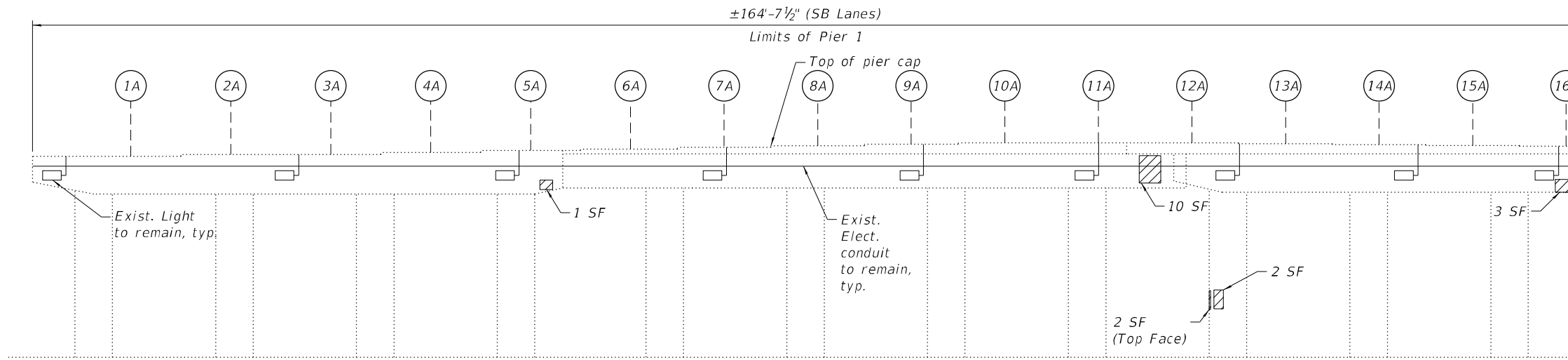




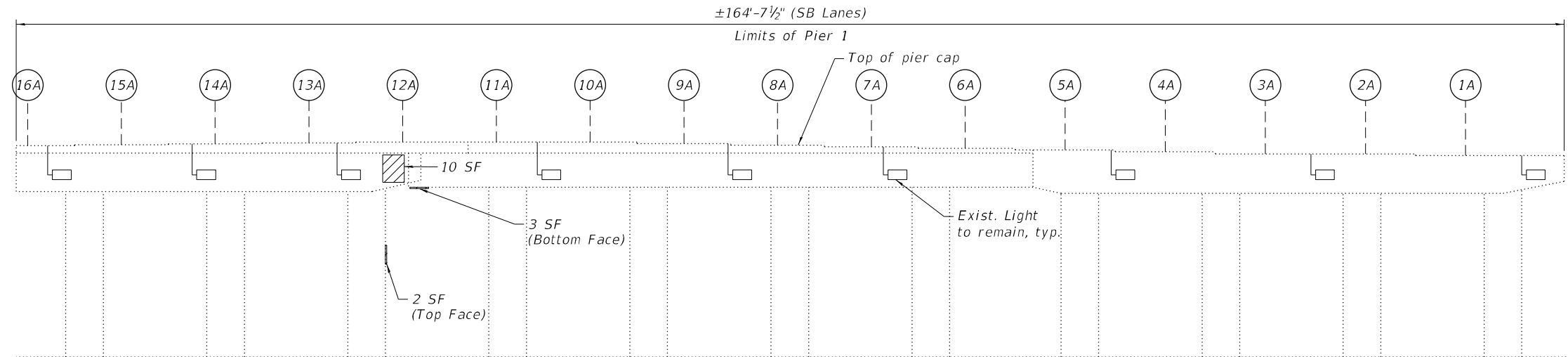
**EXISTING LIGHTING PIER 1**  
(Looking Southwest)



**EXISTING LIGHTING PIER 1**  
(Looking Northwest)



**ELEVATION - PIER 1**  
(Looking South)



**ELEVATION - PIER 1**  
(Looking North)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

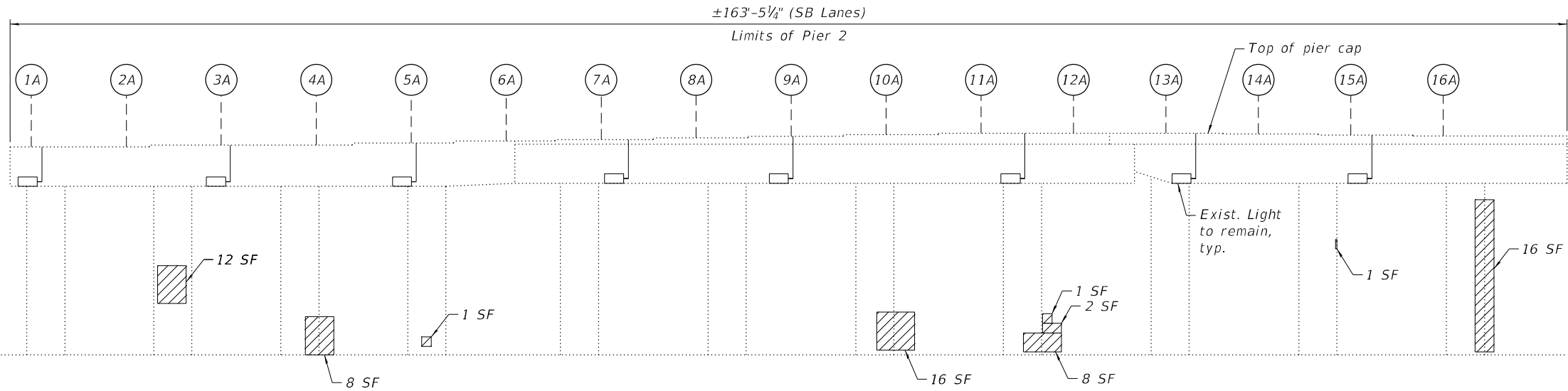
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	33

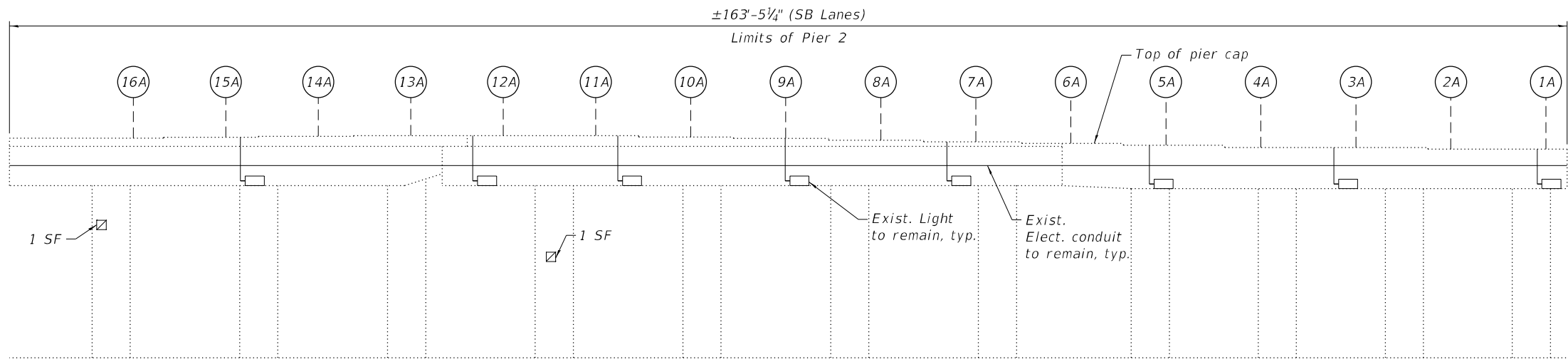
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1101
			CONTRACT NO. 62K74	
		ILLINOIS	FED. AID PROJECT	



**ELEVATION - PIER 2**  
(Looking South)



**ELEVATION - PIER 2**  
(Looking North)



**EXISTING LIGHTING PIER 2**  
(Looking Southwest)



**EXISTING LIGHTING PIER 2**  
(Looking Northwest)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	67

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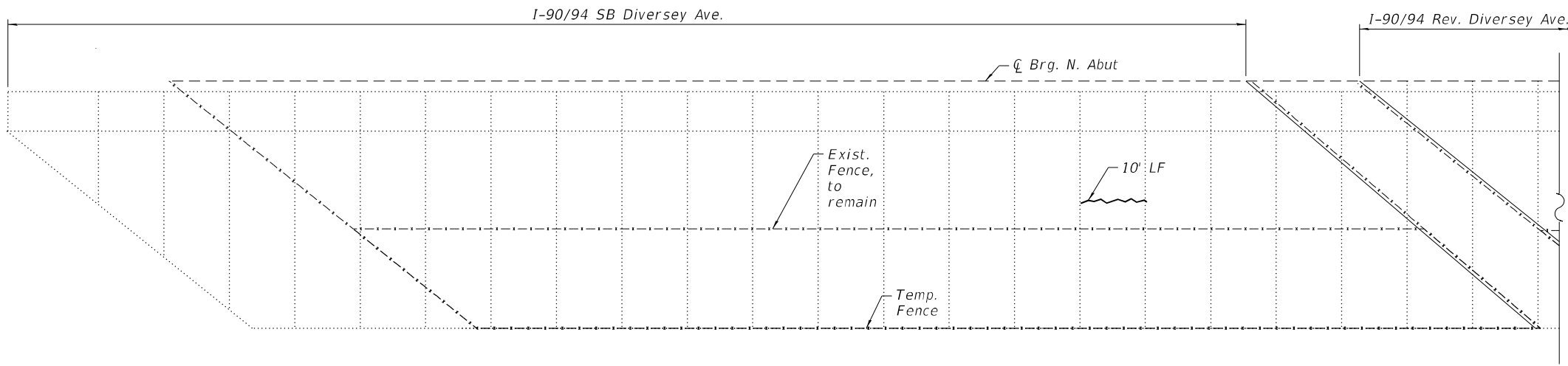
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

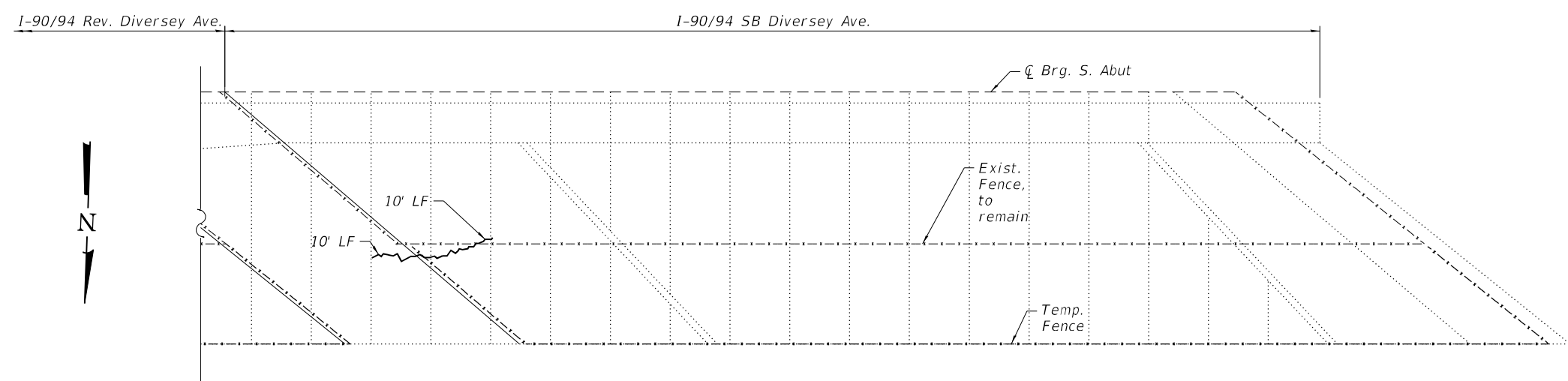
**PIER 2 REPAIRS  
SN 016-1078 (SB)**

SHEET S23-17 OF S23-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1102
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**NORTH SLOPE WALL - PLAN**  
(Looking North)



**SOUTH SLOPE WALL - PLAN**  
(Looking South)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
- Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq ft

**LEGEND**

- LF Linear Foot
- Slope Wall Crack Sealing

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Slope Wall Crack Sealing	Ft	30

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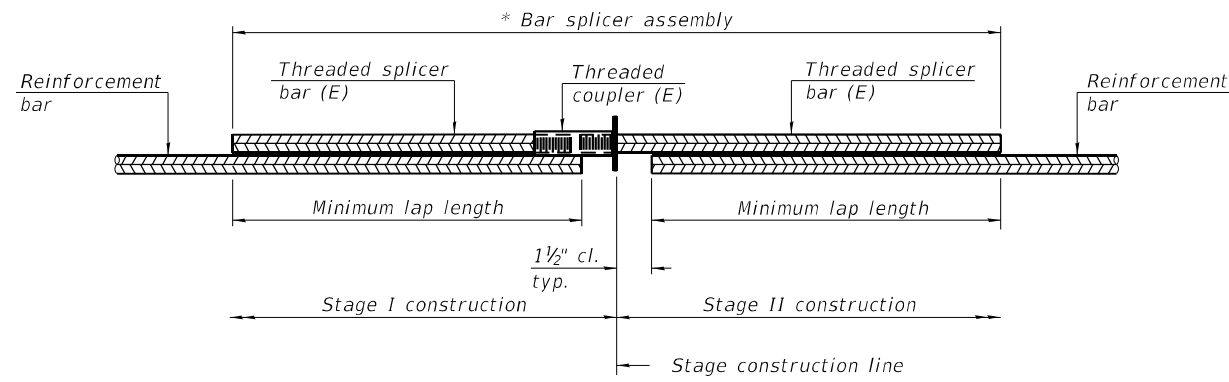
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**SLOPE WALL REPAIRS  
 SN 016-1078 (SB)**

SHEET S23-18 OF S23-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1103
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	

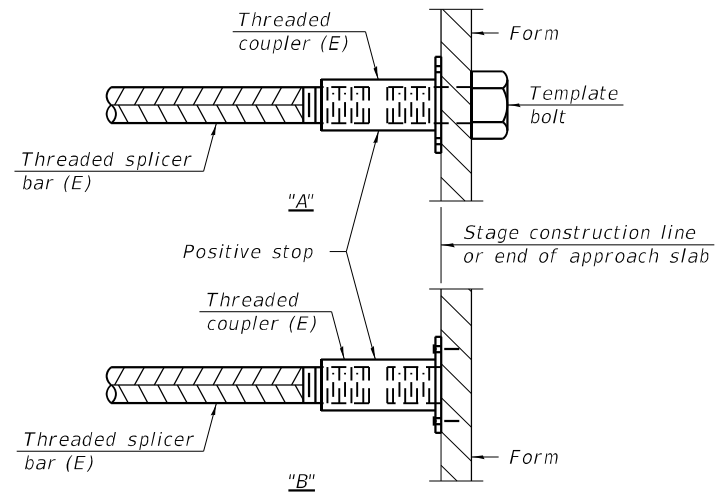


**STANDARD BAR SPLICER ASSEMBLY PLAN**  
 (All components shall be provided from one supplier)

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

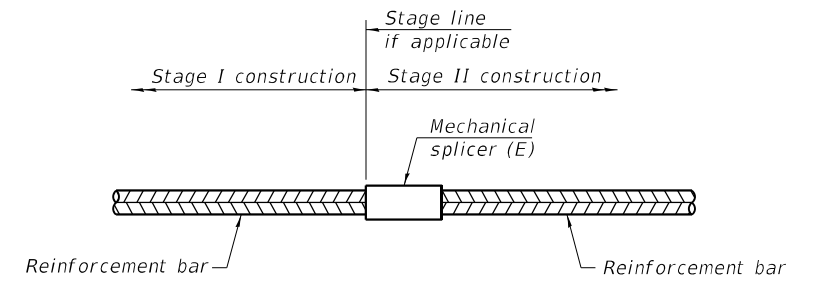
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
South Abutment	#5	10	3'-6"
Exp. Jt.	#6	6	4'-0"
North Abutment	#5	10	3'-6"
Exp. Jt.	#6	6	4'-0"



**INSTALLATION AND SETTING METHODS**

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



**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required

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

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BSD-1

1-1-2020

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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
 SN 016-1078 (SB)**

SHEET S23-19 OF S23-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1104
ILLINOIS			FED. AID PROJECT	

Existing Structure: S.N. 016-1078 was originally built in 1958 from BCR. The bridge was widened and redecked between 1990 and 1993, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 263'-4" and an out-to-out deck width that varies of 59'-2". The superstructure consists of a 7½" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 76'-5¾", 102'-2", and 76'-3⅝". The substructure consists of reinforced concrete abutments and piers supported on piles.

The reversible lanes will be closed to traffic during construction.

No salvage.

**LOADING**

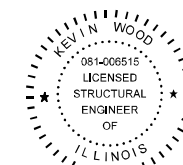
HS20-44 and alternate military loading

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition

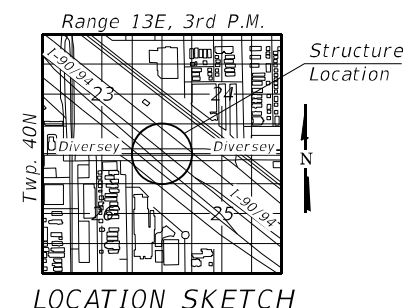
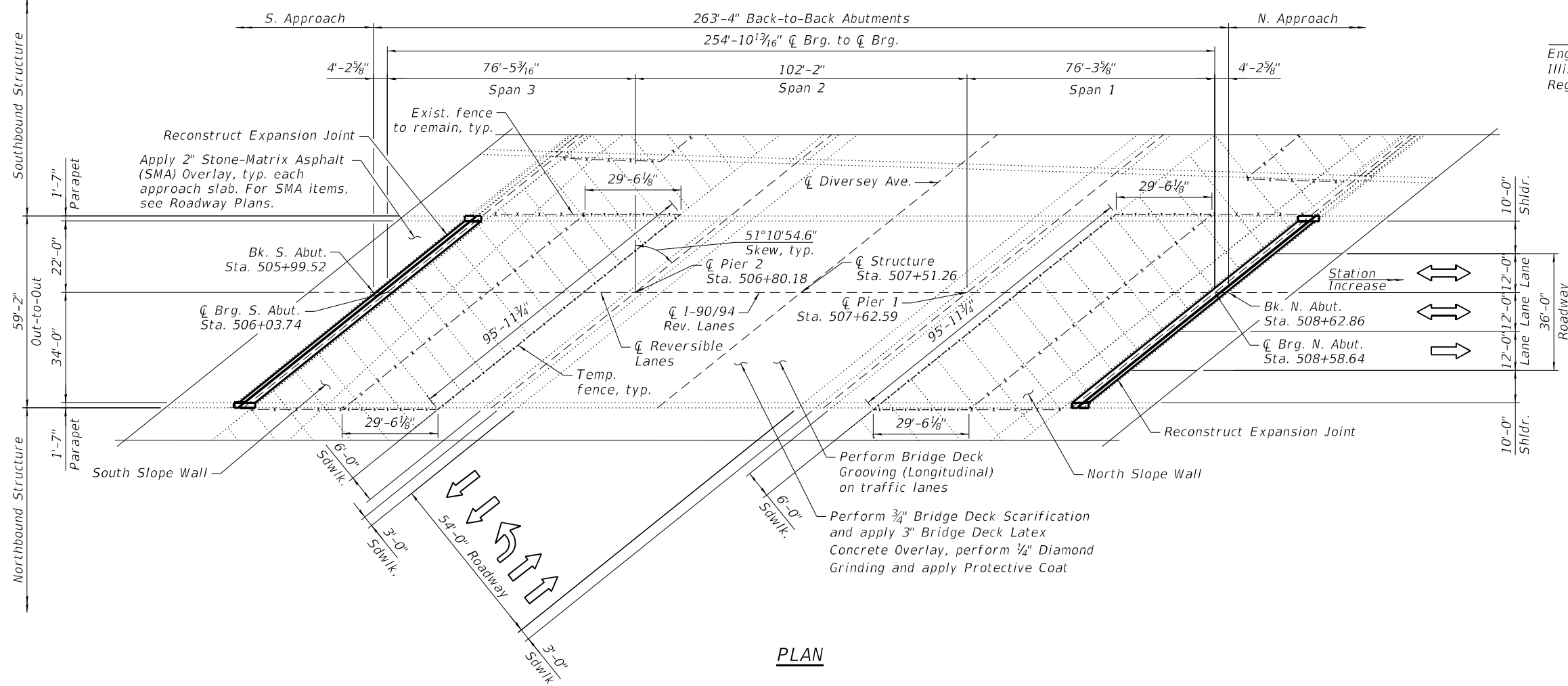
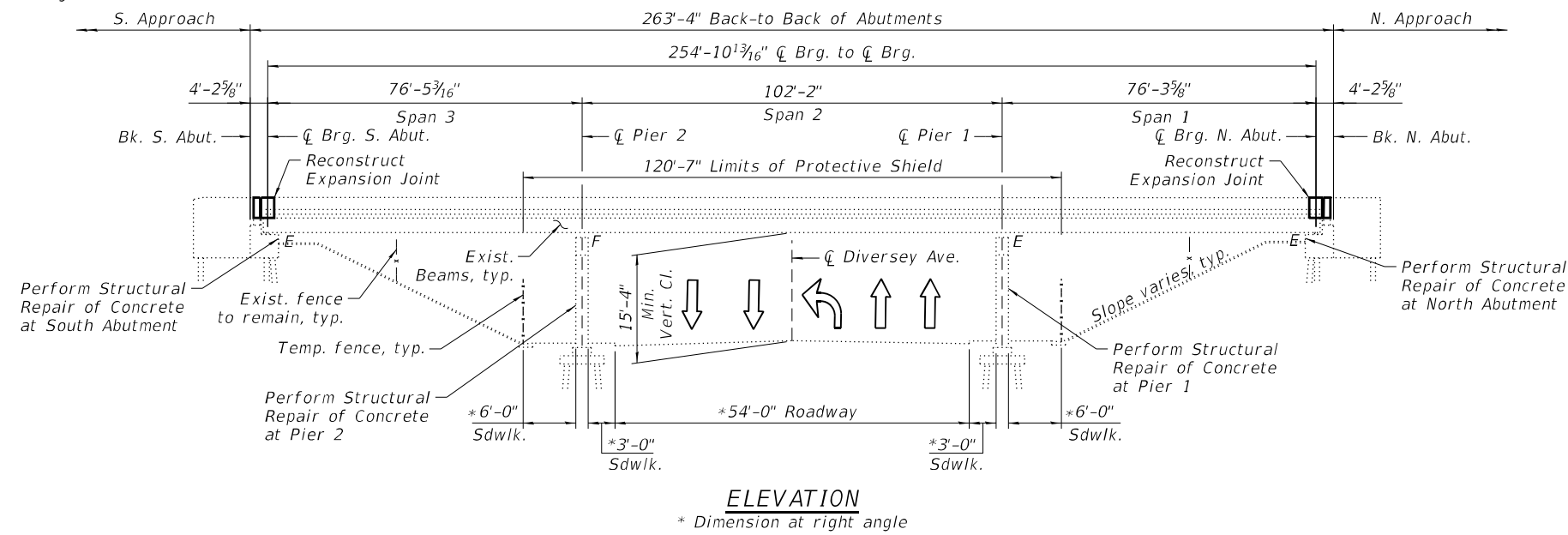
**NOTE:**

1. All stations are to the  $\text{CL}$  I-90/94 Reversible Roadway and taken from existing plans.
2. No Future Wearing Surface is allowed.



*Kevin Wood*

Engineer Full Name: Kevin Wood Date: 10-20-2022  
 Illinois Registered Engineer No. 081-006515  
 Registration Expires 11. 30, 2024



**GENERAL PLAN AND ELEVATION**  
**REVERSIBLE I-90 OVER DIVERSEY AVE**  
**F.A.I. SEC 2020-004-BR**  
**COOK COUNTY**  
**STATION: 507+51.26**  
**STRUCTURE NO. 016-1073 (REV)**

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**DEPARTMENT OF TRANSPORTATION**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1105
			CONTRACT NO. 62K74	

SHEET S24-01 OF S24-17 SHEETS

ILLINOIS FED. AID PROJECT

**GENERAL NOTES**

- Fasteners shall be ASTM A325 Type 1, galvanized according to ASTM F 2329. Bolts 3/4 in., holes 13/16 in., unless otherwise noted. Diaphragm connection holes be 15/16" for 3/4" bolts. Two hardened washers shall be required at diaphragm connections.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or 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 Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further dispositions. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- Plan dimensions and details relative to the existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity furnished at the unit price bid for the work.
- Cleaning and field painting of structural steel shall be done under a separate painting contract.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. The cost of cleaning shall be included in the cost Concrete Removal.
- Bars indicated thus, 3x2-#5, indicates 3 lines of #5 bars with 2 lengths of bar per line.
- All exposed concrete edges shall have a 3/4"x45° chamfer, except where shown otherwise.
- For SMA overlay on Approach Slab, see Roadway Plans.
- Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.
- Joint openings shall be adjusted according to Article 520.04 of the Standard Specification when the deck is poured at an ambient temperature other than 50°F.
- Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provisions "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
- All new structural steel shall be hot-dip galvanized. See Special Provisions for "Hot Dip Galvanized for Structural Steel".
- Adjacent I-90/94 reversible bridge is not shown throughout the plans for clarity.
- The Contractor shall take the necessary precautions for the protection of passing vehicles, bicycles and pedestrians from falling objects and/or materials until completion of work.
- The Contractor is responsible to remove, support and reinstall all existing electrical conduits interfering with the work. See special provision "Protection and Maintenance of Existing Underpass Luminaires".
- The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.
- The Contractor is responsible to protect the existing conduit and junction box embedded in the parapet during concrete removal and construction. Any damage to the existing conduit and junction box shall be repaired by the Contractor at no additional cost to the Department.
- Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.
- Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.
- The Contractor shall contact Chandra Libby, the Director of City of Chicago Department of Family Support Services (DFSS) at 312-746-5443 or Chandra.Libby@cityofchicago.org to coordinate the relocation of persons and their personal belongings under the bridges within the areas bounded by the temporary chain-link-fence.
- Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.

**INDEX OF SHEETS**

S24-01	General Plan & Elevation
S24-02	General Data
S24-03	Bridge Deck Repair Plan and Details
S24-04-S24-06	South Abutment Expansion Joint Details I, II & III
S24-07-S24-09	North Abutment Expansion Joint Details I, II & III
S24-10	Preformed Joint Strip Seal
S24-11	Framing Plan
S24-12	Structural Steel Repair Details
S24-13	South Abutment Repairs
S24-14	North Abutment Repairs
S24-15	Pier 1 Repairs
S24-16	Pier 2 Repairs
S24-17	Slope Wall Repairs

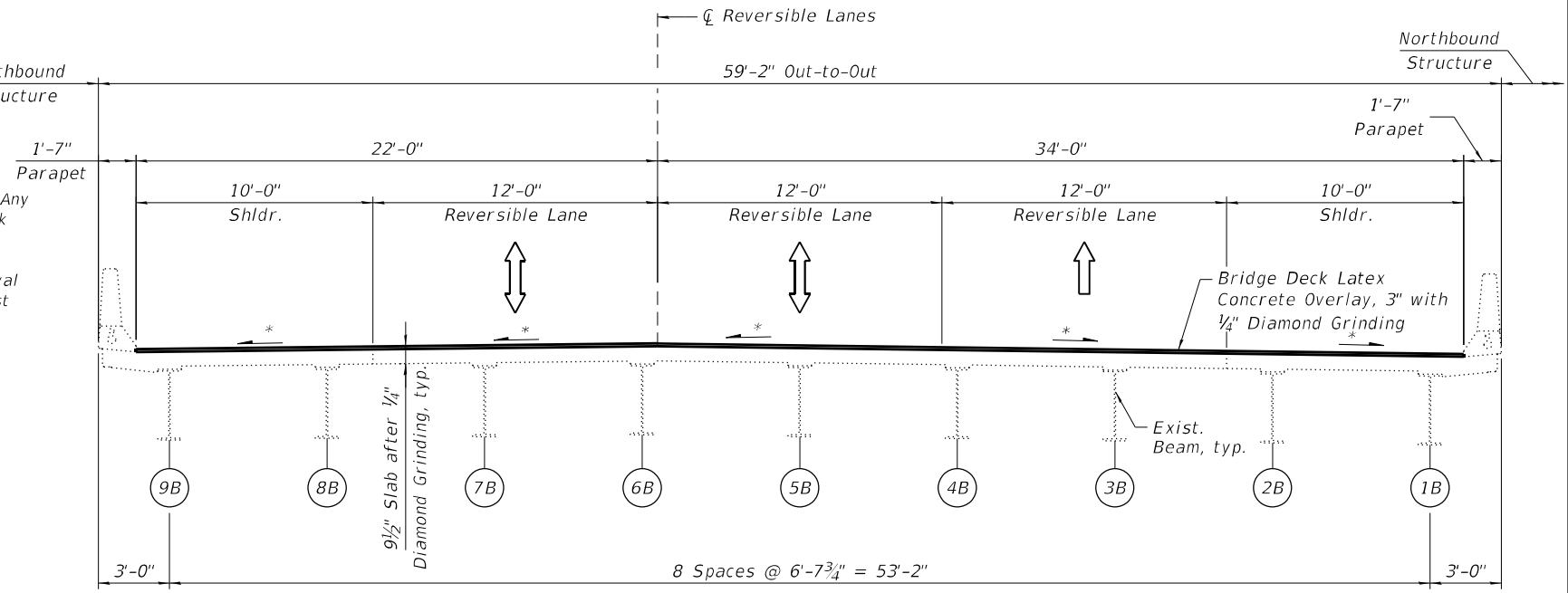
**SCOPE OF WORK**

- Provide Protective Shield within limits indicated on the plans.
- Scarify 3/4" from the bridge deck slab.
- Perform deck repairs.
- Remove and reconstruct expansion joints at north and south abutments, and install new Preformed Joint Strip Seals.
- Repair steel diaphragms as shown on the plans.
- Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs, see Roadway Plans.
- Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
- Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
- Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse expansion joints and to the surface of the new overlay.
- Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.
- Perform slope wall repairs.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	66.1		66.1
Protective Shield	Sq Yd	793		793
Concrete Superstructure	Cu Yd	72.5		72.5
Protective Coat	Sq Yd	1,780		1,780
Furnishing and Erecting Structural Steel	Pound	350		350
Reinforcement Bars, Epoxy Coated	Pound	7,440		7,440
Preformed Joint Strip Seal	Foot	191		191
Concrete Sealer	Sq Ft		1,342	1,342
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,033		1,033
Structural Steel Removal	Pound	350		350
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,554		1,554
Bridge Deck Scarification 3/4"	Sq Yd	1,554		1,554
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		18	18
Deck Slab Repair (Full Depth, Type I)	Sq Yd	3.1		3.1
Deck Slab Repair (Full Depth, Type II)	Sq Yd	32.8		32.8
Diamond Grinding (Bridge Section)	Sq Yd	1,607		1,607
Maintenance of Lighting System	Cal Mo		6	6
Temporary Construction Fence	Foot		310	310

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**FINAL CROSS SECTION**

(Looking North)

\* Match existing deck surface profile

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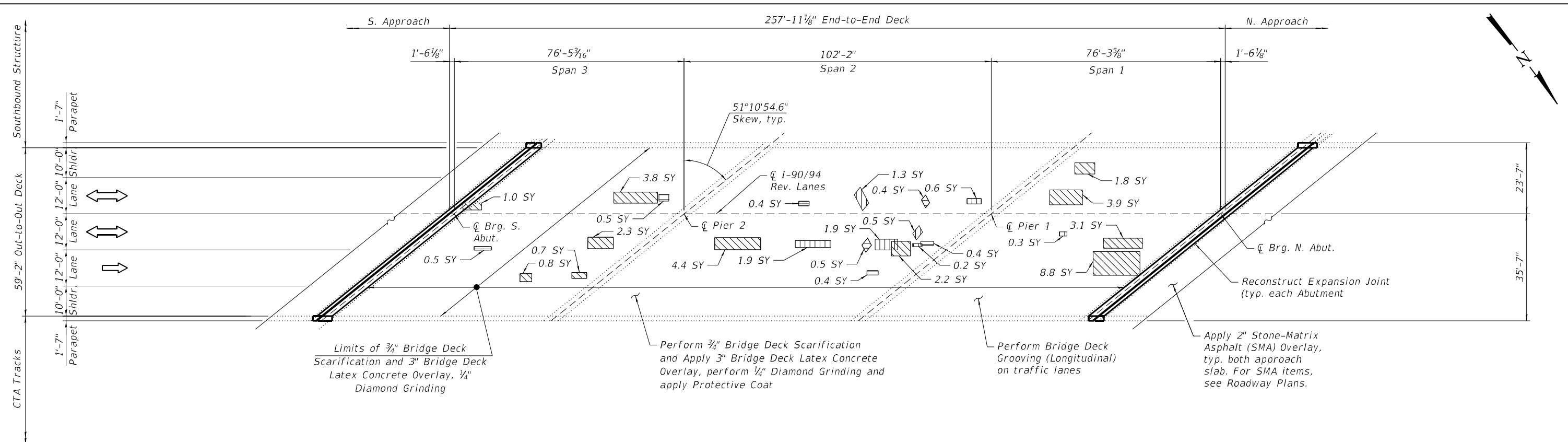
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA  
SN 016-1073 (REV)**

SHEET S24-02 OF S24-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1106
CONTRACT NO. 62K74			ILLINOIS FED. AID PROJECT	



**DECK PLAN**

**LEGEND**

- \*Deck Slab Repair (Partial Depth)
- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- SY** Square Yard

\* Areas of Deck Slab Repair (Partial Depth) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3 Inches

**NOTES:**

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S24-02.
3. For North and South transverse joint removal and reconstruction, see Sheet S24-04 thru S24-09.
4. Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
5. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
6. Protective Coat shall be applied to the top of reconstructed transverse joints, top and inside face of parapets and top of latex concrete overlay.
7. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.
8. The Contractor shall exercise extreme caution during concrete removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer at no cost to the Department.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	793
Protective Coat	Sq Yd	1,780
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,033
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,554
Bridge Deck Scarification 3/4"	Sq Yd	1,554
Deck Slab Repair (Full Depth, Type I)	Sq Yd	3.1
Deck Slab Repair (Full Depth, Type II)	Sq Yd	32.8
Diamond Grinding (Bridge Section)	Sq Yd	1,607
Maintenance of Lighting System	Cal Mo	6

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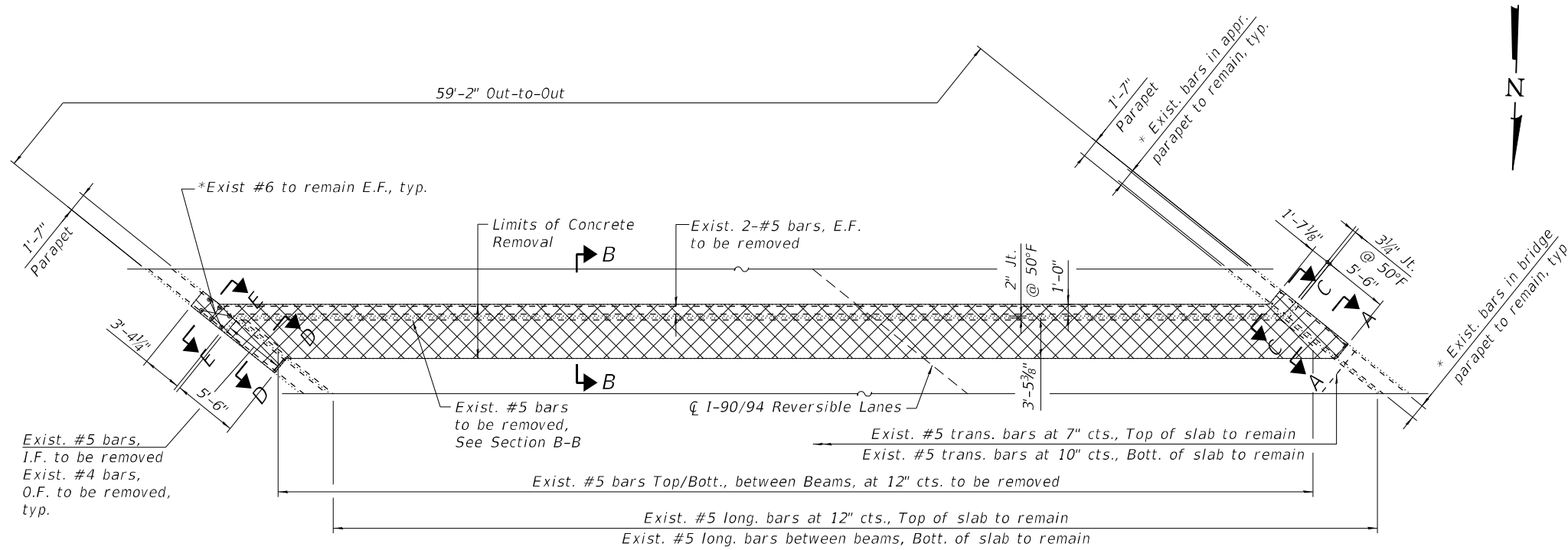
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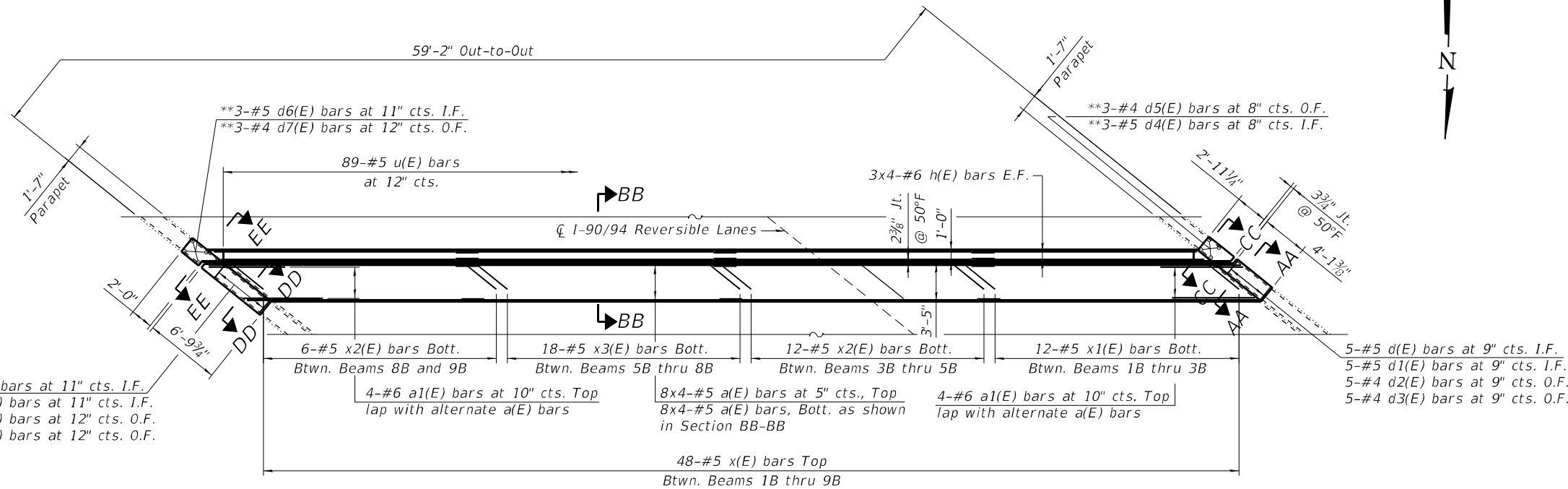
**BRIDGE DECK REPAIR PLAN AND DETAILS  
 SN 016-1073 (REV)**

SHEET S24-03 OF S24-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1107
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



**SOUTH ABUTMENT JOINT REMOVAL PLAN**



**SOUTH ABUTMENT JOINT RECONSTRUCTION PLAN**

**NOTES:**

- For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S24-05.
- For sections D-D, E-E, DD-DD and EE-EE, see sheet S24-06.

- \* Existing longitudinal bars to remain in the parapets can be cut in the field as required
- \*\* Epoxy grout #4 d4(E) & d6(E) bars and #5 d5(E) & d7(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

**LEGEND**

	Concrete Removal
I.F.	Inside Face
O.F.	Outside Face
E.F.	Each Face

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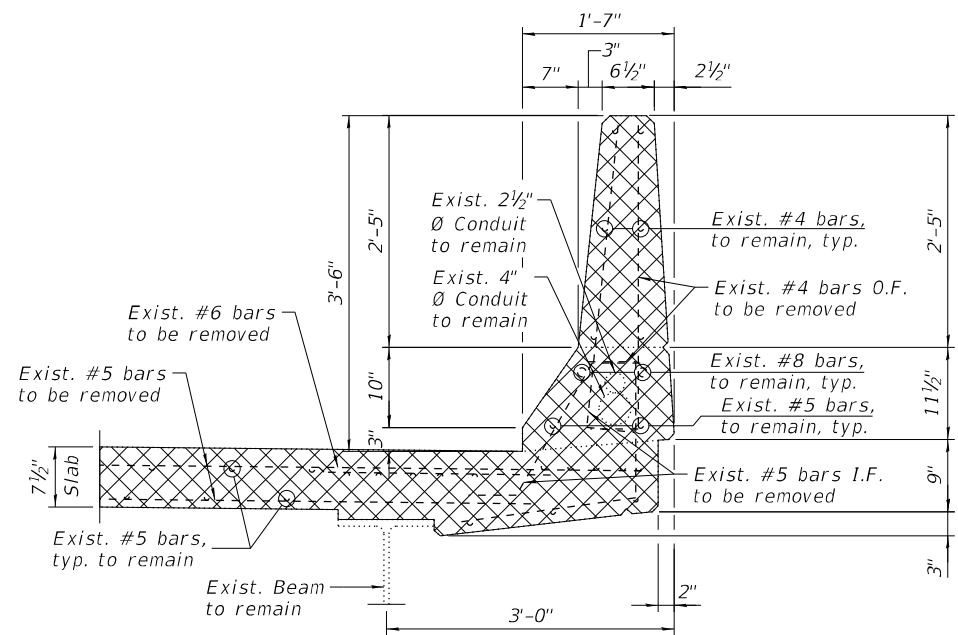
 8501 W. Higgins Road, Suite 280 Chicago, Illinois 60631; (773) 399-0112	USER NAME =	DESIGNED - C.W.G.	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>SOUTH ABUTMENT EXPANSION JOINT DETAILS I</b> <b>SN 016-1073 (REV)</b>	F.A.I. RTE. 90	SECTION 2020-004-BR	COUNTY COOK	TOTAL SHEETS 1492	SHEET NO. 1108
	PLOT SCALE =	DRAWN - D.C.P.	REVISED -			SHEET S24-04 OF S24-17 SHEETS	CONTRACT NO. 62K74			ILLINOIS FED. AID PROJECT
	PLOT DATE =	CHECKED - K.G.W.	REVISED -							



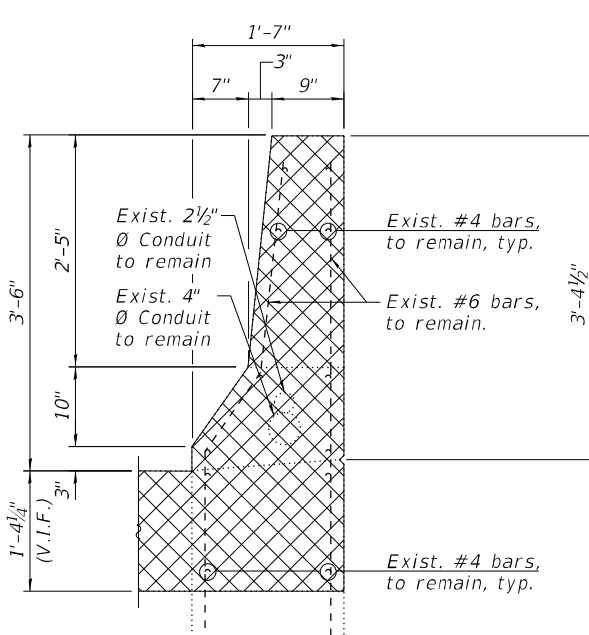


**BILL OF MATERIAL**  
**SOUTH ABUTMENT**

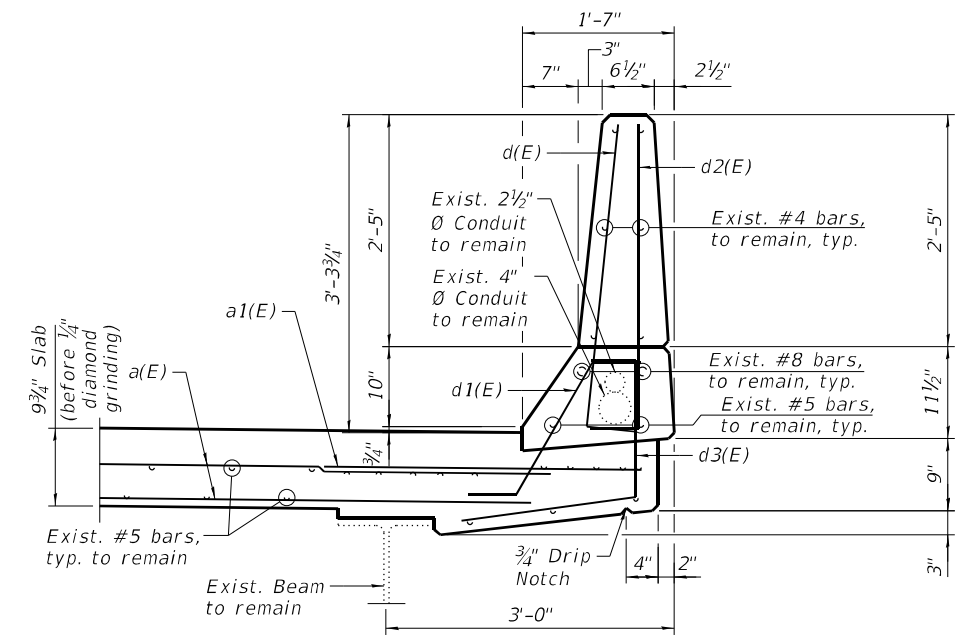
Bar	No.	Size	Length	Shape
a(E)	64	#5	26'-3"	—
a1(E)	8	#6	6'-6"	—
d(E)	12	#5	3'-8"	⌋
d1(E)	12	#5	2'-7"	⌋
d2(E)	12	#4	3'-8"	⌋
d3(E)	12	#4	3'-11"	⌋
d4(E)	3	#5	6'-0"	⌋
d5(E)	3	#4	5'-11"	⌋
d6(E)	3	#5	5'-7"	⌋
d7(E)	3	#4	5'-6"	⌋
x(E)	48	#5	4'-1"	⌋
x1(E)	12	#5	4'-1"	⌋
x2(E)	18	#5	5'-2"	⌋
x3(E)	18	#5	5'-8"	⌋
h(E)	24	#6	27'-4"	—
u(E)	89	#5	3'-3"	⌋
Concrete Removal		Cu Yd	33.1	
Reinforcement Bars, Epoxy Coated		Pound	3,780	
Concrete Superstructure		Cu Yd	36.3	



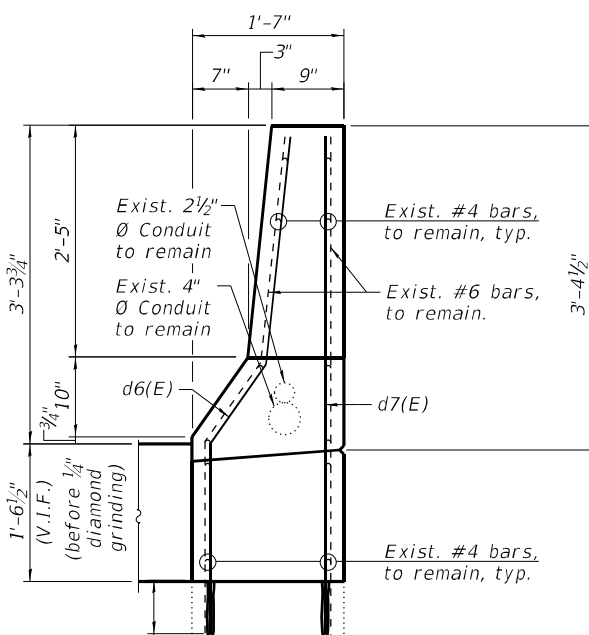
**SECTION D-D**  
(East parapet removal)



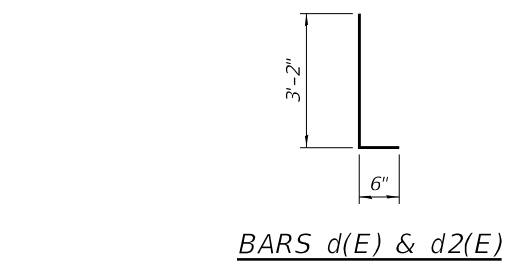
**SECTION E-E**  
(East parapet removal)



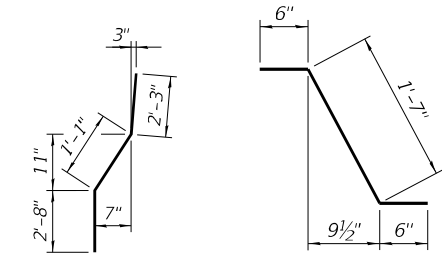
**SECTION DD-DD**  
(East parapet reconstruction)



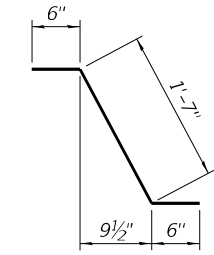
**SECTION EE-EE**  
(East parapet reconstruction)



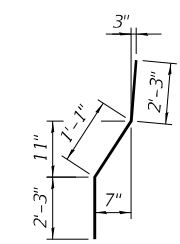
**BARS d(E) & d2(E)**



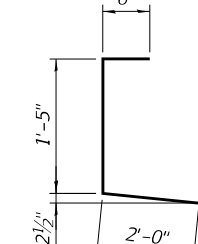
**BARS d4(E)**



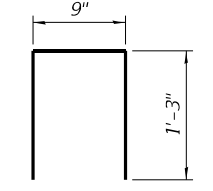
**BAR d1(E)**



**BARS d6(E)**

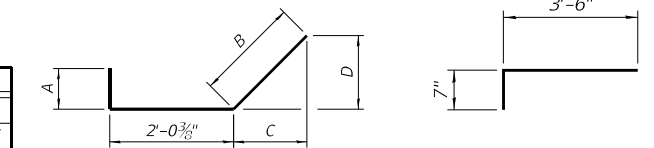


**BARS d3(E)**



**BARS u(E)**

BAR	A	B	C	D
x1(E)	7"	1'-5 1/8"	1'-2 1/2"	9 1/8"
x2(E)	1'-0"	2'-1 3/8"	1'-9 1/2"	1'-1 1/2"
x3(E)	1'-1"	2'-6 7/8"	2'-2 1/8"	1'-4 3/8"



**BARS x1(E), x2(E), & x3(E)**      **BARS x(E)**

**NOTES:**

- For Preformed Joint Strip Seal details, see sheet S24-10.
- Existing reinforced 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 shall be included with Concrete Removal.
- Removal and disposal of the existing expansion joints is included with Concrete Removal.

\* Dimension is taken at the Back of Abut.

\*\* Epoxy grout #4 d7(E) & #5 d6(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

**MIN BAR LAPS**

#5	3'-6"
#6	4'-0"

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

MODEL: SMODELNAME5  
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SH\T016-1078\_Diverse\Rev0161073-62K74-5006-EXPR.dgn  
12/1/2022 11:49:41 AM

**GRAEF**  
8501 W. Higgins Road, Suite 280  
Chicago, Illinois 60631; (773) 399-0112

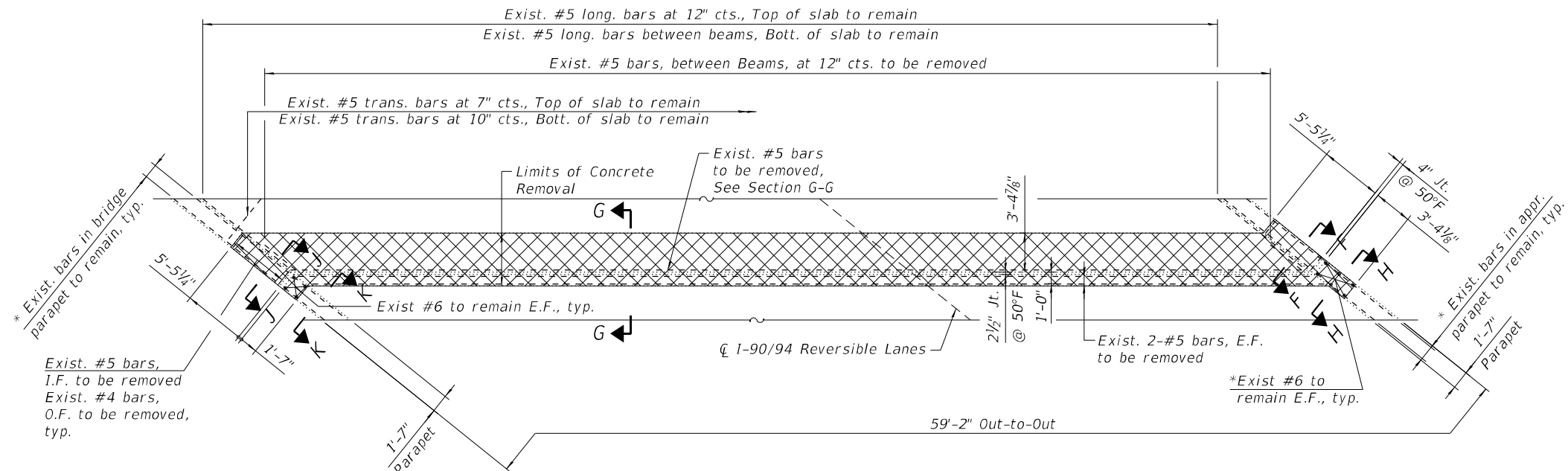
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PLOT DATE =	DRAWN - D.C.P.	REVISED -
	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

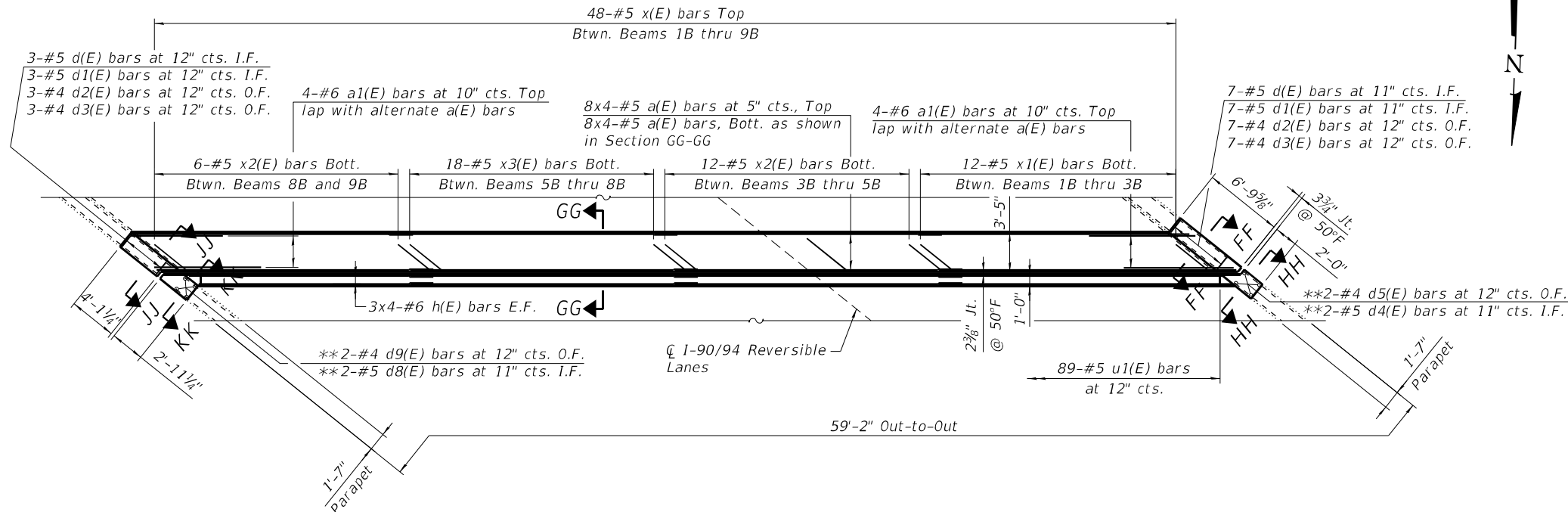
**SOUTH ABUTMENT EXPANSION JOINT DETAILS III**  
**SN 016-1073 (REV)**

SHEET S24-06 OF S24-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1110
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**NORTH ABUTMENT JOINT REMOVAL PLAN**



**NORTH ABUTMENT JOINT RECONSTRUCTION PLAN**

**NOTES:**

- For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S24-08.
- For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S24-09.

\* Existing longitudinal bars to remain in the parapets can be cut in the field as required

\*\* Existing grout #4 d5(E) and d9 & #5 d4(E) and d8(E) bars in 9" min. holes accordance in Section 508 of the Standard Specifications.

**LEGEND**

	Concrete Removal
I.F.	Inside Face
O.F.	Outside Face
E.F.	Each Face

MODEL: sMODELNAME5  
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SH\T016-1073\_Diverse\Rev\161073-62K74-5007-EXPR.dgn

**GR&EF**  
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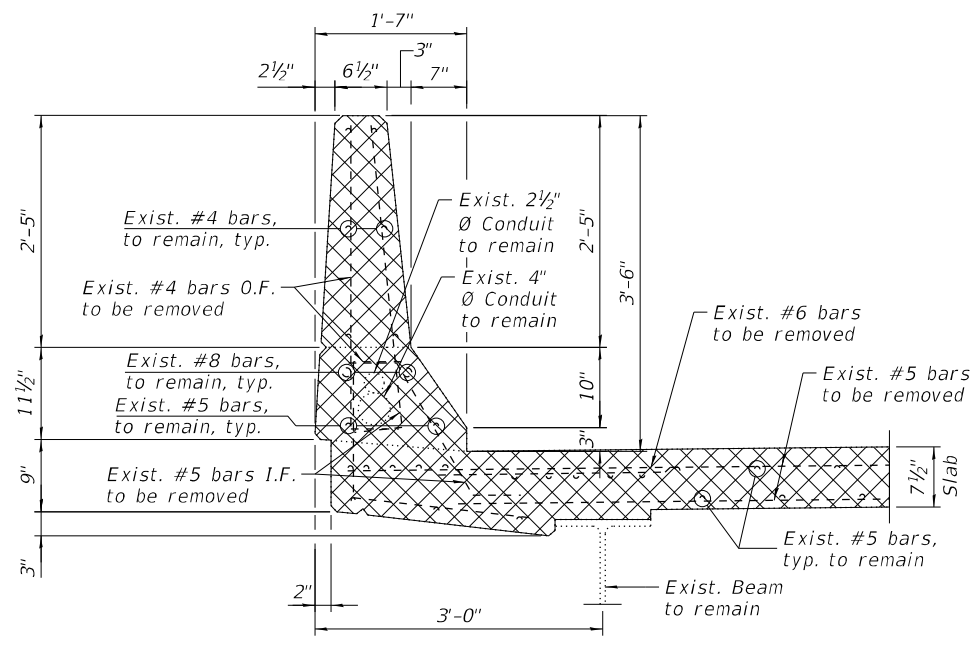
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	CHECKED -	H.A.	REVISED -
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PLOT DATE =	CHECKED -	K.G.W.	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

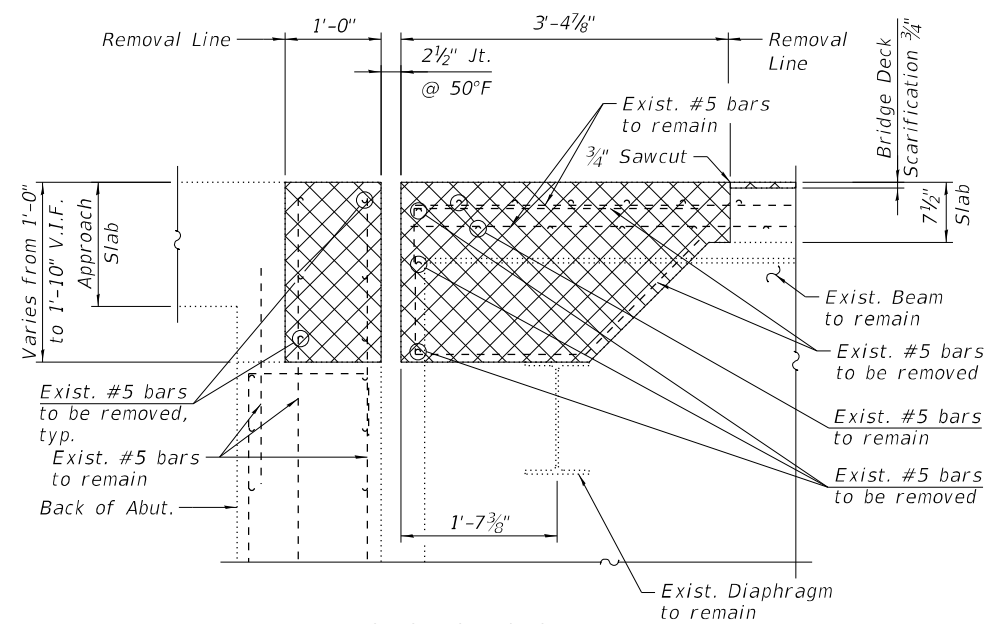
**NORTH ABUTMENT EXPANSION JOINT DETAILS I  
SN 016-1073 (REV)**

SHEET S24-07 OF S24-17 SHEETS

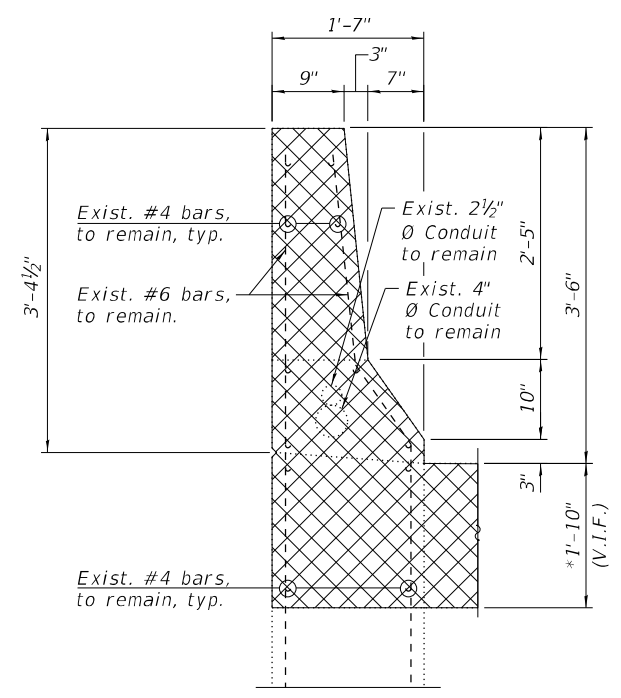
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			CONTRACT NO. 62K74	
ILLINOIS FED. AID PROJECT				



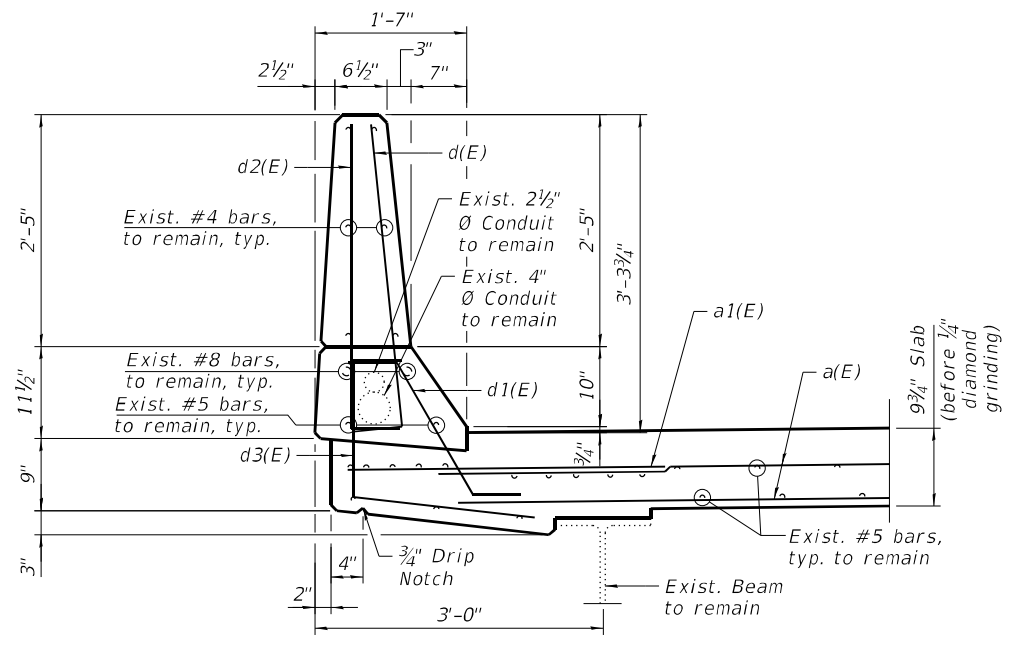
**SECTION F-F**  
(West parapet removal)



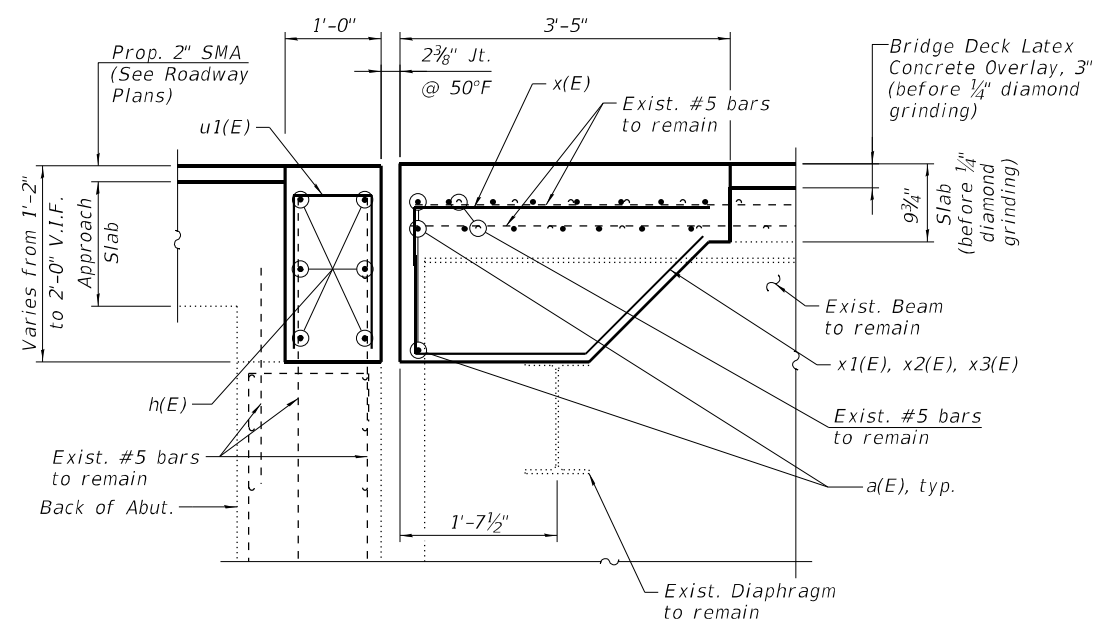
**SECTION G-G**



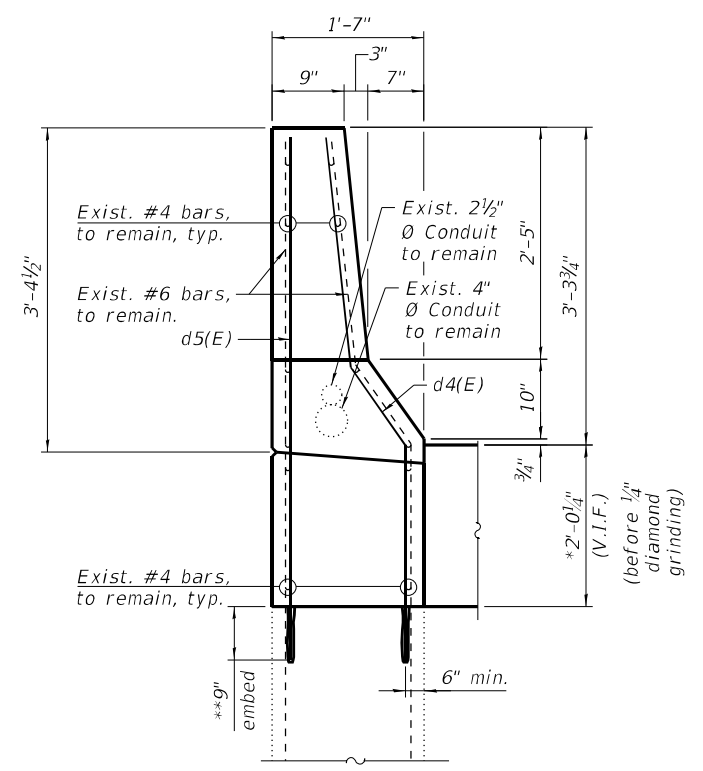
**SECTION H-H**  
(West parapet removal)



**SECTION FF-FF**  
(West parapet reconstruction)



**SECTION GG-GG**



**SECTION HH-HH**  
(West parapet reconstruction)

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

- \* Dimension is taken at the Back of Abut.
- \*\* Epoxy grout #4 d5(E) & #5 d4(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

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**GR&E**  
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PLOT SCALE =	CHECKED - H.A.	REVISED -
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

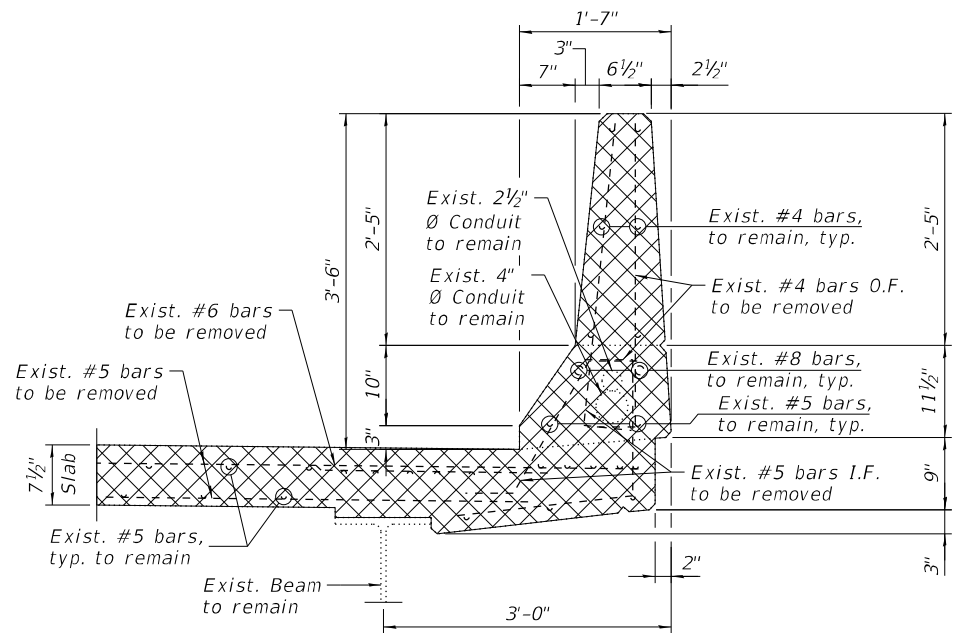
**NORTH ABUTMENT EXPANSION JOINT DETAILS II  
SN 016-1073 (REV)**

SHEET S24-08 OF S24-17 SHEETS

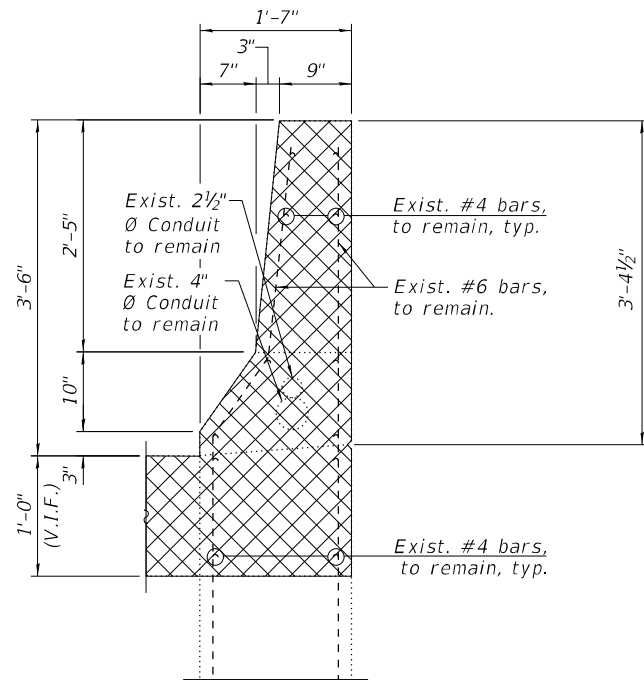
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1112
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL  
NORTH ABUTMENT**

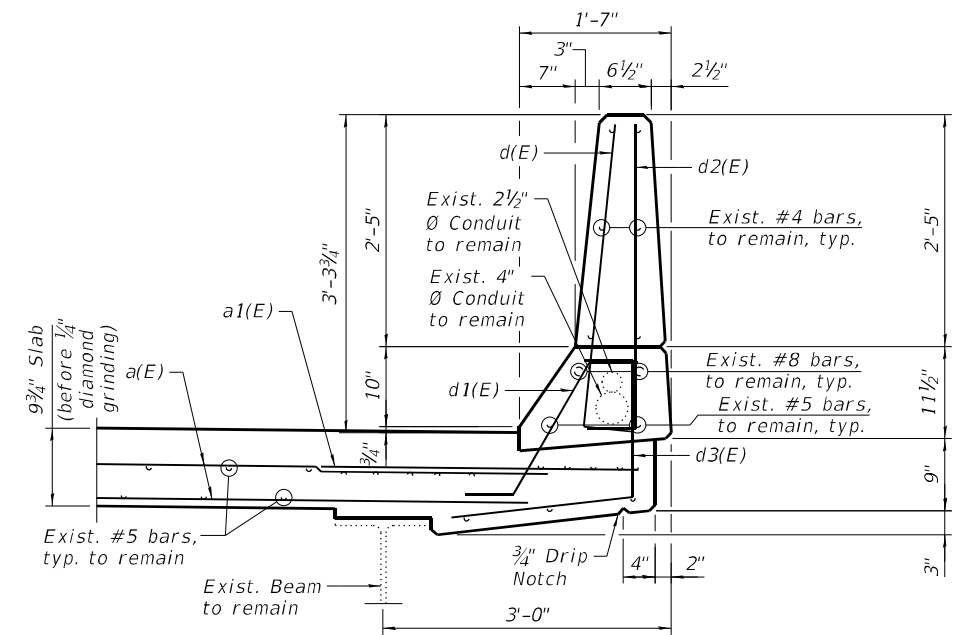
Bar	No.	Size	Length	Shape
a(E)	64	#5	26'-3"	—
a1(E)	8	#6	6'-6"	—
d(E)	10	#5	3'-8"	┌
d1(E)	10	#5	2'-7"	┌
d2(E)	10	#4	3'-8"	┌
d3(E)	10	#4	3'-11"	┌
d4(E)	2	#5	6'-0"	┌
d5(E)	2	#4	5'-11"	┌
d8(E)	2	#5	5'-4"	┌
d9(E)	2	#4	5'-3"	┌
h(E)	24	#6	27'-4"	—
u1(E)	89	#5	2'-5"	┌
x(E)	48	#5	4'-1"	┌
x1(E)	12	#5	4'-1"	┌
x2(E)	18	#5	5'-2"	┌
x3(E)	18	#5	5'-8"	┌
Concrete Removal	Cu Yd		33.0	
Reinforcement Bars, Epoxy Coated	Pound		3,660	
Concrete Superstructure	Cu Yd		36.2	



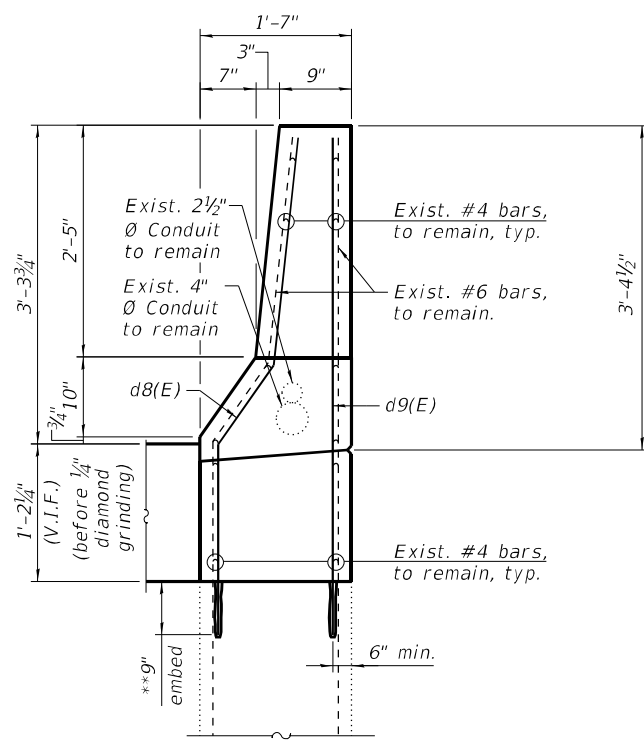
**SECTION J-J**  
(East parapet removal)



**SECTION K-K**  
(East parapet removal)

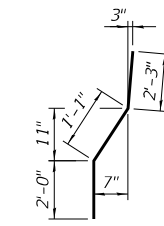


**SECTION JJ-JJ**  
(East parapet reconstruction)

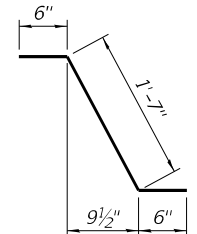


**SECTION KK-KK**  
(East parapet reconstruction)

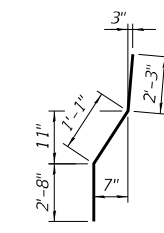
**BARS d(E) & d2(E)**



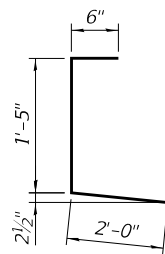
**BAR d8(E)**



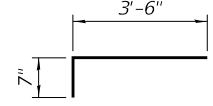
**BAR d1(E)**



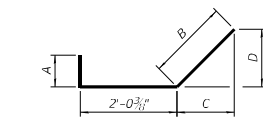
**BAR d4(E)**



**BAR d3(E)**

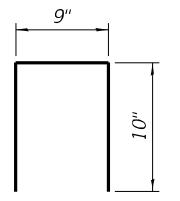


**BAR x(E)**



**BARS x1(E), x2(E), & x3(E)**

BAR	A	B	C	D
x1(E)	7"	1'-5 1/2"	1'-2 1/2"	9 1/2"
x2(E)	1'-0"	2'-1 3/8"	1'-9 1/2"	1'-1 1/2"
x3(E)	1'-1"	2'-6 1/4"	2'-2 1/2"	1'-4 3/4"



**BAR u1(E)**

**NOTES:**

- For Preformed Joint Strip Seal details, see sheet S24-10.
- 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 shall be included with Concrete Removal.
- Removal and disposal of the existing expansion joints is included with Concrete Removal.

