

GENERAL NOTES

- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- THE QUANTITY OF THE ITEMS FOR EROSION PROTECTION INCLUDES AN UNDISTRIBUTED AMOUNT FOR PROTECTION, CONTROL AND ABATEMENT OF WATER POLLUTION RESULTING FROM SOIL EROSION. THE DISTRIBUTION AND LOCATION OF THESE MATERIALS ARE TO BE DETERMINED BY THE ENGINEER.
- NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL BY THE ENGINEER.

UTILITY CONTACTS

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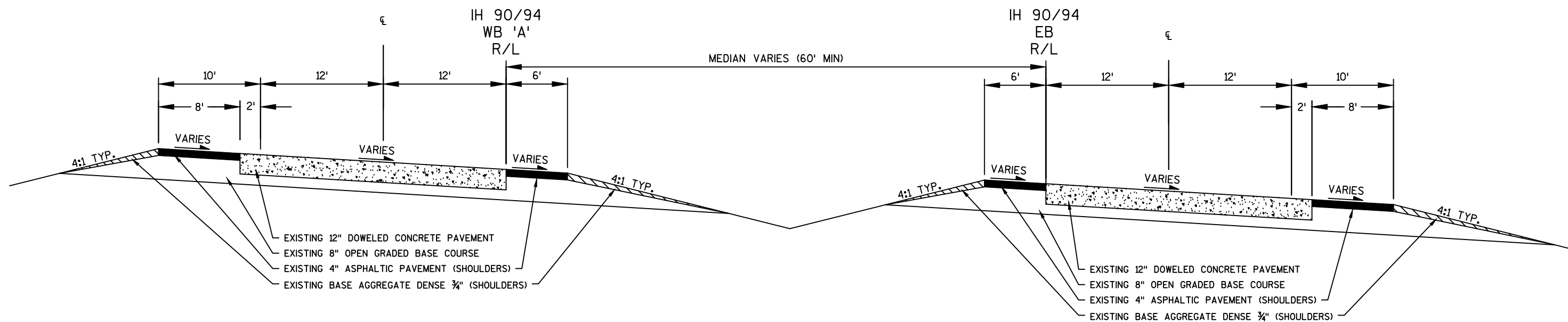
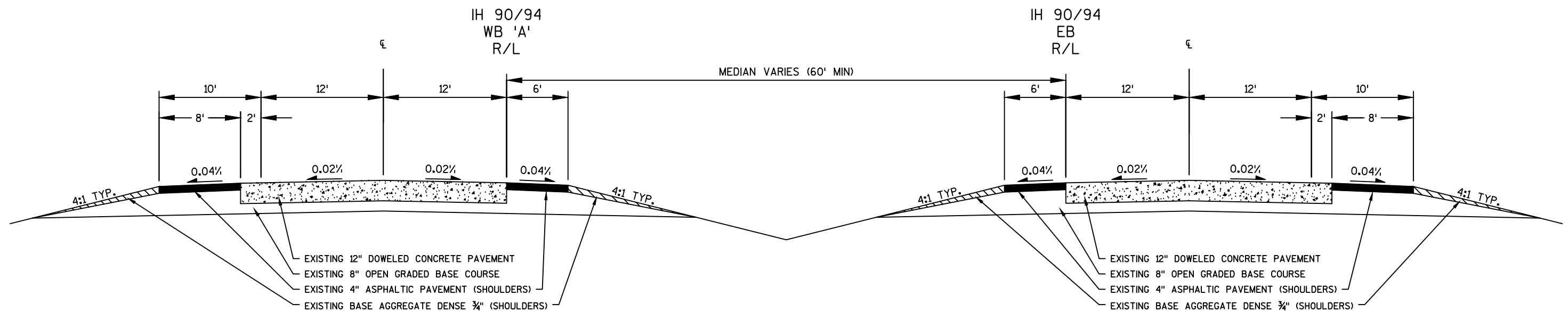
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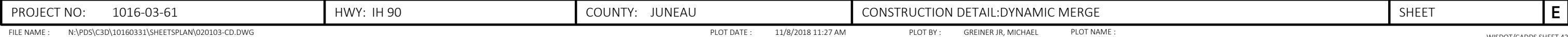
STANDARD ABBREVIATIONS

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



GENERAL NOTES

- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A Crossover MANEUVER.
- CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.
- 1 PLACE PCMS #1 ONE MILE BEYOND ESTIMATED MAXIMUM QUEUE LENGTH. PLACE FLASHING BEACON SIGNS EVERY ONE MILE BETWEEN THE W20 - 1F AND PCMS #1 BEYOND ESTIMATED QUEUE.
 - 2 PLACE FLASHING BEACON SIGNS EVERY ONE MILE BETWEEN PCMS #1 AND FBS #1.
 - 3 FOR THREE LANE CONFIGURATION, PLACE FBS ON BOTH SIDES OF ROADWAY. CHANGE PCMS #1 FRAME 2 MESSAGE TO "USE ALL LANES".
 - 4 5 DRUMS SPACED @ 10' INTERVALS AS NEEDED.



Estimate Of Quantities

		1016-03-61	1016-03-63			
Line	Item	Item Description	Unit	Total	Qty	Qty
0002	213.0100	Finishing Roadway (project) 01. 1016-03-61	EACH	1.000	1.000	
0004	416.0610	Drilled Tie Bars	EACH	54.000		54.000
0006	416.1725	Concrete Pavement Replacement SHES	SY	250.000		250.000
0008	502.3100	Expansion Device (structure) 01. B-29-0049	LS	1.000	1.000	
0010	502.3200	Protective Surface Treatment	SY	51.000	51.000	
0012	502.3210	Pigmented Surface Sealer	SY	7.000	7.000	
0014	502.4205	Adhesive Anchors No. 5 Bar	EACH	84.000	84.000	
0016	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	3,135.000	3,135.000	
0018	506.2610	Bearing Pads Elastomeric Laminated	EACH	9.000	9.000	
0020	506.7060.S	Bridge Jacking (structure) 01. B-29-46	LS	1.000	1.000	
0022	506.7060.S	Bridge Jacking (structure) 02. B-29-47	LS	1.000	1.000	
0024	509.0301	Preparation Decks Type 1	SY	2.000	2.000	
0026	509.0302	Preparation Decks Type 2	SY	2.000	2.000	
0028	509.0310.S	Sawing Pavement Deck Preparation Areas	LF	20.000	20.000	
0030	509.1000	Joint Repair	SY	38.000	38.000	
0032	509.1500	Concrete Surface Repair	SF	142.000	142.000	
0034	509.2100.S	Concrete Masonry Deck Repair	CY	15.000	15.000	
0036	509.5100.S	Polymer Overlay	SY	1,723.000	1,723.000	
0038	603.8000	Concrete Barrier Temporary Precast Delivered	LF	250.000	250.000	
0040	603.8125	Concrete Barrier Temporary Precast Installed	LF	500.000	500.000	
0042	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1016-03-61	EACH	1.000	1.000	
0044	619.1000	Mobilization	EACH	1.000	0.900	0.100
0046	628.1504	Silt Fence	LF	500.000	500.000	
0048	628.1520	Silt Fence Maintenance	LF	500.000	500.000	
0050	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000	
0052	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000	
0054	628.6005	Turbidity Barriers	SY	800.000	800.000	
0056	642.5001	Field Office Type B	EACH	1.000	1.000	
0058	643.0300	Traffic Control Drums	DAY	1,892.000	1,716.000	176.000
0060	643.0420	Traffic Control Barricades Type III	DAY	86.000	78.000	8.000
0062	643.0705	Traffic Control Warning Lights Type A	DAY	86.000	78.000	8.000
0064	643.0715	Traffic Control Warning Lights Type C	DAY	430.000	390.000	40.000
0066	643.0800	Traffic Control Arrow Boards	DAY	86.000	78.000	8.000
0068	643.0900	Traffic Control Signs	DAY	602.000	546.000	56.000
0070	643.0920	Traffic Control Covering Signs Type II	EACH	8.000	8.000	
0072	643.1050	Traffic Control Signs PCMS	DAY	70.000	62.000	8.000
0074	643.1100.S	Dynamic Late Merge System	DAY	19.000	19.000	
0076	643.4100.S	Traffic Control Interim Lane Closure	EACH	6.000	6.000	
0078	643.5000	Traffic Control	EACH	1.000	1.000	

Estimate Of Quantities

		1016-03-61		1016-03-63	
Line	Item	Item Description	Unit	Total	Qty
0080	646.1020	Marking Line Epoxy 4-Inch	LF	1,000.000	1,000.000
0082	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	2,880.000	2,880.000
0084	649.0760	Temporary Marking Raised Pavement Marker Type I	EACH	60.000	60.000
0086	690.0250	Sawing Concrete	LF	392.000	392.000
0088	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0090	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	200.000	200.000
0092	SPV.0035	Special 01. Rapid Set Deck Repair	CY	1.000	1.000
0094	SPV.0060	Special 01. Pile Rehabilitation	EACH	44.000	44.000
0096	SPV.0060	Special 02. Cleaning and Painting Bearings	EACH	81.000	81.000
0098	SPV.0060	Special 03. Embedded Galvanic Anodes	EACH	65.000	65.000
0100	SPV.0060	Special 04. PPC Beam End Block Repair	EACH	9.000	9.000
0102	SPV.0060	Special 05. Clean and Coat Concrete Beam Ends	EACH	9.000	9.000
0104	SPV.0060	Special 06. Welding Steel Expansion Joint Extrusion	EACH	1.000	1.000
0106	SPV.0180	Special 01. Abutment Seat Cleaning and Sealing	SY	10.000	10.000

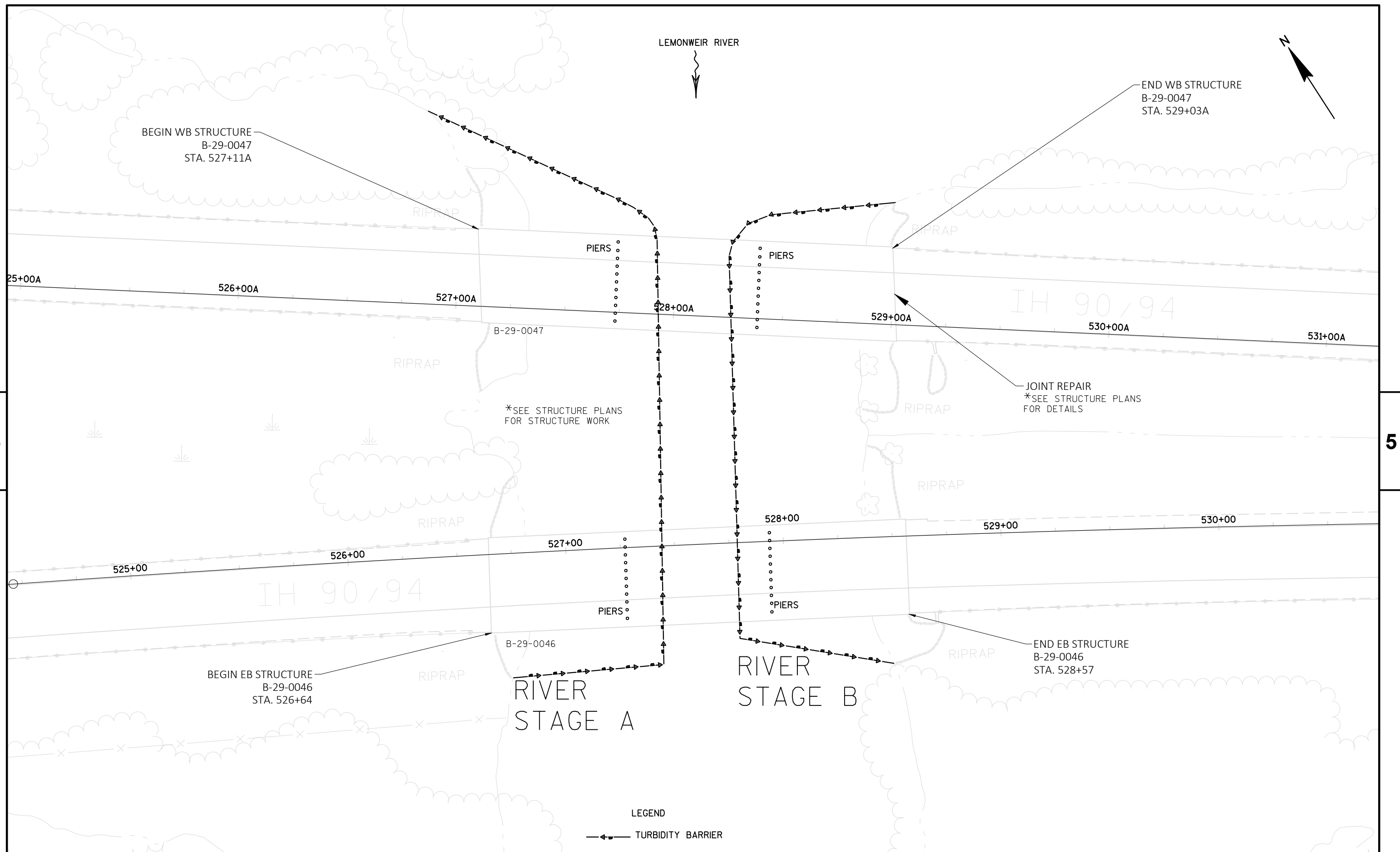
PAVEMENT MARKING										EROSION CONTROL ITEMS																
				MARKING LINE EPOXY 4-INCH 646.1020	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH 649.0150	TEMPORARY MARKING RAISED PAVEMENT MARKER TYPE I 649.0760				SILT FENCE 628.1504 LF	SILT FENCE MAINTENANCE 628.1520 LF	MOBILIZATIONS EROSION CONTROL 628.1905 EACH	MOBILIZATIONS EROSION CONTROL 628.1910 EACH	TURBIDITY BARRIERS 628.6005 SY	REMARKS											
STATION	TO	STATION	LOCATION	LF	LF	EACH	REMARKS			STATION	TO	STATION	LOCATION	LF	LF	EACH	EACH	SY	REMARKS							
526+64	-	528+57	INSIDE CLOSURE	-	720	15	ROAD STAGE 1			526+64	-	529+03A	UNDISTRIBUTED	500	500	1	1									
527+11A	-	529+03A	INSIDE CLOSURE	-	720	15				526+64	-	527+70A	NORTH/WEST PIERS					400	RIVER STAGE A							
526+64	-	528+57	OUTSIDE CLOSURE	-	720	15	ROAD STAGE 2/3			527+80	-	529+03A	SOUTH/EAST PIERS					400	RIVER STAGE B							
527+11A	-	529+03A	OUTSIDE CLOSURE	-	720	15				TOTAL 0010					500	500	1	1	800							
										TRAFFIC CONTROL																
526+64	-	528+57	OUTSIDE LINE	200	-	-	(WHITE)								Traffic Control Interim											
527+11A	-	529+03A	OUTSIDE LINE	200	-	-	(WHITE)								Traffic Control Lane Closure											
526+64	-	528+57	CENTER SKIPS	100	-	-	(WHITE)								Traffic Control 643.5000											
527+11A	-	529+03A	CENTER SKIPS	100	-	-	(WHITE)								643.4100.s											
526+64	-	528+57	INSIDE LINE	200	-	-	(YELLOW)																			
527+11A	-	529+03A	INSIDE LINE	200	-	-	(YELLOW)																			
TOTAL 0010				1000	2880	60									Project 1											
															6					PHASE TWO: WEEKLY SETUP/TEARDOWN						
										TOTAL 0010					1	6										
										TRAFFIC CONTROL SUMMARY																
				SERVICE	TRAFFIC CONTROL DRUMS 643.0300	TRAFFIC BARRICAD ES TYPE III 643.0420	TRAFFIC CONTROL WARNING LIGHTS TYPE A 643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE C 643.0715	TRAFFIC CONTROL ARROW BOARDS 643.0800	TRAFFIC CONTROL SIGNS 643.0900	TRAFFIC CONTROL SIGNS PCMS 643.1050	DYNAMIC LATE MERGE SYSTEM 643.1100.s	REMARKS													
527+11A	-	529+03A	OUTSIDE LANE	10	44	440	2	20	2	20	10	100	2	20	14	140	2	20	10	PHASE ONE:						
527+11A	-	529+03A	INSIDE LANE	9	44	396	2	18	2	18	10	90	2	18	14	126	2	18	9	JOINT REPAIR						
																				PHASE TWO:						
526+64	-	528+57	OUTSIDE LANE	5	44	220	2	10	2	10	10	50	2	10	14	70	-	-	-	STAGE 1						
527+11A	-	529+03A	OUTSIDE LANE	5	44	220	2	10	2	10	10	50	2	10	14	70	-	-	-							
526+64	-	528+57	INSIDE LANE	5	44	220	2	10	2	10	10	50	2	10	14	70	-	-	-	STAGE 2						
527+11A	-	529+03A	INSIDE LANE	5	44	220	2	10	2	10	10	50	2	10	14	70	-	-	-							
				EXIT 55		-	-	-	-	-	-	-	-	-	-	12	-	-	-	ADVANCE WARNING FOR						
				EXIT 61		-	-	-	-	-	-	-	-	-	-	12	-	-	-	WIDTH RESTRICTION						
TOTAL 0010						1716	78	78	390	78	546	62	19													
										TRAFFIC CONTROL COVERING SIGNS TYPE II																
				643.0920											CONCRETE BARRIER TEMPORARY PRECAST DELIVERED 603.8000	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED 603.8125										
STATION	TO	STATION	LOCATION	EACH	REMARKS					STATION	TO	STATION	LOCATION	LF	LF	REMARKS										
526+64	-	528+57	OUTSIDE LANE	2						527+11A	-	529+03A	B-29-0047 (INSIDE CLOSURE)	250	250	PHASE ONE: JOINT REPAIR										
527+11A	-	529+03A	OUTSIDE LANE	2	COVER SPEED LIMIT SIGNS					527+11A	-	529+03A	B-29-0047 (OUTSIDE CLOSURE)		250	(HALF AT A TIME; MOVE ONCE)										
526+64	-	528+57	INSIDE LANE	2	DURING PHASE 2																					
527+11A	-	529+03A	INSIDE LANE	2																						
TOTAL 0010				8											TOTAL 0010					250	500					
PROJECT NO: 1016-03-61				HWY: IH – 90				COUNTY: JUNEAU				MISCELLANEOUS QUANTITIES				SHEET:				E						

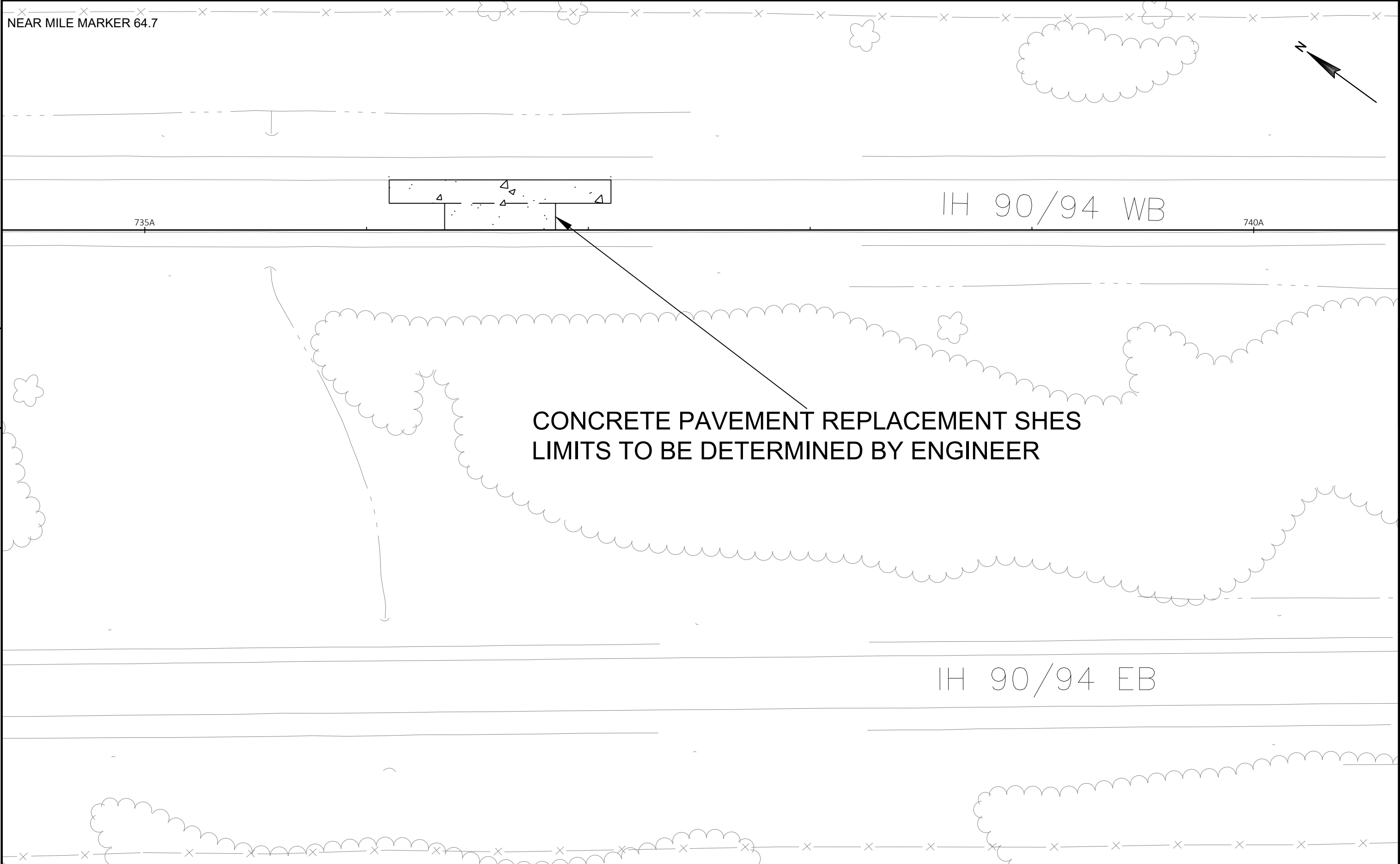
CONCRETE REPAIR

STATION	LOCATION	DRILLED	CONCRETE	SAWING	REMARKS
		TIE BARS	PAVEMENT	CONCRETE	
		416.0610	REPLACEMENT	690.0250	
		EACH	SHES	LF	
			416.1725		
			SY		
736+61'A'	OUTSIDE LANE	30	140	208	90 FT
736+81'A'	INSIDE LANE	24	110	184	70 FT
1016-03-63 TOTAL:		54	250	392	

TRAFFIC CONTROL SUMMARY

						TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL ARROW BOARDS		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL SIGNS PCMS		DYNAMIC LATE MERGE SYSTEM				
				SERVICE		643.0300		643.0420		643.0705		643.0715		643.0800		643.0900		643.1050		643.1100.S		
STATION	TO	STATION	LOCATION	DAYS	QTY	DAY	QTY	DAY	QTY	DAY	QTY	DAY	QTY	DAY	QTY	DAY	QTY	DAY	DAY	REMARKS		
736+10A	-	737+10A	OUTSIDE LANE	3	44	132	2	6	2	6	10	30	2	6	14	42	2	6	-	PAVEMENT REPAIR		
736+70A	-	736+90A	INSIDE LANE	1	44	44	2	2	2	2	10	10	2	2	14	14	2	2	-	INCLUDED IN PHASE ONE		
1016-03-63 TOTAL:						176	8		8		40		8		56		8		0			





PROJECT NO:1016-03-63	HWY: IH-90	COUNTY: JUNEAU	PAVEMENT REPAIR OVERVIEW	SHEET	E
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Standard Detail Drawing List

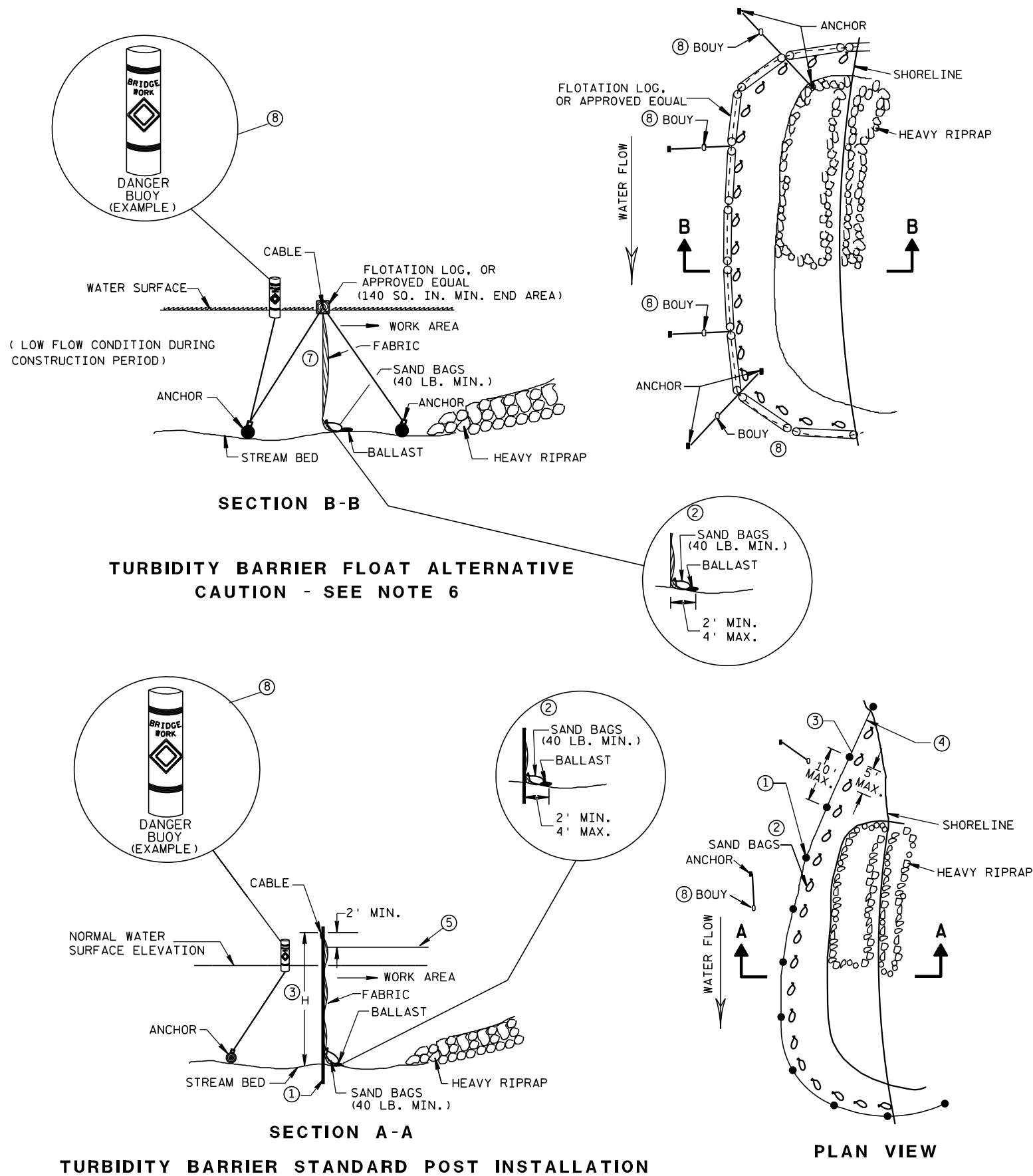
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
13C09-15A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-15B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-15C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D03-04	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D12-06B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



- 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.



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

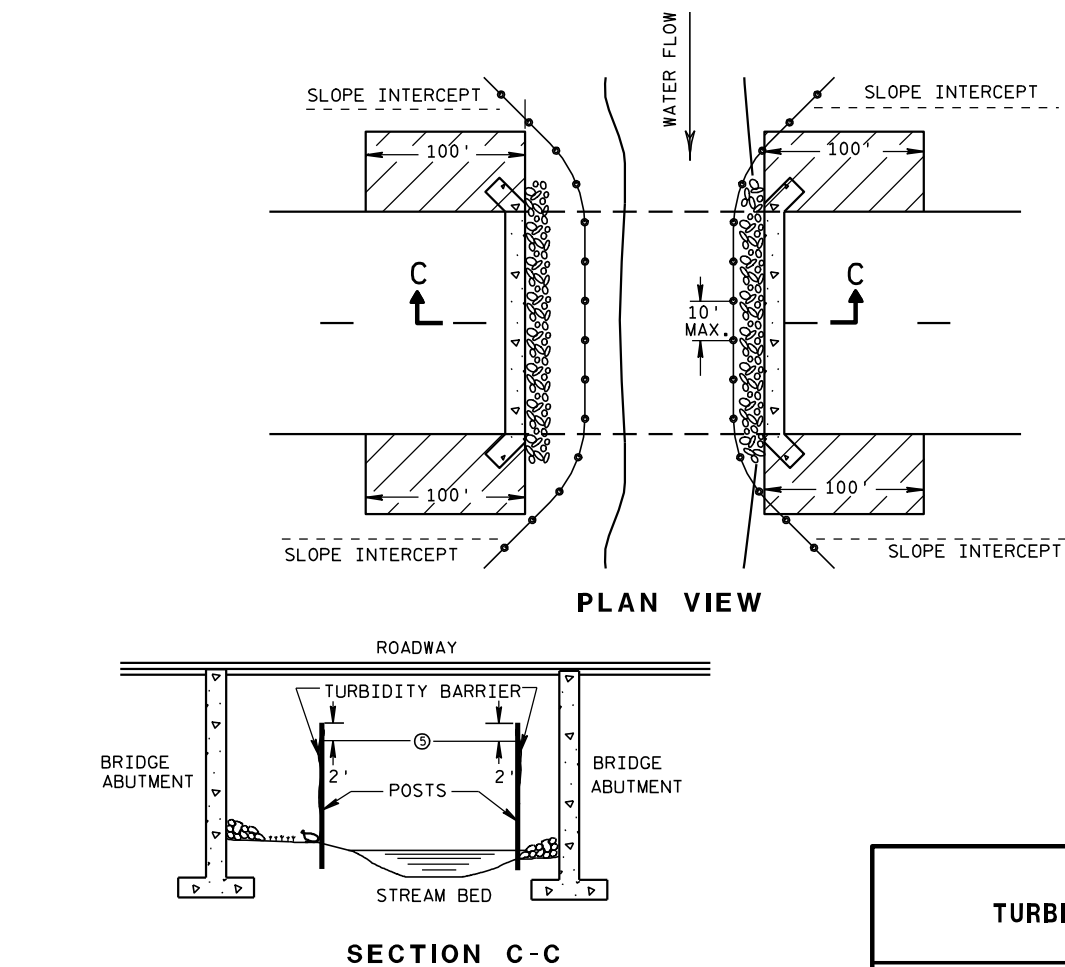


GENERAL NOTES

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

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

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.

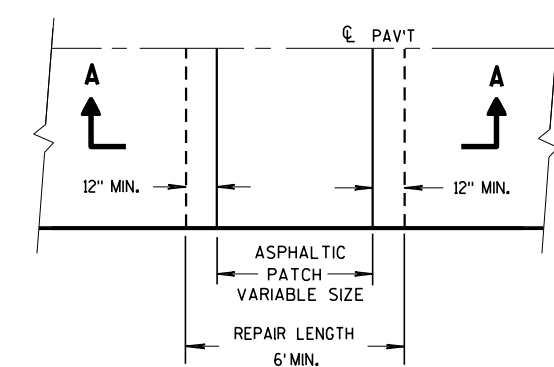


TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

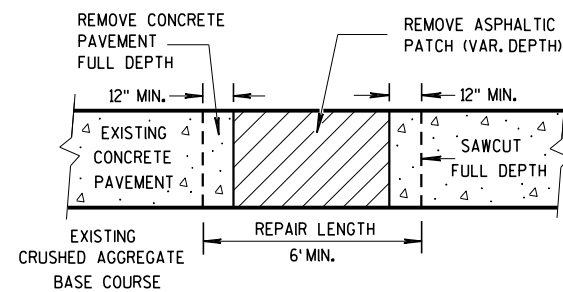
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

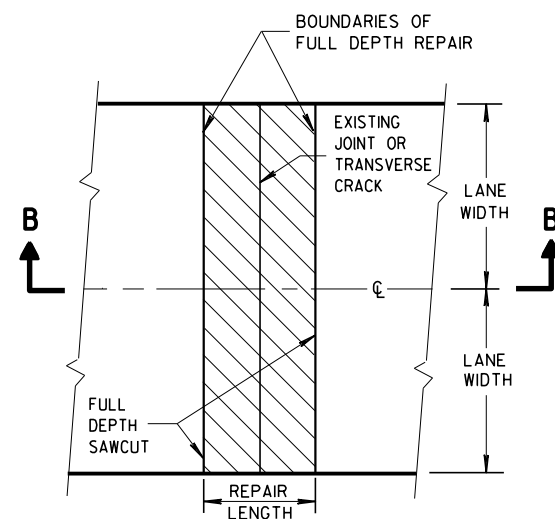
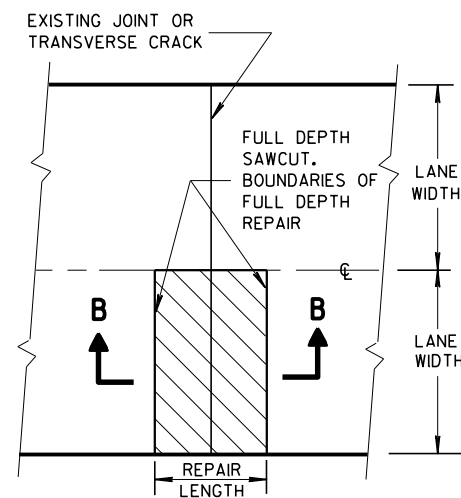


PLAN VIEW



SECTION A-A

HMA PATCH REMOVAL

PLAN VIEW
(DOUBLE LANE REPAIR)PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

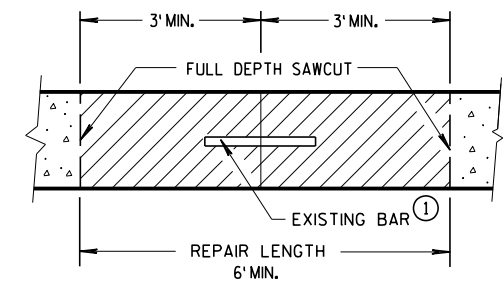
GENERAL NOTES

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

PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

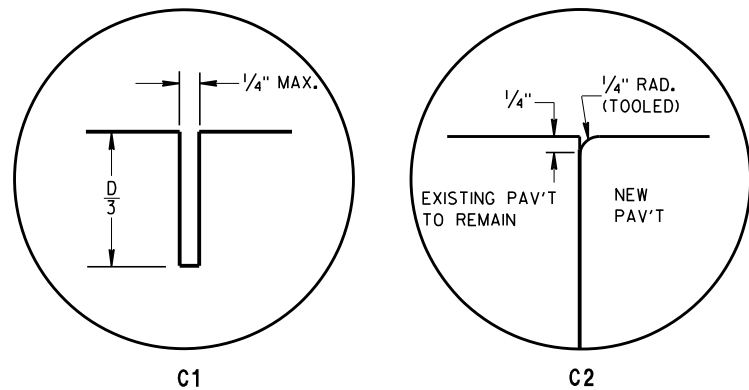
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

① DOWEL BARS MIGHT NOT EXIST.

