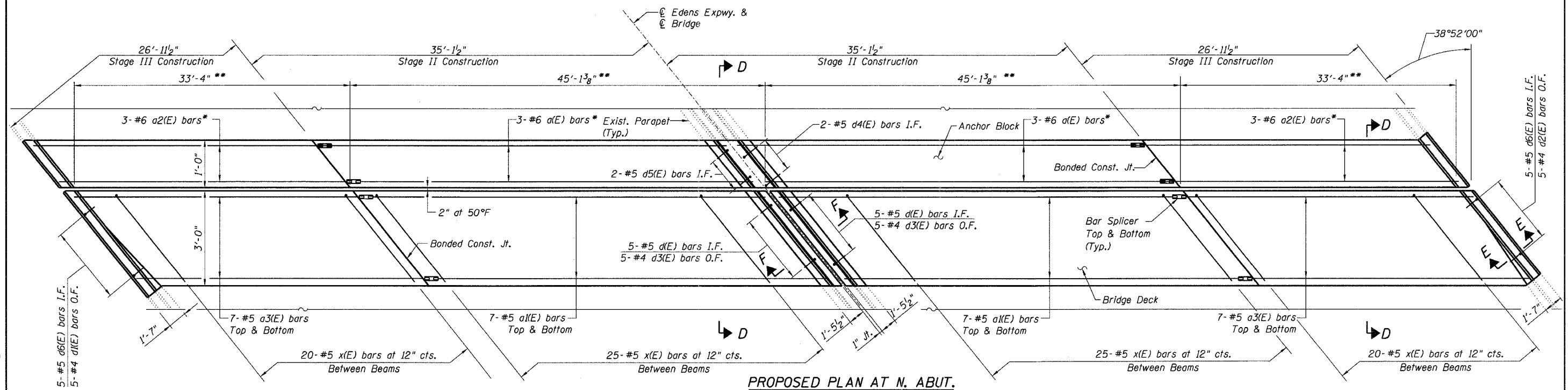
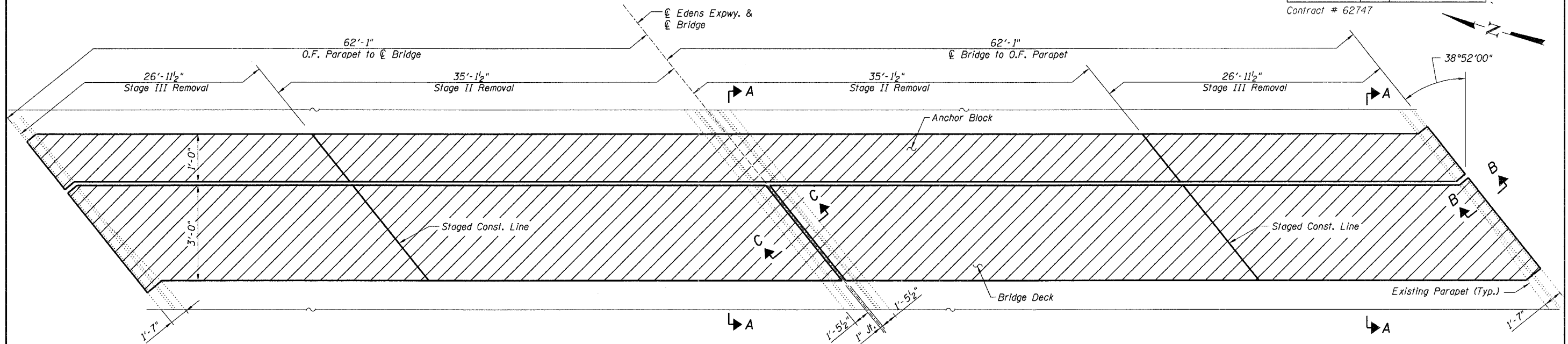


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET
F.A.I. 94	2006-043 RS	COOK	135	101
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

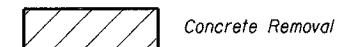


* Located as shown in Sections on Sheet No. 102.
** Measured along face of backwall.

NOTES

- All Reinforcement Bars are to be spaced evenly unless otherwise noted.
- Work this sheet with Sheet No. 102.
- Reinforcement bars designated (E) shall be epoxy coated.
- O.F. denotes Outside Face; I.F. denotes Inside Face.
- Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet No. 104b.
- South Abutment joint will require a modular joint; see Sheet Nos. 103 and 104.
- For Bill of Material and bar details see Sheet No. 104a.
- Stage I does not include any bridge work.
- See Sheet No. 104a for additional abutment backwall demolition and reconstruction.

LEGEND



DESIGNED	GWS
CHECKED	AMK
DRAWN	EF
CHECKED	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

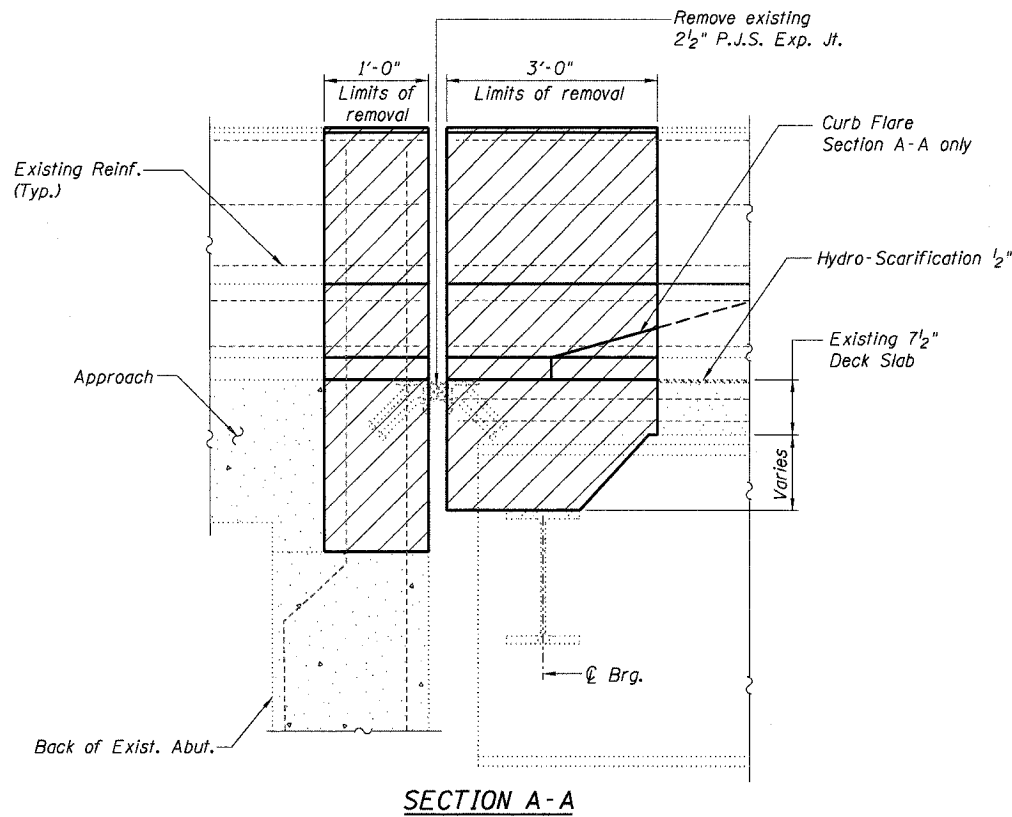
NORTH EXPANSION JOINT REMOVAL & REPLACEMENT PLAN
F.A.I. 94 / (EDENS EXPRESSWAY)
OVER U.P.R.R.
COOK COUNTY
STATION 277+05.05
STRUCTURE NO. 016-0103 & 016-0104

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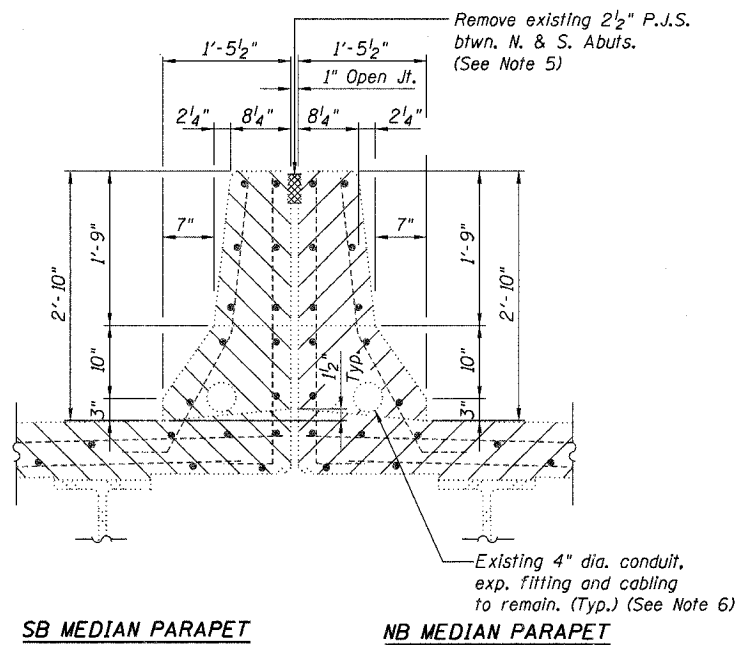
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	102
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747



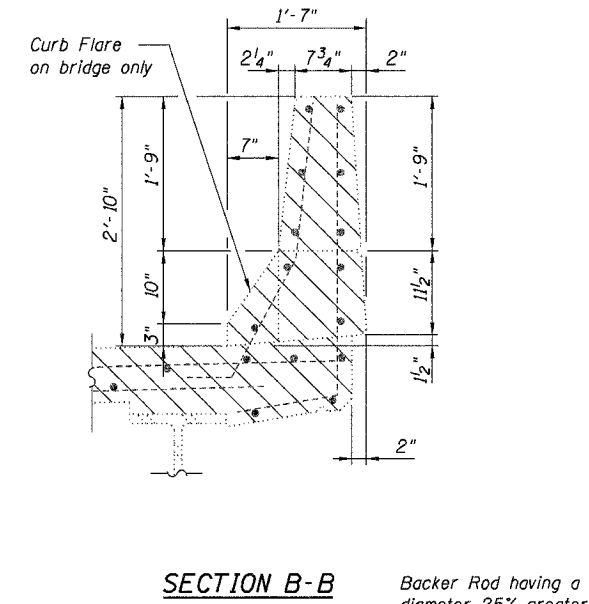
SECTION A-A



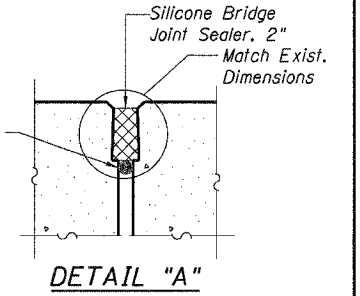
SB MEDIAN PARAPET

NB MEDIAN PARAPET

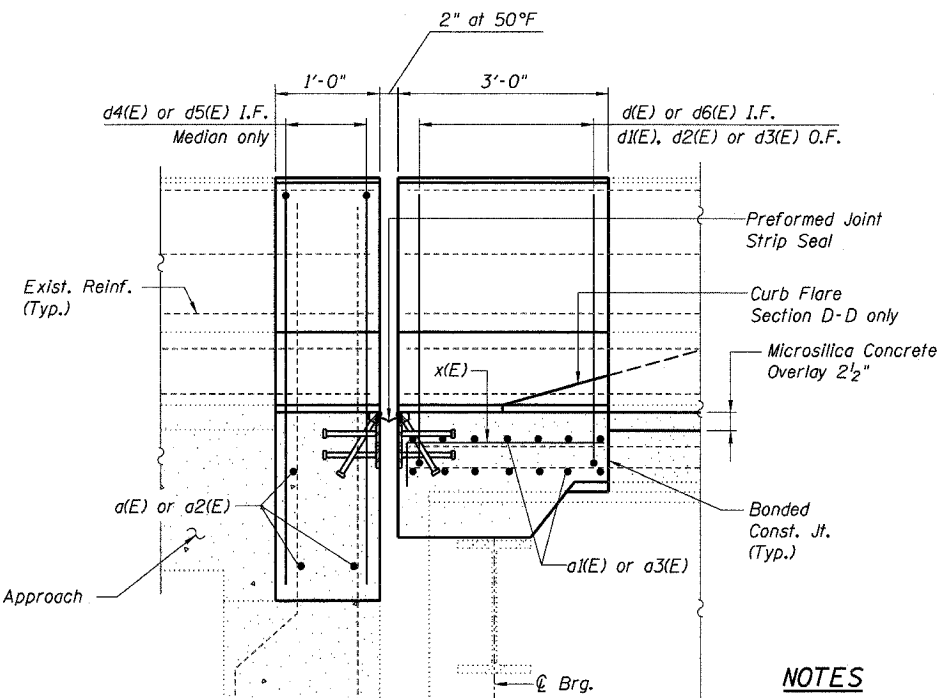
SECTION C-C



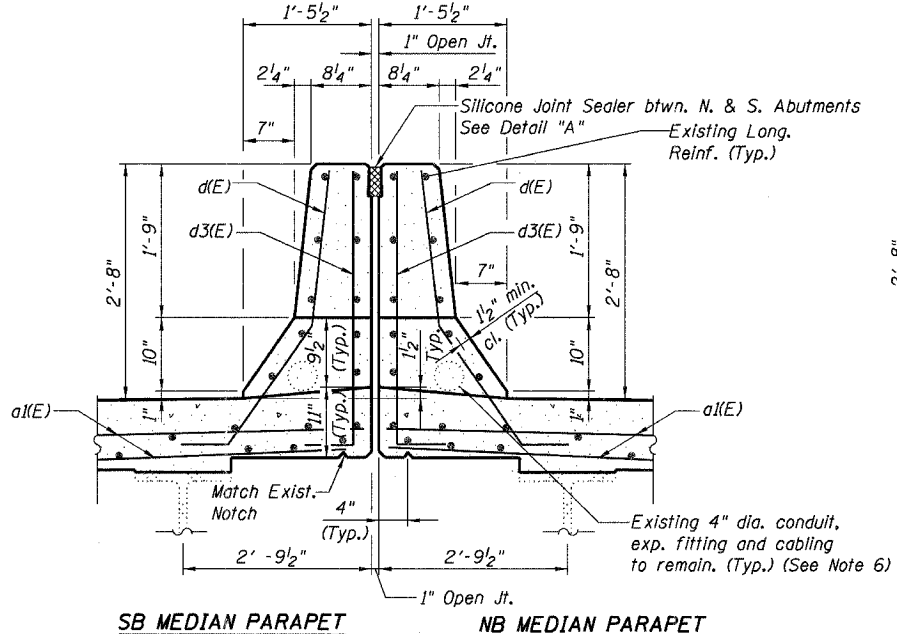
SECTION B-B



DETAIL "A"



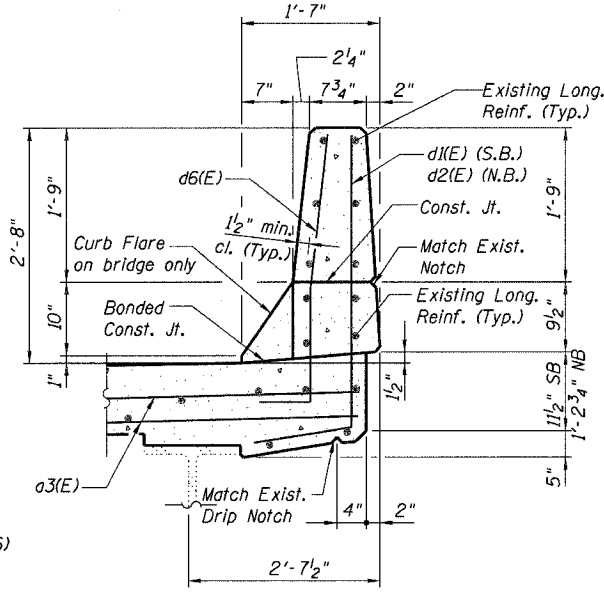
SECTION D-D



SB MEDIAN PARAPET

NB MEDIAN PARAPET

SECTION F-F



SECTION E-E

NOTES

- Existing Reinforcement Bars shown are to be cleaned and incorporated into new construction.
- I.F. denotes Inside Face, O.F. denotes Outside Face.
- Work required for removal of existing expansion joint shall be included in the cost of Concrete Removal.
- Work this sheet with Sheet No. 101.
- Work required for removal of existing P.J.S. shall be included in the cost of Silicone Bridge Joint Sealer, 2".
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the engineer. No splicing will be allowed to any cable damage resulting from this work; instead the Contractor will be required to replace the entire span of any damaged cable.

LEGEND



NORTH EXPANSION JOINT REMOVAL &
REPLACEMENT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER U.P.R.R.
COOK COUNTY
STATION 277+05.05
STRUCTURE NO. 016-0103 & 016-0104

DESIGNED	GWS
CHECKED	AMK
DRAWN	EF
CHECKED	AMK

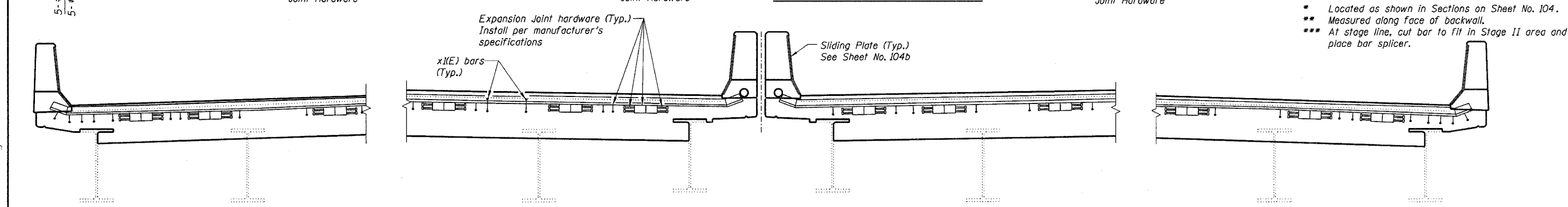
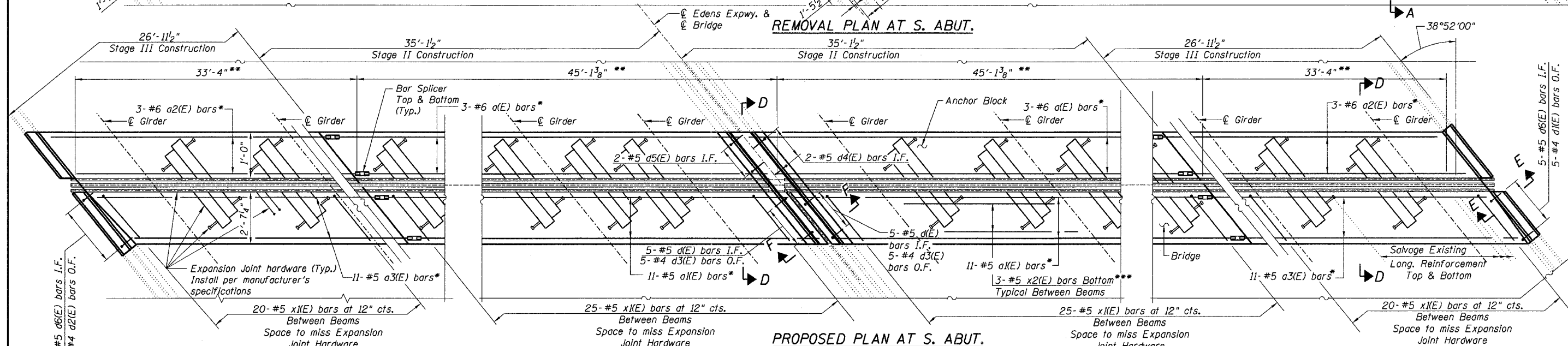
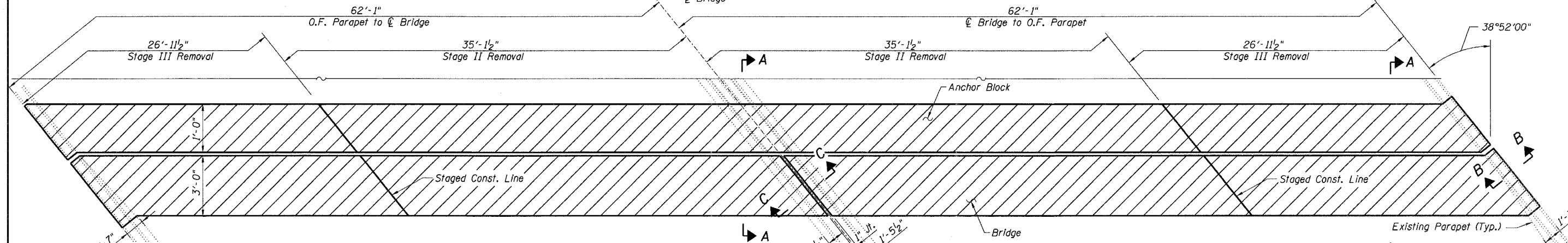
LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

I:\2298\struct\dgn\0103EXP01.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILE	POST MILE
F.A.I. 94	2006-043 RS	COOK	135	103
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747



- * Located as shown in Sections on Sheet No. 104.
- ** Measured along face of backwall.
- *** At stage line, cut bar to fit in Stage II area and place bar splicer.

LEGEND



NOTES

1. All Reinforcement Bars are to be spaced evenly unless otherwise noted.
2. Work this sheet with Sheet No. 104.
3. Reinforcement bars designated (E) shall be epoxy coated.
4. Existing Reinforcement Bars shown are to be cleaned and incorporated into new construction.
5. O.F. denotes Outside Face; I.F. denotes Inside Face.
6. Modular Joint shall be installed parallel to the centerline of bearing and back of abutment.
7. Modular Expansion Joint details are based on D.S. Brown DS-160 Expansion Joint System. Contractor has the option of choosing a competitive product. Contractor shall submit plans showing any changes to dimension to the Engineer for approval.
8. For Bill of Material and bar details see Sheet No. 104a.
9. Stage I does not include any bridge work.
10. See Sheet No. 104a for additional abutment backwall demolition and reconstruction.

SOUTH EXPANSION JOINT REMOVAL & REPLACEMENT PLAN
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER U.P.R.R.
COOK COUNTY
STATION 277+05.05
STRUCTURE NO. 016-0103 & 016-0104

DESIGNED	JSD
CHECKED	AMK
DRAWN	JSD
CHECKED	AMK

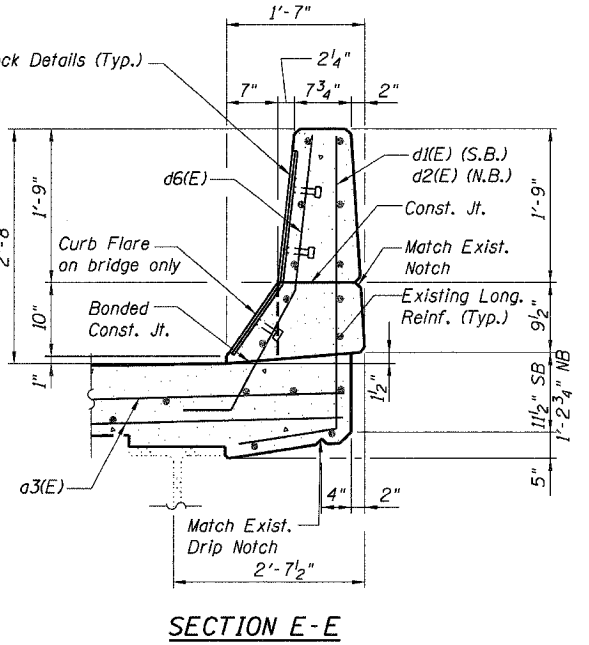
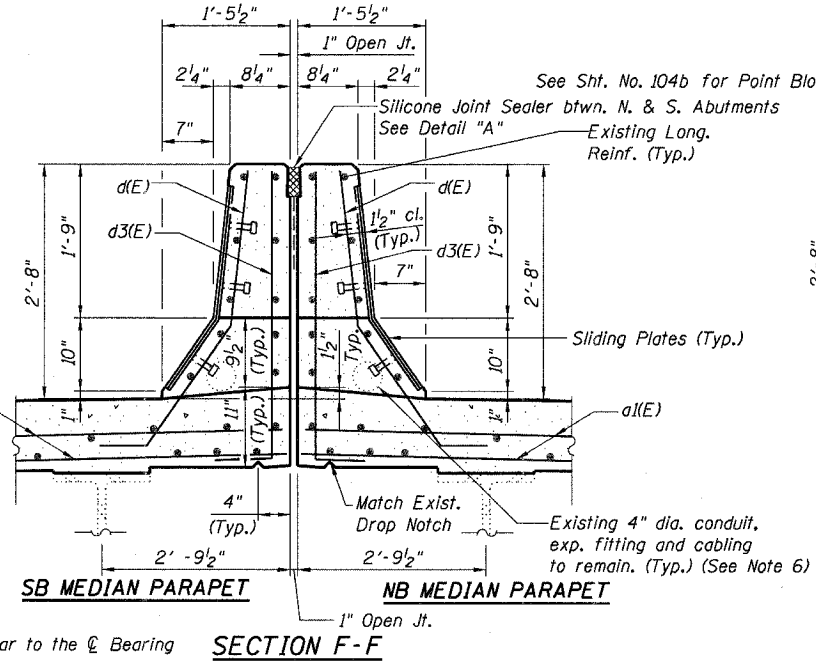
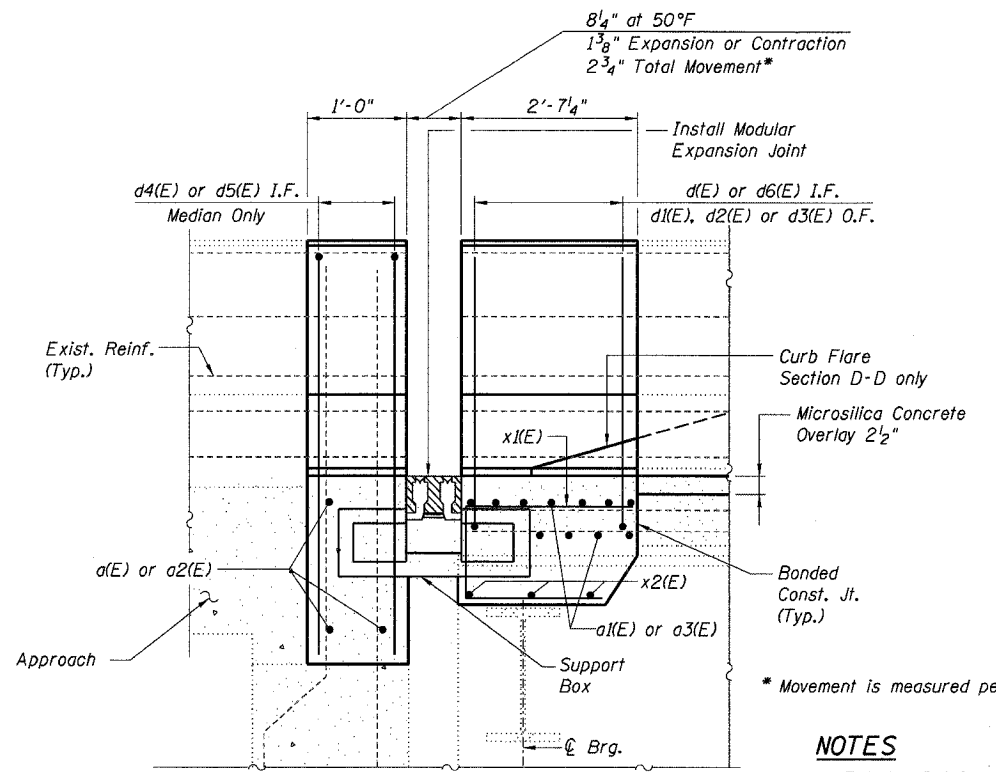
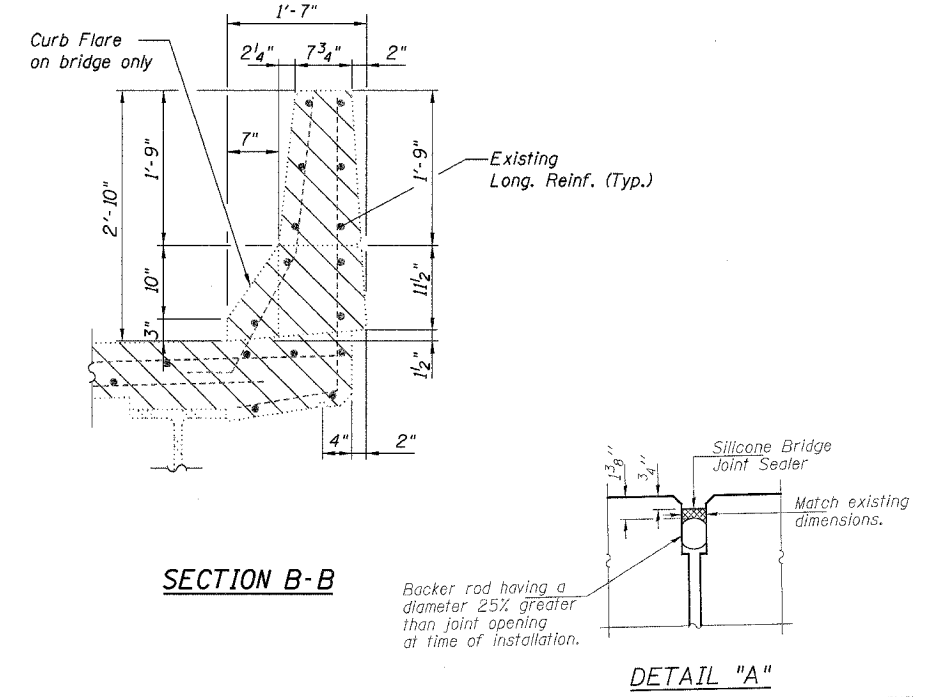
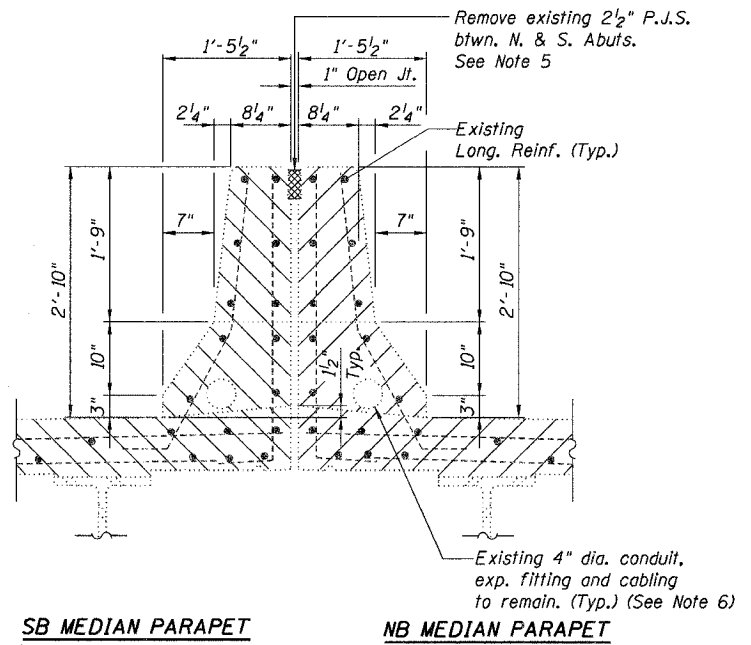
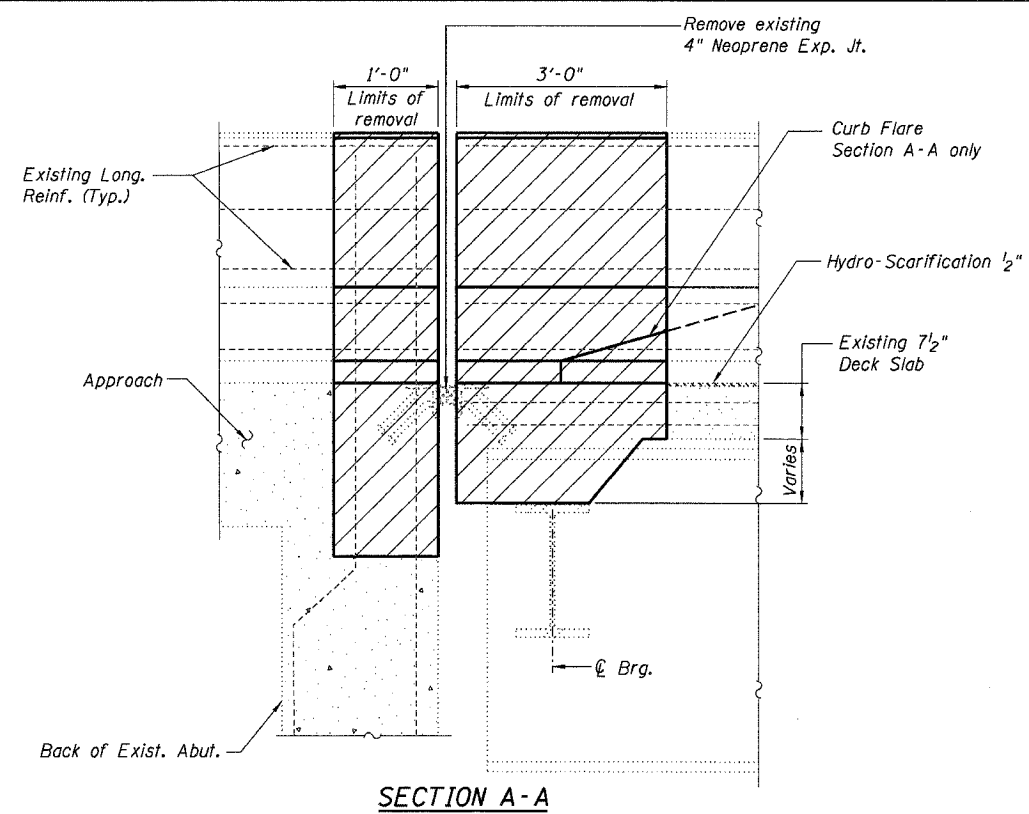
LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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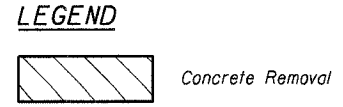
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
F.A.I. 94	2006-043 RS	COOK	135	104
FED. ROAD DIST. NO. 7	ILL. IND. PROJ. NO.	FED. AID PROJECT		

Contract # 62747



- * Movement is measured perpendicular to the ℄ Bearing
- NOTES**
- Existing Reinforcement Bars shown are to be cleaned and incorporated into new construction.
 - I.F. denotes Inside Face. O.F. denotes Outside Face.
 - Work required for removal of existing expansion joint shall be included in the cost of Concrete Removal.
 - Work this sheet with Sheet No. 101.
 - Work required for removal of existing P.J.S. shall be included in the cost of Silicone Bridge Joint Sealer, 2".
 - The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the engineer. No splicing will be allowed to any cable damage resulting from this work; instead the Contractor will be required to replace the entire span of any damaged cable.
 - The Contractor must verify all existing dimensions.



SOUTH EXPANSION JOINT REMOVAL & REPLACEMENT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER U.P.R.R.
COOK COUNTY
STATION 277+05.05
STRUCTURE NO. 016-0103 & 016-0104

DESIGNED	JSD
CHECKED	AMK
DRAWN	JSD
CHECKED	AMK

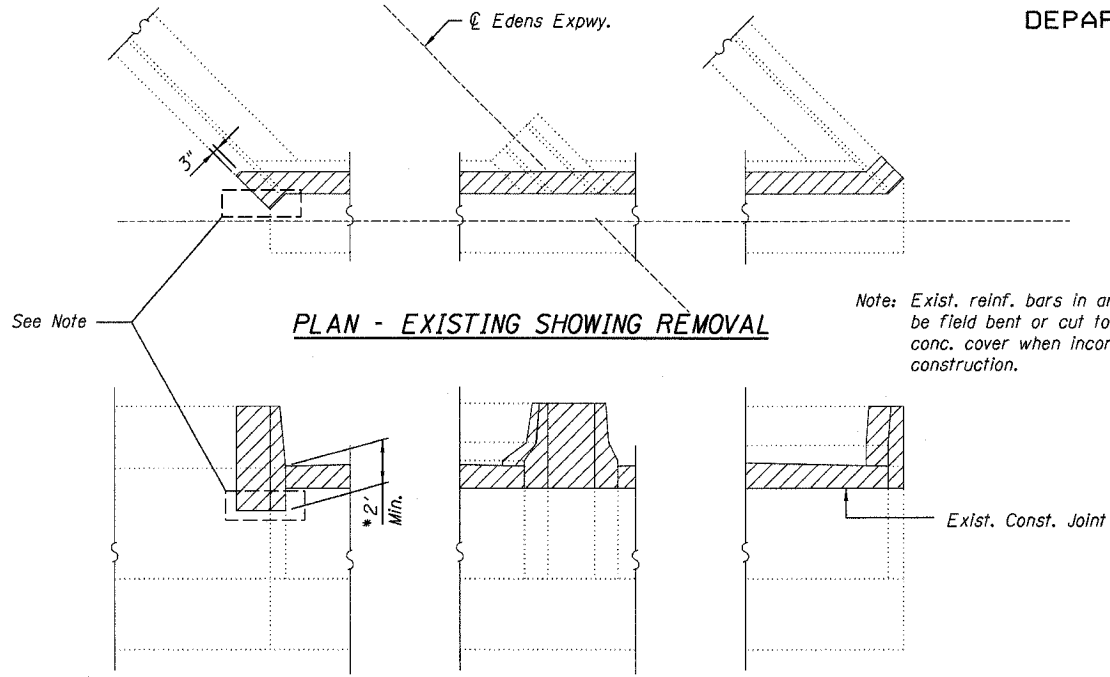
LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

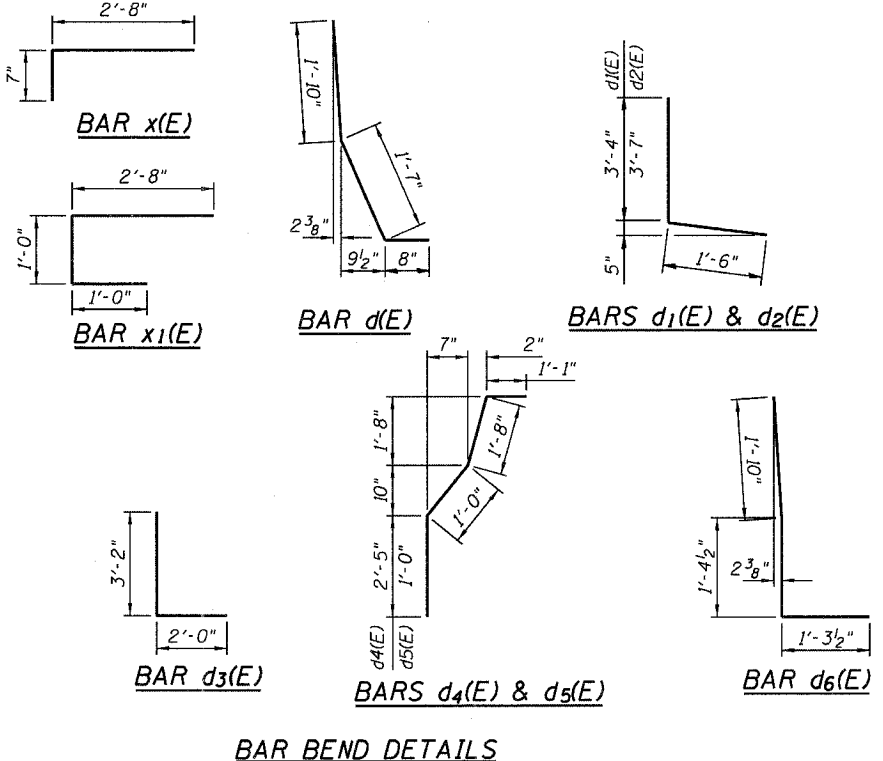
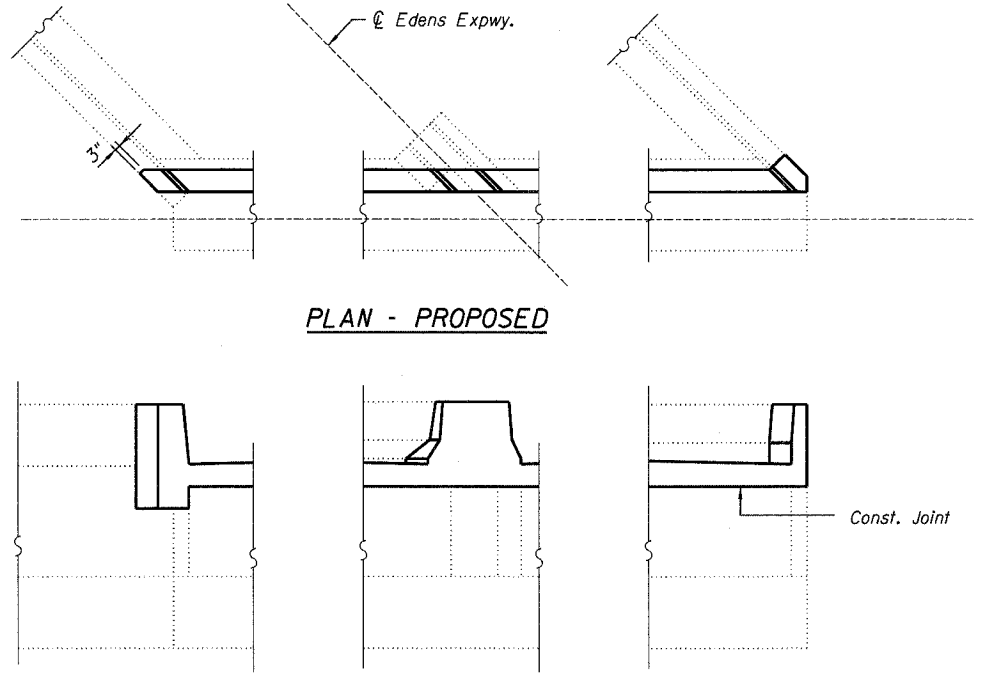
ROUTE NO.	SECTION	COUNTY	SHEET	NO.
F.A.I. 94	2006-043 RS	COOK	135	104a
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747



Note: Exist. reinf. bars in areas indicated shall be field bent or cut to provide 1/2" clear conc. cover when incorporated into new construction.

* Verify clearance is adequate for proposed bridge overhang.



SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	12	#6	44'-10"	—
a1(E)	50	#5	44'-10"	—
a2(E)	12	#6	33'-7"	—
a3(E)	50	#5	33'-7"	—
d(E)	20	#5	4'-1"	⌋
d1(E)	10	#4	5'-3"	L
d2(E)	10	#4	5'-6"	L
d3(E)	20	#4	5'-2"	L
d4(E)	4	#5	6'-2"	⌋
d5(E)	4	#5	4'-9"	⌋
d6(E)	20	#5	4'-6"	⌋
x(E)	90	#5	3'-3"	—
x1(E)	90	#5	4'-8"	—
x2(E)	54	#5	5'-3"	—
Concrete Removal			Cu. Yd.	63.8
Concrete Superstructure			Cu. Yd.	71.8
Bridge Deck Grooving			Sq. Yd.	5,951
Protective Coat			Sq. Yd.	156
Reinforcement Bars, Epoxy Coated			Pound	6,910
Modular Expansion Joint - Swivel, 6"			Foot	152
Silicone Bridge Joint Sealer, 2"			Foot	470

NOTE
Reinforcement bars designated (E) shall be epoxy coated.

REINFORCING BAR DETAILS & SUPERSTRUCTURE BILL OF MATERIAL
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER U.P.R.R.
COOK COUNTY
STATION 277+05.05
STRUCTURE NO. 016-0103 & 016-0104

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	JSD
CHECKED -	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

LEGEND
Concrete Removal

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
F.A.I. 94	2006-043	COOK	135	104b
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Contract # 62747

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

Notes:

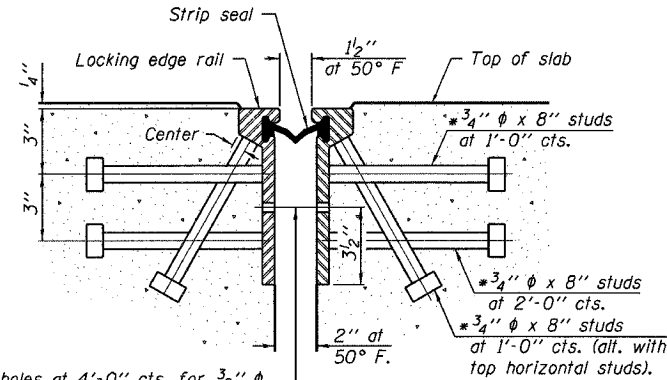
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of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

The height and thickness of the Locking Edge Rails shown are minimum dimensions. 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 and stage construction joints.

The manufacturer's recommended installation methods shall be followed.

