Existing Structure: *S.N. 016-0118 was originally built in 1958 from BCR. The bridge was widened and redecked between 1990 and 1993, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 199'-11⅛" and an out-to-out deck width of 36'-0½". The superstructure consists of a 7½" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 55'-6⅞", 82'-4¾" and 55'-6⅞". The substructure consists of reinforced concrete piers and abutments supported on reinforced concrete piles.*

The reversible lanes will be closed to traffic during construction.

No salvage.

LOADING

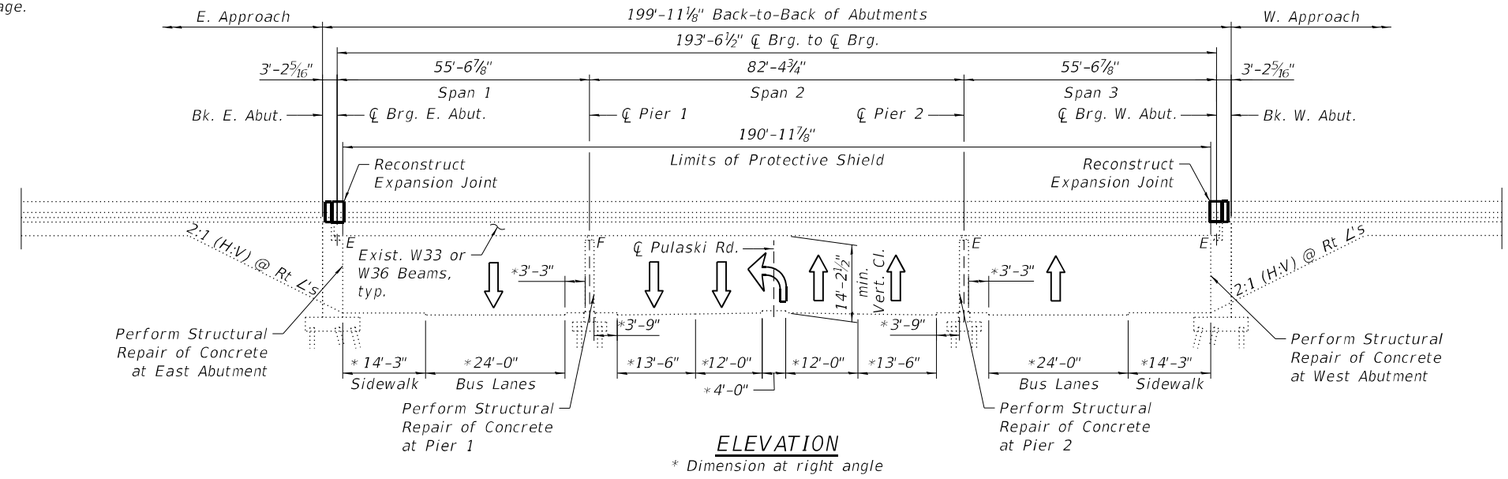
HS20-44 and alternate military loading

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition

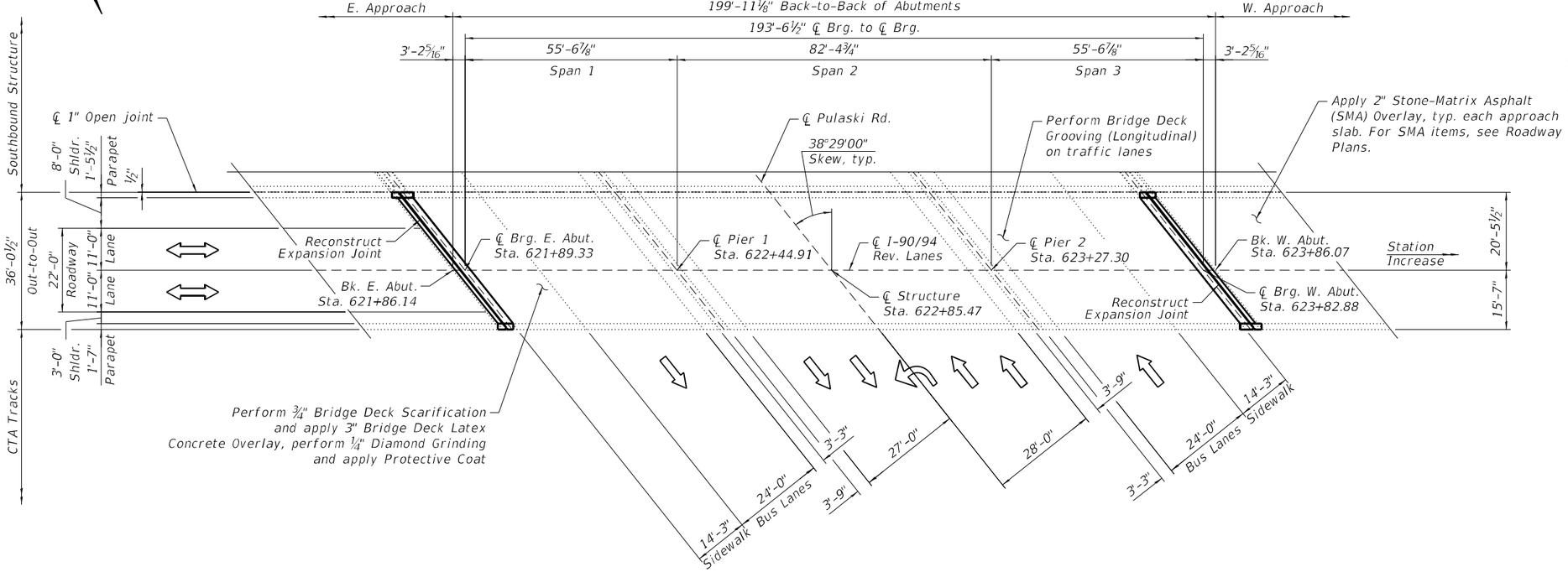
NOTE:

1. *All stations are to the ℄ I-90/94 Reversible Roadway and taken from existing plans.*
2. *No Future Wearing Surface is allowed.*

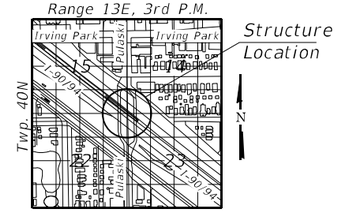


ELEVATION

* Dimension at right angle



PLAN



LOCATION SKETCH

KEVIN WOOD 081-006515 LICENSED STRUCTURAL ENGINEER OF ILLINOIS

Kevin Wood

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

GENERAL PLAN AND ELEVATION
REVERSIBLE I-90 OVER PULASKI ROAD
F.A.I. SEC 2020-004-BR
COOK COUNTY
STATION: 622+85.47
STRUCTURE NO. 016-0118 (REV)

MODEL: SMODELNAMES
FILE NAME: X:\DH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0118_PulaskiRev\016018-62K74-S001-GPER.dgn

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S34-01 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1301
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

GENERAL NOTES

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

2. Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 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.

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

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

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

6. Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. The cost of cleaning shall be included in the cost of Concrete Removal.

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

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

9. For SMA overlay on Approach Slab, see Roadway Plans.

10. Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.

11. 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.

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

13. Adjacent I-90/94 Northbound and Southbound bridge is not shown throughout the plans for clarity.

14. 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.

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

16. The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.

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

18. Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.

19. Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.

20. 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.

21. Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.

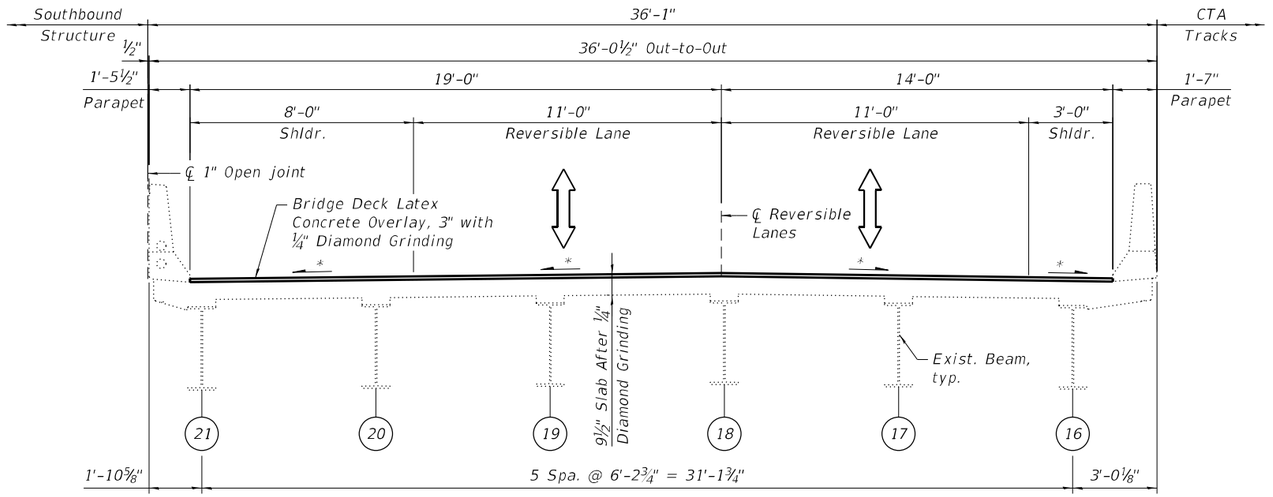
INDEX OF SHEETS

SCOPE OF WORK

1. Provide Protective Shield within limits indicated on the plans.
2. Scarify ¾" from the bridge deck slab.
3. Perform deck repairs.
4. Remove and reconstruct expansion joints at east and west abutments and install new Preformed Joint Strip Seals.
5. Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs.
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 the new overlay.
9. Perform Structural Concrete repairs to the Abutments and Piers as noted in the plans.
10. Install 2½" Longitudinal Preformed Joint Strip Seal along top of parapet between Reversible and Southbound lanes.

TOTAL BILL OF MATERIAL

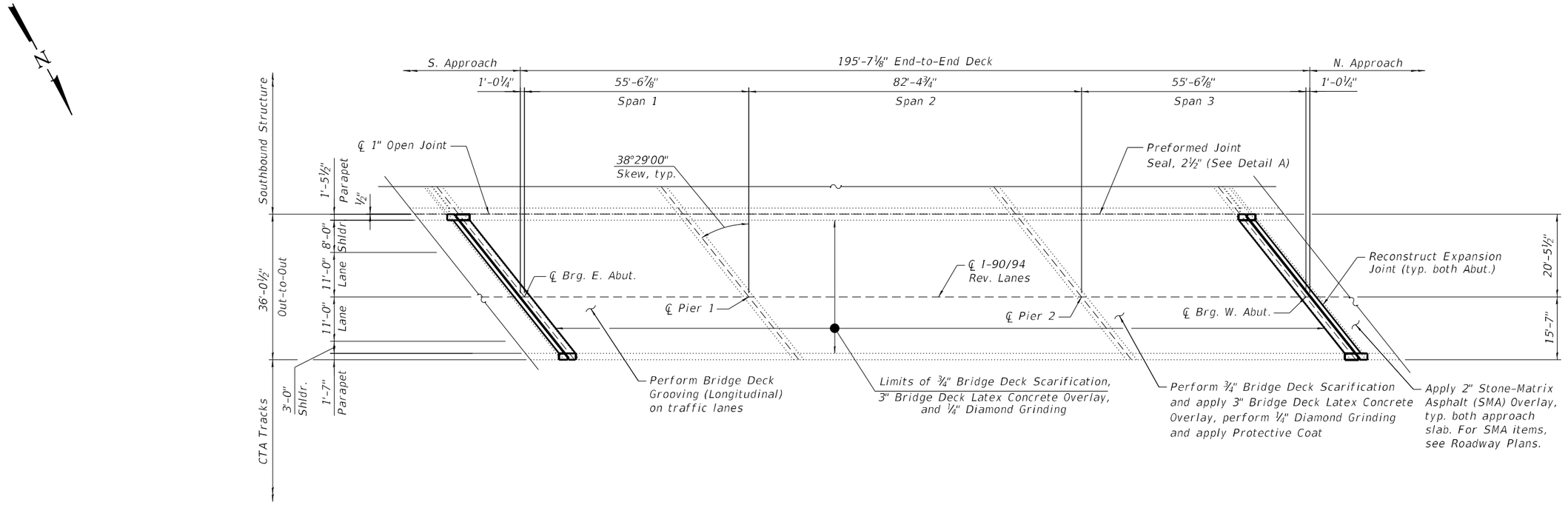
ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	15.2		15.2
Protective Shield	Sq Yd	765		765
Concrete Superstructure	Cu Yd	16.8		16.8
Protective Coat	Sq Yd	957		957
Reinforcement Bars, Epoxy Coated	Pound	2,620		2,620
Preformed Joint Seal 2 1/2"	Foot	200		200
Preformed Joint Strip Seal	Foot	89		89
Concrete Sealer	Sq Ft		421	421
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	520		520
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	697		697
Bridge Deck Scarification 3/4"	Sq Yd	697		697
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		26	26
Diamond Grinding (Bridge Section)	Sq Yd	715		715
Maintenance of Lighting System	Cal Mo		6	6



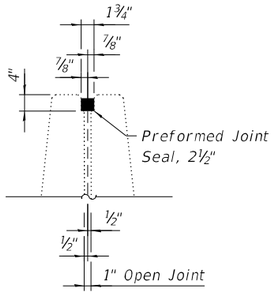
FINAL CROSS SECTION

(Looking West)

* Match existing deck surface profile



DECK PLAN



DETAIL A

(Reinforcement not shown for clarity)

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 S34-02.
3. For East and West transverse joint removal and reconstruction, see Sheet S34-04 thru S34-09.
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.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	765
Protective Coat	Sq Yd	957
Preformed Joint Seal 2 1/2"	Foot	200
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	520
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	697
Bridge Deck Scarification 3/4"	Sq Yd	697
Diamond Grinding (Bridge Section)	Sq Yd	715
Maintenance of Lighting System	Cal Mo	6

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE DECK REPAIR PLAN AND DETAILS
SN 016-0118 (REV)

SHEET S34-03 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1303
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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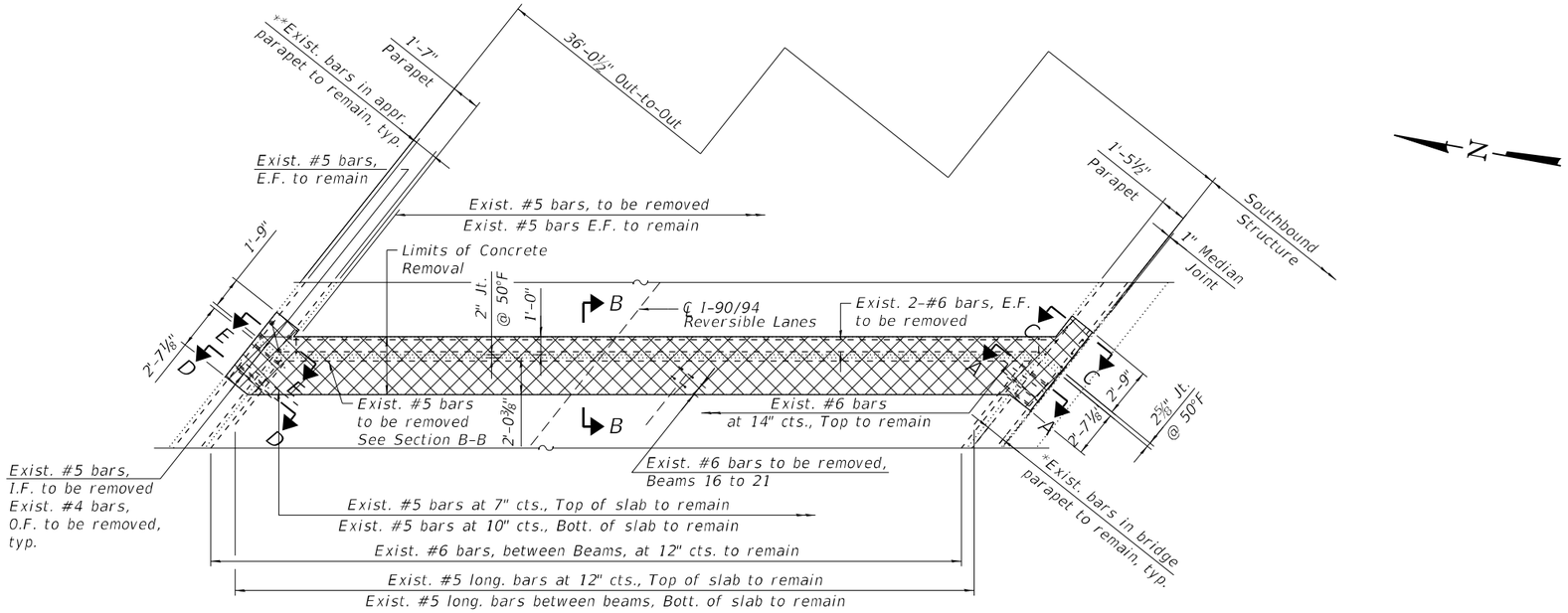
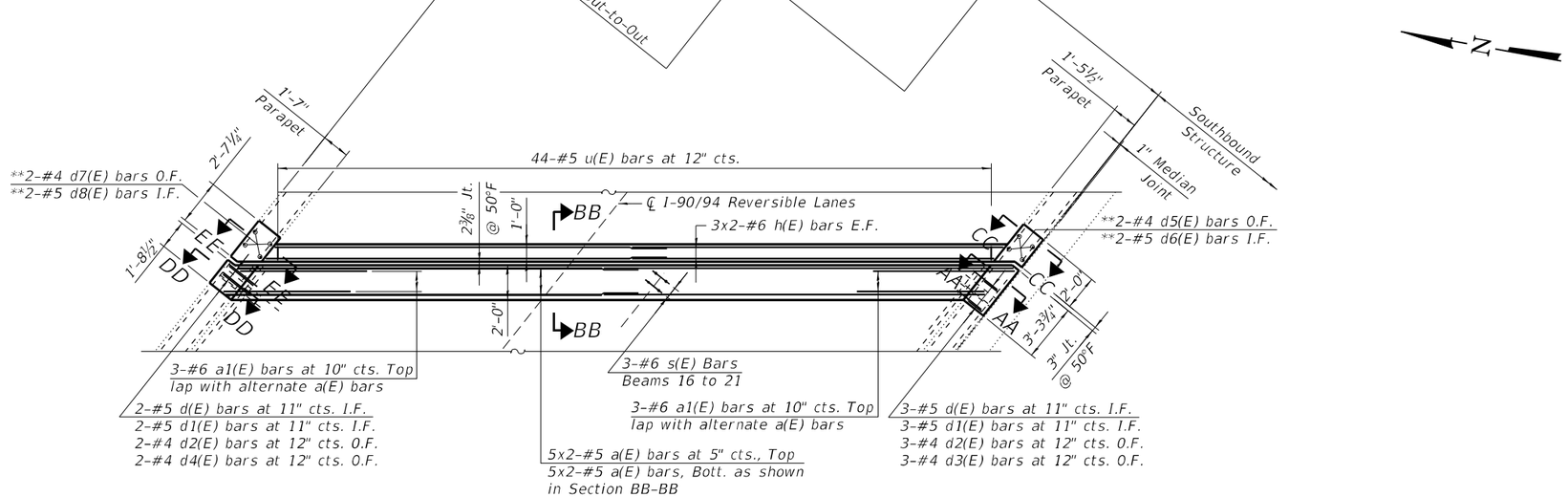


EAST ABUTMENT JOINT REMOVAL PLAN



EAST ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S34-05.
2. For sections D-D, E-E, DD-DD and EE-EE, see sheet S34-06.

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

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

LEGEND

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

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0118 (REV)
SHEET S34-04 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1304
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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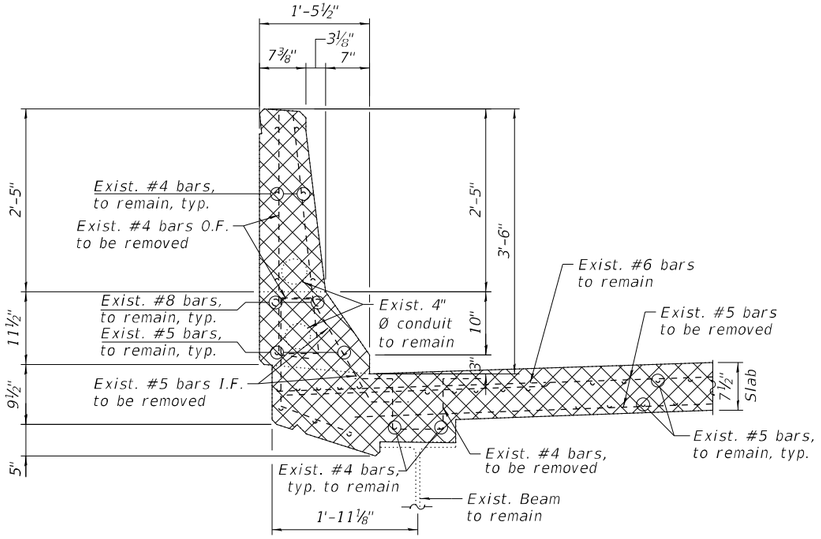
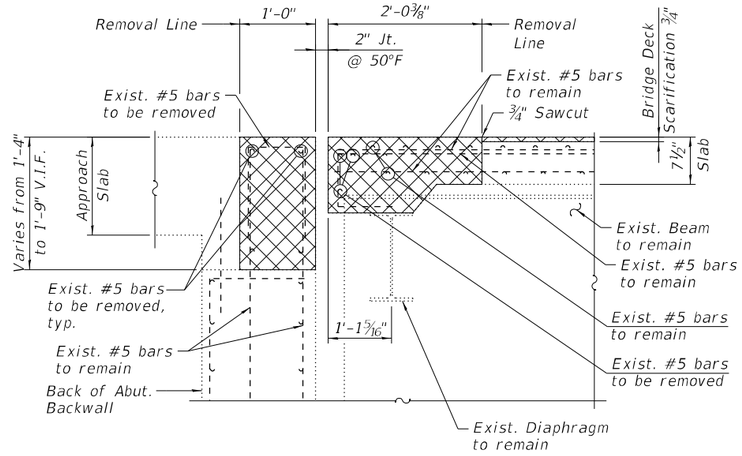
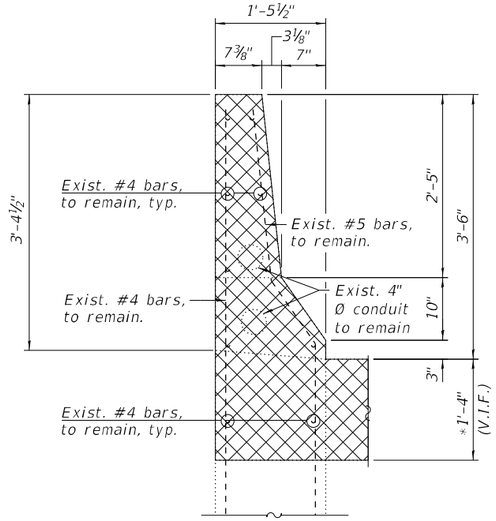


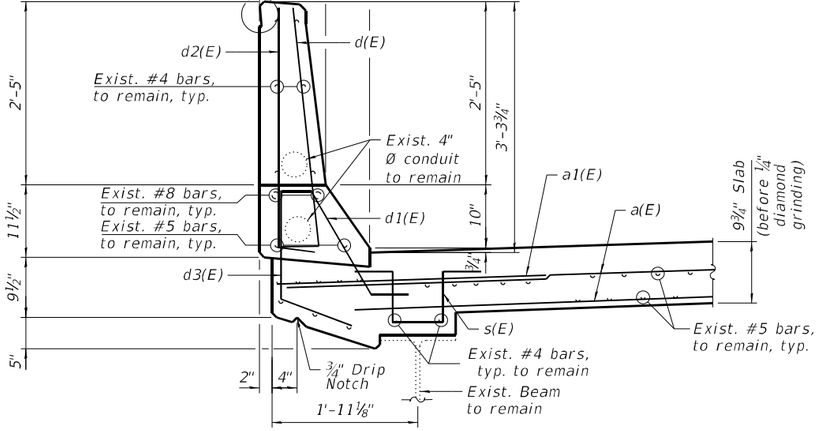
SECTION A-A
(South parapet removal)



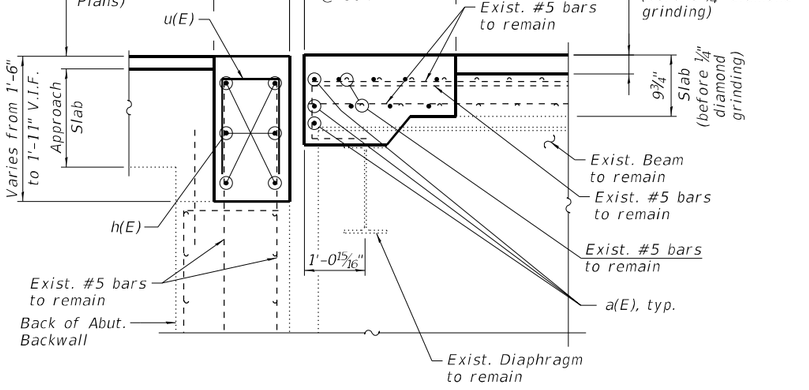
SECTION B-B



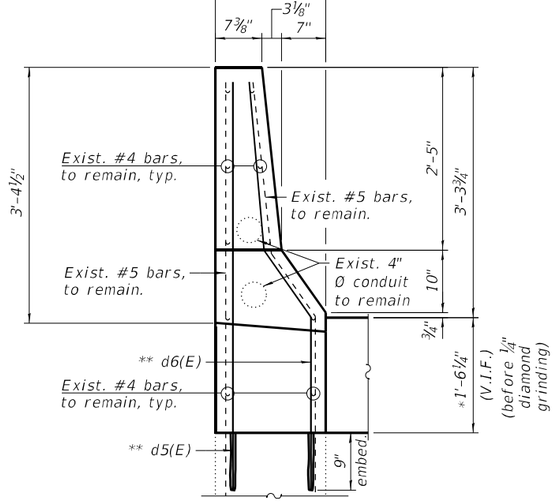
SECTION C-C
(South parapet removal)



SECTION AA-AA
(South parapet reconstruction)



SECTION BB-BB



SECTION CC-CC
(South parapet reconstruction)

LEGEND

* Dimension is taken at the Back of Abut.

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

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

MODEL: SMODELNAMES
FILE NAME: X:\Oh\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0118_PulaskiRev\0160118-62K74-S005-EXPR.dgn

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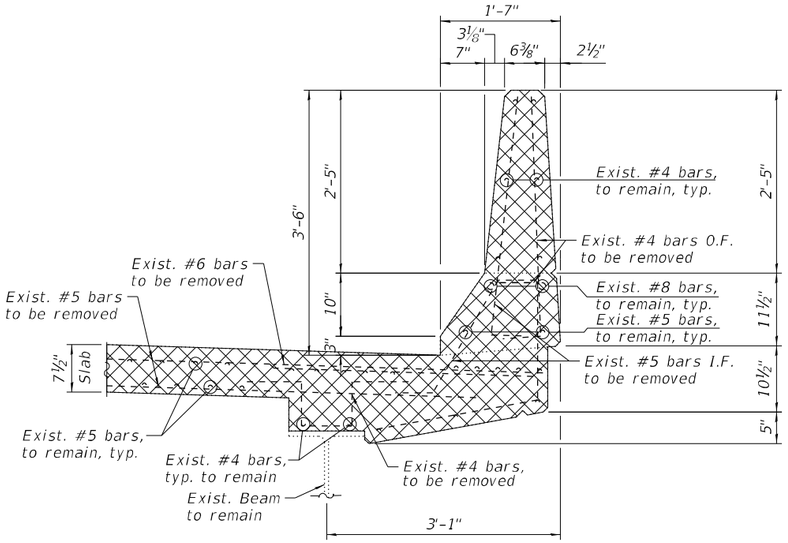
		CHECKED -	H.A.	REVISED -	
PLOT SCALE =		DRAWN -	J.T.B.	REVISED -	
PLOT DATE =		CHECKED -	K.G.W.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

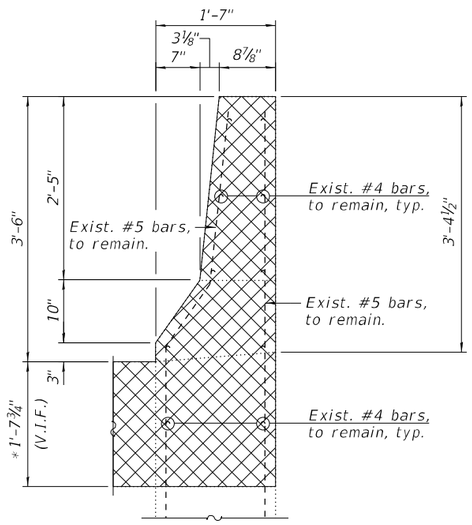
EAST ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0118 (REV)
SHEET S34-05 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1305
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	



SECTION D-D

(North parapet removal)

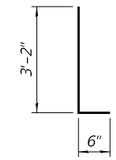


SECTION E-E

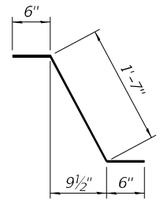
(North parapet removal)

BILL OF MATERIAL
EAST ABUTMENT

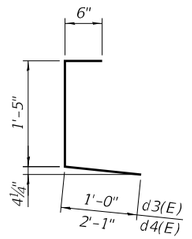
Bar	No.	Size	Length	Shape
a(E)	20	#5	24'-3"	
a1(E)	6	#6	6'-6"	
d(E)	5	#5	3'-8"	
d1(E)	5	#5	2'-7"	
d2(E)	5	#4	3'-8"	
d3(E)	3	#4	2'-11"	
d4(E)	2	#4	4'-0"	
d5(E)	2	#4	5'-7"	
d6(E)	2	#5	5'-8"	
d7(E)	2	#4	5'-10"	
d8(E)	2	#5	6'-0"	
h(E)	12	#6	24'-3"	
s(E)	18	#6	3'-4"	
u(E)	44	#5	2'-7"	
Concrete Removal			Cu Yd	7.7
Reinforcement Bars, Epoxy Coated			Pound	1,310
Concrete Superstructure			Cu Yd	8.5



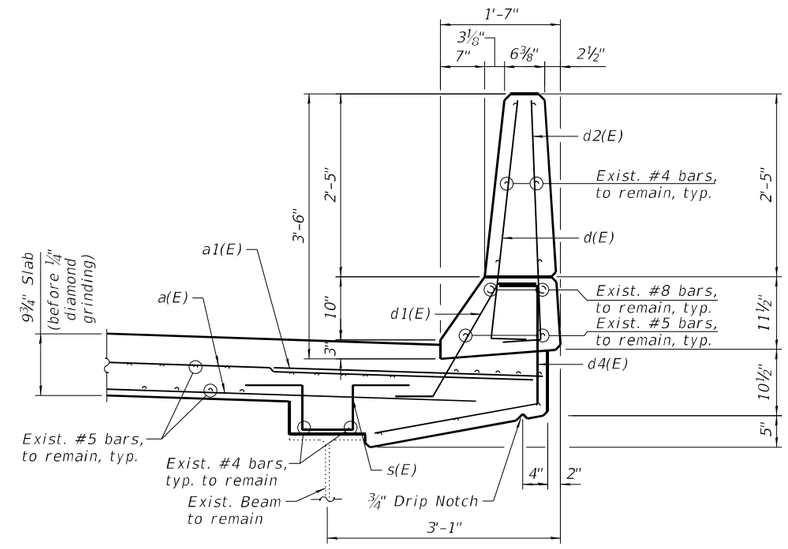
BARS d(E) & d2(E)



BAR d1(E)

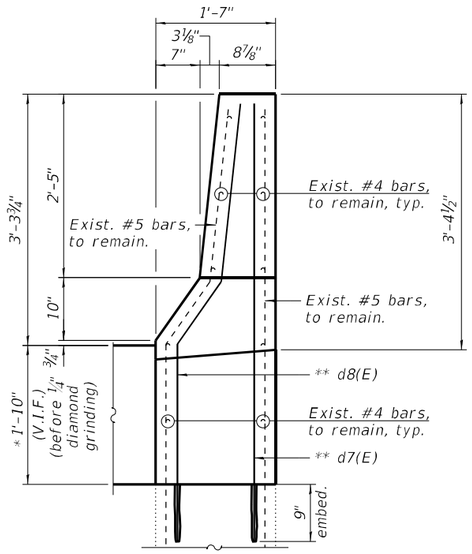


BARS d3(E) & d4(E)



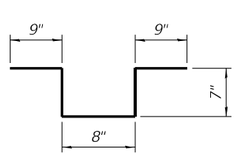
SECTION DD-DD

(North parapet reconstruction)

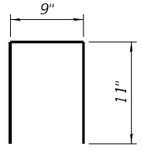


SECTION EE-EE

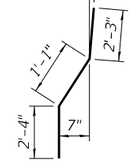
(North parapet reconstruction)



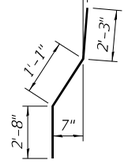
BAR s(E)



BAR u(E)



BAR d6(E)



BAR d8(E)

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S34-10.
2. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
3. Removal and disposal of the existing expansion joints is included with Concrete Removal.

* Dimension is taken at the Back of Abut.

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

LEGEND

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

MIN BAR LAPS

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

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0118 (REV)

SHEET S34-06 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1306
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: sMODELNAMES
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\0160118_PulaskiRev\0160118-62K74-S006-EXPR.dgn
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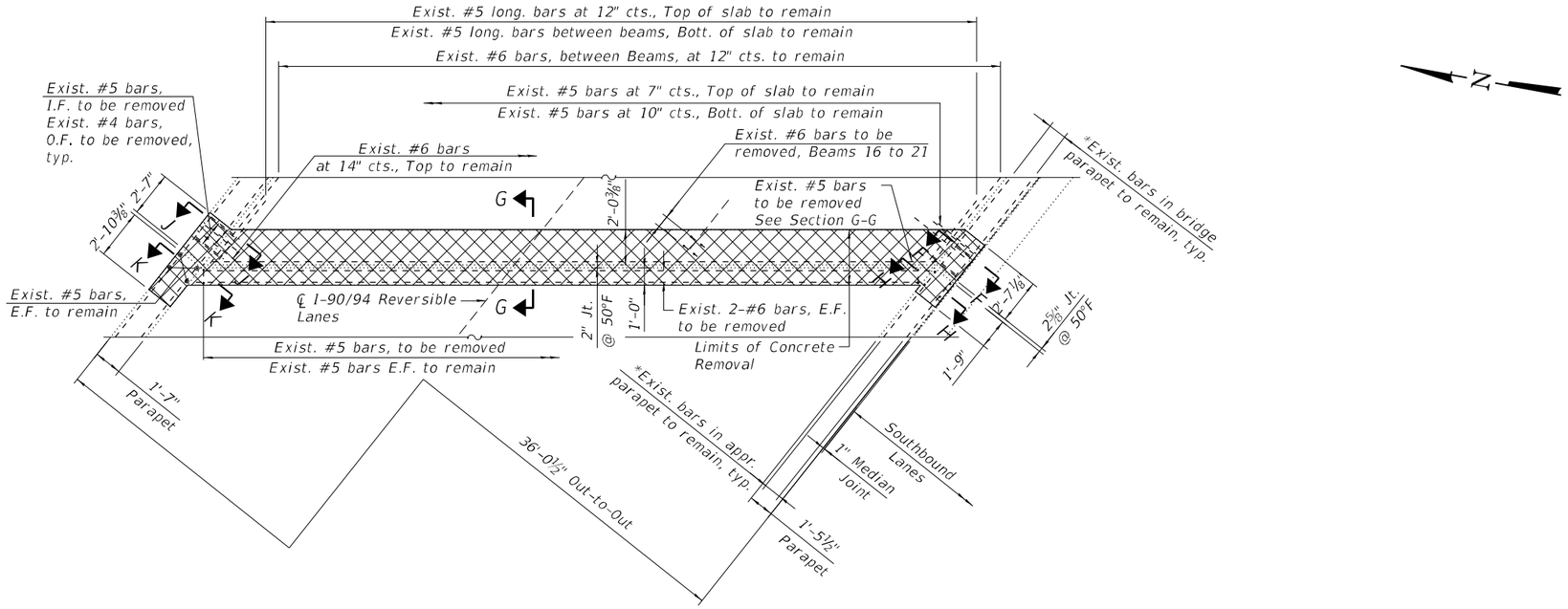
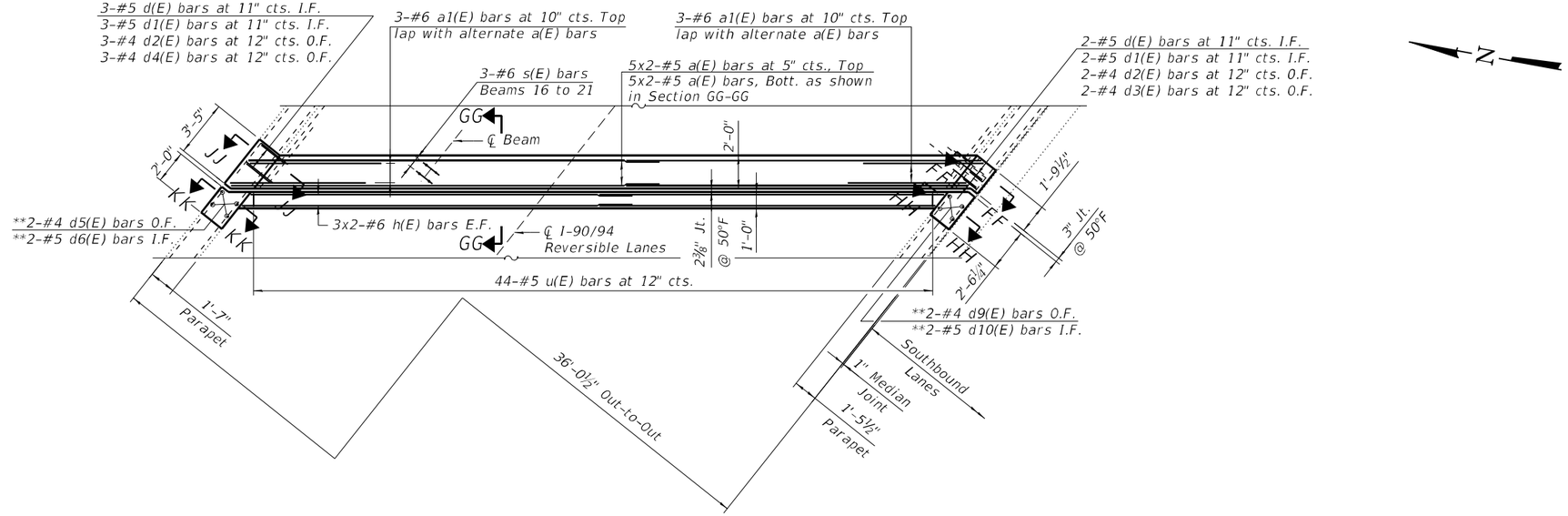


WEST ABUTMENT JOINT REMOVAL PLAN



WEST ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S34-08.
2. For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S34-09.

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

** Epoxy grout #4 d5(E) and d9(E) bars and #5 d6(E) and d10(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

LEGEND

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

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

USER NAME =	DESIGNED -	J.T.B.	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WEST ABUTMENT EXPANSION JOINT DETAILS I SN 016-0118 (REV)
	CHECKED -	H.A.	REVISED -		
PLOT SCALE =	DRAWN -	J.T.B.	REVISED -		SHEET S34-07 OF S34-14 SHEETS
PLOT DATE =	CHECKED -	K.G.W.	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1307
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: sMODELNAMES
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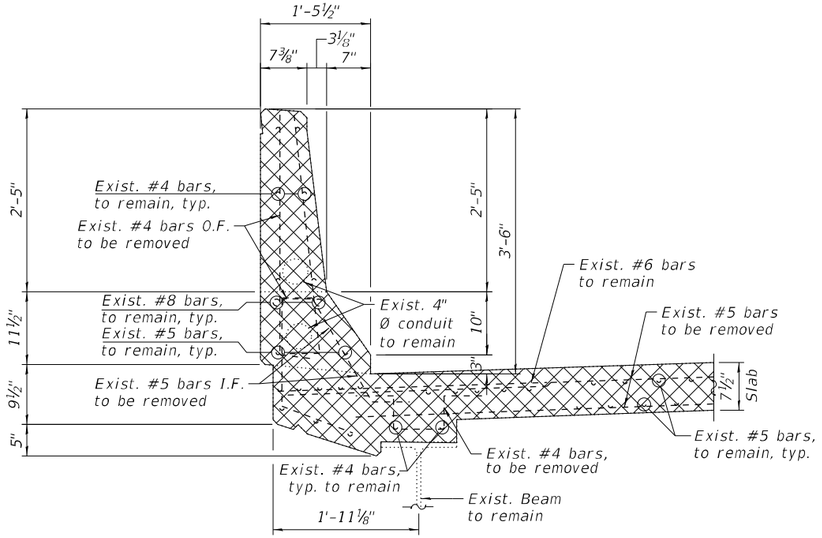
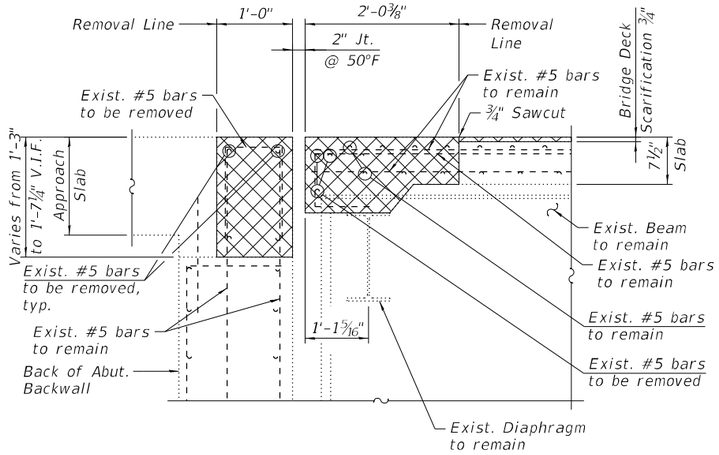
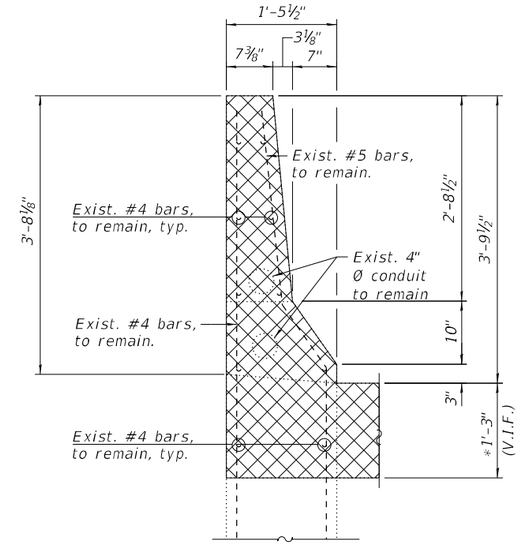


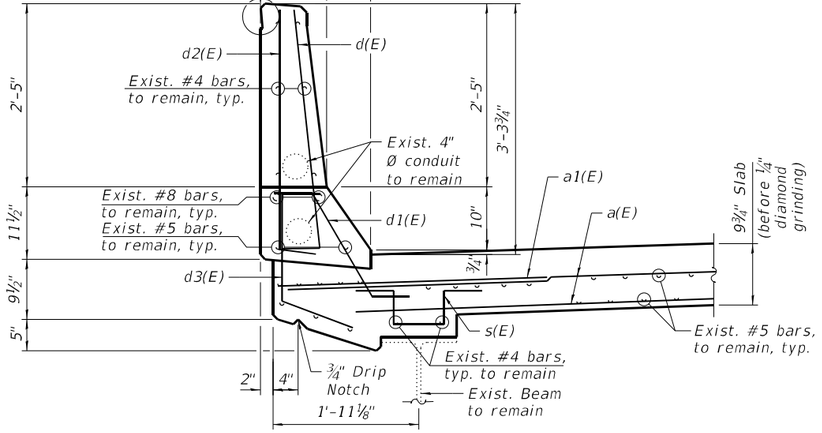
SECTION F-F
(South parapet removal)



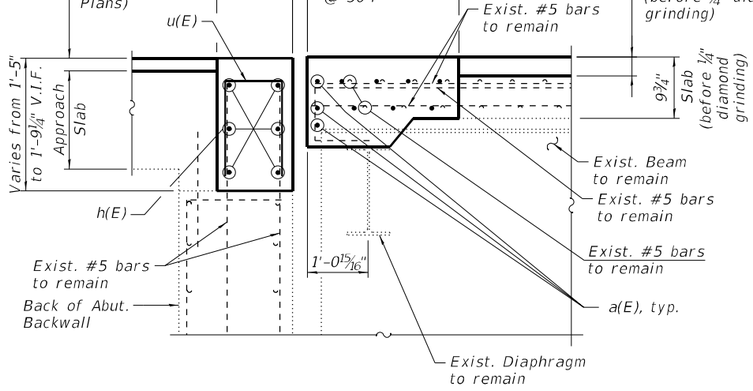
SECTION G-G



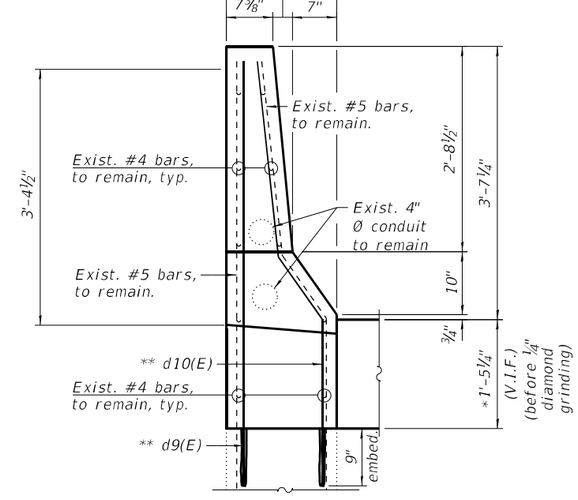
SECTION H-H
(South parapet removal)



SECTION FF-FF
(South parapet reconstruction)



SECTION GG-GG



SECTION HH-HH
(South parapet reconstruction)

LEGEND

* Dimension is taken at the Back of Abut.

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

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

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0118 (REV)
SHEET S34-08 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1308
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

MODEL: sMODELNAMES
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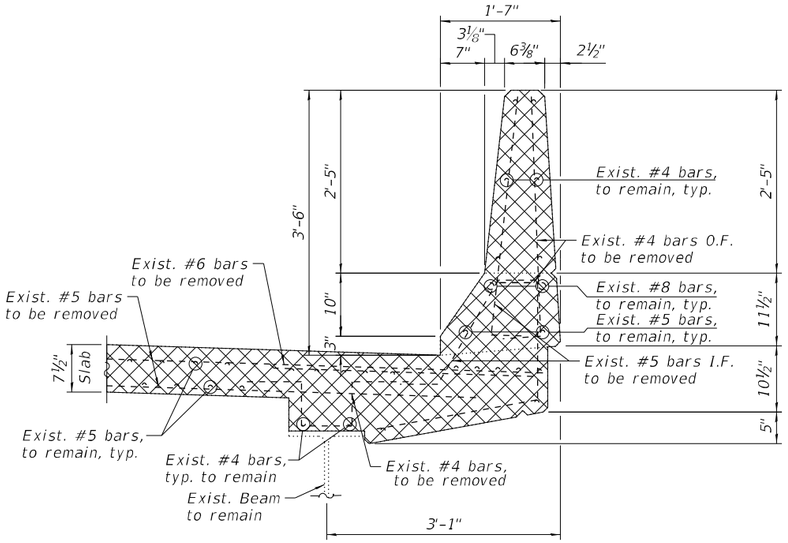
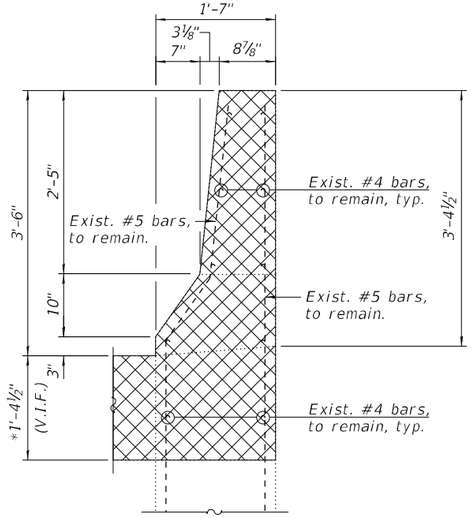


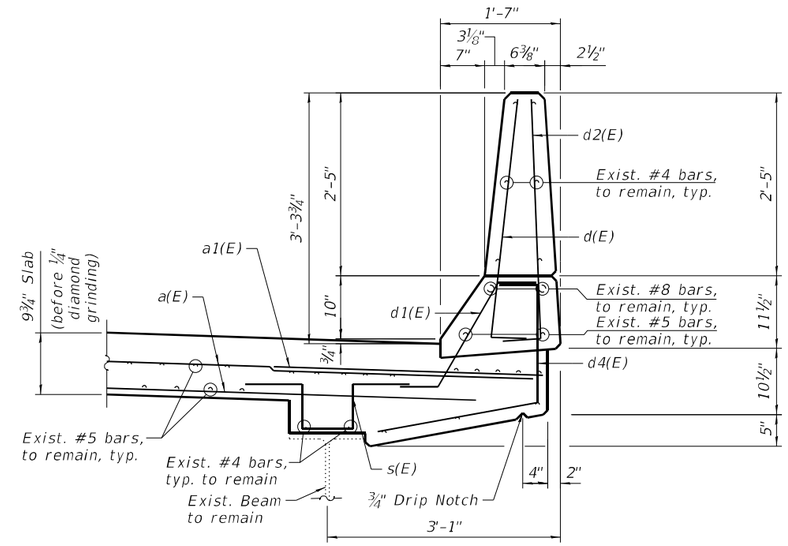
SECTION J-J

(North parapet removal)



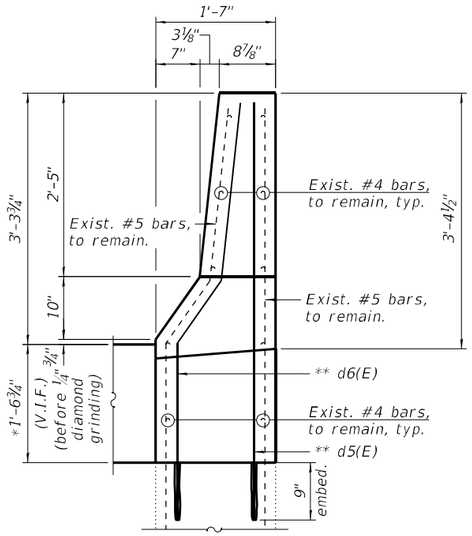
SECTION K-K

(North parapet removal)



SECTION JJ-JJ

(North parapet reconstruction)



SECTION KK-KK

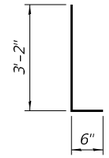
(North parapet reconstruction)

* Dimension is taken at the Back of Abut.

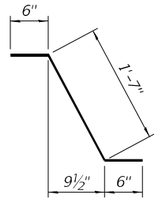
** Epoxy grout #4 d5(E) & #5 d6(E) bars in 9" min. holes accordance in with Section 508 of the Standard Specifications.