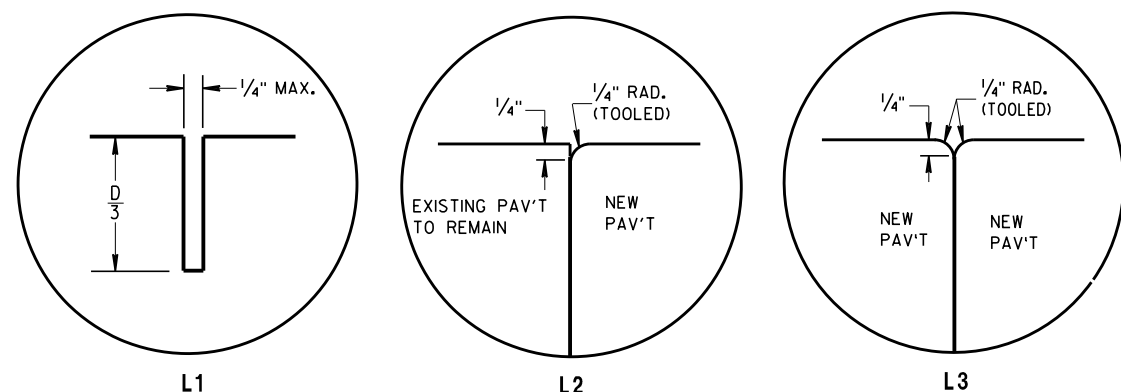
SECTION B-B
CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR
AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TRANSVERSE JOINTS

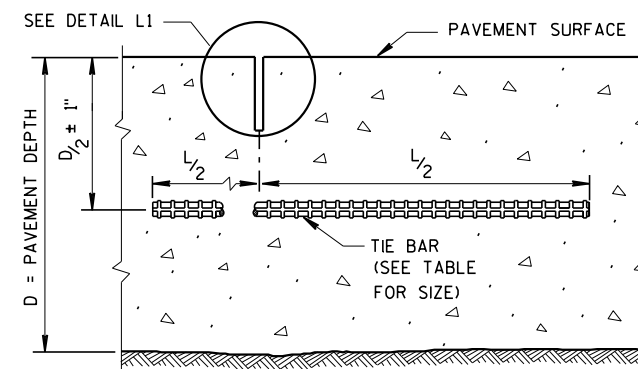


LONGITUDINAL JOINTS

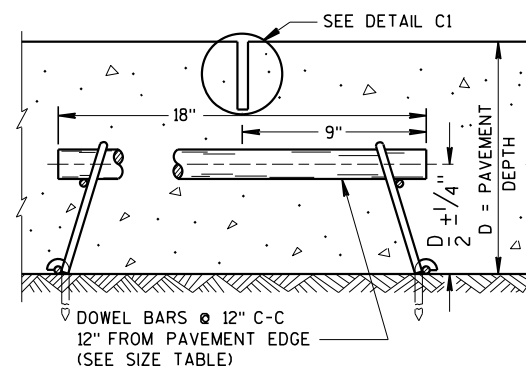
TIE BAR TABLE			
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



SECTION C-C
SAWED LONGITUDINAL JOINT



SECTION F-F
CONTRACTION JOINT

GENERAL NOTES

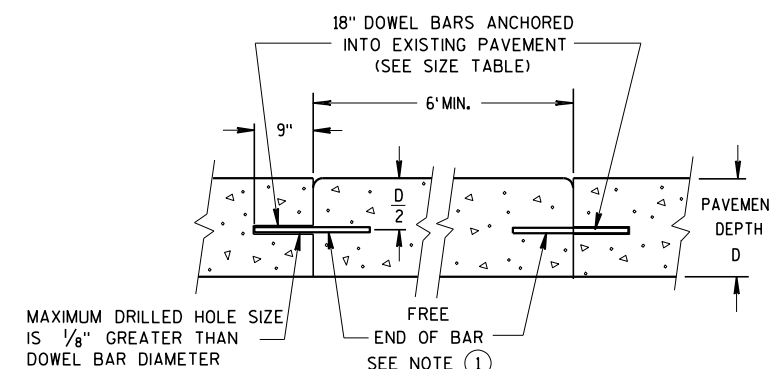
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

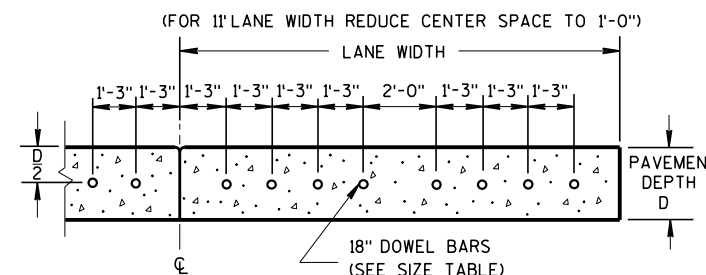
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

- ① APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



SECTION D-D



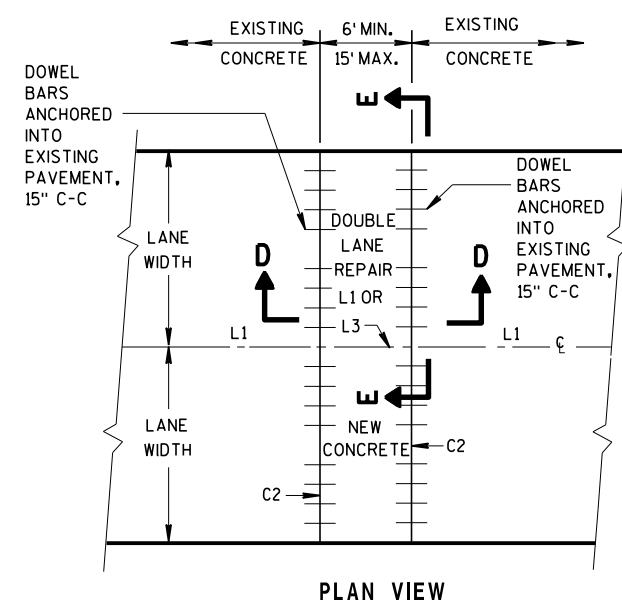
SECTION E-E
DRILLED DOWEL BAR CONSTRUCTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

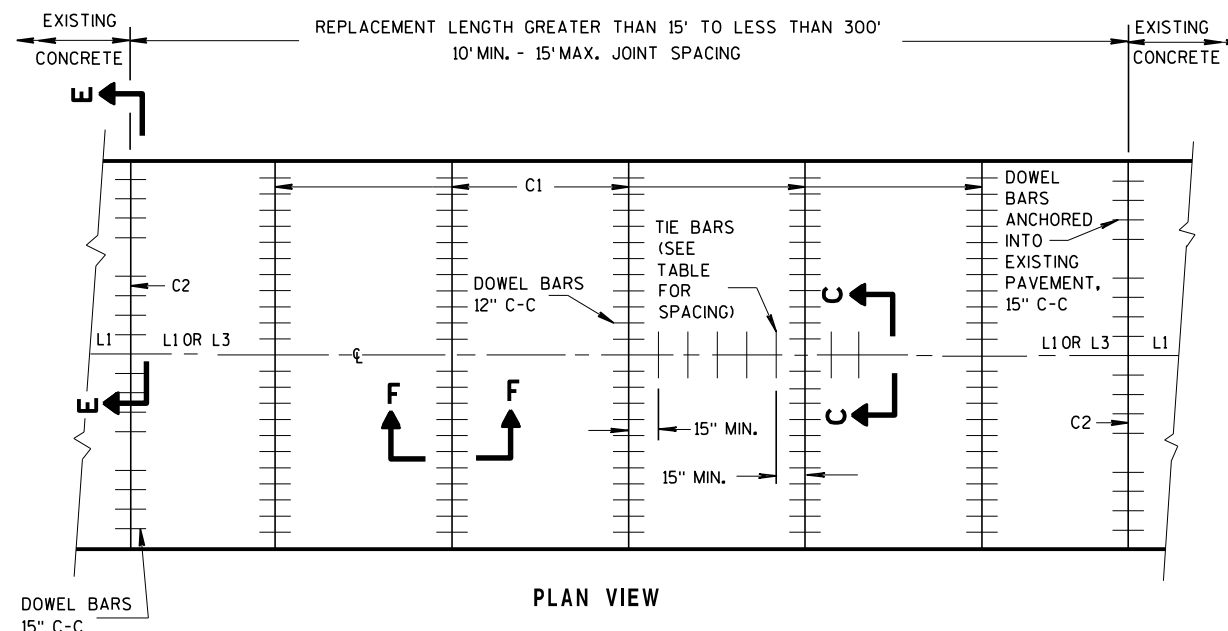
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	DRILLED DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	NONE	12'
7", 7 1/2"	1"	1"	14'
8", 8 1/2"	1 1/4"	1 1/4"	15'
9", 9 1/2"	1 1/4"	1 1/4"	15'
10" & ABOVE	1 1/2"	1 1/4"	15'

CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

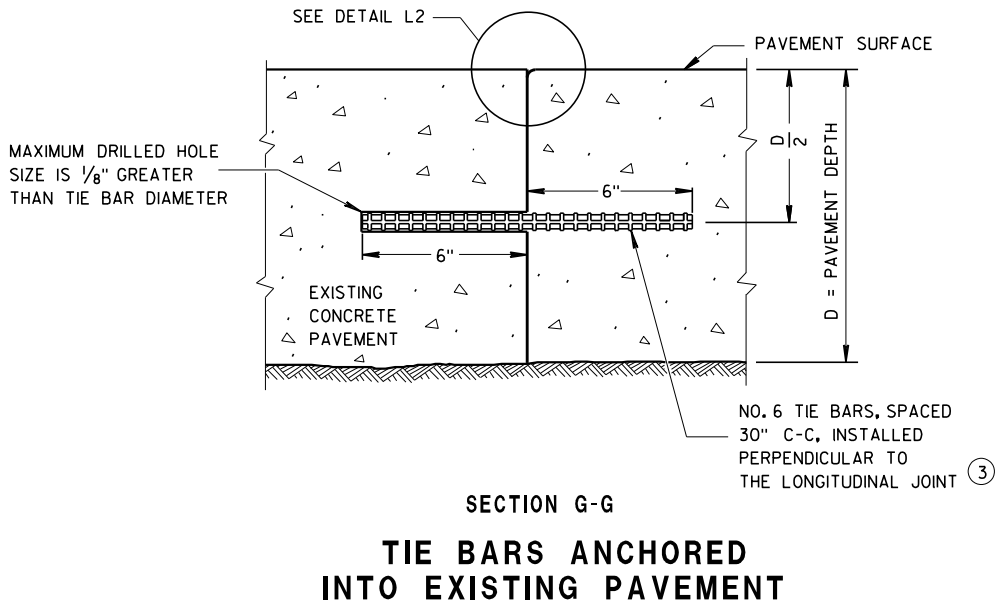
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MULTI-LANE CONCRETE PAVEMENT REPAIR

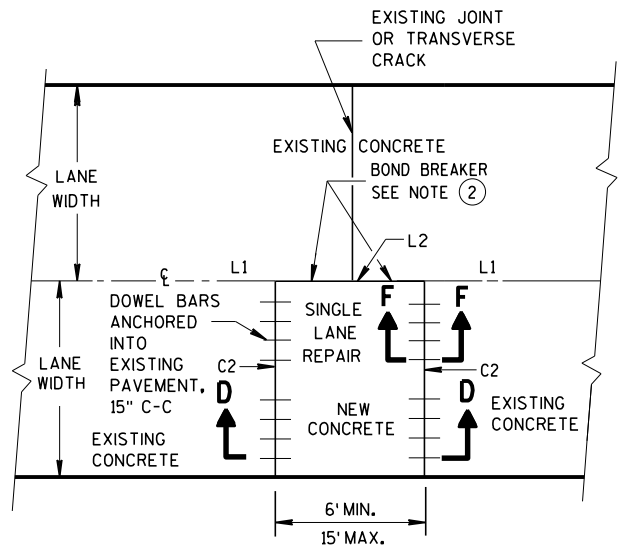


MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

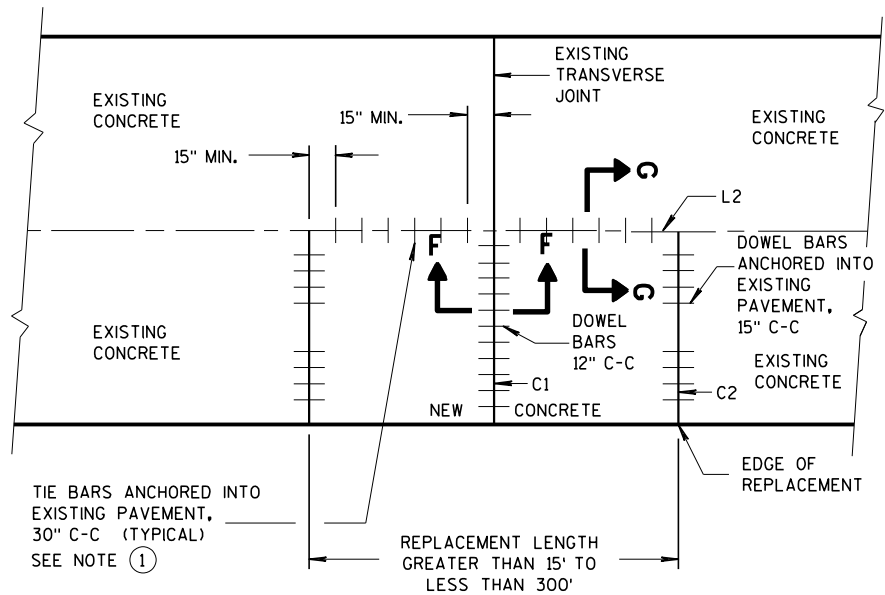


GENERAL NOTES

- ① WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- ② USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
- ③ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

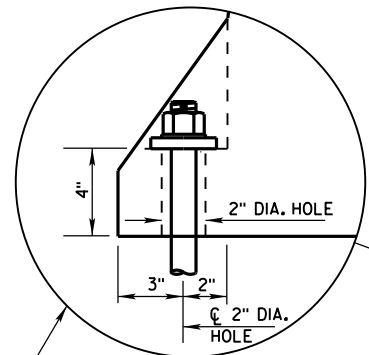


PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPAIR

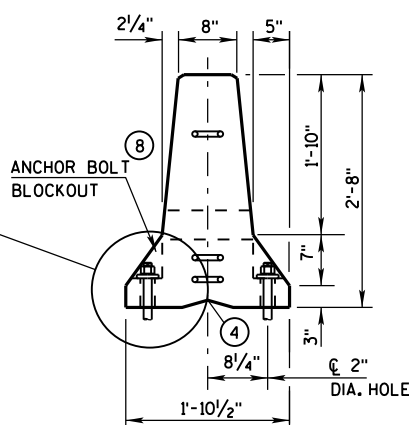


PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPLACEMENT

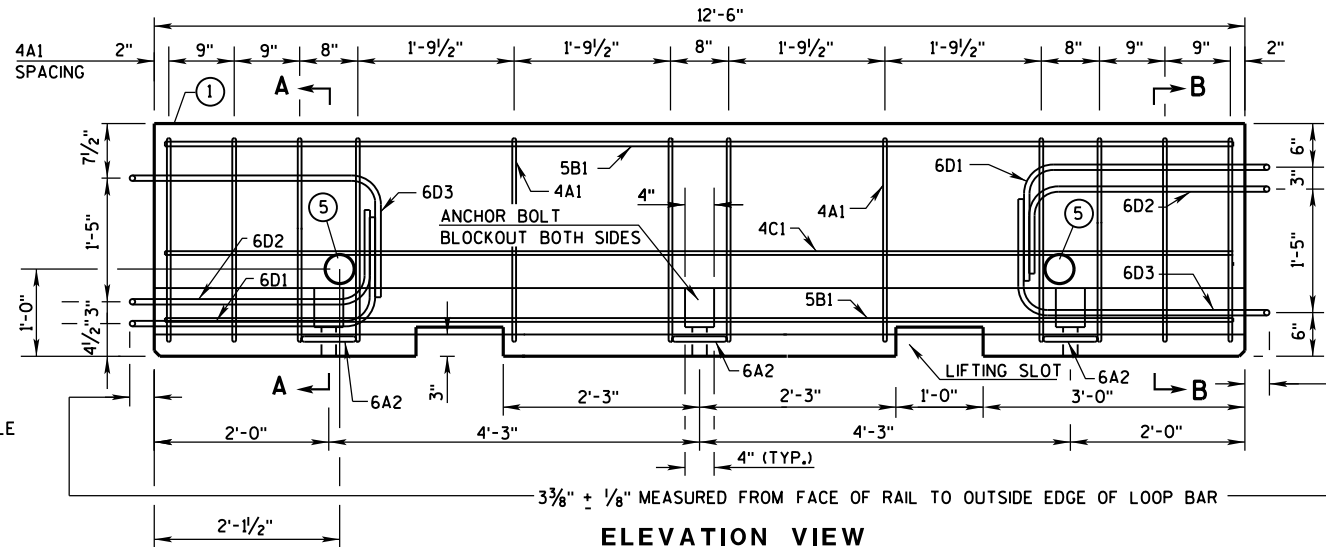
CONCRETE PAVEMENT REPAIR AND REPLACEMENT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2018 DATE	/S/ Peter Kemp, P.E. PAVEMENT SUPERVISOR
FHWA	



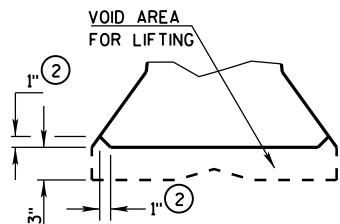
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



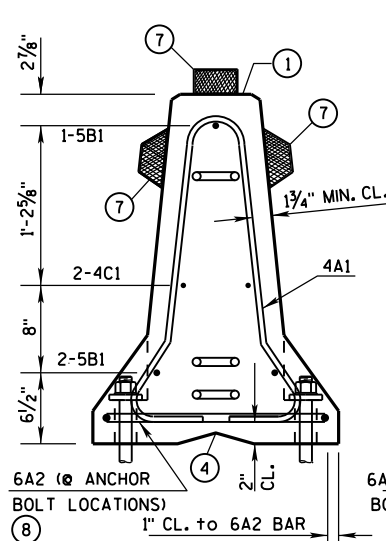
END VIEW



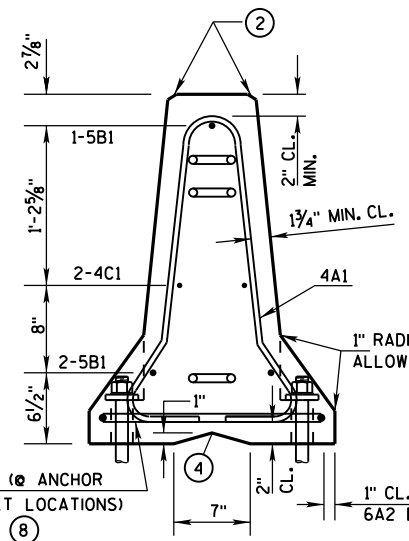
ELEVATION VIEW



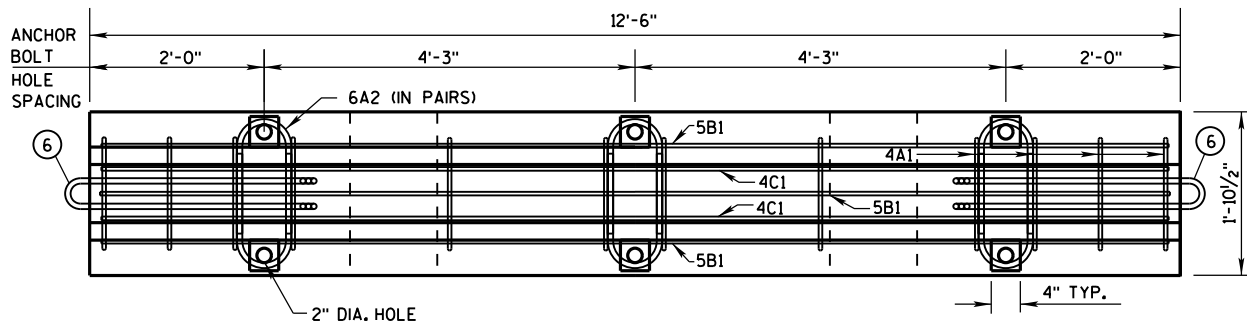
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

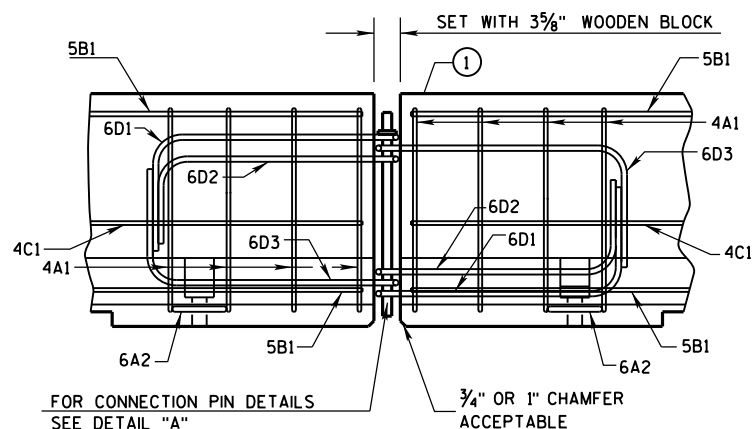


SECTION B-B
(STIRRUP PLACEMENT)

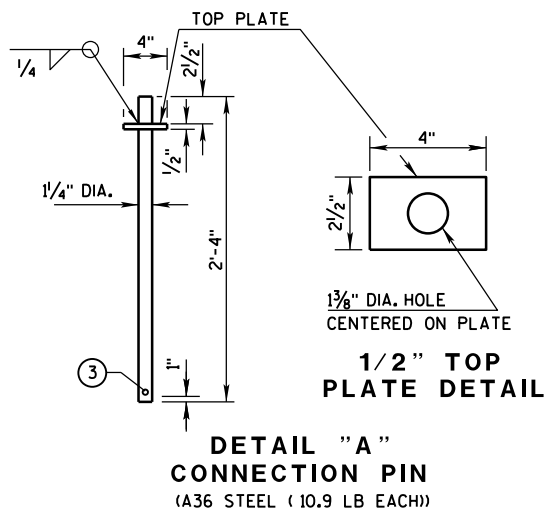


PLAN VIEW

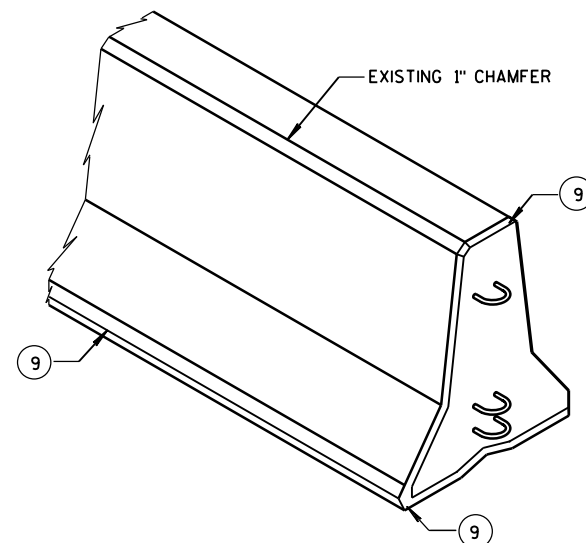
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



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



GENERAL NOTES

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

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

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

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

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

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

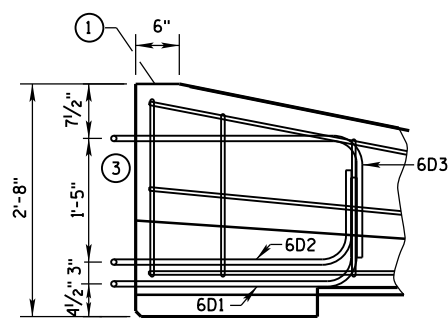
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

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

f'c = 4,000 psi

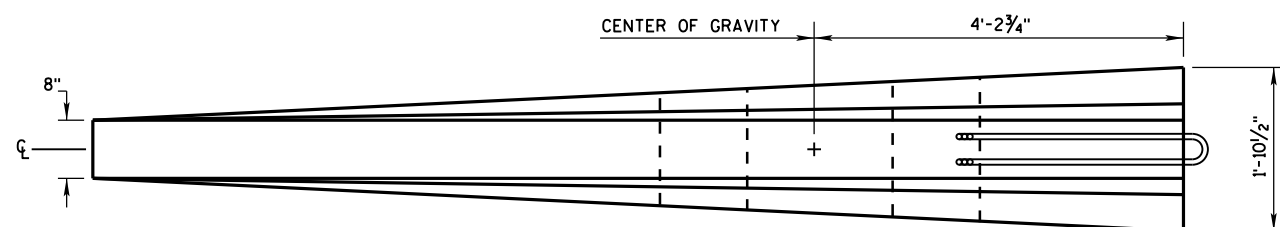
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

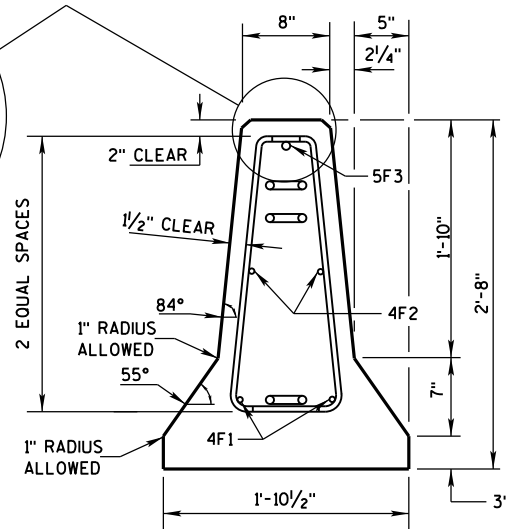


- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

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



A technical drawing of a chamfer detail. It shows a cross-section of a rectangular part with a chamfered top edge. The chamfer is defined by a 45-degree angle. Dimension lines indicate a width of 1 inch and a height of 1 inch for the chamfered section. The text "CHAMFER DETAIL" is written below the drawing.



The diagram illustrates two scenarios for barrier placement on a curve. The top scenario, labeled "BARRIER ON CURVE", shows a barrier segment on a curve with a 5°± MAX. angle. A 10"± OFFSET is indicated from the centerline to the barrier. The segment is divided into two 12'-6" sections. The bottom scenario, labeled "FLARE AT BARRIER END", shows a barrier segment flaring out at the end, with a 12'-6" section indicated.

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

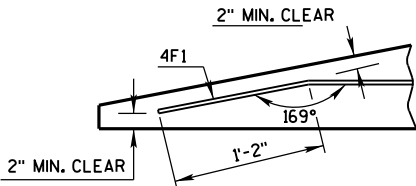
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

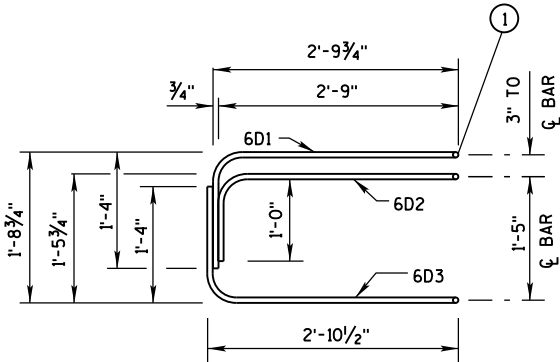
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

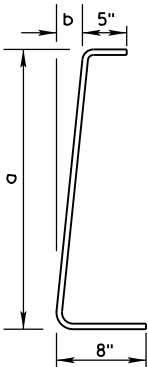
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



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

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

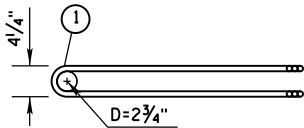
GENERAL NOTES

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

BARRIER SECTION
BILL OF MATERIALS

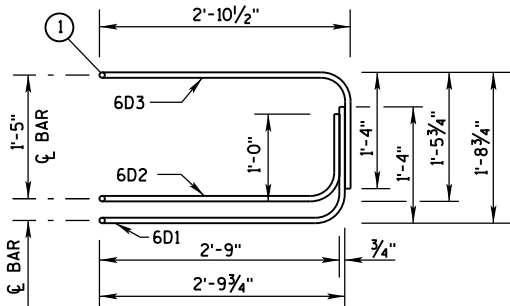
(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"

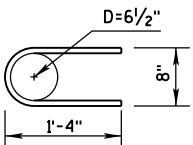


PLAN VIEW
LOOP BAR ASSEMBLY

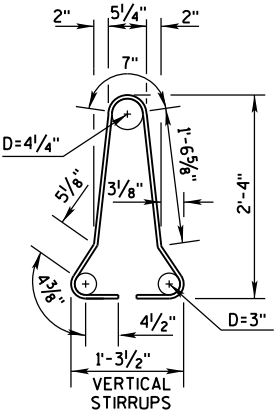
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

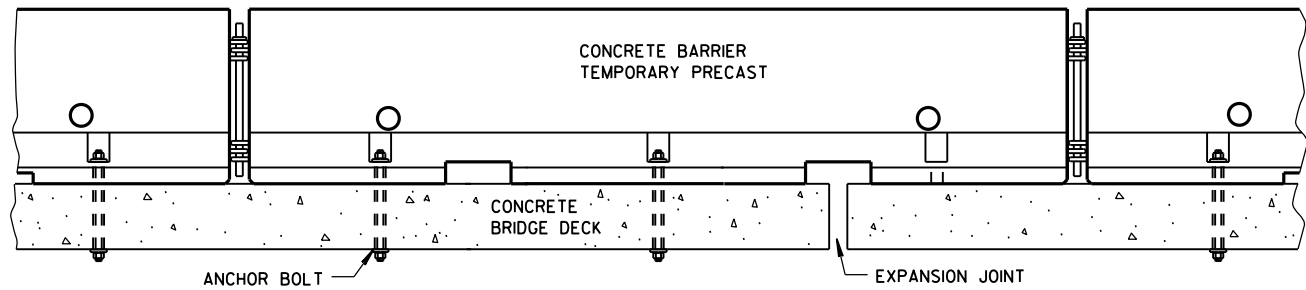
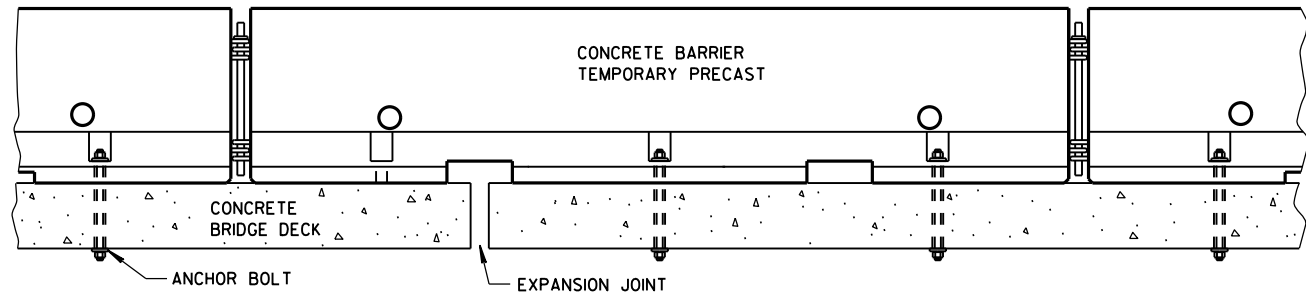


4A1

BARRIER SECTION

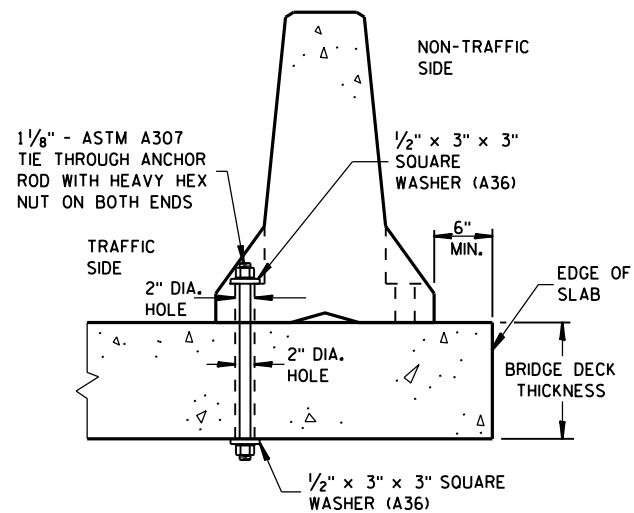
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



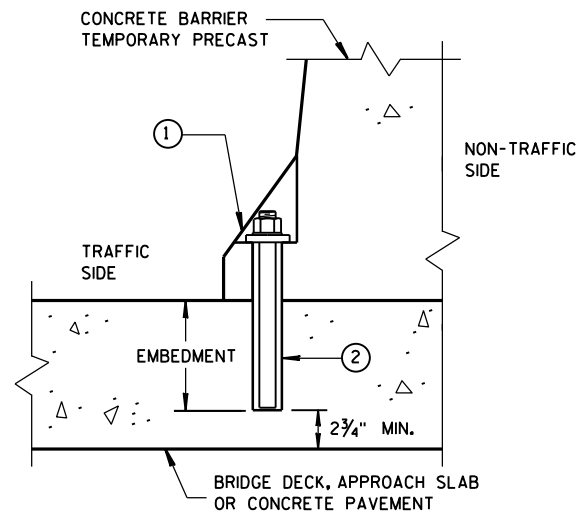
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



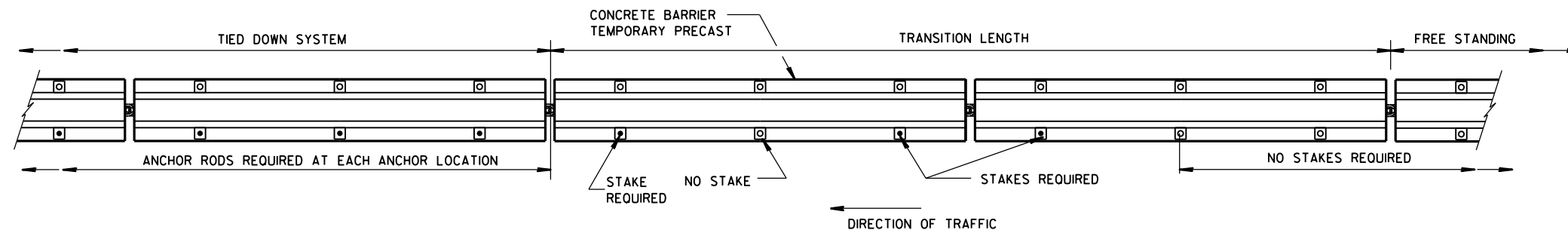
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

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



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

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

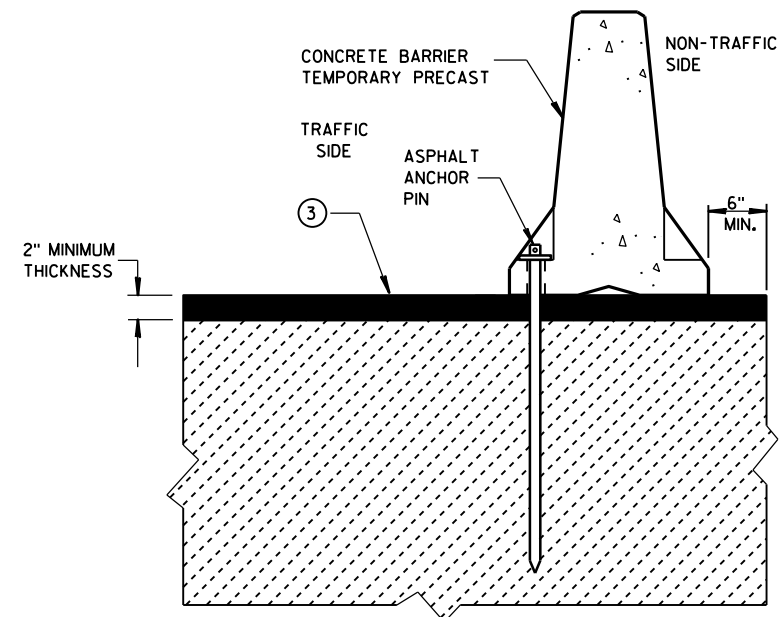
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