\* Dimension is taken at the Back of Abut.

\*\* Epoxy grout #4 d9(E) & #5 d8(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

**MIN BAR LAPS**

#5	3'-6"
#6	4'-0"

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

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**GRAEF**  
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Chicago, Illinois 60631; (773) 399-0112

USER NAME =	DESIGNED - C.W.G.	REVISED -
PLOT SCALE =	CHECKED - H.A.	REVISED -
PLOT DATE =	DRAWN - D.C.P.	REVISED -
	CHECKED - K.G.W.	REVISED -

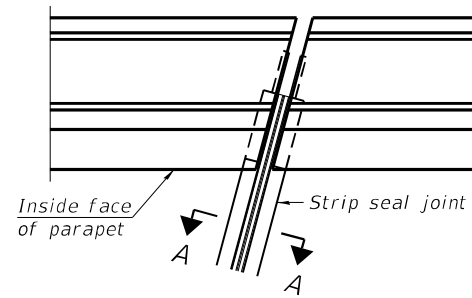
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**NORTH ABUTMENT EXPANSION JOINT DETAILS III  
SN 016-1073 (REV)**

SHEET S24-09 OF S24-17 SHEETS

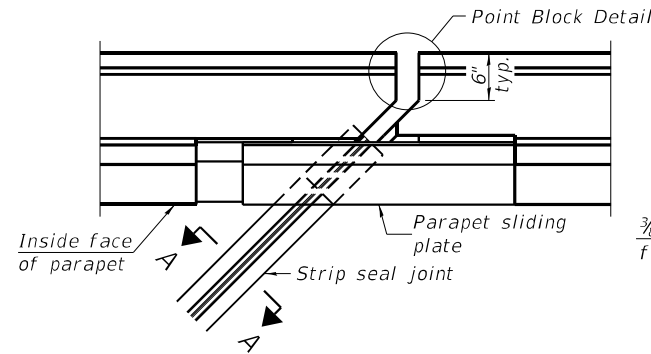
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1113
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

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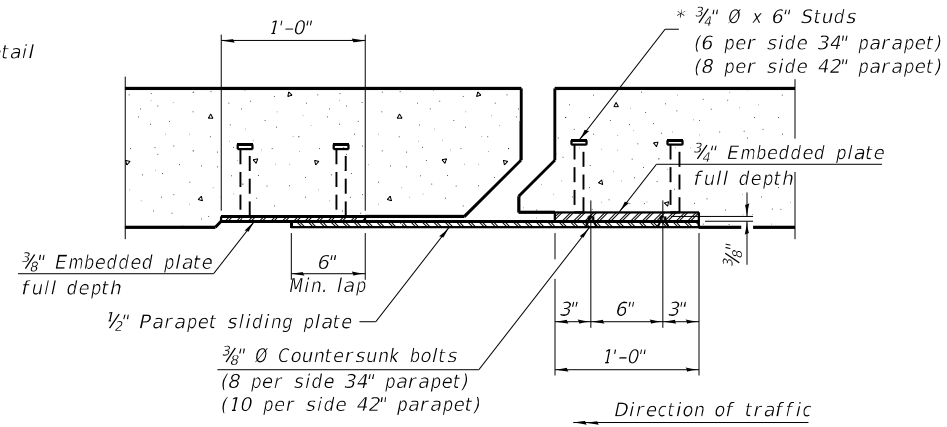


FOR SKEWS  $\leq 30^\circ$

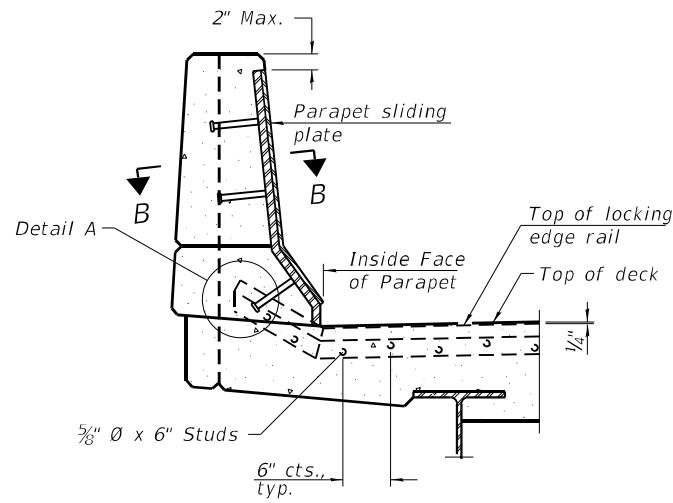
PLAN AT PARAPET



FOR SKEWS  $> 30^\circ$

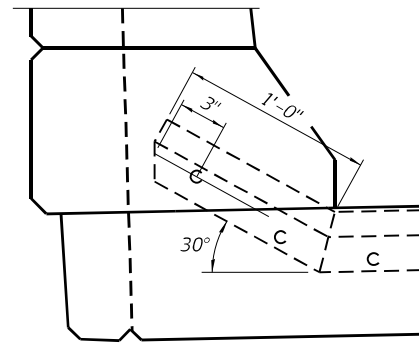


SECTION B-B

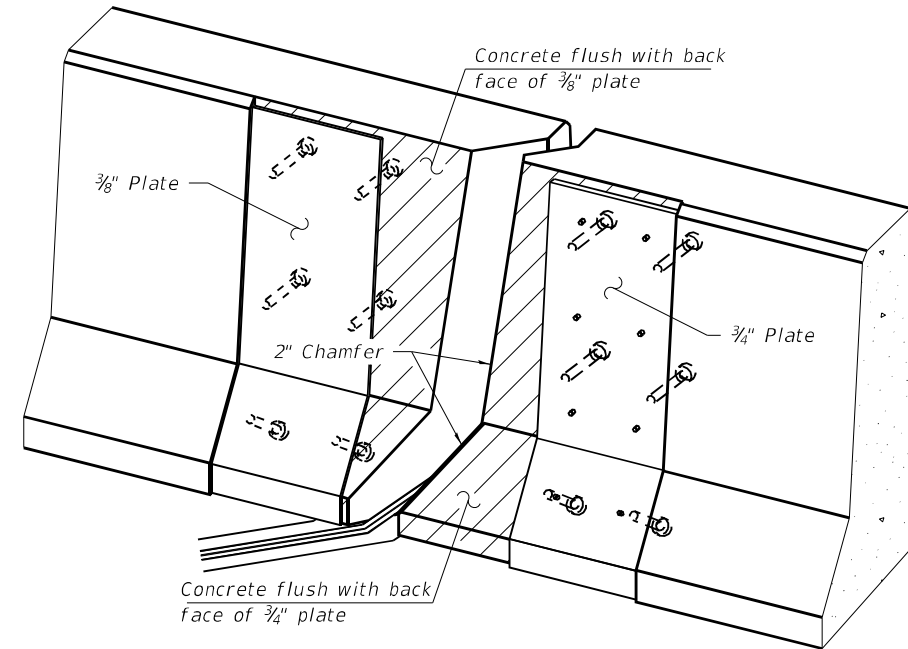


ELEVATION AT PARAPET

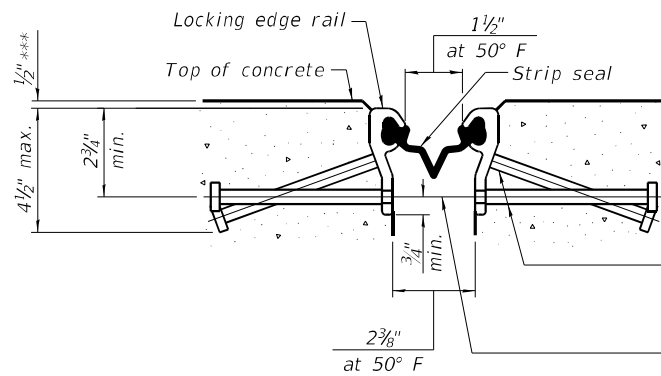
(Skews  $> 30^\circ$  shown. Skews  $\leq 30^\circ$  similar except as shown in plan view.)



DETAIL A



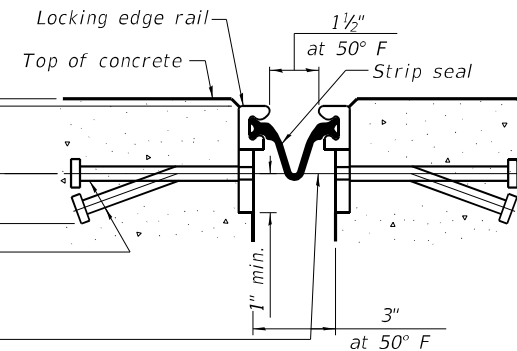
TRIMETRIC VIEW  
(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT

\*  $3/8"$   $\phi$  x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

$3/8"$   $\phi$  threaded rods in  $1/16"$   $\phi$  holes at  $\pm 4'-0"$  cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

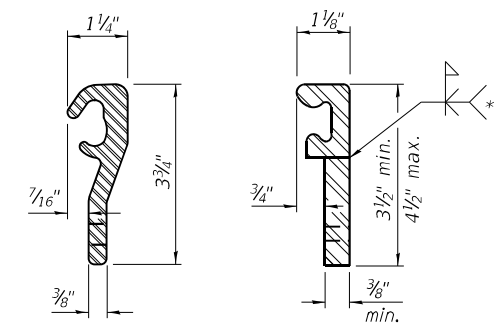


SHOWING WELDED RAIL JOINT

SECTION A-A

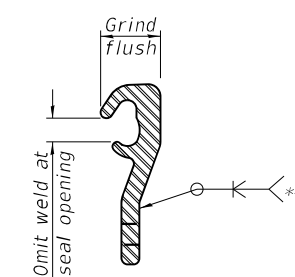
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

\*\*\* Before  $1/4"$  Diamond Grinding.



LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

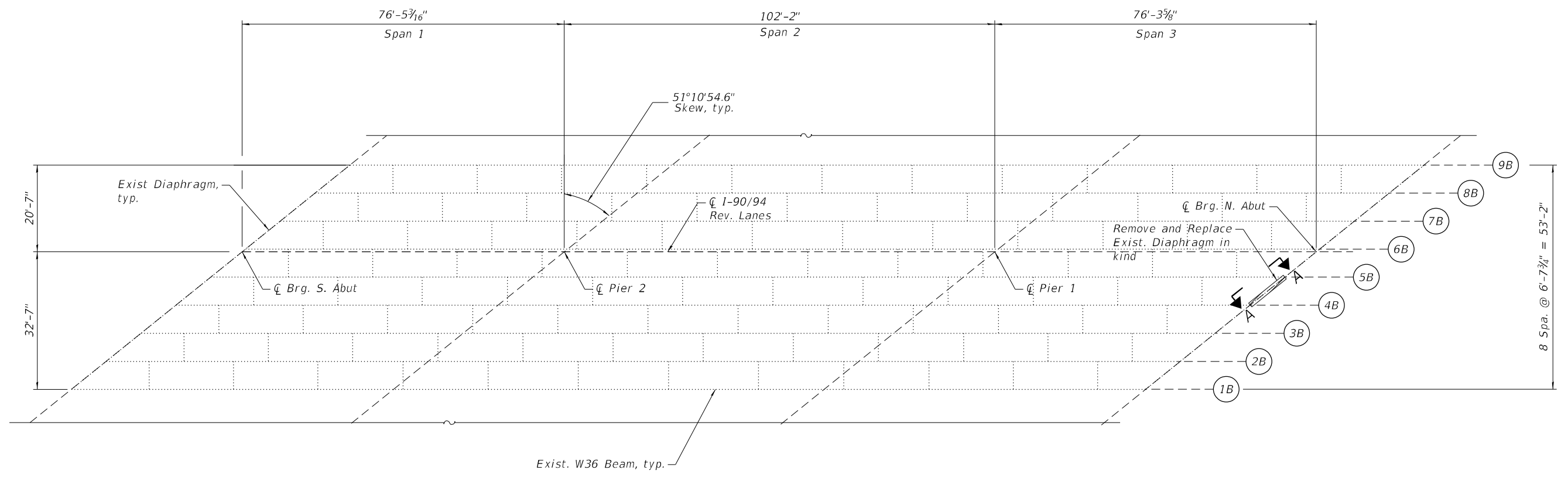
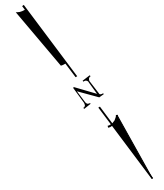
The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	191

USER NAME =	DESIGNED -	C.W.G.	REVISED -
PLOT SCALE =	CHECKED -	H.A.	REVISED -
PLOT DATE =	DRAWN -	D.C.P.	REVISED -
	CHECKED -	K.G.W.	REVISED -

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1114
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**FRAMING PLAN**

**NOTES:**

1. See Sheet S24-02 for final cross-section.
2. For Section A-A, see Sheet S24-12.

**LEGEND**

Remove and Replace Exist. Diaphragm

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	350
Structural Steel Removal	Pound	350

MODEL: sMODELNAME5  
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SH\1016-1078\_Diverse\Rev\0161073-62K74-5011-FRMR.dgn

**GRÄEF**  
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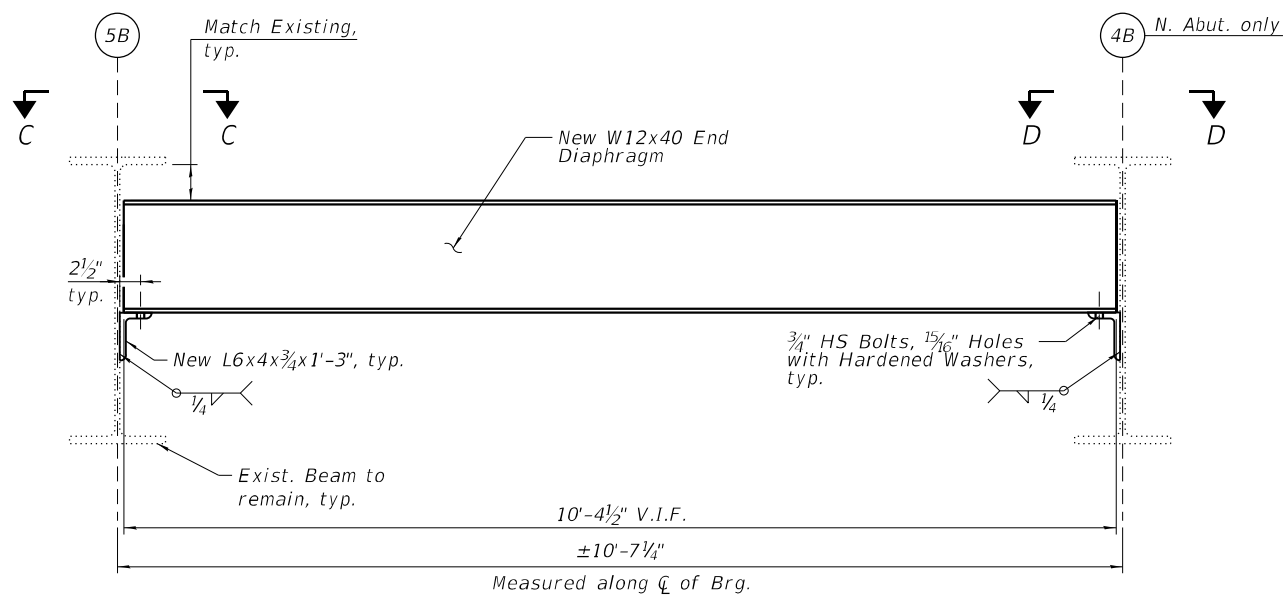
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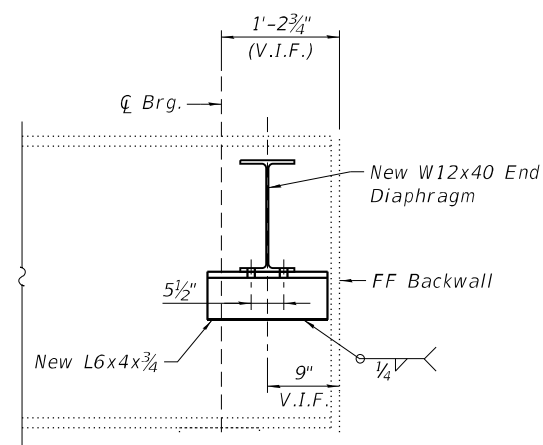
**FRAMING PLAN  
SN 016-1073 (REV)**

SHEET S24-11 OF S24-17 SHEETS

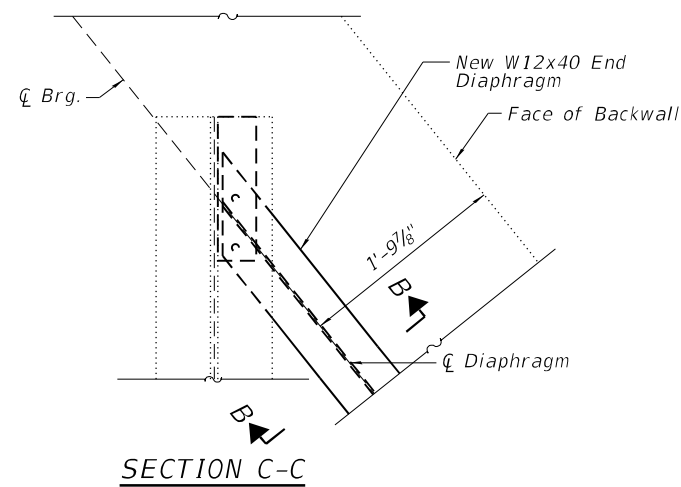
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90	2020-004-BR	COOK	1492	1115
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



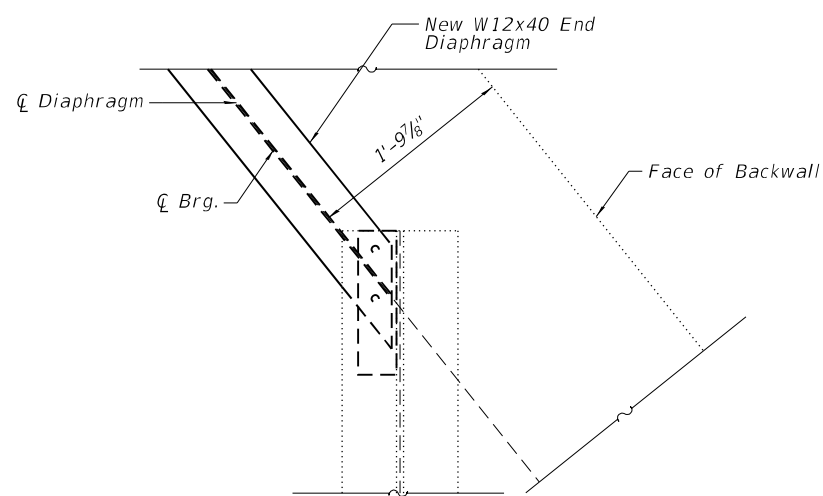
**SECTION A-A**  
North Abutment shown  
(1 Required)



**SECTION B-B**



**SECTION C-C**



**SECTION D-D**

**NOTES**

1. For location of Diaphragm Repair and Bill of Material, see Sheet S24-11.
2. All proposed diaphragm repair plates and angles shall conform to the requirements of AASHTO M270 Grade 36.
3. All proposed diaphragm repair plates, angles, bolts, nuts and washers shall be paid for as Furnishing and Erecting Structural Steel.
4. The cost of all field drilling shall be included in the cost of Furnishing and Erecting Structural Steel.
5. Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection. Cost shall be included with Furnishing and Erecting Structural Steel.
6. Existing diaphragm and connection angle removal shall be paid for as Structural Steel Removal.
7. All proposed steel dimension shall be verified in the field prior to fabrication.

**LEGEND**

- Shop drill holes in new steel. Use new steel as a template to field drill holes in existing steel.

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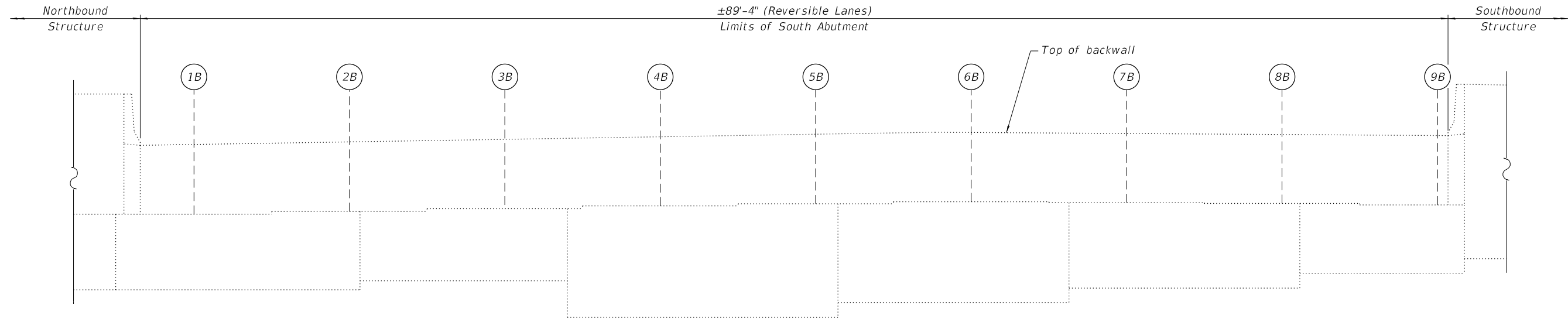
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL REPAIR DETAILS  
SN 016-1073 (REV)**

SHEET S24-12 OF S24-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1116
CONTRACT NO. 62K74			ILLINOIS FED. AID PROJECT	





**ELEVATION - SOUTH ABUTMENT**  
(Looking South)

**NOTES:**

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
3. For Slope Wall repairs, see Sheet S24-17.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	671

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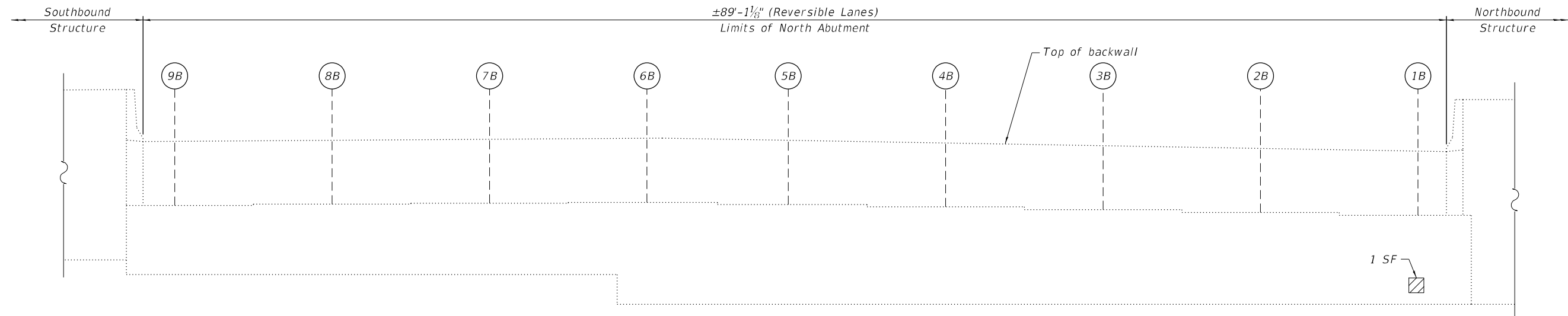
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SOUTH ABUTMENT REPAIRS  
SN 016-1073 (REV)**

SHEET S24-13 OF S24-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1117
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	




**ELEVATION - NORTH ABUTMENT**  
(Looking North)

**NOTES:**

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
3. For Slope Wall repairs, see Sheet S24-17.

**LEGEND**

-  Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	671
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	1

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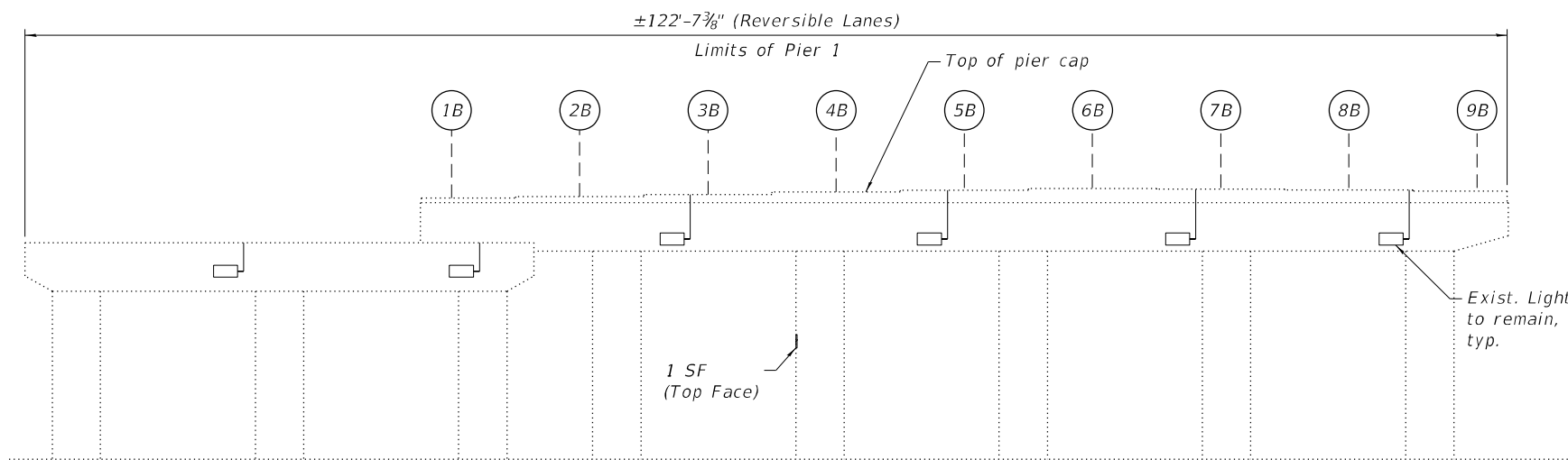
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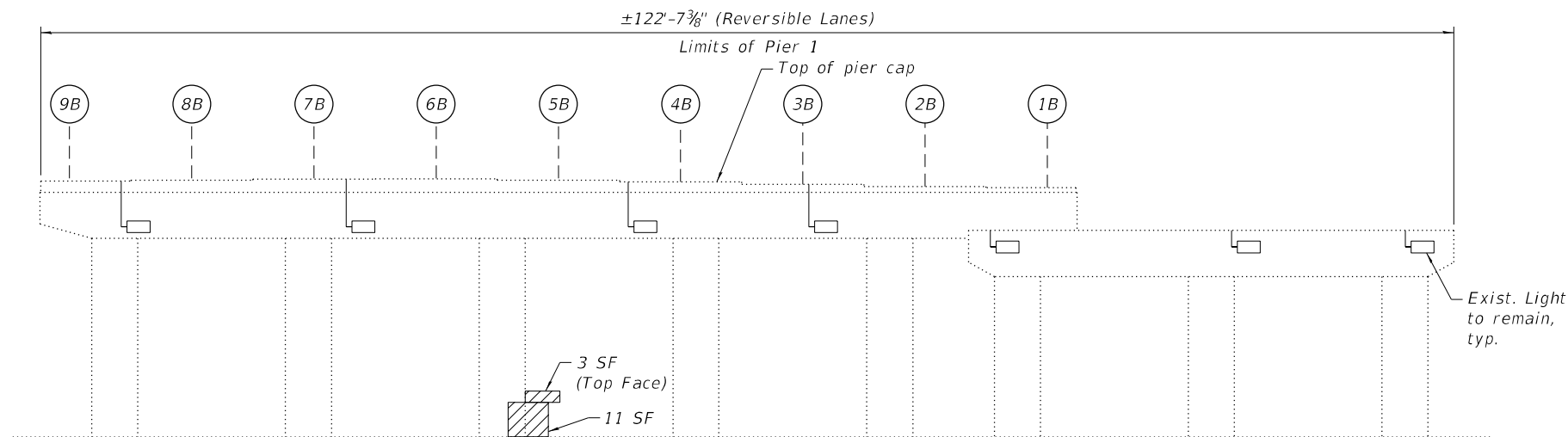
**NORTH ABUTMENT REPAIRS  
SN 016-1073 (REV)**

SHEET S24-14 OF S24-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1118
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



**ELEVATION - PIER 1**  
(Looking South)



**ELEVATION - PIER 1**  
(Looking North)



**EXISTING LIGHTING PIER 1**  
(Looking Southeast)



**EXISTING LIGHTING PIER 1**  
(Looking Northeast)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

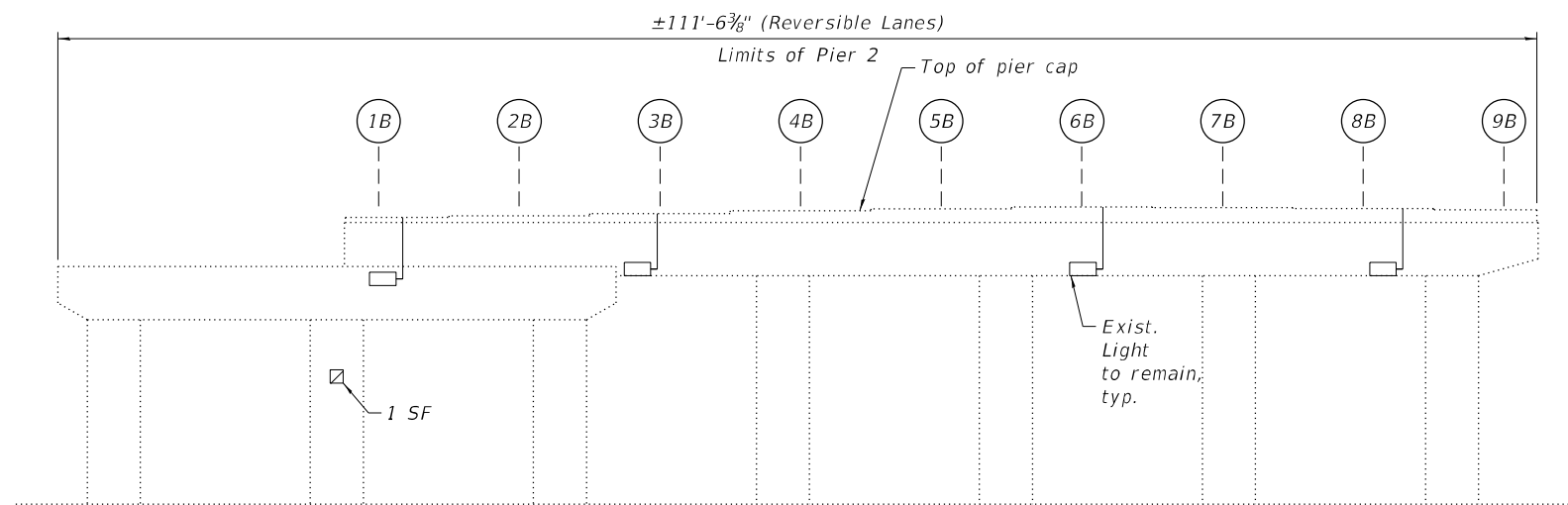
**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

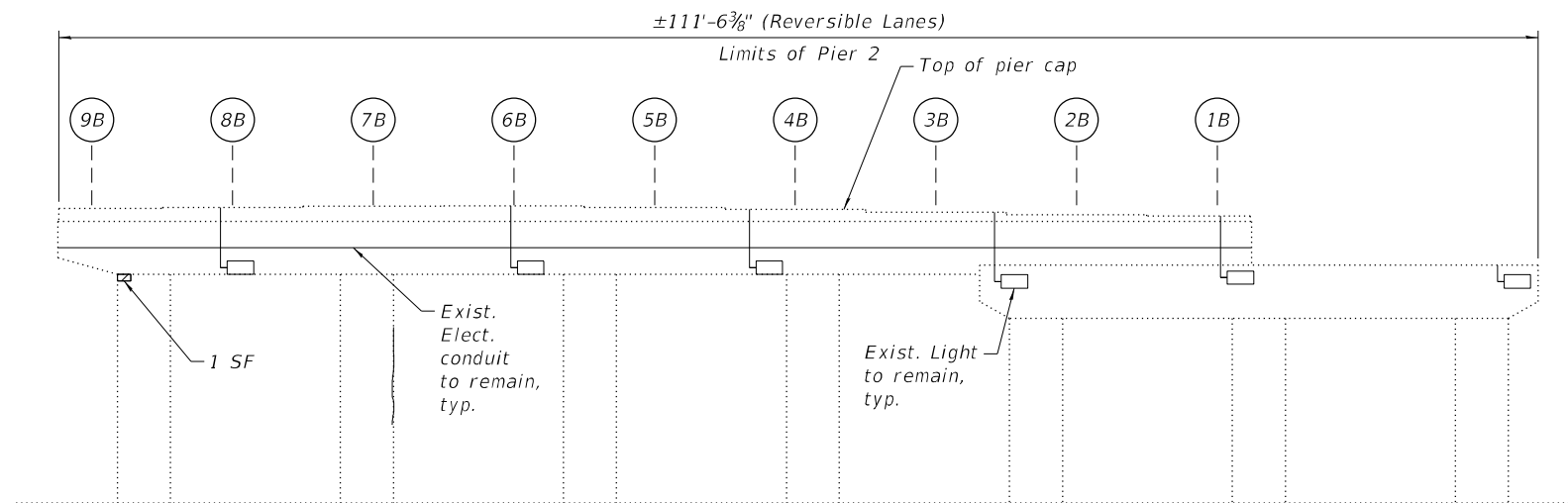
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	15

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**ELEVATION - PIER 2**  
(Looking South)



**ELEVATION - PIER 2**  
(Looking North)



**EXISTING LIGHTING PIER 2**  
(Looking Southeast)



**EXISTING LIGHTING PIER 2**  
(Looking Northeast)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

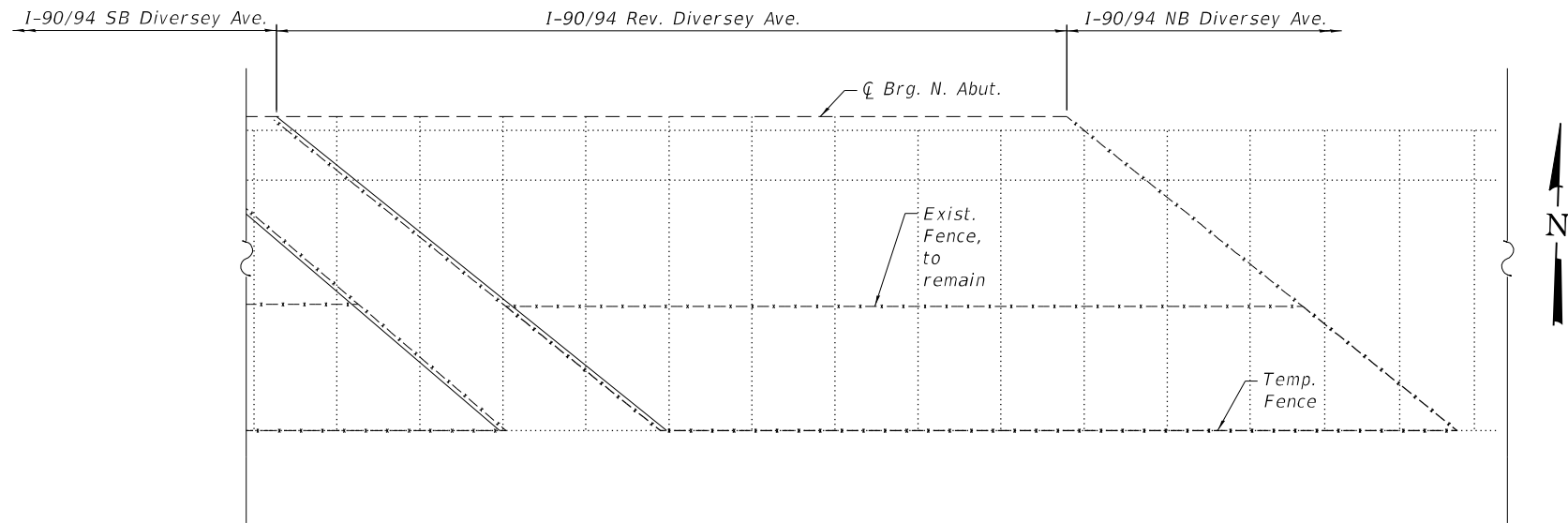
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	2

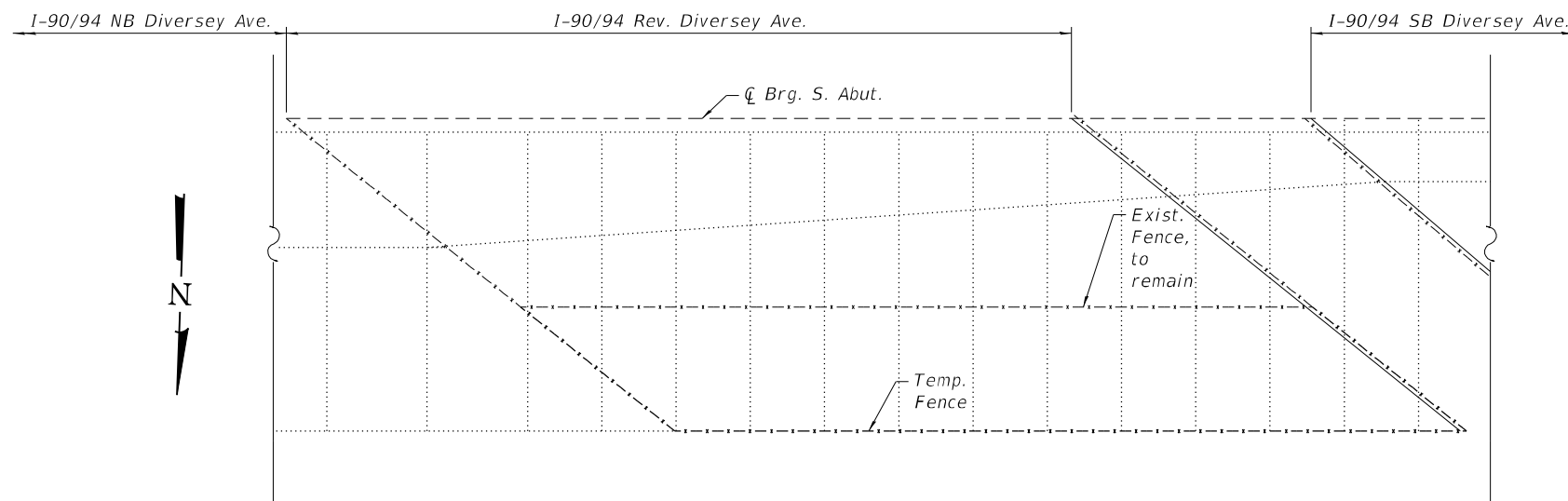
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1120
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



**NORTH SLOPE WALL - PLAN**  
(Looking North)



**SOUTH SLOPE WALL - PLAN**  
(Looking South)

**NOTES:**

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq ft

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SLOPE WALL REPAIRS  
 SN 016-1073 (REV)

SHEET S24-17 OF S24-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1121
			CONTRACT NO. 62K74	
		ILLINOIS	FED. AID PROJECT	

Existing Structure: S.N. 016-0124 was originally built in 1958 from BCR. The bridge was widened and redecked between 1990 and 1992, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 210'-10<sup>1</sup>/<sub>8</sub>" and an out-to-out deck width of 73'-2". The superstructure consists of a 7<sup>1</sup>/<sub>2</sub>" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 56'-9<sup>1</sup>/<sub>2</sub>", 89'-5<sup>3</sup>/<sub>4</sub>", and 56'-9<sup>1</sup>/<sub>2</sub>". The substructure consists of reinforced concrete abutments and piers supported on concrete filled metal shell piles.

Traffic will be maintained utilizing stage construction.

No salvage.

**LOADING**

HS20-44 and alternate military loading

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition

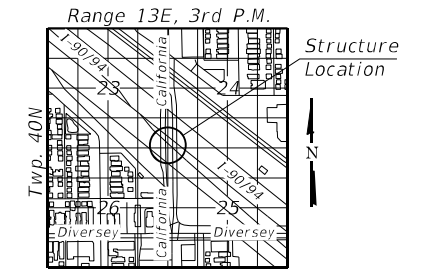
**NOTE:**

1. All stations are to the  $\text{CL}$  I-90/94 SB Roadway and taken from existing plans.
2. No Future Wearing Surface is allowed.

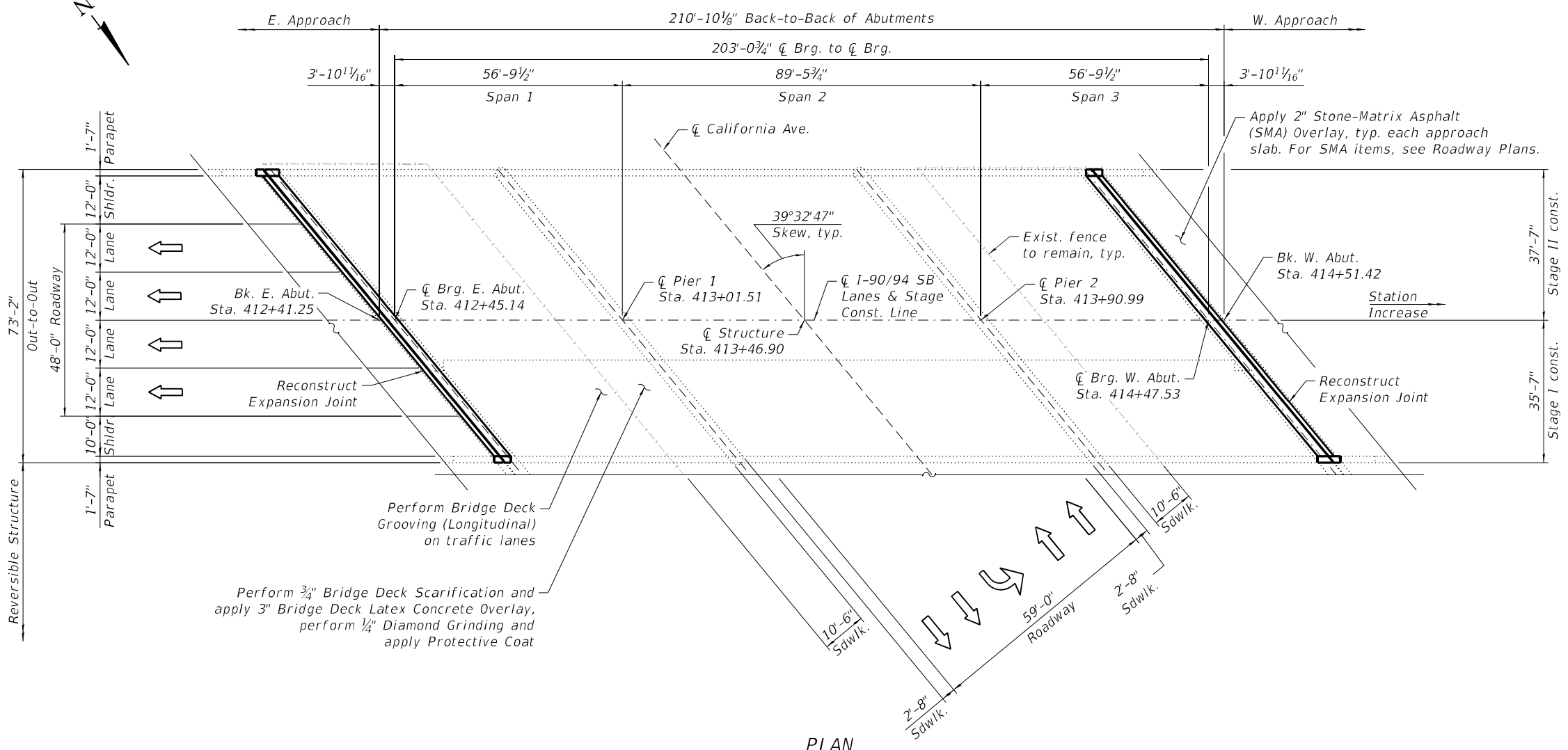
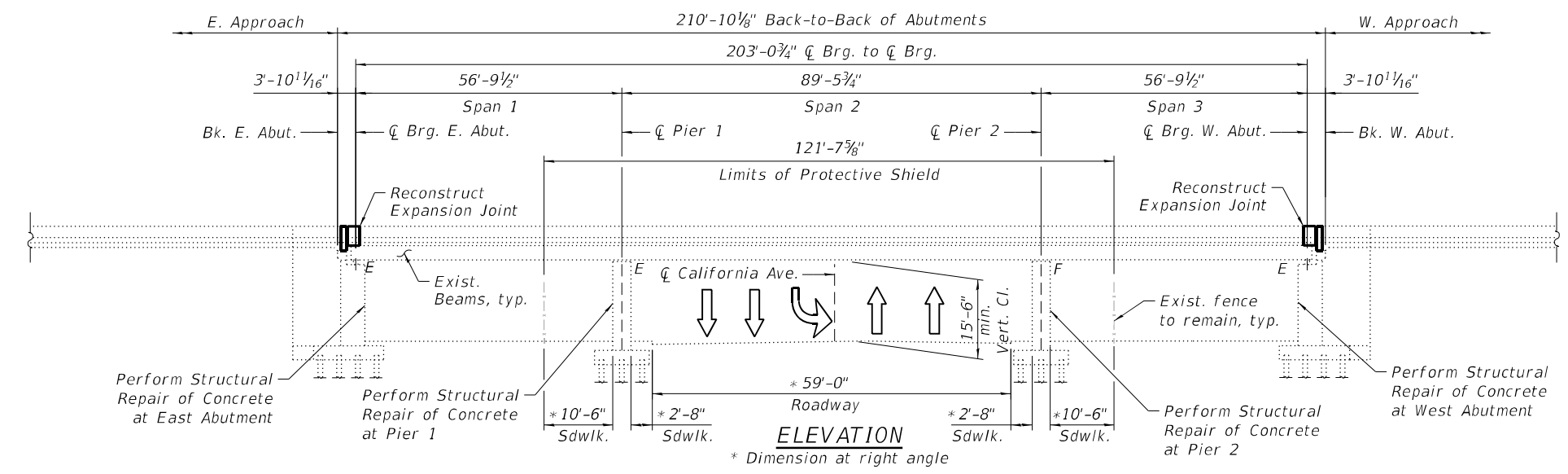


*Kevin Wood*

Engineer Full Name: Kevin Wood Date: 10-20-2022  
 Illinois Registered Engineer No. 081-006515  
 Registration Expires 11. 30, 2024



**LOCATION SKETCH**



**GENERAL PLAN AND ELEVATION**  
**SB I-90 OVER CALIFORNIA AVENUE**  
**F.A.I. SEC 2020-004-BR**  
**COOK COUNTY**  
**STATION: 413+46.90**  
**STRUCTURE NO. 016-0124 (SB)**

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**DEPARTMENT OF TRANSPORTATION**

SHEET S25-01 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1122
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

**GENERAL NOTES**

- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or 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 Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further dispositions. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- Plan dimensions and details relative to the existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity furnished at the unit price bid for the work.
- Cleaning and field painting of structural steel shall be done under a separate painting contract.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. The cost of cleaning shall be included in the cost of Concrete Removal.
- Bars indicated thus, 3x2-#5, indicates 3 lines of #5 bars with 2 lengths of bar per line.
- All exposed concrete edges shall have a 3/4"x45° chamfer, except where shown otherwise.
- For SMA overlay on Approach Slab, see Roadway Plans.
- Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.
- Joint openings shall be adjusted according to Article 520.04 of the Standard Specification when the deck is poured at an ambient temperature other than 50°F.
- Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provisions "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
- Adjacent I-90/94 reversible bridge is not shown throughout the plans for clarity.
- The Contractor shall take the necessary precautions for the protection of passing vehicles, bicycles and pedestrians from falling objects and/or materials until completion of work.
- The Contractor is responsible to remove, support and reinstall all existing electrical conduits interfering with the work. See special provision "Protection and Maintenance of Existing Underpass Luminaires".
- The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.
- The Contractor is responsible to protect the existing conduit and junction box embedded in the parapet during concrete removal and construction. Any damage to the existing conduit and junction box shall be repaired by the Contractor at no additional cost to the Department.
- Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.
- Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.
- The Contractor shall contact Chandra Libby, the Director of City of Chicago Department of Family Support Services (DFSS) at 312-746-5443 or Chandra.Libby@cityofchicago.org to coordinate the relocation of persons and their personal belongings under the bridges within the areas bounded by the temporary chain-link-fence.
- Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.

**INDEX OF SHEETS**

S25-01	General Plan & Elevation
S25-02	General Data
S25-03-S25-04	Stage Construction Details I & II
S25-05	Temporary Concrete Barrier
S25-06	Bridge Deck Repair Plan and Details
S25-07-S25-09	East Abutment Expansion Joint Details I, II & III
S25-10-S25-12	West Abutment Expansion Joint Details I, II & III
S25-13	Preformed Joint Strip Seal
S25-14	East Abutment Repairs
S25-15	West Abutment Repairs
S25-16	Pier 1 Repairs
S25-17	Pier 2 Repairs
S25-18	Bar Splicer Assembly and Mechanical Splicer Details


**SCOPE OF WORK**

- Provide Protective Shield within limits indicated on the plans.
- Scarify 3/4" from the bridge deck slab.
- Perform deck repairs.
- Remove and reconstruct expansion joints at east and west abutments and install new Preformed Joint Strip Seals.
- Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs, see Roadway Plans.
- Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
- Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
- Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse expansion joints and to the surface of the new overlay.
- Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	28.4		28.4
Protective Shield	Sq Yd	989		989
Concrete Superstructure	Cu Yd	31.6		31.6
Protective Coat	Sq Yd	1,838		1,838
Reinforcement Bars, Epoxy Coated	Pound	5,200		5,200
Bar Splicers	Each	32		32
Preformed Joint Strip Seal	Foot	186		186
Concrete Sealer	Sq Ft		1,010	1,010
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,098		1,098
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,563		1,563
Bridge Deck Scarification 3/4"	Sq Yd	1,563		1,563
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		104	104
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq Ft		2	2
Deck Slab Repair (Full Depth, Type I)	Sq Yd	0.1		0.1
Deck Slab Repair (Full Depth, Type II)	Sq Yd	3.7		3.7
Diamond Grinding (Bridge Section)	Sq Yd	1,601		1,601
Maintenance of Lighting System	Cal Mo		6	6

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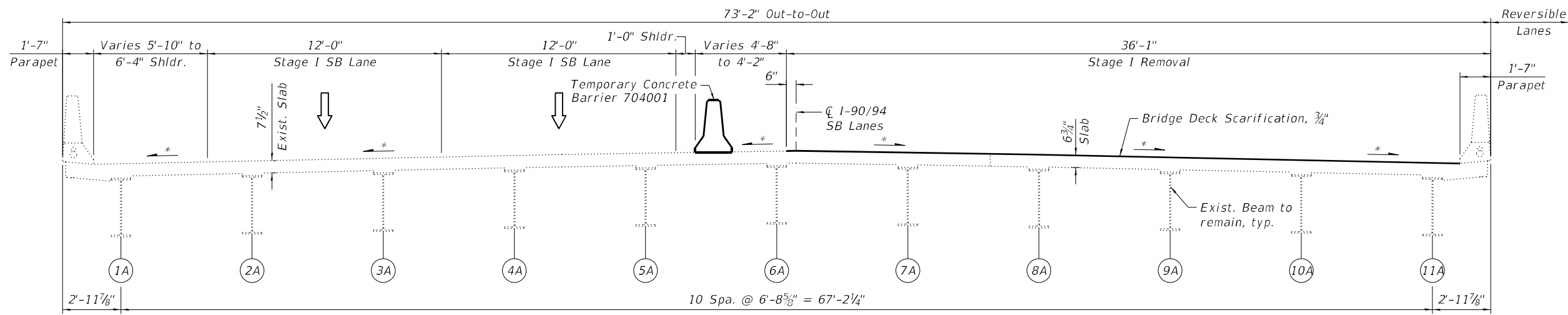
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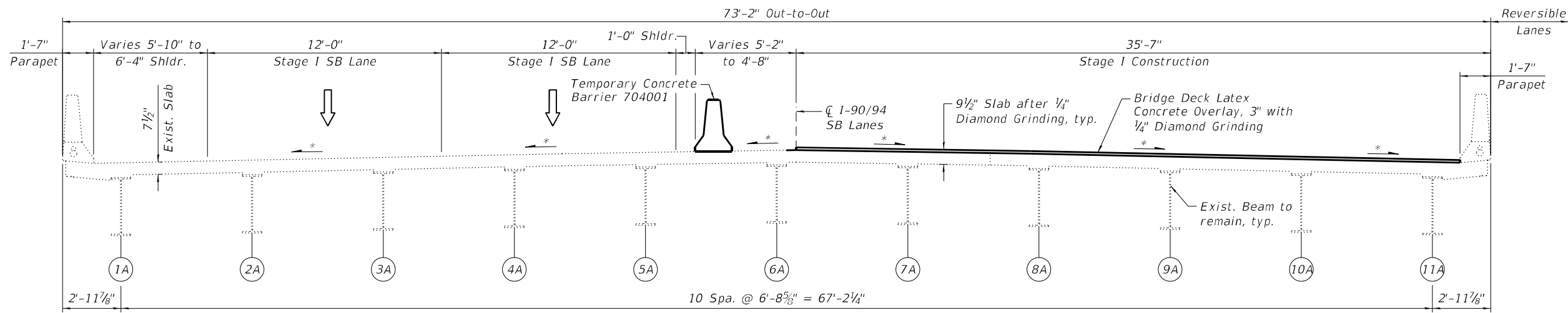
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SN 016-0124 (SB)**

SHEET S25-02 OF S25-18 SHEETS

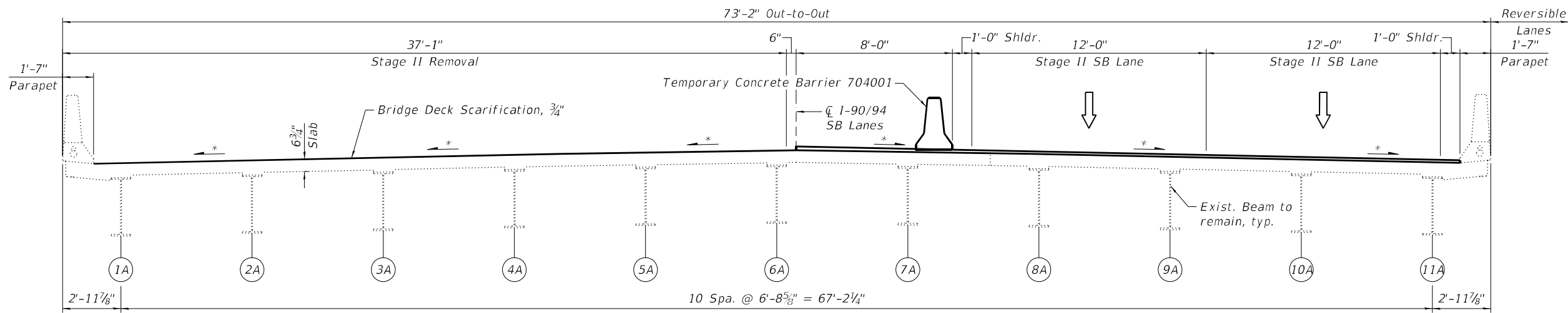
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1123
CONTRACT NO. 62K74				
		ILLINOIS	FED. AID PROJECT	



**STAGE I REMOVAL**  
(Looking West)



**STAGE I CONSTRUCTION**  
(Looking West)



**STAGE II REMOVAL**  
(Looking West)

**STAGE I REMOVAL**

1. Install Temporary Concrete Barrier as shown to locate traffic on the south side of the existing structure.
2. Scarify 3/4" from the top of the deck.
3. Remove portions of bridge deck adjacent to abutment joints, as shown in the plans.

**STAGE I CONSTRUCTION**

1. Perform Deck Slab Repairs at the locations shown in the plans.
2. Reconstruct transverse expansion joints and install Preformed Joint Strip Seal at east and west abutments and replace associated reinforcement and concrete adjacent to the joint.
3. Perform Structural Repair of Concrete at abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay to bridge deck slab.
5. Perform 1/4" diamond grinding to bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay and reconstructed abutment expansion joint areas.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach pavement and taper into existing roadway. See Roadway Plans.
8. Apply Protective Coat to the top of reconstructed transverse joint areas, the surface of the new overlay, and the top and inside faces of the parapets.

**STAGE II REMOVAL**

1. Install Temporary Concrete Barrier as shown to locate traffic on the north side of the existing structure.
2. Scarify 3/4" from the top of the deck.
3. Remove portions of bridge deck adjacent to abutment joints, as shown in the plans.

\* Match existing deck surface profile

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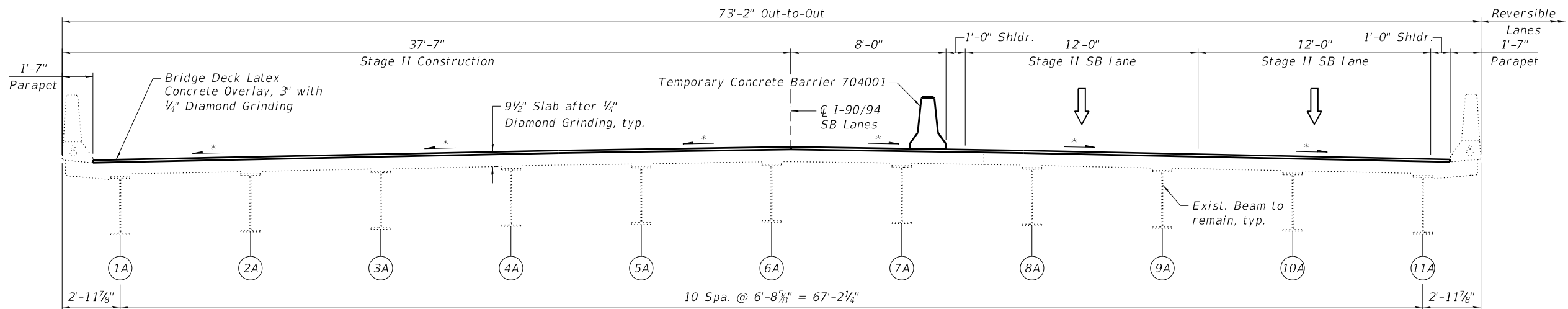
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS I  
SN 016-0124 (SB)

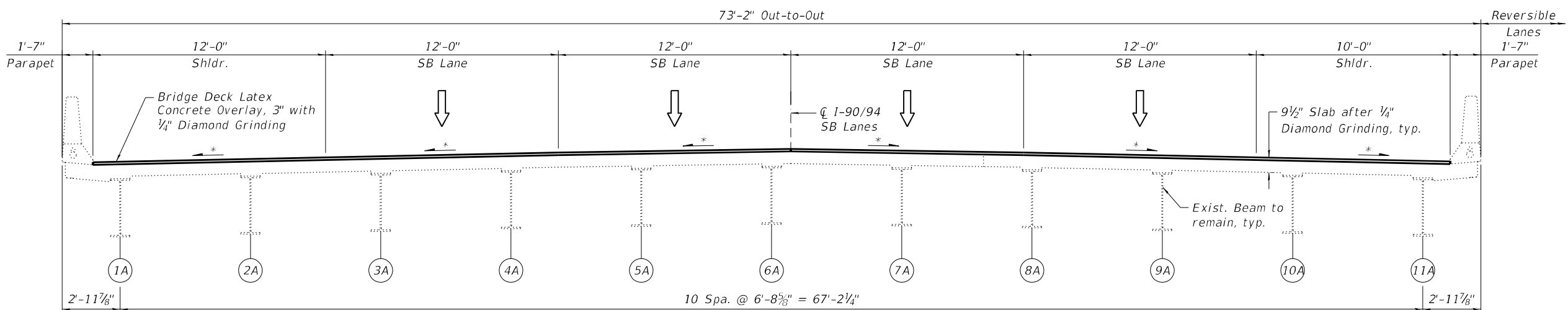
SHEET S25-03 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1124
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				





**STAGE II CONSTRUCTION**  
(Looking West)



**FINAL CROSS SECTION**  
(Looking West)

**STAGE II CONSTRUCTION**

1. Perform Deck Slab Repairs at the locations shown in the plans.
2. Reconstruct transverse expansion joints and install Preformed Joint Strip Seal at east and west abutments and replace associated reinforcement and concrete adjacent to the joint.
3. Perform Structural Repair of Concrete at abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay to bridge deck slab.
5. Perform 1/4" diamond grinding to bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay and reconstructed abutment expansion joint areas.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach pavement and taper into existing roadway. See Roadway Plans.
8. Apply Protective Coat to the top of reconstructed transverse joint areas, the surface of the new overlay, and the top and inside faces of the parapets.

\* Match existing deck surface profile

MODEL: SMODELNAME5  
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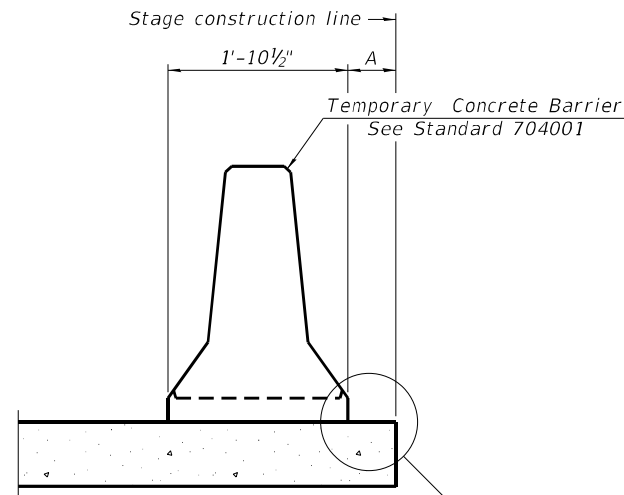
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STAGE CONSTRUCTION DETAILS II  
SN 016-0124 (SB)**

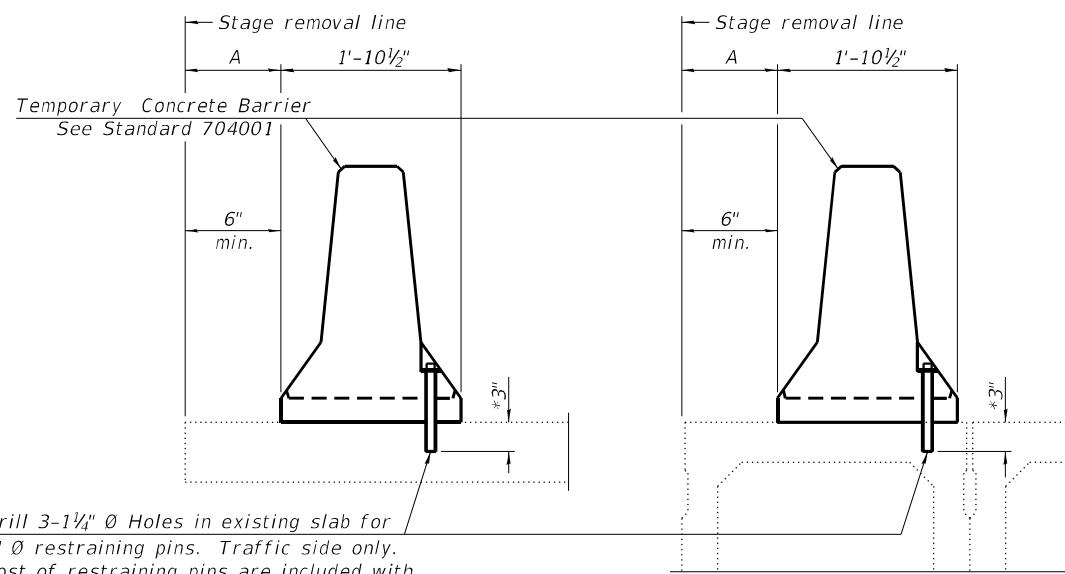
SHEET S25-04 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1125
			CONTRACT NO. 62K74	
		ILLINOIS FED. AID PROJECT		



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

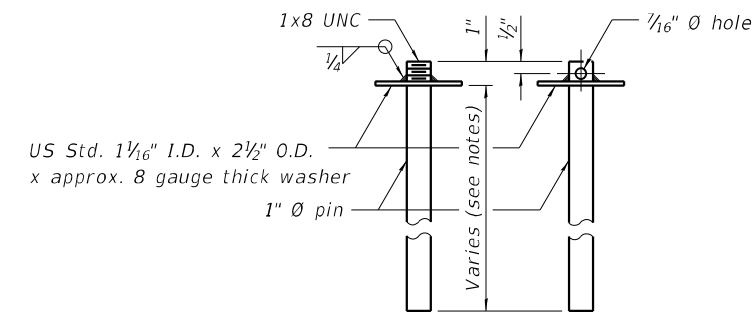
NEW SLAB OR NEW DECK BEAM



Drill 3-1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

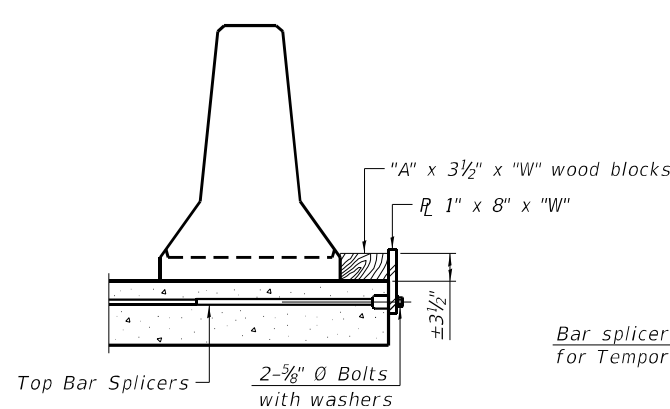
EXISTING DECK BEAM



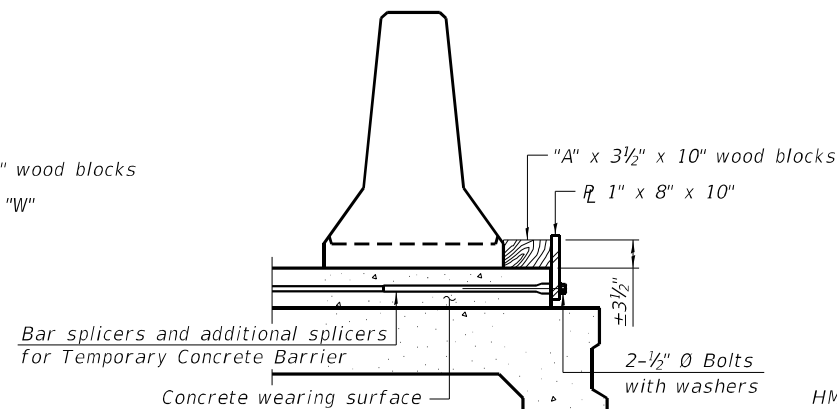
RESTRAINING PIN

\* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

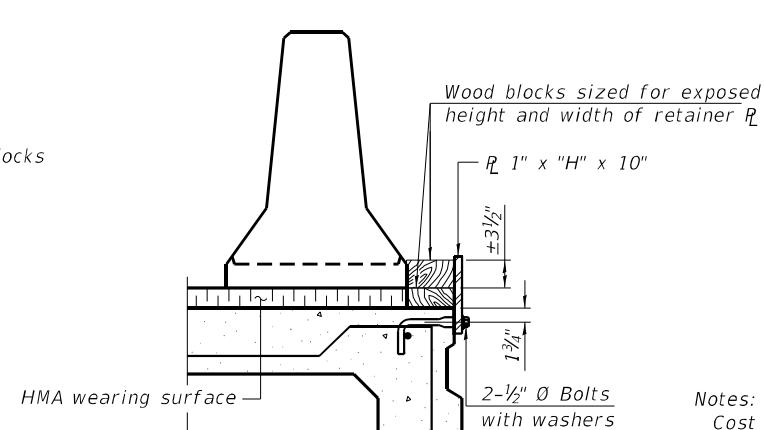
SECTIONS THRU SLAB OR DECK BEAM



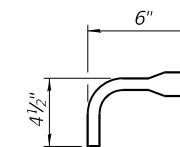
DETAIL I



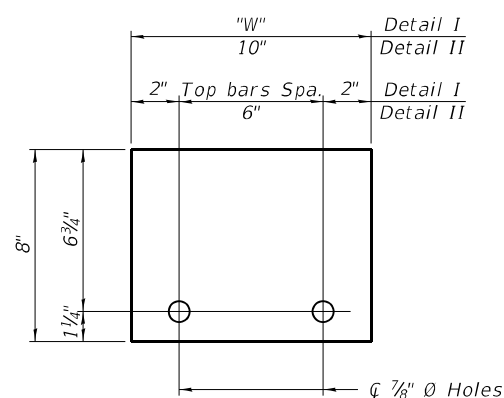
DETAIL II



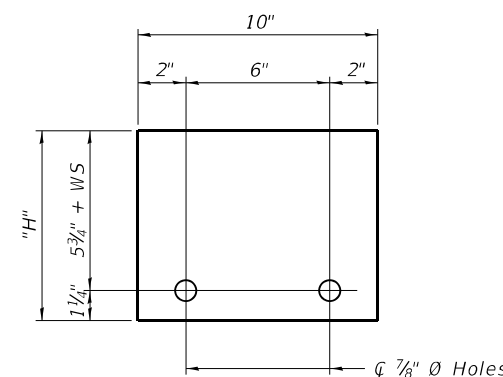
DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER R 1" x 8" x "W" (Detail I and II)



STEEL RETAINER R 1" x "H" x 10" (Detail III)

Notes:  
 Cost of retainer assembly is included with Temporary Concrete Barrier.  
 A retainer assembly shall be located at the approximate center of each temporary concrete barrier.  
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.  
 When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6' to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.  
 Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.  
 Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27 10-12-2021

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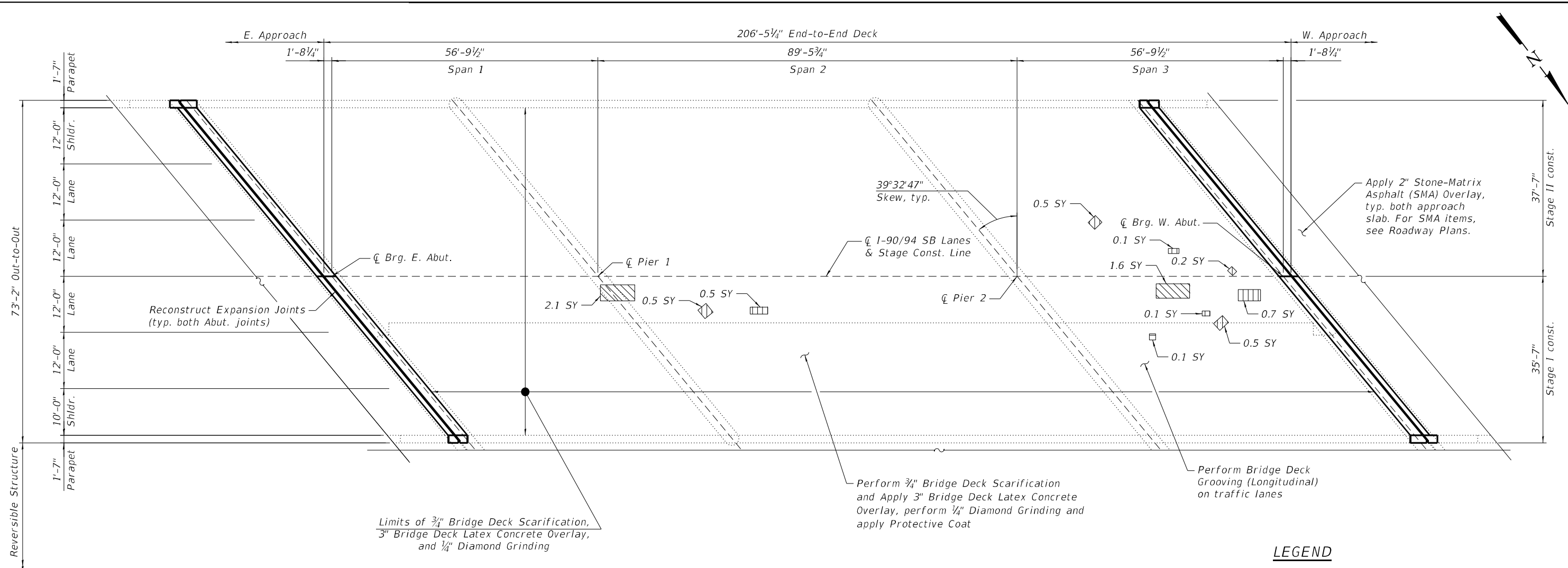
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 DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER  
 SN 016-0124 (SB)

SHEET S25-05 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1126
			CONTRACT NO. 62K74	
		ILLINOIS	FED. AID PROJECT	



**DECK PLAN**

**LEGEND**

- \*Deck Slab Repair (Partial Depth)
- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- Square Yard

\* Areas of Deck Slab Repair (Partial Depth) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3 Inches

**NOTES:**

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S25-04.
3. For East and West transverse joint removal and reconstruction, see Sheet S25-07 thru S25-12.
4. Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
5. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
6. Protective Coat shall be applied to the top of reconstructed transverse joints, top and inside face of parapets and top of latex concrete overlay.
7. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.
8. The Contractor shall exercise extreme caution during concrete removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer at no cost to the Department.
9. Prior to any reconstruction or resurfacing of the bridge deck, a team of the consultant WJE will require access to contractor work zone to take cores of existing deck for independent study with IDOT. Contractor to coordinate with IDOT/WJE in advance. There is no cost to the contractor.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	989
Protective Coat	Sq Yd	1,838
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,098
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,563
Bridge Deck Scarification 3/4"	Sq Yd	1,563
Deck Slab Repair (Full Depth, Type I)	Sq Yd	0.1
Deck Slab Repair (Full Depth, Type II)	Sq Yd	3.7
Diamond Grinding (Bridge Section)	Sq Yd	1,601
Maintenance of Lighting System	Cal Mo	6

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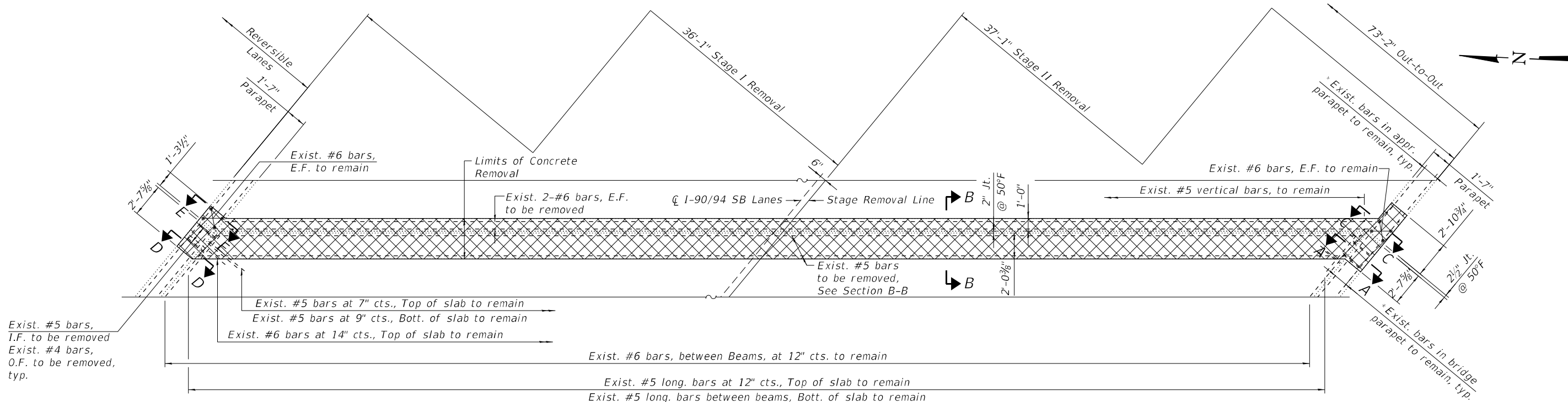
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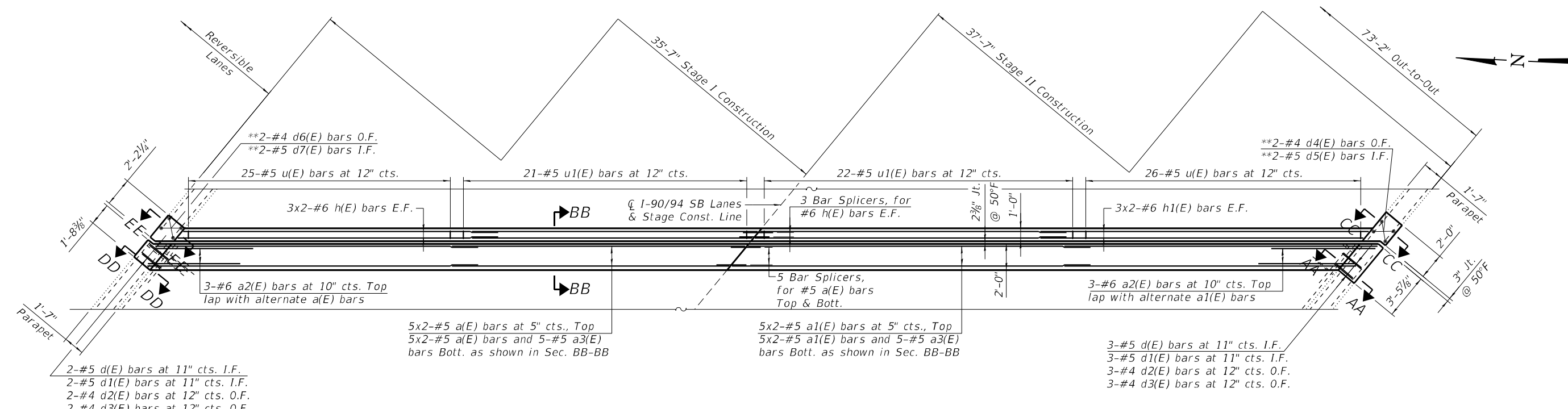
**BRIDGE DECK REPAIR PLAN AND DETAILS  
 SN 016-0124 (SB)**

SHEET S25-06 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1127
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



**EAST ABUTMENT JOINT REMOVAL PLAN**



**EAST ABUTMENT JOINT RECONSTRUCTION PLAN**


**NOTES:**

- For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S25-08.
- For sections D-D, E-E, DD-DD and EE-EE, see sheet S25-09.

