

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

FAP ROUTE 328 (US 45)
SECTION D7 BRIDGE REPAIRS 2010-1

EFFINGHAM COUNTY

C-97-113-09

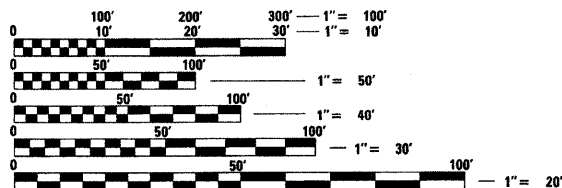
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
328	D7 BRIDGE REPAIRS 2010-1	Effingham	16	1
ILLINOIS			CONTRACT NO. 74400	

D-97-027-09



LOCATION OF SECTION INDICATED THUS: -

FOR INDEX OF SHEETS, SEE SHEET NO.

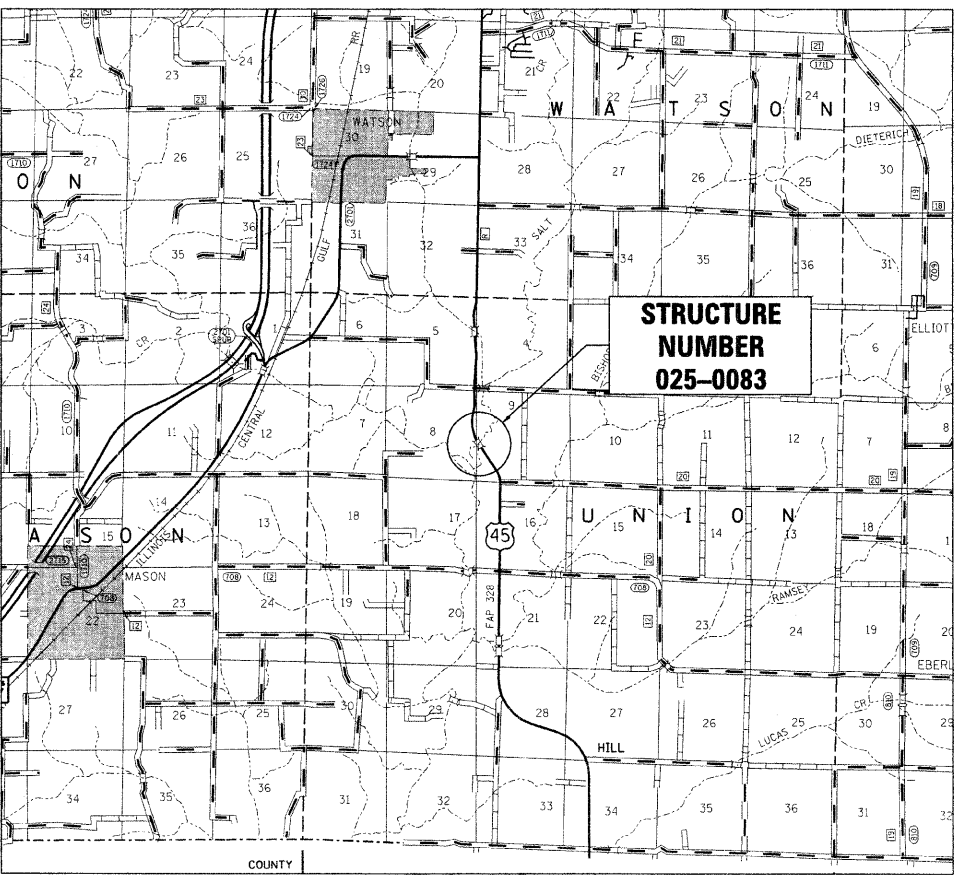


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: ALEC RING
PROJECT MANAGER

CONTRACT NO. 74400



ADT = 2750 (2009)



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED December 23 2009

Roger L. Driscoll
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

January 29 2010
Scott E. Shiff PE/LE
ENGINEER OF DESIGN AND ENVIRONMENT

January 29 2010
Christine M. Reed LE
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS; THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED JANUARY 1, 2007; THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS INDICATED ON THE CHECKSHEET; AND THE SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.

THIS PROJECT IS LOCATED AT BIG SALT CREEK ON US 45 IN EFFINGHAM COUNTY
APPROXIMATELY 3 MILES SOUTH OF THE IL 37 JUNCTION. THE PROJECT INCLUDES
THE STRUCTURE NUMBER 025-0083.

THE WORK INCLUDED IN THIS PROJECT CONSISTS OF CONSTRUCTION OF PCC BASE COURSE WIDENING, REMOVAL OF THE EXISTING NON-ASBESTOS BITUMINOUS WEARING SURFACE AND WATERPROOFING MEMBRANE SYSTEM, REMOVAL OF THE EXISTING POLYMER NOSING WITH SILICONE JOINTS AND REPLACING THEM WITH PREFORMED JOINT STRIP SEAL EXPANSION JOINTS, FULL AND PARTIAL DEPTH DECK PATCHING, RIPRAP PLACEMENT, REPLACING EXISTING BEARINGS WITH ELASTOMERIC BEARING ASSEMBLIES, CONSTRUCTION OF THE WATERPROOFING MEMBRANE AND BITUMINOUS WEARING SURFACES, PAVEMENT STRIPING, AND ALL OTHER WORK NECESSARY TO COMPLETE THIS SECTION.

PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING PLANS ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. THE CONTRACTOR SHALL FIELD VERIFY EXISTING DIMENSIONS AND DETAILS AFFECTING NEW CONSTRUCTION AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN SCOPE OF WORK HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR WORK.

ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF THE RIGHT OF WAY.
EXCAVATION AND DISPOSAL OF THE EXCAVATED MATERIAL WILL BE INCLUDED IN THE
CONTRACT PRICE FOR PCC BASE COURSE WIDENING, 10".

RIPRAP SHALL BE DUMPED ALONG THE EAST END OF THE SOUTH ABUTMENT IN SETTLED AREA.

EPOXY SHALL BE USED TO PLUG SEVERAL SMALL HOLES IN EAST SOFFIT. COST TO BE INCLUDED IN DECK SLAB REPAIR.

THE TOTAL QUANTITY OF PAINT PAVEMENT MARKING - LINE 4 INCH CONSISTS OF:		
STR#	YELLOW FT	WHITE FT
025-0083	1080	1080

ALL EXISTING RAISED REFLECTIVE MARKERS LOCATED WITHIN THE LIMITS OF THE ABUTMENTS AT THE STRUCTURE SHALL BE REMOVED. THIS WORK WILL BE INCLUDED IN THE COST AT THE CONTRACT UNIT PRICE FOR HOT-MIX ASPHALT SURFACE REMOVAL. REPLACEMENT OF THE BI-DIRECTIONAL AMBER MARKERS AT THE COMPLETION OF THE HOT MIX ASPHALT CONSTRUCTION WILL BE PAID FOR AT THE CONTRACT PRICE FOR RAISED REFLECTIVE PAVEMENT MARKER.

THE REFLECTIVE LENSE OF ALL RAISED REFLECTIVE MARKERS LOCATED BETWEEN THE STOP BARS AND THE ABUTMENTS OF THE STRUCTURE SHALL BE REMOVED PRIOR TO STAGE I CONSTRUCTION. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL. REPLACEMENT OF THE BI-DIRECTIONAL AMBER REFLECTORS AT THE COMPLETION OF STAGE II WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR REPLACEMENT REFLECTOR.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:

BITUMINOUS CONCRETE	112	LBS/SQ YD - IN
AGGREGATE SHOULDERS	2.05	TON/CU YD
BITUMINOUS PRIME COAT	0.1	GAL/SQ YD
AGGREGATE PRIME COAT	4	LBS/SQ YD

THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE FOR THIS PROJECT:
STRUCTURE 025-0083

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MIXTURE USE:                SURFACE COURSE
APPLICATION:                HOT-MIX ASPHALT SURFACE COURSE, MIX "C" N70
PG GRADE:                  PG 64-22
RAP %:                      0%
DESIGN AIR VOIDS:          4.0% @ NDESIGN = 70
MIXTURE COMPOSITION:      IL -9.5
FRICTION AGGREGATE:        MIXTURE C

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THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATION AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. THE J.U.L.I.E. NUMBER IS 800-892-0123, A MINIMUM OF 96 HOURS ADVANCE NOTICE IS REQUESTED.

INDEX OF SHEETS

SHEET NO

1	COVER SHEET
2	INDEX OF SHEETS, HIGHWAY STANDARDS AND GENERAL NOTES
3	SUMMARY OF QUANTITIES
4	SCHEDULE OF QUANTITIES
5	BASE COURSE WIDENING
6	STAGE CONSTRUCTION DETAILS
7-14	BRIDGE PLAN AND DETAILS
15-16	BEARING ASSEMBLY DETAILS

LIST OF HIGHWAY STANDARDS

000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
701006-03	OFF-ROAD OPERATIONS, 2L 2W, 15' TO 24" AWAY, SPEEDS > 45 MPH
701011-02	OFF-ROAD MOVING OPERATIONS, 2L 2W, DAY ONLY, FOR SPEEDS > 45 MPH
701201-03	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS > 45MPH
701301-03	LANE CLOSURE, 2L, 2W, SHORT-TIME OPERATIONS
701311-03	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS, DAY ONLY
701321-10	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-03	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS > 45 MPH
701901-01	TRAFFIC CONTROL DEVICES
704001-06	TEMPORARY CONCRETE BARRIER
720001-01	SIGN PANEL MOUNTING DETAILS
720006-02	SIGN PANEL ERECTION DETAILS
780001-02	TYPICAL PAVEMENT MARKINGS
781001-03	TYPICAL APPLICATIONSRAISED REFLECTIVE PAVEMENT MARKERS
780001-02	TYPICAL APPLICATIONS OF RAISED REFLECTIVE PAVEMENT MARKERS

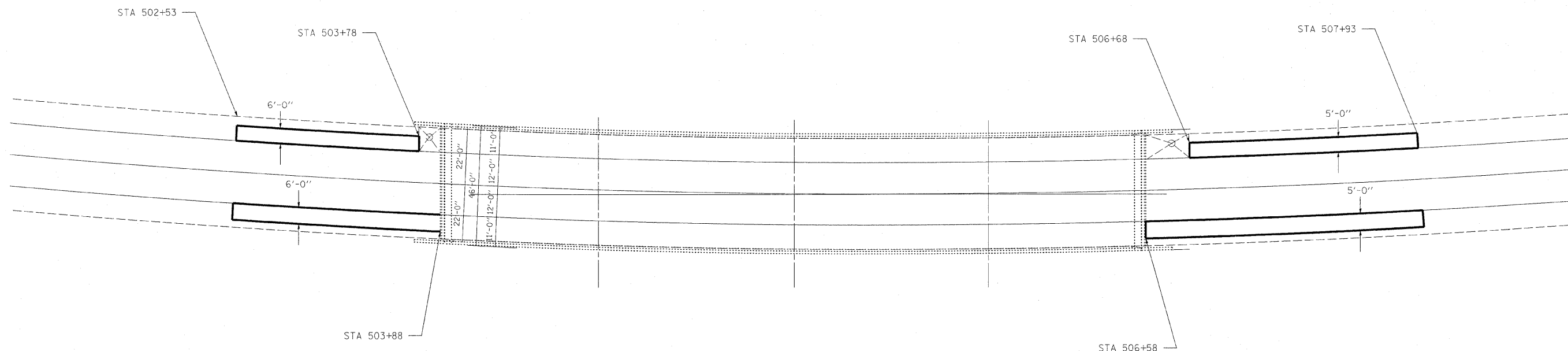
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c:\pwwork\p\dot\steffennk\dd041324\07	4400-sh-t-gen-index.dgn	DRAWN -	REVISED -						328	07 BRIDGE REPAIRS 2010-1	Effingham	16	2
PLOT SCALE = 30.0000' / IN.	CHECKED -	REVISED -	CONTRACT NO. 74400										
PLOT DATE = 12/23/2009	DATE -	REVISED -	<div>TO INCREASED AID PROJECT</div>										
				SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.				