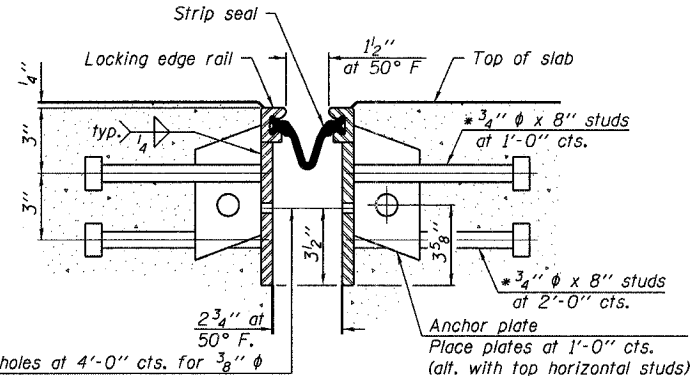
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications 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.



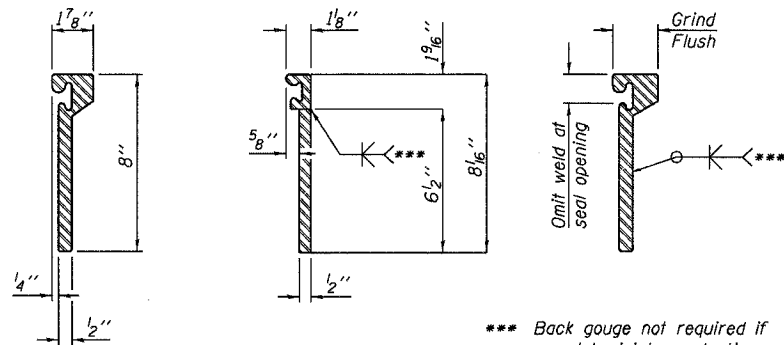
7/16" diameter holes at 4'-0" cts. for 3/8" diameter bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
ROLLED RAIL JOINT



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

SECTION THRU
WELDED RAIL JOINT

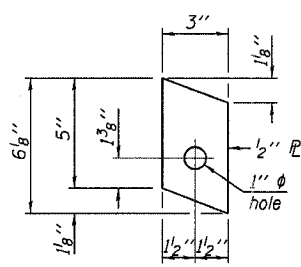


*** Back gouge not required if complete joint penetration is verified by mock-up.

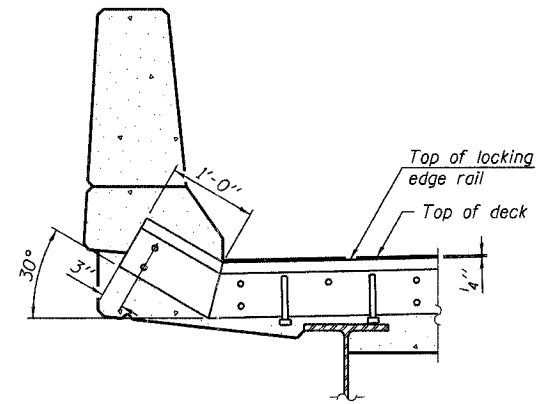
LOCKING EDGE
RAIL SPLICE

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

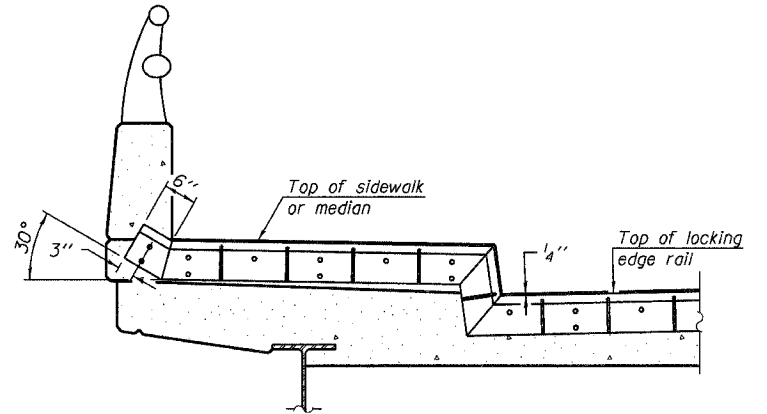
ROLLED
(EXTRUDED) RAIL WELDED RAIL



ANCHOR PLATE
(for welded rail)



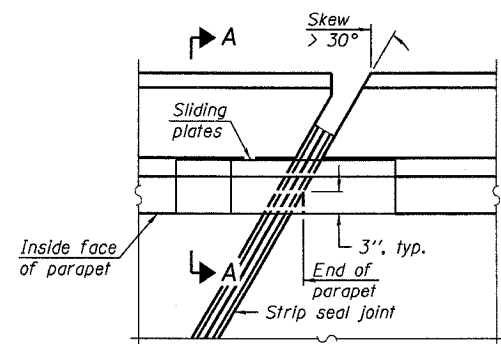
AT PARAPET



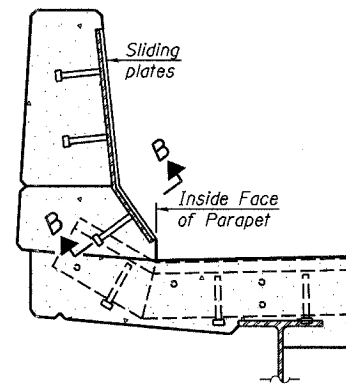
AT SIDEWALK OR MEDIAN

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.

LOCKING EDGE RAILS



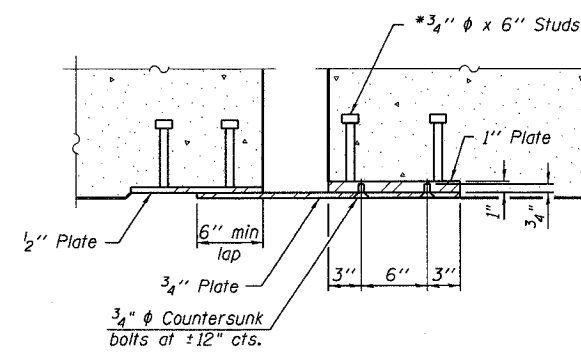
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	154

EXPANSION JOINT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER U.P.R.R.
COOK COUNTY
STATION 277+05.05
STRUCTURE NO. 016-0103 & 016-0104

DESIGNED	GWS
CHECKED	JSD
DRAWN	EF
CHECKED	JSD

EJ-SSJ

11-1-06

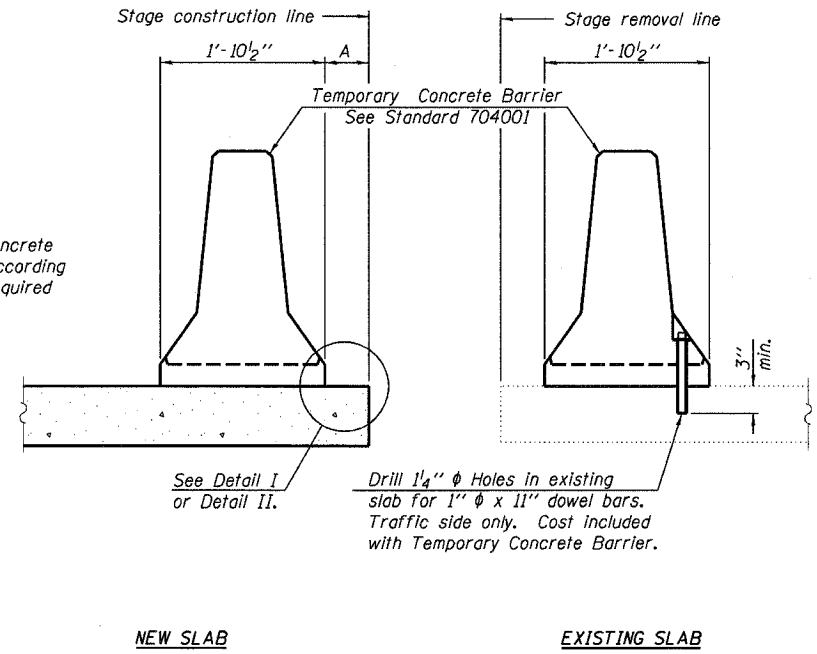
LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	104c
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

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".

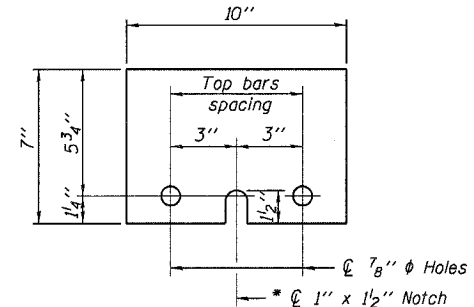
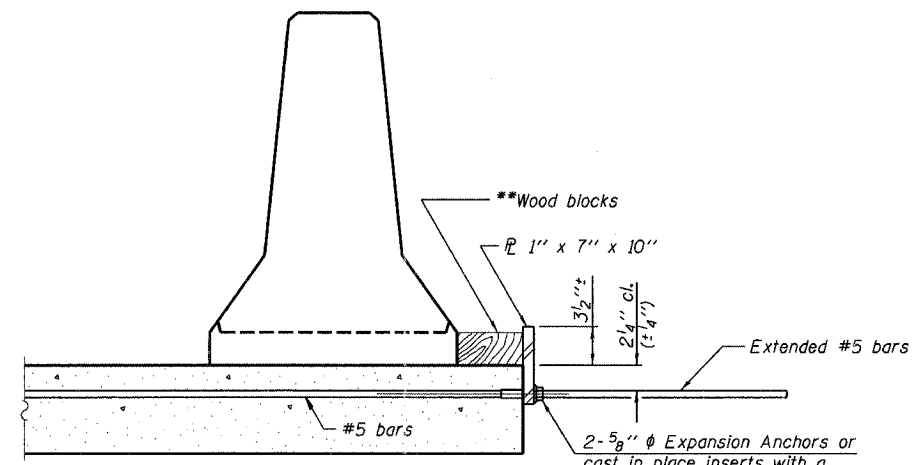
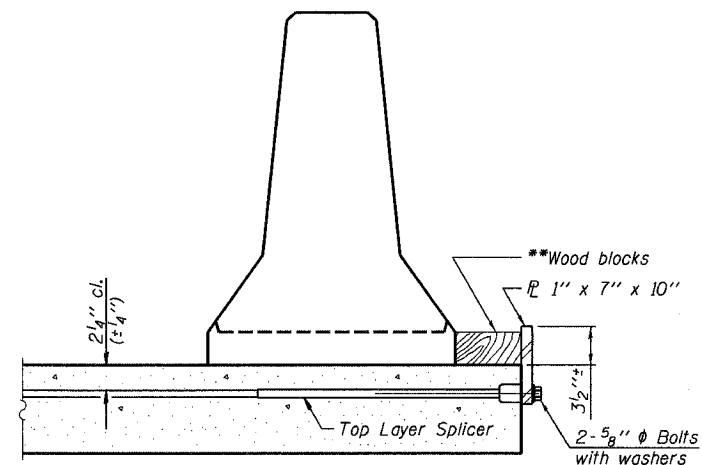


NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{P} to the top layer of couplers with 2- $\frac{5}{8}$ " 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{P} to the concrete slab with 2- $\frac{5}{8}$ " 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.



* Required only with 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.

DESIGNED -	GWS
CHECKED -	JSD
DRAWN -	EF
CHECKED -	JSD

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

R-27

11-1-06

TEMPORARY CONCRETE BARRIER FOR
STAGE CONSTRUCTION
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER U.P.R.R.
COOK COUNTY
STATION 277+05.05
STRUCTURE NO. 016-0103 & 016-0104

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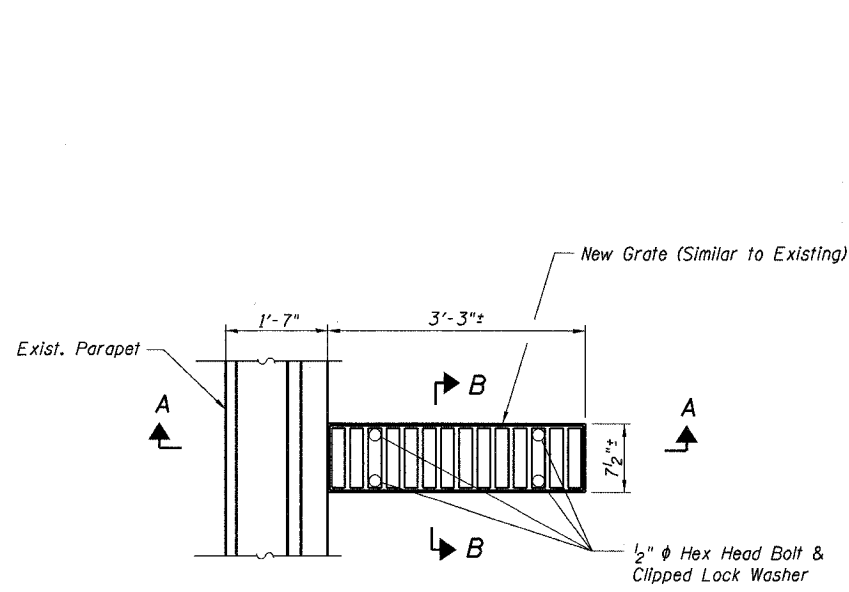
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	104d
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

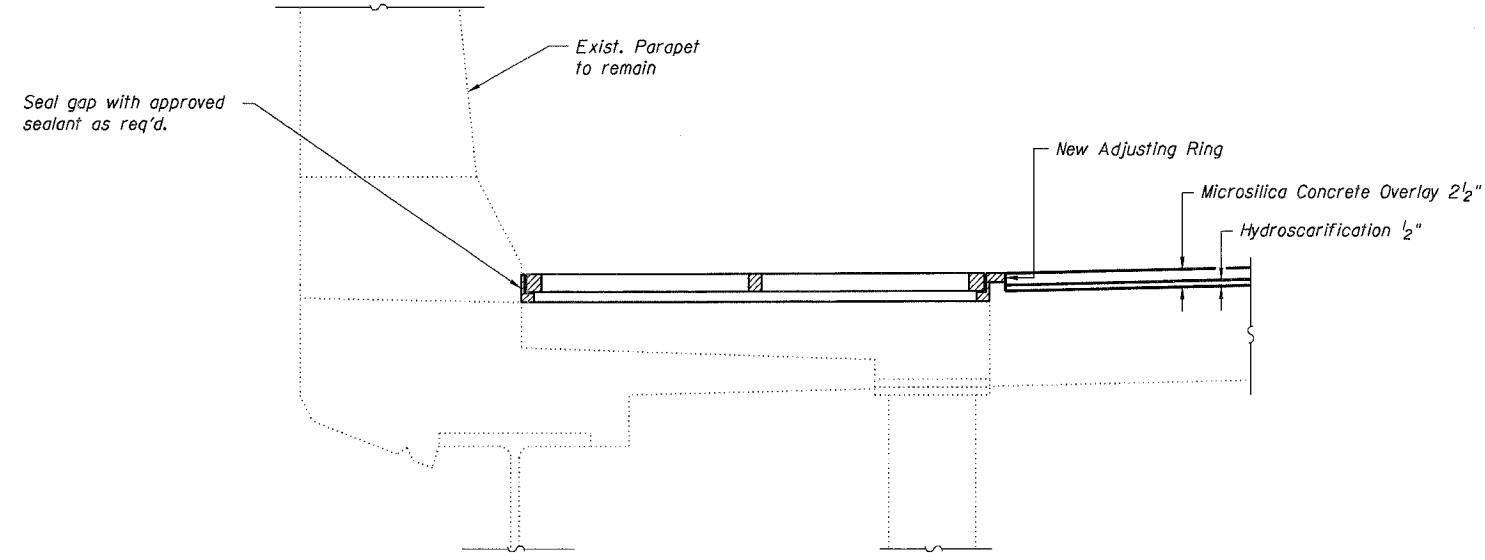
Contract # 62747

BILL OF MATERIAL

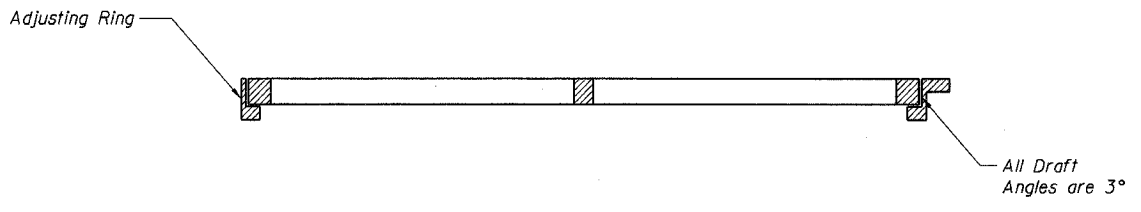
Item	Unit	Total
Adjusting Drainage Scuppers	Each	1



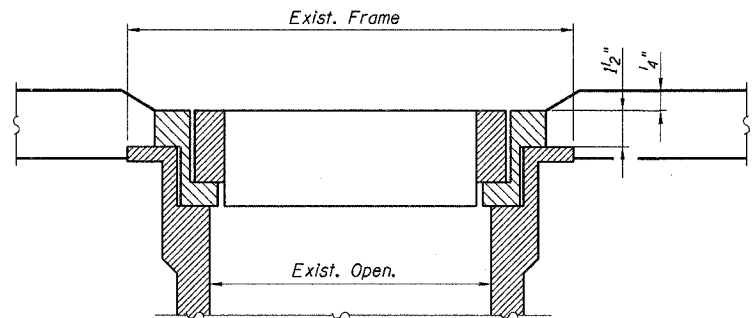
PROPOSED PLAN AT SCUPPER



SECTION THRU SCUPPER



SECTION A-A



SECTION B-B

NOTES

1. The contractor shall verify the exact location, type and dimensions of the existing scuppers before ordering the materials, the cost of which is included in the cost of Adjusting Drainage Scuppers.
2. For scupper locations, see General Plan & Elevation sheets.
3. For additional notes and Bill of Material, see Sheet 97 and 98.
4. All cast iron parts shall be grey iron conforming to the requirements of AASHTO M 105, Class 35B.
5. Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.
6. Cast iron parts shall be unfinished.
7. The Contractor shall take appropriate measures to assure the Protective Coat is not applied to the scuppers.
8. Adjusting ring and grates shall be from Neenah or approved equal. Structural steel weldments or equal sections and of the same configuration may be substituted for cast iron. Fillet or full penetration welds may be used for weldments. Details shall be submitted to the Engineer for approval.
9. Provide an 1/8" fillet weld around perimeter of new adjusting ring to secure to existing scupper. Electrode shall be compatible with the existing scupper housing material.

DRAINAGE SCUPPER DETAILS

DESIGNED	-	JSD
CHECKED	-	DWH
DRAWN	-	JW
CHECKED	-	DWH

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

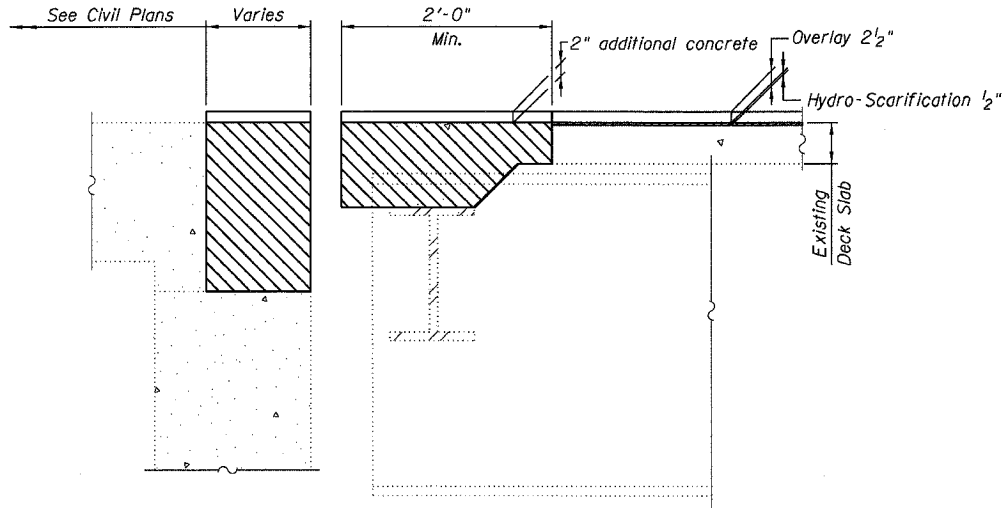
DRAINAGE SCUPPER ADJUSTMENT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER U.P.R.R.
COOK COUNTY
STATION 277+05.05
STRUCTURE NO. 016-0103 & 016-0104

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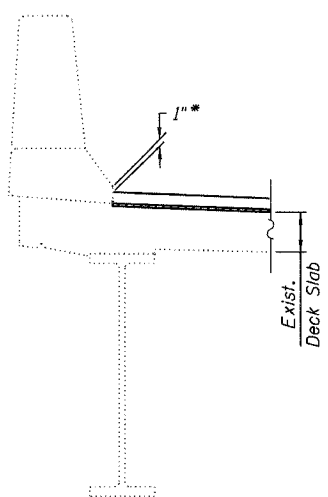
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	104e
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747



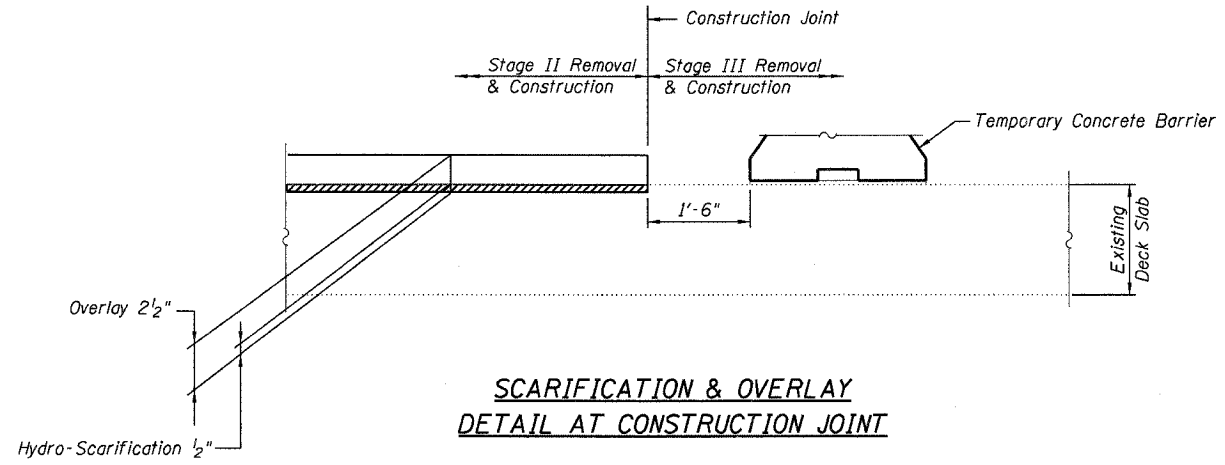
SCARIFICATION & OVERLAY DETAIL AT ABUTMENT



* Contractor shall increase hydro-scarification thickness or reduce overlay thickness as directed by the Engineer to ensure that this dimension is not less than 0".

**SCARIFICATION & OVERLAY
DETAIL AT PARAPET**

(Applies only to areas outside the joint removal area.)





**SCARIFICATION & OVERLAY
DETAIL AT CONSTRUCTION JOINT**

NOTE

If additional hydro-scarification is required to maintain the dimension shown in the Scarification & Overlay Detail at Parapet, it shall be included in the cost for Bridge Deck Hydro-scarification 1/2".

LEGEND

-  Hydro-Scarification
-  Concrete Removal

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	JSD
CHECKED -	DWH

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

**SCARIFICATION AND
OVERLAY DETAILS**
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER U.P.R.R.
COOK COUNTY
STATION 277+05.05
STRUCTURE NO. 016-0103 & 016-0104

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	104f
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

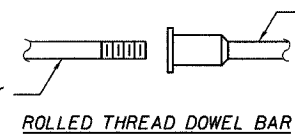
NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_t$
(Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

The diameter of this part is equal or larger than the diameter of bar spliced.

The diameter of this part is the same as the diameter of the bar spliced.

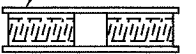


ROLLED THREAD DOWEL BAR



** ONE PIECE

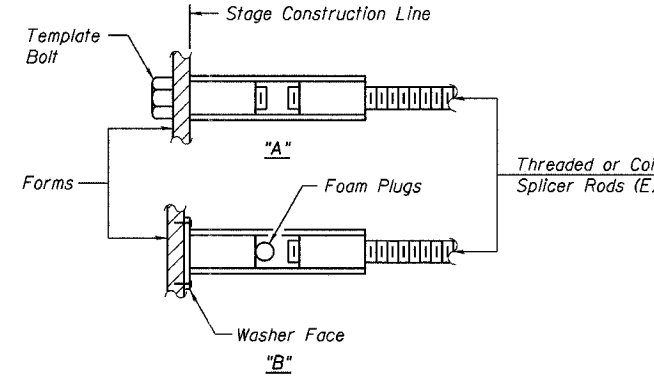
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

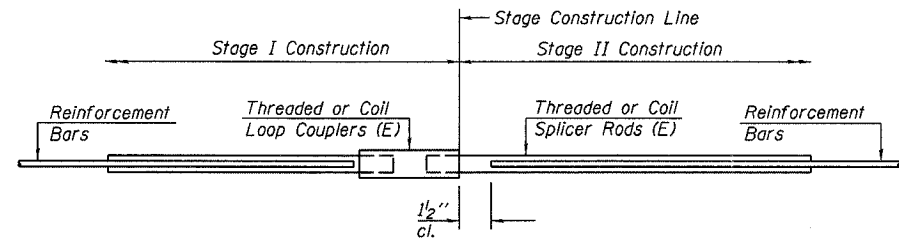
** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



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.

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



STANDARD

Bar Size	No. Assemblies Required	Location
#5	28	N. Abut. Deck
#6	6	N. Abut. Backwall
#5	28	S. Abut. Deck
#6	6	S. Abut. Backwall

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	EF
CHECKED -	AMK

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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

BAR SPLICER ASSEMBLY DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER U.P.R.R.
COOK COUNTY
STATION 277+05.05
STRUCTURE NO. 016-0103 & 016-0104

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B.M. - Engineer to set temporary benchmark in field as necessary.

Existing Structure - Structure No. 016-0105, built as S.A. Rte. 263, Section 263-0607.1-15D at Station 265+65.22 in 1949. The structure was rehabilitated and widened in 1979 as FAI Route 94 (Edens Expressway), Section 1975-120-R & BR. The existing structure consists of a three span continuous non-composite steel multi-beam structure supporting a reinforced concrete deck. The steel beams consist of W36 rolled shapes. The substructure consists of reinforced concrete spill thru abutments supported on piles and reinforced concrete multi-column piers supported by spread footings.

Stage construction shall be utilized to maintain traffic during construction.

No Salvage

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILE	POST MILE
F.A.I. 94	2006-043 RS	COOK	135	105
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

DESIGN SPECIFICATIONS
2002 AASHTO

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinf.)
 $f_y = 50,000$ psi (M270 Grade 50)

SCOPE OF WORK

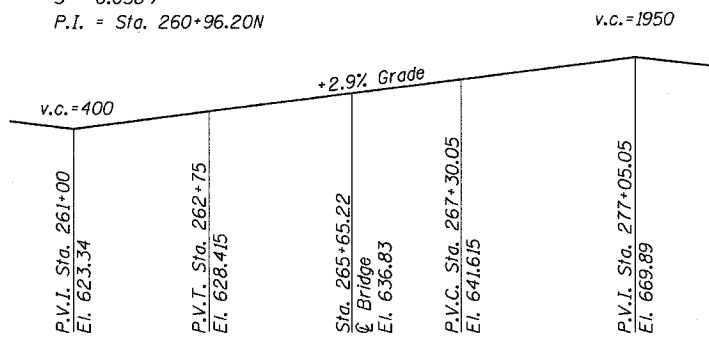
1. Provide Protective Shield with limits as indicated.
 2. Perform substructure repairs (structural repair of concrete and epoxy crack injection).
- Stage II:
3. Close Stage II construction areas to traffic.
 4. Replace existing bearings at abutments.
 5. Hydro-Scarify the deck slab.
 6. Remove and replace expansion joints and surrounding concrete (including parapets).
 7. Perform deck slab repair.
 8. Place Overlay.
 9. Place temporary roadway transitions.
 10. Open Stage II Removal area to staged traffic.
- Stage III:
11. Close Stage III Removal areas to traffic.
 12. Repeat steps 4-9 but for Stage III construction.
 13. Open bridge to traffic.

NOTES

1. For joint removal and replacement plans and details, see Sheet No. 108 thru 109b
2. See Structural Notes on Sheet No. 105a

EXISTING CURVE DATA

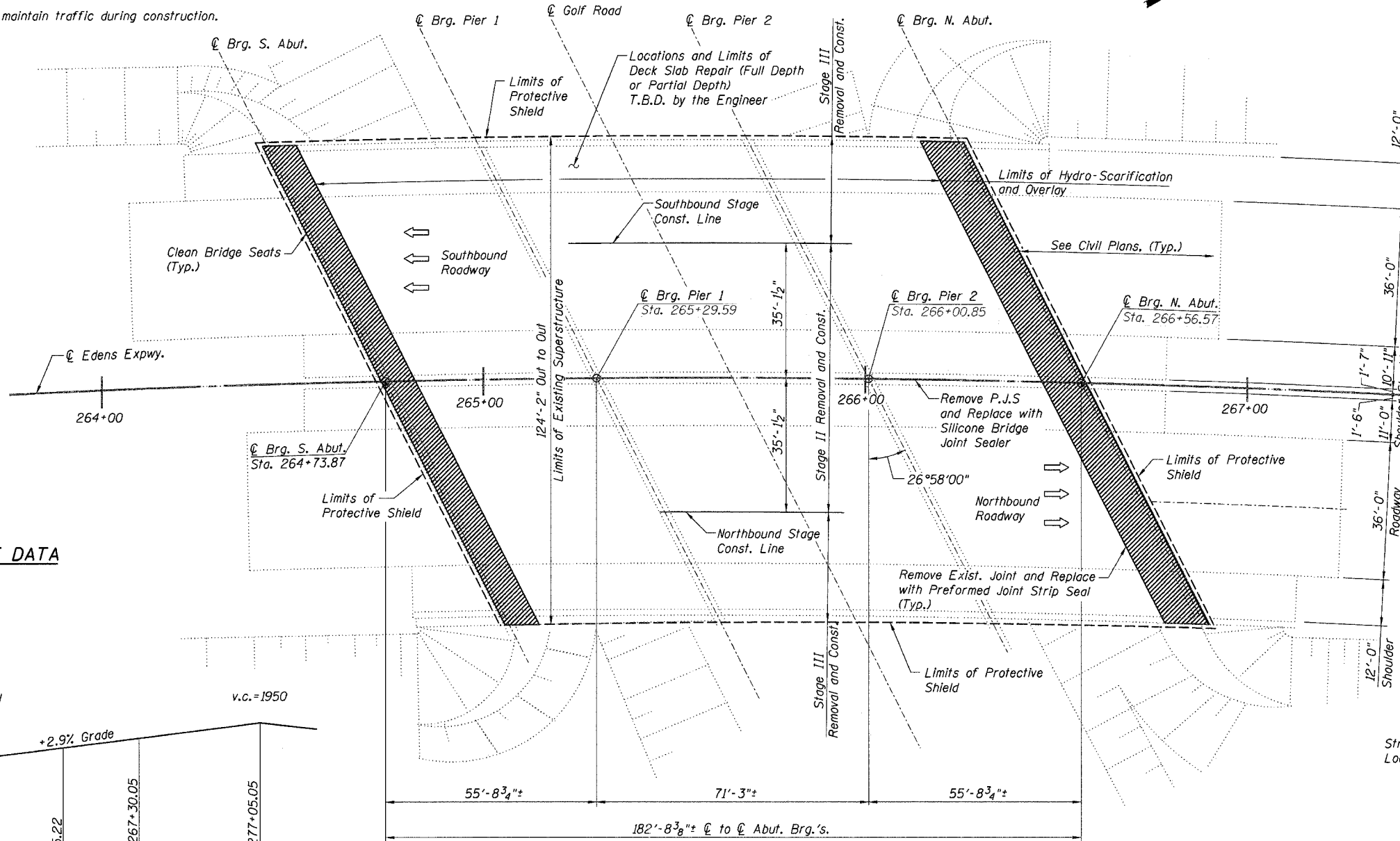
$\Delta = 36^\circ 41'$
 $D = 1^\circ 36'$
 $T = 1187.23'$
 $L = 2292.71'$
 $E = 191.67'$
 $R = 3581.10'$
 $S = 0.0381'$
 $P.I. = Sta. 260+96.20N$



EXISTING PROFILE GRADE
EDENS EXPRESSWAY

DESIGNED -	DWH
CHECKED -	JSD
DRAWN -	EF
CHECKED -	JSD

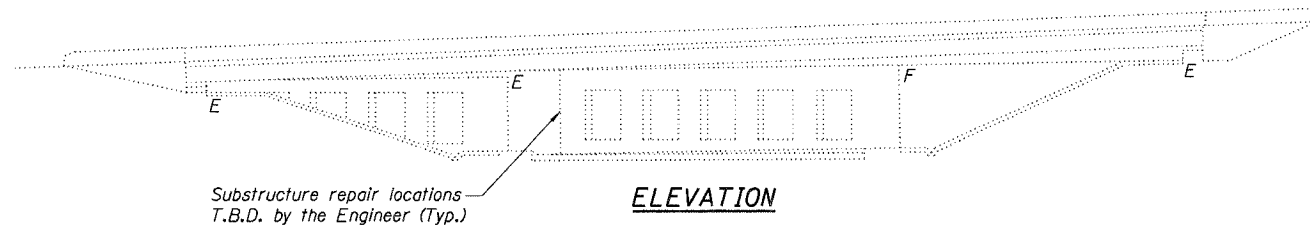
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H.W. LOCHNER, INC., CHICAGO, ILLINOIS



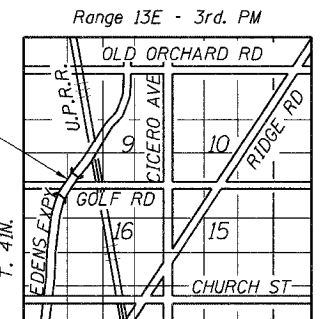
PLAN

LEGEND

- - - Protective Shield Limits
- ▨ Concrete Removal / Joint Reconstruction

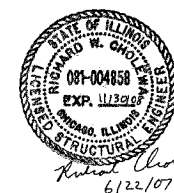


ELEVATION



LOCATION SKETCH

GENERAL PLAN & ELEVATION
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	105a
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

STRUCTURAL NOTES

- Expansion joint plates and attached bars shall be shop painted with the inorganic zinc rich primer.
- The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.
- Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60 (IL Modified). See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- 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 shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- 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 compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.
- Stage construction shall be utilized to maintain traffic during construction.
- The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
- The Contractor shall provide a Protective Shield under the deck for Full Deck Slab repairs as per direction of the Engineer and as shown on the plans.
- The Contractor may have to remove the Name Plate(s) that interfere with the parapet removal for joint reconstruction. The Contractor shall reinstall the Name Plate(s) as directed by the Engineer. The cost of removal and reinstallation of Name Plate(s) shall be included in the cost for "Concrete Removal" and "Concrete Superstructure."
- Protective coat shall be applied only to the new concrete provided for the reconstruction of the joints (top of deck slab, top and traffic face of parapet).
- The Engineer shall determine extent, location and type of substructure and deck slab repairs in the field.
- 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 an individual acceptable to the Engineer. Any cracks that can not be removed by grinding 1/4 inch 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.

- Field welding of construction accessories will not be permitted to beams or girders.
- The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection. Forms for deck slab shall be removed prior to placement of bridge approach pavement.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- Protective shielding shall be installed to insure that all electrical appurtenances below the bridge deck are adequately protected.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8 inch adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. (For Type 1 Elastomeric Bearings, two 1/8 inch adjusting shims shall be provided for each bearing and placed as detailed).

Typ. Lap Splice

Bar Size	Min. Lap
#4	1'-8"
#5	2'-2"
#5*	3'-0"*
#6	2'-7"
#6*	3'-7"*
#7	3'-5"
#8	4'-6"

* Top Horizontal Bar

ABBREVIATION LIST

Abut.	Abutment	F/	Face of	R or Rad.	Radius
Alt.	Alternate	Ft.	Foot or Feet	RR	Railroad
		Fig.	Footing	Req'd	Required
Bk.	Back	Gr.	Grade	Rt.	Right
Brg.	Bearing			Sht.	Sheet
Btwn.	Between			Spa.	Spaces or Spacing
B/	Bottom of	Jt.	Joint	Sq.	Square
Bot.	Bottom	L	Angle	S.S.	Stainless Steel
		Lt.	Left	Std.	Standard
CIP	Cast in Place	Lg.	Long	Sta.	Station
CL	Centerline	Max.	Maximum	Stl.	Steel
Cts.	Centers	Min.	Minimum	Sym.	Symmetrical
Cl.	Clear	Nom.	Nominal	Temp.	Temporary
Conc.	Concrete	N.T.S.	Not to Scale	Thk.	Thick
CJ	Construction Joint	No(s).	Number(s)	T.B.D.	To be determined
Const(r).	Construction	Opp.	Opposite	T/	Top of
				Typ.	Typical
Dia.	Diameter	Pavt.	Pavement	UNO	Unless Noted Otherwise
Ea.	Each	PL	Plate	VIF	Verify in Field
E	East	P.C.	Precast		
E/	Edge of	P.J.F.	Preformed Joint Filler		
El. or Elev.	Elevation	P.J.S.	Preformed Joint Sealer		
Exist.	Existing	PGL	Profile Grade Line		
Exp.	Expansion	Prop.	Proposed	W	West
Expy.	Expressway			W/	With

STRUCTURAL NOTES
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	EF
CHECKED -	DWH

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-Q43 RS	COOK	135	105b
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Contract # 62747

TOTAL BILL OF MATERIAL

Item	Unit	Super.	Sub.	Total
Concrete Removal	Cu. Yd.	104.7	2.5	107.2
Protective Shield	Sq. Yd.	2,553		2,553
Concrete Structures	Cu. Yd.		6.0	6.0
Concrete Superstructure	Cu. Yd.	115.2		115.2
Bridge Deck Grooving	Sq. Yd.	2,329		2,329
Protective Coat	Sq. Yd.	267		267
Stud Shear Connectors	Each	720		720
Reinforcement Bars, Epoxy Coated	Pound	14,700	940	15,640
Bar Splacers	Each	148		148
Preformed Joint Strip Seal	Foot	269		269
Elastomeric Bearing Assembly, Type I	Each	40		40
Anchor Bolts, 1"	Each	40		40
Anchor Bolts, 1/4"	Each	40		40
Epoxy Crack Injection	Foot		100	100
Bridge Deck Microsilica Concrete Overlay, 2 1/2"	Sq. Yd.	2,215		2,215
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	2,215		2,215
Cleaning Bridge Seats	Sq. Ft.		605	605
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	12		12
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	108		108
Silicone Bridge Joint Sealer, 2"	Foot	183		183
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.		400	400
Jack and Remove Existing Bearings	Each	40		40

INDEX OF SHEETS

- 105 GENERAL PLAN & ELEVATION
- 105a STRUCTURAL NOTES
- 105b TOTAL BILL OF MATERIAL AND INDEX OF SHEETS
- 106 TYPICAL SECTION THRU BRIDGE
- 107 CONSTRUCTION STAGING DETAILS
- 108 EXPANSION JOINT REMOVAL & REPLACEMENT PLAN
- 109 EXPANSION JOINT REMOVAL & REPLACEMENT DETAILS
- 109a REINFORCING BAR DETAILS & SUPERSTRUCTURE BILL OF MATERIAL
- 109b EXPANSION JOINT DETAILS
- 110 BEARING DETAILS I
- 111 BEARING DETAILS II
- 112 BEARING DETAILS III
- 112a TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
- 112b SCARIFICATION AND OVERLAY DETAILS
- 112c BAR SPLICER ASSEMBLY DETAILS

TOTAL BILL OF MATERIAL
AND INDEX OF SHEETS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	EF
CHECKED -	DWH

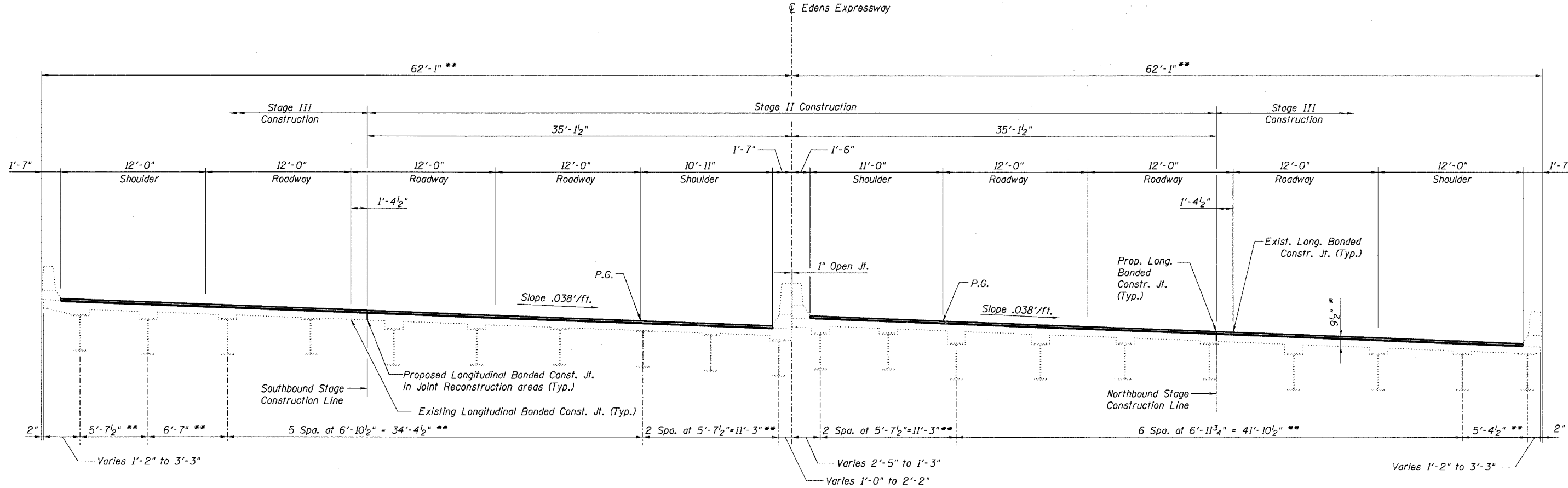
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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	106
FED. AID PROJ. NO.	ILLINOIS	FED. AID PROJECT		

Contract # 62747



TYPICAL SECTION THRU BRIDGE
(Looking North)

* Deck Slab replacement in joint reconstruction locations only. See Sheet No. 108 for limits. In typical locations, proposed slab will consist of 7" slab and 2 1/2" latex concrete overlay. See Sheet No. 112b for details.
** Measured perpendicular to the chord of the ϕ Edens Expressway.

- NOTES**
- Beams and exterior parapets are parallel to the chord of the ϕ of Median Edens Expressway parapets and lane lines follow the alignment of ϕ Edens Expressway. All measurements have been taken perpendicular to the ϕ of the Edens Expressway except as noted.
 - For joint removal limits see Sheet Nos. 108 and 109.
 - Stage I does not include any bridge work.

