

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

F.A.I. ROUTE 290 / F.A.P. ROUTE 342 I-290 / ILL 53  
US 12 (RAND RD.) TO ILL 72 (HIGGINS RD.)  
SECTION: (531-3.1, 0305-302 K) RS-5  
RESURFACING, BRIDGE DECK REPAIR, JOINT REPAIR

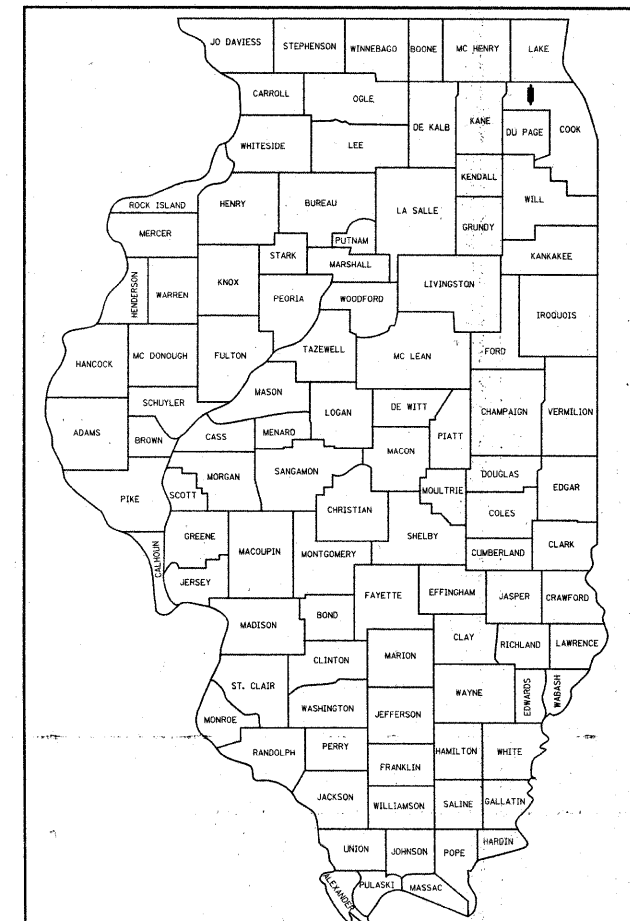
PROJECT: --  
COOK COUNTY  
C-91-033-10

FOR INDEX OF SHEETS, SEE SHEET NO. 2

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1, 0305-302)KRS-5	COOK	314	1
FED. ROAD DIST. NO. 1	ILLINOIS		CONTRACT NO. 60138	

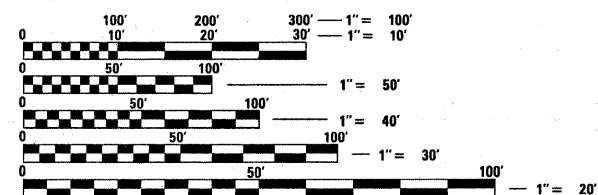
\*314+2=316

D-91-033-10



LOCATION OF SECTION INDICATED THUS: - - -

PROJECT IS LOCATED IN THE CITY OF ROLLING MEADOWS AND THE VILLAGES OF ARLINGTON HEIGHTS, PALATINE, & SCHAUMBURG



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.

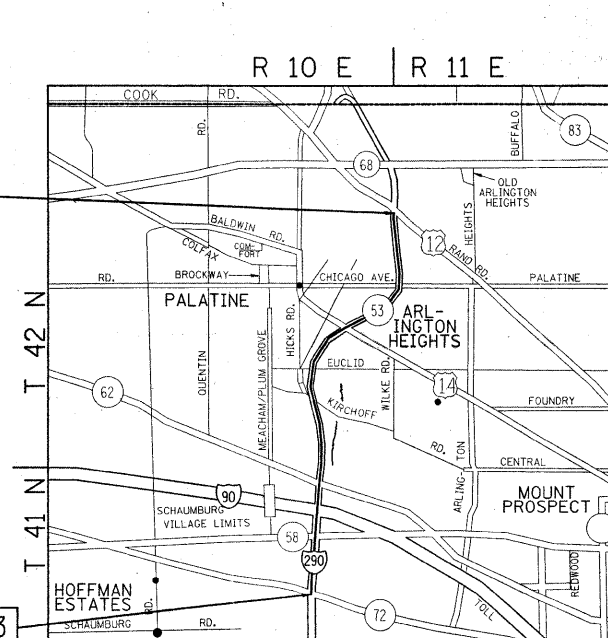
J.U.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

PROJECT ENDS STA. 436+00

RESURFACING OMISSIONS:

- STA. 81+05 TO STA. 82+71
- STA. 109+80 TO STA. 112+01
- STA. 133+91 TO STA. 137+47
- STA. 153+26 TO STA. 154+74
- STA. 173+87 TO STA. 178+97
- STA. 224+22 TO STA. 230+98
- STA. 274+37 TO STA. 280+65
- STA. 298+84 TO STA. 308+60
- STA. 360+26 TO STA. 366+78
- STA. 383+64 TO STA. 389+05
- STA. 433+68 TO STA. 436+00

PROJECT BEGINS STA. 58+43



PALATINE, SCHAUMBURG & ELK GROVE TOWNSHIPS

TRAFFIC DATA (MAINLINE)  
SPEED LIMIT: 55 MPH  
2007 ADT: 194,100

PROJECT ENGINEER: DAN WILGREEN (847) 705-4240  
PROJECT MANAGER: KEN ENG

CONTRACT NO. 60138

GROSS LENGTH OF PROJECT = 37,757 FEET (7.2 MILES)  
NET LENGTH OF PROJECT = 32,651 FEET (6.2 MILES)

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED FEBRUARY 3, 2010

*Diana M. O'Keefe*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

March 19, 2010  
*Scott E. Stott, PE*  
Acting ENGINEER OF DESIGN AND ENVIRONMENT

March 19, 2010  
*Christine M. Reed*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

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313-314	TOLLWAY SIGNING

STATE STANDARDS

000001-05	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
442201-03	CLASS C AND D PATCHES
482011-03	HMA SHLD. STRIPS/SHLDS. WITH RESURFACING OR WIDENING AND RESURFACING PROJECTS
602001-01	CATCH BASIN TYPE A
604036-02	GRATE TYPE 8
606401-01	PAVED DITCH
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
642001-01	SHOULDER RUMBLE STRIPS
664001-02	CHAIN LINK FENCE
701101-02	OFF-ROAD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE
701106-02	OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 M) AWAY
701400-04	APPROACH TO LANE CLOSURE, FREEWAY/ EXPRESSWAY
701401-05	LANE CLOSURE FREEWAY/ EXPRESSWAY
701411-06	LANE CLOSURE, MULTILANE, AT ENTRANCE OR EXIT RAMP, FOR SPEEDS ≥ 45 MPH
701426-03	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATION, FOR SPEEDS ≥ 45 MPH
701446-01	TWO LANE CLOSURE FREEWAY/ EXPRESSWAY
701601-06	URBAN LANE CLOSURE, MULTILANE, 1W OR 2W WITH NONTRAVERSABLE MEDIAN
701701-06	URBAN LANE CLOSURE MULTILANE INTERSECTION
701901-01	TRAFFIC CONTROL DEVICES
704001-06	TEMPORARY CONCRETE BARRIER
720011-01	METAL POSTS FOR SIGNS, MARKERS AND DELINEATORS
728001-01	TELESCOPING STEEL SIGN SUPPORT
729001-01	APPLICATIONS OF TYPES A AND B METAL POSTS (FOR SIGNS AND MARKERS)

GENERAL NOTES:

BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "JULIE" AT 800-892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS FACILITIES. ( 48 HOUR NOTIFICATION IS REQUIRED)

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, THE CITY OF ROLLING MEADOWS, AND THE VILLAGES OF ARLINGTON HEIGHTS, PALATINE, & SCHAUMBURG.

THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.

ALL HOT-MIX ASPHALT PAVEMENT PATCHING SHALL BE CLASS D.

BUTT JOINTS WILL BE INSTALLED AT THE ENDS OF ALL RESURFACING (WHERE RESURFACING MEETS EXISTING PAVEMENT), IN ACCORDANCE WITH THE "BUTT JOINT AND HMA TAPER DETAILS" SHEET INCLUDED IN THE PLANS, UNLESS OTHERWISE SPECIFIED.

WHEN MILLED PAVEMENT IS OPEN TO TRAFFIC THE MAXIMUM GRADE DIFFERENTIAL BETWEEN PASSES OF THE MILLING MACHINE SHALL NOT EXCEED 1 1/2 INCHES (40MM) WHERE THE SPEED LIMIT IS 45 MPH (80KM/H) OR LESS AND 1 INCH (25 MM) WHERE THE SPEED LIMIT IS GREATER THAN 45 MPH (80 KM/H), WITH WRITTEN APPROVAL FROM THE ENGINEER, A MAXIMUM GRADE DIFFERENTIAL OF 3 INCHES (75 MM) MAY BE ALLOWED IF THE EDGE OF THE MILLING IS SLOPED A MINIMUM 1:3 (V:H).

10 FEET (3 METER) TRANSITION SHALL BE USED TO MATCH PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTERS IN THE FIELD, UNLESS OTHERWISE SHOWN. THE TRANSITION SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PROPOSED ITEMS OF WORK SPECIFIED.

THE RESIDENT ENGINEER SHALL VERIFY THE LOCATIONS OF ALL EXISTING PAVEMENT MARKINGS PRIOR TO MILLING OR RESURFACING.

ALL PAVEMENT MARKINGS SHALL BE PLACED THROUGHOUT THE IMPROVEMENT ACCORDING TO DISTRICT 1 TYPICAL PAVEMENT MARKING.

