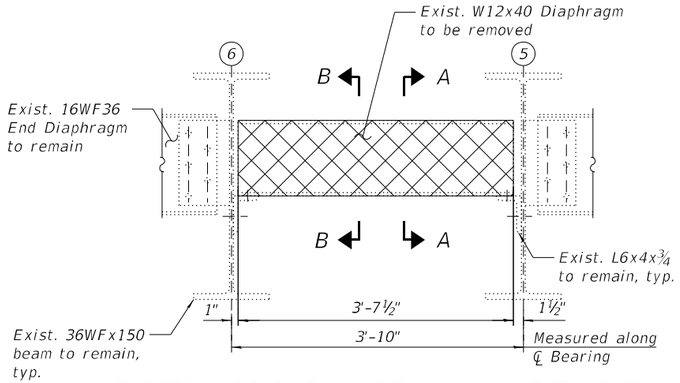
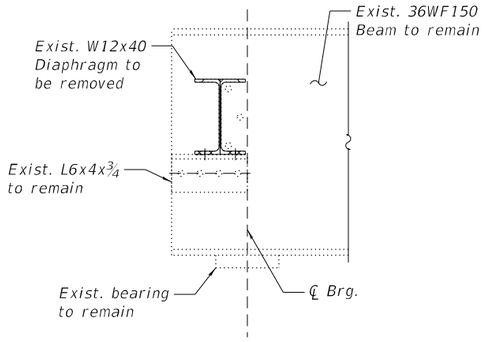
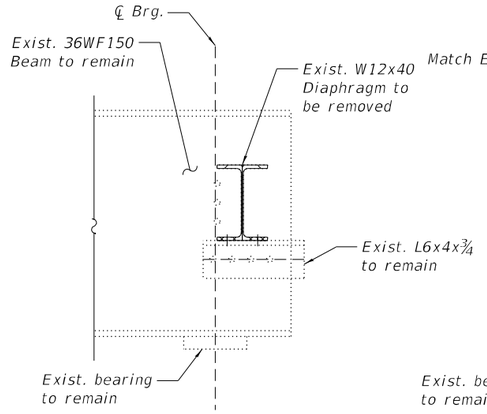


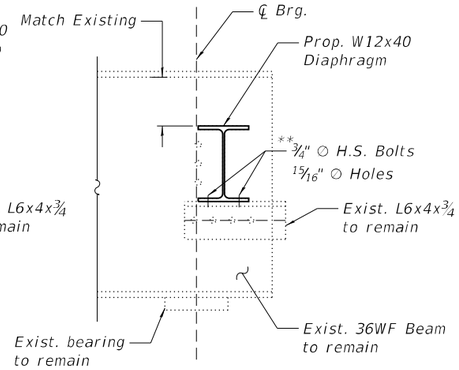
EXISTING DIAPHRAGM REMOVAL - WEST ABUT.



SECTION A-A



SECTION B-B



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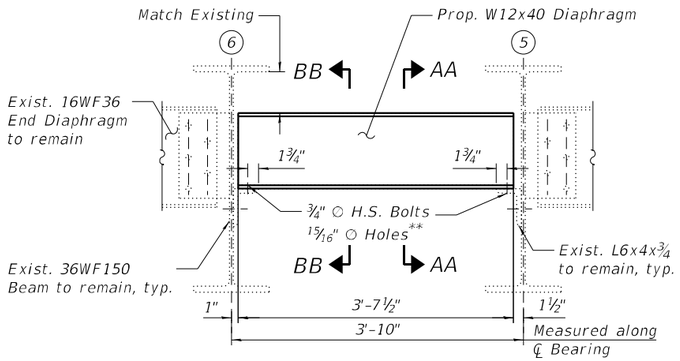
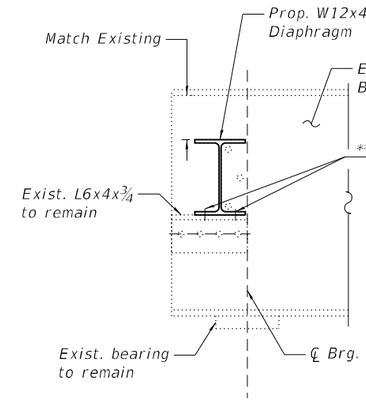


PROPOSED END DIAPHRAGM - WEST ABUT.



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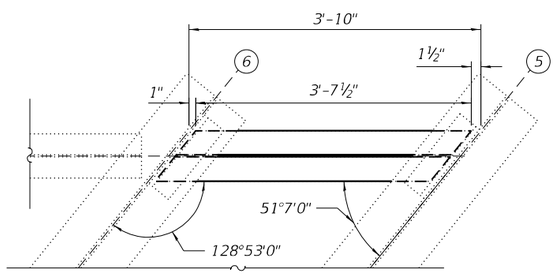


PROPOSED END DIAPHRAGM - WEST ABUT. PLAN

*Dimensions provided along inside face of connection.

**Field drill holes in Diaphragm using existing angle as a template

NOTE:

1. For location of diaphragm removal/replacement and Bill of Material, see Sheet S06-14.

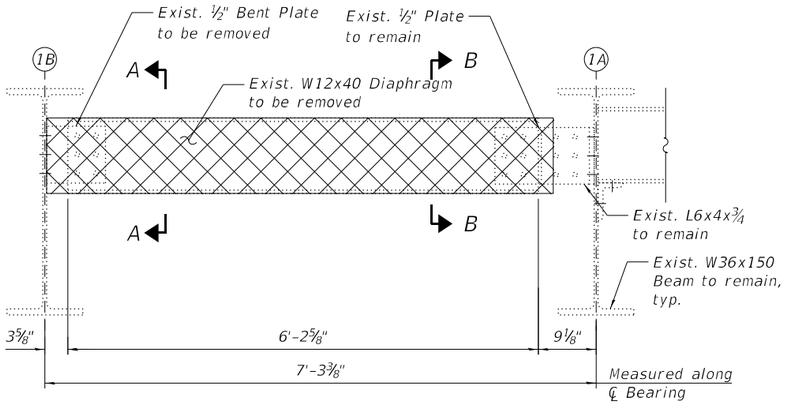
LEGEND:

Structural Steel Removal

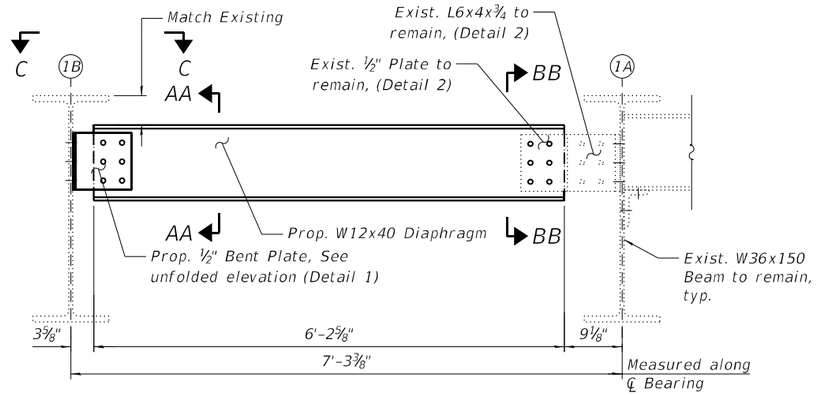
Field drill holes in new steel using existing steel as a template

HBM ENGINEERING GROUP, LLC	USER NAME =	DESIGNED - LAB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURAL STEEL REPAIR DETAILS (SHEET 2 OF 3) STRUCTURE NO. 016-0130 (NB)
		CHECKED - MI	REVISED -		
	PLOT SCALE =	DRAWN - LAB	REVISED -		SHEET S06-16 OF S06-23 SHEETS
	PLOT DATE =	DATE - 4/29/2024	REVISED -		

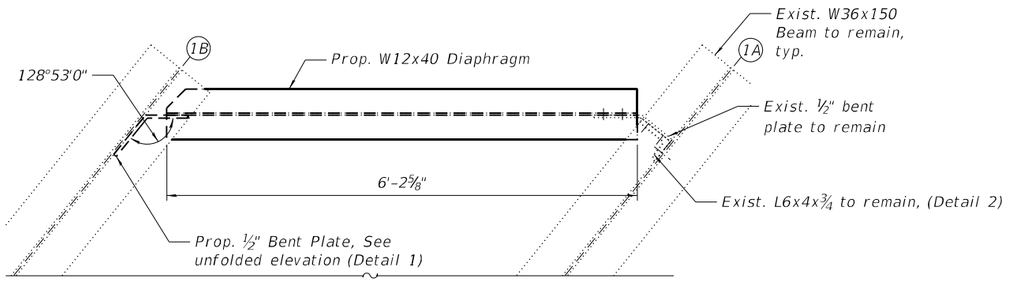
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	601
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



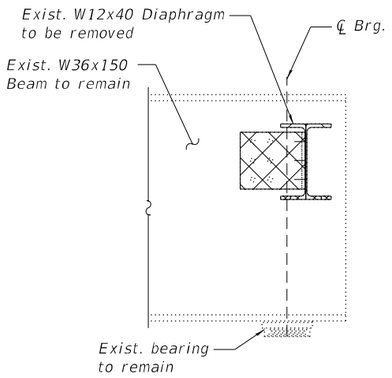
EXISTING END DIAPHRAGM REMOVAL - EAST ABUT.



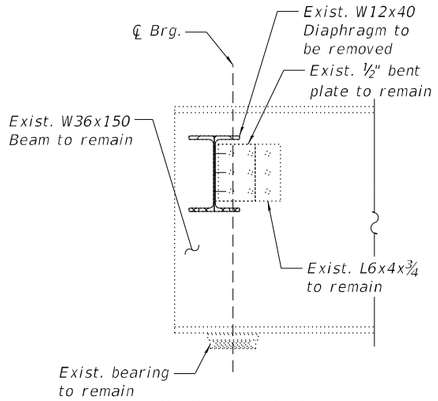
PROPOSED END DIAPHRAGM - EAST ABUT.



PROPOSED PLAN - EAST ABUT.



SECTION A-A



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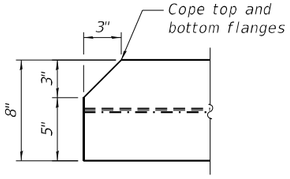
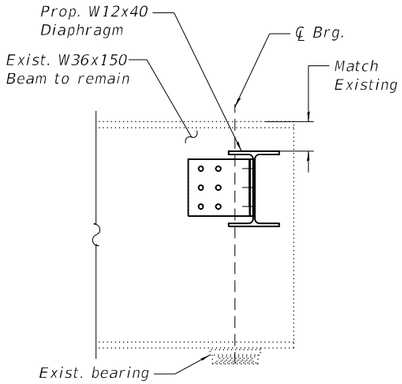


SECTION C-C

(Connection not shown for clarity)



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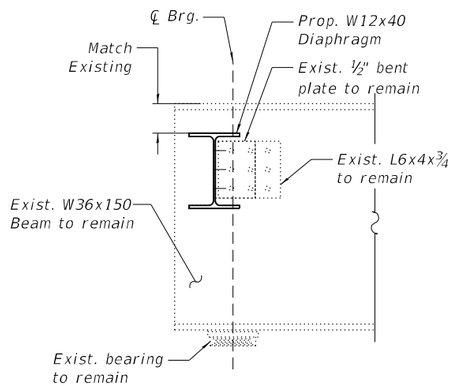
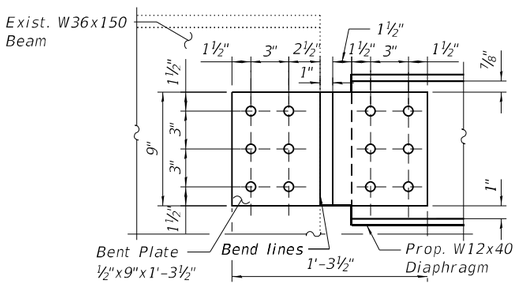
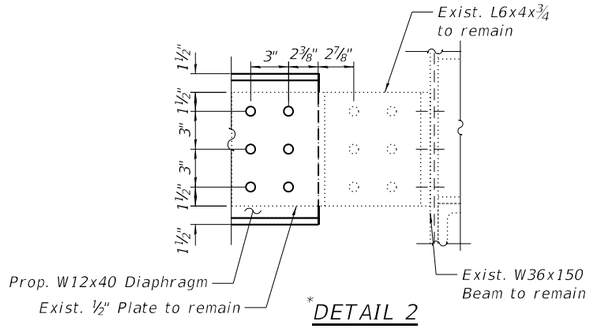


SECTION BB-BB



*DETAIL 1



*DETAIL 2

*Dimensions provided along inside face of connection.

**Field drill holes in Diaphragm using existing angle as a template

NOTE:

1. For location of diaphragm removal/replacement and Bill of Material, see Sheet S06-14.

LEGEND:

Structural Steel Removal

Field drill holes in new steel using existing steel as a template

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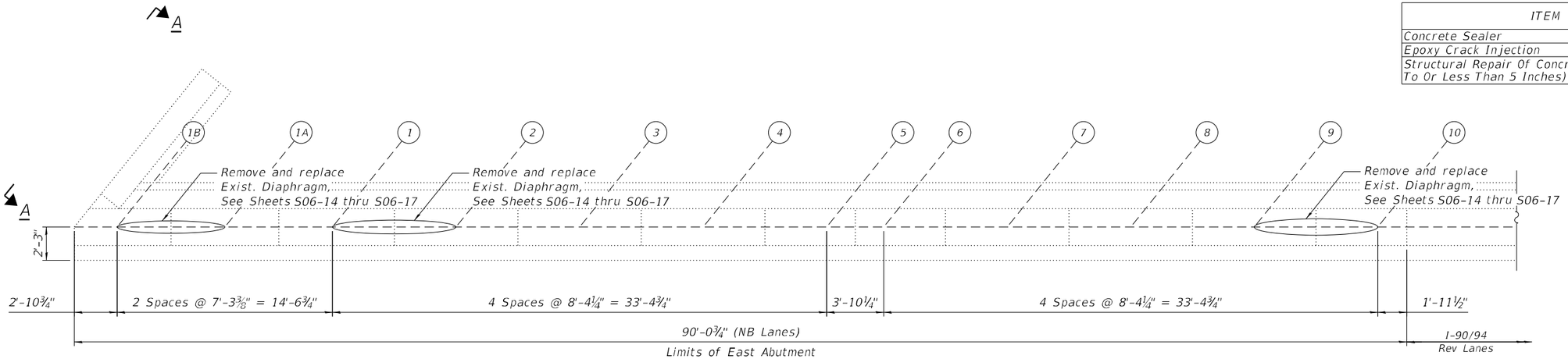
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS (SHEET 3 OF 3)
STRUCTURE NO. 016-0130 (NB)
SHEET S06-17 OF S06-23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	602
		CONTRACT NO. 62K73		
		ILLINOIS	FED. AID PROJECT	

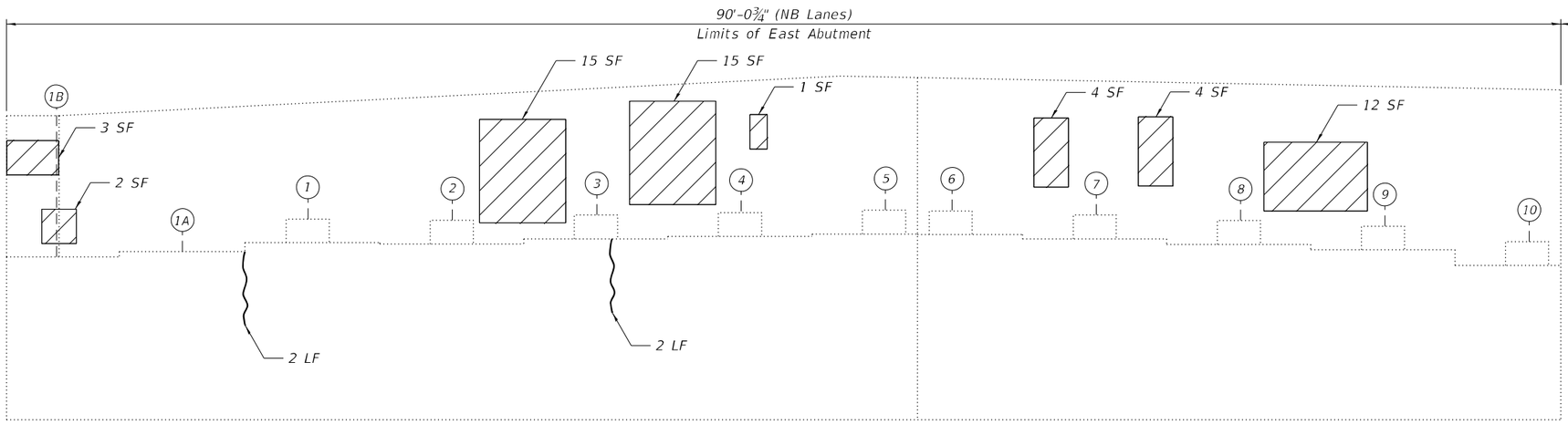
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	414
Epoxy Crack Injection	Foot	4
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	56



EAST ABUTMENT PLAN

(Piles not shown for clarity)

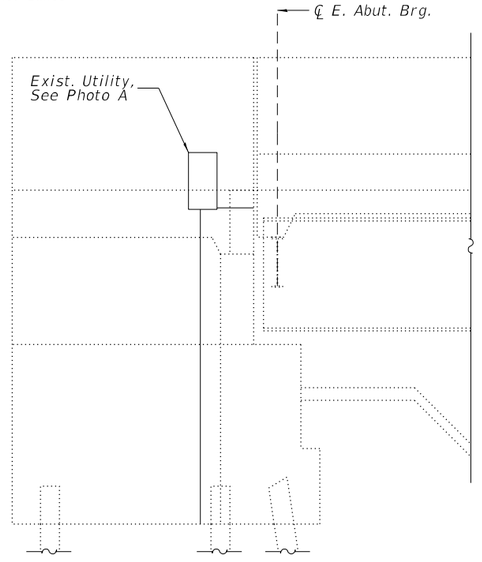


EAST ABUTMENT ELEVATION

(Looking East)

PHOTO A

(Electrical Utility attached to the NE Wing Wall)



SECTION A-A

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the abutment seats and the bottom 2 feet of the abutment backwall.
3. For Slope Wall repairs, see Sheet S06-22.

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Epoxy Crack Injection (Width > 0.06")
LF	Linear Foot
SF	Square Foot

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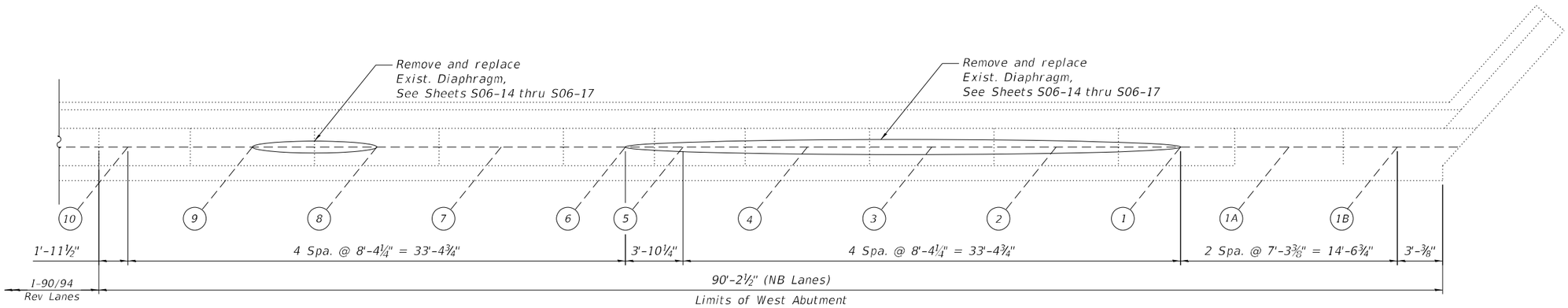
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT REPAIRS
STRUCTURE NO. 016-0130 (NB)
SHEET S06-18 OF S06-23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	603
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

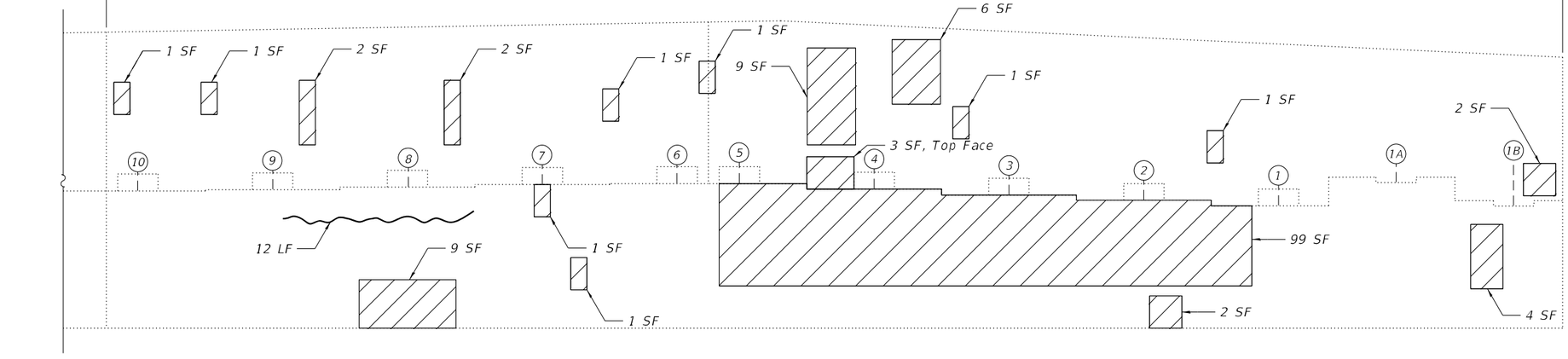
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	419
Epoxy Crack Injection	Foot	12
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	146



WEST ABUTMENT PLAN

(Piles not shown for clarity)



WEST ABUTMENT ELEVATION

(Looking West)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the abutments and the bottom 2 feet of the abutment backwall.
3. For Slope Wall repairs, see Sheet S06-22.

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Epoxy Crack Injection (Width > 0.06")
SF	Linear Foot
LF	Square Foot

MODEL: Default
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PLOT DATE =		DATE -	4/29/2024	REVISED -	

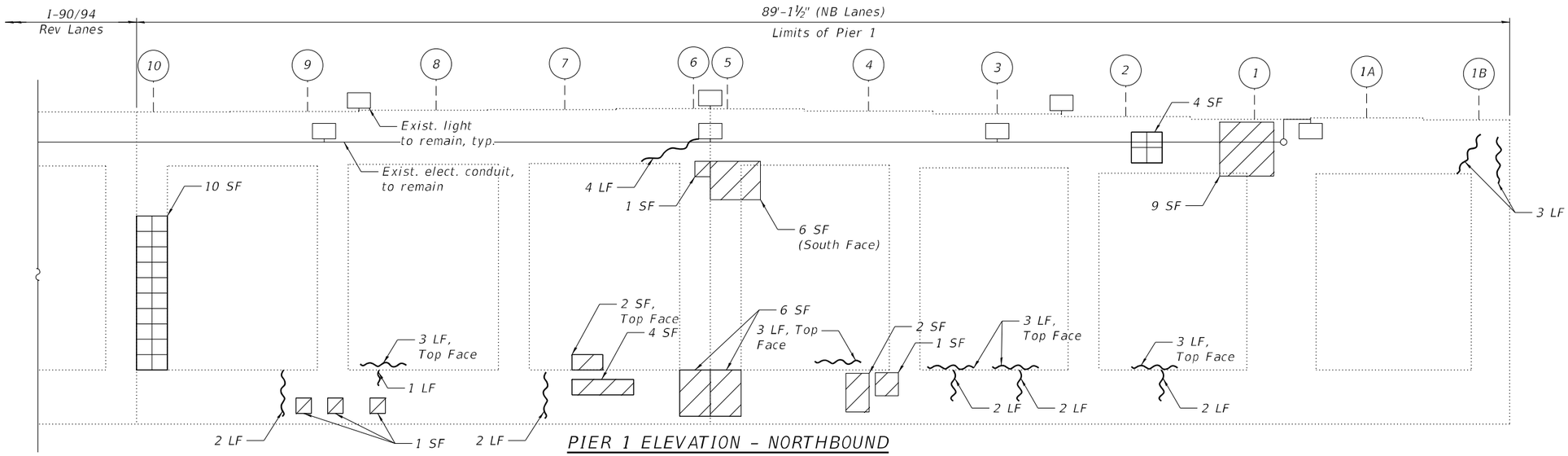
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT REPAIRS
STRUCTURE NO. 016-0130 (NB)
SHEET S06-19 OF S06-23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	604
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	48
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	66
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq Ft	14

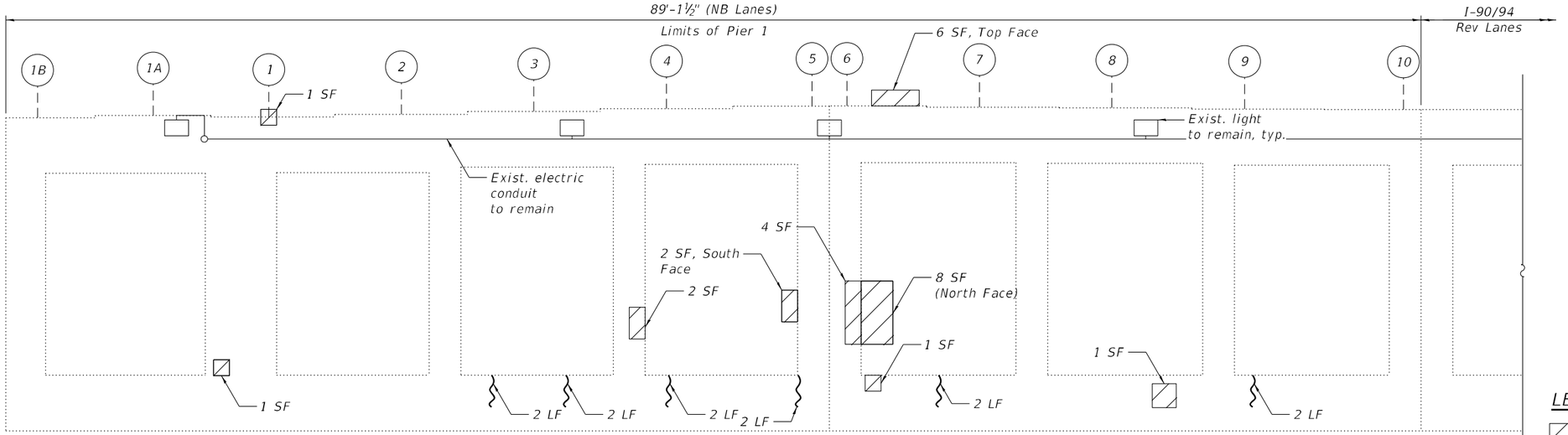


PIER 1 ELEVATION – NORTHBOUND

(Looking West)

EXIST. LIGHTING: PIER 1

(Looking Southwest)



PIER 1 ELEVATION – NORTHBOUND

(Looking East)

EXIST. LIGHTING: PIER 1

(Looking Southeast)

LEGEND

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

Structural Repair of Concrete (Depth Equal to or Greater Than 5 inches)

Epoxy Crack Injection (Width > 0.06")

LF Linear Foot

SF Square Foot

NOTE:

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.

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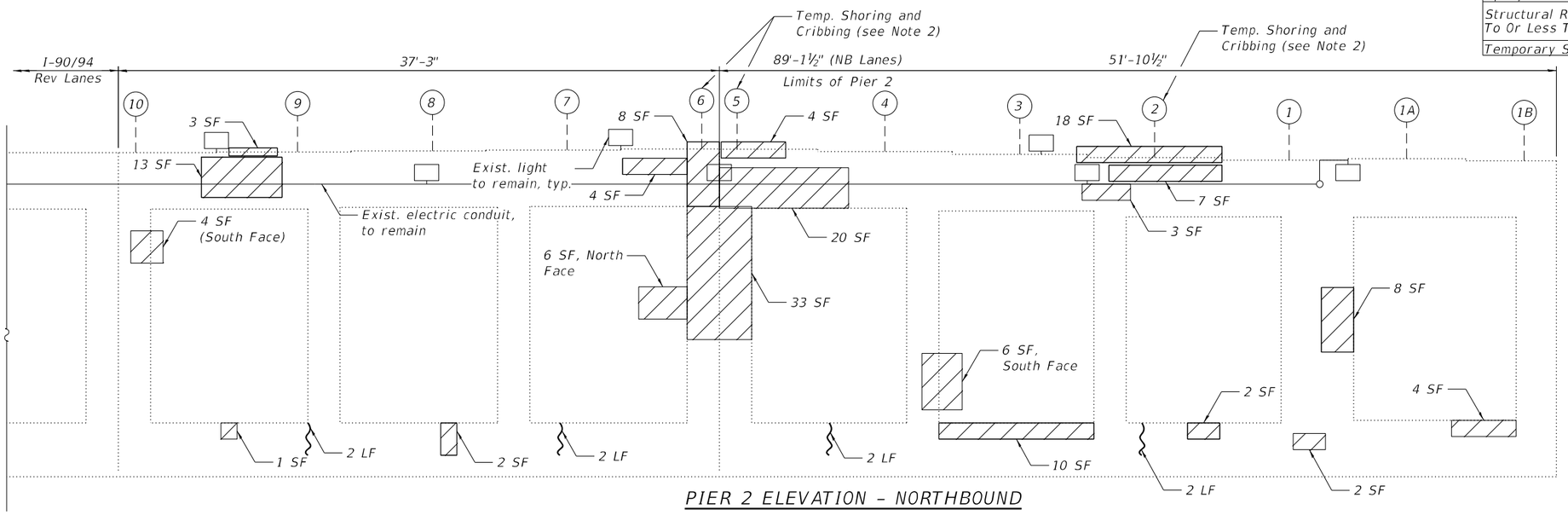
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
STRUCTURE NO. 016-0130 (NB)
SHEET S06-20 OF S06-23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	605
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	21
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	293
Temporary Shoring And Cribbing	Each	3

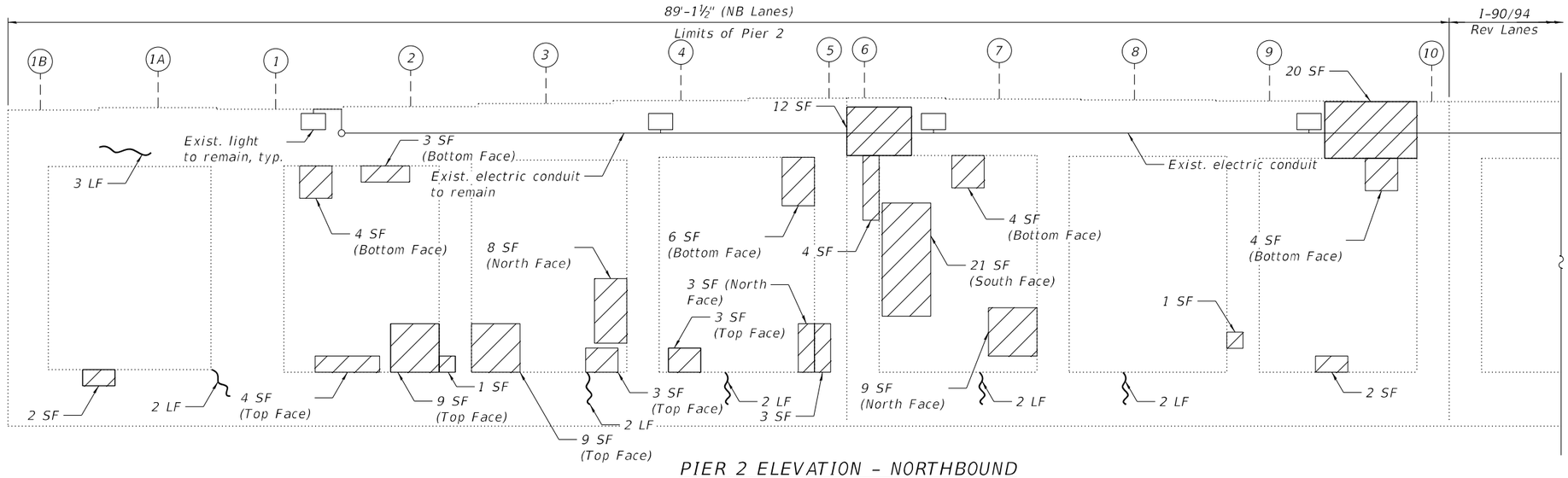


PIER 2 ELEVATION – NORTHBOUND

(Looking West)

EXIST. LIGHTING: PIER 2

(Looking Southwest)



PIER 2 ELEVATION – NORTHBOUND

(Looking East)

EXIST. LIGHTING: PIER 2

(Looking Southeast)

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. Temporary shoring and cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.

SUMMARY OF REACTIONS PIER 2 BEAMS 2, 5 & 6		
R DL	(k)	91.9
R LL	(k)	49.8
R IM	(k)	12.9
R Total	(k)	154.6

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less Than 5 inches)
- Epoxy Crack Injection (Width > 0.06")
- LF Linear Foot
- SF Square Foot

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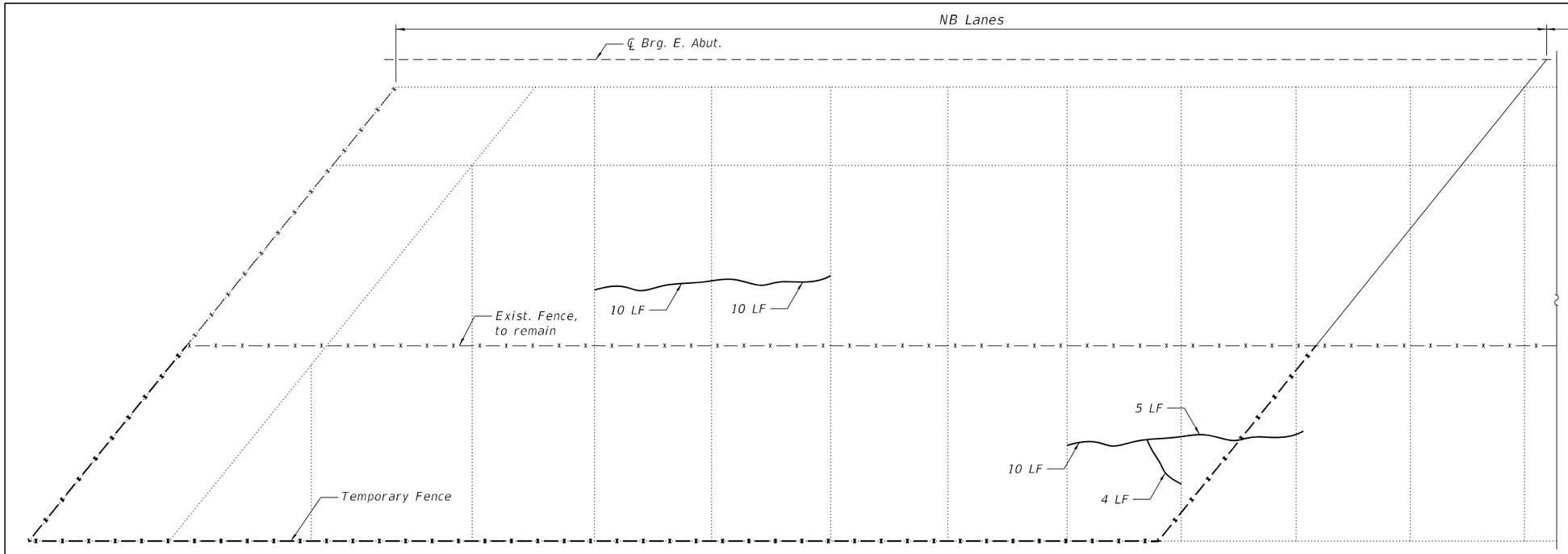
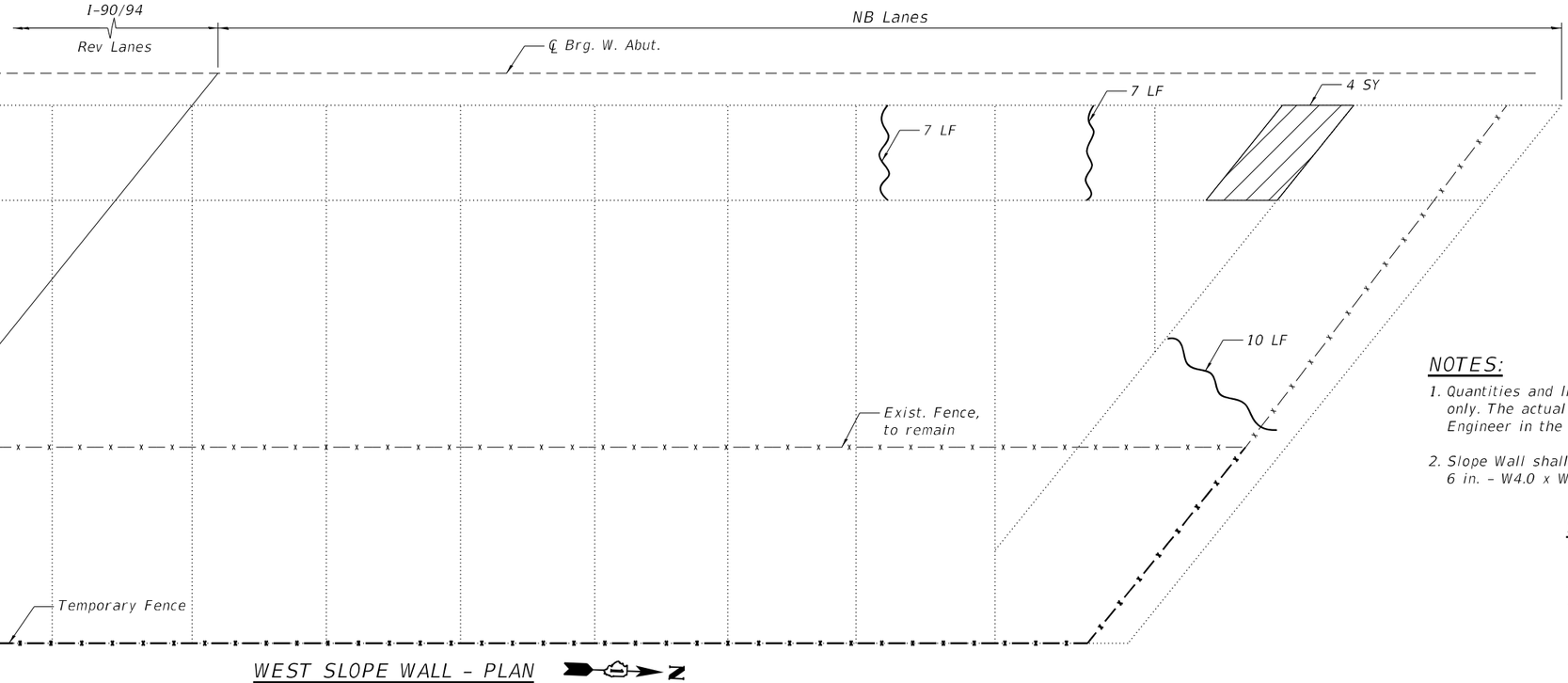
PIER 2 REPAIRS
STRUCTURE NO. 016-0130 (NB)
SHEET S06-21 OF S06-23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	606
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



EAST SLOPE WALL - PLAN



WEST SLOPE WALL - PLAN

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu Yd	2
Slope Wall Removal	Sq Yd	4
Slope Wall 4 Inch	Sq Yd	4
Slope Wall Crack Sealing	Foot	63

NOTES:

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

LEGEND

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

MODEL: Default
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		CHECKED -	MI	REVISED -	
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PLOT DATE =		DATE -	4/29/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL REPAIRS
STRUCTURE NO. 016-0130 (NB)
SHEET S06-22 OF S06-23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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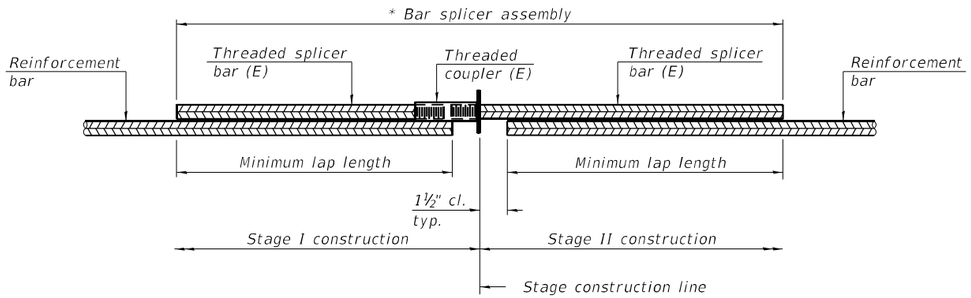
		CONTRACT NO. 62K73		
		ILLINOIS	FED. AID PROJECT	



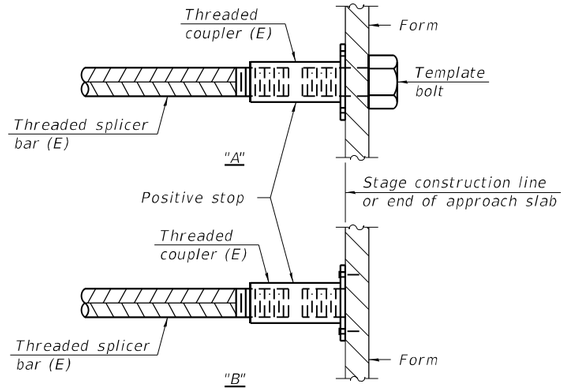
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

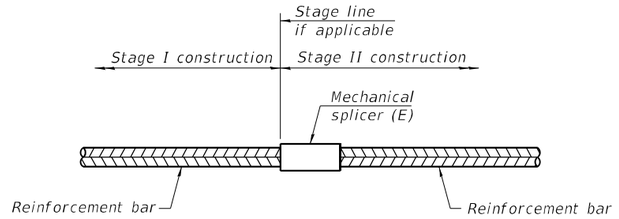
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

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



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

BSD-1

1-1-2020

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PLOT DATE =		DATE -	4/29/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-0130 (NB)

SHEET S06-23 OF S06-23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	608
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

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Existing Structure: S.N. 016-0129 was originally built in 1958. The bridge was widened between 1990 and 1993, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 290'-11½" and an out-to-out deck width of 71'-0½". The superstructure consists of a 7½" thick reinforced concrete deck supported on three span continuous steel plate girders of span lengths 81'-3", 120'-4½", and 81'-3". The substructure consists of reinforced concrete abutments and multi-column piers supported on concrete piles.

Traffic is to be maintained utilizing stage construction.

No salvage.

NOTES:

1. All stations are to the ℄ I-90/94 NB Roadway and taken from existing plans.
2. No future wearing surface is allowed.

DESIGN SPECIFICATIONS

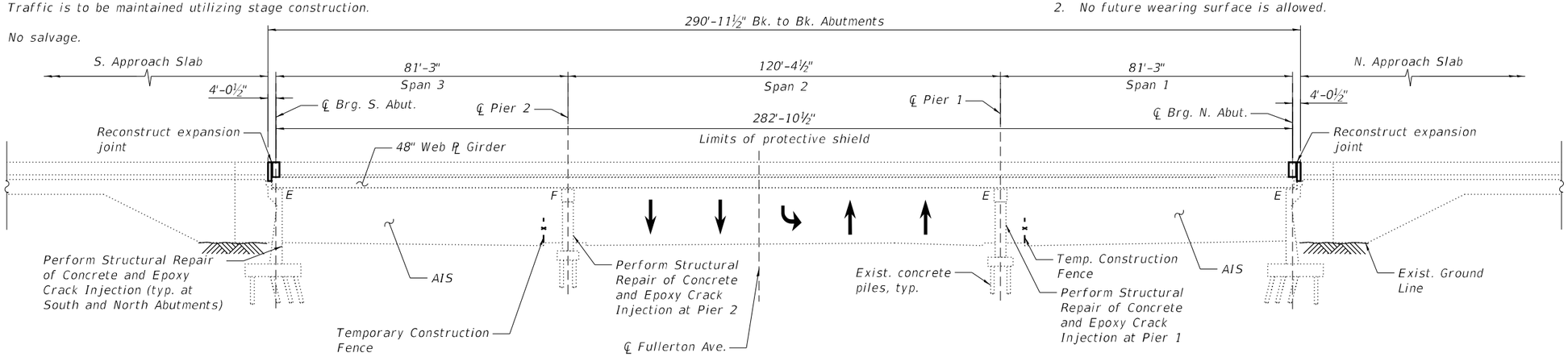
2002 AASHTO Standard Specifications for Highway Bridges (17th Edition)

RECONSTRUCTION 2013

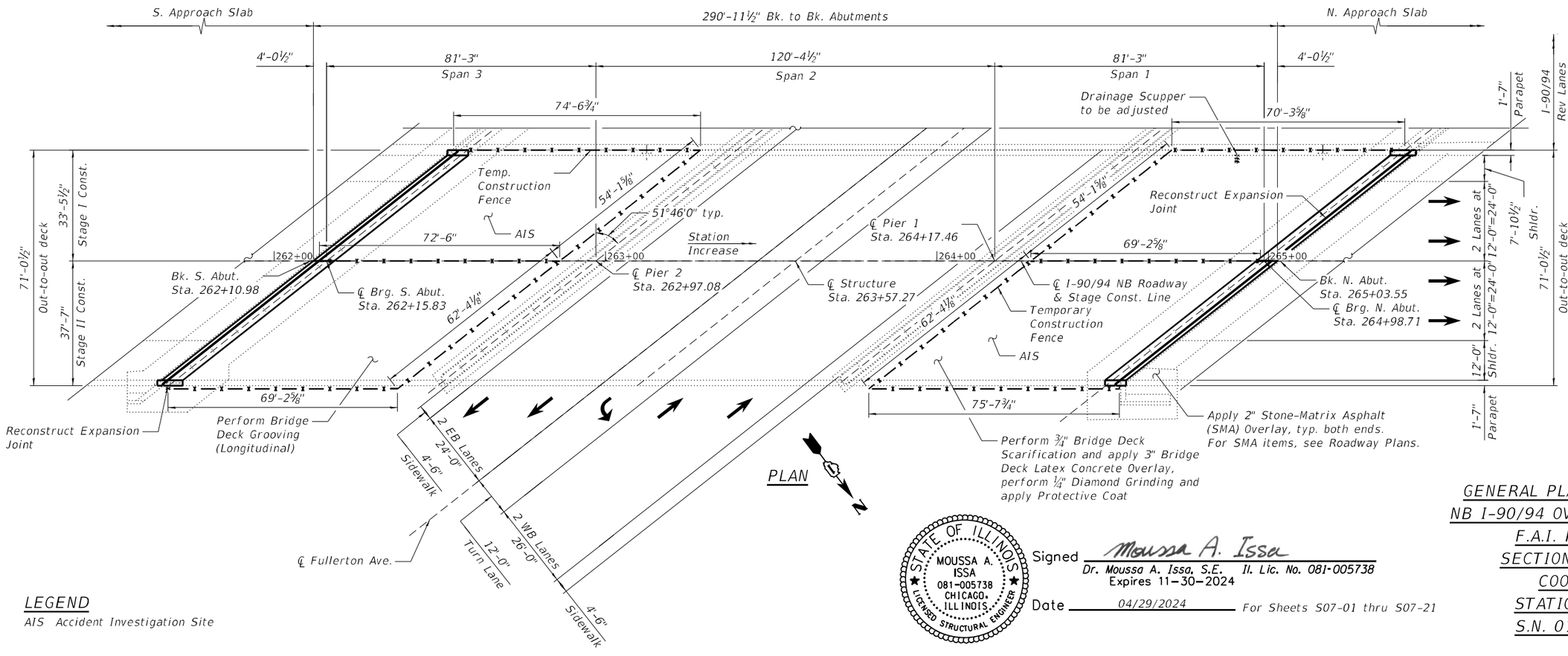
2002 AASHTO Standard Specifications for Highway Bridges

RECONSTRUCTION 1993

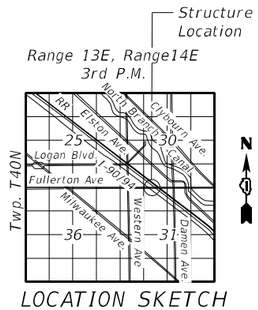
1989 AASHTO Standard Specifications for Highway Bridges with 1990 & 1991 Interim Specifications



ELEVATION



PLAN



LOCATION SKETCH

LEGEND

AIS Accident Investigation Site

STATE OF ILLINOIS
MOUSSA A. ISSA
081-005738
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Moussa A. Issa

Dr. Moussa A. Issa, S.E. Il. Lic. No. 081-005738
Expires 11-30-2024

Date 04/29/2024 For Sheets S07-01 thru S07-21

GENERAL PLAN AND ELEVATION
NB I-90/94 OVER FULLERTON AVE.
F.A.I. ROUTE 90/94
SECTION 2020-005-BR
COOK COUNTY
STATION 263+57.27
S.N. 016-0129 (NB)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-0129 (NB)
SHEET S07-01 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	609
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

GENERAL NOTES

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

2. Plan dimensions and details relative to the existing structure have been taken from existing plans and 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.

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

4. All exposed concrete edges shall have a $\frac{3}{4}$"x45° chamfer except where shown otherwise.

5. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

6. For SMA overlay on Approach Slab, see Civil Sheets.

7. Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside faces of parapets, and top of Latex Overlay.

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

9. Prior to pouring the new concrete deck for expansion joint reconstruction and deck slab repairs, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding $\frac{1}{4}$" deep shall be identified and reported to the Bureau of Bridges and Structures for further dispositions. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

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

11. 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".

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

13. 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 $\frac{3}{4}$ in. diameter, holes $\frac{13}{16}$ in. diameter, unless otherwise noted.

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

15. Adjacent I-90/94 reversible bridge is not shown throughout the plans for clarity.

16. 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.

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 his or her expense at no charge to IDOT.

18. 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".

19. 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.

20. 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.

21. 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 including in the cost of Protective Shield.

22. Calculated weight of steel = 540 lb (M270 Grade 36)

INDEX OF SHEETS

SCOPE OF WORK

1. Provide Protective shield within limits indicated on the plans.

2. Scarify $\frac{3}{4}$" from the bridge deck slab.

3. Perform Deck Slab repairs.

4. Reconstruct Expansion Joints at the South and North abutments and install new preformed joint strip seals.

5. Apply 3" Bridge Deck Latex Concrete Overlay on Bridge Deck.

6. Perform $\frac{1}{4}$" Diamond Grinding to top of bridge deck and abutment hatched block.

7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay on the approach Slabs (see Roadway Plans).

8. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.

9. Apply protective coat to the top of reconstructed transverse joint areas, top and inside faces of parapets, and top of Latex Overlay.

10. Perform structural concrete repairs and epoxy crack injection for the abutments and piers as noted on the plans.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	56.0	-	56.0
Protective Shield	Sq Yd	2,235	-	2,235
Concrete Superstructure	Cu Yd	61.4	-	61.4
Protective Coat	Sq Yd	2,486	-	2,486
Furnishing And Erecting Structural Steel	Pound	540	-	540
Reinforcement Bars, Epoxy Coated	Pound	6,310	-	6,310
Bar Splicers	Each	32	-	32
Preformed Joint Seal 2 1/2"	Foot	292	-	292
Preformed Joint Strip Seal	Foot	226	-	226
Concrete Sealer	Sq Ft	-	1,160	1,160
Epoxy Crack Injection	Foot	-	119	119
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,532	-	1,532
Protect And Maintain Existing Underpass Luminaire	L Sum	-	0.04	0.04
Approach Slab Repair (Full Depth)	Sq Yd	48	-	48.00
Approach Slab Repair (Partial Depth)	Sq Yd	48	-	48.00
Structural Steel Removal	Pound	540	-	540
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	2,116	-	2,116
Cleaning Drainage System	L Sum	0.031	-	0.031
Bridge Deck Scarification 3/4"	Sq Yd	2,116	-	2,116
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	-	678	678
Deck Slab Repair (Full Depth, Type I)	Sq Yd	2	-	2
Drainage Scuppers To Be Adjusted	Each	1	-	1
Diamond Grinding (Bridge Section)	Sq Yd	2,195	-	2,195
Temporary Construction Fence	Foot	-	860	860
Temporary Shoring And Cribbing	Each	-	4	4

GENERAL NOTES (CONT.):

23. The Contractor shall contact Chandra Libby, the Director of City of Chicago Department of Family Support Services (DFSS) at 312-746-5443 or Chandra.Libby@cityofchicago.org to coordinate the relocation of persons and their personal belongings under the bridges within the areas bounded by the temporary chain-link-fence.

24. The intent of the temporary fence is to deny access of any unauthorized personnel under the bridge during construction. Actual fence installations may vary from what is shown on the plans. All fence installations must be approved by the Engineer.

25. Only one of the accident investigation sites at North and South abutments can be closed at a time and the other shall be kept open for public use.

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

27. 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.

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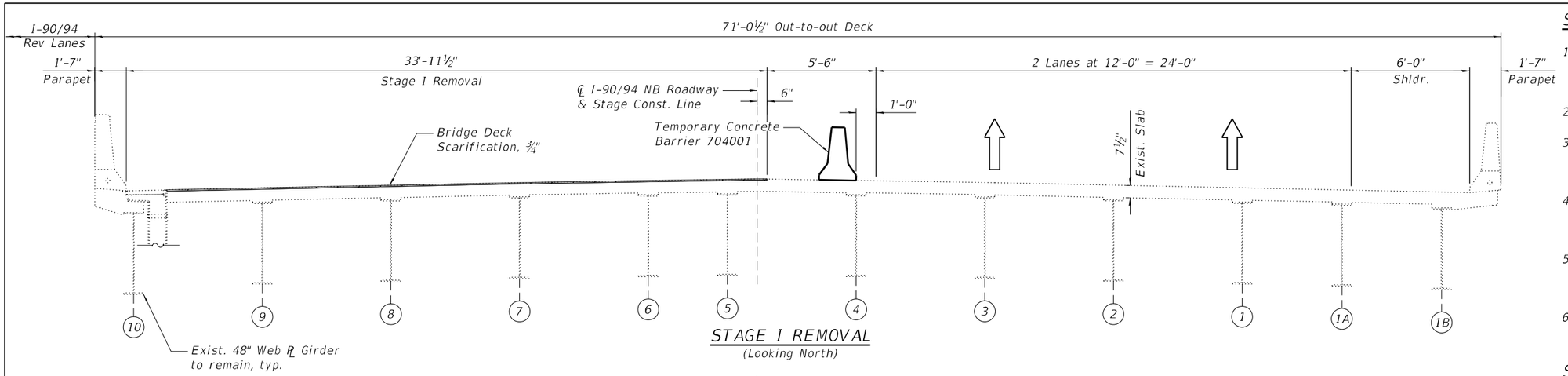
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

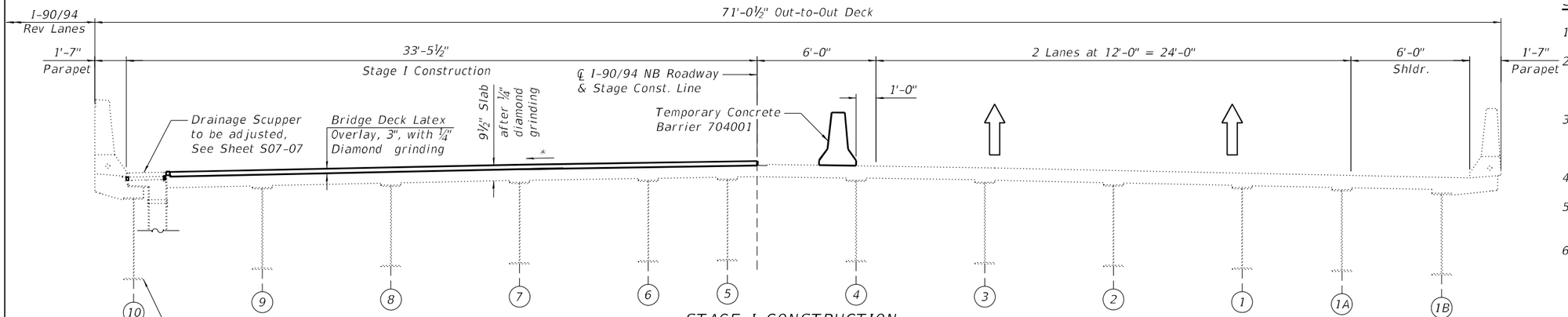
GENERAL NOTES, INDEX OF SHEETS & TBOM
STRUCTURE NO. 016-0129 (NB)
SHEET S07-02 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	610
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



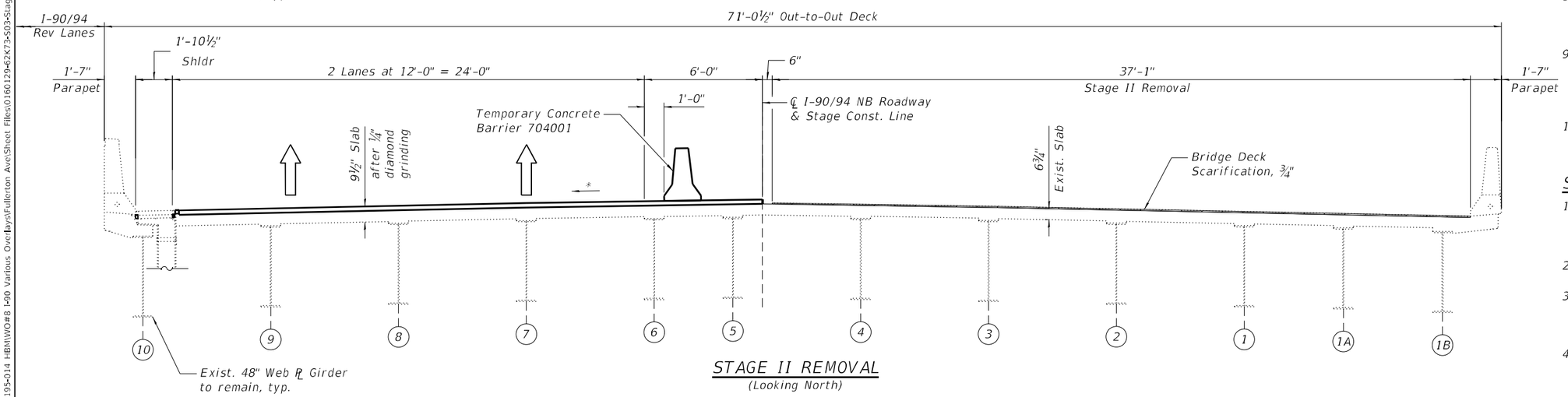
STAGE I REMOVAL

(Looking North)



STAGE I CONSTRUCTION

(Looking North)



STAGE II REMOVAL

(Looking North)

*Match existing cross slopes

STAGE I REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the west side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge concrete deck/approach slab adjacent to expansion joints at the North and South Abutments.
5. Perform temporary shoring and cribbing at locations shown on the plans within the limits of Stage I removal.
6. Remove existing longitudinal preformed joint seal between north parapet and reversible lane parapet.

STAGE I CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct transverse expansion joints and install new preformed joint strip seals within the limits of Stage I Construction.
3. Perform Structural repair of Concrete and epoxy crack injection for the abutments and piers.
4. Apply 3" bridge deck latex concrete overlay.
5. Perform ¼" diamond grinding to bridge deck and abutment hatched block.
6. Perform bridge deck grooving (Longitudinal) for the 3" bridge deck latex concrete overlay and reconstructed abutment expansion joint areas.
7. Adjust drainage scupper.
8. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach slab and taper into existing roadway. See Roadway Plans.
9. Apply protective coat to top and inside faces of west parapet, reconstructed abutment expansion joints and to the surfaces of the new overlay.
10. Replace existing longitudinal preformed joint seal between north parapet and reversible lane parapet.

STAGE II REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the east side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge concrete deck/approach slab adjacent to expansion joints at the North and South Abutments.
5. Perform temporary shoring and cribbing at locations shown on the plans within the limits of Stage II removal.

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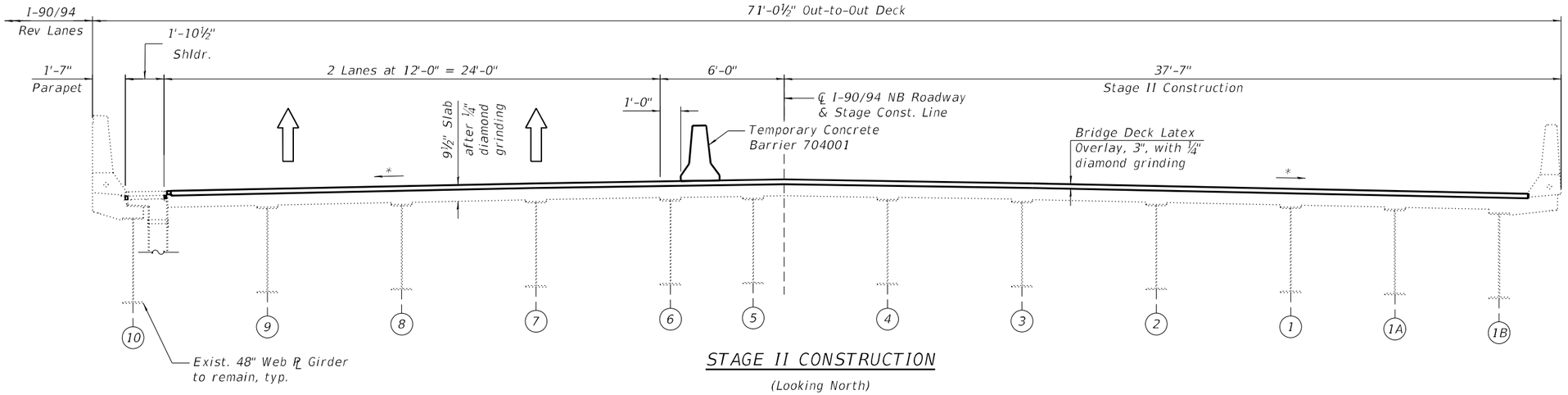
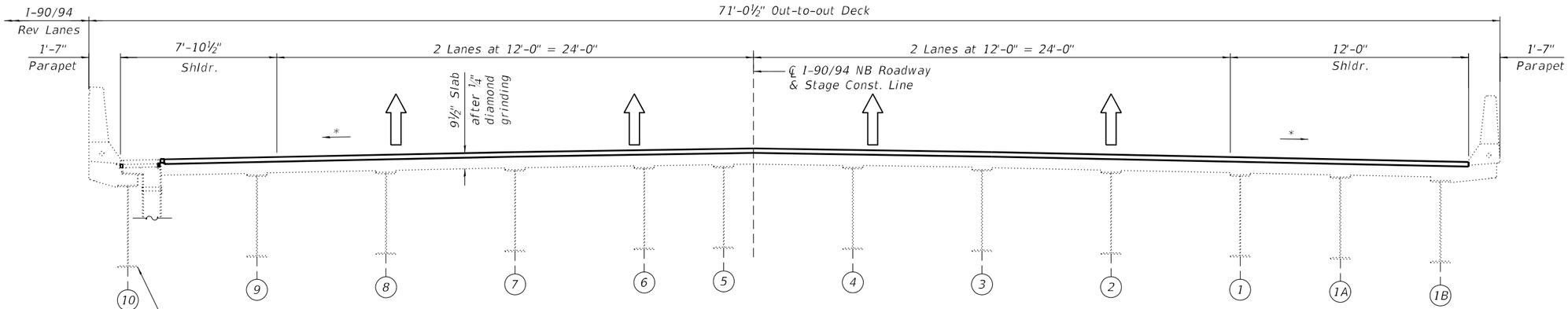
STAGE CONSTRUCTION (SHEET 1 OF 2)
STRUCTURE NO. 016-0129 (NB)
SHEET S07-03 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	611
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		



STAGE II CONSTRUCTION

(Looking North)



FINAL DECK CROSS SECTION

(Looking North)

STAGE II CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct expansion joints and install new preformed joint strip seals within the limits of Stage II Construction.
3. Perform Structural Repair of Concrete and epoxy crack injection for the abutments and piers.
4. Apply 3" bridge deck latex concrete overlay.
5. Perform ¼" diamond grinding to bridge deck and abutment hatched block.
6. Perform bridge deck grooving (Longitudinal) for the 3" bridge deck latex concrete overlay and reconstructed abutment expansion joint areas.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach slab and taper into existing roadway. See Roadway Plans.
8. Apply protective coat to top and inside faces of east parapet, reconstructed abutment expansion joints and to the surfaces of the new overlay.

*Match existing cross slopes

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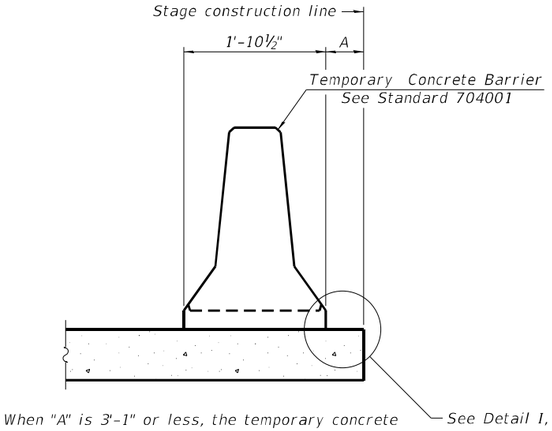
DEPARTMENT OF TRANSPORTATION

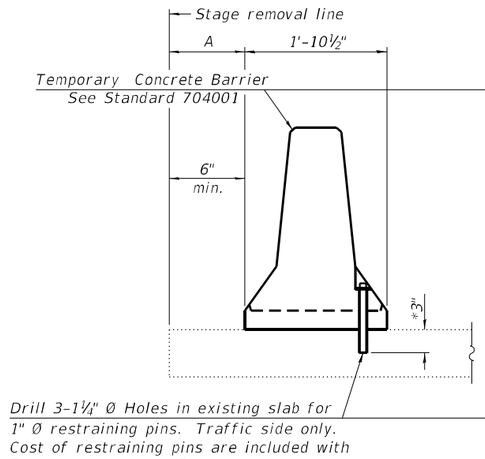
STAGE CONSTRUCTION (SHEET 2 OF 2)
STRUCTURE NO. 016-0129 (NB)
SHEET S07-04 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	612
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



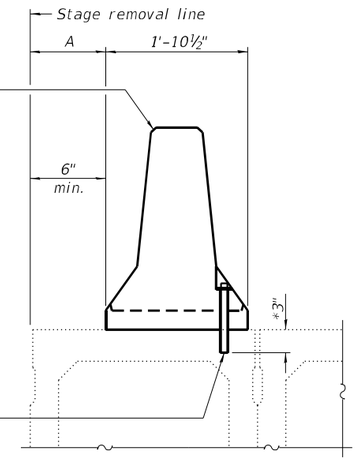
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

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".

