

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
**PROPOSED  
HIGHWAY PLANS**

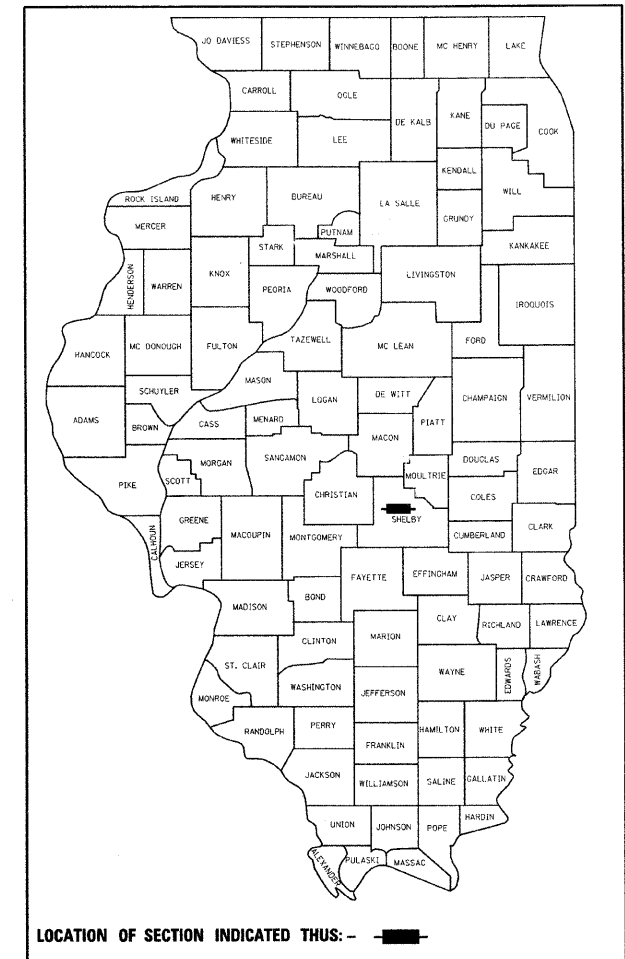
FAP ROUTE 325 (IL 16)  
D7 BRIDGE REPAIRS 2010-2  
PROJECT --  
BRIDGE REPAIRS  
SHELBY COUNTY

C-97-116-09

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
325		Shelby	1	1
ILLINOIS CONTRACT NO. 74403				

D7 BRIDGE REPAIRS 2010-2

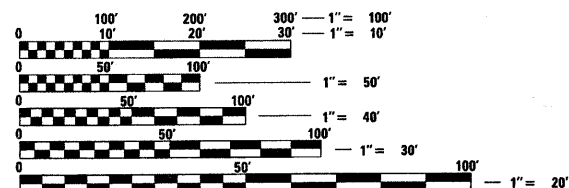
D-97-060-09



LOCATION OF SECTION INDICATED THUS: - [black rectangle] -

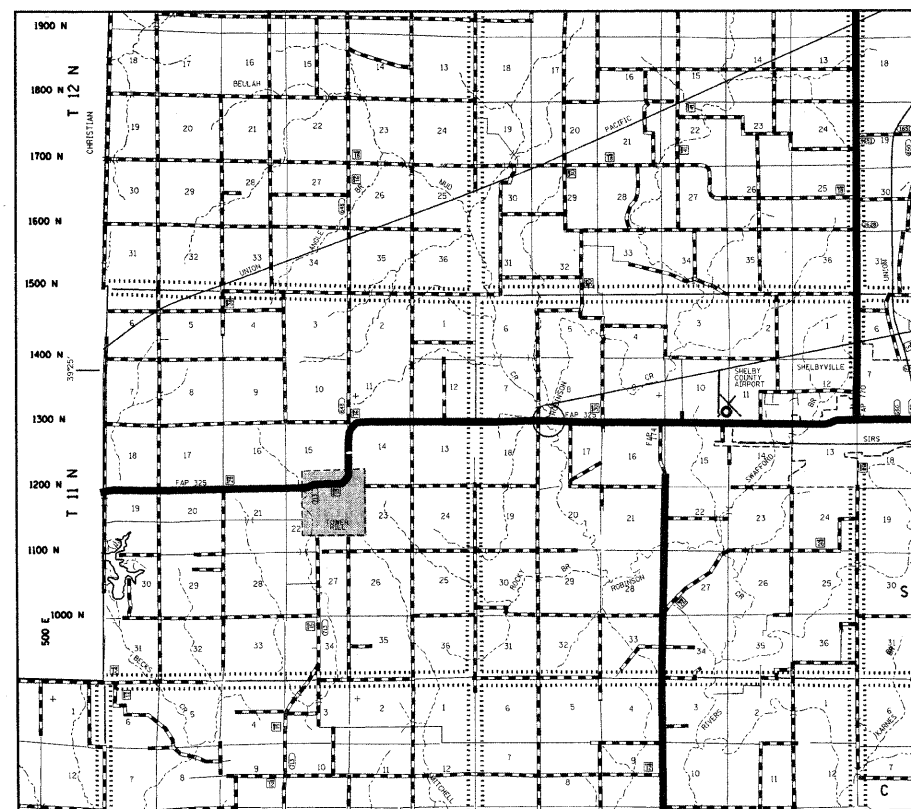
FOR INDEX OF SHEETS, SEE SHEET NO. 2

2007 ADT = 4650



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



LOCATION OF PROPOSED IMPROVEMENT

GROSS LENGTH = 372 FT. = 0.07 MILE  
NET LENGTH = 372 FT. = 0.07 MILE

PROJECT ENGINEER: ALEC RING  
PROJECT MANAGER: BRIAN LEWIS

CONTRACT NO. 74403

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED February 10, 2010

*Raymond A. Smith*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

March 19, 2010

*Scott E. Still, P.E.*  
Acting ENGINEER OF DESIGN AND ENVIRONMENT

March 19, 2010

*Christine M. Reed*  
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 CHECK SHEET, AND "THE SPECIAL PROVISIONS" INCLUDED IN THE PROPOSAL.

THE WORK INCLUDED IN THIS SECTION CONSISTS OF HMA SURFACE REMOVAL, DECK PATCHING, JOINT AND BEARING REPLACEMENT, MICROSILICA CONCRETE OVERLAY, AND OTHER WORK NECESSARY TO COMPLETE THE PROJECT.

PROVIDE TRAFFIC SIGNAL INDICATIONS FOR THE PRIVATE DRIVE WEST OF THE STRUCTURE IN ADDITION TO THE INDICATIONS SHOWN ON STANDARD 701321. COST SHALL BE INCLUDED IN THE BID PRICE FOR TEMPORARY BRIDGE TRAFFIC SIGNALS.

WIDENING THROUGH PRIVATE DRIVE WEST OF STRUCTURE MUST BE CONSTRUCTED IN STAGES UNLESS AN ALTERNATIVE CAN BE AGREED UPON WITH THE AFFECTED PARTIES.

BASE COURSE WIDENING SHALL BE CONSTRUCTED OF EITHER 8" THICK PCC OR 10" THICK HMA AT THE CONTRACTOR'S DISCRETION. WIDENING MAY REMAIN IN PLACE AT THE COMPLETION OF THE PROJECT.

THE MATERIAL USED FOR BITUMINOUS MATERIALS (PRIME COAT) SHALL BE RC-70, SS-1H, OR SS-1HP APPLIED AT THE RATE DIRECTED BY THE ENGINEER.

THE FOLLOWING REQUIREMENTS SHALL APPLY DURING STAGE 1: ERECT VERTICAL PANELS NEXT TO WIDENING AS SHOWN ON STANDARD 701321. PLACE NARROW (12" WIDE OR LESS) TRAFFIC CONTROL BARRELS OR BARRICADES WITH REFLECTIVE SHEETING NEXT TO PARAPET AT 50' INTERVALS TO PREVENT TRAFFIC ON EXISTING BRIDGE DECK DRAINS. COST OF THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR TRAFFIC CONTROL AND PROTECTION STANDARD 701321.

QUANTITIES OF HOT MIX ASPHALT SURFACE REMOVAL AND HOT MIX ASPHALT SURFACE COURSE HAVE BEEN PROVIDED TO ALLOW FOR RESURFACING OF THE APPROACHES. THIS WORK WILL ALLOW TRANSITION BETWEEN THE EXISTING PAVEMENT AND PROPOSED BRIDGE JOINTS. EXISTING RESURFACING ON THE APPROACHES IS ESTIMATED TO BE 2 INCHES THICK.

THE LOCATIONS AND/OR DEPTHS OF UNDERGROUND UTILITIES SHOWN HAVE BEEN TAKEN FROM INFORMATION FURNISHED BY THE UTILITY OWNERS AND MUST BE CONSIDERED APPROXIMATE. FIELD MARKINGS OF FACILITIES IN CRITICAL AREAS MAY BE OBTAINED BY PROVIDING A MINIMUM OF 96 HOURS ADVANCE NOTICE THROUGH THE J.U.L.I.E. SYSTEM BY CALLING 800-892-0123.

THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE TO THIS PROJECT:

APPLICATION	AC/PG	DESIGN AIR VOIDS	MIXTURE COMPOSITION	FRICTION AGGREGATE
SURFACE COURSE	PG 64-22	4.0% @ N=70	IL - 9.5	MIXTURE C

**INDEX OF SHEETS**

SHEET NO	TITLE
1	COVER SHEET
2	GENERAL NOTES, INDEX OF SHEETS
3	SUMMARY OF QUANTITIES
4	TYPICAL SECTIONS
5	STAGE CONSTRUCTION DETAILS
6-16	STRUCTURAL SHEETS

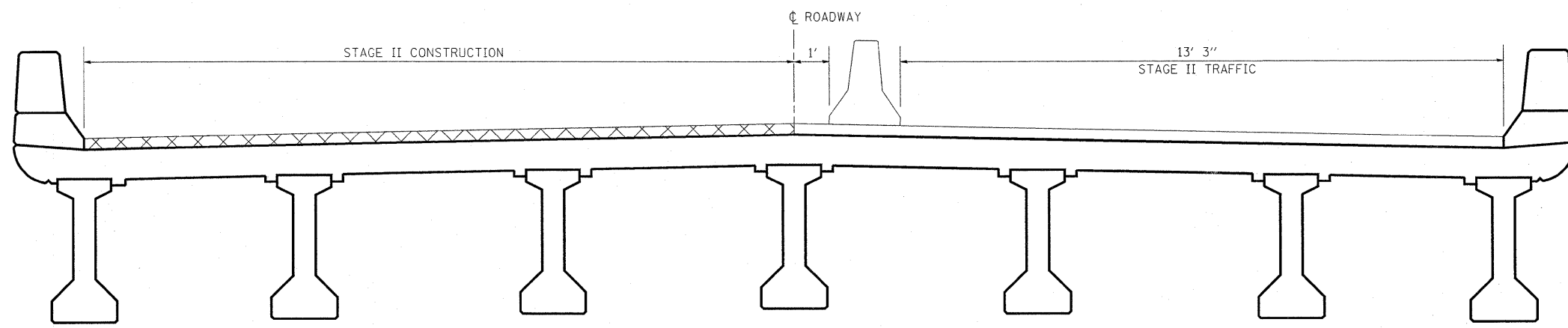
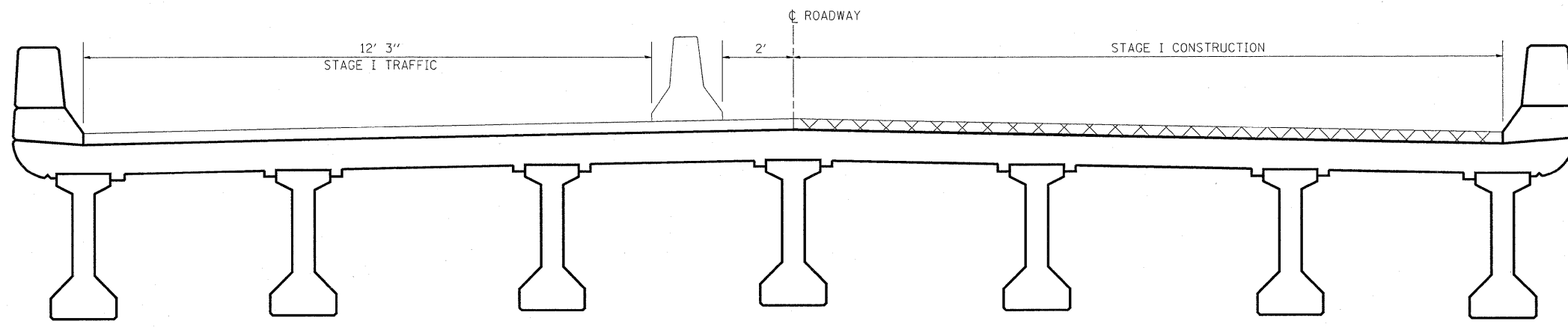
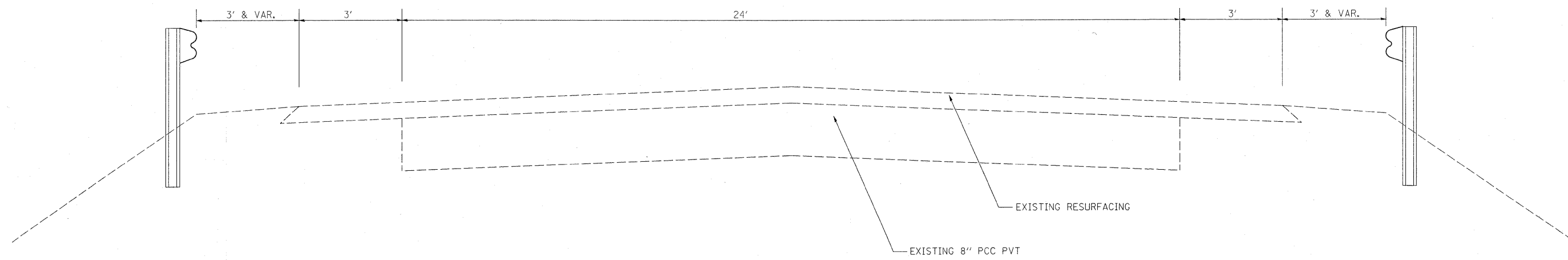
THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED FOLLOWING THE LAST NUMBERED SHEET OF THE PLANS.