TWO WEEKS PRIOR TO PLACING PERMANENT PAVEMENT MARKINGS, CONTACT WALLY CZARNY, AREA TRAFFIC FIELD ENGINEER AT (773) 685-4342.

RAISED REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED THROUGHOUT THE IMPROVEMENT ACCORDING TO THE DISTRICT STANDARDS AS NOTED IN THE DETAIL.

THE UNIT WEIGHT (CONVERSION FACTOR) QUOTED IS FOR THE ESTIMATING PLAN QUANTITIES ONLY. ACTUAL QUANTITIES TO FULFILL CONTRACT REQUIREMENTS WILL BE DETERMINED BASED ON UNIT WEIGHT OF APPROVED MIX DESIGN, PLAN DIMENSIONS, AND DENSITY LIMITATIONS. MAXIMUM PAYMENT WILL BE COMPUTED BASED ON WEIGHT AVERAGE DENSITIES OF THE IN-PLACE MIXTURE.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4470 A MINIMUM OF 72 HOURS PRIOR TO THE PLACEMENT OF ANY TEMPORARY TRAFFIC CONTROL DEVICES.

FILE NAME =	USER NAME = abreuah	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>I-290 / ILL 53 FROM US 12 TO ILL 72 INDEX OF SHEETS STATE STANDARDS AND GENERAL NOTES</b>	F.A.T. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ct:\pw_work\PWIDOT\ABREUAH\0166688\010310\shp-plan.dgn	DRAWN -	REVISED -	290			(531-3.1, 0305-302 K) RS-5	COOK	314	2	
PLOT SCALE = 50.0000' / IN.	CHECKED -	REVISED -	CONTRACT NO. 60138							
PLOT DATE = 2/11/2018	DATE -	REVISED -	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							
					SCALE: 1" = 50'	SHEET NO.	OF	SHEETS	STA.	TO STA.

Rev.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

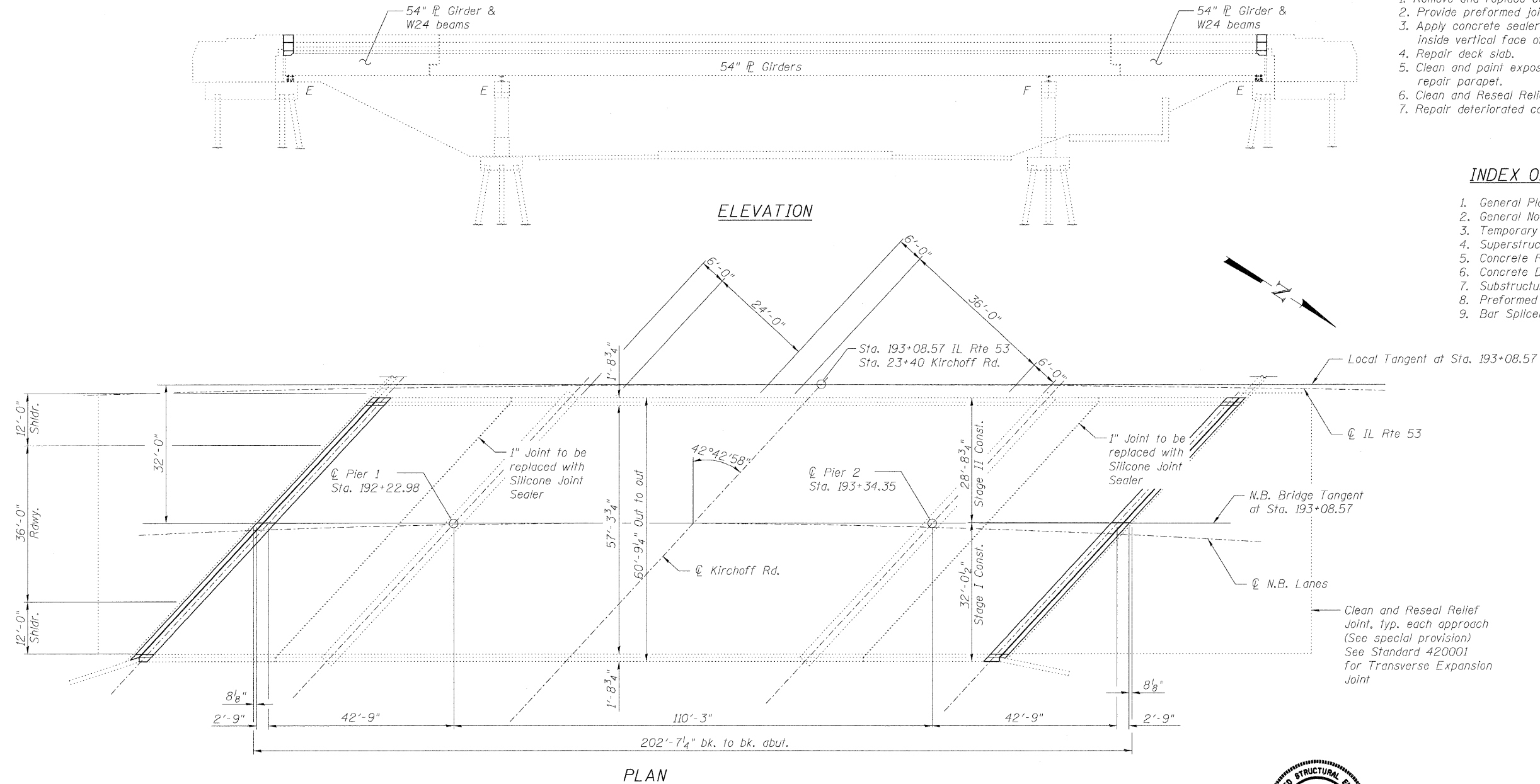
Existing Structure:  
Structure No. 016-0376, constructed in 1963 as FA 61, Section 531-1-HB-8, is a three span hinged continuous steel superstructure with a 7" reinforced concrete deck supported by multi-column piers and stub abutments. In 1971, the deck was patched and overlay was placed. In 1981, longitudinal joint was closed and expansion joint was reconstructed. In 1991, joint and parapet were reconstructed, overlay was replaced and deck was patched. In 2001, the expansion bearings were replaced. The structure is 202'-7 1/4" bk. to bk. abutments measured along north bound bridge tangent at Sta. 193+08.57, 60'-9 1/4" out to out and has a left ahead skew angle of 42°42'58". Stage Construction shall be utilized to maintain traffic during construction.

SCOPE OF WORK

1. Remove and replace concrete deck adjacent to abutment expansion joints.
2. Provide preformed joint strip seal expansion joints at abutments.
3. Apply concrete sealer to top of concrete deck and top and inside vertical face of parapets.
4. Repair deck slab.
5. Clean and paint exposed reinforcement bars on underside deck, and repair parapet.
6. Clean and Reseal Relief Joints.
7. Repair deteriorated concrete on abutments and slope wall.

INDEX OF SHEETS

1. General Plan and Elevation
2. General Notes and Details
3. Temporary Concrete Barrier for Stage Construction
4. Superstructure Repair
5. Concrete Removal
6. Concrete Details
7. Substructure Repair
8. Preformed Joint Strip Seal
9. Bar Splicer Assembly and Mechanical Splicer Details



DESIGN STRESSES  
FIELD UNITS

Existing Construction  
 $f_c = 1,400$  psi (Substructure & Superstructure)  
 $f_s = 20,000$  psi (Reinforcement)  
 $f_s = 20,000$  psi (Structural Steel)

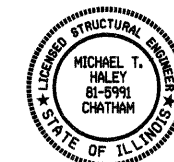
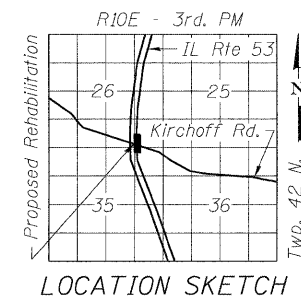
New Construction  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 36,000$  psi (Structural Steel) (M270 Gr. 36)

DESIGN SPECIFICATIONS

(New Construction)  
 2002 AASHTO "Standard  
 Specifications for Highway Bridges"

LOADING HS 20-44

(Original Construction)



Michael J. Haley 2/8/10  
 Michael T. Haley Date  
 Licensed Structural Engineer  
 State of Illinois No. 81-5991  
 Expires 11/30/2010

GENERAL PLAN AND ELEVATION  
 NB IL RTE 53 OVER KIRCHOFF ROAD  
 FAI RTE 290  
 SECTION (531-3.1,0305-302K)RS-5  
 COOK COUNTY  
 STATION 193+08.57  
 STRUCTURE NO. 016-0376

LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	224
Designed By: ESH Date: 12/2009		Checked By: MTH Date: 016-0376.dgn		Drawn By: ESH		CONTRACT NO. 60138
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT						

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

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

Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that can not be removed by grinding 1/4 in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

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.