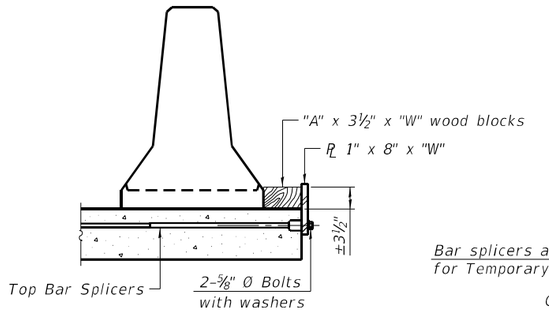
EXISTING SLAB



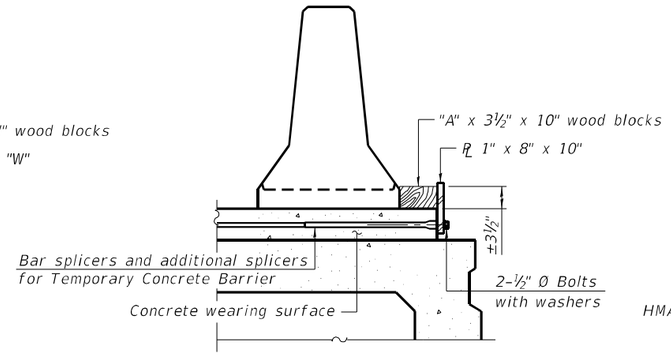
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

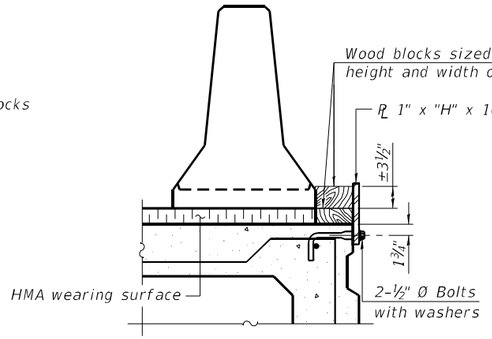
SECTIONS THRU SLAB OR DECK BEAM



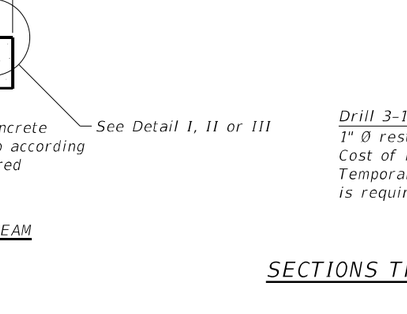
DETAIL I



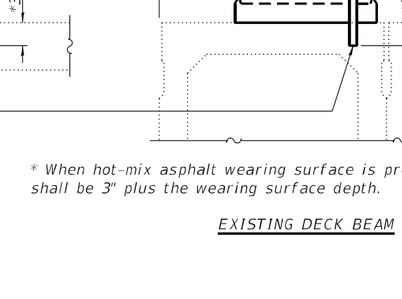
DETAIL II



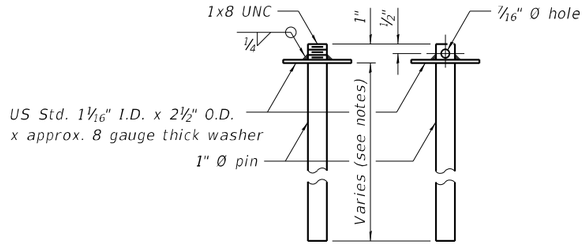
DETAIL III



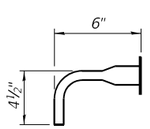
STEEL RETAINER ℄ 1" x 8" x "W"
(Detail I and II)



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



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

A retainer assembly shall be located at the approximate ℄ 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

10-12-2021

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PLOT DATE =	DATE - 4/29/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

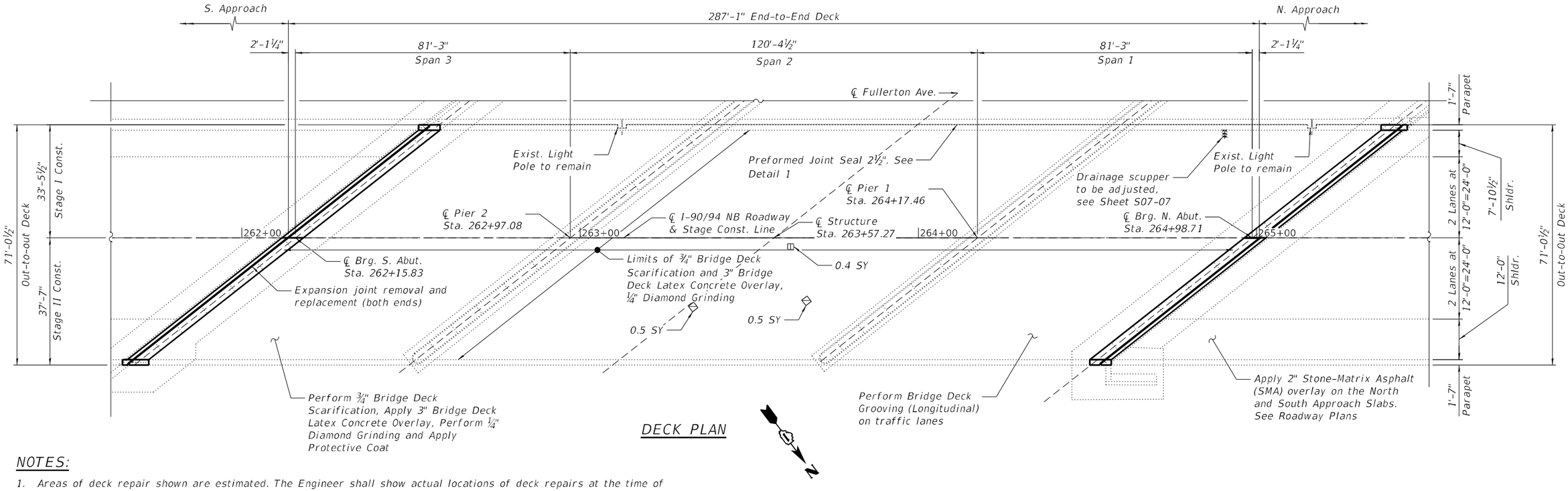
TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 016-0129 (NB)

SHEET S07-05 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	613
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

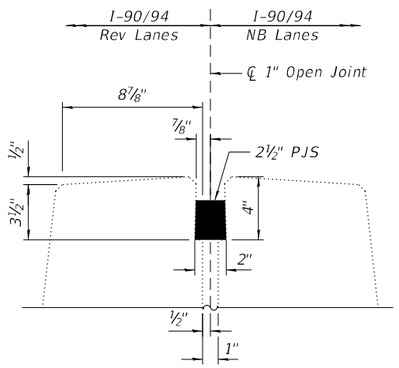
ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	2,235
Protective Coat	Sq Yd	2,382
Preformed Joint Seal 2 1/2"	Foot	292
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,532
Approach Slab Repair (Full Depth)	Sq Yd	48
Approach Slab Repair (Partial Depth)	Sq Yd	48
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	2,116
Bridge Deck Scarification 3/4"	Sq Yd	2,116
Deck Slab Repair (Full Depth, Type I)	Sq Yd	2
Diamond Grinding (Bridge Section)	Sq Yd	2,195



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 S07-04.
3. For drainage scupper adjustment, see Sheet S07-07.
4. For North and South transverse joint removal and reconstruction, see Sheets S07-08 thru S07-13.
5. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
7. Protective Coat shall be applied to the top and inside face of Parapets and top of the latex Concrete Overlay.
8. 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.
9. The Contractor shall exercise extreme caution during Concrete Removal to avoid damaging to 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.
10. Removal of the existing preformed joint seal is included in the cost of Preformed Joint Seal 2½".
11. Approach Slab Repair (Full Depth) and Approach Slab Repair (Partial Depth) quantities have been estimated (based on a nominal 3% of bridge approach area) for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will determined by the Engineer in the field at the time of construction.



DETAIL 1

(Reinforcement not shown for clarity)
(Looking upstation)

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

LEGEND:

*Deck Slab Repair (Partial Depth)

Deck Slab Repair (Full Depth, Type I)

SY Square Yard

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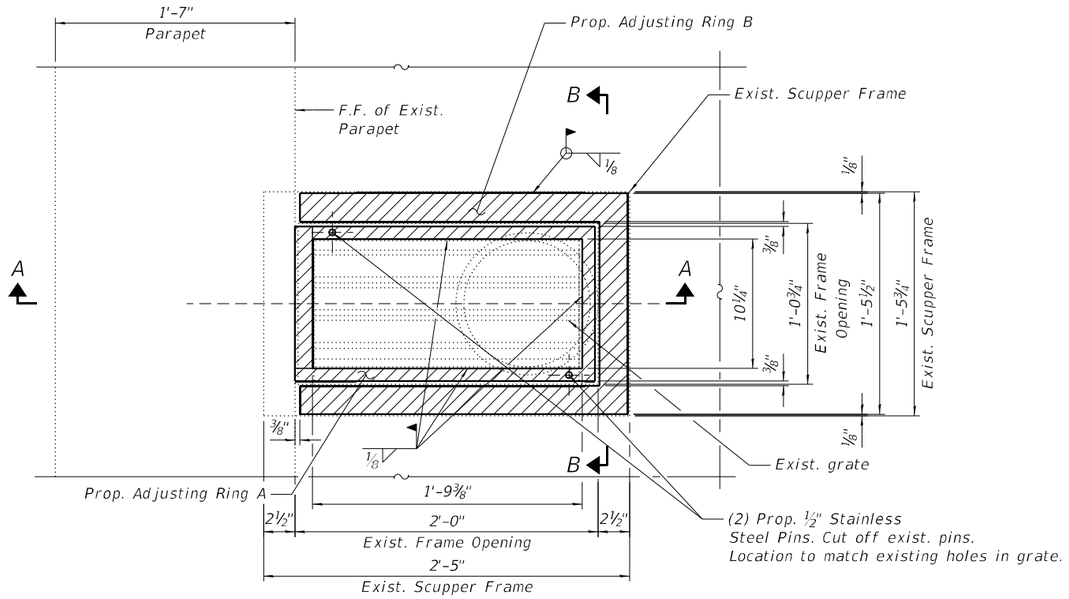
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REPAIR PLAN
STRUCTURE NO. 016-0129 (NB)
SHEET S07-06 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	614
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

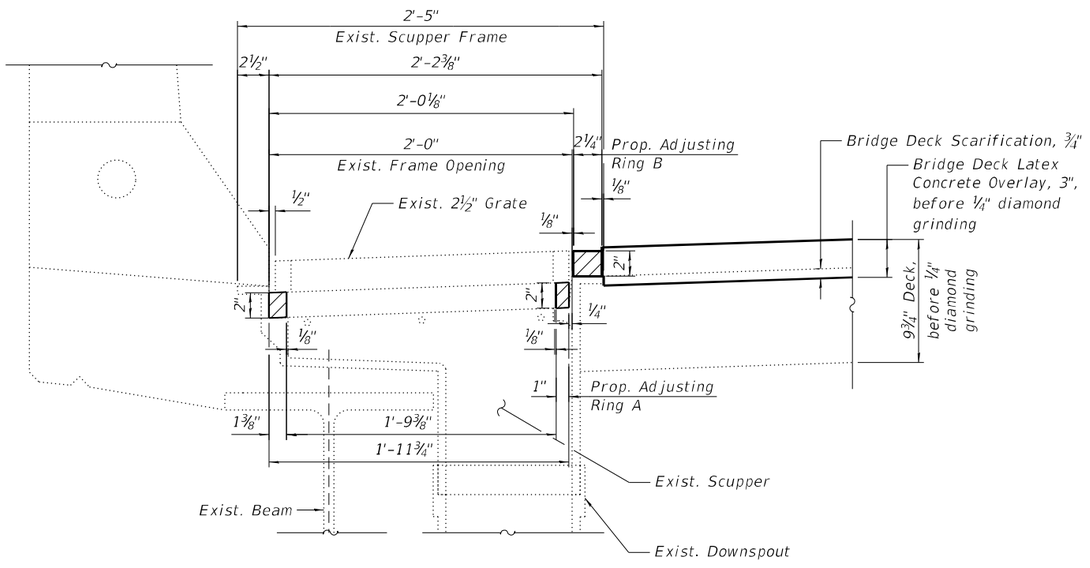


TYPICAL SCUPPER TYPE B PLAN

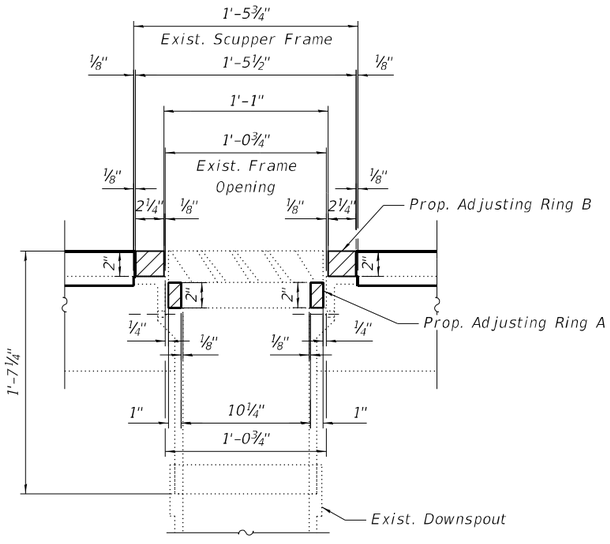
(1 Location at median parapet)

NOTES

1. The Contractor shall field verify Existing Dimensions and Details of the Existing Scuppers and make necessary adjustments prior to construction of New Adjusting Rings or ordering of material for Adjusting Drainage Scuppers.
2. All Cast Iron Parts shall be Grey Iron conforming to the requirements of AASHTO M 105, Class 35B.
3. Cast Iron Parts shall be unfinished.
4. The Contractor shall take appropriate measures to ensure that Protective Coat is not applied to the scuppers.
5. Adjusting Rings shall be from Neenah or approved equal. Structural steel weldments or equal section and of the same configuration may be submitted in place of Cast Iron. Fillet or full penetration welds may be used for weldments. Details shall be submitted to the Engineer for approval.
6. Provide a 1/8" Fillet Weld around perimeter of new Adjusting Rings to secure to existing Scupper.
7. Cost of all labor and materials necessary to clean all existing floor drains and scuppers, install adjusting scupper rings, remove and reinstall grates is included in the cost for Drainage Scupper to be Adjusted.



SECTION A-A



SECTION B-B

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers To Be Adjusted	Each	1

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER ADJUSTMENT DETAILS
STRUCTURE NO. 016-0129 (NB)
SHEET S07-07 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	615
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

109'-8⅛" Face to face parapet, Measured along deck side of exp. jt.

Exist. #5 long. bars at 12" cts., Top of slab to remain
Exist. #5 long. bars between beams, Bott. of slab to remain
Exist. #6 bars at 12" cts. Top of Slab to remain

Exist. #5 bars at 7" cts., Top of slab to remain
Exist. #5 bars at 10" cts., Bott. of slab to remain
Exist. #6 bars at 14" cts. Top of slab to remain
Exist. 1-#5 bar Top & Bott. to be removed
℄ I-90/94 NB Roadway & Stage Const. Line
Stage Removal Line
Limits of Concrete Removal
Exist. long. bars in bridge parapet to remain, typ.
Exist. #6 bars Beams 1A, 1B & Beams 1-10 to be removed
Exist. #5 bars, I.F. to be removed
Exist. #4 bars, O.F. to be removed, typ.
Exist. #4 vert. bars E.F. to remain
Exist. #5 bars at 12" cts. to be removed
3 Exist. #6 bars E.F. to be removed
Exist. long. bars in appr. parapet to remain, typ.

6"
11"
2'-9"
2" Jt. @ 50°F
1'-0"
3¼" Jt. @ 50°F
4'-5⅜"
1'-7⅜"
2'-11½"
1'-7" Parapet typ.
1" Median Joint
33'-11½" Stage I Removal
37'-1" Stage II Removal
I-90/94 Rev Lanes

A, B, C, D, E, F

SOUTH ABUTMENT JOINT REMOVAL PLAN

N

109'-8⅛" Face to face parapet, Measured along deck side of exp. jt.

6-#4 d(E) bars at 12" cts., O.F.
6-#4 d2(E) bars at 12" cts., O.F.
6-#5 d1(E) bars at 11" cts., I.F.
6-#5 d3(E) bars at 11" cts., I.F.
4-#6 s(E) bars at 11" cts. Beams 1A, 1B & 1-10
3-#6 a2(E) bars at 6" cts., Top lap with alternate a(E) bars
5x2-#5 a(E) bars at 5" cts., Top
5x2-#5 a(E) bars Bott, as shown in Section AA-AA
℄ I-90/94 NB Roadway & Stage Const. Line
5 Bar Splicers (E) for #5 a(E) bars Top & Bott.
3-#6 a2(E) bars at 10" cts., Top lap with alternate a1(E) bars
5x3-#5 a1(E) bars at 5" cts., Top,
5x3-#5 a1(E) bars Bott as shown in Section AA-AA
6-#4 d(E) bars at 12" cts., O.F.
6-#5 d1(E) bars at 11" cts., I.F.
7-#4 d6(E) bars at 12" cts., O.F.
7-#5 d7(E) bars at 11" cts., I.F.
*3-#5 d4(E) bars
3-#5 d8(E) bars
53-#5 u(E) bars at 12" cts.
3x2-#6 h(E) bars, E.F.
3 Bar Splicers (E) for #6 h(E) bars E.F.
3x2-#6 h1(E) bars, E.F.
59-#5 u(E) bars at 12" cts.
3-#5 d5(E) bars
*3-#5 d4(E) bars

2'-9"
2⅜" Jt. @ 50°F
11⅜"
3'-0⅛"
3⅛" Jt. @ 50°F
2'-11¼"
5'-9⅞"
3⅛" Jt. @ 50°F
1'-7"
1'-7" Parapet typ.
1" Median Joint
33'-5½" Stage I Construction
37'-7" Stage II Construction
I-90/94 Rev Lanes

AA, BB, CC, DD, EE

SOUTH ABUTMENT JOINT RECONSTRUCTION PLAN

N

NOTES:

1. For Sections A-A, B-B. C-C, AA-AA, BB-BB and CC-CC, see Sheet S07-09.
2. For Sections D-D, E-E, DD-DD, EE-EE, Bar Diagrams, additional Notes and Bill of Material, see Sheet S07-10.

*Epoxy grout #5 d4(E) bars in 9" min. holes according to Section 584 of the Standard Specifications

LEGEND

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

S. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 1 OF 3)
STRUCTURE NO. 016-0129 (NB)
SHEET S07-08 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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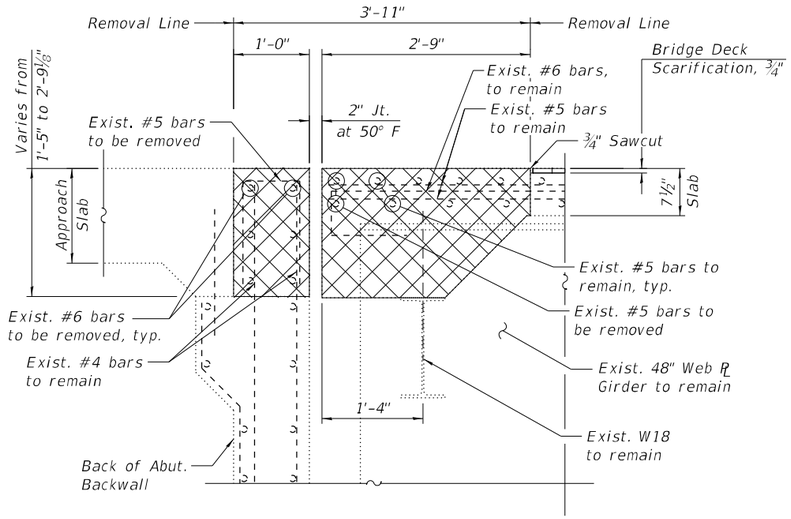
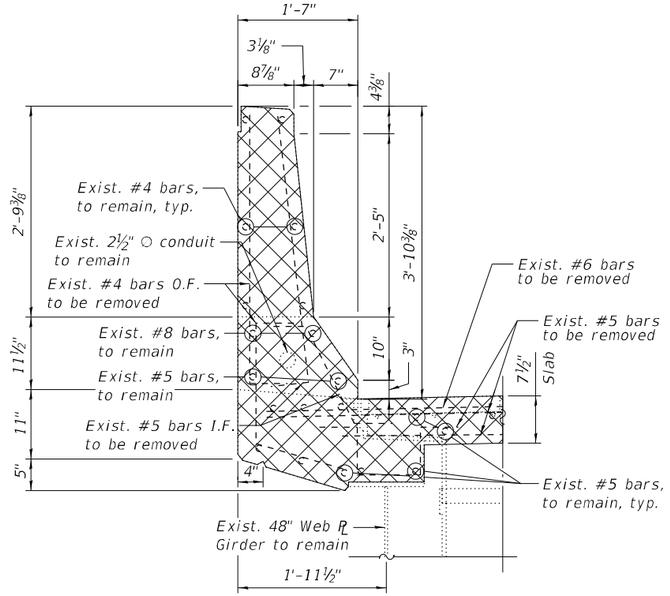
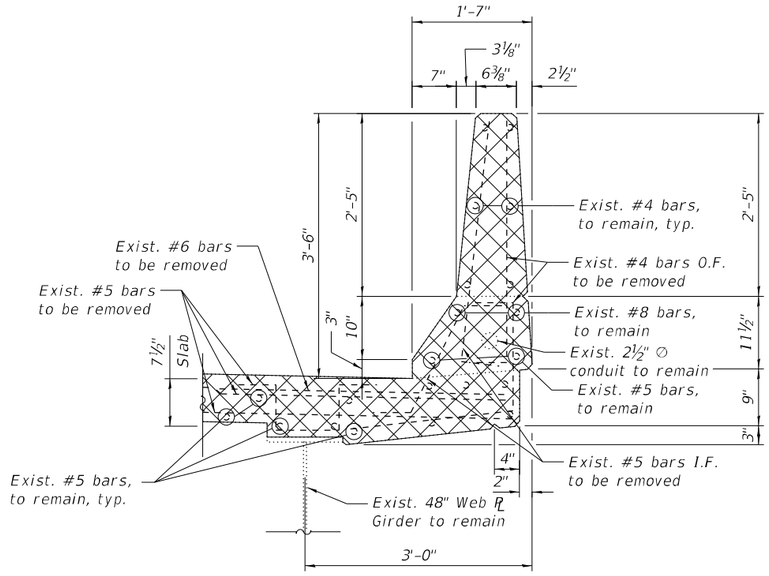
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		



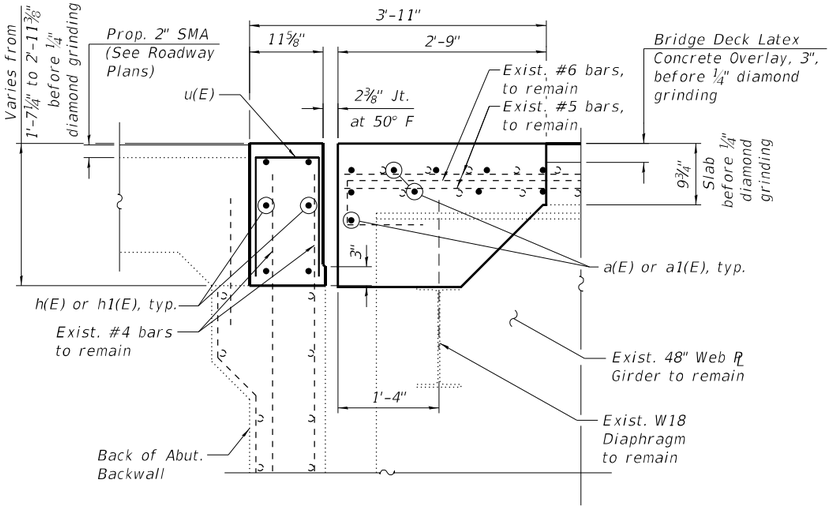
SECTION A-A



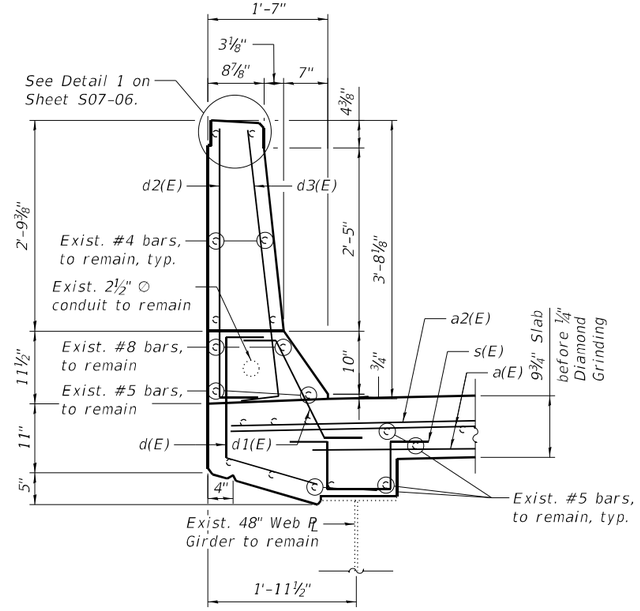
SECTION B-B



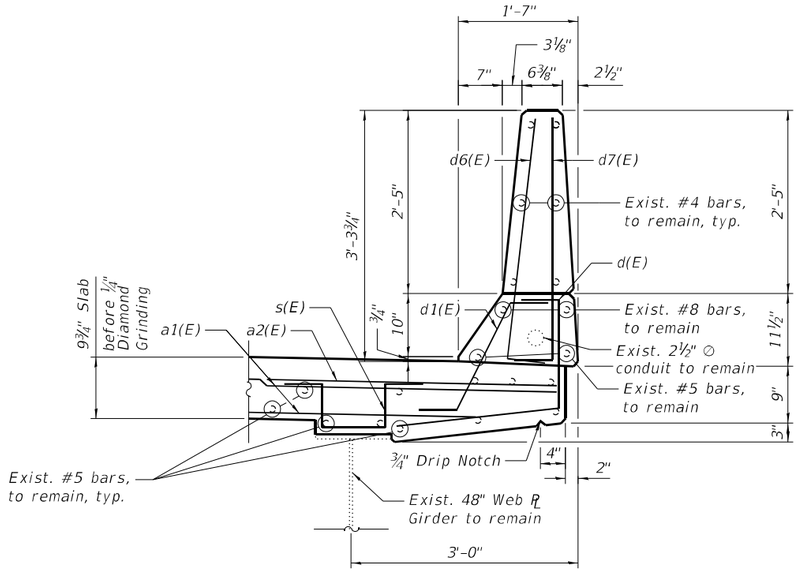
SECTION C-C



SECTION AA-AA



SECTION BB-BB



SECTION CC-CC

NOTES:

1. For legend, see Sheet S07-08.

2. For Bar Diagrams, additional Notes and Bill of Material, see Sheet S07-10.

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DEPARTMENT OF TRANSPORTATION

S. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 2 OF 3)
STRUCTURE NO. 016-0129 (NB)
SHEET S07-09 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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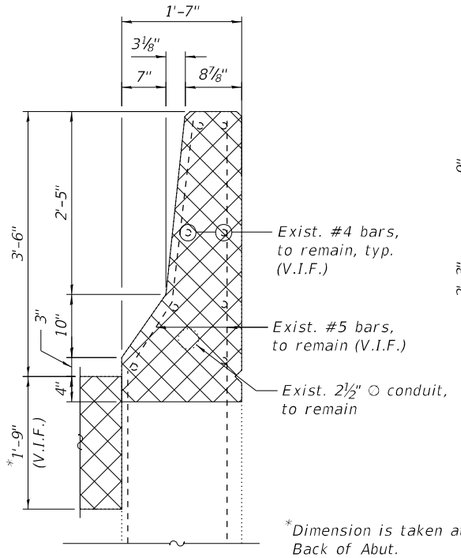
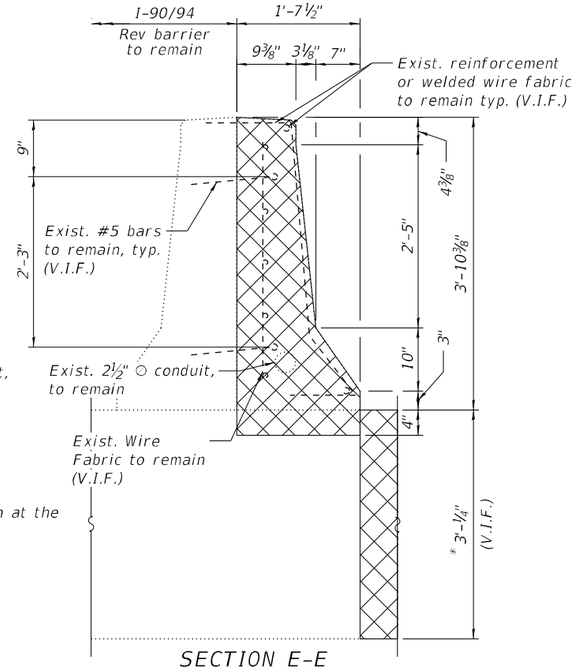
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



*Dimension is taken at the Back of Abut.

SECTION D-D

(Reinforcement in the pour strip is not shown for clarity)



SECTION E-E

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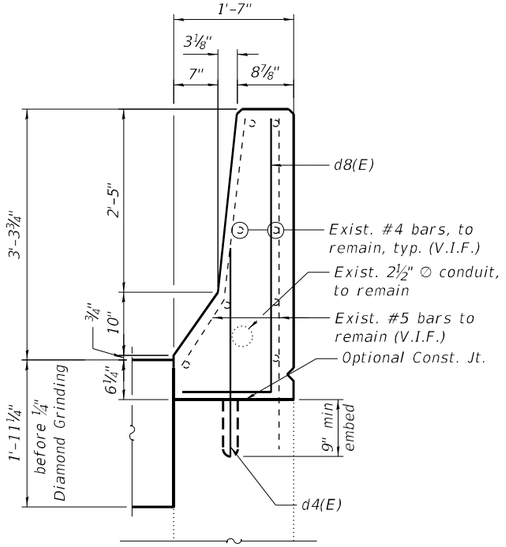

SECTION DD-DD

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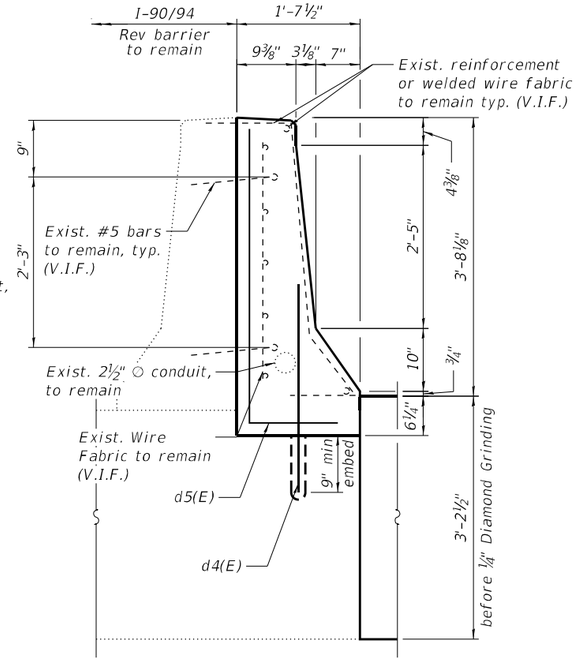

SECTION EE-EE

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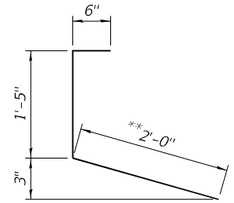
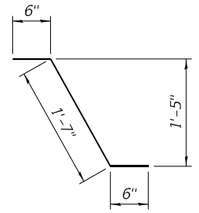
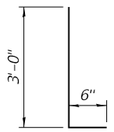


BAR d(E)

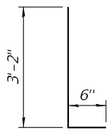
**Cut end bar in the field to fit



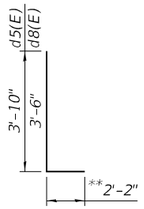
BAR d1(E)



BARS d2(E) & d3(E)

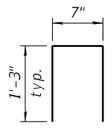


BARS d6(E) & d7(E)

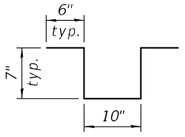


BARS d5(E) & d8(E)

**Cut end bar in field to fit



BAR u(E)



BAR s(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	20	#5	28'-2"	
a1(E)	30	#5	22'-2"	
a2(E)	6	#6	6'-6"	
d(E)	12	#4	3'-11"	
d1(E)	12	#5	2'-7"	
d2(E)	6	#4	3'-6"	
d3(E)	6	#5	3'-6"	
d4(E)	6	#5	2'-9"	
d5(E)	3	#5	5'-0"	
d6(E)	7	#4	3'-8"	
d7(E)	7	#5	3'-8"	
d8(E)	3	#5	5'-8"	
h(E)	12	#6	27'-9"	
h1(E)	12	#6	30'-9"	
s(E)	48	#6	3'-0"	
u(E)	112	#5	3'-1"	
Concrete Removal			Cu Yd	28.0
Concrete Superstructure			Cu Yd	30.7
Protective Coat			Sq Yd	52
Reinforcement Bars, Epoxy Coated			Pound	3,160

MIN BAR LAPS

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

NOTES:

1. For legend, see Sheet S07-08.
2. For preformed joint strip seal details, see Sheet S07-14.
3. For bar splicer assembly details, see Sheet S07-21.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.
5. Epoxy grout d4(E) bars according to Article 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Superstructure.

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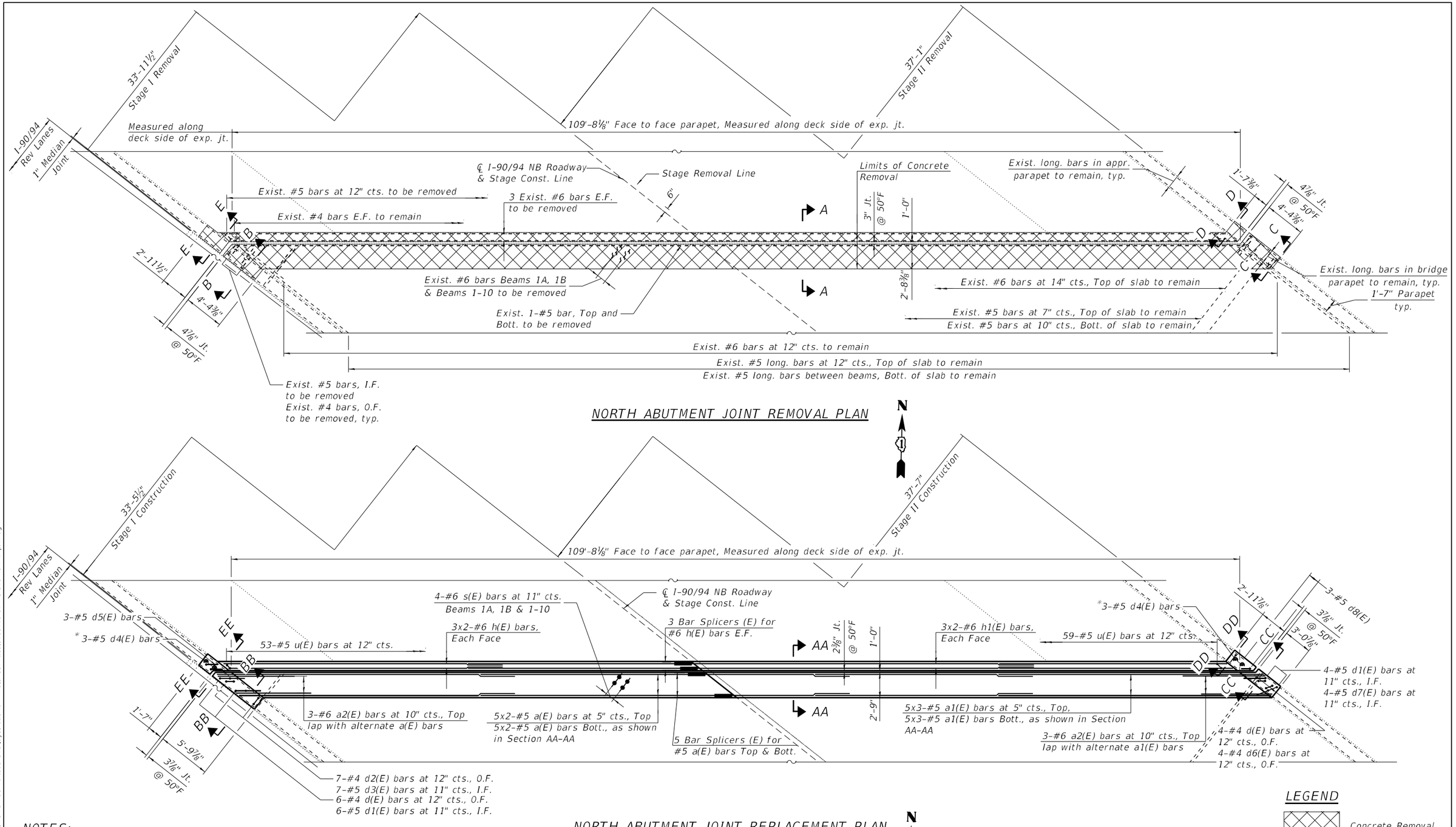
S. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 3 OF 3)
STRUCTURE NO. 016-0129 (NB)
SHEET S07-10 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	618
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		



NORTH ABUTMENT JOINT REMOVAL PLAN

NORTH ABUTMENT JOINT REPLACEMENT PLAN

*Epoxy grout #5 d4(E) bars in 9" min. holes according to Section 584 of the Standard Specifications

NOTES:

1. For Sections A-A, B-B, C-C, AA-AA, BB-BB, and CC-CC, see Sheet S07-12.
2. For Sections D-D, E-E, DD-DD, EE-EE, Bar Diagrams, additional Notes and Bill of Material, see Sheet S07-13.

LEGEND

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

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N. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 1 OF 3)
STRUCTURE NO. 016-0129 (NB)
SHEET S07-11 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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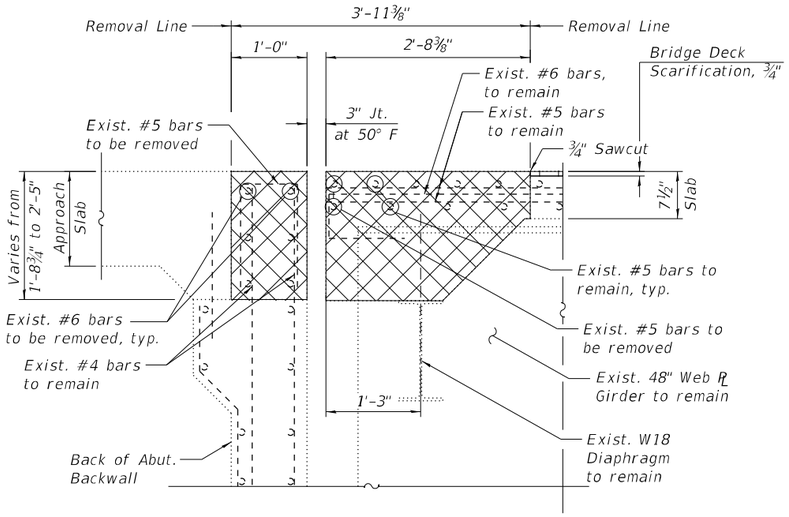
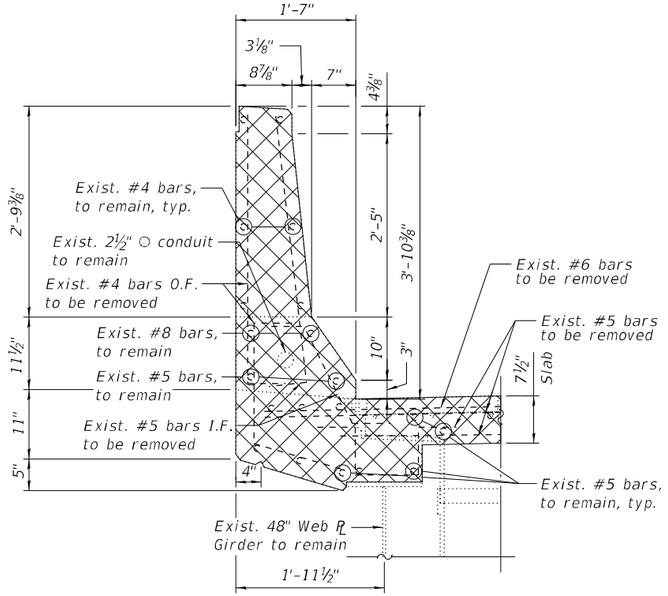
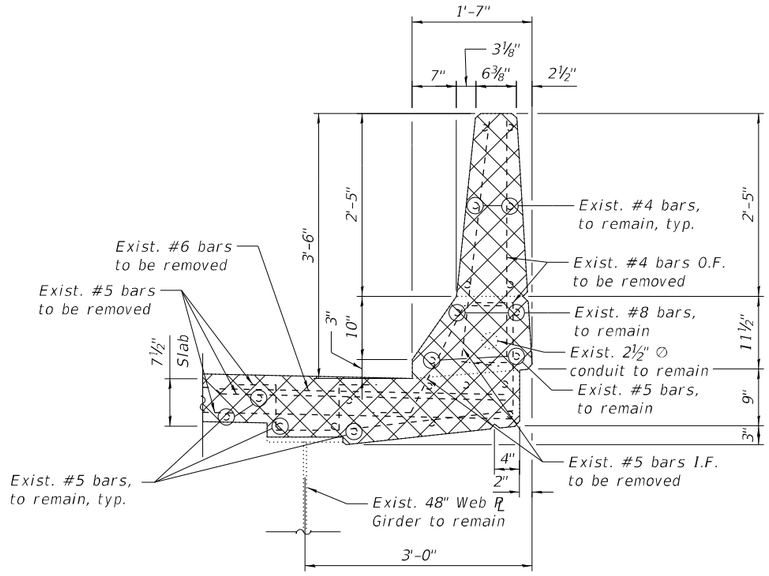


SECTION A-A



SECTION B-B



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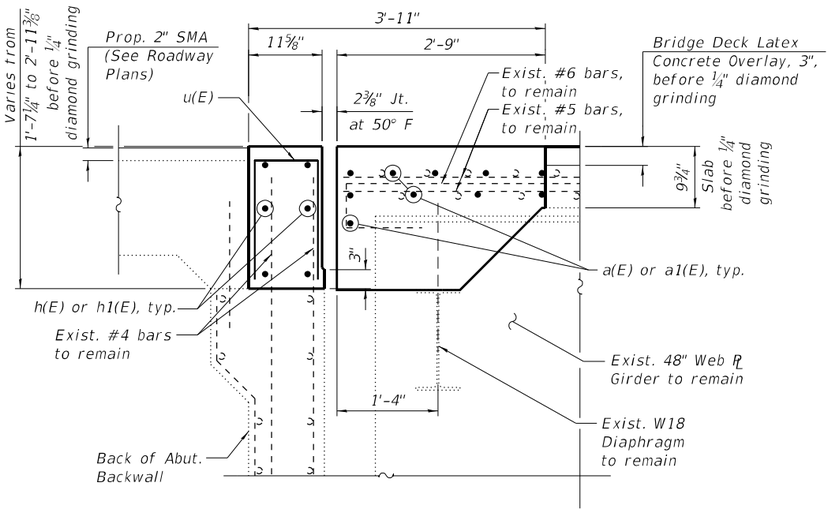

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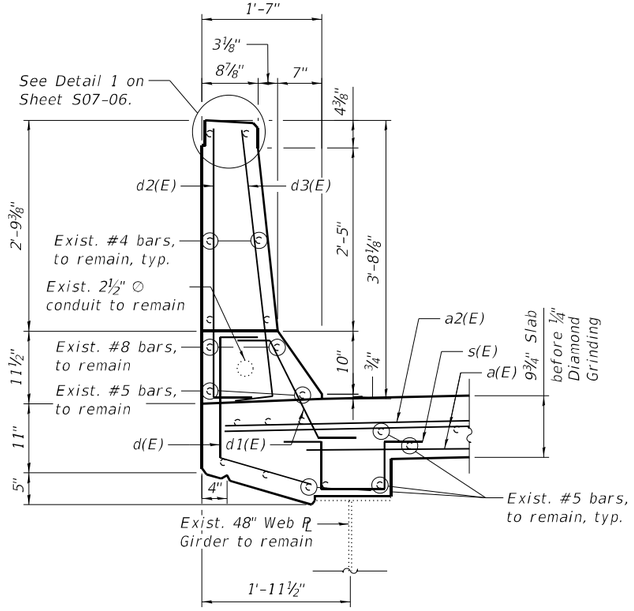

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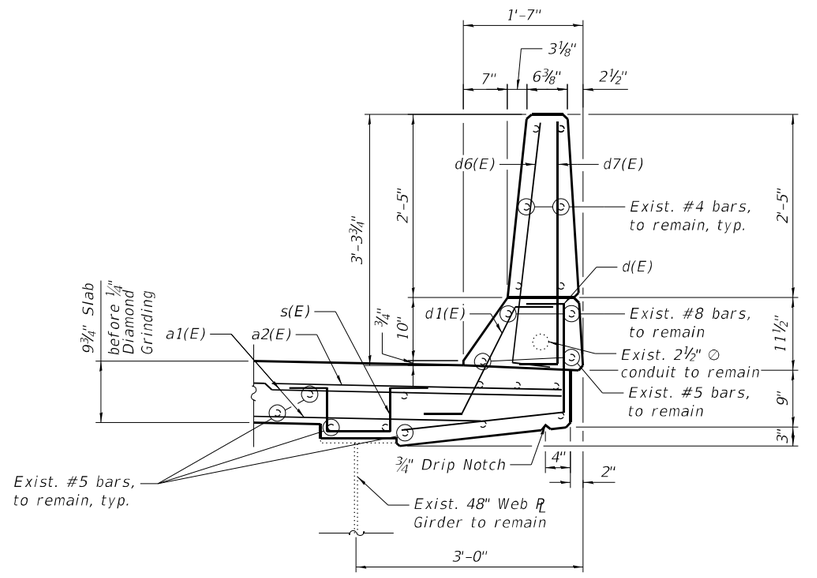

SECTION CC-CC

NOTES:

1. For legend, see Sheet S07-11.

2. For Bar Diagrams, additional Notes and Bill of Material, see Sheet S07-13.

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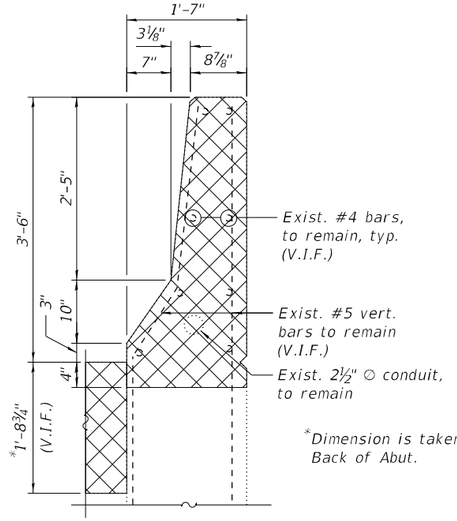
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

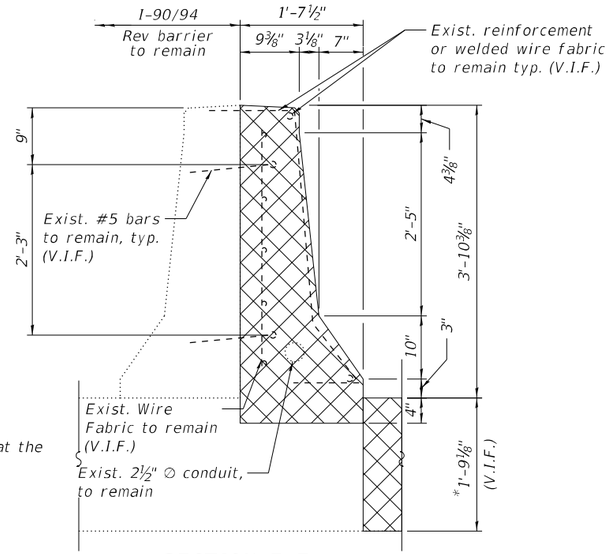
N. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 2 OF 3)
STRUCTURE NO. 016-0129 (NB)
SHEET S07-12 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	620
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



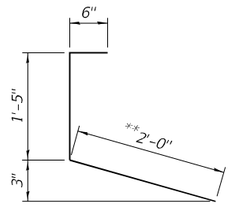
SECTION D-D

(Reinforcement in pour strip not shown for clarity)



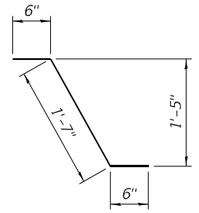
SECTION E-E

(Reinforcement in pour strip not shown for clarity)



BAR d(E)

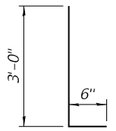
**Cut end bar in the field to fit



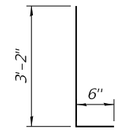
BAR d1(E)

BILL OF MATERIAL

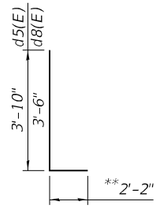
Bar	No.	Size	Length	Shape
a(E)	20	#5	28'-2"	
a1(E)	30	#5	22'-2"	
a2(E)	6	#6	6'-6"	
d(E)	10	#4	3'-11"	
d1(E)	10	#5	2'-7"	
d2(E)	7	#4	3'-6"	
d3(E)	7	#5	3'-6"	
d4(E)	6	#5	2'-9"	
d5(E)	3	#5	6'-0"	
d6(E)	4	#4	3'-8"	
d7(E)	4	#5	3'-8"	
d8(E)	3	#5	5'-8"	
h(E)	12	#6	27'-9"	
h1(E)	12	#6	30'-9"	
s(E)	48	#6	3'-0"	
u(E)	112	#5	3'-2"	
Concrete Removal			Cu Yd	28.0
Concrete Superstructure			Cu Yd	30.7
Protective Coat			Sq Yd	52
Reinforcement Bars, Epoxy Coated			Pound	3,150



BARS d2(E) & d3(E)

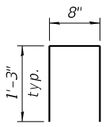


BARS d6(E) & d7(E)

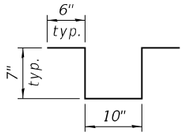


BARS d5(E) & d8(E)

**Cut end bar in field to fit



BAR u(E)



BAR s(E)

MIN BAR LAPS

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

SECTION DD-DD

(Reinforcement in pour strip not shown for clarity)

SECTION EE-EE

(Reinforcement in pour strip not shown for clarity)

NOTES:

1. For legend, see Sheet S07-11.
2. For preformed joint strip seal details, see Sheet S07-14.
3. For bar splicer assembly details, see Sheet S07-21.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.
5. Epoxy grout d4(E) bars according to Article 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Superstructure.

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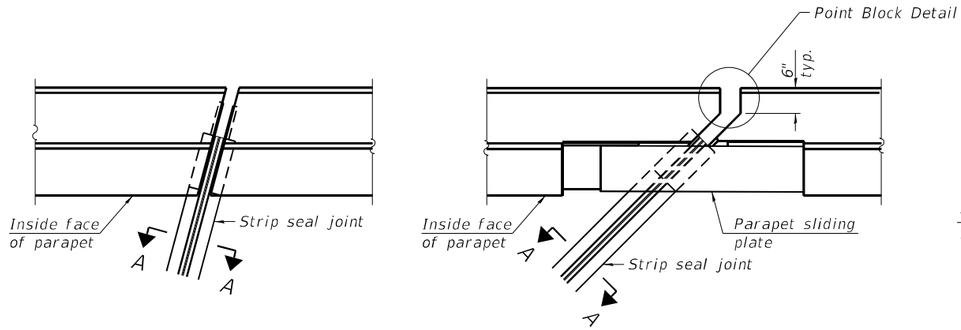
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

N. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 3 OF 3)
STRUCTURE NO. 016-0129 (NB)
SHEET S07-13 OF S07-21 SHEETS

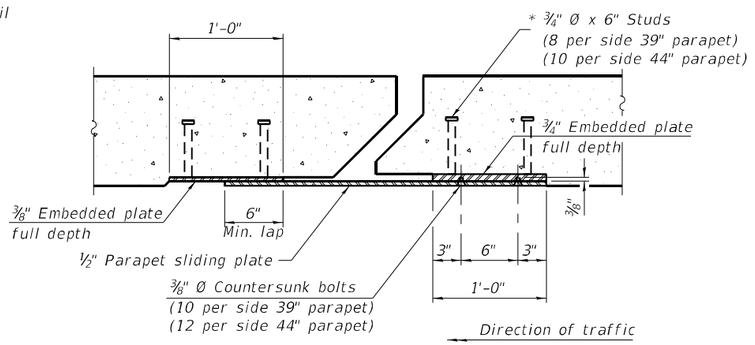
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	621
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



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.

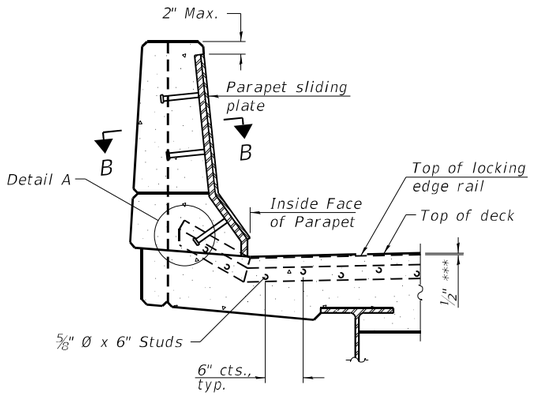
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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.

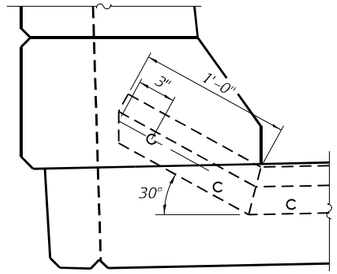
34" F-shape barrier shown, 42" F-shape similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

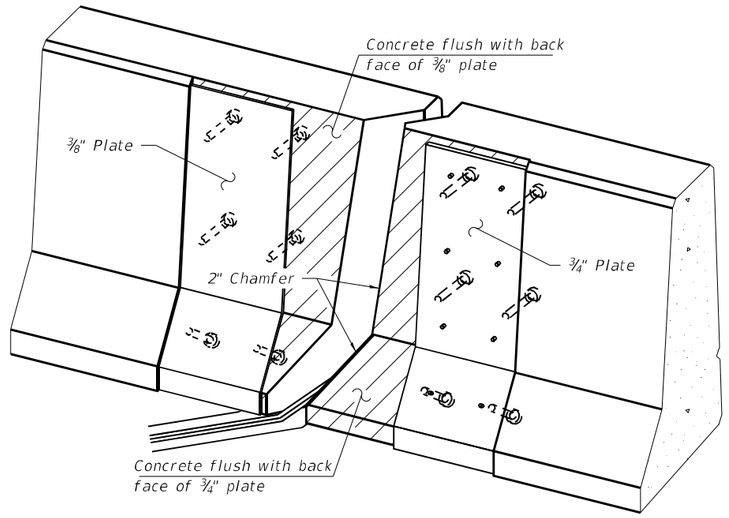


ELEVATION AT PARAPET

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

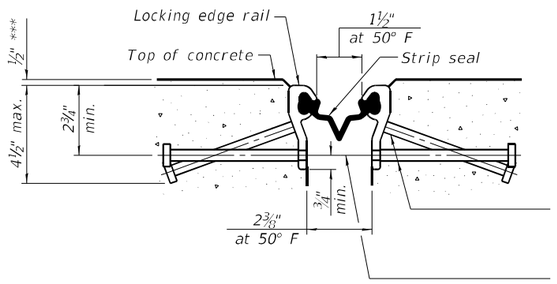


DETAIL A

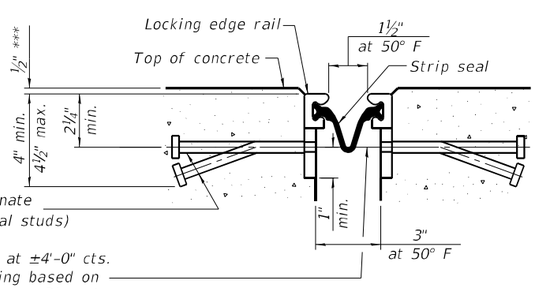


TRIMETRIC VIEW

(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT



SHOWING WELDED RAIL JOINT

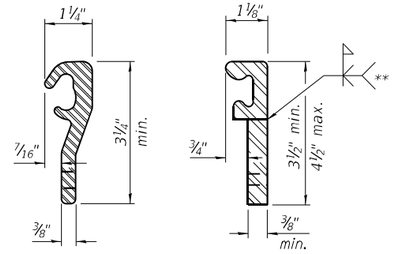
* ⅜" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

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	226

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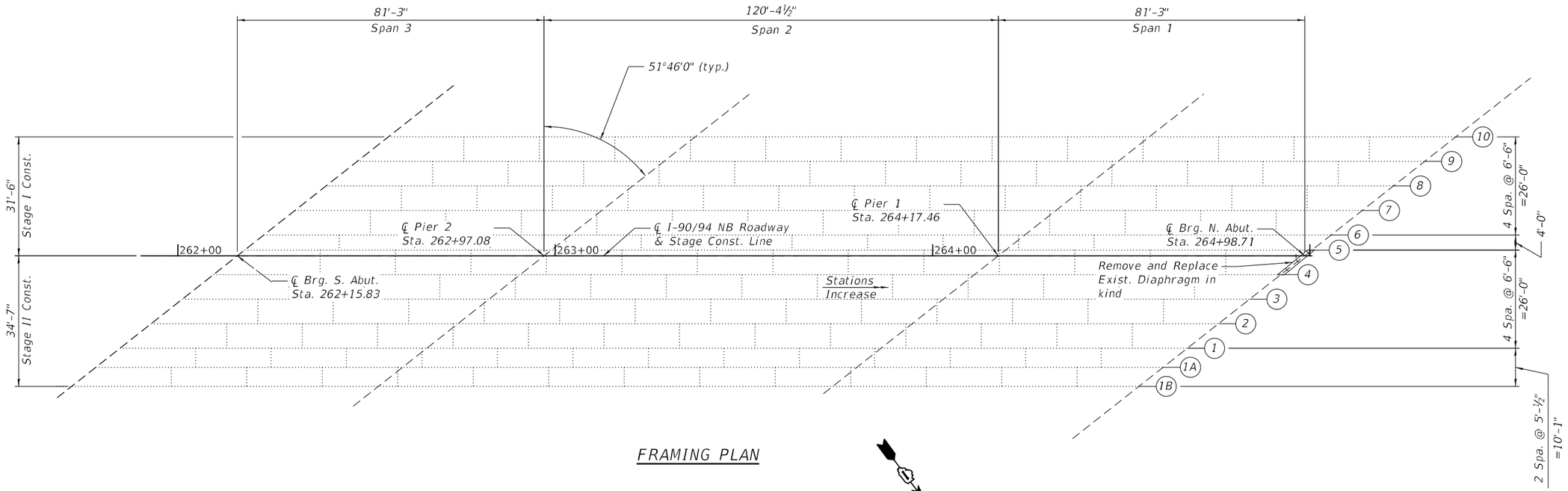
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-0129 (NB)
SHEET S07-14 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	622
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing And Erecting Structural Steel	Pound	540
Structural Steel Removal	Pound	540



FRAMING PLAN

NOTES:

1. All work is to be performed utilizing stage construction. See Sheets S07-03 and S07-04 for details.
2. For Diaphragm Removal and Replacement Details, and Exist. Stiffeners Repair, see Sheet S07-16.
3. All structural steel shall conform to the requirements of AASHTO M270 Grade 36.
4. Diaphragm connection holes shall be 1 1/16" for 7/8" bolts. Two hardened washers shall be required at diaphragm connections. Fasteners shall be high strength bolts.
5. Cost of field drilling, bolts, nuts and washers shall be included in the cost of Furnishing and Erecting Structural Steel.

LEGEND

Remove and Replace Exist. Diaphragm

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DEPARTMENT OF TRANSPORTATION

FRAMING PLAN STEEL REPAIRS
STRUCTURE NO. 016-0129 (NB)
SHEET S07-15 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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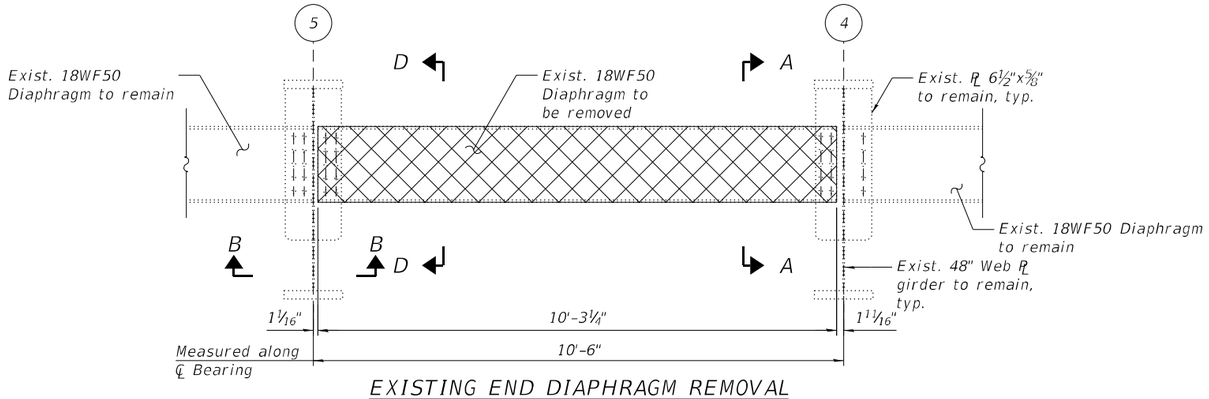
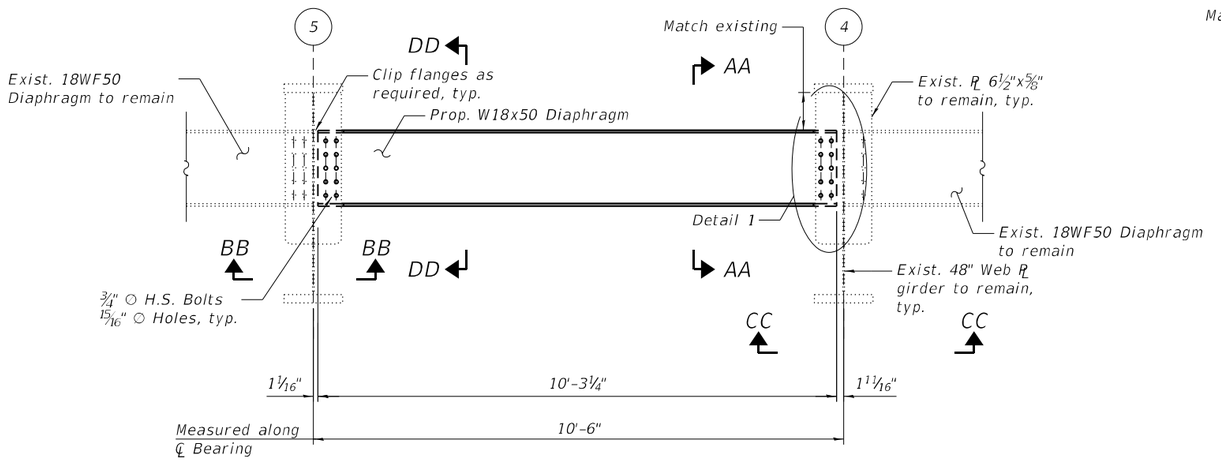
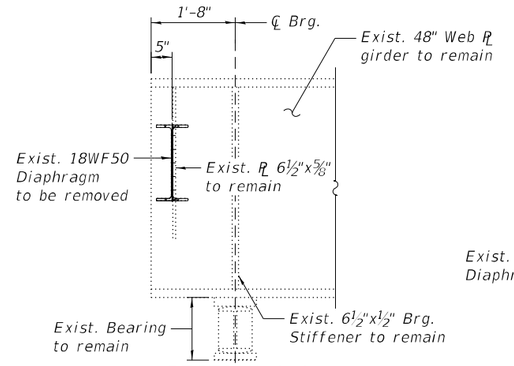


EXISTING END DIAPHRAGM REMOVAL

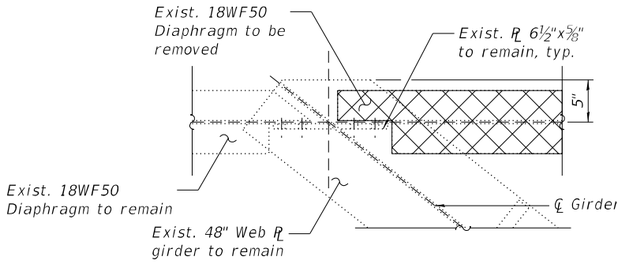


PROPOSED END DIAPHRAGM

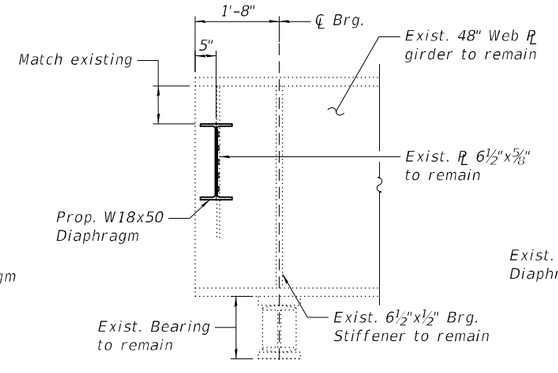


SECTION A-A

(Section D-D opposite hand)

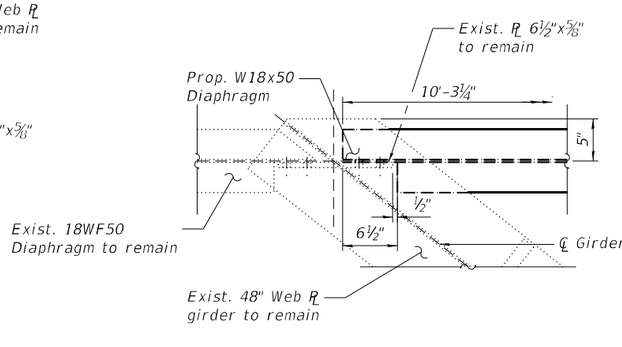


SECTION B-B

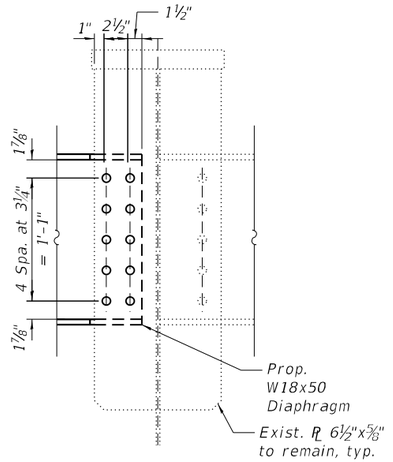


SECTION AA-AA

(Section DD-DD opposite hand)

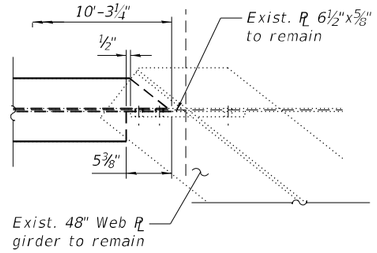


SECTION BB-BB



DETAIL 1

(Shown at Beam 4. Beam 5 opposite hand)



SECTION CC-CC

NOTE:

1. For location of Diaphragm Removal/Replacement and Bill of Material, see Sheet S07-15.

LEGEND:

Structural Steel Removal

Field drill holes in new steel using existing steel as template

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DEPARTMENT OF TRANSPORTATION

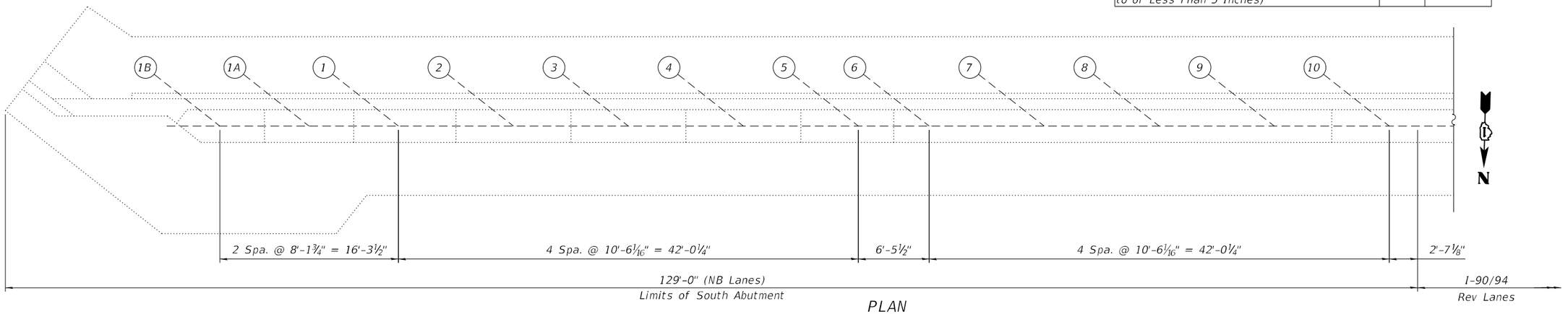
STRUCTURAL STEEL REPAIR DETAILS
STRUCTURE NO. 016-0129 (NB)

SHEET S07-16 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	624
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

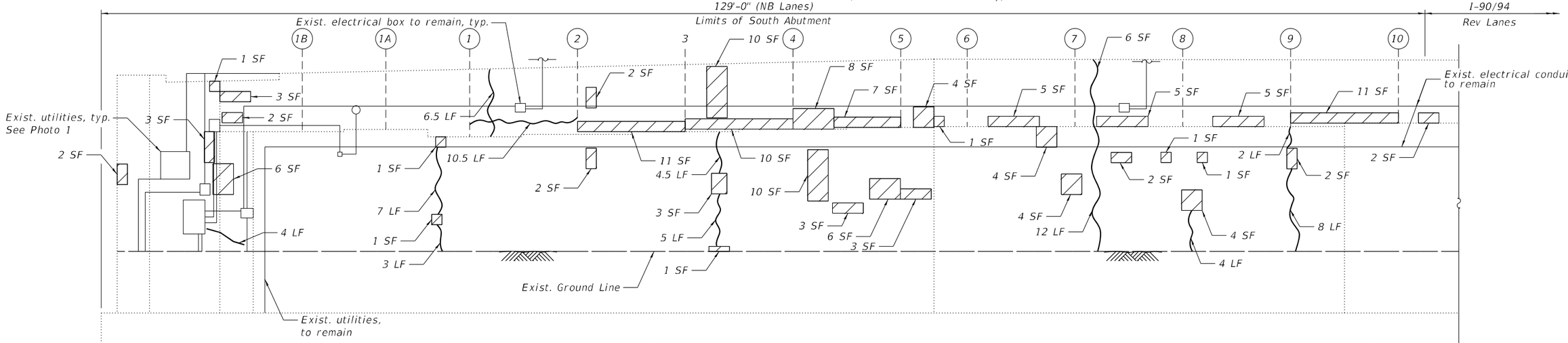
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	575
Epoxy Crack Injection	Foot	72
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	147



PLAN

(Piles not shown for clarity)



EXISTING UTILITIES – SOUTHEAST WINGWALL

(Looking South)

EXISTING ELECTRICAL BOX – SOUTH ABUTMENT

(Looking South)

ELEVATION

(Looking South)

NOTES:

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

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Epoxy Crack Injection (Width > 0.06")
- SF – Square Foot
- LF – Linear Foot

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SOUTH ABUTMENT REPAIRS
STRUCTURE NO. 016-0129 (NB)

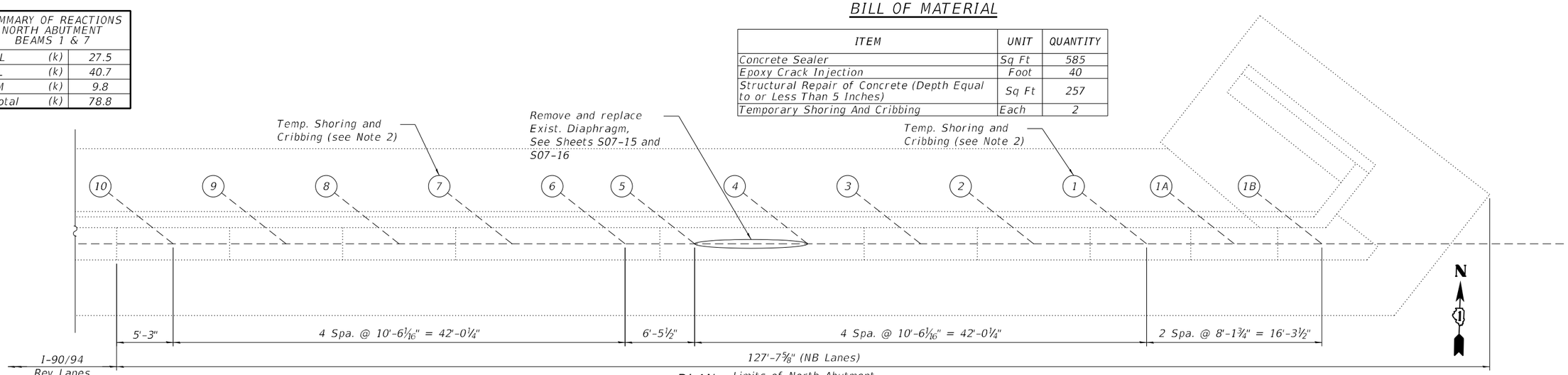
SHEET S07-17 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	625
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

SUMMARY OF REACTIONS NORTH ABUTMENT BEAMS 1 & 7		
R DL	(k)	27.5
R LL	(k)	40.7
R IM	(k)	9.8
R Total	(k)	78.8

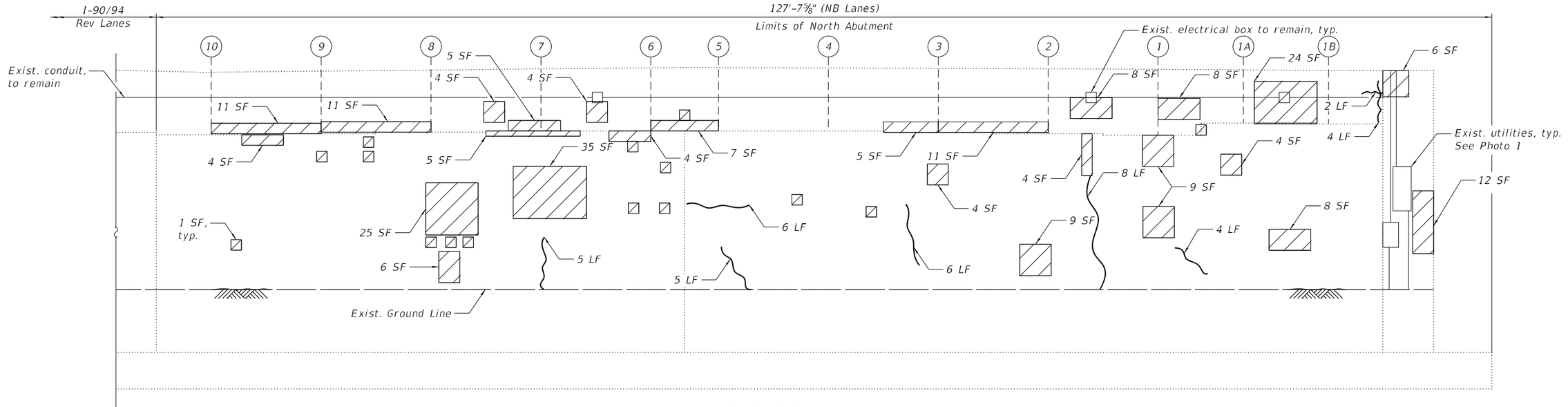
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	585
Epoxy Crack Injection	Foot	40
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	257
Temporary Shoring And Cribbing	Each	2



PLAN

(Piles not shown for clarity)



EXISTING UTILITIES – NORTHEAST WINGWALL

(Looking North)

EXISTING ELECTRICAL BOX – NORTH ABUTMENT

(Looking North)

ELEVATION

(Looking North)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Temporary shoring and cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.
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 Less than 5 inches)

Epoxy Crack Injection (Width > 0.06")

SF – Square Foot

LF – Linear Foot

MODEL: Default
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

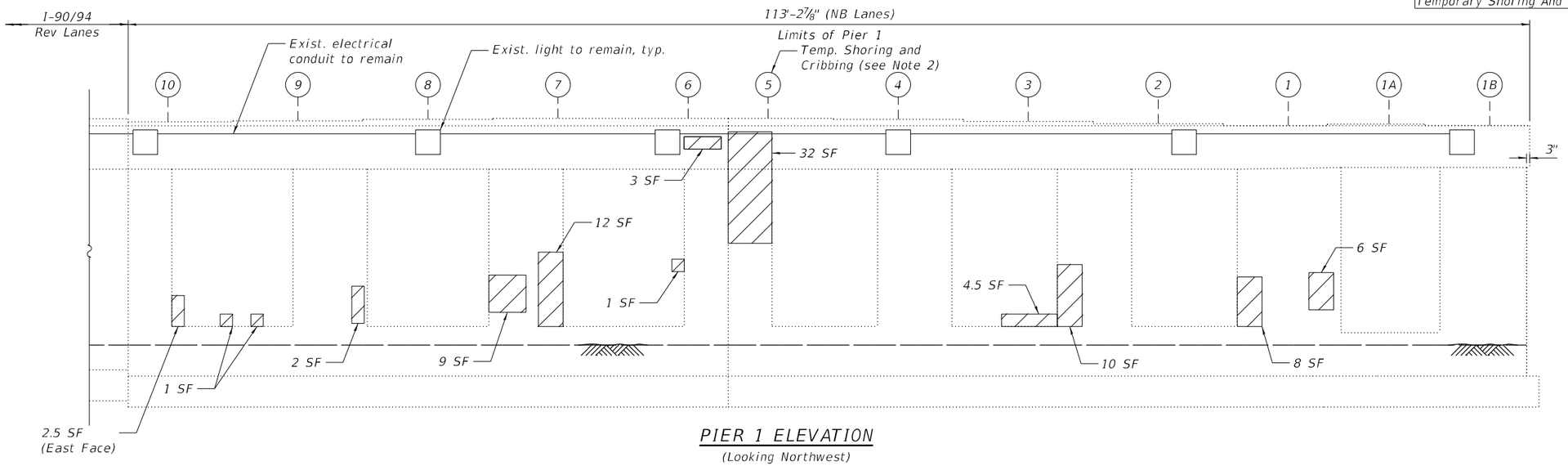
NORTH ABUTMENT REPAIRS
STRUCTURE NO. 016-0129 (NB)

SHEET S07-18 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	626
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

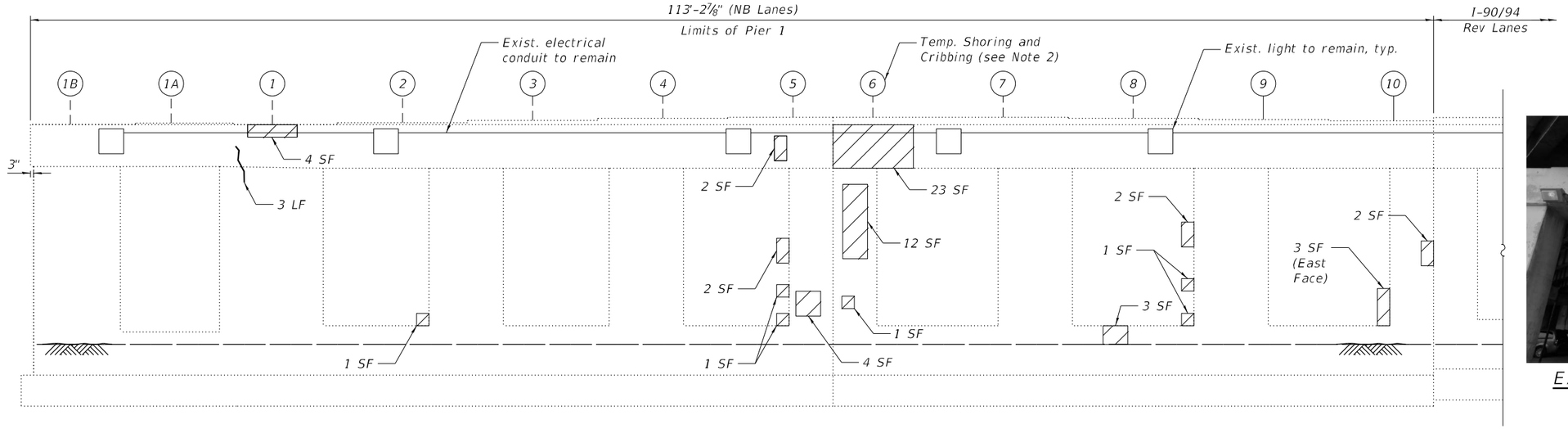
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	3
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	157
Temporary Shoring And Cribbing	Each	2



PIER 1 ELEVATION
(Looking Northwest)

EXISTING LIGHTING - PIER 1
(Looking Northwest)



PIER 1 ELEVATION
(Looking Southeast)

EXISTING LIGHTING - PIER 1
(Looking Southeast)

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 the construction.
2. Temporary shoring and cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.