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" FROM PAVEMENT EDGE
701201-03	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS >= 45 MPH
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
701901-01	TRAFFIC CONTROL DEVICES
704001-06	TEMPORARY CONCRETE BARRIER
780001-02	TYPICAL PAVEMENT MARKINGS
781001-03	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS

FILE NAME =	USER NAME = teasleyck	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL NOTES &amp; INDEX OF SHEETS</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
et\pwork\PIWIDOT\TEASLEYCK\0144212\074403-sh1-cover.dgn	DRAWN -	REVISED -	325			*	Shelby	16	2	
PLOT SCALE = 5/8"=1'-0"	CHECKED -	REVISED -	CONTRACT NO. 74403							
PLOT DATE = 2/11/2010	DATE -	REVISED -	ILLINOIS FED. AID PROJECT							
				SCALE:	SHEET NO. OF SHEETS	STA.	TO STA.			

SUMMARY OF QUANTITIES			100% STATE	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	X081-2A	-----	-----
35650700	BASE COURSE WIDENING	SQ YD	201	201		
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	10	10		
40603315	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	TON	12	12		
44000915	HOT-MIX ASPHALT SURFACE REMOVAL (DECK)	SQ YD	1359	1359		
44001005	HOT-MIX ASPHALT SURFACE REMOVAL	SQ YD	107	107		
44004250	PAVED SHOULDER REMOVAL	SQ YD	201	201		
50102400	CONCRETE REMOVAL	CU YD	22.1	22.1		
50300100	FLOOR DRAINS	EACH	50	50		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	22.1	22.1		
50300260	BRIDGE DECK GROOVING	SQ YD	1359	1359		
50300300	PROTECTIVE COAT	SQ YD	1359	1359		
50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	14	14		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3540	3540		
50800515	BAR SPLICERS	EACH	28	28		
51500200	RELOCATING NAME PLATES	EACH	1	1		
52000110	PREFORMED JOINT STRIP SEAL	FOOT	70	70		
52100025	ELASTOMERIC BEARING ASSEMBLY, TYPE II (SPECIAL)	EACH	14	14		
52100520	ANCHOR BOLTS, 1"	EACH	28	28		
67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	4	4		
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		
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1		
70400100	TEMPORARY CONCRETE BARRIER	FOOT	625	625		
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	513	513		
*78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	2084	2084		
78300100	PAVEMENT MARKING REMOVAL	SQ FT	570	570		
XZ191200	BRIDGE DECK MICROSILICA CONCRETE OVERLAY 2 1/2"	SQ YD	1359	1359		
Z0006204	BRIDGE DECK HYDRO-SCARIFICATION 1/2"	SQ YD	1359	1359		
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	120	120		
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2		
Z0030260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	1	1		
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2		

FILE NAME =	USER NAME = teasleyck	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>			<i>* Specialty Items</i>		
ca:\pwwork\pwwidat\teasleyck\d0144212\0774403-shr-soq.dgn	DRAWN -	REVISED -	F.A.P. RTE. 325					SECTION	COUNTY	TOTAL SHEETS
PLOT SCALE = 50.0000 / IN.	CHECKED -	REVISED -	Shelby		16	3	CONTRACT NO. 74403			
PLOT DATE = 2/10/2010	DATE -	REVISED -	SCALE:		SHEET NO. OF SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT			



FILE NAME =	USER NAME = teasleyck	DESIGNED -	REVISED -
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PLOT SCALE = 58.0000' / IN.		CHECKED -	REVISED -
PLOT DATE = 2/10/2010		DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

TYPICALS				
SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
325	•	Shelby	16	4
CONTRACT NO. 74403				
ILLINOIS FED. AID PROJECT				



PAVED SHOULDER REMOVAL

LT STA 236+12 TO 237+68 52 S. Y.  
 LT STA 241+40 TO 242+96 52 S. Y.

BASE COURSE WIDENING

LT STA 236+12 TO 237+68 52 S. Y.  
 LT STA 241+40 TO 242+96 52 S. Y.


TEMPORARY CONCRETE BARRIER

RT STA 236+41 TO LT STA 237+41 100 FEET  
 LT STA 237+41 TO LT STA 241+66 425 FEET  
 LT STA 241+66 TO RT STA 242+66 100 FEET

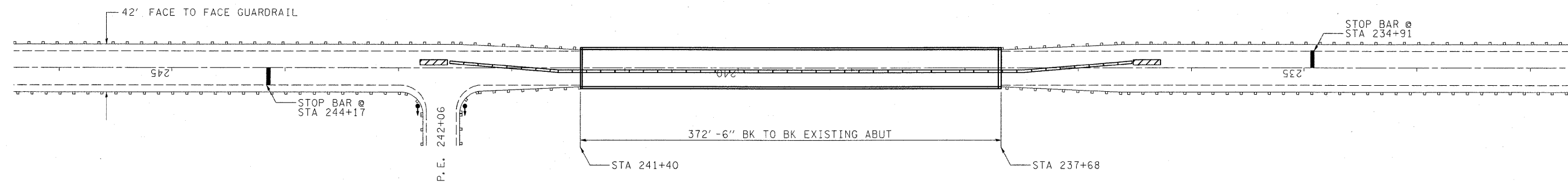
TOTAL 625 FEET

PAVEMENT MARKING REMOVAL

STA 234+91 TO STA 244+17 570 S.F.

IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3  
 (SHOWN BELOW AS )

2 EACH



NOTE: SEE STANDARD 701321 FOR DETAILS NOT SHOWN.

**STAGE 1**



PAVED SHOULDER REMOVAL

RT STA 236+23 TO 237+68 48.5 S. Y.  
 RT STA 241+40 TO 242+85 48.5 S. Y.


BASE COURSE WIDENING

RT STA 236+23 TO 237+68 48.5 S. Y.  
 RT STA 241+40 TO 242+85 48.5 S. Y.


RELOCATE TEMPORARY CONCRETE BARRIER

LT STA 236+53 TO RT STA 237+41 88 FEET  
 RT STA 237+41 TO RT STA 241+66 425 FEET

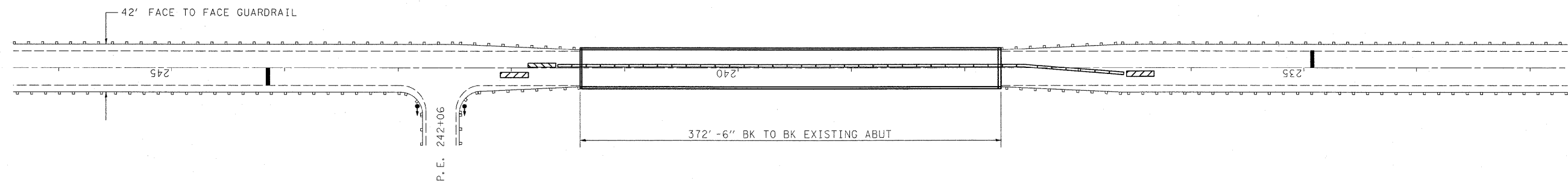
TOTAL 513 FEET

IMPACT ATTENUATORS, RELOCATE, (NON-REDIRECTIVE), TEST LEVEL 3  
 (SHOWN BELOW AS )

2 EACH

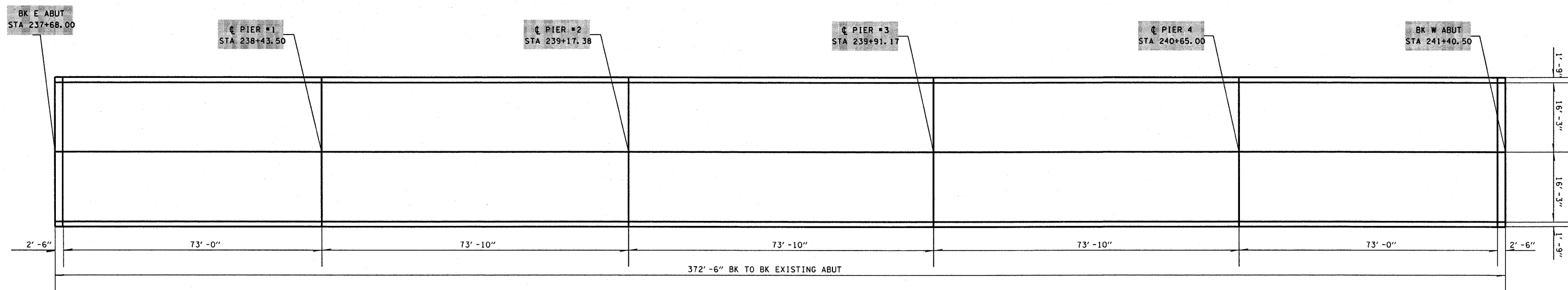
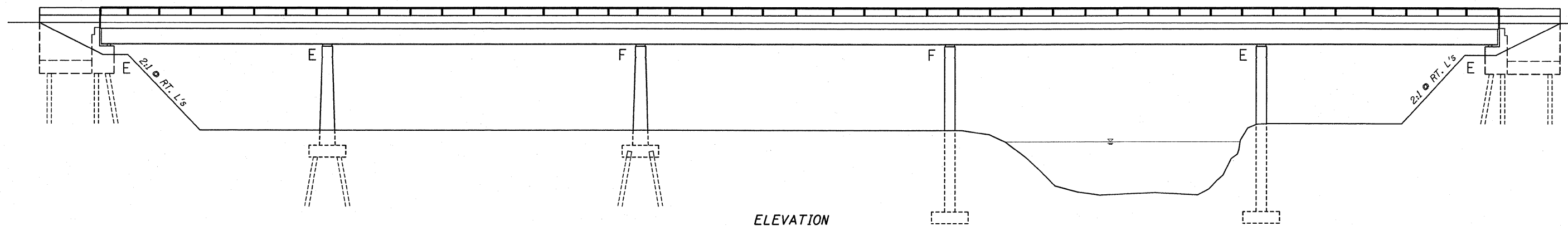
IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW) TEST LEVEL 3  
 (SHOWN BELOW AS )

1 EACH



**STAGE 2**

FILE NAME =	USER NAME = teesleyck	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>STAGE CONSTRUCTION</b>				F.A.P. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ca:\pwork\pwidot\teesleyck\0144212\077403-sht-details.dgn		DRAWN -	REVISED -		SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.	325	Shelby	16	5
PLOT SCALE = 50.0000' / IN.		CHECKED -	REVISED -		CONTRACT NO. 74403								
PLOT DATE = 2/18/2010		DATE -	REVISED -		ILLINOIS FED. AID PROJECT								



PLAN



Expires 11/30/2010

FILE NAME =	USER NAME = teasleyok	DESIGNED - ADR	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PLAN AND ELEVATION SN 087-0005</b>			S.B.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
cr:\pwork\pwork\DOT\TEASLEYCK\d8144281\07	*****-sht-bor.dgn	DRAWN - ADR	REVISED -		SCALE: 20	SHEET NO. 1 OF 11 SHEETS	STA.	TO STA.	16	07 BRIDGE REPAIRS 2010-2	SHELBY	16	6
	PLOT SCALE = 499.9783 1/ IN.	CHECKED -	REVISED -						CONTRACT NO. 74403				
	PLOT DATE = 2/9/2010	DATE - 1/11/10	REVISED -						ILLINOIS FED. AID PROJECT				

## TOTAL BILL OF MATERIAL

### GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Br 60 (IL Modified). See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

Plan dimensions and details relative to existing plans are subject to routine 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 compensations for a change in scope of the work; however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.

