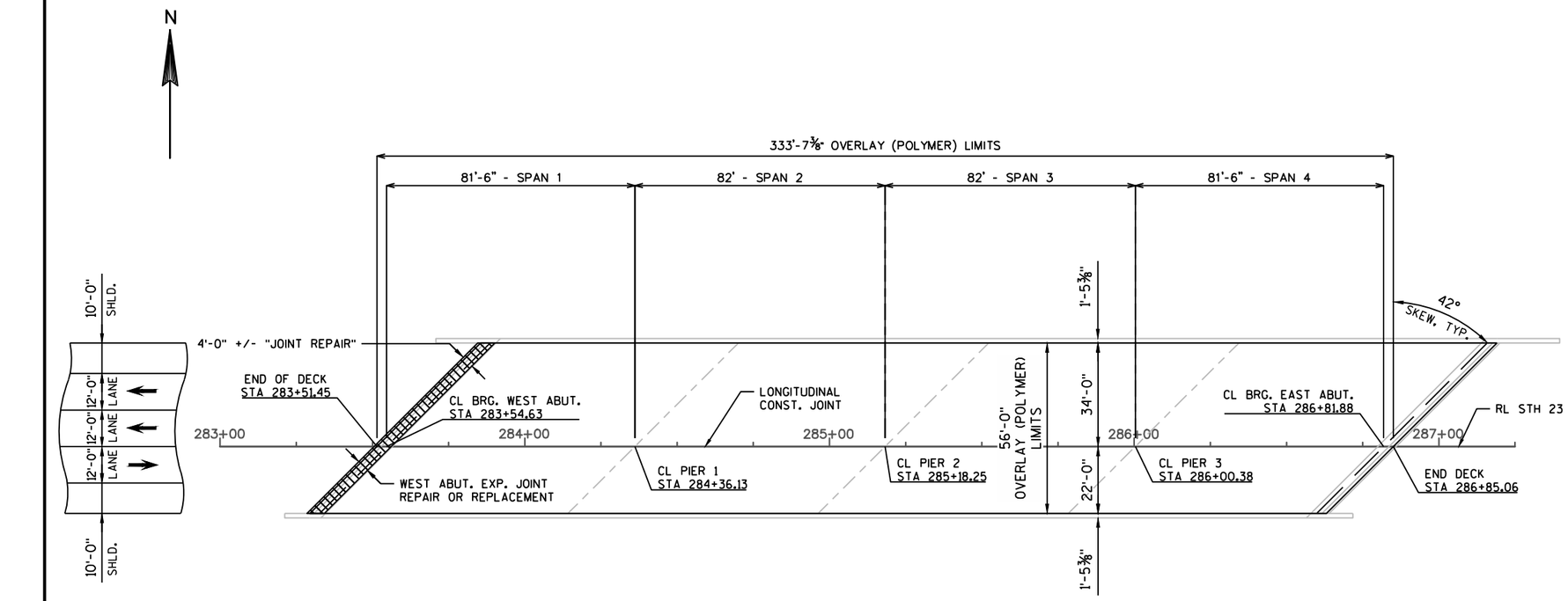
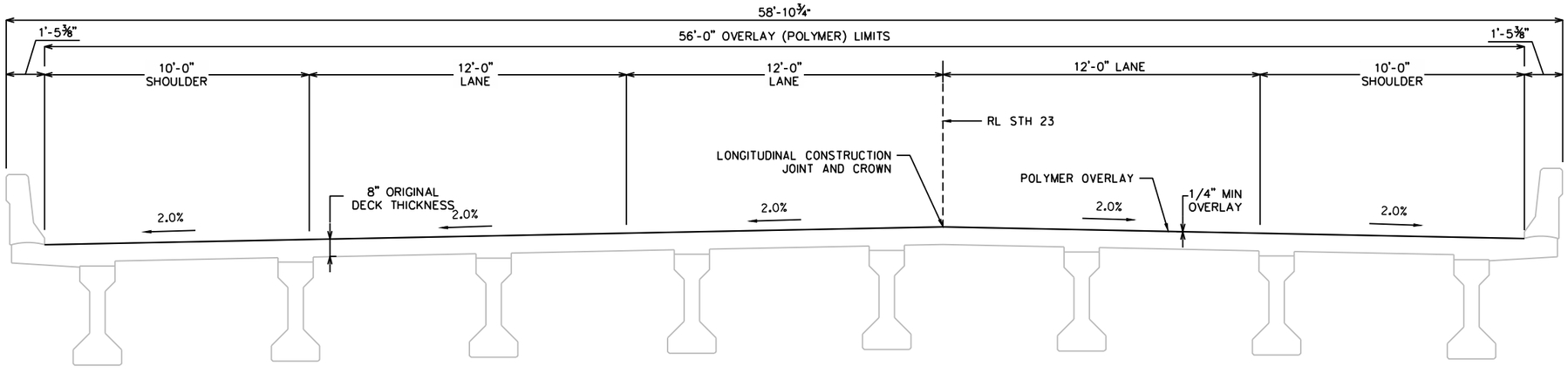
STATE PROJECT NUMBER