SUMMARY OF REACTIONS PIER 1 BEAMS 5 & 6		
R DL	(k)	125.8
R LL	(k)	63.0
R IM	(k)	13.8
R Total	(k)	202.6

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)
- Epoxy Crack Injection (Width > 0.06")
- SF - Square Foot
- LF - Linear Foot

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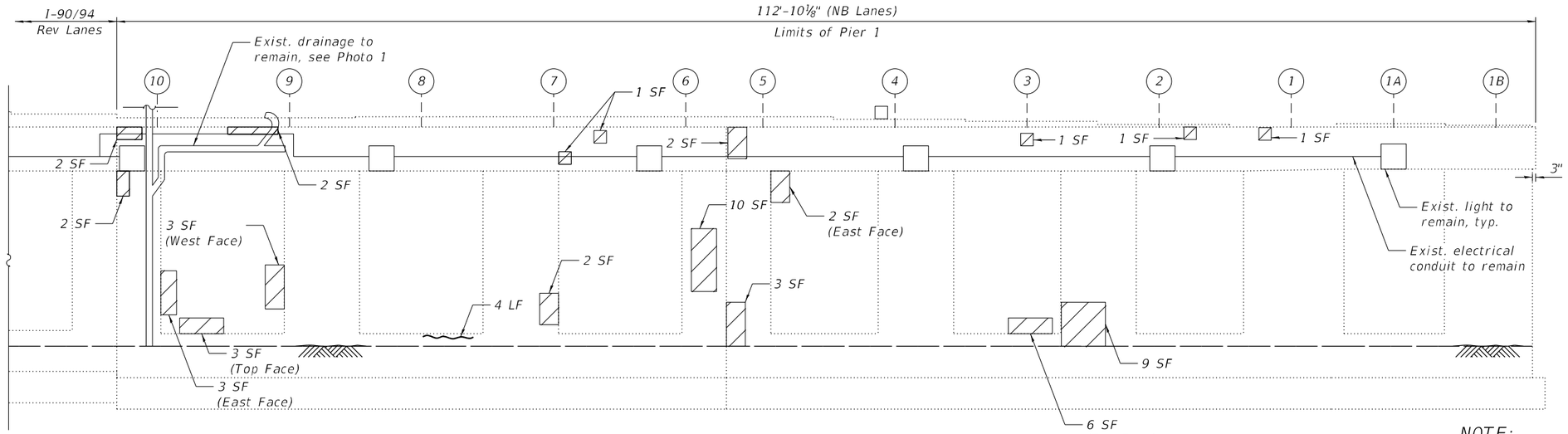
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
STRUCTURE NO. 016-0129 (NB)
SHEET S07-19 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	627
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

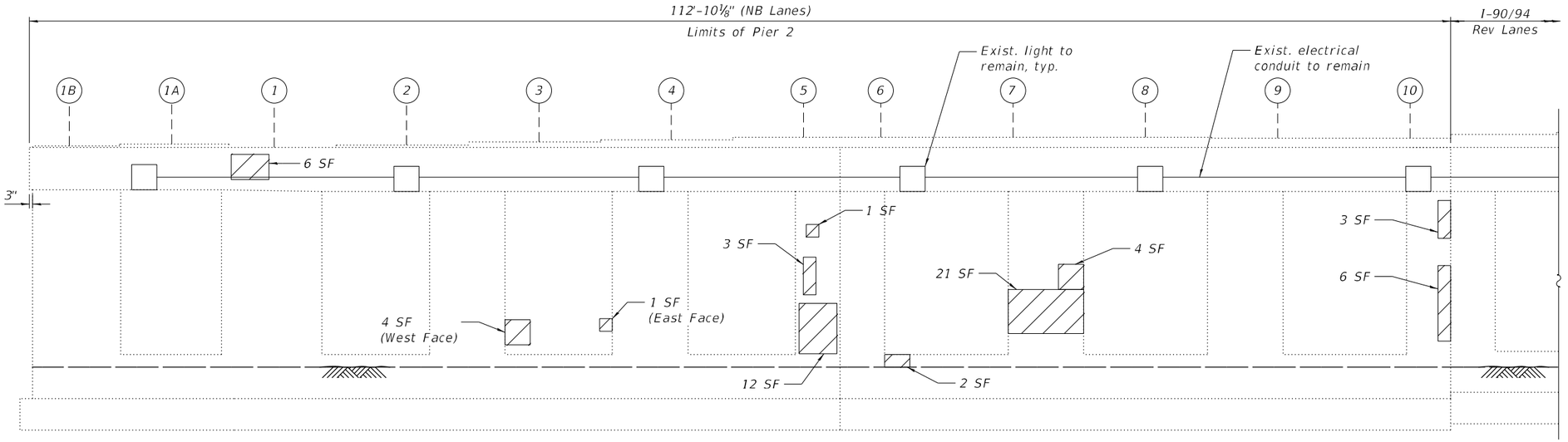


PIER 2 ELEVATION

(Looking Northwest)

NOTE:

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



PIER 2 ELEVATION

(Looking Southeast)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	4
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	117

LEGEND

Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)

Epoxy Crack Injection (Width > 0.06")

SF – Square Foot

LF – Linear Foot

EXISTING DRAINAGE – PIER 2

(Looking Northwest)

EXISTING LIGHTING – PIER 2

(Looking Northwest)

EXISTING LIGHTING – PIER 2

(Looking Southeast)

MODEL: Default
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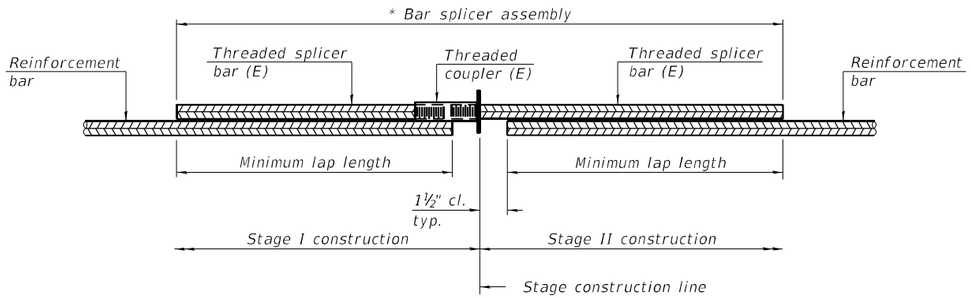
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIRS
STRUCTURE NO. 016-0129 (NB)

SHEET S07-20 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	628
		CONTRACT NO. 62K73		
		ILLINOIS	FED. AID PROJECT	



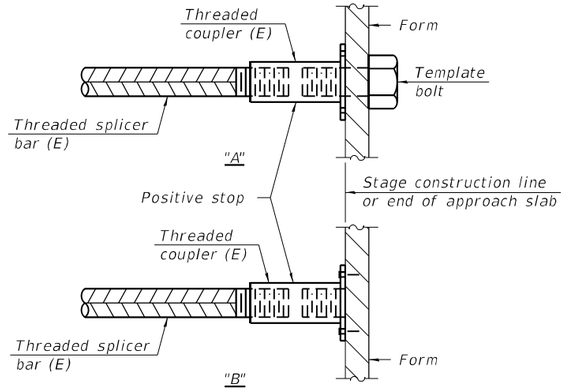
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

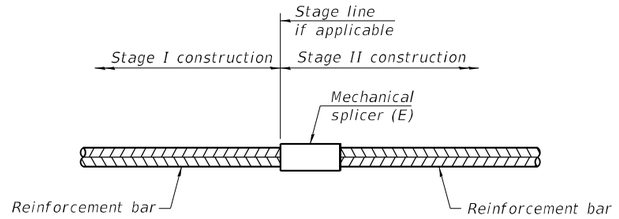
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

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



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

BSD-1

1-1-2020

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DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-0129 (NB)

SHEET S07-21 OF S07-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	629
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

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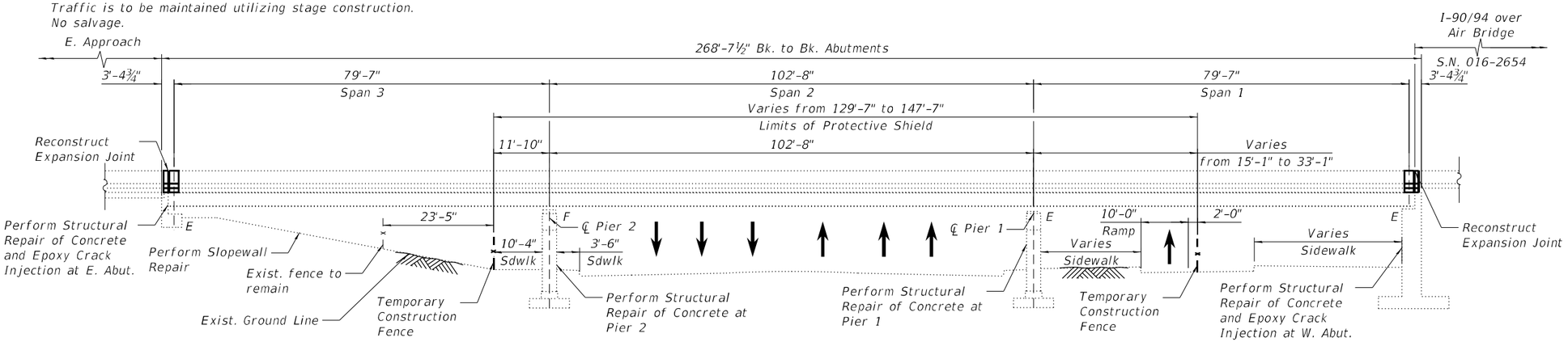
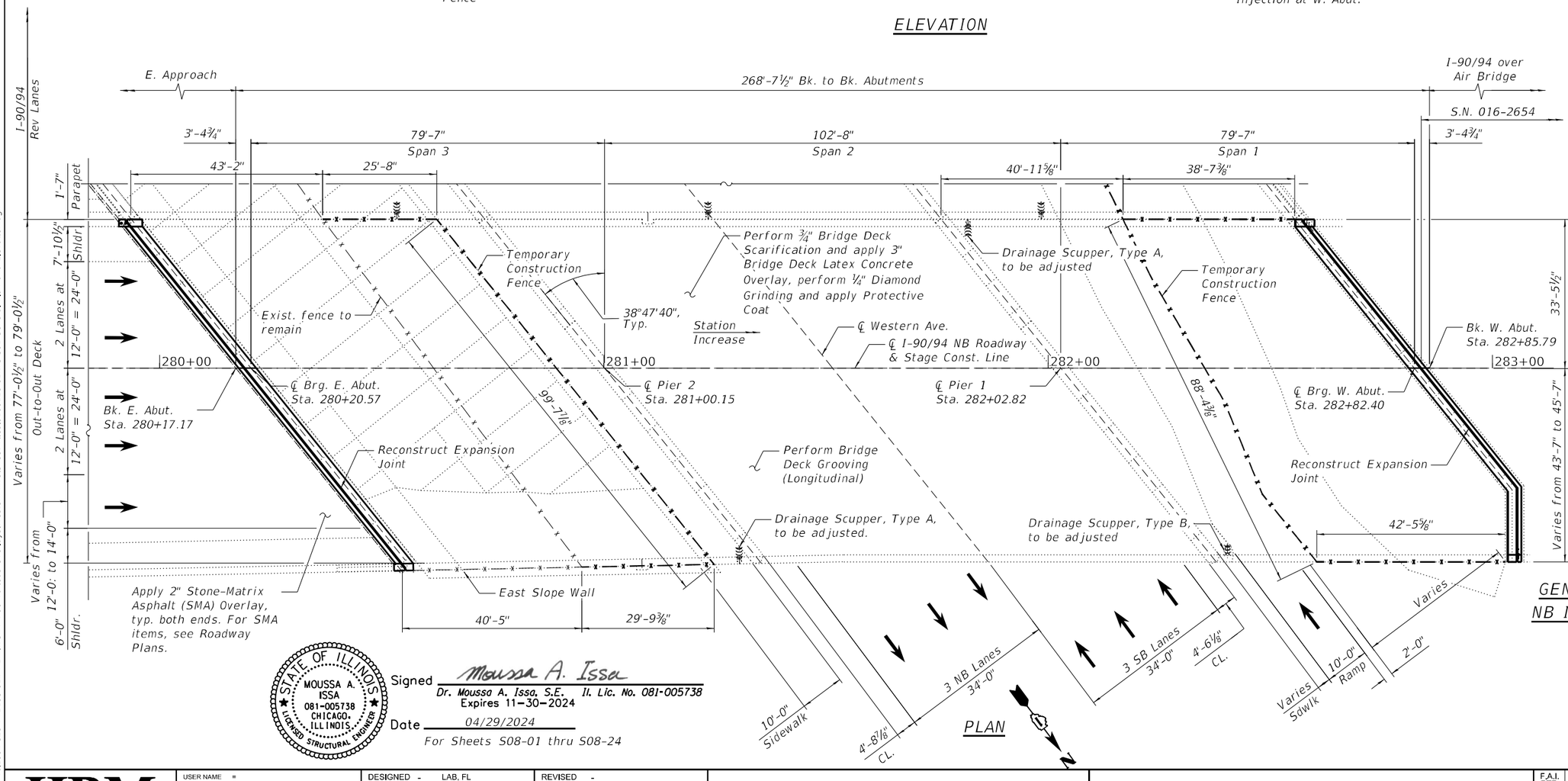
Existing Structure: S.N. 016-0128 was originally built in 1957 and reconstructed in 1990. The structure has a back-to-back abutment length of 268'-7½" and an out-to-out deck width that varies from 77'-0½" to 79'-0½". The superstructure consists of a 7½" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 79'-7", 102'-8" and 79'-7". The substructure consists of reinforced concrete abutments on piles and multi-column piers on caissons.

Traffic is to be maintained utilizing stage construction.
No salvage.



ELEVATION



STATE OF ILLINOIS
MOUSSA A. ISSA
081-005738
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Moussa A. Issa
Dr. Moussa A. Issa, S.E. Il. Lic. No. 081-005738
Expires 11-30-2024
Date 04/29/2024
For Sheets S08-01 thru S08-24

DESIGN SPECIFICATION

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

RECONSTRUCTION 2013

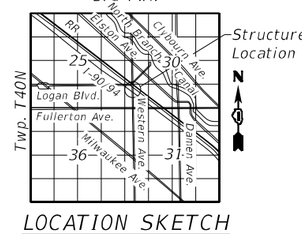
2002 AASHTO Standard Specifications for Highway Bridges

RECONSTRUCTION 1993

1989 AASHTO Standard Specifications for Highway Bridges with 1990 & 1991 Interim Specifications

NOTES:

1. No future wearing surface shall be allowed.
2. All stations are to the ℄ I-90/94 NB Roadway and taken from existing plans.



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
NB I-90/94 OVER WESTERN AVE.
F.A.I. ROUTE 90/94
SECTION 2020-005-BR
COOK COUNTY
STATION 281+51.48
S.N. 016-0128 (NB)

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	PLOT DATE =	DATE - 4/29/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-0128 (NB)
SHEET S08-01 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	630
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

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GENERAL NOTES:

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

2. Calculated weight of Structural Steel = 910 lb (M270 Grade 36)
   = 210 lb (M270 Grade 50)

3. Plan dimensions and details relative to the existing structure have been taken from existing plans and 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.

4. Bars noted thus, 3x2-#5, indicates 3 lines of #5 bars with 2 lengths of bars per line.

5. All exposed concrete edges shall have a ¾"x45° chamfer except where shown otherwise.

6. 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.

7. For SMA overlay on Approach Slab, see Civil Sheets.

8. Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside faces of parapets and top of Latex Overlay.

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

10. Prior to pouring the new concrete deck for expansion joint reconstruction and deck slab repairs, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding ¼" deep shall be identified and reported to the Bureau of Bridges and Structures for further dispositions. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

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

12. 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".

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

14. 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. diameter, holes 13/16 in. diameter, unless otherwise noted.

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

16. Adjacent I-90/94 reversible bridge is not shown throughout the plans for clarity.

17. 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.

18. 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".

19. 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.

20. The Contractor is responsible to protect the existing conduit embedded in the parapet during concrete removal and construction. Any damage to the existing conduit shall be repaired by the Contractor at no additional cost to the Department.

21. 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.

22. 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 including in the cost of Protective Shield.

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd	-	3	3
Concrete Removal	Cu Yd	24.1	-	24.1
Slope Wall Removal	Sq Yd	-	7	7
Protective Shield	Sq Yd	1,222	-	1,222
Concrete Superstructure	Cu Yd	27.5	-	27.5
Protective Coat	Sq Yd	2,450	-	2,450
Furnishing And Erecting Structural Steel	Pound	910	-	910
Reinforcement Bars, Epoxy Coated	Pound	4,830	-	4,830
Bar Splicers	Each	30	-	30
Slope Wall 4 Inch	Sq Yd	-	7	7
Preformed Joint Seal 2 1/2"	Foot	265	-	265
Preformed Joint Strip Seal	Foot	195	-	195
Concrete Sealer	Sq Ft	-	950	950
Epoxy Crack Injection	Foot	-	13	13
Slope Wall Crack Sealing	Foot	-	34	34
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,411	-	1,411
Protect And Maintain Existing Underpass Luminaire	L Sum	-	0.04	0.04
Approach Slab Repair (Full Depth)	Sq Yd	29	-	29
Approach Slab Repair (Partial Depth)	Sq Yd	29	-	29
Structural Steel Removal	Pound	910	-	910
Structural Steel Repair	Pound	210	-	210
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	2,131	-	2,131
Cleaning Drainage System	L Sum	0.094	-	0.094
Bridge Deck Scarification 3/4"	Sq Yd	2,131	-	2,131
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	-	322	322
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq Ft	-	16	16
Deck Slab Repair (Full Depth, Type I)	Sq Yd	1	-	1
Deck Slab Repair (Full Depth, Type II)	Sq Yd	2	-	2
Drainage Scuppers To Be Adjusted	Each	3	-	3
Diamond Grinding (Bridge Section)	Sq Yd	2,146	-	2,146
Temporary Construction Fence	Foot	-	327	327
Temporary Shoring And Cribbing	Each	-	1	1
Locks For Gates	Each	-	4	4

SCOPE OF WORK

1. Provide Protective shield within limits indicated on the plans.

2. Scarify ¾" from the bridge deck slab.

3. Perform Deck Slab Repairs and Approach Slab Repairs and adjust existing scuppers and inlets as required.

4. Reconstruct Expansion Joints at the East and West abutments and install new preformed joint strip seals.

5. Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck.

6. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatched block.

7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs, see Roadway Plans.

8. Perform Bridge Deck Grooving (Longitudinal).

9. Apply protective coat to the top of reconstructed transverse joint areas and top and inside faces of parapets and top of Latex Overlay.

10. Perform structural concrete repairs for the abutments and piers as noted on the plans.

11. Perform Slope Wall repairs.

GENERAL NOTES (CONT.):

23. The Contractor shall contact Chandra Libby, the Director of City of Chicago Department of Family Support Services (DFSS) at 312-746-5443 or Chandra.Libby@cityofchicago.org to coordinate the relocation of persons and their personal belongings under the bridges within the areas bounded by the temporary chain-link-fence.

24. The intent of the temporary fence is to deny access of any unauthorized personnel under the bridge during construction. Actual fence installations may vary from what is shown on the plans. All fence installations must be approved by the Engineer.

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

26. 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.

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PLOT DATE =	DATE - 4/29/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, INDEX OF SHEETS AND TBOM
STRUCTURE NO. 016-0128 (NB)
SHEET S08-02 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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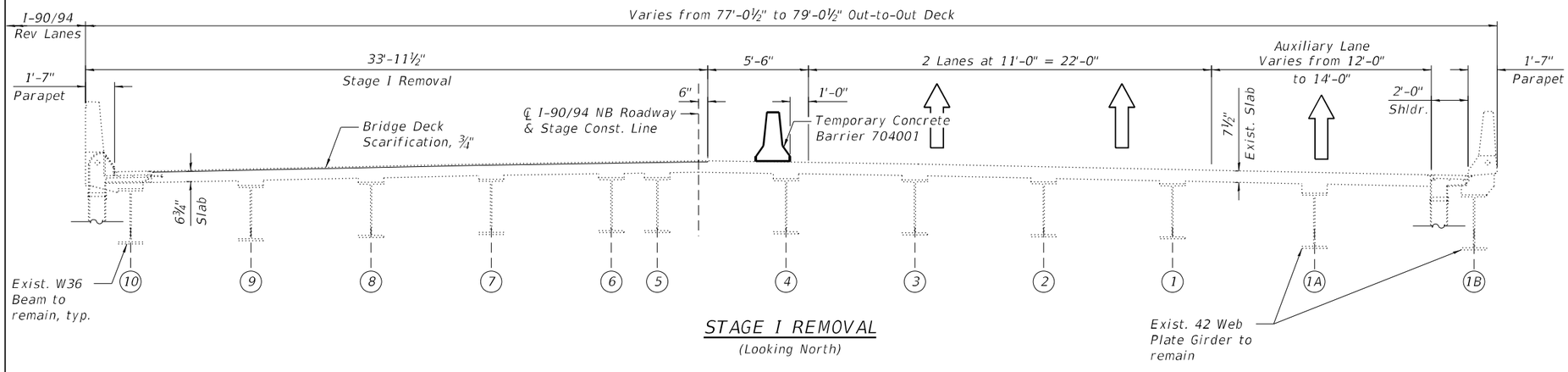
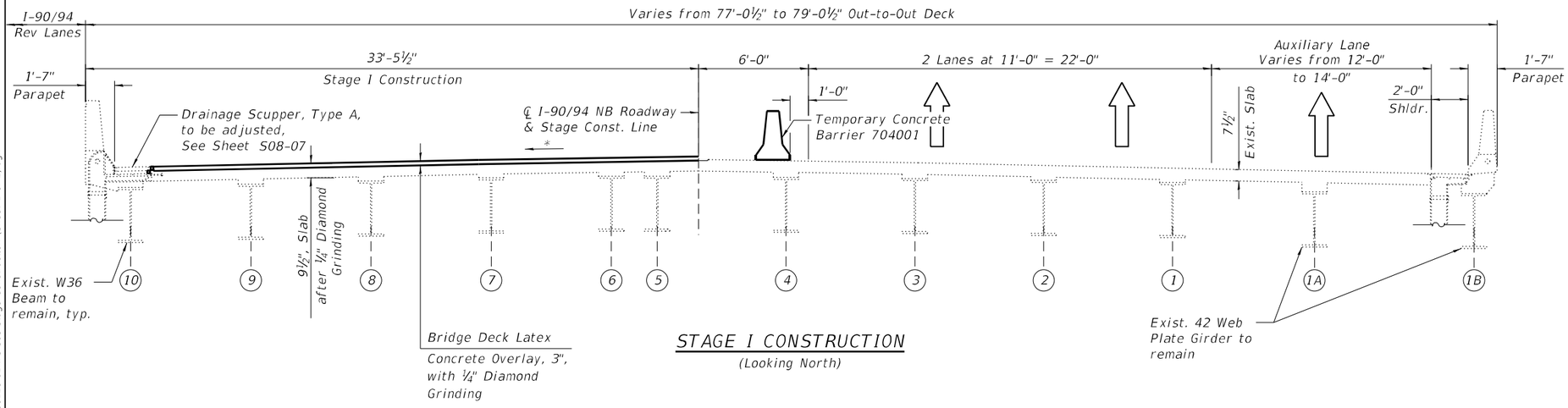
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



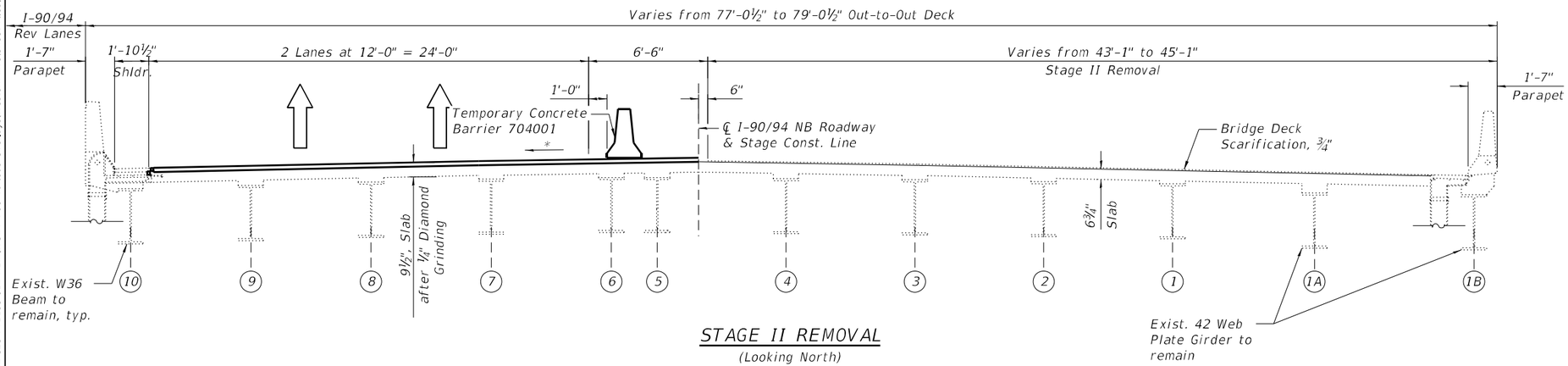
STAGE I REMOVAL

(Looking North)



STAGE I CONSTRUCTION

(Looking North)



STAGE II REMOVAL

(Looking North)

STAGE I REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the east side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge concrete deck/approach slab adjacent to expansion joints at the East and West Abutments.
5. Remove existing longitudinal preformed joint seal between north parapet and reversible lane parapet.

STAGE I CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct transverse expansion joints and install new preformed joint strip seals within the limits of Stage I Construction.
3. Perform structural repair of concrete and epoxy crack injection for the abutments and piers.
4. Apply 3" bridge deck latex concrete overlay.
5. Perform ¼" diamond grinding to bridge deck and abutment hatched block.
6. Perform bridge deck grooving (Longitudinal) for the 3" bridge deck latex concrete overlay and reconstructed abutment expansion joint areas.
7. Adjust drainage scupper.
8. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach slab and taper into existing roadway. See Roadway Plans.
9. Apply protective coat to top and inside faces of west parapet, reconstructed transverse expansion joints and to the surfaces of the new overlay.
10. Perform Slope Wall repairs as shown on the plans.
11. Replace existing longitudinal preformed joint seal between north parapet and reversible lane parapet.

STAGE II REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the west side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge concrete deck/approach slab adjacent to expansion joints at the East and West Abutments.
5. Perform temporary shoring and cribbing at locations shown on the plans within the limits of stage II removal.

*Match Exist. Cross-Slopes

MODEL: Default
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HBM ENGINEERING GROUP, LLC

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION (SHEET 1 OF 2)
STRUCTURE NO. 016-0128 (NB)
SHEET S08-03 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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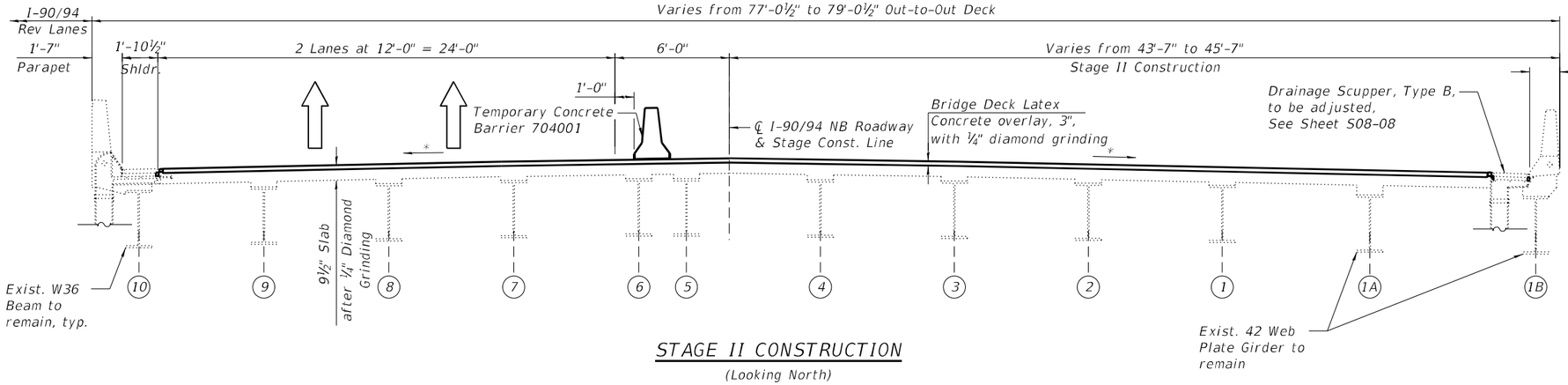
		CONTRACT NO. 62K73		
		ILLINOIS	FED. AID PROJECT	

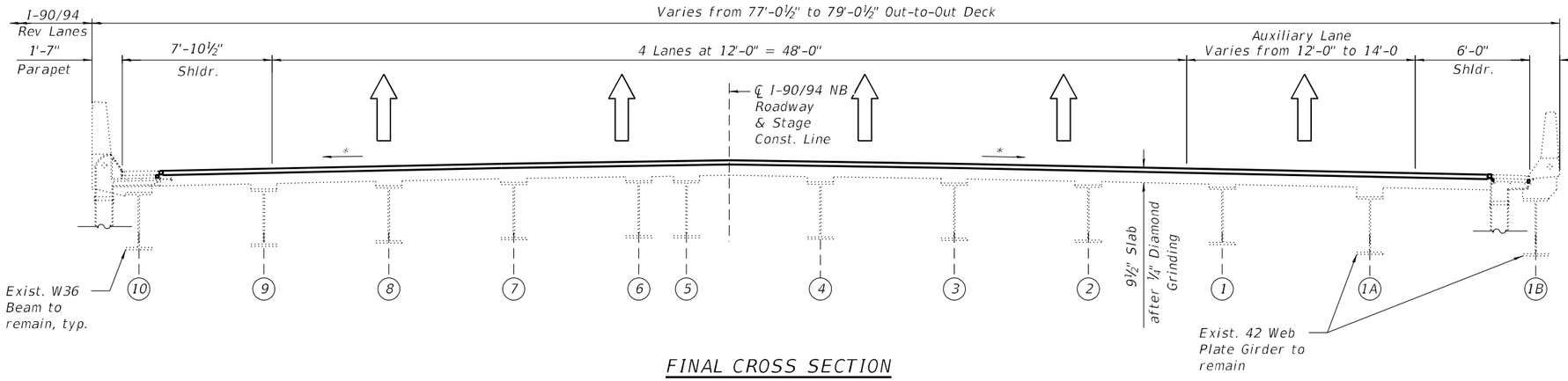


STAGE II CONSTRUCTION

(Looking North)

STAGE II CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct expansion joints and install new preformed joint strip seals within the limits of Stage II Construction.
3. Perform structural repair of concrete and epoxy crack injection for the abutments and piers.
4. Apply 3" bridge deck latex concrete overlay.
5. Perform ¼" diamond grinding to bridge deck and abutment hatched block.
6. Perform bridge deck grooving (Longitudinal) for the 3" bridge deck latex concrete overlay and reconstructed abutment expansion joint areas.
7. Adjust drainage scuppers.
8. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach slab and taper into existing roadway. See Roadway Plans.
9. Apply protective coat to top and inside faces of east parapet, reconstructed abutment expansion joints areas, and to the surfaces of the new overlay.
10. Perform Slope Wall repairs as shown on the plans.



FINAL CROSS SECTION

(Looking North)

*Match Exist. Cross-Slopes

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION (SHEET 2 OF 2)
STRUCTURE NO. 016-0128 (NB)

SHEET S08-04 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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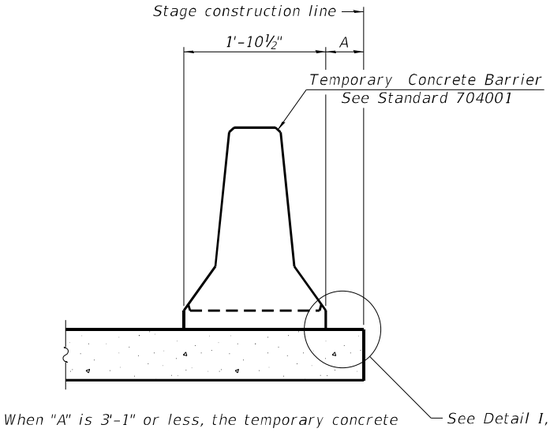
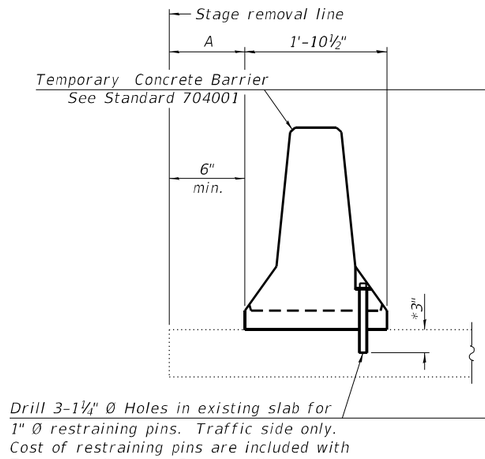
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		



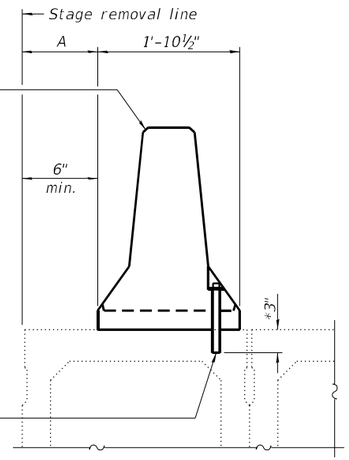
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

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".

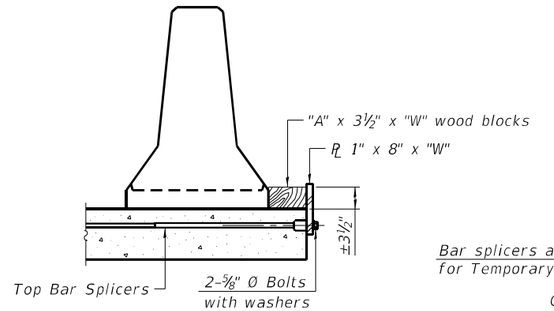
EXISTING SLAB



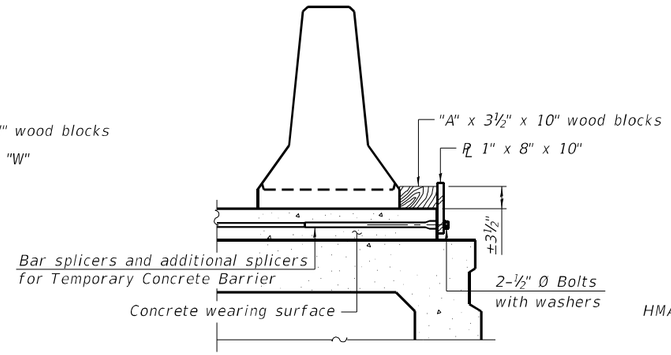
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

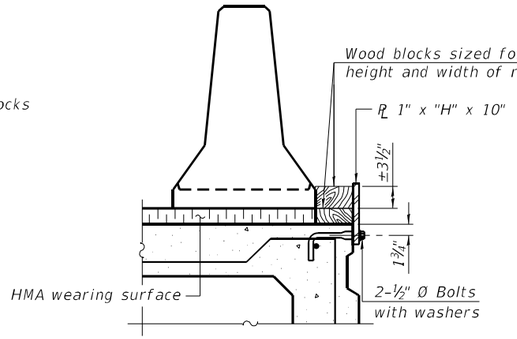
SECTIONS THRU SLAB OR DECK BEAM



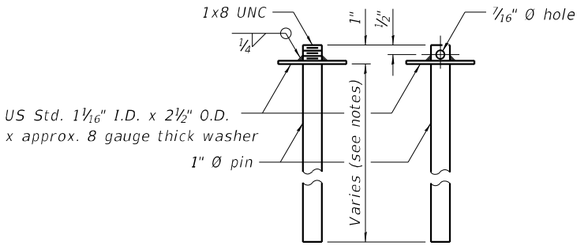
DETAIL I



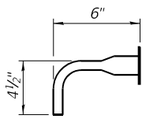
DETAIL II



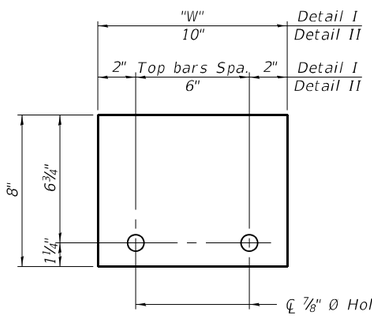
DETAIL III



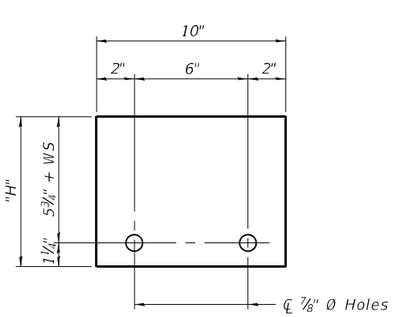
RESTRAINING PIN



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

10-12-2021

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DEPARTMENT OF TRANSPORTATION

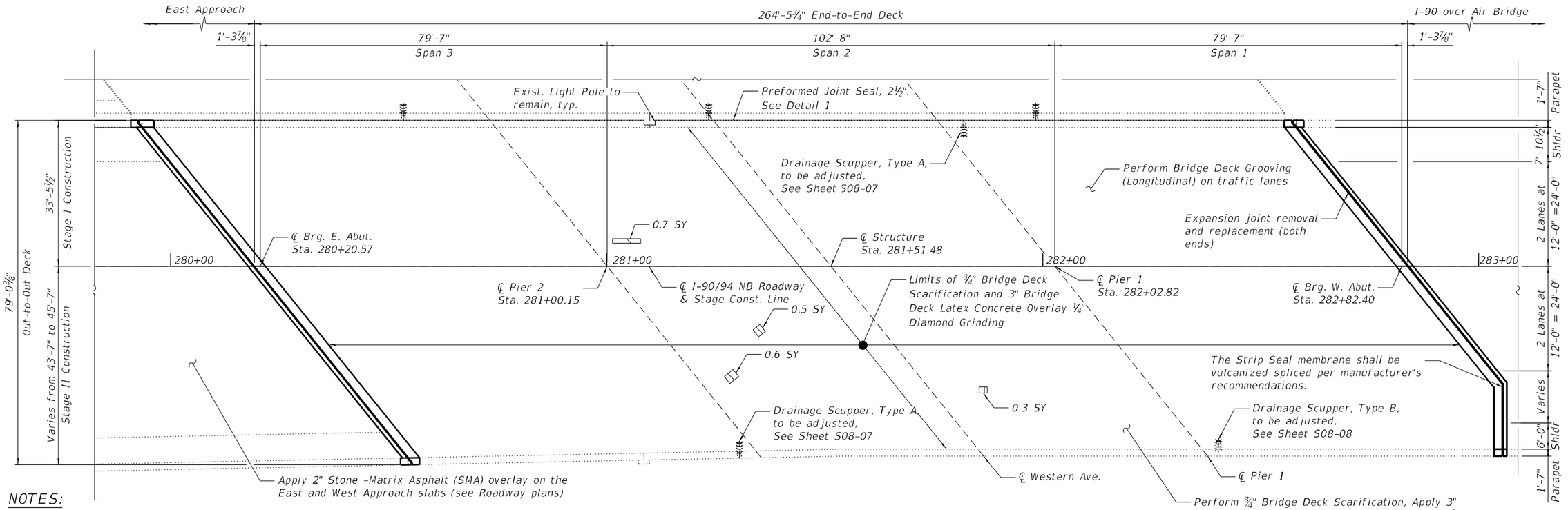
TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 016-0128 (NB)

SHEET S08-05 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	634
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

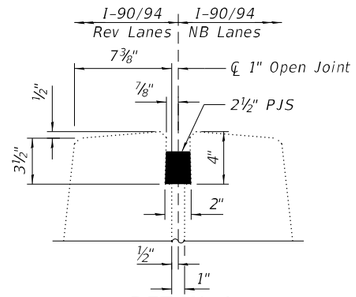
ITEM	UNIT	QUANTITY
Protective Coat	Sq Yd	2,380
Preformed Joint Seal 2 1/2"	Foot	265
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,411
Approach Slab Repair (Full Depth)	Sq Yd	29
Approach Slab Repair (Partial Depth)	Sq Yd	29
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	2,131
Bridge Deck Scarification 3/4"	Sq Yd	2,131
Deck Slab Repair (Full Depth, Type I)	Sq Yd	1
Deck Slab Repair (Full Depth, Type II)	Sq Yd	2
Diamond Grinding (Bridge Section)	Sq Yd	2146



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 S08-04.
3. For West and East transverse joint removal and reconstruction, see Sheets S08-09 thru S08-14.
4. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatched block.
5. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
6. Protective Coat shall be applied to the top of reconstructed transverse joints, top and inside face of parapets and top of latex concrete overlay.
7. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.
8. The Contractor shall exercise extreme caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.
9. Removal of the existing preformed joint seal is included in the cost of Preformed Joint Seal 2½".
10. Approach Slab Repair (Full Depth) and Approach Slab Repair (Partial Depth) quantities have been estimated (based on a nominal 3% of bridge approach area) for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will determined by the Engineer in the field at the time of construction.

DECK PLAN



DETAIL 1

(Reinforcement not shown for clarity)

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

LEGEND:

Deck Slab Repair (Full Depth, Type I)

Deck Slab Repair (Full Depth, Type II)

SY Square Yard

MODEL: Default
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DEPARTMENT OF TRANSPORTATION

DECK REPAIR PLAN
STRUCTURE NO. 016-0128 (NB)
SHEET S08-06 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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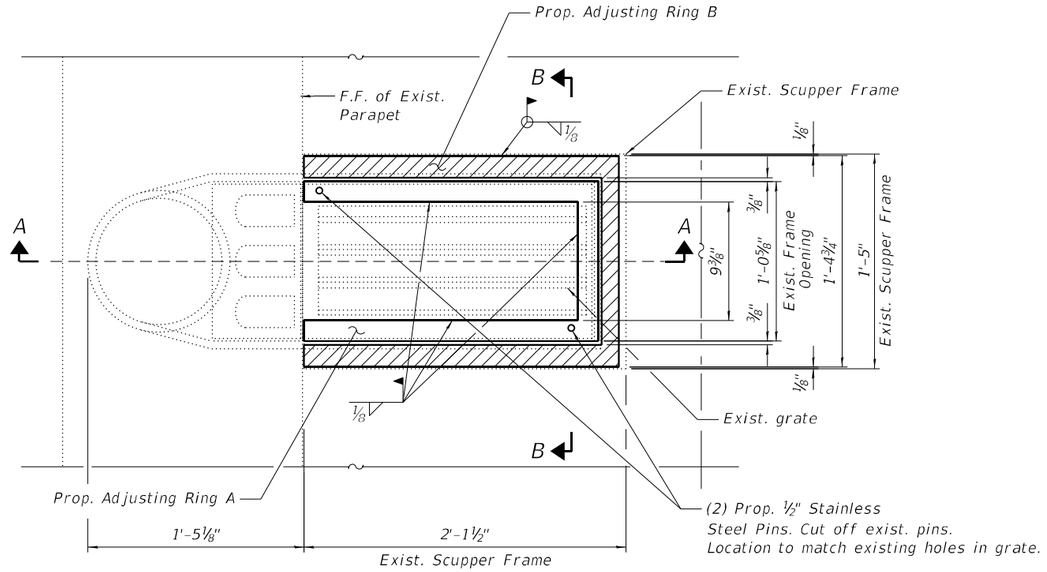
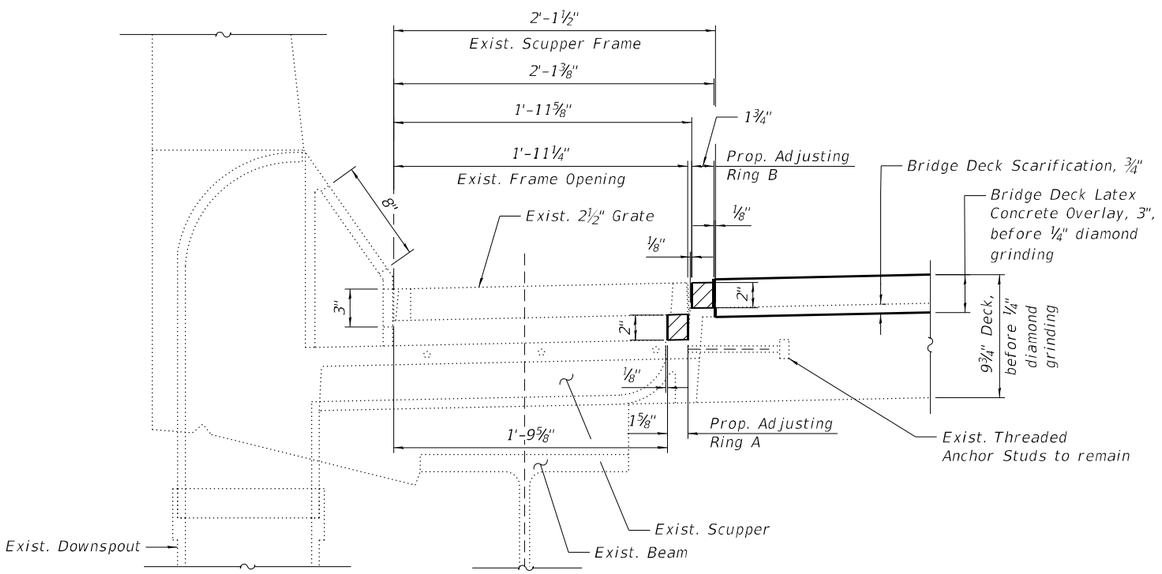
		CONTRACT NO. 62K73		
		ILLINOIS	FED. AID PROJECT	

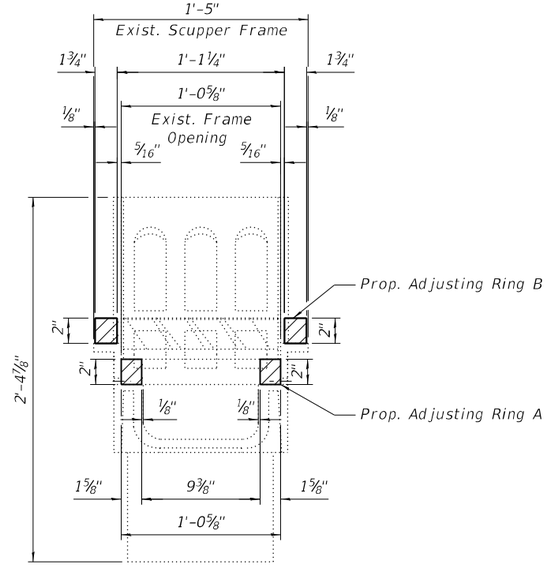


TYPICAL SCUPPER TYPE A PLAN

(1 Location at median parapet)
(1 Location at exterior parapet)



SECTION A-A



SECTION B-B

NOTES

1. The Contractor shall field verify Existing Dimensions and Details of the Existing Scuppers and make necessary adjustments prior to construction of New Adjusting Rings or ordering of material for Adjusting Drainage Scuppers.
2. All Cast Iron Parts shall be Grey Iron conforming to the requirements of AASHTO M 105, Class 35B.
3. Cast Iron Parts shall be unfinished.
4. The Contractor shall take appropriate measures to ensure that Protective Coat is not applied to the scuppers.
5. Adjusting Rings shall be from Neenah or approved equal. Structural steel weldments or equal section and of the same configuration may be submitted in place of Cast Iron. Fillet or full penetration welds may be used for weldments. Details shall be submitted to the Engineer for approval.
6. Provide a 1/8" Fillet Weld around perimeter of new Adjusting Rings to secure to existing Scupper.
7. Cost of all labor and materials necessary to clean all existing floor drains and scuppers, install adjusting scupper rings, remove and reinstall grates is included in the cost for Drainage Scupper to be Adjusted.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers To Be Adjusted	Each	2

MODEL: Default
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER TYPE A ADJUSTMENT DETAILS
STRUCTURE NO. 016-0128 (NB)
SHEET S08-07 OF S08-24 SHEETS

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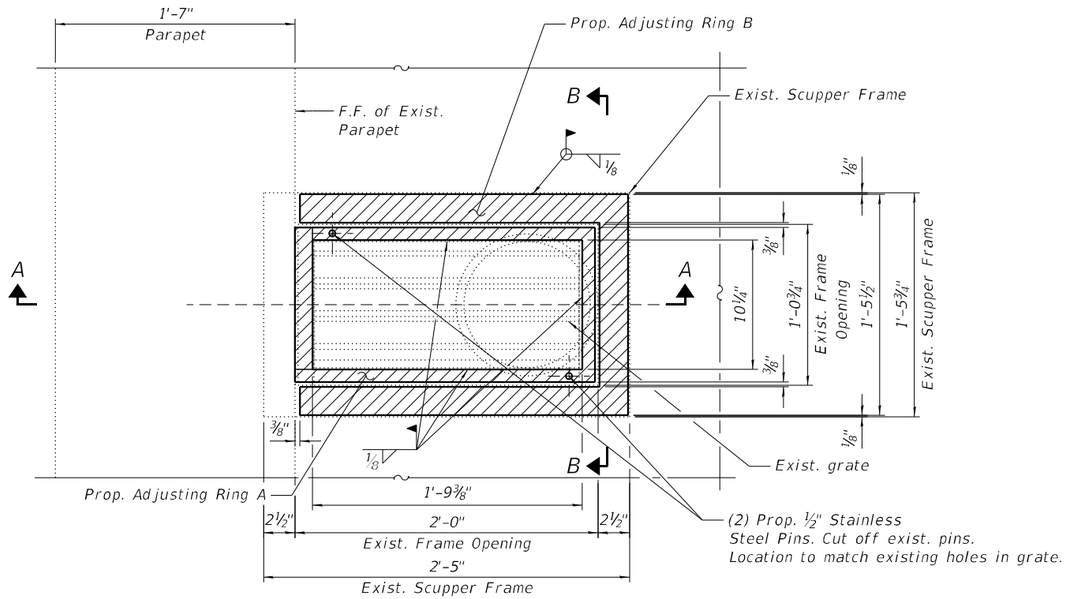
	ILLINOIS	FED. AID PROJECT		

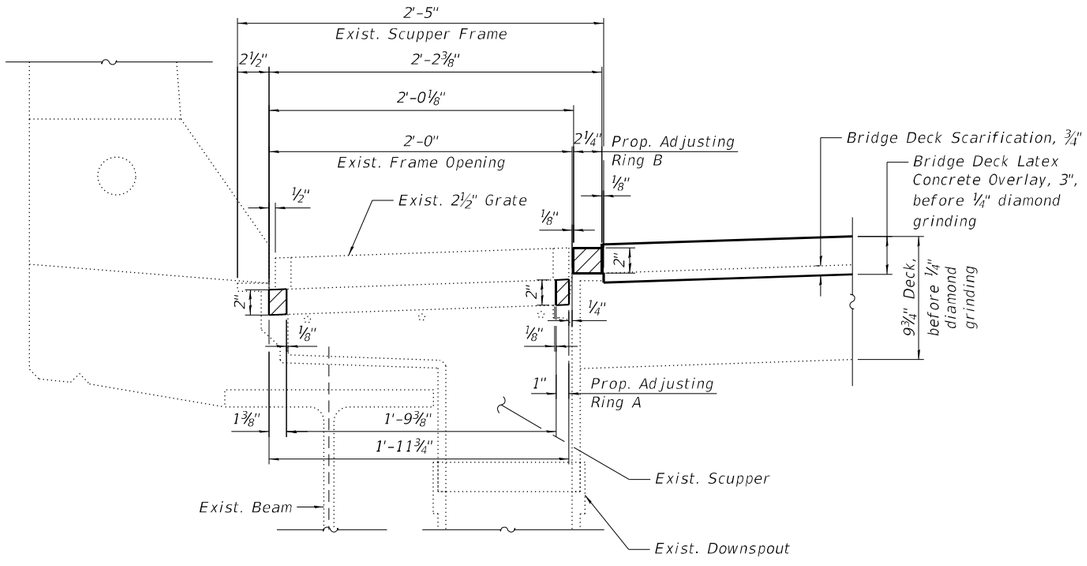


TYPICAL SCUPPER TYPE B PLAN

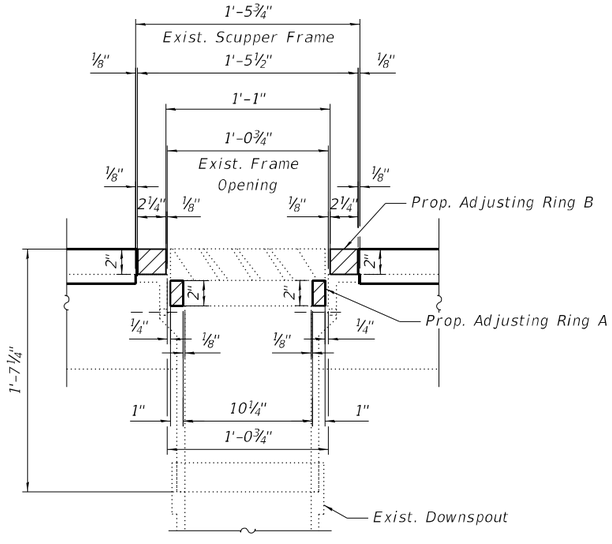
(1 Location at exterior parapet)

NOTES

1. The Contractor shall field verify Existing Dimensions and Details of the Existing Scuppers and make necessary adjustments prior to construction of New Adjusting Rings or ordering of material for Adjusting Drainage Scuppers.
2. All Cast Iron Parts shall be Grey Iron conforming to the requirements of AASHTO M 105, Class 35B.
3. Cast Iron Parts shall be unfinished.
4. The Contractor shall take appropriate measures to ensure that Protective Coat is not applied to the scuppers.
5. Adjusting Rings shall be from Neenah or approved equal. Structural steel weldments or equal section and of the same configuration may be submitted in place of Cast Iron. Fillet or full penetration welds may be used for weldments. Details shall be submitted to the Engineer for approval.
6. Provide a 1/8" Fillet Weld around perimeter of new Adjusting Rings to secure to existing Scupper.
7. Cost of all labor and materials necessary to clean all existing floor drains and scuppers, install adjusting scupper rings, remove and reinstall grates is included in the cost for Drainage Scupper to be Adjusted.



SECTION A-A



SECTION B-B

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers To Be Adjusted	Each	1

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER TYPE B ADJUSTMENT DETAILS
STRUCTURE NO. 016-0128 (NB)
SHEET S08-08 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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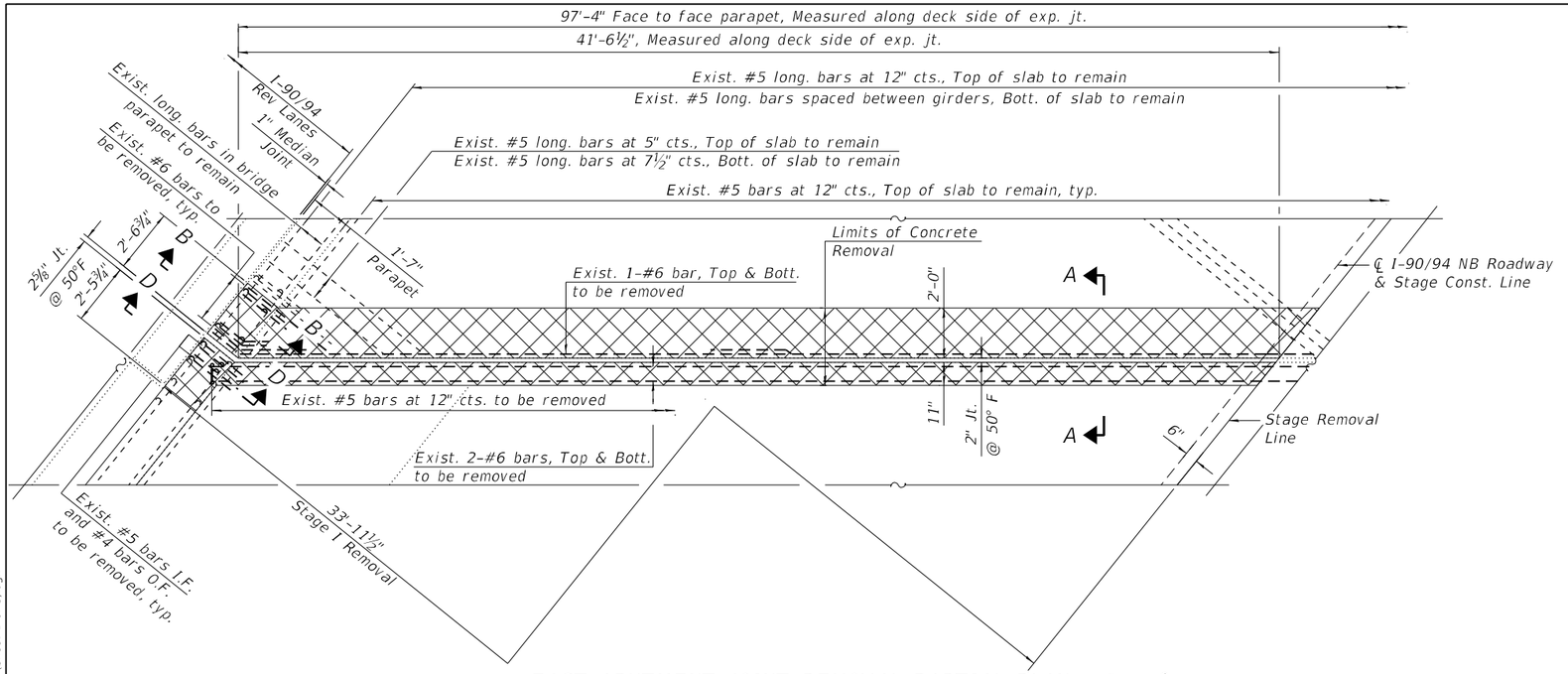
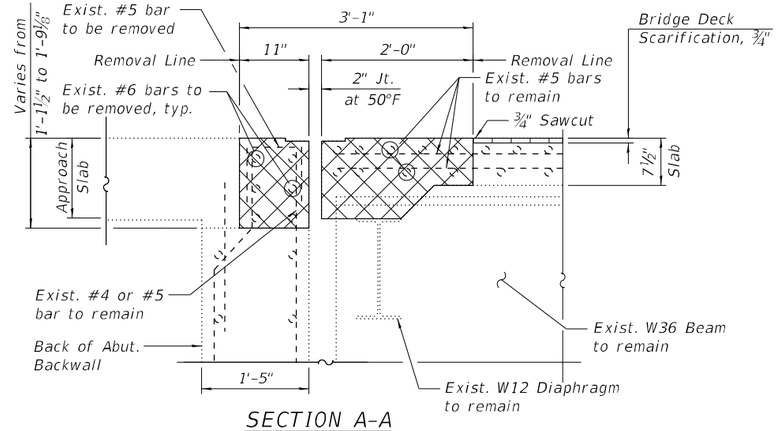
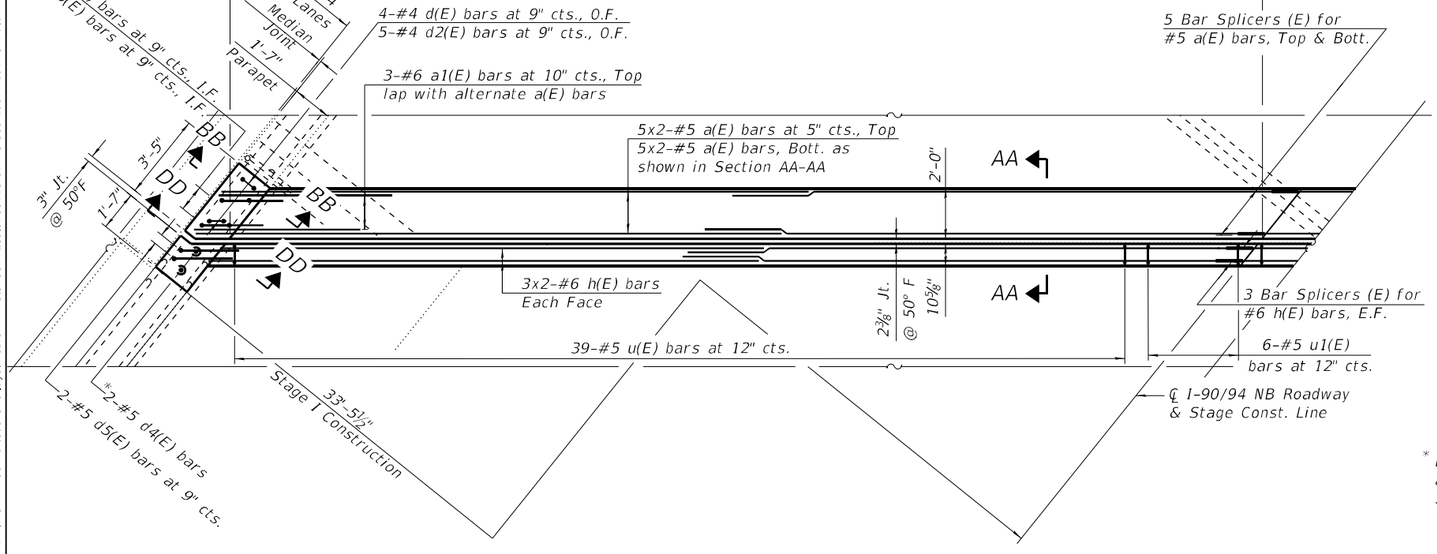
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



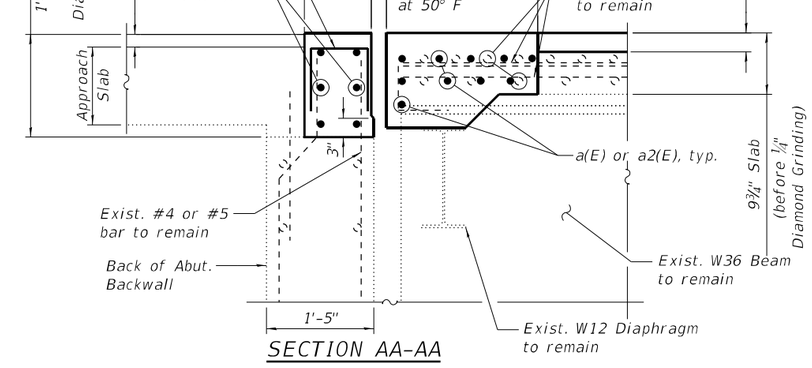
EAST ABUTMENT JOINT REMOVAL PARTIAL PLAN



SECTION A-A



EAST ABUTMENT JOINT RECONSTRUCTION PARTIAL PLAN



SECTION AA-AA

* Epoxy grout #5 d4(E) bar in 9" min. holes according to Section 584 of the Standard Specifications.