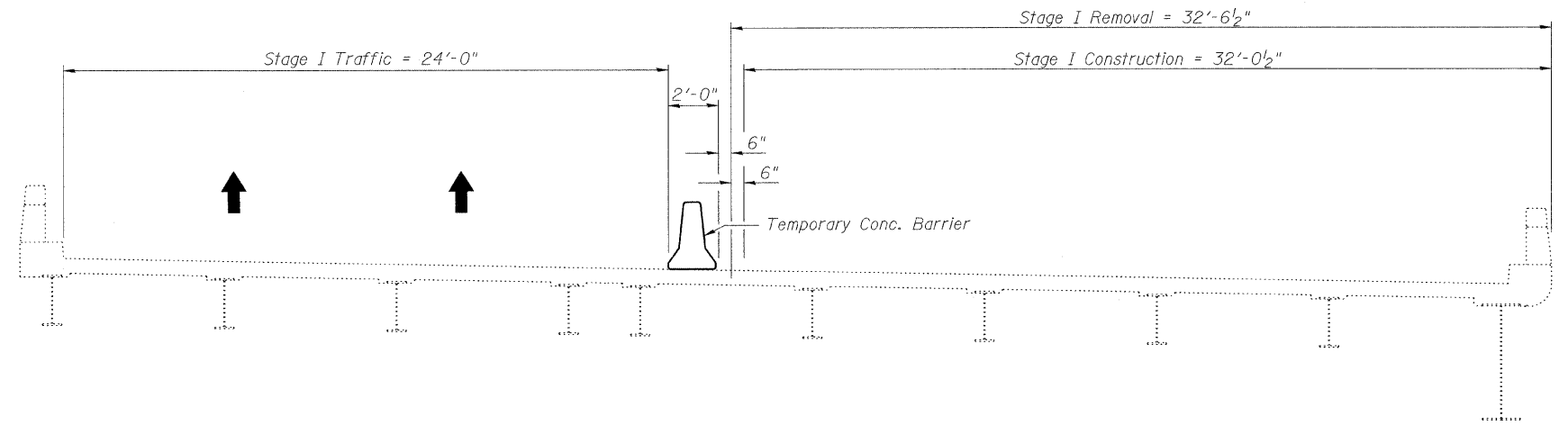
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

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

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

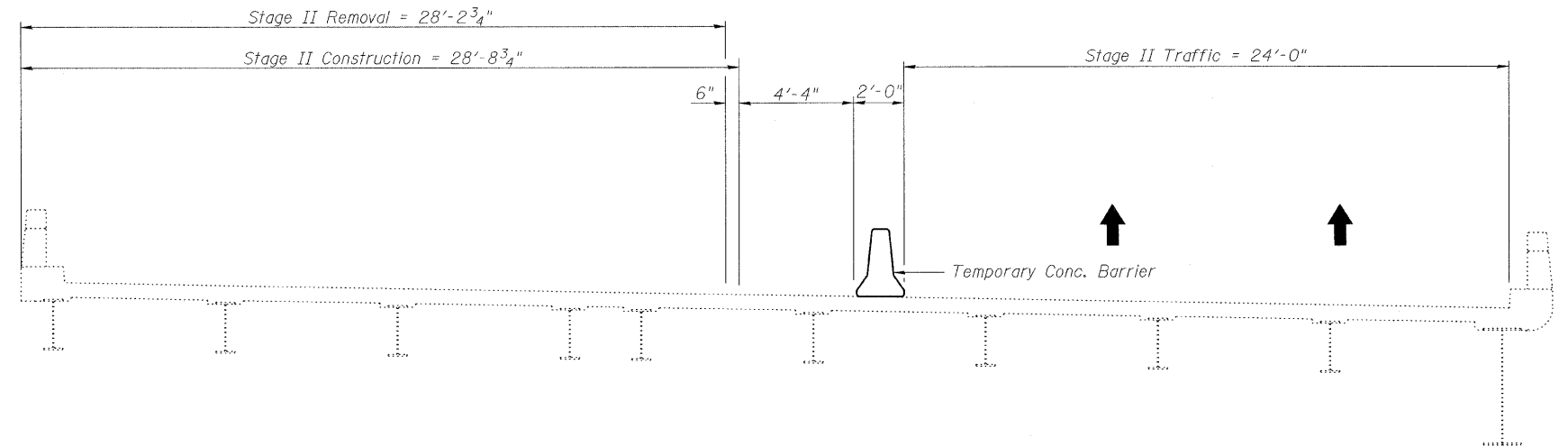
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	24.9	-	24.9
Slope Wall Removal	Sq. Yd.	-	116	116
Protective Shield	Sq. Yd.	934	-	934
Concrete Superstructure	Cu. Yd.	24.9	-	24.9
Reinforcement Bars, Epoxy Coated	Pound	2,580	-	2,580
Bar Splicers	Each	24	-	24
Slope Wall 4 Inch	Sq. Yd.	-	116	116
Preformed Joint Strip Seal	Foot	158	-	158
Concrete Sealer	Sq. Ft.	13,240	-	13,240
Silicone Joint Sealer, 1"	Foot	158	-	158
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	12	24	36
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1.0	-	1.0
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	66.7	-	66.7
Deck Slab Repair (Partial)	Sq. Yd.	35.9	-	35.9
Clean and Reseal Relief Joint	Foot	120	-	120
Cleaning and Painting Exposed Rebar	Sq. Ft.	1,102	-	1,102



**STAGE I REMOVAL & CONSTRUCTION**

(Looking North)



**STAGE II REMOVAL & CONSTRUCTION**

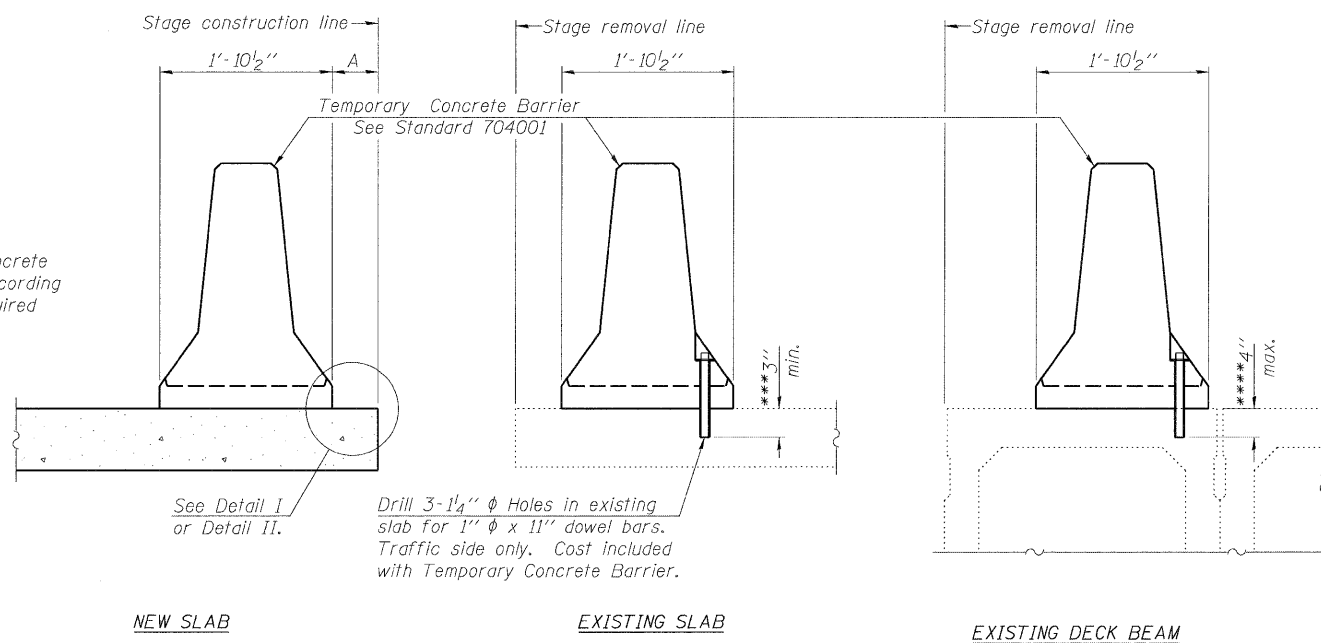
(Looking North)

**GENERAL NOTES & DETAILS**  
**STRUCTURE NO. 016-0376**

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 2  9 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		290	(531-3.1,0305-302)RS-5	COOK	314	225
Designed By: ESH    Checked By: MTH    Drawn By: ESH Date: 12/2009    File: 016-0376.dgn		CONTRACT NO. 60138 FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

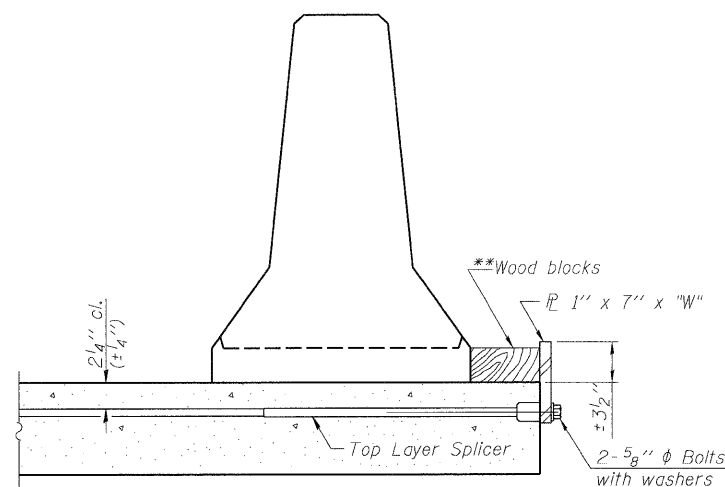
Detail I - With Bar Splicer or Couplers:  
Connect one (1) 1"x7"x10" steel  $\bar{L}$  to the top layer of couplers with 2-5/8"  $\phi$  bolts screwed to coupler at approximate  $\bar{C}$  of each barrier panel.

Detail II - With Extended Reinforcement Bars:  
Connect one (1) 1"x7"x10" steel  $\bar{L}$  to the concrete slab or concrete wearing surface with 2-5/8"  $\phi$  Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate  $\bar{C}$  of each barrier panel.