TYPICAL SECTION THRU BRIDGE
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	EF
CHECKED -	AMK

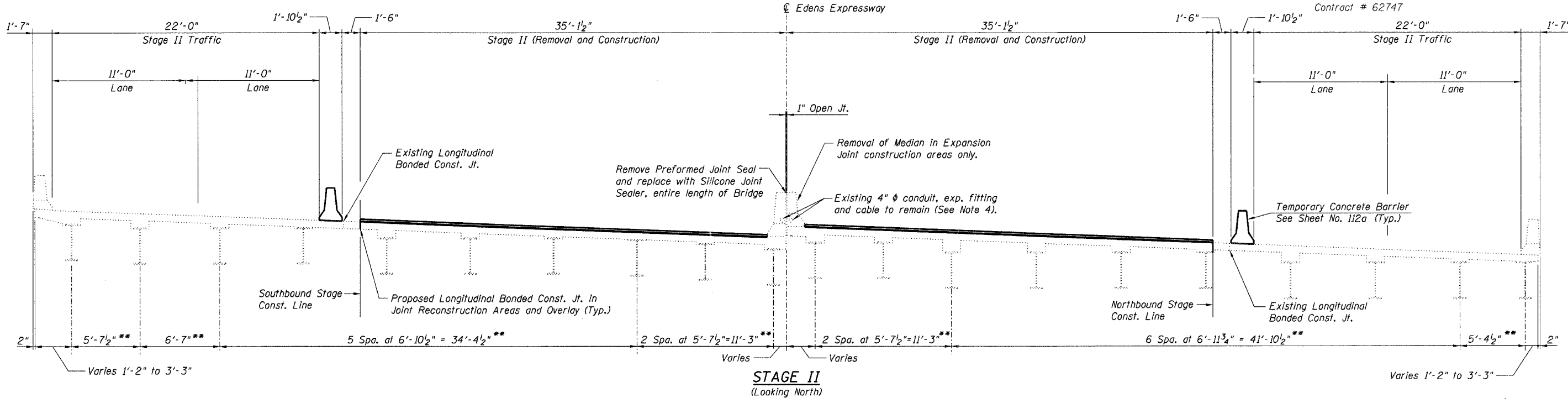
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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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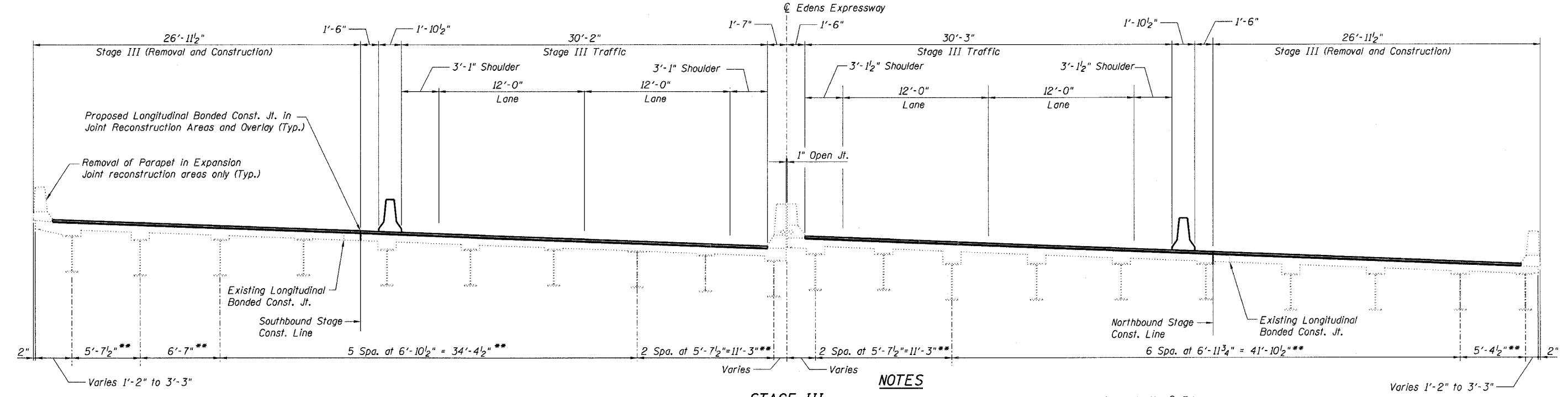
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET
F.A.I. 94	2006-043 RS	COOK	135	107
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747



STAGE II
(Looking North)



STAGE III
(Looking North)

NOTES

- All measurements have been taken perpendicular to the ϕ Edens Expressway except as noted.
- For joint removal limits see Sheet Nos. 108 and 109
- Stage I does not include any bridge work.
- The Contractor shall exercise extreme care with the existing conduits in sections of the wall to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work; instead the Contractor will be required to replace the entire span of any damaged cable.

** Measured perpendicular to the chord of the ϕ Edens Expressway

DESIGNED	- JSD
CHECKED	- AMK
DRAWN	- EF
CHECKED	- AMK

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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

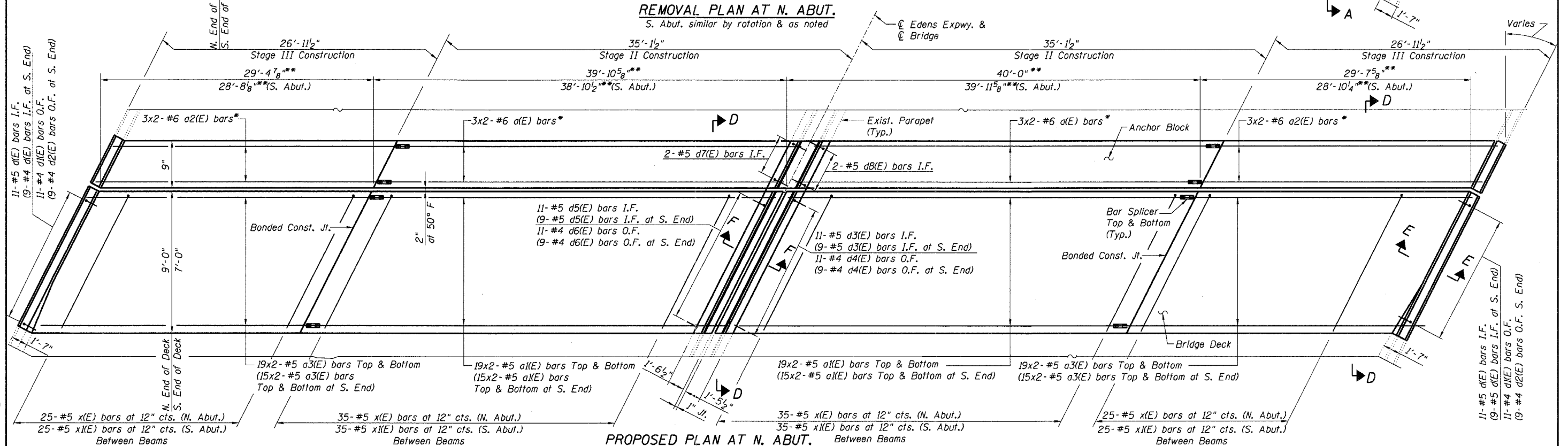
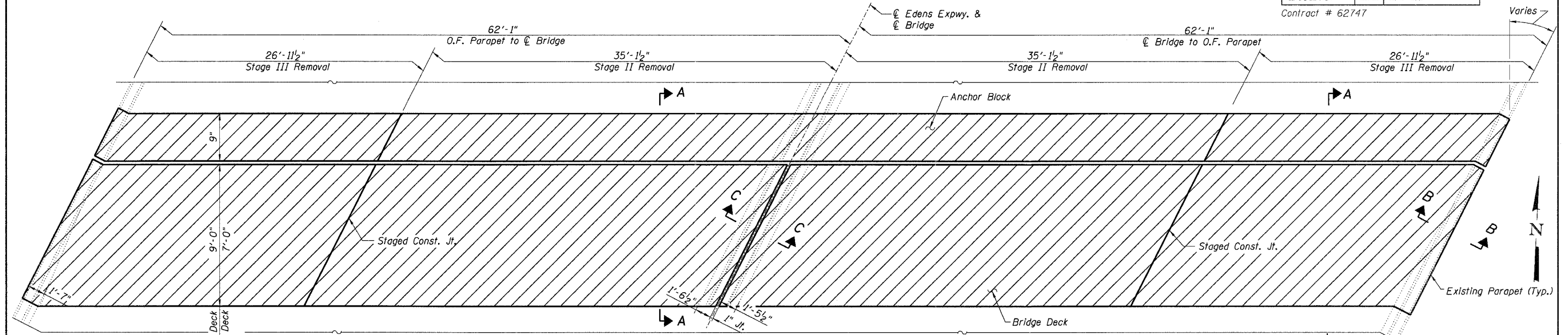
CONSTRUCTION STAGING DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	NO.
F.A.I. 94	2006-043 RS	COOK	135	108
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

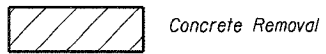


* Located as shown in Sections on Sheet No. 109
 ** Measured along face of backwall.

NOTES

- All Reinforcement Bars are to be spaced evenly unless otherwise noted.
- Work this sheet with Sheet No. 109
- Reinforcement bars designated (E) shall be epoxy coated.
- Bars indicated thus 19x2-#5 etc. indicates 19 lines of bars with 2 lengths per line.
- Shear studs shall be welded to the beams; see Sheet No. 109 for details.
- O.F. denotes Outside Face; I.F. denotes Inside Face.
- Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet No. 109b
- For Bill of Material and bar details see Sheet No. 109a
- Stage I does not include any bridge work.

LEGEND



EXPANSION JOINT REMOVAL & REPLACEMENT PLAN
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

DESIGNED	GWS/JSD
CHECKED	AMK
DRAWN	EF
CHECKED	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

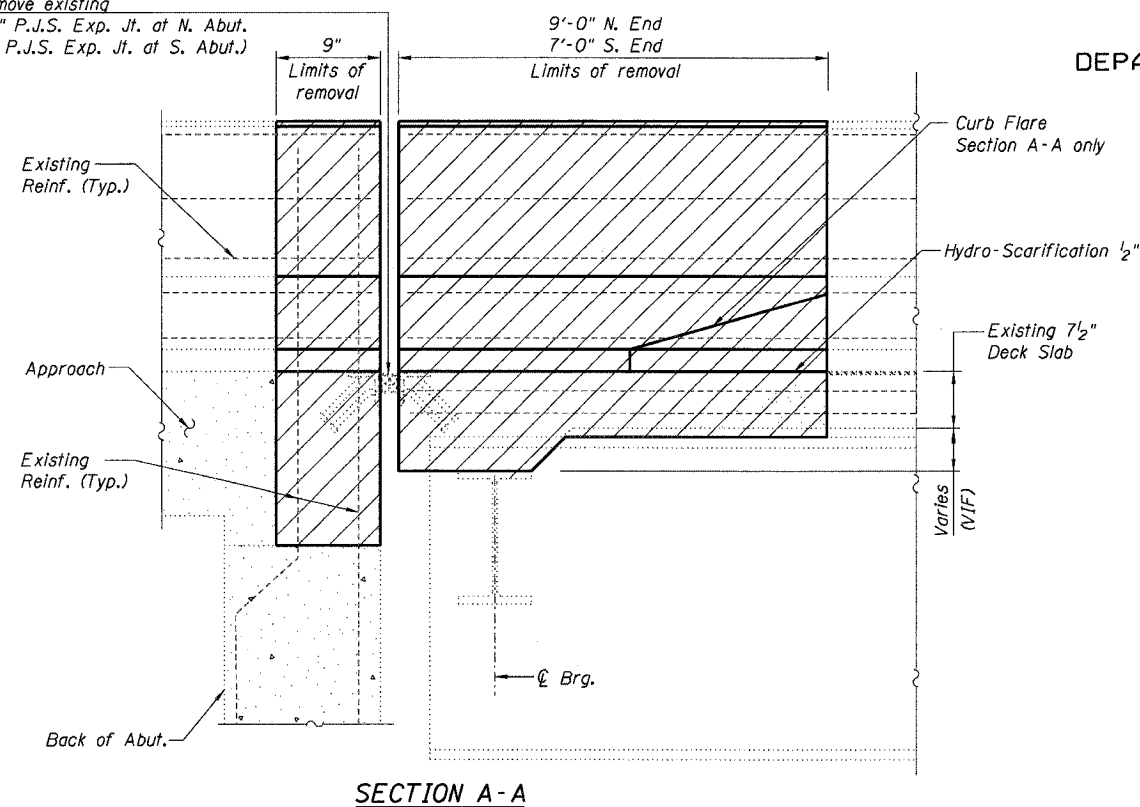
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DEPARTMENT OF TRANSPORTATION

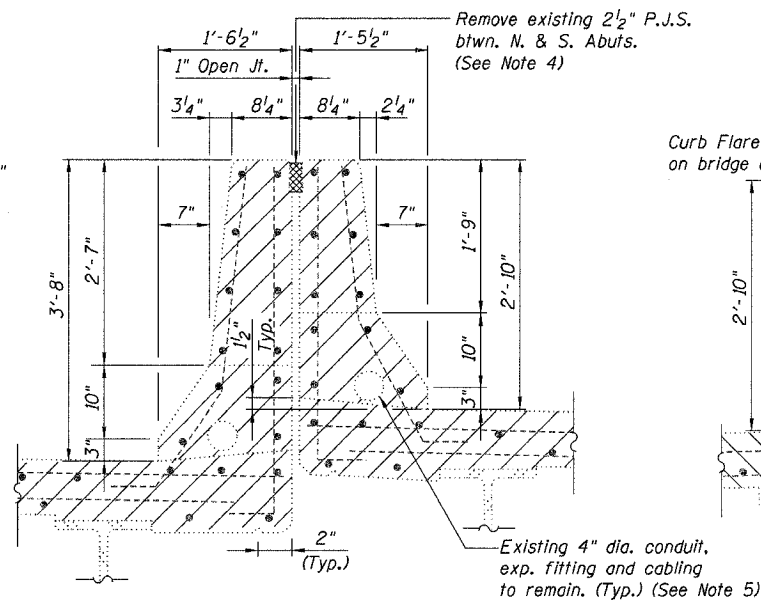
ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	109
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

Remove existing
2 1/2" P.J.S. Exp. Jt. at N. Abut.
(4" P.J.S. Exp. Jt. at S. Abut.)



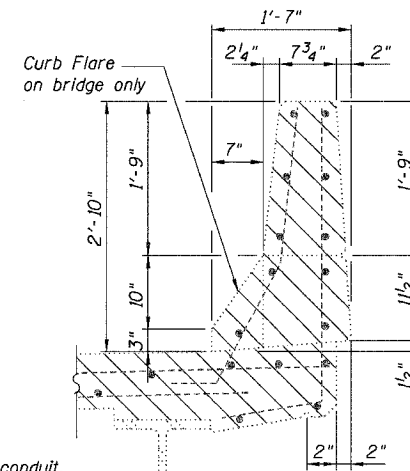
SECTION A-A



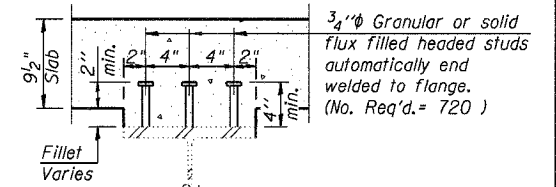
SB MEDIAN PARAPET

NB MEDIAN PARAPET

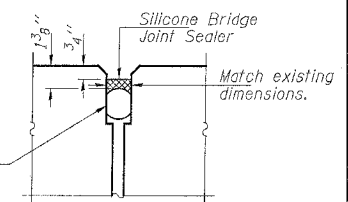
SECTION C-C



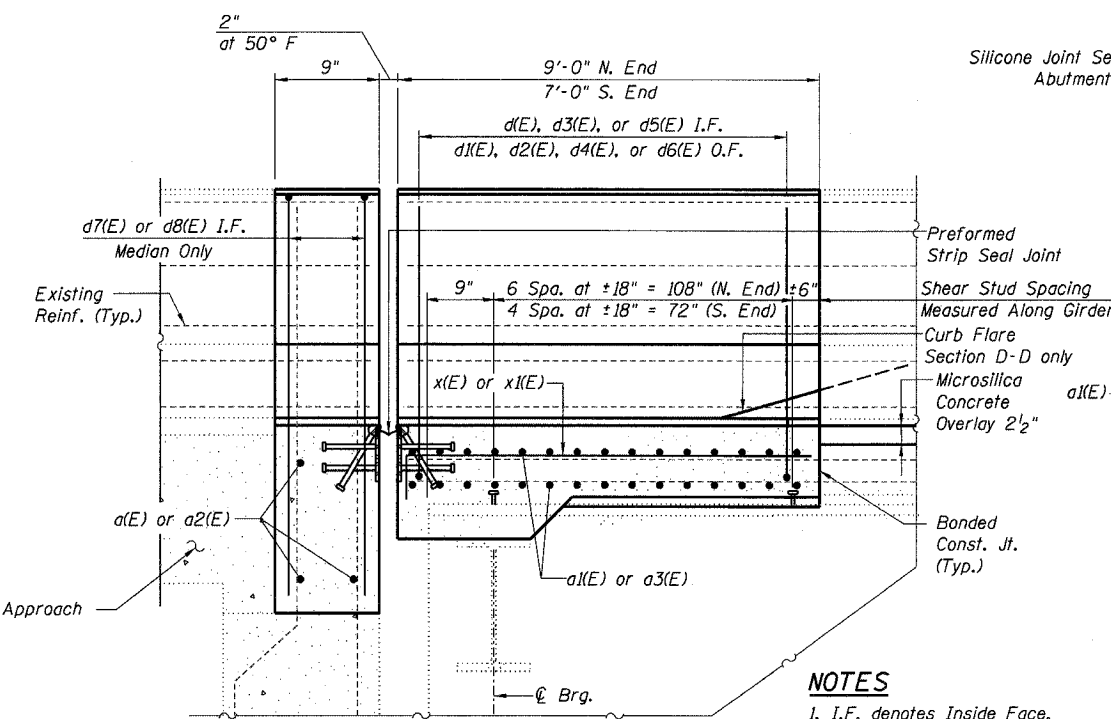
SECTION B-B



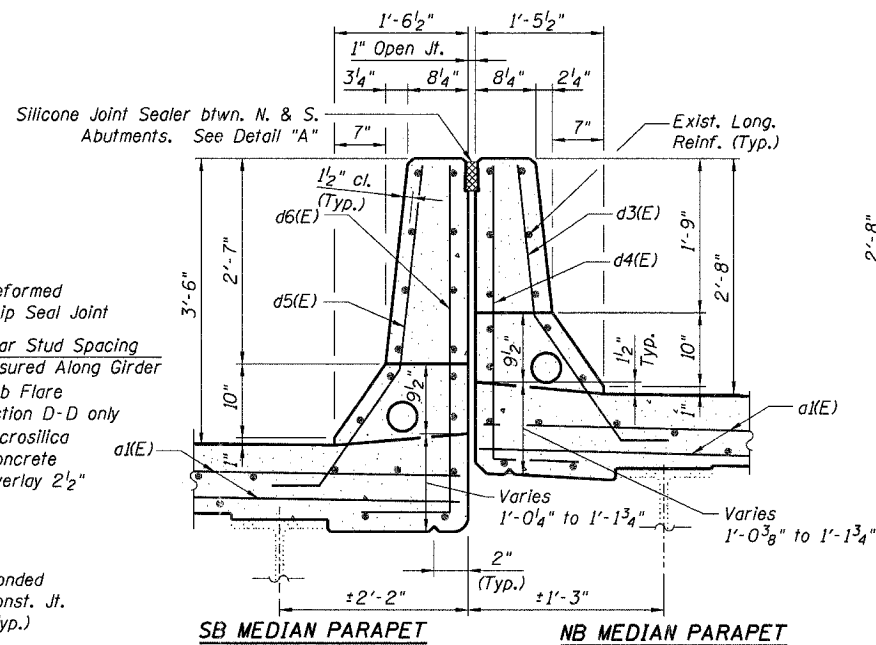
SECTION THRU BEAM



DETAIL "A"



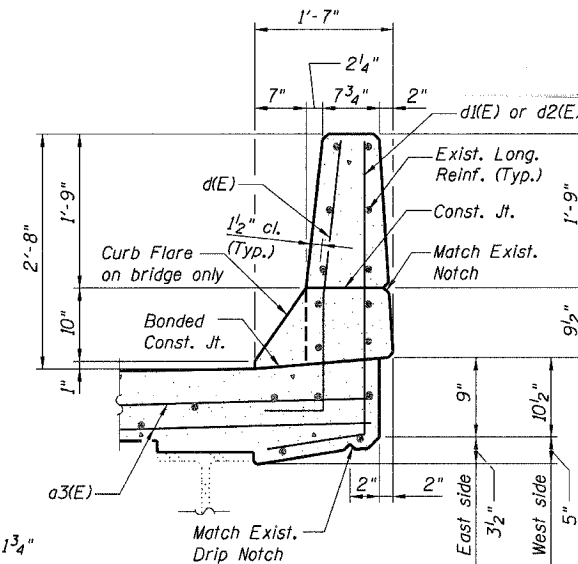
SECTION D-D



SB MEDIAN PARAPET

NB MEDIAN PARAPET

SECTION F-F



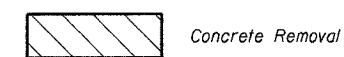
SECTION E-E

NOTES

1. I.F. denotes Inside Face. O.F. denotes Outside Face.
2. Work required for removal of existing expansion joint shall be included in the cost of Concrete Removal.
3. Work this sheet with Sheet No. 108
4. Work required for removal of existing P.J.S. shall be included in the cost of Silicone Bridge Joint Sealer, 2".

5. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the engineer. No splicing will be allowed to any cable damage resulting from this work; Instead the Contractor will be required to replace the entire span of any damaged cable.

LEGEND



EXPANSION JOINT REMOVAL &
REPLACEMENT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

DESIGNED	GWS
CHECKED	AMK
DRAWN	EF
CHECKED	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

I:\2298\struct\dgn\0105EXP01.dgn

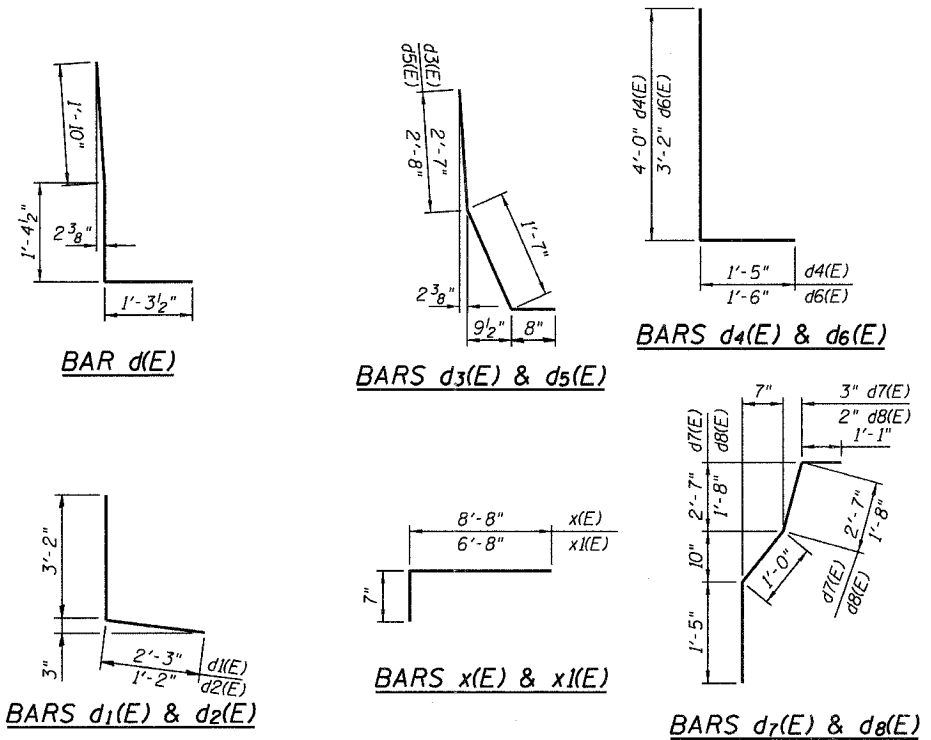
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	109a
FED. ROAD DIST. NO. 7	ILLINOIS		FED. AID PROJECT	

Contract # 62747

**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	24	#6	21'-2"	—
a1(E)	272	#5	20'-11"	—
a2(E)	24	#6	16'-7"	—
a3(E)	272	#5	16'-4"	—
d(E)	40	#5	4'-6"	L
d1(E)	22	#4	5'-5"	L
d2(E)	18	#4	4'-4"	L
d3(E)	20	#5	4'-10"	┘
d4(E)	20	#4	5'-5"	┘
d5(E)	20	#5	4'-11"	┘
d6(E)	20	#4	4'-8"	┘
d7(E)	4	#5	6'-1"	┘
d8(E)	4	#5	5'-2"	┘
x(E)	120	#5	9'-3"	—
x1(E)	120	#5	7'-3"	—
Concrete Removal			Cu. Yd.	104.7
Concrete Superstructure			Cu. Yd.	115.2
Bridge Deck Grooving			Sq. Yd.	2,329
Protective Coat			Sq. Yd.	267
Reinforcement Bars, Epoxy Coated			Pound	14,700
Silicone Bridge Joint Sealer, 2"			Foot	183



BAR BEND DETAILS

NOTE

Reinforcement bars designated (E) shall be epoxy coated.

**REINFORCING BAR DETAILS &
SUPERSTRUCTURE BILL OF MATERIAL
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105**

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	JSD
CHECKED -	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

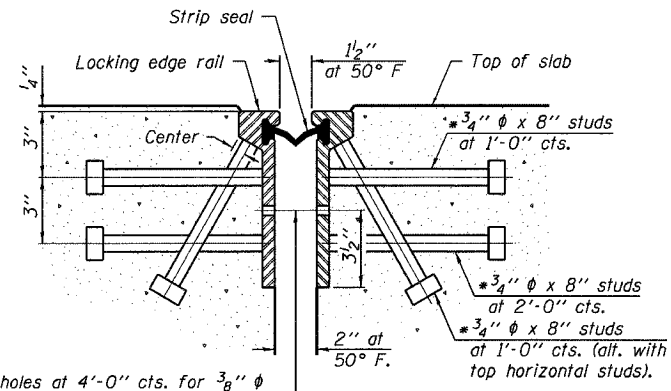
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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	109b
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

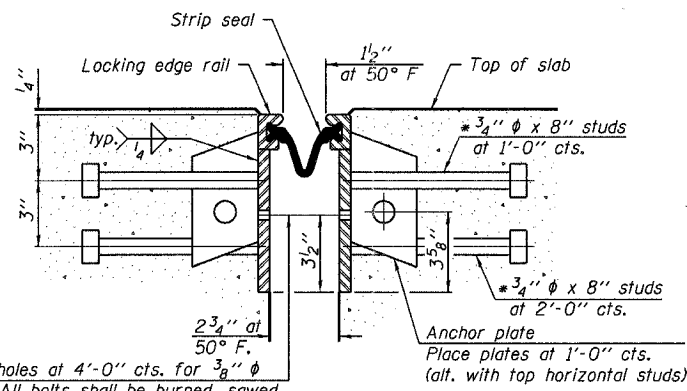
Contract # 62747

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.



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

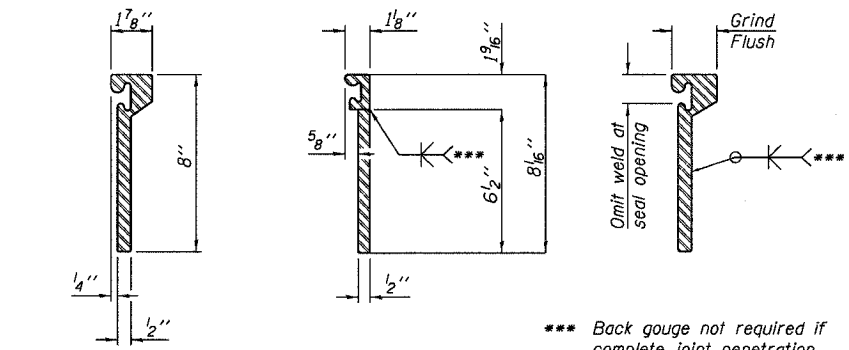


7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

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 height and thickness of the Locking Edge Rails shown are minimum dimensions. 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 and stage construction joints.
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.

SECTION THRU
ROLLED RAIL JOINT

SECTION THRU
WELDED RAIL JOINT

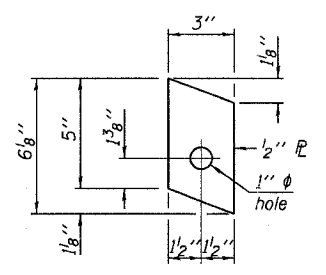


ROLLED (EXTRUDED) RAIL WELDED RAIL

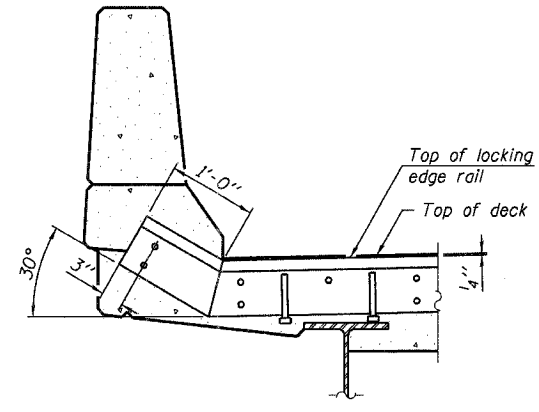
*** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE
RAIL SPLICE

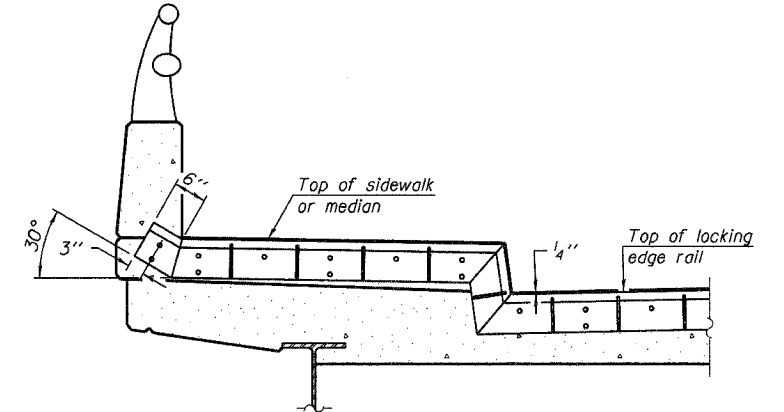
The inside of the locking edge rail groove shall be free of weld residue.



ANCHOR PLATE
(for welded rail)



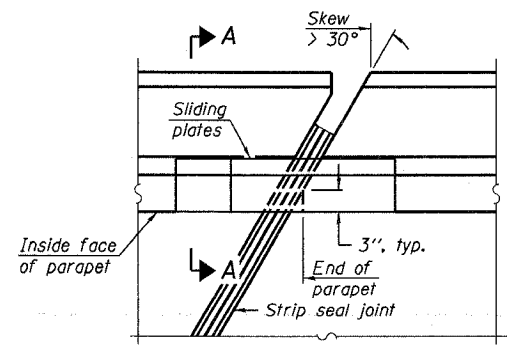
AT PARAPET



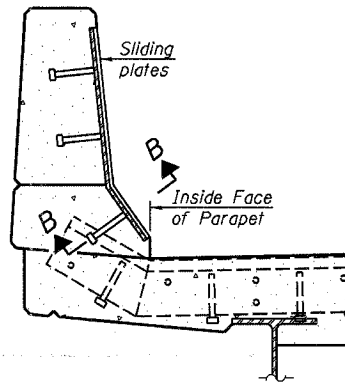
AT SIDEWALK OR MEDIAN

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.

LOCKING EDGE RAILS



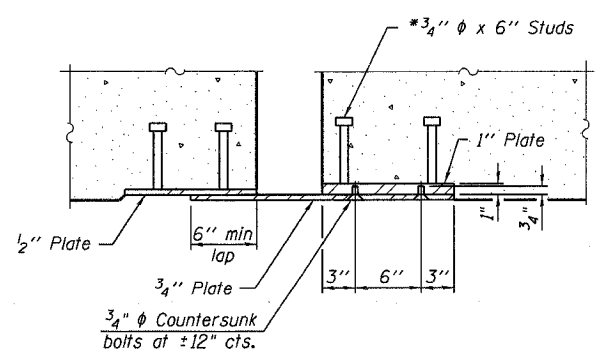
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	269

EXPANSION JOINT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

DESIGNED	GWS
CHECKED	JSD
DRAWN	EF
CHECKED	JSD

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

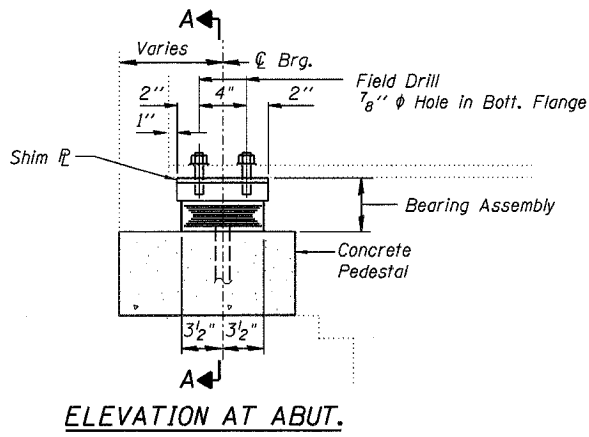
EJ-SSJ 11-1-06

T:\2298\structure\dgn\0105COM09.dgn

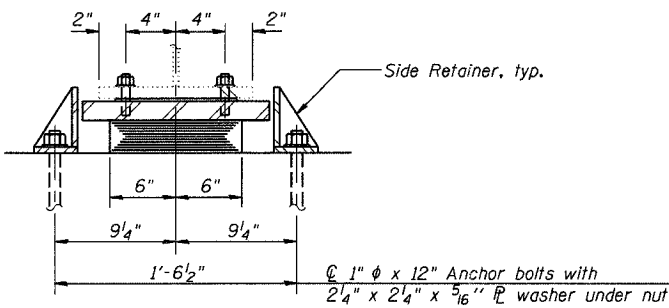
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043	COOK	135	110
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

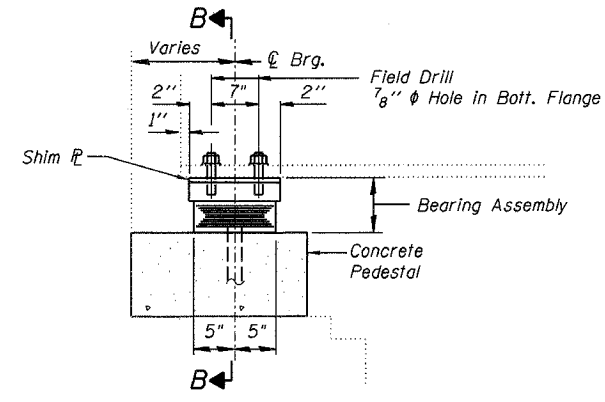


ELEVATION AT ABUT.

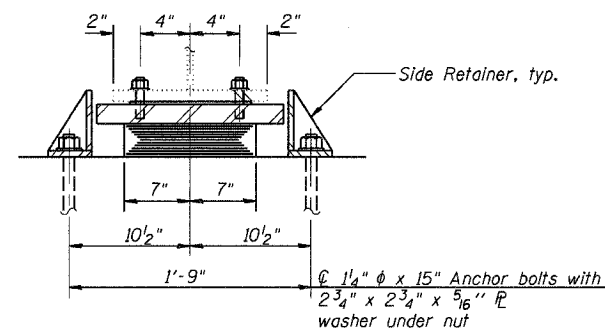


SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.
N. ABUT.

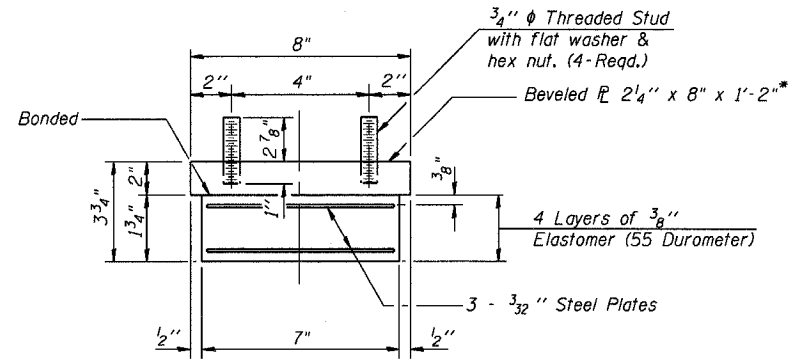


ELEVATION AT ABUT.



SECTION B-B

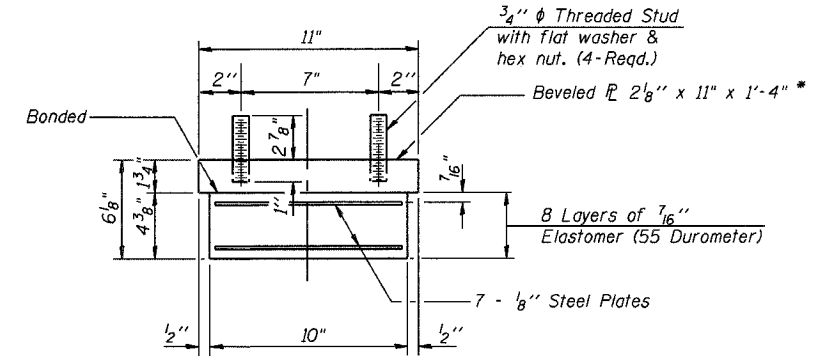
TYPE I ELASTOMERIC EXP. BRG.
S. ABUT.



BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.

Notes:
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 at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.
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 I.

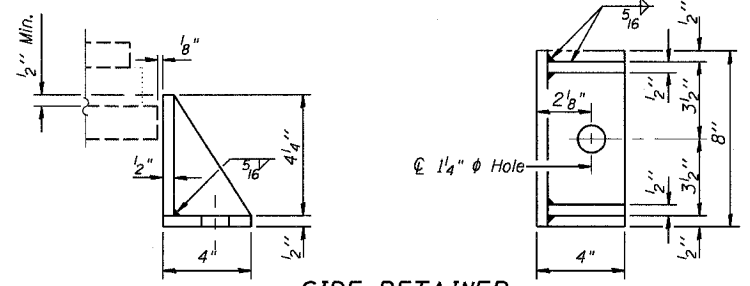


BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.

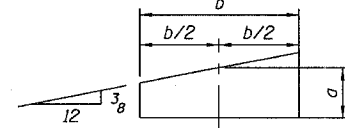
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	40
Jack & Remove Existing Bearings	Each	40
Anchor Bolts, 1"	Each	40
Anchor Bolts, 1 1/4"	Each	40



SIDE RETAINER

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

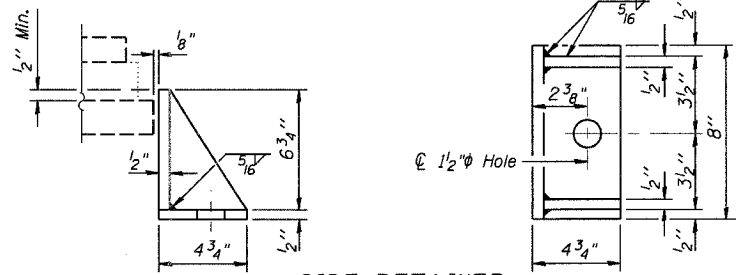


BEVEL DETAIL

Location	a	b
N. Abut.	2 1/8"	8"
S. Abut.	1 5/16"	11"

NOTES

- See Sheet No. 111 and 112 for existing bearing removal and proposed pedestal details.
- Field drilling of holes in bottom flange of existing beams is included with the cost of Elastomeric Bearing Assembly, Type I.



SIDE RETAINER

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

BEARING DETAILS I
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	JSD
CHECKED -	AMK

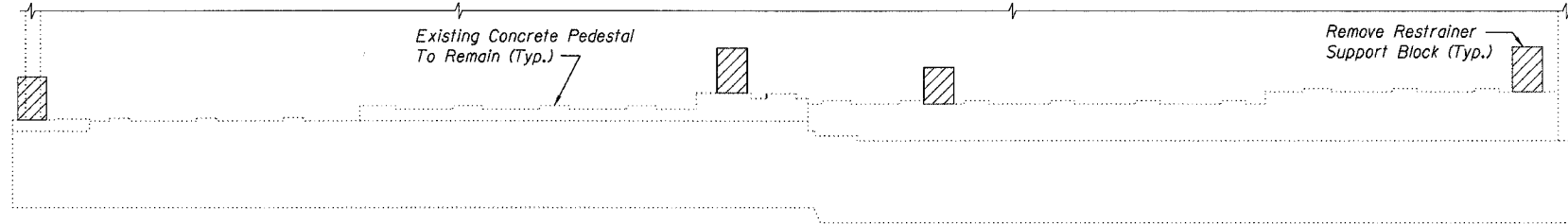
LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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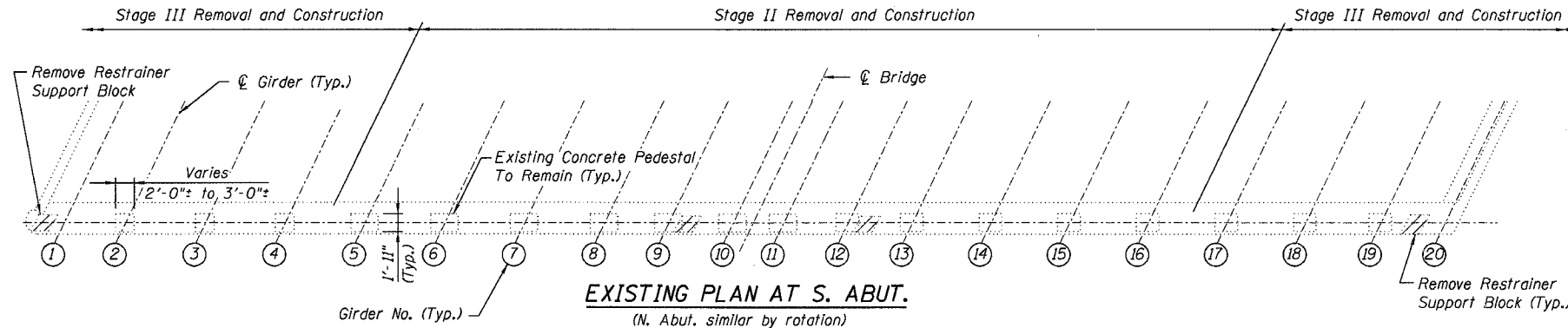
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET
F.A.I. 94	2006-043 RS	COOK	135	111
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

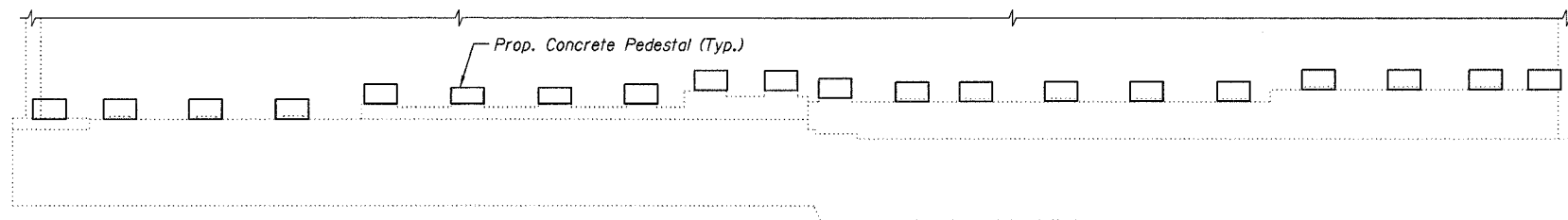
Contract # 62747



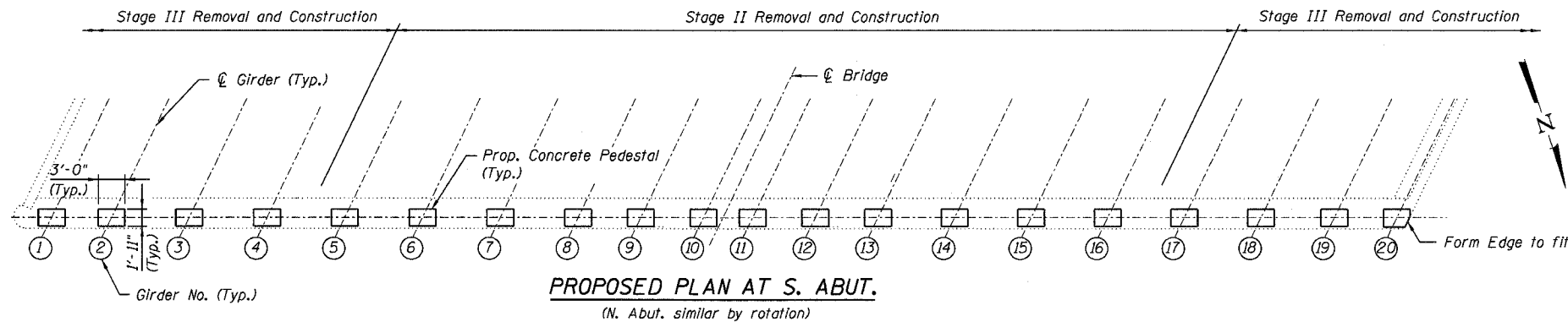
EXISTING ELEVATION AT S. ABUT.
(N. Abut. similar by rotation)



EXISTING PLAN AT S. ABUT.
(N. Abut. similar by rotation)



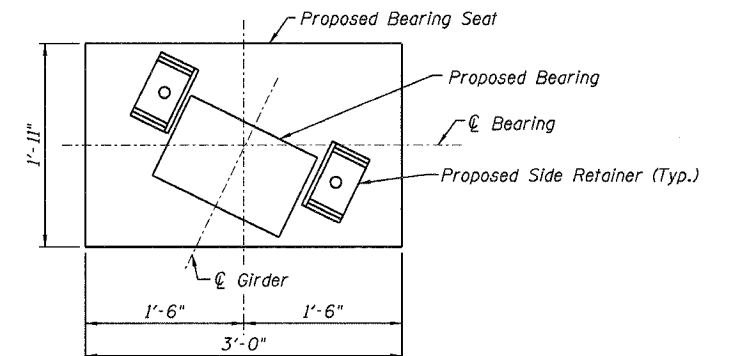
PROPOSED ELEVATION AT S. ABUT.
(N. Abut. similar by rotation)



PROPOSED PLAN AT S. ABUT.
(N. Abut. similar by rotation)