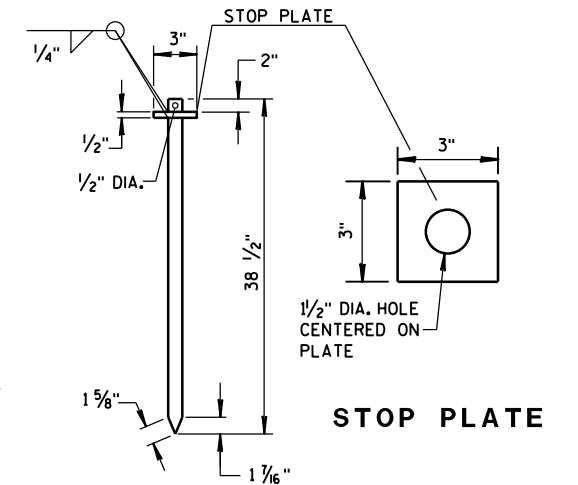
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

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

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.12 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE

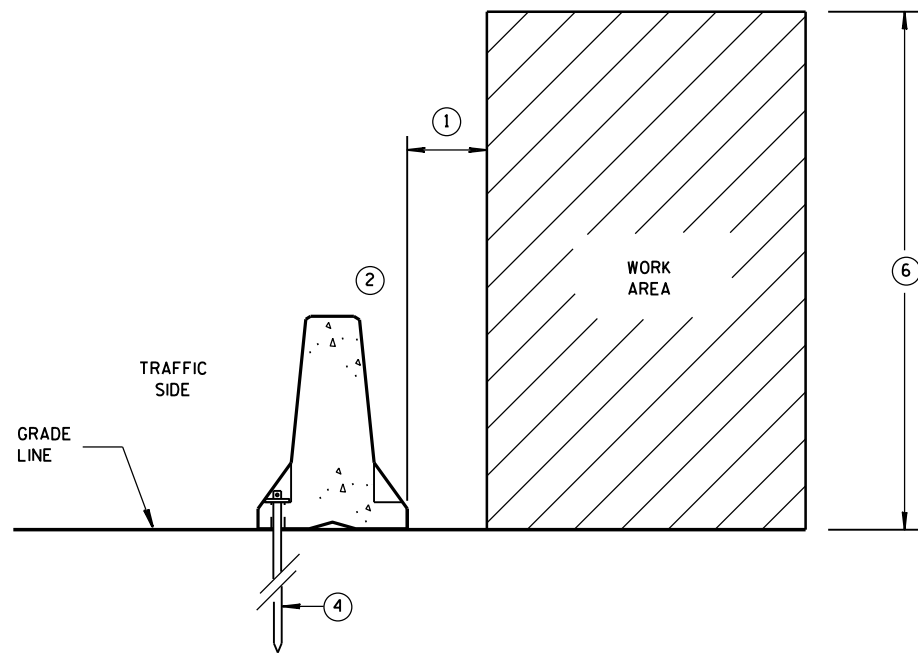


ASPHALT ANCHOR PIN

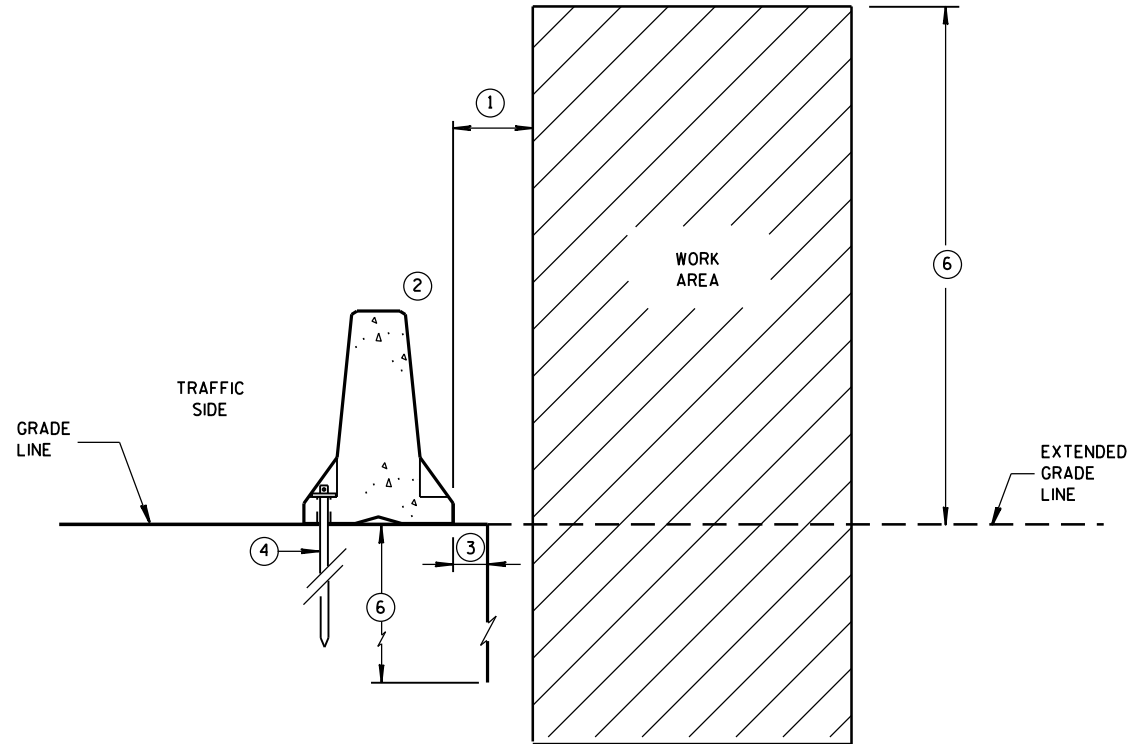
(ASTM A36 STEEL)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

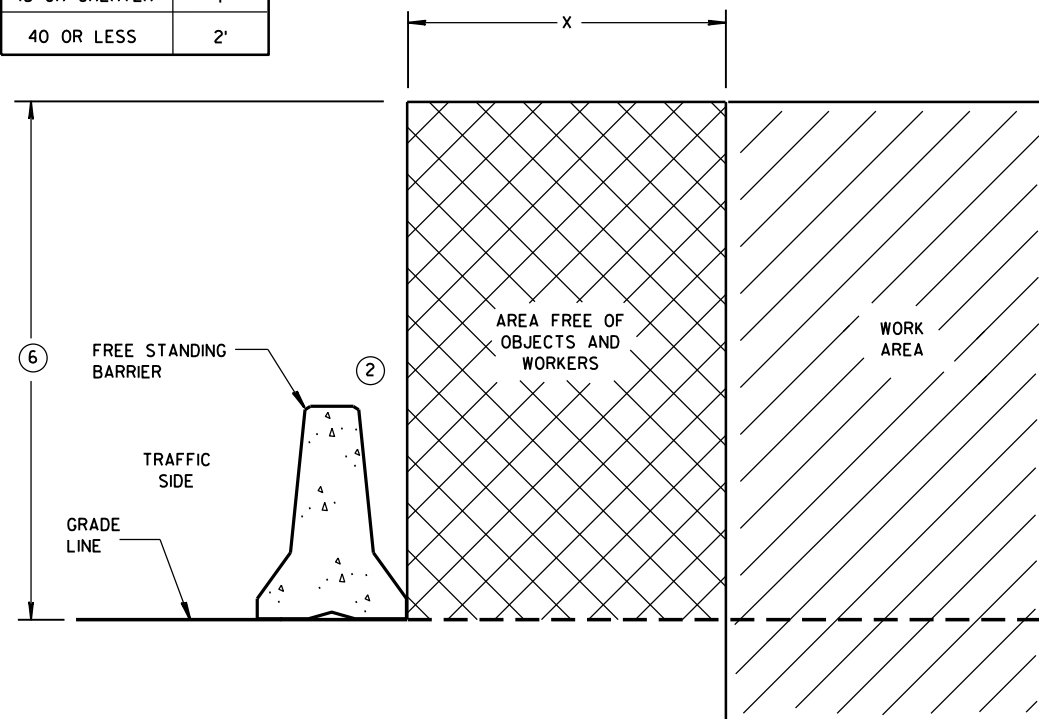


**ANCHORED BARRIER SPACE REQUIREMENTS
FOR HAZARDS EXTENDED
ABOVE THE GRADE LINE**

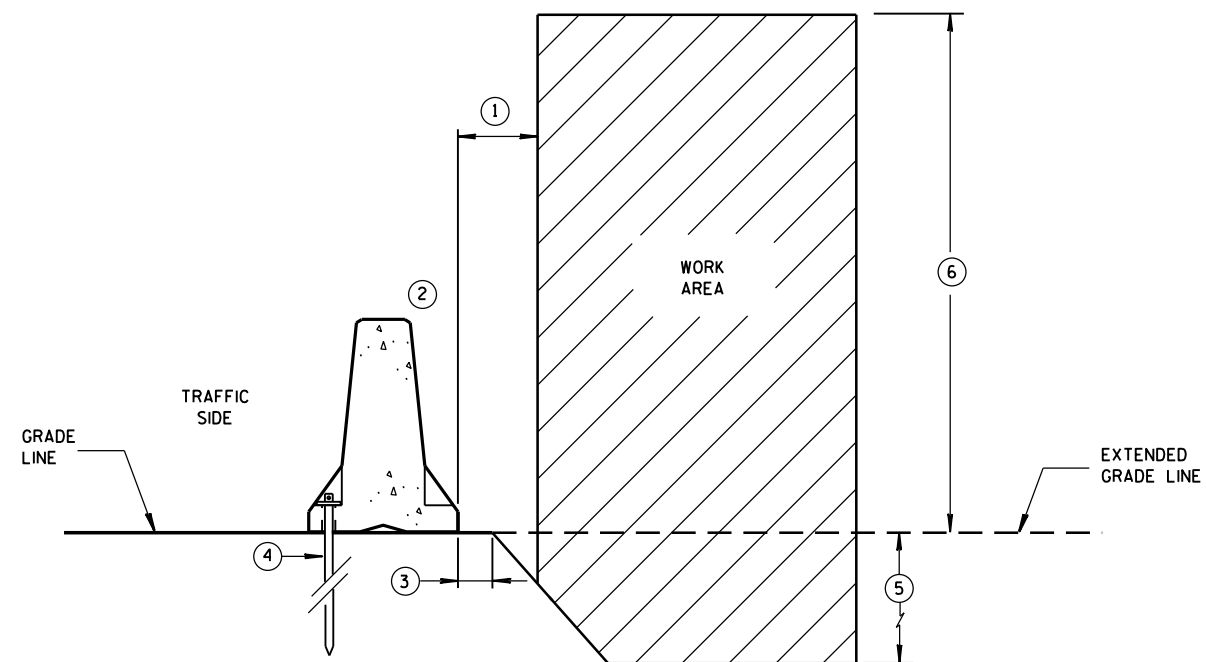


**ANCHORED BARRIER SPACE REQUIREMENTS
ON VERTICAL DROP OFFS**

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



FREE STANDING BARRIER SPACE REQUIREMENTS



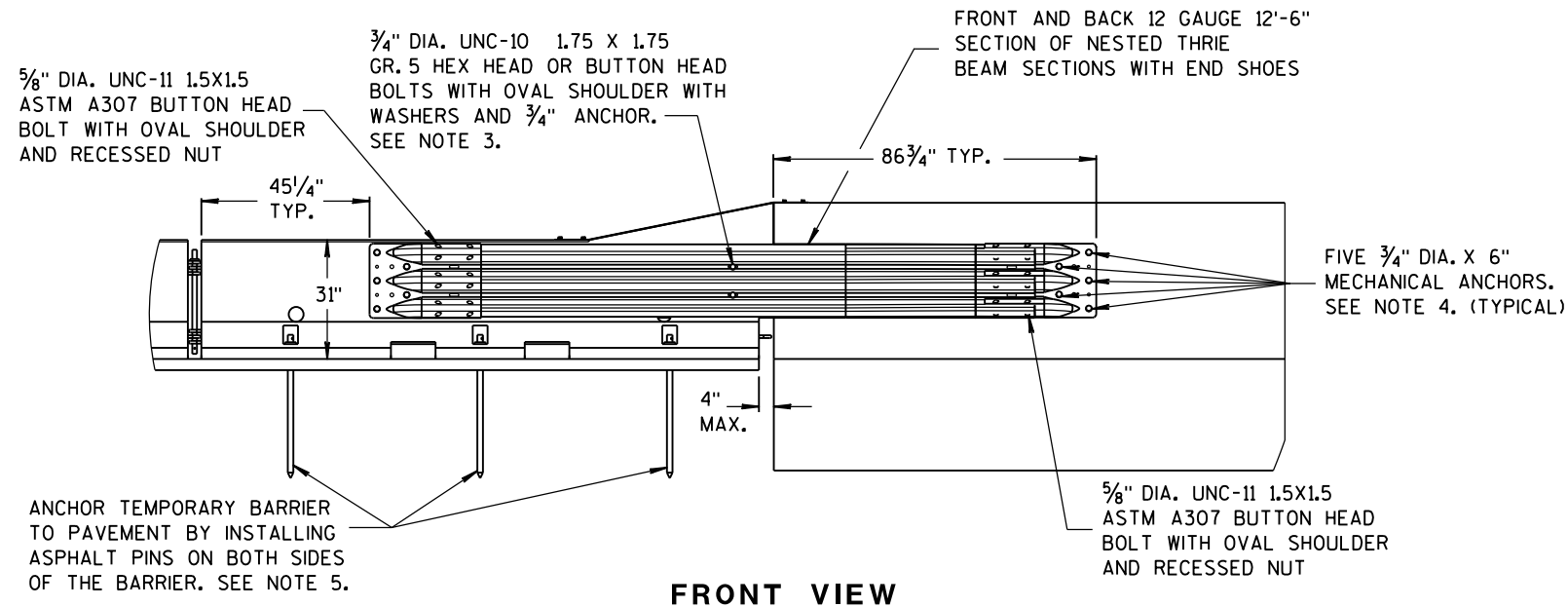
**ANCHORED BARRIER SPACE REQUIREMENTS
ON SLOPES**

GENERAL NOTES

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



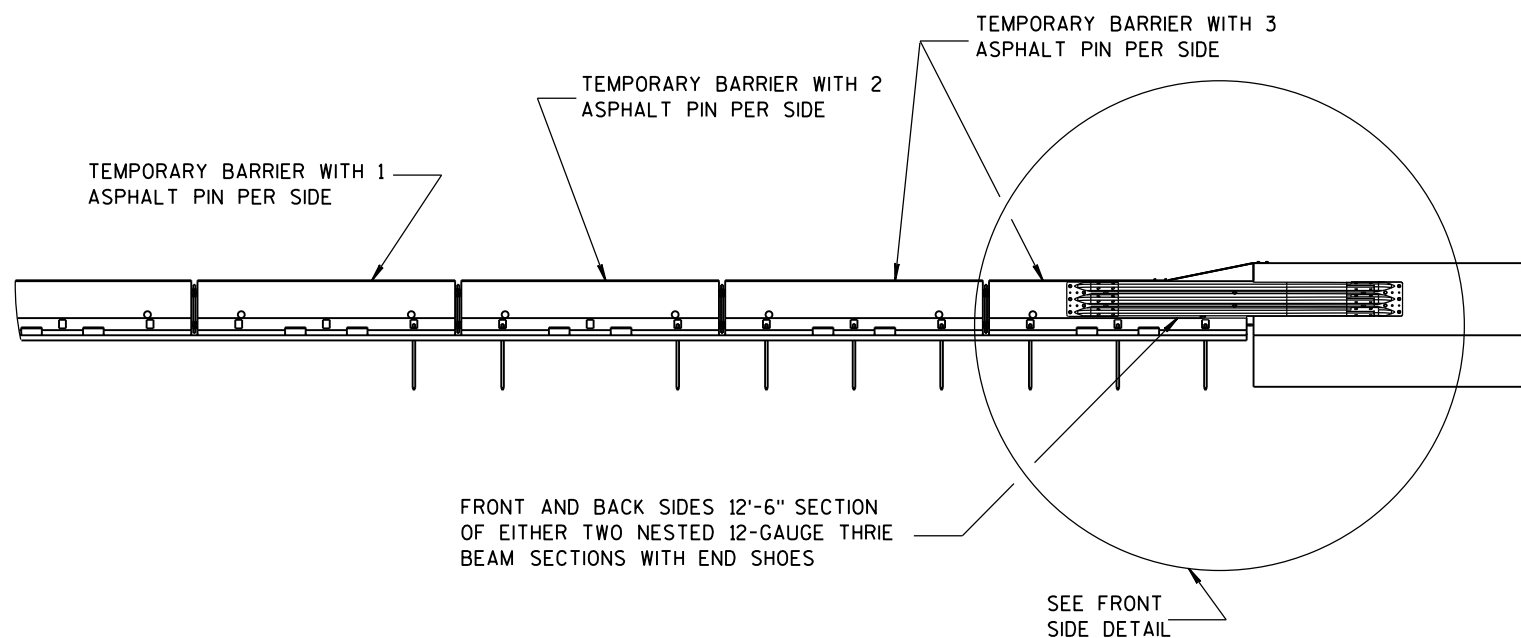
FRONT VIEW

NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS REGARDLESS OF TRAFFIC.

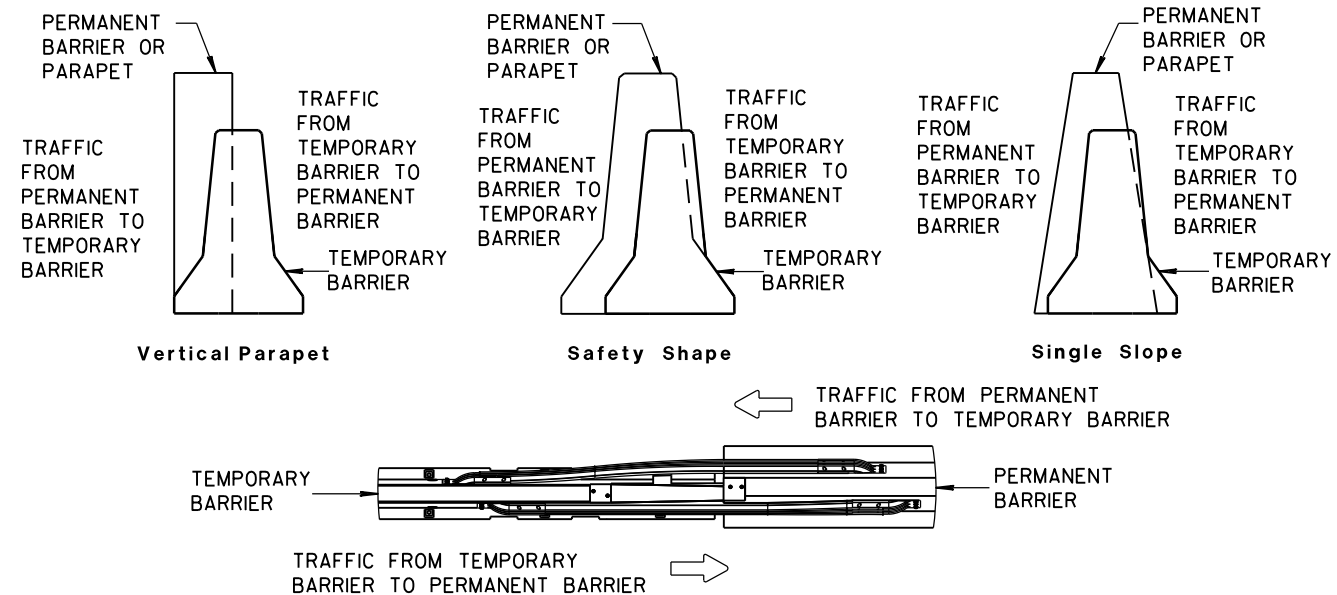
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.

4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

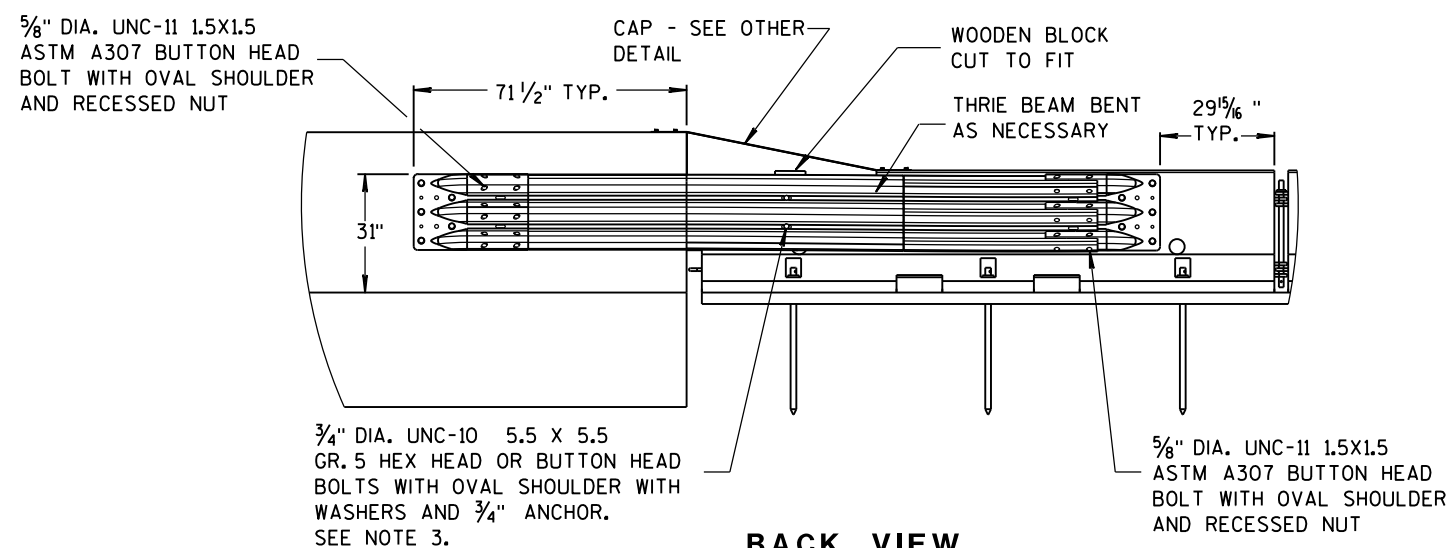


FRONT VIEW

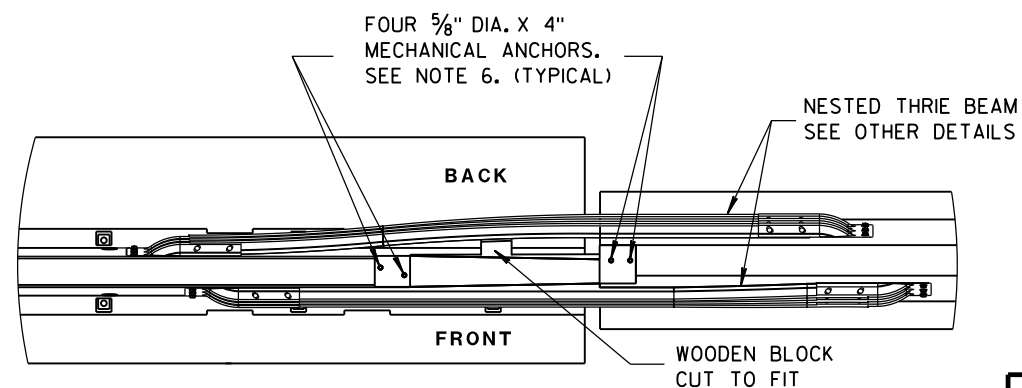
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



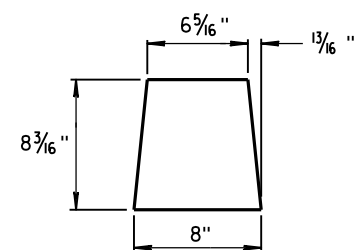
BACK VIEW



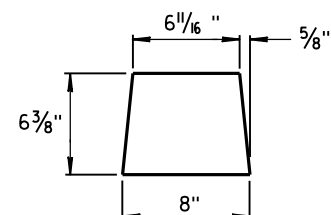
PLAN VIEW

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

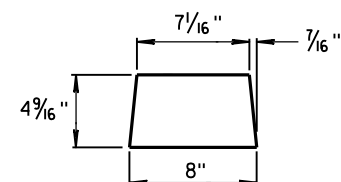
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



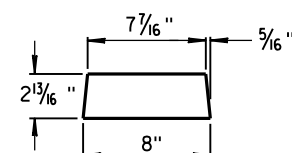
GUSSET 1



GUSSET 2

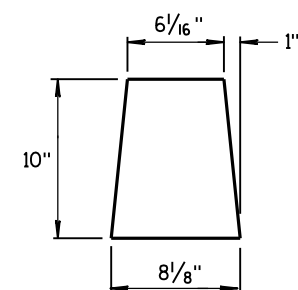


GUSSET 3

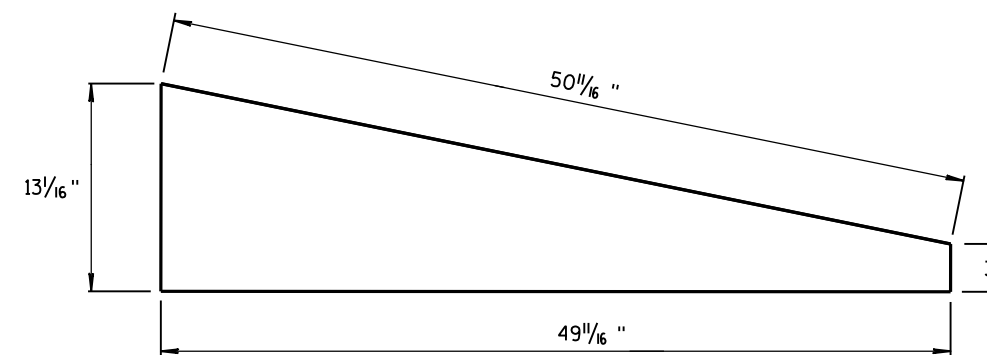


GUSSET 4

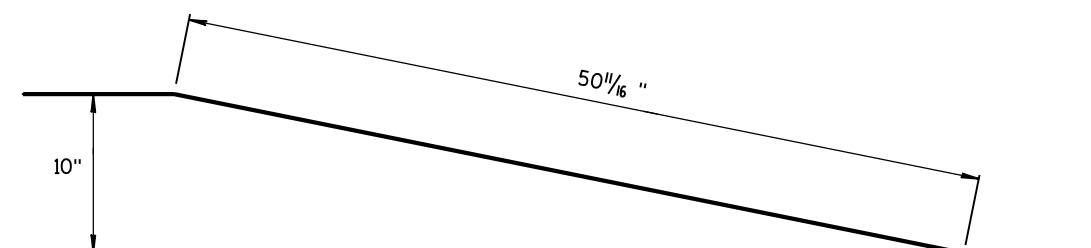
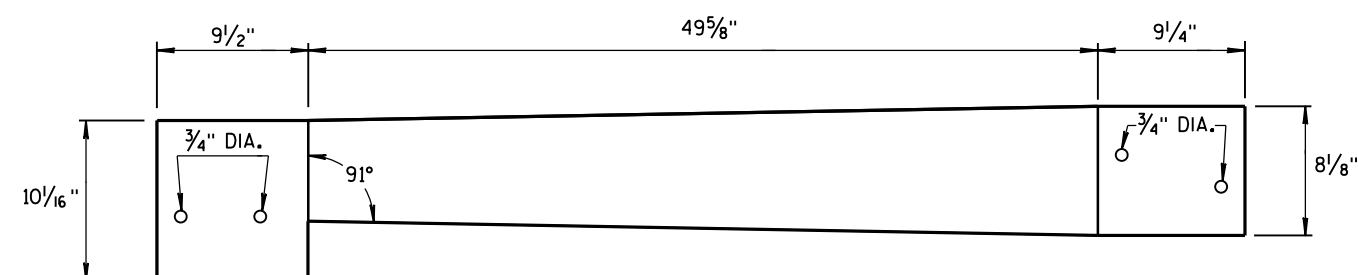
GUSSETS



END PLATE



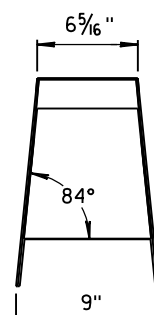
SIDE PLATE



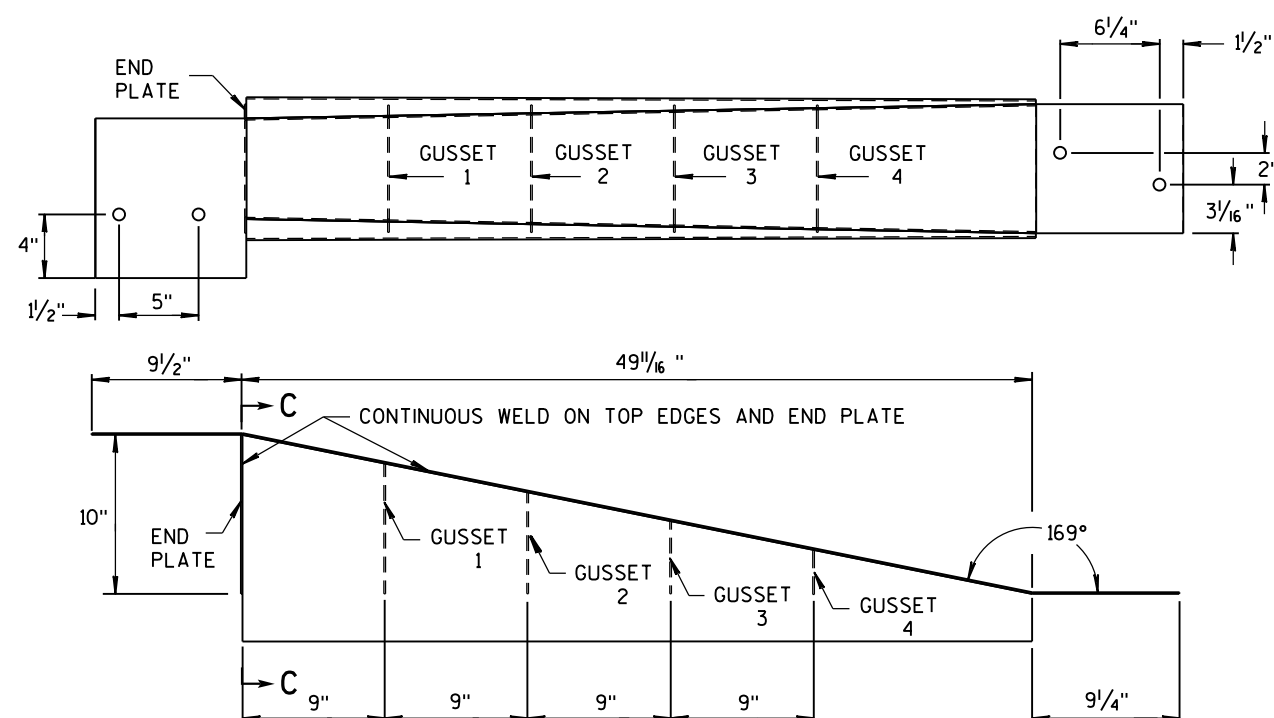
TOP PLATE

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

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



SECTION C-C



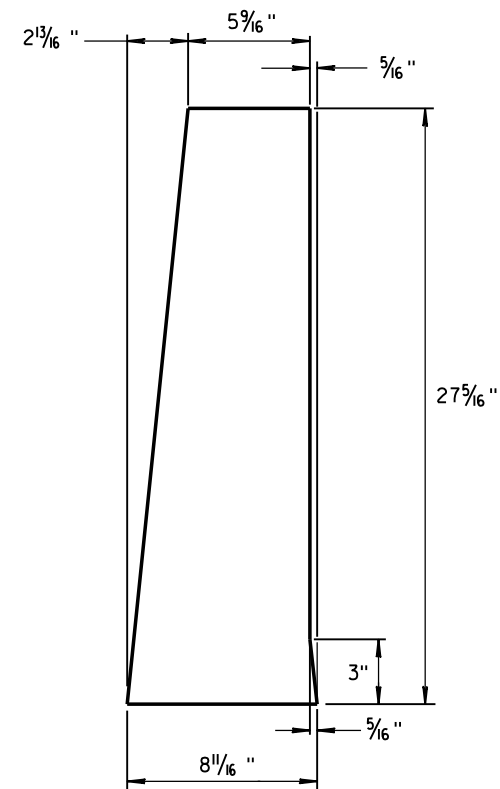
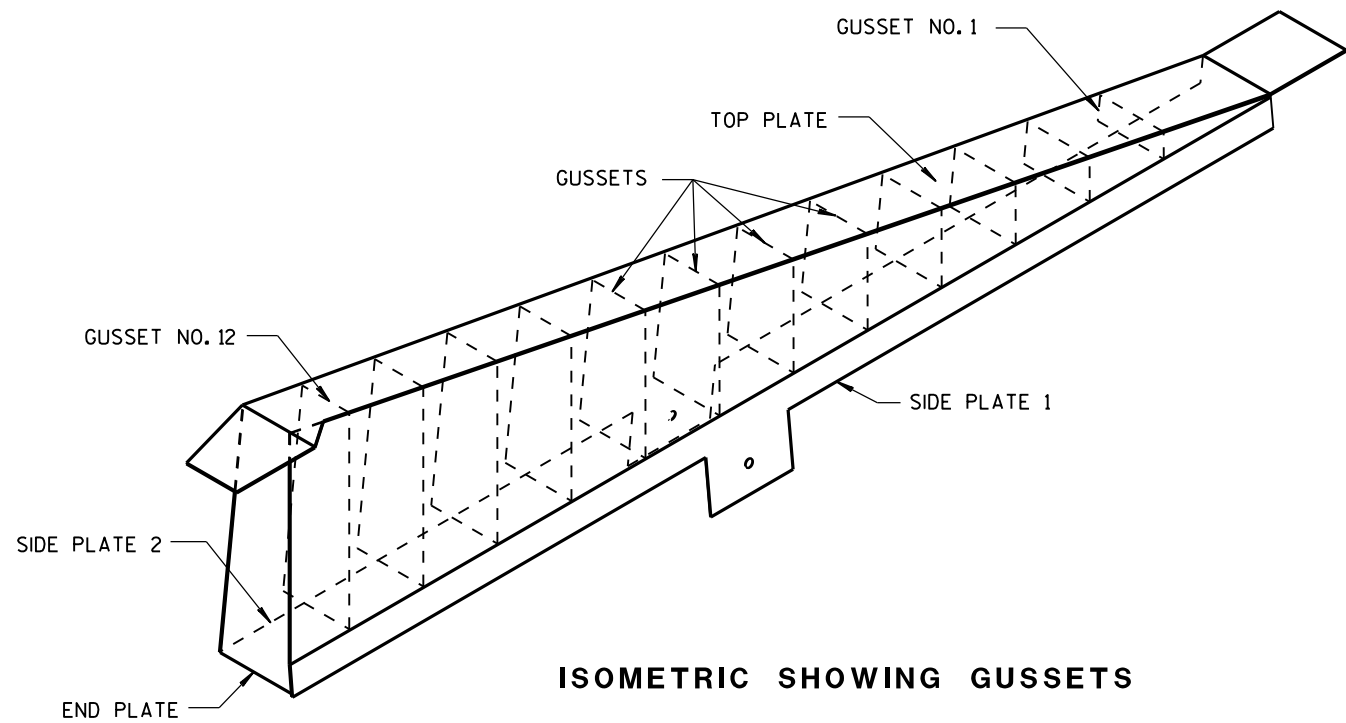
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