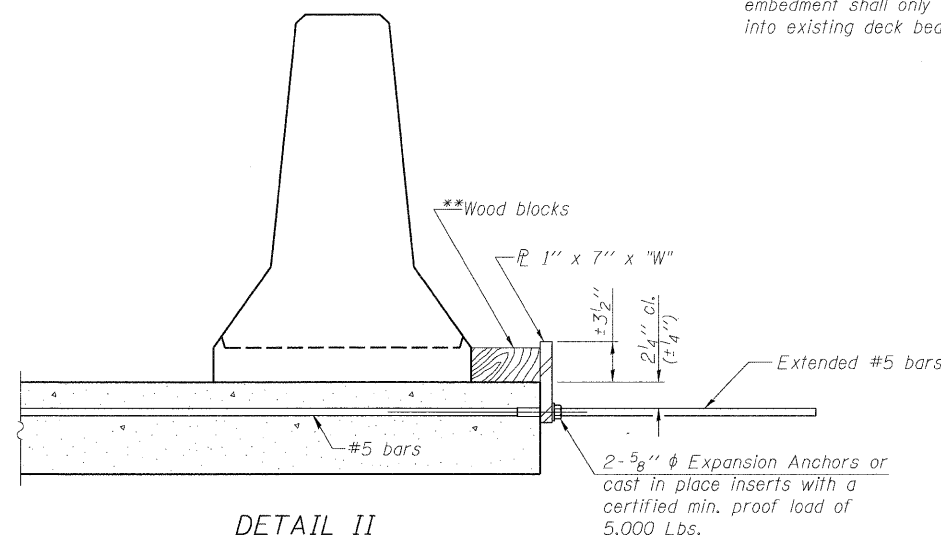
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

\*\*\* Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

\*\*\*\* If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



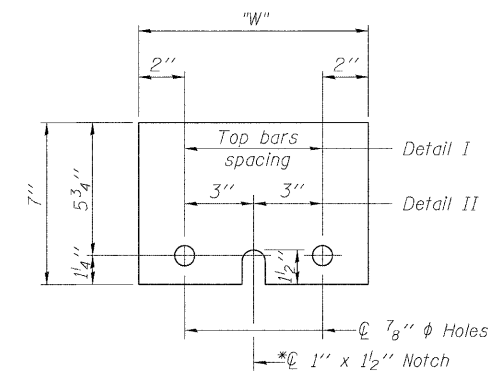
DETAIL I



DETAIL II

\*\* Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"



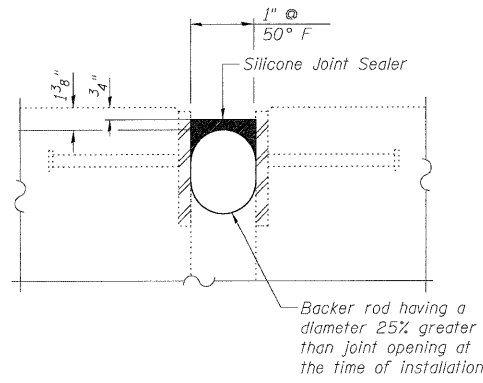
STEEL RETAINER  $\bar{L}$  1" x 7" x 10"

\* Required only with Detail II

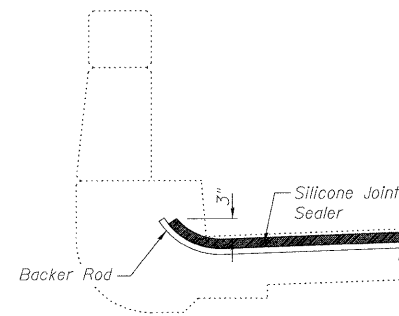
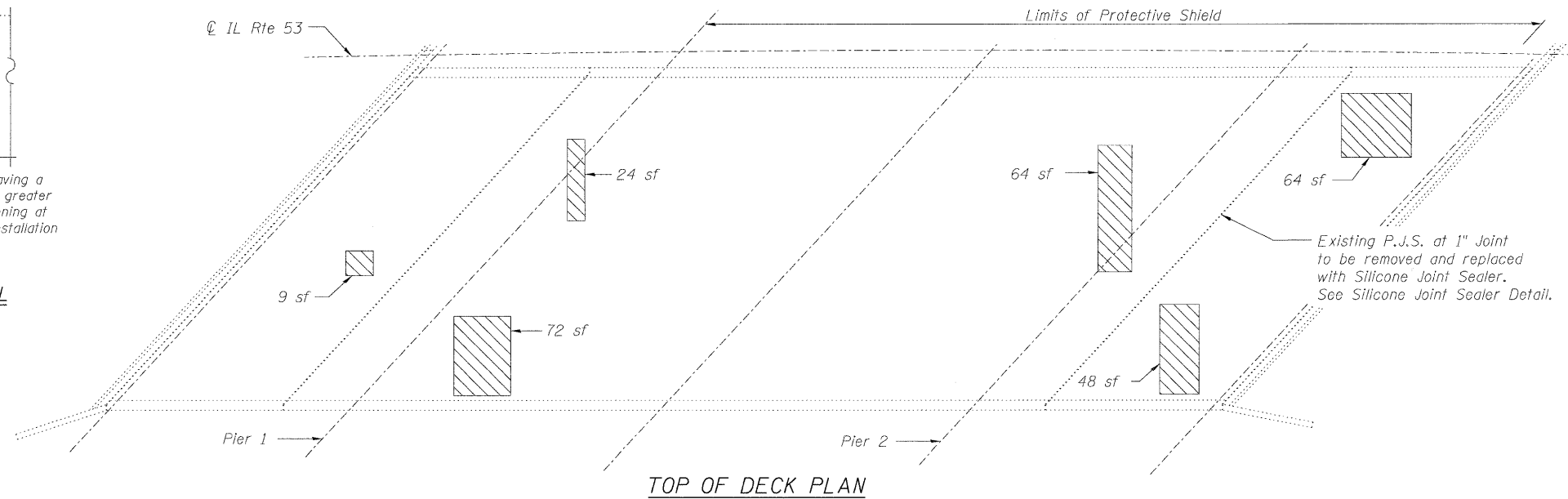
TEMPORARY CONCRETE BARRIER  
FOR STAGE CONSTRUCTION  
STRUCTURE NO. 016-0376

<p>LIN ENGINEERING LTD. Consulting Engineers Chattanooga, Illinois</p>	SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	224
Designed By: ESH Checked By: WTH Date: 12/2009		Drawn By: ESH File: 016-0376.dgn		CONTRACT NO. 60I38		
FED. ROAD DIST. NO. - ILLINOIS				FED. AID PROJECT		

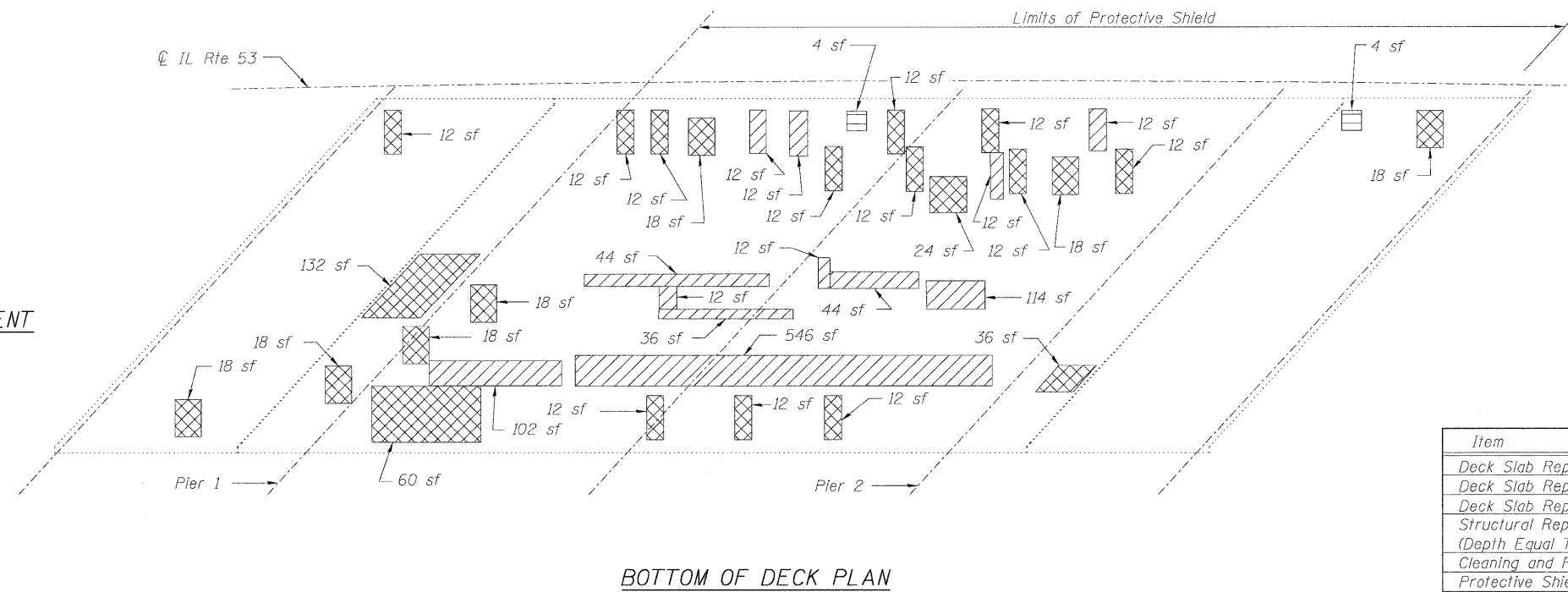
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



SILICONE JOINT SEALER DETAIL



SILICONE JOINT SEALER END TREATMENT



Note:  
Cost of existing P.J.S. removal is included in the cost of Silicone Joint Sealer, 1".

