

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

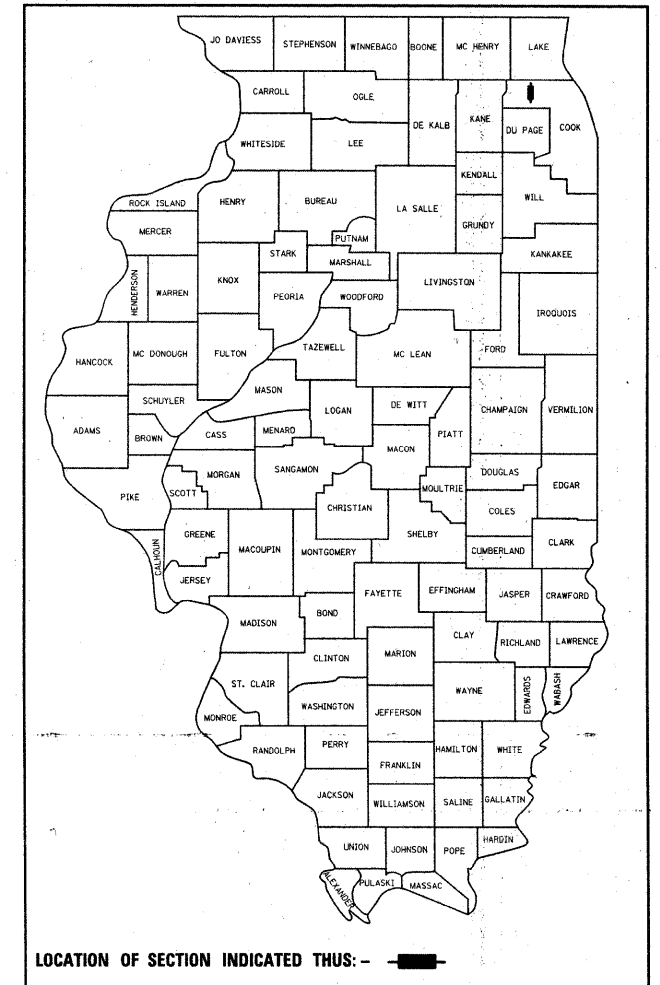
PROJECT: --
COOK COUNTY
C-91-033-10

FOR INDEX OF SHEETS, SEE SHEET NO. 2

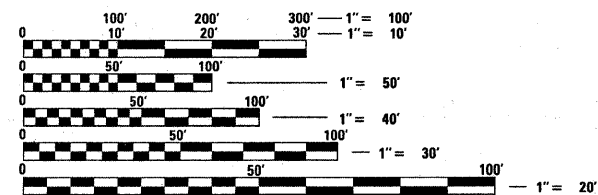
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1, 0305-302)KRS-5	COOK	314	1
FED. ROAD DIST. NO. 1		ILLINOIS	CONTRACT NO. 60138	

★ 314 + 2 = 316

D-91-033-10



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.

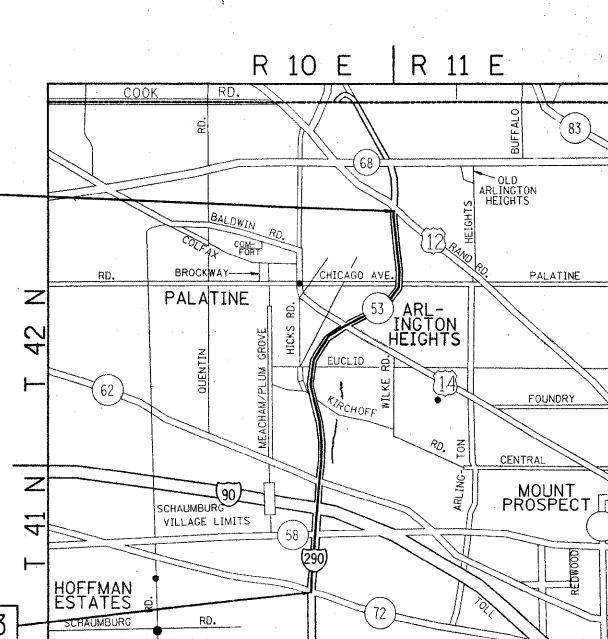
J.U.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

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

Diane 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

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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 = obreuah	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	I-290 / ILL 53 FROM US 12 TO ILL 72 INDEX OF SHEETS STATE STANDARDS AND GENERAL NOTES	F.A.T. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ct:\pwork\PWIDOT\ABREUAH\0166688\010310\shp-plan.dgn	10-11-2018	DRAWN -	REVISED -			290	(531-3.1, 0305-302 K) RS-5	COOK	314	2	
PLOT SCALE = 50,0000 ' / IN.		CHECKED -	REVISED -			SCALE: 1" = 50'		SHEET NO. OF SHEETS STA. TO STA.		CONTRACT NO. 60138	
PLOT DATE = 2/11/2018		DATE -	REVISED -			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure: S.N. 016-1119 built in 1964 as F.A. 61, Section 531-2-VHB at Station 270+71.17. In 1991, the deck was repaired, neoprene expansion joints were provided and an overlay was replaced. In 2000, the rocker bearings were replaced with elastomeric bearings. Existing structure is a seven span continuous steel superstructure with a 7" reinforced concrete deck and 2" overlay, supported on two-column piers and stub abutments, measuring 519'-2" back to back abutments, varies 65'-4³/₄" to 72'-5¹/₄" out to out deck, with a 29°24'20" right ahead skew. Traffic is to be maintained utilizing stage construction.

SCOPE OF WORK

1. Remove and replace concrete deck adjacent to expansion joints at abutments and pier 3.
2. Provide preformed joint strip seal expansion joints at abutments and pier 3.
3. Apply Concrete Sealer to top of concrete deck and top and inside vertical face of parapets.
4. Repair deck slab.
5. Clean and Reseal Relief Joints.
6. Repair deteriorated concrete on parapets, abutments and piers.

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.

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.

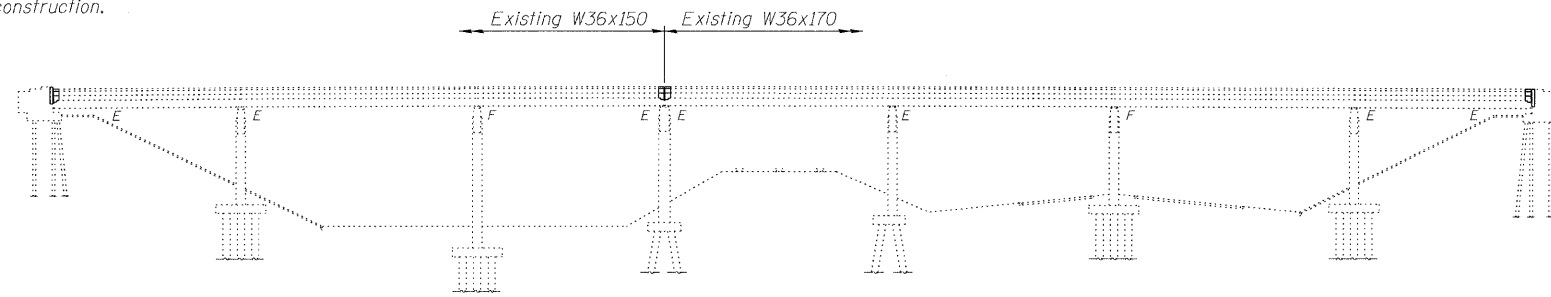
Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods 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.

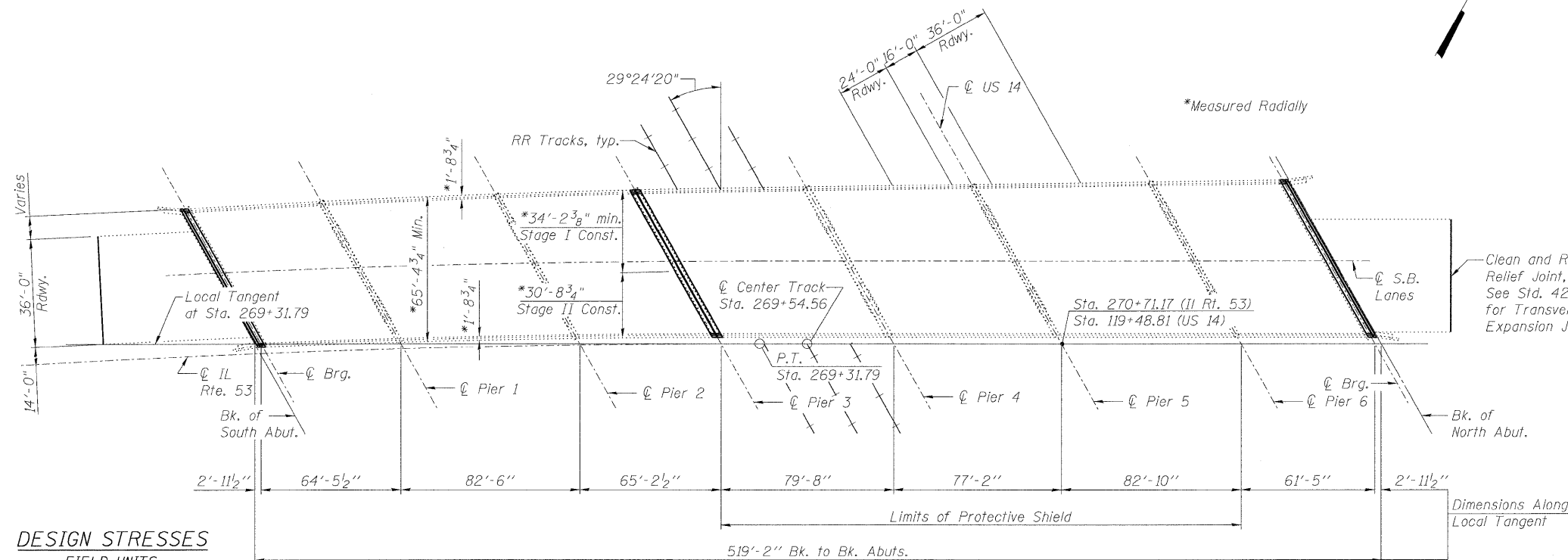
The existing structural steel coating contains lead. The contractor shall take appropriate precautions to deal with the presence of lead on this project.

Joint opening 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.