NOTES

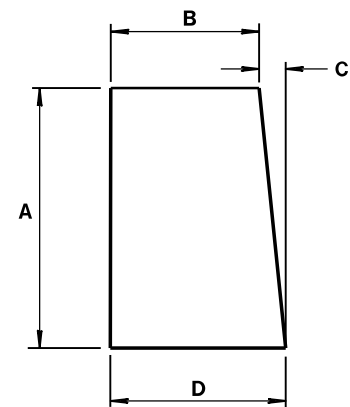
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END PLATE
1/8" STEEL PLATE

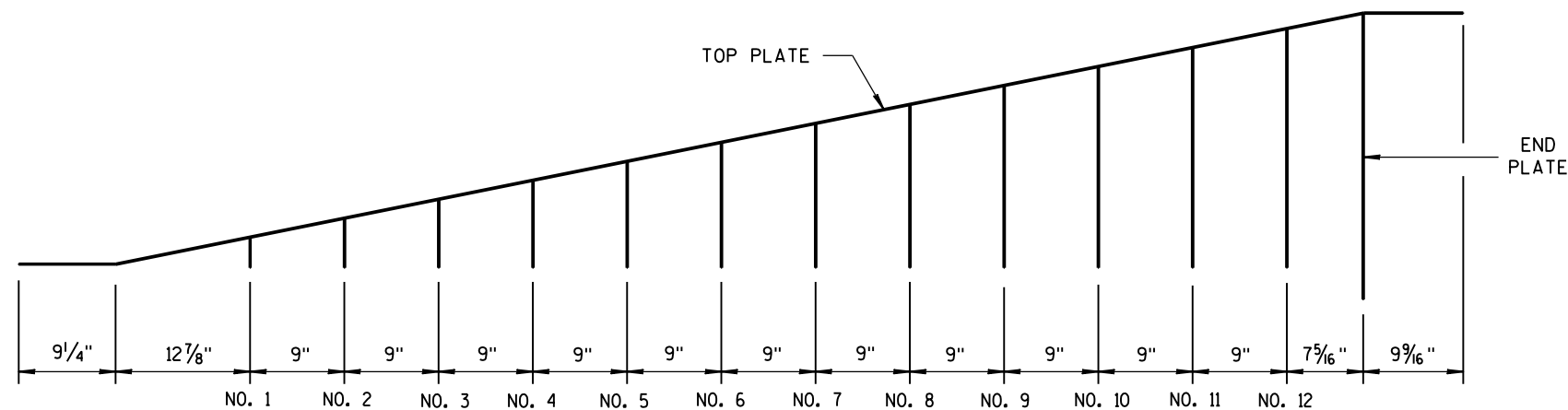


GUSSETS 1 - 12
ALL GUSSETS 1/8" STEEL PLATE

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

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

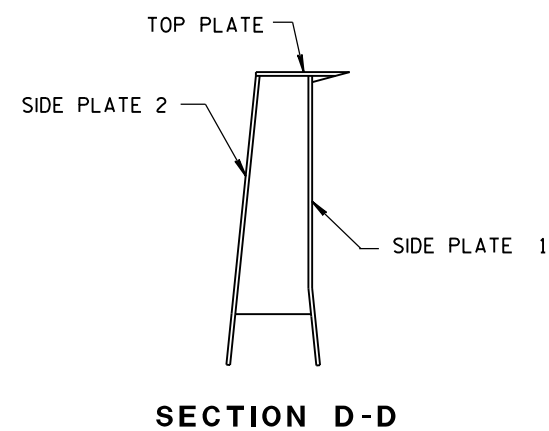
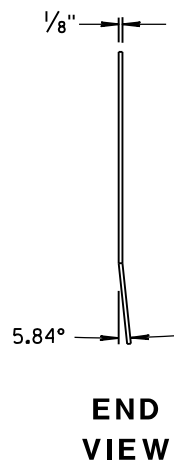
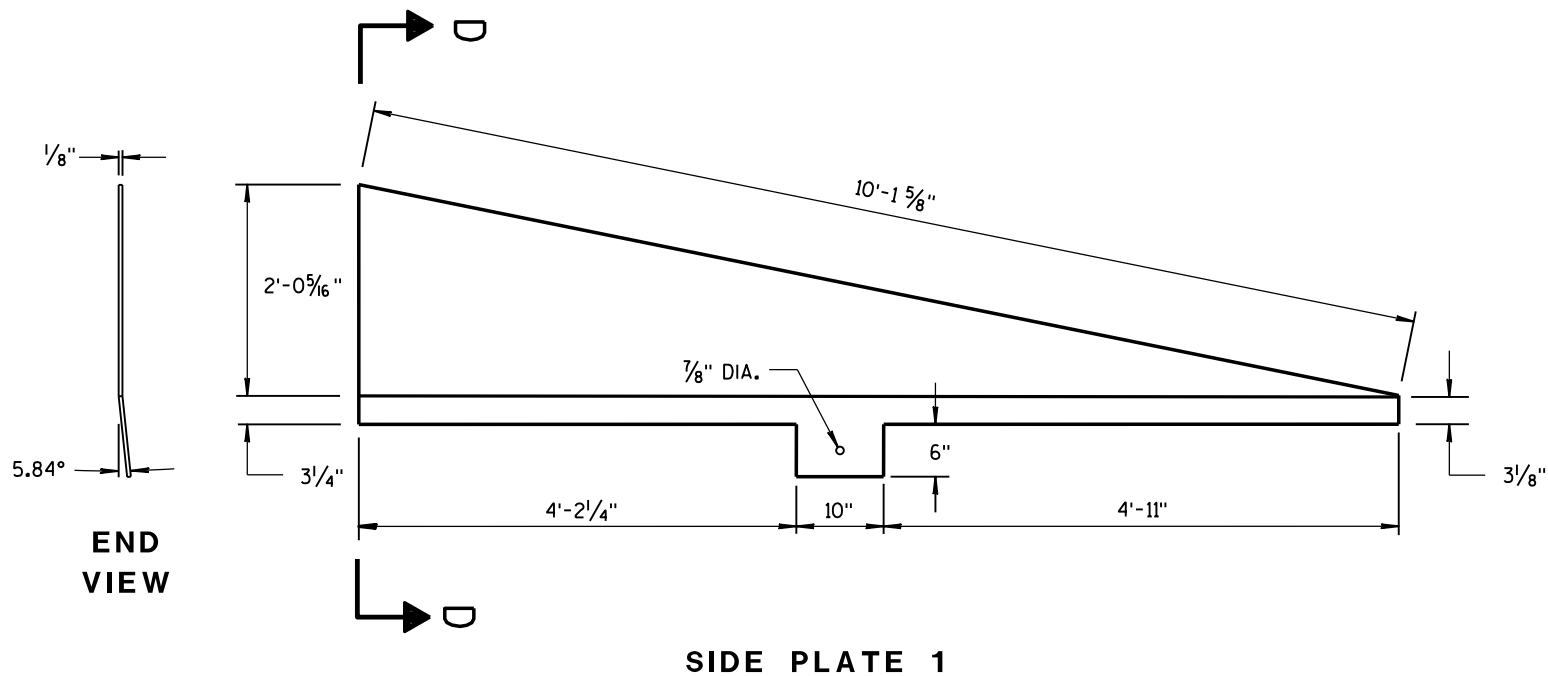
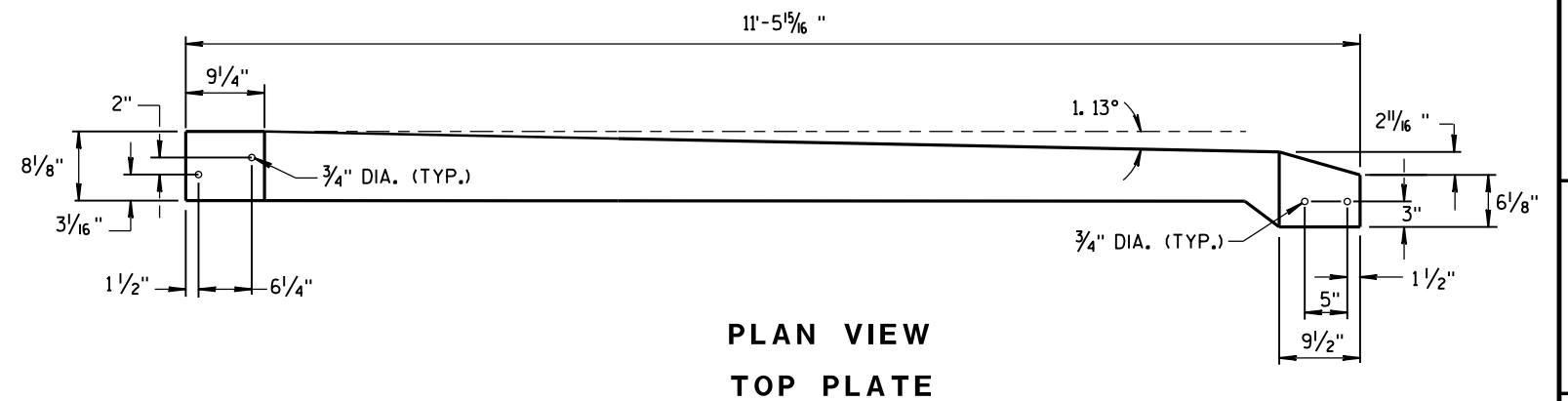
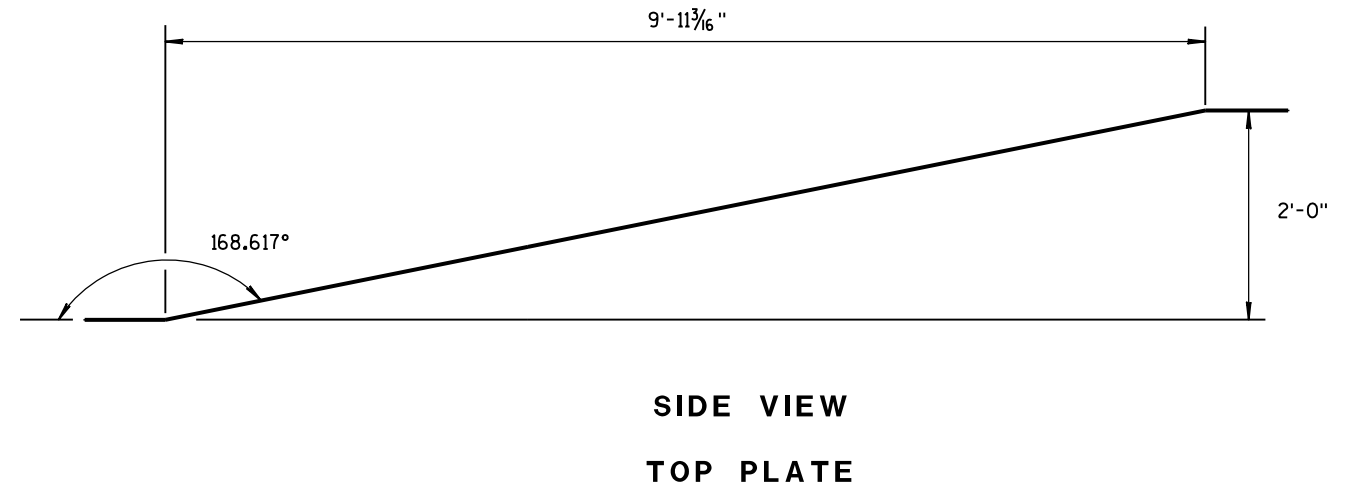
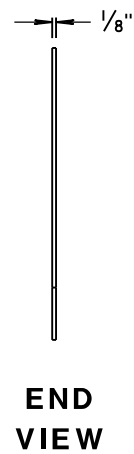
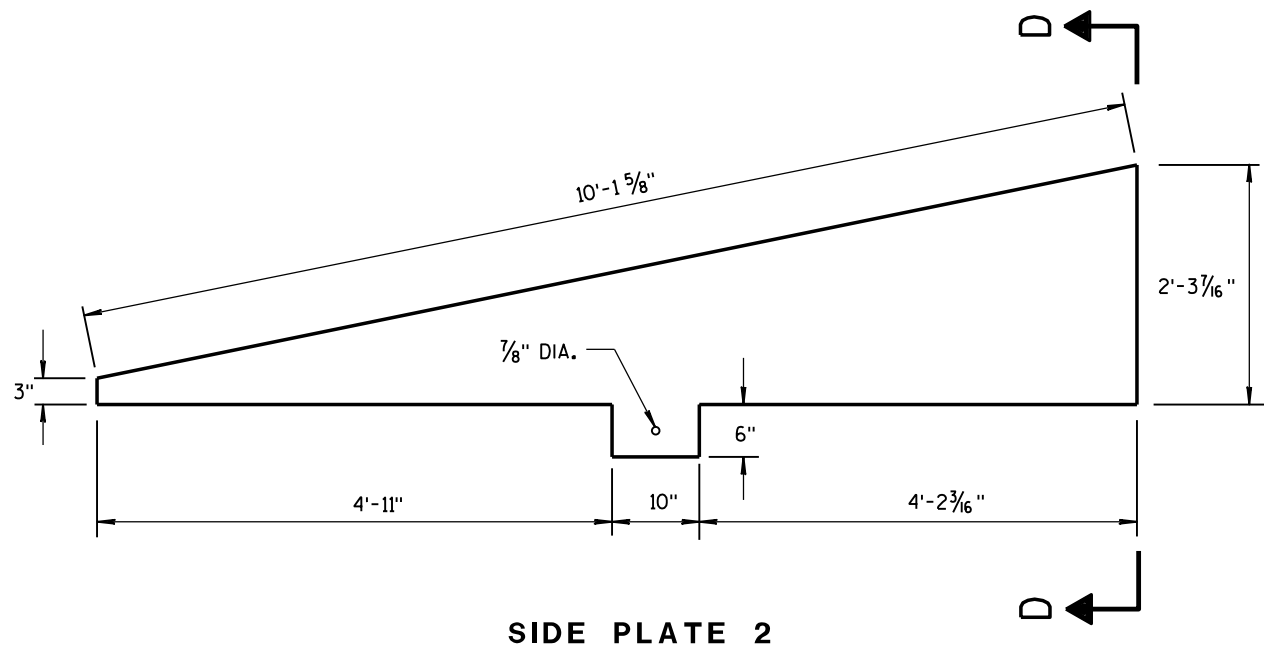
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



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

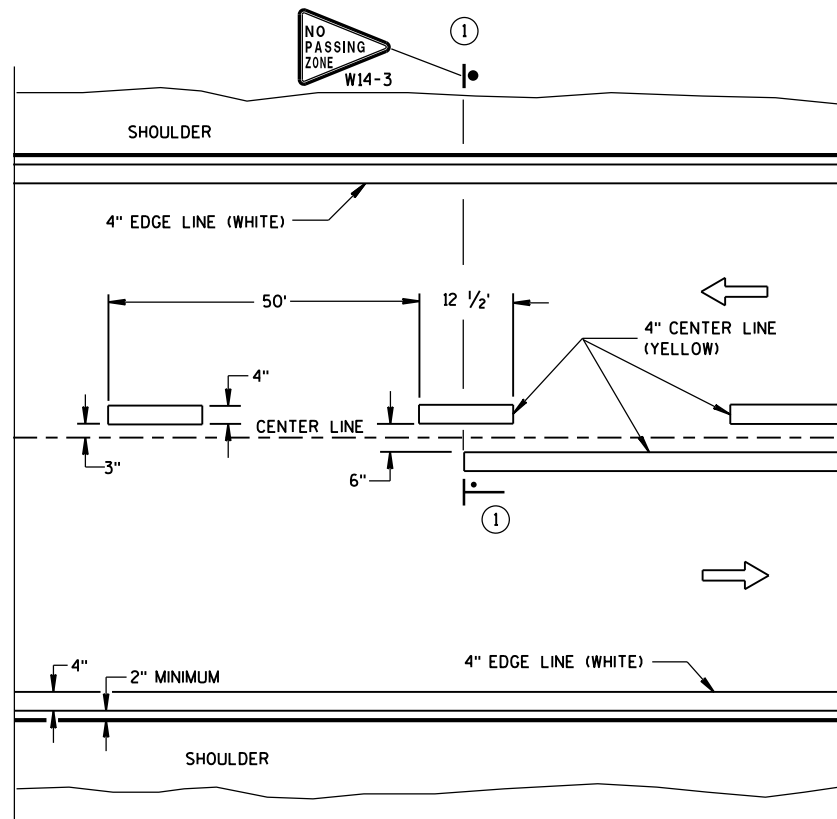
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

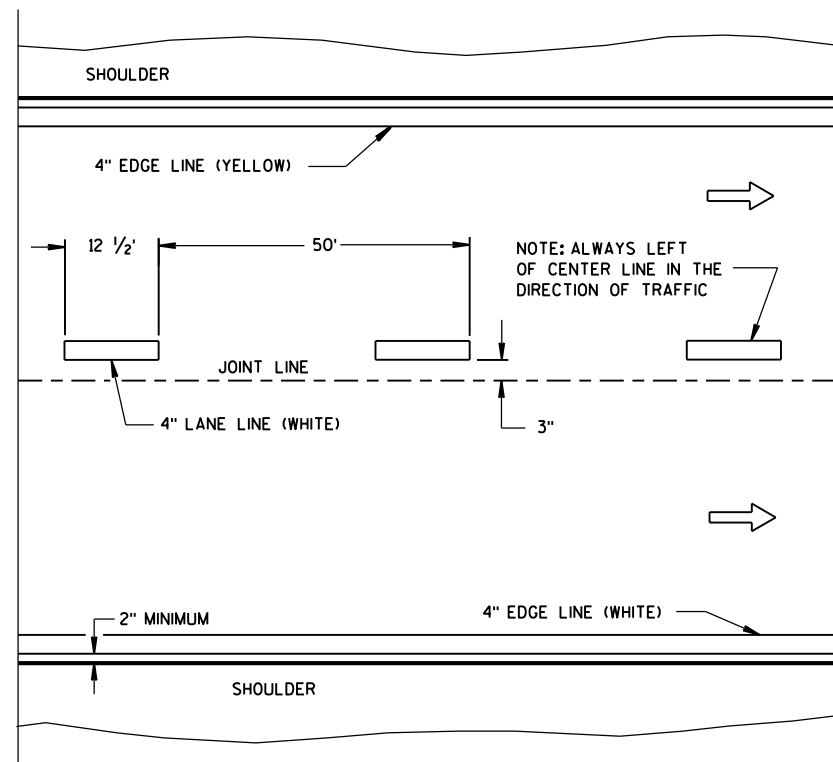


**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER**

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

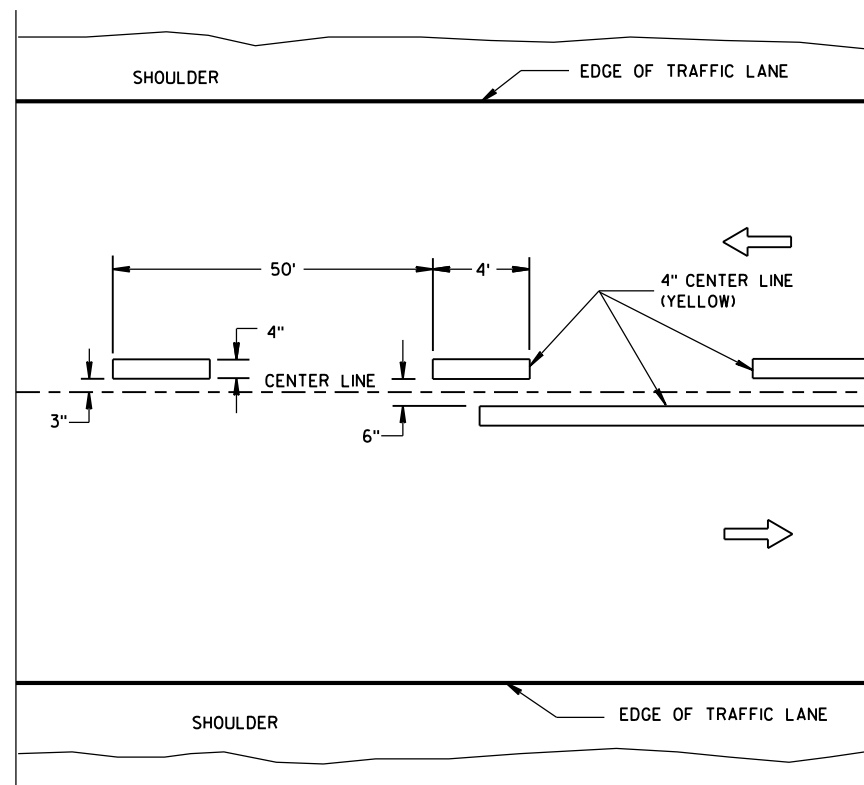


TWO WAY TRAFFIC

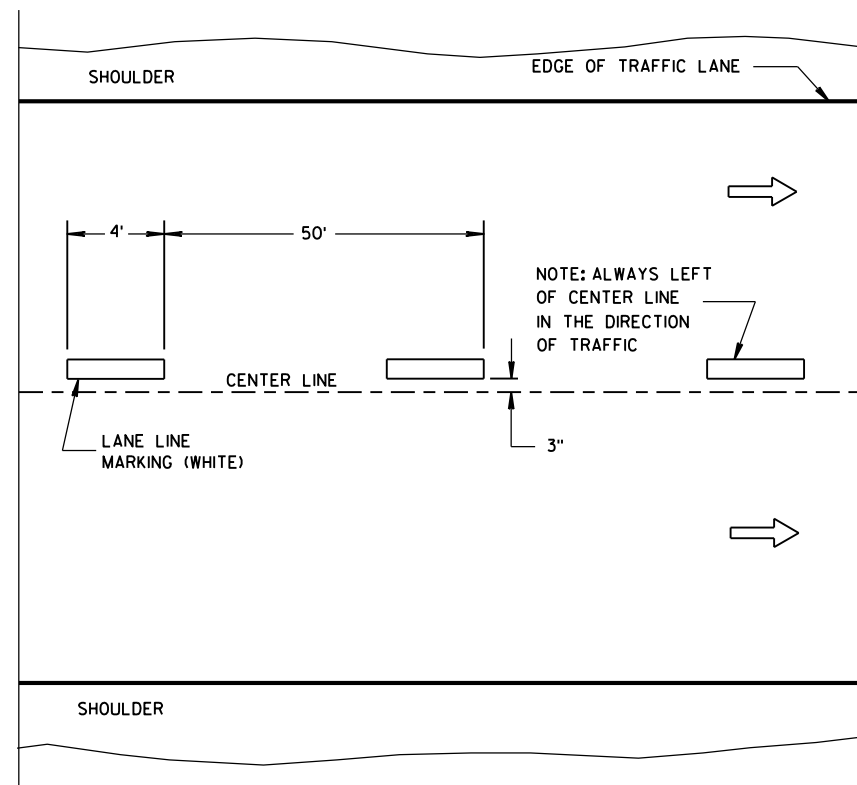


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

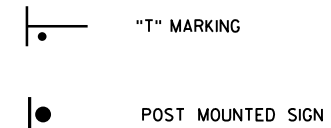
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL

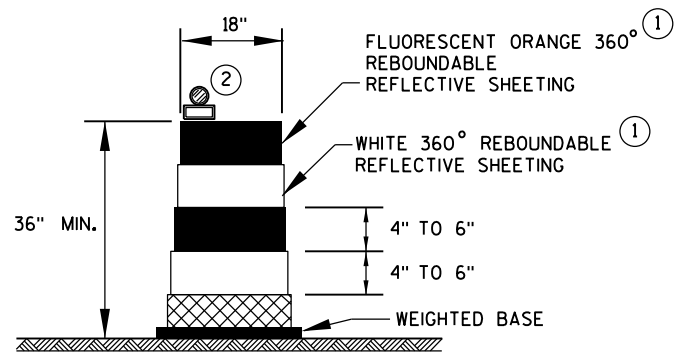
LEGEND



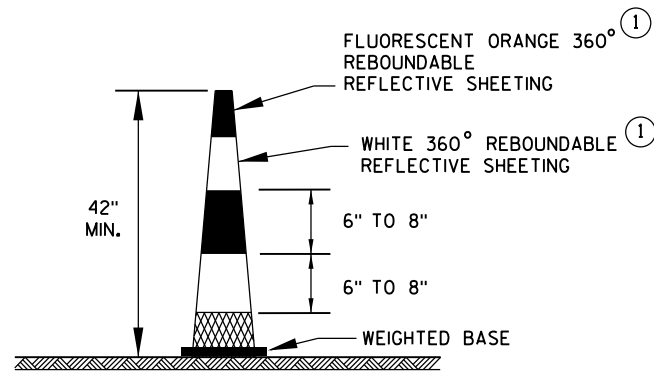
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



DRUM

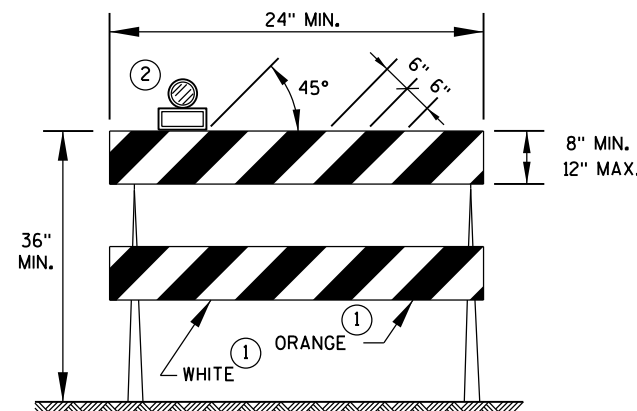


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

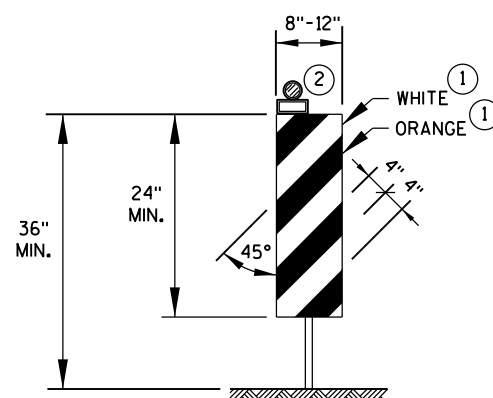
GENERAL NOTES

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



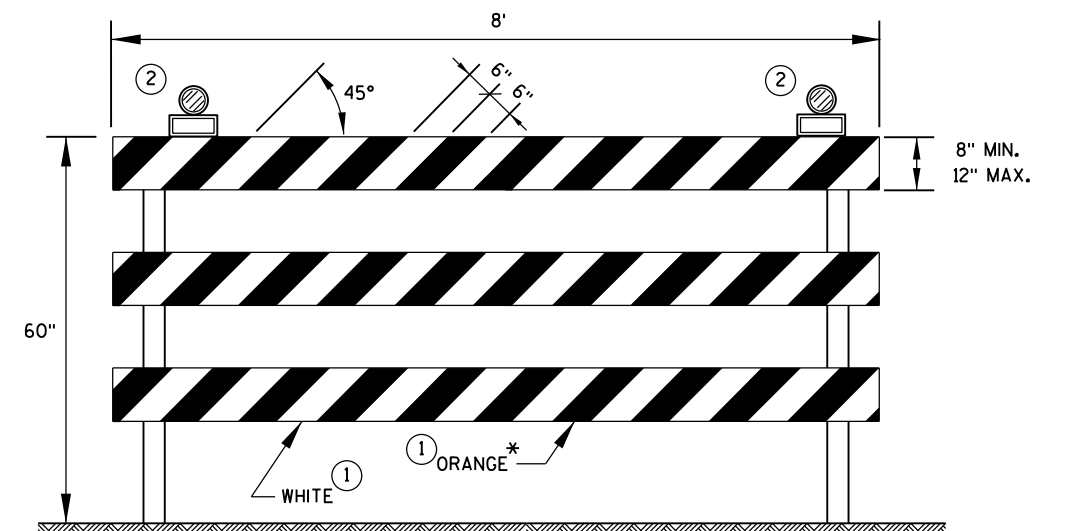
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

FHWA

/S/ Andrew Heidtke
WORK ZONE ENGINEER

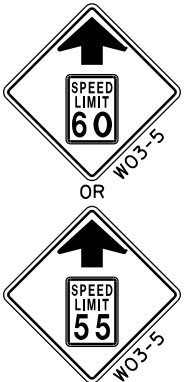
LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA

L, TAPER LENGTH (MPH)						
SPEED (MPH)	W, LATERAL OFFSET (FT)					
	10	11	12	13	14	15
45	450	495	540	585	630	675
50	500	550	600	650	700	750
55	550	605	660	715	770	825
60	600	660	720	780	840	900
65	650	715	780	845	910	975
70	700	770	840	910	980	1050



INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET).



LOCATED 2600 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.



OR



R2-1 48"x60" (BLACK AND WHITE) LOCATED 500 FEET BEYOND W20-5G SIGN.

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"W0" 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.

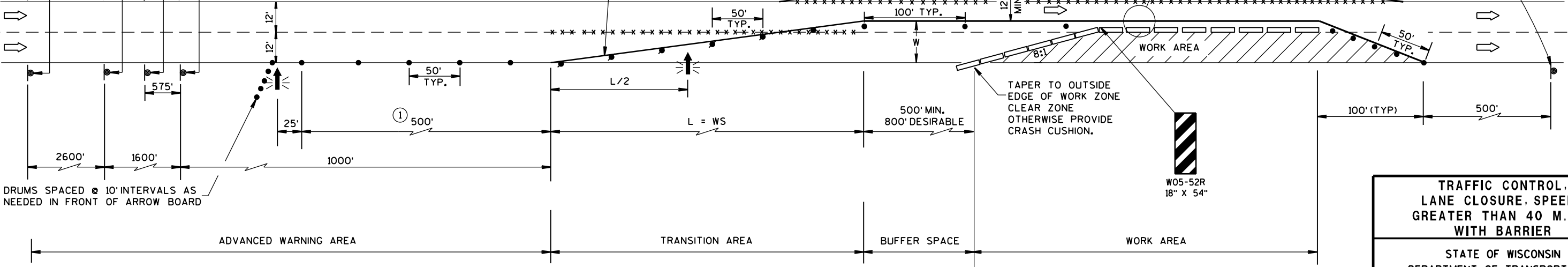
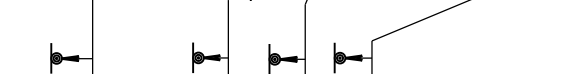
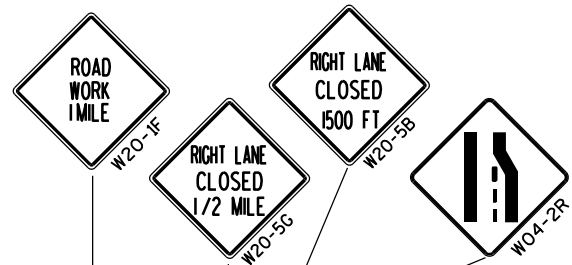
1 CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

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

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

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.