NOTE:

1. For Sections B-B, D-D, BB-BB, and DD-DD, Bar diagrams and Bill of Material, see Sheet S08-11.

LEGEND

Concrete Removal

E.F. Each Face

I.F. Inside Face

O.F. Outside Face

HBM ENGINEERING GROUP, LLC	USER NAME =	DESIGNED - LAB, FL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	E. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 1 OF 3) STRUCTURE NO. 016-0128 (NB)
		CHECKED - MAI, MI	REVISED -		
	PLOT SCALE =	DRAWN - FL	REVISED -		SHEET S08-09 OF S08-24 SHEETS
	PLOT DATE =	DATE - 4/29/2024	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 62K73		
		ILLINOIS	FED. AID PROJECT	

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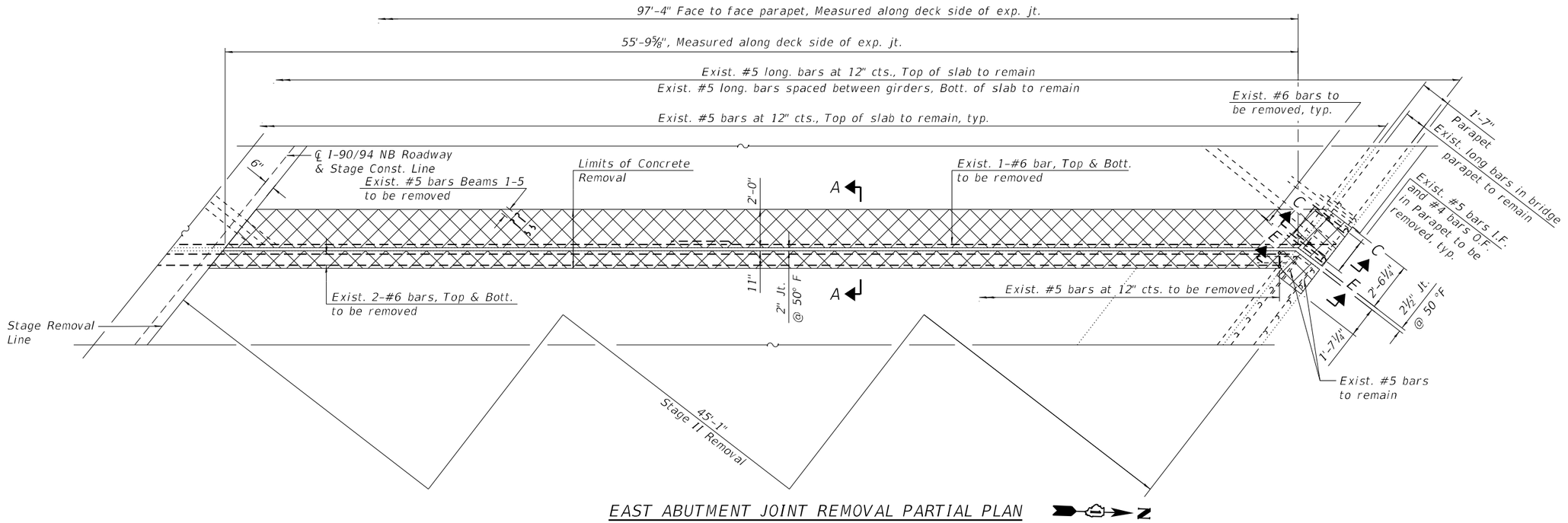
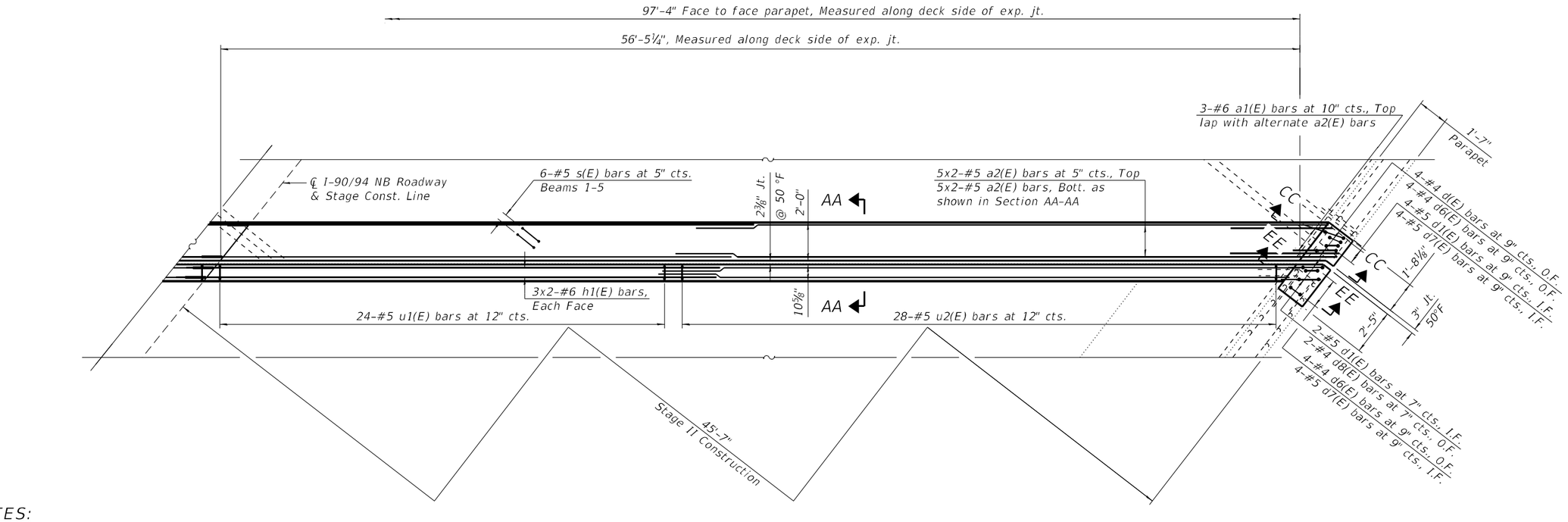


EAST ABUTMENT JOINT REMOVAL PARTIAL PLAN



EAST ABUTMENT JOINT RECONSTRUCTION PARTIAL PLAN

NOTES:

1. For legend and Sections A-A and AA-AA, see Sheet S08-09.
2. For Sections C-C, E-E, CC-CC, EE-EE, additional Notes, Bar Diagrams and Bill of Material, see Sheet S08-11.

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4/30/2024 11:36:01 AM

HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - LAB, FL	REVISED -	
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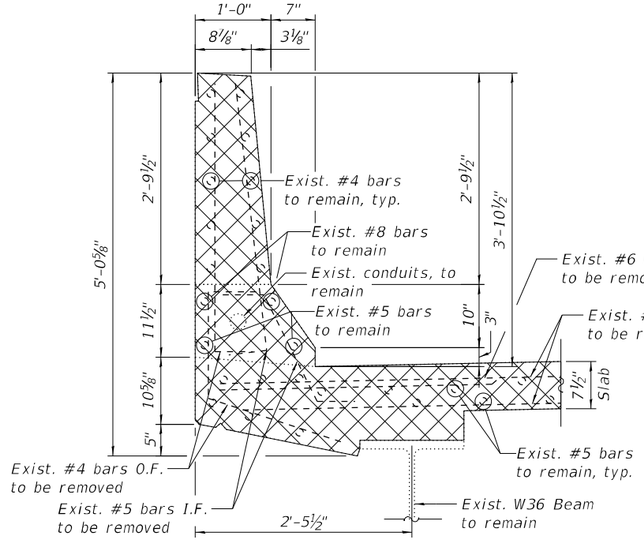
PLOT SCALE =	DRAWN - FL	REVISED -	
PLOT DATE =	DATE - 4/29/2024	REVISED -	

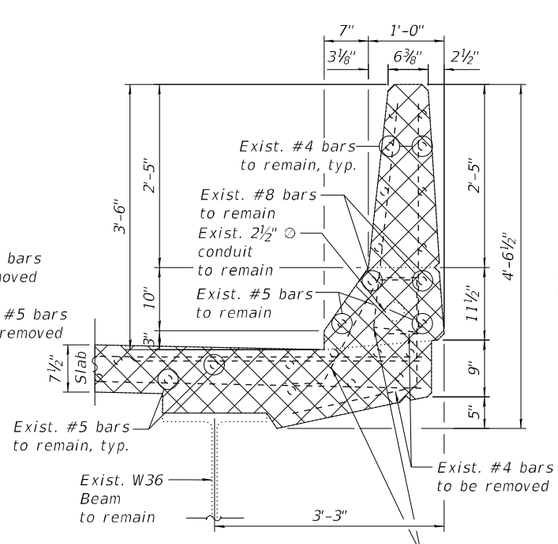
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

E. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 2 OF 3)
STRUCTURE NO. 016-0128 (NB)
SHEET S08-10 OF S08-24 SHEETS

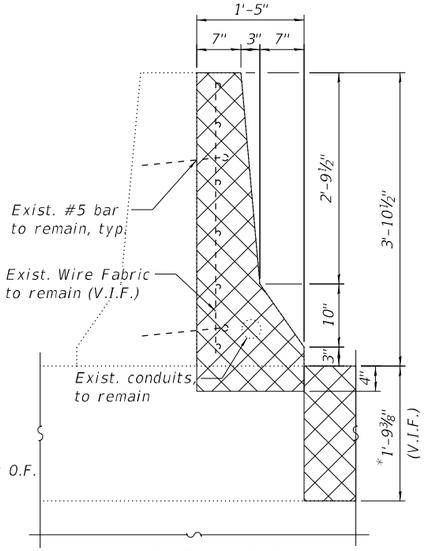
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	639
		CONTRACT NO. 62K73		
		ILLINOIS	FED. AID PROJECT	



SECTION B-B

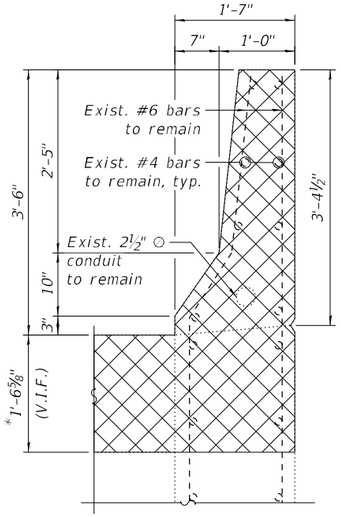


SECTION C-C



SECTION D-D

(Reinforcement in the pour strip not shown for clarity)



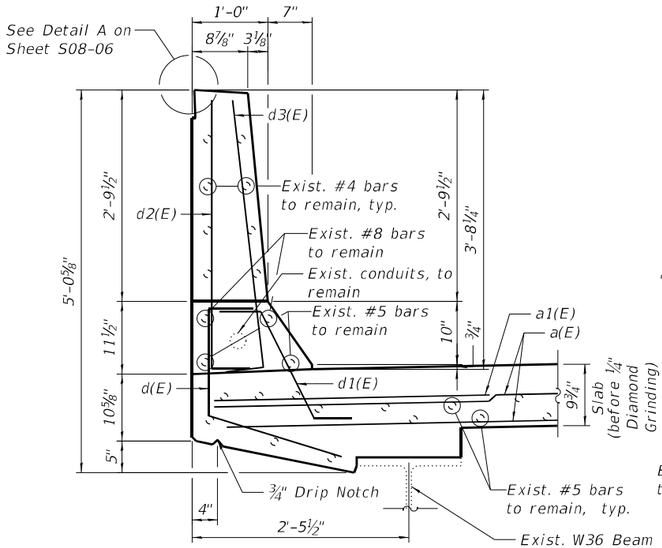
SECTION E-E

(Reinforcement in the pour strip not shown for clarity)

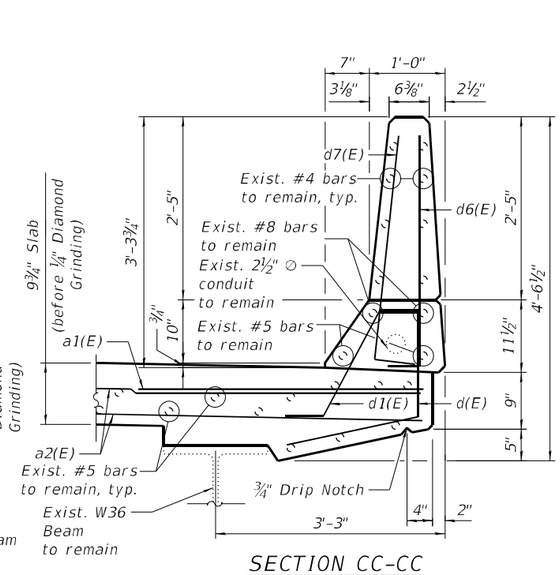
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	20	#5	22'-11"	
a1(E)	6	#6	6'-6"	
a2(E)	20	#5	30'-7"	
d(E)	8	#4	4'-1"	
d1(E)	10	#5	2'-7"	
d2(E)	5	#4	4'-0"	
d3(E)	5	#5	4'-0"	
d4(E)	2	#5	2'-9"	
d5(E)	2	#5	4'-0"	
d6(E)	8	#4	3'-8"	
d7(E)	8	#5	3'-8"	
d8(E)	2	#4	4'-9"	
h(E)	12	#6	22'-1"	
h1(E)	12	#6	29'-11"	
s(E)	30	#5	3'-5"	
u(E)	39	#5	3'-8"	
u1(E)	30	#5	3'-2"	
u2(E)	28	#5	3'-6"	
Concrete Removal			Cu Yd	13.4
Concrete Superstructure			Cu Yd	15.1
Protective Coat			Sq Yd	37
Reinforcement Bars, Epoxy Coated			Pound	2,730

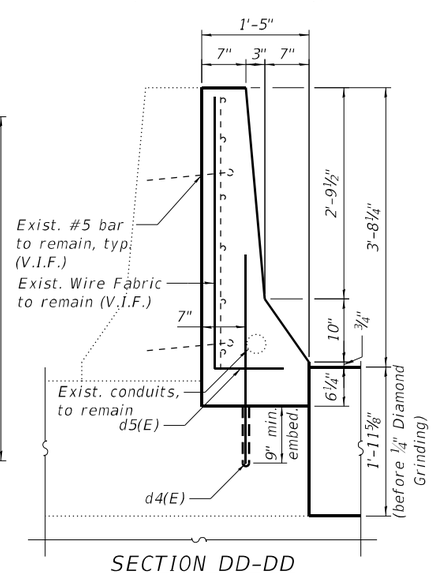
*Dimension is taken at the Back of Abut.



SECTION BB-BB



SECTION CC-CC



SECTION DD-DD

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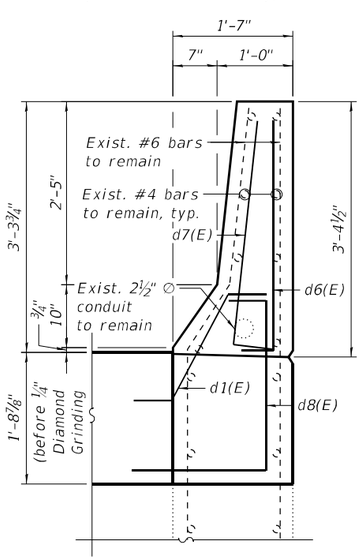

SECTION EE-EE

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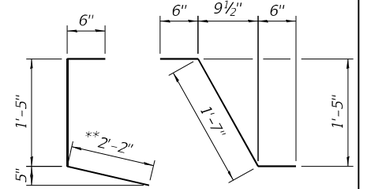
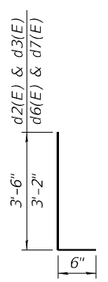


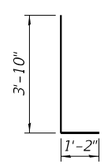
BAR d(E)

BAR d1(E)

**Cut end bar in the field to fit.



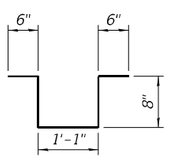
BAR d2(E), d3(E), d6(E) & d7(E)



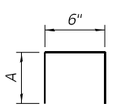
BAR d5(E)

NOTES:

1. For legend, see Sheet S08-09.
2. For preformed joint strip seal details, see Sheet S08-15.
3. For bar splicer assembly details, see Sheet S08-24.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.
5. Epoxy grout d4(E) bars according to Article 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Superstructure.

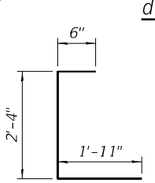


BAR s(E)



BARS u(E), u1(E) & u2(E)

BARS	A
u(E)	1'-7"
u1(E)	1'-4"
u2(E)	1'-6"



BAR d8(E)

MIN BAR LAPS

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

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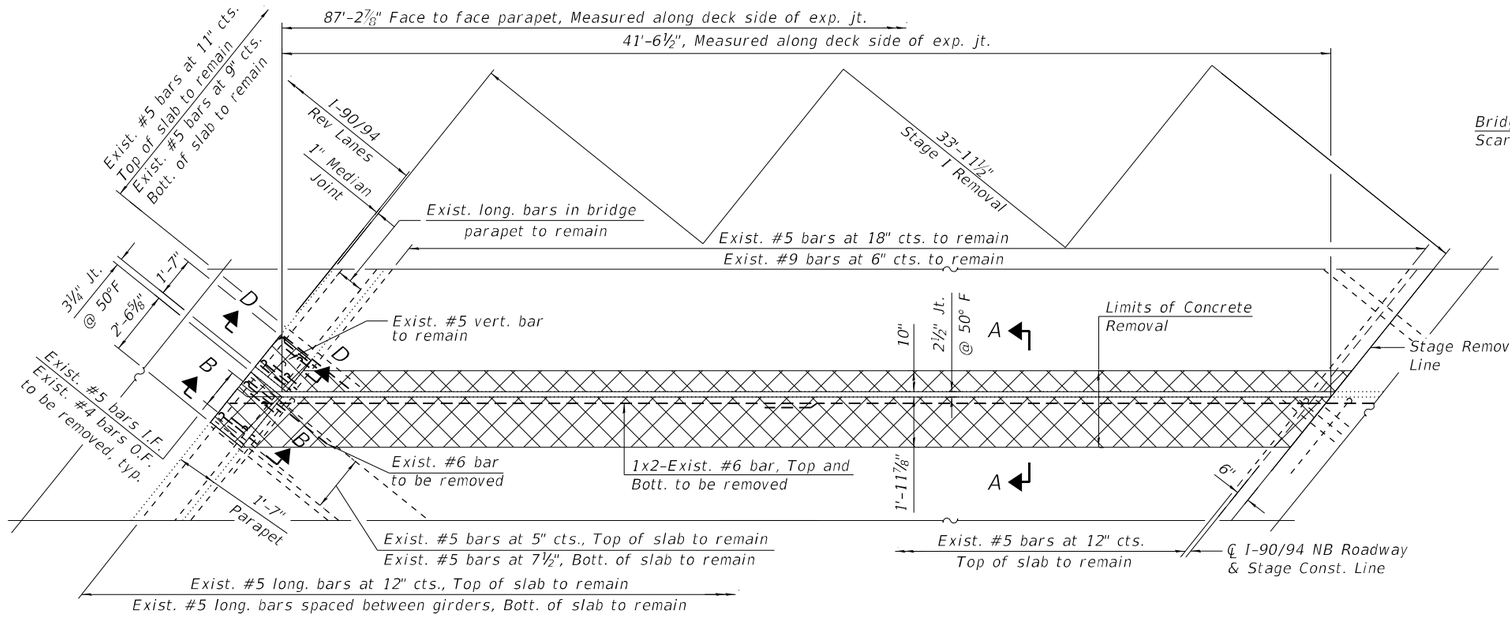
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

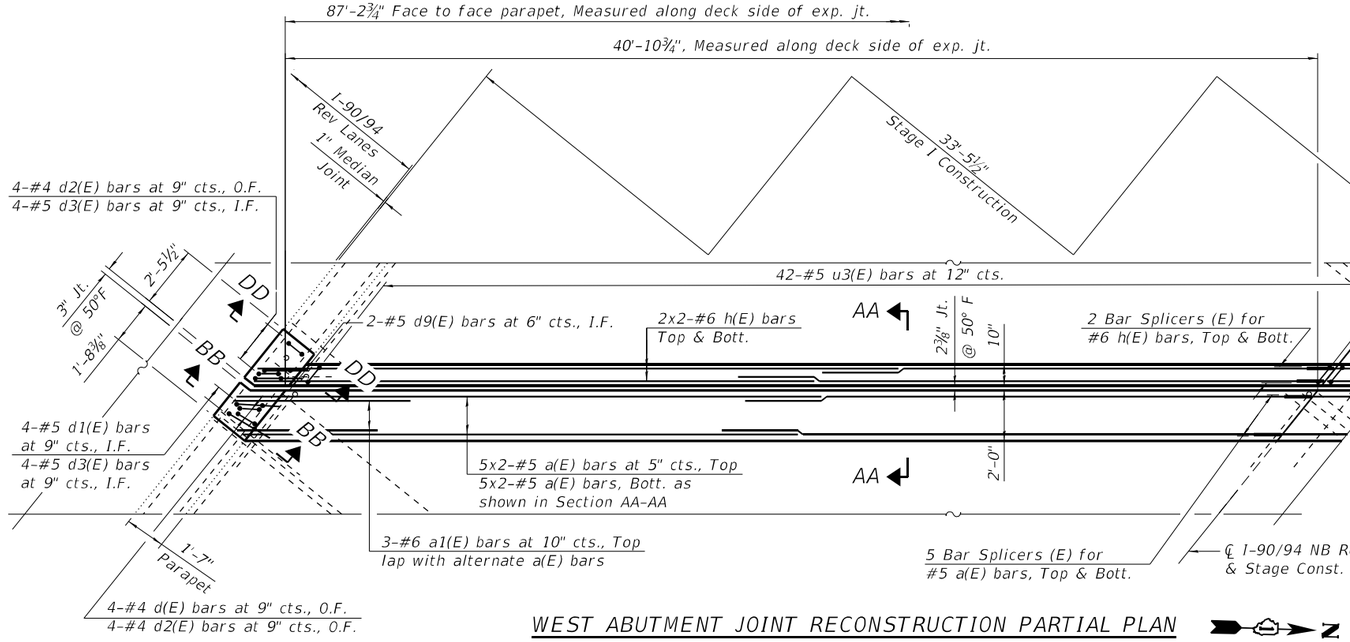
E. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 3 OF 3)
STRUCTURE NO. 016-0128 (NB)

SHEET S08-11 OF S08-24 SHEETS

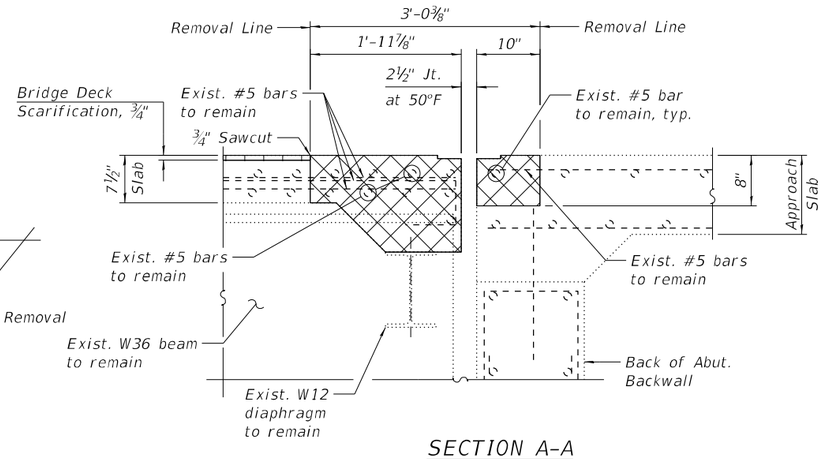
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	640
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



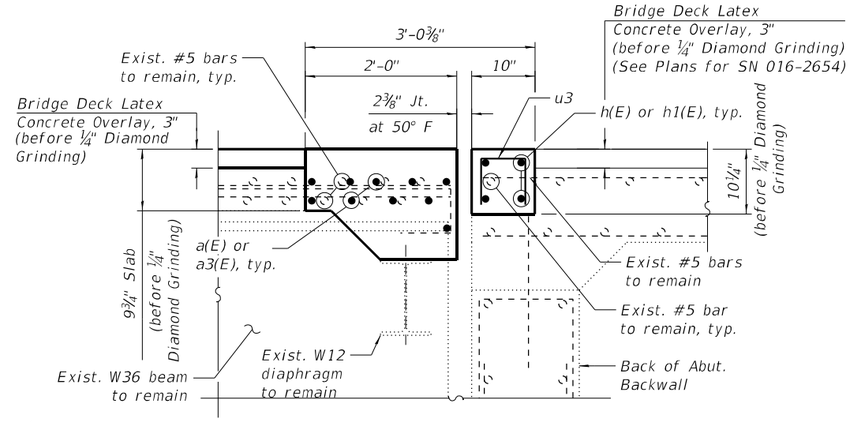
WEST ABUTMENT JOINT REMOVAL PARTIAL PLAN



WEST ABUTMENT JOINT RECONSTRUCTION PARTIAL PLAN



SECTION A-A



SECTION AA-AA

NOTES:

1. For Sections B-B and BB-BB, see Sheet S08-13.
2. For Sections D-D and DD-DD, additional Notes, Bar Diagrams, and Bill of Material, see Sheet S08-14.

LEGEND

Concrete Removal

E.F. Each Face

I.F. Inside Face

O.F. Outside Face

MODEL: Default
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HBM ENGINEERING GROUP, LLC

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PLOT DATE =		DATE -	4/29/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

W. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 1 OF 3)
STRUCTURE NO. 016-0128 (NB)
SHEET S08-12 OF S08-24 SHEETS

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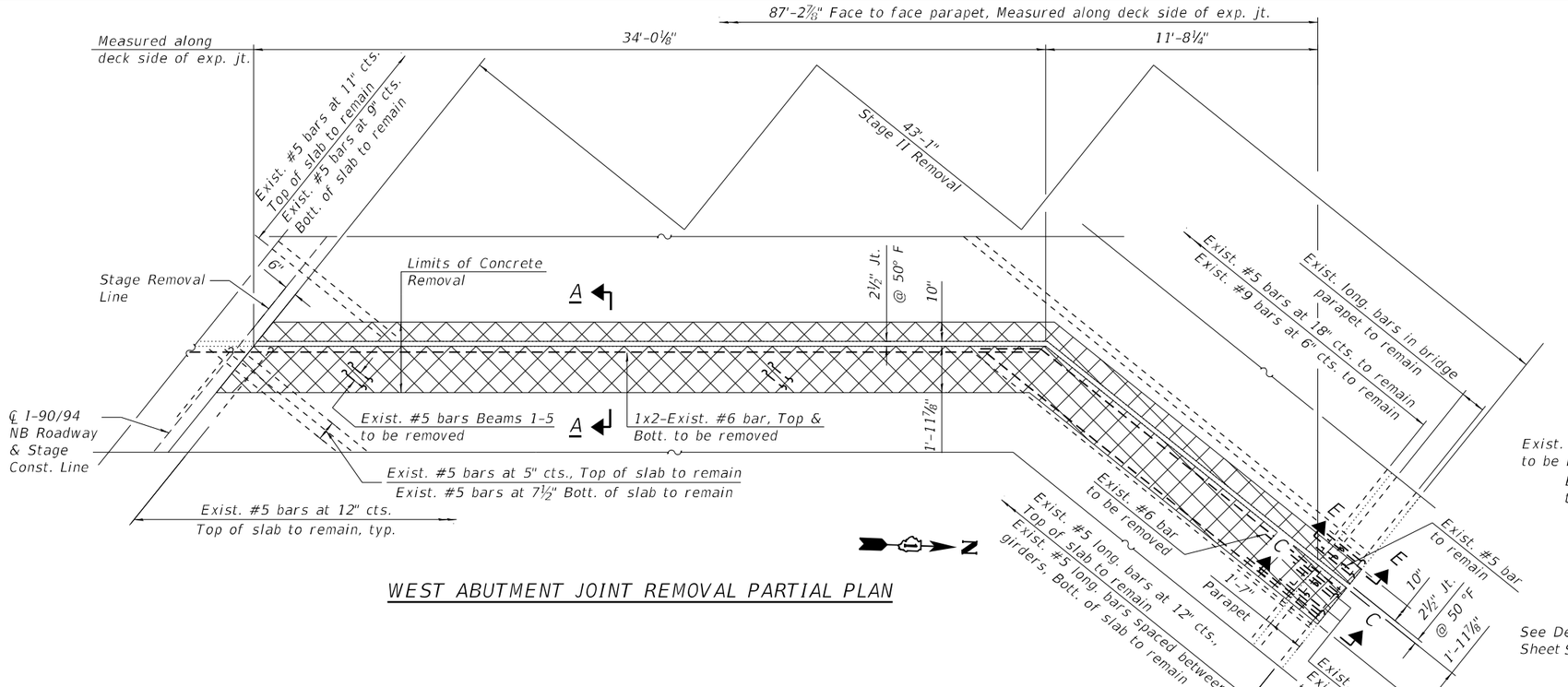
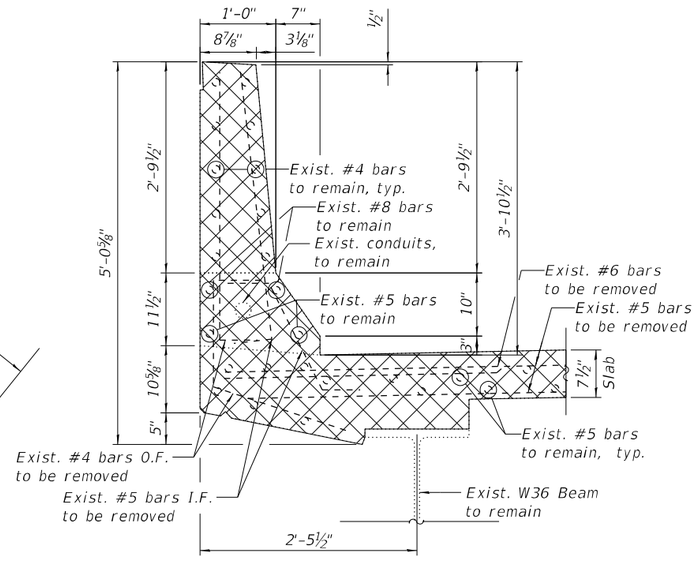
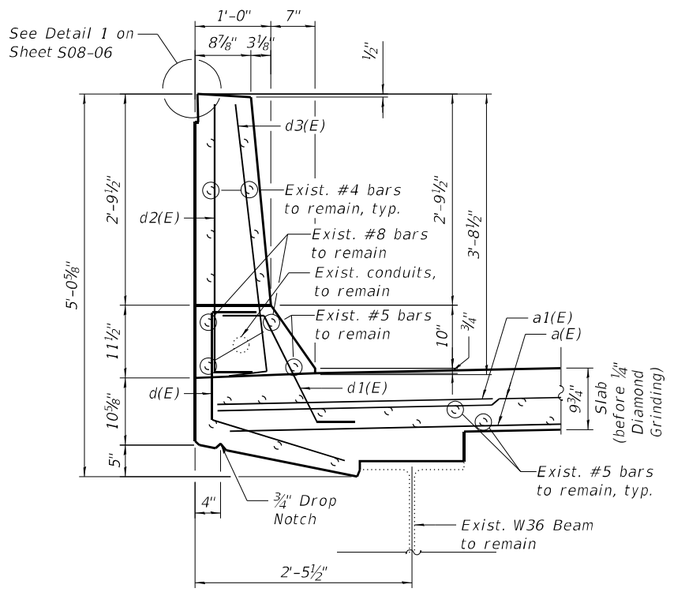
	ILLINOIS FED. AID PROJECT			



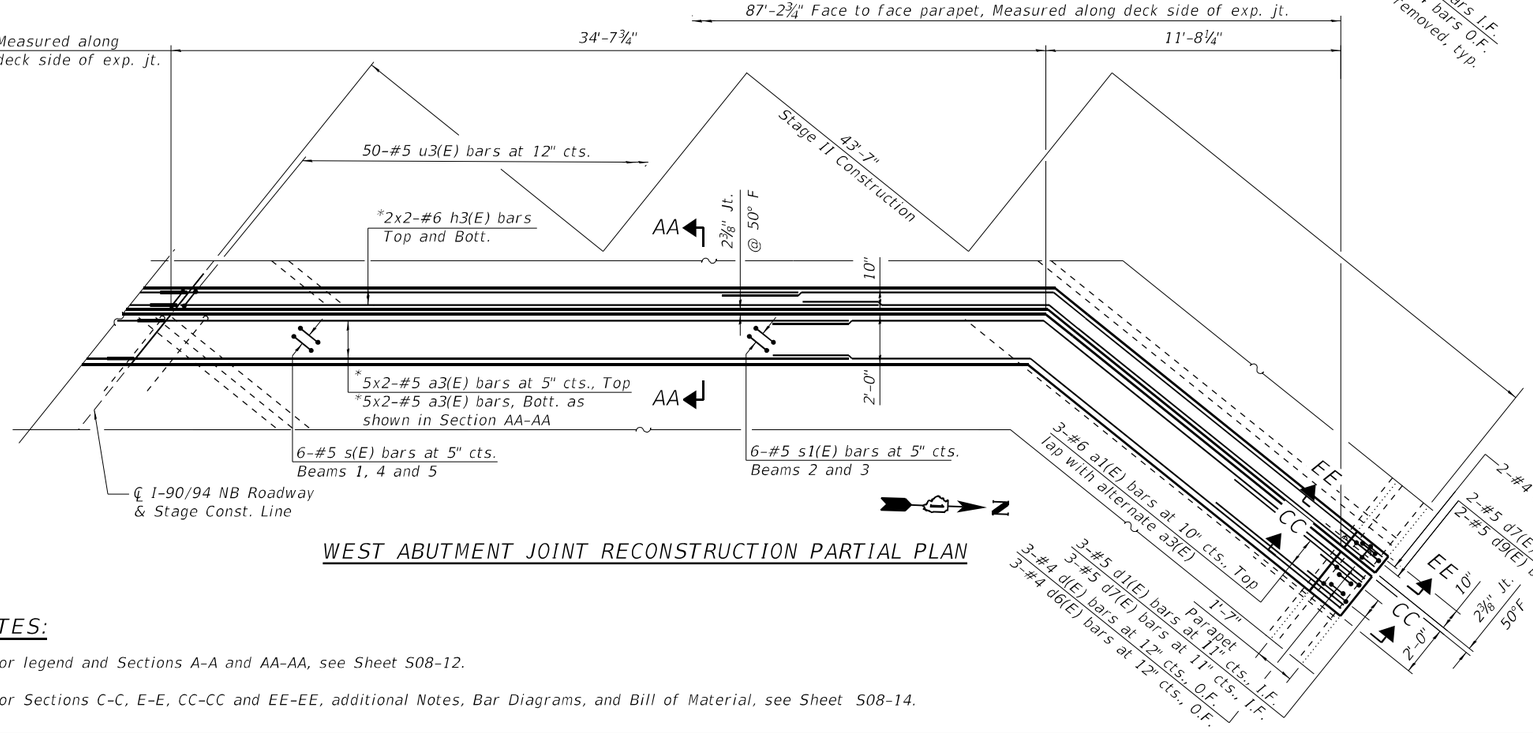
WEST ABUTMENT JOINT REMOVAL PARTIAL PLAN



SECTION B-B



SECTION BB-BB



WEST ABUTMENT JOINT RECONSTRUCTION PARTIAL PLAN

NOTES:

1. For legend and Sections A-A and AA-AA, see Sheet S08-12.
2. For Sections C-C, E-E, CC-CC and EE-EE, additional Notes, Bar Diagrams, and Bill of Material, see Sheet S08-14.

*Cut and bend to fit in field in accordance with Art. 508.04 of the Standard Specifications.

HBM ENGINEERING GROUP, LLC	USER NAME =	DESIGNED - LAB, FL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	W. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 2 OF 3) STRUCTURE NO. 016-0128 (NB)
		CHECKED - MAI, MI	REVISED -		SHEET S08-13 OF S08-24 SHEETS
	PLOT SCALE =	DRAWN - FL	REVISED -		
	PLOT DATE =	DATE - 4/29/2024	REVISED -		

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

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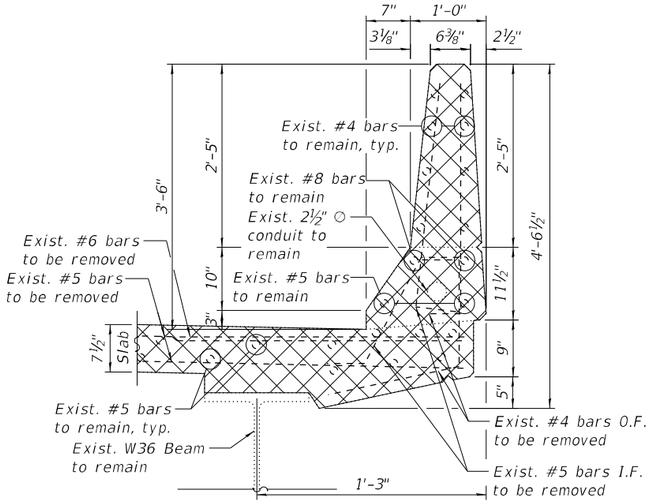
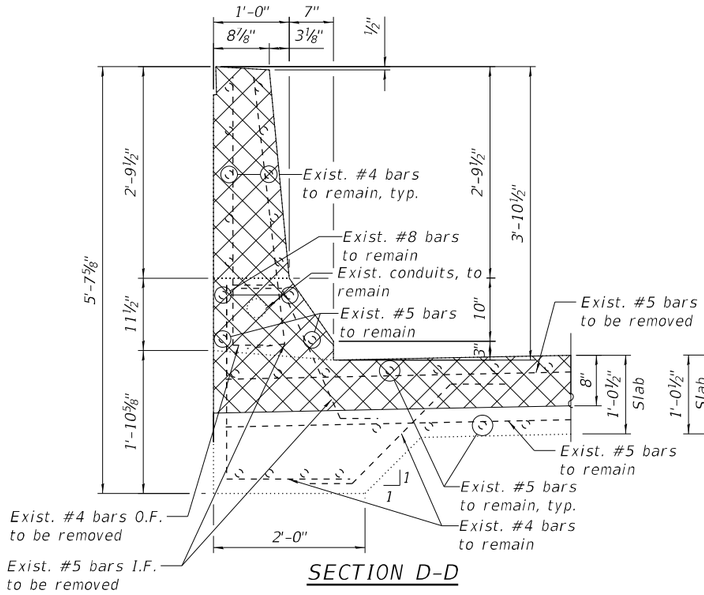
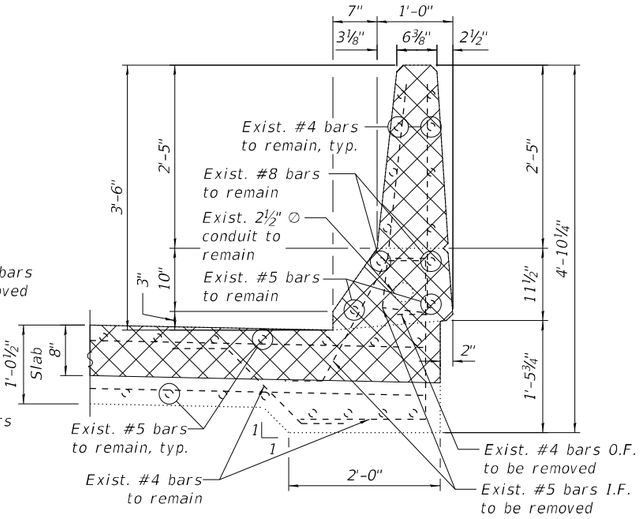


SECTION C-C



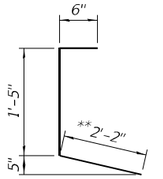
SECTION D-D



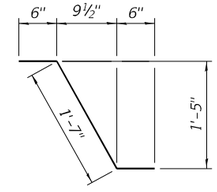
SECTION E-E

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	20	#5	22'-11"	
a1(E)	6	#6	6'-6"	
a3(E)	20	#5	27'-4"	
d(E)	7	#4	4'-1"	
d1(E)	7	#5	2'-7"	
d2(E)	8	#4	4'-0"	
d3(E)	8	#5	4'-0"	
d6(E)	5	#5	3'-8"	
d7(E)	5	#5	3'-8"	
d9(E)	4	#5	2'-10"	
h(E)	8	#6	22'-11"	
h1(E)	8	#6	27'-4"	
s(E)	18	#5	3'-5"	
s1(E)	12	#5	3'-9"	
u3(E)	92	#5	1'-6"	
Concrete Removal			Cu Yd	10.7
Concrete Superstructure			Cu Yd	12.4
Protective Coat			Sq Yd	33
Reinforcement Bars, Epoxy Coated			Pound	2,100

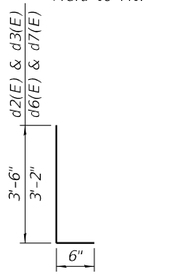


BAR d(E)

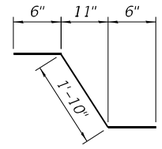


BAR d1(E)

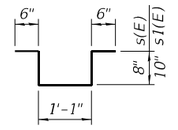
**Cut end bar in the field to fit.



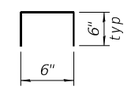
BAR d2(E), d3(E), d6(E) & d7(E)



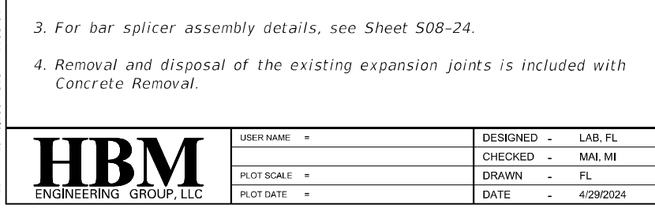
BAR d9(E)



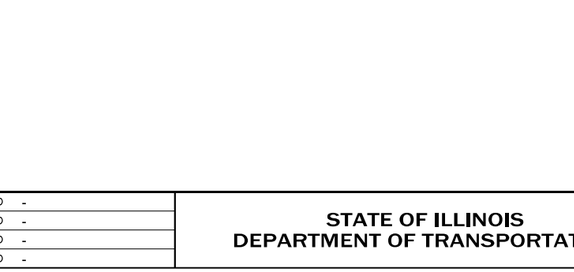
BARS s(E) & s1(E)



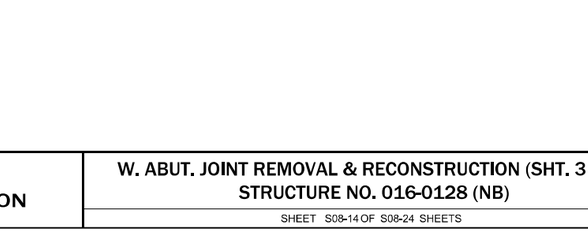
BAR u3(E)



SECTION CC-CC



SECTION DD-DD



SECTION EE-EE

NOTES:

1. For legend, see Sheet S08-12.
2. For preformed joint strip seal, see Sheet S08-15.
3. For bar splicer assembly details, see Sheet S08-24.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.

MIN BAR LAPS

#5 3'-6"

MODEL: Default
FILE NAME: P:\2004-825 PTB195-014 HBM\WO#7 I-90 Various Overlays\Western Ave\Sheet Files\160128-62K73-S14-West Abutment Joint Removal and Reconstruction (Sheet 3 of 3).dgn
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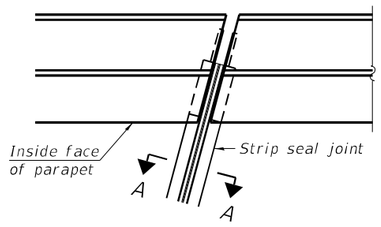
PLOT SCALE =	DRAWN - FL	REVISED -	
PLOT DATE =	DATE - 4/29/2024	REVISED -	

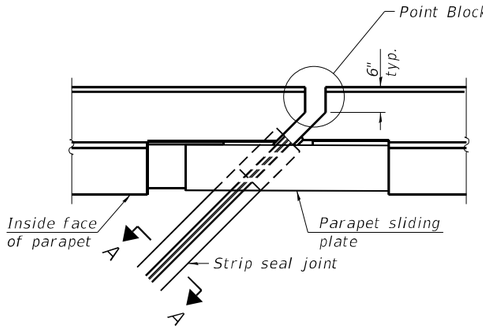
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

W. ABUT. JOINT REMOVAL & RECONSTRUCTION (SHT. 3 OF 3)
STRUCTURE NO. 016-0128 (NB)
SHEET S08-14 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	643
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

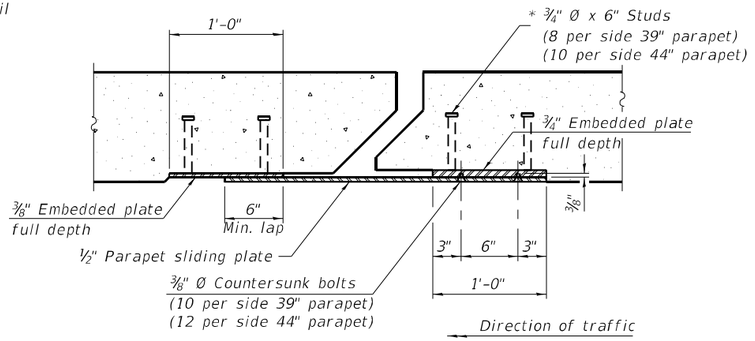


FOR SKEWS ≤ 30°



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.

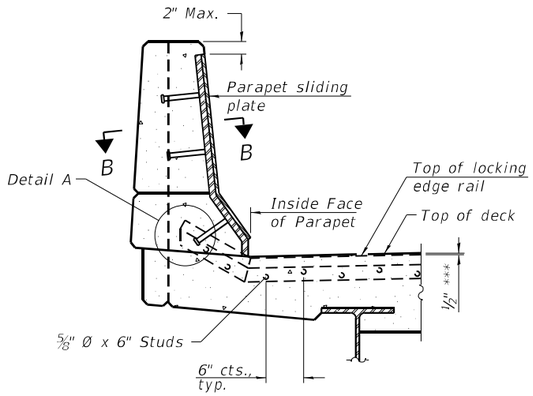
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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.

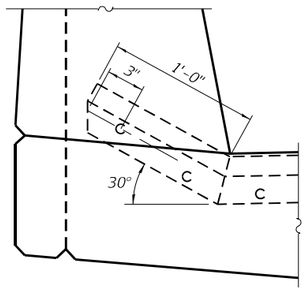
34" F-shape barrier shown, 42" F-shape similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

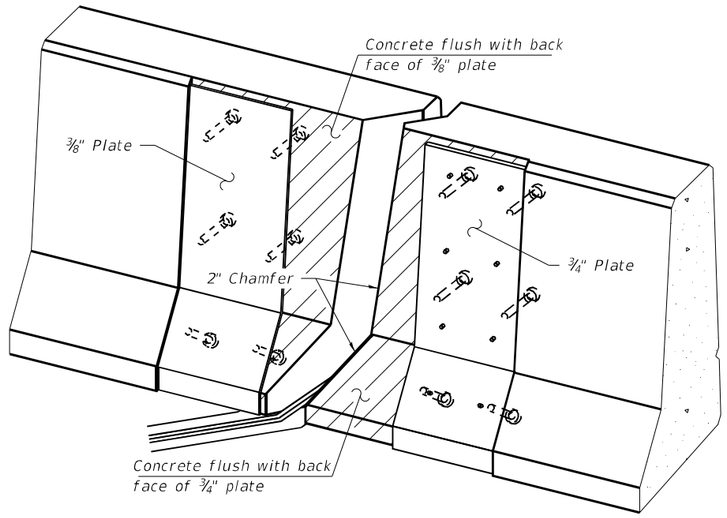


SECTION AT PARAPET

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

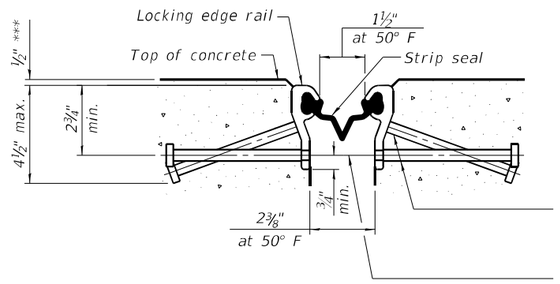


DETAIL A



TRIMETRIC VIEW

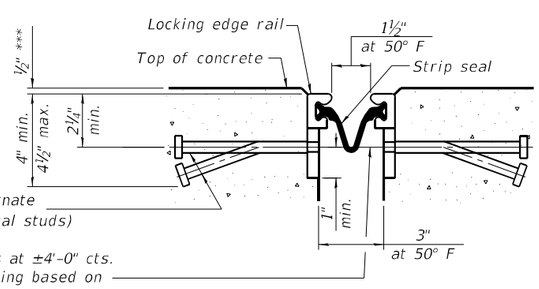
(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT

* ⅜" 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.

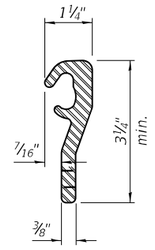


SHOWING WELDED RAIL JOINT

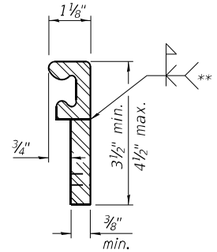
SECTION A-A

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

****Before ¼" Diamond Grinding*



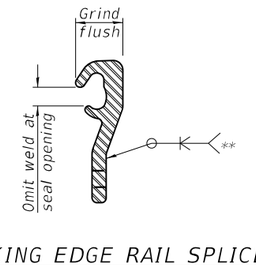
ROLLED (EXTRUDED) RAIL



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	195

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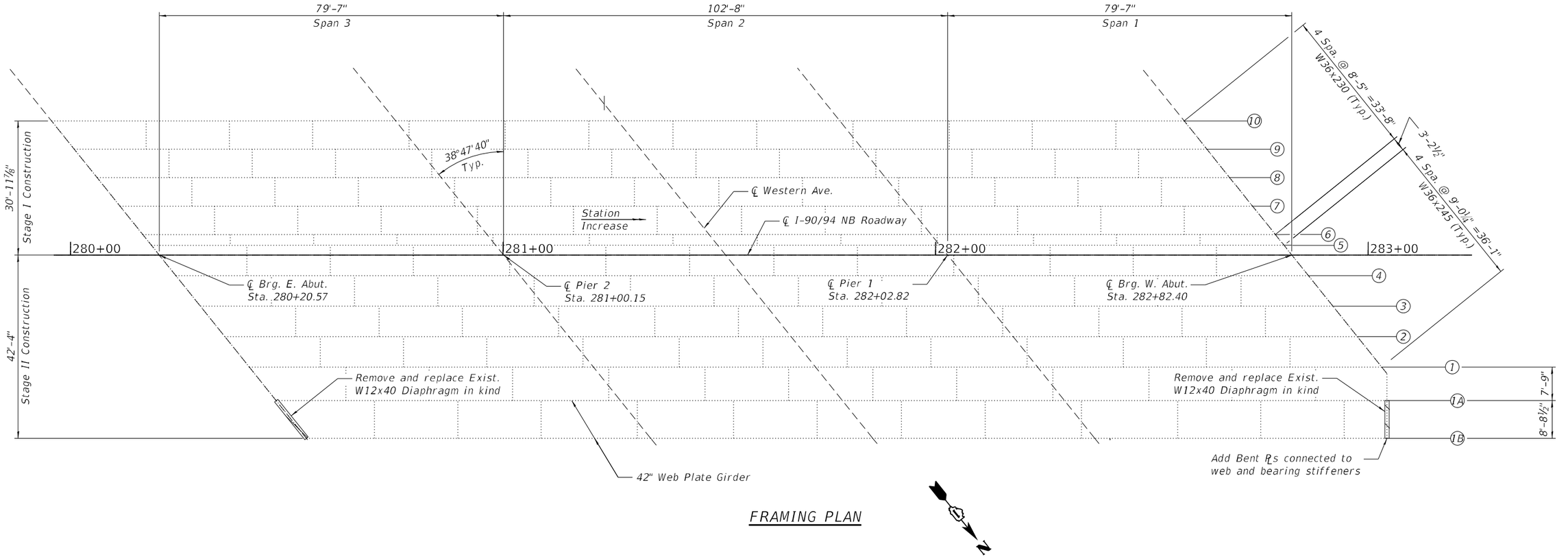
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-0128 (NB)
SHEET S08-15 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	644
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing And Erecting Structural Steel	Pound	910
Structural Steel Removal	Pound	910
Structural Steel Repair	Pound	210



FRAMING PLAN

NOTES:

1. All work is to be performed utilizing stage construction. See Sheets S08-03 and S08-04 for details.
2. For Diaphragm Removal and Replacement Details, see Sheets S08-17 and S08-18.
3. All structural steel for web repair plates shall be AASHTO M270 Grade 50. All structural steel for diaphragms and associated connection plates and angles may be AASHTO M270 Grade 36.
4. Diaphragm connection holes shall be 15/16" for ¾" bolts, unless otherwise noted. Two hardened washers shall be required at diaphragm connections. Fasteners shall be high strength bolts.
5. All proposed web repair plates, bolts, nuts, washers and associated field-drilling shall be paid for as Structural Steel Repairs. The proposed diaphragm and associated connection plates and angles shall be paid for as Furnishing and Erecting Structural Steel.
6. Holes in new steel shall be field drilled using existing steel as a template.

LEGEND

Remove and Replace Exist. Diaphragm

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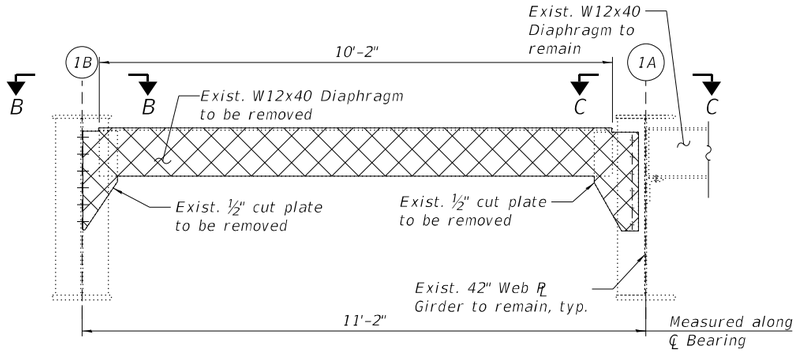
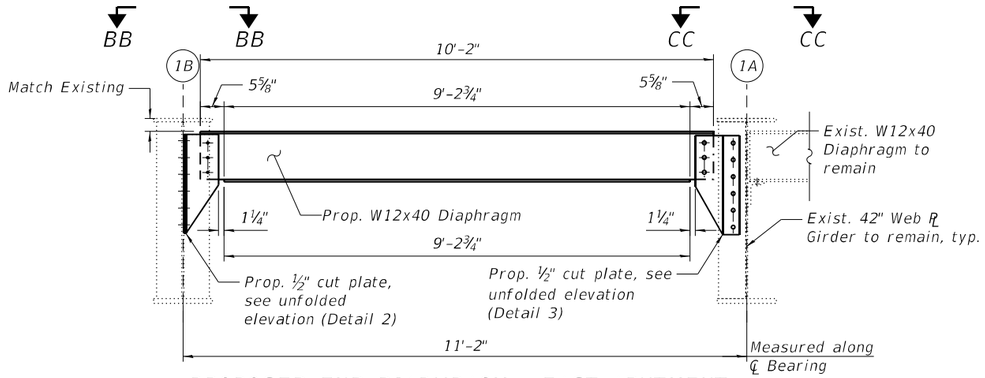
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 016-0128 (NB)
SHEET S08-16 OF S08-24 SHEETS

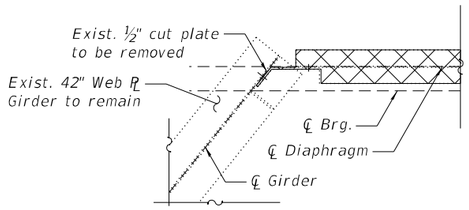
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	645
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



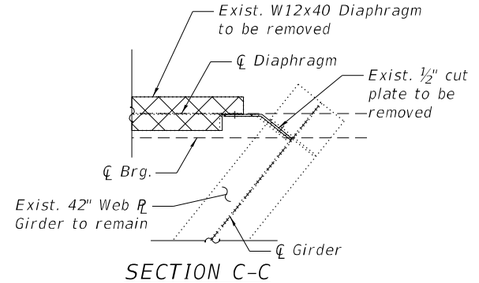
EXISTING END DIAPHRAGM REMOVAL – EAST ABUTMENT



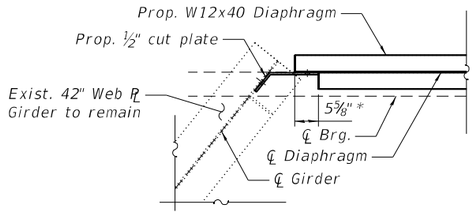
PROPOSED END DIAPHRAGM – EAST ABUTMENT



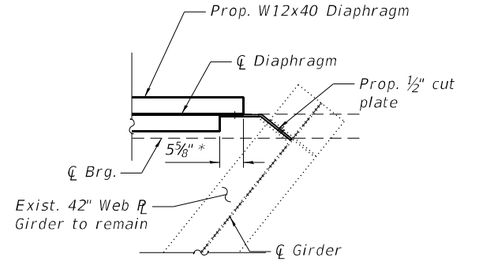
SECTION B-B



SECTION C-C

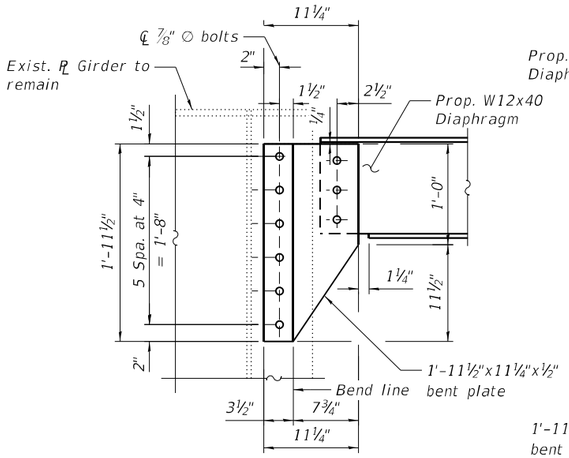


SECTION BB-BB

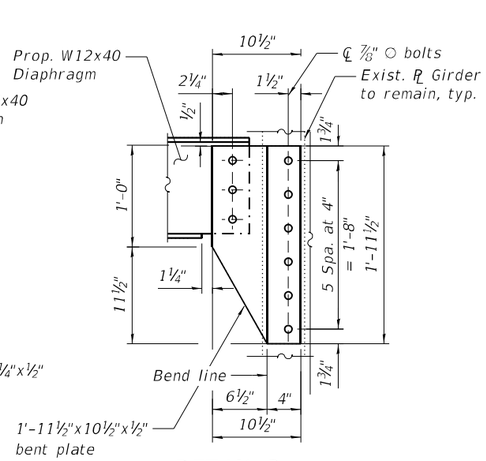


SECTION CC-CC

*At bottom flange only



DETAIL 2



DETAIL 3

PHOTO 1 – AT BEAM 1B

PHOTO 2 – AT BEAM 1A

NOTES:

1. For location of Diaphragm Removal and Replacement, additional notes and Bill of Material, see Sheet S08-16.
2. Bolts connecting to existing girder stiffeners shown on this sheet shall be 1⅛" ∅ holes for ⅞" ∅ bolts as shown in Details 2 and 3.

LEGEND

Structural Steel Removal

∅ Field drill holes in new steel using existing steel as a template

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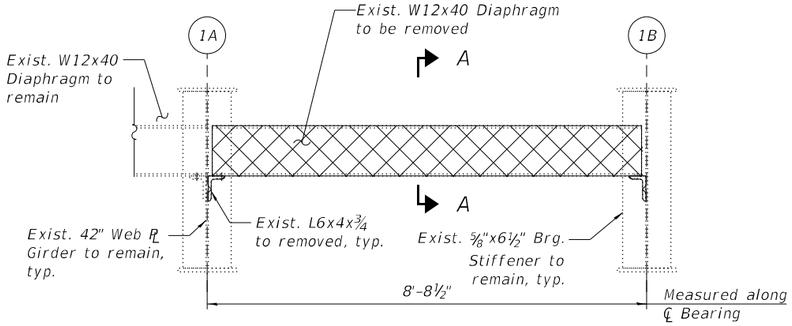
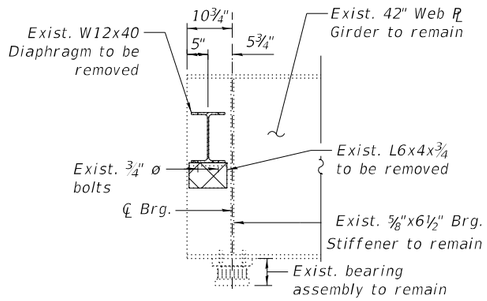
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS (SHEET 1 OF 2)
STRUCTURE NO. 016-0128 (NB)
SHEET S08-17 OF S08-24 SHEETS

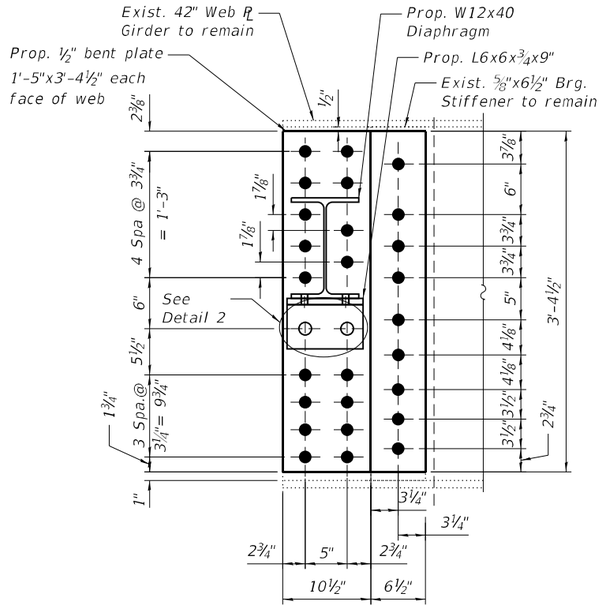
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	646
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		



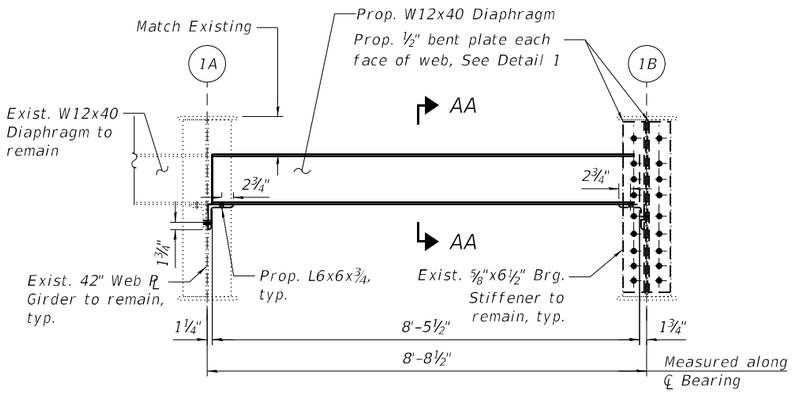
EXISTING END DIAPHRAGM REMOVAL - WEST ABUTMENT



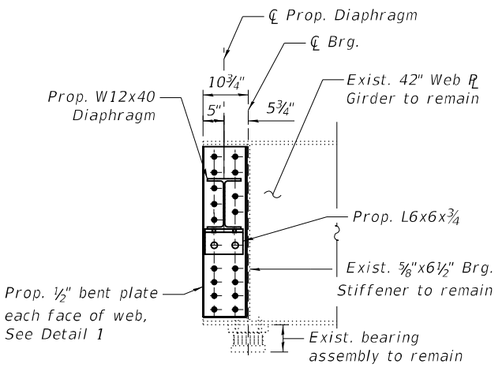
SECTION A-A



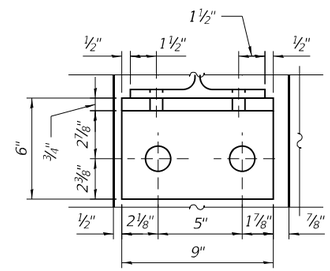
DETAIL 1 - UNFOLDED ELEVATION



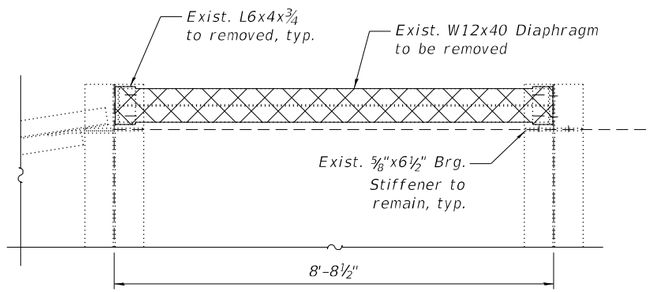
PROPOSED END DIAPHRAGM - WEST ABUTMENT



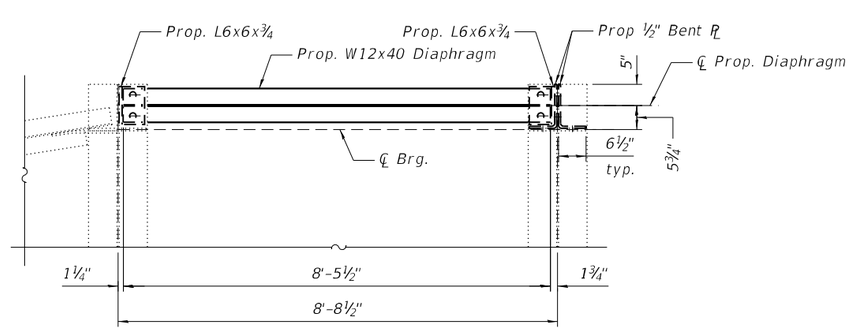
SECTION AA-AA



DETAIL 2



EXISTING PLAN VIEW



PROPOSED PLAN VIEW

NOTE:

1. For location of Diaphragm Removal and Replacement, additional notes and Bill of Material, see Sheet S08-16.

LEGEND

- Structural Steel Removal
- ○ Field drill holes in new steel using existing steel as a template
- ● Shop drill holes in new steel. Use new steel as template to field drill holes in existing steel.

