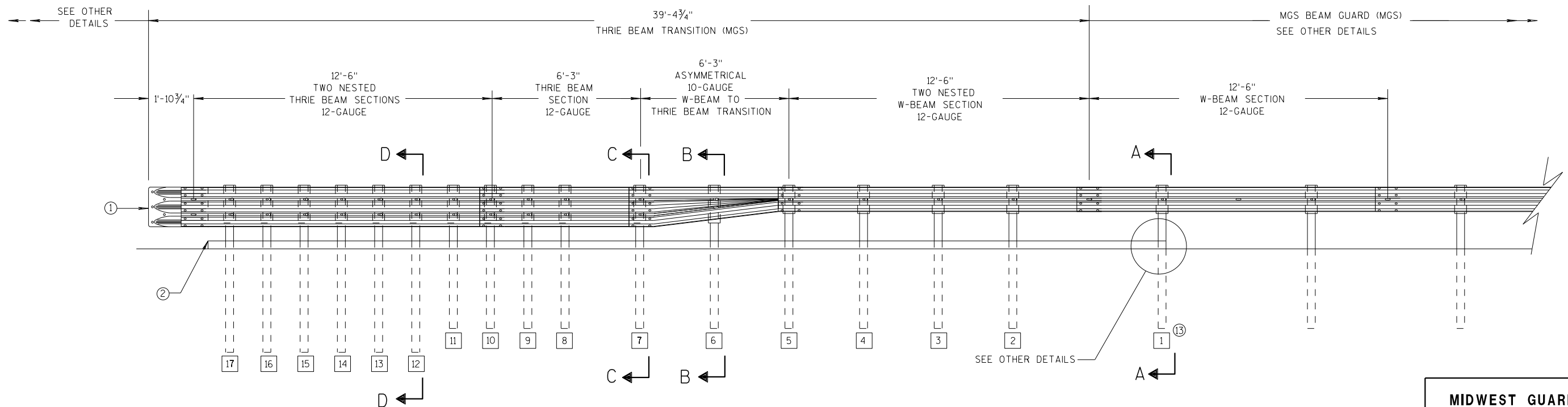
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

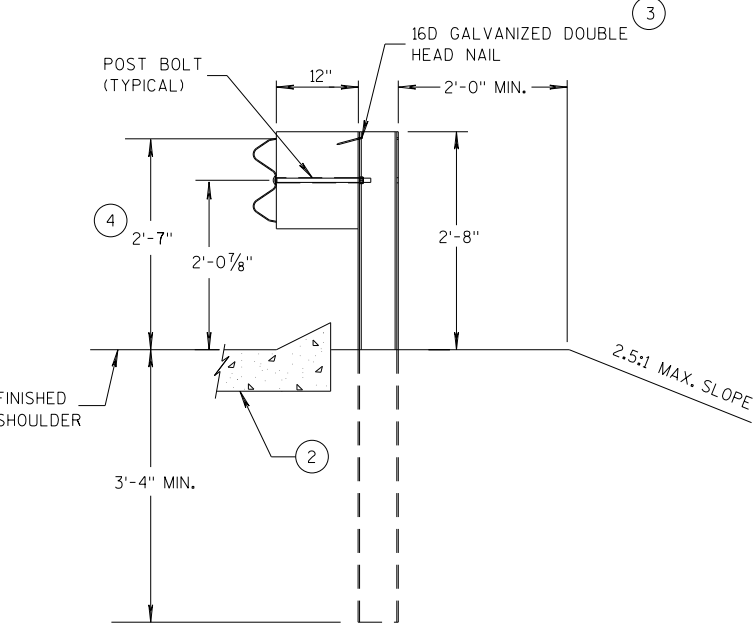
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

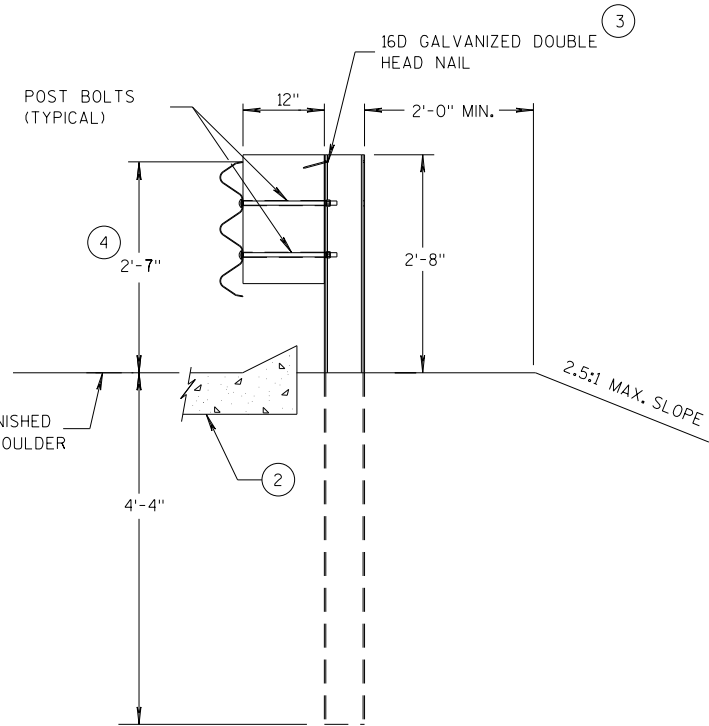
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

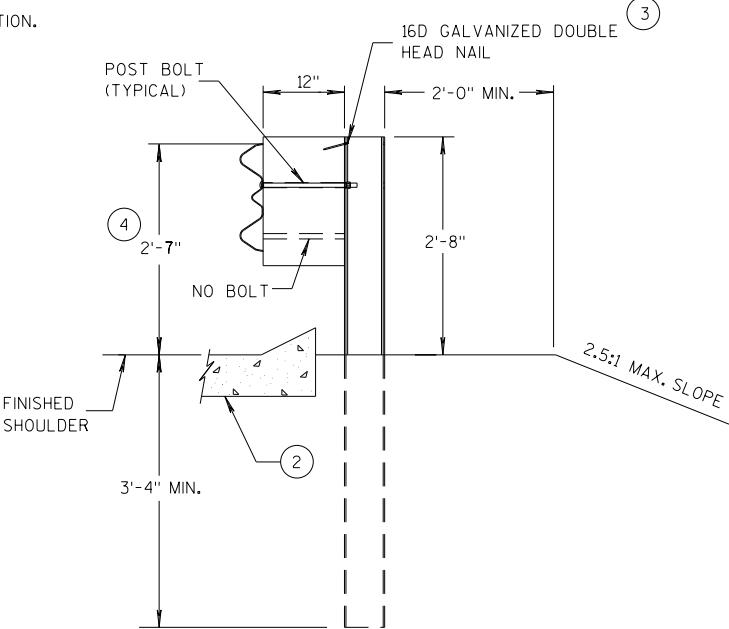
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



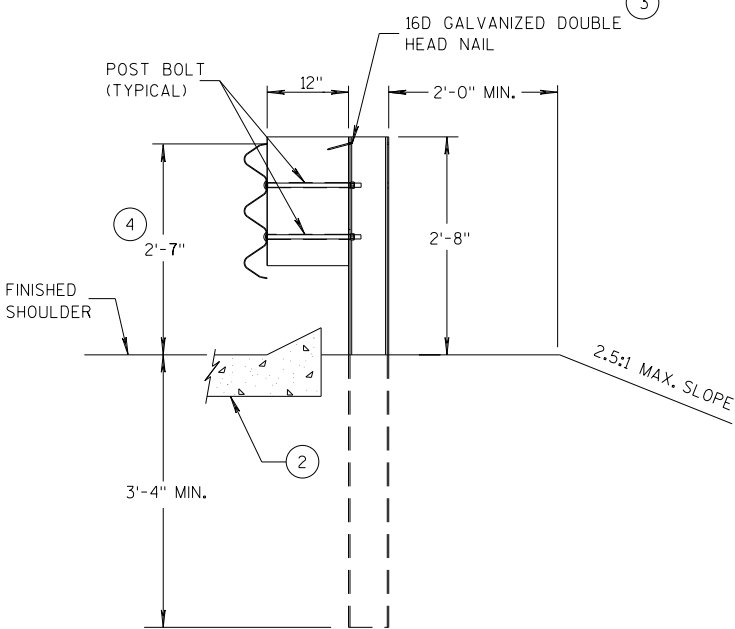
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

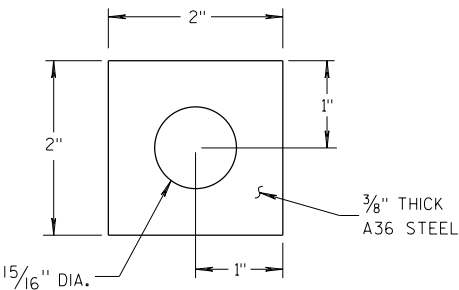
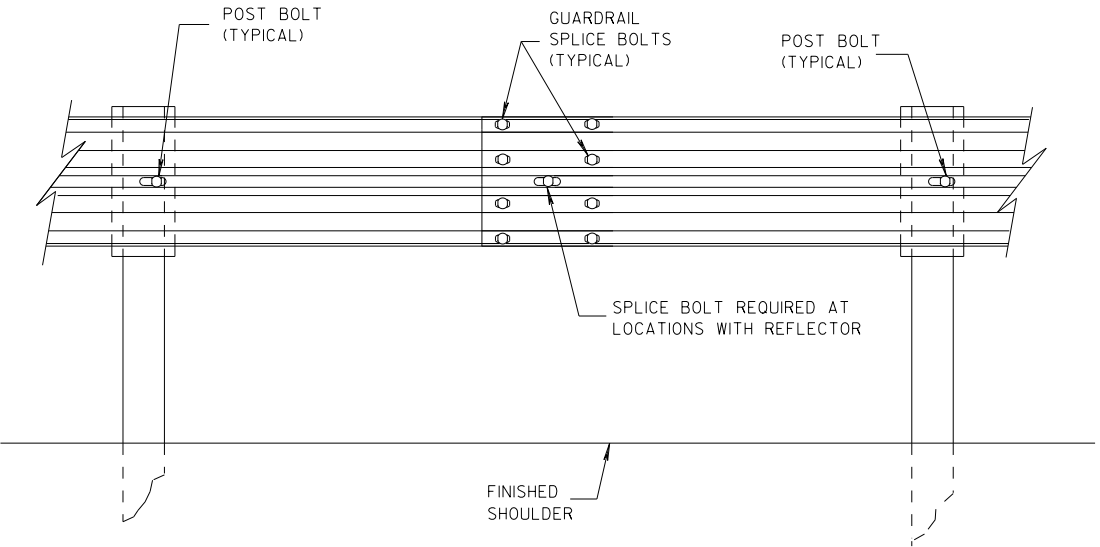
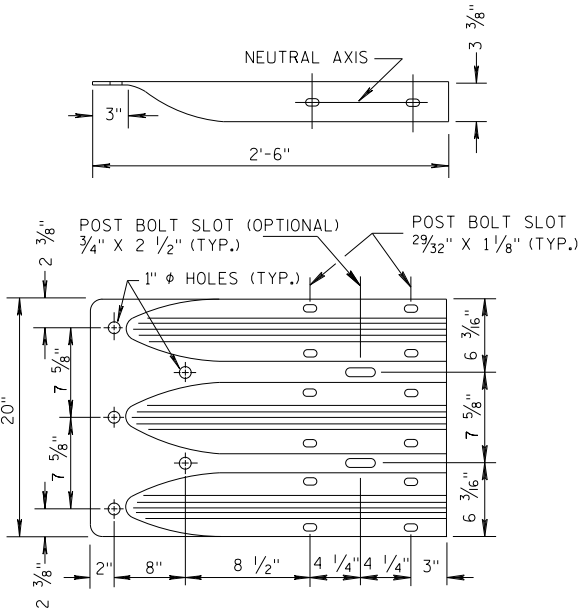


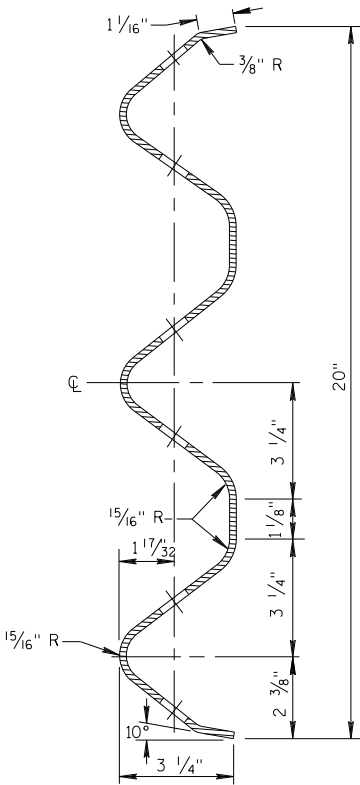
PLATE WASHER DETAIL



SPlice DETAIL



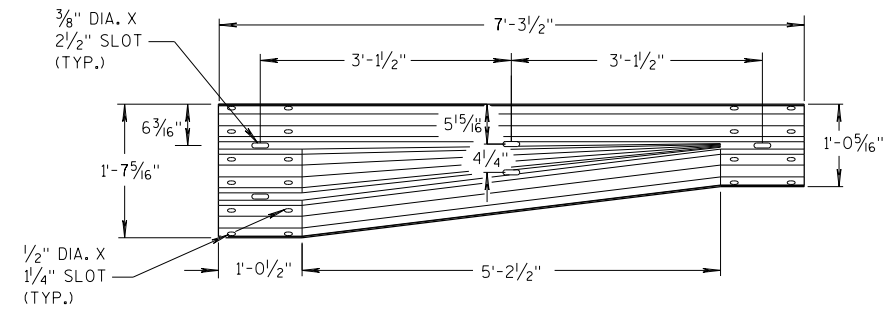
THRIE BEAM
TERMINAL CONNECTOR



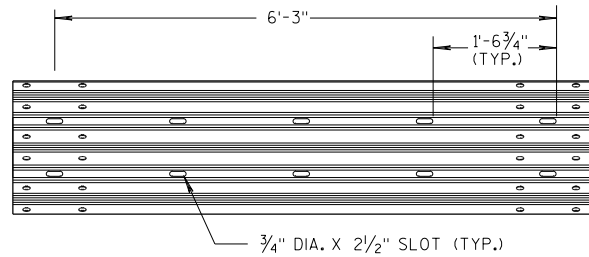
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

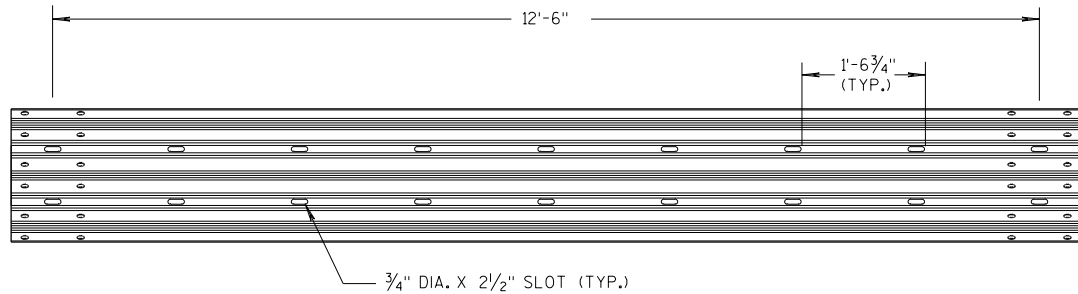
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



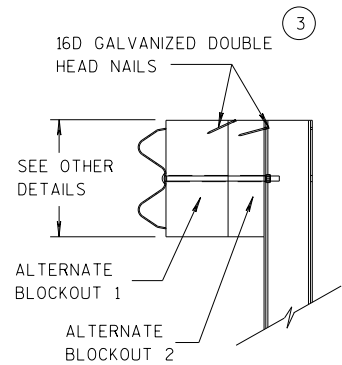
W-BEAM TO THRIE BEAM TRANSITION SECTION



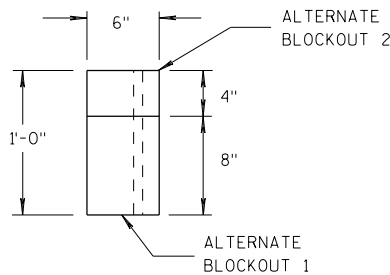
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

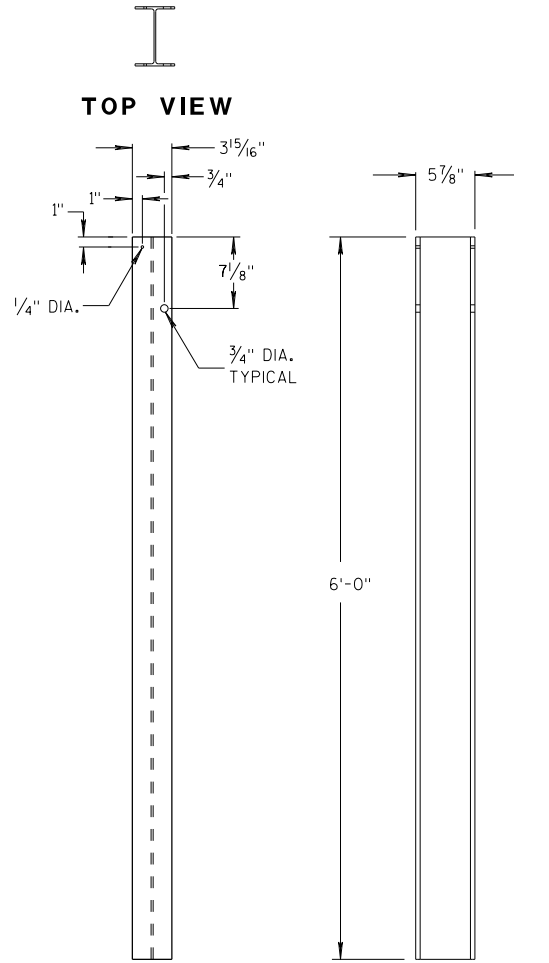


SIDE VIEW



TOP VIEW

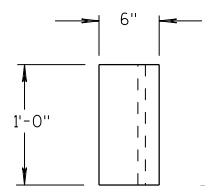
ALTERNATE WOOD BLOCKOUT DETAIL



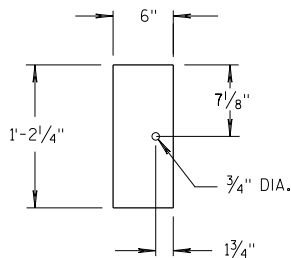
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

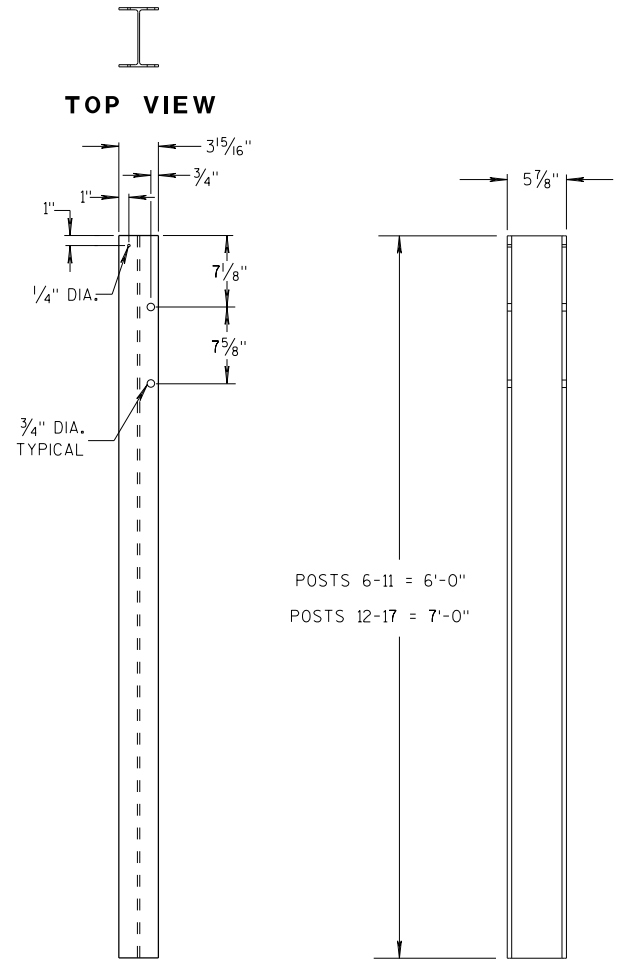


TOP VIEW



FRONT VIEW

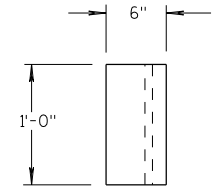
**BLOCKOUT
POSTS 1-5**



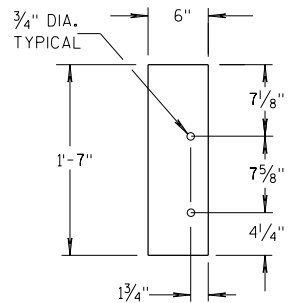
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

**BLOCKOUT
POSTS 6-17**

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

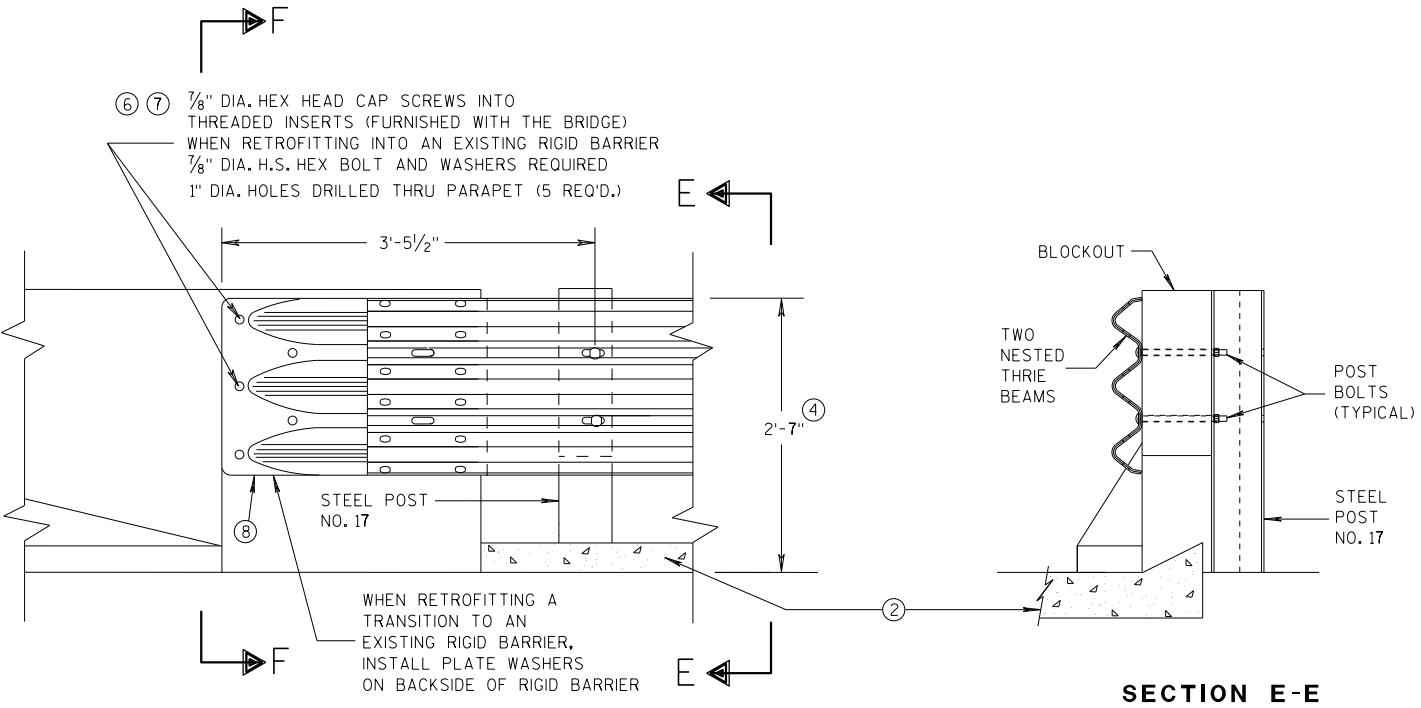
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

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

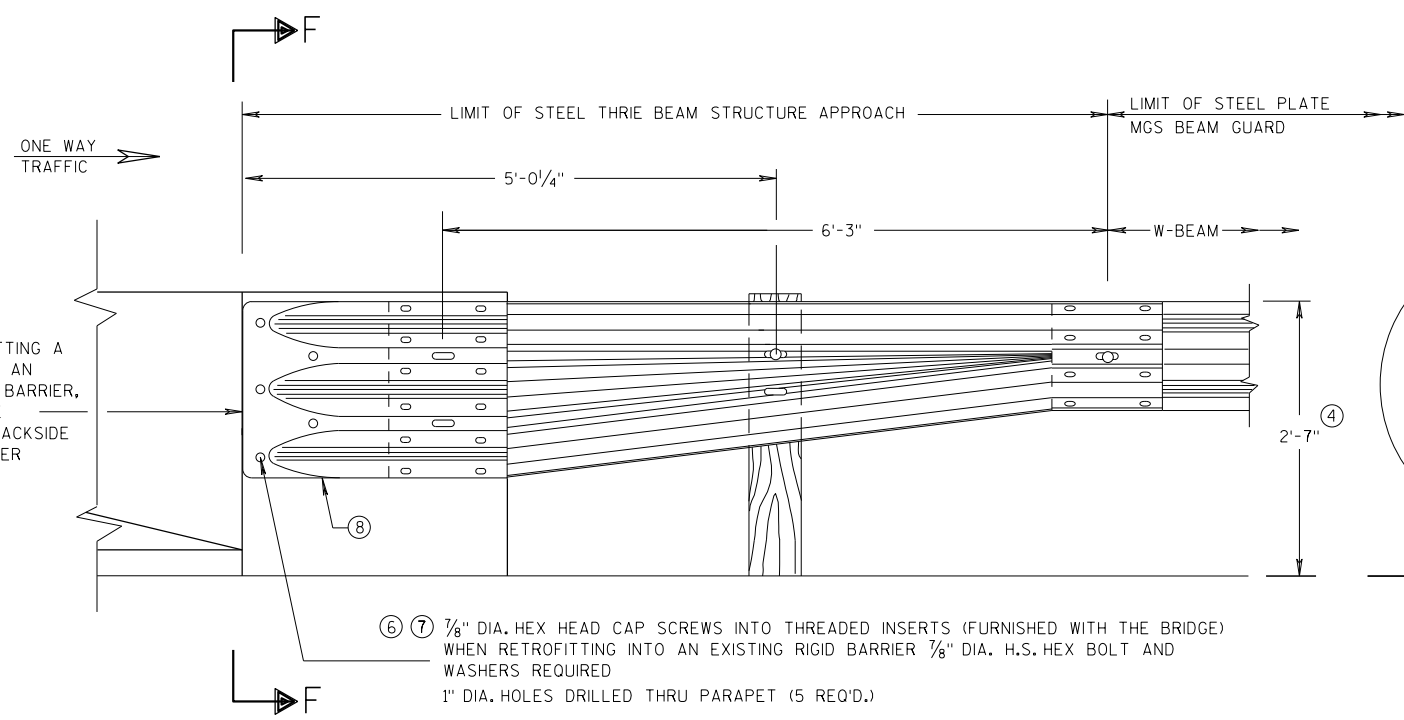
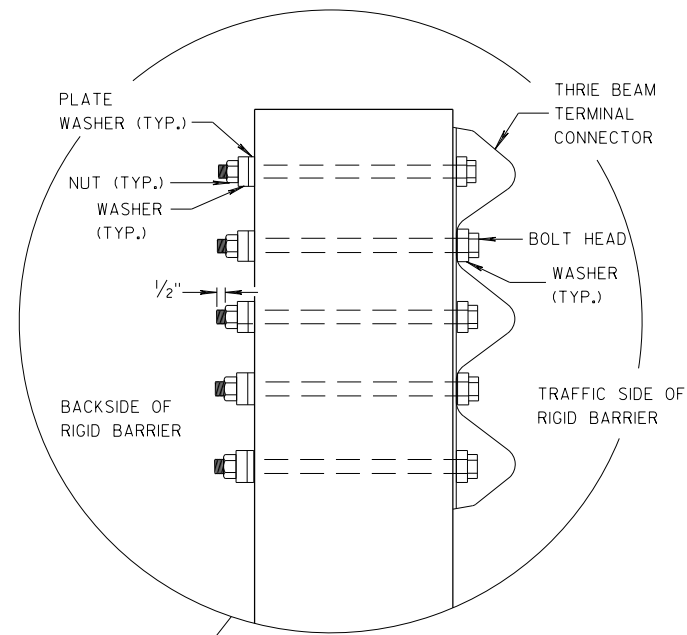
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

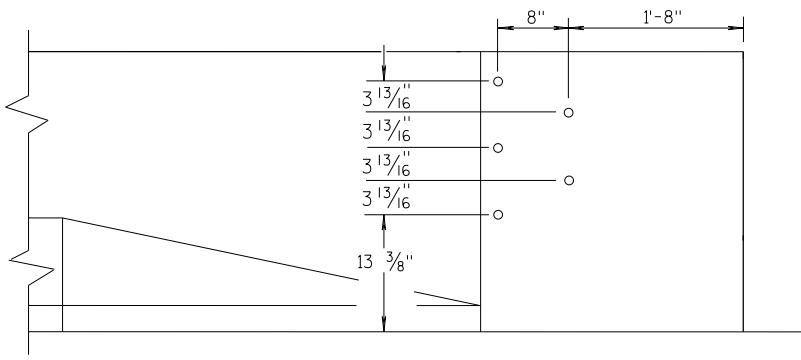


GENERAL NOTES

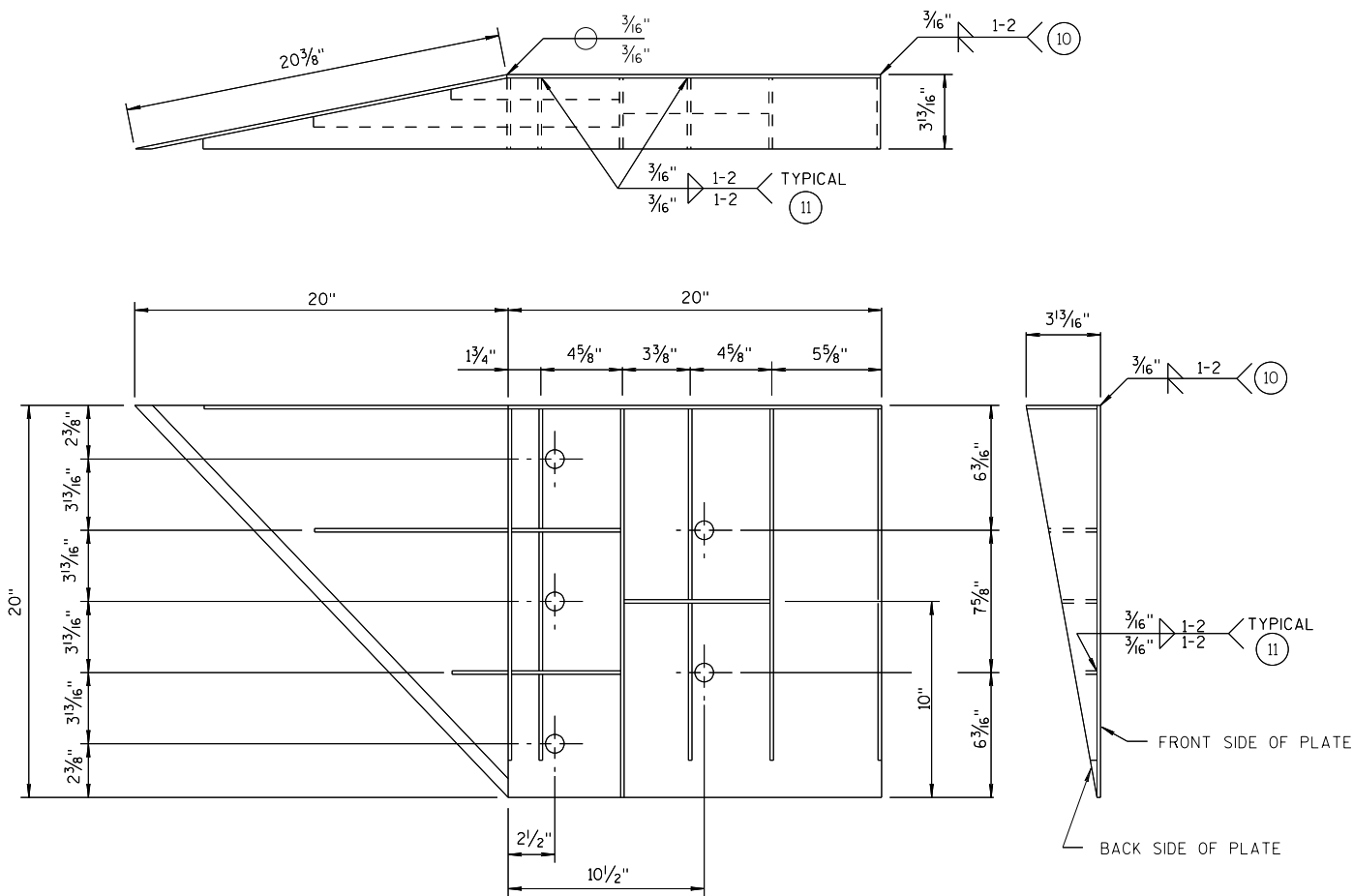
- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET,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