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



ELEVATION



PLAN

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)

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	34.7	-	34.7
Protective Shield	Sq. Yd.	1669	-	1669
Concrete Superstructure	Cu. Yd.	34.7	-	34.7
Reinforcement Bars, Epoxy Coated	Pound	4110	-	4110
Bar Splicers	Each	40	-	40
Preformed Joint Strip Seal	Foot	228	-	228
Concrete Sealer	Sq. Ft.	37764	-	37764
Structural Repair of Concrete (Depth Greater Than 5 in.)	Sq. Ft.	-	21	21
Structural Repair of Concrete (Depth Equal To or Less Than 5 in.)	Sq. Ft.	284	150	434
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	52.9	-	52.9
Deck Slab Repair (Partial)	Sq. Yd.	106.6	-	106.6
Clean and Reseal Relief Joint	Foot	100	-	100

DESIGN SPECIFICATIONS

(New Construction)
2002 AASHTO "Standard Specifications for Highway Bridges", 17th Edition

LOADING HS 20-44

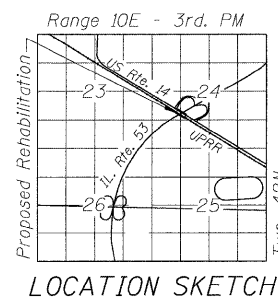
(Original Construction)

INDEX OF SHEETS

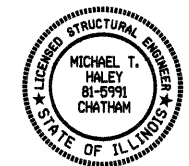
1. General Plan and Elevation
2. Stage Construction Details
3. Temporary Concrete Barrier for Stage Construction
4. Deck Slab Repair
5. Parapet Repair
6. Concrete Removal
7. Abutment Concrete Details
8. Pier 3 Concrete Details
9. Abutment Repair
10. Pier Repair
11. Preformed Joint Strip Seal
12. Bar Splicer Assembly and Mechanical Splicer Details

EXIST. CURVE DATA

IL RTE 53
 $\Delta = 77^\circ 11' 38''$
 $D = 0^\circ 57' 17.8''$
 $T = 4789.21'$
 $L = 8083.72'$
 $E = 1677.02'$
 $R = 6000'$
 $S.E. = 0.02'/'$
 $P.C. = \text{Sta. } 188+48.07$
 $P.T. = \text{Sta. } 269+31.79$
 $P.I. = \text{Sta. } 236+37.28$



LOCATION SKETCH

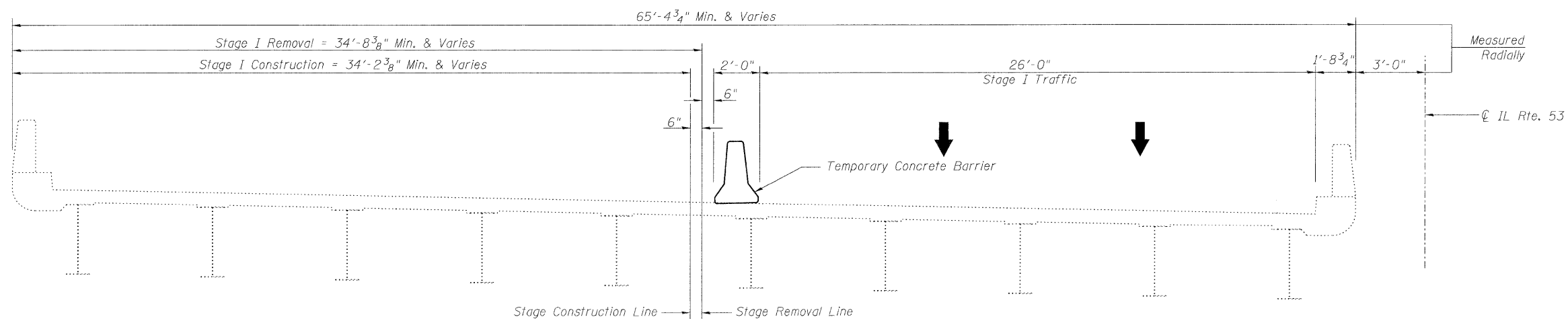


Michael J. Haley 2/8/10
 Michael T. Haley
 Licensed Structural Engineer
 State of Illinois No. 81-5991
 Expires 11/30/2010

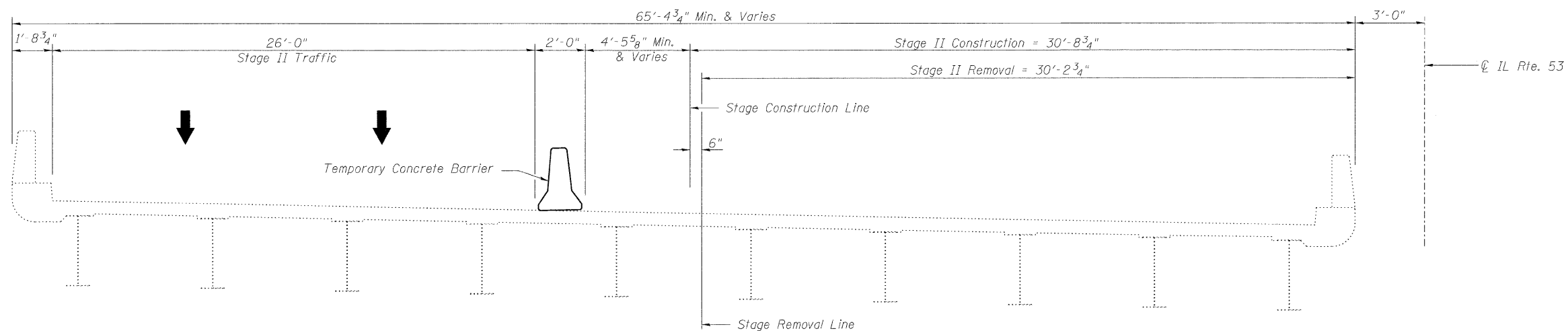
GENERAL PLAN AND ELEVATION
 SB IL RTE 53 OVER US 14 & UP R.R.
 F.A.I. RTE 290
 SECTION (531-3.1,0305-302K)RS-5
 COOK COUNTY
 STATION 270+71.17
 STRUCTURE NO. 016-1119

LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	196
Designed By: MTH Checked By: MTH Date: 12/2/09		Drawn By: MTH File: 016-1119.dgn		CONTRACT NO. 60I38 FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION




STAGE I REMOVAL & CONSTRUCTION
(Looking North)



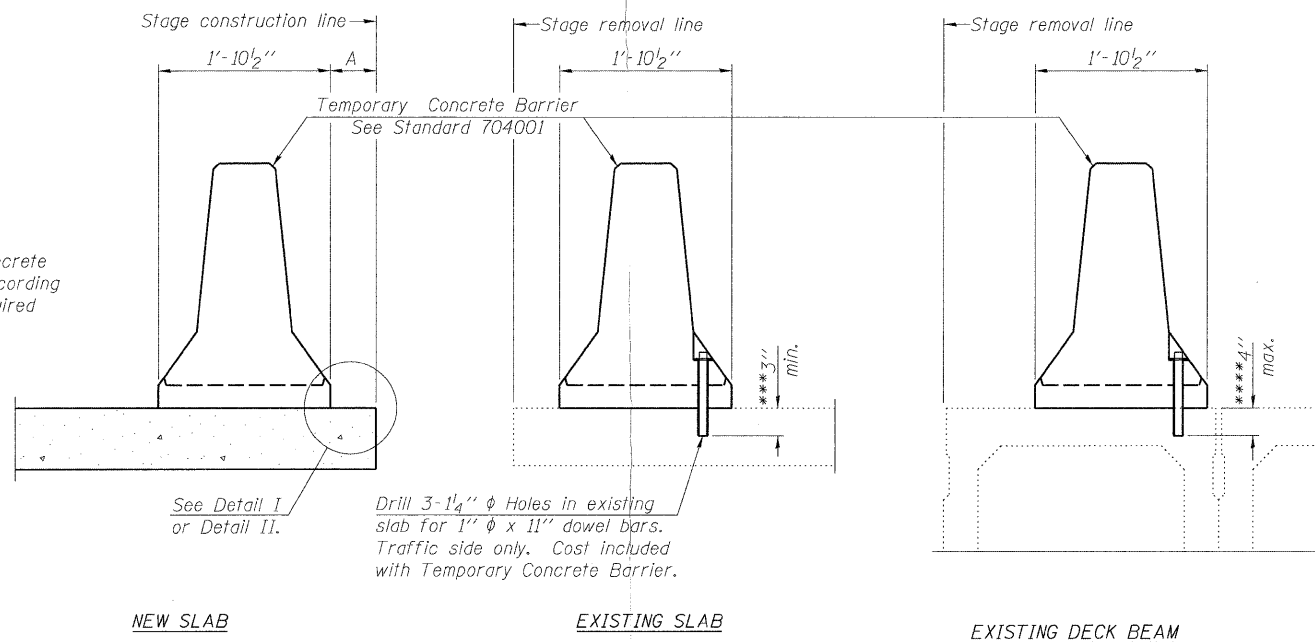
STAGE II REMOVAL & CONSTRUCTION
(Looking North)

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-1119

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 2 12 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		290	(531-3.1,0305-302K)RS-5	COOK	314	117
		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

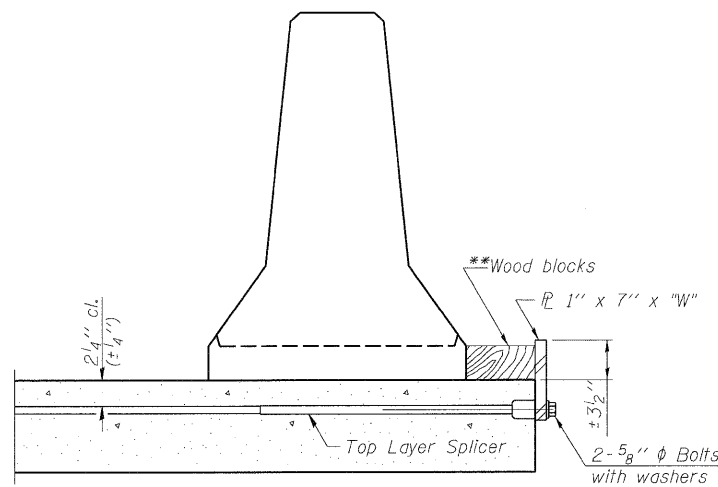
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{L} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

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" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

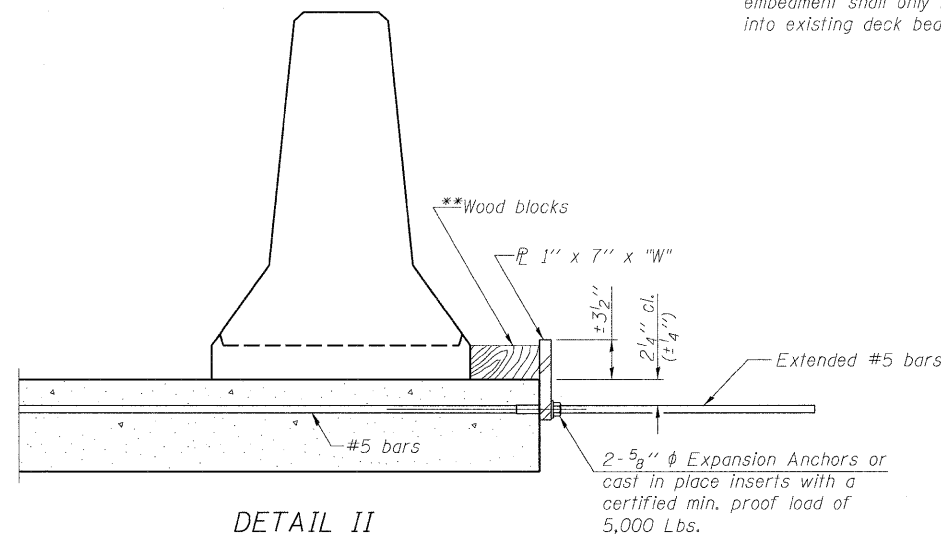
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** 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.