REACTION TABLE

		Abutment
R_p	(k)	24.4
R_k	(k)	35.8
Imp	(k)	9.9
R_{Total}	(k)	70.2

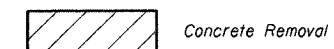


CONCRETE PEDESTAL PLAN

NOTES

1. See Sheet No. 110 for proposed bearing details.
2. The Contractor shall field verify all existing dimensions.
3. Work this sheet with Sheet No. 112
4. For Bill of Material, see Sheet No. 112

LEGEND



BEARING DETAILS II
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	JSD
CHECKED -	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

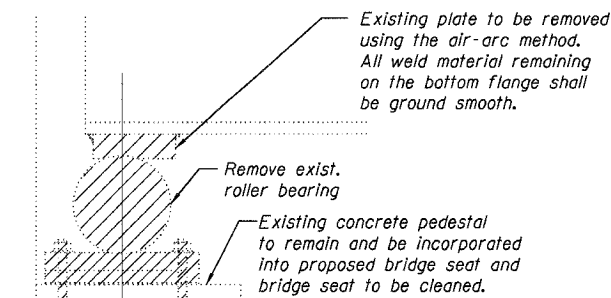
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	112
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

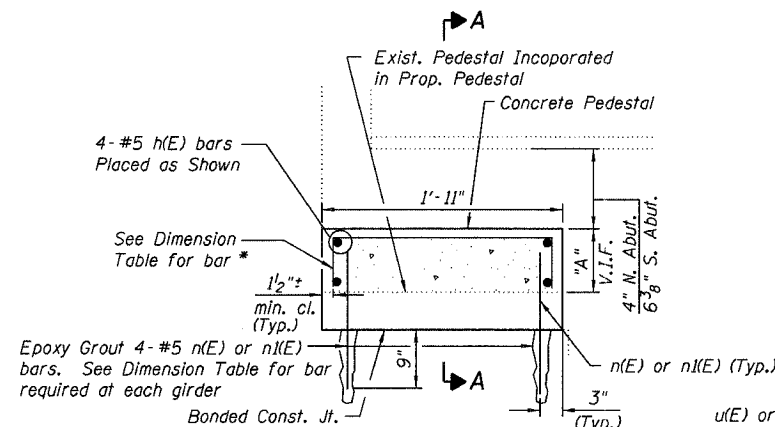
Contract # 62747

DIMENSION TABLE

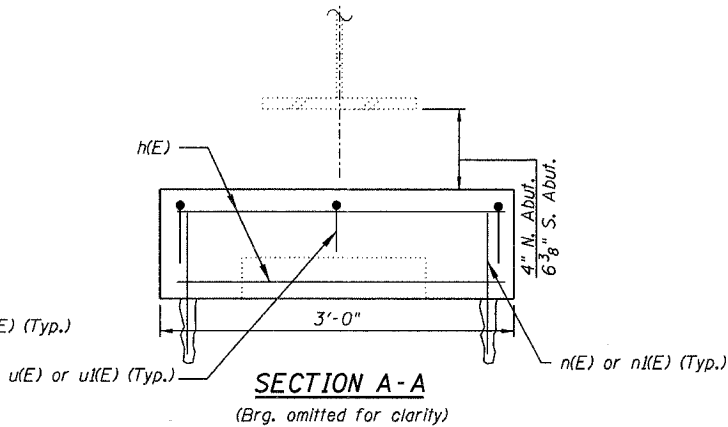
Girder	N. Abut.		S. Abut.	
	"A" (in)	bars required	"A" (in)	bars required
1	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
2	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
3	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
4	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
5	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
6	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
7	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
8	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
9	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
10	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
11	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
12	8 1/8	3-#5 u(E) n(E)	6 3/4	3-#5 u(E) n(E)
13	8 1/8	3-#5 u(E) n(E)	6 3/4	3-#5 u(E) n(E)
14	8 1/8	3-#5 u(E) n(E)	6 3/4	3-#5 u(E) n(E)
15	8 1/8	3-#5 u(E) n(E)	6 3/4	3-#5 u(E) n(E)
16	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
17	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
18	9 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
19	8 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)
20	9 1/8	3-#5 u(E) n(E)	5 3/4	3-#5 u(E) n(E)



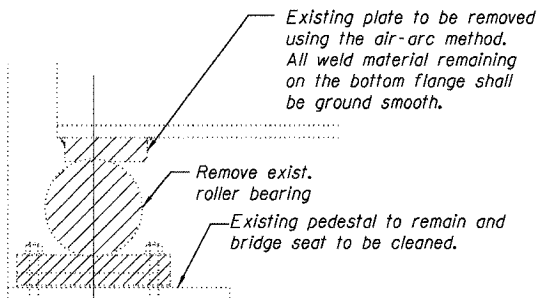
**EXISTING ABUT. ELEVATION
AT BEAMS 2 THRU 4**



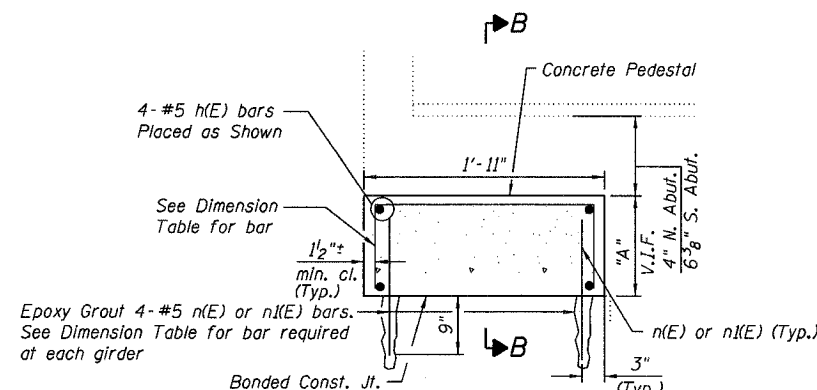
**PROPOSED ABUT. ELEVATION
AT BEAMS 2 THRU 4 AND 12 THRU 19**
(Brg. omitted for clarity)



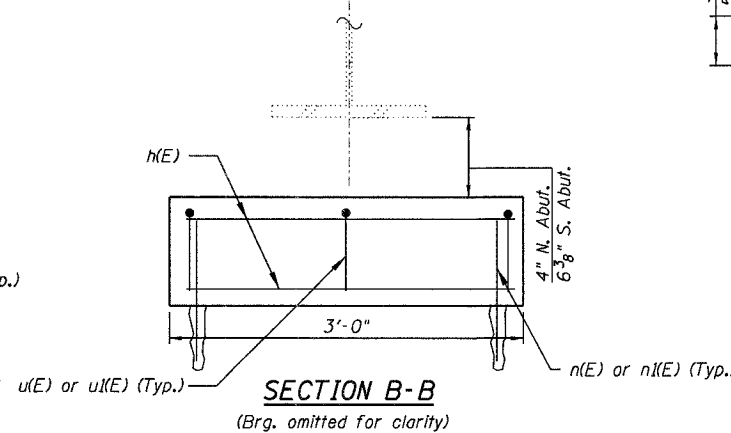
SECTION A-A
(Brg. omitted for clarity)



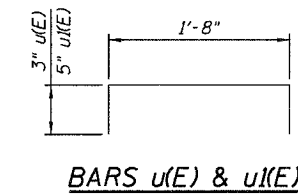
**EXISTING ABUT. ELEVATION
AT BEAMS 1 AND 5 THRU 20**



**PROPOSED ABUT. ELEVATION
AT BEAMS 1, 5 THRU 11 AND 20**
(Brg. omitted for clarity)



SECTION B-B
(Brg. omitted for clarity)



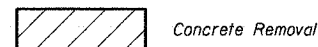
BARS u(E) & u(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
n(E)	160	#5	2'-9"	—
n(E)	80	#5	1'-1"	—
n(E)	80	#5	1'-3"	—
u(E)	60	#5	2'-2"	┌
u(E)	60	#5	2'-6"	┌
Concrete Removal			Cu. Yd.	2.5
Concrete Structures			Cu. Yd.	6.0
Reinforcement Bars, Epoxy Coated			Pound	940
Cleaning Bridge Seats			Sq. Ft.	605

* Cut u bars in the field if necessary to fit around existing pedestals

LEGEND



Concrete Removal

NOTES

- See Sheet No. 110 for proposed bearing details.
- Epoxy Grouting of Bars is included with the cost of Concrete Structures.
- The Contractor shall field verify all dimensions.

BEARING DETAILS III
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

DESIGNED	JSD
CHECKED	DWH
DRAWN	JSD
CHECKED	DWH

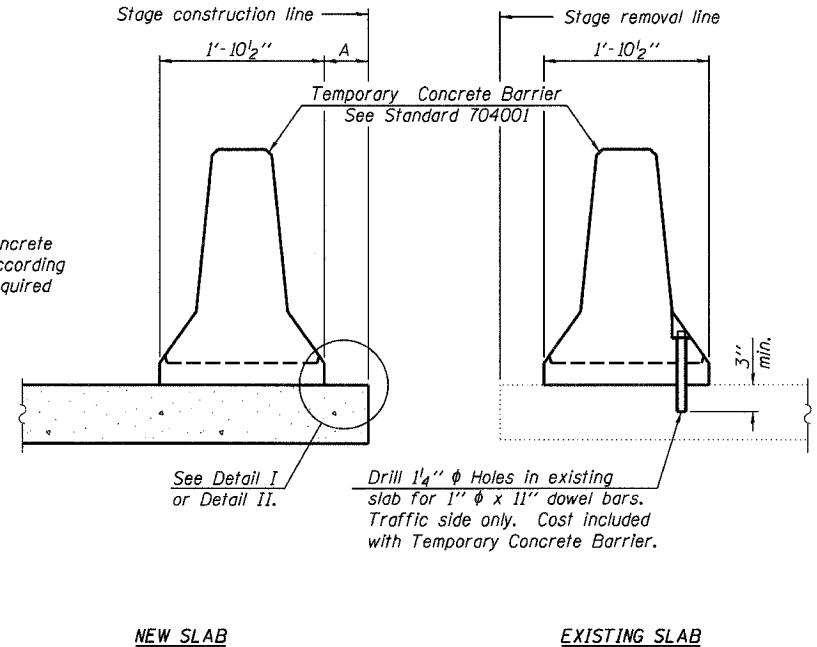
LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	112a
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

Contract # 62747

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".

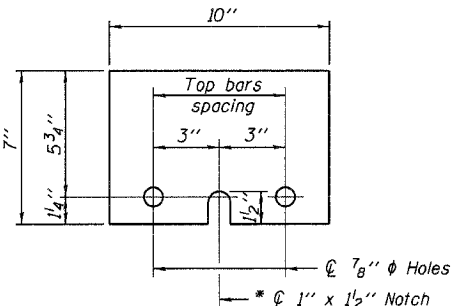
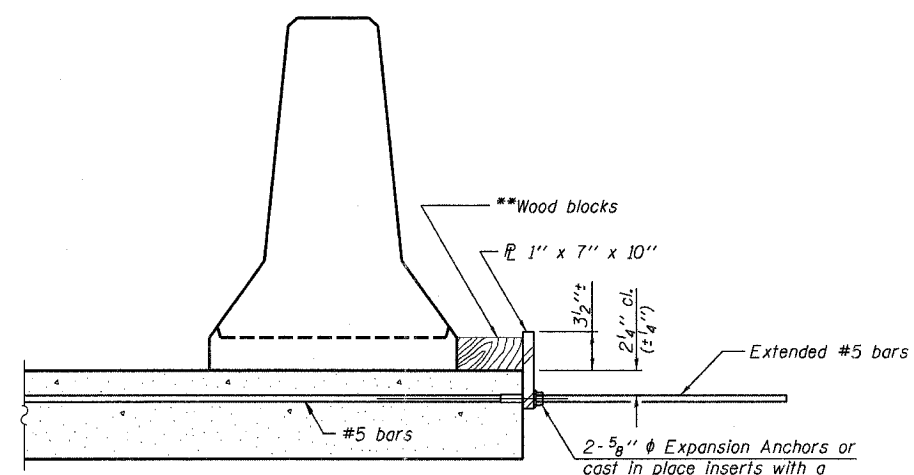
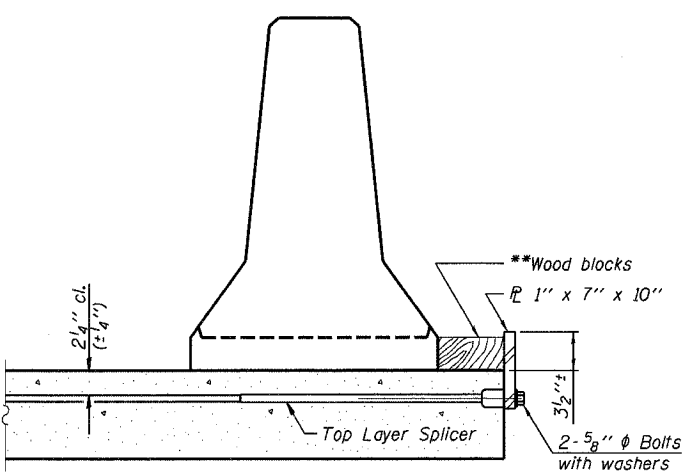


NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{P} to the top layer of couplers with 2- $\frac{5}{8}$ " 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{P} to the concrete slab with 2- $\frac{5}{8}$ " 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.



** 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.

DESIGNED -	GWS
CHECKED -	JSD
DRAWN -	EF
CHECKED -	JSD

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

R-27

11-1-06

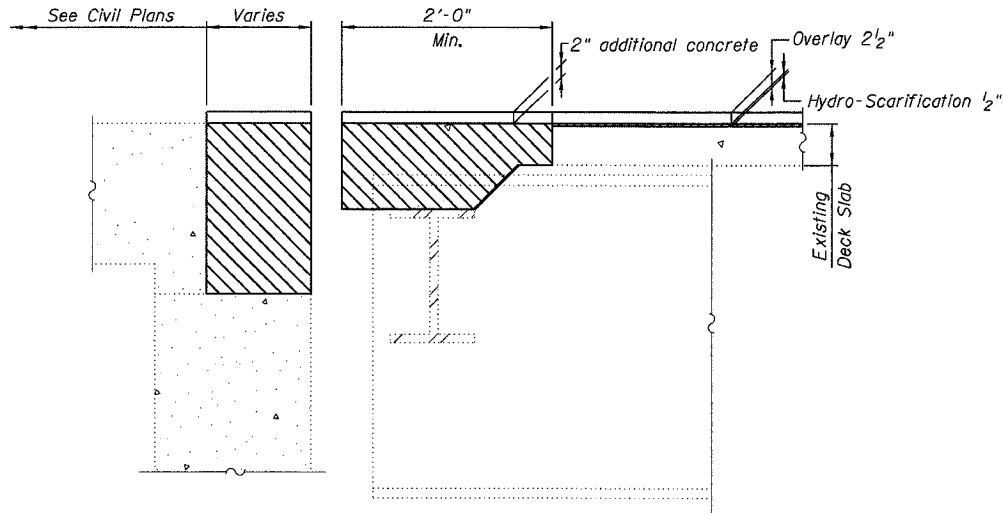
TEMPORARY CONCRETE BARRIER FOR
STAGE CONSTRUCTION
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

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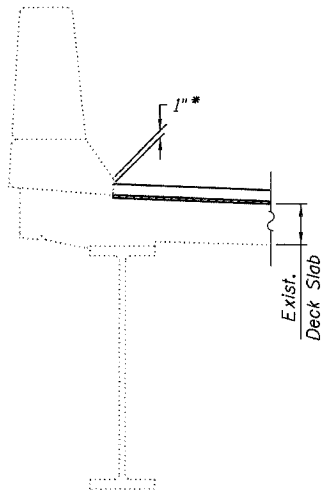
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	112b
FED. ROAD DIST. NO. 7	ILLINOIS		FED. AID PROJECT	

Contract # 62747



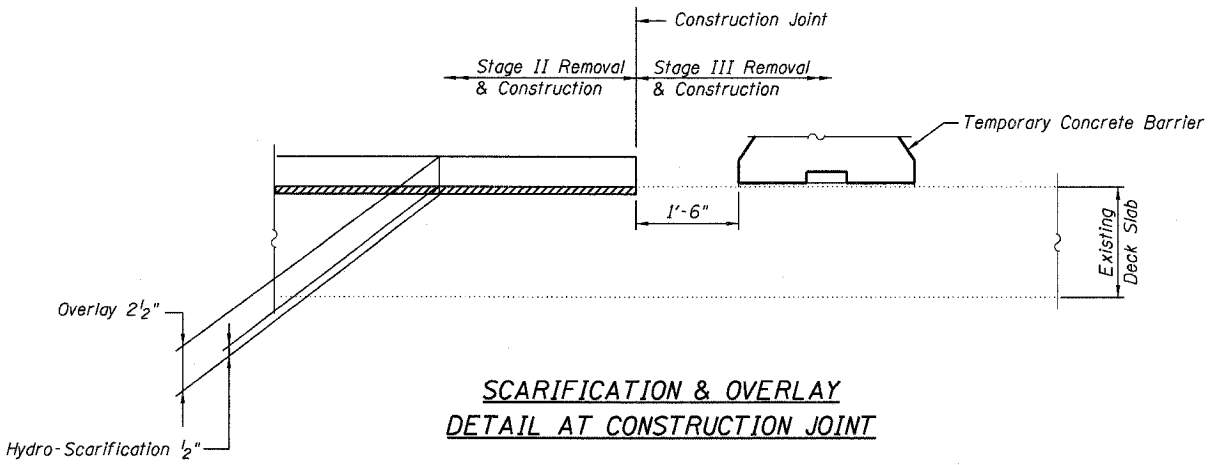
SCARIFICATION & OVERLAY DETAIL AT ABUTMENT



* Contractor shall increase hydro-scarification thickness or reduce overlay thickness as directed by the Engineer to ensure that this dimension is not less than 0".

SCARIFICATION & OVERLAY DETAIL AT PARAPET

(Applies only to areas outside the joint removal area.)





SCARIFICATION & OVERLAY DETAIL AT CONSTRUCTION JOINT

NOTE

If additional hydro-scarification is required to maintain the dimension shown in the Scarification & Overlay Detail at Parapet, it shall be included in the cost for Bridge Deck Hydro-Scarification 1/2".

LEGEND

-  Hydro-Scarification
-  Concrete Removal

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	JSD
CHECKED -	DWH

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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SCARIFICATION AND OVERLAY DETAILS OVER GOLF ROAD F.A.I. 94/ (EDENS EXPRESSWAY) COOK COUNTY STATION 265+65.22 STRUCTURE NO. 016-0105

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
F.A.I. 94	2006-043 RS	- COOK -	135	112c
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

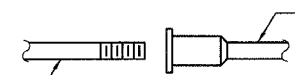
NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
- ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_t$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

The diameter of this part is equal or larger than the diameter of bar spliced.
The diameter of this part is the same as the diameter of the bar spliced.

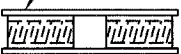


ROLLED THREAD DOWEL BAR



** ONE PIECE

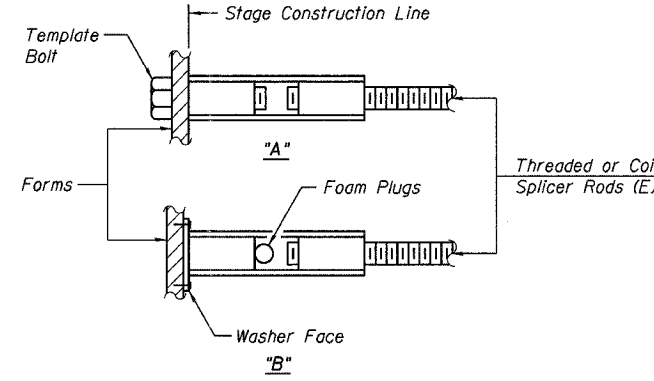
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

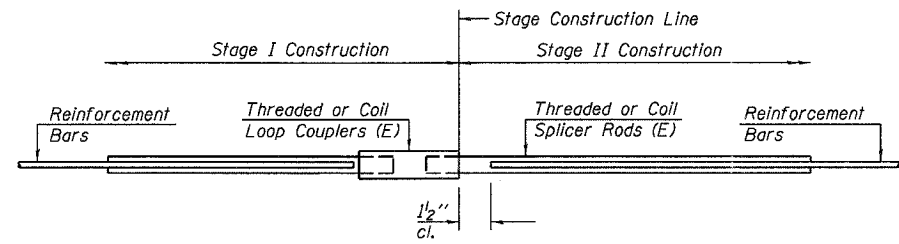
** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



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.

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



STANDARD

Bar Size	No. Assemblies Required	Location
#5	76	N. Abut. Deck
#6	6	N. Abut. Backwall
#5	60	S. Abut. Deck
#6	6	S. Abut. Backwall

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	EF
CHECKED -	AMK

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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

BAR SPLICER ASSEMBLY DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER GOLF ROAD
COOK COUNTY
STATION 265+65.22
STRUCTURE NO. 016-0105

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET
F.A.I. 94	2006-043 RS	COOK	135	113
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

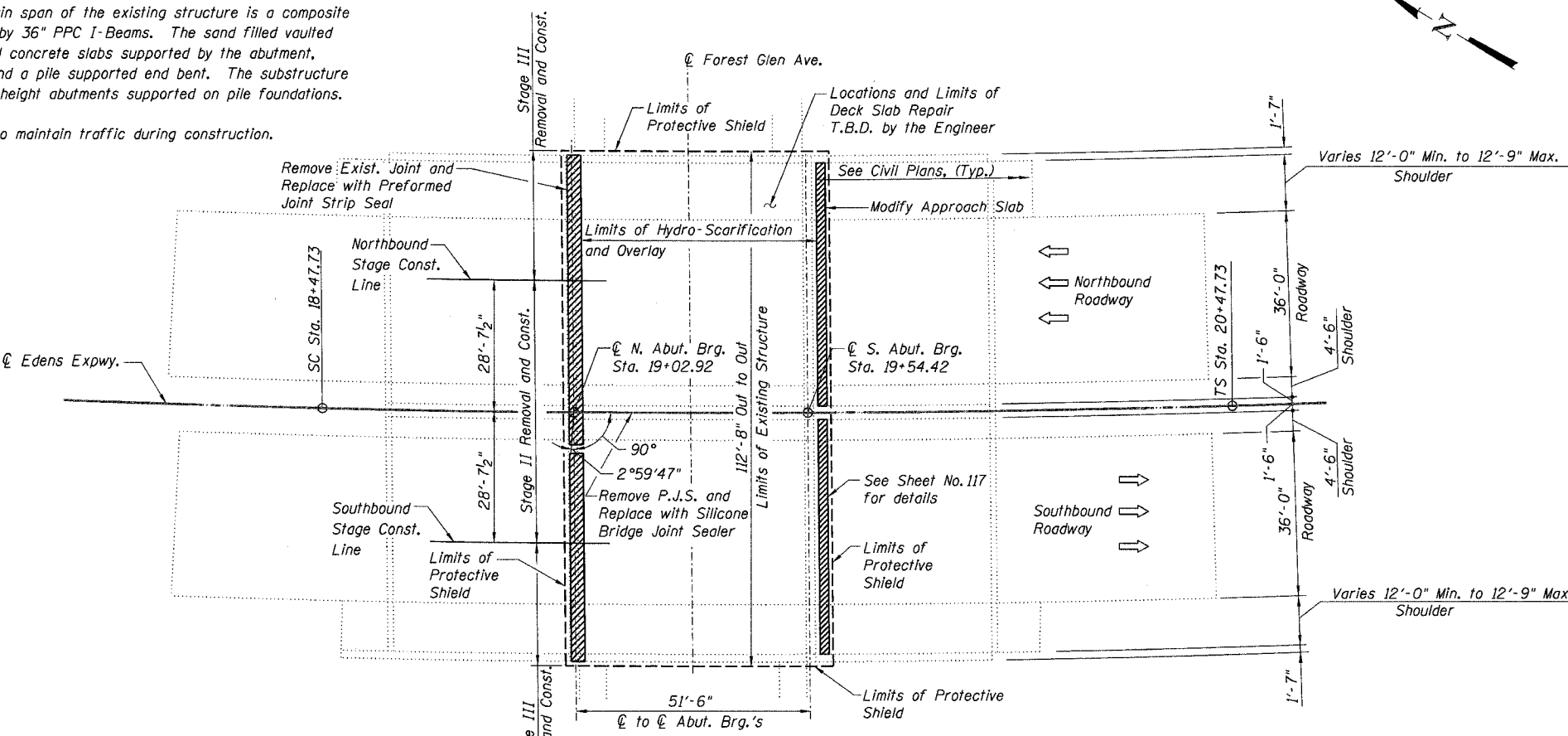
Contract # 62747

B.M. - Engineer to set temporary benchmark in field as necessary.

Existing Structure - Structure No. 016-0106, built as S.A. Edens Superhighway, Section 263-0202.1-15D at Station 19+28.67 in 1949. The structure was rehabilitated and widened in 1979 as FAI Route 94 (Edens Expressway), Section 1975-118-R & BR. The existing structure consists of a simple span with vaulted, sand filled approach spans. The main span of the existing structure is a composite reinforced concrete deck supported by 36" PPC I-Beams. The sand filled vaulted approaches consist of 16" reinforced concrete slabs supported by the abutment, a pile supported intermediate bent and a pile supported end bent. The substructure consists of reinforced concrete full height abutments supported on pile foundations.

Stage construction shall be utilized to maintain traffic during construction.

No Salvage



DESIGN SPECIFICATIONS

2002 AASHTO

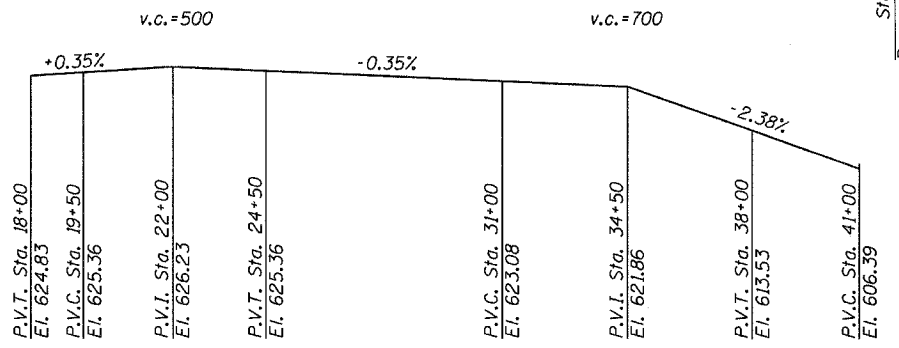
DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

SCOPE OF WORK

1. Provide Protective Shield with limits as indicated.
 2. Perform substructure repairs (structural repair of concrete and epoxy crack injection).
- Stage II:**
3. Close Stage II construction areas to traffic.
 4. Hydro-Scarify the deck slab.
 5. Remove and replace expansion joint and surrounding concrete (including parapets); Remove and replace concrete at fixed joint.
 6. Perform deck slab repair.
 7. Place Overlay.
 8. Place temporary roadway transitions.
 9. Open Stage II Removal area to staged traffic.
- Stage III:**
10. Close Stage III Removal areas to traffic.
 11. Repeat steps 4-8 but for Stage III construction.
 12. Open bridge to traffic.



**EXISTING PROFILE GRADE
EDENS EXPRESSWAY**

PLAN

EXISTING CURVE DATA

$\Delta = 38^\circ 21'$
 $D = 3^\circ$
 $T = 764.52'$
 $L_s = 200.0'$
 $E_s = 113.12'$
 $R = 1910.08'$
 $L_c = 1078.33'$
 $P.I. = \text{Sta. } 13+33.92$

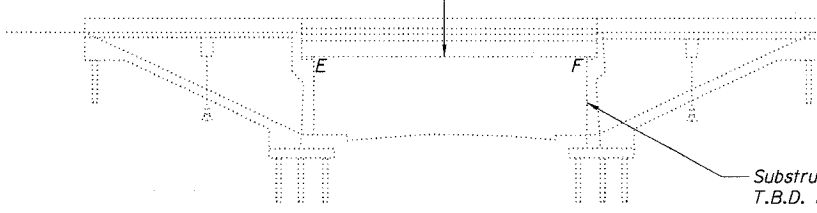
NOTES

1. For joint removal and replacement plans and details, see Sheet No. 116 thru 117b
2. See Structural Notes on Sheet No. 113a

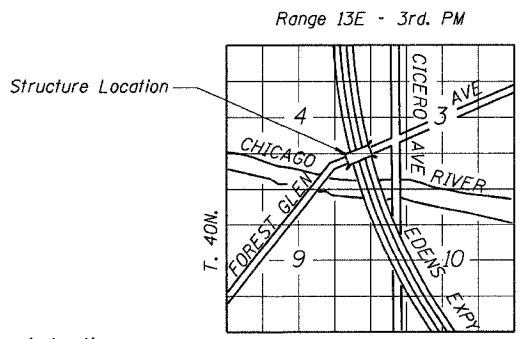
LEGEND

- Protective Shield Limits
- Concrete Removal / Joint Reconstruction

PPC I-Beam repair locations
T.B.D. by the Engineer (Typ.)



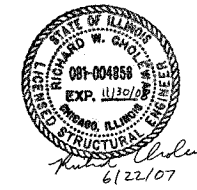
**ELEVATION
(Looking East)**



LOCATION SKETCH

DESIGNED	DWH
CHECKED	JSD
DRAWN	EF
CHECKED	JSD

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H.W. LOCHNER, INC., CHICAGO, ILLINOIS



**GENERAL PLAN & ELEVATION
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106**

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	113a
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

STRUCTURAL NOTES

- Expansion joint plates and attached bars shall be shop painted with the inorganic zinc rich primer.
- The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.
- Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60 (IL Modified). See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- 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 shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- 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 compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.
- Stage construction shall be utilized to maintain traffic during construction.
- The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
- The Contractor shall provide a Protective Shield under the deck for Full Deck Slab repairs as per direction of the Engineer and as shown on the plans.
- The Contractor may have to remove the Name Plate(s) that interfere with the parapet removal for joint reconstruction. The Contractor shall reinstall the Name Plate(s) as directed by the Engineer. The cost of removal and reinstallation of Name Plate(s) shall be included in the cost for "Concrete Removal" and "Concrete Superstructure."
- Protective coat shall be applied only to the new concrete provided for the reconstruction of the joints (top of deck slab, top and traffic face of parapet).
- The Engineer shall determine extent, location and type of substructure and deck slab repairs in the field.
- 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 an individual acceptable to the Engineer. Any cracks that can not be removed by grinding 1/4 inch 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.

- Field welding of construction accessories will not be permitted to beams or girders.
- The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection. Forms for deck slab shall be removed prior to placement of bridge approach pavement.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- Protective shielding shall be installed to insure that all electrical appurtenances below the bridge deck are adequately protected.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8 inch adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. (For Type 1 Elastomeric Bearings, two 1/8 inch adjusting shims shall be provided for each bearing and placed as detailed.

Bar Size	Min. Lap
#4	1'-8"
#5	2'-2"
#5*	3'-0"
#6	2'-7"
#6*	3'-7"
#7	3'-5"
#8	4'-6"

* Top Horizontal Bar

ABBREVIATION LIST

Abut.	Abutment	F/	Face of	R or Rad.	Radius
Alt.	Alternate	Ft.	Foot or Feet	RR	Railroad
		Ftg.	Footing	Req'd	Required
Bk.	Back			Rt.	Right
Brg.	Bearing	Gr.	Grade	Sht.	Sheet
Btwn.	Between			Spa.	Spaces or Spacing
B/	Bottom of	Jt.	Joint	Sq.	Square
Bot.	Bottom	L	Angle	S.S.	Stainless Steel
		Lt.	Left	Std.	Standard
CIP	Cast in Place	Lg.	Long	Sta.	Station
CL	Centerline			Stl.	Steel
Cts.	Centers	Max.	Maximum	St.	Street
Cl.	Clear	Min.	Minimum	Sym.	Symmetrical
Conc.	Concrete	Nom.	Nominal	Temp.	Temporary
CJ	Construction Joint	N.T.S.	Not to Scale	Thk.	Thick
Const(r).	Construction	No(s).	Number(s)	T.B.D.	To be determined
		Opp.	Opposite	T/	Top of
Dia.	Diameter			Typ.	Typical
Ea.	Each	Pavt.	Pavement	UNO	Unless Noted Otherwise
E	East	PL	Plate	VIF	Verify in Field
E/	Edge of	P.C.	Precast		
El. or Elev.	Elevation	P.J.F.	Preformed Joint Filler		
Exist.	Existing	P.J.S.	Preformed Joint Sealer		
Exp.	Expansion	PGL	Profile Grade Line	W	West
Exp.	Expressway	Prop.	Proposed	W/	With

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	EF
CHECKED -	DWH

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

STRUCTURAL NOTES
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	113b
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

TOTAL BILL OF MATERIAL

Item	Unit	Super.	Sub.	Total
Concrete Removal	Cu. Yd.	28.1		28.1
Protective Shield	Sq. Yd.	672		672
Concrete Superstructure	Cu. Yd.	31.7		31.7
Bridge Deck Grooving	Sq. Yd.	611		611
Protective Coat	Sq. Yd.	65		65
Reinforcement Bars, Epoxy Coated	Pound	5,080		5,080
Bar Splicers	Each	32		32
Preformed Joint Strip Seal	Foot	109		109
Epoxy Crack Injection	Foot		100	100
Bridge Deck Microsilica Concrete Overlay, 2 1/2"	Sq. Yd.	588		588
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	588		588
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	3		3
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	29		29
Silicone Bridge Joint Sealer, 1"	Foot	107		107
Silicone Bridge Joint Sealer, 2"	Foot	134		134
* Precast Prestressed Concrete I-Beam Repairs	L. Sum	1		1
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.		50	50

* Requires Special Provision

INDEX OF SHEETS

- 113 GENERAL PLAN & ELEVATION
- 113a STRUCTURAL NOTES
- 113b TOTAL BILL OF MATERIAL AND INDEX OF SHEETS
- 114 TYPICAL SECTION THRU BRIDGE
- 115 CONSTRUCTION STAGING DETAILS
- 116 EXPANSION JOINT REMOVAL & REPLACEMENT PLAN
- 117 EXPANSION JOINT REMOVAL & REPLACEMENT DETAILS
- 117a REINFORCING BAR DETAILS & SUPERSTRUCTURE BILL OF MATERIAL
- 117b EXPANSION JOINT DETAILS
- 117c TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
- 117d SCARIFICATION AND OVERLAY DETAILS
- 117e BAR SPLICER ASSEMBLY DETAILS

TOTAL BILL OF MATERIAL
AND INDEX OF SHEETS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

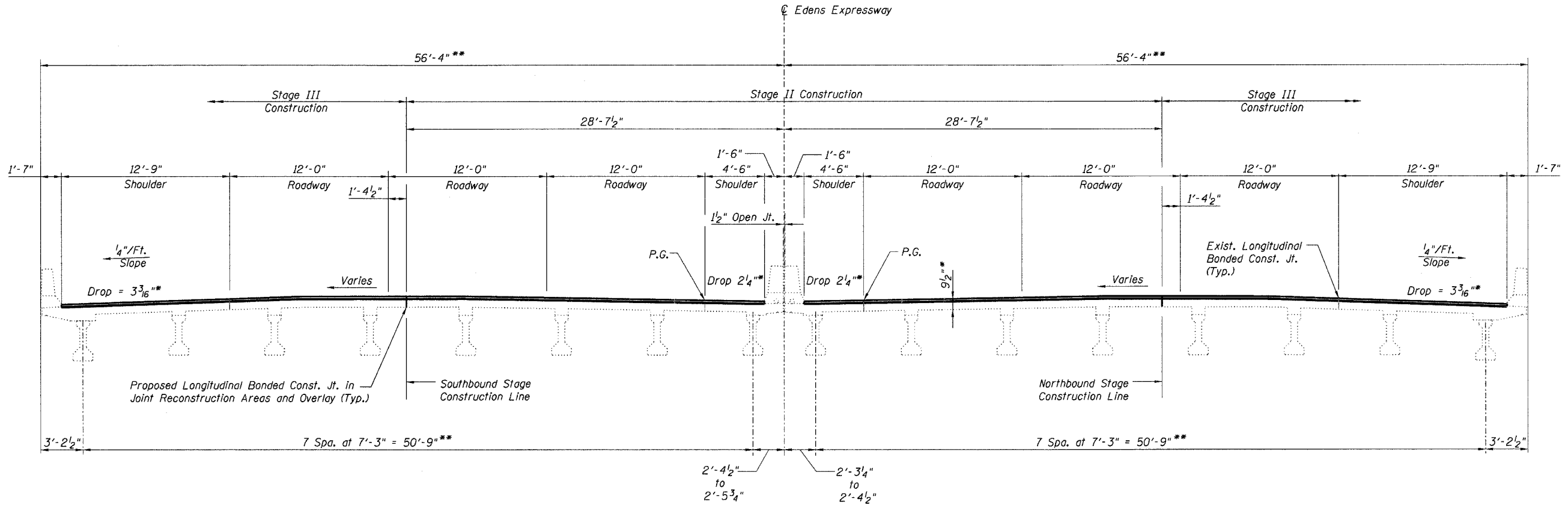
DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	EF
CHECKED -	DWH

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	114
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Contract # 62747



TYPICAL SECTION THRU BRIDGE
(Looking North)

* Deck Slab replacement in joint reconstruction locations only. See Sheet No. 116 for limits. In typical locations, proposed slab will consist of 7" slab and 2 1/2" latex concrete overlay. See Sheet No. 117d for details.

** Measured perpendicular to the chord of the \odot Edens Expressway

NOTES

- The beams and exterior parapets are parallel to the chord of the \odot Edens Expressway. The lane lines and median parapets follow the alignment of \odot Edens Expressway. All measurements have been taken perpendicular to the \odot of the Edens Expressway except as noted.
- For joint removal limits see Sheet Nos. 116 and 117
- Stage I does not include any bridge work.

TYPICAL SECTION THRU BRIDGE
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	EF
CHECKED -	AMK

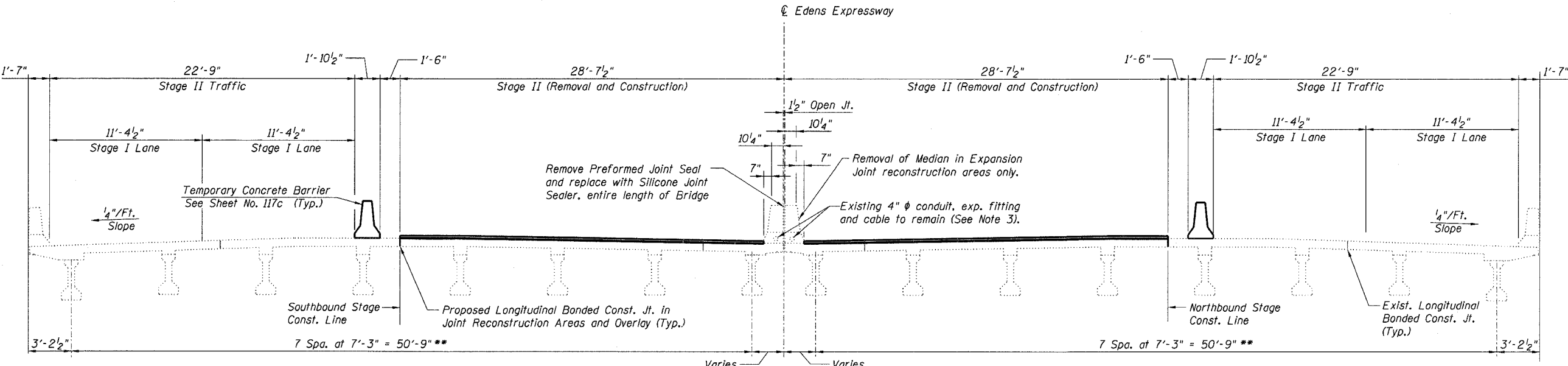
LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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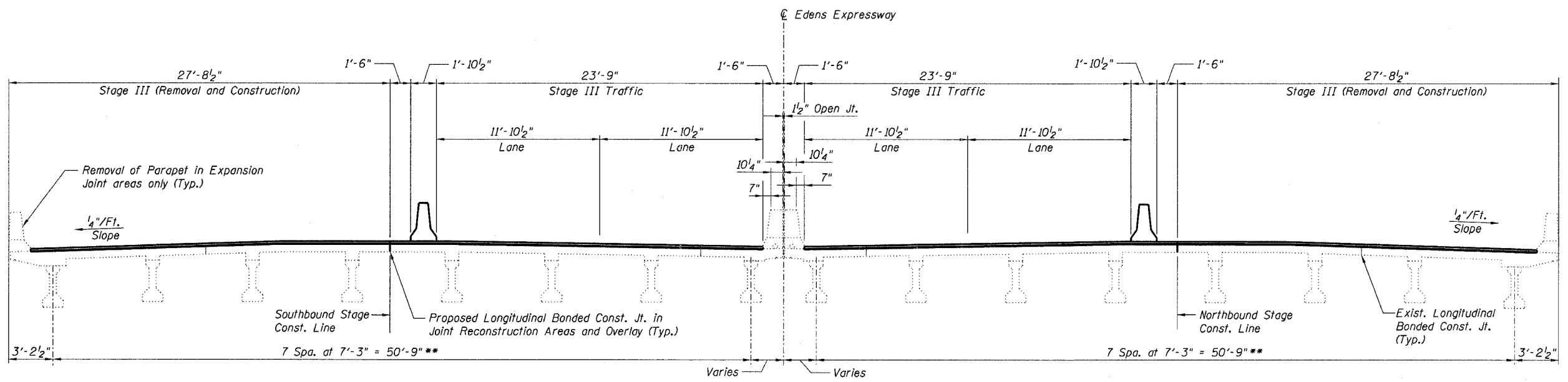
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
F.A.I. 94	2006-043 RS	COOK	135	115
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747



STAGE II
(Looking North)



STAGE III
(Looking North)

** Measured perpendicular to the chord of the Edens Expressway

NOTES

1. For joint removal limits see Sheet Nos. 116 and 117.
2. Stage I does not include any bridge work.
3. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work; instead the Contractor will be required to replace the entire span of any damaged cable.

CONSTRUCTION STAGING DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

DESIGNED	-	JSD
CHECKED	-	AMK
DRAWN	-	EF
CHECKED	-	AMK

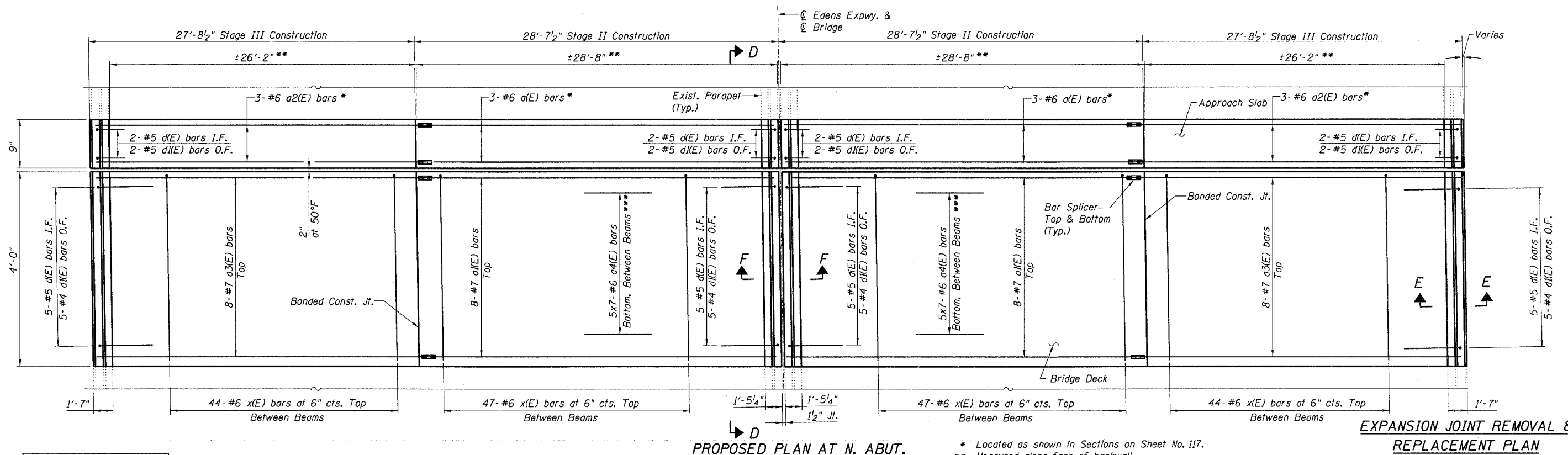
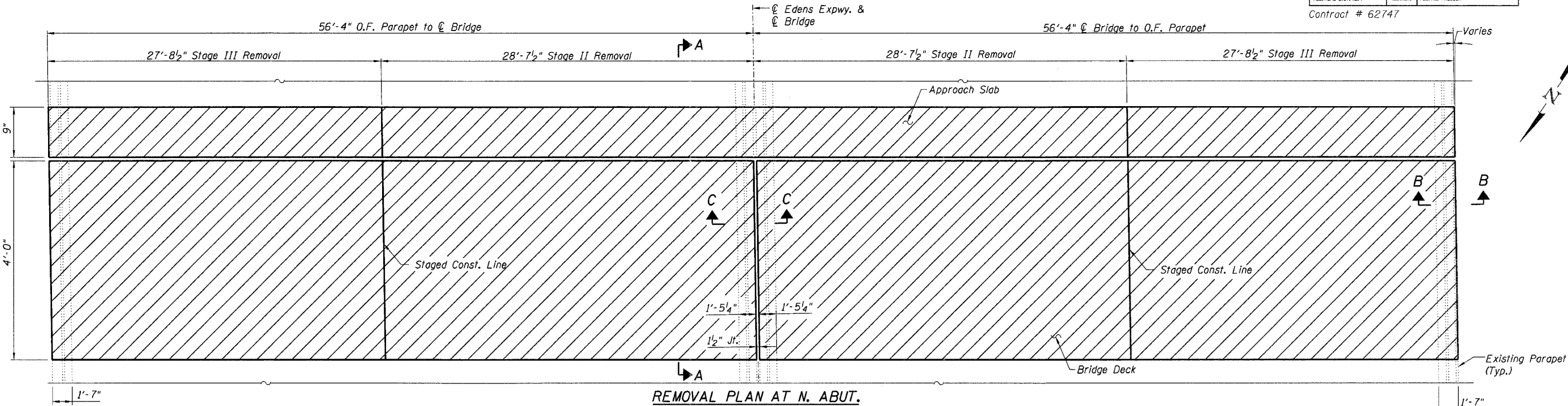
LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET
F.A.I. 94	2006-043 RS	COOK	135	116
FED. ROAD DIST. NO. 7		ILL. IND. PROJ.	FED. AID PROJECT	

Contract # 62747



DESIGNED	GWS/JSD
CHECKED	AMK
DRAWN	EF
CHECKED	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

NOTES

- All Reinforcement Bars are to be spaced evenly unless otherwise noted.
- Work this sheet with Sheet No. 117.
- Reinforcement bars designated (E) shall be epoxy coated.
- Bars indicated thus 5x7- #6 etc. indicates 5 lines of bars with 7 lengths per line.