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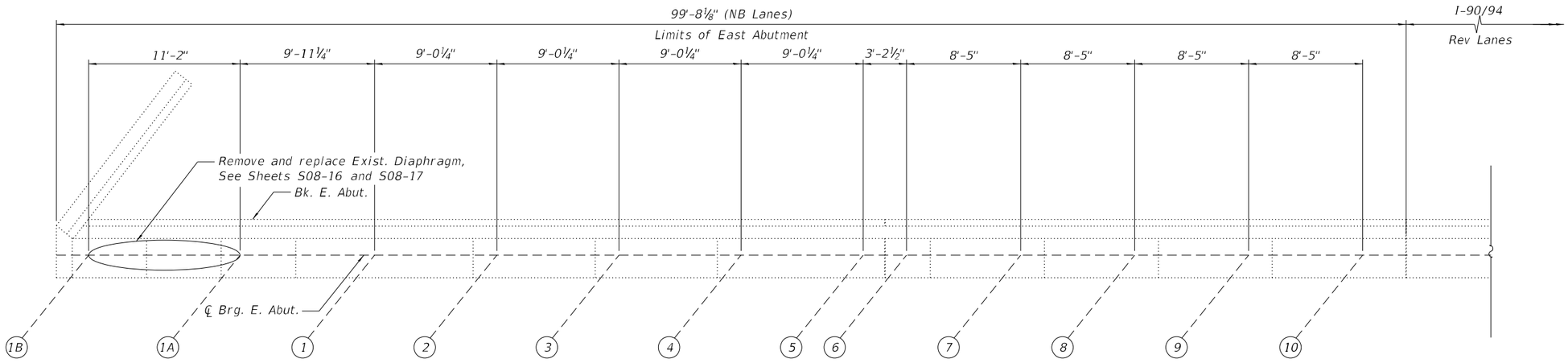
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS (SHEET 2 OF 2)
STRUCTURE NO. 016-0128 (NB)
SHEET S08-18 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	647
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

BILL OF MATERIAL

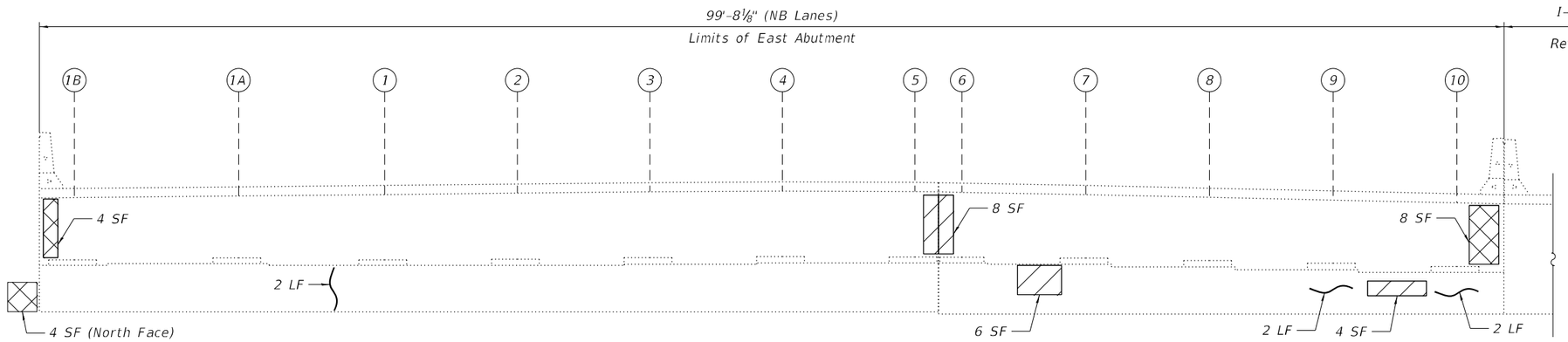
ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	500
Epoxy Crack Injection	Foot	6
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	18
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq Ft	16



PLAN - EAST ABUTMENT

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the abutment seats and the bottom 2 feet of the abutment backwall.
3. For Slope Wall repairs, see Sheet S08-23.



ELEVATION - EAST ABUTMENT
(Looking East)

LEGEND

	Epoxy Crack Injection (Width > 0.06")
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Structural Repair of Concrete (Depth Greater Than 5 inches)
SF	Square Foot
LF	Linear Foot

MODEL: Default
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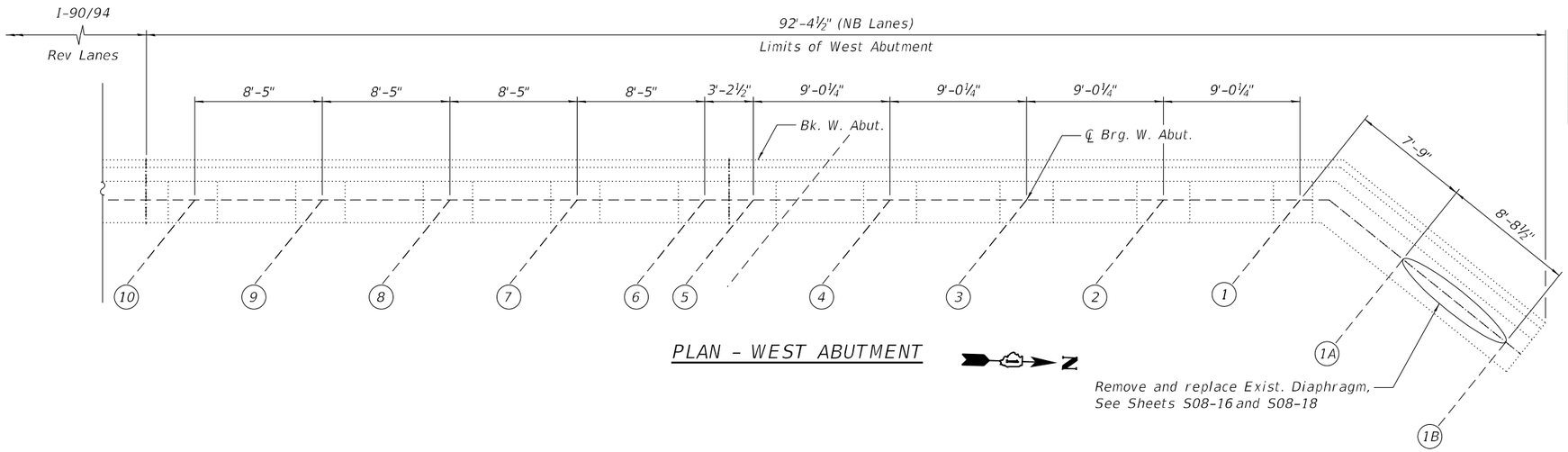
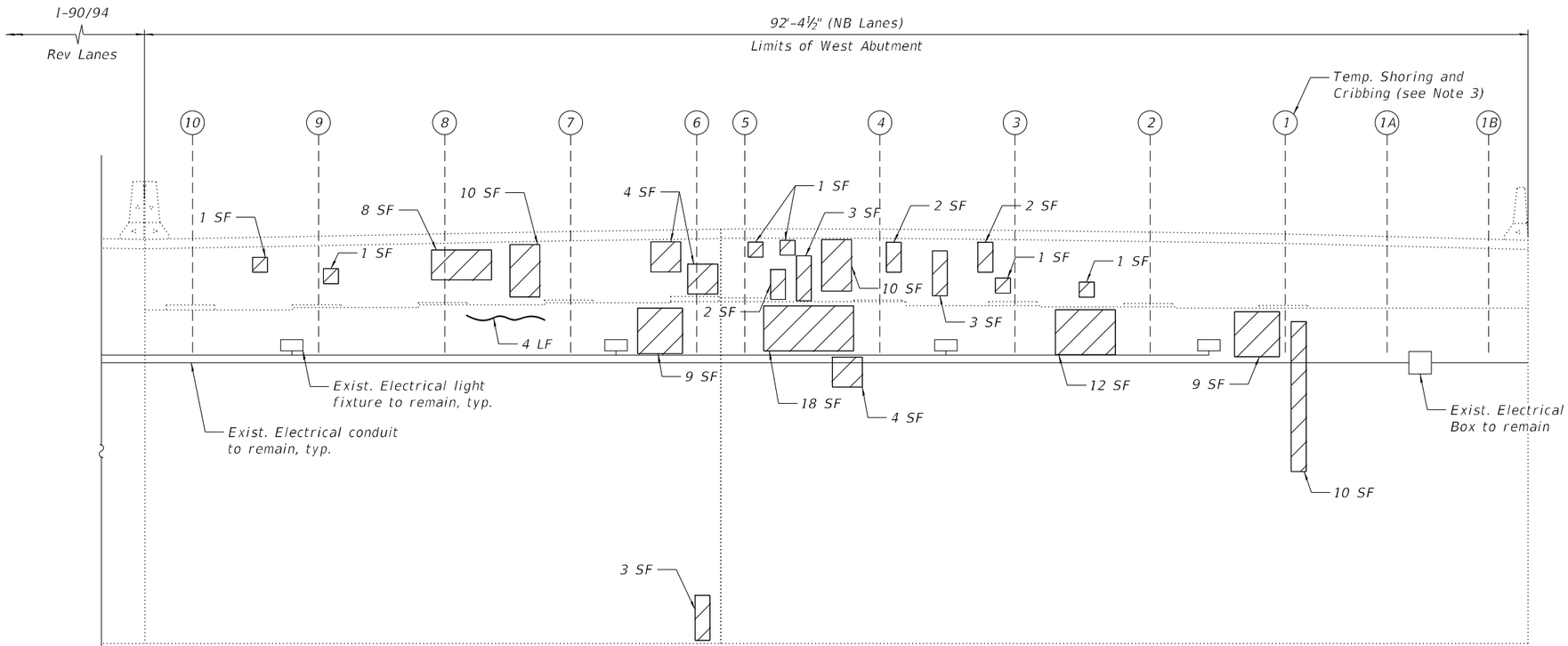
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT REPAIRS
STRUCTURE NO. 016-0128 (NB)
SHEET S08-19 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	648
		CONTRACT NO. 62K73		
		ILLINOIS	FED. AID PROJECT	



PLAN - WEST ABUTMENT

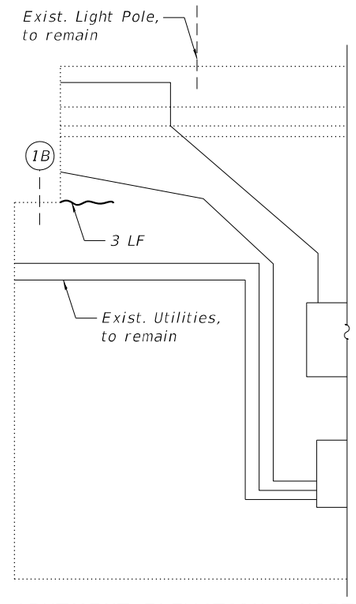


ELEVATION - WEST ABUTMENT

(Looking West)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer		450
Epoxy Crack Injection	Foot	7
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	119
Temporary Shoring And Cribbing	Each	1



WEST ABUTMENT ELEVATION - NORTH END

EXISTING LIGHTING: WEST ABUTMENT

(Looking Northwest)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the abutment seats and the bottom 2 feet of the abutment backwall.
3. Temporary shoring and cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.

SUMMARY OF REACTIONS WEST ABUTMENT BEAM 1		
R DL	(k)	37.8
R LL	(k)	46.5
R IM	(k)	11.1
R Total	(k)	95.4

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Epoxy Crack Injection (Width > 0.06")
- SF Square Foot
- LF Linear Foot

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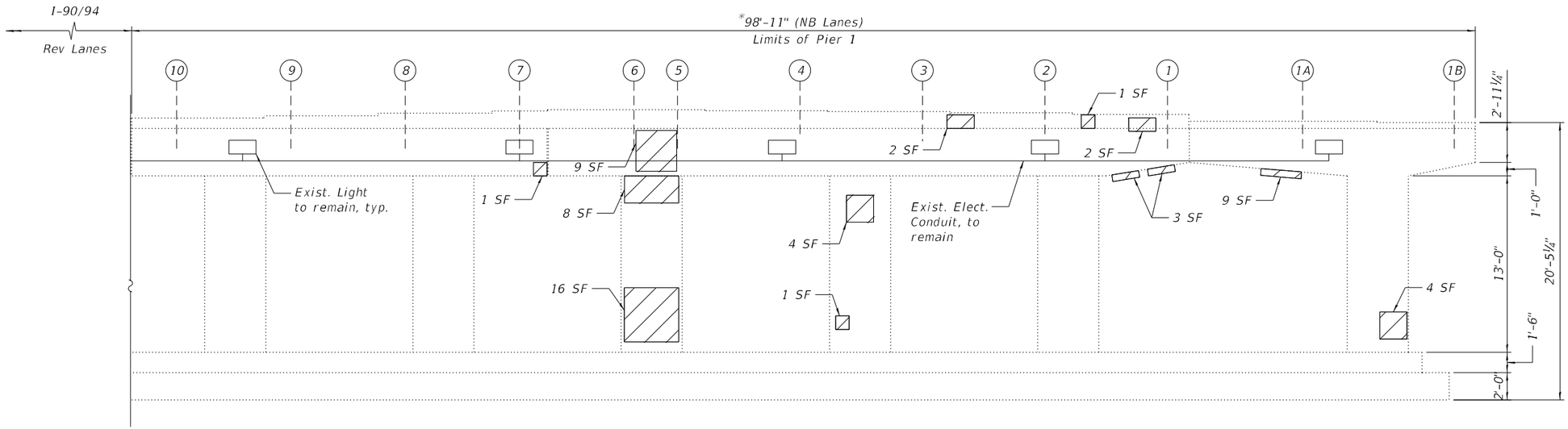
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT REPAIRS
STRUCTURE NO. 016-0128 (NB)
SHEET S08-20 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	649
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	99



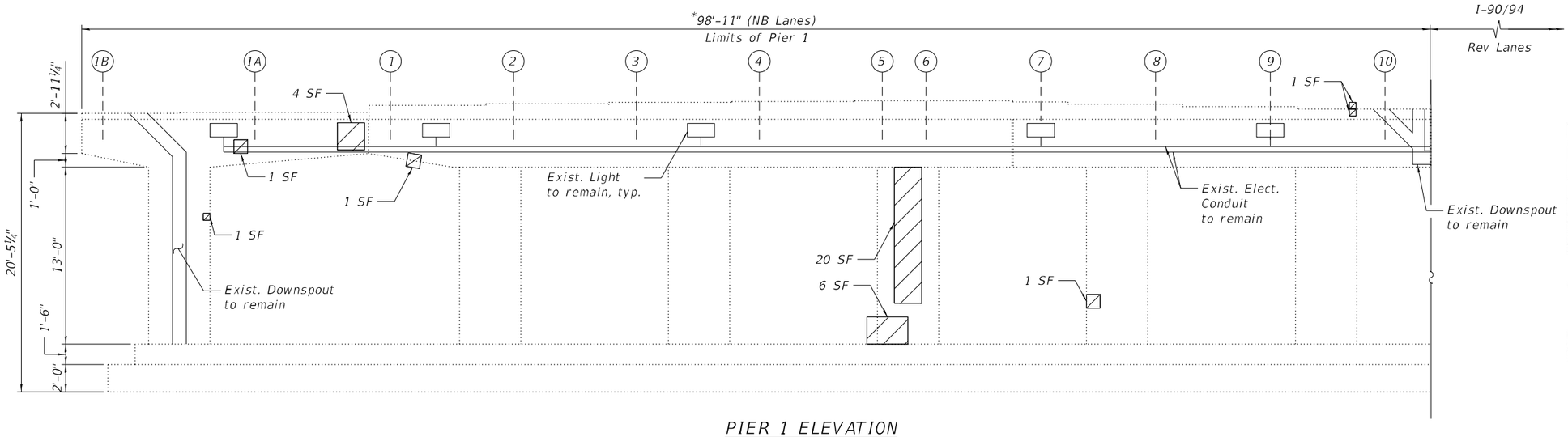
PIER 1 ELEVATION

(Looking West)

EXISTING LIGHTING: PIER 1

(Looking West)

*Length measured perpendicular to the centerline of the NB lanes



PIER 1 ELEVATION

(Looking East)

EXISTING LIGHTING: PIER 1

(Looking East)

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 inches)

SF Square Foot

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PLOT DATE =	DATE - 4/29/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
STRUCTURE NO. 016-0128 (NB)
SHEET S08-21 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	650
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

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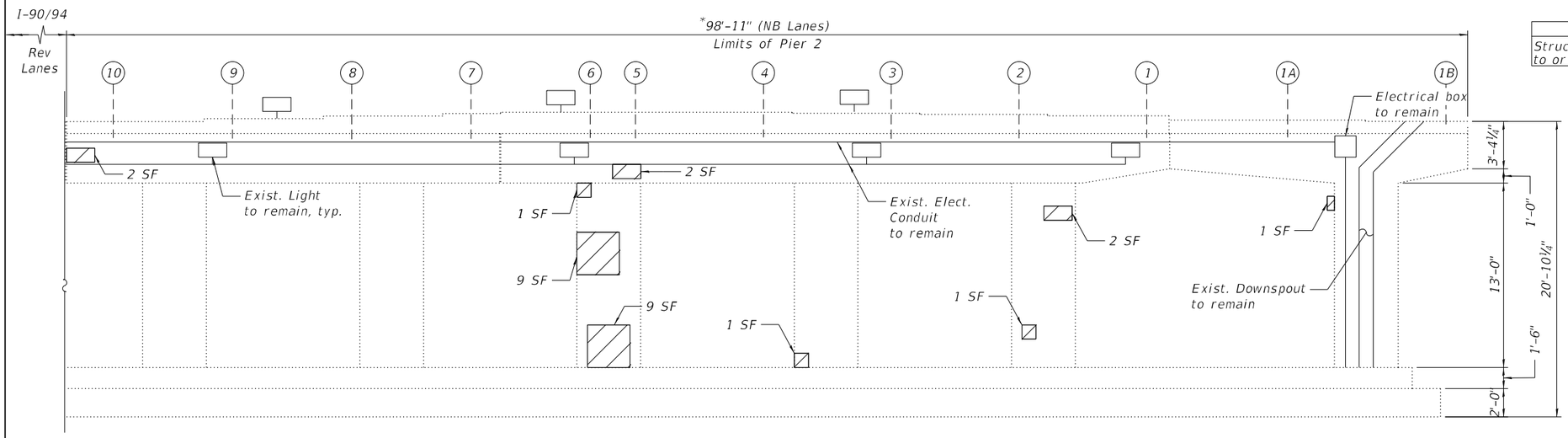
BILL OF MATERIAL

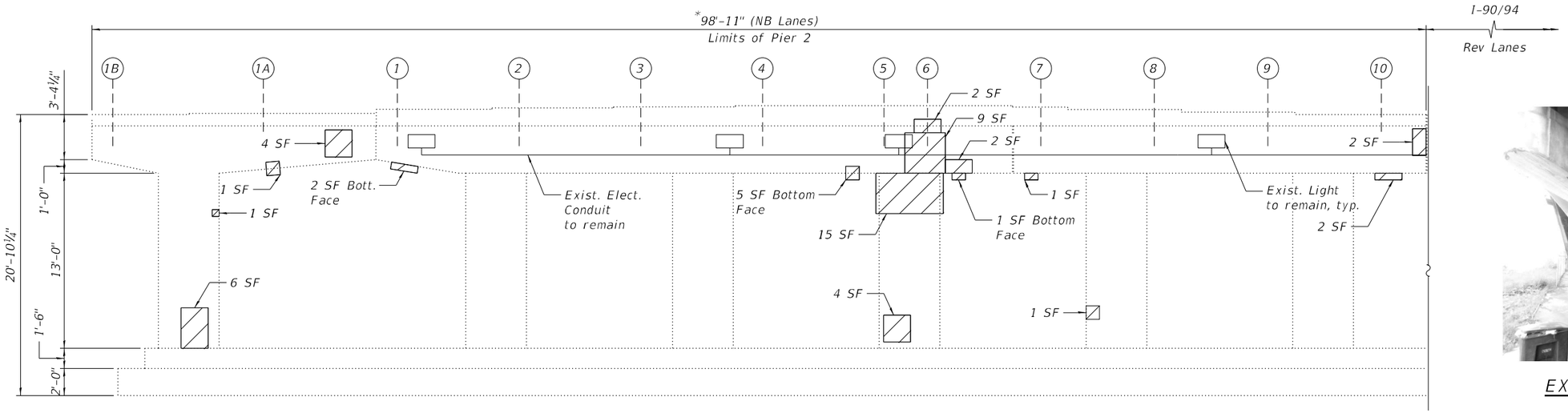
ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	86



PIER 2 ELEVATION
(Looking West)

EXISTING LIGHTING: PIER 2
(Looking West)

*Length measured perpendicular to the centerline of the NB lanes



PIER 2 ELEVATION
(Looking East)

EXISTING LIGHTING: PIER 2
(Looking Southeast)

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 inches)

SF Square Foot

MODEL: Default
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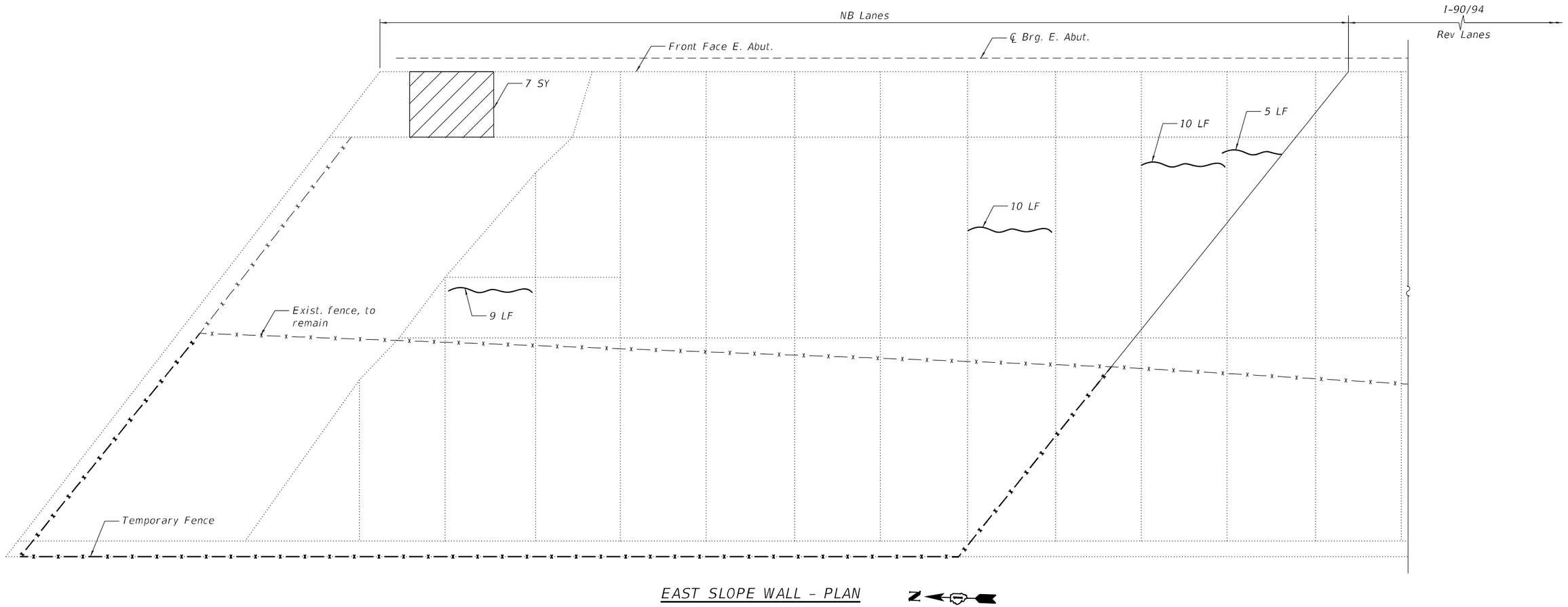
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIRS
STRUCTURE NO. 016-0128 (NB)
SHEET S08-22 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	651
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu Yd	3
Slope Wall Removal	Sq Yd	7
Slope Wall 4 Inch	Sq Yd	7
Slope Wall Crack Sealing	Foot	34



EAST SLOPE WALL – PLAN

N

NOTES:

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

LEGEND

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

MODEL: Default
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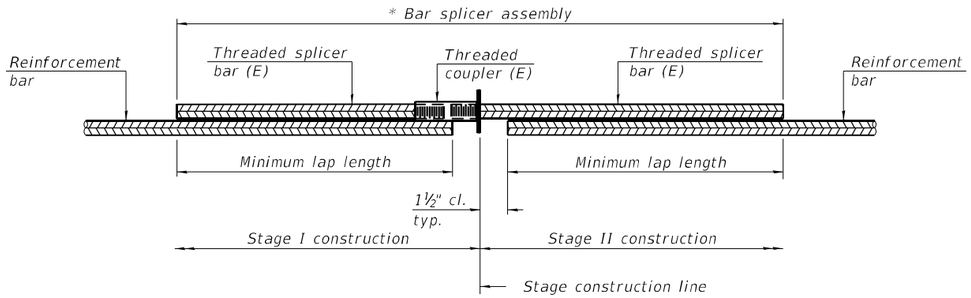
PLOT DATE =		DATE -	4/29/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST SLOPE WALL REPAIRS
STRUCTURE NO. 016-0128 (NB)
SHEET S08-23 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	652
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		



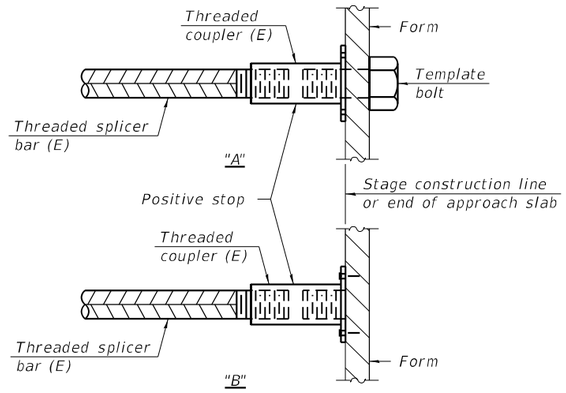
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

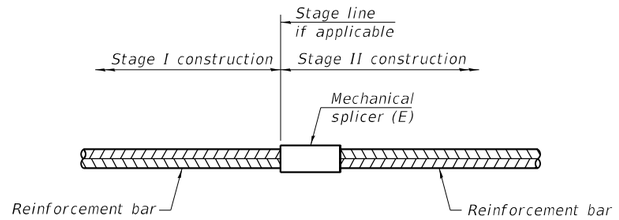
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies	Minimum lap length
West Abutment Exp. Jt.	5	10	3'-6"
	6	6	4'-0"
East Abutment Exp. Jt.	5	14	3'-6"



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 1-1-2020

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DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-0128 (NB)
SHEET S08-24 OF S08-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	653
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

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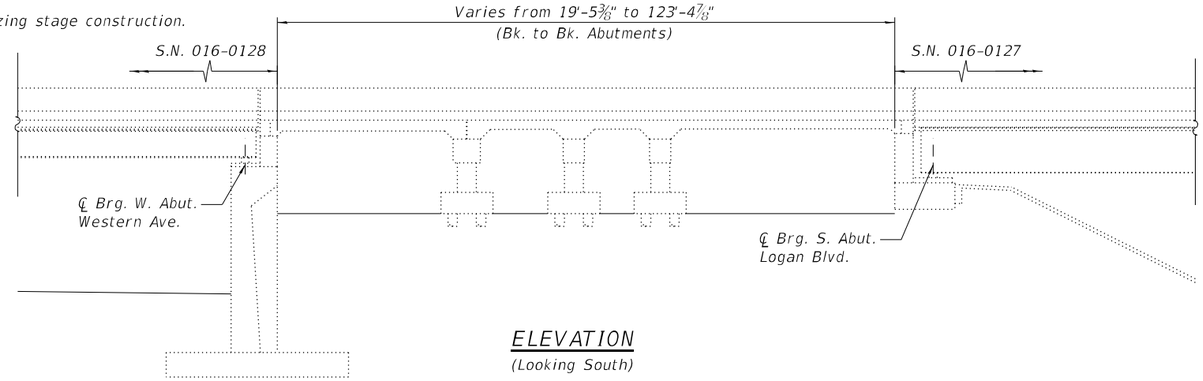
Existing Structure: S.N. 016-2654 was originally built in 1960. In 1994 rehabilitation was performed and consisted in deck replacement and widening. The structure consists of a 1'-0½" continuous reinforced concrete slab from the West Abutment to Bent 7.5 and Bent 13 and a 10½" continuous reinforced concrete slab from the South Abutment to Bent 7.5. The superstructure is supported by reinforced concrete piers and abutments founded on timber and concrete piles.

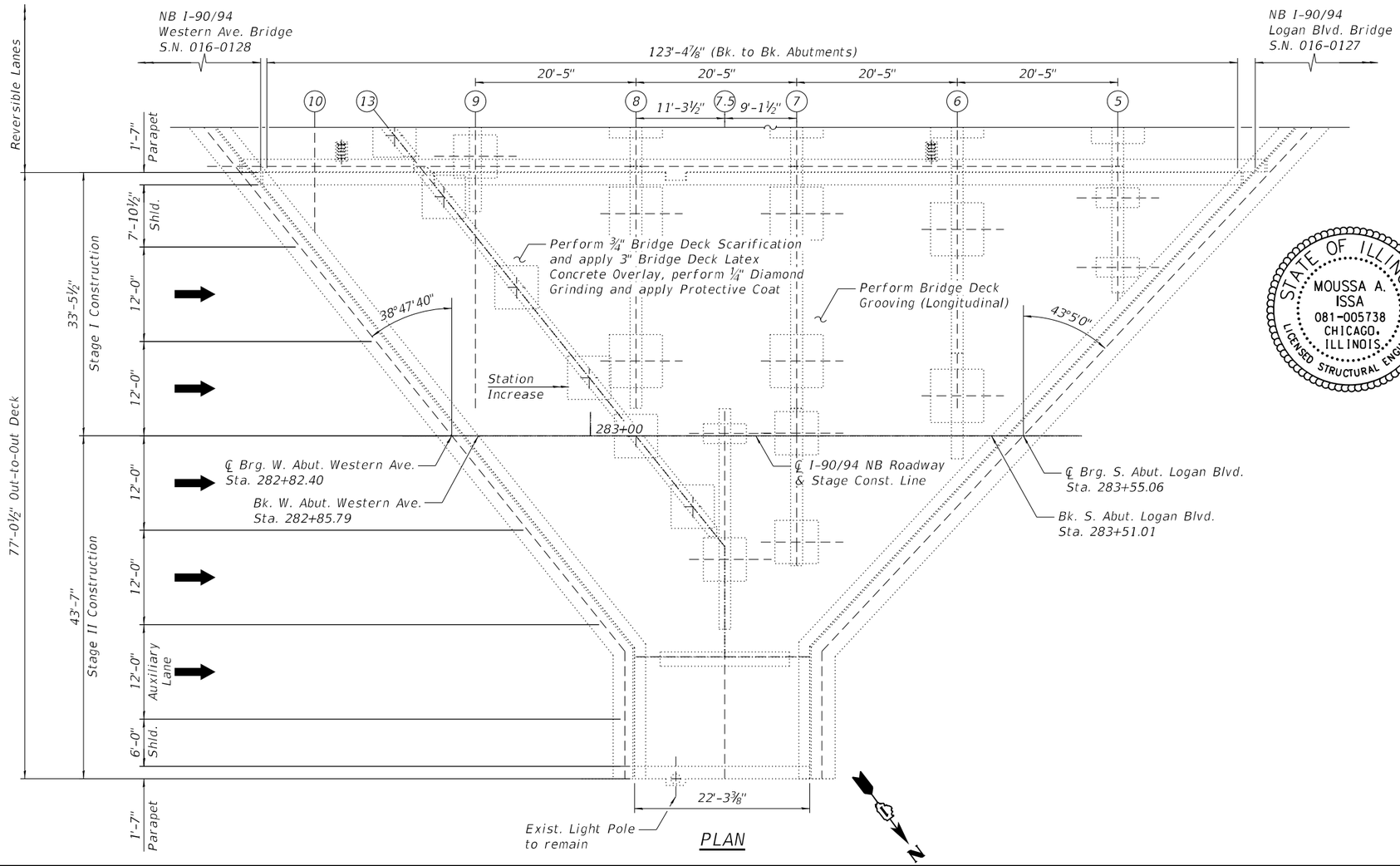
Traffic is to be maintained utilizing stage construction.

No salvage.



ELEVATION

(Looking South)



PLAN

DESIGN SPECIFICATION

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

NOTES:

1. All stations are to the ℄ I-90/94 NB Roadway and taken from existing plans.
2. No future wearing surface is allowed.

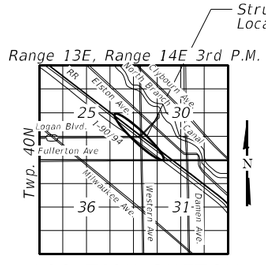
STATE OF ILLINOIS
MOUSSA A. ISSA
081-005738
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Moussa A. Issa

Dr. Moussa. Issa, S.E. Il. Lic. No. 081-005738
Expires 11-30-2024

Date 04/29/2024

For Sheets S09-01 thru S09-08



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
NB I-90/94 OVER AIR
F.A.I. ROUTE 90/94
SECTION 2020-005-BR
COOK COUNTY
STATION 283+18.40
S.N. 016-2654 (NB)

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STRUCTURE NO. 016-2654 (NB)

SHEET S09-01 OF S09-08 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	654
		CONTRACT NO. 62K73		
		ILLINOIS	FED. AID PROJECT	

GENERAL NOTES

1. Plan dimensions and details relative to the existing structure have been taken from existing plans and 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. Protective Coat shall be applied to the top and inside faces of parapets and top of Latex Concrete Overlay.

3. The Contractor shall exercise extreme caution during removal and construction operations to avoid damaging the existing utilities. Any damage to the existing utilities caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, at no cost to the Department.

4. Adjacent I-90/94 reversible bridge is not shown throughout the plans for clarity.

5. The contractor can access the interior of the vault via a bolted hatch located in the reversible lanes during the restricted hours noted in the Keeping the Expressway Open to Traffic special provision. The hatch should be re-bolted shut prior to opening to traffic.

6. Appropriate safety precautions should be taken when working in the confined space inside the vault.

7. The Contractor is responsible to remove, support and reinstall all electrical conduits interfering with the work. See special provision "Protection and Maintenance of Existing Underpass Luminaires".

8. For NB Western Ave (S.N. 016-0128) adjacent bridge, see Sheets S08-01 thru S08-24.

9. For NB Logan Blvd. (S.N. 016-0127) adjacent bridge, see Sheets S10-01 thru S10-21.

INDEX OF SHEETS

SCOPE OF WORK

1. Scarify ¾" from the bridge deck slab.
2. Perform Deck Slab Repairs as required.
3. Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck.
4. Perform ¼" Diamond Grinding to top of bridge deck.
5. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
6. Apply protective coat to the top and inside faces of parapets and top of Latex Concrete Overlay.
7. Perform Structural Repair of Concrete to the Abutments and Piers as noted on the plans.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Coat	Sq Yd	557	-	557
Preformed Joint Seal 2 1/2"	Foot	125	-	125
Bridge Deck Grooving (Longitudinal)	Sq Yd	444	-	444
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	487	-	487
Bridge Deck Scarification 3/4"	Sq Yd	487	-	487
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	-	47	47
Deck Slab Repair (Full Depth, Type I)	Sq Yd	2	-	2
Deck Slab Repair (Full Depth, Type II)	Sq Yd	10	-	10
Diamond Grinding (Bridge Section)	Sq Yd	487	-	487

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GENERAL NOTES, INDEX OF SHEETS & TBOM
STRUCTURE NO. 016-2654 (NB)
SHEET S09-02 OF S09-08 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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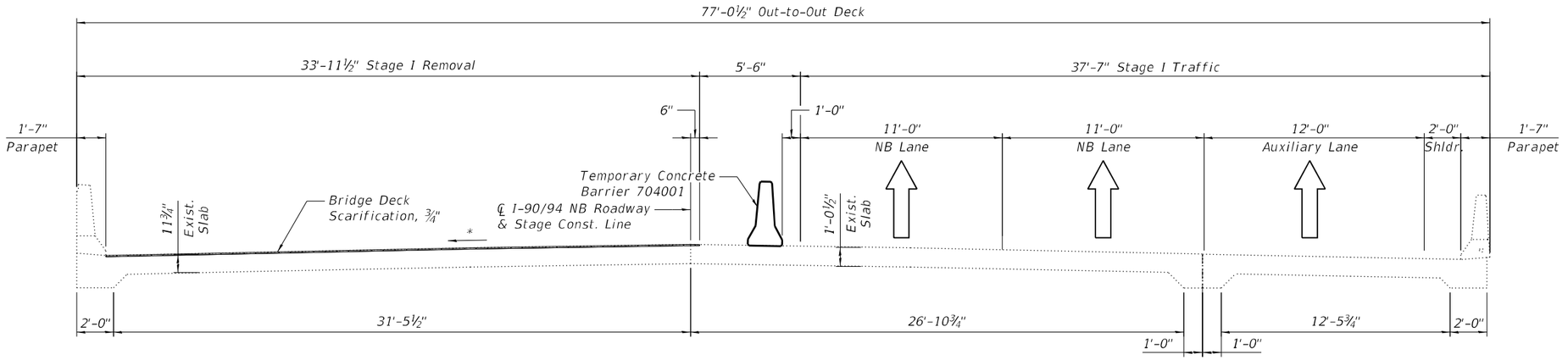
		CONTRACT NO. 62K73		
		ILLINOIS	FED. AID PROJECT	

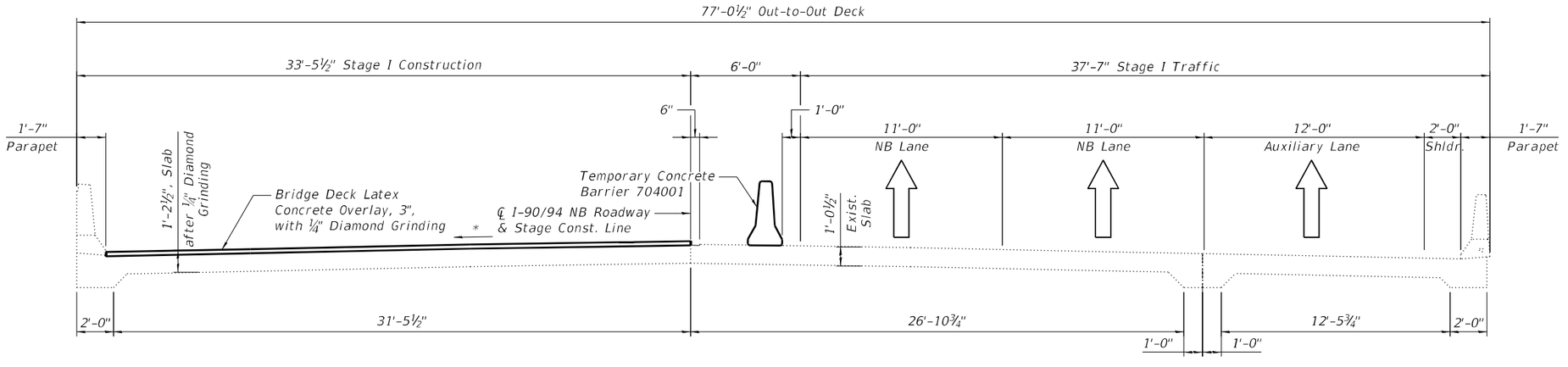


STAGE I REMOVAL

(Looking North)

STAGE I REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the right side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove existing longitudinal preformed joint seal between north parapet and reversible lane parapet.



STAGE I CONSTRUCTION

(Looking North)

STAGE I CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Perform Structural Repair of Concrete for beams.
3. Apply 3" Bridge Deck Latex Concrete Overlay.
4. Perform ¼" Diamond Grinding to bridge deck.
5. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay.
6. Apply Protective Coat to top and inside faces of west parapet and to the surfaces of the new overlay.

   Replace existing longitudinal preformed joint seal between north parapet and reversible lane parapet.

*Match Existing Cross-Slopes

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STAGE CONSTRUCTION (SHEET 1 OF 2)
STRUCTURE NO. 016-2654 (NB)
SHEET S09-03 OF S09-08 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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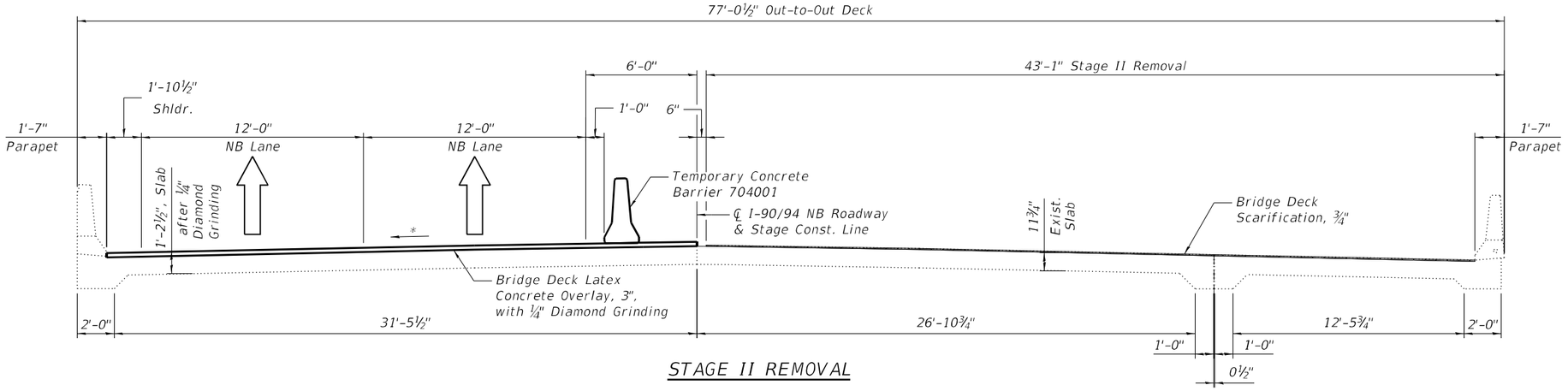
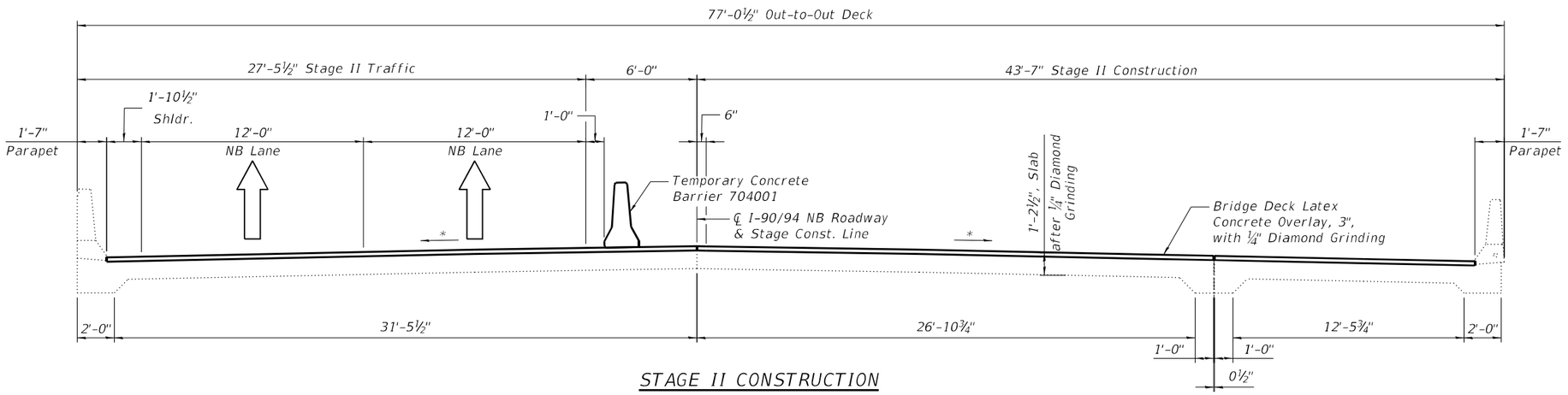
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



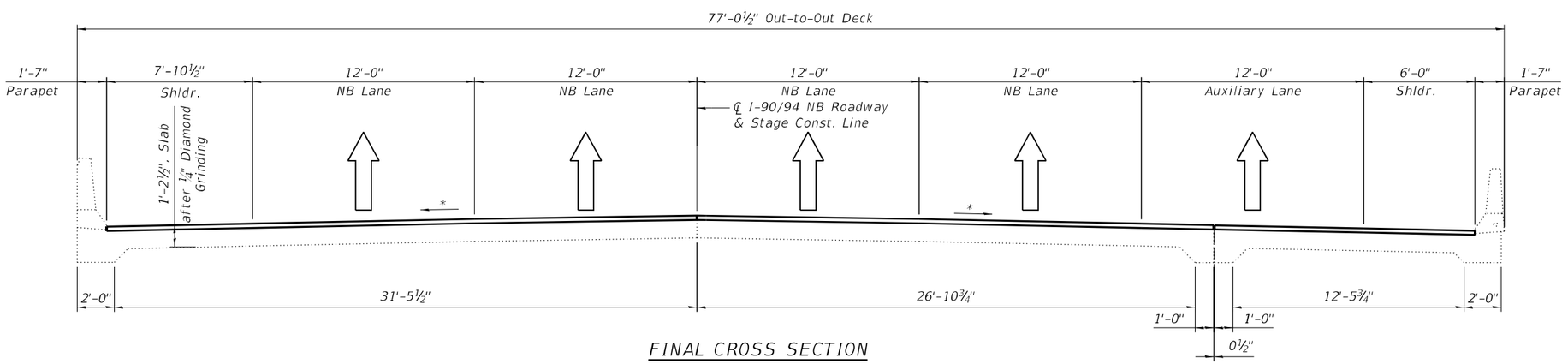
STAGE II REMOVAL

(Looking North)



STAGE II CONSTRUCTION

(Looking North)



FINAL CROSS SECTION

(Looking North)

STAGE II REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the left side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.

STAGE II CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Perform structural repair of concrete for beams.
3. Apply 3" Bridge Deck Latex Concrete Overlay.
4. Perform ¼" Diamond Grinding to bridge deck.
5. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay.
6. Apply protective coat to top and inside faces of east parapet and to the surfaces of the new overlay.

*Match Existing Cross-Slopes

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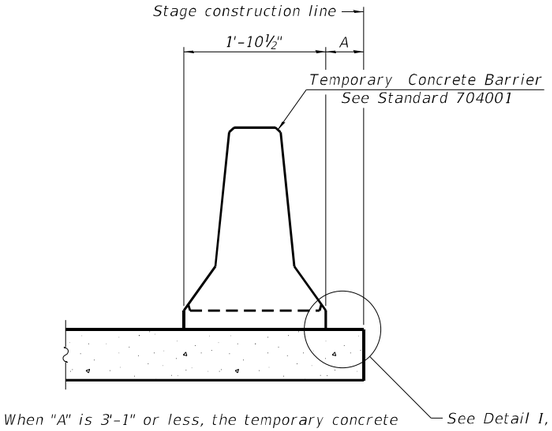
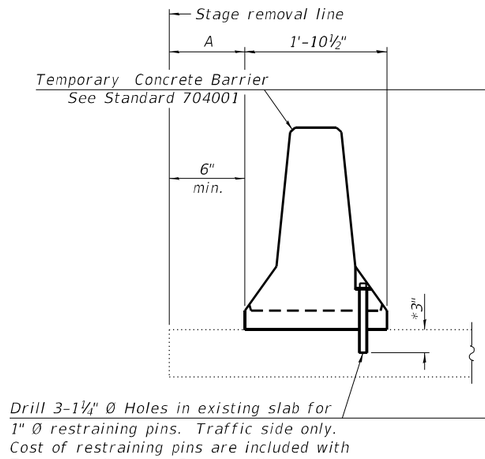
STAGE CONSTRUCTION (SHEET 2 OF 2)
STRUCTURE NO. 016-2654 (NB)
SHEET S09-04 OF S09-08 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	657
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



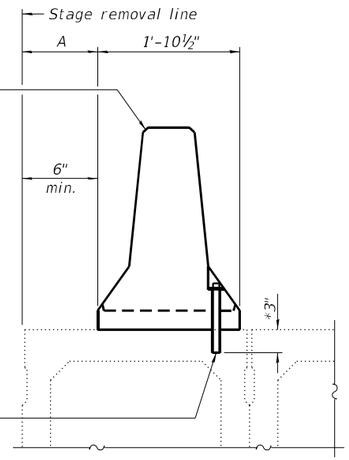
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

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".

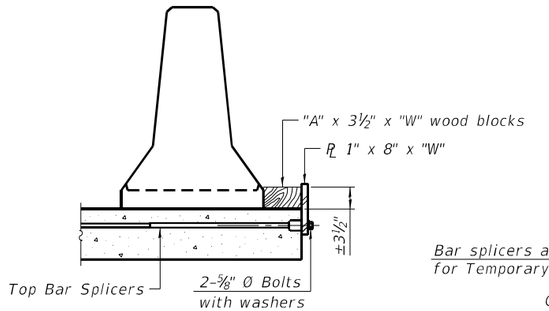
EXISTING SLAB



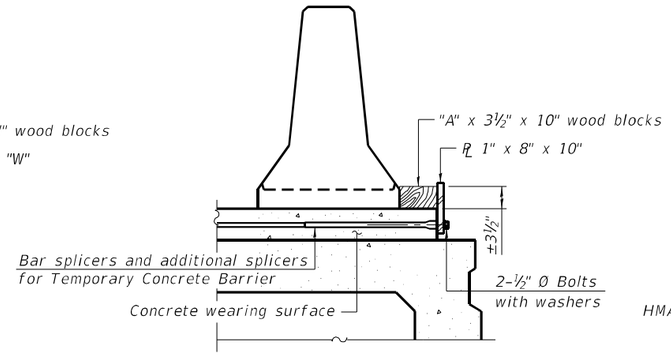
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

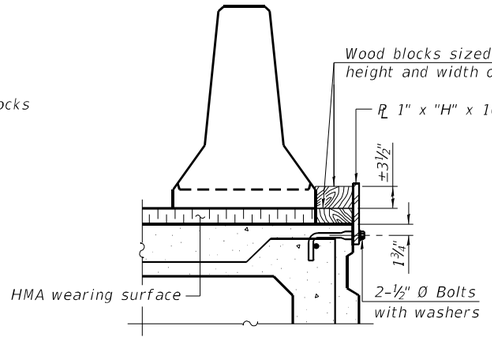
SECTIONS THRU SLAB OR DECK BEAM



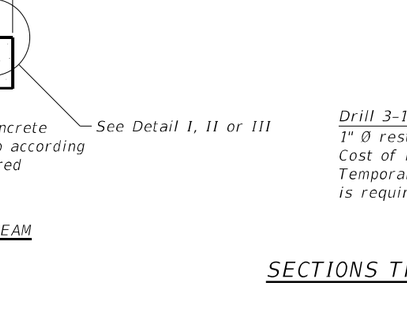
DETAIL I



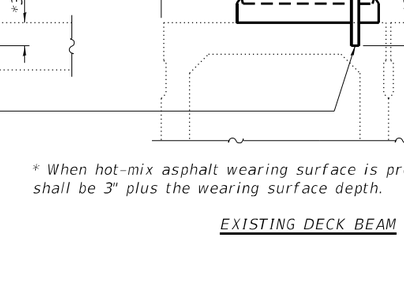
DETAIL II



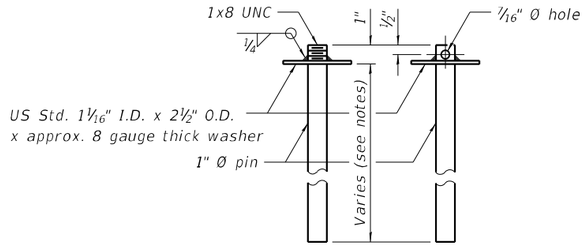
DETAIL III



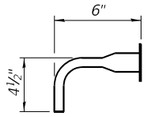
STEEL RETAINER ℄ 1" x 8" x "W"
(Detail I and II)



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



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

A retainer assembly shall be located at the approximate ℄ 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

10-12-2021

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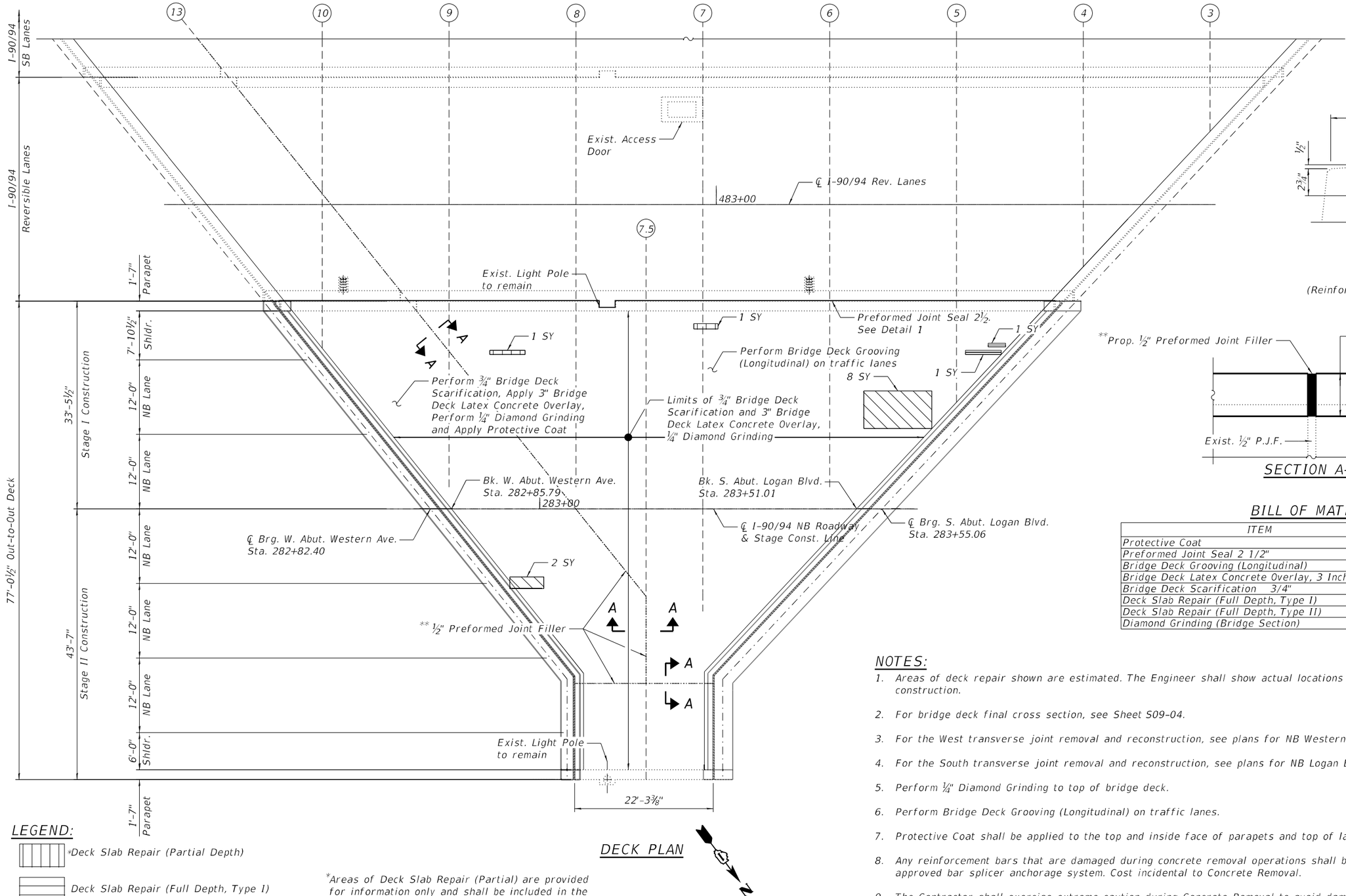
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

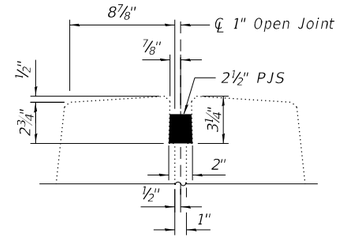
TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 016-2654 (NB)

SHEET S09-05 OF S09-08 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	658
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			



DECK PLAN



DETAIL 1

(Reinforcement not shown for clarity)

SECTION A-A

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Protective Coat	Sq Yd	557
Preformed Joint Seal 2 1/2"	Foot	125
Bridge Deck Grooving (Longitudinal)	Sq Yd	444
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	487
Bridge Deck Scarification 3/4"	Sq Yd	487
Deck Slab Repair (Full Depth, Type I)	Sq Yd	2
Deck Slab Repair (Full Depth, Type II)	Sq Yd	10
Diamond Grinding (Bridge Section)	Sq Yd	487

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 S09-04.
3. For the West transverse joint removal and reconstruction, see plans for NB Western Ave. (S.N. 016-0128).
4. For the South transverse joint removal and reconstruction, see plans for NB Logan Blvd. (S.N. 016-0127).
5. Perform ¼" Diamond Grinding to top of bridge deck.
6. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
7. Protective Coat shall be applied to the top and inside face of parapets and top of latex concrete overlay.
8. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer anchorage system. Cost incidental to Concrete Removal.
9. The Contractor shall exercise extreme caution during Concrete Removal to avoid damaging the concrete beams to remain. Any damage to the existing concrete beams 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.
10. Removal of the existing preformed joint seal is included in the cost of Preformed Joint Seal 2½".

LEGEND:

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

SY Square Yard

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

** 1/2" Preformed Joint Filler shall be included in the cost of "Bridge Deck Latex Concrete Overlay, 3".

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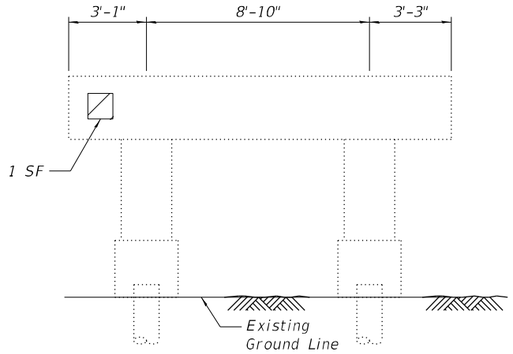
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REPAIR PLAN
STRUCTURE NO. 016-2654 (NB)
SHEET S09-06 OF S09-08 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	659
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

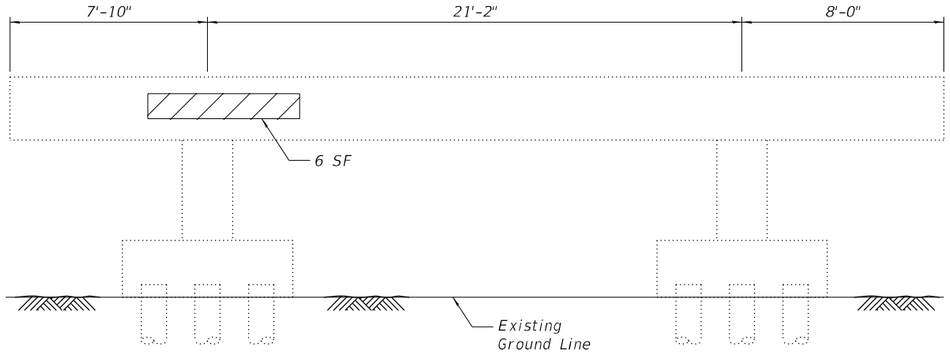
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	29



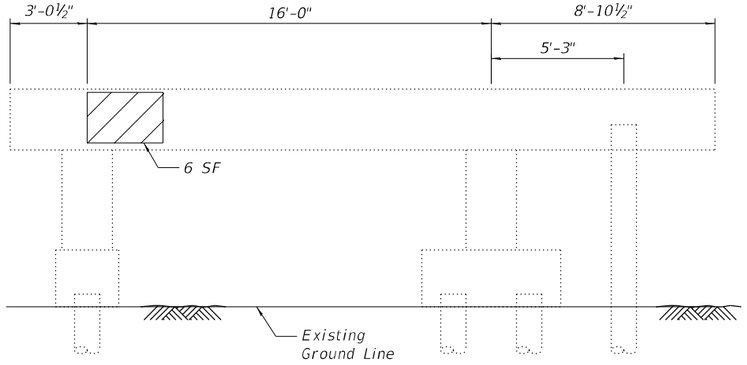
BENT 5 ELEVATION

Looking North



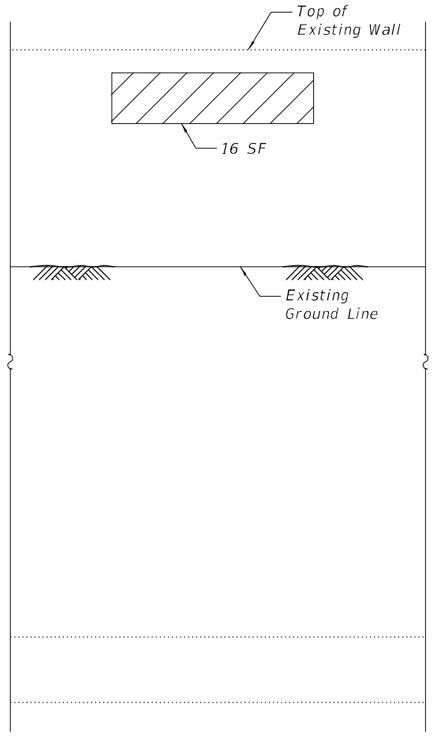
BENT 6 ELEVATION

Looking South



BENT 7.5 ELEVATION

Looking North



EXISTING NORTH WALL ELEVATION

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 inches)
SF	Square Foot

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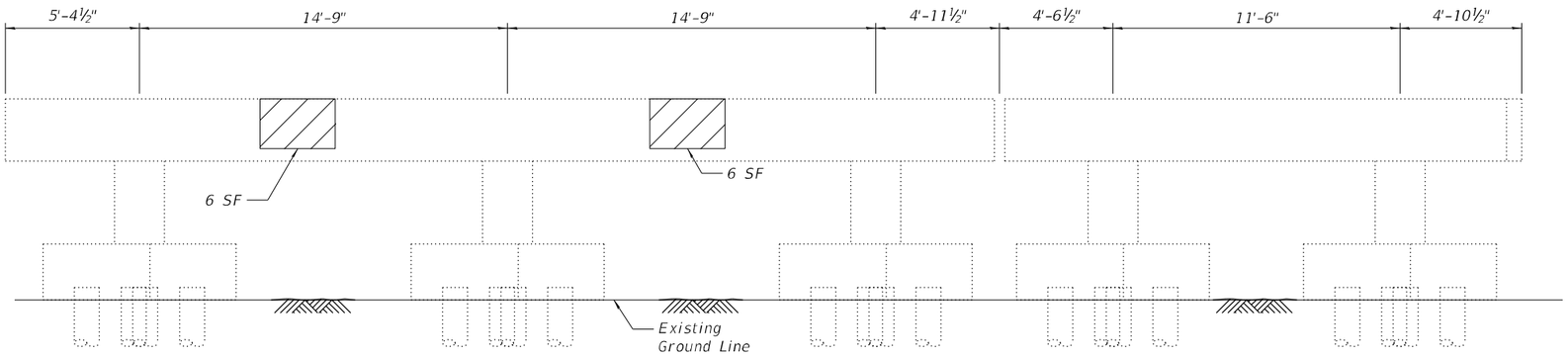
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BENT REPAIR ELEVATIONS (SHEET 1 OF 2)
STRUCTURE NO. 016-2654 (NB)
SHEET S09-07 OF S09-08 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	660
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

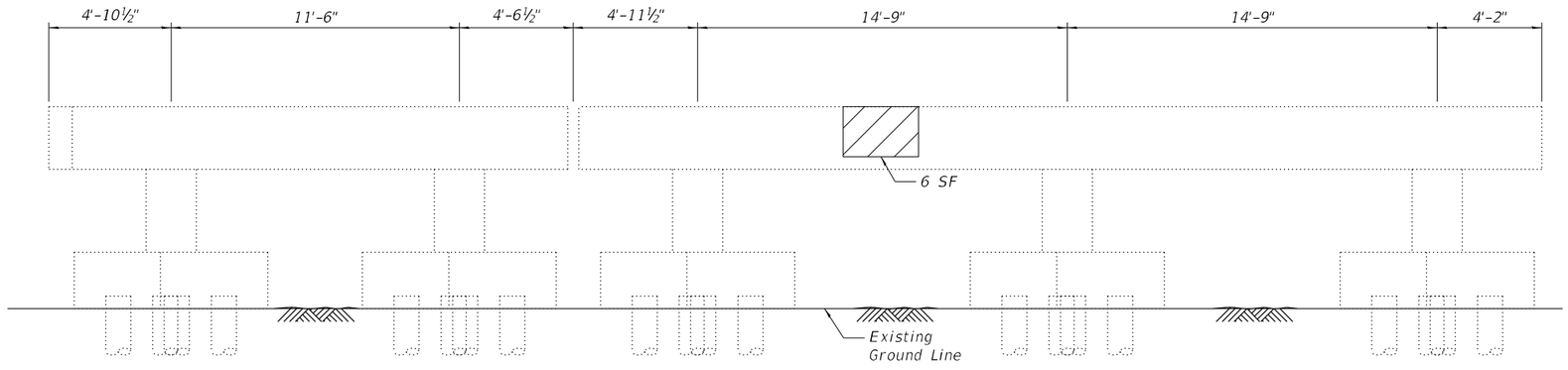
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft	18



BENT 13 ELEVATION

Looking West



BENT 13 ELEVATION

Looking East

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 inches)
SF	Square Foot

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

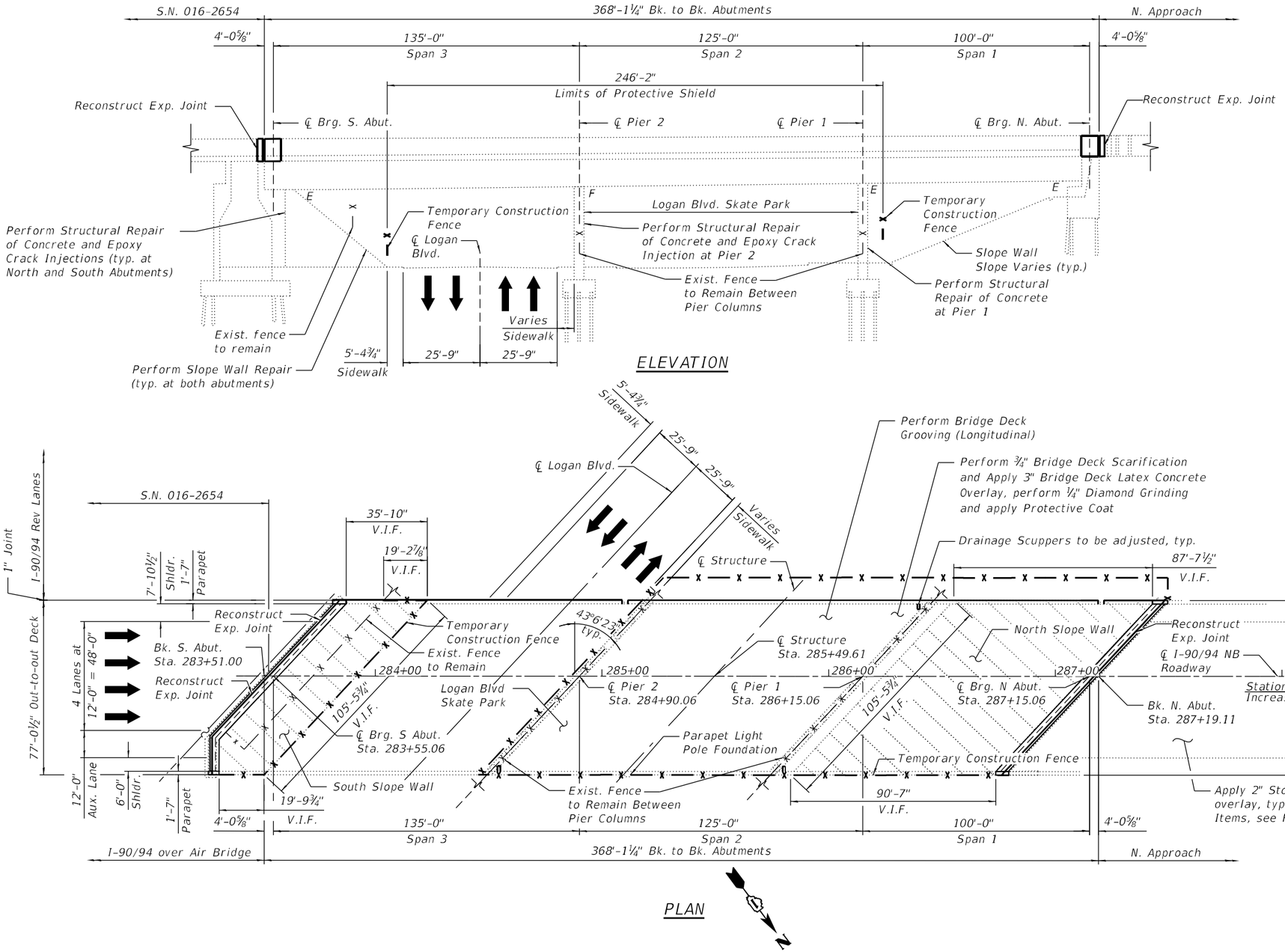
BENT REPAIR ELEVATIONS (SHEET 2 OF 2)
STRUCTURE NO. 016-2654 (NB)
SHEET S09-08 OF S09-08 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	661
		CONTRACT NO. 62K73		
	ILLINOIS FED. AID PROJECT			

Existing Structure: The existing Structure No. 016-0127, I-90 over Logan Blvd., was built in 1957 under Project I-02-2(25), Section 0707-404-HB. In 1964, the concrete deck was repaired under contract 23742. In 1990, the northwestbound (NWB) and southeastbound (SEB) substructure was repaired and widened per Contract 80159. The superstructure was widened with temporary decking under contract 80779. In 1992 and 1993, both the SEB and NWB deck were removed and replaced with a composite concrete deck under Contract 82107 and 82137, respectively. In 2013, portions of the joints were removed and replaced with a silicone joint sealer under 60V58. The structure is a 3-span, continuous steel stringer/multi-beam bridge with a 7½" concrete deck, 77'-0½" out to out of structure, and 368'-1¼" back to back of abutments.

Traffic will be maintained utilizing staged construction.

No salvage.