DRUMS SPACED @ 10' INTERVALS AS NEEDED IN FRONT OF ARROW BOARD

TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept., 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

LEGEND

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

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" 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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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

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

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

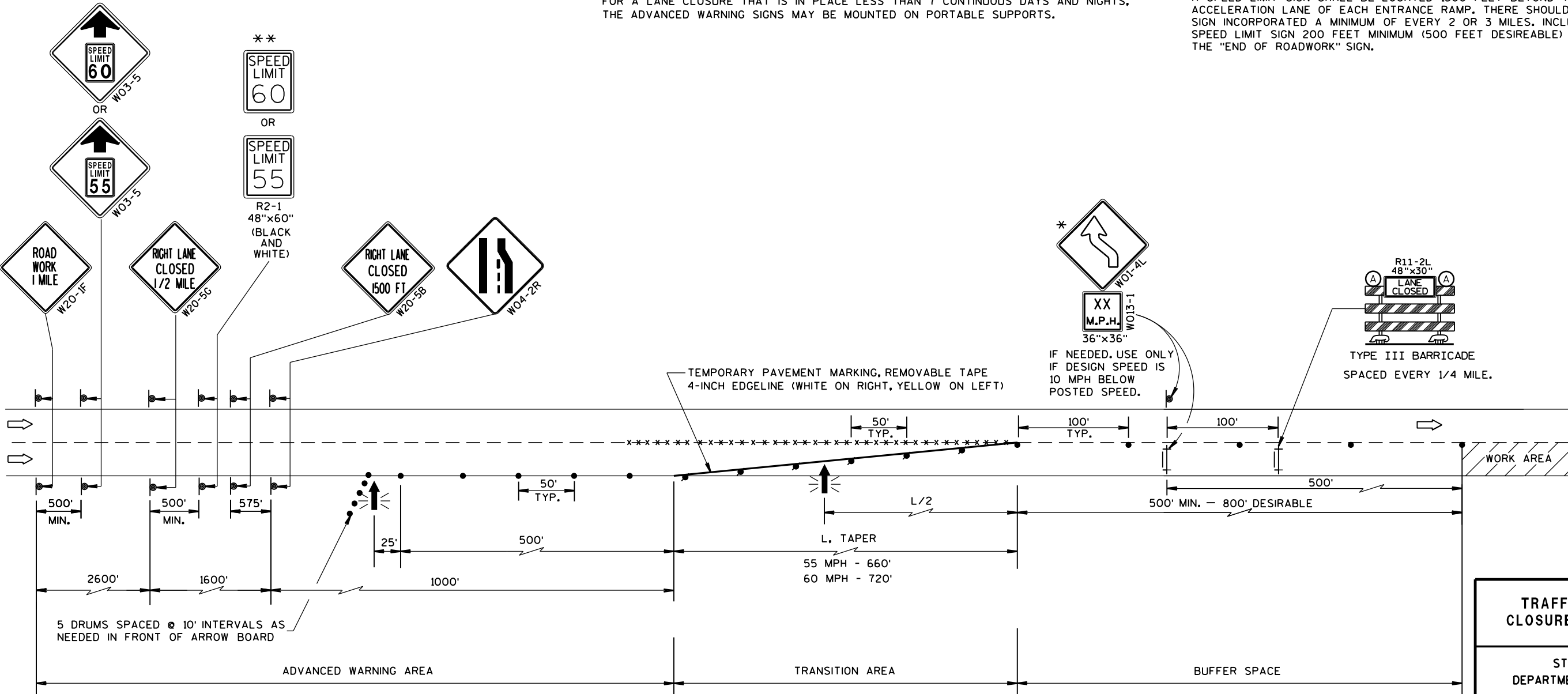
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

** A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.

6

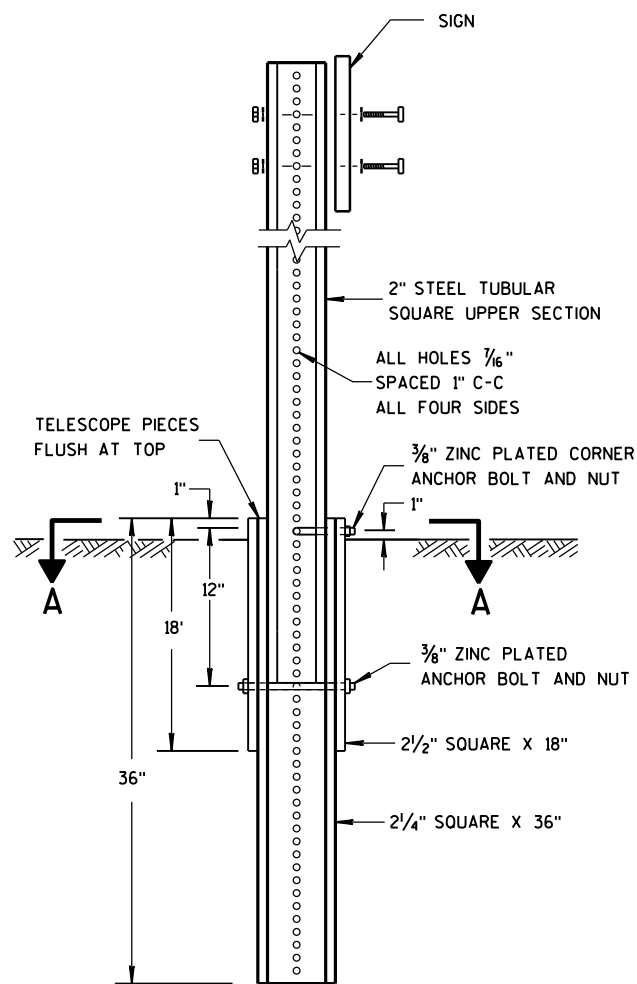


6

S.D.D. 15 D 12-6b

TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

S.D.D. 15 D 12-6b

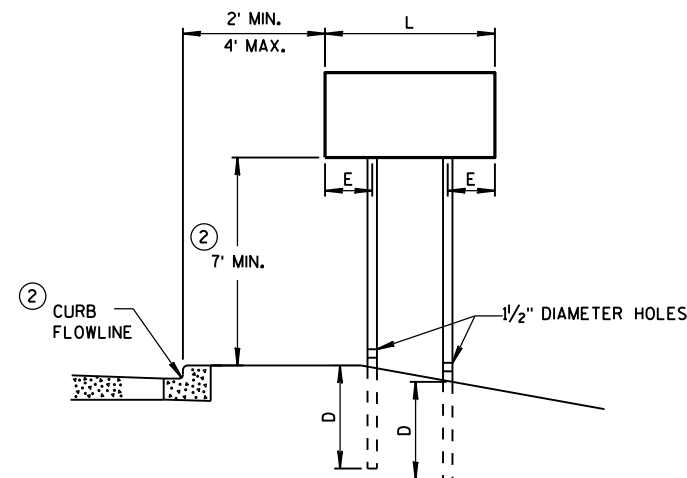
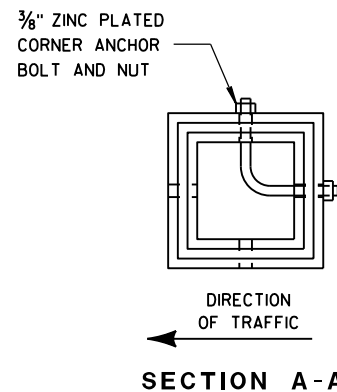


DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

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

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

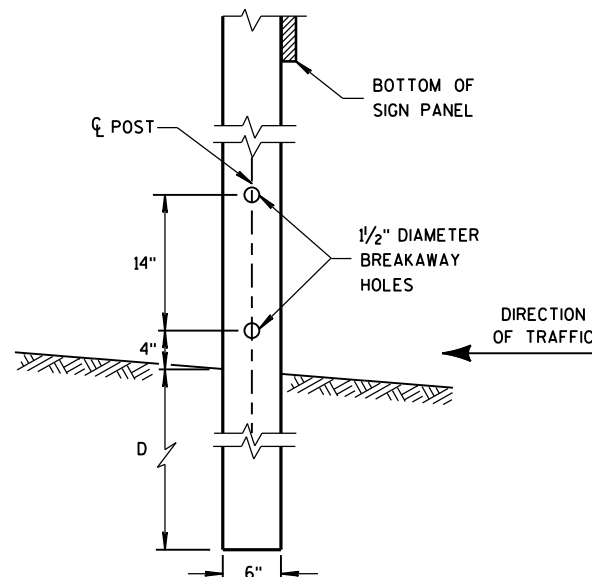


URBAN AREA

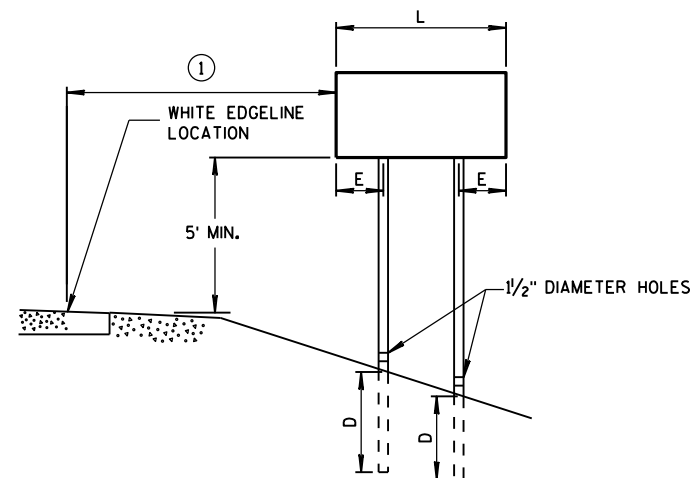
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST EMBEDMENT DEPTH

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



4" x 6" WOOD POST MODIFICATION



RURAL AREA

4" X 6" WOOD POST

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

SEE NOTE ③

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

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

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

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

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

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

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

DESIGN DATA


LIVE LOAD:
DESIGN LOADING: HS-20
INVENTORY RATING: HS-16
OPERATING RATING: HS-28
MAXIMUM STANDARD PERMIT VEHICLE LOAD: 210 KIPS

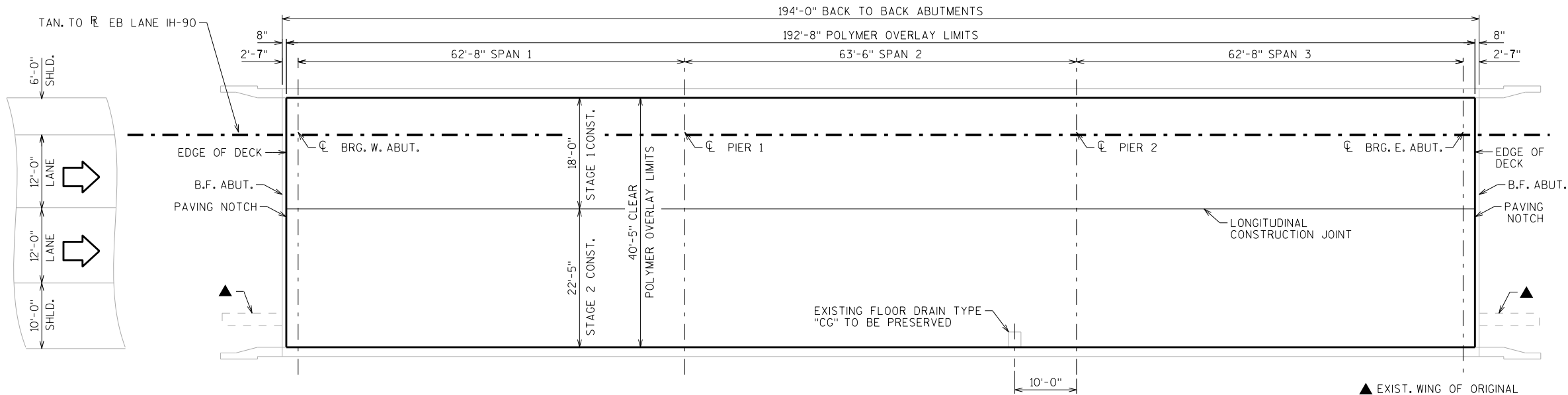
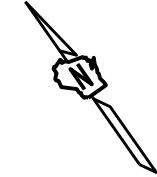
MATERIAL PROPERTIES:
CONCRETE SURFACE REPAIR
SUBSTRUCTURE $f'c = 3,500$ P.S.I.
GIRDERS $f'c = 6,000$ P.S.I.
RAPID SET DECK REPAIR $f'c = 4,000$ P.S.I.

GENERAL NOTES

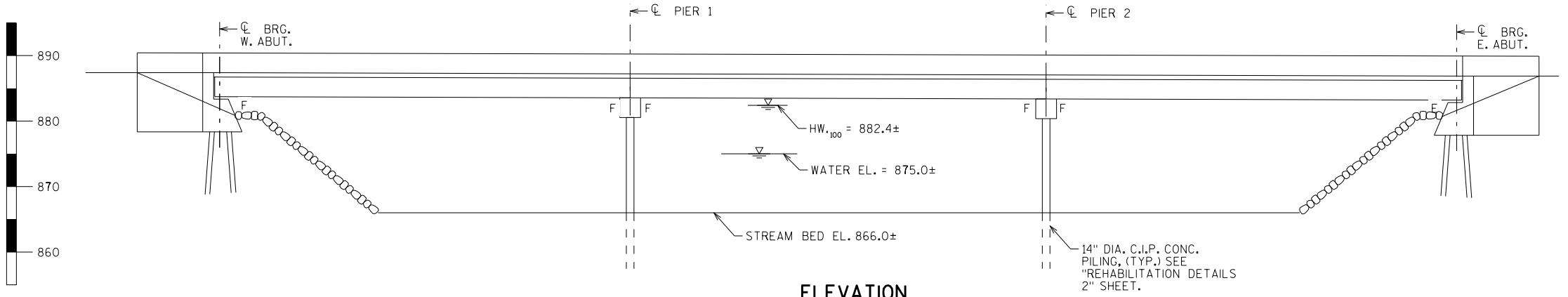
DRAWINGS SHALL NOT BE SCALED.
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
WATER ELEVATIONS OBTAINED FROM THE FLOOD INSURANCE STUDY FOR JUNEAU COUNTY (NAVD 88).
DECK SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "POLYMER OVERLAY"
CONCRETE SURFACE REPAIR IS LOCATED AT GIRDERS, PIERS, AND ABUTMENTS. AREAS PROVIDED ARE APPROXIMATE. LOCATIONS AND EXTENTS SHALL BE DETERMINED BY THE FIELD ENGINEER.
THE COLOR OF THE PAINT ON BEARINGS SHALL BE FEDERAL STANDARD COLOR NO. 26293.
AREAS OF "PREPARATION DECKS TYPE 1" SHALL BE DEFINED BY A 1" DEEP SAW CUT BEFORE REMOVING DETERIORATED CONCRETE.
"PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2" AREAS ARE TO BE DETERMINED BY THE FIELD ENGINEER. DECK REPAIRS SHALL BE FILLED WITH "RAPID SET DECK REPAIR".
CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION OR CONSTRUCTION.
DURING ANY REMOVAL OR REHABILITATION PROCESS, PREVENT ALL LARGE PIECES OF DEBRIS AND MINIMIZE THE NUMBER OF SMALL PIECES FROM ENTERING THE WATERWAY. REMOVE ALL CONCRETE AND ALL OTHER DEBRIS THAT FALLS INTO THE WATERWAY.

STRUCTURE DESIGN CONTACTS:
DAN MONROE (608) 266-8490
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY
<div><div><div><div><div>BUREAU OF</div><div>STRUCTURES</div></div><div>ACCEPTED <i>William C. Decker</i> ^{LLS} 10/29/18 CHIEF STRUCTURES DESIGN ENGINEER DATE</div></div></div><div>STRUCTURE B-29-46</div><div>IH-90 EB OVER LEMONWEIR RIVER</div><div>COUNTY JUNEAU TOWN/CITY/VILLAGE LIBSON</div><div>DESIGN SPEC. REHABILITATION - N/A</div><div>DESIGNED BY DLM DESIGNED CK'D. ARC DRAWN BY DLM PLANS CK'D. ARC</div><div>POLYMER OVERLAY & GENERAL NOTES</div><div>SHEET 1 OF 3</div></div>			



PLAN
THREE SPAN 36" PRESTRESSED GIRDER BRIDGE



ELEVATION

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	PIER 1	PIER 2	EAST ABUT.	TOTALS
506.7060.S	BRIDGE, JACKING, B-29-46	LS	1	—	—	—	—	1
509.0301	PREPARATION DECKS TYPE 1	SY	1	—	—	—	—	1
509.0302	PREPARATION DECKS TYPE 2	SY	1	—	—	—	—	1
509.0310.S	SAWING PAVEMENT DECK PREPARATION AREAS	LF	10	—	—	—	—	10
509.1500	CONCRETE SURFACE REPAIR	SF	76	—	2	—	15	93
509.5100.S	POLYMER OVERLAY	SY	866	—	—	—	—	866
SPV.0035	RAPID SET DECK REPAIR	CY	1	—	—	—	—	1
SPV.0060	PILE REHABILITATION	EACH	—	—	11	11	—	22
SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	—	—	18	18	—	36
SPV.0060	WELDING STEEL EXPANSION JOINT EXTRUSION	EACH	1	—	—	—	—	1

SCOPE OF WORK

REHABILITATION OF DETERIORATED 14" DIA. CAST-IN-PLACE PILING AT PILE BENTS.
CONCRETE SURFACE REPAIRS ON SUPERSTRUCTURE, GIRDERS, ABUTMENTS, AND PIERS.
BRIDGE JACKING TO REPOSITION EXISTING BEARING AT EAST ABUTMENT.
CLEAN & PAINT ALL EXISTING STEEL BEARINGS.
APPLICATION OF A 1/4" MIN. POLYMER OVERLAY, INCLUDING REPAIR OF EXISTING STEEL EXTRUSION AT E. ABUT.

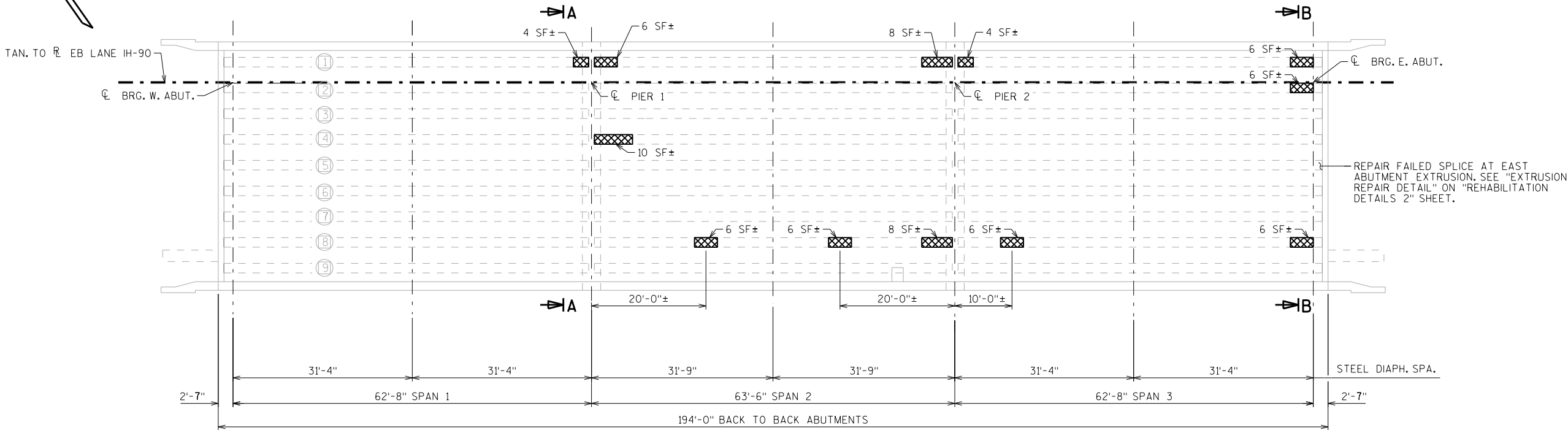
TRAFFIC VOLUME

IH-90
ADT = 19,600 (2037)
R.D.S. = 70 M.P.H.

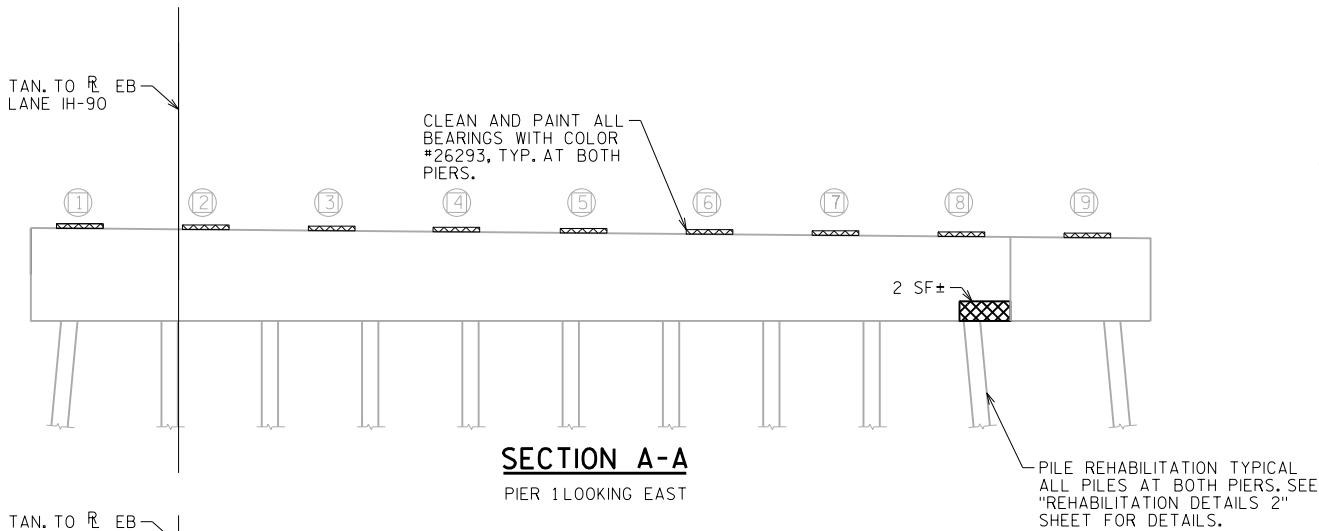
LIST OF DRAWINGS

- POLYMER OVERLAY & GENERAL NOTES
- REHABILITATION DETAILS 1
- REHABILITATION DETAILS 2

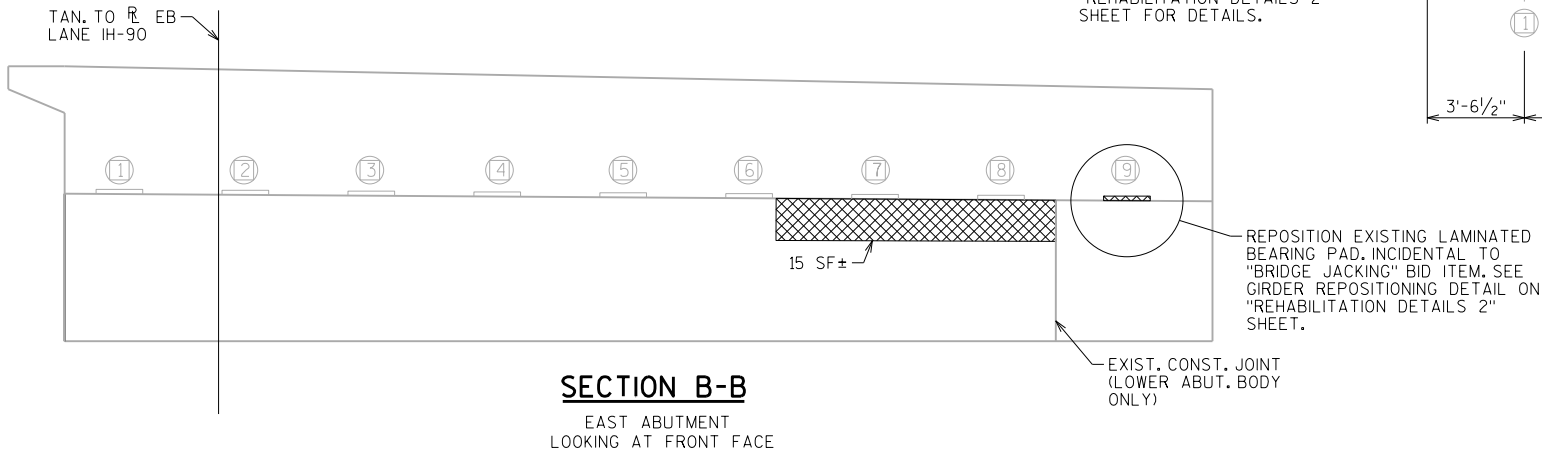
NOTE: CONCRETE REPAIRS ARE LOCATED AT BOTTOM AND OUTER EDGES OF FLANGES AND WEBS OF PRESTRESSED GIRDERS. LOCATIONS SHOWN ARE BASED ON FIELD OBSERVATIONS AND ARE APPROXIMATE. LOCATIONS AND EXTENTS SHALL BE DETERMINED BY THE FIELD ENGINEER.



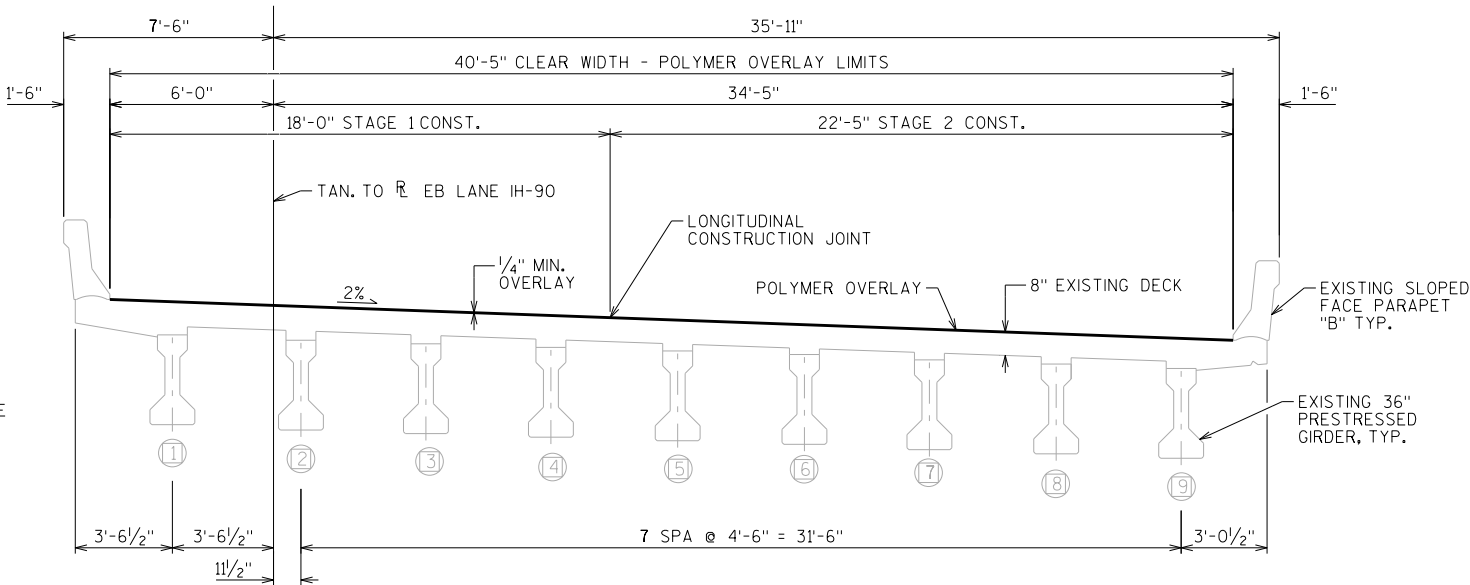
CONCRETE SURFACE REPAIR - GIRDERS



SECTION A-A
PIER 1 LOOKING EAST

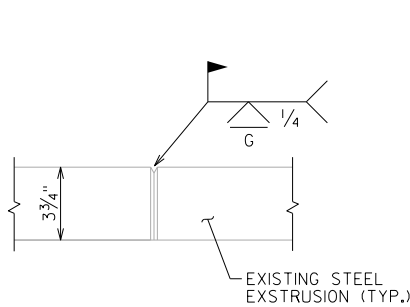


SECTION B-B
EAST ABUTMENT
LOOKING AT FRONT FACE



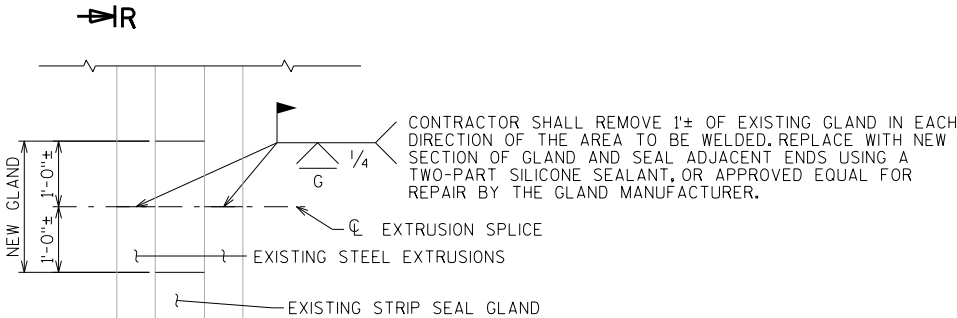
CROSS SECTION THRU ROADWAY
LOOKING EAST

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-46			
DRAWN BY		DLM	PLANS CK'D. ARC
REHABILITATION DETAILS 1		SHEET 2	



SECTION R-R

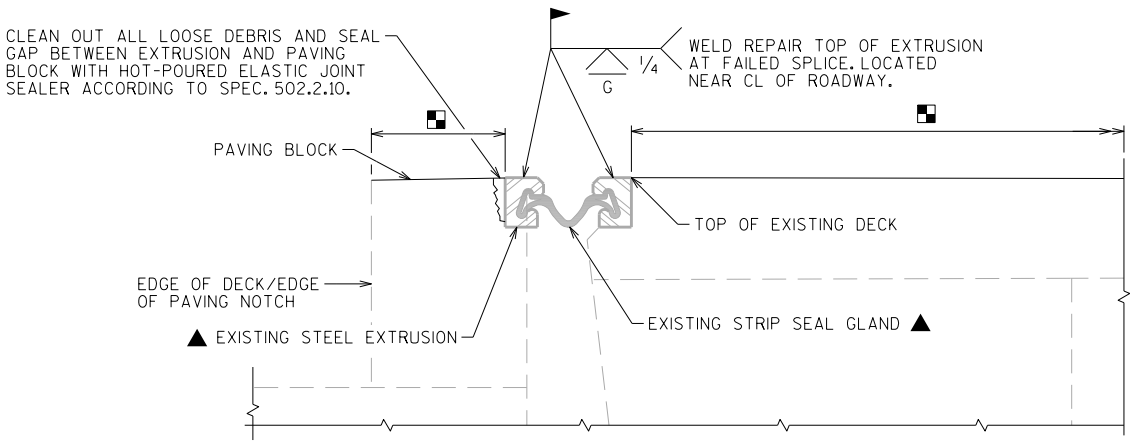
REAR VIEW STEEL EXTRUSION @ SPLICE



PLAN VIEW

PIER DETAIL TABLE

LOCATION	APPROX. EXPOSED PILE HEIGHT (FT)	APPROX. WATER DEPTH TO STREAMBED (FT)	APPROX. TOTAL HEIGHT (FT)	EXCAVATION MIN. DEPTH (FT)	NUMBER OF PILES	APPROX. REHABILITATION HEIGHT (FT)	APPROX. REPAIR AREA (SF)
PIER 1	2.2±	9±	11.2	1	11	12.2	492
PIER 2	1.1±	9±	10.1	1	11	11.1	448

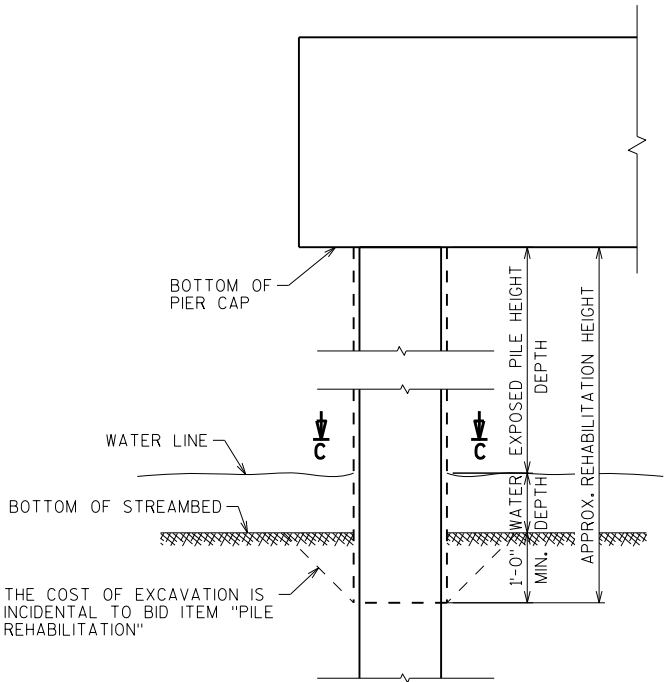


EXTRUSION REPAIR DETAIL

LOOKING SOUTH ALONG EAST ABUTMENT

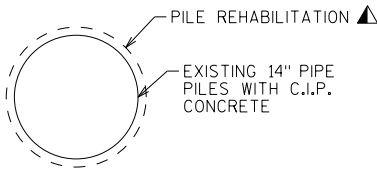
■ POLYMER OVERLAY LIMITS.

▲ NEOPRENE STRIP SEAL & STEEL EXTRUSION D.S. BROWN SSCM2-400A2

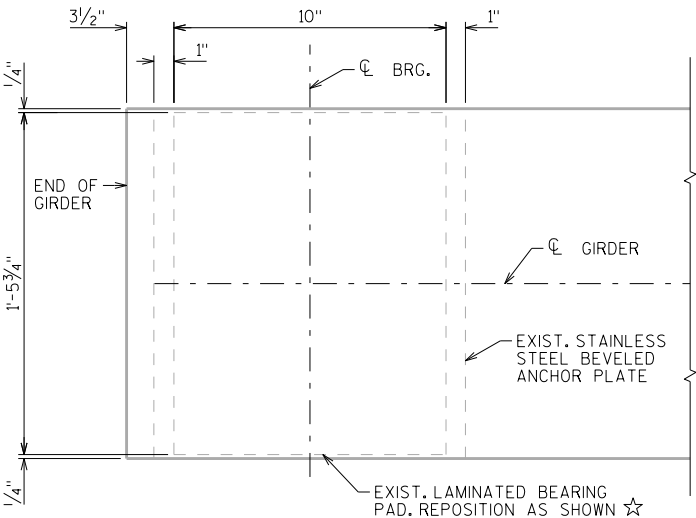


PILE REHABILITATION DETAILS

▲ SEE SPECIAL PROVISIONS



SECTION C-C



GIRDER REPOSITIONING DETAIL

SHOWING GIRDER 9

☆ NOTE: EXISTING LAMINATED ELASTOMERIC BEARING PADS DO NOT HAVE TOP PLATE AND ARE EPOXY ADHERED TO BOTTOM OF GIRDER.

PREPARE EXISTING PAD SURFACE BY CLEANING WITH A TOLUENE-BASED SOLVENT AND ALLOW TO FULLY DRY BEFORE PLACING QUICK SETTING CONTACT ADHESIVE.

BRUSH APPLY QUICK SETTING NEOPRENE CONTACT ADHESIVE AS APPROVED BY THE STRUCTURES DESIGN SECTION.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-46			
DRAWN BY		DLM	PLANS CK'D. ARC
REHABILITATION DETAILS 2		SHEET 3	

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HS-20
INVENTORY RATING: HS-15
OPERATING RATING: HS-26
MAXIMUM STANDARD PERMIT VEHICLE LOAD: 210 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY:
DECK REPAIR f'c = 4,000 P.S.I.
CONCRETE SURFACE REPAIR f'c = 4,000 P.S.I.
SUBSTRUCTURE f'c = 3,500 P.S.I.
GIRDERS f'c = 6,000 P.S.I.
BAR STEEL REINFORCEMENT:
GRADE 60 fy = 60,000 P.S.I.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
WATER ELEVATIONS OBTAINED FROM THE FLOOD INSURANCE STUDY FOR JUNEAU COUNTY (NAVD 88).
DECK SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "POLYMER OVERLAY"
CONCRETE SURFACE REPAIR IS LOCATED AT GIRDERS, PIERS, AND ABUTMENTS. AREAS PROVIDED ARE APPROXIMATE. LOCATIONS AND EXTENTS SHALL BE DETERMINED BY THE FIELD ENGINEER.
THE COLOR OF THE PAINT ON ALL STEEL BEARINGS SHALL BE FEDERAL STANDARD COLOR NO. 26293.

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACE OF EAST ABUTMENT. PAID FOR IN "ABUTMENT SEAT CLEANING AND SEALING" BID ITEM.

"PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2" AREAS ARE TO BE DETERMINED BY THE FIELD ENGINEER. DECK REPAIRS SHALL BE FILLED WITH "RAPID SET DECK REPAIR".

DURING ANY REMOVAL OR REHABILITATION PROCESS, PREVENT ALL LARGE PIECES OF DEBRIS AND MINIMIZE THE NUMBER OF SMALL PIECES FROM ENTERING THE WATERWAY. REMOVE ALL CONCRETE AND ALL OTHER DEBRIS THAT FALLS INTO THE WATERWAY.

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

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

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

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

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS AT JOINT REPAIR AREAS.

ANY EXCAVATION NECESSARY TO COMPLETE THE JOINT REPAIR AT THE ABUTMENTS IS INCIDENTAL TO THE BID ITEM "JOINT REPAIR".

ALL LINES OF REMOVAL SHALL BE DEFINED BY A 1" DEEP SAW CUT.

STRUCTURE DESIGN CONTACTS:

DAN MONROE (608) 266-8490
LAURA SHADEWALD (608) 267-9592

TRAFFIC VOLUME

IH-90
ADT = 19,600 (2037)
R.D.S. = 70 M.P.H.

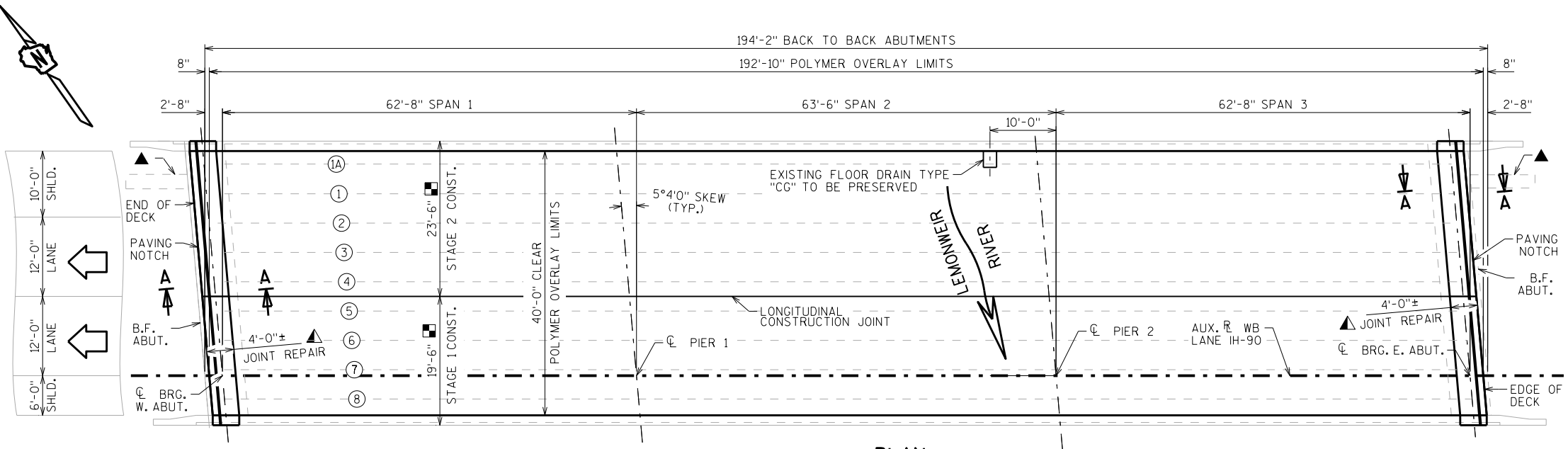
SEE "STAGING DETAILS 1" SHEET FOR REMOVAL AND STAGING DETAILS AT JOINT REPAIR.