BILL OF MATERIAL
WEST ABUTMENT

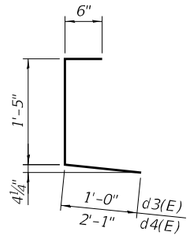
Bar	No.	Size	Length	Shape
a(E)	20	#5	24'-3"	
a1(E)	6	#6	6'-6"	
d(E)	5	#5	3'-8"	
d1(E)	5	#5	2'-7"	
d2(E)	5	#4	3'-8"	
d3(E)	2	#4	2'-11"	
d4(E)	3	#4	4'-0"	
d5(E)	2	#4	5'-7"	
d6(E)	2	#5	5'-8"	
d9(E)	2	#4	5'-8"	
d10(E)	2	#5	5'-11"	
h(E)	12	#6	24'-3"	
s(E)	18	#6	3'-4"	
u(E)	44	#5	2'-7"	
Concrete Removal			Cu Yd	7.5
Reinforcement Bars, Epoxy Coated			Pound	1,310
Concrete Superstructure			Cu Yd	8.3



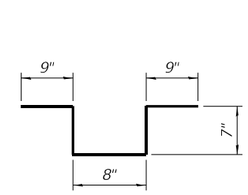
BARS d(E) & d2(E)



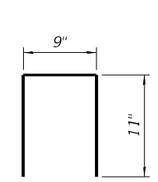
BAR d1(E)



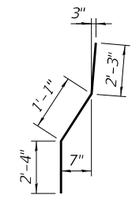
BARS d3(E) & d4(E)



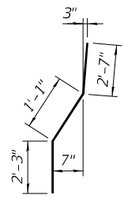
BAR s(E)



BAR u(E)



BAR d6(E)



BAR d10(E)

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S34-10.
2. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
3. Removal and disposal of the existing expansion joints is included with Concrete Removal.

LEGEND

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

MIN BAR LAPS

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

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

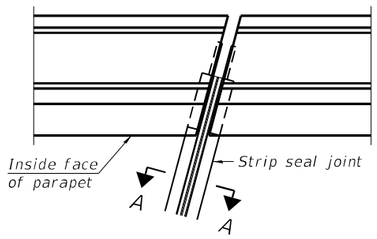
USER NAME =		DESIGNED -	J.T.B.	REVISED -	
		CHECKED -	H.A.	REVISED -	
PLOT SCALE =		DRAWN -	J.T.B.	REVISED -	
PLOT DATE =		CHECKED -	K.G.W.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

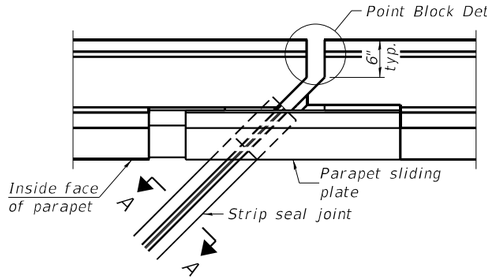
WEST ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0118 (REV)

SHEET S34-09 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1309
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

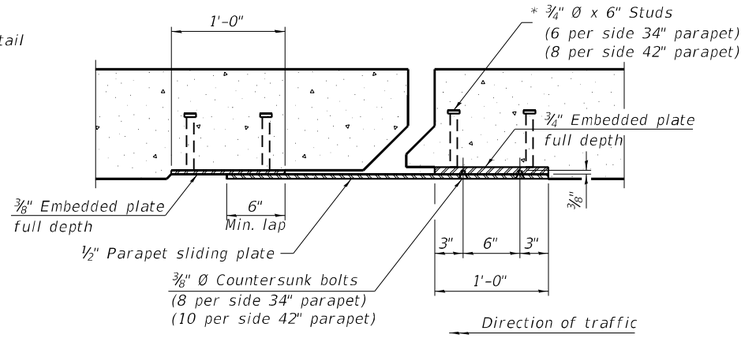


FOR SKEWS ≤ 30°



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.

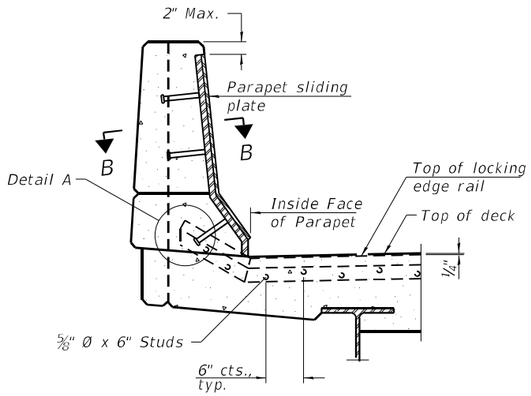
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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.

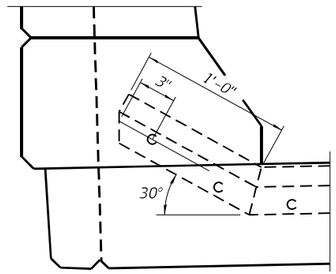
34" F-shape barrier shown, 42" F-shape similar as noted.

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.

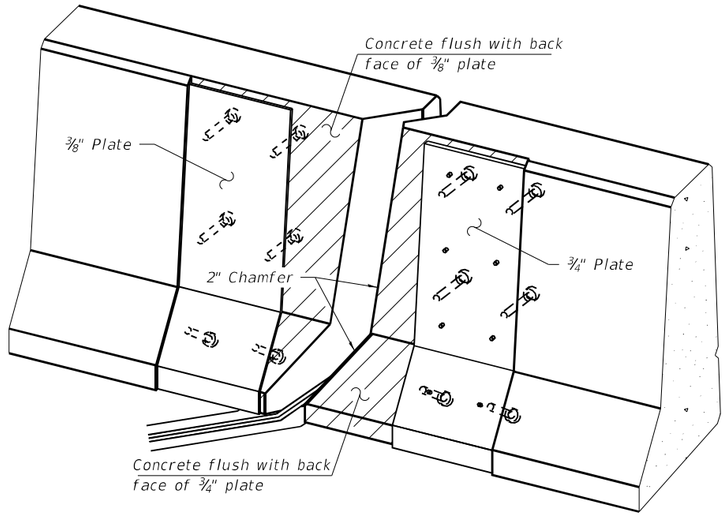


ELEVATION AT PARAPET

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

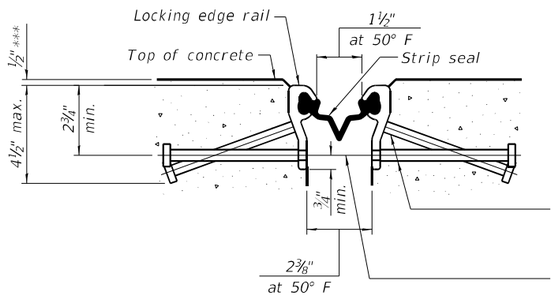


DETAIL A



TRIMETRIC VIEW

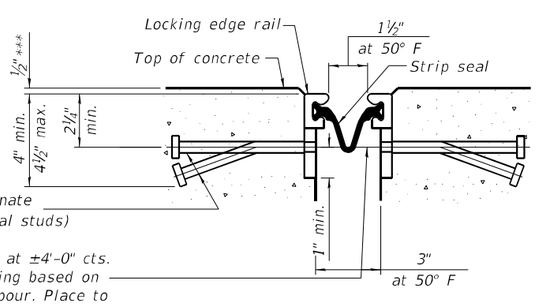
(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT

* 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.

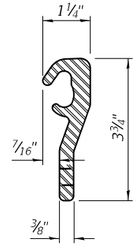


SHOWING WELDED RAIL JOINT

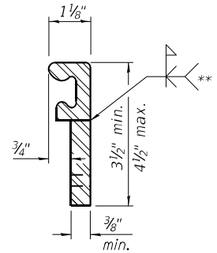
SECTION A-A

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

*** Before ¼" Diamond Grinding.



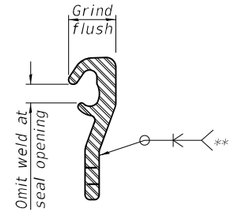
ROLLED (EXTRUDED) RAIL



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	89

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Chicago, Illinois 60631; (773) 399-0112

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
SN 016-0118 (REV)

SHEET S34-10 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1310
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
FILE NAME: X:\DH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0118_Publish\Rev\016011B-62K74-S010-PJSR.dgn

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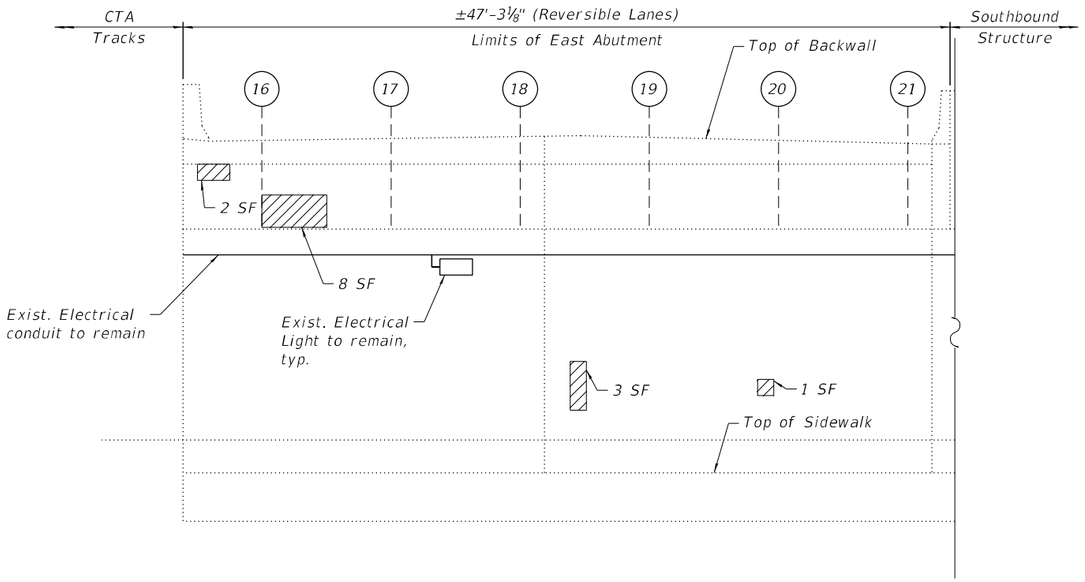

ELEVATION - EAST ABUTMENT
(Looking East)

EXISTING LIGHTING: EAST ABUTMENT
(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. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	217
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	14

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT REPAIRS
SN 016-0118 (REV)
SHEET S34-11 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1311
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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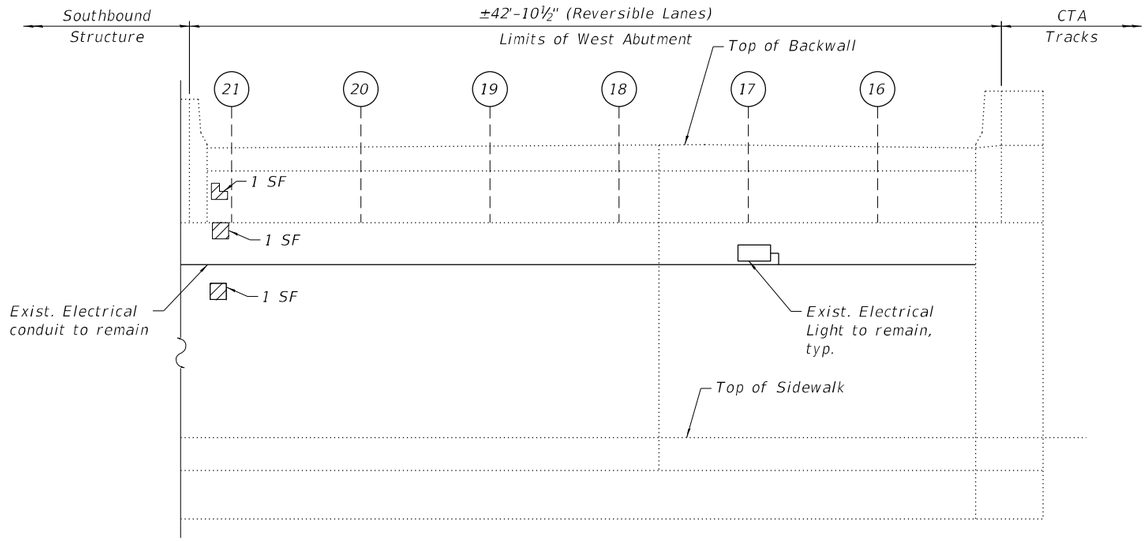

ELEVATION - WEST ABUTMENT

(Looking West)

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 lower 2 feet of the backwalls and to the seats of the abutments.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	204
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	3

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT REPAIRS
SN 016-0118 (REV)

SHEET S34-12 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1312
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: sMODELNAMES
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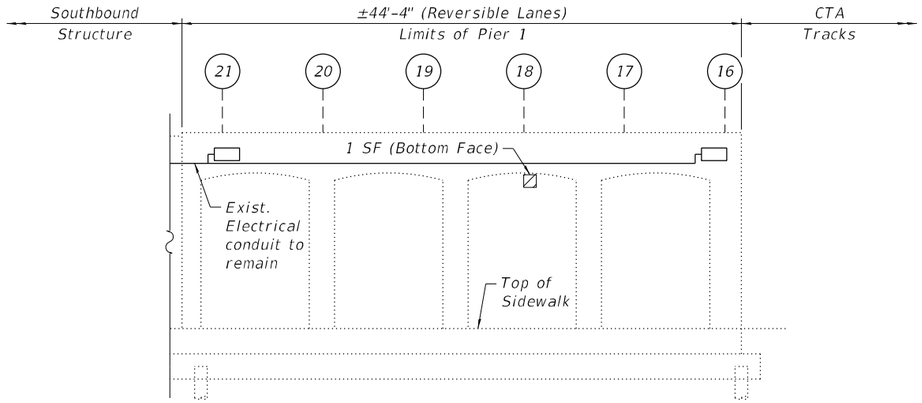
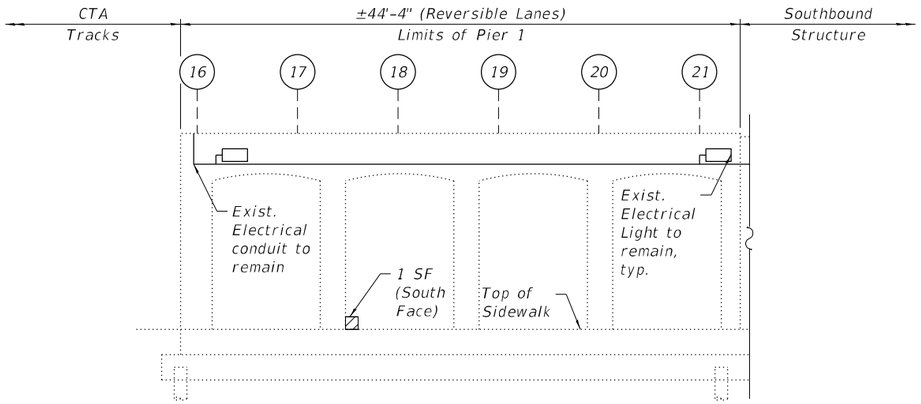


ELEVATION - PIER 1

(Looking West)



ELEVATION - PIER 1

(Looking East)

EXISTING LIGHTING: PIER 1

(Looking Northwest)

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 construction.

LEGEND

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

BILL OF MATERIAL

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
SN 016-0118 (REV)
SHEET S34-13 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1313
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

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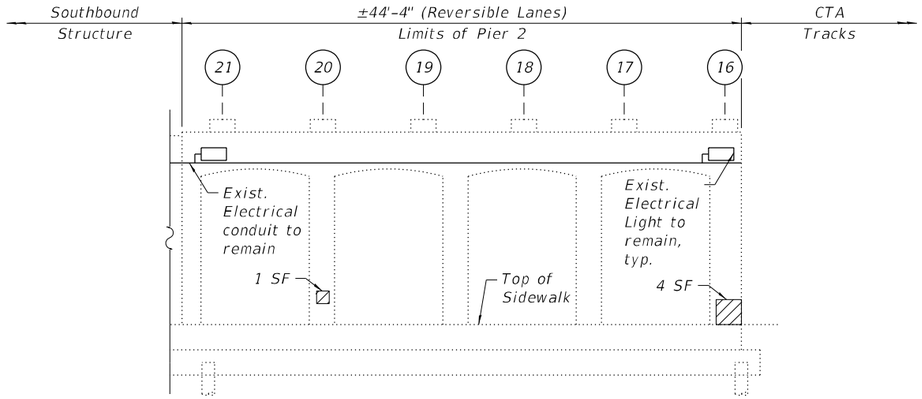
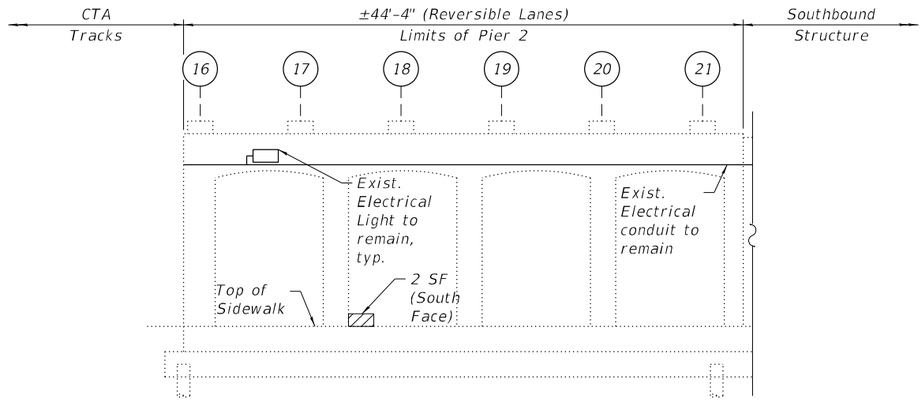


ELEVATION - PIER 2
(Looking West)



ELEVATION - PIER 2
(Looking East)

EXISTING LIGHTING: PIER 2
(Looking Northwest)

EXISTING LIGHTING: PIER 2
(Looking Southeast)

EXISTING 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.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	7

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PIER 2 REPAIRS
SN 016-0118 (REV)
SHEET S34-14 OF S34-14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1314
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

MODEL: SMODELNAMES
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Existing Structure: S.N. 016-0115 was originally built in 1957 from BCR. The bridge was widened and redecked between 1990 and 1993, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 321'-3¾" 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 beams of span lengths 85'-7", 142'-7", and 85'-7". The substructure consists of reinforced concrete abutments and piers supported on reinforced concrete piles.

Traffic will be maintained utilizing stage construction.

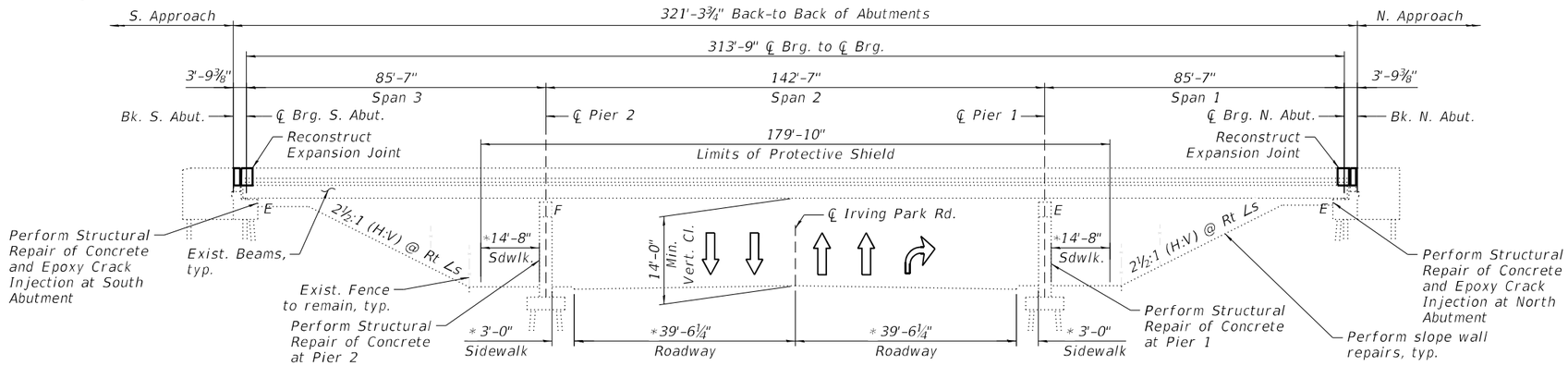
No salvage.

LOADING

HS20-44 and alternate military loading

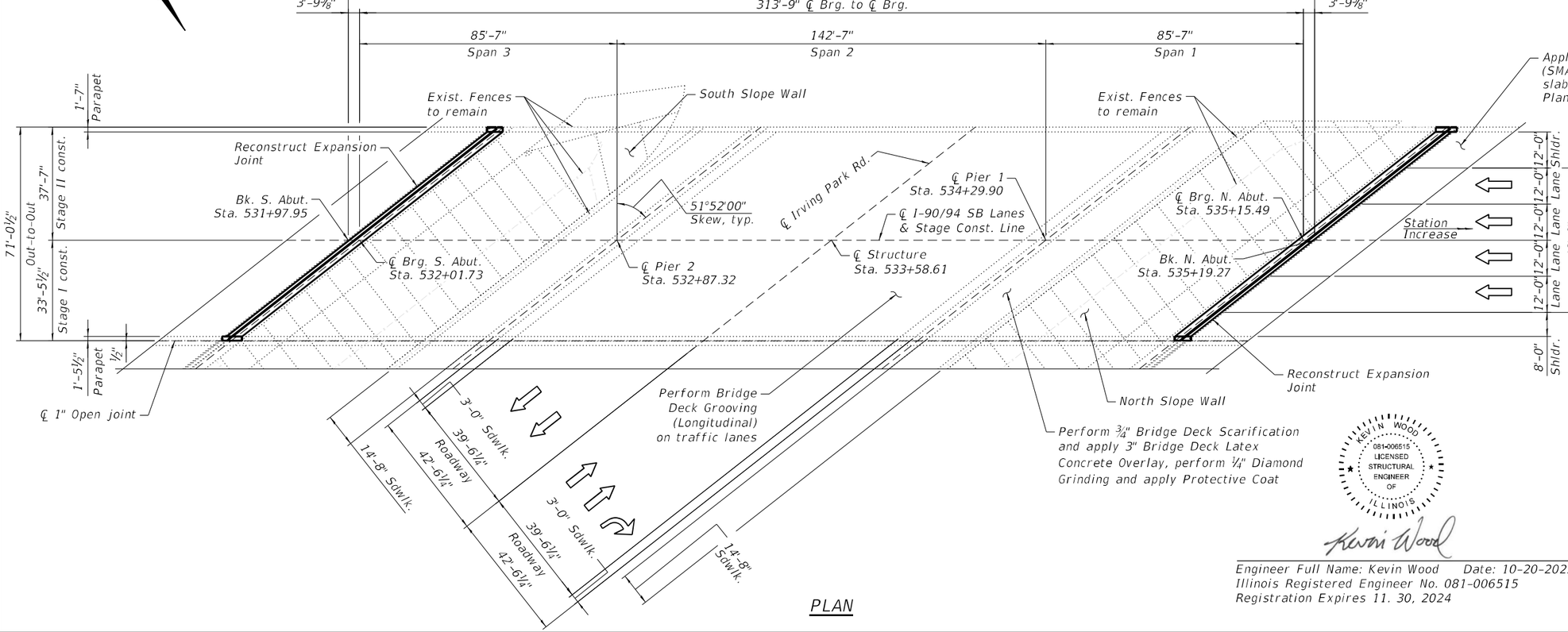
DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition

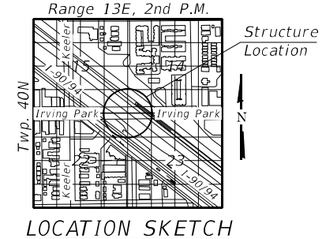


ELEVATION

* Dimension at right angle



PLAN



LOCATION SKETCH

NOTE:

1. All stations are to the ℄ I-90/94 SB Roadway and taken from existing plans.
2. No Future Wearing Surface is allowed.

KEVIN WOOD 081-006515 LICENSED STRUCTURAL ENGINEER OF ILLINOIS

Kevin Wood

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

GENERAL PLAN AND ELEVATION
SB I-90 OVER IRVING PARK ROAD
F.A.I. SEC 2020-004-BR
COOK COUNTY
STATION: 533+58.61
STRUCTURE NO. 016-0115 (SB)

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

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		CHECKED -	H.A.	REVISED -	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S35-01 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1315
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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GENERAL NOTES

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

2. Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 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.

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

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

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

6. Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. The cost of cleaning shall be included in the cost of Concrete Removal.

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

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

9. For SMA overlay on Approach Slab, see Roadway Plans.

10. Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.

11. 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.

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

13. 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.

14. 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".

15. The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.

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

17. Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.

18. Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.

19. 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.

20. Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.

INDEX OF SHEETS

SCOPE OF WORK

1. Provide Protective Shield within limits indicated on the plans.
2. Scarify ¾" from the bridge deck.
3. Perform deck repairs.
4. Remove and reconstruct expansion joints at north and south abutments and install new Preformed Joint Strip Seals.
5. Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs, see Roadway Plans.
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 the new overlay.
9. Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.
10. Epoxy crack injection at the abutments and piers for cracks greater than hairline.
11. Perform slope wall repairs.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd		1	1
Concrete Removal	Cu Yd	35.0		35.0
Slope Wall Removal	Sq Yd		1	1
Protective Shield	Sq Yd	1,420		1,420
Concrete Superstructure	Cu Yd	39.4		39.4
Protective Coat	Sq Yd	2,795		2,795
Reinforcement Bars, Epoxy Coated	Pound	5,980		5,980
Bar Splicers	Each	32		32
Slope Wall 4 Inch	Sq Yd		1	1
Preformed Joint Strip Seal	Foot	225		225
Concrete Sealer	Sq Ft		1,244	1,244
Epoxy Crack Injection	Foot		7	7
Slope Wall Crack Sealing	Foot		22	22
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,685		1,685
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	2,339		2,339
Bridge Deck Scarification 3/4"	Sq Yd	2,339		2,339
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		103	103
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq Ft		15	15
Deck Slab Repair (Full Depth, Type I)	Sq Yd	1.1		1.1
Deck Slab Repair (Full Depth, Type II)	Sq Yd	0.9		0.9
Diamond Grinding (Bridge Section)	Sq Yd	2,387		2,387
Maintenance of Lighting System	Cal Mo		6	6

GRAEF
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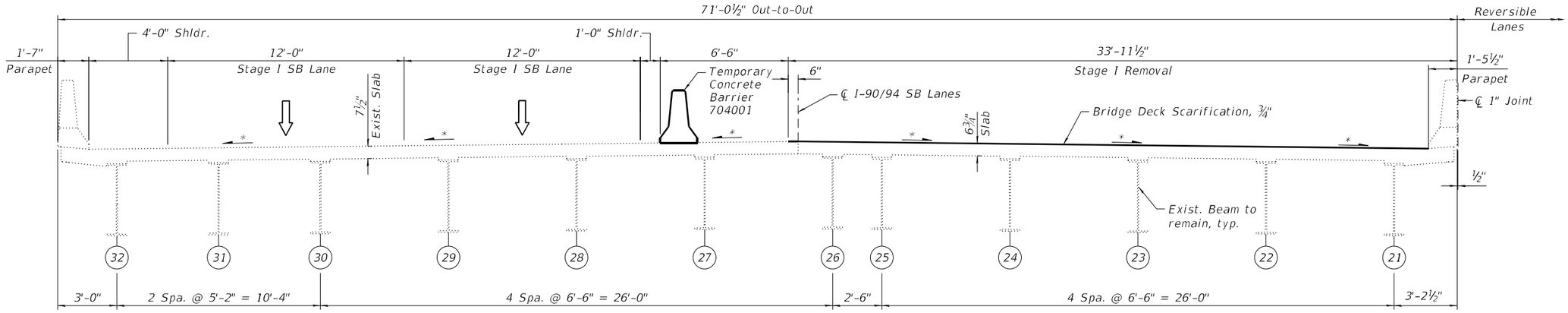
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

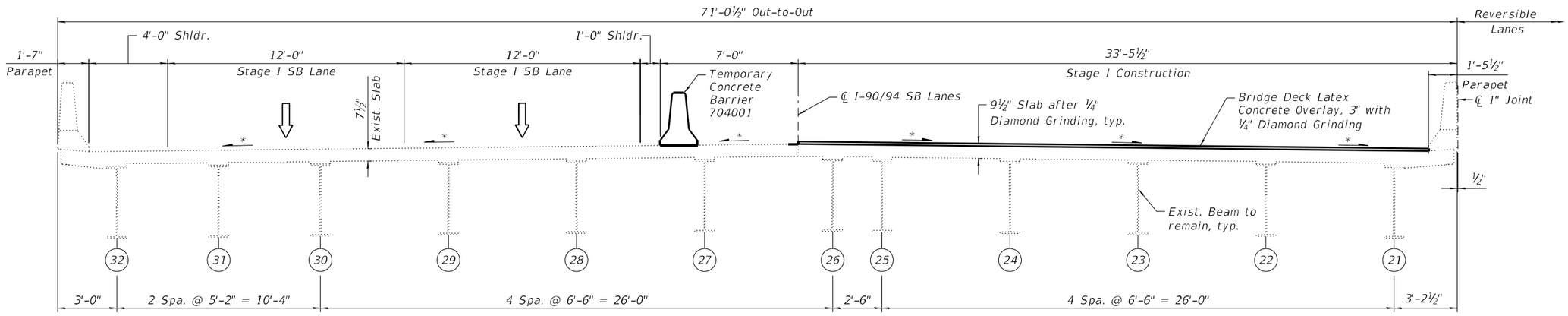
GENERAL DATA
SN 016-0115 (SB)
SHEET S35-02 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1316
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	



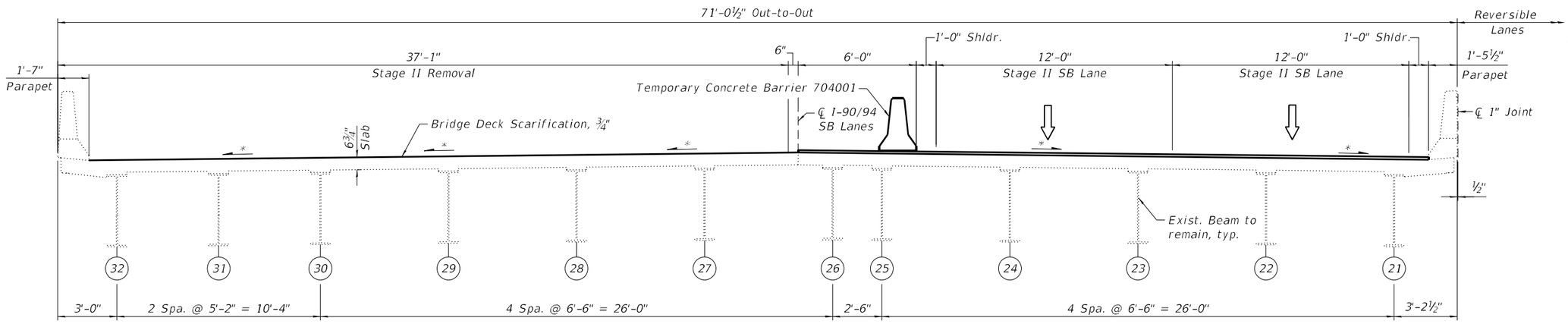
STAGE I REMOVAL

(Looking North)



STAGE I CONSTRUCTION

(Looking North)



STAGE II REMOVAL

(Looking North)

* Match existing deck surface profile

STAGE I REMOVAL

1. Install Temporary Concrete Barrier as shown to locate traffic on the west side of the existing structure.
2. Scarify ¾" from the top of the deck.
3. Remove portions of bridge deck adjacent to abutment joints, as shown in the plans.

STAGE I CONSTRUCTION

1. Perform Deck Slab Repairs at the locations shown in the plans.
2. Reconstruct transverse expansion joints and install Preformed Joint Strip Seal at north and south abutments and replace associated reinforcement and concrete adjacent to the joint.
3. Perform Structural Repair of Concrete and Epoxy Crack Injection at abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay to bridge deck slab.
5. Perform 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 the top of reconstructed transverse joint areas, the surface of the new overlay, and the top and inside faces of the parapets.
9. Perform slope wall repairs as shown in the plans

STAGE II REMOVAL

1. Install Temporary Concrete Barrier as shown to locate traffic on the East side of the existing structure.
2. Scarify ¾" from the top of the deck.
3. Remove portions of bridge deck adjacent to abutment joints, as shown in the plans.

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PLOT DATE =	CHECKED - H.A.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS I
SN 016-0115 (SB)

SHEET S35-03 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1317
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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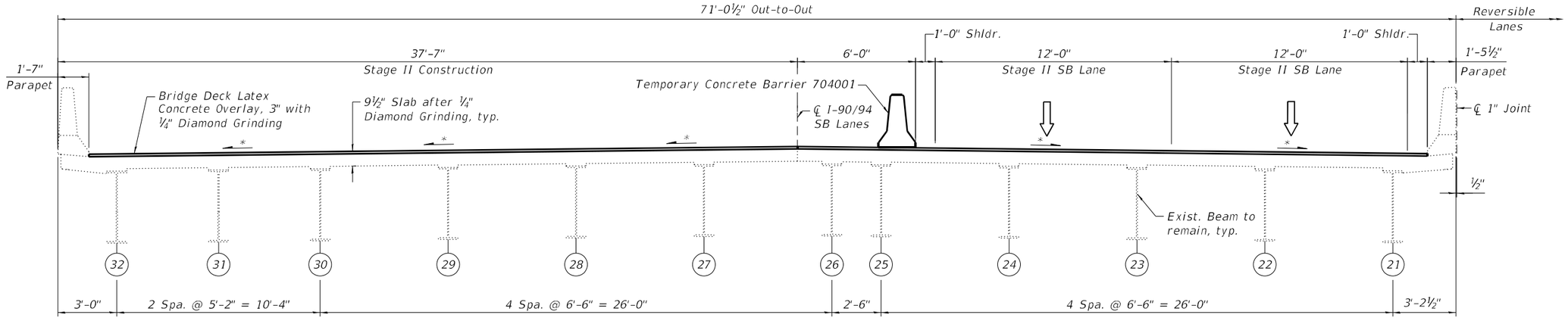
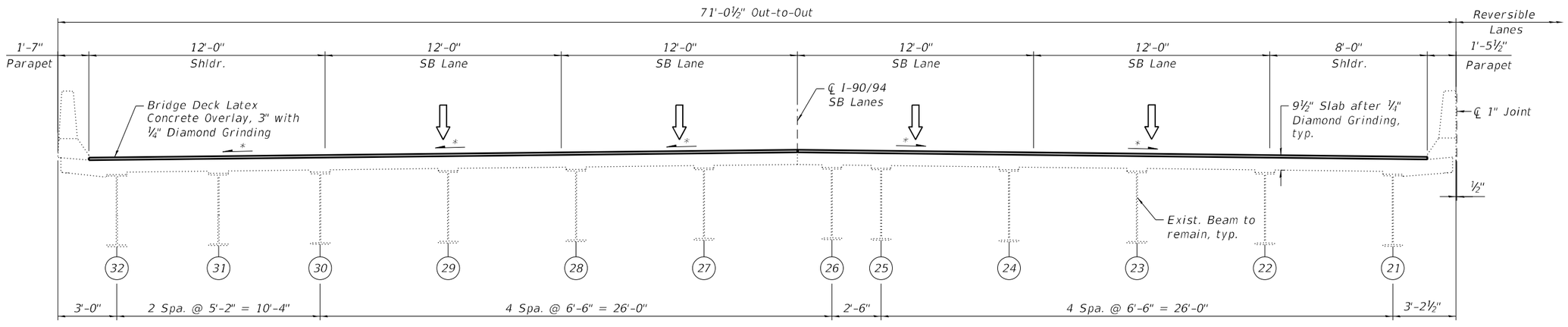


STAGE II CONSTRUCTION

(Looking North)



FINAL CROSS SECTION

(Looking North)

STAGE II CONSTRUCTION

1. Perform Deck Slab Repairs at the locations shown in the plans.
2. Reconstruct transverse expansion joints and install Preformed Joint Strip Seal at north and south abutments and replace associated reinforcement and concrete adjacent to the joint.
3. Perform Structural Repair of Concrete and Epoxy Crack Injection at abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay to bridge deck slab.
5. Perform 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 the top of reconstructed transverse joint areas, the surface of the new overlay, and the top and inside faces of the parapets.
9. Perform slope wall repairs as shown in the plans

* Match existing deck surface profile

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Chicago, Illinois 60631; (773) 399-0112

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS II
SN 016-0115 (SB)

SHEET S35-04 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1318
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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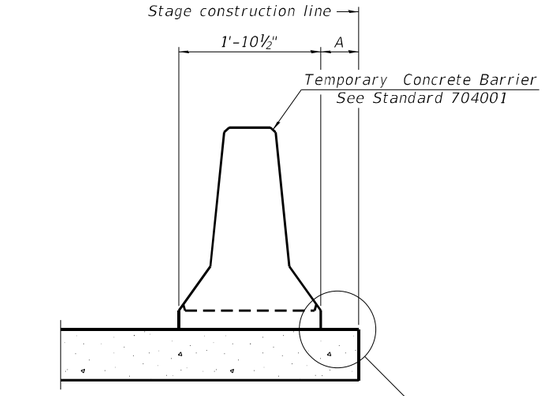
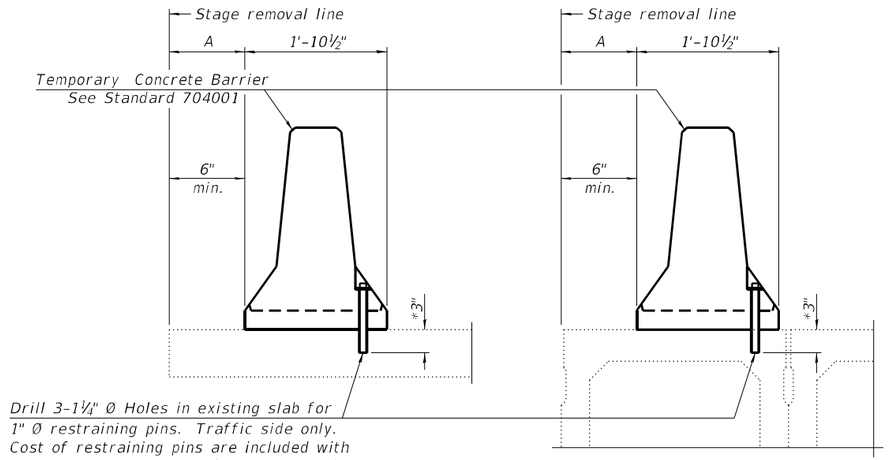


When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



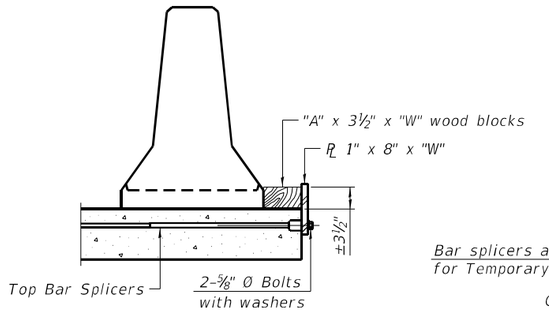
Drill 3-1¼" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

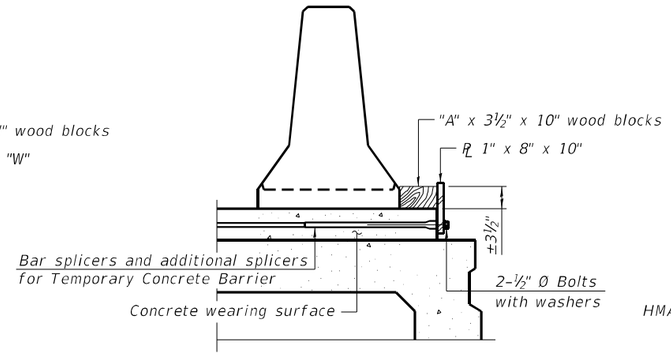
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

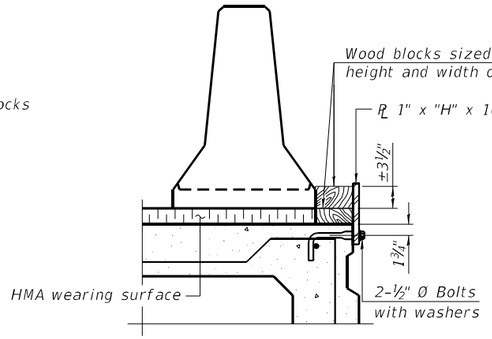
SECTIONS THRU SLAB OR DECK BEAM



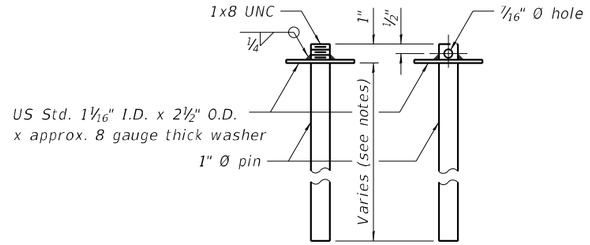
DETAIL I



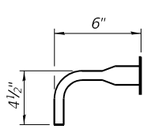
DETAIL II



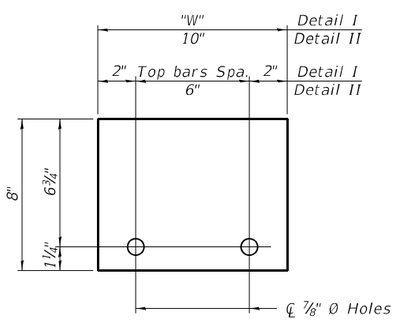
DETAIL III



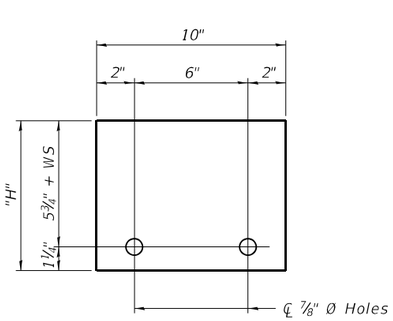
RESTRAINING PIN



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

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

USER NAME =	DESIGNED - J.T.B.	REVISED -	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
SN 016-0115 (SB)

SHEET S35-05 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1319
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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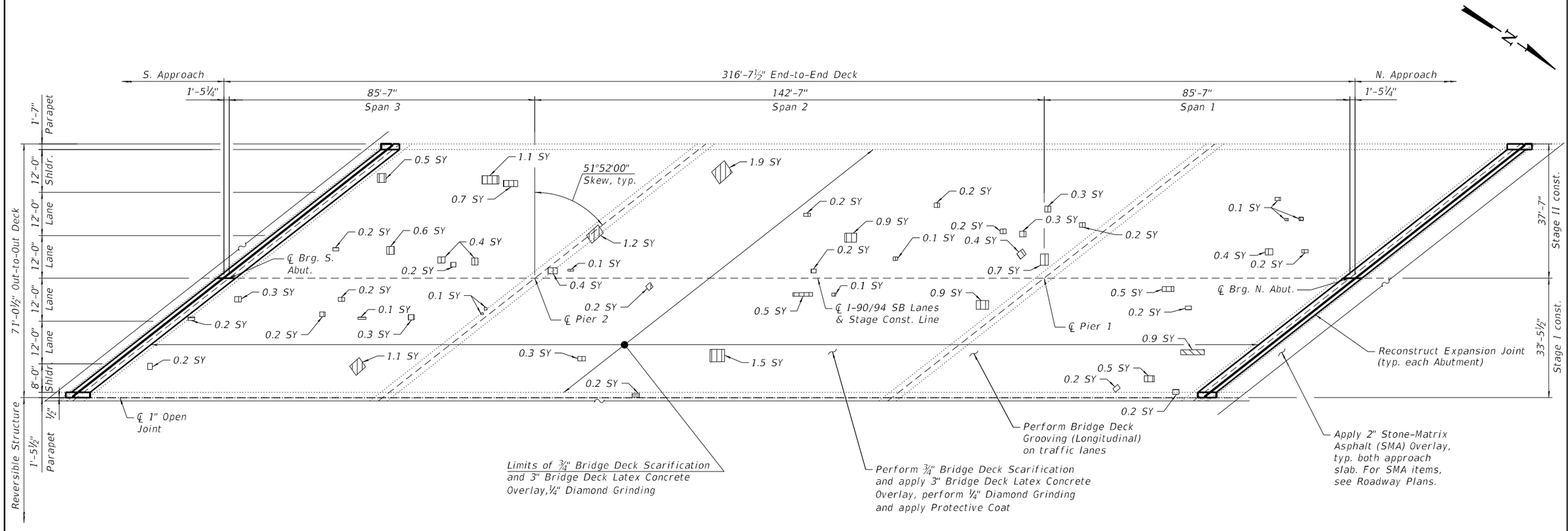

DECK PLAN

LEGEND

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

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

NOTES:

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S35-04.
3. For North and South transverse joint removal and reconstruction, see Sheet S35-07 thru S35-12.
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. Prior to any reconstruction or resurfacing of the bridge deck, a team of the consultant WJE will require access to contractor work zone to take cores of existing deck for independent study with IDOT. Contractor to coordinate with IDOT/WJE in advance. There is no cost to the contractor.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	1,420
Protective Coat	Sq Yd	2,795
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,685
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	2,339
Bridge Deck Scarification 3/4"	Sq Yd	2,339
Deck Slab Repair (Full Depth, Type I)	Sq Yd	1.1
Deck Slab Repair (Full Depth, Type II)	Sq Yd	0.9
Diamond Grinding (Bridge Section)	Sq Yd	2,387
Maintenance of Lighting System	Cal Mo	6

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE DECK REPAIR PLAN AND DETAILS
SN 016-0115 (SB)

SHEET S35-06 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1320
		CONTRACT NO. 62K74		
		ILLINOIS FED. AID PROJECT		

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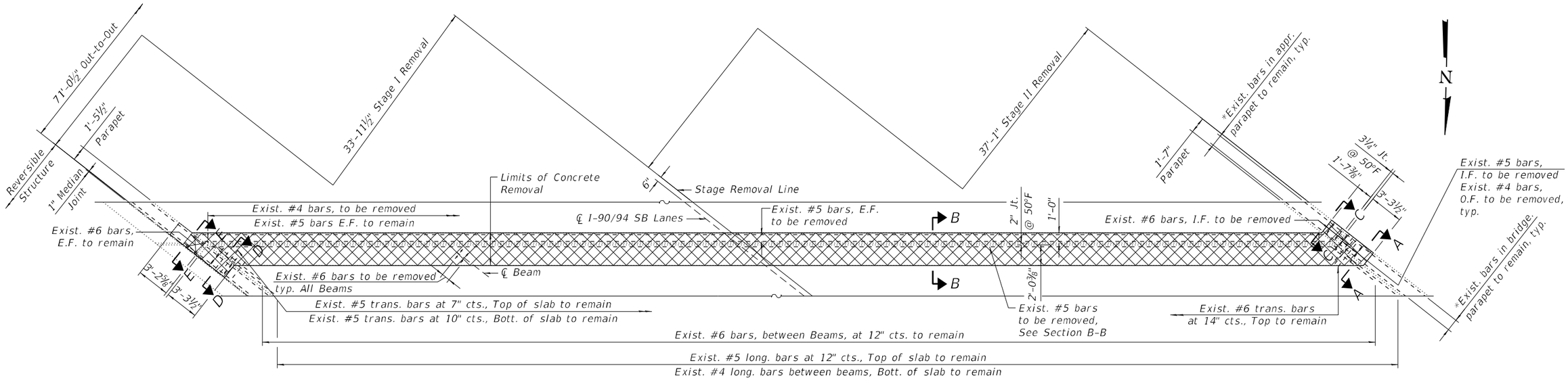
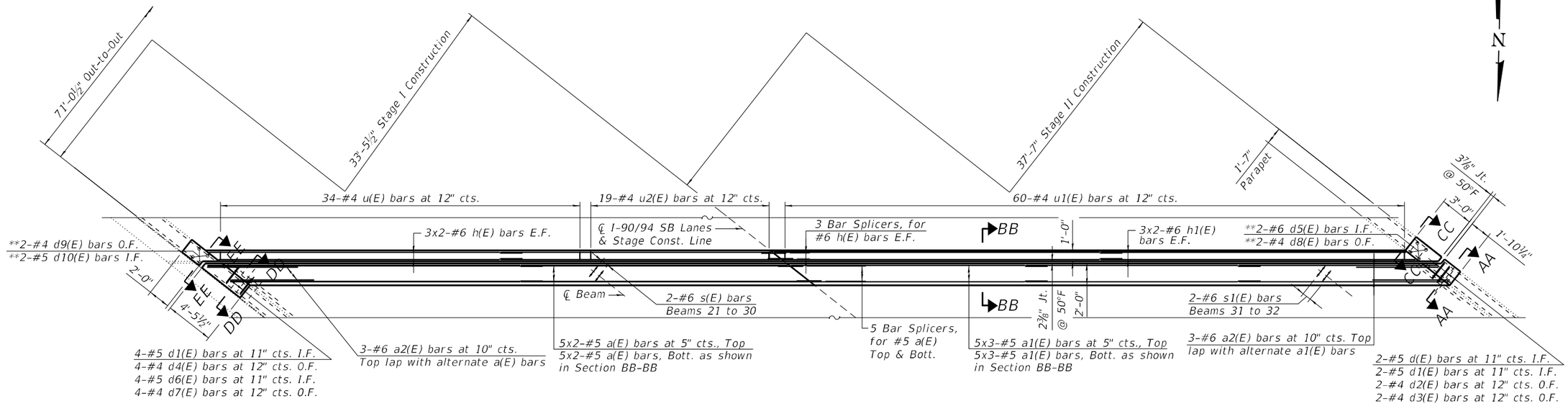


SOUTH ABUTMENT JOINT REMOVAL PLAN



SOUTH ABUTMENT JOINT RECONSTRUCTION PLAN

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

** Epoxy grout #4 d8(E) and d9(E) bars, #5 d10(E) and #6 d5(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

LEGEND

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

NOTES:

1. For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S35-08.
2. For sections D-D, E-E, DD-DD and EE-EE, see sheet S35-09.