PLAN

NOTE:

1. All stations are to ℄ I-90/94 NB Roadway and taken from existing plans.

LOADING

No Future Wearing Surface Allowed.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

RECONSTRUCTION 2013

2002 AASHTO Standard Specifications for Highway Bridges

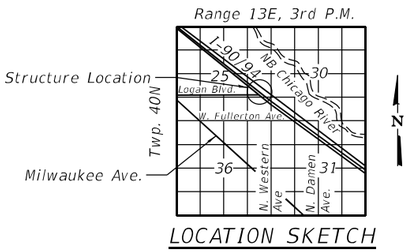
RECONSTRUCTION 1993

1989 AASHTO Standard Specifications for Highway Bridges with 1990 & 1991 Interim Specifications

STATE OF ILLINOIS
MAEN A. FARHAT
081.008545
LICENSED STRUCTURAL ENGINEER

Signed: _____
Date Signed: 04/29/2024

MAEN A. FARHAT, SE
IL Lic. No.: 081-008545
Expires: 11/30/2024



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
NB I-90/94 OVER LOGAN BOULEVARD
F.A.I. ROUTE 90/94
SECTION 2020-005-BR
COOK COUNTY
STATION: 285+49.61
S.N. 016-0127 (NB)

USER NAME =	DESIGNED - PV	REVISED -	
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PLOT DATE =	CHECKED - MAF	REVISED -	

Accurate GROUP, INC.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NUMBER 016-0127 (NB)
SHEET S10-01 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	662
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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GENERAL NOTES

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

2. 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.

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

4. All exposed concrete edges shall have a ¾"x45° chamfer, except where shown otherwise.

5. 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.

6. For SMA overlay on Approach slab, see Roadway plans.

7. Protective Coat shall be applied to the top and inside face of parapets, reconstructed transverse Expansion Joints and to the surface of the new Latex Concrete Overlay.

8. 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.

9. Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Deck slab repairs, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that can not be removed by grinding ¼ in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

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

11. Adjacent I-90/94 reversible bridge is not shown throughout the plans for clarity.

12. 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.

13. 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".

14. 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.

15. The Contractor is responsible to protect the existing conduits embedded in the parapet and junction boxes during concrete removal and construction. Any damage to the existing conduits or junction boxes shall be repaired by the Contractor at no additional cost to the Department.

16. 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.

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

18. The contractor shall contact Chandra Libby, the Director of City of Chicago Department of Family Support Services (DFSS) at 312-746-5443 or Chandra.Libby@cityofchicago.org to coordinate the relocation of persons and their personal belongings under the bridges within the areas bounded by temporary chain-link-fence.

19. The intent of Temporary Construction Fence is to deny access of any unauthorized personnel under the bridge during construction. Actual fence installations may vary from what is shown on the plans. All fence Installations must be approved by the engineer.

20. Concrete Sealer is to be applied to the abutment seats and the bottom 2 ft of the abutment backwall.

21. Concrete Sealer shall be applied to the designated areas of the abutments and piers.

22. 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.

INDEX OF SHEETS

SCOPE OF WORK

1. Provide Protective Shield within limits indicated on the plans.

2. Scarify ¾" from the bridge deck slab.

3. Perform Deck Slab Repairs and Adjust existing Scuppers as Required.

4. Remove and Reconstruct Expansion joints at North and South abutments and install new Preformed Joint Strip Seals.

5. Apply 3" Bridge Deck Latex Concrete Overlay on Bridge Deck.

6. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatched block.

7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Pavement (See roadway plans).

8. Perform Bridge Deck Grooving (Longitudinal), on traffic lanes.

9. Apply Protective Coat to the top of reconstructed transverse joint areas, top and inside faces of parapets, and top of Latex Concrete Overlay.

10. Perform structural concrete repairs to abutments and piers, as noted on plans.

11. Perform Slope Wall repairs.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd	-	5	5
Concrete Removal	Cu Yd	46.9	-	46.9
Slope Wall Removal	Sq Yd	-	14	14
Protective Shield	Sq Yd	-	1,954	1,954
Concrete Superstructure	Cu Yd	52.6	-	52.6
Protective Coat	Sq Yd	3,334	-	3,334
Reinforcement Bars, Epoxy Coated	Pound	5,500	-	5,500
Bar Splicers	Each	34	-	34
Slope Wall 4 Inch	Sq Yd	-	14	14
Preformed Joint Seal, 2½"	Foot	369	-	369
Preformed Joint Strip Seal	Foot	201	-	201
Concrete Sealer	Sq Ft	-	1,086	1,086
Epoxy Crack Injection	Foot	-	46	46
Slope Wall Crack Sealing	Foot	-	134	134
Bridge Deck Grooving (Longitudinal)	Sq Yd	2,369	-	2,369
Protect and Maintain Existing Underpass Luminaire	L Sum	-	0.04	0.04
Approach Slab Repair (Full Depth)	Sq Yd	21	-	21
Approach Slab Repair (Partial Depth)	Sq Yd	21	-	21
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	2,911	-	2,911
Cleaning Drainage System	L Sum	-	0.094	0.094
Bridge Deck Scarification ¾"	Sq Yd	2,911	-	2,911
Structural Repair of Concrete (Depth Equal to or less than 5")	Sq Ft	-	210	210
Structural Repair of Concrete (Depth Greater Than 5")	Sq Ft	-	19	19
Deck Slab Repair (Full Depth, Type II)	Sq Yd	4.8	-	4.8
Drainage Scuppers to be Adjusted	Each	3	-	3
Diamond Grinding (Bridge Section)	Sq Yd	2,833	-	2,833
Temporary Construction Fence	Foot	-	730	730
Locks for Gates	Each	-	7	7

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PLOT DATE =	CHECKED - MAF	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, INDEX OF SHEETS & TBOM
STRUCTURE NUMBER 016-0127 (NB)
SHEET S10-02 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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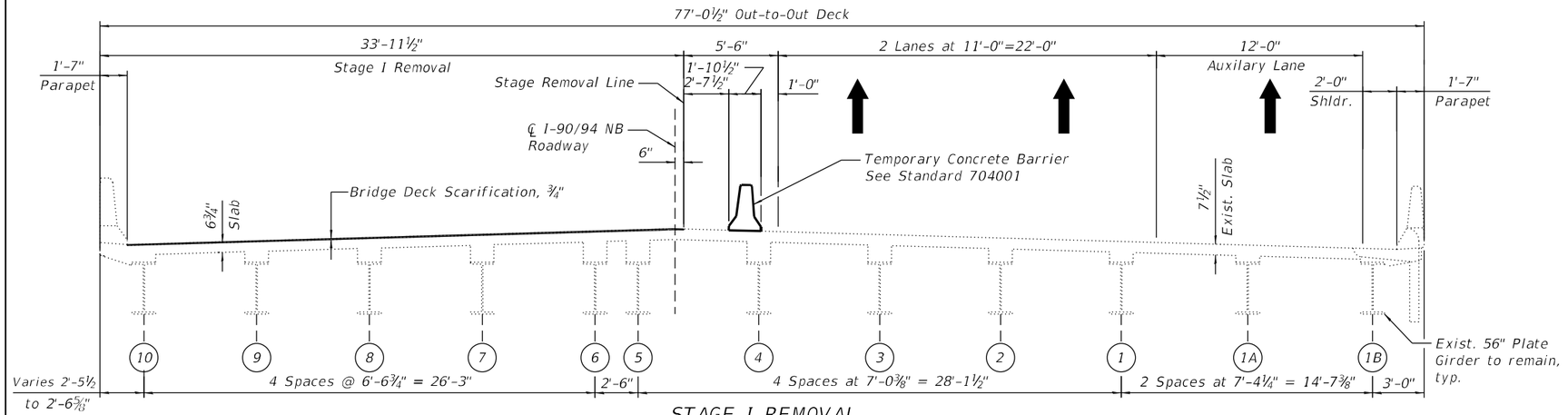
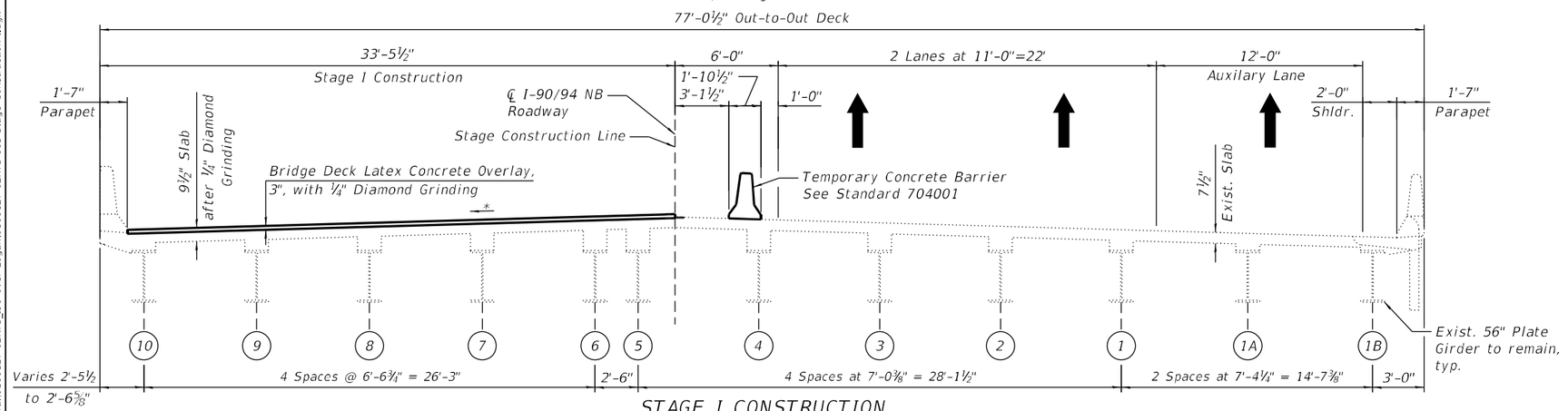
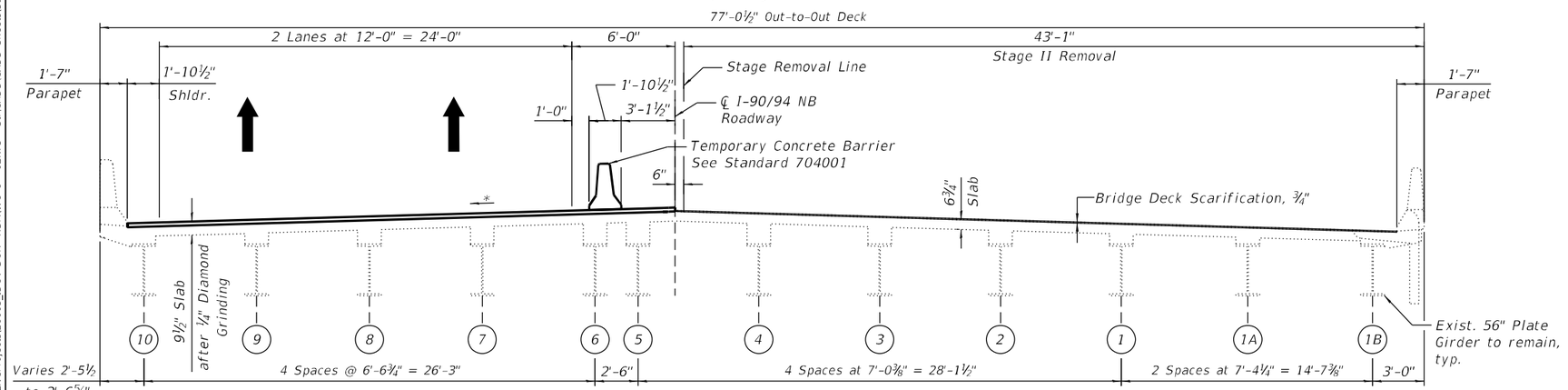
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		



STAGE I REMOVAL
(Looking West)



STAGE I CONSTRUCTION
(Looking West)



STAGE II REMOVAL
(Looking West)

STAGE I REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the east side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge concrete deck/approach slab adjacent to expansion joints at the North and South Abutments.
5. Remove existing preformed joint seal between northbound and reversible lanes parapets.

STAGE I CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct transverse expansion joints and install new Preformed Joint Strip Seals within the limits of Stage I Construction.
3. Perform structural repair of concrete and epoxy crack injection for the abutments and piers.
4. Apply 3" bridge deck latex concrete overlay.
5. Perform ¼" Diamond Grinding to bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay, reconstructed abutment expansion joint areas and adjust drainage scuppers.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach pavement and taper into existing roadway. See Roadway Plans.
8. Install new preformed joint seal between northbound and reversible lanes parapets.
9. Apply protective coat to top and inside faces of west parapet, reconstructed transverse expansion joints and to the surfaces of the new overlay.
10. Perform slope wall repairs as shown on the plans.

STAGE II REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the east side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge concrete deck/approach slab adjacent to expansion joints at the North and South Abutments.

*Match existing cross slopes

Accurate GROUP, INC.	USER NAME =	DESIGNED - IH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION (SHEET 1 OF 2) STRUCTURE NUMBER 016-0127 (NB)
		CHECKED - MAF	REVISED -		
	PLOT SCALE =	DRAWN - IH	REVISED -		SHEET S10-03 OF S10-21 SHEETS
	PLOT DATE =	CHECKED - MAF	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO.		62K73
		ILLINOIS	FED. AID PROJECT	

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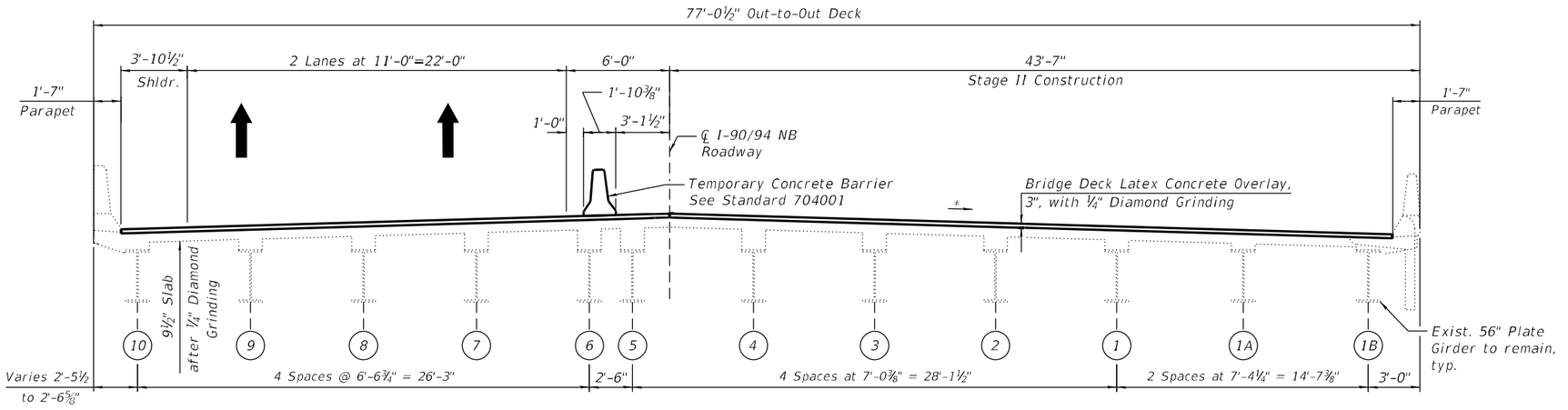
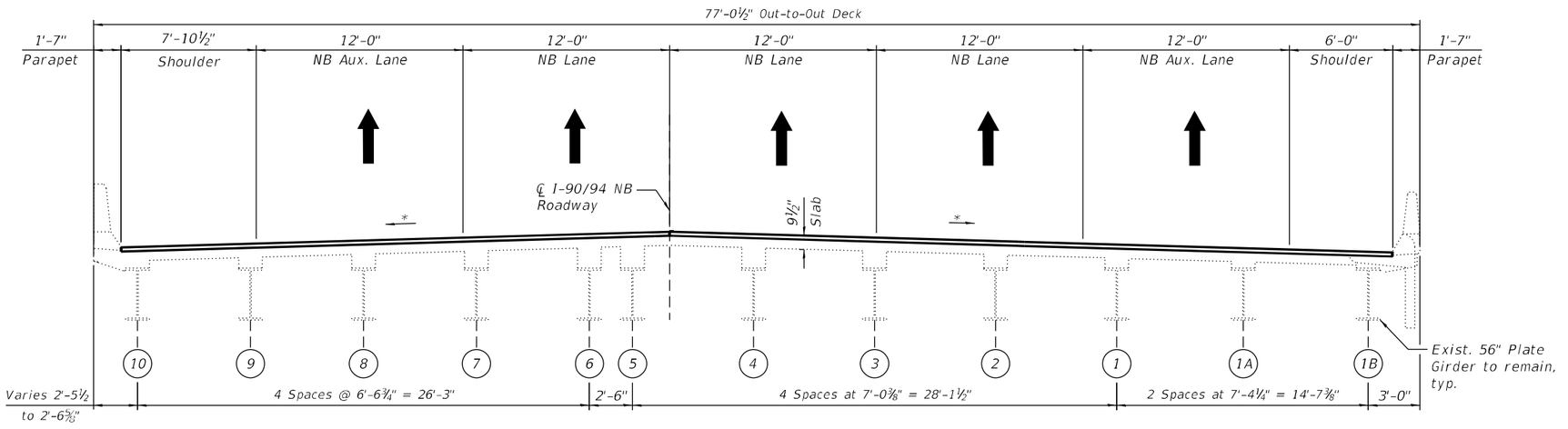


STAGE II CONSTRUCTION

(Looking West)



FINAL CROSS SECTION

(Looking West)

STAGE II CONSTRUCTION

1. Perform bridge deck slab repairs and Adjust Existing Drainage Scuppers as needed.
2. Reconstruct expansion joints and install new Preformed Joint Strip Seals within the limits of Stage II Construction.
3. Perform structural repair of concrete and epoxy crack injection for the abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay.
5. Perform ¼" Diamond Grinding to bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay, reconstructed abutment expansion joint areas and adjust drainage scuppers.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach pavement and taper into existing roadway. See Roadway Plans.
8. Apply protective coat to top and inside faces of east parapet, reconstructed abutment expansion joints areas, and to the surfaces of the new overlay.
9. Perform slope wall repairs as shown on the plans.

*Match Existing Cross-slopes

MODEL: Default
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION (SHEET 2 OF 2)
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-04 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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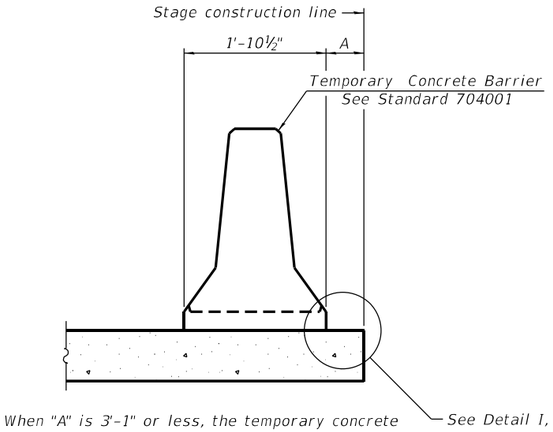
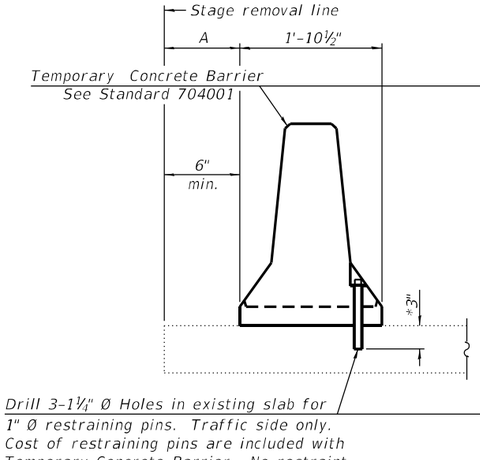
		CONTRACT NO.		62K73
		ILLINOIS	FED. AID PROJECT	



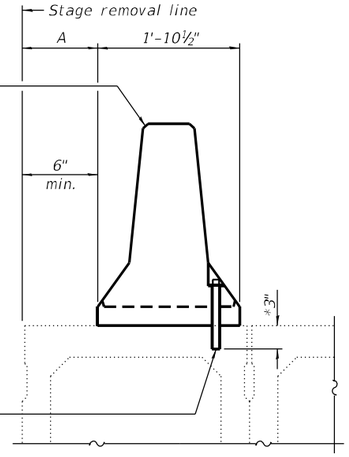
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

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".

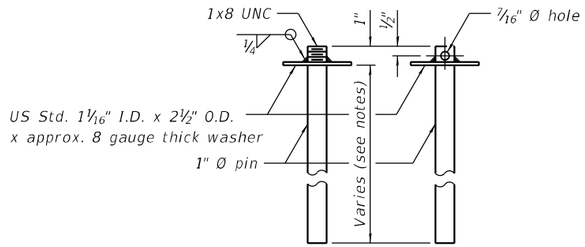
EXISTING SLAB



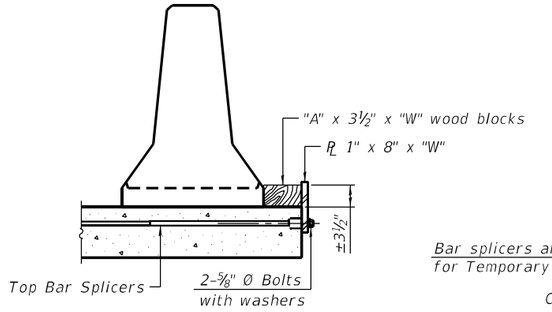
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

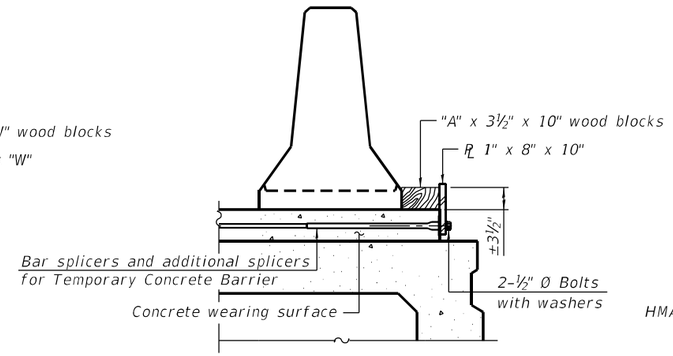
SECTIONS THRU SLAB OR DECK BEAM



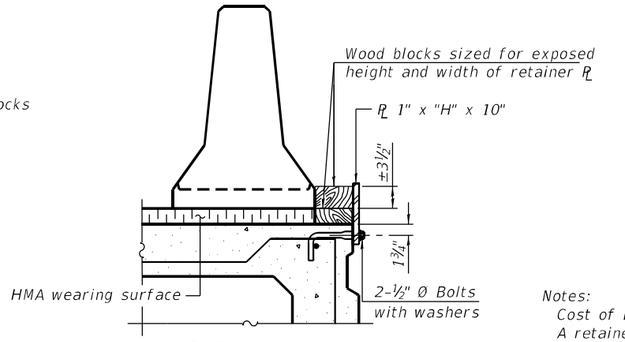
RESTRAINING PIN



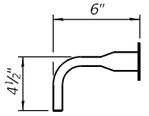
DETAIL I



DETAIL II



DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

A retainer assembly shall be located at the approximate ℄ of each temporary concrete barrier.

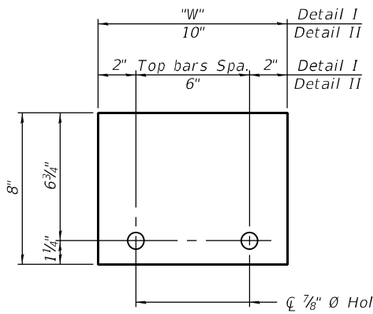
The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.

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.

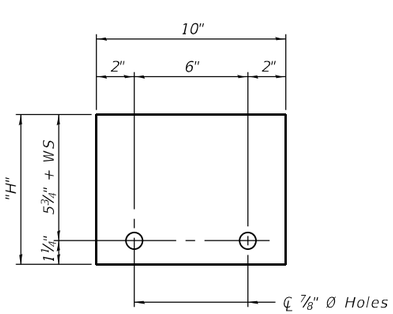
Detail I - Installation for a new bridge deck or bridge slab.

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.



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



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

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27

10-12-2021

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-05 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	666
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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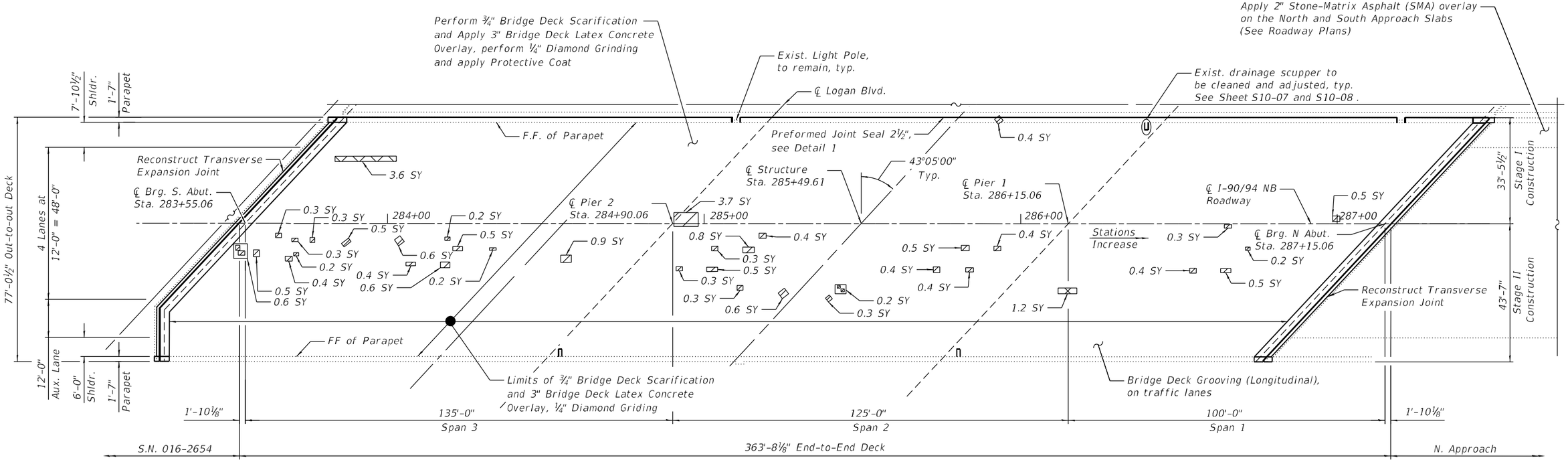


DECK PLAN

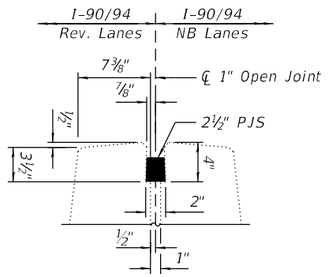
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Coat	Sq Yd	3,241
Preformed Joint Seal, 2½"	Foot	369
Bridge Deck Grooving (Longitudinal)	Sq Yd	2,369
Approach Slab Repair (Full Depth)	Sq Yd	21
Approach Slab Repair (Partial Depth)	Sq Yd	21
Bridge Deck Latex Concrete Overlay, 3" Inches	Sq Yd	2,911
Bridge Deck Scarification ¾"	Sq Yd	2,911
Deck Slab Repair (Full Depth, Type II)	Sq Yd	4.8
Diamond Grinding (Bridge Section)	Sq Yd	2,833

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

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 S10-04.
3. For South and North transverse joint removal and reconstruction, see Sheets S10-09 thru S10-14.
4. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
5. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatched area.
6. Protective Coat shall be applied to top and inside face of parapets, median, the reconstructed transverse expansion joint areas and top of Latex Concrete Overlay.
7. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.
8. The Contractor shall exercise extreme caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.
9. Approach Slab Repair (Full Depth) and Approach Slab Repair (Partial Depth) quantities have been estimated (based on a nominal 3% of bridge approach area) 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.



DETAIL 1

(Reinforcement not shown for clarity)

LEGEND

*Deck Slab Repair (Partial Depth)

Deck Slab Repair (Full Depth, Type II)

SY Square Yard

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		CHECKED - MAF	REVISED -		SHEET S10-06 OF S10-21 SHEETS
	PLOT SCALE =	DRAWN - PV	REVISED -		
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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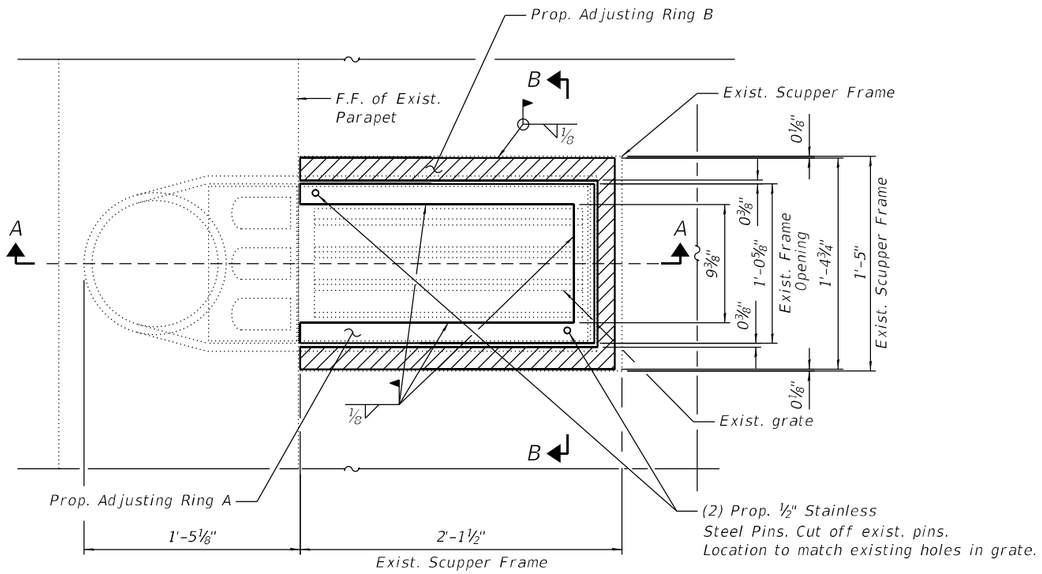
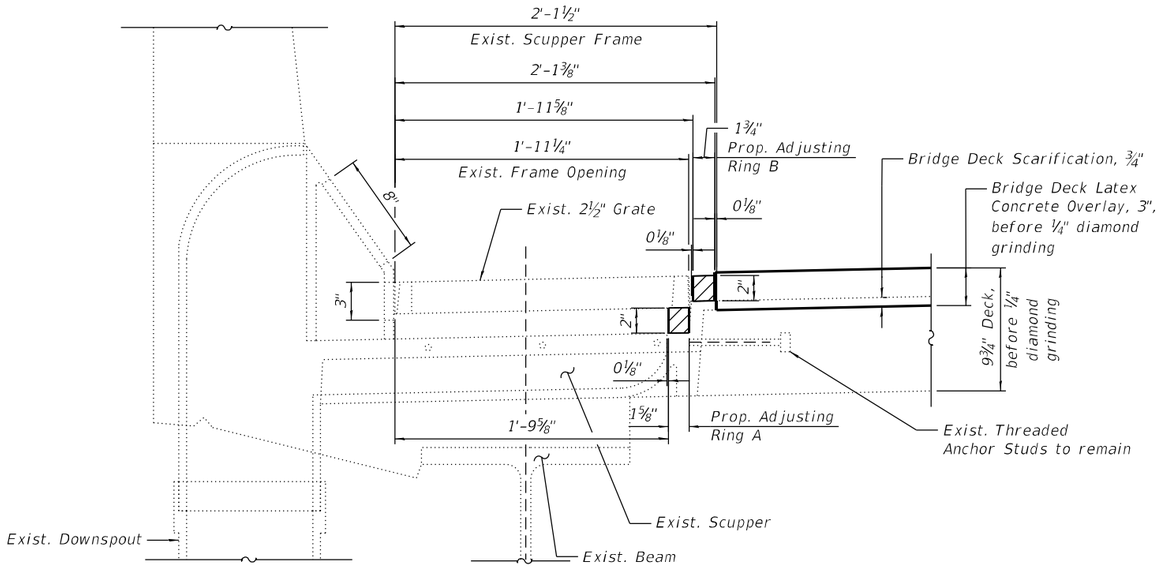
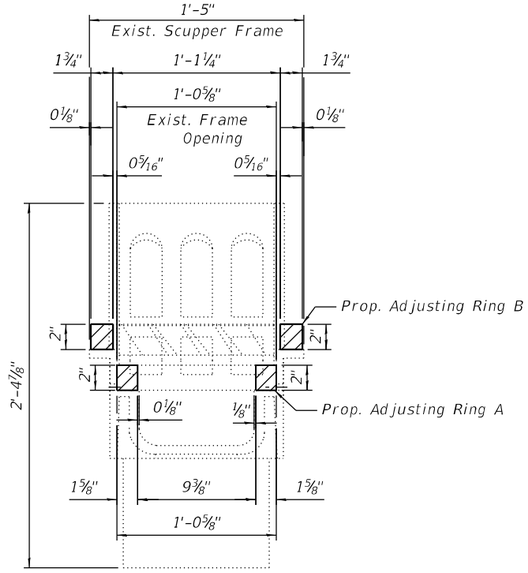


TYPICAL SCUPPER TYPE A PLAN

(2 Location at Exterior Parapet)



SECTION A-A



SECTION B-B

NOTES

1. The Contractor shall field verify Existing Dimensions and Details of the Existing Scuppers and make necessary adjustments prior to construction of New Adjusting Rings or ordering of material for Adjusting Drainage Scuppers.
2. All Cast Iron Parts shall be Grey Iron conforming to the requirements of AASHTO M 105, Class 35B.
3. Cast Iron Parts shall be unfinished.
4. The Contractor shall take appropriate measures to ensure that Protective Coat is not applied to the scuppers.
5. Adjusting Rings shall be from Neenah or approved equal. Structural steel weldments or equal section and of the same configuration may be submitted in place of Cast Iron. Fillet or full penetration welds may be used for weldments. Details shall be submitted to the Engineer for approval.
6. Provide a 1/8" Fillet Weld around perimeter of new Adjusting Rings to secure to existing Scupper.
7. Cost of all labor and materials necessary to clean all existing floor drains and scuppers, install adjusting scupper rings, remove and reinstall grates is included in the cost for Drainage Scupper to be Adjusted.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers To Be Adjusted	Each	2

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DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER TYPE A ADJUSTMENT DETAILS
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-07 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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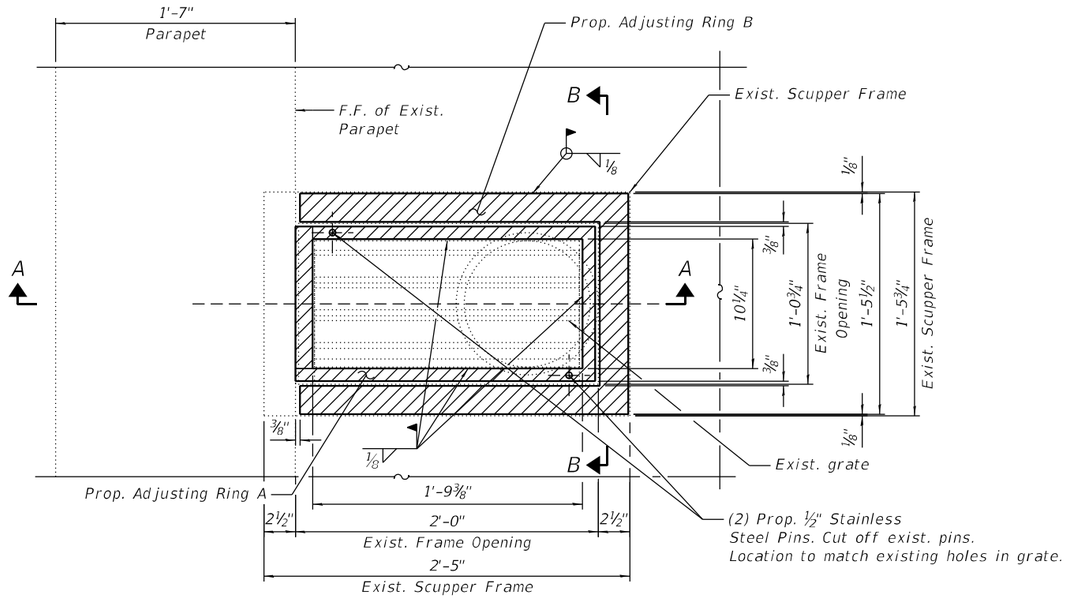
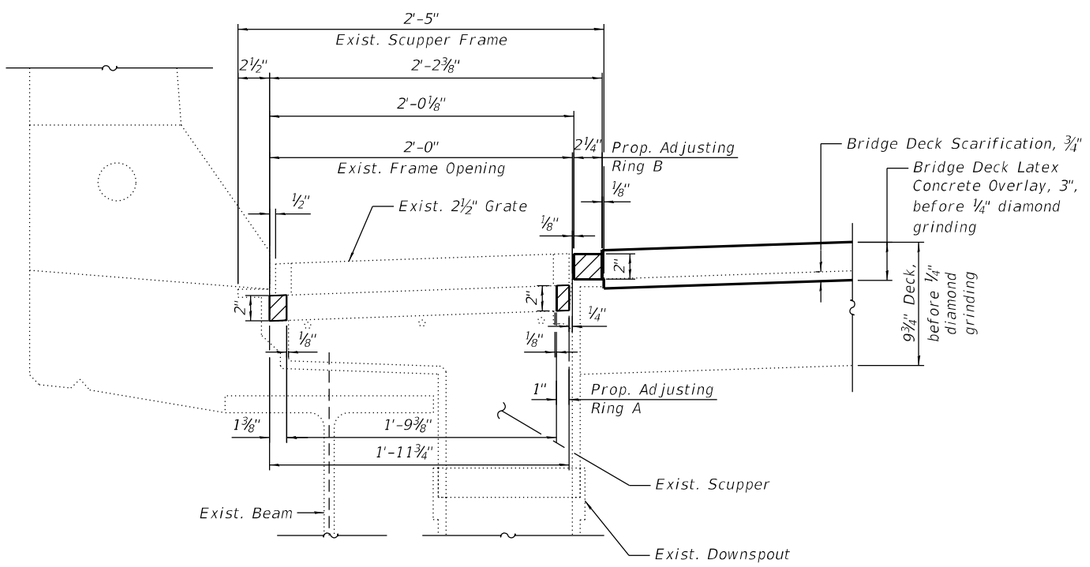
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

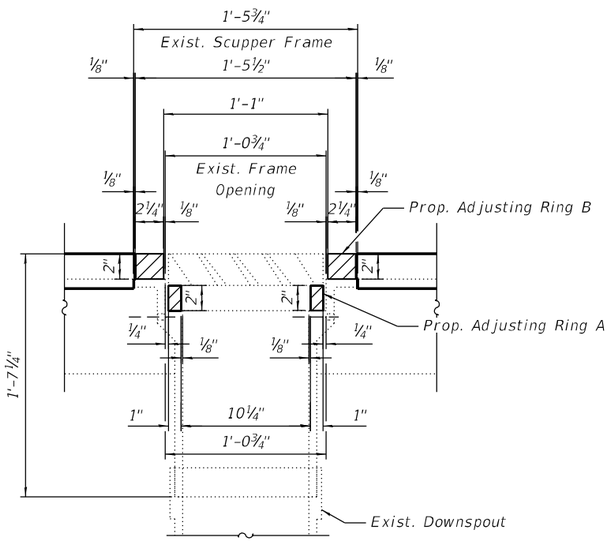


TYPICAL SCUPPER TYPE B PLAN

(1 Location at Interior Parapet)



SECTION A-A



SECTION B-B

NOTES

1. The Contractor shall field verify Existing Dimensions and Details of the Existing Scuppers and make necessary adjustments prior to construction of New Adjusting Rings or ordering of material for Adjusting Drainage Scuppers.
2. All Cast Iron Parts shall be Grey Iron conforming to the requirements of AASHTO M 105, Class 35B.
3. Cast Iron Parts shall be unfinished.
4. The Contractor shall take appropriate measures to ensure that Protective Coat is not applied to the scuppers.
5. Adjusting Rings shall be from Neenah or approved equal. Structural steel weldments or equal section and of the same configuration may be submitted in place of Cast Iron. Fillet or full penetration welds may be used for weldments. Details shall be submitted to the Engineer for approval.
6. Provide a 1/8" Fillet Weld around perimeter of new Adjusting Rings to secure to existing Scupper.
7. Cost of all labor and materials necessary to clean all existing floor drains and scuppers, install adjusting scupper rings, remove and reinstall grates is included in the cost for Drainage Scupper to be Adjusted.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers To Be Adjusted	Each	1

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER TYPE B ADJUSTMENT DETAILS
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-08 OF S10-21 SHEETS

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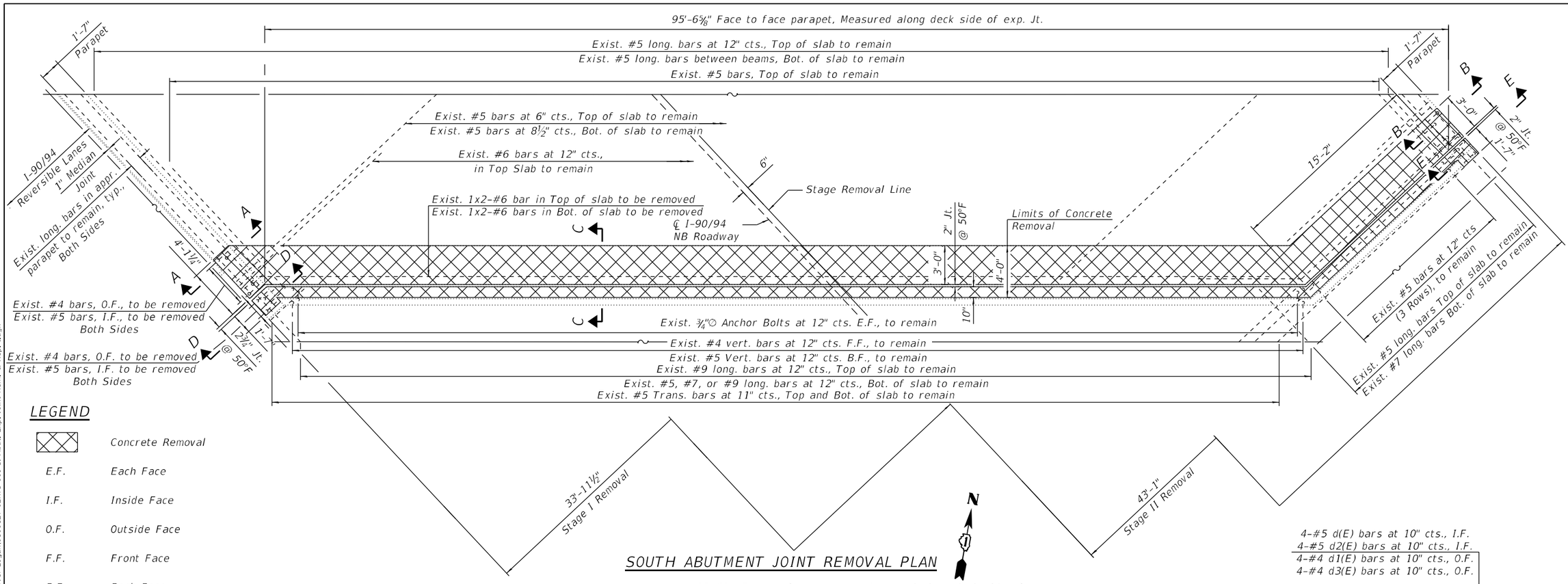
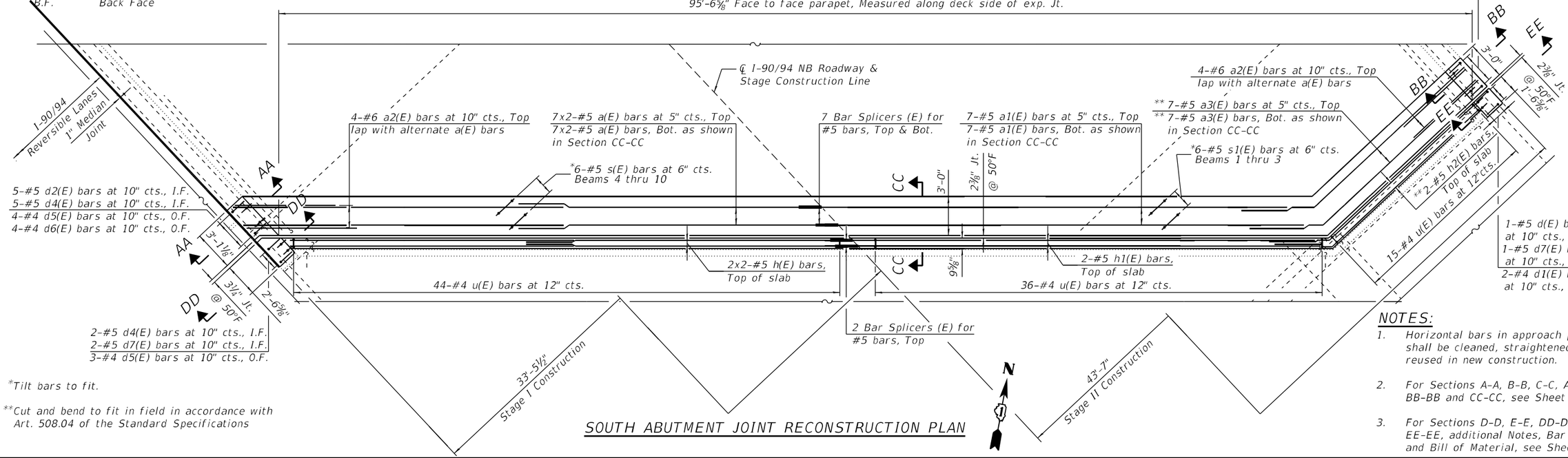
	ILLINOIS	FED. AID PROJECT		



SOUTH ABUTMENT JOINT REMOVAL PLAN

LEGEND

	Concrete Removal
E.F.	Each Face
I.F.	Inside Face
O.F.	Outside Face
F.F.	Front Face
B.F.	Back Face



SOUTH ABUTMENT JOINT RECONSTRUCTION PLAN

*Tilt bars to fit.

**Cut and bend to fit in field in accordance with Art. 508.04 of the Standard Specifications

NOTES:

1. Horizontal bars in approach parapets shall be cleaned, straightened, and reused in new construction.
2. For Sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see Sheet S10-10.
3. For Sections D-D, E-E, DD-DD and EE-EE, additional Notes, Bar diagrams and Bill of Material, see Sheet S10-11.

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S. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 1 OF 3)
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-09 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 62K73		
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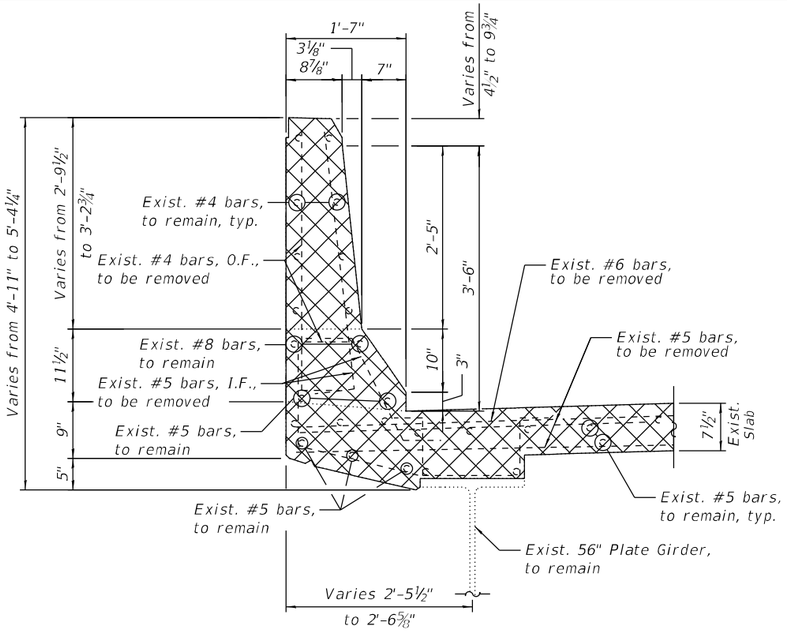
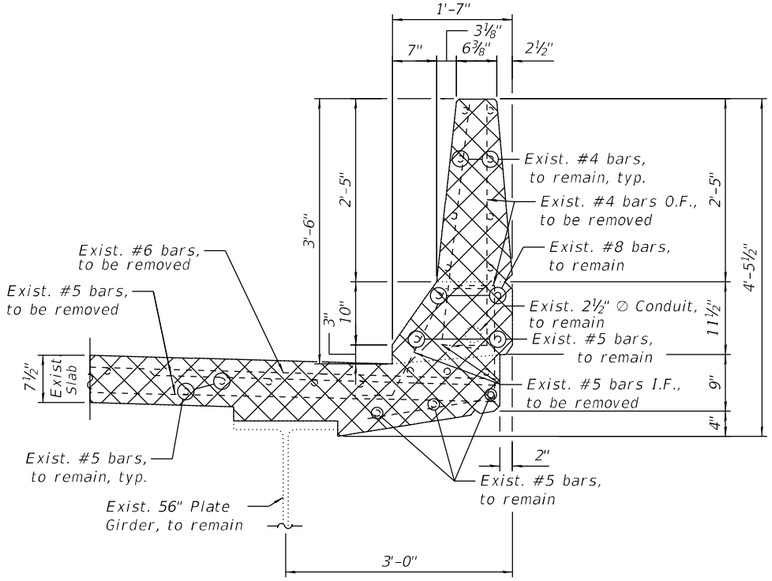
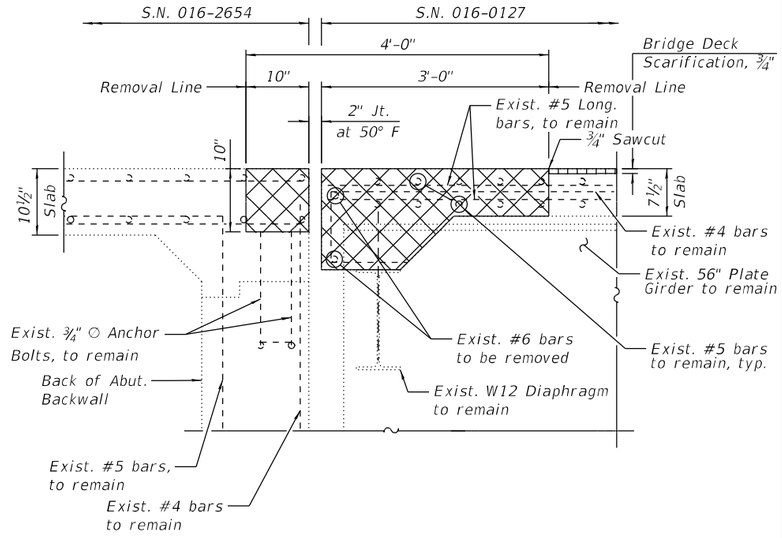


SECTION A-A



SECTION B-B



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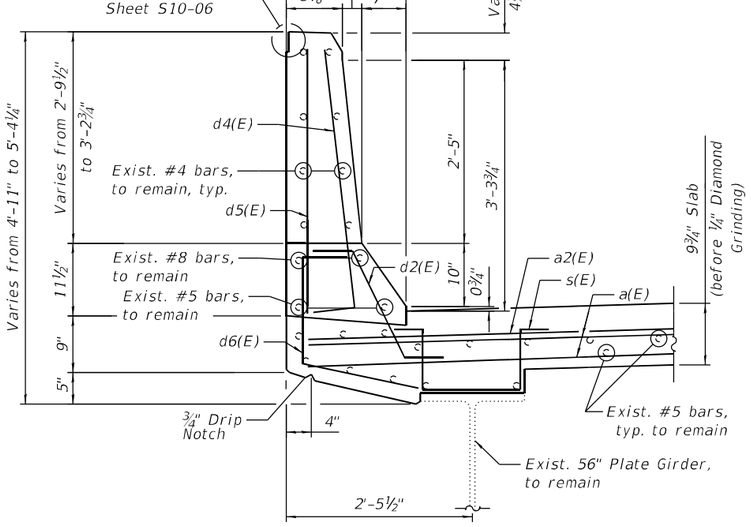

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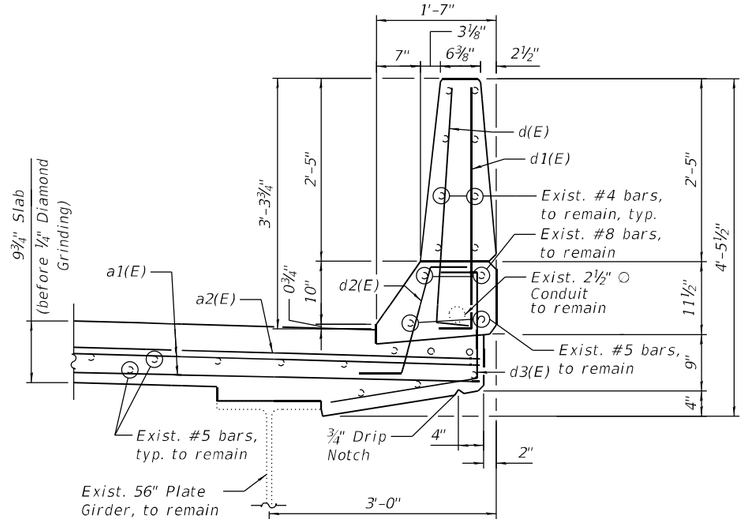
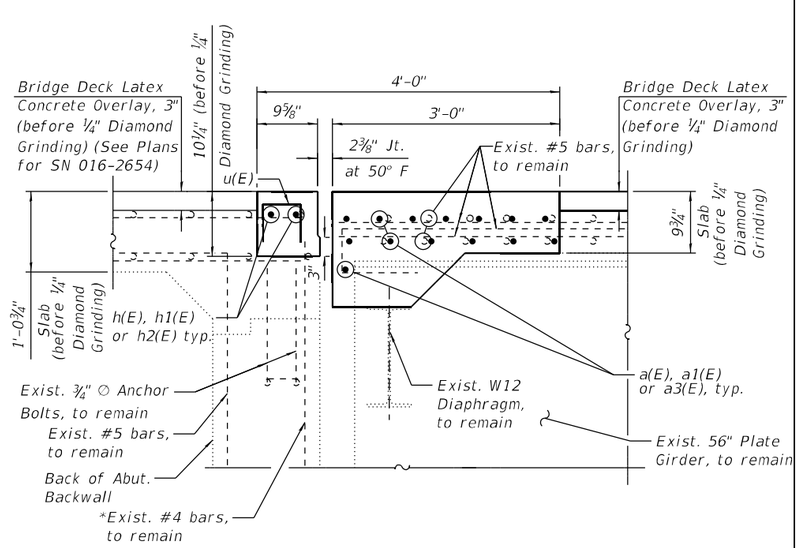


SECTION BB-BB



SECTION CC-CC

*Bend F.F. bars in the field as needed to fit

NOTES:

1. For Legend. see Sheet S10-09.
2. For Bar diagrams, additional Notes, and Bill of Material, see Sheet S10-11.

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DEPARTMENT OF TRANSPORTATION

S. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 2 OF 3)
STRUCTURE NUMBER 016-0127 (NB)
SHEET S10-10 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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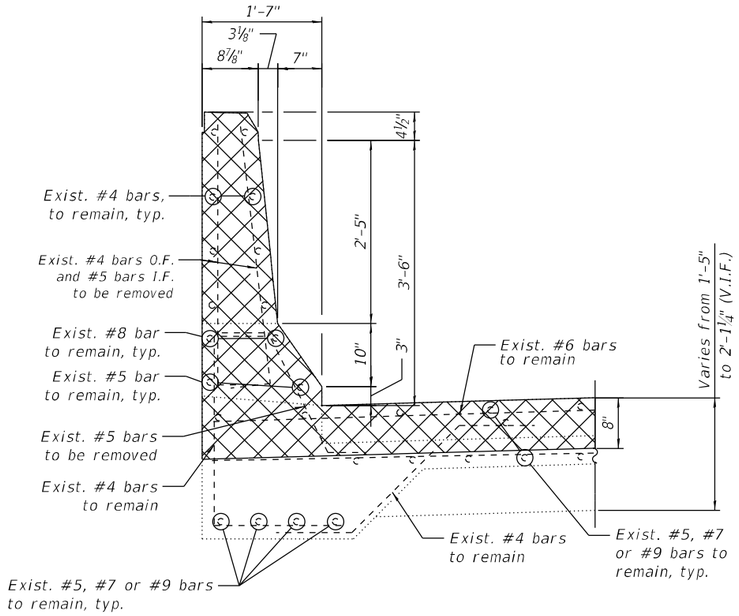
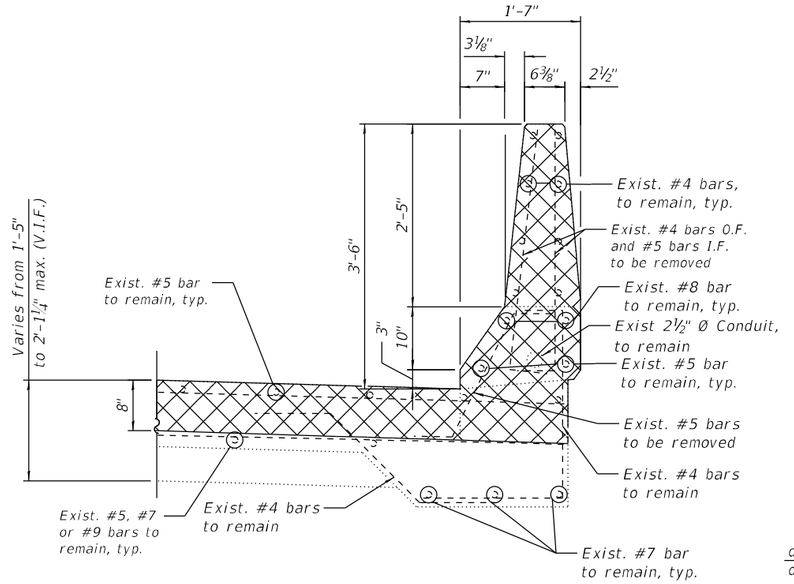
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		



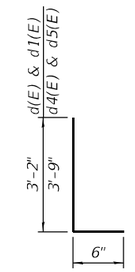
SECTION D-D



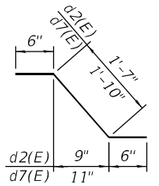
SECTION E-E

MIN BAR LAPS

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



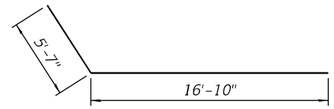
BARs d(E), d1(E), d4(E) & d5(E)



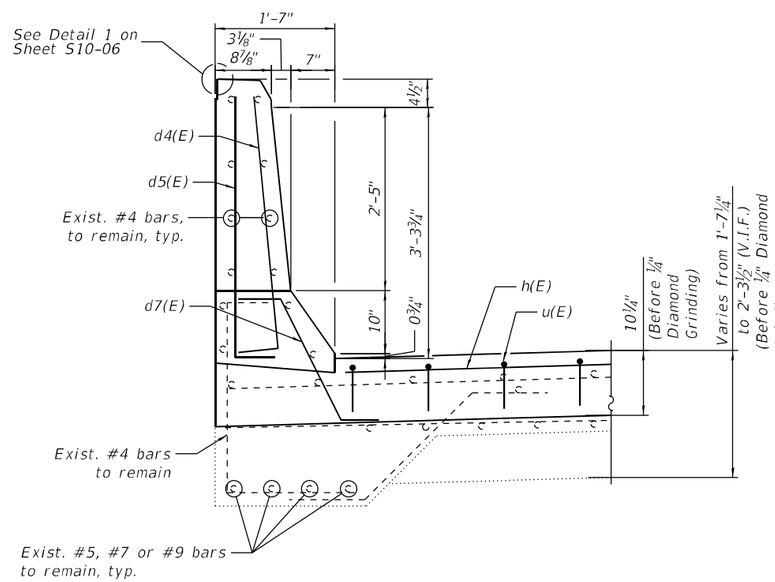
BARS d2(E) & d7(E)

BILL OF MATERIAL

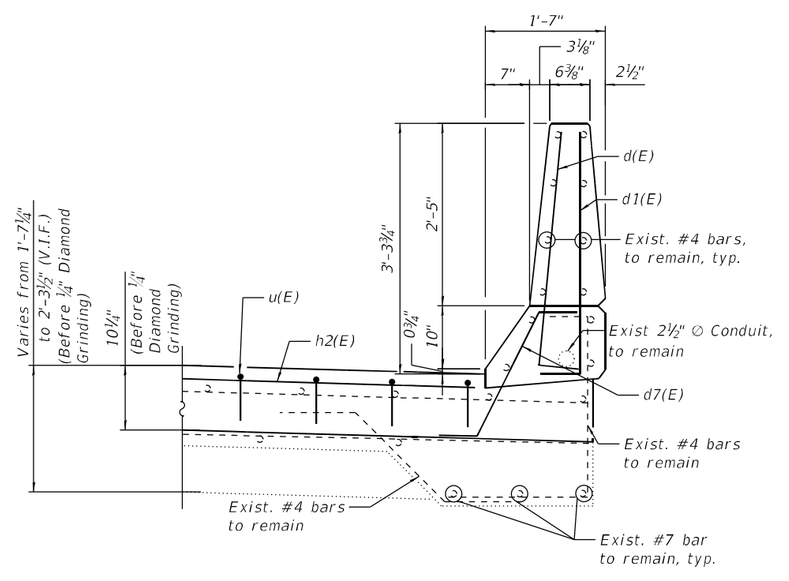
Bar	No.	Size	Length	Shape
a(E)	28	#5	26'-0"	
a1(E)	14	#5	35'-8"	
a2(E)	8	#6	6'-6"	
a3(E)	14	#5	22'-5"	
d(E)	5	#5	3'-8"	L
d1(E)	6	#4	3'-8"	L
d2(E)	9	#5	2'-7"	
d3(E)	4	#4	3'-11"	C
d4(E)	7	#5	4'-3"	L
d5(E)	7	#4	4'-3"	L
d6(E)	4	#4	3'-5"	C
d7(E)	3	#5	2'-10"	
h(E)	4	#5	24'-9"	
h1(E)	2	#5	35'-5"	
h2(E)	2	#5	19'-9"	
s(E)	42	#5	3'-5"	
s1(E)	18	#5	3'-9"	
u(E)	95	#4	1'-6"	
Concrete Removal			Cu Yd	22.4
Concrete Superstructure			Cu Yd	25.0
Protective Coat			Sq Yd	45.7
Reinforcement Bars, Epoxy Coated			Pound	2,360



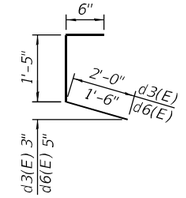
BAR a3(E)



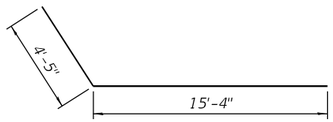
SECTION DD-DD



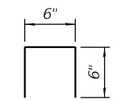
SECTION EE-EE



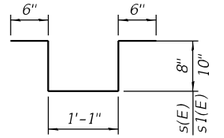
BARS d3(E) & d6(E)



BAR h2(E)



BAR u(E)



BARS s(E) & s1(E)

NOTES:

1. For Legend, see Sheet S10-09.
2. For Preformed Joint Strip Seal Details, see Sheet S10-15.
3. For Bar Splicer Assembly Details, see Sheet S10-21.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.