BILL OF MATERIAL

Item	Unit	Total
Deck Slab Repair (Partial)	Sq. Yd.	35.9
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1.0
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	66.7
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	12
Cleaning and Painting Exposed Rebar	Sq. Ft.	1102
Protective Shield	Sq. Yd.	934
Silicone Joint Sealer, 1"	Foot	158

Repair of the existing deck slab and parapets shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

LEGEND

- Cleaning and Painting Exposed Rebar on Deck Slab Underside
- Indicates Deck Slab Repair (Full Depth, Type I)
- Indicates Deck Slab Repair (Full Depth, Type II)
- Indicates Deck Slab Repair (Partial)

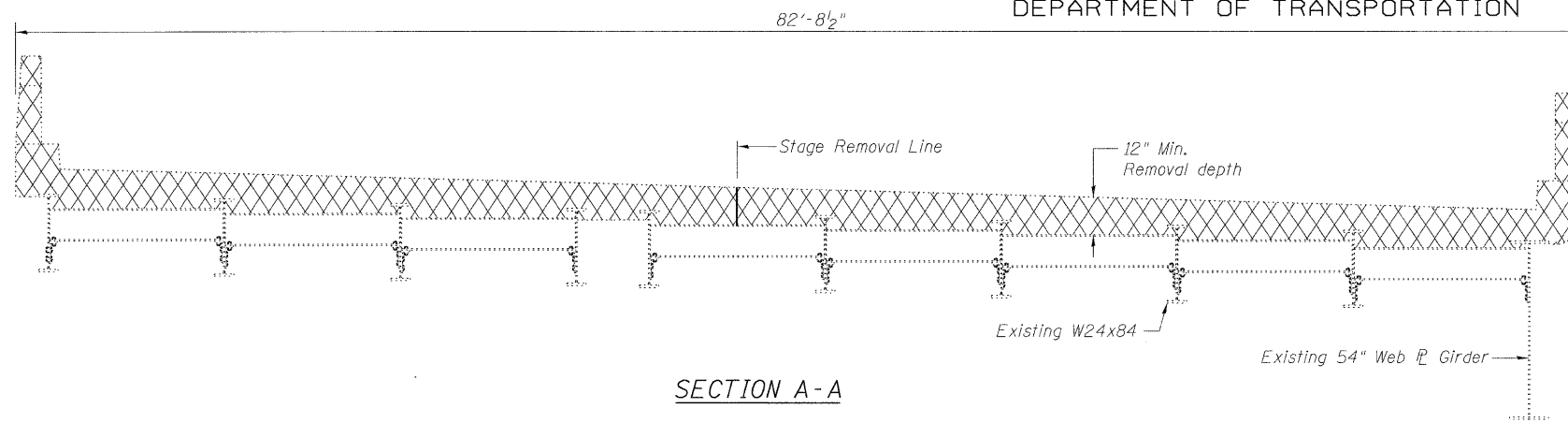
sf Square Feet



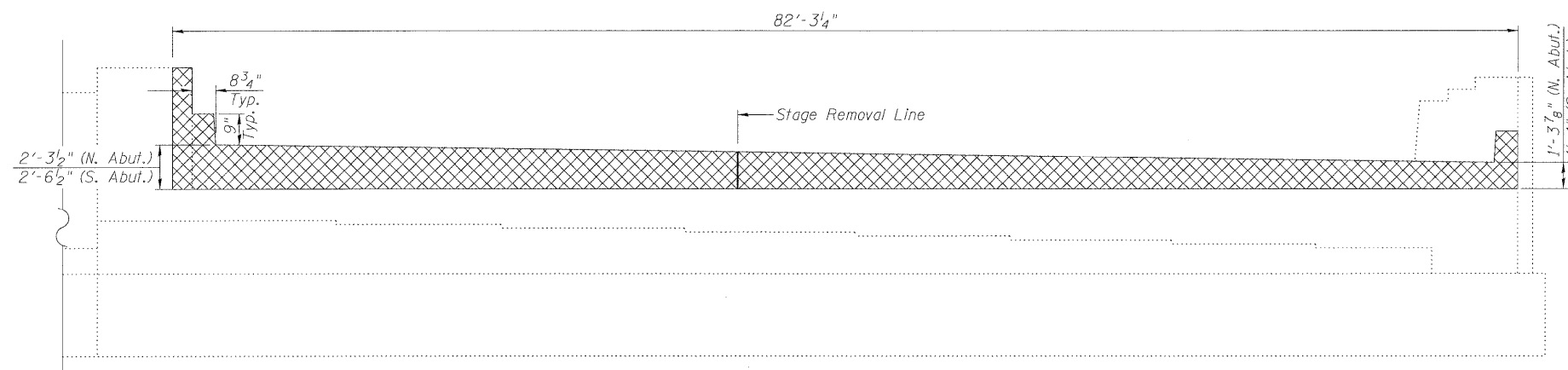
SUPERSTRUCTURE REPAIR  
STRUCTURE NO. 016-0376

LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois Designed By: ESH Checked By: MTH Date: 12/25/09 Drawn By: ESH File: 08-0376.dgn	SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302)RS-5	COOK	314	227
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				CONTRACT NO. 60I38		

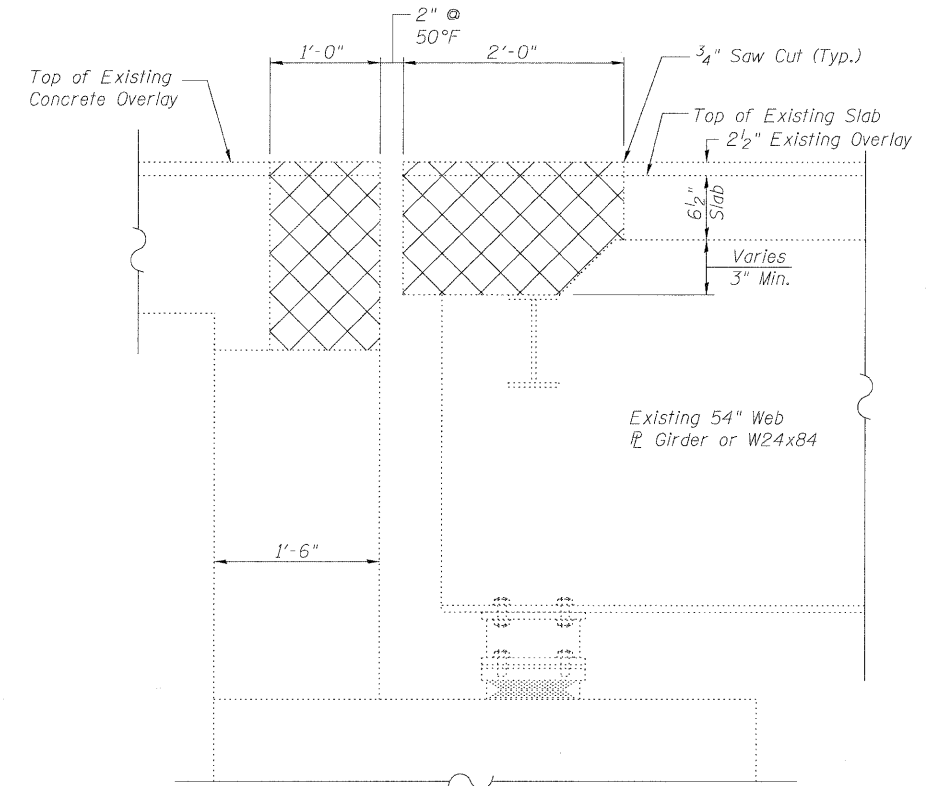
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



SECTION A-A



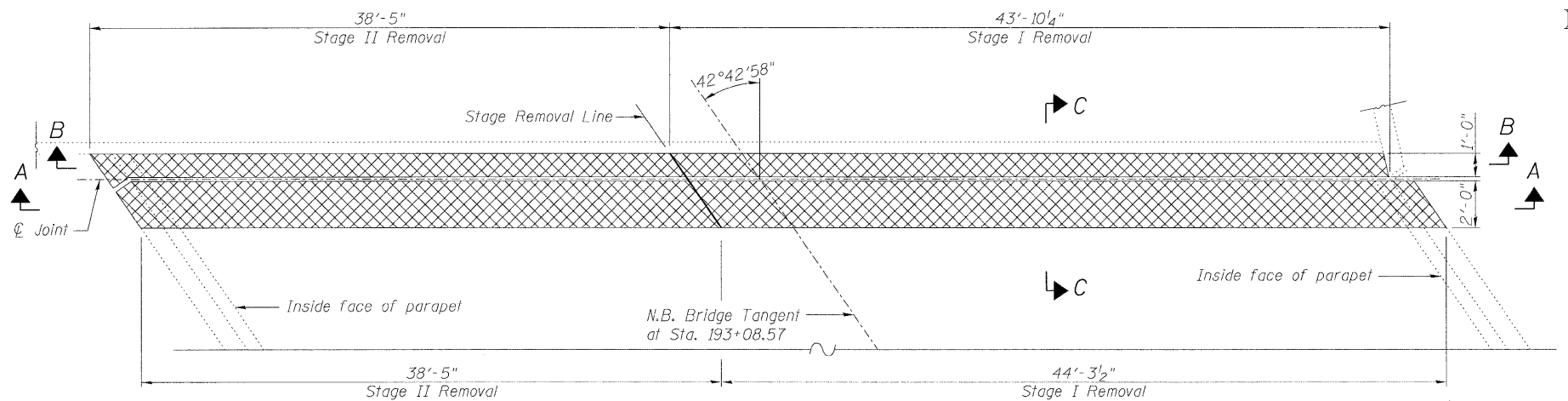
SECTION B-B



SECTION C-C  
(Dimensions at Rt. L's)

Notes:

1. Cross hatched area indicates concrete removal.
2. Existing reinforcement bars in the concrete removal area extending in new construction shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
3. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system, in accordance with IDOT Standard Specifications Article 501.03. Cost included in "Concrete Removal"
4. Overlay removal is included in pay item Concrete Removal.