\* Existing longitudinal bars to remain in the parapets can be cut in the field as required

\*\* Epoxy grout #4 d4(E) and d6(E) bars and #5 d5(E) and d7(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

**LEGEND**

-  Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- E.F. Each Face

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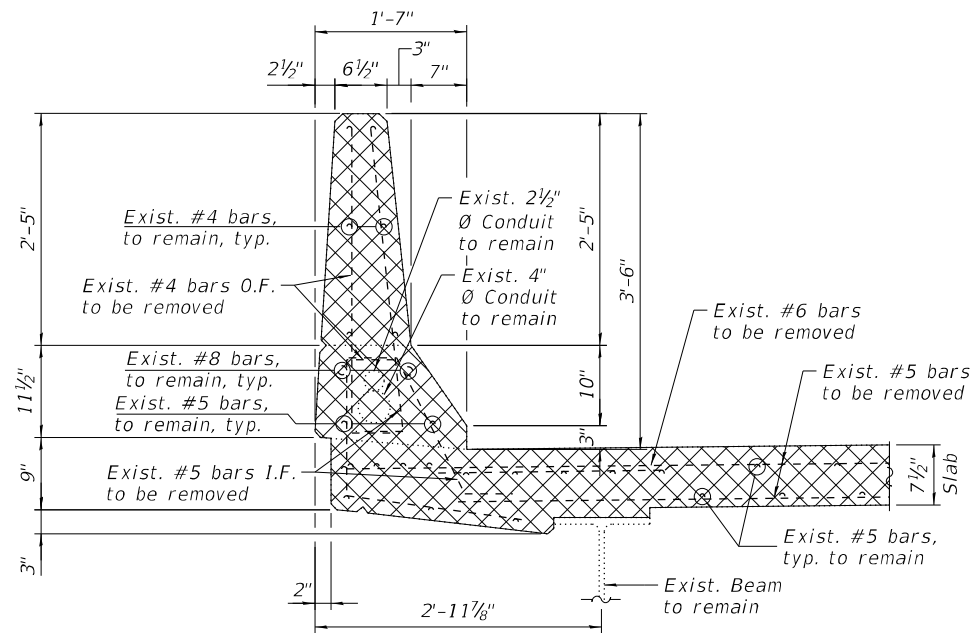
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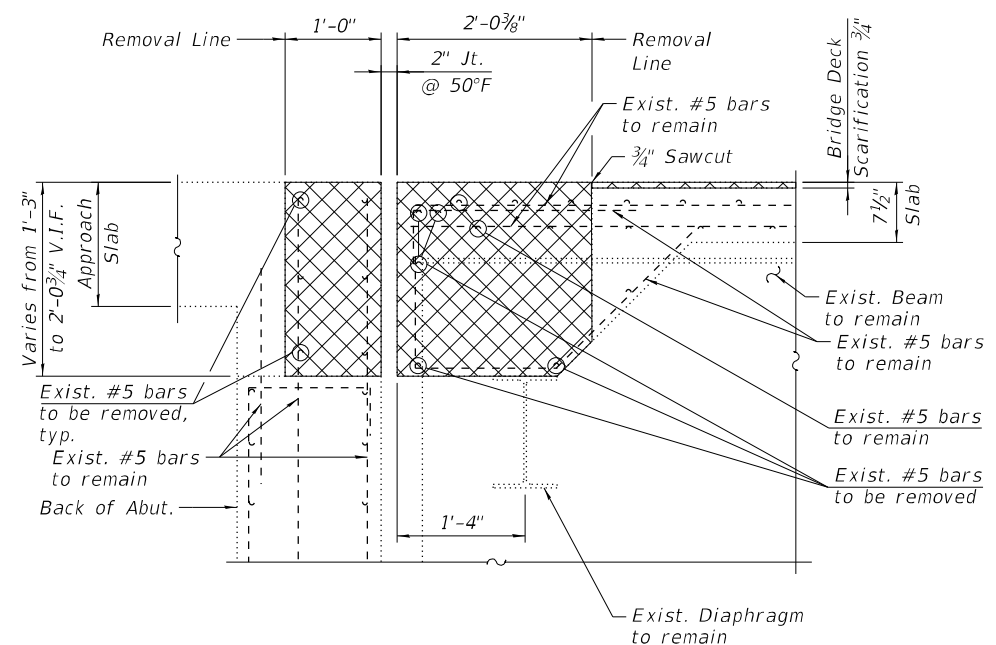
**EAST ABUTMENT EXPANSION JOINT DETAILS I  
SN 016-0124 (SB)**

SHEET S25-07 OF S25-18 SHEETS

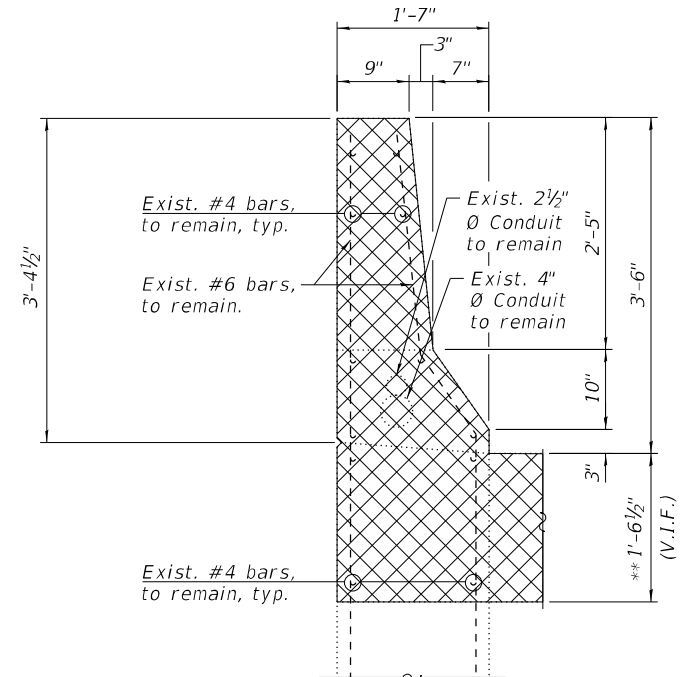
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



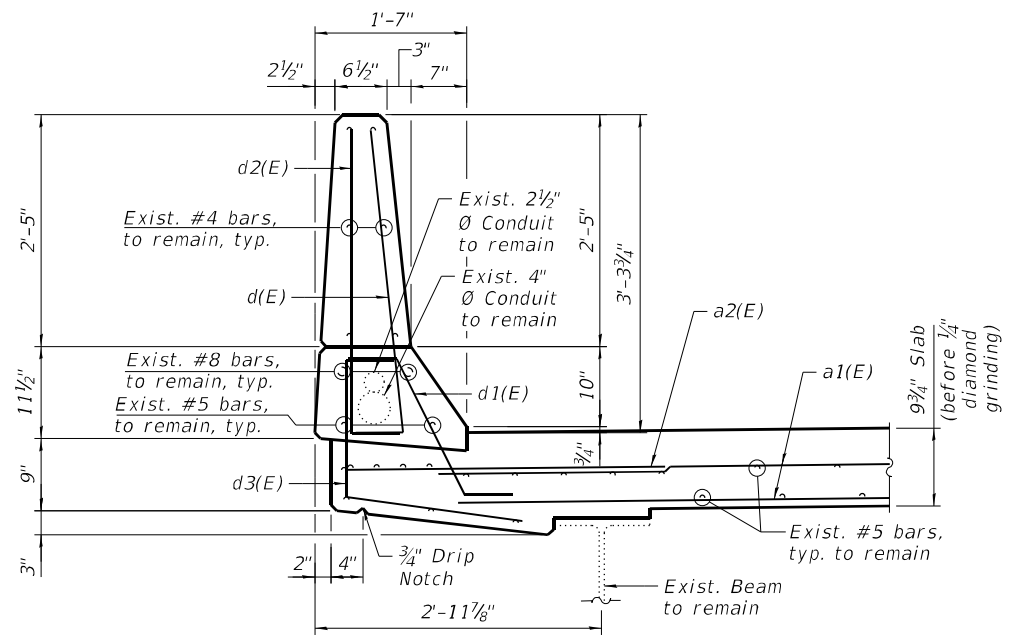
**SECTION A-A**  
(South parapet removal)



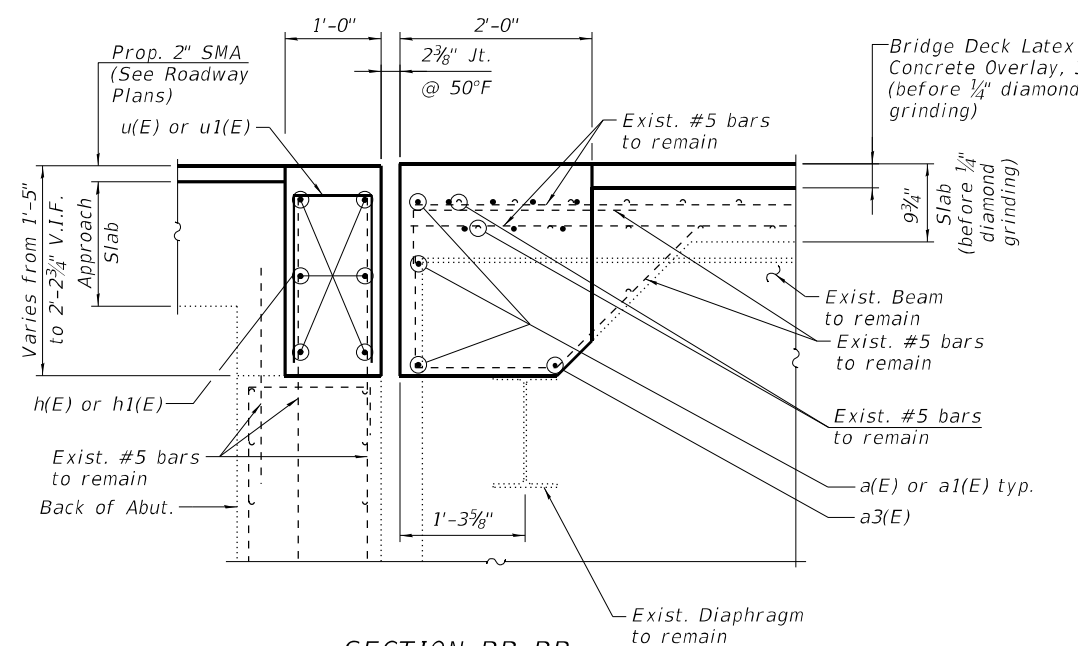
**SECTION B-B**



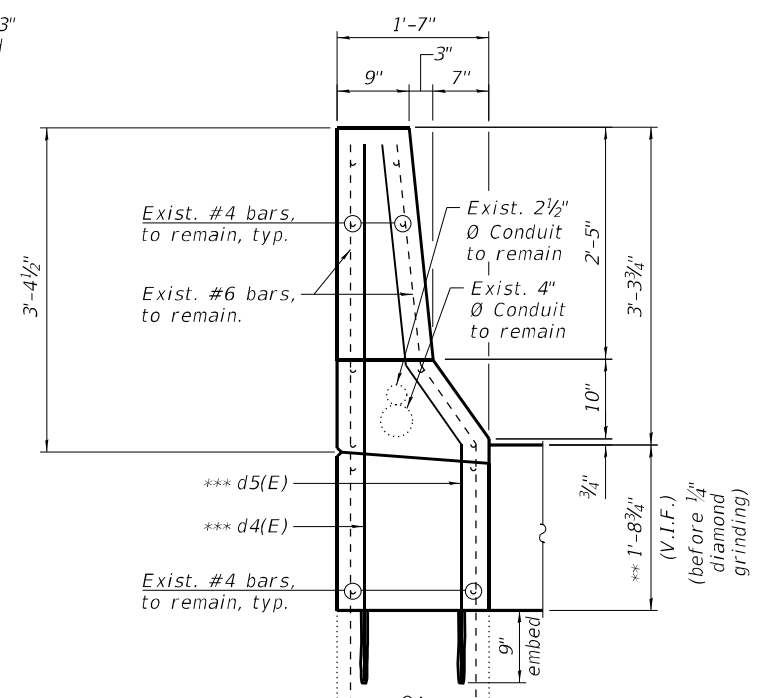
**SECTION C-C**  
(South parapet removal)



**SECTION AA-AA**  
(South parapet reconstruction)



**SECTION BB-BB**



**SECTION CC-CC**  
(South parapet reconstruction)

- LEGEND**
- \*\* Dimension is taken at the Back of Abut.
  - \*\*\* Epoxy grout #4 d4(E) & #5 d5(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.
  - Concrete Removal
  - I.F. Inside Face
  - O.F. Outside Face
  - V.I.F. Verify in Field

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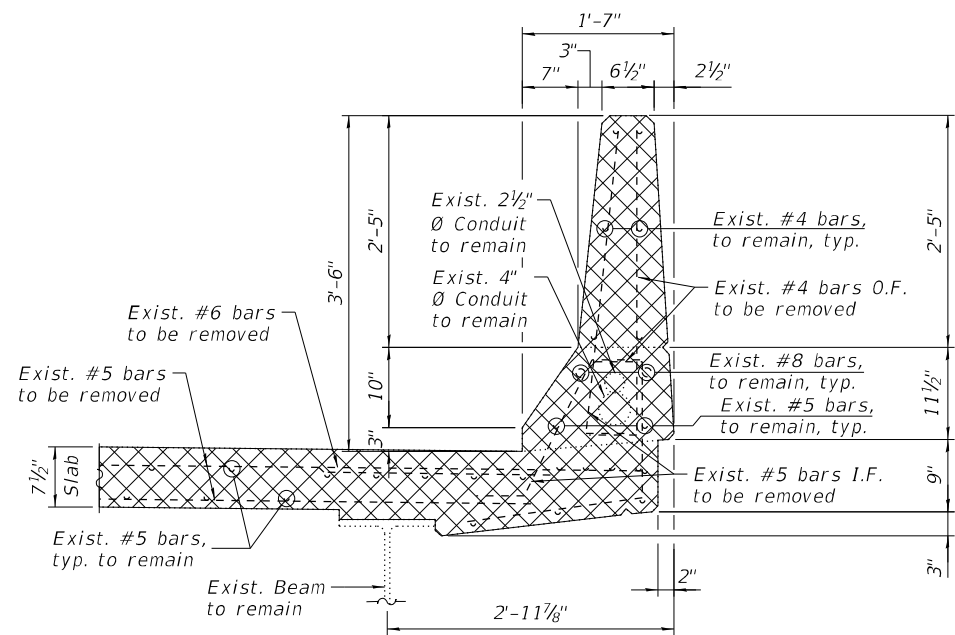
**EAST ABUTMENT EXPANSION JOINT DETAILS II**  
**SN 016-0124 (SB)**

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CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

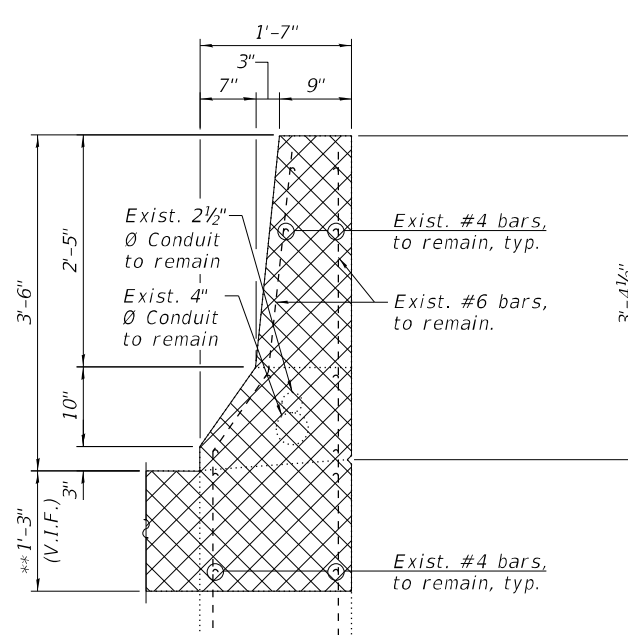
SHEET S25-08 OF S25-18 SHEETS

**BILL OF MATERIAL  
EAST ABUTMENT**

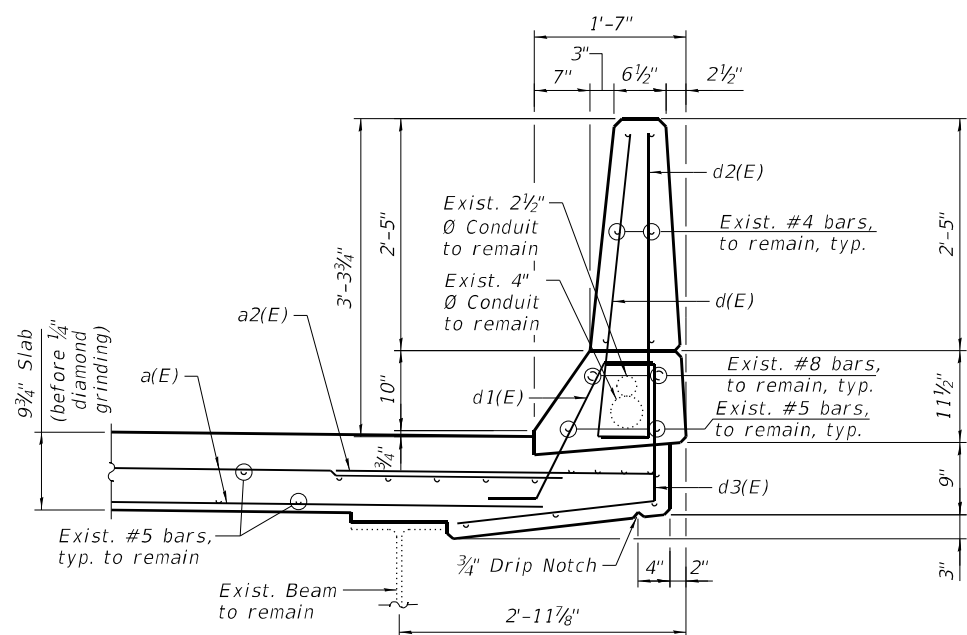
Bar	No.	Size	Length	Shape
a(E)	20	#5	24'-6"	—
a1(E)	20	#5	25'-9"	—
a2(E)	6	#6	6'-6"	—
a3(E)	10	#5	8'-4"	—
d(E)	5	#5	3'-8"	┘
d1(E)	5	#5	2'-7"	┘
d2(E)	5	#4	3'-8"	┘
d3(E)	5	#4	3'-9"	┘
d4(E)	2	#4	5'-8"	┘
d5(E)	2	#5	5'-10"	┘
d6(E)	2	#4	5'-5"	┘
d7(E)	2	#5	5'-7"	┘
h(E)	12	#6	24'-6"	—
h1(E)	12	#6	25'-10"	—
u(E)	51	#5	3'-2"	┘
u1(E)	43	#5	4'-2"	┘
Concrete Removal			Cu Yd	14.2
Reinforcement Bars, Epoxy Coated			Pound	2,600
Concrete Superstructure			Cu Yd	15.8



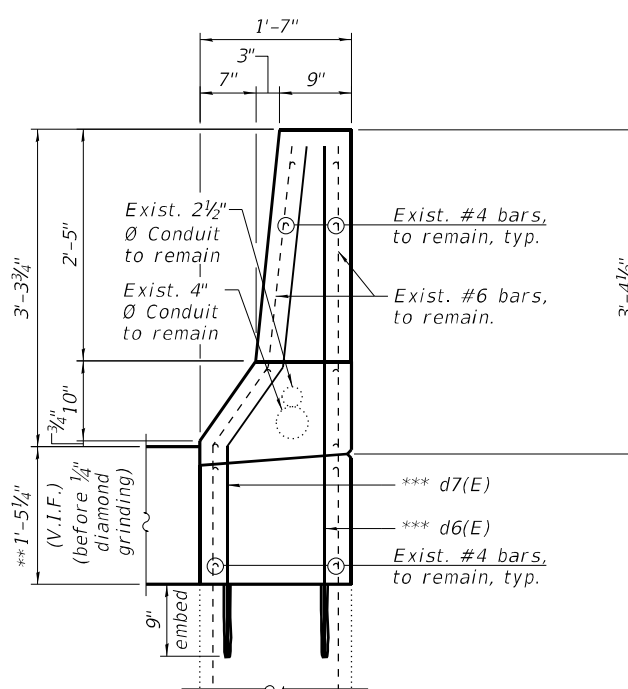
**SECTION D-D**  
(North parapet removal)



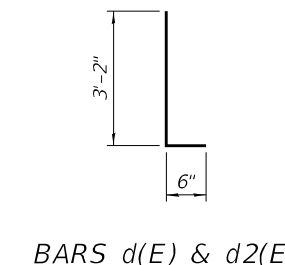
**SECTION E-E**  
(North parapet removal)



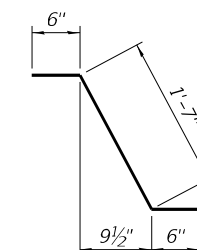
**SECTION DD-DD**  
(North parapet reconstruction)



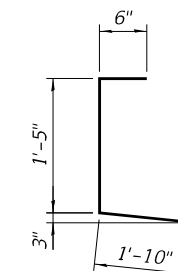
**SECTION EE-EE**  
(North parapet reconstruction)



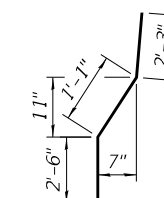
**BARS d(E) & d2(E)**



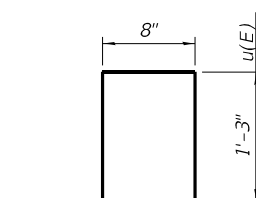
**BAR d1(E)**



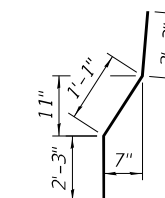
**BARS d3(E)**



**BAR d5(E)**



**BARS u(E) & u1(E)**



**BAR d7(E)**

**NOTES:**

- For Preformed Joint Strip Seal details, see sheet S25-13.
- For Bar Splicer Assembly details, see sheet S25-18.
- 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 shall be included with Concrete Removal.
- Removal and disposal of the existing expansion joints is included with Concrete Removal.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

**MIN BAR LAPS**

- #5 3'-6"
- #6 4'-0"

\*\* Dimension is taken at the Back of Abutment.

\*\*\* Epoxy grout #4 d6(E) & #5 d7(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT EXPANSION JOINT DETAILS III  
SN 016-0124 (SB)**

SHEET S25-09 OF S25-18 SHEETS

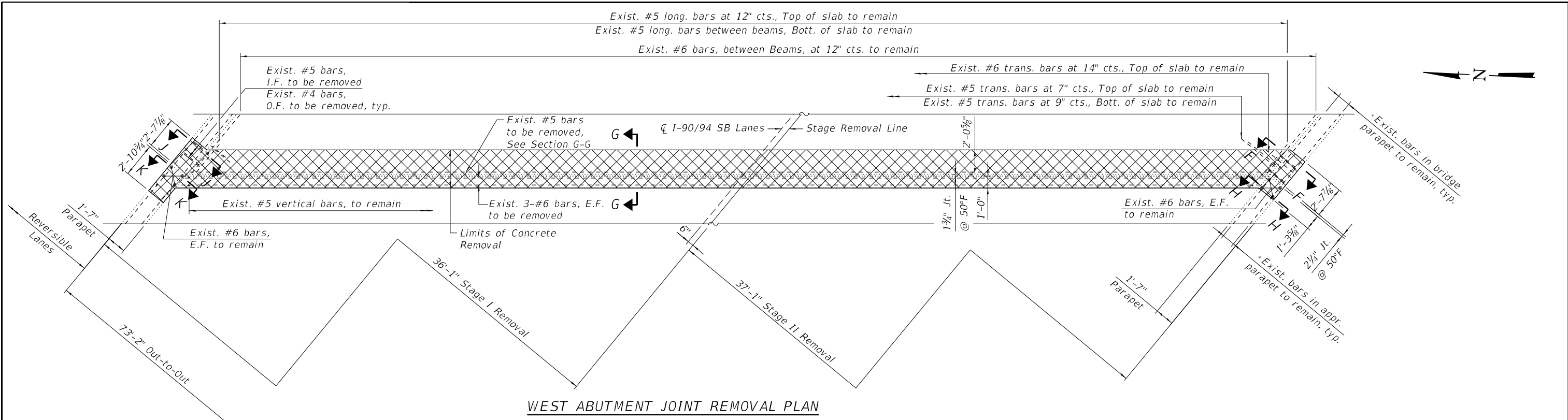
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90	2020-004-BR	COOK	1492	1130
				CONTRACT NO. 62K74

ILLINOIS FED. AID PROJECT

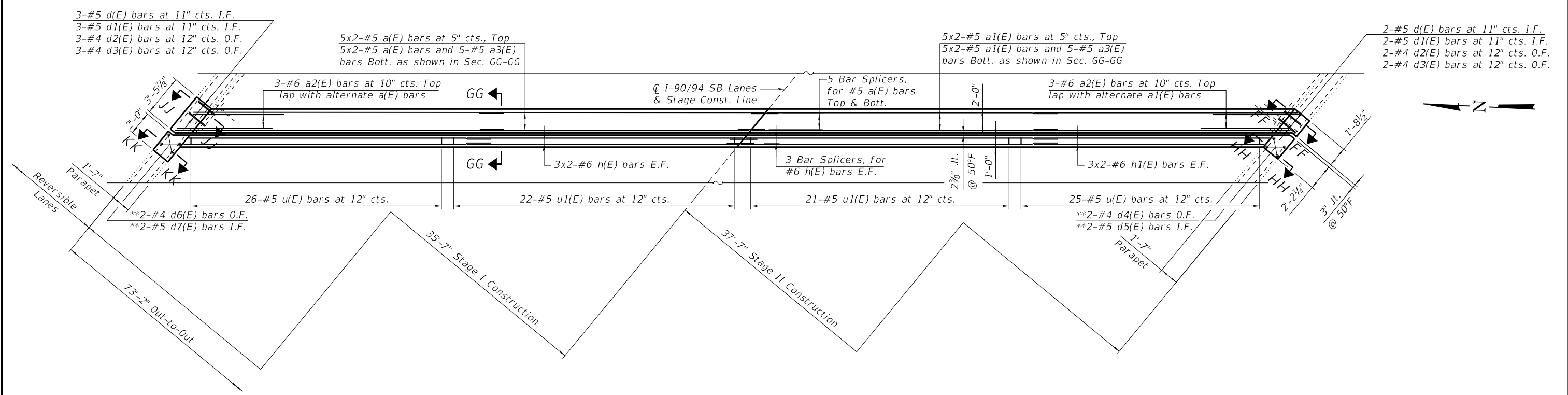
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	CHECKED - K.G.W.	REVISED -



WEST ABUTMENT JOINT REMOVAL PLAN



WEST ABUTMENT JOINT RECONSTRUCTION PLAN


NOTES:

1. For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S25-11.
2. For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S25-12.

\* Existing longitudinal bars to remain in the parapets can be cut in the field as required

\*\* Epoxy grout #4 d4(E) and d6(E) bars and #5 d5(E) and d7(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

LEGEND

-  Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- E.F. Each Face

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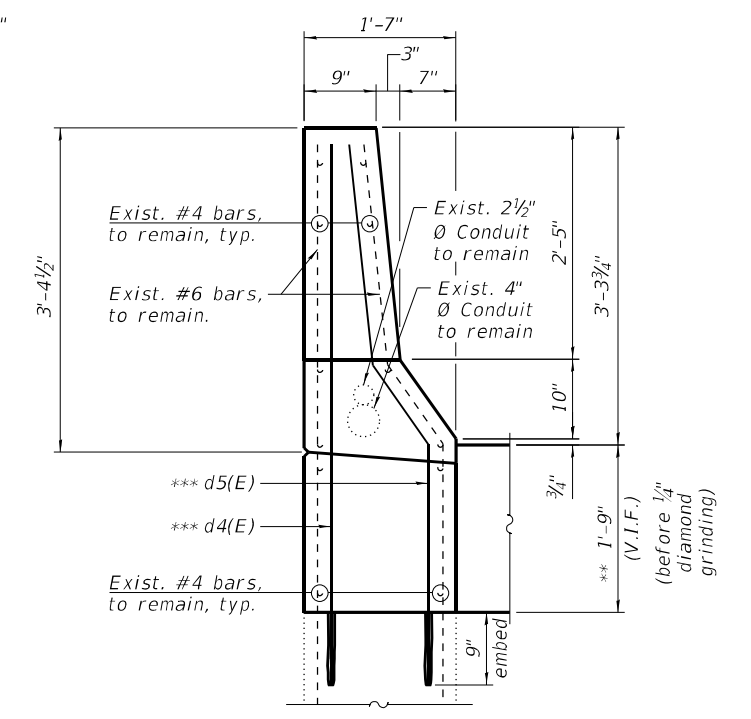
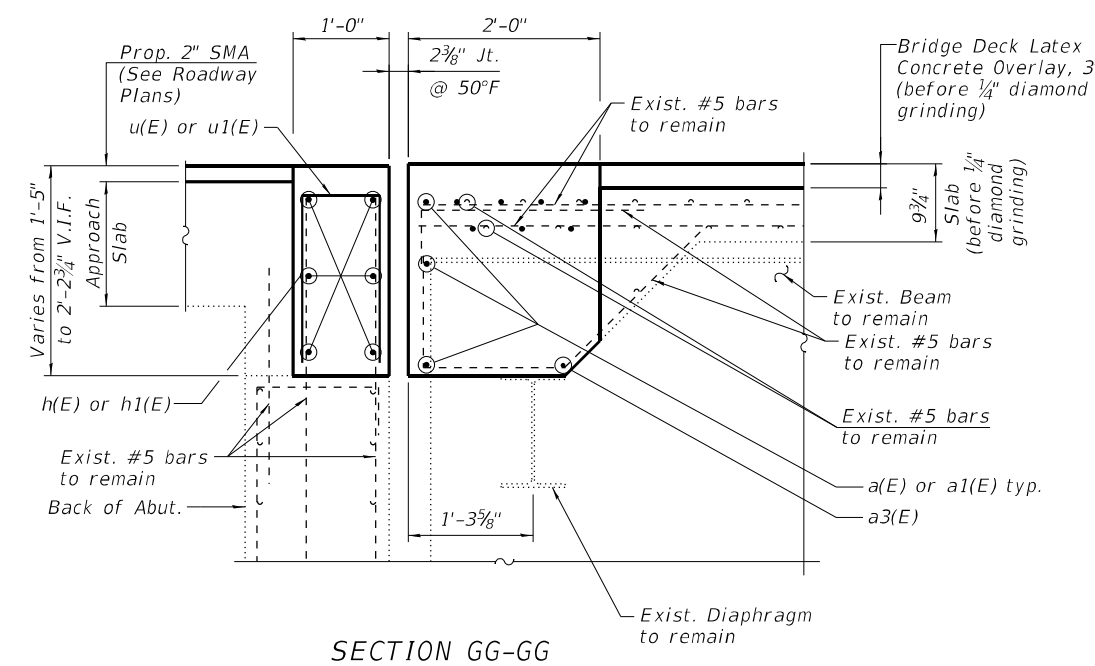
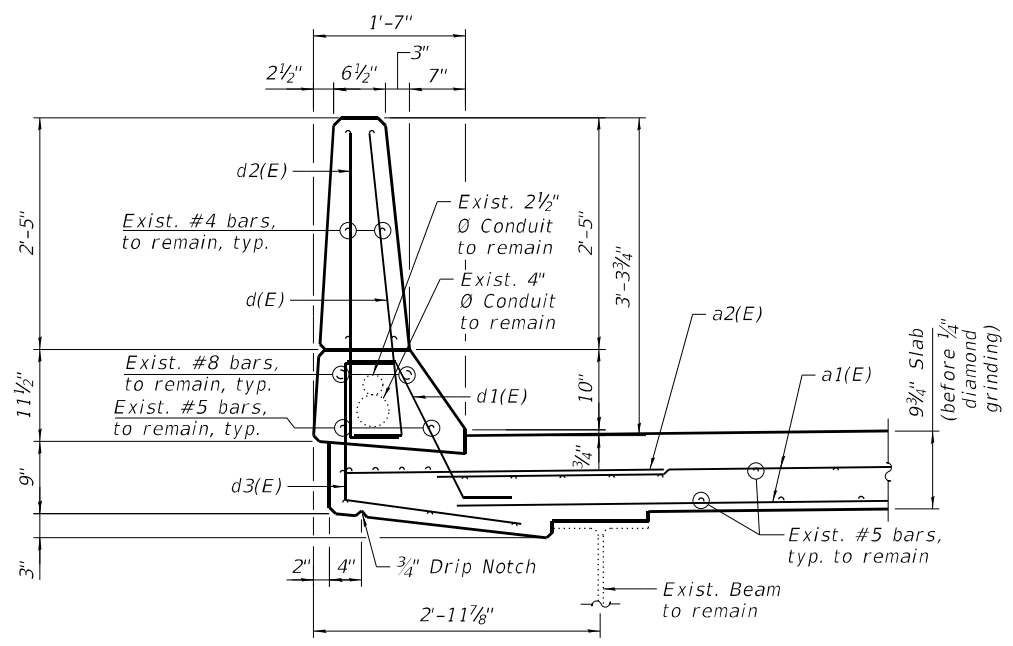
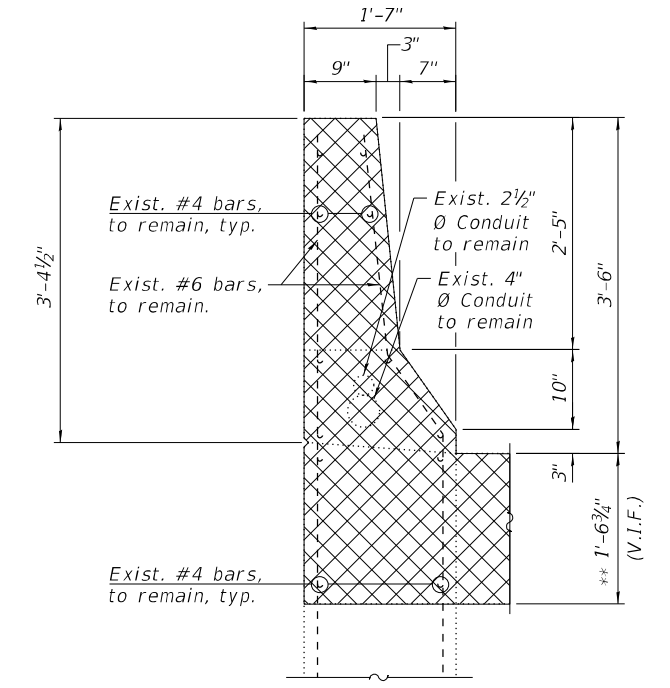
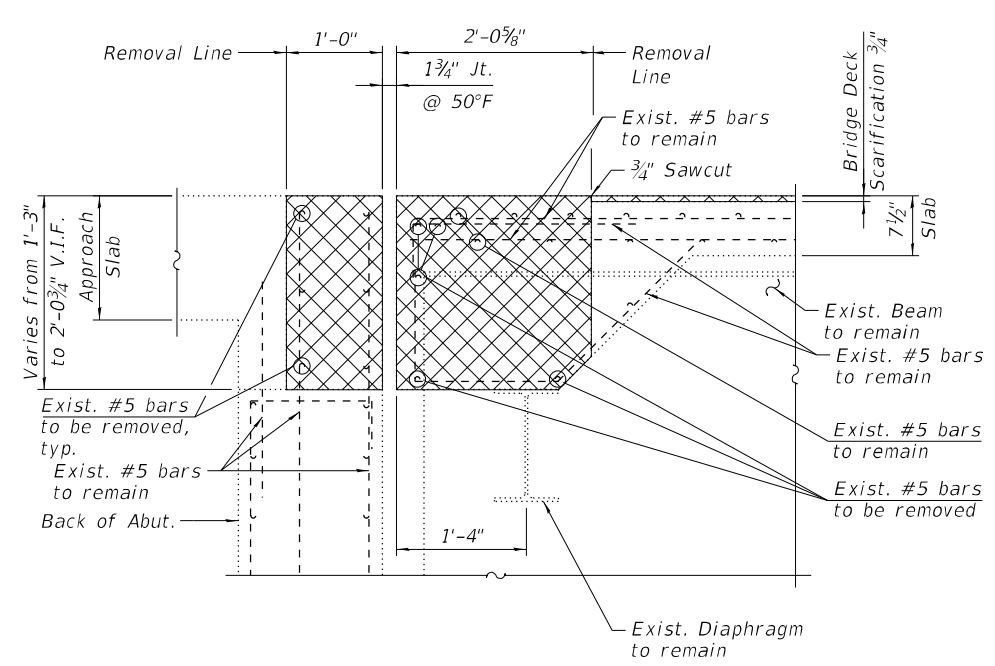
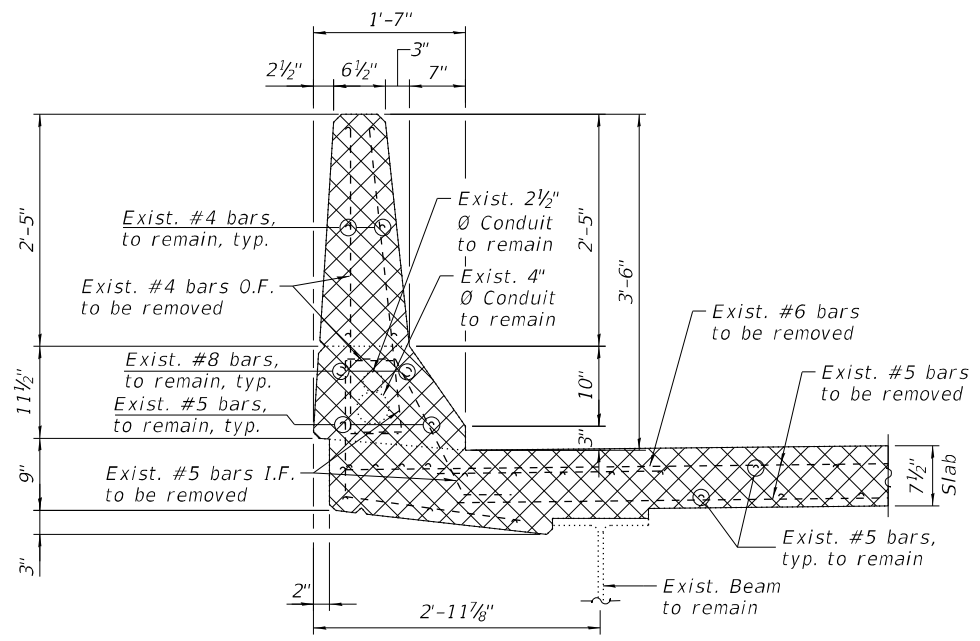
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STATE OF ILLINOIS  
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WEST ABUTMENT EXPANSION JOINT DETAILS I  
SN 016-0124 (SB)

SHEET S25-10 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1131
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



**LEGEND**

\*\* Dimension is taken at the Back of Abut.

\*\*\* Epoxy grout #4 d4(E) & #5 d5(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

Concrete Removal

I.F. Inside Face

O.F. Outside Face

V.I.F. Verify in Field

MODEL: sMODELNAME5  
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT EXPANSION JOINT DETAILS II**  
**SN 016-0124 (SB)**

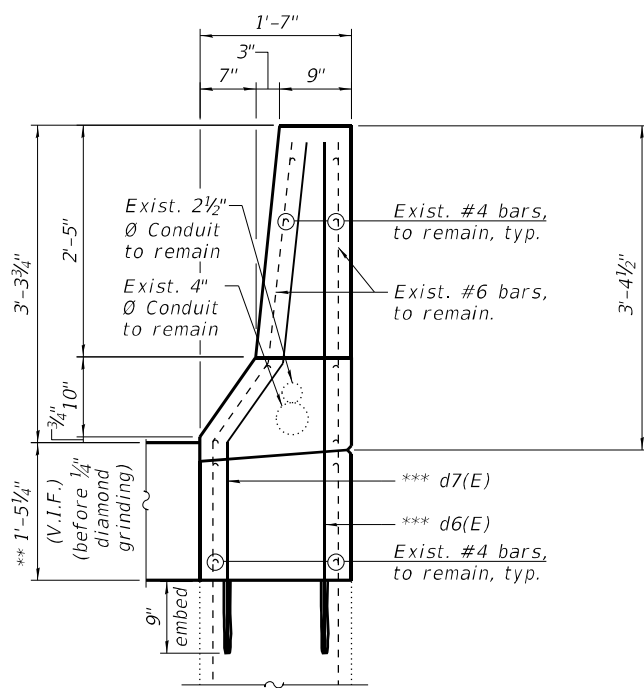
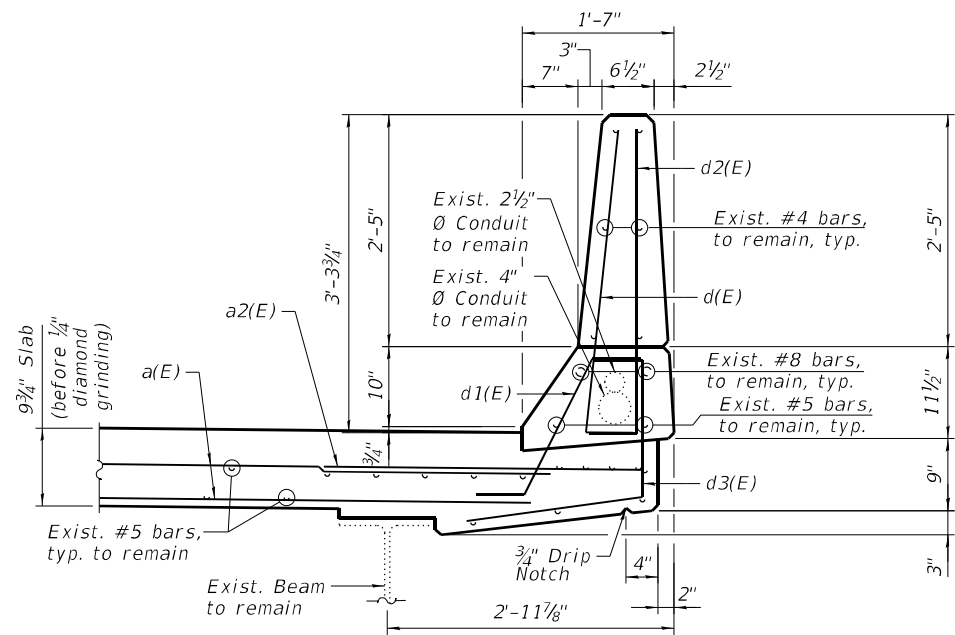
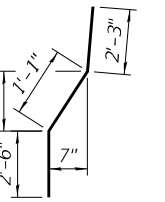
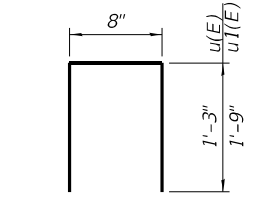
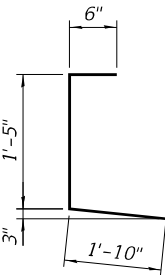
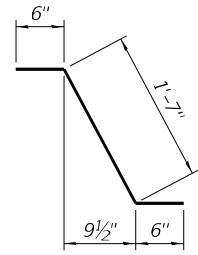
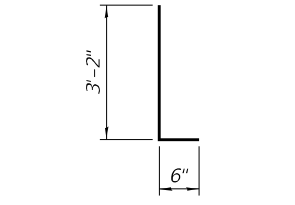
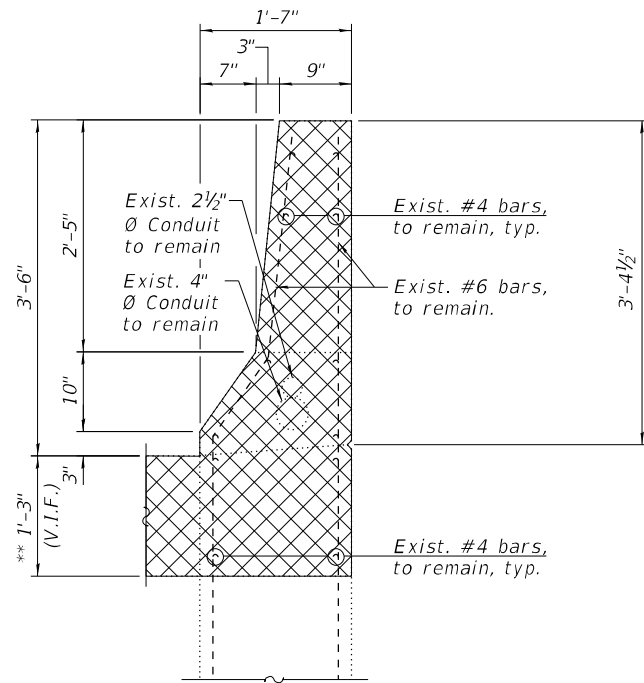
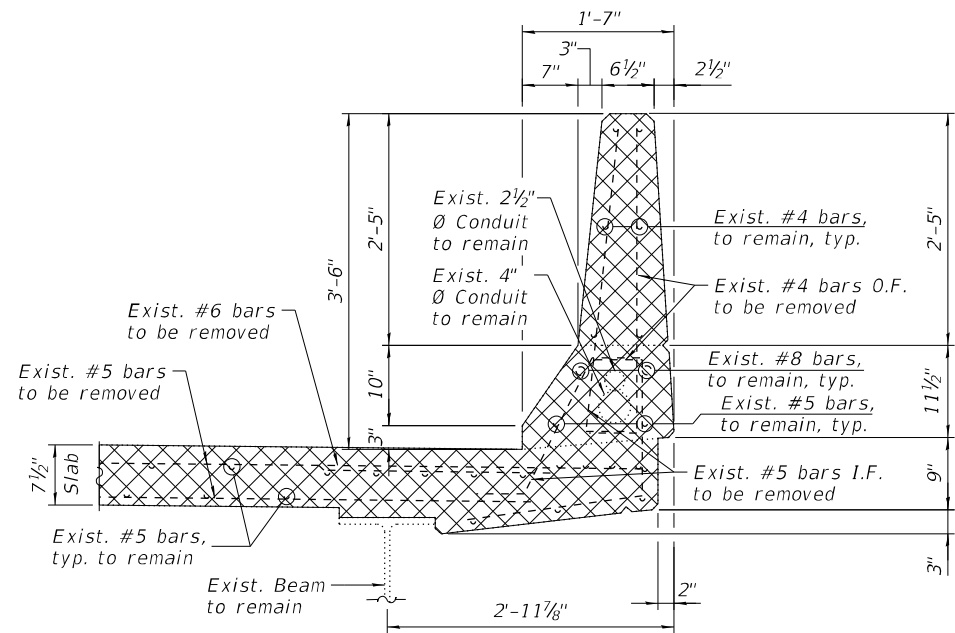
SHEET S25-11 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1132
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**BILL OF MATERIAL  
WEST ABUTMENT**

Bar	No.	Size	Length	Shape
a(E)	20	#5	24'-6"	—
a1(E)	20	#5	25'-9"	—
a2(E)	6	#6	6'-6"	—
a3(E)	10	#5	8'-4"	—
d(E)	5	#5	3'-8"	┘
d1(E)	5	#5	2'-7"	┘
d2(E)	5	#4	3'-8"	┘
d3(E)	5	#4	3'-9"	┘
d4(E)	2	#4	5'-8"	┘
d5(E)	2	#5	5'-10"	┘
d6(E)	2	#4	5'-5"	┘
d7(E)	2	#5	5'-7"	┘
h(E)	12	#6	24'-6"	—
h1(E)	12	#6	25'-10"	—
u(E)	51	#5	3'-2"	┘
u1(E)	43	#5	4'-2"	┘
Concrete Removal			Cu Yd	14.2
Reinforcement Bars, Epoxy Coated			Pound	2,600
Concrete Superstructure			Cu Yd	15.8



**NOTES:**

- For Preformed Joint Strip Seal details, see sheet S25-13.
- For Bar Splicer Assembly details, see sheet S25-18.
- 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 shall be included with Concrete Removal.
- Removal and disposal of the existing expansion joints is included with Concrete Removal.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

**MIN BAR LAPS**

- #5 3'-6"
- #6 4'-0"

\*\* Dimension is taken at the Back of Abutment.

\*\*\* Epoxy grout #4 d6(E) & #5 d7(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

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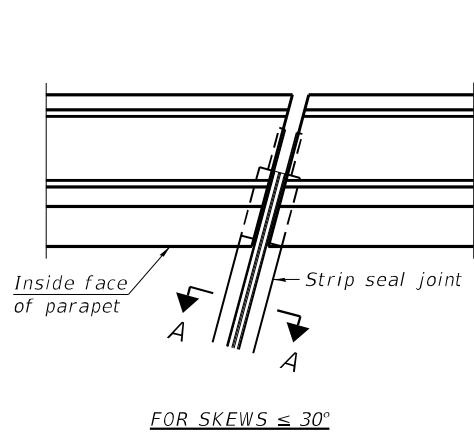
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT EXPANSION JOINT DETAILS III  
SN 016-0124 (SB)**

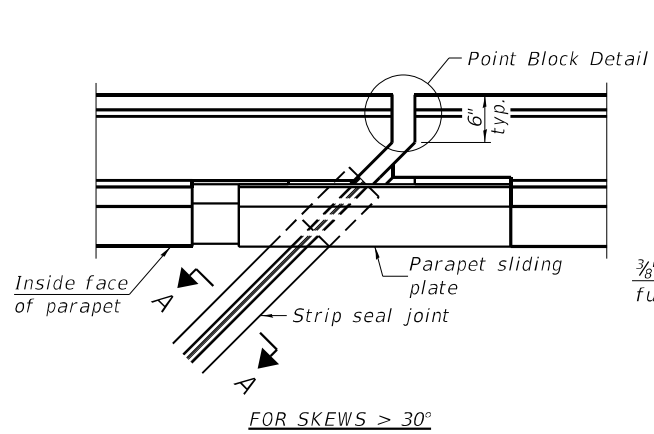
SHEET S25-12 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1133
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

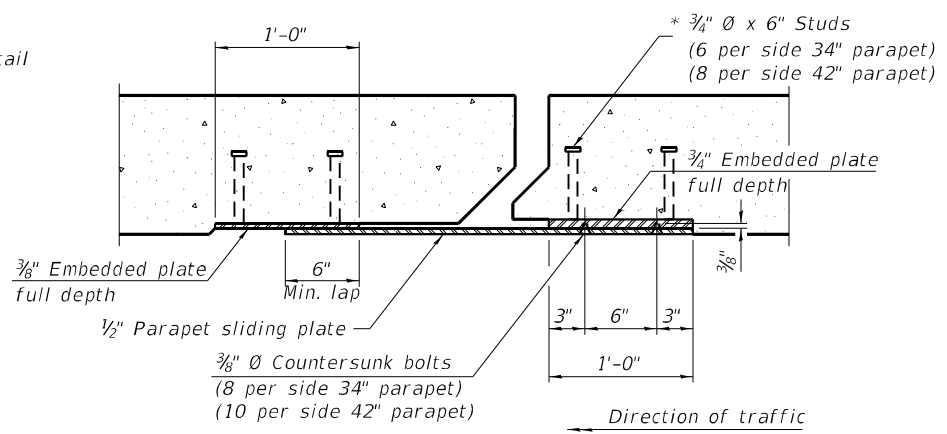
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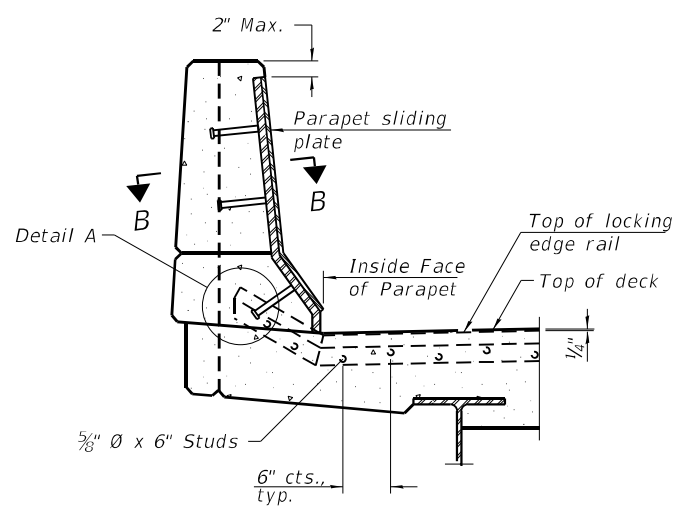
**PLAN AT PARAPET**



**SECTION B-B**

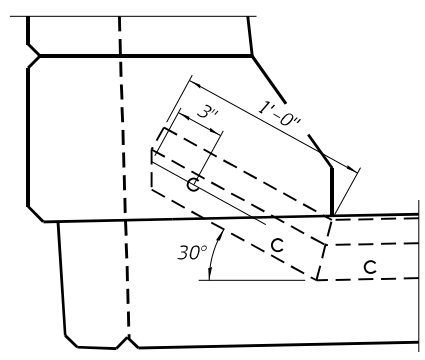


**Notes:**  
 The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.  
 The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4 1/2" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.  
 The manufacturer's recommended installation methods shall be followed.  
 All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.  
 The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.  
 Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.  
 34" F-shape barrier shown, 42" F-shape similar as noted.  
 The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

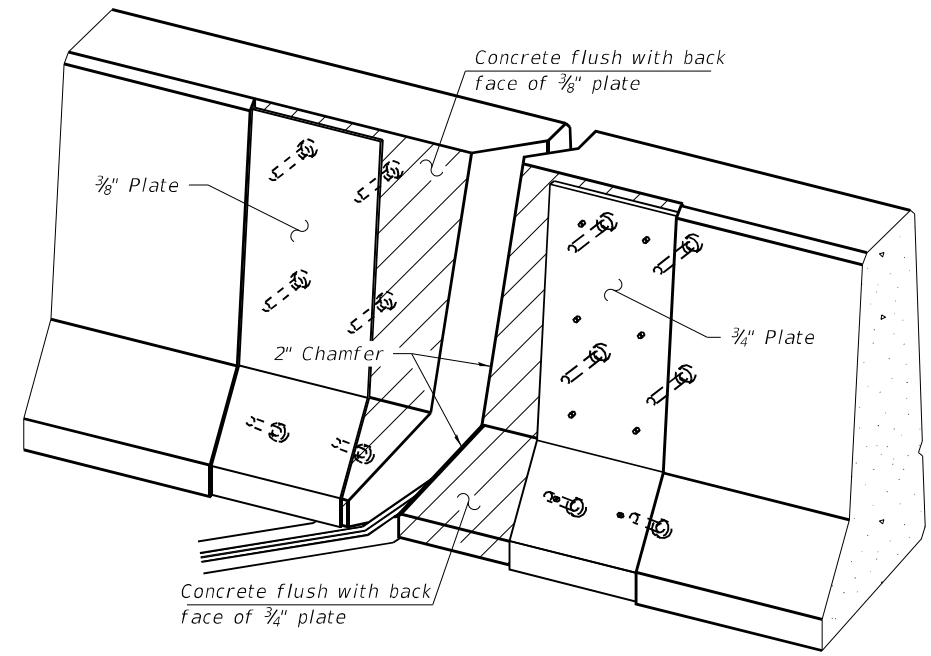


**ELEVATION AT PARAPET**

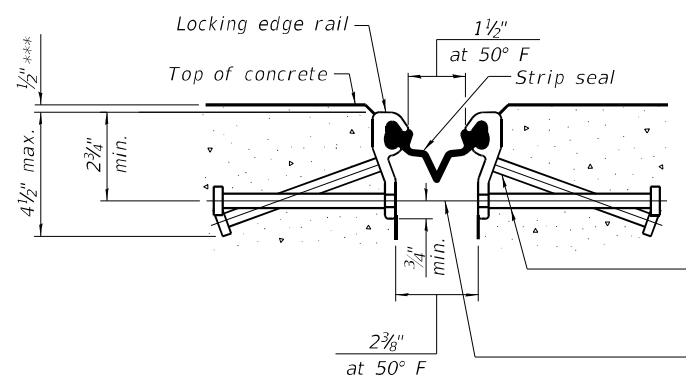
(Skews > 30° shown. Skews ≤ 30° similar except as shown in plan view.)



**DETAIL A**



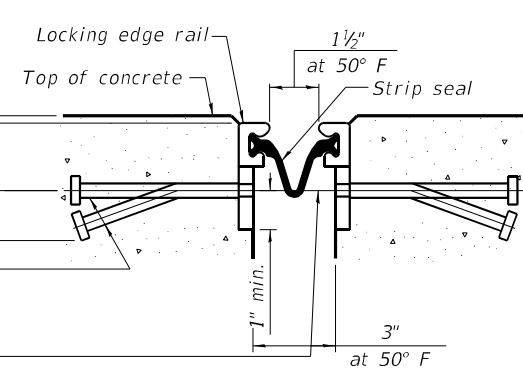
**TRIMETRIC VIEW**  
(Showing embedded plates only)



**SHOWING ROLLED RAIL JOINT**

\* 3/8" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

3/8" Ø threaded rods in 1/16" Ø holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

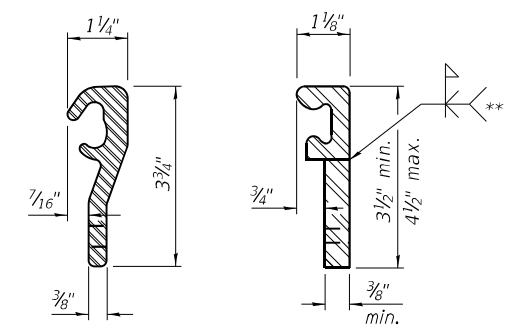


**SHOWING WELDED RAIL JOINT**

**SECTION A-A**

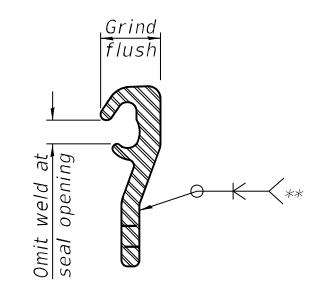
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

\*\*\* Before 1/4" Diamond Grinding.



**LOCKING EDGE RAILS**

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

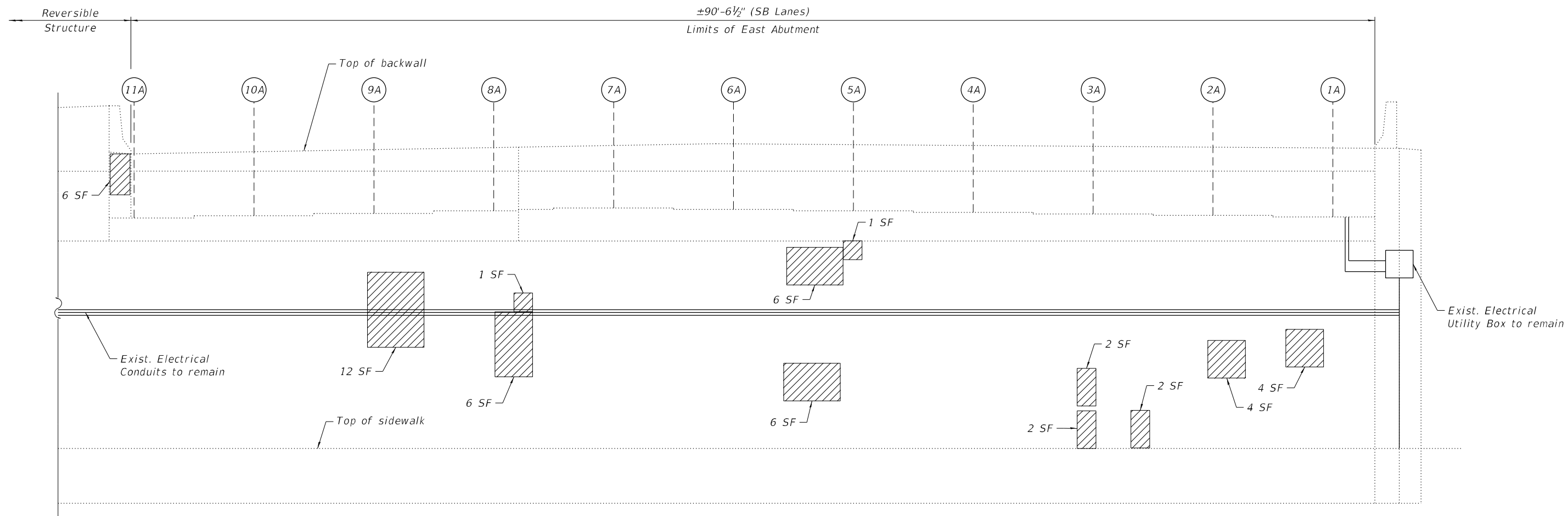


**LOCKING EDGE RAIL SPLICE**

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

**BILL OF MATERIAL**

Item	Unit	Total
Preformed Joint Strip Seal	Foot	186



**ELEVATION - EAST ABUTMENT**  
(Looking East)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
- Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	504
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	52

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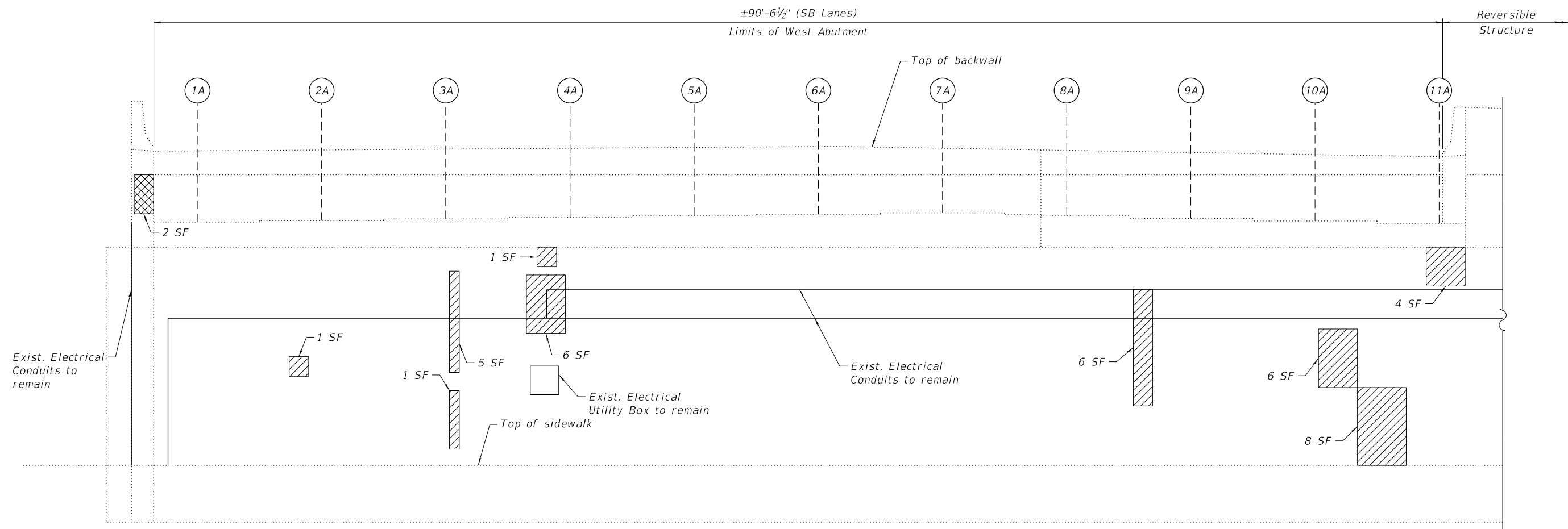
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT REPAIRS  
SN 016-0124 (SB)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1135
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**ELEVATION - WEST ABUTMENT**  
(Looking West)

**NOTES:**

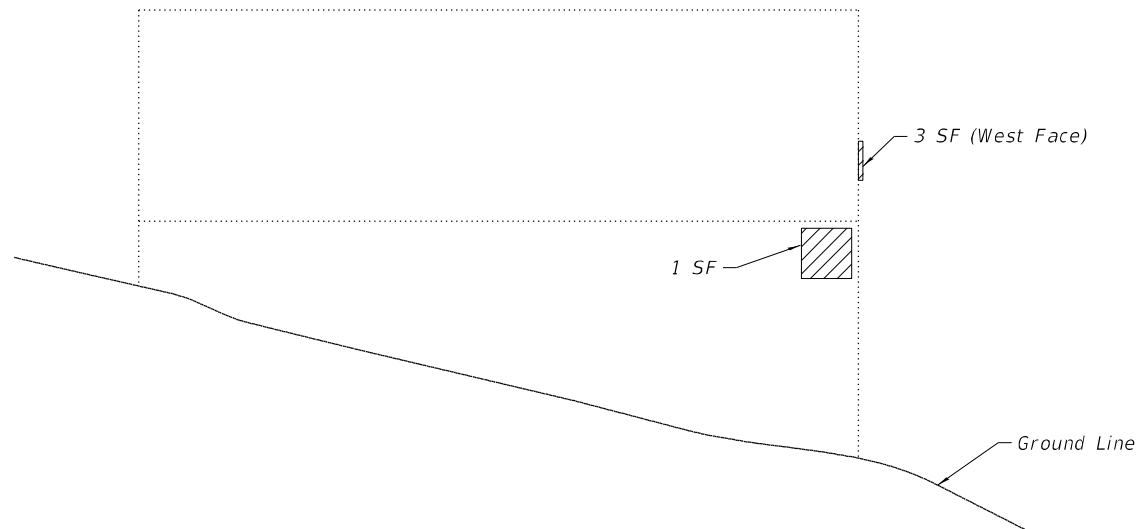
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- Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- Structural Repair of Concrete (Depth greater than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	506
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	42
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	2



**ELEVATION - SOUTHWEST WINGWALL**  
(Looking South)

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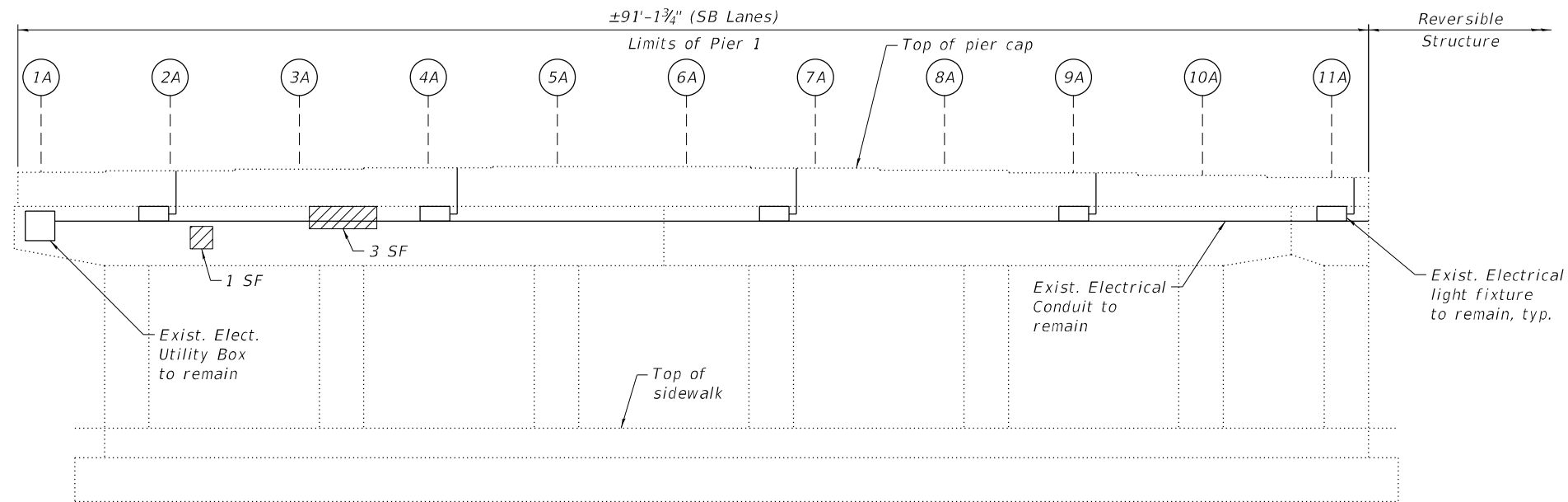
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**STATE OF ILLINOIS  
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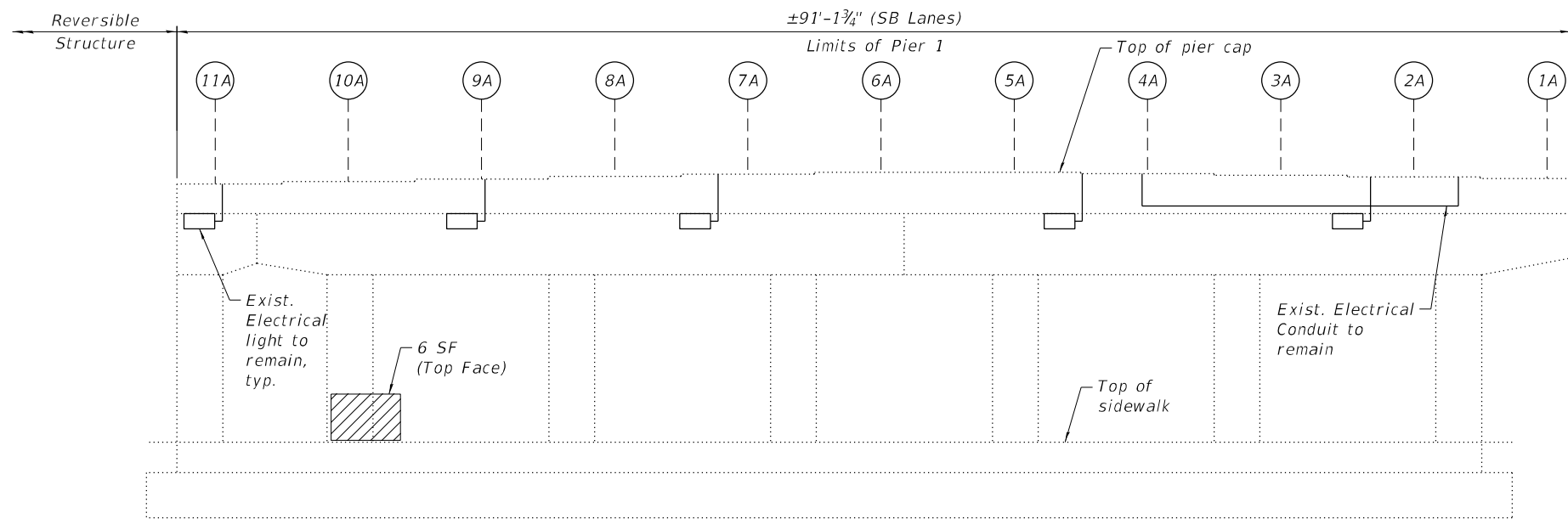
**WEST ABUTMENT REPAIRS  
SN 016-0124 (SB)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1136
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	

SHEET S25-15 OF S25-18 SHEETS



**ELEVATION - PIER 1**  
(Looking West)



**ELEVATION - PIER 1**  
(Looking East)



**EXISTING LIGHTING: PIER 1**  
(Looking Southwest)



**EXISTING LIGHTING: PIER 1**  
(Looking Southeast)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	10

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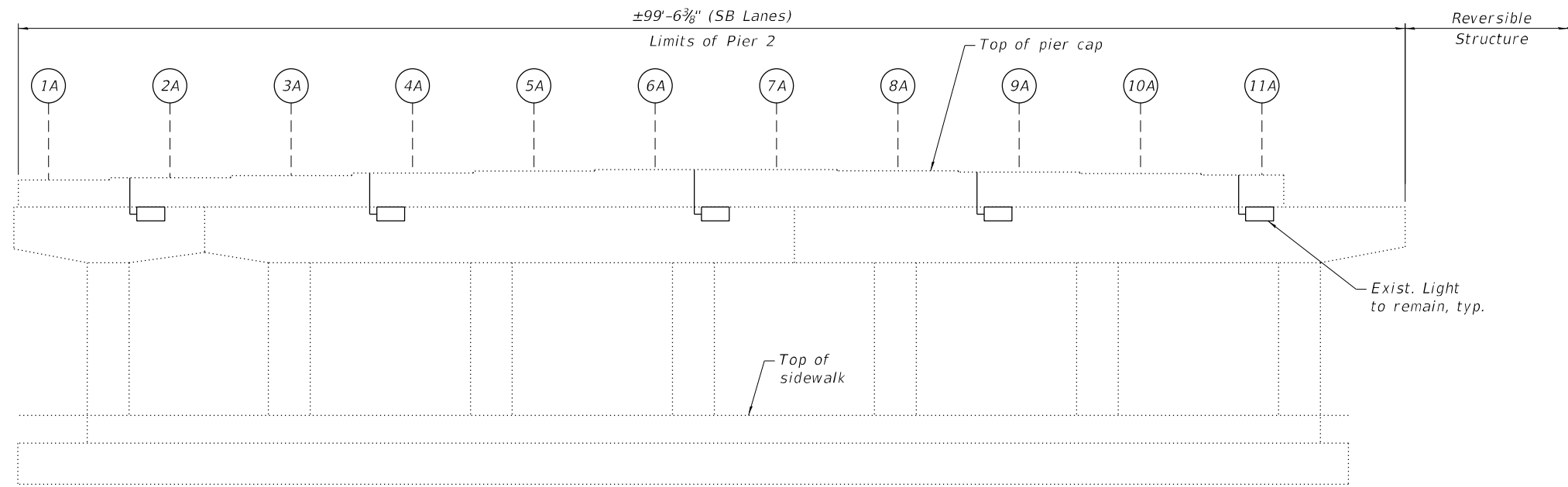
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

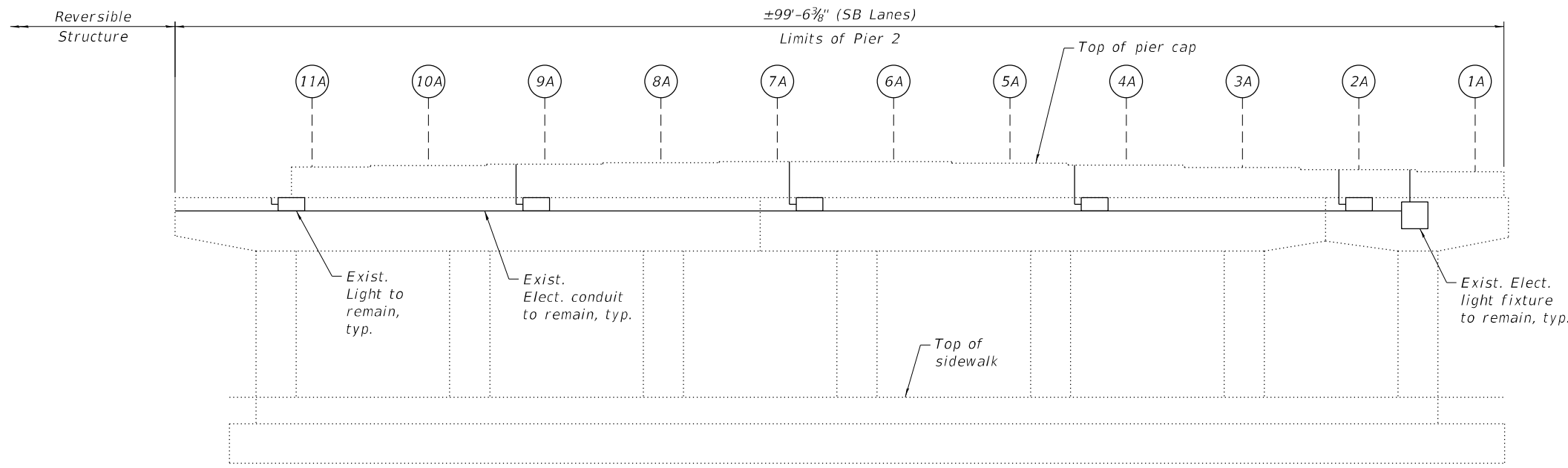
**PIER 1 REPAIRS**  
**SN 016-0124 (SB)**

SHEET S25-16 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1137
			CONTRACT NO. 62K74	
		ILLINOIS	FED. AID PROJECT	



**ELEVATION - PIER 2**  
(Looking West)



**ELEVATION - PIER 2**  
(Looking East)



**EXISTING LIGHTING: PIER 2**  
(Looking Southwest)



**EXISTING LIGHTING: PIER 2**  
(Looking Northeast)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

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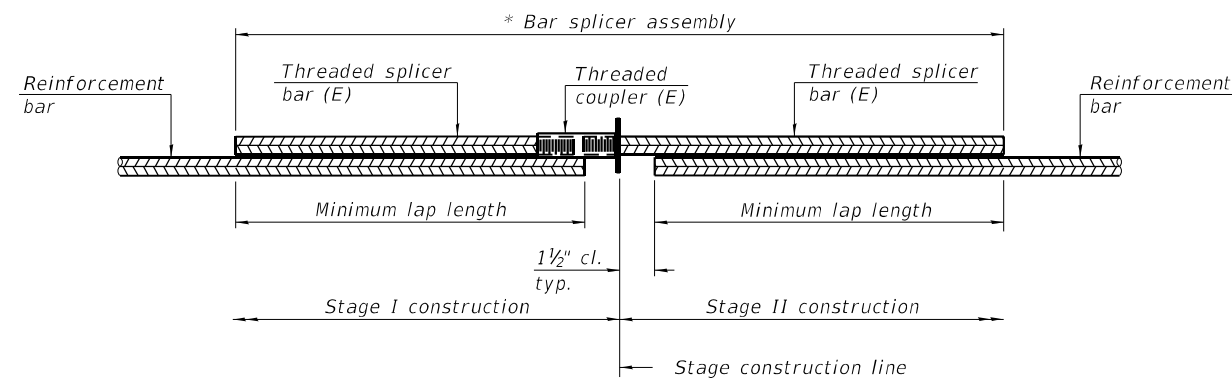
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**DEPARTMENT OF TRANSPORTATION**

**PIER 2 REPAIRS**  
**SN 016-0124 (SB)**

SHEET S25-17 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1138
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



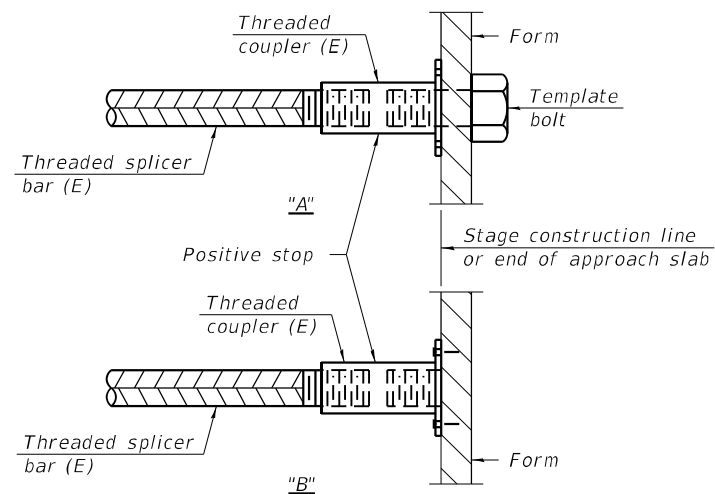
**STANDARD BAR SPLICER ASSEMBLY PLAN**

(All components shall be provided from one supplier)

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

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

Location	Bar size	No. assemblies required	Minimum lap length
East Abutment	#5	10	3'-6"
Exp. Jt.	#6	6	4'-0"
West Abutment	#5	10	3'-6"
Exp. Jt.	#6	6	4'-0"

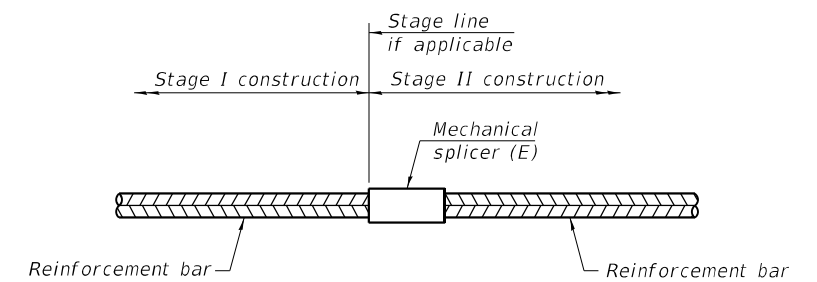


**INSTALLATION AND SETTING METHODS**

"A" : Set bar splicer assembly by means of a template bolt.