GRÄEF
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Chicago, Illinois 60631 (773) 399-0112

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0115 (SB)

SHEET S35-07 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1321
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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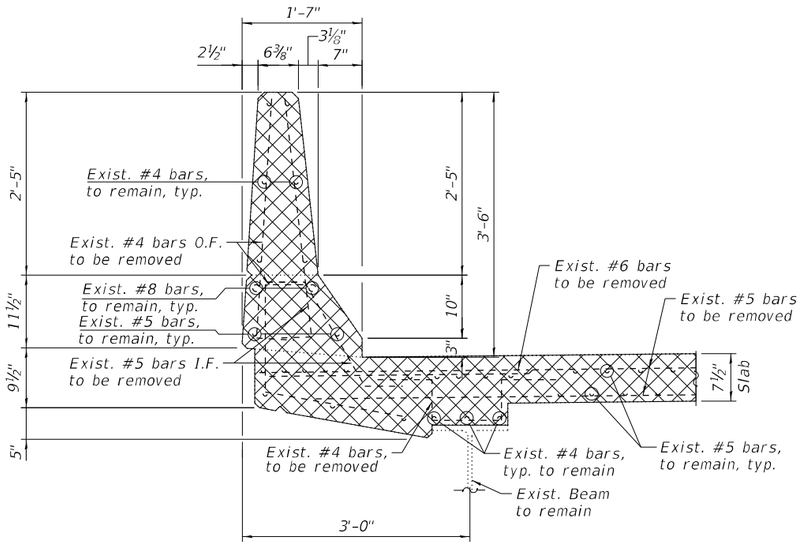
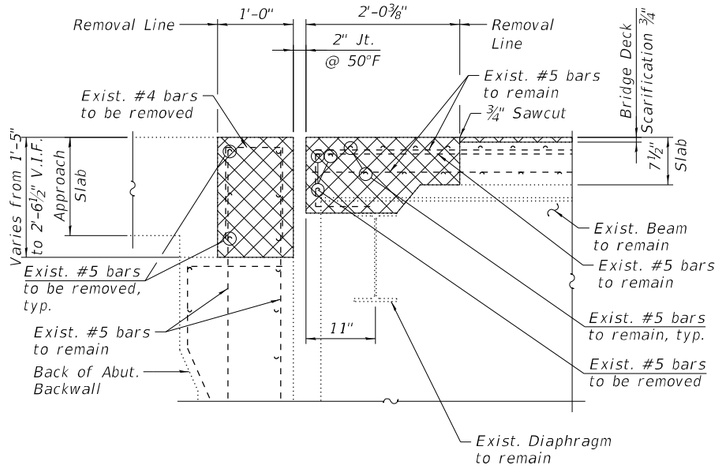
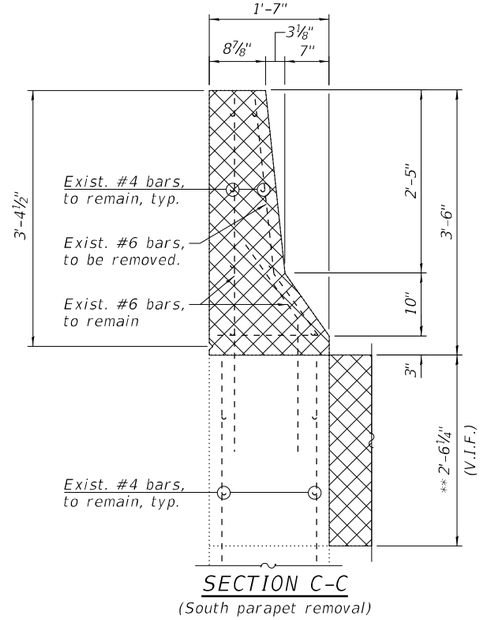


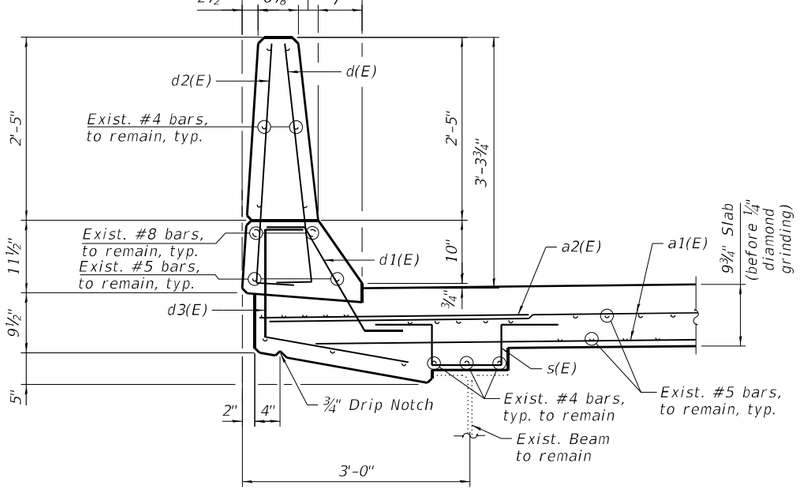
SECTION A-A
(South parapet removal)



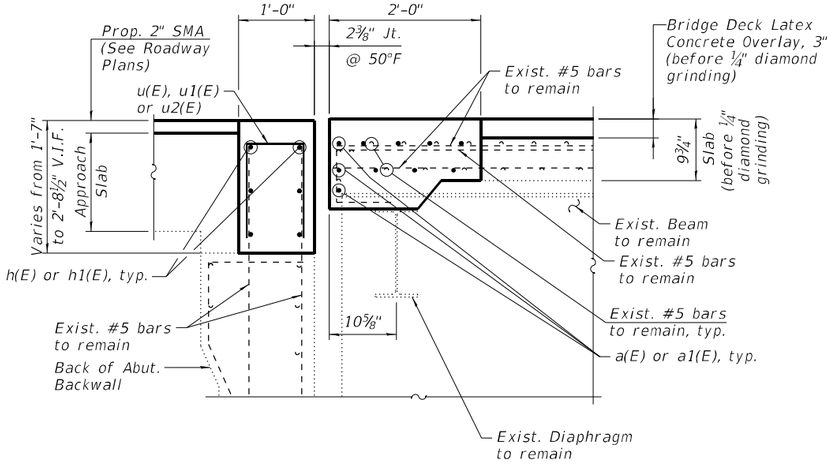
SECTION B-B



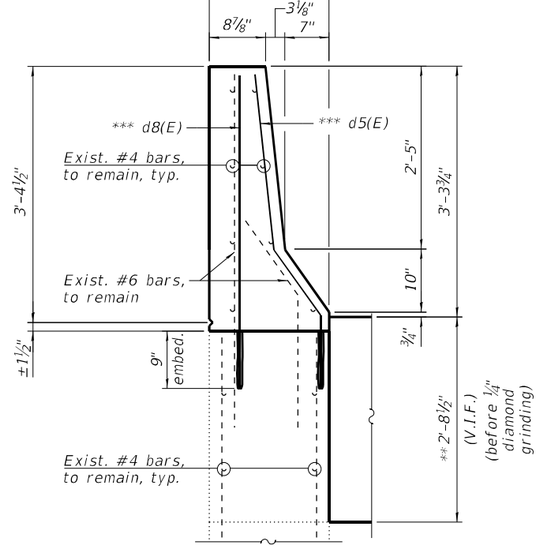
SECTION C-C
(South parapet removal)



SECTION AA-AA
(South parapet reconstruction)



SECTION BB-BB



SECTION CC-CC
(South parapet reconstruction)

LEGEND

** Dimension is taken at the Back of Abut.

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

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

MODEL: SMODELNAMES
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GRāEF
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0115 (SB)

SHEET S35-08 OF S35-19 SHEETS

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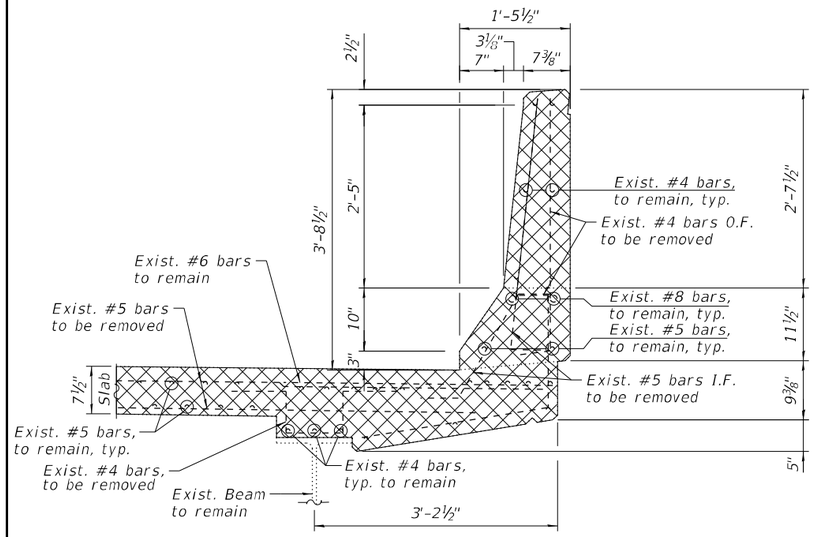
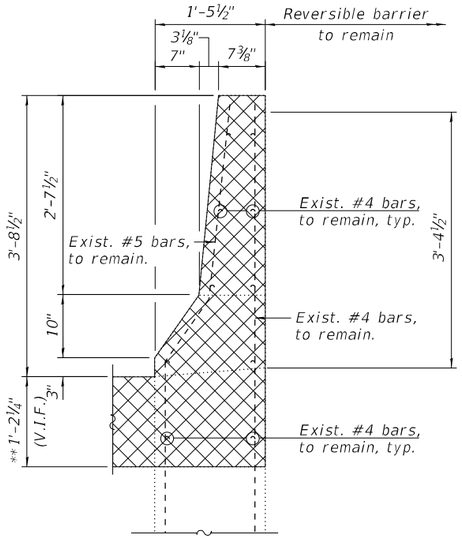
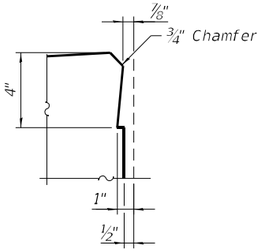
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



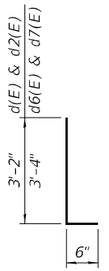
SECTION D-D
(North parapet removal)



SECTION E-E
(North parapet removal)



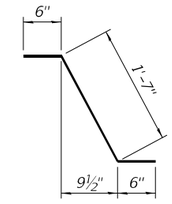
DETAIL A
(Reinforcement not shown for clarity)



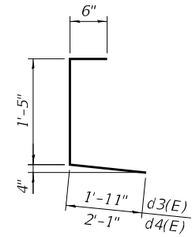
BARS d(E), d2(E), d6(E) & d7(E)

BILL OF MATERIAL
SOUTH ABUTMENT

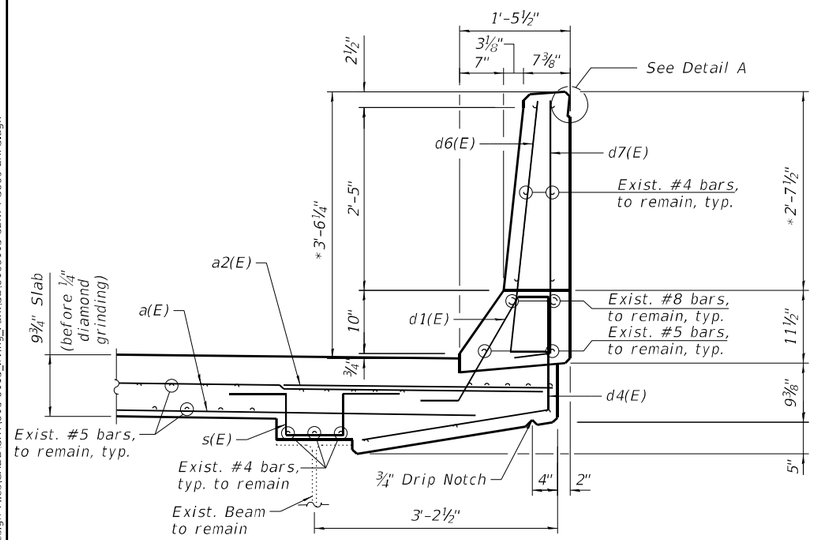
Bar	No.	Size	Length	Shape
a(E)	20	#5	29'-0"	
a1(E)	30	#5	22'-8"	
a2(E)	6	#6	6'-6"	
d(E)	2	#5	3'-8"	
d1(E)	6	#5	2'-7"	
d2(E)	2	#4	3'-8"	
d3(E)	2	#4	3'-10"	
d4(E)	4	#4	4'-0"	
d5(E)	2	#6	4'-4"	
d6(E)	4	#5	3'-10"	
d7(E)	4	#4	3'-10"	
d8(E)	2	#4	4'-2"	
d9(E)	2	#4	5'-10"	
d10(E)	2	#5	6'-1"	
h(E)	12	#6	29'-0"	
h1(E)	12	#6	32'-4"	
s(E)	20	#6	3'-5"	
s1(E)	4	#6	3'-7"	
u(E)	34	#4	2'-9"	
u1(E)	60	#4	4'-9"	
u2(E)	19	#4	3'-9"	
Concrete Removal		Cu Yd	18.5	
Reinforcement Bars, Epoxy Coated		Pound	3,020	
Concrete Superstructure		Cu Yd	20.5	



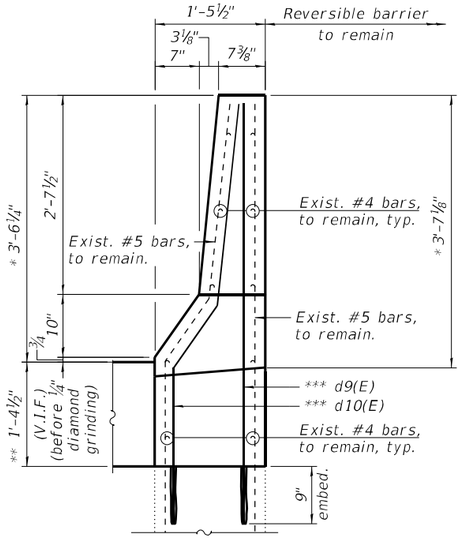
BAR d1(E)



BARS d3(E) & d4(E)



SECTION DD-DD
(North parapet reconstruction)

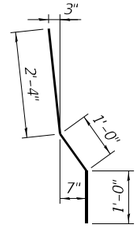


SECTION EE-EE
(North parapet reconstruction)

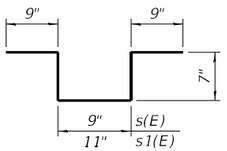
* Adjust in field as required to match reversible parapet

** Dimension is taken at the Back of Abut.

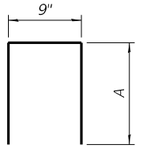
*** Epoxy grout #4 d9E) bars #5 d10(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.



BAR d5(E)

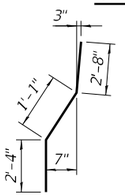


BARS s(E) & s1(E)



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

Bar	A
u(E)	1'-0"
u1(E)	2'-0"
u2(E)	1'-6"



BAR d10(E)

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S35-13.
2. For Bar Splicer Assembly details, see sheet S35-19.
3. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.

LEGEND

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

MIN BAR LAPS

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0115 (SB)

SHEET S35-09 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1323
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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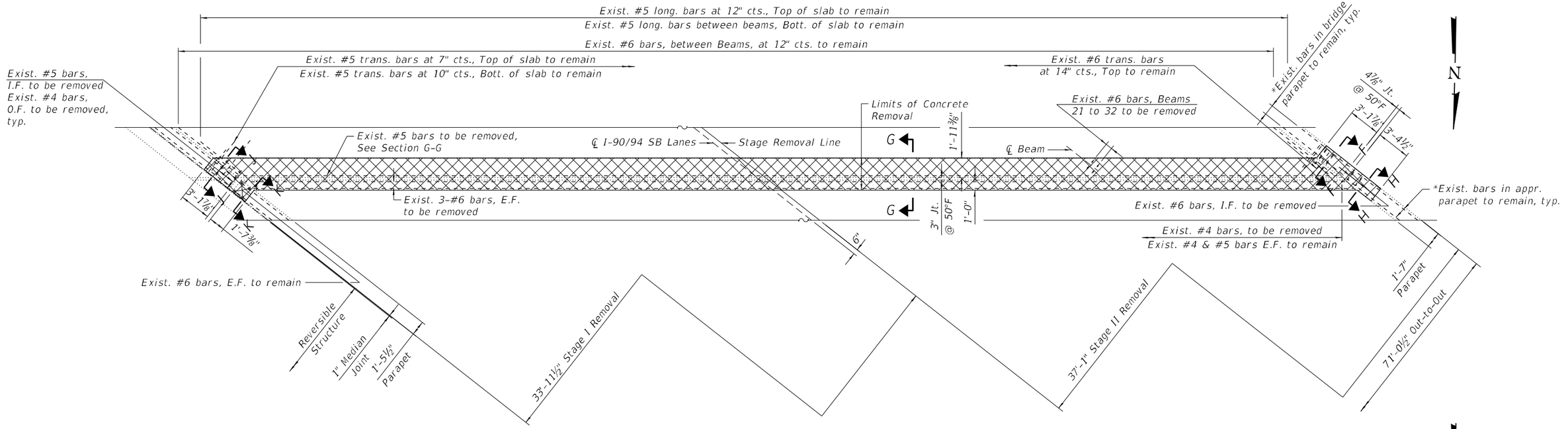
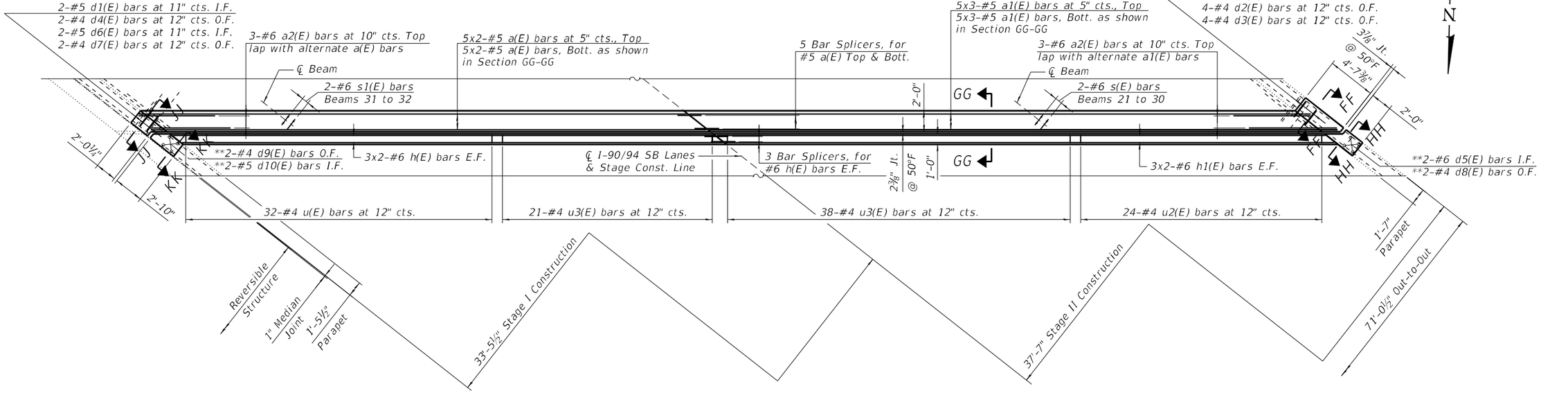


NORTH ABUTMENT JOINT REMOVAL PLAN



NORTH ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S35-11.
2. For sections J-J, K-K, JJ-JJ, KK-KK, see sheet S35-12.

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

** Epoxy grout #4 d8(E) and d9(E) bars, #5 d10(E) and #6 d5(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

LEGEND

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

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0115 (SB)
SHEET S35-10 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1324
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: sMODELNAMES
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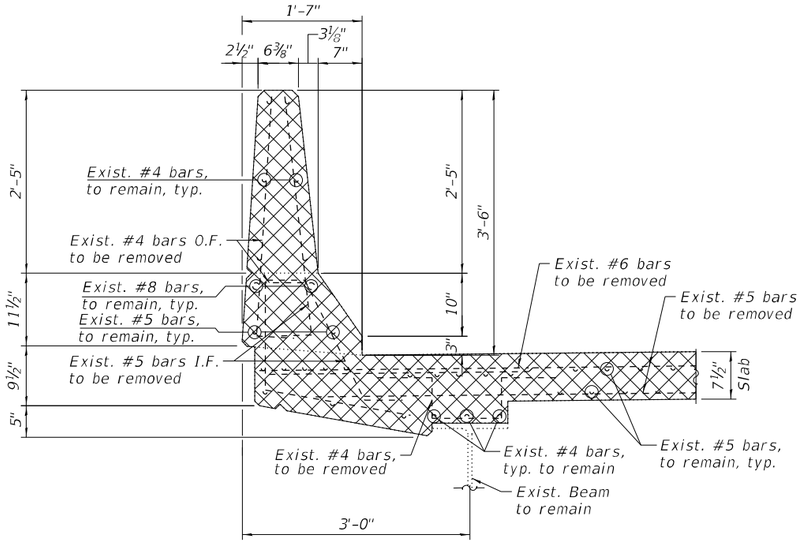
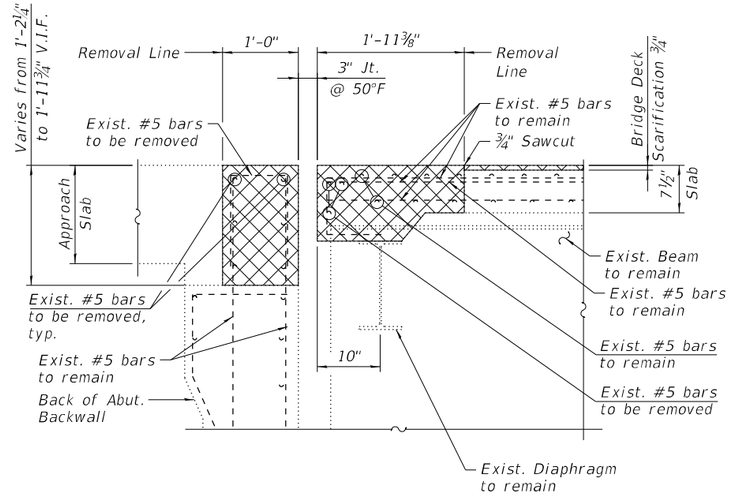
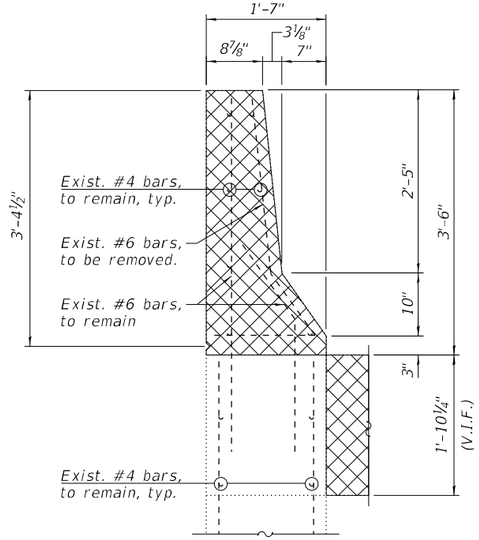


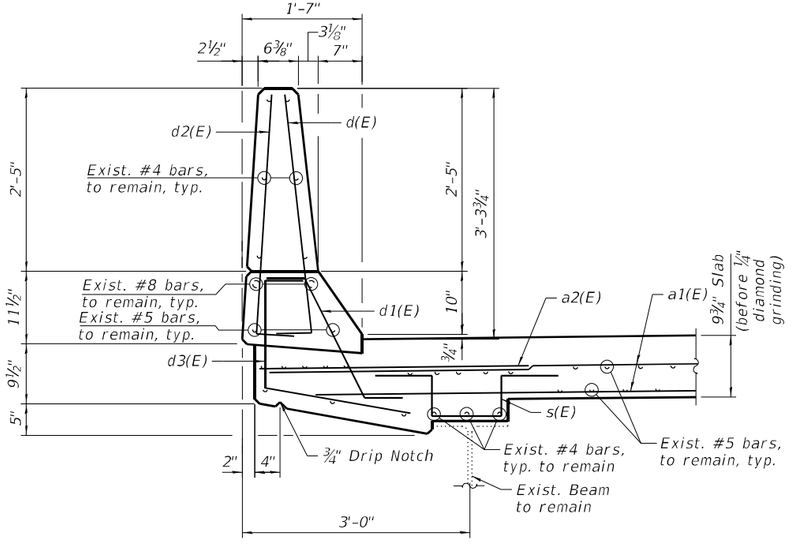
SECTION F-F
(South parapet removal)



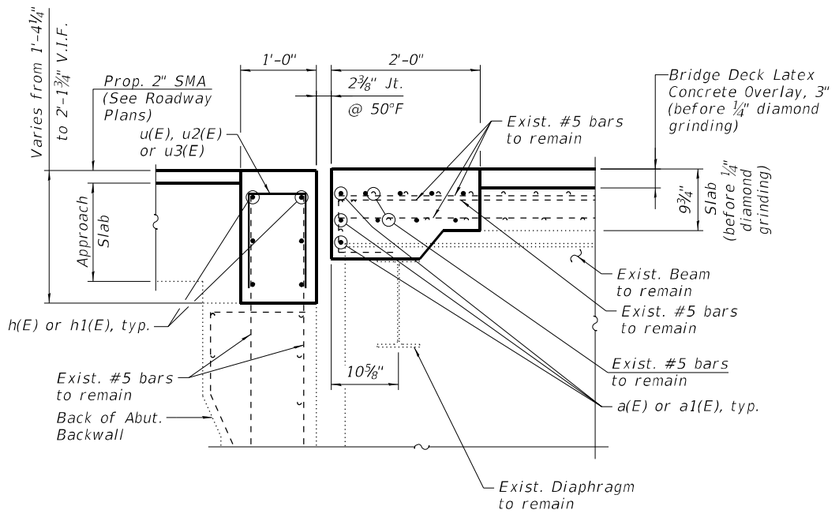
SECTION G-G



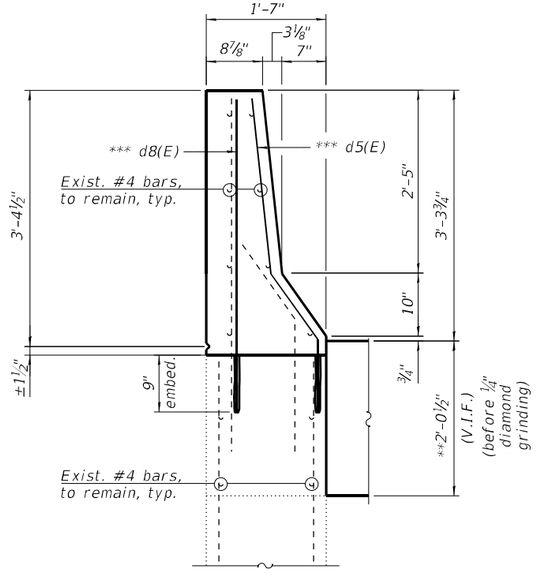
SECTION H-H
(South parapet removal)



SECTION FF-FF
(South parapet reconstruction)



SECTION GG-GG



SECTION HH-HH
(South parapet reconstruction)

LEGEND

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

** Dimension is taken at the Back of Abut.

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0115 (SB)

SHEET S35-11 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1325
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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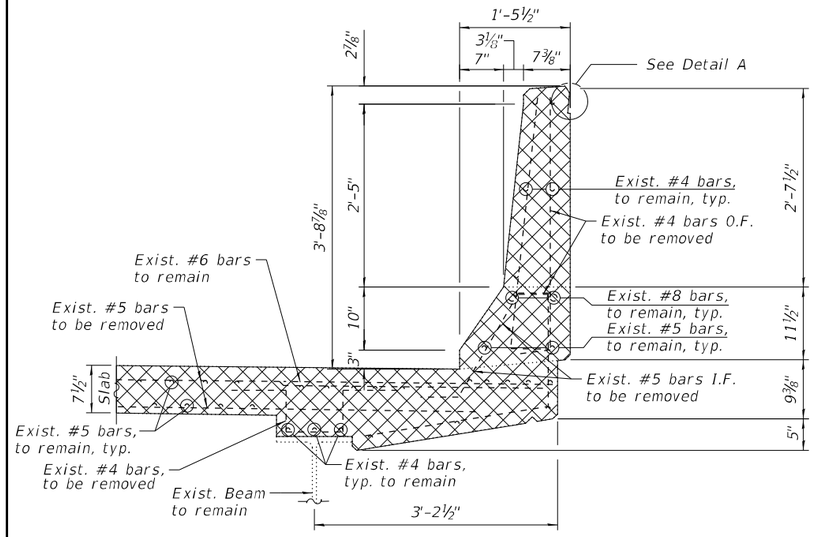
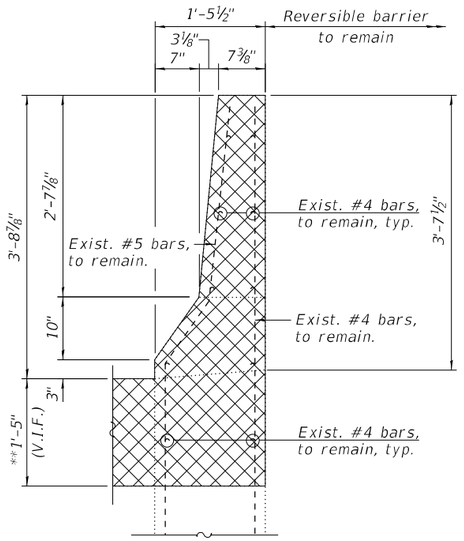
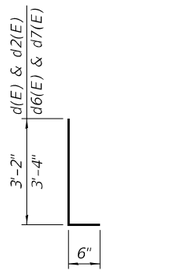


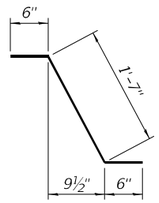
SECTION J-J
(North parapet removal)



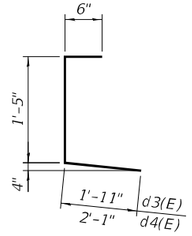
SECTION K-K
(North parapet removal)



BARS d(E), d2(E), d6(E) & d7(E)



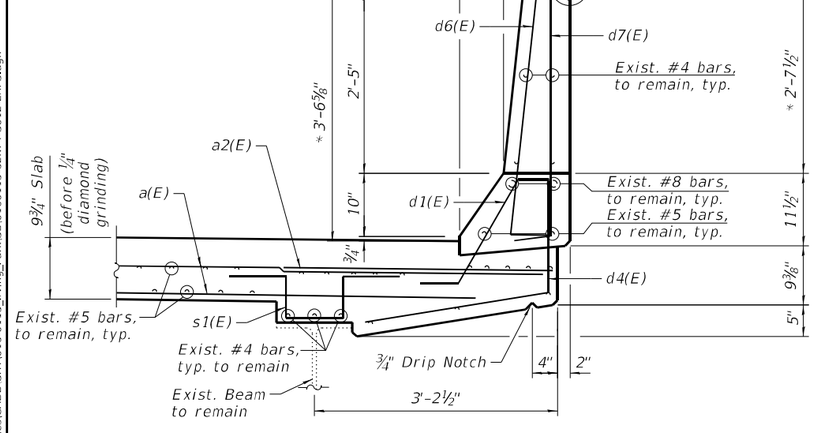
BAR d1(E)



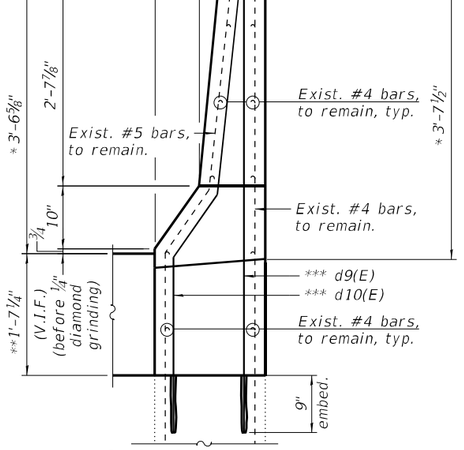
BARS d3(E) & d4(E)

BILL OF MATERIAL
NORTH ABUTMENT

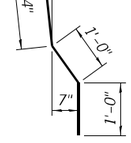
Bar	No.	Size	Length	Shape
a(E)	20	#5	29'-0"	
a1(E)	30	#5	22'-8"	
a2(E)	6	#6	6'-6"	
d(E)	4	#5	3'-8"	
d1(E)	6	#5	2'-7"	
d2(E)	4	#4	3'-8"	
d3(E)	4	#4	3'-10"	
d4(E)	2	#4	4'-0"	
d5(E)	2	#6	4'-4"	
d6(E)	2	#5	3'-10"	
d7(E)	2	#4	3'-10"	
d8(E)	2	#4	4'-2"	
d9(E)	2	#4	5'-10"	
d10(E)	2	#5	6'-1"	
h(E)	12	#6	29'-0"	
h1(E)	12	#6	32'-4"	
s(E)	20	#6	3'-5"	
s1(E)	4	#6	3'-7"	
u(E)	32	#4	2'-9"	
u2(E)	24	#4	3'-9"	
u3(E)	59	#4	3'-3"	
Concrete Removal		Cu Yd	16.5	
Reinforcement Bars, Epoxy Coated		Pound	2,960	
Concrete Superstructure		Cu Yd	18.6	



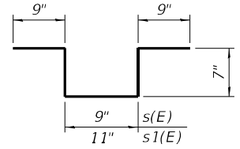
SECTION JJ-JJ
(North parapet reconstruction)



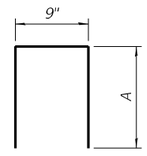
SECTION KK-KK
(North parapet reconstruction)



BAR d5(E)

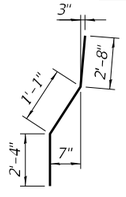


BARS s(E) & s1(E)



BARS u(E), u2(E) & u3(E)

Bar	A
u(E)	1'-0"
u2(E)	1'-6"
u3(E)	1'-3"



BAR d10(E)

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S35-13.
2. For Bar Splicer Assembly details, see sheet S35-19.
3. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal

* Adjust in field as required to match reversible parapet

** Dimension is taken at the Back of Abut.

*** Epoxy grout #4 d9E) bars #5 d10(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

LEGEND

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

MIN BAR LAPS

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

MODEL: SMODELNAMES
FILE NAME: X:\OH\2020\2020221-03\Design\Structural\Design Files\CADD\SHT\016-0115_Irving_Park\SB\016011562K74-S012-EXPS.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0115 (SB)

SHEET S35-12 OF S35-19 SHEETS

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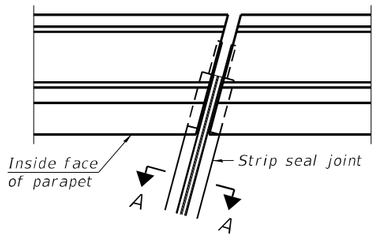
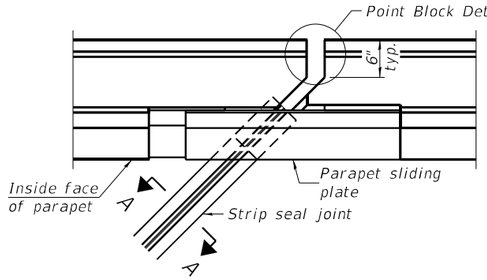
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

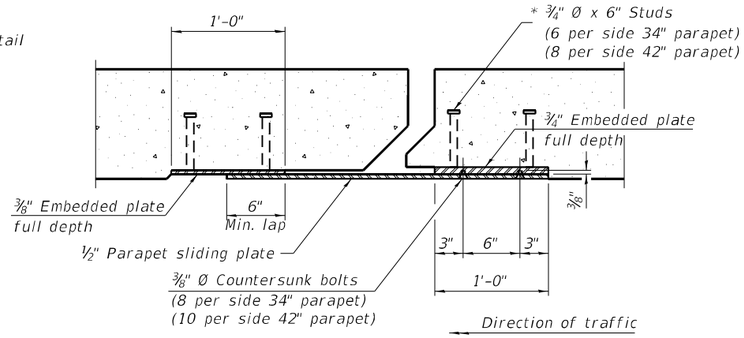


FOR SKEWS ≤ 30°

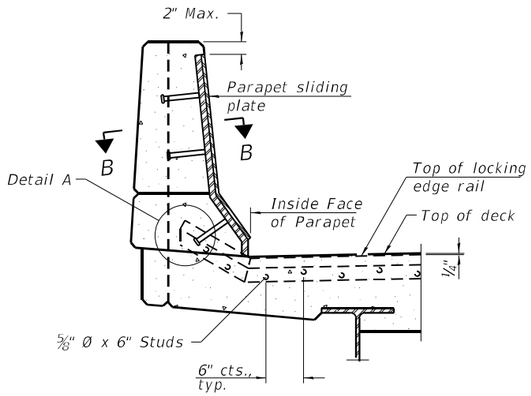


FOR SKEWS > 30°

PLAN AT PARAPET

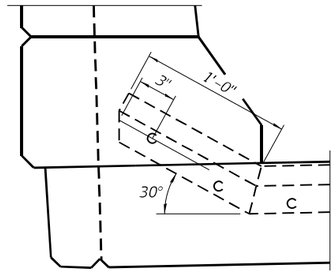


SECTION B-B

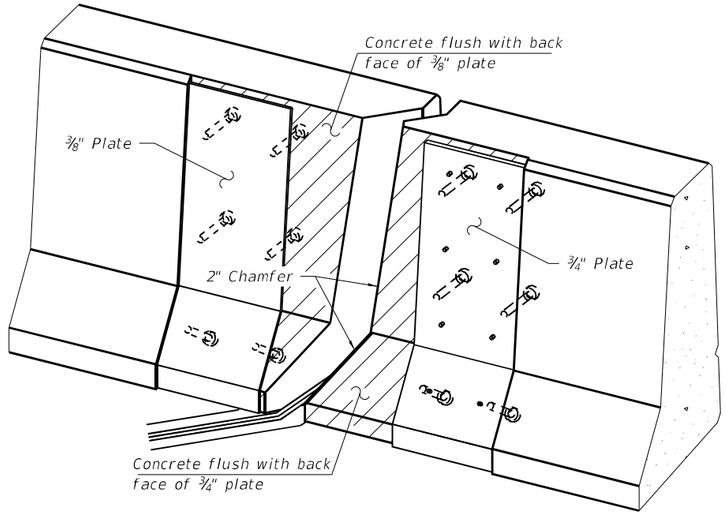


ELEVATION AT PARAPET

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



DETAIL A



TRIMETRIC VIEW

(Showing embedded plates only)

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.

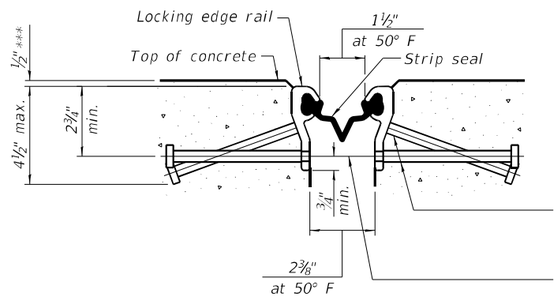
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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.

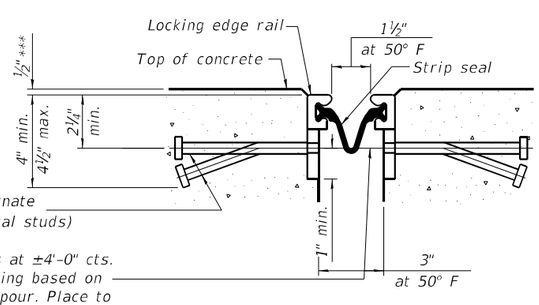
Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.

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.



SHOWING ROLLED RAIL JOINT



SHOWING WELDED RAIL JOINT

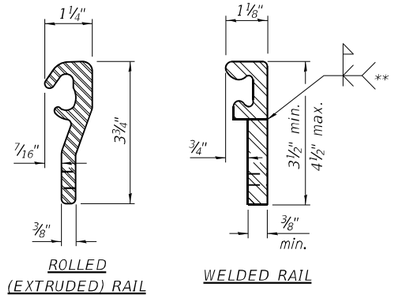
* ⅜" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

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.

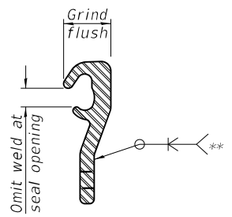


ROLLED (EXTRUDED) RAIL

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	225

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
SN 016-0115 (SB)

SHEET S35-13 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1327
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

MODEL: SMODELNAMES
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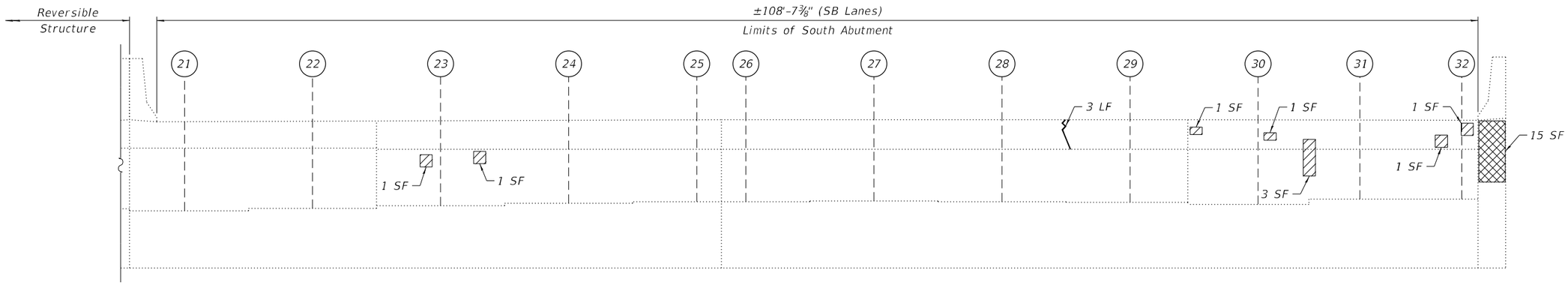

ELEVATION - SOUTH ABUTMENT

(Looking South)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction
2. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
3. For Slope Wall repairs, see Sheet S35-18.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Yd	618
Epoxy Crack Injection	Foot	3
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	9
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	15

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT REPAIRS
SN 016-0115 (SB)

SHEET S35-14 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1328
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: SMODELNAMES
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0115_Irving_Park\SB\0160115-62K74-S014-SABS.dgn
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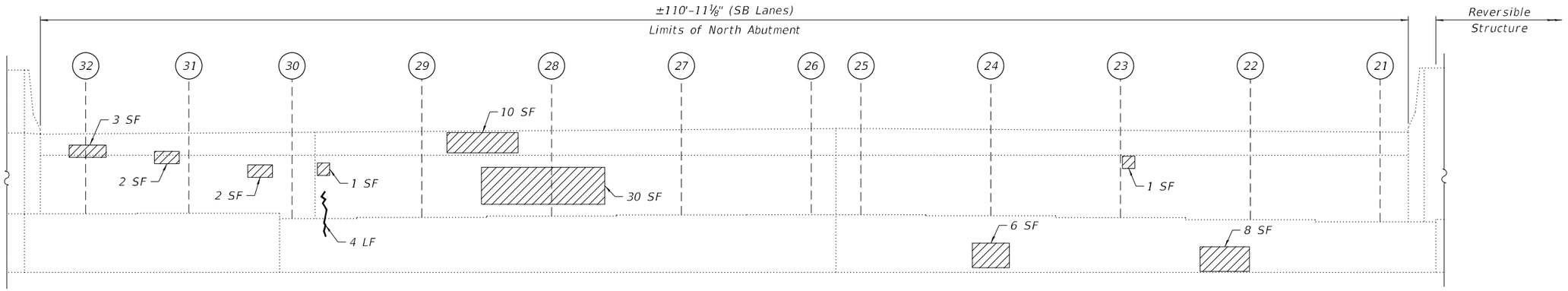

ELEVATION - NORTH ABUTMENT

(Looking North)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction
2. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
3. For Slope Wall repairs, see Sheet S35-18.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	626
Epoxy Crack Injection	Foot	4
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	63

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DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIRS
SN 016-0115 (SB)
SHEET S35-15 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1329
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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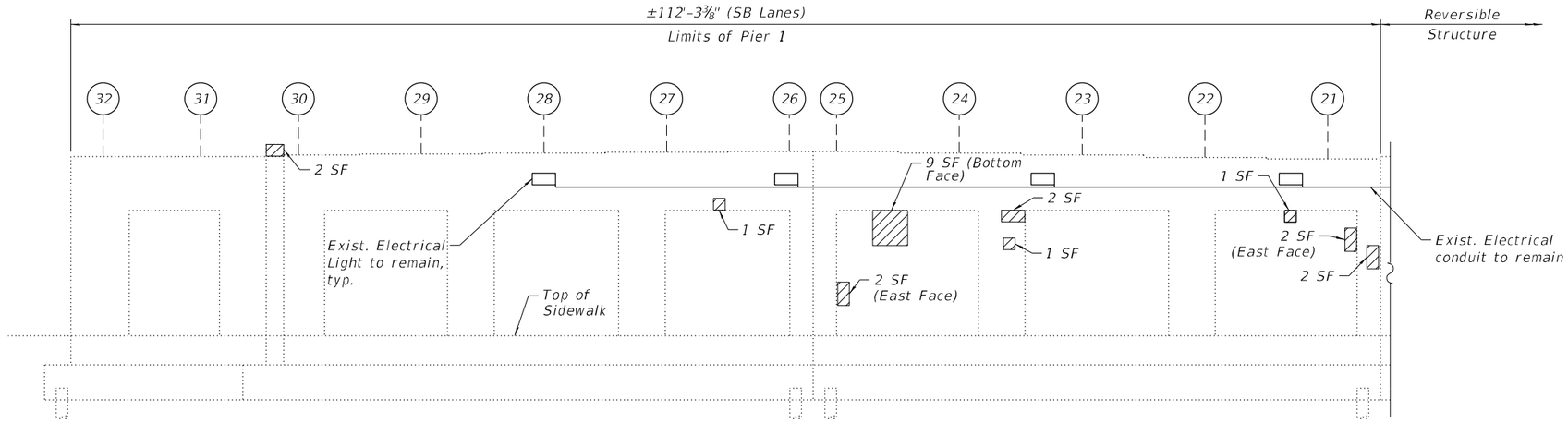
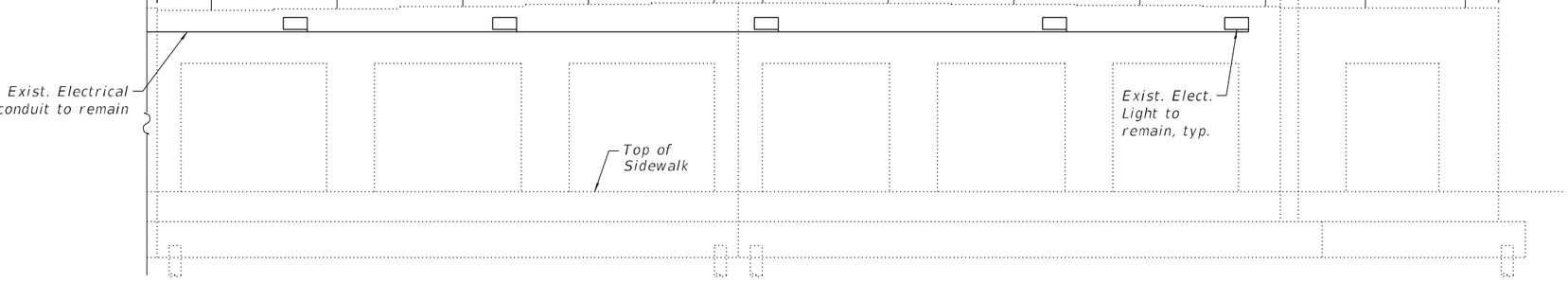


ELEVATION - PIER 1

(Looking North)



ELEVATION - PIER 1

(Looking South)

EXISTING LIGHTING: PIER 1

(Looking Northwest)

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 construction.