SUMMARY OF QUANTITIES			100% STATE	CONSTRUCTION TYPE CODE	
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	025-0083 SFTY-2A	-----
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	50	50	
35400500	PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 10"	SQ YD	289	289	
40603315	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	TON	108	108	
44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	1275	1275	
44004250	PAVED SHOULDER REMOVAL	SQ YD	289	289	
50102400	CONCRETE REMOVAL	CU YD	12.7	12.7	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	12.7	12.7	
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	1620	1620	
50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	12	12	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	1980	1980	
50800515	BAR SPlicERS	EACH	22	22	
52000110	PREFORMED JOINT STRIP SEAL	FOOT	89	89	
52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	12	12	
52100520	ANCHOR BOLTS, 1"	EACH	24	24	
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	1275	1275	
67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	8	8	
67100100	MOBILIZATION	L SUM	1	1	
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1	
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1	
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	1	
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	10	10	
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1	
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	1480	1480	
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	3400	3400	
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	470	470	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	525	525	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	525	525	
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	2160	2160	
* 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	14	14	
* 78100300	REPLACEMENT REFLECTOR	EACH	6	6	
78300100	PAVEMENT MARKING REMOVAL	SQ FT	560	560	

SUMMARY OF QUANTITIES			100% STATE	CONSTRUCTION TYPE CODE	
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	025-0083 SFTY-2A	-----
X0322050	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL	EACH	6	6	
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	25	25	
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	1	1	
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	87	87	
Z0016200	DECK SLAB REPAIR (PARTIAL)	SQ YD	64	64	
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2	
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2	

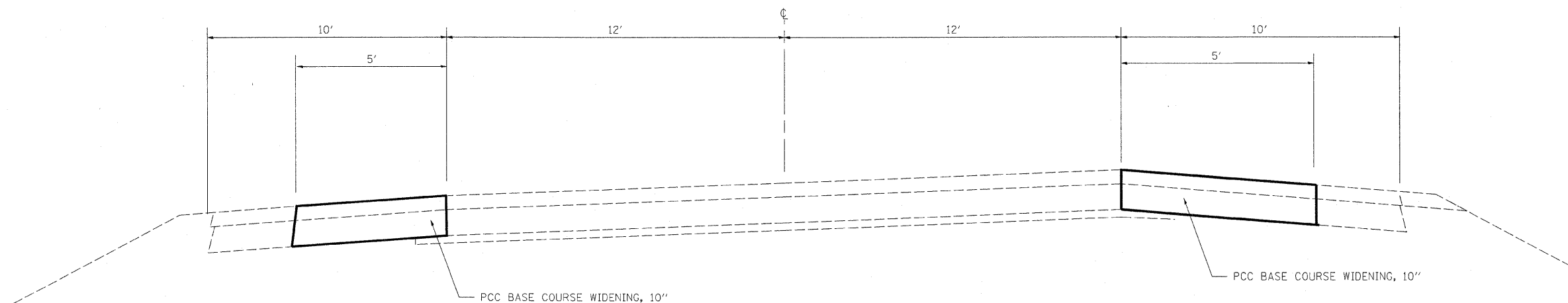
BRIDGE REPAIR SCHEDULE

Structure Number	Length	Concrete Removal	Concrete Superstructure	Preformed Joint Strip Seal	Hot-Mix Asphalt Surface Removal, 1 1/2"	Waterproofing Membrane System	Hot-Mix Asphalt Surface Course, Mixture C, N70	Structural Repair of Concrete (Depth 5 in)	Deck Slab Repair (Full Depth, Type I)	Deck Slab Repair (Full Depth, Type II)	Deck Slab Repair (Partial)
025-0083	FEET	CU YD	CU YD	FEET	SQ YD	SQ YD	TON	SQ FT	SQ YD	SQ YD	SQ YD
Stage I		7.05	6.35	44.5	765	637.5	54	25	0	75	27.5
Stage II		5.65	6.35	44.5	510	637.5	54	0	1.0	12.0	36.5
TOTAL	270	12.7	12.7	89	1275	1275	108	25	1.0	87.0	64.0

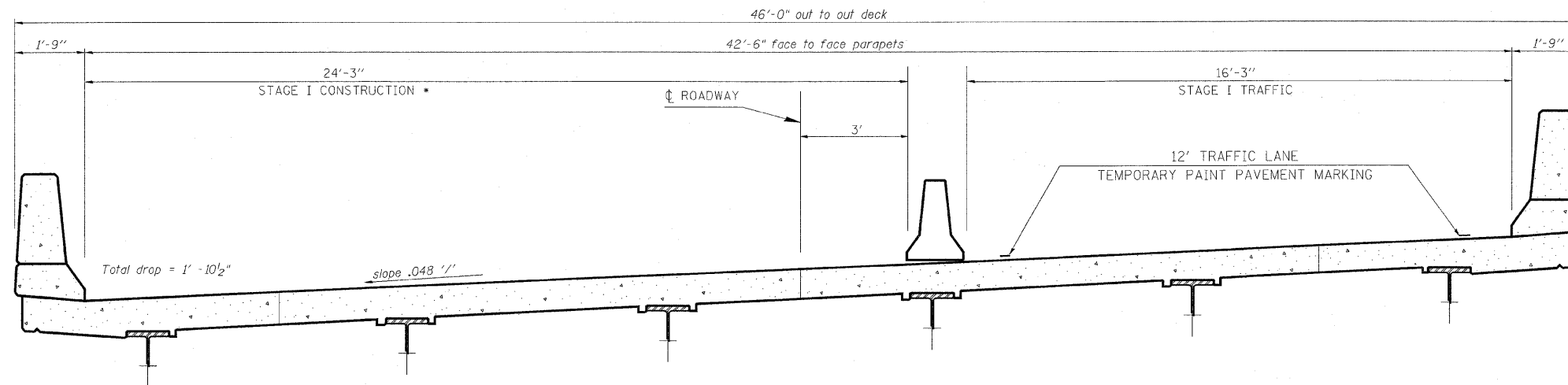


BASE COURSE WIDENING

Station Left	502+53	to	503+78	=	69.5	SQ YDS
Station Right	502+53	to	503+88	=	75.0	SQ YDS
Station Left	506+68	to	507+93	=	69.5	SQ YDS
Station Right	506+58	to	507+93	=	75.0	SQ YDS



FILE NAME =	USER NAME = steffennk	DESIGNED <i>ADR</i>	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BASE COURSE WIDENING 025-0083	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ca:\pw\work\p\1001\STEFFENMK\144324\1	74400-sht-plan.dgn	DRAWN <i>ADR</i>	REVISED -			328	07 BRIDGE REPAIRS 2010-1	Effingham	16	5	
	PLOT SCALE = 20.0000 ' / IN.	CHECKED -	REVISED -			CONTRACT NO. 74400					
	PLOT DATE = 12/23/2009	DATE <i>12/10/09</i>	REVISED -			ILLINOIS FED. AID PROJECT					
SCALE:		SHEET NO. OF SHEETS		STA. TO STA.							



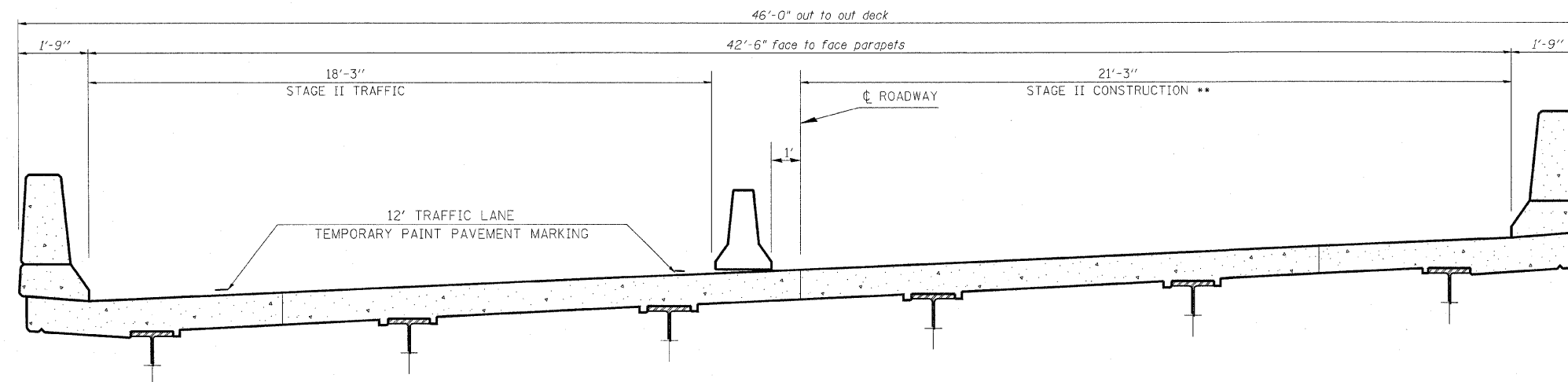
CROSS SECTION

NEAR MIDSPAN

(Looking South)

- STAGE 1 CONSTRUCTION 1 24'-3" WIDTH
DUE TO STAGE 1 PATCHING
(FULL DEPTH PATCHES AT CENTER LINE)

TEMPORARY CONCRETE BARRIER STA 502+60 TO STA 507+85 = 525FT



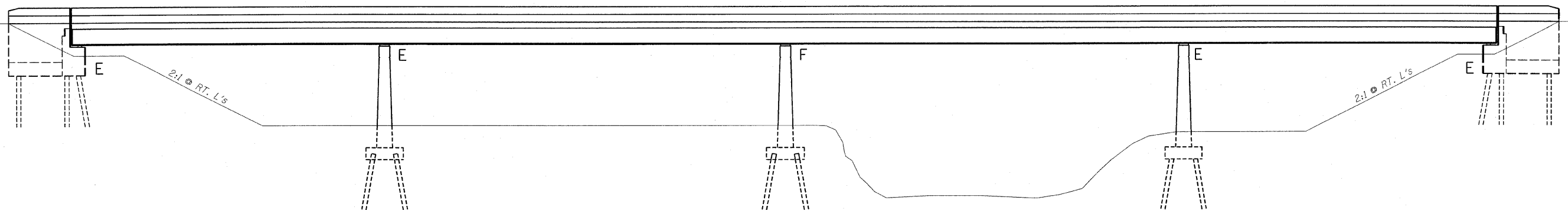
CROSS SECTION

NEAR MIDSPAN

(Looking South)

- ** STAGE 2 CONSTRUCTION 1 21'-3" WIDTH
DUE TO JOINT REPLACEMENT AT CENTERLINE

FILE NAME =	USER NAME = steffennk	DESIGNED ADR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION DETAILS 025-0083	F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.				
c:\pw\work\PWIDOT\STEFFENMK\d0144324\74400-sht-plan.dgn	74400-sht-plan.dgn	DRAWN ADR	REVISED -			328	D7 BRIDGE REPAIRS 2010-1	Effingham	16	6
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PLOT DATE = 12/23/2009		DATE 12/10/09	REVISED -			ILLINOIS FED. AID PROJECT				
SCALE: SHEET NO. OF SHEETS STA. TO STA.										



GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

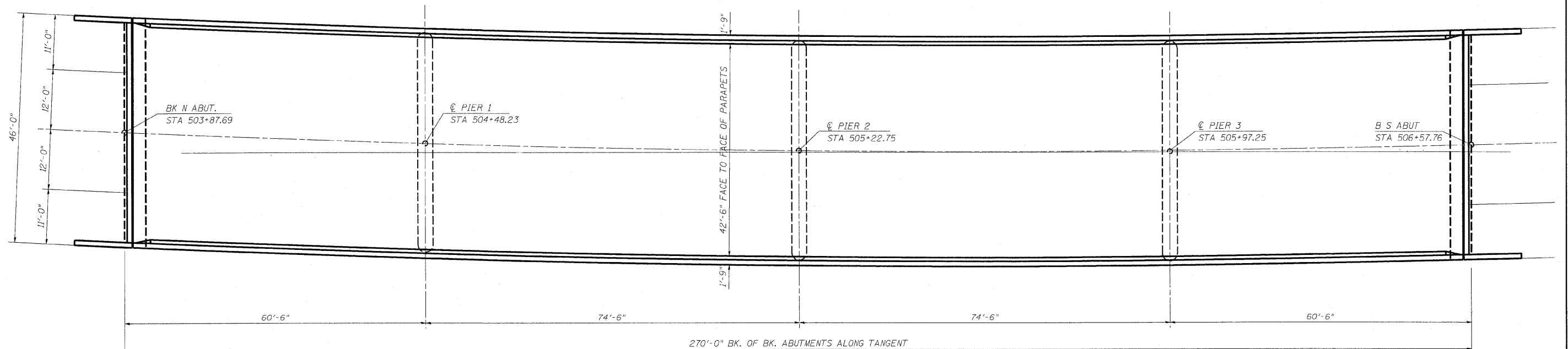
Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Joint openings shall be adjusted according to article 520.04 of the standard specification when the deck is poured at an ambient temperature other than 50F.

ELEVATION

TOTAL BILL OF MATERIAL

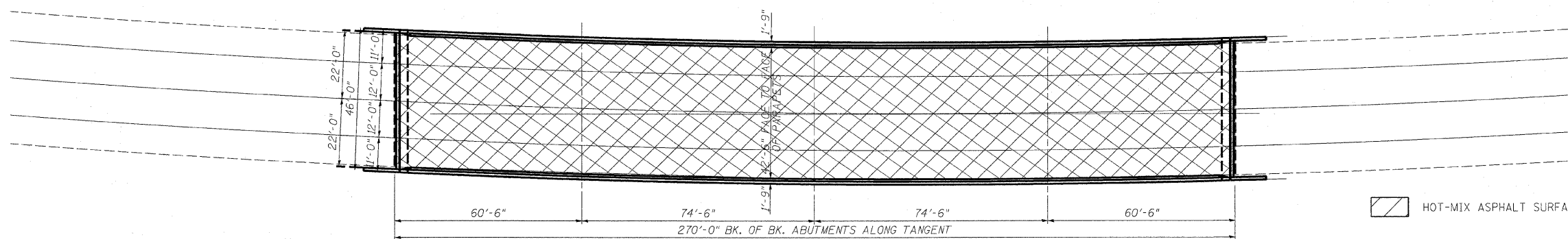
ITEM	UNIT	TOTAL
HOT-MIX ASPHALT SURFACE, MIX C, N70	TONS	108
HOT-MIX ASPHALT SURFACE REMOVAL 1 1/2"	SQ. YD.	1275
STRUCTURAL REPAIR OF CONCRETE (= OR < 5")	SQ. FT.	25
CONCRETE REMOVAL	CU. YD.	12.7
CONCRETE SUPERSTRUCTURE	CU. YD.	12.7
REINFORCEMENT BARS, EPOXY COATED	POUND	1980
PREFORMED JOINT STRIP SEAL	FOOT	89
BAR SPLICERS	EACH	22
WATERPROOFING MEMBRANE SYSTEM	SQ. YD.	1275
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	1620
ANCHOR BOLT 1"	EACH	24
ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	12
JACK AND REMOVE EXISTING BEARING	EACH	12
DECK SLAB REPAIR (FULL DEPTH, TY. 1)	SQ. YD.	1
DECK SLAB REPAIR (FULL DEPTH, TY. 2)	SQ. YD.	87
DECK SLAB REPAIR (PARTIAL)	SQ. YD.	64



Expires Nov 30, 2010

PLAN

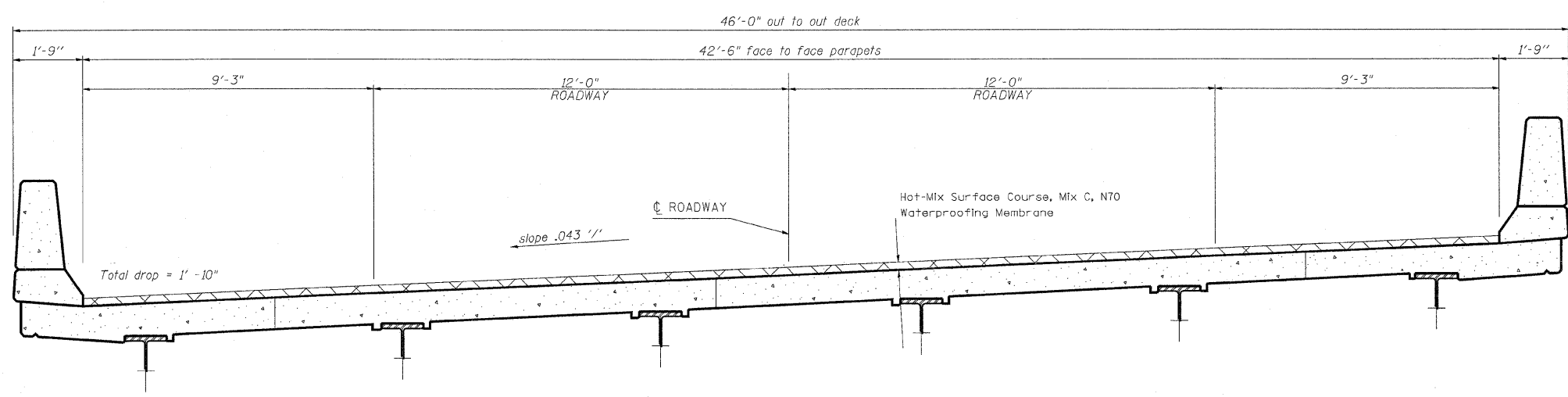
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c:\pwwork\PIWIDOT\STEFFENMK\d0144324\074400-shr-plan.dgn		DRAWN ADR	REVISED -			328	D7 BRIDGE REPAIRS 2010-1	Effingham	16	7
PLOT SCALE = 20.0000' / 1".		CHECKED -	REVISED -			CONTRACT NO. 74400				
PLOT DATE = 12/23/2009		DATE 12/10/09	REVISED -							
				SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.	
				ILLINOIS FED. AID PROJECT						



PLAN



EXISTING WATERPROOFING REMOVE TO BE REMOVED AND INCLUDED IN THE COST OF HOT-MIX ASPHALT SURFACE REMOVAL 1 1/2"

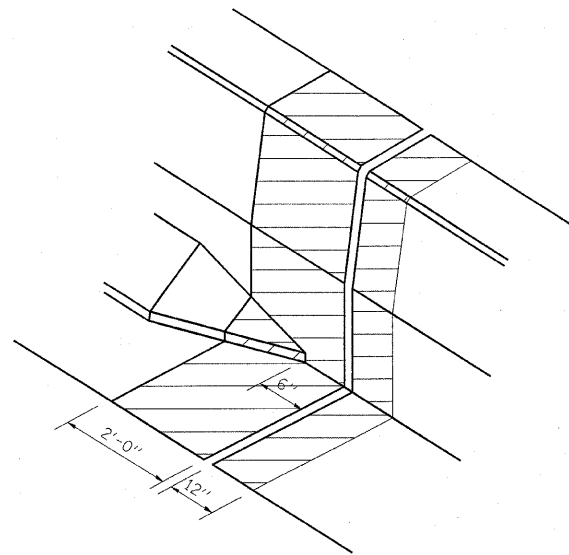


CROSS SECTION

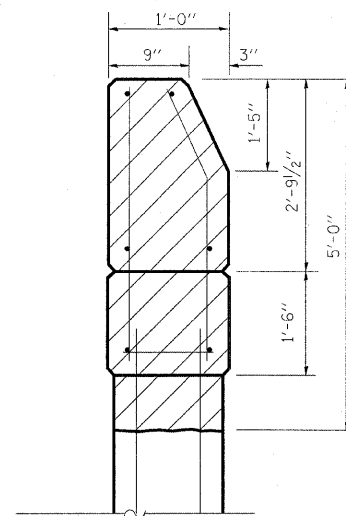
NEAR MIDSPAN

(Looking South)