"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required

**Notes:**

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
SN 016-0124 (SB)**

SHEET S25-18 OF S25-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1139
ILLINOIS			FED. AID PROJECT	
			CONTRACT NO. 62K74	

Existing Structure: S.N. 016-1076 was originally built in 1958 from BCR. The bridge was widened and redecked between 1990 and 1992, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 210'-10 1/8" and an out-to-out deck width that varies from 88'-6 1/8" to 76'-7 3/8". The superstructure consists of a 7 1/2" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 56'-9 1/2", 89'-5 3/4", and 56'-9 1/2". The substructure consists of reinforced concrete abutments and piers supported on concrete filled metal shell piles.

The reversible lanes will be closed to traffic during construction.

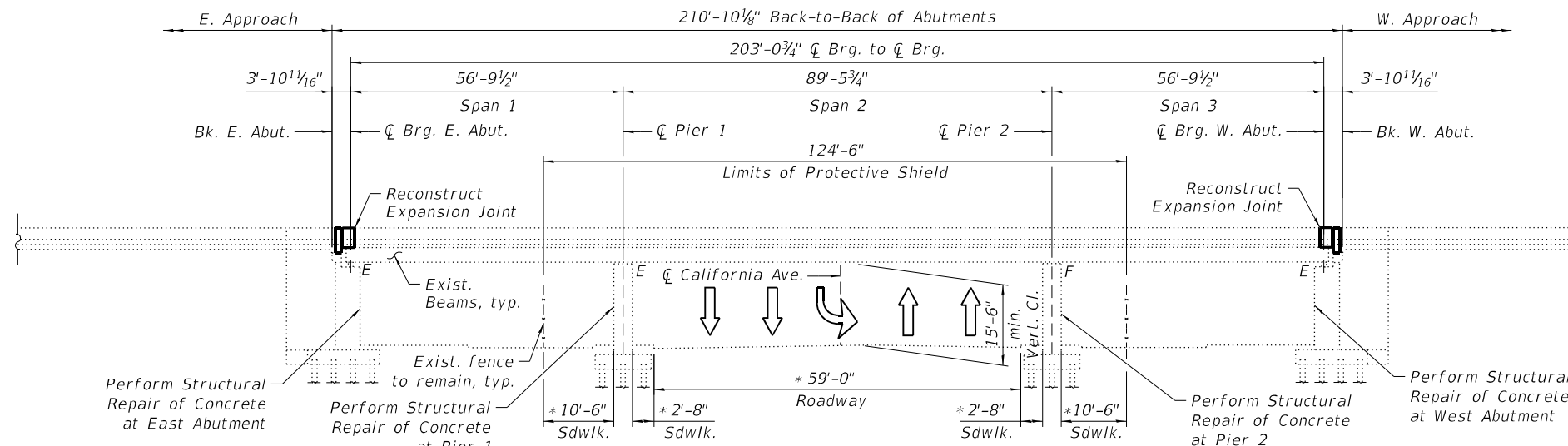
No salvage.

**LOADING**

HS20-44 and alternate military loading

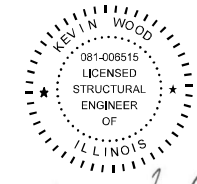
**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition



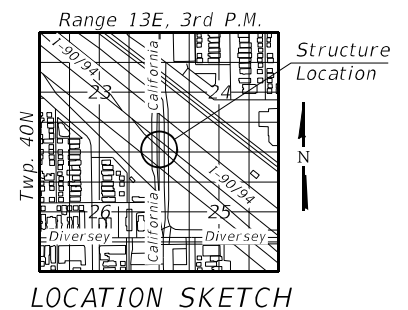
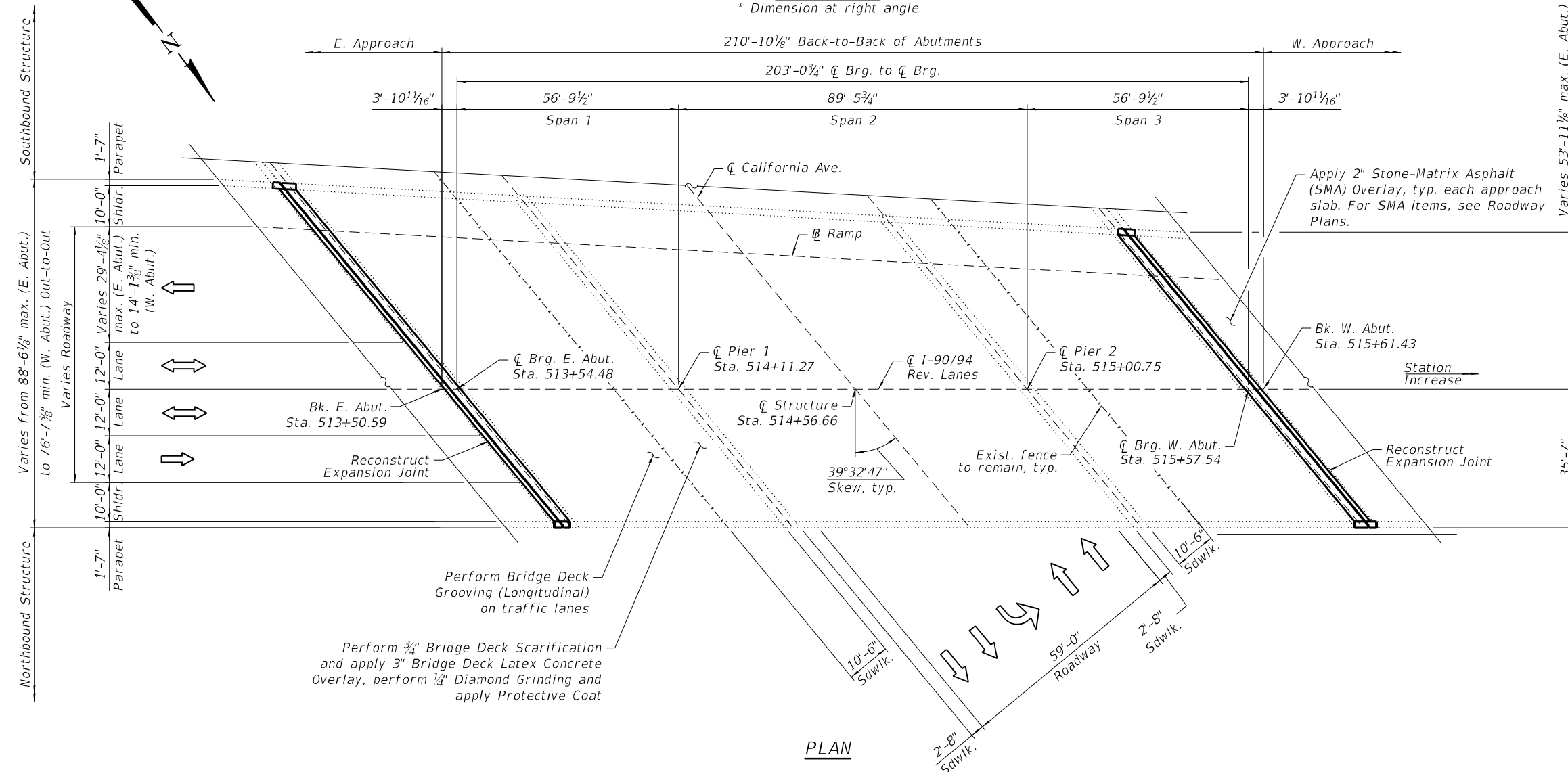
**NOTE:**

1. All stations are to the  $\bar{C}$  I-90/94 Reversible Roadway and taken from existing plans.



*Kevin Wood*

Engineer Full Name: Kevin Wood Date: 10-20-2022  
Illinois Registered Engineer No. 081-006515  
Registration Expires 11. 30, 2024



**GENERAL PLAN AND ELEVATION  
REVERSIBLE I-90 OVER CALIFORNIA AVENUE  
F.A.I. SEC 2020-004-BR  
COOK COUNTY  
STATION: 514+56.66  
STRUCTURE NO. 016-1076 (REV)**

MODEL: SMODELNAME5  
FILE NAME: X:\OHA\2020\20200221-03\Design\Structural\Design Files\CADD\SH\T016-0124\_California\Rev\0161076-62K74-5001-GPER.dgn

**GR&EF**  
8501 W. Higgins Road, Suite 280  
Chicago, Illinois 60631; (773) 399-0112

USER NAME =	DESIGNED - J.T.B.	REVISED -
PLOT SCALE =	CHECKED - H.A.	REVISED -
PLOT DATE =	DRAWN - D.C.P.	REVISED -
	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

SHEET S26-01 OF S26-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1140
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**GENERAL NOTES**

- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or 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 Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further dispositions. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- Plan dimensions and details relative to the existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity furnished at the unit price bid for the work.
- Cleaning and field painting of structural steel shall be done under a separate painting contract.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. The cost of cleaning shall be included in the cost of Concrete Removal.
- Bars indicated thus, 3x2-#5, indicates 3 lines of #5 bars with 2 lengths of bar per line.
- All exposed concrete edges shall have a 3/4"x45° chamfer, except where shown otherwise.
- For SMA overlay on Approach Slab, see Roadway Plans.
- Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.
- Joint openings shall be adjusted according to Article 520.04 of the Standard Specification when the deck is poured at an ambient temperature other than 50°F.
- Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provisions "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
- Adjacent I-90/94 Northbound and Southbound bridge is not shown throughout the plans for clarity.
- The Contractor shall take the necessary precautions for the protection of passing vehicles, bicycles and pedestrians from falling objects and/or materials until completion of work.
- The Contractor is responsible to remove, support and reinstall all existing electrical conduits interfering with the work. See special provision "Protection and Maintenance of Existing Underpass Luminaires".
- The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.
- The Contractor is responsible to protect the existing conduit and junction box embedded in the parapet during concrete removal and construction. Any damage to the existing conduit and junction box shall be repaired by the Contractor at no additional cost to the Department.
- Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.
- Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.
- The Contractor shall contact Chandra Libby, the Director of City of Chicago Department of Family Support Services (DFSS) at 312-746-5443 or Chandra.Libby@cityofchicago.org to coordinate the relocation of persons and their personal belongings under the bridges within the areas bounded by the temporary chain-link-fence.
- Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.

**INDEX OF SHEETS**

S26-01	General Plan & Elevation
S26-02-S26-03	General Data I & II
S26-04	Bridge Deck Repair Plan and Details
S26-05-S26-07	East Abutment Expansion Joint Details I, II & III
S26-08-S26-10	West Abutment Expansion Joint Details I, II & III
S26-11	Preformed Joint Strip Seal
S26-12	East Abutment Repairs
S26-13	West Abutment Repairs
S26-14	Pier 1 Repairs
S26-15	Pier 2 Repairs


**SCOPE OF WORK**

- Provide Protective Shield within limits indicated on the plans.
- Scarify 3/4" from the bridge deck slab.
- Perform deck repairs.
- Remove and reconstruct expansion joints at east and west abutments and install new Preformed Joint Strip Seals.
- Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs, see Roadway Plans.
- Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
- Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
- Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse expansion joints and to the surface of the new overlay.
- Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	30.5		30.5
Protective Shield	Sq Yd	1,143		1,143
Concrete Superstructure	Cu Yd	34.0		34.0
Protective Coat	Sq Yd	2,058		2,058
Reinforcement Bars, Epoxy Coated	Pound	5,930		5,930
Preformed Joint Strip Seal	Foot	210		210
Concrete Sealer	Sq Ft		1,133	1,133
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,321		1,321
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,772		1,772
Bridge Deck Scarification 3/4"	Sq Yd	1,772		1,772
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		72	72
Deck Slab Repair (Full Depth, Type II)	Sq Yd	2.4		2.4
Diamond Grinding (Bridge Section)	Sq Yd	1,816		1,816
Maintenance of Lighting System	Cal Mo		6	6

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 <p>8501 W. Higgins Road, Suite 280 Chicago, Illinois 60631; (773) 399-0112</p>	USER NAME =	DESIGNED -	J.T.B.	REVISED -
	PLOT SCALE =	CHECKED -	H.A.	REVISED -
	PLOT DATE =	DRAWN -	D.C.P.	REVISED -
		CHECKED -	K.G.W.	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

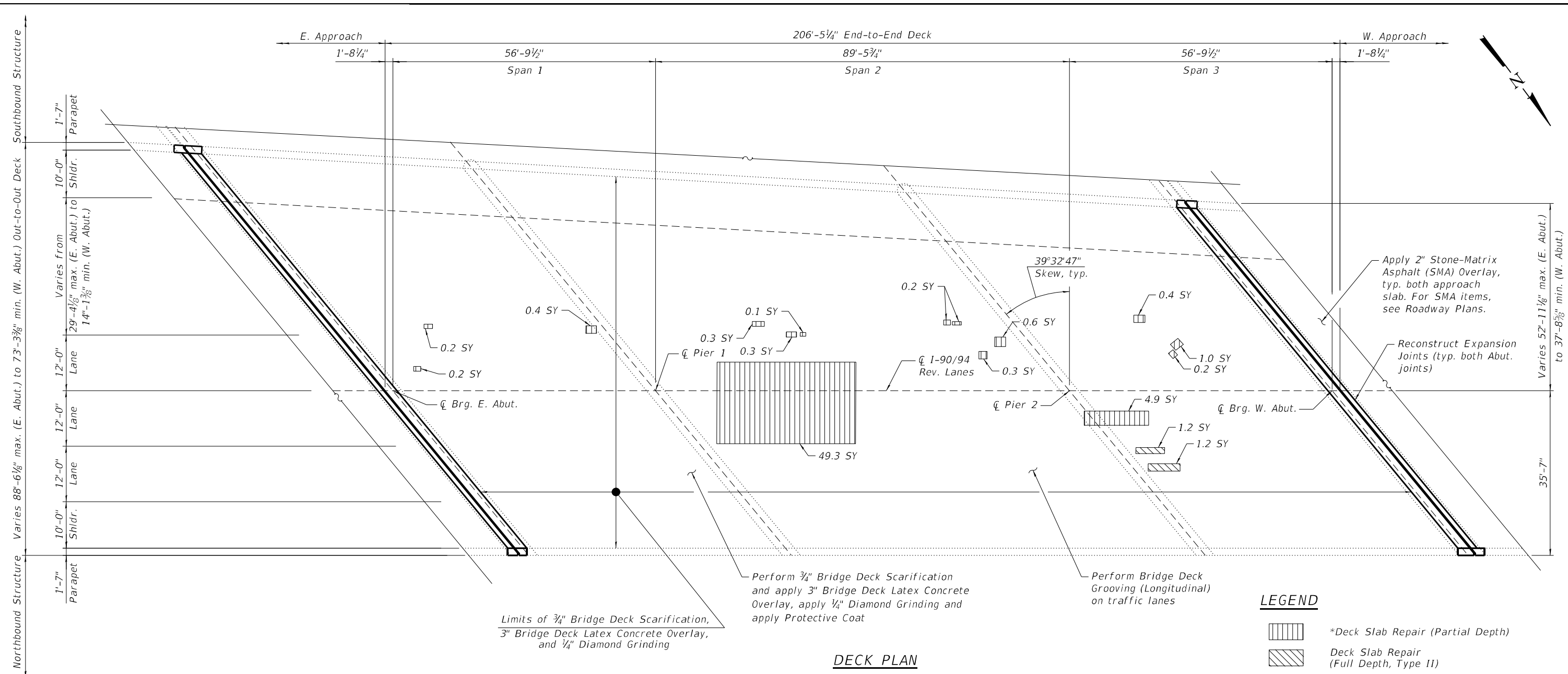
**GENERAL DATA I  
SN 016-1076 (REV)**

SHEET S26-02 OF S26-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1141
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



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**DECK PLAN**

**NOTES:**

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S26-03.
3. For East and West transverse joint removal and reconstruction, see Sheet S26-05 thru S26-10.
4. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
5. Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
6. Protective Coat shall be applied to the top of reconstructed transverse joints, top and inside face of parapets and top of latex concrete overlay.
7. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.
8. The Contractor shall exercise extreme caution during concrete removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer at no cost to the Department.

**LEGEND**

- \*Deck Slab Repair (Partial Depth)
- Deck Slab Repair (Full Depth, Type II)
- SY Square Yard

\* Areas of Deck Slab Repair (Partial) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3 Inches

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	1,143
Protective Coat	Sq Yd	2,058
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,321
Bridge Deck Latex Concrete Overlay, 3"	Sq Yd	1,772
Bridge Deck Scarification 3/4"	Sq Yd	1,772
Deck Slab Repair (Full Depth, Type II)	Sq Yd	2.4
Diamond Grinding (Bridge Section)	Sq Yd	1,816
Maintenance of Lighting System	Cal Mo	6



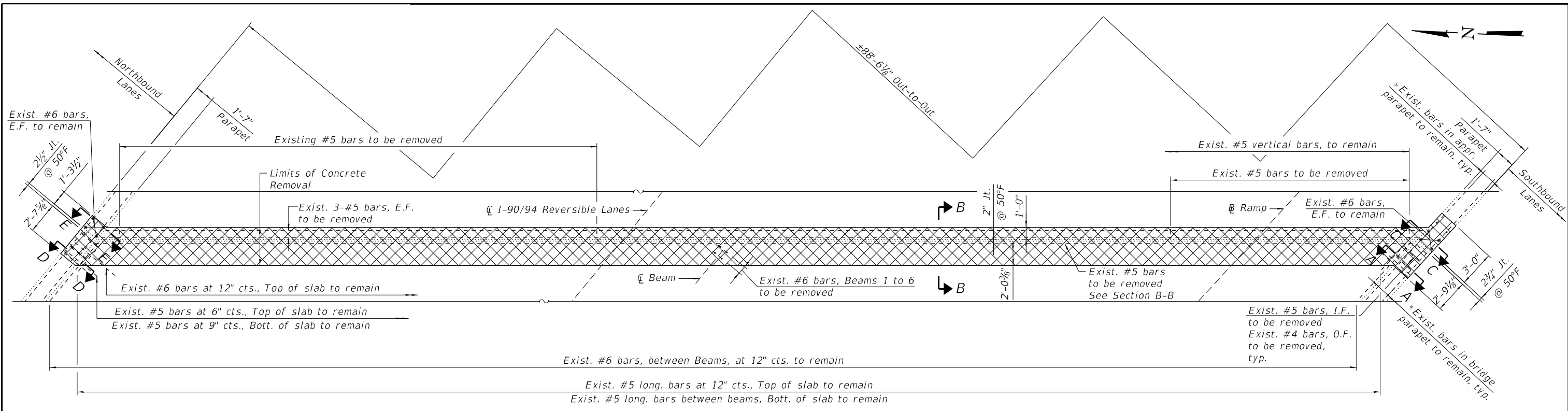
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PLOT DATE =	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

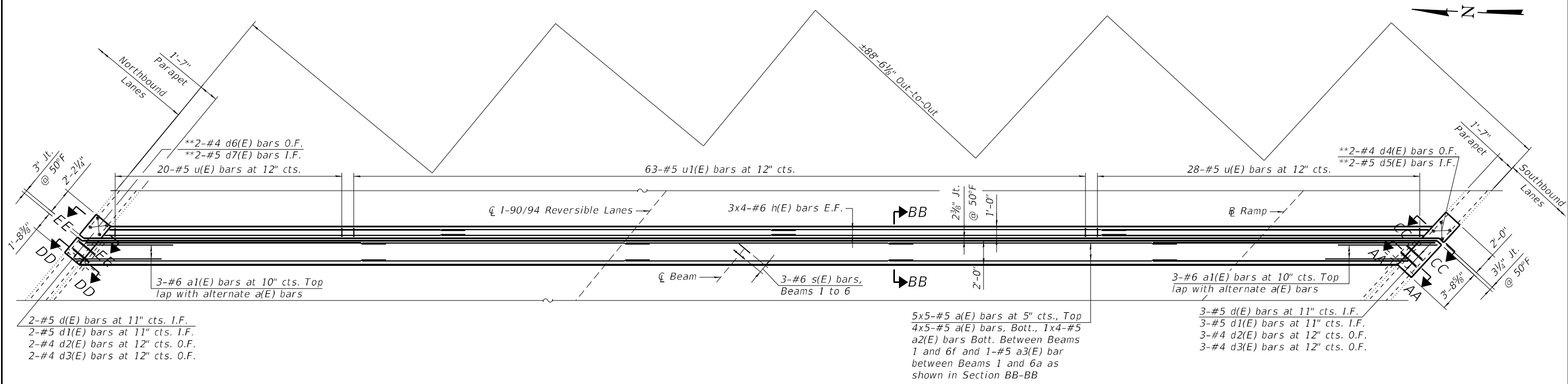
**BRIDGE DECK REPAIR PLAN AND DETAILS  
 SN 016-1076 (REV)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1143
ILLINOIS			CONTRACT NO. 62K74	
FED. AID PROJECT				

SHEET S26-04 OF S26-15 SHEETS



**EAST ABUTMENT JOINT REMOVAL PLAN**



**EAST ABUTMENT JOINT RECONSTRUCTION PLAN**


**NOTES:**

- For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S26-06.
- For sections D-D, E-E, DD-DD and EE-EE, see sheet S26-07.

\* Existing longitudinal bars to remain in the parapets can be cut in the field as required

\*\* Epoxy grout #4 d4(E) and d6(E) bars and #5 d5(E) and d7(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

**LEGEND**

-  Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- E.F. Each Face

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**GRÄEF**  
8501 W. Higgins Road, Suite 280  
Chicago, Illinois 60631; (773) 399-0112

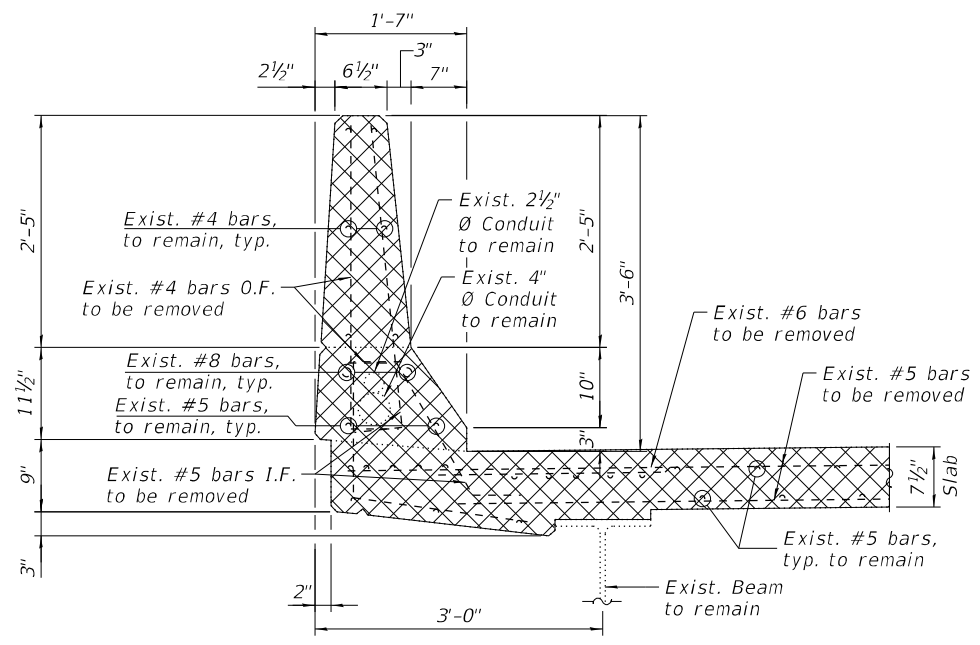
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

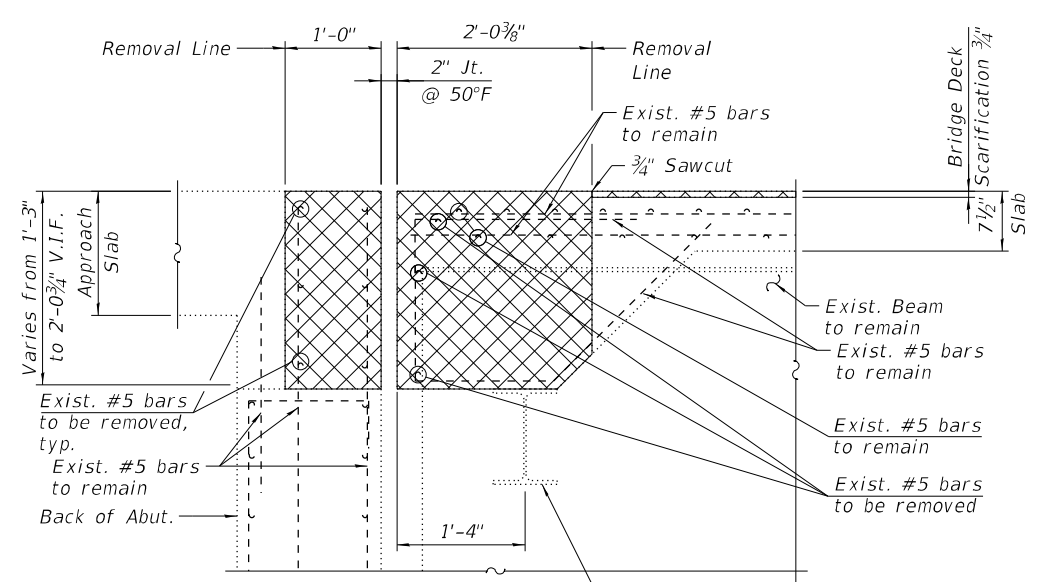
**EAST ABUTMENT EXPANSION JOINT DETAILS I  
SN 016-1076 (REV)**

SHEET S26-05 OF S26-15 SHEETS

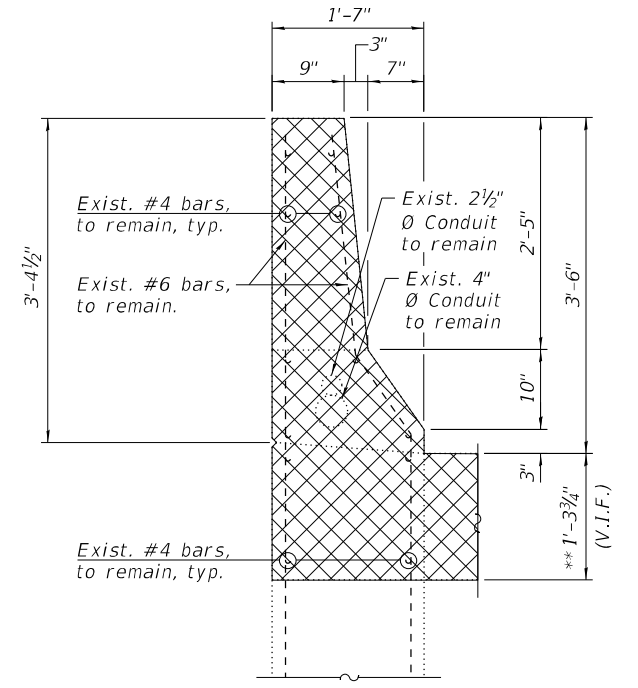
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90	2020-004-BR	COOK	1492	1144
CONTRACT NO. 62K74			ILLINOIS FED. AID PROJECT	



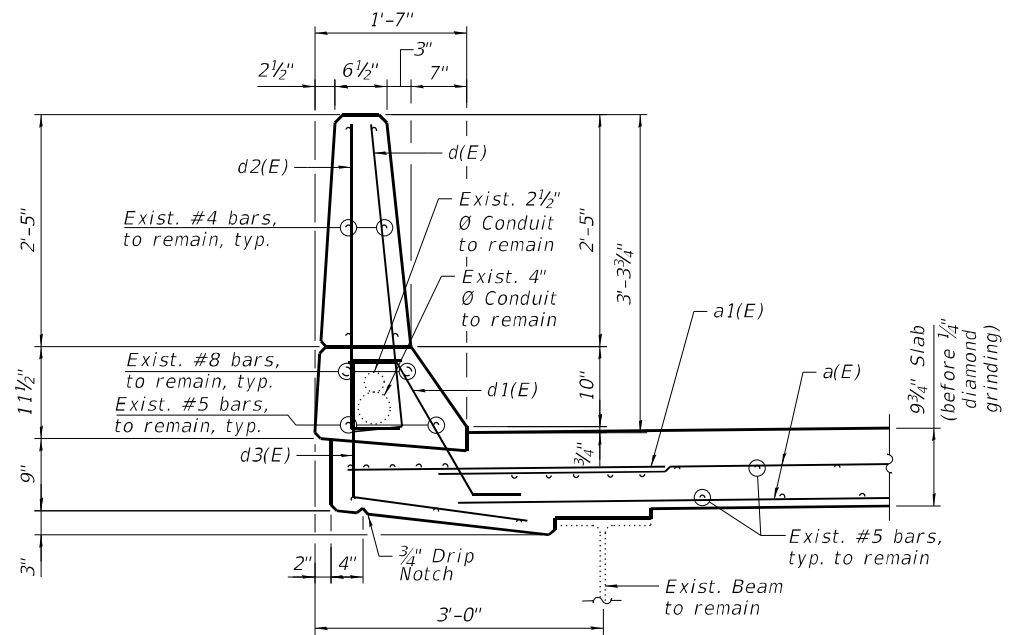
**SECTION A-A**  
(South parapet removal)



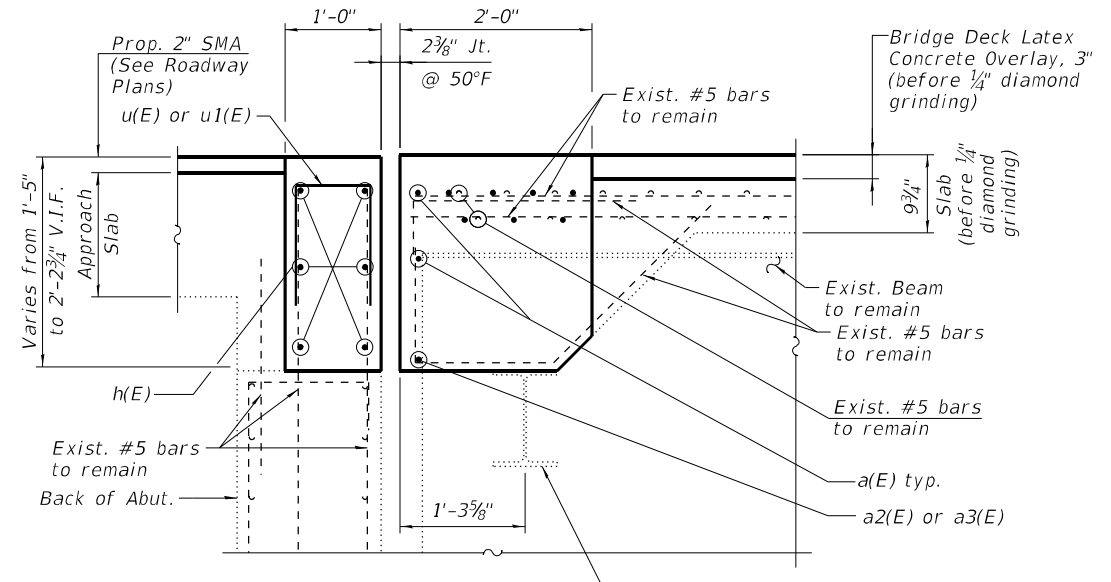
**SECTION B-B**



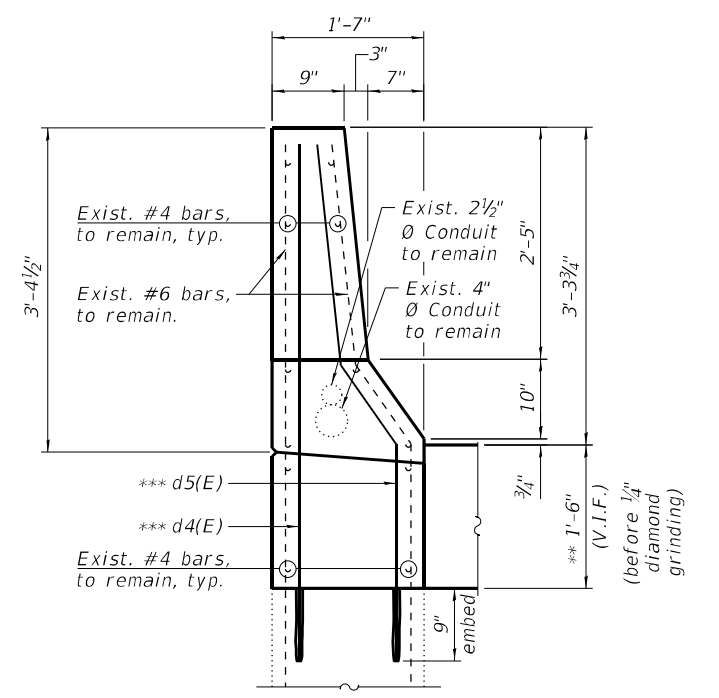
**SECTION C-C**  
(South parapet removal)



**SECTION AA-AA**  
(South parapet reconstruction)



**SECTION BB-BB**



**SECTION CC-CC**  
(South parapet reconstruction)

- LEGEND**
- \*\* Dimension is taken at the Back of Abut.
  - \*\*\* Epoxy grout #4 d4(E) & #5 d5(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.
  - Concrete Removal
  - I.F. Inside Face
  - O.F. Outside Face
  - V.I.F. Verify in Field

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**GR&E**  
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	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

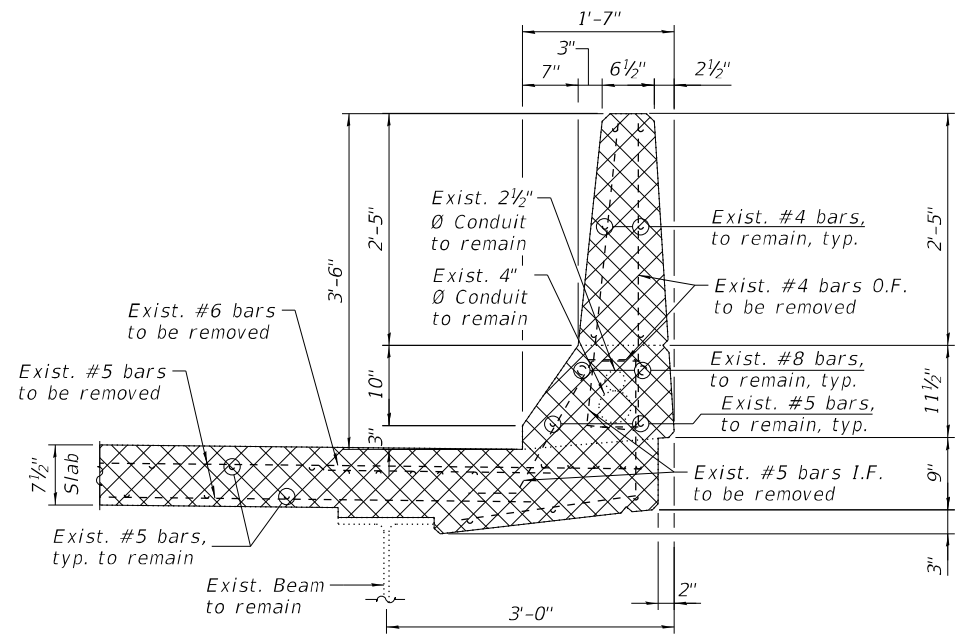
**EAST ABUTMENT EXPANSION JOINT DETAILS II**  
**SN 016-1076 (REV)**

SHEET S26-06 OF S26-15 SHEETS

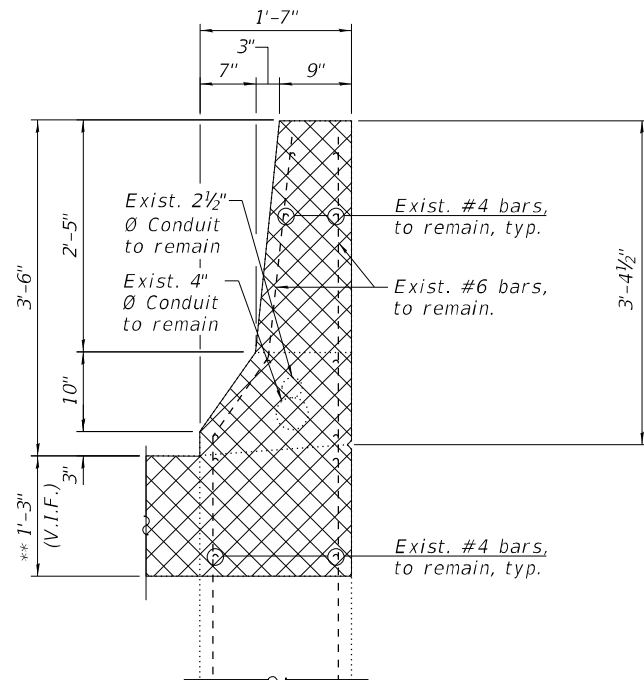
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1145
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL  
EAST ABUTMENT**

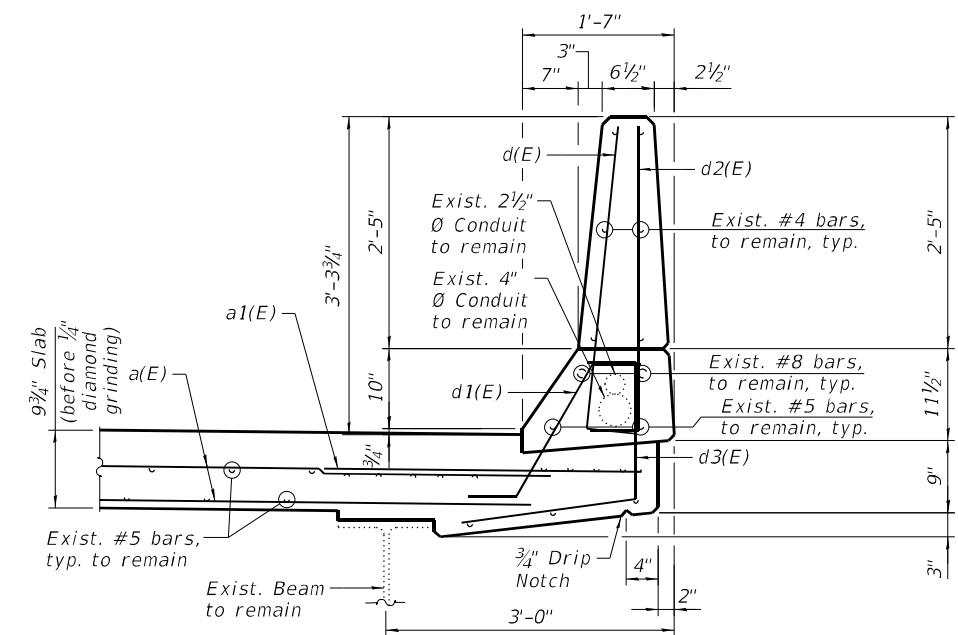
Bar	No.	Size	Length	Shape
a(E)	45	#5	25'-6"	—
a1(E)	6	#6	6'-6"	—
a2(E)	4	#5	26'-9"	—
a3(E)	1	#5	9'-6"	—
d(E)	5	#5	3'-8"	┌┐
d1(E)	5	#5	2'-7"	┌┐
d2(E)	5	#4	3'-8"	┌┐
d3(E)	5	#4	3'-9"	┌┐
d4(E)	2	#4	5'-8"	┌┐
d5(E)	2	#5	5'-10"	┌┐
d6(E)	2	#4	5'-5"	┌┐
d7(E)	2	#5	5'-8"	┌┐
h(E)	24	#6	31'-2"	—
s(E)	18	#6	4'-6"	┌┐
u(E)	48	#5	2'-9"	┌┐
u1(E)	63	#5	3'-3"	┌┐
Concrete Removal	Cu Yd		16.1	
Reinforcement Bars, Epoxy Coated	Pound		3,110	
Concrete Superstructure	Cu Yd		18.0	



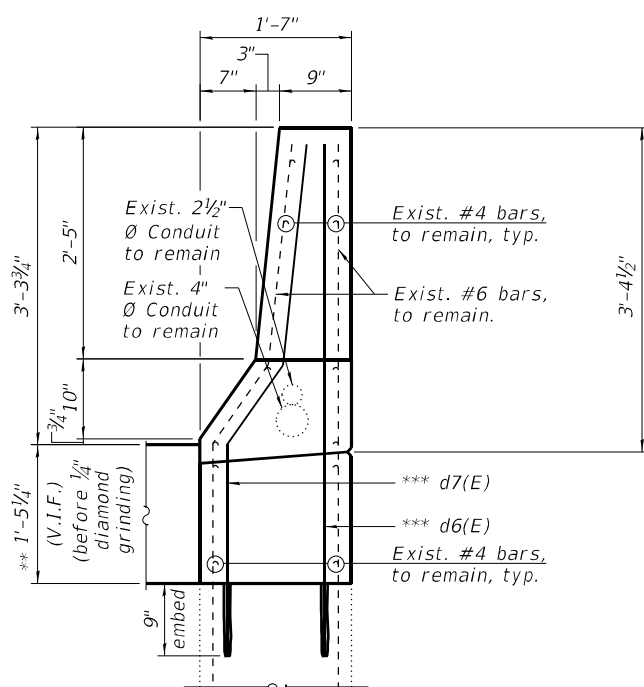
**SECTION D-D**  
(North parapet removal)



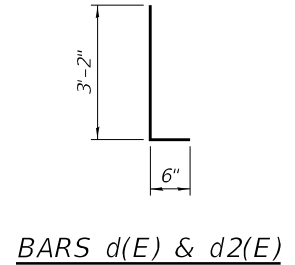
**SECTION E-E**  
(North parapet removal)



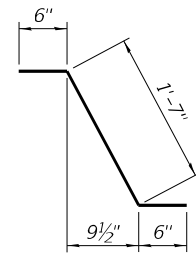
**SECTION DD-DD**  
(North parapet reconstruction)



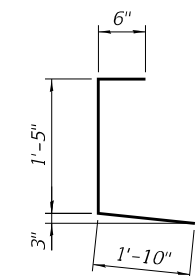
**SECTION EE-EE**  
(North parapet reconstruction)



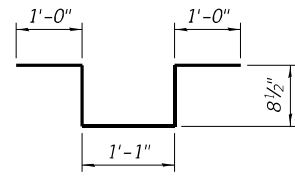
**BARS d(E) & d2(E)**



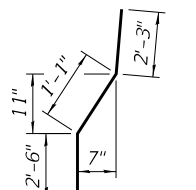
**BAR d1(E)**



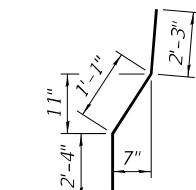
**BARS d3(E)**



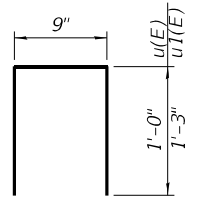
**BAR s(E)**



**BAR d5(E)**



**BAR d7(E)**



**BARS u(E) & u1(E)**

**NOTES:**

- For Preformed Joint Strip Seal details, see sheet S26-11.
- 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 shall be included with Concrete Removal.
- Removal and disposal of the existing expansion joints is included with Concrete Removal.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

**MIN BAR LAPS**

- #5 3'-6"
- #6 4'-0"

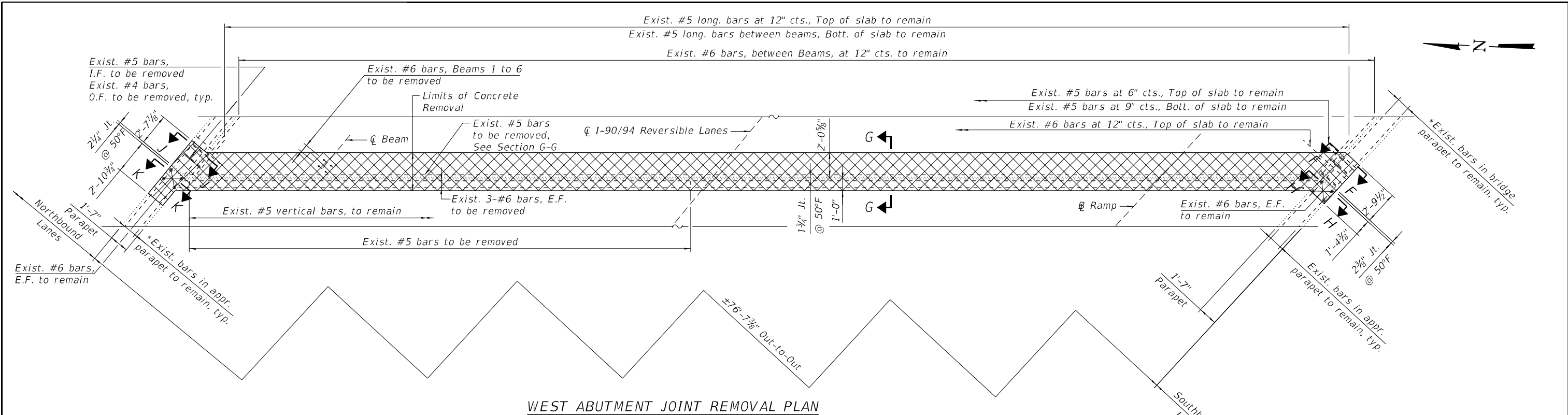
\*\* Dimension is taken at the Back of Abut.

\*\*\* Epoxy grout #4 d6(E) & #5 d7(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

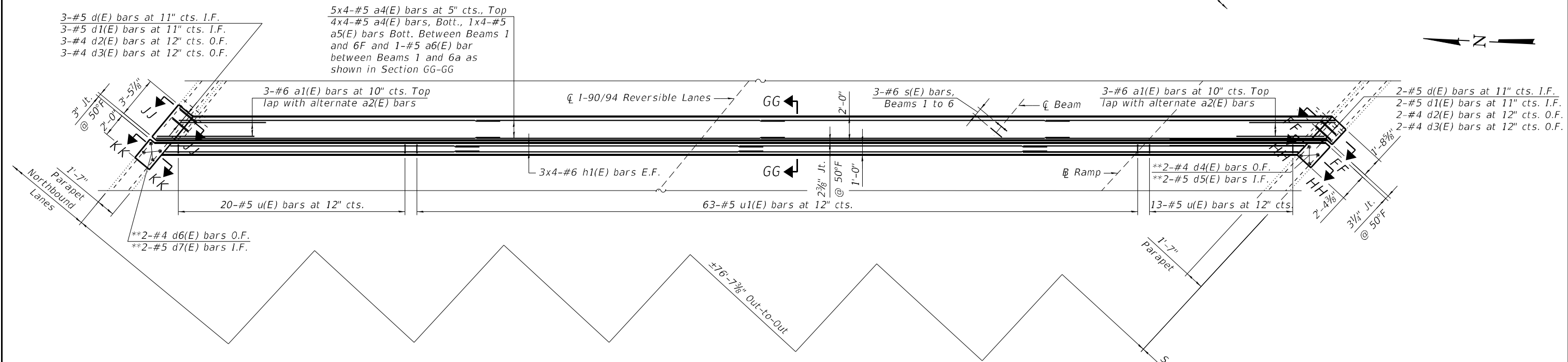
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PLOT SCALE =	CHECKED - H.A.	REVISED -
PLOT DATE =	DRAWN - J.T.B.	REVISED -
	CHECKED - K.G.W.	REVISED -

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1146
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**WEST ABUTMENT JOINT REMOVAL PLAN**



**WEST ABUTMENT JOINT RECONSTRUCTION PLAN**

**NOTES:**

- For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S26-09.
- For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S26-10.

\* Existing longitudinal bars to remain in the parapets can be cut in the field as required

\*\* Epoxy grout #4 d4(E) and d6(E) bars and #5 d5(E) and d7(E) bars in 9\"/>

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- E.F. Each Face

MODEL: SMOELNAME5  
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**GR&E**  
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USER NAME =	DESIGNED - J.T.B.	REVISED -
	CHECKED - H.A.	REVISED -
PLOT SCALE =	DRAWN - J.T.B.	REVISED -
PLOT DATE =	CHECKED - K.G.W.	REVISED -

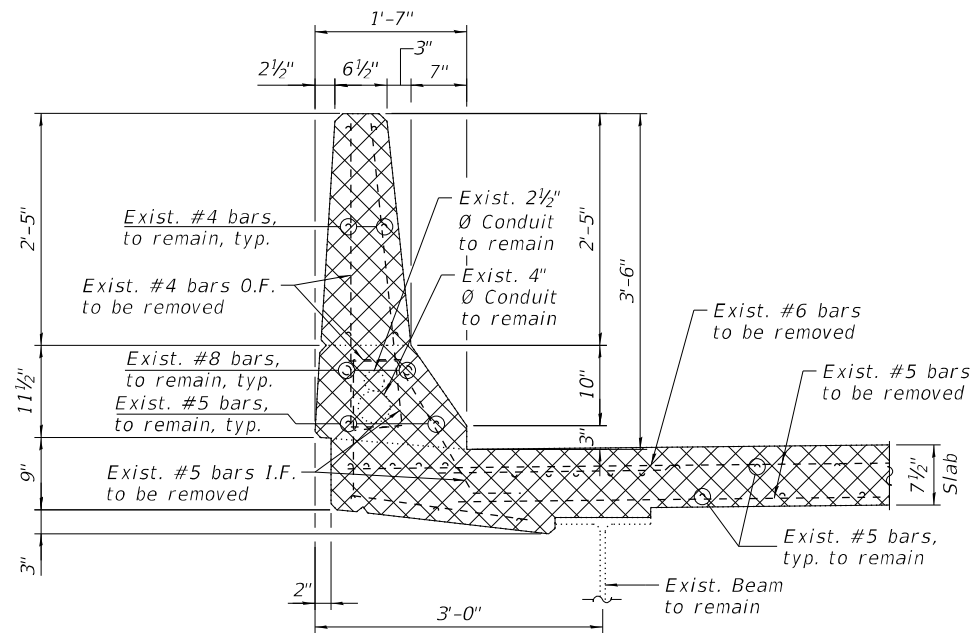
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT EXPANSION JOINT DETAILS I  
SN 016-1076 (REV)**

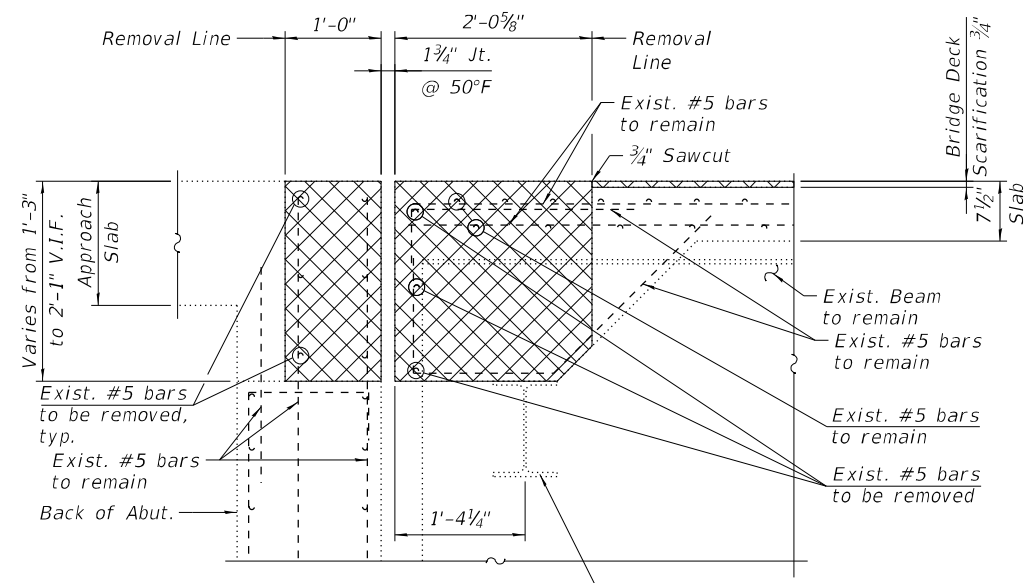
SHEET S26-08 OF S26-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1147
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	

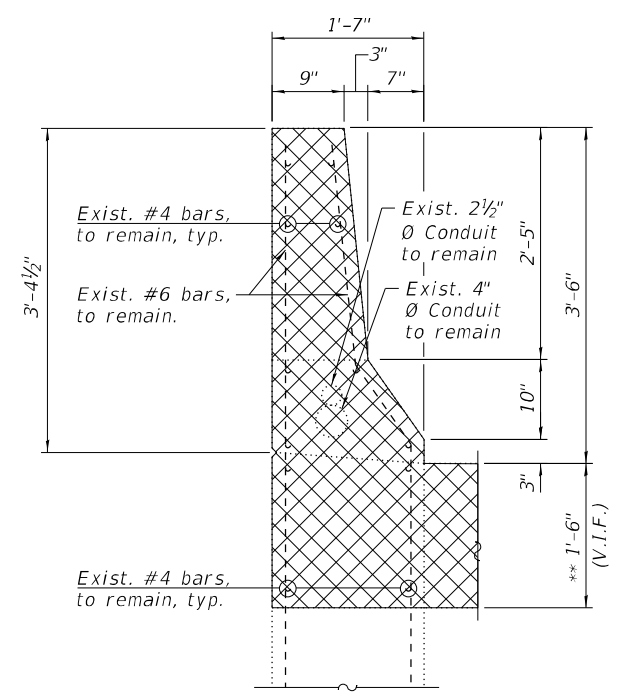
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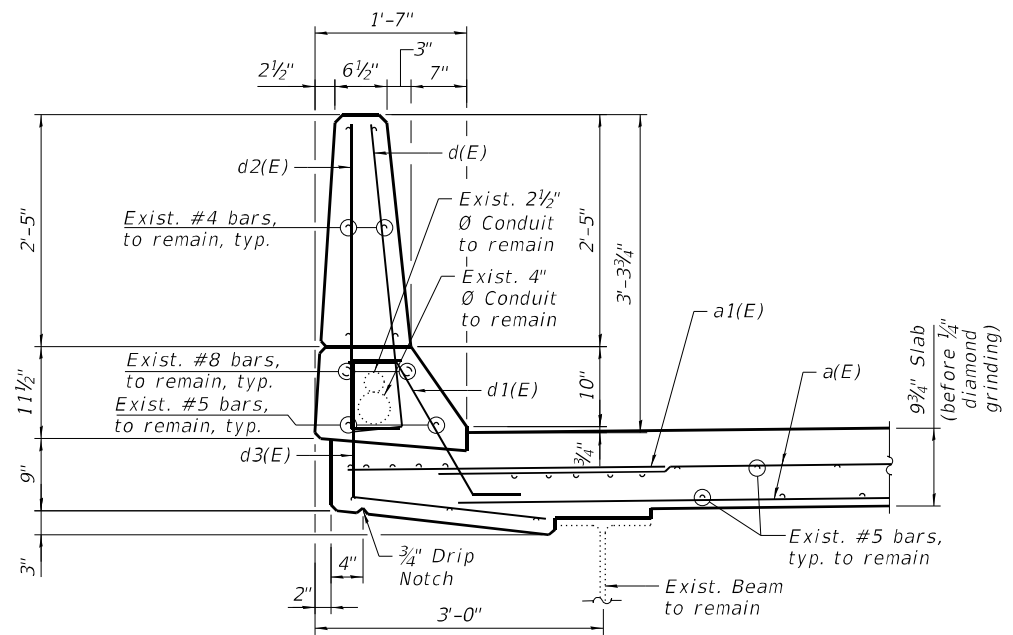
SECTION F-F  
(South parapet removal)



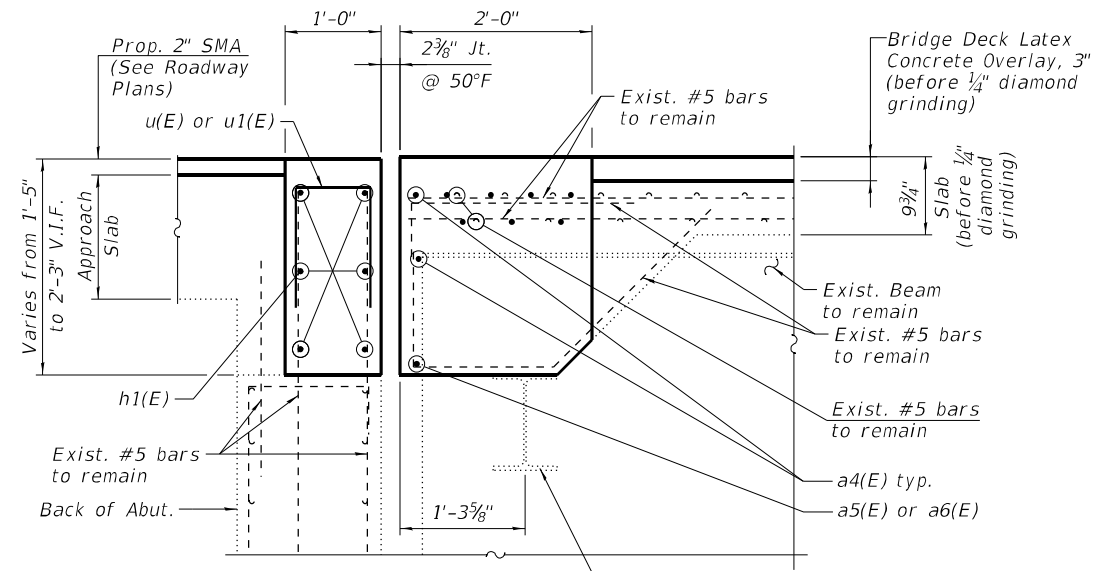
SECTION G-G



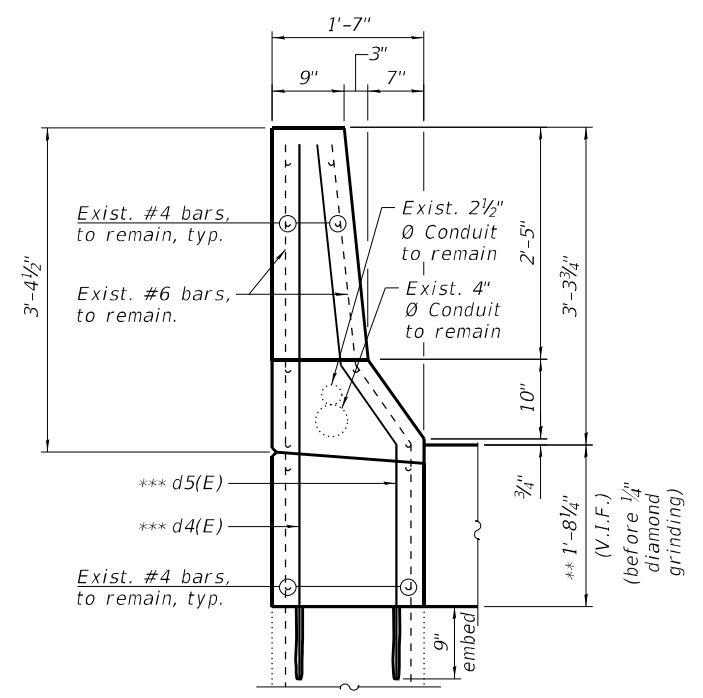
SECTION H-H  
(South parapet removal)



SECTION FF-FF  
(South parapet reconstruction)



SECTION GG-GG



SECTION HH-HH  
(South parapet reconstruction)

**LEGEND**

\*\* Dimension is taken at the Back of Abut.

\*\*\* Epoxy grout #4 d4(E) & #5 d5(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

Concrete Removal (hatched pattern)

I.F. Inside Face

O.F. Outside Face

V.I.F. Verify in Field

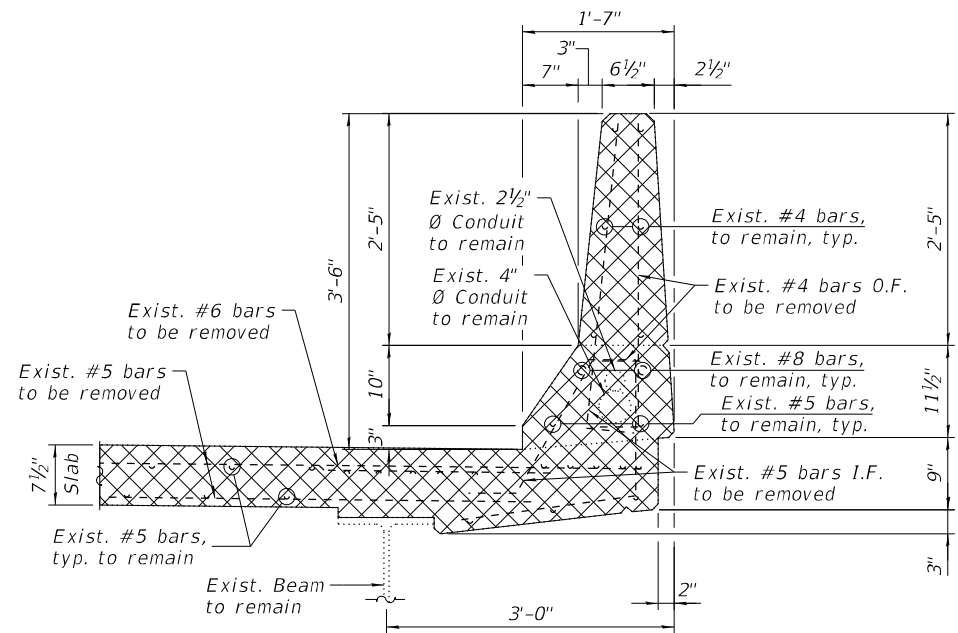
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1148
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

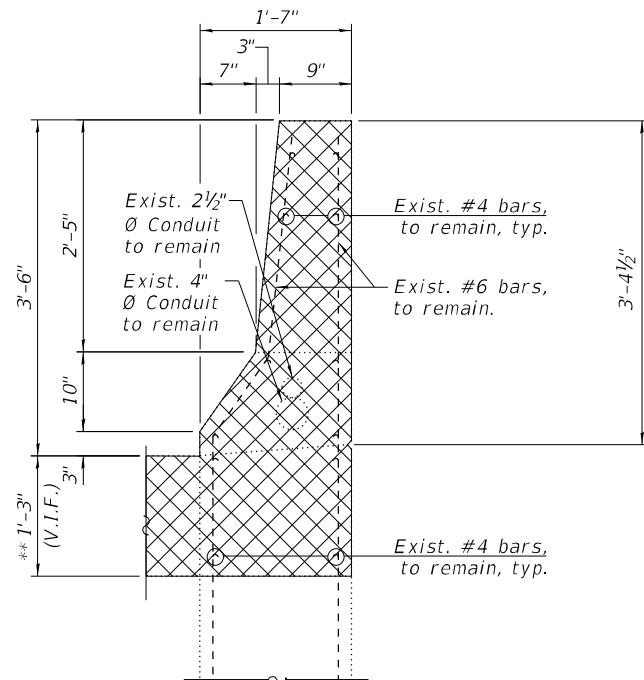


**BILL OF MATERIAL  
WEST ABUTMENT**

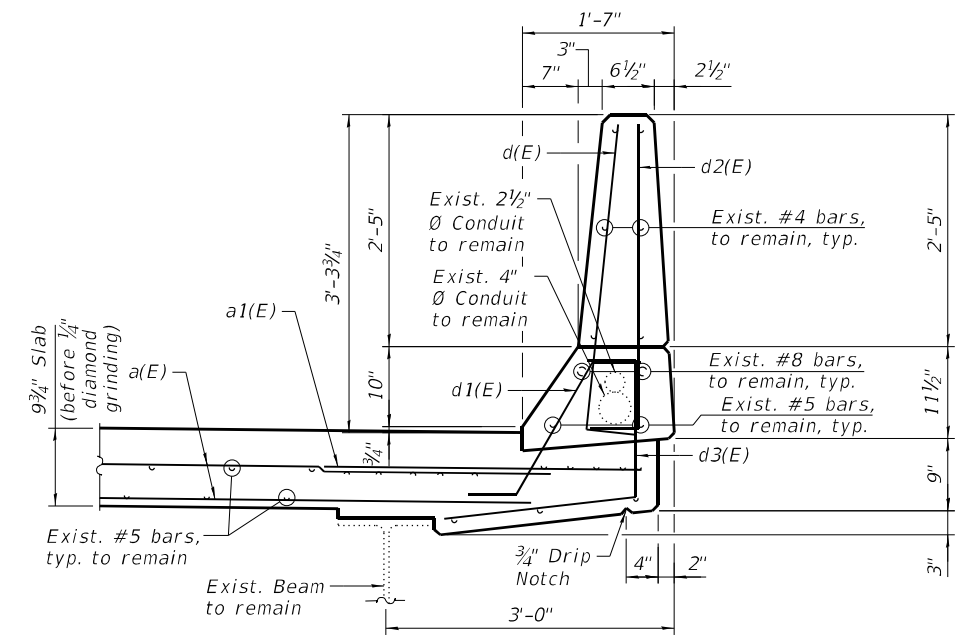
Bar	No.	Size	Length	Shape
a1(E)	6	#6	6'-6"	—
a4(E)	36	#5	27'-3"	—
a5(E)	4	#5	23'-7"	—
a6(E)	1	#5	7'-0"	—
d(E)	5	#5	3'-8"	┌┐
d1(E)	5	#5	2'-7"	┌┐
d2(E)	5	#4	3'-8"	┌┐
d3(E)	5	#4	3'-9"	┌┐
d4(E)	2	#4	5'-8"	┌┐
d5(E)	2	#5	5'-10"	┌┐
d6(E)	2	#4	5'-5"	┌┐
d7(E)	2	#5	5'-8"	┌┐
h1(E)	24	#6	27'-4"	—
s(E)	18	#6	4'-6"	┌┐
u(E)	33	#5	2'-9"	┌┐
u1(E)	63	#5	3'-3"	┌┐
Concrete Removal		Cu Yd	14.4	
Reinforcement Bars, Epoxy Coated		Pound	2,820	
Concrete Superstructure		Cu Yd	16.0	



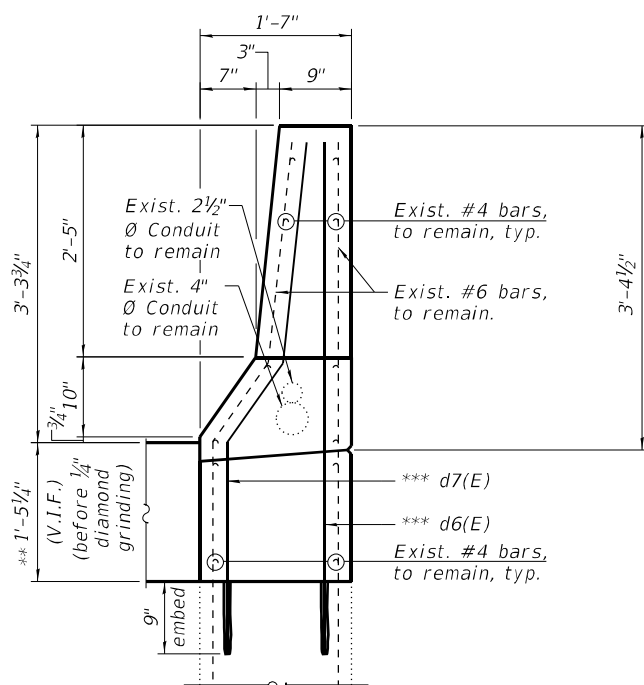
**SECTION J-J**  
(North parapet removal)



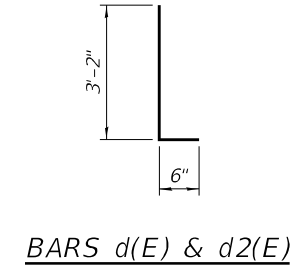
**SECTION K-K**  
(North parapet removal)



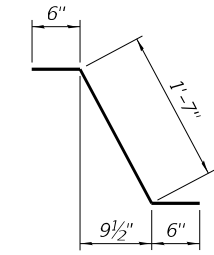
**SECTION JJ-JJ**  
(North parapet reconstruction)



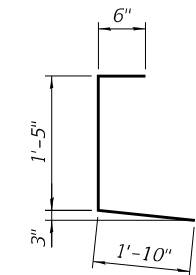
**SECTION KK-KK**  
(North parapet reconstruction)



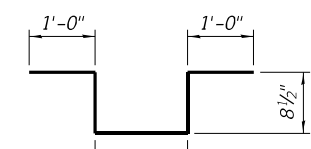
**BARS d(E) & d2(E)**



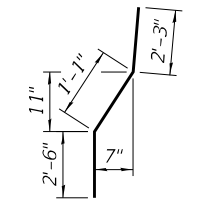
**BAR d1(E)**



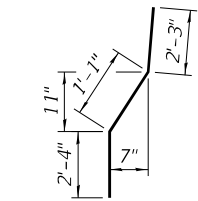
**BAR d3(E)**



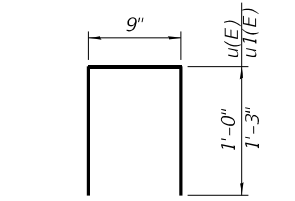
**BAR s(E)**



**BAR d5(E)**



**BAR d7(E)**



**BARS u(E) & u1(E)**

**NOTES:**

- For Preformed Joint Strip Seal details, see sheet S26-11.
- 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 shall be included with Concrete Removal.
- Removal and disposal of the existing expansion joints is included with Concrete Removal.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

**MIN BAR LAPS**

- #5 3'-6"
- #6 4'-0"

\*\* Dimension is taken at the Back of Abut.

\*\*\* Epoxy grout #4 d6(E) & #5 d7(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT EXPANSION JOINT DETAILS III  
SN 016-1076 (REV)**

SHEET S26-10 OF S26-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1149
CONTRACT NO. 62K74				

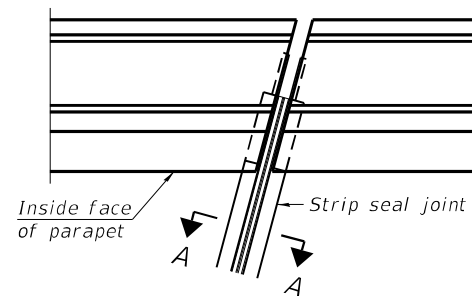
ILLINOIS FED. AID PROJECT

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**GRÄEF**  
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Chicago, Illinois 60631; (773) 399-0112

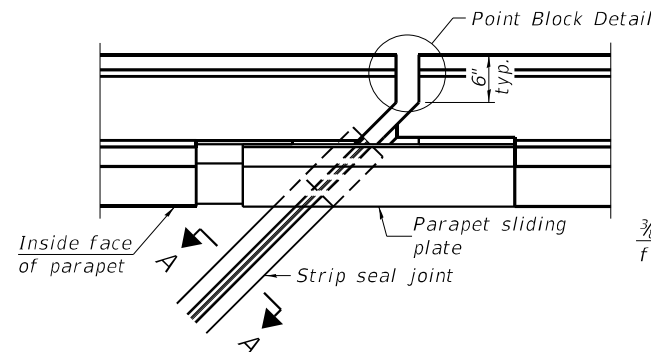
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	CHECKED	H.A.	REVISED
	PLOT SCALE	DRAWN	J.T.B.
	PLOT DATE	CHECKED	K.G.W.