1430-00-66



PLAN

4 SPAN - 45" PRESTRESSED CONCRETE GIRDERS



CROSS SECTION THRU ROADWAY

LOOKING EAST

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: H-20
INVENTORY RATING: HS-18
OPERATING RATING: HS-44
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): XXX

MATERIAL PROPERTIES:

CONCRETE MASONRY-DECK PATCHING.....f/c=4,000 P.S.I.

TRAFFIC VOLUME

STH 23
ADT = 12160 (2023)
RDS = 50 MPH

SCOPE OF WORK B-24-0009

1. POLYMER OVERLAY
2. JOINT REPAIR
3. DECK REPAIR

TOTAL ESTIMATED QUANTITIES

203.0225.S DEBRIS CONTAINMENT STRUCTURE B-24-0009..... XX LS
502.0100 CONCRETE MASONRY BRIDGES..... XX CY
502.3101 EXPANSION DEVICE B-24-0009..... XX LF
509.0301 PREPARATION DECKS TYPE 1..... XX SY
509.0302 PREPARATION DECKS TYPE 2..... XX SY
509.0310.S SAWING PAVEMENT DECK PREPARATION AREAS.... XX LF
509.1000 JOINT REPAIR..... XX SY
509.2000 FULL-DECK REPAIR..... XX SF
509.2100.S CONCRETE MASONRY DECK REPAIR..... XX CY
509.5100.S OVERLAY POLYMER..... XX SY

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED

DIMENSIONS SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLANS

DECK SURFACE PREPARATION IS INCLUDED IN THE BID ITEM 'POLYMER OVERLAY'

AREAS OF "PREPARATION DECKS TYPE 1" SHALL BE DEFINED BY A SAW CUT.

PREPARATION DECKS TYPE1, PREPARATION DECKS TYPE 2, AND FULL-DEPTH DECK REPAIR AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINER. DECK PREPARTION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY DECK REPAIR".

LIST OF DRAWINGS

NO.	DATE	REVISION	BY

GRAEF
1150 Springhurst Drive
Suite 201
Green Bay, WI 54304-5947
920 / 592 9440
920 / 592 9445 fax
www.graef-usa.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-24-0009

STH 23 OVER PUCHYAN RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
GREEN LAKE	BROOKLYN