DIMENSION GIVEN NORMAL TO C SUBSTRUCTURE.

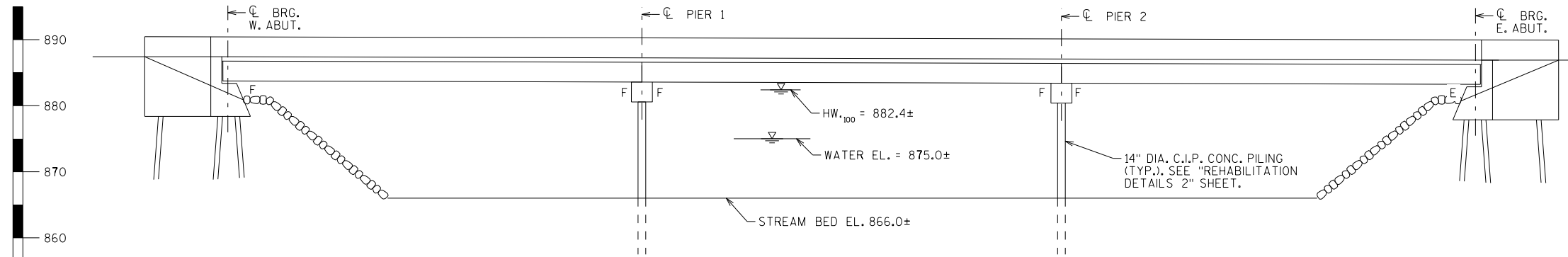
EXIST. WING OF ORIGINAL STRUCTURE. EXISTING CONCRETE IN THIS AREA WAS REMOVED A MIN. OF 2 FT. BELOW GRADE. (TYP.)

SEE 'PPC BEAM END REPAIR DETAILS' SHEETS FOR DETAILS.

NO.	DATE	REVISION	BY
BUREAU OF STRUCTURES			
ACCEPTED <i>William C. Diehl</i> 10/29/18 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-29-47			
IH-90 WB OVER LEMONWEIR RIVER			
COUNTY	JUNEAU	TOWN/CITY/VILLAGE	LIBSON
DESIGN SPEC. REHABILITATION	N/A		
DESIGNED BY	DLM	DESIGNED CK'D.	ARC
DRAWN BY	DLM	PLANS CK'D.	ARC
POLYMER OVERLAY & GENERAL NOTES			SHEET 1 OF 14



PLAN
THREE SPAN 36" PRESTRESSED GIRDERS



ELEVATION

SCOPE OF WORK

REHABILITATION OF DETERIORATED 14" DIA. C.I.P. PILING AT PILE BENTS.

MISCELLANEOUS CONCRETE SURFACE REPAIRS ON SUPERSTRUCTURE, GIRDERS, ABUTMENTS, AND PIERS. BEAM END BLOCK REPAIR TO GIRDERS AT EAST ABUTMENT.

BRIDGE JACKING TO REPAIR GIRDER ENDS AND INSTALL NEW LAMINATED ELASTOMERIC BEARING PADS AT EAST ABUT.

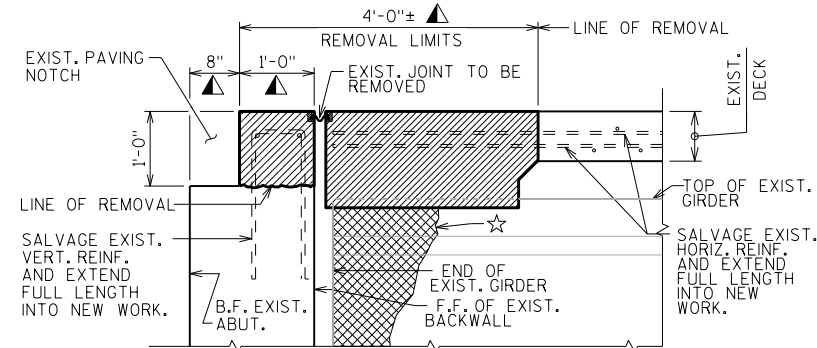
CLEAN & PAINT ALL EXISTING STEEL BEARINGS AT BOTH PIERS AND WEST ABUT.

APPLICATION OF A 1/4" MIN. POLYMER OVERLAY.

JOINT REPAIR AT BOTH ABUTMENTS.

LIST OF DRAWINGS

- POLYMER OVERLAY & GENERAL NOTES
- STAGING DETAILS 1
- STAGING DETAILS 2
- REHABILITATION DETAILS 1
- REHABILITATION DETAILS 2
- PPC BEAM END REPAIR DETAILS 1
- PPC BEAM END REPAIR DETAILS 2
- EXISTING GIRDER DETAILS
- PRESTRESSED GIRDER BEARINGS
- CATHODIC PROTECTION
- JOINT REPAIR DETAILS 1
- JOINT REPAIR DETAILS 2
- EXPANSION DEVICE
- COVER PLATE DETAILS



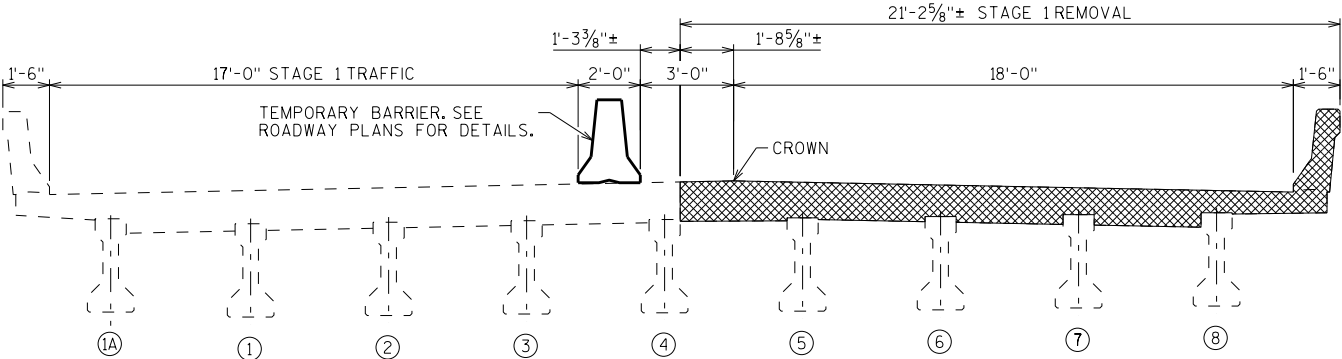
EXISTING SECTION A-A

SHOWING REMOVAL (TYP. BOTH ABUTS.)

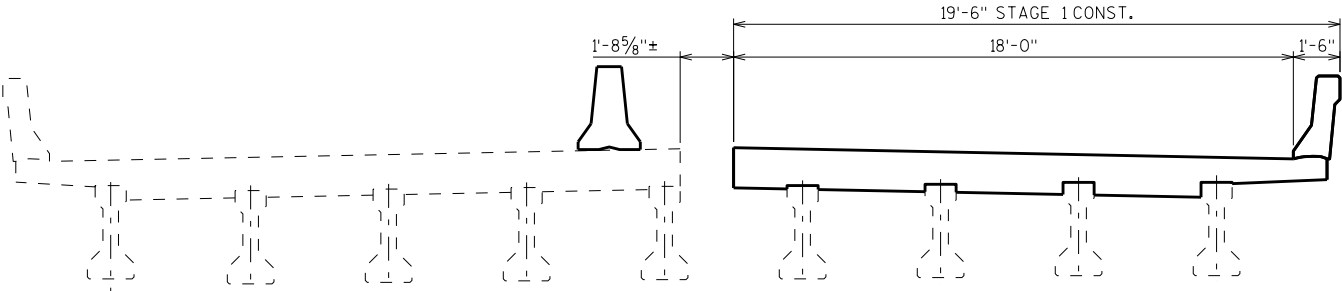
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	PIER 1	PIER 2	EAST ABUT.	TOTALS
502.3100	EXPANSION DEVICE B-29-47	LS	1	—	—	—	—	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	51	—	—	—	—	51
502.3210	PIGMENTED SURFACE SEALER	SY	7	—	—	—	—	7
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	84	—	—	—	—	84
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	3,135	—	—	—	—	3,135
506.2610	BEARING PADS ELASTOMERIC LAMINATED	EACH	—	—	—	—	9	9
506.7060.S	BRIDGE, JACKING, B-29-47	LS	1	—	—	—	—	1
509.0301	PREPARATION DECKS TYPE 1	SY	1	—	—	—	—	1
509.0302	PREPARATION DECKS TYPE 2	SY	1	—	—	—	—	1
509.0310.S	SAWING PAVEMENT DECK PREPARATION AREAS	LF	10	—	—	—	—	10
509.1000	JOINT REPAIR	SY	38	—	—	—	—	38
509.1500	CONCRETE SURFACE REPAIR	SF	37	8	—	4	—	49
509.2100.S	CONCRETE MASONRY DECK REPAIR	CY	15	—	—	—	—	15
509.5100.S	POLYMER OVERLAY	SY	857	—	—	—	—	857
SPV.0060	PILE REHABILITATION	EACH	—	—	11	11	—	22
** SPV.0060	EMBEDDED GALVANIC ANODES	EACH	65	—	—	—	—	65
SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	—	9	18	18	—	45
SPV.0060	PPC BEAM END BLOCK REPAIR	EACH	9	—	—	—	—	9
SPV.0060	CLEAN AND COAT CONCRETE BEAM ENDS	EACH	9	—	—	—	—	9
SPV.0180	ABUTMENT SEAT CLEANING AND SEALING	SY	—	—	—	—	10	10

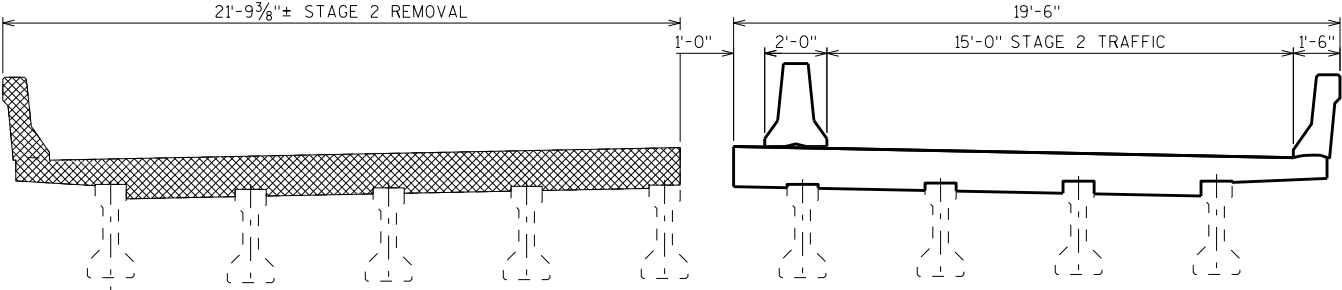
** QUANTITY ESTIMATED SHALL BE USED FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY EXACT AMOUNT NEEDED PER TABLE AS SHOWN ON "CATHODIC PROTECTION" SHEET.



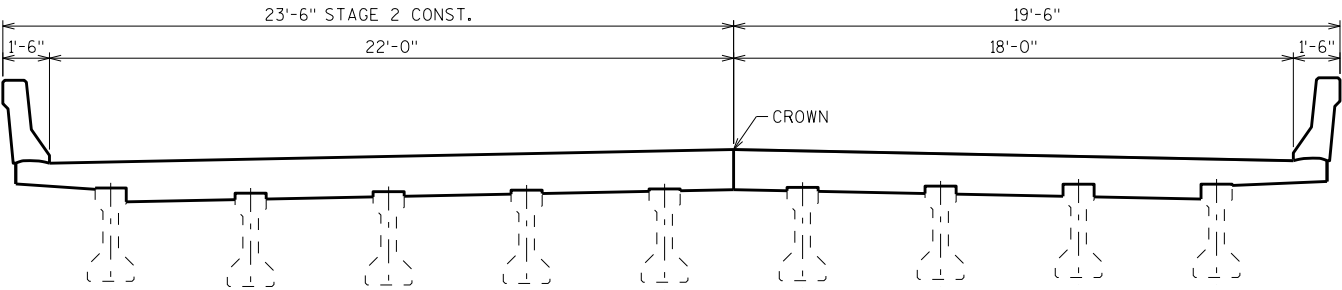
STAGE 1 TRAFFIC AND REMOVAL
SHOWING SECTION AT ABUTMENT DIAPHRAGMS (TYP.)
LOOKING EAST (TYP.)



STAGE 1 CONSTRUCTION

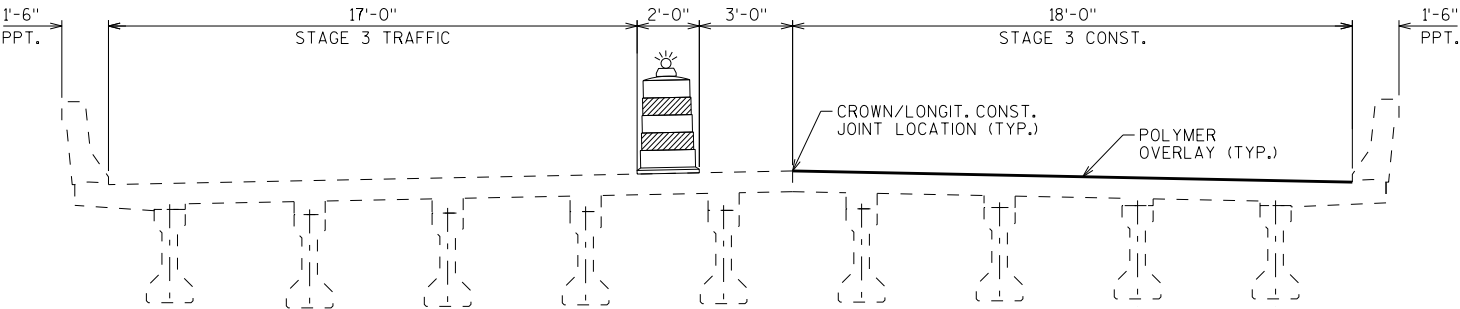


STAGE 2 TRAFFIC AND REMOVAL

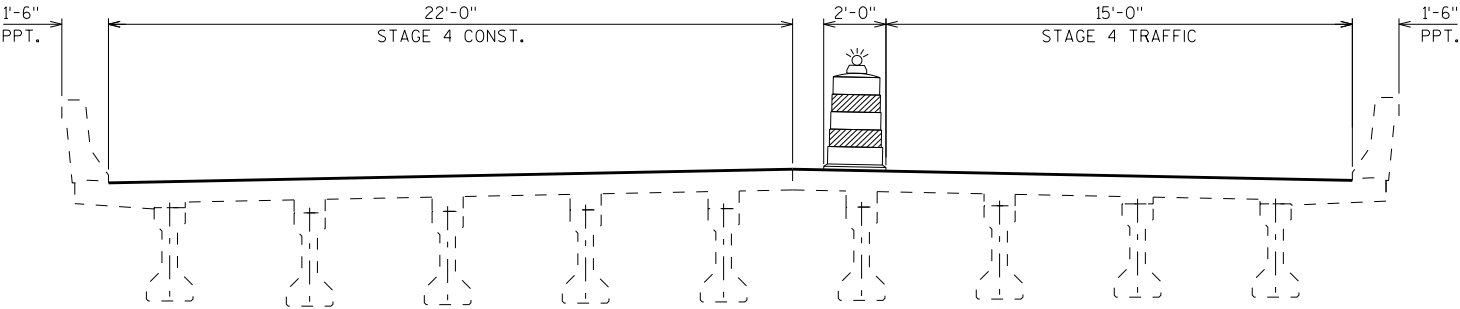


STAGE 2 CONSTRUCTION

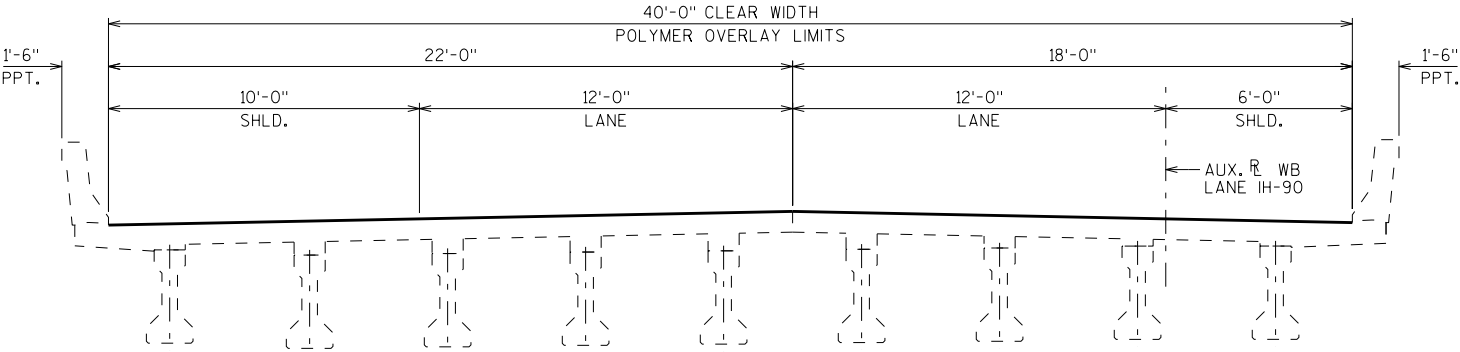
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
STAGING DETAILS 1		SHEET 2	



STAGE 3 CONSTRUCTION
LOOKING EAST



STAGE 4 CONSTRUCTION



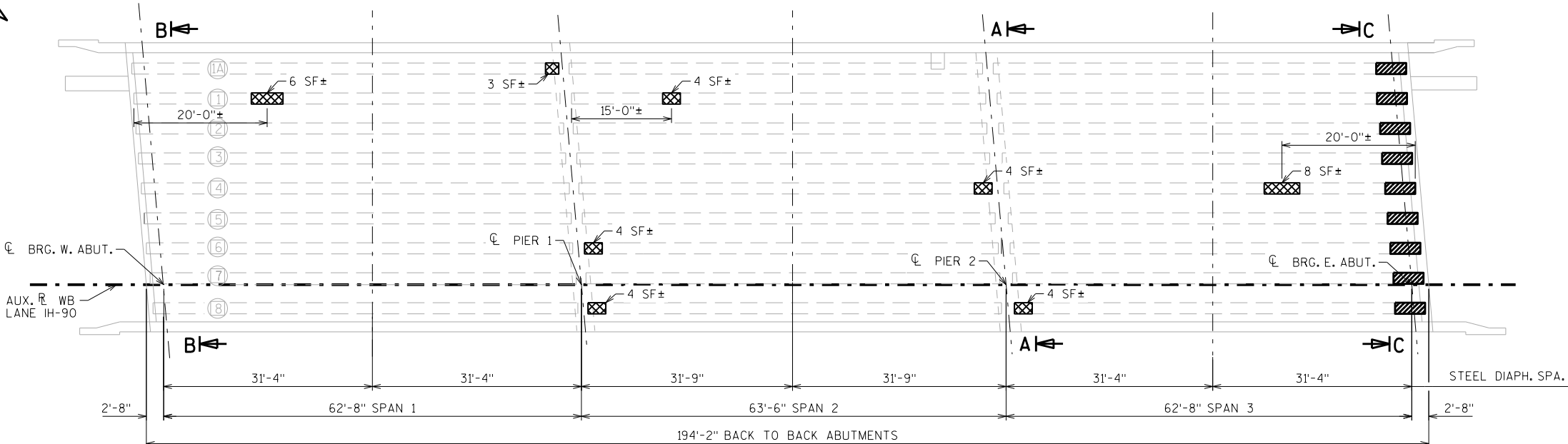
FINISHED SECTION

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
STAGING DETAILS 2			SHEET 3

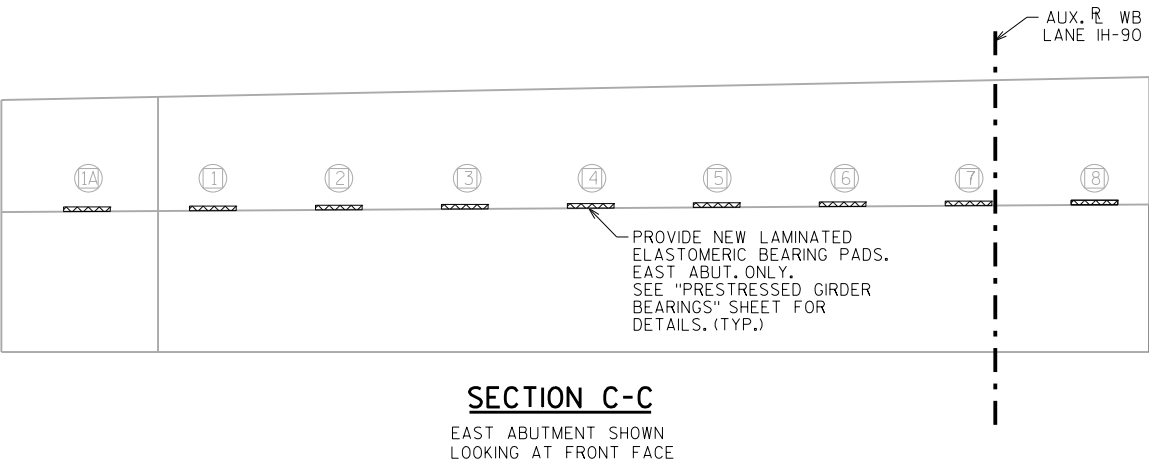
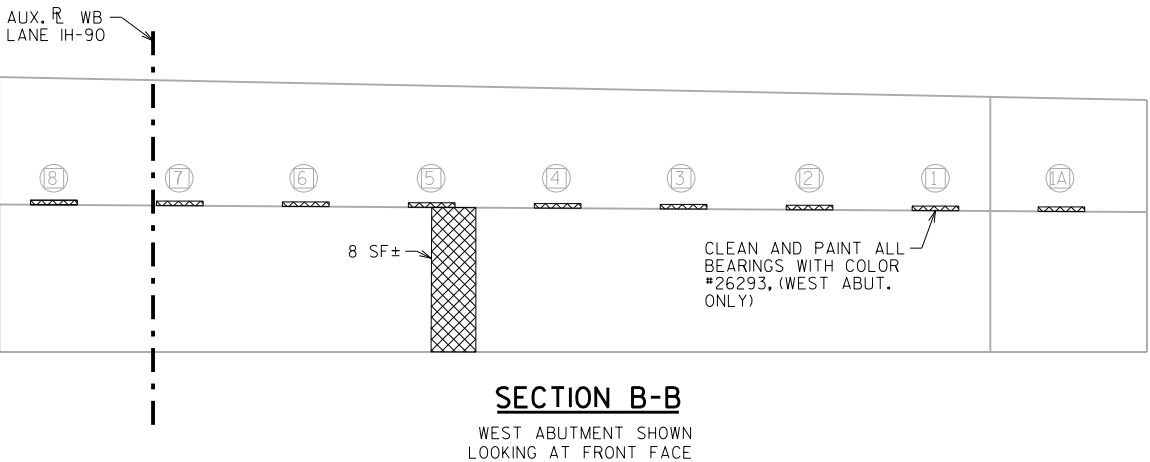
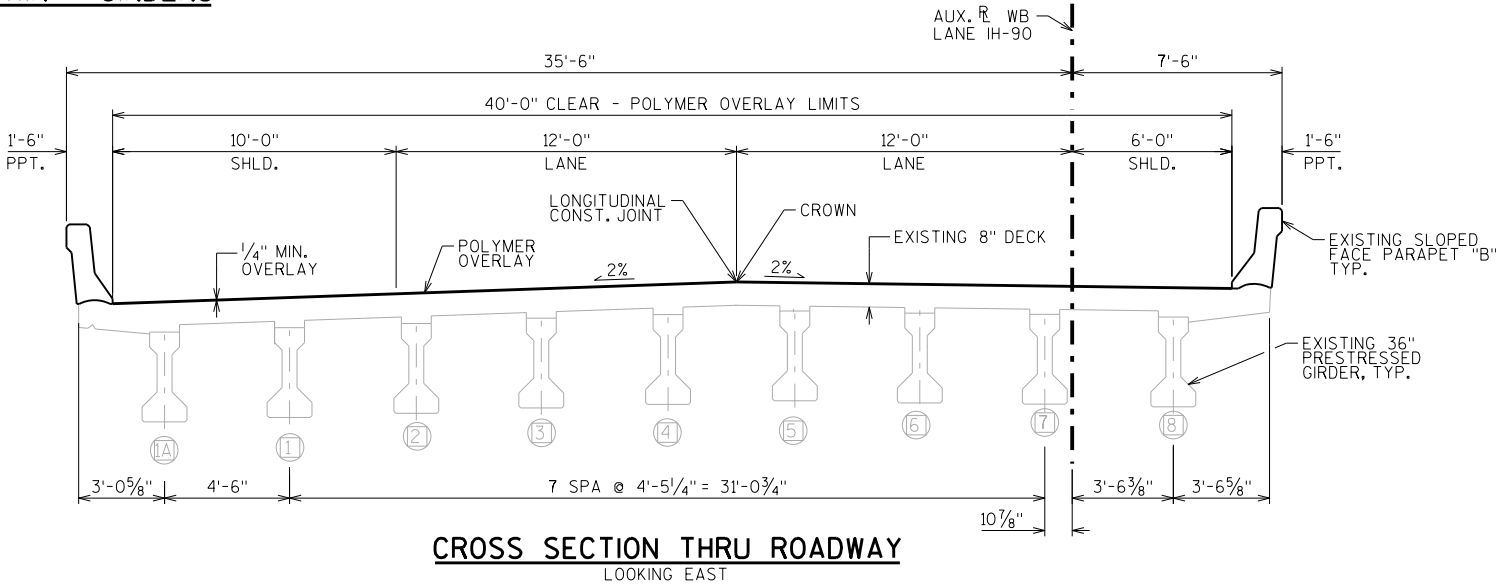
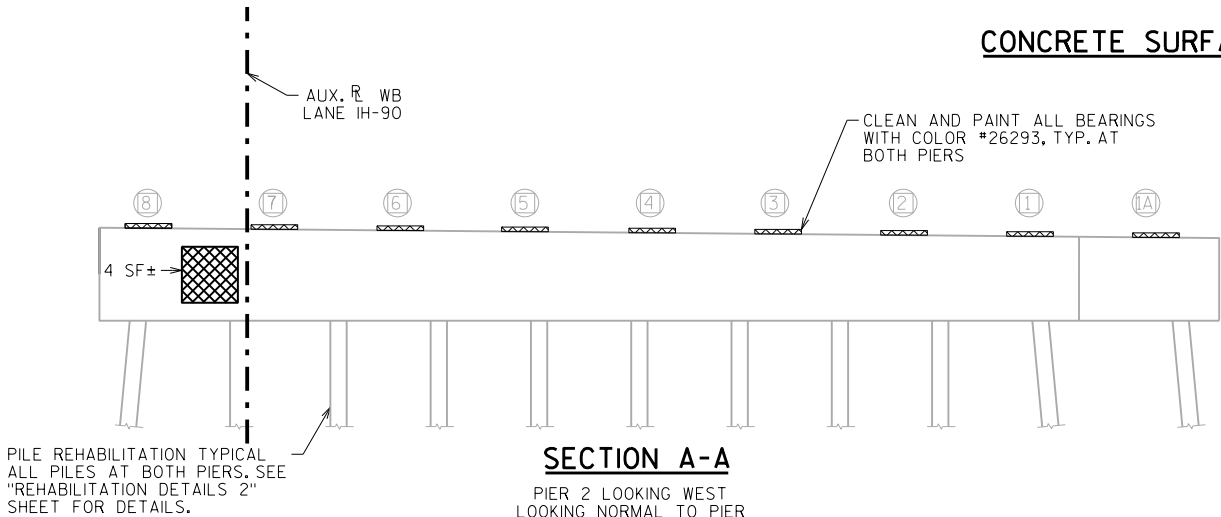
NOTE: CONCRETE REPAIRS ARE LOCATED AT BOTTOM AND OUTER EDGES OF FLANGES AND WEBS OF PRESTRESSED GIRDERS. LOCATIONS SHOWN ARE BASED ON FIELD OBSERVATIONS AND ARE APPROXIMATE. LOCATIONS AND EXTENTS SHALL BE DETERMINED BY THE FIELD ENGINEER.

LEGEND

- CONCRETE SURFACE REPAIR
- BEAM END BLOCK REPAIR, SEE "PPC BEAM END REPAIR DETAILS" SHEET.



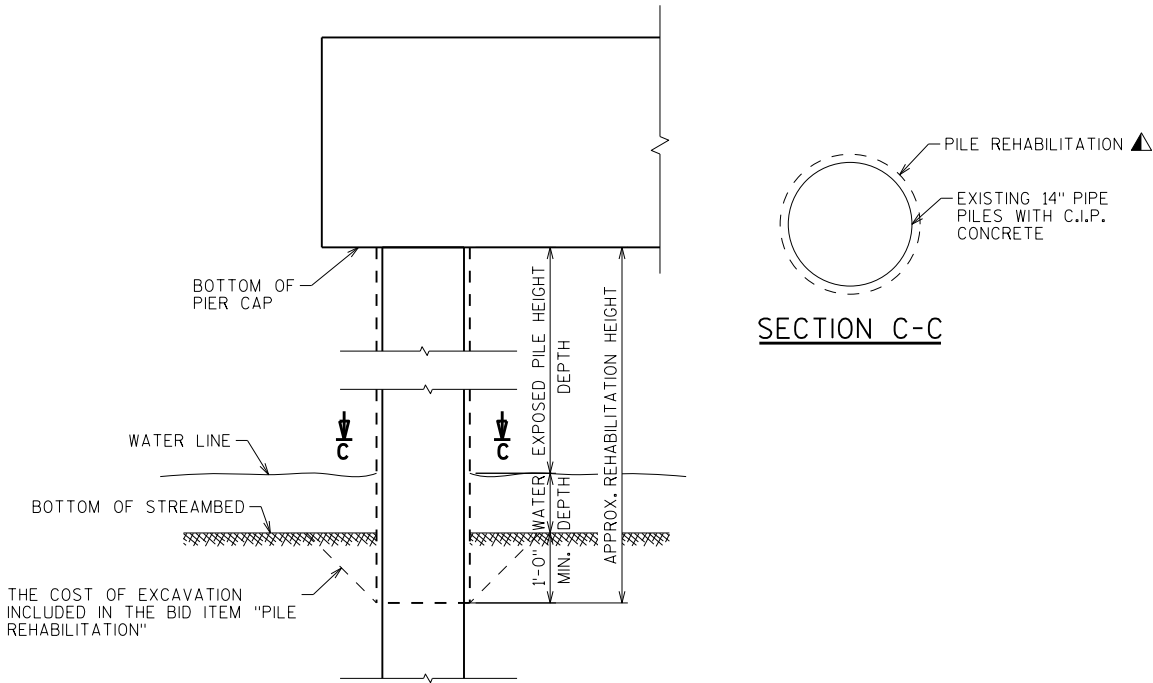
CONCRETE SURFACE REPAIR - GIRDERS



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
REHABILITATION DETAILS 1		SHEET 4	

PIER DETAIL TABLE

LOCATION	APPROX. EXPOSED PILE HEIGHT (FT)	APPROX. WATER DEPTH TO STREAMBED (FT)	APPROX. TOTAL HEIGHT (FT)	EXCAVATION MIN. DEPTH (FT)	NUMBER OF PILES	APPROX. REHABILITATION HEIGHT (FT)	APPROX. REPAIR AREA (SF)
PIER 1	2.2±	9±	11.2	1	11	12.2	492
PIER 2	1.1±	9±	10.1	1	11	11.1	448



PILE REHABILITATION DETAILS

▲ SEE SPECIAL PROVISIONS

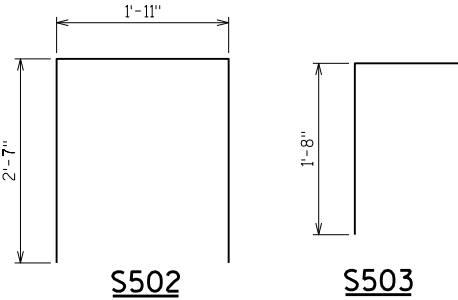
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
		DRAWN BY DLM	PLANS CK'D. ARC
REHABILITATION DETAILS 2		SHEET 5	

SCALE = 10.00

BILL OF BARS

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

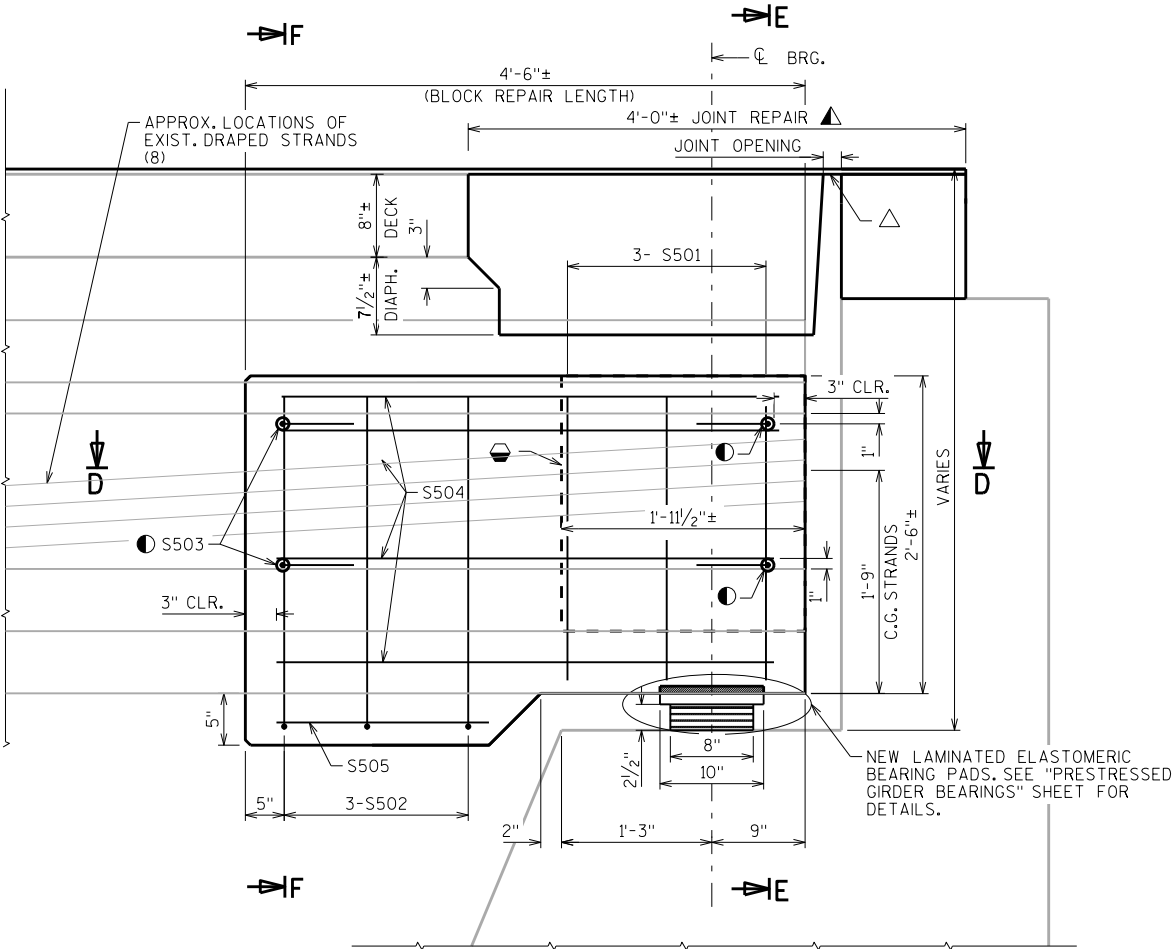
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	48	2'-2"			VERT.
S502	X	24	6'-10"	X		VERT.
S503	X	64	2'-5"	X		HORIZ. - TOP/MIDDLE
S504	X	64	4'-0"			HORIZ. - BOT.
S505	X	24	1'-8"			HORIZ. - BOT.