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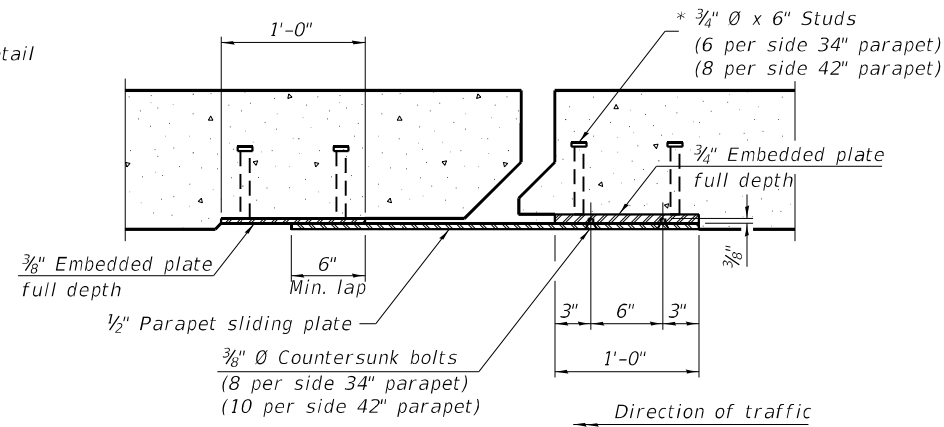


FOR SKEWS  $\leq 30^\circ$

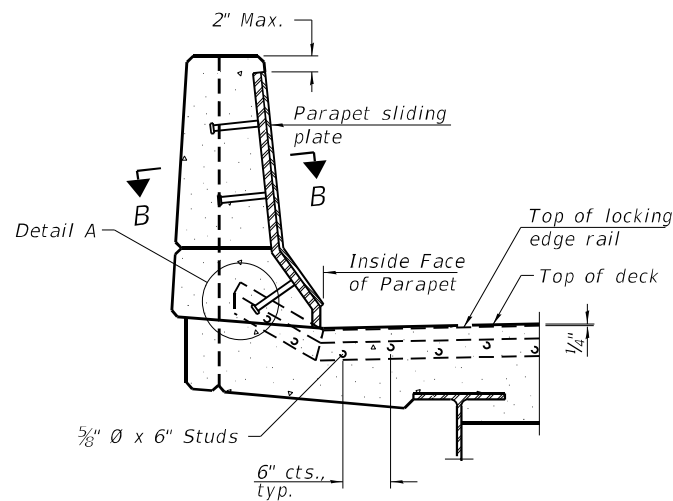
**PLAN AT PARAPET**



FOR SKEWS  $> 30^\circ$

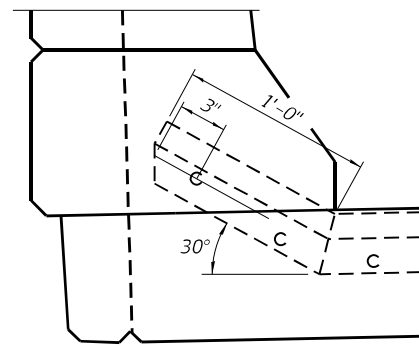


**SECTION B-B**

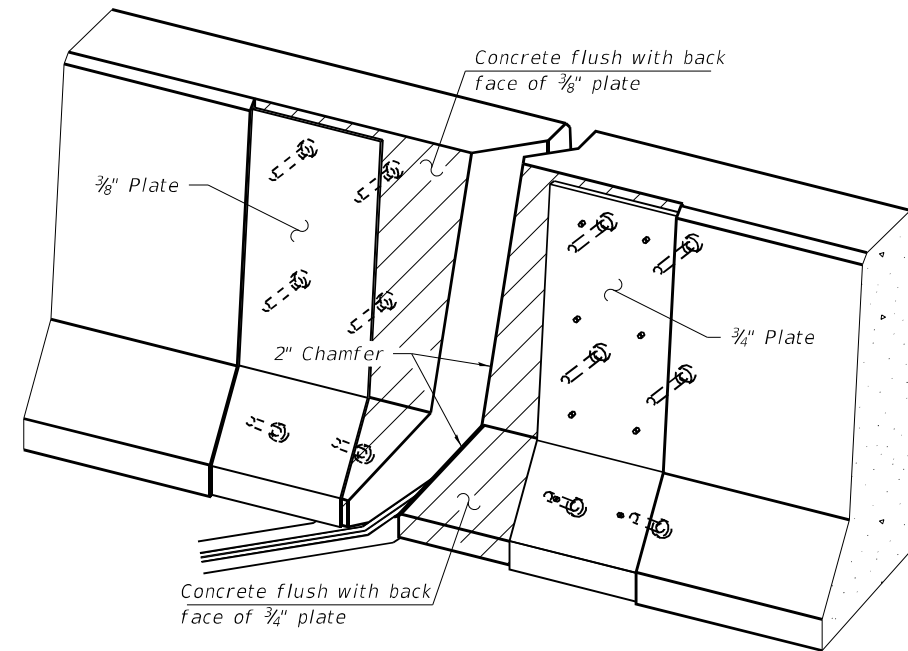


**ELEVATION AT PARAPET**

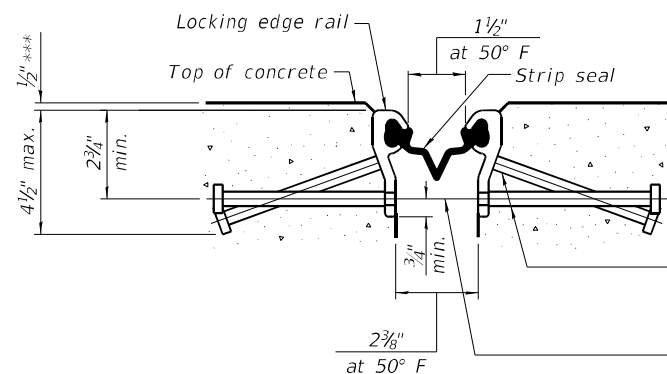
(Skews  $> 30^\circ$  shown. Skews  $\leq 30^\circ$  similar except as shown in plan view.)



**DETAIL A**



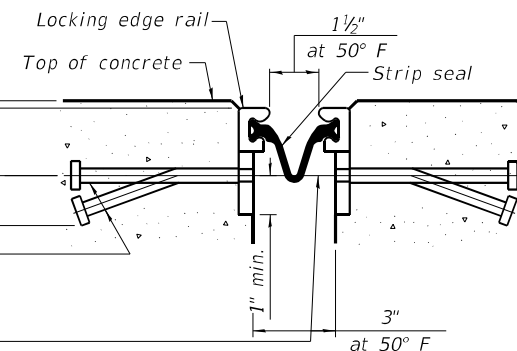
**TRIMETRIC VIEW**  
(Showing embedded plates only)



**SHOWING ROLLED RAIL JOINT**

\*  $5/8"$   $\phi$  x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

$3/8"$   $\phi$  threaded rods in  $1/16"$   $\phi$  holes at  $\pm 4'-0"$  cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

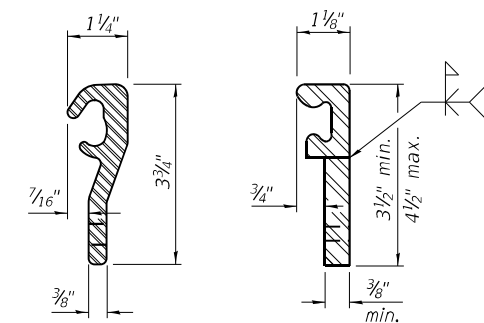


**SHOWING WELDED RAIL JOINT**

**SECTION A-A**

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

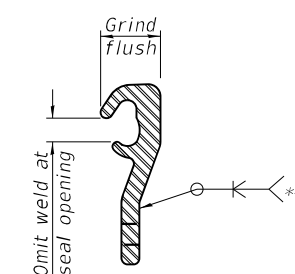
\*\*\* Before  $1/4"$  Diamond Grinding.



**LOCKING EDGE RAILS**

**LOCKING EDGE RAILS**

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



**LOCKING EDGE RAIL SPLICE**

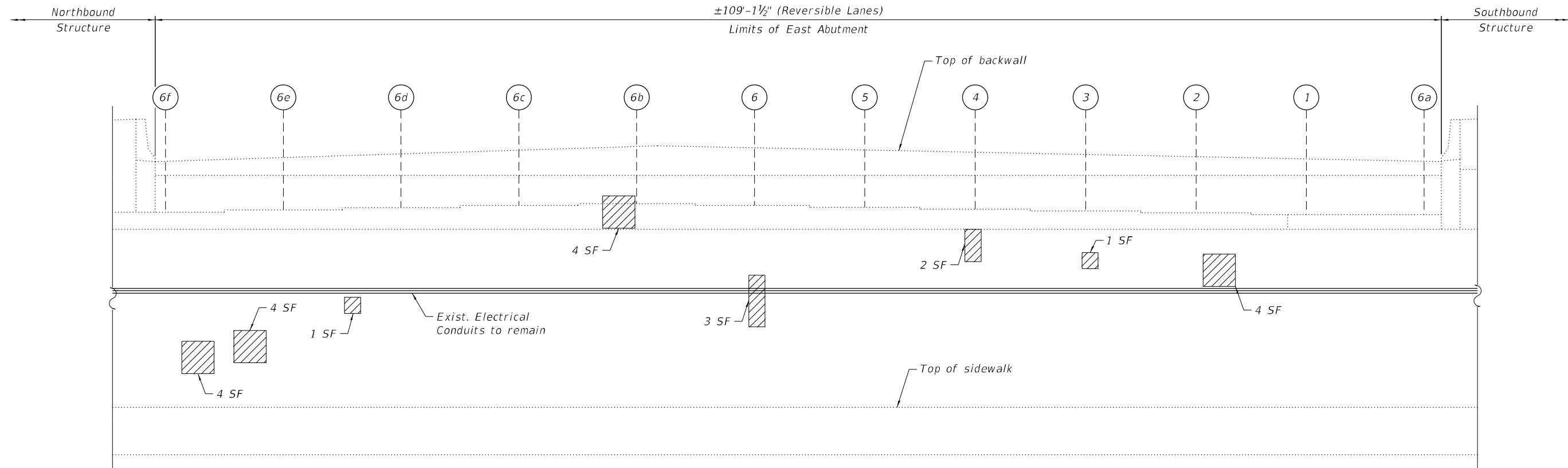
The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

**BILL OF MATERIAL**

Item	Unit	Total
Preformed Joint Strip Seal	Foot	210

USER NAME =	DESIGNED - J.T.B.	REVISED -
PLOT SCALE =	CHECKED - H.A.	REVISED -
PLOT DATE =	DRAWN - D.C.P.	REVISED -
	CHECKED - K.G.W.	REVISED -

F.A.I. RTE. 90	SECTION 2020-004-BR	COUNTY COOK	TOTAL SHEETS 1492	SHEET NO. 1150
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



**ELEVATION - EAST ABUTMENT**  
(Looking East)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
- Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

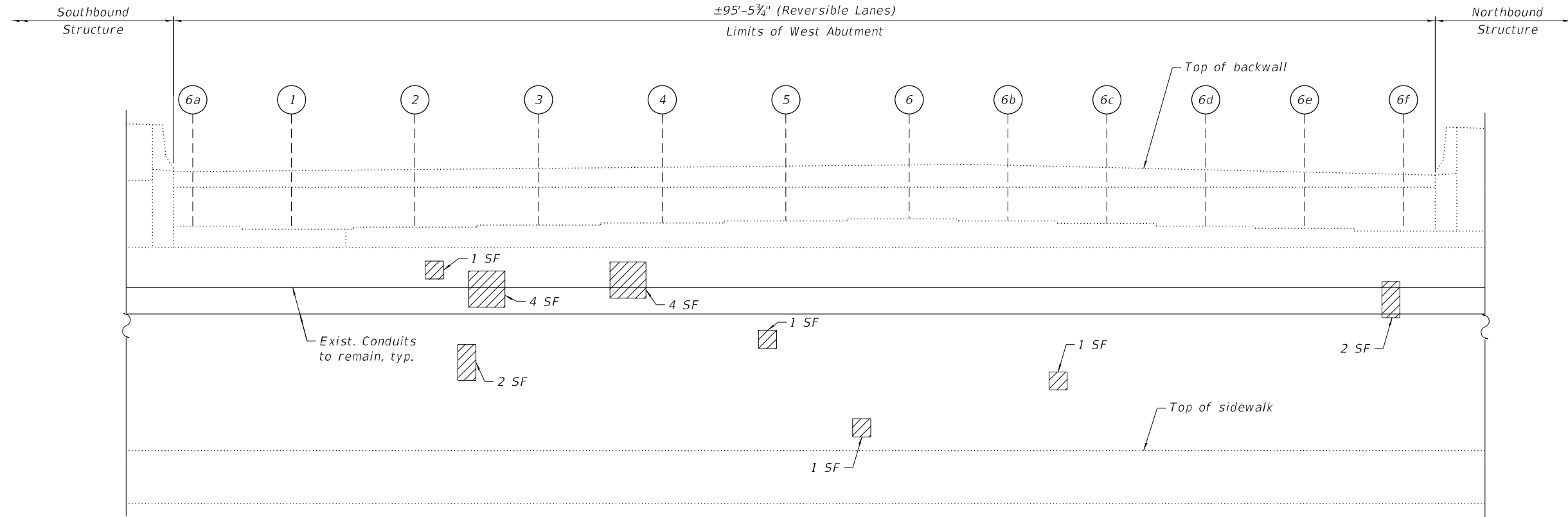
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	609
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	23

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PLOT DATE =	CHECKED -	K.G.W.	REVISED -	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1151
CONTRACT NO. 62K74				
ILLINOIS		FED. AID PROJECT		



**ELEVATION - WEST ABUTMENT**  
(Looking West)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
- Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

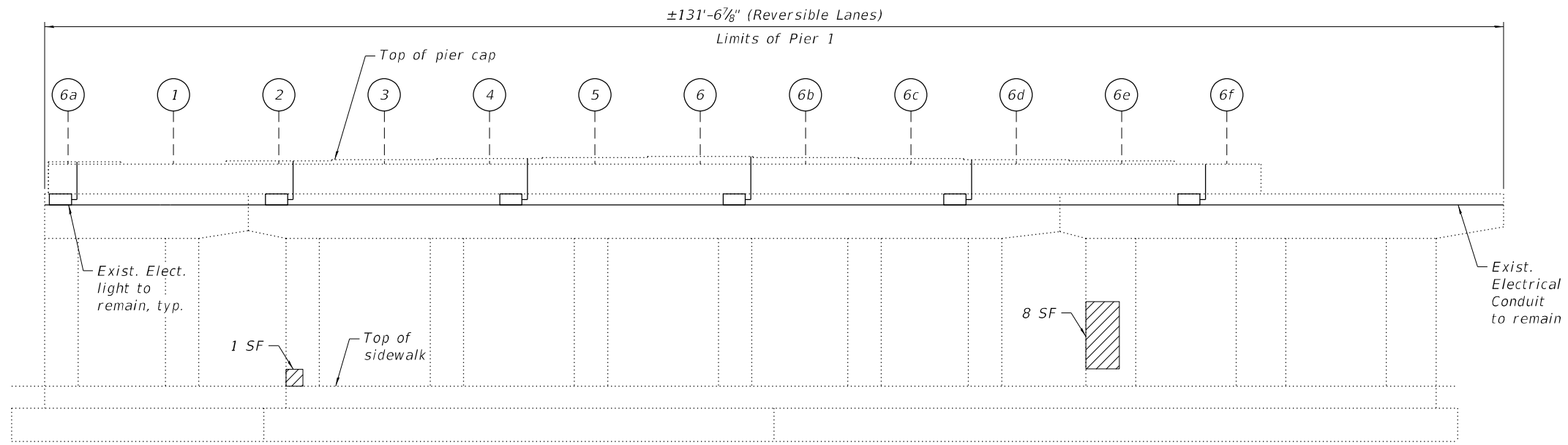
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	524
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	16

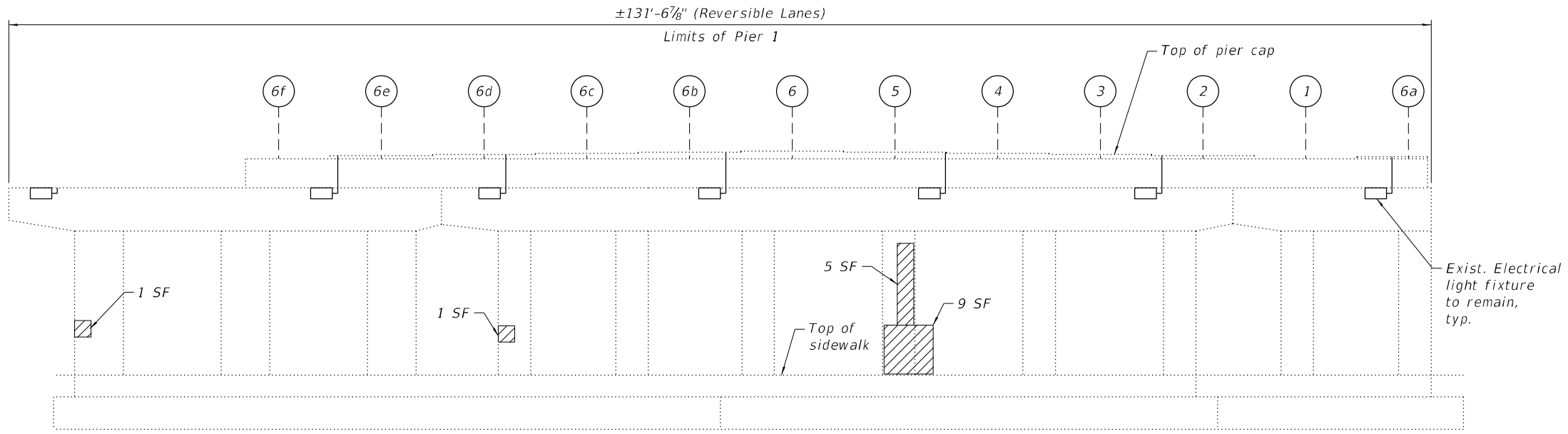
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PLOT SCALE =	DRAWN -	D.C.P.	REVISED -
PLOT DATE =	CHECKED -	K.G.W.	REVISED -

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1152
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



**ELEVATION - PIER 1**  
(Looking West)



**ELEVATION - PIER 1**  
(Looking East)



**EXISTING LIGHTING: PIER 1**  
(Looking Northwest)



**EXISTING LIGHTING: PIER 1**  
(Looking Northeast)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	25

MODEL: sMODELNAME5  
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**GR&EF**  
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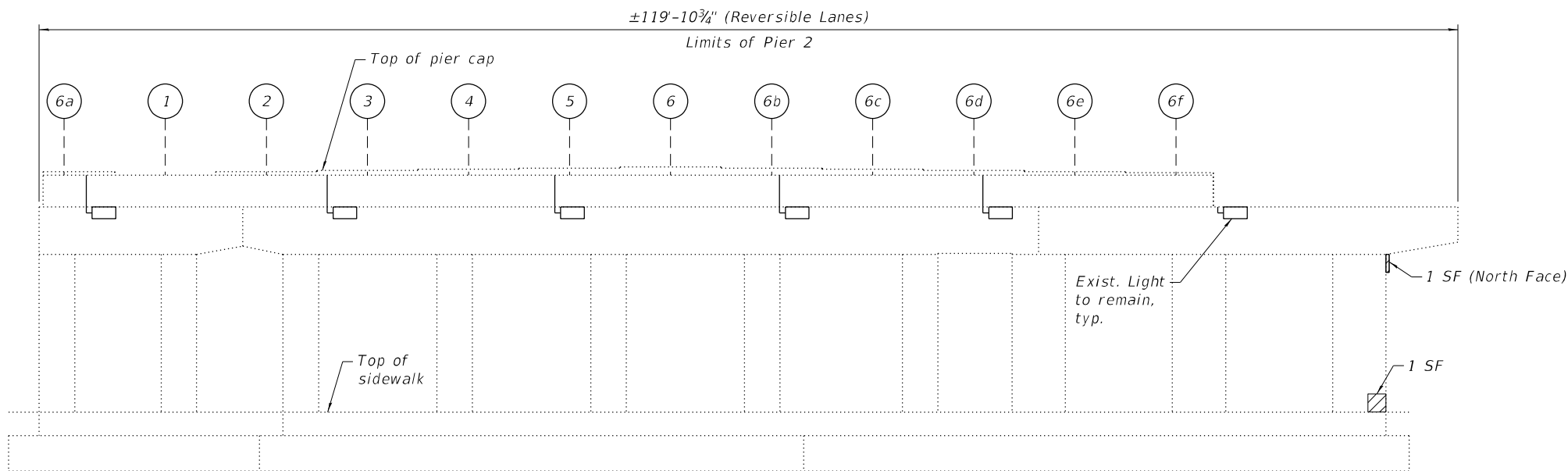
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PLOT DATE =	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

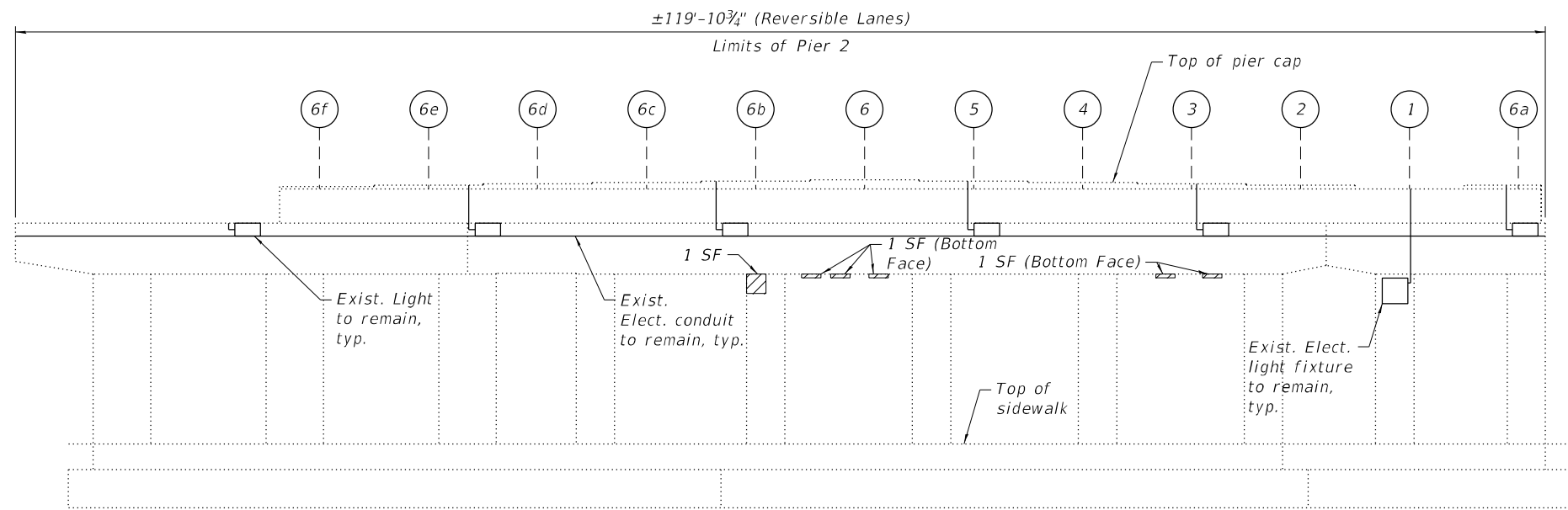
**PIER 1 REPAIRS**  
**SN 016-1076 (REV)**

SHEET S26-14 OF S26-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1153
CONTRACT NO. 62K74				
ILLINOIS		FED. AID PROJECT		



**ELEVATION - PIER 2**  
(Looking West)



**ELEVATION - PIER 2**  
(Looking East)



**EXISTING LIGHTING: PIER 2**  
(Looking Northwest)



**EXISTING LIGHTING: PIER 2**  
(Looking Northeast)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	8

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**GR&EF**  
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Chicago, Illinois 60631; (773) 399-0112

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	CHECKED -	H.A.	REVISED -
PLOT SCALE =	DRAWN -	D.C.P.	REVISED -
PLOT DATE =	CHECKED -	K.G.W.	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PIER 2 REPAIRS**  
**SN 016-1076 (REV)**

SHEET S26-15 OF S26-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1154
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**GENERAL NOTES**

- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or 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 Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further dispositions. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- Plan dimensions and details relative to the existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity furnished at the unit price bid for the work.
- Cleaning and field painting of structural steel shall be done under a separate painting contract.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. The cost of cleaning shall be included in the cost of Concrete Removal.
- Bars indicated thus, 3x2-#5, indicates 3 lines of #5 bars with 2 lengths of bar per line.
- All exposed concrete edges shall have a 3/4"x45° chamfer, except where shown otherwise.
- For SMA overlay on Approach Slab, see Roadway Plans.
- Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.
- Joint openings shall be adjusted according to Article 520.04 of the Standard Specification when the deck is poured at an ambient temperature other than 50°F.
- Adjacent I-90/94 reversible bridge is not shown throughout the plans for clarity.
- The Contractor shall take the necessary precautions for the protection of passing vehicles, bicycles and pedestrians from falling objects and/or materials until completion of work.
- The Contractor is responsible to remove, support and reinstall all existing electrical conduits interfering with the work. See special provision "Protection and Maintenance of Existing Underpass Luminaires".
- The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.
- The Contractor is responsible to protect the existing conduit and junction box embedded in the parapet during concrete removal and construction. Any damage to the existing conduit and junction box shall be repaired by the Contractor at no additional cost to the Department.
- Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.
- Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.
- The Contractor shall contact Chandra Libby, the Director of City of Chicago Department of Family Support Services (DFSS) at 312-746-5443 or Chandra.Libby@cityofchicago.org to coordinate the relocation of persons and their personal belongings under the bridges within the areas bounded by the temporary chain-link-fence.
- Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.

**INDEX OF SHEETS**

- S27-01 General Plan & Elevation
- S27-02 General Data
- S27-03-S27-04 Stage Construction Details I & II
- S27-05 Temporary Concrete Barrier
- S27-06 Bridge Deck Repair Plan and Details
- S27-07-S27-09 East Abutment Expansion Joint Details I, II & III
- S27-10-S27-12 West Abutment Expansion Joint Details I, II & III
- S27-13 Preformed Joint Strip Seal
- S27-14 East Abutment Repairs
- S27-15 West Abutment Repairs
- S27-16 Pier 1 Repairs
- S27-17 Pier 2 Repairs
- S27-18 Slope Wall Repairs
- S27-19 Bar Splicer Assembly and Mechanical Splicer Details

**SCOPE OF WORK**

- Provide Protective Shield within limits indicated on the plans.
- Scarify 3/4" from the bridge deck slab.
- Perform deck repairs.
- Remove and reconstruct expansion joints at east and west abutments and install new Preformed Joint Strip Seals.
- Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs, see Roadway Plans.
- Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
- Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
- Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse expansion joints and to the surface of the new overlay.
- Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.
- Perform slope wall repairs.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd		1	1
Concrete Removal	Cu Yd	52.0		52.0
Slope Wall Removal	Sq Yd		1	1
Protective Shield	Sq Yd	911		911
Concrete Superstructure	Cu Yd	57.3		57.3
Protective Coat	Sq Yd	1,751		1,751
Reinforcement Bars, Epoxy Coated	Pound	7,880		7,880
Bar Splicers	Each	44		44
Slope Wall 4 Inch	Sq Yd		1	1
Preformed Joint Strip Seal	Foot	194		194
Concrete Sealer	Sq Ft		1,188	1,188
Slope Wall Crack Sealing	Foot		101	101
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,053		1,053
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,463		1,463
Bridge Deck Scarification 3/4"	Sq Yd	1,463		1,463
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		92	92
Structural Repair of Concrete (Depth Greater than 5 inches)	Sq Ft		6	6
Diamond Grinding (Bridge Section)	Sq Yd	1,535		1,535
Maintenance of Lighting System	Cal Mo		6	6
Temporary Construction Fence	Foot		270	270
Temporary Shoring and Cribbing	Each		1	1

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PLOT DATE =	DRAWN -	D.C.P.	REVISED -
	CHECKED -	K.G.W.	REVISED -

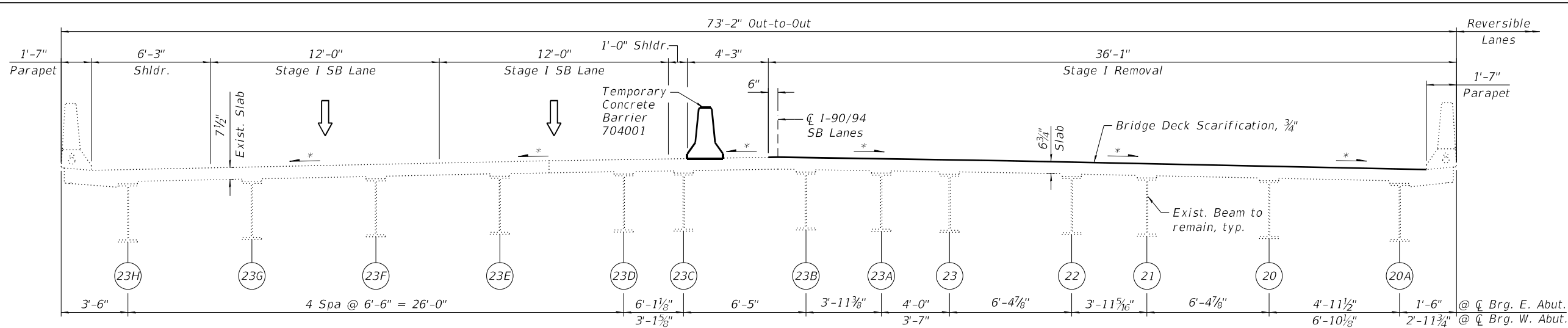
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA  
SN 016-0123 (SB)**

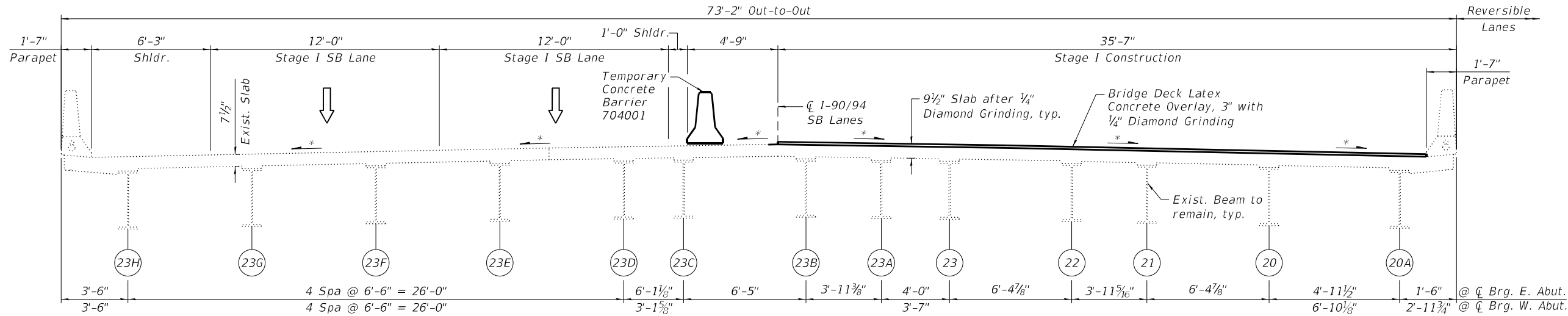
SHEET S27-02 OF S27-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 62K74				
ILLINOIS		FED. AID PROJECT		

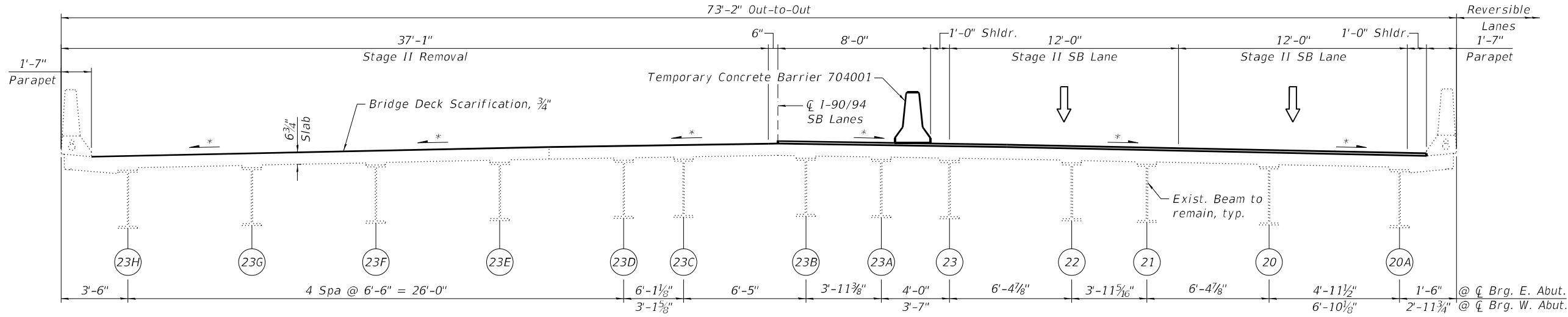




**STAGE I REMOVAL**  
(Looking West)



**STAGE I CONSTRUCTION**  
(Looking West)



**STAGE II REMOVAL**  
(Looking West)

\* Match existing deck surface profile

**STAGE I REMOVAL**

1. Install Temporary Concrete Barrier as shown to locate traffic on the south side of the existing structure.
2. Scarify 3/4" from the top of the deck.
3. Remove portions of bridge deck adjacent to abutment joints, as shown in the plans.

**STAGE I CONSTRUCTION**

1. Perform Deck Slab Repairs at the locations shown in the plans.
2. Reconstruct transverse expansion joints and install Preformed Joint Strip Seal at east and west abutments and replace associated reinforcement and concrete adjacent to the joint.
3. Perform Structural Repair of Concrete at abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay to bridge deck slab.
5. Perform 1/4" diamond grinding to bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay and reconstructed abutment expansion joint areas.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach pavement and taper into existing roadway. See Roadway Plans.
8. Apply Protective Coat to the top of reconstructed transverse joint areas, the surface of the new overlay, and the top and inside faces of the parapets.
9. Perform slope wall repairs as shown in the plans.

**STAGE II REMOVAL**

1. Install Temporary Concrete Barrier as shown to locate traffic on the north side of the existing structure.
2. Scarify 3/4" from the top of the deck.
3. Remove portions of bridge deck adjacent to abutment joints, as shown in the plans.

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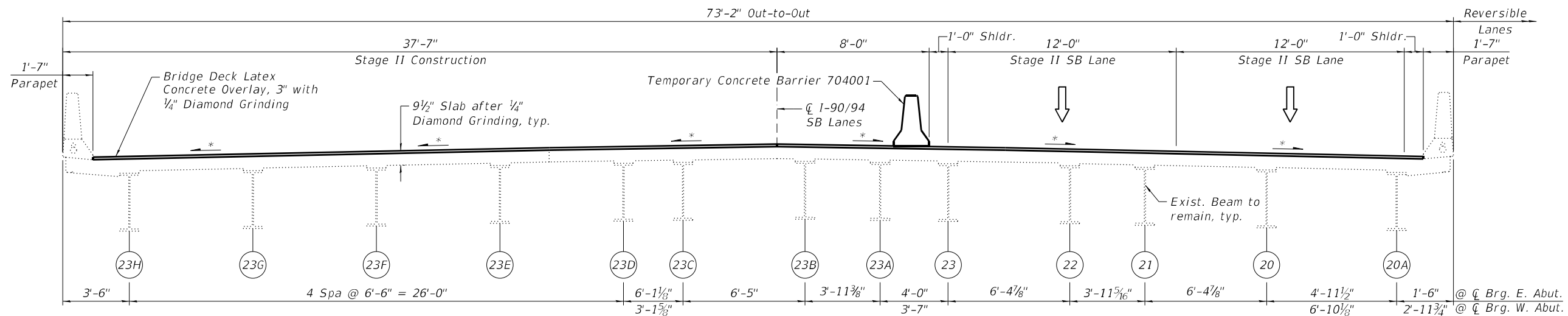
**STATE OF ILLINOIS  
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**STAGE CONSTRUCTION DETAILS I  
SN 016-0123 (SB)**

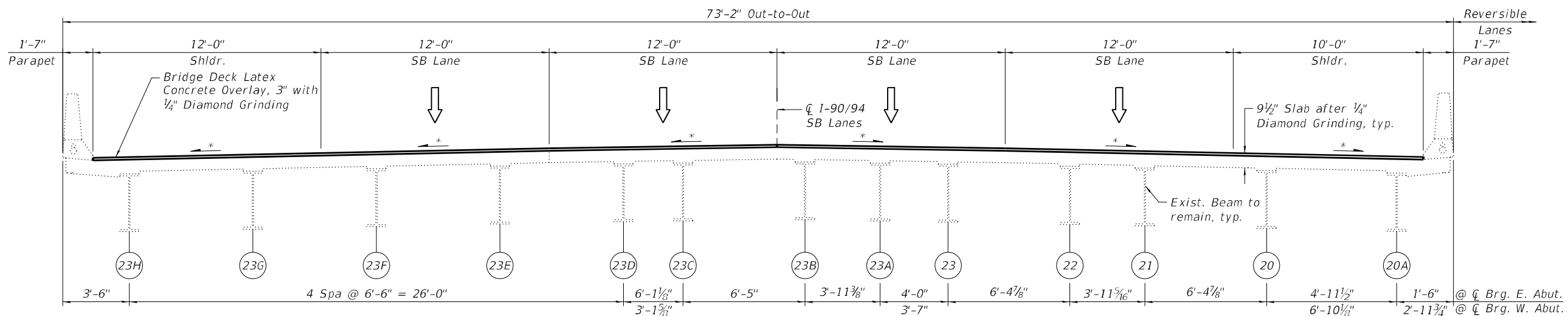
SHEET S27-03 OF S27-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 62K74			ILLINOIS FED. AID PROJECT	

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**STAGE II CONSTRUCTION**  
(Looking West)



**FINAL CROSS SECTION**  
(Looking West)

**STAGE II CONSTRUCTION**

1. Perform Deck Slab Repairs at the locations shown in the plans.
2. Reconstruct transverse expansion joints and install Preformed Joint Strip Seal at east and west abutments and replace associated reinforcement and concrete adjacent to the joint.
3. Perform Structural Repair of Concrete at abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay to bridge deck slab.
5. Perform 1/4" diamond grinding to bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay and reconstructed abutment expansion joint areas.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach paving and taper into existing roadway. See Roadway Plans.
8. Apply Protective Coat to the top of reconstructed transverse joint areas, the surface of the new overlay, and the top and inside faces of the parapets.
9. Perform slope wall repairs as shown in the plans.

\* Match existing deck surface profile

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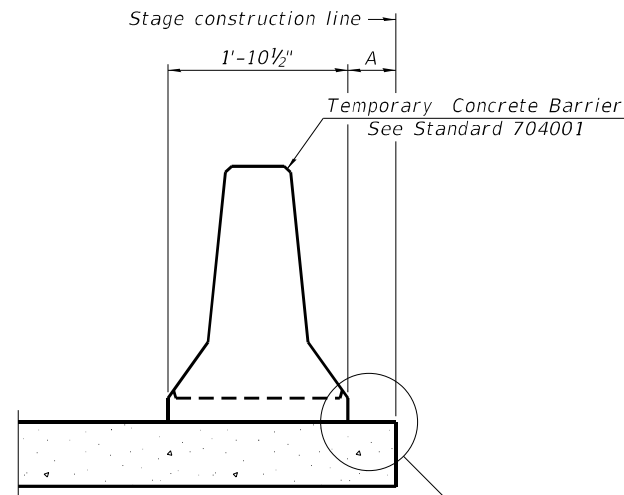
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PLOT DATE =	CHECKED -	K.G.W.	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STAGE CONSTRUCTION DETAILS II  
SN 016-0123 (SB)**

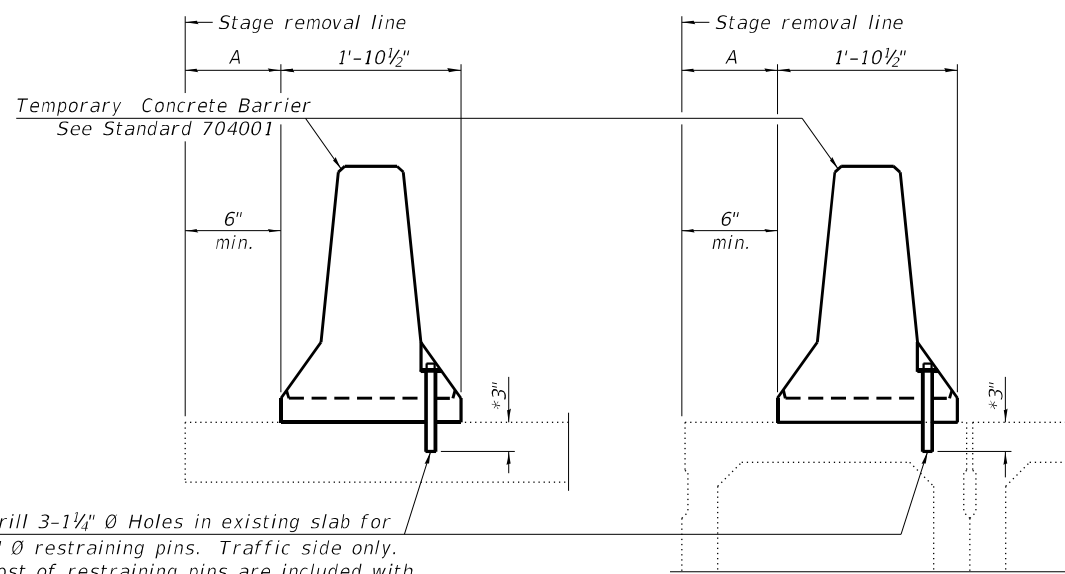
SHEET S27-04 OF S27-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1158
			CONTRACT NO. 62K74	
ILLINOIS FED. AID PROJECT				



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM

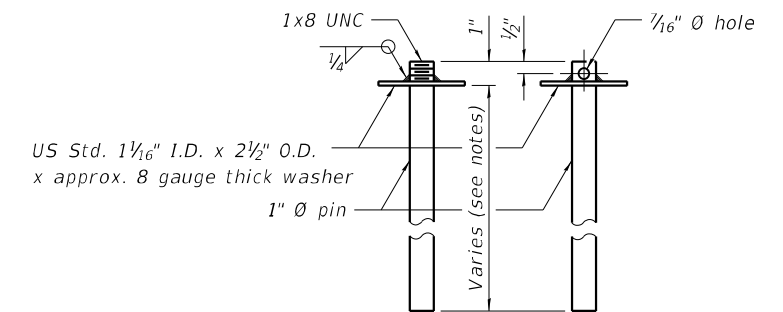


Drill 3-1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

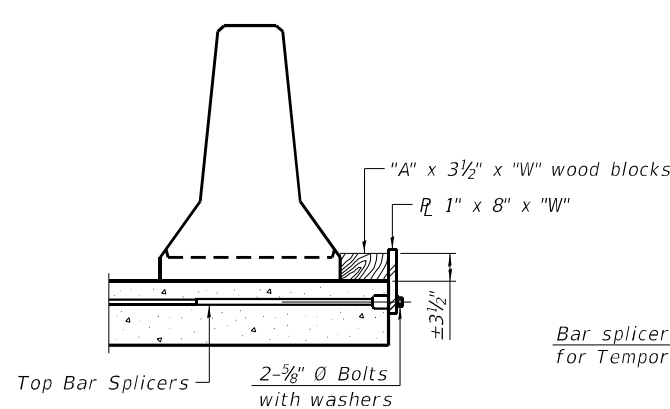
\* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

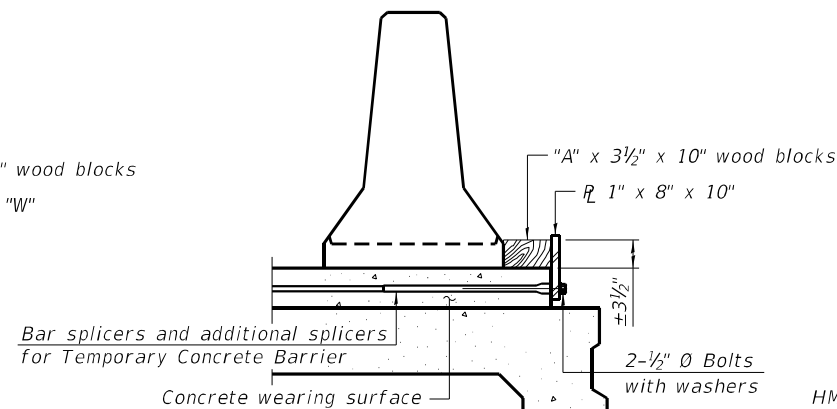


RESTRAINING PIN

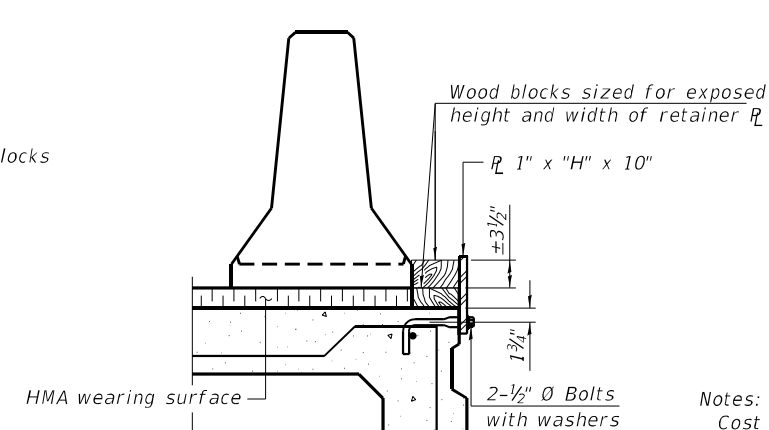
SECTIONS THRU SLAB OR DECK BEAM



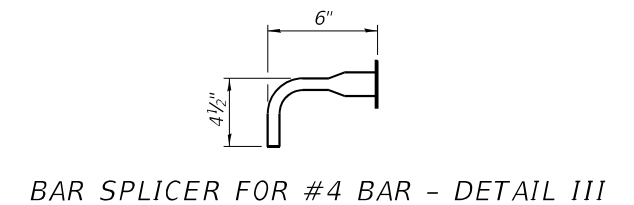
DETAIL I



DETAIL II



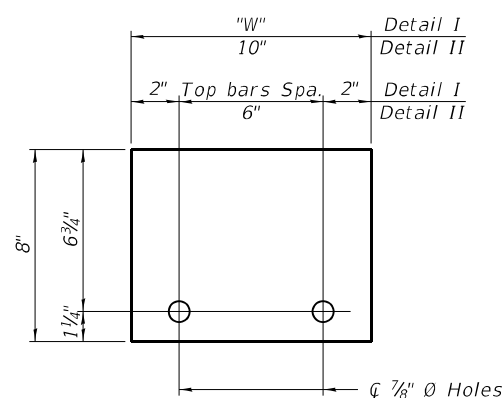
DETAIL III



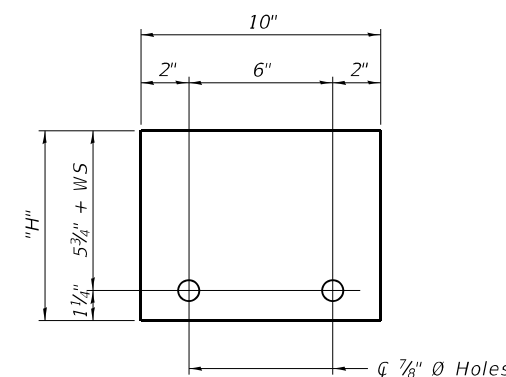
BAR SPLICER FOR #4 BAR - DETAIL III

Notes:  
 Cost of retainer assembly is included with Temporary Concrete Barrier.  
 A retainer assembly shall be located at the approximate  $\frac{1}{2}$  of each temporary concrete barrier.  
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.  
 When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6' to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.  
 Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.  
 Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.



STEEL RETAINER R 1" x 8" x "W"  
(Detail I and II)



STEEL RETAINER R 1" x "H" x 10"  
(Detail III)

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27 10-12-2021

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER  
SN 016-0123 (SB)

SHEET S27-05 OF S27-19 SHEETS

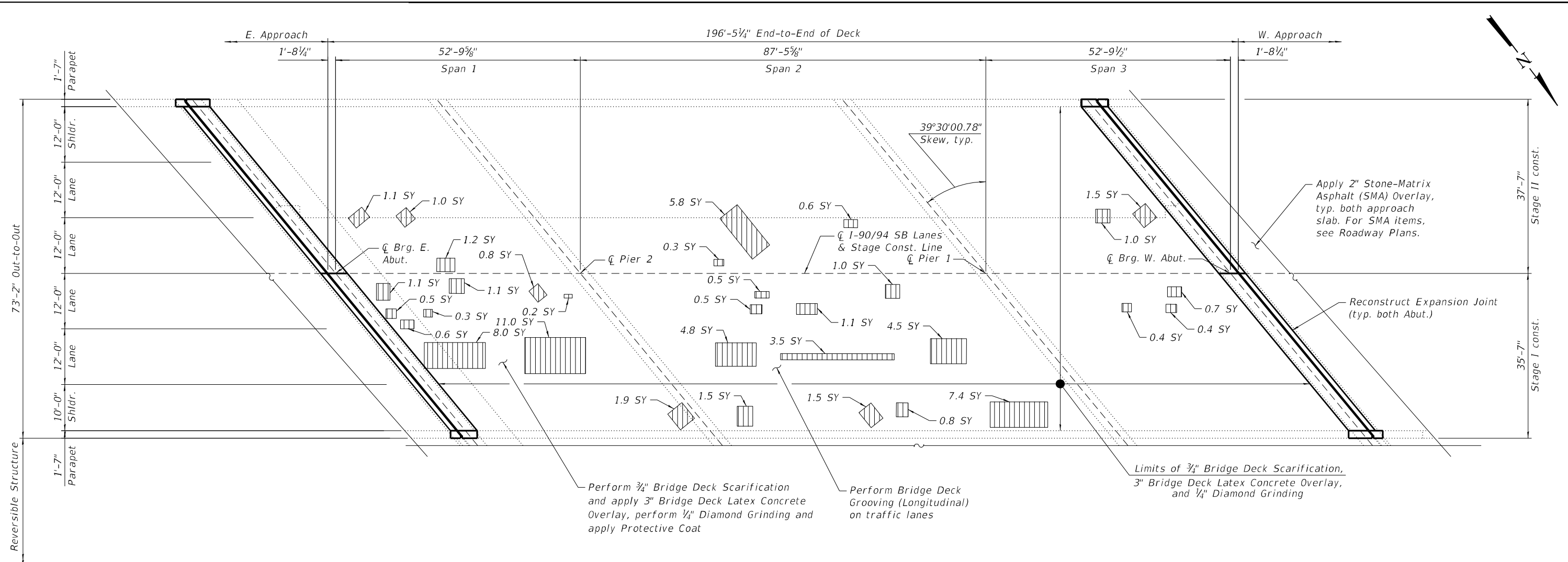
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1159
CONTRACT NO. 62K74				

ILLINOIS FED. AID PROJECT

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**DECK PLAN**

**LEGEND**

- \*Deck Slab Repair (Partial Depth)
- SY Square Yard

\* Areas of Deck Slab Repair (Partial Depth) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3 Inches

**NOTES:**

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S27-04.
3. For East and West transverse joint removal and reconstruction, see Sheet S27-07 thru S27-12.
4. Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
5. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
6. Protective Coat shall be applied to the top of reconstructed transverse joints, top and inside face of parapets and top of latex concrete overlay.
7. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.
8. The Contractor shall exercise extreme caution during concrete removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer at no cost to the Department.
9. Prior to any reconstruction or resurfacing of the bridge deck, a team of the consultant WJE will require access to contractor work zone to take cores of existing deck for independent study with IDOT. Contractor to coordinate with IDOT/WJE in advance. There is no cost to the contractor.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	911
Protective Coat	Sq Yd	1,751
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,053
Bridge Deck Latex Concrete Overlay, 3"	Sq Yd	1,463
Bridge Deck Scarification 3/4"	Sq Yd	1,463
Diamond Grinding (Bridge Section)	Sq Yd	1,535
Maintenance of Lighting System	Cal Mo	6

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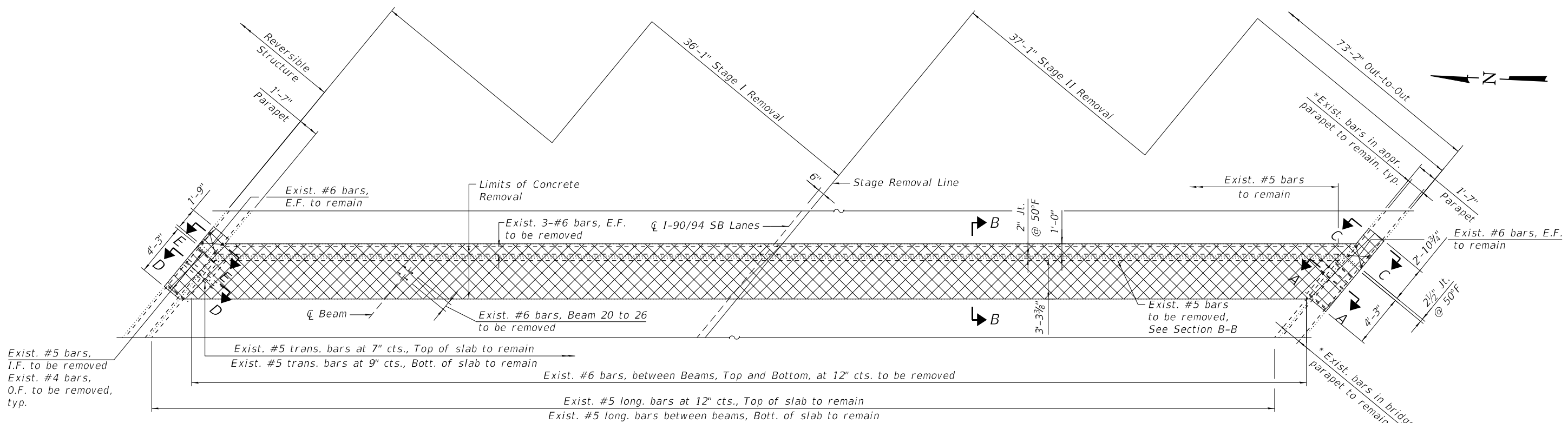
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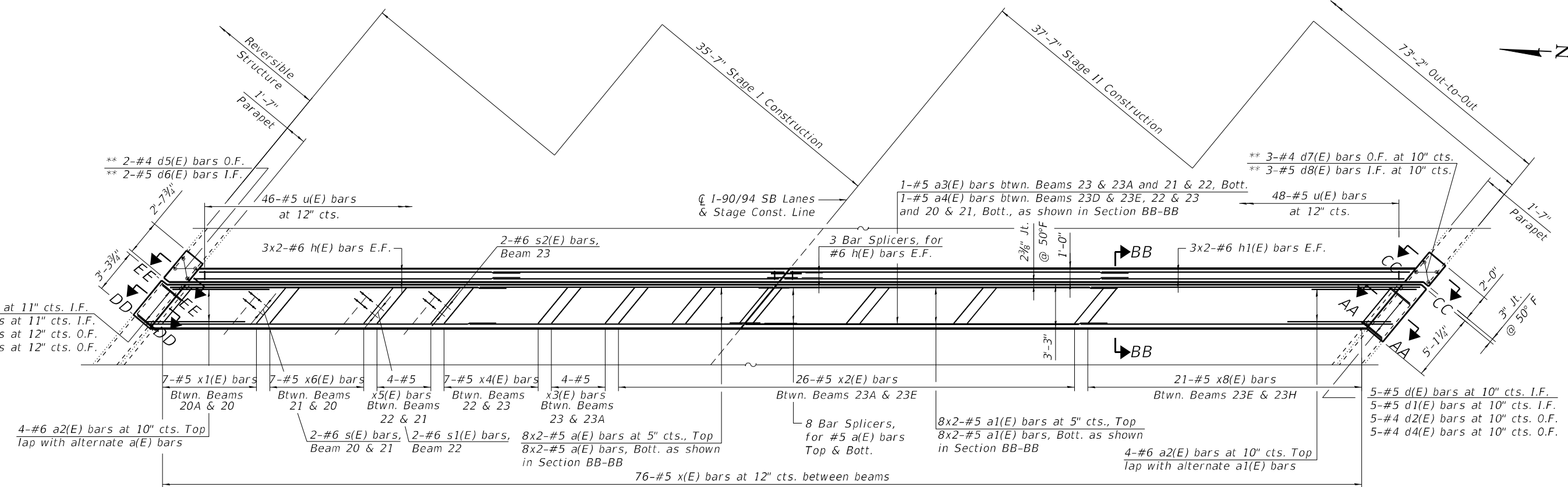
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BRIDGE DECK REPAIR PLAN AND DETAILS  
SN 016-0123 (SB)**

F.A.I. RTE. 90	SECTION 2020-004-BR	COUNTY COOK	TOTAL SHEETS 1492	SHEET NO. 1160
CONTRACT NO. 62K74			ILLINOIS FED. AID PROJECT	



**EAST ABUTMENT JOINT REMOVAL PLAN**



**EAST ABUTMENT JOINT RECONSTRUCTION PLAN**

**NOTES:**

1. For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S27-08.
2. For sections D-D, E-E, DD-DD and EE-EE, see sheet S27-09.

\* Existing longitudinal bars to remain in the parapets can be cut in the field as required

\*\* Epoxy grout #4 d5(E) and d7(E) bars and #5 d6(E) and d8(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- E.F. Each Face

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

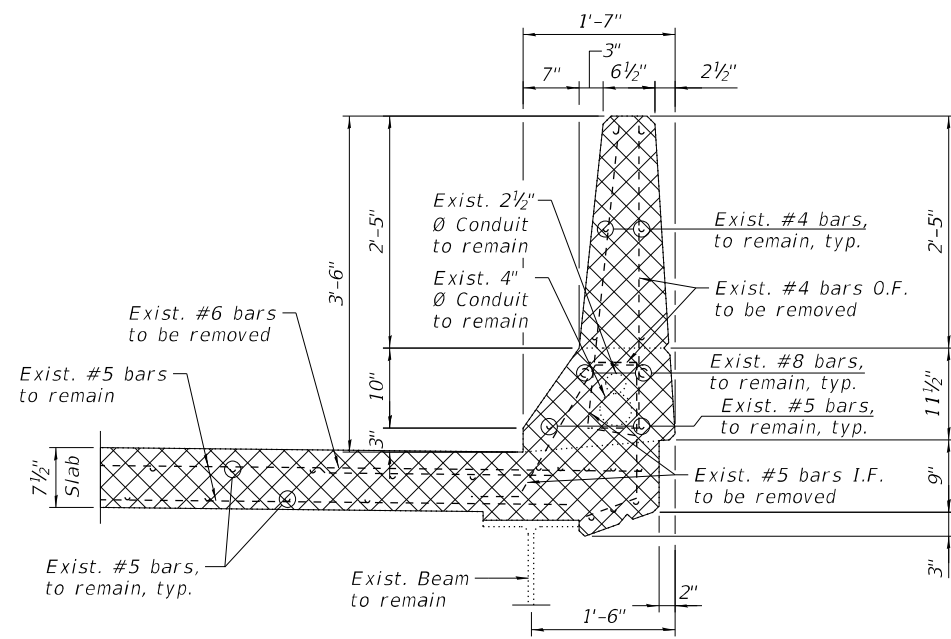
**EAST ABUTMENT EXPANSION JOINT DETAILS I  
SN 016-0123 (SB)**

SHEET S27-07 OF S27-19 SHEETS

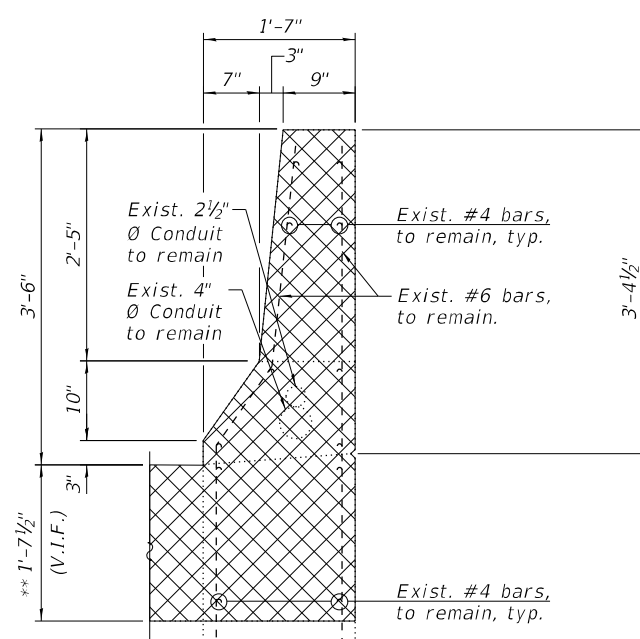
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CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



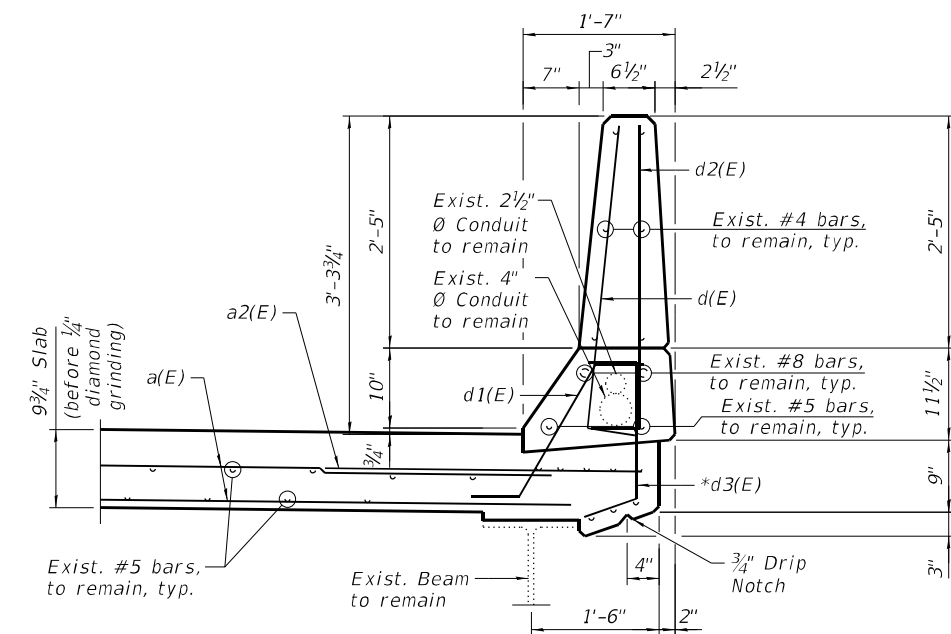
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**SECTION D-D**  
(North parapet removal)

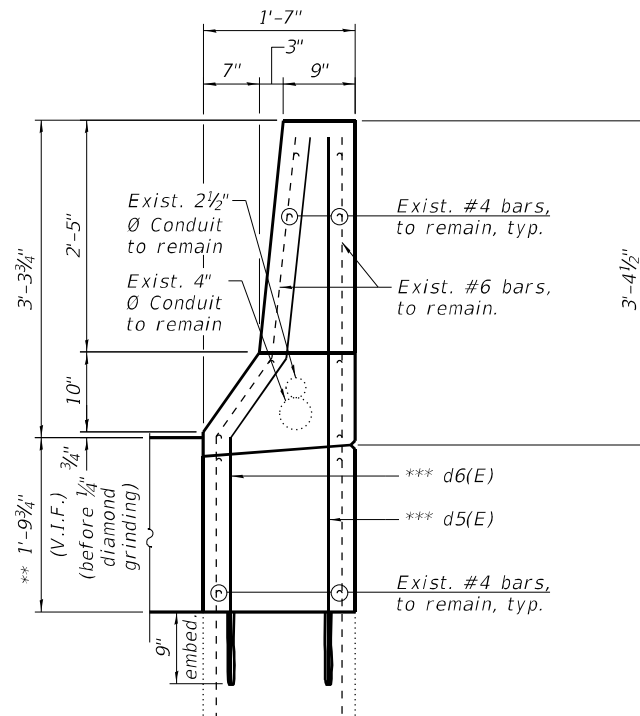


**SECTION E-E**  
(North parapet removal)



**SECTION DD-DD**  
(North parapet reconstruction)

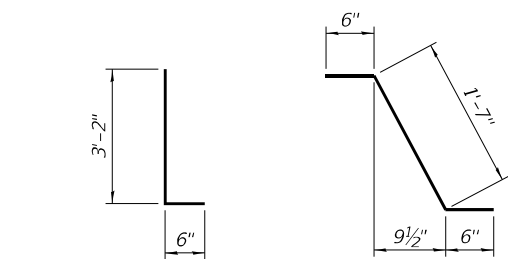
\* Field bend bar to miss top flange of beam



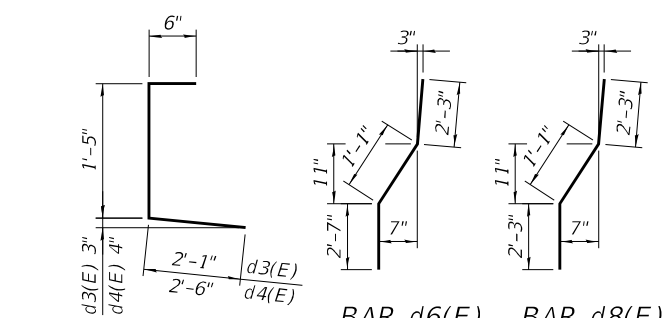
**SECTION EE-EE**  
(North parapet reconstruction)

\*\* Dimension is taken at the Back of Abut.

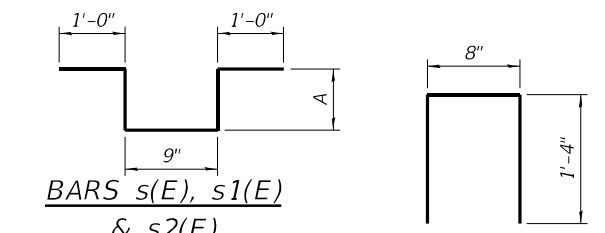
\*\*\* Epoxy grout #4 d5(E) & #5 d6(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.



**BARS d(E) & d2(E)**      **BAR d1(E)**



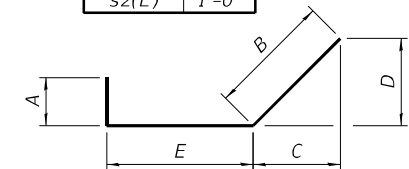
**BARS d3(E) & d4(E)**      **BAR d6(E)**      **BAR d8(E)**



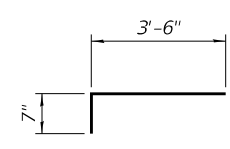
**BARS s(E), s1(E) & s2(E)**

Bar	A
s(E)	8 1/2"
s1(E)	10"
s2(E)	1'-0"

**BAR u(E)**



**BARS x1(E), x2(E), x3(E), x4(E), x5(E), x6(E) & x8(E)**



**BAR x(E)**

**NOTES:**

- For Preformed Joint Strip Seal details, see sheet S27-13.
- For Bar Splicer Assembly details, see sheet S27-19.
- 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 shall be included with Concrete Removal.
- Removal and disposal of the existing expansion joints is included with Concrete Removal.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

**BILL OF MATERIAL  
EAST ABUTMENT**

Bar	No.	Size	Length	Shape
a1(E)	32	#5	24'-11"	—
a2(E)	8	#6	6'-6"	—
a3(E)	2	#5	4'-9"	—
a4(E)	3	#5	7'-11"	—
d(E)	9	#5	3'-8"	┘
d1(E)	9	#5	2'-7"	┘
d2(E)	9	#4	3'-8"	┘
d3(E)	4	#4	4'-0"	┘
d4(E)	5	#4	4'-5"	┘
d5(E)	2	#4	5'-9"	┘
d6(E)	2	#5	5'-11"	┘
d7(E)	3	#4	5'-4"	┘
d8(E)	3	#5	5'-7"	┘
h(E)	12	#6	25'-2"	—
h1(E)	12	#6	26'-6"	—
s(E)	4	#6	4'-2"	┘
s1(E)	2	#6	4'-5"	┘
s2(E)	2	#6	4'-9"	┘
u(E)	94	#5	3'-4"	┘
x(E)	76	#5	4'-1"	┘
x1(E)	7	#5	3'-8"	┘
x2(E)	26	#5	3'-5"	┘
x3(E)	4	#5	4'-7"	┘
x4(E)	7	#5	5'-7"	┘
x5(E)	4	#5	3'-11"	┘
x6(E)	7	#5	5'-4"	┘
x8(E)	21	#5	4'-1"	┘
Concrete Removal			Cu Yd	25.9
Reinforcement Bars, Epoxy Coated			Pound	3,940
Concrete Superstructure			Cu Yd	28.6

Bar	A	B	C	D	E
x1(E)	6"	1'-3"	11"	9 1/8"	1'-11"
x2(E)	6"	1'-0"	9"	7 1/2"	1'-11"
x3(E)	10"	1'-10"	1'-5"	1'-1 1/2"	1'-11"
x4(E)	1'-2"	2'-5 1/4"	1'-11 1/4"	1'-6"	1'-11"
x5(E)	7"	1'-5 1/4"	1'-1 3/8"	10 3/4"	1'-11"
x6(E)	1'-1"	2'-3 1/4"	1'-9 3/8"	1'-5"	1'-11"
x8(E)	8"	1'-4"	1'-0 1/2"	9 3/8"	2'-1"

**MIN BAR LAPS**

- #5 3'-6"
- #6 4'-0"



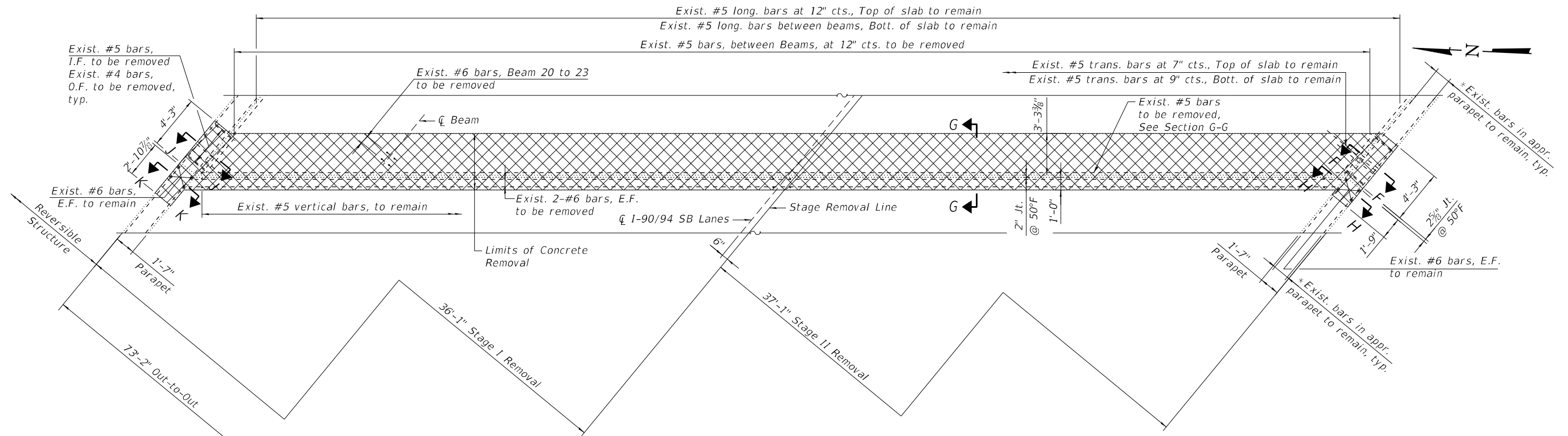
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PLOT DATE =	DRAWN - D.C.P.	REVISED -
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

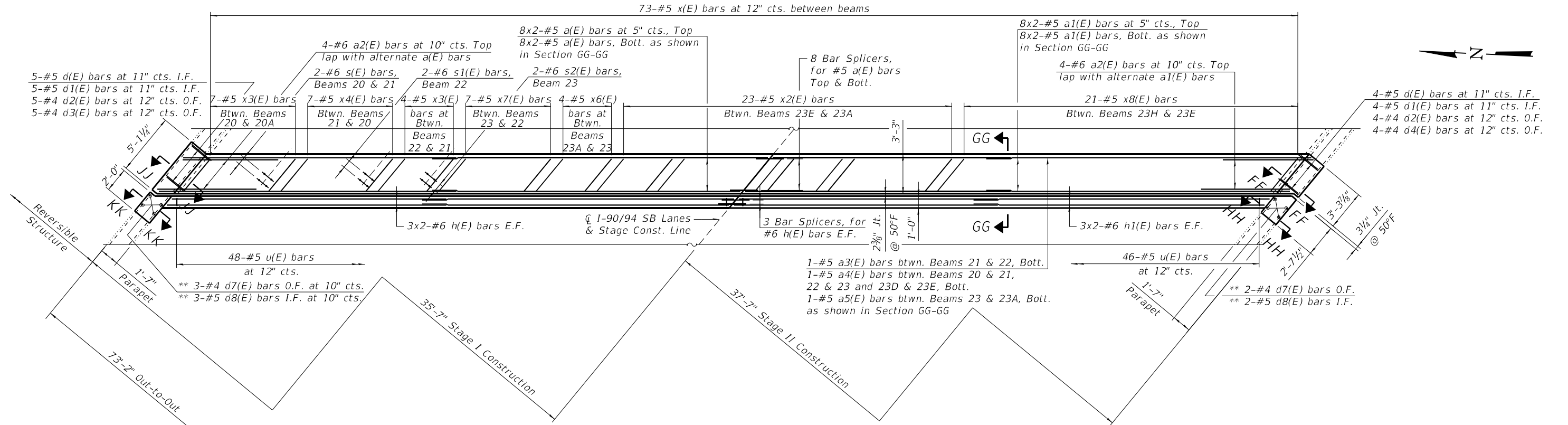
**EAST ABUTMENT EXPANSION JOINT DETAILS III  
SN 016-0123 (SB)**

SHEET S27-09 OF S27-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1163
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**WEST ABUTMENT JOINT REMOVAL PLAN**



**WEST ABUTMENT JOINT RECONSTRUCTION PLAN**

**NOTES:**

1. For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S27-11.
2. For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S27-12.