Existing reinforcement bars extending into the removal area shall 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.

Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.

Floor drains to be eliminated will not be paid for separately but shall be included in the price per square yards of Deck Slab Repair (Full Depth).

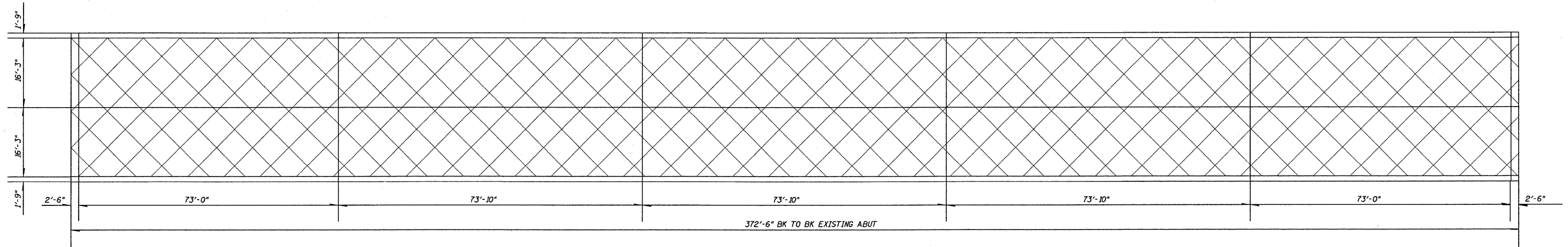
The Name Plate to be removed and replaced will be paid for separately and shall be paid for in the contract unit price EACH of Relocating Name Plates.

Removal and replacement of the end handrail sections and support posts at both abutments of both structures will be necessary for construction of the expansion joints. The existing handrail sections and support posts shall be reused. New bolts, shim plates, and post support anchor assemblies as detailed in the plans are to be provided and installed for the replacement of the handrail and supports. This work and all materials shall be included in the contract unit price for Concrete Superstructure.

Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on as-built plans.

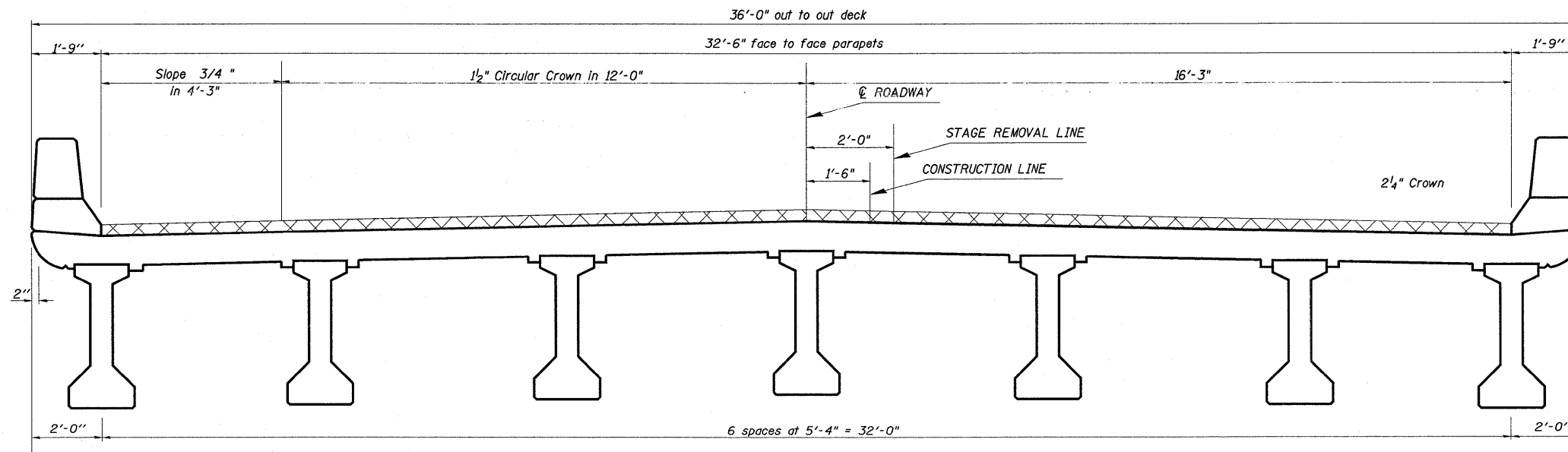
The existing waterproofing membrane system is not known to contain asbestos.

ITEM	UNIT	TOTAL
Hot-Mix Asphalt Surface Removal (Deck)	SQ YD	1359
Concrete Removal	CU YD	22.1
Concrete Superstructure	CU YD	22.1
Jack and Remove Existing Bearings	EACH	14
Reinforcement Bars, Epoxy Coated	POUND	3540
Bar Splicers	EACH	28
Relocating Name Plates	EACH	1
Preformed Joint Strip Seal	FOOT	70
Elastomeric Bearing Assembly, Type II (Special)	EACH	14
Anchor Bolts, 1"	EACH	28
Bridge Deck Microsilica Concrete Overlay 2 3/4"	SQ YD	1359
Bridge Deck Hydro-scarification 1/2 "	SQ YD	1359
Floor Drains	EACH	50
Deck Slab Repair (Full Depth, Type II)	SQ YD	120
Protective Coat	SQ YD	1359
Bridge Deck Grooving	SQ YD	1359



**PLAN**

HOT-MIX ASPHALT SURFACE REMOVAL (DECK)  
 2 3/4 " MICROSILICA OVERLAY  
 BRIDGE DECK HYDROSCARIFICATION 1/2"



**CROSS SECTION**

FILE NAME =  
c:\pwork\pwork\WIDOT\TEASLEYCK\d0144201\07

USER NAME = teasleyck  
\*\*\*\*\*-ght-bcr.dgn

DESIGNED - ADR  
DRAWN - ADR

REVISED -  
REVISED -  
REVISED -  
REVISED -

PLOT SCALE 500.0798 1 / IN.  
PLOT DATE 2/9/2010

CHECKED -  
DATE - 1/20/10

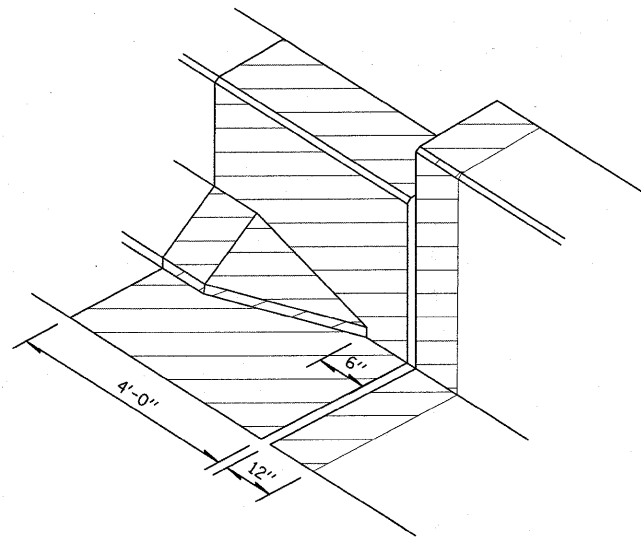
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**OVERLAY DETAILS 087-0005**

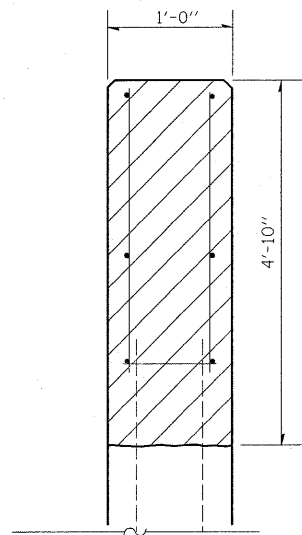
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S.B.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
16	07 BRIDGE REPAIRS 2010-2	SHELBY	16	8
CONTRACT NO. 74403				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

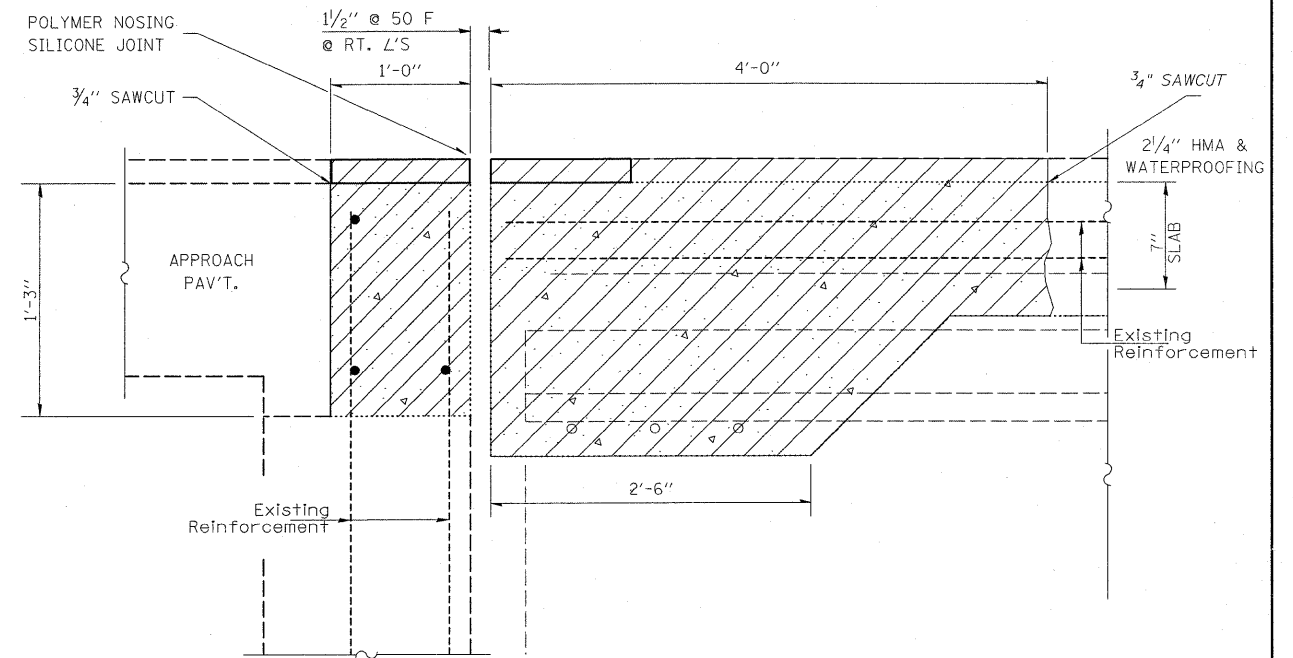




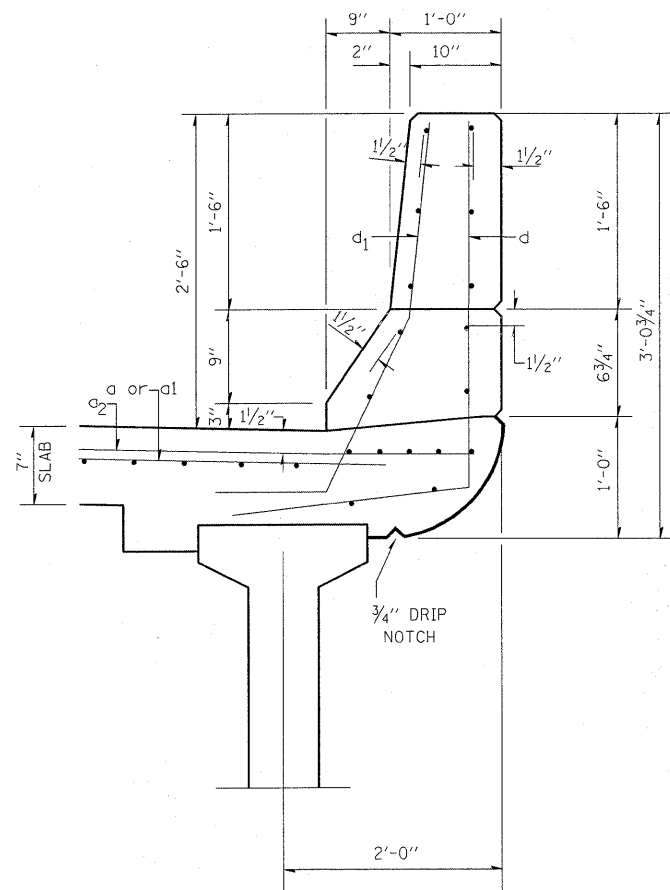
TYPICAL CONCRETE REPLACEMENT AT EACH ABUTMENT