PLAN

(North abutment shown, south abutment mirrored about N.B. bridge tangent)

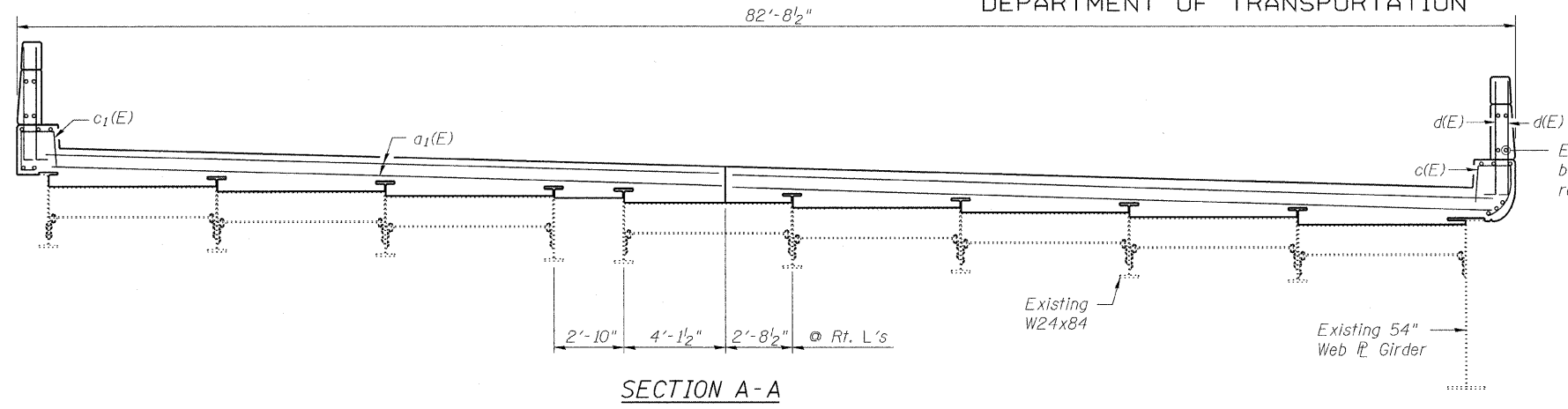
BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	24.9

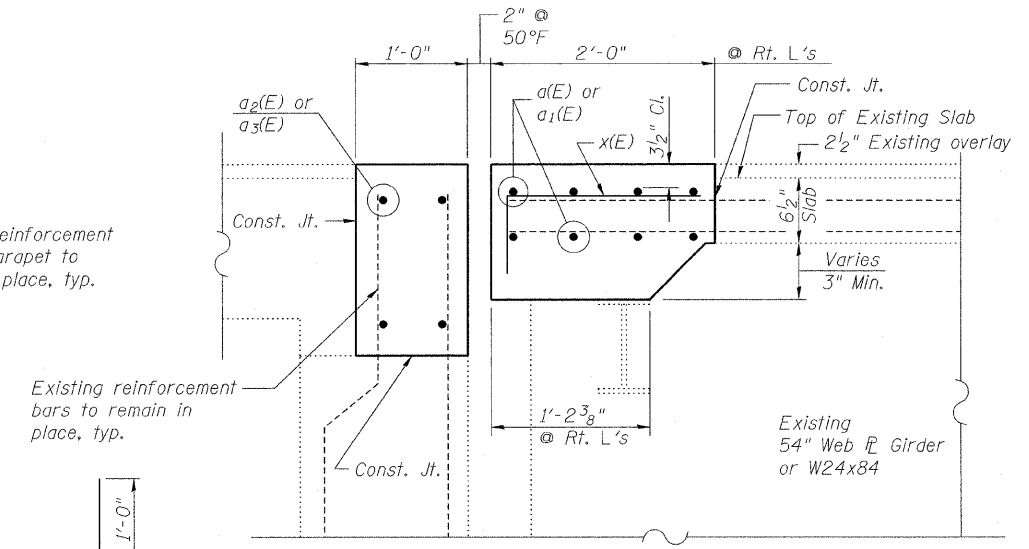
CONCRETE REMOVAL  
STRUCTURE NO. 016-0376

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 5	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	9 SHEETS	290	(531-3.1,0305-302)RS-5	COOK	314	228	
<small>Designed By: ESH   Checked By: MTH   Drawn By: ESH Date: 12/29/09   File: 016-0376.dgn</small>		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				CONTRACT NO. 60138	

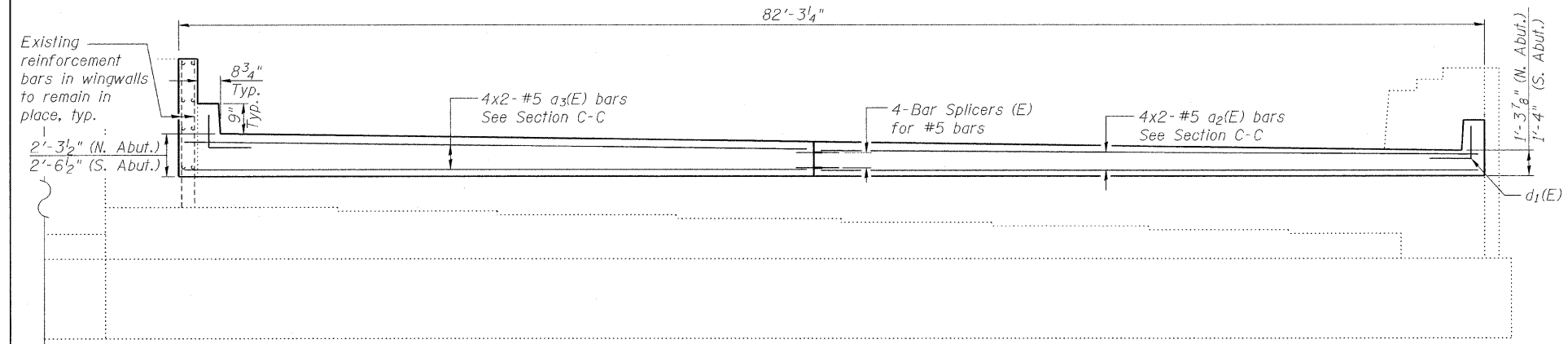
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



SECTION A-A

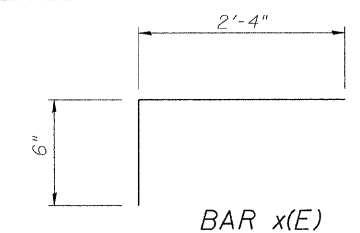


SECTION C-C



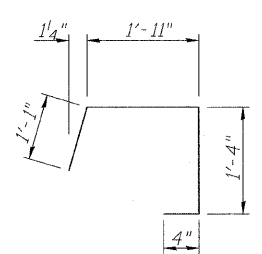
SECTION B-B

BAR d1(E)

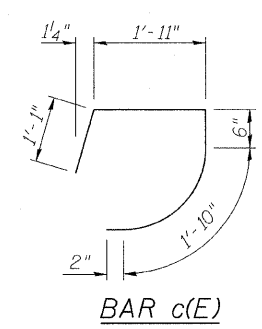


BAR x(E)

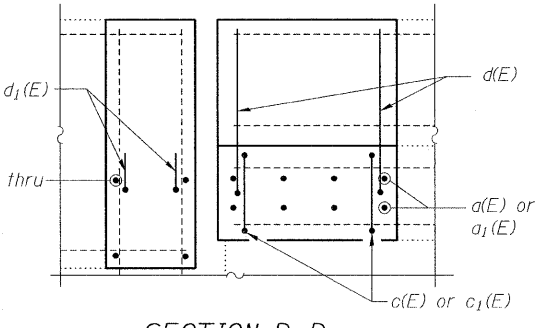
BAR d(E)



BAR c1(E)



BAR c(E)

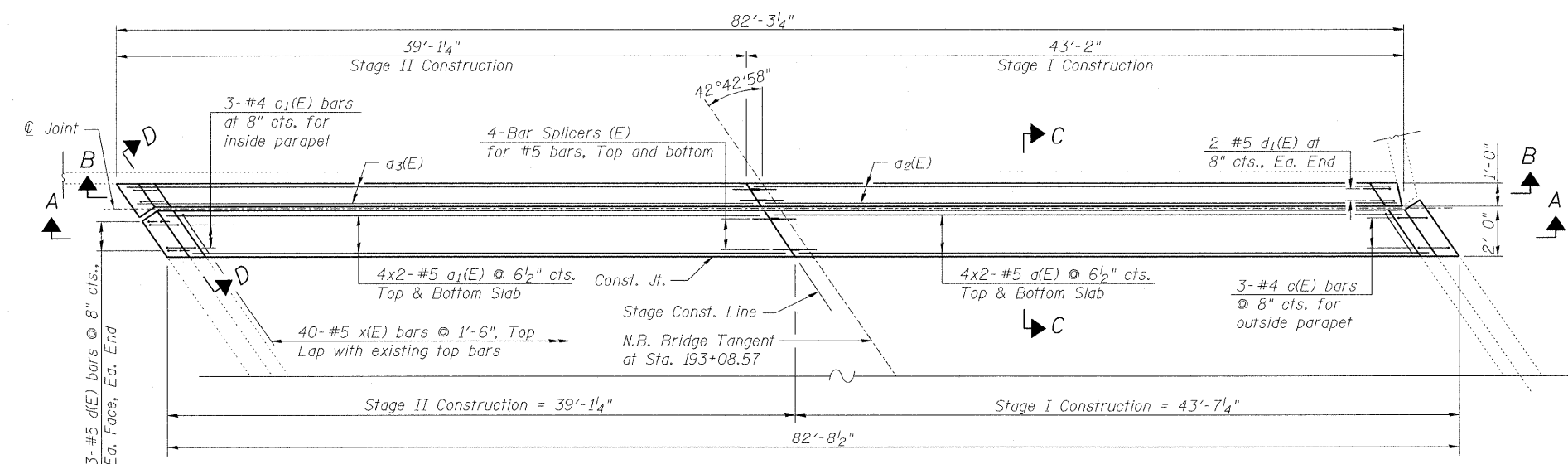


SECTION D-D

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	32	#5	23'-0"	—
a1(E)	32	#5	20'-8"	—
a2(E)	16	#5	22'-6"	—
a3(E)	16	#5	20'-10"	—
c(E)	6	#4	5'-6"	⌋
c1(E)	6	#4	4'-8"	⌋
d(E)	24	#5	3'-8"	L
d1(E)	8	#5	3'-0"	J
x(E)	80	#5	2'-10"	┌
Reinforcement Bars, Epoxy Coated			Pound	2580
Concrete Superstructure			Cu. Yd.	24.9

Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.