SECTION F-F



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	

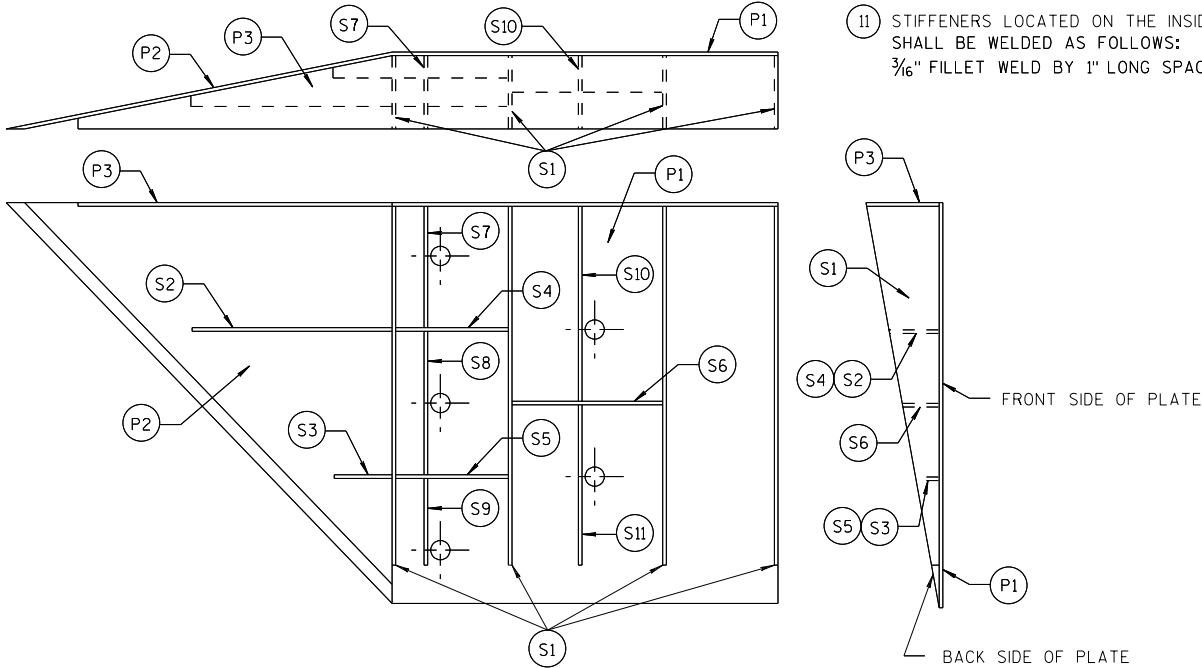


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 3/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

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



GENERAL NOTES

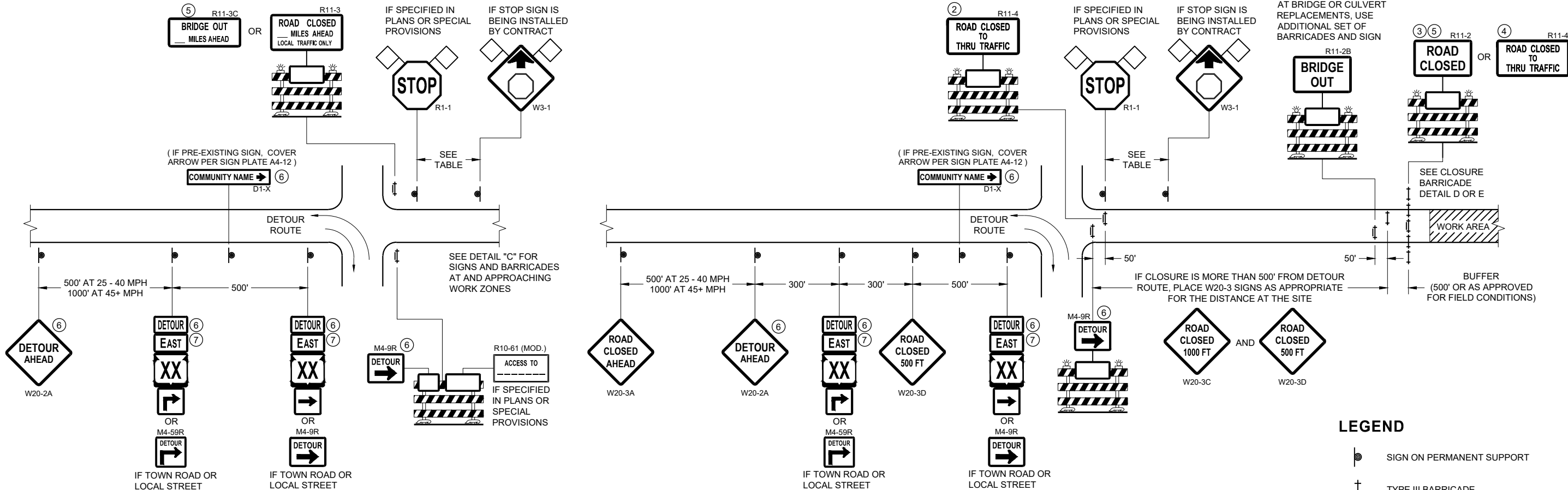
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



LEGEND

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

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

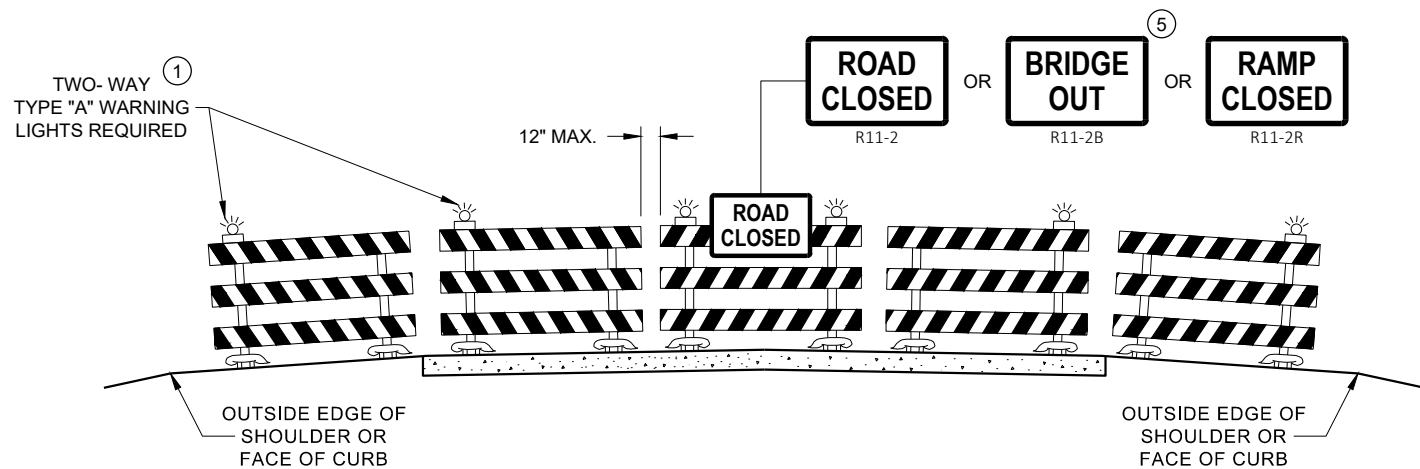
SEE SDD 15C2-SHEET "b" FOR GENERAL NOTES AND FOOTNOTES ① THROUGH ⑦

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

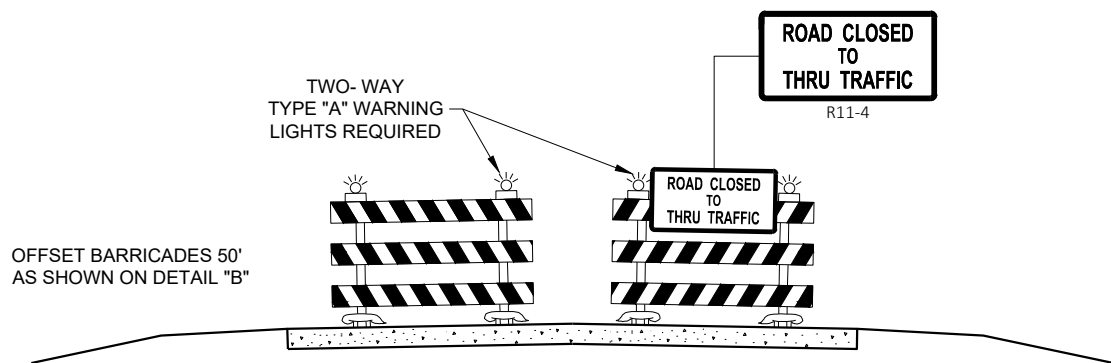
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

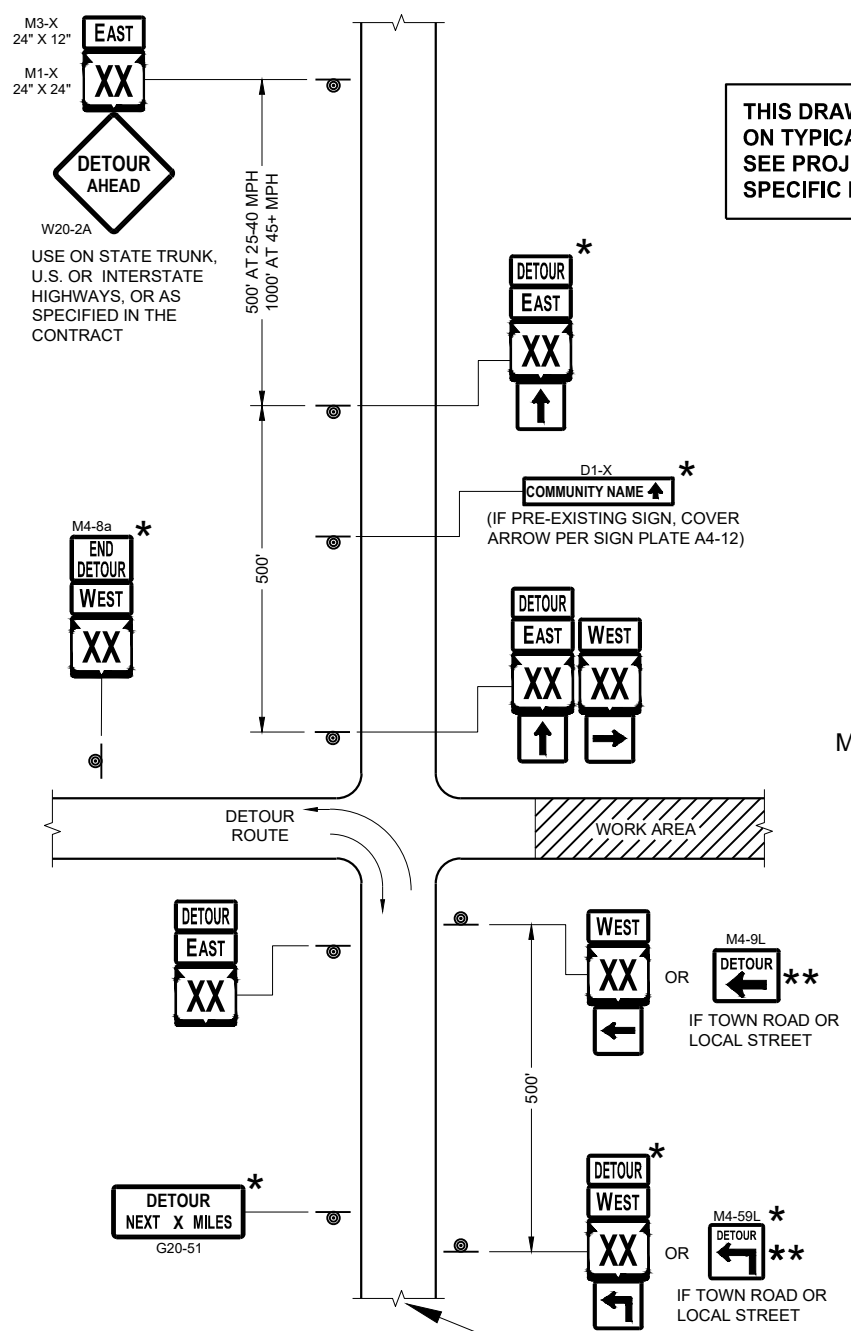
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

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

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



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

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

MATCH POINT

DETAIL F
DETOUR SIGNING

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

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

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

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

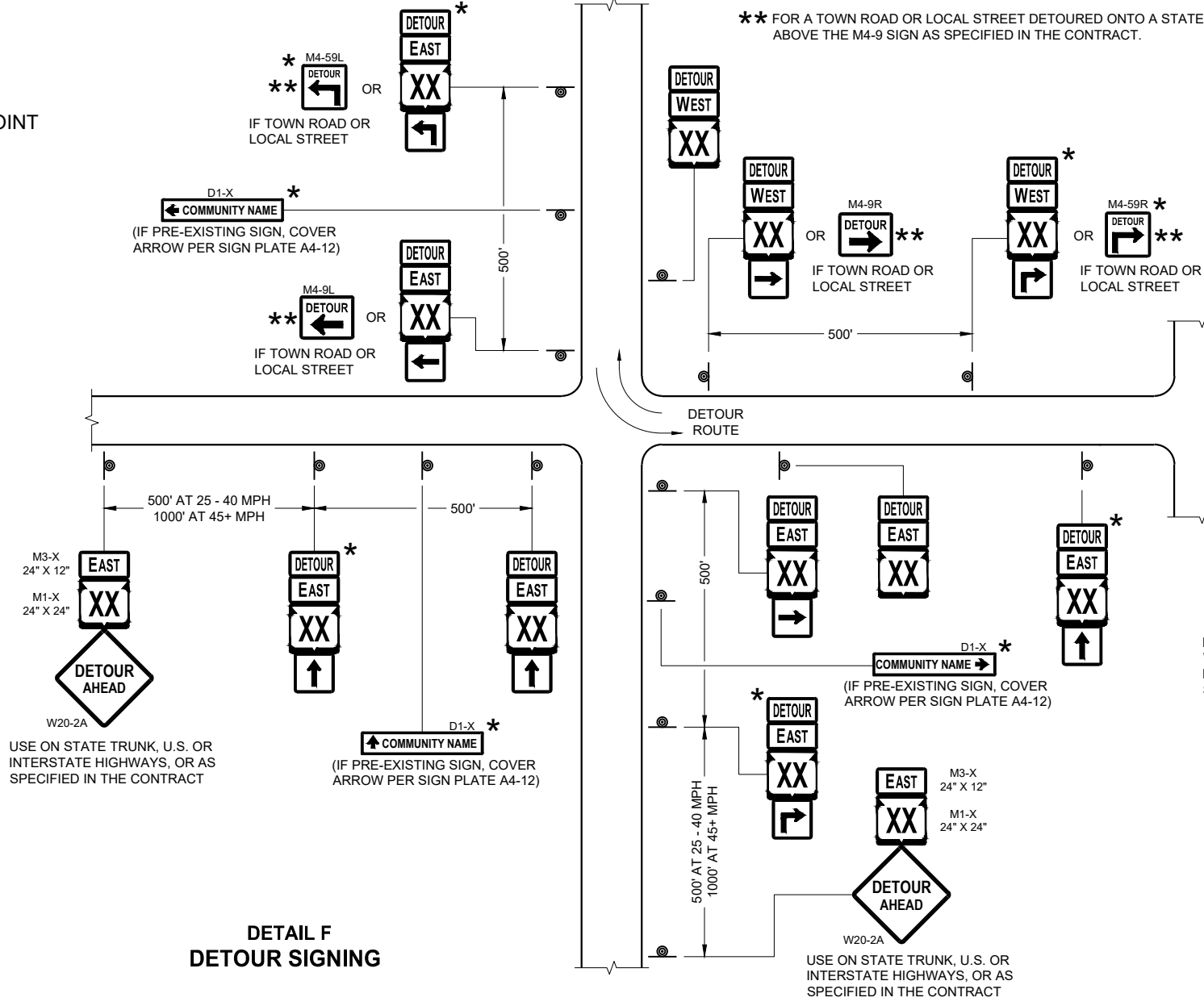
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

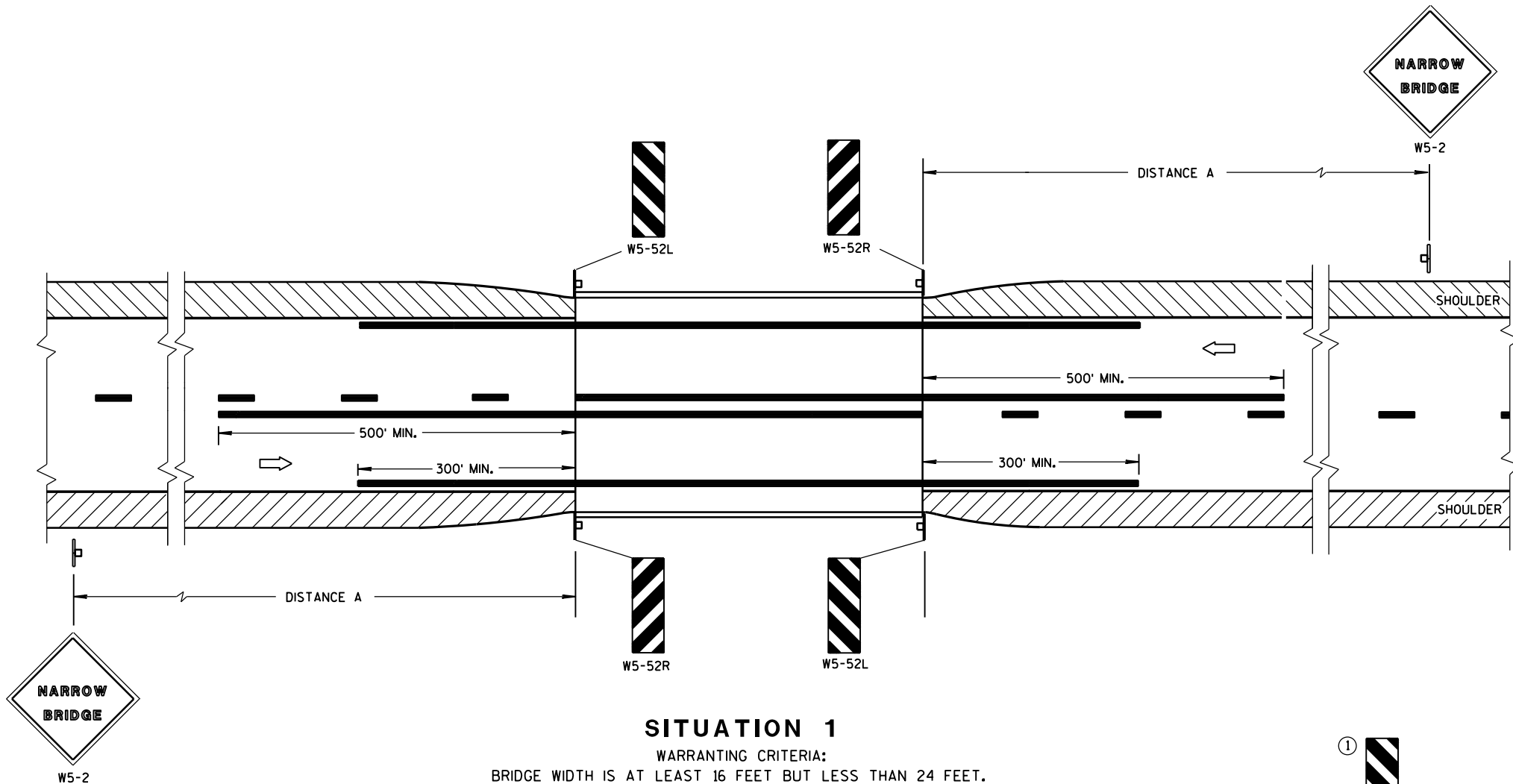


DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

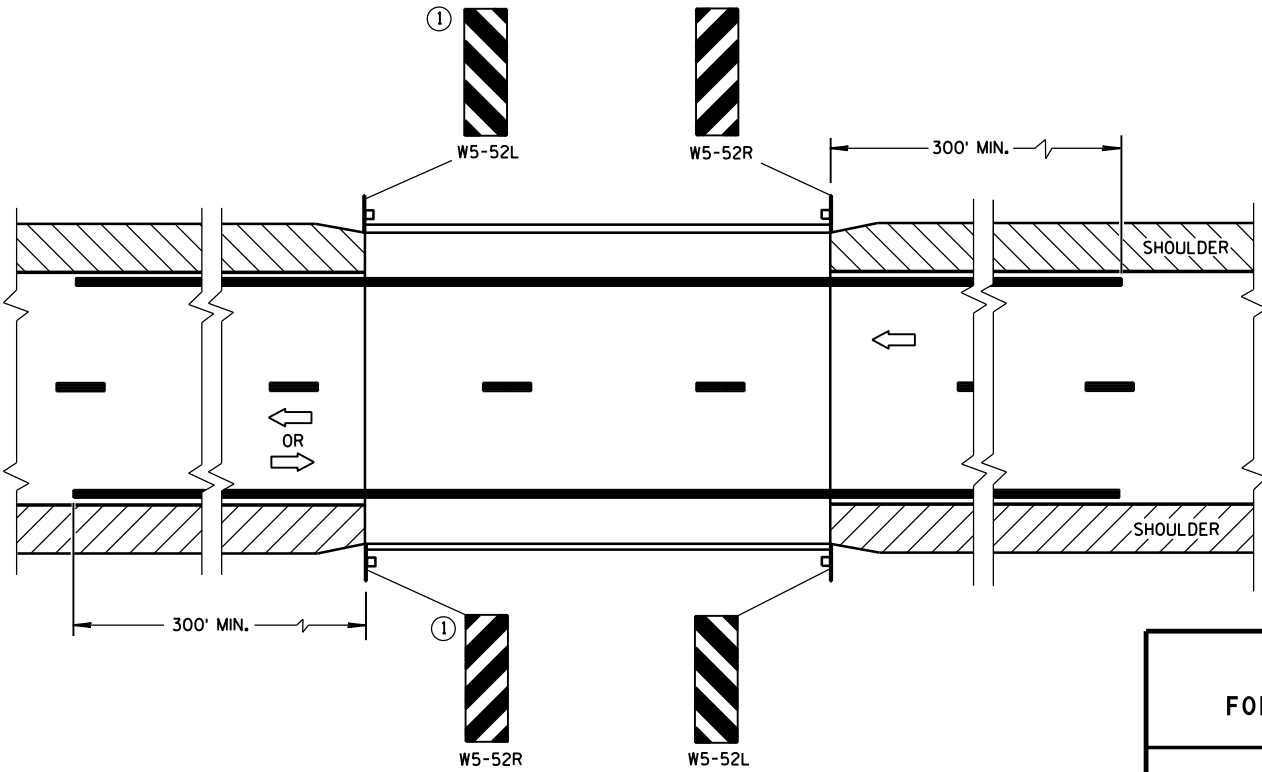


SITUATION 1

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

DISTANCE TABLE

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



SITUATION 2

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

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON 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.

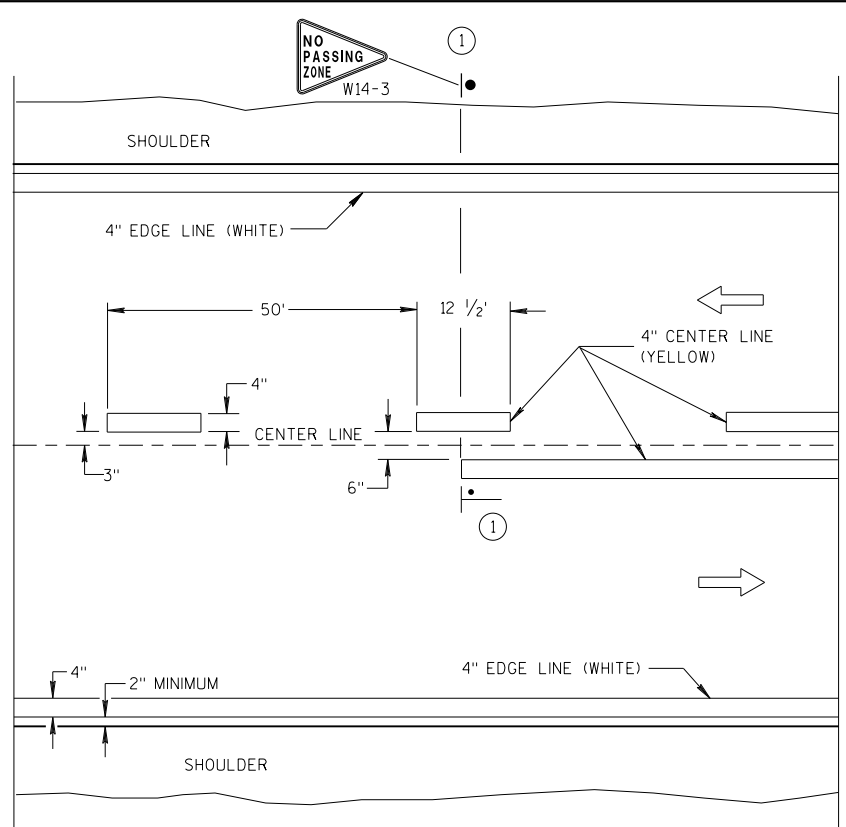
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC

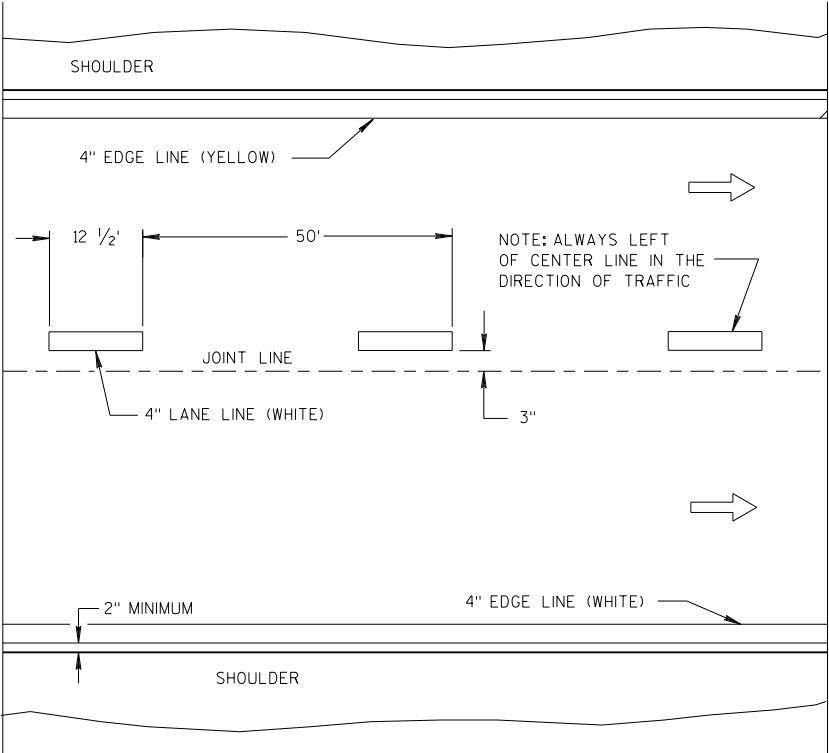
**SIGNING & MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

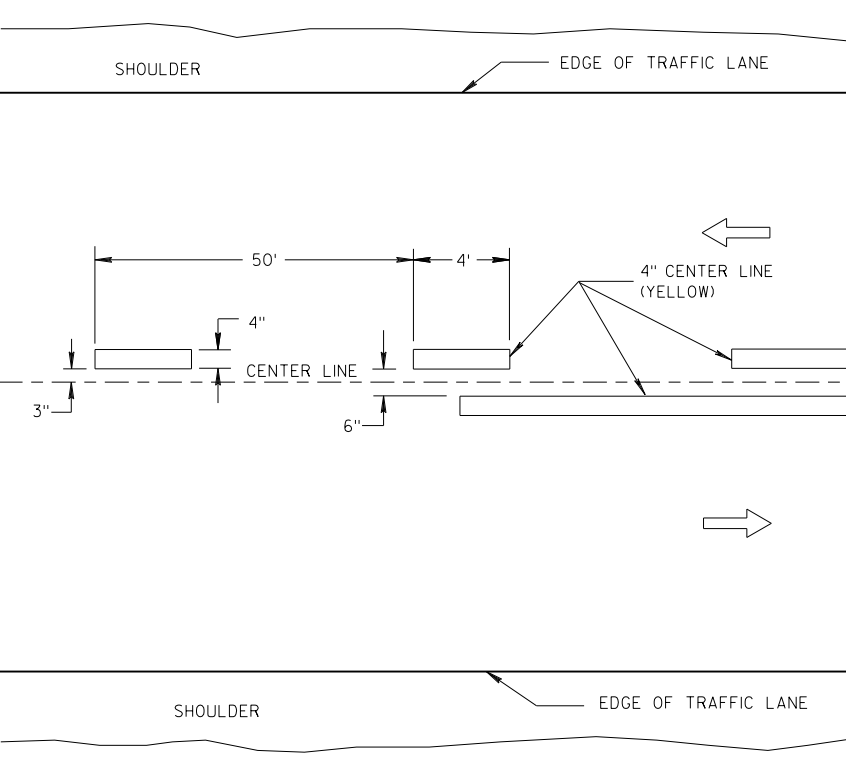


TWO WAY TRAFFIC

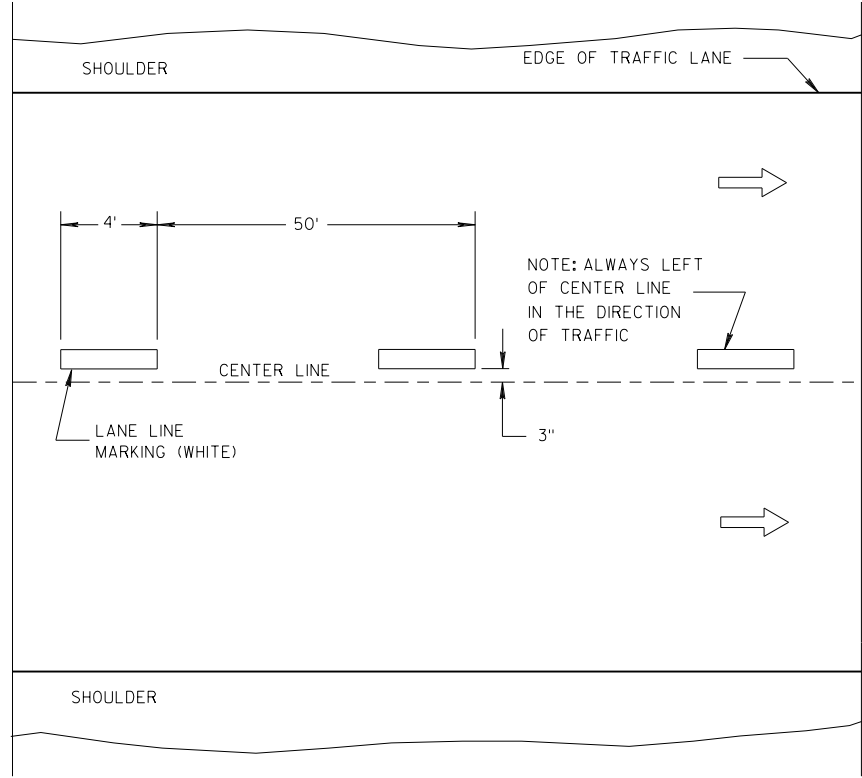


ONE WAY TRAFFIC

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.