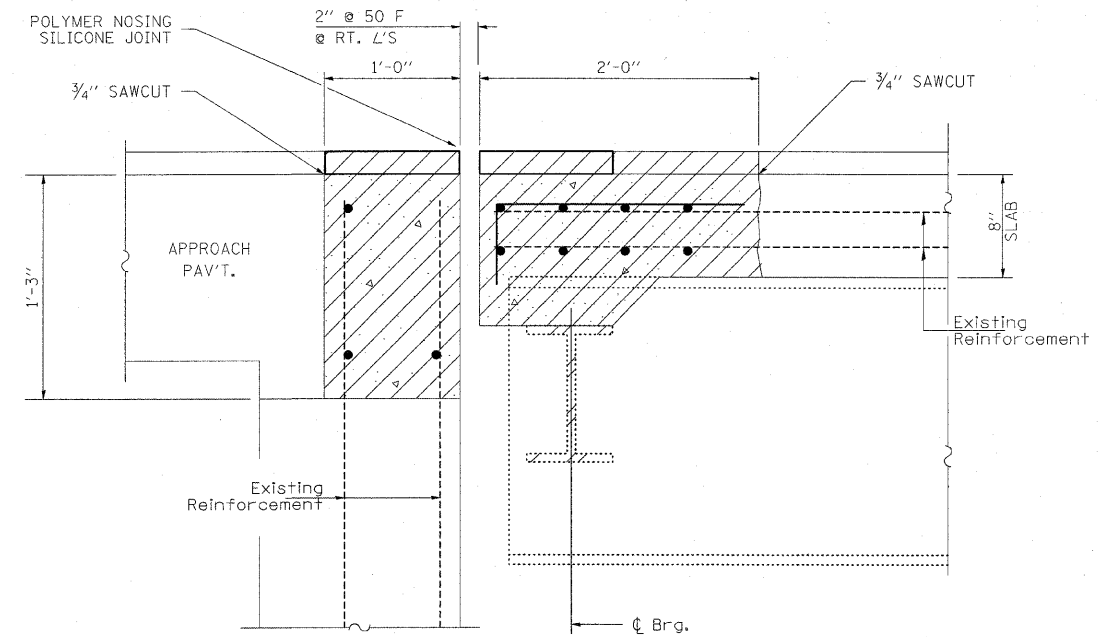
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ca\pwwork\PWIDOT\STEFFENMK\08144324\0	74400-shr-plan.dgn	DRAWN ADR	REVISED -			328	07 BRIDGE REPAIRS 2010-1	Effingham	16	8
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	PLOT DATE = 12/23/2009	DATE 12/10/09	REVISED -			ILLINOIS FED. AID PROJECT				



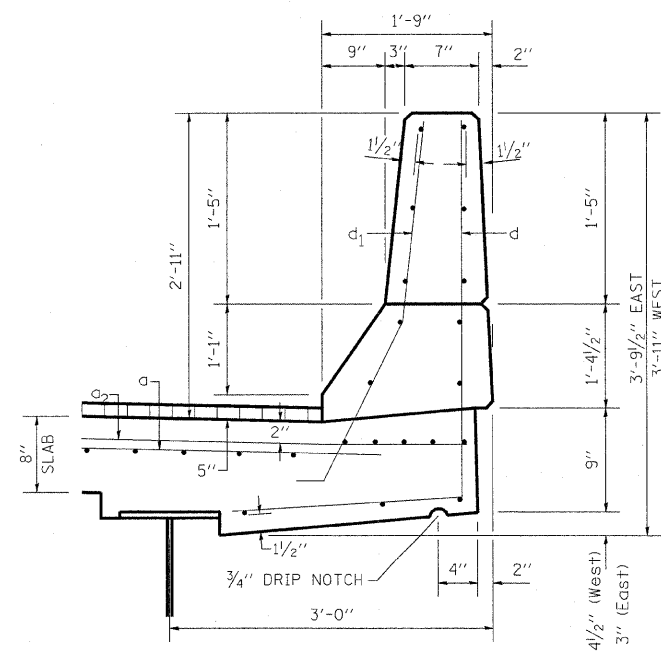
**TYPICAL CONCRETE REPLACEMENT
AT EACH ABUTMENT**



WINGWALL DETAIL

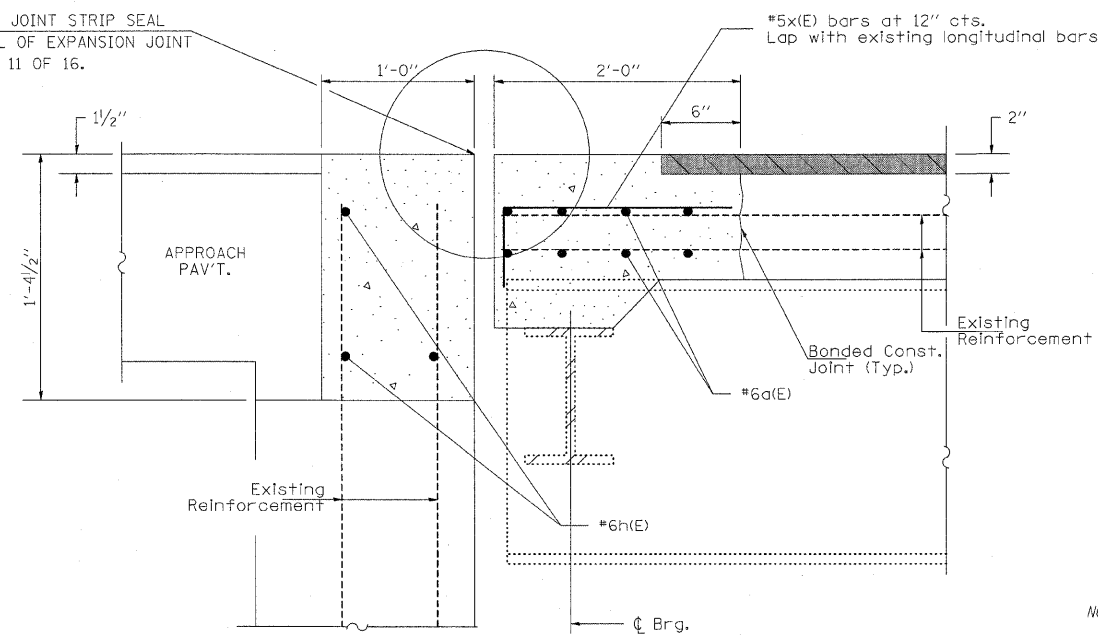


EXISTING EXPANSION JOINTS AT ABUTMENTS



PARAPET DETAIL

PREFORMED JOINT STRIP SEAL
FOR DETAIL OF EXPANSION JOINT
SEE SHEET 11 OF 16.



PROPOSED EXPANSION JOINTS AT ABUTMENTS

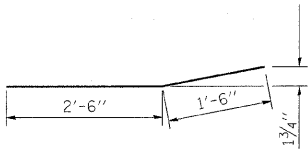
HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70
WATERPROOFING MEMBRANE SYSTEM

NOTE: EXISTING REINFORCEMENT BARS ARE TO BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. ANY REINFORCEMENT BARS THAT ARE DAMAGED DURING CONCRETE REMOVAL OPERATIONS SHALL BE REPAIRED OR REPLACED USING AN APPROVED BAR SPLICER OR ANCHORAGE SYSTEM (COST INCLUDED IN CONCRETE REMOVAL).

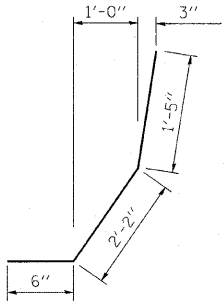
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c:\pwork\FW1001\STEFFENMK\d0144324\074400-shr-plan.dgn		DRAWN <i>ADR</i>	REVISED -		328	07 BRIDGE REPAIRS 2010-1	Effingham	16	9					
	PLOT SCALE = 20.0000' / 1" IN.	CHECKED -	REVISED -		CONTRACT NO. 74400					ILLINOIS FED. AID PROJECT				
	PLOT DATE = 12/23/2009	DATE <i>12/10/09</i>	REVISED -		SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.				

BAR LIST - PER JOINT - STR #025-0083

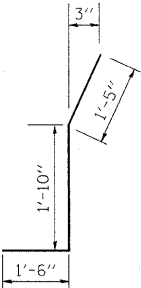
BAR	NUMBER OF BARS		TOTAL	SIZE	LENGTH	SHAPE
	STAGE I	STAGE II				
a(E)	8	8	16	6	22'-6"	
a2(E)	4	4	8	6	4'-0"	
d(E)	4	4	8	5	5'-3"	
d1(E)	3	3	6	5	4'-1"	
d2(E)	1	1	2	4	4'-10"	
h(E)	3	3	6	6	22'-6"	
x(E)	23	23	46	5	2'-6"	
CONCRETE REMOVAL						CU YD 6.3
REINFORCEMENT BARS (EPOXY COATED)						POUND 990
CONCRETE SUPERSTRUCTURE						CU YD 6.3



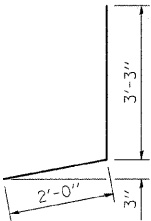
BAR a₂ (E)



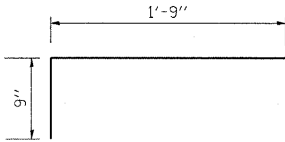
BAR d₁ (E)



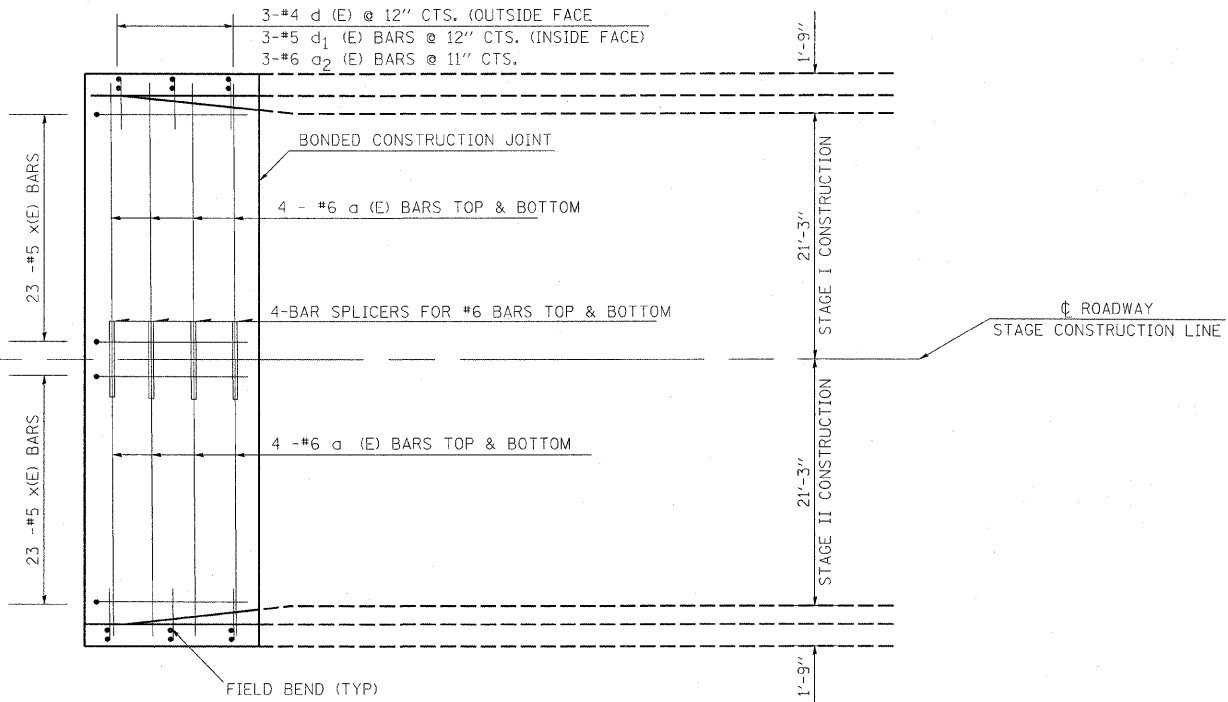
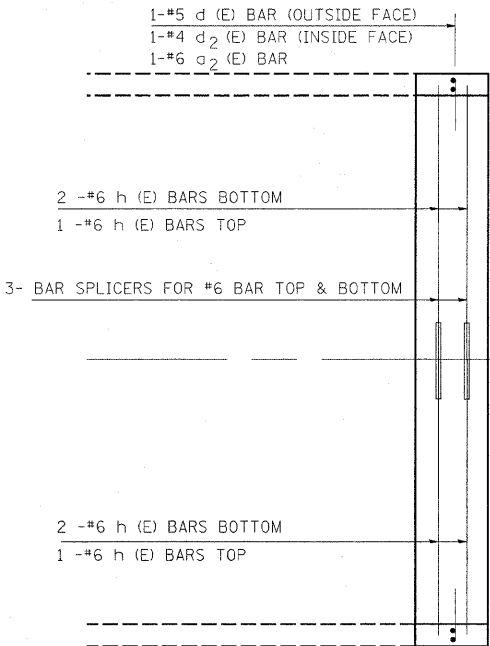
BAR d₂ (E)