MODEL: Default
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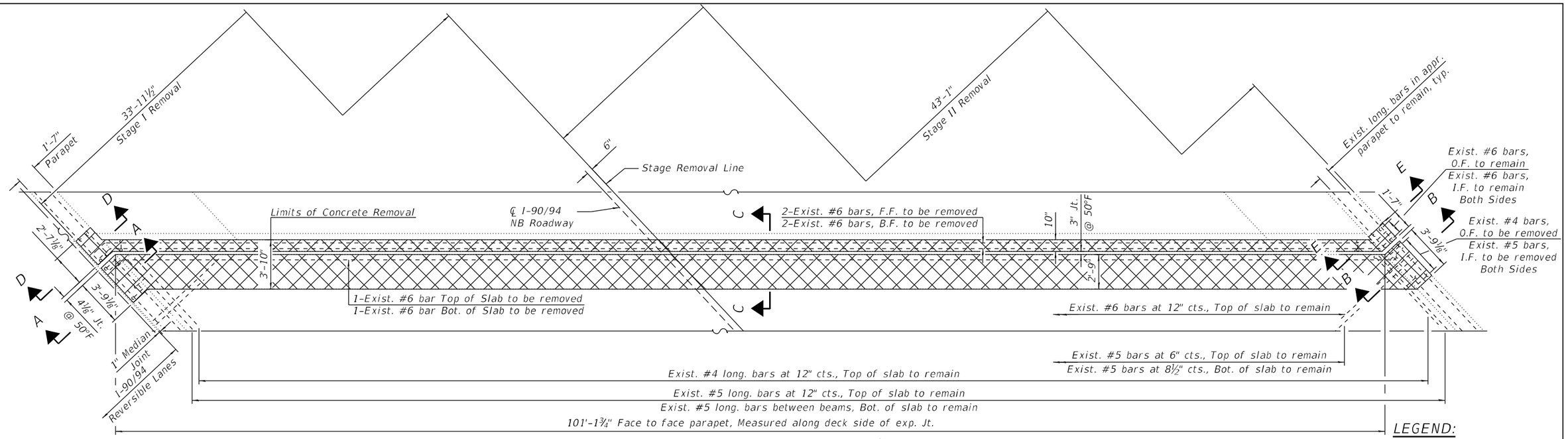
PLOT DATE =	CHECKED - MAF	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

S. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 3 OF 3)
STRUCTURE NUMBER 016-0127 (NB)
SHEET S10-11 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	672
		CONTRACT NO.		62K73
	ILLINOIS FED. AID PROJECT			



NORTH ABUTMENT JOINT REMOVAL PLAN

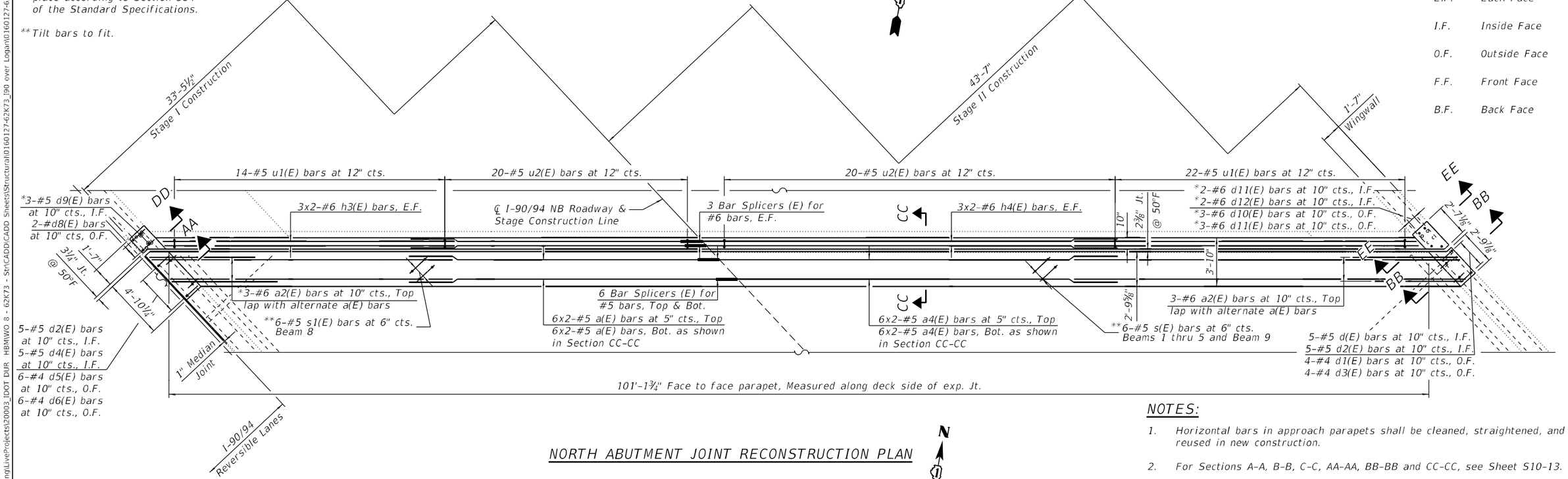
N

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

**Tilt bars to fit.

LEGEND:

	Concrete Removal
E.F.	Each Face
I.F.	Inside Face
O.F.	Outside Face
F.F.	Front Face
B.F.	Back Face



NORTH ABUTMENT JOINT RECONSTRUCTION PLAN

N

NOTES:

1. Horizontal bars in approach parapets shall be cleaned, straightened, and reused in new construction.
2. For Sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see Sheet S10-13.
3. For Sections D-D, E-E, DD-DD and EE-EE, additional Notes, Bar diagrams and Bill of Material, see Sheet S10-14.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

N. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 1 OF 3)
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-12 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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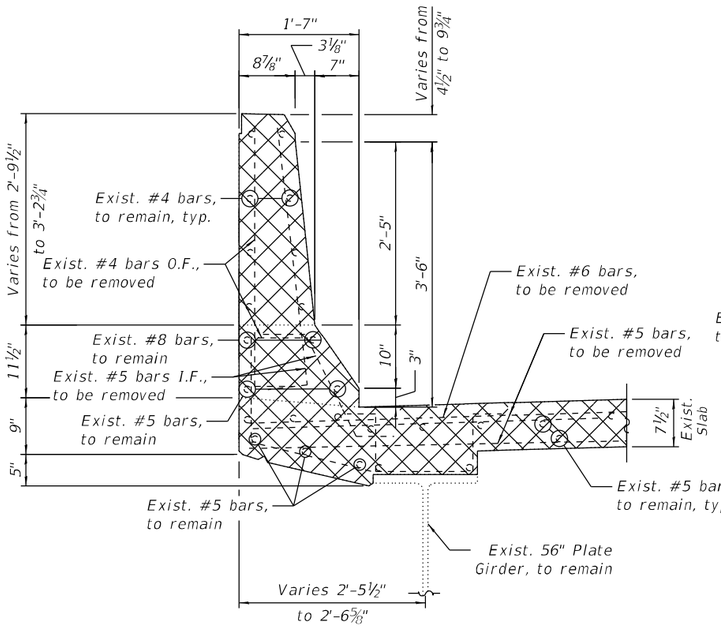
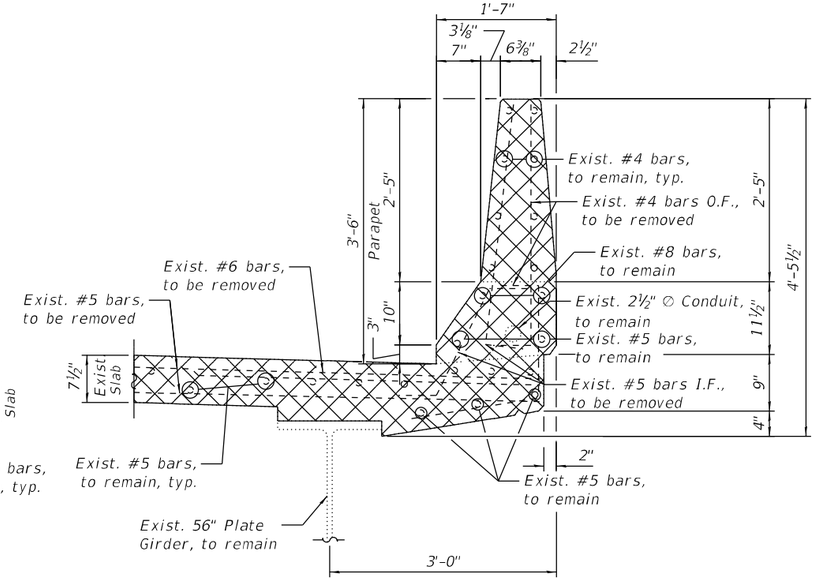
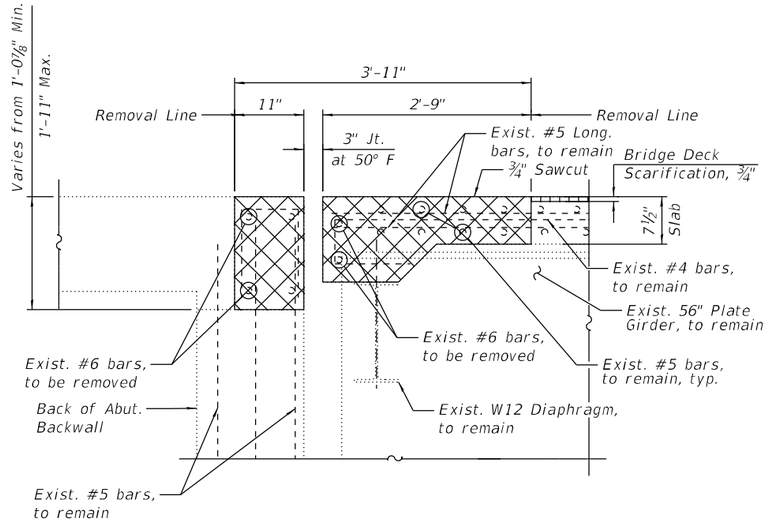


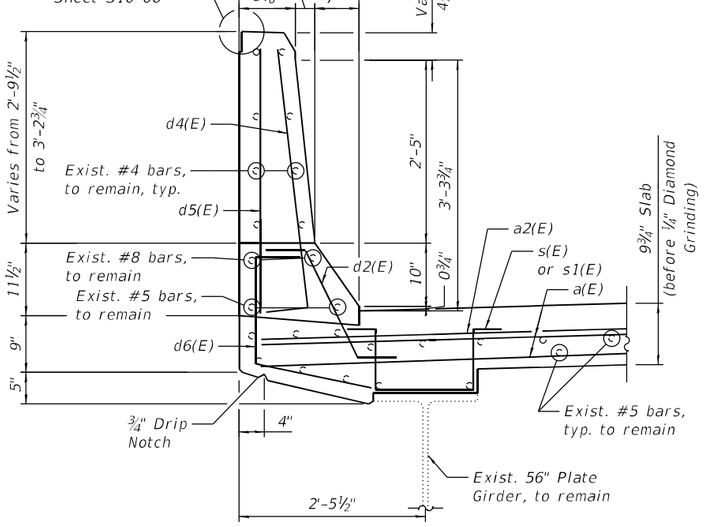
SECTION A-A



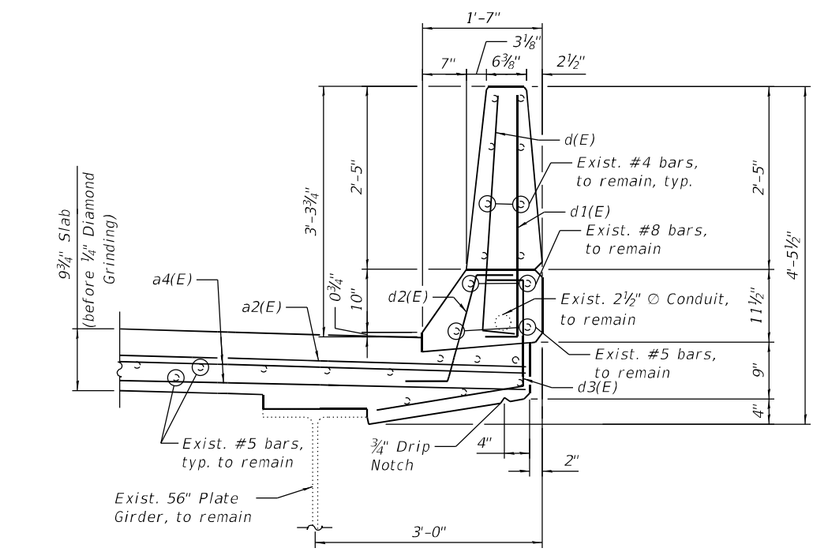
SECTION B-B



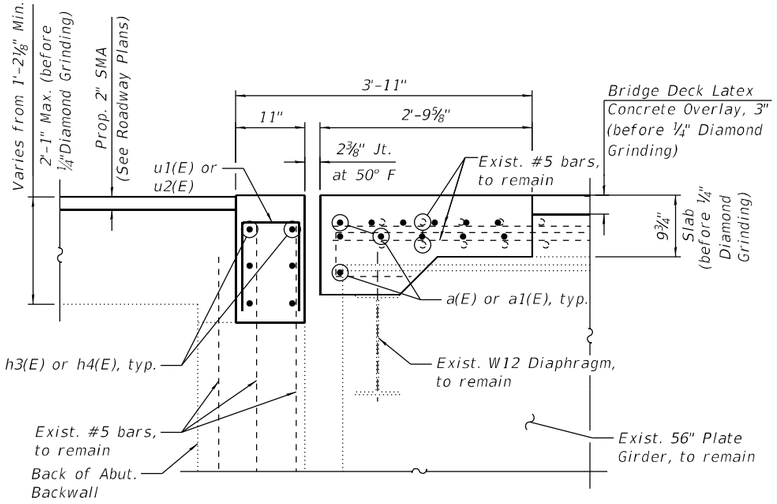
SECTION C-C



SECTION AA-AA



SECTION BB-BB



SECTION CC-CC

NOTES:

1. For Legend. see Sheet S10-12.
2. For Bar diagrams, additional Notes, and Bill of Material, see Sheet S10-14.

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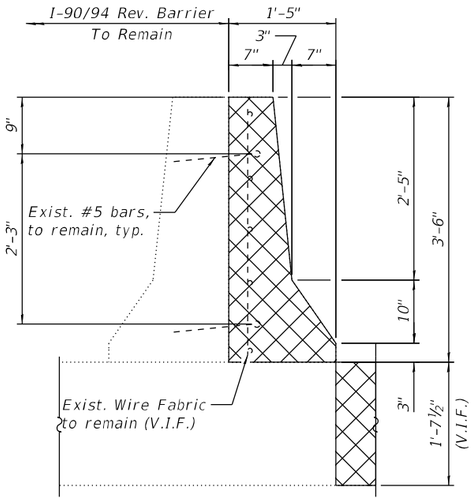
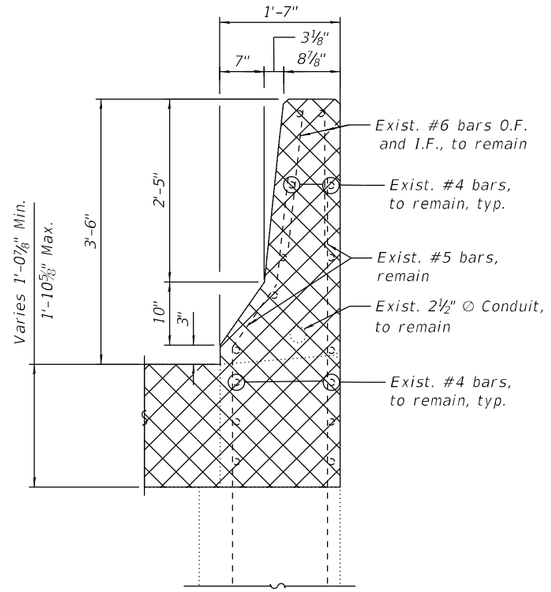
DEPARTMENT OF TRANSPORTATION

N. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 2 OF 3)
STRUCTURE NUMBER 016-0127 (NB)
SHEET S10-13 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	674
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		



SECTION D-D



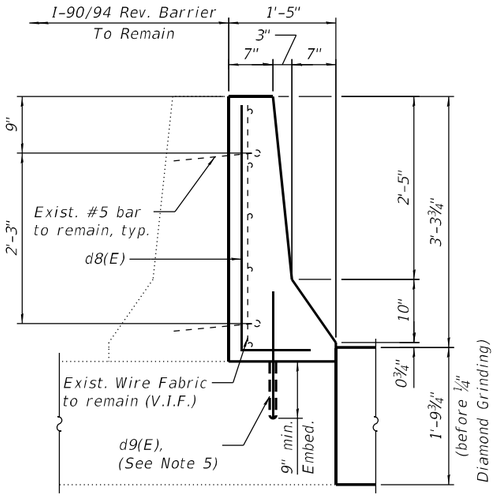
SECTION E-E

MIN BAR LAPS

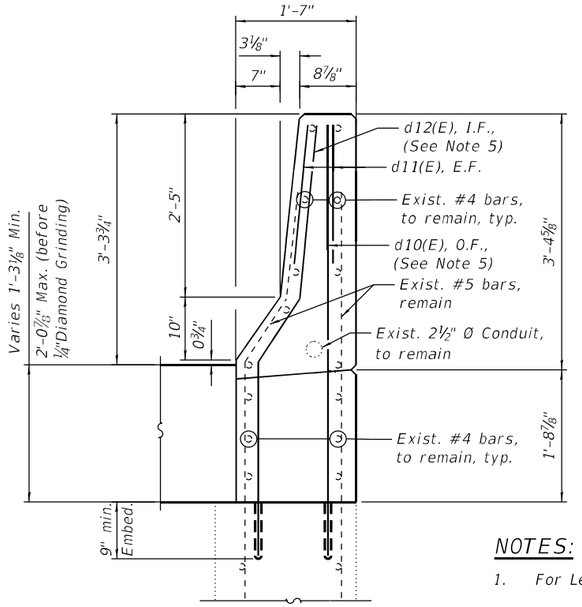
#5	3'-6"
#6	4'-0"

BILL OF MATERIAL

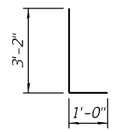
Bar	No.	Size	Length	Shape
a(E)	24	#5	26'-0"	
a2(E)	6	#6	6'-6"	
a4(E)	24	#5	29'-5"	
d(E)	5	#5	3'-8"	
d1(E)	4	#4	3'-8"	
d2(E)	10	#5	2'-7"	
d3(E)	4	#4	3'-11"	
d4(E)	5	#5	4'-3"	
d5(E)	6	#4	4'-3"	
d6(E)	6	#4	3'-5"	
d8(E)	2	#5	4'-2"	
d9(E)	3	#5	2'-9"	
d10(E)	3	#6	5'-9"	
d11(E)	5	#6	2'-0"	
d12(E)	2	#6	5'-10"	
h3(E)	12	#6	26'-2"	
h4(E)	12	#6	33'-0"	
s(E)	36	#5	3'-5"	
s1(E)	6	#5	3'-9"	
u1(E)	36	#5	3'-4"	
u2(E)	40	#5	3'-8"	
Concrete Removal			Cu Yd	24.6
Concrete Superstructure			Cu Yd	27.6
Protective Coat			Sq Yd	47.3
Reinforcement Bars, Epoxy Coated			Pound	3,140



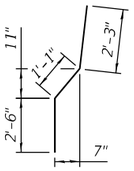
SECTION DD-DD



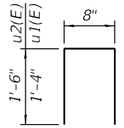
SECTION EE-EE



BAR d8(E)



BAR d12(E)



BARS u1(E) & u2(E)

NOTES:

1. For Legend, see Sheet S10-12.
2. For Preformed Joint Strip Seal Details, see Sheet S10-15.
3. For Bar Splicer Assembly Details, see Sheet S10-21.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.
5. Epoxy grout d9(E), d10(E) and d12(E) bars according to Article 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Superstructure.

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N. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 3 OF 3)
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-14 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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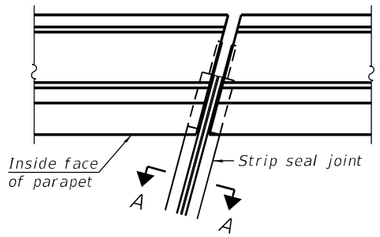
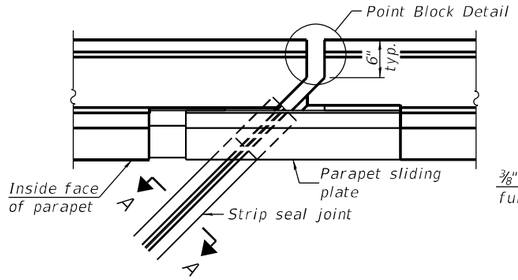
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

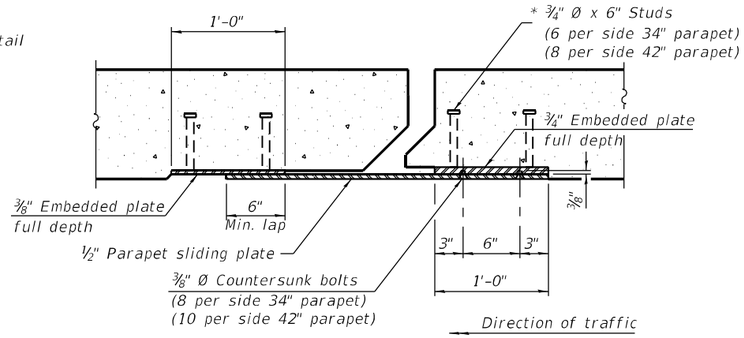


FOR SKEWS ≤ 30°

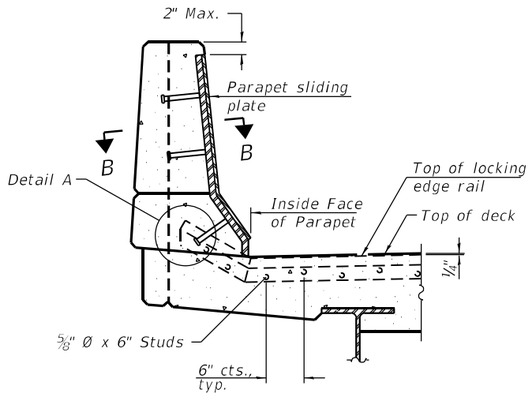


FOR SKEWS > 30°

PLAN AT PARAPET

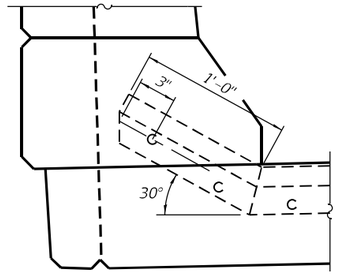


SECTION B-B

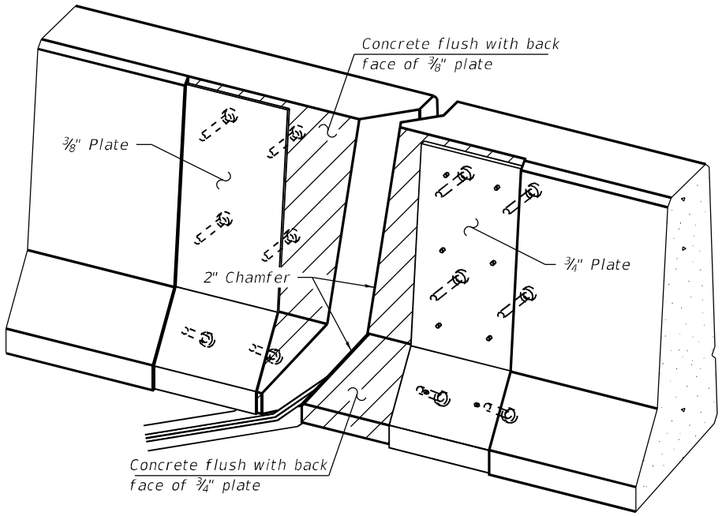


ELEVATION AT PARAPET

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

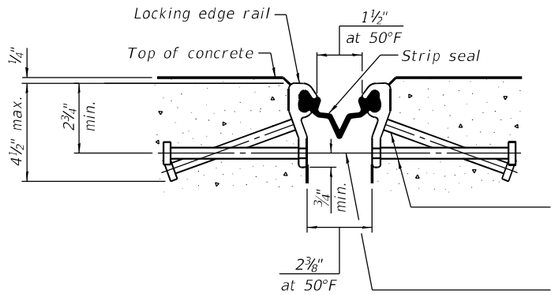


DETAIL A

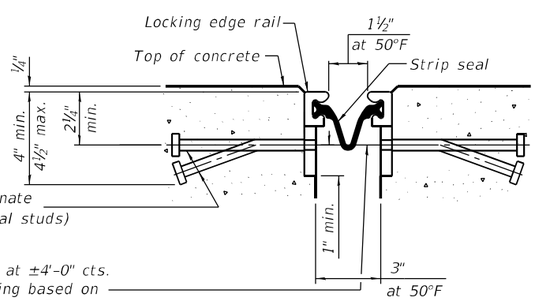


TRIMETRIC VIEW

(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT



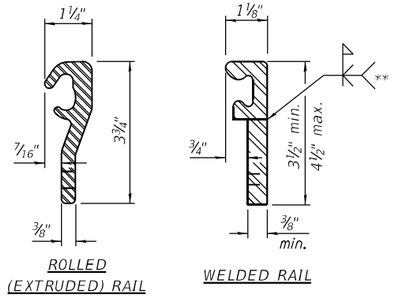
SHOWING WELDED RAIL JOINT

* 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.

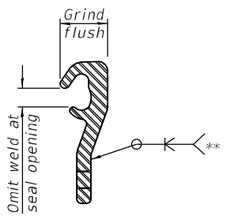


ROLLED (EXTRUDED) RAIL

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.

34" F-shape barrier shown, 42" F-shape similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	201

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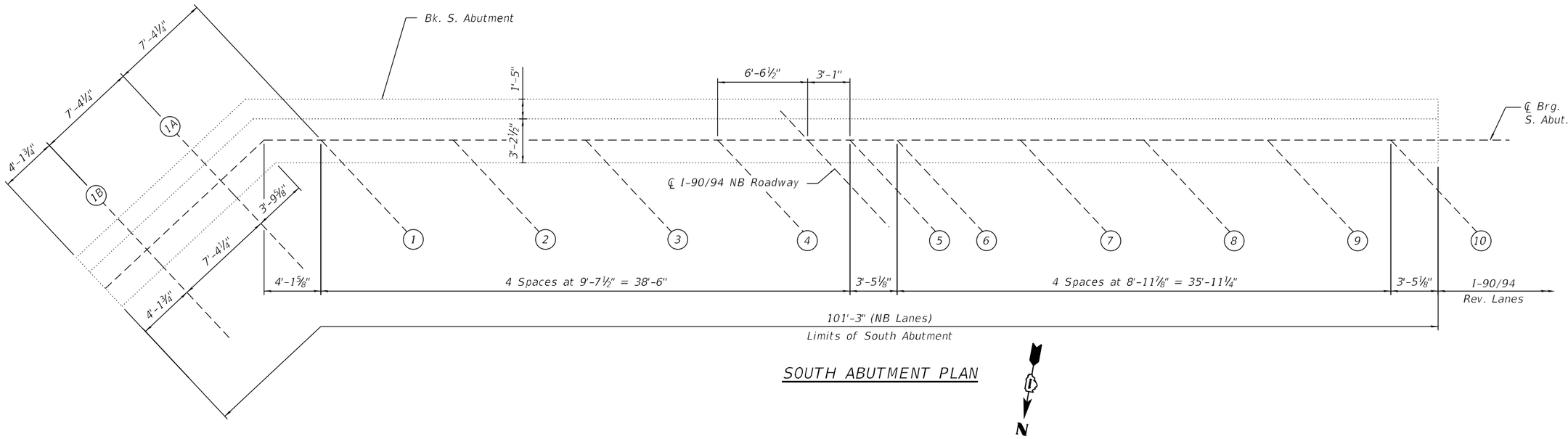
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

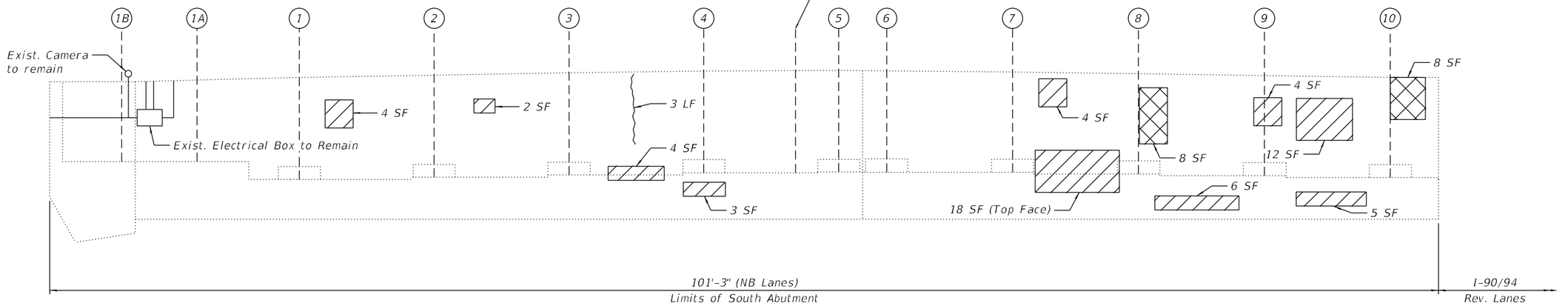
PREFORMED JOINT STRIP SEAL
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-15 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	676
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		



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 S10-20 .
3. Concrete Sealer is to be applied to the abutment seats and the bottom 2 feet of the abutment backwall.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	539
Epoxy Crack Injection	Foot	3
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq Ft	62
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	16

LEGEND

	Structural Repair of Concrete (Depth Equal to or less than 5")
	Structural Repair of Concrete (Depth greater than 5")
	Epoxy Crack Injection (Width > 0.06")
SF	Square Foot
LF	Linear Foot

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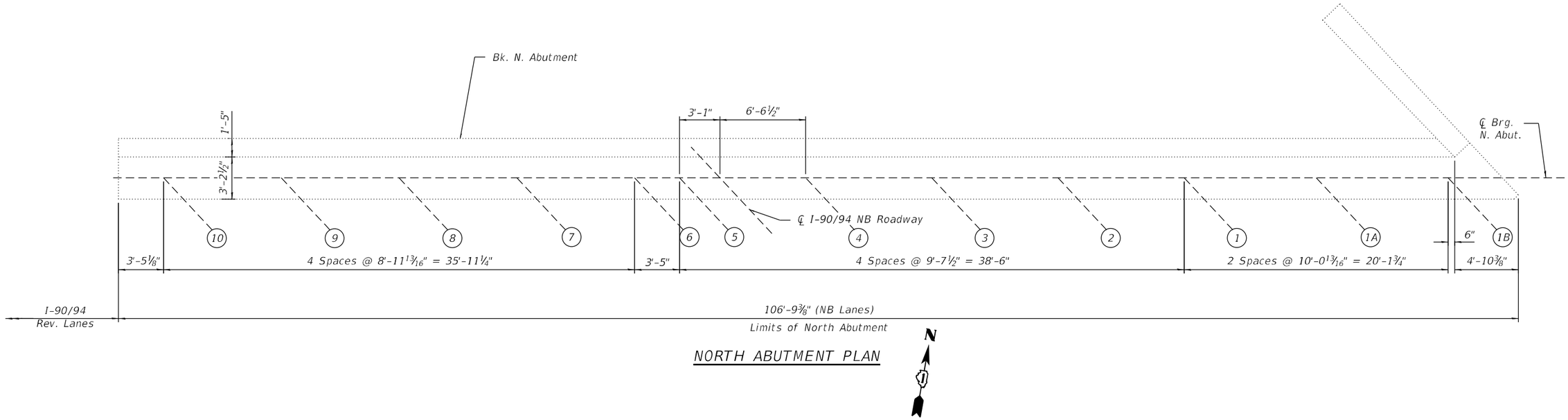
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

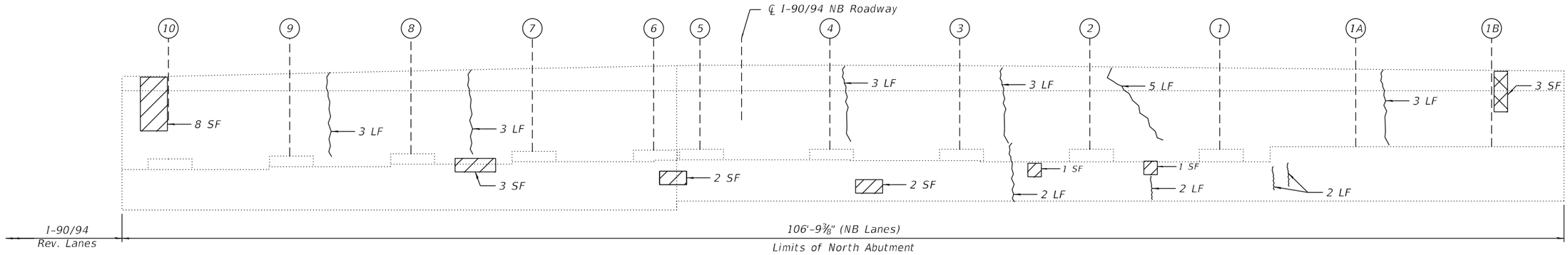
SOUTH ABUTMENT REPAIRS
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-16 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	677
		CONTRACT NO.		62K73
		ILLINOIS	FED. AID PROJECT	



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 S10-20.
3. Concrete Sealer is to be applied to the abutment seats and the bottom 2 feet of the abutment backwall.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	547
Epoxy Crack Injection	Foot	28
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq Ft	17
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	3

LEGEND

- Structural Repair of Concrete (Depth Equal to or less than 5")
- Structural Repair of Concrete (Depth greater than 5")
- Epoxy Crack Injection (Width > 0.06")
- SF — Square Foot
- LF — Linear Foot

MODEL: Default
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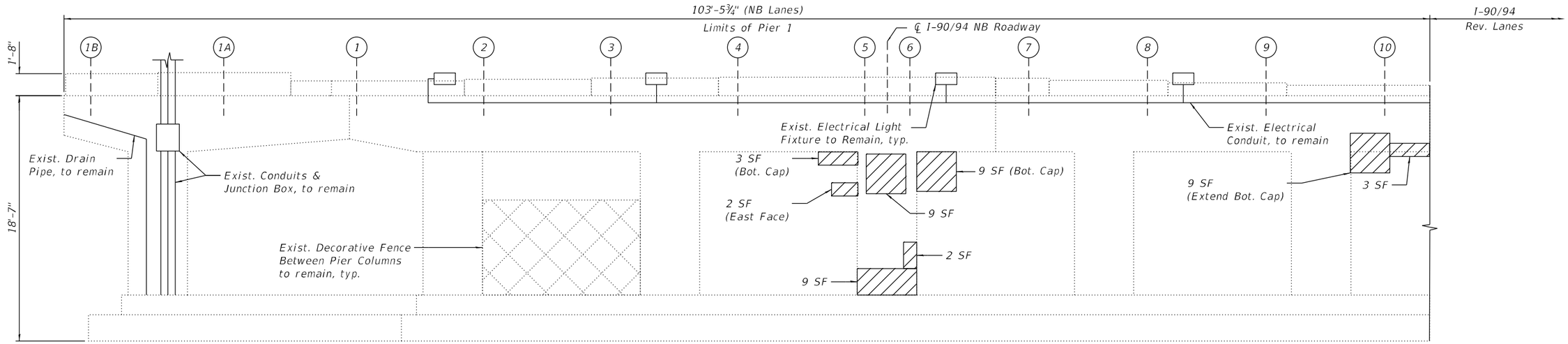
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIRS
STRUCTURE NUMBER 016-0127 (NB)

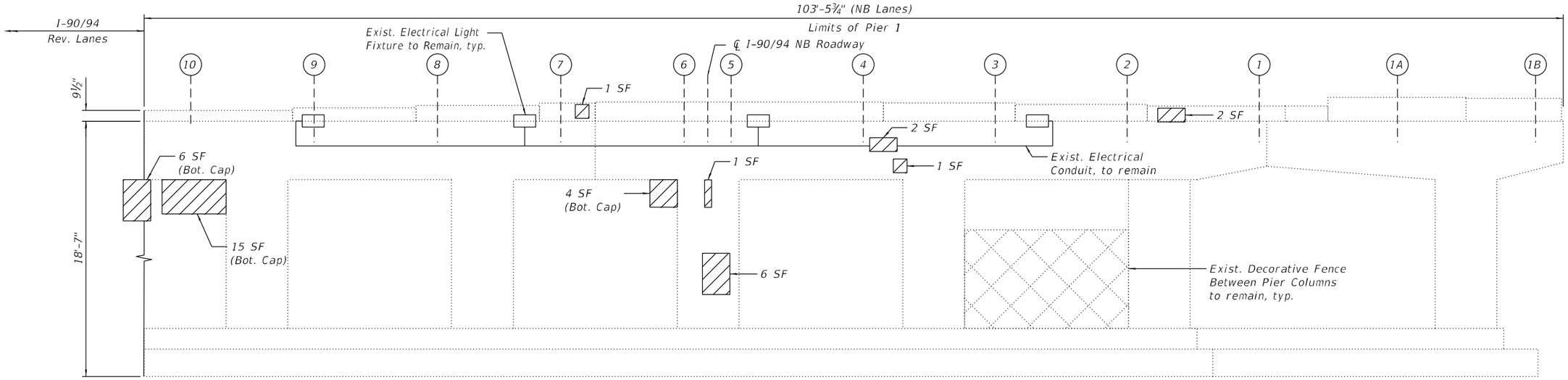
SHEET S10-17 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	678
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		



PIER 1 ELEVATION

(Looking South)



EXISTING LIGHTING: PIER 1

(Looking North)

PIER 1 ELEVATION

(Looking North)

LEGEND

	Structural Repair of Concrete (Depth Equal to or less than 5")
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 bedetermined by the engineer in the field at the time of construction.

EXISTING LIGHTING: PIER 1

(Looking South)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	SQ FT	84

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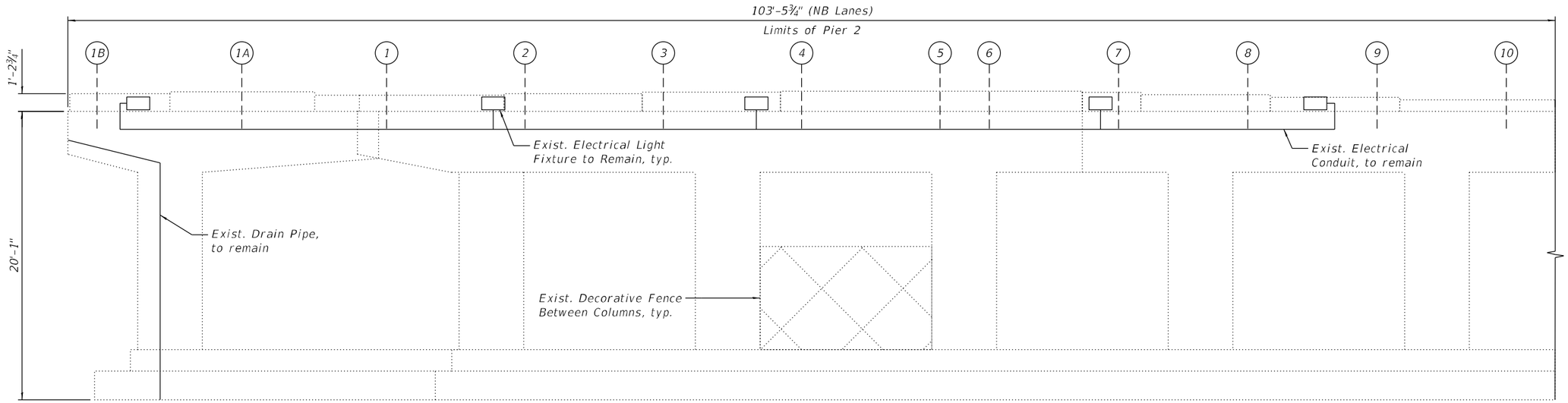
PIER 1 REPAIRS
STRUCTURE NUMBER 016-0127 (NB)

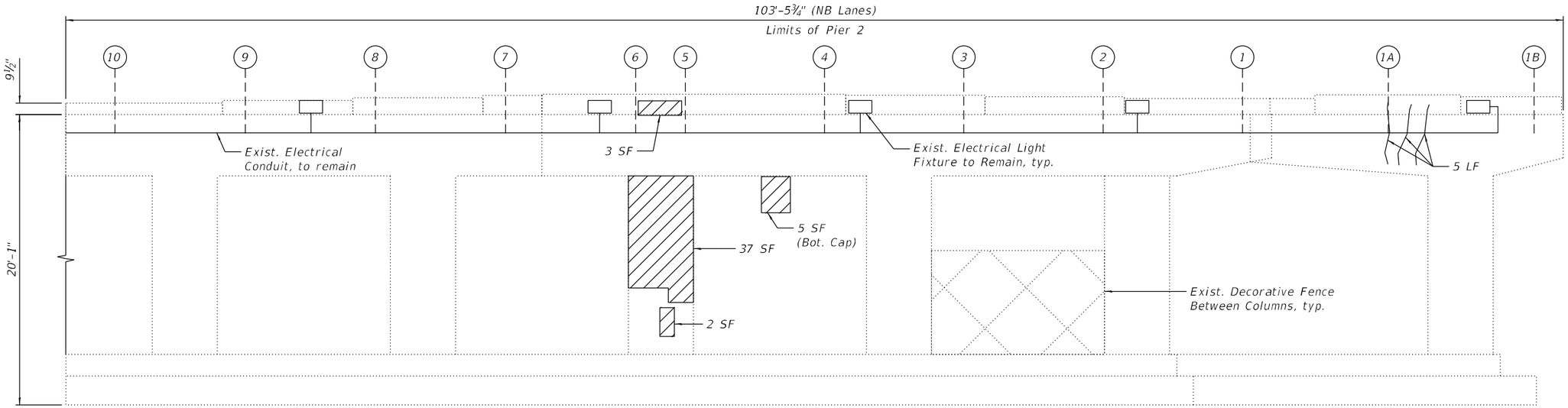
SHEET S10-18 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	679
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		



PIER 2 ELEVATION

(Looking South)



PIER 2 Elevation

(Looking North)

EXISTING LIGHTING: PIER 2

(Looking North)

LEGEND

	Structural Repair of Concrete (Depth Equal to or less than 5")
	Epoxy Crack Injection (Width > 0.06")
SF	Square Foot
LF	Linear 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.

EXISTING LIGHTING: PIER 2

(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	47

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PIER 2 REPAIRS
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-19 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	680
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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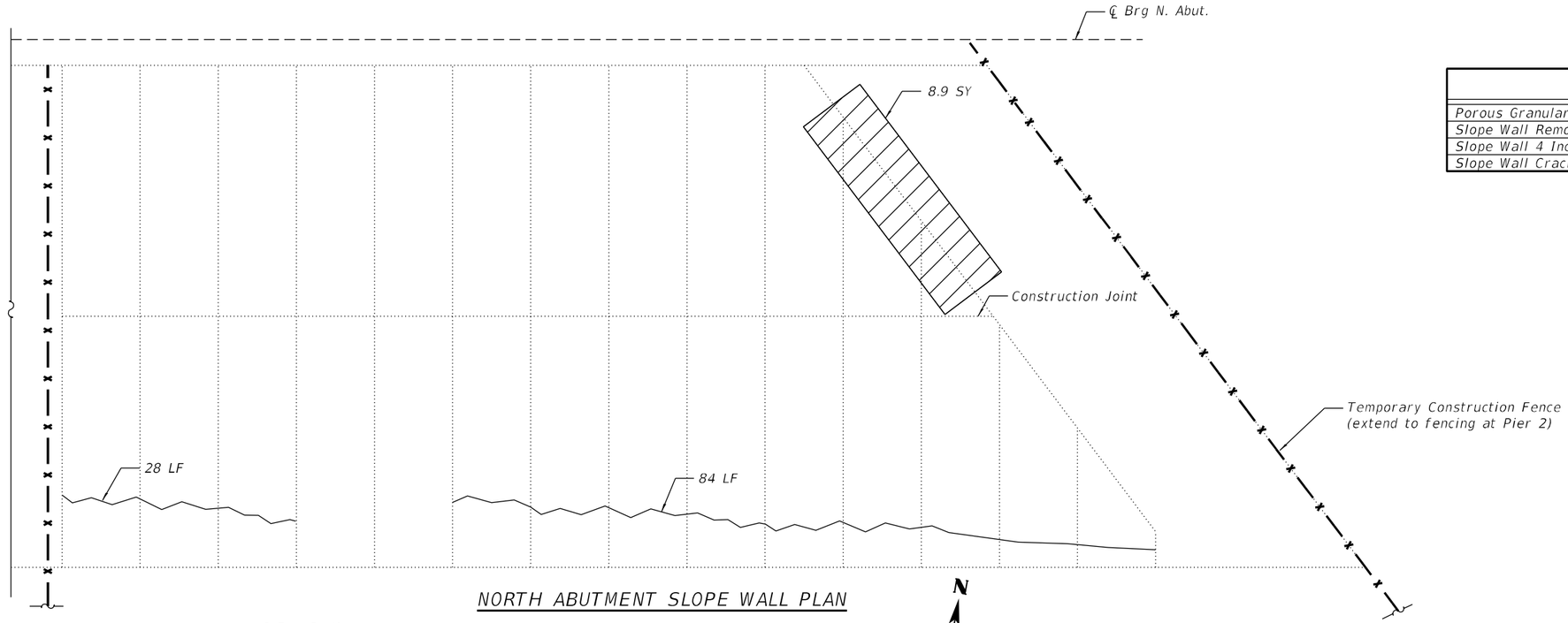
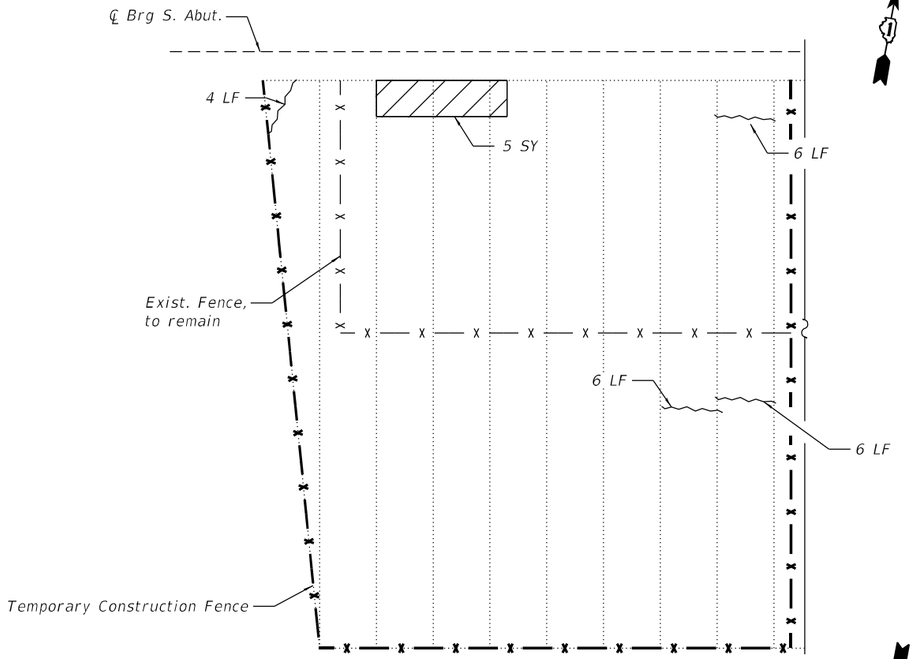


NORTH ABUTMENT SLOPE WALL PLAN



SOUTH ABUTMENT SLOPE WALL PLAN

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu Yd	5
Slope Wall Removal	Sq Yd	14
Slope Wall 4 Inch	Sq Yd	14
Slope Wall Crack Sealing	Foot	134

LEGEND

	Slope Wall Removal and Replacement with 4 Inch Slope Wall
	Slope Wall Crack Sealing
SY	Square Yard
LF	Linear 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. W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.

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SLOPE WALL REPAIRS
STRUCTURE NUMBER 016-0127 (NB)

SHEET S10-20 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	681
		CONTRACT NO.		62K73
	ILLINOIS FED. AID PROJECT			

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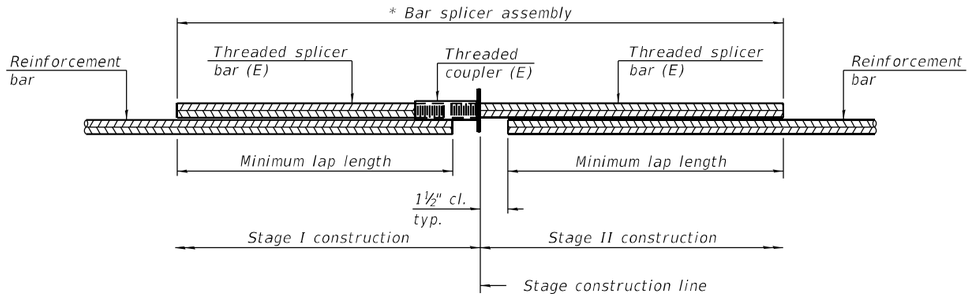


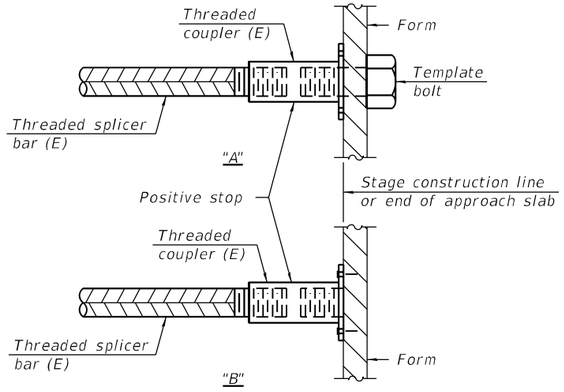
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

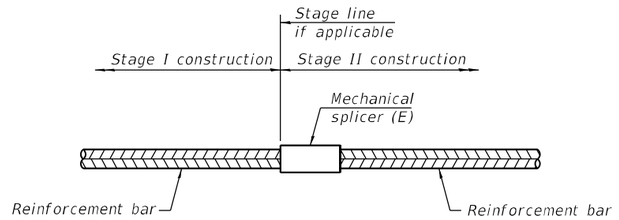
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
N. Abut.	#5	12	3'-6"
N. Abut.	#6	6	4'-0"
S. Abut.	#5	14	3'-6"
S. Abut.	#6	2	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 1-1-2020

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DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NUMBER 016-0127 (NB)
SHEET S10-21 OF S10-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	682
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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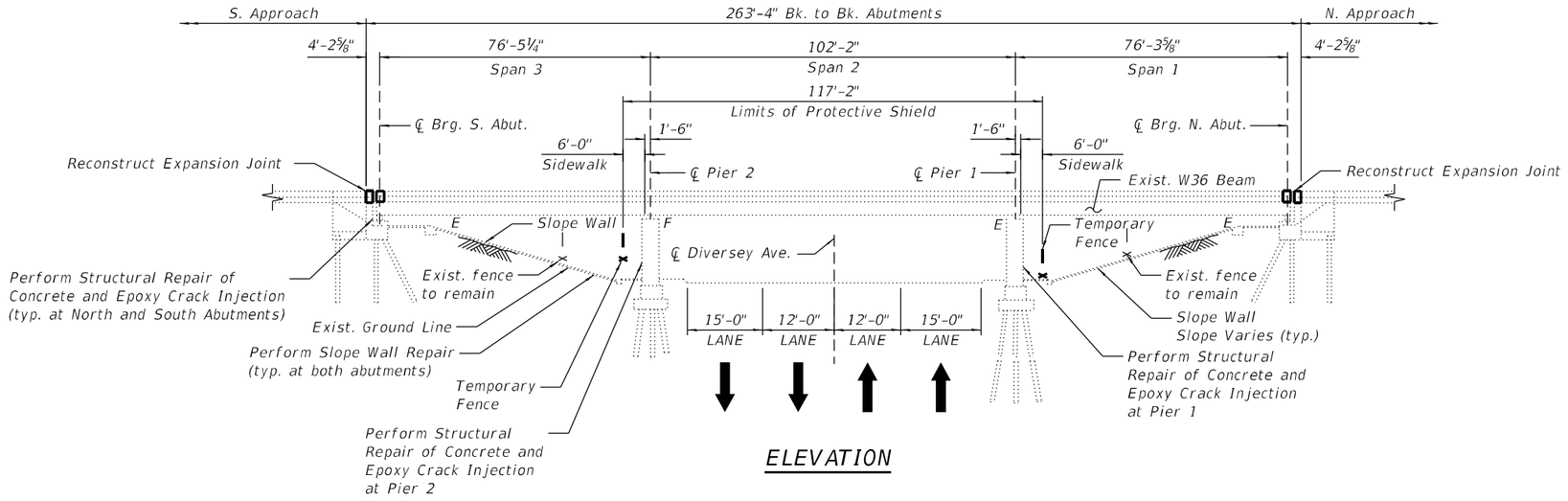
Existing Structure: The existing Structure No. 016-0125, I-90 over Diversey Ave., was originally built in 1958 and modified between 1990 and 1993. In 1993, the concrete deck and superstructure were removed and new composite decks and superstructures were constructed under contract 82136. Expansion joint repairs were performed in 2013. The structure is a 3-span, continuous steel stringer/multi-beam bridge with a 7½" concrete deck, 73'-2" out-to-out of structure, and 263'-4" back-to-back of abutments. The substructure consists of reinforced concrete abutments and piers supported over concrete drilled shafts.

Traffic will be maintained utilizing staged construction.

No salvage.



ELEVATION

NOTE:

1. All stations are to ℄ I-90/94 NB Roadway and taken from existing plans.

LOADING

No Future Wearing Surface Allowed.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

RECONSTRUCTION 2013

2002 AASHTO Standard Specifications for Highway Bridges

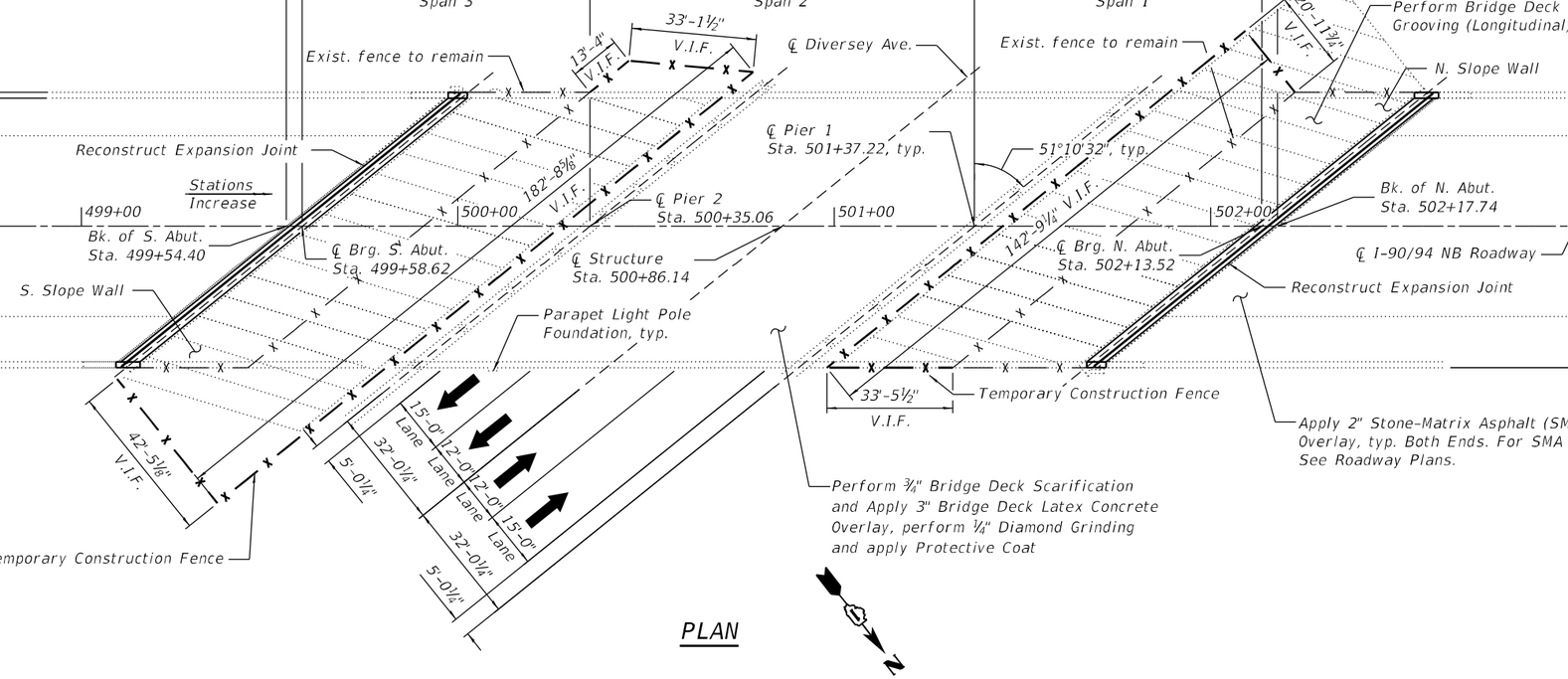
RECONSTRUCTION 1993

1989 AASHTO Standard Specifications for Highway Bridges with 1990 & 1991 Interim Specifications

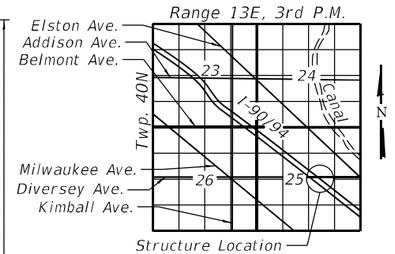
STATE OF ILLINOIS
MAEN A. FARHAT
081.008545
LICENSED STRUCTURAL ENGINEER

Signed:
Date Signed: 04/29/2024

MAEN A. FARHAT, SE
IL Lic. No.: 081-008545
Expires: 11/30/2024



PLAN



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
NB I-90/94 OVER DIVERSEY AVENUE
F.A.I. 90/94 SECTION 2020-005-BR
COOK COUNTY
STATION: 500+86.14
S.N. 016-0125 (NB)

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	PLOT DATE =	CHECKED - MAF	REVISED -

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DEPARTMENT OF TRANSPORTATION

STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-01 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	683
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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GENERAL NOTES

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

2. 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.

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

4. All exposed concrete edges shall have a ¾"x45° chamfer, except where shown otherwise.

5. 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.

6. For SMA overlay on Approach slab, see Roadway plans.

7. Protective Coat shall be applied to the top and inside face of parapets, reconstructed transverse Expansion Joints and to the surface of the new Latex Concrete overlay.

8. 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.

9. Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Deck slab repairs, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that can not be removed by grinding ¼ in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

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

11. Adjacent I-90/94 reversible bridge is not shown throughout the plans for clarity.

12. 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.

13. 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".

14. 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.

15. The Contractor is responsible to protect the existing conduits embedded in the parapet and junction boxes during concrete removal and construction. Any damage to the existing conduits or junction boxes shall be repaired by the Contractor at no additional cost to the Department.

16. 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.

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

18. The contractor shall contact Chandra Libby, the Director of City of Chicago Department of Family Support Services (DFSS) at 312-746-5443 or Chandra.Libby@cityofchicago.org to coordinate the relocation of persons and their personal belongings under the bridges within the areas bounded by temporary chain-link-fence.

19. The intent of Temporary Construction Fence is to deny access of any unauthorized personnel under the bridge during construction. Actual fence installations may vary from what is shown on the plans. All fence Installations must be approved by the engineer.

20. Concrete Sealer is to be applied to the abutment seats and the bottom 2 ft of the abutment backwall.

21. Concrete Sealer shall be applied to the designated areas of the abutments and piers.

22. 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.

INDEX OF SHEETS

SCOPE OF WORK

1. Provide Protective Shield within limits indicated on the plans.

2. Scarify ¾" from the bridge deck slab.

3. Perform Deck Slab Repairs.

4. Remove and Reconstruct Expansion joints at North and South abutments and install new Preformed Joint Strip Seals.

5. Apply 3" Bridge Deck Latex Concrete Overlay on Bridge Deck and 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Pavement (See roadway plans).

6. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatched block.

7. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.

8. Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse Expansion Joints and to the surface of Latex Concrete Overlay.

9. Perform structural concrete repairs to abutments and piers, as noted on plans.

10. Perform Slope Wall repairs.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd	-	3	3
Concrete Removal	Cu Yd	35	-	35
Slope Wall Removal	Sq Yd	-	8	8
Protective Shield	Sq Yd	895	-	895
Concrete Superstructure	Cu Yd	39.7	-	39.7
Protective Coat	Sq Yd	2,274	-	2,274
Reinforcement Bars, Epoxy Coated	Pound	6,020	-	6,020
Bar Splicers	Each	32	-	32
Slope Wall 4 Inch	Sq Yd	-	8	8
Preformed Joint Strip Seal	Foot	228	-	228
Concrete Sealer	Sq Ft	-	1,111	1,111
Epoxy Crack Injection	Foot	-	73	73
Slope Wall Crack Sealing	Foot	-	220	220
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,342	-	1,342
Protect and Maintain Existing Underpass Luminaire	L SUM	-	0.04	0.04
Approach Slab Repair (Full Depth)	Sq Yd	32	-	32
Approach Slab Repair (Partial Depth)	Sq Yd	32	-	32
Bridge Deck Latex Concrete Overlay, 3"	Sq Yd	1,957	-	1,957
Bridge Deck Scarification ¾"	Sq Yd	1,957	-	1,957
Structural Repair of Concrete (Depth Equal to or less than 5")	Sq Ft	-	83	83
Deck Slab Repair (Full Depth, Type II)	Sq Yd	73	-	73
Diamond Grinding (Bridge Section)	Sq Yd	1,915	-	1,915
Temporary Construction Fence	Foot	-	469	469
Locks for Gates	Each	-	6	6

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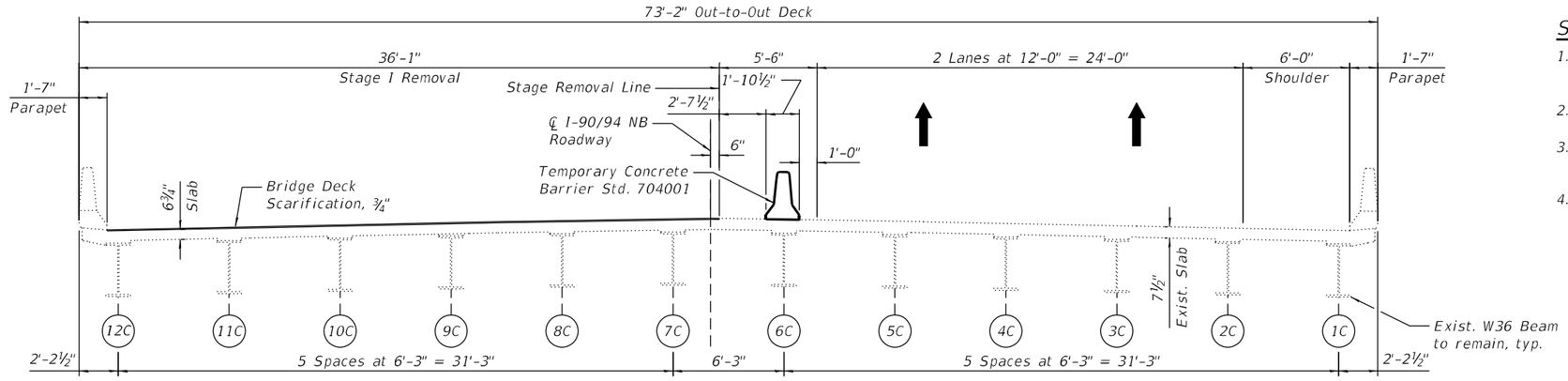
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, INDEX OF SHEETS & TBOM
STRUCTURE NUMBER 016-0125 (NB)
SHEET S11-02 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	684
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

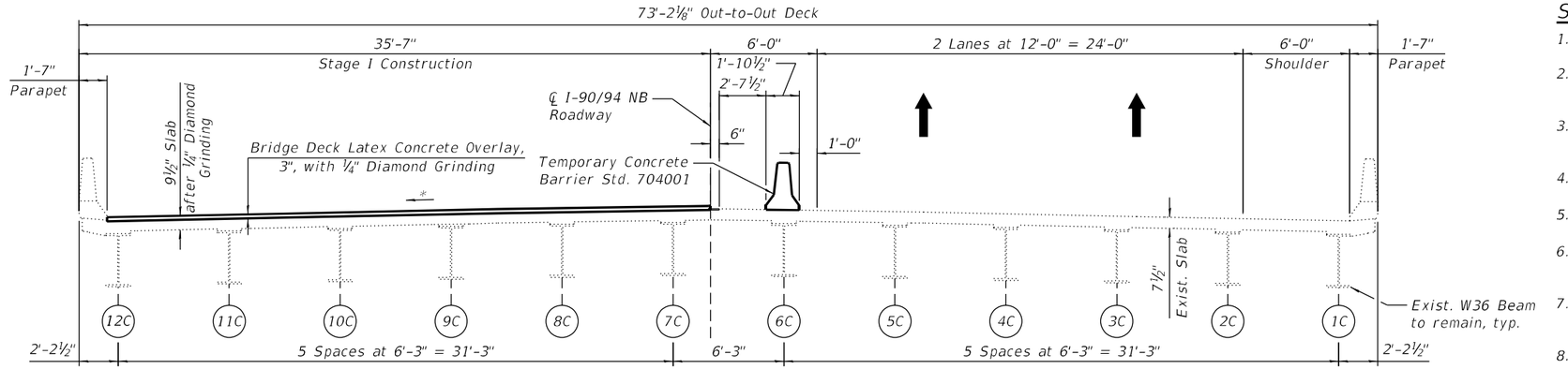


STAGE I REMOVAL

(Looking North)

STAGE I REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the east side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge concrete deck/approach slab adjacent to expansion joints at the North and South Abutments.

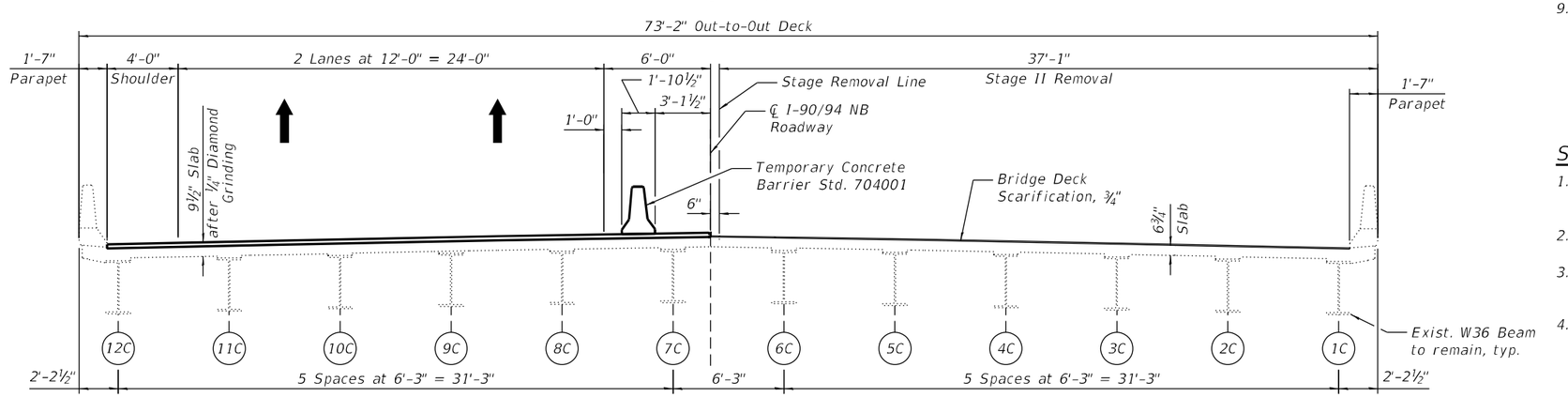


STAGE I CONSTRUCTION

(Looking North)

STAGE I CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct transverse expansion joints and install new Preformed Joint Strip Seals within the limits of Stage I Construction.
3. Perform structural repair of concrete and epoxy crack injection for the abutments and piers.
4. Apply 3" bridge deck latex concrete overlay.
5. Perform ¼" Diamond Grinding to bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay and reconstructed abutment expansion joint areas.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach pavement and taper into existing roadway. See Roadway Plans.
8. Apply protective coat to top and inside faces of west parapet, reconstructed transverse expansion joints and to the surfaces of the new overlay.
9. Perform slope wall repairs as shown on the plans.



STAGE II REMOVAL

(Looking North)

STAGE II REMOVAL

1. Install temporary concrete barrier as shown to locate traffic on the west side of the existing structure.
2. Perform ¾" bridge deck scarification.
3. Remove areas of existing deck for full-depth deck slab repairs at locations shown in the plans.
4. Remove portions of bridge concrete deck/approach slab adjacent to expansion joints at the North and South Abutments.

*Match Existing Cross-slopes

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STAGE CONSTRUCTION (SHEET 1 OF 2)
STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-03 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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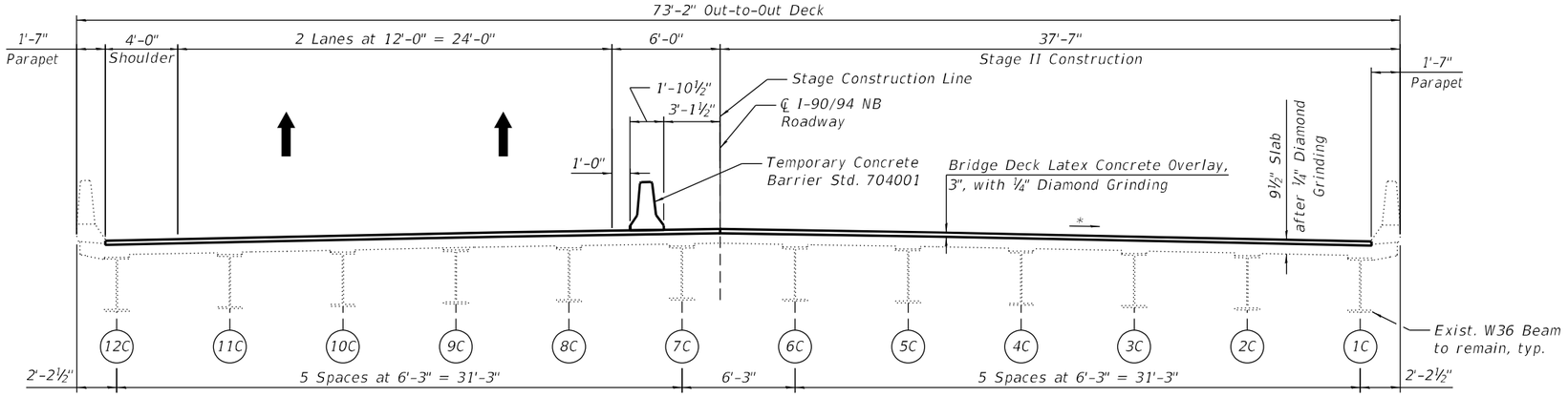
		CONTRACT NO.		62K73
		ILLINOIS	FED. AID PROJECT	

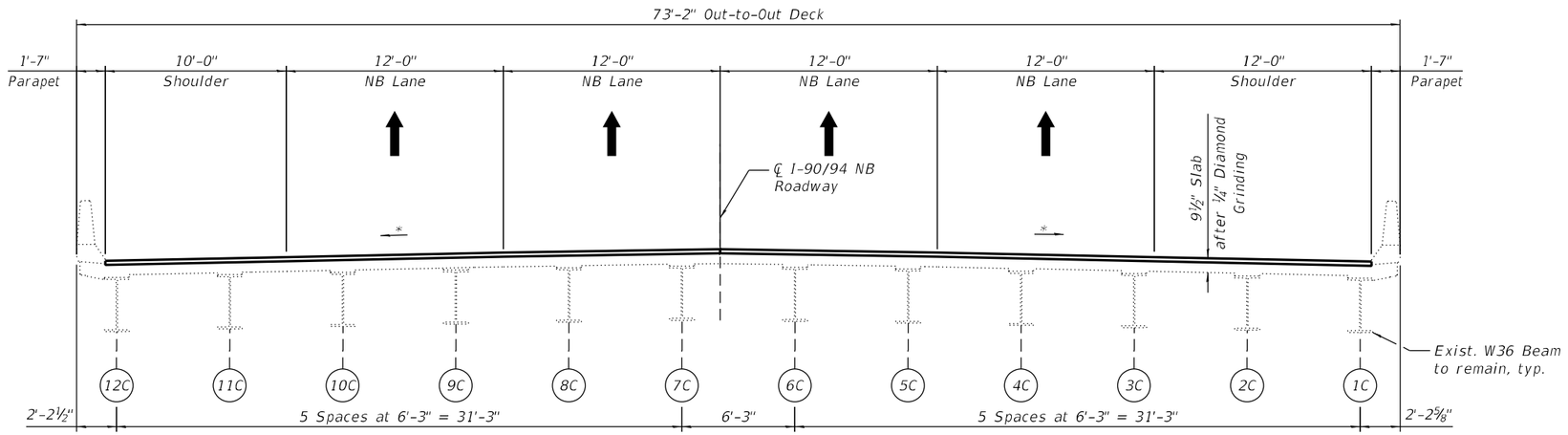


STAGE II CONSTRUCTION

(Looking North)

STAGE II CONSTRUCTION

1. Perform bridge deck slab repairs.
2. Reconstruct expansion joints and install new Preformed Joint Strip Seals within the limits of Stage II Construction.
3. Perform structural repair of concrete and epoxy crack injection for the abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay.
5. Perform ¼" Diamond Grinding to bridge deck and abutment hatched block.
6. Perform Bridge Deck Grooving (Longitudinal) for the 3" Bridge Deck Latex Concrete Overlay and reconstructed abutment expansion joint areas.
7. Apply 2" Stone-Matrix Asphalt (SMA) Overlay to the approach pavement and taper into existing roadway. See Roadway Plans.
8. Apply Protective Coat to top and inside faces of east parapet, reconstructed abutment expansion joints areas, and to the surfaces of the new overlay.
9. Perform slope wall repairs as shown on plans.



FINAL CROSS SECTION

(Looking North)

*Match Existing Cross-slopes

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STAGE CONSTRUCTION (SHEET 2 OF 2)
STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-04 OF S11-19 SHEETS

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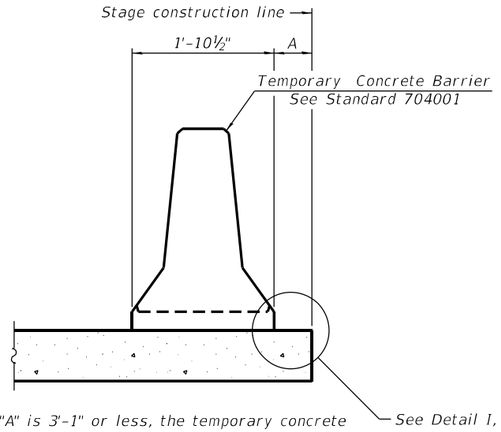
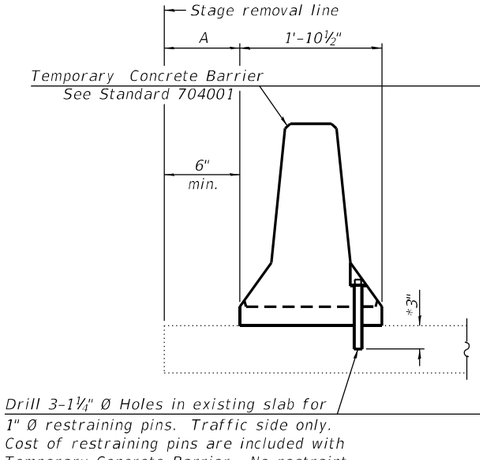
	ILLINOIS	FED. AID PROJECT		



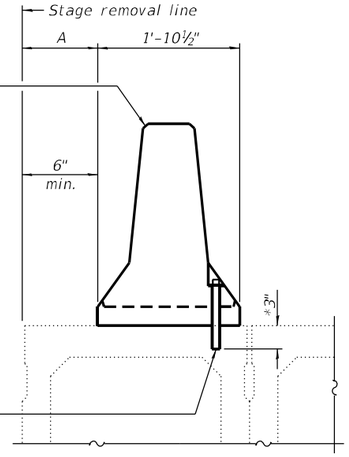
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

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".