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

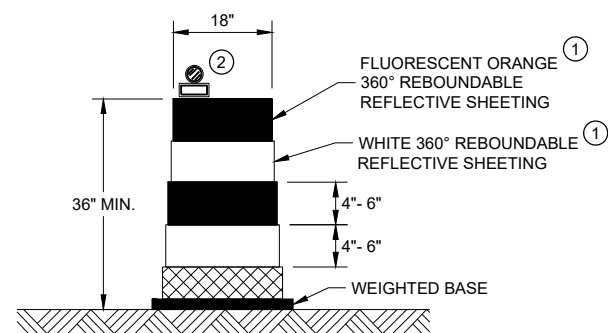
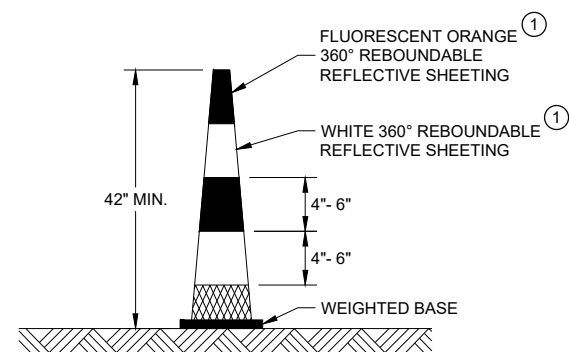
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

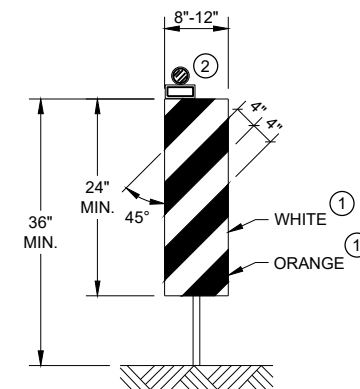
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

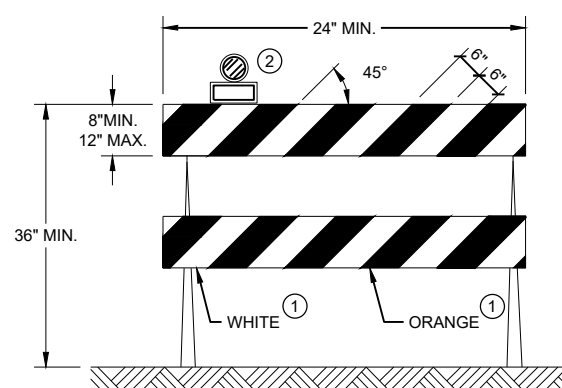
APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

**DRUM****42" CONE**

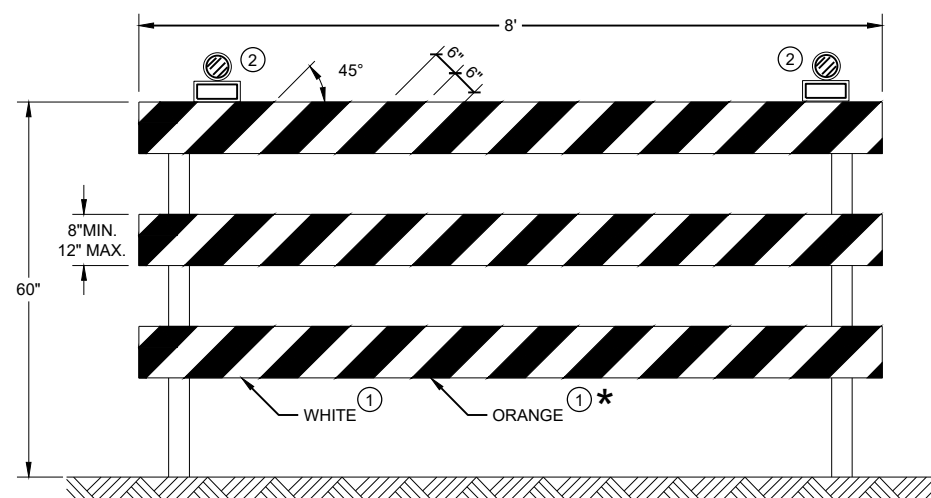
DO NOT USE IN TAPERS
 $\frac{1}{2}$ SPACING OF DRUMS

**VERTICAL PANEL**

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

**TYPE II BARRICADE**

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

**TYPE III BARRICADE**

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

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

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

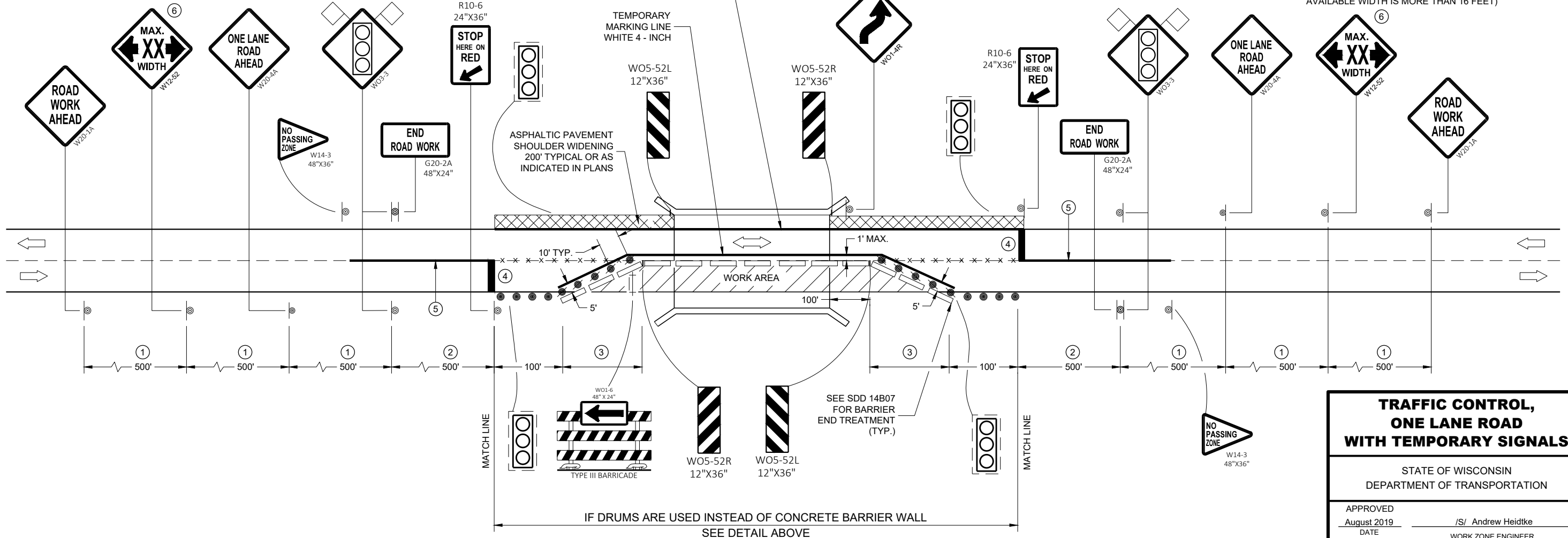
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LEGEND

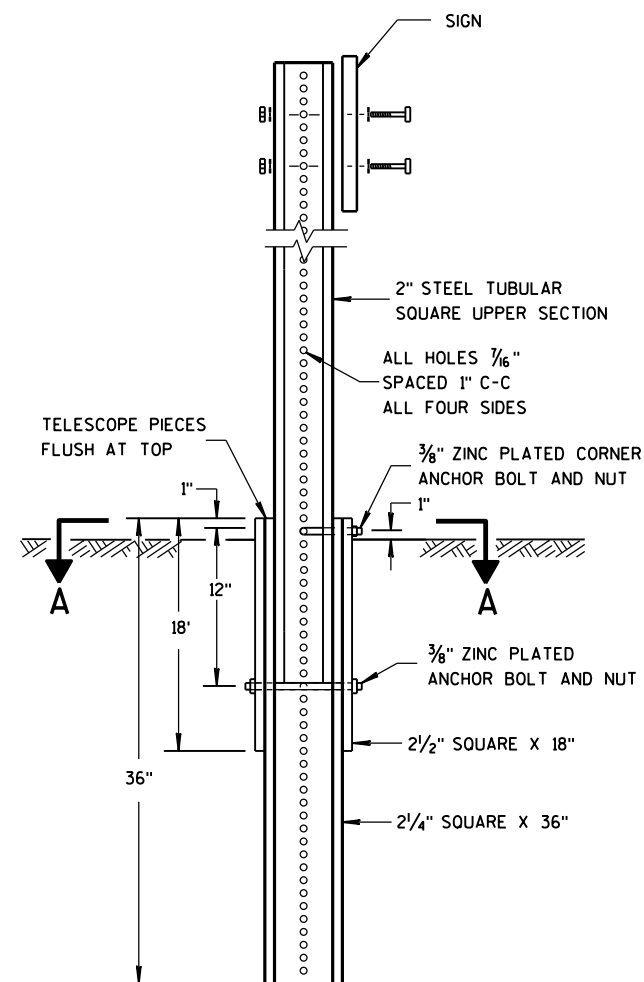
- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLAGS, 16" X 16" MIN. (ORANGE)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- ASPHALTIC PAVEMENT WIDENING
- CONCRETE BARRIER TEMPORARY PRECAST
- TEMPORARY SIGNAL. SEE SDD 09G02 FOR EXACT PLACEMENT

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



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.
- 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.
 - USE 300 FOOT SPACING IF THE PRE - CONSTRUCTION REGULATORY SPEED IS 35 MPH OR LESS.
 - DIMENSION DETERMINED BY CBTP TAPER FROM EDGE LINE TO TANGENT SECTION OF THE ROAD.
 - TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18 - INCH.
 - 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.
 - SEE SDD 15C02 - SHEET "F" FOR ADVANCED WIDTH RESTRICTION SIGNING.

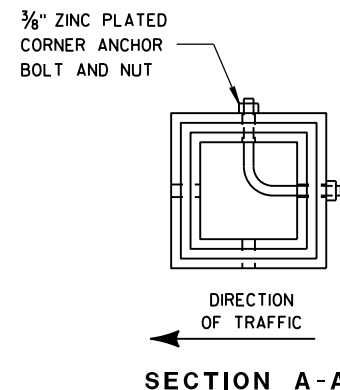


DETAIL OF TUBULAR
STEEL SIGN POST

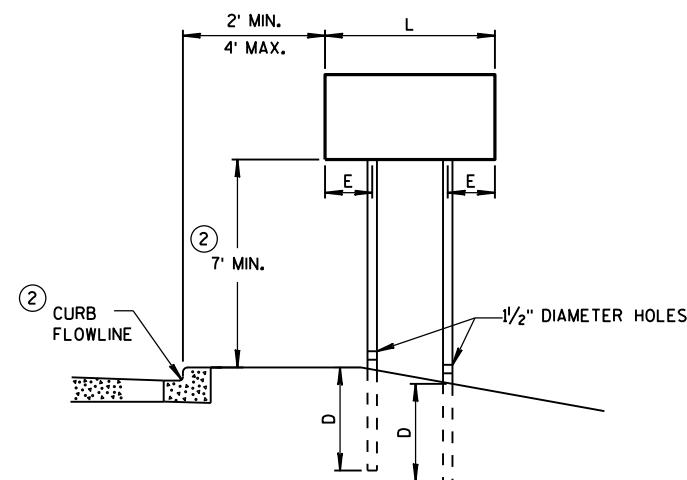
TUBULAR STEEL POSTS

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

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



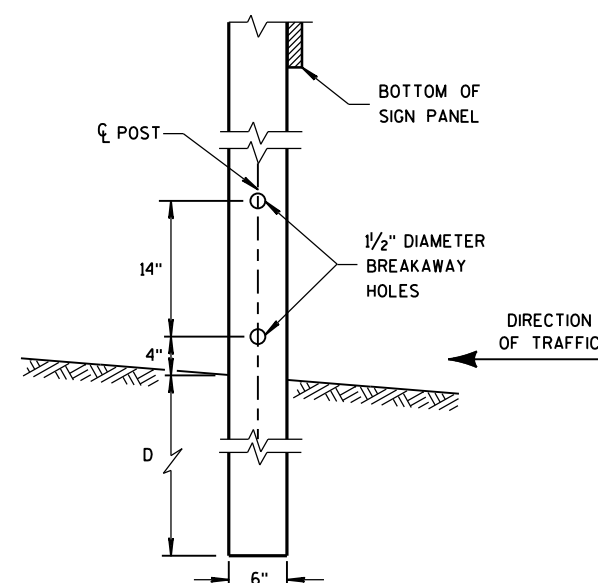
SECTION A-A



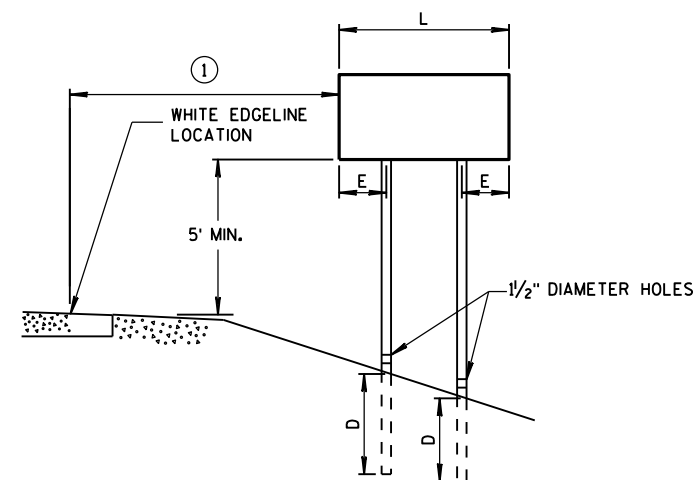
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

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

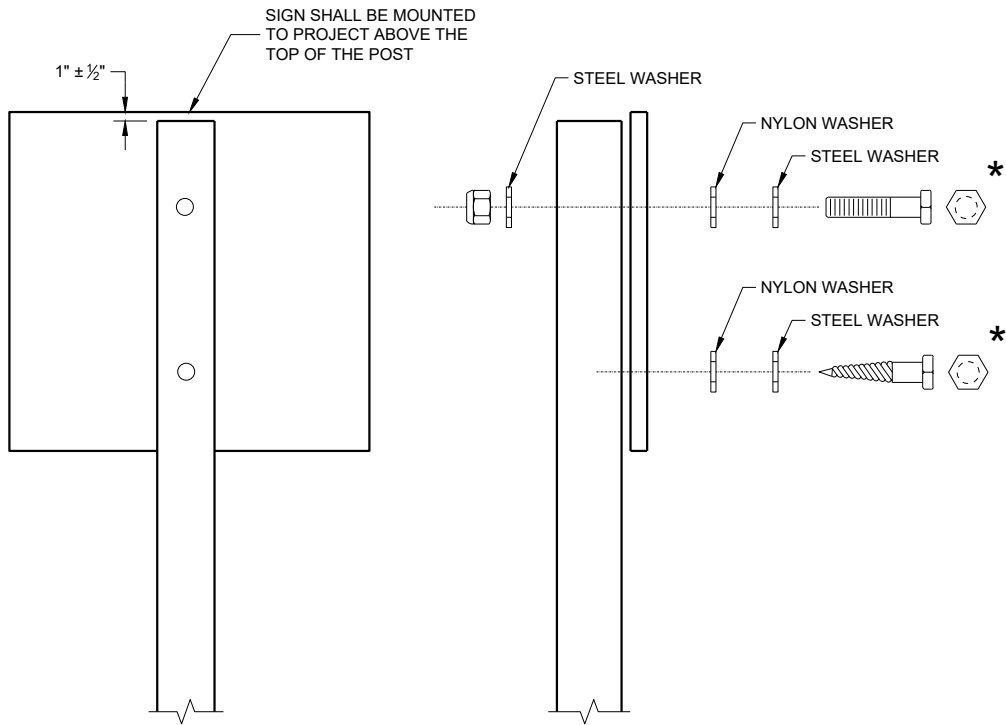
SEE NOTE ③

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

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

WOOD 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

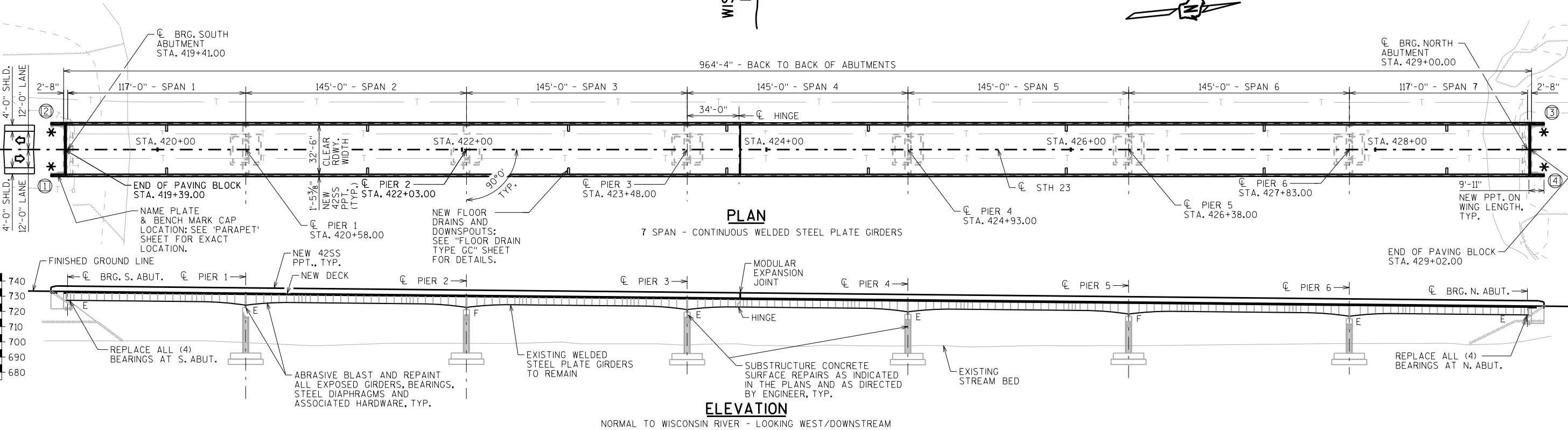
APPROVED
June 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

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

NOTE: SURFACE DRAIN BARS ARE REQUIRED AT ALL FOUR WINGS.

INDICATES WING NUMBER



DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HS-20
INVENTORY RATING FACTOR: HS-18
OPERATING RATING FACTOR: HS-30
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 180 (KIPS)

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

MATERIAL PROPERTIES:

CONCRETE MASONRY:
SUPERSTRUCTURE $f'_c = 4,000$ P.S.I.
ALL OTHER $f'_c = 3,500$ P.S.I.

BAR STEEL REINFORCEMENT:
GRADE 60 $f_y = 60,000$ P.S.I.

STRUCTURAL CARBON STEEL:
ASTM A709, GRADE 36 $F_y = 36,000$ P.S.I.

HIGH STRENGTH STRUCTURAL STEEL:
ASTM A709, GRADE 50 $F_y = 50,000$ P.S.I.

TRAFFIC VOLUME

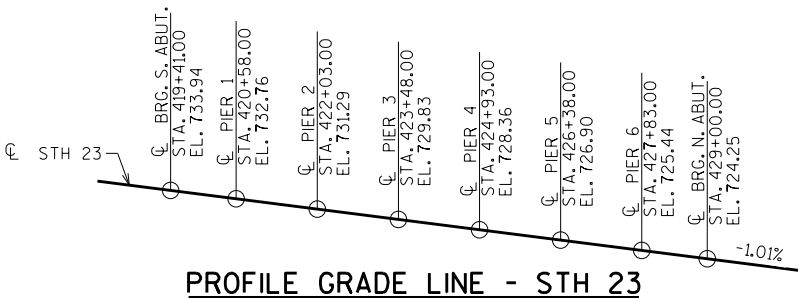
STH 23
ADT = 4,400 (2040)
R.D.S. = 60 M.P.H.

STRUCTURE DESIGN CONTACTS:

EMILY KUEHNE (608) 266-5089
AARON BONK (608) 261-0261

LIST OF DRAWINGS

1. GENERAL PLAN (DECK REPLACEMENT)
2. EXISTING & PROPOSED CROSS SECTIONS
3. GENERAL NOTES & QUANTITIES
4. EXISTING ABUTMENT REMOVAL DETAILS
5. ABUTMENT REPLACEMENT DETAILS
6. ABUTMENTS EXPANSION BEARINGS REPLACEMENT
7. HINGE JOINT DETAILS
8. SUPERSTRUCTURE CROSS SECTIONS
9. EXISTING GIRDERS AND HAT BAR DETAILS 1
10. EXISTING GIRDERS AND HAT BAR DETAILS 2
11. SUPERSTRUCTURE PLAN SPANS 1-3
12. SUPERSTRUCTURE PLAN SPANS 3-5
13. SUPERSTRUCTURE PLAN SPANS 5-7
14. SUPERSTRUCTURE DETAILS
15. STRIP SEAL EXPANSION JOINT DETAILS
16. COVER PLATE DETAILS FOR PARAPETS AT ABUT. EXP. JOINTS
17. MODULAR EXPANSION JOINT
18. MODULAR EXPANSION JOINT DETAILS
19. COVER PLATE DETAILS FOR PARAPETS AT MODULAR EXP. JOINT
20. DEADLOAD DEFLECTION DIAGRAM & DECK POURING SEQUENCE
21. FLOOR DRAIN TYPE 'GC'
22. SINGLE SLOPE PARAPET 42SS

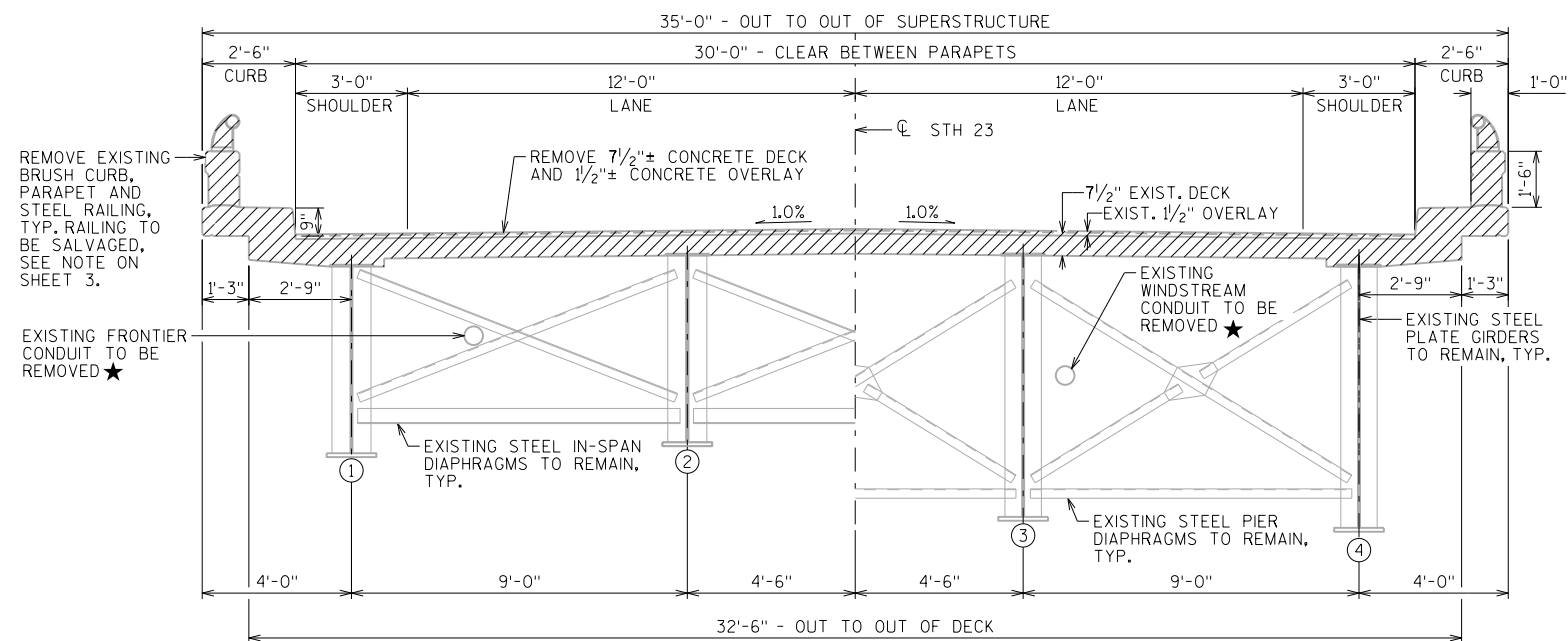


NO.	DATE	REVISION	BY
			
ACCEPTED <i>William C. Dierker</i> 2/10/20 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-25-51			
STH 23 OVER WISCONSIN RIVER			
COUNTY	SAUK/IOWA	TOWN	WYOMING/SPRING GREEN
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	EMK	DESIGNED CK'D.	MJK
DRAWN BY	EMK/JPH	PLANS CK'D.	EMK
GENERAL PLAN (DECK REPLACEMENT)			SHEET 1 OF 22

○ INDICATES GIRDER NUMBER

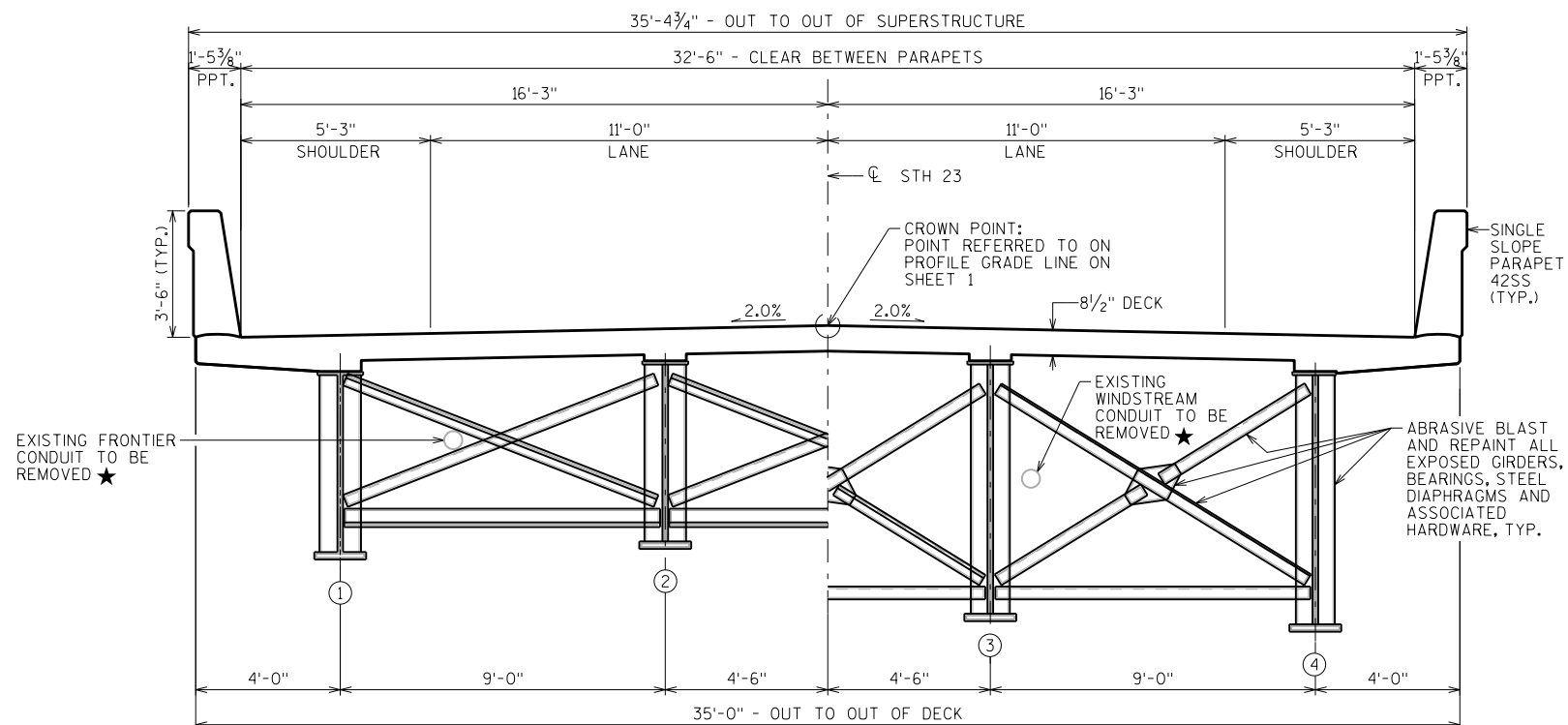
STATE PROJECT NUMBER

5255-01-81



EXISTING CROSS SECTION THRU SUPERSTRUCTURE

LOOKING NORTH - SHOWING REMOVAL AREAS



PROPOSED CROSS SECTION THRU SUPERSTRUCTURE

LOOKING NORTH

 REMOVAL LIMITS

★ CONTRACTOR TO COORDINATE THE REMOVAL OF ALL UTILITIES AND ATTACHMENTS ON THIS BRIDGE WITH THE UTILITY COMPANIES. COST INCIDENTAL TO "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS" BID ITEM.

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY EMK/JPH		PLANS CK'D. EMK	
EXISTING & PROPOSED CROSS SECTIONS		SHEET 2	

SCALE = 2.50

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 ¾" UNLESS OTHERWISE NOTED.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK, TOP OF PAVING BLOCK AND TO THE EXPOSED TOP OF PARAPET BASES AT ABUTMENT WINGS.

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

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF ALL ABUTMENTS BELOW EXPANSION DEVICES.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH OF 3.77".

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1965.

ANY EXCAVATION NECESSARY TO COMPLETE THE RE-DECK AND NEW PARAPET PLACEMENT ON WINGS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-25-51".

THE COLOR OF THE FINISH EPOXY TOP COAT FOR ALL STRUCTURAL STEEL AREAS SHALL BE BROWN (AMS STANDARD COLOR NUMBER 30111).

REMOVE AND SALVAGE THE EXISTING RAILINGS (INCLUDES RAILS, POSTS AND ALL ASSOCIATED HARDWARE). AFTER REMOVAL, THE RAILINGS ARE TO BE SET ASIDE AND SHALL REMAIN THE PROPERTY OF THE STATE OF WISCONSIN. THE CONTRACTOR WILL COORDINATE WITH SAUK COUNTY HIGHWAY DEPARTMENT, AS TO WHEN THE RAILING ARE READY TO BE PICKED UP. THIS SHALL BE INCIDENTAL TO "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 419+41".

"CONCRETE SURFACE REPAIR" AREAS SHALL BE DETERMINED BY THE FIELD ENGINEER.

REPLACE ALL EXISTING EXPANSION BEARINGS AT BOTH ABUTMENTS. CLEAN & PAINT ALL EXISTING BEARINGS AT PIERS.

RESET EXISTING PIER EXPANSION ROCKER BEARINGS AS DIRECTED BY THE ENGINEER. WORK SHALL BE COVERED UNDER THE BID ITEM "RESET EXISTING BEARINGS". SEE THE "ROCKER SETTING DATA" AND "BEARING RESETTING" DETAILS PROVIDED ON THIS SHEET.

WORK FOR CLEANING AND PAINTING EXISTING BEARINGS SHALL BE INCLUDED UNDER THE BID ITEM "STRUCTURE REPAINTING RECYCLED ABRASIVE B-25-51".