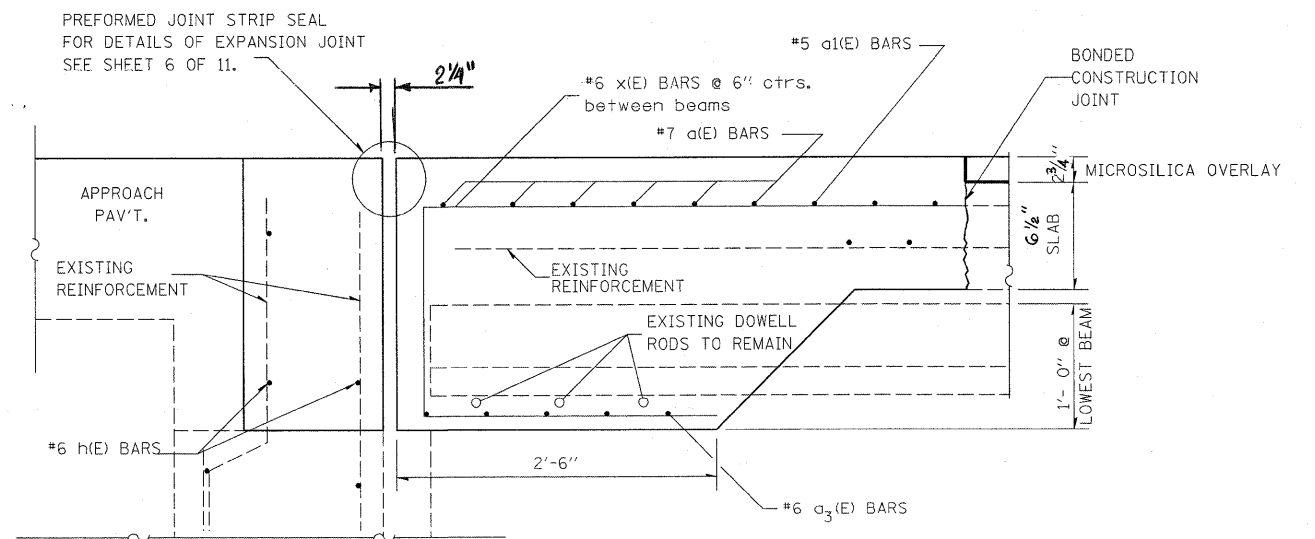
WINGWALL DETAIL



EXISTING EXPANSION JOINTS AT ABUTMENTS



PARAPET DETAIL



PROPOSED EXPANSION JOINTS AT ABUTMENTS

FILE NAME =  
c:\pwwork\pwid001\TEASLEYCK\d014420\IND7

USER NAME = teasleyck  
\*\*\*\*-sht-bor.dgn

DESIGNED - ADR  
DRAWN - ADR

REVISED -  
REVISED -  
REVISED -  
REVISED -

PLOT SCALE = 500.0790 1/1 IN.  
PLOT DATE = 2/9/2010

CHECKED -  
DATE - 1/20/10

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT DETAILS

SCALE: 20 SHEET NO. 4 OF 11 SHEETS STA. TO STA.

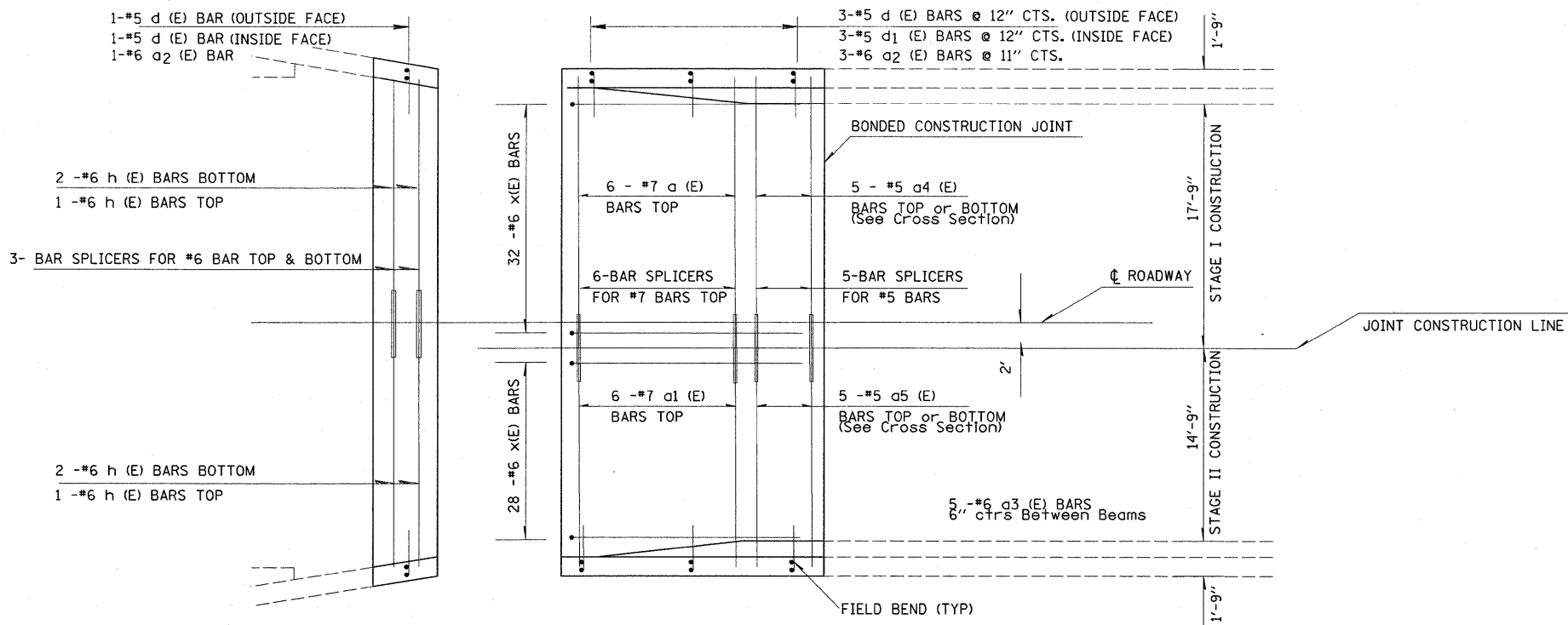
S.B.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
16	D7 BRIDGE REPAIRS 2010-2	SHELBY	16	9

CONTRACT NO. 74403

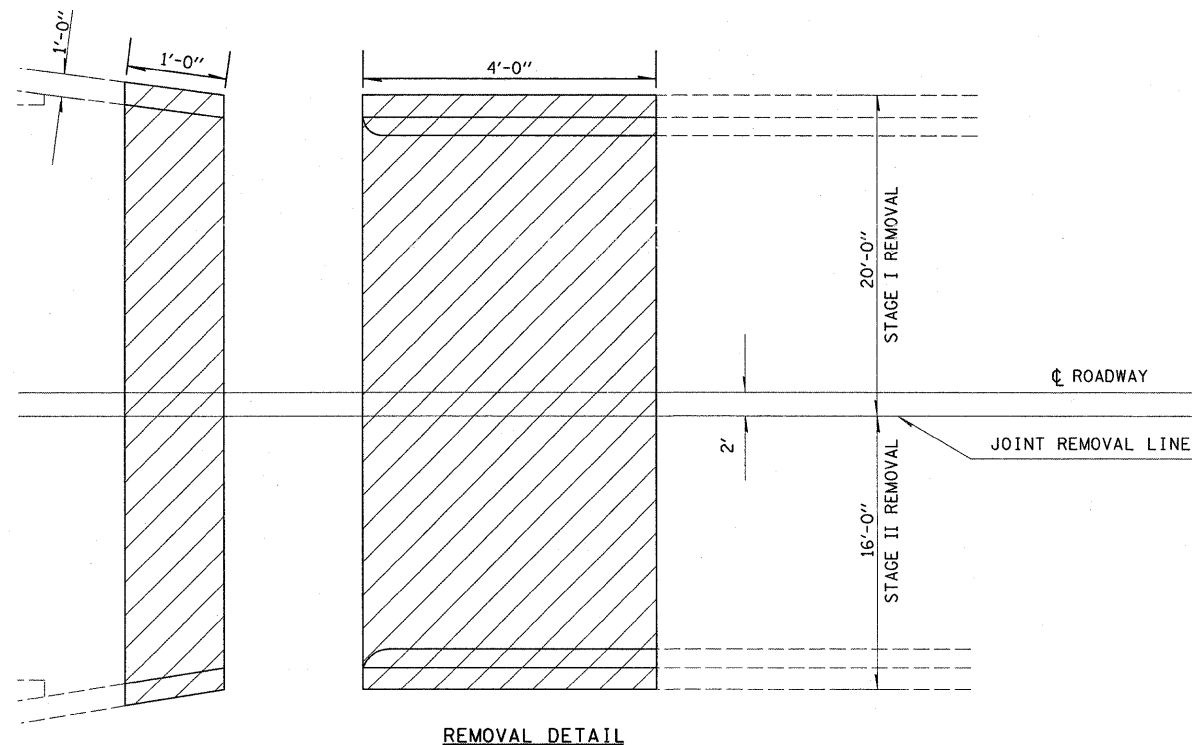
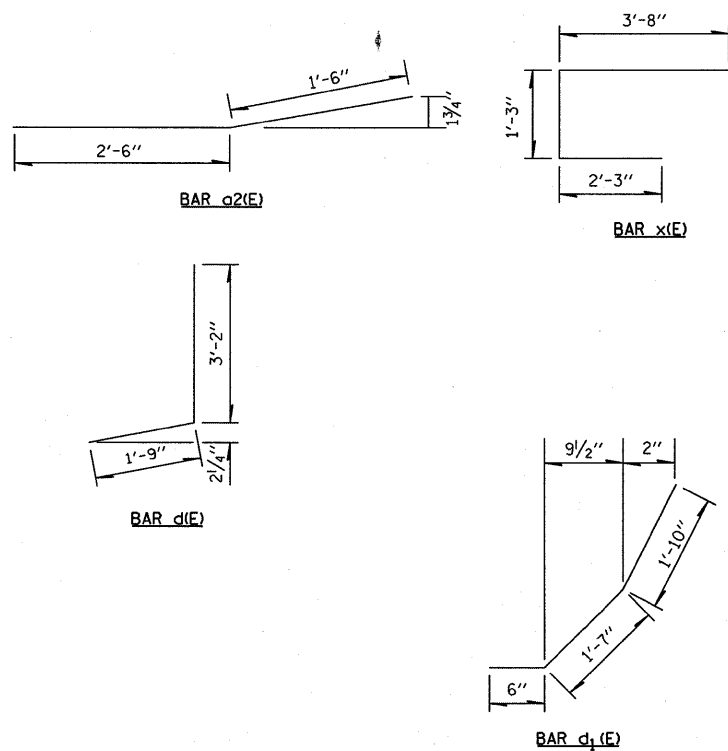
FFR. ROAD DIST. NO. ILLINOIS FFD. AID PROJECT