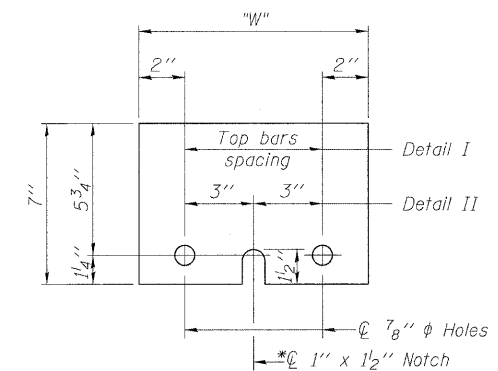
DETAIL I



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"

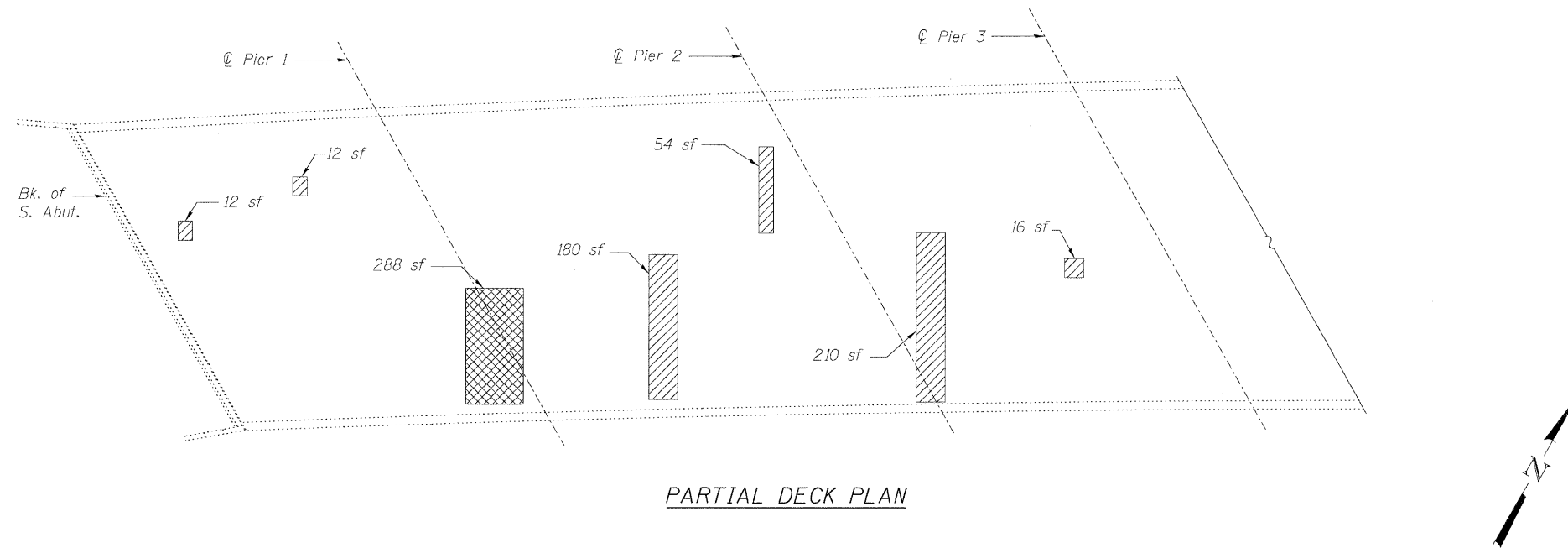


STEEL RETAINER \bar{L} 1" x 7" x 10"
* Required only with Detail II

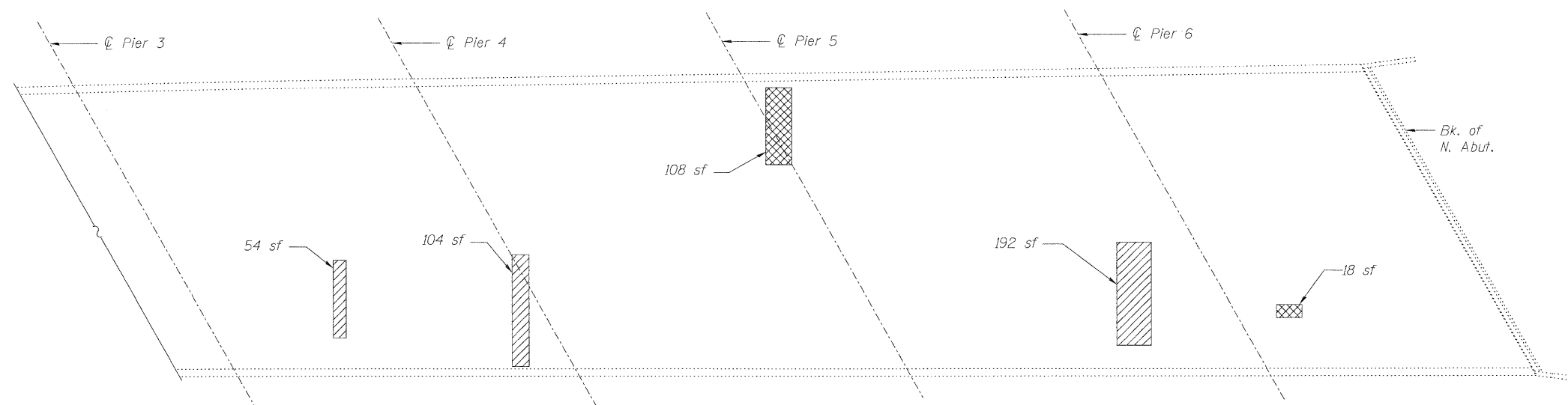
TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-1119

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302)RS-5	COOK	314	198
<p>Designed By: RH Date: 12/2009 Checked By: MTH File: 016-1119.dgn Drawn By: RH</p>		<p>FED. ROAD DIST. NO. ILLINOIS</p>		<p>CONTRACT NO. 60138</p>		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PARTIAL DECK PLAN



PARTIAL DECK PLAN

BILL OF MATERIAL

Item	Unit	Total
Deck Slab Repair (Partial)	Sq. Yd.	106.6
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	52.9
Protective Shield	Sq. Yd.	1669

Repair of the existing deck slab 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

 Deck Slab Repair (Full Depth, Type II)

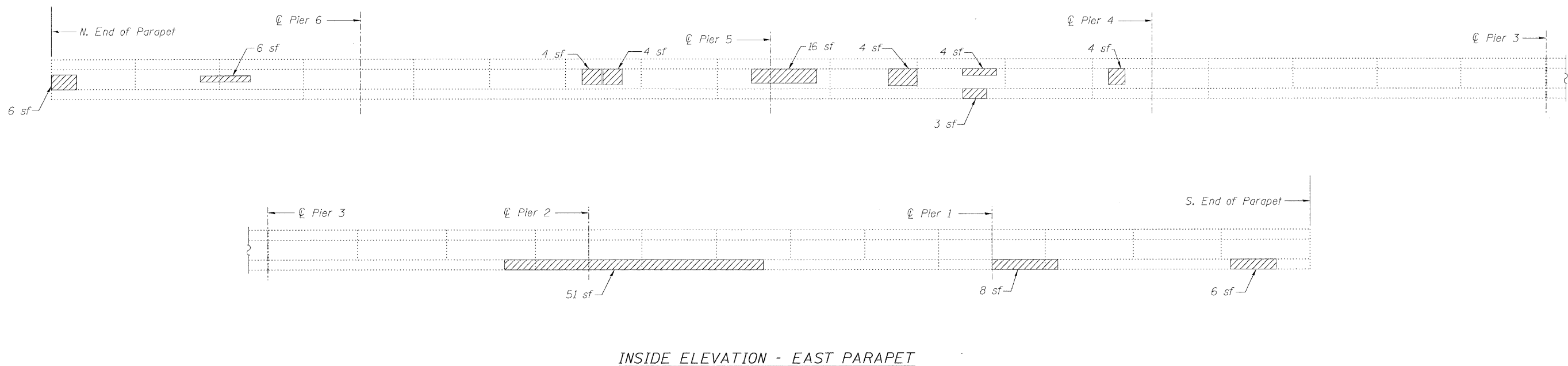
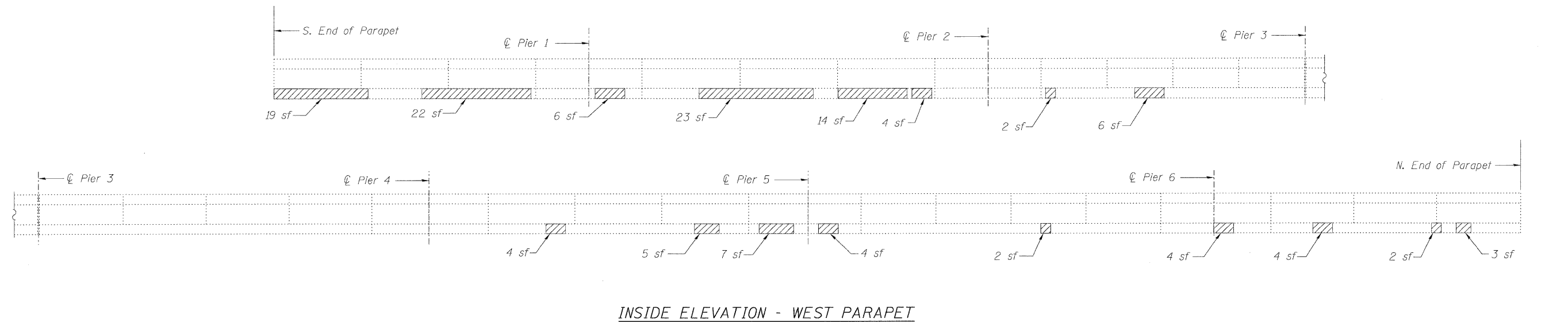
 Deck Slab Repair (Partial)

sf Square Feet

DECK SLAB REPAIR
STRUCTURE NO. 016-1119

 LIN ENGINEERING, LTD. Consulting Engineers Channah, Illinois	SHEET NO. 4 12 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		290	(531-3.1,0305-302K)RS-5	COOK	314	199
		CONTRACT NO. 60138				
		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	284