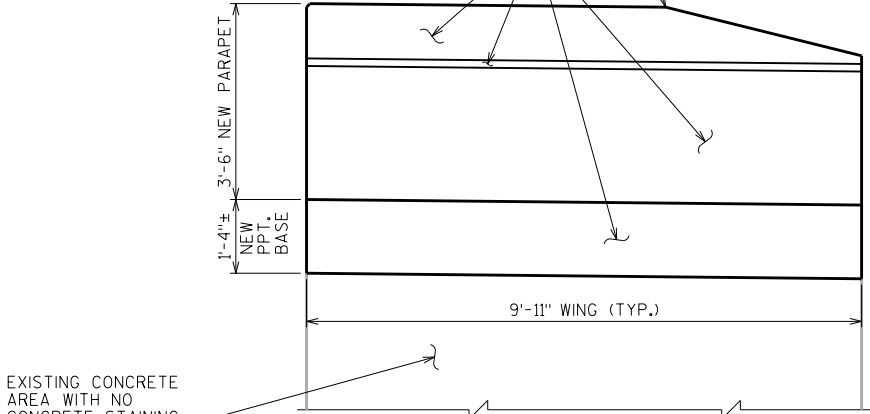
☆STANDARD SPEC 107.18 WILL BE STRICTLY ENFORCED AS A PART OF THE "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS" BID ITEM IN THIS CONTRACT.

TOTAL ESTIMATED QUANTITIES

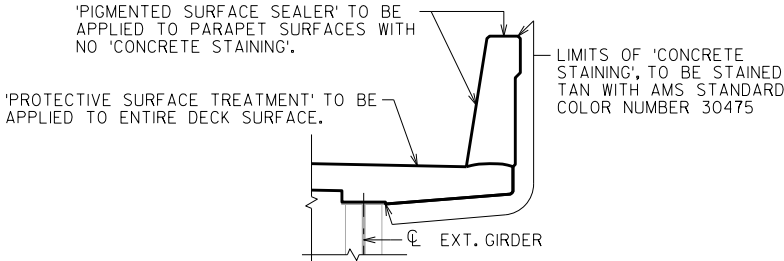
BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	NORTH ABUT.	TOTALS
203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-25-51	LS	—	—	—	—	—	—	—	—	—	1
☆ 203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 419+41	LS	—	—	—	—	—	—	—	—	—	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-25-51	LS	—	—	—	—	—	—	—	—	—	1
502.0100	CONCRETE MASONRY BRIDGES	CY	1,250	6	—	—	—	—	—	—	6	1,262
502.3101	EXPANSION DEVICE B-25-51	LF	66	—	—	—	—	—	—	—	—	66
502.3111.S	EXPANSION DEVICE MODULAR B-25-51	LF	33	—	—	—	—	—	—	—	—	33
502.3200	PROTECTIVE SURFACE TREATMENT	SY	3,470	5	—	—	—	—	—	—	5	3,480
502.3210	PIGMENTED SURFACE SEALER	SY	930	10	—	—	—	—	—	—	10	950
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	—	71	—	—	—	—	—	—	71	142
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	285,925	1,400	—	—	—	—	—	—	1,400	288,725
506.0105	STRUCTURAL STEEL CARBON	LB	140	—	—	—	—	—	—	—	—	140
506.0605	STRUCTURAL STEEL HS	LB	10	—	—	—	—	—	—	—	—	10
506.6000	BEARING ASSEMBLIES EXPANSION B-25-51	EACH	—	4	—	—	—	—	—	—	4	8
506.7050.S	REMOVING BEARINGS B-25-51	EACH	—	4	—	—	—	—	—	—	4	8
509.1500	CONCRETE SURFACE REPAIR	SF	—	—	—	—	10	20	—	—	15	45
514.0445	FLOOR DRAINS TYPE GC	EACH	16	—	—	—	—	—	—	—	—	16
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	3	—	—	—	—	—	—	3	6
517.0900.S	PREPARATION AND COATING OF TOP FLANGES B-25-51	LS	—	—	—	—	—	—	—	—	—	1
517.1010.S	CONCRETE STAINING B-25-51	SF	15,000	100	—	—	—	—	—	—	100	15,200
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE B-25-51	LS	—	—	—	—	—	—	—	—	—	1
517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-25-51	LS	—	—	—	—	—	—	—	—	—	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	—	—	—	—	—	—	—	—	—	1
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	—	—	—	—	—	—	—	—	4
SPV.0105	RESET EXISTING BEARINGS	LS	—	—	—	—	—	—	—	—	—	1
	NON-BID ITEMS											
	BRIDGE SEAT PROTECTION	LS	—	—	—	—	—	—	—	—	—	1

AREAS OF 'CONCRETE STAINING', TO BE STAINED TAN WITH AMS STANDARD COLOR NUMBER 30475.

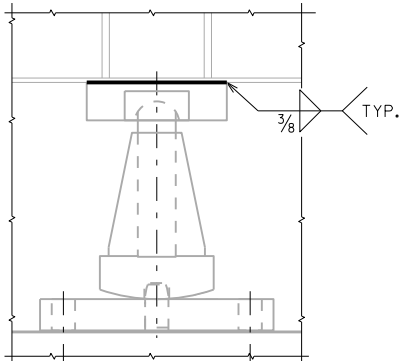
'PIGMENTED SURFACE SEALER' TO BE APPLIED TO INSIDE AND TOP PARAPET SURFACES WITH NO 'CONCRETE STAINING'.



PARTIAL OUTSIDE VIEW OF NEW WINGS
(SHOWING "CONCRETE STAINING" AREAS)



PARTIAL CROSS SECTION AT BOTH EDGES OF DECK
(SHOWING "CONCRETE STAINING" AREAS)



BEARING RESETTING
(AT PIERS 1,3,4,6)

NOTES:
REMOVE EXISTING WELDS
RESET BEARINGS (SEE ROCKER SETTING DATA)
REPLACE 3/8" WELDS
PAID FOR UNDER BID ITEM "RESET EXISTING BEARINGS"

ROCKER SETTING DATA

TEMPERATURE AT TIME OF SETTING - °F	VERTICAL			
	PIER 1	PIER 3	PIER 4	PIER 6
120	-1/16"	+1/16"	-1/16"	+1/16"
100	-7/16"	+7/16"	-7/16"	+7/16"
80	-1/4"	+1/4"	-1/4"	+1/4"
60	0"	0"	0"	0"
40	+1/4"	-1/4"	+1/4"	-1/4"
20	+7/16"	-7/16"	+7/16"	-7/16"
0	+1/16"	-1/16"	+1/16"	-1/16"
-20	+7/8"	-7/8"	+7/8"	-7/8"

(+) INDICATES ROCKERS TILTED AWAY FROM S. ABUT.
(-) INDICATES ROCKERS TILTED TOWARD S. ABUT.

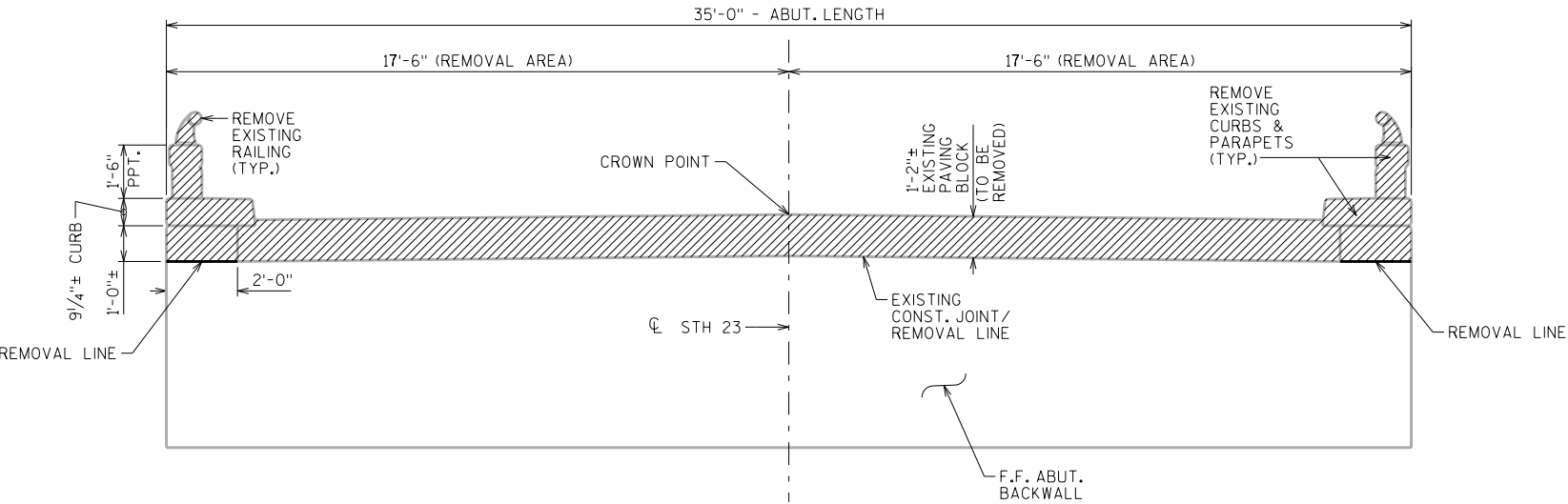
ROCKER BEARING SHALL BE SET VERTICAL AT 60° F.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
		DRAWN BY: EMK/JPH	PLANS CK'D: EMK
GENERAL NOTES & QUANTITIES		SHEET 3	

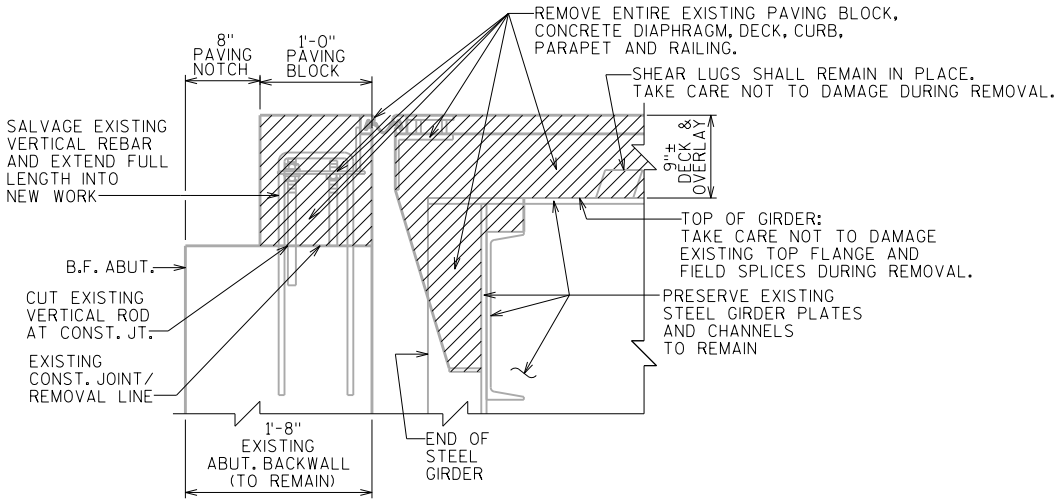
SCALE = 2.50

NOTE:
REMOVAL LINES SHALL BE DEFINED
BY A 1" DEEP SAW-CUT.

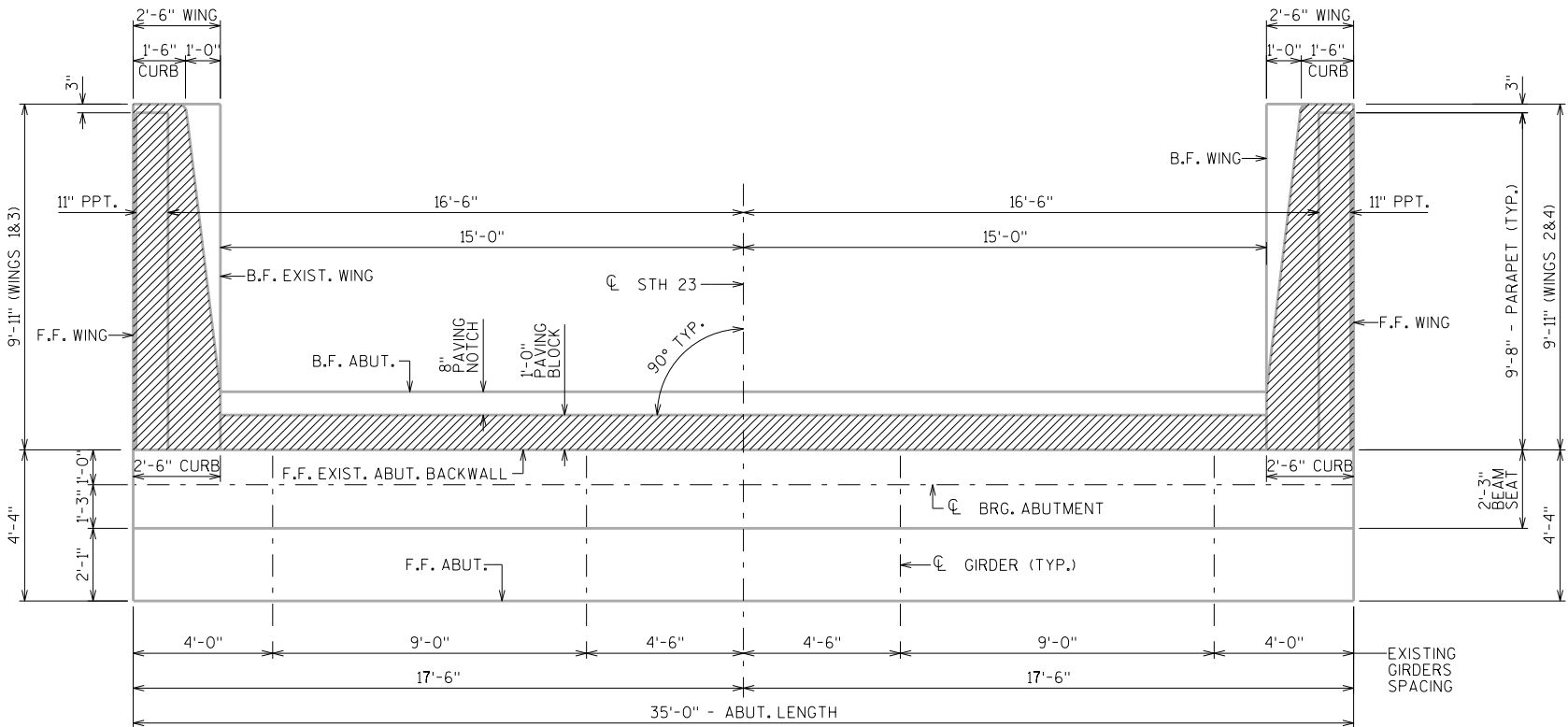
REMOVAL AREAS



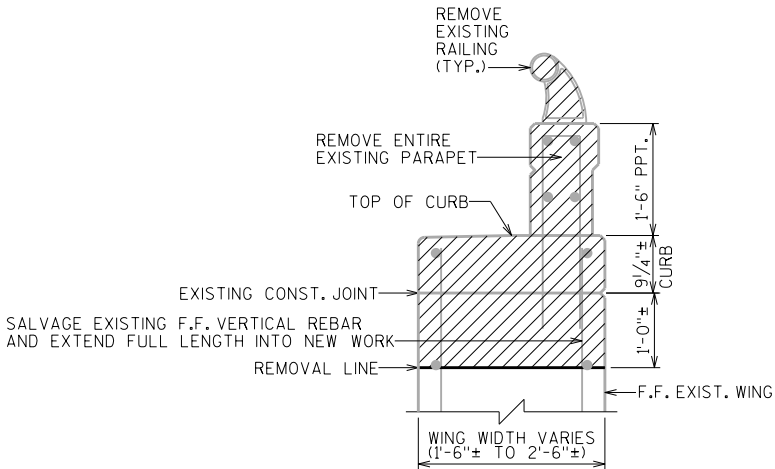
EXISTING ABUTMENT BACKWALL ELEVATION LOOKING AT F.F.
TYPICAL AT BOTH ABUTS.



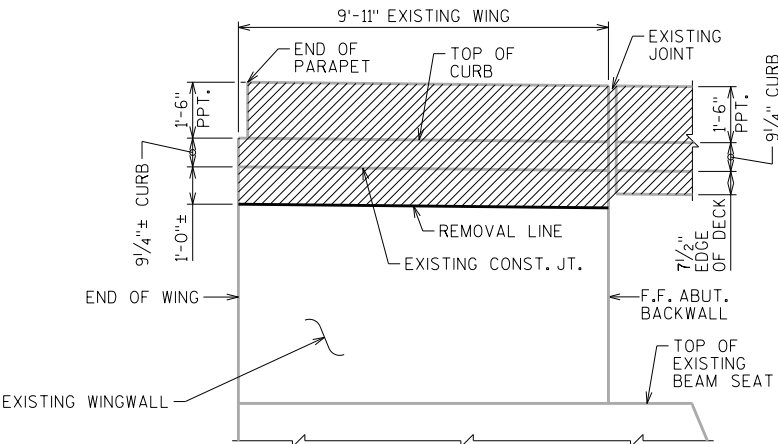
PARTIAL SECTION THRU EXISTING ABUTMENT BACKWALL/DECK
TYPICAL AT BOTH ABUTS.



PLAN VIEW OF EXISTING ABUTMENT
EXISTING RAILING NOT SHOWN FOR CLARITY
(TYPICAL AT BOTH ABUTS.)

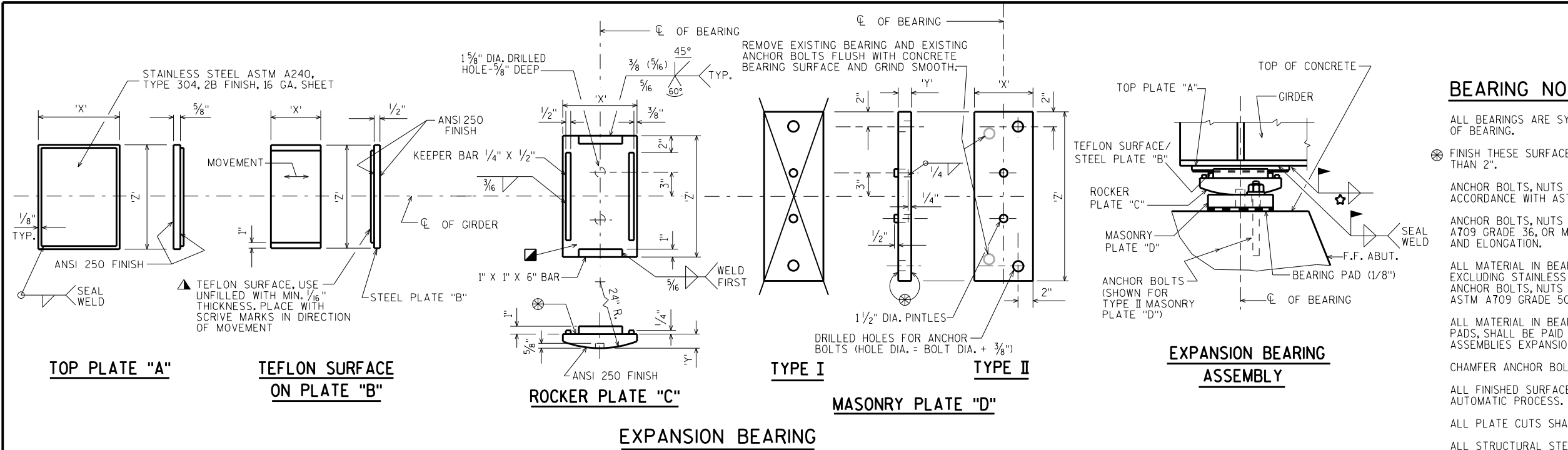


PARTIAL SECTION THRU EXISTING WINGS
TYPICAL AT ALL FOUR WING LOCATIONS



PARTIAL OUTSIDE VIEW OF ALL EXISTING WINGS
EXISTING RAILING NOT SHOWN FOR CLARITY
(TYPICAL AT ALL FOUR WING LOCATIONS)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY JPH		PLANS CK'D. EMK	
EXISTING ABUTMENT REMOVAL DETAILS		SHEET 4	



STATE PROJECT NUMBER
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BEARING NOTES

- ALL BEARINGS ARE SYMMETRICAL ABOUT ϕ OF GIRDER AND ϕ OF BEARING.
- ⊗ FINISH THESE SURFACES TO ANSI250 IF 'Y' DIMENSION IS GREATER THAN 2".
- ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.
- ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 36, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.
- ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES, BUT EXCLUDING STAINLESS STEEL SHEET, TEFLON SURFACE, PINTLES, ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.
- ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES AND BEARING PADS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES EXPANSION B-25-51", EACH.
- CHAMFER ANCHOR BOLTS PRIOR TO THREADING.
- ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.
- ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.
- ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.
- PROVIDE 1/8" THICK BEARING PAD THE SAME SIZE AS MASONRY PLATE "D" FOR EACH BEARING.
- ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. BOLT LENGTH TO BE 1'-10 FOR 1 1/2" DIA. BOLTS. PROJECT ANCHOR BOLTS, MASONRY PLATE "D" THICKNESS + 2 1/4", ABOVE TOP OF CONCRETE.
- CHAMFER TOP OF PINTLES 1/8". DRILL HOLES FOR ALL PINTLES IN MASONRY PLATE "D" FOR A DRIVING FIT.
- STEEL PINTLES SHALL CONFORM TO ASTM A449 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.
- EXPANSION BEARINGS:
ROCKER PLATE "C" AND MASONRY PLATE "D" SHALL BE GALVANIZED. TOP PLATE "A" AND STEEL PLATE "B" SHALL BE SHOP PAINTED. USE A WELDABLE PRIMER ON TOP PLATE "A". DO NOT PAINT STAINLESS STEEL OR TEFLON SURFACES.
- ☑ PROVIDE A METHOD FOR HANDLING ROCKER PLATE "C" DURING GALVANIZING.
- ⚠ BOND STEEL PLATE "B" AND TEFLON WITH ADHESIVE MATERIAL MEETING REQUIREMENTS FOUND IN THE STANDARD SPECIFICATION.
- AT INSTALLATION, ENSURE STAINLESS STEEL SLIDING FACE OF THE UPPER ELEMENT AND THE TFE SLIDING FACE OF THE LOWER ELEMENT HAVE THE SURFACE FINISH SPECIFIED AND ARE CLEAN AND FREE OF ALL DUST, MOISTURE, AND OTHER FOREIGN MATTER.

★ TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED.	± MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	△ 5/16"
OVER 1 1/2" TO 2 1/4"	△ 3/8"
OVER 2 1/4" TO 6"	△ 1/2"

± EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.
△ MIN. PASS SIZE IS 5/16"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
		DRAWN BY JPH	PLANS CK'D. EMK
ABUTMENTS EXPANSION BEARINGS REPLACEMENT		SHEET 6	

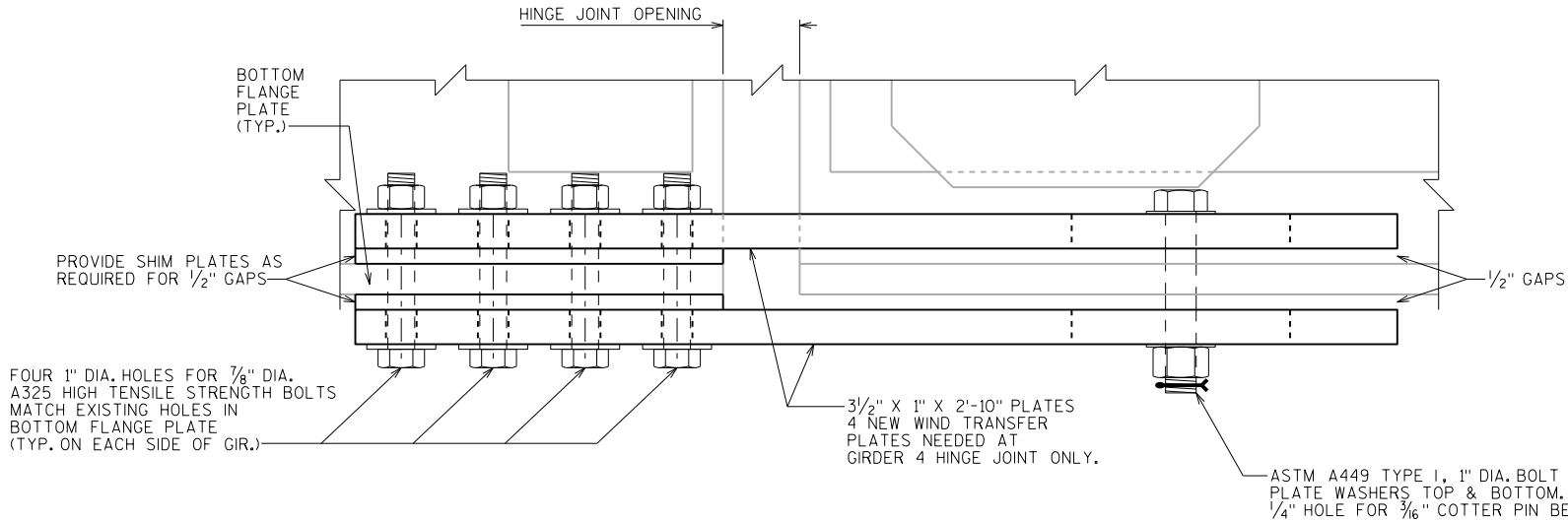
NOTES

REMOVE EXISTING WIND TRANSFER PLATES AT GIRDER 4 AND REPLACE WITH NEW MATERIALS.

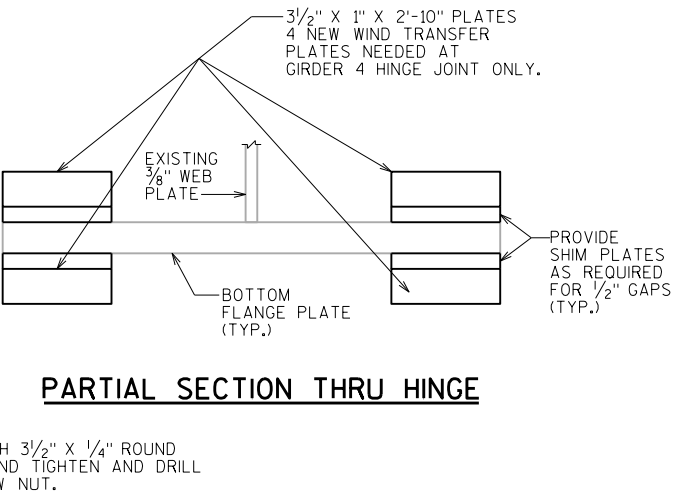
WIND TRANSFER PLATES SHALL BE SHOP PAINTED BROWN (AMS STANDARD COLOR NUMBER 30111).

ALL MATERIAL AND LABOR INVOLVED FOR WIND TRANSFER PLATE WORK SHALL BE PAID FOR UNDER BID ITEM "STRUCTURAL STEEL CARBON".

7/8" DIA. A325 HIGH-TENSILE STRENGTH BOLTS SHALL BE PAID FOR UNDER BID ITEM "STRUCTURAL STEEL HS".



PARTIAL ELEVATION OF HINGE JOINT

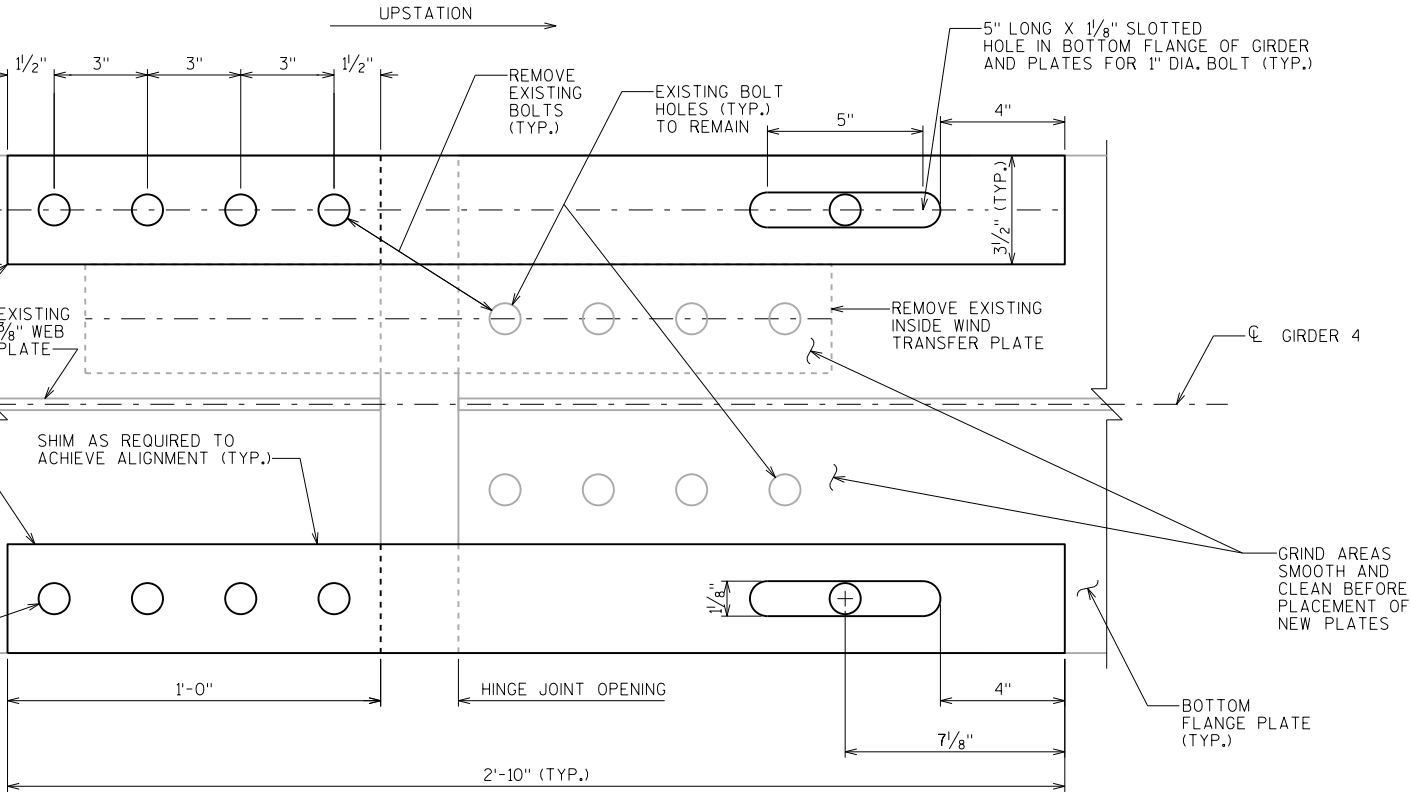


PARTIAL SECTION THRU HINGE

CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF HOLES IN BOTTOM FLANGE TO MATCH HOLES DRILLED IN NEW PLATES (TYP. ON EACH SIDE)

3 1/2" X 1" X 2'-10" PLATES (A441 STEEL)
4 NEW WIND TRANSFER PLATES NEEDED AT GIRDER 4 HINGE JOINT ONLY.