BAR LIST - PER JOINT - STR #087-0005

BAR	NUMBER OF BARS		TOTAL	SIZE	LENGTH	SHAPE
	STAGE I	STAGE II				
a(E)	6		6	7	19'-4"	—
a1(E)		6	6	7	16'-4"	—
a2(E)	4	4	8	6	4'-0"	—
a3(E)	15	15	30	6	4'-9"	—
a4(E)	5		5	5	19'-4"	—
a5(E)		5	5	5	16'-4"	—
d(E)	5	5	10	5	4'-11"	J
d1(E)	3	3	6	5	3'-11"	J
h(E)	3	3	6	6	17'-9"	—
x(E)	32	28	60	6	7'-2"	—
CONCRETE REMOVAL					CU YD	11.0
REINFORCEMENT BARS (EPOXY COATED)					POUND	1770
CONCRETE SUPERSTRUCTURE					CU YD	11.0



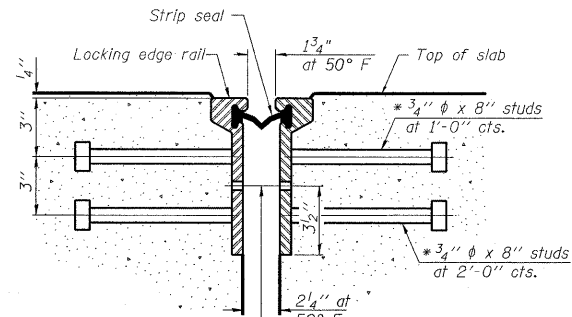
REINFORCEMENT DETAIL



REMOVAL DETAIL

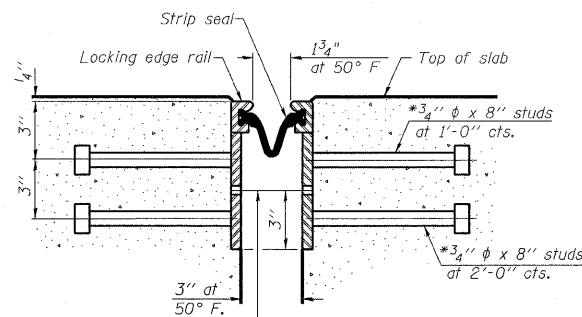
CONCRETE REMOVAL

\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



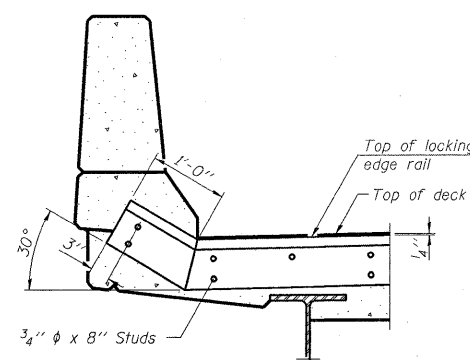
7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

**SECTION THRU ROLLED RAIL JOINT**



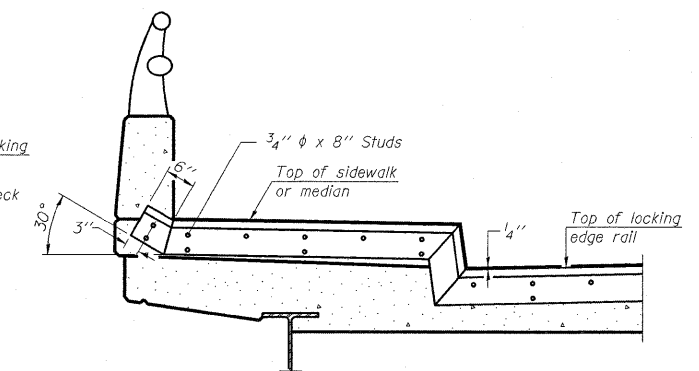
7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

**SECTION THRU WELDED RAIL JOINT**



**AT PARAPET**

See Section A-A for end treatment of skews > 30°.



**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.

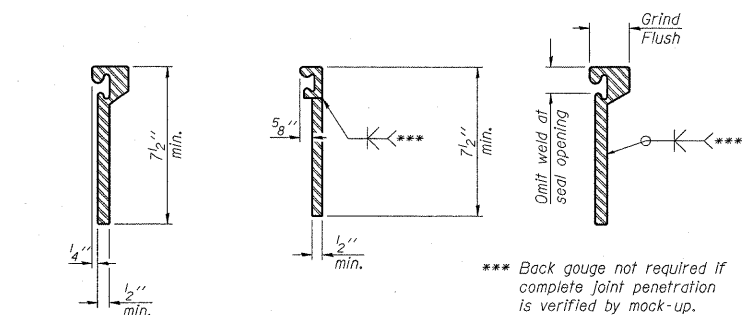
**TYPICAL END TREATMENTS**

**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 3/16", sealed with a suitable sealant.

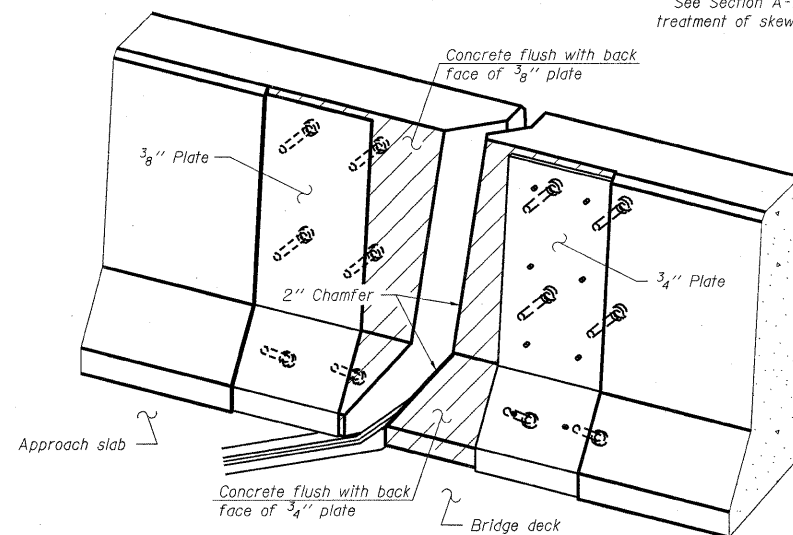


**ROLLLED EXTRUDED RAIL**

**WELDED RAIL**

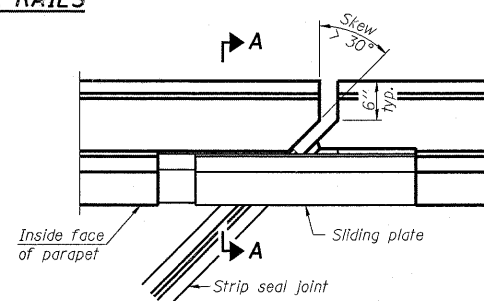
**LOCKING EDGE RAIL SPLICE**

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

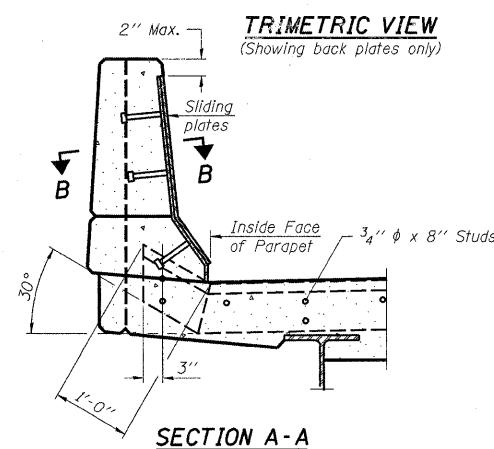


**TRIMETRIC VIEW (Showing back plates only)**

**LOCKING EDGE RAILS**

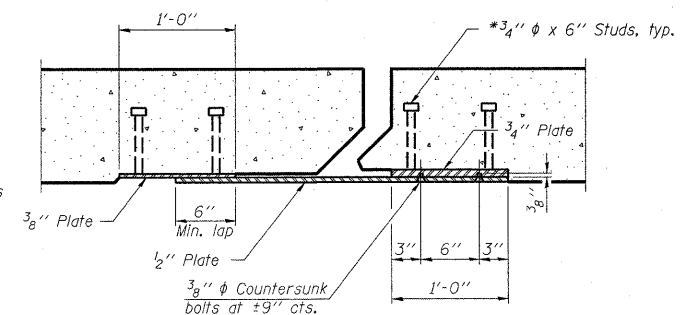


**PLAN**



**SECTION A-A**

**POINT BLOCK DETAILS (for skews > 30°)**



**SECTION B-B**

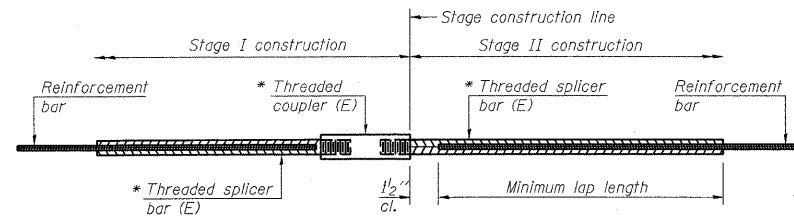
**BILL OF MATERIAL**

Item	Unit	Total
Preformed Joint Strip Seal	Foot	70

**PREFORMED JOINT STRIP SEAL STRUCTURE NO.**

EJ-SSJ

11-1-09



**STANDARD BAR SPLICER ASSEMBLY**

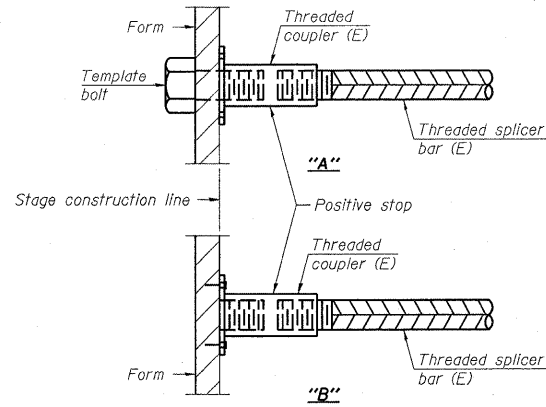
Bar size to be spliced	Minimum Lap Lengths			
	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

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

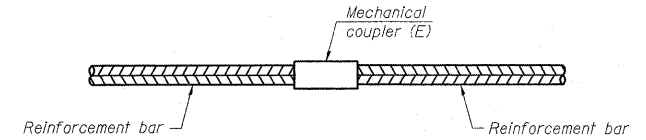
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
APPROACH	#6	2	3'-6"
APPROACH	#6	4	3'-1"
DECK	#5	10	2'-11"
DECK	#7	12	4'-8"



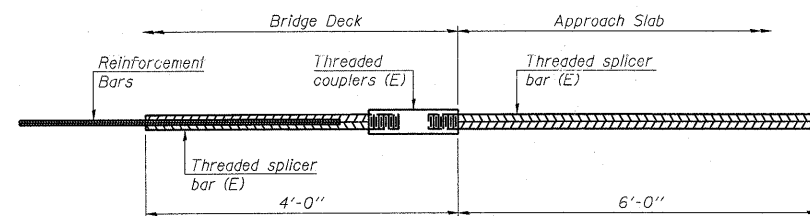
**INSTALLATION AND SETTING METHODS**

"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.