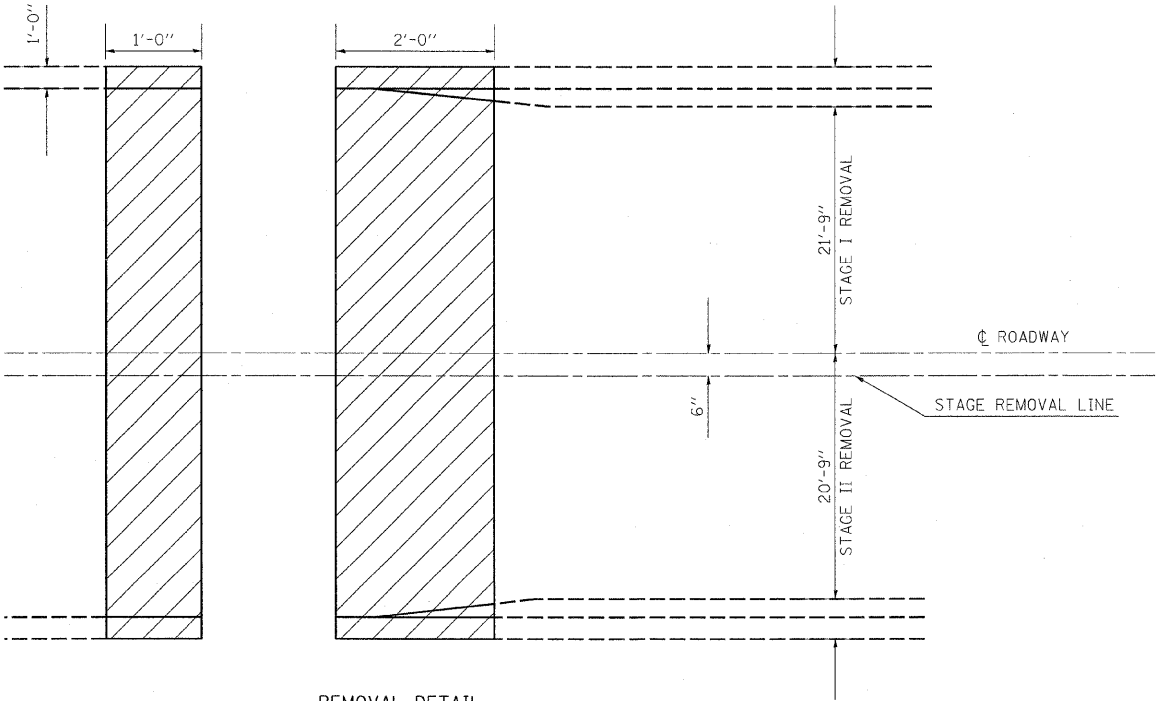
BAR d (E)



BAR x(E)



REINFORCEMENT DETAIL

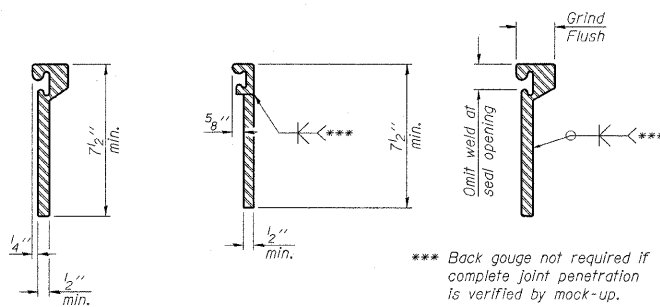


REMOVAL DETAIL

CONCRETE REMOVAL

Technical drawing of a cross-section of a concrete slab and wall joint. The drawing shows a vertical wall on the left and a horizontal slab on the right. A 'Strip seal' is located at the joint. A 'Locking edge rail' is on the left side of the wall. Dimensions include: 1 1/2 inch at 50 degrees F for the seal; 3 inch for the wall thickness; 3 inch for the slab thickness; 3 inch for the distance from the wall face to the first row of studs; 3 inch for the distance from the slab face to the first row of studs; 3/4 inch for the hole diameter; 8 inch for the stud length; 1 foot 0 inch for the stud spacing; 2 inch at 50 degrees F for the seal; 3/8 inch for the hole diameter; 8 inch for the stud length; 2 foot 0 inch for the stud spacing. The drawing is labeled 'Top of slab' and 'Locking edge rail'.

SECTION THRU
ROLLED RAIL JOINT



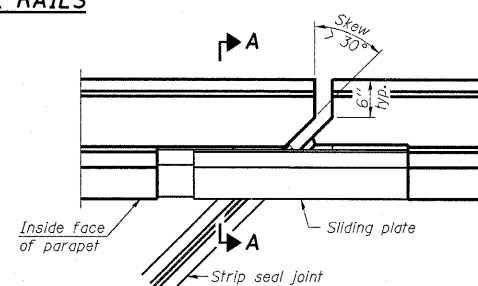
ROLLED
EXTRUDED RAIL WELDED RAIL

LOCKING EDGE
RAIL SPLICE

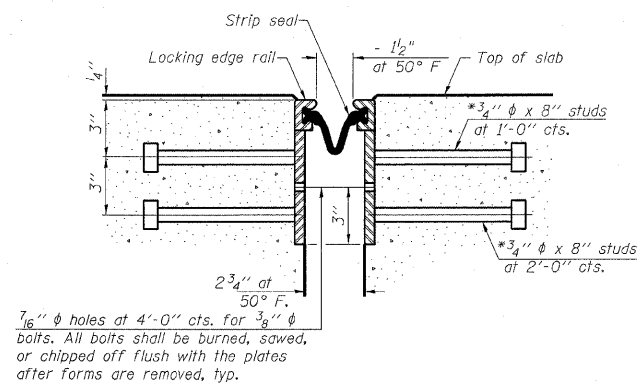
The inside of the locking edge rail groove shall be free of weld residue.

Rolled rail shown, welded rail similar.

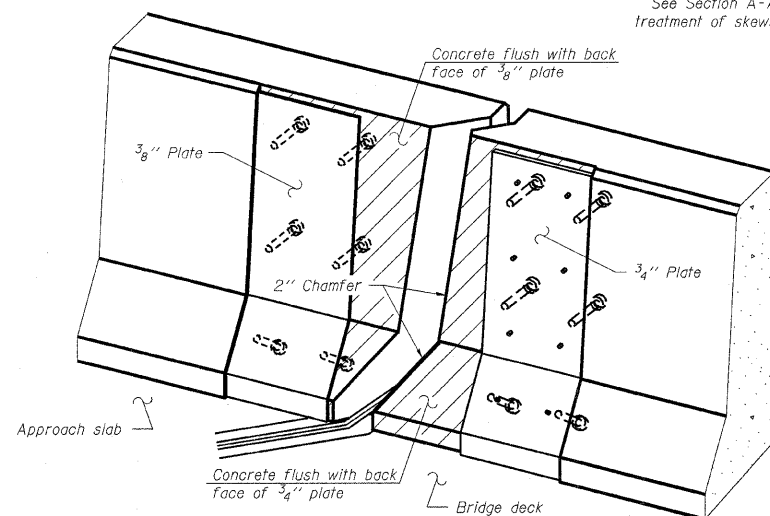
LOCKING EDGE RAILS



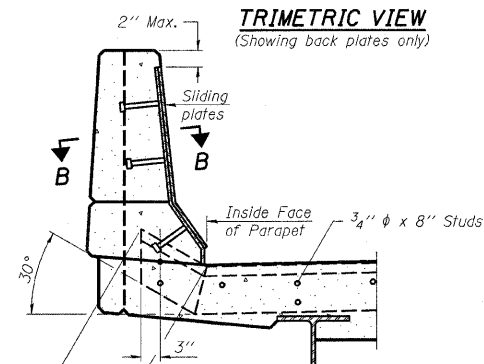
PLAN



SECTION THRU
WELDED RAIL JOINT

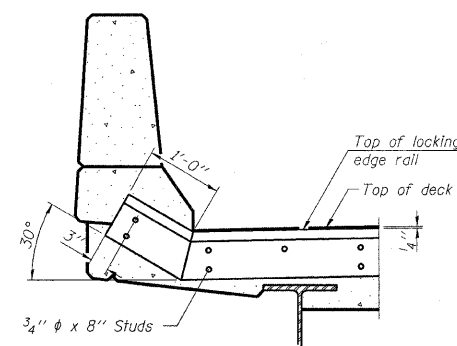


TRIMETRIC VIEW
(Showing back plates only)



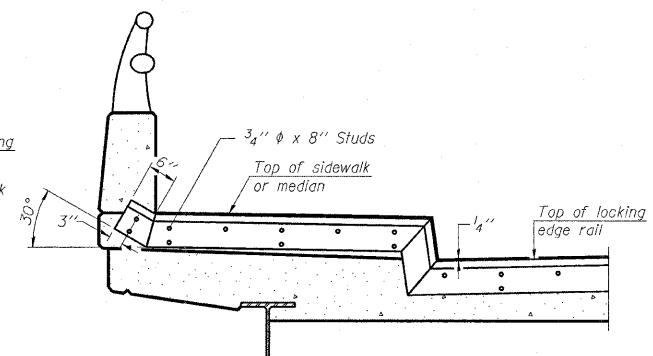
SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



AT PARAPET

See Section A-A for end treatment of skews $> 30^\circ$.