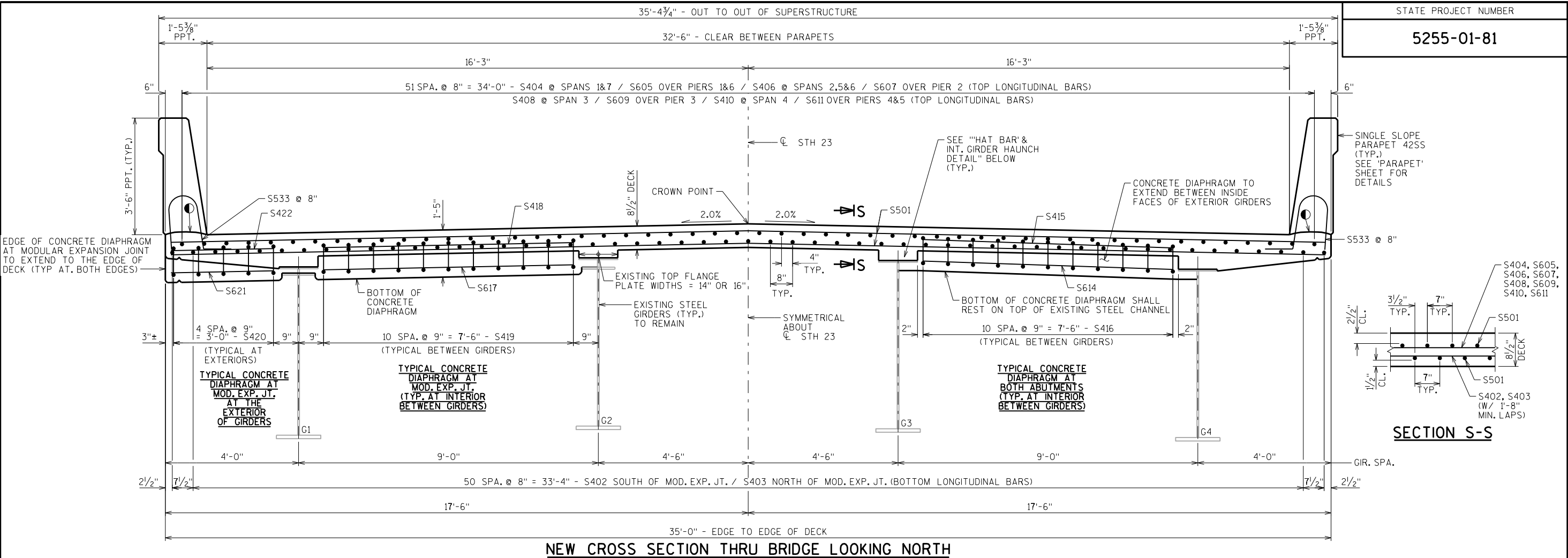
FOUR 1" DIA. HOLES FOR 7/8" DIA. A325 HIGH-TENSILE STRENGTH BOLTS MATCH EXISTING HOLES IN BOTTOM FLANGE PLATE (TYP. ON EACH SIDE OF GIR.)



WIND TRANSFER PLATES PLAN DETAIL AT HINGE JOINT

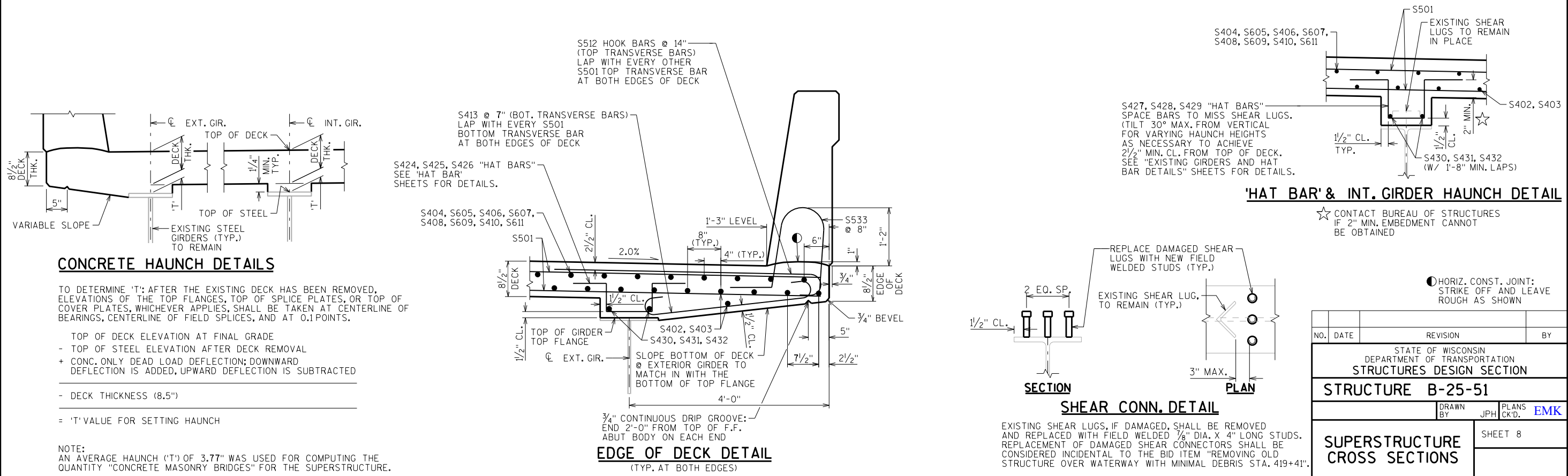
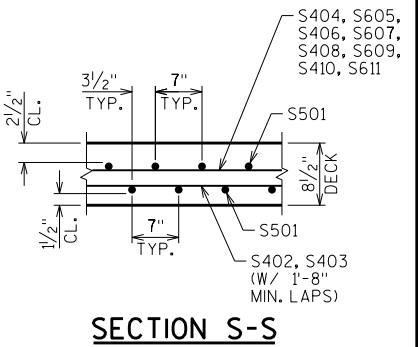
CONTACT AREA OF WIND TRANSFER PLATES TO BE FINISHED ANSI125. (FIX ONLY FOR GIRDER 4 @ HINGE JOINT)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
		DRAWN BY JPH	PLANS CK'D. EMK
HINGE JOINT DETAILS		SHEET 7	



STATE PROJECT NUMBER

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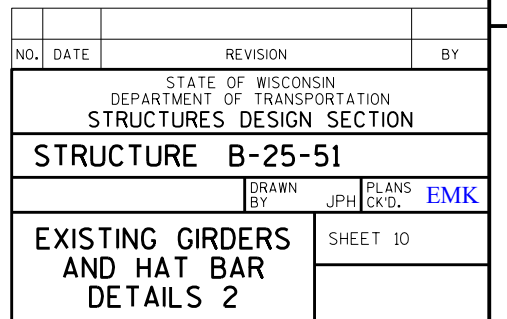


8



PLACE HAT BARS AT EVERY EXISTING SHEAR LUG AND 1/2 EXISTING SHEAR LUG SPACING AS SHOWN IN THE 'HAT BAR DETAIL' AND ON THIS SHEET.

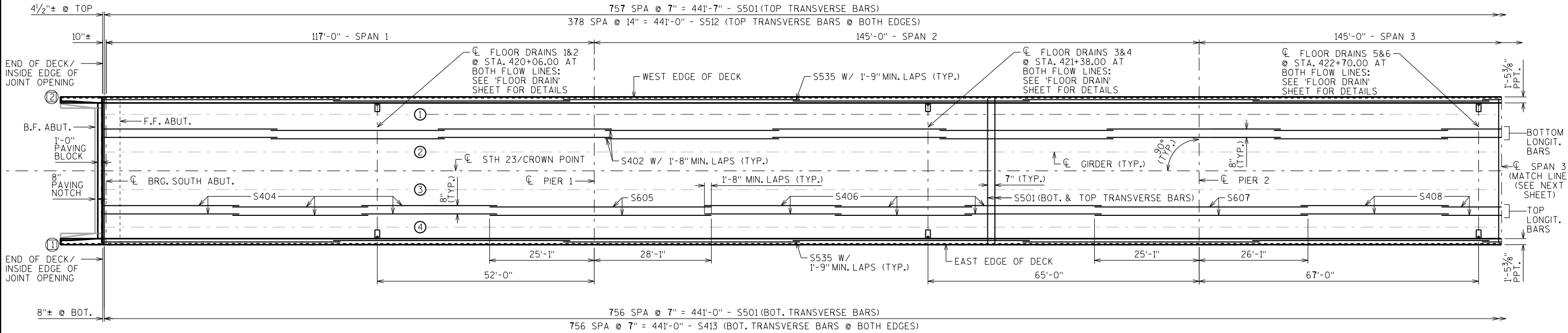
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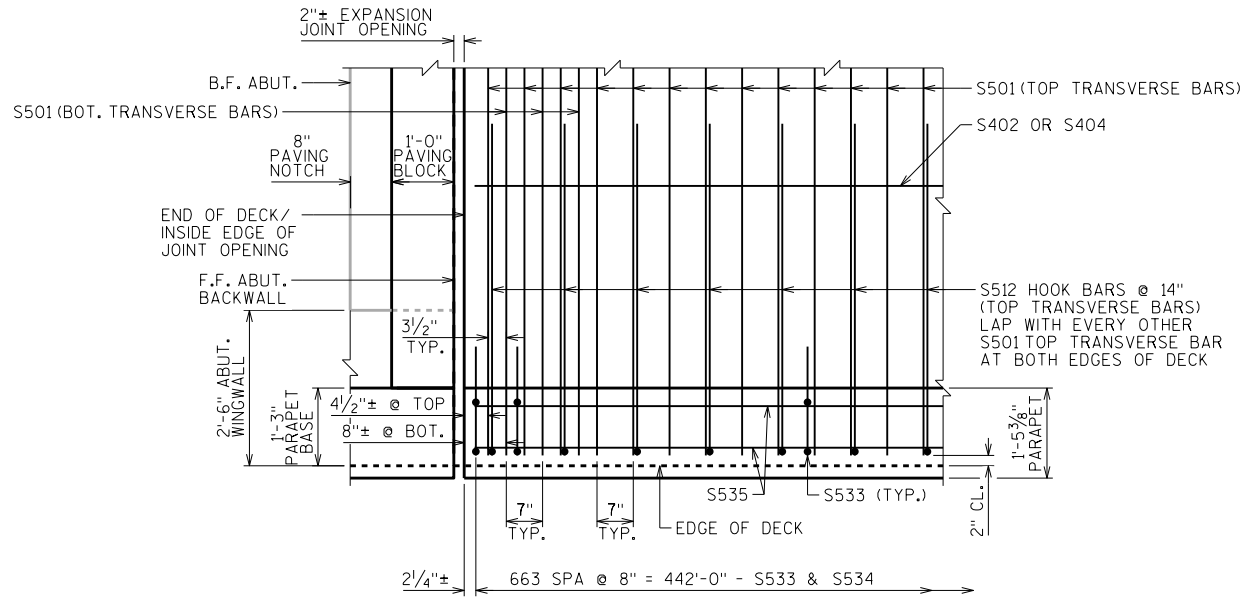
- GIRDER NUMBER
□ INDICATES WING NUMBER

STATE PROJECT NUMBER

5255-01-81



PLAN (SPANS 1-3)



EDGE OF DECK/CORNER DETAIL

NOT ALL BARS SHOWN FOR CLARITY

TOP OF DECK ELEVATIONS (SPANS 1-3)

	CL BRG. S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL PIER 2	1/10	2/10	3/10	4/10	5/10
WEST E.O.D.	733.62	733.50	733.38	733.26	733.14	733.02	732.91	732.79	732.67	732.55	732.43	732.29	732.14	731.99	731.85	731.70	731.55	731.41	731.26	731.12	730.97	730.82	730.68	730.53	730.38	730.24
CL GIRDER 1	733.67	733.55	733.43	733.32	733.20	733.08	732.96	732.84	732.72	732.61	732.49	732.34	732.20	732.05	731.90	731.76	731.61	731.46	731.32	731.17	731.02	730.88	730.73	730.58	730.44	730.29
CL GIRDER 2	733.85	733.73	733.61	733.50	733.38	733.26	733.14	733.02	732.90	732.79	732.67	732.52	732.38	732.23	732.08	731.94	731.79	731.64	731.50	731.35	731.20	731.06	730.91	730.76	730.62	730.47
CL STH 23	733.94	733.82	733.70	733.59	733.47	733.35	733.23	733.11	732.99	732.88	732.76	732.61	732.47	732.32	732.17	732.03	731.88	731.73	731.59	731.44	731.29	731.15	731.00	730.85	730.71	730.56
CL GIRDER 3	733.85	733.73	733.61	733.50	733.38	733.26	733.14	733.02	732.90	732.79	732.67	732.52	732.38	732.23	732.08	731.94	731.79	731.64	731.50	731.35	731.20	731.06	730.91	730.76	730.62	730.47
CL GIRDER 4	733.67	733.55	733.43	733.32	733.20	733.08	732.96	732.84	732.72	732.61	732.49	732.34	732.20	732.05	731.90	731.76	731.61	731.46	731.32	731.17	731.02	730.88	730.73	730.58	730.44	730.29
EAST E.O.D.	733.62	733.50	733.38	733.26	733.14	733.02	732.91	732.79	732.67	732.55	732.43	732.29	732.14	731.99	731.85	731.70	731.55	731.41	731.26	731.12	730.97	730.82	730.68	730.53	730.38	730.24

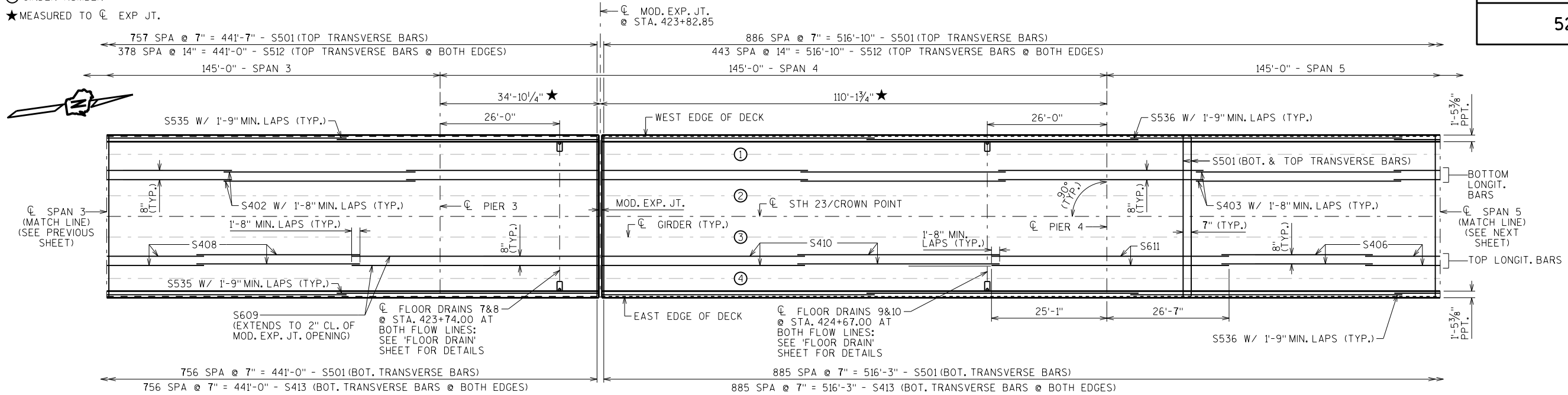
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY JPH		PLANS CK'D. EMK	
SUPERSTRUCTURE PLAN SPANS 1-3		SHEET II	

SCALE = 12.00

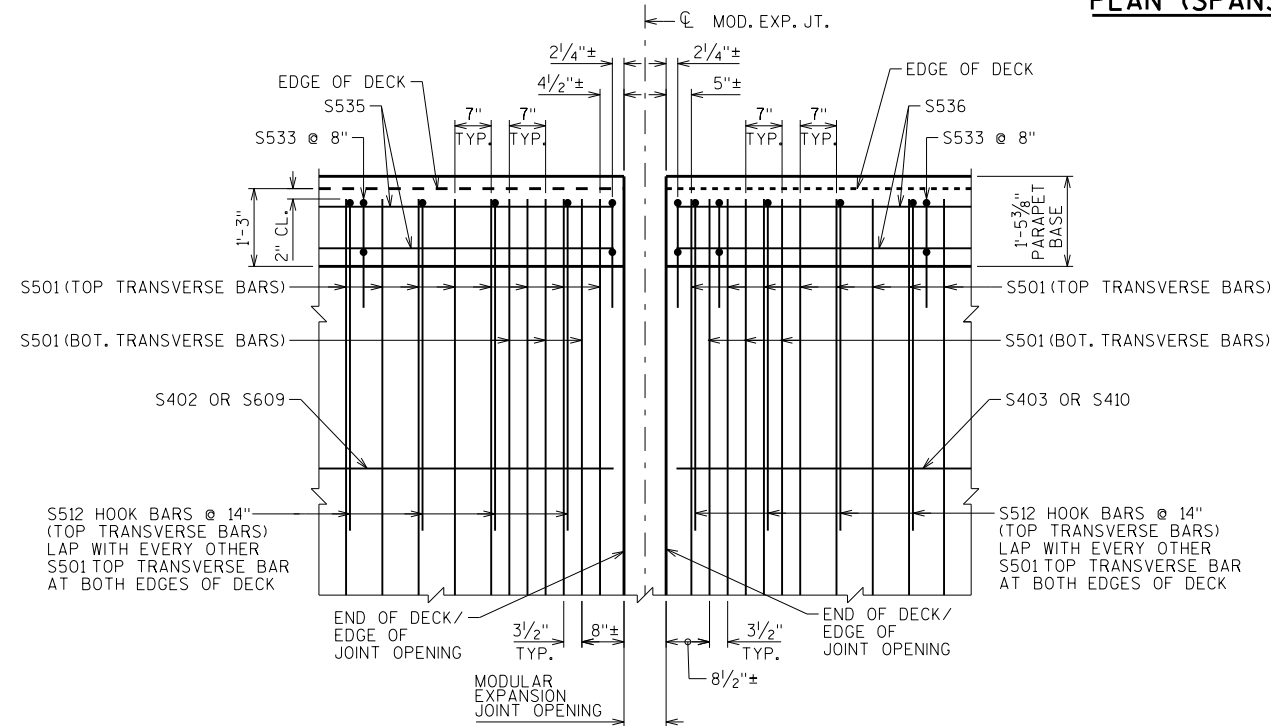
○ GIRDER NUMBER
★ MEASURED TO CL EXP. JT.

STATE PROJECT NUMBER

5255-01-81



PLAN (SPANS 3-5)



EDGE OF DECK/MODULAR JOINT DETAIL

NOT ALL BARS SHOWN FOR CLARITY

TOP OF DECK ELEVATIONS (SPANS 3-5)

	5/10	6/10	7/10	8/10	9/10	PIER 3	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 4	1/10	2/10	3/10	4/10	5/10
WEST E.O.D.	730.24	730.09	729.94	729.80	729.65	729.50	729.36	729.21	729.06	728.92	728.77	728.63	728.48	728.33	728.19	728.04	727.89	727.75	727.60	727.45	727.31
CL GIRDER 1	730.29	730.15	730.00	729.85	729.71	729.56	729.41	729.27	729.12	728.97	728.83	728.68	728.53	728.39	728.24	728.09	727.95	727.80	727.66	727.51	727.36
CL GIRDER 2	730.47	730.33	730.18	730.03	729.89	729.74	729.59	729.45	729.30	729.15	729.01	728.86	728.71	728.57	728.42	728.27	728.13	727.98	727.84	727.69	727.54
CL STH 23	730.56	730.42	730.27	730.12	729.98	729.83	729.68	729.54	729.39	729.24	729.10	728.95	728.80	728.66	728.51	728.36	728.22	728.07	727.93	727.78	727.63
CL GIRDER 3	730.47	730.33	730.18	730.03	729.89	729.74	729.59	729.45	729.30	729.15	729.01	728.86	728.71	728.57	728.42	728.27	728.13	727.98	727.84	727.69	727.54
CL GIRDER 4	730.29	730.15	730.00	729.85	729.71	729.56	729.41	729.27	729.12	728.97	728.83	728.68	728.53	728.39	728.24	728.09	727.95	727.80	727.66	727.51	727.36
EAST E.O.D.	730.24	730.09	729.94	729.80	729.65	729.50	729.36	729.21	729.06	728.92	728.77	728.63	728.48	728.33	728.19	728.04	727.89	727.75	727.60	727.45	727.31

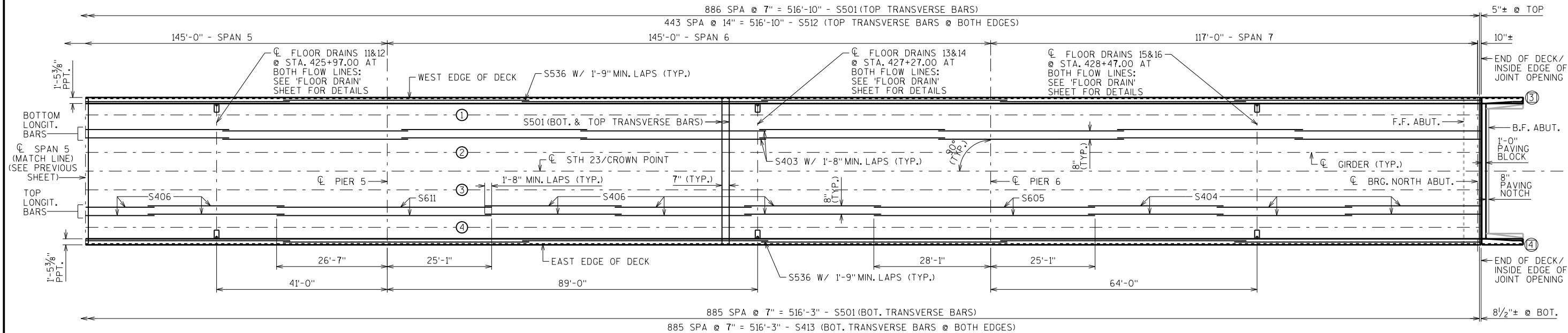
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY JPH		PLANS CK'D. EMK	
SUPERSTRUCTURE PLAN SPANS 3-5		SHEET 12	

SCALE = 12:00

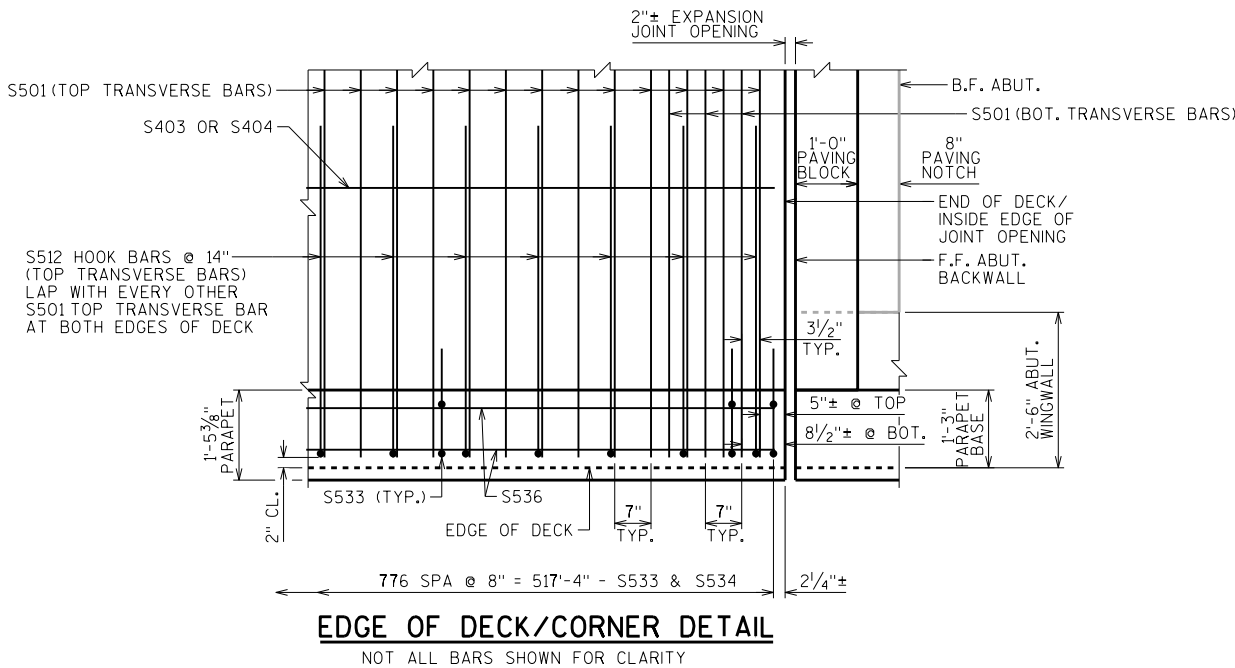
- GIRDER NUMBER
□ INDICATES WING NUMBER

STATE PROJECT NUMBER

5255-01-81



PLAN (SPANS 5-7)



EDGE OF DECK/CORNER DETAIL

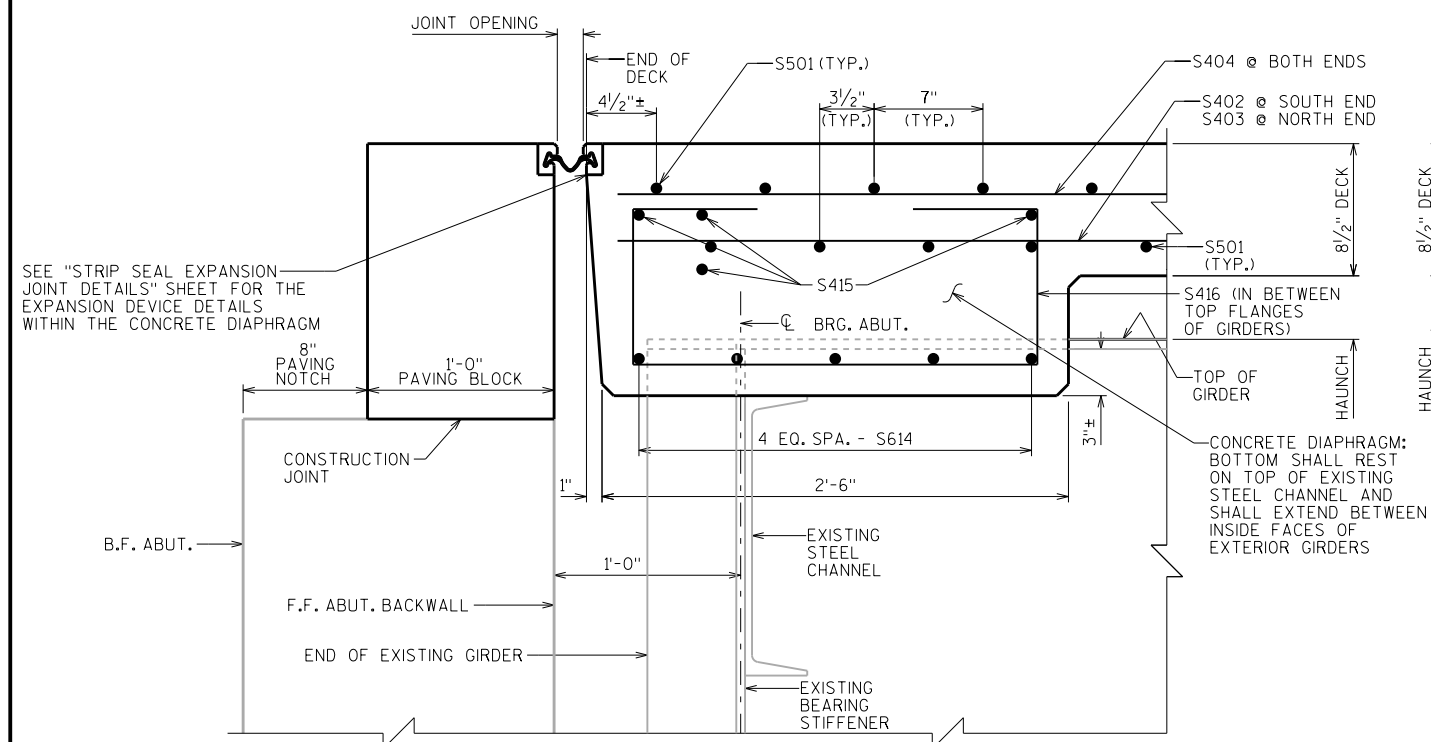
NOT ALL BARS SHOWN FOR CLARITY

TOP OF DECK ELEVATIONS (SPANS 5-7)

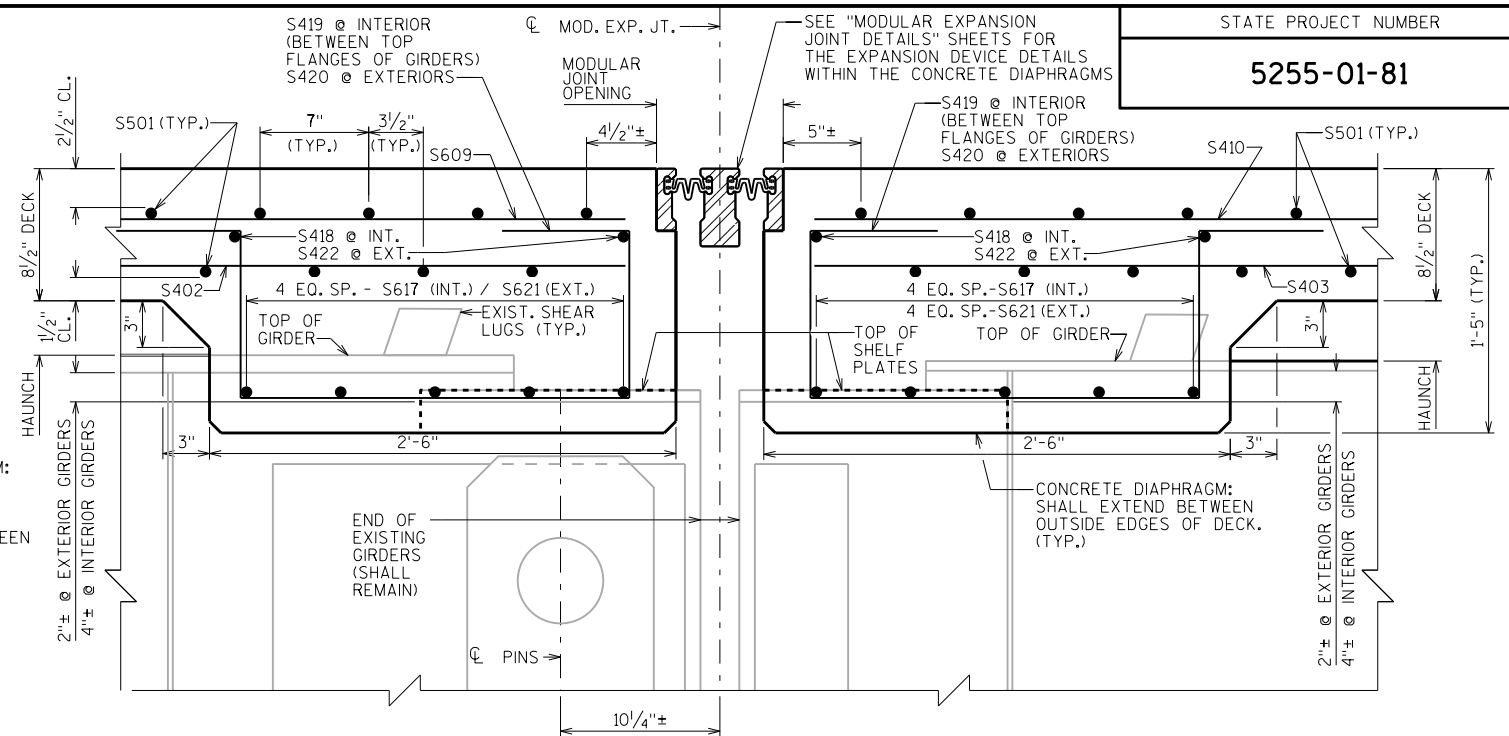
	5/10	6/10	7/10	8/10	9/10	PIER 5	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 6	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	BRG. N. ABUT.
WEST E.O.D.	727.31	727.16	727.01	726.87	726.72	726.58	726.43	726.28	726.14	725.99	725.84	725.70	725.55	725.40	725.26	725.11	724.99	724.87	724.76	724.64	724.52	724.40	724.28	724.17	724.05	723.93
CL GIRDER 1	727.36	727.22	727.07	726.92	726.78	726.63	726.48	726.34	726.19	726.04	725.90	725.75	725.61	725.46	725.31	725.17	725.05	724.93	724.81	724.69	724.57	724.46	724.34	724.22	724.10	723.98
CL GIRDER 2	727.54	727.40	727.25	727.10	726.96	726.81	726.66	726.52	726.37	726.22	726.08	725.93	725.79	725.64	725.49	725.35	725.23	725.11	724.99	724.87	724.75	724.64	724.52	724.40	724.28	724.16
CL STH 23	727.63	727.49	727.34	727.19	727.05	726.90	726.75	726.61	726.46	726.31	726.17	726.02	725.88	725.73	725.58	725.44	725.32	725.20	725.08	724.96	724.84	724.73	724.61	724.49	724.37	724.25
CL GIRDER 3	727.54	727.40	727.25	727.10	726.96	726.81	726.66	726.52	726.37	726.22	726.08	725.93	725.79	725.64	725.49	725.35	725.23	725.11	724.99	724.87	724.75	724.64	724.52	724.40	724.28	724.16
CL GIRDER 4	727.36	727.22	727.07	726.92	726.78	726.63	726.48	726.34	726.19	726.04	725.90	725.75	725.61	725.46	725.31	725.17	725.05	724.93	724.81	724.69	724.57	724.46	724.34	724.22	724.10	723.98
EAST E.O.D.	727.31	727.16	727.01	726.87	726.72	726.58	726.43	726.28	726.14	725.99	725.84	725.70	725.55	725.40	725.26	725.11	724.99	724.87	724.76	724.64	724.52	724.40	724.28	724.17	724.05	723.93