PLAN

(North abutment shown, south abutment mirrored about N.B. bridge tangent)

MINIMUM BAR LAP  
#5 bar = 2'-7"

**E** LIN ENGINEERING, LTD.  
Consulting Engineers  
Chatham, Illinois

SHEET NO. 6  
9 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1,0305-302)RS-5	COOK	314	219
CONTRACT NO. 60138				
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

Designed By: ESH  
Checked By: MTH  
Date: 12/2009  
File: 016-0376.dgn

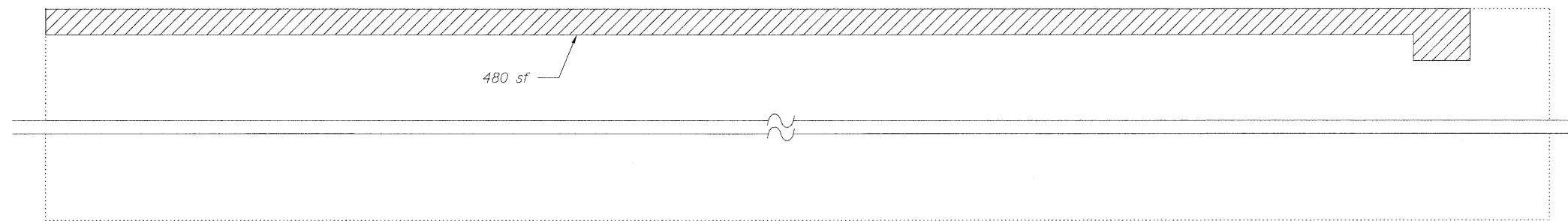
Drawn By: ESH



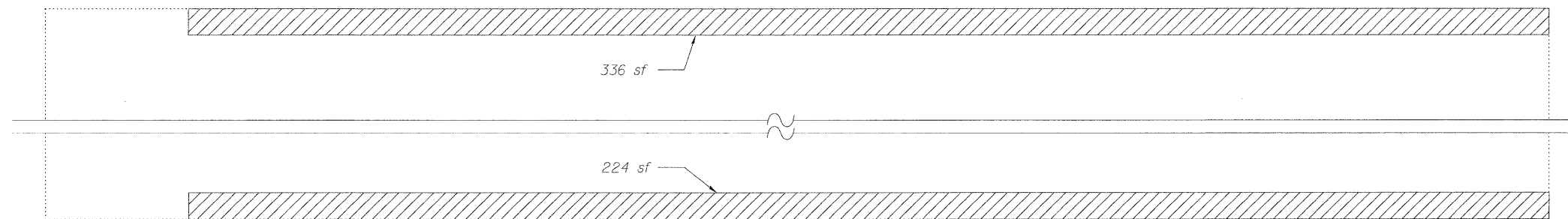
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



NORTH ABUTMENT ELEVATION  
(Looking North)



NORTH SLOPE WALL PLAN



SOUTH SLOPE WALL PLAN



LEGEND

- Indicates Slope Wall Removal and Slope Wall 4 Inch
- Indicates Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)
- sf Square Feet

BILL OF MATERIAL

Item	Unit	Total
Slope Wall Removal	Sq. Yd.	116
Slope Wall 4 Inch	Sq. Yd.	116
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	24

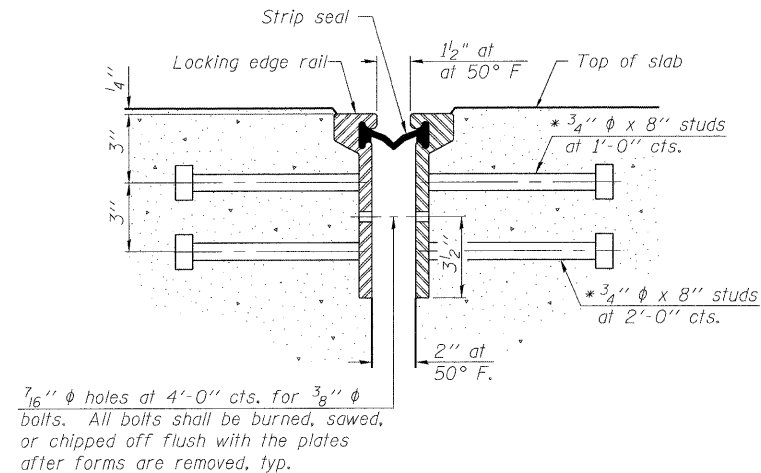
*Note:*  
Slopedwall shall be reinforced with welded wire fabric, 6"x 6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.  
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Slope Wall Removal.  
Existing and new welded wire fabric must be lapped at least 6".  
Repair of the existing abutment and slope walls shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

SUBSTRUCTURE REPAIR  
STRUCTURE NO. 016-0376

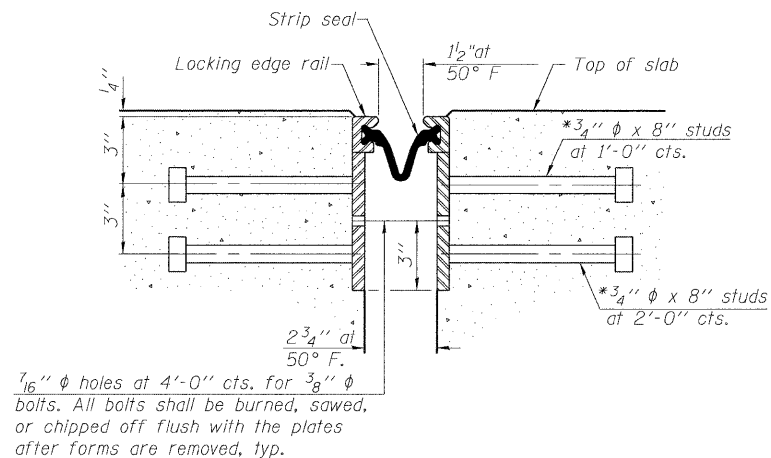
 <b>LIN ENGINEERING, LTD.</b> Consulting Engineers Chatham, Illinois	SHEET NO. 7	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	230
Designed By: ESH Date: 12/2009		Checked By: MTH File: 016-0376.dgn		Drewn By: ESH		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT
CONTRACT NO. 60138						

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

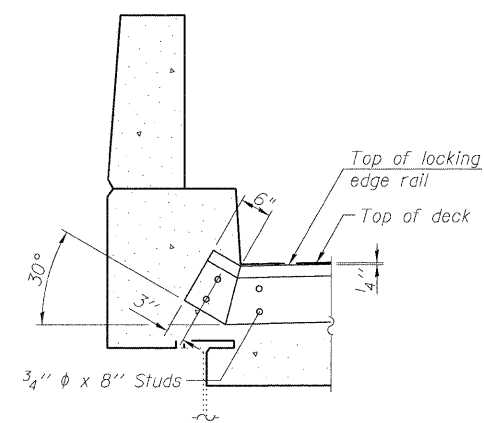
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