- \* Existing longitudinal bars to remain in the parapets can be cut in the field as required
- \*\* Epoxy grout #4 d5(E) bars and #5 d6(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

**LEGEND**

	Concrete Removal
I.F.	Inside Face
O.F.	Outside Face
E.F.	Each Face

MODEL: SMOELNAME5  
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**GR&E**  
 8501 W. Higgins Road, Suite 280  
 Chicago, Illinois 60631; (773) 399-0112

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PLOT SCALE =	CHECKED - H.A.	REVISED -
PLOT DATE =	DRAWN - D.C.P.	REVISED -
	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

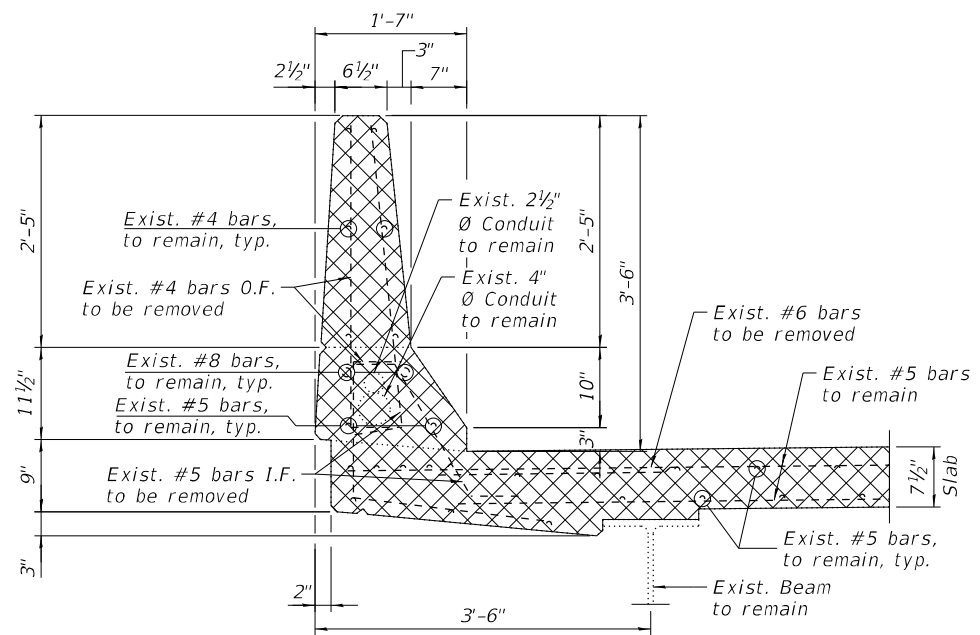
**WEST ABUTMENT EXPANSION JOINT DETAILS I  
 SN 016-0123 (SB)**

SHEET S27-10 OF S27-19 SHEETS

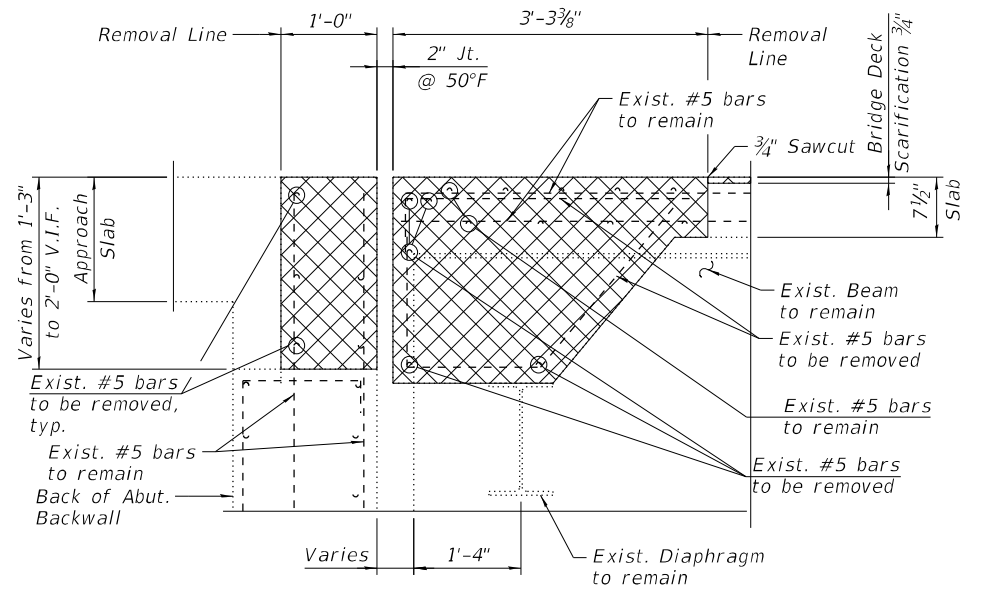
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90	2020-004-BR	COOK	1492	1164
			CONTRACT NO. 62K74	
ILLINOIS FED. AID PROJECT				



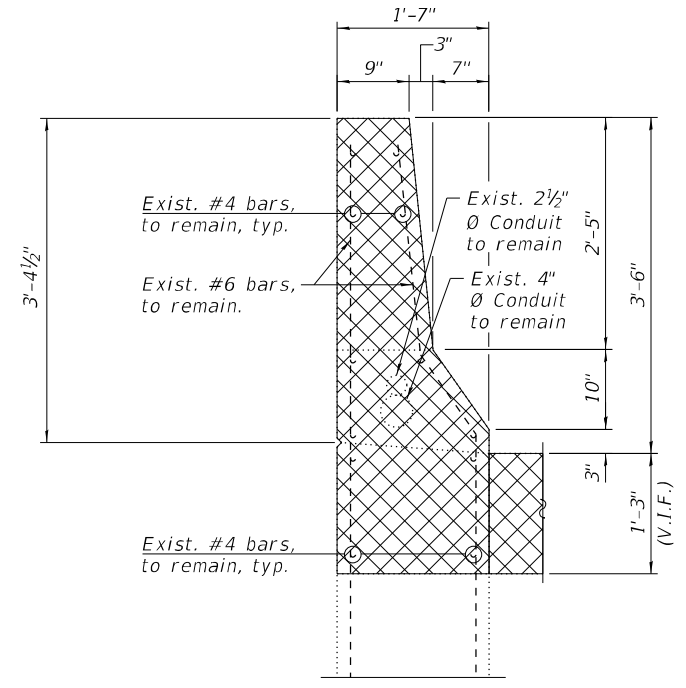
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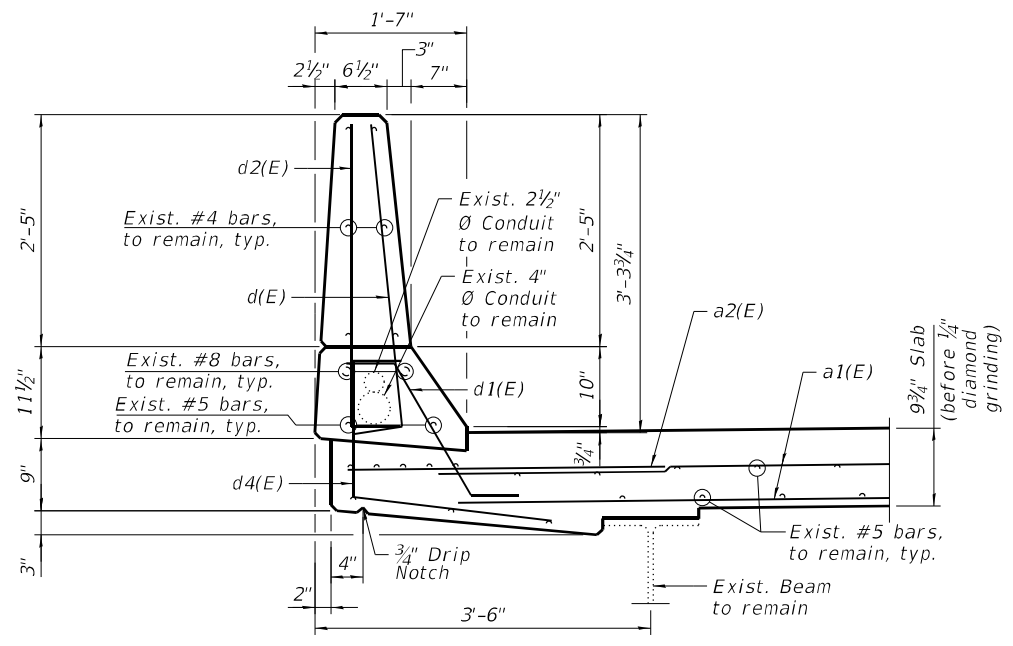
SECTION F-F  
(South parapet removal)



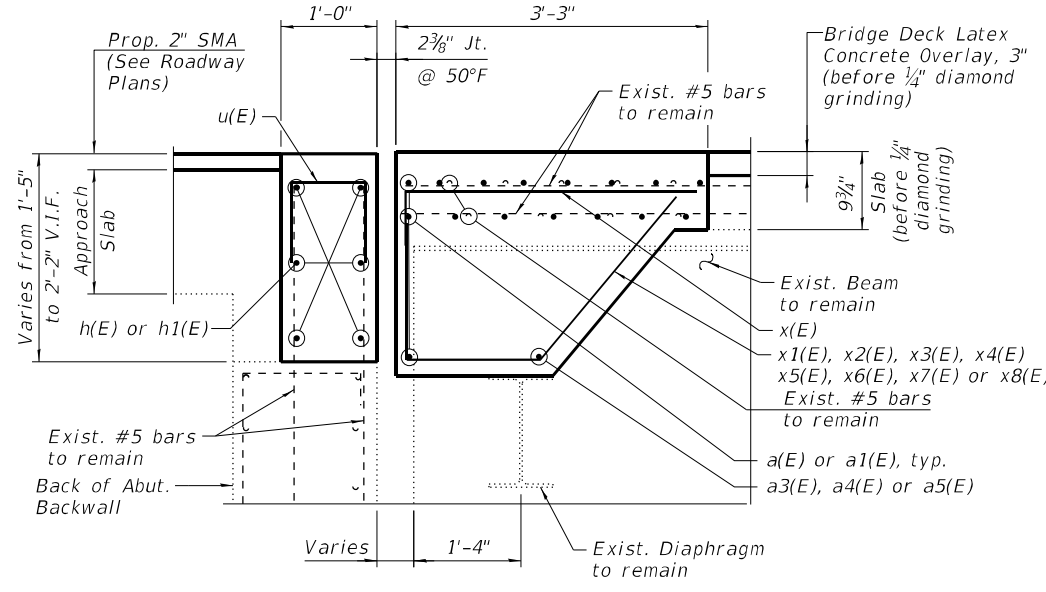
SECTION G-G



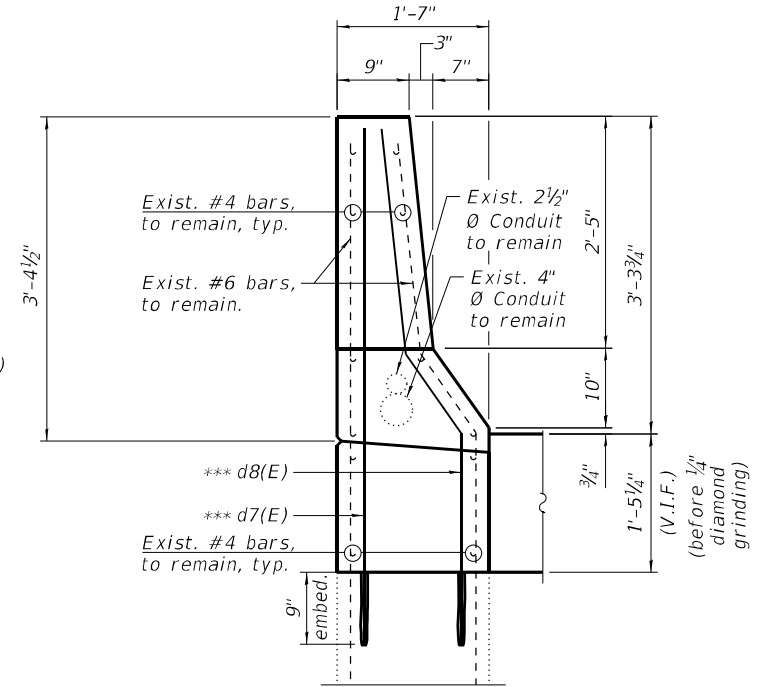
SECTION H-H  
(South parapet removal)



SECTION FF-FF  
(South parapet reconstruction)



SECTION GG-GG



SECTION HH-HH  
(South parapet reconstruction)

**LEGEND**

\*\* Dimension is taken at the Back of Abut.

\*\*\* Epoxy grout #4 d5(E) & #5 d6(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

Concrete Removal (hatched pattern)

I.F. Inside Face

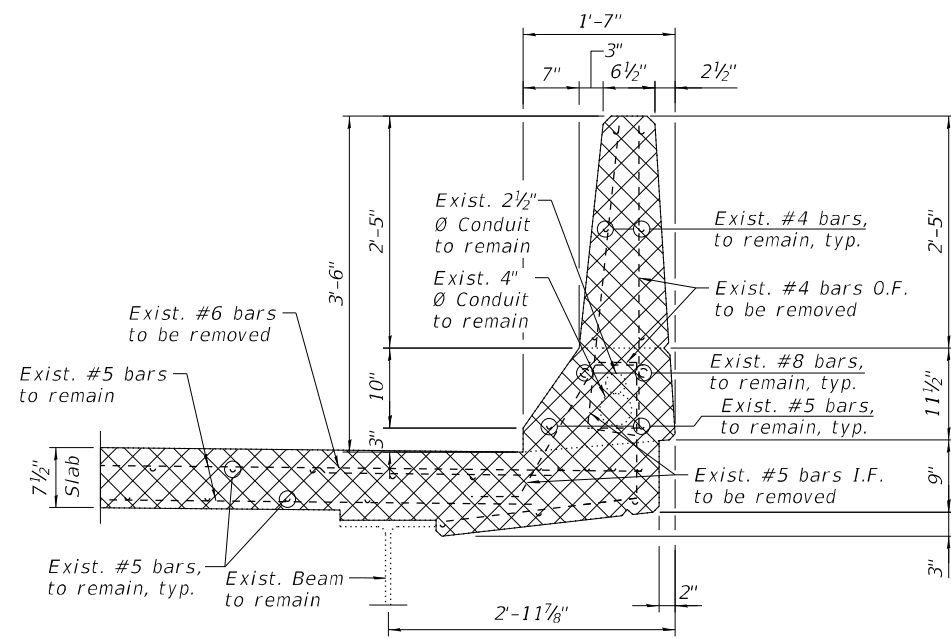
O.F. Outside Face

V.I.F. Verify in Field

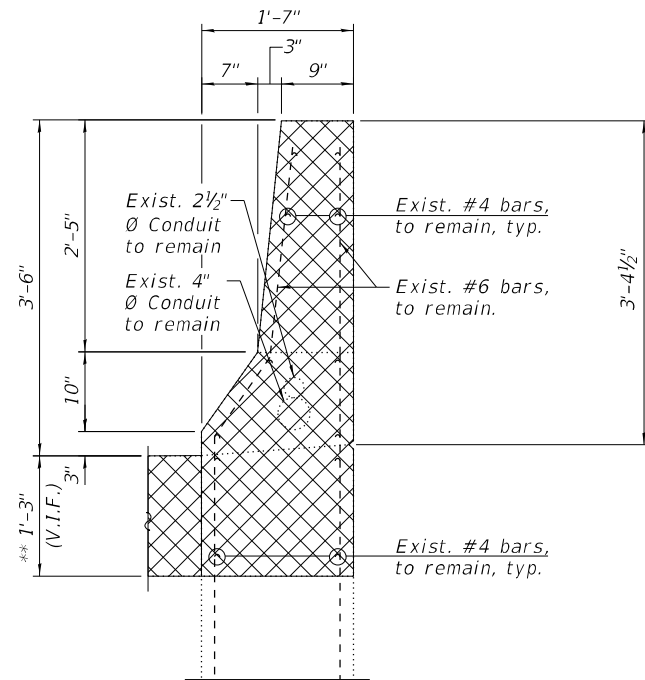
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	CHECKED - K.G.W.	REVISED -

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1165
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

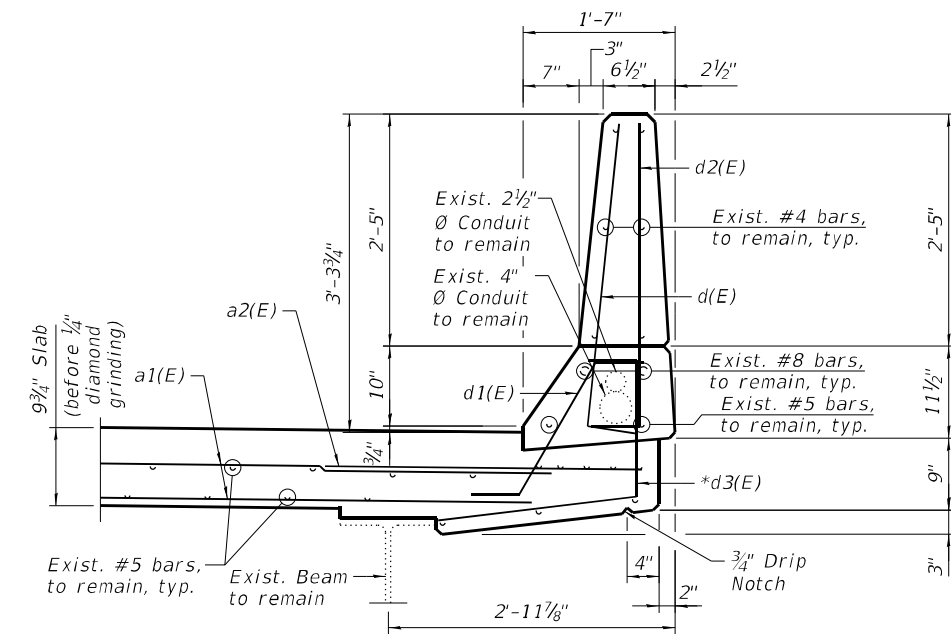
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**SECTION J-J**  
(North parapet removal)

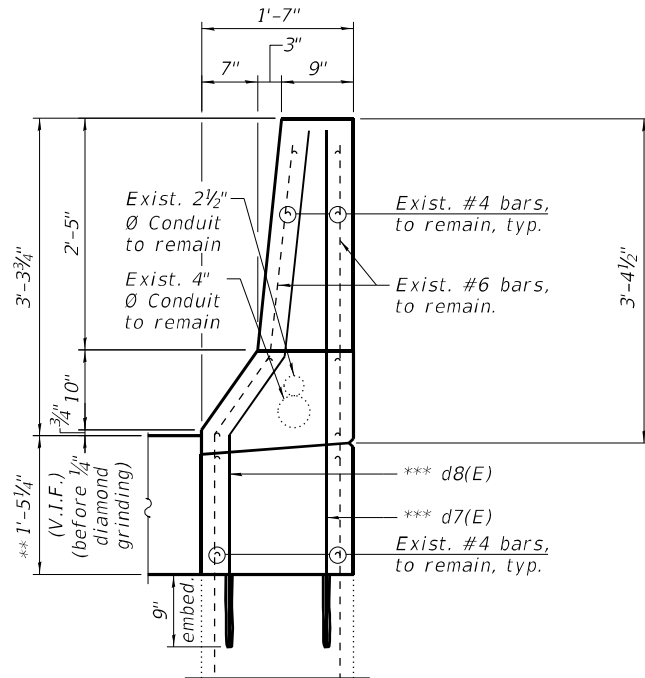


**SECTION K-K**  
(North parapet removal)



**SECTION JJ-JJ**  
(North parapet reconstruction)

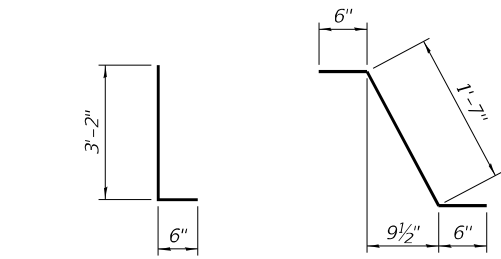
\* Field bend bar to miss top flange of beam



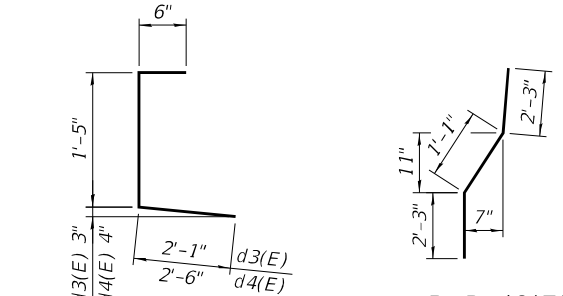
**SECTION KK-KK**  
(North parapet reconstruction)

\*\* Dimension is taken at the Back of Abut.

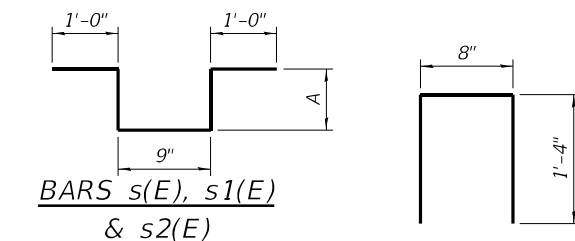
\*\*\* Epoxy grout #4 d5(E) & #5 d6(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.



**BARS d(E) & d2(E)**      **BAR d1(E)**

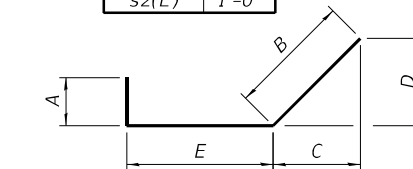


**BARS d3(E) & d4(E)**      **BAR d8(E)**

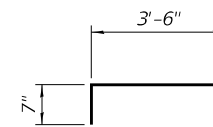


**BARS s(E), s1(E) & s2(E)**      **BAR u(E)**

Bar	A
s(E)	8 1/2"
s1(E)	10"
s2(E)	1'-0"



**BARS x2(E), x3(E), x4(E), x6(E), x7(E) & x8(E)**



**BAR x(E)**

**NOTES:**

- For Preformed Joint Strip Seal details, see sheet S27-13.
- For Bar Splicer Assembly details, see sheet S27-19.
- 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 shall be included with Concrete Removal.
- Removal and disposal of the existing expansion joints is included with Concrete Removal.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

**BILL OF MATERIAL  
WEST ABUTMENT**

Bar	No.	Size	Length	Shape
a(E)	32	#5	24'-11"	—
a1(E)	32	#5	26'-3"	—
a2(E)	8	#6	6'-6"	—
a3(E)	1	#5	4'-9"	—
a4(E)	3	#5	7'-11"	—
a5(E)	1	#5	4'-4"	—
d(E)	9	#5	3'-8"	—
d1(E)	9	#5	2'-7"	—
d2(E)	9	#4	3'-8"	—
d3(E)	5	#4	4'-0"	—
d4(E)	4	#4	4'-5"	—
d7(E)	5	#4	5'-5"	—
d8(E)	5	#5	5'-7"	—
h(E)	12	#6	25'-2"	—
h1(E)	12	#6	26'-6"	—
s(E)	4	#6	4'-2"	—
s1(E)	2	#6	4'-5"	—
s2(E)	2	#6	4'-9"	—
u(E)	94	#5	3'-4"	—
x(E)	73	#5	4'-1"	—
x2(E)	23	#5	3'-5"	—
x3(E)	11	#5	4'-7"	—
x4(E)	7	#5	5'-7"	—
x6(E)	4	#5	5'-4"	—
x7(E)	7	#5	6'-2"	—
x8(E)	21	#5	4'-1"	—
Concrete Removal			Cu Yd	26.1
Reinforcement Bars, Epoxy Coated			Pound	3,940
Concrete Superstructure			Cu Yd	28.7

Bar	A	B	C	D	E
x2(E)	6"	1'-0"	9"	7 1/2"	1'-11"
x3(E)	10"	1'-10"	1'-5"	1'-1 1/2"	1'-11"
x4(E)	1'-2"	2'-5 1/4"	1'-11 1/4"	1'-6"	1'-11"
x6(E)	1'-1"	2'-3 3/4"	1'-9 3/8"	1'-5"	1'-11"
x7(E)	1'-5"	2'-9 3/4"	2'-2 3/8"	1'-8 1/2"	1'-11"
x8(E)	8"	1'-4"	1'-0 1/2"	9 3/8"	2'-1"

**MIN BAR LAPS**

- #5 3'-6"
- #6 4'-0"



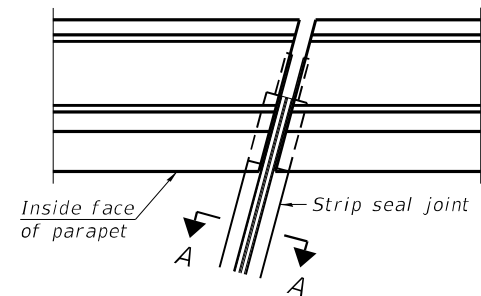
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	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT EXPANSION JOINT DETAILS III  
SN 016-0123 (SB)**

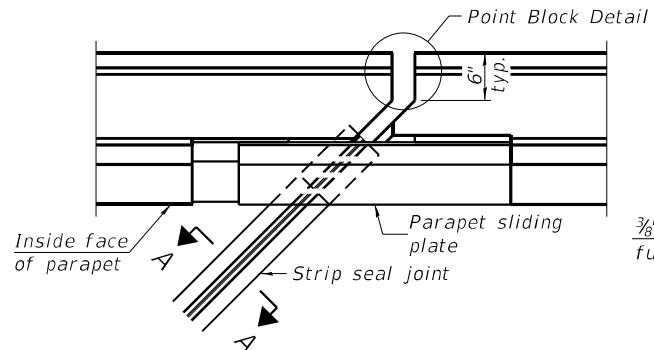
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1166
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

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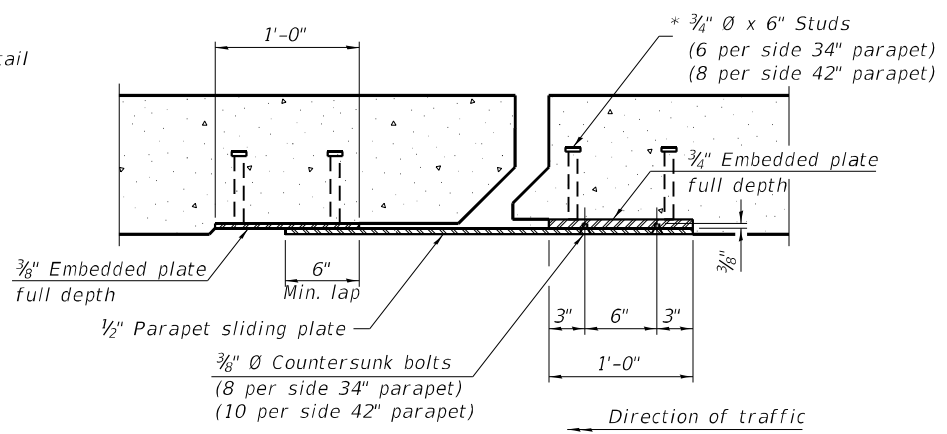


FOR SKEWS  $\leq 30^\circ$

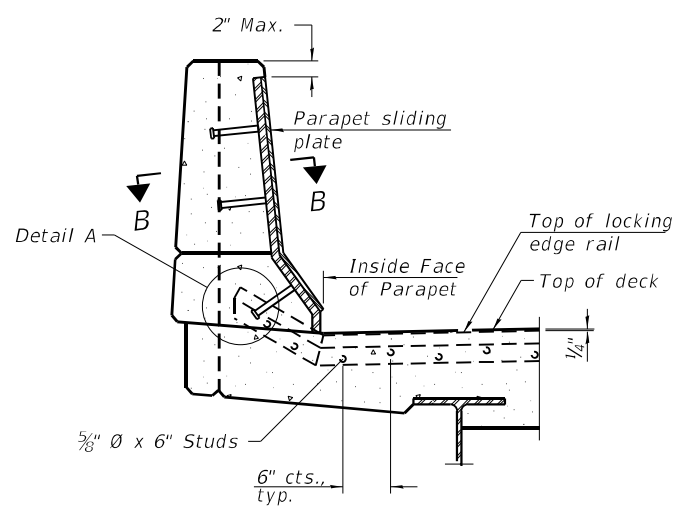
PLAN AT PARAPET



FOR SKEWS  $> 30^\circ$

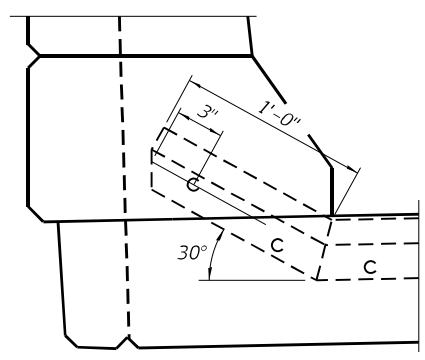


SECTION B-B

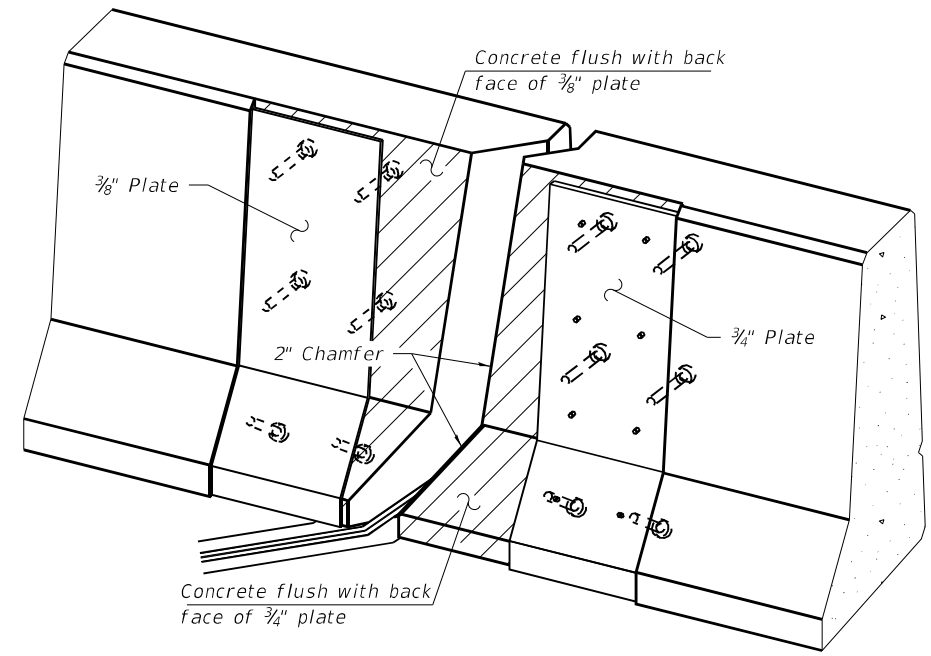


ELEVATION AT PARAPET

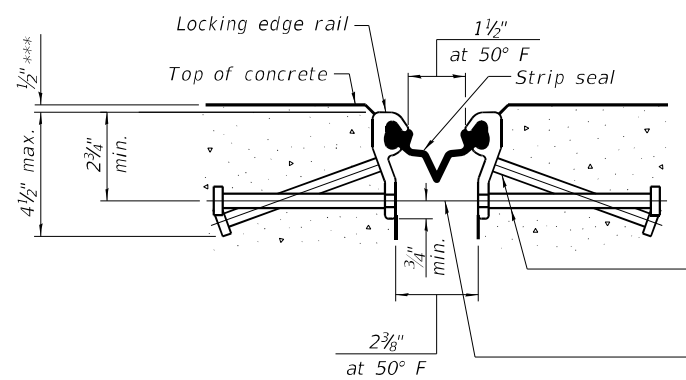
(Skews  $> 30^\circ$  shown. Skews  $\leq 30^\circ$  similar except as shown in plan view.)



DETAIL A



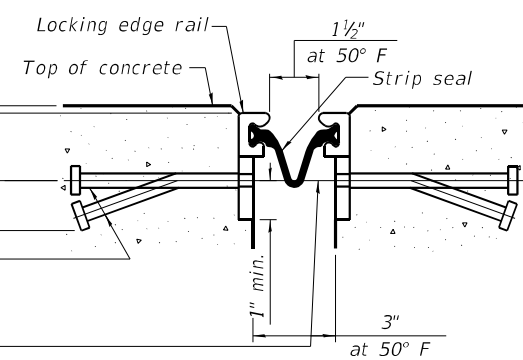
TRIMETRIC VIEW  
(Showing embedded plates only)



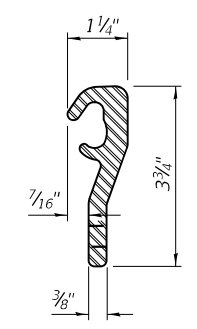
SHOWING ROLLED RAIL JOINT

\*  $3/8"$   $\phi$  x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

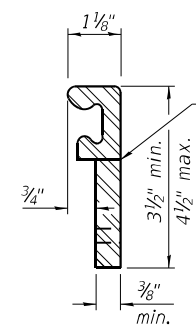
$3/8"$   $\phi$  threaded rods in  $1/16"$   $\phi$  holes at  $\pm 4'-0"$  cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.



SHOWING WELDED RAIL JOINT



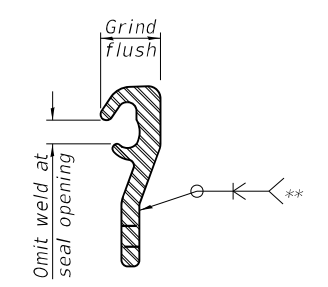
ROLLED (EXTRUDED) RAIL



WELDED RAIL

LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

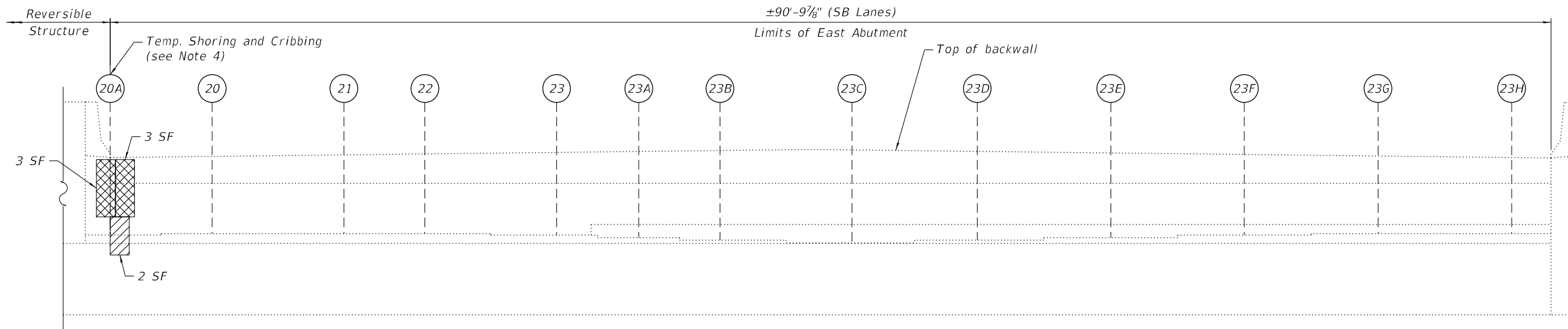
The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	194

USER NAME =	DESIGNED - J.T.B.	REVISED -
PLOT SCALE =	CHECKED - H.A.	REVISED -
PLOT DATE =	DRAWN - D.C.P.	REVISED -
	CHECKED - K.G.W.	REVISED -

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1167
			CONTRACT NO. 62K74	
		ILLINOIS FED. AID PROJECT		



SUMMARY OF REACTIONS	
	Beam 20A
R DL (k)	18.04
R LL (k)	34.98
R IM (k)	9.83
R Total (k)	62.85

**ELEVATION - EAST ABUTMENT**  
(Looking East)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
- Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
- For Slope Wall Repairs, see Sheet S27-18.
- Temporary Shoring and Cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- Structural Repair of Concrete (Depth greater than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	598
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	2
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	6
Temporary Shoring and Cribbing	Each	1

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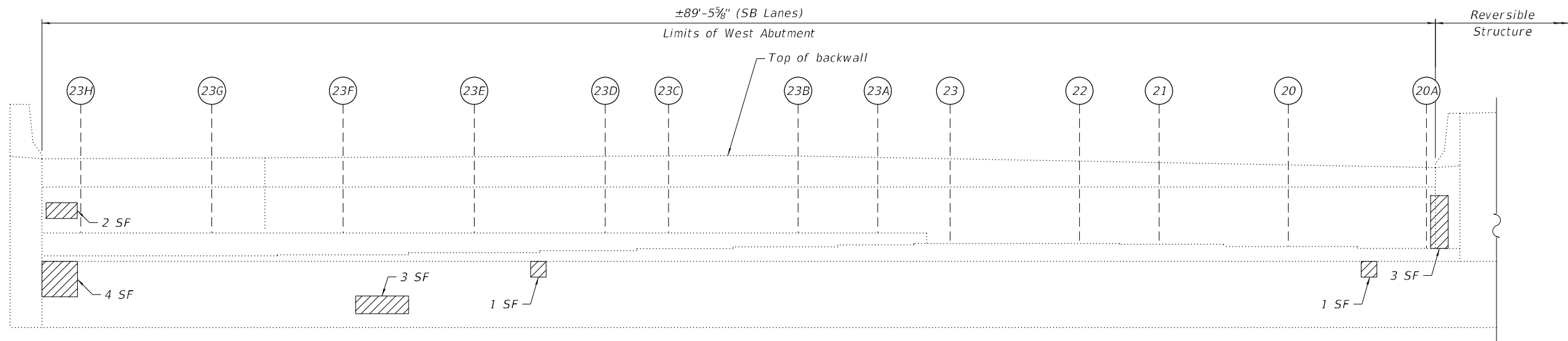
**GRÄEF**  
8501 W. Higgins Road, Suite 280  
Chicago, Illinois 60631; (773) 399-0112

USER NAME =	DESIGNED - J.T.B.	REVISED -
	CHECKED - H.A.	REVISED -
PLOT SCALE =	DRAWN - D.C.P.	REVISED -
PLOT DATE =	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT REPAIRS  
SN 016-0123 (SB)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1168
			CONTRACT NO. 62K74	
		ILLINOIS FED. AID PROJECT		



**ELEVATION - WEST ABUTMENT**  
(Looking West)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
- Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
- For Slope Wall repairs, see Sheet S27-18.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	590
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	14

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**GRÄEF**  
 8501 N. Higgins Road, Suite 280  
 Chicago, Illinois 60631; (773) 399-0112

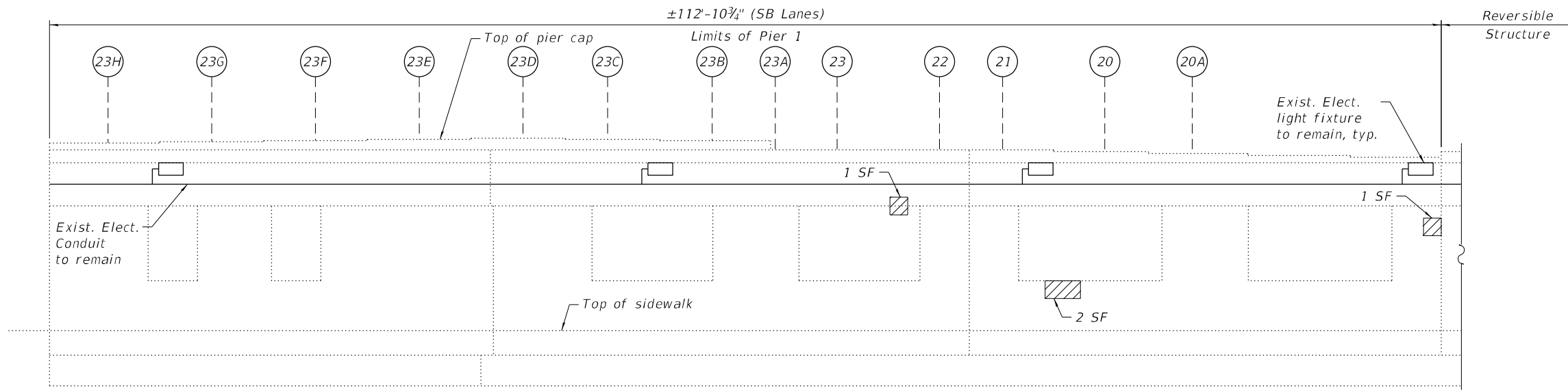
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

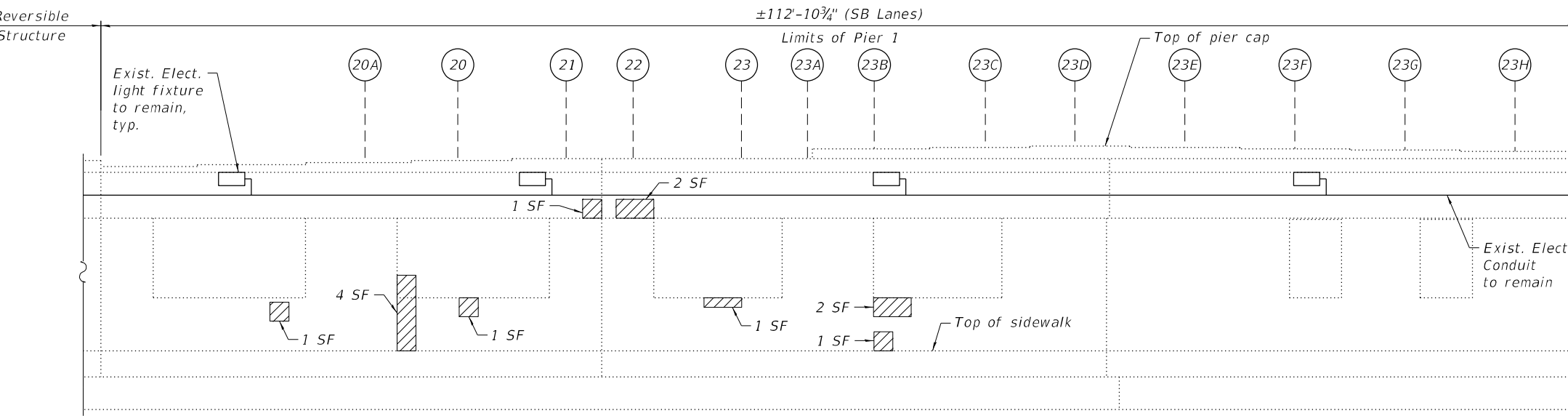
**WEST ABUTMENT REPAIRS  
SN 016-0123 (SB)**

SHEET S27-15 OF S27-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1169
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**ELEVATION - PIER 1**  
(Looking West)



**ELEVATION - PIER 1**  
(Looking East)



**EXISTING LIGHTING: PIER 1**  
(Looking Northwest)



**EXISTING LIGHTING: PIER 1**  
(Looking Southeast)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	17

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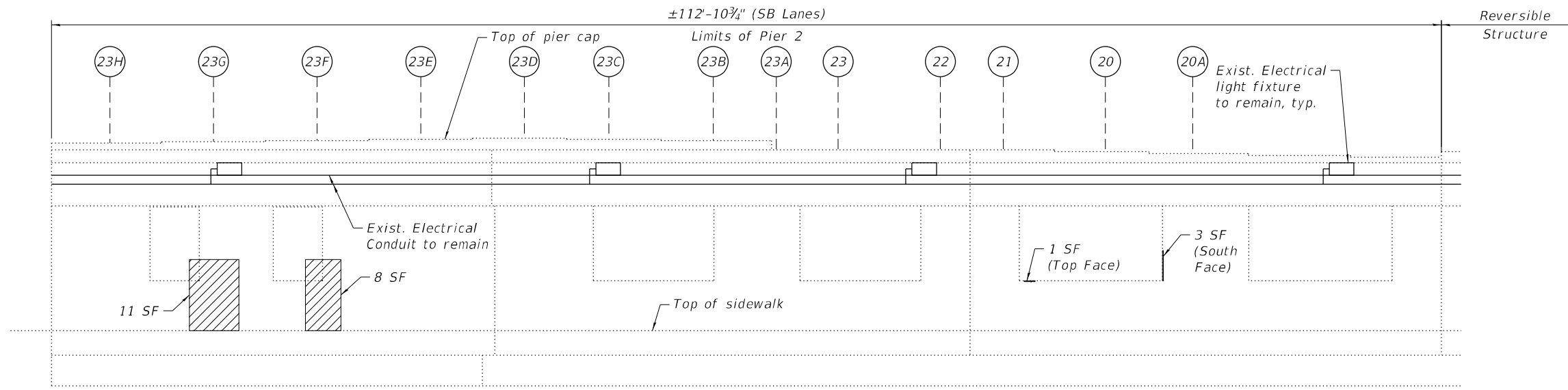
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**DEPARTMENT OF TRANSPORTATION**

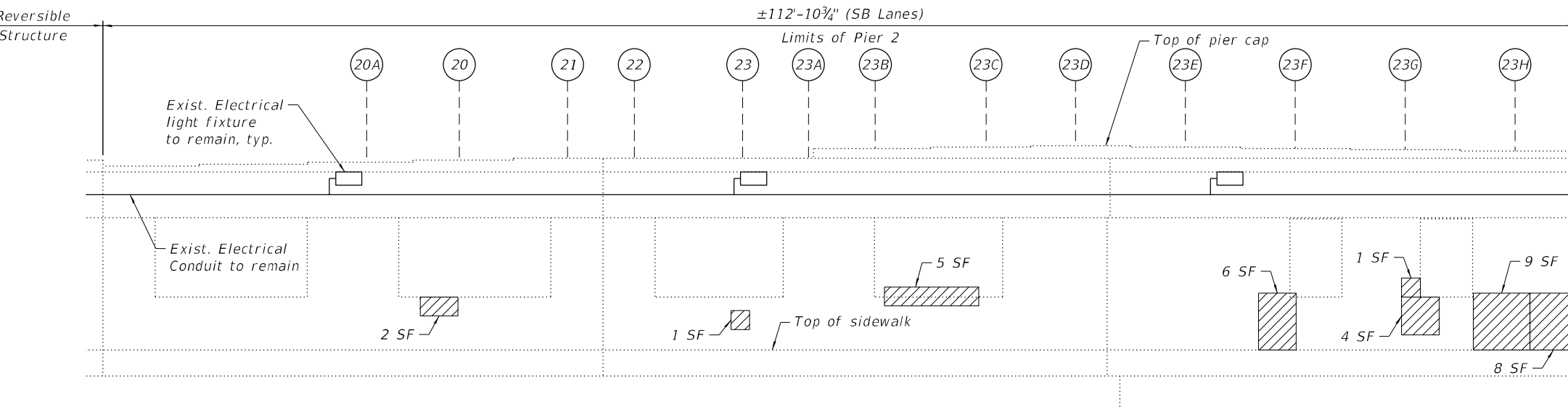
**PIER 1 REPAIRS**  
**SN 016-0123 (SB)**

SHEET S27-16 OF S27-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1170
CONTRACT NO. 62K74			ILLINOIS FED. AID PROJECT	



**ELEVATION - PIER 2**  
(Looking West)



**ELEVATION - PIER 2**  
(Looking East)



**EXISTING LIGHTING: PIER 2**  
(Looking Southwest)



**EXISTING LIGHTING: PIER 2**  
(Looking Southeast)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	59

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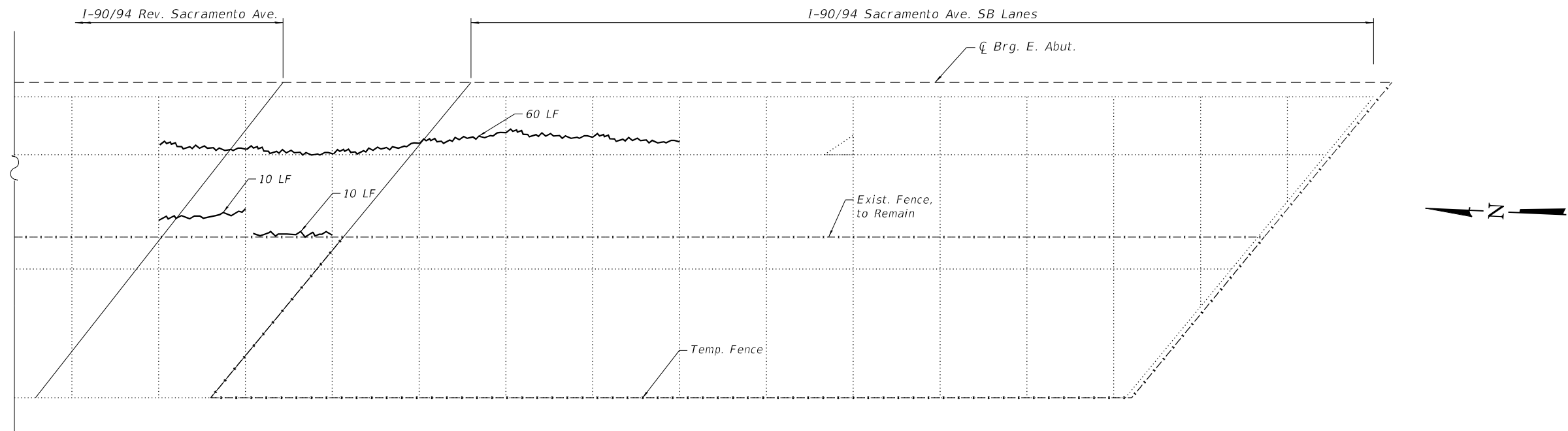
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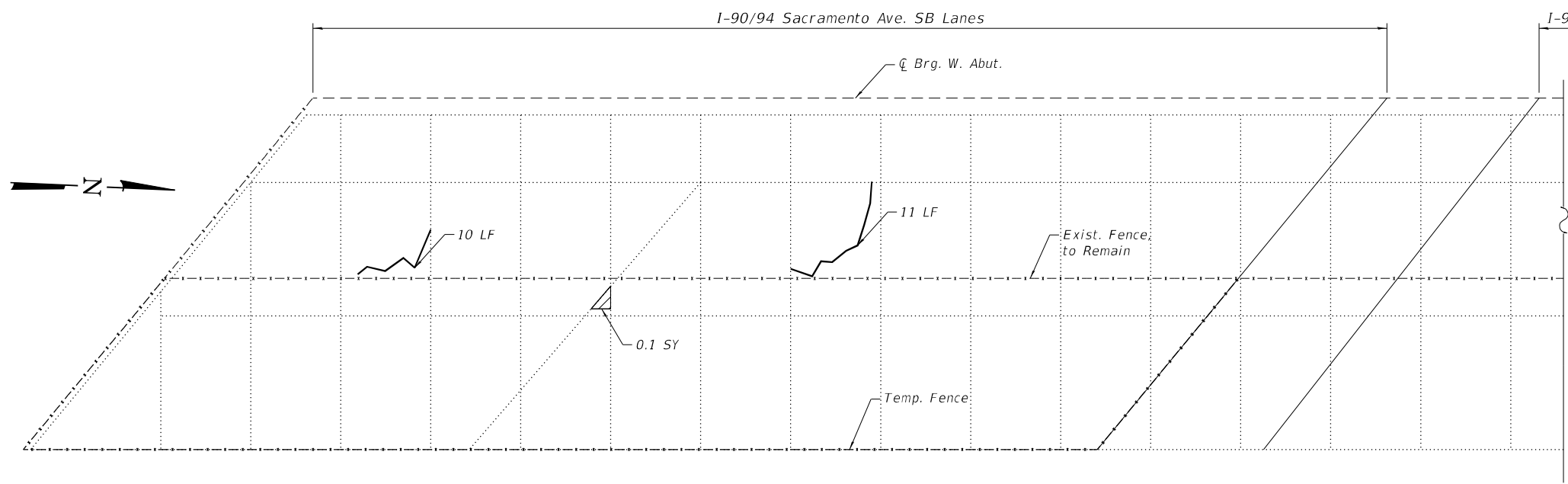
**PIER 2 REPAIRS**  
**SN 016-0123 (SB)**

SHEET S27-17 OF S27-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1171
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



EAST SLOPE WALL - PLAN



WEST SLOPE WALL - PLAN

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
- Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq ft

**LEGEND**

- Slope Wall Removal and Replacement with Slope Wall 4 Inch
- SY Square Yard
- LF Linear Foot
- Slope Wall Crack Sealing

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu Yd	1
Slope Wall Removal	Sq Yd	1
Slope Wall 4 Inch	Sq Yd	1
Slope Wall Crack Sealing	Foot	101

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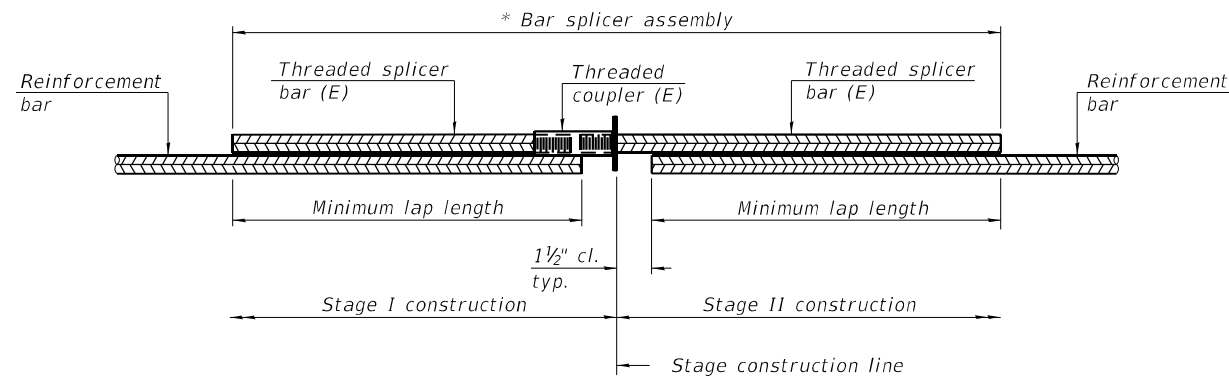
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SLOPE WALL REPAIRS  
SN 016-0123 (SB)**

SHEET S27-18 OF S27-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1172
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



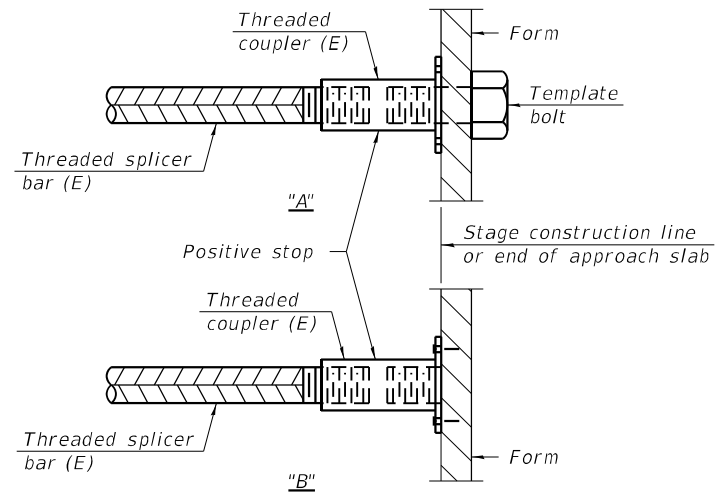


**STANDARD BAR SPLICER ASSEMBLY PLAN**  
 (All components shall be provided from one supplier)

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

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

Location	Bar size	No. assemblies required	Minimum lap length
East Abutment	#5	16	3'-6"
Exp. Jt.	#6	6	4'-0"
West Abutment	#5	16	3'-6"
Exp. Jt.	#6	6	4'-0"

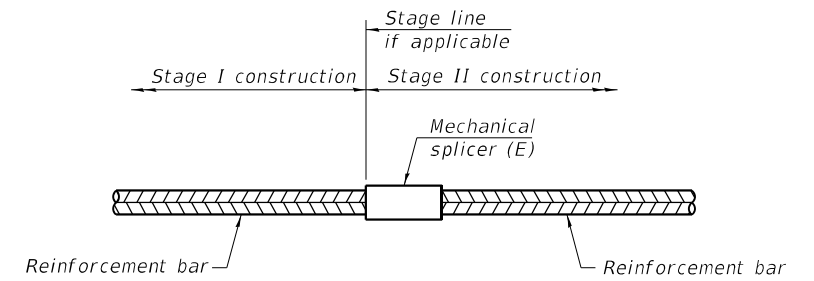


**INSTALLATION AND SETTING METHODS**

"A" : Set bar splicer assembly by means of a template bolt.

"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required

**Notes:**

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

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BSD-1

1-1-2020

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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
 SN 016-0123 (SB)**

SHEET S27-19 OF S27-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1173
CONTRACT NO. 62K74			ILLINOIS FED. AID PROJECT	

Existing Structure: S.N. 016-0123 was originally built in 1957 from BCR. The bridge was widened and redecked between 1990 and 1992, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 200'-10" and an out-to-out deck width that varies between 73'-2 1/4" and 77'-10 1/4". The superstructure consists of a 7 1/2" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 52'-9 5/8", 87'-5 5/8", and 52'-9 1/2". The substructure consists of reinforced concrete abutments and piers supported on cast-in-place metal shell piles.

The reversible lanes will be closed to traffic during construction.

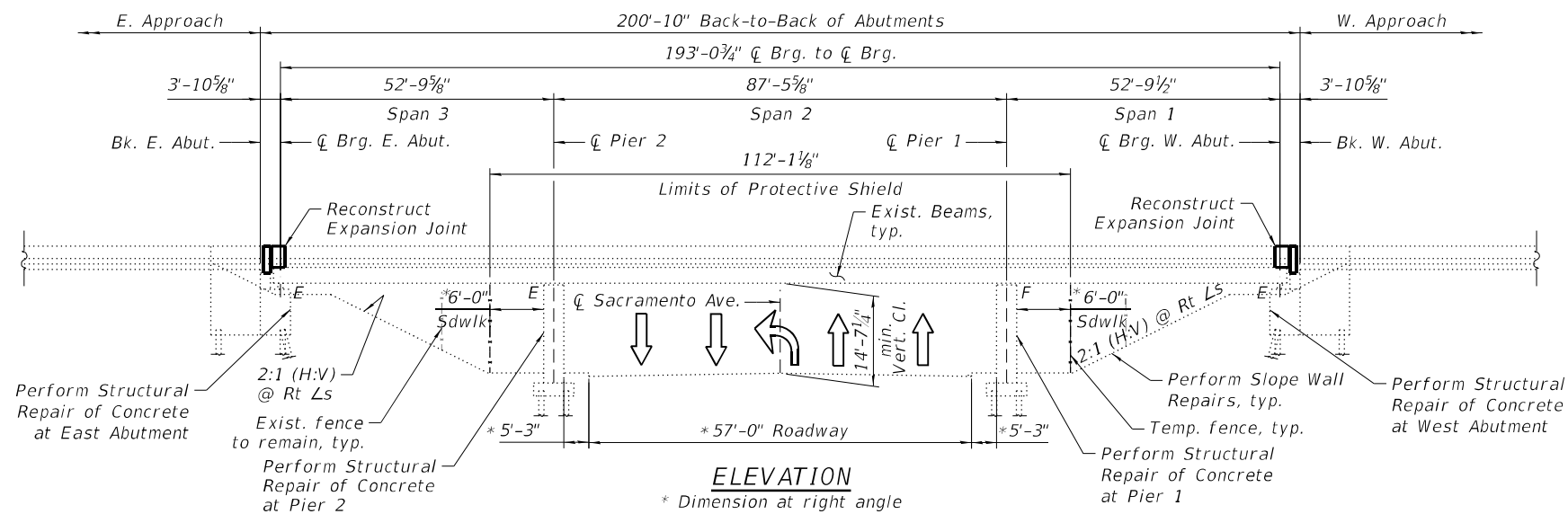
No salvage.

**LOADING**

HS20-44 and alternate military loading

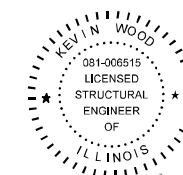
**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition



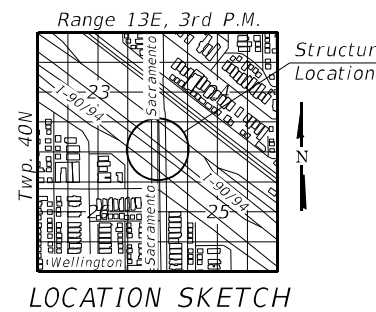
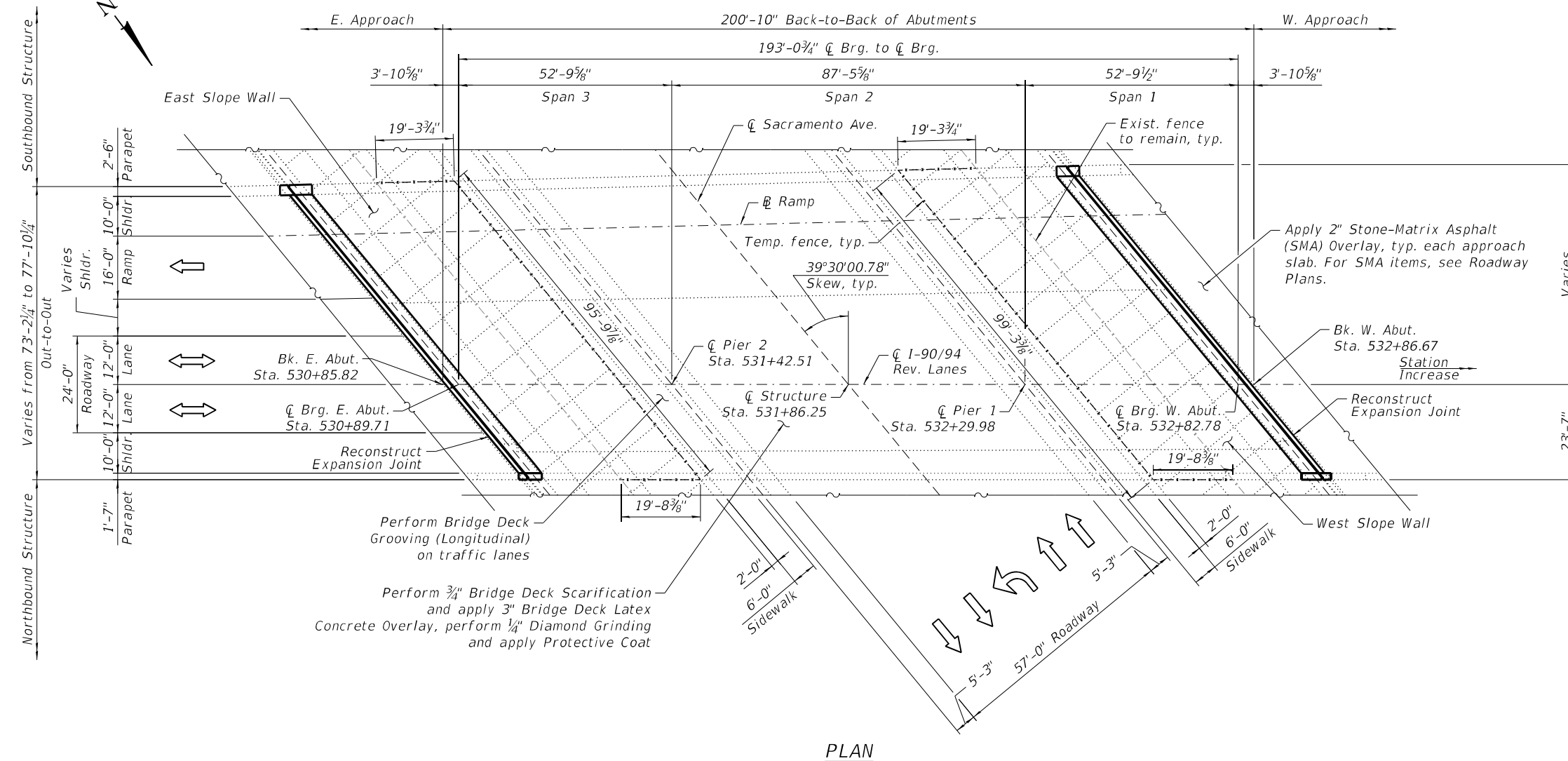
**NOTE:**

- All stations are to the C 1-90/94 Rev. Roadway and taken from existing plans.
- No Future Wearing Surface is allowed.



*Kevin Wood*

Engineer Full Name: Kevin Wood Date: 10-20-2022  
Illinois Registered Engineer No. 081-006515  
Registration Expires 11. 30, 2024



**GENERAL PLAN AND ELEVATION  
REVERSIBLE I-90 OVER SACRAMENTO AVENUE**

F.A.I. SEC 2020-004-BR

COOK COUNTY

STATION: 531+86.25

STRUCTURE NO. 016-0123 (REV)

MODEL: SMOELNAMES  
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET S28-01 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1174
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

**GENERAL NOTES**

- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or 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 Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further dispositions. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- Plan dimensions and details relative to the existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity furnished at the unit price bid for the work.
- Cleaning and field painting of structural steel shall be done under a separate painting contract.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Removal.
- Bars indicated thus, 3x2-#5, indicates 3 lines of #5 bars with 2 lengths of bar per line.
- All exposed concrete edges shall have a 3/4"x45° chamfer, except where shown otherwise.
- For SMA overlay on Approach Slab, see Roadway Plans.
- Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.
- Joint openings shall be adjusted according to Article 520.04 of the Standard Specification when the deck is poured at an ambient temperature other than 50°F.
- Adjacent I-90/94 Northbound and Southbound bridge is not shown throughout the plans for clarity.
- The Contractor shall take the necessary precautions for the protection of passing vehicles, bicycles and pedestrians from falling objects and/or materials until completion of work.
- The Contractor is responsible to remove, support and reinstall all existing electrical conduits interfering with the work. See special provision "Protection and Maintenance of Existing Underpass Luminaires".
- The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.
- The Contractor is responsible to protect the existing conduit and junction box embedded in the parapet during concrete removal and construction. Any damage to the existing conduit and junction box shall be repaired by the Contractor at no additional cost to the Department.
- Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.
- Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.
- The Contractor shall contact Chandra Libby, the Director of City of Chicago Department of Family Support Services (DFSS) at 312-746-5443 or Chandra.Libby@cityofchicago.org to coordinate the relocation of persons and their personal belongings under the bridges within the areas bounded by the temporary chain-link-fence.
- Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.

**INDEX OF SHEETS**

- S28-01 General Plan & Elevation
- S28-02-S28-03 General Data I & II
- S28-04 Bridge Deck Repair Plan and Details
- S28-05-S28-07 East Abutment Expansion Joint Details I, II & III
- S28-08-S28-10 West Abutment Expansion Joint Details I, II & III
- S28-11 Performed Joint Strip Seal
- S28-12 East Abutment Repairs
- S28-13 West Abutment Repairs
- S28-14 Pier 1 Repairs
- S28-15 Pier 2 Repairs
- S28-16 Slope Wall Repairs

**SCOPE OF WORK**

- Provide Protective Shield within limits indicated on the plans.
- Scarify 3/4" from the bridge deck slab.
- Perform deck repairs.
- Remove and reconstruct expansion joints at east and west abutments and install new Performed Joint Strip Seals.
- Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs, see Roadway Plans.
- Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
- Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
- Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse expansion joints and to the surface of the new overlay.
- Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.
- Perform slope wall repairs.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	58.3		58.3
Protective Shield	Sq Yd	941		941
Concrete Superstructure	Cu Yd	63.9		63.9
Protective Coat	Sq Yd	1,908		1,908
Reinforcement Bars, Epoxy Coated	Pound	8,330		8,330
Performed Joint Strip Seal	Foot	200		200
Concrete Sealer	Sq Ft		1,014	1,014
Slope Wall Crack Sealing	Foot		89	89
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	869		869
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,493		1,493
Bridge Deck Scarification 3/4"	Sq Yd	1,493		1,493
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		60	60
Deck Slab Repair (Full Depth, Type II)	Sq Yd	132.8		132.8
Diamond Grinding (Bridge Section)	Sq Yd	1,552		1,552
Maintenance of Lighting System	Cal Mo		6	6
Temporary Construction Fence	Foot		274	274

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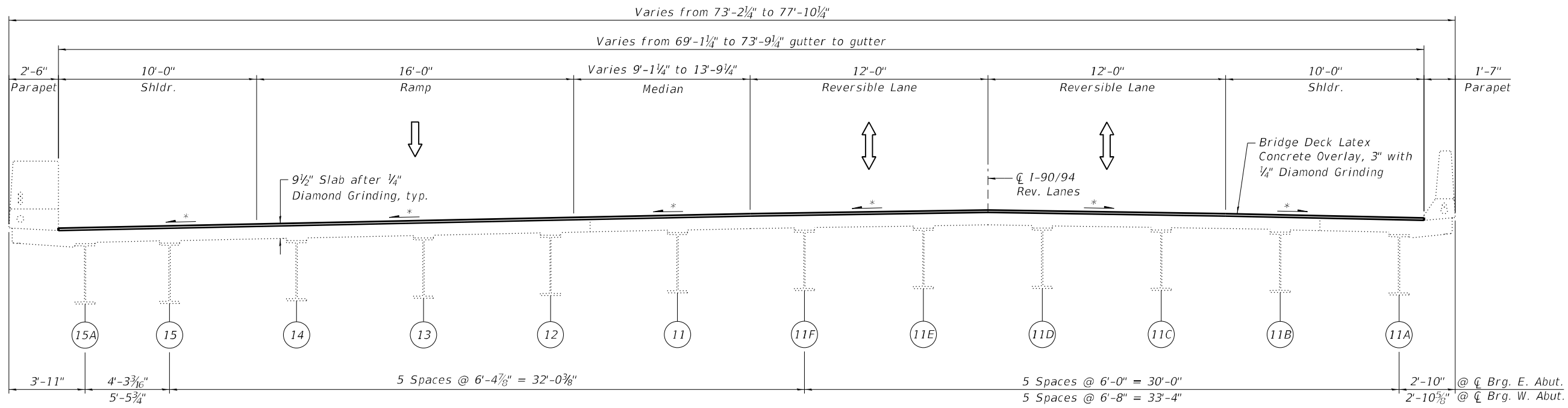
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA I  
SN 016-0123 (REV)**

SHEET S28-02 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1175
CONTRACT NO. 62K74			ILLINOIS FED. AID PROJECT	



**FINAL CROSS SECTION**  
(Looking West)

\* Match existing deck surface profile

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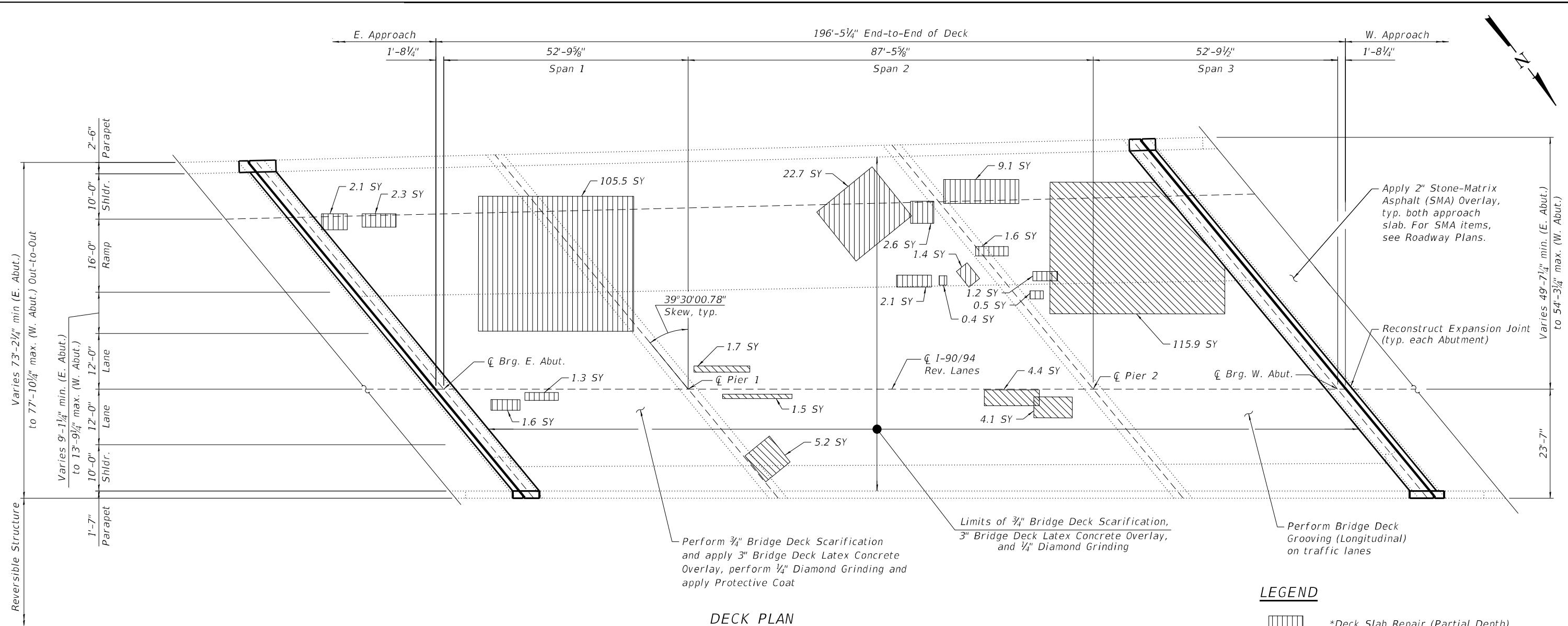
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA II**  
**SN 016-0123 (REV)**

SHEET S28-03 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1176
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



**DECK PLAN**

**LEGEND**

- \*Deck Slab Repair (Partial Depth)
- Deck Slab Repair (Full Depth, Type II)
- SY Square Yard

\* Areas of Deck Slab Repair (Partial) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3 Inches

**NOTES:**

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S28-03.
3. For East and West transverse joint removal and reconstruction, see Sheet S28-05 thru S28-10.
4. Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
5. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
6. Protective Coat shall be applied to the top of reconstructed transverse joints, top and inside face of parapets and top of latex concrete overlay.
7. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.
8. The Contractor shall exercise extreme caution during concrete removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer at no cost to the Department.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	941
Protective Coat	Sq Yd	1,908
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	869
Bridge Deck Latex Concrete Overlay, 3"	Sq Yd	1,493
Bridge Deck Scarification 3/4"	Sq Yd	1,493
Deck Slab Repair (Full Depth, Type II)	Sq Yd	132.8
Diamond Grinding (Bridge Section)	Sq Yd	1,552
Maintenance of Lighting System	Cal Mo	6

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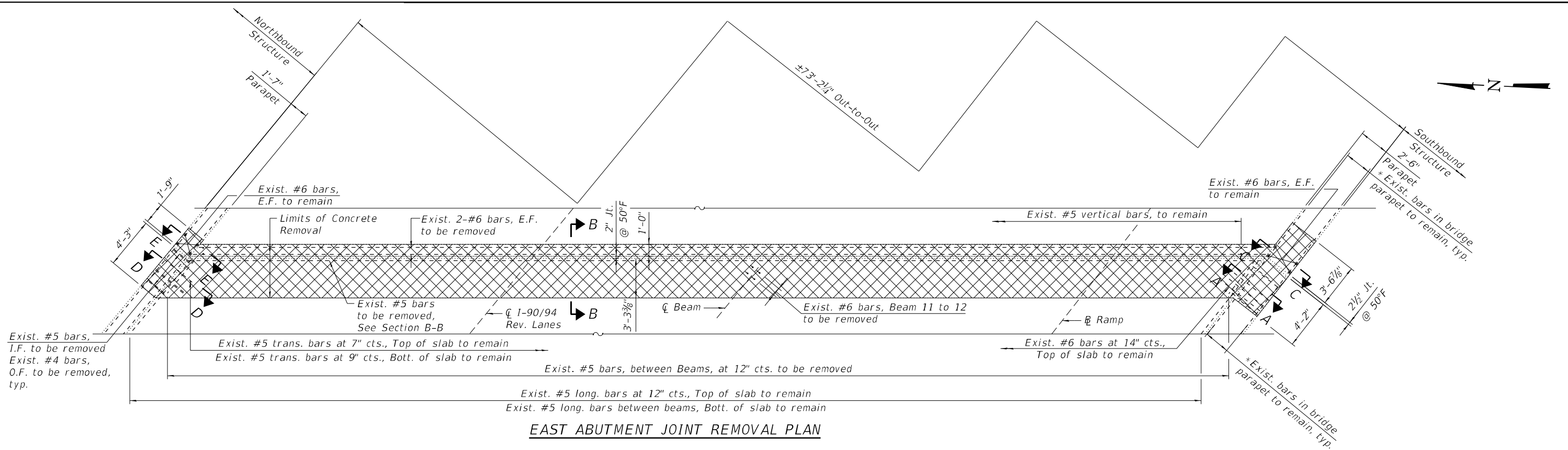
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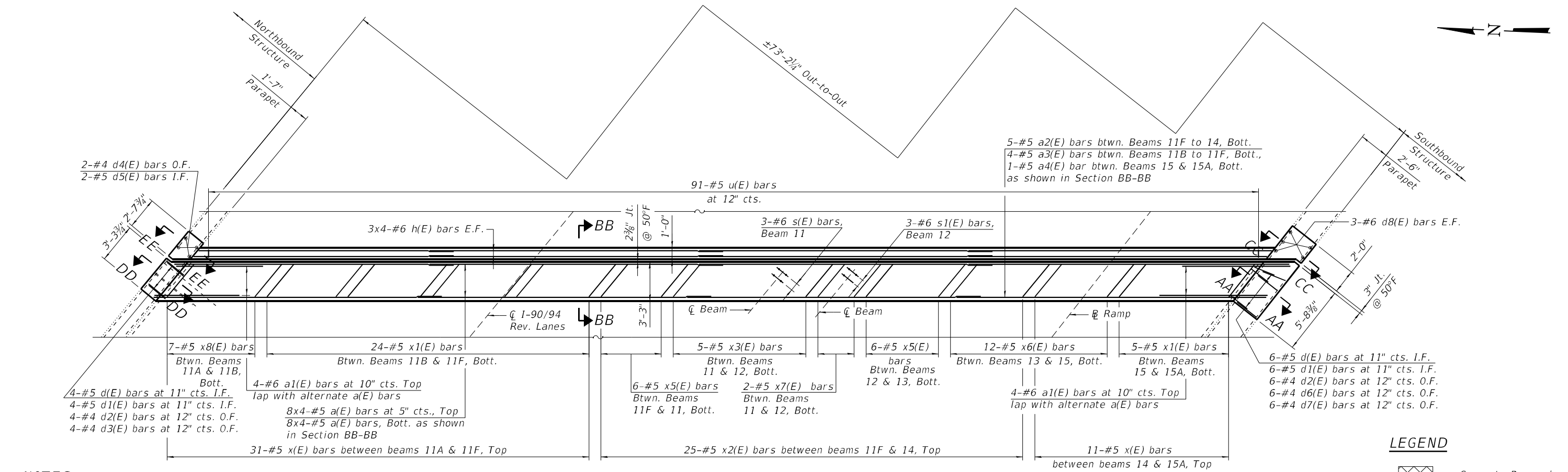
**BRIDGE DECK REPAIR PLAN AND DETAILS  
SN 016-0123 (REV)**

SHEET S28-04 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1177
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



**EAST ABUTMENT JOINT REMOVAL PLAN**



**EAST ABUTMENT JOINT RECONSTRUCTION PLAN**

**NOTES:**

- For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S28-06.
- For sections D-D, E-E, DD-DD and EE-EE, see sheet S28-07.