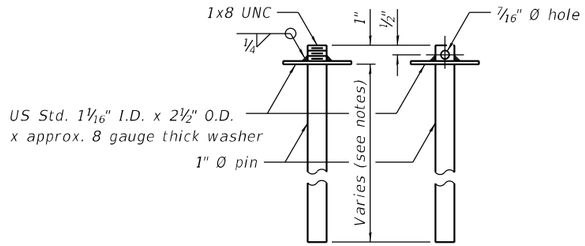
EXISTING SLAB



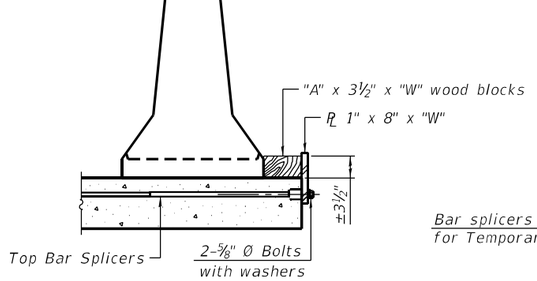
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

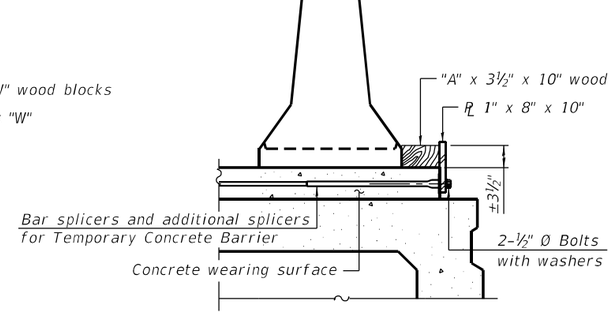
SECTIONS THRU SLAB OR DECK BEAM



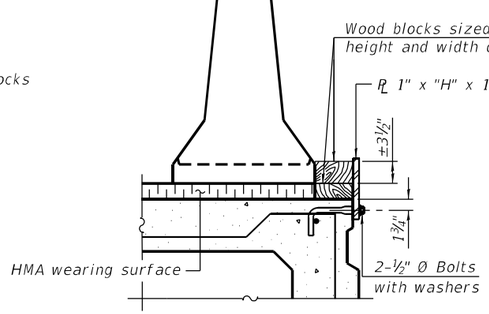
RESTRAINING PIN



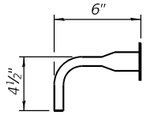
DETAIL I



DETAIL II



DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

A retainer assembly shall be located at the approximate ℄ of each temporary concrete barrier.

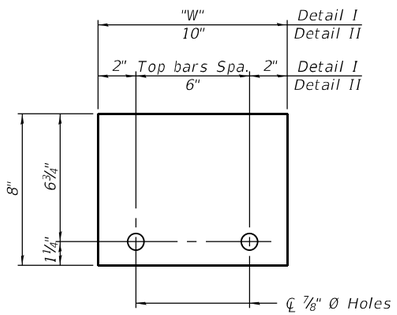
The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.

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.

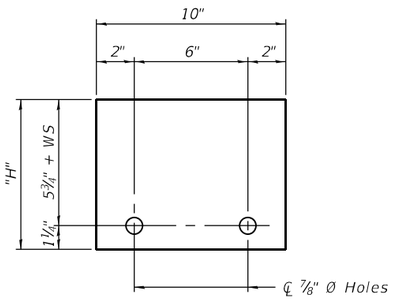
Detail I - Installation for a new bridge deck or bridge slab.

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.



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



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

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

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DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-05 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	687
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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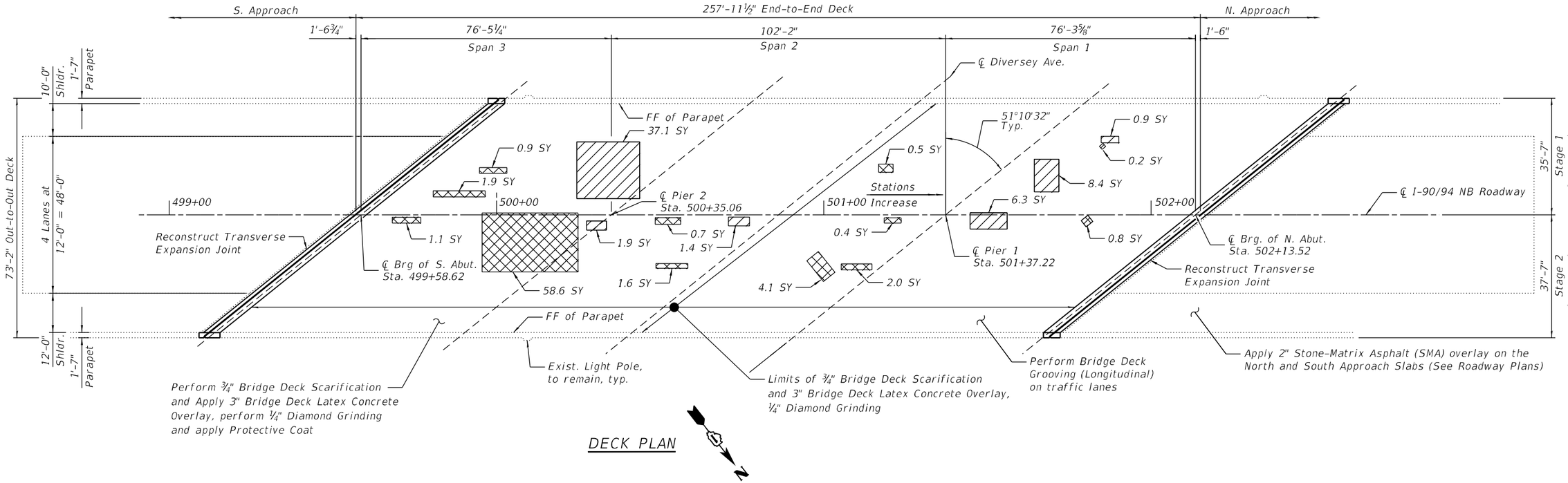
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Coat	Sq Yd	2,179
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,342
Approach Slab Repair (Full Depth)	Sq Yd	32
Approach Slab Repair (Partial Depth)	Sq Yd	32
Bridge Deck Latex Concrete Overlay, 3" Inches	Sq Yd	1,957
Bridge Deck Scarification ¾"	Sq Yd	1,957
Deck Slab Repair (Full Depth, Type II)	Sq Yd	73
Diamond Grinding (Bridge Section)	Sq Yd	1,915



DECK PLAN

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

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 S11-04.
3. For North and South transverse joint removal and reconstruction, see Sheets S11-07 through S11-12.
4. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
5. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatched block.
6. Protective Coat shall be applied to top and inside face of parapets, median, the reconstructed transverse expansion joint areas and top of Latex Concrete Overlay.
7. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to Concrete Removal.
8. The Contractor shall exercise extreme caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.
9. Approach Slab Repair (Full Depth) and Approach Slab Repair (Partial Depth) quantities have been estimated (based on a nominal 3% of bridge approach area) for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.

LEGEND

*Deck Slab Repair (Partial Depth)

Deck Slab Repair (Full Depth, Type II)

SY Square Yard

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DECK REPAIR PLAN
STRUCTURE NUMBER 016-0125 (NB)
SHEET S11-06 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	688
		CONTRACT NO. 62K73		
	ILLINOIS	FED. AID PROJECT		

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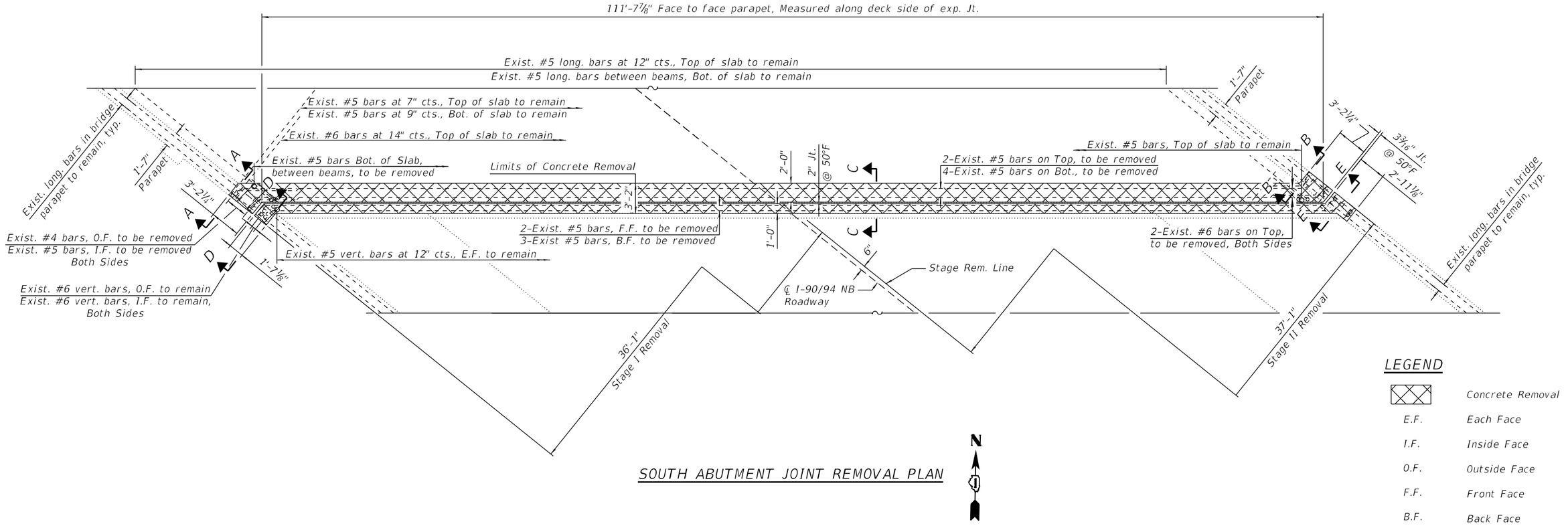
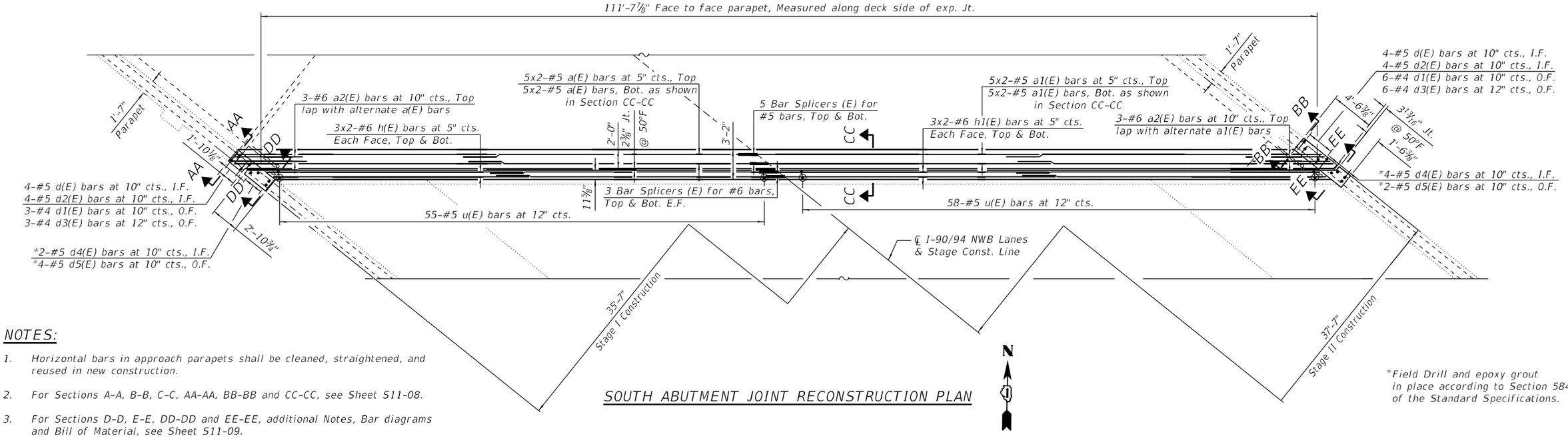


SOUTH ABUTMENT JOINT REMOVAL PLAN



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 Sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see Sheet S11-08.
3. For Sections D-D, E-E, DD-DD and EE-EE, additional Notes, Bar diagrams and Bill of Material, see Sheet S11-09.

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DEPARTMENT OF TRANSPORTATION

S. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 1 OF 3)
STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-07 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	689
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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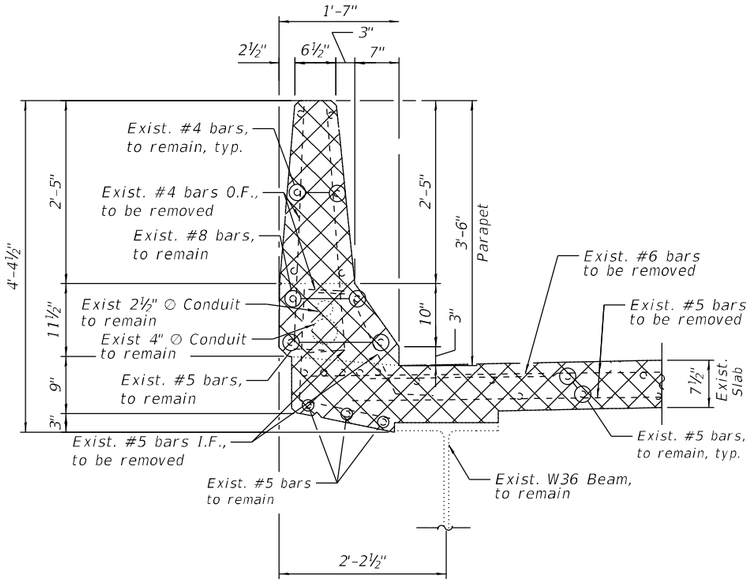
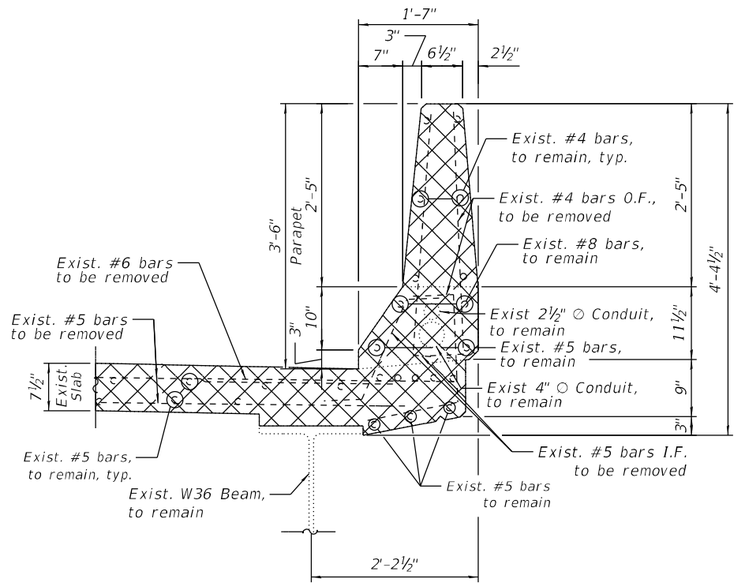
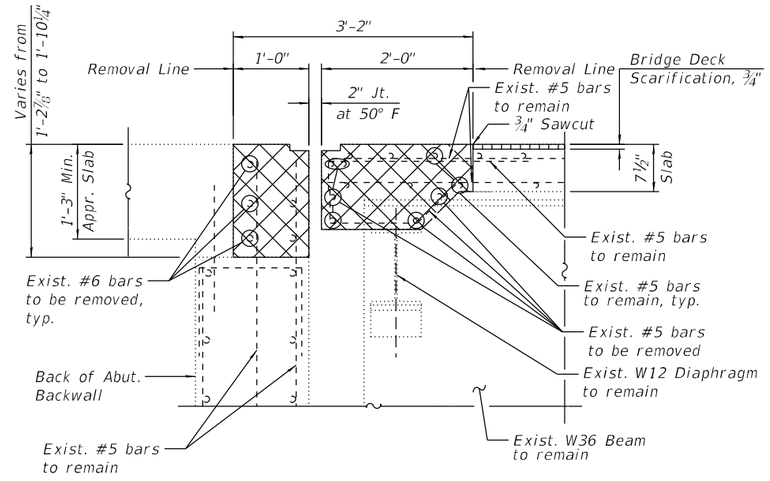


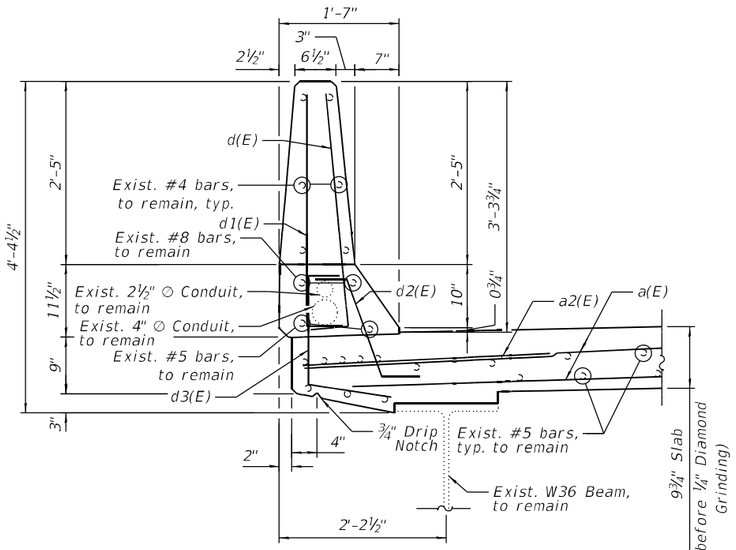
SECTION A-A



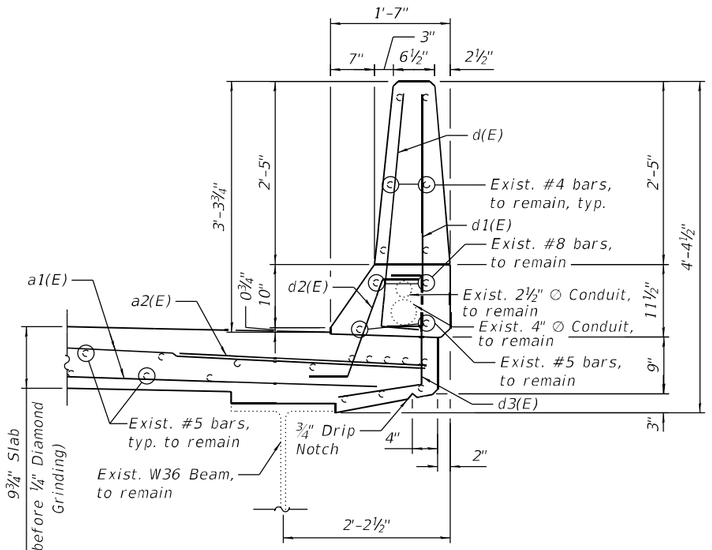
SECTION B-B



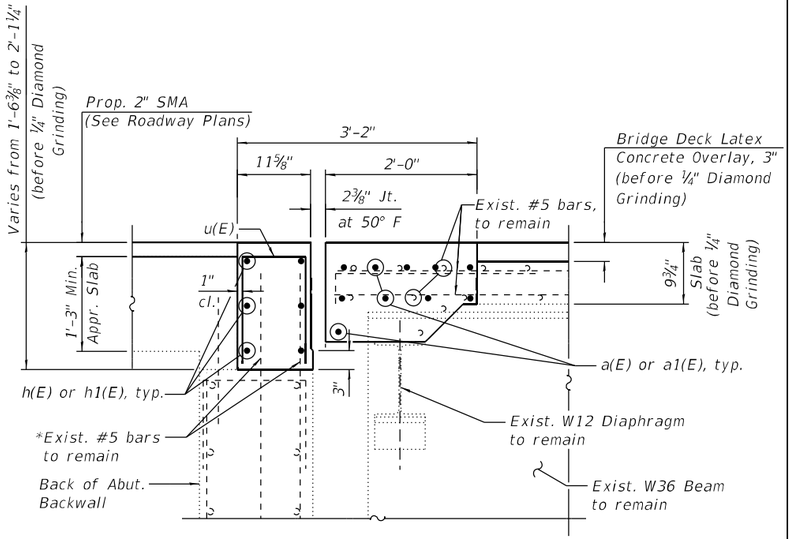
SECTION C-C



SECTION AA-AA



SECTION BB-BB



SECTION CC-CC

*Bend F.F. bars in the field as needed to fit.

NOTES:

1. For Legend, see Sheet S11-07.
2. For Sections D-D, E-E, DD-DD and EE-EE, Bar diagrams, additional Notes and Bill of Material, see Sheet S11-09.

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S. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 2 OF 3)
STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-08 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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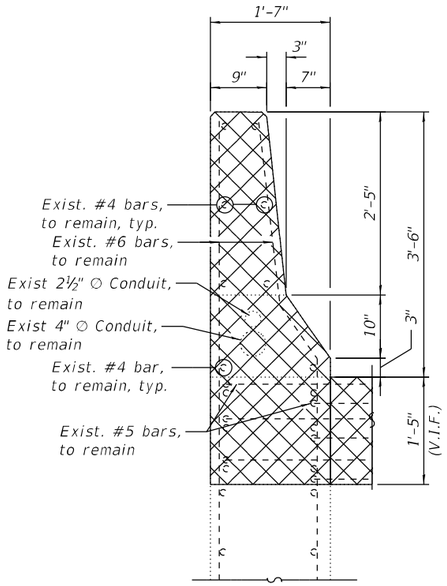
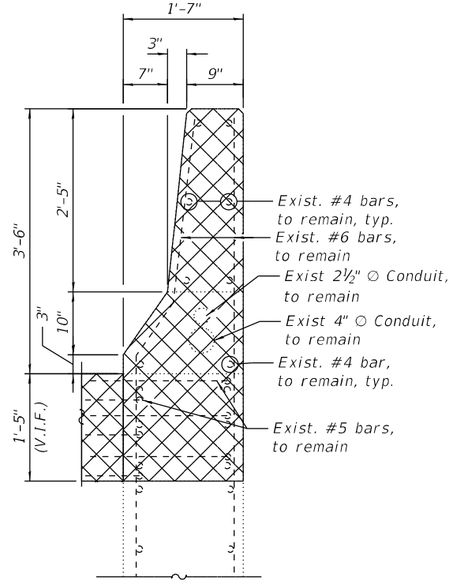
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		



SECTION D-D



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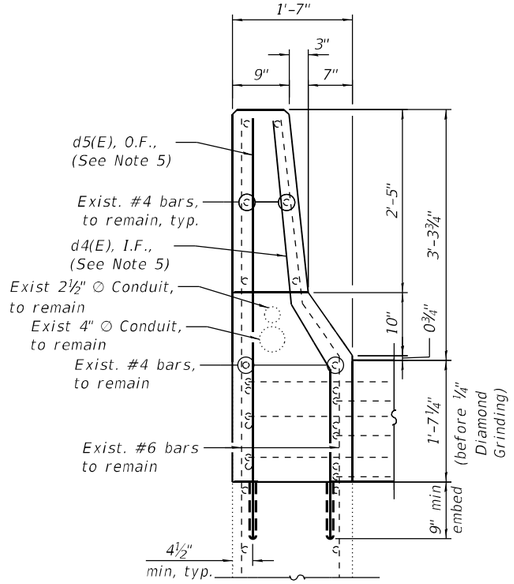
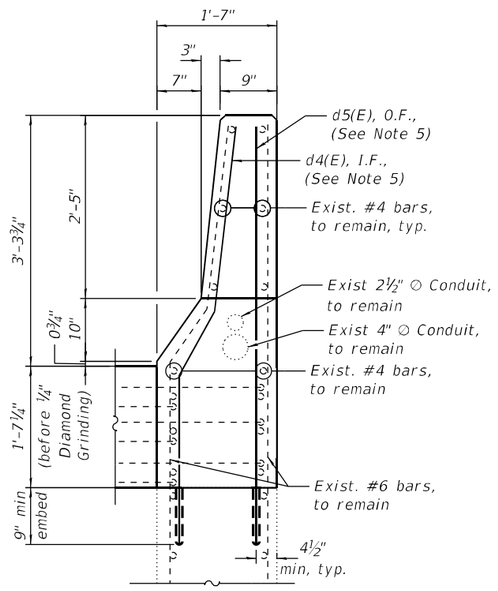


SECTION DD-DD



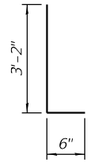
SECTION EE-EE

MIN BAR LAPS

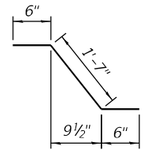
#5	3'-6"
#6	4'-0"

BILL OF MATERIAL

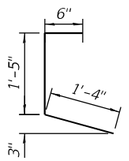
Bar	No.	Size	Length	Shape
a(E)	20	#5	30'-0"	
a1(E)	20	#5	31'-7"	
a2(E)	6	#6	6'-6"	
d(E)	8	#5	3'-8"	L
d1(E)	9	#4	3'-8"	L
d2(E)	8	#5	2'-7"	
d3(E)	9	#4	3'-3"	
d4(E)	6	#6	5'-7"	
d5(E)	6	#6	5'-6"	
h(E)	12	#6	29'-2"	
h1(E)	12	#6	30'-9"	
u(E)	113	#5	3'-4"	⊓
Concrete Removal			Cu Yd	16.9
Concrete Superstructure			Cu Yd	19.0
Protective Coat			Sq Yd	45.7
Reinforcement Bars, Epoxy Coated			Pound	3,010



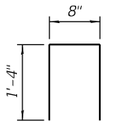
BARS d(E) & d1(E)



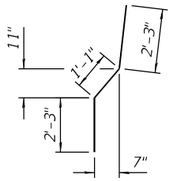
BAR d2(E)



BAR d3(E)



BAR u(E)



BAR d4(E)

NOTES:

1. For Legend, see Sheet S11-07.
2. For Preformed Joint Strip Seal Details,see Sheet S11-13.
3. For Bar Splicer Assembly Details, see Sheet S11-19.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.
5. Epoxy grout d4(E) and d5(E) bars according to Article 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Superstructure.

MODEL: Default
FILE NAME: Q:\Engineering\LiveProjects\20003_IDOT DIR HBM\WO 8 - 62K73 - Str\CADD\CADD Sheets\Structural\0160125-62K73_I-90 over Diversey\0160125-62K73-009-S, Abutments Exp. Joint Removal and Replacement Details III.dgn
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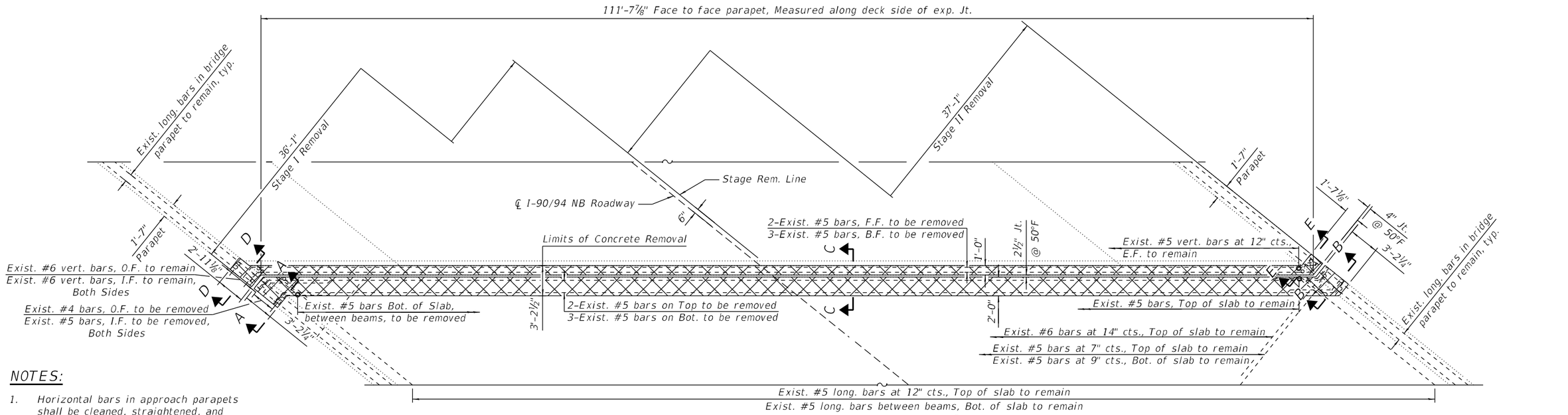
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

S. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 3 OF 3)
STRUCTURE NUMBER 016-0125 (NB)
SHEET S11-09 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	691
		CONTRACT NO.		62K73
		ILLINOIS	FED. AID PROJECT	



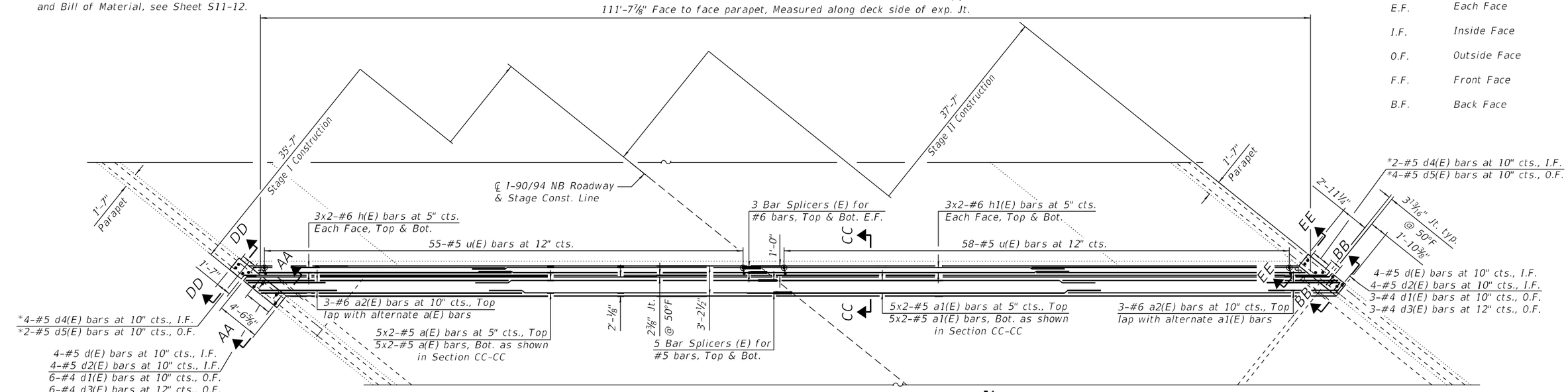
NORTH ABUTMENT JOINT REMOVAL PLAN

NOTES:

1. Horizontal bars in approach parapets shall be cleaned, straightened, and reused in new construction.
2. For Sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see Sheet S11-11.
3. For Sections D-D, E-E, DD-DD and EE-EE, additional Notes, Bar diagrams and Bill of Material, see Sheet S11-12.

LEGEND

	Concrete Removal
E.F.	Each Face
I.F.	Inside Face
O.F.	Outside Face
F.F.	Front Face
B.F.	Back Face



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

NORTH ABUTMENT JOINT RECONSTRUCTION PLAN

Accurate GROUP, INC.	USER NAME =	DESIGNED - IH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	N. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 1 OF 3) STRUCTURE NUMBER 016-0125 (NB)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - MAF	REVISED -			90/94	2020-005-BR	COOK	908	692
	PLOT SCALE =	DRAWN - IH	REVISED -					CONTRACT NO.		62K73
	PLOT DATE =	CHECKED - MAF	REVISED -		SHEET S11-10 OF S11-19 SHEETS			ILLINOIS	FED. AID PROJECT	

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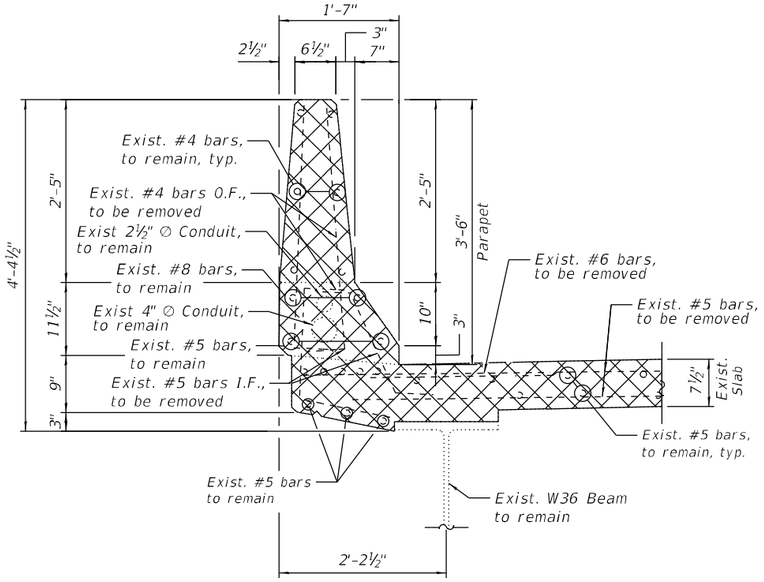
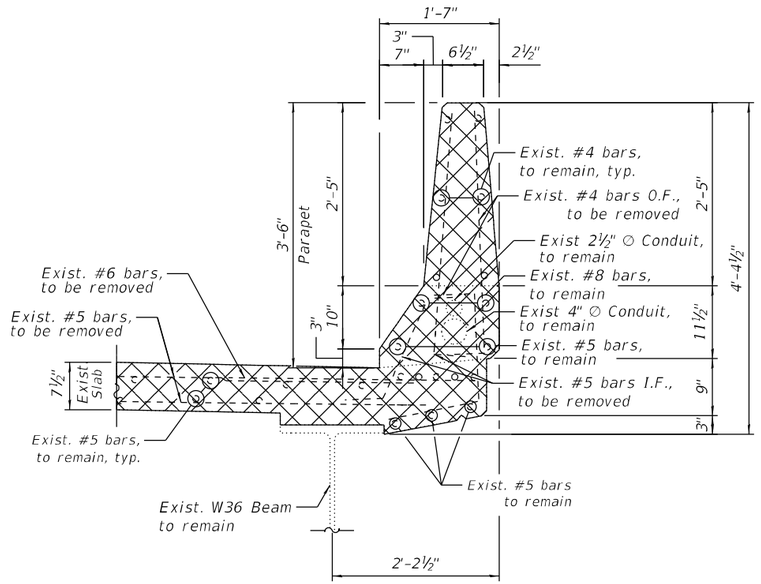
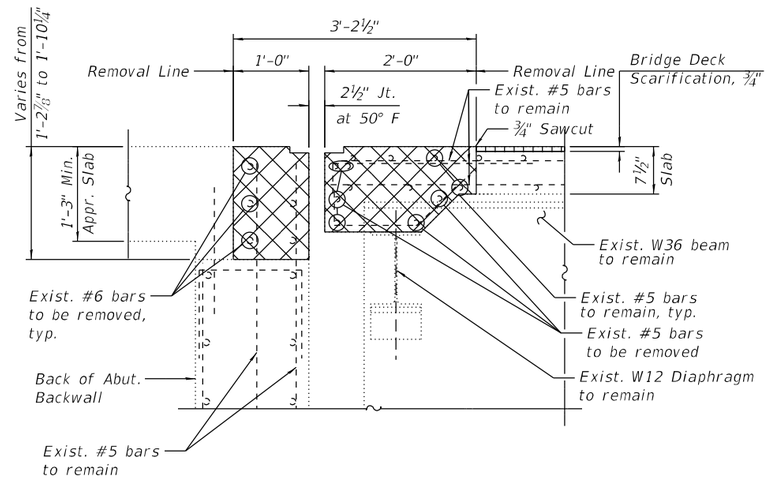


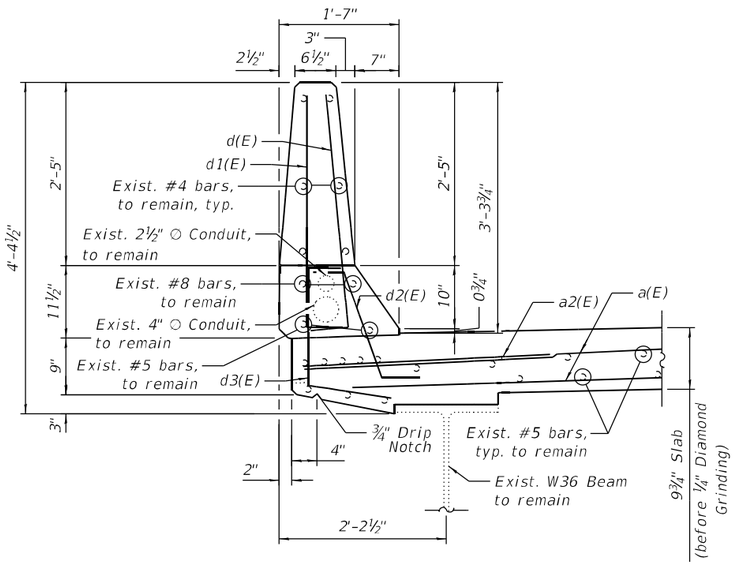
SECTION A-A



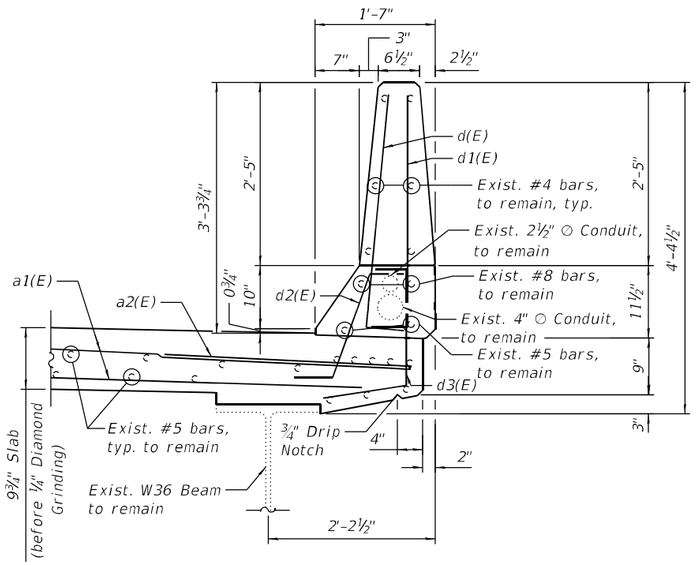
SECTION B-B



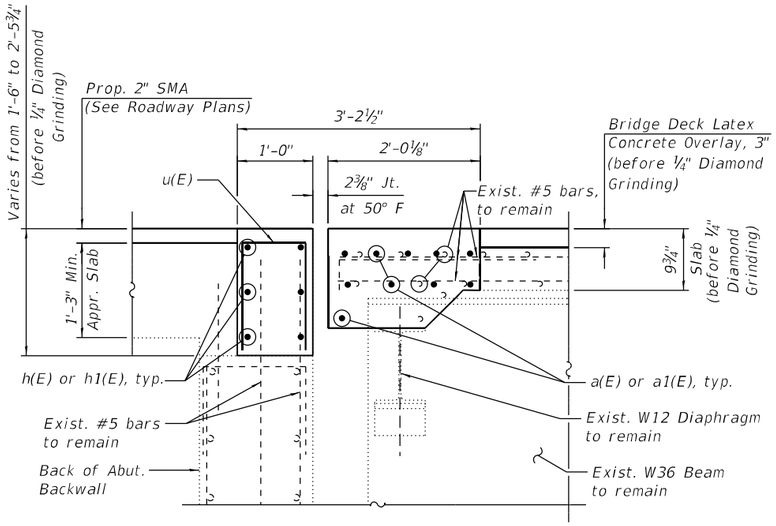
SECTION C-C



SECTION AA-AA



SECTION BB-BB



SECTION CC-CC

NOTES:

1. For Legend, see Sheet S11-10.
2. For Bar diagrams, additional Notes and Bill of Material, see Sheet S11-12.

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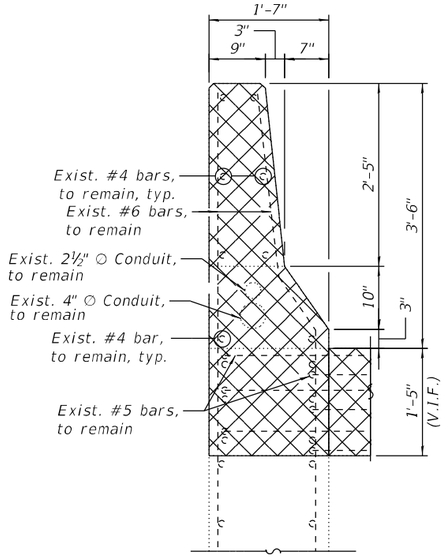
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

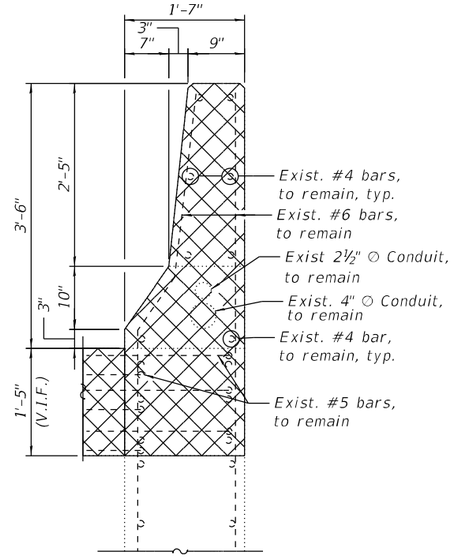
N. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 2 OF 3)
STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-11 OF S11-19 SHEETS

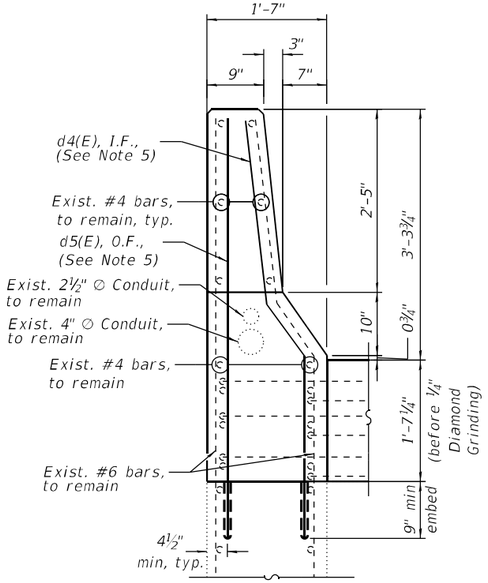
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	693
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		



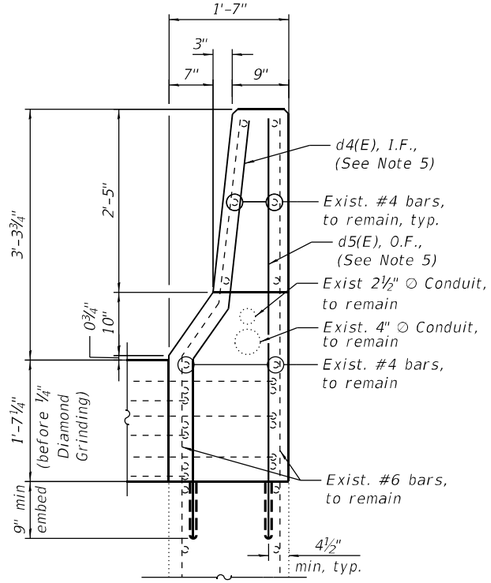
SECTION D-D



SECTION E-E



SECTION DD-DD



SECTION EE-EE

MIN BAR LAPS

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

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	20	#5	30'-0"	
a1(E)	20	#5	31'-7"	
a2(E)	6	#6	6'-6"	
d(E)	8	#5	3'-8"	L
d1(E)	9	#4	3'-8"	L
d2(E)	8	#5	2'-7"	
d3(E)	9	#4	3'-3"	
d4(E)	6	#6	5'-7"	
d5(E)	6	#6	5'-6"	
h(E)	12	#6	29'-2"	
h1(E)	12	#6	30'-9"	
u(E)	113	#5	3'-4"	⊓
Concrete Removal			Cu Yd	18.1
Concrete Superstructure			Cu Yd	20.7
Protective Coat			Sq Yd	49.2
Reinforcement Bars, Epoxy Coated			Pound	3,010

NOTES:

1. For Legend, see Sheet S11-10.
2. For Preformed Joint Strip Seal Details, see Sheet S11-13.
3. For Bar Splicer Assembly Details, see Sheet S11-19.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.
5. Epoxy grout d4(E) and d5(E) bars according to Article 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Superstructure.

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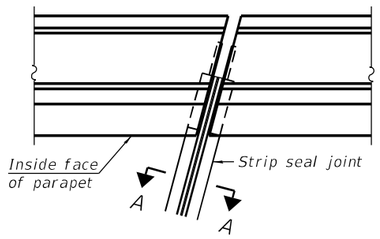
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

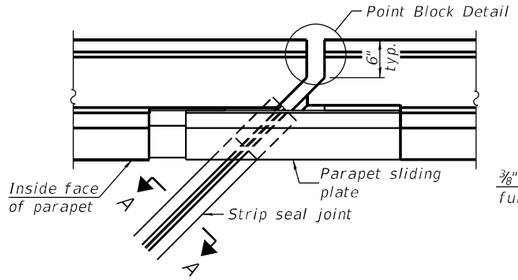
N. ABUT. JOINT REMOVAL & REPLACEMENT (SHEET 3 OF 3)
STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-12 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	694
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

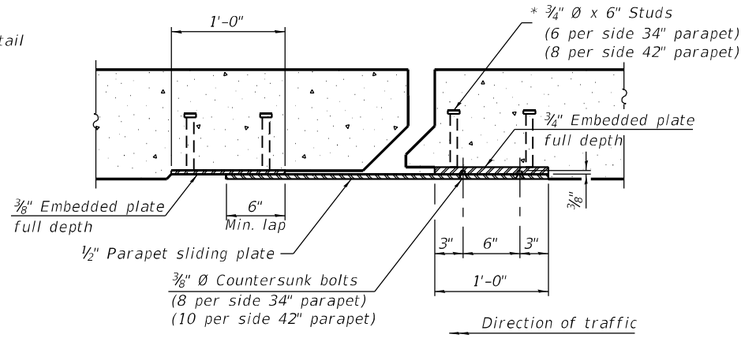


FOR SKEWS ≤ 30°



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.

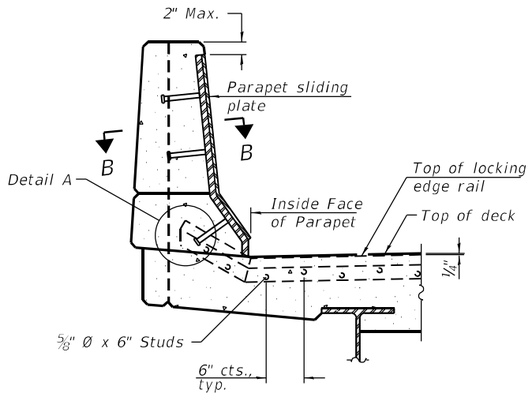
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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.

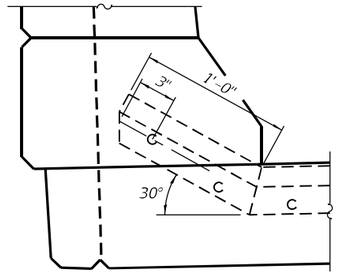
34" F-shape barrier shown, 42" F-shape similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

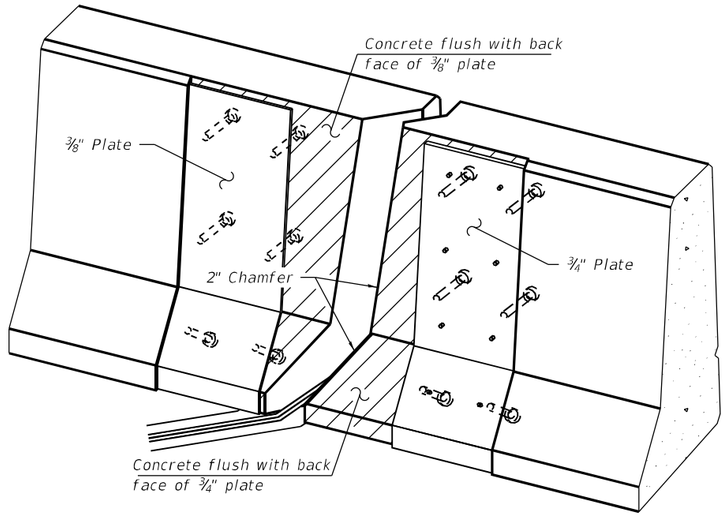


ELEVATION AT PARAPET

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

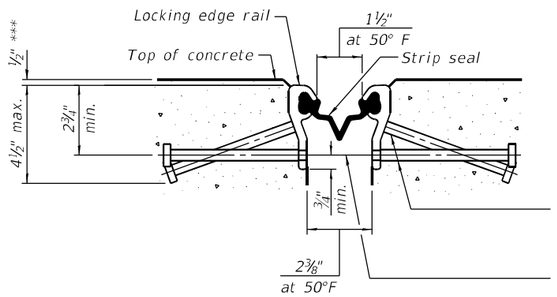


DETAIL A

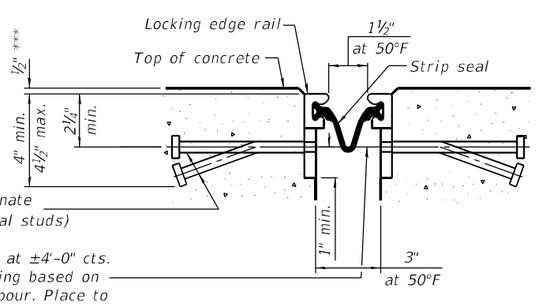


TRIMETRIC VIEW

(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT



SHOWING WELDED RAIL JOINT

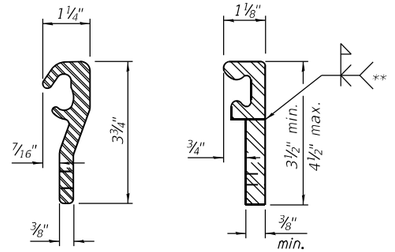
* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

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.*

**** Before ¼" Diamond Grinding*

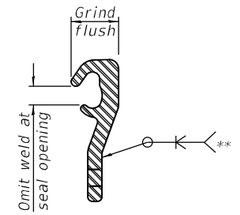


ROLLED (EXTRUDED) RAIL

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	228

MODEL: Default
FILE NAME: Q:\Engineering\LiveProjects\20003_IDOT DIR HBM\WO 8 - 62K73 - Str\CADD\CADD Sheets\Structural\0160125-62K73_I-90 over Diversey\0160125-62K73-013-Preformed Joint Strip Seal I.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

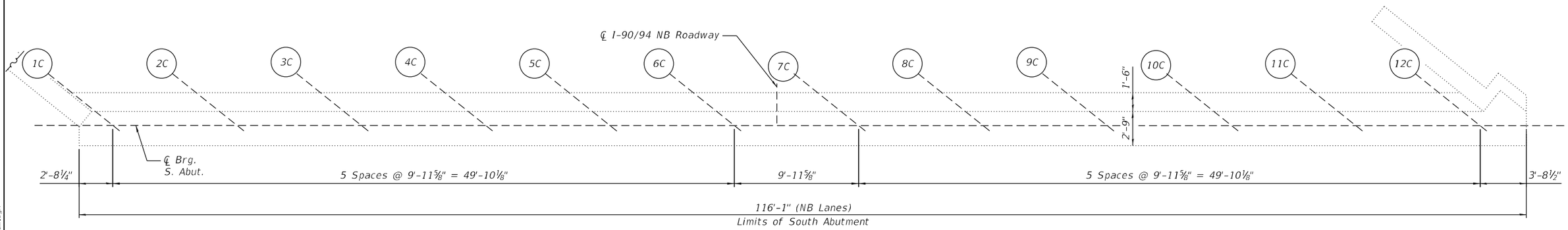
PREFORMED JOINT STRIP SEAL
STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-13 OF S11-19 SHEETS

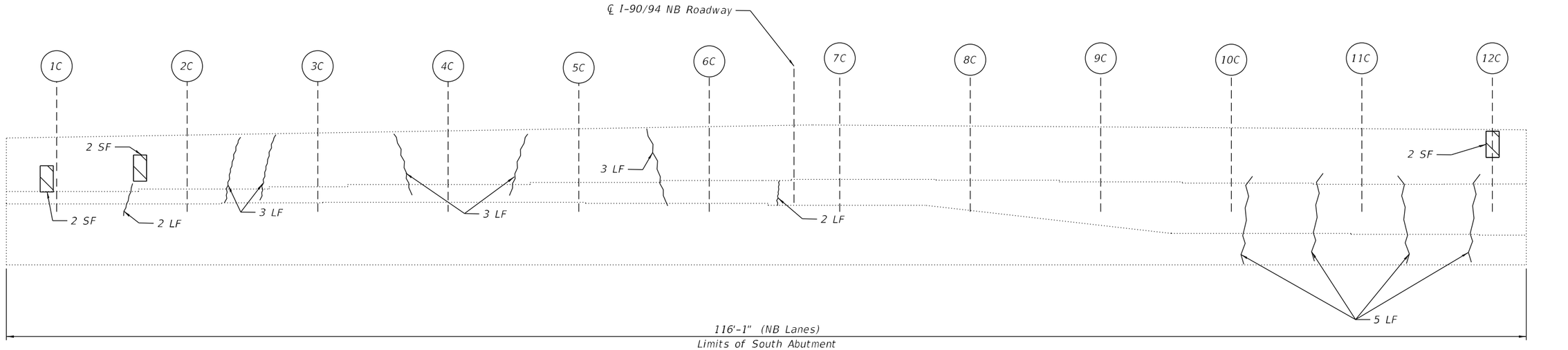
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	695
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

BILL OF MATERIAL

ITEM	UNIT	Quantity
Concrete Sealer	Sq Ft	552
Epoxy Crack Injection	Foot	39
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq Ft	6



SOUTH ABUTMENT PLAN



SOUTH ABUTMENT ELEVATION

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 S11-18.
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 less than 5")
- Epoxy Crack Injection (width > 0.06")
- SF — Square Foot
- LF — Linear Foot

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PLOT DATE =	CHECKED - MAF	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT REPAIRS
STRUCTURE NUMBER 016-0125 (NB)
SHEETS11-14 OS11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	696
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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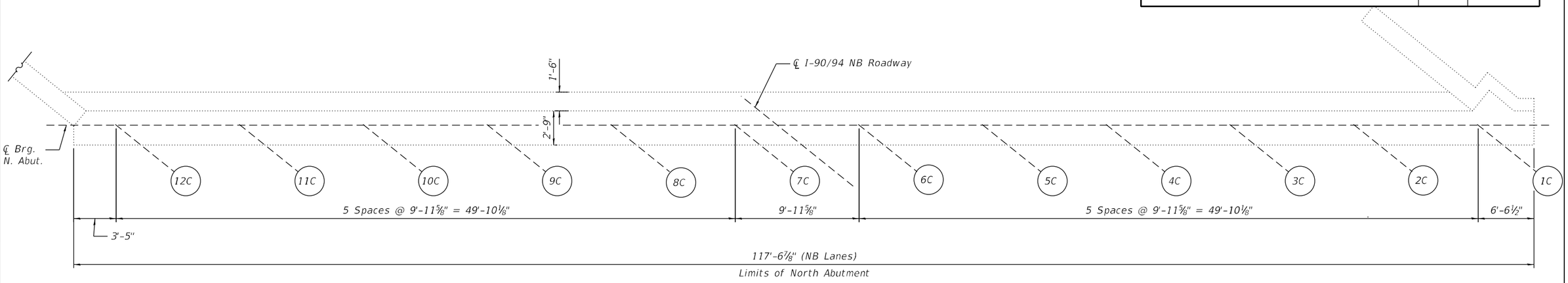
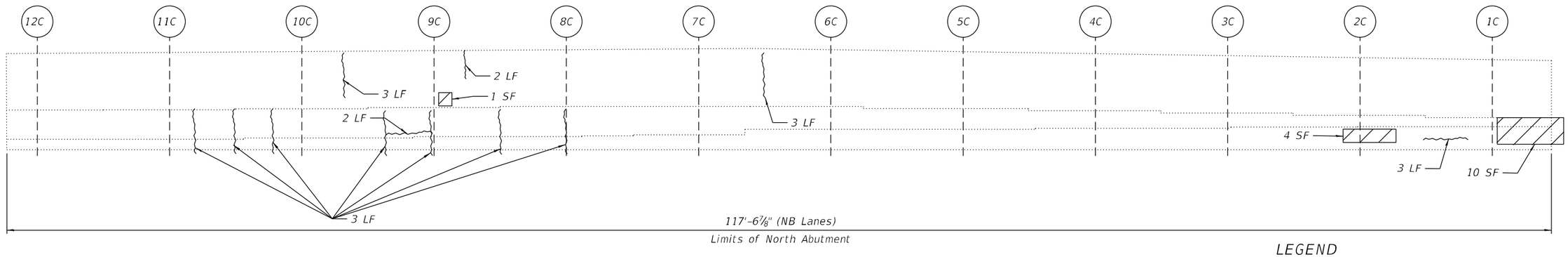
BILL OF MATERIAL

ITEM	UNIT	Quantity
Concrete Sealer	Sq Ft	559
Epoxy Crack Injection	Foot	34
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq Ft	15



NORTH ABUTMENT PLAN

N



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 S11-18 .
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 less than 5")
	Epoxy Crack Injection (width > 0.06")
SF	Square Foot
LF	Linear Foot

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIRS
STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-15 OFS11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	697
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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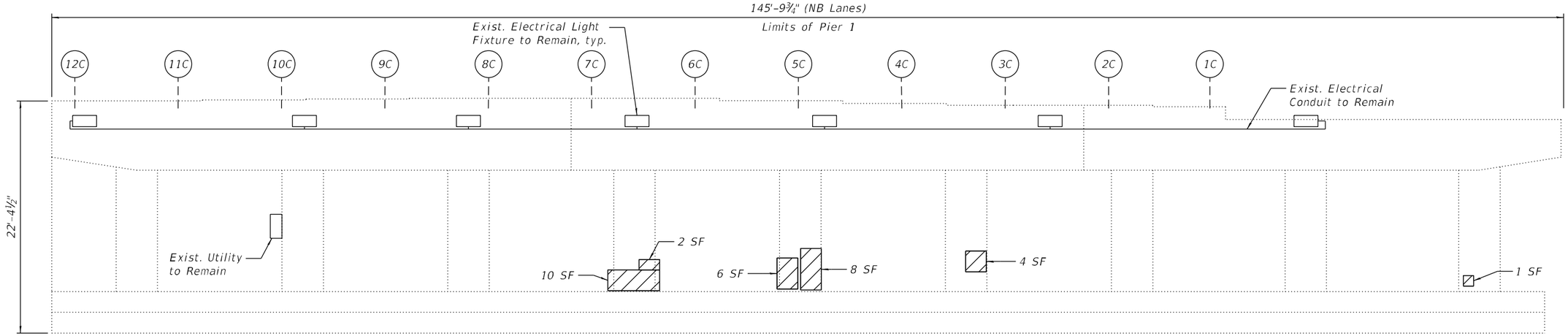
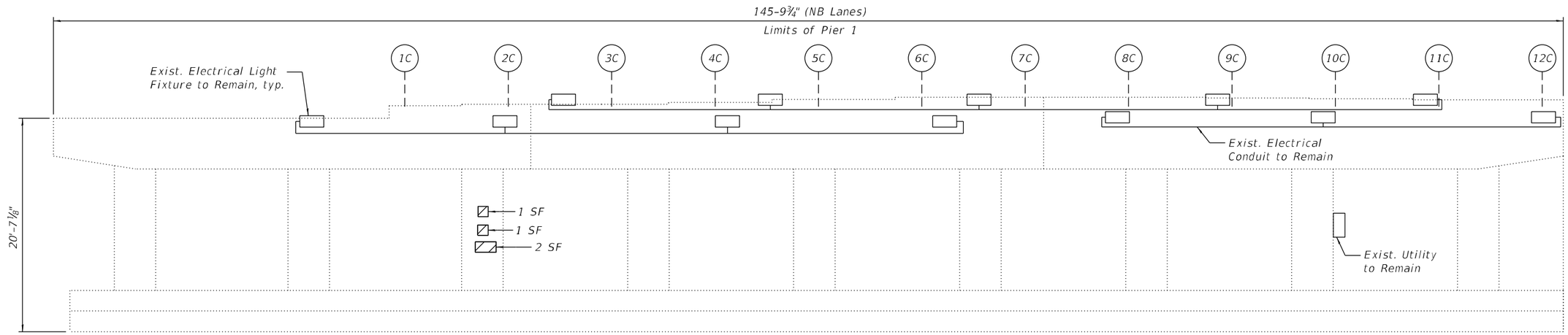


PIER 1 ELEVATION
(Looking North)



PIER 1 ELEVATION
(Looking South)

EXISTING LIGHTING: PIER 1
South Face, Looking North

LEGEND

Structural Repair of Conrete
(Depth Equal to or less than 5")

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.

EXISTING LIGHTING: PIER 1
North Face, Looking South

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq Ft	35

MODEL: Default
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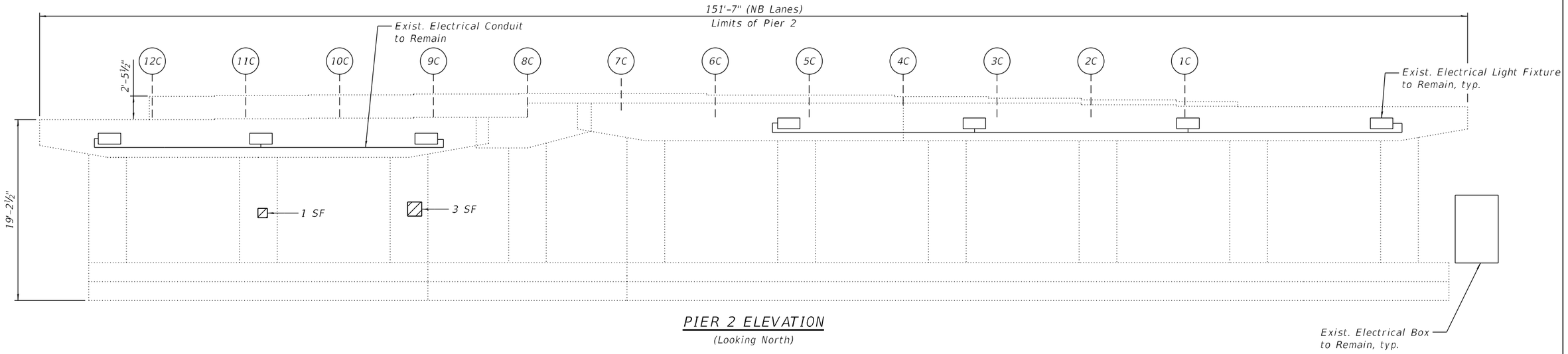
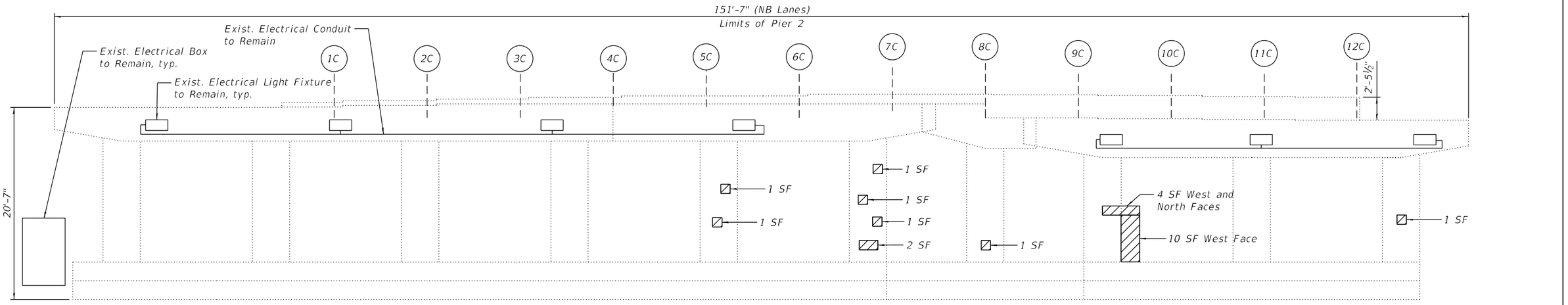
PIER 1 REPAIRS
STRUCTURE NUMBER 016-0125 (NB)
SHEET S11-16 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	698
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		



PIER 2 ELEVATION

(Looking North)



PIER 2 ELEVATION

(Looking South)

EXISTING LIGHTING: PIER 2

South Face, Looking North

LEGEND

▨	Structural Repair of Conrete (Depth Equal to or less than 5")
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.

EXISTING LIGHTING: PIER 2

North Face, Looking South

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq Ft	27

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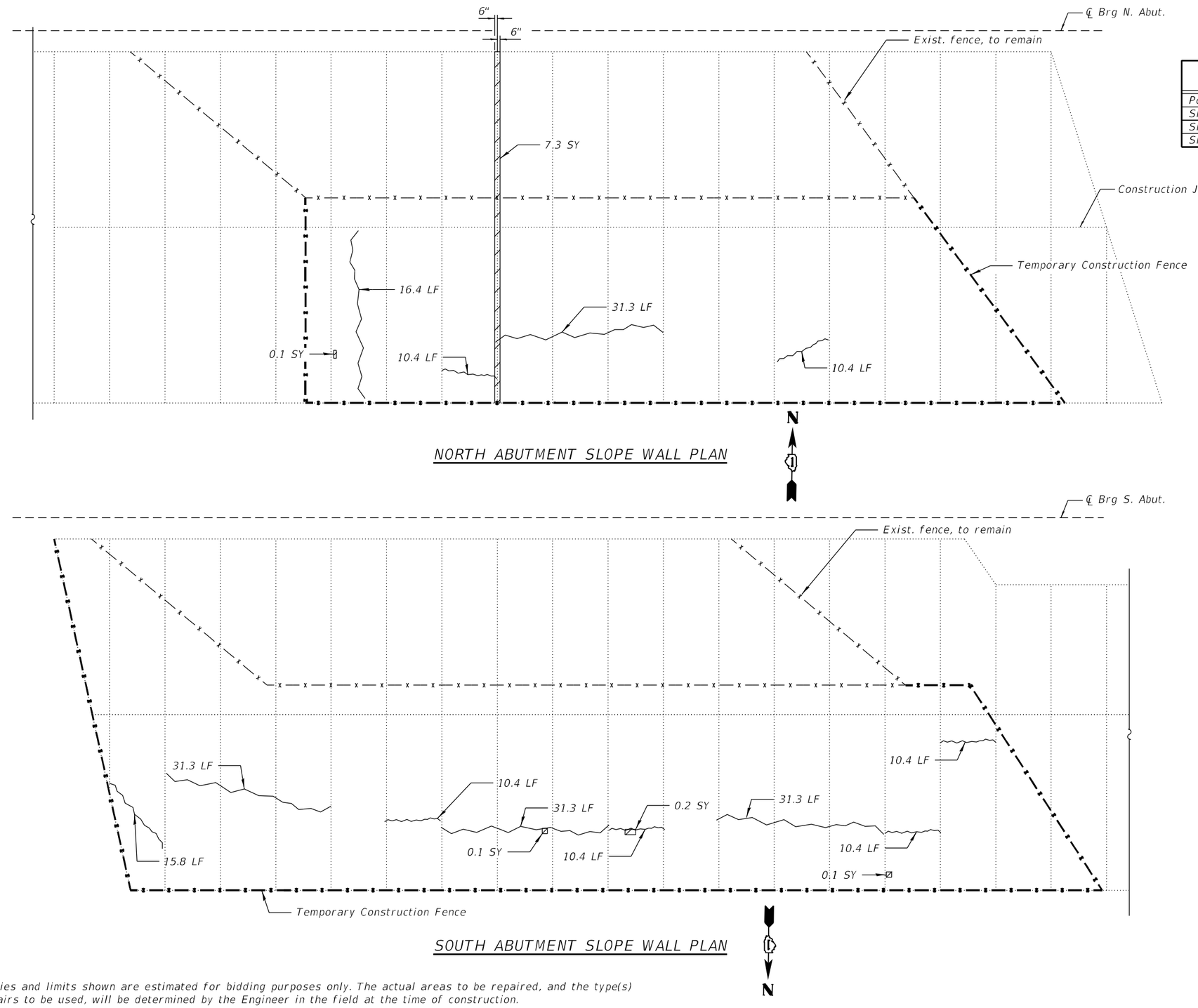
PIER 2 REPAIRS
STRUCTURE NUMBER 016-0125 (NB)

SHEET S11-17 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	699
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		



BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu Yd	3
Slope Wall Removal	Sq Yd	8
Slope Wall 4 Inch	Sq Yd	8
Slope Wall Crack Sealing	Foot	220

NORTH ABUTMENT SLOPE WALL PLAN

SOUTH ABUTMENT SLOPE WALL PLAN

LEGEND

	Slope Wall Removal and Replacement with 4 Inch Slope Wall
	Slope Wall Crack Sealing
SY	Square Yard
LF	Linear 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. W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.

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PLOT DATE =	CHECKED - MAF	REVISED -

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DEPARTMENT OF TRANSPORTATION

SLOPE WALL REPAIRS
STRUCTURE NUMBER 016-0125 (NB)
SHEET S11-18 OF S11-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-005-BR	COOK	908	700
		CONTRACT NO.		62K73
	ILLINOIS	FED. AID PROJECT		

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