PROPOSED PLAN AT N. ABUT.

- O.F. denotes Outside Face. I.F. denotes Inside Face.
- Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet No. 117b.
- For Bill of Material and bar details see Sheet No. 117a.
- Stage I does not include any bridge work.

- * Located as shown in Sections on Sheet No. 117.
- ** Measured along face of backwall.
- *** At stage line, cut bar to fit in Stage II area and place bar splicer.

LEGEND



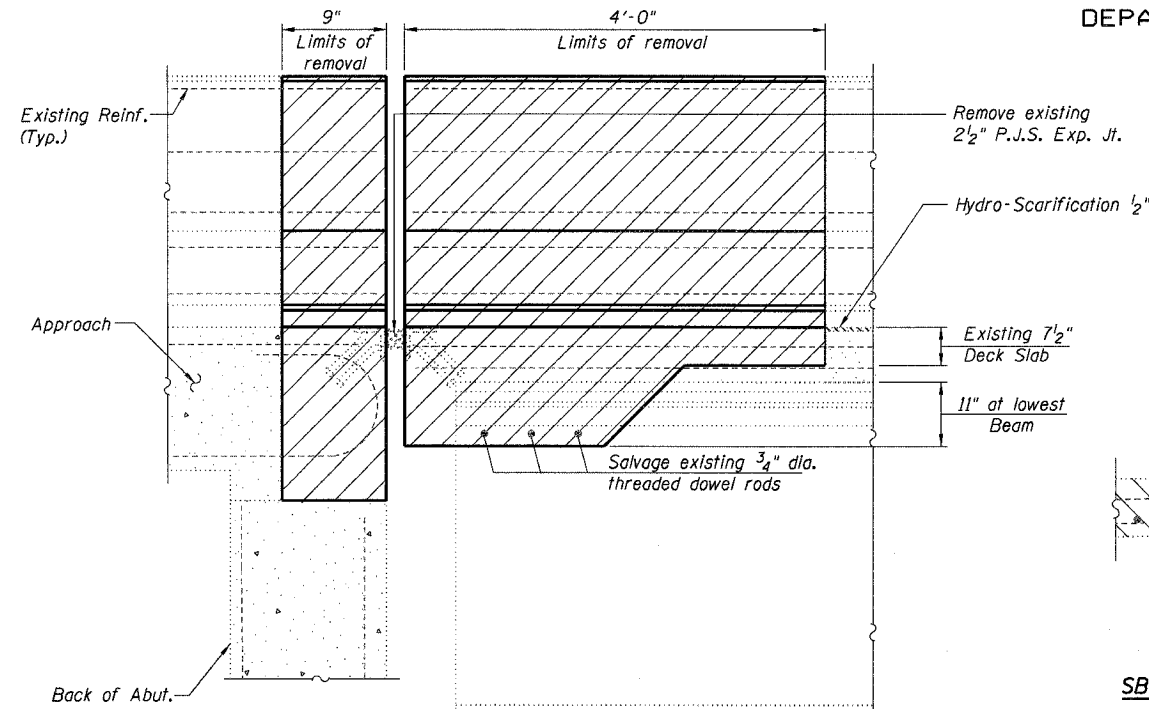
EXPANSION JOINT REMOVAL & REPLACEMENT PLAN
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

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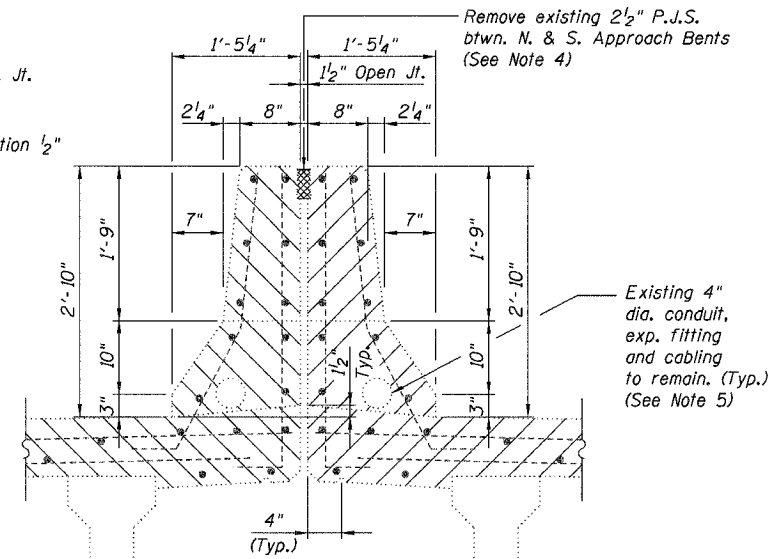
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	117
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747



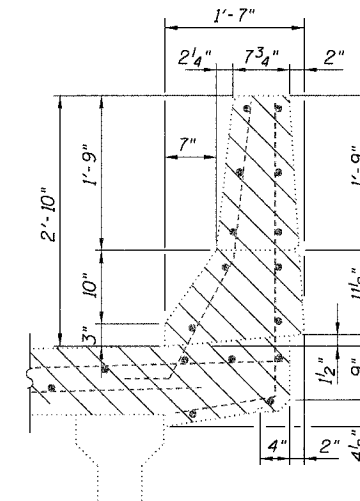
SECTION A-A



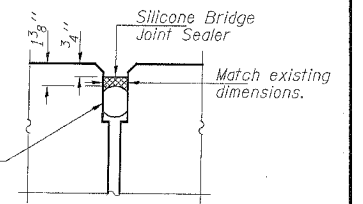
SB MEDIAN PARAPET

NB MEDIAN PARAPET

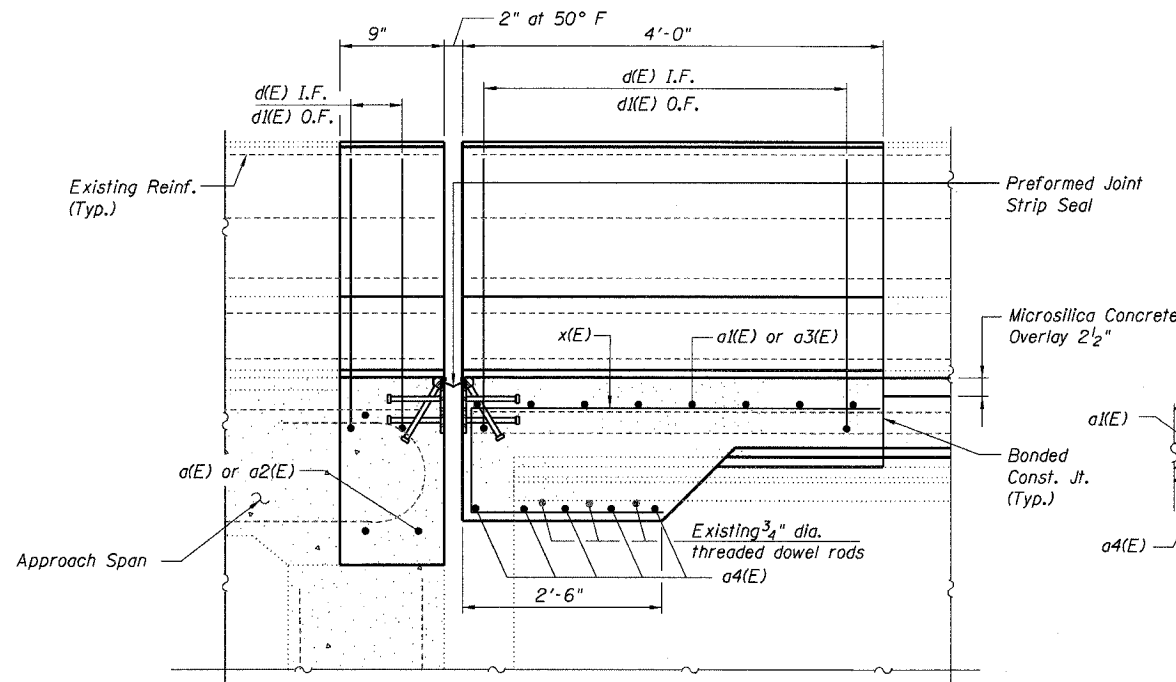
SECTION C-C



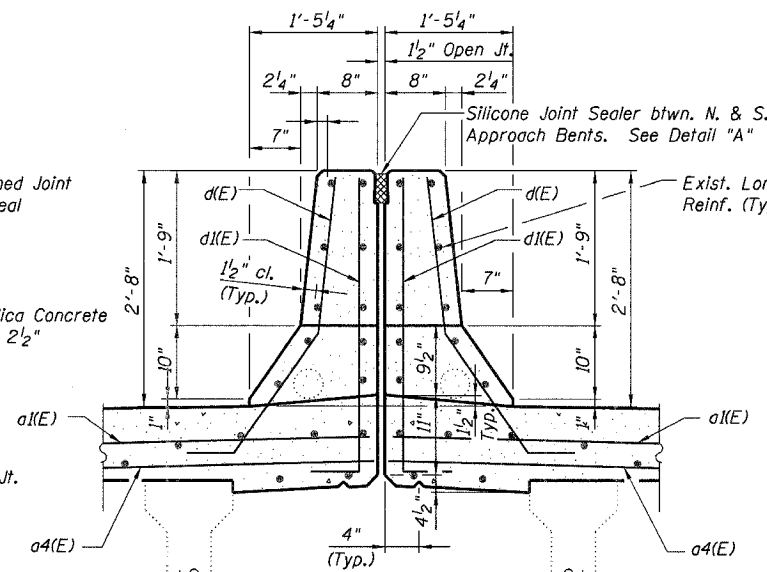
SECTION B-B



DETAIL "A"



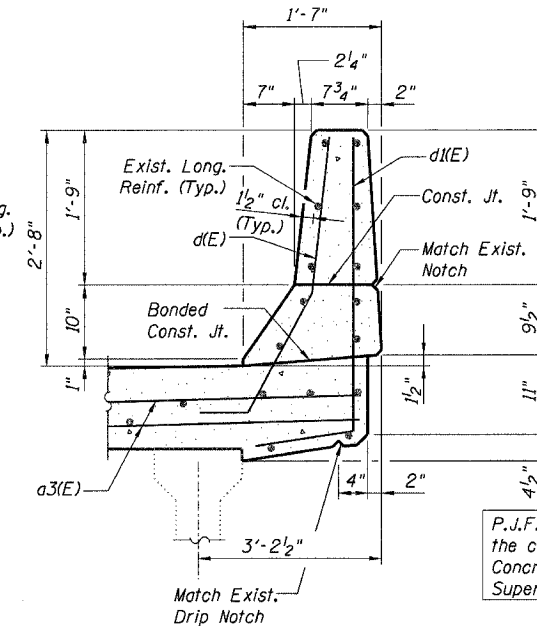
SECTION D-D



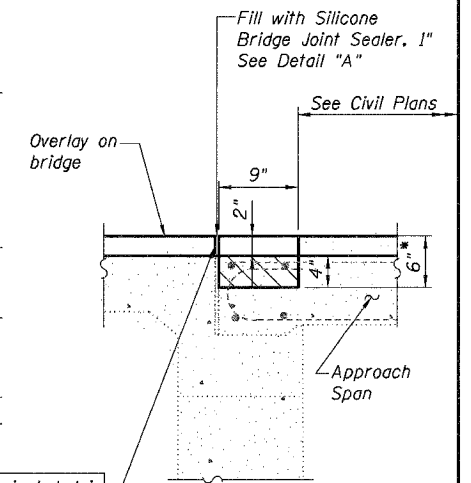
SB MEDIAN PARAPET

NB MEDIAN PARAPET

SECTION F-F



SECTION E-E



SECTION THRU S. ABUT.

(Applies parapet to parapet at fixed joint only)

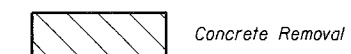
* Concrete quantity included in Concrete Superstructure

NOTES

1. I.F. denotes Inside Face.
O.F. denotes Outside Face.
2. Work required for removal of existing expansion joint shall be included in the cost of Concrete Removal.
3. Work this Sheet with Sheet No. 116
4. Work required for removal of existing P.J.S. shall be included in the cost of Silicone Bridge Joint Sealer, 2".

5. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work; instead the Contractor will be required to replace the entire span of any damaged cable.

LEGEND



Concrete Removal

EXPANSION JOINT REMOVAL &
REPLACEMENT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

DESIGNED	GWS
CHECKED	AMK
DRAWN	EF
CHECKED	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

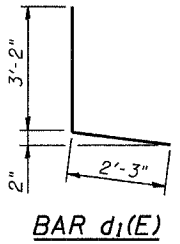
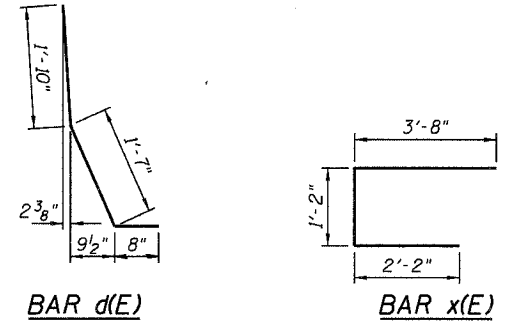
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
F.A.I. 94	2006-043 RS	COOK	135	117a
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

SUPERSTRUCTURE
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	6	#6	28'-4"	—
a1(E)	16	#7	28'-4"	—
a2(E)	6	#6	27'-2"	—
a3(E)	16	#7	27'-2"	—
a4(E)	70	#6	6'-0"	—
d(E)	28	#5	4'-1"	⌒
d1(E)	28	#4	5'-5"	⌒
x(E)	182	#6	7'-0"	⌒
Concrete Removal		Cu. Yd.	28.1	
Concrete Superstructure		Cu. Yd.	31.7	
Bridge Deck Grooving		Sq. Yd.	611	
Protective Coat		Sq. Yd.	65	
Reinforcement Bars, Epoxy Coated		Pound	5,080	
Silicone Bridge Joint Sealer, 1"		Foot	107	
Silicone Bridge Joint Sealer, 2"		Foot	134	



BAR BEND DETAILS

NOTE

Reinforcement bars designated (E) shall be epoxy coated.

REINFORCING BAR DETAILS &
SUPERSTRUCTURE BILL OF MATERIAL
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	JSD
CHECKED -	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

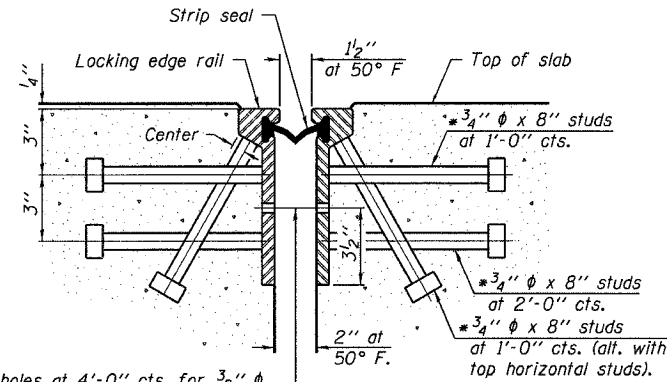
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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	117b
FED. HIGH. DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

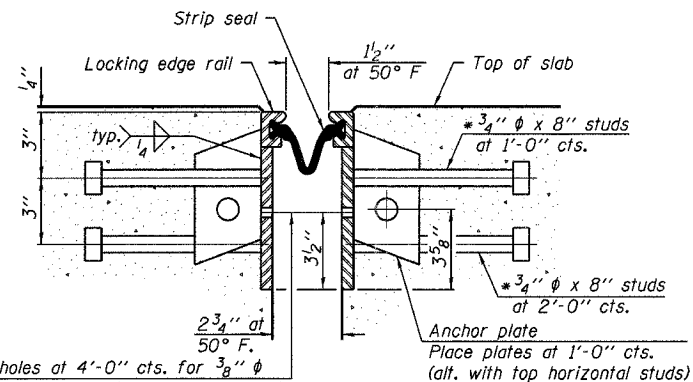
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



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

SECTION THRU
ROLLED RAIL JOINT

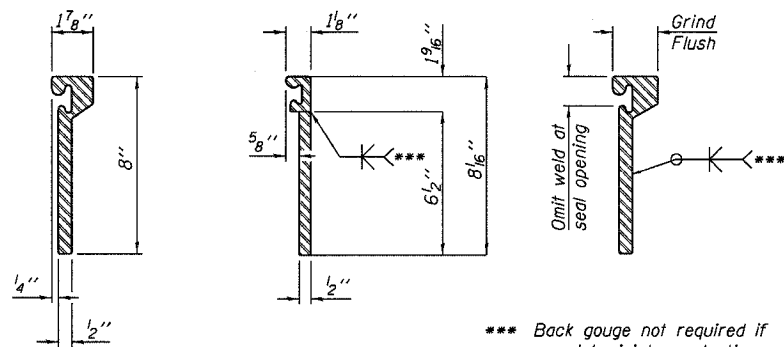


7/16" φ holes at 4'-0" cts. for 3/8" φ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
WELDED RAIL JOINT

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 height and thickness of the Locking Edge Rails shown are minimum dimensions. 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 and stage construction joints. 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.

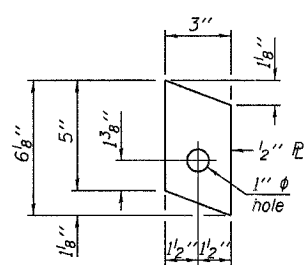


*** Back gouge not required if complete joint penetration is verified by mock-up.

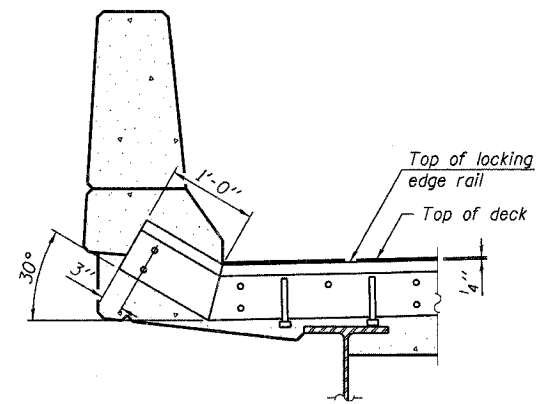
ROLLED (EXTRUDED) RAIL WELDED RAIL

LOCKING EDGE
RAIL SPLICE

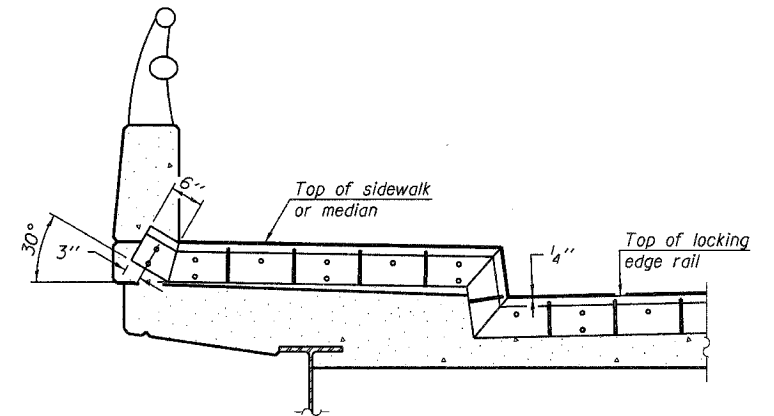
The inside of the locking edge rail groove shall be free of weld residue.



ANCHOR PLATE
(for welded rail)



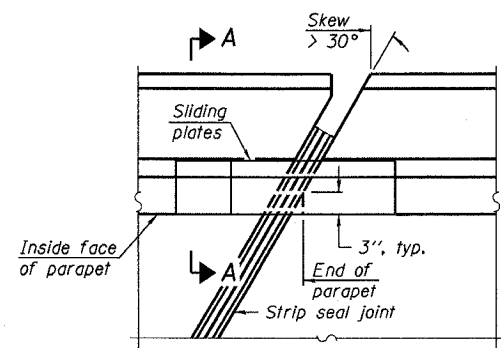
AT PARAPET



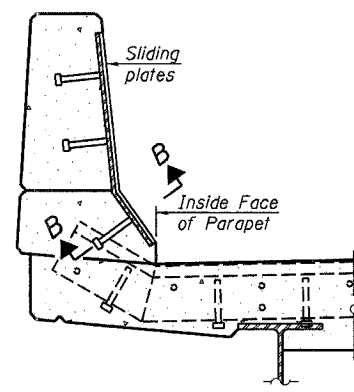
AT SIDEWALK OR MEDIAN

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.

LOCKING EDGE RAILS



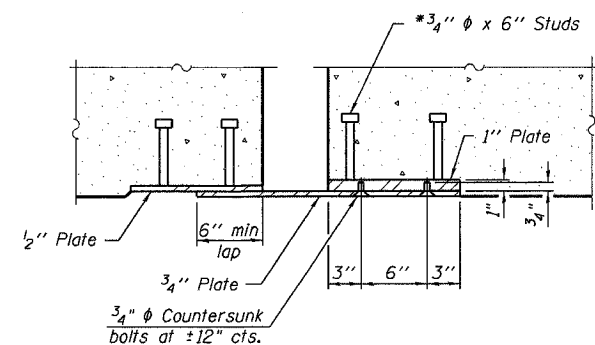
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	109

EXPANSION JOINT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

DESIGNED	-	GWS
CHECKED	-	JSD
DRAWN	-	EF
CHECKED	-	JSD

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

EJ-SSJ

11-1-06

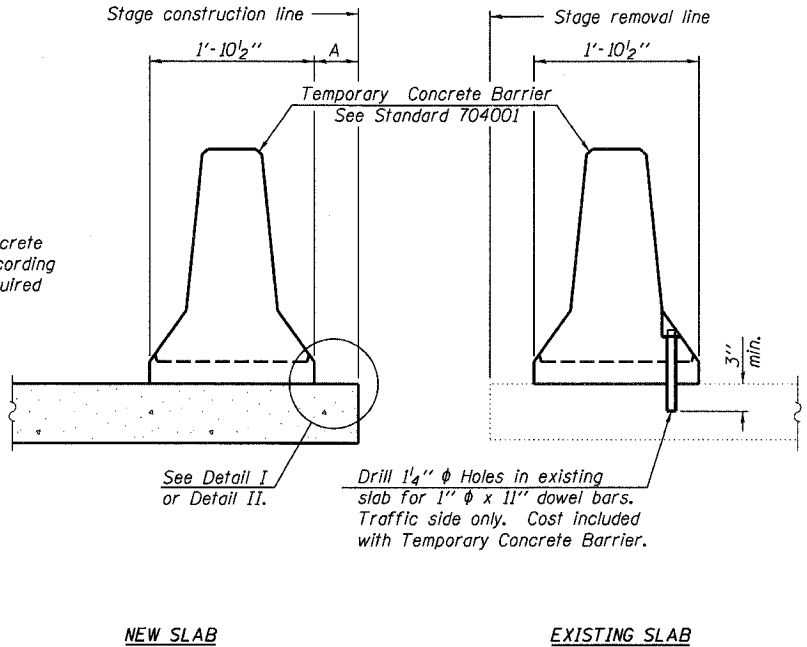
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	117c
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

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".



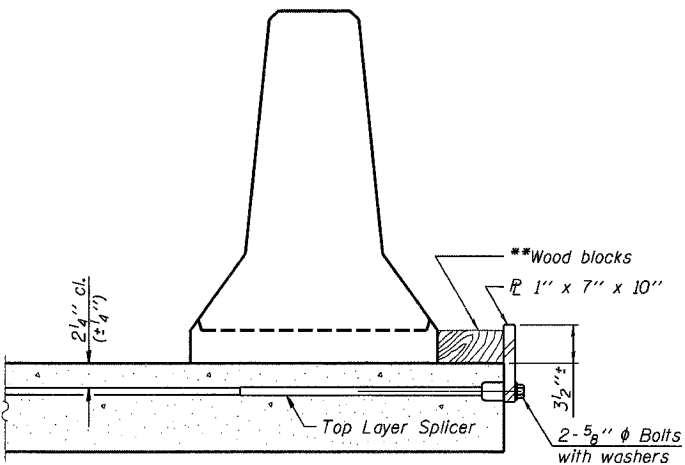
SECTIONS THRU SLAB

NOTES

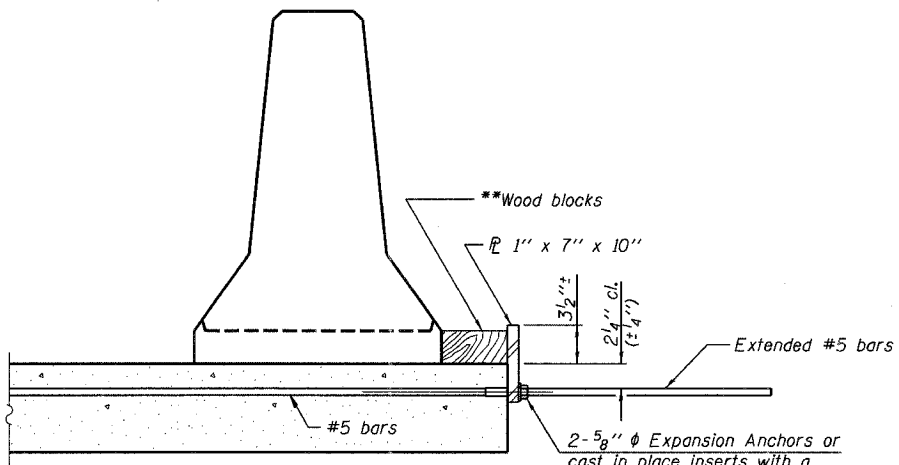
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{P} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{P} to the concrete slab 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.

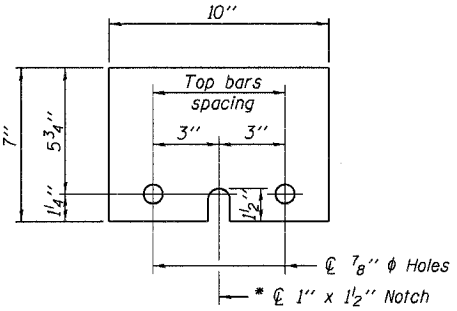
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



DETAIL I



DETAIL II



STEEL RETAINER \bar{P} 1" x 7" x 10"

* Required only with 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.

DESIGNED	-	GWS
CHECKED	-	JSD
DRAWN	-	EF
CHECKED	-	JSD

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

R-27

11-1-06

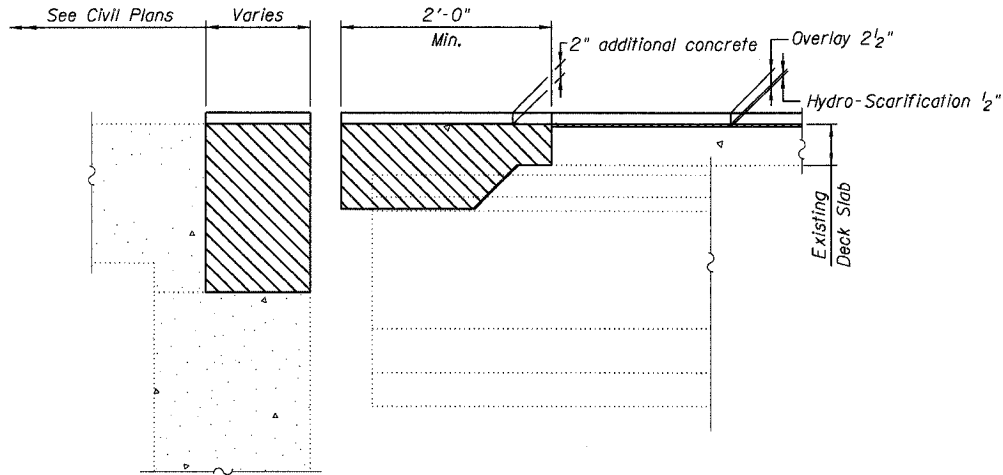
TEMPORARY CONCRETE BARRIER FOR
STAGE CONSTRUCTION
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

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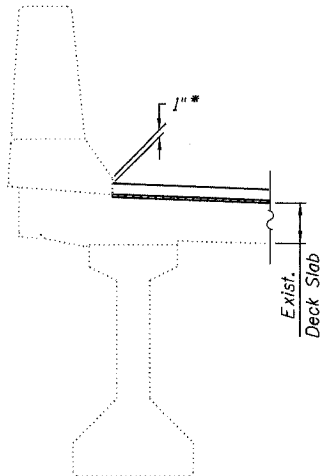
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	117d
FED. ROAD DIST. NO. 7	ILLINOIS		FED. AID PROJECT	

Contract # 62747



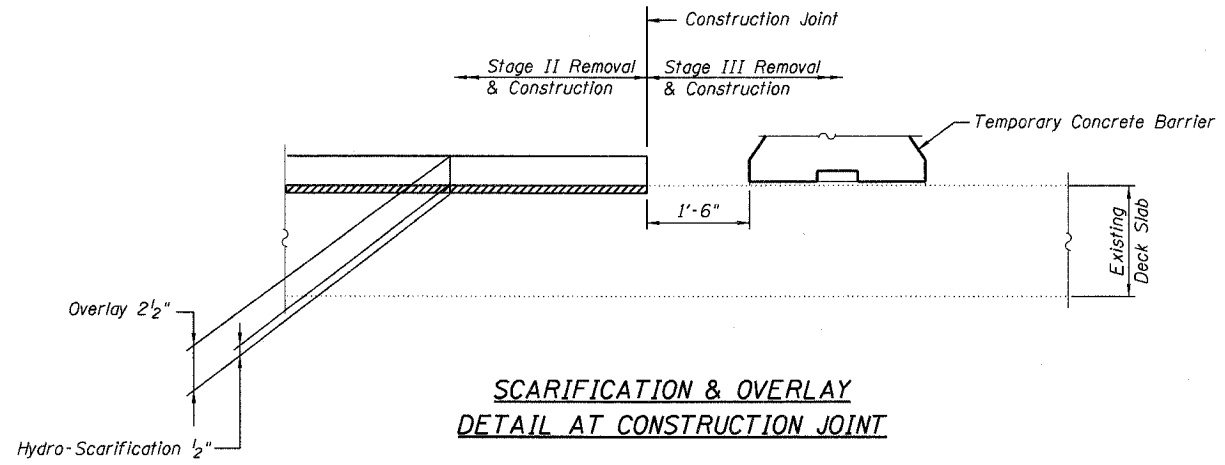
SCARIFICATION & OVERLAY DETAIL AT ABUTMENT



* Contractor shall increase hydro-scarification thickness or reduce overlay thickness as directed by the Engineer to ensure that this dimension is not less than 0".

SCARIFICATION & OVERLAY DETAIL AT PARAPET

(Applies only to areas outside the joint removal area.)





SCARIFICATION & OVERLAY DETAIL AT CONSTRUCTION JOINT

NOTE

If additional hydro-scarification is required to maintain the dimension shown in the Scarification & Overlay Detail at Parapet, it shall be included in the cost for Bridge Deck Hydro-Scarification 1/2".

LEGEND

-  Hydro-Scarification
-  Concrete Removal

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	JSD
CHECKED -	DWH

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

SCARIFICATION AND OVERLAY DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043	COOK	135	117e
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

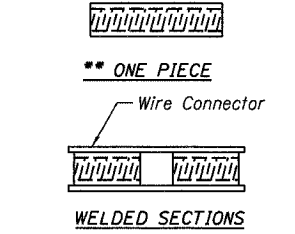
- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
- ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_t$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

The diameter of this part is equal or larger than the diameter of bar spliced.

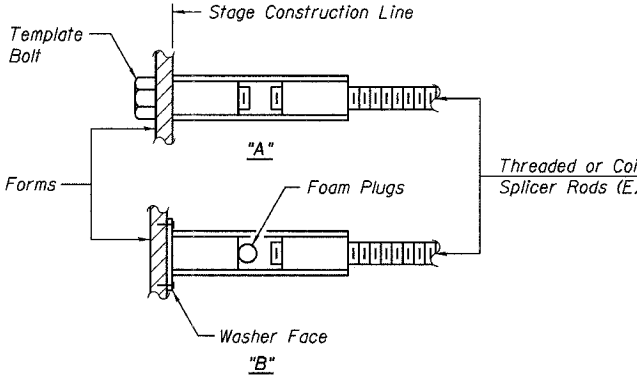
The diameter of this part is the same as the diameter of the bar spliced.

ROLLED THREAD DOWEL BAR



BAR SPLICER ASSEMBLY ALTERNATIVES

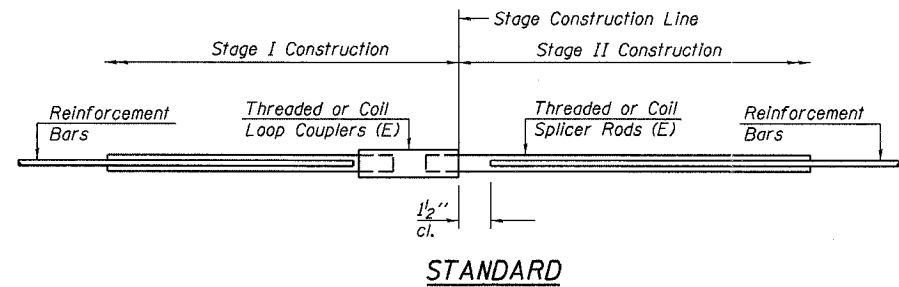
** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



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.

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



Bar Size	No. Assemblies Required	Location
#7	16	N. Abut. Deck
#6	16	N. Abut. Backwall

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	EF
CHECKED -	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

BAR SPLICER ASSEMBLY DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER FOREST GLEN
COOK COUNTY
STATION 19+28.67
STRUCTURE NO. 016-0106

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B.M. - Engineer to set temporary benchmark in field as necessary.

Existing Structure - Structure No. 016-0107, built as S.A. Edens Superhighway, Section 263-0102.1-15D of Station 23+63.00 in 1949. The structure was rehabilitated and widened in 1979 as FAI Route 94 (Edens Expressway), Section 1975-118-R & BR. The existing structure consists of a three span continuous steel multi-beam structure supporting a 7 1/2" reinforced concrete deck. The deck is composite with the steel beams in the positive moment areas of the spans. The structure is flared with one beam line termination. The steel beams consist of W36 rolled shapes. The substructure consists of reinforced concrete spill-thru type abutments (1979 widening) supported on concrete drilled shaft foundations and reinforced concrete counterfort type abutments (original construction) supported on concrete piles and reinforced concrete multi-column piers supported by concrete piles.

Stage construction shall be utilized to maintain traffic during construction.

Salvage Existing Drainage Scupper Grates

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	118
FED. HIGH. DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

DESIGN SPECIFICATIONS
2002 AASHTO

DESIGN STRESSES

FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

SCOPE OF WORK

1. Provide Protective Shield with limits as indicated.
 2. Perform substructure repairs (structural repair of concrete and epoxy crack injection).
- Stage II:
3. Close Stage II construction areas to traffic.
 4. Hydro-Scarify the deck slab.
 5. Remove and replace expansion joints and surrounding concrete (including parapets).
 6. Perform deck slab repair.
 7. Adjust existing scuppers and install new grate.
 8. Place Overlay.
 9. Place temporary roadway transitions.
 10. Open Stage II Removal area to staged traffic.
- Stage III:
11. Close Stage III Removal areas to traffic.
 12. Repeat steps 4-9 but for Stage III construction.
 13. Open bridge to traffic.

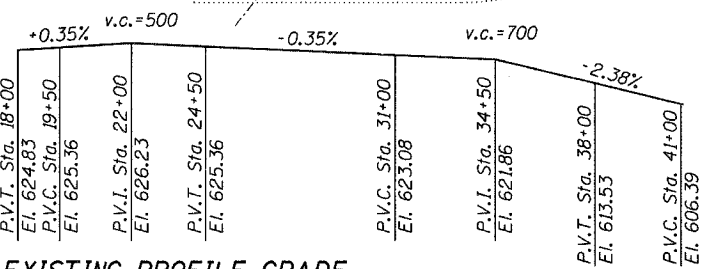
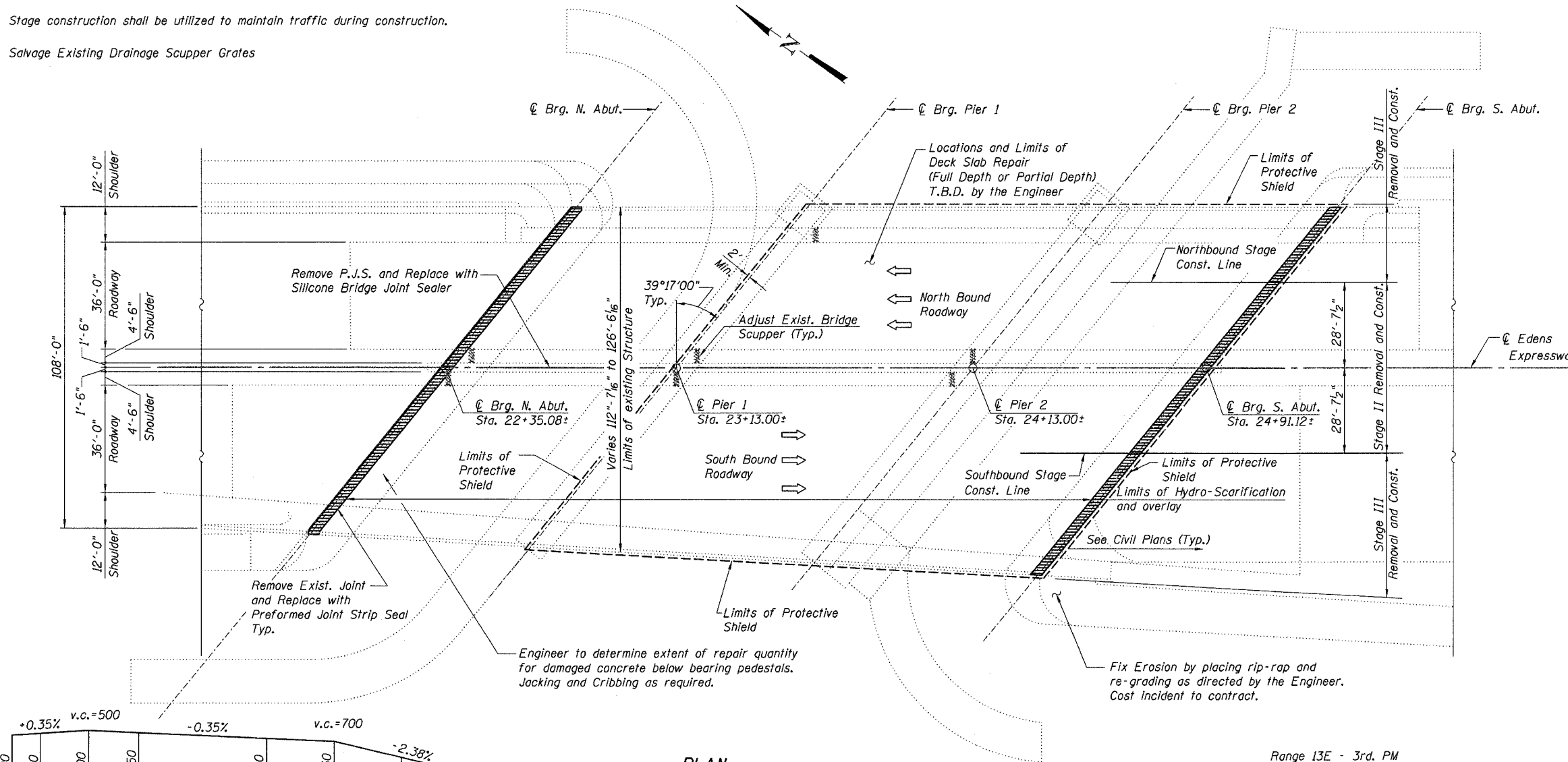
NOTES

1. For joint removal and replacement plans and details, see Sheet No. 121 thru 122b
2. See Structural Notes on Sheet No. 118a

LEGEND

- Protective Shield Limits
- ▨ Concrete Removal / Joint Reconstruction

GENERAL PLAN & ELEVATION
 F.A.I. 94/ (EDENS EXPRESSWAY)
 OVER NORTH BRANCH
 COOK COUNTY
 STATION 23+63.00
 STRUCTURE NO. 016-0107



EXISTING PROFILE GRADE
EDENS EXPRESSWAY

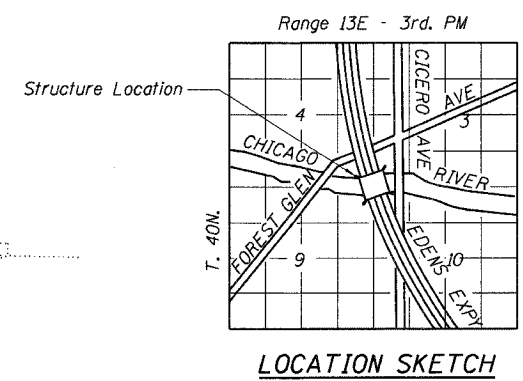
DESIGNED	DWH
CHECKED	JSD
DRAWN	EF
CHECKED	JSD

LOCHNER
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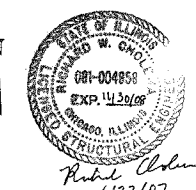
PLAN

ELEVATION
(Looking East)

Substructure repair locations
T.B.D. by the Engineer (Typ.)



LOCATION SKETCH



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	118a
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

STRUCTURAL NOTES

1. Expansion joint plates and attached bars shall be shop painted with the inorganic zinc rich primer.
2. The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.
3. Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60 (IL Modified). See Special Provisions.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. 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 shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
6. 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 compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.
7. Stage construction shall be utilized to maintain traffic during construction.
8. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
9. The Contractor shall provide a Protective Shield under the deck for Full Deck Slab repairs as per direction of the Engineer and as shown on the plans.
10. The Contractor may have to remove the Name Plate(s) that interfere with the parapet removal for joint reconstruction. The Contractor shall reinstall the Name Plate(s) as directed by the Engineer. The cost of removal and installation of Name Plate(s) shall be included in the cost for "Concrete Removal" and "Concrete Superstructure."
11. Protective coat shall be applied only to the new concrete provided for the reconstruction of the joints (top of deck slab, top and traffic face of parapet).
12. The Engineer shall determine extent, location and type of substructure and deck slab repairs in the field.
13. 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 an individual acceptable to the Engineer. Any cracks that can not be removed by grinding 1/4 inch 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.

14. Field welding of construction accessories will not be permitted to beams or girders.
15. The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection. Forms for deck slab shall be removed prior to placement of bridge approach pavement.
16. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
17. If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
18. Protective shielding shall be installed to insure that all electrical appurtenances below the bridge deck are adequately protected.
19. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8 inch adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. (For Type 1 Elastomeric Bearings, two 1/8 inch adjusting shims shall be provided for each bearing and placed as detailed).