\* Existing longitudinal bars to remain in the parapets can be cut in the field as required

\*\* Epoxy grout #4 d4(E) bars, #5 d5(E) bars and #6 d8(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- E.F. Each Face

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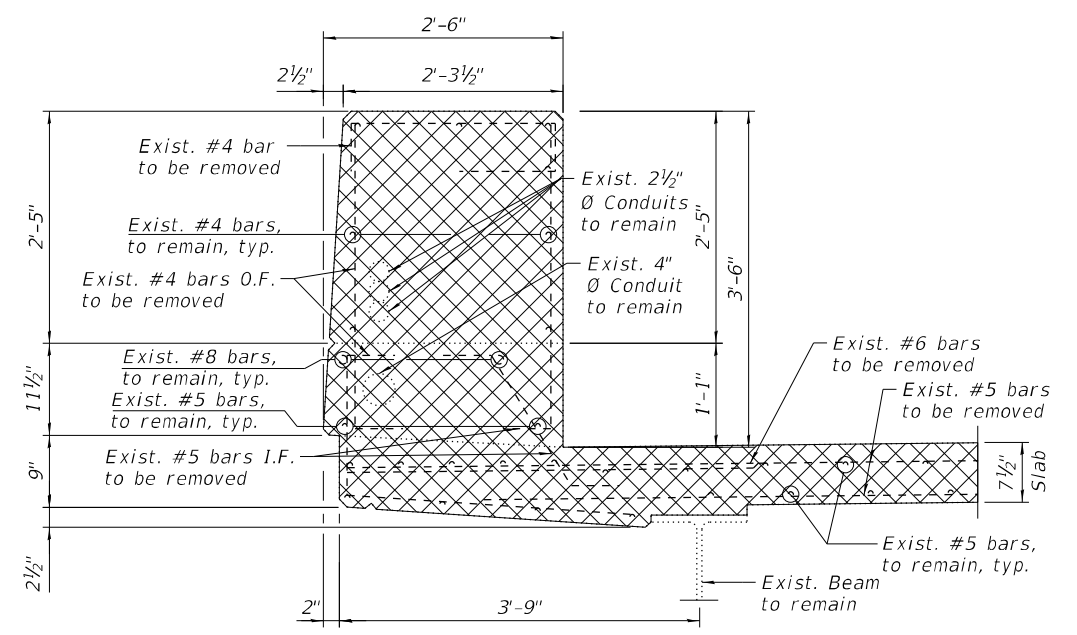
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT EXPANSION JOINT DETAILS I  
SN 016-0123 (REV)**

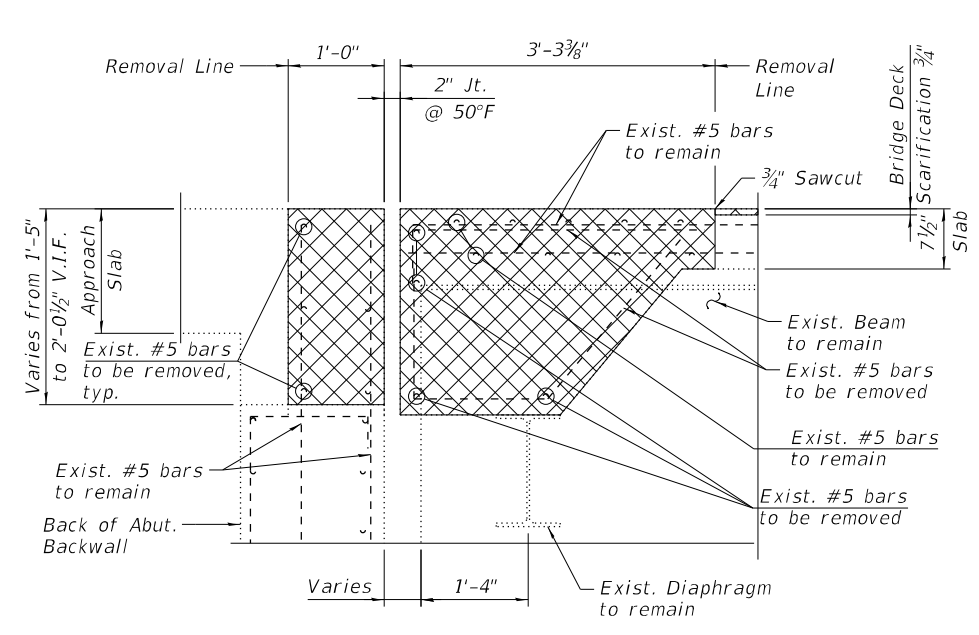
SHEET S28-05 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1178
CONTRACT NO. 62K74				
ILLINOIS		FED. AID PROJECT		

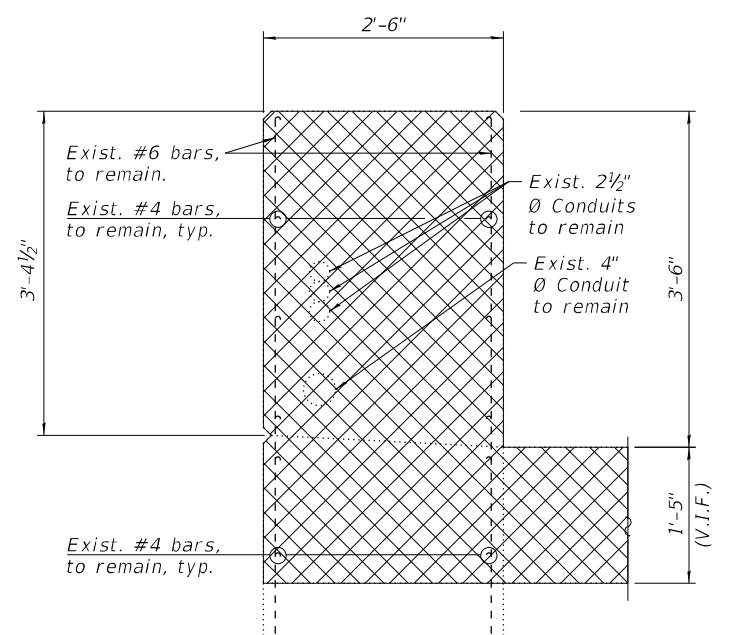
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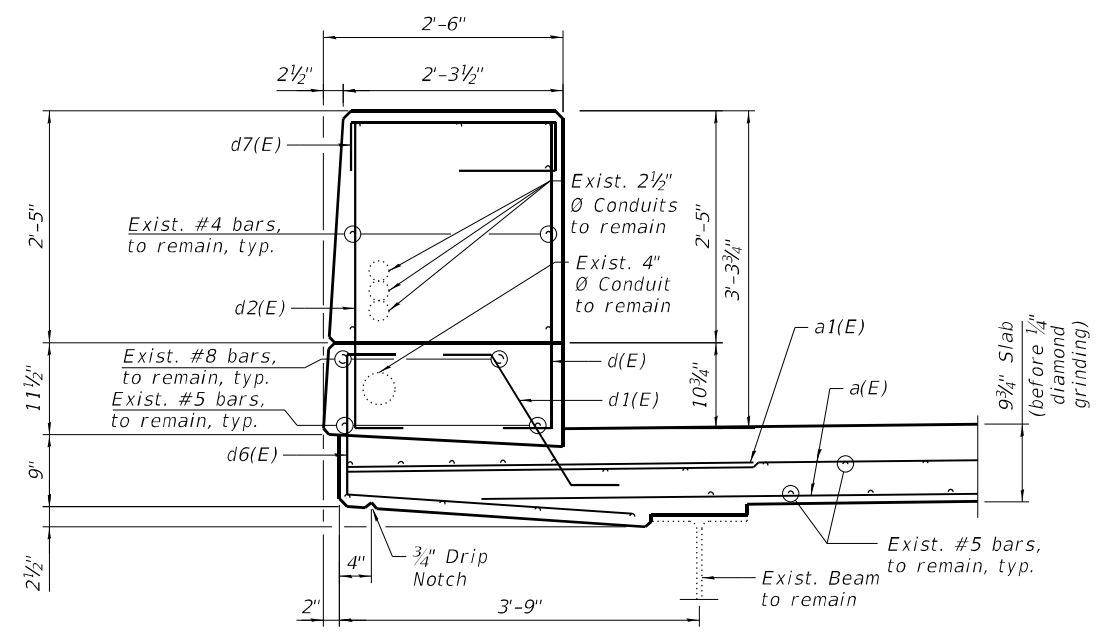
SECTION A-A  
(South parapet removal)



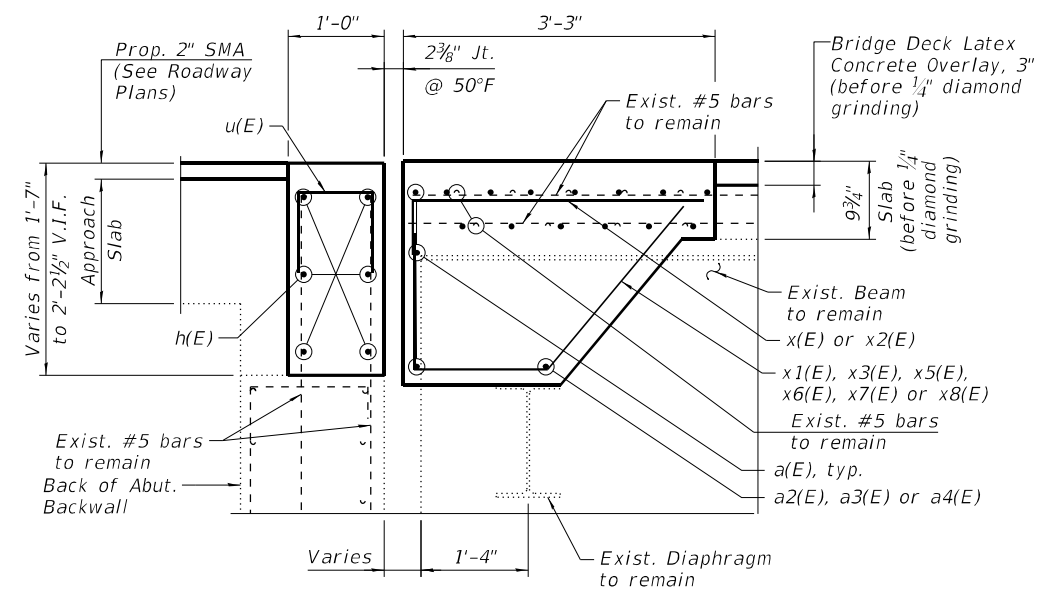
SECTION B-B



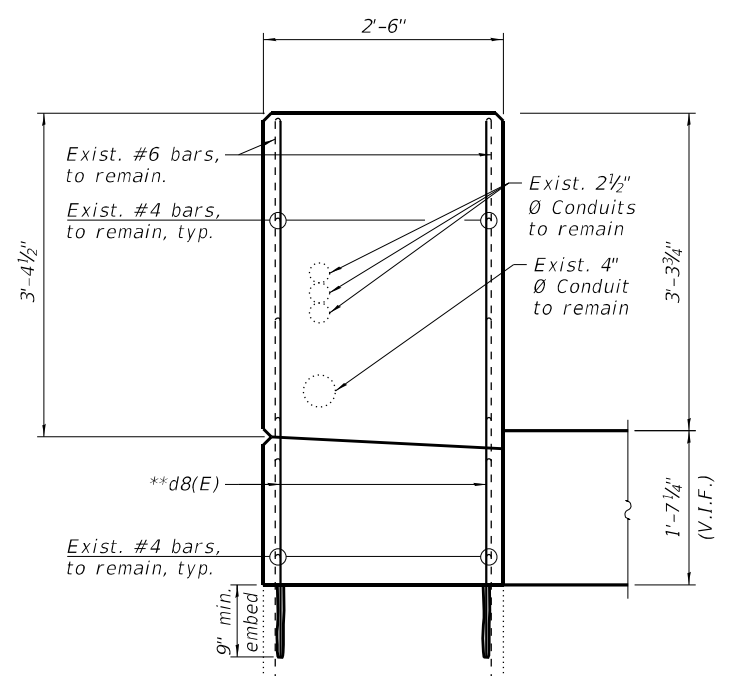
SECTION C-C  
(South parapet removal)



SECTION AA-AA  
(South parapet reconstruction)



SECTION BB-BB



SECTION CC-CC  
(South parapet reconstruction)

LEGEND

- \* Dimension is taken at the Back of Abut.
- \*\* Epoxy grout #6 d8(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.
- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field



USER NAME =	DESIGNED -	J.T.B.	REVISED -
PLOT SCALE =	CHECKED -	H.A.	REVISED -
PLOT DATE =	DRAWN -	J.T.B.	REVISED -
	CHECKED -	K.G.W.	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT EXPANSION JOINT DETAILS II  
 SN 016-0123 (REV)

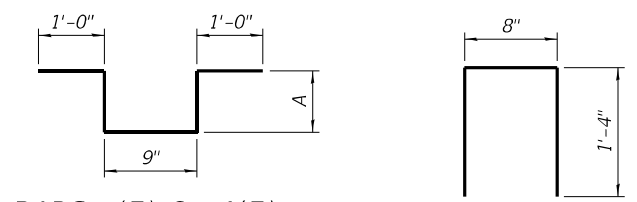
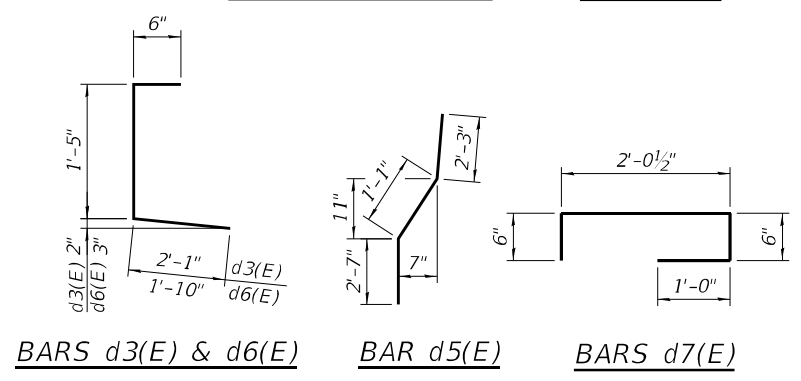
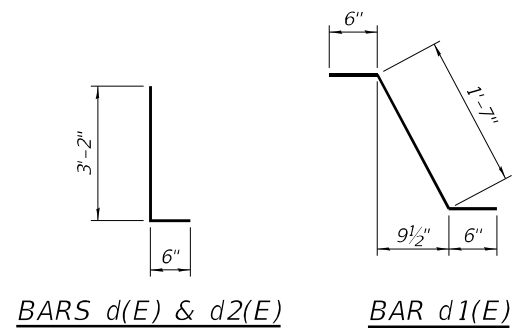
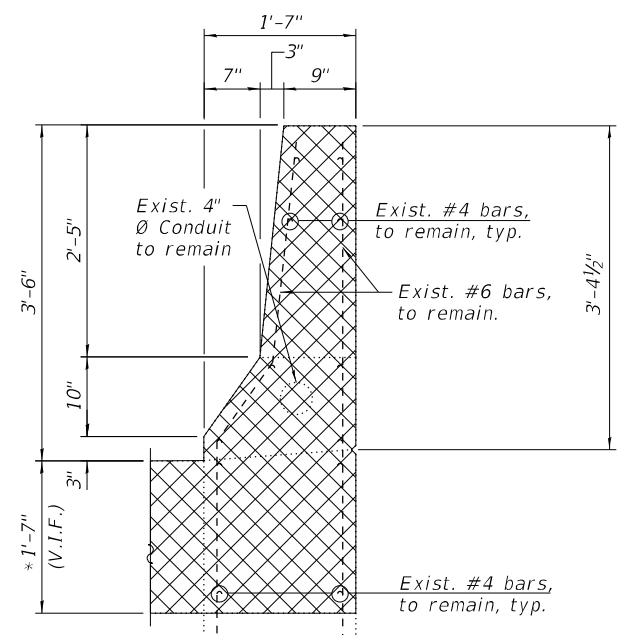
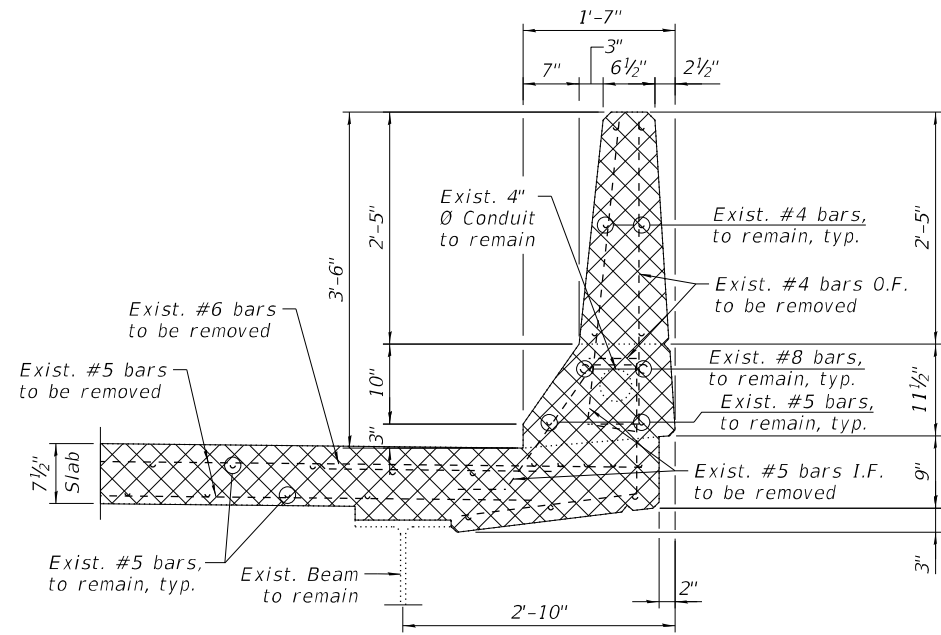
SHEET S28-06 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

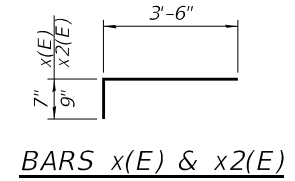
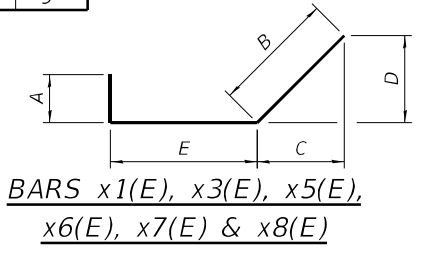
**BILL OF MATERIAL  
EAST ABUTMENT**

Bar	No.	Size	Length	Shape
a(E)	64	#5	26'-7"	—
a1(E)	8	#6	6'-6"	—
a2(E)	5	#5	8'-1"	—
a3(E)	4	#5	7'-7"	—
a4(E)	1	#5	5'-3"	—
d(E)	10	#5	3'-8"	—
d1(E)	10	#5	2'-7"	—
d2(E)	10	#4	3'-8"	—
d3(E)	4	#4	4'-0"	—
d4(E)	2	#4	5'-9"	—
d5(E)	2	#5	5'-11"	—
d6(E)	6	#4	3'-9"	—
d7(E)	6	#4	4'-1"	—
d8(E)	6	#6	5'-7"	—
h(E)	24	#6	27'-4"	—
s(E)	3	#6	4'-10"	—
s1(E)	3	#6	4'-3"	—
u(E)	91	#5	3'-4"	—
x(E)	42	#5	4'-1"	—
x1(E)	29	#5	3'-9"	—
x2(E)	25	#5	4'-3"	—
x3(E)	5	#5	6'-0"	—
x5(E)	12	#5	5'-5"	—
x6(E)	12	#5	5'-0"	—
x7(E)	2	#5	5'-8"	—
x8(E)	7	#5	3'-8"	—
Concrete Removal			Cu Yd	28.7
Reinforcement Bars, Epoxy Coated			Pound	4,080
Concrete Superstructure			Cu Yd	31.3

Bar	A	B	C	D	E
x1(E)	6"	1'-3 <sup>1</sup> / <sub>4</sub> "	1'-0 <sup>7</sup> / <sub>8</sub> "	9 <sup>3</sup> / <sub>8</sub> "	1'-11 <sup>3</sup> / <sub>8</sub> "
x3(E)	1'-2"	2'-9 <sup>3</sup> / <sub>4</sub> "	2'-2 <sup>5</sup> / <sub>8</sub> "	1'-8 <sup>5</sup> / <sub>8</sub> "	1'-11 <sup>3</sup> / <sub>8</sub> "
x5(E)	11"	2'-6"	1'-11 <sup>3</sup> / <sub>4</sub> "	1'-6 <sup>3</sup> / <sub>8</sub> "	1'-11 <sup>3</sup> / <sub>8</sub> "
x6(E)	10"	2'-2 <sup>1</sup> / <sub>2</sub> "	1'-9"	1'-4 <sup>1</sup> / <sub>4</sub> "	1'-11 <sup>3</sup> / <sub>8</sub> "
x7(E)	1'-1"	2'-6 <sup>1</sup> / <sub>8</sub> "	2'-0 <sup>3</sup> / <sub>8</sub> "	1'-6 <sup>1</sup> / <sub>8</sub> "	1'-11 <sup>3</sup> / <sub>8</sub> "
x8(E)	6"	11 <sup>3</sup> / <sub>8</sub> "	9"	7"	2'-2"



Bar	A
s(E)	1'-0 1/2"
s1(E)	9"



**NOTES:**

- For Preformed Joint Strip Seal details, see sheet S28-11.
- 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 shall be included with Concrete Removal.
- Removal of Existing Expansion Joint will not be paid for separately but will be included in the cost of Concrete Removal.

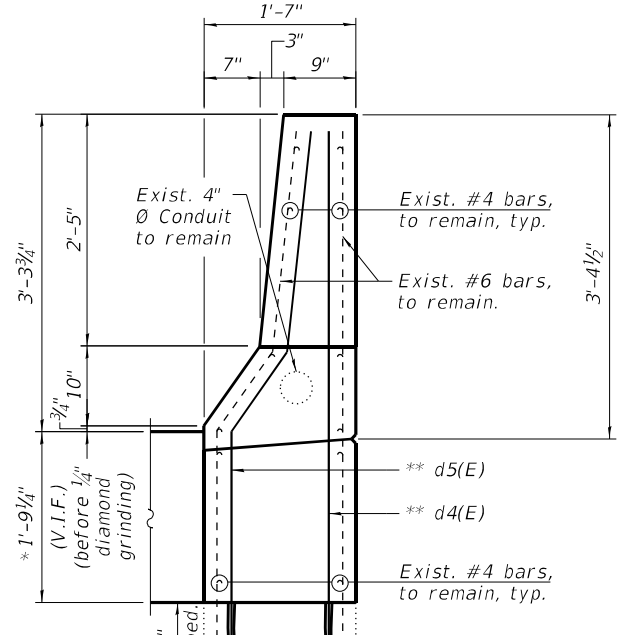
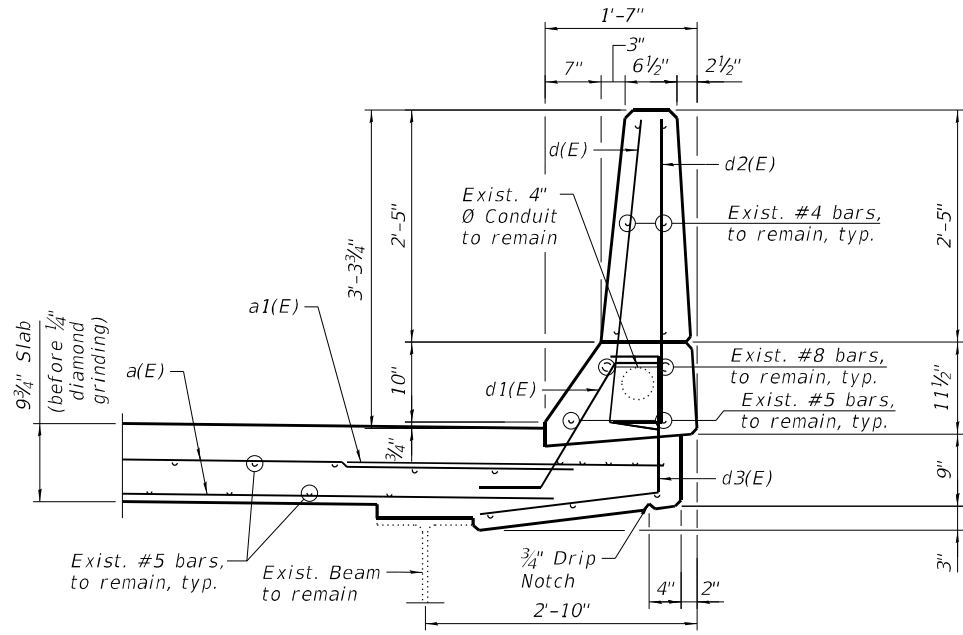
**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

**MIN BAR LAPS**

- #5 3'-6"
- #6 4'-0"

\* Dimension is taken at the Back of Abut.  
 \*\* Epoxy grout #4 d4(E) & #5 d5(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

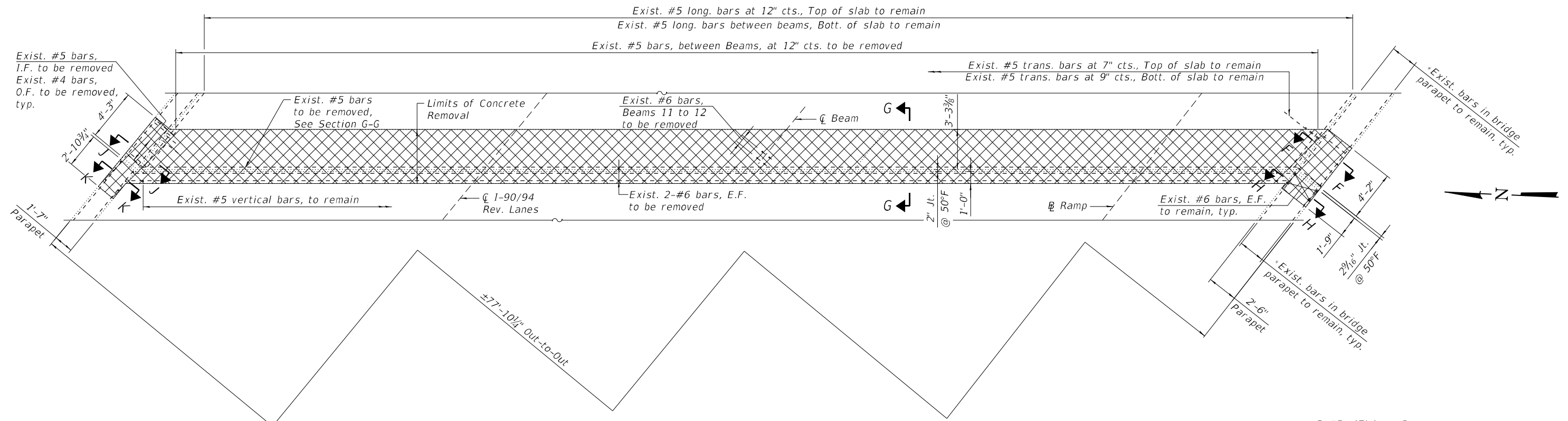


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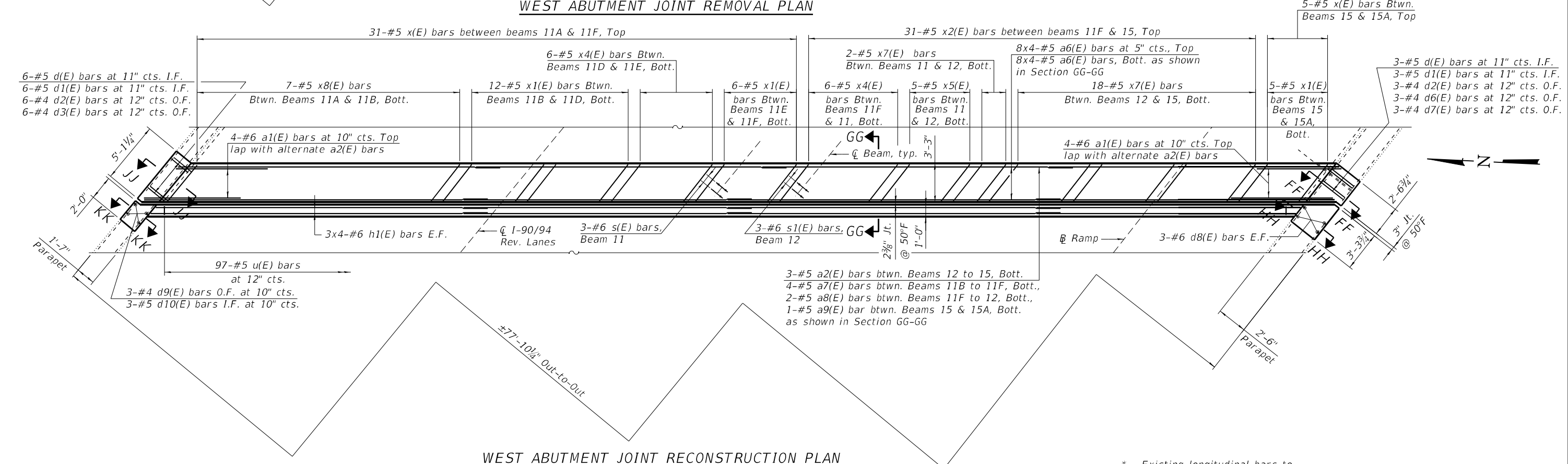
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PLOT DATE =	DRAWN -	J.T.B.	REVISED -
	CHECKED -	K.G.W.	REVISED -

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1180
CONTRACT NO. 62K74				





**WEST ABUTMENT JOINT REMOVAL PLAN**



**WEST ABUTMENT JOINT RECONSTRUCTION PLAN**

**NOTES:**

1. For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S28-09.
2. For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S28-10.

\* Existing longitudinal bars to remain in the parapets can be cut in the field as required

\*\* Epoxy grout #4 d(E) bars, #5 d10(E) bars and #6 d8(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- E.F. Each Face

MODEL: sMODELNAME5  
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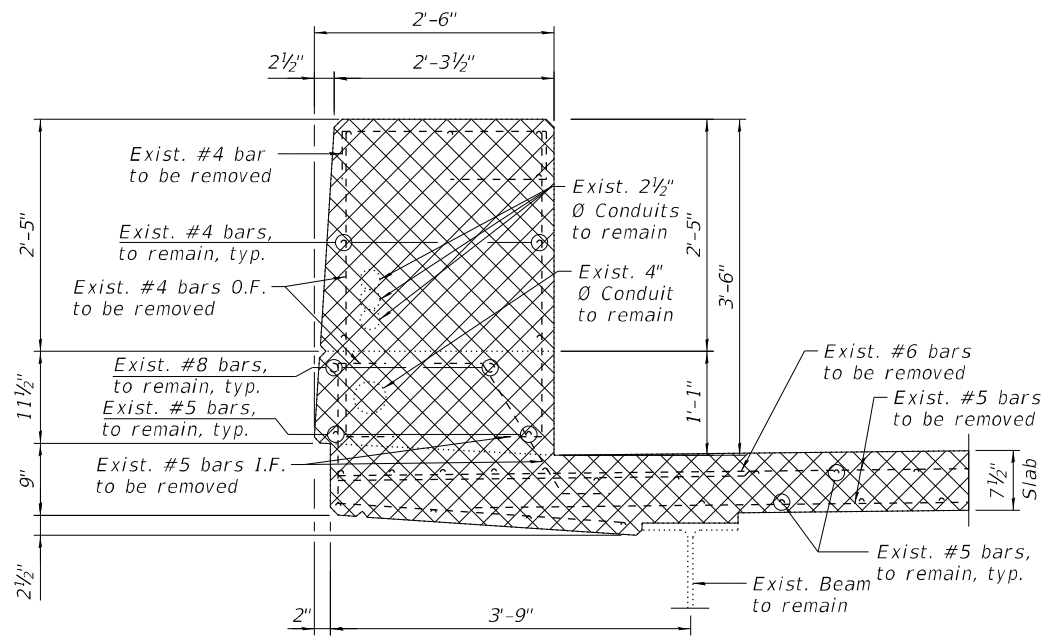
**GR&E**  
8501 W. Higgins Road, Suite 280  
Chicago, Illinois 60631; (773) 399-0112

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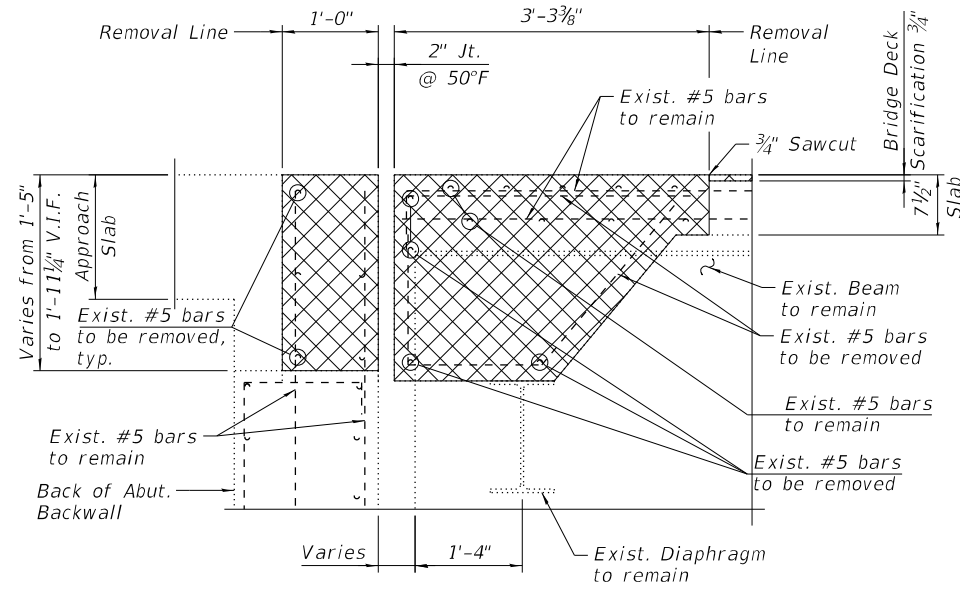
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT EXPANSION JOINT DETAILS I  
SN 016-0123 (REV)**

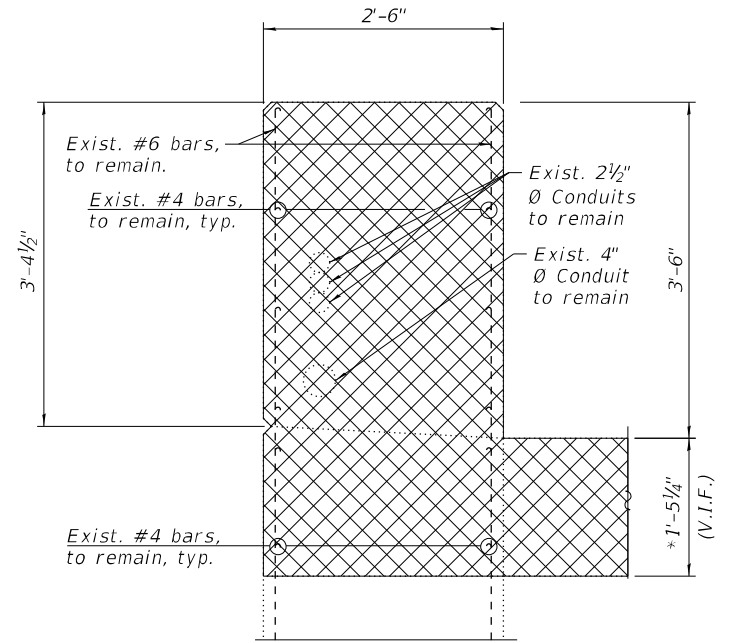
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CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



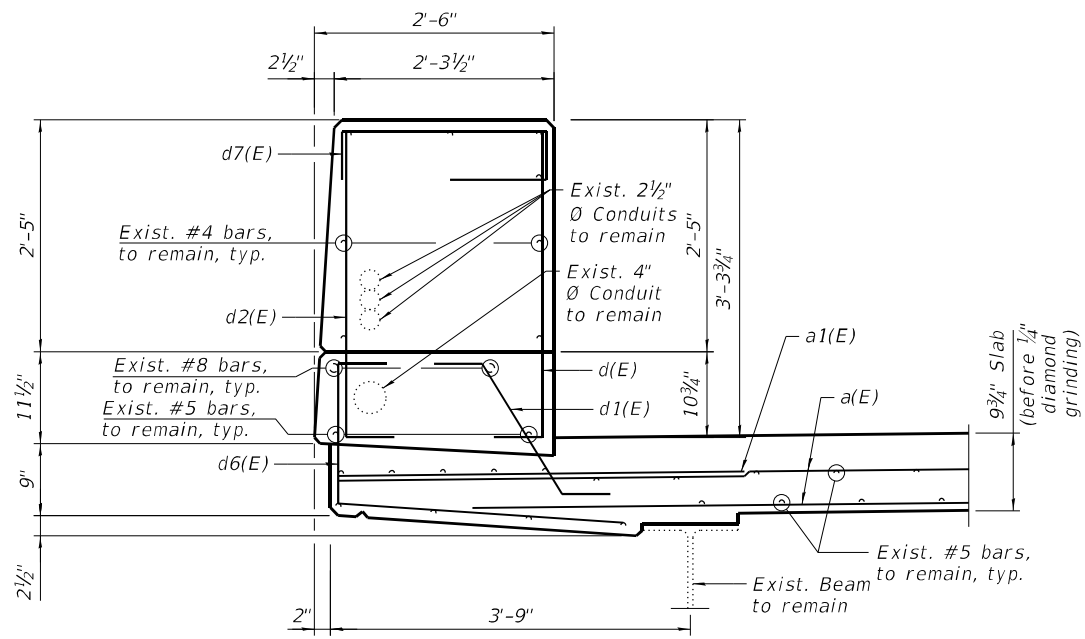
SECTION F-F  
(South parapet removal)



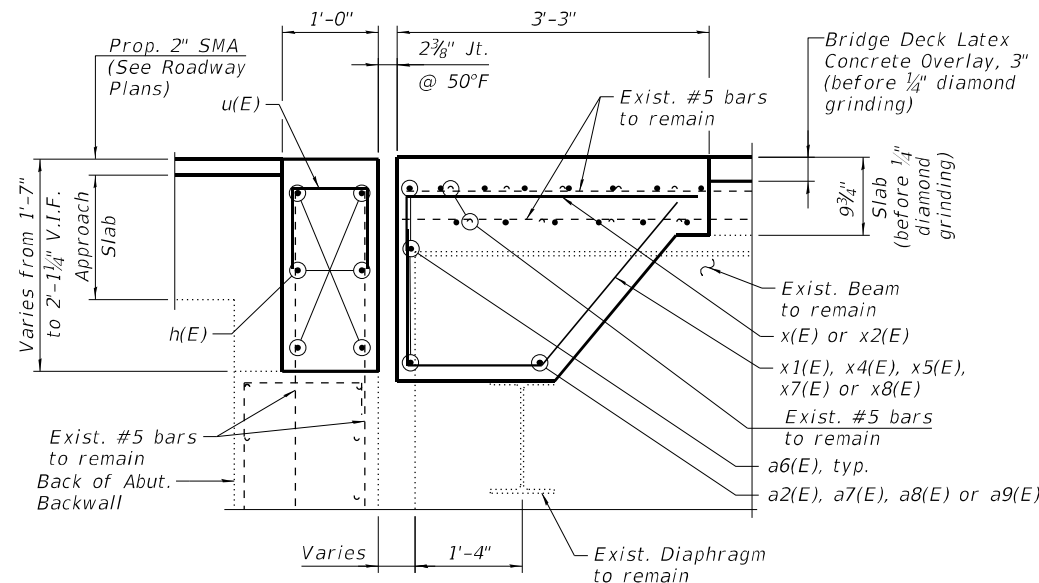
SECTION G-G



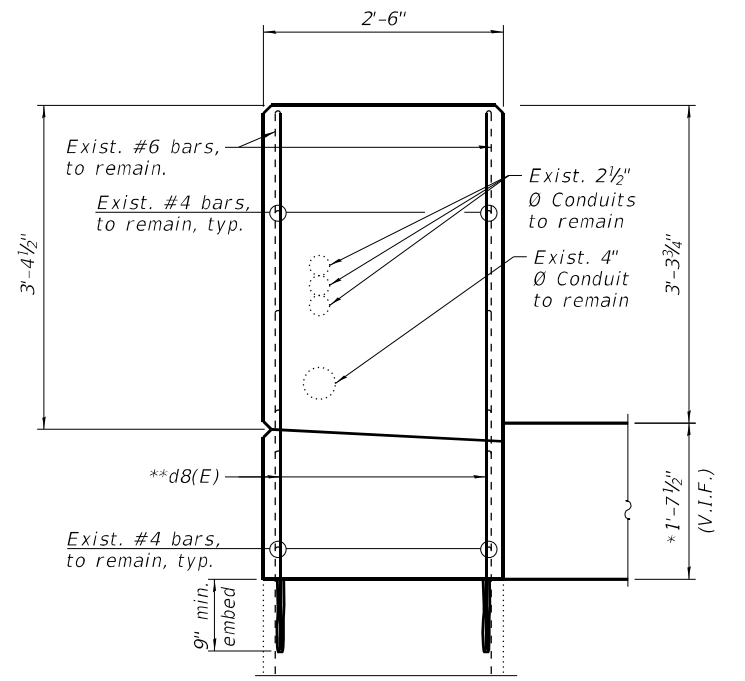
SECTION H-H  
(South parapet removal)



SECTION FF-FF  
(South parapet reconstruction)



SECTION GG-GG



SECTION HH-HH  
(South parapet reconstruction)

\* Dimension is taken at the Back of Abut.

\*\* Epoxy grout #6 d8(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

LEGEND

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

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**GR&E**  
 8501 W. Higgins Road, Suite 280  
 Chicago, Illinois 60631; (773) 399-0112

USER NAME =	DESIGNED - J.T.B.	REVISED -
PLOT SCALE =	CHECKED - H.A.	REVISED -
PLOT DATE =	DRAWN - J.T.B.	REVISED -
	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT EXPANSION JOINT DETAILS II  
SN 016-0123 (REV)**

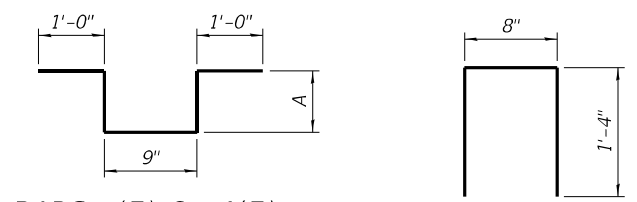
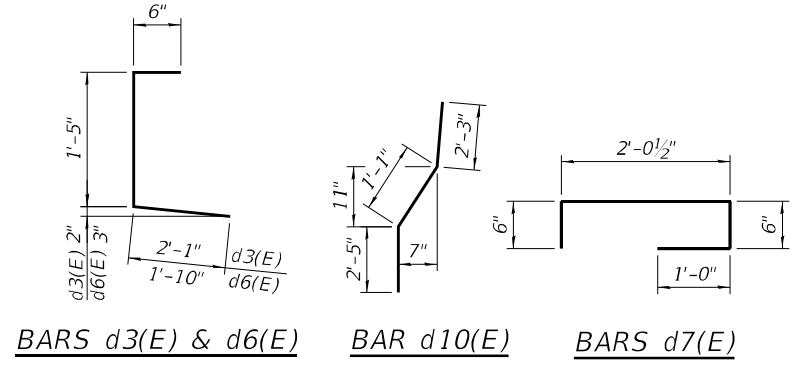
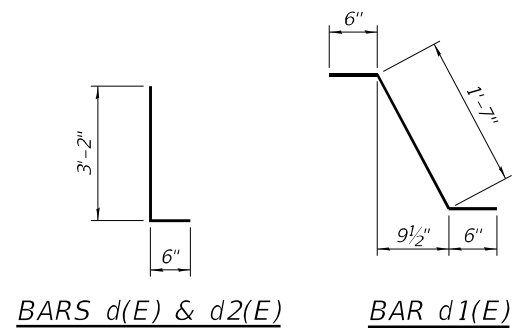
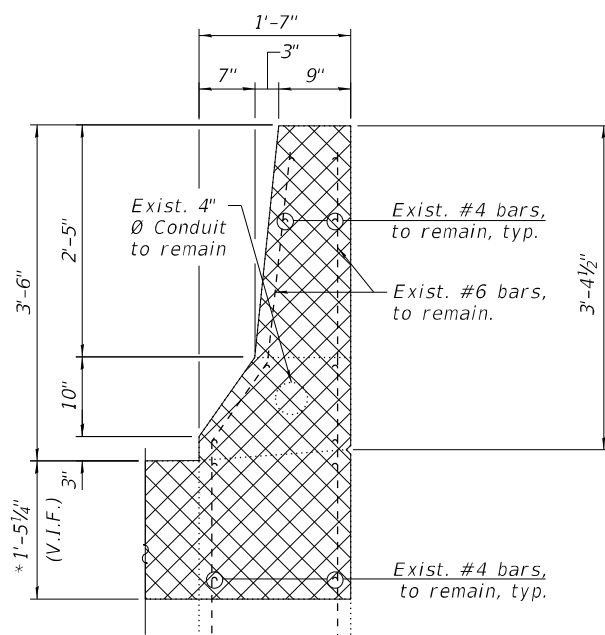
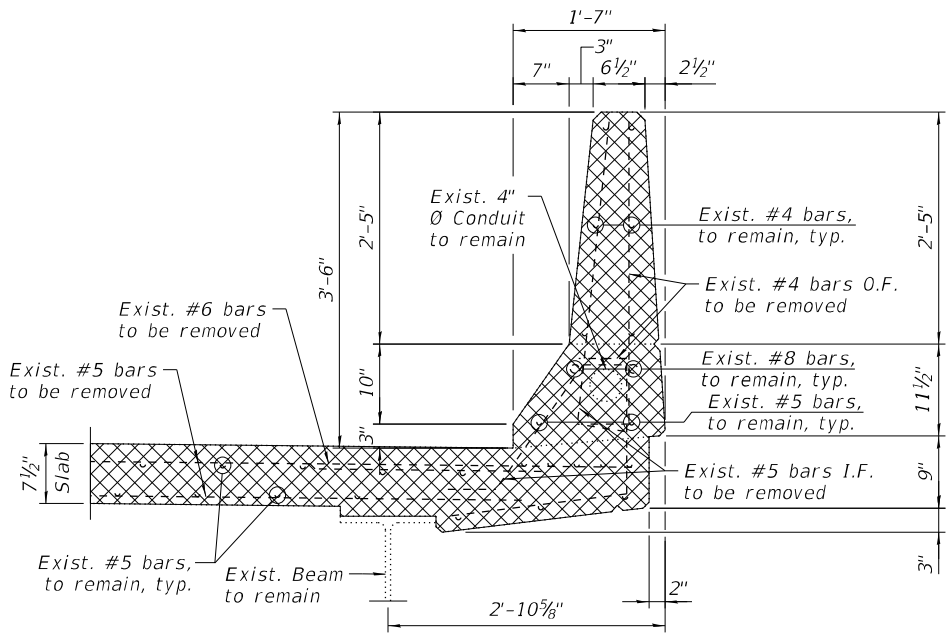
SHEET S28-09 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

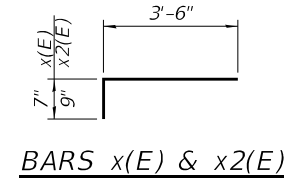
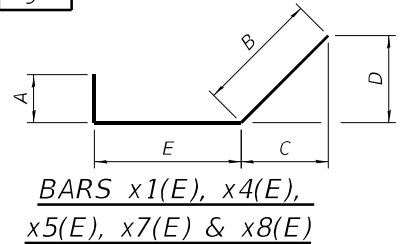
**BILL OF MATERIAL  
WEST ABUTMENT**

Bar	No.	Size	Length	Shape
a1(E)	8	#6	6'-6"	—
a2(E)	3	#5	8'-1"	—
a6(E)	64	#5	28'-2"	—
a7(E)	4	#5	8'-4"	—
a8(E)	2	#5	8'-2"	—
a9(E)	1	#5	6'-11"	—
d(E)	9	#5	3'-8"	—
d1(E)	9	#5	2'-7"	—
d2(E)	9	#4	3'-8"	—
d3(E)	6	#4	4'-0"	—
d6(E)	3	#4	3'-9"	—
d7(E)	3	#4	4'-1"	—
d8(E)	6	#6	5'-7"	—
d9(E)	3	#4	5'-7"	—
d10(E)	3	#5	5'-9"	—
h1(E)	24	#6	28'-5"	—
s(E)	3	#6	4'-10"	—
s1(E)	3	#6	4'-3"	—
u(E)	97	#5	3'-4"	—
x(E)	36	#5	4'-1"	—
x1(E)	23	#5	3'-9"	—
x2(E)	31	#5	4'-3"	—
x4(E)	12	#5	4'-5"	—
x5(E)	5	#5	5'-5"	—
x7(E)	20	#5	5'-8"	—
x8(E)	7	#5	3'-8"	—
Concrete Removal			Cu Yd	29.6
Reinforcement Bars, Epoxy Coated			Pound	4,250
Concrete Superstructure			Cu Yd	32.6

Bar	A	B	C	D	E
x1(E)	6"	1'-3 <sup>1</sup> / <sub>4</sub> "	1'-0 <sup>1</sup> / <sub>8</sub> "	9 <sup>3</sup> / <sub>8</sub> "	1'-11 <sup>3</sup> / <sub>8</sub> "
x4(E)	7"	1'-9 <sup>1</sup> / <sub>8</sub> "	1'-5 <sup>1</sup> / <sub>4</sub> "	1'-1 <sup>3</sup> / <sub>8</sub> "	1'-11 <sup>3</sup> / <sub>8</sub> "
x5(E)	11"	2'-6"	1'-11 <sup>3</sup> / <sub>4</sub> "	1'-6 <sup>3</sup> / <sub>8</sub> "	1'-11 <sup>3</sup> / <sub>8</sub> "
x7(E)	1'-1"	2'-6 <sup>7</sup> / <sub>8</sub> "	2'-0 <sup>3</sup> / <sub>8</sub> "	1'-6 <sup>7</sup> / <sub>8</sub> "	1'-11 <sup>3</sup> / <sub>8</sub> "
x8(E)	6"	11 <sup>3</sup> / <sub>8</sub> "	9"	7"	2'-2"



Bar	A
s(E)	1'-0 1/2"
s1(E)	9"



**NOTES:**

- For Preformed Joint Strip Seal details, see sheet S28-11.
- 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 shall be included with Concrete Removal.
- Removal of Existing Expansion Joint will not be paid for separately but will be included in the cost of Concrete Removal.

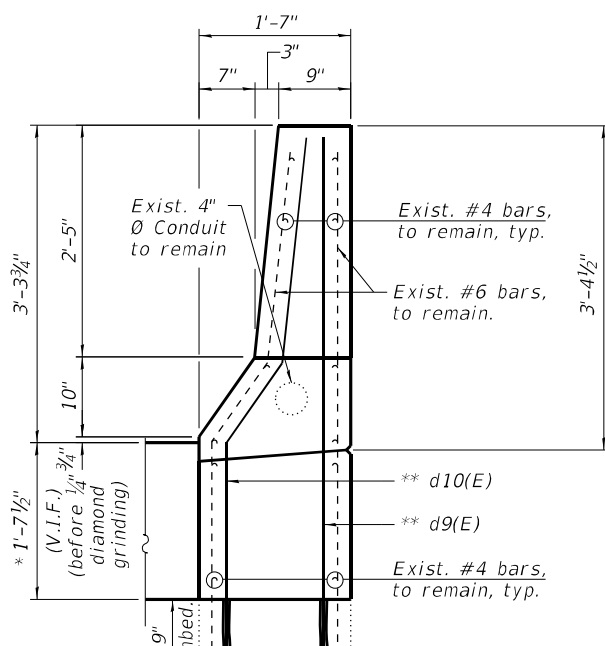
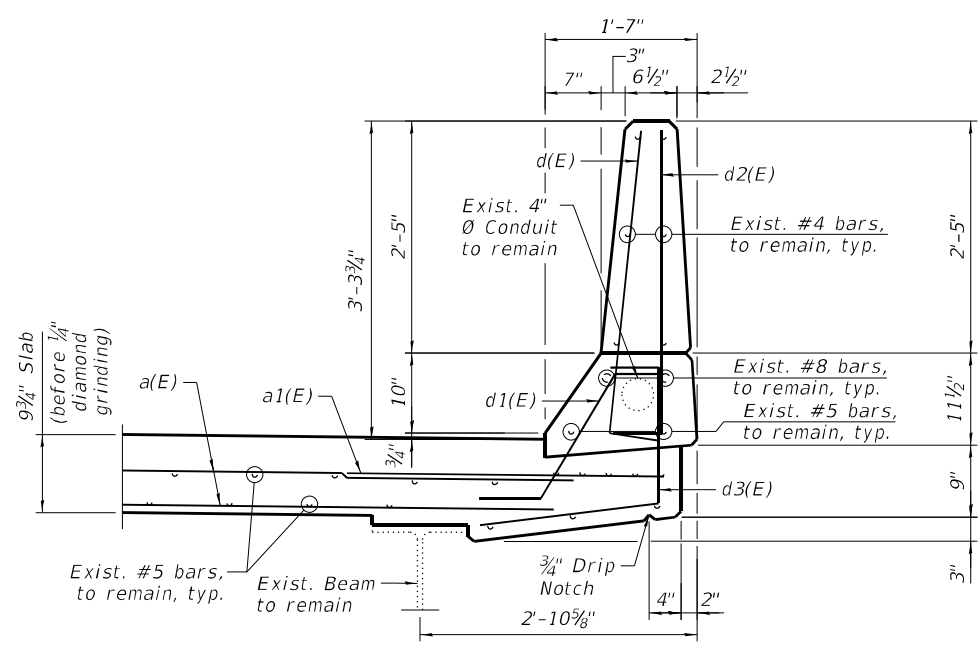
**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

**MIN BAR LAPS**

- #5 3'-6"
- #6 4'-0"

**SECTION JJ-JJ**  
(North parapet reconstruction)



**SECTION K-K**  
(North parapet reconstruction)

\* Dimension is taken at the Back of Abut.

\*\* Epoxy grout #4 d9(E) & #5 d10(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

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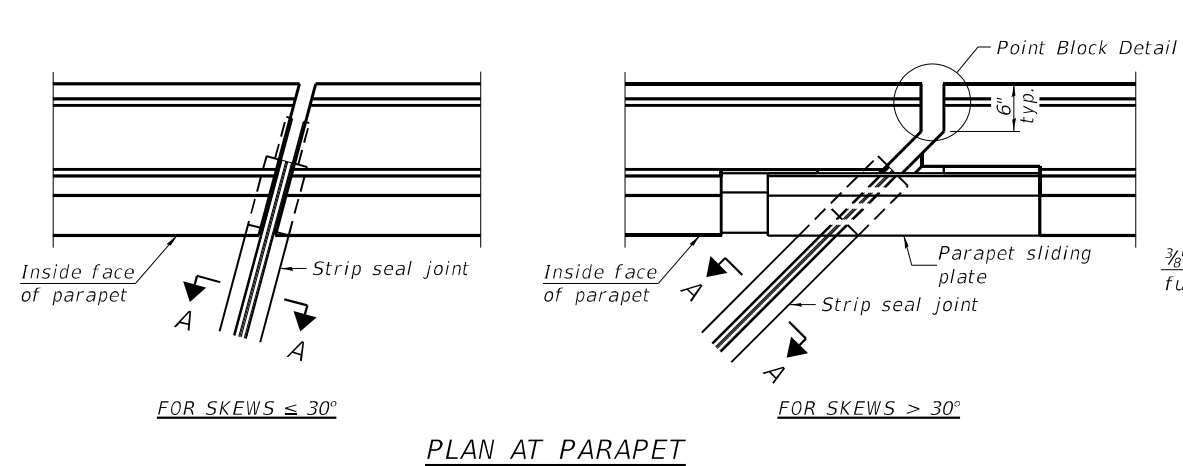
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT EXPANSION JOINT DETAILS III  
SN 016-0123 (REV)**

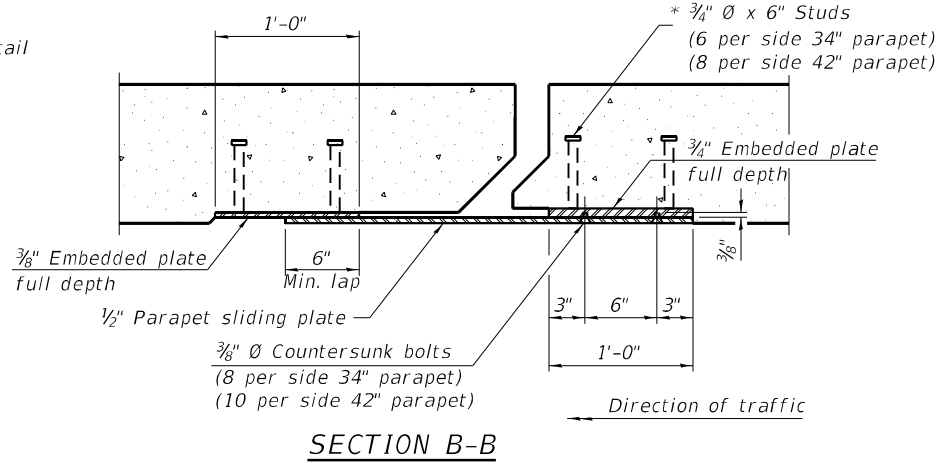
SHEET S28-10 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1183
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

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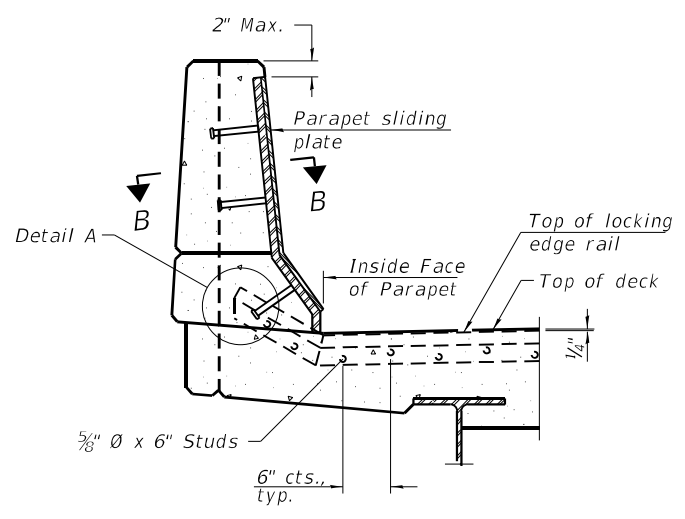


PLAN AT PARAPET



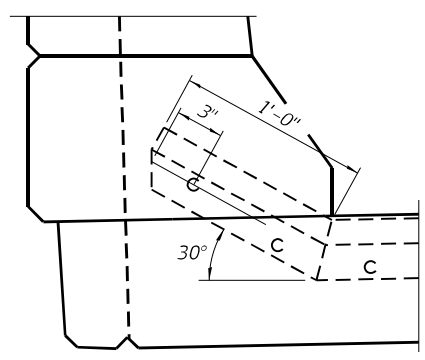
SECTION B-B

**Notes:**  
 The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.  
 The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4 1/2" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.  
 The manufacturer's recommended installation methods shall be followed.  
 All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.  
 The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.  
 Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.  
 34" F-shape barrier shown, 42" F-shape similar as noted.  
 The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

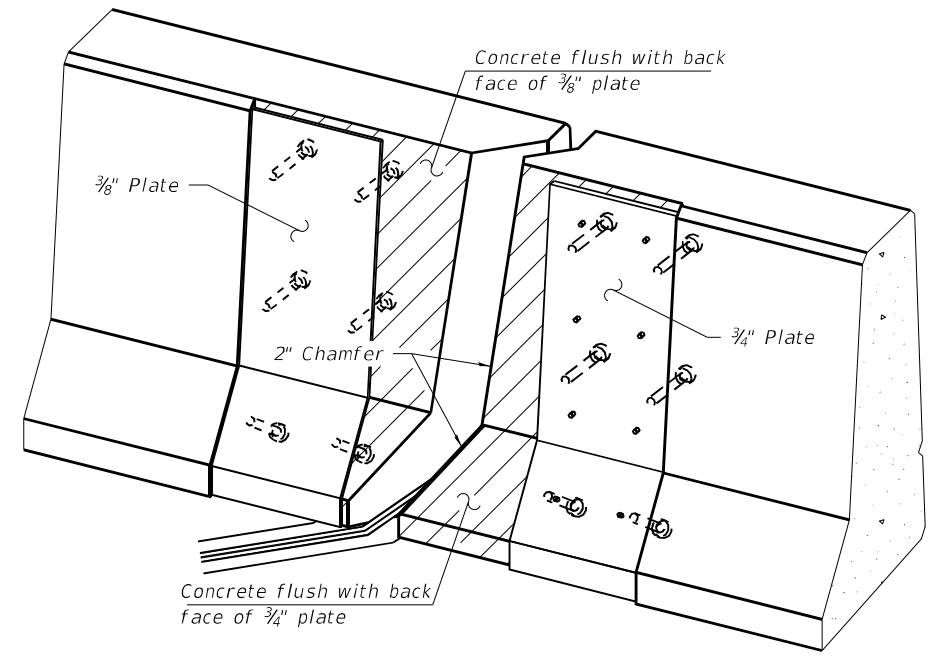


ELEVATION AT PARAPET

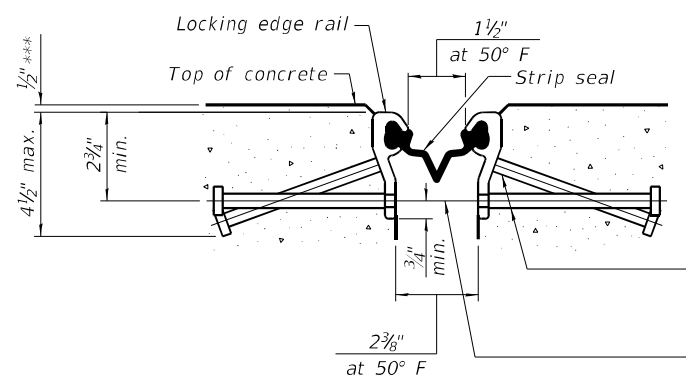
(Skews > 30° shown. Skews <= 30° similar except as shown in plan view.)



DETAIL A

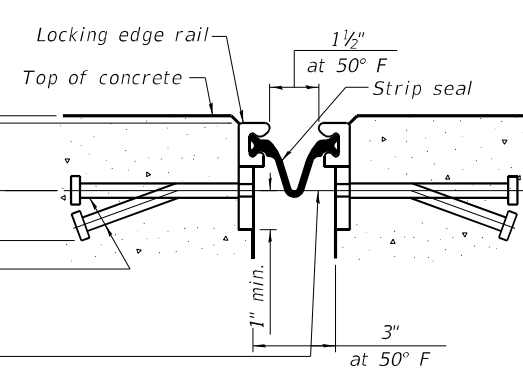


TRIMETRIC VIEW  
 (Showing embedded plates only)

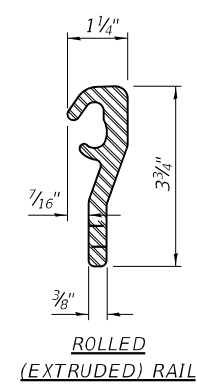


SHOWING ROLLED RAIL JOINT

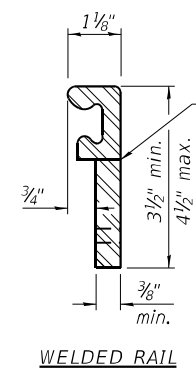
\* 3/8" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)  
 3/8" Ø threaded rods in 1/16" Ø holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.



SHOWING WELDED RAIL JOINT



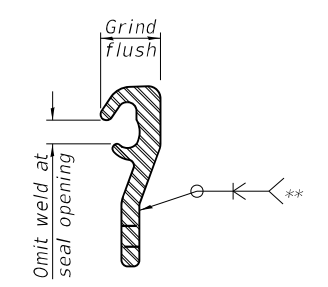
ROLLED (EXTRUDED) RAIL



WELDED RAIL

LOCKING EDGE RAILS

\*\* 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 rail shown, welded rail similar.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	200

SECTION A-A  
 \* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.  
 \*\*\* Before 1/4" Diamond Grinding.



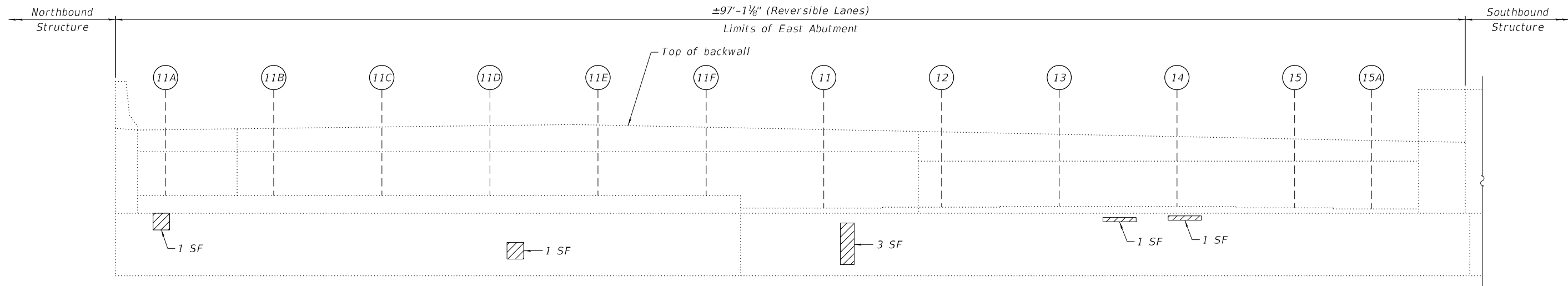
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PREFORMED JOINT STRIP SEAL  
 SN 016-0123 (REV)

SHEET S27-11 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1184
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**ELEVATION - EAST ABUTMENT**  
(Looking East)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
- Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
- For Slope Wall repairs, see Sheet S28-16.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	507
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	7

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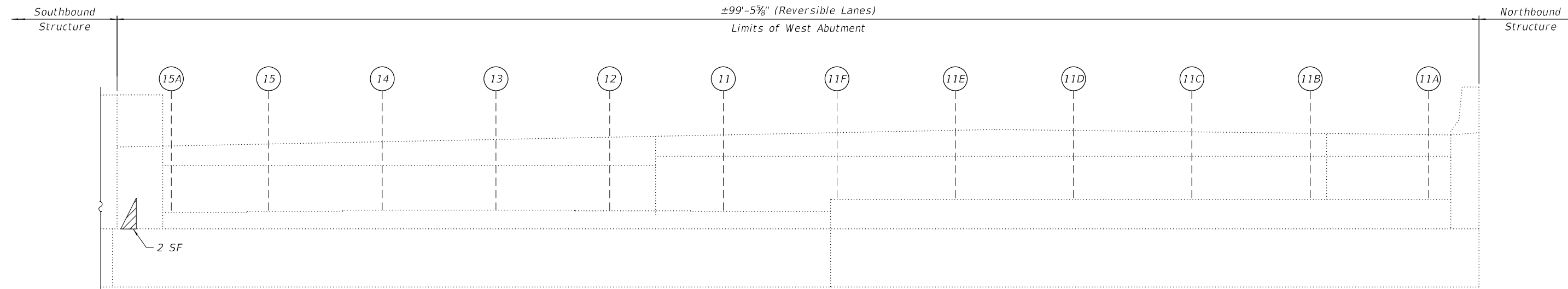
**GRÄEF**  
 8501 W. Higgins Road, Suite 280  
 Chicago, Illinois 60631; (773) 399-0112

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PLOT DATE =	CHECKED -	K.G.W.	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT REPAIRS**  
**SN 016-0123 (REV)**  
 SHEET S28-12 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1185
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



**ELEVATION - WEST ABUTMENT**  
(Looking West)

**NOTES:**

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
3. For Slope Wall repairs, see Sheet S28-16.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	507
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	2

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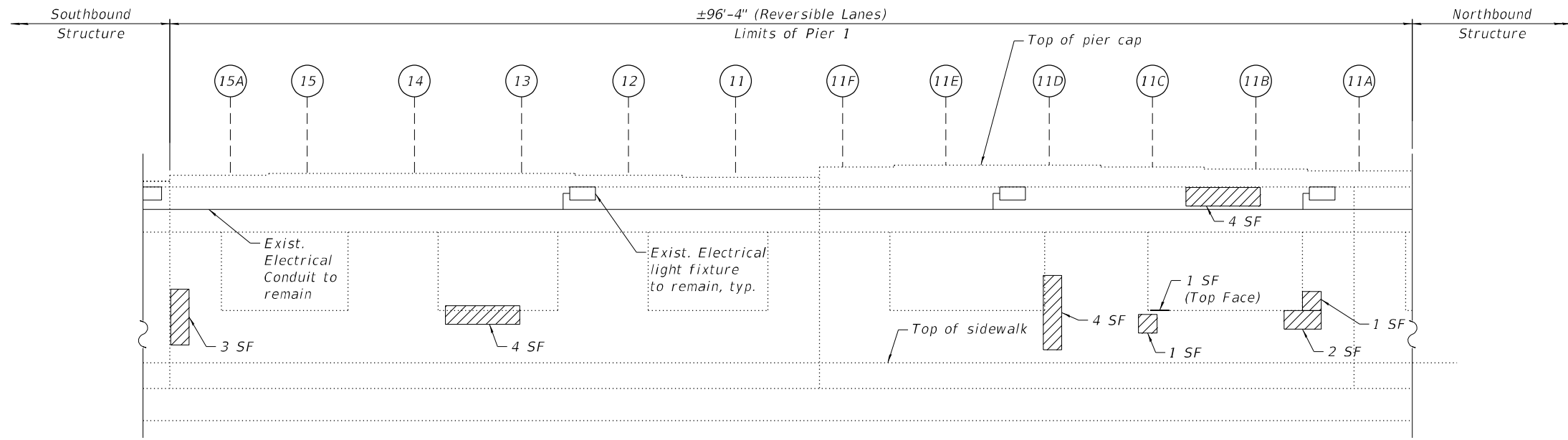
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

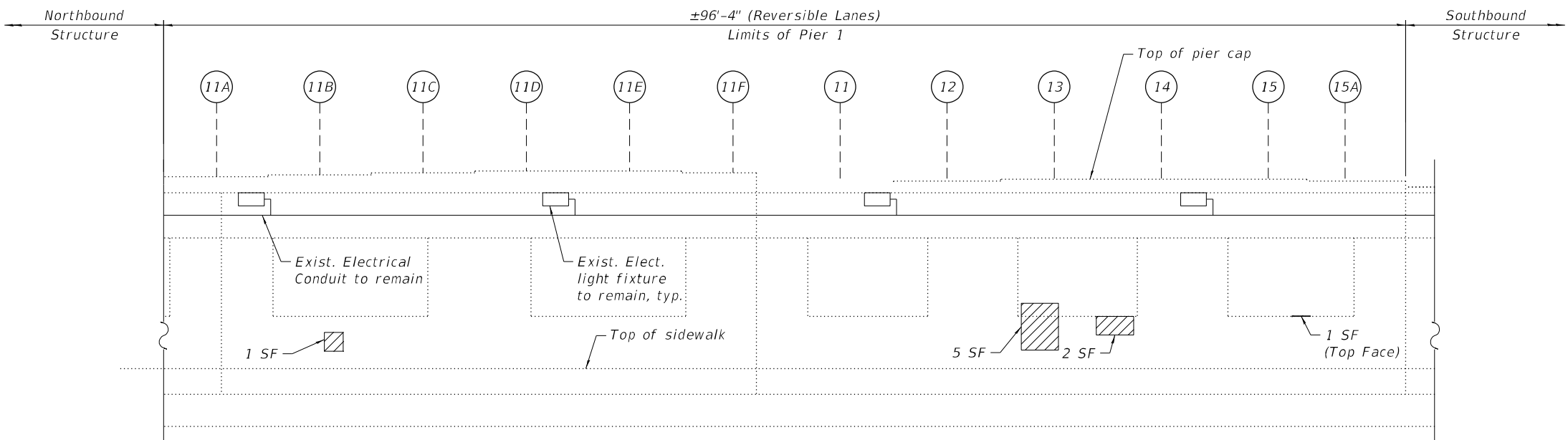
**WEST ABUTMENT REPAIRS  
SN 016-0123 (REV)**

SHEET S28-13 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1186
CONTRACT NO. 62K74				
ILLINOIS		FED. AID PROJECT		



**ELEVATION - PIER 1**  
(Looking West)



**ELEVATION - PIER 1**  
(Looking East)



**EXISTING LIGHTING: PIER 1**  
(Looking Northwest)



**EXISTING LIGHTING: PIER 1**  
(Looking Northeast)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	29

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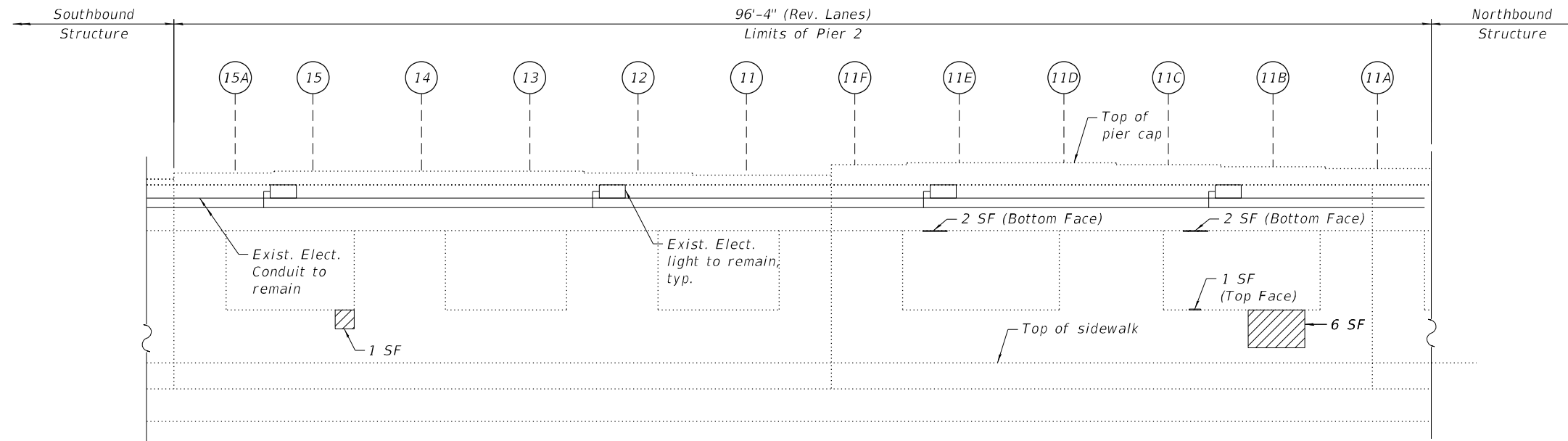
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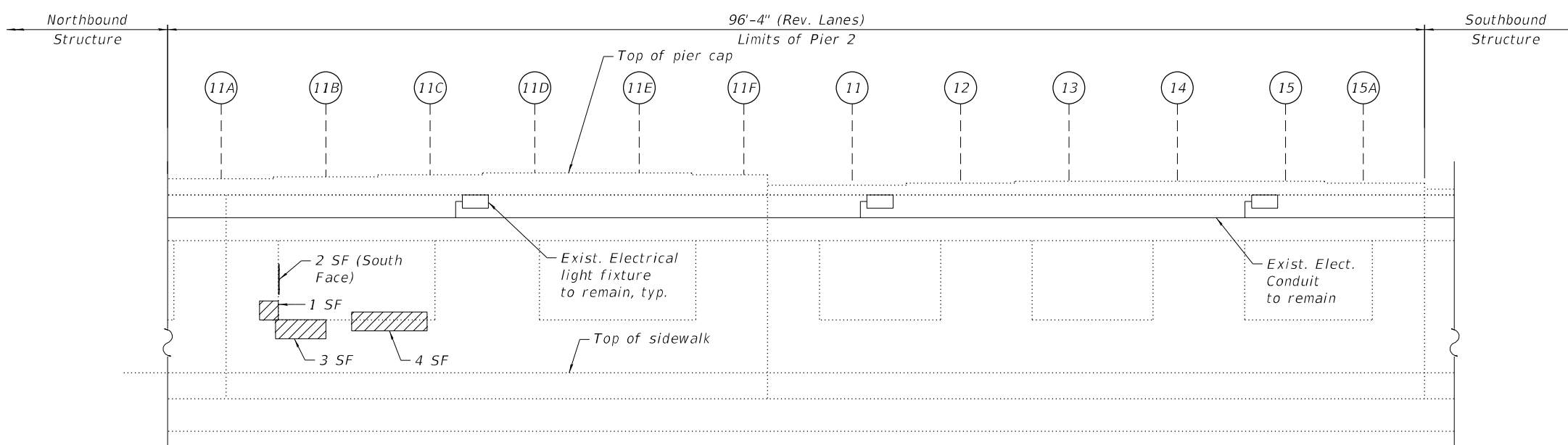
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PIER 1 REPAIRS**  
**SN 016-0123 (REV)**  
SHEET S28-14 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1187
			CONTRACT NO. 62K74	
		ILLINOIS	FED. AID PROJECT	



**ELEVATION - PIER 2**  
(Looking West)



**ELEVATION - PIER 2**  
(Looking East)



**EXISTING LIGHTING: PIER 2**  
(Looking Northwest)



**EXISTING LIGHTING: PIER 2**  
(Looking Northeast)

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5 Inches)
- SF Square Foot

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	22

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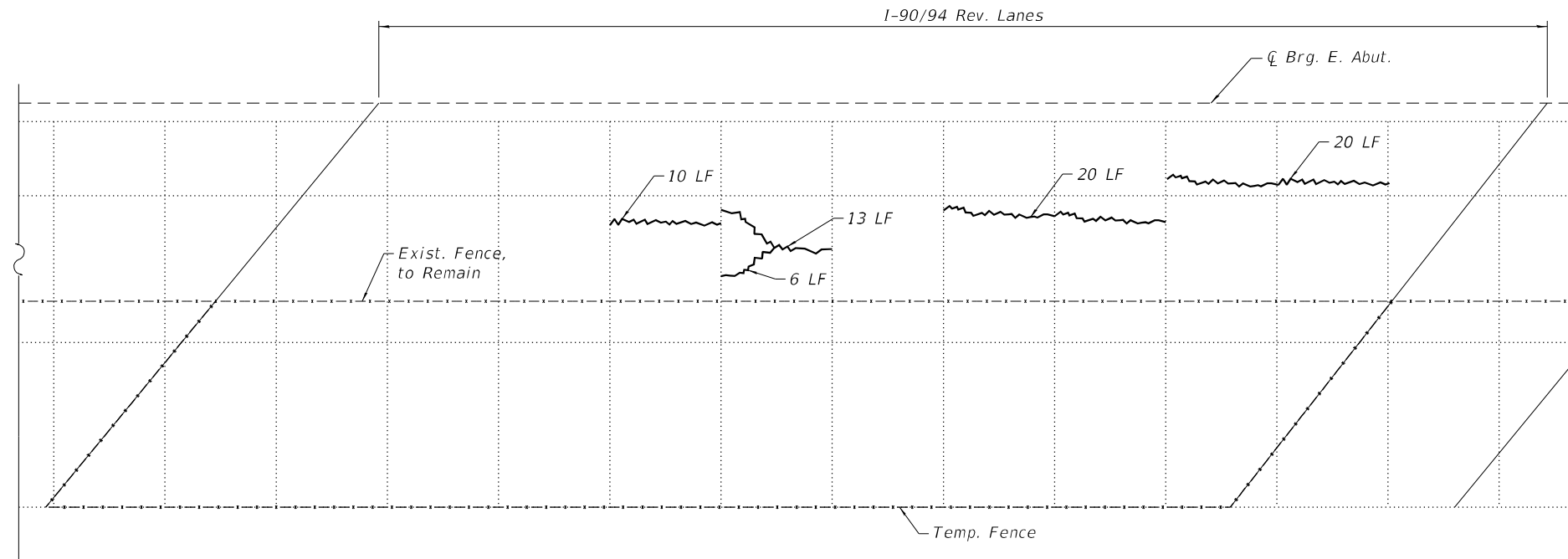
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

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SN 016-0123 (REV)**

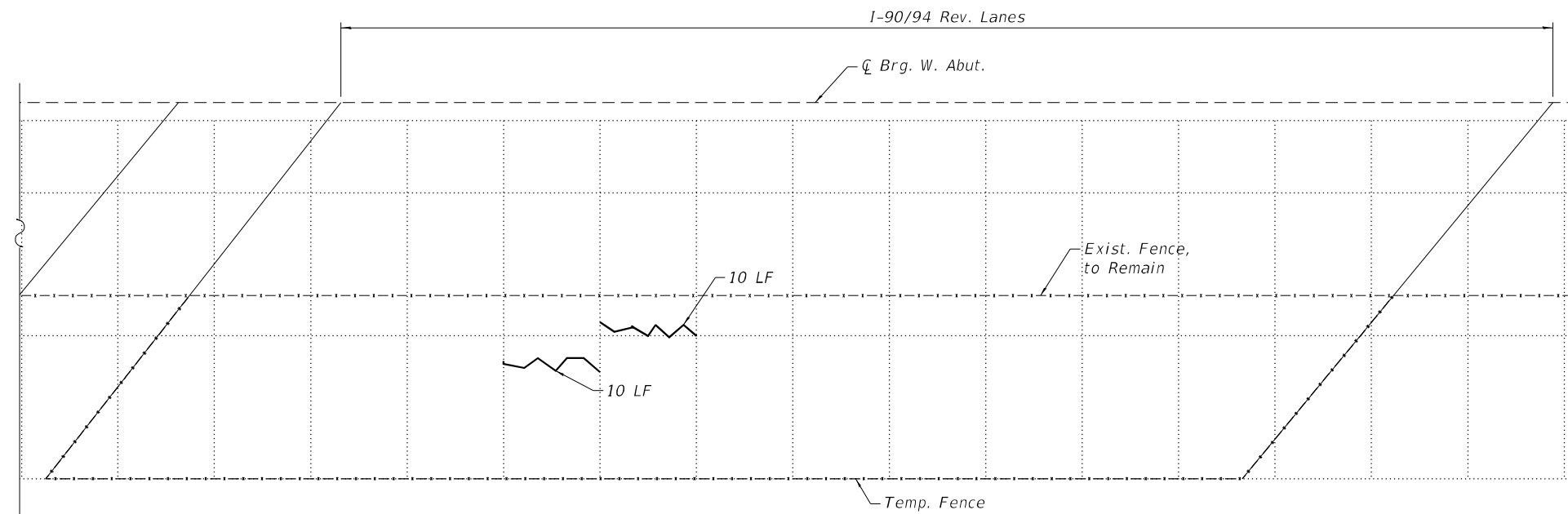
SHEET S28-15 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1188
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	





**EAST SLOPE WALL - PLAN**



**WEST SLOPE WALL - PLAN**

**NOTES:**

- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
- Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq ft

**LEGEND**

- LF Linear Foot
- Slope Wall Crack Sealing

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Slope Wall Crack Sealing	Ft	89

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SLOPE WALL REPAIRS  
SN 016-0123 (REV)**  
SHEET S28-16 OF S28-16 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1189
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	

Existing Structure: S.N. 016-0121 was originally built in 1957 from BCR. The bridge was widened and redecked between 1990 and 1993, and expansion joint repairs were performed in 2013. The structure has a bearing-to-bearing length of 429'-8½" and an out-to-out deck width of 73'-0½". The superstructure consists of a 7½" thick reinforced concrete deck, a simple steel beam span, multiple reinforced concrete slab spans and a 2-span continuous steel beam superstructure. The substructure consists of by reinforced concrete columns, piers, and abutments founded on metal shell CIP concrete piles.