Repair of the existing 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

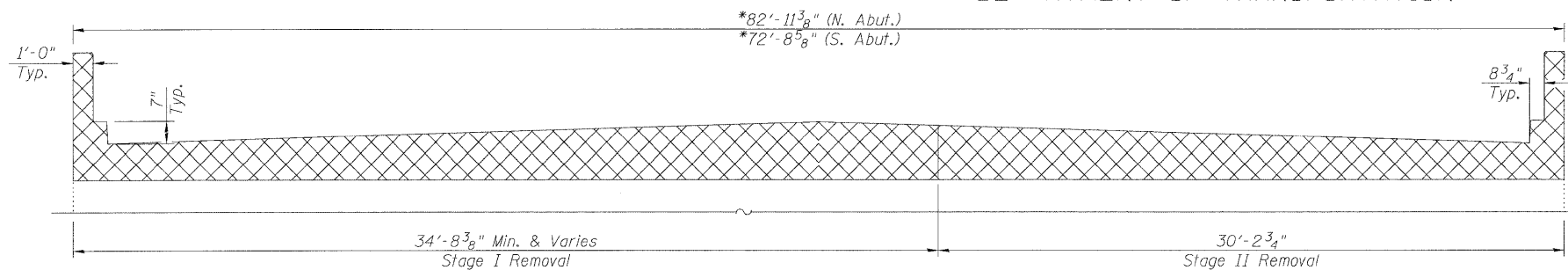
Structural Repair of Concrete
(Depth equal to or less than 5")

sf Square Feet

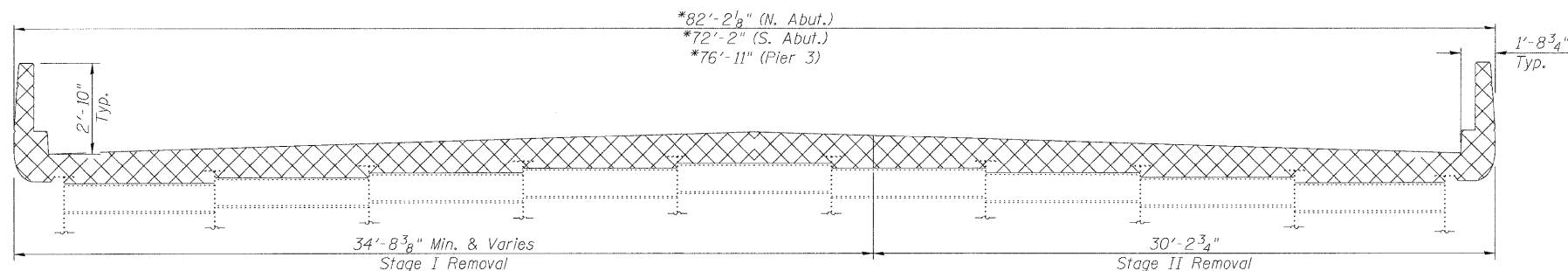
PARAPET REPAIR
STRUCTURE NO. 016-1119

LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 5	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	200
Designed By: RH Date: 12/29/09		Checked By: MTH File: 016-1119.dgn		FED. ROAD DIST. NO. _ ILLINOIS		CONTRACT NO. 60138
FED. AID PROJECT						

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

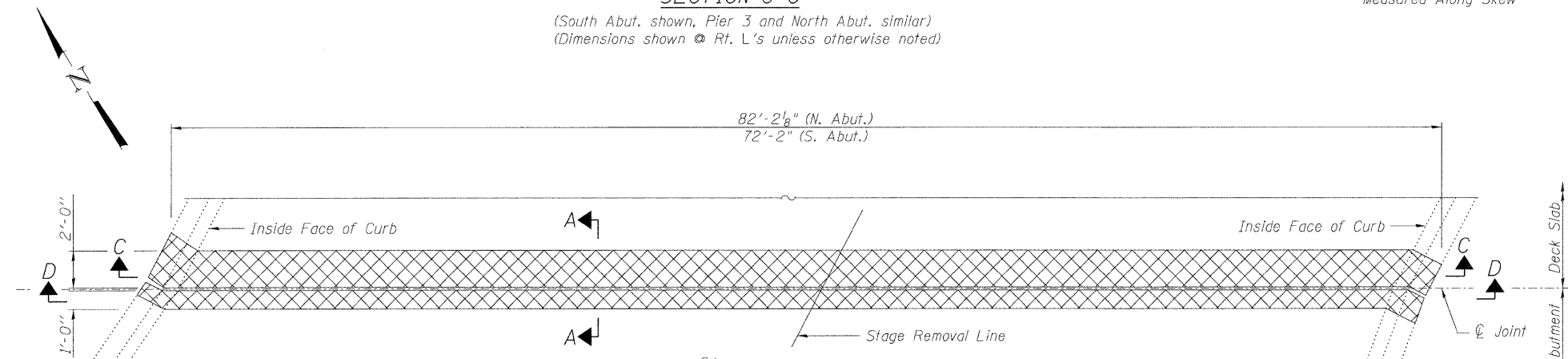


SECTION D-D
(South Abut. shown, North Abut. similar)
(Dimensions shown @ Rt. L's unless otherwise noted)

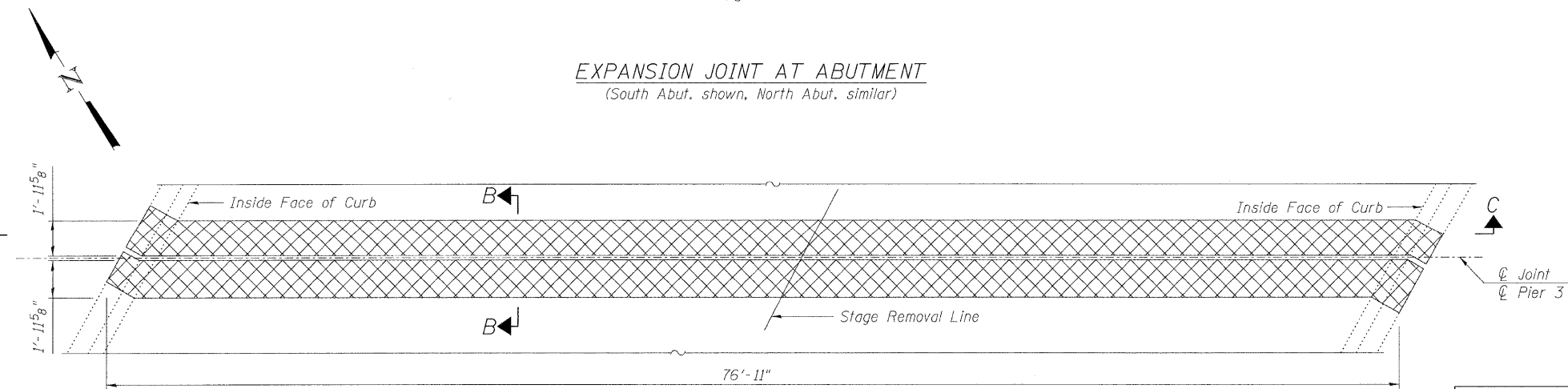


SECTION C-C
(South Abut. shown, Pier 3 and North Abut. similar)
(Dimensions shown @ Rt. L's unless otherwise noted)

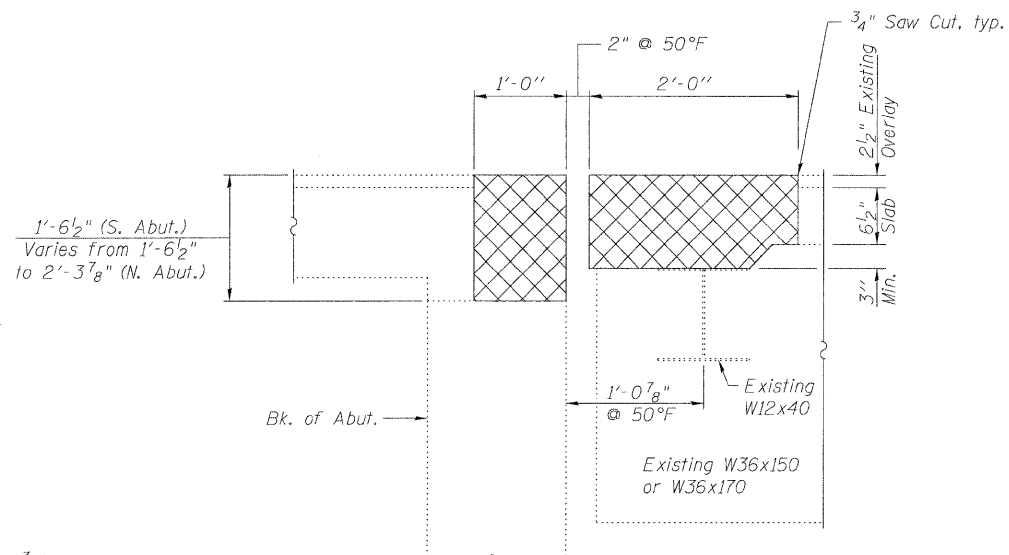
*Measured Along Skew



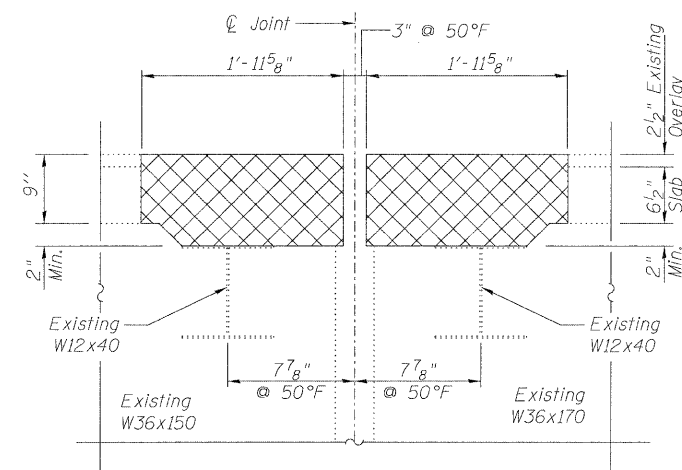
EXPANSION JOINT AT ABUTMENT
(South Abut. shown, North Abut. similar)



EXPANSION JOINT AT PIER 3



SECTION A-A
(Dimensions @ Rt. L's)



SECTION B-B
(Dimensions @ 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.