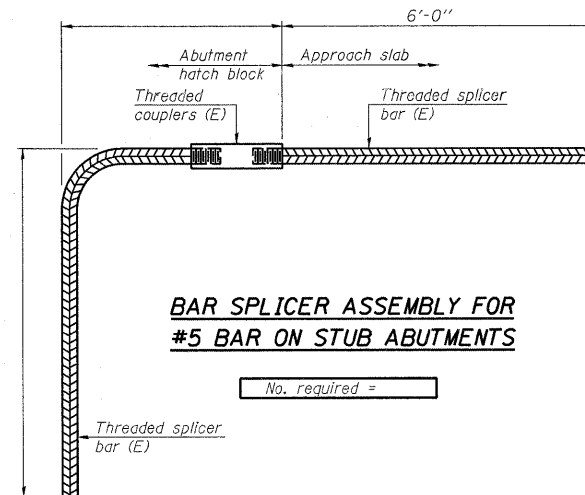
**STANDARD MECHANICAL SPLICER**

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 =

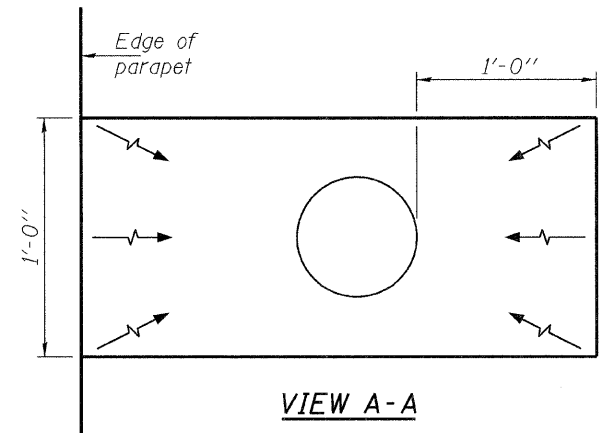
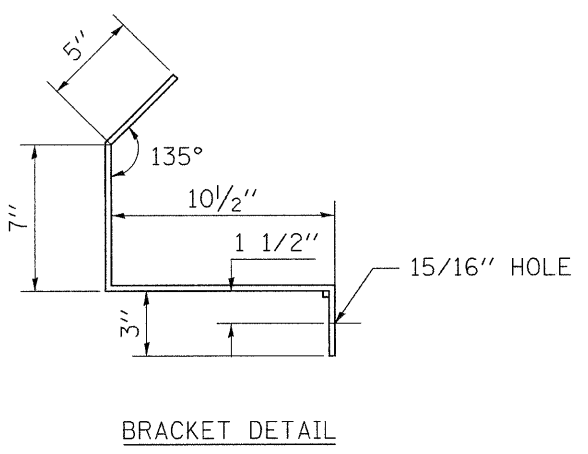
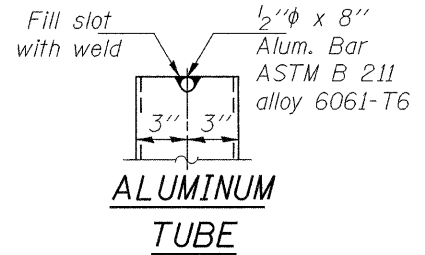
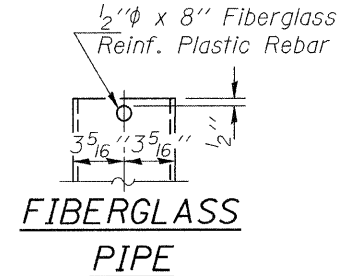
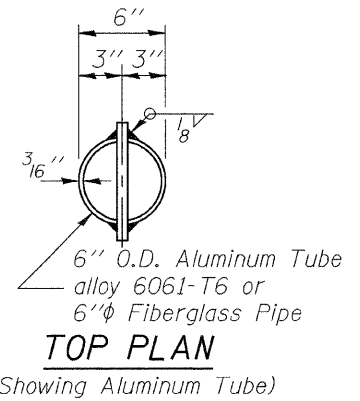
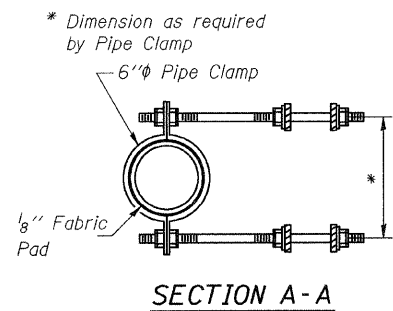
**NOTES**

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.

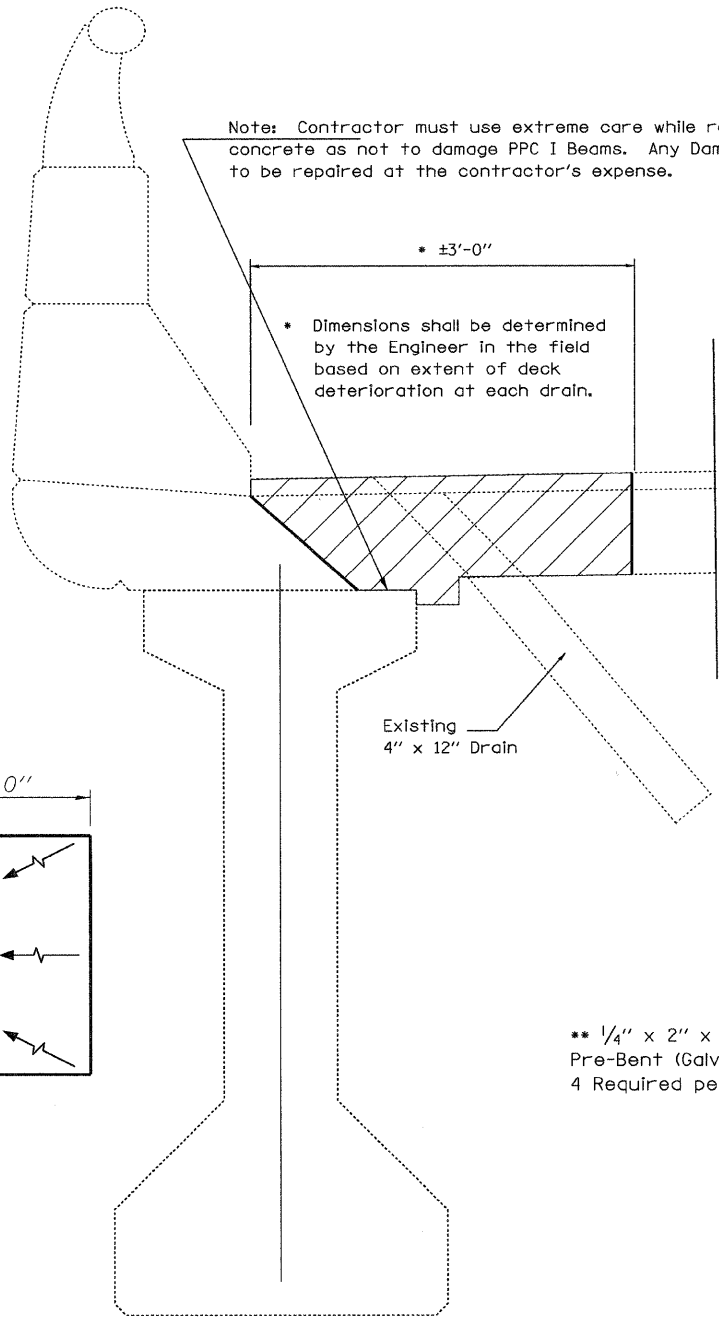
**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO.**

BSD-1

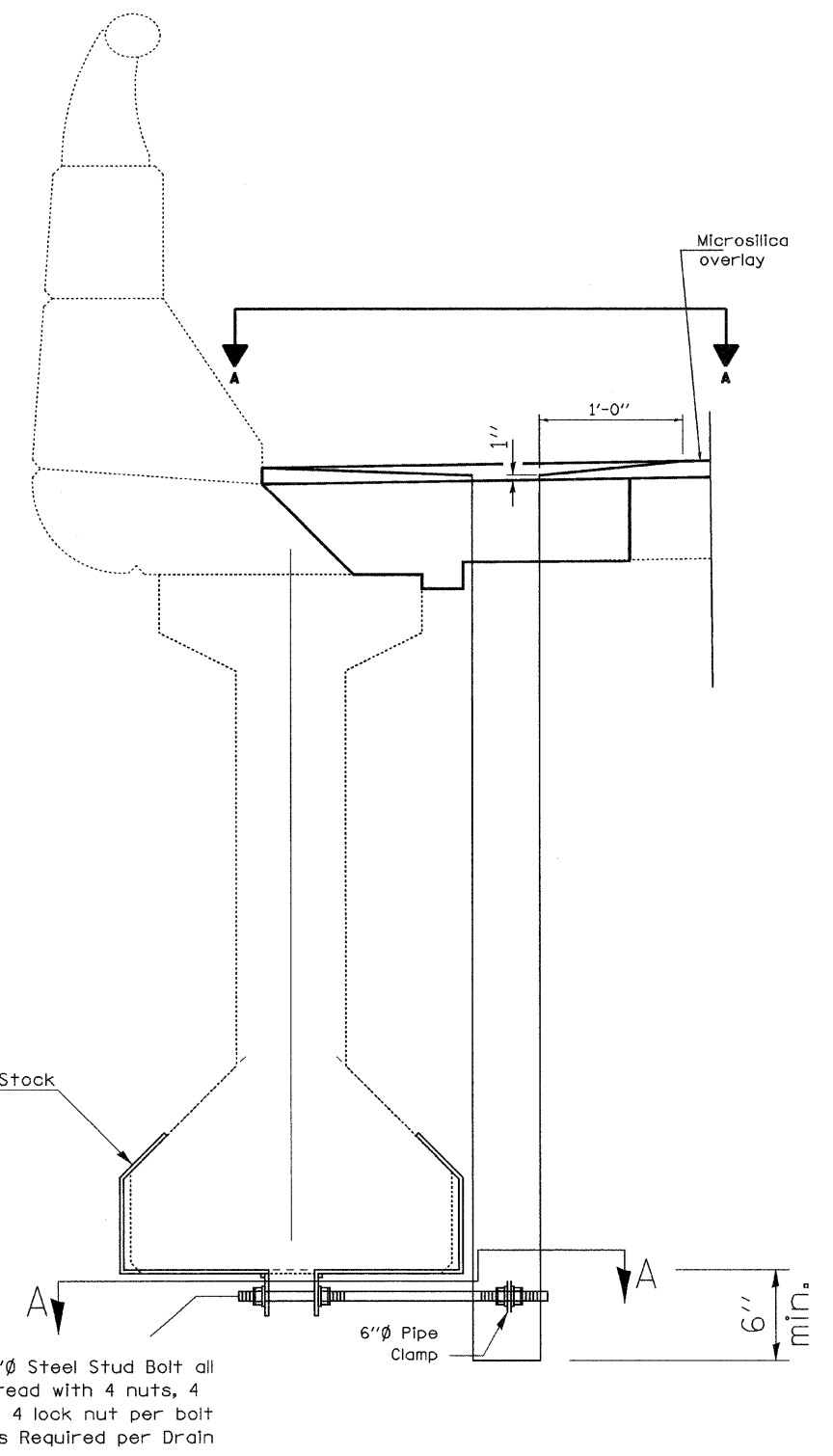
11-1-09



Note: Contractor must use extreme care while removing concrete as not to damage PPC I Beams. Any Damage is to be repaired at the contractor's expense.