LEGEND

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

BILL OF MATERIAL

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

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
SN 016-0115 (SB)
SHEET S35-16 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1330
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
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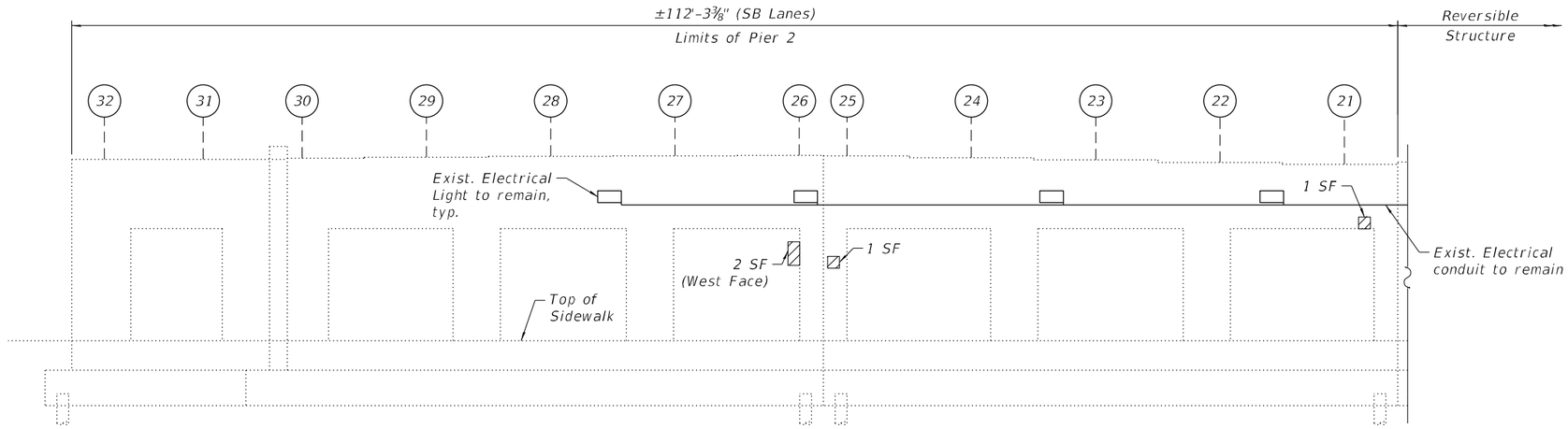
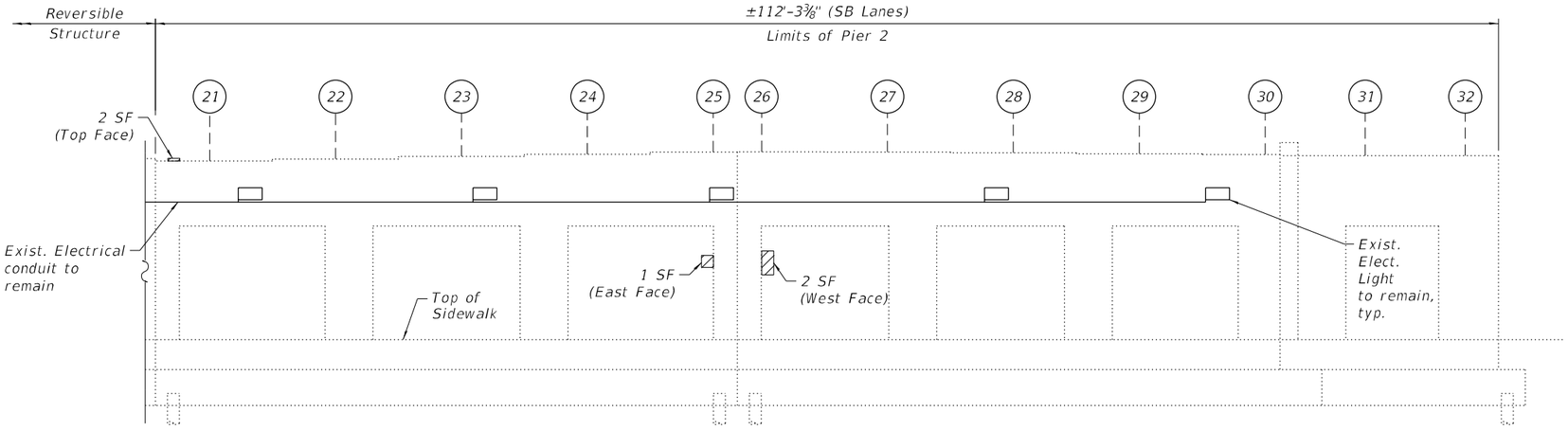


ELEVATION - PIER 2

(Looking North)



ELEVATION - PIER 2

(Looking South)

EXISTING LIGHTING: PIER 2

(Looking North)

EXISTING LIGHTING: PIER 2

(Looking Southwest)

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.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	9

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIRS
SN 016-0115 (SB)

SHEET S35-17 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1331
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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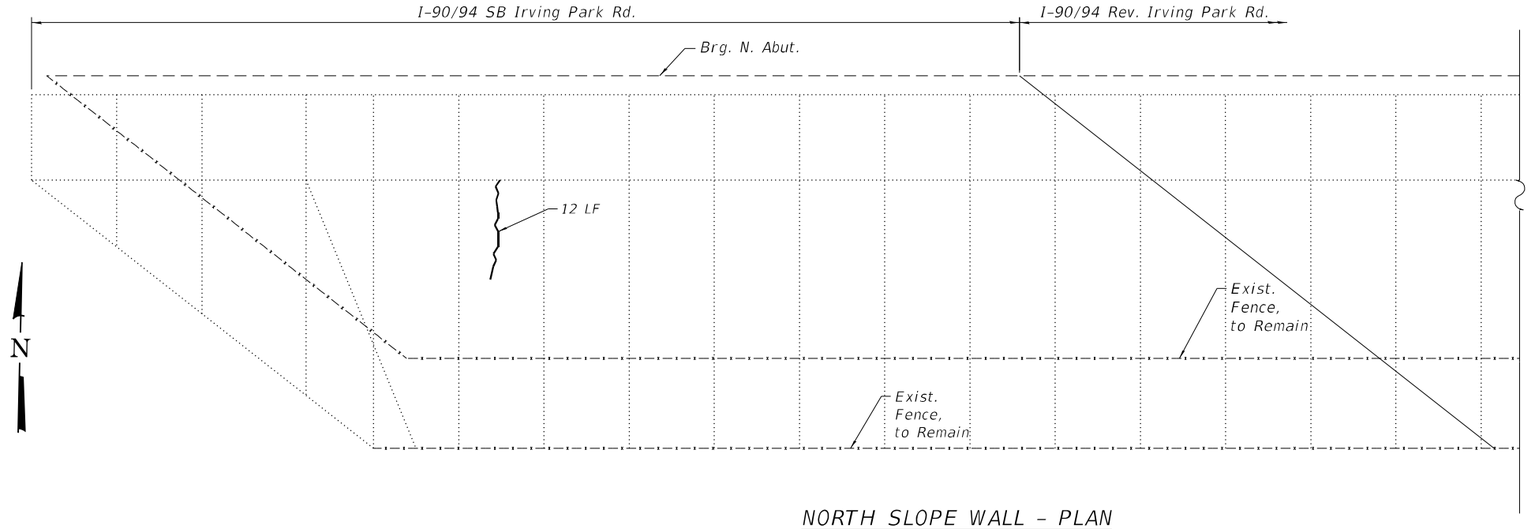
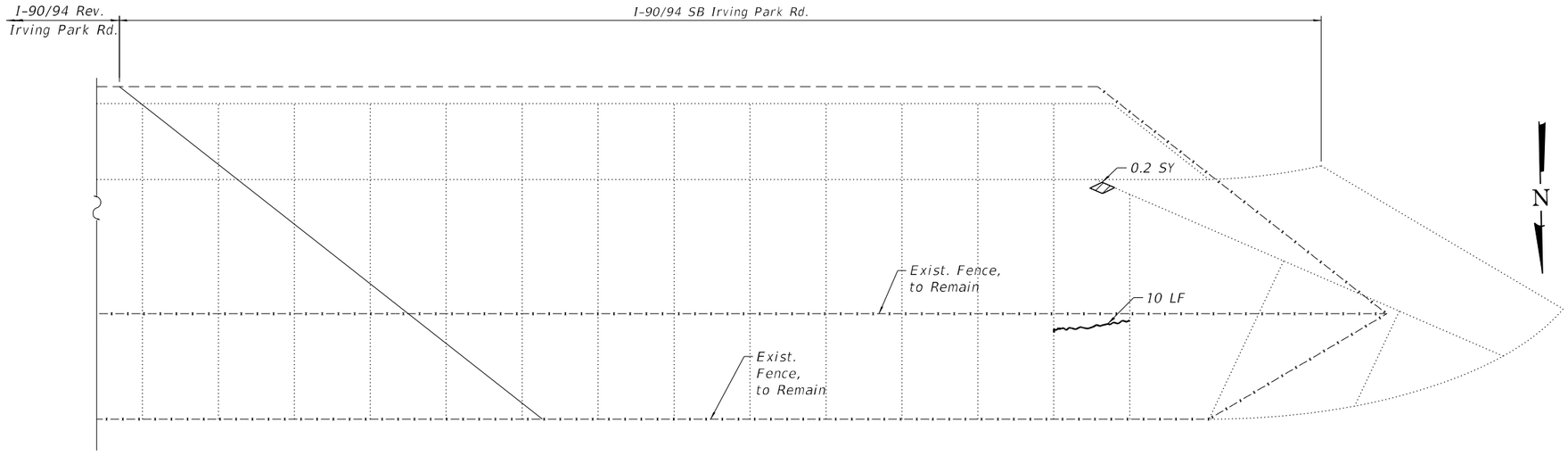


NORTH SLOPE WALL - PLAN

(Looking North)



SOUTH SLOPE WALL - PLAN

(Looking South)

NOTES:

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

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu Yd	1
Slope Wall Removal	Sq Yd	1
Slope Wall 4 Inch	Sq Yd	1
Slope Wall Crack Sealing	Foot	22

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DEPARTMENT OF TRANSPORTATION

SLOPE WALL REPAIRS
SN 016-0115 (SB)
SHEET S35-18 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1332
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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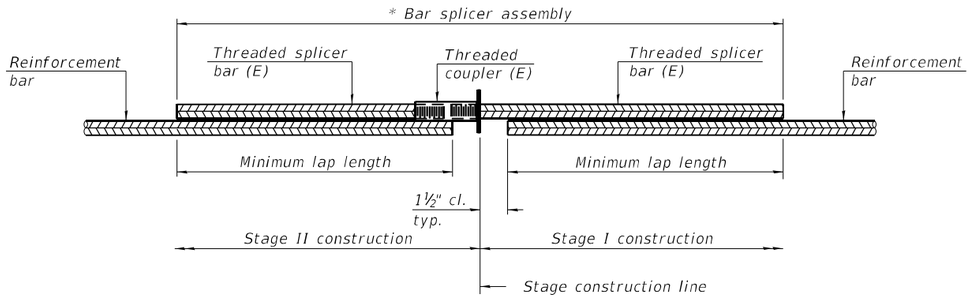


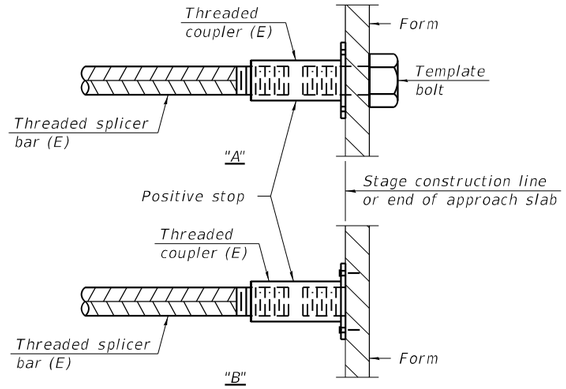
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

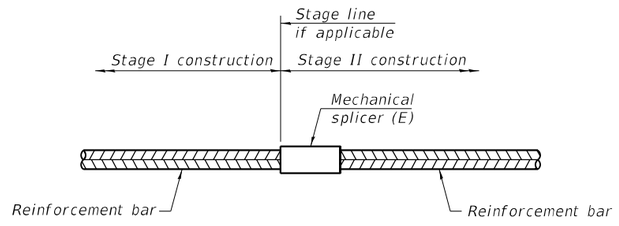
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

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

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BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 016-0115 (SB)

SHEET S35-19 OF S35-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1333
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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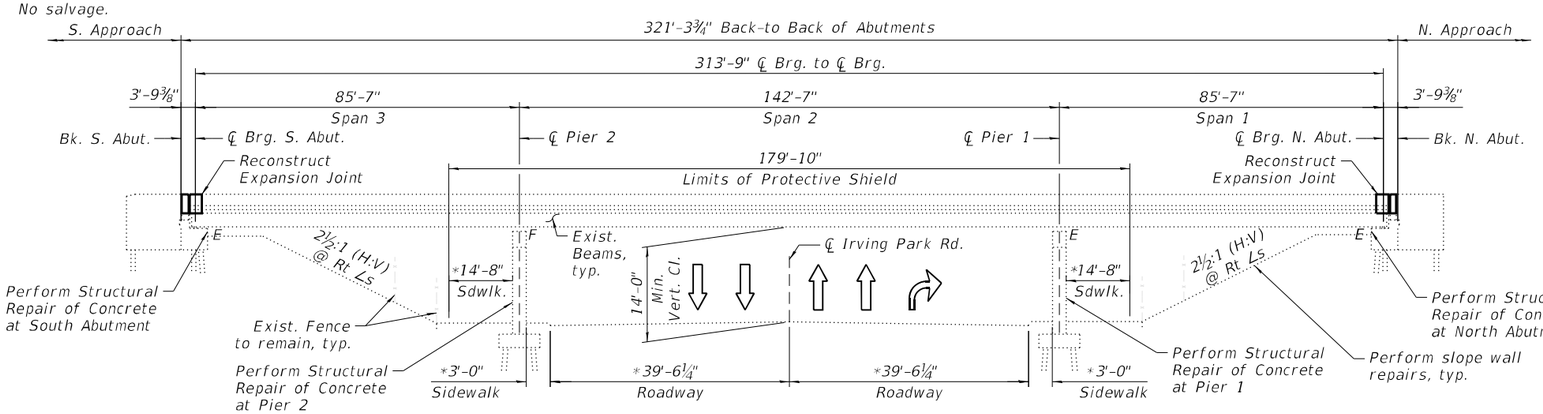
Existing Structure: S.N. 016-0115 was originally built in 1957 from BCR. The bridge was widened and redecked between 1990 and 1993, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 321'-3¾" and an out-to-out deck width of 36'-0½". The superstructure consists of a 7½" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 85'-7", 142'-7", and 85'-7". The substructure consists of reinforced concrete abutments and piers supported on reinforced concrete piles.

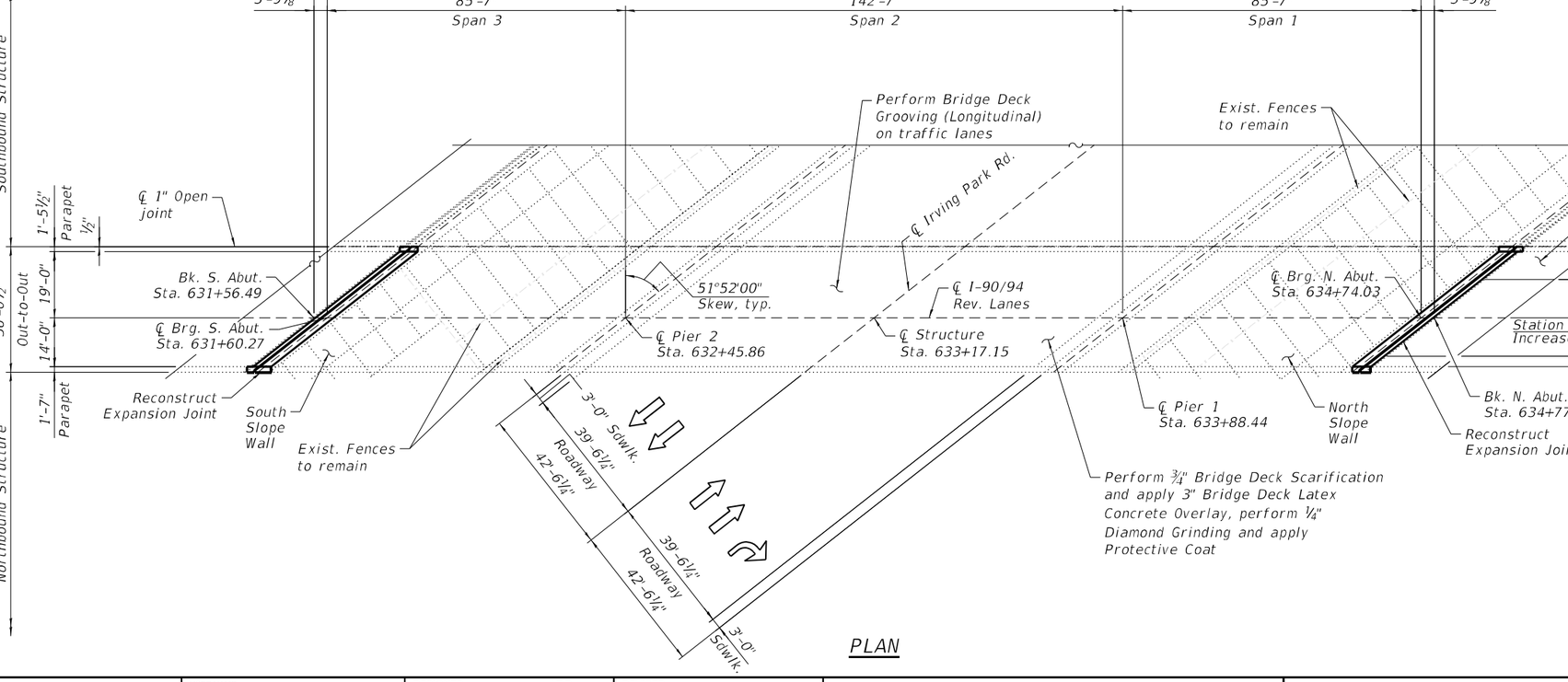
The reversible lanes will be closed to traffic during construction.

No salvage.

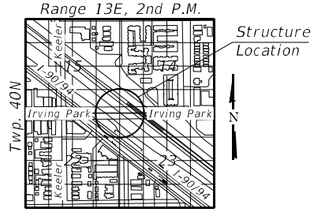


ELEVATION

* Dimension at right angle



PLAN



LOCATION SKETCH

LOADING

HS20-44 and alternate military loading

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition

NOTE:

1. All stations are to the ℄ I-90/94 Reversible Roadway and taken from existing plans.
2. No Future Wearing Surface is allowed.

KEVIN WOOD
081-006515
LICENSED STRUCTURAL ENGINEER OF ILLINOIS

Kevin Wood

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

GENERAL PLAN AND ELEVATION
REVERSIBLE I-90 OVER IRVING PARK ROAD
F.A.I. SEC 2020-004-BR
COOK COUNTY
STATION: 633+17.15
STRUCTURE NO. 016-0115 (REV)

MODEL: SMODELNAMES
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\0160115_Irving_Park\Rev\0160115-62K74-S001-GPER.dgn
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S36-01 OF S36-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1334
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

GENERAL NOTES

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

2. Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 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.

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

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

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

6. Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. The cost of cleaning shall be included in the cost of Concrete Removal.

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

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

9. For SMA overlay on Approach Slab, see Roadway Plans.

10. Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.

11. 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.

12. Adjacent I-90/94 Northbound and Southbound bridge is not shown throughout the plans for clarity.

13. 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.

14. 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".

15. The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.

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

17. Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.

18. Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.

19. 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.

20. Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.

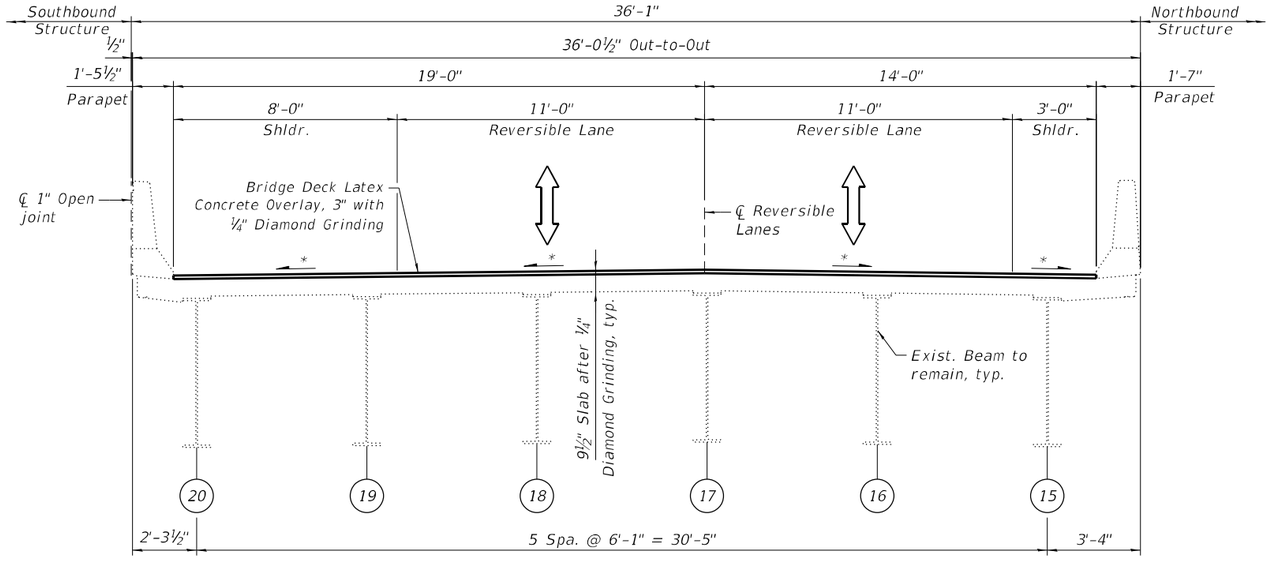
INDEX OF SHEETS

SCOPE OF WORK

1. Provide Protective Shield within limits indicated on the plans.
2. Scarify ¾" from the bridge deck slab.
3. Perform deck repairs.
4. Remove and reconstruct expansion joints at north and south abutments and install new Preformed Joint Strip Seals.
5. Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs, see Roadway Plans.
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 the new overlay.
9. Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.
10. Epoxy crack injection at the abutments and piers for cracks greater than hairline.
11. Perform slope wall repairs.
12. Install 2½" Performed Joint Seal along top of parapet between I-90/94 Southbound and Reversible lanes.

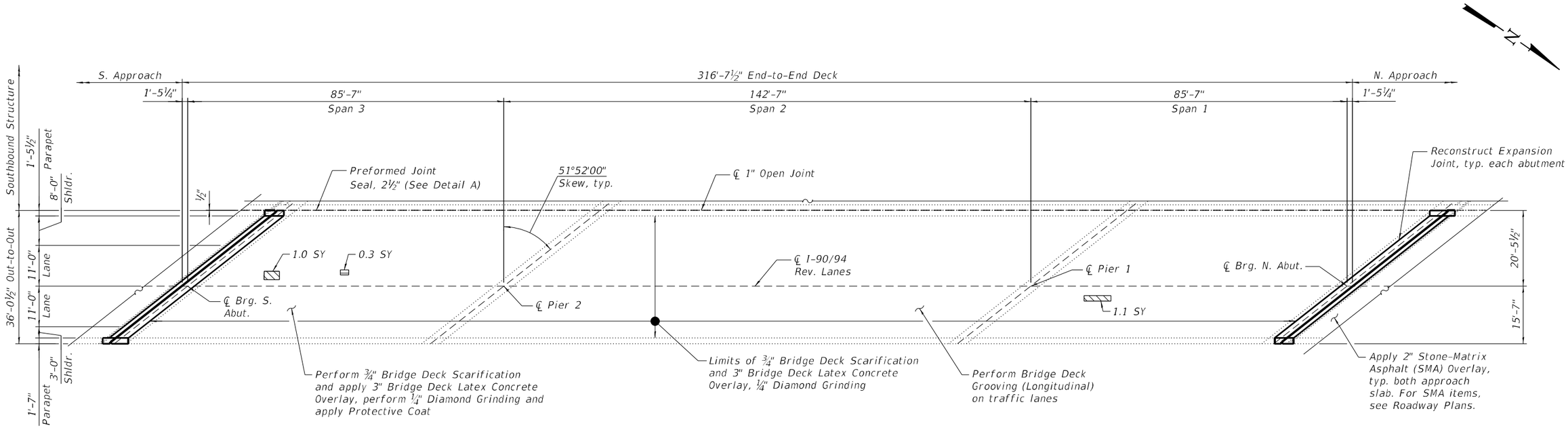
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	17.9		17.9
Protective Shield	Sq Yd	721		721
Concrete Superstructure	Cu Yd	20.1		20.1
Protective Coat	Sq Yd	1,482		1,482
Reinforcement Bars, Epoxy Coated	Pound	3,110		3,110
Preformed Joint Seal 2 1/2"	Foot	322		322
Preformed Joint Strip Seal	Foot	111		111
Concrete Sealer	Sq Ft		641	641
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	773		773
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,135		1,135
Bridge Deck Scarification 3/4"	Sq Yd	1,135		1,135
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		73	73
Deck Slab Repair (Full Depth, Type I)	Sq Yd	0.3		0.3
Deck Slab Repair (Full Depth, Type II)	Sq Yd	2.1		2.1
Diamond Grinding (Bridge Section)	Sq Yd	1,159		1,159
Maintenance of Lighting System	Cal Mo		6	6

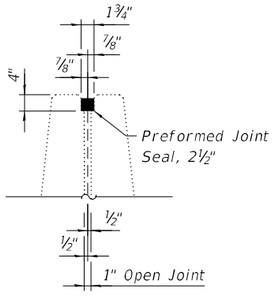


FINAL CROSS SECTION
(Looking West)

* Match existing deck surface profile



DECK PLAN



DETAIL A

(Reinforcement not shown for clarity)

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 S36-02.
3. For North and South transverse joint removal and reconstruction, see Sheet S36-04 thru S36-09.
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.

LEGEND

	Deck Slab Repair (Full Depth, Type I)
	Deck Slab Repair (Full Depth, Type II)
SY	Square Yard

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	721
Protective Coat	Sq Yd	1,482
Preformed Joint Seal 2 1/2"	Foot	322
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	773
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,135
Bridge Deck Scarification 3/4"	Sq Yd	1,135
Deck Slab Repair (Full Depth, Type I)	Sq Yd	0.3
Deck Slab Repair (Full Depth, Type II)	Sq Yd	2.1
Diamond Grinding (Bridge Section)	Sq Yd	1,159
Maintenance of Lighting System	Cal Mo	6

GRÄEF
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DEPARTMENT OF TRANSPORTATION

BRIDGE DECK REPAIR PLAN AND DETAILS
SN 016-0115 (REV)

SHEET S36-03 OF S36-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1336
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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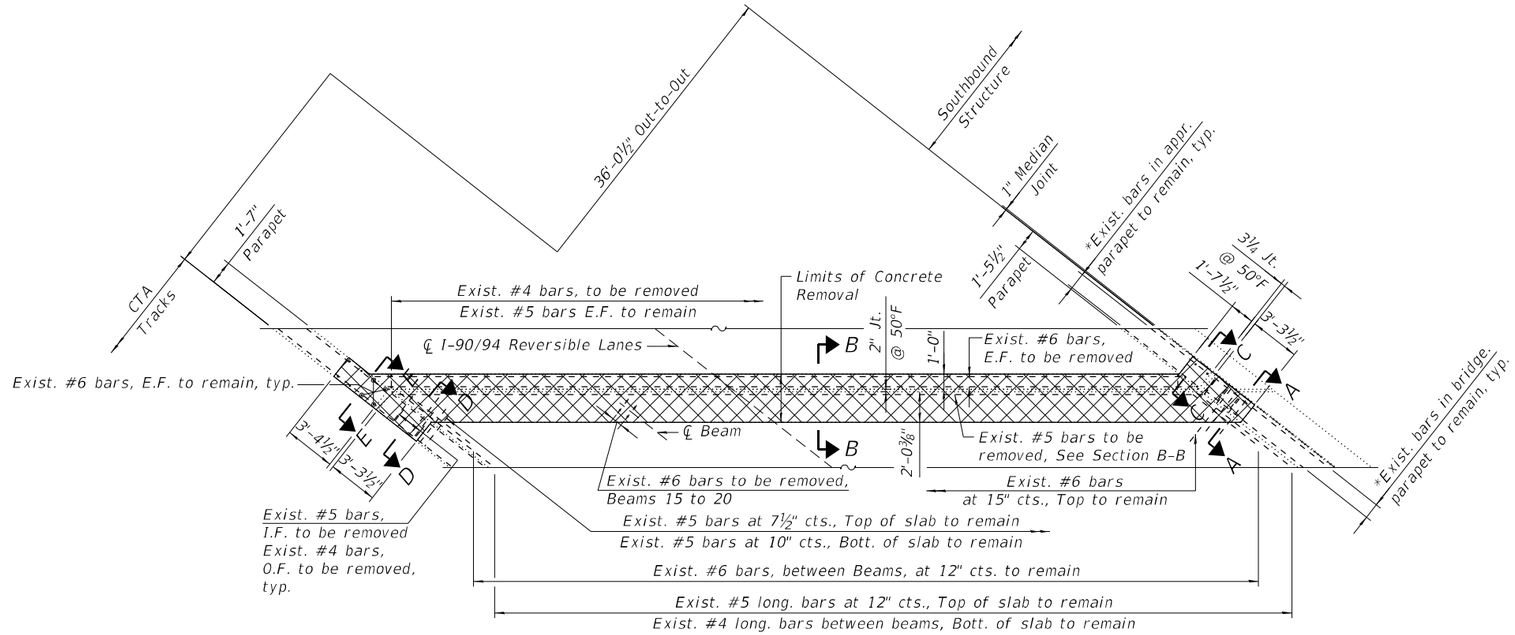
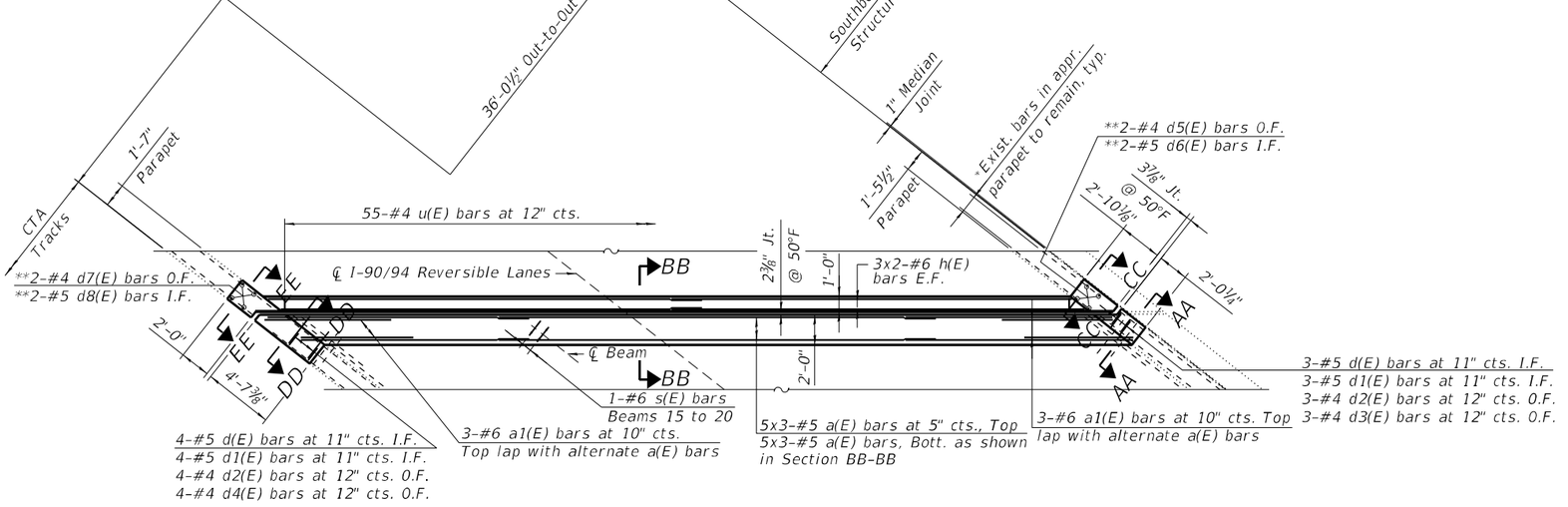


SOUTH ABUTMENT JOINT REMOVAL PLAN



SOUTH ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S36-05.
2. For sections D-D, E-E, DD-DD and EE-EE, see sheet S36-06.

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

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

LEGEND

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

MODEL: sMODELNAMES
FILE NAME: X:\DH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0115_Irving_Park\Rev\016011S-62K74-S004-EXPR.dgn
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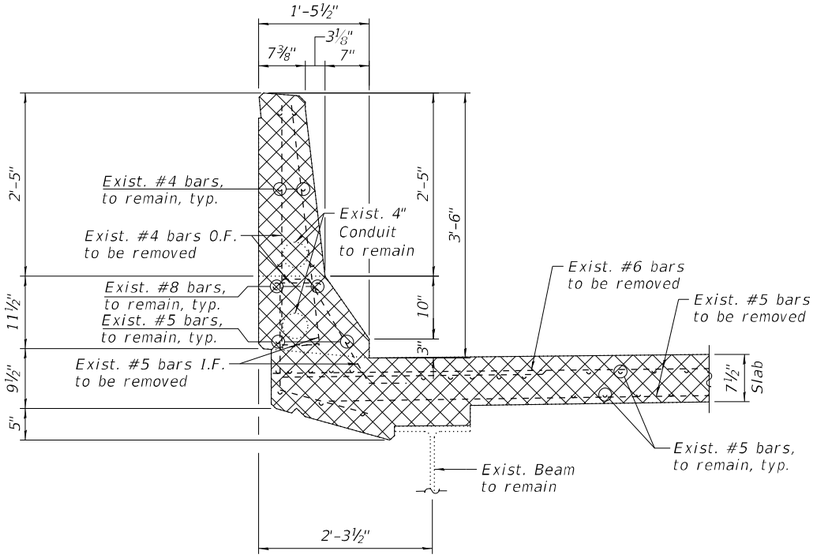
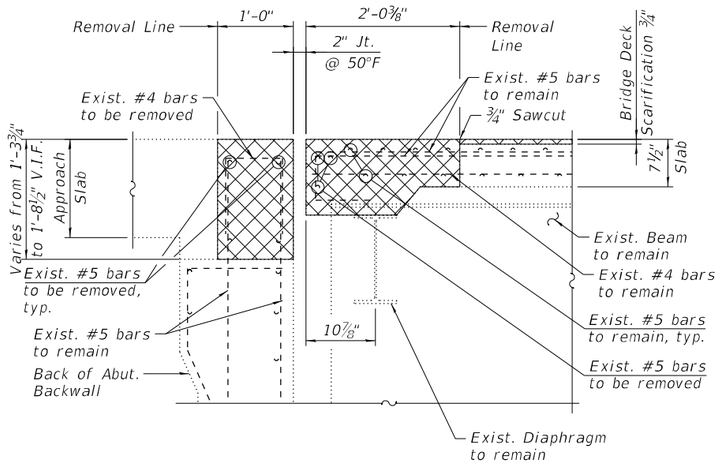
SOUTH ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0115 (REV)
SHEET S36-04 OF S36-15 SHEETS

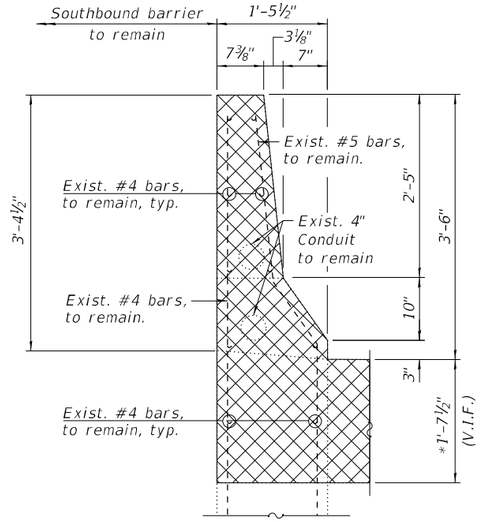
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1337
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



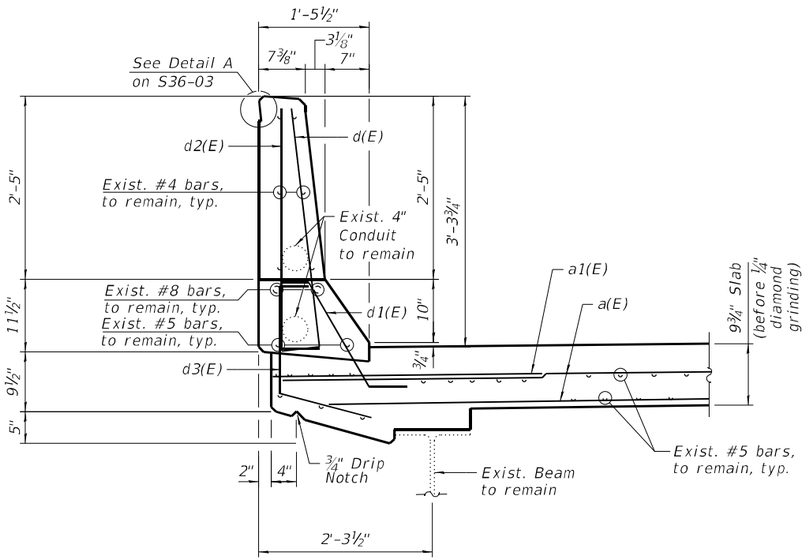
SECTION A-A
(South parapet removal)



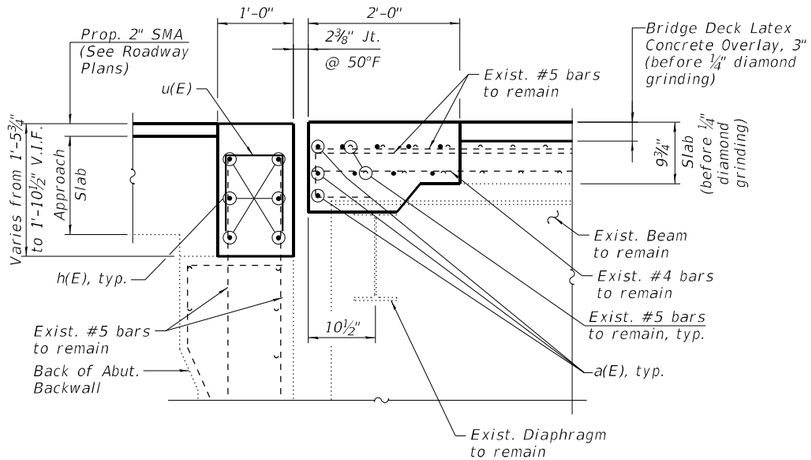
SECTION B-B



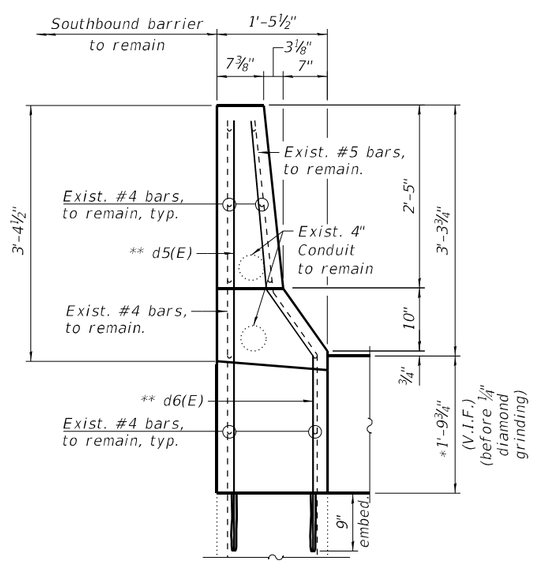
SECTION C-C
(South parapet removal)



SECTION AA-AA
(South parapet reconstruction)



SECTION BB-BB



SECTION CC-CC
(South parapet reconstruction)

LEGEND

* Dimension is taken at the Back of Abut.

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

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

MODEL: SMODELNAMES
FILE NAME: X:\DM\2020\20200221-03\Design\Structural\Design Files\CADD\SHT0116-0115_Irving_Park\Rev\0160115-62K74-S005-EXPR.dgn

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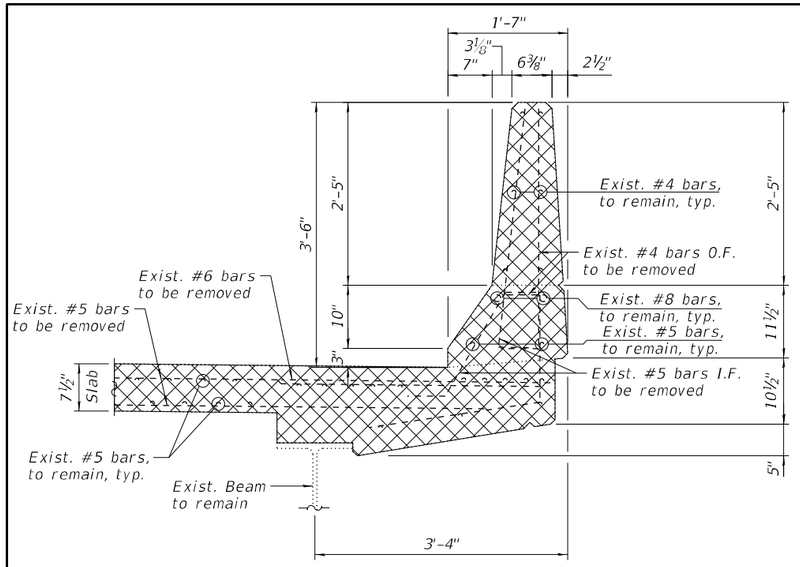
PLOT SCALE =	DRAWN -	J.T.B.	REVISED -	
PLOT DATE =	CHECKED -	K.G.W.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0115 (REV)

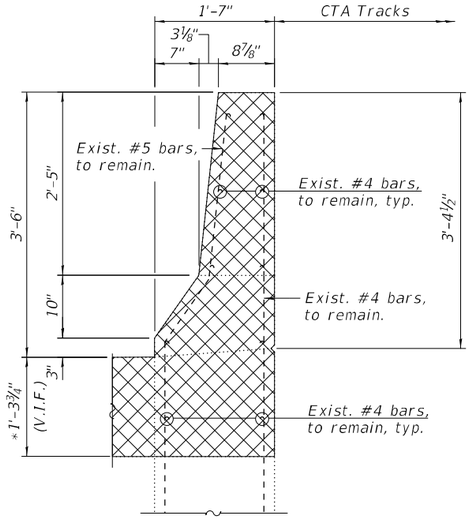
SHEET S36-05 OF S36-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1338
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	



SECTION D-D

(North parapet removal)

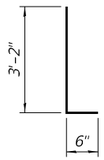


SECTION E-E

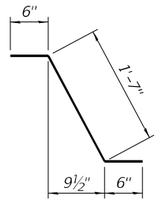
(North parapet removal)

BILL OF MATERIAL
SOUTH ABUTMENT

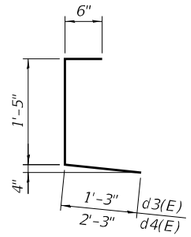
Bar	No.	Size	Length	Shape
a(E)	30	#5	21'-10"	
a1(E)	6	#6	6'-6"	
d(E)	7	#5	3'-8"	
d1(E)	7	#5	2'-7"	
d2(E)	7	#4	3'-8"	
d3(E)	3	#4	3'-2"	
d4(E)	4	#4	4'-2"	
d5(E)	2	#4	5'-9"	
d6(E)	2	#5	5'-11"	
d7(E)	2	#4	5'-6"	
d8(E)	2	#5	5'-8"	
h(E)	12	#6	30'-1"	
s(E)	6	#6	3'-4"	
u(E)	55	#4	2'-9"	
Concrete Removal			Cu Yd	9.1
Reinforcement Bars, Epoxy Coated			Pound	1,560
Concrete Superstructure			Cu Yd	10.1



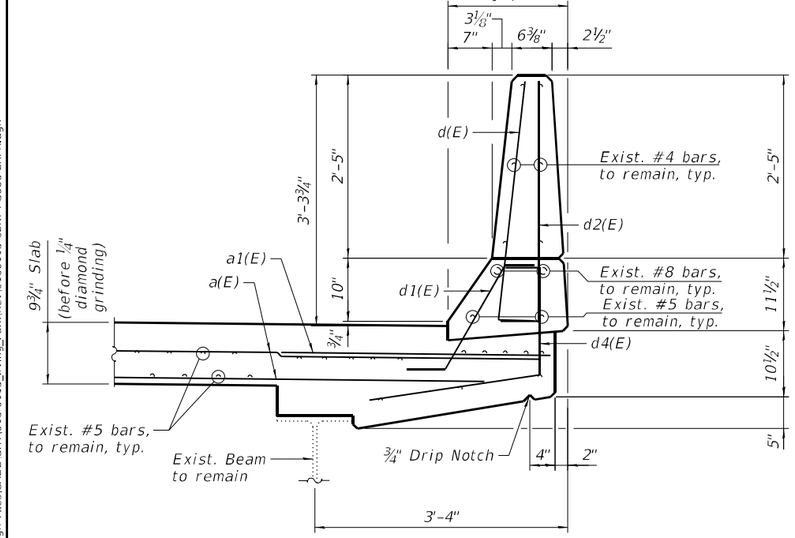
BARS d(E) & d2(E)



BAR d1(E)

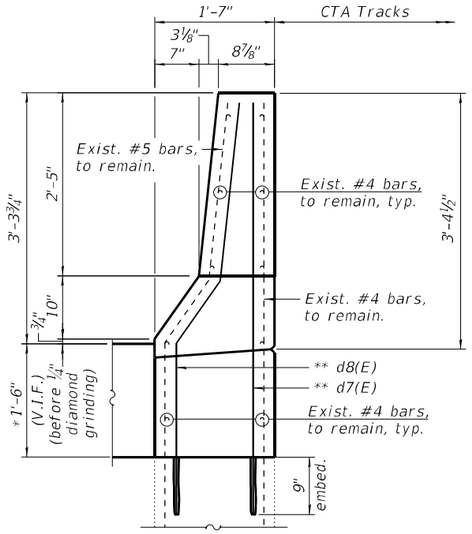


BARS d3(E) & d4(E)



SECTION DD-DD

(North parapet reconstruction)

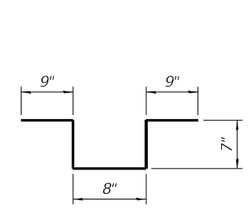


SECTION EE-EE

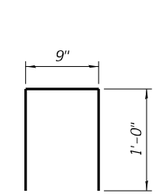
(North parapet reconstruction)

* Dimension is taken at the Back of Abut.

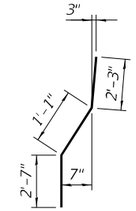
** Epoxy grout #4 d7(E) & #5 d8(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.



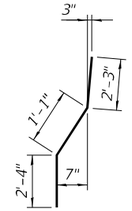
BAR s(E)



BAR u(E)



BAR d6(E)



BAR d8(E)

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S36-10.
2. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
3. Removal and disposal of the existing expansion joints is included with Concrete Removal.

LEGEND

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

MIN BAR LAPS

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0115 (REV)

SHEET S36-06 OF S36-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1339
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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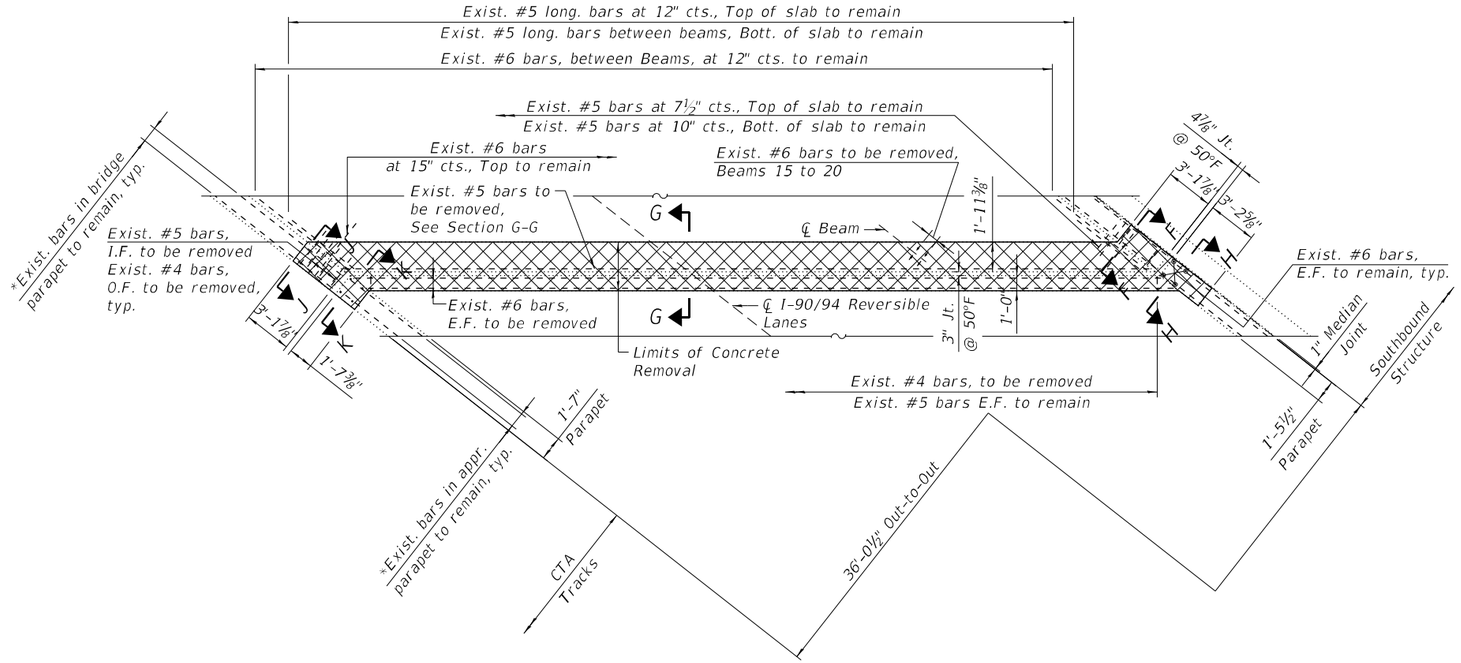
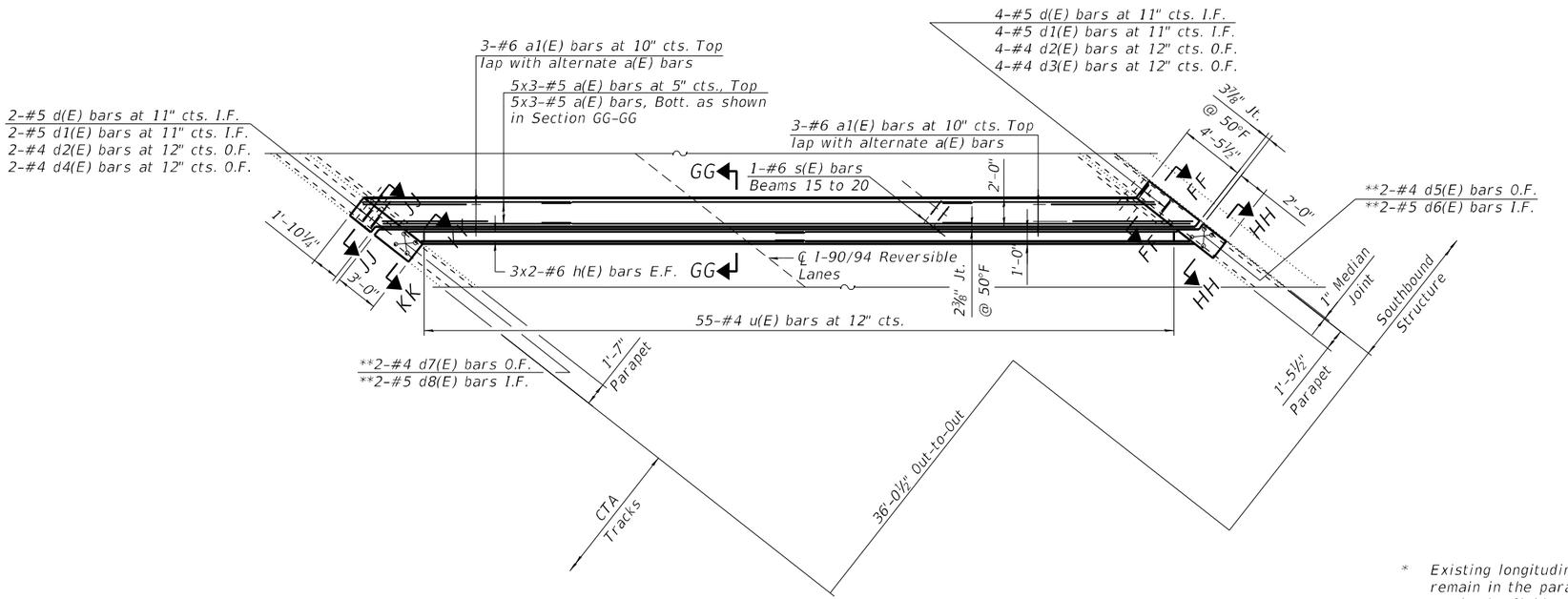


NORTH ABUTMENT JOINT REMOVAL PLAN



NORTH ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S36-08.
2. For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S36-09.

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

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

LEGEND

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0115 (REV)
SHEET S36-07 OF S36-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1340
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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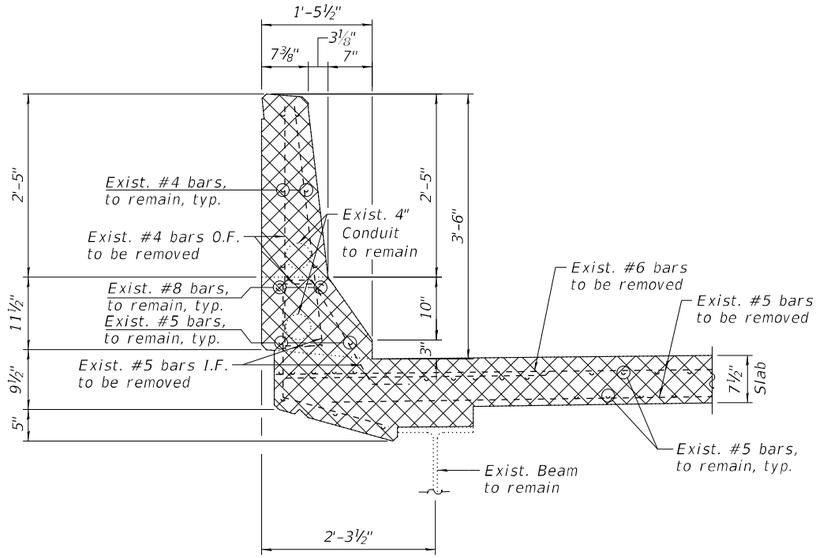
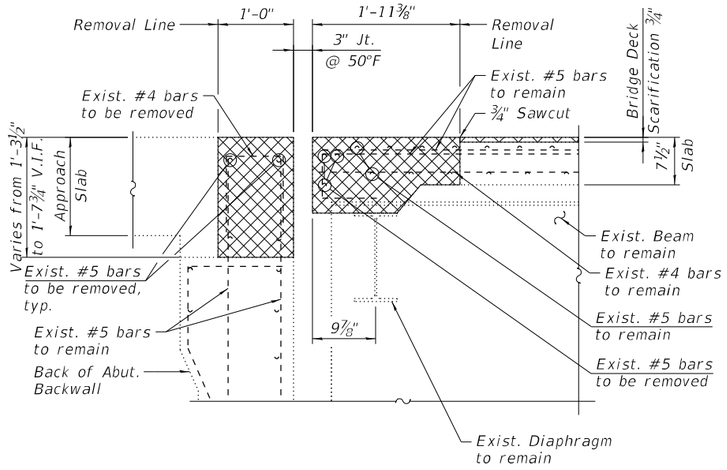
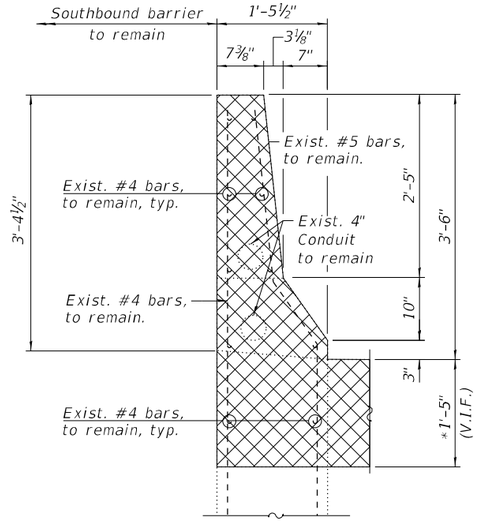


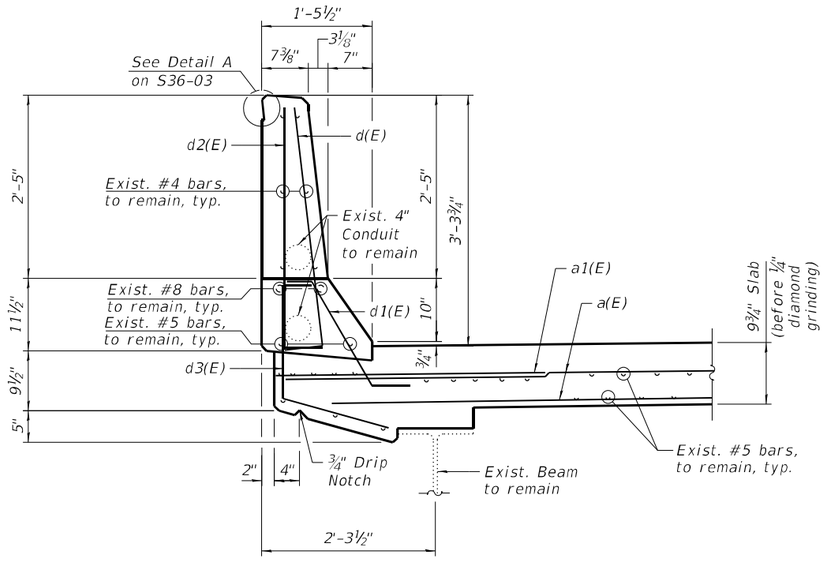
SECTION F-F
(South parapet removal)



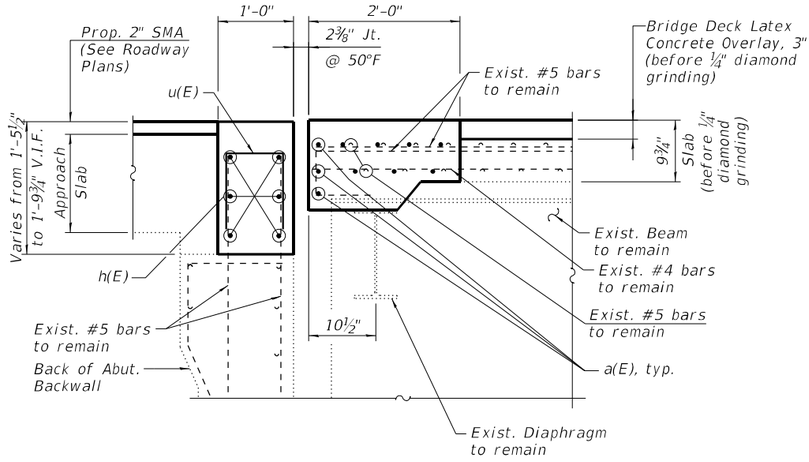
SECTION G-G



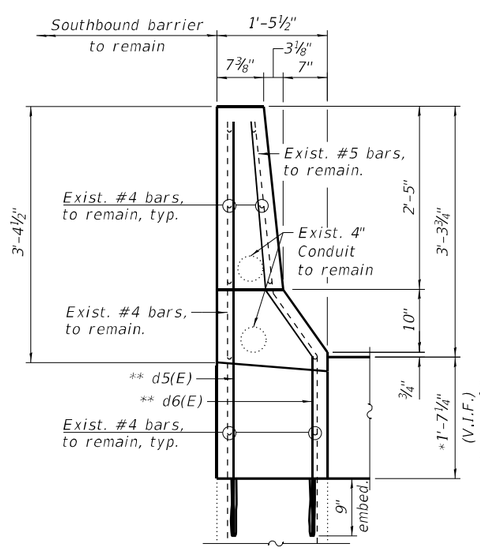
SECTION H-H
(South parapet removal)



SECTION FF-FF
(South parapet reconstruction)



SECTION GG-GG



SECTION HH-HH
(South parapet reconstruction)

* Dimension is taken at the Back of Abut.