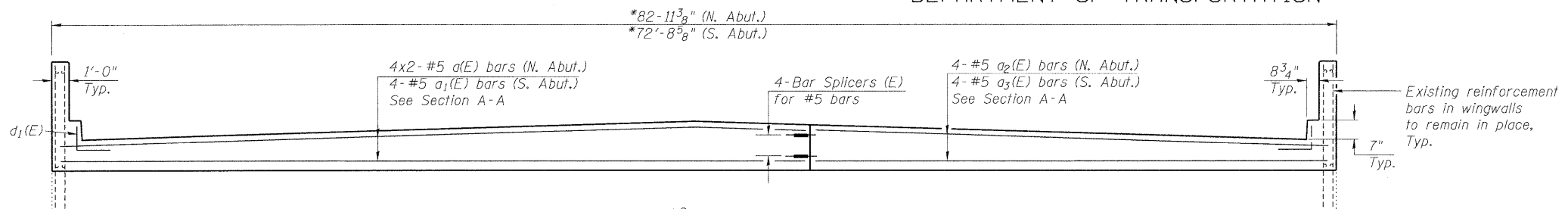
BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	34.7

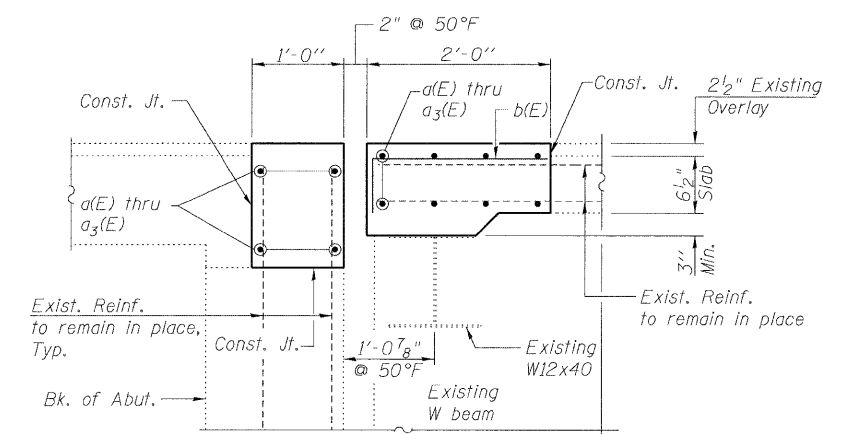
**CONCRETE REMOVAL
STRUCTURE NO. 016-1119**

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 6	F.A.I. RTE. 290	SECTION (531-3.1,0305-302)RS-5	COUNTY COOK	TOTAL SHEETS 314	SHEET NO. 201
	12 SHEETS	FED. ROAD DIST. NO. _ ILLINOIS		CONTRACT NO. 60138		
<small>Designed By: Rrt Checked By: MTH Drawn By: Rrt Date: 12/2009 File: 016-1119.dgn</small>		FED. AID PROJECT				

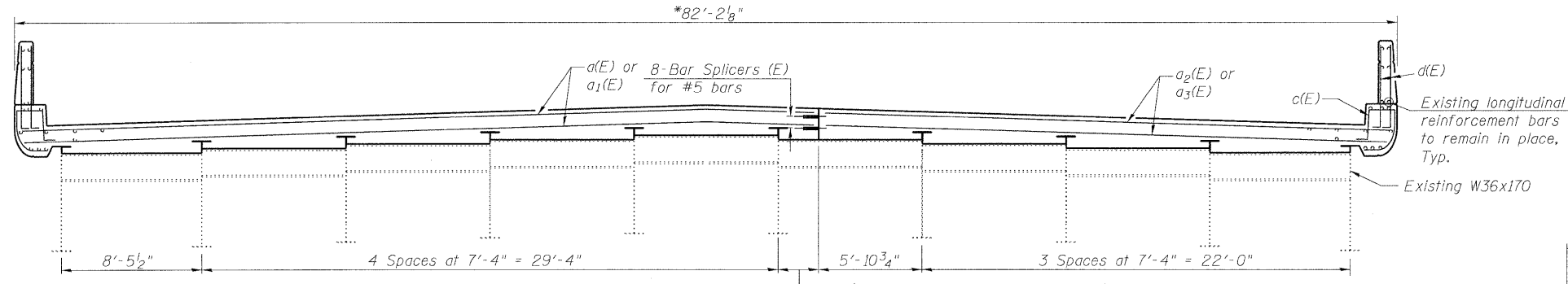
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



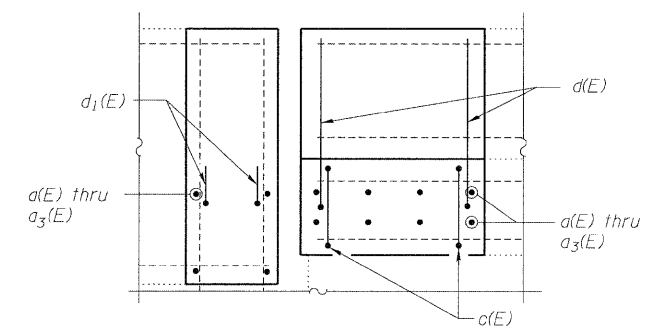
SECTION C-C
(Dimensions @ Rt. L's unless otherwise noted)
(South Abut. shown, North Abut. similar)



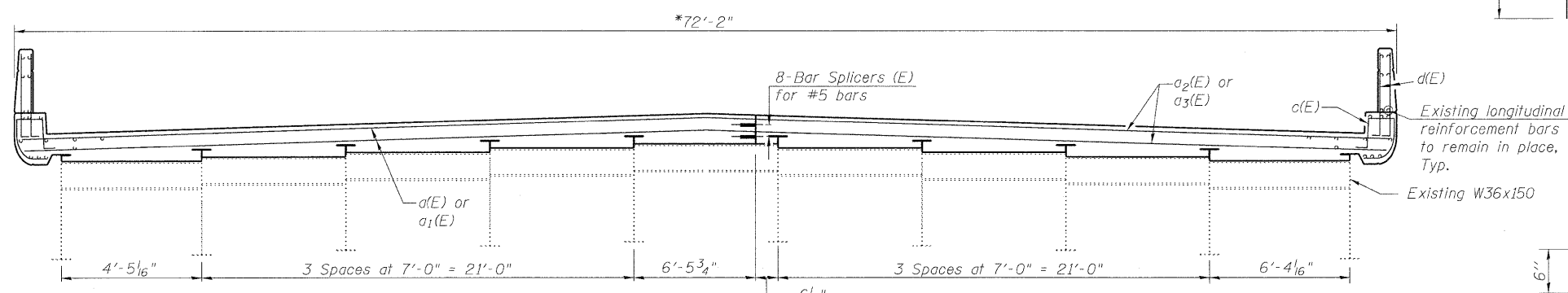
SECTION A-A
(Dimension @ Rt. L's)



SECTION B-B (N. ABUT.)
(Dimensions @ Rt. L's unless otherwise noted)

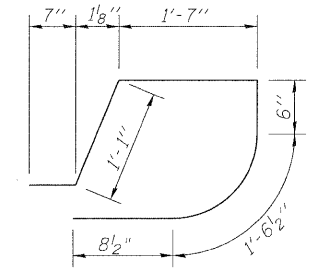


SECTION D-D

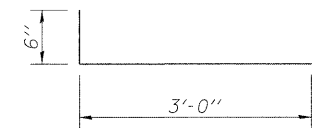


SECTION B-B (S. ABUT.)
(Dimensions @ Rt. L's unless otherwise noted)

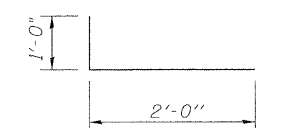
BAR b(E)



BAR c(E)



BAR d(E)

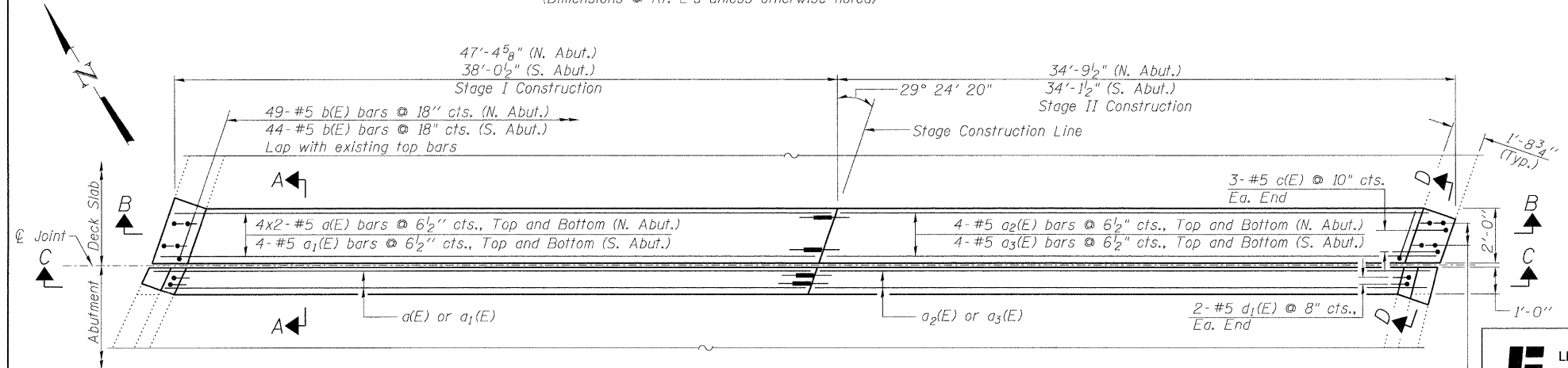


BAR d1(E)

BILL OF MATERIAL
(Both Abutments)

Bar	No.	Size	Length	Shape
a(E)	24	#5	25'-1"	—
a1(E)	12	#5	38'-1"	—
a2(E)	12	#5	35'-1"	—
a3(E)	12	#5	34'-3"	—
b(E)	93	#5	2'-6"	┌
c(E)	12	#5	6'-0"	└
d(E)	24	#5	3'-6"	┌
d1(E)	8	#5	3'-0"	┌
Reinforcement Bars, Epoxy Coated		Pound	2410	
Concrete Superstructure		Cu. Yd.	22.4	

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



EXPANSION JOINT AT ABUTMENT
(South Abut. Shown, North Abut. Similar)

Lin ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

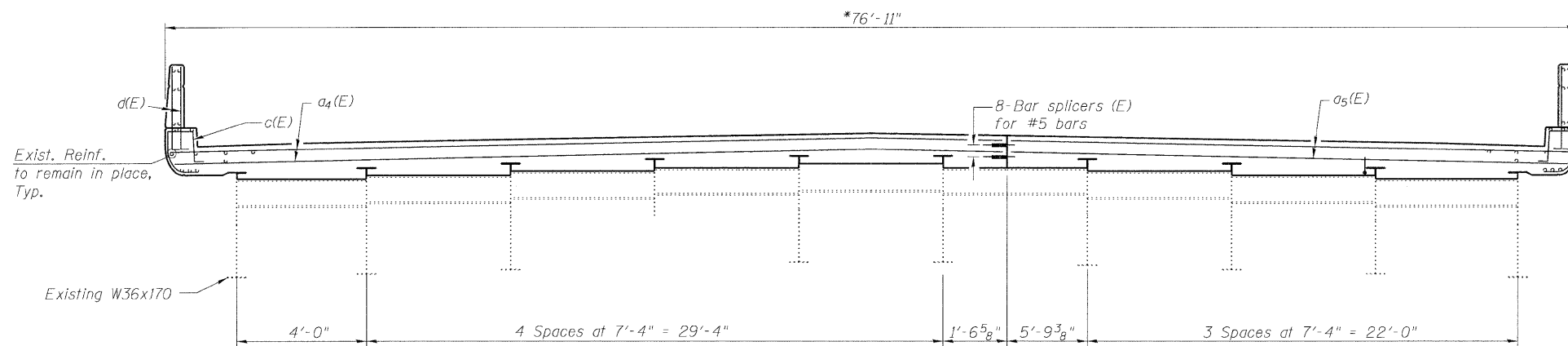
SHEET NO. 7
12 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	(531-3.1,0305-302)RS-5	COOK	314	202
CONTRACT NO. 60138				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