**SECTION THRU EXISTING FLOOR DRAIN**  
Hatched area indicates concrete removal at floor drain replacement and elimination locations. Cost included with Deck Slab Repair (Full Depth)



\*\* 1/4" x 2" x 24" Bar Stock Pre-Bent (Galvanized) 4 Required per Drain

\*\* 3/4" Steel Stud Bolt all thread with 4 nuts, 4 washers & 4 lock nut per bolt 2 Bolts Required per Drain

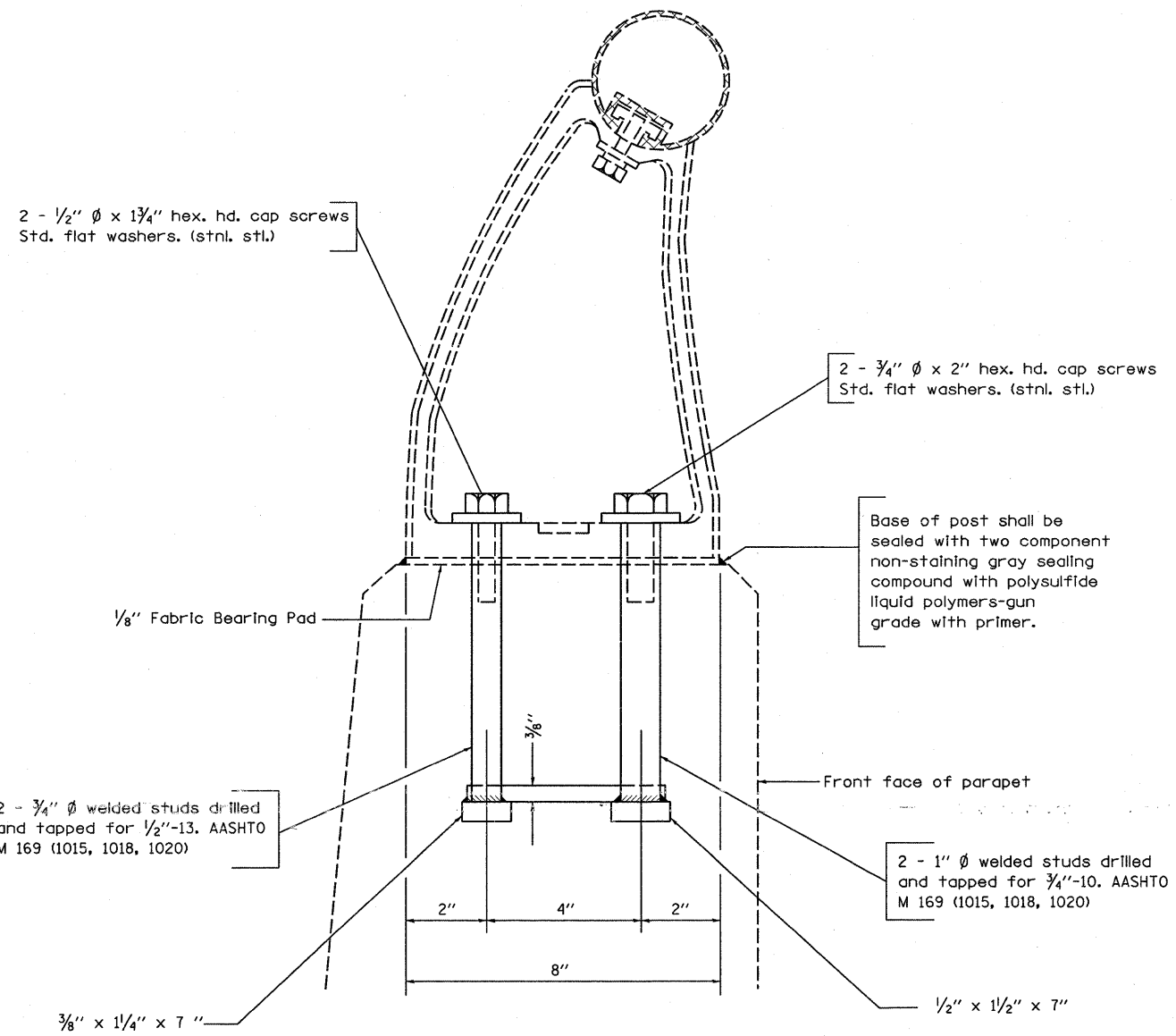
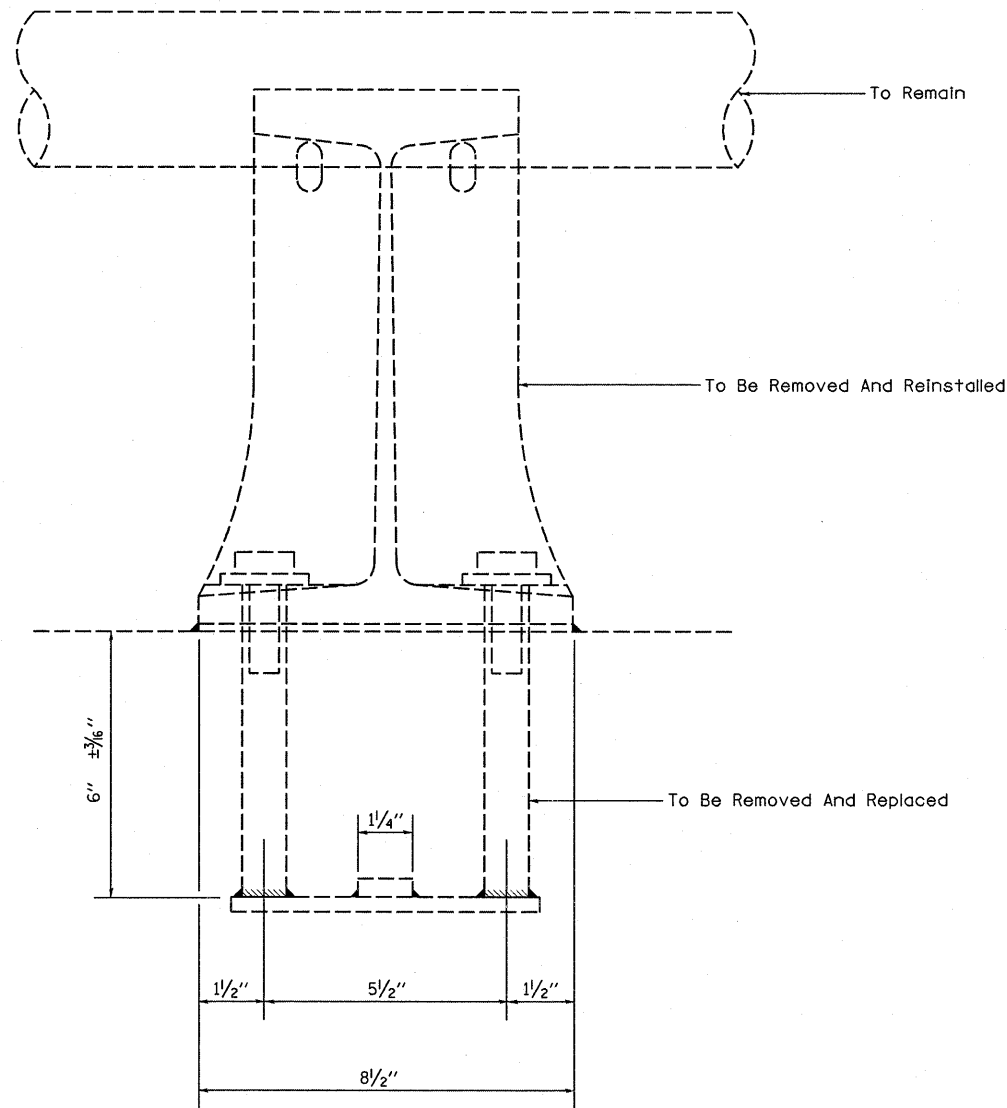
**DRAIN REPLACEMENT DETAIL**  
Concrete placement details similar at locations of floor drain elimination.

Note: Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

Note: See "Bridge Deck Patching" plan sheets for Floor Drain elimination/replacement locations. See "Total Bill of Materials" for each structure for quantities.

\*\* COST INCLUDED WITH FLOOR DRAINS

FILE NAME = #FILE#	USER NAME = #USER#	DESIGNED - ADR	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>FLOOR DRAIN DETAIL</b>			S.B.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		DRAWN -	REVISED -		SCALE: N/A	SHEET NO. 8 OF 11 SHEETS	STA.	TO STA.	16	07 BRIDGE REPAIRS 2010-2	SHELBY	16	13
		CHECKED -	REVISED -					CONTRACT NO. 74403					
		DATE -	REVISED -					FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					



Note: Post anchorage supports are to be removed and replaced during construction. new bolts, shim plates, and post support anchor assemblies are to be provided.  
Cost Included with Concrete Removal.

FILE NAME =	USER NAME = teasleyck
et:\pw_work\PWIDOT\TEASLEYCK\08144201\07	*****-sh-t-bor.dgn
PLOT SCALE = 500.0000 ' / IN.	
PLOT DATE = 2/9/2010	

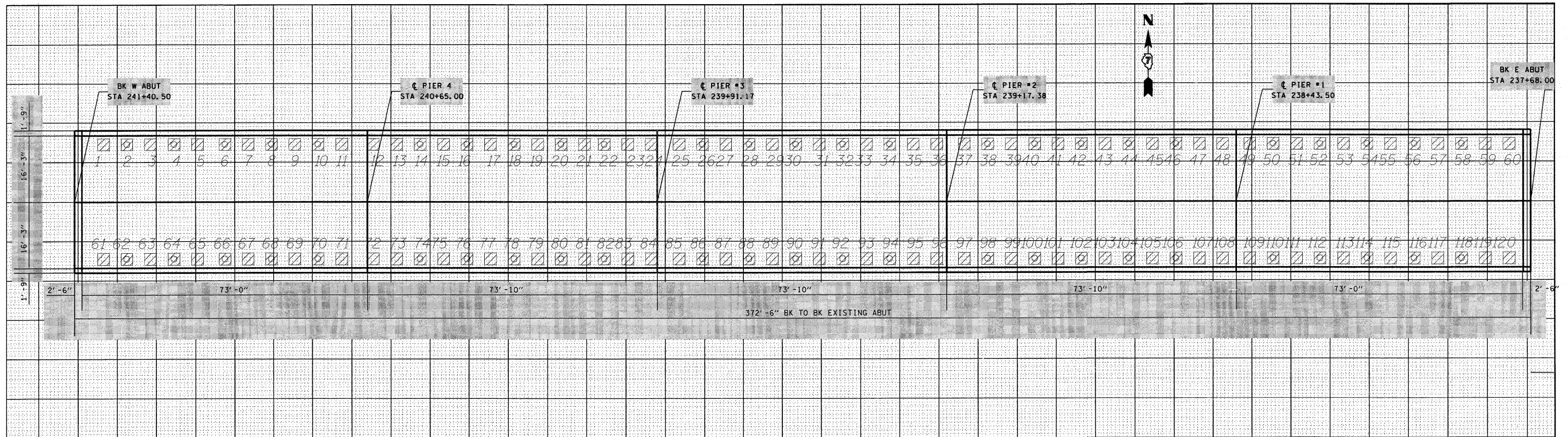
DESIGNED - ADR	REVISIONS
DRAWN -	REVISIONS -
CHECKED -	REVISIONS -
DATE -	REVISIONS -

REVISIONS	REVISIONS
REVISIONS	REVISIONS
REVISIONS	REVISIONS
REVISIONS	REVISIONS

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>RAIL SUPPORT ANCHOR DETAILS</b>			
SCALE: N/A	SHEET NO. 9 OF 11 SHEETS	STA.	TO STA.