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EMT	KGW	EMT	KGW

POLYMER OVERLAY

SHEET 1 OF 6

BUREAU OF STRUCTURES CONTACT:
BILL DREHER (608) 266-8489

CONSULTANT CONTACT:
KEVIN WOOD (414) 259-1500

I.D. 6220-00-61

DATE: MARCH 2019

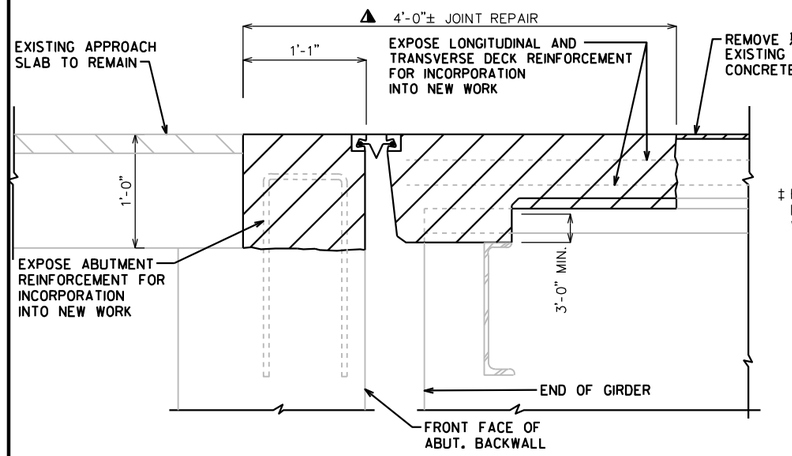
SCALE = NTS

8

8

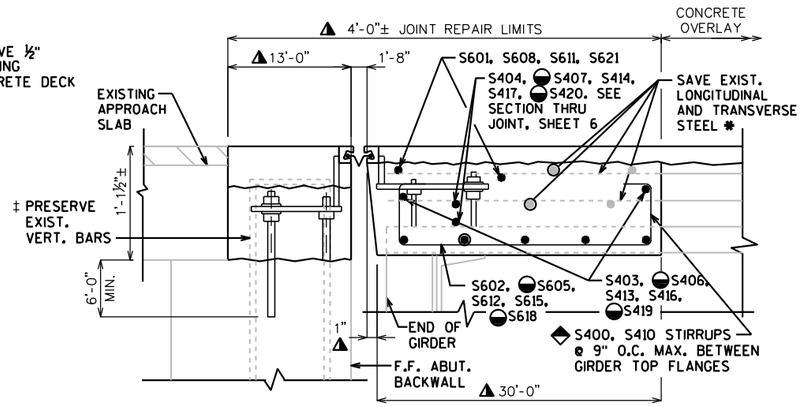
STATE PROJECT NUMBER

1430-00-66



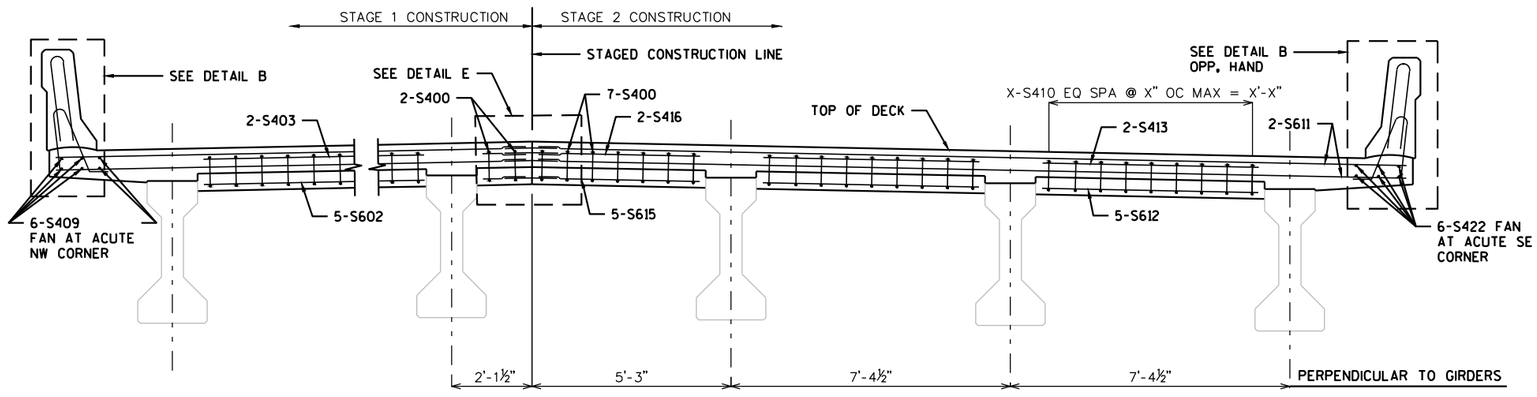
JOINT REPAIR - REMOVAL

NORMAL TO ℄ SUBSTRUCTURE



SECTION THRU EXPANSION JOINT

NORMAL TO ℄ SUBSTRUCTURE
SEE SHEET 6 FOR PAVING, BLOCK REINFORCING DETAILS



PART TRANSVERSE SECTION AT DIAPHRAGM EXPANSION END

LEGEND

‡ EXISTING BARS ARE LIKELY TO BE CORRODED AND/OR DAMAGED DURING CONCRETE REMOVAL. PRESERVE AND INCORPORATE AS MUCH REBAR AS PRACTICAL. SUPPLEMENT WITH THE BARS INDICATED BY ☆.

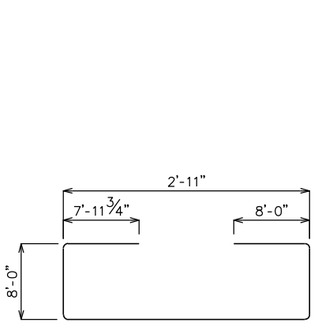
☆ A502, A512 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT.

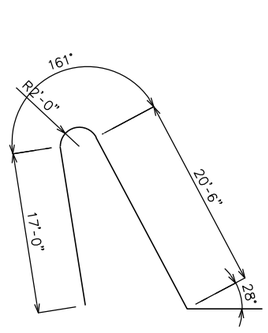
◭ DIMENSIONS GIVEN ARE NORMAL TO ℄ OF SUBSTRUCTURE UNIT. INCORPORATE EXISTING REINFORCEMENT.

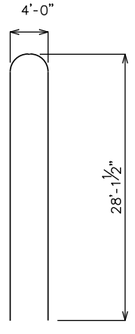
* SAVE AND INCORPORATE 1'-6" MINIMUM OF TRAVERSE REINFORCING BARS.

◆ BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO GIRDERS.

◒ BAR COUPLERS REQUIRED. SEE SHEET 9 FOR DETAILS.