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

TYPICAL END TREATMENTS

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches. The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

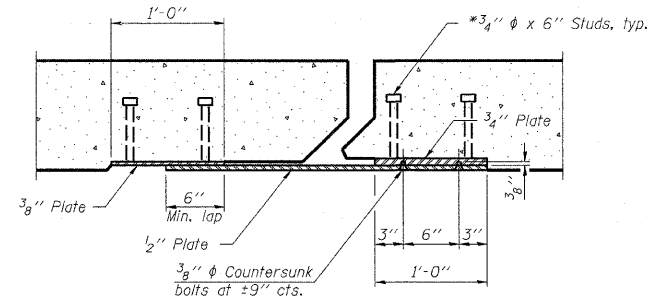
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments at stage lines shall be $\frac{3}{16}$ ", sealed with a suitable sealant.

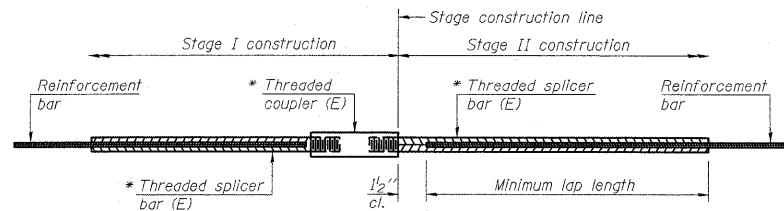
BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	89

PREFORMED JOINT STRIP SEAL
STRUCTURE NO.



SECTION B-B



STANDARD BAR SPLICER ASSEMBLY

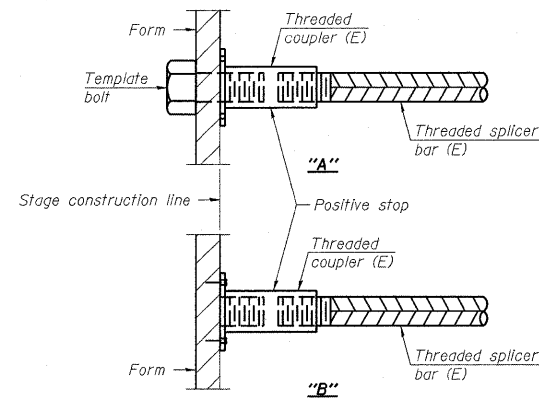
Bar size to be spliced	Minimum Lap Lengths			
	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

Table 1: Black bar, 0.8 Class C
 Table 2: Black bar, Top bar lap, 0.8 Class C
 Table 3: Epoxy bar, 0.8 Class C
 Table 4: Epoxy bar, Top bar lap, 0.8 Class C

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

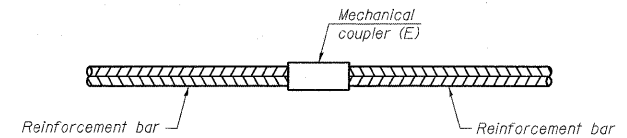
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
APPROACH	#6	2	3'-6"
APPROACH	#6	4	3'-1"
DECK	#6	8	3'-6"
DECK	#6	8	3'-1"



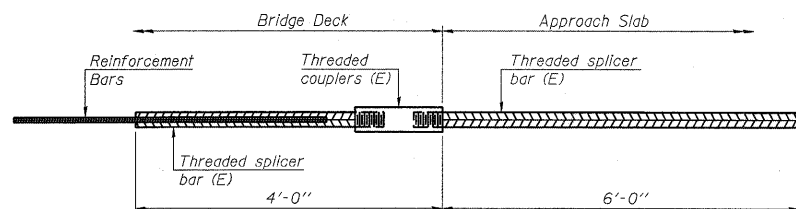
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.



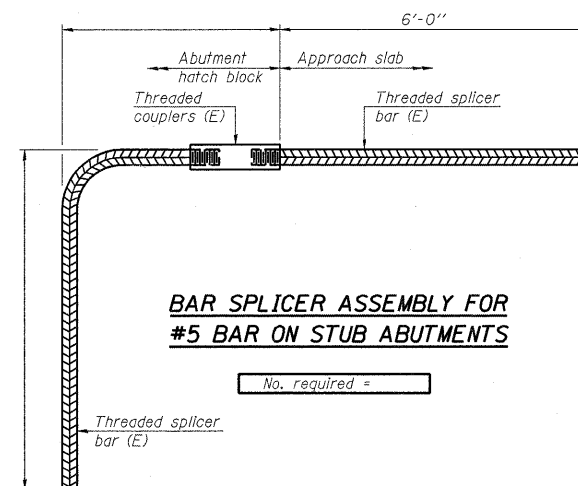
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

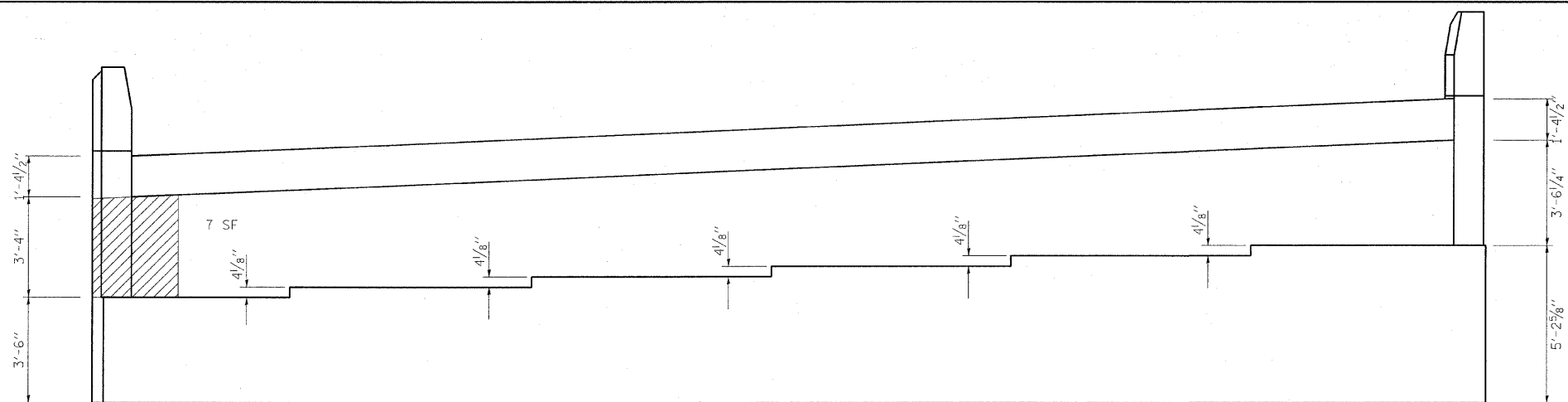
NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
 All reinforcement shall be lapped and tied to the splicer bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
 See special provision for Mechanical Splicers.
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

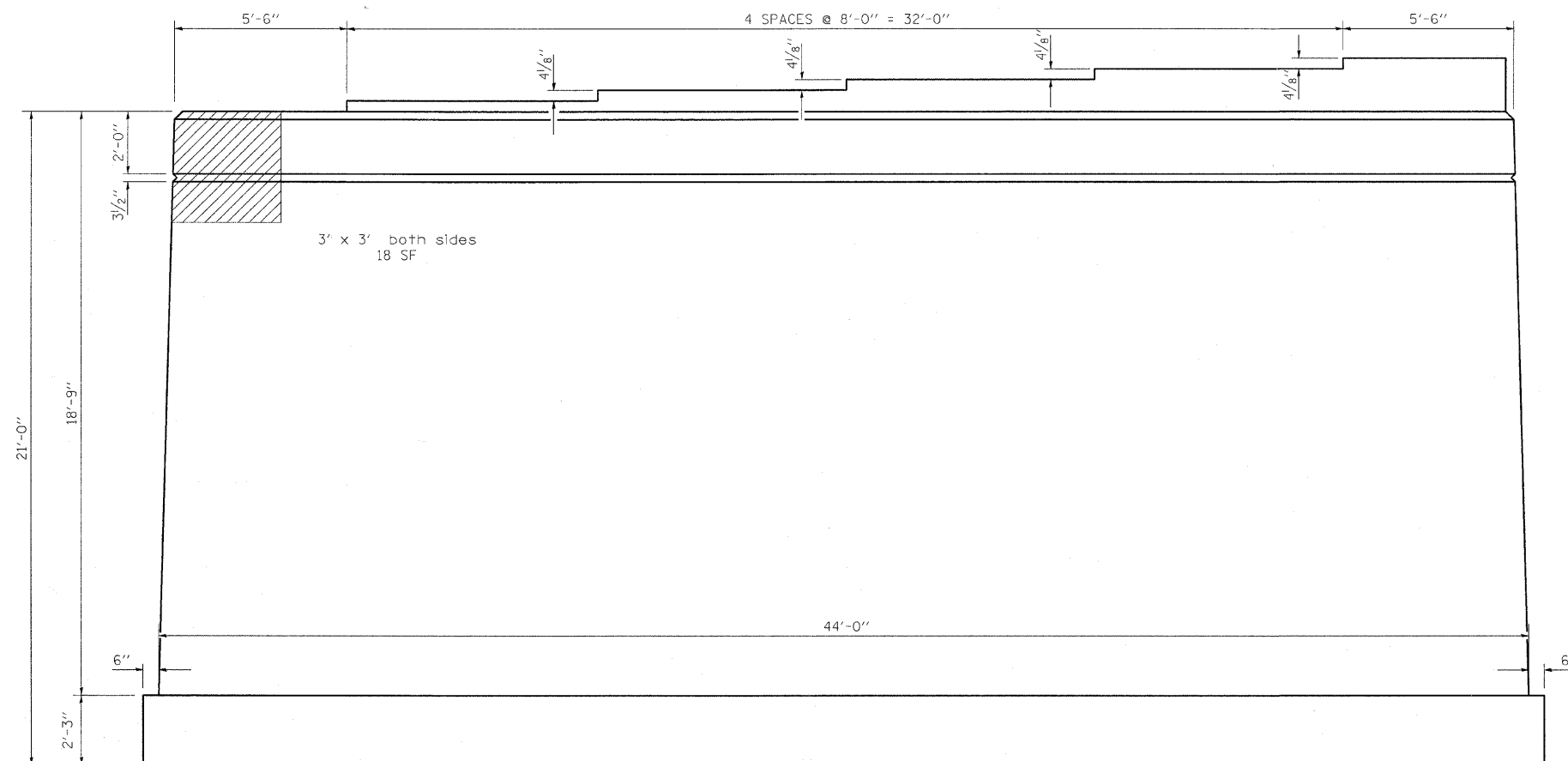
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 STRUCTURE NO.