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

LEGEND

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

MODEL: SMODELNAMES
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PLOT DATE =		CHECKED -	K.G.W.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0115 (REV)

SHEET S36-08 OF S36-15 SHEETS

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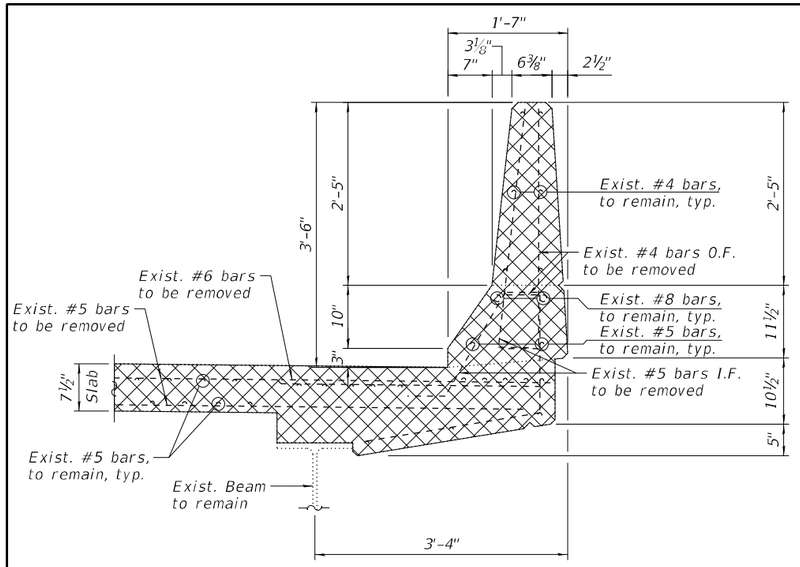
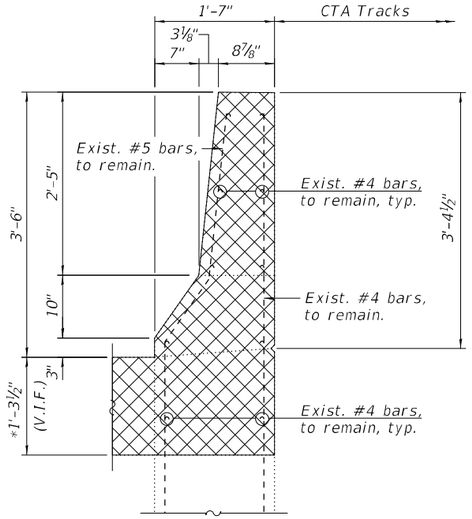
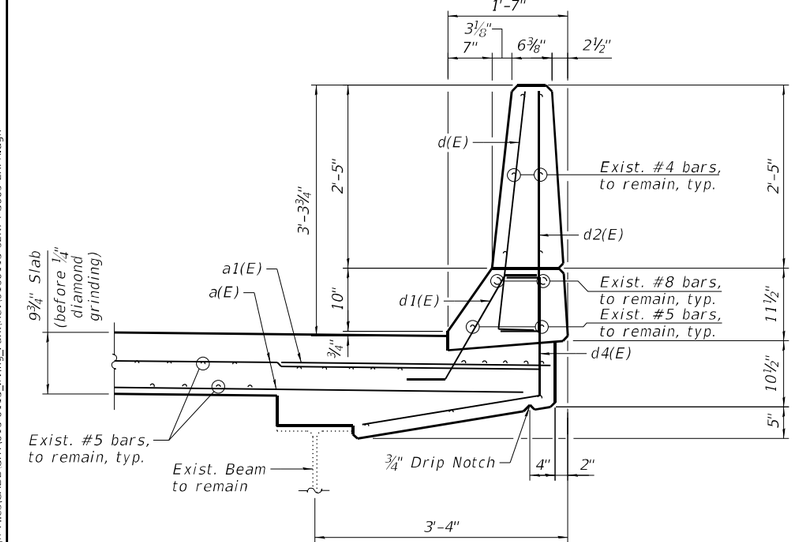
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



SECTION J-J
(North parapet removal)



SECTION K-K
(North parapet removal)



SECTION JJ-JJ
(North parapet reconstruction)

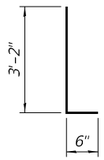
SECTION KK-KK
(North parapet reconstruction)

* Dimension is taken at the Back of Abut.

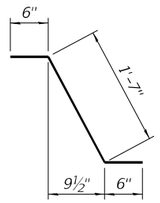
** Epoxy grout #4 d7(E) & #5 d8(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

BILL OF MATERIAL
NORTH ABUTMENT

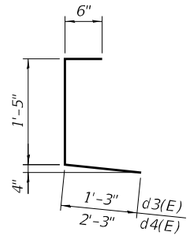
Bar	No.	Size	Length	Shape
a(E)	30	#5	21'-10"	
a1(E)	6	#6	6'-6"	
d(E)	6	#5	3'-8"	
d1(E)	6	#5	2'-7"	
d2(E)	6	#4	3'-8"	
d3(E)	4	#4	3'-2"	
d4(E)	2	#4	4'-2"	
d5(E)	2	#4	5'-9"	
d6(E)	2	#5	5'-11"	
d7(E)	2	#4	5'-6"	
d8(E)	2	#5	5'-8"	
h(E)	12	#6	31'-1"	
s(E)	6	#6	3'-4"	
u(E)	55	#4	2'-9"	
Concrete Removal			Cu Yd	8.8
Reinforcement Bars, Epoxy Coated			Pound	1,550
Concrete Superstructure			Cu Yd	10.0



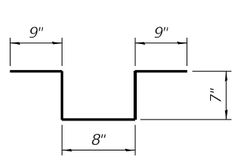
BARS d(E) & d2(E)



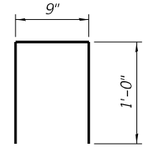
BAR d1(E)



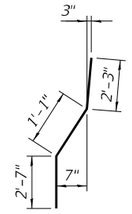
BARS d3(E) & d4(E)



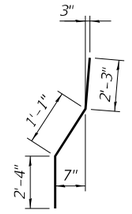
BAR s(E)



BAR u(E)



BAR d6(E)



BAR d8(E)

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S36-10.
2. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
3. Removal and disposal of the existing expansion joints is included with Concrete Removal.

LEGEND

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

MIN BAR LAPS

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

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0115 (REV)

SHEET S36-09 OF S36-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1342
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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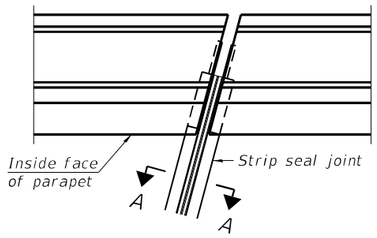
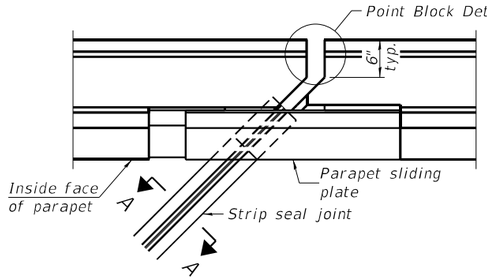
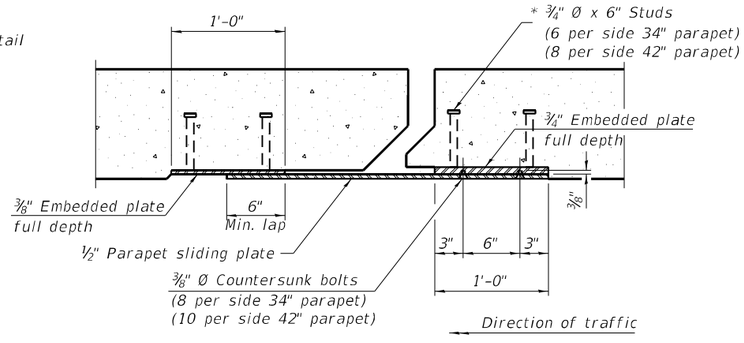


FOR SKEWS ≤ 30°

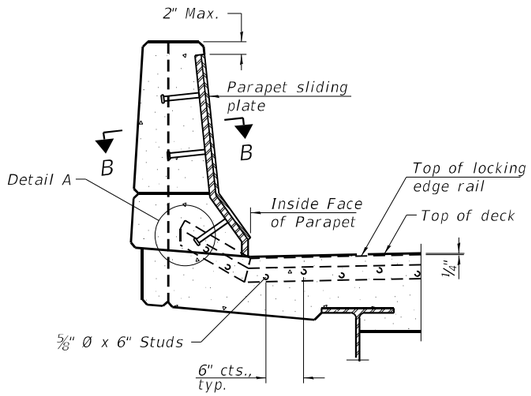


FOR SKEWS > 30°

PLAN AT PARAPET

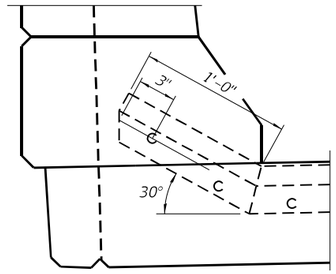


SECTION B-B

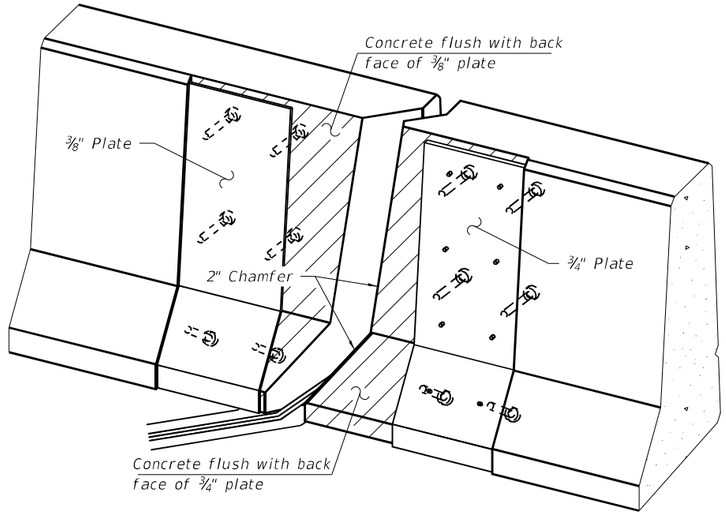


ELEVATION AT PARAPET

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



DETAIL A



TRIMETRIC VIEW

(Showing embedded plates only)

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.

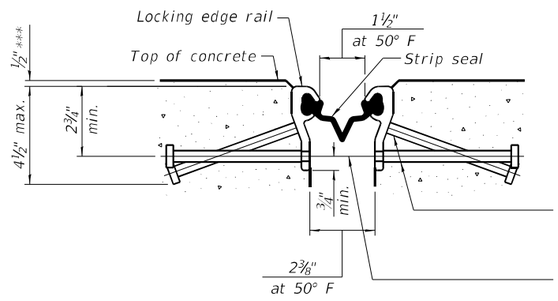
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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.

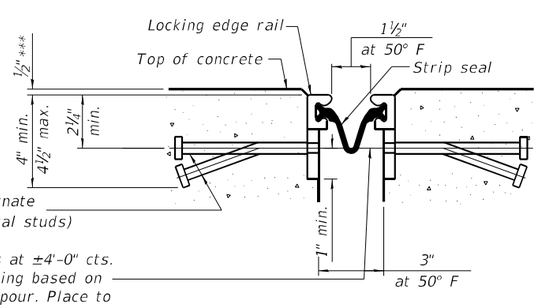
Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.

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.



SHOWING ROLLED RAIL JOINT



SHOWING WELDED RAIL JOINT

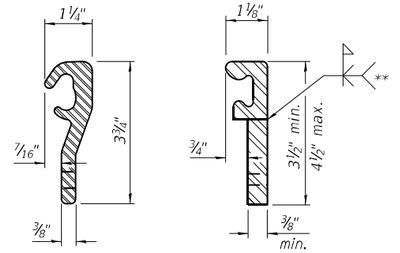
* ⅜" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

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.

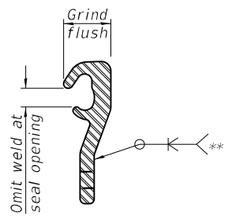


ROLLED (EXTRUDED) RAIL

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	111

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
SN 016-0115 (REV)
SHEET S36-10 OF S36-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1343
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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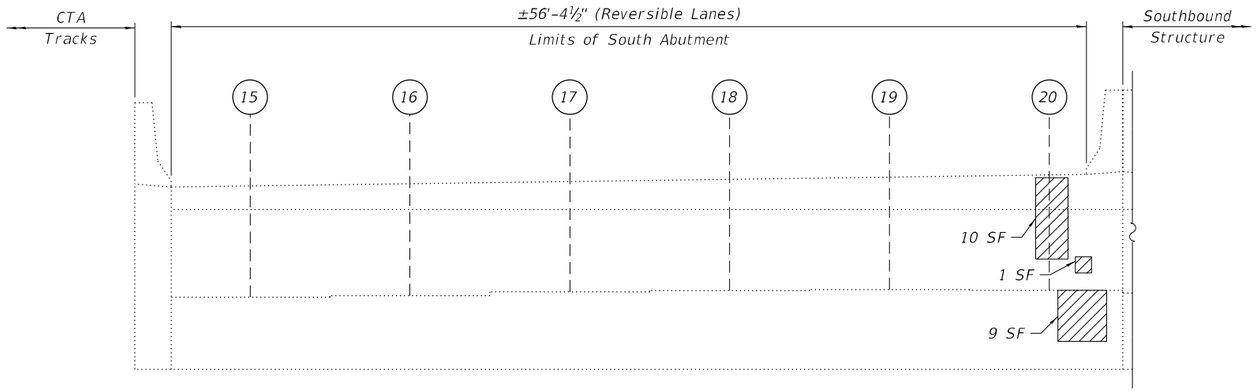

ELEVATION - SOUTH ABUTMENT

(Looking South)

NOTES:

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

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

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	296
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	20

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT REPAIRS
SN 016-0115 (REV)
SHEET S36-11 OF S36-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1344
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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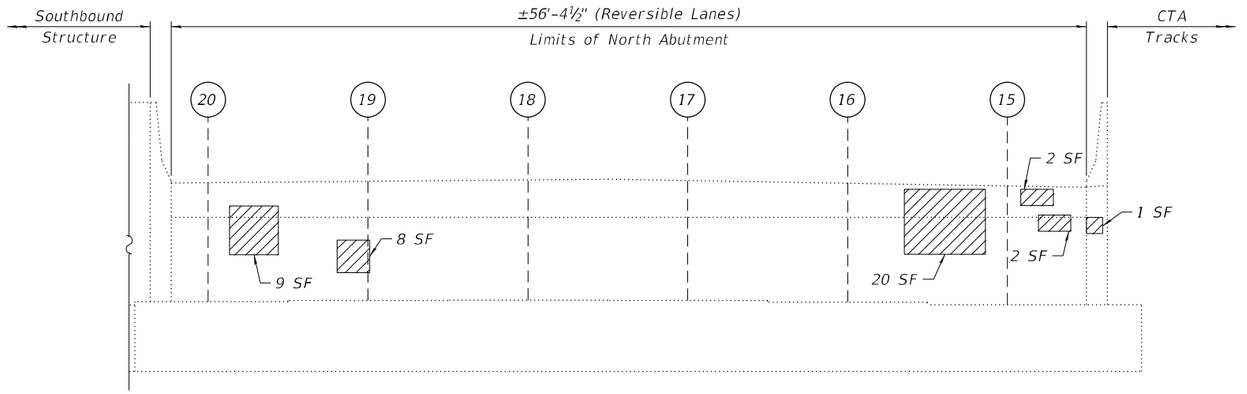

ELEVATION - NORTH ABUTMENT

(Looking North)

NOTES:

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

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

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	345
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	42

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DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIRS
SN 016-0115 (REV)
SHEET S36-12 OF S36-15 SHEETS

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

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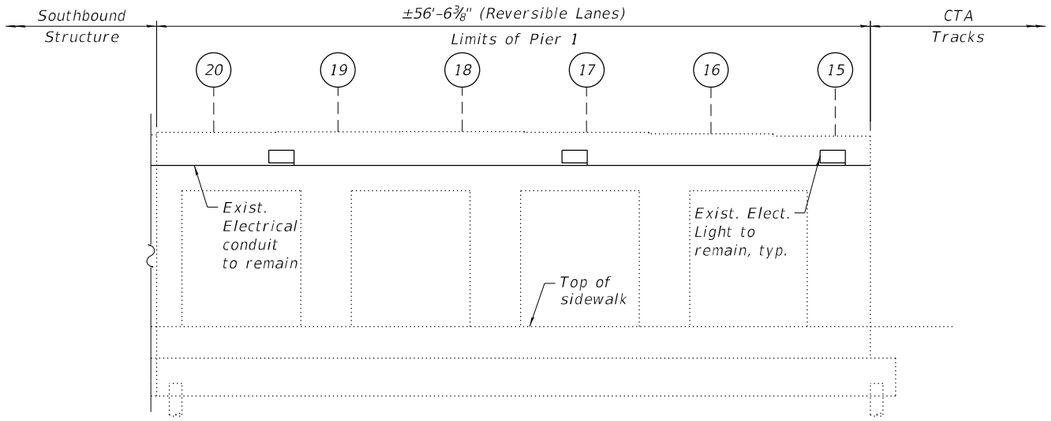
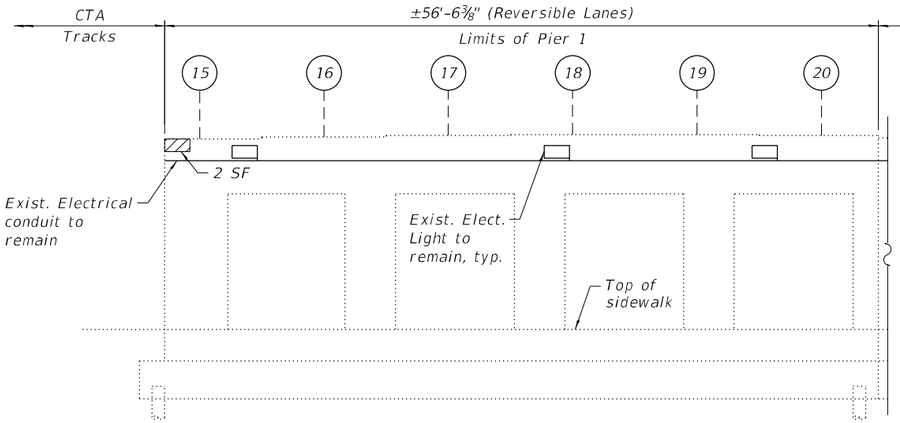


ELEVATION - PIER 1

(Looking North)



ELEVATION - PIER 1

(Looking South)

EXISTING LIGHTING: PIER 1

(Looking Northwest)

EXISTING LIGHTING: PIER 1

(Looking Southwest)

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.

LEGEND

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

BILL OF MATERIAL

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

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
SN 016-0115 (REV)
SHEET S36-13 OF S36-15 SHEETS

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

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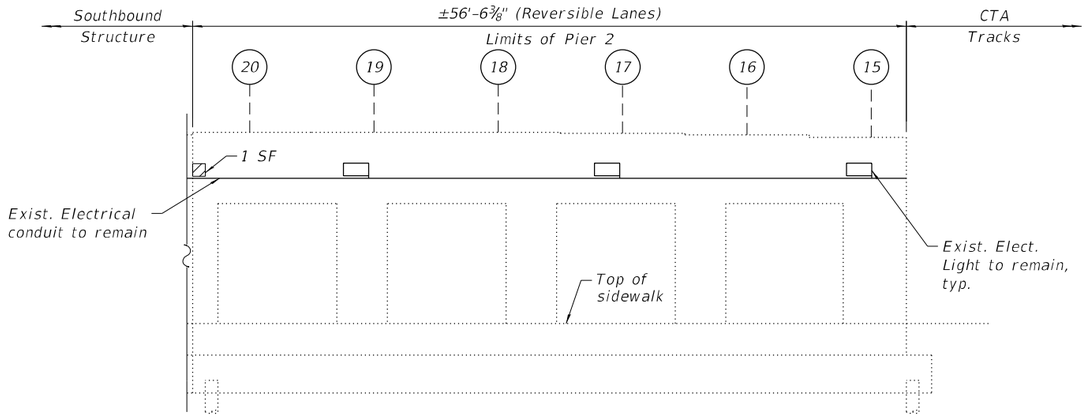
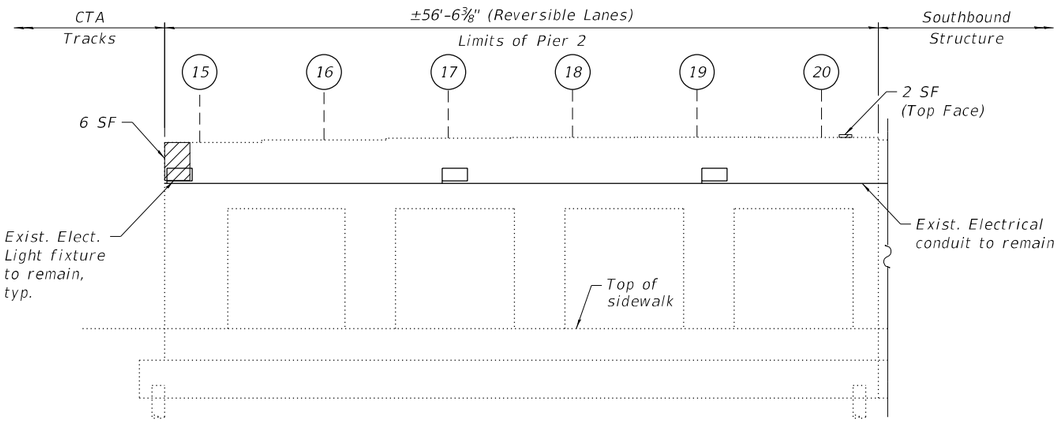


ELEVATION - PIER 2

(Looking North)

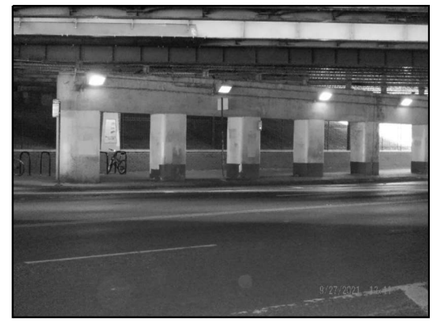


ELEVATION - PIER 2

(Looking South)

EXISTING LIGHTING: PIER 2

(Looking Northeast)



EXISTING LIGHTING: PIER 2

(Looking Southwest)

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.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	9

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIRS
SN 016-0115 (REV)

SHEET S36-14 OF S36-15 SHEETS

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

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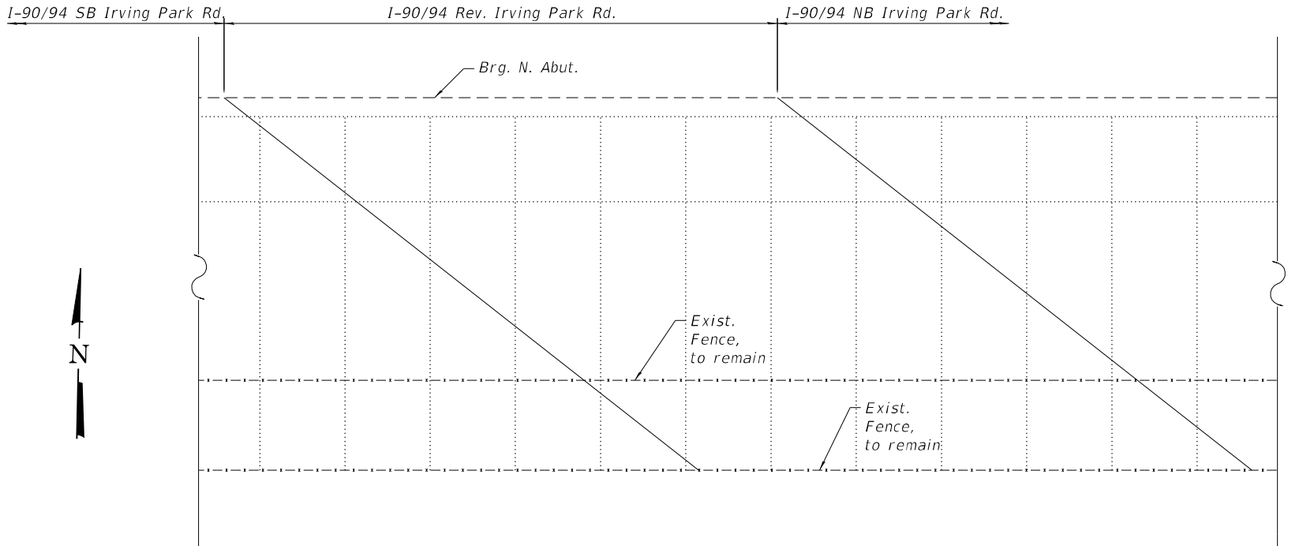
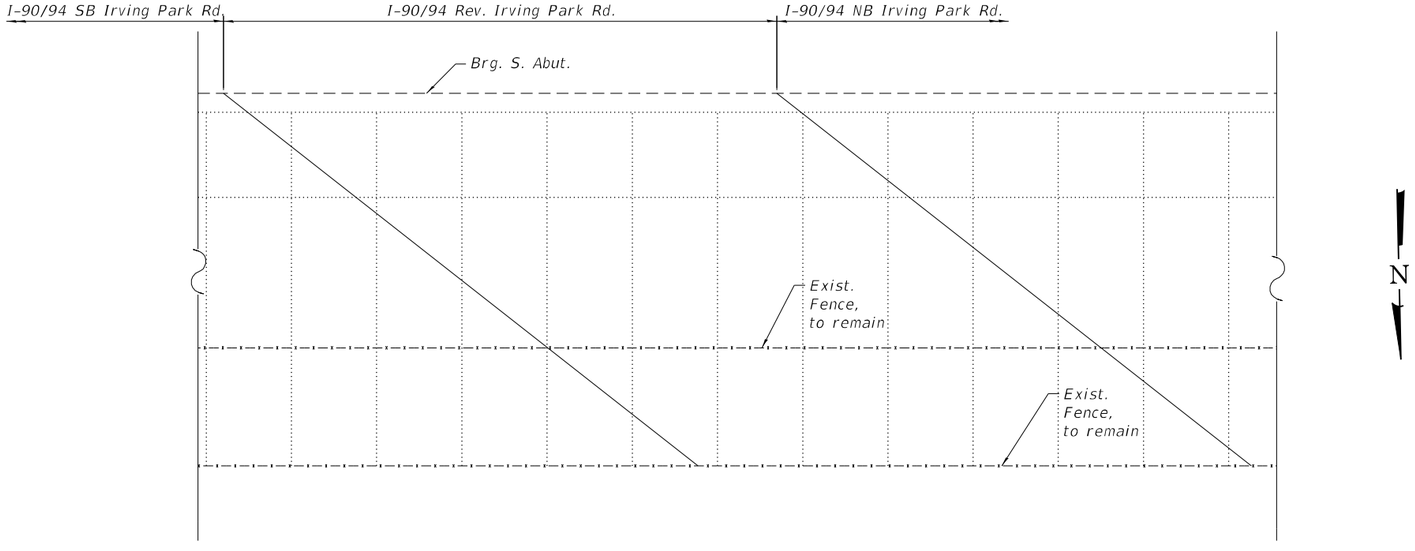


NORTH SLOPE WALL - PLAN

(Looking North)



SOUTH SLOPE WALL - PLAN

(Looking South)

NOTES:

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

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL REPAIRS
SN 016-0115 (REV)

SHEET S36-15 OF S36-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1348
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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Existing Structure: S.N. 016-0114 was originally built in 1957 from BCR. The bridge was widened and redecked between 1990 and 1993, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 202'-2⅝" and an out-to-out deck width that varies between 74'-0¾" to 76'-10¼". The superstructure consists of a 7½" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 60'-4", 74'-1⅛" and 60'-4". The substructure consists of reinforced concrete abutments and piers supported on concrete filled metal shell piles.

Traffic will be maintained utilizing stage construction.

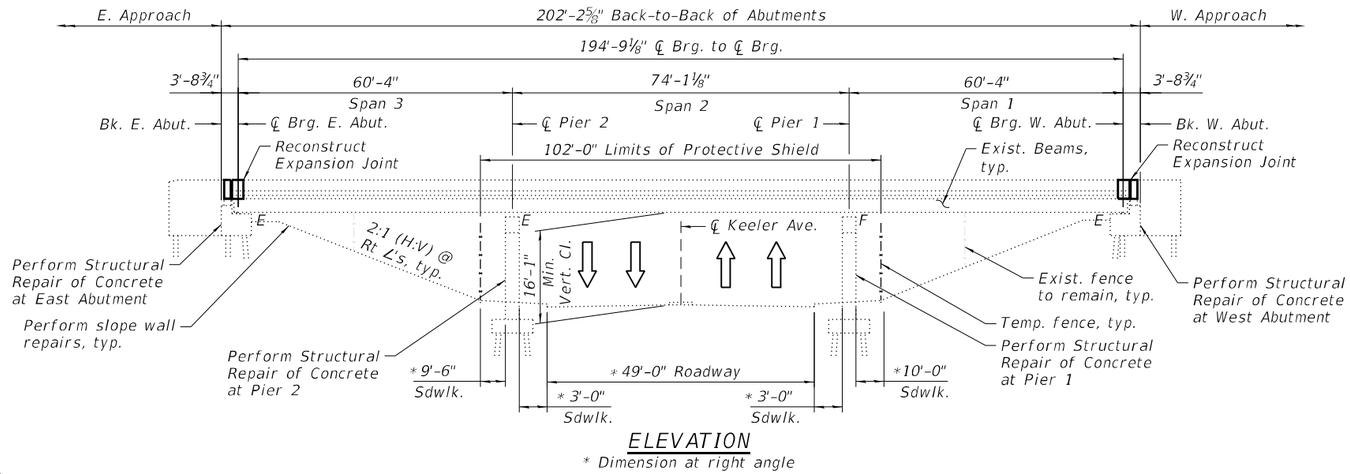
No salvage.

LOADING

HS20-44 and alternate military loading

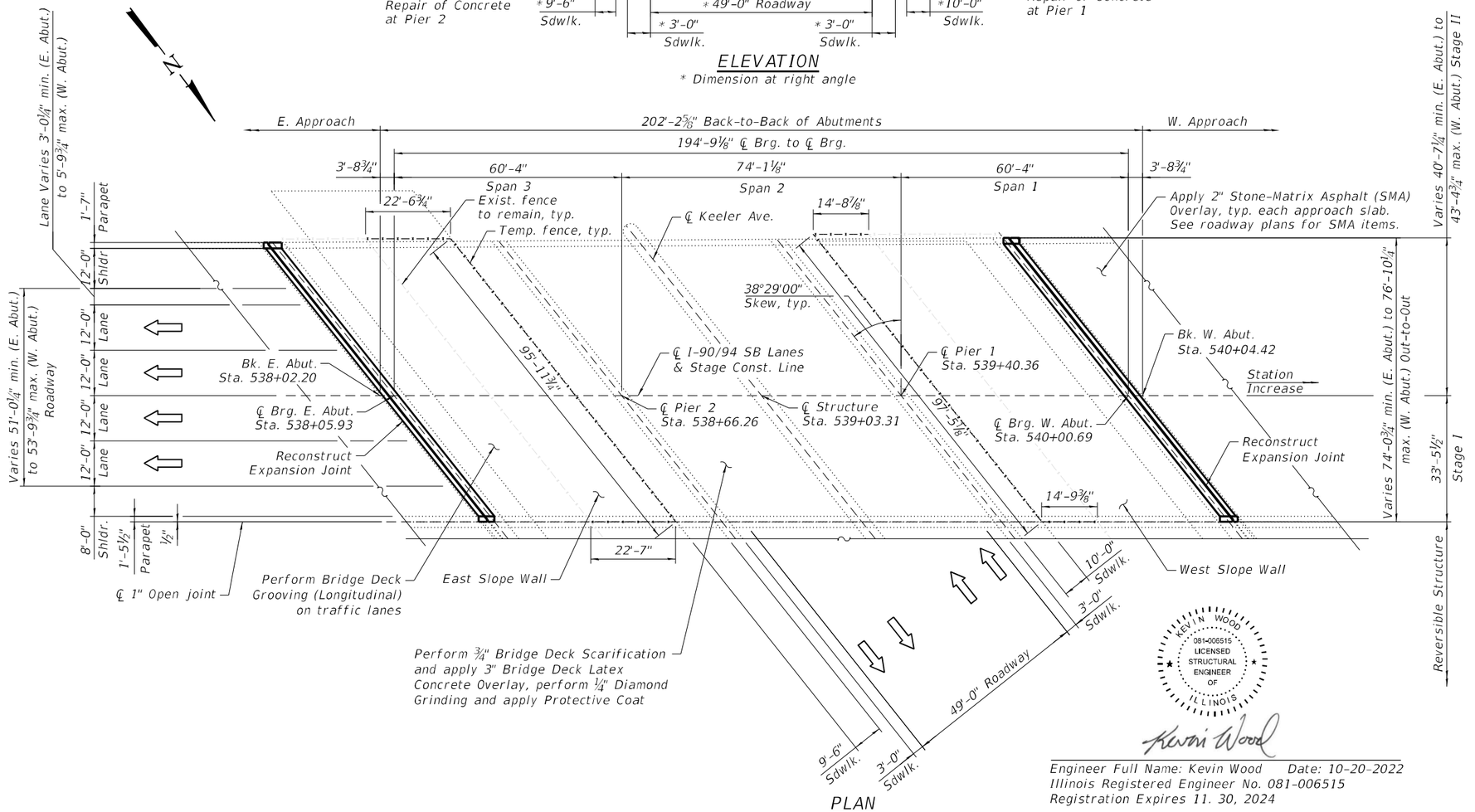
DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition

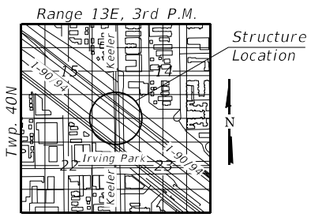


ELEVATION

* Dimension at right angle



PLAN



LOCATION SKETCH

NOTE:

1. All stations are to the ℄ I-90/94 SB Roadway and taken from existing plans.
2. No Future Wearing Surface is allowed.

KEVIN WOOD
081-006515
LICENSED STRUCTURAL ENGINEER OF ILLINOIS

Kevin Wood

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

GENERAL PLAN AND ELEVATION
SB I-90 OVER KEELER AVE.
F.A.I. SEC 2020-004-BR
COOK COUNTY
STATION: 539+03.31
STRUCTURE NO. 016-0114 (SB)

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S37-01 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1349
		CONTRACT NO. 62K74		
		ILLINOIS FED. AID PROJECT		

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GENERAL NOTES

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

2. Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 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.

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

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

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

6. Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. The cost of cleaning shall be included in the cost of Concrete Removal.

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

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

9. For SMA overlay on Approach Slab, see Roadway Plans.

10. Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.

11. 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.

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

13. 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.

14. 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".

15. The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.

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

17. Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.

18. Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.

19. 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.

20. Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.

INDEX OF SHEETS

SCOPE OF WORK

1. Provide Protective Shield within limits indicated on the plans.
2. Scarify ¾" from the bridge deck.
3. Perform deck repairs.
4. Remove and reconstruct expansion joints at east and west abutments and install new Preformed Joint Strip Seals.
5. Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs, see Roadway Plans.
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 the new overlay.
9. Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.
10. Perform slope wall repairs.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd		1.0	1.0
Concrete Removal	Cu Yd	30.9		30.9
Slope Wall Removal	Sq Yd		1.0	1.0
Protective Shield	Sq Yd	862		862
Concrete Superstructure	Cu Yd	34.6		34.6
Protective Coat	Sq Yd	1,825		1,825
Reinforcement Bars, Epoxy Coated	Pound	4,950		4,950
Bar Splicers	Each	32		32
Slope Wall 4 Inch	Sq Yd		1.0	1.0
Preformed Joint Strip Seal	Foot	190		190
Concrete Sealer	Sq Ft		1,119	1,119
Slope Wall Crack Sealing	Foot		41	41
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,149		1,149
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,557		1,557
Bridge Deck Scarification 3/4"	Sq Yd	1,557		1,557
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		132	132
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		6	6
Deck Slab Repair (Full Depth, Type II)	Sq Yd	3.6		3.6
Diamond Grinding (Bridge Section)	Sq Yd	1,586		1,586
Maintenance of Lighting System	Cal Mo		6	6
Temporary Construction Fence	Foot		268	268

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
SN 016-0114 (SB)
SHEET S37-02 OF S37-19 SHEETS

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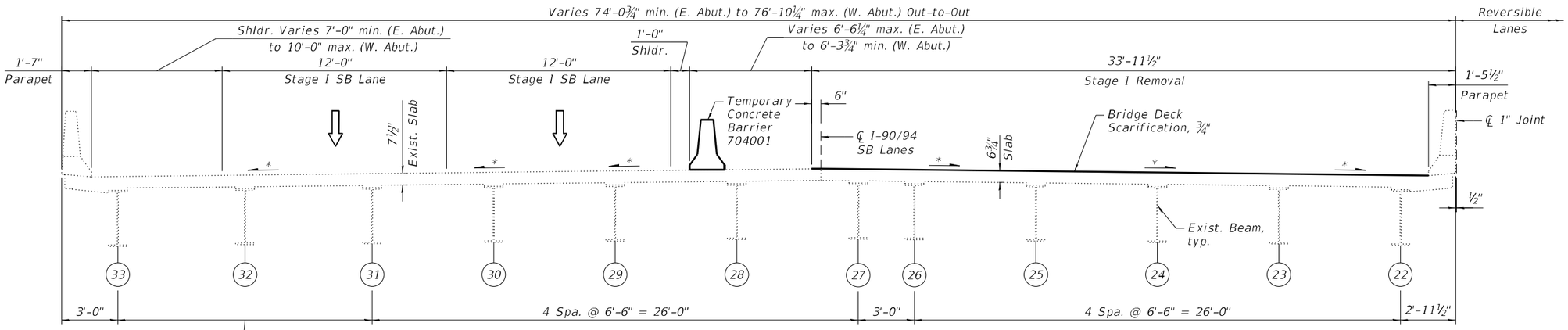
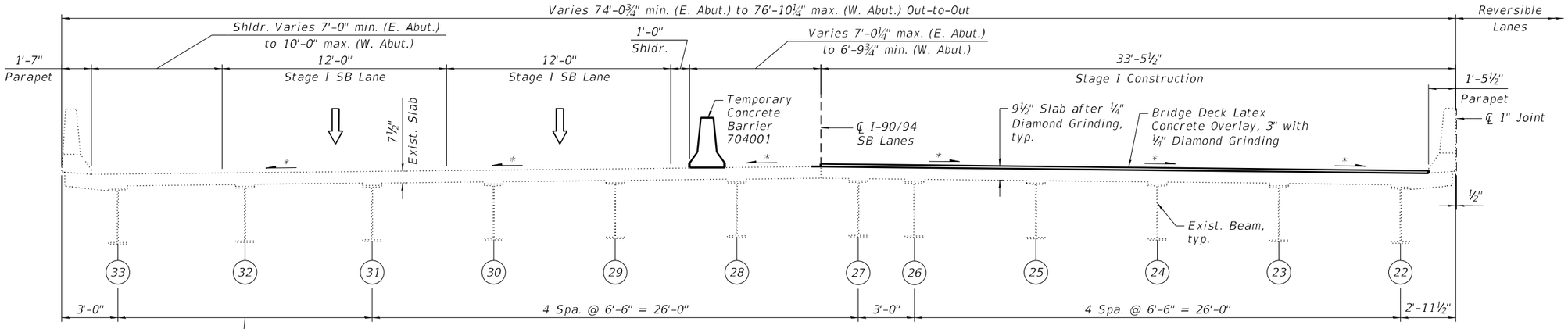
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



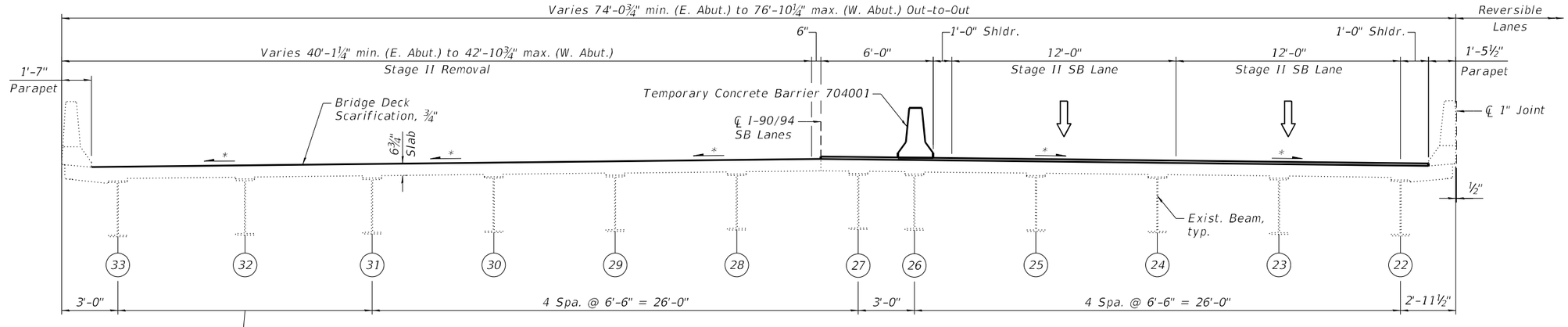
STAGE I REMOVAL

(Looking West)



STAGE I CONSTRUCTION

(Looking West)



STAGE II REMOVAL

(Looking West)

* Match existing deck surface profile

STAGE I REMOVAL

1. Install Temporary Concrete Barrier as shown to locate traffic on the south side of the existing structure.
2. Scarify ¾" from the top of the deck.
3. Remove portions of bridge deck adjacent to abutment joints, as shown in the plans.

STAGE I CONSTRUCTION

1. Perform Deck Slab Repairs at the locations shown in the plans.
2. Reconstruct transverse expansion joints and install Preformed Joint Strip Seal at east and west abutments and replace associated reinforcement and concrete adjacent to the joint.
3. Perform Structural Repair of Concrete at abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay to bridge deck slab.
5. Perform 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 the top of reconstructed transverse joint areas, the surface of the new overlay, and the top and inside faces of the parapets.
9. Perform slope wall repairs as shown in the plans.

STAGE II REMOVAL

1. Install Temporary Concrete Barrier as shown to locate traffic on the north side of the existing structure.
2. Scarify ¾" from the top of the deck.
3. Remove portions of bridge deck adjacent to abutment joints, as shown in the plans.

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STAGE CONSTRUCTION DETAILS I
SN 016-0114 (SB)
SHEET S37-03 OF S37-19 SHEETS

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

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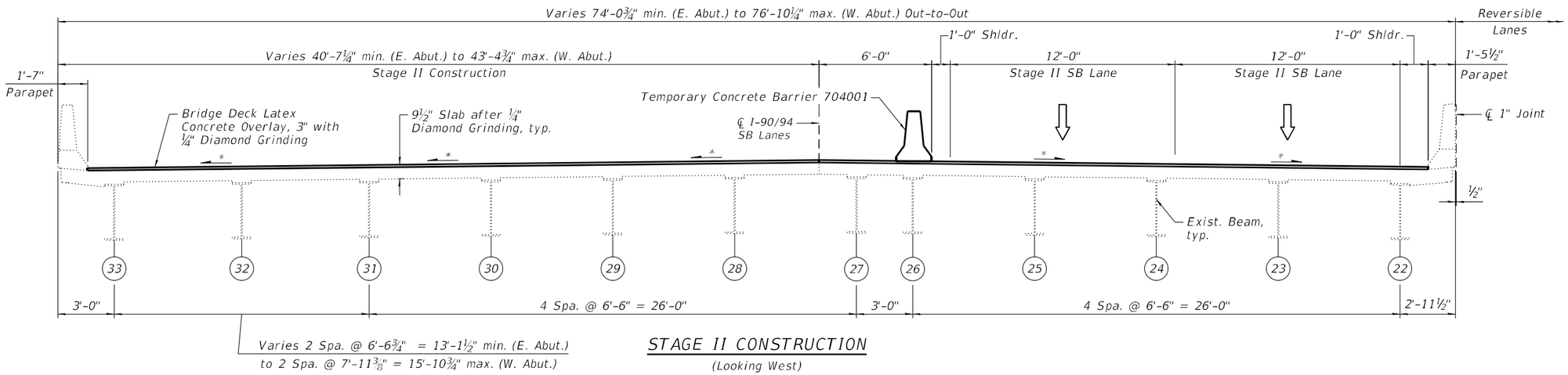
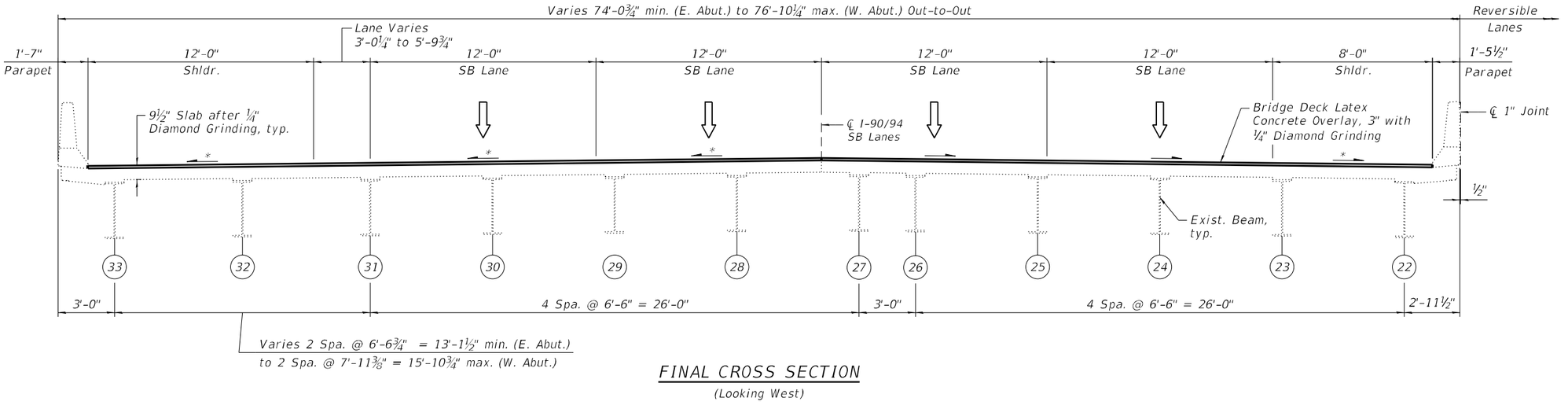


STAGE II CONSTRUCTION

(Looking West)



FINAL CROSS SECTION

(Looking West)

STAGE II CONSTRUCTION

1. Perform Deck Slab Repairs at the locations shown in the plans.
2. Reconstruct transverse expansion joints and install Preformed Joint Strip Seal at east and west abutments and replace associated reinforcement and concrete adjacent to the joint.
3. Perform Structural Repair of Concrete at abutments and piers.
4. Apply 3" Bridge Deck Latex Concrete Overlay to bridge deck slab.
5. Perform 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 the top of reconstructed transverse joint areas, the surface of the new overlay, and the top and inside faces of the parapets.
9. Perform slope wall repairs as shown in the plans.