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY JPH		PLANS CK'D. EMK	
SUPERSTRUCTURE PLAN SPANS 5-7			SHEET 13

SCALE = 12.00



PARTIAL SECTION THRU EXPANSION JOINT AT ABUTMENT ENDS

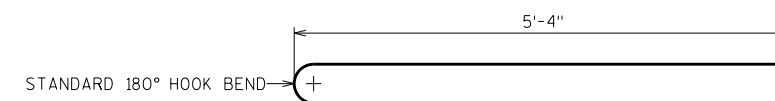


PARTIAL SECTION THRU MODULAR EXPANSION JOINT AT SPAN 4 LOOKING WEST

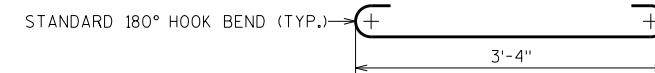
BILL OF BARS

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

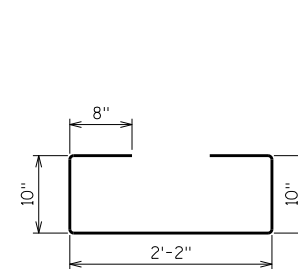
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	X	3288	34'-8"		DECK-TOP & BOTTOM-HORIZONTAL-TRANSVERSE
S402	X	605	41'-9"		DECK-BOT.-HORIZ.-LONGITUDINAL-@ SPANS 1-4/SOUTH OF MOD. EXP. JT.
S403	X	660	44'-8"		DECK-BOT.-HORIZ.-LONGITUDINAL-@ SPANS 4-7/NORTH OF MOD. EXP. JT.
S404	X	312	32'-7"		DECK-TOP-HORIZ.-LONGIT.-@ SPANS 1&7
S605	X	104	53'-2"		DECK-TOP-HORIZ.-LONGIT.-OVER PIERS 1&6
S406	X	468	32'-11"		DECK-TOP-HORIZ.-LONGIT.-@ SPANS 2,5&6
S607	X	52	51'-2"		DECK-TOP-HORIZ.-LONGIT.-OVER PIER 2
S408	X	156	35'-7"		DECK-TOP-HORIZ.-LONGIT.-@ SPAN 3
S609	X	52	53'-7"		DECK-TOP-HORIZ.-LONGIT.-OVER PIER 3/SOUTH OF MOD. EXP. JT.
S410	X	104	44'-0"		DECK-TOP-HORIZ.-LONGIT.-@ SPAN 4/NORTH OF MOD. EXP. JT.
S611	X	104	51'-8"		DECK-TOP-HORIZ.-LONGIT.-OVER PIERS 4&5
S512	X	1646	5'-11"	X	DECK-TOP-VERTICAL-TRANS.-BOTH EDGES-END TO END
S413	X	3286	4'-4"	X	DECK-BOT.-VERTICAL-TRANS.-BOTH EDGES-END TO END
S614	X	30	7'-6"		SOUTH & NORTH ABUTMENT DIAPHRAGMS-BOT.-HORIZ.-BTWN. GIRS.
S415	X	24	7'-6"		SOUTH & NORTH ABUTMENT DIAPHRAGMS/DECK-HORIZ.-BTWN. GIRS.
S416	X	66	4'-10"	X	SOUTH & NORTH ABUTMENT DIAPHRAGMS/DECK-VERT.-BTWN. GIRS.
S617	X	30	7'-6"		MODULAR EXP. JT. DIAPHRAGMS-BOT.-HORIZ.-BTWN. GIRS.
S418	X	12	7'-6"		MODULAR EXP. JT. DIAPHRAGMS/DECK-HORIZ.-BTWN. GIRS.
S419	X	66	4'-11"	X	MODULAR EXP. JT. DIAPHRAGMS/DECK-VERT.-BTWN. GIRS.
S420	X	20	4'-11"	X	MODULAR EXP. JT. DIAPHRAGMS/DECK-VERT.-AT GIR. EXTERIORS
S621	X	20	3'-1"		MODULAR EXP. JT. DIAPHRAGMS-BOT.-HORIZ.-AT GIR. EXTERIORS
S422	X	8	3'-1"		MODULAR EXP. JT. DIAPHRAGMS/DECK-HORIZ.-AT GIR. EXTERIORS
S523	X	64	5'-0"		DECK-TOP & BOT.-HORIZ.-LONGIT.-AROUND DRAINS ONLY-4 PER DRAIN
S424	X	158	3'-1"	X	DECK/GIRDER HAUNCHES-BOT.-VERT.-TRANS.-HAT BARS-@ SPAN 1-ABOVE GIRDERS 1&4 @ 14" WIDE TOP FLANGE PLATE
S425	X	392	3'-1"	X	DECK/GIRDER HAUNCHES-BOT.-VERT.-TRANS.-HAT BARS-@ SPANS 1-7-ABOVE GIRDERS 1&4 @ 16" WIDE TOP FLANGE PLATE
S426	X	856	2'-11"	X	DECK/GIRDER HAUNCHES-BOT.-VERT.-TRANS.-HAT BARS-@ SPANS 2-7-ABOVE GIRDERS 1&4 @ 14" WIDE TOP FLANGE PLATE
S427	X	158	2'-11"	X	DECK/GIRDER HAUNCHES-BOT.-VERT.-TRANS.-HAT BARS-@ SPAN 1-ABOVE GIRDERS 2&3 @ 14" WIDE TOP FLANGE PLATE
S428	X	392	2'-11"	X	DECK/GIRDER HAUNCHES-BOT.-VERT.-TRANS.-HAT BARS-@ SPANS 1-7-ABOVE GIRDERS 2&3 @ 16" WIDE TOP FLANGE PLATE
S429	X	856	2'-9"	X	DECK/GIRDER HAUNCHES-BOT.-VERT.-TRANS.-HAT BARS-@ SPANS 2-7-ABOVE GIRDERS 2&3 @ 14" WIDE TOP FLANGE PLATE
S430	X	32	42'-7"		GIRDER HAUNCHES-BOTH FACES-BOT.-HORIZ.-LONGIT.-@ SPANS 1&7-ABOVE ALL GIRDERS @ 14" WIDE TOP FLANGE PLATE
S431	X	96	36'-11		GIRDER HAUNCHES-BOTH FACES-BOT.-HORIZ.-LONGIT.-@ SPANS 1-7-ABOVE ALL GIRDERS @ 16" WIDE TOP FLANGE PLATE
S432	X	80	39'-2"		GIRDER HAUNCHES-BOTH FACES-BOT.-HORIZ.-LONGIT.-@ SPANS 2-6-ABOVE ALL GIRDERS @ 14" WIDE TOP FLANGE PLATE
S533	X	2882	4'-5"	X	DECK/PARAPETS-VERT.-TRANS.-END TO END
S534	X	2882	6'-8"	X	PARAPETS-VERT.-TRANS.-END TO END OF DECK
S535	X	128	56'-10"		PARAPETS-HORIZ.-LONGIT.-BOTH FACES-@ SPANS 1-4/SOUTH OF MOD. EXP. JT.
S536	X	144	59'-2"		PARAPETS-HORIZ.-LONGIT.-BOTH FACES-@ SPANS 4-7/NORTH OF MOD. EXP. JT.



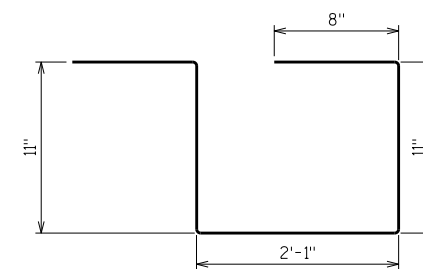
S512



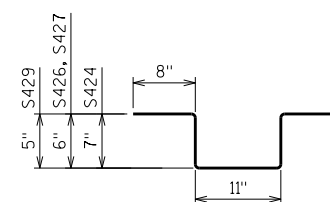
S413



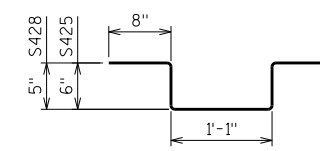
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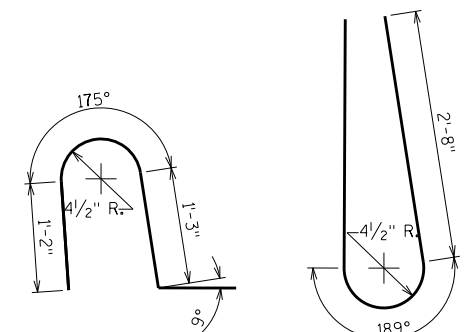
S419



S424, S426, S427, S429

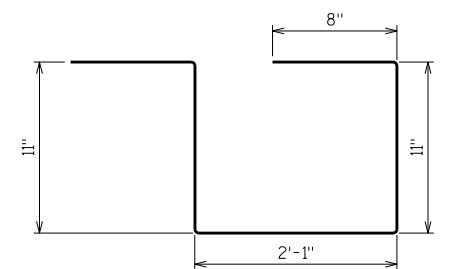


S425, S428



S533

S534



S420

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY		JPH	PLANS CKD. EMK
SUPERSTRUCTURE DETAILS		SHEET 14	

SCALE = 1.00

LEGEND

- ① NEOPRENE STRIP SEAL (4 INCH) AND STEEL EXTRUSIONS.
- ② STUDS $\frac{5}{8}$ " ϕ X $6\frac{3}{8}$ " LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ②A $\frac{1}{2}$ " THICK ANCHOR PLATE WITH $\frac{5}{8}$ " ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- ③ $\frac{3}{4}$ " ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- ④ $\frac{3}{4}$ " ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- ⑤ FABRICATE SUPPORT FROM 3" X $\frac{1}{2}$ " BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE, SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE $1\frac{1}{2}$ " ϕ HOLE FOR NO. 3 AND 1" ϕ HOLE FOR NO. 4.
- ⑥ GALVANIZED PLATE $\frac{3}{8}$ " X 10" X 2'-2" LONG WITH HOLES FOR NO. 7.
- ⑦ $\frac{3}{4}$ " ϕ X $1\frac{1}{2}$ " STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS $\frac{1}{16}$ " BELOW PLATE SURFACE.
- ⑧ $\frac{3}{4}$ " ϕ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- ⑨ $\frac{3}{4}$ " ϕ X $2\frac{1}{4}$ " GALVANIZED THREADED COUPLING.
- ⑪ 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

TEMPERATURE TABLE

SHADED UNDERSIDE DECK TEMP. (°F)	JOINT OPENING (NORMAL TO JT.)
85°	$1\frac{1}{2}$ "
80°	$1\frac{5}{8}$ "
75°	$1\frac{3}{4}$ "
70°	$1\frac{7}{8}$ "
65°	$1\frac{1}{8}$ "
60°	2"
55°	$2\frac{1}{8}$ "
50°	$2\frac{1}{4}$ "
45°	$2\frac{1}{4}$ "
40°	$2\frac{3}{8}$ "
35°	$2\frac{1}{2}$ "
30°	$2\frac{5}{8}$ "
25°	$2\frac{3}{4}$ "
20°	$2\frac{7}{8}$ "
15°	$2\frac{1}{8}$ "
10°	3"
5°	$3\frac{1}{8}$ "

A SMALL JOINT OPENING DUE TO A HIGH TEMPERATURE AT TIME OF CONSTRUCTION MAY REQUIRE NEOPRENE STRIP SEAL INSTALLATION INTO STEEL EXTRUSIONS PRIOR TO SETTING THE EXPANSION JOINT.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY JPH		PLANS CK'D. EMK	
STRIP SEAL EXPANSION JOINT DETAILS		SHEET 15	

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

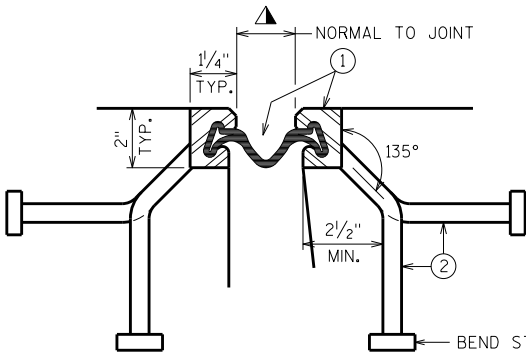
SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-25-51".

SECTION THRU JOINT AT ABUTMENTS

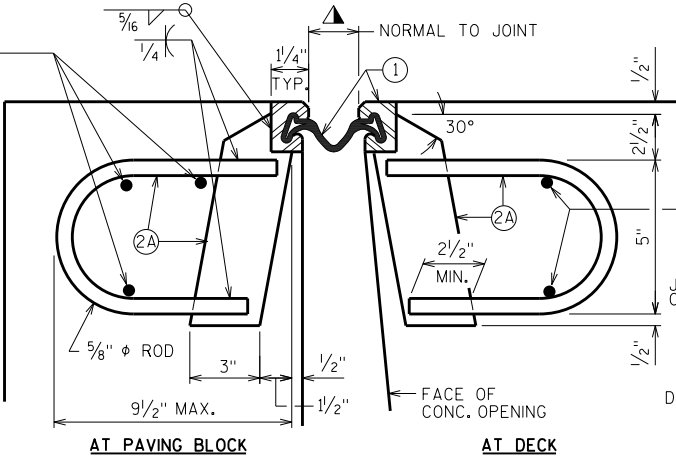
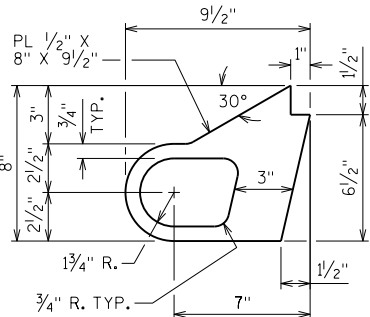
NORMAL TO ϕ SUBSTRUCTURE



SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS

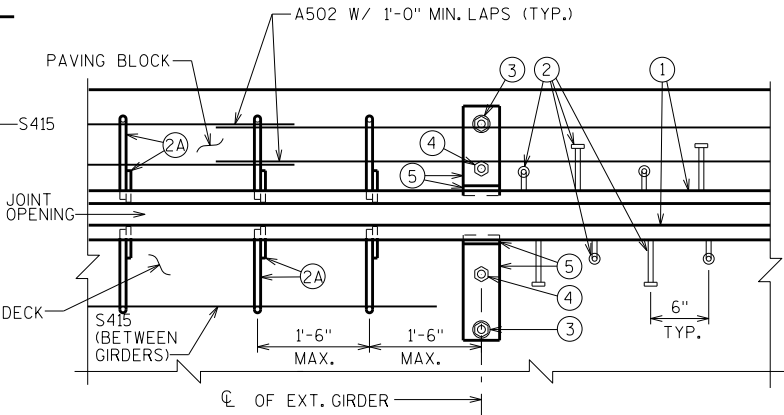
ALTERNATE STRIP SEAL ANCHOR

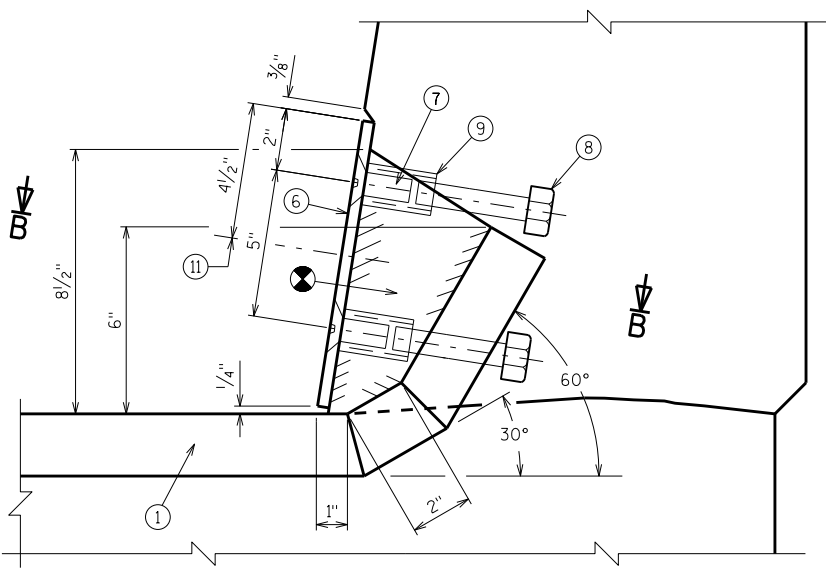


SECTION THRU JOINT

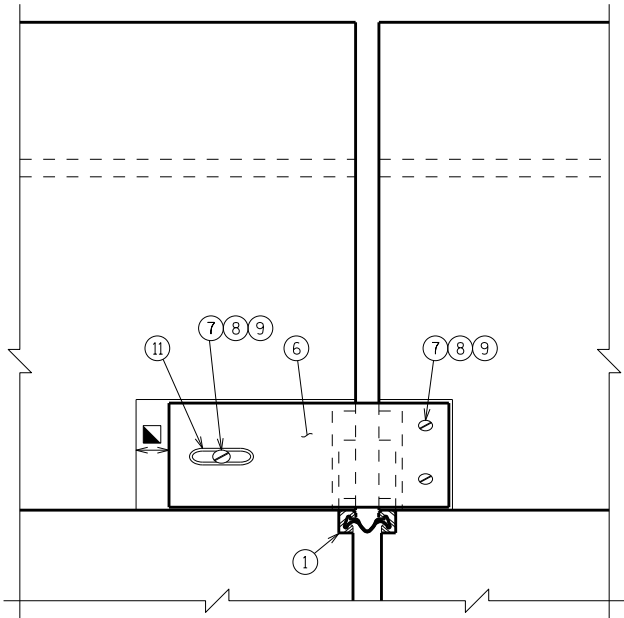
ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.

PART PLAN

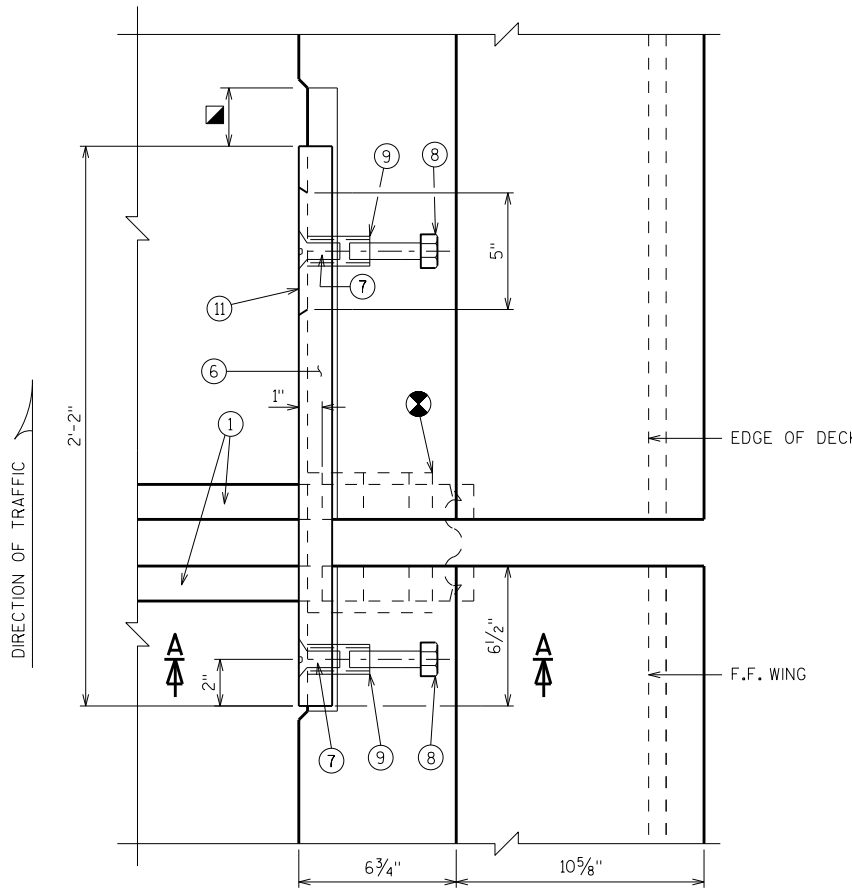




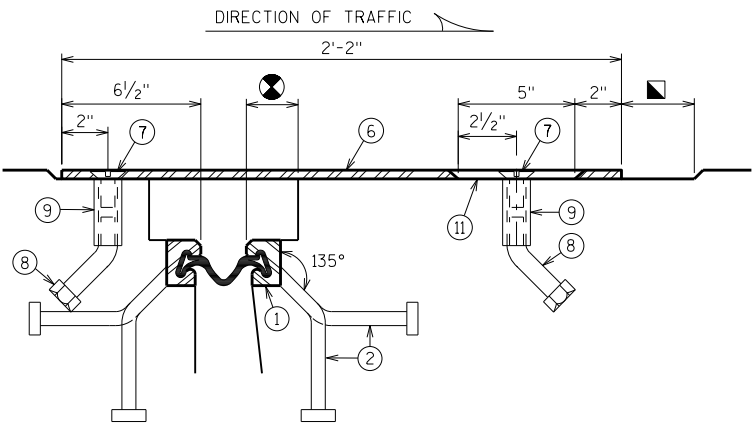
SECTION A-A



VIEW OF PARAPET PLATE
FROM ROADWAY



PLAN



SECTION B-B

LEGEND

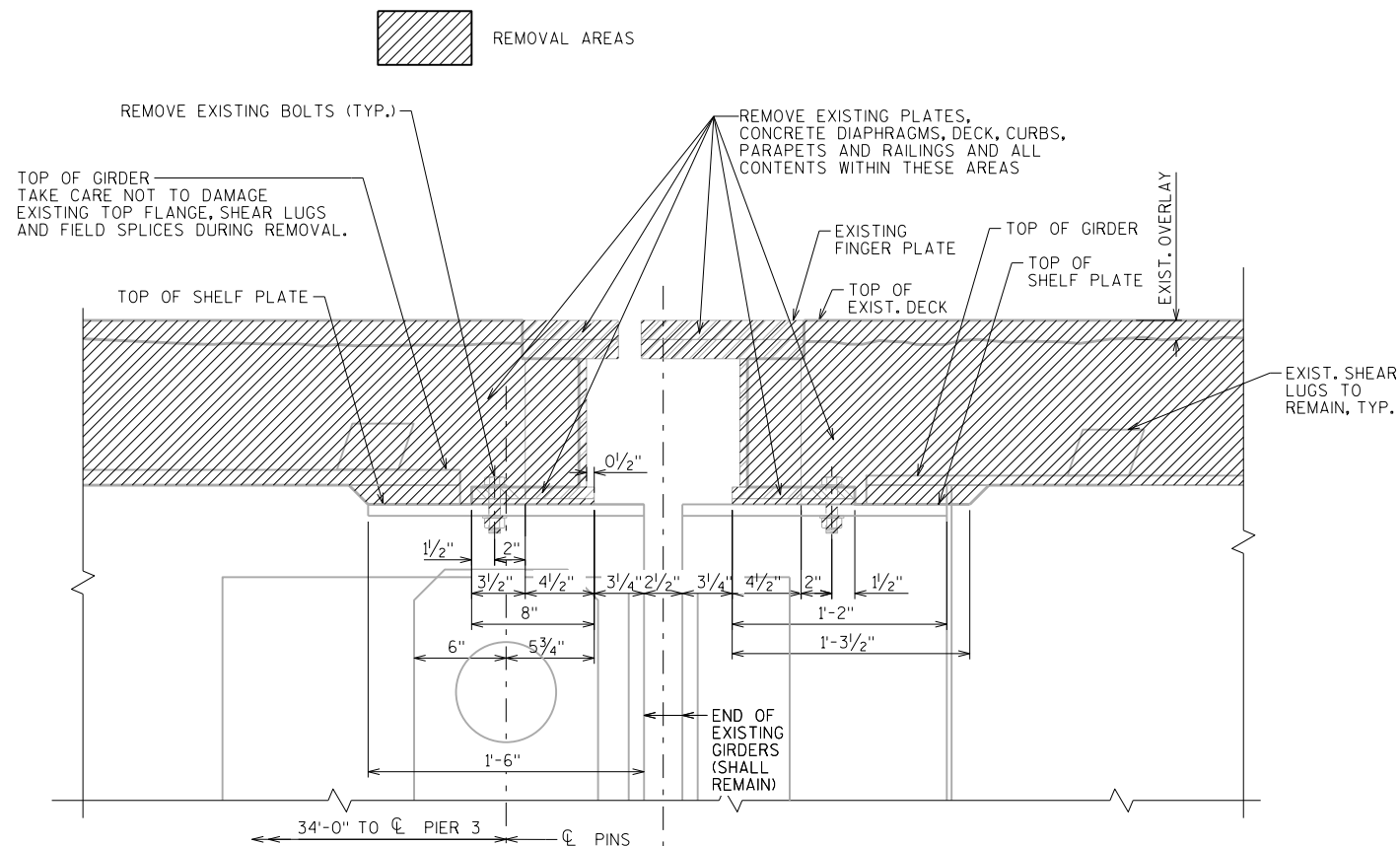
- ① NEOPRENE STRIP SEAL (4 INCH) AND STEEL EXTRUSIONS.
- ② STUDS $\frac{5}{8}$ " ϕ X $6\frac{3}{8}$ " LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ③ GALVANIZED PLATE $\frac{3}{8}$ " X 10" X 2'-2" LONG WITH HOLES FOR NO. 7.
- ④ $\frac{3}{4}$ " ϕ X $1\frac{1}{2}$ " STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS $\frac{1}{16}$ " BELOW PLATE SURFACE.
- ⑤ $\frac{3}{4}$ " ϕ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- ⑥ $\frac{3}{4}$ " ϕ X $2\frac{1}{4}$ " GALVANIZED THREADED COUPLING.
- ⑦ 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- ▣ JOINT OPENING DIMENSION ALONG SKEW PLUS $\frac{1}{2}$ ".

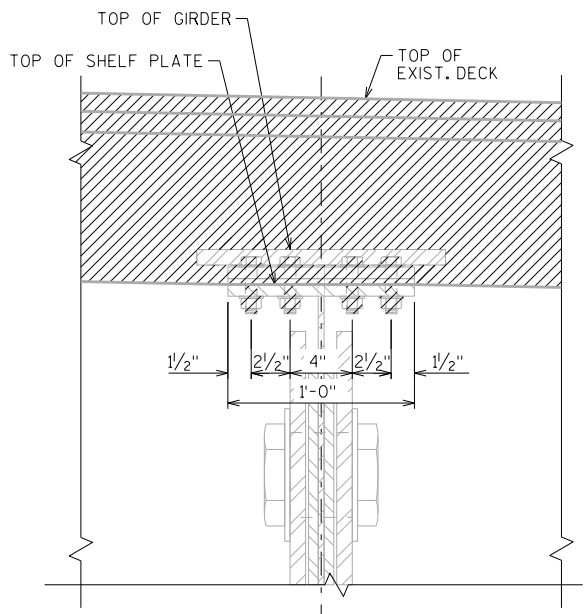
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY JPH		PLANS CK'D. EMK	
COVER PLATE DETAILS FOR PARAPETS AT ABUT. EXP. JOINTS		SHEET 16	

▲ MANUFACTURER'S RECOMMENDED JOINT OPENING BASED ON THE TEMPERATURE ON THE DAY OF PLACEMENT PER TEMPERATURE TABLE. THE MODULAR EXPANSION DEVICE SHALL HAVE THE NUMBER OF CELLS AS INDICATED IN ①.

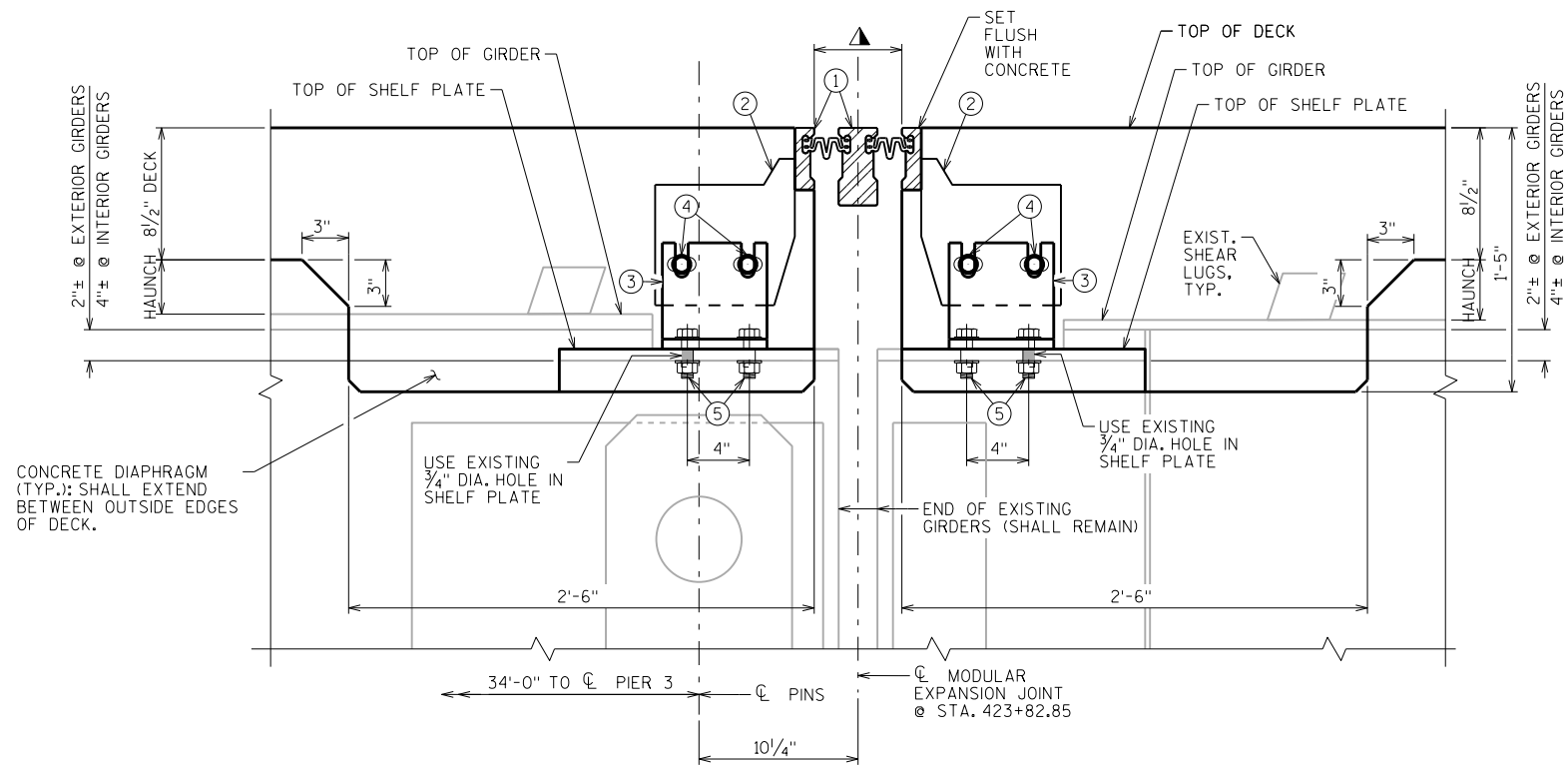
○ SEE NEXT SHEET FOR NUMBERS LEGEND



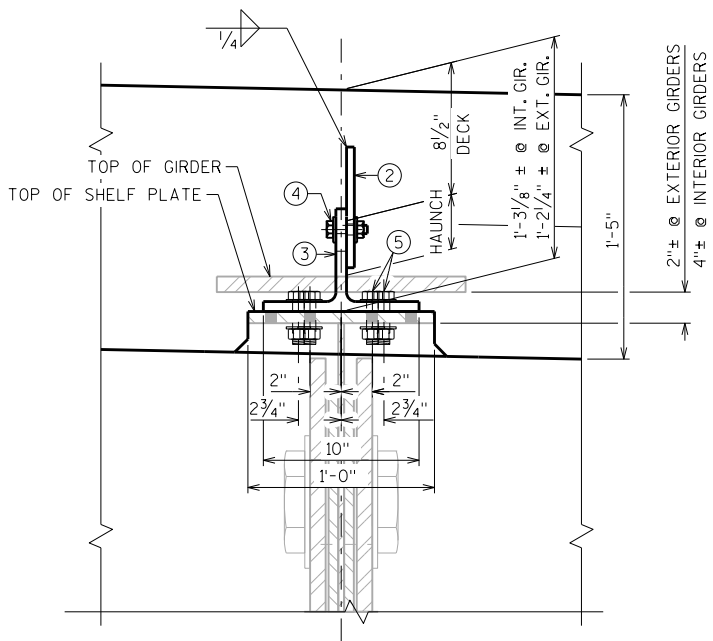
PARTIAL SECTION THRU EXISTING HINGE EXPANSION JOINT AT SPAN 4 LOOKING WEST
(SHOWING REMOVAL AREAS)



END OF EXISTING GIRDER VIEW
(SHOWING REMOVAL AREAS)



PARTIAL SECTION THRU NEW MODULAR EXPANSION JOINT AT SPAN 4 LOOKING WEST



END OF GIRDER VIEW
(SHOWING NEW WORK)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY JPH		PLANS CK'D. EMK	
MODULAR EXPANSION JOINT		SHEET 17	

LEGEND

- ① MODULAR EXPANSION JOINT DEVICE, 2 CELLS.
- ② 1/2" PLATE, ONE PER GIRDER MIN. PROVIDE 2 - 1" X 2" MIN. SLOTTED HOLES PLACED HORIZONTALLY FOR NO. 4.
- ③ WT 6 X 29 (OR EQUIVALENT BUILT UP T-SECTION). ONE PER GIRDER, PROVIDE 2 - 1" X 3" MIN. SLOTTED HOLES PLACED VERTICALLY IN WEB OF WT FOR BOLTS NO. 4.
- ④ 3/4" DIA. HIGH STRENGTH BOLTS WITH NUTS & WASHERS. (A325 GALV.)
- ⑤ 3/4" DIA. HIGH STRENGTH BOLTS WITH NUTS & WASHERS. FIELD DRILL HOLES IN GIRDER SHELF PLATE. (A325 GALV.)
- ⑥ SUPPORT BOX ASSEMBLY FOR SUPPORT BAR (SPA. PER MANUFACTURER). FABRICATE BOX FROM 1/2" PLATES.
- ⑦ 3/8" BULKHEAD PLATE. WELD TO NO. 1, NO. 8 AND NO. 14. WHEN CONDUIT IS PRESENT IN PARAPET OR SIDEWALK, ACCOMMODATE FOR BY PROVIDING OPENING IN NO. 7.
- ⑧ INSIDE PLATE. FABRICATE FROM 3/8" PLATE.
- ⑨ OUTSIDE PLATE. FABRICATE FROM 5/8" PLATE.
- ⑩ 7/8" SQUARE BAR. WELD TO NO. 8 AS SHOWN.
- ⑪ 3/4" DIA. X 4" LONG STUDS. WELD TO NO. 8, NO. 7 & NO. 14 AS SHOWN.
- ⑫ 3/4" DIA. X 2" STAINLESS STEEL FLAT CTSK. SLOTTED HEAD CAP SCREWS WITH ANTI-SEIZE LUBRICANT. RECESS 1/16" BELOW PLATE SURFACE.
- ⑬ 1/2" PLATE WITH 5/8" DIA. LOOP ANCHOR FABRICATED AS SHOWN. SPACED AT MANUFACTURER'S SPEC.
- ⑭ INSIDE PLATE. FABRICATE FROM 5/8" PLATE.
- ⑮ ADIPRENE BUTTON. SEE DETAIL. SET IN OUTSIDE PLATE.