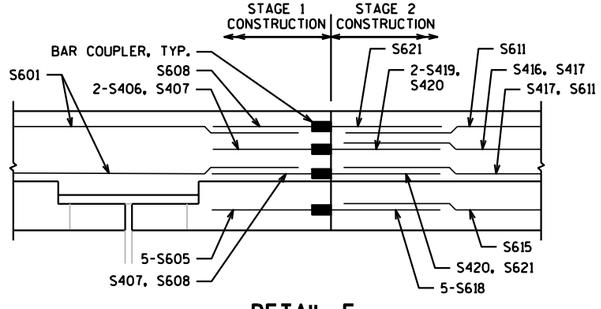




S400
S410

S430

S431



DETAIL E

STIRRUPS NOT SHOWN FOR CLARITY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-24-0009

DRAWN BY EMT | PLANS CK'D. KWG

EXPANSION JOINT DETAILS 1 & BILL OF BARS

SHEET 2 OF 6

I.D.

DATE:

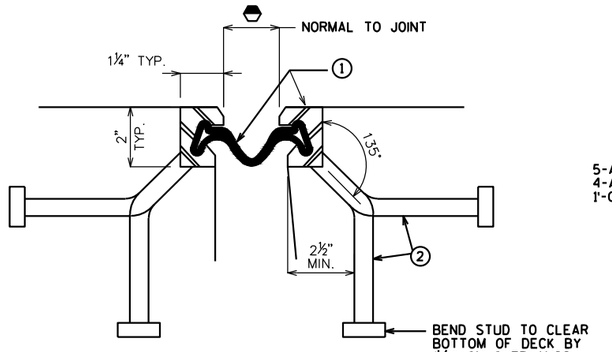
SCALE = ###

8

8

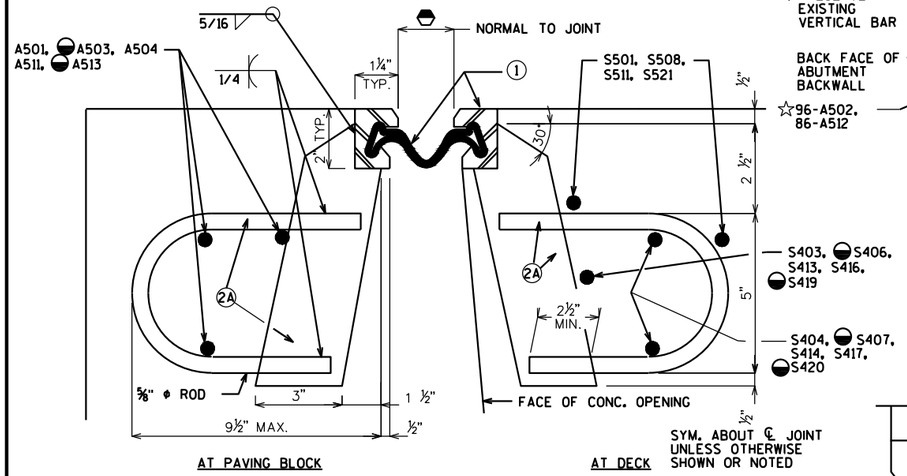
STATE PROJECT NUMBER

1430-00-66



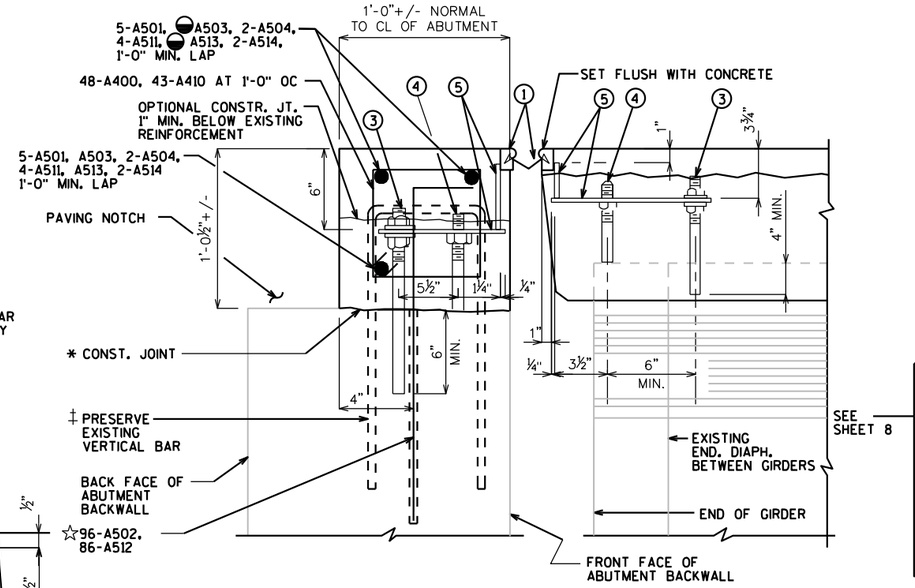
SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT MEDIANS AND SIDEWALKS.