* Match existing deck surface profile

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DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS II
SN 016-0114 (SB)
SHEET S37-04 OF S37-19 SHEETS

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

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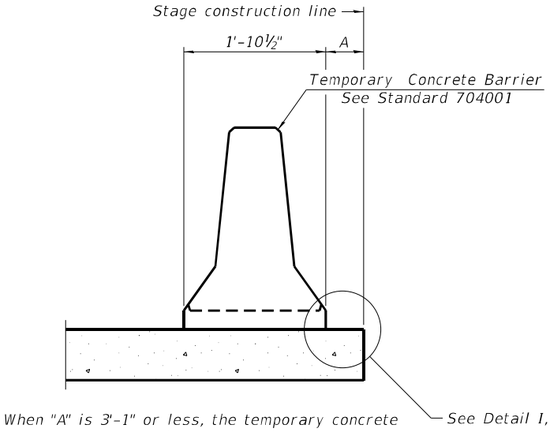
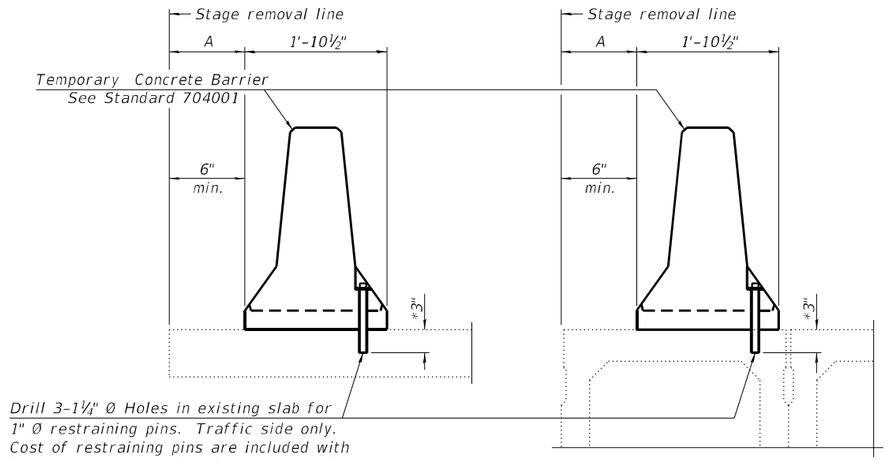


When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



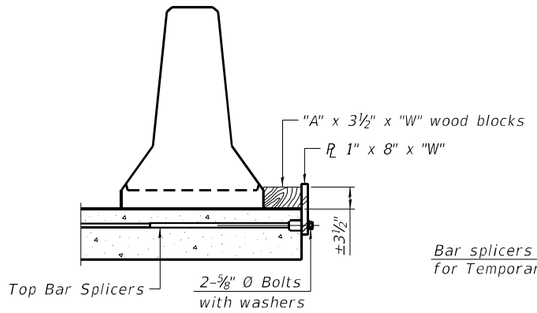
Drill 3-1¼" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

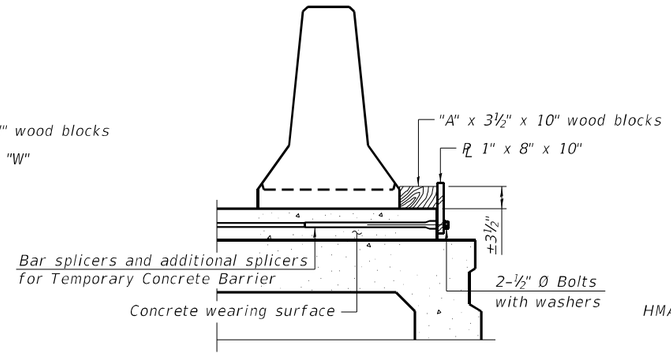
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

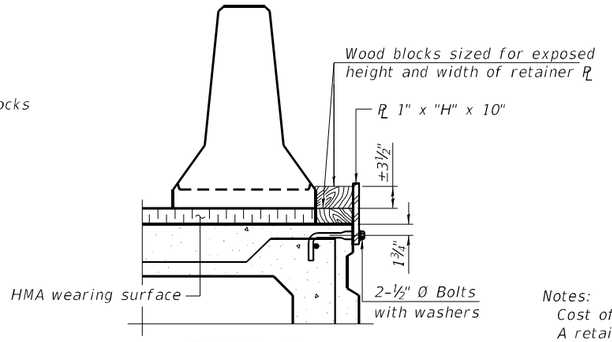
SECTIONS THRU SLAB OR DECK BEAM



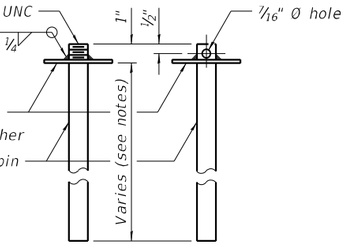
DETAIL I



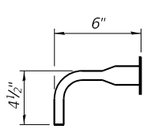
DETAIL II



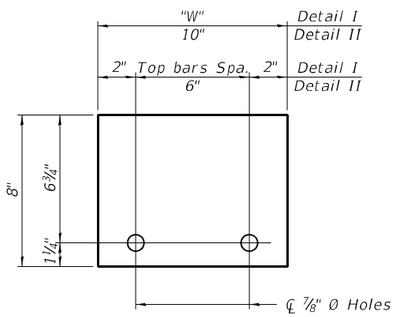
DETAIL III



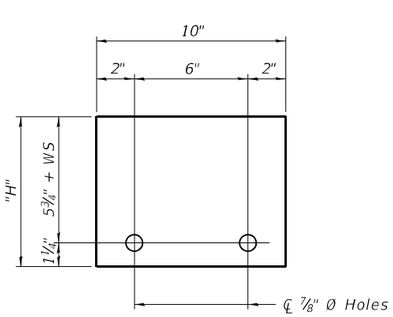
RESTRAINING PIN



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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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
SN 016-0114 (SB)

SHEET S37-05 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1353
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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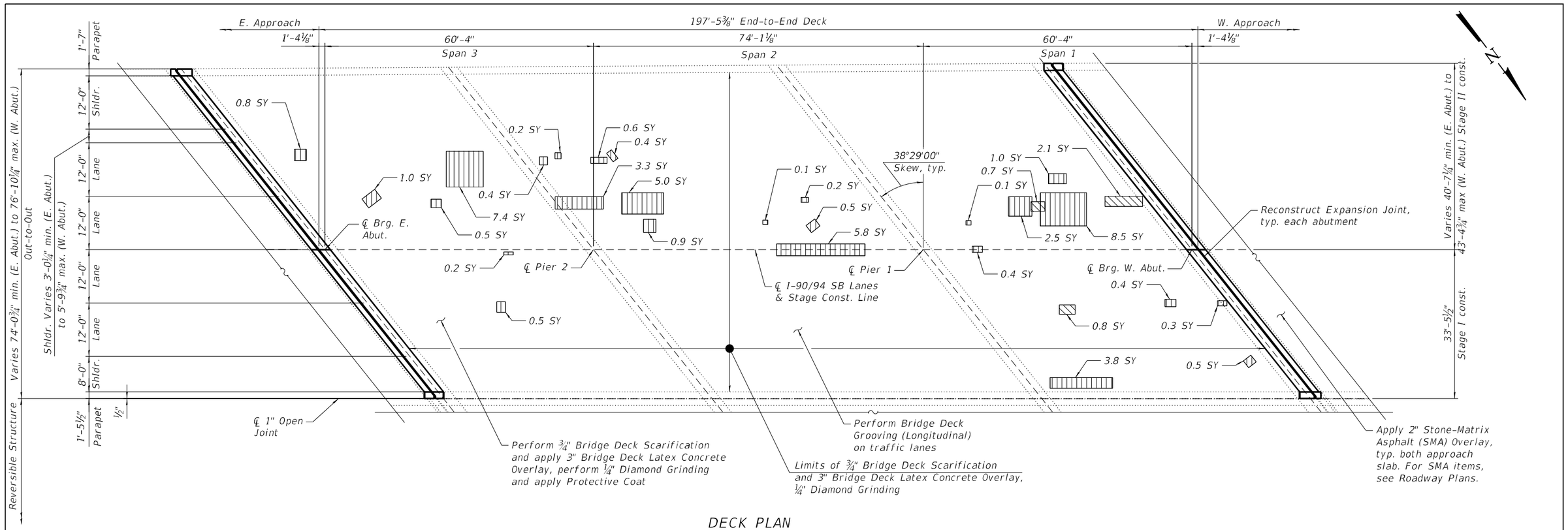

DECK PLAN

NOTES:

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S37-04.
3. For East and West transverse joint removal and reconstruction, see Sheet S37-07 thru S37-12.
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. The cost of repair or replacement shall be included in the cost of Concrete Removal.
8. The Contractor shall exercise extreme caution during concrete removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer at no cost to the Department.

LEGEND

*Deck Slab Repair (Partial Depth)

Deck Slab Repair (Full Depth, Type II)

SY Square Yard

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	862
Protective Coat	Sq Yd	1,825
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,149
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,557
Bridge Deck Scarification 3/4"	Sq Yd	1,557
Deck Slab Repair (Full Depth, Type II)	Sq Yd	3.6
Diamond Grinding (Bridge Section)	Sq Yd	1,586
Maintenance of Lighting System	Cal Mo	6

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BRIDGE DECK REPAIR PLAN AND DETAILS
SN 016-0114 (SB)

SHEET S37-06 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1354
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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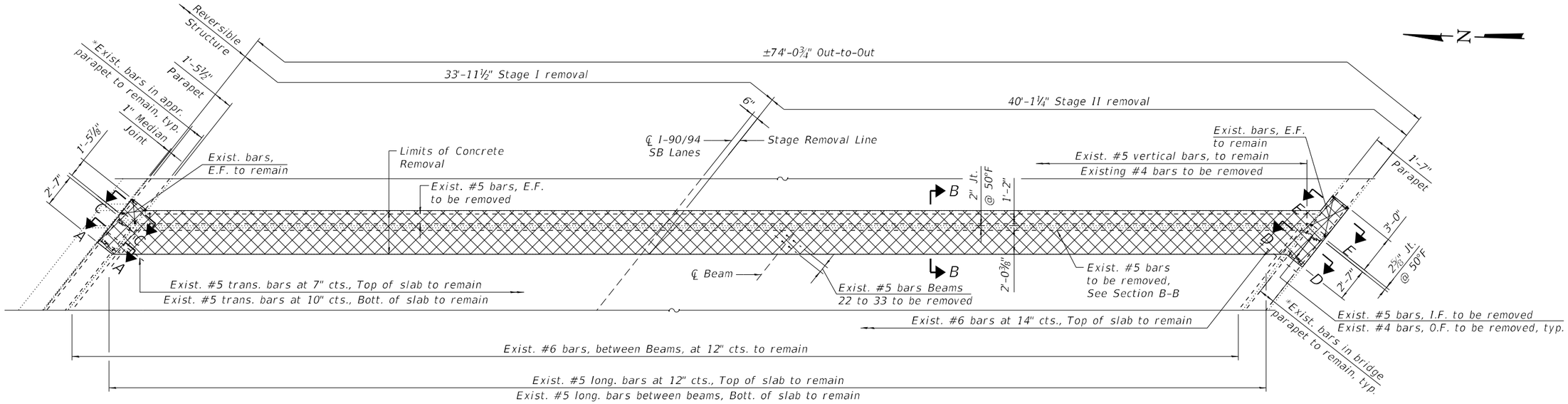
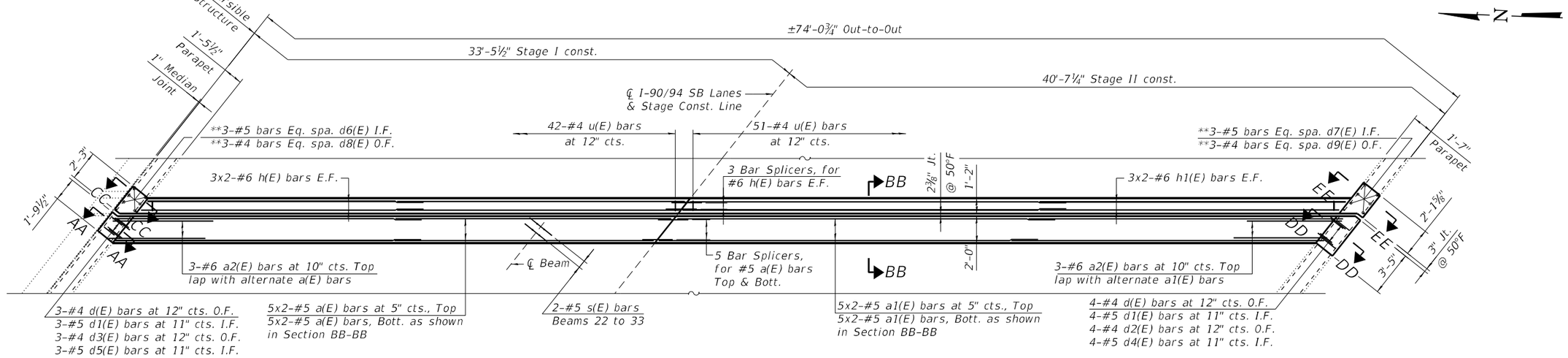


EAST ABUTMENT JOINT REMOVAL PLAN



EAST ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S37-08.
2. For sections D-D, E-E, DD-DD and EE-EE, see sheet S37-09.

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

** Epoxy grout #4 d8(E) and d9(E) bars and #5 d6(E) and d7(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

LEGEND

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0114 (SB)

SHEET S37-07 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1355
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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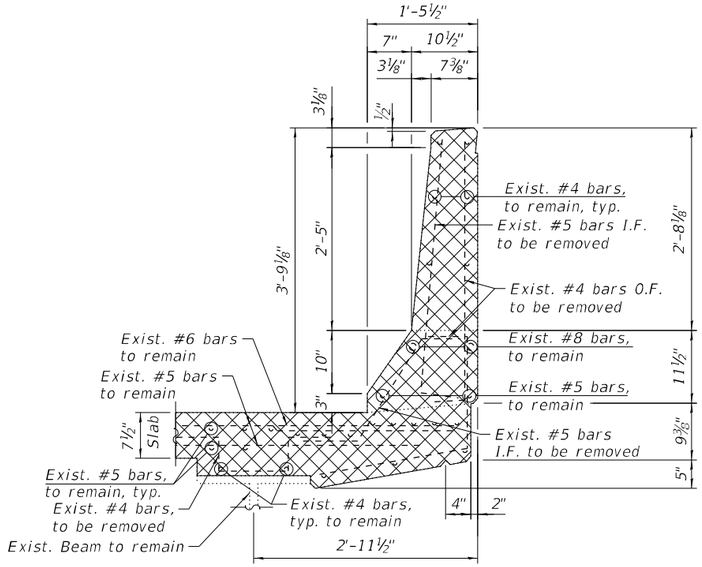
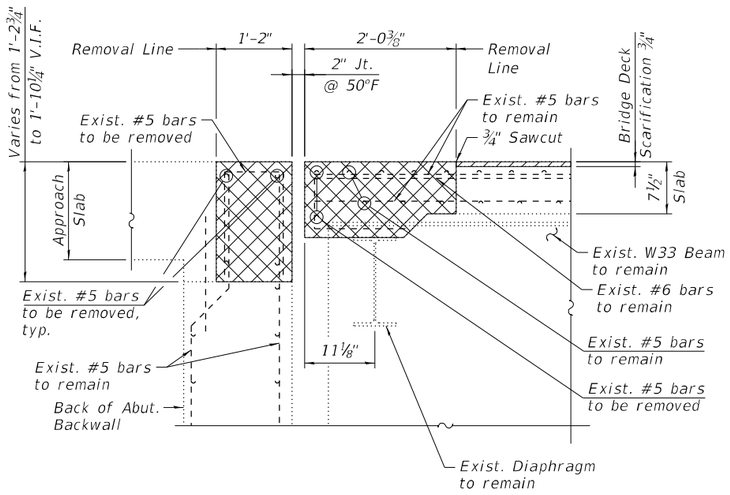
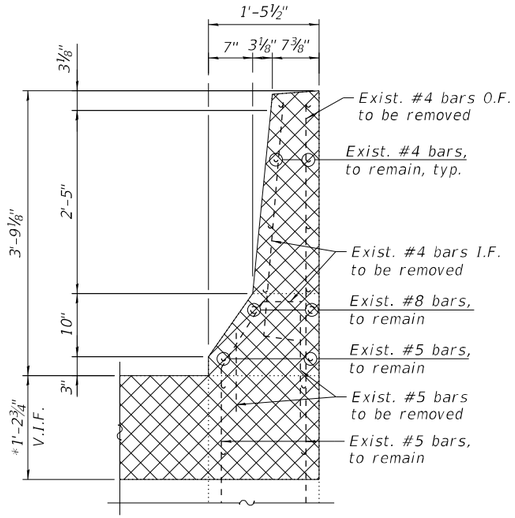


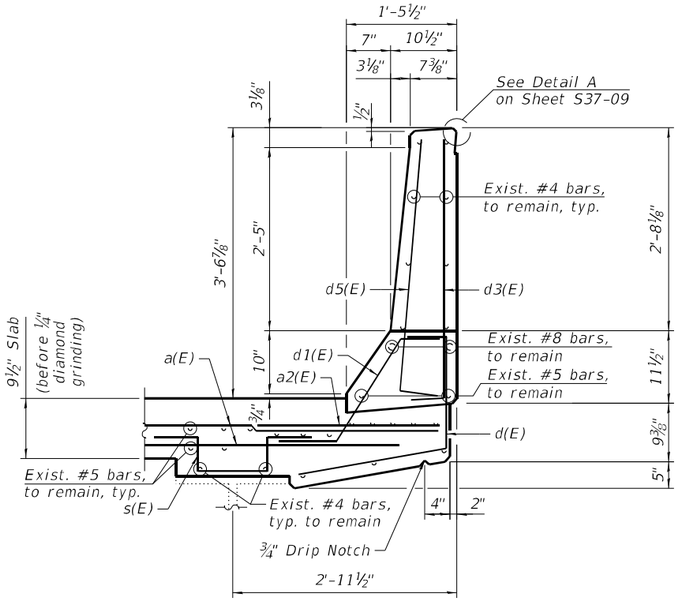
SECTION A-A
(North parapet removal)



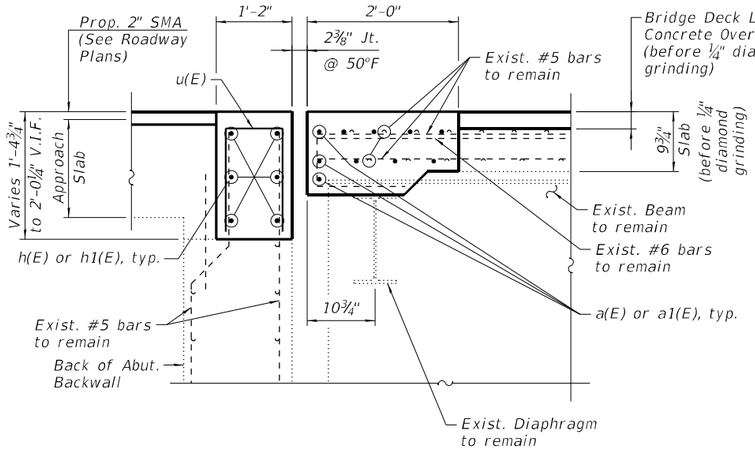
SECTION B-B



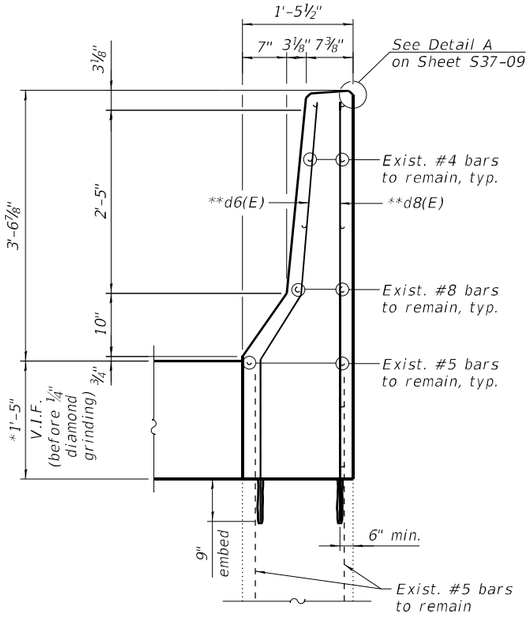
SECTION C-C
(North parapet removal)



SECTION AA-AA
(North parapet reconstruction)



SECTION BB-BB



SECTION CC-CC
(North parapet reconstruction)

LEGEND

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

* Dimension is taken at the Back of Abut.

** Epoxy grout #4 d8(E) & #5 d6(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0114 (SB)

SHEET S37-08 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1356
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0114_KeelerSB016011 4-62K74-S008-EXPS.dgn
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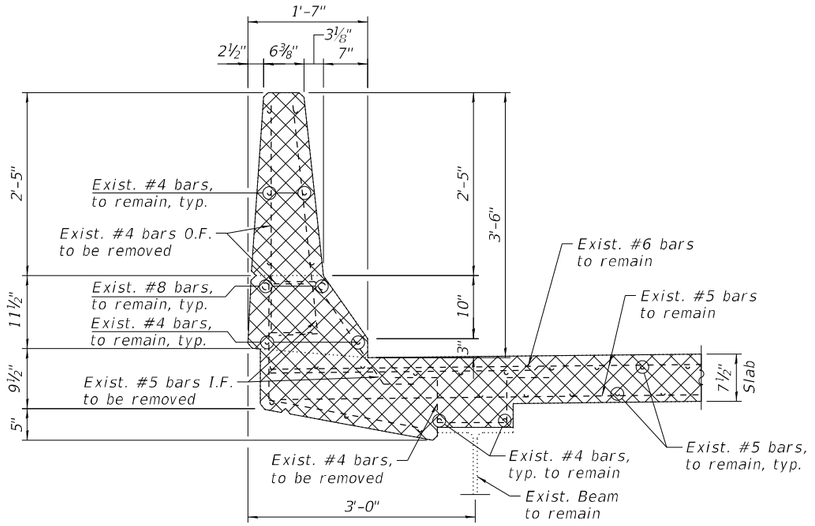
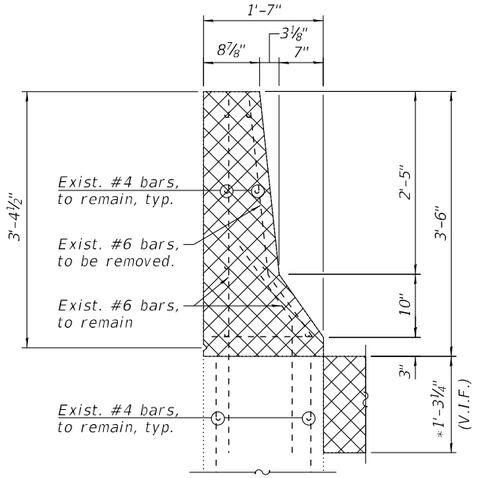
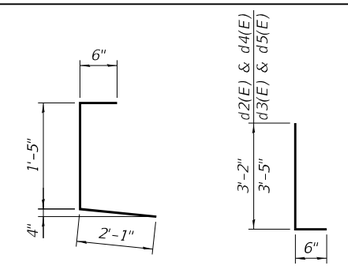


SECTION D-D
(South parapet removal)

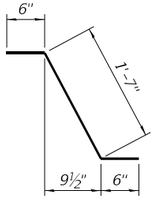


SECTION E-E
(South parapet removal)

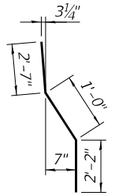


BAR d(E)

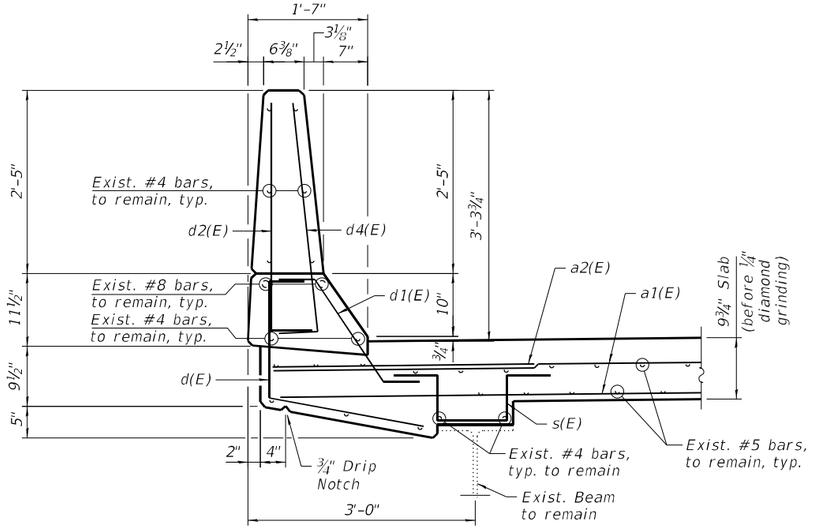
BARS d2(E), d3(E), d4(E) & d5(E)



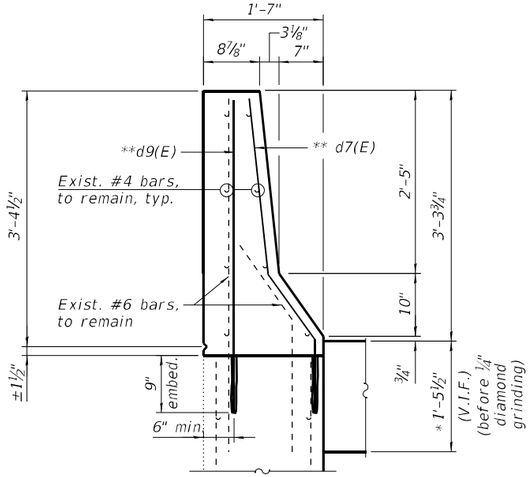
BAR d1(E)



BAR d6(E)

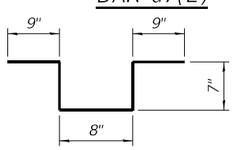


SECTION DD-DD
(South parapet reconstruction)

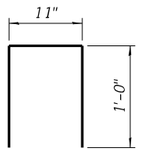


SECTION EE-EE
(South parapet reconstruction)

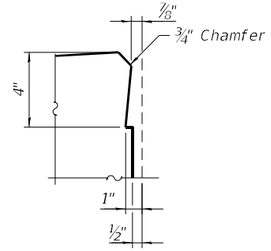
BAR d7(E)



BAR s(E)



BAR u(E)



DETAIL A
(Reinforcement not shown for clarity)

BILL OF MATERIAL
EAST ABUTMENT

Bar	No.	Size	Length	Shape
a(E)	20	#5	23'-1"	
a1(E)	20	#5	27'-8"	
a2(E)	6	#6	6'-6"	
d(E)	7	#4	4'-0"	
d1(E)	7	#5	2'-7"	
d2(E)	4	#4	3'-8"	
d3(E)	3	#4	3'-11"	
d4(E)	4	#5	3'-8"	
d5(E)	3	#5	3'-11"	
d6(E)	3	#5	5'-9"	
d7(E)	3	#5	4'-7"	
d8(E)	3	#4	5'-8"	
d9(E)	3	#4	4'-2"	
h(E)	12	# 6	23'-4"	
h1(E)	12	# 6	27'-11"	
s(E)	24	#5	3'-4"	
u(E)	93	#4	2'-11"	
Concrete Removal			Cu Yd	15.4
Reinforcement Bars, Epoxy Coated			Pound	2,450
Concrete Superstructure			Cu Yd	17.3

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S37-13.
2. For Bar Splicer Assembly details, see sheet S37-19.
3. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.

* Dimension is taken at the Back of Abut.

** Epoxy grout #4 d9(E) & #5 d7(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

LEGEND

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

MIN BAR LAPS

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0114 (SB)

SHEET S37-09 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1357
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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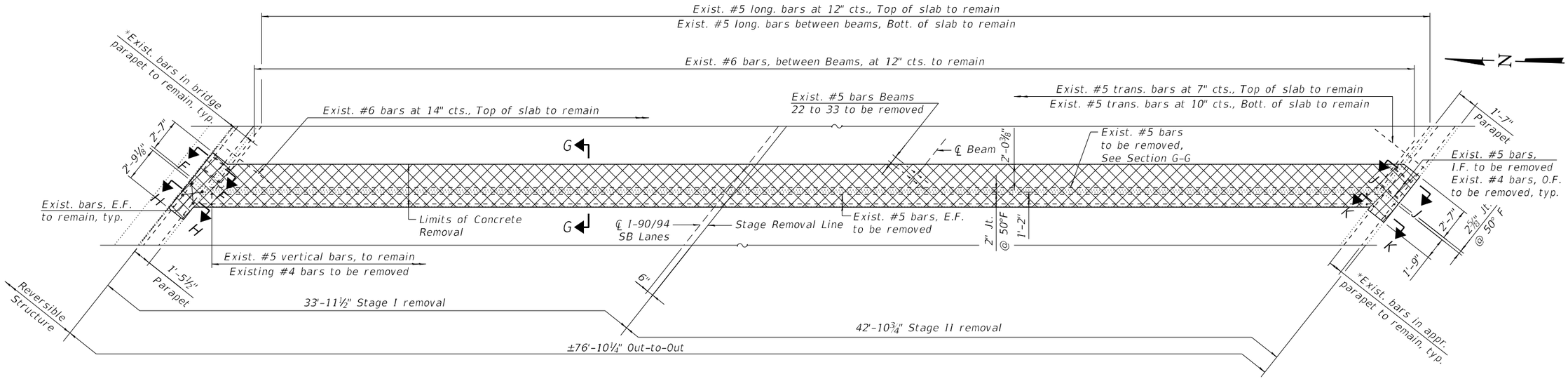
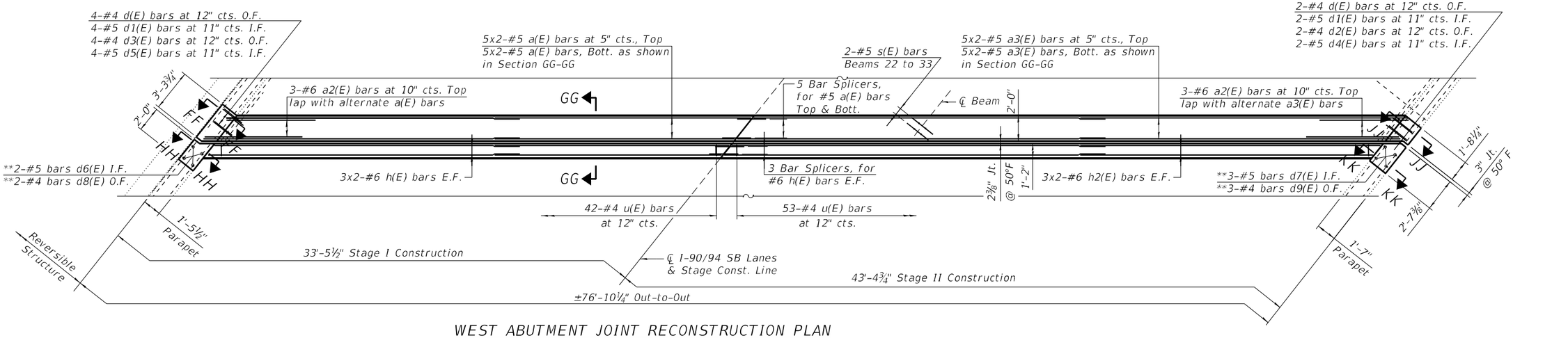


WEST ABUTMENT JOINT REMOVAL PLAN



WEST ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S37-11.
2. For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S37-12.

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

** Epoxy grout #4 d8(E) and d9(E) bars and #5 d6(E) and d7(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

LEGEND

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

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0114 (SB)
SHEET S37-10 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1358
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
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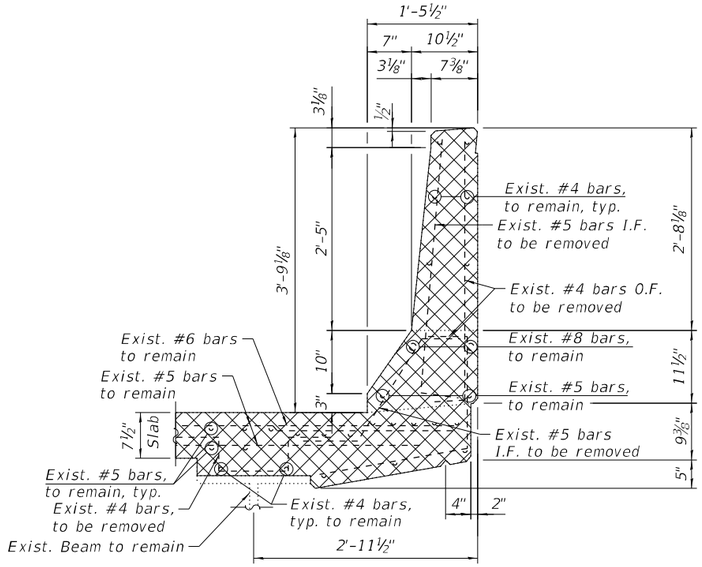
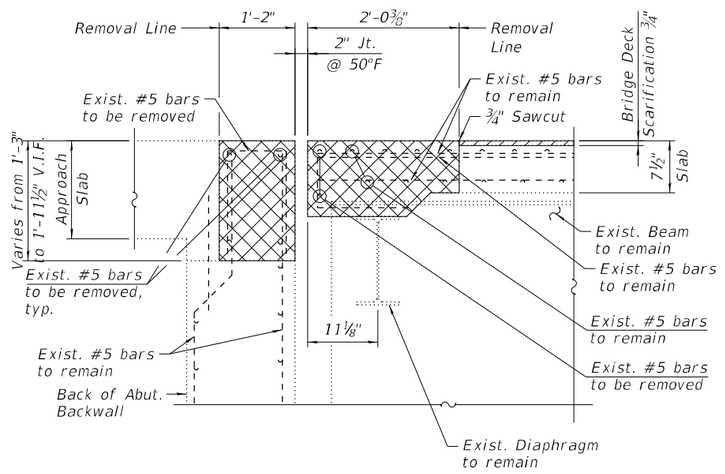
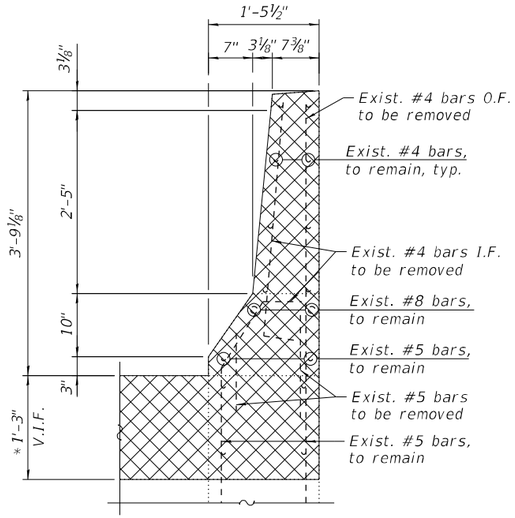


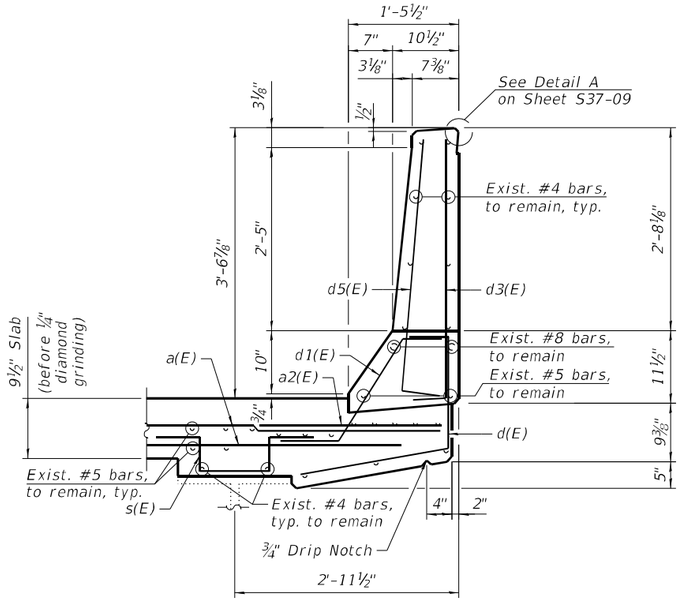
SECTION F-F
(North parapet removal)



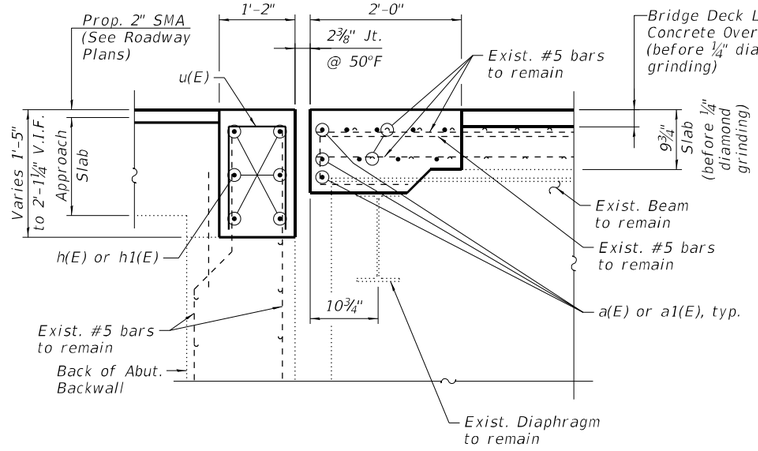
SECTION G-G



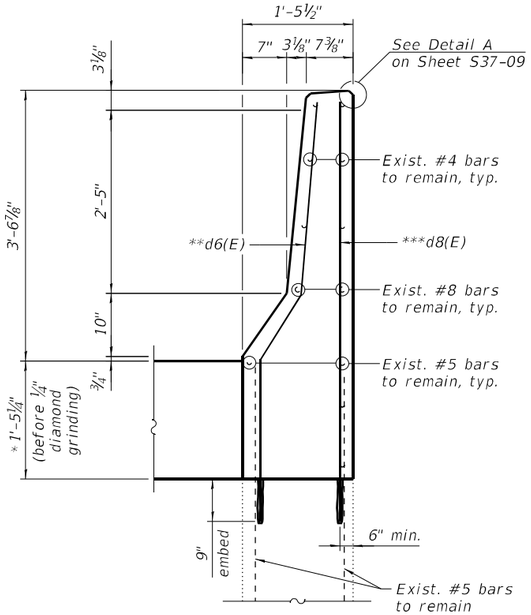
SECTION H-H
(North parapet removal)



SECTION FF-FF
(North parapet reconstruction)



SECTION GG-GG



SECTION HH-HH
(North parapet reconstruction)

LEGEND

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

* Dimension is taken at the Back of Abut.

** Epoxy grout #4 d6(E) & #5 d8(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

MODEL: sMODELNAMES
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0114_KeelerSB0160114-62K74-S011-EXFS.dgn

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GRāEF
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Chicago, Illinois 60631 (773) 399-0112

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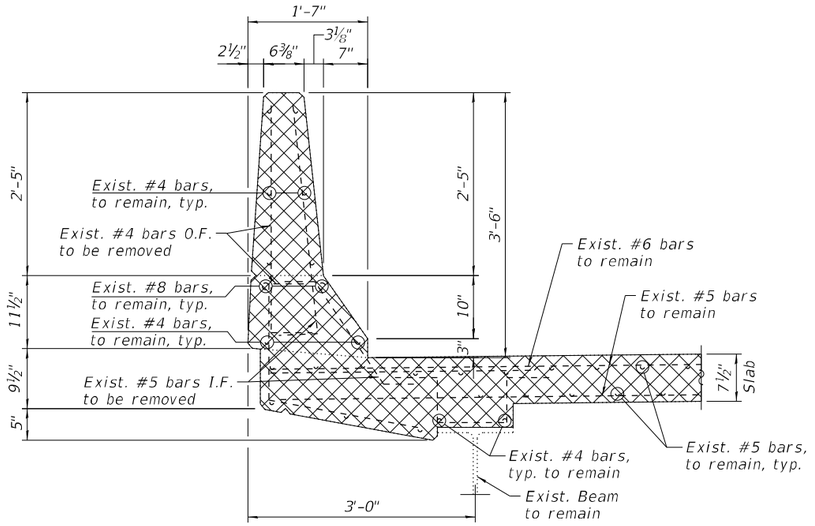
		CHECKED -	H.A.	REVISED -	
PLOT SCALE =		DRAWN -	D.C.P.	REVISED -	
PLOT DATE =		CHECKED -	K.G.W.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

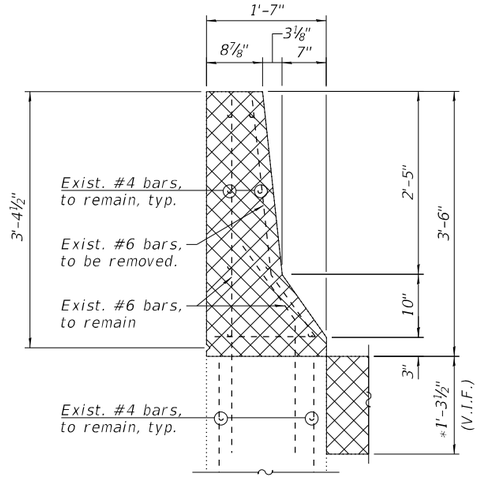
WEST ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0114 (SB)

SHEET S37-11 OF S37-19 SHEETS

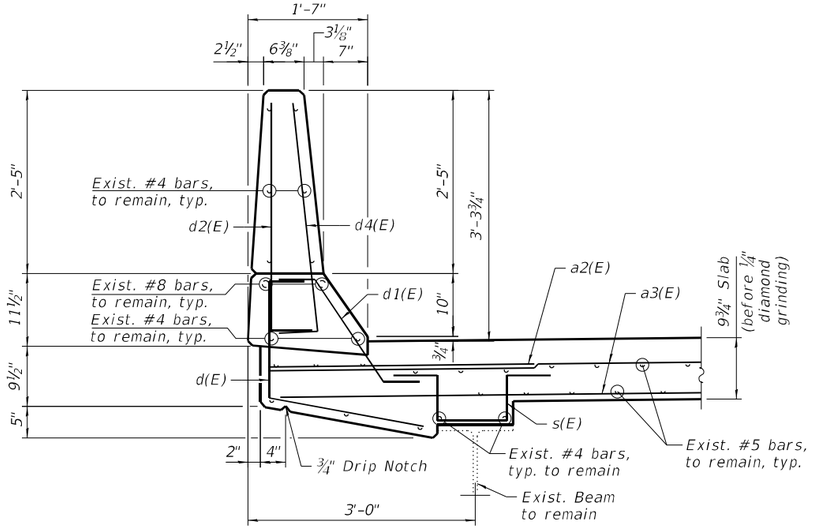
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1359
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



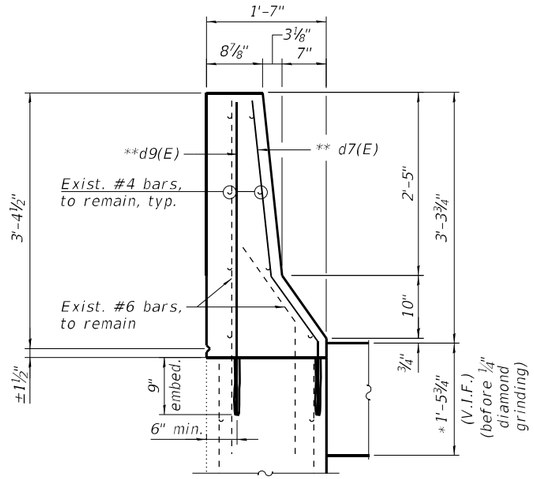
SECTION J-J
(South parapet removal)



SECTION K-K
(South parapet removal)



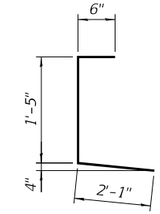
SECTION JJ-JJ
(South parapet reconstruction)



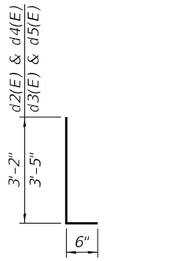
SECTION KK-KK
(South parapet reconstruction)

* Dimension is taken at the Back of Abut.

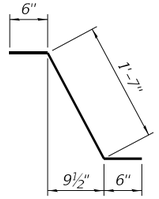
** Epoxy grout #4 d9(E) & #5 d7(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.



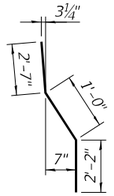
BAR d(E)



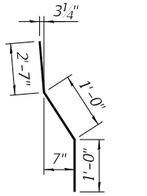
BARS d2(E), d3(E), d4(E) & d5(E)



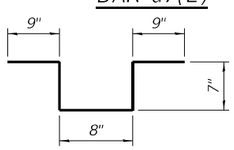
BAR d1(E)



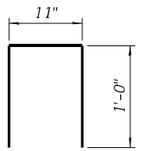
BAR d6(E)



BAR d7(E)



BAR s(E)



BAR u(E)

BILL OF MATERIAL
WEST ABUTMENT

Bar	No.	Size	Length	Shape
a(E)	20	#5	23'-1"	
a2(E)	6	#6	6'-6"	
a3(E)	20	#5	29'-5"	
d(E)	6	#4	4'-0"	
d1(E)	6	#5	2'-7"	
d2(E)	2	#4	3'-8"	
d3(E)	4	#4	3'-11"	
d4(E)	2	#5	3'-8"	
d5(E)	4	#5	3'-11"	
d6(E)	2	#5	5'-9"	
d7(E)	3	#5	4'-7"	
d8(E)	2	#4	5'-8"	
d9(E)	3	#4	4'-2"	
h(E)	12	#6	23'-4"	
h2(E)	12	#6	29'-8"	
s(E)	24	#5	3'-4"	
u(E)	95	#4	2'-11"	
Concrete Removal			Cu Yd	15.5
Reinforcement Bars, Epoxy Coated			Pound	2,500
Concrete Superstructure			Cu Yd	17.3

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S37-13.
2. For Bar Splicer Assembly details, see sheet S37-19.
3. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
4. Removal and disposal of the existing expansion joints is included with Concrete Removal.

LEGEND

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

MIN BAR LAPS

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0114 (SB)

SHEET S37-12 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1360
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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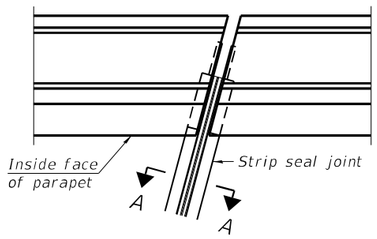
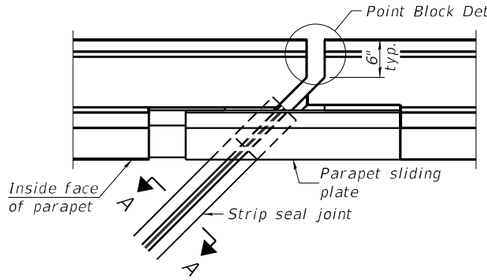
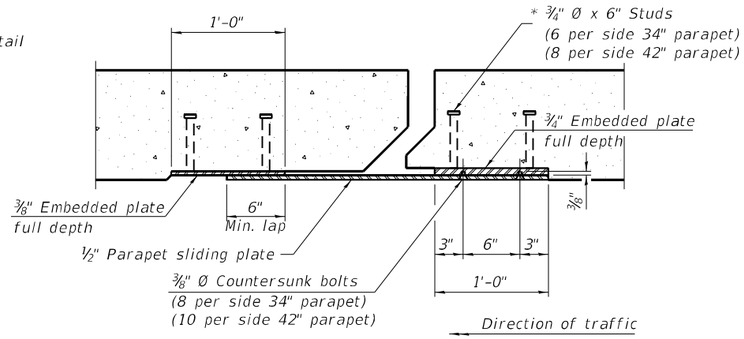


FOR SKEWS ≤ 30°

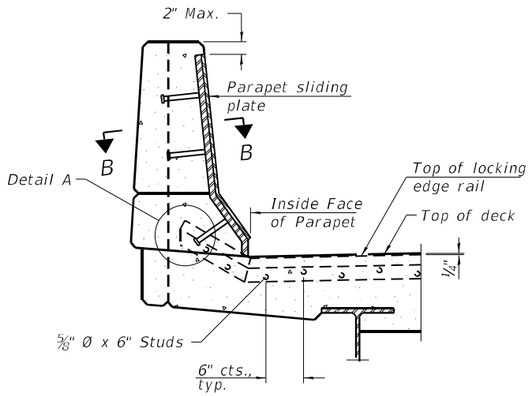


FOR SKEWS > 30°

PLAN AT PARAPET

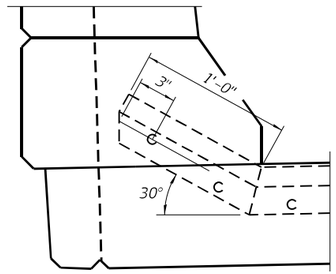


SECTION B-B

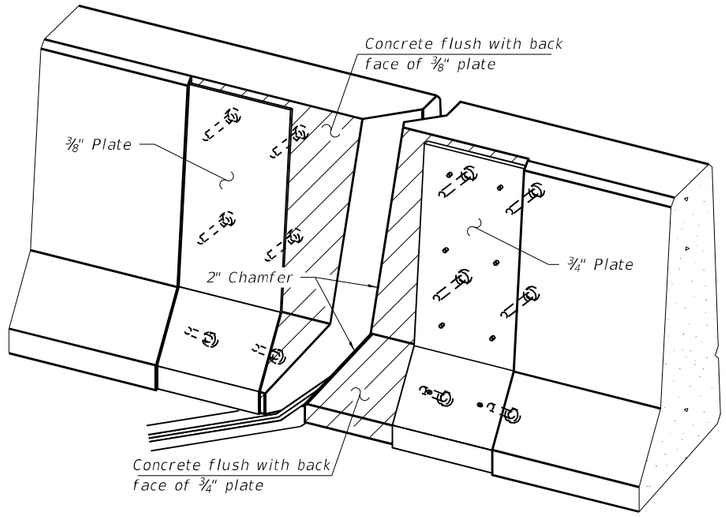


ELEVATION AT PARAPET

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



DETAIL A



TRIMETRIC VIEW

(Showing embedded plates only)

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.

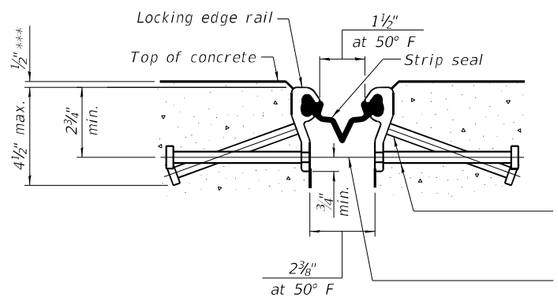
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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.

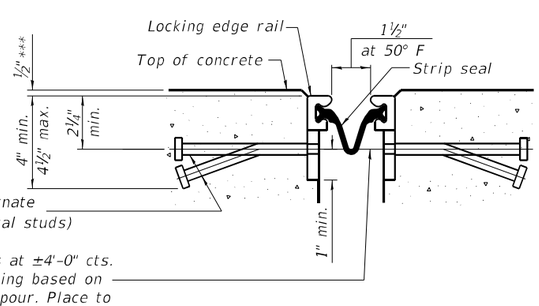
The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to 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.



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.