Designed By: RH
Checked By: MTH
Date: 12/2009
File: 016-1119.dwg

Drawn By: RH

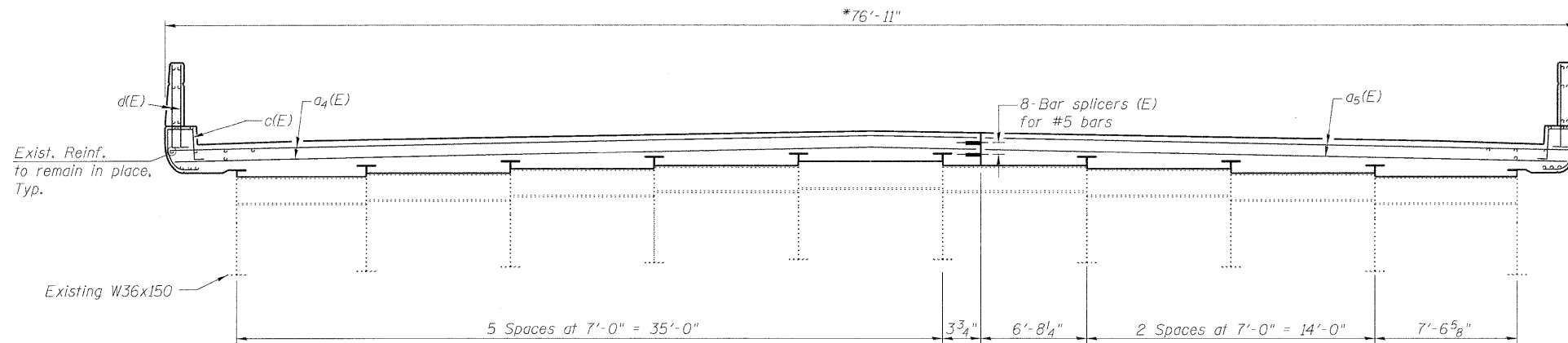
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION B-B

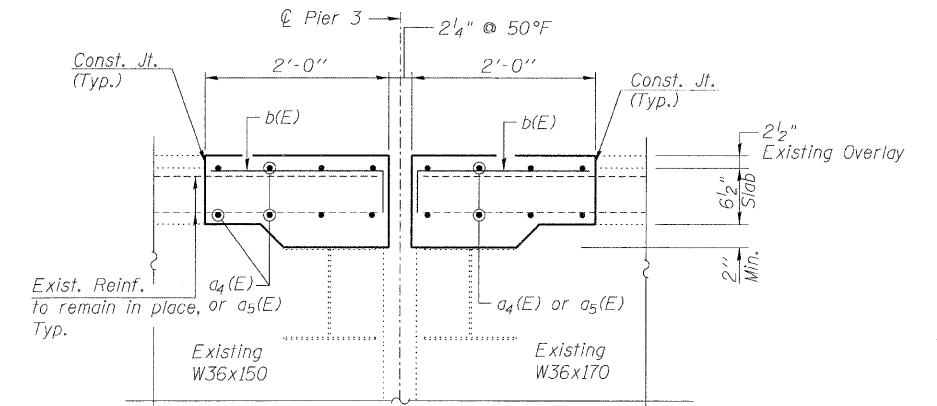
(Dimension @ Rt. L's unless otherwise noted)

* Measured along skew

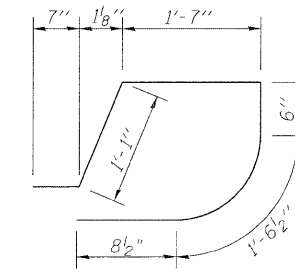


SECTION C-C

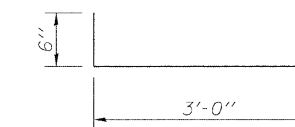
(Dimension @ Rt. L's unless otherwise noted)



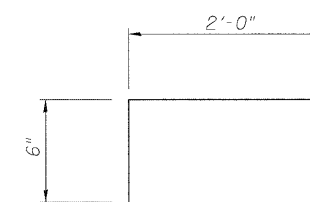
SECTION A-A
(Dimension @ Rt. L's)



BAR c(E)



BAR d(E)

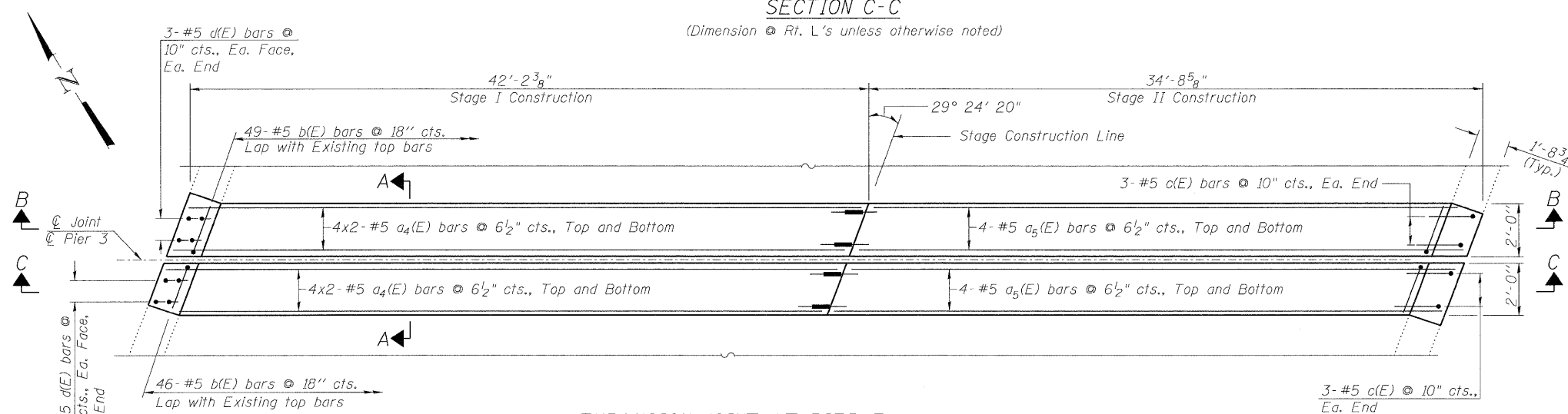


BAR b(E)

BILL OF MATERIAL

(Pier 3)

Bar	No.	Size	Length	Shape
a4(E)	32	#5	22'-5"	—
a5(E)	16	#5	34'-11"	—
b(E)	95	#5	2'-6"	┌
c(E)	12	#5	6'-0"	J
d(E)	24	#5	3'-6"	L
Reinforcement Bars, Epoxy Coated		Pound	1700	
Concrete Superstructure		Cu. Yds.	12.3	



EXPANSION JOINT AT PIER 3

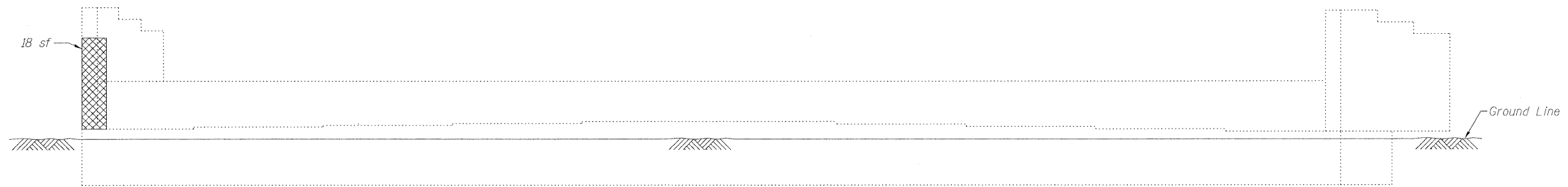
MINIMUM BAR LAP

#5 bar = 2'-7"

PIER 3 CONCRETE DETAILS
STRUCTURE NO. 016-1119

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	203
		FED. ROAD DIST. NO. _		ILLINOIS		FED. AID PROJECT
				CONTRACT NO. 60I38		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NORTH ABUTMENT
(Looking North)

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Greater Than 5 in.)	Sq. Ft.	21


Repair of the existing abutments 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

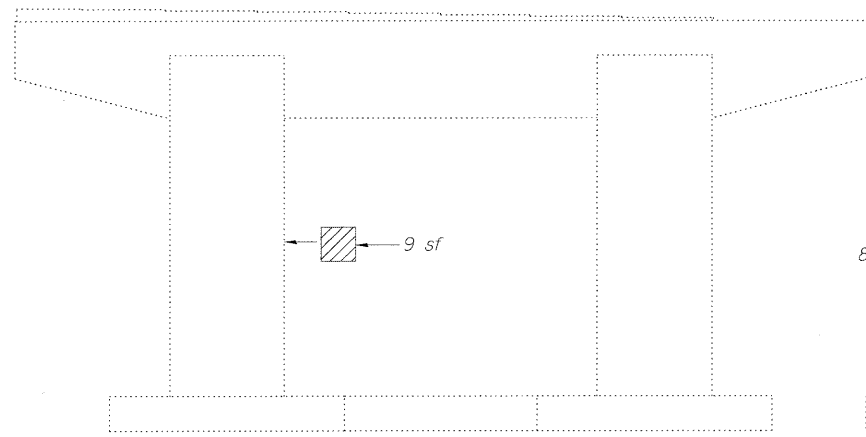
 Structural Repair of Concrete
(Depth greater than 5")

sf. Square Feet

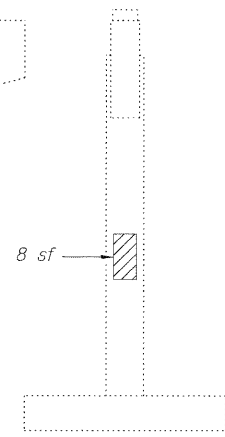
ABUTMENT REPAIR
STRUCTURE NO. 016-1119

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 9	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	34	207	
<small>Designed By: RH Checked By: MTH Drawn By: RH</small> <small>Date: 12/25/09 File: 016-1119.dgn</small>		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT					CONTRACT NO. 60138