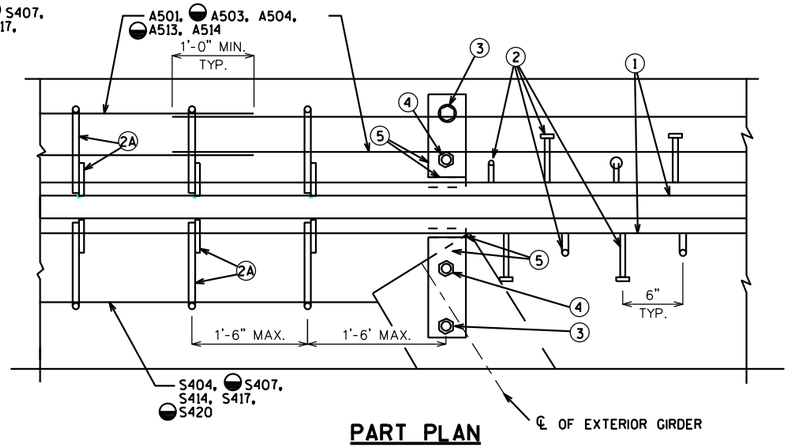
SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.

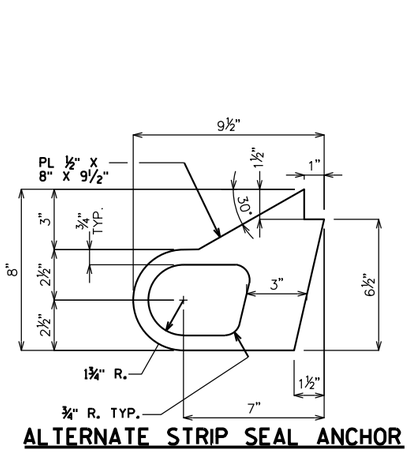


TYPICAL SECTION THRU JOINT AT STEEL GIRDER

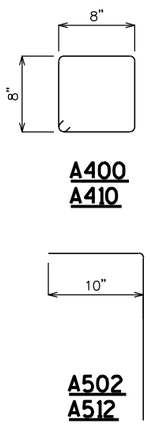
NORMAL TO ℄ SUBSTRUCTURE AT ABUTMENT



PART PLAN



ALTERNATE STRIP SEAL ANCHOR



LEGEND

1. NEOPRENE STRIP SEAL (5-INCH) AND STEEL EXTRUSIONS. JOINT OPENINGS GIVEN NORMAL TO JOINT.
2. STUDS ⅝" ø x 6⅜" LONG AT 6" ALTERNATE CENTERS, WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
2A. ½"X" THICK ANCHOR PLATE WITH ⅝" ø ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
3. ¾" ø THREADED ROD WITH 2 NUTS AND PLATE WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES ON ℄ OF GIRDER. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. ¾" ø THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" x X½" 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 1½" ø HOLE FOR NO. 3 AND 1" ø HOLE FOR NO. 4.
6. NOT USED.
7. ¾" ø x 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾" ø x 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾" ø x 2¼", GALVANIZED THREADED COUPLING.
10. SIDEWALK COVER PLATE ⅜" X 3'-0" WIDE X LIMITS SHOWN. BEND DOWN FACE OF SIDEWALK WITH HOLES FOR NO. 7. GALVANIZED PLATE AFTER SLIP-RESISTANT SURFACE IS APPLIED.
11. 1" x 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

☆ A502, A512 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT.

◒ BAR COUPLERS REQUIRED. SEE SHEET 9 FOR DETAILS.

* POUR CONC. ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE.

‡ EXISTING BARS ARE LIKELY TO BE CORRODED AND/OR DAMAGED DURING CONCRETE REMOVAL. PRESERVE AND INCORPORATE AS MUCH REBAR AS PRACTICAL. SUPPLEMENT WITH THE BARS INDICATED BY ☆.

⬭ SEE SHEET 5 FOR JOINT WIDTH.

NOTES

1. ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING, OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.
2. AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.
3. FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.
4. SANDBLAST PLATES AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.
5. ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM 153 CLASS C AND D.
6. STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LINEAL FOOT PRICE BID FOR "EXPANSION DEVICE B-24-0009.