S.B.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
16	DT BRIDGE REPAIRS 2010-2	SHELBY	16	14
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 74403	



PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)			
		SO FT	SO FT	SO FT	
1	3.0 x 3.0			9.0	
2	3.0 x 3.0			9.0	D
3	3.0 x 3.0			9.0	
4	3.0 x 3.0			9.0	D
5	3.0 x 3.0			9.0	
6	3.0 x 3.0			9.0	D
7	3.0 x 3.0			9.0	
8	3.0 x 3.0			9.0	D
9	3.0 x 3.0			9.0	
10	3.0 x 3.0			9.0	D
11	3.0 x 3.0			9.0	
12	3.0 x 3.0			9.0	
13	3.0 x 3.0			9.0	
14	3.0 x 3.0			9.0	D
15	3.0 x 3.0			9.0	
16	3.0 x 3.0			9.0	D
17	3.0 x 3.0			9.0	
18	3.0 x 3.0			9.0	D
19	3.0 x 3.0			9.0	
20	3.0 x 3.0			9.0	D
21	3.0 x 3.0			9.0	D
22	3.0 x 3.0			9.0	D
23	3.0 x 3.0			9.0	
24	3.0 x 3.0			9.0	
25	3.0 x 3.0			9.0	
26	3.0 x 3.0			9.0	D
27	3.0 x 3.0			9.0	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)			
		SO FT	SO FT	SO FT	
28	3.0 x 3.0			9.0	D
29	3.0 x 3.0			9.0	
30	3.0 x 3.0			9.0	D
31	3.0 x 3.0			9.0	
32	3.0 x 3.0			9.0	D
33	3.0 x 3.0			9.0	
34	3.0 x 3.0			9.0	D
35	3.0 x 3.0			9.0	
36	3.0 x 3.0			9.0	
37	3.0 x 3.0			9.0	
38	3.0 x 3.0			9.0	D
39	3.0 x 3.0			9.0	
40	3.0 x 3.0			9.0	D
41	3.0 x 3.0			9.0	
42	3.0 x 3.0			9.0	D
43	3.0 x 3.0			9.0	
44	3.0 x 3.0			9.0	D
45	3.0 x 3.0			9.0	
46	3.0 x 3.0			9.0	D
47	3.0 x 3.0			9.0	
48	3.0 x 3.0			9.0	
49	3.0 x 3.0			9.0	
50	3.0 x 3.0			9.0	D
51	3.0 x 3.0			9.0	
52	3.0 x 3.0			9.0	D
53	3.0 x 3.0			9.0	
54	3.0 x 3.0			9.0	D

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)			
		SO FT	SO FT	SO FT	
55	3.0 x 3.0			9.0	
56	3.0 x 3.0			9.0	D
57	3.0 x 3.0			9.0	
58	3.0 x 3.0			9.0	D
59	3.0 x 3.0			9.0	
60	3.0 x 3.0			9.0	
61	3.0 x 3.0			9.0	
62	3.0 x 3.0			9.0	D
63	3.0 x 3.0			9.0	
64	3.0 x 3.0			9.0	D
65	3.0 x 3.0			9.0	
66	3.0 x 3.0			9.0	D
67	3.0 x 3.0			9.0	
68	3.0 x 3.0			9.0	D
69	3.0 x 3.0			9.0	
70	3.0 x 3.0			9.0	D
71	3.0 x 3.0			9.0	
72	3.0 x 3.0			9.0	
73	3.0 x 3.0			9.0	
74	3.0 x 3.0			9.0	D
75	3.0 x 3.0			9.0	
76	3.0 x 3.0			9.0	D
77	3.0 x 3.0			9.0	
78	3.0 x 3.0			9.0	D
79	3.0 x 3.0			9.0	
80	3.0 x 3.0			9.0	D
81	3.0 x 3.0			9.0	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)			
		SO FT	SO FT	SO FT	
82	3.0 x 3.0			9.0	D
83	3.0 x 3.0			9.0	
84	3.0 x 3.0			9.0	
85	3.0 x 3.0			9.0	
86	3.0 x 3.0			9.0	D
87	3.0 x 3.0			9.0	
88	3.0 x 3.0			9.0	D
89	3.0 x 3.0			9.0	
90	3.0 x 3.0			9.0	D
91	3.0 x 3.0			9.0	
92	3.0 x 3.0			9.0	D
93	3.0 x 3.0			9.0	
94	3.0 x 3.0			9.0	D
95	3.0 x 3.0			9.0	
96	3.0 x 3.0			9.0	
97	3.0 x 3.0			9.0	
98	3.0 x 3.0			9.0	D
99	3.0 x 3.0			9.0	
100	3.0 x 3.0			9.0	D
101	3.0 x 3.0			9.0	
102	3.0 x 3.0			9.0	D
103	3.0 x 3.0			9.0	
104	3.0 x 3.0			9.0	D
105	3.0 x 3.0			9.0	
106	3.0 x 3.0			9.0	D
107	3.0 x 3.0			9.0	
108	3.0 x 3.0			9.0	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)			
		SO FT	SO FT	SO FT	
109	3.0 x 3.0			9.0	
110	3.0 x 3.0			9.0	D
111	3.0 x 3.0			9.0	
112	3.0 x 3.0			9.0	D
113	3.0 x 3.0			9.0	
114	3.0 x 3.0			9.0	D
115	3.0 x 3.0			9.0	
116	3.0 x 3.0			9.0	D
117	3.0 x 3.0			9.0	
118	3.0 x 3.0			9.0	D
119	3.0 x 3.0			9.0	
120	3.0 x 3.0			9.0	
TOTAL		0	0	1080	0
PARTIAL DEPTH					
0 / 9 =		0.0			
USE		0	50	YD	
FULL DEPTH, TYPE 1					
0 / 9 =		0.0			
USE		0	50	YD	
FULL DEPTH, TYPE 2					
1080 / 9 =		120.0			
USE		120	50	YD	

THE LOCATIONS AND SIZES SHOWN GRAPHICALLY ABOVE ARE APPROXIMATE. SEE THIS TABLE FOR ACTUAL SIZES.  
 ALL PATCHES ARE AT EXISTING DRAIN LOCATIONS  
 D = NEW FLOOR DRAIN

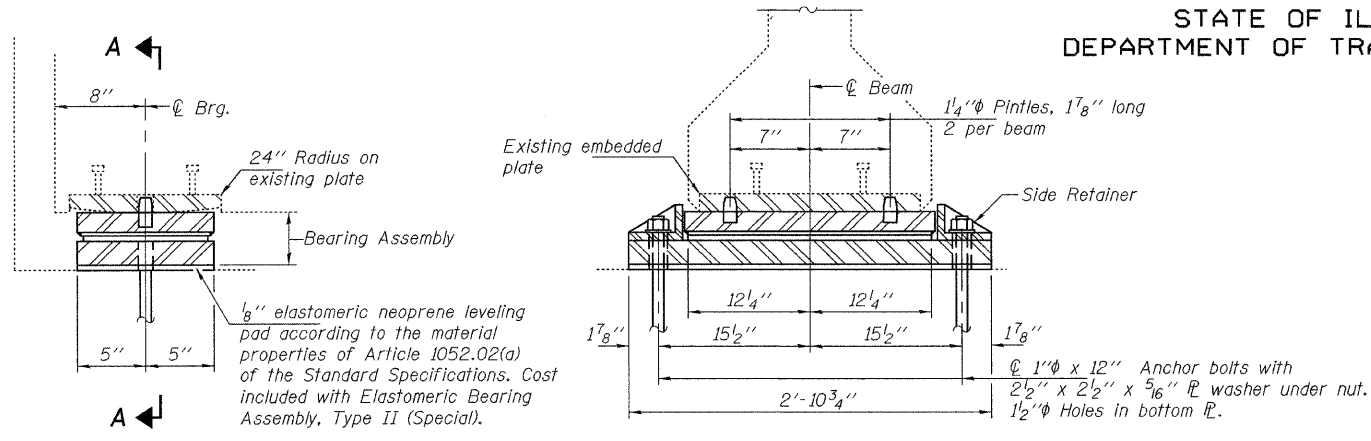
**PATCHING LEGEND**  
  
 PARTIAL DEPTH (FOR INFORMATION ONLY)  
 FULL DEPTH (EXISTING DRAIN)  
 FULL DEPTH & FLOOR DRAIN

DATE OF SURVEY: 1/12/10  
 SURVEY BY: A. RING  
 METHOD OF SURVEY: VISUAL

BRIDGE DECK PATCHING  
 SHELBY COUNTY  
 IL 16  
 SN 087-0005

005

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



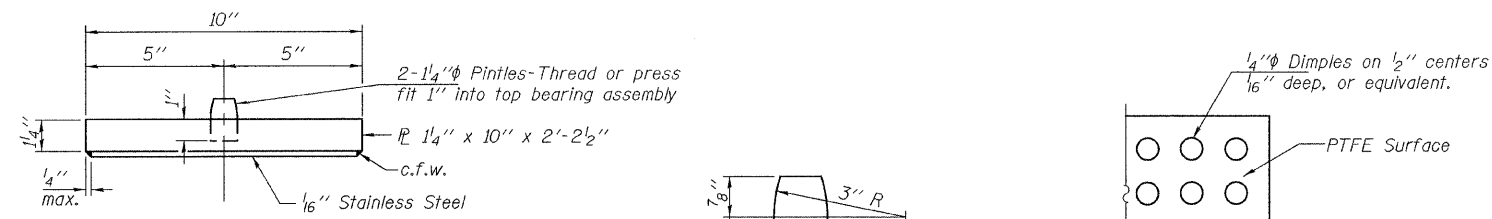
**BEAM REACTIONS**

R <sub>ℓ</sub>	(K)	51.3
R <sub>r</sub>	(K)	29.4
Imp.	(K)	7.4
R (Total)	(K)	88.1

**SECTION AT ABUT.**

**SECTION A-A**

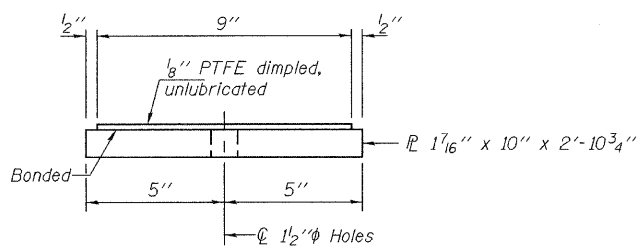
**TYPE II ELASTOMERIC EXP. BRG.**



**TOP BEARING ASSEMBLY**

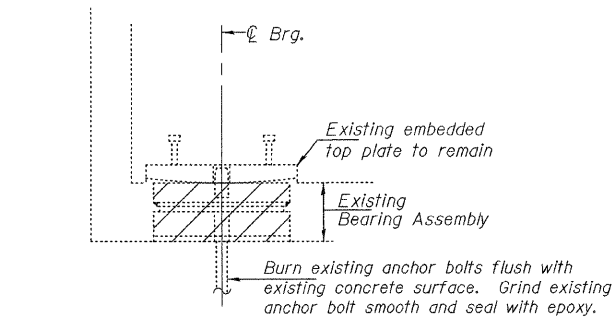
**PINTLE**

**PLAN-PTFE SURFACE**



**BOTTOM BEARING ASSEMBLY**

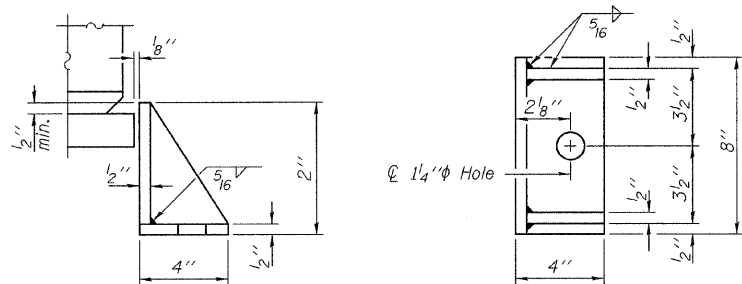
**SECTION THRU PTFE**



**EXISTING BEARING REMOVAL DETAIL**

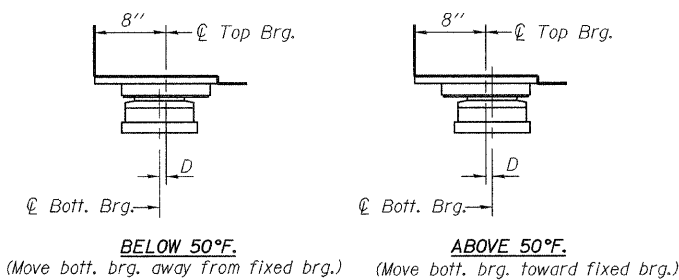
Cost included with Jack and Remove Existing Bearings.

**Notes:**  
The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50 Min. jack capacity = 52 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 in the concrete drilled through holes in 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 and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II (Special).  
The 1/8 inch 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 1/8 inch PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



**SIDE RETAINER**

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



**SETTING ANCHOR BOLTS AT EXP. BRG.**

D=1/8 inch per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly, Type II (Special)	Each	14
Anchor Bolts 1"φ	Each	28
Jack and Remove Existing Bearings	Each	14

**ABUTMENT BEARING REPLACEMENT DETAILS  
STRUCTURE NO. 087-0005**

DESIGNED	<i>Victor H. Valiz</i>
CHECKED	<i>Ramin Bali</i>
DRAWN	baliva
CHECKED	<i>VHV</i>

EXAMINED	<i>A. Carl Prosky</i> ENGINEER OF STRUCTURAL SERVICES
PASSED	<i>Ralph E. Anderson</i> ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. 1 1 SHEETS	SBI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	16	D7 Bridge Repairs 2010-2	SHELBY	16	16
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 74403		