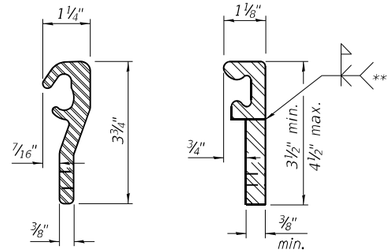


SHOWING WELDED RAIL JOINT

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	190

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PREFORMED JOINT STRIP SEAL
SN 016-0114 (SB)

SHEET S37-13 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1361
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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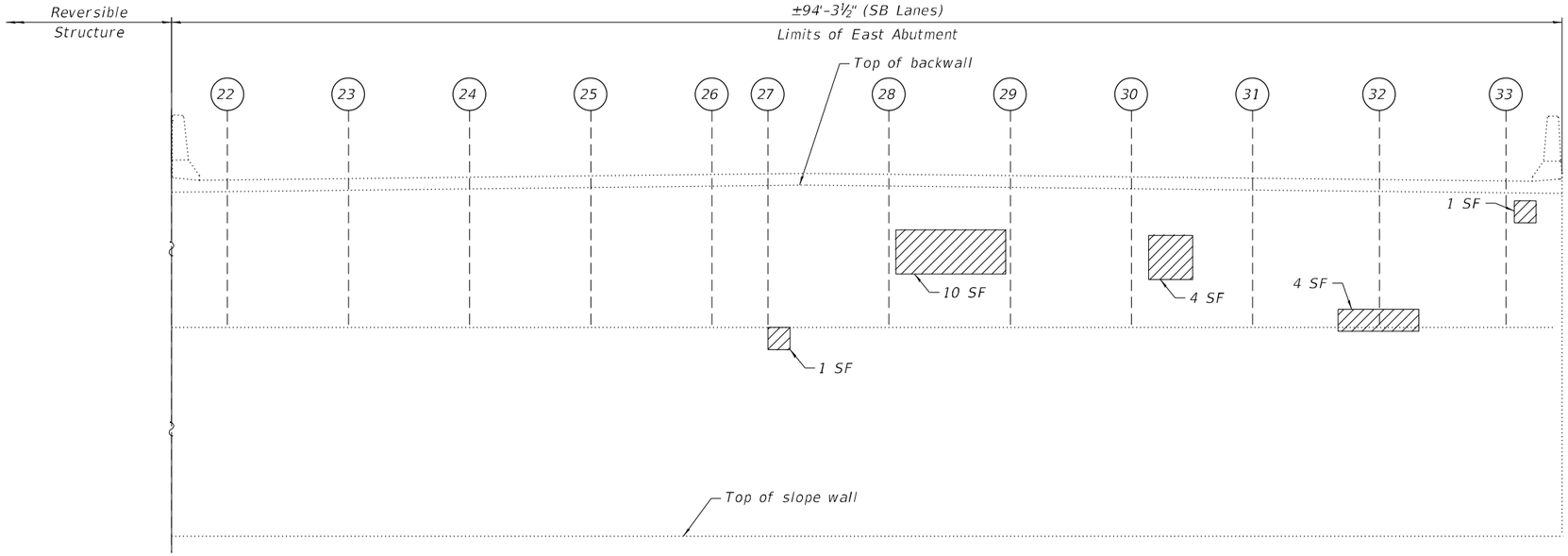

ELEVATION - EAST ABUTMENT

(Looking East)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
3. For slope wall repairs, see sheet S37-18.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	549
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	20

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EAST ABUTMENT REPAIRS
SN 016-0114 (SB)
SHEET S37-14 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1362
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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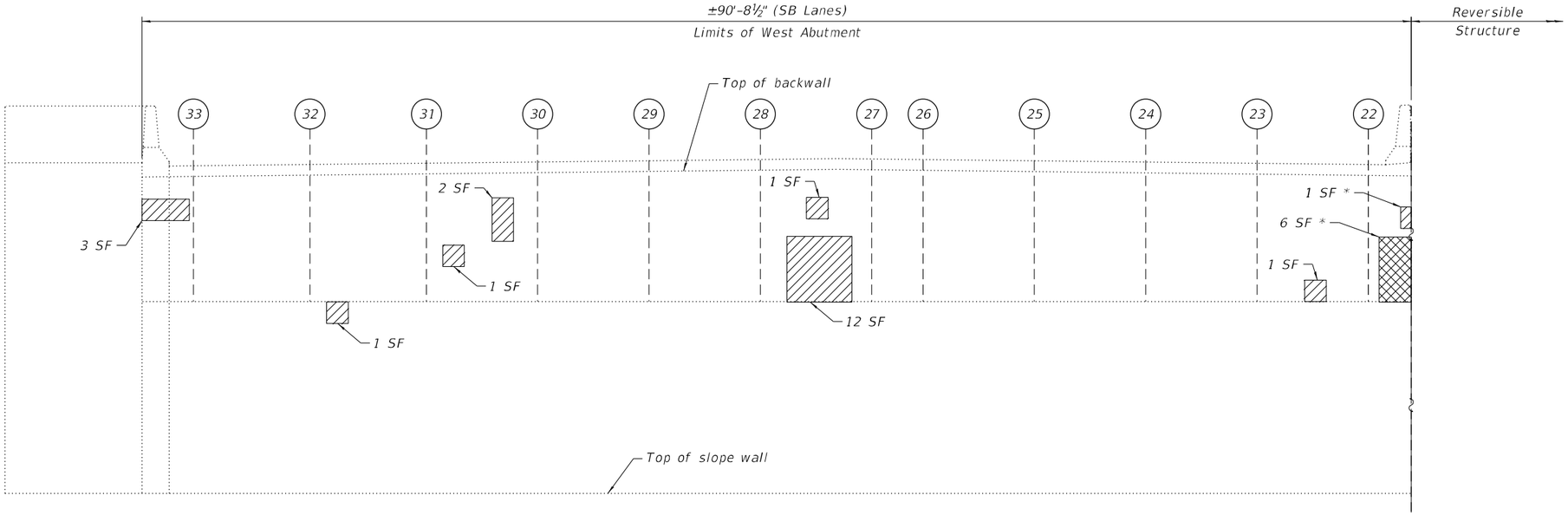

ELEVATION – WEST ABUTMENT

(Looking West)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
3. For slope wall repairs, see sheet S37-18.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	570
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	22
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	6

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DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT REPAIRS
SN 016-0114 (SB)
SHEET S37-15 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1363
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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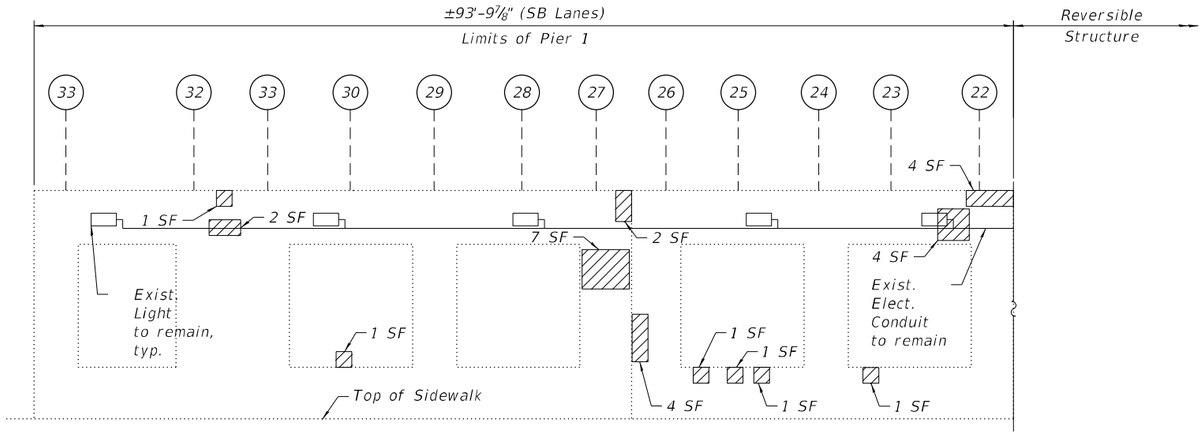
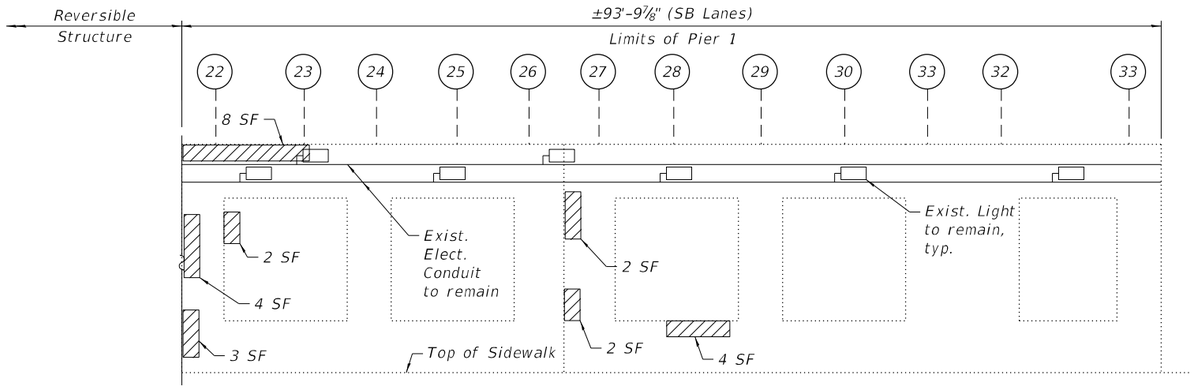


ELEVATION – PIER 1

(Looking West)



ELEVATION – PIER 1

(Looking East)

EXISTING LIGHTING: PIER 1

(Looking Southwest)

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 construction.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	54

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PIER 1 REPAIRS
SN 016-0114 (SB)
SHEET S37-16 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1364
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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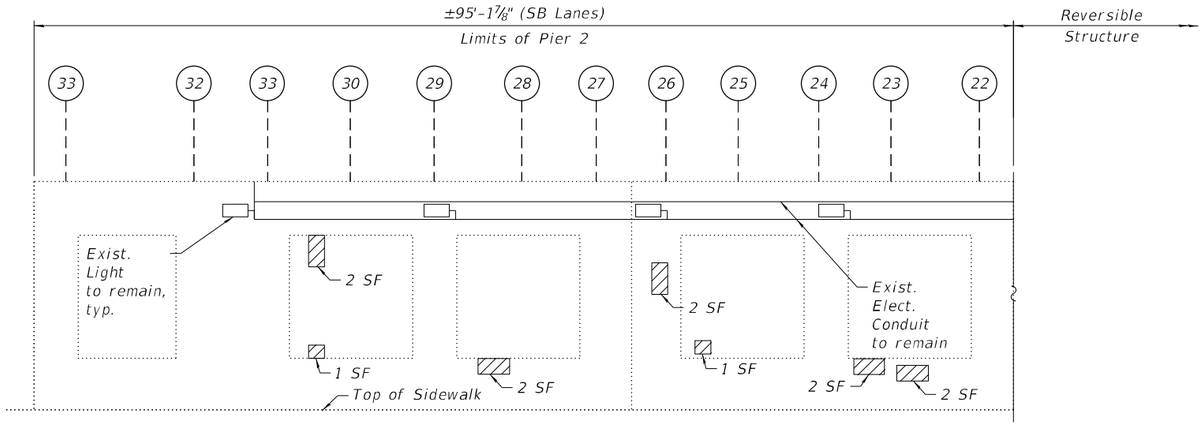
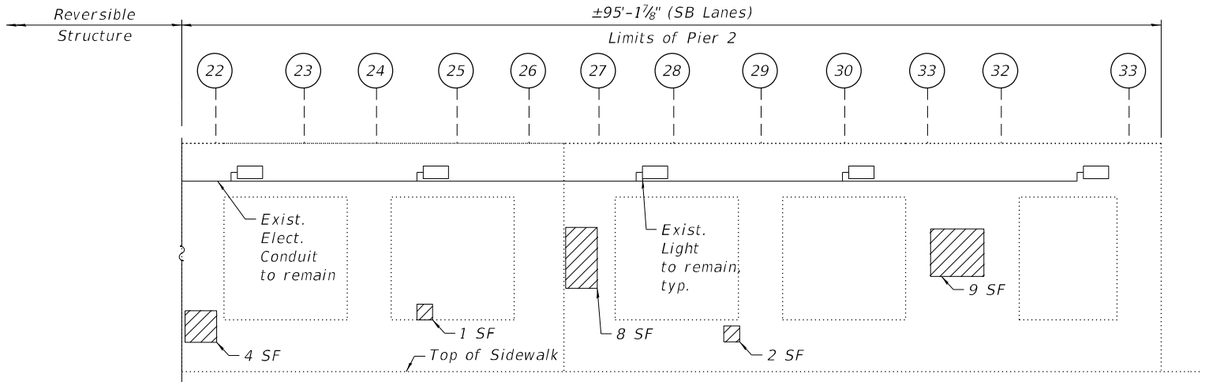


ELEVATION - PIER 2

(Looking West)



ELEVATION - PIER 2

(Looking East)

EXISTING LIGHTING: PIER 2

(Looking Southwest)

EXISTING 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.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	36

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PIER 2 REPAIRS
SN 016-0114 (SB)
SHEET S37-17 OF S37-19 SHEETS

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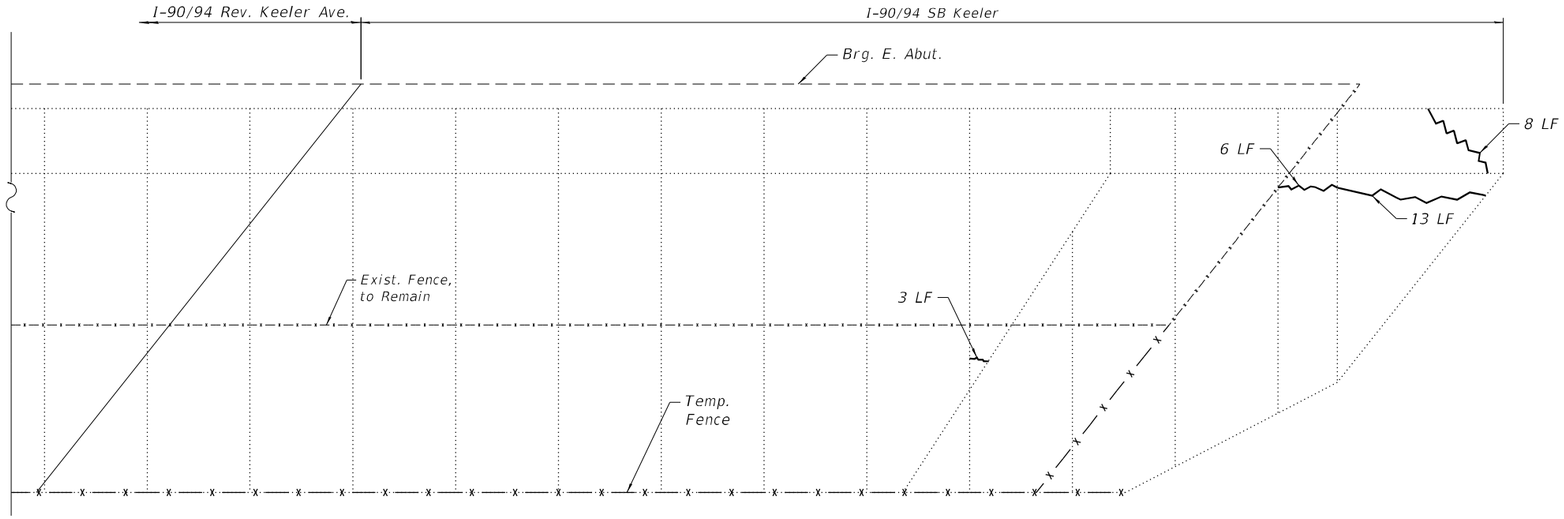
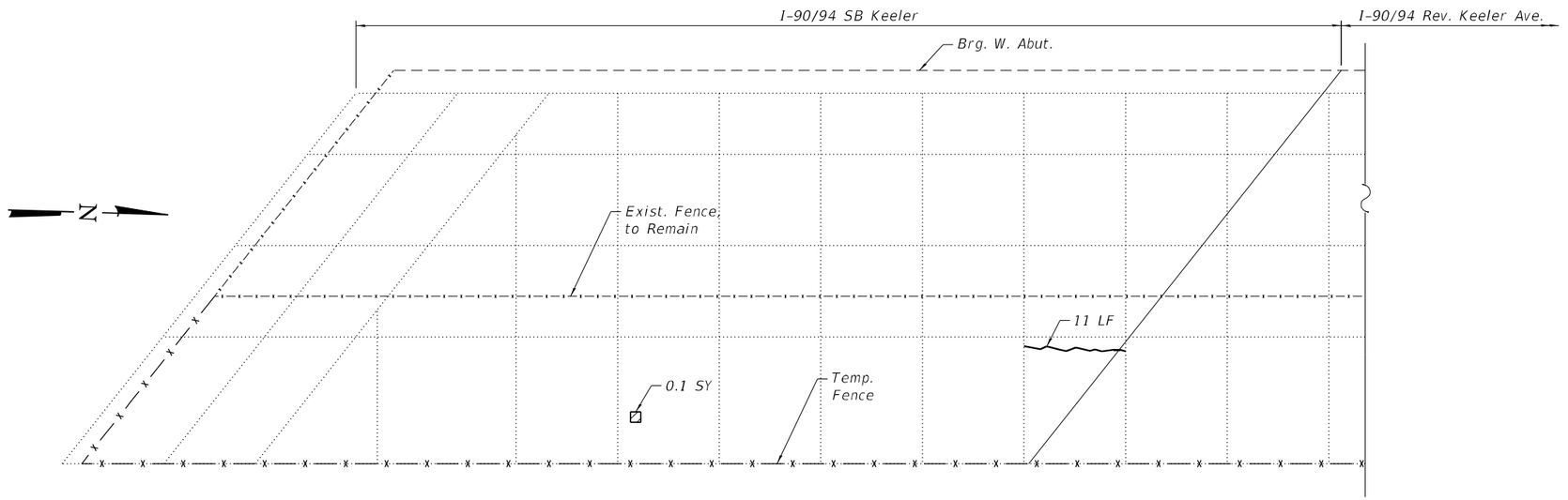
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		



EAST SLOPE WALL - PLAN

(Looking East)



WEST SLOPE WALL - PLAN

(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. 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
SY	Square Yard
LF	Linear Foot
	Slope Wall Crack Sealing

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu Yd	1
Slope Wall Removal	Sq Yd	1
Slope Wall 4 Inch	Sq Yd	1
Slope Wall Crack Sealing	Foot	41

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SLOPE WALL REPAIRS
SN 016-0114 (SB)

SHEET S37-18 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1366
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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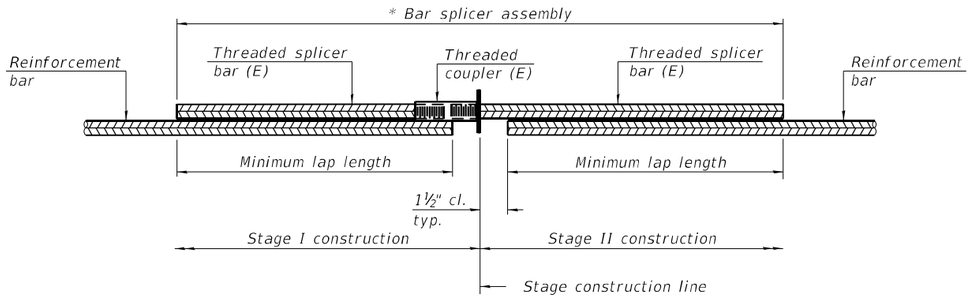


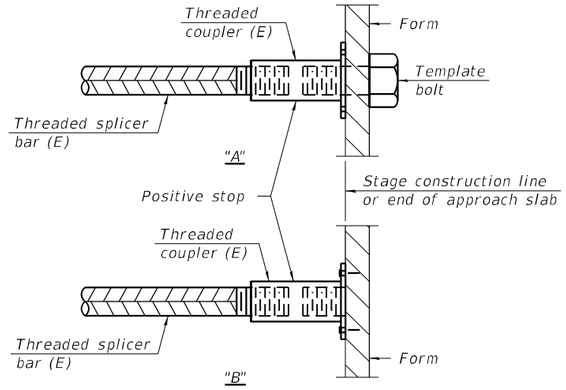
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

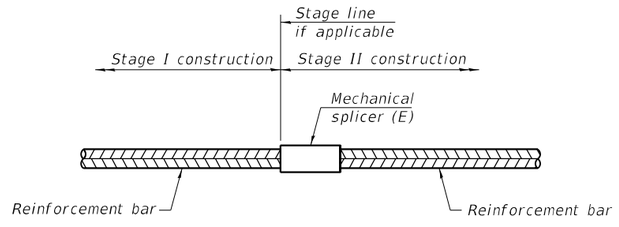
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

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

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DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 016-0114 (SB)

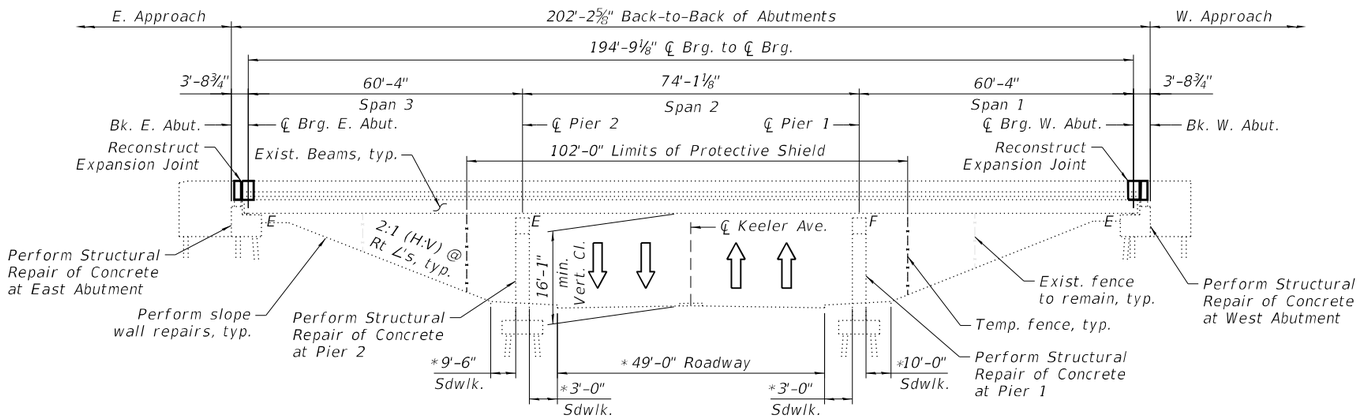
SHEET S37-19 OF S37-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1367
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

Existing Structure: S.N. 016-0114 was originally built in 1957 from BCR. The bridge was widened and redecked between 1990 and 1993, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 202'-2⅝" and an out-to-out deck width of 36'-0½". The superstructure consists of a 7½" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 60'-4", 74'-1⅛" and 60'-4". The substructure consists of reinforced concrete abutments and piers supported on concrete filled metal shell piles.

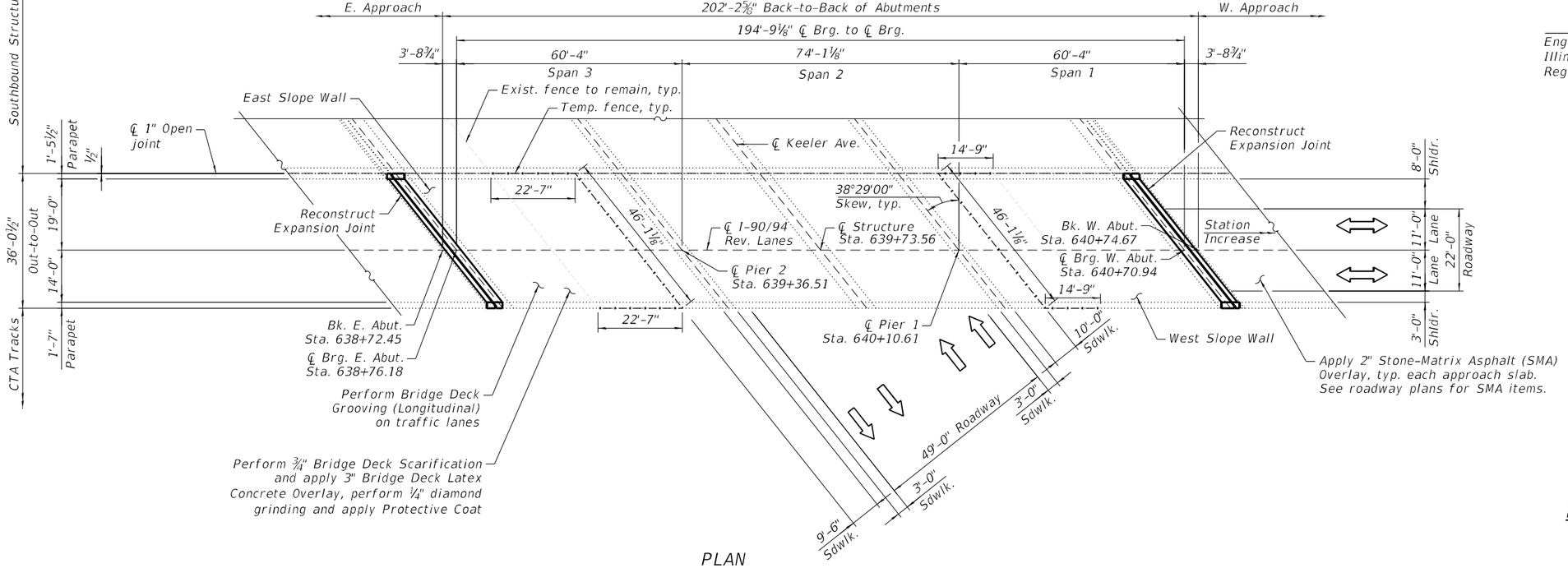
The reversible lanes will be closed to traffic during construction.

No salvage.



ELEVATION

* Dimension at right angle



PLAN

LOADING

HS20-44 and alternate military loading

DESIGN SPECIFICATIONS

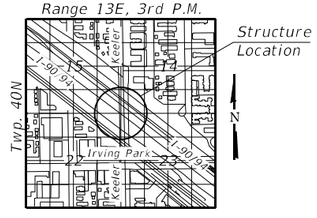
2002 AASHTO Standard Specification for Highway Bridges, 17th Edition

NOTE:

1. All stations are to the ℄ I-90/94 Reversible Roadway and taken from existing plans.
2. No Future Wearing Surface is allowed.

KEVIN WOOD
081-006515
LICENSED STRUCTURAL ENGINEER OF ILLINOIS

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



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
REVERSIBLE I-90 OVER KEELER AVE.
F.A.I. SEC 2020-004-BR
COOK COUNTY
STATION: 639+73.56
STRUCTURE NO. 016-0114 (REV)

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SHEET S38-01 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1368
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

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GENERAL NOTES

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

2. Prior to pouring the new concrete deck for Expansion Joints Reconstruction and Bridge Deck repairs, all heavy or loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the Concrete Removal pay item. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 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.

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

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

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

6. Existing reinforcement extended into the removal of area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. The cost of cleaning shall be included in the cost of Concrete Removal.

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

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

9. For SMA overlay on Approach Slab, see Roadway Plans.

10. Protective Coat shall be applied to the top of reconstructed transverse joint areas, top and inside face of the parapets, and top of Latex Concrete overlay.

11. 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.

12. Adjacent I-90/94 Northbound and Southbound bridge is not shown throughout the plans for clarity.

13. 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.

14. 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".

15. The Contractor shall exercise caution during Concrete Removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer, at no cost to the Department.

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

17. Where underpass lighting is present on the structure, the Contractor shall adjust the Protective Shielding to be placed above the existing lighting fixtures in order to maintain the existing level of lighting on the roadway underneath. Details shall be approved by the Engineer before installation.

18. Any adjustment done to the Protective Shield System must not change the system's load carrying capacity (or containment specifications) as indicated in the Standard Specifications. Cost of adjusting shielding is including in the cost of Protective Shield.

19. 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.

20. Prior to the application of the Concrete Sealer, the Contractor shall clean all existing debris from the abutment seats. The method of debris removal shall not damage the existing concrete and shall be approved by the Engineer. The debris shall be disposed of according to Art 202.03 of the Std Specs. The cost of cleaning shall be included in the cost of Concrete Sealer.

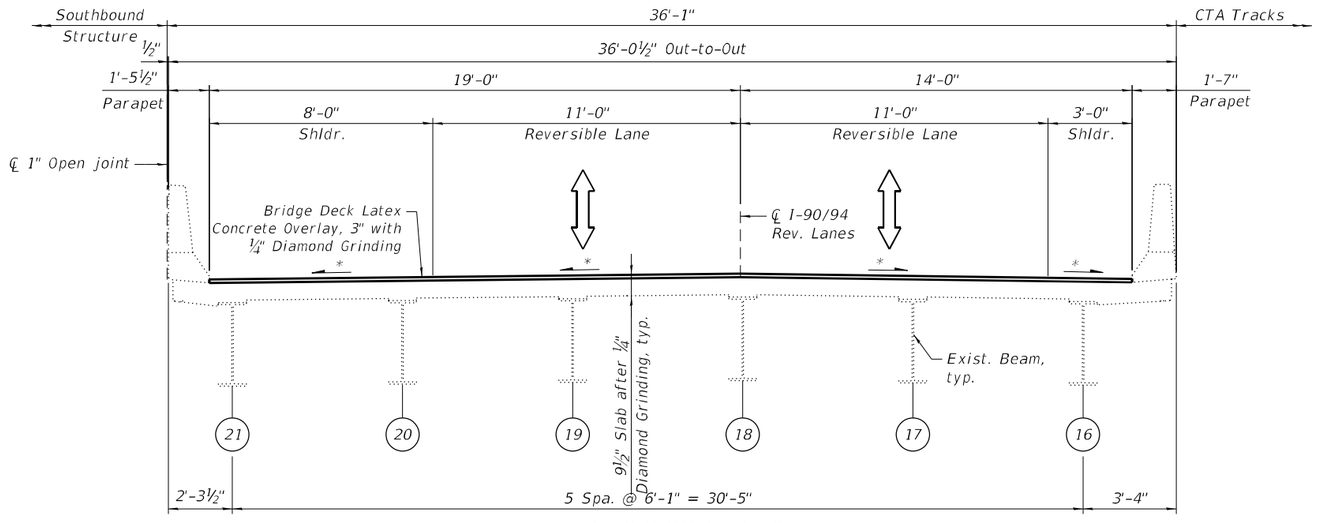
INDEX OF SHEETS

SCOPE OF WORK

1. Provide Protective Shield within limits indicated on the plans.
2. Scarify ¾" from the bridge deck slab.
3. Perform deck repairs.
4. Remove and reconstruct expansion joints at east and west abutments and install new Preformed Joint Strip Seals.
5. Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs.
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 the new overlay.
9. Perform Structural Concrete repairs to the Abutments and Piers as noted in the plans.
10. Perform slope wall repairs.

TOTAL BILL OF MATERIAL

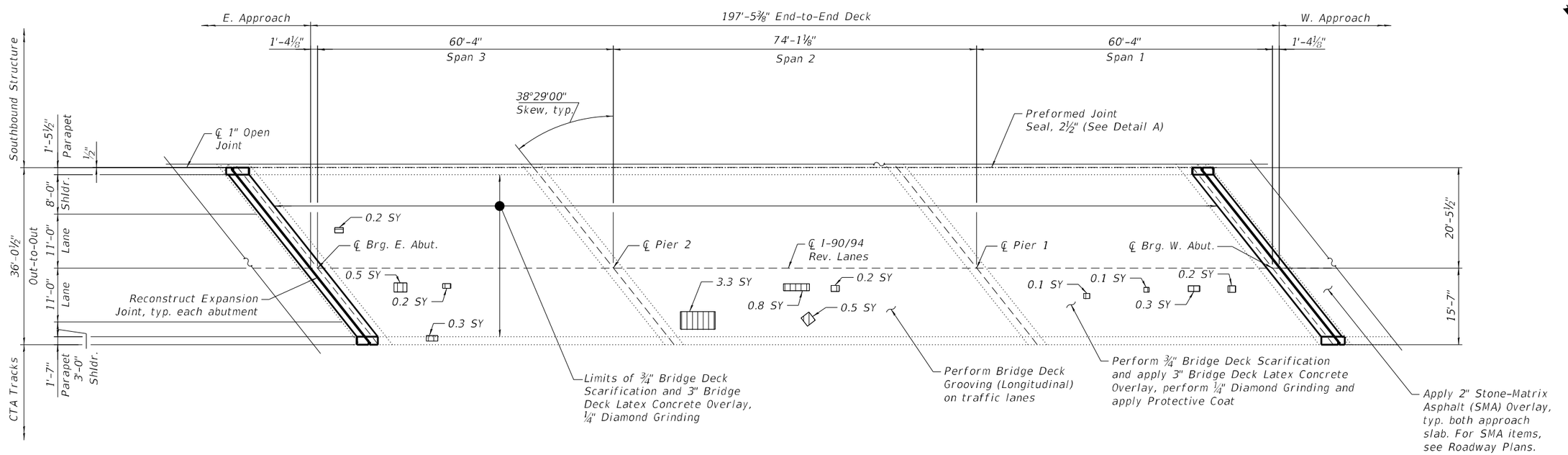
ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	16.1		16.1
Protective Shield	Sq Yd	412		412
Concrete Superstructure	Cu Yd	17.4		17.4
Protective Coat	Sq Yd	938		938
Reinforcement Bars, Epoxy Coated	Pound	2,580		2,580
Preformed Joint Seal 2 1/2"	Foot	203		203
Preformed Joint Strip Seal	Foot	89		89
Concrete Sealer	Sq Ft		537	537
Slope Wall Crack Sealing	Foot		23	23
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	482		482
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	709		709
Bridge Deck Scarification 3/4"	Sq Yd	709		709
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		17	17
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq Ft		6	6
Deck Slab Repair (Full Depth, Type II)	Sq Yd	0.2		0.2
Diamond Grinding (Bridge Section)	Sq Yd	723		723
Maintenance of Lighting System	Cal Mo		6	6
Temporary Construction Fence	Foot		167	167



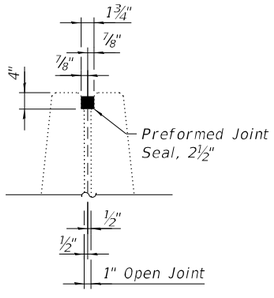
FINAL CROSS SECTION

(Looking West)

* Match existing deck surface profile



DECK PLAN



DETAIL A

(Reinforcement not shown for clarity)

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 S38-02.
3. For East and West transverse joint removal and reconstruction, see Sheet S38-04 thru S38-09.
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. The cost of repair or replacement shall be included in the cost of Concrete Removal.
8. The Contractor shall exercise extreme caution during concrete removal to avoid damaging the steel beams and diaphragms to remain. Any damage to the existing steel beams and/or diaphragms to remain caused by the Contractor in the performance of his/her work shall be repaired by the Contractor, to the satisfaction of the Engineer at no cost to the Department.

LEGEND

*Deck Slab Repair (Partial Depth)

Deck Slab Repair (Full Depth, Type I)

SY Square Yard

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	412
Protective Coat	Sq Yd	938
Preformed Joint Seal 2 1/2"	Foot	203
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	482
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	709
Bridge Deck Scarification 3/4"	Sq Yd	709
Deck Slab Repair (Full Depth, Type I)	Sq Yd	0.2
Diamond Grinding (Bridge Section)	Sq Yd	723
Maintenance of Lighting System	Cal Mo	6

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BRIDGE DECK REPAIR PLAN AND DETAILS
SN 016-0114 (REV)

SHEET S38-03 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1370
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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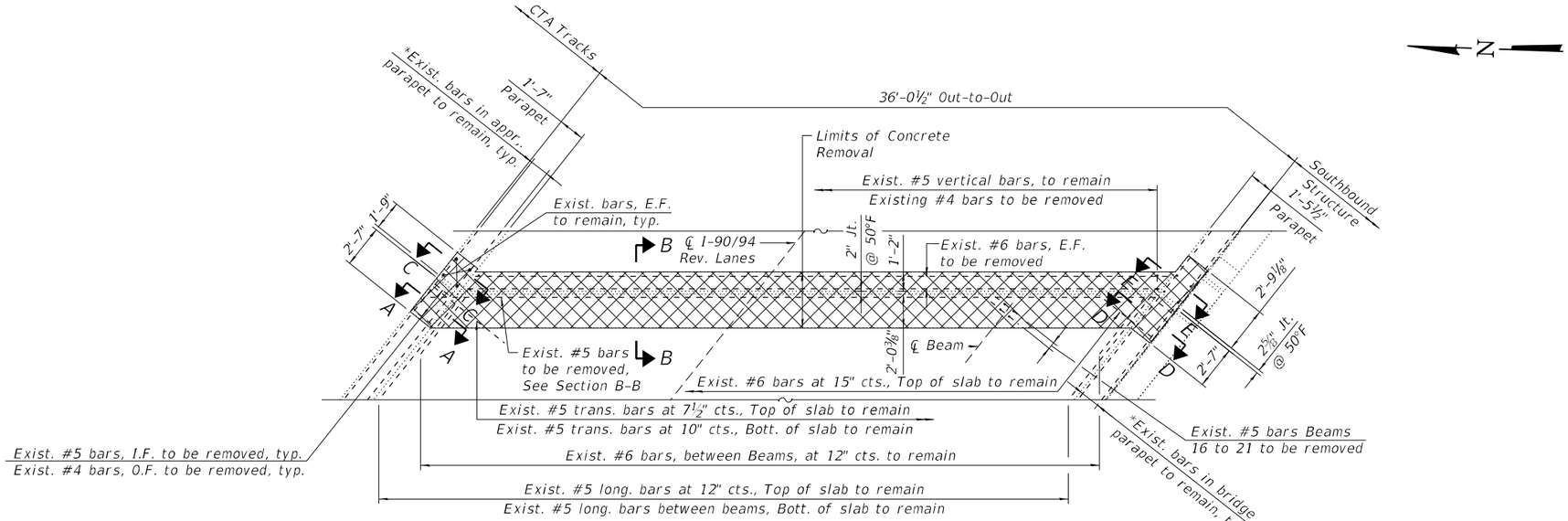
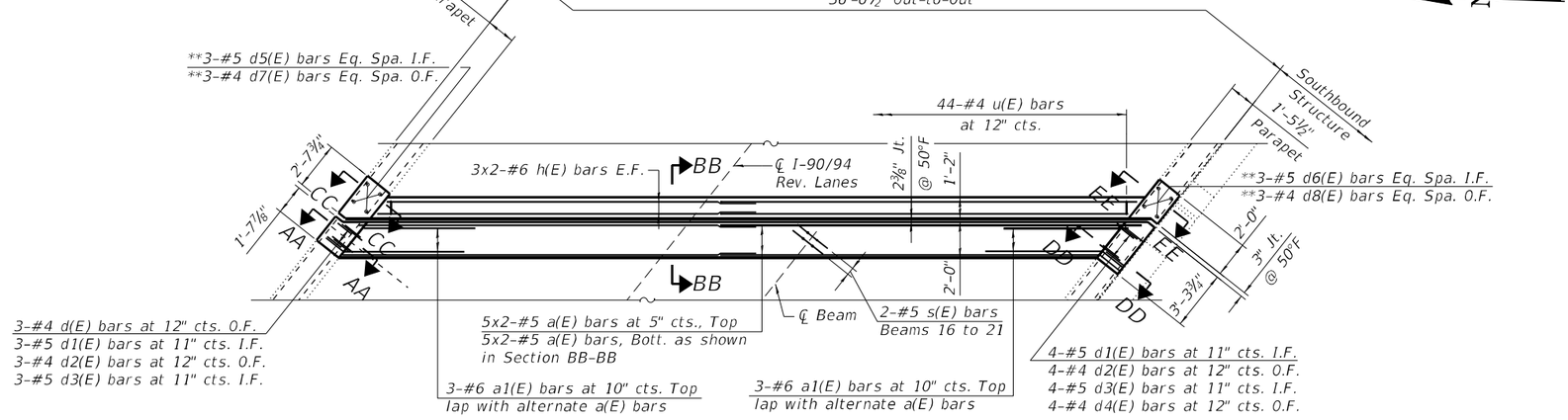


EAST ABUTMENT JOINT REMOVAL PLAN



EAST ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S38-05.
2. For sections D-D, E-E, DD-DD and EE-EE, see sheet S38-06.

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

** Epoxy grout #4 d8(E) and d9(E) bars and #5 d6(E) and d7(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

LEGEND

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0114 (REV)
SHEET S38-04 OF S38-15 SHEETS

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

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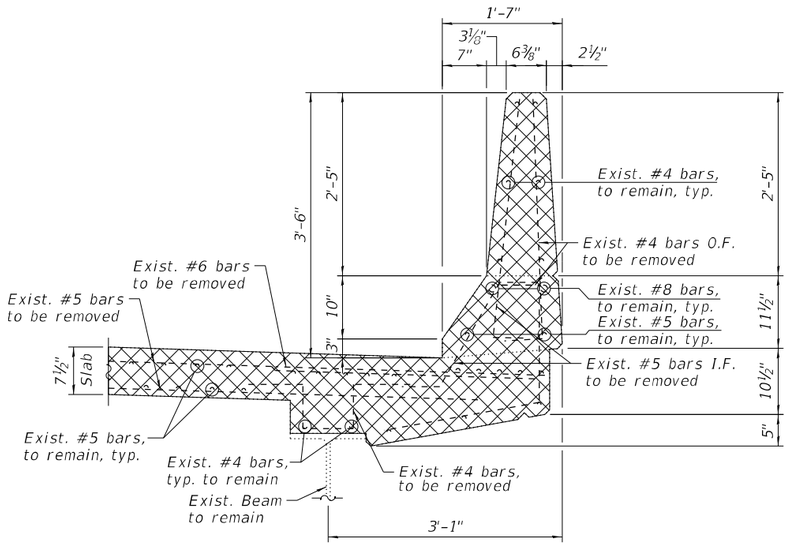
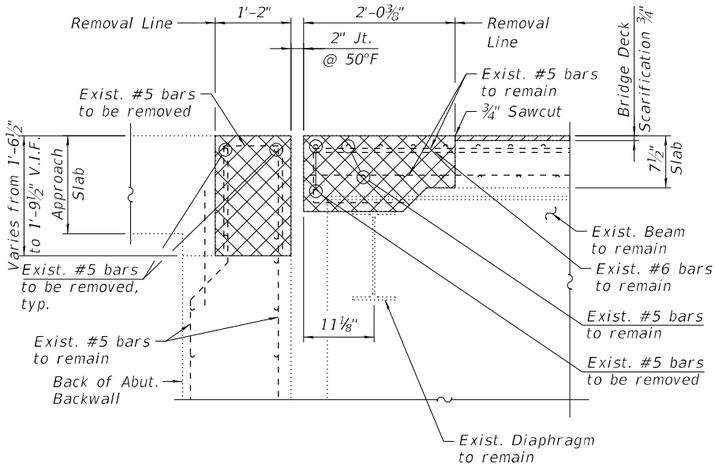
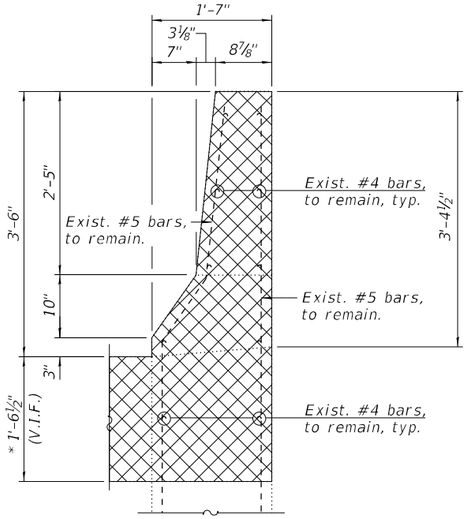


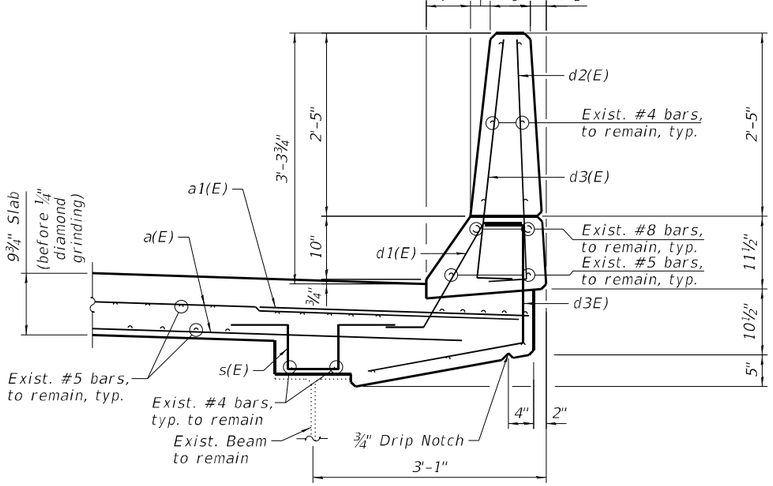
SECTION A-A
(North parapet removal)



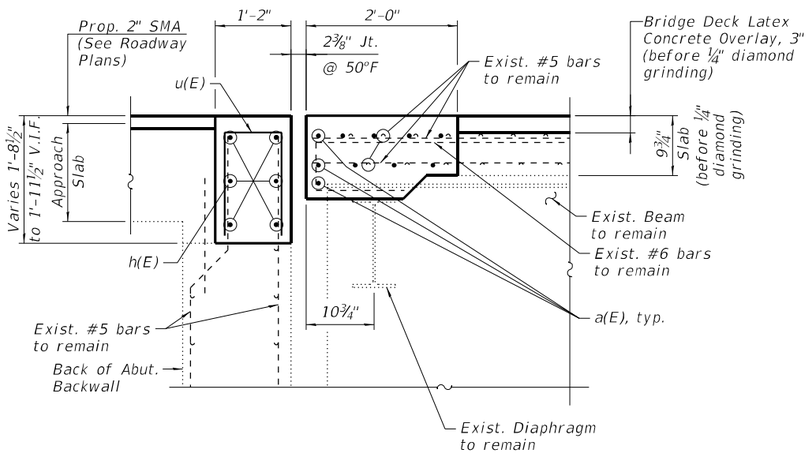
SECTION B-B



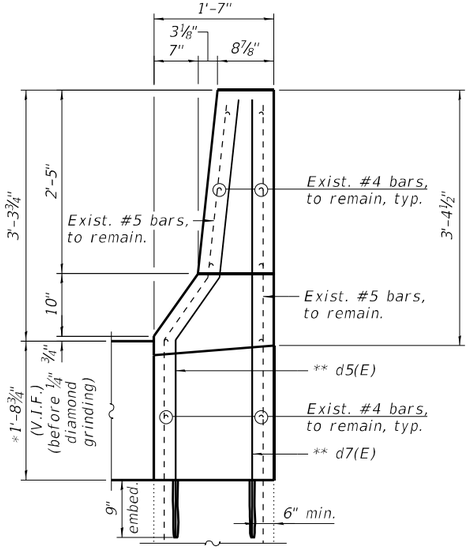
SECTION C-C
(North parapet removal)



SECTION AA-AA
(North parapet reconstruction)



SECTION BB-BB



SECTION CC-CC
(North parapet reconstruction)

LEGEND

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

* Dimension is taken at the Back of Abut.

** Epoxy grout #4 d7(E) & #5 d5(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0114 (REV)

SHEET S38-05 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1372
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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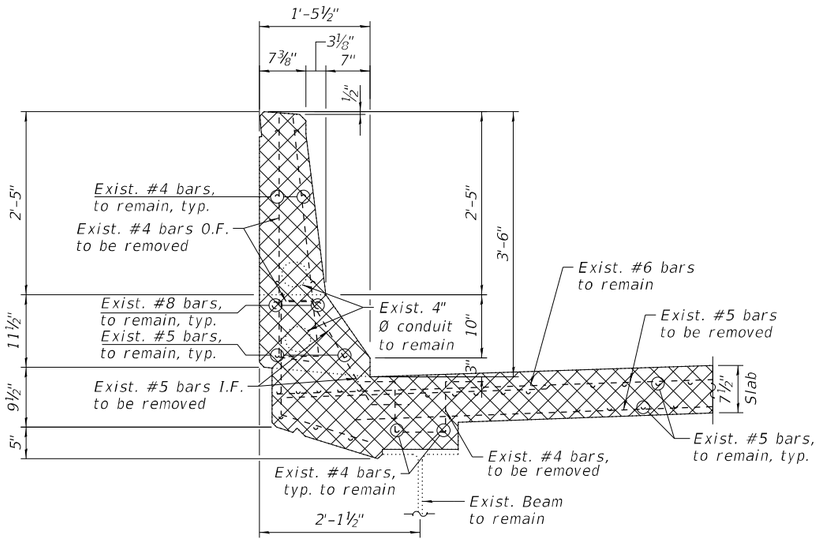
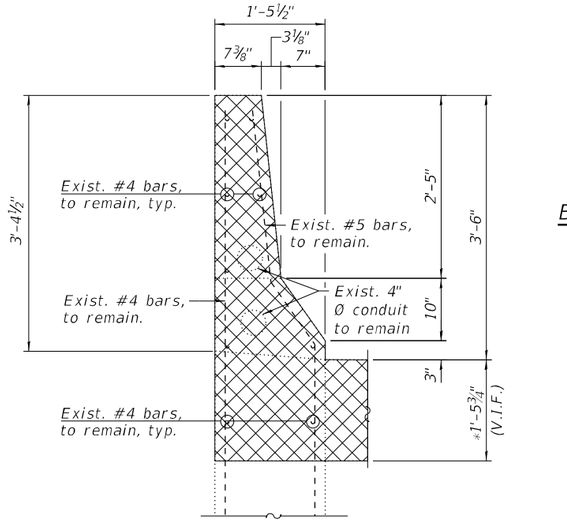
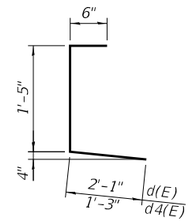


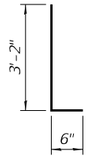
SECTION D-D
(South parapet removal)



SECTION E-E
(South parapet removal)



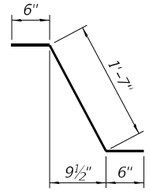
BARS d(E) & d4(E)



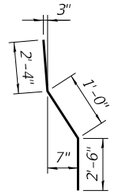
BARS d2(E) & d3(E)

BILL OF MATERIAL
EAST ABUTMENT

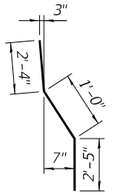
Bar	No.	Size	Length	Shape
a(E)	20	#5	24'-9"	
a1(E)	6	#6	6'-6"	
d(E)	3	#4	4'-0"	
d1(E)	7	#5	2'-7"	
d2(E)	7	#4	3'-8"	
d3(E)	7	#5	3'-8"	
d4(E)	4	#4	3'-2"	
d5(E)	3	#5	5'-10"	
d6(E)	3	#5	5'-9"	
d7(E)	3	#4	5'-11"	
d8(E)	3	#4	5'-7"	
h(E)	12	#6	25'-0"	
s(E)	12	#5	3'-4"	
u(E)	44	#4	2'-11"	
Concrete Removal			Cu Yd	8.0
Reinforcement Bars, Epoxy Coated			Pound	1,290
Concrete Superstructure			Cu Yd	8.7



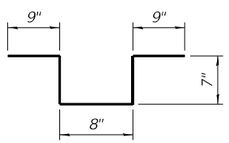
BAR d1(E)



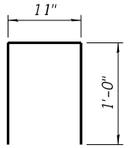
BAR d5(E)



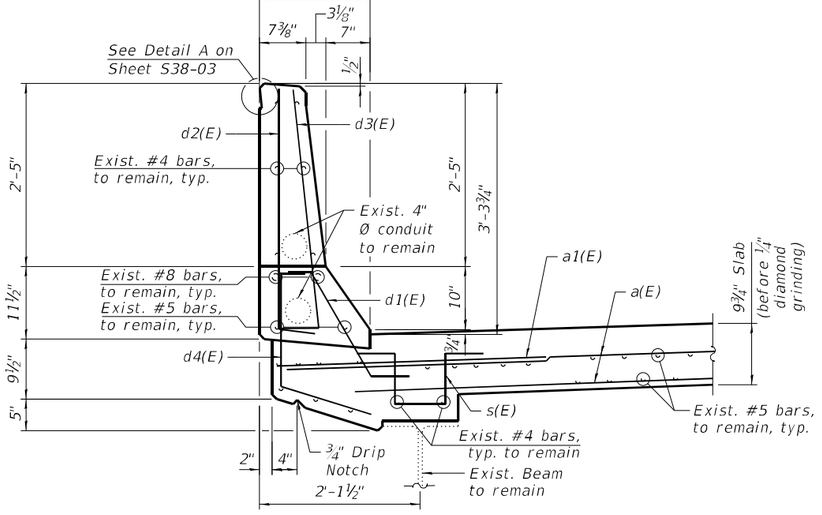
BAR d6(E)



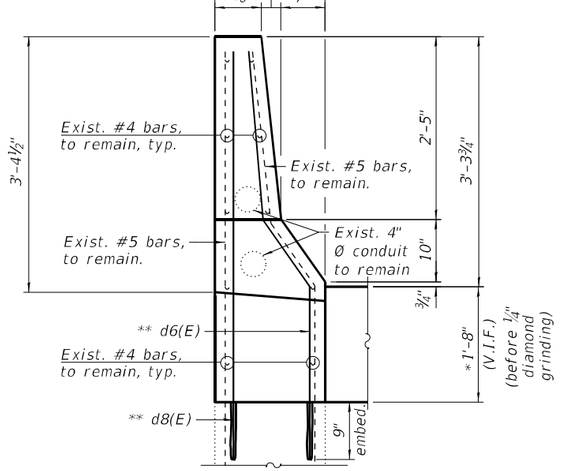
BAR s(E)



BAR u(E)



SECTION DD-DD
(South parapet reconstruction)



SECTION EE-EE
(South parapet reconstruction)

* Dimension is taken at the Back of Abutment

** Epoxy grout #4 d8(E) & #5 d6(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S37-10.
2. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
3. Removal and disposal of the existing expansion joints is included with Concrete Removal.