▲ MANUFACTURER'S RECOMMENDED JOINT OPENING BASED ON THE TEMPERATURE ON THE DAY OF PLACEMENT PER TEMPERATURE TABLE. THE MODULAR EXPANSION DEVICE SHALL HAVE THE NUMBER OF CELLS AS INDICATED IN ①.

TEMP. TABLE

TEMPERATURE TABLE FOR SETTING JOINT OPENINGS TO BE DETERMINED BY JOINT MANUFACTURER WITH THE FOLLOWING DESIGN DATA:

1. 0.339 IN. OF MOVEMENT PER 10° F
2. MEDIAN TEMPERATURE OF 45° F
3. TEMP. RANGE IN TABLE FROM (-5°)F TO (+95°)F.

A TABLE OF JOINT OPENINGS BASED ON ABOVE DATA SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

TEMPERATURE TABLE

SHADED UNDERSIDE DECK TEMP. (°F)	JOINT OPENING (NORMAL TO JT.)
95°	1 1/4"
90°	1 1/2"
85°	1 5/8"
80°	1 7/8"
75°	2"
70°	2 1/8"
65°	2 3/8"
60°	2 1/2"
55°	2 5/8"
50°	2 7/8"
45°	3"
40°	3 1/8"
35°	3 3/8"
30°	3 1/2"
25°	3 3/4"
20°	3 7/8"
15°	4"
10°	4 1/4"
5°	4 3/8"
0°	4 1/2"
-5°	4 3/4"

GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLING PERMITTED IN NEOPRENE GLAND.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

NO EXPANSION JOINT PROTRUSIONS PERMITTED ABOVE ROADWAY SURFACE, ON PARAPET ROADWAY FACE OR ABOVE SIDEWALK SURFACE (FOR RAISED SIDEWALK).

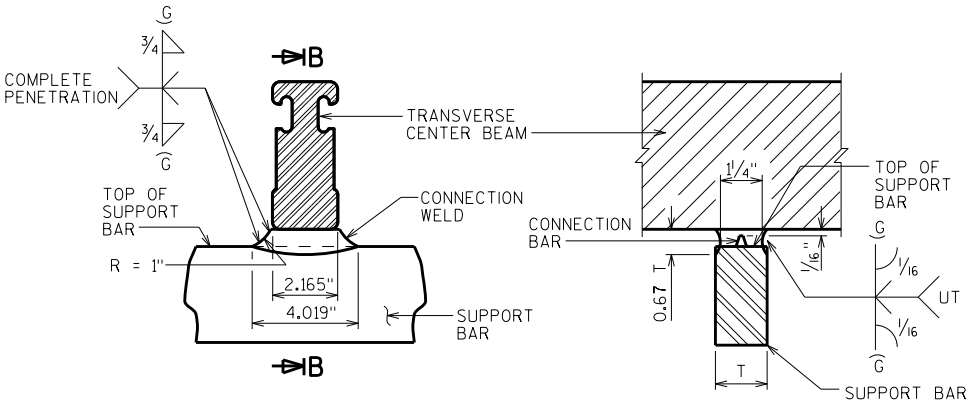
THE EXPANSION JOINT SEALS SHALL BE PLACED, BONDED & SEALED AS RECOMMENDED BY THE MANUFACTURER. FORM WORK SHALL BE PLACED BETWEEN THE SUPPORT BOXES TO PREVENT CONCRETE INTRUSION INTO THE SUPPORT BOX. A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER SHALL BE PRESENT DURING INSTALLATION. PRIOR TO SETTING THE JOINT ASSEMBLY INTO POSITION, THE PROJECT ENGINEER SHALL DETERMINE THE PROPER JOINT OPENING.

EXPANSION JOINT EXTRUSIONS SHALL BE FABRICATED TO CONFORM TO ROADWAY CROWN & GRADE. FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST BARS, PLATES, WT-SECTION, ANCHORAGE LOOP, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERICAL BLAST CLEANING". AFTER BLAST CLEANING, THIS ASSEMBLY SHALL BE HOT DIPPED GALVANIZED. SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

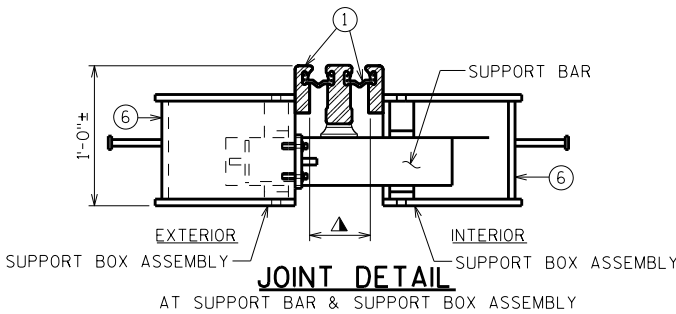
COST OF FURNISHING & PLACING OF THE EXPANSION JOINTS COMPLETE WITH PARAPET PLATES & SIDEWALK PLATES SHALL BE PAID FOR UNDER THE PRICE BID FOR "EXPANSION DEVICE MODULAR B-25-51".

BAR STEEL REINF. IN DECK AND CONC. DIAPHRAGM SHALL BE RE-SPACED AS NECESSARY TO ALLOW PLACEMENT OF JOINT ASSEMBLY. TOP TRANSVERSE BARS, ADJACENT TO MOD. JT., TO BE CUT AND PLACED BETWEEN JT. SUPPORT SYSTEM.



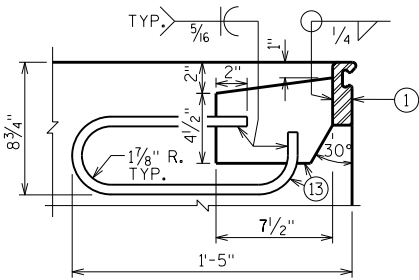
MODULAR EXPANSION JOINT CONNECTION
DETAIL AND WELD SPECIFICATION

SECTION B-B



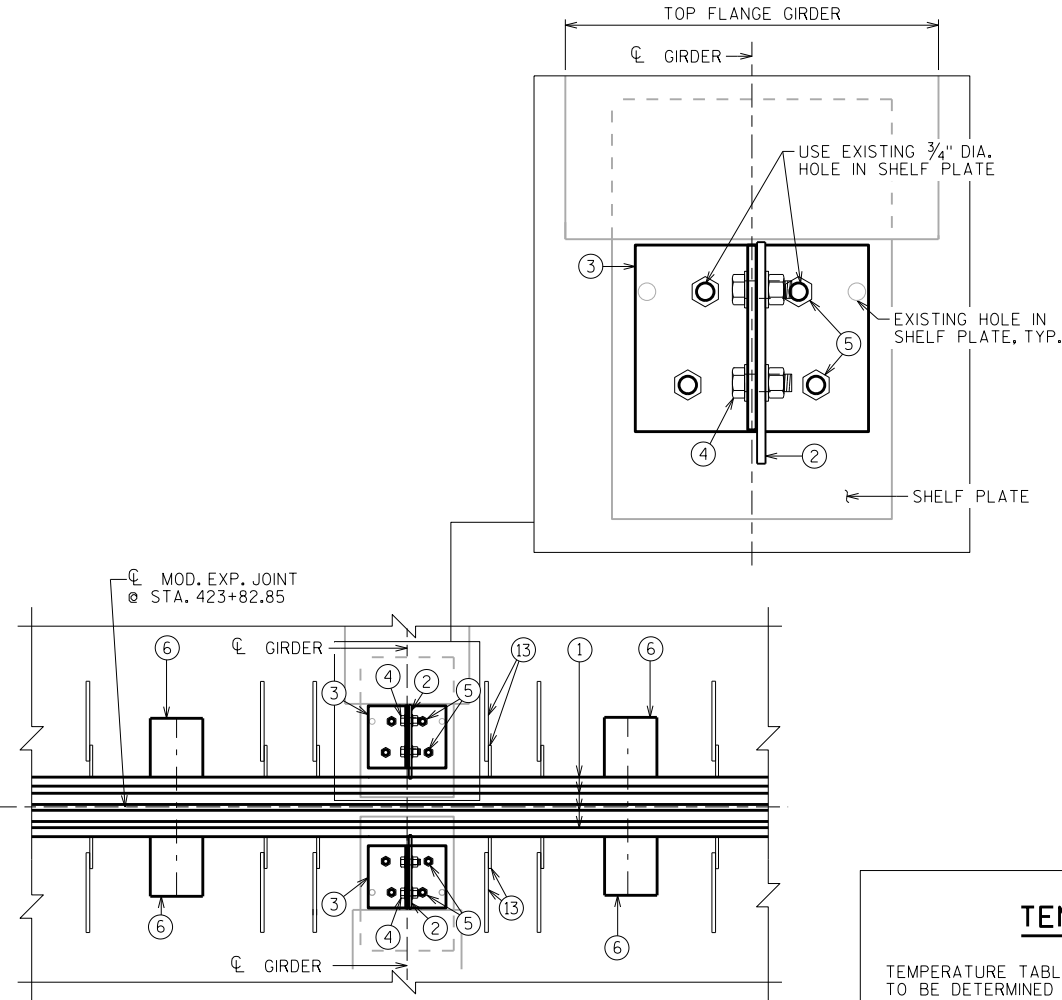
JOINT DETAIL

AT SUPPORT BAR & SUPPORT BOX ASSEMBLY



ANCHORAGE DETAIL

PLACE ADJACENT TO SUPPORT BOXES

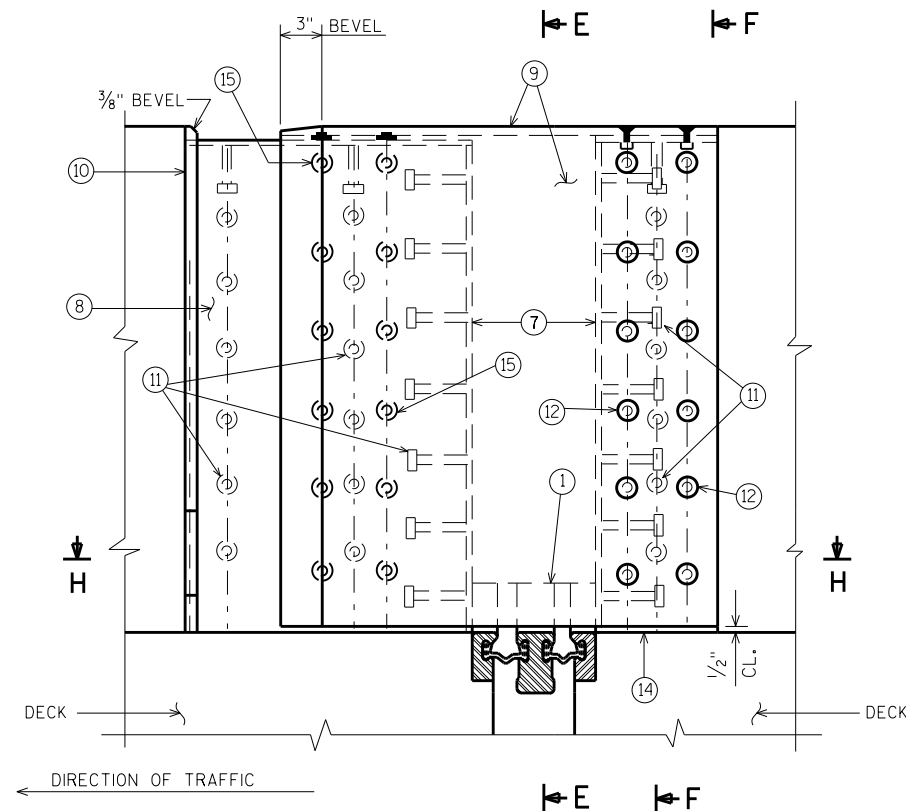


PART PLAN

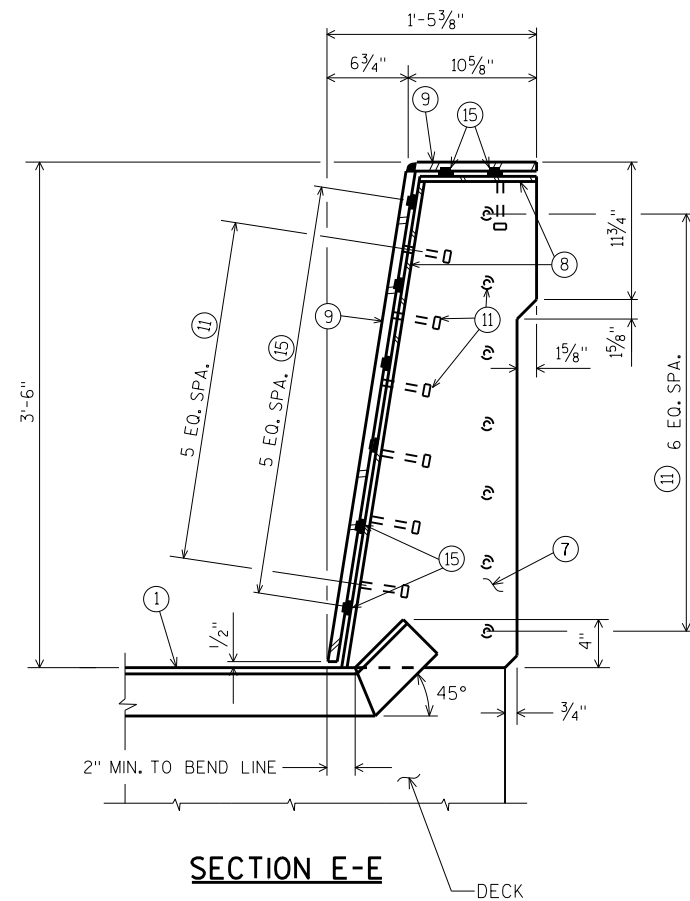
NOTE:
MODULAR EXPANSION DEVICE DESIGN AND DETAILS ARE SPECIFIC TO THE MANUFACTURER SELECTED FROM THOSE LISTED IN THE SPECIAL PROVISIONS.

SUPPORT BOXES ARE SHOWN FOR GENERAL INFORMATION AND LOCATION MAY VARY ACCORDING TO FABRICATOR DESIGN. SPACE SUPPORT BOXES TO MISS GIRDER TOP FLANGES WHEN POSSIBLE, BUT NOT TO EXCEED MAXIMUM SPACING PER SPECIAL PROVISIONS.

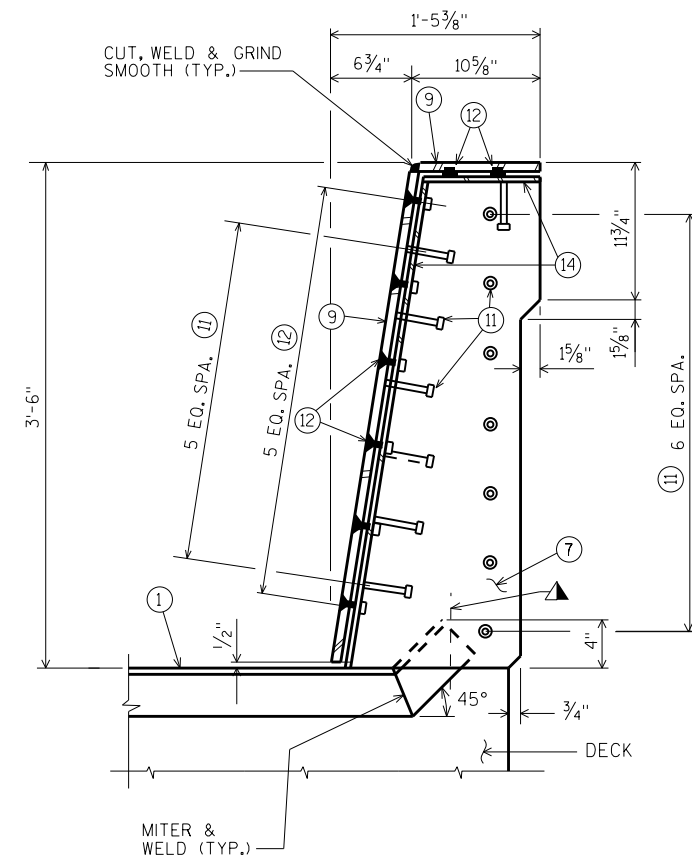
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY JPH		PLANS CK'D. EMK	
MODULAR EXPANSION JOINT DETAILS		SHEET 18	



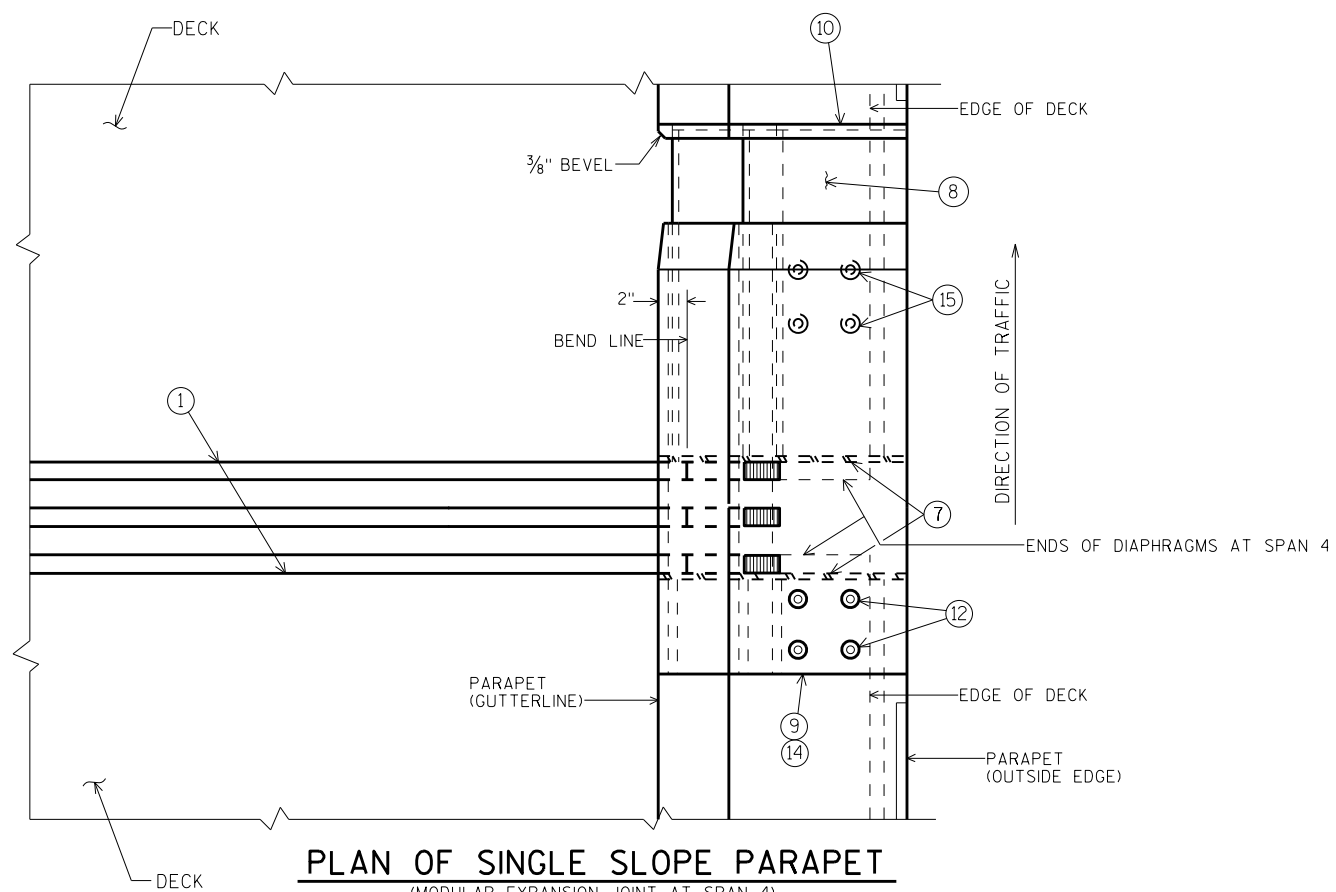
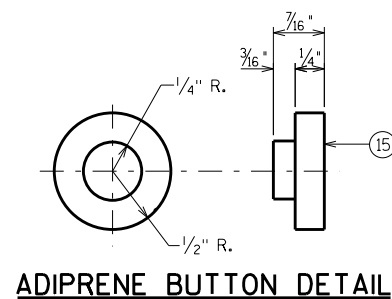
ELEVATION OF SINGLE SLOPE PARAPET



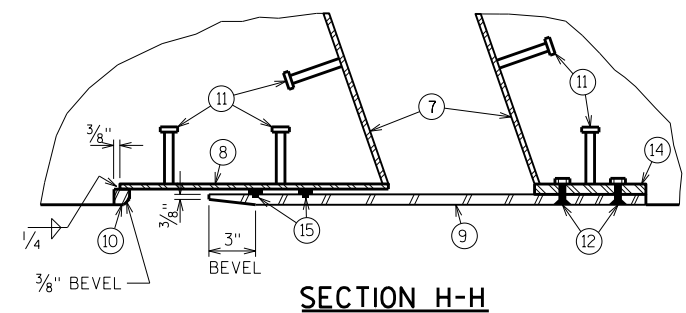
SECTION E-E



SECTION F-F

PLAN OF SINGLE SLOPE PARAPET
(MODULAR EXPANSION JOINT AT SPAN 4)

ADIPRENE BUTTON DETAIL



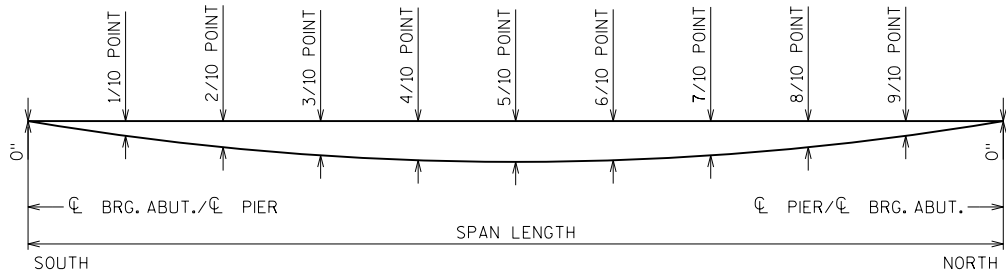
SECTION H-H

LEGEND

- ① MODULAR EXPANSION JOINT DEVICE, 2 CELLS.
- ⑦ $\frac{3}{8}$ " BULKHEAD PLATE. WELD TO NO. 1, NO. 8 AND NO. 14. WHEN CONDUIT IS PRESENT IN PARAPET OR SIDEWALK, ACCOMMODATE FOR BY PROVIDING OPENING IN NO. 7.
- ⑧ INSIDE PLATE. FABRICATE FROM $\frac{3}{8}$ " PLATE.
- ⑨ OUTSIDE PLATE. FABRICATE FROM $\frac{5}{8}$ " PLATE.
- ⑩ $\frac{7}{8}$ " SQUARE BAR. WELD TO NO. 8 AS SHOWN.
- ⑪ $\frac{3}{4}$ " DIA. X 4" LONG STUDS. WELD TO NO. 8, NO. 7 & NO. 14 AS SHOWN.
- ⑫ $\frac{3}{4}$ " DIA. X 2" STAINLESS STEEL FLAT CTSK. SLOTTED HEAD CAP SCREWS WITH ANTI-SEIZE LUBRICANT. RECESS $\frac{1}{16}$ " BELOW PLATE SURFACE.
- ⑭ INSIDE PLATE. FABRICATE FROM $\frac{5}{8}$ " PLATE.
- ⑮ ADIPRENE BUTTON. SEE DETAIL. SET IN OUTSIDE PLATE.

▲ MITER EXTRUSION ENDS AS REQ'D TO PROVIDE CLEARANCE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY JPH		PLANS CK'D. EMK	
COVER PLATE DETAILS FOR PARAPETS AT MODULAR EXP. JOINT		SHEET 19	

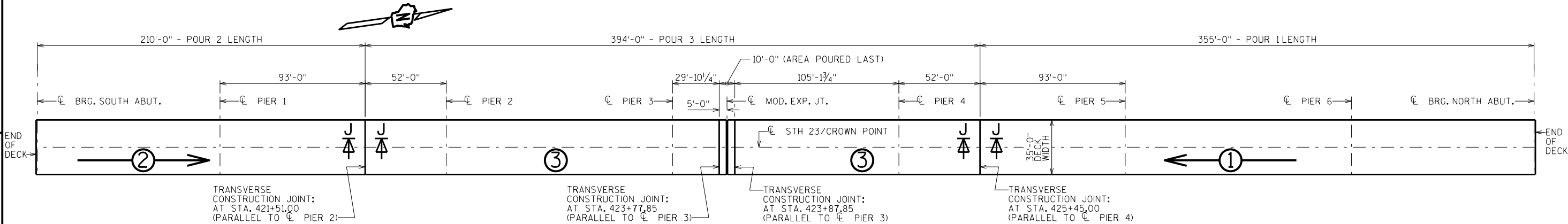


DEADLOAD DEFLECTION DIAGRAM

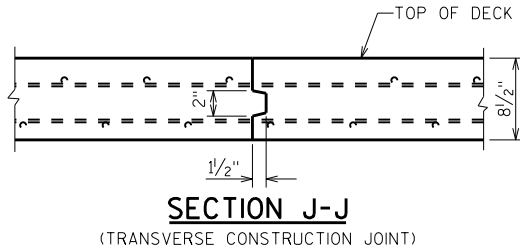
EXTERIOR GIRDERS											
SPAN	CL BRG. ABUT./PIER	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL PIER/BRG. ABUT.
1	0.00	0.73	1.33	1.73	1.87	1.76	1.44	0.98	0.52	0.16	0.00
2	0.00	0.13	0.54	1.06	1.48	1.65	1.50	1.09	0.57	0.16	0.00
3	0.00	0.18	0.61	1.14	1.55	1.72	1.58	1.18	0.64	0.19	0.00
4	0.00	0.19	0.65	1.25	1.73	1.91	1.74	1.27	0.69	0.21	0.00
5	0.00	0.16	0.61	1.16	1.60	1.77	1.62	1.19	0.64	0.19	0.00
6	0.00	0.17	0.61	1.15	1.57	1.72	1.54	1.10	0.57	0.14	0.00
7	0.00	0.15	0.50	0.96	1.41	1.74	1.85	1.71	1.32	0.72	0.00

INTERIOR GIRDERS											
SPAN	CL BRG. ABUT./PIER	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL PIER/BRG. ABUT.
1	0.00	0.70	1.28	1.66	1.80	1.69	1.38	0.94	0.50	0.16	0.00
2	0.00	0.13	0.52	1.02	1.43	1.59	1.44	1.05	0.55	0.15	0.00
3	0.00	0.17	0.59	1.09	1.49	1.65	1.52	1.13	0.62	0.18	0.00
4	0.00	0.18	0.63	1.20	1.67	1.84	1.67	1.23	0.66	0.20	0.00
5	0.00	0.16	0.58	1.11	1.54	1.70	1.56	1.14	0.62	0.18	0.00
6	0.00	0.17	0.59	1.10	1.51	1.65	1.49	1.06	0.55	0.14	0.00
7	0.00	0.15	0.48	0.92	1.36	1.67	1.78	1.64	1.27	0.69	0.00

SHOWING CONCRETE ONLY DEADLOAD DEFLECTION. DEFLECTIONS ARE GIVEN IN INCHES. NEGATIVE VALUE INDICATES UPWARD DEFLECTION. 1/10 POINTS ARE ALONG CL OF THE GIRDER.