NOTES

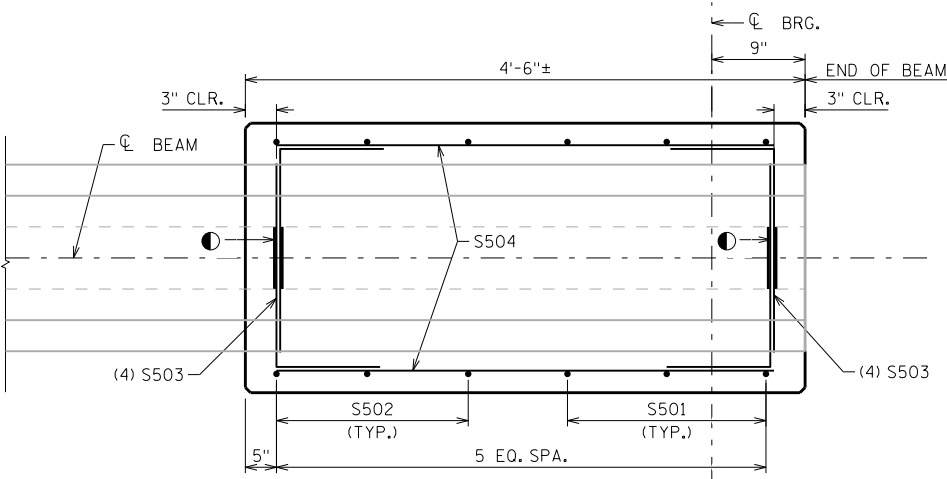
- REMOVAL AREA SHOWN IS APPROXIMATE. THE ENTIRE BEAM END SHALL BE SOUNDED BUT ONLY UNSOUNDED CONCRETE SHALL BE REMOVED EXCEPT WHERE NECESSARY TO GET BEHIND EXPOSED REINFORCING STEEL.
 - EXERCISE PROPER CARE WHEN SAWING/DRILLING OF THE EXISTING GIRDERS TO NOT DAMAGE EMBEDDED REINFORCING STEEL OR PRESTRESSING STRANDS. REPLACE DAMAGED GIRDERS AT NO ADDITIONAL COST TO THE DEPARTMENT.
 - USE EPOXY ADHESIVE PER WISDOT'S APPROVED PRODUCT LIST AND INSTALL USING AN EPOXY DISPENSING GUN TO COMPLETELY FILL VOID SPACE IN DRILLED HOLE. DRILLED HOLE SHALL NOT EXCEED 1/2" DIA.
 - SEE "EXISTING GIRDER DETAILS" SHEET FOR EXISTING GIRDER DIMENSIONS.
 - PROVIDE GALVANIC ANODES AT REPAIR AREAS. SEE "CATHODIC PROTECTION" SHEET FOR DETAILS.
 - CLEAN & COAT BEAM REPAIR AREAS UNDER "CLEAN AND COAT CONCRETE BEAM ENDS" BID ITEM.
- LAP BARS WITHIN DRILLED HOLES AND FILL REMAINING SPACE WITH EPOXY PRIOR TO CASTING CONCRETE END BLOCK. SEE NOTE 3
- △ SEE JOINT REPAIR DETAILS SHEETS FOR DETAILS. CONTRACTOR SHALL COORDINATE PLACEMENT OF BEAM END BLOCK REPAIRS WITH JOINT REPAIR.
- ☆ WHERE EXISTING REINFORCEMENT IS EXPOSED, REMOVE CONCRETE A MIN. 1/2" BEHIND REINFORCING BARS. ABRASIVE BLAST CLEAN AND COAT WITH ZINC RICH PAINT. WHERE EXISTING PRESTRESSING STRAND IS EXPOSED, REMOVE UNSOUND CONCRETE. ABRASIVE BLAST CLEAN AND COAT WITH ZINC RICH PAINT.
- ◉ EXISTING DIAPHRAGM WAS POURED FULL DEPTH TO BOTTOM OF FLANGE DURING 1996 DECK REPLACEMENT. REMOVE CONCRETE IN THIS AREA AND PREPARE FOR NEW CONCRETE PLACEMENT. PRESERVE EXISTING REINFORCING STEEL WHERE ENCOUNTERED.
- ▲ DIMENSION GIVEN NORMAL TO CL SUBSTRUCTURE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
PPC BEAM END REPAIR DETAILS 1			SHEET 6

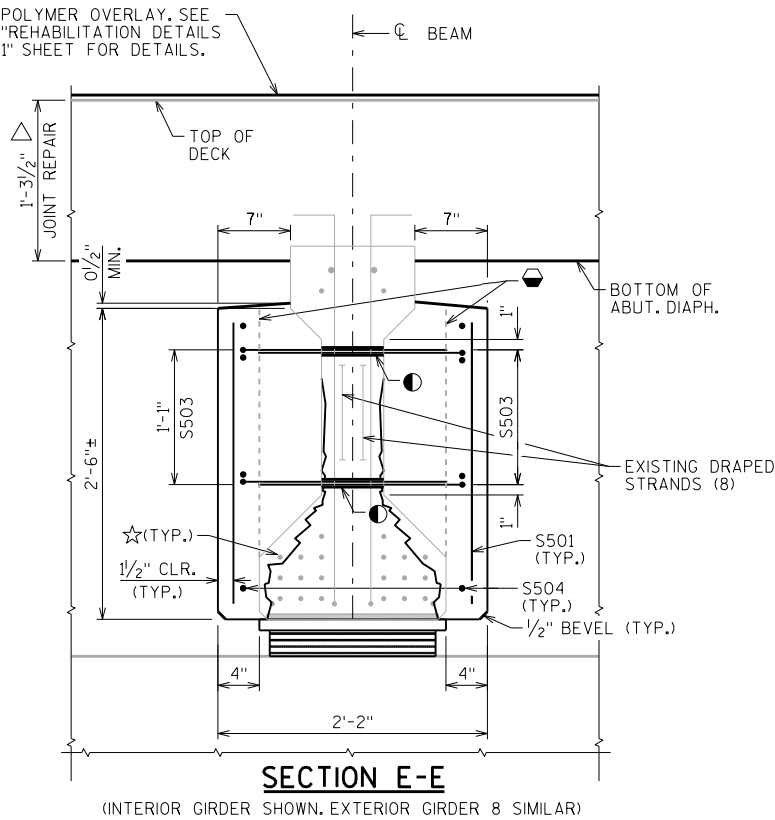


BEAM END REPAIR GIRDERS 1-8

(GIRDER AT EAST ABUTMENT SHOWN. DOES NOT INCLUDE GIRDER 1A)

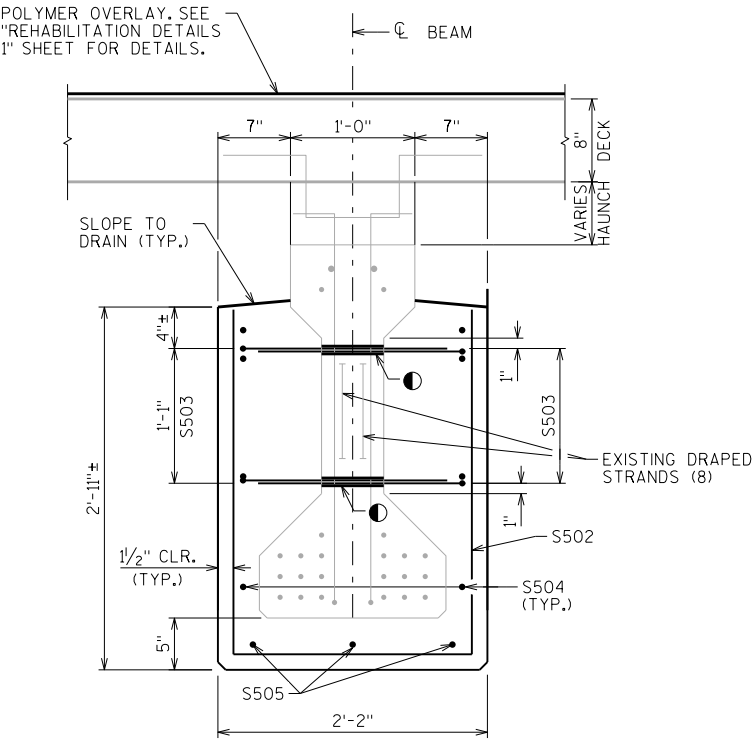


SECTION D-D



SECTION E-E

(INTERIOR GIRDER SHOWN. EXTERIOR GIRDER 8 SIMILAR)

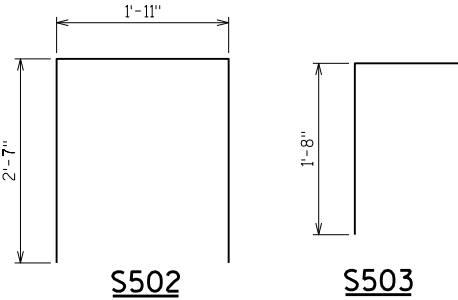


SECTION F-F

BILL OF BARS

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

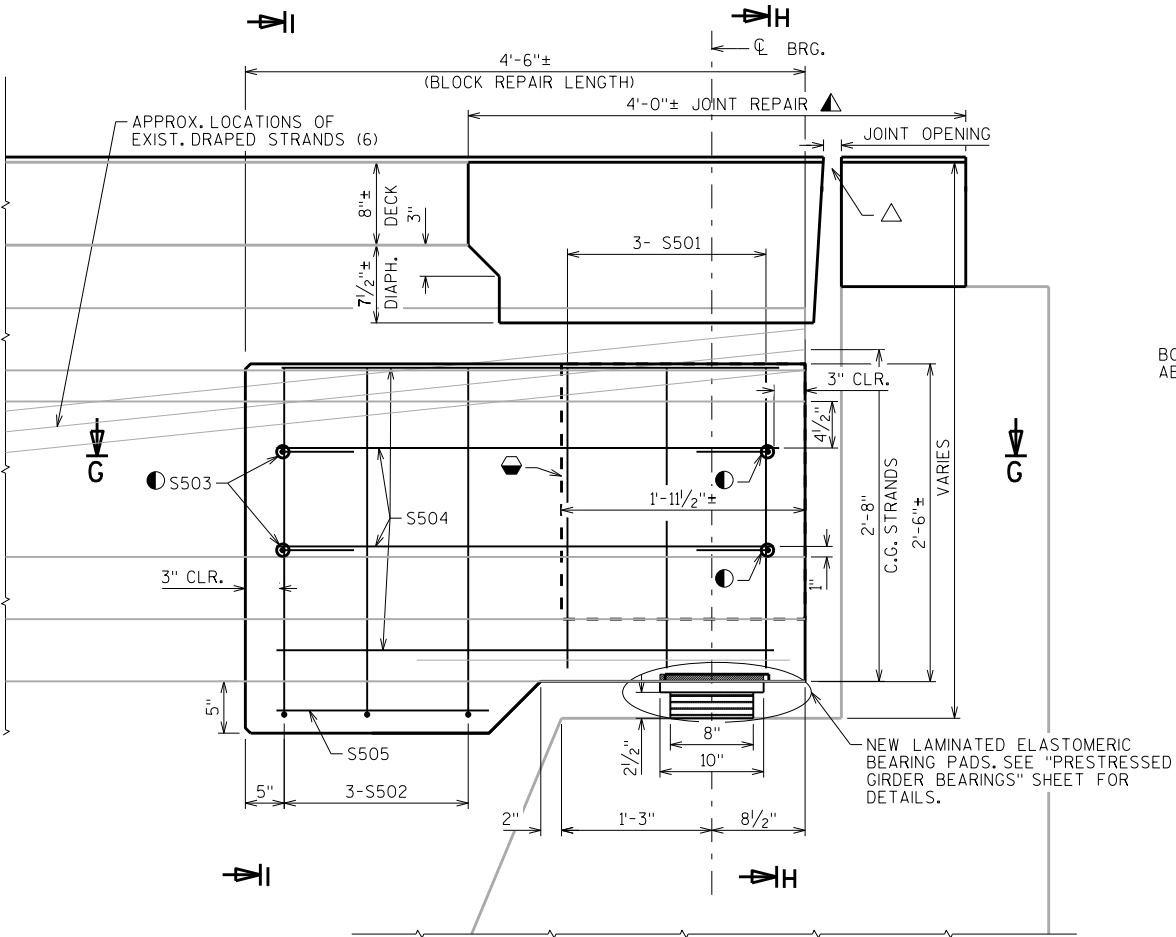
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	6	2'-2"			VERT.
S502	X	3	6'-10"	X		VERT.
S503	X	8	2'-5"	X		HORIZ. - TOP/MIDDLE
S504	X	8	4'-0"			HORIZ. - BOT.
S505	X	3	1'-8"			HORIZ. - BOT.



NOTES

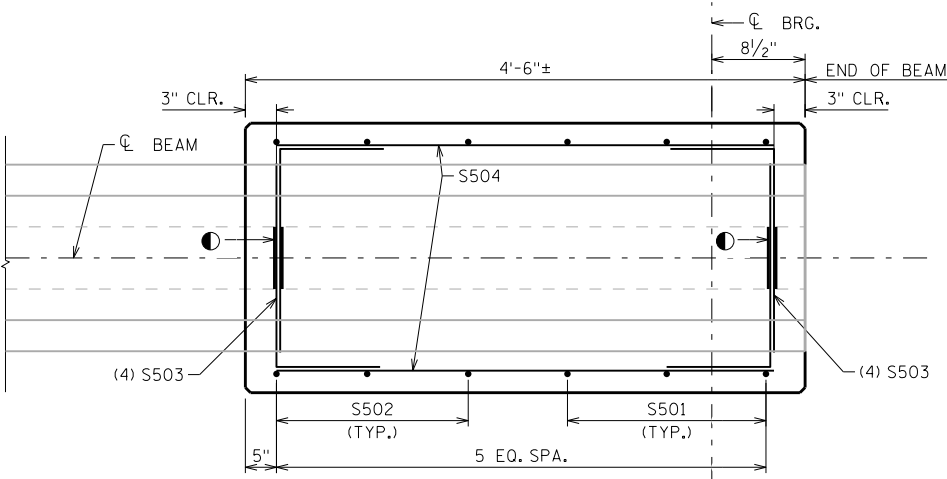
- REMOVAL AREA SHOWN IS APPROXIMATE. THE ENTIRE BEAM END SHALL BE SOUNDED BUT ONLY UNSOUNDED CONCRETE SHALL BE REMOVED EXCEPT WHERE NECESSARY TO GET BEHIND EXPOSED REINFORCING STEEL.
 - EXERCISE PROPER CARE WHEN SAWING/DRILLING OF THE EXISTING GIRDERS TO NOT DAMAGE EMBEDDED REINFORCING STEEL OR PRESTRESSING STRANDS. REPLACE DAMAGED GIRDERS AT NO ADDITIONAL COST TO THE DEPARTMENT.
 - USE EPOXY ADHESIVE PER WISDOT'S APPROVED PRODUCT LIST AND INSTALL USING AN EPOXY DISPENSING GUN TO COMPLETELY FILL VOID SPACE IN DRILLED HOLE. DRILLED HOLE SHALL NOT EXCEED 1/2" DIA.
 - SEE "EXISTING GIRDER DETAILS" SHEET FOR EXISTING GIRDER DIMENSIONS.
 - PROVIDE GALVANIC ANODES AT REPAIR AREAS. SEE "CATHODIC PROTECTION" SHEET FOR DETAILS.
 - CLEAN & COAT BEAM REPAIR AREAS UNDER "CLEAN AND COAT CONCRETE BEAM ENDS" BID ITEM.
- LAP BARS WITHIN DRILLED HOLES AND FILL REMAINING SPACE WITH EPOXY PRIOR TO CASTING CONCRETE END BLOCK. SEE NOTE 3
- △ SEE JOINT REPAIR DETAILS SHEETS FOR DETAILS. CONTRACTOR SHALL COORDINATE PLACEMENT OF BEAM END BLOCK REPAIRS WITH JOINT REPAIR.
- ☆ WHERE EXISTING REINFORCEMENT IS EXPOSED, REMOVE CONCRETE A MIN. 1/2" BEHIND REINFORCING BARS. ABRASIVE BLAST CLEAN AND COAT WITH ZINC RICH PAINT. WHERE EXISTING PRESTRESSING STRAND IS EXPOSED, REMOVE UNSOUND CONCRETE. ABRASIVE BLAST CLEAN AND COAT WITH ZINC RICH PAINT.
- EXISTING DIAPHRAGM WAS POURED FULL DEPTH TO BOTTOM OF FLANGE DURING 1996 DECK REPLACEMENT. REMOVE CONCRETE IN THIS AREA AND PREPARE FOR NEW CONCRETE PLACEMENT. PRESERVE EXISTING REINFORCING STEEL WHERE ENCOUNTERED.
- ▲ DIMENSION GIVEN NORMAL TO CL SUBSTRUCTURE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
PPC BEAM END REPAIR DETAILS 2			SHEET 7

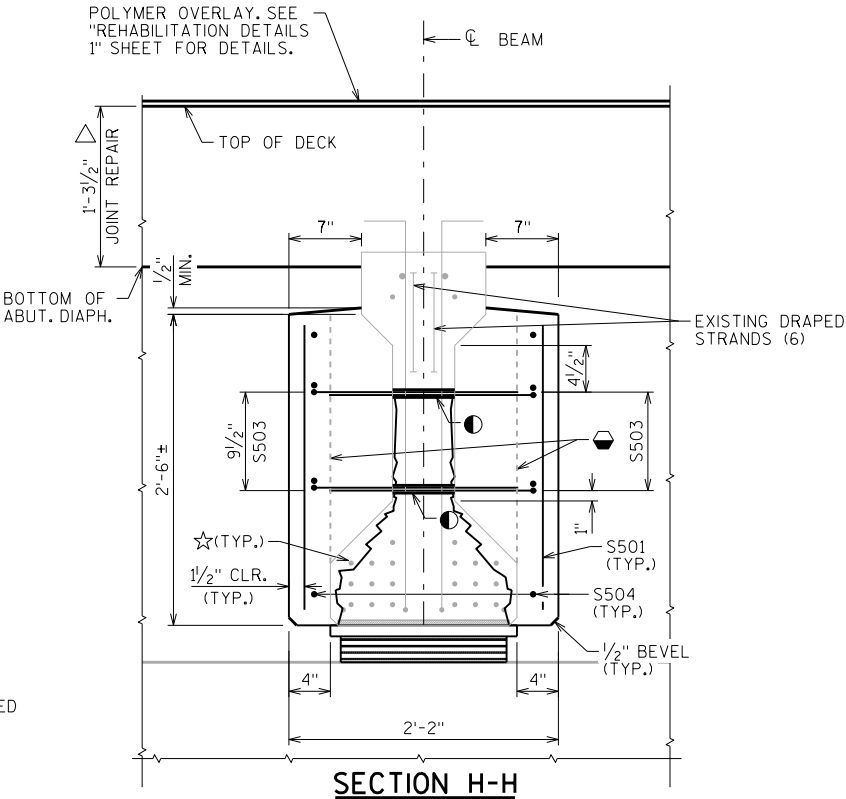


BEAM END REPAIR GIRDER 1A

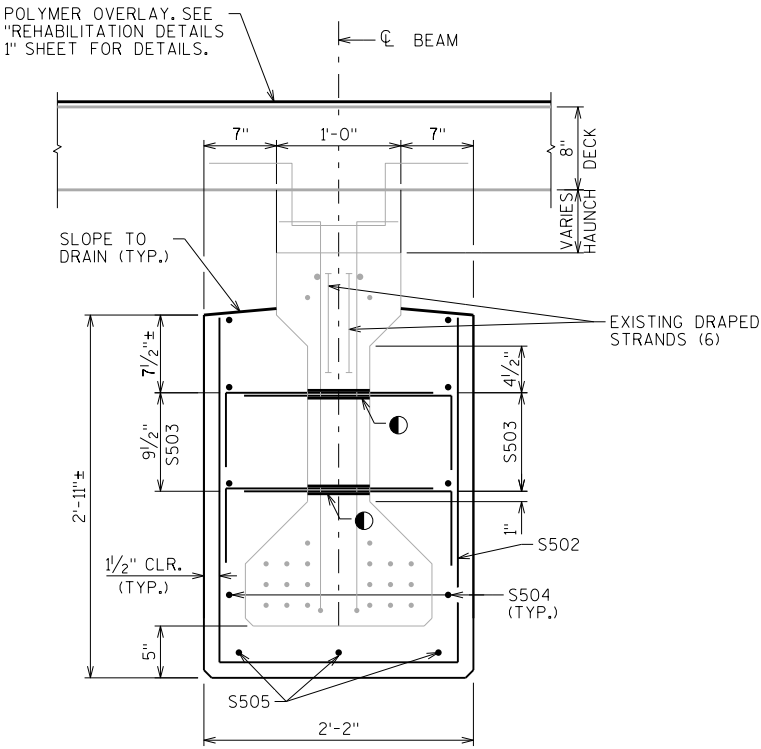
(BEAM AT EAST ABUTMENT SHOWN)



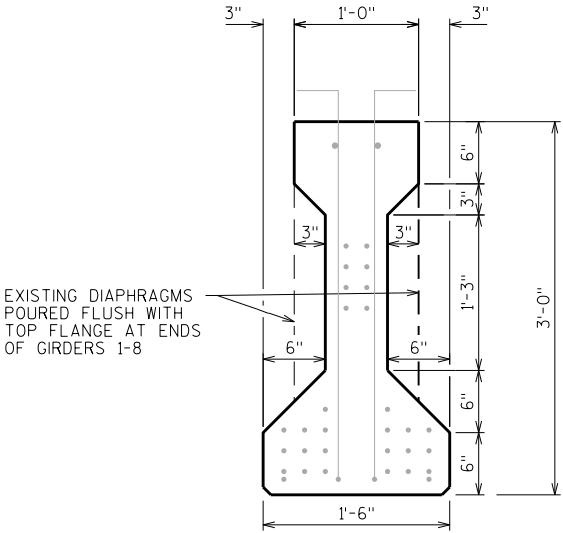
SECTION G-G



SECTION H-H

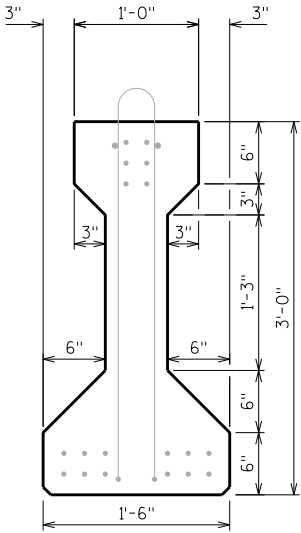


SECTION I-I



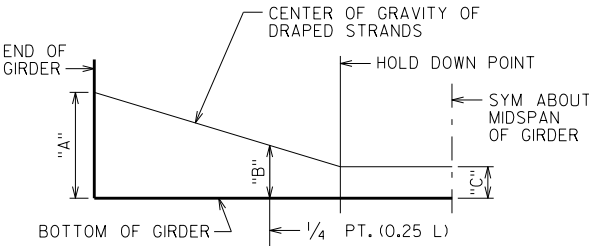
EXISTING 36" GIRDER

SHOWING GIRDERS 1-8.
GIRDER SHOWN AT END.



EXISTING 36" GIRDER

SHOWING GIRDER 1A.
GIRDER SHOWN AT END.



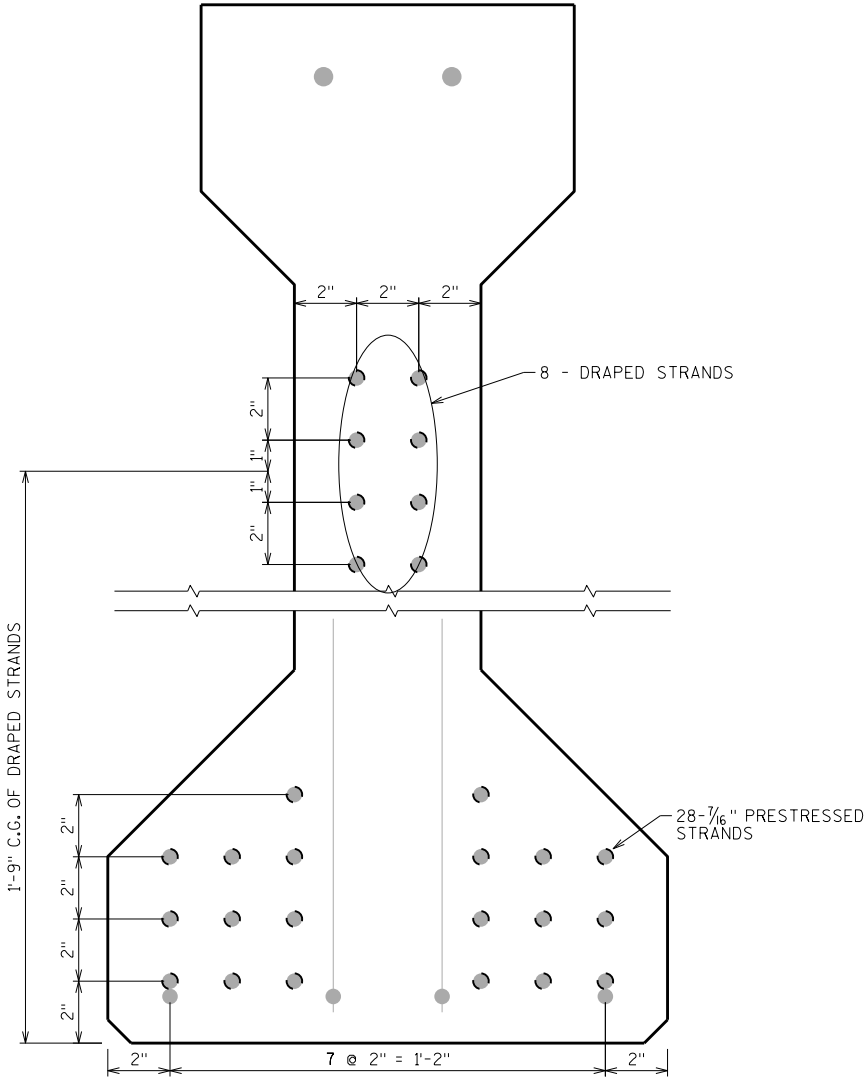
DRAPED STRAND PROFILE

EXISTING GIRDER DATA

GIRDER	DIA. OF STRAND (IN.)	TOTAL NO. OF STRANDS	DRAPED PATTERN (IN.)			
			"A"	"B" MIN.	"B" MAX.	"C"
1A	1/2"	18	32	11	14	4
1-8	7/16"	28	21	9	12	5

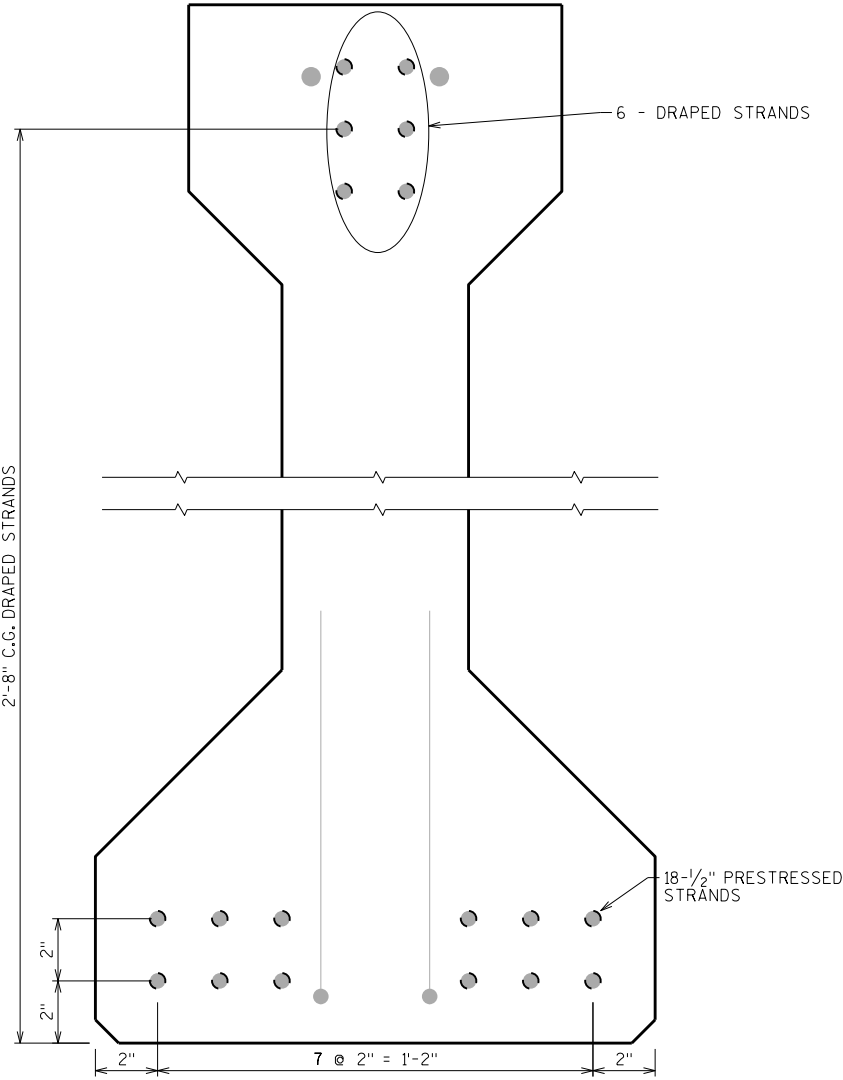
NOTES

DIMENSIONS SHOWN ARE BASED ON ORIGINAL 1964 STRUCTURE PLANS AND 1997 REDECK PLANS.



PRESTRESSING STRAND LAYOUT

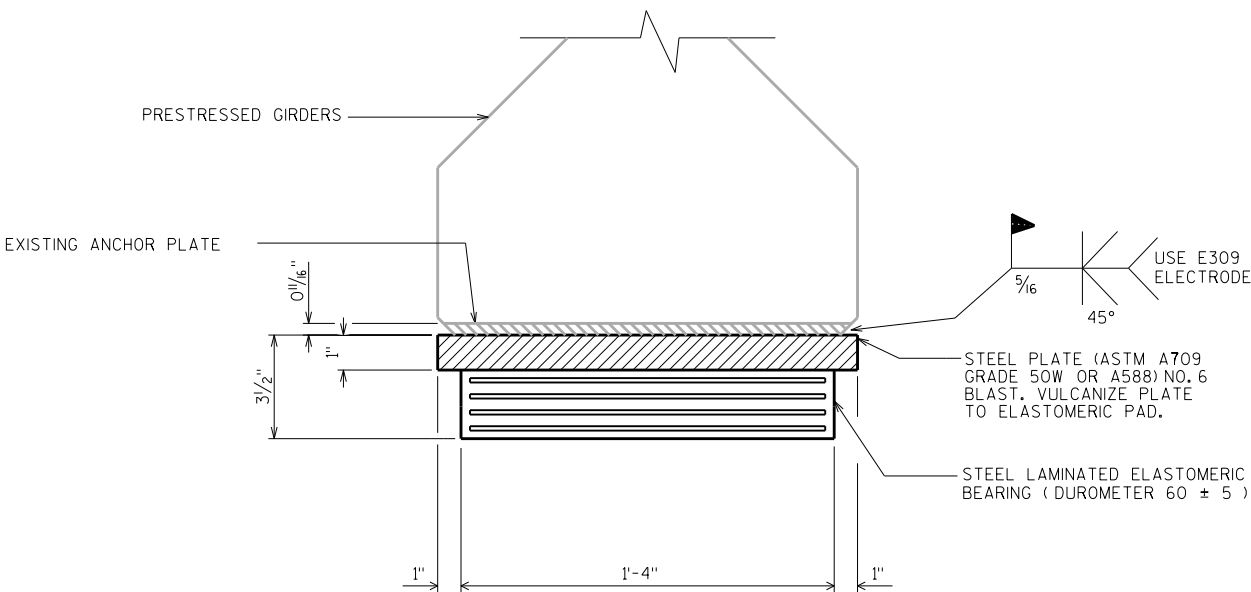
SHOWING GIRDERS 1-8



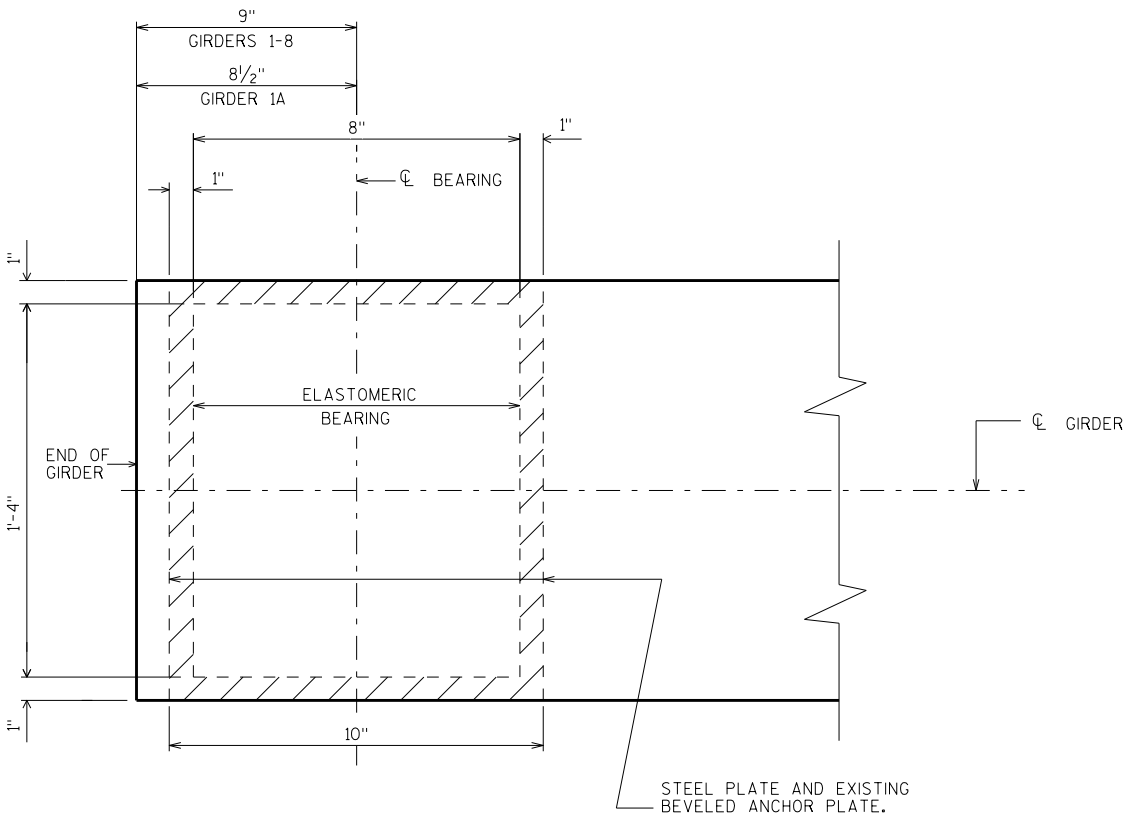
PRESTRESSING STRAND LAYOUT

SHOWING GIRDER 1A

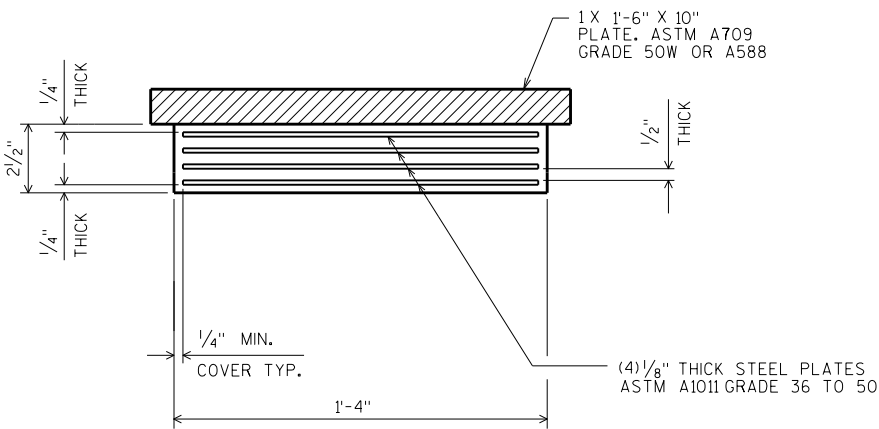
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
EXISTING GIRDER DETAILS		SHEET 8	



END VIEW



PLAN VIEW



SECTION THRU ELASTOMERIC BEARING

NOTES

- BEARINGS SHALL NOT BE PLACED AT A TEMPERATURE GREATER THAN 85° F.
- ALL MATERIAL USED FOR BEARINGS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING PADS ELASTOMERIC LAMINATED", EACH.
- ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.
- ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.
- WELDING PROCEDURES SHALL BE ESTABLISHED BY THE CONTRACTOR TO RESTRICT THE MAXIMUM TEMPERATURE REACHED BY SURFACES IN CONTACT WITH ELASTOMER TO 200°F (93°C). TEMPERATURES SHALL BE CONTROLLED BY TEMPERATURE INDICATING WAX PENCILS OR OTHER SUITABLE MEANS APPROVED BY THE ENGINEER.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
PRESTRESSED GIRDER BEARINGS		SHEET 9	

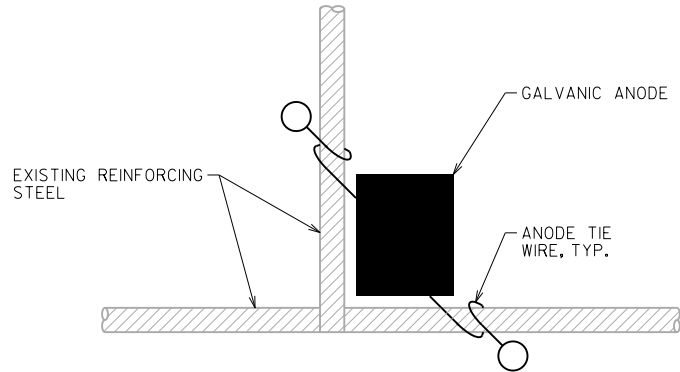
GENERAL NOTES

SEE SPECIAL PROVISION "EMBEDDED GALVANIC ANODES" FOR DESCRIPTION, MATERIALS, CONSTRUCTION, MEASUREMENT, AND PAYMENT INFORMATION.