Typ. Lap Splice

Bar Size	Min. Lap
#4	1'-8"
#5	2'-2"
#5*	3'-0"*
#6	2'-7"
#6*	3'-7"*
#7	3'-5"
#8	4'-6"

* Top Horizontal Bar

ABBREVIATION LIST

Abut.	Abutment	F/	Face of	R or Rad.	Radius
Alt.	Alternate	Ft.	Foot or Feet	RR	Railroad
		Ftg.	Footing	Req'd	Required
Bk.	Back			Rt.	Right
Brg.	Bearing	Gr.	Grade	Sht.	Sheet
Btwn.	Between			Spa.	Spaces or Spacing
B/	Bottom of	Jt.	Joint	Sq.	Square
Bot.	Bottom	L	Angle	S.S.	Stainless Steel
		Lt.	Left	Std.	Standard
CIP	Cast in Place	Lg.	Long	Sta.	Station
CL	Centerline			Stl.	Steel
Cts.	Centers	Max.	Maximum	St.	Street
Cl.	Clear	Min.	Minimum	Sym.	Symmetrical
Conc.	Concrete			Temp.	Temporary
CJ	Construction Joint	Nom.	Nominal	Thk.	Thick
Const(r).	Construction	N.T.S.	Not to Scale	T.B.D.	To be determined
		No(s).	Number(s)	T/	Top of
Dia.	Diameter	Opp.	Opposite	Typ.	Typical
Ea.	Each			UNO	Unless Noted Otherwise
E	East	Pavt.	Pavement		
E/	Edge of	PL	Plate	VIF	Verify in Field
EI. or Elev.	Elevation	P.C.	Precast		
Exist.	Existing	P.J.F.	Preformed Joint Filler	W	West
Exp.	Expansion	P.J.S.	Preformed Joint Sealer	W/	With
Exp.	Expressway	PGL	Profile Grade Line		
		Prop.	Proposed		

STRUCTURAL NOTES
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	EF
CHECKED -	DWH

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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	118b
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

TOTAL BILL OF MATERIAL

Item	Unit	Super.	Sub.	Total
Concrete Removal	Cu. Yd.	63.7		63.7
Protective Shield	Sq. Yd.	2,443		2,443
Concrete Superstructure	Cu. Yd.	69.2		69.2
Bridge Deck Grooving	Sq. Yd.	3,105		3,105
Protective Coat	Sq. Yd.	120		120
Reinforcement Bars, Epoxy Coated	Pound	6,600		6,600
Bar Splicers	Each	64		64
Preformed Joint Strip Seal	Foot	297		297
Epoxy Crack Injection	Foot		100	100
Bridge Deck Microsilica Concrete Overlay, 2 1/2"	Sq. Yd.	3,145		3,145
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	3,145		3,145
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	16		16
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	144		144
Jacking and Cribbing	Each	2		2
Silicone Bridge Joint Sealer, 2"	Foot	260		260
* Adjusting Drainage Scuppers, Type A	Each	7		7
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.		100	100

* Requires Special Provision

INDEX OF SHEETS

118	GENERAL PLAN & ELEVATION
118a	STRUCTURAL NOTES
118b	TOTAL BILL OF MATERIAL AND INDEX OF SHEETS
119	TYPICAL SECTION THRU BRIDGE
120	CONSTRUCTION STAGING DETAILS
121	EXPANSION JOINT REMOVAL & REPLACEMENT PLAN
122	EXPANSION JOINT REMOVAL & REPLACEMENT DETAILS
122a	REINFORCING BAR DETAILS & SUPERSTRUCTURE BILL OF MATERIAL
122b	EXPANSION JOINT DETAILS
122c	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
122d	DRAINAGE SCUPPER ADJUSTMENT DETAILS
122e	SCARIFICATION AND OVERLAY DETAILS
122f	BAR SPLICER ASSEMBLY DETAILS

TOTAL BILL OF MATERIAL
AND INDEX OF SHEETS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	EF
CHECKED -	DWH

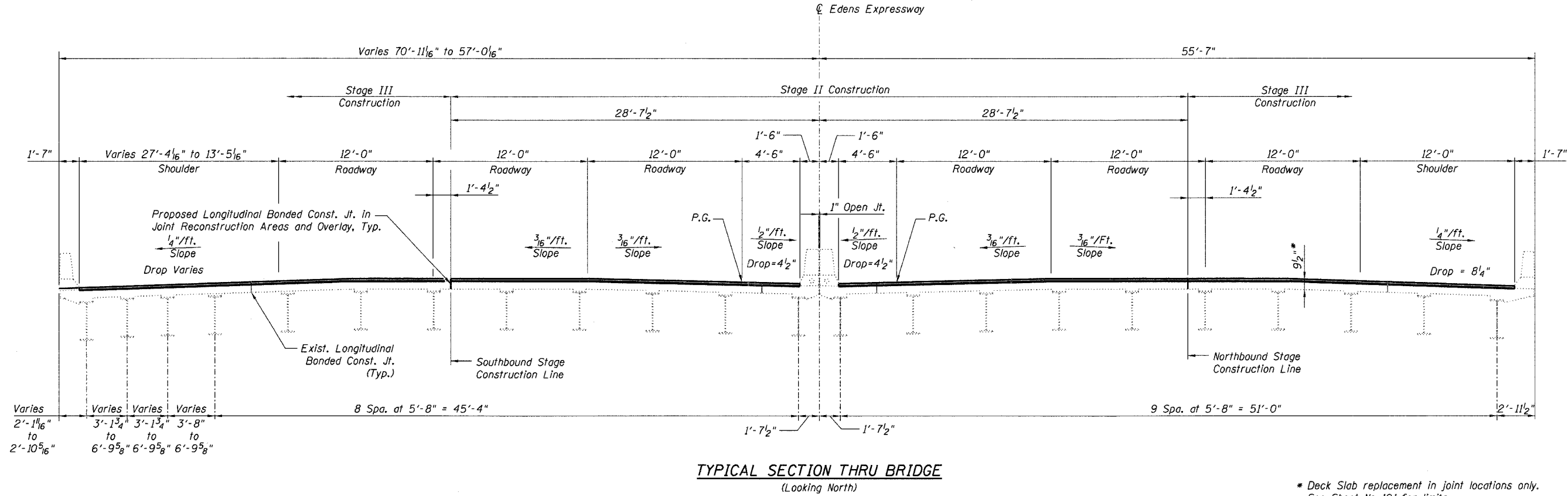
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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	119
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747



TYPICAL SECTION THRU BRIDGE
(Looking North)

* Deck Slab replacement in joint locations only. See Sheet No. 121 for limits. In typical locations, proposed slab will consist of 7" slab and 2 1/2" latex concrete overlay. See Sheet No. 122e for details.

NOTES

1. For joint removal limits see Sheet Nos. 121 and 122.
2. Stage I does not include any bridge work.

TYPICAL SECTION THRU BRIDGE
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

DESIGNED	-	JSD
CHECKED	-	AMK
DRAWN	-	EF
CHECKED	-	AMK

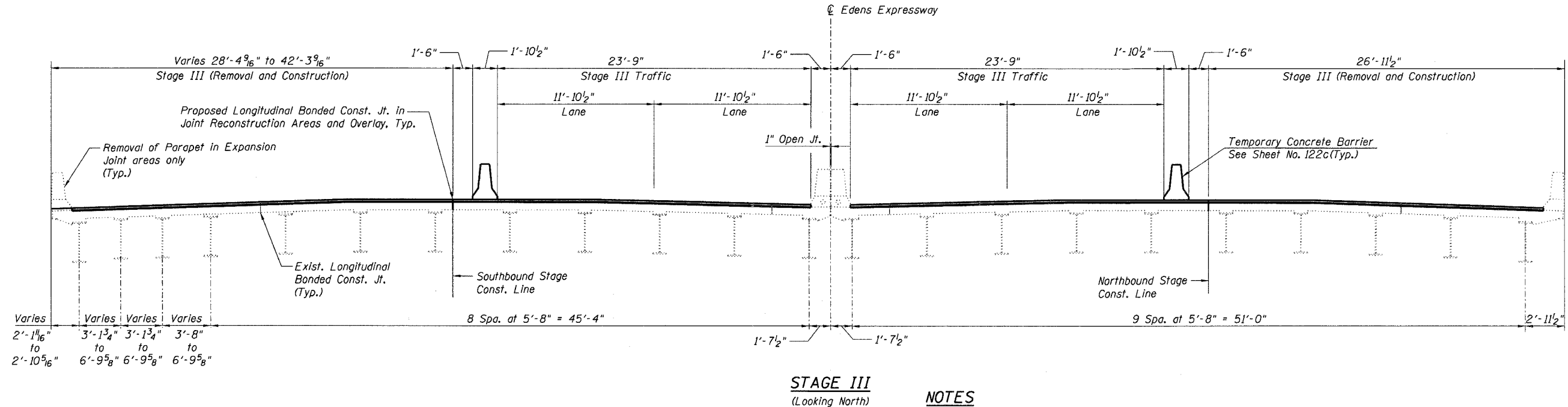
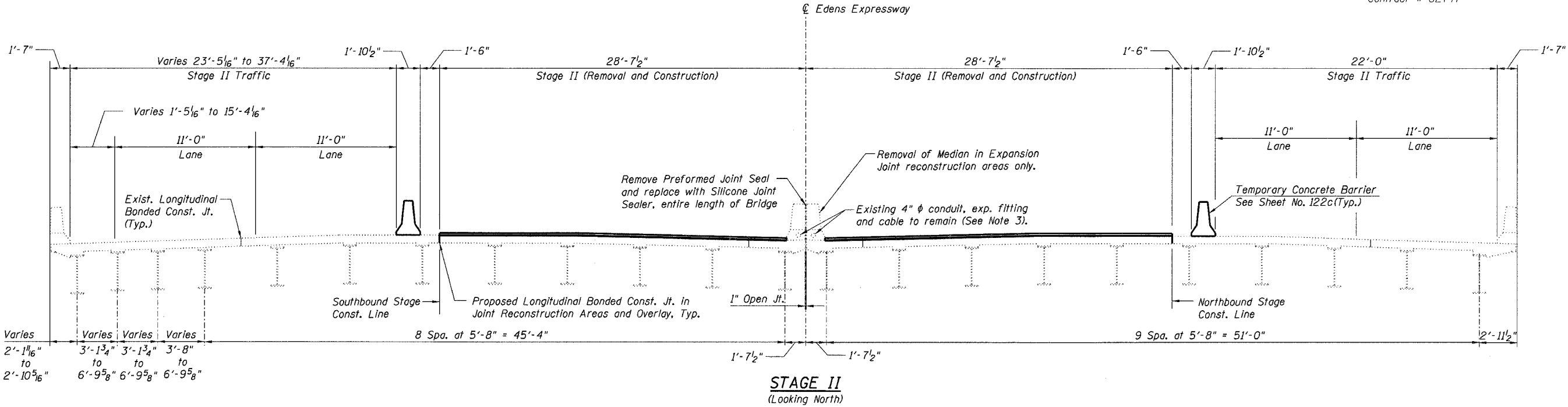
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	120
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747



NOTES

1. For joint removal limits, see Sheet Nos. 121 and 122.
2. Stage I does not include any bridge work.
3. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work; instead the Contractor will be required to replace the entire span of any damaged cable.

CONSTRUCTION STAGING DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	EF
CHECKED -	AMK

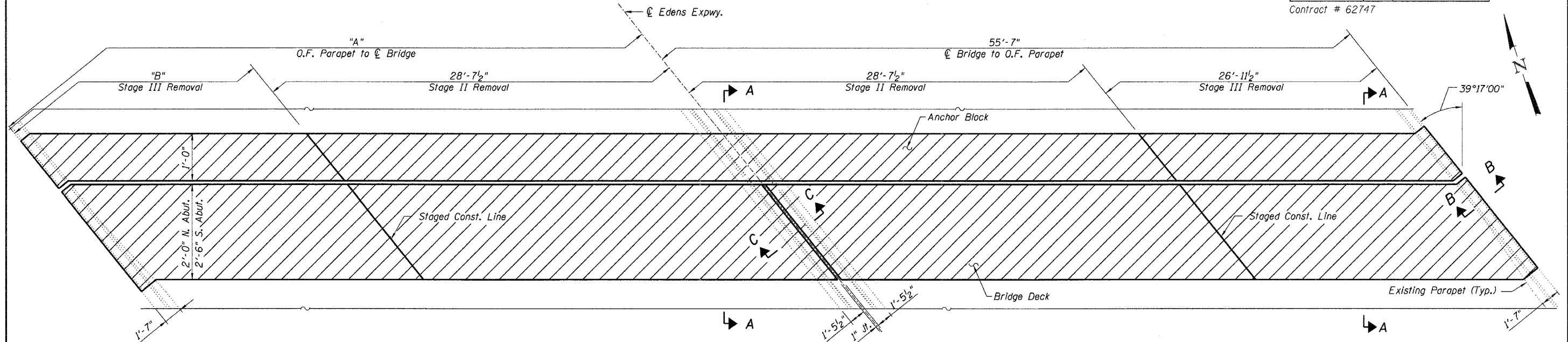
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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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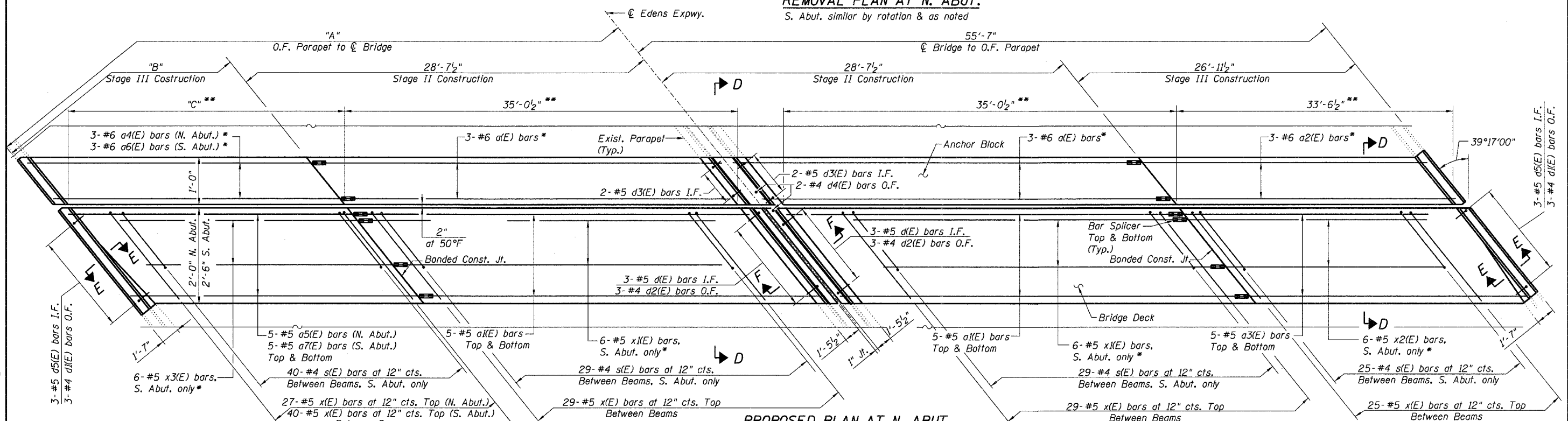
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	121
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747



REMOVAL PLAN AT N. ABUT.
S. Abut. similar by rotation & as noted



PROPOSED PLAN AT N. ABUT.
S. Abut. similar by rotation & as noted

* Located as shown in Sections on Sheet No. 122.
** Measured along face of backwall.

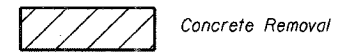
NOTES

- All Reinforcement Bars are to be spaced evenly unless otherwise noted.
- Work this sheet with Sheet No. 122
- Reinforcement bars designated (E) shall be epoxy coated.
- O.F. denotes Outside Face; I.F. denotes Inside Face.
- Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet No.122b
- For Bill of Material and bar details see Sheet No. 122a
- Stage I does not include any bridge work.
- See Sheet No.122a for additional abutment backwall demolition and reconstruction.

DIMENSIONS TABLE

	N. Abut.	S. Abut.
"A"	57'-0 1/16"	70'-11 1/16"
"B"	28'-4 9/16"	42'-3 9/16"
"C"	35'-4 1/2"	53'-4 1/4"

LEGEND



EXPANSION JOINT REMOVAL & REPLACEMENT PLAN
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

DESIGNED	JSD
CHECKED	AMK
DRAWN	JSD
CHECKED	AMK

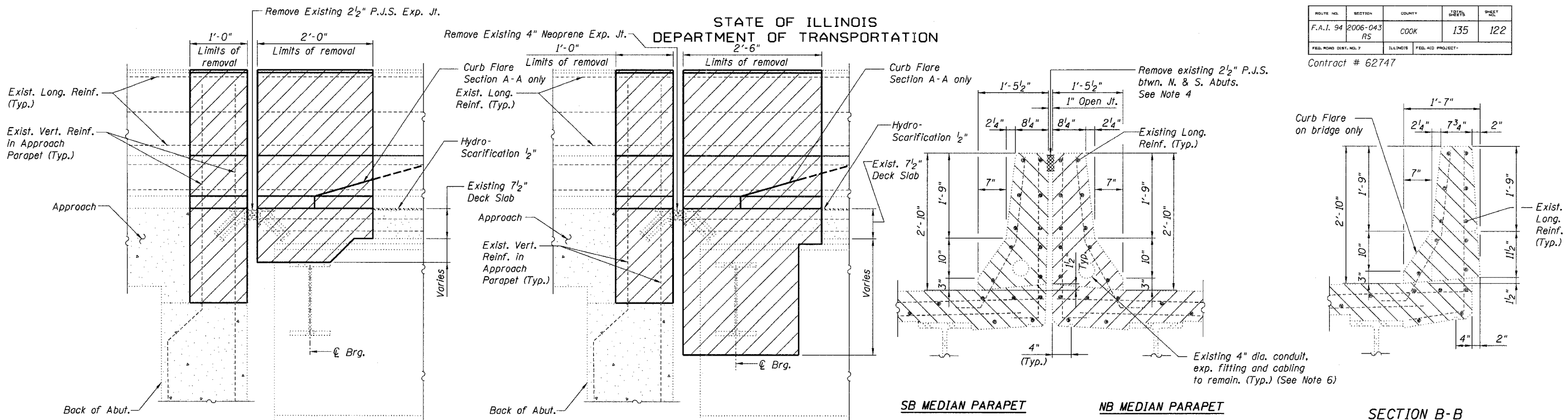
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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET
F.A.I. 94	2006-043	COOK	135	122
FED. ROAD DIST. NO. 7	RS	ILL. PROJECT	FED. AID PROJECT	

Contract # 62747

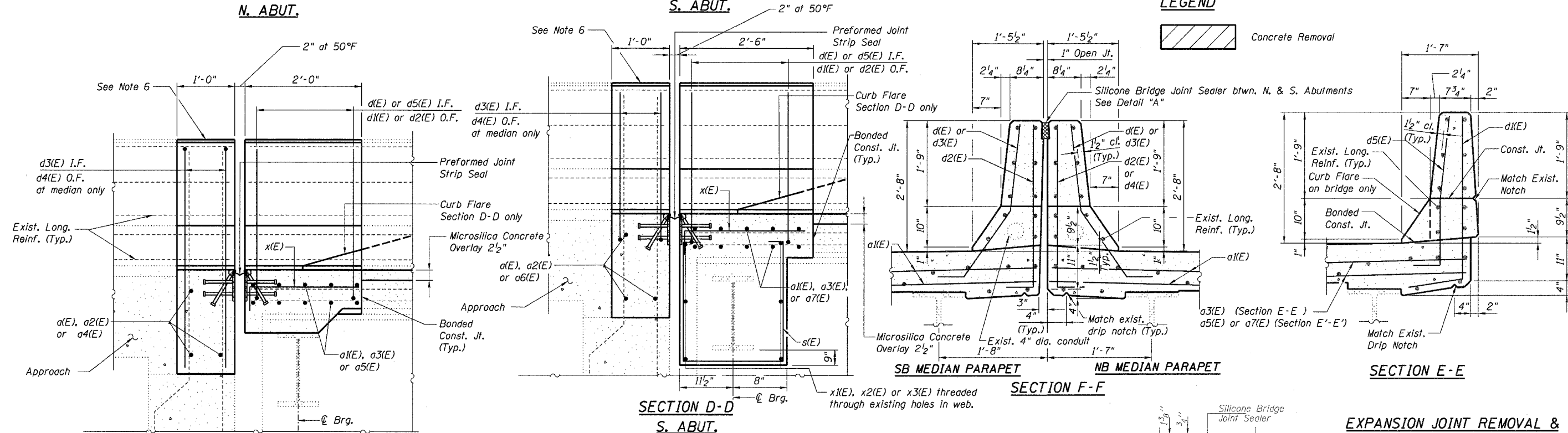
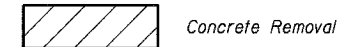


SECTION A-A
N. ABUT.

SECTION A-A
S. ABUT.

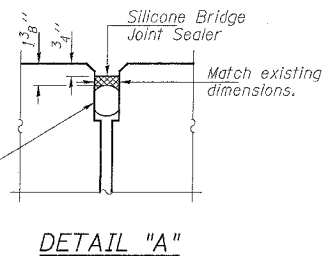
SECTION C-C

LEGEND



NOTES

1. I.F. denotes Inside Face. O.F. denotes Outside Face.
2. Work required for removal of existing expansion joint shall be included in the cost of Concrete Removal.
3. Work this sheet with Sheet No. 121.
4. Work required for removal of existing P.J.S. shall be included in the cost of Silicone Bridge Joint Sealer, 2".
5. Form top of parapet to match elevation of top of wingwall.
6. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work; instead the Contractor will be required to replace the entire span of any damaged cable.



EXPANSION JOINT REMOVAL & REPLACEMENT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	EF
CHECKED -	AMK

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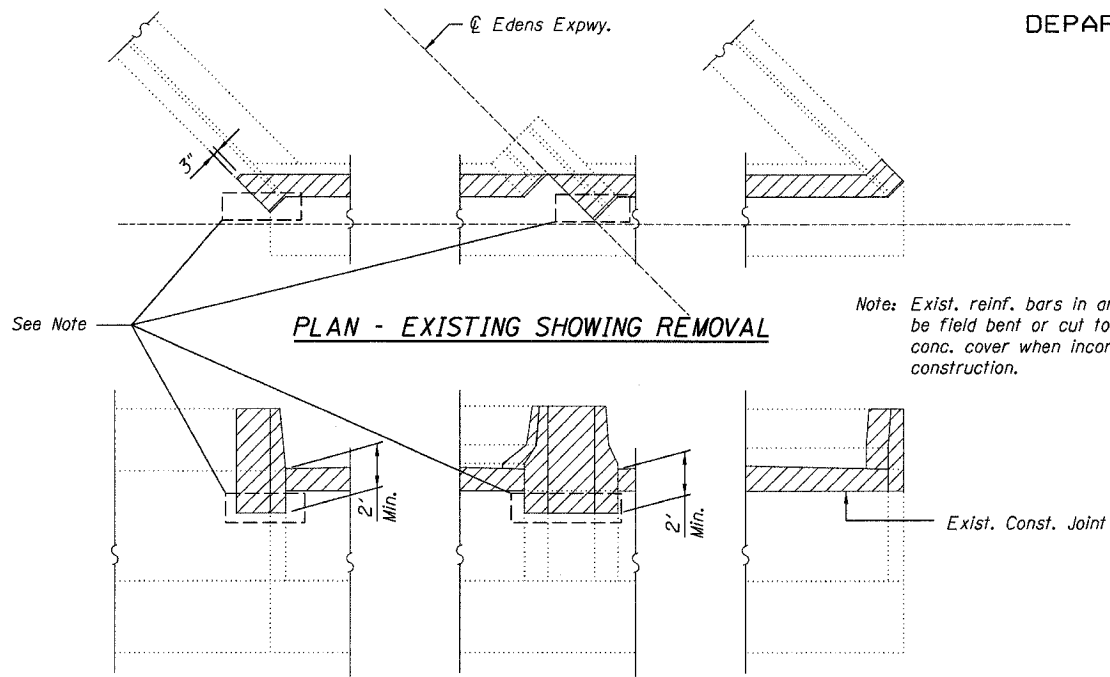
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
F.A.I. 94	2006-043 RS	COOK	135	122a
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

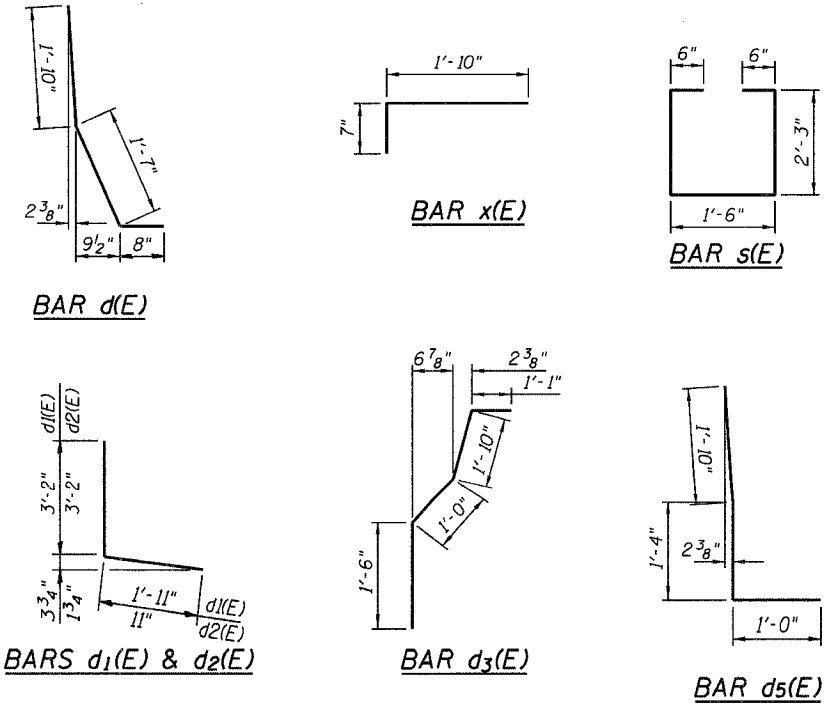
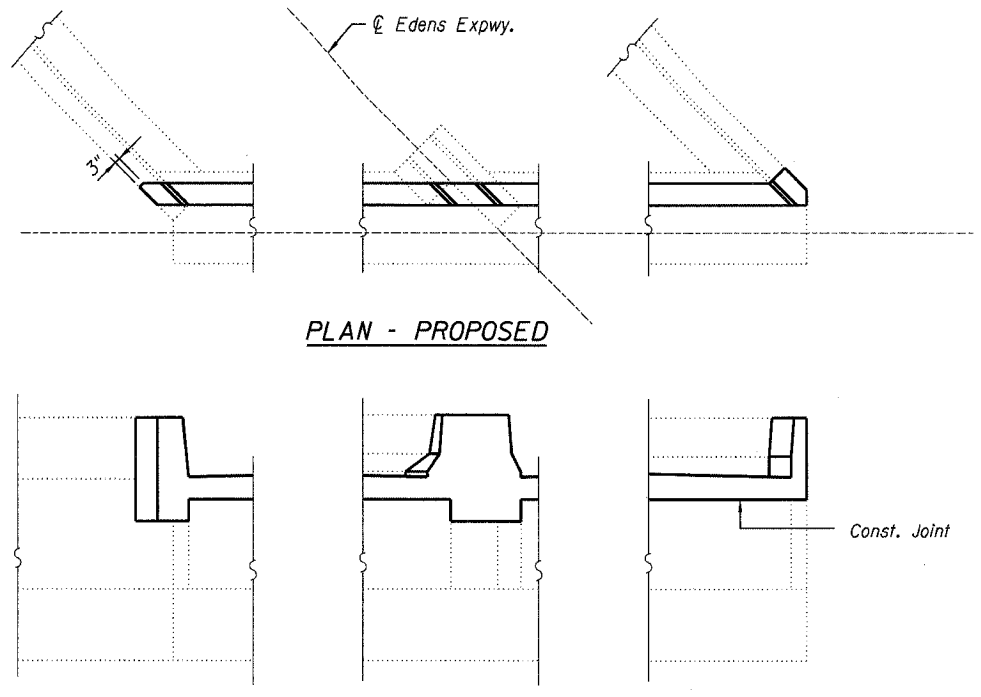
Contract # 62747

**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	12	#6	35'-2"	—
a2(E)	40	#5	35'-2"	—
a3(E)	6	#6	34'-4"	—
a4(E)	20	#5	34'-4"	—
a5(E)	3	#6	36'-1"	—
a6(E)	10	#5	36'-1"	—
a7(E)	3	#6	54'-1"	—
a7(E)	10	#5	54'-1"	—
d(E)	12	#5	4'-1"	┌
d1(E)	12	#4	5'-1"	┌
d2(E)	12	#4	4'-1"	┌
d3(E)	8	#5	5'-5"	┌
d4(E)	4	#4	4'-0"	—
d5(E)	12	#5	4'-2"	┌
s(E)	123	#4	4'-9"	□
x(E)	233	#5	2'-5"	—
x1(E)	12	#5	34'-10"	—
x2(E)	6	#5	29'-0"	—
x3(E)	6	#5	48'-0"	—
Concrete Removal			Cu. Yd.	63.7
Concrete Superstructure			Cu. Yd.	69.2
Bridge Deck Grooving			Sq. Yd.	3,105
Protective Coat			Sq. Yd.	120
Reinforcement Bars, Epoxy Coated			Pound	6,600
Silicone Bridge Joint Sealer, 2"			Foot	260



Note: Exist. reinf. bars in areas indicated shall be field bent or cut to provide 1/2" clear conc. cover when incorporated into new construction.



BAR BEND DETAILS

NOTE
Reinforcement bars designated (E) shall be epoxy coated.

LEGEND
Concrete Removal

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	JSD
CHECKED -	AMK

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**REINFORCING BAR DETAILS &
SUPERSTRUCTURE BILL OF MATERIAL
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107**

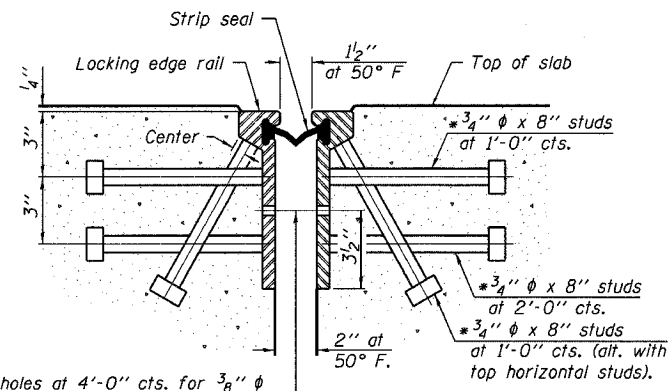
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ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET
F.A.I. 94	2006-043 RS	COOK	135	122b
FED. ROAD DIST. NO. 7	ILL. MOTOR	FED. AID PROJECT-		

Contract # 62747

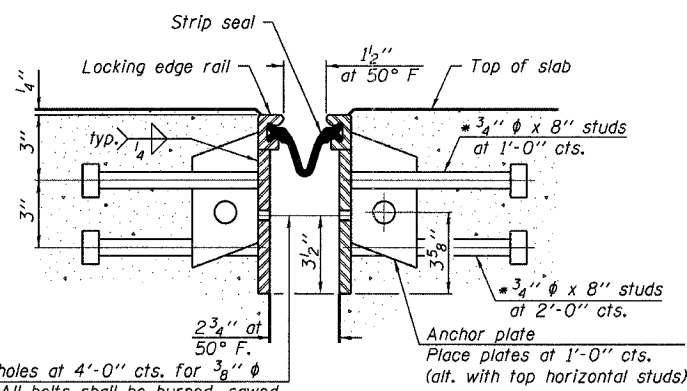
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



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

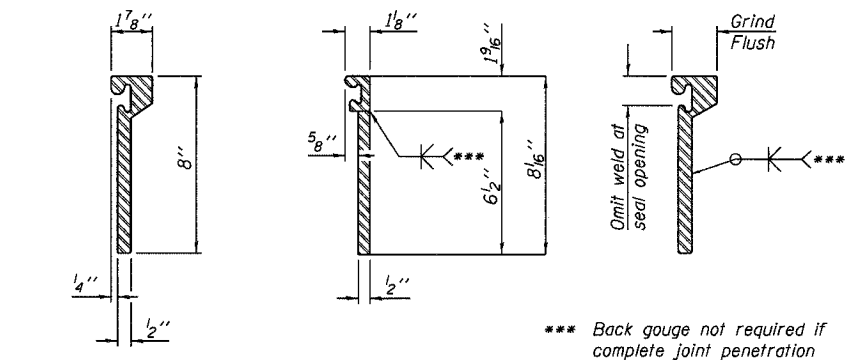
SECTION THRU
ROLLED RAIL JOINT



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

SECTION THRU
WELDED RAIL JOINT

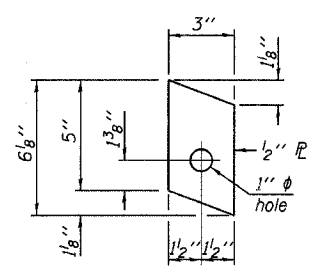
Notes:
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement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



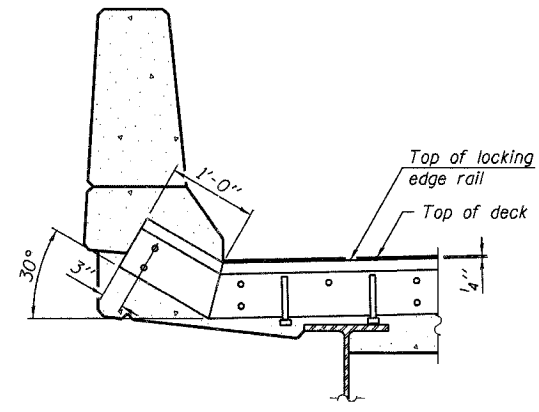
ROLLED
(EXTRUDED) RAIL WELDED RAIL

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

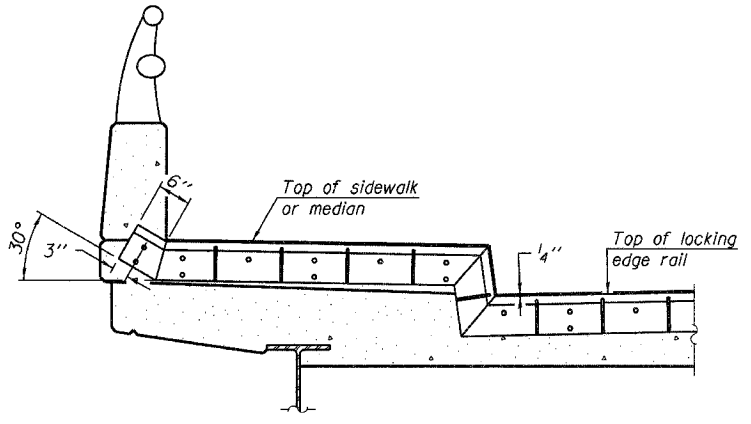
LOCKING EDGE RAIL SPLICE
The inside of the locking edge rail groove shall be free of weld residue.



ANCHOR PLATE
(for welded rail)

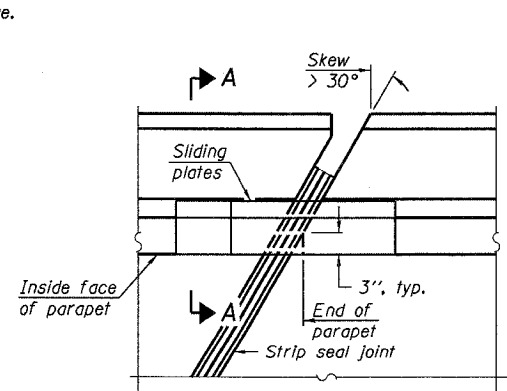


AT PARAPET

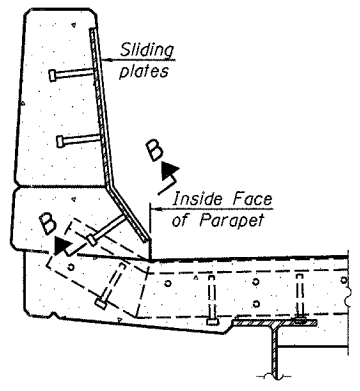


AT SIDEWALK OR MEDIAN
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

LOCKING EDGE RAILS



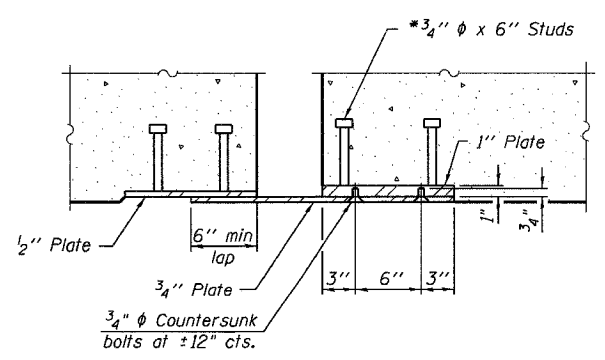
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	297

EXPANSION JOINT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

DESIGNED	GWS
CHECKED	JSD
DRAWN	EF
CHECKED	JSD

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

EJ-SSJ 11-1-06

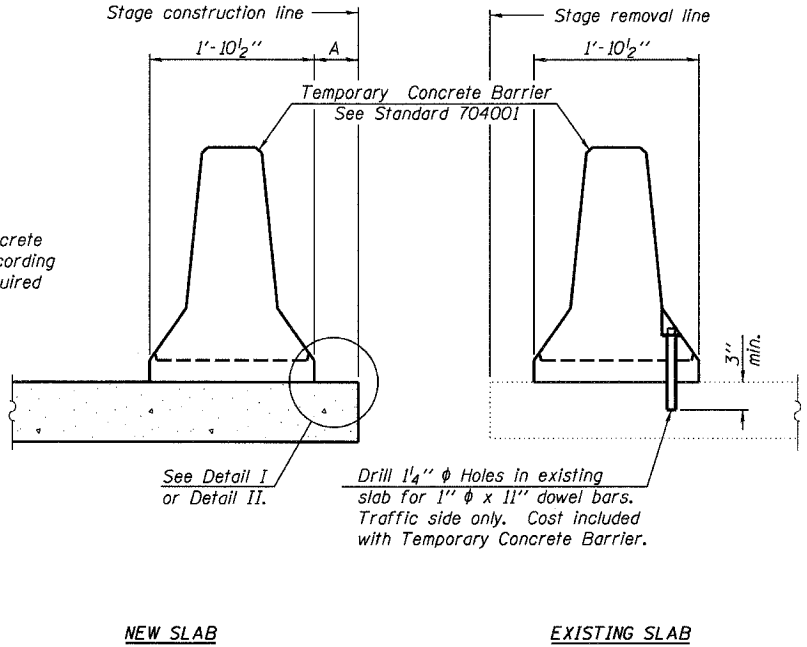
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET
F.A.I. 94	2006-043 RS	COOK	135	122c
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

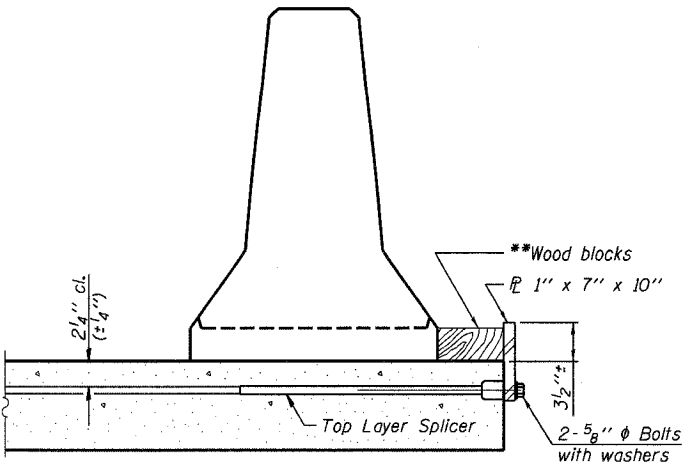
When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



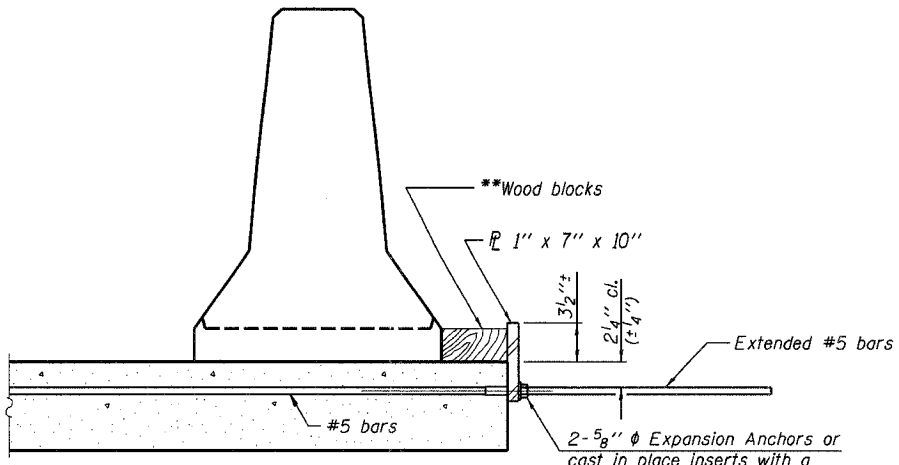
SECTION THRU SLAB

NOTES

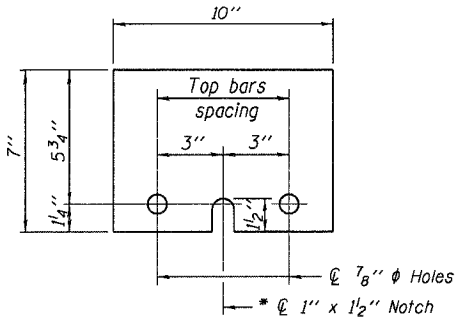
- Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{P} to the top layer of couplers with 2- $\frac{5}{8}$ " ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.
 - Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{P} to the concrete slab with 2- $\frac{5}{8}$ " 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.



DETAIL I



DETAIL II



STEEL RETAINER \bar{P} 1" x 7" x 10"

* Required only with 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.