PLAN VIEW OF DECK POURING SEQUENCE
(SHOWING PLACEMENT OF TRANSVERSE CONSTRUCTION JOINTS)



INDICATES POUR NUMBER AND DIRECTION OF POUR

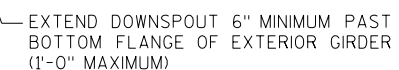
NOTES

- THE RATE OF PLACING CONCRETE SHALL EQUAL OR EXCEED 1/2 SPAN LENGTH PER HOUR BUT NEED NOT EXCEED 100 CU. YDS. PER HOUR.
- THE NEXT DECK POUR CAN BE MADE NO LESS THAN 72 HOURS AFTER THE PREVIOUS POUR.
- THE CONTRACTOR SHALL POUR THE ENTIRE DECK PER THE DECK POUR SEQUENCE. THE CONTRACTOR MAY SUBMIT AN ALTERNATE POURING SEQUENCE SUBJECT TO THE APPROVAL OF THE STRUCTURES DESIGN SECTION.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY JPH		PLANS CK'D. EMK	
DEADLOAD DEFLECTION DIAGRAM & DECK POURING SEQUENCE		SHEET 20	

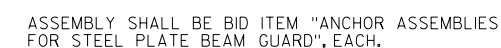
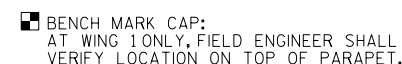
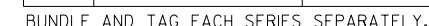
[illegible]

BRACKET DETAIL



ALL DOWNSPOUT PIPE SHALL MATCH THE COLOR OF THE STEEL GIRDERS (FEDERAL COLOR NUMBER 30111). USE RTP PIPE AND PIPE FITTINGS EITHER PIGMENTED THROUGHOUT OR THAT HAVE A RESIN-RICH PIGMENTED EXTERIOR COAT SPECIFICALLY DESIGNED FOR OVERCOATING FIBERGLASS AS THE RTP MANUFACTURER RECOMMENDS.

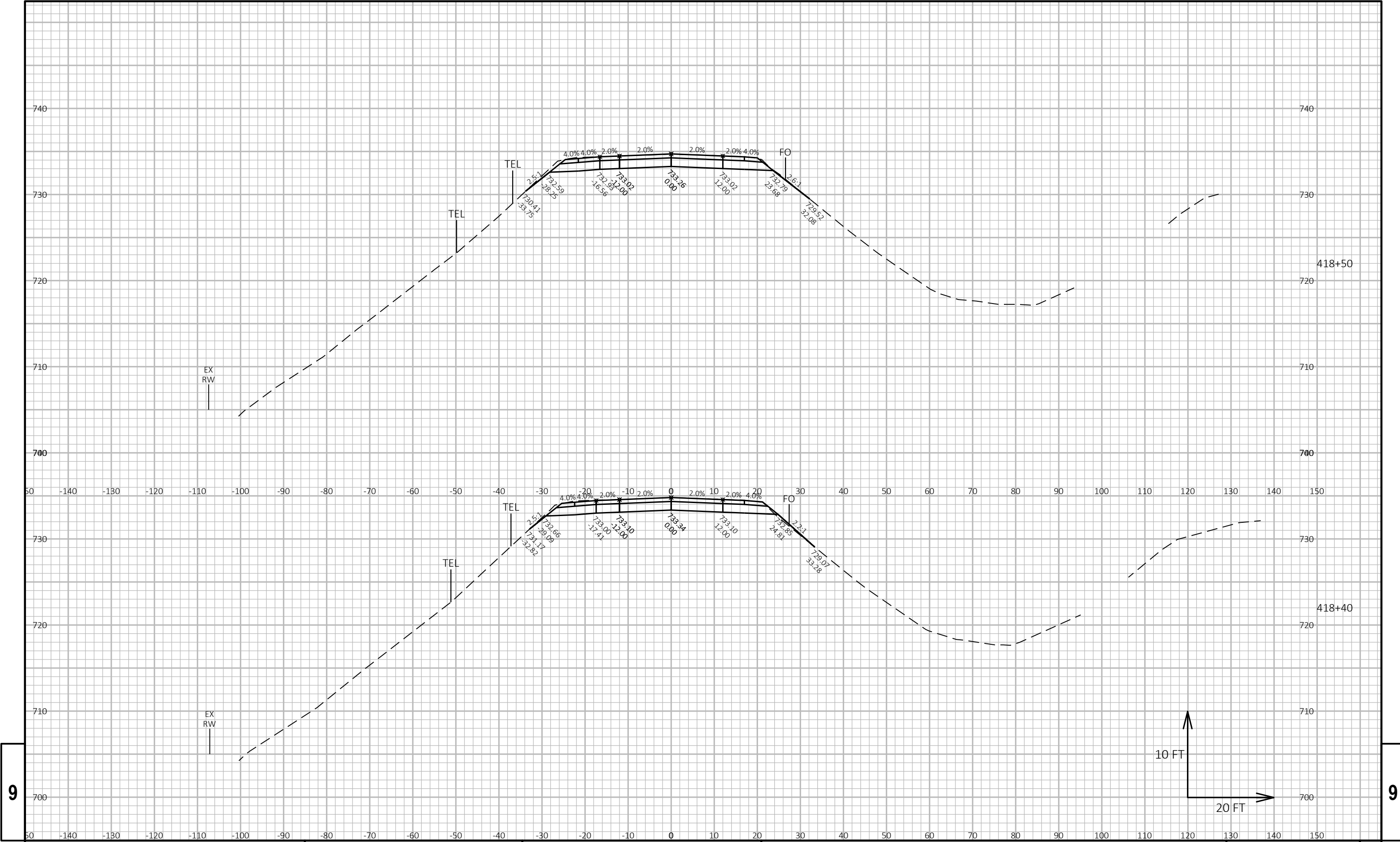
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-25-51			
DRAWN BY		JPH	PLANS CK'D. EMK
FLOOR DRAIN TYPE 'GC'		SHEET 21	

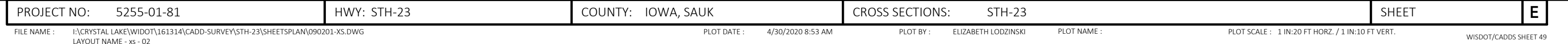
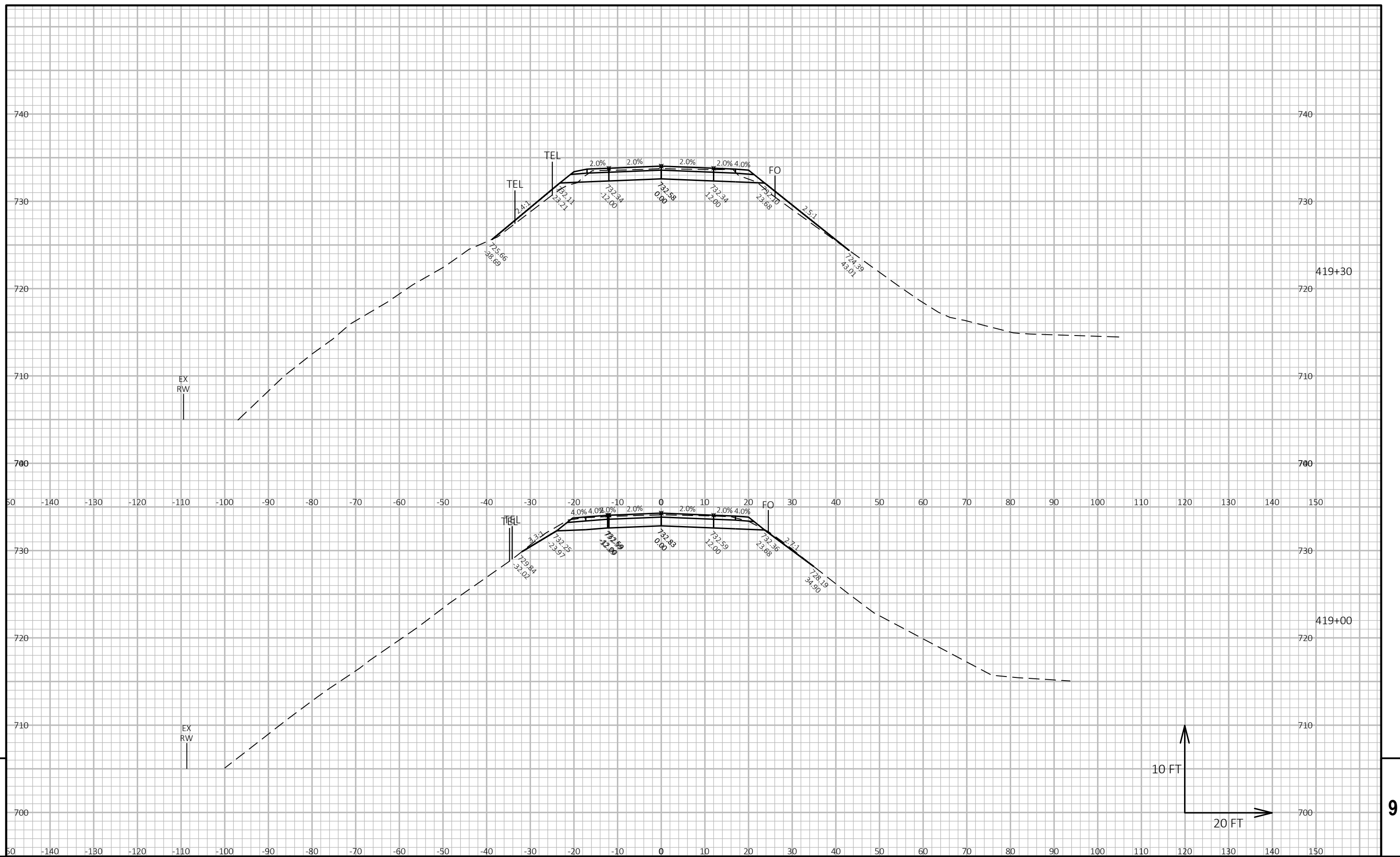


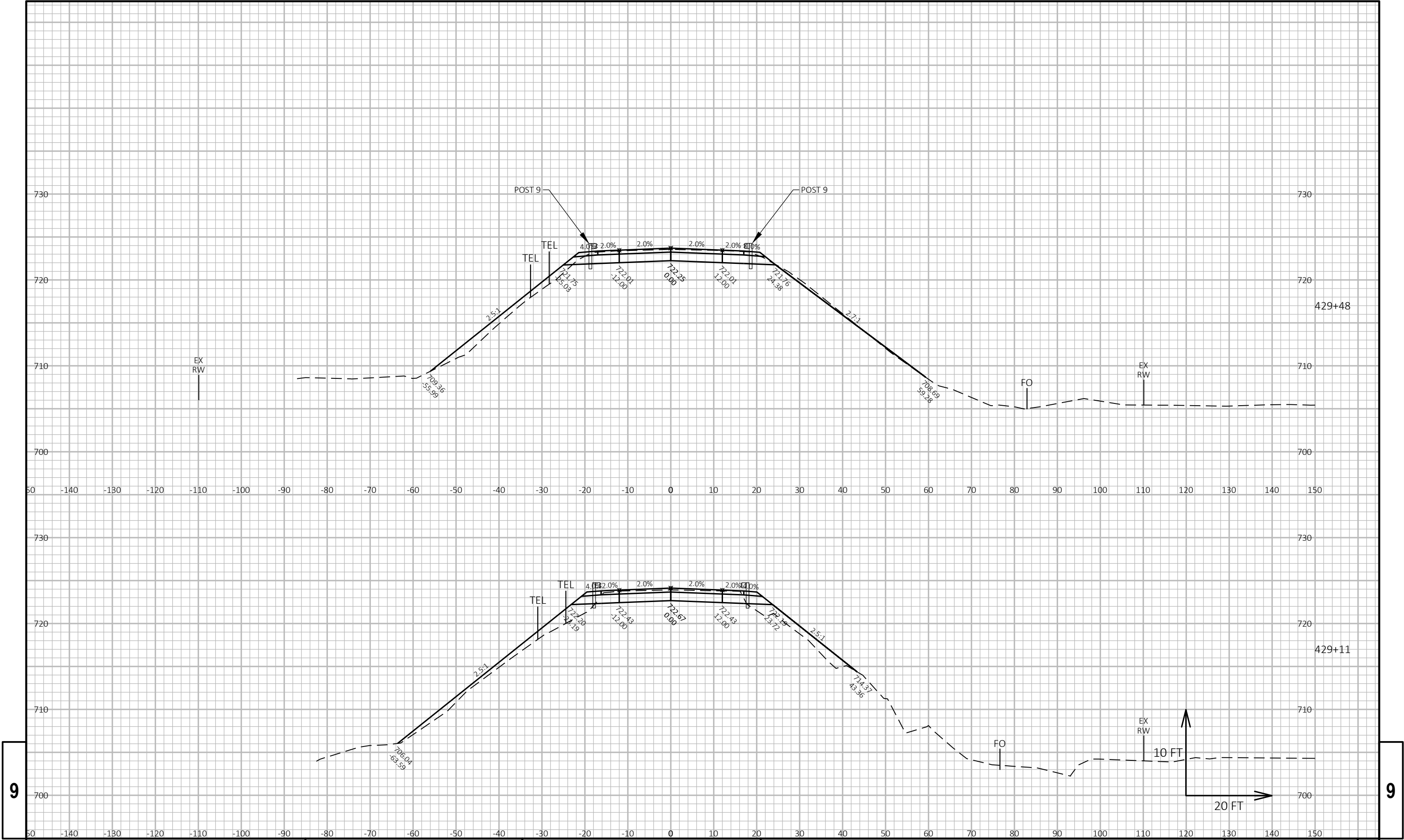
WING 2&4 CORNERS SHOWN, WING 1&3 CORNERS SIMILAR

Station	Real Station	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
			Cut	Salvaged / Unusable Pavement Material	Fill	Cut	Salvaged / Unusable Pavement Material	Fill	Cut 1.00 Note 1	Expanded Fill 1.25	
418+40.10	41840.10	0.00	74.57	0.00	1.43	0.00	0.00	0.00	0.00	0.00	0.00
418+43.75	41843.75	3.65	74.14	15.08	0.63	10.06	2.04	0.14	10.06	0.17	7.85
418+50.00	41850.00	6.25	73.47	15.08	0.00	17.08	3.49	0.07	27.15	0.27	21.35
418+56.25	41856.25	6.25	42.24	15.08	0.00	13.39	3.49	0.00	40.54	0.27	31.25
418+62.50	41862.50	6.25	71.30	15.08	0.00	13.14	3.49	0.00	53.68	0.27	40.90
418+68.75	41868.75	6.25	90.95	15.08	0.00	18.78	3.49	0.00	72.46	0.27	56.19
418+75.00	41875.00	6.25	68.57	15.08	0.00	18.46	3.49	0.00	90.92	0.27	71.16
418+81.25	41881.25	6.25	66.60	15.08	0.00	15.64	3.49	0.00	106.57	0.27	83.31
418+87.50	41887.50	6.25	65.03	15.08	0.00	15.23	3.49	0.00	121.80	0.27	95.06
418+93.75	41893.75	6.25	63.31	15.08	0.00	14.85	3.49	0.00	136.66	0.27	106.42
419+00.00	41900.00	6.25	61.23	15.08	0.00	14.41	3.49	0.00	151.07	0.27	117.34
419+06.25	41906.25	6.25	57.18	15.08	0.00	13.70	3.49	0.00	164.78	0.27	127.55
419+12.50	41912.50	6.25	54.55	15.08	1.02	12.93	3.49	0.12	177.71	0.41	136.85
419+18.75	41918.75	6.25	52.13	15.08	3.01	12.35	3.49	0.47	190.05	1.00	145.12
419+25.00	41925.00	6.25	49.93	15.08	7.50	11.81	3.49	1.22	201.87	2.52	151.92
419+29.90	41929.90	4.90	44.90	15.08	16.16	8.60	2.74	2.15	210.47	5.20	155.10
						210	50	4			

Station	Real Station	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)		Mass Ordinate	
			Cut	Salvaged / Unusable Pavement Material	Fill	Cut	Salvaged / Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25			
											Note 1		Note 2
429+10.82	42910.82		43.01	13.92	59.57	0.00	0.00		0.00	0.00	0.00		
429+12.50	42912.50	1.68	44.83	13.92	39.24	2.74	0.87	▼	3.08	2.74	3.85	▼	-1.98
429+18.75	42918.75	6.25	53.34	13.92	3.56	11.36	3.22	▼	4.95	14.10	10.04	▼	-0.03
429+25.00	42925.00	6.25	56.80	13.92	2.23	12.75	3.22	▼	0.67	26.85	10.88	▼	8.66
429+31.25	42931.25	6.25	58.37	13.92	11.47	13.33	3.22	▼	1.59	40.18	12.86	▼	16.79
429+37.50	42937.50	6.25	58.62	13.92	28.34	13.54	3.22	▼	4.61	53.72	18.62	▼	21.35
429+43.75	42943.75	6.25	58.40	13.92	41.33	13.54	3.22	▼	8.06	67.26	28.70	▼	21.59
429+50.00	42950.00	6.25	58.69	13.92	66.81	13.55	3.22	▼	12.52	80.81	44.34	▼	16.27
429+56.25	42956.25	6.25	58.97	13.92	95.34	13.62	3.22	▼	18.77	94.43	67.80	▼	3.21
429+62.50	42962.50	6.25	60.86	13.92	111.34	13.87	3.22	▼	23.92	108.30	97.70	▼	-16.04
429+68.75	42968.75	6.25	62.03	13.92	114.43	14.22	3.22	▼	26.13	122.52	130.37	▼	-37.70
429+75.00	42975.00	6.25	62.27	13.92	115.85	14.39	3.22	▼	26.65	136.91	163.68	▼	-59.86
429+81.25	42981.25	6.25	62.24	13.92	119.06	14.41	3.22	▼	27.19	151.32	197.67	▼	-82.65
429+87.50	42987.50	6.25	63.15	13.92	122.36	14.51	3.22	▼	27.94	165.83	232.60	▼	-106.29
429+93.75	42993.75	6.25	65.39	13.92	123.19	14.88	3.22	▼	28.42	180.71	268.12	▼	-130.16
430+00.00	43000.00	6.25	67.28	13.92	99.09	15.36	3.22	▼	25.73	196.07	300.28	▼	-150.18
430+06.25	43006.25	6.25	22.19	13.92	74.31	10.36	3.22	▼	20.07	206.42	325.37	▼	-168.14
430+12.50	43012.50	6.25	21.69	13.92	58.04	5.08	3.22	▼	15.32	211.50	344.52	▼	-185.43
430+18.75	43018.75	6.25	19.35	13.92	51.78	4.75	3.22	▼	12.71	216.25	360.40	▼	-199.79
430+25.00	43025.00	6.25	18.49	13.92	44.90	4.38	3.22	▼	11.19	220.63	374.39	▼	-212.61
430+31.25	43031.25	6.25	19.00	13.92	38.13	4.34	3.22	▼	9.61	224.97	386.40	▼	-223.51
430+37.50	43037.50	6.25	18.11	13.92	31.46	4.30	3.22	▼	8.05	229.26	396.47	▼	-232.50
430+43.75	43043.75	6.25	17.94	13.92	24.60	4.17	3.22	▼	6.49	233.44	404.58	▼	-239.66
430+50.00	43050.00	6.25	19.32	13.92	1.57	4.31	3.22	▼	3.03	237.75	408.37	▼	-242.36
430+56.25	43056.25	6.25	20.97	13.92	0.13	4.66	3.22	▼	0.20	242.41	408.61	▼	-241.16
430+62.50	43062.50	6.25	20.84	13.92	0.00	4.84	3.22	▼	0.02	247.25	408.63	▼	-239.56
430+68.75	43068.75	6.25	21.02	13.92	0.00	4.84	3.22	▼	0.00	252.10	408.63	▼	-237.94
430+75.00	43075.00	6.25	21.21	13.92	0.00	4.89	3.22	▼	0.00	256.98	408.63	▼	-236.27
430+77.45	43077.45	2.45	21.26	13.92	0.00	1.93	1.26	▼	0.00	258.91	408.63	▼	-235.61
						259	86		327				



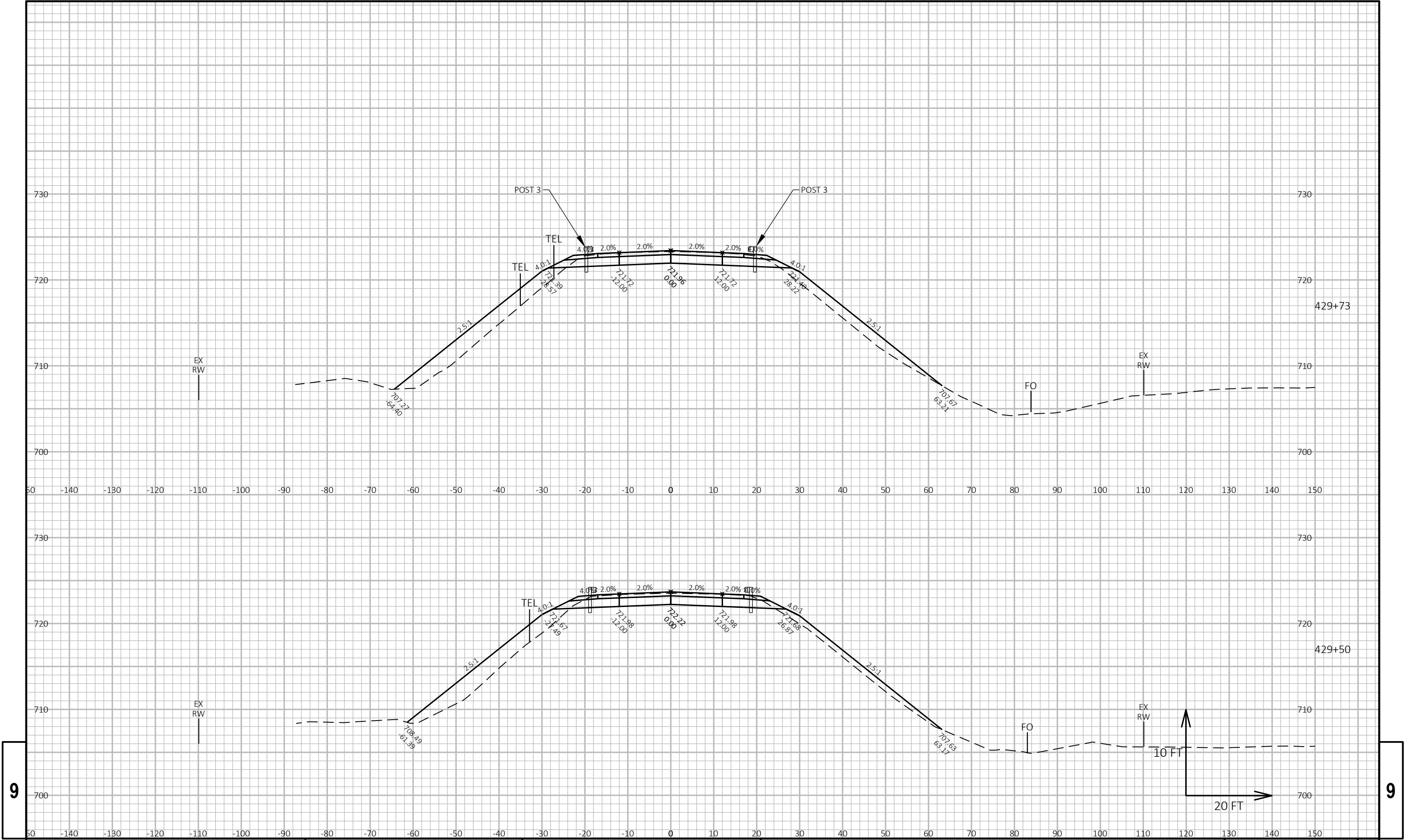




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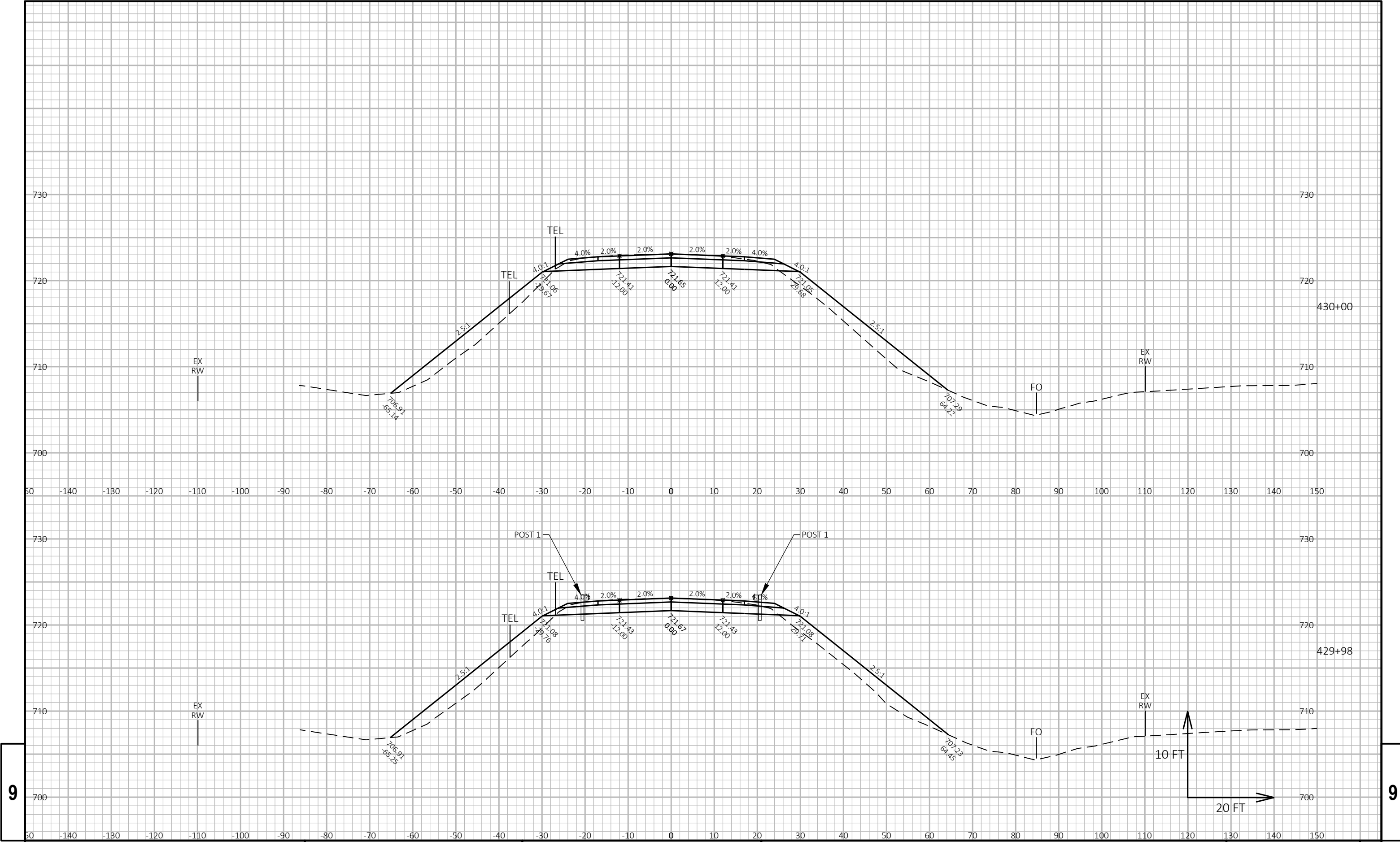
PROJECT NO: 5255-01-81	HWY: STH-23	COUNTY: IOWA, SAUK	CROSS SECTIONS: STH-23	SHEET E
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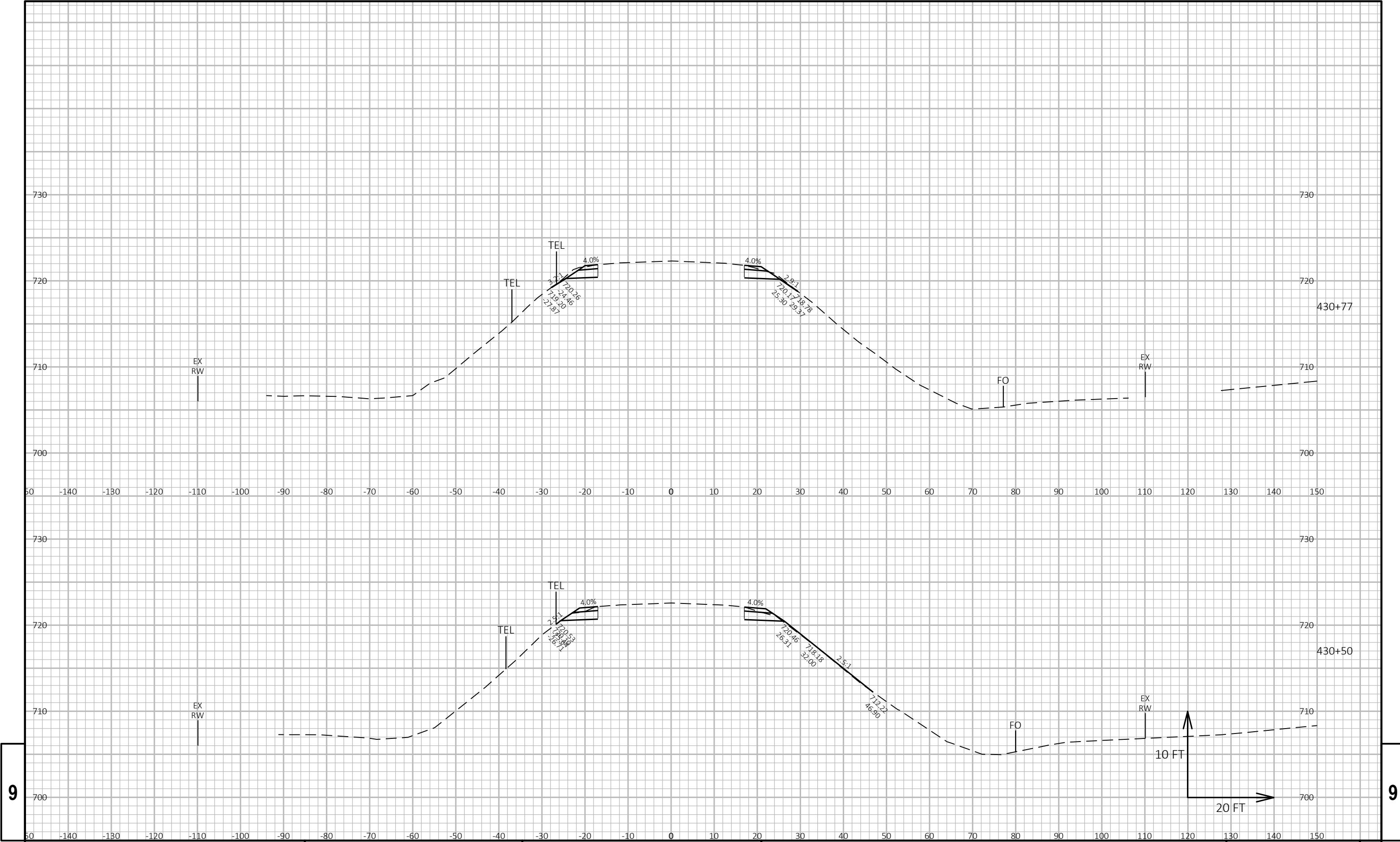
PROJECT NO: 5255-01-81	HWY: STH-23	COUNTY: IOWA, SAUK	CROSS SECTIONS: STH-23	SHEET	E
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PROJECT NO: 5255-01-81	HWY: STH-23	COUNTY: IOWA, SAUK	CROSS SECTIONS: STH-23	SHEET E
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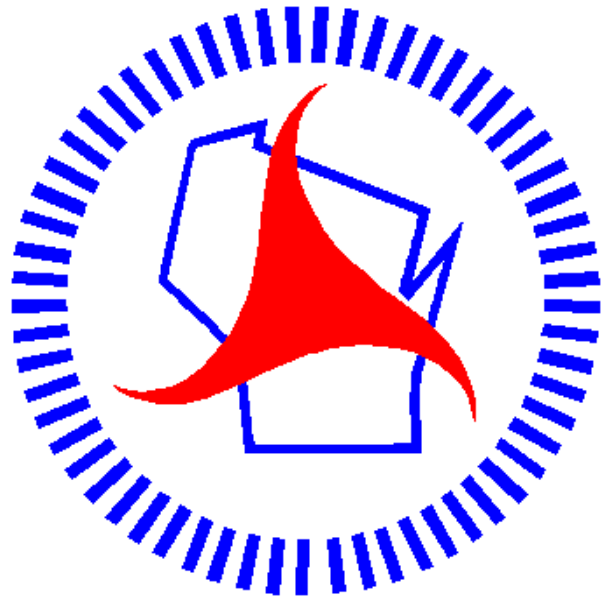


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PROJECT NO: 5255-01-81	HWY: STH-23	COUNTY: IOWA, SAUK	CROSS SECTIONS: STH-23	SHEET	E
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Notes



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