Traffic will be maintained utilizing stage construction.  
No salvage.

**LOADING**

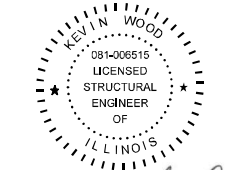
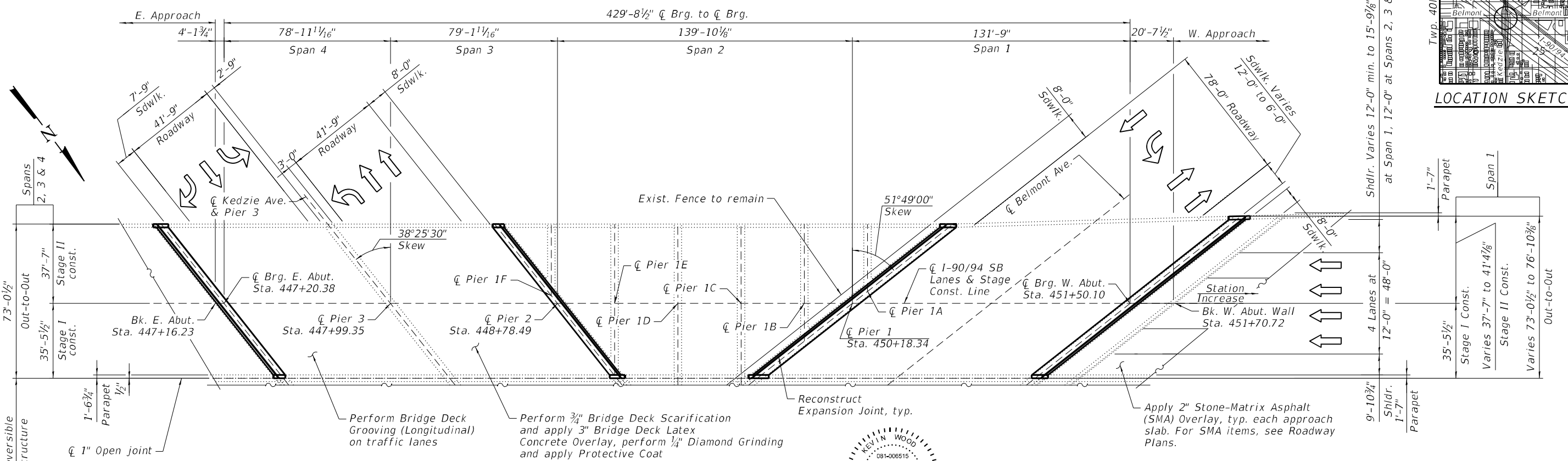
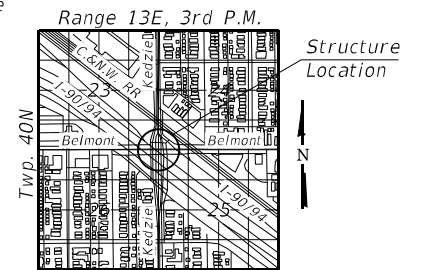
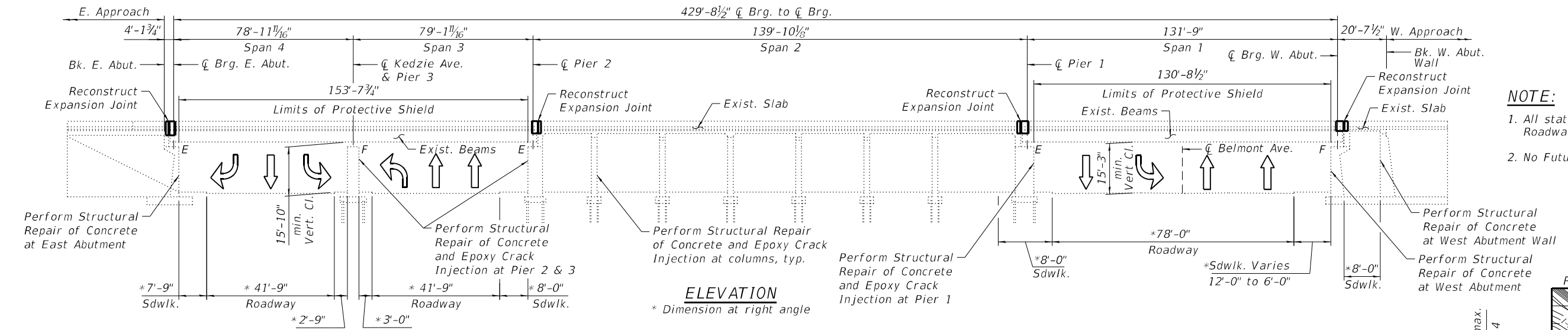
HS20-44 and alternate military loading

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition

**NOTE:**

1. All stations are to the  $\text{CL}$  I-90/94 SB Roadway and taken from existing plans.
2. No Future Wearing Surface is allowed.



Kevin Wood  
Engineer Full Name: Kevin Wood Date: 10-20-2022  
Illinois Registered Engineer No. 081-006515  
Registration Expires 11. 30, 2024

**GENERAL PLAN AND ELEVATION**  
**SB I-90 OVER KEDZIE AVE AND BELMONT AVE**  
**F.A.I. SEC 2020-004-BR**  
**COOK COUNTY**  
**STATION: 548+76.54 (REV)**  
**STRUCTURE NO. 016-0121 (SB)**

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**GR&E**  
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1190
CONTRACT NO. 62K74				

SHEET S29-01 OF S29-29 SHEETS		ILLINOIS	FED. AID PROJECT
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**GENERAL NOTES**

- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or 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 Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further dispositions. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- Plan dimensions and details relative to the existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity furnished at the unit price bid for the work.
- Cleaning and field painting of structural steel shall be done under a separate painting contract.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- Bars indicated thus, 3x2-#5, indicates 3 lines of #5 bars with 2 lengths of bar per line.
- All exposed concrete edges shall have a 3/4"x45° chamfer, except where shown otherwise.
- For SMA overlay on Approach Slab, see Roadway Sheets.
- Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.
- Joint openings shall be adjusted according to Article 520.04 of the Standard Specification when the deck is poured at an ambient temperature other than 50°F.
- Adjacent I-90/94 reversible bridge is not shown throughout the plans for clarity.
- The Contractor shall take the necessary precautions for the protection of passing vehicles, bicycles and pedestrians from falling objects and/or materials until completion of work.
- The Contractor is responsible to remove, support and reinstall all existing electrical conduits interfering with the work. See special provision "Protection and Maintenance of Existing Underpass Luminaires".
- The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.
- The Contractor is responsible to protect the existing conduit and junction box embedded in the parapet during concrete removal and construction. Any damage to the existing conduit and junction box shall be repaired by the Contractor at no additional cost to the Department.
- Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.
- Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.
- The Contractor shall contact Chandra Libby, the Director of City of Chicago Department of Family Support Services (DFSS) at 312-746-5443 or Chandra.Libby@cityofchicago.org to coordinate the relocation of persons and their personal belongings under the bridges within the areas bounded by the temporary chain-link-fence.
- Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.
- City of Chicago Department of Water Management's Water Valve for feeder line near intersection of Kedzie Ave & Belmont Ave cannot be adjusted. Access to valve must be maintained throughout construction.

**INDEX OF SHEETS**

S29-01	General Plan & Elevation
S29-02	General Data
S29-03-S29-04	Stage Construction Details I & II
S29-05	Temporary Concrete Barrier
S29-06-S29-07	Bridge Deck Repair Plan and Details
S29-08-S29-10	East Abutment Expansion Joint Details I, II & III
S29-11-S29-13	West Abutment Expansion Joint Details I, II & III
S29-14-S29-16	Pier 1 Expansion Joint Details I, II & III
S29-17-S29-19	Pier 2 Expansion Joint Details I, II & III
S29-20	Preformed Joint Strip Seal
S29-21	East Abutment Repairs
S29-22-S29-23	West Abutment Repairs
S29-24	Pier 1 Repairs
S29-25	Pier 2 Repairs
S29-26	Pier 3 Repairs
S29-27-S29-28	Piers in Span 2 Repairs I, II & III
S29-29	Bar Splicer Assembly and Mechanical Splicer Details

**SCOPE OF WORK**

- Provide Protective Shield within limits indicated on the plans.
- Scarify 3/4" from the bridge deck slab.
- Perform deck repairs.
- Remove and reconstruct expansion joints at north and south abutments and install new Preformed Joint Strip Seals.
- Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs, see Roadway Plans.
- Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
- Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
- Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse expansion joints and to the surface of the new overlay.
- Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.
- Epoxy crack injection at the abutments and piers for cracks greater than hairline.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	152.6		152.6
Protective Shield	Sq Yd	2,482		2,482
Concrete Superstructure	Cu Yd	165.1		165.1
Protective Coat	Sq Yd	4,247		4,247
Reinforcement Bars, Epoxy Coated	Pound	15,540		15,540
Bar Splicers	Each	82		82
Preformed Joint Strip Seal	Foot	437		437
Concrete Sealer	Sq Ft		2,087	2,087
Epoxy Crack Injection	Foot		17	17
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	2,373		2,373
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	3,582		3,582
Bridge Deck Scarification 3/4"	Sq Yd	3,582		3,582
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		688	688
Deck Slab Repair (Full Depth, Type II)	Sq Yd	40.3		40.3
Diamond Grinding (Bridge Section)	Sq Yd	3,654		3,654
Maintenance of Lighting System	Cal Mo		6	6
Temporary Shoring and Cribbing	Each		2	2

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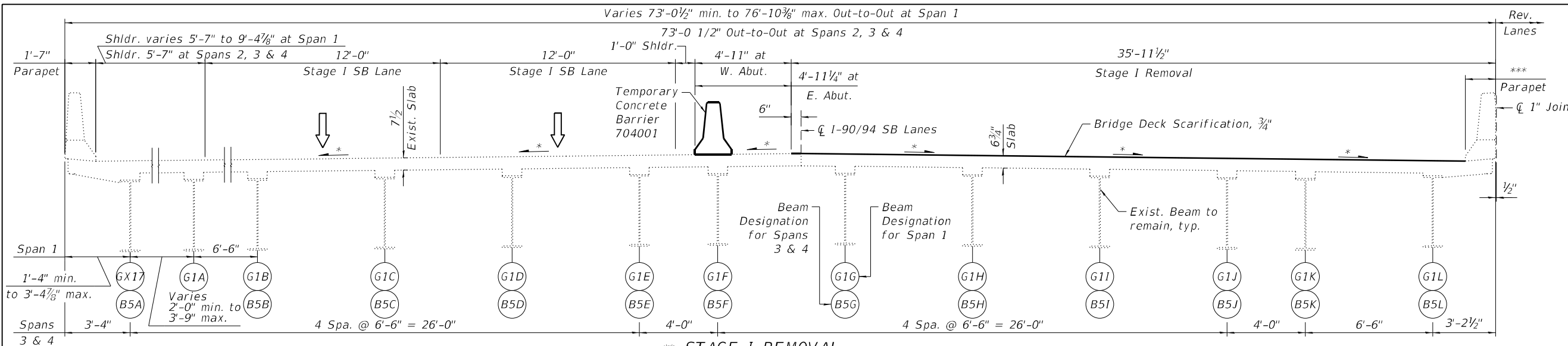
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PLOT DATE =	CHECKED -	K.G.W.	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA  
SN 016-0121 (SB)**

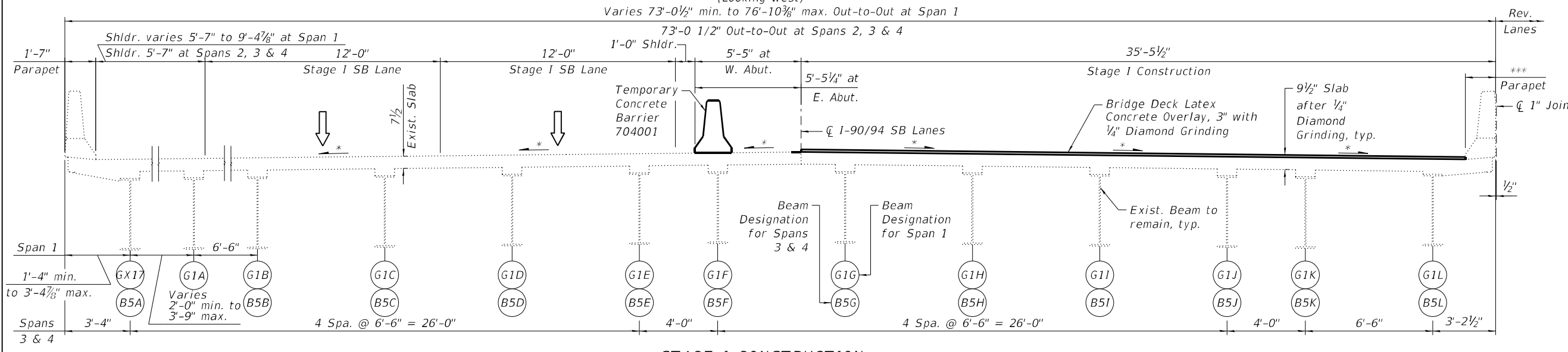
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			CONTRACT NO. 62K74	
		ILLINOIS	FED. AID PROJECT	

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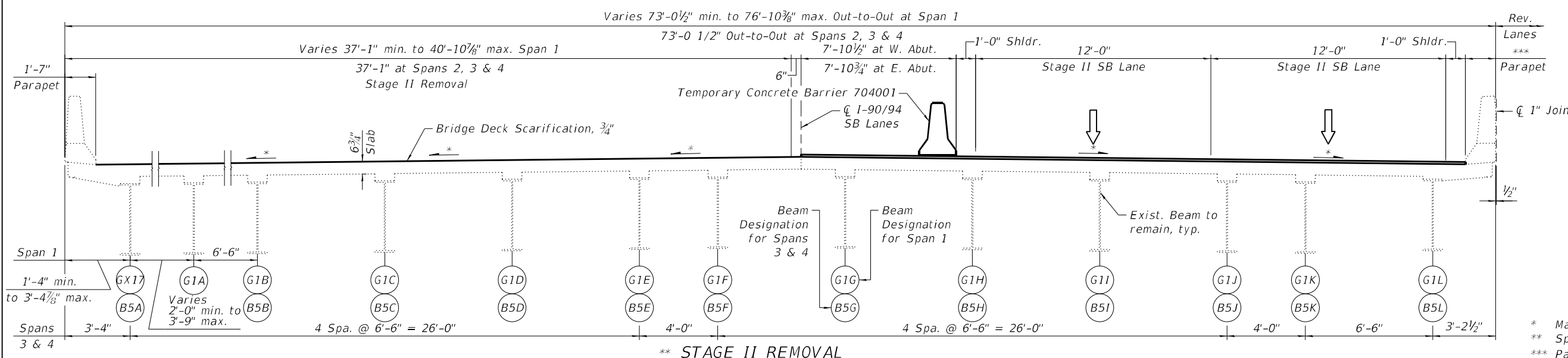
**\*\* STAGE I REMOVAL**

(Looking West)



**\*\* STAGE I CONSTRUCTION**

(Looking West)



**\*\* STAGE II REMOVAL**

(Looking West)

**STAGE I REMOVAL**

1. Install Temporary Concrete Barrier as shown to locate traffic on the south side of the existing structure.
2. Scarify 3/4" from the top of the deck.
3. Remove portions of bridge deck adjacent to abutment joints, as shown in the plans.

**STAGE I CONSTRUCTION**

1. Perform Deck Slab Repairs at the locations shown in the plans.
2. Reconstruct transverse expansion joints and install Preformed Joint Strip Seal at east and west abutments and replace associated reinforcement and concrete adjacent to the joint.
3. Perform Structural Repair of Concrete and Epoxy Crack Injection at abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay to bridge deck slab.
5. Perform 1/4" diamond grinding to bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay and reconstructed abutment expansion joint areas.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach pavement and taper into existing roadway. See Roadway Plans.
8. Apply Protective Coat to the top of reconstructed transverse joint areas, the surface of the new overlay, and the top and inside faces of the parapets.

**STAGE II REMOVAL**

1. Install Temporary Concrete Barrier as shown to locate traffic on the north side of the existing structure.
2. Scarify 3/4" from the top of the deck.
3. Remove portions of bridge deck adjacent to abutment joints, as shown in the plans.

\* Match existing deck surface profile  
\*\* Spans 1, 3 & 4 shown. Span 2 similar  
\*\*\* Parapet is 1'-6 3/4" at E. Abut. and 1'-7" at W. Abut.

**GR&EF**  
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PLOT SCALE =	CHECKED - H.A.	REVISED -
PLOT DATE =	DRAWN - D.C.P.	REVISED -
	CHECKED - K.G.W.	REVISED -

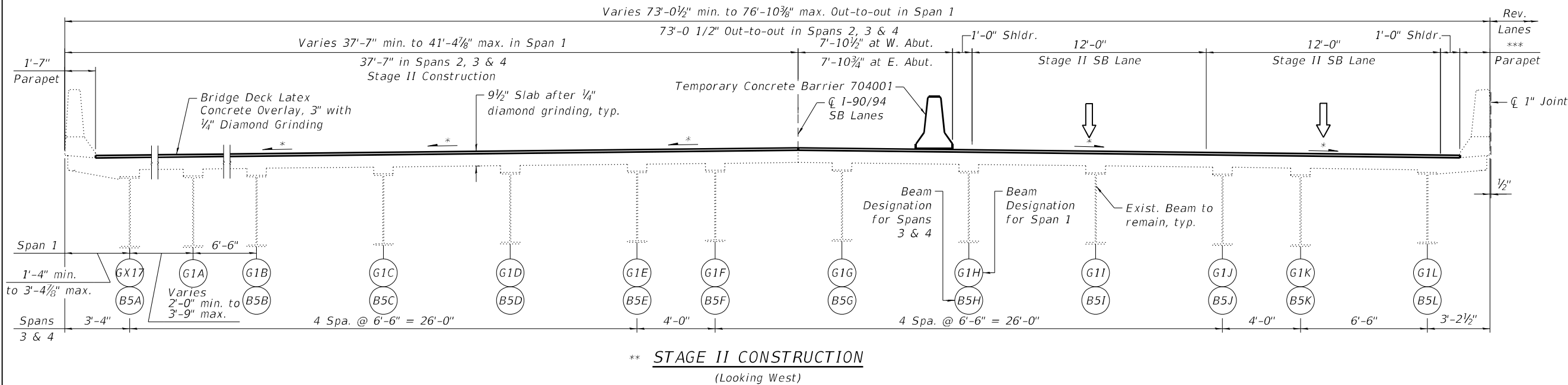
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STAGE CONSTRUCTION DETAILS I  
SN 016-0121 (SB)**

SHEET S29-03 OF S29-29 SHEETS

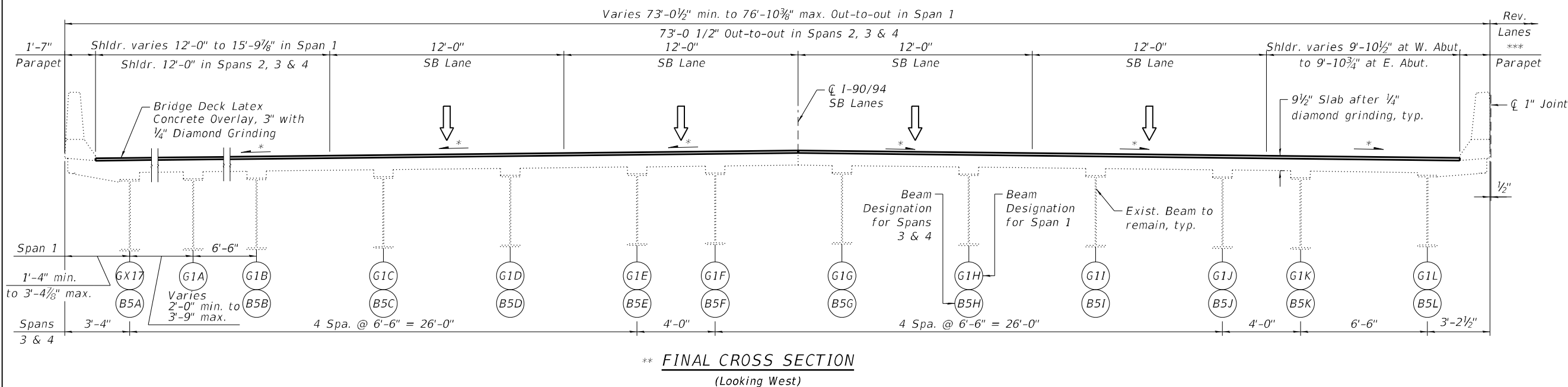
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90	2020-004-BR	COOK	1492	1192
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

MODEL: sMODELNAME5  
 FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SH1016-0121\_Kedzie\_Belmont\SB\016-0121-62K74-5004-STGS.dgn



**STAGE II CONSTRUCTION**

1. Perform Deck Slab Repairs at the locations shown in the plans.
2. Reconstruct transverse expansion joints and install Preformed Joint Strip Seal at east and west abutments and replace associated reinforcement and concrete adjacent to the joint.
3. Perform Structural Repair of Concrete and Epoxy Crack Injection at abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay to bridge deck slab.
5. Perform 1/4" diamond grinding to bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay and reconstructed abutment expansion joint areas.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach pavement and taper into existing roadway. See Roadway Plans.
8. Apply Protective Coat to the top of reconstructed transverse joint areas, the surface of the new overlay, and the top and inside faces of the parapets.



\* Match existing deck surface profile  
 \*\* Spans 1, 3 & 4 shown. Span 2 similar.  
 \*\*\* Parapet is 1'-6 3/4" at E. Abut. and 1'-7" at W. Abut.

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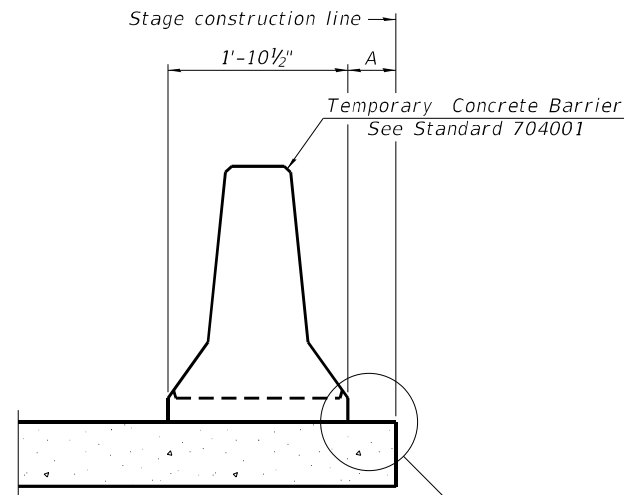
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	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**STAGE CONSTRUCTION DETAILS II**  
**SN 016-0121 (SB)**

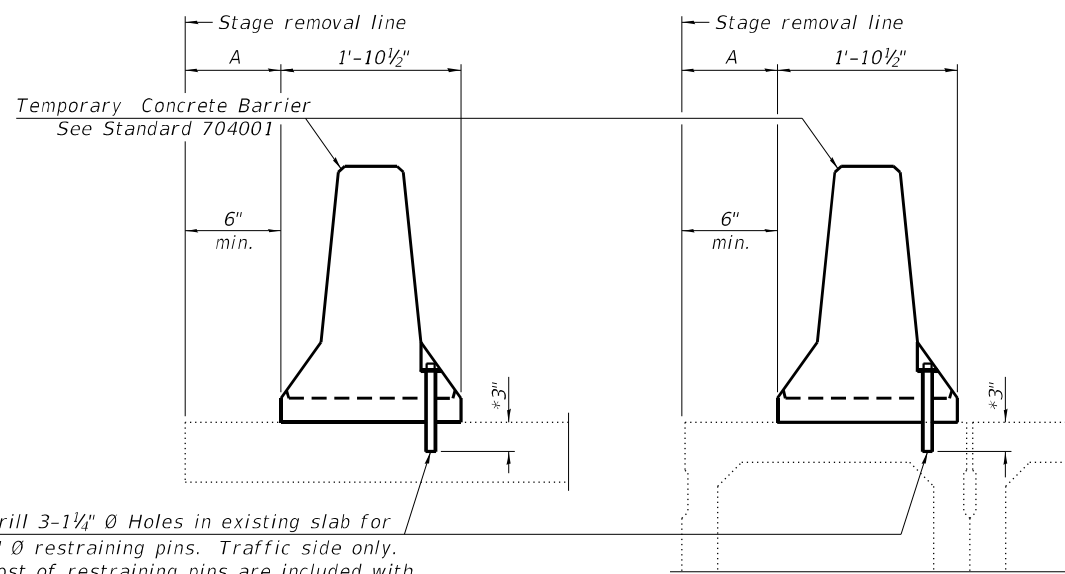
SHEET S29-04 OF S29-29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1193
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

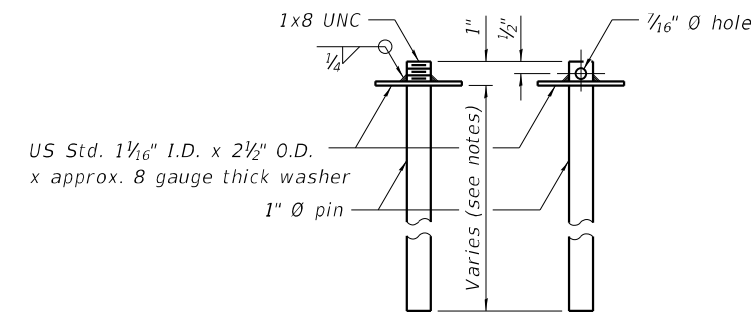
NEW SLAB OR NEW DECK BEAM



Drill 3-1 1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

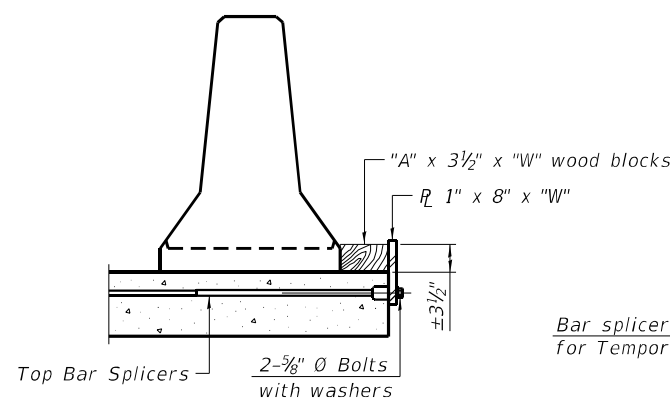
EXISTING DECK BEAM



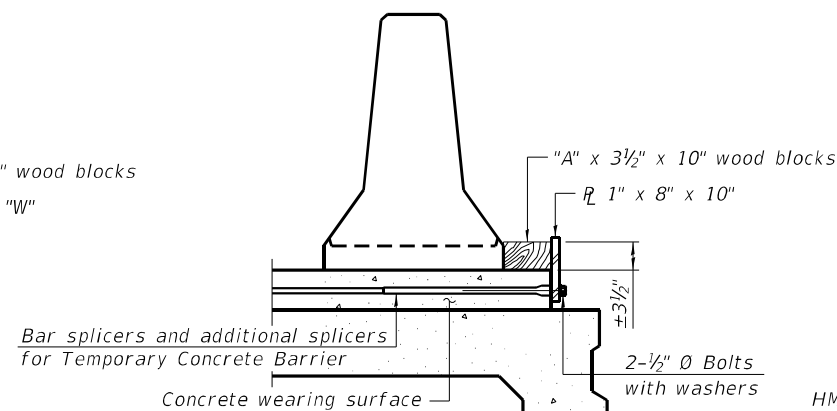
RESTRAINING PIN

\* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

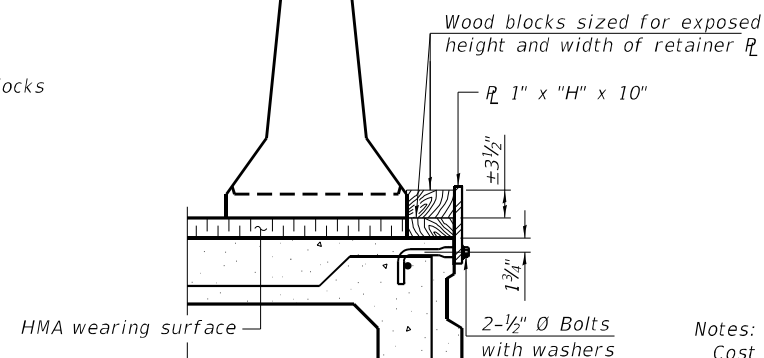
SECTIONS THRU SLAB OR DECK BEAM



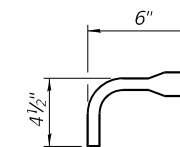
DETAIL I



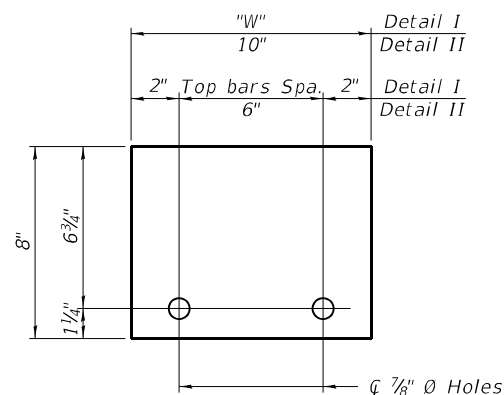
DETAIL II



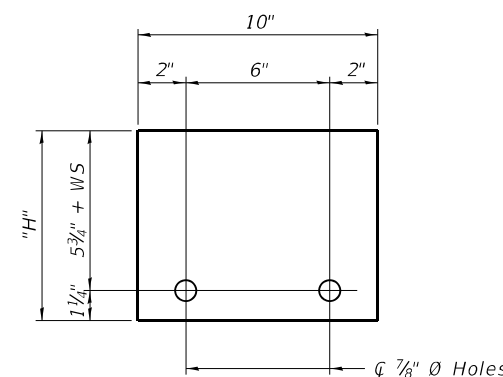
DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER R 1" x 8" x "W"  
(Detail I and II)



STEEL RETAINER R 1" x "H" x 10"  
(Detail III)

Notes:  
 Cost of retainer assembly is included with Temporary Concrete Barrier.  
 A retainer assembly shall be located at the approximate  $\bar{c}$  of each temporary concrete barrier.  
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.  
 When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.  
 Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.  
 Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27 10-12-2021

MODEL: SMODELNAMES  
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**GR&E**  
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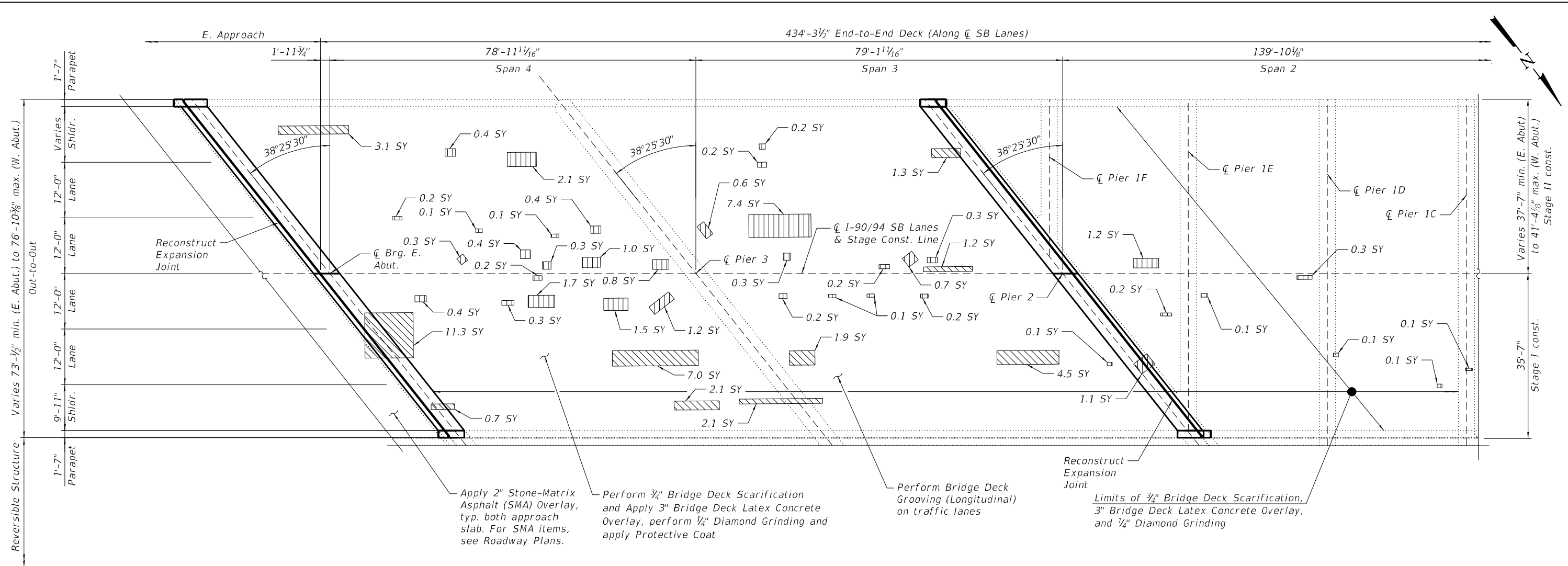
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STATE OF ILLINOIS  
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TEMPORARY CONCRETE BARRIER  
 SN 016-0121 (SB)

SHEET S29-05 OF S29-29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1194
			CONTRACT NO. 62K74	
		ILLINOIS	FED. AID PROJECT	



**DECK PLAN**

**LEGEND**

- \*Deck Slab Repair (Partial Depth)
- Deck Slab Repair (Full Depth, Type II)
- Square Yard

\* Areas of Deck Slab Repair (Partial Depth) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3 Inches

**NOTES:**

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S29-04.
3. For East, West and Pier transverse joint removal and reconstruction, see Sheet S29-08 thru S29-19.
4. Perform 1/4" Diamond Grinding to top of bridge deck and abutment hatched block.
5. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
6. Protective Coat shall be applied to the top of reconstructed transverse joints, top and inside face of parapets and top of latex concrete overlay.
7. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.
8. The Contractor shall exercise extreme caution during concrete removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer at no cost to the Department.
9. Prior to any reconstruction or resurfacing of the bridge deck, a team of the consultant WJE will require access to contractor work zone to take cores of existing deck for independent study with IDOT. Contractor to coordinate with IDOT/WJE in advance. There is no cost to the contractor.

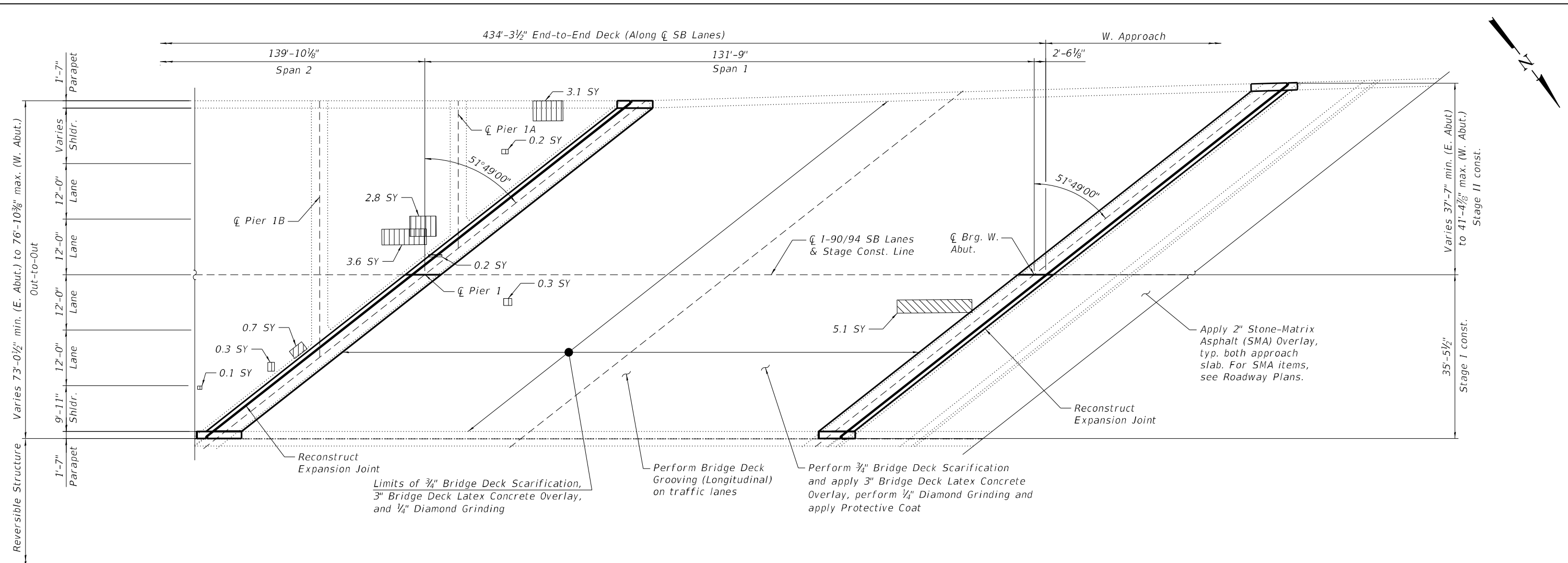
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	2,482
Protective Coat	Sq Yd	4,247
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	2,373
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	3,582
Bridge Deck Scarification 3/4"	Sq Yd	3,582
Deck Slab Repair (Full Depth, Type II)	Sq Yd	40.3
Diamond Grinding (Bridge Section)	Sq Yd	3,654
Maintenance of Lighting System	Cal Mo	6

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
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1195
CONTRACT NO. 62K74				
ILLINOIS		FED. AID PROJECT		



**DECK PLAN**

**LEGEND**

-  \*Deck Slab Repair (Partial Depth)
-  Deck Slab Repair (Full Depth, Type I)
-  Deck Slab Repair (Full Depth, Type II)
-  Square Yard

\* Areas of Deck Slab Repair (Partial Depth) are provided for information only and shall be included in the cost of Bridge Deck Latex Concrete Overlay, 3 Inches

**NOTES:**

1. For notes and Bill of Material, see Sheet S29-06.

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**GRAF**  
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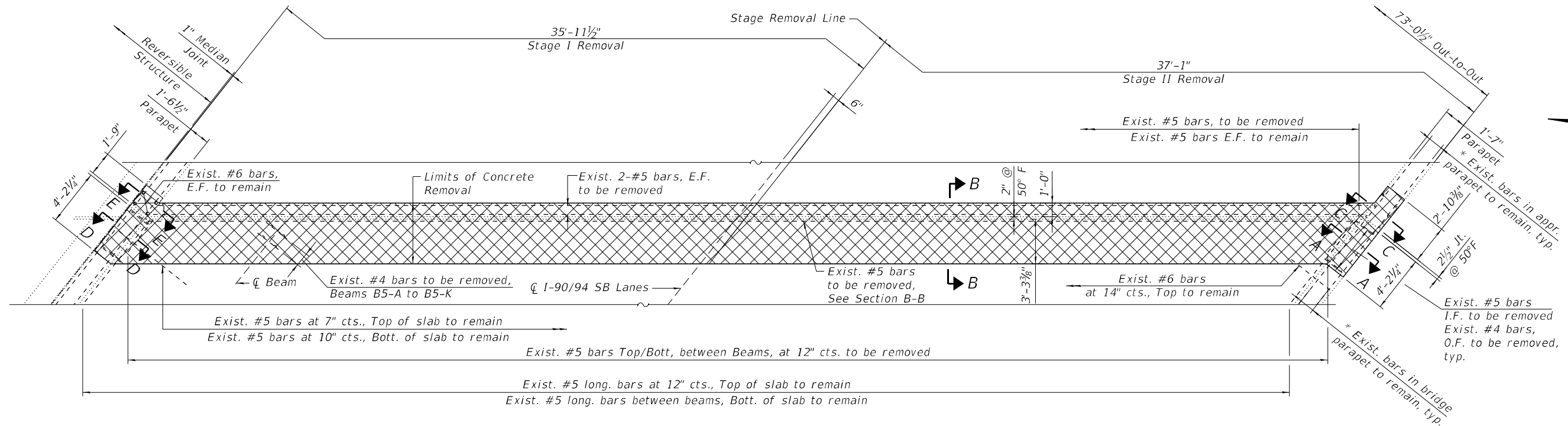
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PLOT DATE =	CHECKED - K.G.W.	REVISED -

**STATE OF ILLINOIS  
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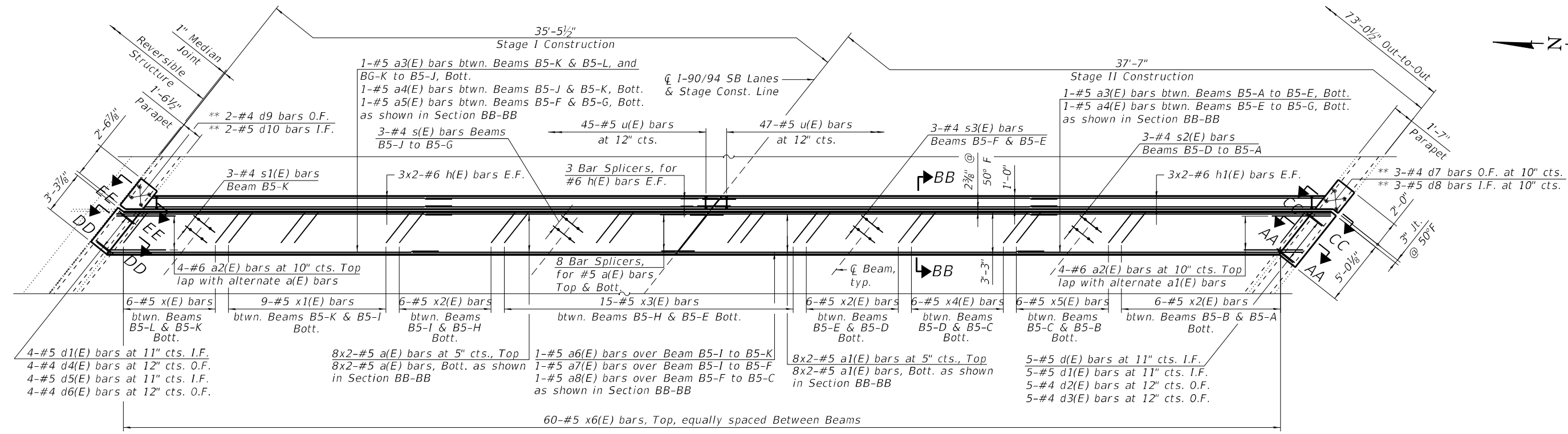
**BRIDGE DECK REPAIR PLAN AND DETAILS II  
 SN 016-0121 (SB)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1196
CONTRACT NO. 62K74				
ILLINOIS		FED. AID PROJECT		





**EAST ABUTMENT JOINT REMOVAL PLAN**



**EAST ABUTMENT JOINT RECONSTRUCTION PLAN**

**NOTES:**

- For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S29-09.
- For sections D-D, E-E, DD-DD and EE-EE, see sheet S29-10.

\* Existing longitudinal bars to remain in the parapets can be cut in the field as required

\*\* Epoxy grout #4 d7(E) and d9(E) bars and #5 d8(E) and d10(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- E.F. Each Face

MODEL: SMODELNAME5  
FILE NAME: X:\04\2020\20200221-03\Design\Structural\Design Files\CADD\SH016-0121\_Kedzle\_Belmont\SB0160121-62K74-5008-EXP5.dgn

**GR&EF**  
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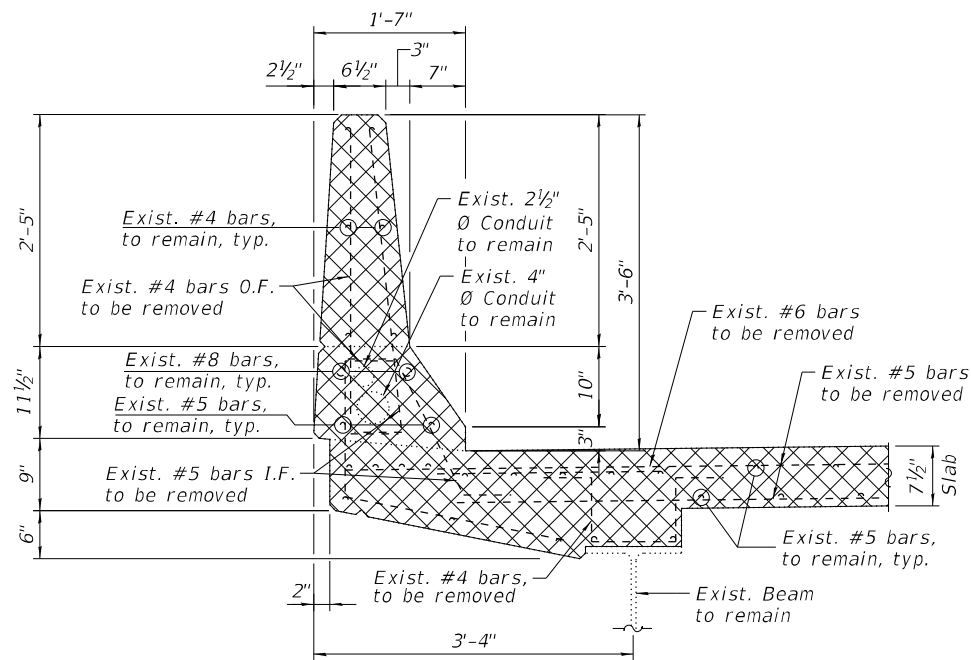
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

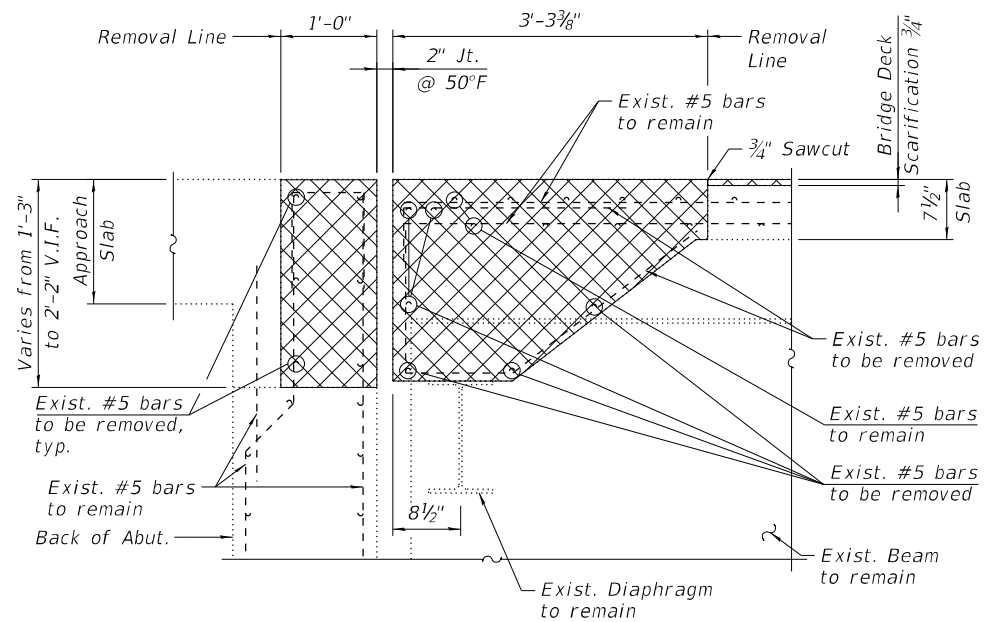
**EAST ABUTMENT EXPANSION JOINT DETAILS I  
SN 016-0121 (SB)**

SHEET S29-08 OF S29-29 SHEETS

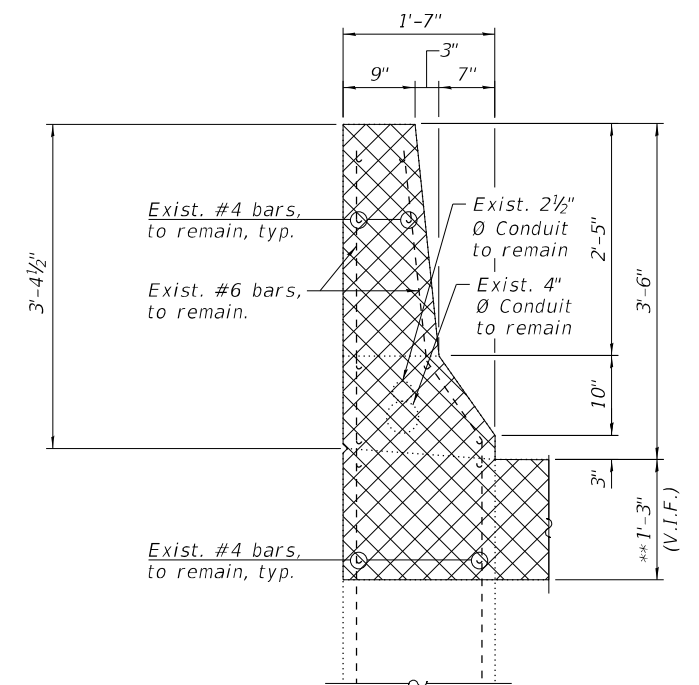
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90	2020-004-BR	COOK	1492	1197
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62K74	



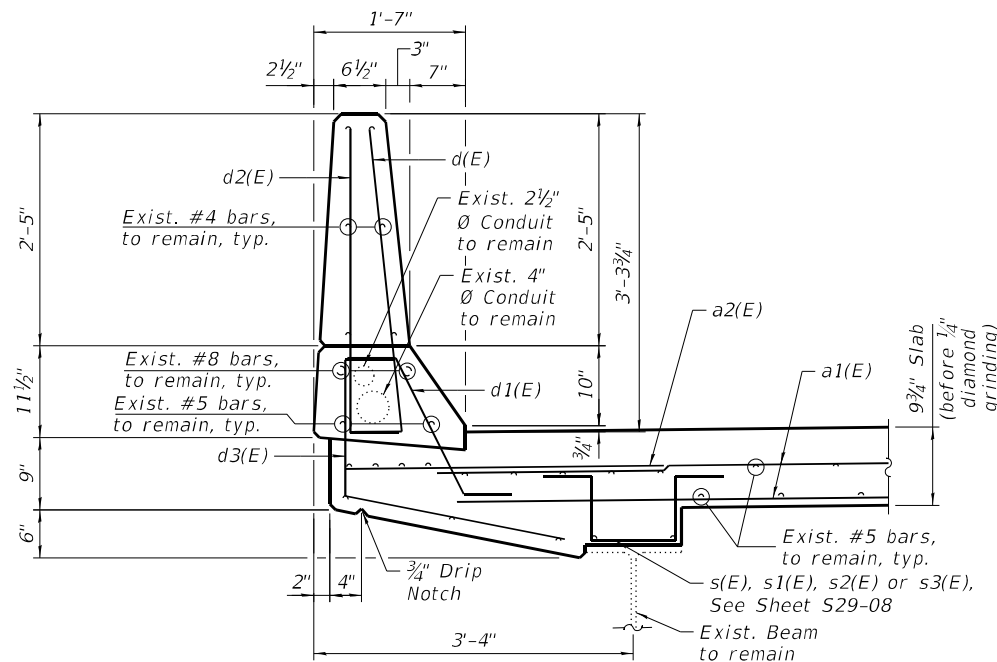
**SECTION A-A**  
(South parapet removal)



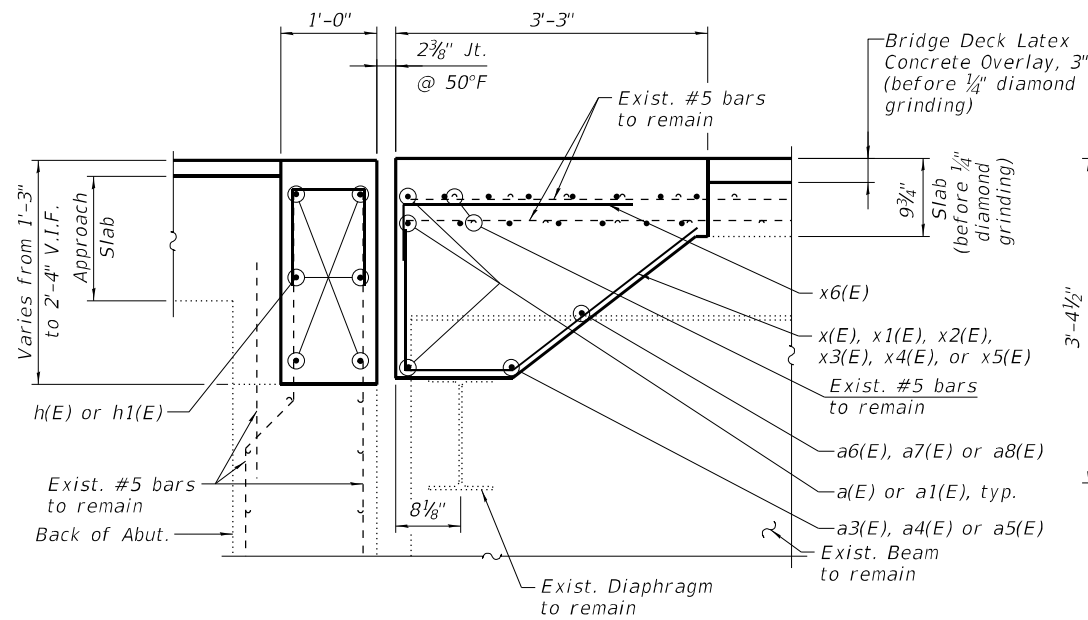
**SECTION B-B**



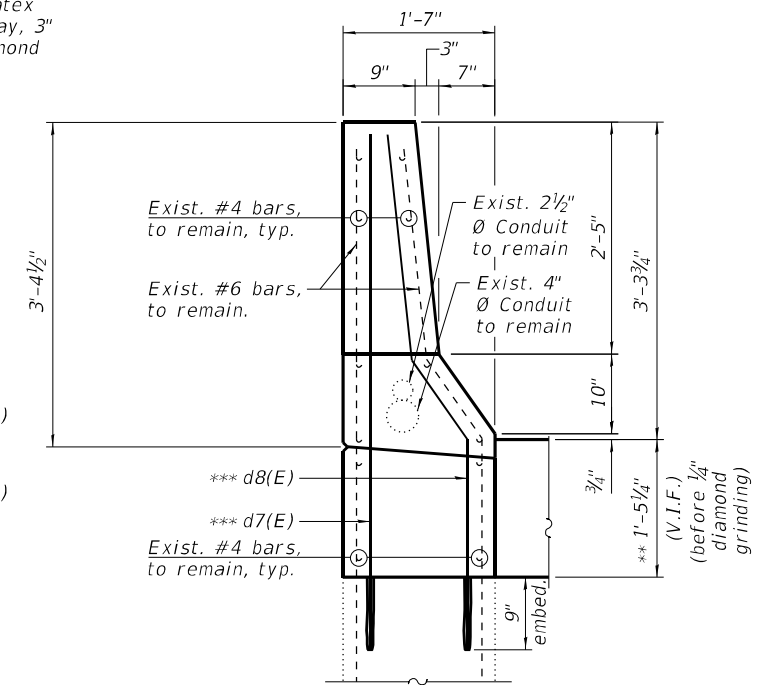
**SECTION C-C**  
(South parapet removal)



**SECTION AA-AA**  
(South parapet reconstruction)



**SECTION BB-BB**



**SECTION CC-CC**  
(South parapet reconstruction)

**LEGEND**

\* Dimension is taken at the Back of Abutment

\*\* Epoxy grout #4 d7(E) & #5 d8(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

MODEL: sMODELNAME5  
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SH\016-0121\_Kedzie\_Belmont\SB\0160121-62K74-5009+EPS.dgn



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PLOT DATE =	DRAWN - D.C.P.	REVISED -
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

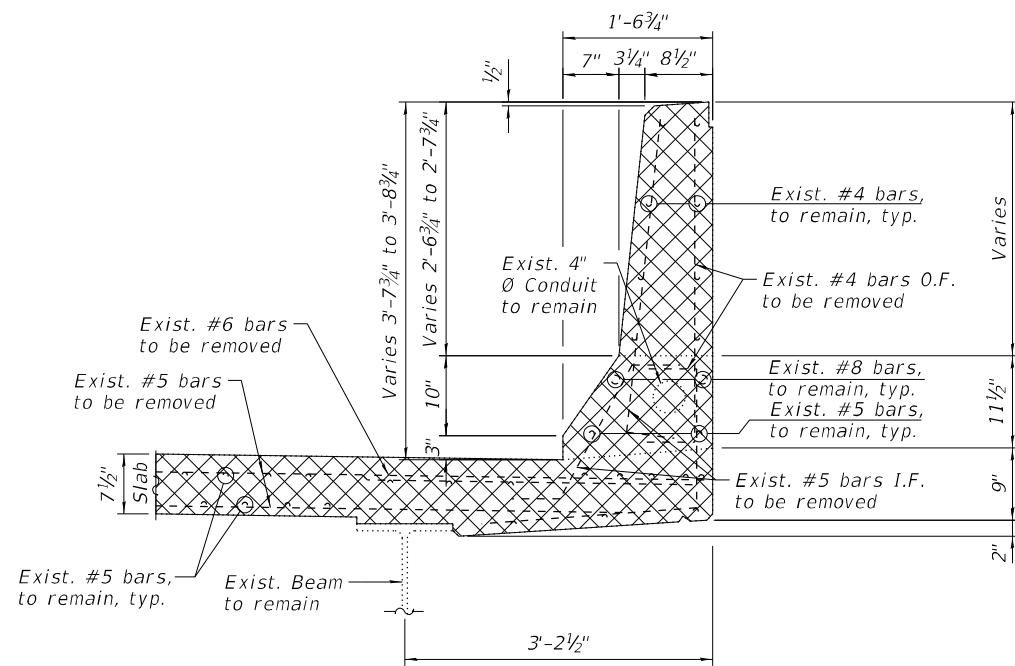
**EAST ABUTMENT EXPANSION JOINT DETAILS II  
SN 016-0121 (SB)**

SHEET S29-09 OF S29-29 SHEETS

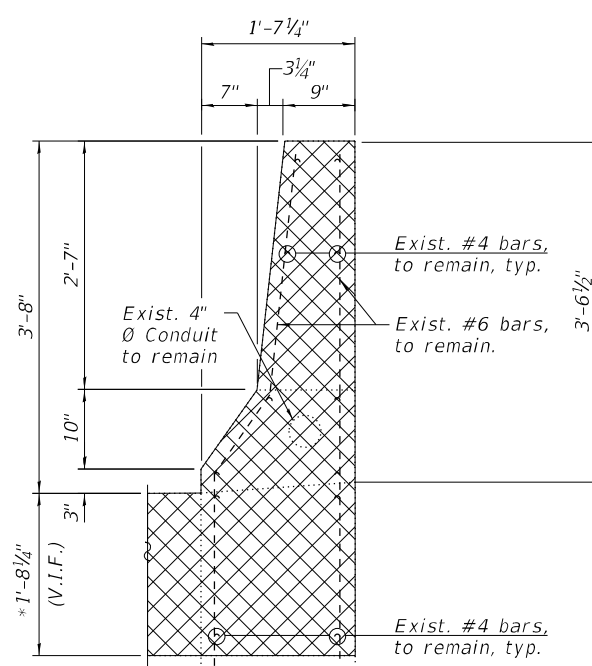
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90	2020-004-BR	COOK	1492	1198
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL  
EAST ABUTMENT**

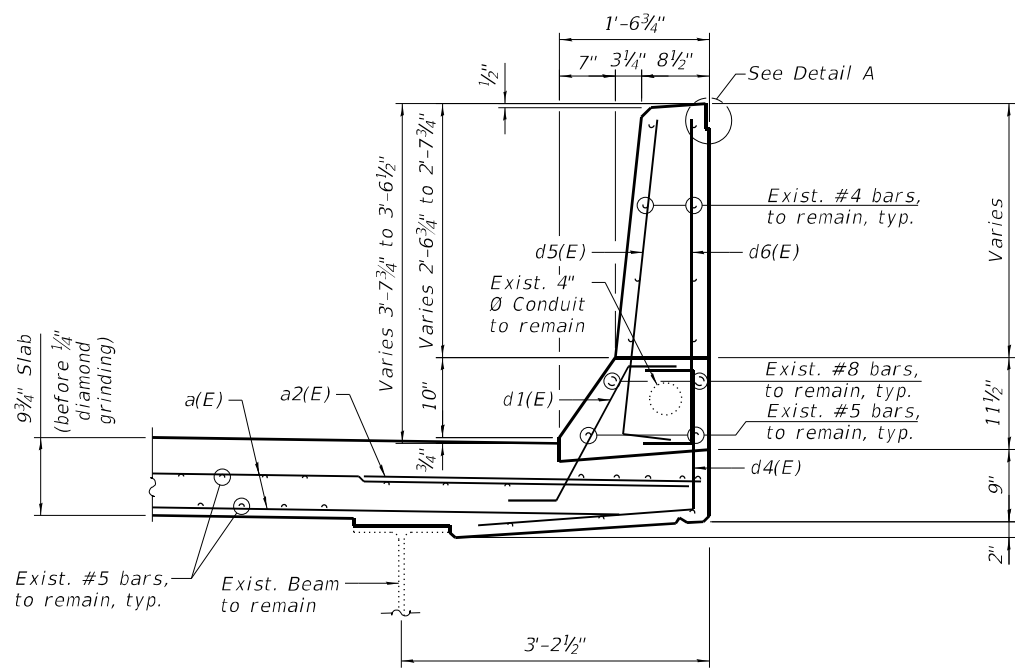
Bar	No.	Size	Length	Shape
a1(E)	32	#5	24'-6"	—
a2(E)	8	#6	6'-6"	—
a3(E)	8	#5	8'-0"	—
a4(E)	3	#5	4'-10"	—
a5(E)	1	#5	2'-8"	—
a6(E)	1	#5	13'-0"	—
a7(E)	1	#5	22'-7"	—
a8(E)	1	#5	23'-11"	—
d(E)	5	#5	3'-8"	┘
d1(E)	9	#5	2'-7"	┘
d2(E)	5	#4	3'-8"	┘
d3(E)	5	#4	4'-3"	┘
d4(E)	4	#4	4'-2"	┘
d5(E)	4	#5	3'-10"	┘
d6(E)	4	#4	3'-10"	┘
d7(E)	3	#4	5'-5"	┘
d8(E)	3	#5	5'-7"	┘
d9(E)	2	#4	6'-0"	┘
d10(E)	2	#5	6'-2"	┘
h(E)	12	#6	24'-9"	—
h1(E)	12	#6	26'-1"	—
s(E)	12	#4	4'-0"	┘
s1(E)	3	#4	3'-4"	┘
s2(E)	12	#4	3'-6"	┘
s3(E)	6	#4	3'-8"	┘
u(E)	92	#5	2'-9"	┘
x(E)	6	#5	3'-2"	┘
x1(E)	9	#5	5'-7"	┘
x2(E)	18	#5	4'-8"	┘
x3(E)	15	#5	5'-2"	┘
x4(E)	6	#5	4'-3"	┘
x5(E)	6	#5	3'-10"	┘
x6(E)	60	#5	3'-7"	┘
Concrete Removal			Cu Yd	32.0
Reinforcement Bars, Epoxy Coated			Pound	3,840
Concrete Superstructure			Cu Yd	34.8



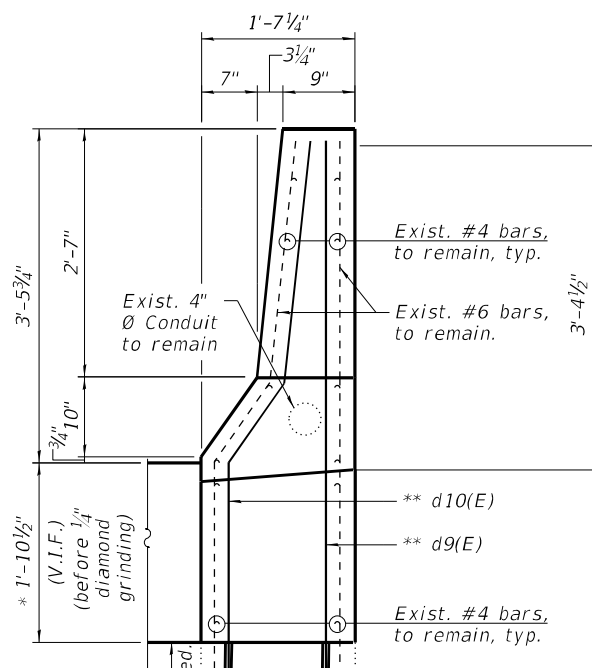
**SECTION D-D**  
(North parapet removal)



**SECTION E-E**  
(North parapet removal)



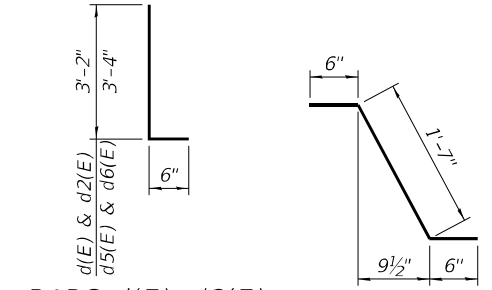
**SECTION DD-DD**  
(North parapet reconstruction)



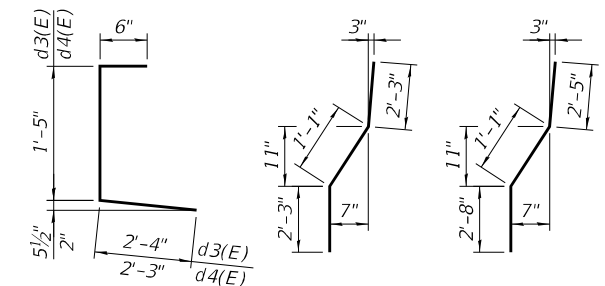
**SECTION EE-EE**  
(North parapet reconstruction)

\* Dimension is taken at the Back of Abut.

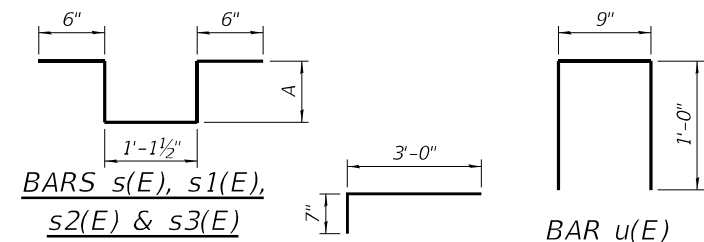
\*\* Epoxy grout #4 d9(E) & #5 d10(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.



**BARS d(E), d2(E), d5(E) & d6(E)**  
**BAR d1(E)**



**BARS d3(E) & d4(E)** **BAR d8(E)** **BAR d10(E)**



**BARS s(E), s1(E), s2(E) & s3(E)**  
**BAR u(E)**

Bar	A
s(E)	11"
s1(E)	7"
s2(E)	8"
s3(E)	9"

Bar	A	B
x(E)	8"	1'-1"
x1(E)	1'-7"	2'-7"
x2(E)	1'-3"	2'-0"
x3(E)	1'-5"	2'-4"
x4(E)	1'-1"	1'-9"
x5(E)	11"	1'-6"

**BARS x(E), x1(E), x2(E), x3(E), x4(E) & x5(E)**



**BAR x6(E)**

**NOTES:**

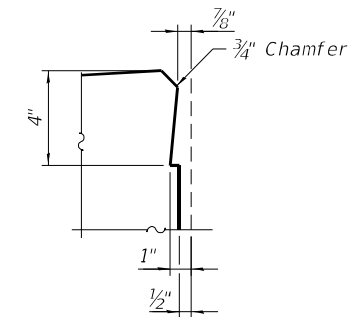
- For Preformed Joint Strip Seal details, see sheet S29-20.
- For Bar Splicer Assembly details, see sheet S29-29.
- Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- Removal and disposal of the existing expansion joints is included with Concrete Removal.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- V.I.F. Verify in Field

**MIN BAR LAPS**

- #5 3'-6"
- #6 4'-0"



**DETAIL A**

(Reinforcement not shown for clarity)

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT EXPANSION JOINT DETAILS III  
SN 016-0121 (SB)**

SHEET S29-10 OF S29-29 SHEETS

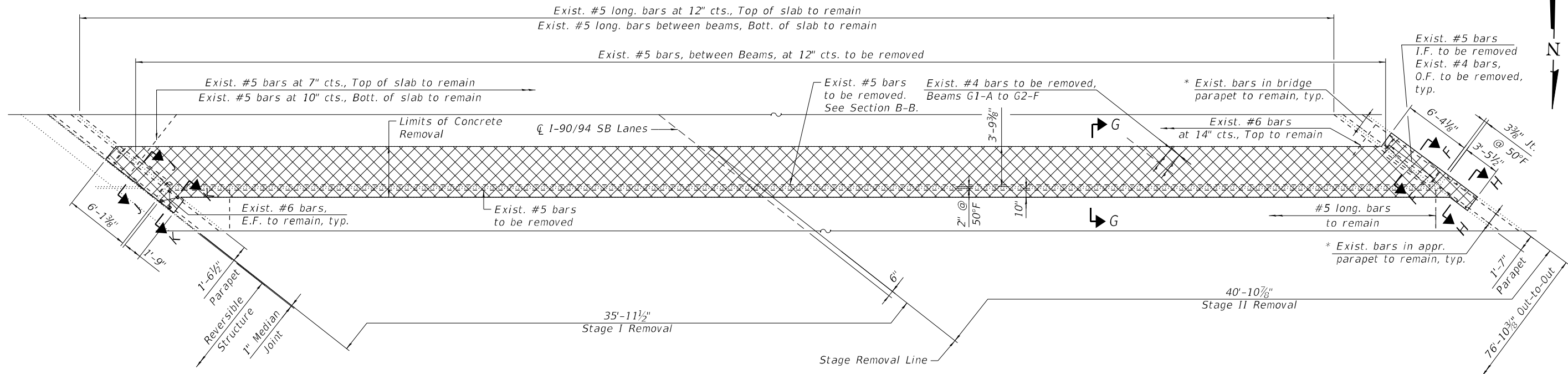
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1199
CONTRACT NO. 62K74				

ILLINOIS FED. AID PROJECT

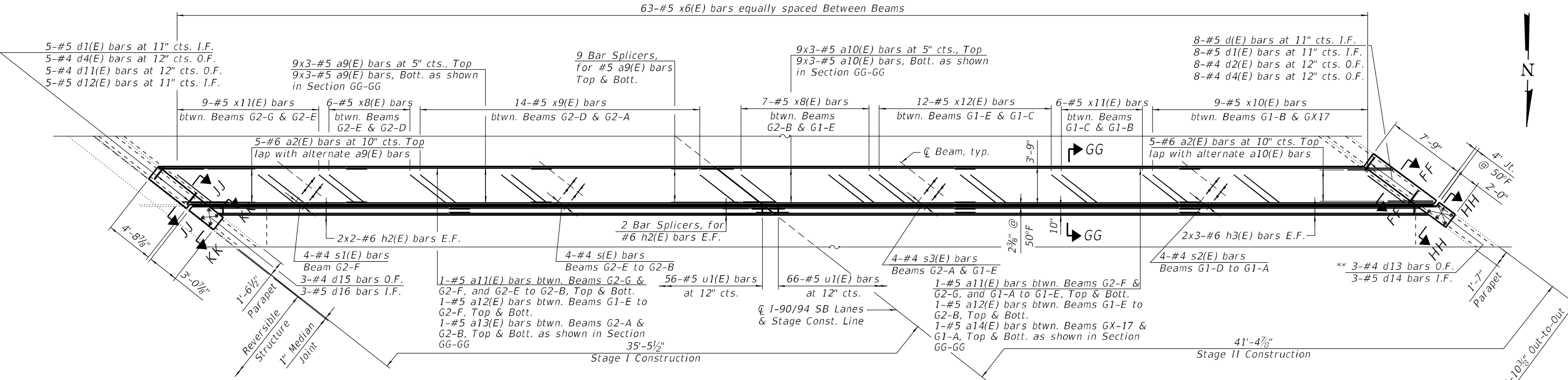
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12/1/2022 10:11:45 AM

**GR&E**  
8501 W. Higgins Road, Suite 280  
Chicago, Illinois 60631; (773) 399-0112

USER NAME	DESIGNED	J.T.B.	REVISED
	CHECKED	H.A.	REVISED
	PLOT SCALE	DRAWN	D.C.P.
	PLOT DATE	CHECKED	K.G.W.



**WEST ABUTMENT JOINT REMOVAL PLAN**



**WEST ABUTMENT JOINT RECONSTRUCTION PLAN**

**NOTES:**

- For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S29-12.
- For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S29-13.

\* Existing longitudinal bars to remain in the parapets can be cut in the field as required

\*\* Epoxy grout #4 d13(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

**LEGEND**

- Concrete Removal
- I.F. Inside Face
- O.F. Outside Face
- E.F. Each Face

MODEL: SMODELNAME5  
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SH016-0121\_Kedzie\_Belmont\SB0160121-62K74-5011-EXP5.dgn  
12/1/2022 10:11:46 AM

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8501 W. Higgins Road, Suite 280  
Chicago, Illinois 60631; (773) 399-0112

USER NAME =	DESIGNED -	J.T.B.	REVISED -
PLOT SCALE =	CHECKED -	H.A.	REVISED -
PLOT DATE =	DRAWN -	D.C.P.	REVISED -
	CHECKED -	K.G.W.	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT EXPANSION JOINT DETAILS I  
SN 016-0121 (SB)**

SHEET S29-11 OF S29-29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1200
CONTRACT NO. 62K74				
ILLINOIS FED. AID PROJECT				