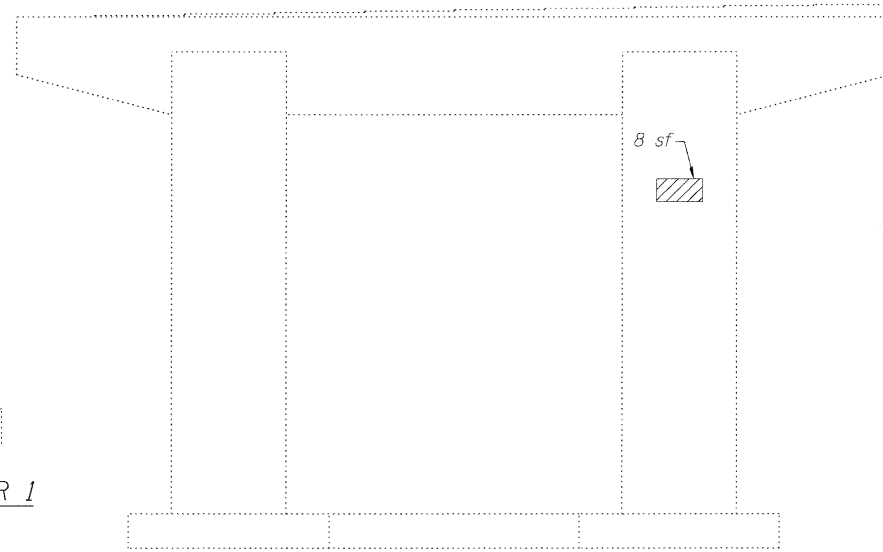
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



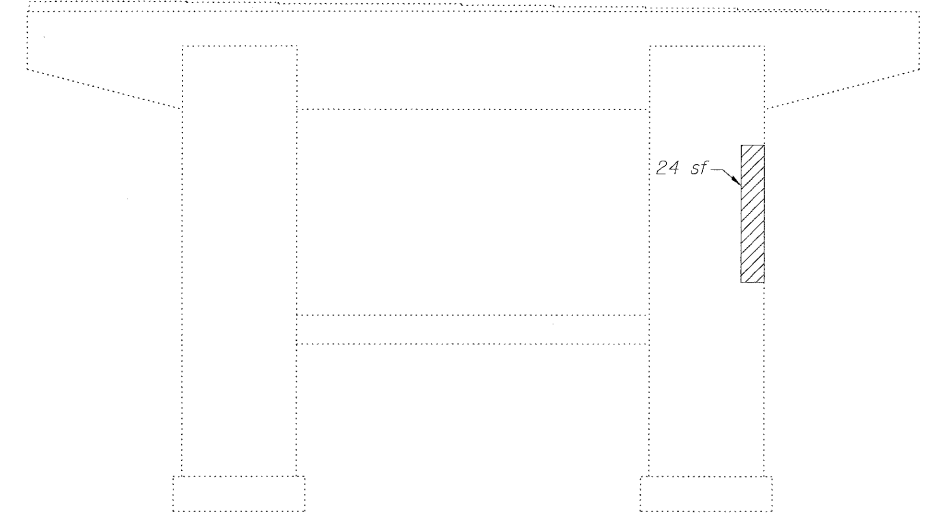
PIER 1
(Looking North)



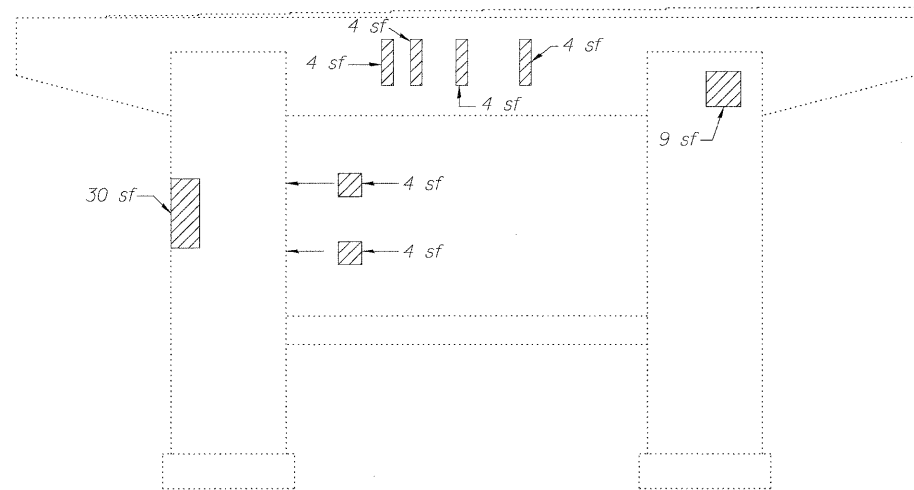
END VIEW - PIER 1
(Looking West)



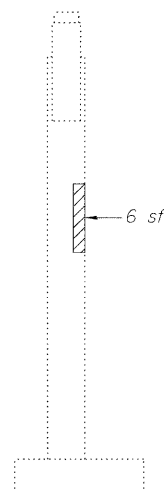
PIER 2
(Looking South)



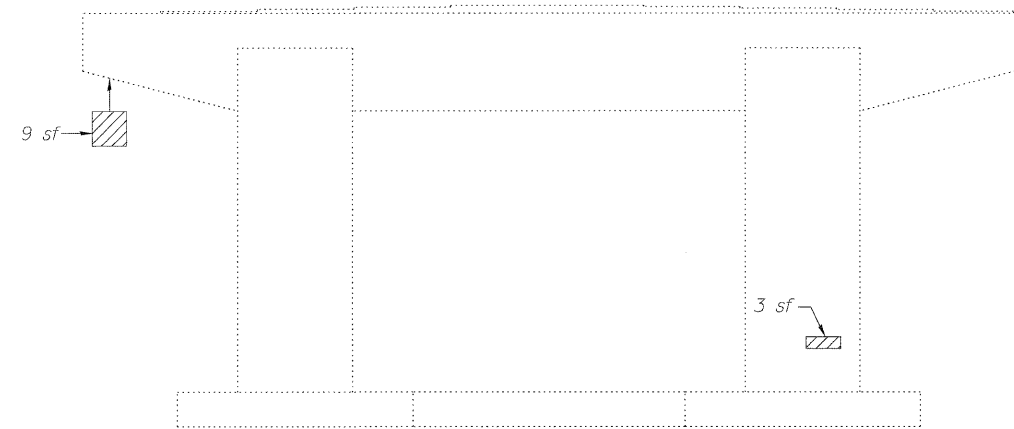
PIER 3
(Looking North)



PIER 4
(Looking South)



END VIEW - PIER 4
(Looking West)



PIER 6
(Looking South)

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	150

LEGEND

Structural Repair of Concrete
(Depth equal to or less than 5")

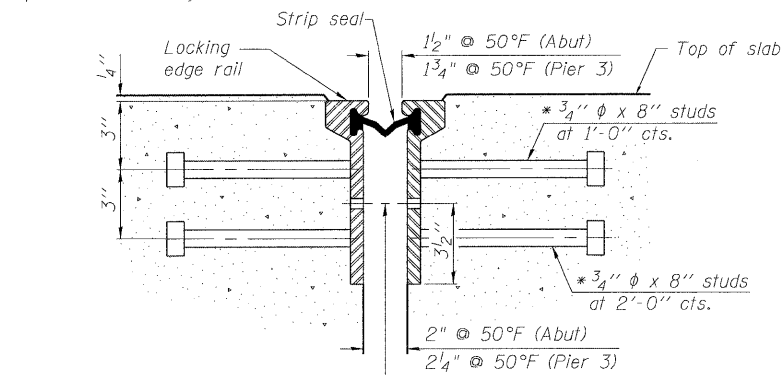
sf Square Feet

PIER REPAIR
STRUCTURE NO. 016-1119

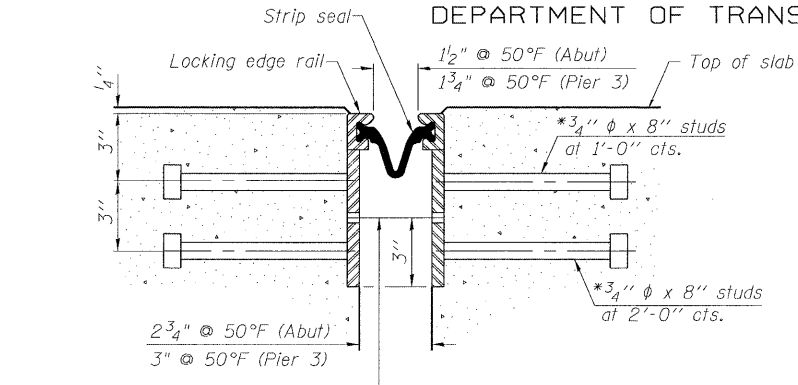
E LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	SHEET NO. 10 12 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		290	(531-3.1,0305-302K)RS-5	COOK	314	205
Designed By: RH Date: 12/2009		Checked By: MTH File: 016-1119.dwg		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT		
					CONTRACT NO. 60138	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

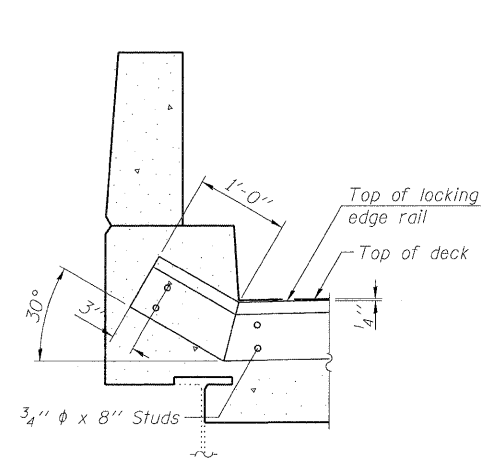
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



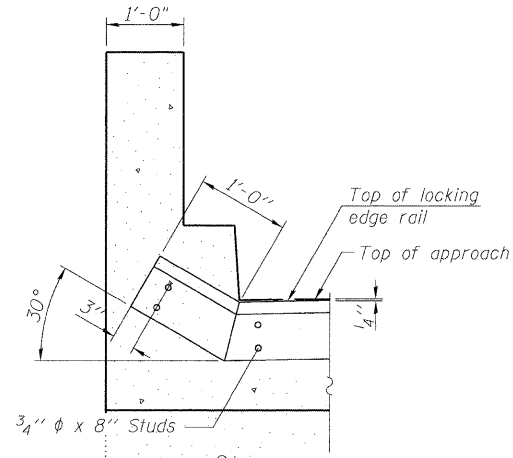
SECTION THRU
ROLLED RAIL JOINT



SECTION THRU
WELDED RAIL JOINT



AT PARAPET

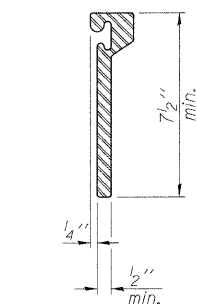


AT WING WALL

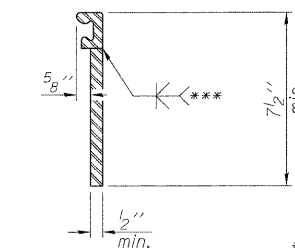
7/16 inch diameter holes at 4 foot 0 inch centers for 3/8 inch diameter bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