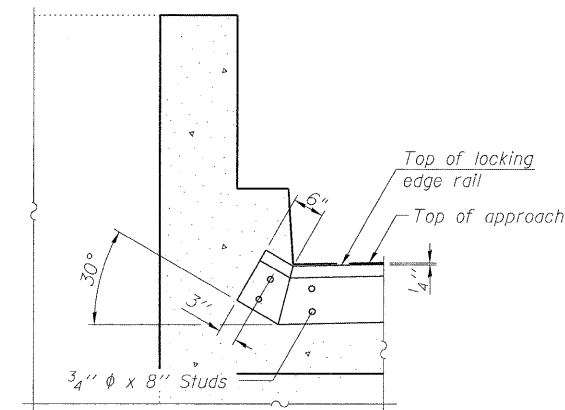
SECTION THRU  
ROLLED RAIL JOINT



SECTION THRU  
WELDED RAIL JOINT

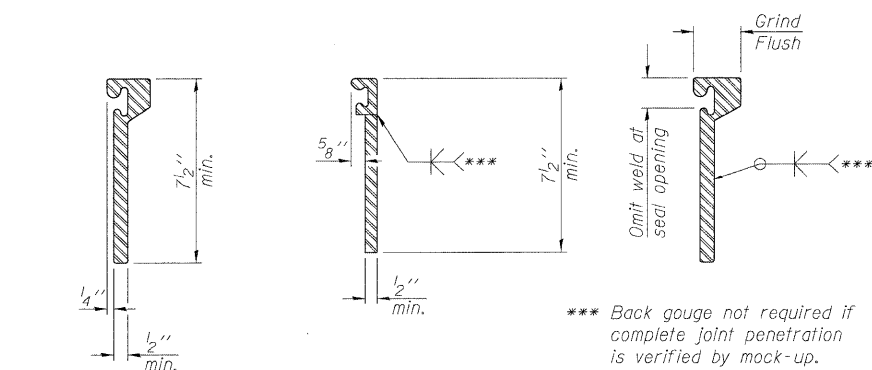


AT PARAPET



AT MEDIAN WALL

TYPICAL END TREATMENTS

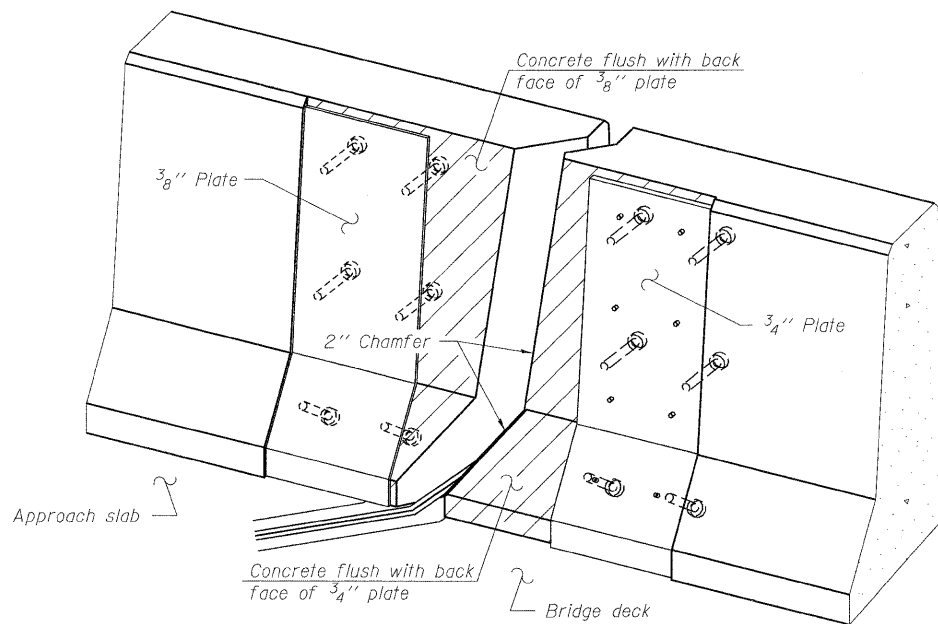


ROLLED  
EXTRUDED RAIL

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.



Notes:

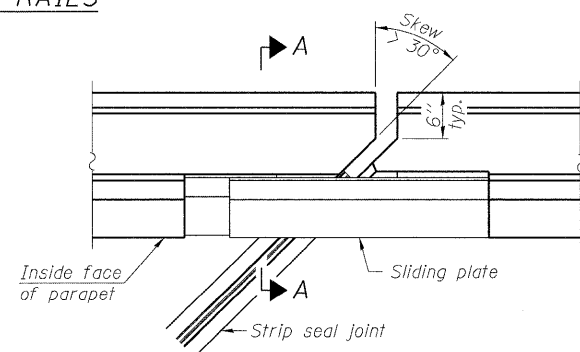
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 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.

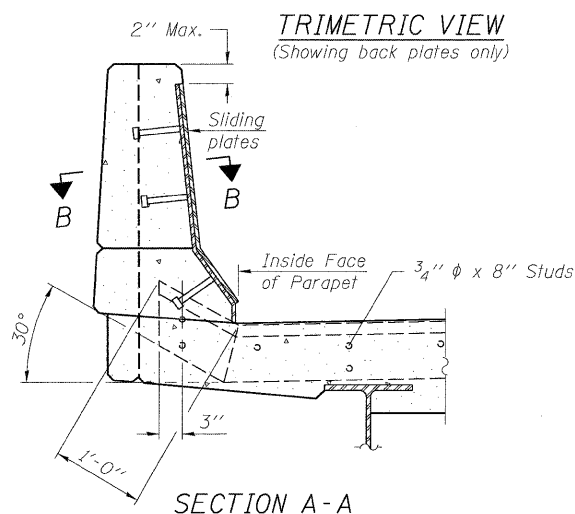
The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according 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.

LOCKING EDGE RAILS

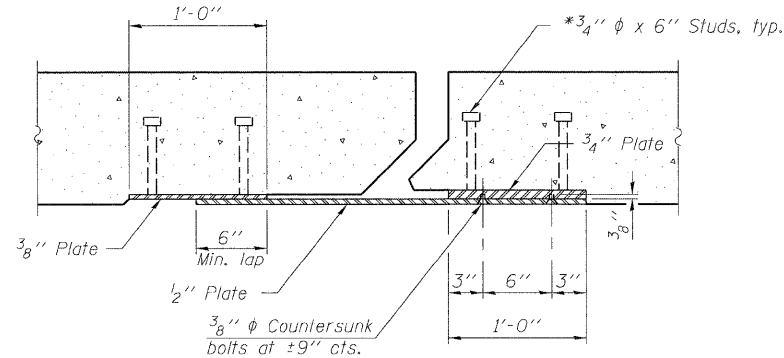


PLAN



SECTION A-A

POINT BLOCK DETAILS  
(for skews > 30°)



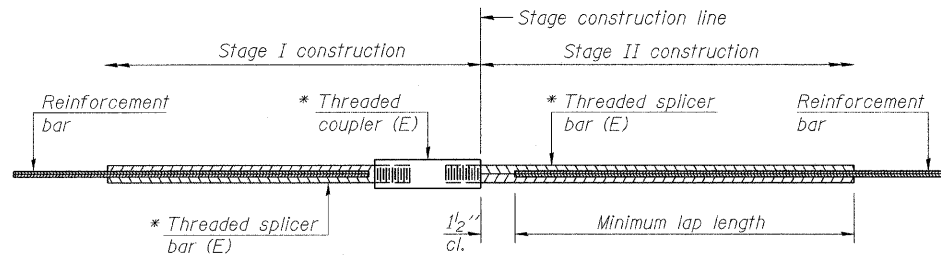
SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	158

PREFORMED JOINT STRIP SEAL  
STRUCTURE NO. 016-0376

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



STANDARD BAR SPLICER ASSEMBLY

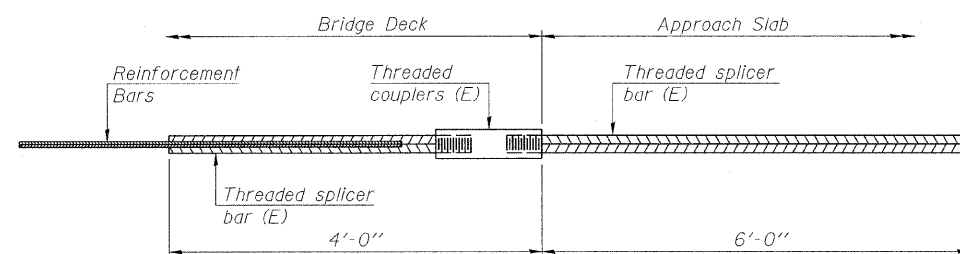
Bar size to be spliced	Minimum Lap Lengths			
	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

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

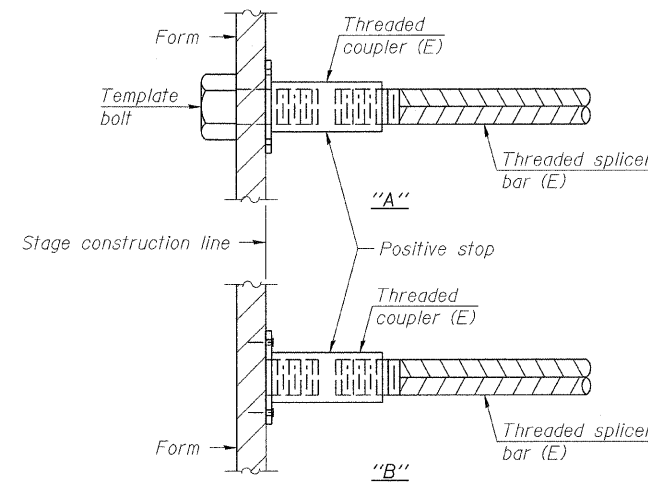
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	16	Table 3
Abutment	#5	8	Table 3



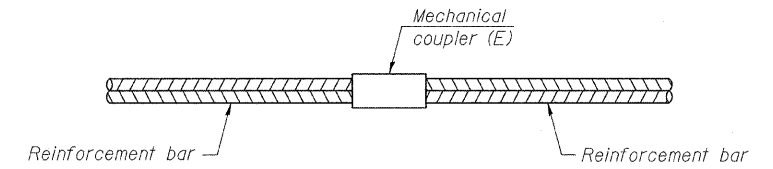
BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



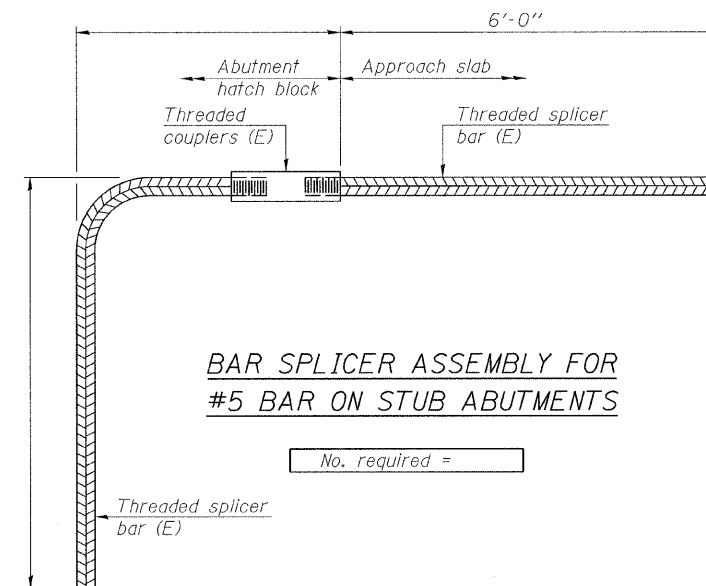
INSTALLATION AND SETTING METHODS

"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 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. 016-0376