- BILL OF BARS

	MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
	A400	X	96	3'-2"		X	PAVING BLOCK STIRRUP STAGE 1
	A501	X	30	7'-6"			PAVING BLOCK TRANSV. ROAD STAGE 1
☆◒	A502	X	96	3'-1"		X	PAVING BLOCK VERTICAL STAGE 1
	A503	X	6	1'-2"			PAVING BLOCK TRANSV. STAGE 1 DOWEL
	A504	X	12	5'-1"			PAVING BLOCK TRANSV. SIDEWALK STAGE 1
	A410	X	86	3'-2"		X	PAVING BLOCK STIRRUP STAGE 2
	A511	X	30	7'-9"			PAVING BLOCK TRANSV. ROAD STAGE 2
☆◒	A512	X	86	3'-1"		X	PAVING BLOCK VERTICAL STAGE 2
	A513	X	6	1'-2"			PAVING BLOCK TRANSV. STAGE 2 DOWEL
	A514	X	12	6'-0"			PAVING BLOCK TRANSV. MEDIAN STAGE 2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-24-0009

DRAWN BY EMT | PLANS CK'D. KWG

STRIP SEAL, EXP. JT. & ABUT. BILL OF BARS

SHEET 3 OF 6

I.D.

DATE:

SCALE = ###

8

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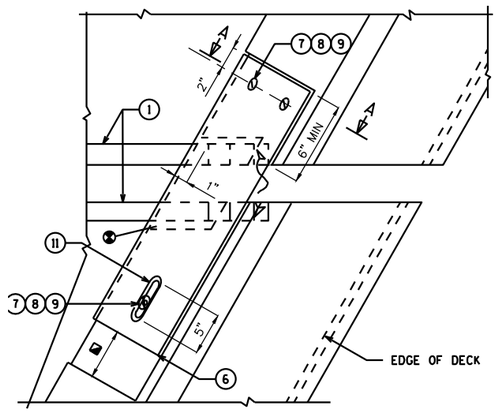
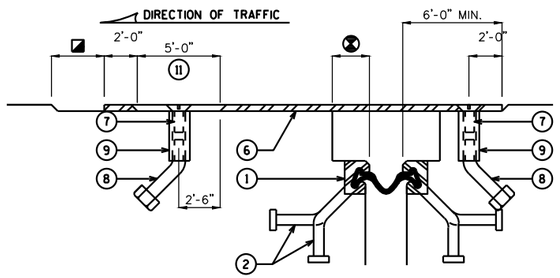
STATE PROJECT NUMBER