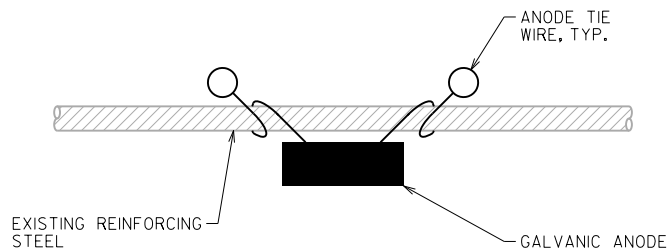
LOCATIONS OF GALVANIC ANODES SHOULD BE WITHIN 6" OF THE EDGE OF THE REPAIR AREA.

AFTER PLACEMENT, GALVANIC ANODES SHOULD MAINTAIN A MINIMUM TOP COVER OF 1 1/2" AND A MINIMUM BOTTOM COVER OF 3/4".

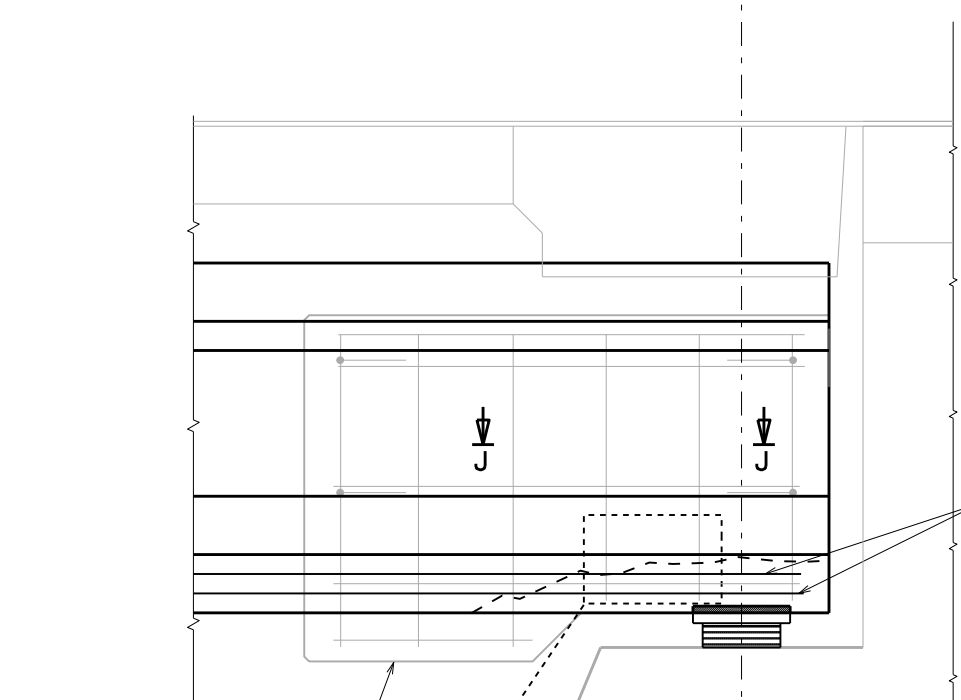
CATHODIC PROTECTION TO BE PLACED AT EXPOSED REINFORCING STEEL LOCATED AT BOTTOM FLANGES OF PRESTRESSED GIRDERS. LOCATIONS AND EXTENTS SHALL BE DETERMINED BY THE FIELD ENGINEER.



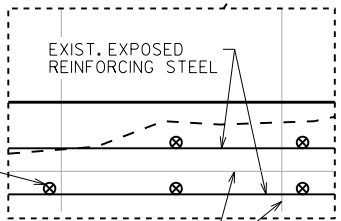
TYPICAL INSTALLATION AT
BAR STEEL INTERSECTION



TYPICAL INSTALLATION
FOR BAR STEEL

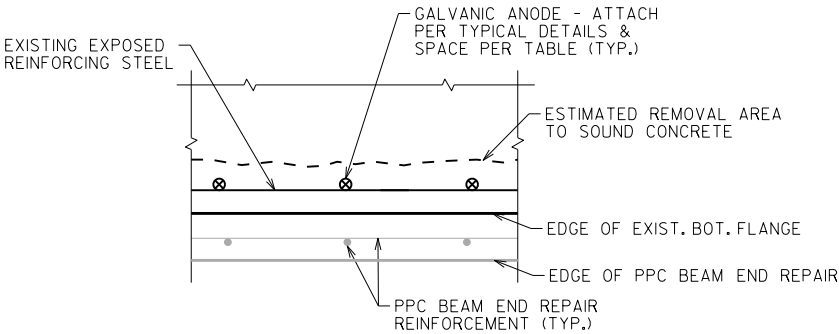


SEE "PPC BEAM END REPAIR DETAILS" SHEETS FOR REPAIR DETAILS.



GALVANIC ANODE - ATTACH PER TYPICAL DETAILS & SPACE PER TABLE (TYP.)

PPC BEAM END REPAIR REINFORCEMENT (TYP.)



SECTION J-J
LOOKING AT GIRDER BOTTOM FLANGE

TYPICAL REPAIR DETAIL

GENERAL ANODE APPLICATION FOR PPC BEAM END REPAIR DETAIL

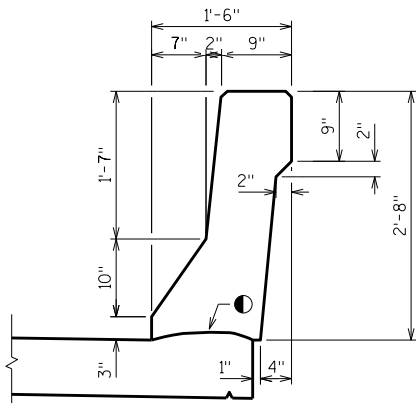
MAXIMUM GALVANIC ANODE SPACING

STEEL DENSITY RATIO	MAXIMUM ANODE SPACING (INCHES)
≤ 0.30	24
0.31 → 0.50	20
0.51 → 0.60	18
0.61 → 0.80	16
0.81 → 0.90	15
0.91 → 1.00	14
1.01 → 1.20	12
≥ 1.20	*

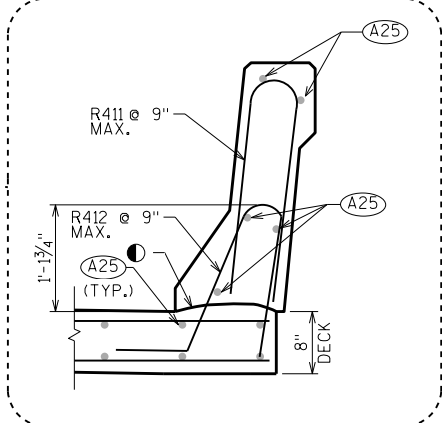
NOTES:

- *AT STEEL DENSITY RATIOS GREATER THAN 1.20, GENERAL CONTRACTOR TO CONSULT THE ENGINEER TO DETERMINE MAXIMUM ANODE SPACING AND ANODE LAYOUT.
- STEEL DENSITY RATIO IS THE RATIO OF STEEL REINFORCING BAR SURFACE AREA TO EXPOSED CONCRETE SURFACE AREA WITHIN THE REPAIR AREA.
- TABLE IS BASED ON HIGH CORROSION RISK WITHIN THE SURFACE REPAIR AREA, A MINIMUM ZINC MASS OF 38 GRAMS, AND AN APPROXIMATE SERVICE LIFE OF 10-20 YEARS.

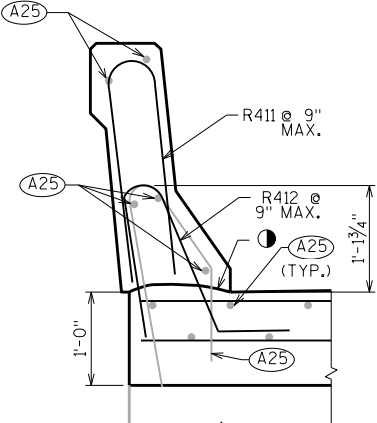
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
CATHODIC PROTECTION		SHEET 10	



SECTION THRU PARAPET



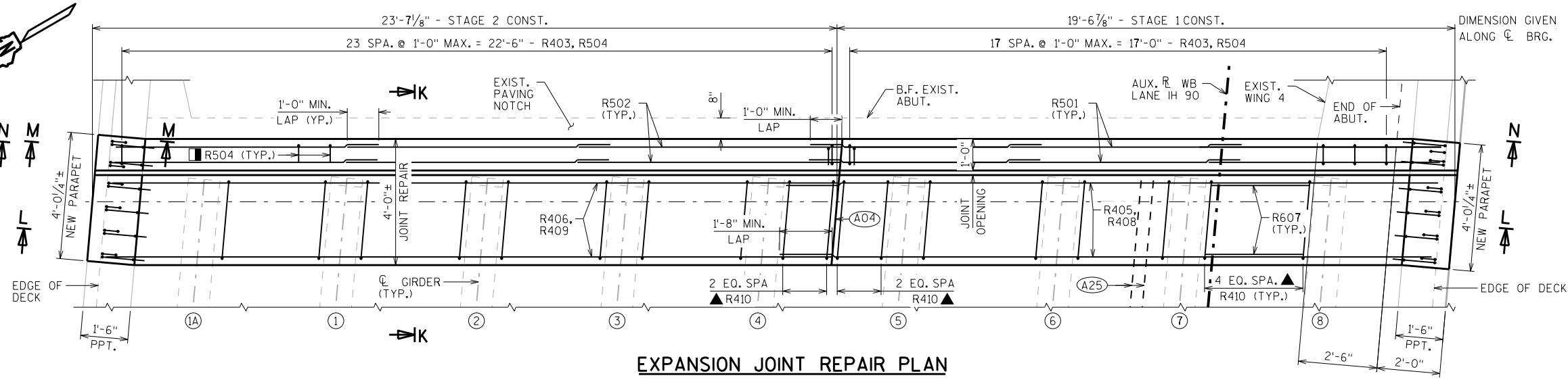
DETAIL A



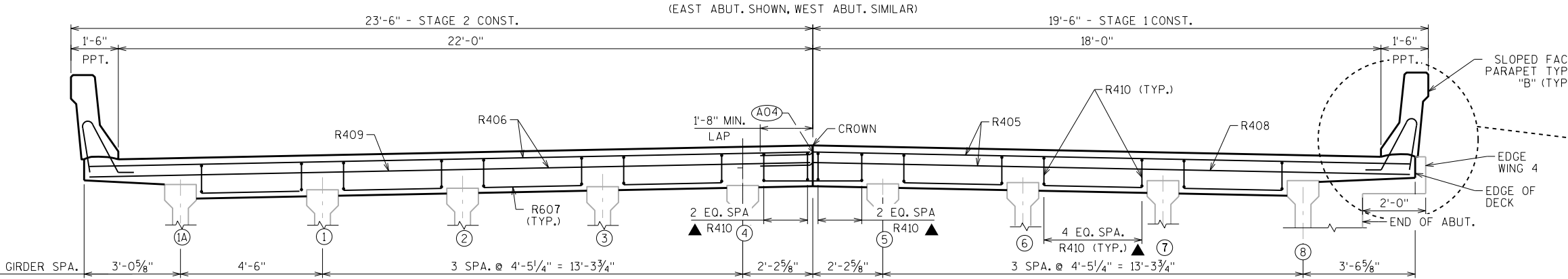
SECTION M-M

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
JOINT REPAIR DETAILS 1		SHEET 11	

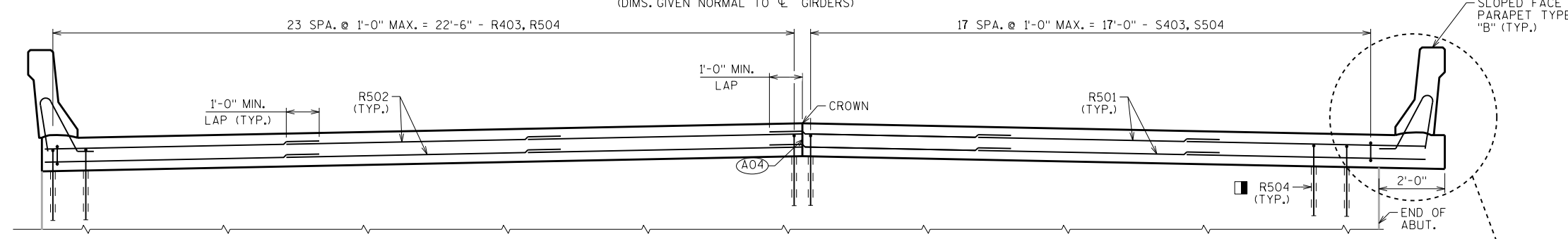
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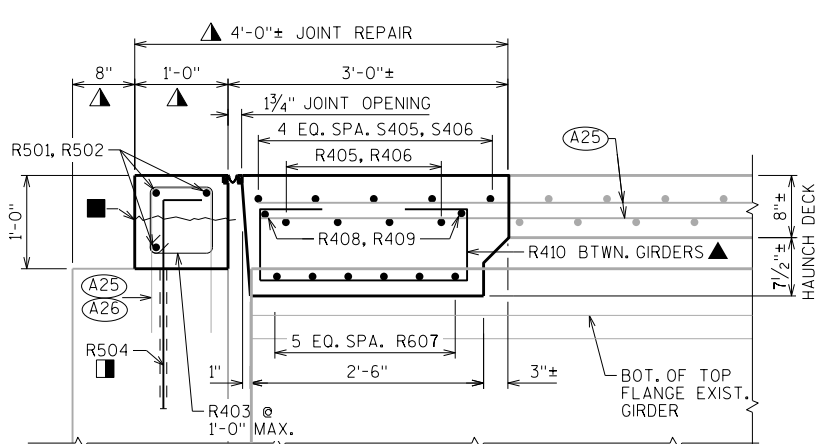
EXPANSION JOINT REPAIR PLAN



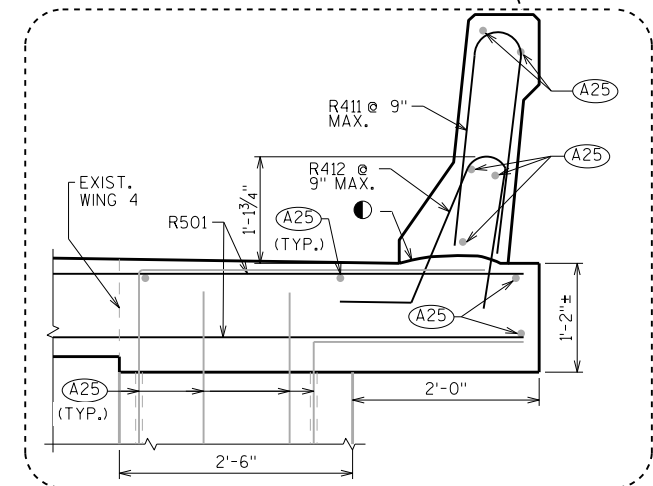
SECTION L-L
(LOOKING EAST)
(DIMS. GIVEN NORMAL TO CL GIRDERS)



SECTION N-N
(LOOKING EAST)



SECTION K-K



DETAIL B

- ▲ MEASURED NORMAL TO CL SUBSTRUCTURE
- CONSTRUCTION JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.
- ▲ BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO CL GIRDERS.
- OPT. CONST. JOINT 1" MIN. BELOW EXIST. REINF.
- ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-6" IN CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT.
- (A04) VERT. CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 8.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- (A26) IF EXISTING BARS ARE SEVERELY CORRODED OR DAMAGED DURING CONCRETE REMOVAL, REPLACE WITH EPOXY ANCHORED R504 BARS WITH A 10" HORIZ. LEG, EMBED 7". WORK TO BE PAID UNDER ITEM "JOINT REPAIR"

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	18	7'-4"			PAVING BLOCK - TRANSVERSE - STAGE 1
R502	X	18	8'-4"			PAVING BLOCK - TRANSVERSE - STAGE 2
R403	X	84	3'-2"	X		PAVING BLOCK - STIRRUPS - VERTICAL
R504	X	84	3'-0"	X		PAVING BLOCK - VERTICAL
R405	X	18	20'-8"			SUPERSTRUCTURE - TRANS. - STAGE 1
R406	X	18	23'-0"			SUPERSTRUCTURE - TRANS. - STAGE 2
R607	X	96	3'-1"			DIAPHRAGM - TRANSVERSE - BOTTOM
R408	X	4	20'-8"			DIAPHRAGM - TRANS. - TOP - STAGE 1
R409	X	4	23'-0"			DIAPHRAGM - TRANS. - TOP - STAGE 2
R410	X	82	4'-8"	X		DIAPHRAGM - VERTICAL
R411	X	24	4'-10"	X		PARAPET - VERTICAL
R412	X	24	4'-3"	X		PARAPET & DECK - VERTICAL
R413	X	32	3'-1"			EXPANSION DEVICE - TRANSVERSE

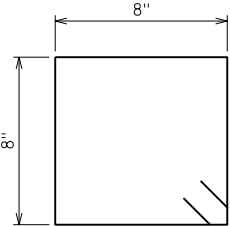
* SEE 'EXPANSION DEVICE' SHEET FOR LOCATIONS

■ ADHESIVE ANCHORS NO. 5 BAR.

PIGMENTED SURFACE SEALER TO BE APPLIED TO FRONT FACE AND TOP OF PARAPETS AT JOINT REPAIR.

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

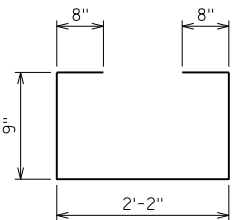
SECTION THRU PARAPET



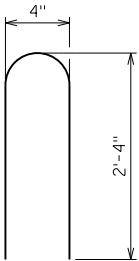
R403



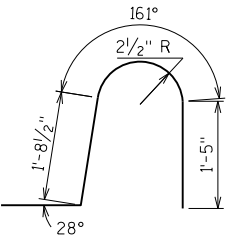
R504



R410

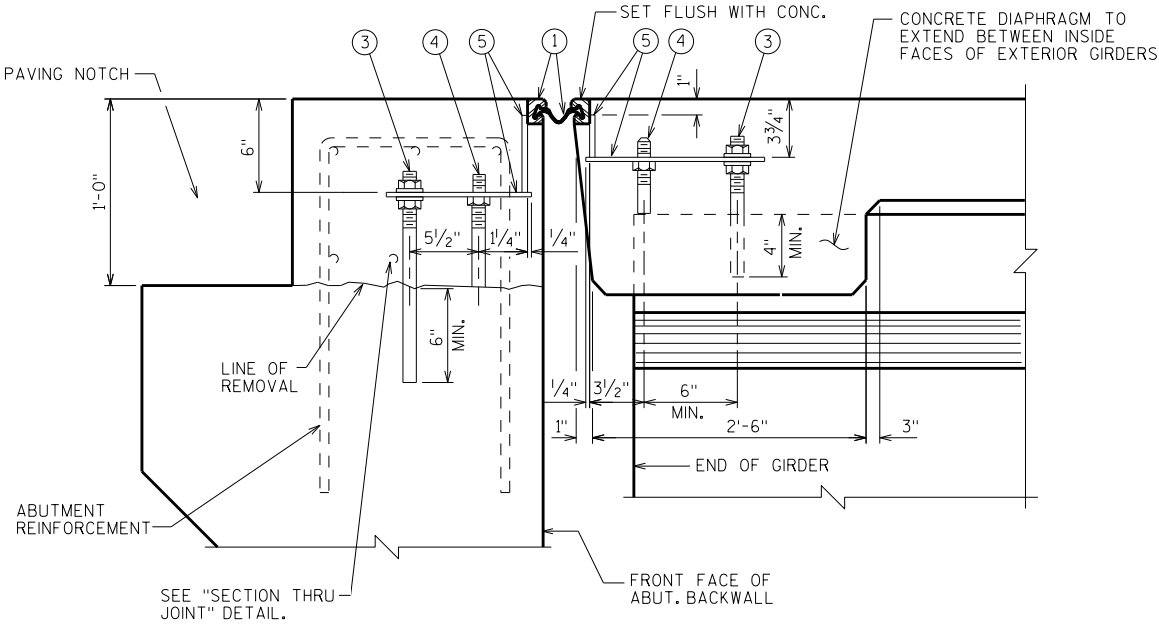


R411

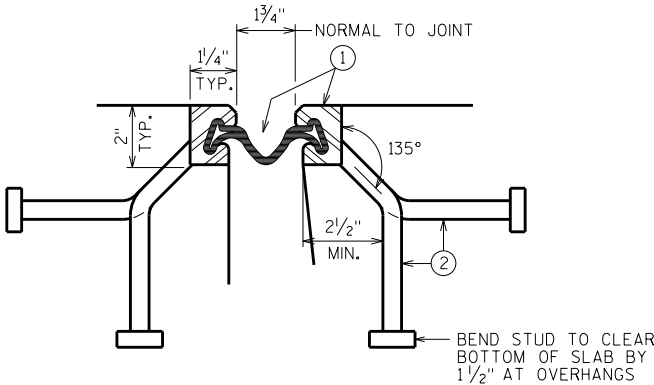


R412

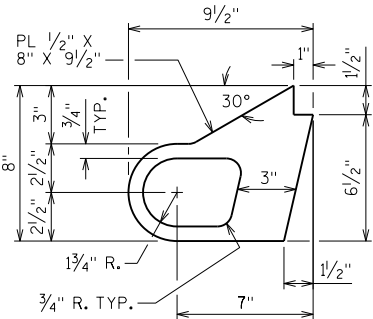
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
JOINT REPAIR DETAILS 2		SHEET 12	



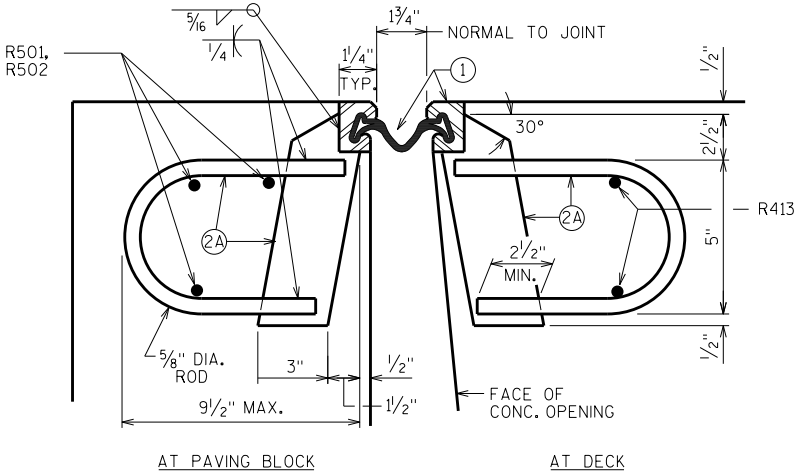
SECTION THRU JOINT AT ABUTMENT
NORMAL TO ϕ SUBSTRUCTURE



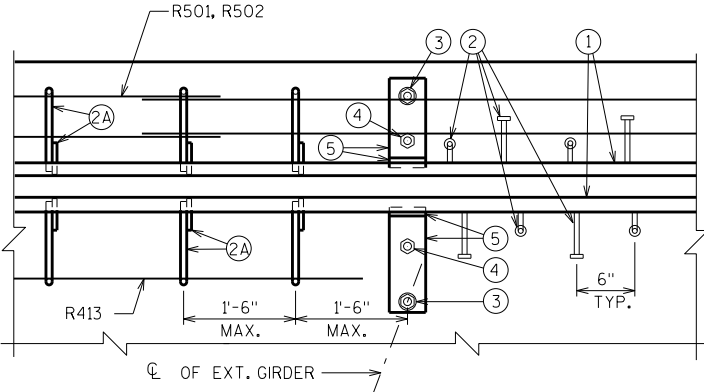
SECTION THRU JOINT
EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS



ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT
ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN

LEGEND

- ① NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS.
- ② STUDS $\frac{5}{8}$ " DIA. X $6\frac{3}{4}$ " LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ②A $\frac{1}{2}$ " THICK ANCHOR PLATE WITH $\frac{5}{8}$ " DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO.1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- ③ $\frac{3}{4}$ " DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES ON ϕ OF GIRDER, ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- ④ $\frac{3}{4}$ " DIA. 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 $\frac{1}{2}$ " DIA. HOLE FOR NO. 3 AND 1" DIA. HOLE FOR NO. 4.
- ⑥ GALVANIZED PLATE $\frac{3}{8}$ " X 1'-2" X 2'-2" LONG WITH HOLES FOR NO. 7. BEND AS SHOWN.
- ⑦ $\frac{3}{4}$ " DIA. X $\frac{1}{2}$ " STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS $\frac{1}{16}$ " BELOW PLATE SURFACE.
- ⑧ $\frac{3}{4}$ " DIA. X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- ⑨ $\frac{3}{4}$ " DIA. X 2 $\frac{1}{4}$ " GALVANIZED THREADED COUPLING.
- ⑩ 1' X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

REFER TO "COVER
PLATE DETAILS" SHT.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. 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.

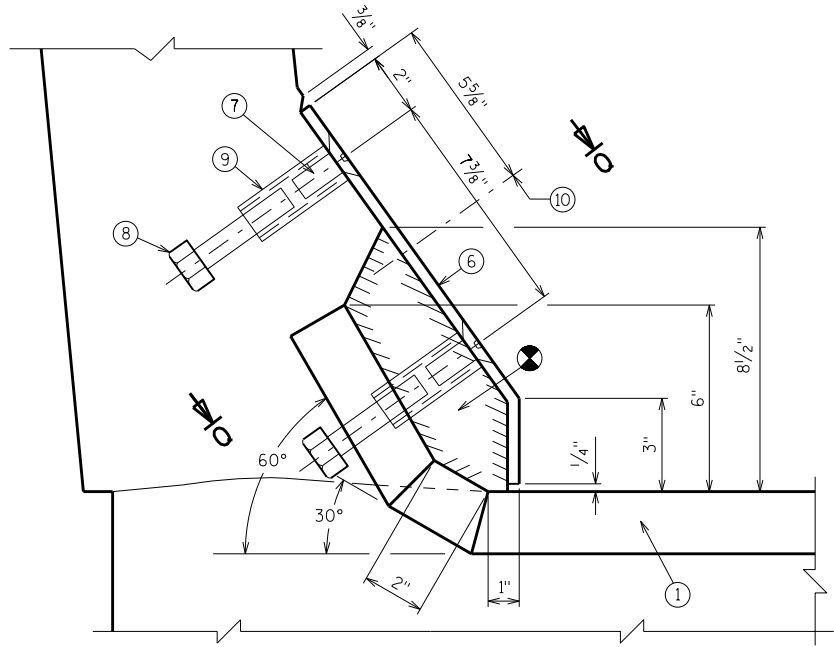
FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

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.

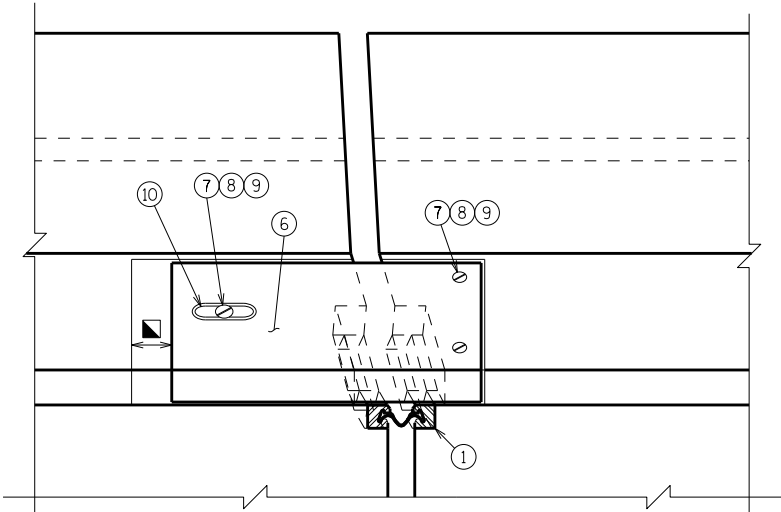
ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-29-47".

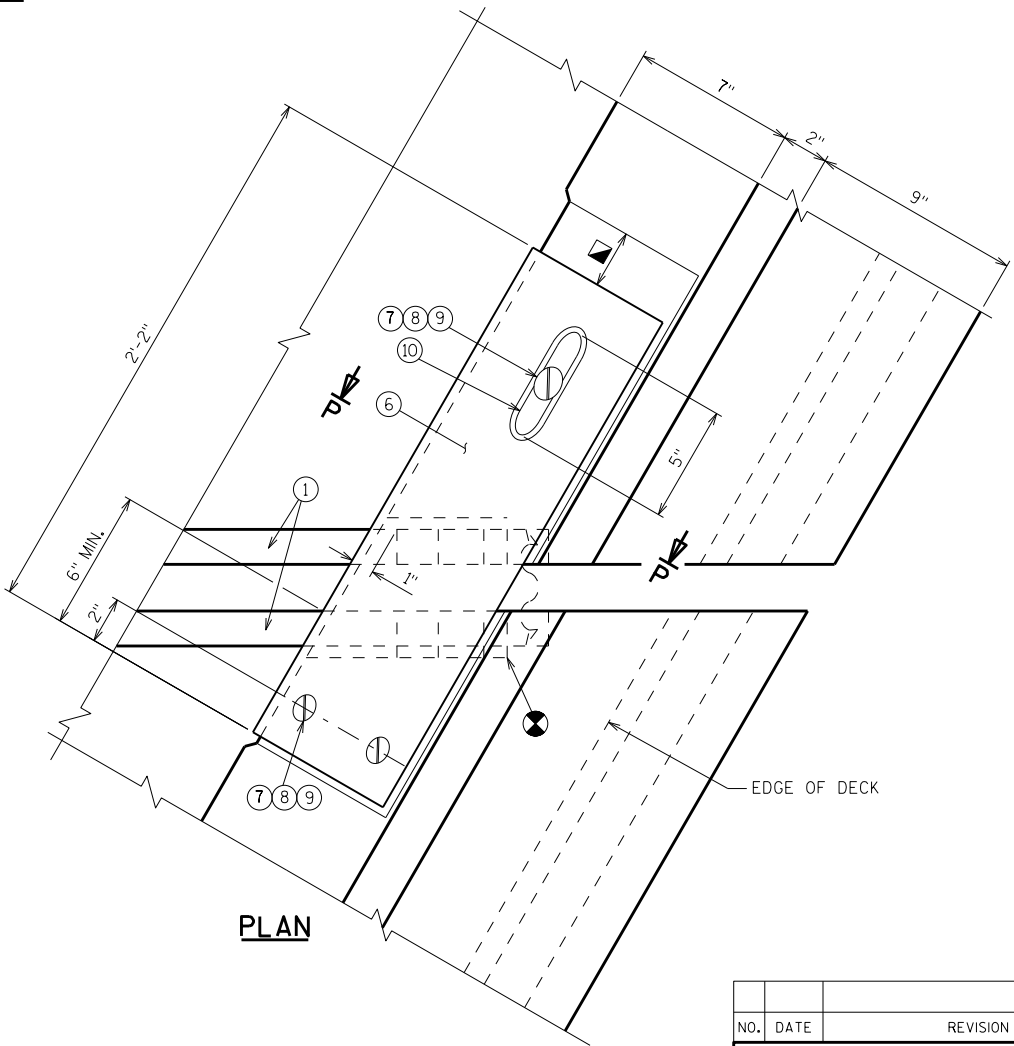
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY		DLM	PLANS CK'D. ARC
EXPANSION DEVICE		SHEET 13	



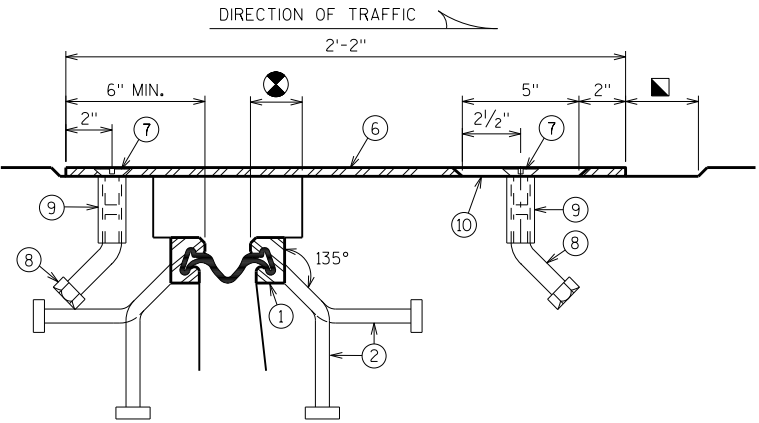
SECTION P-P



VIEW OF PARAPET PLATE
FROM ROADWAY



PLAN



SECTION Q-Q

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
▣ JOINT OPENING DIMENSION ALONG SKEW PLUS 1/2".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-29-47			
DRAWN BY DLM		PLANS CK'D. ARC	
COVER PLATE DETAILS		SHEET 14	



Wisconsin Department of Transportation

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