DESIGNED	-	GWS
CHECKED	-	JSD
DRAWN	-	EF
CHECKED	-	JSD

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R-27

11-1-06

TEMPORARY CONCRETE BARRIER FOR
STAGE CONSTRUCTION
F.A.I. 94/ (EDENS EXPRESSWAY)
OVERNORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

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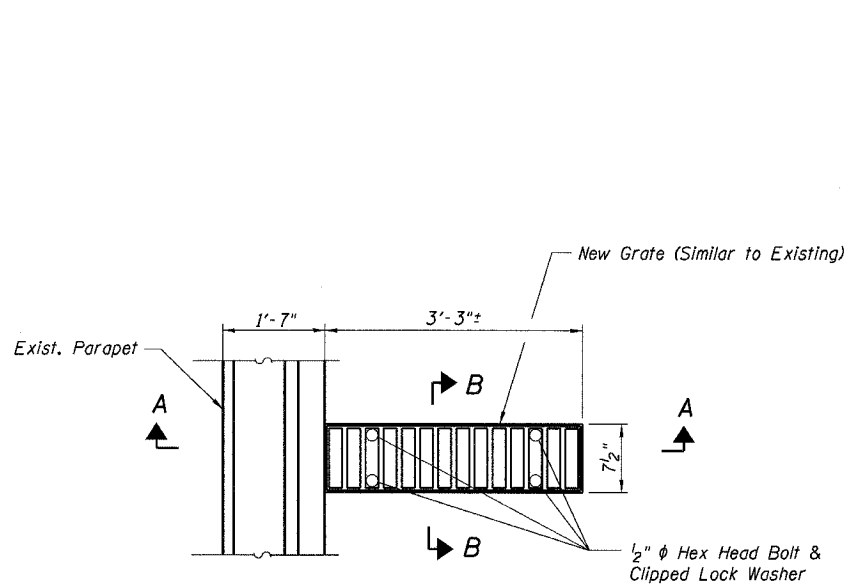
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	122d
FED. ROAD DIST. NO. 7	ILLINOIS		FED. AID PROJECT	

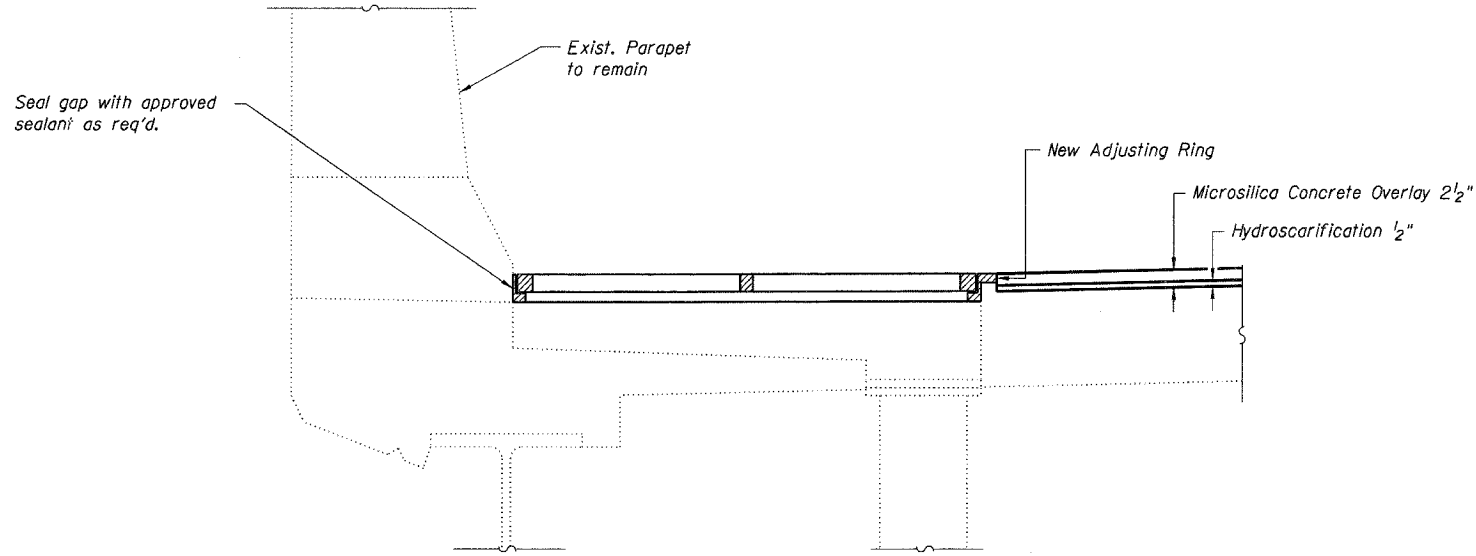
Contract # 62747

BILL OF MATERIAL

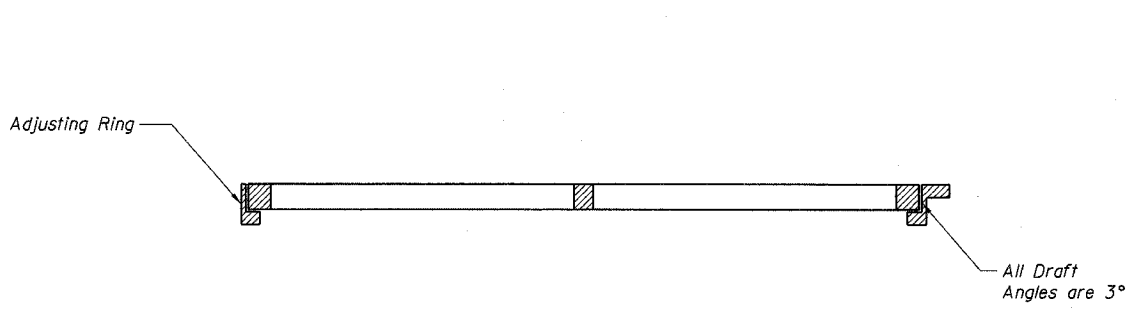
Item	Unit	Total
Adjusting Drainage Scuppers	Each	7



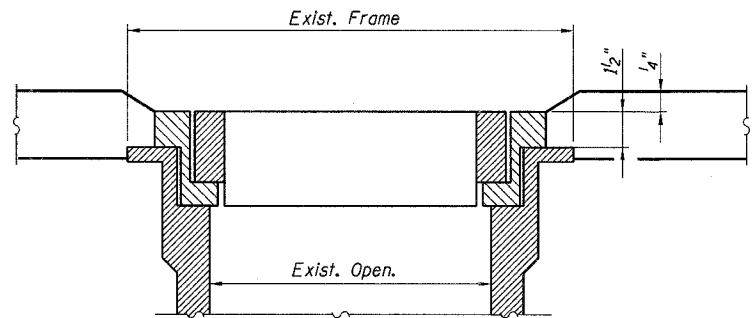
PROPOSED PLAN AT SCUPPER



SECTION THRU SCUPPER



SECTION A-A



SECTION B-B

NOTES

1. The contractor shall verify the exact location, type and dimensions of the existing scuppers before ordering the materials, the cost of which is included in the cost of Adjusting Drainage Scuppers.
2. For scupper locations, see General Plan & Elevation sheets.
3. For additional notes and Bill of Material, see Sheet 118a and 118b
4. All cast iron parts shall be grey iron conforming to the requirements of AASHTO M 105, Class 35B.
5. Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.
6. Cast iron parts shall be unfinished.
7. The Contractor shall take appropriate measures to assure the Protective Coat is not applied to the scuppers.
8. Adjusting ring and grates shall be from Neenah or approved equal. Structural steel weldments or equal sections and of the same configuration may be substituted for cast iron. Fillet or full penetration welds may be used for weldments. Details shall be submitted to the Engineer for approval.
9. Provide an 1/8" fillet weld around perimeter of new adjusting ring to secure to existing scupper. Electrode shall be compatible with the existing scupper housing material.

DRAINAGE SCUPPER DETAILS

DRAINAGE SCUPPER ADJUSTMENT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

DESIGNED	JSD
CHECKED	DWH
DRAWN	JW
CHECKED	DWH

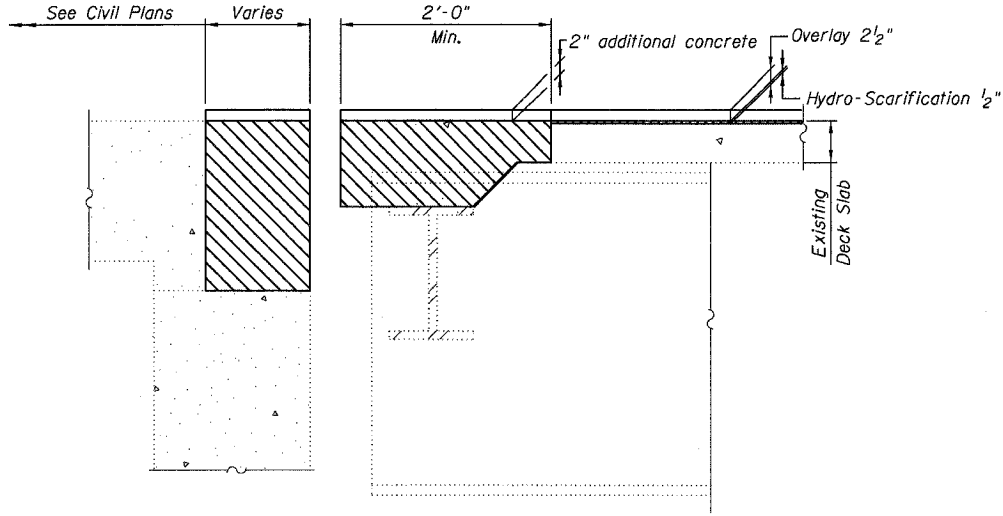
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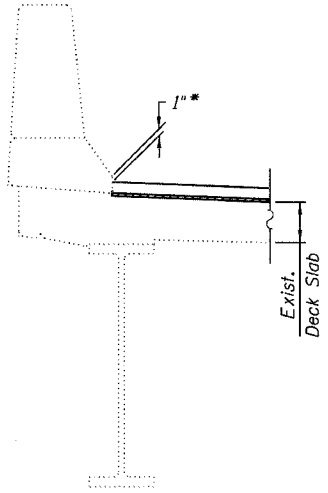
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET
F.A.I. 94	2006-043 RS	COOK	135	122e
FED. ROAD DIST. NO. 7		ILL. PROJ. FED. AID PROJECT		

Contract # 62747



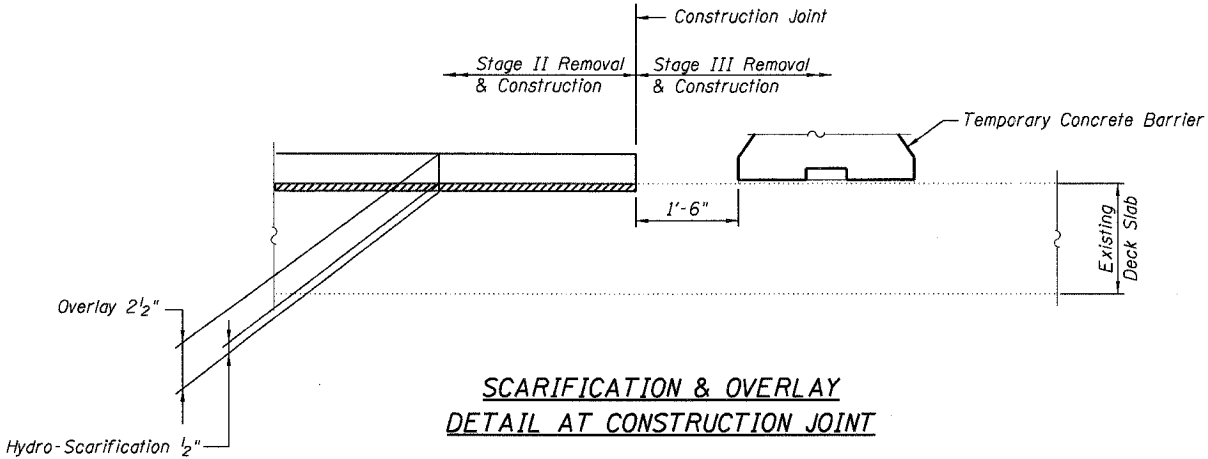
SCARIFICATION & OVERLAY DETAIL AT ABUTMENT



* Contractor shall increase hydro-scarification thickness or reduce overlay thickness as directed by the Engineer to ensure that this dimension is not less than 0".

SCARIFICATION & OVERLAY
DETAIL AT PARAPET

(Applies only to areas outside the joint removal area.)





SCARIFICATION & OVERLAY
DETAIL AT CONSTRUCTION JOINT

NOTE

If additional hydro-scarification is required to maintain the dimension shown in the Scarification & Overlay Detail at Parapet, it shall be included in the cost for Bridge Deck Hydro-scarification 1/2".

LEGEND

-  Hydro-Scarification
-  Concrete Removal

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	JSD
CHECKED -	DWH

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SCARIFICATION AND
OVERLAY DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
F.A.I. 94	2006-043 RS	- COOK -	135	122f
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

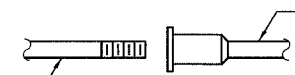
NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_s$
(Tension in kips)
- ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_s$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_s = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

The diameter of this part is equal or larger than the diameter of bar spliced.
The diameter of this part is the same as the diameter of the bar spliced.

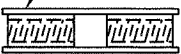


ROLLED THREAD DOWEL BAR



** ONE PIECE

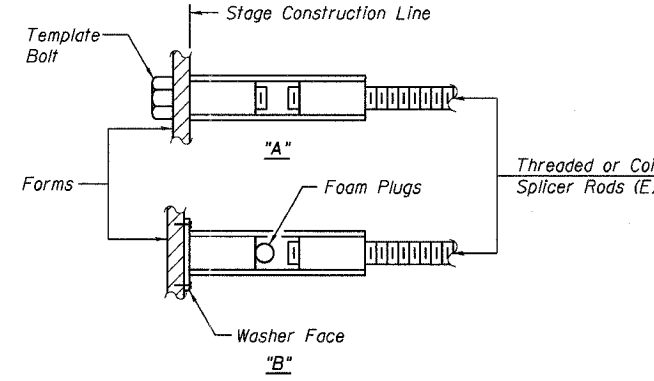
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

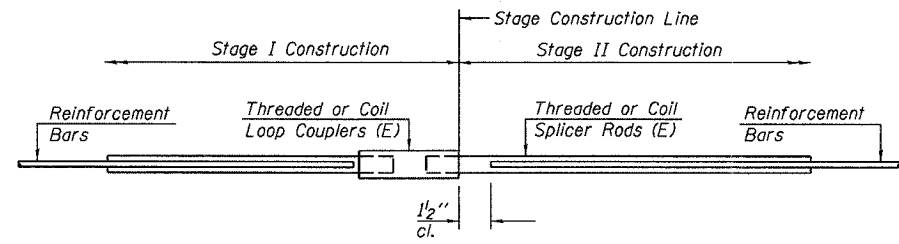
** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



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.

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	23.0	12.3
#5 x(E)	3'-2"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



STANDARD

Bar Size	No. Assemblies Required	Location
#5	20	N. Abut. Deck
#6	6	N. Abut. Backwall
#5	20	S. Abut. Deck
#5 x(E)	12	S. Abut. Deck
#6	6	S. Abut. Backwall

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	EF
CHECKED -	AMK

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BAR SPLICER ASSEMBLY DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER NORTH BRANCH
COOK COUNTY
STATION 23+63.00
STRUCTURE NO. 016-0107

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B.M. - Engineer to set temporary benchmark in field as necessary.

Existing Structure - Structure No. 016-0108, built as S.A. Edens Superhighway, Section 263-0101.1-15D at Station 29+14.49 in 1949. The structure was rehabilitated and widened in 1979 as FAI Route 94 (Edens Expressway), Section 1975-118-R & BR. The existing structure consists of a four span continuous steel multi-beam structure supporting a 7 1/2" reinforced concrete deck. The deck is composite with the steel beams in the end spans only. The steel beams consist of W36 rolled shapes. The original (1949) substructure consists of reinforced concrete pile bent abutments and reinforced concrete multi-column piers supported by concrete piles. The widened substructure (1979) utilizes drilled shafts to support the abutment extension and solid wall pier extensions supported by concrete piles.

Stage construction shall be utilized to maintain traffic during construction.

Salvage Existing Drainage Scupper Grates.

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DEPARTMENT OF TRANSPORTATION

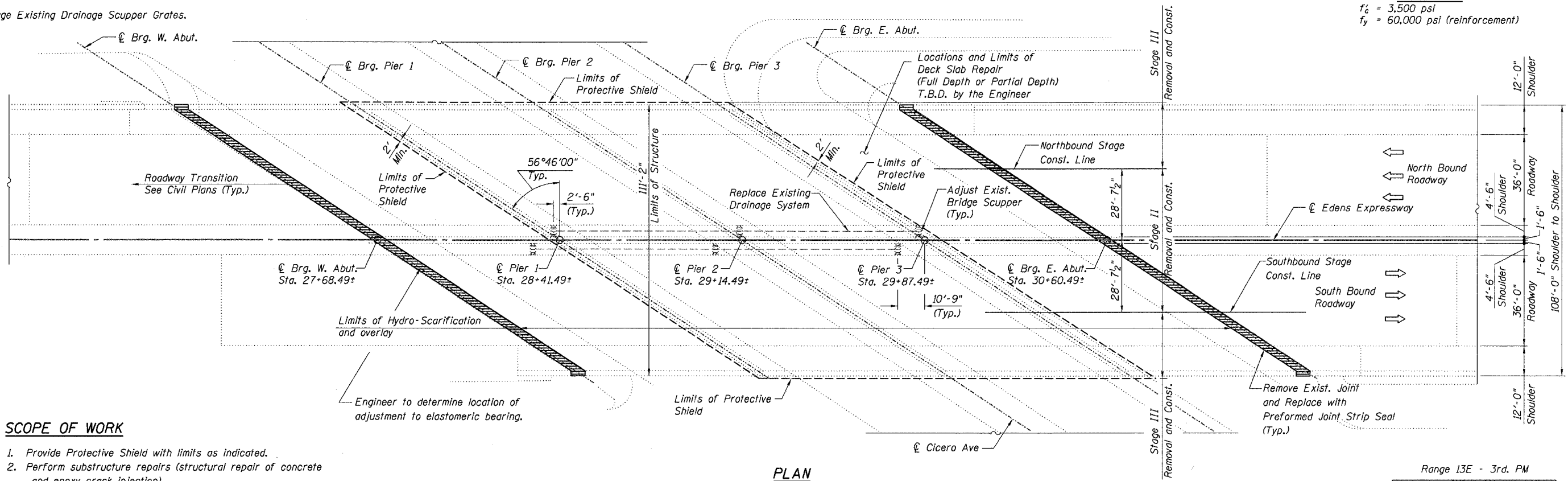
ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL
F.A.I. 94	2006-043 RS	COOK	135	123
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

DESIGN SPECIFICATIONS
2002 AASHTO

DESIGN STRESSES

FIELD UNITS
f_c = 3,500 psi
f_y = 60,000 psi (reinforcement)



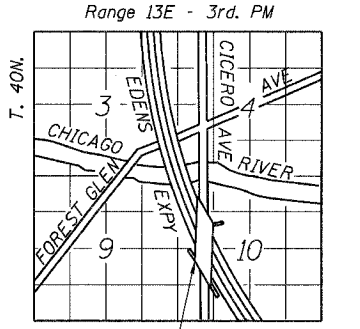
PLAN

SCOPE OF WORK

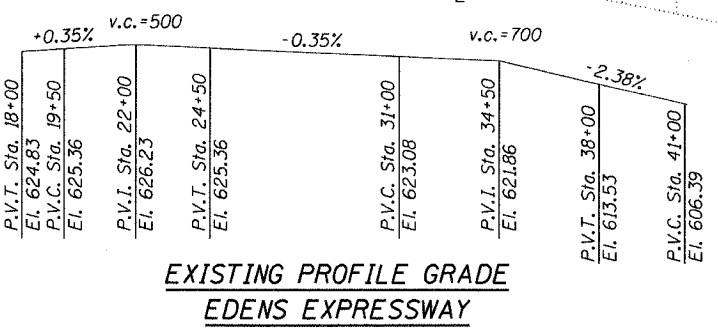
1. Provide Protective Shield with limits as indicated.
 2. Perform substructure repairs (structural repair of concrete and epoxy crack injection).
- Stage II:
3. Close Stage II construction areas to traffic.
 4. Hydro-Scarify the deck slab.
 5. Remove and replace expansion joints and surrounding concrete (including parapets).
 6. Perform deck slab repair.
 7. Adjust existing scuppers and install new grates; replace drainage system.
 8. Place Overlay.
 9. Place temporary roadway transitions.
 10. Open Stage II Construction area to staged traffic.
- Stage III:
11. Close Stage III Removal areas to traffic.
 12. Repeat steps 4-9 but for Stage III construction.
 13. Open bridge to traffic.

LEGEND

- Protective Shield Limits
- ▨ Concrete Removal / Joint Reconstruction



LOCATION SKETCH



ELEVATION
(Looking East)

Substructure repair locations
T.B.D. by the Engineer (Typ.)

DESIGNED -	DWH
CHECKED -	JSD
DRAWN -	EF
CHECKED -	JSD

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EXISTING PROFILE GRADE
EDENS EXPRESSWAY

NOTES

1. For joint removal and replacement plans and details, see Sheet No. 126 thru 130
2. See Structural Notes on Sheet No. 123a



GENERAL PLAN & ELEVATION
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CINCINNATI AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	123a
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

Contract # 62747

STRUCTURAL NOTES

- Expansion joint plates and attached bars shall be shop painted with the inorganic zinc rich primer.
- The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.
- Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60 (IL Modified). See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- 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 shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- 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 compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.
- Stage construction shall be utilized to maintain traffic during construction.
- The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
- The Contractor shall provide a Protective Shield under the deck for Full Deck Slab repairs as per direction of the Engineer and as shown on the plans.
- The Contractor may have to remove the Name Plate(s) that interfere with the parapet removal for joint reconstruction. The Contractor shall reinstall the Name Plate(s) as directed by the Engineer. The cost of removal and reinstallation of Name Plate(s) shall be included in the cost for "Concrete Removal" and "Concrete Superstructure."
- Protective coat shall be applied only to the new concrete provided for the reconstruction of the joints (top of deck slab, top and traffic face of parapet).
- The Engineer shall determine extent, location and type of substructure and deck slab repairs in the field.
- 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 an individual acceptable to the Engineer. Any cracks that can not be removed by grinding 1/4 inch 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.

- Field welding of construction accessories will not be permitted to beams or girders.
- The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection. Forms for deck slab shall be removed prior to placement of bridge approach pavement.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- Protective shielding shall be installed to insure that all electrical appurtenances below the bridge deck are adequately protected.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shrinking the bearing. Two 1/8 inch adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. (For Type 1 Elastomeric Bearings, two 1/8 inch adjusting shims shall be provided for each bearing and placed as detailed.

Bar Size	Min. Lap
#4	1'-8"
#5	2'-2"
#5*	3'-0"
#6	2'-7"
#6*	3'-7"
#7	3'-5"
#8	4'-6"

* Top Horizontal Bar

ABBREVIATION LIST

Abut.	Abutment	F/	Face of	R or Rad.	Radius
Alt.	Alternate	Ft.	Foot or Feet	RR	Railroad
		Ftg.	Footing	Req'd	Required
Bk.	Back			Rt.	Right
Brg.	Bearing	Gr.	Grade	Sht.	Sheet
Btwn.	Between			Spa.	Spaces or Spacing
B/	Bottom of	Jt.	Joint	Sq.	Square
Bot.	Bottom	L	Angle	S.S.	Stainless Steel
		Lt.	Left	Std.	Standard
CIP	Cast in Place	Lg.	Long	Sta.	Station
CL	Centerline			Stl.	Steel
Cts.	Centers	Max.	Maximum	St.	Street
Cl.	Clear	Min.	Minimum	Sym.	Symmetrical
Conc.	Concrete				
CJ	Construction Joint	Nom.	Nominal	Temp.	Temporary
Const(r).	Construction	N.T.S.	Not to Scale	Thk.	Thick
		No(s).	Number(s)	T.B.D.	To be determined
Dia.	Diameter			T/	Top of
		Opp.	Opposite	Typ.	Typical
Ea.	Each				
E	East			UNO	Unless Noted Otherwise
E/	Edge of	Pavl.	Pavement		
E.I. or Elev.	Elevation	PL	Plate	VIF	Verify in Field
Exist.	Existing	P.C.	Precast		
Exp.	Expansion	P.J.F.	Preformed Joint Filler		
Exp.	Expressway	P.J.S.	Preformed Joint Sealer	W	West
		PGL	Profile Grade Line	W/	With
		Prop.	Proposed		

STRUCTURAL NOTES
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	EF
CHECKED -	DWH

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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	123b
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

Contract # 62747

TOTAL BILL OF MATERIAL

Item	Unit	Super.	Sub.	Total
Concrete Removal	Cu. Yd.	62.7		62.7
Protective Shield	Sq. Yd.	1,800		1,800
Concrete Superstructure	Cu. Yd.	70.9		70.9
Bridge Deck Grooving	Sq. Yd.	3,315		3,315
Protective Coat	Sq. Yd.	146		146
Adjust and Reposition Bearings	Each	1		1
Reinforcement Bars, Epoxy Coated	Pound	6,840		6,840
Bar Splicers	Each	52		52
Preformed Joint Strip Seal	Foot	388		388
Epoxy Crack Injection	Foot		100	100
Bridge Deck Microsilica Concrete Overlay, 2 1/2"	Sq. Yd.	3,361		3,361
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	3,361		3,361
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	17		17
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	153		153
Drainage System	L. Sum	1		1
Silicone Bridge Joint Sealer, 2"	Foot	296		296
* Adjusting Drainage Scuppers, Type A	Each	6		6
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.		650	650

* Requires Special Provision

INDEX OF SHEETS

123	GENERAL PLAN & ELEVATION
123a	STRUCTURAL NOTES
123b	TOTAL BILL OF MATERIAL AND INDEX OF SHEETS
124	TYPICAL SECTION THRU BRIDGE
125	CONSTRUCTION STAGING DETAILS
126	EXPANSION JOINT REMOVAL & REPLACEMENT PLAN
127	EXPANSION JOINT REMOVAL & REPLACEMENT DETAILS
128	REINFORCING BAR DETAILS & SUPERSTRUCTURE BILL OF MATERIAL
129	REINFORCING BAR DETAILS
130	EXPANSION JOINT DETAILS
131	DRAINAGE SYSTEM DETAILS
132	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
133	DRAINAGE SCUPPER ADJUSTMENT DETAILS
134	SCARIFICATION AND OVERLAY DETAILS
135	BAR SPLICER ASSEMBLY DETAILS

TOTAL BILL OF MATERIAL
AND INDEX OF SHEETS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

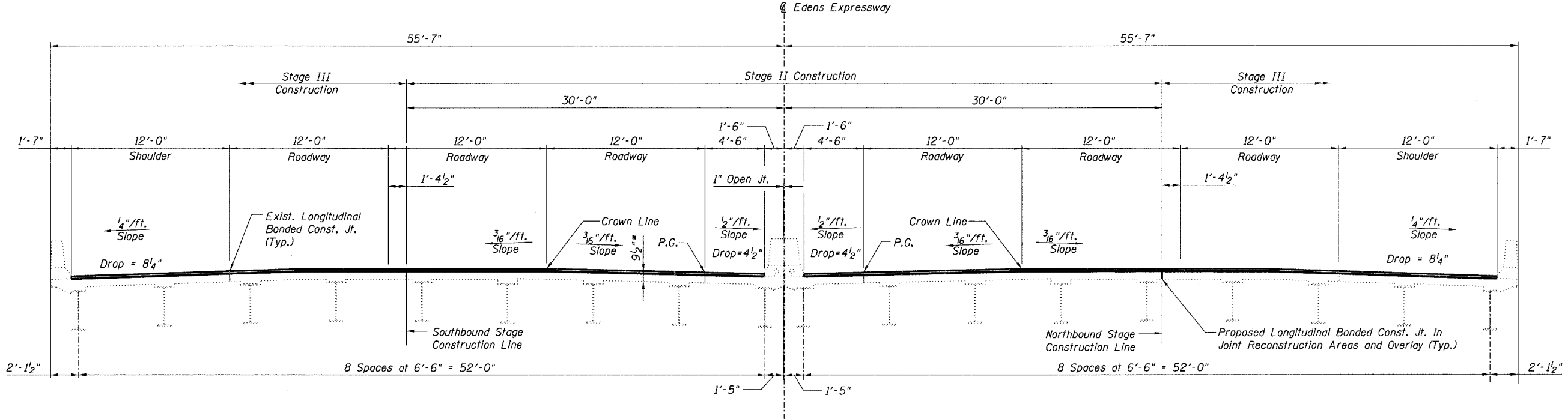
DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	EF
CHECKED -	DWH

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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	124
FED. ROAD DIST. NO. 7	ILLINOIS		FED. AID PROJECT	

Contract # 62747



TYPICAL SECTION THRU BRIDGE
(Looking West)

* Deck Slab replacement in joint locations only.
See Sheet No. 126 for limits.
In typical locations, proposed slab will consist of 7" slab and 2 1/2" latex concrete overlay.
See Sheet No. 134 for details.

- NOTES**
1. For joint removal limits see Sheet Nos. 126 and 127
 2. Stage I does not include any bridge work.

TYPICAL SECTION THRU BRIDGE
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

DESIGNED	-	JSD
CHECKED	-	AMK
DRAWN	-	EF
CHECKED	-	AMK

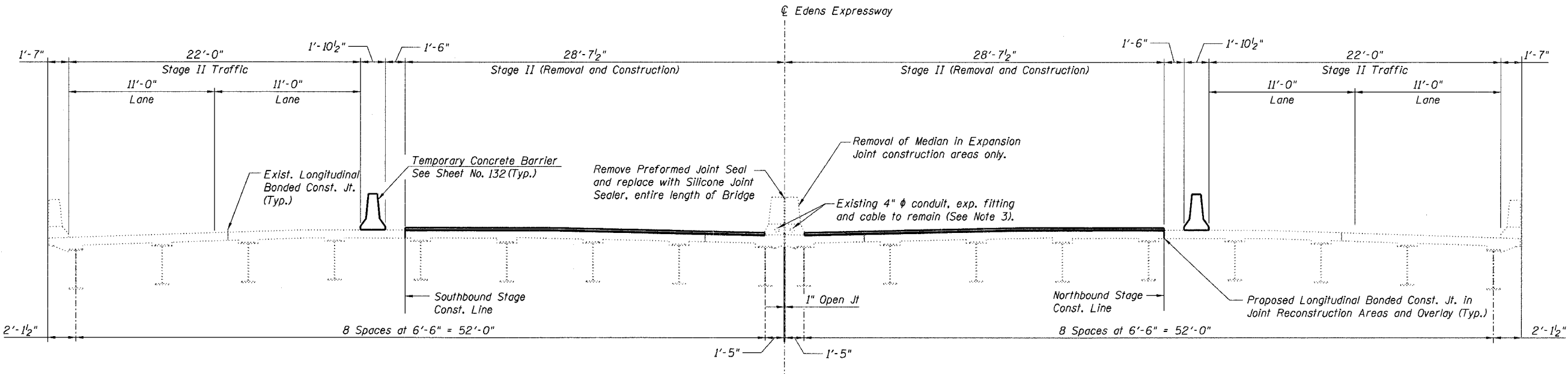
LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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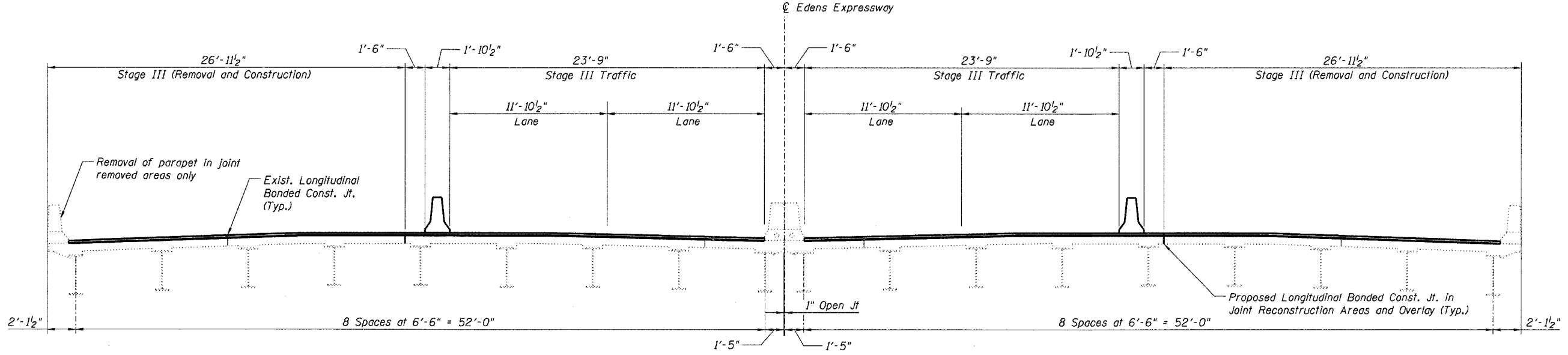
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET TOTAL
F.A.I. 94	2006-043 RS	COOK	135	125
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747



STAGE II CONSTRUCTION AND REMOVAL
(Looking West)



STAGE III CONSTRUCTION AND REMOVAL
(Looking West)

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	EF
CHECKED -	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

- NOTES**
1. For joint removal limits see Sheet Nos. 126 and 127.
 2. Stage I does not include any bridge work.
 3. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work; instead the Contractor will be required to replace the entire span of any damaged cable.

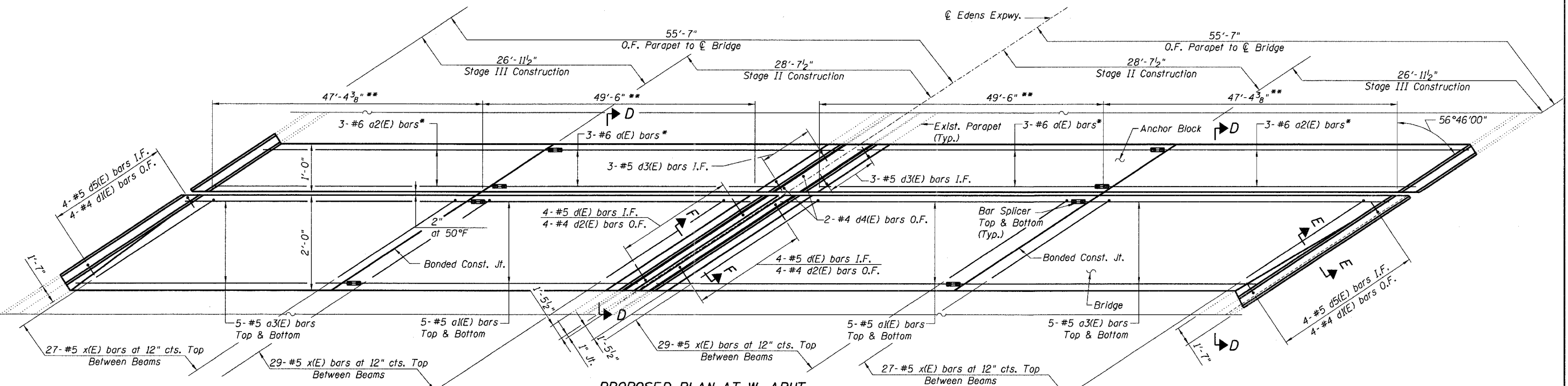
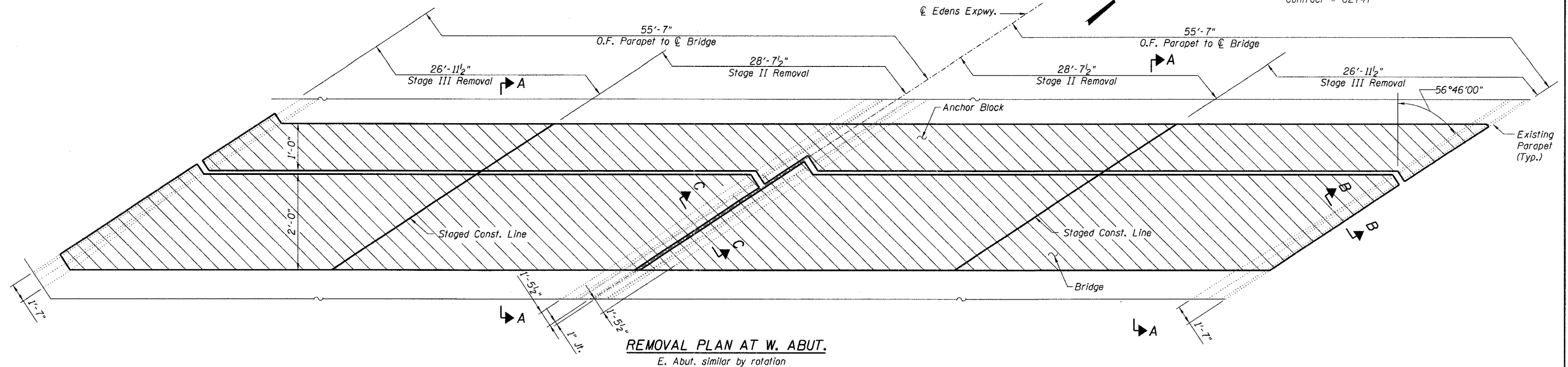
CONSTRUCTION STAGING DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	126
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

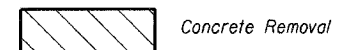


* Located as shown in Sections on Sheet No. 127
** Measured along face of backwall.

NOTES

- All Reinforcement Bars are to be spaced evenly unless otherwise noted.
- Work this sheet with Sheet No. 127
- Reinforcement bars designated (E) shall be epoxy coated.
- O.F. denotes Outside Face; I.F. denotes Inside Face.
- Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet No. 130
- For Bill of Material and bar details see Sheet Nos. 128 and 129
- Stage I does not include any bridge work.
- See Sheet No. 128 for additional abutment backwall demolition and reconstruction.

LEGEND



EXPANSION JOINT REMOVAL & REPLACEMENT PLAN
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

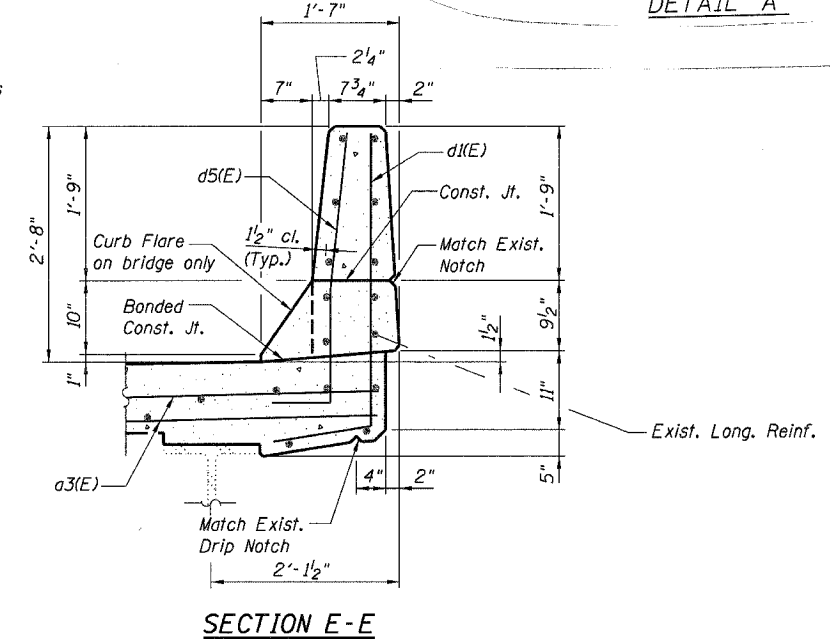
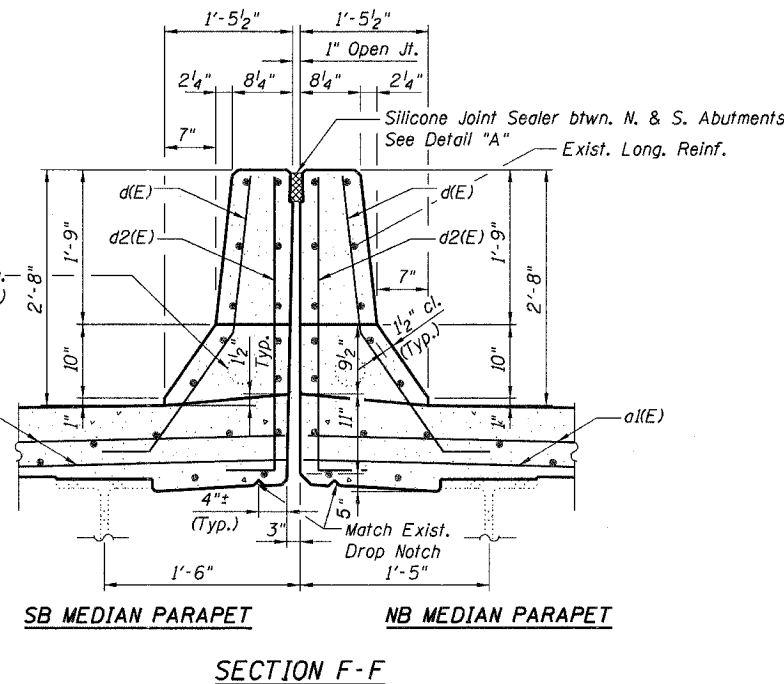
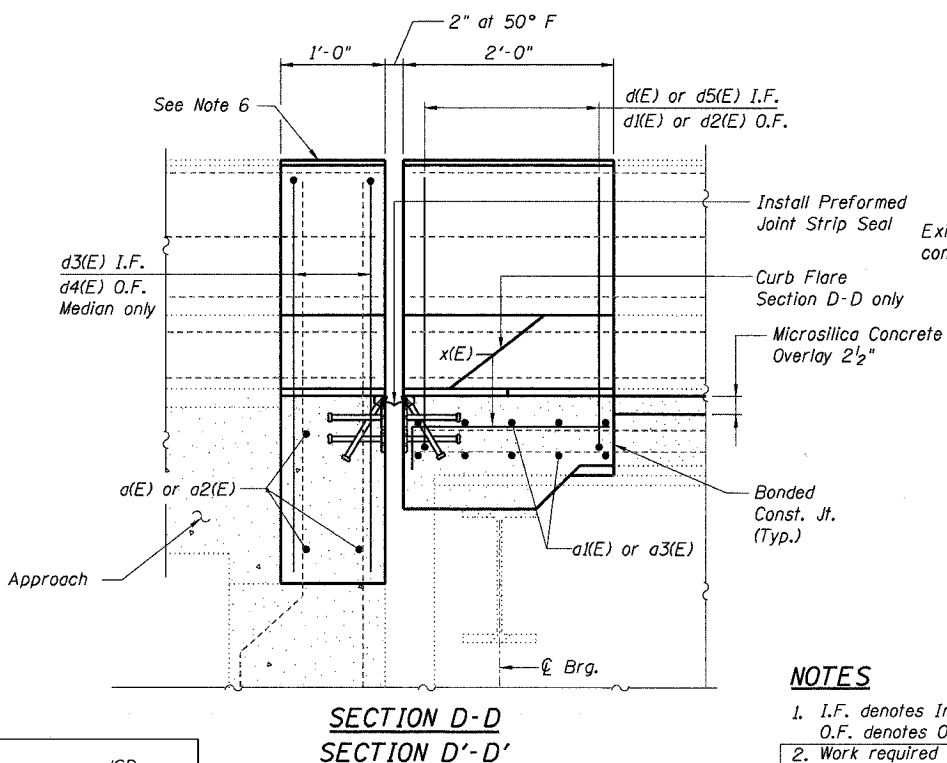
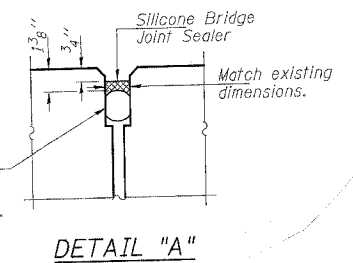
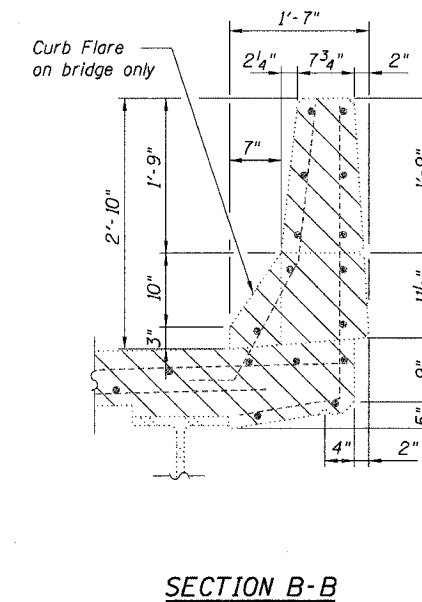
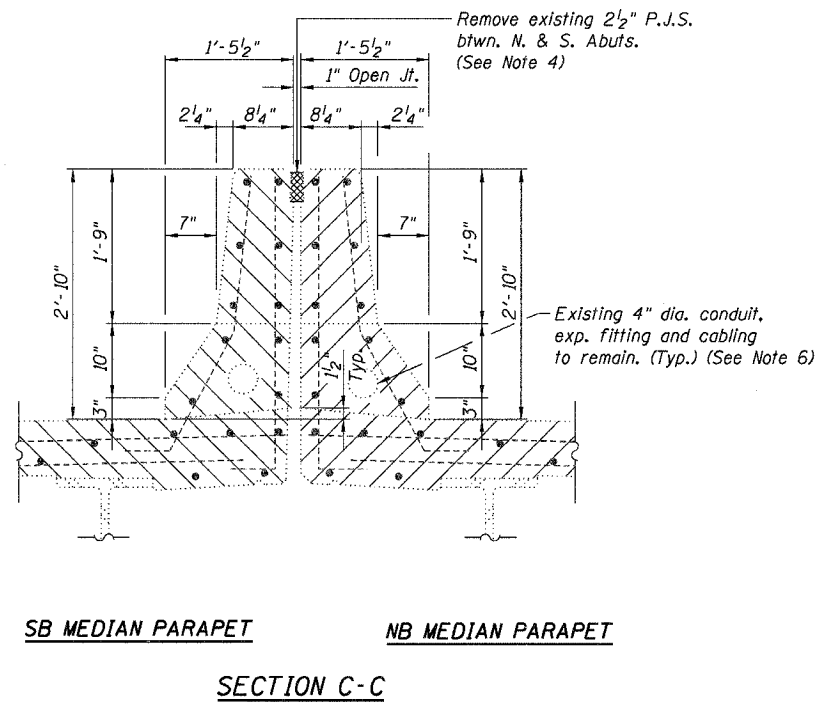
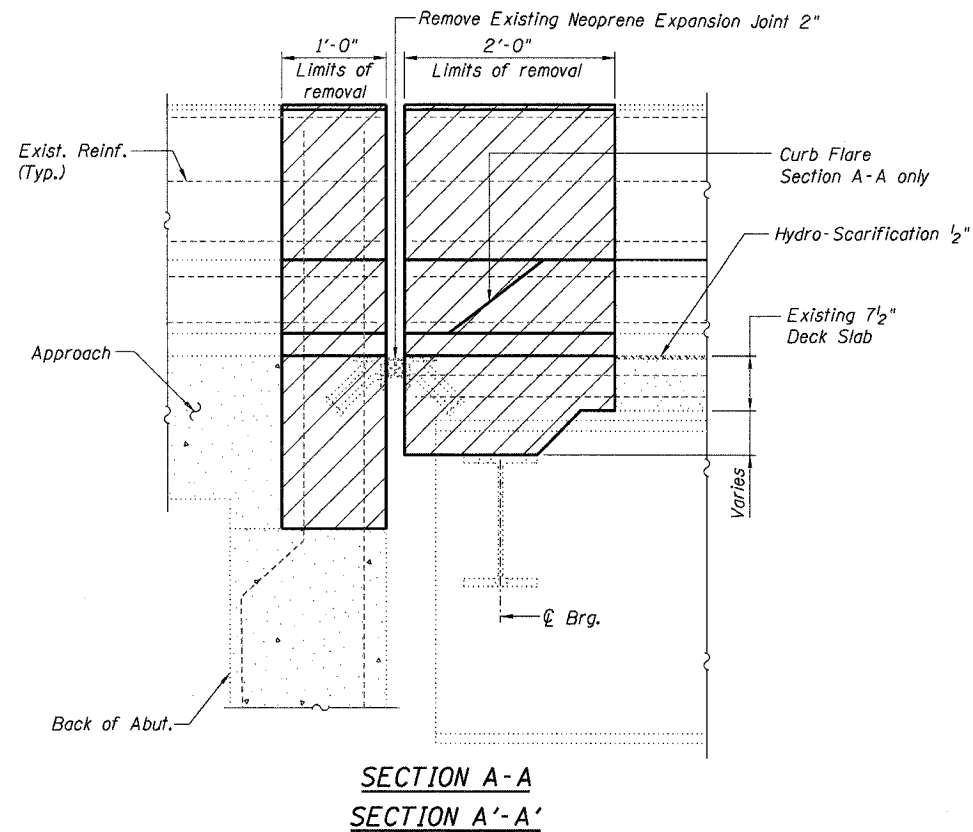
DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	JSD
CHECKED -	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
F.A.I. 94	2006-043 RS	COOK	135	127
FED. ROAD DIST. NO. 7	ILL. PROJ. NO.	FED. AID PROJECT		

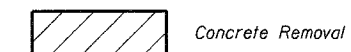
Contract # 62747



NOTES

1. I.F. denotes Inside Face.
O.F. denotes Outside Face.
2. Work required for removal of existing expansion joint shall be included in the cost of Concrete Removal.
3. Work this sheet with Sheet No. 126.
4. Work required for removal of existing P.J.S. shall be included in the cost of Silicone Joint Sealer, 2".
5. Form top of parapet to match elevation of top of wingwall.
6. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work; Instead the Contractor will be required to replace the entire span of any damaged cable.