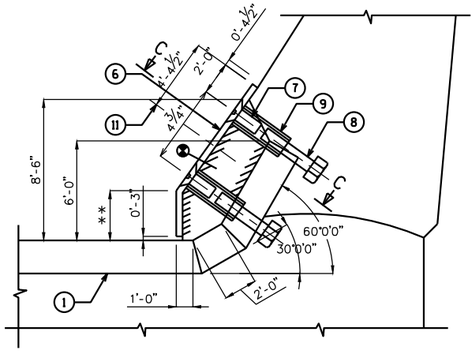
1430-00-66



PLAN

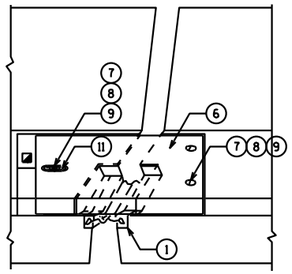


SECTION C-C

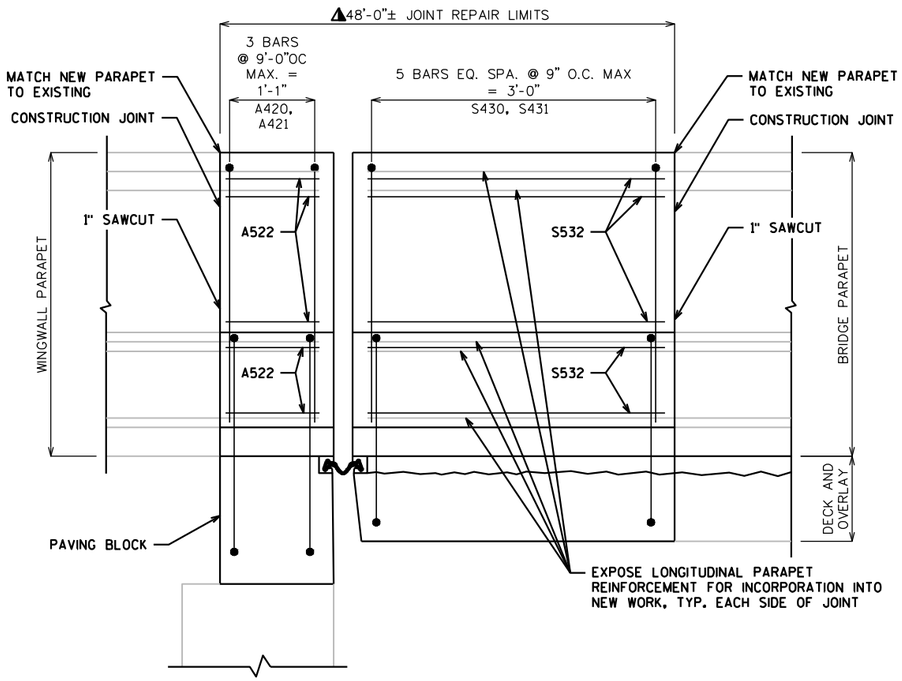


SECTION A-A

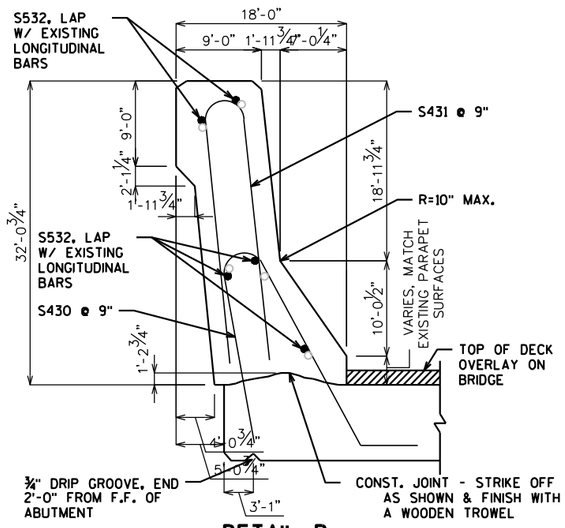
** AS REQUIRED FOR OVERLAY. COORDINATE WITH EXPANSION JOINT MANUFACTURER.



VIEW OF PARAPET PLATES FROM ROADWAY



SECTION D-D



DETAIL B

NOTES

SEE SHEET 7 LEGEND FOR MATERIAL NOTES.

LEGEND

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

◪ JOINT OPENING DIM. ALONG SKEW PLUS ½"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-24-0009

DRAWN BY EMT | PLANS CK'D. KWG

STRIP SEAL COVER PLATE

SHEET 4 OF 6

I.D.

DATE:

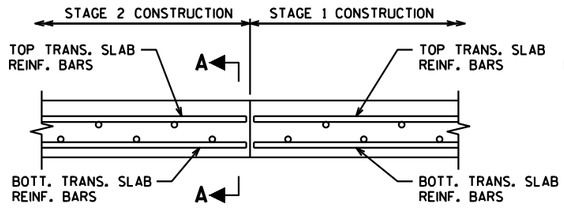
SCALE = ###

8

8

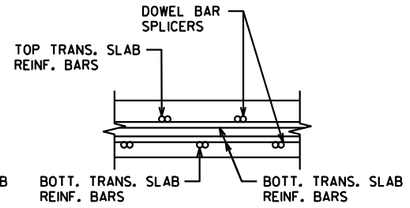
STATE PROJECT NUMBER

1430-00-66



SECTION THRU DECK

(LOOKING EAST)



SECTION A-A

DOWEL BAR SPLICER LAP LENGTHS

BAR SIZE	4	5	6
f'c = 4000	2'-3"	2'-11"	3'-6"

NOTES

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL BE OF MINIMUM 60 ksi YIELD STRENGTH, AND HAVE TENSILE STRENGTH AREA EQUAL OR GREATER THAN THAT OF THE LAPPED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

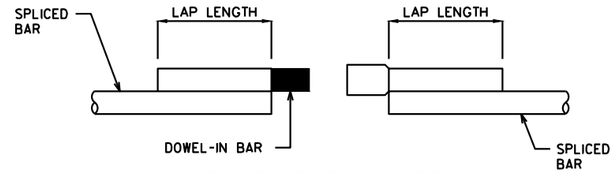
FOR DOWEL BAR SPLICERS, ALL REINFORCEMENT SHALL BE LAPPED AND TIED TO THE SPLICER BARS.

SPLICER (COUPLER) ASSEMBLY IN THE SLAB SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENT:

(1) MINIMUM CAPACITY = 1.25 X fy X AREA OF SPLICED REINFORCEMENT BAR.

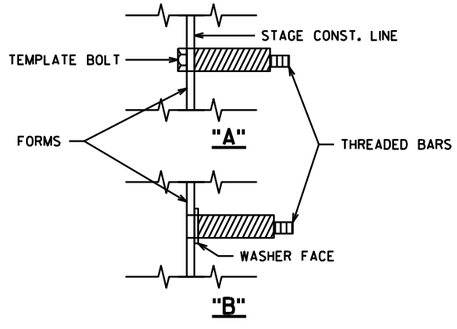
WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS



DOWEL BAR SPLICER

ONE PIECE THREADED SPLICER

SPLICER ALTERNATIVES



INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-24-0009

DRAWN BY EMT | PLANS CK'D. KWG

BAR SPLICER (COUPLER) DETAILS

SHEET 5 OF 6

I.D.

DATE:

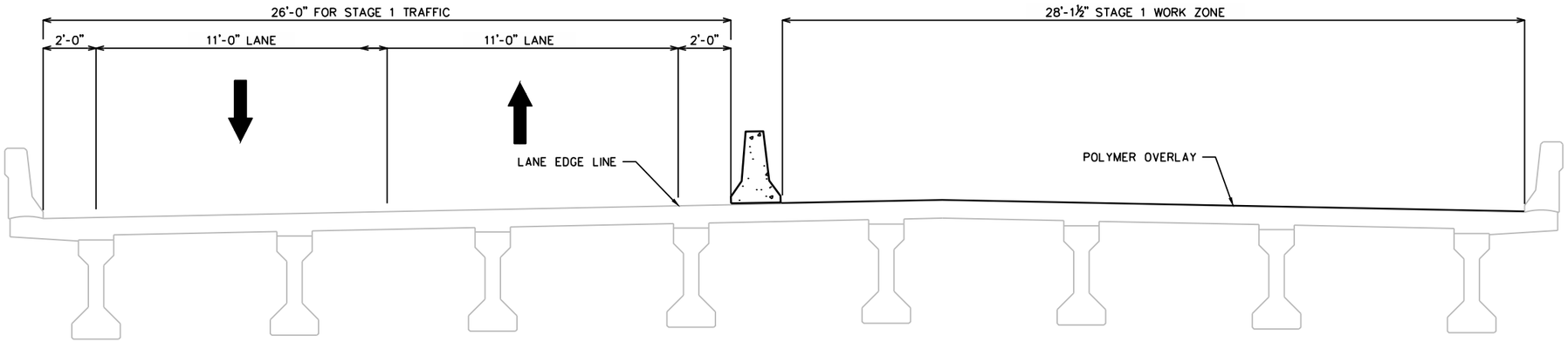
SCALE = ###

8

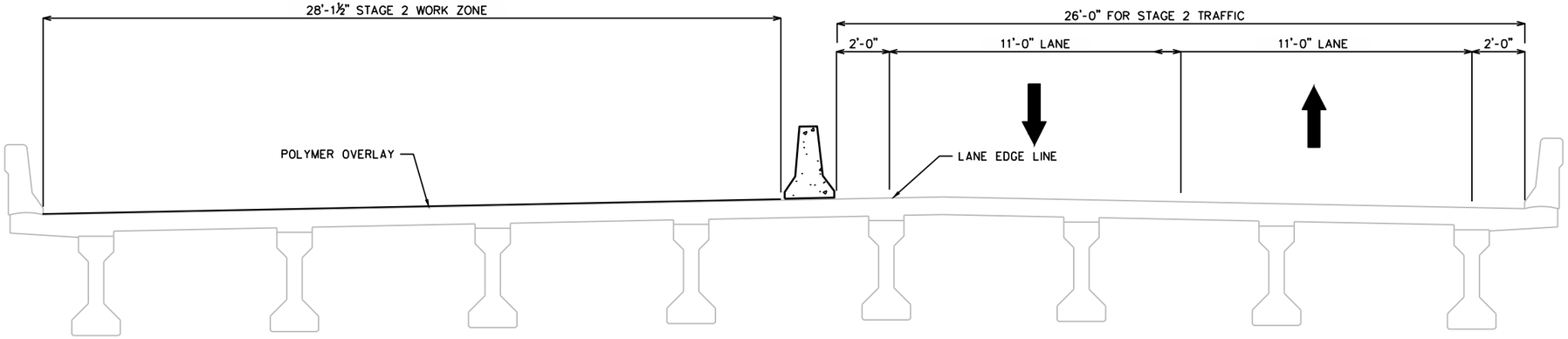
8

STATE PROJECT NUMBER

1430-00-66



STAGE 1 CONSTRUCTION
LOOKING EAST



STAGE 2 CONSTRUCTION
LOOKING EAST

8

8

NO.	DATE	REVISION	BY

GRAEF

1150 Springhurst Drive
Suite 201
Green Bay, WI 54304-5947
920 / 592 9440
920 / 592 9445 fax
www.graef-usa.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-24-0009

STH 23 OVER PUCHYAN RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
GREEN LAKE	BROOKLYN

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EMT	KGW	EMT	KGW

CONSTRUCTION STAGING

SHEET 6 OF 6

BUREAU OF STRUCTURES CONTACT:
BILL DREHER (608) 266-8489

CONSULTANT CONTACT:
KEVIN WOOD (414) 259-1500

I.D. 6220-00-61

DATE: MARCH 2019

SCALE = NTS