BSD-1

11-1-09



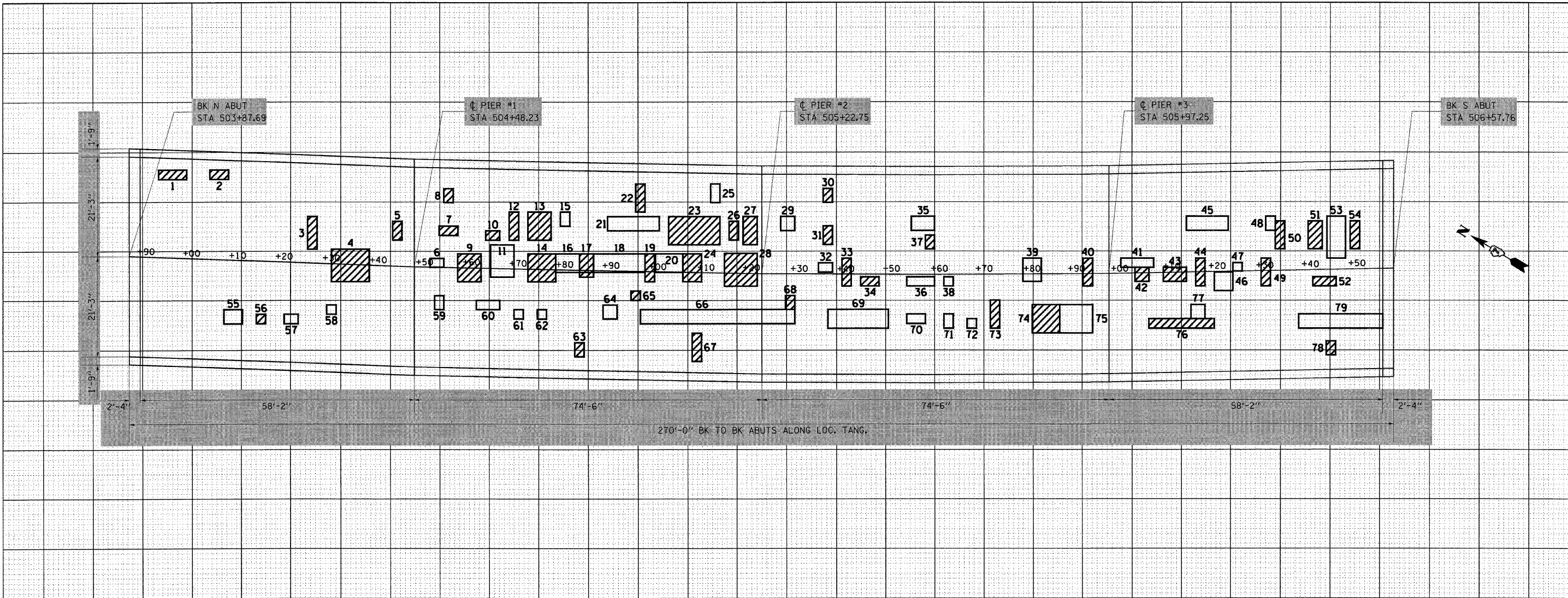
SOUTH ABUTMENT ELEVATION



PIER 3 ELEVATION

STRUCTURAL REPAIR OF CONCRETE
(DEPTH = 5')

FILE NAME =	USER NAME = steffenmk	DESIGNED ADR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FORMED CONCRETE REPAIR	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
al\pw\work\p\idat\steffenmk\d0144324\07	4400-sht-plon.dgn	DRAWN ADR	REVISED -			328	07 BRIDGE REPAIRS 2010-1	Effingham	16	13
PLOT SCALE = 20.0000 ' / IN.	CHECKED -	REVISED -	REVISED -			CONTRACT NO. 74400				
PLOT DATE = 12/23/2009	DATE 12/10/09	REVISED -	REVISED -			ILLINOIS FED. AID PROJECT				



PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)	DECK SLAB REPAIR (FD TY 1)	DECK SLAB REPAIR (FD TY 2)
		SQ FT	SQ FT	SQ FT
1	6.0 x 2.0			12.0
2	4.0 x 2.0			8.0
3	2.0 x 7.0			14.0
4	8.0 x 7.0			56.0
5	2.0 x 4.0			8.0
6	3.0 x 2.0	6.0		
7	4.0 x 2.0			8.0
8	2.0 x 3.0			6.0
9	5.0 x 6.0			30.0
10	3.0 x 2.0			6.0
11	5.0 x 7.0	35.0		
12	2.0 x 6.0			12.0
13	5.0 x 6.0			30.0
14	6.0 x 6.0			36.0
15	2.0 x 3.0			6.0
16	4.0 x 4.0	16.0		
17	3.0 x 5.0			15.0
18	4.0 x 11.0	44.0		

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)	DECK SLAB REPAIR (FD TY 1)	DECK SLAB REPAIR (FD TY 2)
		SQ FT	SQ FT	SQ FT
19	2.0 x 6.0			12.0
20	6.0 x 4.0			24.0
21	11.0 x 3.0	33.0		
22	2.0 x 6.0			12.0
23	11.0 x 6.0			66.0
24	4.0 x 6.0			24.0
25	2.0 x 4.0	8.0		
26	2.0 x 4.0			8.0
27	3.0 x 6.0			18.0
28	7.0 x 7.0			49.0
29	3.0 x 3.0	9.0		
30	2.0 x 3.0			6.0
31	2.0 x 4.0			8.0
32	3.0 x 2.0	6.0		
33	2.0 x 6.0			12.0
34	4.0 x 2.0			8.0
35	5.0 x 3.0	15.0		
36	6.0 x 2.0	12.0		

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)	DECK SLAB REPAIR (FD TY 1)	DECK SLAB REPAIR (FD TY 2)
		SQ FT	SQ FT	SQ FT
37	2.0 x 3.0			6.0
38	2.0 x 2.0	4.0		
39	4.0 x 5.0	20.0		
40	2.0 x 6.0			12.0
41	2.0 x 7.0	14.0		
42	3.0 x 3.0			9.0
43	5.0 x 3.0			15.0
44	2.0 x 6.0			12.0
45	3.0 x 9.0			27.0
46	4.0 x 4.0	16.0		
47	2.0 x 2.0	4.0		
48	2.0 x 3.0	6.0		
49	2.0 x 6.0			12.0
50	2.0 x 6.0			12.0
51	3.0 x 6.0			18.0
52	5.0 x 2.0			10.0
53	4.0 x 9.0			36.0
54	2.0 x 6.0			12.0

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)	DECK SLAB REPAIR (FD TY 1)	DECK SLAB REPAIR (FD TY 2)
		SQ FT	SQ FT	SQ FT
55	4.0 x 3.0	12.0		
56	2.0 x 2.0		4.0	
57	3.0 x 2.0	6.0		
58	2.0 x 2.0	4.0		
59	2.0 x 3.0	6.0		
60	5.0 x 2.0	10.0		
61	2.0 x 2.0	4.0		
62	2.0 x 2.0	4.0		
63	2.0 x 3.0			6.0
64	3.0 x 3.0	9.0		
65	2.0 x 2.0		4.0	
66	33.0 x 3.0	99.0		
67	2.0 x 6.0			12.0
68	2.0 x 3.0			6.0
69	13.0 x 4.0	52.0		
70	4.0 x 2.0	8.0		
71	2.0 x 3.0	6.0		
72	2.0 x 2.0	4.0		

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)	DECK SLAB REPAIR (FD TY 1)	DECK SLAB REPAIR (FD TY 2)
		SQ FT	SQ FT	SQ FT
73	2.0 x 6.0			12.0
74	6.0 x 6.0			36.0
75	7.0 x 6.0	42.0		
76	14.0 x 2.0			28.0
77	3.0 x 3.0	9.0		
78	2.0 x 3.0			6.0
79	18.0 x 3.0	54.0		
TOTAL		577	8	781
PARTIAL DEPTH		577/9 = 64.1	USE 64	SQ YD
FULL DEPTH, TYPE 1		8/9 = 0.9	USE 1	SQ YD
FULL DEPTH, TYPE 2		781/9 = 86.8	USE 87	SQ YD

THE SIZES SHOWN GRAPHICALLY ABOVE ARE APPROXIMATE. SEE THIS TABLE FOR ACTUAL SIZES.

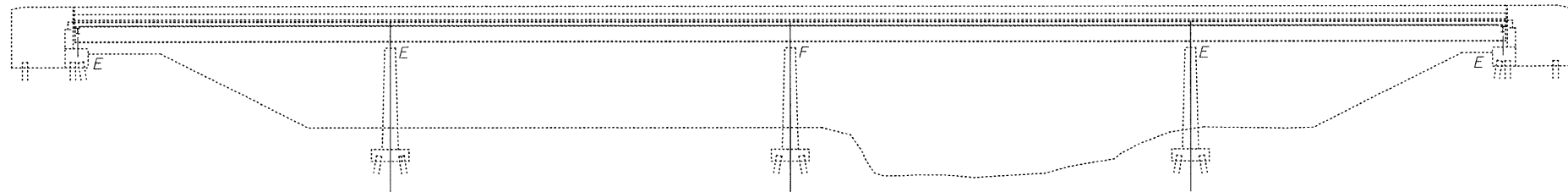
PATCHING LEGEND

PARTIAL DEPTH

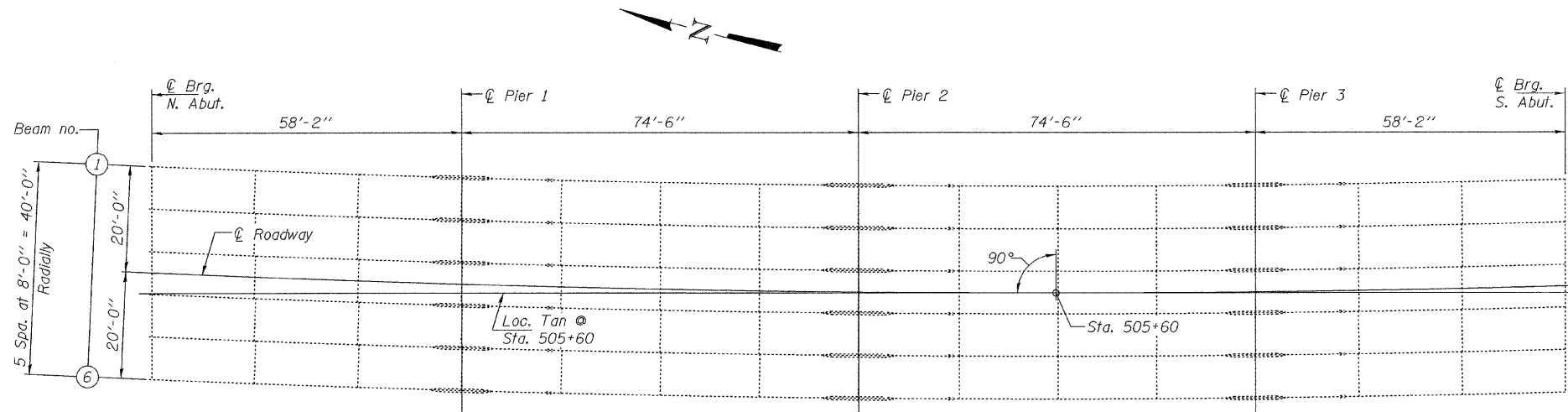
FULL DEPTH

BRIDGE DECK PATCHING
EFFINGHAM COUNTY
US-45 OVER
BIG SALT CREEK
3 MILES SOUTH OF
ILL-37 JUNCTION
SN 025-0083

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION



PLAN

Remove and replace bearings at abutments.

NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

If the analysis submitted to the Contractor for the jacking/temporary support system to be used shows temporary stiffeners are required to prevent web crippling or buckling, the stiffeners shall be steel and bolted to the web. If stiffeners are not required, hardwood timbers shall be installed tightly between the top and bottom flange to prevent flange rotation.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Furnishing and Erecting Structural Steel.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing and Erecting Structural Steel	Pound	1620
Anchor Bolt 1"φ	Each	24
Elastomeric Bearing Assembly, Type II	Each	12
Jack and Remove Existing Bearings	Each	12

**PLAN AND ELEVATION
FA 26 OVER SALT CREEK
SN 025-0083**

DESIGNED	<i>John J. Jorg</i>
CHECKED	<i>John J. Jorg</i>
DRAWN	<i>baliva</i>
CHECKED	<i>ISL</i>

JANUARY 25, 2010
EXAMINED <i>John J. Jorg</i>
PASSED <i>Robert E. Anderson</i>
ENGINEER OF STRUCTURAL SERVICES
ENGINEER OF BRIDGES AND STRUCTURES



EXPIRES 11-30-2010

SHEET NO. 1 2 SHEETS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	26	D7 Bridge Repairs 2010-1	EFFINGHAM	16	15
CONTRACT NO. 74400					
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM REACTIONS

R _L	(K)	32.3
R _R	(K)	42.2
Imp.	(K)	11.5
R (Total)	(K)	86.0

Notes:

Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.

New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Min. jack capacity = 45 Tons.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

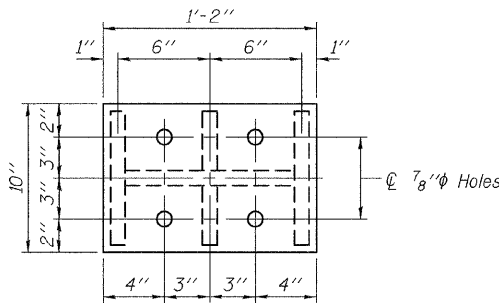
Anchor bolts for Type II bearings shall be placed in holes drilled through the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

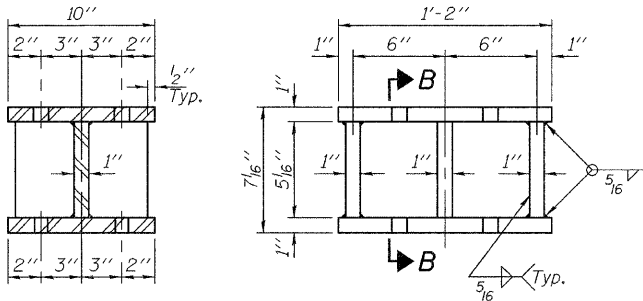
Side retainers shall be included in the cost of Elastomeric Bearing Assembly, Type II.

The $\frac{1}{8}$ " PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of $\frac{1}{8}$ " PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

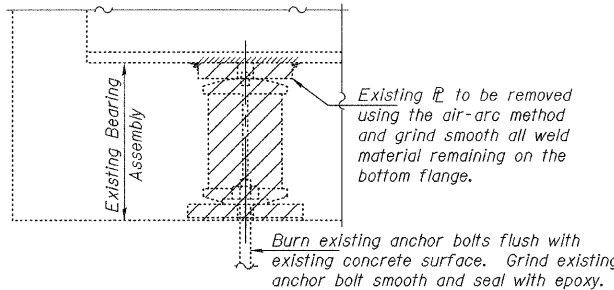


PLAN TOP AND BOTTOM PLATE



SECTION B-B

STEEL EXTENSION DETAIL



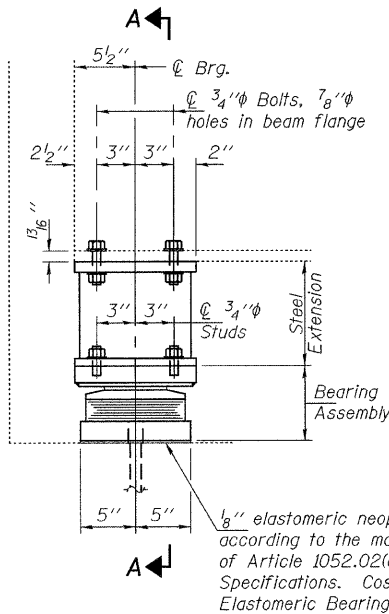
EXISTING BEARING REMOVAL DETAIL
(Cost included with Jack and Remove Existing Bearings.)

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	12
Jack and Remove Existing Bearings	Each	12
Furnishing and Erecting Structural Steel	Pound	1620
Anchor Bolts 1"φ	Each	24

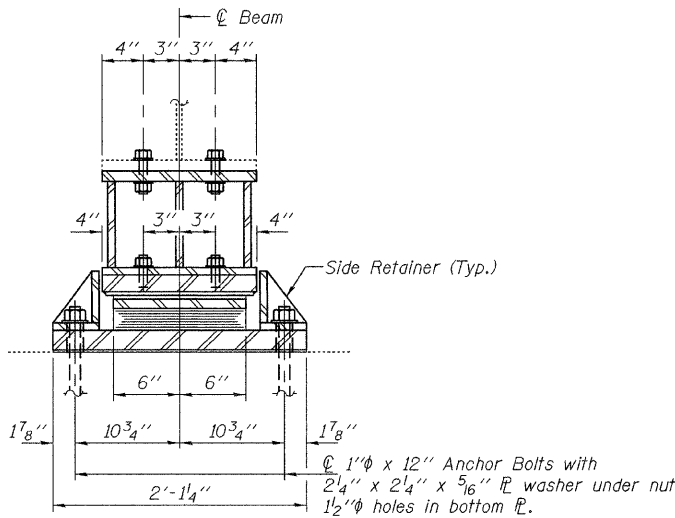
BEARING REPLACEMENT DETAILS
FA 26 OVER SALT CREEK
SN 025-0083

SHEET NO. 2	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2 SHEETS	26	D7 Bridge Repairs 2010-1	EFFINGHAM	16	16
CONTRACT NO. 74400					
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

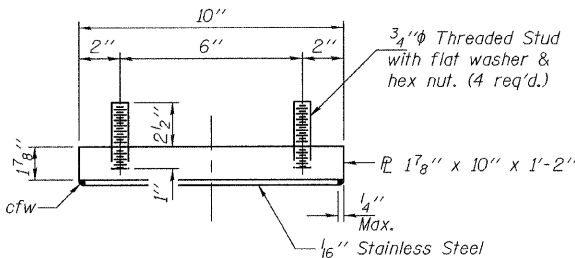


ELEVATION AT ABUTMENT

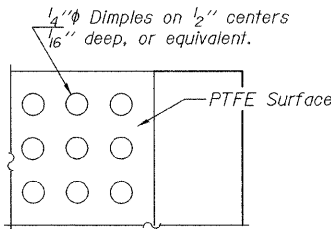
TYPE II TFE ELASTOMERIC EXP. BRG.



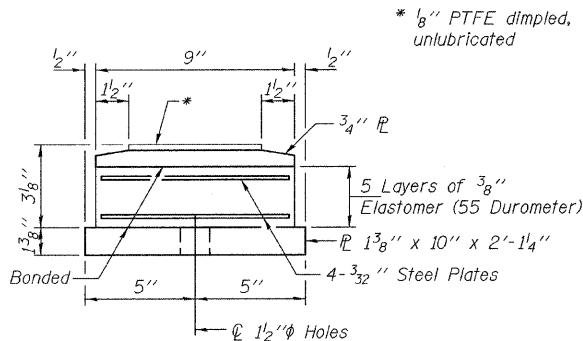
SECTION A-A



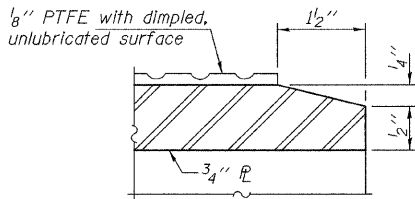
TOP BEARING ASSEMBLY



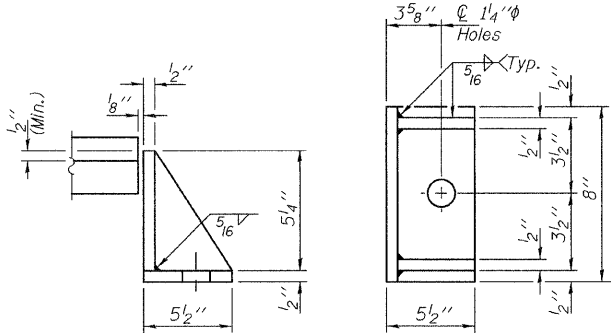
PLAN-PTFE SURFACE



BOTTOM BEARING ASSEMBLY

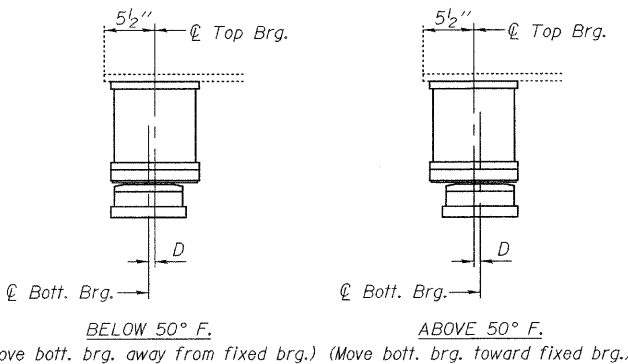


SECTION THRU PTFE



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



SETTING ANCHOR BOLTS AT EXP. BRG.

D = $\frac{1}{8}$ " per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

DESIGNED	IJL
CHECKED	DAB
DRAWN	baliva
CHECKED	IJL DAB

TYII/REPS 12-03-2008

EXAMINED	JANUARY 25, 2010
PASSED	Ralph E. Anderson

ENGINEER OF BRIDGES AND STRUCTURES

ENGINEER OF STRUCTURAL SERVICES

ENGINEER OF BRIDGES AND STRUCTURES

ENGINEER OF BRIDGES AND STRUCTURES

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