LEGEND



EXPANSION JOINT REMOVAL &
REPLACEMENT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

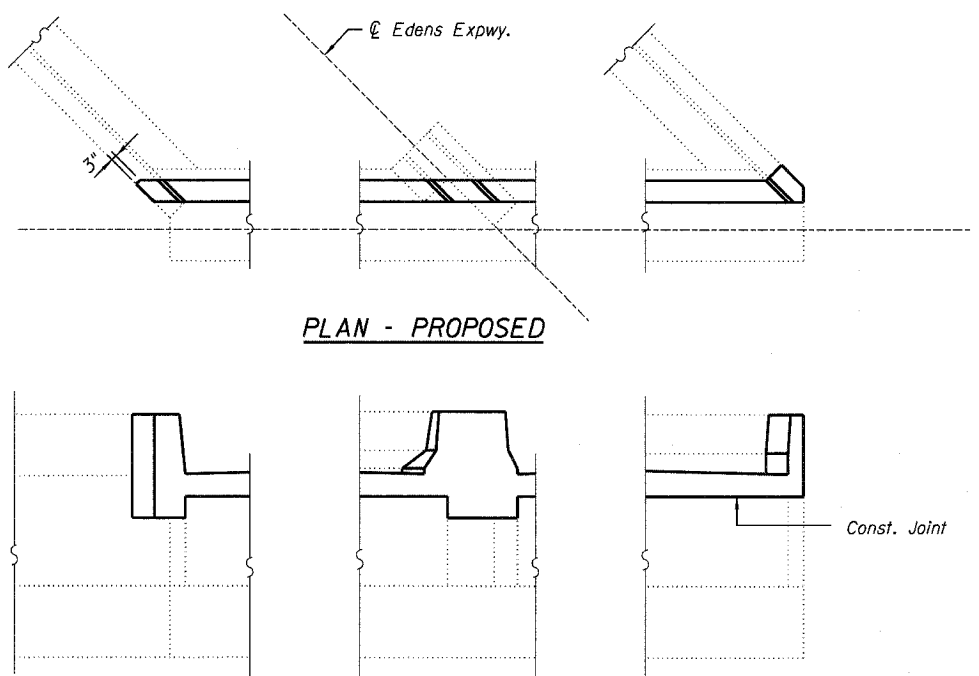
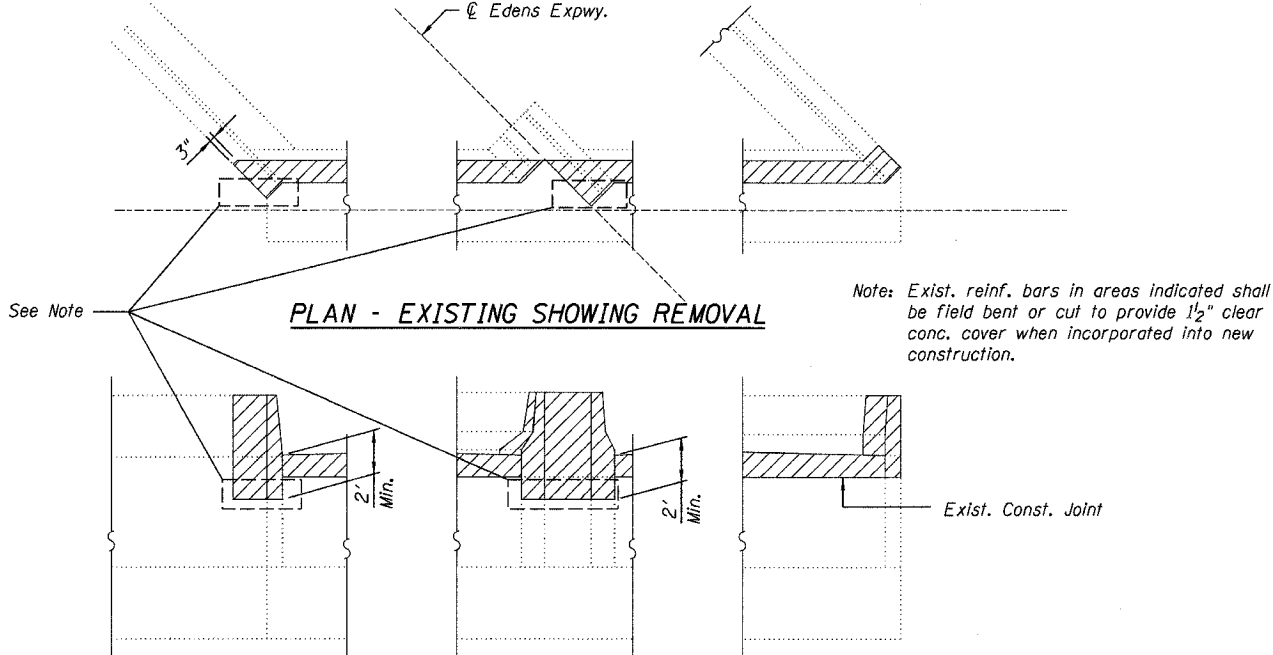
DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	EF
CHECKED -	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL
F.A.I. 94	2006-043 RS	COOK	135	128
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Contract # 62747



**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	12	#6	51'-11"	—
a1(E)	40	#5	51'-11"	—
a2(E)	12	#6	48'-9"	—
a3(E)	40	#5	48'-9"	—
d(E)	16	#5	4'-1"	┘
d1(E)	16	#4	4'-5"	┘
d2(E)	16	#4	4'-1"	┘
d3(E)	12	#5	5'-4"	┘
d4(E)	2	#4	4'-0"	┘
d5(E)	16	#5	4'-2"	┘
x(E)	224	#5	2'-3"	—
Concrete Removal			Cu. Yd.	62.7
Concrete Superstructure			Cu. Yd.	70.9
Bridge Deck Grooving			Sq. Yd.	3,315
Protective Coat			Sq. Yd.	146
Reinforcement Bars, Epoxy Coated			Pound	6,840
Silicone Bridge Joint Sealer, 2"			Foot	296

NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheet No. 129

**REINFORCING BAR DETAILS &
SUPERSTRUCTURE BILL OF MATERIAL**
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	JSD
CHECKED -	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

LEGEND

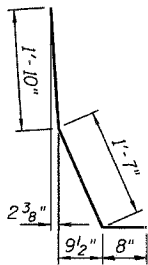
Concrete Removal

T:\2298\struct\dgn\0108C.0M06.dgn

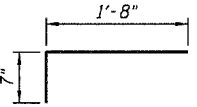
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	129
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

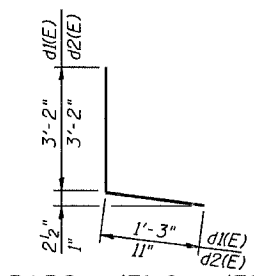
Contract # 62747



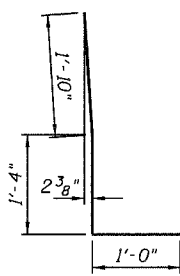
BAR d(E)



BAR x(E)



BARS d₁(E) & d₂(E)



BAR d₅(E)

NOTE

Work this sheet with Sheet No. 128

REINFORCING BAR DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

DESIGNED -	JSD
CHECKED -	AMK
DRAWN -	JSD
CHECKED -	AMK

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

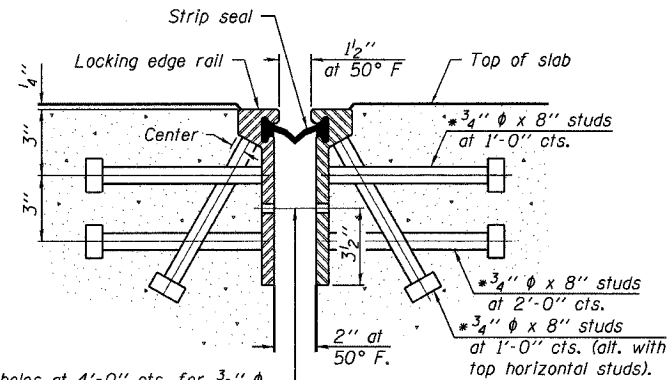
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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	130
FED. ROAD DIST. NO. 7	ILL. ROAD PROJECT			

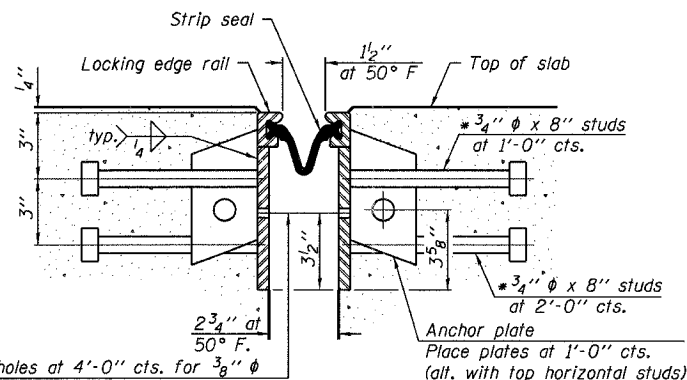
Contract # 62747

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.



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



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

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 height and thickness of the Locking Edge Rails shown are minimum dimensions. 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 and stage construction joints.

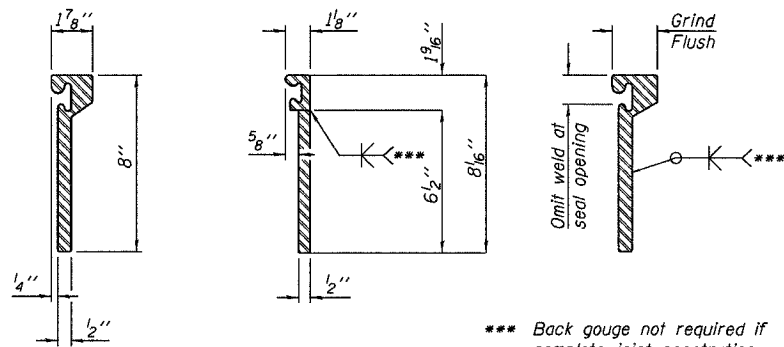
The manufacturer's recommended installation methods shall be followed.

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.

SECTION THRU
ROLLED RAIL JOINT

SECTION THRU
WELDED RAIL JOINT

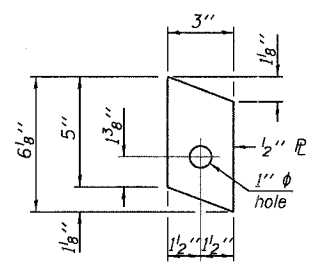


ROLLED (EXTRUDED) RAIL WELDED RAIL

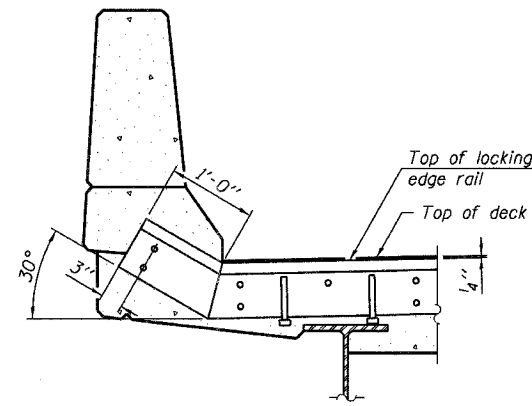
*** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE
RAIL SPLICE

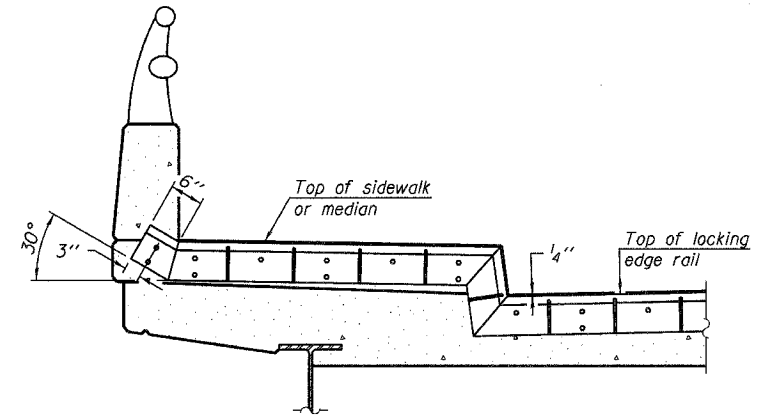
The inside of the locking edge rail groove shall be free of weld residue.



ANCHOR PLATE
(for welded rail)



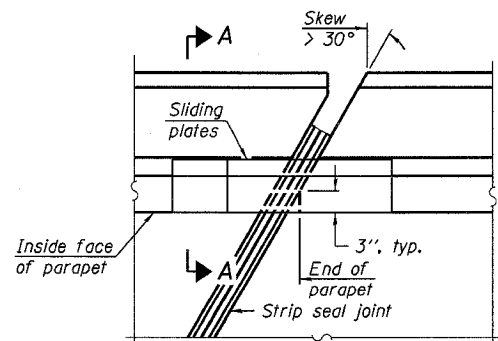
AT PARAPET



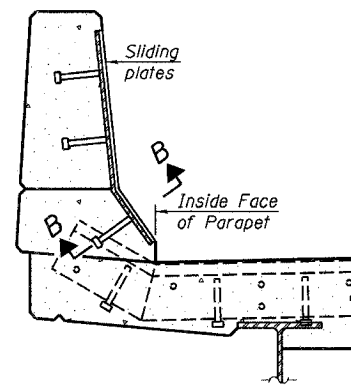
AT SIDEWALK OR MEDIAN

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.

LOCKING EDGE RAILS



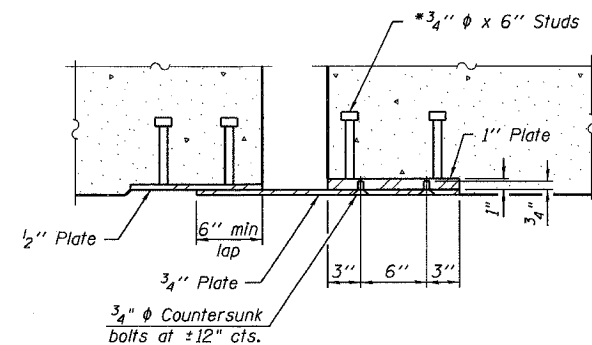
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	388

EXPANSION JOINT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

DESIGNED	GWS
CHECKED	JSD
DRAWN	EF
CHECKED	JSD

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

EJ-SSJ

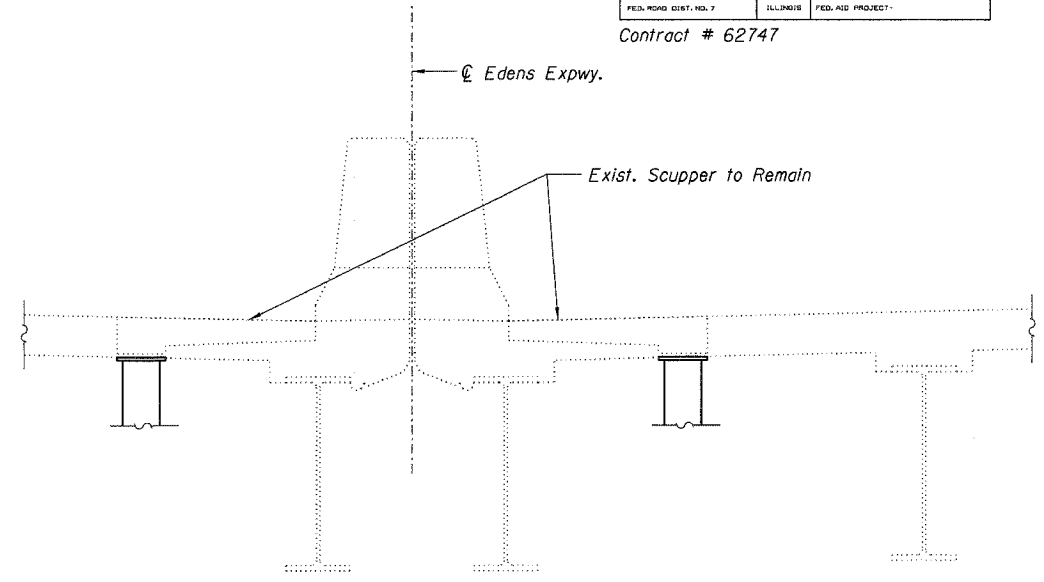
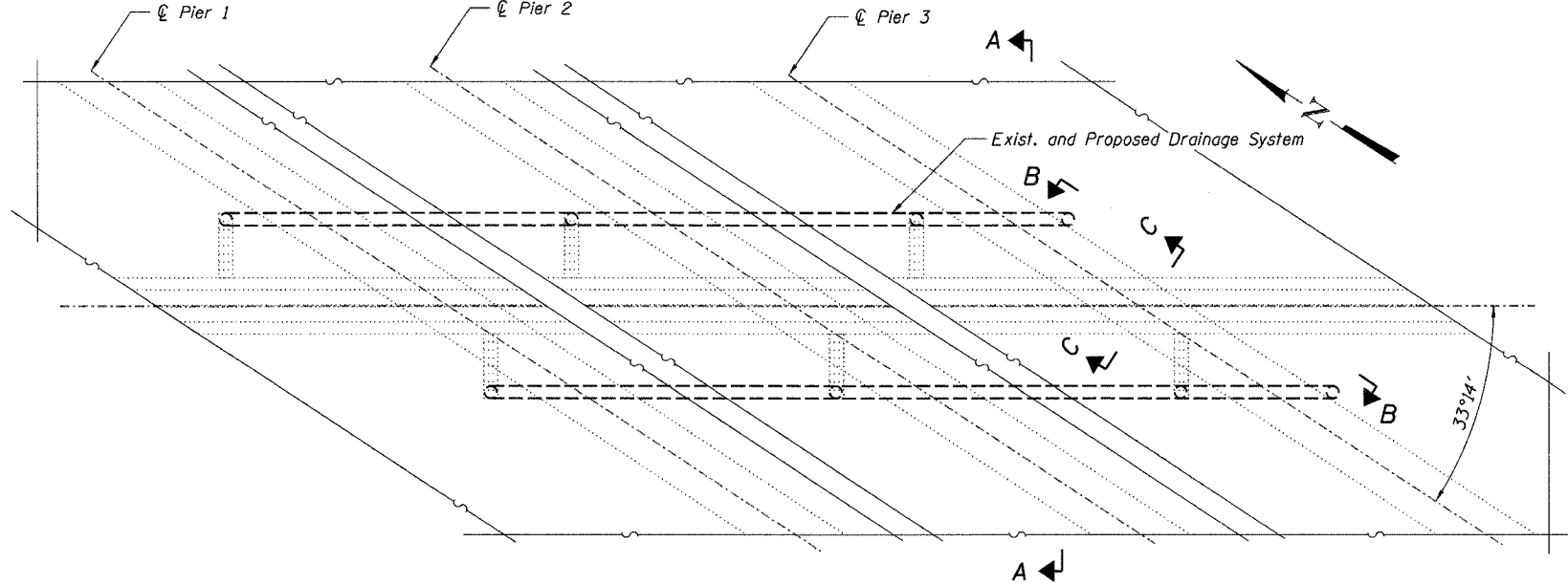
11-1-06

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

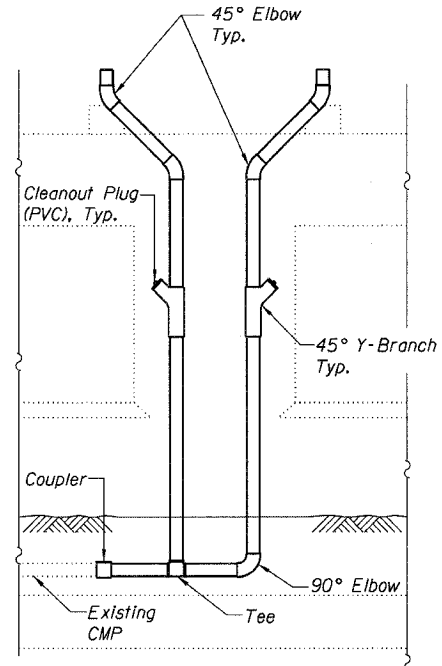
ROUTE NO.	SECTION	COUNTY	DATE	SHEET
F.A.I. 94	2006-043 RS	COOK	135	131
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:		

Contract # 62747

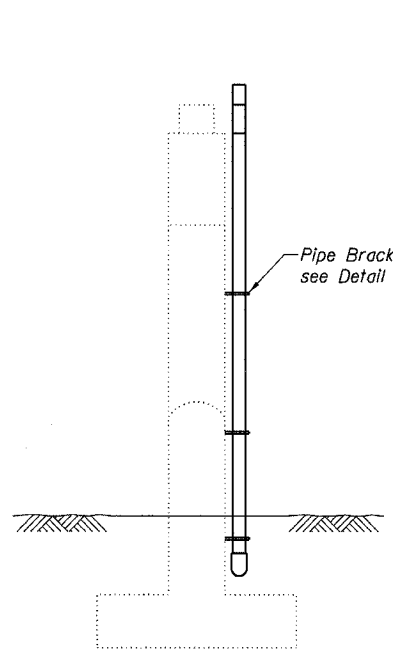


SECTION A-A

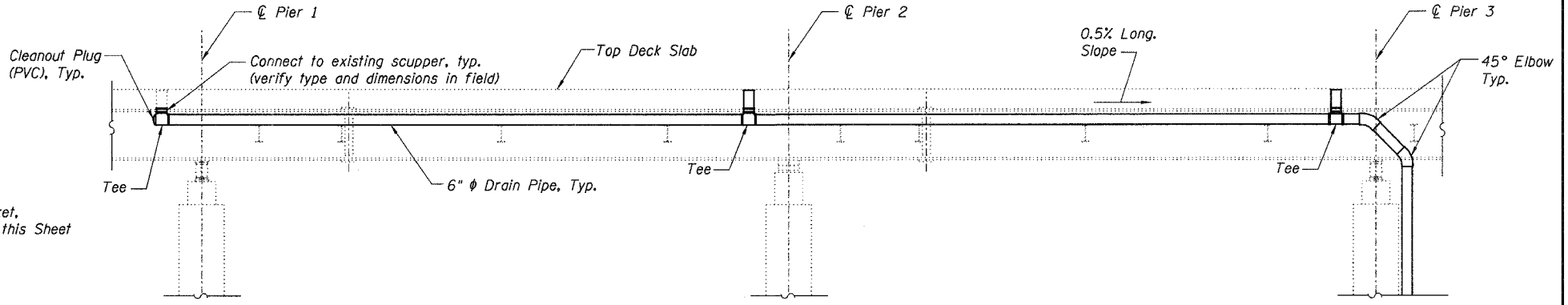
PLAN



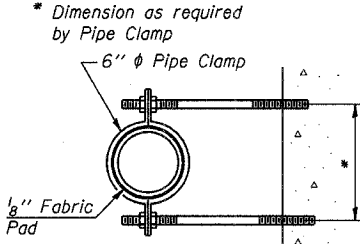
SECTION B-B



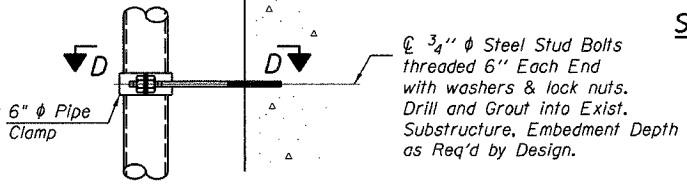
SECTION C-C



ELEVATION



SECTION D-D



PIPE BRACKET DETAIL

BILL OF MATERIAL

Item	Unit	Total
Drainage System	L. Sum	1

NOTES

1. Remove existing Drainage System, cost included with "Drainage System".
2. Clean and flush existing underground drain pipe, prior to coupling to proposed drainage system, cost included with "Drainage System".
3. Provide structural support from existing deck slab for drain pipe per manufacturer's recommendation not to exceed 6" ctrs., cost included with "Drainage System".

DRAINAGE SYSTEM DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	JW
CHECKED -	DWH

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

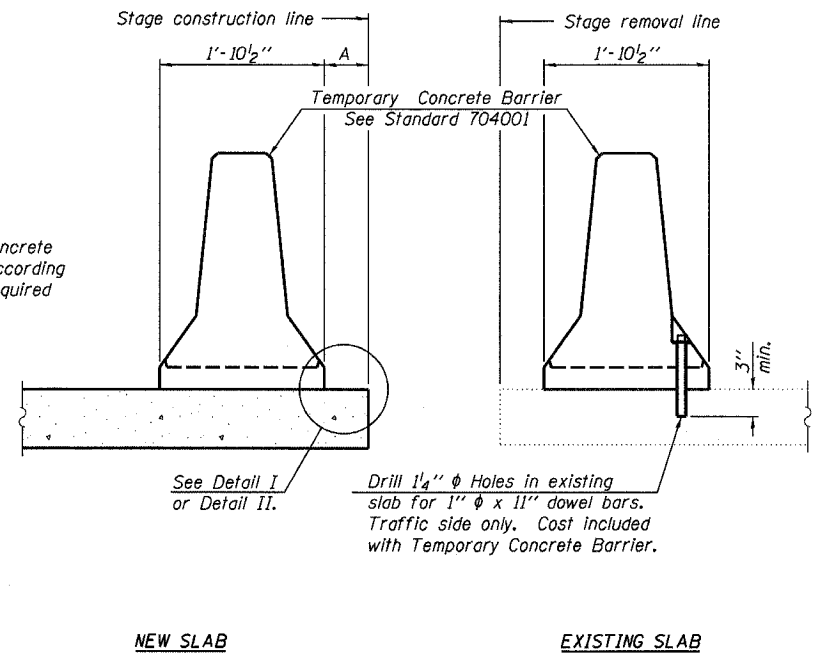
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	2006-043 RS	COOK	135	132
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 62747

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".



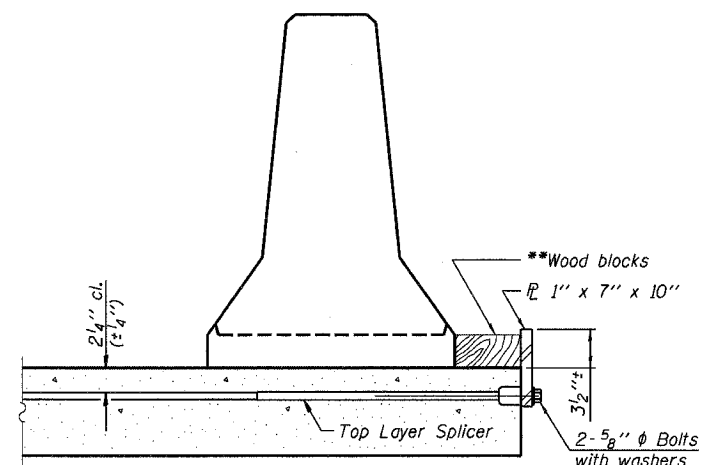
SECTIONS THRU SLAB

NOTES

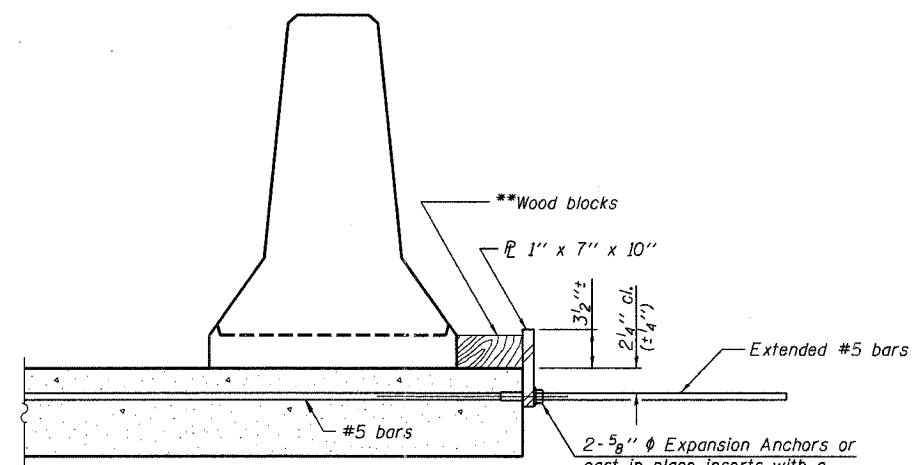
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{L} to the top layer of couplers with 2- $\frac{5}{8}$ " ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

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

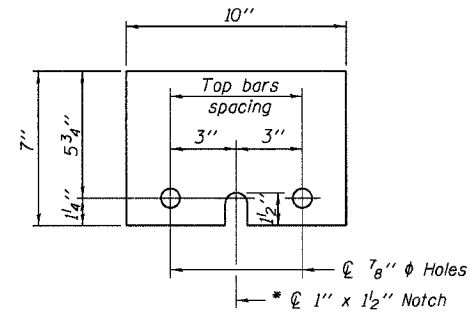
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



DETAIL I



DETAIL II



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

DESIGNED	GWS
CHECKED	JSD
DRAWN	EF
CHECKED	JSD

LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

R-27

11-1-06

**TEMPORARY CONCRETE BARRIER FOR
STAGE CONSTRUCTION
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108**

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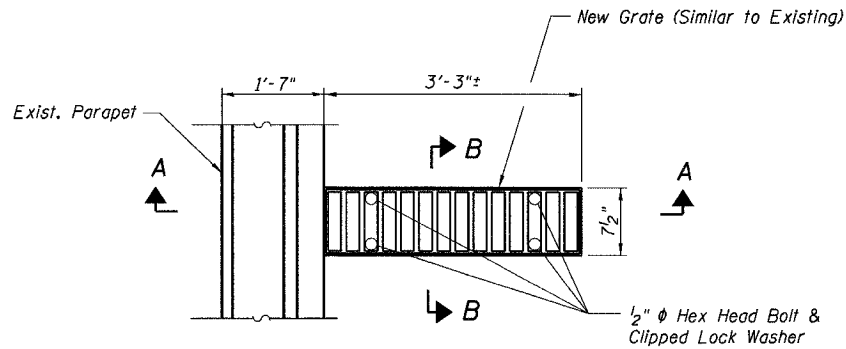
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET #
F.A.I. 94	2006-043 RS	COOK	135	133
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

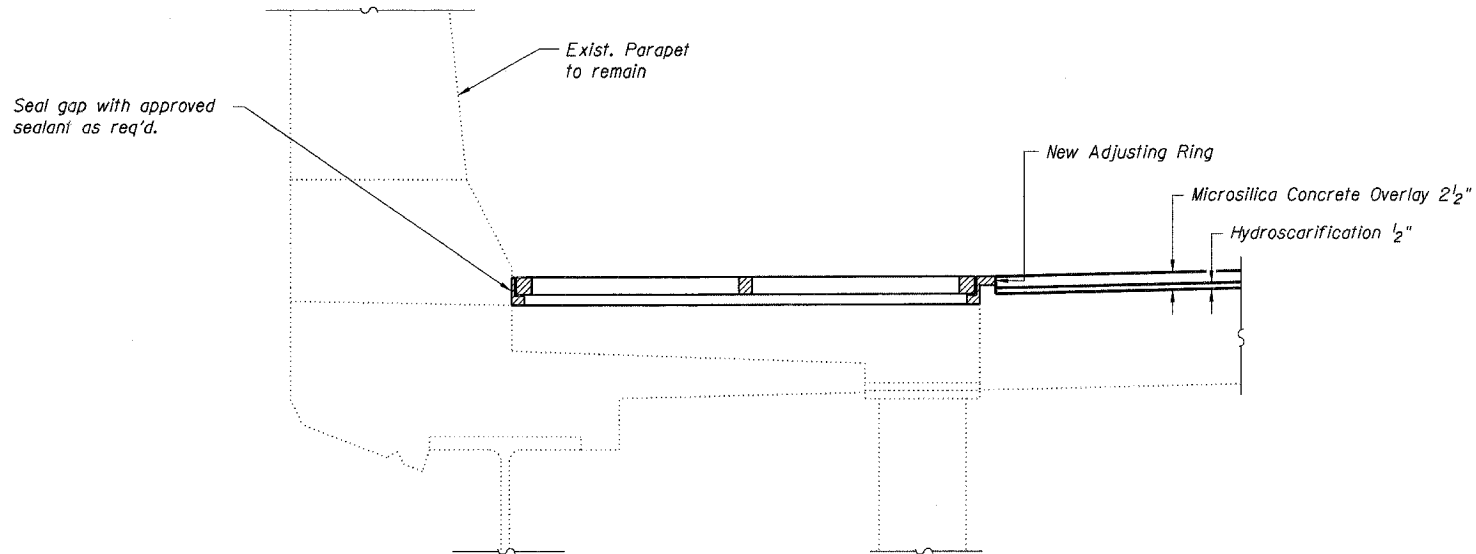
Contract # 62747

BILL OF MATERIAL

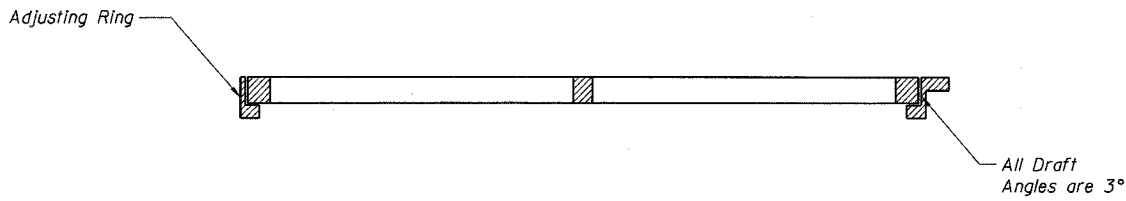
Item	Unit	Total
Adjusting Drainage Scuppers	Each	6



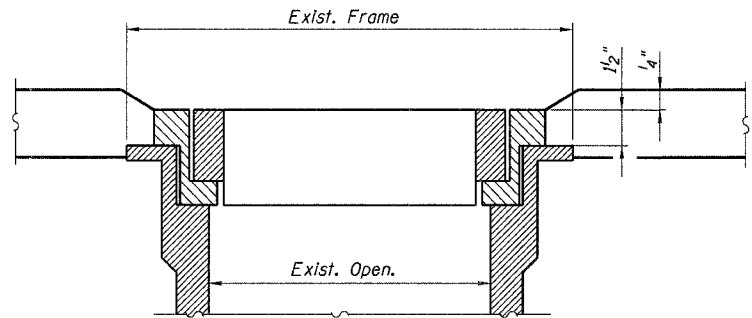
PROPOSED PLAN AT SCUPPER



SECTION THRU SCUPPER



SECTION A-A



SECTION B-B

NOTES

1. The contractor shall verify the exact location, type and dimensions of the existing scuppers before ordering the materials, the cost of which is included in the cost of Adjusting Drainage Scuppers.
2. For scupper locations, see General Plan & Elevation sheets.
3. For additional notes and Bill of Material, see Sheet 123a and 123b
4. All cast iron parts shall be grey iron conforming to the requirements of AASHTO M 105, Class 35B.
5. Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.
6. Cast iron parts shall be unfinished.
7. The Contractor shall take appropriate measures to assure the Protective Coat is not applied to the scuppers.
8. Adjusting ring and grates shall be from Neenah or approved equal. Structural steel weldments or equal sections and of the same configuration may be substituted for cast iron. Fillet or full penetration welds may be used for weldments. Details shall be submitted to the Engineer for approval.
9. Provide an 1/8" fillet weld around perimeter of new adjusting ring to secure to existing scupper. Electrode shall be compatible with the existing scupper housing material.

DRAINAGE SCUPPER DETAILS

DRAINAGE SCUPPER ADJUSTMENT DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

DESIGNED -	JSD
CHECKED -	DWH
DRAWN -	JW
CHECKED -	DWH

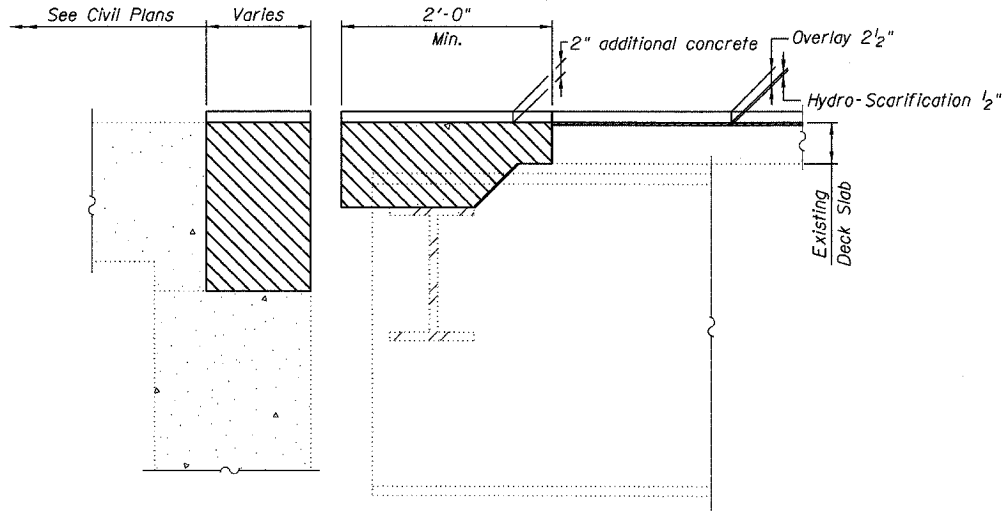
LOCHNER
H.W. LOCHNER, INC., CHICAGO, ILLINOIS

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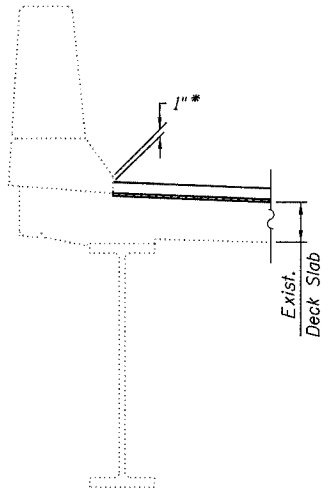
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	134
FED. HIGH. DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747



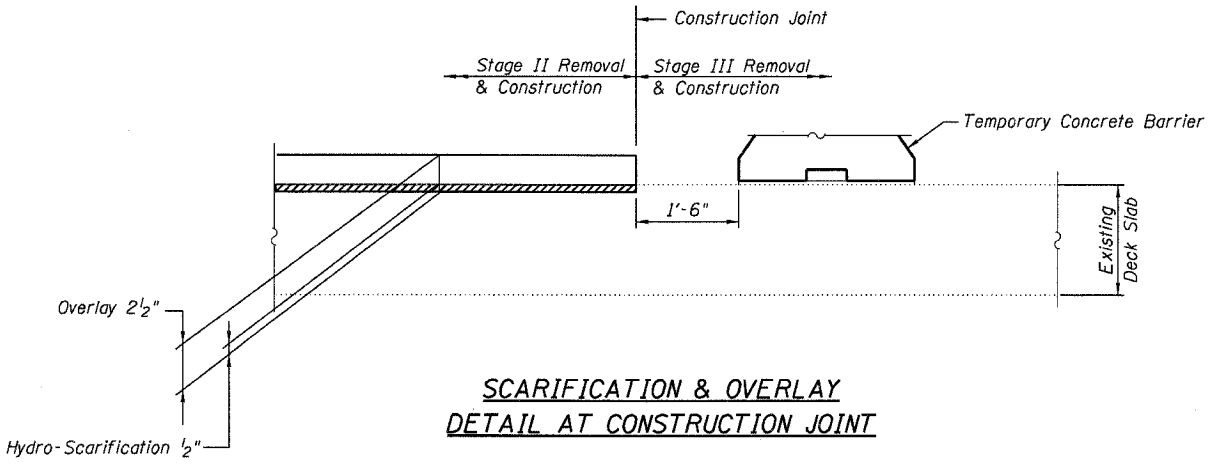
SCARIFICATION & OVERLAY DETAIL AT ABUTMENT



* Contractor shall increase hydro-scarification thickness or reduce overlay thickness as directed by the Engineer to ensure that this dimension is not less than 0".

**SCARIFICATION & OVERLAY
DETAIL AT PARAPET**

(Applies only to areas outside the joint removal area.)





**SCARIFICATION & OVERLAY
DETAIL AT CONSTRUCTION JOINT**

NOTE

If additional hydro-scarification is required to maintain the dimension shown in the Scarification & Overlay Detail at Parapet, it shall be included in the cost for Bridge Deck Hydro-Scarification 1/2".

LEGEND

-  Hydro-Scarification
-  Concrete Removal

DESIGNED	-	JSD
CHECKED	-	DWH
DRAWN	-	JSD
CHECKED	-	DWH

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**SCARIFICATION AND
OVERLAY DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108**

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	2006-043 RS	COOK	135	135
FED. HIGH. DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract # 62747

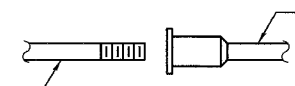
NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_l$
(Tension in kips)
- ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_l$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_l = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

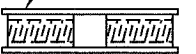
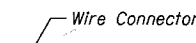
The diameter of this part is equal or larger than the diameter of bar spliced.
The diameter of this part is the same as the diameter of the bar spliced.



ROLLED THREAD DOWEL BAR



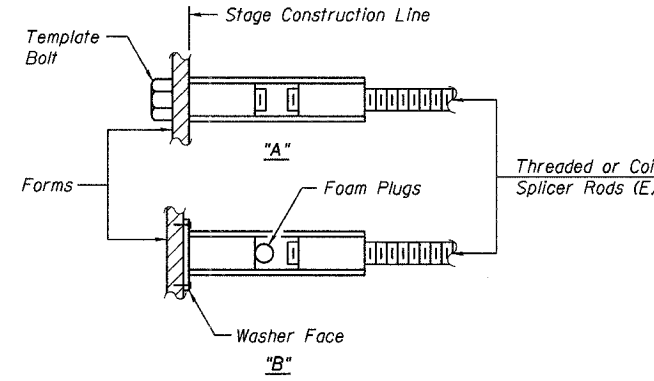
** ONE PIECE



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

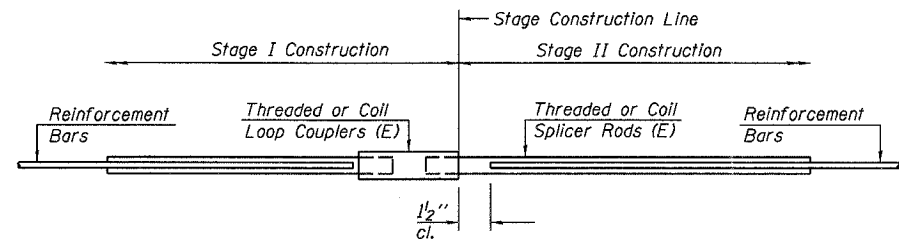
** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



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.

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



STANDARD

Bar Size	No. Assemblies Required	Location
#5	20	N. Abut. Deck
#6	6	N. Abut. Backwall
#5	20	S. Abut. Deck
#6	6	S. Abut. Backwall

DESIGNED	JSD
CHECKED	AMK
DRAWN	EF
CHECKED	AMK

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H.W. LOCHNER, INC., CHICAGO, ILLINOIS

BAR SPLICER ASSEMBLY DETAILS
F.A.I. 94/ (EDENS EXPRESSWAY)
OVER CICERO AVE.
COOK COUNTY
STATION 29+14.49
STRUCTURE NO. 016-0108

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