7/16 inch diameter holes at 4 foot 0 inch centers for 3/8 inch diameter bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

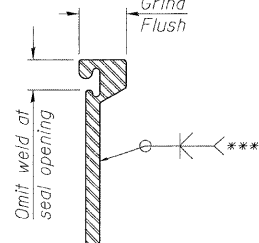
TYPICAL END TREATMENTS



ROLLED
EXTRUDED RAIL



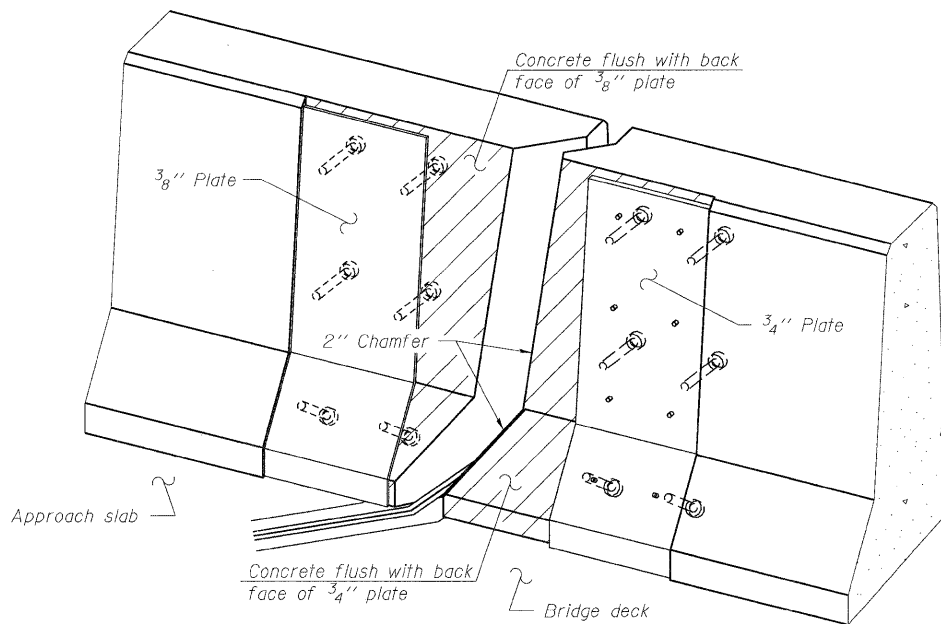
WELDED RAIL



*** Back gauge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE
RAIL SPLICE

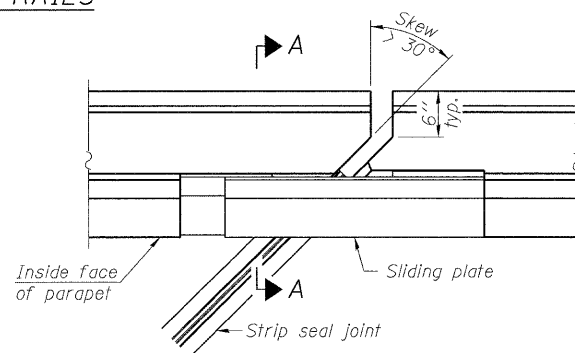
The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.



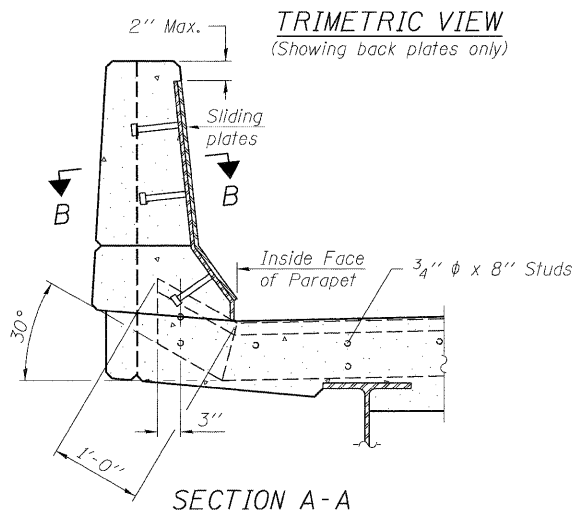
TRIMETRIC VIEW
(Showing back plates only)

Notes:
The strip seal shall be made continuous and shall have a minimum thickness of 1/4 inch. 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 inch, sealed with a suitable sealant.

LOCKING EDGE RAILS

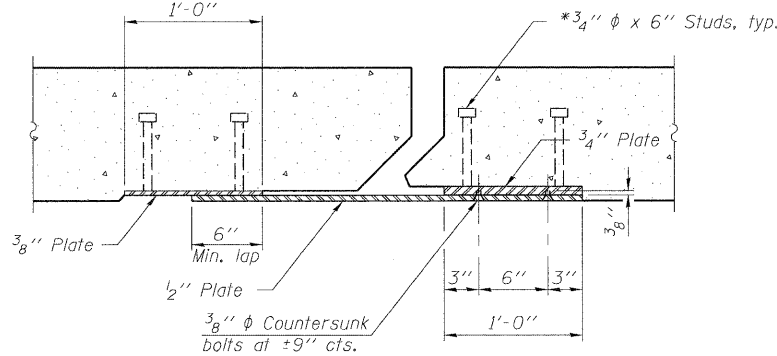


PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30 degrees)



SECTION B-B

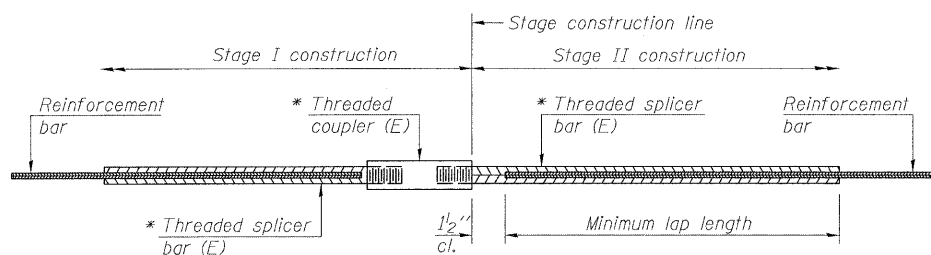
BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	228

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-1119

 LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois <small>Designed By: RH Date: 12/25/08</small>	SHEET NO. 11	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	204
			CONTRACT NO. 60138			
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT						

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STANDARD BAR SPLICER ASSEMBLY

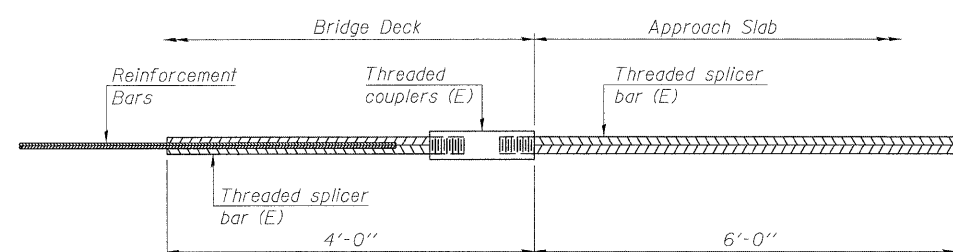
Bar size to be spliced	Minimum Lap Lengths			
	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

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

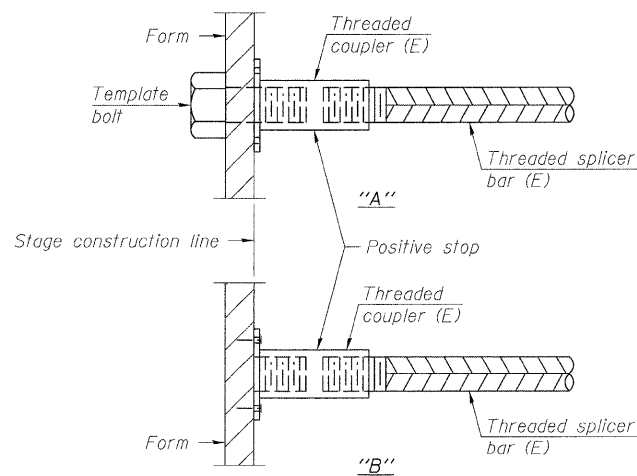
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	32	Table 3
Abutment	#5	8	Table 3



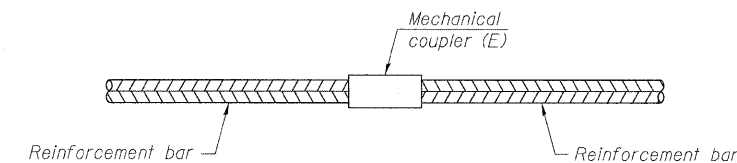
BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



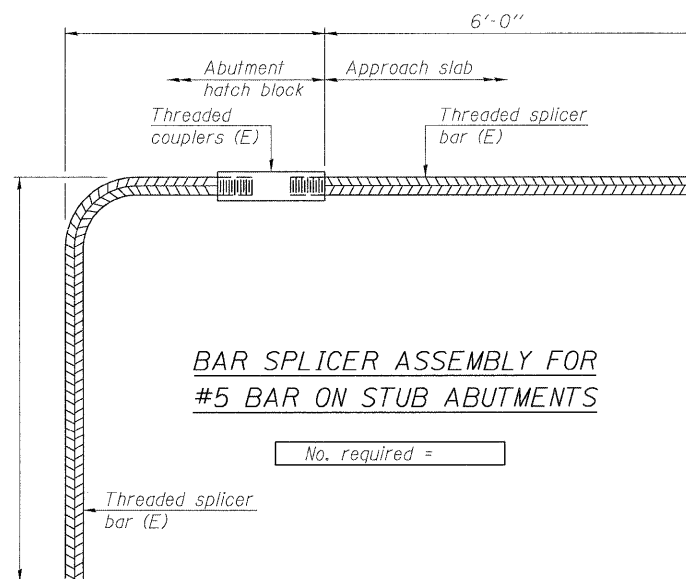
INSTALLATION AND SETTING METHODS

"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. 016-1119

<p>LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois</p>	SHEET NO. 12	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12 SHEETS	290	(531-3.1,0305-302K)RS-5	COOK	314	207
DESIGNED BY: RH		CHECKED BY: MTH		DRAWN BY: RH		CONTRACT NO. 60138
DATE: 12/20/09		FILE: 05-1124.dgn		FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT		