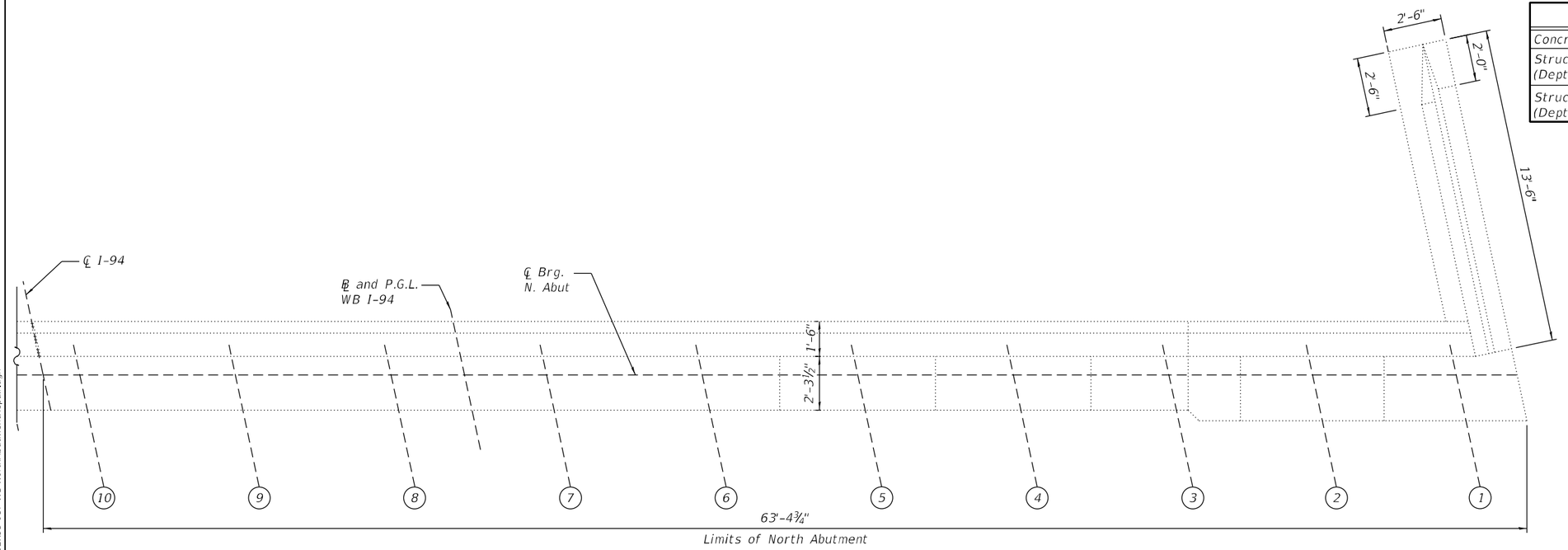
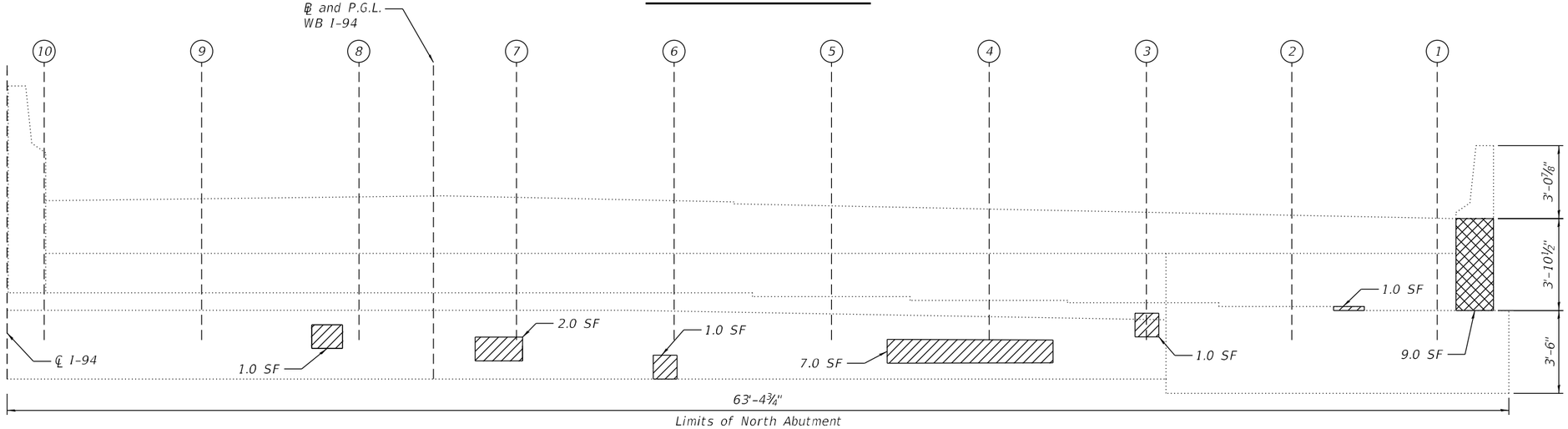
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	471
Structural Repair Of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	13
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq Ft	9



NORTH ABUTMENT PLAN



NORTH ABUTMENT ELEVATION

(Looking North)

NOTES:

1. Quantities and limits shown are estimated for bidding purpose 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. For slope wall repairs, see sheet S05-20.
3. Concrete Sealer is to be applied to the abutment seats and the bottom 2 feet of the abutment backwall.

LEGEND

	Structural Repair of Concrete (Depth Equal to or Greater than 5 inches)
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
SF	Square Foot

Accurate GROUP, INC.

USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	NORTH ABUTMENT REPAIRS STRUCTURE NO. 016-0161 (WB)	
	DRAWN - ME	REVISED -			
PLOT SCALE = 5:4 ':' / in.	CHECKED - JL	REVISED -			
PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -		SHEET S05-17 OF S05-27 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	601
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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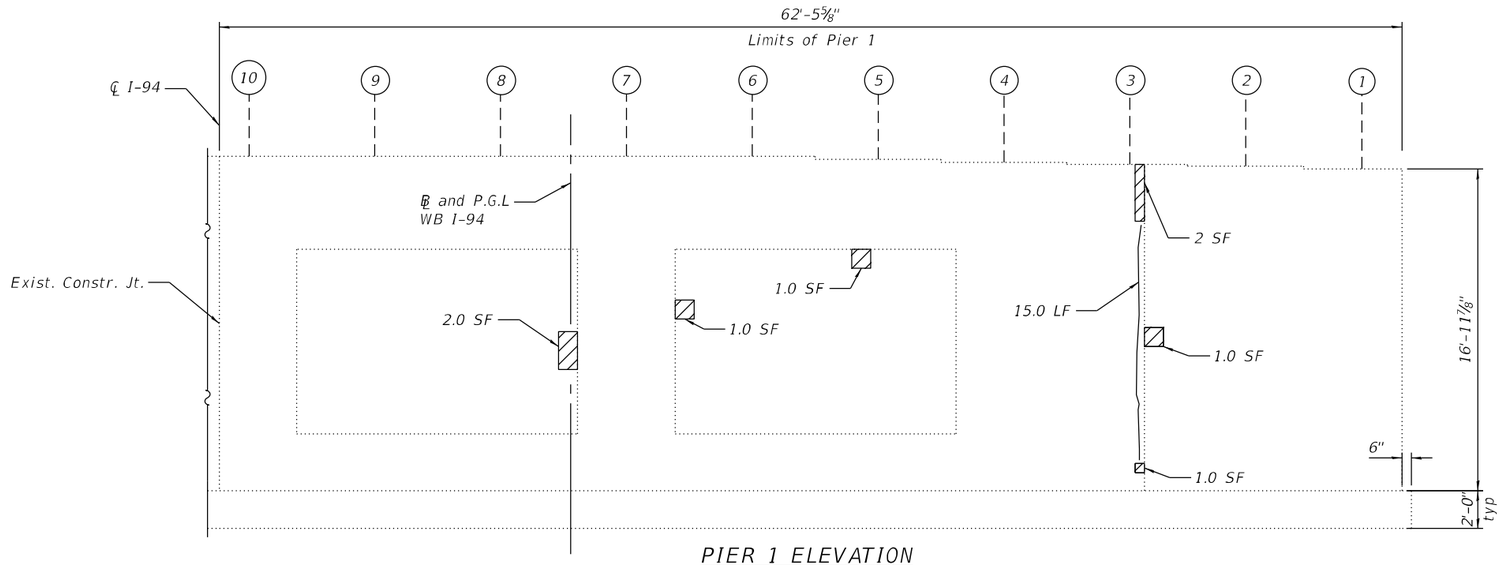
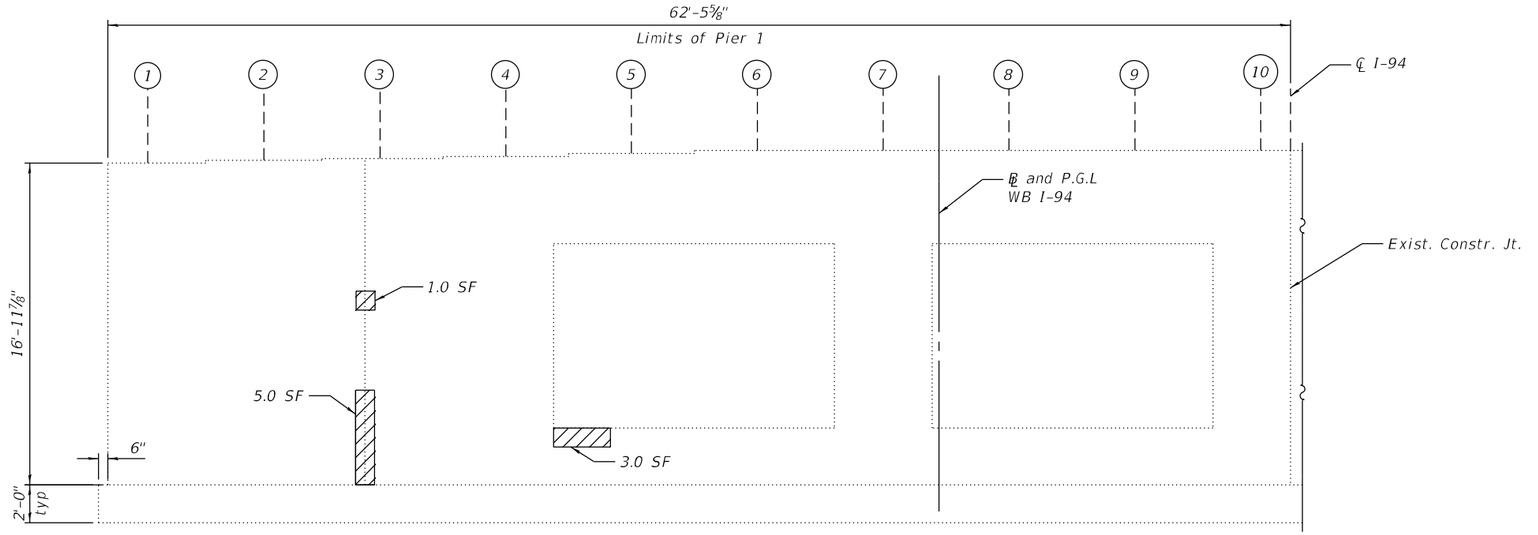


PIER 1 ELEVATION
(Looking North)



PIER 1 ELEVATION
Looking South

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	15
Structural Repair Of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	17

LEGEND

Structural Repair of Concrete (Depth Equal to or Less than 5 inches)

Epoxy Crack Injection

LF Linear Foot

SF Square Foot

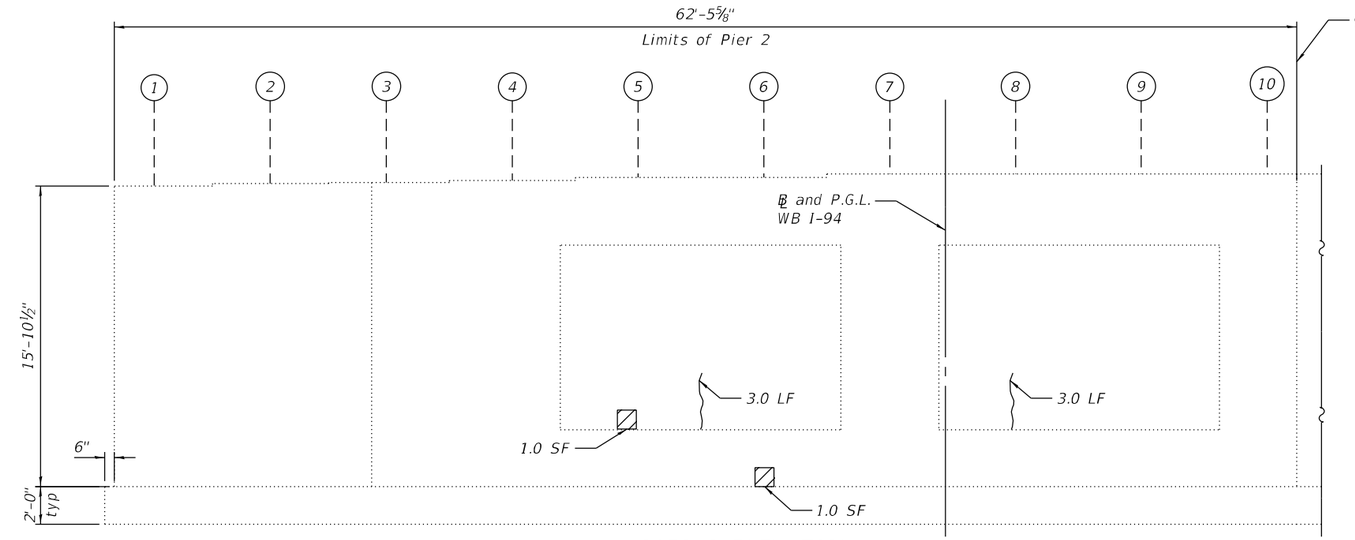
NOTE:

1. Quantities and limits shown are estimated for bidding purpose 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.

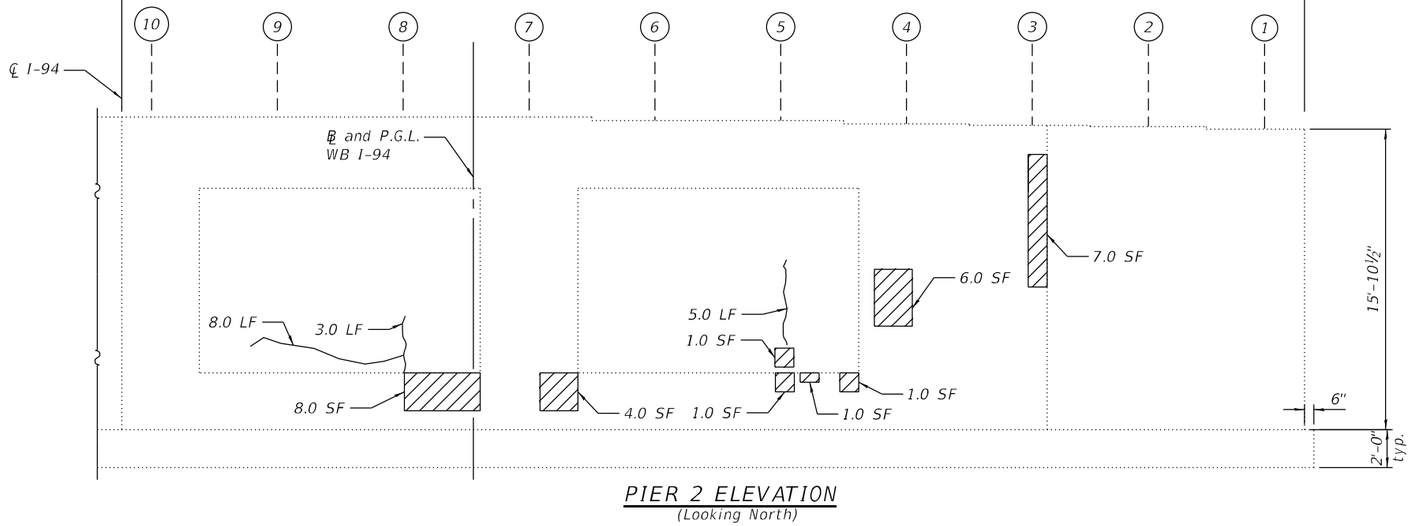
Accurate GROUP, INC.

USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 1 REPAIRS STRUCTURE NO. 016-0161 (WB)	
	DRAWN - ME	REVISED -			
PLOT SCALE = 8:0.0000 ':" / in.	CHECKED - JL	REVISED -			
PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -		SHEET S05-18 OF S05-27 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	602
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



PIER 2 ELEVATION
(Looking South)



PIER 2 ELEVATION
(Looking North)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	22
Structural Repair Of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	31

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Epoxy Crack Injection
LF	Linear Foot
SF	Square Foot

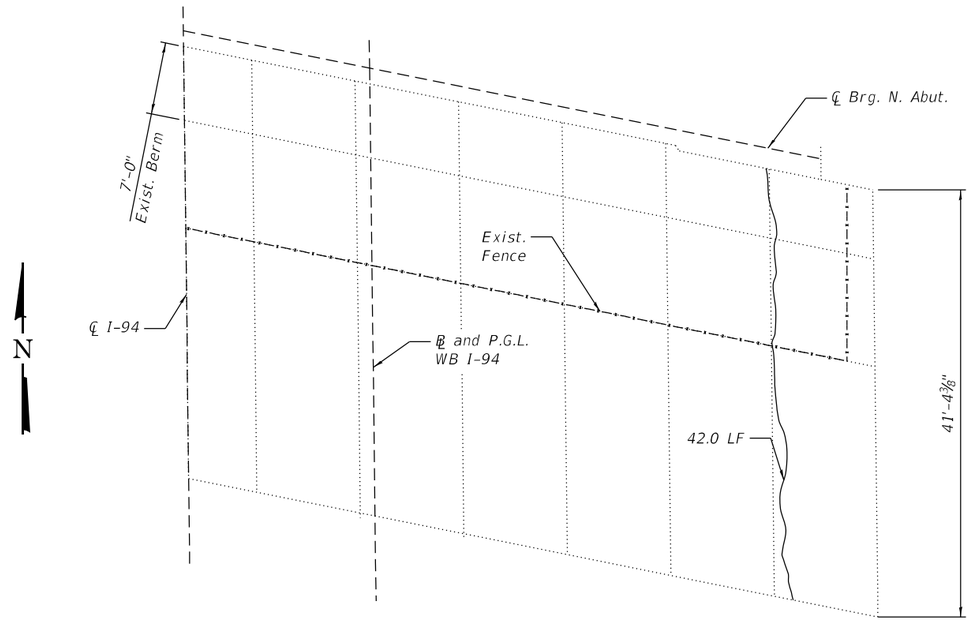
NOTE:

1. Quantities and limits shown are estimated for bidding purpose 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.

Accurate GROUP, INC.

USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 2 REPAIRS STRUCTURE NO. 016-0161 (WB)	
	DRAWN - ME	REVISED -			
PLOT SCALE = 8:0.0000 ':" / in.	CHECKED - JL	REVISED -			
PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -		SHEET S05-19 OF S05-27 SHEETS	

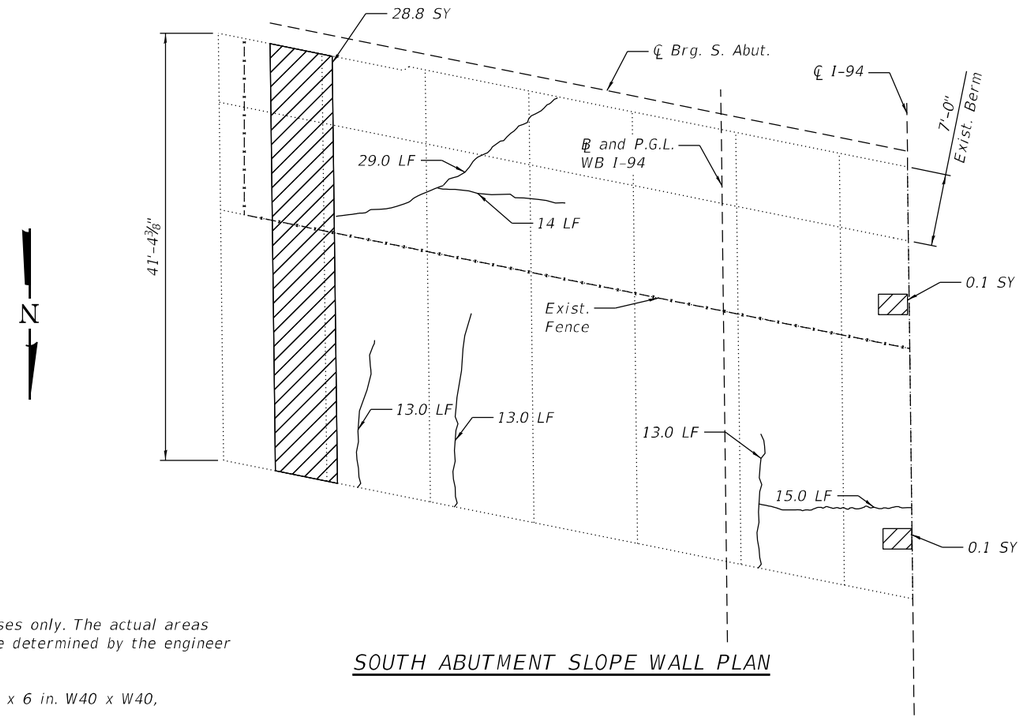
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	603
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



NORTH ABUTMENT SLOPE WALL PLAN

BILL OF MATERIAL NORTH SLOPE WALL

ITEM	UNIT	QUANTITY
Slope Wall Crack Sealing	LF	42



SOUTH ABUTMENT SLOPE WALL PLAN

BILL OF MATERIAL SOUTH SLOPE WALL

ITEM	UNIT	QUANTITY
Porous Grandular Embankment	Cu Yd	10
Slope Wall Removal	Sq Yd	29
Slope Wall 4 Inch	Sq Yd	29
Slope Wall Crack Sealing	Foot	97

LEGEND

- Slope Wall Removal and Replacement with 4 inch Slope Wall
- Slope Wall Crack Sealing
- LF Linear Foot
- SF Square Foot

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. W40 x W40, weighing 58 lbs. per 100 sq. ft.

Accurate GROUP, INC.

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		DRAWN - ME		REVISED -	
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PLOT DATE = 12/9/2024		DATE - 12/6/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL REPAIRS
STRUCTURE NO. 016-0161 (WB)
SHEET S05-20 OF S05-27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	604
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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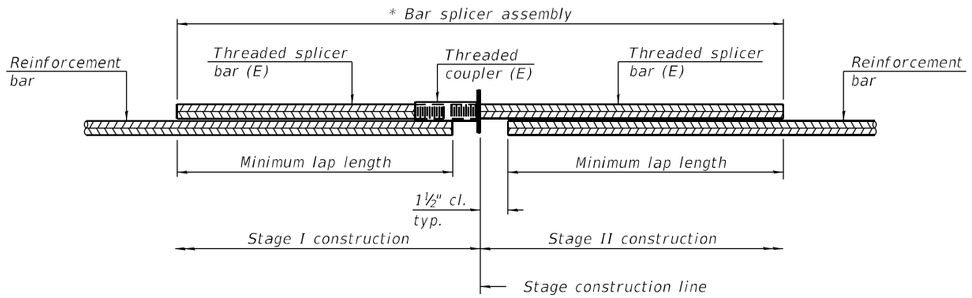


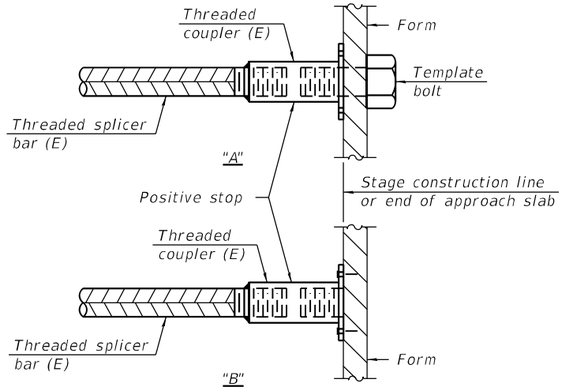
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1½" + thread length

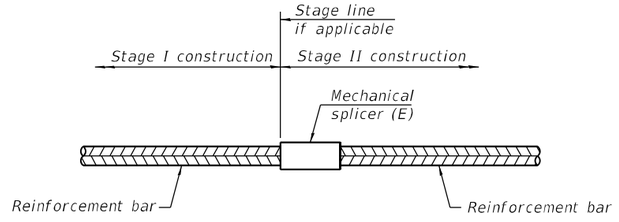
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length
N. Abut.	#5	10	3'-6"
N. Abut.	#6	6	4'-10"
S. Abut.	#5	10	3'-6"
S. Abut.	#6	6	4'-10"



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:

1. *Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.*
2. *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.*
3. *See approved list of bar splicer assemblies and mechanical splicers for alternatives.*

BSD-1 *05-15-2023*

Accurate GROUP, INC.

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		DRAWN - ME		REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.		CHECKED - JL		REVISED -	
PLOT DATE = 12/9/2024		DATE - 12/6/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY & MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-0161 (WB)
SHEET S05-21 OF S05-27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	605
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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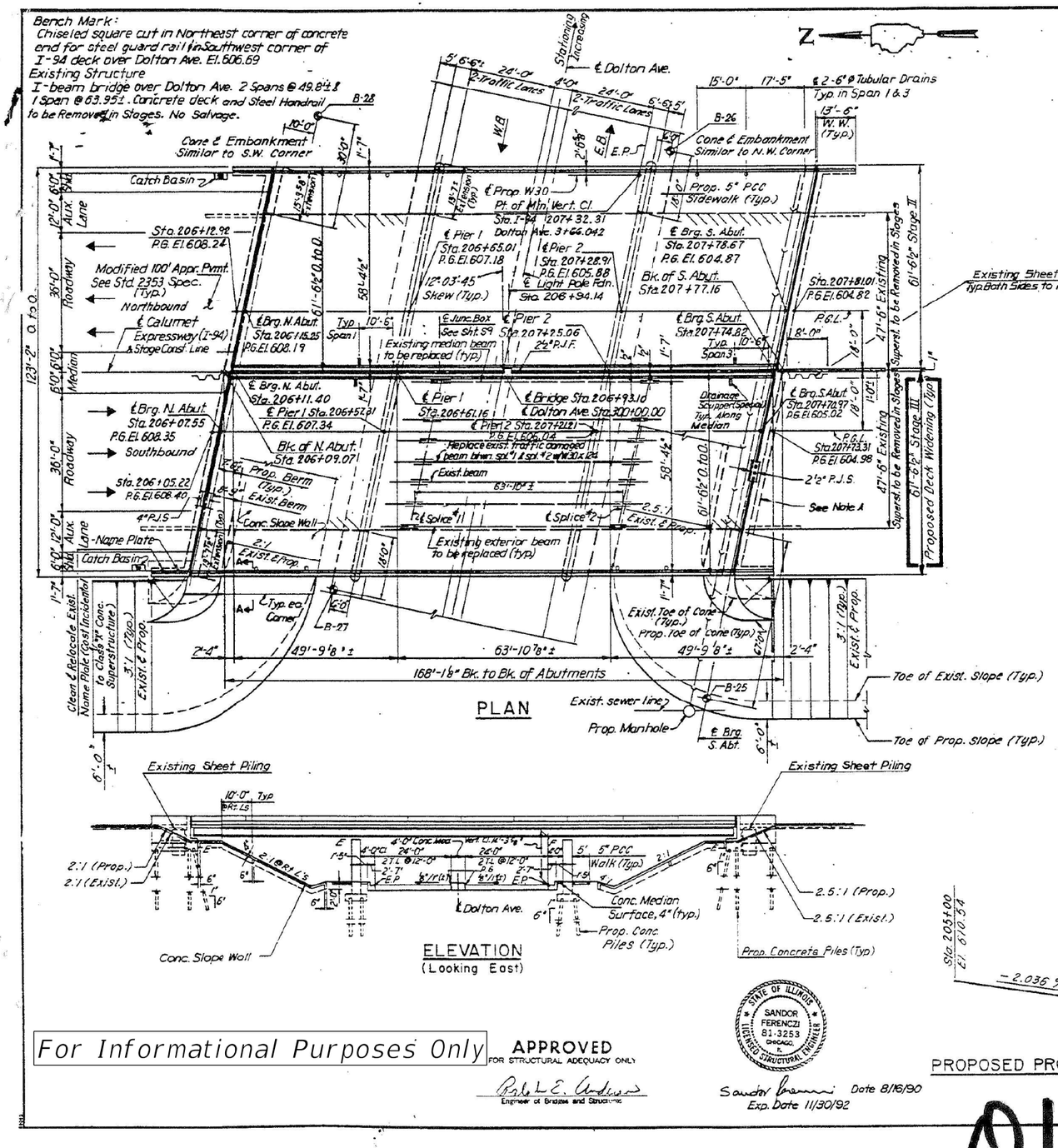
*42(VB-10,12,HB-14,B11)&0707.1HB(R-3)90

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	*	COOK	318	255
STA.	TO STA.			
FED. ROAD DIST. NO. ?	ILLINOIS	FEDERAL AID PROJECT		

SHT. S1 OF S25

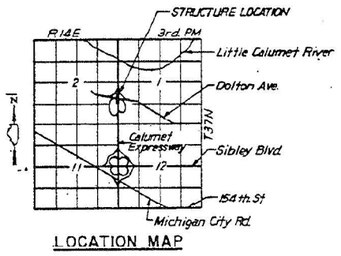
Bench Mark:
Chiseled square cut in Northeast corner of concrete end for steel guard rail in Southwest corner of I-94 deck over Dolton Ave. El. 606.69

Existing Structure
I-beam bridge over Dolton Ave. 2 Spans @ 49.8'± & 1 Span @ 63.95'±. Concrete deck and Steel Handrail to be Removed in Stages. No Salvage.

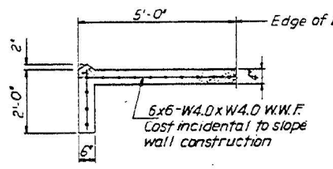


PLAN

ELEVATION
(Looking East)



LOCATION MAP



SECTION A-A

STATION 6+93.11
RE-BUILT 19 BY
STATE OF ILLINOIS
PROJECT-ACIM-ACBHI-94-3(307) 70
LOADING HS 20 & ALT.
STR. No. 016-0161

NAME PLATE
See Standard 2113

GENERAL NOTES:

DESIGN SPECIFICATIONS:
A.A.S.H.T.O. 1983 Standard Specifications for Highway Bridges, and 1984 thru 1988 Interims.
1983 Guide specifications for Seismic Design of Highway Bridges with 1985 and 1988 Interim Specifications.

DESIGN CRITERIA:
Service Load Design, Load Factor for Deck
Live Load: HS 20-44 & Alt.

Allow 25 psf for Future Wearing Surface
DESIGN STRESSES
Existing Structural Steel
fs = 18,000 psi, ASTM A 7 & fs = 20,000, ASTM A 36 (M 183 Steel Beam 16 Repair)
Proposed Structural Steel
fs = 20,000 psi (M 183 Steel)
Reinforced Concrete
f'c = 3500 psi – Superstructure Composite Deck Slab
fc = 1400 psi – Substructure
f c = 1000 psi with earth pressure
n = 9

REINFORCEMENT:
fy = 60,000 psi – Superstructure
fs = 24,000 psi – Substructure

TRAFFIC:
All barricades, signs and other traffic control devices and their placement installed for the purpose of temporarily maintaining traffic during construction shall be in full conformance with the Illinois State Manual on Uniform Traffic Control Devices unless otherwise noted.
The Contractor shall procure, install and remove all temporary pavement markings as per the traffic phasing shown on the plans or as directed by the Engineer. See Roadway Plans.

Indicates Removal of Existing Concrete Deck Slab.

Indicates Boring Locations.

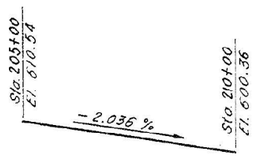
Note:
A. Limits of Porous Granular Embankment (Typ. both Abutments). Place at 45°.

For Informational Purposes Only

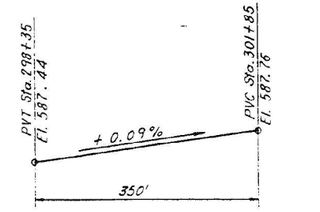
APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Robert E. Andrews
Engineer of Bridges and Structures

STATE OF ILLINOIS
SANDOR FERENCZI
81-3253
CHICAGO, IL
LICENSED STRUCTURAL ENGINEER

Sandor Ferenczi Date 8/16/90
Exp. Date 11/30/92



PROPOSED PROFILE I-94



PROPOSED PROFILE-DOLTON AVE.

STAGE III – S.B. MAINLINE CONSTRUCTION
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLAN AND ELEVATION
I-94 OVER DOLTON AVE.
COOK COUNTY
STA. 206+93.10 S.N. 016-0161
SCALE
DRAWN BY KC & MG
DATE NOV. 1991
CHECKED BY L.M.
S.B.M.-III-1 of 21

016-0161

Accurate GROUP, INC.	USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - ME	REVISED -	
	PLOT SCALE = 0:2.0000 ':" / in.	CHECKED - JL	REVISED -	
	PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -	

EXISTING PLANS (SHEET 1 OF 6)
STRUCTURE NO. 016-0161 (WB)
SHEET S05-22 OF S05-27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	606
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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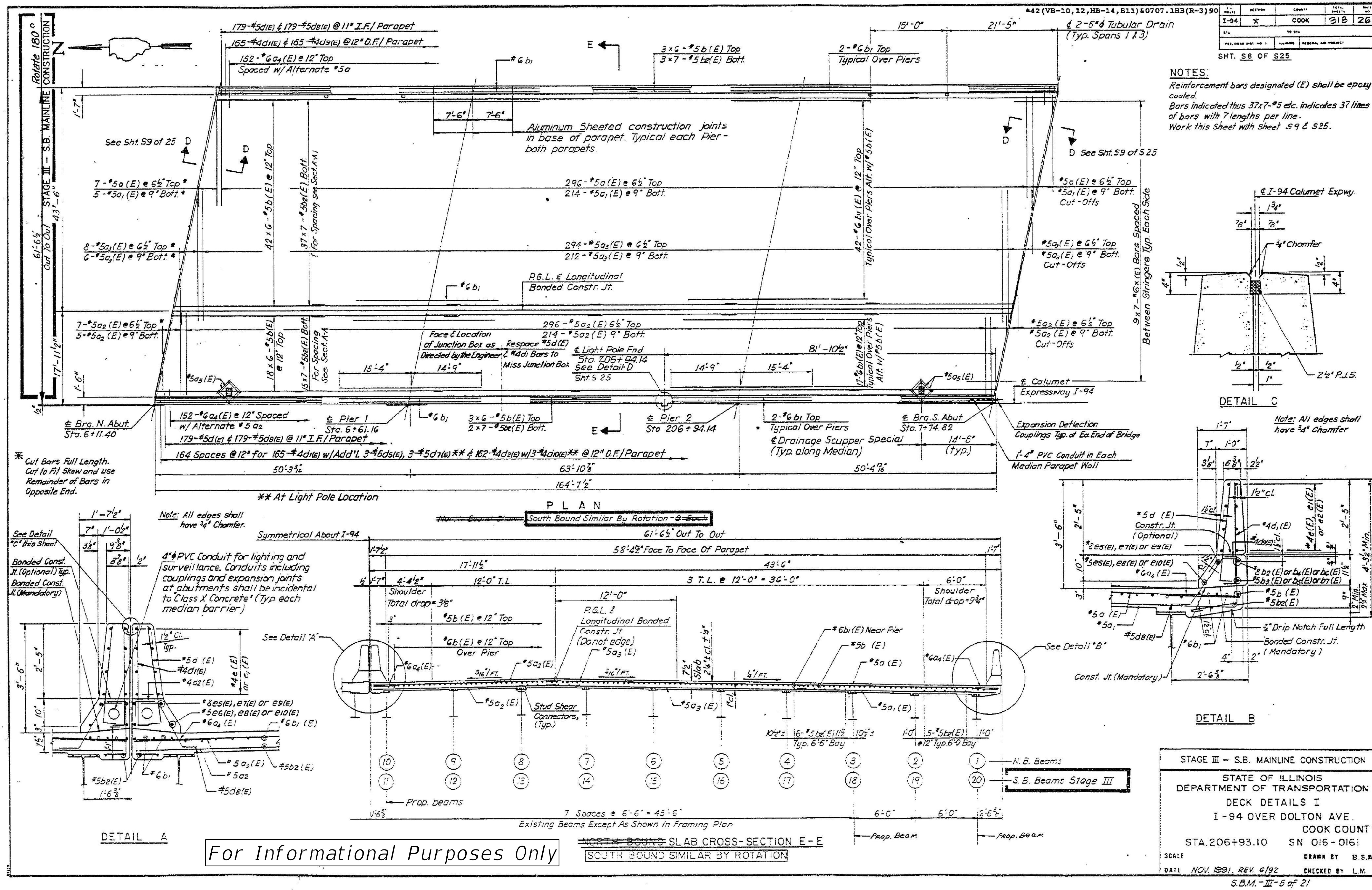

42(VB-10,12,HB-14,E11)&0707.1HB(R-3)90
I-94 | * | COOK | 318 | 260
SHT. S8 OF S25
NOTES:
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 37x7-#5 etc. indicates 37 lines of bars with 7 lengths per line.
Work this Sheet with Sheet S9 & S25.
Rotate 180°
STAGE III - S.B. MAINLINE CONSTRUCTION
179-#5d(E) & 179-#5d8(E) @ 11" I.F./Parapet
165-#4d1(E) & 165-#4d9(E) @ 12" O.F./Parapet
152-#6a4(E) @ 12" Top Spaced w/ Alternate #5a
3x6-#5b(E) Top
3x7-#5b2(E) Bott.
2-#6b1 Top Typical Over Piers
15'-0"
21'-5"
℄ 2-6"ϕ Tubular Drain (Typ. Spans 1 & 3)
Aluminum Sheeted construction joints in base of parapet. Typical each Pier - both parapets.
See Sht. S9 of 25
D See Sht. S9 of S25
7-#5a(E) @ 6½" Top
5-#5a1(E) @ 9" Bott.
296-#5a(E) @ 6½" Top
214-#5a1(E) @ 9" Bott.
#5a(E) @ 6½" Top
#5a1(E) @ 9" Bott.
Cut-Offs
8-#5a3(E) @ 6½" Top
6-#5a3(E) @ 9" Bott.
294-#5a3(E) @ 6½" Top
212-#5a3(E) @ 9" Bott.
P.G.L. & Longitudinal Bonded Constr. Jt.
7-#5a2(E) @ 6½" Top
5-#5a2(E) @ 9" Bott.
296-#5a2(E) 6½" Top
214-#5a2(E) 9" Bott.
Face & Location of Junction Box as Directed by the Engineer
Respace #5d(E) & #4d1 Bars to Miss Junction Box
℄ Light Pole Fnd Sta. 206+94.14 See Detail D Sht. S 25
81'-10½"
9x7-#6x(E) Bars Spaced Between Stringers Typ. Each Side
℄ Calumet Expressway I-94
℄ Brg. N. Abut. Sta. 6+11.40
152-#6a4(E) @ 12" Spaced w/ Alternate #5a2
179-#5d(E) & 179-#5d8(E) @ 11" I.F./Parapet
℄ Pier 1 Sta. 6+61.16
℄ Pier 2 Sta 206+94.14
℄ Brg. S. Abut. Sta. 7+74.82
Expansion Deflection Couplings Typ. at Ea. End of Bridge
1-4" PVC Conduit in Each Median Parapet Wall
℄ Drainage Scupper Special (Typ. along Median)
164 Spaces @ 12" for 165-#4d1(E) w/Add'l. 3-#6d5(E), 3-#5d7(E)** & 162-#4d2(E) w/3-#4d10(E)** @ 12" O.F./Parapet
50'-3⅜"
63'-10⅞"
50'-4⅞"
164'-7½"
* Cut Bars Full Length. Cut to Fit Skew and use Remainder of Bars in Opposite End.
** At Light Pole Location
PLAN
South Bound Similar By Rotation
Symmetrical About I-94
61'-6½" Out To Out
58'-4½" Face To Face Of Parapet
3 T.L. @ 12'-0" = 36'-0"
Shoulder Total drop = 3⅛"
#5b(E) @ 12" Top
#6b(E) @ 12" Top Over Pier
P.G.L. & Longitudinal Bonded Constr. Jt (Do not edge)
Stud Shear Connectors (Typ.)
See Detail "A"
See Detail "B"
N.B. Beams
S.B. Beams Stage III
Prop. beams
7 Spaces @ 6'-6" = 45'-6"
Existing Beams Except As Shown In Framing Plan
SLAB CROSS-SECTION E-E
SOUTH BOUND SIMILAR BY ROTATION
Note: All edges shall have ¾" Chamfer.
4"ϕ PVC Conduit for lighting and surveillance. Conduits including couplings and expansion joints at abutments shall be incidental to Class X Concrete (Typ each median barrier)
DETAIL A
DETAIL B
DETAIL C
℄ I-94 Calumet Expwy.
¾" Drip Notch Full Length
Bonded Constr. Jt. (Mandatory)
Const. Jt. (Mandatory)
For Informational Purposes Only
STAGE III - S.B. MAINLINE CONSTRUCTION
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DECK DETAILS I
I-94 OVER DOLTON AVE.
COOK COUNTY
STA. 206+93.10 SN 016-0161
DRAWN BY B.S.A.
DATE NOV. 1991, REV. 6/92
CHECKED BY L.M.
S.B.M.-III-6 of 21

Accurate GROUP, INC.	USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS (SHEET 2 OF 6) STRUCTURE NO. 016-0161 (WB)
		DRAWN - ME	REVISED -		
	PLOT SCALE = 0:2.0000 ':' / in.	CHECKED - JL	REVISED -		
	PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -		SHEET S05-23 OF S05-27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	607
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

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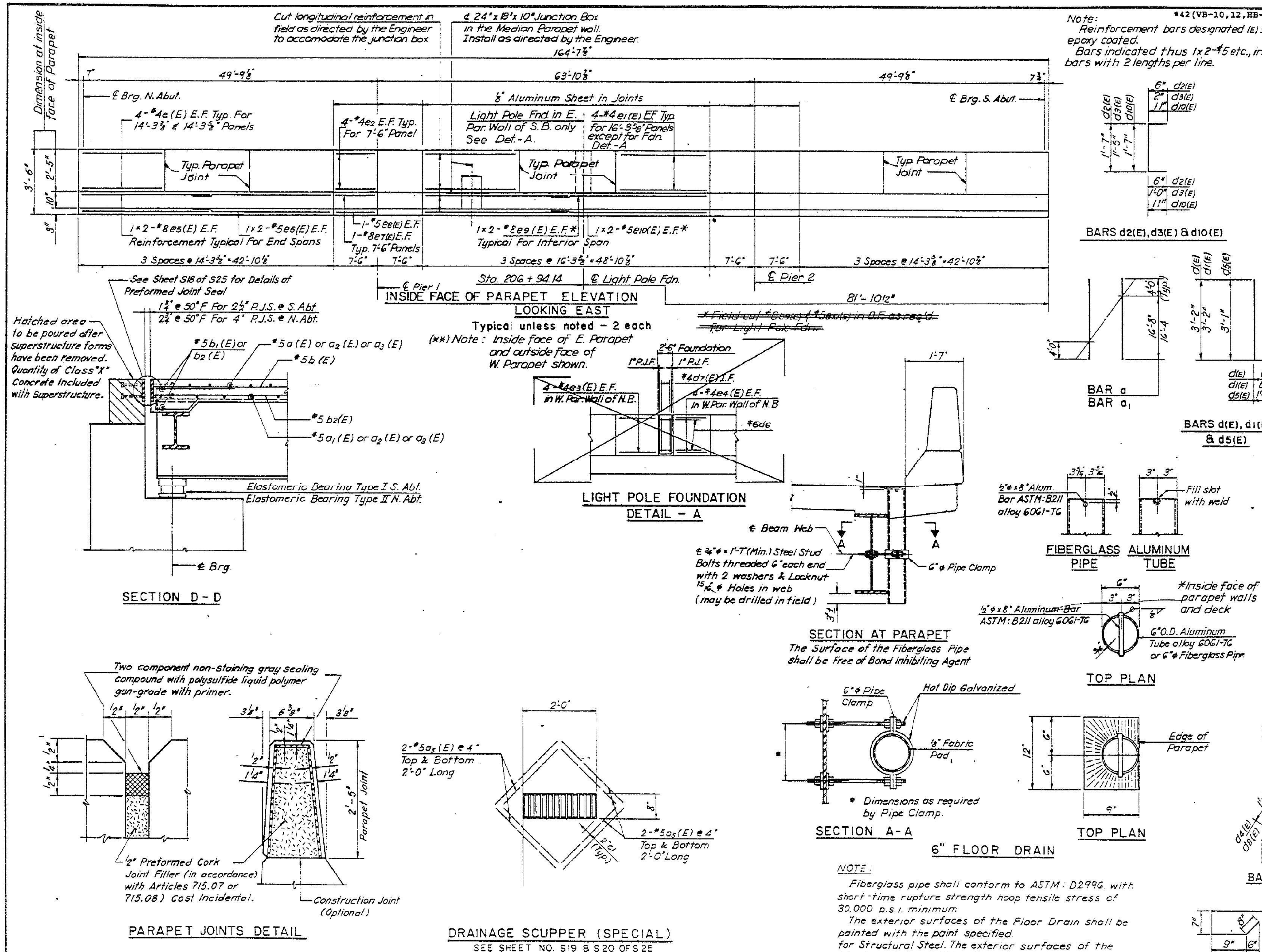
*42(VB-10,12,HB-14,B11)&0707.1HB(R-3)90

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	*	COOK	318	261

SHT. S9 OF S25

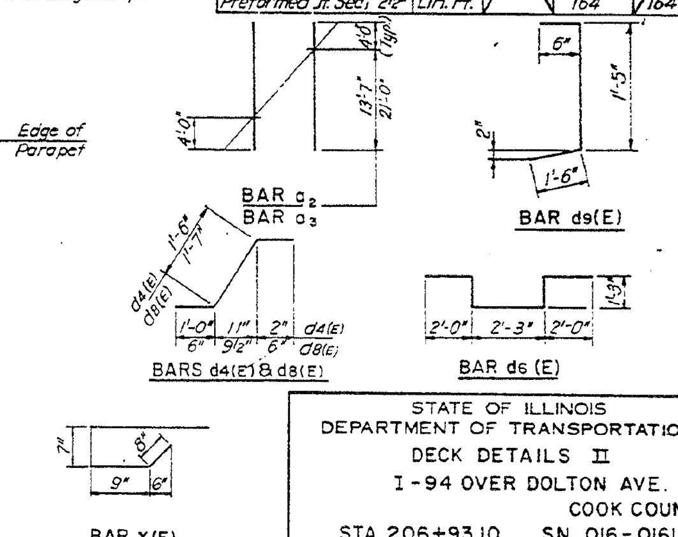
Note:
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 1x2-#5 etc., indicates 1 line of bars with 2 lengths per line.



CONSTR. STAGE II	CONSTR. STAGE III	BAR	NO.	SIZE	LENGTH	SHAPE
303	303	a (E)	606	#5	20'-8"	—
219	219	a1 (E)	438	#5	20'-4"	—
522	522	a2 (E)	1044	#5	17'-7"	—
520	520	a3 (E)	1040	#5	27'-1"	—
304	304	a4 (E)	608	#6	4'-0"	—
32	32	a5(E)	64	#5	2'-0"	—
396	396	b(E)	792	#5	29'-0"	—
126	126	b1(E)	252	#6	30'-1"	—
399	399	b2(E)	798	#5	25'-2"	—
356	358	d(E)	713	#5	3'-8"	┘
327	330	d1(E)	657	#4	3'-8"	┘
162	162	d2(E)	324	#4	2'-7"	[
3	—	d3(E)	3	#4	2'-7"	[
3	—	d4(E)	3	#5	2'-8"	⌐
—	3	d5(E)	3	#6	4'-8"	┘
—	6	d6(E)	6	#6	8'-9"	⊔
—	3	d7(E)	3	#5	2'-0"	—
355	358	d8(E)	713	#5	2'-7"	⌐
165	165	d9(E)	330	#4	3'-5"	[
—	3	d10(E)	3	#4	3'-5"	[
96	96	e(E)	192	#4	13'-11"	—
40	48	e1(E)	88	#4	15'-11"	—
64	64	e2(E)	128	#4	7'-2'	—
8	—	e3(E)	8	#4	7'-0"	—
8	—	e4(E)	8	#4	6'-0"	—
16	16	e5(E)	32	#8	23'-0"	—
16	16	e6(E)	32	#5	22'-0"	—
16	16	e7(E)	32	#8	7'-1"	—
16	16	e8(E)	32	#5	7'-1"	—
8	8	e9(E)	16	#8	26'-0"	—
8	8	e10(E)	16	#5	25'-2	—
	126	x (E)		#6	5'-6"	

ITEM	UNIT	CONTR. STAGE II	CONTR. STAGE III	TOTAL
Reinf. bars (Epoxy Coated)	Lbs.	72,590	74,690	145,320
Class X Concrete Superstr.	Cu. Yds.	297.0	295.9	592.9
6"φ Floor Drains	Each	4	4	8
* Protective Coat	Sq. Yds.	1231	1231	2462
Preformed Jt. Seal 2 1/2"	Lin. Ft.		164	164

* Includes Coat applied to deck



NOTE:
Fiberglass pipe shall conform to ASTM: D2996 with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
The exterior surfaces of the Floor Drain shall be painted with the paint specified.
for Structural Steel. The exterior surfaces of the Aluminum tube shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 prior to Painting.

For Informational Purposes Only

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DECK DETAILS II
I-94 OVER DOLTON AVE.
COOK COUNTY
STA. 206+93.10 SN 016-0161
SCALE | DRAWN BY B.S.A.
DATE: NOV. 1991, REV. 6/92 | CHECKED BY L.M.

STAGE III - S.B. MAINLINE CONSTRUCTION

S.B.M.-III-7 of 21

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Accurate GROUP, INC.

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	DRAWN - ME	REVISED -
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PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (SHEET 3 OF 6)
STRUCTURE NO. 016-0161 (WB)

SHEET S05-24 OF S05-27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	608

CONTRACT NO. 62W87

ILLINOIS | FED. AID PROJECT

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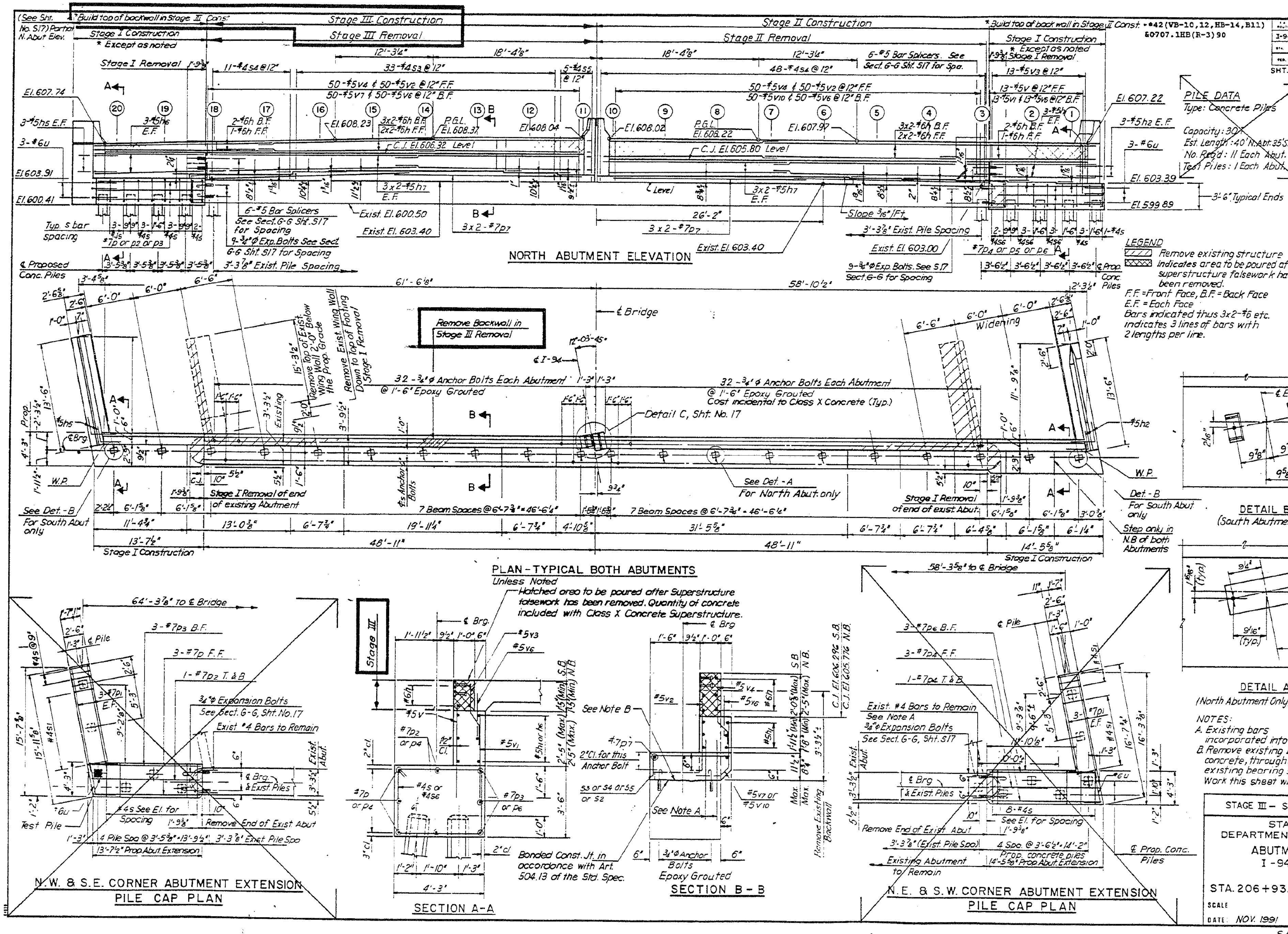

F.A. Route	Section	County	Total Sheets	Sheet No.
I-94	*	COOK	318	267

SHT. S15 OF S25

ABUTMENT SEAT ELEVATIONS		
BEAM NO.	CONCRETE ELEVATIONS	SHIM ℙ
1	603.39	—
2	603.55	—
3	603.71	—
4	603.81	—
5	603.98	—
6	604.13	—
7	604.13	1 1/8"
8	604.13	1 13/16"
9	604.13	7/8"
10	604.13	7/16"
11	604.19	—
12	604.28	—
13	604.36	1/4"
14	604.36	5/8"
15	604.36	—
16	604.26	—
17	604.11	1/2"
18	604.11	—
19	603.91	1 3/16"
20	603.91	—

STAGE III – S.B. MAINLINE CONSTRUCTION

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
ABUTMENT DETAILS - I
I-94 OVER DOLTON AVE
COOK COUNTY
STA. 206+93.10
SN 016-0161
SCALE
DRAWN BY EBP
DATE NOV. 1991
CHECKED BY L.M.

S.B.M.-III-13 of 21

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (SHEET 4 OF 6)
STRUCTURE NO. 016-0161 (WB)
SHEET S05-25 OF S05-27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	609
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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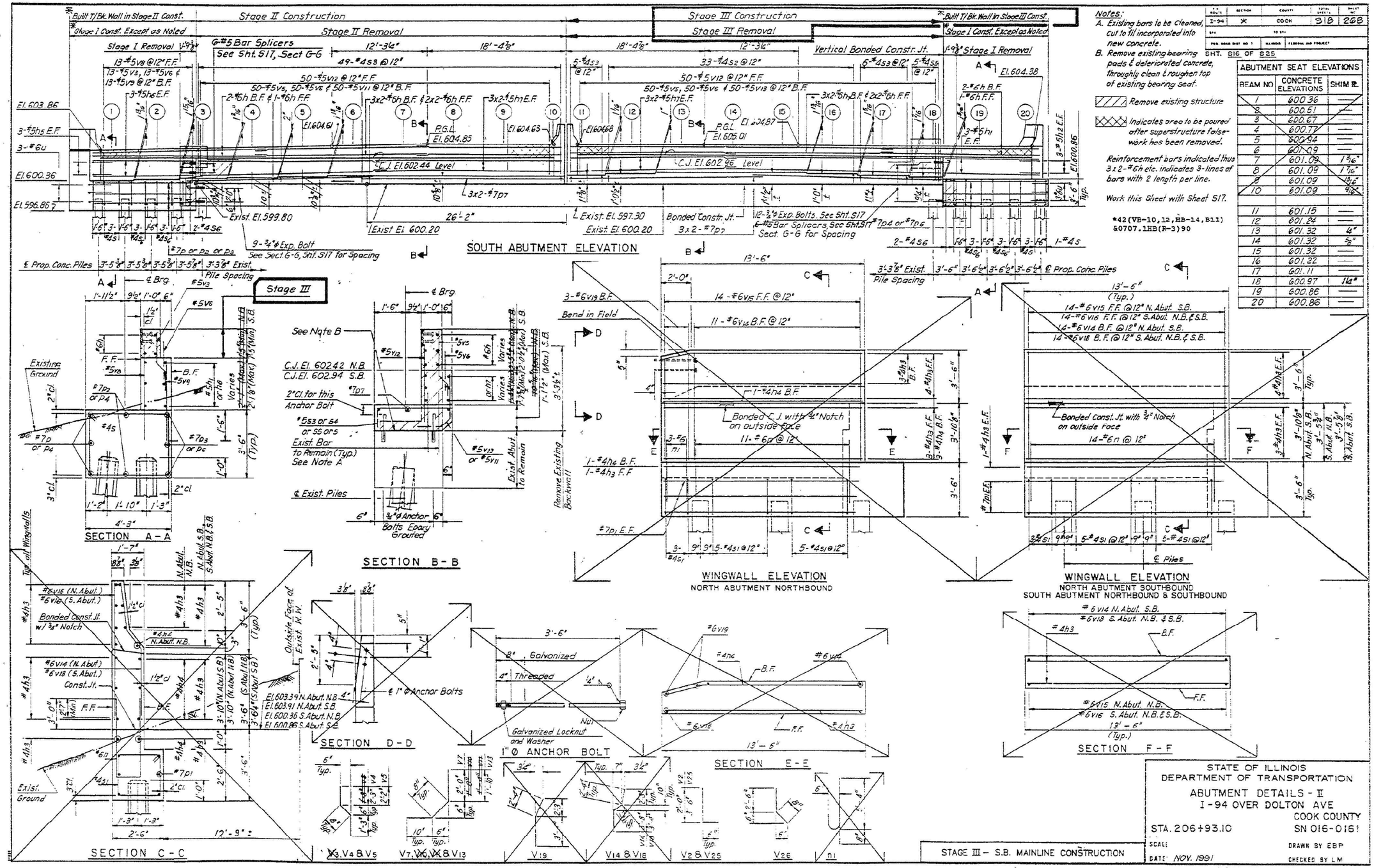

Notes:

A. Existing bars to be Cleaned, cut to fit incorporated into new concrete.

B. Remove existing bearing pads & deteriorated concrete, throughly clean & roughen top of existing bearing seat.

Remove existing structure

Indicates area to be poured after superstructure falsework has been removed.

Reinforcement bars indicated thus 3 x 2-#6h etc. indicates 3-lines of bars with 2 length per line.

Work this Sheet with Sheet S17.

*42(VB-10,12,HB-14,B11)
&0707.1HB(R-3)90

F.A.I. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	*	COOK	318	208
STA.		TO STA.		
PROJ. ENGR. DIST. NO. 1	ILLINOIS	FEDERAL AID PROJECT		

SHT. S16 OF S25

ABUTMENT SEAT ELEVATIONS

BEAM NO	CONCRETE ELEVATIONS	SHIM R.
1	600.36	—
2	600.51	—
3	600.67	—
4	600.77	—
5	600.94	—
6	601.09	—
7	601.09	1 1/16"
8	601.09	1 1/16"
9	601.09	1 1/16"
10	601.09	1 1/16"
11	601.15	—
12	601.24	—
13	601.32	4"
14	601.32	5 1/2"
15	601.32	—
16	601.22	—
17	601.11	—
18	600.97	1/2"
19	600.86	—
20	600.86	—

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
ABUTMENT DETAILS - II
I-94 OVER DOLTON AVE
COOK COUNTY
STA. 206+93.10
SN 016-0161
SCALE
DRAWN BY EBP
DATE NOV. 1991
CHECKED BY L.M.

STAGE III – S.B. MAINLINE CONSTRUCTION

S.B.M.-III-14 of 21

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PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -

Accurate GROUP, INC.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (SHEET 5 OF 6)
STRUCTURE NO. 016-0161 (WB)
SHEET S05-26 OF S05-27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	610
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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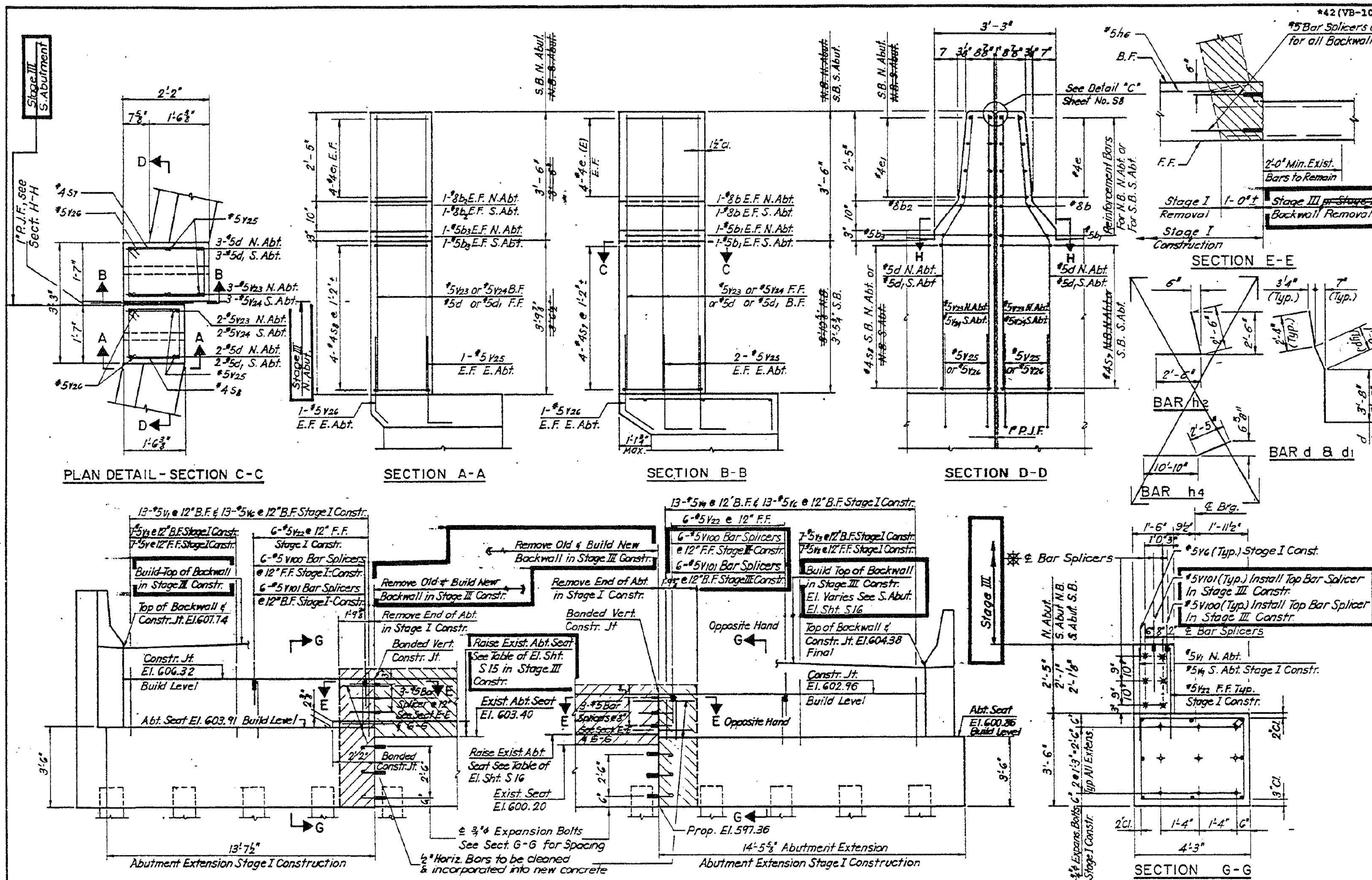
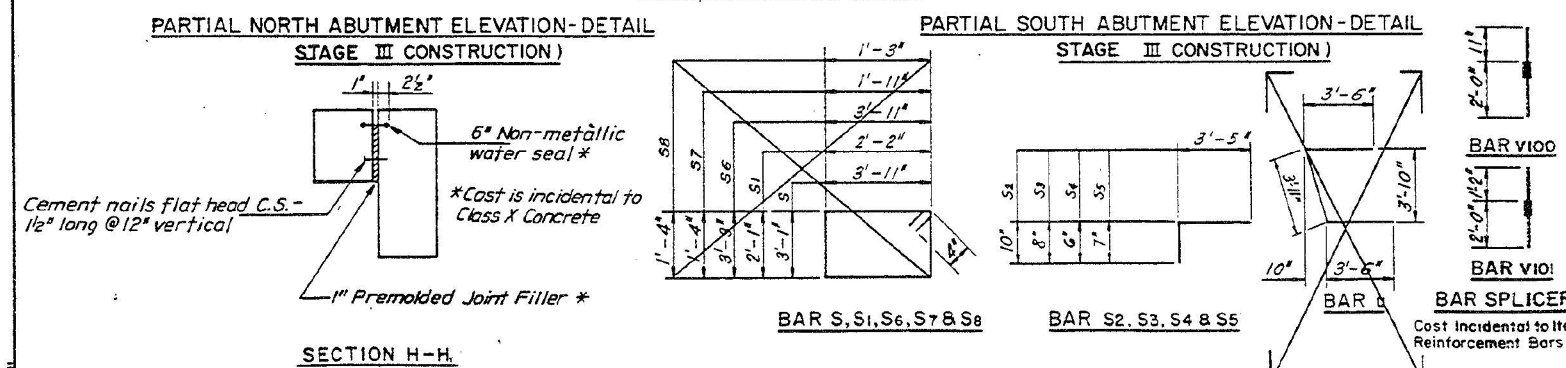




BILL OF MATERIAL

CONST. STAGES I	II	III	N. ABUT.	S. ABUT.	BAR	NO.	SIZE	LENGTH	SHAPE
—	2	2	2	2	b	4	#8	1'-10"	
—	2	2	2	2	b1	4	#5	1'-10"	
—	2	2	2	2	b2	4	#8	1'-2"	
—	2	2	2	2	b3	4	#5	1'-2"	
—	3	2	5	—	d	5	#5	7'-0"	
—	2	3	—	5	d1	5	#5	6'-7"	
—	6	6	6	6	e	12	#4	1'-10"	
—	6	6	6	6	e1	12	#4	1'-2"	
—	26	26	26	26	h	52(55)	#6	22'-1"	
12	—	—	6	6	h1	12	#5	13'-3"	
12	—	—	6	6	h2	12	#5	5'-0"	
52	—	—	10	42	h3	52	#4	13'-2"	
4	—	—	4	4	h4	4	#4	13'-3"	
12	—	—	6	6	h5	12	#5	5'-0"	
12	—	—	6	6	h6	12	#5	14'-1"	
—	24	24	24	24	h7	48	#5	25'-3"	
44	—	—	22	22	n	44	#6	11'-11"	
6	—	—	3	3	p	6	#7	13'-1"	
24	—	—	12	12	p1	24	#7	15'-0"	
4	—	—	2	2	p2	4	#7	13'-8"	
6	—	—	3	3	p3	6	#7	14'-2"	
10	—	—	5	5	p4	10	#7	14'-9"	
3	—	—	3	—	n1	3	#6	6'-0"	
6	—	—	3	3	p6	6	#7	13'-6"	
—	12	12	12	12	p7	24	#7	26'-0"	
20	—	—	14	6	s	20	#4	14'-8"	
52	—	—	26	26	s1	52	#4	9'-2"	
—	—	33	—	33	s2	33	#4	4'-7"	
—	49	44	33	60	s3	93	#4	4'-1"	
—	48	11	59	—	s4	59	#4	3'-11"	
—	—	10	5	5	s5	10	#4	4'-0"	
24	—	—	16	8	s6	24	#4	15'-0"	
—	4	4	4	4	s7	8	#4	7'-2"	
—	4	4	4	4	s8	8	#4	5'-10"	
24	—	—	12	12	u	24	#6	10'-11"	
20	—	—	20	—	v	20	#5	5'-0"	
26	—	—	26	—	v1	26	#5	4'-0"	
—	50	50	100	—	v2	100	#5	4'-0"	
40	—	—	20	20	v3	40	#5	3'-2"	
—	50	50	100	—	v4	100	#5	4'-2"	
—	50	50	—	100	v5	100	#5	3'-10"	
52	100	100	126	126	v6	252	#5	2'-6"	
—	—	50	50	—	v7	50	#5	3'-6"	
20	—	—	—	20	v8	20	#5	5'-0"	
26	—	—	—	26	v9	26	#5	3'-6"	
—	50	—	50	—	v10	50	#5	3'-4"	
—	50	—	—	50	v11	50	#5	3'-0"	
—	50	50	—	100	v12	100	#5	4'-10"	
—	—	50	—	50	v13	50	#5	3'-6"	
25	—	—	25	—	v14	22	#6	7'-0"	
28	—	—	28	—	v15	28	#6	6'-0"	
14	12	—	—	28	v16	28	#6	6'-7"	
Not	Used								
28	—	—	—	2	v18	22	#6	6'-8"	
6	—	—	6	—	v19	6	#6	5'-5"	
Not	Used	—	—	—	—	—	—	Not	Used
Not	Used	—	—	—	—	—	—	Not	Used
12	—	—	6	6	v22	12	#5	4'-0"	
—	3	2	5	—	v23	5	#5	7'-0"	
—	2	3	—	5	v24	5	#5	6'-7"	
—	6	6	6	6	v25	12	#5	2'-6"	
—	4	4	4	4	v26	8	#5	2'-8"	

BILL OF MATERIAL

ITEM	UNIT	CONST. STAGES I	II	III	TOTAL
* Reinforcement Bars	Lbs.	6400	4100	4090	14380
Structure Excavation	C.Y.	137.2	23.9	23.9	185
Concrete Removal	C.Y.	19.6	10.3	10.3	40.2
Class "X" Concrete	C.Y.	61.3	32.6	22.9	126.2
3/4" ϕ Expansion Bolts	Ea.	36	—	—	36
Furnishing Concrete Piles	L.F.	847	—	—	847
Driving Concrete Piles	L.F.	825	—	—	825
Test Piles, Concrete	Ea.	2	—	—	2
* Porous Granular Embankment	C.Y.	90.5	23.9	18.0	138.3

Epoxy Coated

* All reinf. bars shown shall be epoxy coated. Individual Details and sections have not been revised to reflect this change. However, the quantities shown have been revised to reflect these changes.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
ABUTMENT DETAILS III
I-94 OVER DOLTON AVE.
COOK COUNTY
STA. 206+93.10 SN 016-0161
SCALE DRAWN BY B.S.A.
DATE: NOV. 1991 CHECKED BY L.M.

STAGE III – S.B. MAINLINE CONSTRUCTION

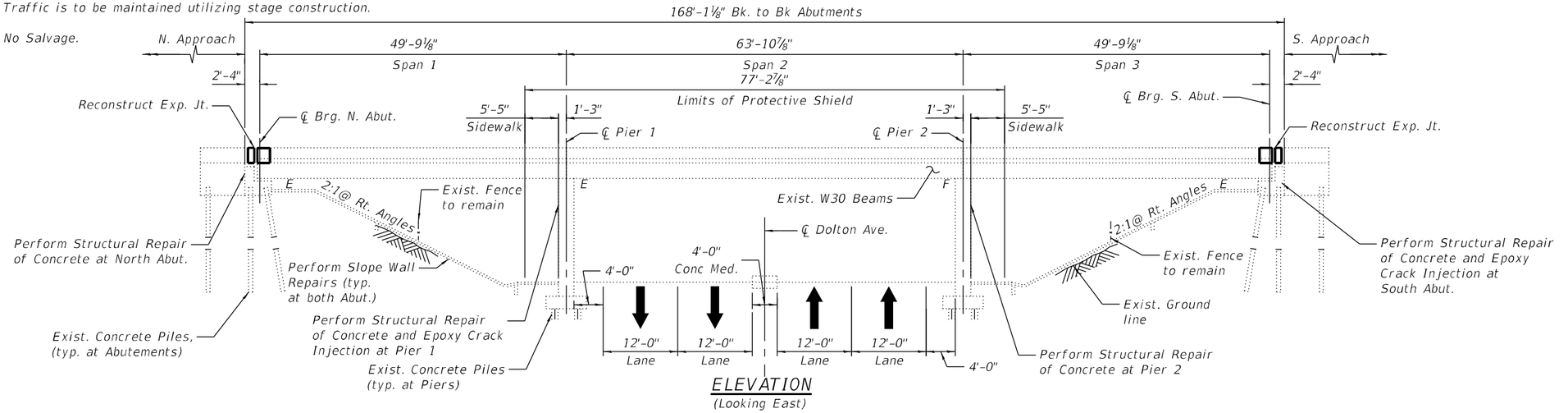
S.B.M.-III-15 of 21

For Informational Purposes Only

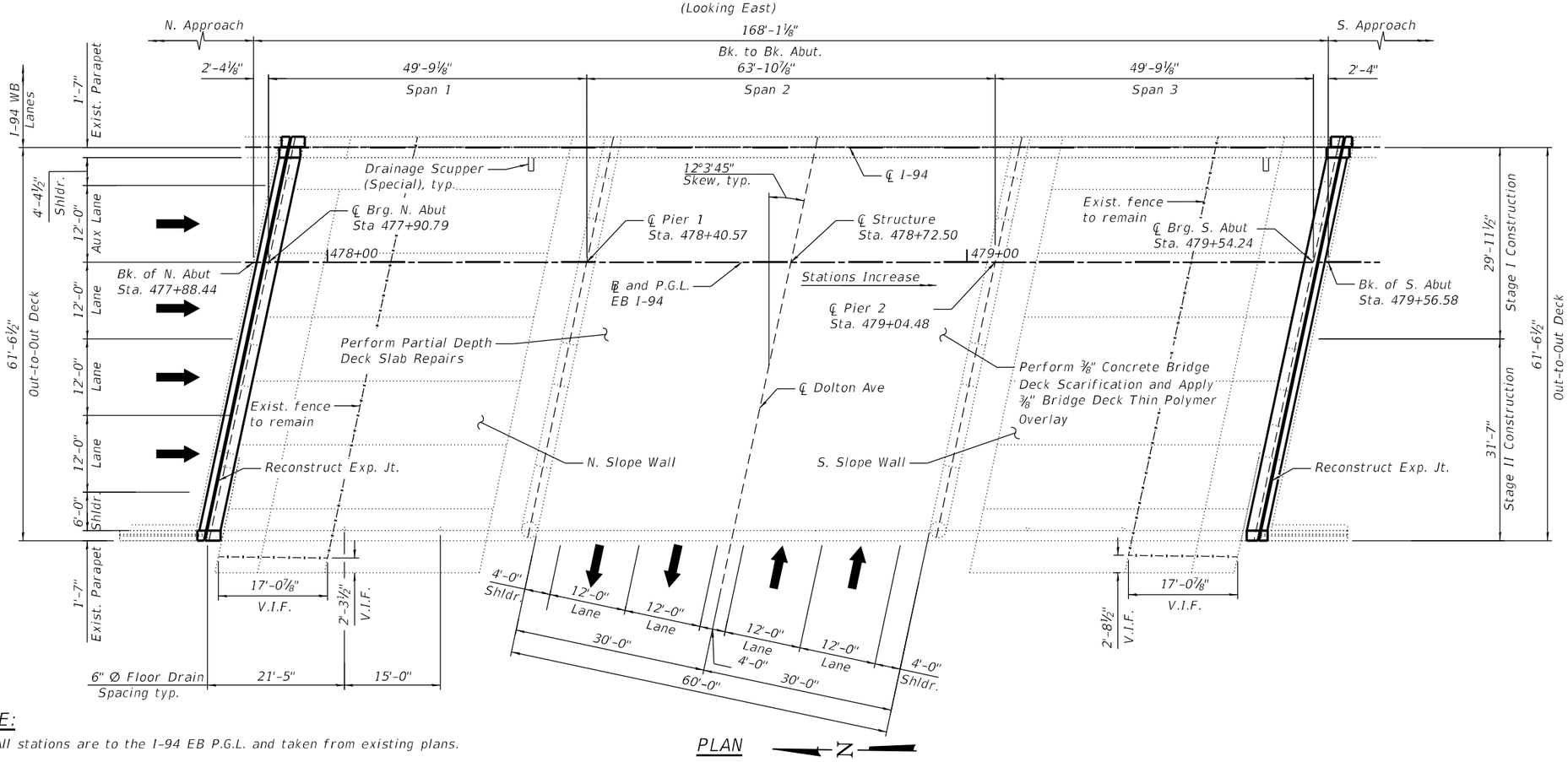
Existing Structure:
The bridge was constructed in 1948 under Section 0707.1-HB. It bridge was widened in 1990 under Section 42 (VB 10, 12) and 0707.1 HB (B-Y-I-86). In 1992, the bridge was reconstructed under Section 42 (VB 10, 12, HB 14, B-11) and 0707.1 HB (R-3)90. This structure carries eight 12' lanes (four westbound & four eastbound) of I-94 over Dolton Avenue. The outer shoulder is 6' wide, and the inner shoulder is 4'-4½". The bridge has three spans (49'-9⅛", 63'-10⅞", and 49'-9⅛") and a Skew of 12°-03'-45". The abutments are pile-supported stub abutments. The bridge has reinforced concrete column piers on pile foundations with an extension at each end.

Traffic is to be maintained utilizing stage construction.

No Salvage.



ELEVATION
(Looking East)



PLAN

NOTE:

1. All stations are to the I-94 EB P.G.L. and taken from existing plans.

LOADING HS 20-44

No future wearing surface is allowed.

DESIGN SPECIFICATION

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

EXISTING DESIGN STRESSES (1992 RECONSTRUCTION)

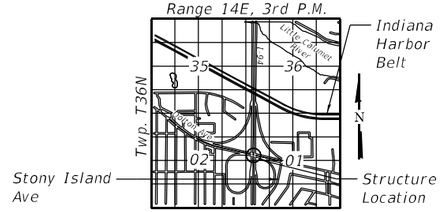
f'c = 3500 psi (Superstructure)
fy = 60,000 psi (Reinforcement Superstructure)
fs = 24,000 psi (Structural Steel)

PROPOSED DESIGN STRESSES

f'c = 4,000 psi (Superstructure)
fy = 60,000 psi (Reinforcement)

LICENSED STRUCTURAL ENGINEER
JUNSHAN LIU
081-008224
STATE OF ILLINOIS

Exp: 11/30/2026
Date: 12/05/2024



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
EB I-94 OVER DOLTON AVE
F.A.I. ROUTE 94
SECTION 2019 180-RS & T
COOK COUNTY
STATION: 478+72.50
S.N. 016-0161

Accurate GROUP, INC.	USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - ME	REVISED -	
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	PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -	SHEET S06-01 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	612
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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GENERAL NOTES

1. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

2. During repair operations the contractor shall locate and protect any utilities or facilities including but not limited to the fiber optic and/or electrical conduits, conduits under the bridge deck, under lighting, traffic signals or signs attached to the structure. This work is to be performed to the satisfaction of the engineer and will not be paid for separately, but shall be included with the contract. It will be the contractor's responsibility to restore and replace any damage utilities or facilities to the satisfaction of the engineer and the department.

3. All exposed concrete edges shall have a ¾" x 45° chamfer except where shown otherwise.

4. Protective Coat shall be applied to the top and inside face of parapets.

5. Repairs shown are based upon inspection carried out at the time of plan preparation are for bidding purposes only. Actual area to be repaired and the type(s) of repairs to be used shall be determined by the engineer in the field at the time of construction.

6. 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.

7. Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to ride 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.

8. Any adjustment done to the Protective Shield System must not change the load carrying capacity (or containment specifications) as indicated in the Standard Specifications, Cost of adjusting shielding is included in the cost of Protective Shield.

9. Concrete Sealer shall be applied to the designated areas of the abutments.

10. 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. See Special provision for Debris Removal.

11. Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose detrimental foreign material shall be removed from the surfaces in contact with concrete (SSPCSP3 standards). 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 paid for according to Article 109.04 of the Standard Specifications. 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 ¼ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

12. Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Structural Steel Repairs.

13. Existing reinforcement extended into the removal area shall be cleaned, straightened and incorporated into the new construction cost is included with concrete removal. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system at the Contractor's expense.

14. Cleaning and field painting of structural steel shall be done under a separate painting contract.

15. 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".

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

17. The Contractor is responsible to protect the existing conduit and junction box embedded in the parapet during 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.

18. No field welding is permitted except as specified in the contract documents.

19. The Engineer shall show actual locations and size of deck repairs on As-built Plans.

20. Bars indicated thus, 3x2-#5, indicates 3 lines of #5 bars with 2 lengths of bar per line.

21. 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.

22. 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 Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures", and the Standard Specifications. The color of the final finish coat shall be Gray, Munsell No. 5B 7/1. Cost included with Structural Steel Repair.

23. All new structural steel shall be hot-dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel".

24. Fasteners shall be ASTM F 3125 Grade A325 Type 1, mechanically galvanized bolts in painted areas. Bolts ¾ in. diameter, holes $^{15}/_{16}$ in. diameter, unless otherwise noted.

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

INDEX OF SHEETS

SCOPE OF WORK

1. Provide Protective Shield within limits indicated on the plans.
2. Scarify ⅜" from the bridge deck slab.
3. Perform Deck Slab Repairs (Partial).
4. Remove and Reconstruct Expansion joints at North and South abutments and install new Preformed Joint Strip Seals.
5. Apply ⅜" Thin Polymer Overlay on Bridge Deck.
6. Refer to Roadway plans for Approach Pavement Rehabilitation.
7. Apply Protective Coat to the top of reconstructed transverse joint areas, top and inside faces of parapets.
8. Perform structural concrete repairs to abutments and piers, as noted on plans.
9. Perform structural steel repairs to beams, as noted on plans.
10. Perform Slope Wall repairs.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd	-	1	1
Concrete Removal	Cu Yd	18.2	-	18.2
Slope Wall Removal	Sq Yd	-	2	2
Protective Shield	Sq Yd	529	-	529
Concrete Superstructure	Cu Yd	18.2	-	18.2
Protective Coat	Sq Yd	203	-	203
Reinforcement Bars, Epoxy Coated	Pound	3,150	-	3,150
Bar Splicers	Each	32	-	32
Slope Wall 4 Inch	Sq Yd	-	2	2
Preformed Joint Strip Seal	Foot	124	-	124
Anchor Bolt, 1"	Each	1	-	1
Concrete Sealer	Sq Ft	-	928	928
Epoxy Crack Injection	Foot	-	30	30
Slope Wall Crack Sealing	Foot	-	154	154
Structural Steel Repair	Pound	190	-	190
Beam Straightening	L Sum	0.33	-	0.33
Bridge Deck Scarification ⅜"	Sq Yd	1,042	-	1,042
Bridge Deck Thin Polymer Overlay ⅜"	Sq Yd	1,042	-	1,042
Structural Repair of Concrete (Depth Equal to or less than 5")	Sq Ft	-	93	93
Deck Slab Repair (Partial)	Sq Yd	46	-	46

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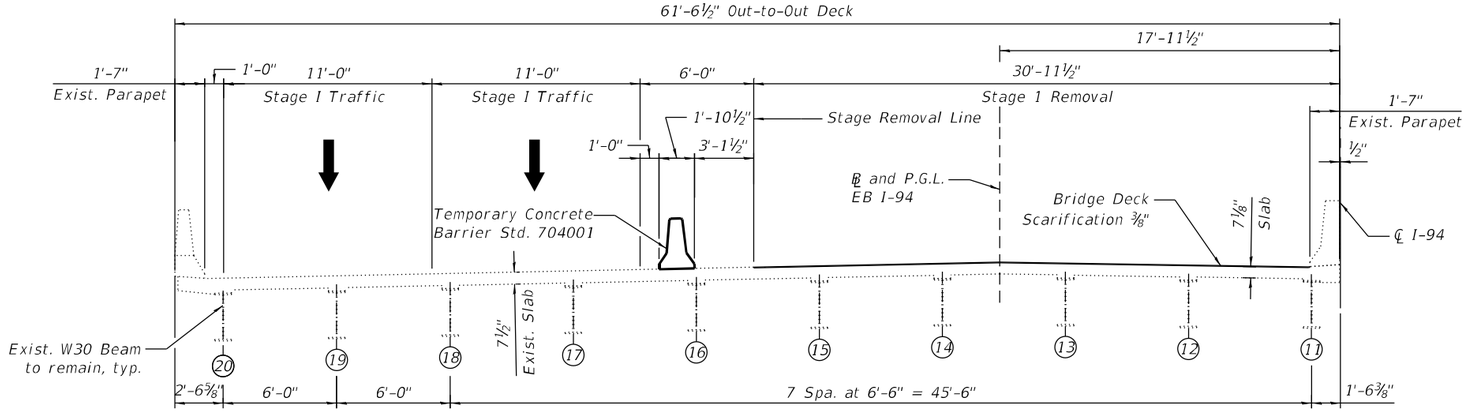
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, INDEX OF SHEETS & TBOM
STRUCTURE NO. 016-0161 (EB)
SHEET S06-02 OF S06-28 SHEETS

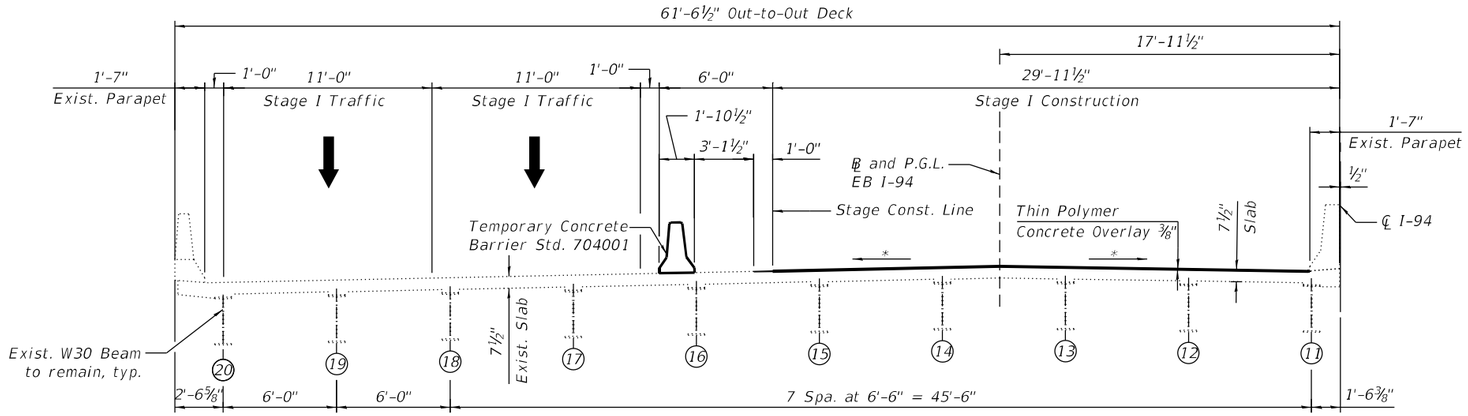
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	613
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



STAGE I REMOVAL
(Looking North)

STAGE I REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the West side of the existing structure.
2. Perform ⅜" bridge deck scarification.
3. Remove portions of bridge concrete deck/approach slab adjacent to expansion joints at the North and South Abutments.



STAGE I CONSTRUCTION
(Looking North)

STAGE I CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct transverse expansion joints and install new preformed joint strip steals within the limits of Stage I Construction.
3. Perform Structural repair of concrete and epoxy crack injection for the abutments and piers.
4. Apply ⅜" bridge deck thin polymer overlay.
5. Refer to Roadway plans for Approach Pavement Rehabilitation.
6. Apply protective coat to top and inside faces of East parapet, and reconstructed transverse expansion joints.
7. Perform Slope Wall repairs as shown on the plans.

*Match existing cross slopes

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	DRAWN - ME	REVISED -			
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PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -		SHEET S06-03 OF S06-28 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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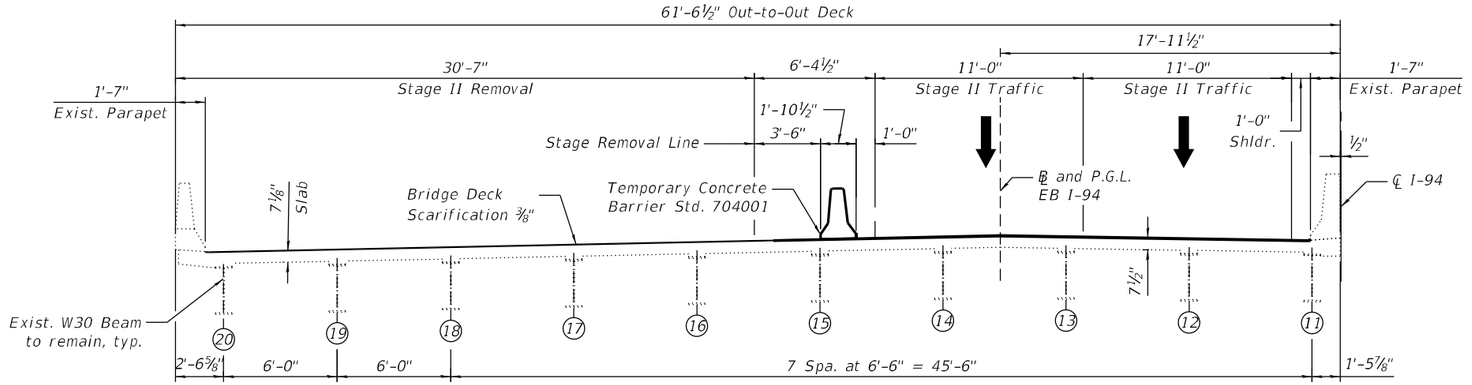
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

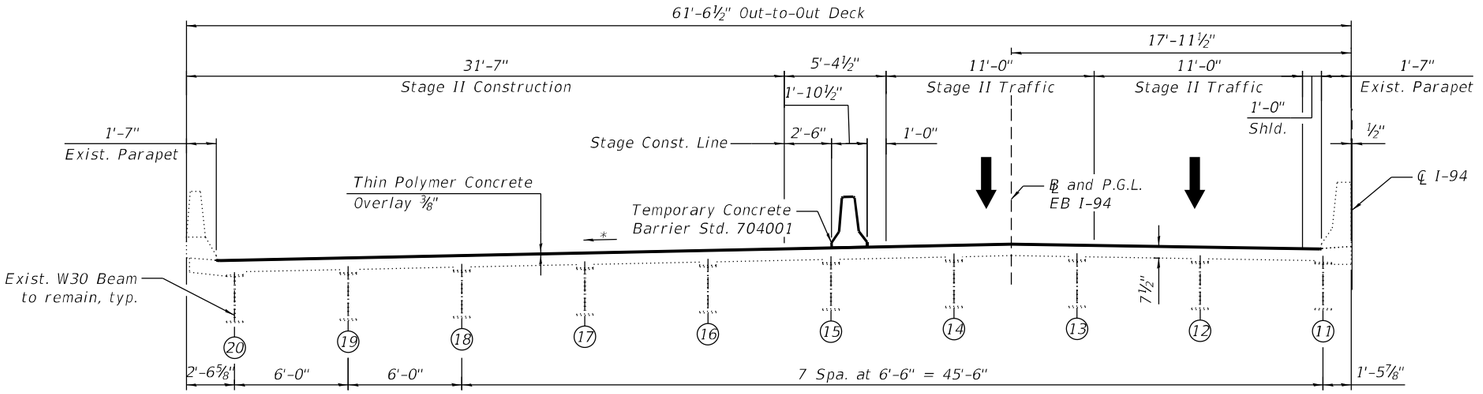


STAGE II REMOVAL

(Looking North)

STAGE II REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the East side of the existing structure.
2. Perform ⅜" bridge deck scarification.
3. Remove portions of bridge concrete deck/approach slab adjacent to expansion joints at the North and South Abutments.

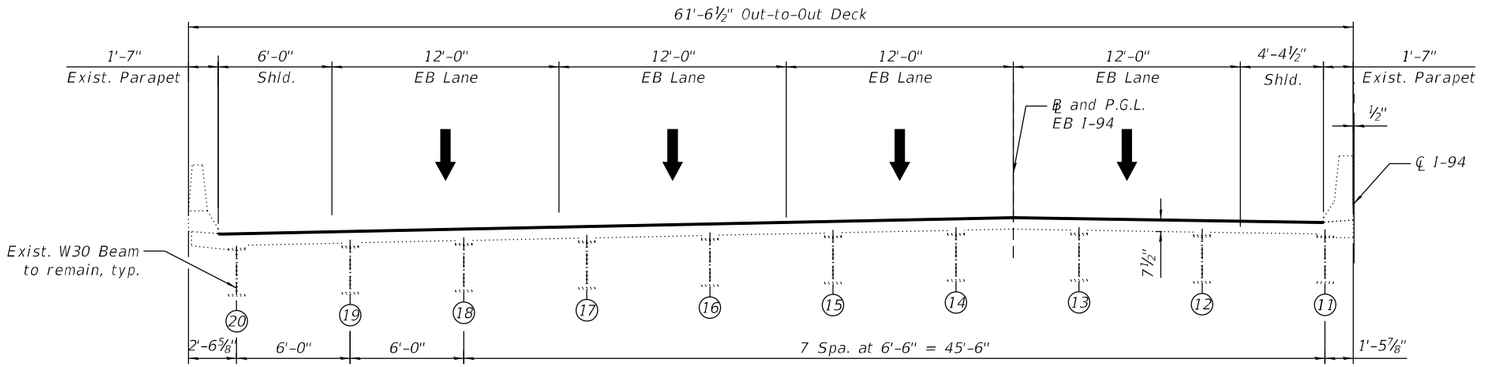


STAGE II CONSTRUCTION

(Looking North)

STAGE II CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct expansion joints and install new preformed joint strip seal within the limits of Stage II Construction.
3. Perform structural repair of concrete and epoxy crack injection for the abutments and piers.
4. Apply ⅜" bridge deck thin polymer overlay.
5. Apply protective coat to top and inside faces of West parapets, and reconstructed abutment expansion joint areas.



FINAL CROSS SECTION

(Looking North)

*Match existing cross slopes

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION (SHEET 2 OF 2)
STRUCTURE NO. 016-0161 (EB)

SHEET S06-04 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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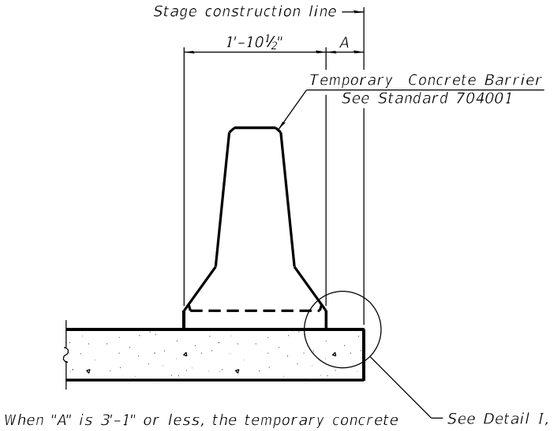
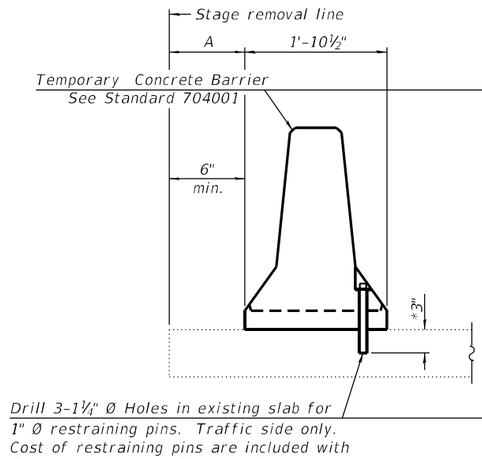
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	



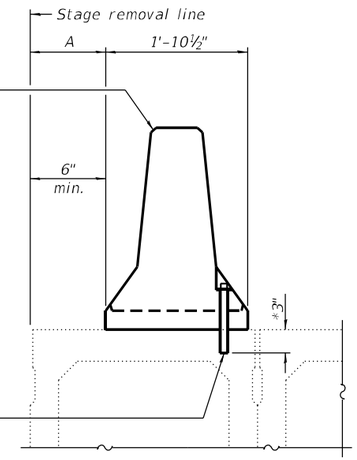
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1¼" 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".

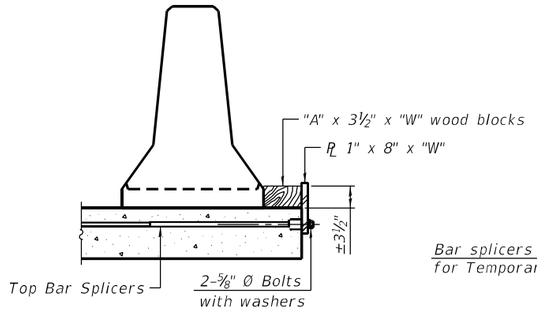
EXISTING SLAB



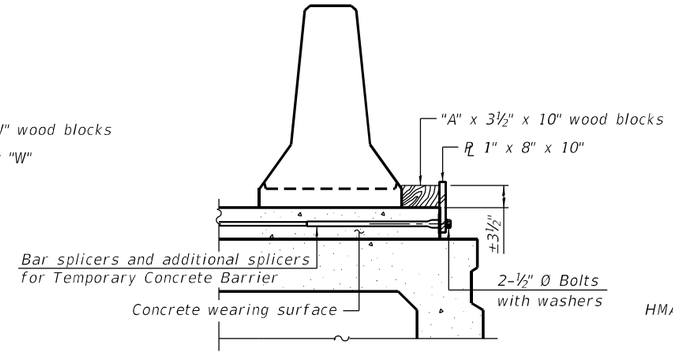
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

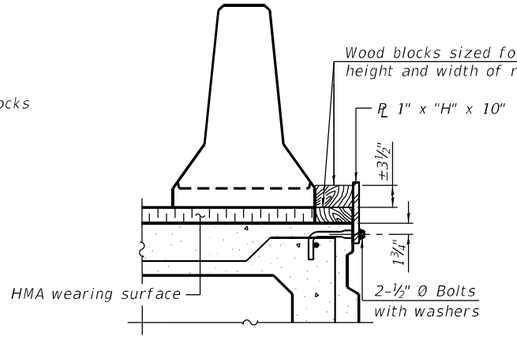
SECTIONS THRU SLAB OR DECK BEAM



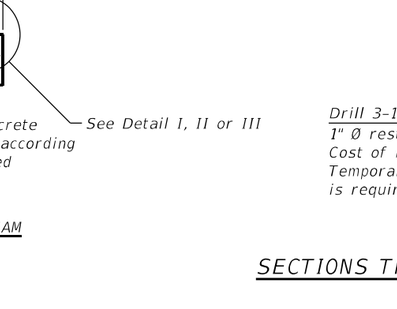
DETAIL I



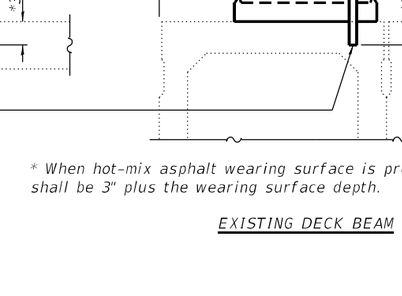
DETAIL II



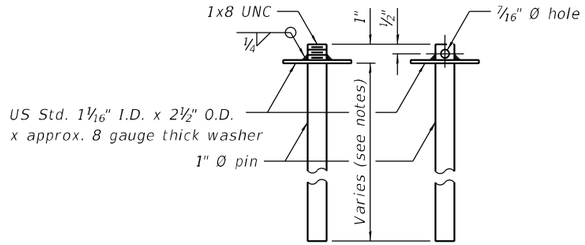
DETAIL III



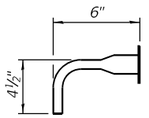
STEEL RETAINER PL 1" x 8" x "W"
(Detail I and II)



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



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III

NOTES:

1. Cost of retainer assembly is included with Temporary Concrete Barrier.
2. A retainer assembly shall be located at the approximate ℄ of each temporary concrete barrier.
3. 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.
4. When the 'A' dimension is less than 1½", 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

05-15-2023

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 016-0161 (EB)

SHEET S06-05 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	616
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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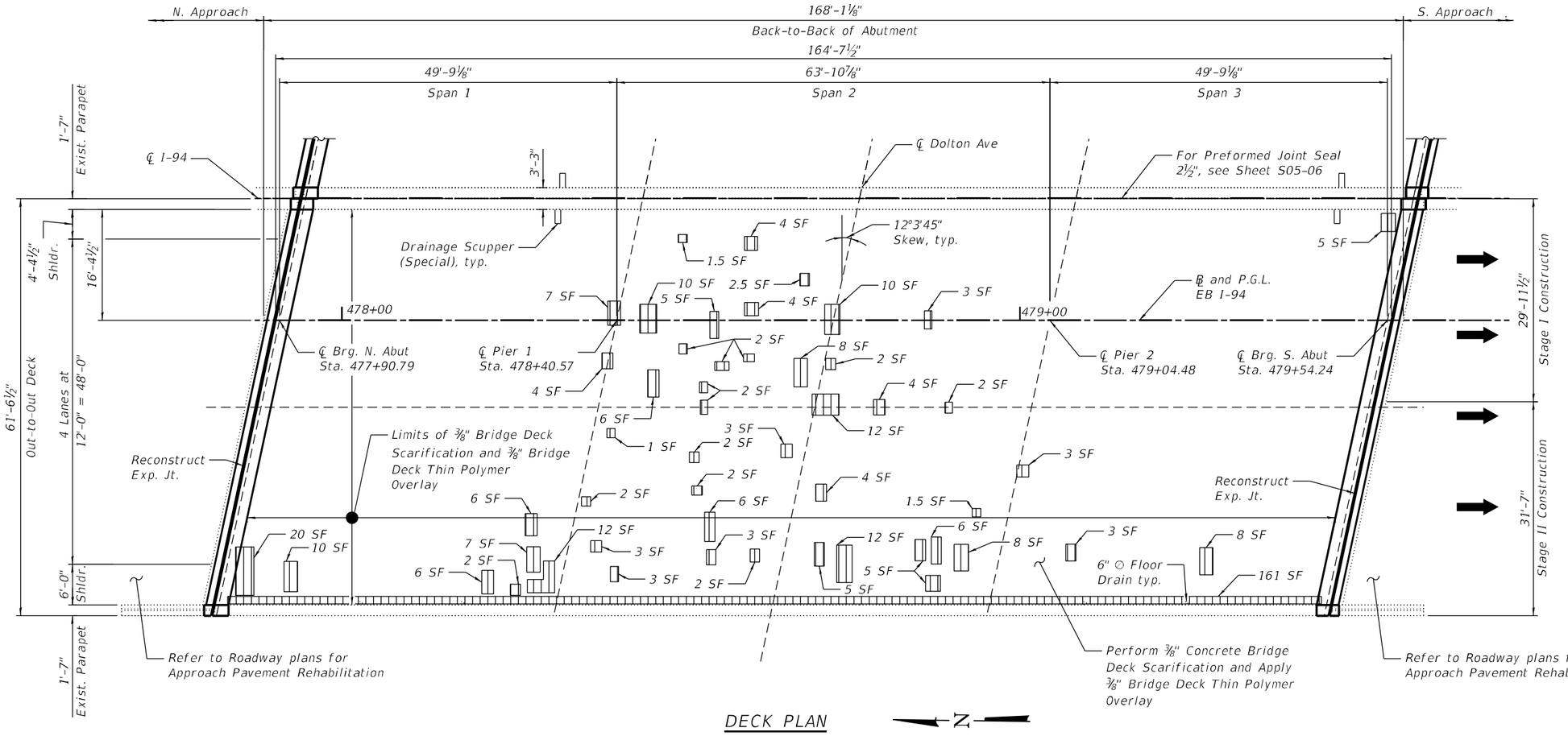

DECK PLAN

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 S06-04.
3. For North and South Joint Removal and Replacement, See Sheets S06-07 through S06-12.
4. Protective Coat shall be applied to top and inside face of parapets, and the joint areas.
5. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.
6. 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)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Coat	Sq Yd	149
Bridge Deck Thin Polymer Overlay ⅜"	Sq Yd	1042
Bridge Deck Scarification ⅜"	Sq Yd	1042
Deck Slab Repair (Partial)	Sq Yd	46

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DEPARTMENT OF TRANSPORTATION

DECK REPAIR PLAN
STRUCTURE NO. 016-0161 (EB)
SHEET S06-06 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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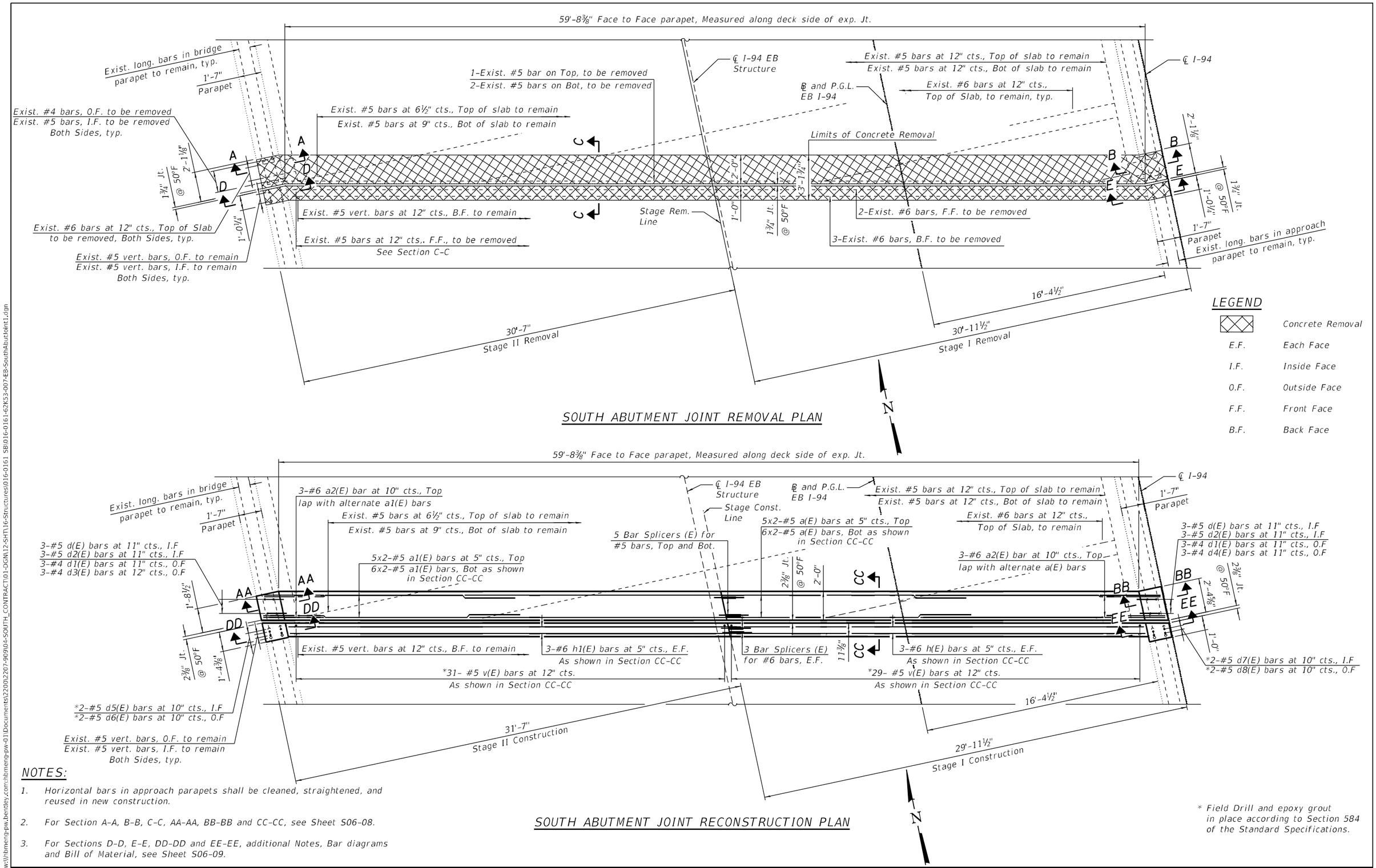
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



SOUTH ABUTMENT JOINT REMOVAL PLAN

SOUTH ABUTMENT JOINT RECONSTRUCTION PLAN

* Field Drill and epoxy grout in place according to Section 584 of the Standard Specifications.

NOTES:

1. Horizontal bars in approach parapets shall be cleaned, straightened, and reused in new construction.
2. For Section A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see Sheet S06-08.
3. For Sections D-D, E-E, DD-DD and EE-EE, additional Notes, Bar diagrams and Bill of Material, see Sheet S06-09.

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S. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 1 OF 3)
STRUCTURE NO. 016-0161 (EB)
SHEET S06-07 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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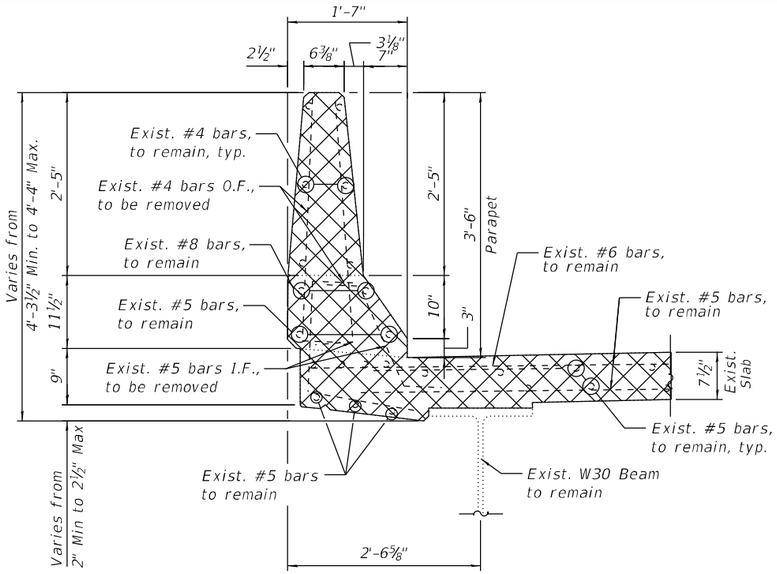
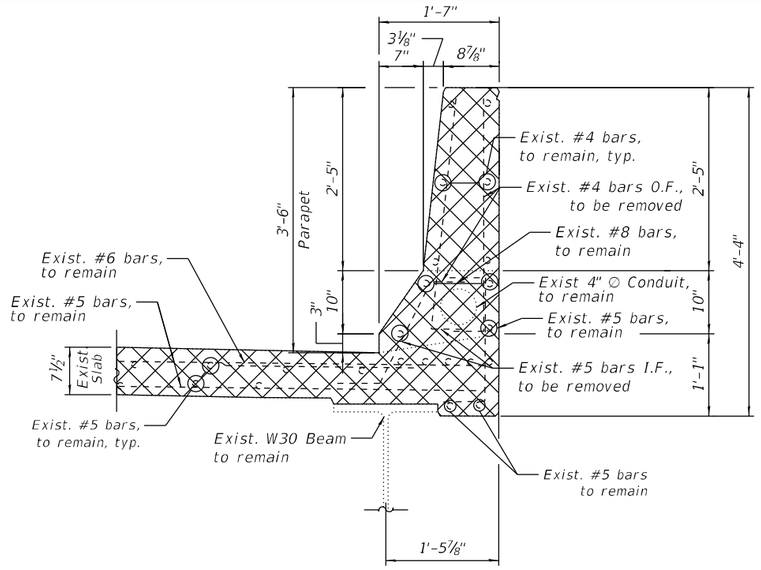
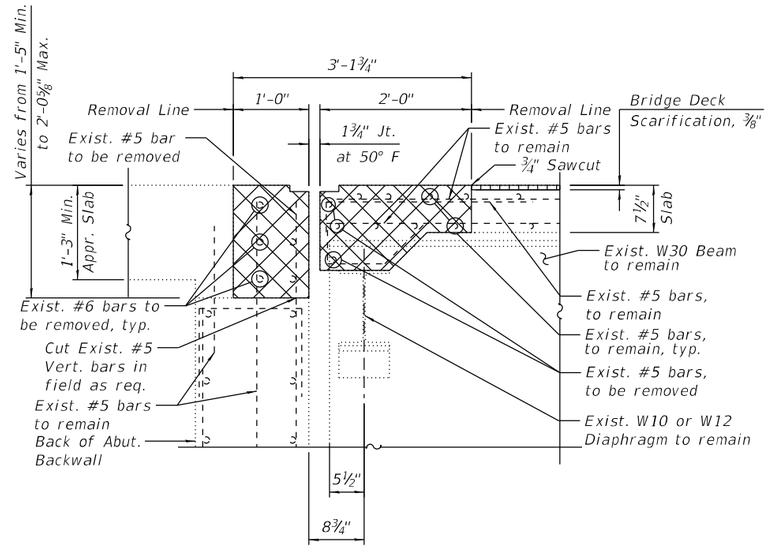


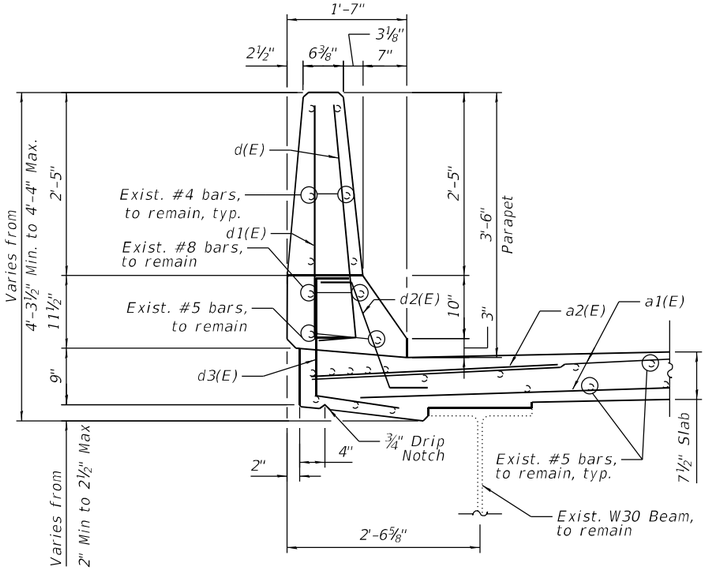
SECTION A-A



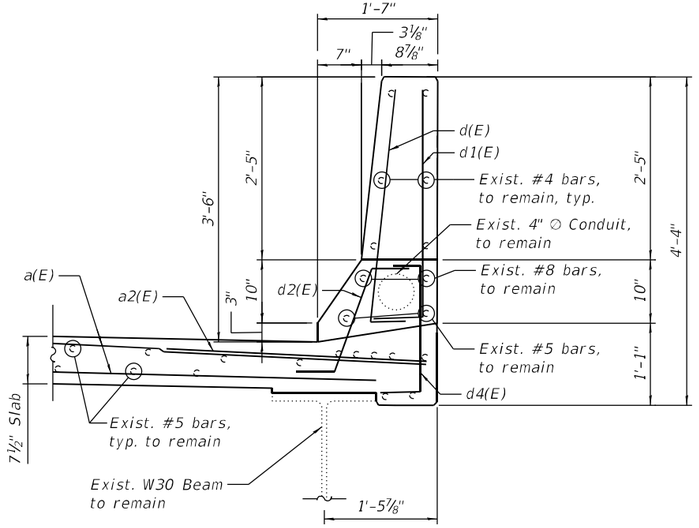
SECTION B-B



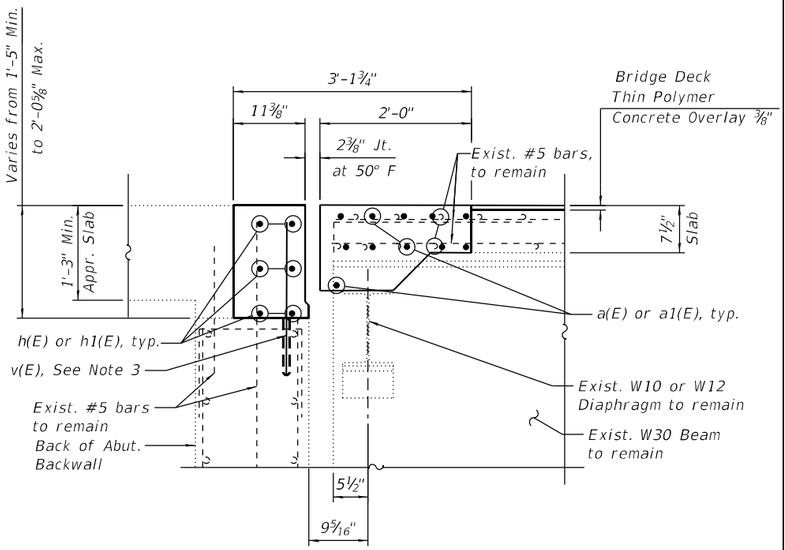
SECTION C-C



SECTION AA-AA



SECTION BB-BB



SECTION CC-CC

NOTES:

1. For Legend, see Sheet S06-07.
2. For Sections D-D, E-E, DD-DD and EE-EE, Bar diagrams, additional Notes and Bill of Material, see Sheet S06-09.
3. Epoxy Grout v(E) bars in 9" min. holes in accordance with Section 584 of the Standard Specifications, drill to miss existing reinforcement. Cost included with Concrete Superstructure.

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DEPARTMENT OF TRANSPORTATION

S. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 2 OF 3)
STRUCTURE NO. 016-0161 (EB)

SHEET S06-08 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	619
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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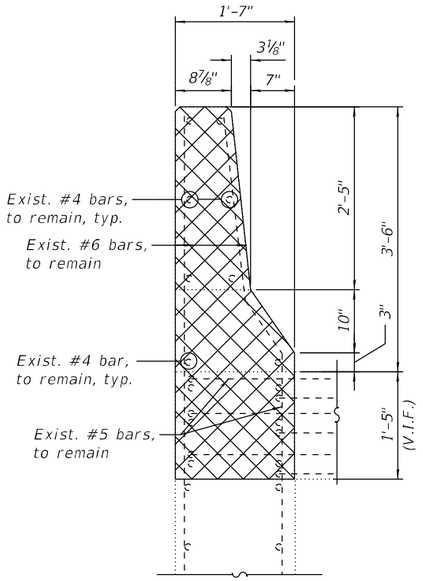
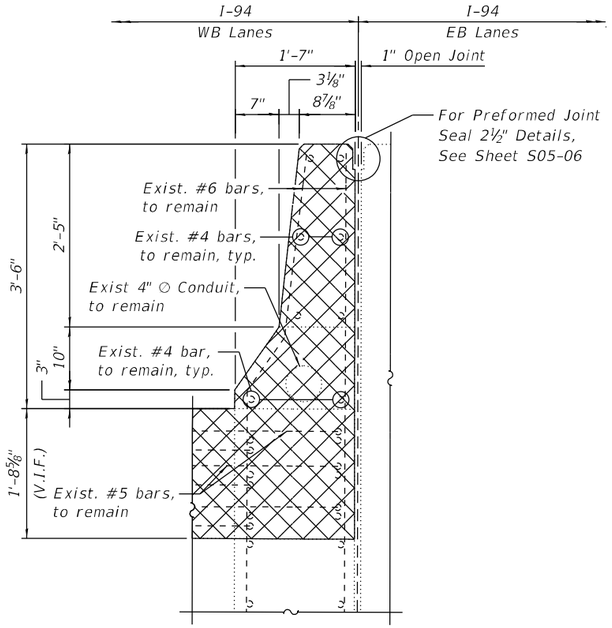
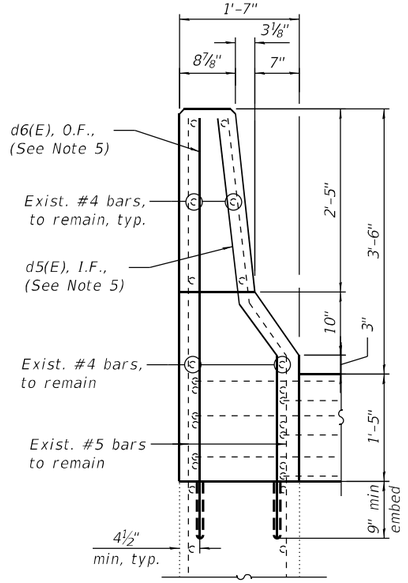


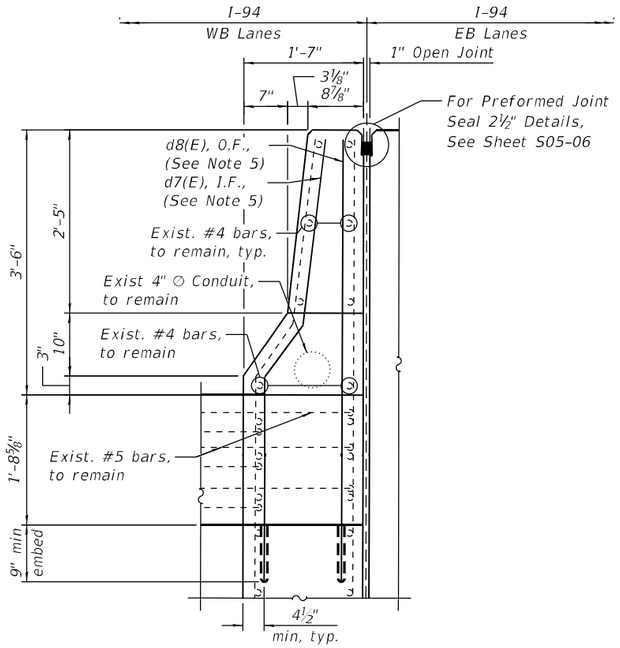
SECTION D-D



SECTION E-E



SECTION DD-DD



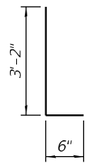
SECTION EE-EE

MIN BAR LAPS

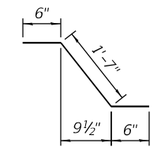
#5	3'-6"
#6	4'-10"

BILL OF MATERIAL

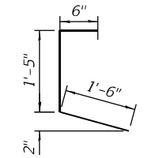
Bar	No.	Size	Length	Shape
a(E)	22	#5	17'-1"	
a1(E)	22	#5	17'-10"	
a2(E)	6	#6	6'-6"	
d(E)	6	#5	3'-8"	L
d1(E)	6	#4	3'-8"	L
d2(E)	6	#5	2'-7"	
d3(E)	3	#4	3'-5"	C
d4(E)	3	#4	2'-7"	C
d5(E)	2	#5	5'-8"	
d6(E)	2	#5	5'-6"	
d7(E)	2	#5	6'-1"	
d8(E)	2	#5	5'-10"	
h(E)	6	#6	28'-10"	
h1(E)	6	#6	30'-6"	
v(E)	60	#5	2'-0"	
Concrete Removal			Cu Yd	8.9
Concrete Superstructure			Cu Yd	8.9
Protective Coat			Sq Yd	27
Reinforcement Bars, Epoxy Coated			Pound	1,640



BARS d(E) & d1(E)



BAR d2(E)



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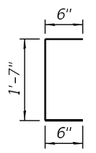
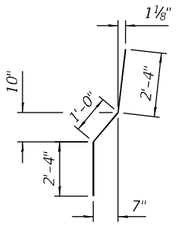
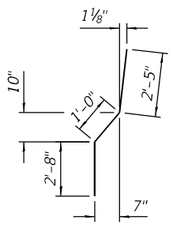


BAR d4(E)



BAR d5(E)



BAR d7(E)

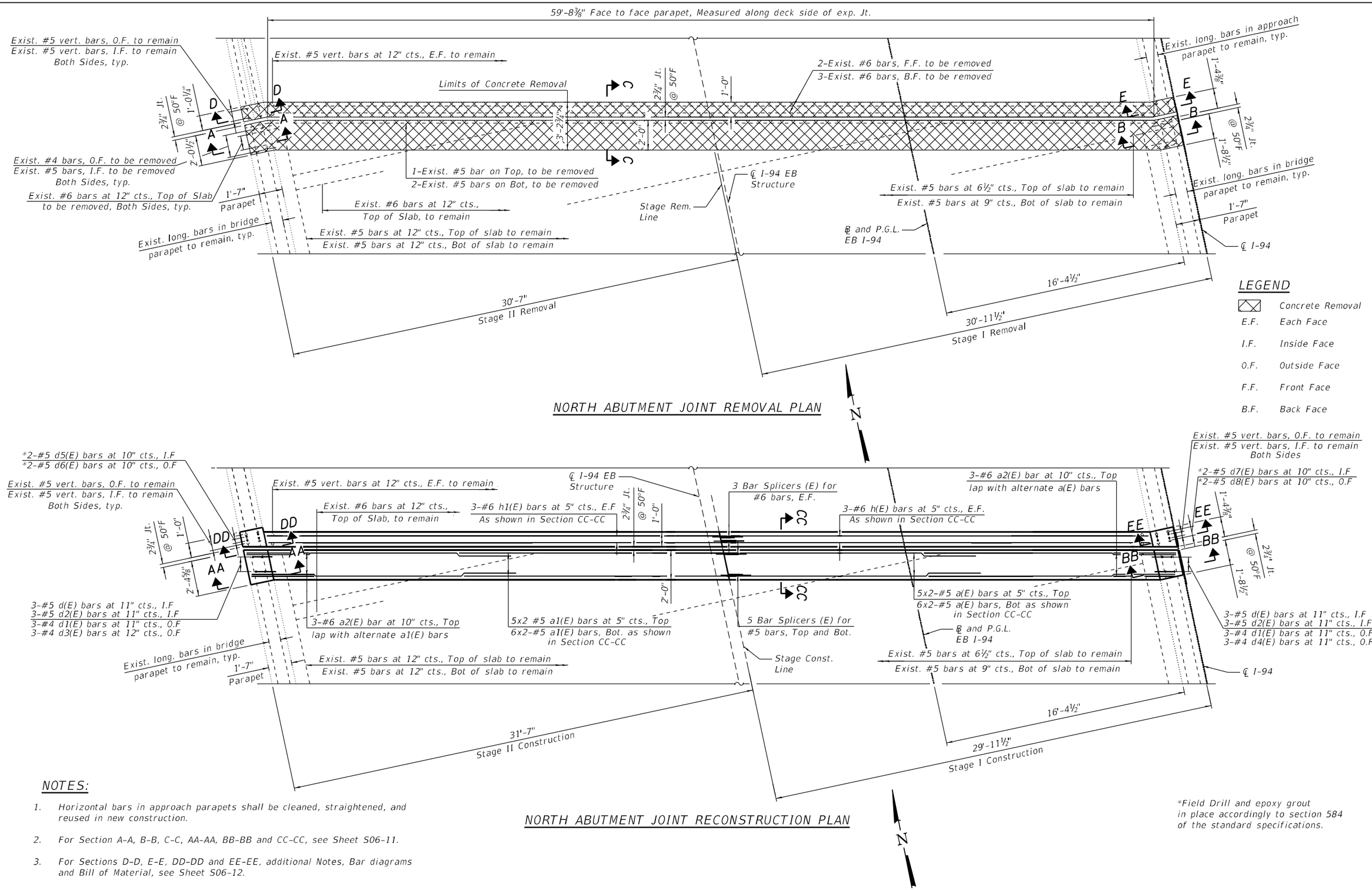
NOTES:

1. For Legend, see Sheet S06-07.
2. For Preformed Joint Strip Seal Details,see Sheet S06-13.
3. For Bar Splicer Assembly Details, see Sheet S06-22.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.
5. Epoxy grout d5(E), d6(E), d7(E) and d8(E) bars according to Article 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Superstructure.

Accurate GROUP, INC.

USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	S. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 3 OF 3) STRUCTURE NO. 016-0161 (EB)	
	DRAWN - ME	REVISED -			
PLOT SCALE = 2:0.0000 ':" / in.	CHECKED - JL	REVISED -			
PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -		SHEET S06-09 OF S06-28 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	620
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



NORTH ABUTMENT JOINT REMOVAL PLAN

NORTH ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. Horizontal bars in approach parapets shall be cleaned, straightened, and reused in new construction.
2. For Section A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see Sheet S06-11.
3. For Sections D-D, E-E, DD-DD and EE-EE, additional Notes, Bar diagrams and Bill of Material, see Sheet S06-12.

*Field Drill and epoxy grout in place accordingly to section 584 of the standard specifications.

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Accurate GROUP, INC.

USER NAME = imranh		DESIGNED - SUR		REVISED -	
		DRAWN - ME		REVISED -	
PLOT SCALE = 6:0 ':' / in.		CHECKED - JL		REVISED -	
PLOT DATE = 12/9/2024		DATE - 12/6/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

N. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 1 OF 3)
STRUCTURE NO. 016-0161 (EB)

SHEET S06-10 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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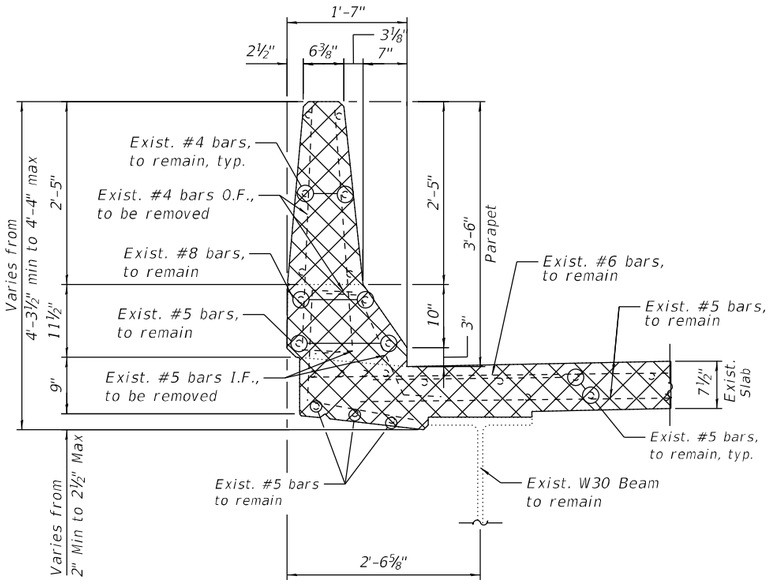
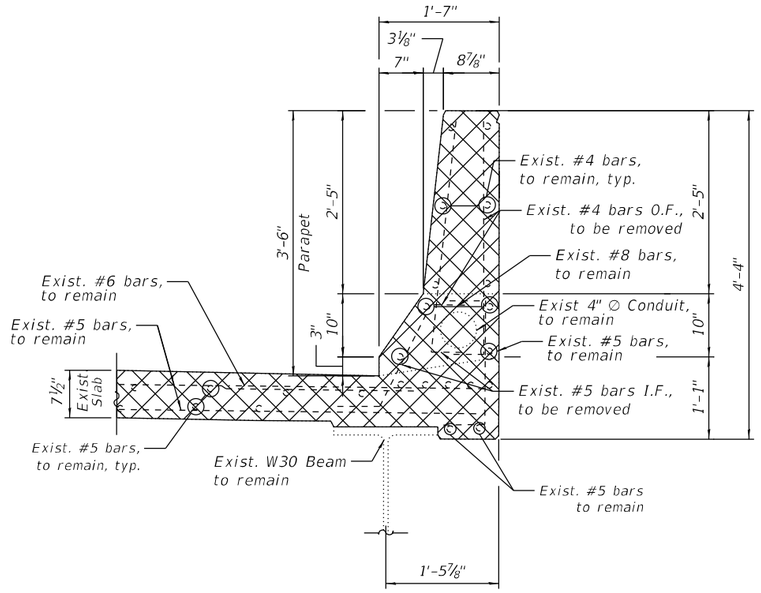
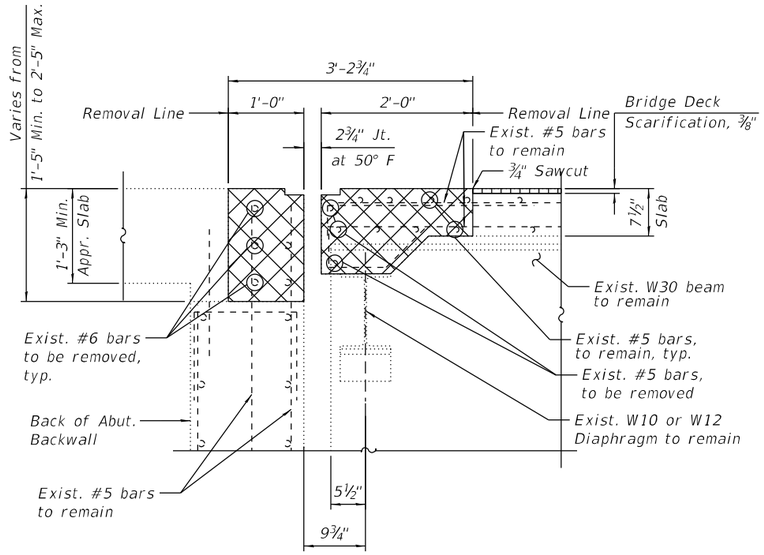
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



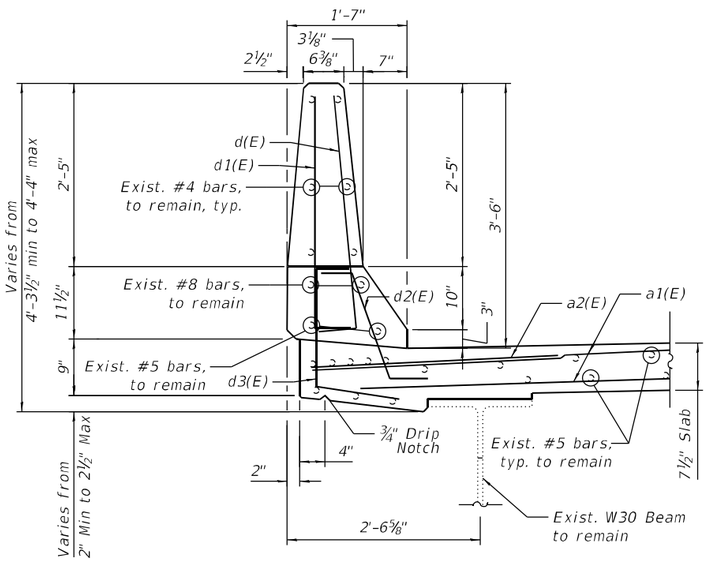
SECTION A-A



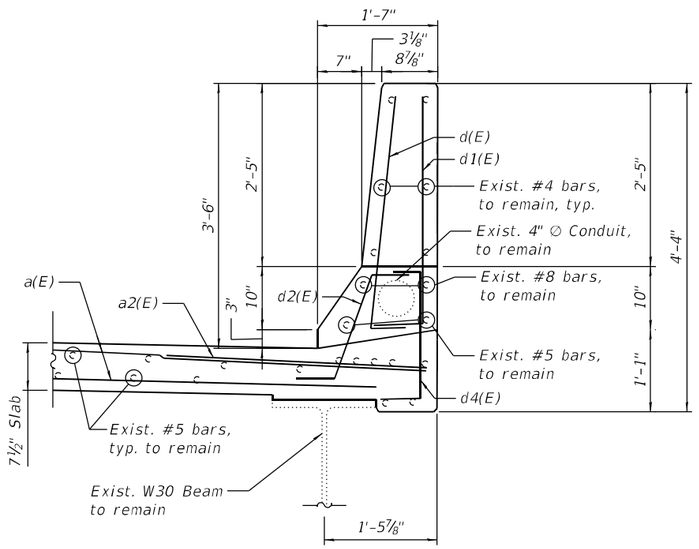
SECTION B-B



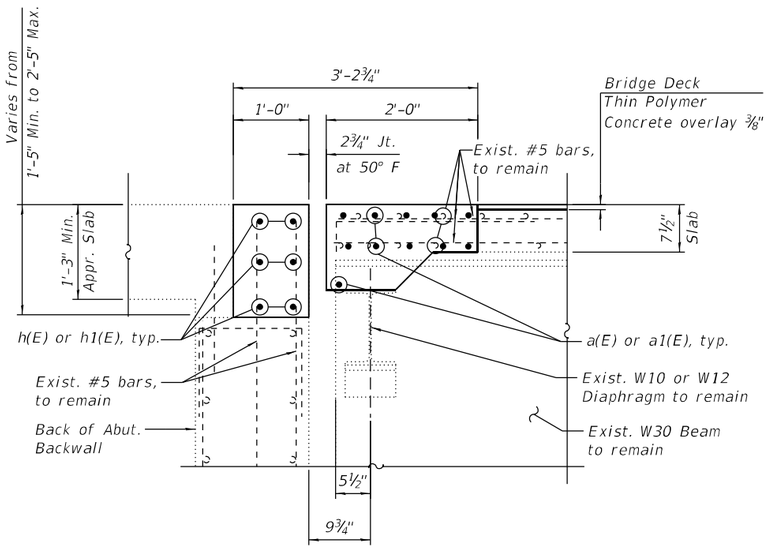
SECTION C-C



SECTION AA-AA



SECTION BB-BB



SECTION CC-CC

NOTES:

1. For Legend, see Sheet S06-10.
2. For Bar diagrams, additional Notes and Bill of Material, see Sheet S06-12.

Accurate GROUP, INC.	USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - ME	REVISED -	
	PLOT SCALE = 2:0 ':' / in.	CHECKED - JL	REVISED -	
	PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -	

N. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 2 OF 3)
STRUCTURE NO. 016-0161 (EB)
SHEET S06-11 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	622
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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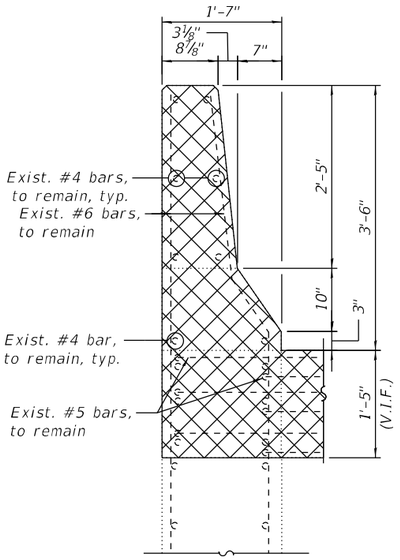
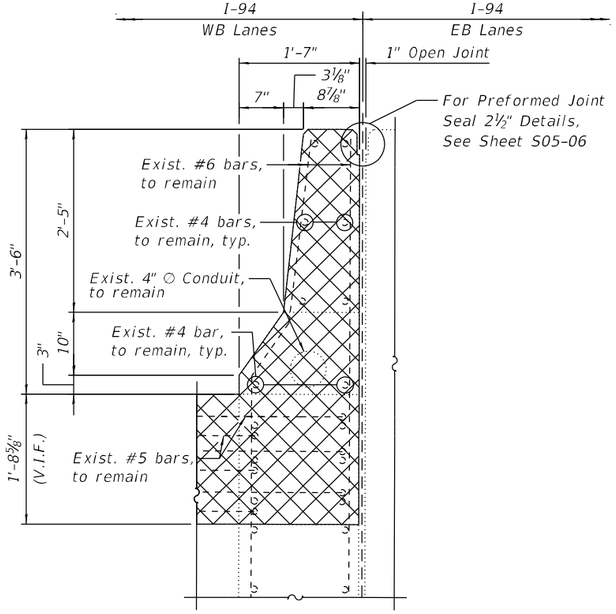
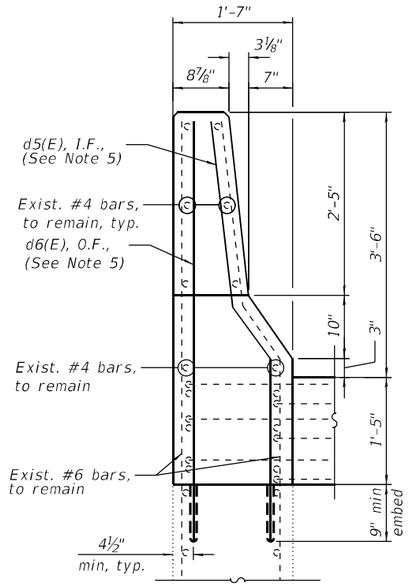


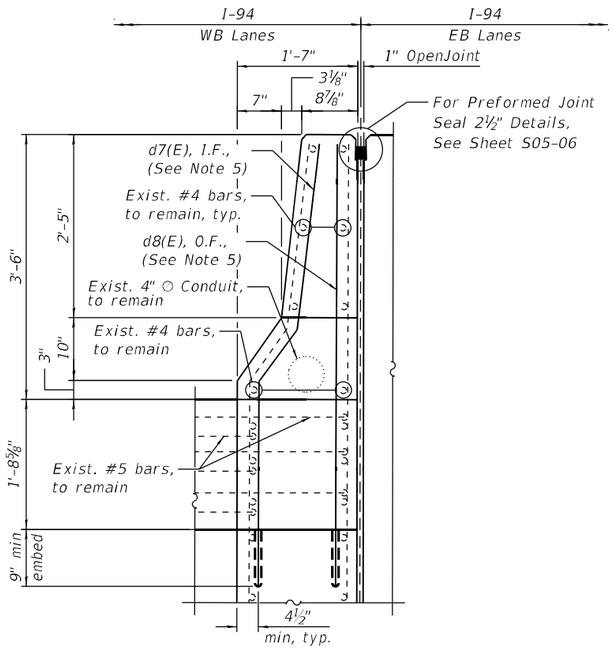
SECTION D-D



SECTION E-E



SECTION DD-DD



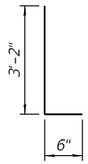
SECTION EE-EE

MIN BAR LAPS

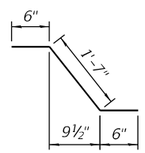
#5	3'-6"
#6	4'-10"

BILL OF MATERIAL

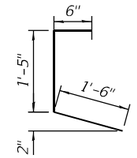
Bar	No.	Size	Length	Shape
a(E)	22	#5	17'-1"	
a1(E)	22	#5	17'-10"	
a2(E)	6	#6	6'-6"	
d(E)	6	#5	3'-8"	L
d1(E)	6	#4	3'-8"	L
d2(E)	6	#5	2'-7"	
d3(E)	3	#4	3'-5"	C
d4(E)	3	#4	2'-7"	C
d5(E)	2	#5	5'-8"	
d6(E)	2	#5	5'-6"	
d7(E)	2	#5	6'-1"	
d8(E)	2	#5	5'-10"	
h(E)	6	#6	28'-10"	
h1(E)	6	#6	30'-6"	
Concrete Removal			Cu Yd	9.3
Concrete Superstructure			Cu Yd	9.3
Protective Coat			Sq Yd	27
Reinforcement Bars, Epoxy Coated			Pound	1,510



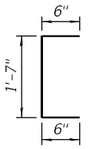
BARS d(E) & d1(E)



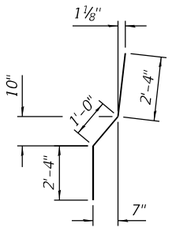
BAR d2(E)



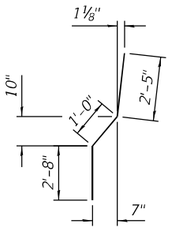
BAR d3(E)



BAR d4(E)



BAR d5(E)



BAR d7(E)

NOTES:

1. For Legend, see Sheet S06-10.
2. For Preformed Joint Strip Seal Details,see Sheet S06-13.
3. For Bar Splicer Assembly Details, see Sheet S06-21.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.
5. Epoxy grout d5(E), d6(E), d7(E), and d8(E) bars according to Article 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Superstructure.

Accurate GROUP, INC.

USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	N. ABUT. JOINT REMOVAL & REPLACEMENT (SHT. 3 OF 3) STRUCTURE NO. 016-0161 (EB)	
	DRAWN - ME	REVISED -			
PLOT SCALE = 2:0.0000 ':" / in.	CHECKED - JL	REVISED -		SHEET S06-12 OF S06-28 SHEETS	
PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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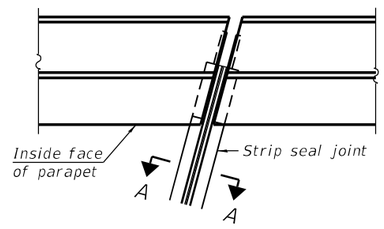
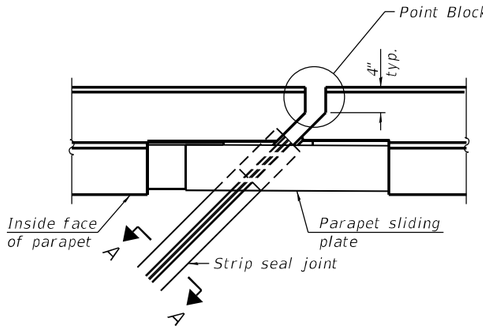
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

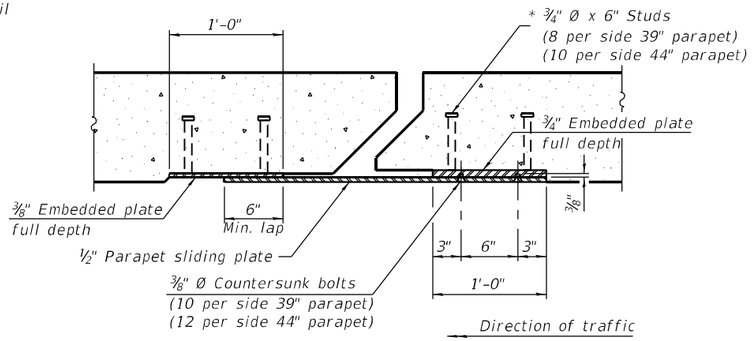


FOR SKEWS ≤ 30°



FOR SKEWS > 30°

PLAN AT PARAPET



SECTION B-B

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". 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 4½" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

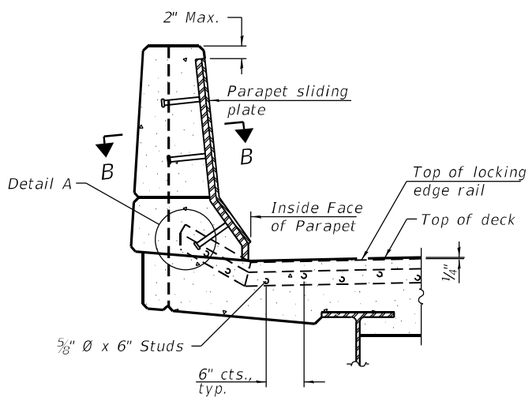
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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.

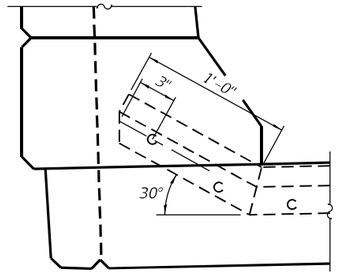
39" constant slope barrier shown, 44" constant slope barrier similar as noted.

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.

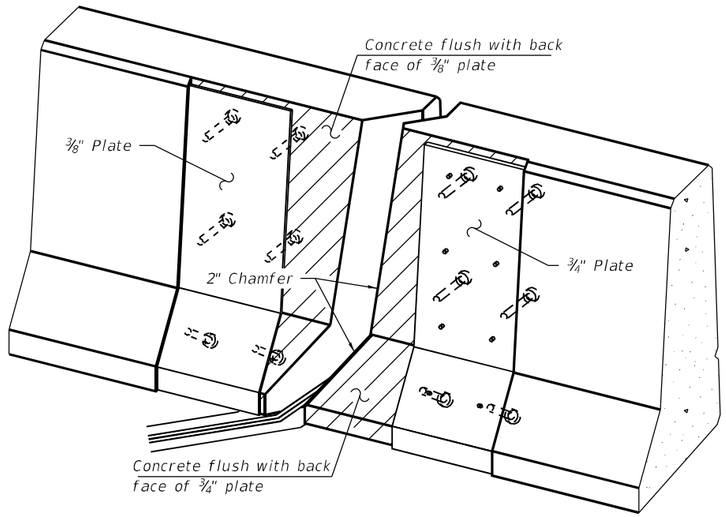


ELEVATION AT PARAPET

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

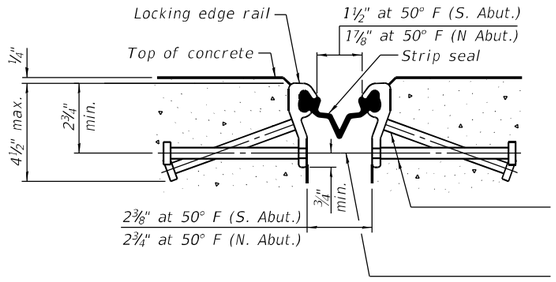


DETAIL A

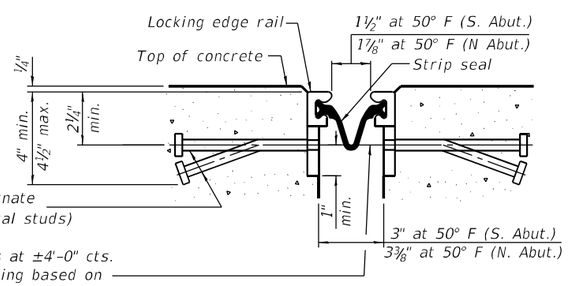


TRIMETRIC VIEW

(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT



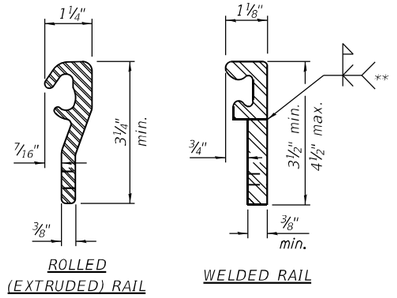
SHOWING WELDED RAIL JOINT

* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅞" ϕ threaded rods in 7/16" ϕ 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.

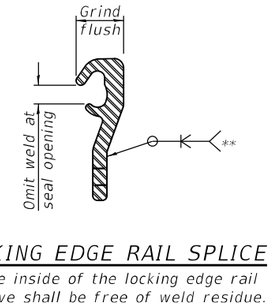
SECTION A-A

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



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	124

USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PREFORMED JOINT STRIP SEAL STRUCTURE NO. 016-0161 (EB)	
	DRAWN - ME	REVISED -			
PLOT SCALE = 0:2.0000 ':" / in.	CHECKED - JL	REVISED -		SHEET S06-13 OF S06-28 SHEETS	
PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	624
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

Accurate GROUP, INC.

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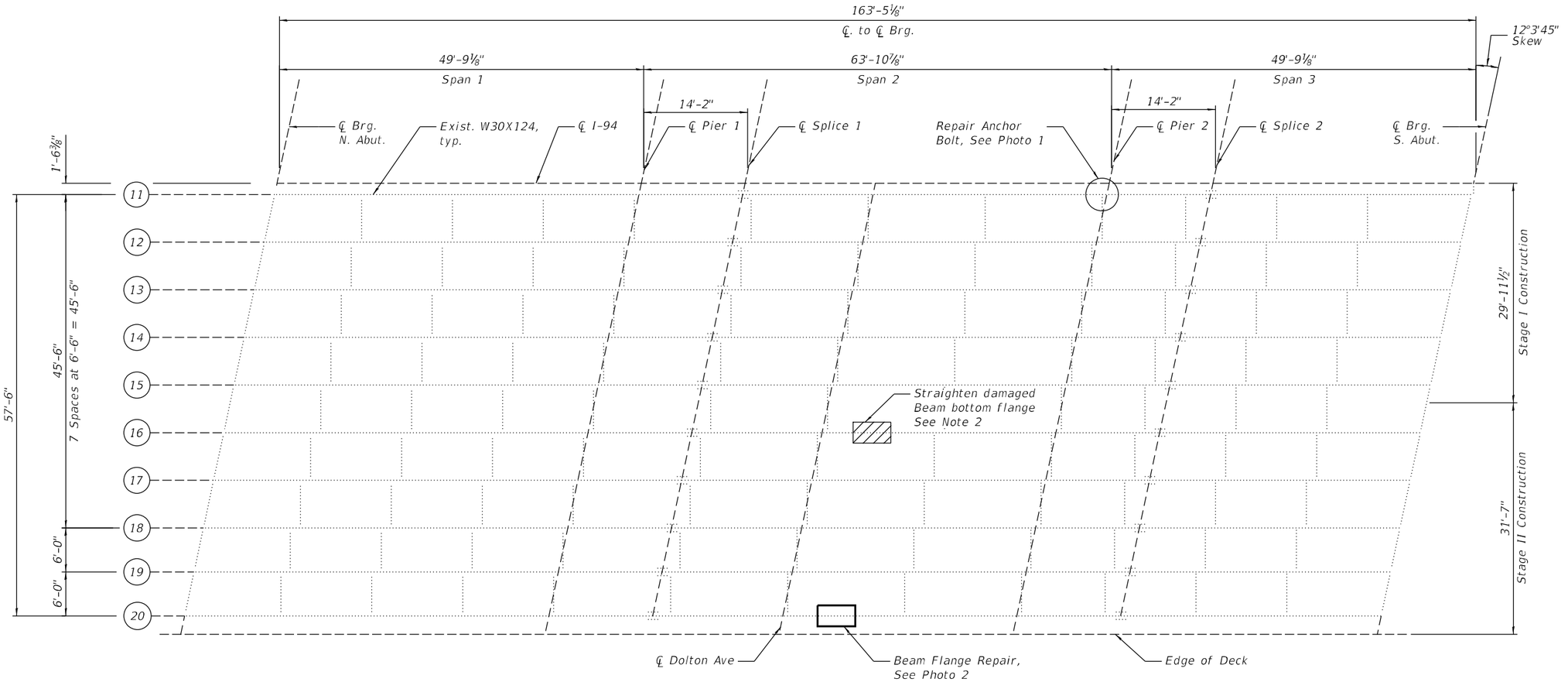

FRAMING PLAN

PHOTO 1: REPAIR ANCHOR BOLT

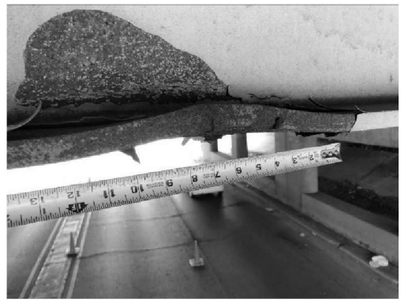

PHOTO 2: BEAM FLANGE REPAIR

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Beam Straightening	L Sum	0.33
Anchor Bolts, 1"	Each	1

LEGEND

Straighten Damaged Beam Flange

Perform Beam Mid-Span Plating,
Paid for as Structural Steel Repair

NOTES:

1. All work is to be performed utilizing stage construction, See Sheets S06-03 and S06-04 for details.
2. Gouges caused by the impact should be ground to eliminate sharp or sudden irregularities in the beam surface. Grinding should be done in such a way as to provide a smooth transition with a maximum slope of 3:1 between the damaged and undamaged surfaces. Cost included in Structural Steel Repair.
3. See Sheet S06-16 for Structural Steel Repair Details.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 016-0161 (EB)
SHEET S06-14 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	625
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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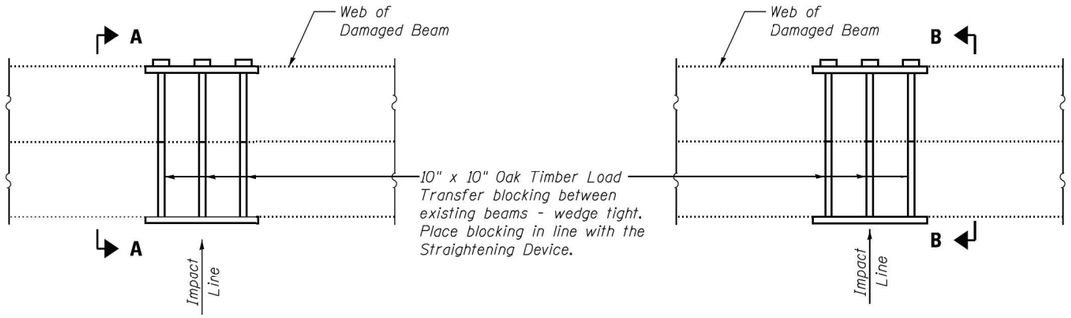
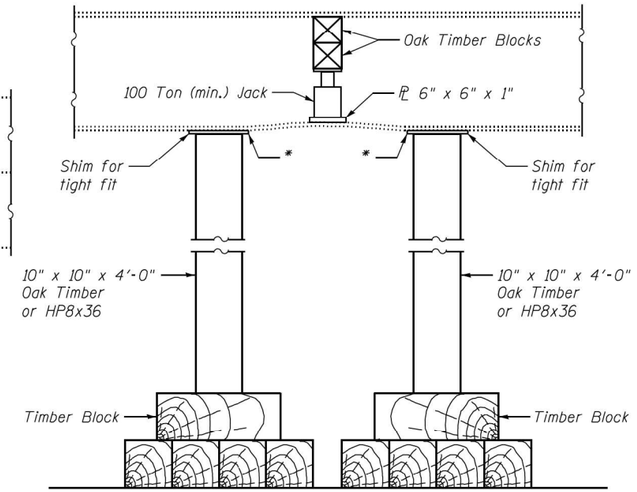


(PULLING DEVICE)

(PUSHING DEVICE)

PARTIAL PLAN
SUGGESTED BEAM STRAIGHTENING METHODS

NOTE: Straightening force shall be maintained on all load transfer blocking during beam straightening.

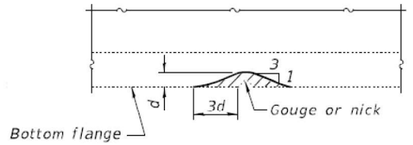


SUGGESTED VERTICAL STRAIGHTENING DETAIL

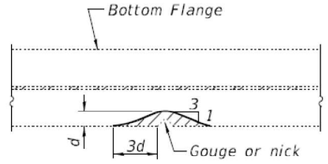
(To correct localized vertical flange deformations.)

* Edge of plate shall line up with edge of deformation.

NOTE:
Braces and jack assembly shall be placed on same side of web.
Bent bottom flange shall be straightened before starting any horizontal straightening operations.



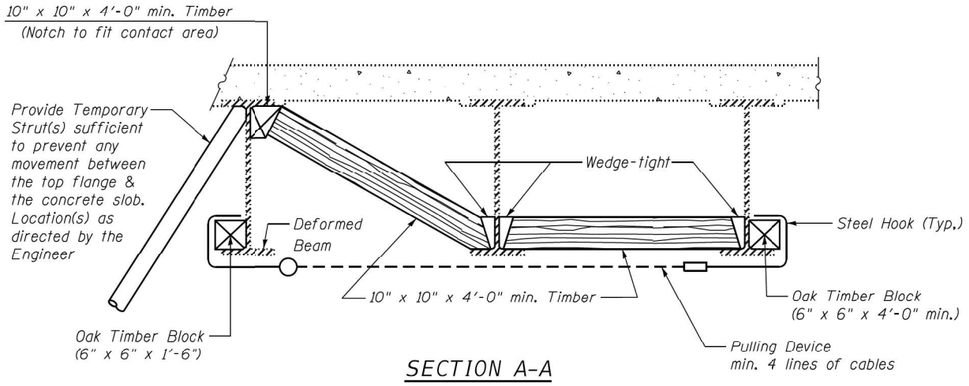
ELEVATION



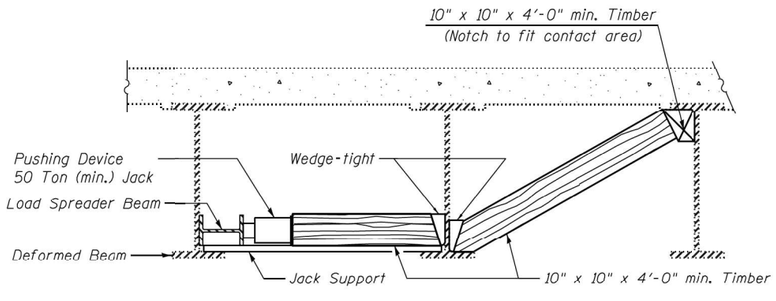
PLAN

GRINDING DETAIL

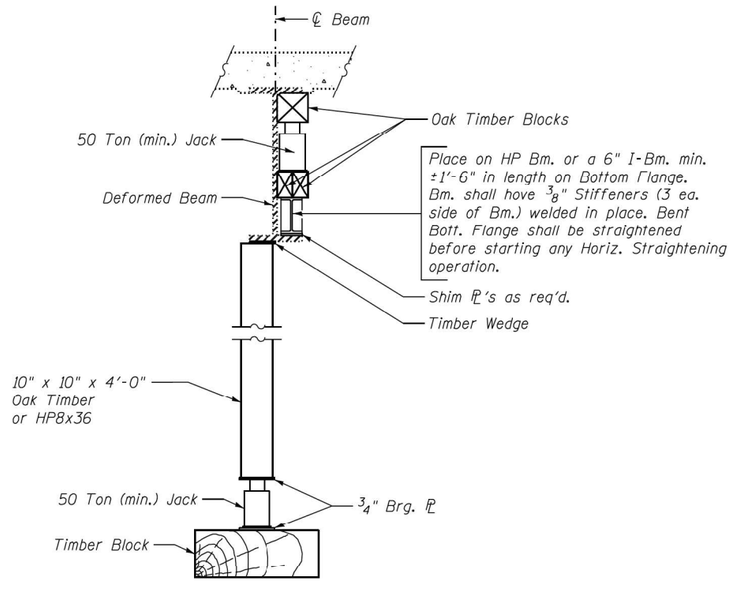
Grind existing nicks, gouges and shallow cracks in the damaged beams as detailed. Grinding shall be done parallel to the longitudinal axis of the member. Ground surfaces shall be inspected for cracks using dye penetrant or magnetic particle testing prior to initiating any beam straightening operations. Any cracks that cannot be removed by grinding approximately ¼" deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. Ground surfaces shall be spot cleaned and painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam. Cost of grinding, testing and spot painting is included with Beam Straightening.



SECTION A-A



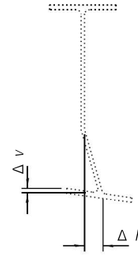
SECTION B-B



VERTICAL STRAIGHTENING DETAIL

Δ h: Measure in Field

Δ v: Measure in Field



EXISTING DEFORMATION TO BE STRAIGHTENED

(Looking North)
(Approximate max. deflections)
Deflected length of beam to be straightened is approximately 4'-0".

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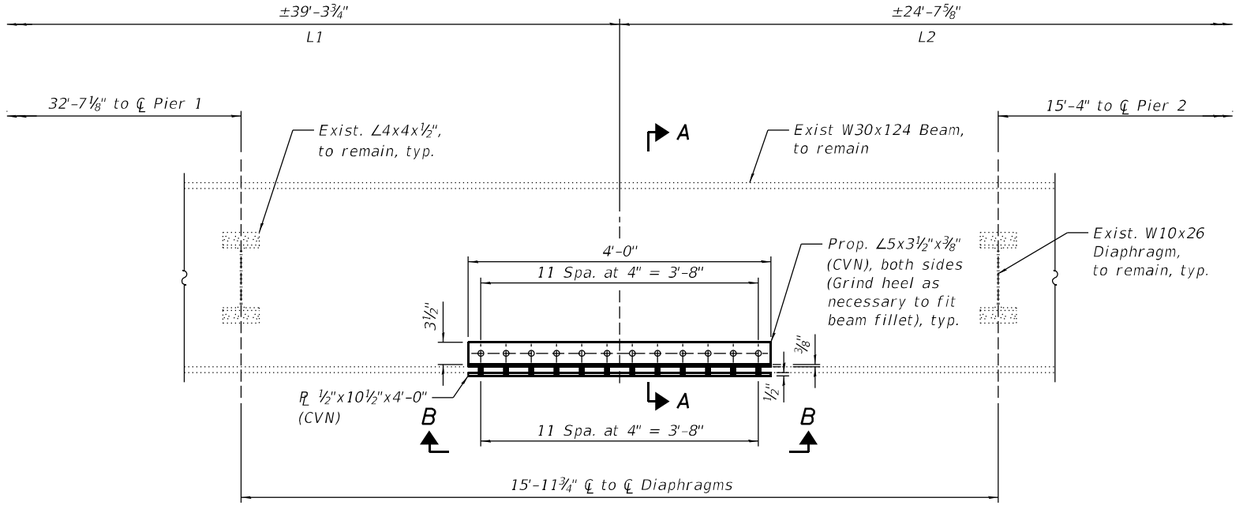
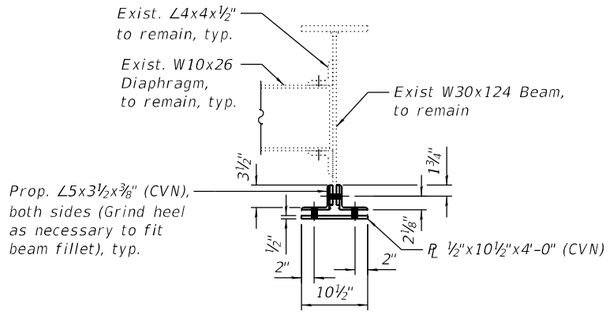
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM STRAIGHTENING DETAILS
STRUCTURE NO. 016-0161 (EB)
SHEET S06-15 OF S06-28 SHEETS

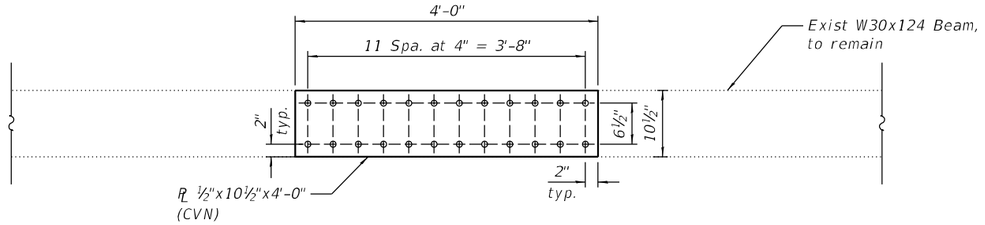
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	626
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



BEAM ELEVATION



SECTION A-A



SECTION B-B

Mid-Span Repair Detail Table				
Direction of Travel I-94	Beam #	Span Number	Pier Reference	Distance from ℄ Plate to ℄ Pier
EB	20	2	1	39'-3¼" (L1)
EB	20	2	2	24'-7⅝" (L2)

NOTES:

1. For locations of Beam bottom flange Repairs, See Framing Plan on Sheet S06-14.
2. All Beam bottom flange repair plate and bottom flange repair angles shall conform to the requirements of AASHTO M270 Grade 36.
3. Beam bottom flange plate & bottom flange repair angles connection holes shall be 15/16" Ø for ¾ Ø bolts.
4. All proposed beam bottom flange repair plate, bottom flange repair angles, field drilling and associated bolts and fasteners shall be paid for as Structural Steel Repair.
5. Load carrying components designated "CVN" shall conform to the impact Testing Requirement, Zone 2.
6. Contractor to field verify hole locations before ordering material. Contractor can elect to field drill holes in repair plates.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	190

Accurate GROUP, INC.

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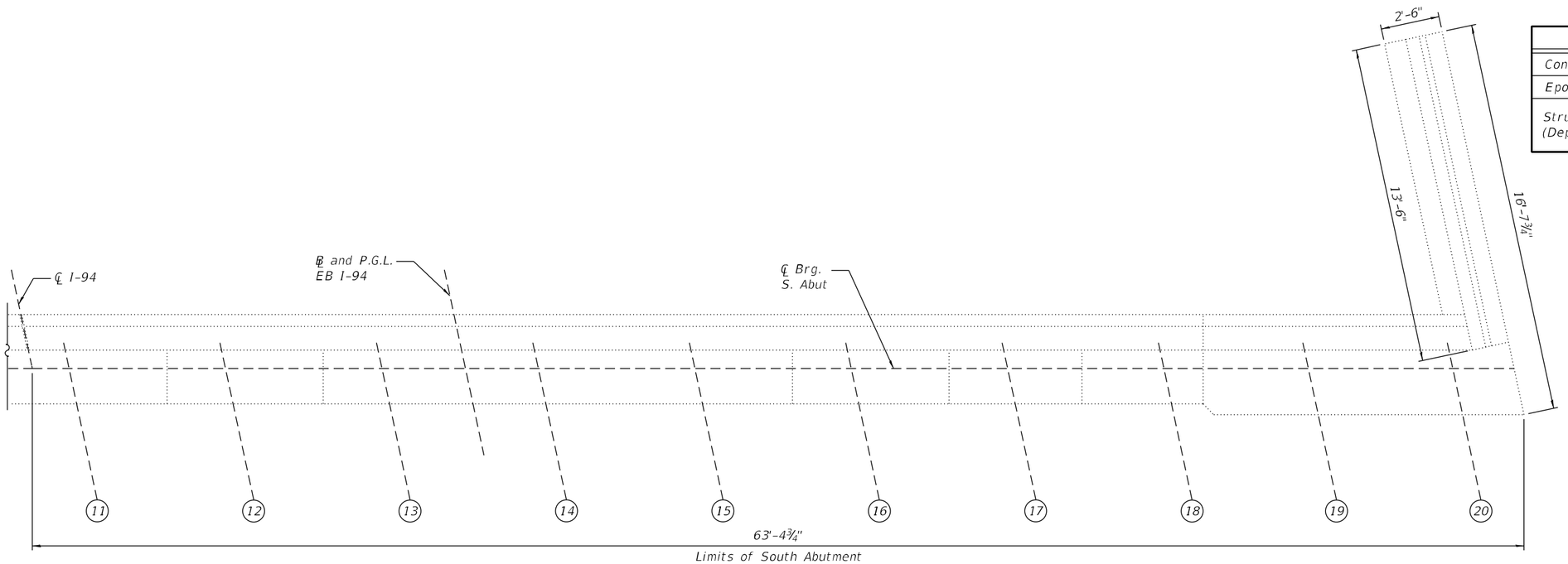
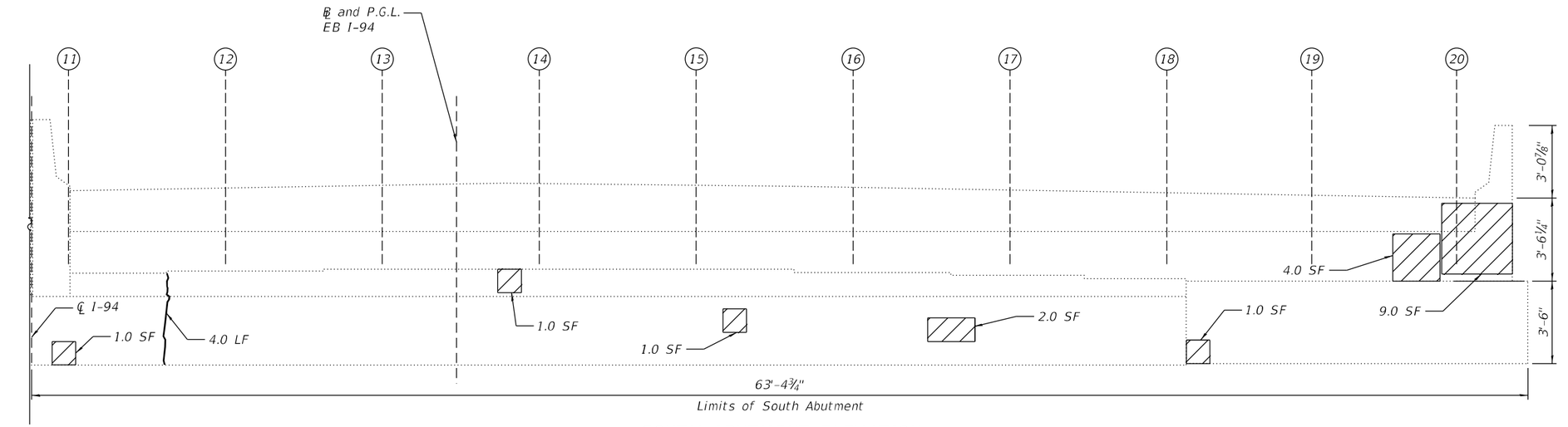
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	627
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	464
Epoxy Crack Injection	Foot	4
Structural Repair Of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	19



SOUTH ABUTMENT PLAN



SOUTH ABUTMENT ELEVATION

(Looking South)

NOTES:

1. Quantities and limits shown are estimated for bidding purpose 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. For slope wall repairs, see Sheet S06-21.
3. Concrete Sealer is to be applied to the abutment seats, abutment backwall and abutment stem.

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Epoxy Crack Injection
SF	Square Foot

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT REPAIRS
STRUCTURE NO. 016-0161 (EB)

SHEET S06-17 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	628
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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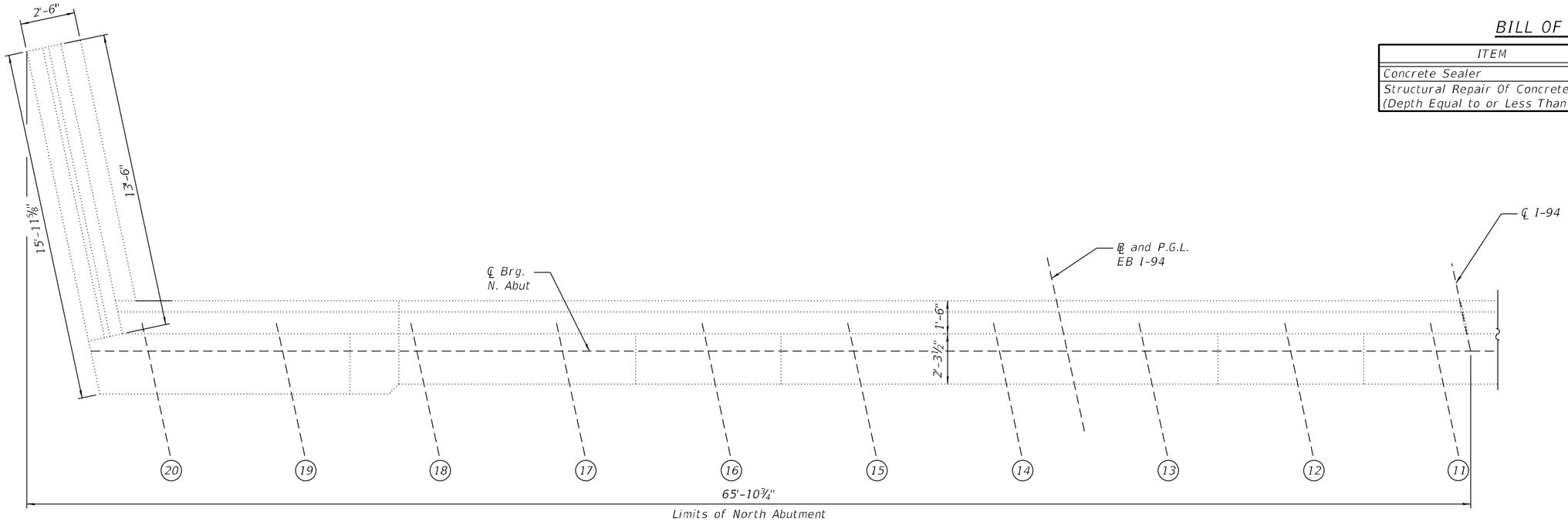
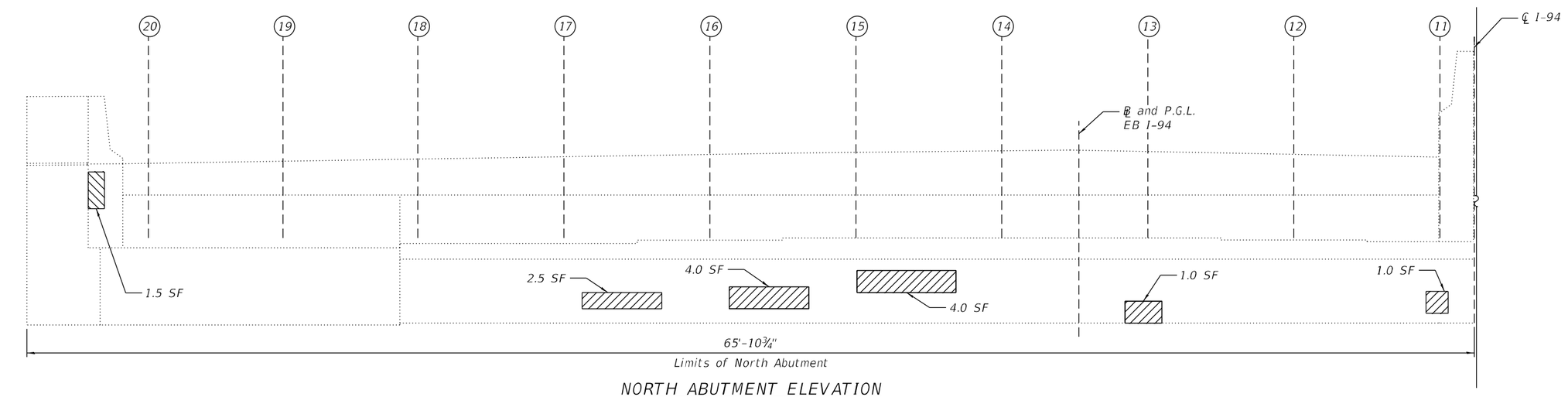
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	464
Structural Repair Of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	14



NORTH ABUTMENT PLAN



NORTH ABUTMENT ELEVATION

(Looking North)

NOTES:

1. Quantities and limits shown are estimated for bidding purpose 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. For slope wall repairs, see sheet S06-21.
3. Concrete Sealer is to be applied to the Abutment Seats, Abutment Backwall and Abutment Stem.

LEGEND

Structural Repair of Concrete (Depth Equal to or Less than 5 inches)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIRS
STRUCTURE NO. 016-0161 (EB)
SHEET S06-18 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	629
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	26
Structural Repair Of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	39

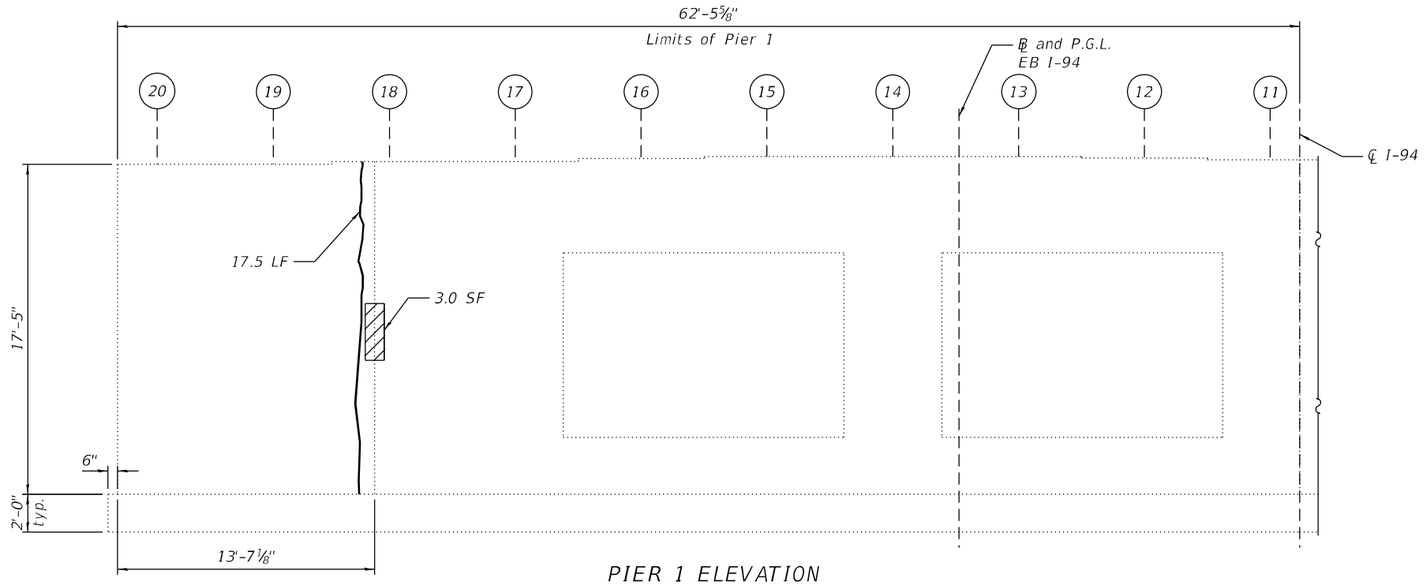
LEGEND

Structural Repair of Concrete (Depth Equal to or Less than 5 inches)

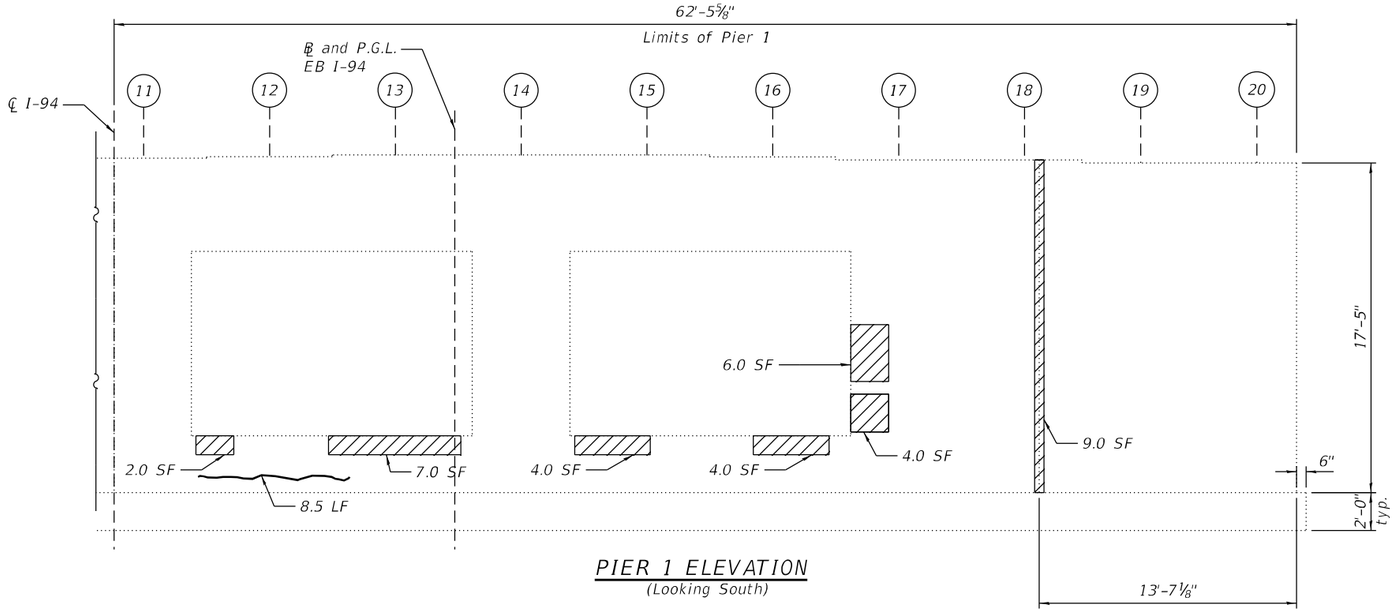
Epoxy Crack Injection

LF Linear Foot

SF Square Foot



PIER 1 ELEVATION
(Looking North)



PIER 1 ELEVATION
(Looking South)

NOTE:

1. Quantities and limits shown are estimated for bidding purpose 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.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
STRUCTURE NO. 016-0161 (EB)
SHEET S06-19 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	630
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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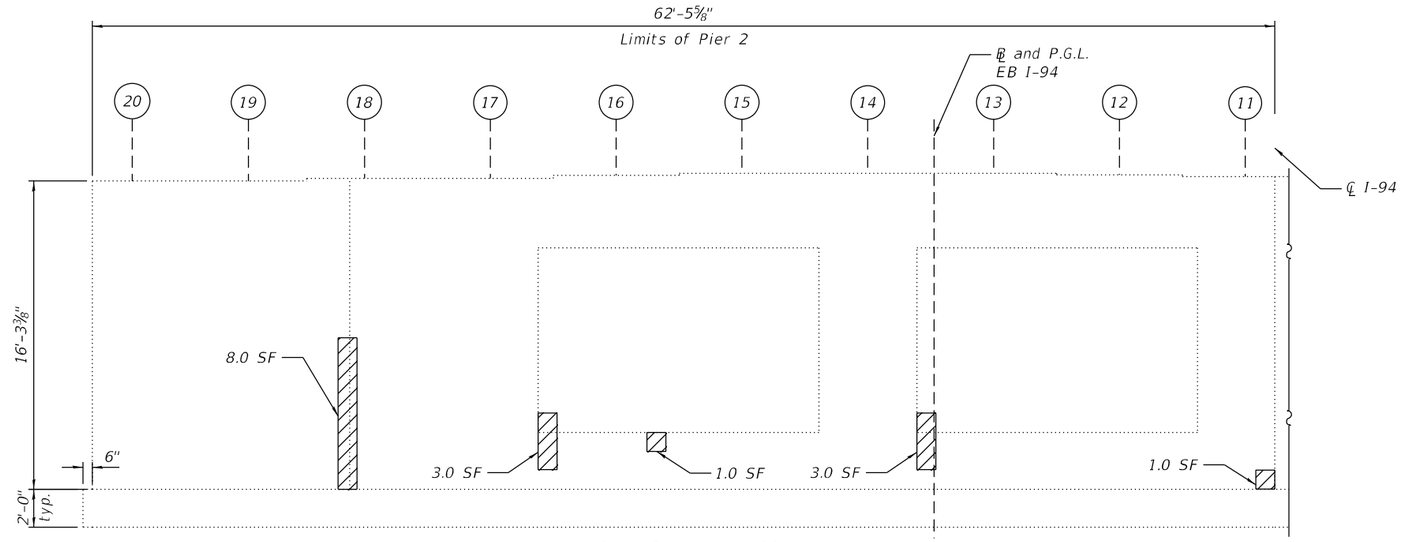
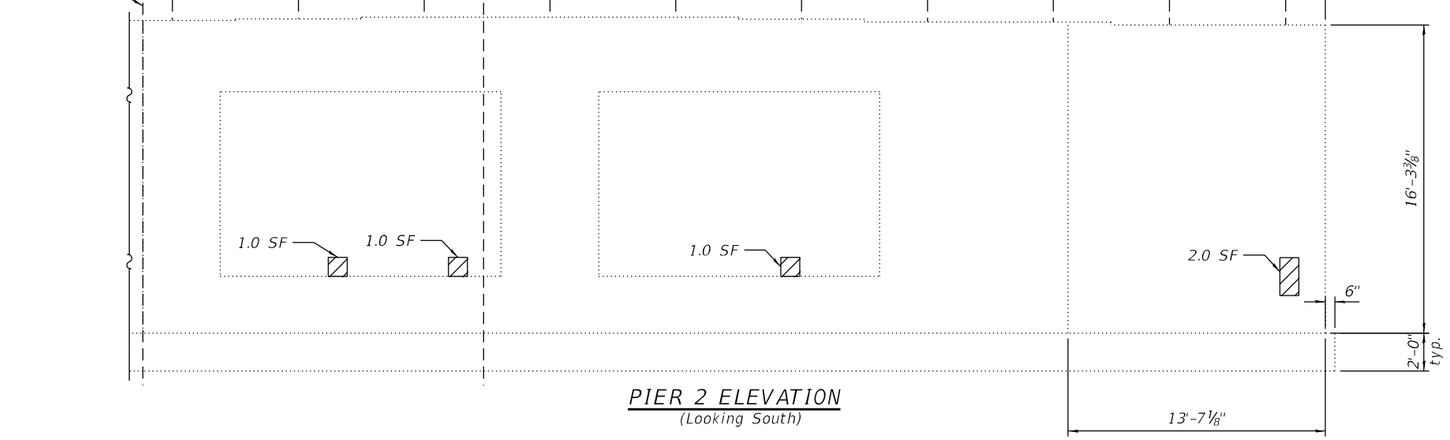
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq Ft	21



PIER 2 ELEVATION
(Looking North)



PIER 2 ELEVATION
(Looking South)

CRACKS ON PIER 2 (SF)
(Looking North)

NOTE:

1. Quantities and limits shown are estimated for bidding purpose 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")

SF Square Foot

CRACKS ON PIER 2 (NF)
(Looking South)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIRS
STRUCTURE NO. 016-0161 (EB)
SHEET S06-20 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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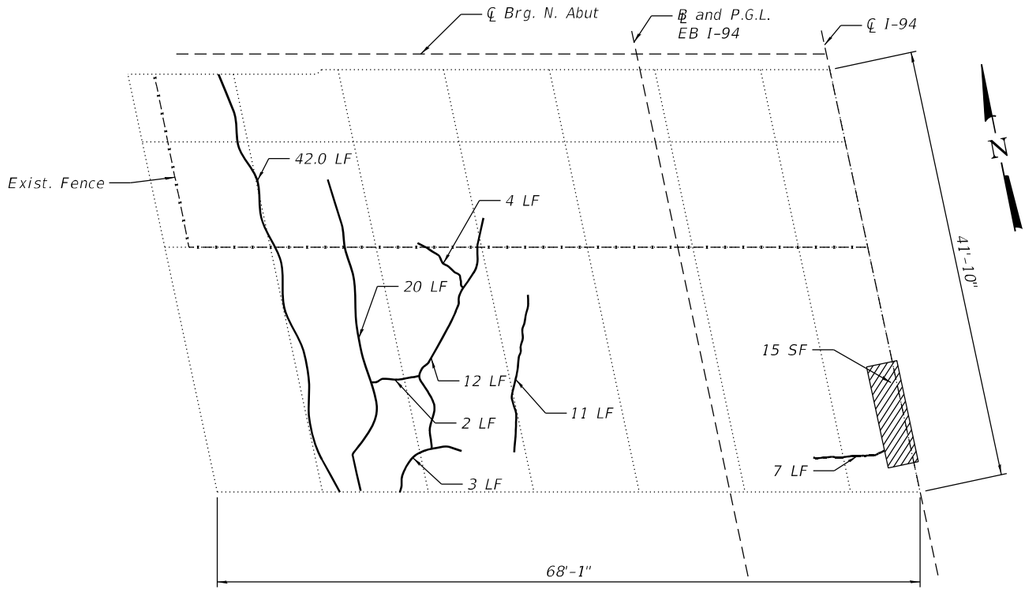
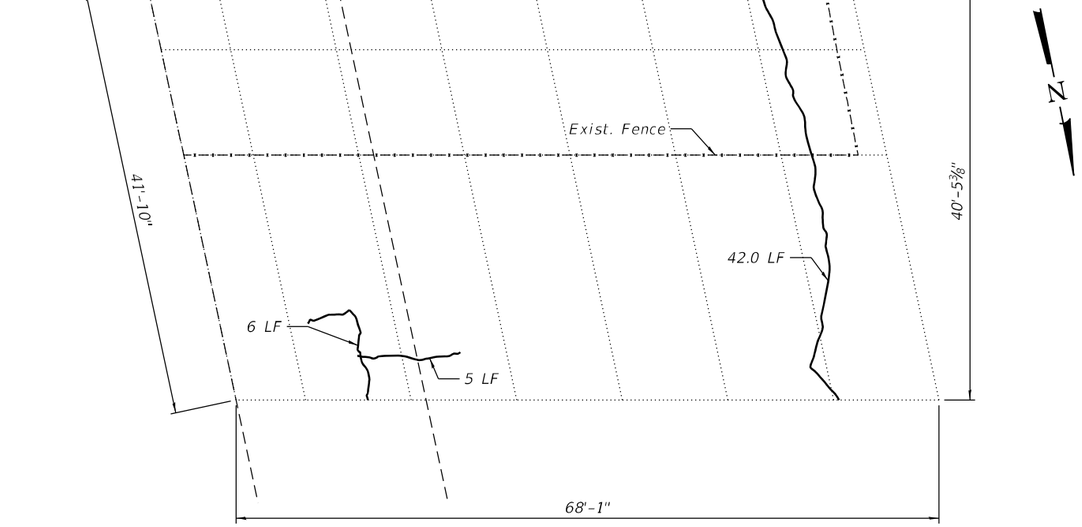
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



NORTH ABUTMENT SLOPE WALL PLAN

BILL OF MATERIAL NORTH SLOPE WALL

ITEM	UNIT	QUANTITY
Porous Grandular Embankment	Cu Yd	1
Slope Wall Removal	Sq Yd	2
Slope Wall 4 Inch	Sq Yd	2
Slope Wall Crack Sealing	Foot	101



SOUTH ABUTMENT SLOPE WALL PLAN

BILL OF MATERIAL SOUTH SLOPE WALL

ITEM	UNIT	QUANTITY
Slope Wall Crack Sealing	Foot	53.0

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. W40 x W40 weighing 58 lbs. per 100 sq. ft.

LEGEND

Slope Wall Removal and Replacement with 4 inch Slope Wall

Slope Wall Crack Sealing

LF Linear Foot

SF Square Foot

Accurate GROUP, INC.

USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SLOPE WALL REPAIRS STRUCTURE NO. 016-0161 (EB)	SHEET S06-21 OF S06-28 SHEETS
	DRAWN - ME	REVISED -			
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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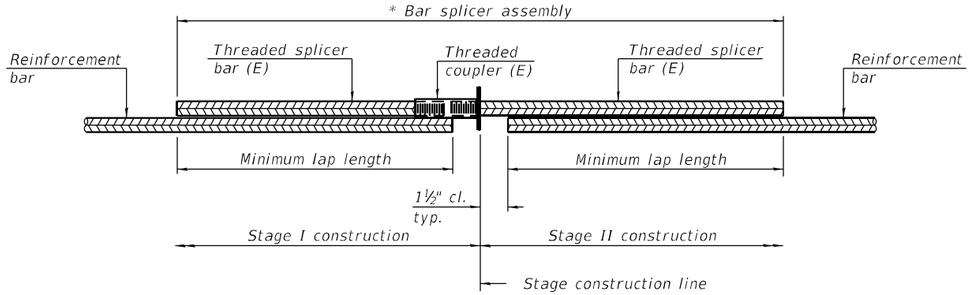
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



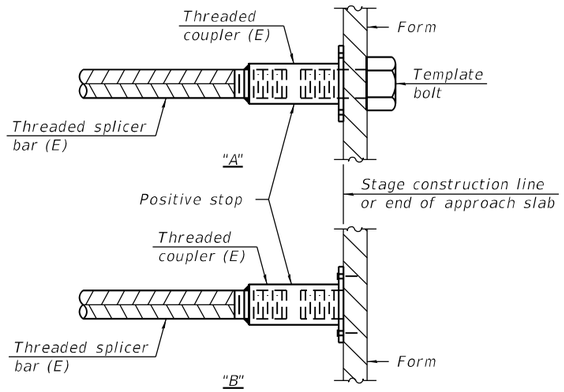
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1½" + thread length

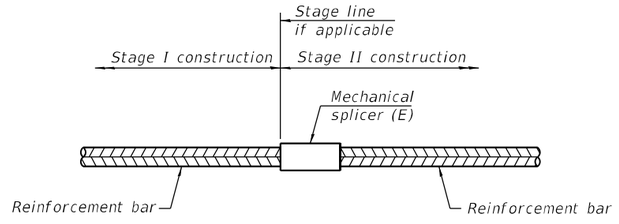
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length
N. Abut.	#5	10	3'-6"
N. Abut.	#6	6	4'-10"
S. Abut.	#5	10	3'-6"
S. Abut.	#6	6	4'-10"



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:

1. *Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.*
2. *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.*
3. *See approved list of bar splicer assemblies and mechanical splicers for alternatives.*

BSD-1 *05-15-2023*

Accurate GROUP, INC.

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		DRAWN - ME		REVISED -	
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PLOT DATE = 12/9/2024		DATE - 12/6/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY & MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-0161 (EB)
SHEET S06-22 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	633
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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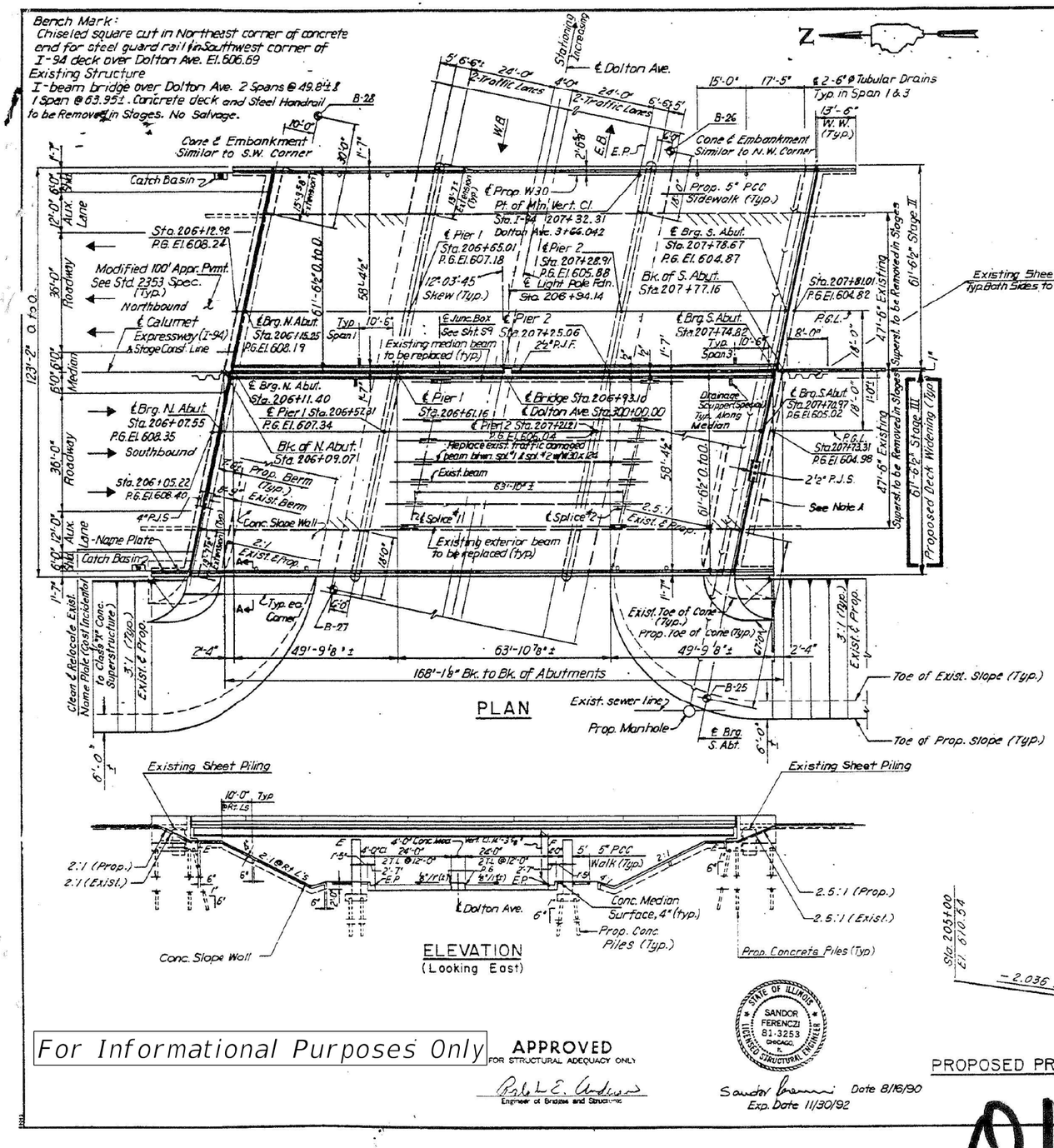
*42(VB-10,12,HB-14,B11)&0707.1HB(R-3)90

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	*	COOK	318	255
STA.	TO STA.			
FED. ROAD DIST. NO. ?	ILLINOIS	FED. AID PROJECT		

SHT. S1 OF S25

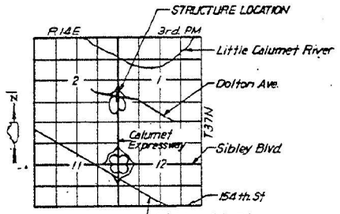
Bench Mark:
Chiseled square cut in Northeast corner of concrete end for steel guard rail in Southwest corner of I-94 deck over Dolton Ave. El. 606.69

Existing Structure
I-beam bridge over Dolton Ave. 2 Spans @ 49.8'± & 1 Span @ 63.95'±. Concrete deck and Steel Handrail to be Removed in Stages. No Salvage.

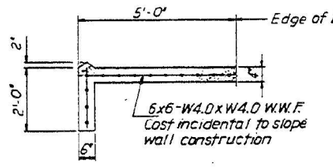


PLAN

ELEVATION
(Looking East)



LOCATION MAP



SECTION A-A

STATION 6+93.11
RE-BUILT 19 BY
STATE OF ILLINOIS
PROJECT-ACIM-ACBHI-94-3(307) 70
LOADING HS 20 & ALT.
STR. No. 016-0161

NAME PLATE
See Standard 2113

GENERAL NOTES:

DESIGN SPECIFICATIONS:
A.A.S.H.T.O. 1983 Standard Specifications for Highway Bridges, and 1984 thru 1988 Interims.
1983 Guide specifications for Seismic Design of Highway Bridges with 1985 and 1988 Interim Specifications.

DESIGN CRITERIA:
Service Load Design, Load Factor for Deck
Live Load: HS 20-44 & Alt.

Allow 25 psf for Future Wearing Surface
DESIGN STRESSES
Existing Structural Steel
fs = 18,000 psi, ASTM A 7 & fs = 20,000, ASTM A 36 (M 183 Steel Beam 16 Repair)
Proposed Structural Steel
fs = 20,000 psi (M 183 Steel)
Reinforced Concrete
f'c = 3500 psi – Superstructure Composite Deck Slab
fc = 1400 psi – Substructure
f c = 1000 psi with earth pressure
n = 9

REINFORCEMENT:
fy = 60,000 psi – Superstructure
fs = 24,000 psi – Substructure

TRAFFIC:
All barricades, signs and other traffic control devices and their placement installed for the purpose of temporarily maintaining traffic during construction shall be in full conformance with the Illinois State Manual on Uniform Traffic Control Devices unless otherwise noted.
The Contractor shall procure, install and remove all temporary pavement markings as per the traffic phasing shown on the plans or as directed by the Engineer. See Roadway Plans.

Indicates Removal of Existing Concrete Deck Slab.

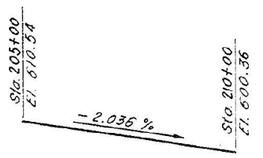
Indicates Boring Locations.

Note:
A. Limits of Porous Granular Embankment (Typ. both Abutments). Place at 45°.

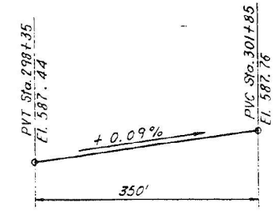
For Informational Purposes Only

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Robert E. Anderson
Engineer of Bridges and Structures

STATE OF ILLINOIS
SANDOR FERENCZI
81-3253
CHICAGO, IL
LICENSED STRUCTURAL ENGINEER
Sandor Ferenczi Date 8/16/90
Exp. Date 11/30/92



PROPOSED PROFILE I-94



PROPOSED PROFILE-DOLTON AVE.

STAGE III – S.B. MAINLINE CONSTRUCTION

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLAN AND ELEVATION
I-94 OVER DOLTON AVE.
COOK COUNTY
STA. 206+93.10 S.N. 016-0161
SCALE
DRAWN BY KC & MG
DATE NOV. 1991
CHECKED BY L.M.

S.B.M.-III-1 of 21

016-0161

Accurate GROUP, INC.	USER NAME = imranh	DESIGNED - SUR	REVISED -	
		DRAWN - ME	REVISED -	
	PLOT SCALE = 0:2.0000 ':" / in.	CHECKED - JL	REVISED -	
	PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (SHEET 1 OF 6)
STRUCTURE NO. 016-0161 (EB)
SHEET S06-23 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	634
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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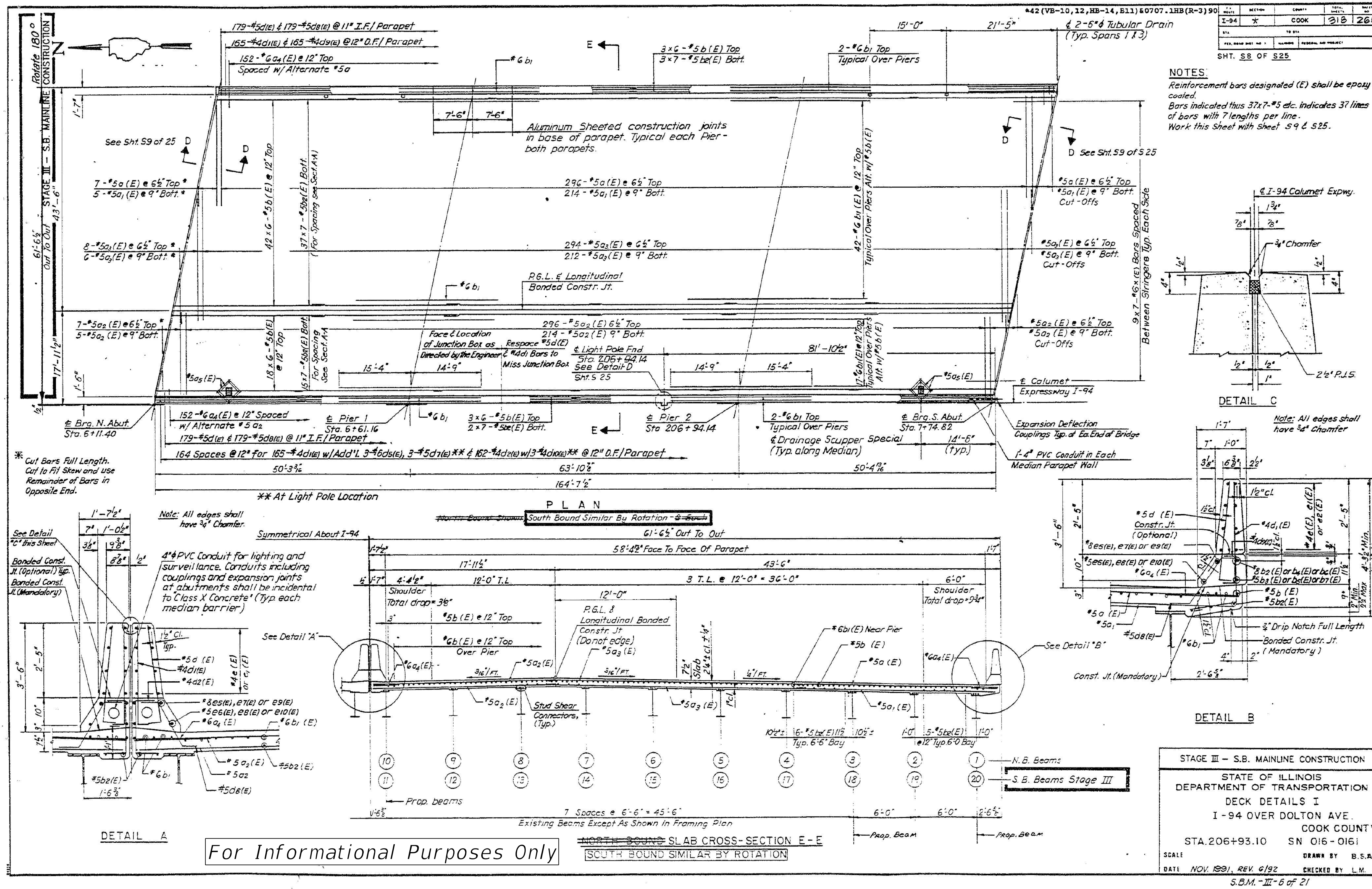
12/9/2024 3:15:15 PM



*42 (VB-10,12,HB-14,E11) & 0707.1HB(R-3)90
I-94 | * | COOK | 318 | 260
SHT. S8 OF S25
NOTES:
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 37x7-#5 etc. indicates 37 lines of bars with 7 lengths per line.
Work this Sheet with Sheet S9 & S25.
Rotate 180°
STAGE III - S.B. MAINLINE CONSTRUCTION
179-#5d(E) & 179-#5d8(E) @ 11" I.F./Parapet
165-#4d1(E) & 165-#4d9(E) @ 12" O.F./Parapet
152-#6a4(E) @ 12" Top Spaced w/ Alternate #5a
3x6-#5b(E) Top
3x7-#5b2(E) Bott.
2-#6b1 Top Typical Over Piers
15'-0"
21'-5"
℄ 2-6"⌀ Tubular Drain (Typ. Spans 1 & 3)
Aluminum Sheeted construction joints in base of parapet. Typical each Pier - both parapets.
See Sht. S9 of 25
D See Sht. S9 of S25
7-#5a(E) @ 6½" Top
5-#5a1(E) @ 9" Bott.
296-#5a(E) @ 6½" Top
214-#5a1(E) @ 9" Bott.
#5a(E) @ 6½" Top
#5a1(E) @ 9" Bott.
Cut-Offs
8-#5a3(E) @ 6½" Top
6-#5a3(E) @ 9" Bott.
294-#5a3(E) @ 6½" Top
212-#5a3(E) @ 9" Bott.
P.G.L. & Longitudinal Bonded Constr. Jt.
7-#5a2(E) @ 6½" Top
5-#5a2(E) @ 9" Bott.
296-#5a2(E) 6½" Top
214-#5a2(E) 9" Bott.
#5a2(E) @ 6½" Top
#5a2(E) @ 9" Bott.
Cut-Offs
Face & Location of Junction Box as Directed by the Engineer
Respace #5d(E) & #4d1 Bars to Miss Junction Box
℄ Light Pole Fnd. Sta. 206+94.14 See Detail D Sht. S25
9x7-#6x(E) Bars Spaced Between Stringers Typ. Each Side
℄ Calumet Expressway I-94
℄ Brg. N. Abut. Sta. 6+11.40
℄ Pier 1 Sta. 6+61.16
℄ Pier 2 Sta. 206+94.14
℄ Brg. S. Abut. Sta. 7+74.82
152-#6a4(E) @ 12" Spaced w/ Alternate #5a2
179-#5d(E) & 179-#5d8(E) @ 11" I.F./Parapet
164 Spaces @ 12" for 165-#4d1(E) w/Add'l. 3-#6d6(E), 3-#5d7(E)** & 162-#4d2(E) w/3-#4d10(E)** @ 12" O.F./Parapet
50'-3⅜"
63'-10⅞"
50'-4⅞"
164'-7½"
** At Light Pole Location
* Cut Bars Full Length. Cut to Fit Skew and Use Remainder of Bars in Opposite End.
Expansion Deflection Couplings Typ. at Ea. End of Bridge
1'-4" PVC Conduit in Each Median Parapet Wall
℄ Drainage Scupper Special (Typ. along Median)
PLAN
South Bound Similar By Rotation
DETAIL C
℄ I-94 Calumet Expwy.
¾" Chamfer
2½" P.J.S.
Note: All edges shall have ¾" Chamfer
DETAIL A
4"⌀ PVC Conduit for lighting and surveillance. Conduits including couplings and expansion joints at abutments shall be incidental to Class X Concrete (Typ. each median barrier)
See Detail "C" this Sheet
Bonded Const. Jt. (Optional) Typ.
Bonded Const. Jt. (Mandatory)
Symmetrical About I-94
61'-6½" Out To Out
58'-4½" Face To Face Of Parapet
43'-6"
3 T.L. @ 12'-0" = 36'-0"
Shoulder Total drop = 3⅜"
#5b(E) @ 12" Top
#6b(E) @ 12" Top Over Pier
P.G.L. & Longitudinal Bonded Constr. Jt (Do not edge)
Stud Shear Connectors, (Typ.)
See Detail "A"
See Detail "B"
7 Spaces @ 6'-6" = 45'-6"
Existing Beams Except As Shown In Framing Plan
N.B. Beams
S.B. Beams Stage III
Prop. beams
SLAB CROSS-SECTION E-E
SOUTH BOUND SIMILAR BY ROTATION
DETAIL B
Const. Jt. (Mandatory)
¾" Drip Notch Full Length
Bonded Constr. Jt. (Mandatory)
For Informational Purposes Only
STAGE III - S.B. MAINLINE CONSTRUCTION
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DECK DETAILS I
I-94 OVER DOLTON AVE.
COOK COUNTY
STA. 206+93.10 SN 016-0161
DRAWN BY B.S.A.
DATE NOV. 1991, REV. 6/92
CHECKED BY L.M.
S.B.M.-III-6 of 21

MODEL: Default
FILE NAME: pw:\\hbmeng-pw.bentley.com:hbmeng-pw-01\Documents\2200\2207-909\04-SOUTH_CONTRACT\01-DGN\12-SHT\16-Structures\016-0161 SB\016-0161-62K53-024-EB-Existing Plans (Sheet 2 of 6).dgn

Accurate GROUP, INC.

USER NAME = imranh	DESIGNED - SUR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS (SHEET 2 OF 6) STRUCTURE NO. 016-0161 (EB)	
	DRAWN - ME	REVISED -			
PLOT SCALE = 0:2.0000 ':" / in.	CHECKED - JL	REVISED -			
PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -		SHEET S06-24 OF S06-28 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	635
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

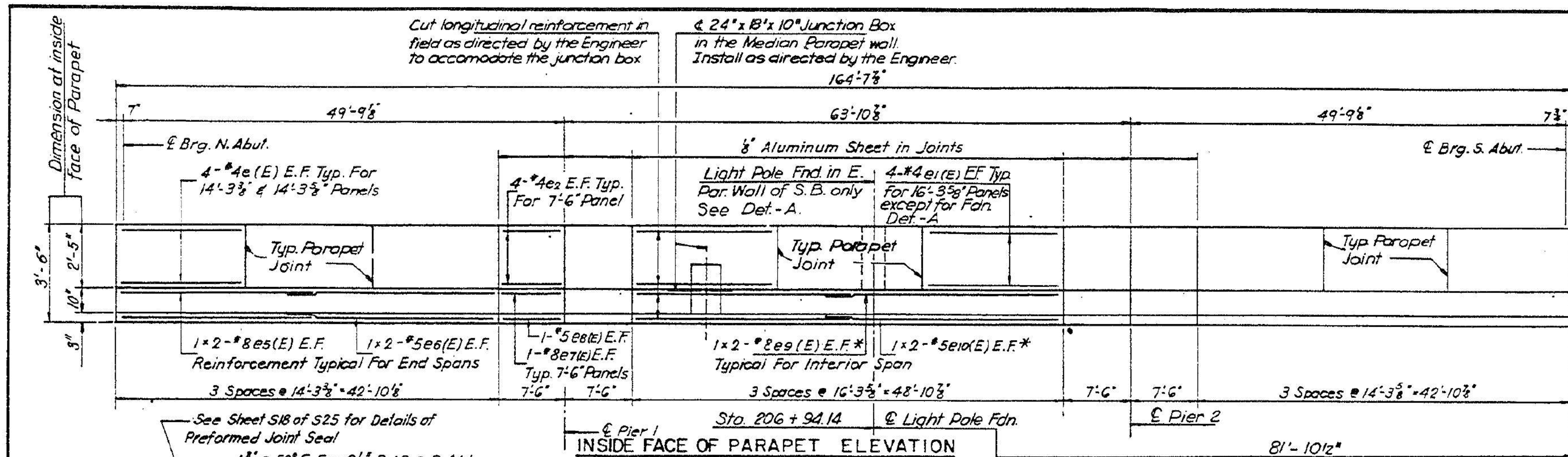
12/9/2024 3:15:24 PM

*42(VB-10,12,HB-14,B11)&0707.1HB(R-3)90

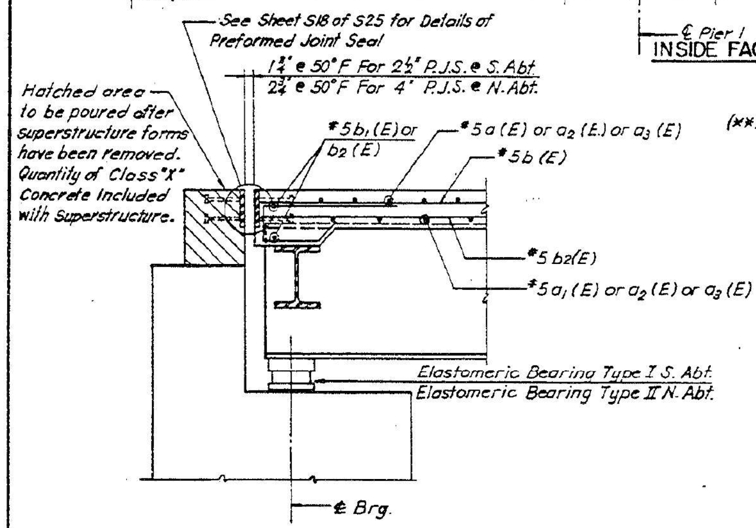
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	*	COOK	318	261

SHT. S9 OF S25

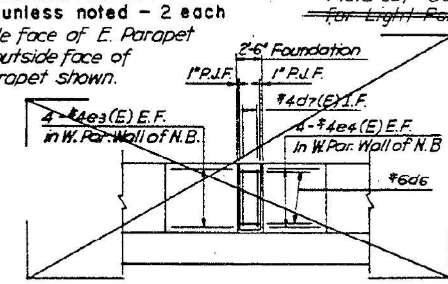
Note:
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 1x2-#5 etc., indicates 1 line of bars with 2 lengths per line.



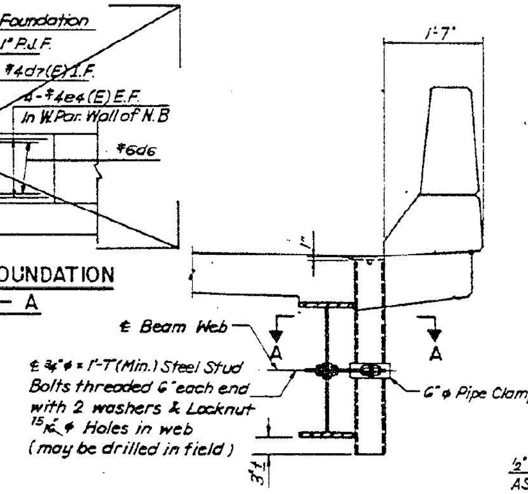
INSIDE FACE OF PARAPET ELEVATION
LOOKING EAST
Typical unless noted - 2 each
(**) Note: Inside face of E. Parapet and outside face of W. Parapet shown.



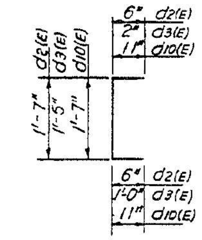
SECTION D-D



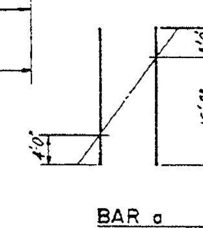
LIGHT POLE FOUNDATION DETAIL - A



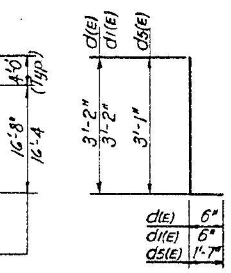
SECTION AT PARAPET
The Surface of the Fiberglass Pipe shall be Free of Bond Inhibiting Agent



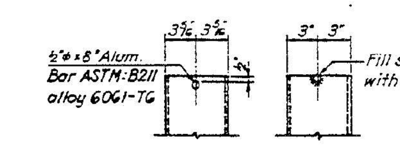
BARS d2(E), d3(E) & d10(E)



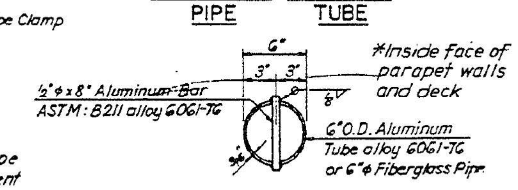
BAR a
BAR a1



BARS d(E), d1(E) & d5(E)



FIBERGLASS PIPE
ALUMINUM TUBE



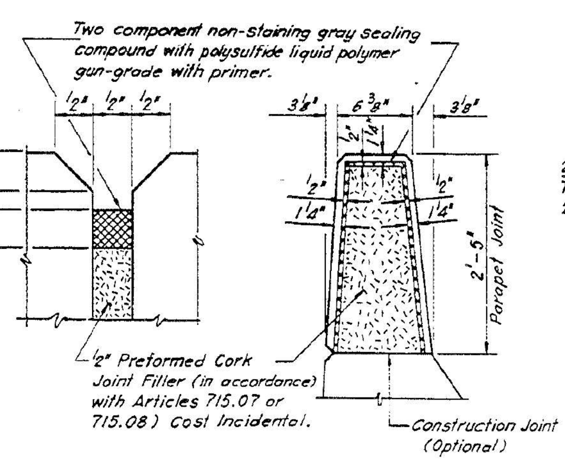
TOP PLAN

BILL OF MATERIAL

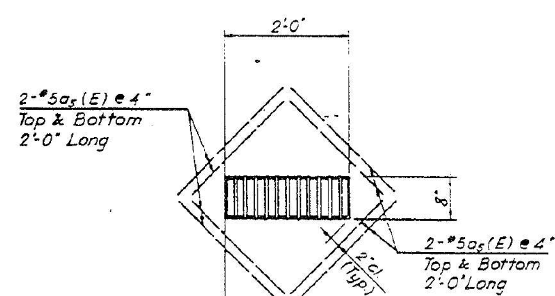
CONSTR. STAGE II	CONSTR. STAGE III	BAR	NO.	SIZE	LENGTH	SHAPE
303	303	a (E)	606	#5	20'-8"	—
219	219	a1 (E)	438	#5	20'-4"	—
522	522	a2 (E)	1044	#5	17'-7"	—
520	520	a3 (E)	1040	#5	27'-1"	—
304	304	a4 (E)	608	#6	4'-0"	—
32	32	a5(E)	64	#5	2'-0"	—
396	396	b(E)	792	#5	29'-0"	—
126	126	b1(E)	252	#6	30'-1"	—
399	399	b2(E)	798	#5	25'-2"	—
356	358	d(E)	713	#5	3'-8"	┘
327	330	d1(E)	657	#4	3'-8"	┘
162	162	d2(E)	324	#4	2'-7"	[
3	—	d3(E)	3	#4	2'-7"	[
3	—	d4(E)	3	#5	2'-8"	⌐
—	3	d5(E)	3	#6	4'-8"	┘
—	6	d6(E)	6	#6	8'-9"	⊔
—	3	d7(E)	3	#5	2'-0"	—
355	358	d8(E)	713	#5	2'-7"	⌐
165	165	d9(E)	330	#4	3'-5"	[
—	3	d10(E)	3	#4	3'-5"	[
96	96	e(E)	192	#4	13'-11"	—
40	48	e1(E)	88	#4	15'-11"	—
64	64	e2(E)	128	#4	7'-2'	—
8	—	e3(E)	8	#4	7'-0"	—
8	—	e4(E)	8	#4	6'-0"	—
16	16	e5(E)	32	#8	23'-0"	—
16	16	e6(E)	32	#5	22'-0"	—
16	16	e7(E)	32	#8	7'-1"	—
16	16	e8(E)	32	#5	7'-1"	—
8	8	e9(E)	16	#8	26'-0"	—
8	8	e10(E)	16	#5	25'-2	—
	126	X (E)		#6	5'-6"	

ITEM	UNIT	CONTR. STAGE II	CONTR. STAGE III	TOTAL
Reinf. bars (Epoxy Coated)	Lbs.	72,590	74,690	145,320
Class X Concrete Superstr.	Cu. Yds.	297.0	295.9	592.9
6"φ Floor Drains	Each	4	4	8
* Protective Coat	Sq. Yds.	1231	1231	2462
Preformed Jt. Seal 2½"	Lin. Ft.		164	164

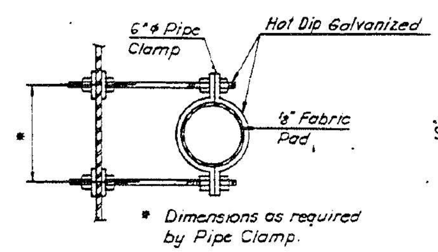
* Includes Coat applied to deck



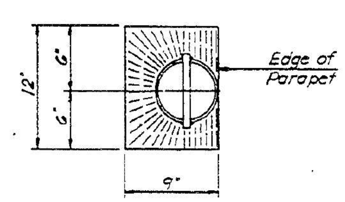
PARAPET JOINTS DETAIL



DRAINAGE SCUPPER (SPECIAL)
SEE SHEET NO. S19 & S20 OF S25



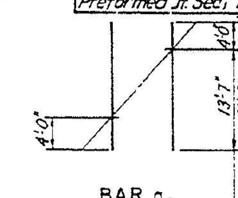
SECTION A-A



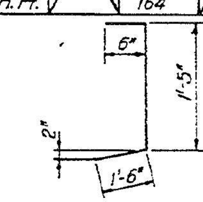
TOP PLAN

6" FLOOR DRAIN

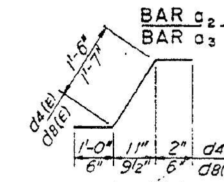
NOTE:
Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
The exterior surfaces of the Floor Drain shall be painted with the paint specified.
for Structural Steel. The exterior surfaces of the Aluminum tube shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 prior to Painting.



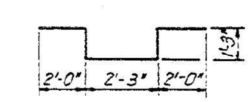
BAR c2
BAR c3



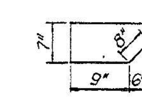
BAR d9(E)



BARS d4(E) & d8(E)



BAR d6 (E)



BAR X(E)

For Informational Purposes Only

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DECK DETAILS II
I-94 OVER DOLTON AVE.
COOK COUNTY
STA. 206+93.10 SN 016-0161
SCALE
DRAWN BY B.S.A.
DATE: NOV. 1991, REV. 6/92
CHECKED BY L.M.

STAGE III - S.B. MAINLINE CONSTRUCTION

S.B.M.-III-7 of 21

USER NAME = imranh	DESIGNED - SUR	REVISED -
	DRAWN - ME	REVISED -
PLOT SCALE = 0:2.0000 ':" / in.	CHECKED - JL	REVISED -
PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (SHEET 3 OF 6)
STRUCTURE NO. 016-0161 (EB)

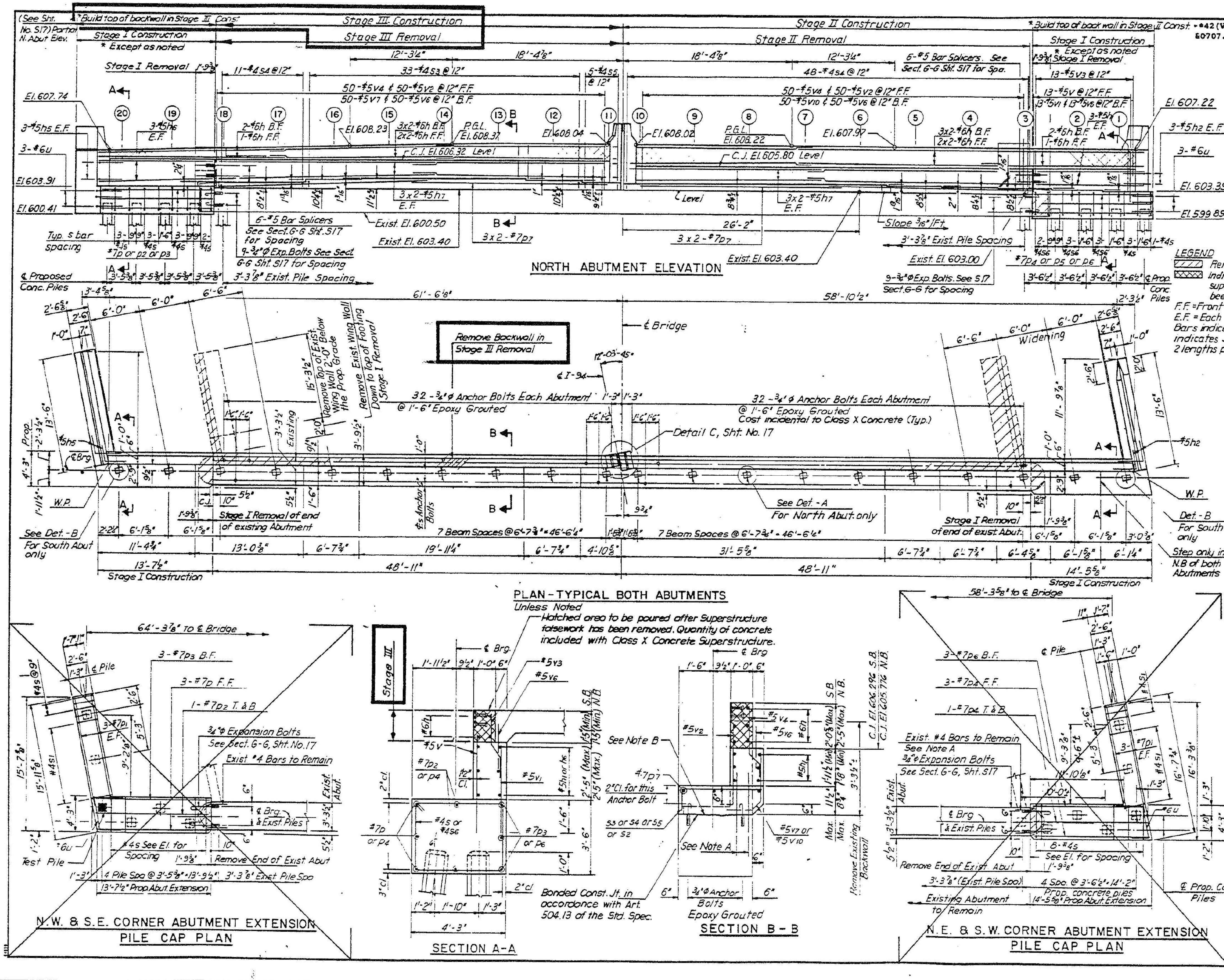
SHEET S06-25 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	636
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

* Build top of backwall in Stage II Const. *#42 (VB-10,12,HB-14,B11) 60707.1HB(R-3)90

F.A. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	*	COOK	318	267

SHT. S15 OF S25



PILE DATA

Type: Concrete Piles

Capacity: 30T

Est. Length: 40' N.Abt. 35' S.Abt.

No. Reqd.: 11 Each Abut.

Test Piles: 1 Each Abut.

ABUTMENT SEAT ELEVATIONS		
BEAM NO.	CONCRETE ELEVATIONS	SHIM PL.
1	603.39	—
2	603.55	—
3	603.71	—
4	603.81	—
5	603.98	—
6	604.13	—
7	604.13	1/8"
8	604.13	1 13/16"
9	604.13	7/8"
10	604.13	7/16"
11	604.19	—
12	604.28	—
13	604.36	1/4"
14	604.36	5/8"
15	604.36	—
16	604.26	—
17	604.11	1/2"
18	604.11	—
19	603.91	1 3/16"
20	603.91	—

3'-6" Typical Ends

LEGEND

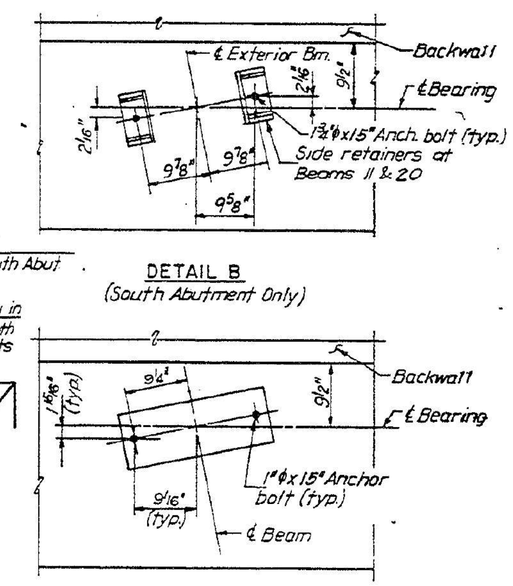
Remove existing structure

Indicates area to be poured after superstructure falsework has been removed.

F.F. = Front Face, B.F. = Back Face

E.F. = Each Face

Bars indicated thus 3x2-#6 etc. indicates 3 lines of bars with 2 lengths per line.



NOTES:

A. Existing bars to be cleaned, cut to fit and incorporated into new concrete.

B. Remove existing bearing pads and all deteriorated concrete, throughly clean and roughen top of existing bearing seat.

Work this sheet with Sht. No. S16 & S17

STAGE III – S.B. MAINLINE CONSTRUCTION

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT DETAILS - I
I-94 OVER DOLTON AVE
COOK COUNTY

STA. 206+93.10

SN 016-0161

SCALE

DRAWN BY EBP

DATE NOV. 1991

CHECKED BY L.M.

S.B.M.-III-13 of 21

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Accurate GROUP, INC.

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PLOT DATE = 12/9/2024	DATE - 12/6/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (SHEET 4 OF 6)
STRUCTURE NO. 016-0161 (EB)

SHEET S06-26 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	637

CONTRACT NO. 62W87

ILLINOIS FED. AID PROJECT

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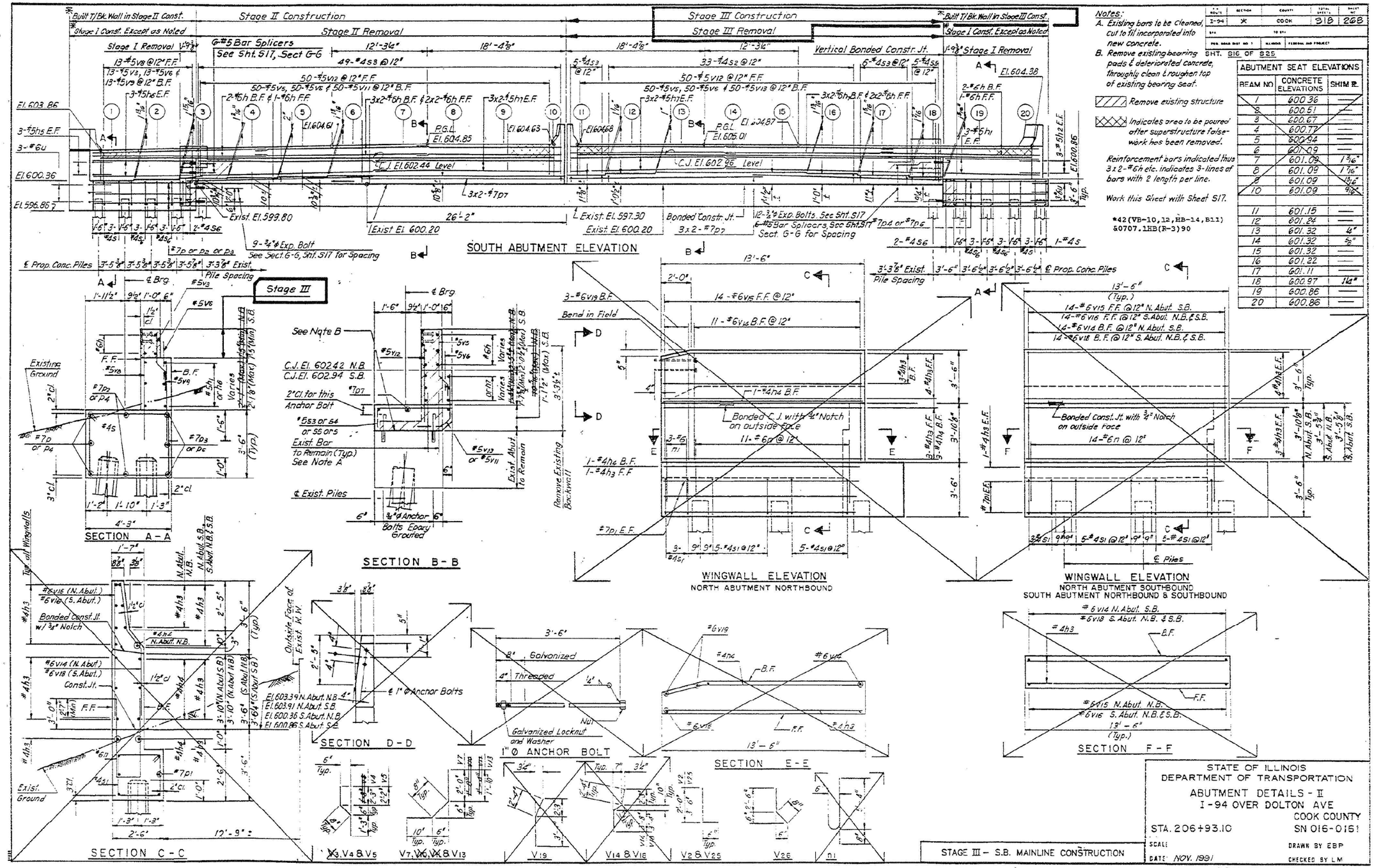

Notes:

A. Existing bars to be Cleaned, cut to fit incorporated into new concrete.

B. Remove existing bearing pads & deteriorated concrete, throughly clean & roughen top of existing bearing seat.

Remove existing structure

Indicates area to be poured after superstructure falsework has been removed.

Reinforcement bars indicated thus 3 x 2-#6h etc. indicates 3-lines of bars with 2 length per line.

Work this Sheet with Sheet S17.

*42(VB-10,12,HB-14,B11)
&0707.1HB(R-3)90

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	*	COOK	318	208
STA.		TO STA.		
PROJ. BRGE. DIST. NO. 1	ILLINOIS	FEDERAL AID PROJECT		

SHT. S16 OF S25

ABUTMENT SEAT ELEVATIONS

BEAM NO	CONCRETE ELEVATIONS	SHIM R.
1	600.36	—
2	600.51	—
3	600.67	—
4	600.77	—
5	600.94	—
6	601.09	—
7	601.09	1 1/16"
8	601.09	1 1/16"
9	601.09	1 1/16"
10	601.09	1 1/16"
11	601.15	—
12	601.24	—
13	601.32	¼"
14	601.32	5/16"
15	601.32	—
16	601.22	—
17	601.11	—
18	600.97	1/16"
19	600.86	—
20	600.86	—

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
ABUTMENT DETAILS - II
I-94 OVER DOLTON AVE
COOK COUNTY
STA. 206+93.10
SN 016-0161
SCALE
DRAWN BY EBP
DATE NOV. 1991
CHECKED BY L.M.

S.B.M.-III-14 of 21

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Accurate GROUP, INC.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (SHEET 5 OF 6)
STRUCTURE NO. 016-0161 (EB)
SHEET S06-27 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	638
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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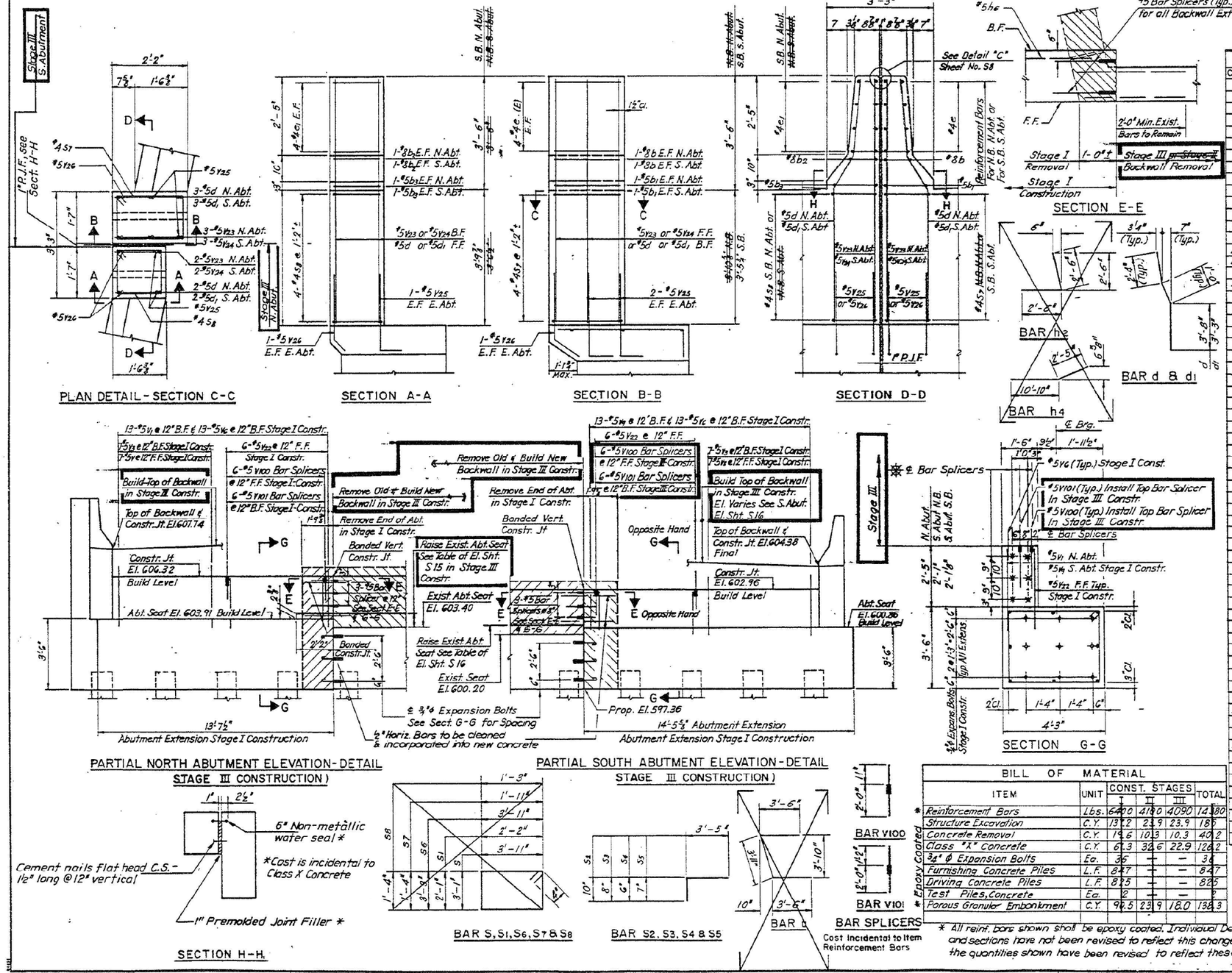

*42(VB-10,12,HB-14,B11)60707.1HB(R-3)90

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	★	COOK	318	269

SHT. S17 OF S25

PARTIAL NORTH ABUTMENT ELEVATION - DETAIL
(STAGE III CONSTRUCTION)

PARTIAL SOUTH ABUTMENT ELEVATION - DETAIL
(STAGE III CONSTRUCTION)

BILL OF MATERIAL										
CONST. STAGES I	II	III	N. ABUT.	S. ABUT.	BAR	NO.	SIZE	LENGTH	SHAPE
—	2	2	2	2	b	4	#8	1'-10"	—
—	2	2	2	2	b1	4	#5	1'-10"	—
—	2	2	2	2	b2	4	#8	1'-2"	—
—	2	2	2	2	b3	4	#5	1'-2"	—
—	3	2	5	—	d	5	#5	7'-0"	
—	2	3	—	5	d1	5	#5	6'-7"	
—	6	6	6	6	e	12	#4	1'-10"	—
—	6	6	6	6	e1	12	#4	1'-2"	—
—	26	26	26	26	h	52(55)	#6	22'-1"	—
12	—	—	6	6	h1	12	#5	13'-3"	—
12	—	—	6	6	h2	12	#5	5'-0"	
52	—	—	10	42	h3	52	#4	13'-2"	—
4	—	—	4	4	h4	4	#4	13'-3"	
12	—	—	6	6	h5	12	#5	5'-0"	
12	—	—	6	6	h6	12	#5	14'-1"	—
—	24	24	24	24	h7	48	#5	25'-3"	—
44	—	—	22	22	n	44	#6	11'-11"	
6	—	—	3	3	p	6	#7	13'-1"	—
24	—	—	12	12	p1	24	#7	15'-0"	—
4	—	—	2	2	p2	4	#7	13'-8"	—
6	—	—	3	3	p3	6	#7	14'-2"	—
10	—	—	5	5	p4	10	#7	14'-9"	—
3	—	—	3	—	n1	3	#6	6'-0"	—
6	—	—	3	3	p6	6	#7	13'-6"	—
—	12	12	12	12	p7	24	#7	26'-0"	—
20	—	—	14	6	s	20	#4	14'-8"	
52	—	—	26	26	s1	52	#4	9'-2"	
—	—	33	—	33	s2	33	#4	4'-7"	
—	49	44	33	60	s3	93	#4	4'-1"	
—	48	11	59	—	s4	59	#4	3'-11"	
—	—	10	5	5	s5	10	#4	4'-0"	
24	—	—	16	8	s6	24	#4	15'-0"	
—	4	4	4	4	s7	8	#4	7'-2"	
—	4	4	4	4	s8	8	#4	5'-10"	
24	—	—	12	12	u	24	#6	10'-11"	
20	—	—	20	—	v	20	#5	5'-0"	—
26	—	—	26	—	v1	26	#5	4'-0"	—
—	50	50	100	—	v2	100	#5	4'-0"	
40	—	—	20	20	v3	40	#5	3'-2"	
—	50	50	100	—	v4	100	#5	4'-2"	
—	50	50	—	100	v5	100	#5	3'-10"	
52	100	100	126	126	v6	252	#5	2'-6"	—
—	—	50	50	—	v7	50	#5	3'-6"	
20	—	—	—	20	v8	20	#5	5'-0"	—
26	—	—	—	26	v9	26	#5	3'-6"	—
—	50	—	50	—	v10	50	#5	3'-4"	
—	50	—	—	50	v11	50	#5	3'-0"	
—	50	50	—	100	v12	100	#5	4'-10"	
—	—	50	—	50	v13	50	#5	3'-6"	
25	—	—	25	—	v14	25	#6	7'-0"	
28	—	—	28	—	v15	28	#6	6'-0"	—
14	14	—	—	28	v16	28	#6	6'-7"	—
Not	Used								
28	—	—	—	2	v18	28	#6	6'-8"	
6	—	—	6	—	v19	6	#6	5'-5"	
Not	Used	—	—	—	—	—	—	Not	Used
Not	Used	—	—	—	—	—	—	Not	Used
12	—	—	6	6	v22	12	#5	4'-0"	—
—	3	2	5	—	v23	5	#5	7'-0"	—
—	2	3	—	5	v24	5	#5	6'-7"	—
—	6	6	6	6	v25	12	#5	2'-6"	
—	4	4	4	4	v26	8	#5	2'-8"	

BILL OF MATERIAL						
ITEM	UNIT	CONST. STAGES I	II	III	TOTAL
* Reinforcement Bars	Lbs.	6400	4190	4090	14380
Structure Excavation	C.Y.	137.2	23.9	23.9	185
Concrete Removal	C.Y.	19.6	10.3	10.3	40.2
Class "X" Concrete	C.Y.	67.3	32.6	22.9	126.2
3/4" ϕ Expansion Bolts	Ea.	36	—	—	36
Furnishing Concrete Piles	L.F.	847	—	—	847
Driving Concrete Piles	L.F.	825	—	—	825
Test Piles, Concrete	Ea.	2	—	—	2
* Porous Granular Embankment	C.Y.	90.5	23.9	18.0	138.3

Epoxy Coated

* All reinf. bars shown shall be epoxy coated. Individual Details and sections have not been revised to reflect this change. However, the quantities shown have been revised to reflect these changes.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
ABUTMENT DETAILS III
I-94 OVER DOLTON AVE.
COOK COUNTY
STA. 206+93.10 SN 016-0161
SCALE
DRAWN BY B.S.A.
DATE: NOV. 1991
CHECKED BY L.M.

STAGE III - S.B. MAINLINE CONSTRUCTION

S.B.M.-III-15 of 21

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Accurate GROUP, INC.

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		DRAWN -	ME	REVISED -
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PLOT DATE =	12/9/2024	DATE -	12/6/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (SHEET 6 OF 6)
STRUCTURE NO. 016-0161 (EB)

SHEET S06-28 OF S06-28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	639

CONTRACT NO. 62W87

ILLINOIS FED. AID PROJECT

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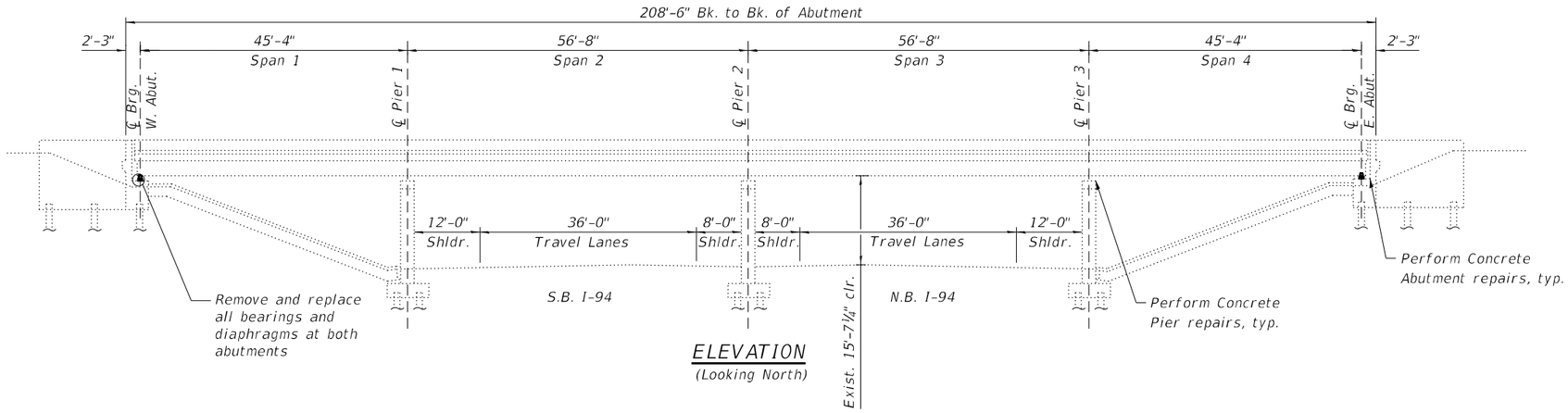
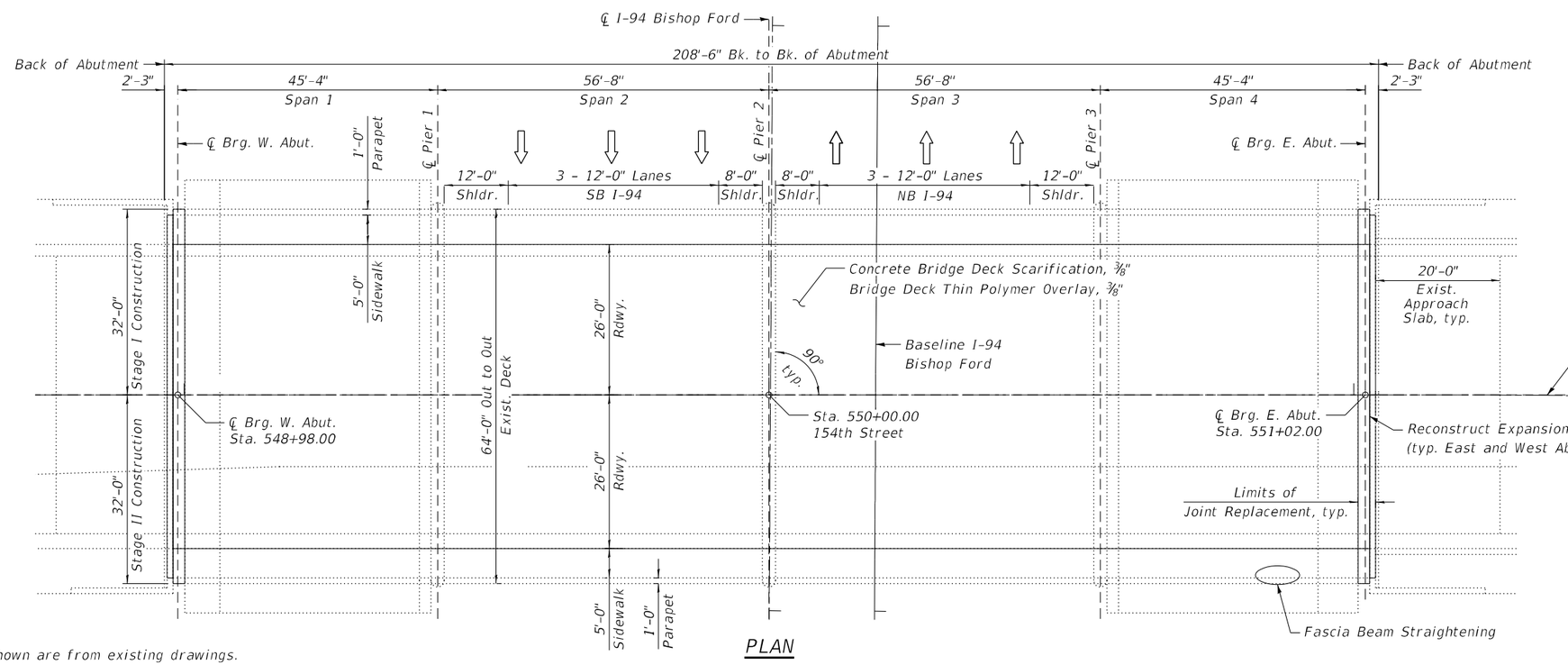
Benchmark: *Chiseled square cut in south end of west Pier 154th St. Bridge over I-94. Elev. 598.38*

Existing Structure: *Structure No. 016-0914 was originally constructed in 1946 as 4 Span steel wide flange bridge. Structure was repaired and rehabiliated in 1968, 1980, 1981 and 1988. In 1990 the existing deck was replaced, substructure was repaired and new bearings were placed at piers. Traffic to be mantained utilizing stage construction.*

Salvage: *Timber cribbing at abutments.*



ELEVATION
(Looking North)



PLAN

NOTE:
Dimensions shown are from existing drawings.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

FIELD UNITS

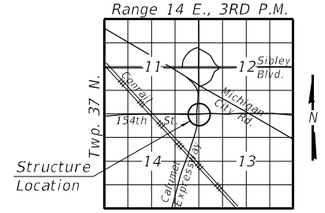
f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Structural Steel AASHTO M270 Gr. 50)

RECONSTRUCTION (1990)

f'c = 3,500 psi (Superstructure)
f'c = 1,400 psi (Substructure)
fy = 60,000 psi (Reinforcement)
fy = 36,000 psi (Structual Steel AASHTO M 183)

ORIGINAL CONSTRUCTION (1946)

f'c = 3,000 psi
fy = 40,000 psi (Reinforcement)



LOCATION SKETCH

LICENSED STRUCTURAL ENGINEER
RYAN R DOERRER
081-007941
STATE OF ILLINOIS

12/05/2024
Exp. 11/30/2026

GENERAL PLAN AND ELEVATION
154TH STREET OVER I-94 BISHOP FORD
I-94 BRIDGES FROM 154TH TO US 6
COOK COUNTY
STATION 550+00.00
STRUCTURE NO. 016-0914

USER NAME =	DESIGNED - JS	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 016-0914
SHEET S07-01 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	640
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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GENERAL NOTES

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, all heavy or loose rust, loose mill scale, and other loose detrimental foreign material shall be removed from the surfaces in contact with concrete (SSPC-SP3 standards). 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 paid for according to Article 109.04 of the Standard Specifications.

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 ¼ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Proposed elevations are based on the existing drawing profile and adjusted to account for the proposed overlay.

Fasteners shall be ASTM F 3125 Grade A325 Type 1. Fasteners shall be hot dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel." Bolts ¾ in. Φ holes $^{13}/_{16}$ in. Φ, unless otherwise noted.

All new structural steel shall be galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel."

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 Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures."

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

It is the Contractor's responsibility to temporarily support the existing signal interconnect and all other utilities interfering with proposed work, as required. Embedment in the south parapet shall be reestablished. Cost included in Concrete Superstructure.

The contractor shall exercise caution during removal and construction operations to avoid damaging the existing signal interconnect and all other utilities. Any damage to the signal interconnect or other utilities caused by the Contractor in the performance of their work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.

All exposed concrete edges shall have a ¾" x 45 degree chamfer except where shown otherwise.

The contractor shall salvage the wood cribbing supporting some of the abutment beam ends and diaphragms. The wood cribbing shall be transported, unloaded, and stacked by the Contractor to the District Bridge Yard in Elk Grove at 1101 Biesterfield Road during the week days of Monday-Friday, and between the hours of 8am and 2pm. The Contractor shall notify the District Bridge Office 48 hours in advance of the delivery at (847) 956-1443. Cost included in Structural Steel Removal.

Joint openings shall be adjusted according with Article 520.04 of the Standard Specs. when the joint concrete is poured at an ambient temperature other than 50° F.

Expansion joint shall be fabricated to conform to the existing cross-slopes of the bridge.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of ⅛ in. (0.01 ft.) Adjustment shall be made either by grinding the surface or by shimming the bearings.

Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included to "Concrete Removal".

Cleaning and field painting of the structural steel shall be done under a separate painting contract.

Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Furnishing and Erecting Structural Steel or Structural Steel Repairs.

The Engineer shall show actual locations and size of deck repairs on As-built Plans.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	CU YD	0	2	2
Concrete Removal	CU YD	17.0	0	17.0
Slope Wall Removal	SQ YD	0	3	3
Protective Shield	SQ YD	758	0	758
Concrete Structures	CU YD	0.0	1	1.0
Concrete Superstructure	CU YD	17.2	0	17.2
Protective Coat	SQ YD	1,443	0	1,443
Furnishing And Erecting Structural Steel	POUND	5,830	0	5,830
Reinforcement Bars, Epoxy Coated	POUND	2,630	0	2,630
Bar Splicers	EACH	26	0	26
Slope Wall 4 Inch	SQ YD	0	3	3
Preformed Joint Strip Seal	FOOT	124	0	124
Elastomeric Bearing Assembly, Type II	EACH	20	0	20
Anchor Bolts, 1"	EACH	80	0	80
Epoxy Crack Injection	FOOT	0	259	259
Jack and Remove Existing Bearings	EACH	0	20	20
Structural Steel Removal	POUND	5,430	0	5,430
Structural Steel Repair	POUND	10,650	0	10,650
Cleaning Drainage System	L SUM	0.34	0	0.34
Concrete Bridge Deck Scarification 3/8"	SQ YD	1,430	0	1,430
Bridge Deck Thin Polymer Overlay, 3/8"	SQ YD	1,430	0	1,430
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	SQ FT	0	679	679
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	SQ FT	0	46	46
Deck Slab Repair (Full Depth, Type I)	SQ YD	1	0	1
Deck Slab Repair (Partial)	SQ YD	4	0	4
Beam Straightening	L SUM	0.34	0	0.34
Temporary Shoring and Cribbing	EACH	0	23	23

SCOPE OF WORK

1. Remove and replace the abutment bearings with elastomeric bearings.
2. Remove and replace diaphragms at both abutments.
3. Perform Structural Steel Beam End and Midspan Repairs at the locations shown in the drawings.
4. Straighten impact damage on Beam 1 in Span 4.
5. Perform Structural Repair of Concrete and Epoxy Crack Injection to the abutments and Piers as shown in the drawings.
6. Perform ⅜" Bridge Deck Scarification.
7. Perform Deck slab repairs as required.
8. Remove and replace deck expansion joints at the North and South Abutments. Install new Preformed Joint Strip Seals.
9. Apply a ⅜" thin Polymer Deck Overlay on Bridge Deck.
10. Apply Protective Coat.

INDEX OF SHEETS

USER NAME =	DESIGNED - JS	REVISED -	
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PLOT SCALE =	DRAWN - SVJ	REVISED -	
PLOT DATE =	CHECKED - RRD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 016-0914
SHEET S07-02 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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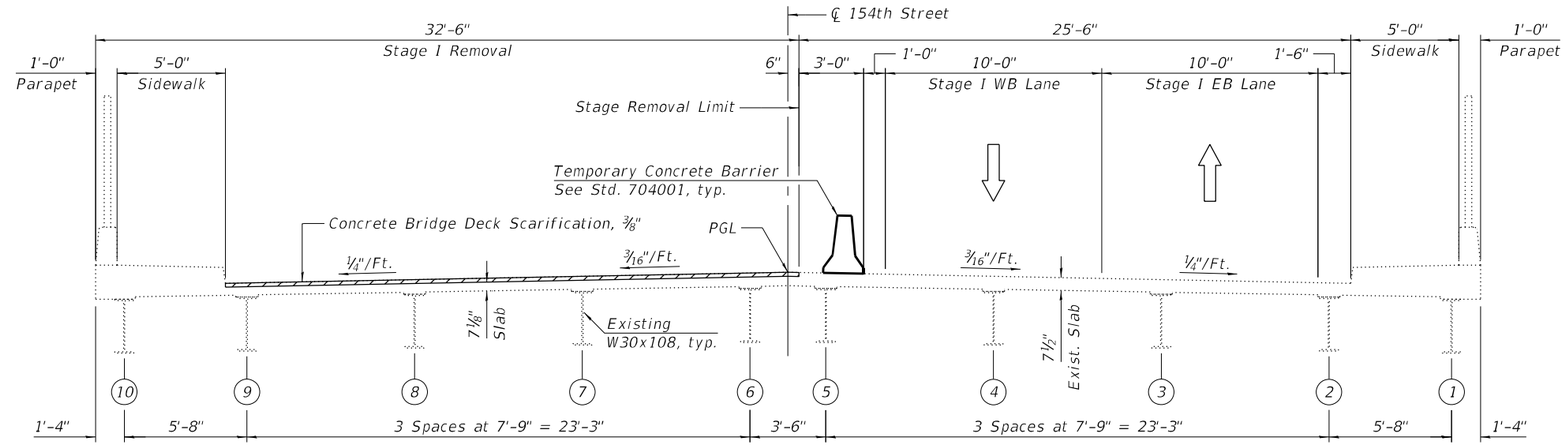
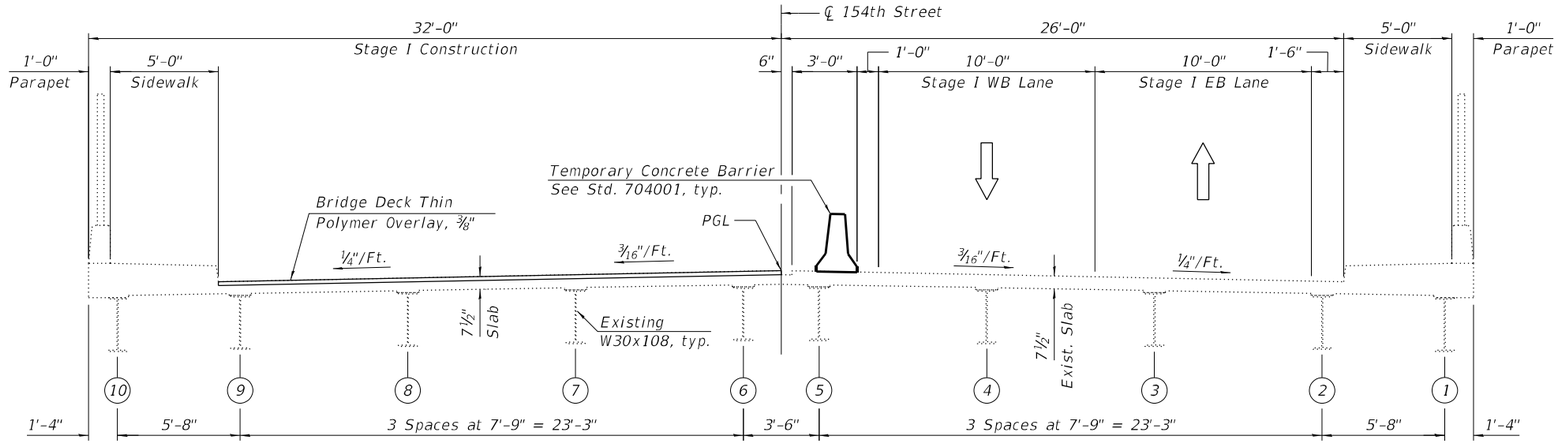
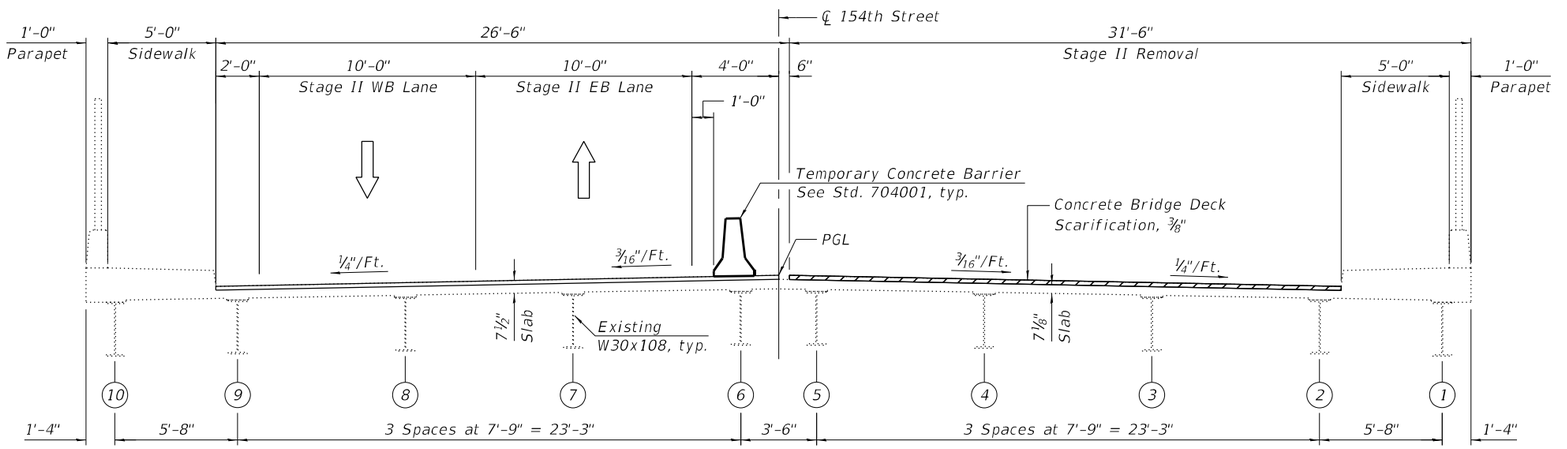
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



STAGE I REMOVAL
(Looking East)



STAGE I CONSTRUCTION
(Looking East)



STAGE II REMOVAL
(Looking East)

NOTE:
Joint removal and reconstruction not shown but included in the removal and construction limits shown.

LEGEND

Bridge Deck Scarification

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REMOVAL AND CONSTRUCTION STAGING (1 OF 2)
STRUCTURE NO. 016-0914
SHEET S07-03 OF S07-25 SHEETS

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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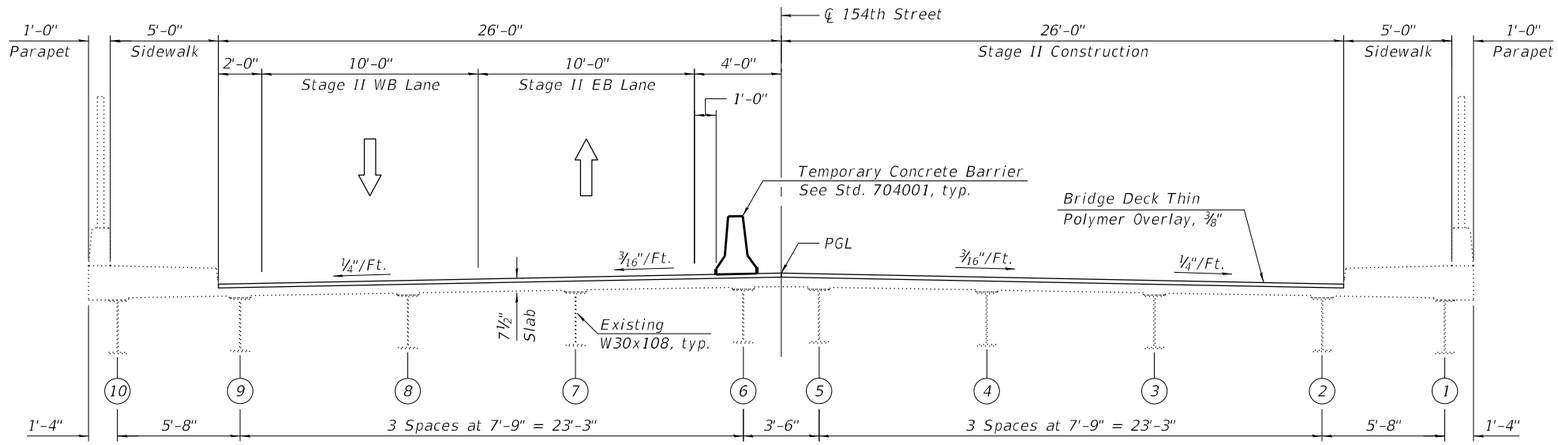
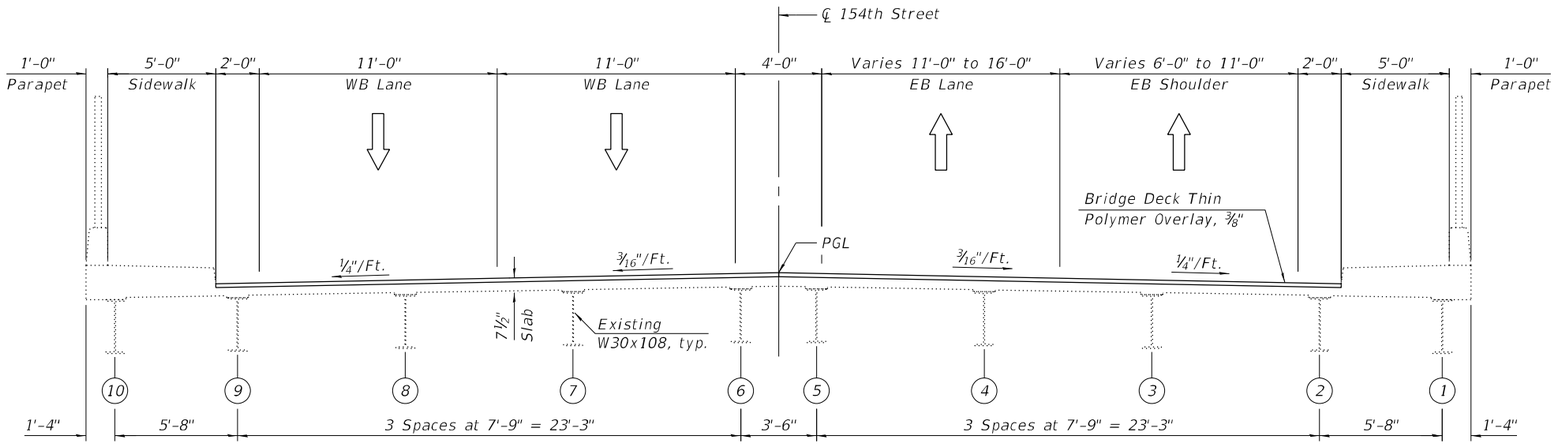
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



STAGE II CONSTRUCTION

(Looking East)



FINAL DECK CROSS SECTION

(Looking East)

NOTE:

Joint removal and reconstruction not shown but included in the removal and construction limits shown.

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REMOVAL AND CONSTRUCTION STAGING (2 OF 2)
STRUCTURE NO. 016-0914
SHEET S07-04 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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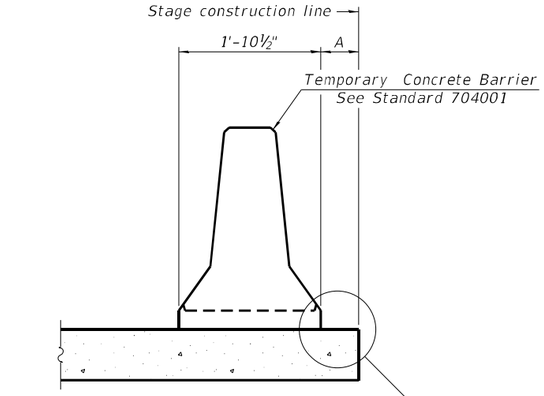
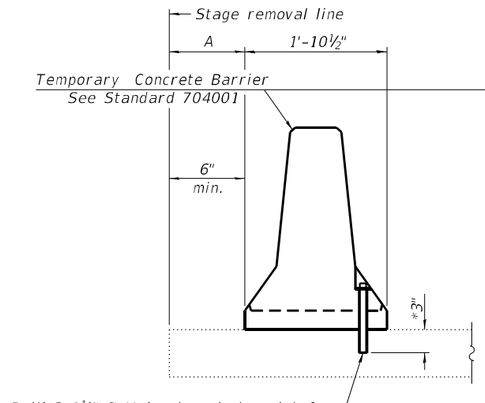
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



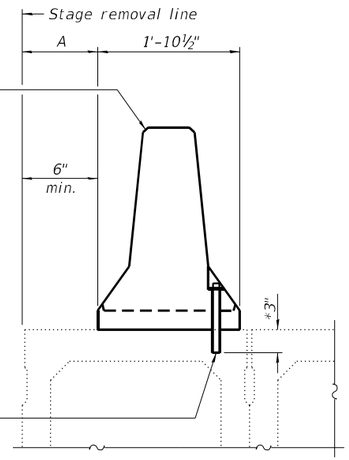
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1¼" 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".

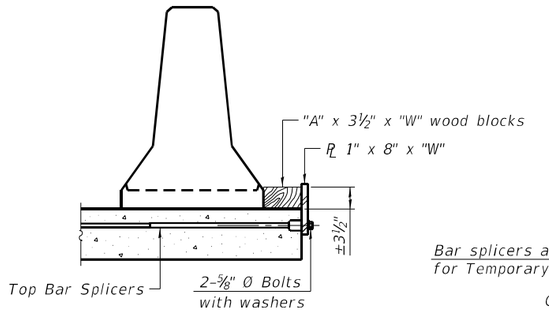
EXISTING SLAB



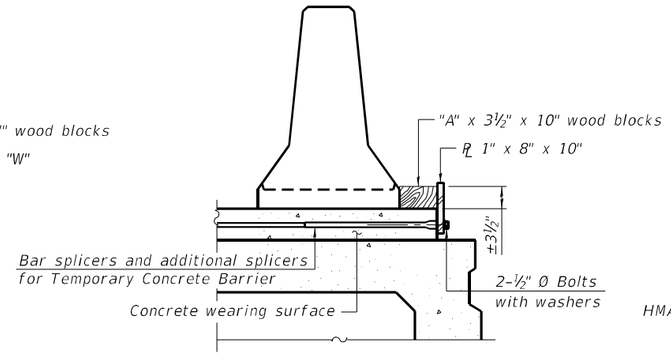
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

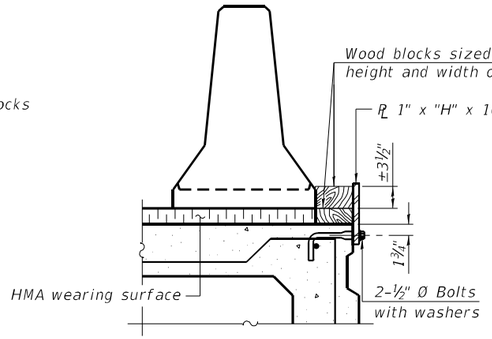
SECTIONS THRU SLAB OR DECK BEAM



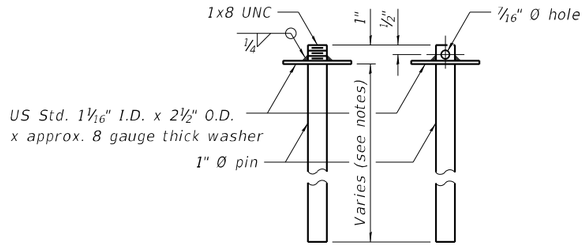
DETAIL I



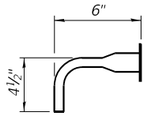
DETAIL II



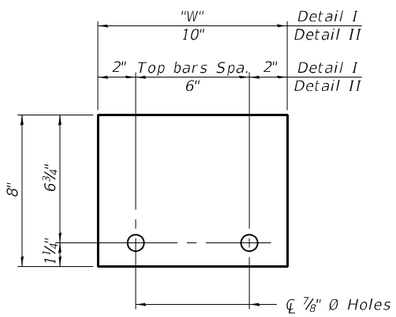
DETAIL III



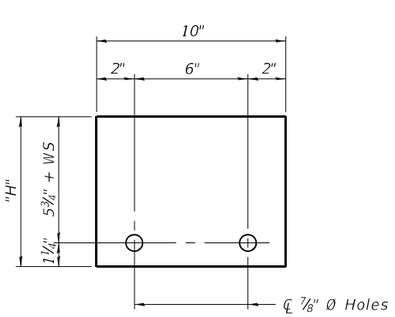
RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III



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



STEEL RETAINER ℄ 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 ℄ 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 1½", 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

5-15-2023

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PLOT DATE =	CHECKED - RRD	REVISED -	

TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 016-0914

SHEET S07-05 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	644
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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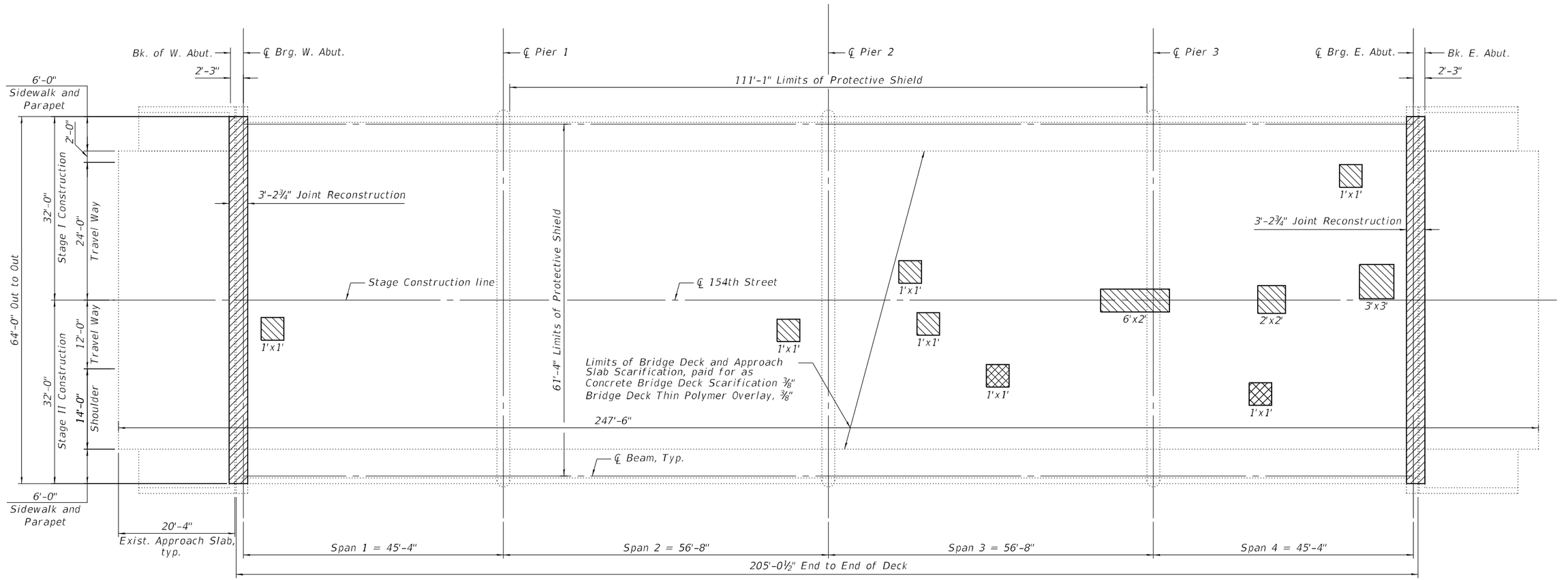

DECK PLAN

NOTES:

1. Areas of deck repair shown are estimated. The Engineer shall determine actual locations of deck repairs at the time of construction.
2. For West and East Abutment Expansion Joint Removal and Reconstruction, see Sheets S07-07 thru S07-08.
3. Protective coat shall be applied to top and inside face of reconstructed parapets, reconstructed sidewalks, reconstructed transverse joint areas and the surface of the new overlay. Protective coat need not be applied to existing exposed concrete surfaces.
4. 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.
5. The Contractor shall exercise extreme caution during Concrete Removal to avoid damaging the steel beams and diaphragms. Any damage to the existing steel beams and/or diaphragms caused by the Contractor in the performance of their work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.
6. Existing bridge fencing is to be protected during construction. Post location in the removal area for the joint replacement shall be temporally shored during the concrete removal and replacement. Existing concrete anchor shall be replaced in kind and installed into the proposed parapet. Cost included in Concrete Removal.
7. Removal and disposal of the existing expansion joints will not be paid for separately, but are included in the cost of Concrete Removal.
8. The Contractor must exercise extreme care with the existing conduits in the sections of the parapets to be removed and to protect and support the conduit during construction. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damaged resulting from this work. The Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
9. If the existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original locations in accordance with IDOT Standard 515001. Cost included with Concrete Superstructure.
10. Adjust Deck Slab Repairs (Full Depth, Type I) limits as required to meet field conditions.

LEGEND:

- Deck Slab Repair (Partial)
- Deck Slab Repair (Full Depth, Type I)
- Concrete Removal

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Coat	Sq Yd	1,443
Bridge Deck Thin Polymer Overlay, ⅜"	Sq Yd	1,430
Concrete Bridge Deck Scarification ⅜"	Sq Yd	1,430
Protective Shield	Sq Yd	758
Jack and Remove Existing Bearings	Each	20
Deck Slab Repair (Full Depth, Type I)	Sq Yd	1
Deck Slab Repair (Partial)	Sq Yd	4

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE DECK REPAIR PLAN AND DETAILS
STRUCTURE NO. 016-0914
SHEET S07-06 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	645
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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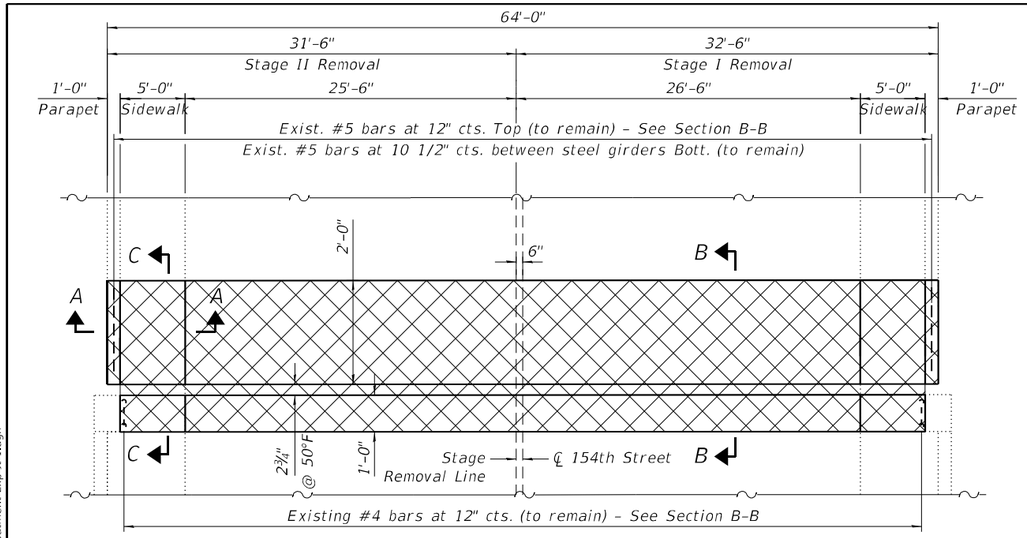
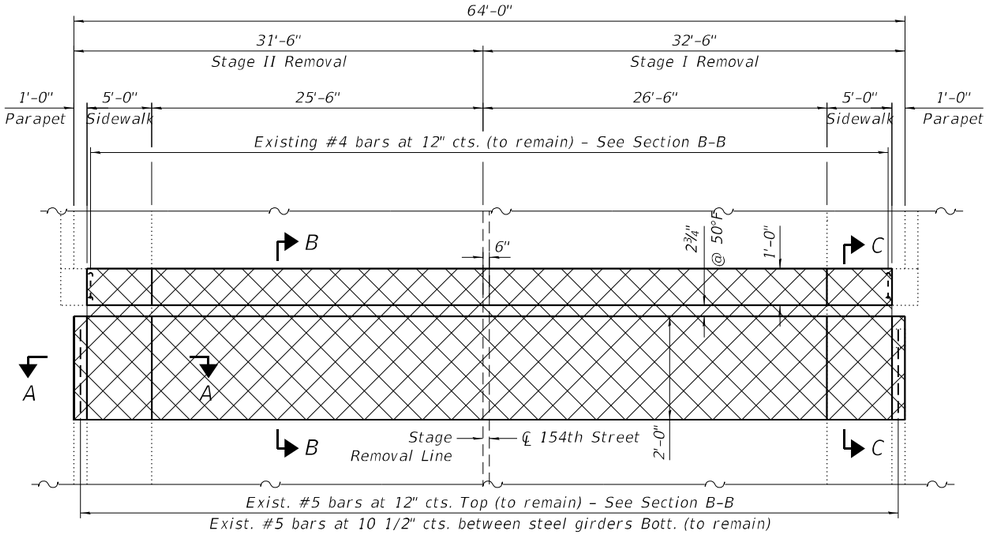
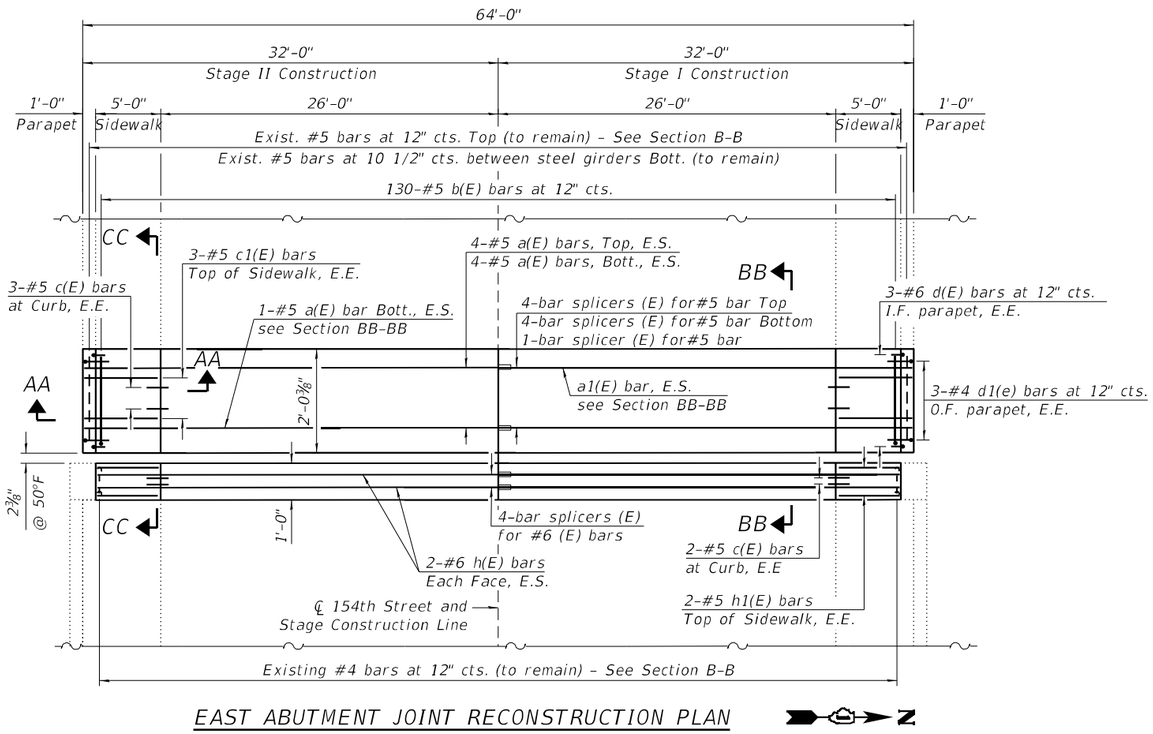


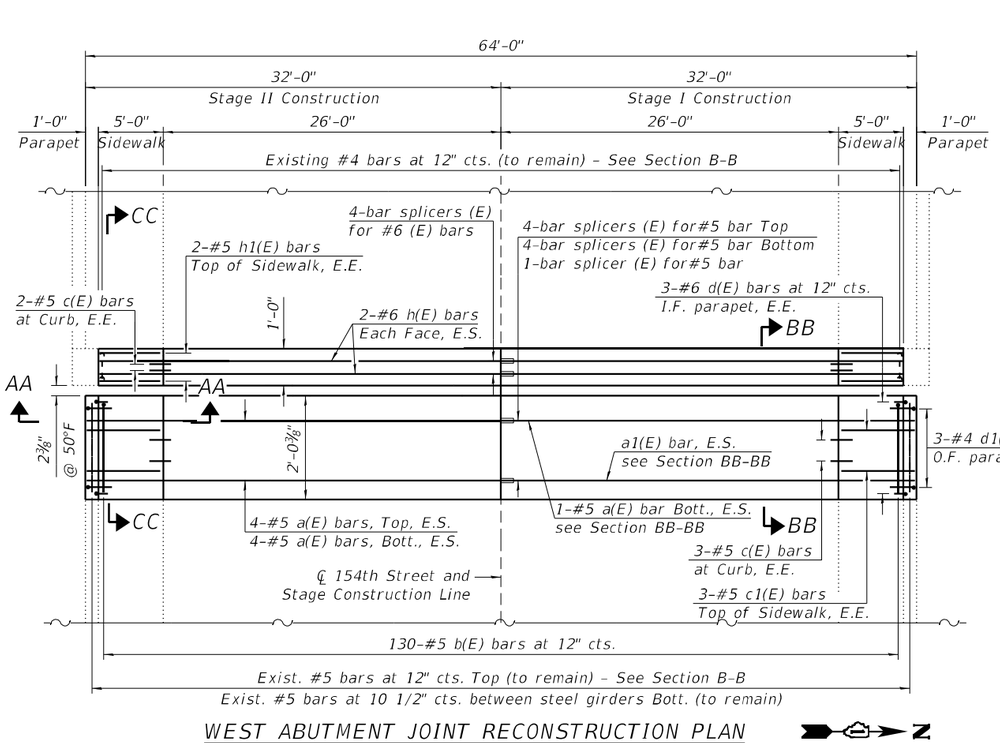
EAST ABUTMENT JOINT REMOVAL PLAN



WEST ABUTMENT JOINT REMOVAL PLAN



EAST ABUTMENT JOINT RECONSTRUCTION PLAN



WEST ABUTMENT JOINT RECONSTRUCTION PLAN

LEGEND:

Concrete Removal

O.F. = Outside Face
I.F. = Inside Face
E.E. = Each End
E.S. = Each Side (of stage construction line)

NOTES:

1. For Preformed Joint Strip Seal details, see Sheet S07-09 thru S07-11.
2. For Bar Splicer Assembly details, see Sheet S07-24.
3. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
4. See Sheet S0-08 for Sections and Bill of Material.

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E. & W. ABUT. EXP. JOINT REMOVAL & RECONSTRUCTION PLAN
STRUCTURE NO. 016-0914
SHEET S07-07 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	646
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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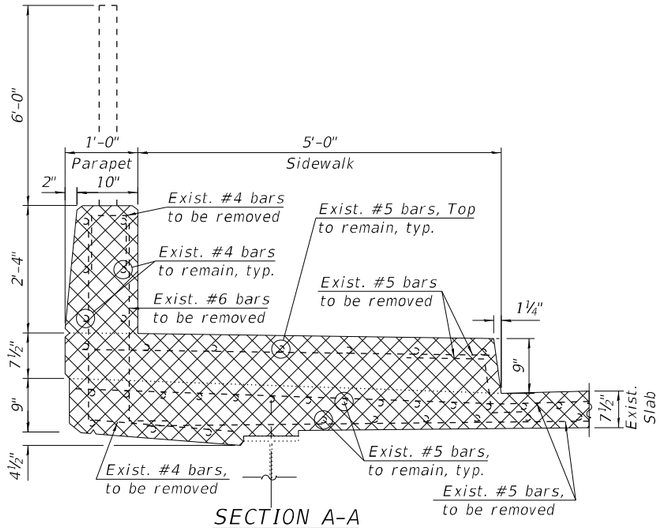
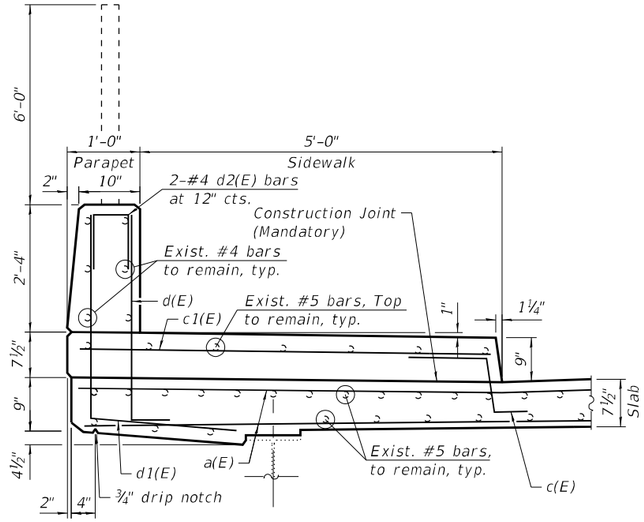


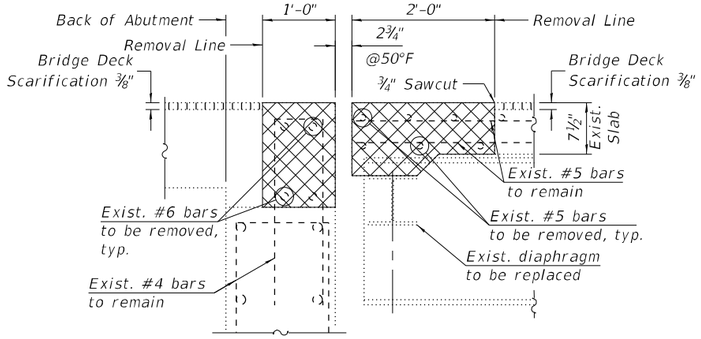
SECTION A-A



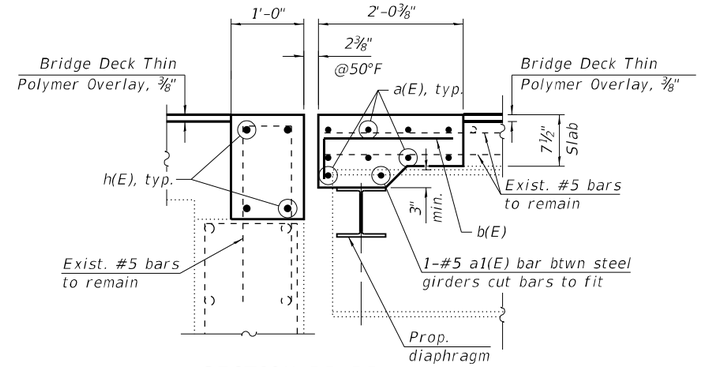
SECTION AA-AA

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	36	#5	31'-8"	
a1(E)	16	#5	6'-6"	
b(E)	130	#5	2'-2"	
c(E)	20	#5	2'-5"	
c1(E)	12	#5	5'-7"	
d(E)	12	#6	4'-4"	
d1(E)	12	#4	4'-8"	
d2(E)	8	#4	2'-1"	
h(E)	16	#6	30'-8"	
h1(E)	8	#6	4'-6"	
Concrete Removal			Cu. Yd.	17.0
Concrete Superstructure			Cu. Yd.	17.2
Reinforcement Bars, Epoxy Coated			Pound	2,630



SECTION B-B



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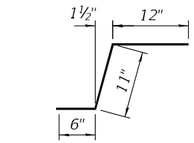
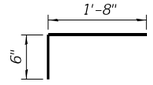
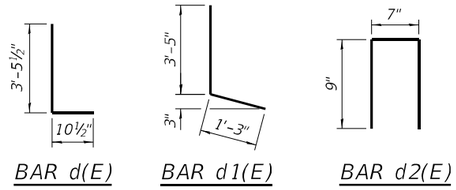


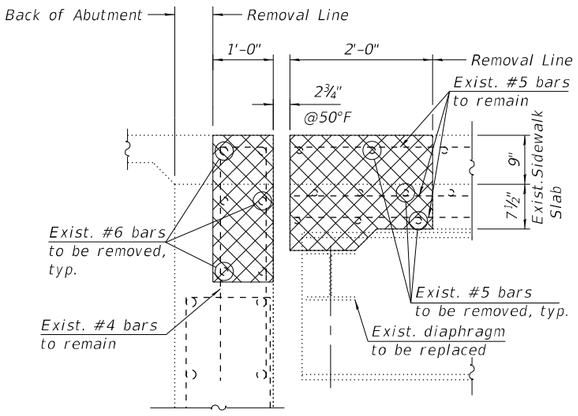
BAR c(E)



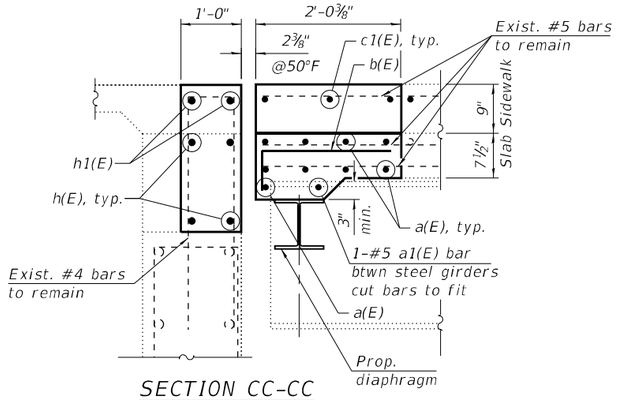
BAR b(E)



BAR d(E) BAR d1(E) BAR d2(E)



SECTION C-C



SECTION CC-CC

NOTE:

1. Cut a1(E) bars to fit between girders 1 and 2 and 9 and 10.

LEGEND:

Concrete Removal

Bridge Deck Scarification ⅜"

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STRUCTURE NO. 016-0914
SHEET S07-08 OF S07-25 SHEETS

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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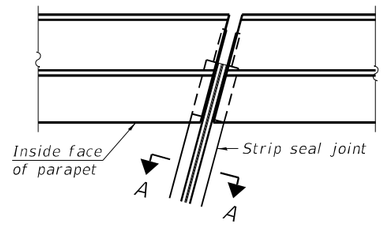
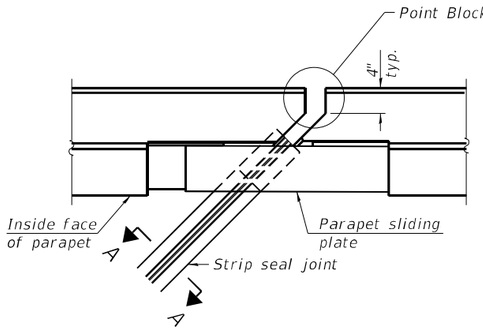
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

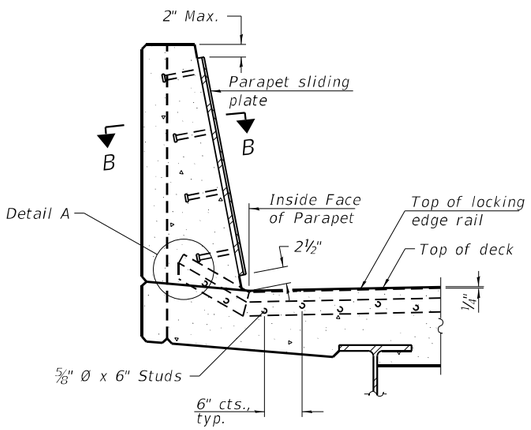


FOR SKEWS ≤ 30°



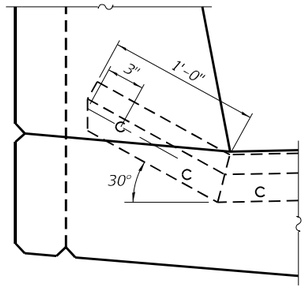
FOR SKEWS > 30°

PLAN AT PARAPET

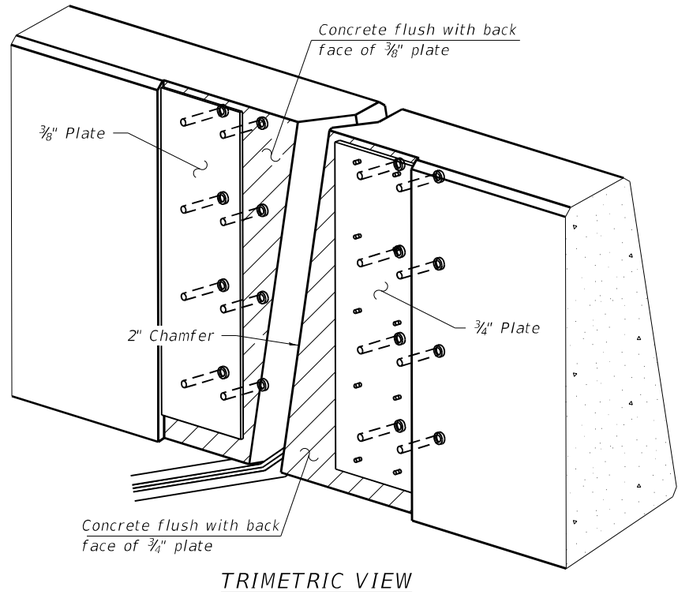


SECTION AT PARAPET

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

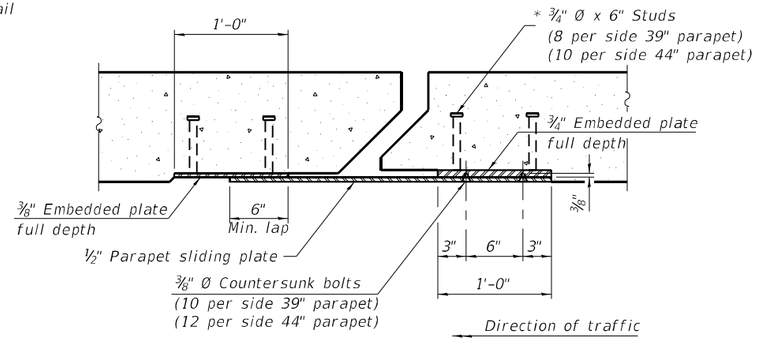


DETAIL A

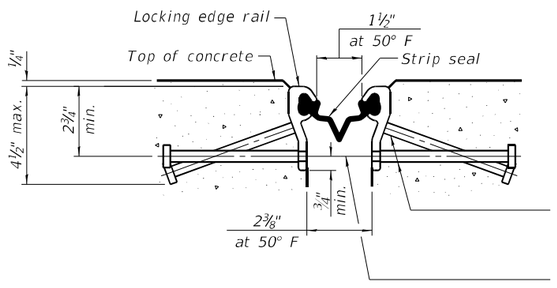


TRIMETRIC VIEW

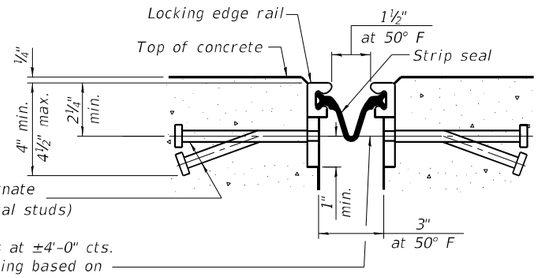
(Showing embedded plates only)



SECTION B-B



SHOWING ROLLED RAIL JOINT



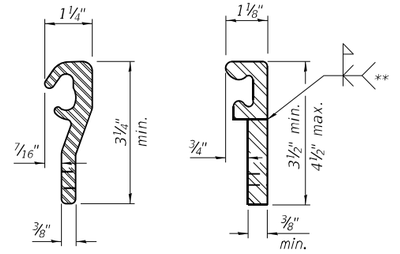
SHOWING WELDED RAIL JOINT

* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅜" ϕ threaded rods in 7/16" ϕ 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.

SECTION A-A

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

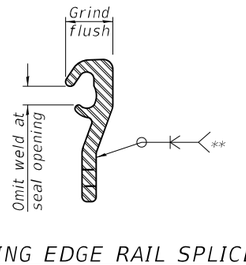


ROLLED (EXTRUDED) RAIL

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.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". 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 4½" 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.

The top surface of sidewalk sliding plates shall have a raised pattern according to ASTM A786.

Cost of parapet sliding plates, sidewalk sliding plates, embedded plates, anchorage studs, and expansion anchors included with Preformed Joint Strip Seal.

39" constant slope barrier shown, 44" constant slope barrier 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.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	124

EJ-SS-S 11-1-2022

(Sheet 1 of 3)

USER NAME =	DESIGNED - JS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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PLOT SCALE =	DRAWN - SVJ	REVISED -	
PLOT DATE =	CHECKED - RRD	REVISED -	

PREFORMED JOINT STRIP SEAL - SIDEWALK (1 OF 3)
STRUCTURE NO. 016-0914
SHEET S07-09 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	648
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

MODEL: Default
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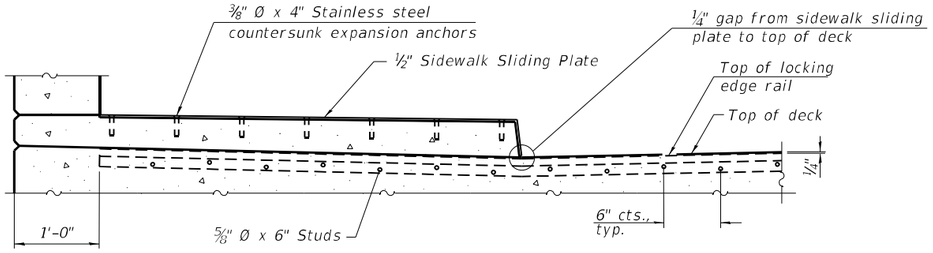
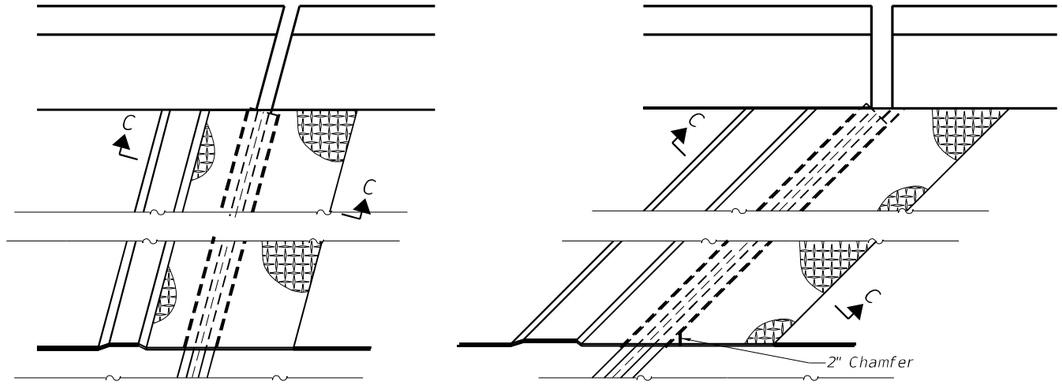


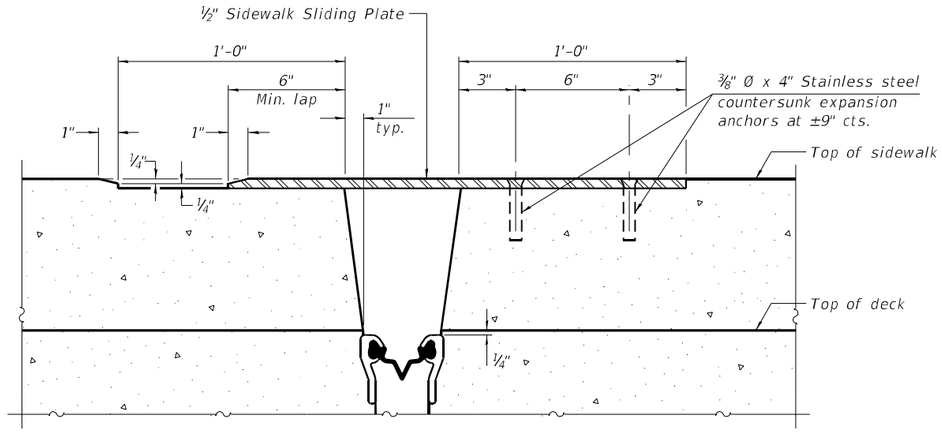
SECTION AT RAISED SIDEWALK



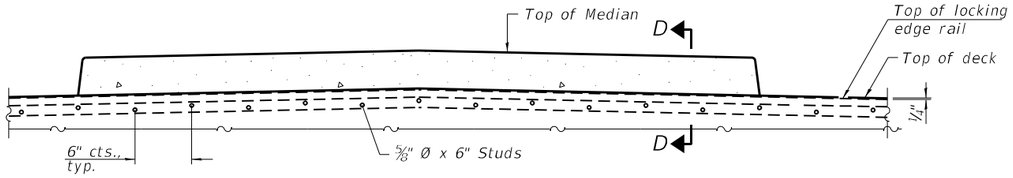
(FOR SKEWS ≤ 30°)

(FOR SKEWS > 30°)

PLAN AT RAISED SIDEWALK

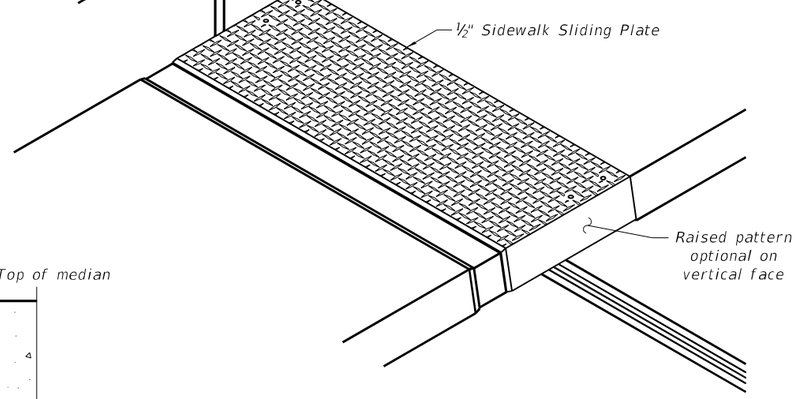


SECTION C-C

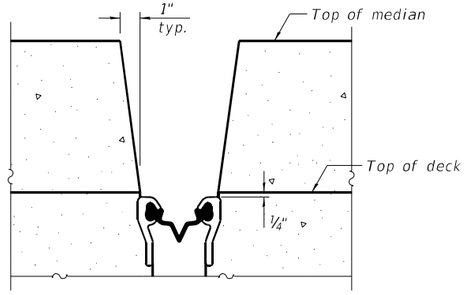


SECTION AT MEDIAN

For skews > 30°, chamfer acute corners 2" similar to sidewalk.



TRIMETRIC VIEW



SECTION D-D

(at Rt. ∠'s)

EJ-SS-S

11-1-2022

(Sheet 2 of 3)

USER NAME =	DESIGNED - JS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - RRD	REVISED -	
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PLOT DATE =	CHECKED - RRD	REVISED -	

PREFORMED JOINT STRIP SEAL - SIDEWALK (2 OF 3)
STRUCTURE NO. 016-0914

SHEET S07-10 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	649
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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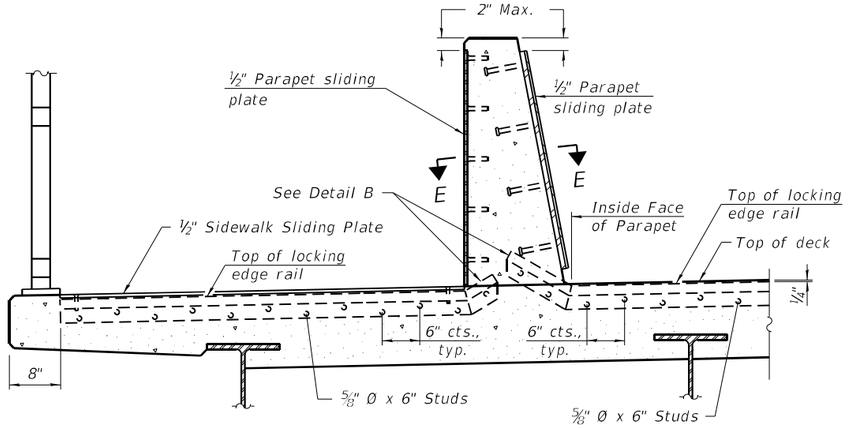
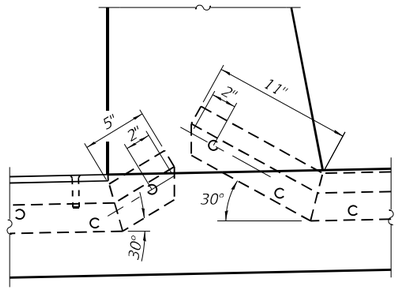
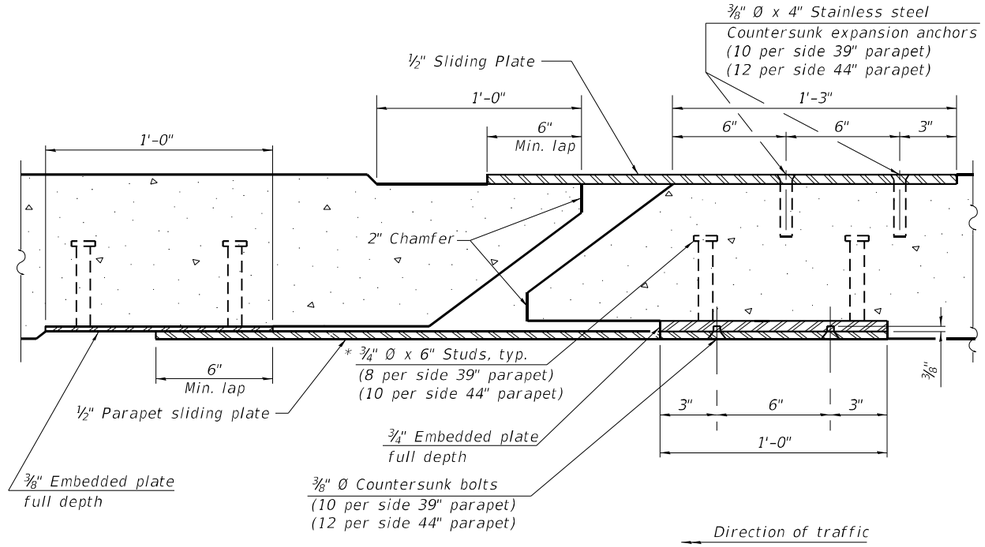


SECTION AT DECK LEVEL SIDEWALK

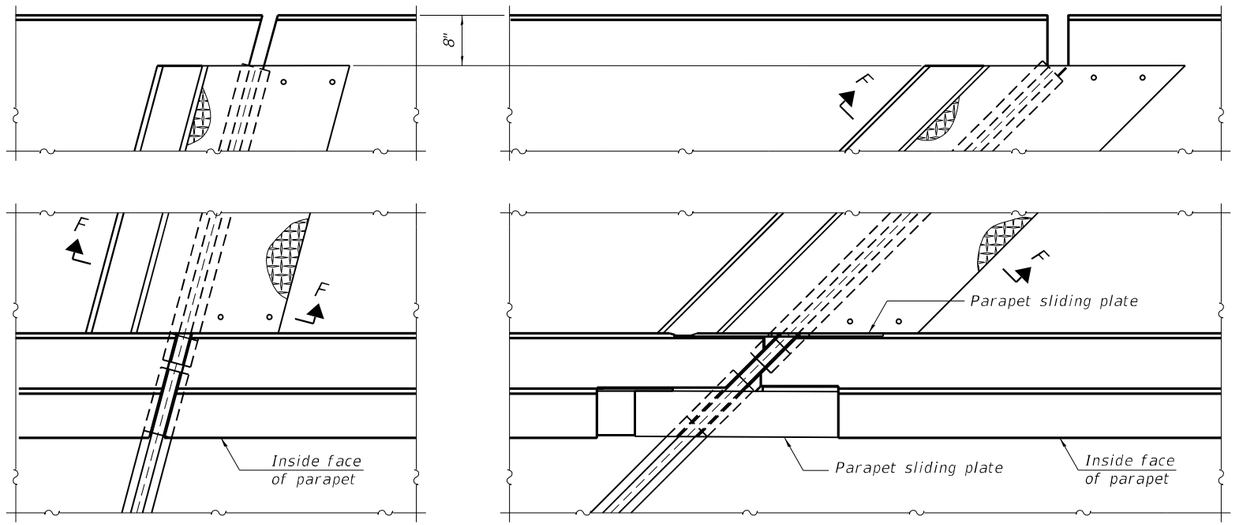
(Skews > 30° shown. Skews ≤ 30° similar except as shown in plan view.)



DETAIL B



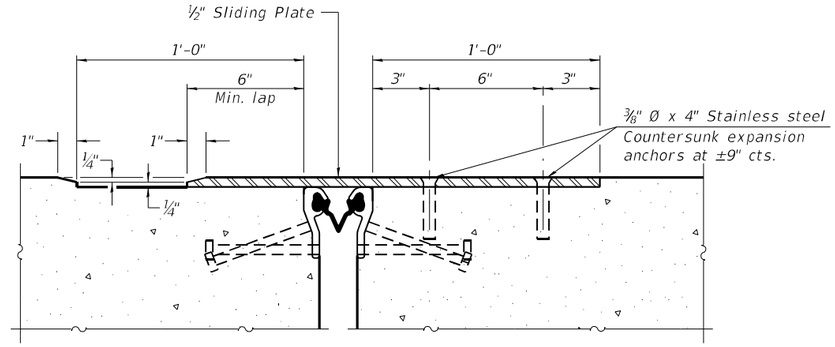
SECTION E-E



(FOR SKEWS ≤ 30°)

(FOR SKEWS > 30°)

PLAN AT DECK LEVEL SIDEWALK



SECTION F-F

EJ-SS-S

11-1-2022

(Sheet 3 of 3)

USER NAME =	DESIGNED - JS	REVISED -
	CHECKED - RRD	REVISED -
PLOT SCALE =	DRAWN - SVJ	REVISED -
PLOT DATE =	CHECKED - RRD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL - SIDEWALK (3 OF 3)
STRUCTURE NO. 016-0914

SHEET S07-11 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	650
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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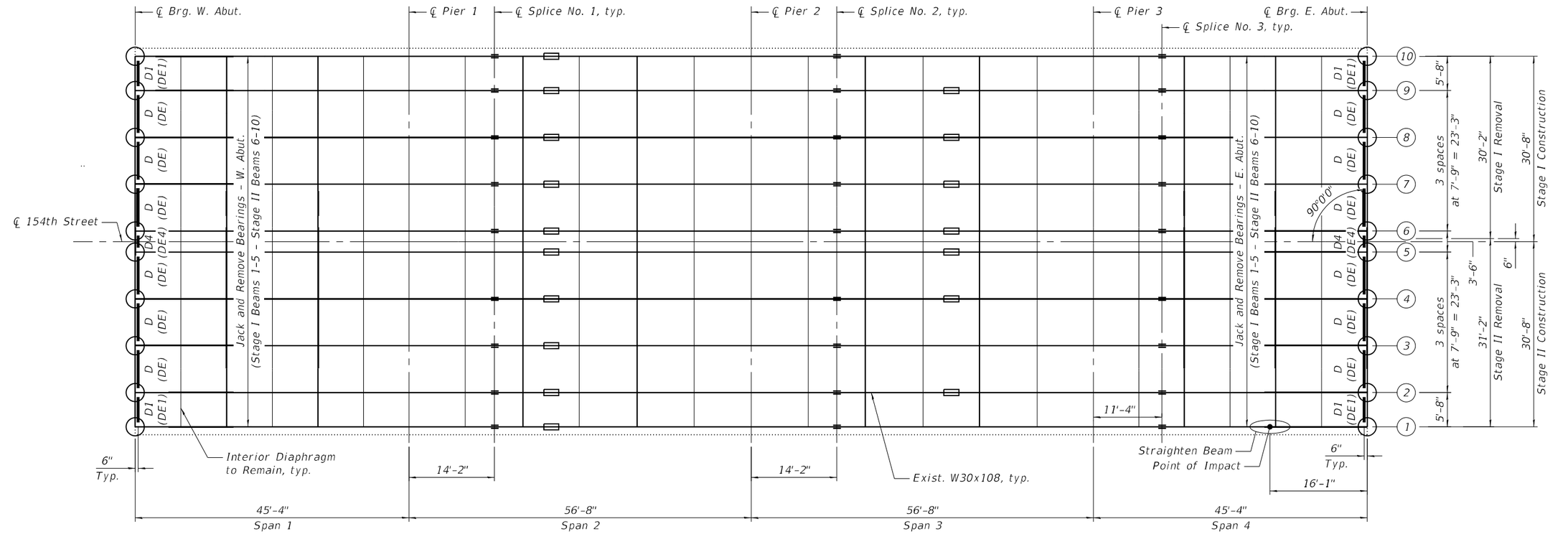

N

LEGEND

- Perform Beam End Plating. Paid for as Structural Steel Repair.
- Remove and Replace Existing Diaphragm. Paid for as Structural Steel Removal and Furnishing and Erecting Structural Steel.
- Perform Beam Mid-Span Plating. Paid for as Structural Steel Repair.

Proposed Diaphragm Name — D (DE) — Existing Diaphragm Name

NOTES:

1. For Beam End and Mid-Span Repairs, Diaphragm Removal and Replacement Details and Bill of Materials, see Sheet S07-13 thru S07-15.
2. DE, DE1 and DE4 are W12x40 existing diaphragms. D, D1 and D4 are proposed W12x40 diaphragms.

USER NAME =	DESIGNED - JS	REVISED -	
	CHECKED - RRD	REVISED -	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 016-0914
SHEET S07-12 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	651
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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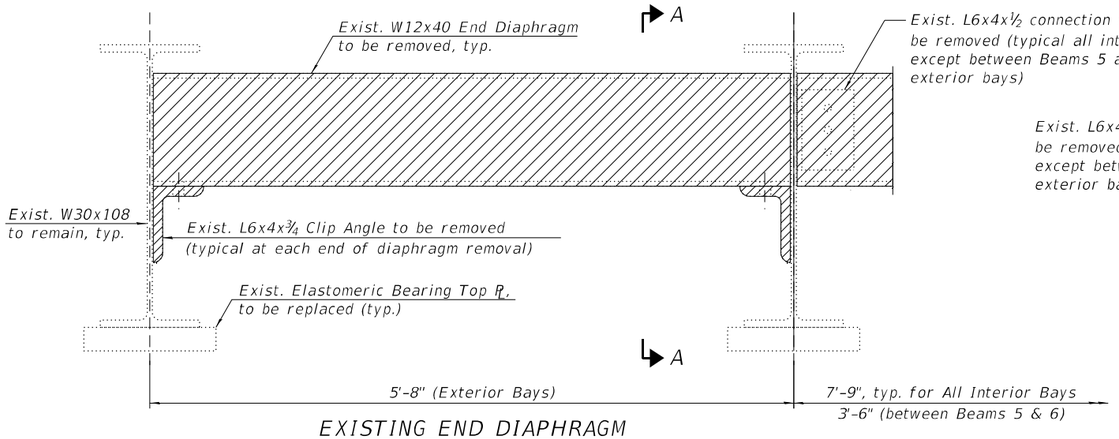
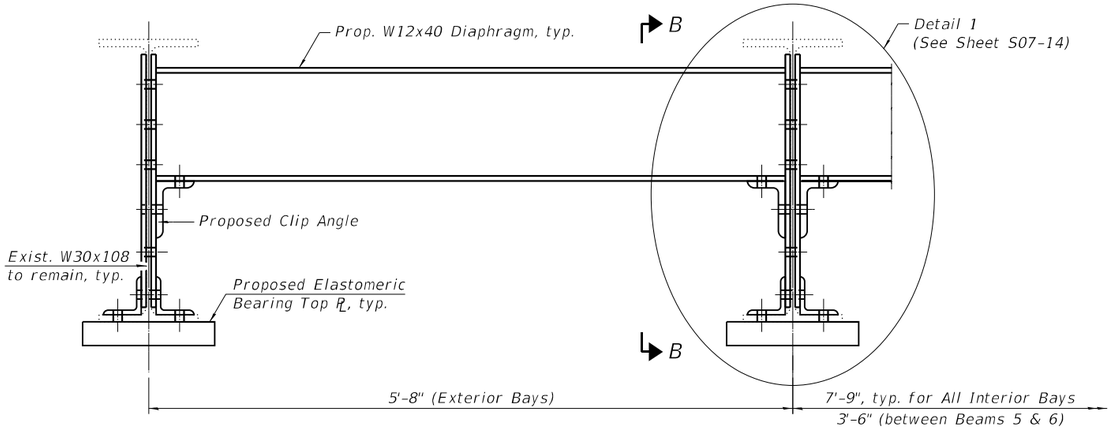


EXISTING END DIAPHRAGM

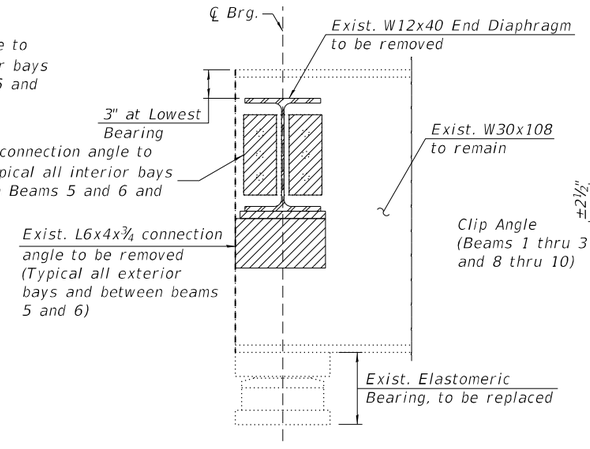


SHOWING EXTERIOR END PLATING LOCATIONS

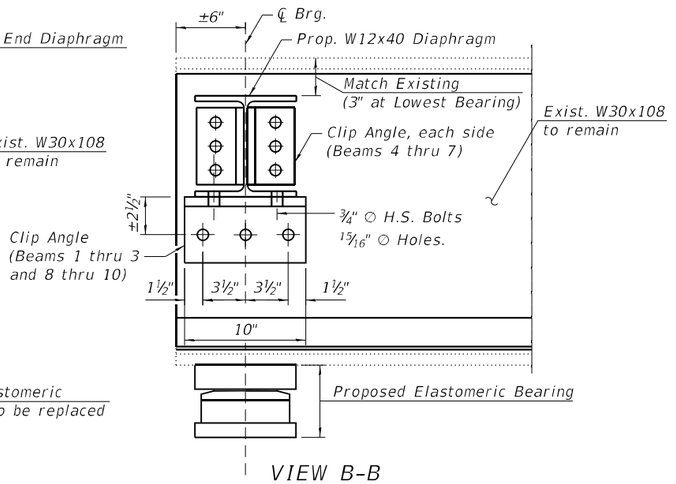
(Beams 1 & 10 only – Exterior Bays)

SHOWING BEAM END PLATING LOCATIONS

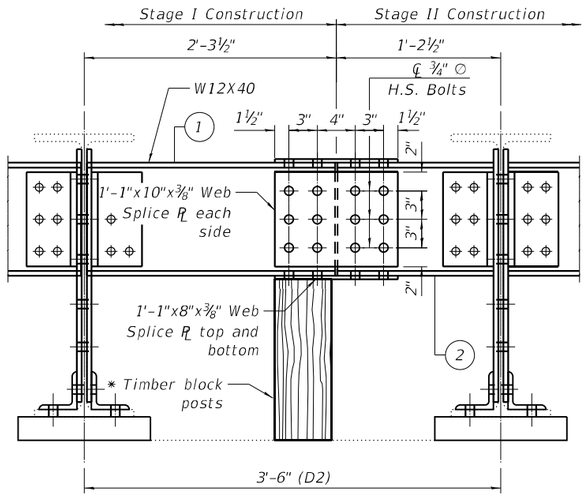
PROPOSED END DIAPHRAGM



VIEW A–A



VIEW B–B



PROPOSED END DIAPHRAGM AT STAGE CONSTRUCTION JOINT

(See Proposed End Diaphragm detail for Connection Plate and Angle details.)

*Cost of Timber Block Posts is included with Furnishing and Erecting Structural Steel

NOTES:

1. For Framing Plan, locations of Diaphragm Removal/Replacement and Beam End and Mid-Span Repairs, see Sheet S07-12.
2. All proposed beam end repair plates and bottom flange repair angles shall conform to the requirements of AASHTO M270 Grade 50. All proposed diaphragms and their connection angles shall conform to the requirements of AASHTO M270 Grade 36.
3. Diaphragm connection holes shall be 15/16 in. diameter for ¾ in. diameter A325 bolts. Two hardened washers shall be required at all diaphragm connections and all oversized holes.
4. Existing Diaphragm and Clip Angle removal shall be paid for as Structural Steel Removal.
5. All proposed Web Repair Plates, mid-span Strengthening Plates, Flange Repair Angles, Fill Plates and associated bolts and fasteners shall be paid for as Structural Steel Repair. All proposed Diaphragms, Diaphragm Splice Plates, Clip Angles and associated bolts, washers and fasteners shall be paid for as Furnishing and Erecting Structural Steel.
6. See Sheet S07-14 for Detail 1.

END DIAPHRAGM STAGE CONSTRUCTION SEQUENCE

1. Order Diaphragm in two sections.
2. Attach section (1) of Diaphragm to Beam
3. Place Timber Block Posts between section (1) of diaphragm and abutment bearing section.
4. Attach section (2) of diaphragm to both Beam and section (1) of diaphragm during Stage II Construction with splice plates.
5. Remove Timber Block Posts.

LEGEND:

Structural Steel Removal

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	5,830
Structural Steel Removal	Pound	5,430
Structural Steel Repair	Pound	10,650

USER NAME =	DESIGNED - JS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DIAPHRAGM REPLACEMENT DETAILS STRUCTURE NO. 016-0914	
	CHECKED - RRD	REVISED -			
PLOT SCALE =	DRAWN - SVJ	REVISED -		SHEETS07-13 OF S07-25 SHEETS	
PLOT DATE =	CHECKED - RRD	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	652
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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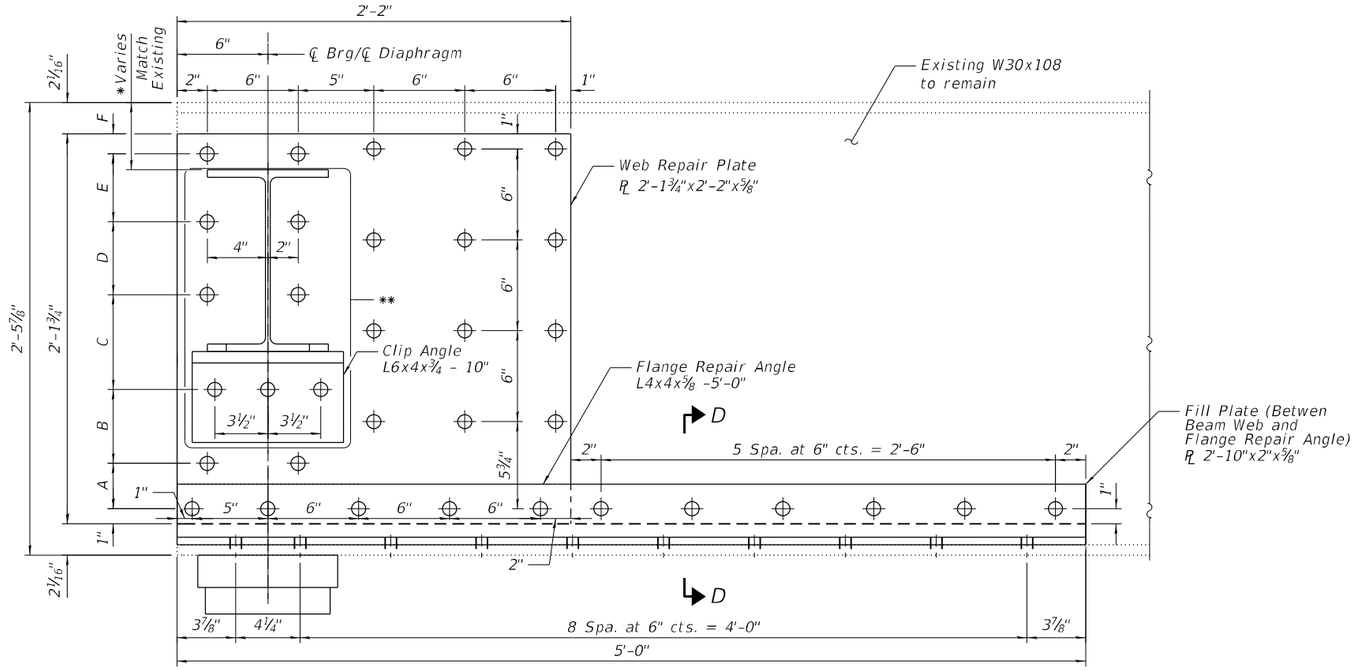


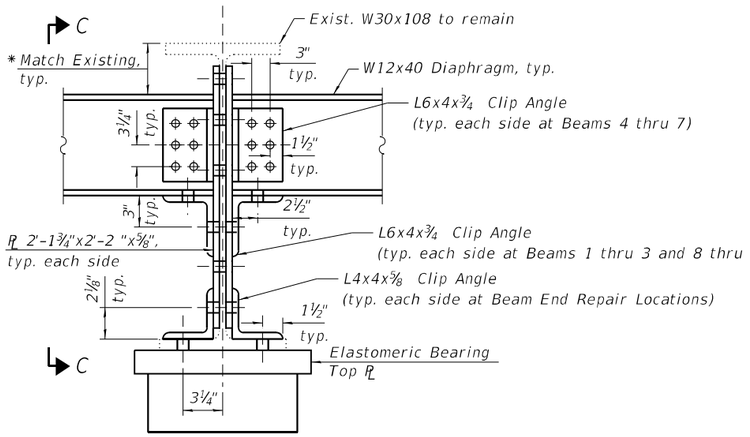
VIEW C-C

BEAMS 1 THRU 3 AND 5 THRU 10 EAST AND WEST ABUTMENTS

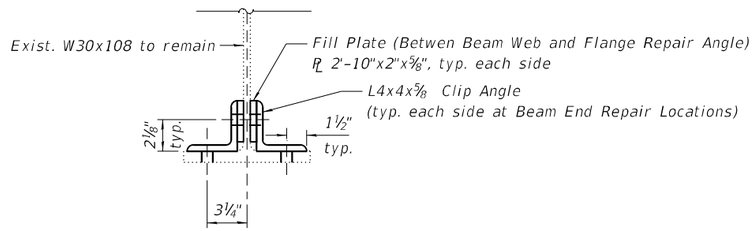
East and West Abutment						
Beam	A	B	C	D	E	F
1 & 10	3 3/4"	5 1/2"	5 1/2"	3 1/2"	3"	3 1/2"
2 & 9	3"	4 3/4"	5 1/2"	4 1/2"	6"	1"
3 & 8	3 1/2"	2 1/2"	5 3/4"	6"	6"	1"

* Distance from Top of Main Girder to Top of Proposed Diaphragm to be Field Verified prior to Ordering Material.

** Contractor to field verify diaphragm location and bolt hole locations before ordering material.



DETAIL 1



SECTION D-D

VIEW C-C

BEAMS 4 THRU 7 EAST AND WEST ABUTMENTS

NOTES:

1. For Notes and Bill of Material see Sheet S07-13.
2. For Locations of Diaphragm Removal/Replacement and Beam End and Mid-Span Repairs, see Sheet S07-12.
3. See Sheet S07-13 for Clip Angle lengths.
4. Contractor to field verify hole locations before ordering material. Contractor can elect to field drill holes in repair plates.

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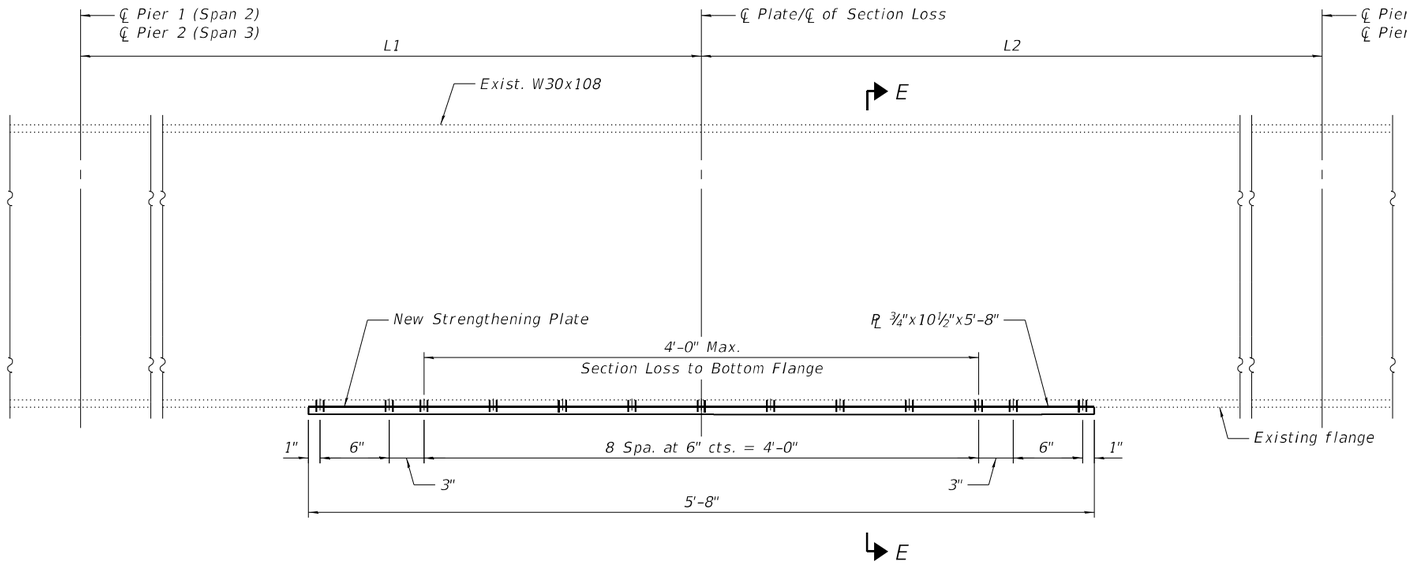
PLOT DATE =	CHECKED - RRD	REVISED -

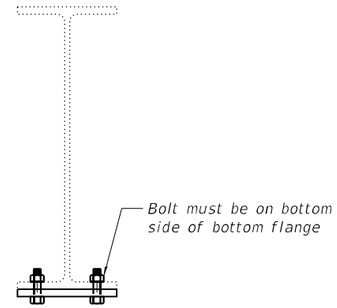
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM END PLATING DETAILS
STRUCTURE NO. 016-0914
SHEET S07-14 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	653
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



PARTIAL ELEVATION
(Looking North)



SECTION E-E

Mid-Span Repair Detail Table					
Direction of Travel I-94	Beam #	Span Number	Pier Reference	Distance from CL Plate to CL Pier	
				L1	L2
Northbound	2	3	3		32'-0"
Northbound	4	3	3		32'-0"
Northbound	5	3	3		32'-0"
Northbound	6	3	3		32'-0"
Northbound	7	3	3		32'-0"
Northbound	8	3	3		32'-0"
Northbound	9	3	3		32'-0"
Southbound	1	2	1	27'-10"	
Southbound	2	2	1	31'-0"	
Southbound	3	2	1	31'-0"	
Southbound	4	2	1	31'-0"	
Southbound	5	2	1	29'-0"	
Southbound	6	2	1	29'-0"	
Southbound	7	2	1	31'-0"	
Southbound	8	2	1	25'-0"	
Southbound	9	2	1	25'-0"	
Southbound	10	2	1	28'-0"	

NOTES:

1. For Notes and Bill of Material see Sheet S07-13.

2. Contractor to field verify hole locations before ordering material. Contractor can elect to field drill holes in repair plates.

USER NAME =	DESIGNED - JS	REVISED -	
	CHECKED - RRD	REVISED -	
PLOT SCALE =	DRAWN - SVJ	REVISED -	
PLOT DATE =	CHECKED - RRD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM MID SPAN REPAIR DETAILS
STRUCTURE NO. 016-0914
SHEET S07-15 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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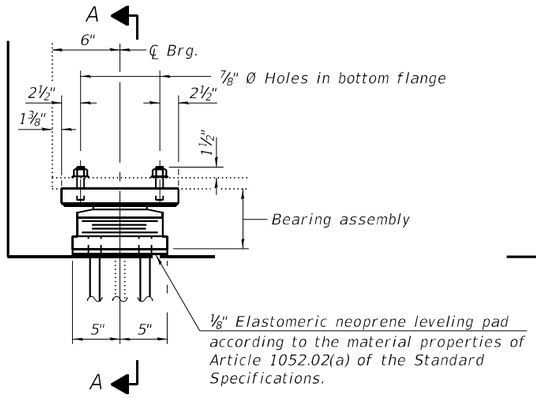
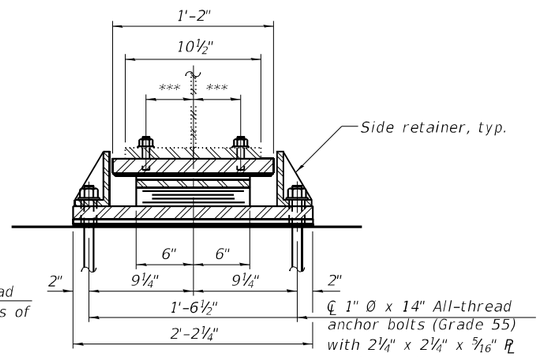
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



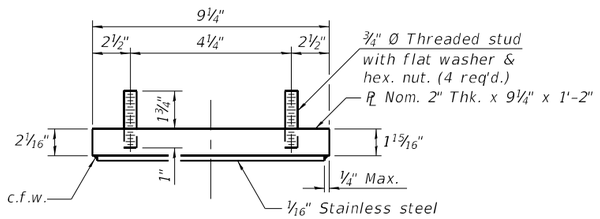
ELEVATION AT ABUT.



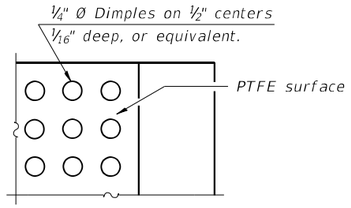
SECTION A-A

*** Match Existing

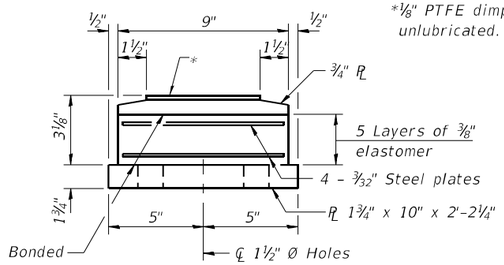
TYPE II ELASTOMERIC EXP. BRG.



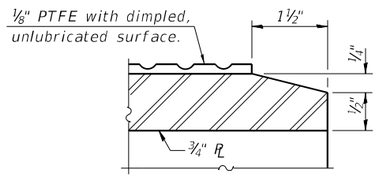
TOP BEARING ASSEMBLY



PLAN-PTFE SURFACE

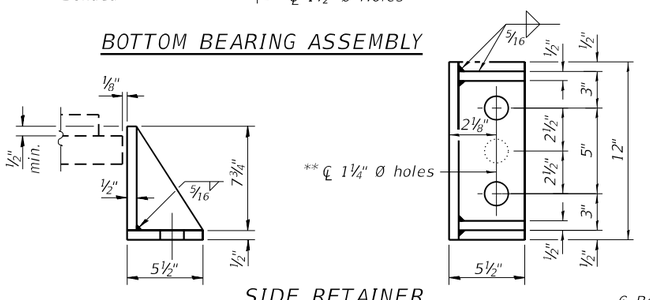


*⅛" PTFE dimpled, unlubricated.



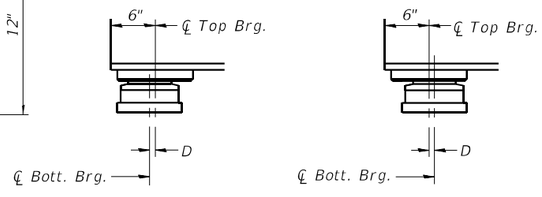
SECTION THRU PTFE

BOTTOM BEARING ASSEMBLY



SIDE RETAINER

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



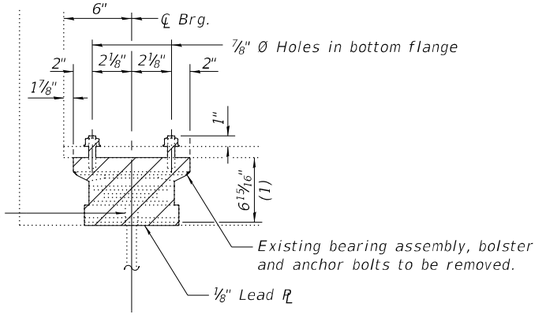
BELOW 50°F. ABOVE 50°F.

D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

EXPANSION BEARING ORIENTATION

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.

** Center of proposed anchor bolts must be at least 2¼" away from center of existing anchor bolts.



EXISTING BEARING REMOVAL

(1) Contractor shall measure in field the distance between bottom of existing bottom flange and top of bearing seat prior to ordering material. Cost is included with "Jack and Remove Existing Bearings".

GIRDER REACTIONS

Bearing Location	DL (kips)	LL (kips)	IM (kips)	Total (kips)
E. & W. Abut. - Beam 1 and 10	20.6	47.2	13.9	81.7
E. & W. Abut. - Beam 5 and 6	20.4	47.2	13.9	81.5
E. & W. Abut. - Beams 2 thru 4 and 7 thru 9	23.9	47.2	13.9	85.0

Service girder self-weight and deck weight prior to overlay are shown. The Contractor shall design and place jacking system to reposition the specified bearing for the stated reactions and as required in the special provision.

Loads are per Girder.

Notes:

Side retainers and leveling pad required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.

The ⅛" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

See Sheet S07-06 for Jack and Remove Existing Bearings Bill of Material and Staging Details.

See Sheet S07-23 for existing bearing removal detail and "Jack and Remove Existing Bearings Procedures".

BILL OF MATERIAL

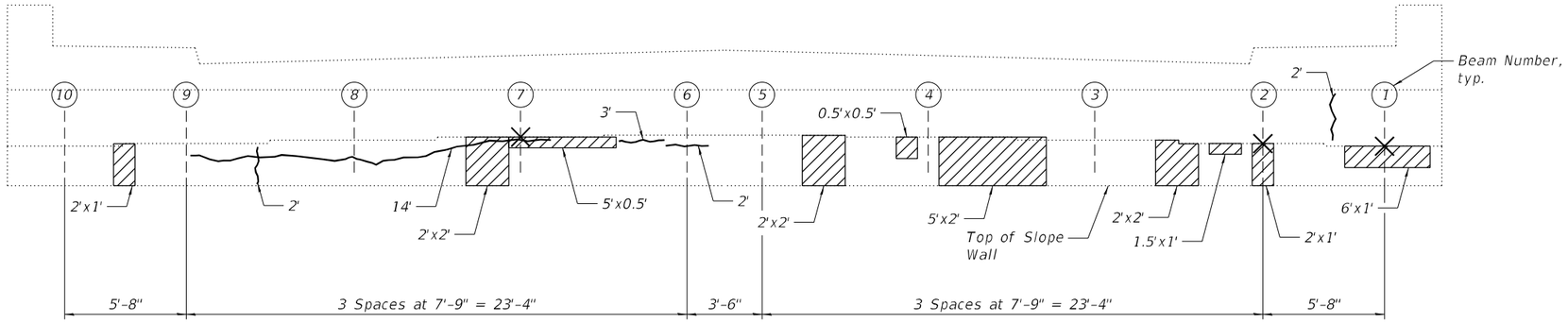
Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	20
Anchor Bolts, 1"	Each	80

USER NAME =	DESIGNED - JS	REVISED -	
	CHECKED - RRD	REVISED -	
PLOT SCALE =	DRAWN - SVJ	REVISED -	
PLOT DATE =	CHECKED - RRD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

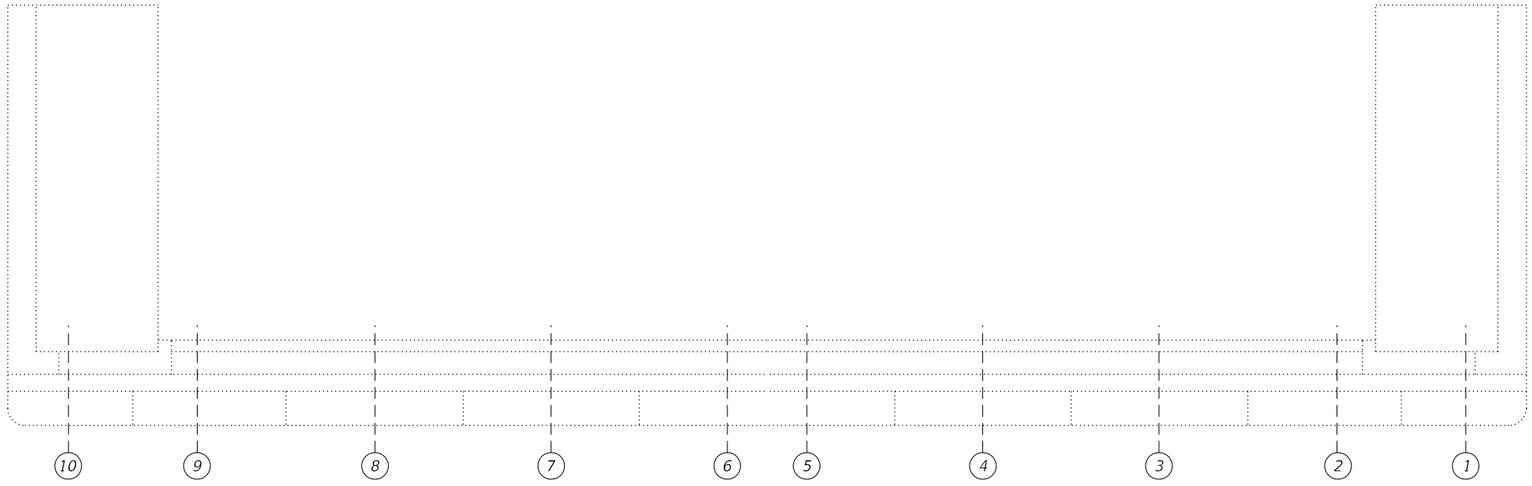
BEARING DETAILS
STRUCTURE NO. 016-0914
SHEET S07-16 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	655
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



ELEVATION
(Looking East)

N



PLAN

NOTES:

1. Quantities and limits shown are estimates for bidding porposes only. The actual area 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. Removal and installation of drainage pipes, electrical cables conduits, or other items attached to the existing structure are included in the cost of Structural Repair of Concrete.
3. Concrete repairs directly under Girders shall not start until the Temporary Shoring is installed.

GIRDER REACTION TABLE

East Abutment	Load (kips)
DL	23.9
LL	47.2
IM	13.9
TOTAL	85.0

Reactions are per girder

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	37
Epoxy Crack Injection	Foot	23
Temporary Shoring and Cribbing	Each	3

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less Than 5 inches)
- Epoxy Crack Injection
- Temporary Shoring and Cribbing

MODEL: Default
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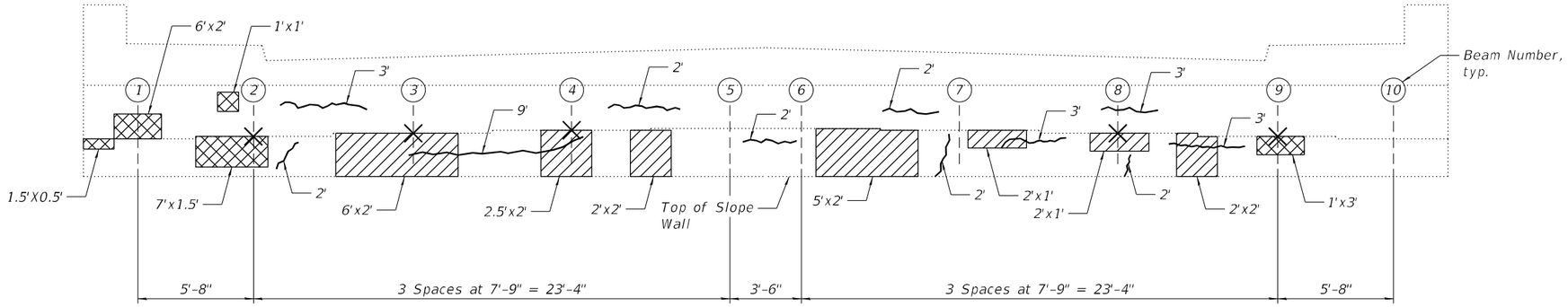
	CHECKED - RRD	REVISED -	
PLOT SCALE =	DRAWN - SVJ	REVISED -	
PLOT DATE =	CHECKED - RRD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

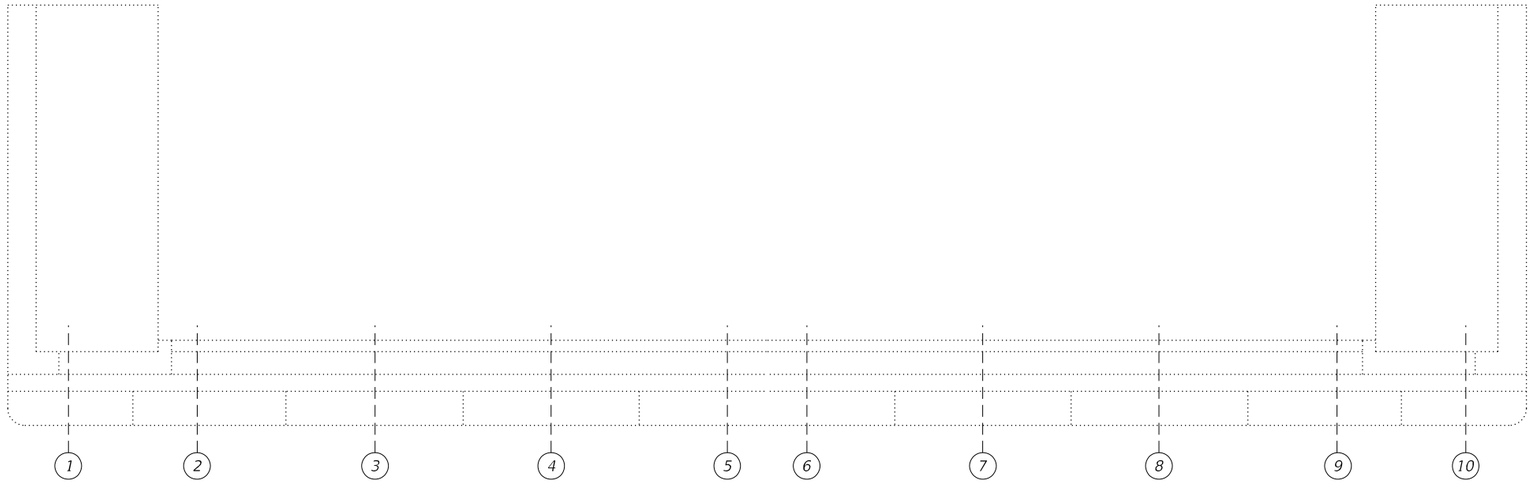
EAST ABUTMENT REPAIRS
STRUCTURE NO. 016-0914
SHEET S07-17 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	656
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



ELEVATION
(Looking West)

N



PLAN

NOTES:

1. Quantities and limits shown are estimates for bidding porposes only. The actual area 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. Removal and installation of drainage pipes, electrical cables conduits, or other items attached to the existing structure are included in the cost of Structural Repair of Concrete.
3. Concrete repairs directly under Girders shall not start until the Temporary Shoring is installed.

GIRDER REACTION TABLE

West Abutment	Load (kips)
DL	23.9
LL	47.2
IM	13.9
TOTAL	85.0

Reactions are per girder

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	42
Structural Repair Of Concrete (Depth Greater Than 5 In)	Sq. Ft.	25
Low Pressure Epoxy Crack Injection	Foot	33
Temporary Shoring and Cribbing	Each	5

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less Than 5 inches)
- Structural Repair of Concrete (Depth Greater than 5 inches)
- Epoxy Crack Injection
- Temporary Shoring and Cribbing

USER NAME =	DESIGNED - JS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WEST ABUTMENT REPAIRS STRUCTURE NO. 016-0914
	CHECKED - RRD	REVISED -		
PLOT SCALE =	DRAWN - SVJ	REVISED -		
PLOT DATE =	CHECKED - RRD	REVISED -		SHEET S07-18 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	657
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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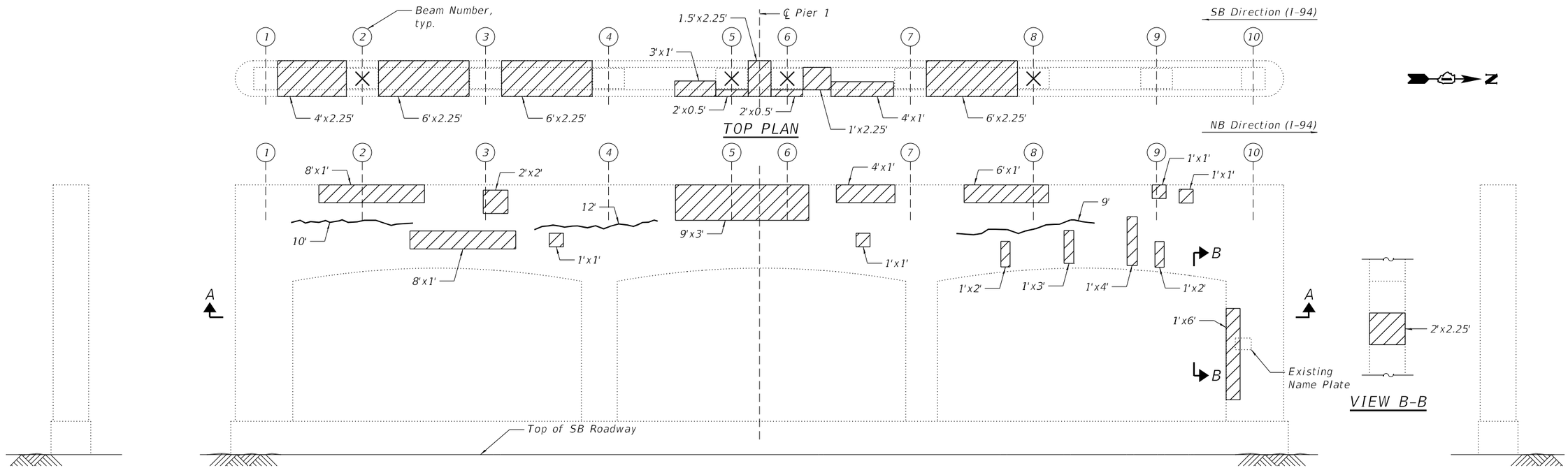
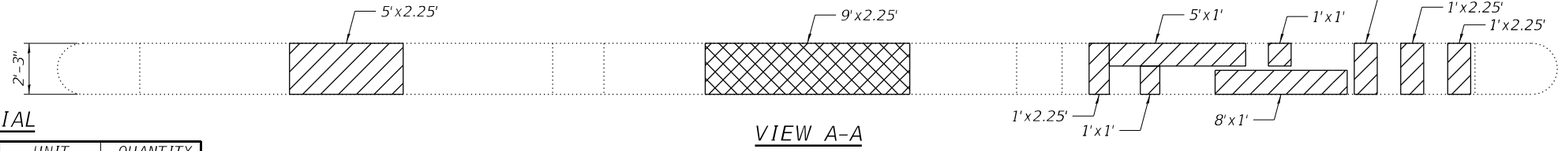




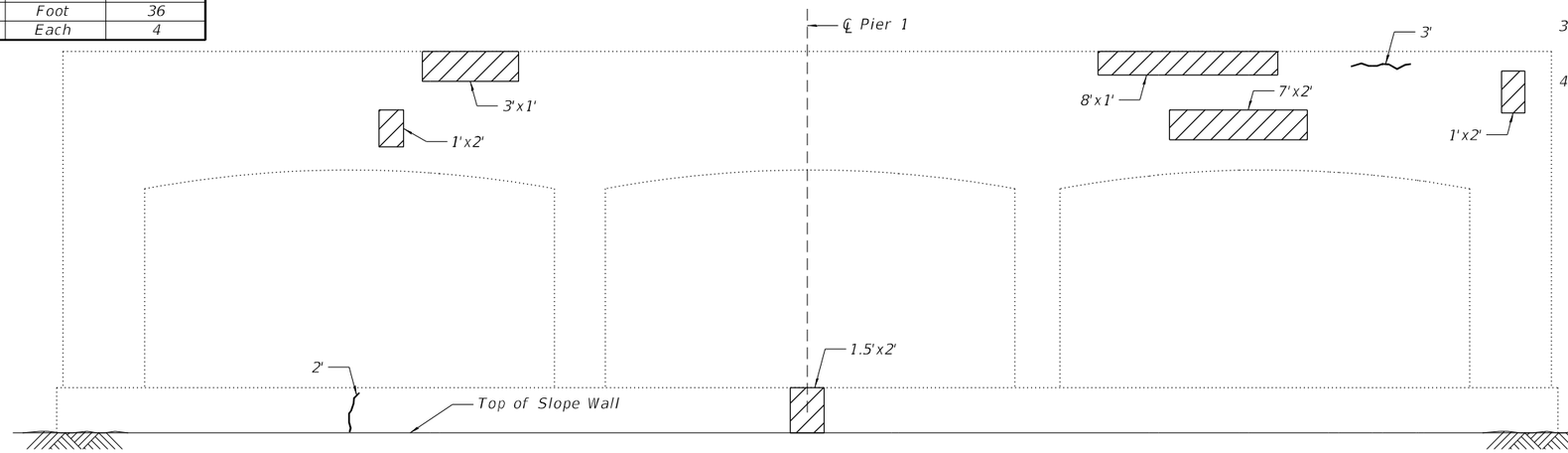
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	214
Structural Repair Of Concrete (Greater Than 5 In)	Sq. Ft.	21
Epoxy Crack Injection	Foot	36
Temporary Shoring and Cribbing	Each	4

GIRDER REACTION TABLE

Pier 1	Load (kips)
DL	79.4
LL	53.2
IM	14.7
TOTAL	147.3

Reactions are per girder



NOTES:

1. Quantities and limits shown are estimates for bidding purposes only. The actual area 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. Removal and installation of drainage pipes, electrical cables conduits, or other items attached to the existing structure are included in the cost of Structural Repair of Concrete.
3. Concrete repairs directly under Girders shall not start until the Temporary Shoring is installed.
4. Existing Name Plate that interferes with Structural Repair of Concrete should be removed prior to repair and reinstalled after repair is completed. Cost included in Structural Repair of Concrete (Depth Equal to or less than 5 inches)

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less Than 5 inches)
- Structural Repair of Concrete (Depth Greater than 5 inches)
- Epoxy Crack Injection
- Temporary Shoring and Cribbing

USER NAME =	DESIGNED - JS	REVISED -	
	CHECKED - RRD	REVISED -	
PLOT SCALE =	DRAWN - SVJ	REVISED -	
PLOT DATE =	CHECKED - RRD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
STRUCTURE NO. 016-0914
SHEET S07-19 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	658
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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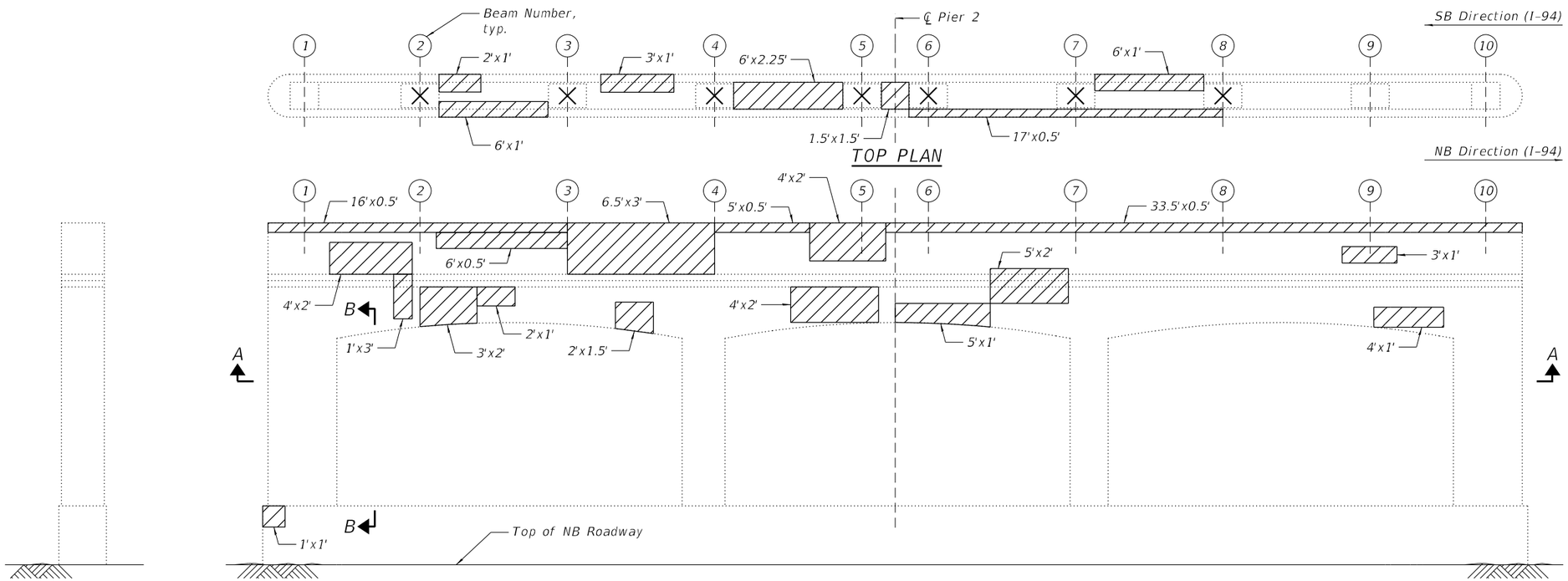
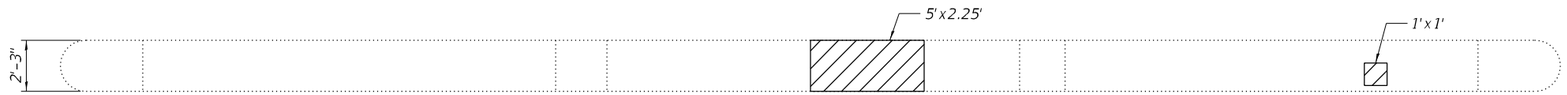
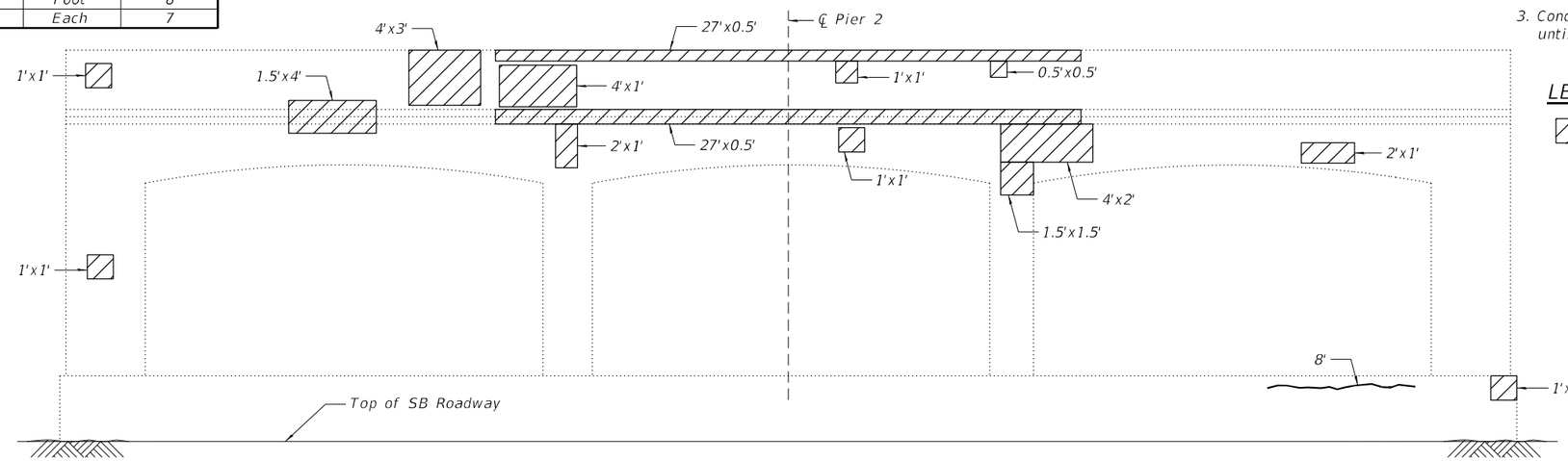




VIEW A-A

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	247
Epoxy Crack Injection	Foot	8
Temporary Shoring and Cribbing	Each	7



VIEW B-B

NOTES:

1. Quantities and limits shown are estimates for bidding purposes only. The actual area 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. Removal and installation of drainage pipes, electrical cables conduits, or other items attached to the existing structure are included in the cost of Structural Repair of Concrete.
3. Concrete repairs directly under Girders shall not start until the Temporary Shoring is installed.

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less Than 5 inches)
- Epoxy Crack Injection
- Temporary Shoring and Cribbing

GIRDER REACTION TABLE

Pier 2	Load (kips)
DL	79.8
LL	53.0
IM	14.6
TOTAL	147.4

Reactions are per girder

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PLOT SCALE =	DRAWN - SVJ	REVISED -	
PLOT DATE =	CHECKED - RRD	REVISED -	

PIER 2 REPAIRS
STRUCTURE NO. 016-0914
SHEET S07-20 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	659
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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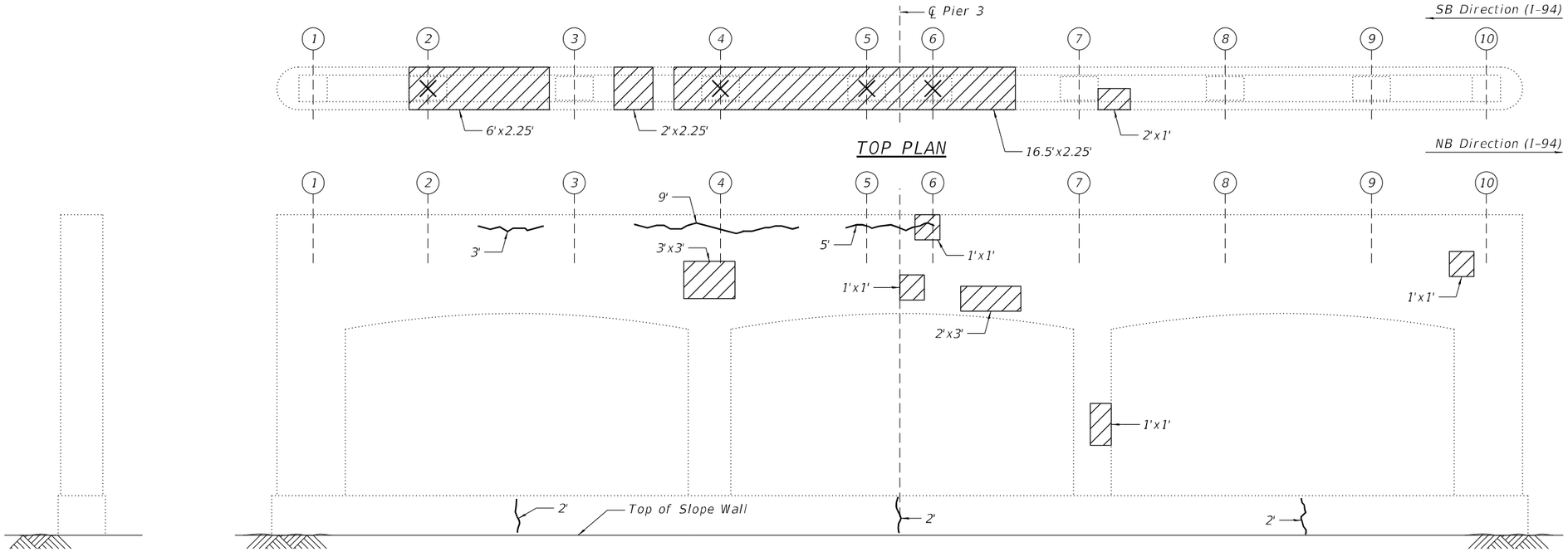


TOP PLAN

SOUTH FACE

EAST FACE
(Looking West)

NORTH FACE

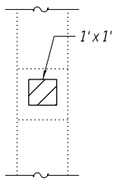
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	139
Epoxy Crack Injection	Foot	53
Temporary Shoring and Cribbing	Each	4

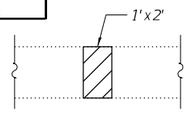
GIRDER REACTION TABLE

Pier 3	Load (kips)
DL	79.4
LL	53.2
IM	15.6
TOTAL	148.2

Reactions are per girder

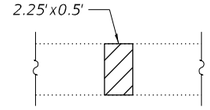


VIEW D-D

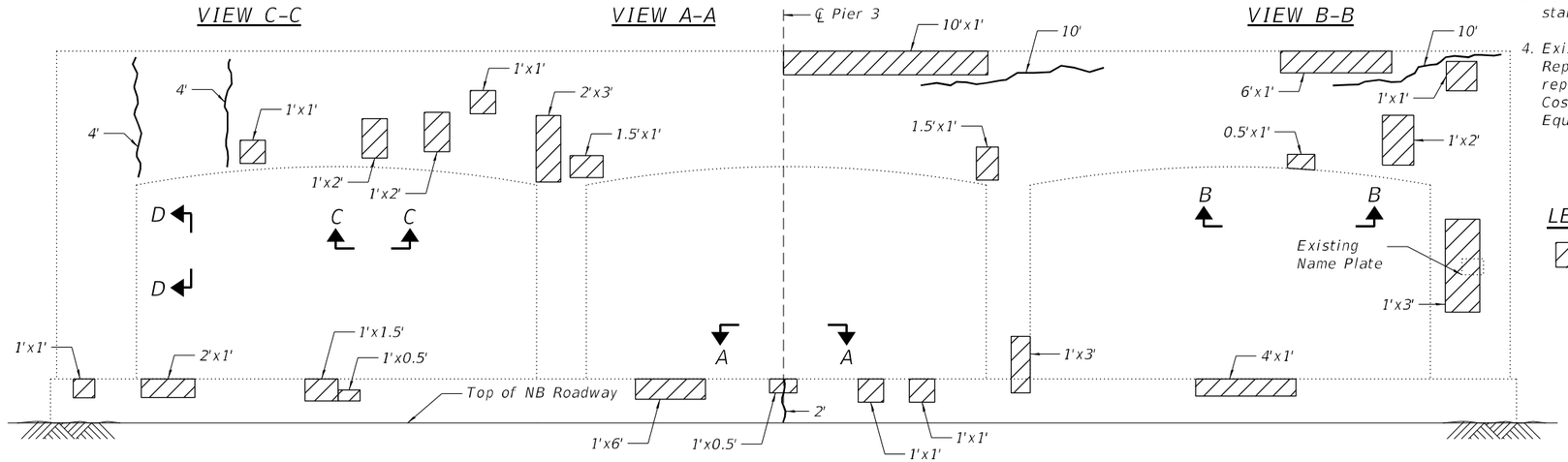


VIEW C-C

VIEW A-A



VIEW B-B



WEST FACE
(Looking East)

NOTES:

1. Quantities and limits shown are estimates for bidding purposes only. The actual area 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. Removal and installation of drainage pipes, electrical cables conduits, or other items attached to the existing structure are included in the cost of Structural Repair of Concrete.
3. Concrete repairs directly under Girders shall not start until the Temporary Shoring is installed.
4. Existing Name Plate that interferes with Structural Repair of Concrete should be removed prior to repair and reinstalled after repair is completed. Cost included in Structural Repair of Concrete (Depth Equal to or less than 5 inches)

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less Than 5 inches)
- Epoxy Crack Injection
- Temporary Shoring and Cribbing

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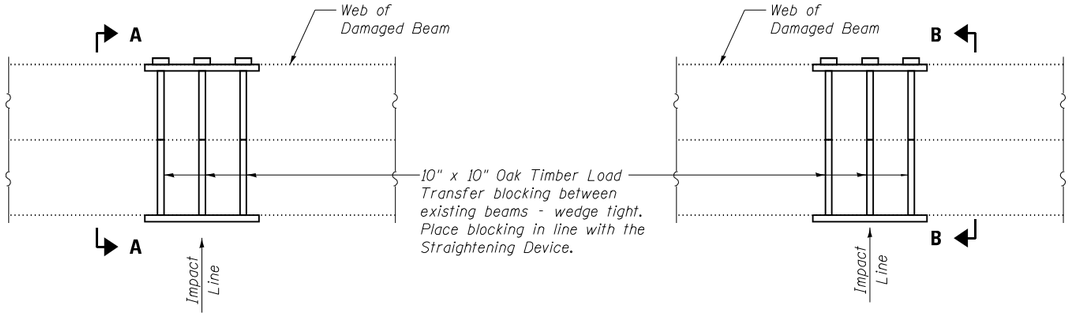
PLOT SCALE =	DRAWN - SVJ	REVISED -	
PLOT DATE =	CHECKED - RRD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 REPAIRS
STRUCTURE NO. 016-0914
SHEET S07-21 OF S07-25 SHEETS

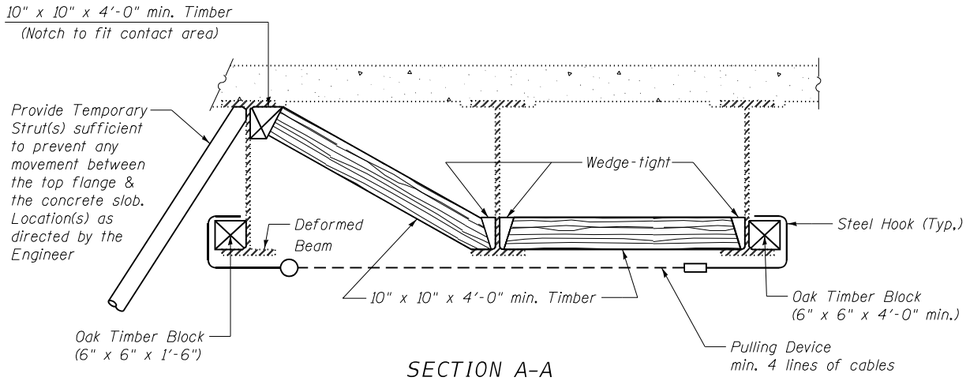
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	660
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



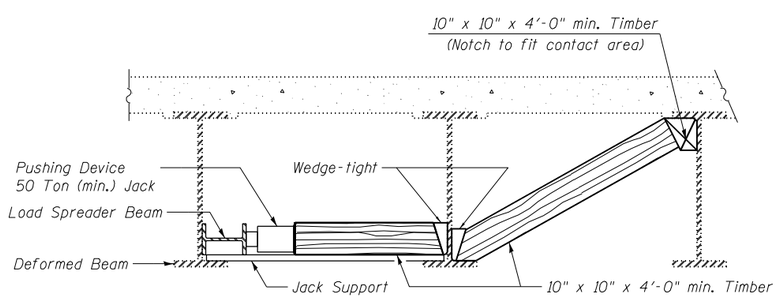
(PULLING DEVICE) (PUSHING DEVICE)

PARTIAL PLAN
SUGGESTED BEAM STRAIGHTENING METHODS

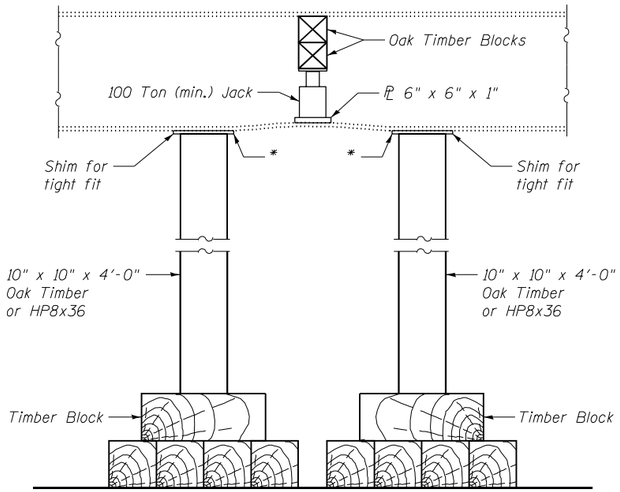
NOTE: Straightening force shall be maintained on all load transfer blocking during beam straightening.



SECTION A-A



SECTION B-B

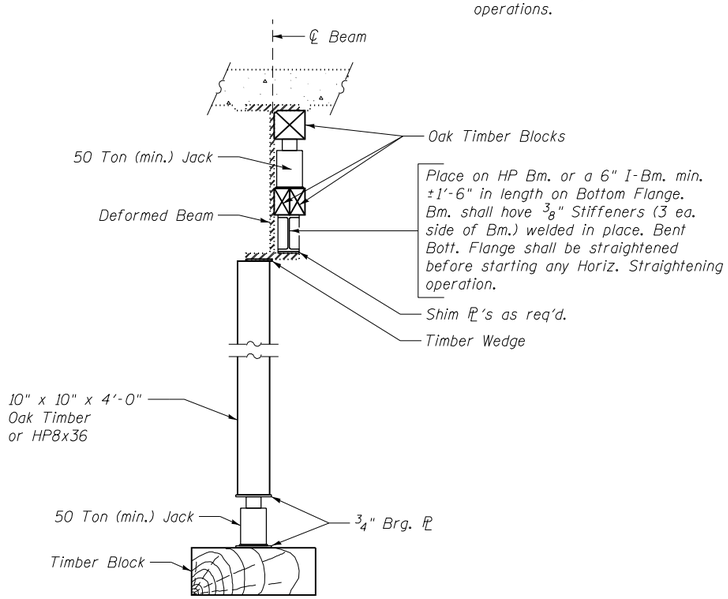


SUGGESTED VERTICAL STRAIGHTENING DETAIL

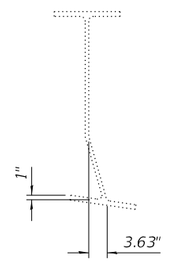
(To correct localized vertical flange deformations.)

* Edge of plate shall line up with edge of deformation.

NOTE:
Braces and jack assembly shall be placed on same side of web.
Bent bottom flange shall be straightened before starting any horizontal straightening operations.



VERTICAL STRAIGHTENING DETAIL



EXISTING DEFORMATION TO BE STRAIGHTENED

(Looking North)
(Approximate max. deflections)
Deflected length of beam to be straightened is approximately 4'-0".

USER NAME =	DESIGNED - JS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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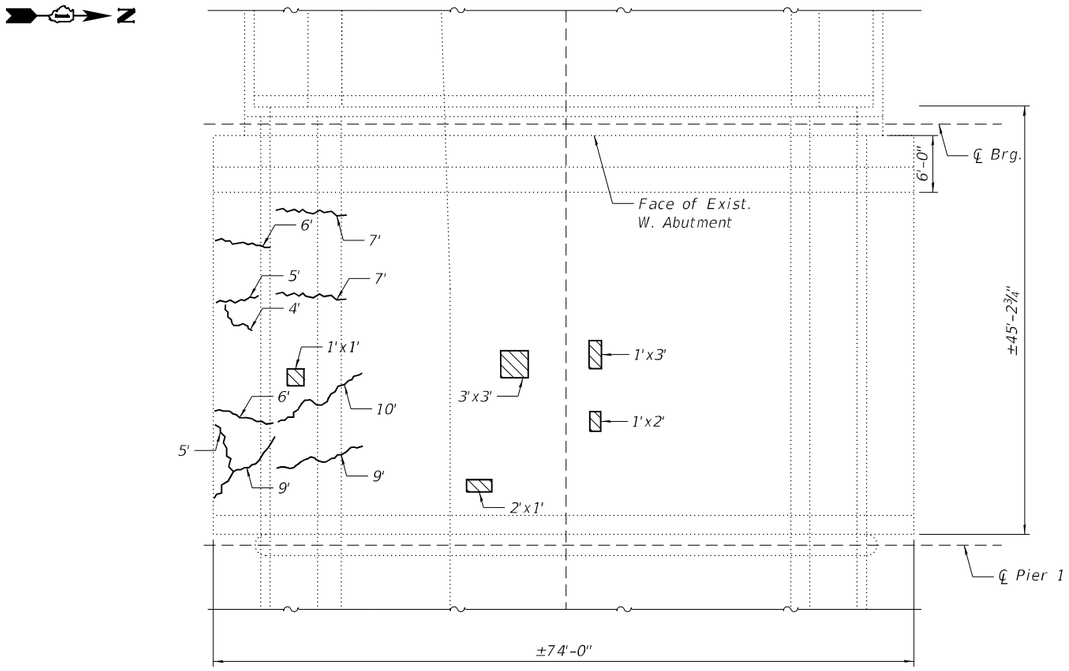
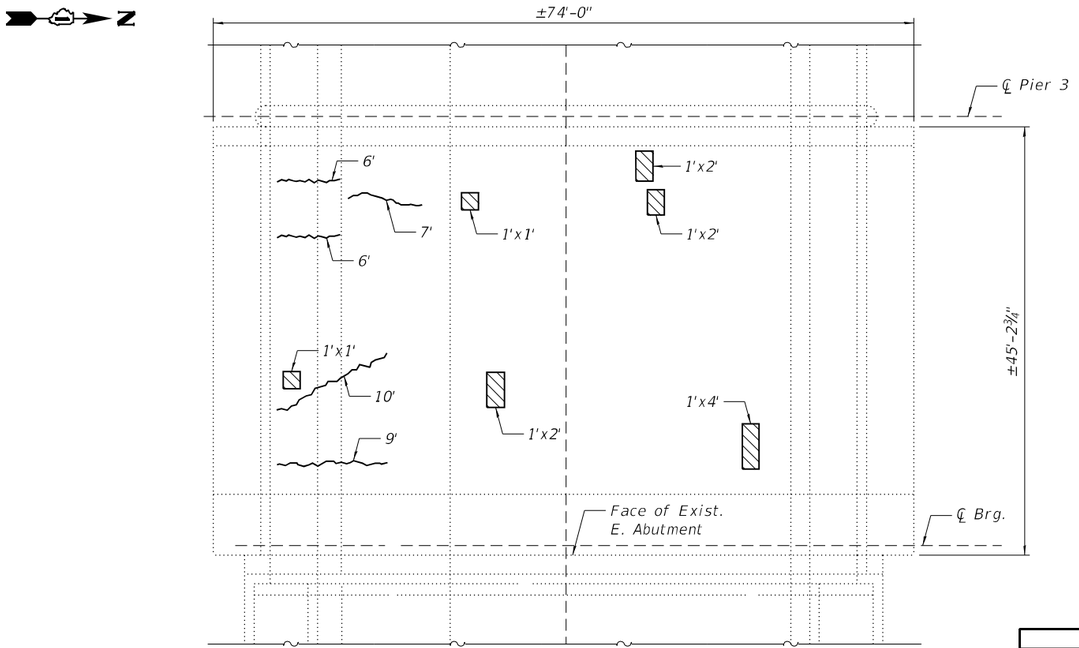
PLOT SCALE =	DRAWN - SVJ	REVISED -	
PLOT DATE =	CHECKED - RRD	REVISED -	

BEAM STRAIGHTENING DETAILS
STRUCTURE NO. 016-0914
SHEET S07-22 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	661
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



WEST SLOPE WALL PLAN

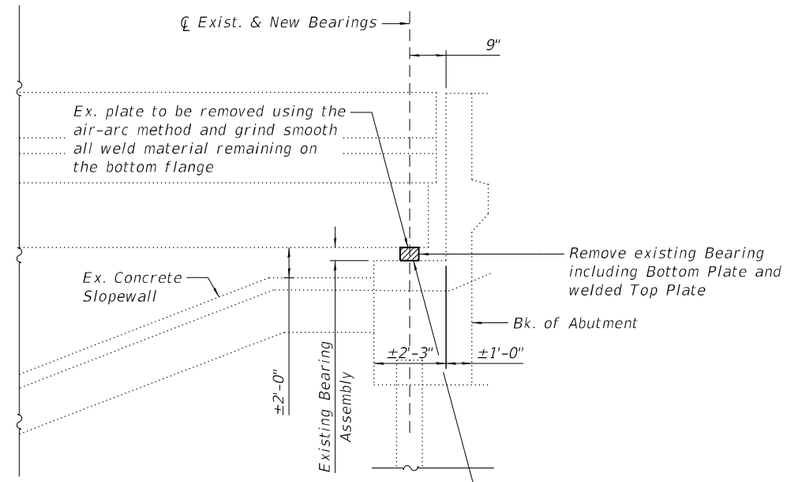


EAST SLOPE WALL PLAN

Notes:

Repairs shown are based upon observations performed in 2023 and are for bidding purposes only. Actual areas to be repaired shall be determined by the Engineer in the field at the time of construction. Quantities have been adjusted to account for the difference.

Any voids found under the existing slopewall during the Slopewall Removal process are to be filled with Porous Granular Embankment.



EXISTING BEARING REMOVAL DETAIL

(Dimensions at Rt L's)

LEGEND:

- Slope Wall Removal and Slope Wall 4 Inch
- Epoxy Crack Injection

JACK AND REMOVE EXISTING BEARINGS PROCEDURES

1. *Jacking shall be done after existing deck partial removal is completed.*
2. *The Contractor shall submit for approval by the Engineer plans for jacking, prior to commencing any work at the bearings. The maximum dead load reaction with the deck removed (per bearing) at the west and east abutments = 16 kips. The minimum jack capacity at each beam shall be 32 kips at the west and east abutments.*
3. *Top of beam elevations shall be measured prior to jacking and shall remain the same after bearings are in place.*
4. *There shall be at least one jack per bearing, and the jack shall be placed close to the bearing. The steel shall be raised a maximum of 1/8 inch and shall be blocked in position until after the completion of the installation of new bearings.*
5. *Burn the existing anchor bolts flush with the concrete surface, grind smooth, and seal with epoxy. The top and bottom plates shall be removed. The top plate shall be removed using the air-arc method. Ground smooth all weld material remaining on the bottom flange. Cost of removing anchor, bolts, top plates, and bottom plates shall be included with "Jack and Remove Existing Bearings".*
6. *The new elastomeric bearings shall be in place and the jacks lowered before the new concrete deck is poured.*
7. *See sheet S07-16 for bearing bill of materials.*

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu Yd	2
Slope Wall Removal	Sq Yd	3
Slope Wall 4 Inch	Sq Yd	3
Epoxy Crack Injection	Foot	106

USER NAME =	DESIGNED - JS	REVISED -	
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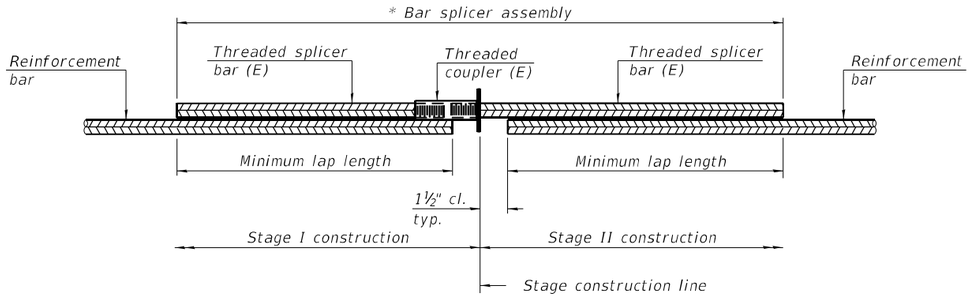
PLOT DATE =	CHECKED - RRD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL DETAILS
STRUCTURE NO. 016-0914

SHEET S07-23 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	662
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



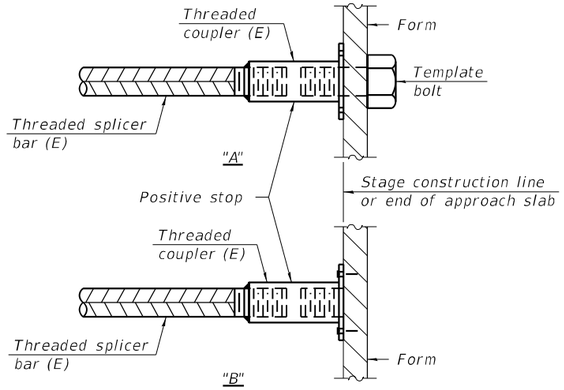
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1½" + thread length

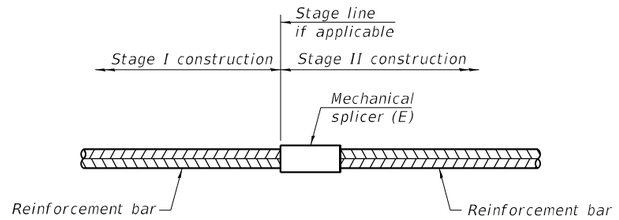
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
W. Abutment	#5	9	3'-9"
W. Abutment	#6	4	4'-0"
E. Abutment	#5	9	3'-9"
E. Abutment	#6	4	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.

BSD-1 5-15-2023

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 016-0914
SHEET S07-24 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-8-11-1) BR, BJR 24	COOK	761	663
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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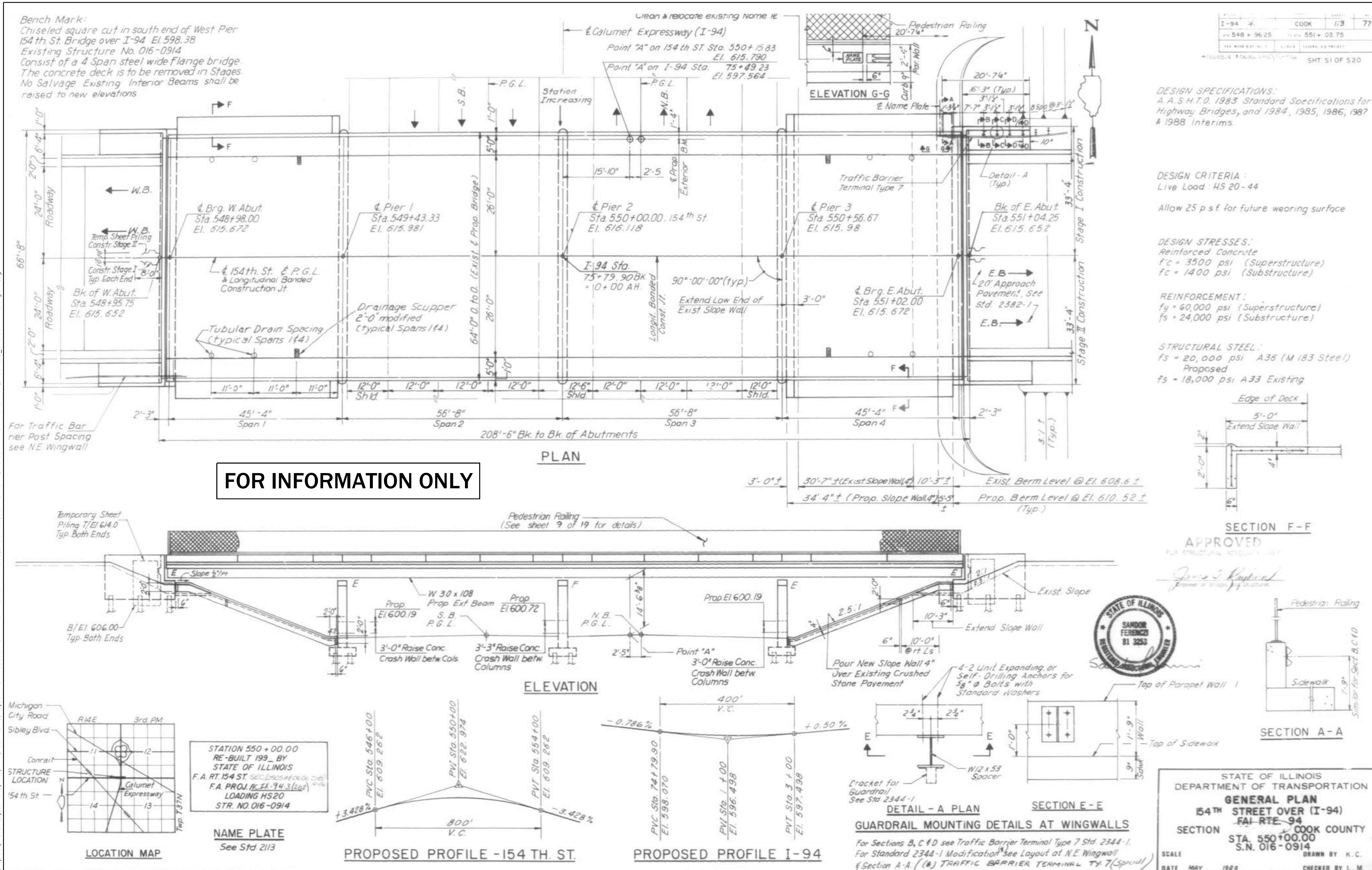
Bench Mark:
Chiseled square cut in south end of West Pier 154 th St. Bridge over I-94 El. 598.38
Existing Structure No. 016-0914
Consist of a 4 Span steel wide flange bridge.
The concrete deck is to be removed in Stages.
No Salvage. Existing Interior Beams shall be raised to new elevations
¢ Calumet Expressway (I-94)
Point "A" on 154 th ST. Sta. 550+15.83 El. 615.790
Point "A" on I-94 Sta. 75+49.23 El. 597.564
ELEVATION G-G
Pedestrian Railing
¢ Brg. W. Abut. Sta. 548+98.00 El. 615.672
¢ Pier 1 Sta. 549+43.33 El. 615.981
¢ Pier 2 Sta. 550+00.00, 154th St. El. 616.118
¢ Pier 3 Sta. 550+56.67 El. 615.98
Bk. of E. Abut. Sta. 551+04.25 El. 615.652
Bk. of W. Abut. Sta. 548+95.75 El. 615.652
¢ Brg. E. Abut. Sta. 551+02.00 El. 615.672
I-94 Sta. 75+79.90 Bk = 10+00 AH.
Traffic Barrier Terminal Type 7
Detail - A (Typ)
Drainage Scupper 2'-0" modified (typical Spans 1 & 4)
Tubular Drain Spacing (typical Spans 1 & 4)
Extend Low End of Exist Slope Wall
20' Approach Pavement, See Std. 2382-1
45'-4" Span 1
56'-8" Span 2
56'-8" Span 3
45'-4" Span 4
208'-6" Bk. to Bk. of Abutments
PLAN
FOR INFORMATION ONLY
Exist. Berm Level @ El. 608.6 ±
Prop. Berm Level @ El. 610.52 ±
ELEVATION
Pedestrian Railing (See sheet 9 of 19 for details)
W 30 x 108 Prop. Ext. Beam
Pour New Slope Wall 4" Over Existing Crushed Stone Pavement
DESIGN SPECIFICATIONS:
A.A.S.H.T.O. 1983 Standard Specifications for Highway Bridges, and 1984, 1985, 1986, 1987 & 1988 Interims.
DESIGN CRITERIA:
Live Load: HS 20-44
Allow 25 p.s.f. for future wearing surface
DESIGN STRESSES:
Reinforced Concrete
f'c = 3500 psi (Superstructure)
fc = 1400 psi (Substructure)
REINFORCEMENT:
fy = 60,000 psi (Superstructure)
fs = 24,000 psi (Substructure)
STRUCTURAL STEEL:
fs = 20,000 psi A36 (M 183 Steel) Proposed
fs = 18,000 psi A33 Existing
SECTION F-F
SECTION A-A
APPROVED
LOCATION MAP
STATION 550+00.00
RE-BUILT 199_ BY
STATE OF ILLINOIS
F.A. RT. 154 ST.
LOADING HS20
STR. NO. 016-0914
NAME PLATE
See Std 2113
PROPOSED PROFILE - 154 TH. ST.
PROPOSED PROFILE I-94
DETAIL - A PLAN
SECTION E-E
GUARDRAIL MOUNTING DETAILS AT WINGWALLS
For Sections B, C & D see Traffic Barrier Terminal Type 7 Std. 2344-1.
For Standard 2344-1 Modification see Layout at N.E. Wingwall
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
GENERAL PLAN
154TH STREET OVER (I-94)
FAI RTE. 94
SECTION
COOK COUNTY
STA. 550+00.00
S.N. 016-0914
DATE MAY 1989

USER NAME =	DESIGNED - JS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING GENERAL PLAN AND ELEVATION STRUCTURE NO. 016-0914
	CHECKED - RRD	REVISED -		
PLOT SCALE =	DRAWN - SVJ	REVISED -		
PLOT DATE =	CHECKED - RRD	REVISED -		SHEET S07-25 OF S07-25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	664
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

MODEL: Default
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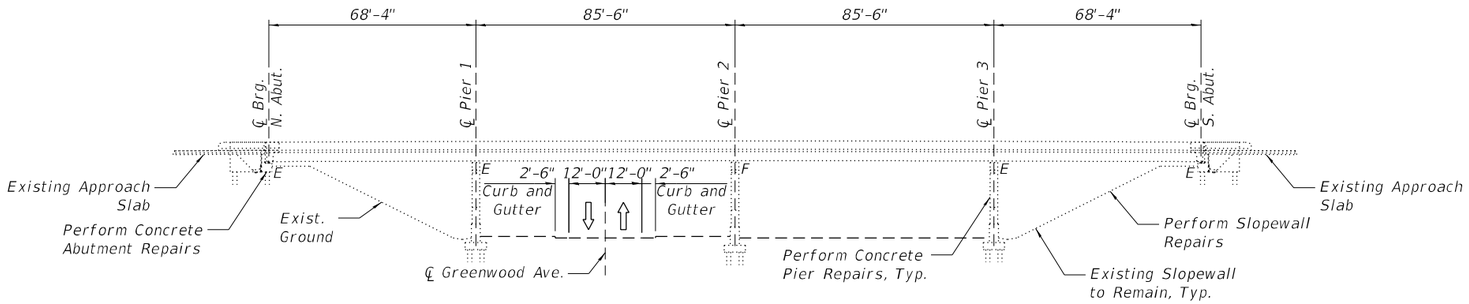
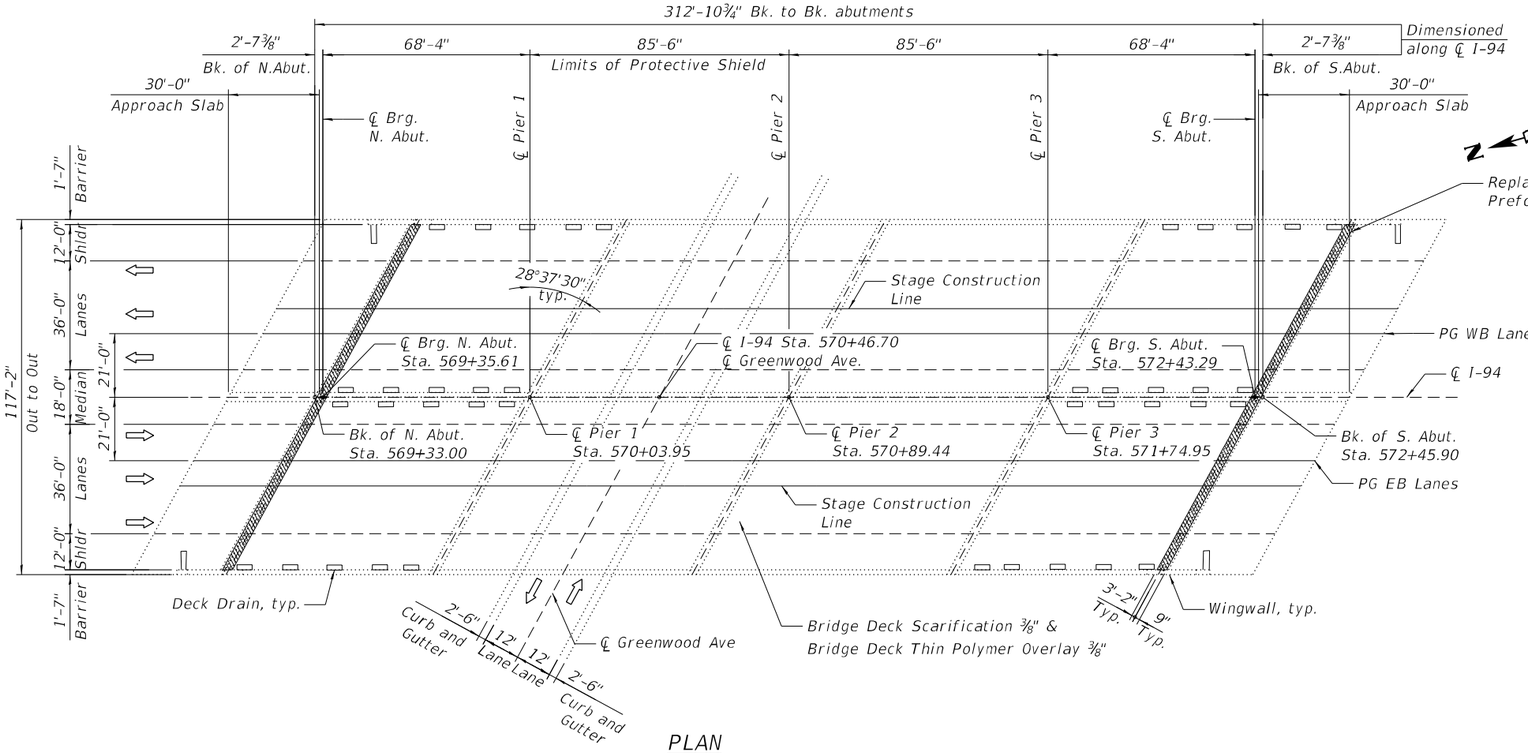
Bench Mark: "X" scribed in chiseled box on top of concrete barrier wall at the southeast corner of bridge structure for Westbound FAI-94 over the Greenwood Avenue Elev. 627.12 (Assumed Local Datum)

Existing Structure: S.N. 016-0162 originally constructed in 1947 as a 4 span structure. In 1981, the structure was widened with a new deck and new beam lines on both sides of the superstructure. All superstructure was cleaned and painted. In 2009, the approach slabs, deck joints at abutments and deck overlay were replaced. The deck joint between the center parapets was resealed. Abutment bearings were replaced with elastomeric bearings. The steel beam ends and end diaphragms at abutments were cleaned and painted.



ELEVATION



PLAN

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

FIELD UNITS (New Construction)
f'c = 4,000 psi (Superstructure)
f'c = 3,500 psi (Substructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

FIELD UNITS (2009 Repairs)
f'c = 3,500 psi (Concrete - Deck Slab)
fy = 60,000 psi (Reinforcement - Deck Slab)
fs = 36,000 psi (M270 Grade 36)

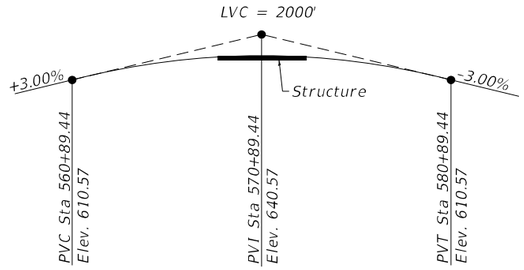
FIELD UNITS (1980 Rehab)
f'c = 3,500 psi (Concrete - Deck Slab)
fc = 1,400 psi (Substructure)
fy = 60,000 psi (Reinforcement - Deck Slab)
fs = 20,000 psi (Reinforcement- Substructure)
fs = 20,000 psi (Structural Steel) (M183 Grade 36)

FIELD UNITS (1946 Original Construction)
fs = 18,000 psi (A7 Struct. Steel)
f'c = 1,200 psi (Superstructure)
fy = 20,000 psi (Reinforcement)
f'c = 800 psi (Concrete - Substructure)

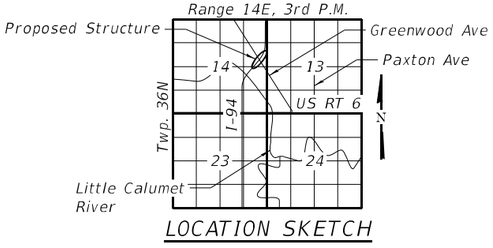
LOADING HL-93

SCOPE OF WORK

1. Remove the existing bridge deck overlay.
2. Repair deck with partial and full depth patches.
3. Repair of bridge approach slabs.
4. Removal and replacement of expansion joints at the abutments.
5. Install a ⅜" thin polymer overlay.
6. Substructure and slopewall repairs.
7. Repair steel beams at corroded deck drain connections and beam ends.



EXISTING PROFILE GRADE FAI-94



LOCATION SKETCH

WILLIAM P. MALINOWSKI
081-006059
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

William P. Malinowski S.E.
Licensed Structural Engineer
State of Illinois No. 081-006059
Registration Expires 11/30/2026

GENERAL PLAN AND ELEVATION
I-94 OVER GREENWOOD AVE
FAI 94 SEC. 1975-079-BR
COOK COUNTY
STATION 570+46.70
SN 016-0162

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S08-01 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	665
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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GENERAL NOTES

1. No field welding is permitted except as specified in the contract documents.

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

3. 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 ¾ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

4. Plan dimensions and details relative to the existing structure have been taken from existing plans are subject to nominal construction variations. The Contactor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

5. Existing reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.

6. Fasteners shall be ASTM F 3125 Grade A325 Type 1. Fastener shall be hot dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel." Bolts ¾ in. Ø holes $1\frac{3}{16}$ in. ○, unless otherwise noted.

7. All new structural steel shall be galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel."

8. 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 Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures."

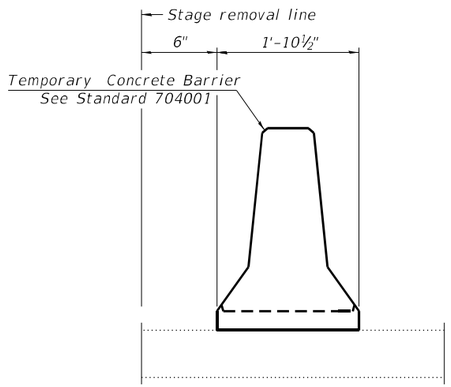
9. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to address the presence of lead on this project.

10. 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".

11. Calculated weight of Structural Steel = 2,008 lbs.

12. Cleaning and field painting of the existing structural steel shall be done under a separate painting contract.

13. Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Structural Steel Repair.



EXISTING SLAB

SECTIONS THRU SLAB OR DECK BEAM

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL
Porous Granular Embankment	Cu. Yd.	-	211	211
Concrete Removal	Cu. Yd.	23	9	32
Slope Wall Removal	Sq Yd.	-	159	159
Protective Shield	Sq Yd.	1,114	-	1,114
Concrete Structures	Cu. Yd.	-	9.0	9.0
Concrete Superstructure	Cu. Yd.	23.0	-	23.0
Protective Coat	Sq Yd.	10	-	10
Reinforcement Bars, Epoxy Coated	Pound	4,730	1,220	5,950
Bar Splicers	Each	52	12	64
Slope Wall 4 Inch	Sq Yd.	-	159	159
Preformed Joint Strip Seal	Foot	267	-	267
Epoxy Crack Injection	Foot	-	217	217
Approach Slab Repair (Full Depth)	Sq. Yd.	7	-	7
Structural Steel Repair	Pound	2,010	-	2,010
Cleaning Bridge Seats	Sq. Ft.	-	1,566	1,566
Concrete Bridge Deck Scarification 3/8"	Sq. Yd.	3,860	-	3,860
Bridge Deck Thin Polymer Overlay 3/8"	Sq. Yd.	3,860	-	3,860
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	-	872	872
Deck Slab Repair (Full Depth - Type I)	Sq. Yd.	6	-	6
Deck Slab Repair (Full Depth - Type II)	Sq. Yd.	158	-	158
Deck Slab Repair (Partial)	Sq. Yd.	255	-	255
Expansion Joint (Special)	Foot	313	-	313

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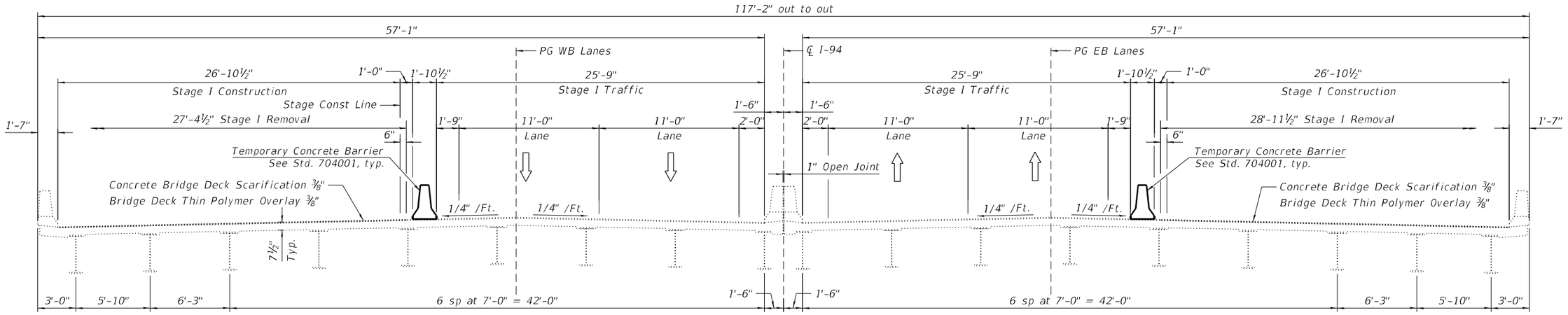
PLOT DATE =	CHECKED - MGH	REVISED -	

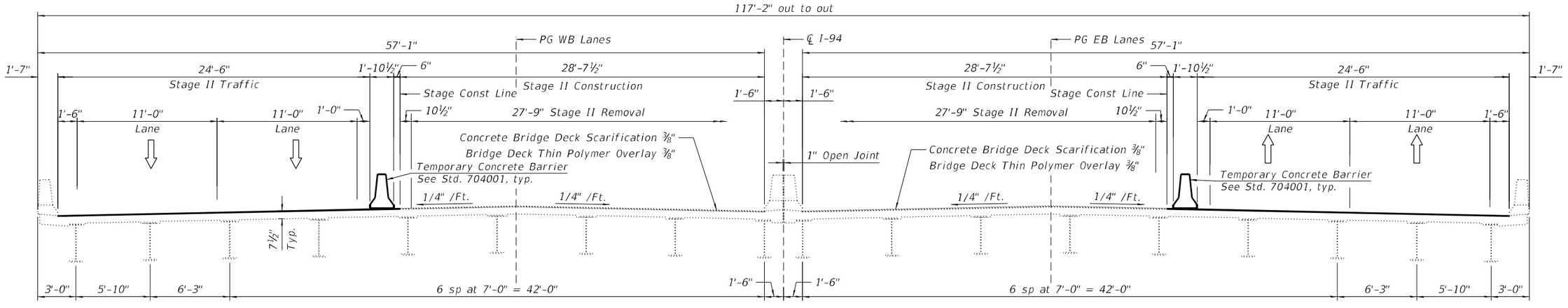
GENERAL DATA
STRUCTURE NO. 016-0162
SHEET S08-02 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	666
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



STAGE I CONSTRUCTION

(Looking South)



STAGE II CONSTRUCTION

(Looking South)

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	PLOT DATE =	CHECKED - MGH	REVISED -		SHEET S08-03 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	667
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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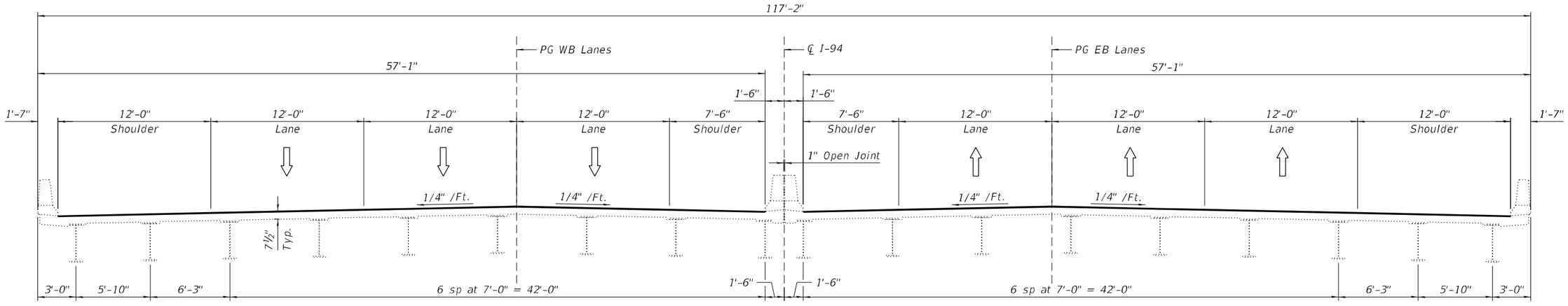

FINAL CROSS SECTION

(Looking South)

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PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING - 2
STRUCTURE NO. 016-0162
SHEET S08-04 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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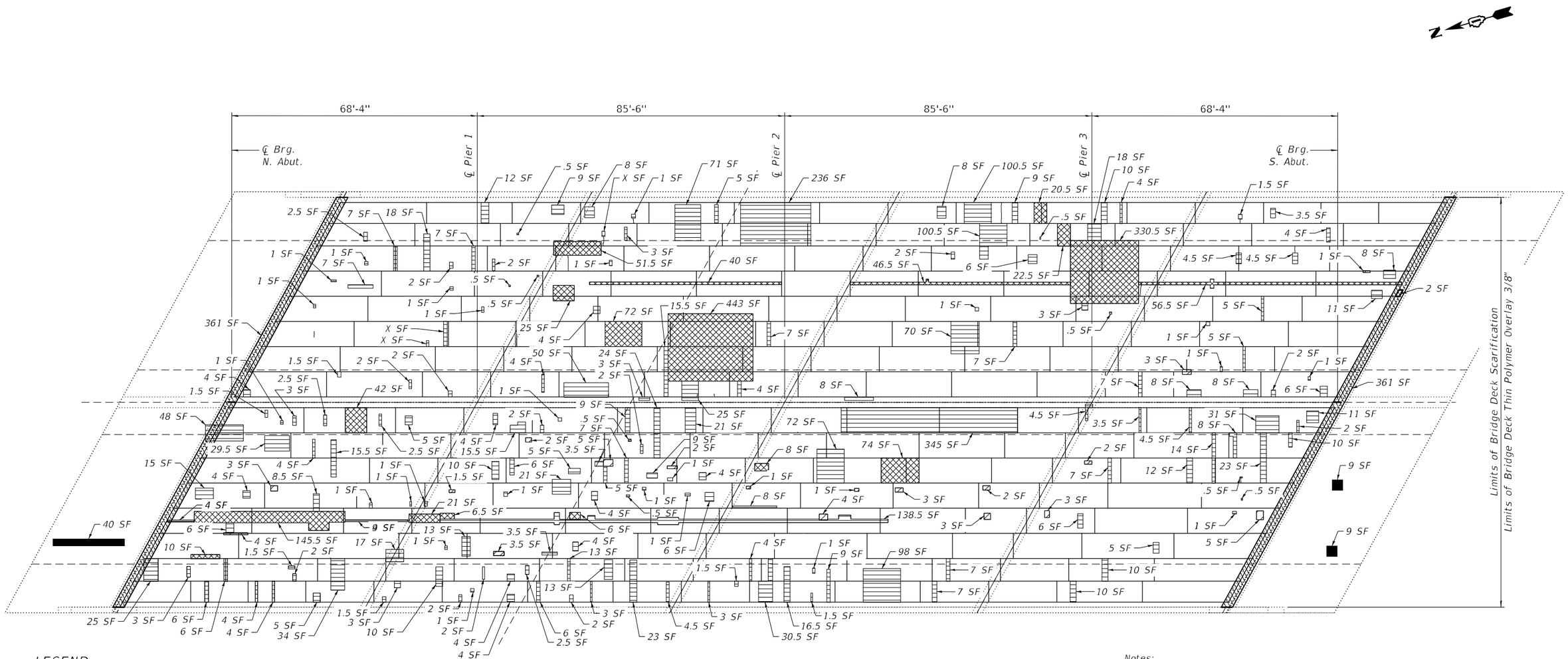
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



LEGEND:

- Concrete Removal for Joint Replacement (see Sheets S08-07 to S08-10)
- Approach Slab Repair (Full Depth)
- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- Deck Slab Repair (Partial)

DECK REPAIR PLAN

Notes:
Area of deck and approach slab repairs are estimated. Actual type, location, and dimensions are to be determined by the Engineer during construction and documented on as-built plans.

BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	QUANTITY
Concrete Removal	Cu. Yd.	23	9	32
Approach Slab Repair (Full Depth)	Sq. Yd.	7	-	7
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	6	-	6
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	158	-	158
Deck Slab Repair (Partial Depth)	Sq. Yd.	255	-	255

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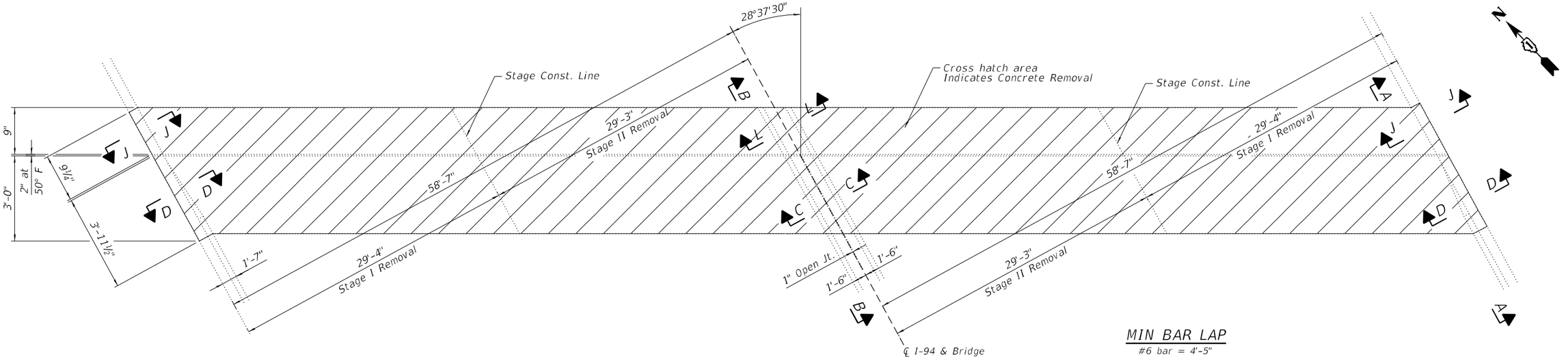
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REPAIR PLAN
STRUCTURE NO. 016-0162
SHEET S08-05 OF S08-19 SHEETS

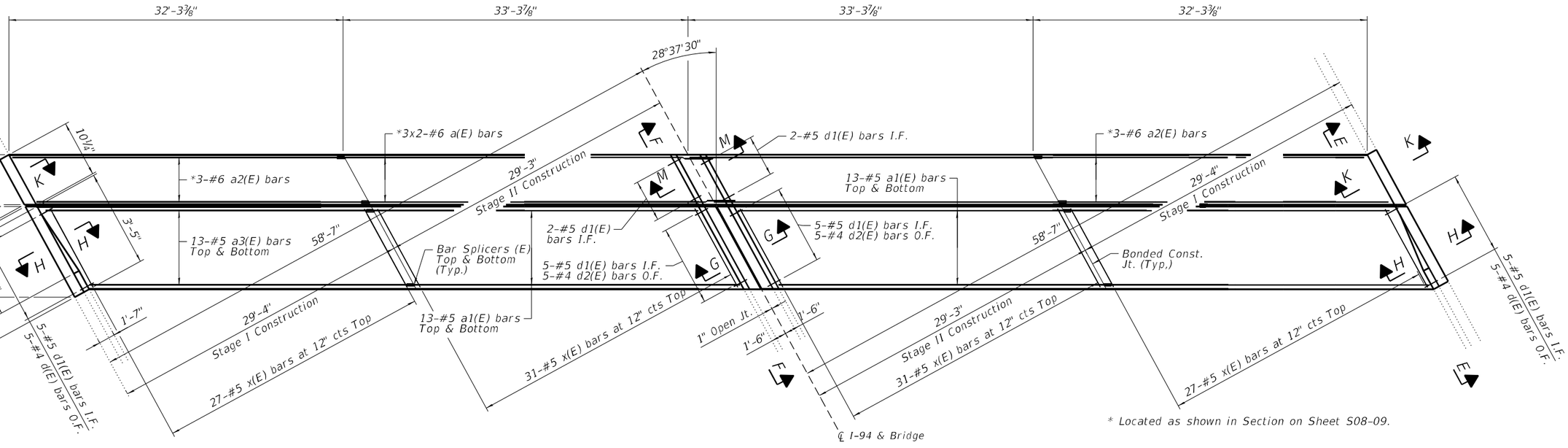
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	669
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



MIN BAR LAP

#6 bar = 4'-5"

REMOVAL PLAN AT NORTH ABUTMENT



* Located as shown in Section on Sheet S08-09.

NOTES

All reinforcement bars are to be evenly spaced unless otherwise noted.
Reinforcement bars designated (E) shall be epoxy coated.
O.F. denotes Outside Face. I.F. denotes Inside Face.
For Bill of Material and bar details see Sheet S08-10.
For additional abutment backwall demolition and reconstruction see Sheet S08-09.

PROPOSED PLAN AT NORTH ABUTMENT

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXPANSION JOINT RECONSTRUCTION PLAN
STRUCTURE NO. 016-0162
SHEET S08-06 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	670
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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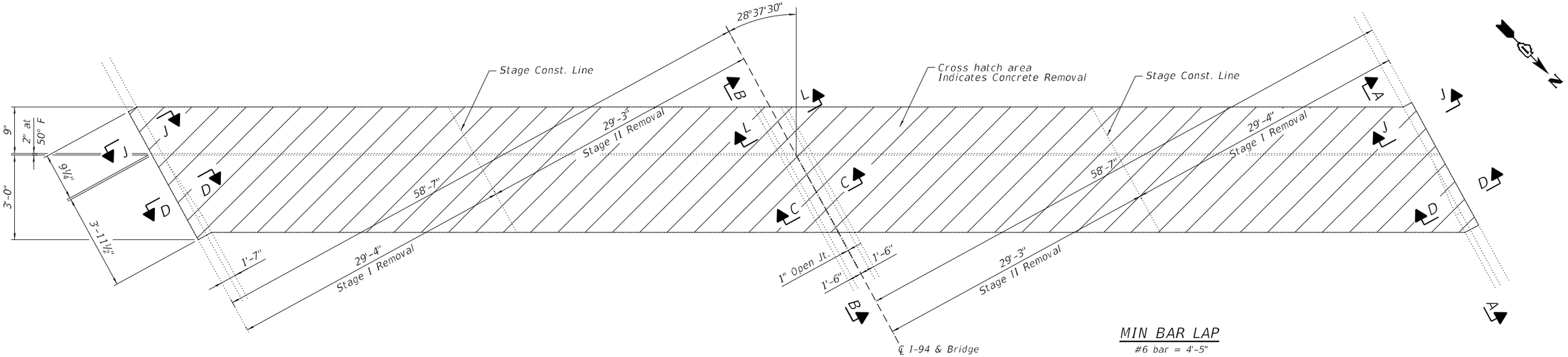
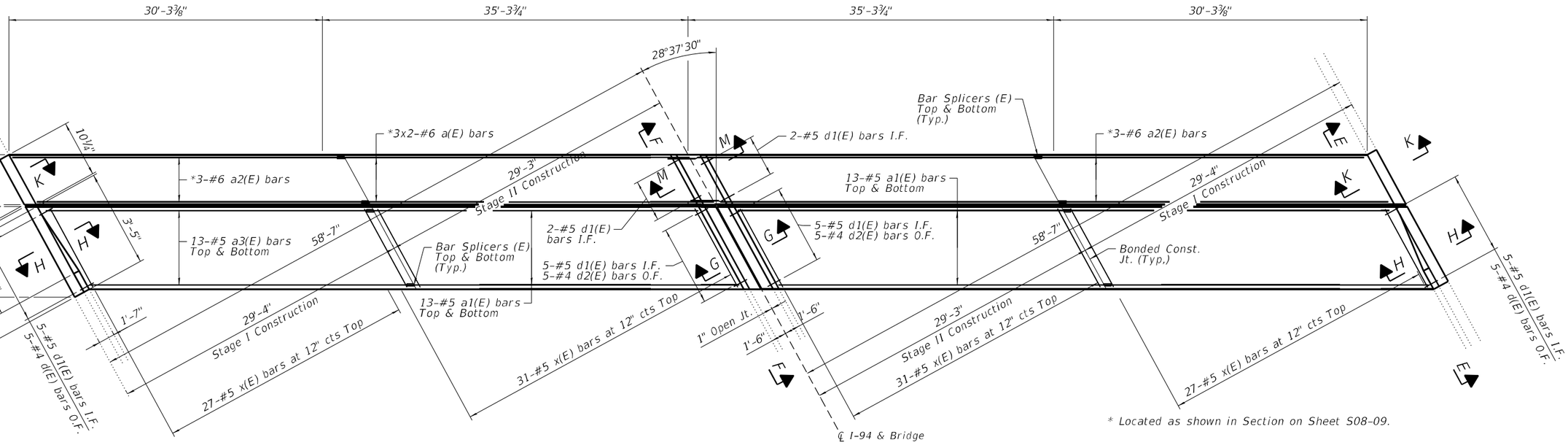
12/9/2024 7:17:31 AM



MIN BAR LAP
#6 bar = 4'-5"

REMOVAL PLAN AT SOUTH ABUTMENT



* Located as shown in Section on Sheet S08-09.

NOTES

All reinforcement bars are to be evenly spaced unless otherwise noted.
Reinforcement bars designated (E) shall be epoxy coated.
O.F. denotes Outside Face. I.F. denotes Inside Face.
For Bill of Material and bar details see Sheet S08-10.
For additional abutment backwall demolition and reconstruction see Sheet S08-09.

PROPOSED PLAN AT SOUTH ABUTMENT

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT EXPANSION JOINT RECONSTRUCTION PLAN
STRUCTURE NO. 016-0162
SHEET S08-07 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	671
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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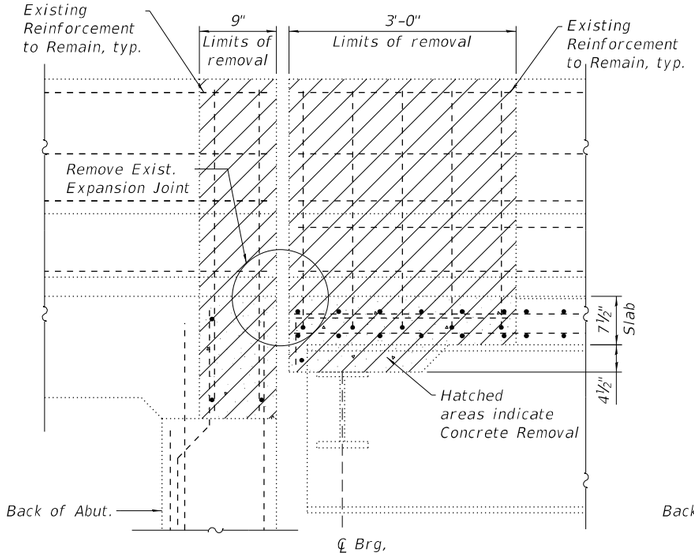
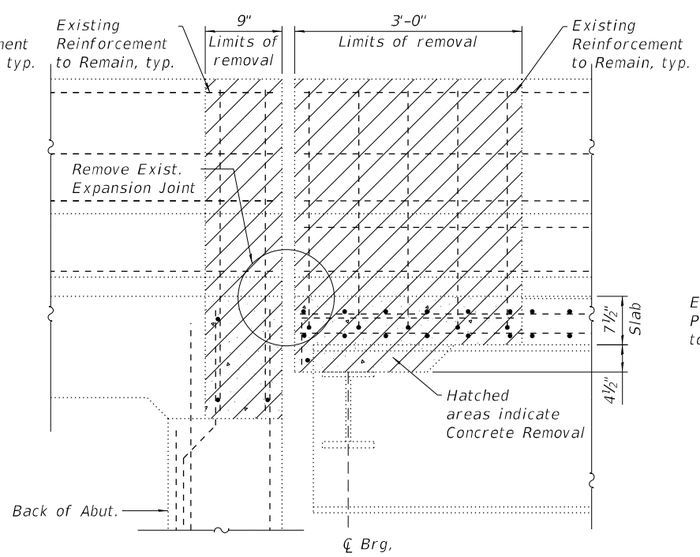
12/9/2024 7:17:35 AM

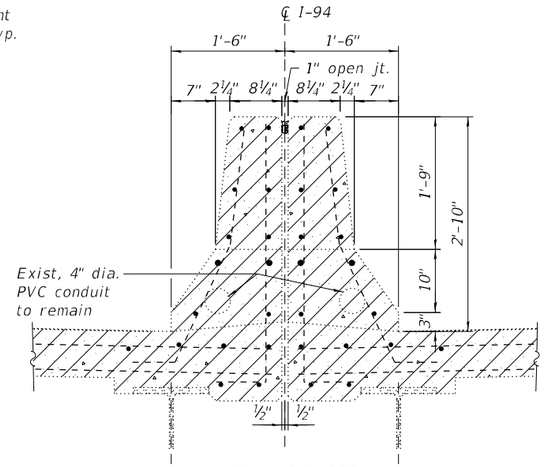
The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable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



SECTION A-A

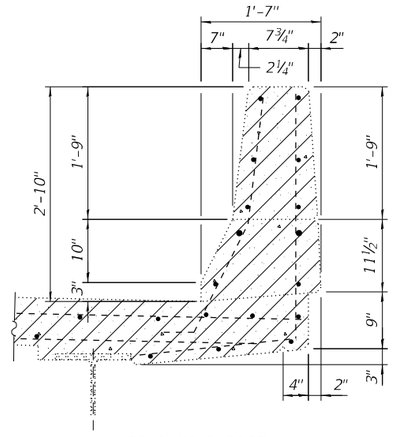


SECTION B-B



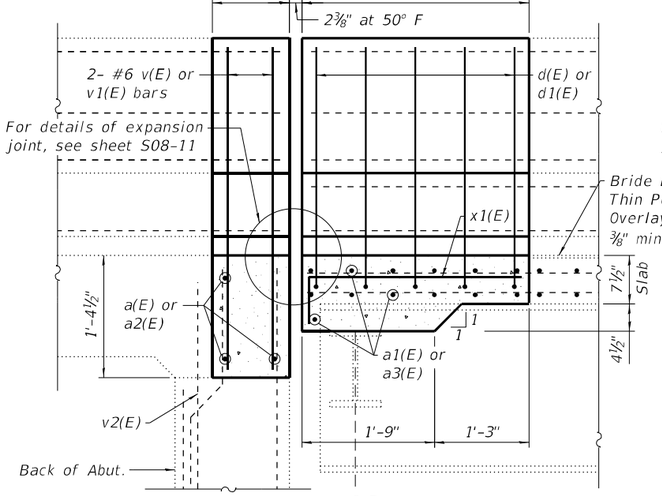
MEDIAN PARAPET

SECTION C-C

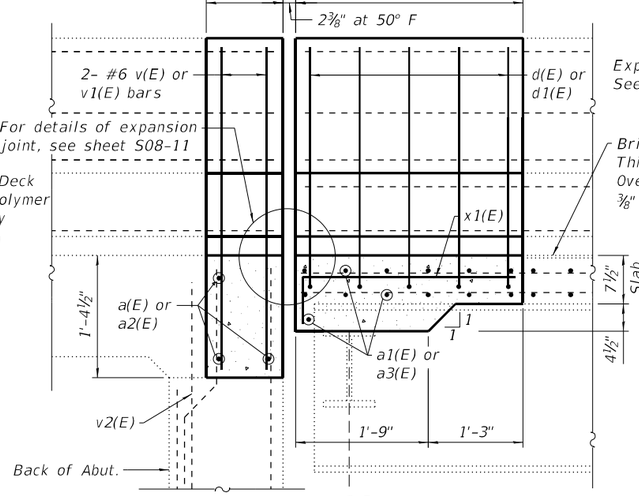


EB & WB PARPET

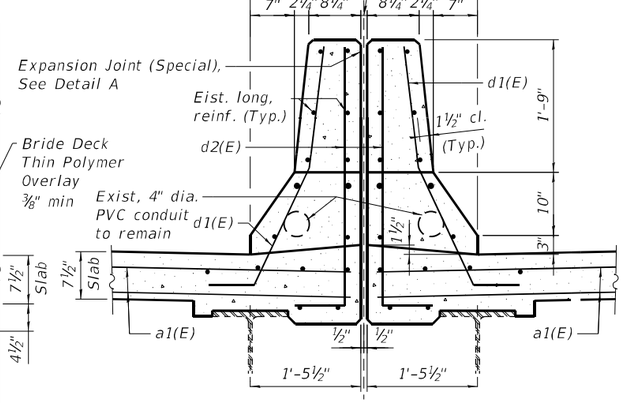
SECTION D-D



SECTION E-E

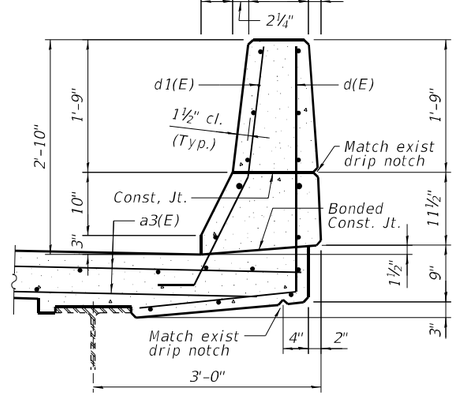


SECTION F-F



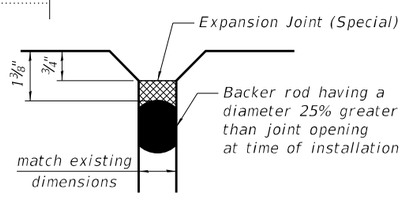
MEDIAN PARAPET

SECTION G-G



EB & WB PARPET

SECTION H-H



DETAIL A

(Typical entire length of bridge at median parapet)

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

ABUTMENT EXPANSION JOINT RECONSTRUCTION DETAILS - 1
STRUCTURE NO. 016-0162
SHEET S08-08 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	672
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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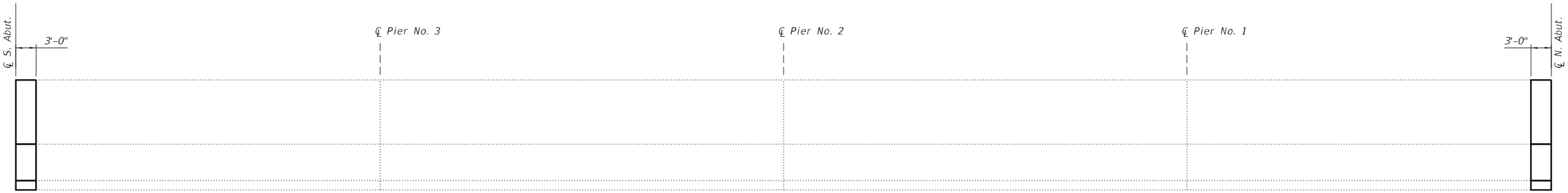
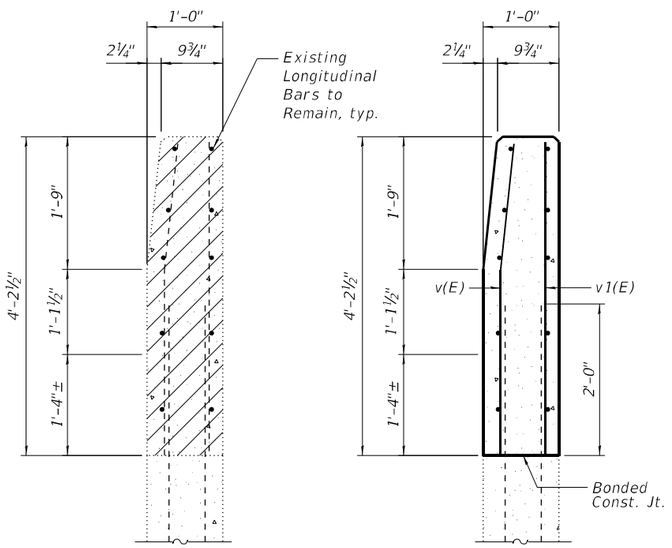


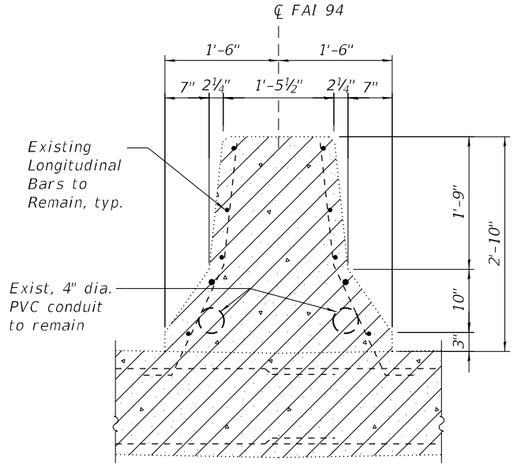
INSIDE ELEVATION OF WEST PARAPET

(East Parapet Similar)



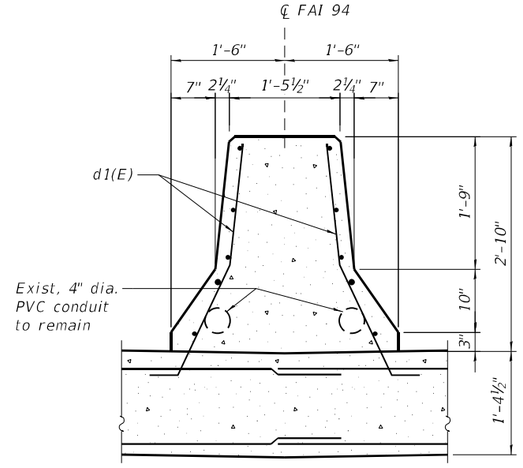
SECTION J-J

SECTION K-K



MEDIAN PARAPET

SECTION L-L



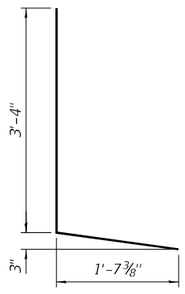
MEDIAN PARAPET

SECTION M-M

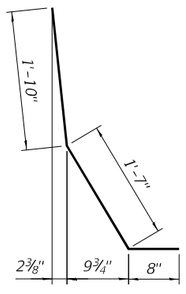
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	12	#6	37'-5"	
a1(E)	52	#5	35'-0"	
a2(E)	12	#6	29'-10"	
a3(E)	52	#5	29'-10"	
d(E)	20	#4	5'-0"	
d1(E)	48	#5	4'-1"	
d2(E)	20	#4	4'-0"	
v(E)	8	#6	4'-0"	
v1(E)	8	#6	4'-1"	
x(E)	232	#5	3'-3"	
Concrete Structures		Cu. Yd.	9.0	
Concrete Superstructure		Cu. Yd.	23.0	
Protective Coat		Sq. Yd.	10.0	
Reinforcement Bars, Epoxy Coated		Pound	5,938	
Silicon Joint Sealer, 1"		Foot	313	

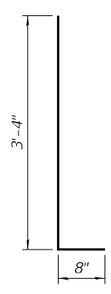
Reinforcement bars designated (E) shall be epoxy coated.



BAR d(E)

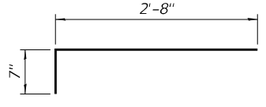


BAR d1(E)



BAR d2(E)

BAR v(E)



BAR x(E)

Note:
Protective Coat shall be applied to the front faces and tops of newly constructed parapets and medians.

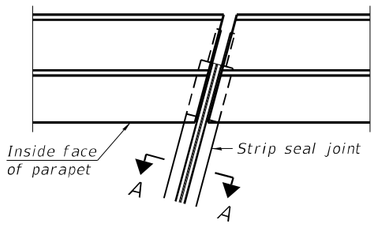
USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

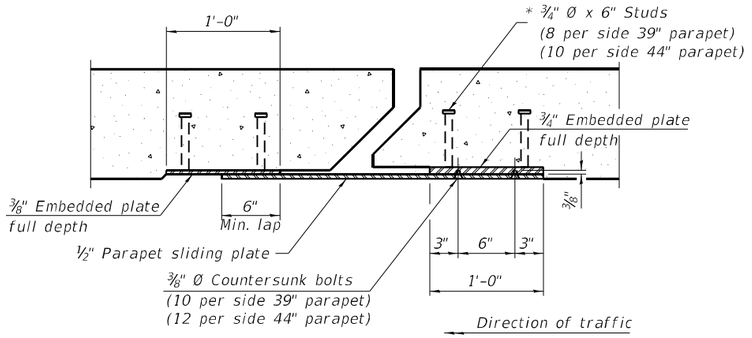
ABUTMENT EXPANSION JOINT RECONSTRUCTION DETAILS - 2
STRUCTURE NO. 016-0162

SHEET S08-09 OF S08-19 SHEETS

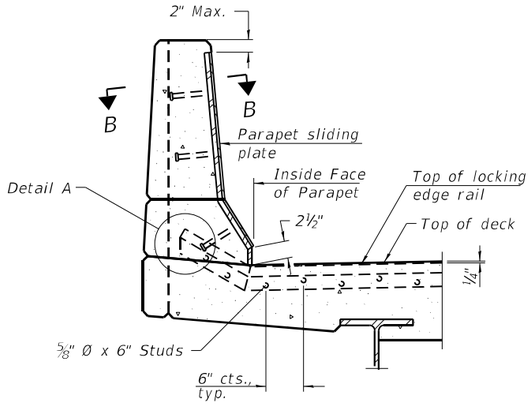
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	673
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	



PLAN AT PARAPET

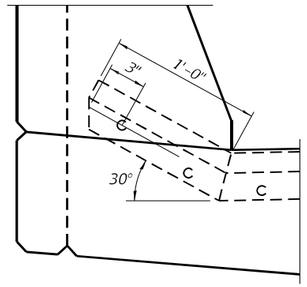


SECTION B-B

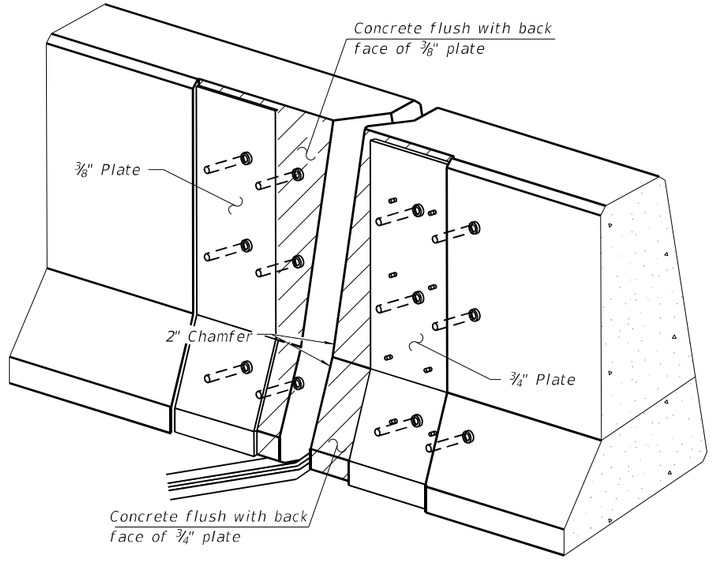


SECTION AT PARAPET

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

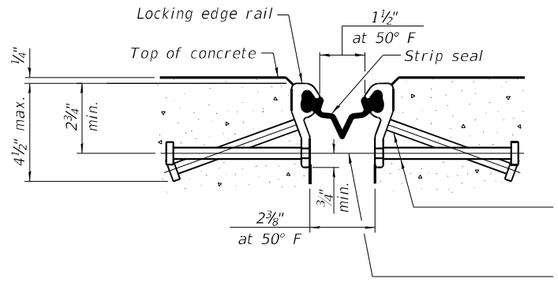


DETAIL A

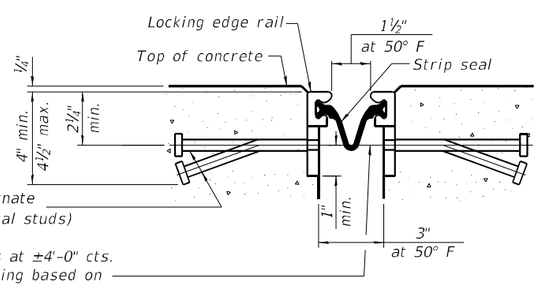


TRIMETRIC VIEW

(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT



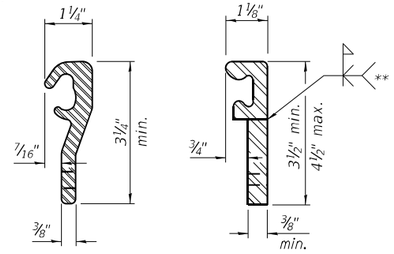
SHOWING WELDED RAIL JOINT

* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅜" ϕ threaded rods in 7/16" ϕ 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.

SECTION A-A

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

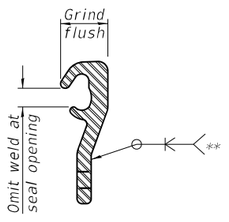


ROLLED (EXTRUDED) RAIL

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.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". 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 4½" 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.

39" constant slope barrier shown, 44" constant slope barrier 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.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	267

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-0162
SHEET S08-10 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	674
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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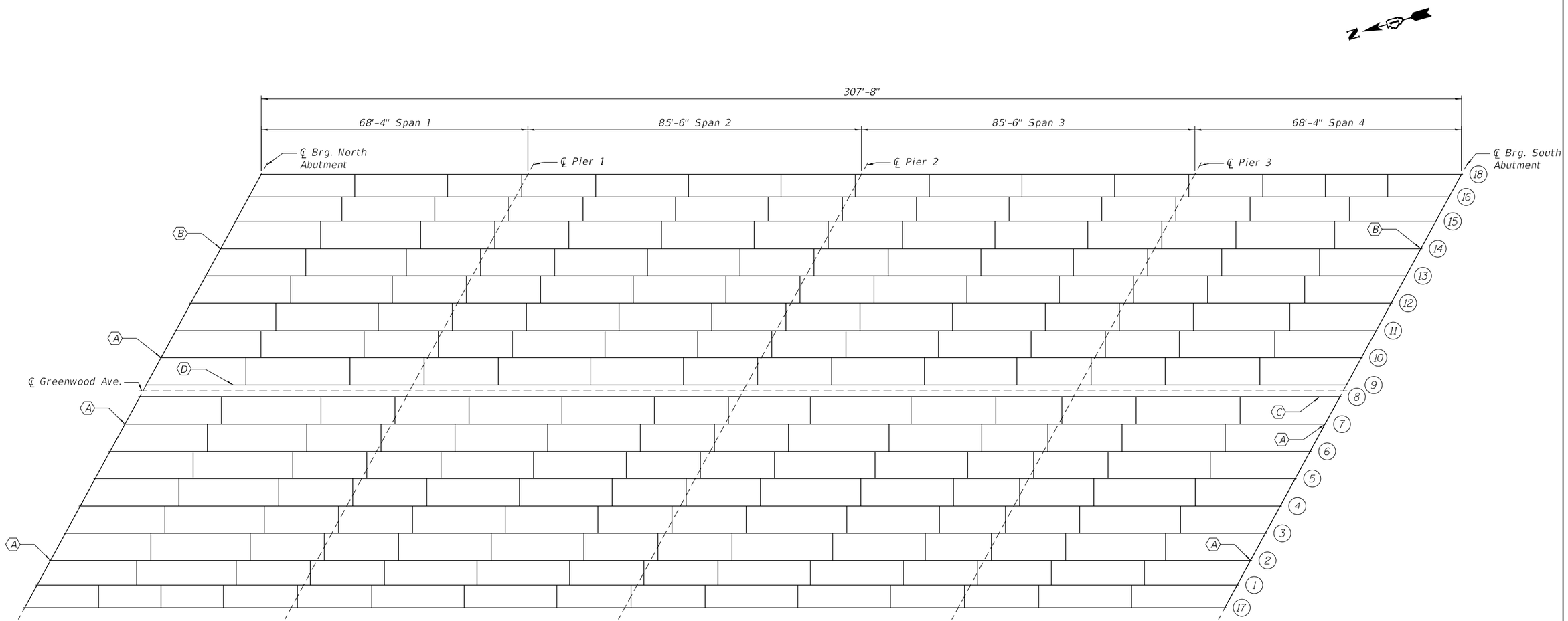


FRAMING PLAN

Ⓐ- Beam End Repairs, 40" (5 Locations).
See Sheet S08-12 for details.

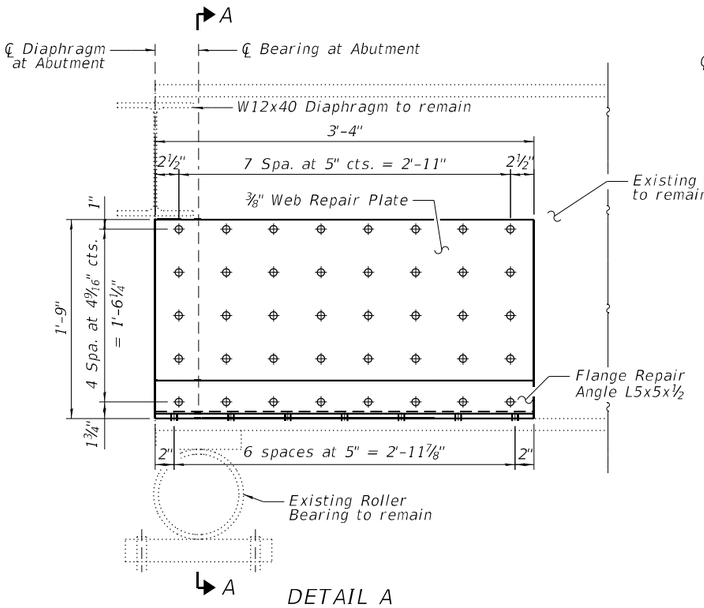
Ⓑ- Beam End Repairs, 20" (2 Locations).
See Sheet S08-12 for details.

Ⓒ- Beam 8 Top and Bottom Flange Repairs.
See Sheet S08-12 for details.

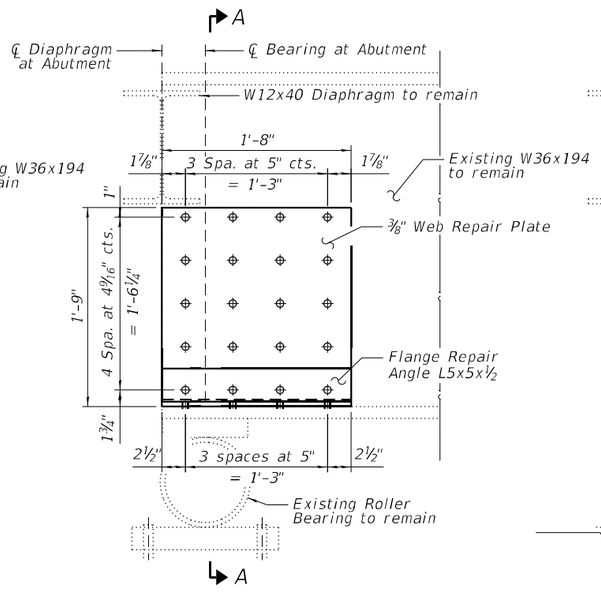
Ⓓ- Beam 9 Top and Bottom Flange and Web Repairs (Includes repair to the web at corroded deck drain).
See Sheet S08-12 for details.

wsp	USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FRAMING PLAN STRUCTURE NO. 016-0162
		CHECKED - MGH	REVISED -		SHEET S08-11 OF S08-19 SHEETS
	PLOT SCALE =	DRAWN - BJD	REVISED -		
	PLOT DATE =	CHECKED - MGH	REVISED -		

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	675
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



DETAIL A



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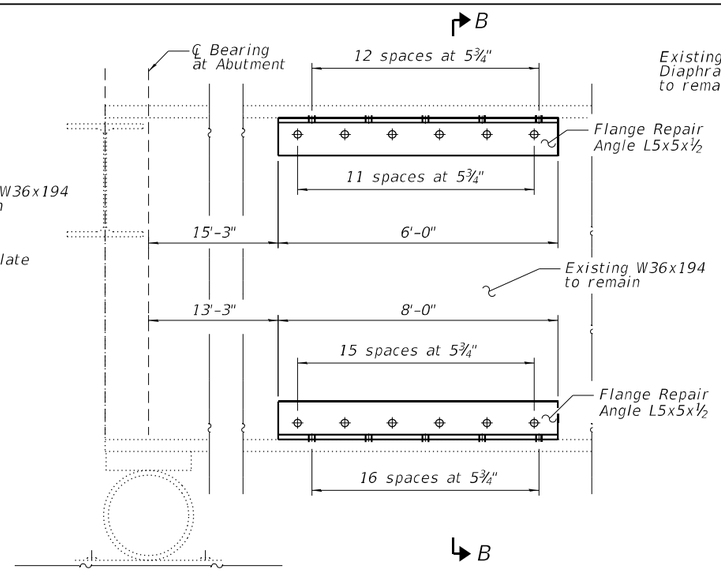

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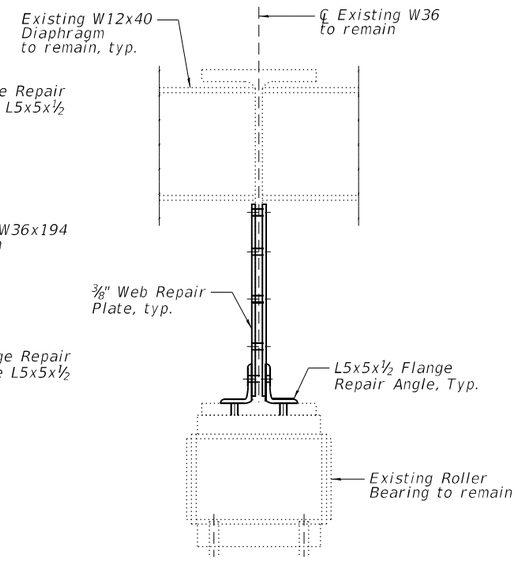
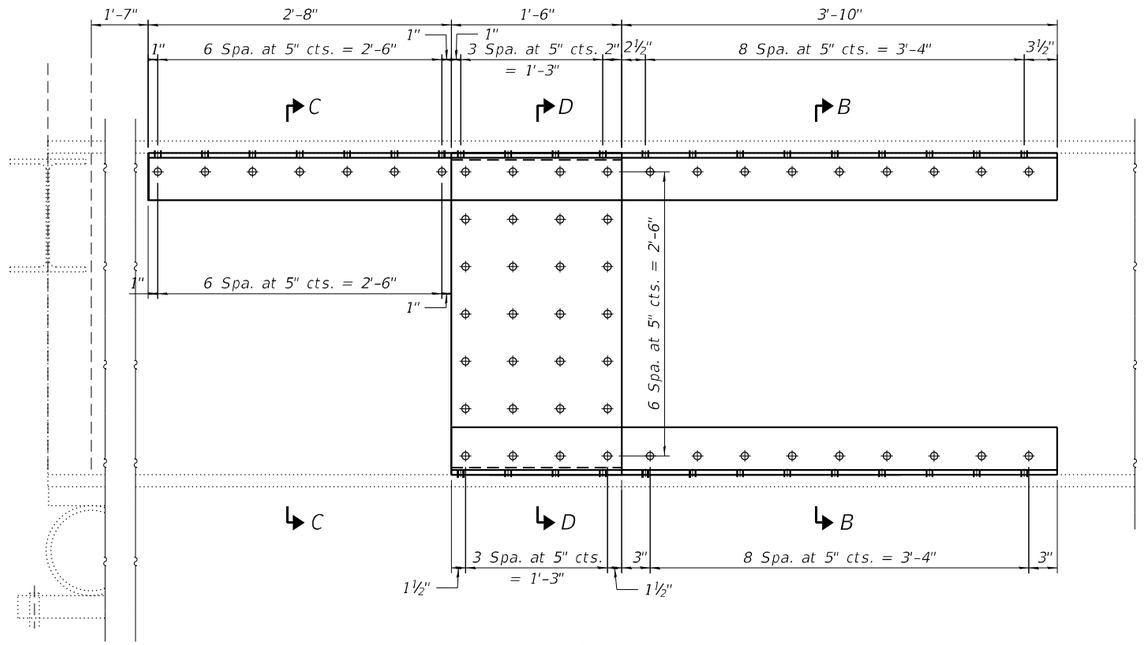


SECTION A-A



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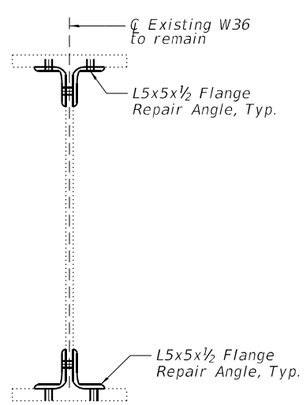
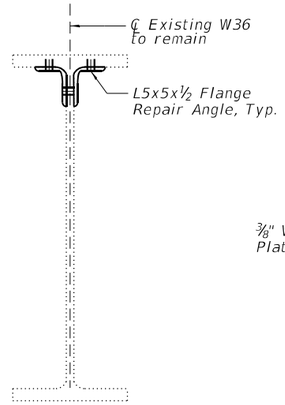
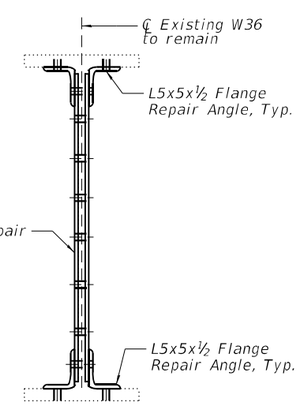


SECTION B-B



SECTION C-C



SECTION D-D

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	2,010

NOTES:

1. Distance from top of main girder to top of diaphrgam to be field verified prior to ordering material.
2. Contractor to field verify diaphragm location and bolt hole locations before ordering material.
3. No welds are to be installed on the back/end of the beam. All welds are included in the cost of Structural Steel Repair.
4. Contractor to field verify hole locations before ordering material. Contractor can elect to field drill holes in repair plates.

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL BEAM REPAIR DETAILS
STRUCTURE NO. 016-0162
SHEET S08-12 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	676
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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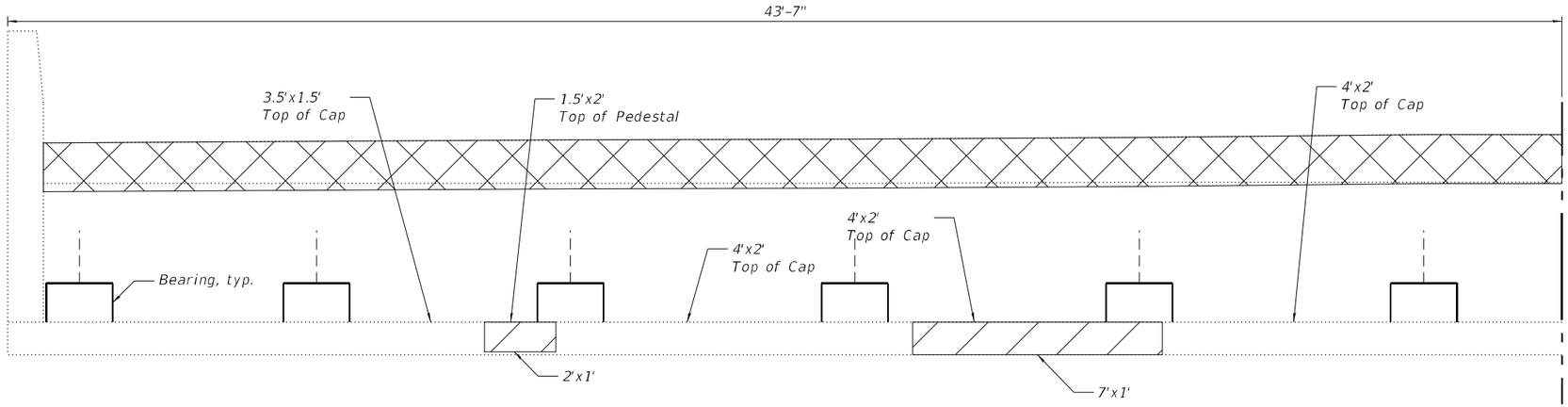
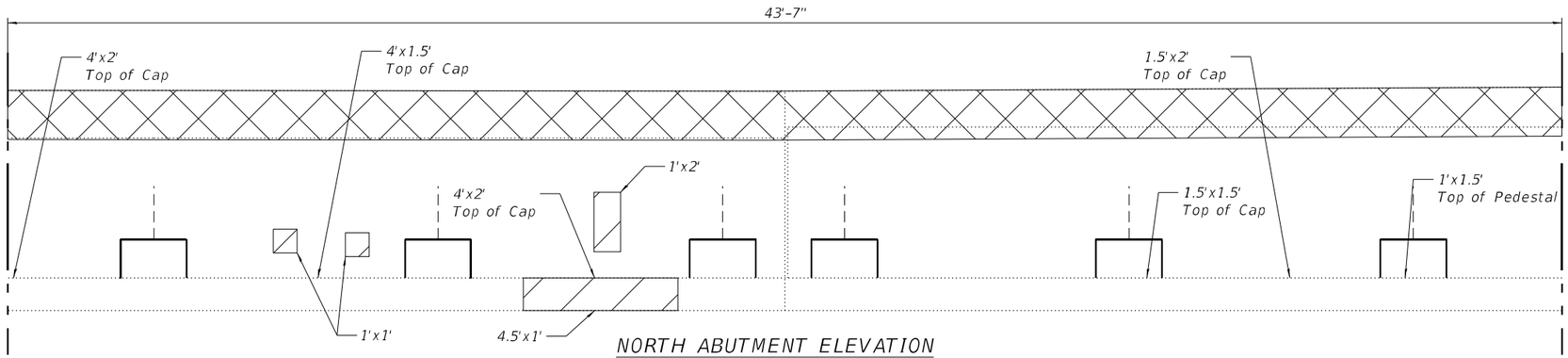


NORTH ABUTMENT ELEVATION



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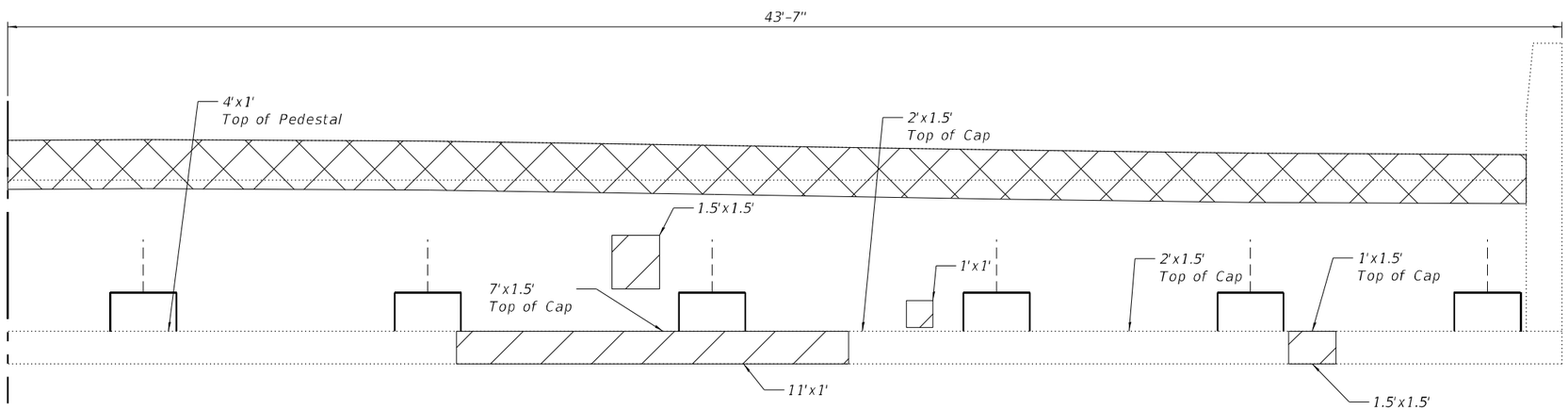

NORTH ABUTMENT ELEVATION

LEGEND:

Concrete Removal, for Information Only
(see Sheets S08-05 - S08-08)

Structural Repair Of Concrete
(Depth Equal To Or Less Than 5 In)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	115

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIRS
STRUCTURE NO. 016-0162
SHEET S08-13 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	677
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

MODEL: Default
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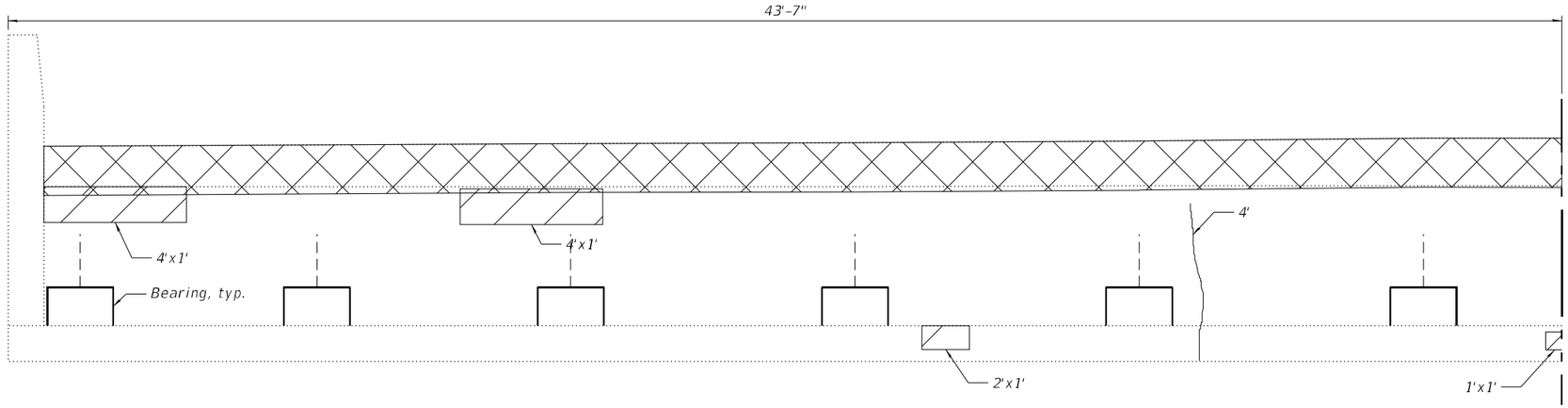
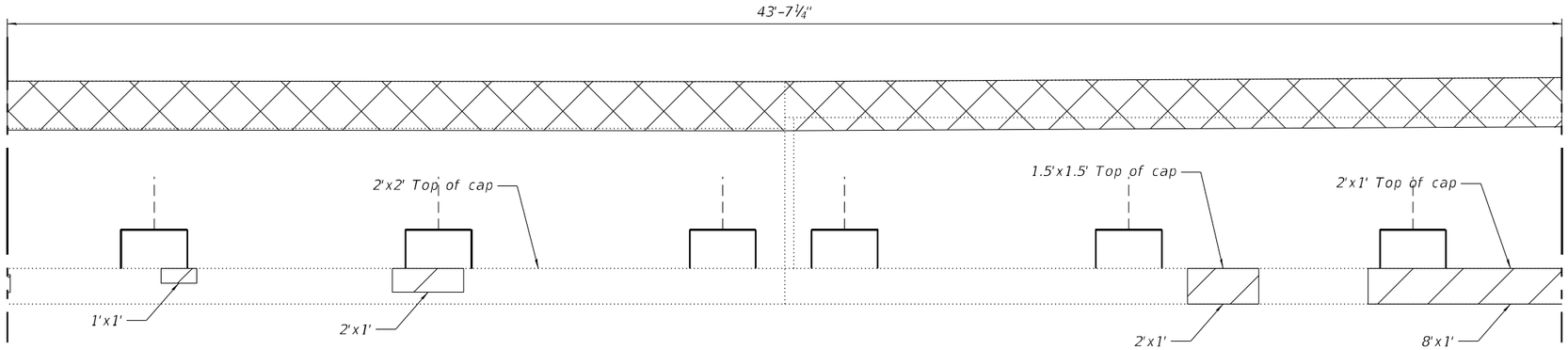


SOUTH ABUTMENT ELEVATION



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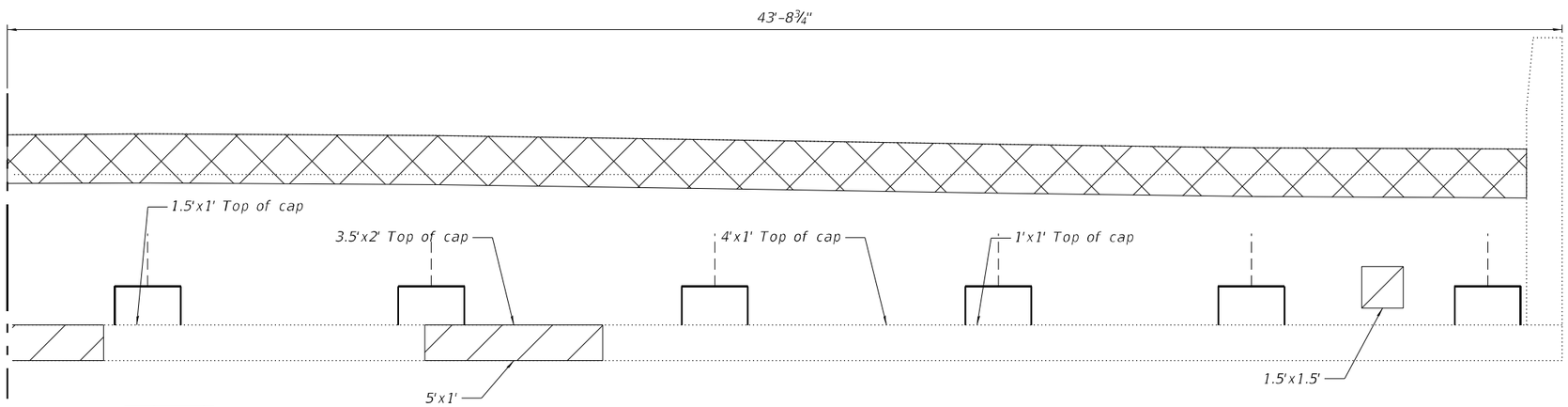

SOUTH ABUTMENT ELEVATION

LEGEND:

Concrete Removal, for Information Only (see Sheets S08-05 - S08-08)

Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)

Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	53
Epoxy Crack Injection	Foot	4

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT REPAIRS
STRUCTURE NO. 016-0162
SHEET S08-14 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	678
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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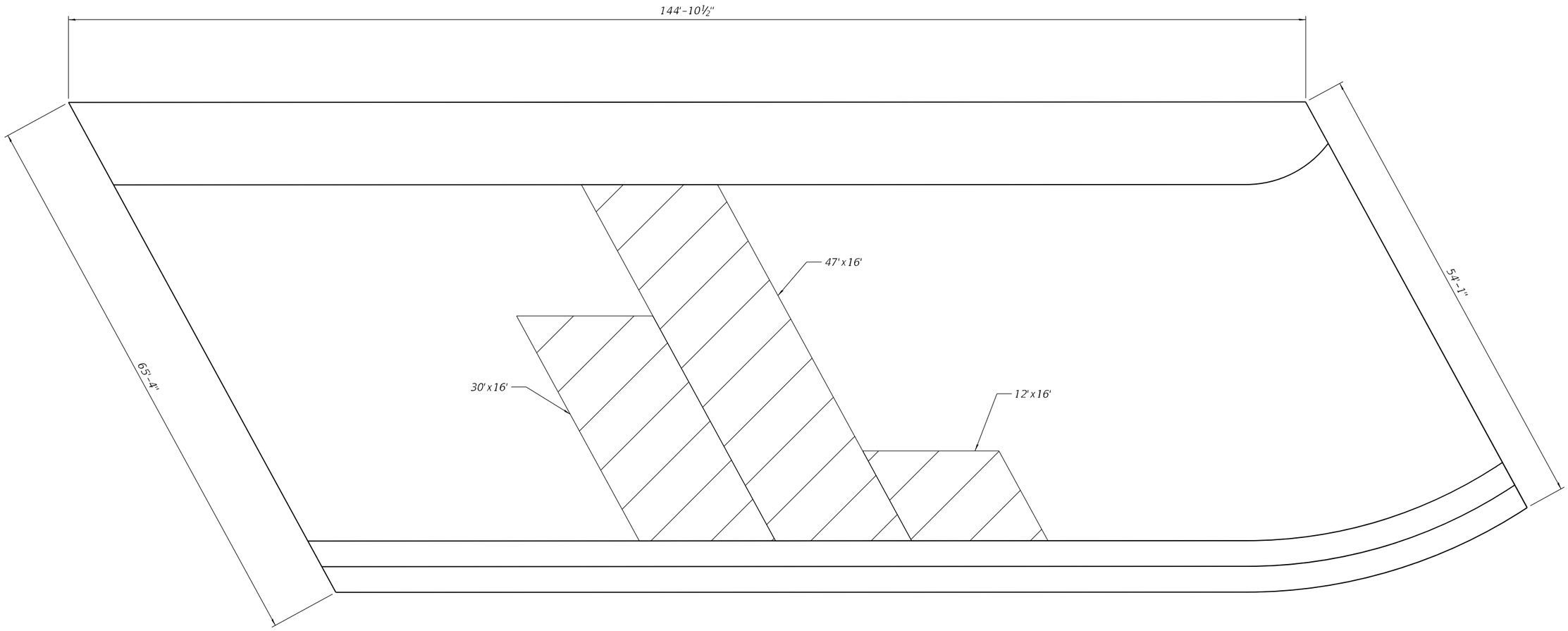

SOUTH SLOPEWALL

LEGEND:

Slope Wall Removal, Porous Granular Embankment and Slope Wall 4 Inch

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu. Yd.	211
Slope Wall Removal	Sq. Yd.	159
Slope Wall 4 Inch	Sq. Yd.	159

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH SLOPEWALL REPAIRS
STRUCTURE NO. 016-0162

SHEET S08-15 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	679
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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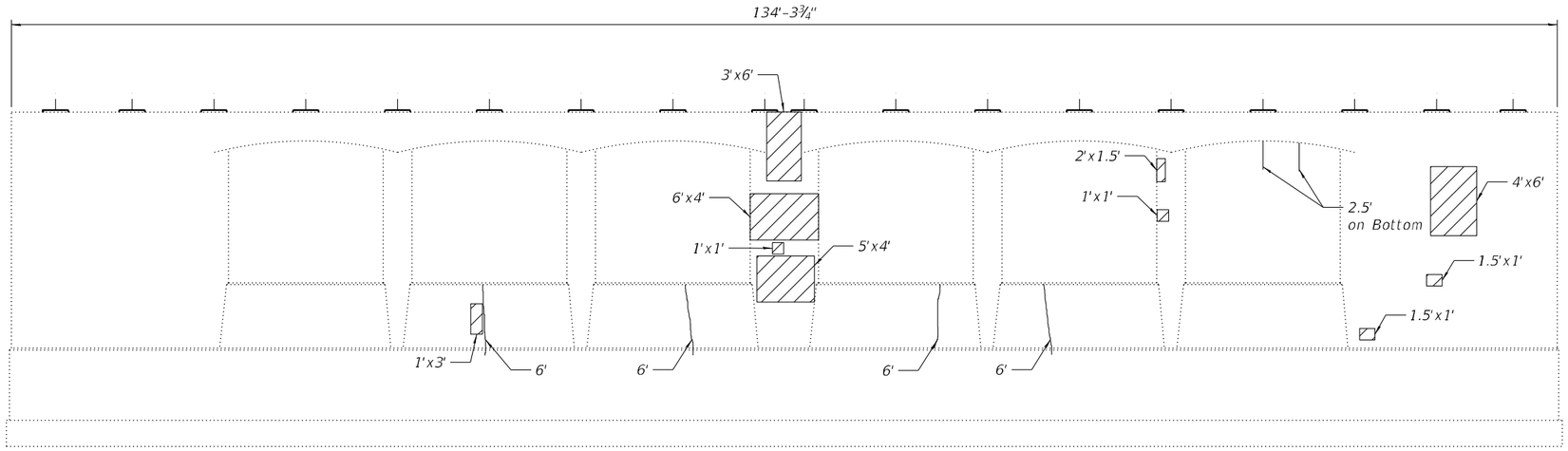
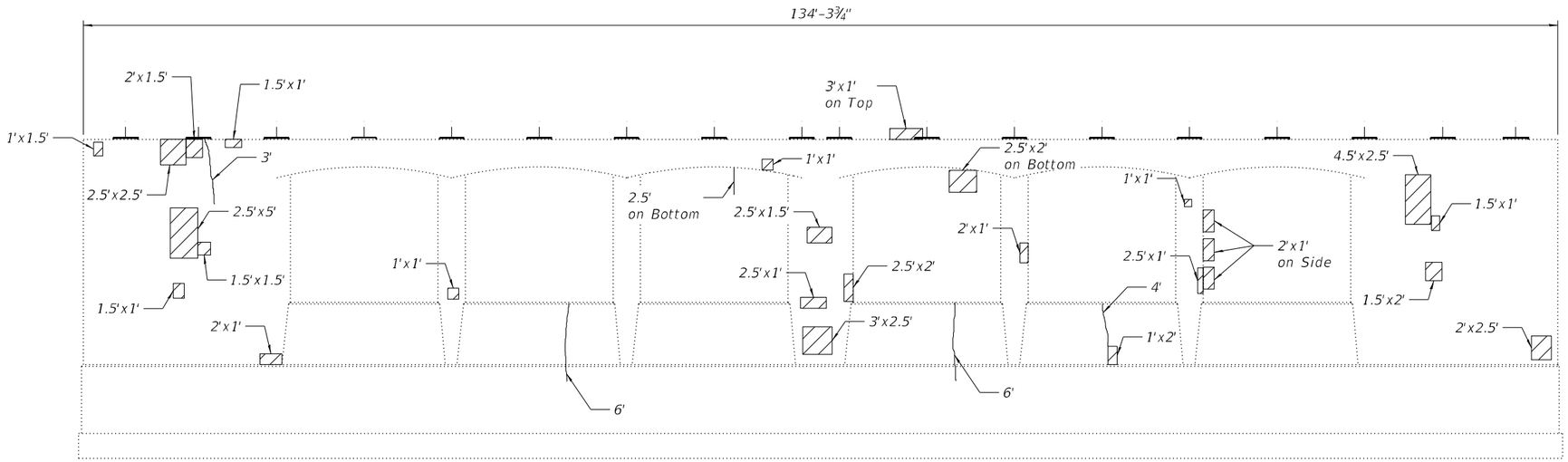


PIER 1 NORTH FACE



PIER 1 SOUTH FACE

LEGEND:

Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)

Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	190.5
Epoxy Crack Injection	Foot	50.5

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
STRUCTURE NO. 016-0162
SHEET S08-16 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	680
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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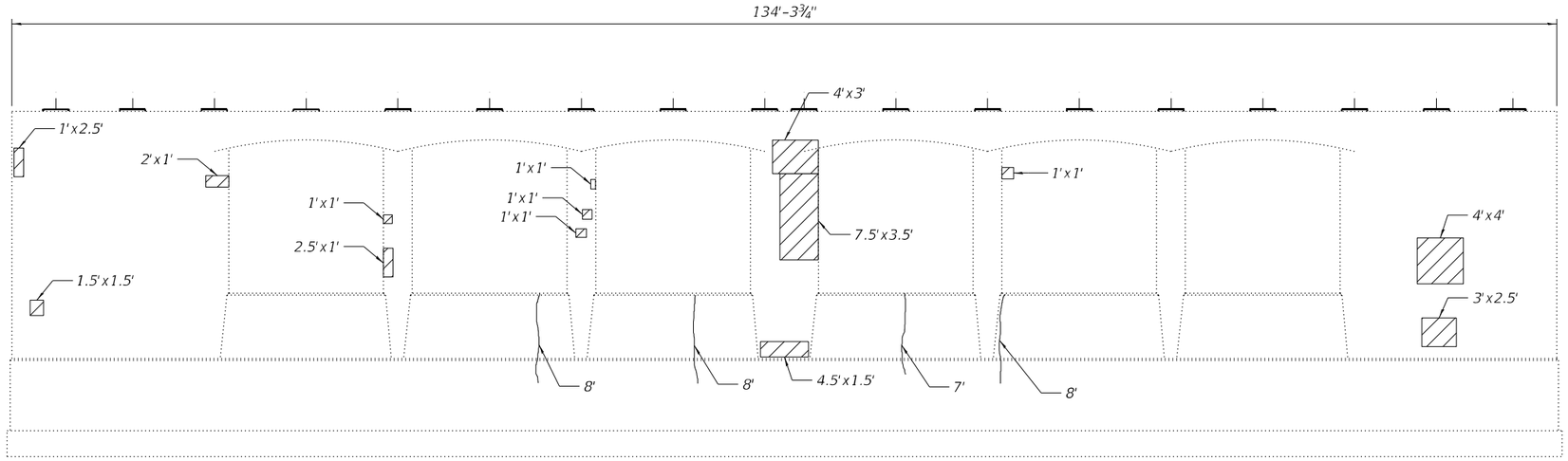
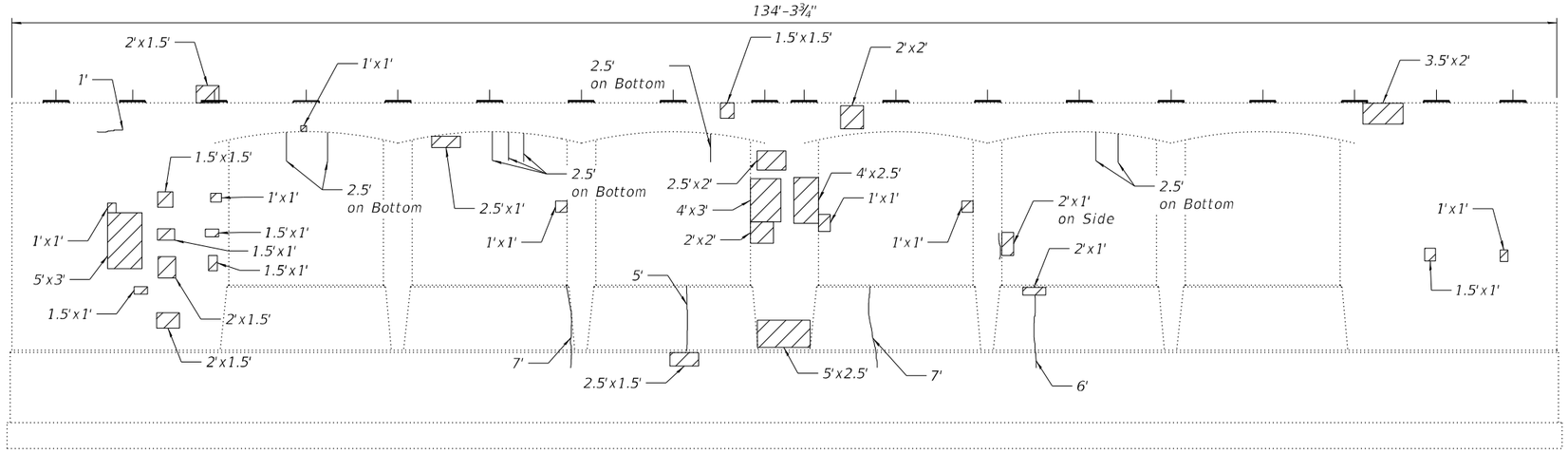


PIER 2 NORTH FACE



PIER 2 SOUTH FACE

LEGEND:

Structural Repair Of Concrete
(Depth Equal To Or Less Than 5 In)

Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	190.5
Epoxy Crack Injection	Foot	77

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIRS
STRUCTURE NO. 016-0162
SHEET S08-17 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	681
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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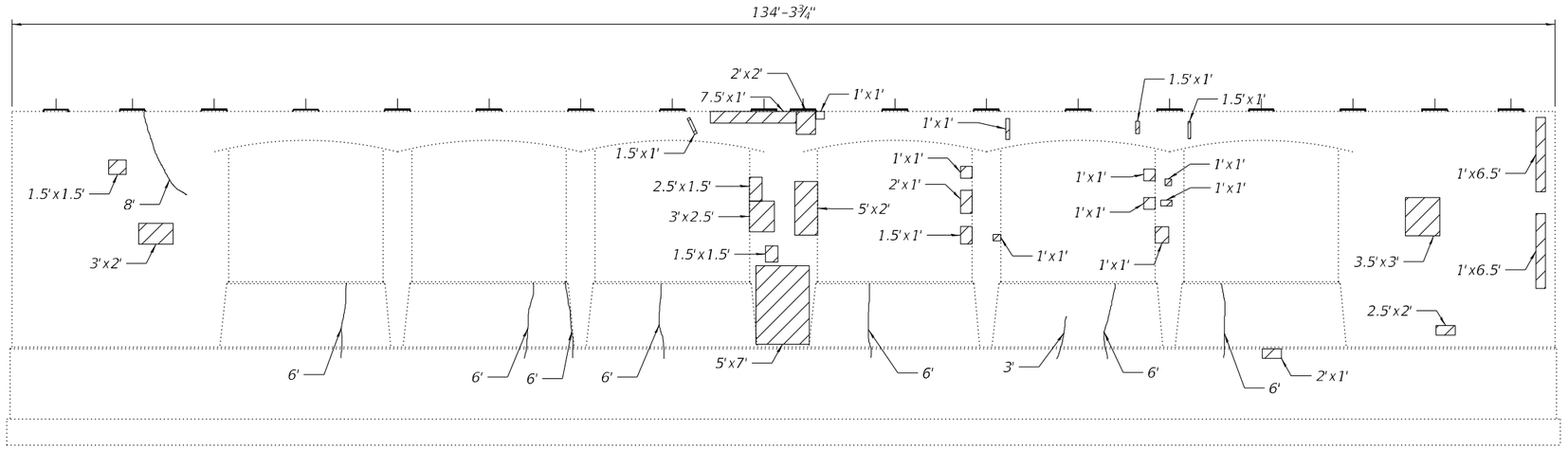
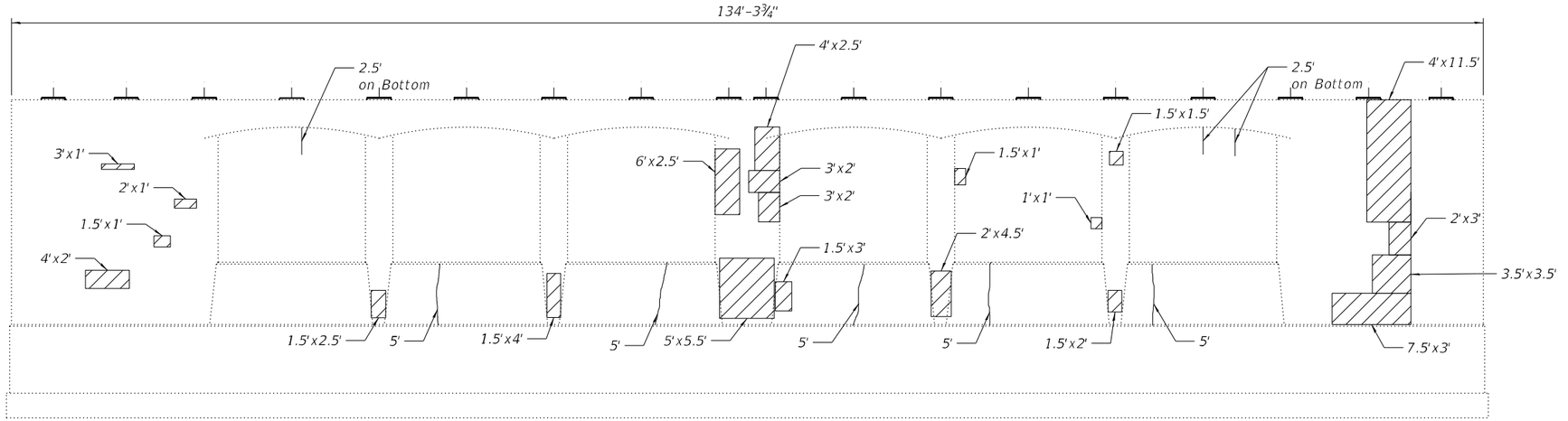


PIER 3 NORTH FACE



PIER 3 SOUTH FACE

LEGEND:

Structural Repair Of Concrete
(Depth Equal To Or Less Than 5 In)

Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	322.5
Epoxy Crack Injection	Foot	85.5

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 REPAIRS
STRUCTURE NO. 016-0162
SHEET S08-18 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	682
		CONTRACT NO. 62W87		
		ILLINOIS FED. AID PROJECT		

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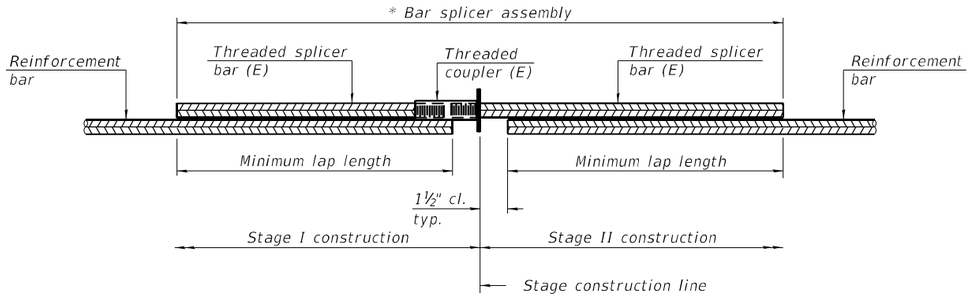


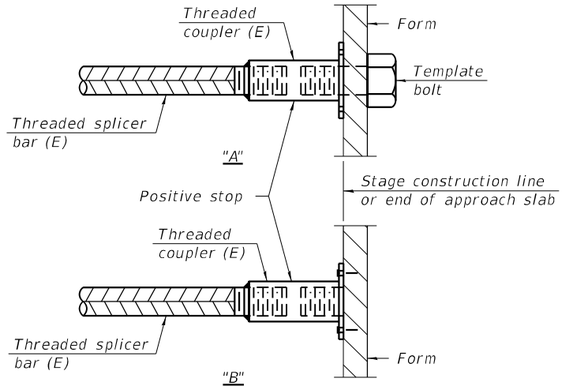
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1½" + thread length

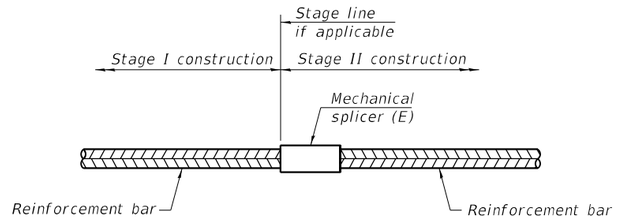
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Abutment	#6	12	4'-5"
Deck	#5	52	3'-1"



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.

BSD-1 2-1-2023

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

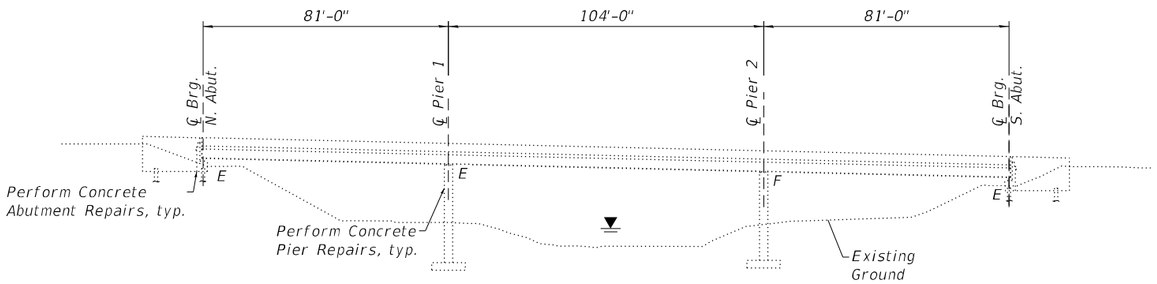
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-0162
SHEET S08-19 OF S08-19 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	683
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

Bench Mark: "X" scribed in chiseled box on top of concrete barrier wall at the southeast corner of bridge structure for Westbound FAI-94 over the Little Calumet River Elev. 606.96 (Assumed Local Datum)

Existing Structure: S.N. 016-0163 originally constructed in 1947 as a 3 span structure. In 1981, the structure was widened with a new deck and new beam lines on both sides of the superstructure. All superstructure was cleaned and painted. In 2009, the approach slabs, deck joints at abutments and deck overlay were replaced. The deck joint between the center parapets was resealed. Abutment bearings were replaced with elastomeric bearings. The steel beam ends and end diaphragms at abutments were cleaned and painted.

Traffic to be maintained utilizing staged construction.



ELEVATION

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

FIELD UNITS (New Construction)
f'c = 4,000 psi (Superstructure)
f'c = 3,500 psi (Substructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

FIELD UNITS (2009 Repairs)
f'c = 3,500 psi (Concrete – Deck Slab)
fy = 60,000 psi (Reinforcement – Deck Slab)
fs = 36,000 psi (M270 Grade 36)

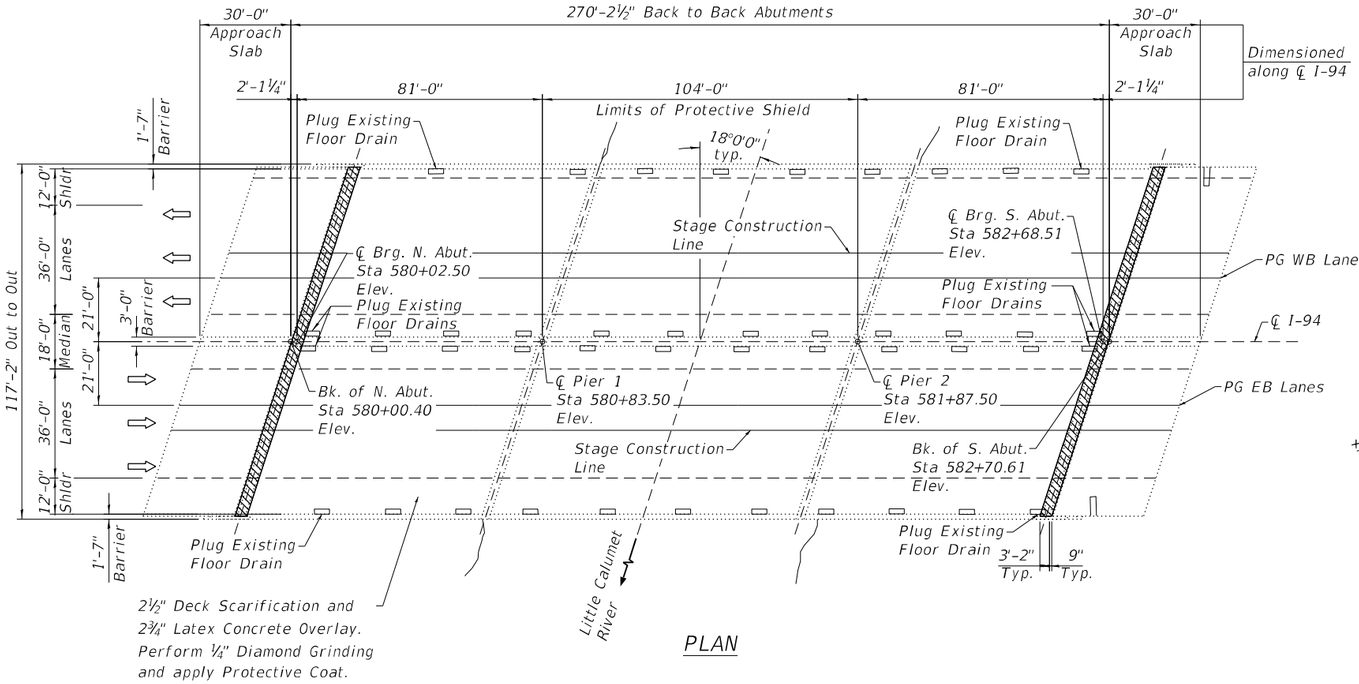
FIELD UNITS (1980 Rehab)
f'c = 3,500 psi (Concrete – Deck Slab)
fc = 1,400 psi (Substructure)
fy = 60,000 psi (Reinforcement – Deck Slab)
fs = 20,000 psi (Reinforcement– Substructure)
fs = 20,000 psi (Structural Steel) (M183 Grade 36)

FIELD UNITS (1946 Original Construction)
fs = 18,000 psi (A7 Struct. Steel)
f'c = 1,200 psi (Superstructure)
fy = 20,000 psi (Reinforcement)
f'c = 800 psi (Concrete – Substructure)

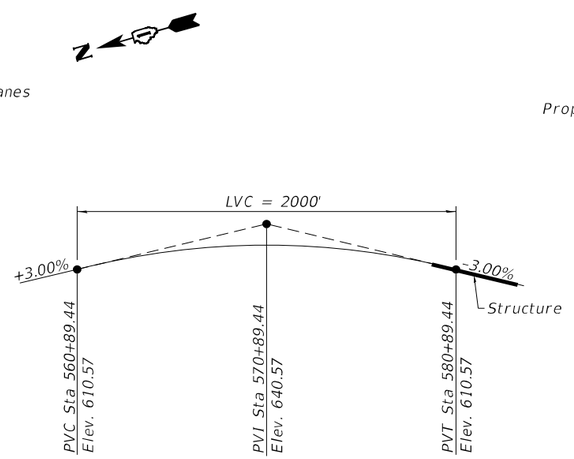
LOADING HL-93

SCOPE OF WORK

1. Scarify 2½" of the existing bridge deck.
2. Repair deck with partial and full depth patches.
3. Repair of bridge approach slabs.
4. Removal and replacement of expansion joints at the abutments.
5. Clean the existing floor drains and plug the floor drains within 10 feet of abutments.
6. Install enclosed drainage system.
7. Install a 2¾" latex concrete overlay.
8. Perform ¼" Diamond Grinding to the top of bridge deck and abutment hatch block.
9. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
10. Apply Protective Coat to the top of the reconstructed transverse joints, top of new Latex Concrete Overlay, and top and inside face of parapets.
11. Perform Substructure repairs.



PLAN

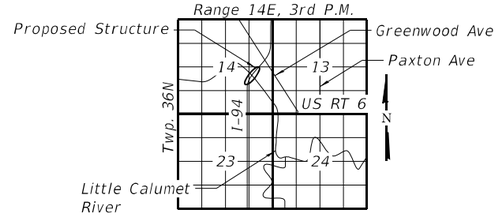


EXISTING PROFILE GRADE FAI-94

The Profile Grade shows the final grade after grinding.

LICENSED STRUCTURAL ENGINEER
WILLIAM P. MALINOWSKI
081-006059
STATE OF ILLINOIS

William P. Malinowski S.E.
Licensed Structural Engineer
State of Illinois No. 081-006059
Registration Expires 11/30/2026



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
I-94 OVER LITTLE CALUMET RIVER
FAI 94 SEC. 1975-079-BR
COOK COUNTY
STATION 581+35.50
SN 016-0163

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S09-01 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	684
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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GENERAL NOTES

1. No field welding is permitted except as specified in the contract documents.

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

3. Plan dimensions and details relative to the existing structure have been taken from existing plans are subject to nominal construction variations. The Contactor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

4. Existing reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.

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

6. Cleaning and painting of the existing structural steel shall be done under a separate painting contract.

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".

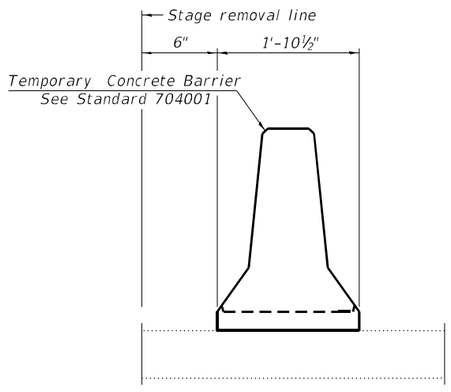
8. Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the joint concrete is poured at an ambient temperature other than 50°F.

9. All exposed concrete edges shall have a ¾" x 45° chamfer except where shown otherwise.

10. 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 ¾ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

11. Up to ¼ inch to be ground off the bridge deck and the bridge approach slabs. The Profile Grade shows the final grade after grinding.

INDEX OF SHEETS



EXISTING SLAB

SECTIONS THRU SLAB OR DECK BEAM

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL
Concrete Removal	Cu. Yd.	23	9	32
Protective Shield	Sq. Yd.	1,354		1,354
Concrete Structures	Cu. Yd.		9.0	9.0
Concrete Superstructure	Cu. Yd.	23.0		23.0
Protective Coat	Sq. Yd.	4,085		4,085
Reinforcement Bars, Epoxy Coated	Pound	4,460	1,130	5,590
Bar Splicers	Each	52	12	64
Preformed Joint Strip Seal	Foot	247		247
Epoxy Crack Injection	Foot		38	38
Plug Existing Floor Drains	Each	8		8
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	2,972		2,972
Bridge Drainage System	Each	1		1
Approach Slab Repair (Full Depth)	Sq. Yd.	1		1
Approach Slab Repair (Partial Depth)	Sq. Yd.	53		53
Bridge Latex Concrete Overlay 2 3/4"	Sq. Yd.	3,333		3,333
Cleaning Bridge Seats	Sq. Ft.		1,346	1,346
Clean Existing Inlets	Each	40		40
Bridge Deck Scarification 2 1/2"	Sq. Yd.	3,333		3,333
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.		65	65
Deck Slab Repair (Full Depth – Type I)	Sq. Yd.	59		59
Deck Slab Repair (Full Depth – Type II)	Sq. Yd.	95		95
Expansion Joint (Special)	Foot	271		271
Diamond Grinding (Bridge Section)	Sq. Yd.	3,303		3,303

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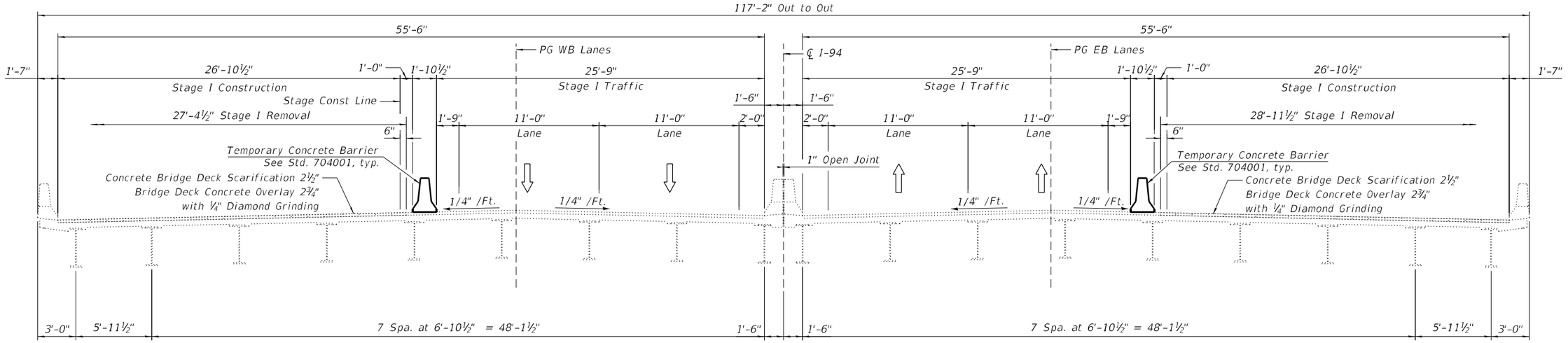
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

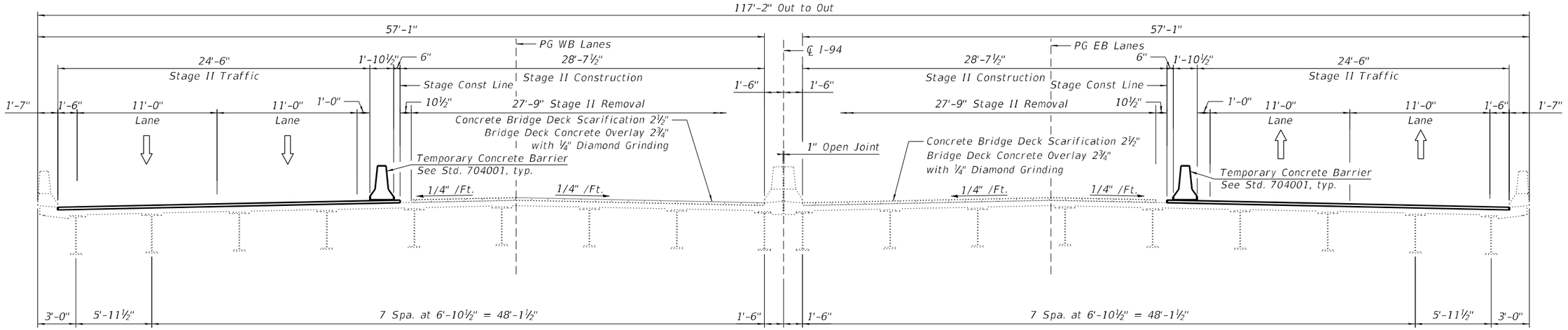
GENERAL DATA
STRUCTURE NO. 016-0163
SHEET S09-02 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	685
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



STAGE I CONSTRUCTION

(Looking South)



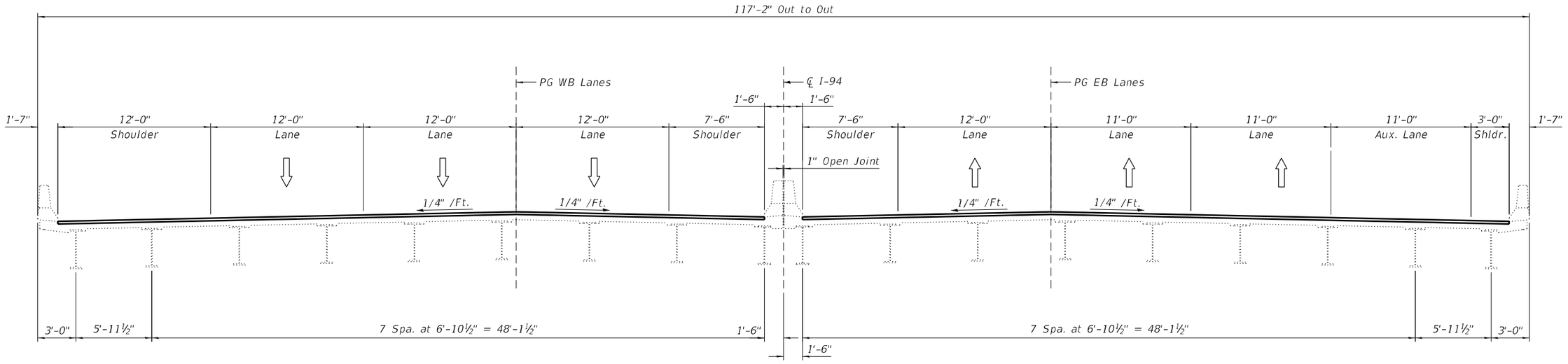
STAGE II CONSTRUCTION

(Looking South)

USER NAME =	DESIGNED - BJD	REVISED -	**STATE OF ILLINOIS** **DEPARTMENT OF TRANSPORTATION**
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

CONSTRUCTION STAGING - 1
STRUCTURE NO. 016-0163
SHEET S09-03 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	686
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



FINAL CROSS SECTION

(Looking South)

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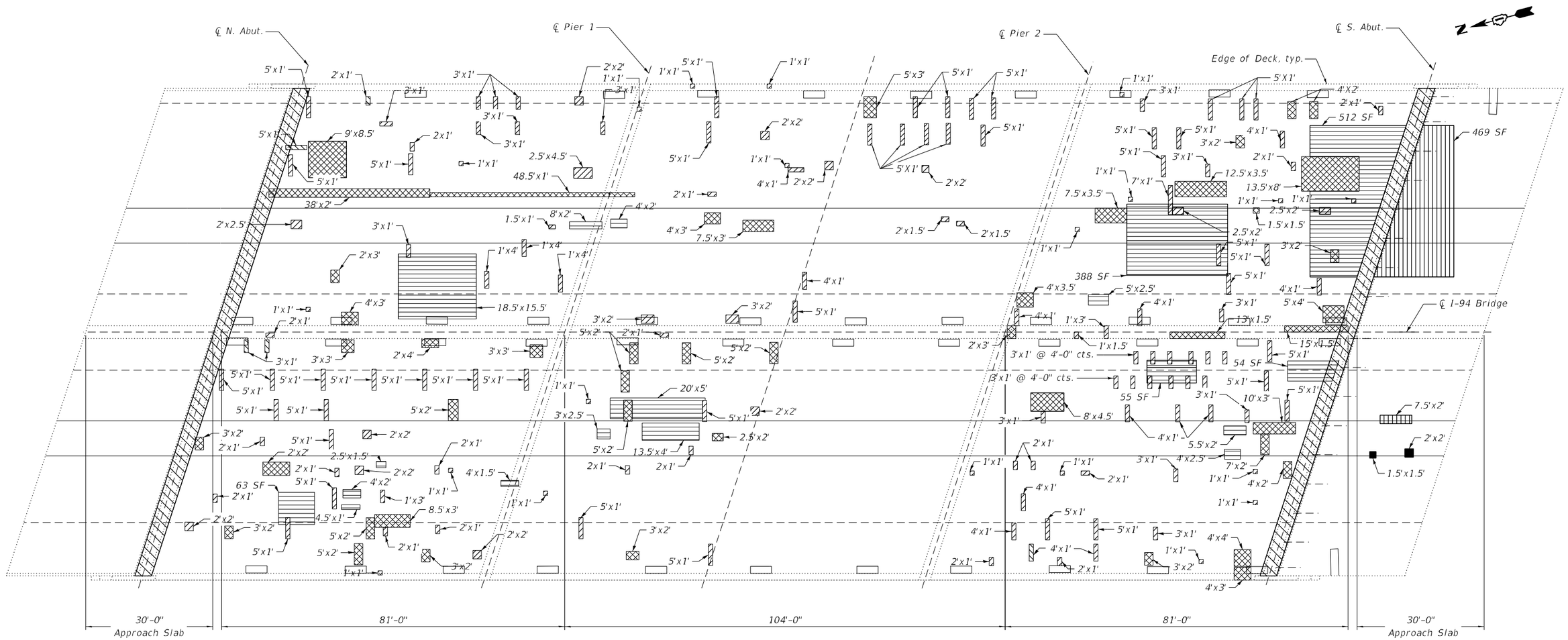
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING - 2
STRUCTURE NO. 016-0163
SHEET S09-04 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	687
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



LEGEND:

- Concrete Removal for Joint Replacement (see Sheets 7-10)
- Approach Slab Repair (Full Depth)
- Approach Slab Repair (Partial Depth)
- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- Deck Slab Repair (Partial), For Information Only

DECK REPAIR PLAN

(Top of Deck)

Notes:
Area of deck and approach slab repairs are estimated. Actual type, location, and dimensions are to be determined by the Engineer during construction and documented on as-built plans.

Areas of Deck Slab Repair (Partial) are shown for information only and shall be included in the Cost of Bridge Deck Latex Overlay, 2¾"

BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	QUANTITY
Concrete Removal	Cu. Yd.	23	7	30
Approach Slab Repair (Full Depth)	Sq. Yd.	1	-	1
Approach Slab Repair (Partial Depth)	Sq. Yd.	54	-	54
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	59	-	59
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	95	-	95

wsp

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PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REPAIR PLAN
STRUCTURE NO. 016-0163
SHEET S09-05 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	688
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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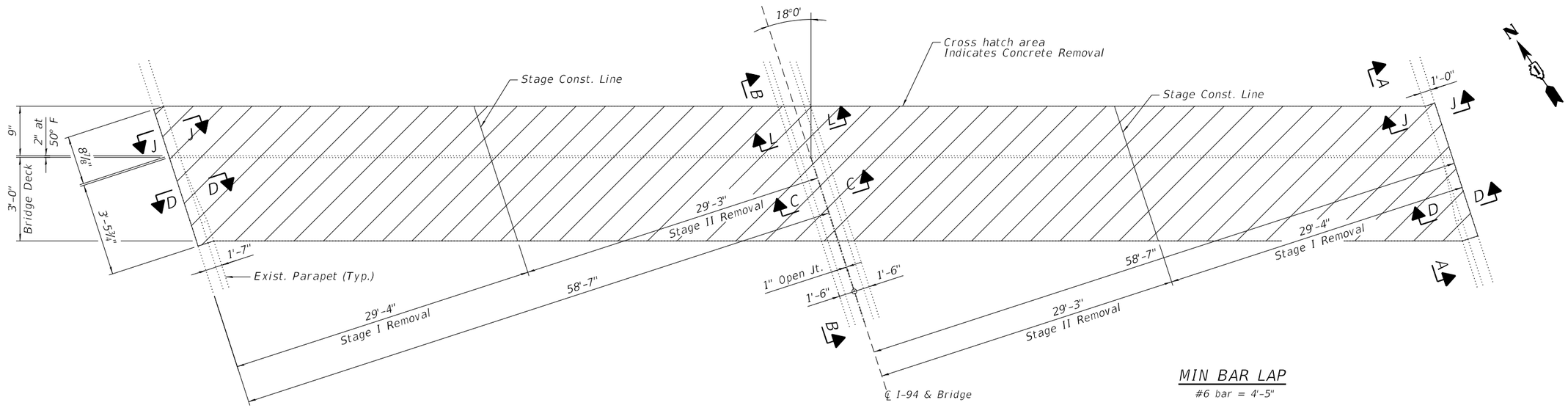
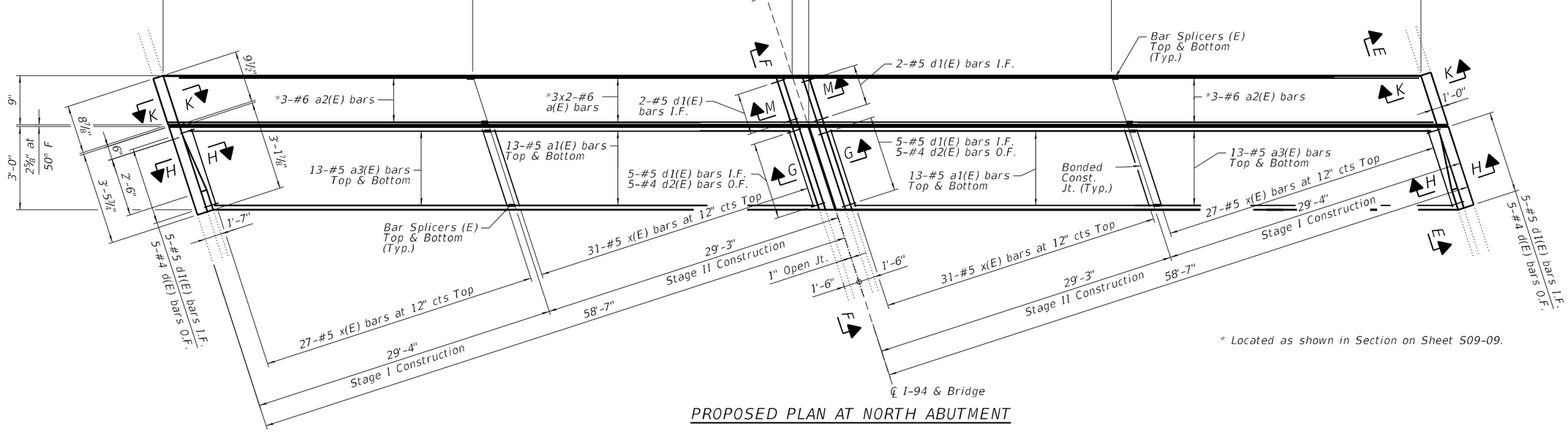


MIN BAR LAP

#6 bar = 4'-5"

REMOVAL PLAN AT NORTH ABUTMENT



PROPOSED PLAN AT NORTH ABUTMENT

* Located as shown in Section on Sheet S09-09.

NOTES

All reinforcement bars are to be evenly spaced unless otherwise noted.
Reinforcement bars designated (E) shall be epoxy coated.
O.F. denotes Outside Face. I.F. denotes Inside Face.
For Bill of Material and bar details see Sheet S09-10.
For additional abutment backwall demolition and reconstruction see Sheet S09-09.

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PLOT DATE =	CHECKED - MGH	REVISED -	

NORTH ABUTMENT EXPANSION JOINT RECONSTRUCTION PLAN
STRUCTURE NO. 016-0163
SHEET S09-06 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	689
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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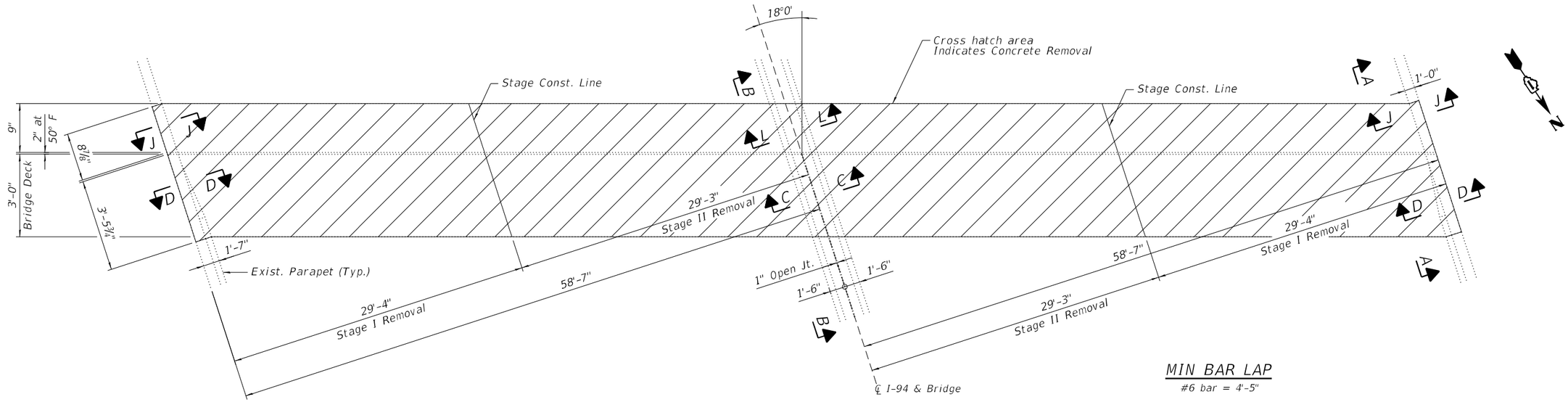
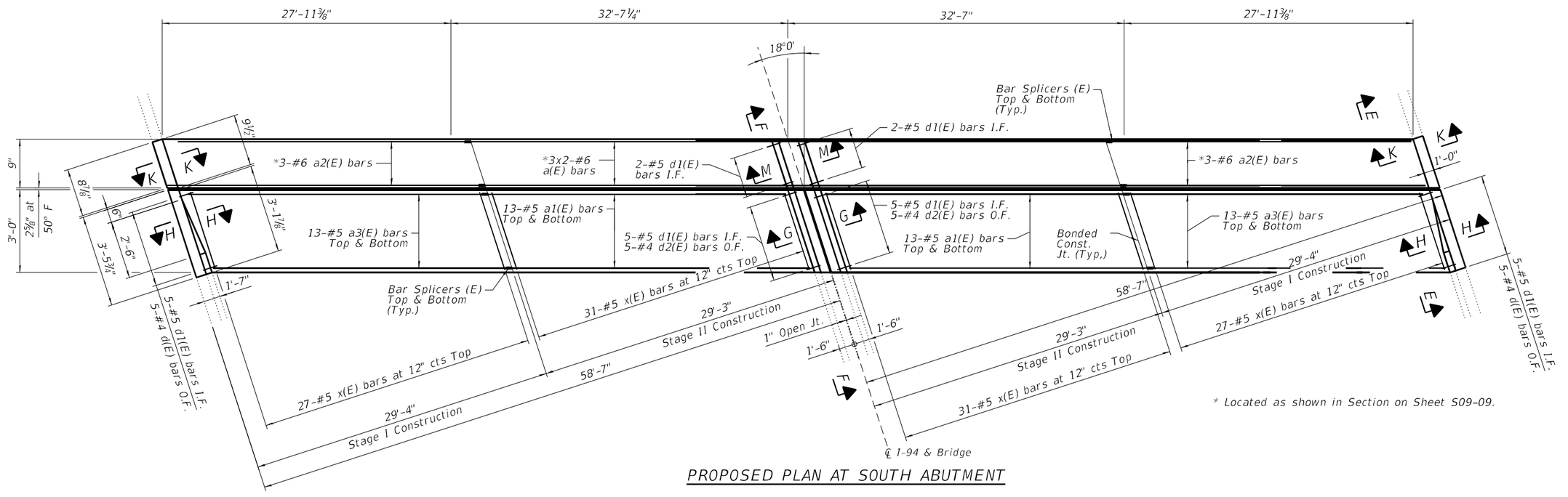


MIN BAR LAP

#6 bar = 4'-5"

REMOVAL PLAN AT SOUTH ABUTMENT



PROPOSED PLAN AT SOUTH ABUTMENT

* Located as shown in Section on Sheet S09-09.

NOTES

All reinforcement bars are to be evenly spaced unless otherwise noted.
Reinforcement bars designated (E) shall be epoxy coated.
O.F. denotes Outside Face. I.F. denotes Inside Face.
For Bill of Material and bar details see Sheet S09-10.
For additional abutment backwall demolition and reconstruction see Sheet S09-09.

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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PLOT DATE =	CHECKED - MGH	REVISED -	

SOUTH ABUTMENT EXPANSION JOINT RECONSTRUCTION PLAN
STRUCTURE NO. 016-0163
SHEET S09-07 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	690
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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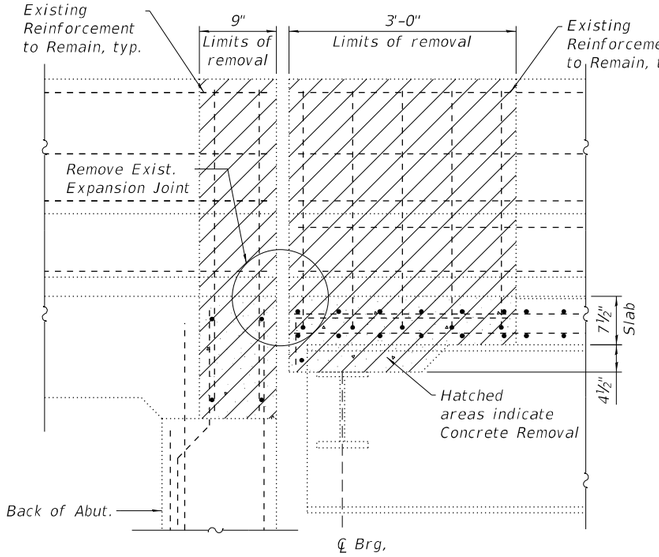
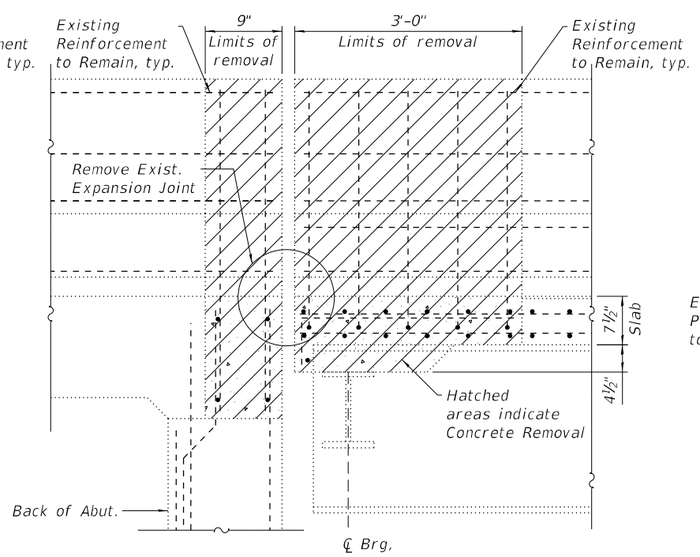
12/9/2024 7:20:39 AM

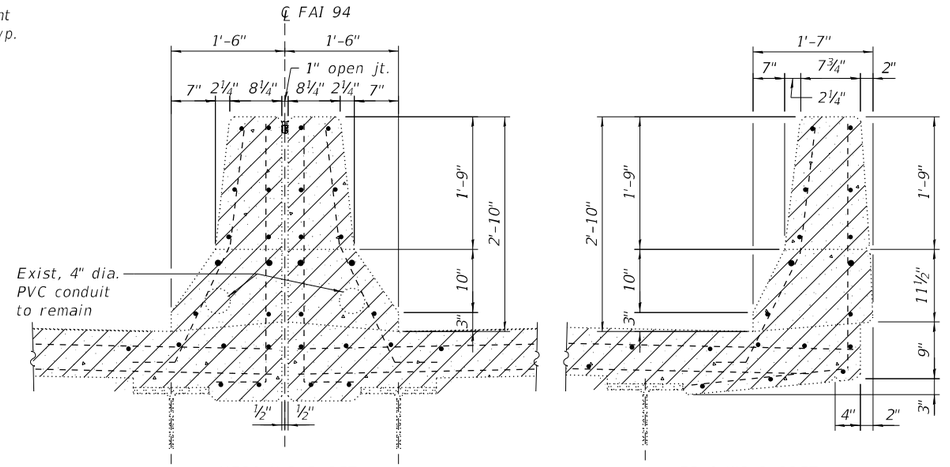
The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable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



SECTION A-A



SECTION B-B

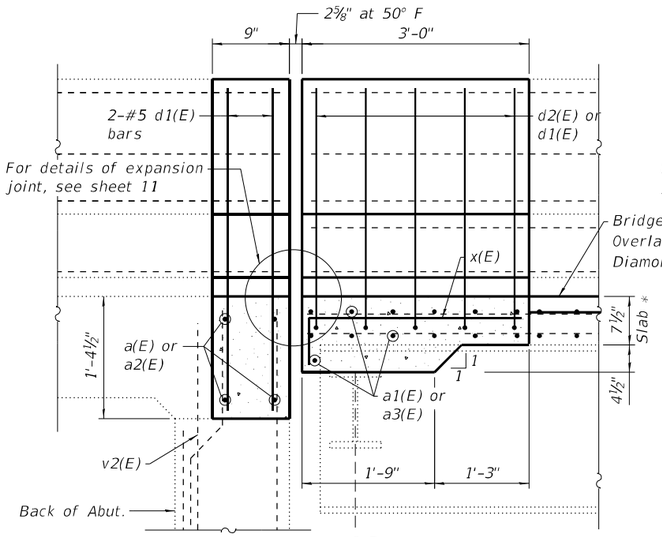


MEDIAN PARAPET

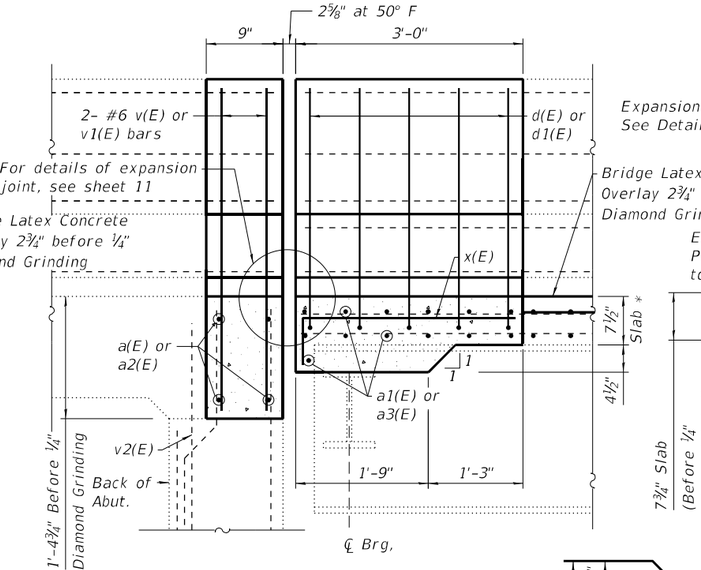
SECTION C-C

EB & WB PARPET

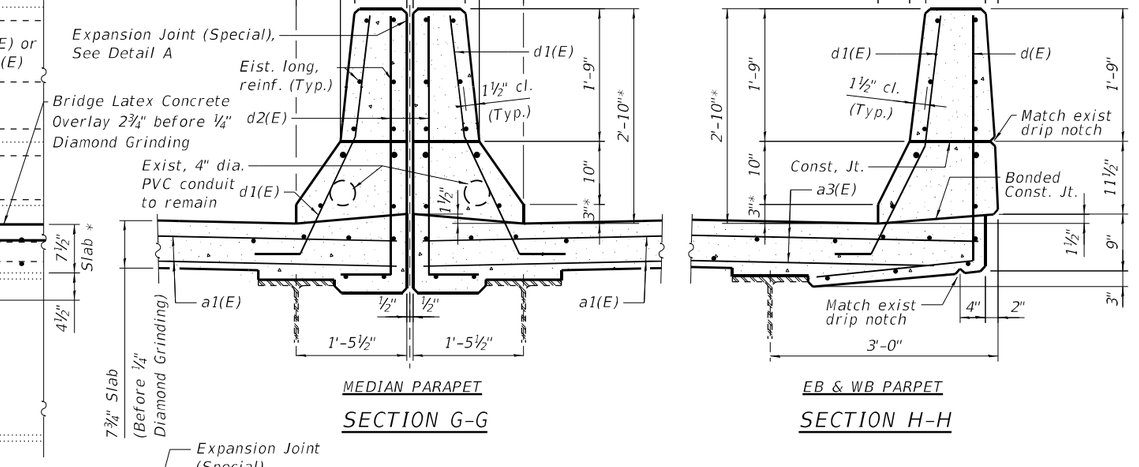
SECTION D-D



SECTION E-E



SECTION F-F

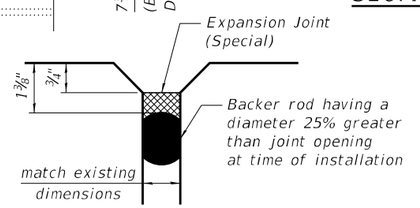


MEDIAN PARAPET

SECTION G-G

EB & WB PARPET

SECTION H-H



DETAIL A

(Typical entire length of bridge)

* After ¼" Diamond Grinding

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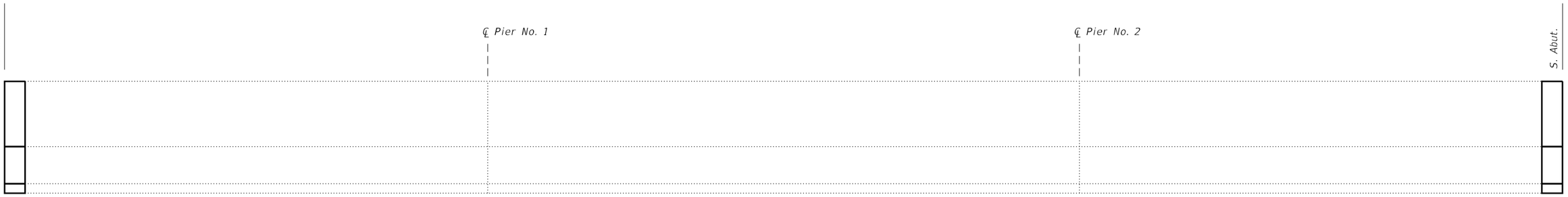
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

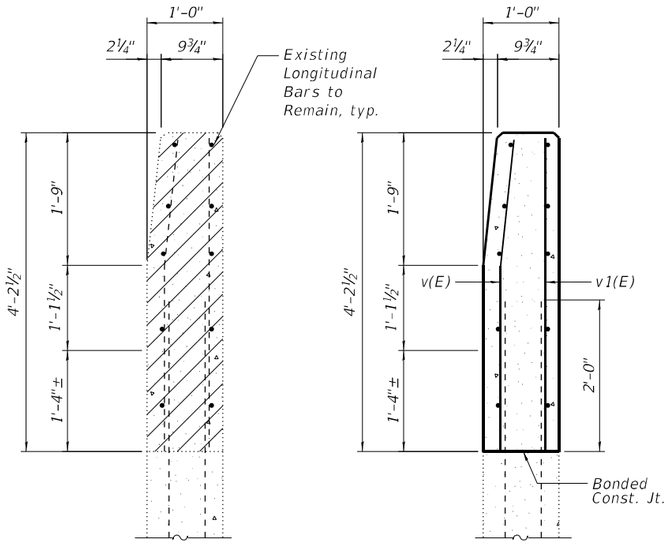
ABUTMENT EXPANSION JOINT RECONSTRUCTION DETAILS - 1
STRUCTURE NO. 016-0163
SHEET S09-08 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	691
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



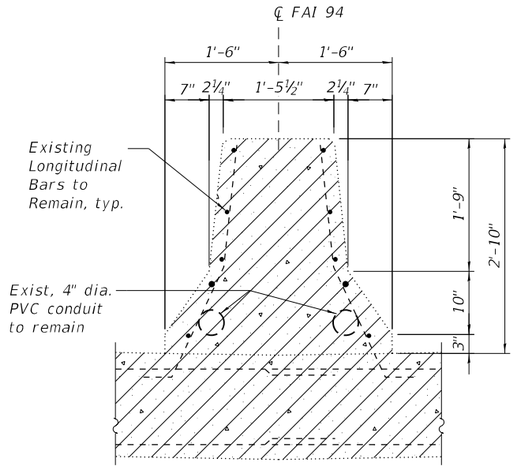
INSIDE ELEVATION OF EAST PARAPET

(West Parapet Similar)



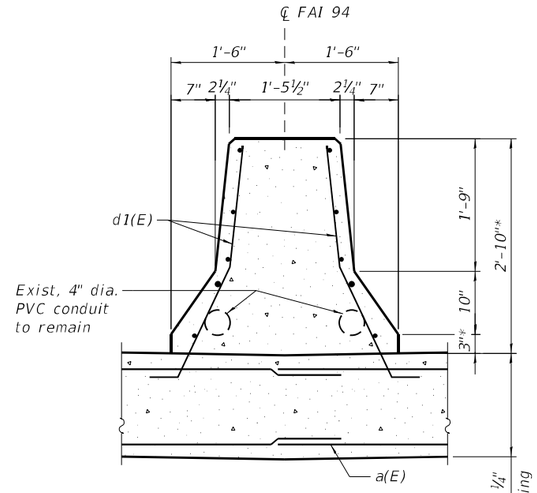
SECTION J-J

SECTION K-K



MEDIAN PARAPET

SECTION L-L



MEDIAN PARAPET

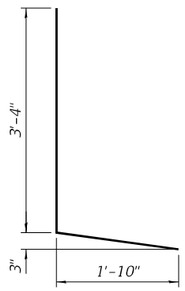
SECTION M-M

* After ¼" Diamond Grinding

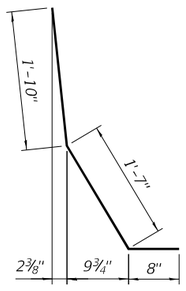
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	12	#6	34'-8"	
a1(E)	52	#5	32'-4"	
a2(E)	12	#6	27'-7"	
a3(E)	52	#5	27'-7"	
d(E)	20	#4	5'-0"	
d1(E)	48	#5	4'-1"	
d2(E)	20	#4	4'-0"	
v(E)	8	#6	4'-0"	
v1(E)	8	#6	4'-1"	
x(E)	232	#5	3'-3"	
Concrete Structures		Cu. Yd.	9.0	
Concrete Superstructure		Cu. Yd.	23.0	
Protective Coat		Sq. Yd.	10	
Reinforcement Bars, Epoxy Coated		Pound	5,580	
Silicon Joint Sealer, 1"		Foot	271	

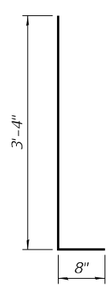
Reinforcement bars designated (E) shall be epoxy coated.



BAR d(E)

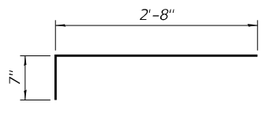


BAR d1(E)



BAR d2(E)

BAR v(E)



BAR x(E)

Note:
Protective Coat shall be applied to the front faces and tops of newly constructed parapets and medians.

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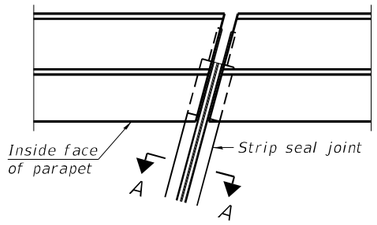
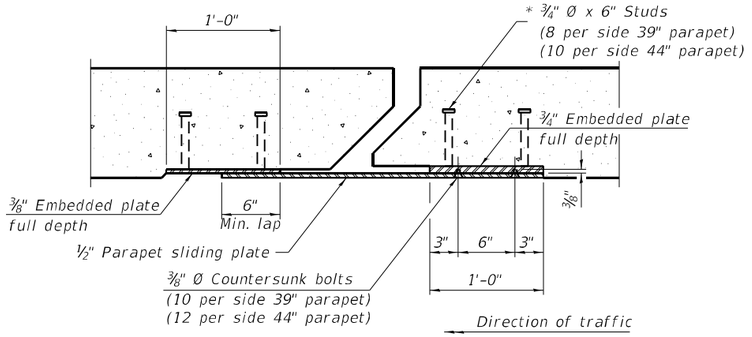
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

ABUTMENT EXPANSION JOINT RECONSTRUCTION DETAILS - 2
STRUCTURE NO. 016-0163
SHEET S09-09 OF S09-15 SHEETS

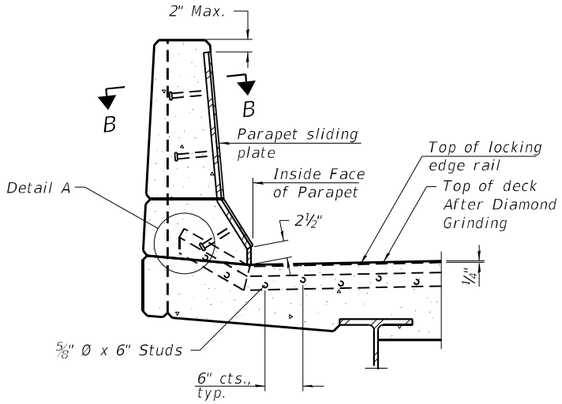
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	692
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



PLAN AT PARAPET

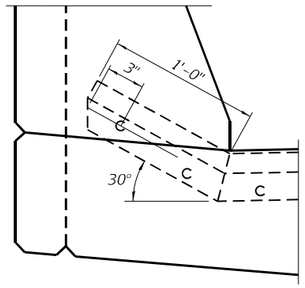


SECTION B-B

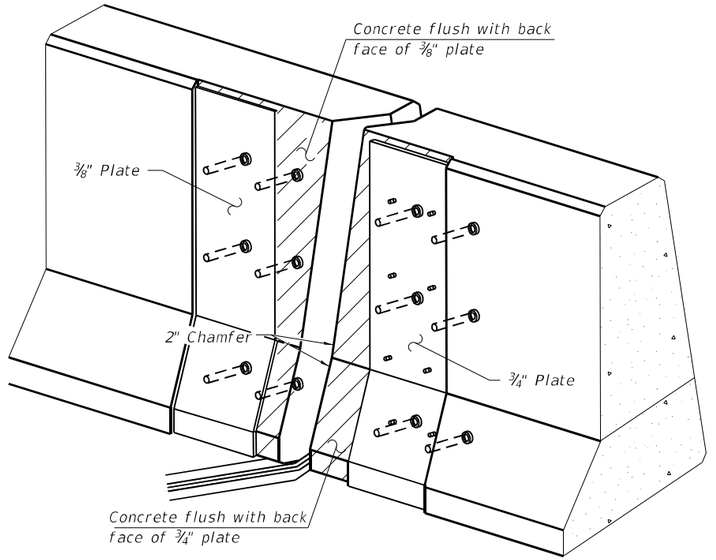


SECTION AT PARAPET

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

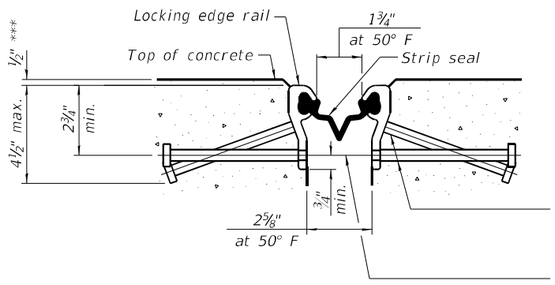


DETAIL A

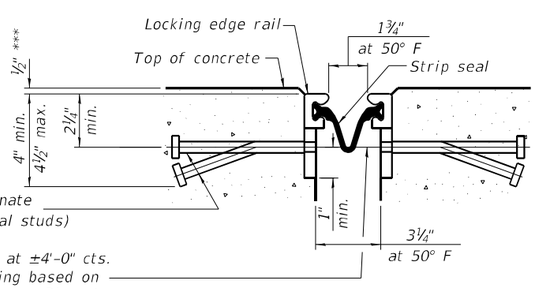


TRIMETRIC VIEW

(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT



SHOWING WELDED RAIL JOINT

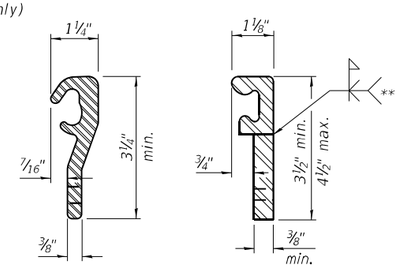
* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅜" ϕ threaded rods in 7/16" ϕ 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.

SECTION A-A

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

*** Before ¼" Diamond Grinding

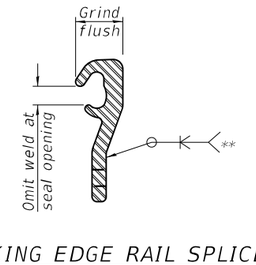


ROLLED (EXTRUDED) RAIL

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	247

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". 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 4½" 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.

39" constant slope barrier shown, 44" constant slope barrier 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.

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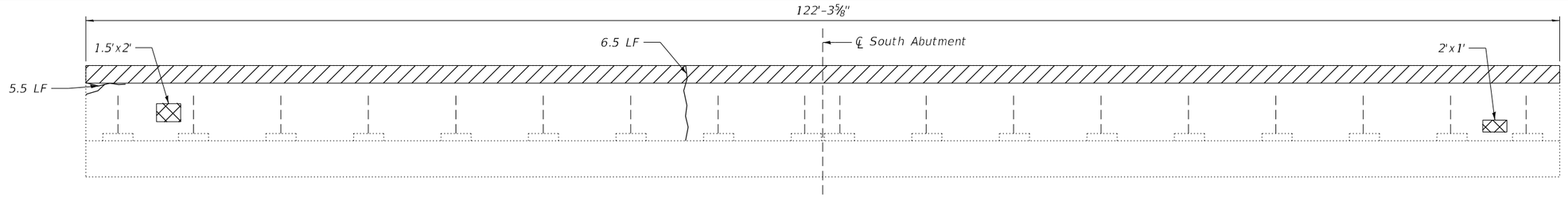
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

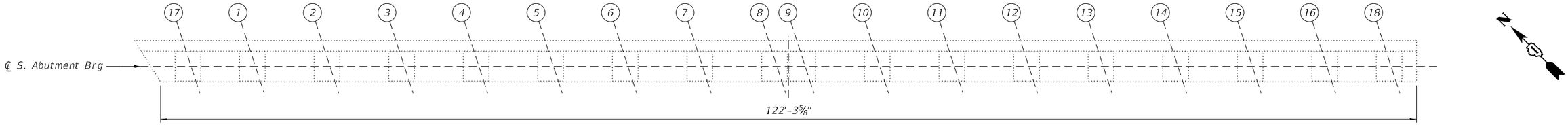
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MODIFIED PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-0163
SHEET S09-10 OF S09-15 SHEETS

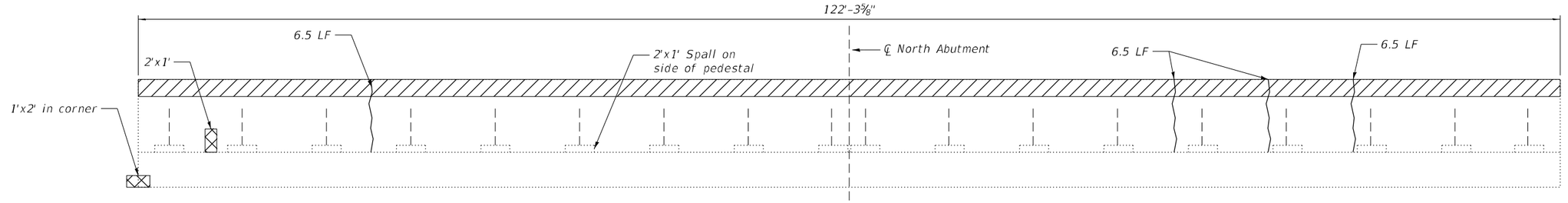
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	693
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



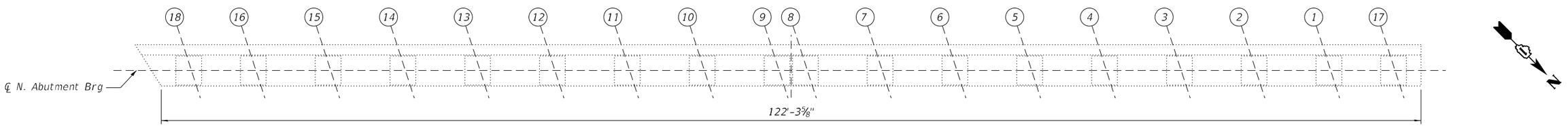
ELEVATION
(South Abutment)



TOP PLAN



ELEVATION
(North Abutment)



TOP PLAN

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 in)	Sq. Ft.	11
Epoxy Crack Injection	Foot	38

LEGEND:

- Concrete Removal for Joint Replacement (see Sheets S09-07 to S09-10)
- Structural Repair Of Concrete (Depth Equal To Or Less Than 5 in)
- Epoxy Crack Injection

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
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PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT REPAIRS
STRUCTURE NO. 016-0163
SHEET S09-11 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	694
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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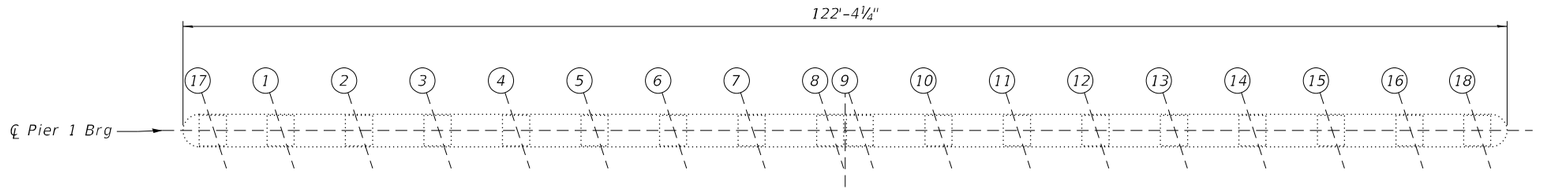
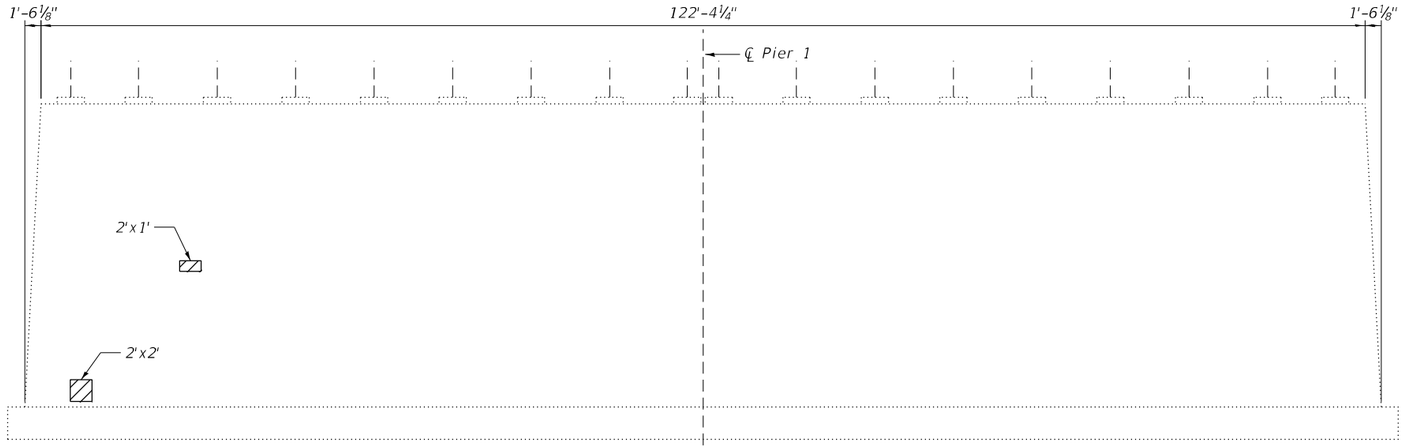


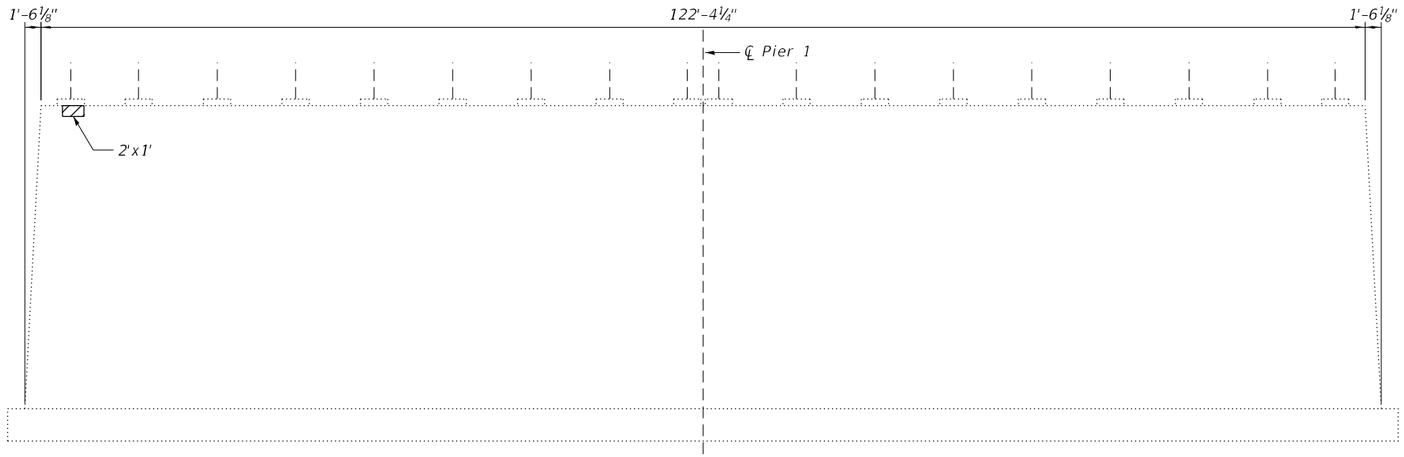
TOP PLAN



WEST FACE

SOUTH FACE

EAST FACE



NORTH FACE

LEGEND:

Structural Repair Of Concrete
(Depth Equal To Or Less Than 5 in)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 in)	Sq. Ft.	8

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - BJD	REVISED -	
PLOT DATE =	CHECKED - MGH	REVISED -	

PIER 1 REPAIRS
STRUCTURE NO. 016-0163
SHEET S09-12 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	695
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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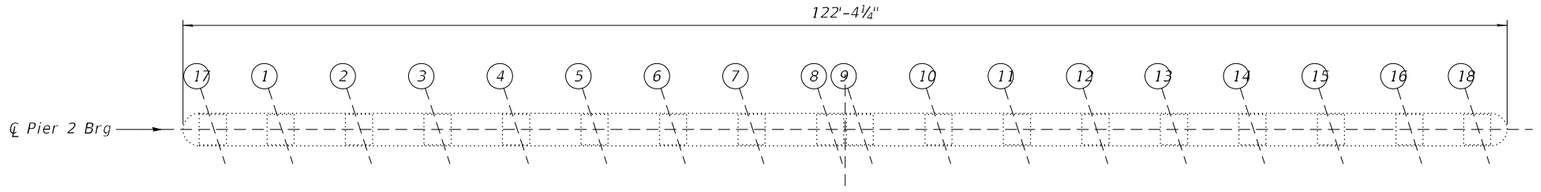
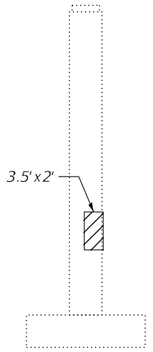
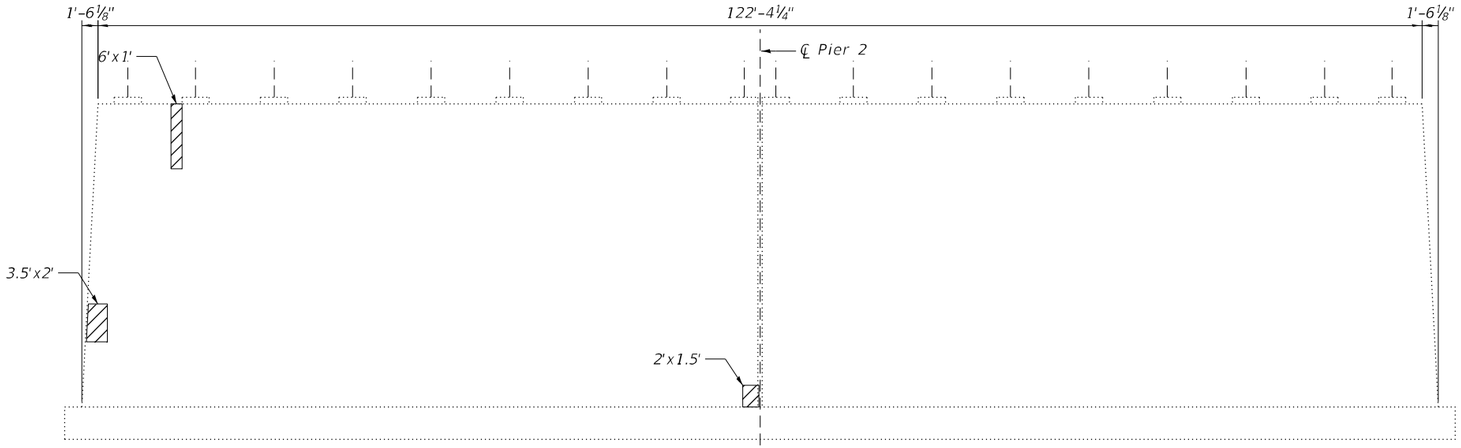


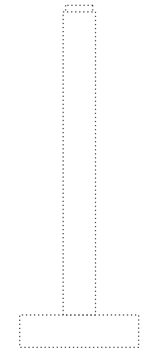
TOP PLAN



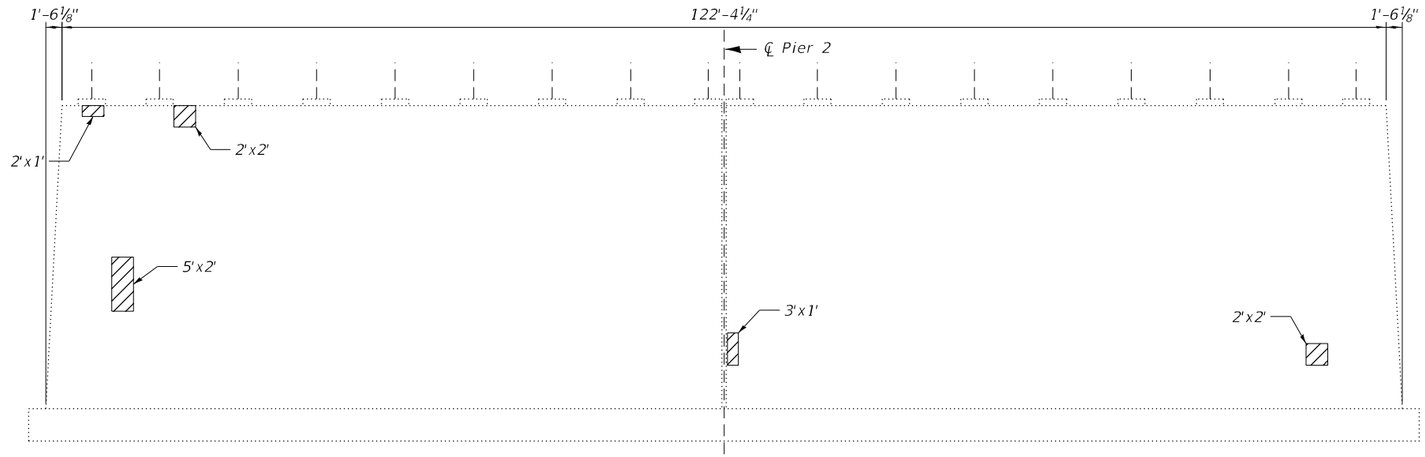
WEST FACE



SOUTH FACE



EAST FACE



NORTH FACE

LEGEND:

Structural Repair Of Concrete (Depth Equal To Or Less Than 5 in)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	46

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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PLOT DATE =	CHECKED - MGH	REVISED -	

PIER 2 REPAIRS
STRUCTURE NO. 016-0163
SHEET S09-13 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	696
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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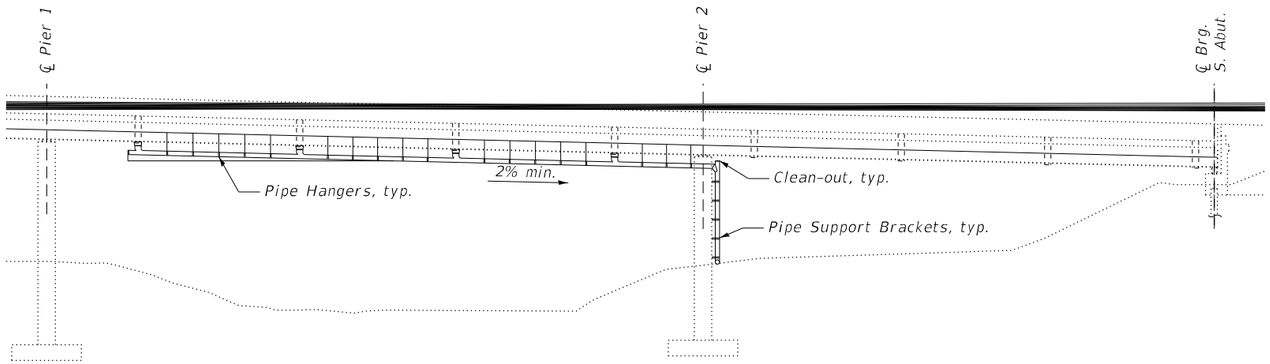
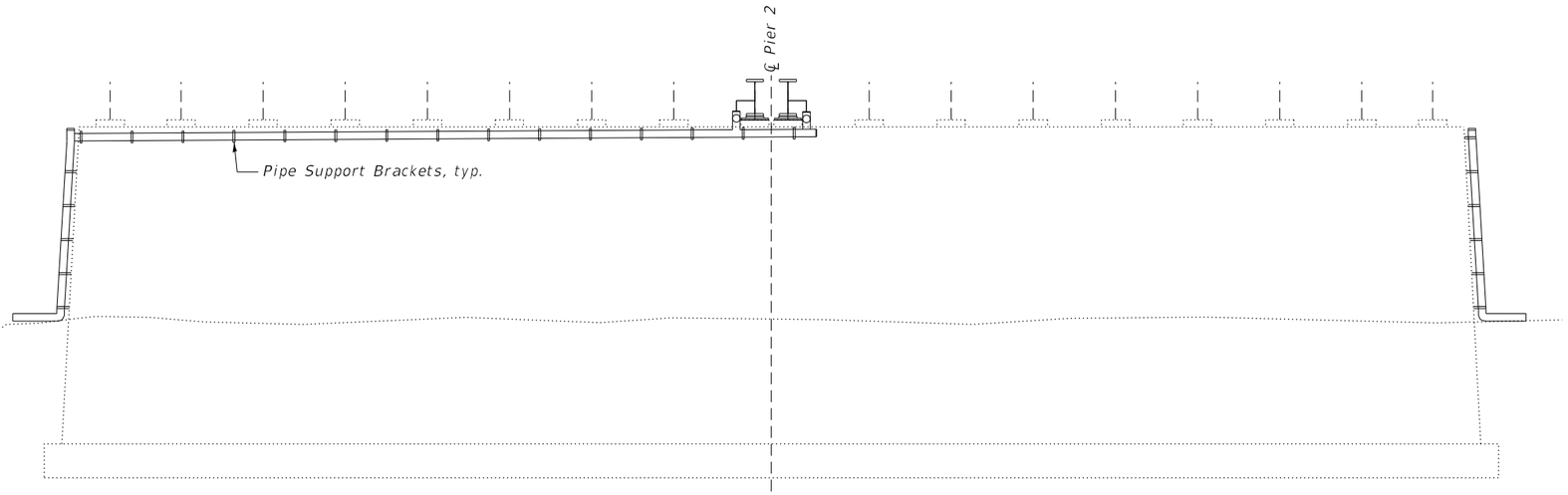


ELEVATION
(Looking East)



PIER 2 ELEVATION
(Looking North)

SCUPPER LOCATIONS

Station	Offset
580+79.48	57.00' Rt.
581+05.10	57.00' Rt.
581+29.85	57.00' Rt.
581+55.00	57.00' Rt.
580+98.36	1.50' Rt.
581+23.31	1.50' Rt.
581+49.27	1.50' Rt.
581+74.26	1.50' Rt.
581+02.94	1.50' Lt.
581+27.36	1.50' Lt.
581+52.23	1.50' Lt.
581+75.09	1.50' Lt.
581+17.39	57.00' Lt.
581+42.41	57.00' Lt.
581+67.68	57.00' Lt.
581+92.40	57.00' Lt.

Notes:
1. All drain pipes and fittings shall be 8" ∅ Reinforced Thermosetting Resin Pipe (RTRP) in accordance with Article 523.02 of the Standard Specifications.
2. All pipe hangers, supports and hardware shall be galvanized by the hot-dip process. The zinc coatings shall conform to the requirements of AASHTO M2332.
3. Pipe hangers/supports shall be provided on all horizontal/vertical pipes at each tee, elbow or change in direction and at intermediate spacings not to exceed those recommended by the manufacturer.
4. Hanger dimensions shall be adjusted in the field by the Engineer to fit existing conditions and to maximize slope.
5. Details shown are schematic only. Contractor to determine required fittings, provisions for expansion/contraction and routing of piping as required to pass diaphragms and maintain minimum slopes.
6. All cost for the components and work required for the drainage system will be included in the pay item Drainage System for Structures (L. Sum.).

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage System For Structures	L. Sum	1

USER NAME =	DESIGNED - BJD	REVISED -	
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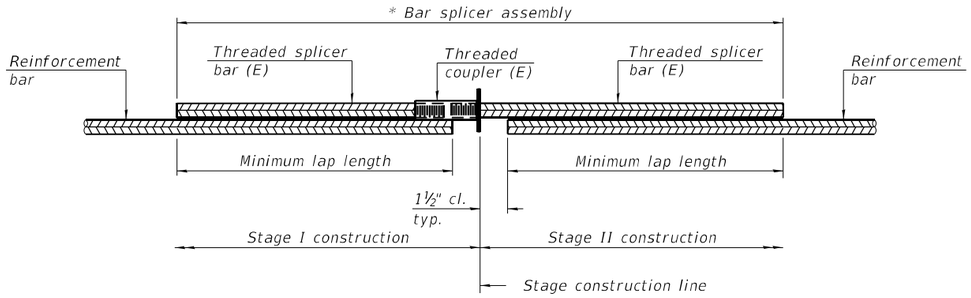
PLOT DATE =	CHECKED - MGH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ENCLOSED DRAINAGE SYSTEM
STRUCTURE NO. 016-0163
SHEET S09-14 OF S09-15 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	697
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



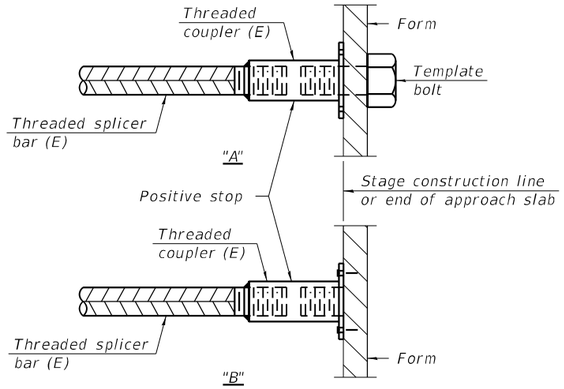
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1½" + thread length

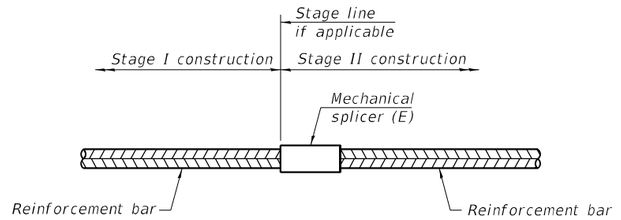
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Abutment	#6	12	4'-5"
Deck	#5	52	3'-1"



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.

BSD-1 2-1-2023

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-0163
SHEET S09-15 OF S09-15 SHEETS

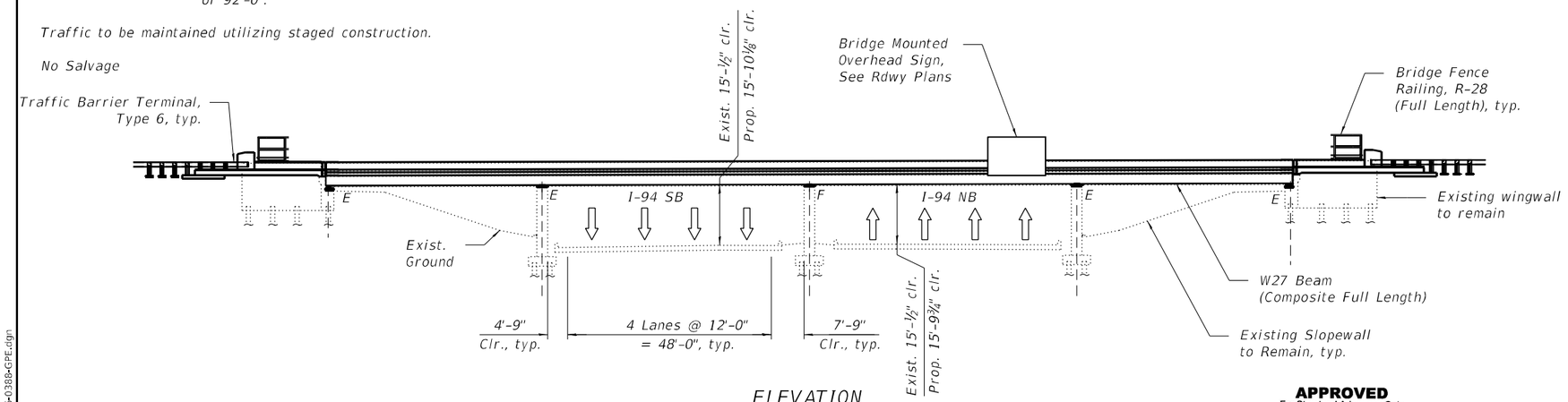
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	698
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

Bench Mark: "X" scribed in chiseled box on top of concrete barrier wall at the southeast corner of bridge structure for Westbound FAI-94 over the Greenwood Avenue Elev. 627.12 (Assumed Local Datum)

Existing Structure: S.N. 016-0388 originally constructed in 1947 under S.A. Rte. 6, Section 066-0405.1-MFT. The original structure had a back- to-back of abutment length of 230'-3" and out to out width of 68'-0". The substructure consisted of stub abutments and 3 wall piers. In 1987, the structure was widened equally to the north and south to a new out to out width of 92'-0".

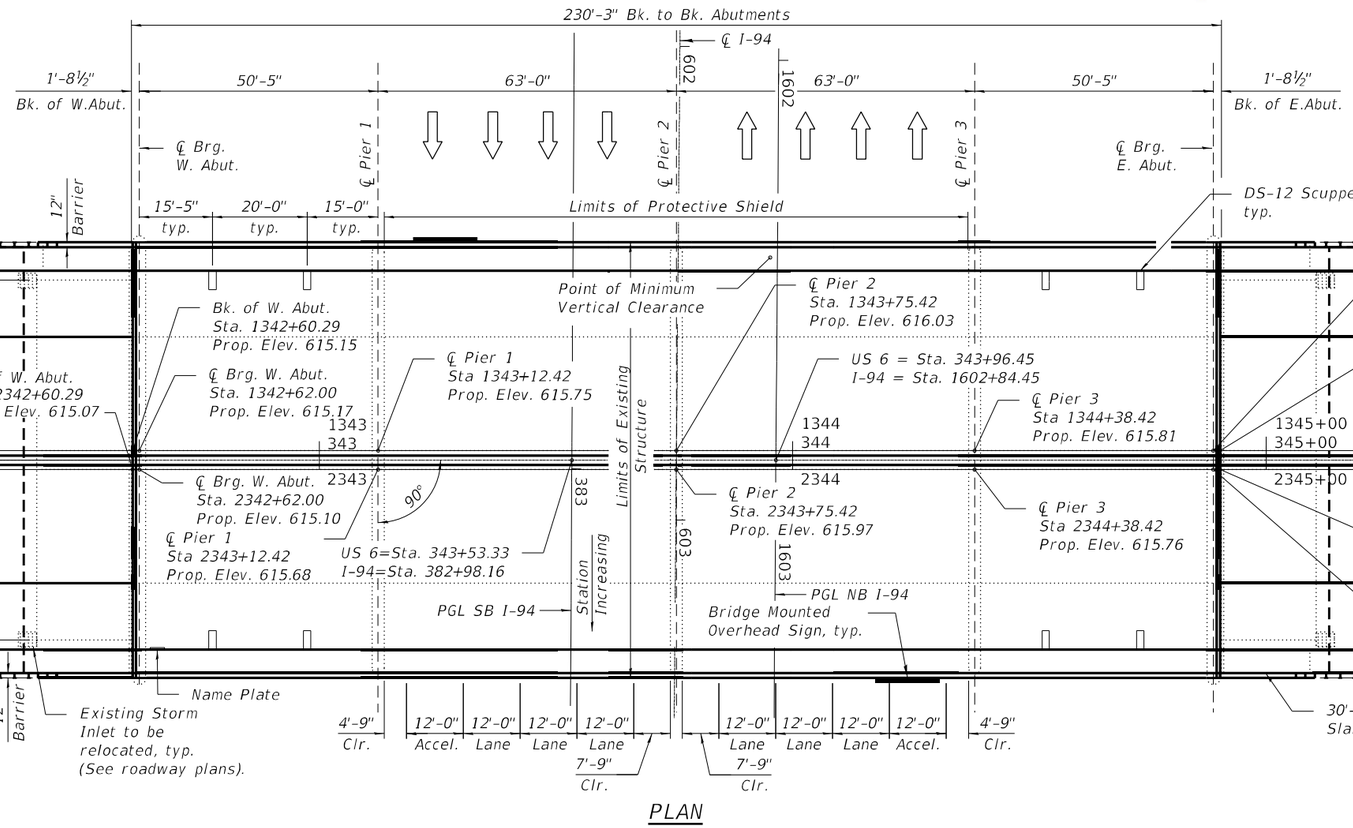
Traffic to be maintained utilizing staged construction.

No Salvage



ELEVATION
(Looking North)

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures



PLAN

N

William P. Malinowski S.E.
Licensed Structural Engineer
State of Illinois No. 081-006059
Registration Expires 11/30/2026

DESIGN STRESSES

FIELD UNITS (New Construction)
f'c = 4,000 psi (Concrete - Superstructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)
All structural steel shall be metallized

FIELD UNITS (Existing Construction, 1986)
f'c = 3,500 psi (Superstructure)
fc = 1,400 psi (Substructure)
fy = 60,000 psi (Reinforcement - Superstructure)
fs = 24,000 psi (Reinforcement - Substructure)
fs = 20,000 psi (AASHTO M183 Struct. Steel)

FIELD UNITS (Original Construction)
fc = 800 psi (Substructure)
fs = 20,000 psi (Reinforcement)
fs = 18,000 psi (A7 Structural Steel)

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface
Live Load Deflection = L/1000

SEISMIC DATA

Seismic Retrofit Category (SRC) = A
Design Spectral Acceleration at 1.0 sec (S_{D1}) = 0.091g
Design Spectral Acceleration at 0.2 sec (S_{DS}) = 0.152g
Soil Site Class = D
Performance Level = I

DESIGN SPECIFICATIONS

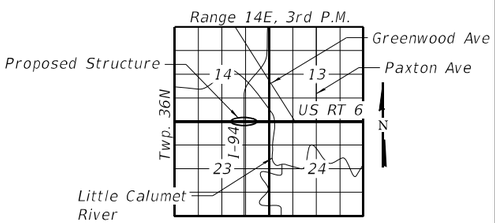
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition (Existing Construction)

2020 AASHTO LRFD Bridge Design Specification, 9th Edition (New Construction)

2006 Seismic Retrofitting Manual for Highway Structures: Part 1 - Bridges (FHWA-HRT-06-032)

SCOPE OF WORK

1. Longitudinally saw cut a joint in the bridge deck at the median and detach the existing diaphragms under the median.
2. Remove and replace the existing superstructure, bearings and approach slabs in two stages.
3. Complete substructure concrete repairs and modifications.



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
159TH ST OVER I-94
FAP-581 SEC. (42-B-11-1) BR, BJR 24
COOK COUNTY
STATION 343+75.42
SN 016-0388

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S10-01 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	699
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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GENERAL NOTES

1. Fasteners shall be ASTM F 3125 Grade A325 Type 1, hot dip galvanized bolts in metallized areas. Bolts $\frac{7}{8}$ in. diameter, holes $\frac{15}{16}$ in. diameter, unless otherwise noted. See Special Provision for "Metallizing of Structural Steel"

2. Calculated weight of Structural Steel = 36,610 (Grade 36)
   Calculated weight of Structural Steel = 623,700 (Grade 50)

3. All structural steel shall be metalized. See Special Provision for "Metallizing of Structural Steel."

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

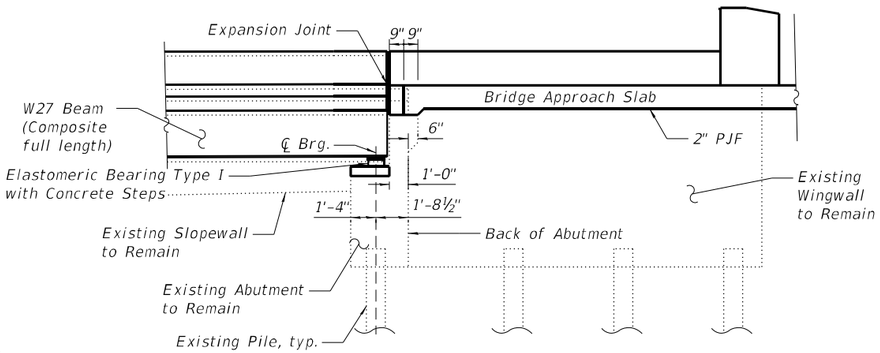
5. The finishing machine rails shall be placed on the top of the top flange of the exterior beams within the deck. Beam blocks shall be placed between beams at all tie locations in each bay for the full width of the deck pour.

6. Slipforming of the parapets is not allowed.

7. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

8. Plan dimensions and details relative to the existing structure have been taken from existing plans are subject to nominal construction variations. The Contactor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

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



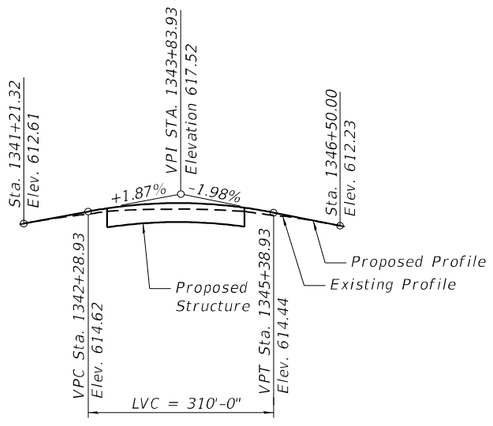
SECTION THRU ABUTMENT

STA. 344+75.42
RE-BUILT 202X BY
STATE OF ILLINOIS
F.A.P. Rt. 581
Sec. (42-B-11-1) BR, BJR 24
LOADING HL-93
STR. NO. 016-0388

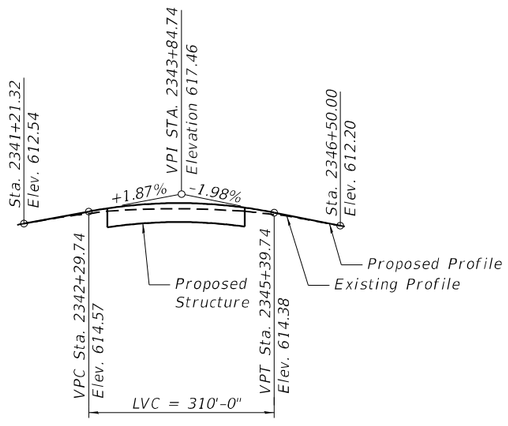
NAME PLATE

See Std. 515001. Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included in Name Plates.

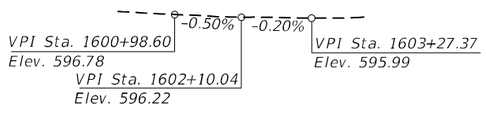
INDEX OF SHEETS



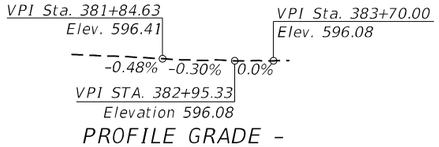
PROFILE GRADE - WB 159TH ST (US 6)



PROFILE GRADE - EB 159TH ST (US 6)



PROFILE GRADE - I-94 NB (BISHOP FORD)



PROFILE GRADE - I-94 SB (BISHOP FORD)

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL
Removal of Existing Superstructures	Each	1	-	1
Concrete Removal	Cu Yd	-	18.9	18.9
Protective Shield	Sq Yd	1,288	-	1,288
Concrete Structures	Cu Yd	-	127.6	127.6
Concrete Superstructure	Cu Yd	952.6	-	952.6
Bridge Deck Grooving	Sq Yd	2,368	-	2,368
Protective Coat	Sq Yd	3,184	-	3,184
Concrete Superstructure (Approach Slab)	Cu Yd	253.8	-	253.8
Furnishing and Erecting Structural Steel	L Sum	1	-	1
Stud Shear Connectors	Each	9,198	-	9,198
Reinforcement Bars, Epoxy Coated	Pound	360,890	29,920	390,810
Bar Splicers	Each	896	154	1,050
Bridge Fence Railing	Foot	524	-	524
Name Plates	Each	2	-	2
Preformed Joint Strip Seal	Foot	184	-	184
Elastomeric Bearing Assembly, Type I	Each	56	-	56
Anchor Bolts, 1"	Each	112	-	112
Anchor Bolts, 1 1/4"	Each	28	-	28
Concrete Sealer	Sq Ft	-	1,060	1,060
Epoxy Crack Injection	Foot	-	147	147
Bar Terminators	Each	156	-	156
Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)	Sq Ft	-	207	207
Drainage Scuppers, DS-12	Each	8	-	8

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

GENERAL DATA
STRUCTURE NO. 016-0388
SHEET S10-02 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	700
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		