LEGEND

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

MIN BAR LAPS

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

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DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0114 (REV)

SHEET S38-06 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1373
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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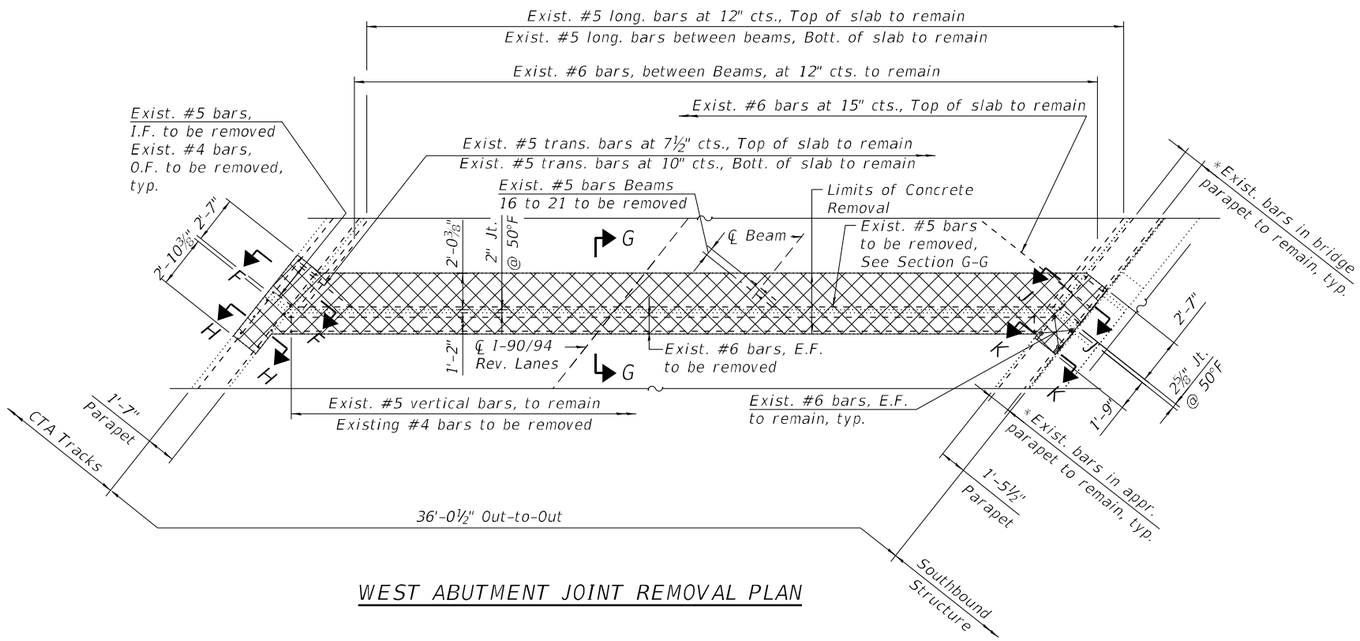
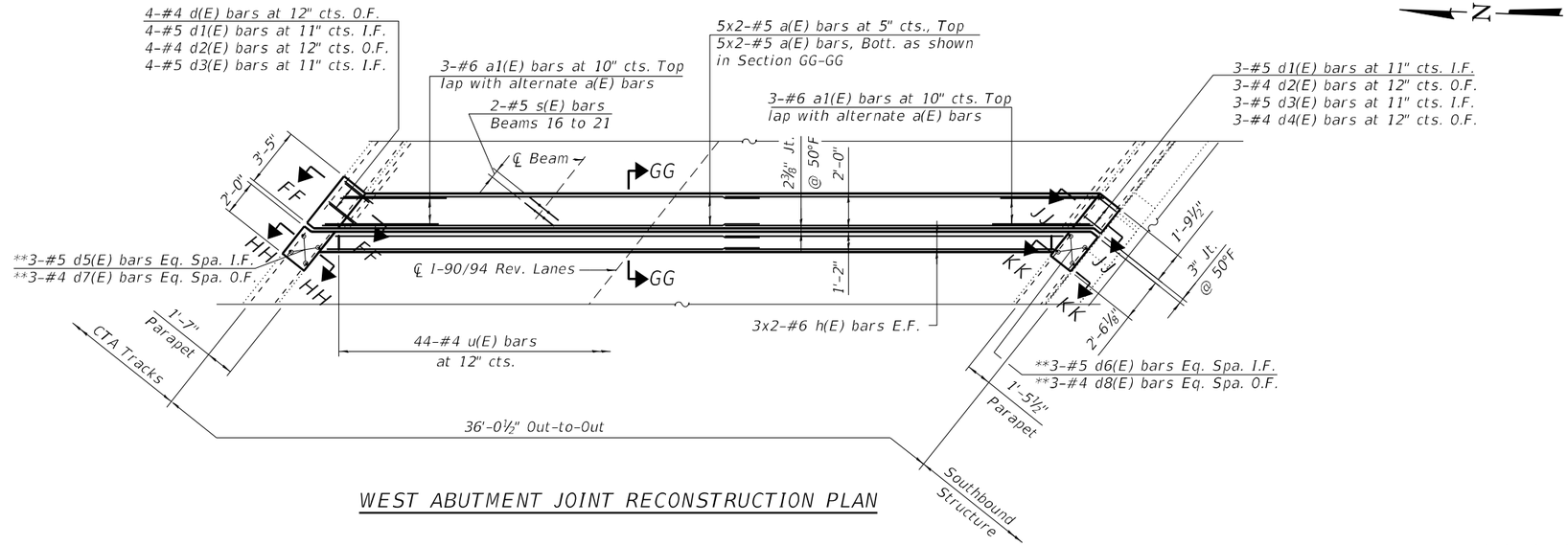


WEST ABUTMENT JOINT REMOVAL PLAN



WEST ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S38-08.
2. For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S38-09.

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

** Epoxy grout #4 d8(E) and d9(E) bars and #5 d6(E) and d7(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

LEGEND

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

MODEL: sMODELNAMES
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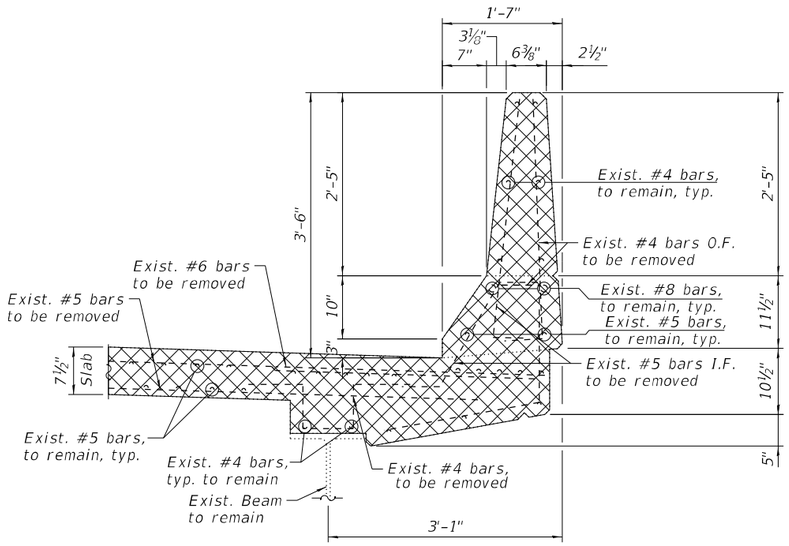
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0114 (REV)

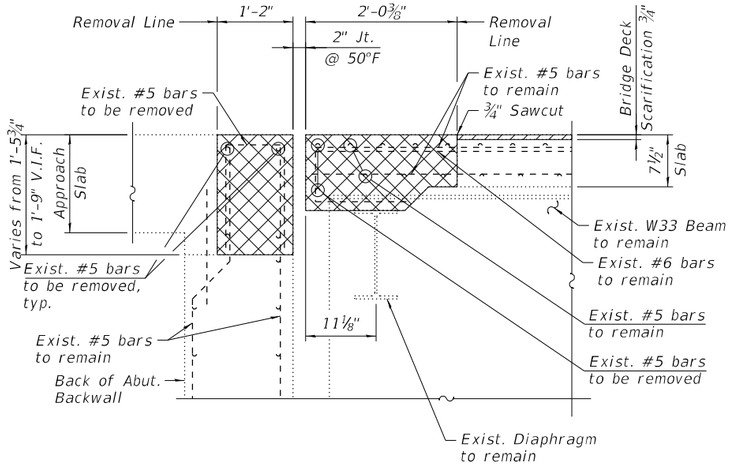
SHEET S38-07 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1374
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

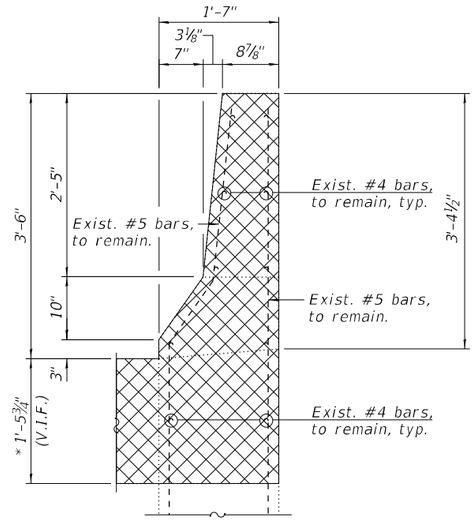


SECTION F-F

(North parapet removal)

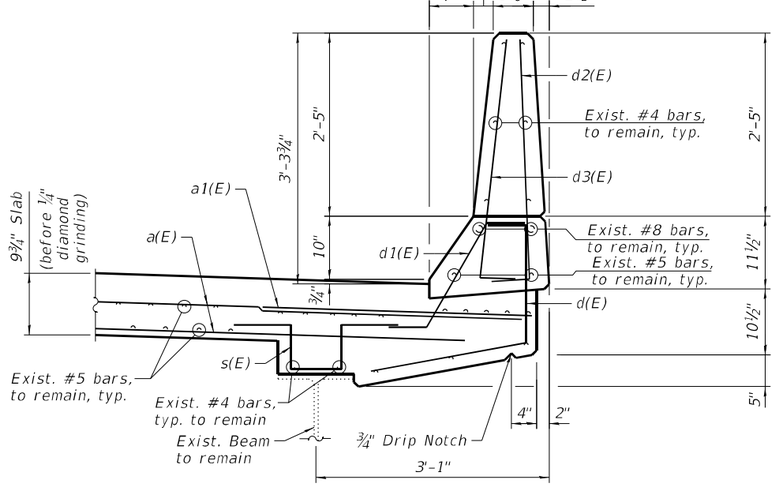


SECTION G-G



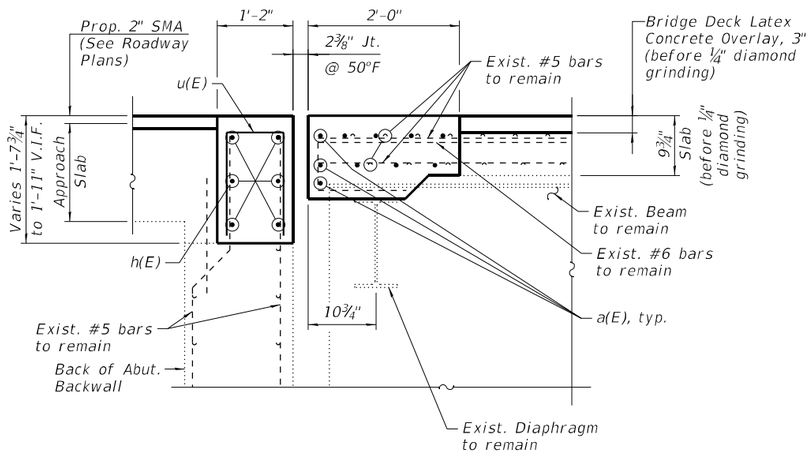
SECTION H-H

(North parapet removal)

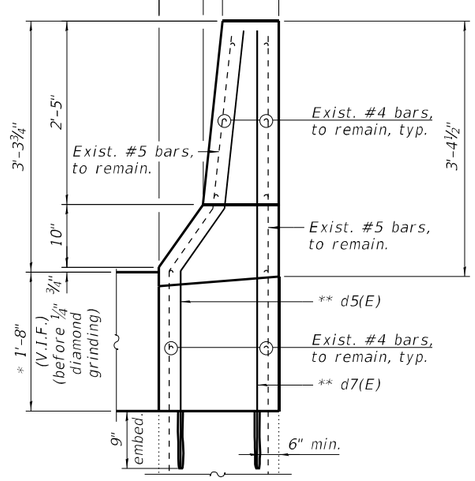


SECTION FF-FF

(North parapet reconstruction)



SECTION GG-GG



SECTION HH-HH

(North parapet reconstruction)

LEGEND

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0114 (REV)

SHEET S38-08 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1375
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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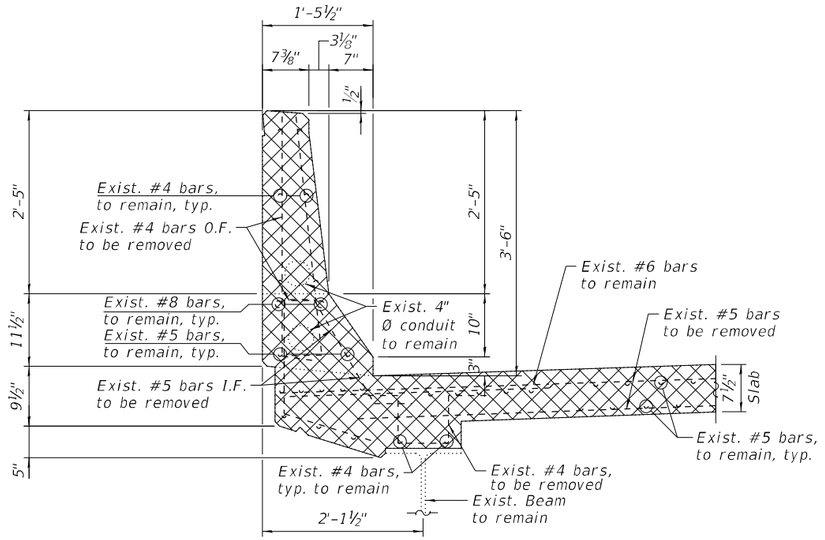
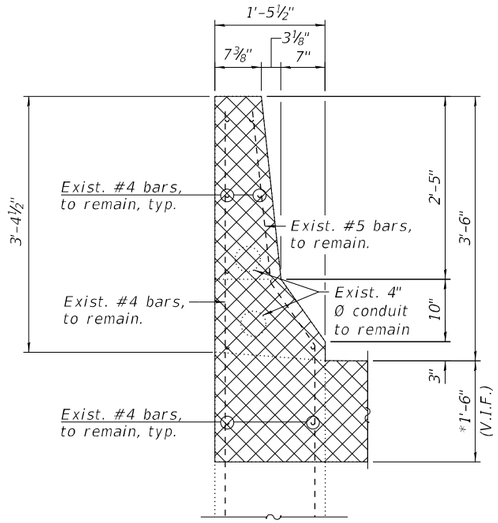


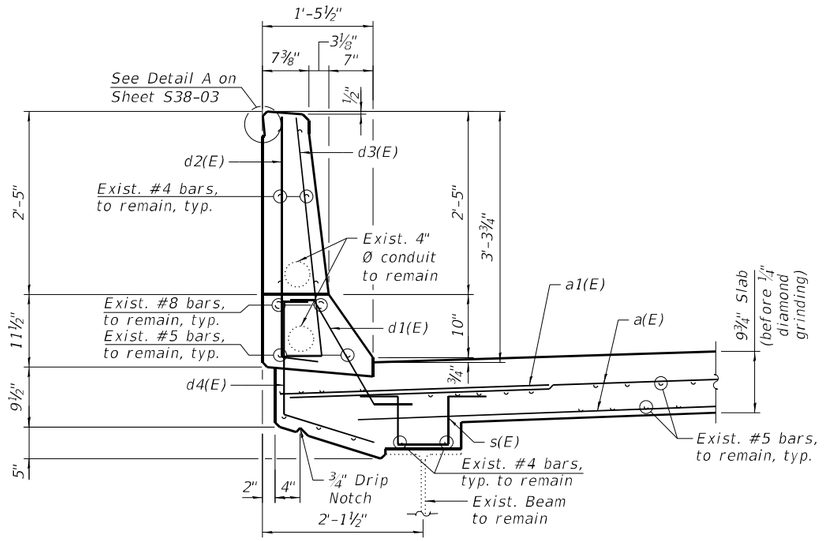
SECTION J-J

(South parapet removal)



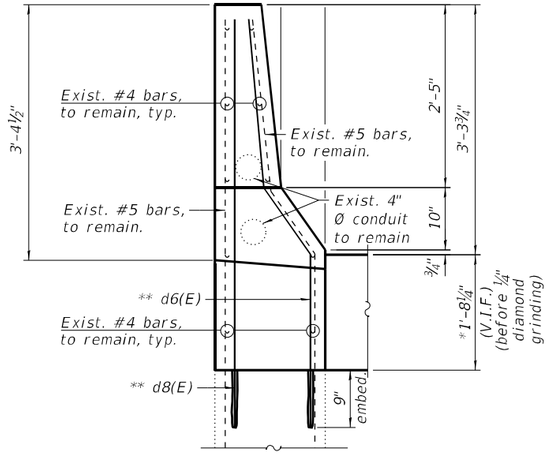
SECTION K-K

(South parapet removal)



SECTION JJ-JJ

(South parapet reconstruction)

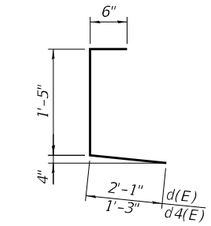


SECTION KK-KK

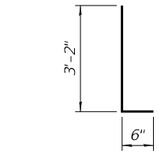
(South parapet reconstruction)

* Dimension is taken at the Back of Abutment

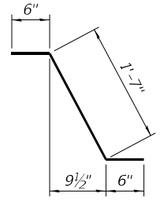
** Epoxy grout #4 d8(E) & #5 d6(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.



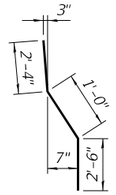
BARS d(E) & d4(E)



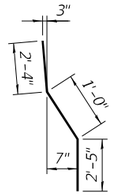
BARS d2(E) & d3(E)



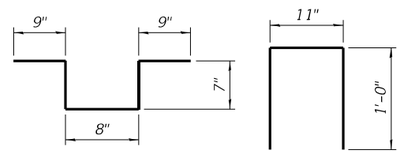
BAR d1(E)



BAR d5(E)



BAR d6(E)



BAR s(E)

BAR u(E)

BILL OF MATERIAL
WEST ABUTMENT

Bar	No.	Size	Length	Shape
a(E)	20	#5	24'-9"	
a1(E)	6	#6	6'-6"	
d(E)	3	#4	4'-0"	
d1(E)	7	#5	2'-7"	
d2(E)	7	#4	3'-8"	
d3(E)	7	#5	3'-8"	
d4(E)	4	#4	3'-2"	
d5(E)	3	#5	5'-10"	
d6(E)	3	#5	5'-9"	
d7(E)	3	#4	5'-11"	
d8(E)	3	#4	5'-7"	
h(E)	12	#6	25'-0"	
s(E)	12	#5	3'-4"	
u(E)	44	#4	2'-11"	
Concrete Removal			Cu Yd	8.1
Reinforcement Bars, Epoxy Coated			Pound	1,290
Concrete Superstructure			Cu Yd	8.7

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S38-10.
2. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
3. Removal and disposal of the existing expansion joints is included with Concrete Removal.

LEGEND

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

MIN BAR LAPS

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

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WEST ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0114 (REV)

SHEET S38-09 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1376
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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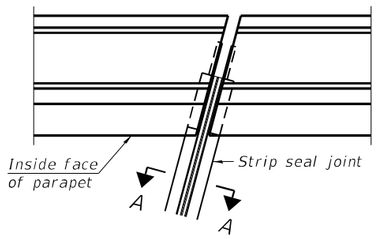
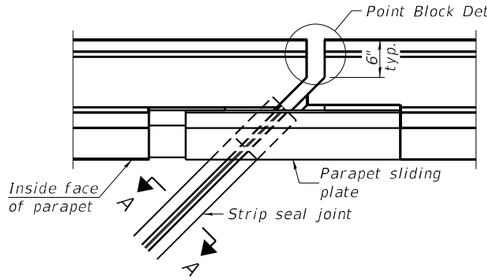
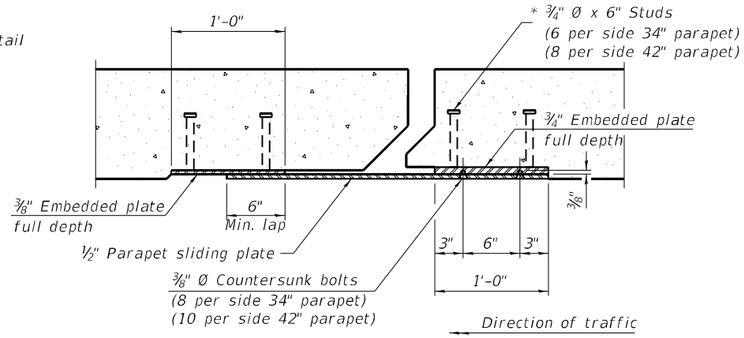


FOR SKEWS ≤ 30°

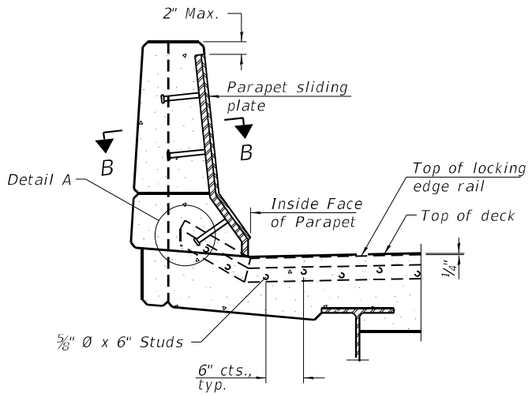


FOR SKEWS > 30°

PLAN AT PARAPET

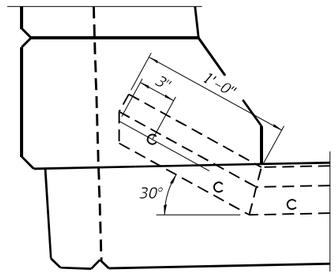


SECTION B-B

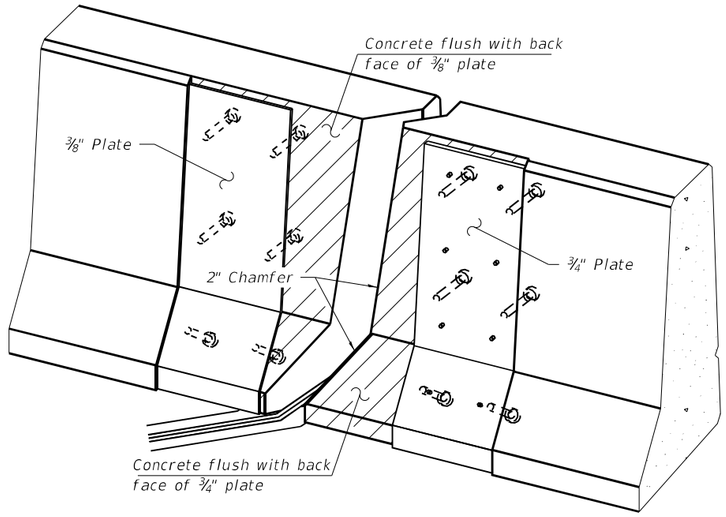


ELEVATION AT PARAPET

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

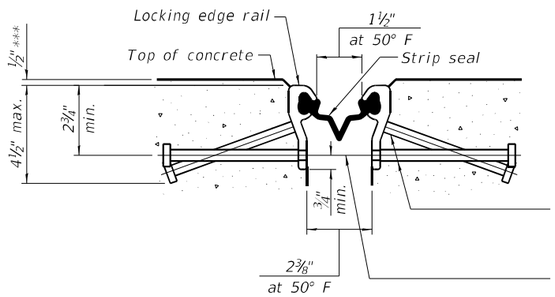


DETAIL A

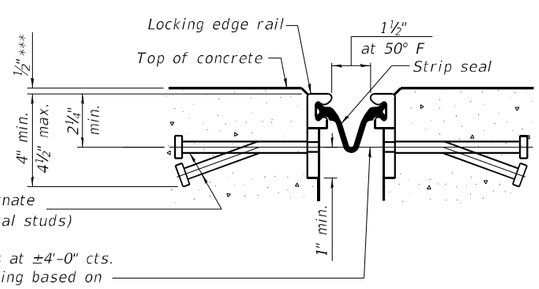


TRIMETRIC VIEW

(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT



SHOWING WELDED RAIL JOINT

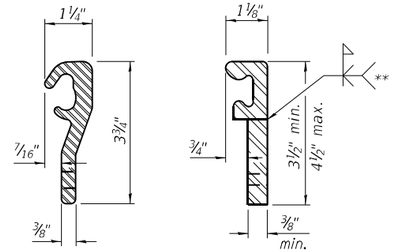
* ⅜" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

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.

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	89

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DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
SN 016-0114 (REV)

SHEET S38-10 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1377
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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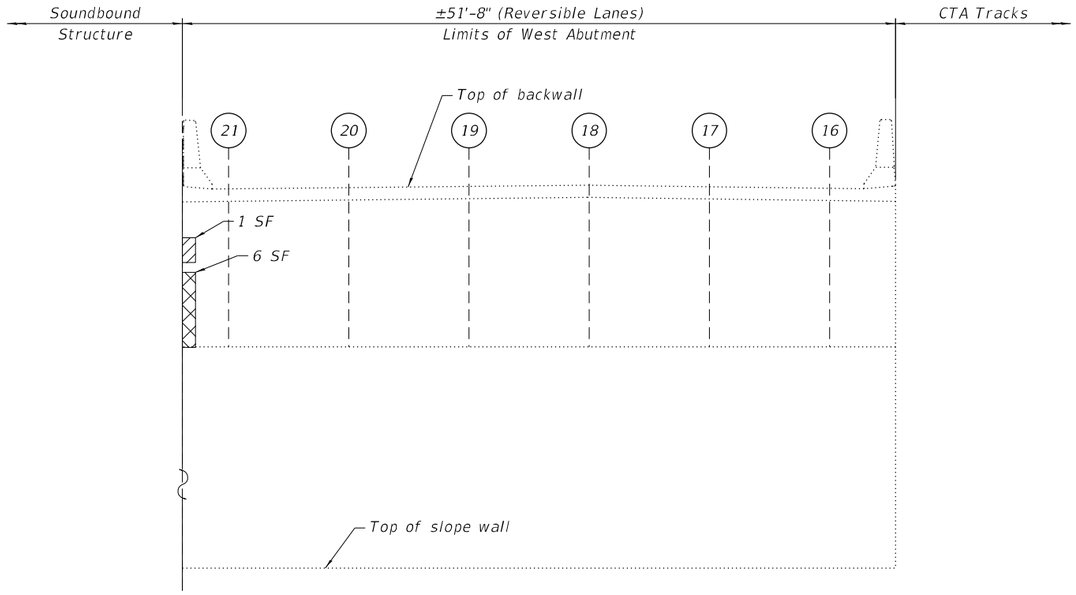

ELEVATION - WEST ABUTMENT

(Looking West)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
3. For slope wall repairs, see sheet S38-15.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	255
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	1
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	6

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DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT REPAIRS
SN 016-0114 (REV)
SHEET S38-11 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1378
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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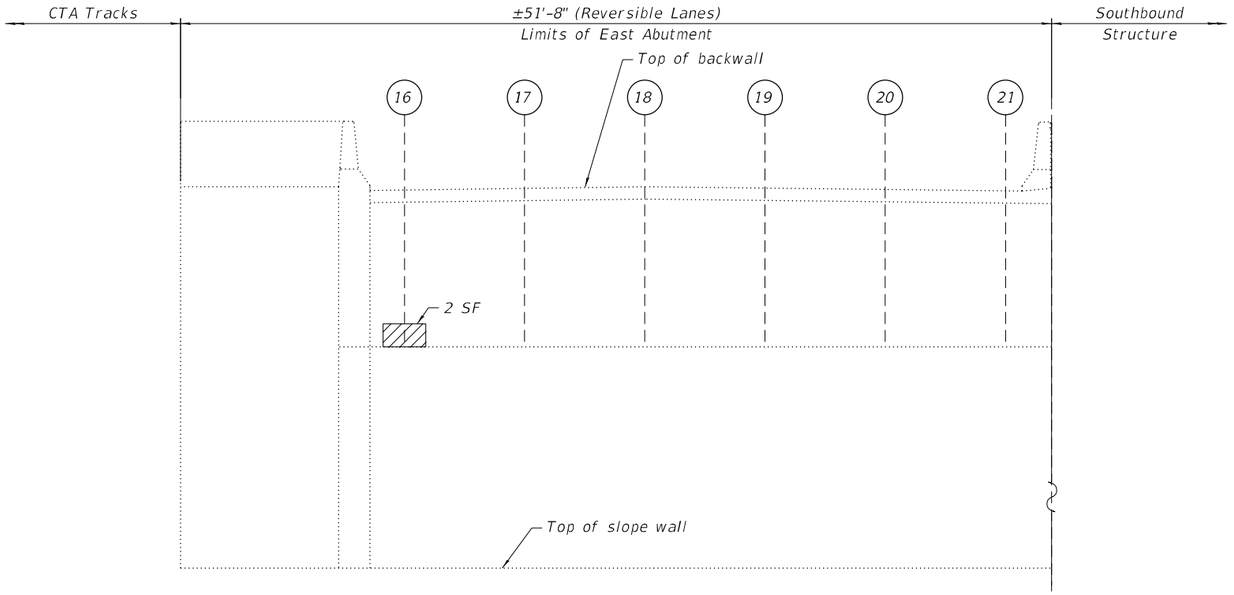

ELEVATION - EAST ABUTMENT

(Looking East)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
3. For slope wall repairs, see sheet S38-15.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq Ft	282
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	2

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DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT REPAIRS
SN 016-0114 (REV)
SHEET S38-12 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1379
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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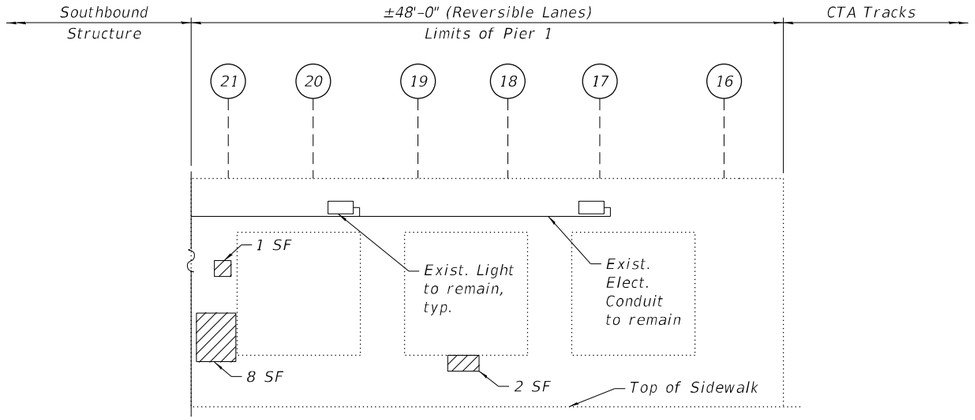
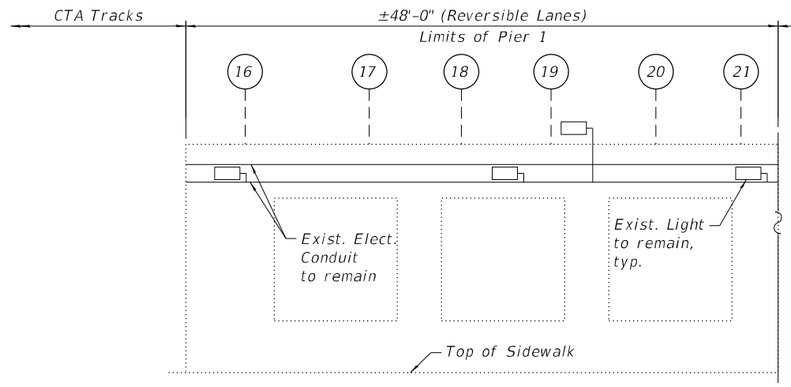


ELEVATION - PIER 1

(Looking West)



ELEVATION - PIER 1

(Looking East)

EXISTING LIGHTING: PIER 1

(Looking Southwest)

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 construction.

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	11

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PIER 1 REPAIRS
SN 016-0114 (REV)
SHEET S38-13 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1380
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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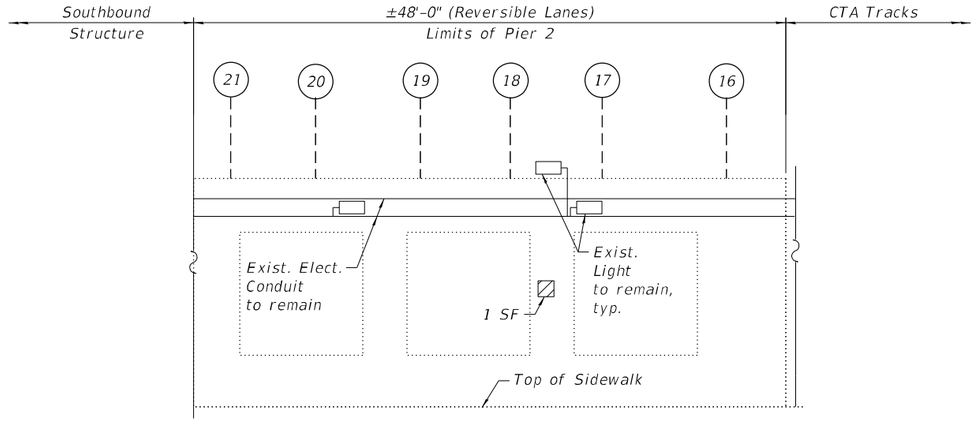
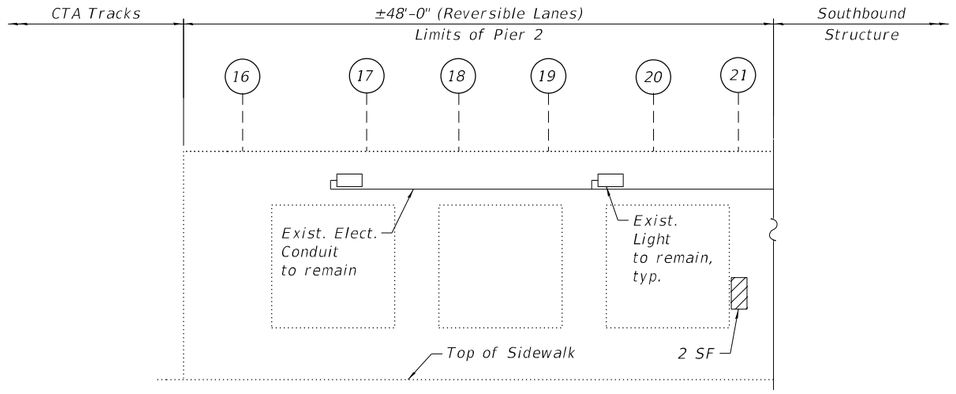


ELEVATION - PIER 2

(Looking West)



ELEVATION - PIER 2

(Looking East)

EXISTING LIGHTING: PIER 2

(Looking Southwest)

EXISTING LIGHTING: PIER 2

(Looking Southeast)

NOTES:

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LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	3

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PIER 2 REPAIRS
SN 016-0114 (REV)
SHEET S38-14 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1381
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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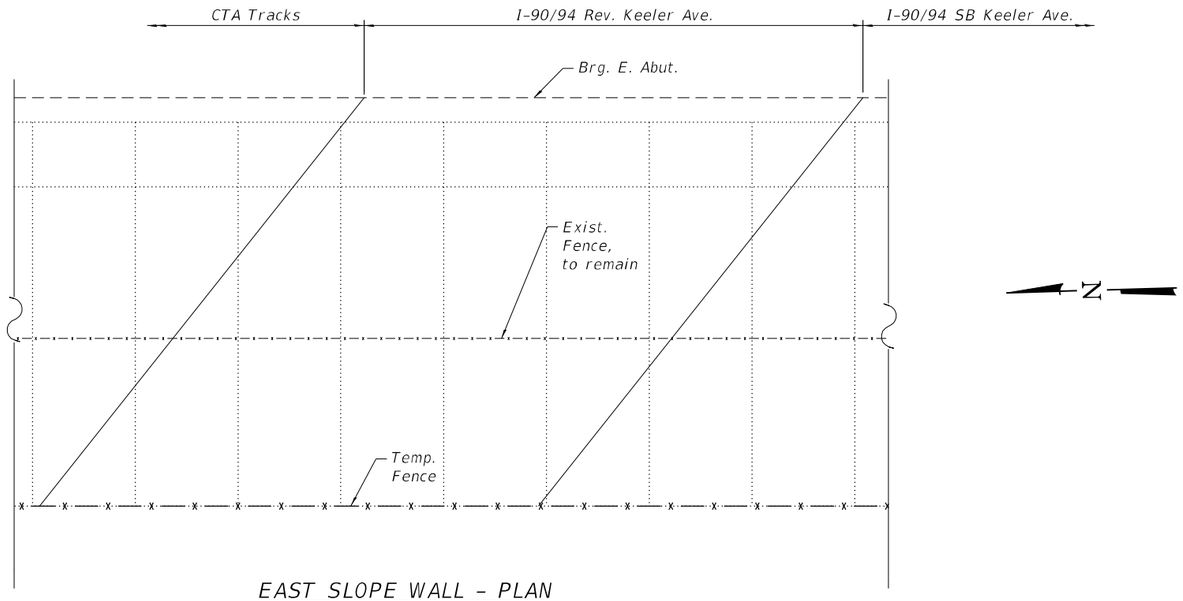
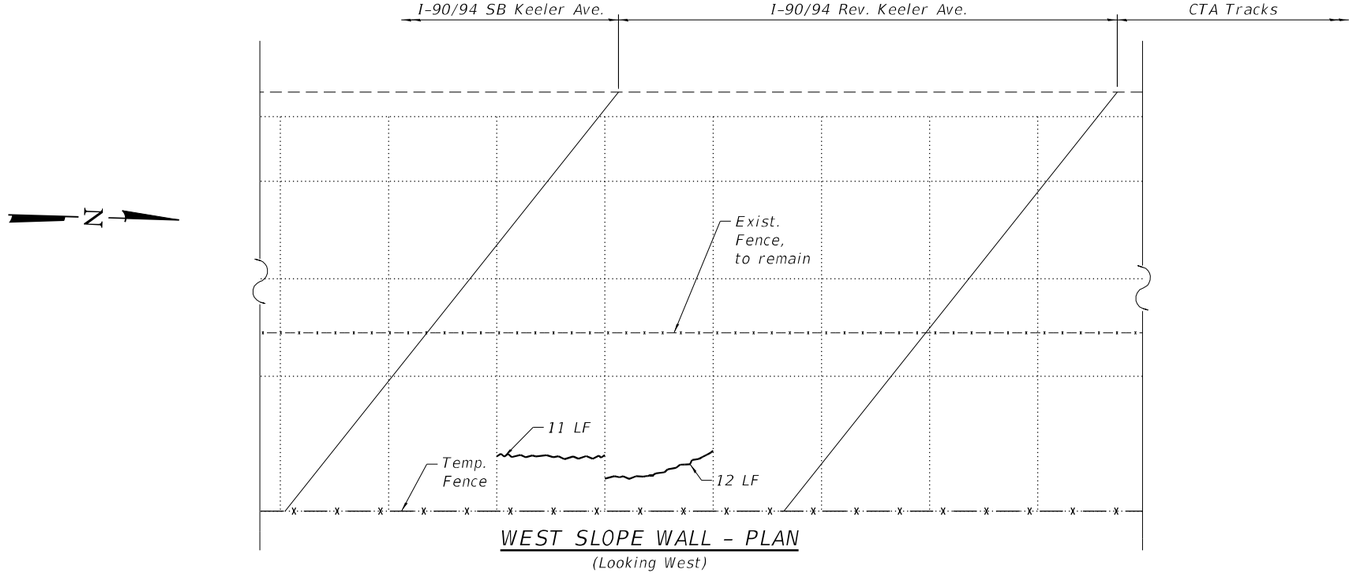


EAST SLOPE WALL – PLAN

(Looking East)



WEST SLOPE WALL – PLAN

(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. Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. – W4.0 x W4.0, weighing 58 lbs. per 100 sq ft

LEGEND

LF	Linear Foot
⁓	Slope Wall Crack Sealing

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Slope Wall Crack Sealing	Ft	23

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL REPAIRS
SN 016-0114 (REV)

SHEET S38-15 OF S38-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1382
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: $MODELNAME$
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Existing Structure: S.N. 016-2459 (I-90 REV over the CTA Blue Line Tunnel) was originally built in 1959 from BCR. The main structure consists of a reinforced concrete culvert, with reinforced concrete retaining walls to the northwest and reinforced concrete deck on steel beams supported by reinforced concrete retaining walls to the southeast. In 1992, the upper part of the trough walls were removed to provide clearance for the reversible lane reconfiguration and widening, and steel beams with reinforced concrete decking were added.

The reversible lanes will be closed to traffic during construction.

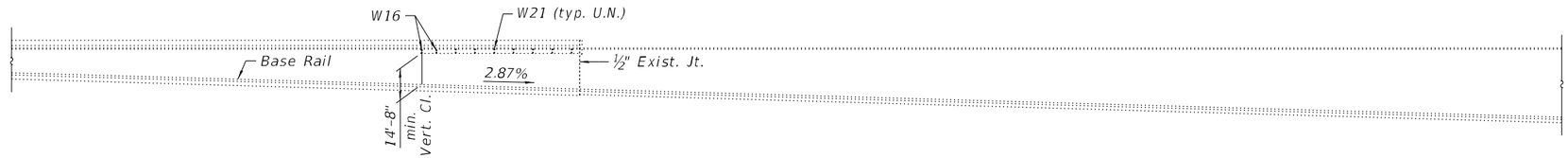
No salvage.

LOADING

HS20-44 and alternate military loading

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification
for Highway Bridges, 17th Edition



ELEVATION

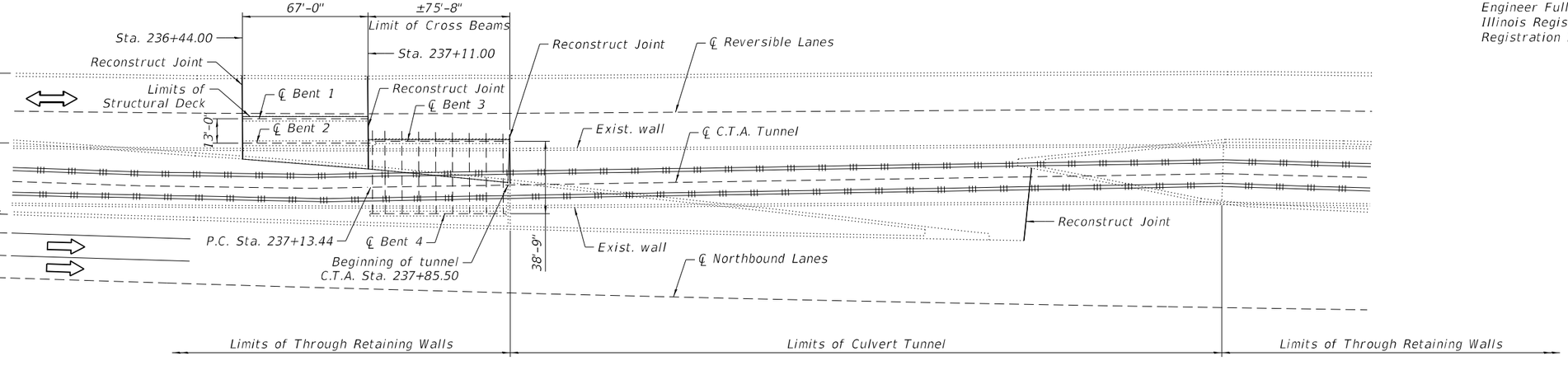
NOTE:

1. All stations are to the ℄ I-90/94 Reversible Roadway and taken from existing plans.
2. No Future Wearing Surface is allowed.

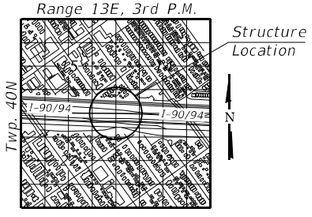
KEVIN WOOD
081-006515
LICENSED
STRUCTURAL
ENGINEER
OF
ILLINOIS

Kevin Wood

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



PLAN



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
REVERSIBLE I-90 OVER C.T.A. TUNNEL
F.A.I. SEC 2020-004-BR
COOK COUNTY
STATION: 639+73.56
STRUCTURE NO. 016-2459 (REV)

MODEL: $MODELNAMES
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\0162459_CTA Tunnel Rev\0162459-62K74-S001-GPER.dgn

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Chicago, Illinois 60631; (773) 399-0112

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S39-01 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1383
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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GENERAL NOTES

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

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

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

4. For SMA overlay on Approach Slab, see Roadway Plans.

5. 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.

6. The Contractor shall take the necessary precautions for the protection of passing vehicles, bicycles and pedestrians from falling objects and/or materials until completion of work.

7. 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".

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

9. Concrete Sealer shall be applied to the designated areas of the deck and parapet.

INDEX OF SHEETS

SCOPE OF WORK

1. Apply Concrete Sealer to the designated areas of the deck and parapet.

2. Install Performed Joint Seal to the transverse deck joints.

2. Perform Structural Repair of Concrete to the Culvert and Walls as noted in the plans.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Preformed Joint Seal 1"	Foot	174		174
Concrete Sealer	Sq Ft	457		457
Cleaning and Painting of Exposed Rebar	Sq Ft	484		484
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		1,324	1,324
Structural Repair of Concrete (Greater than 5 Inches)	Sq Ft		115	115
Maintenance of Lighting System	Cal Mo		6	6

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Chicago, Illinois 60631; (773) 399-0112

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
SN 016-2459
SHEET S39-02 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1384
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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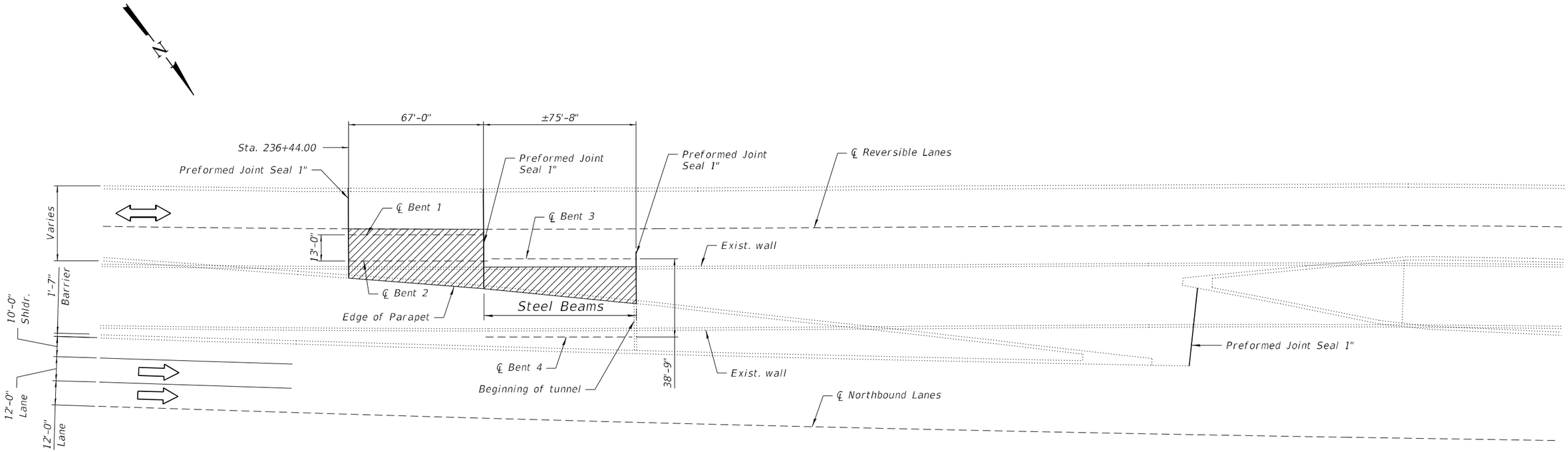
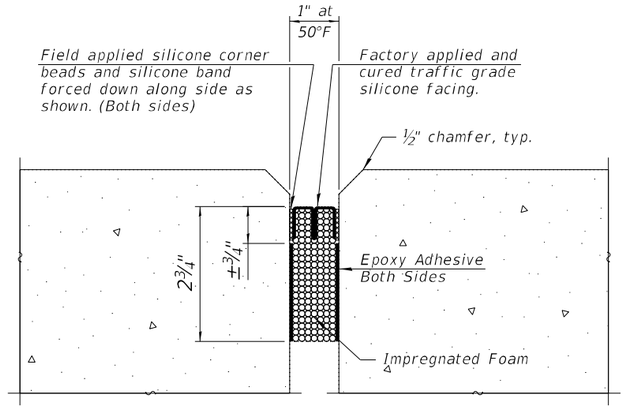


DECK PLAN



PERFORMED JOINT SEAL 1"

NOTES:

1. Concrete Sealer shall be applied to the designated areas of the deck and parapet.

LEGEND

Limits of Concrete Sealer

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Preformed Joint Seal 1"	Foot	174
Concrete Sealer	Sq Ft	457
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Maintenance of Lighting System	Cal Mo	6

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REPAIR PLAN
SN 016-2459
SHEET S39-03 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1385
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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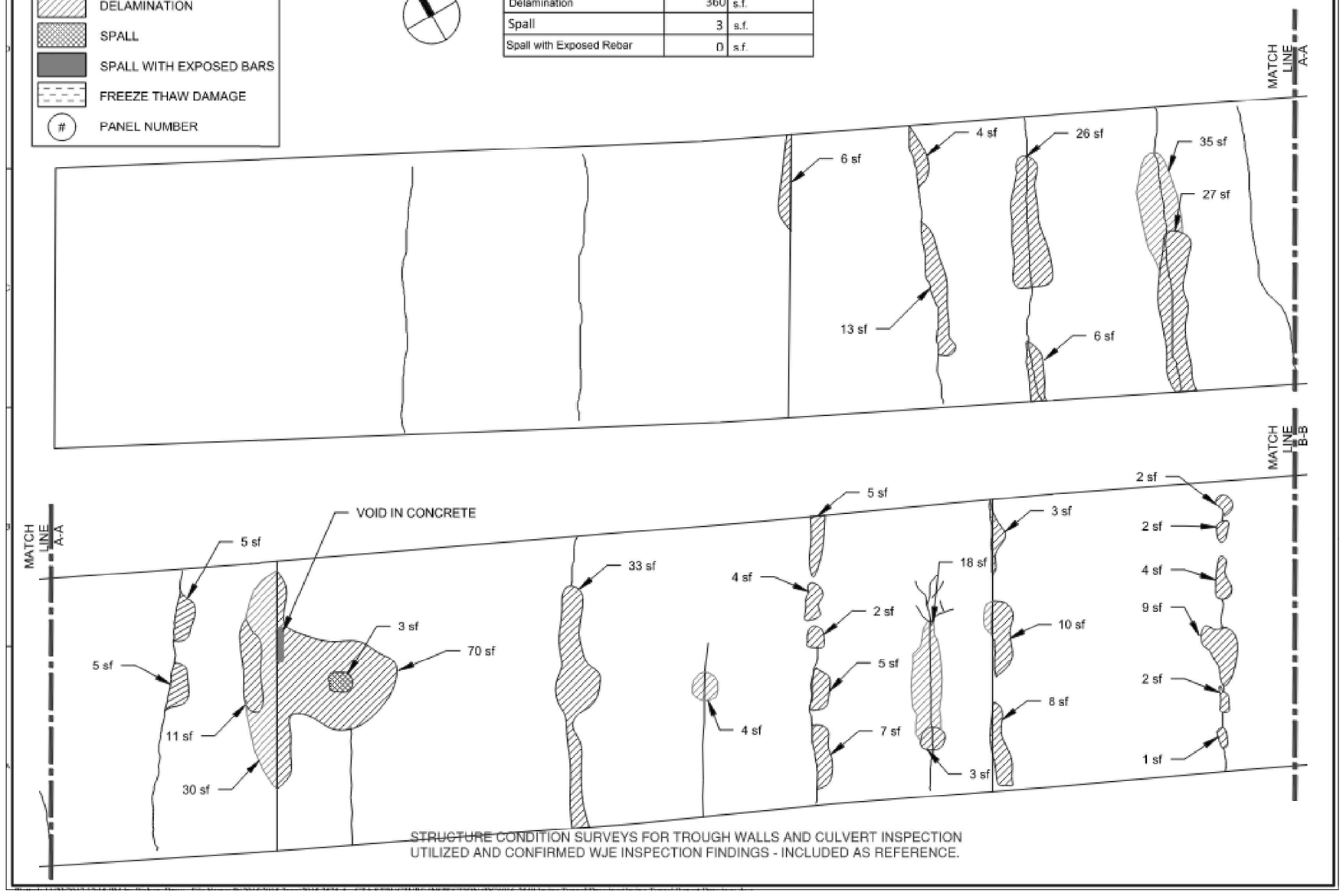
LEGEND:

- CRACK
- DELAMINATION
- SPALL
- SPALL WITH EXPOSED BARS
- FREEZE THAW DAMAGE
- (#) PANEL NUMBER

N

Deterioration Quantities This Sheet		
Repair Type	**Total**	
Delamination	360	s.f.
Spall	3	s.f.
Spall with Exposed Rebar	0	s.f.



PLAN - BOTTOM OF TOP SLAB OF CULVERT

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.*

BILL OF MATERIAL

ITEM	*UNIT*	*QUANTITY*
Cleaning and Painting Exposed Rebar	*Sq Ft*	*363*

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Chicago, Illinois 60631; (773) 399-0112

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT REPAIRS I
SN 016-2459
SHEET S39-04 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1386
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: sMODELNAMES
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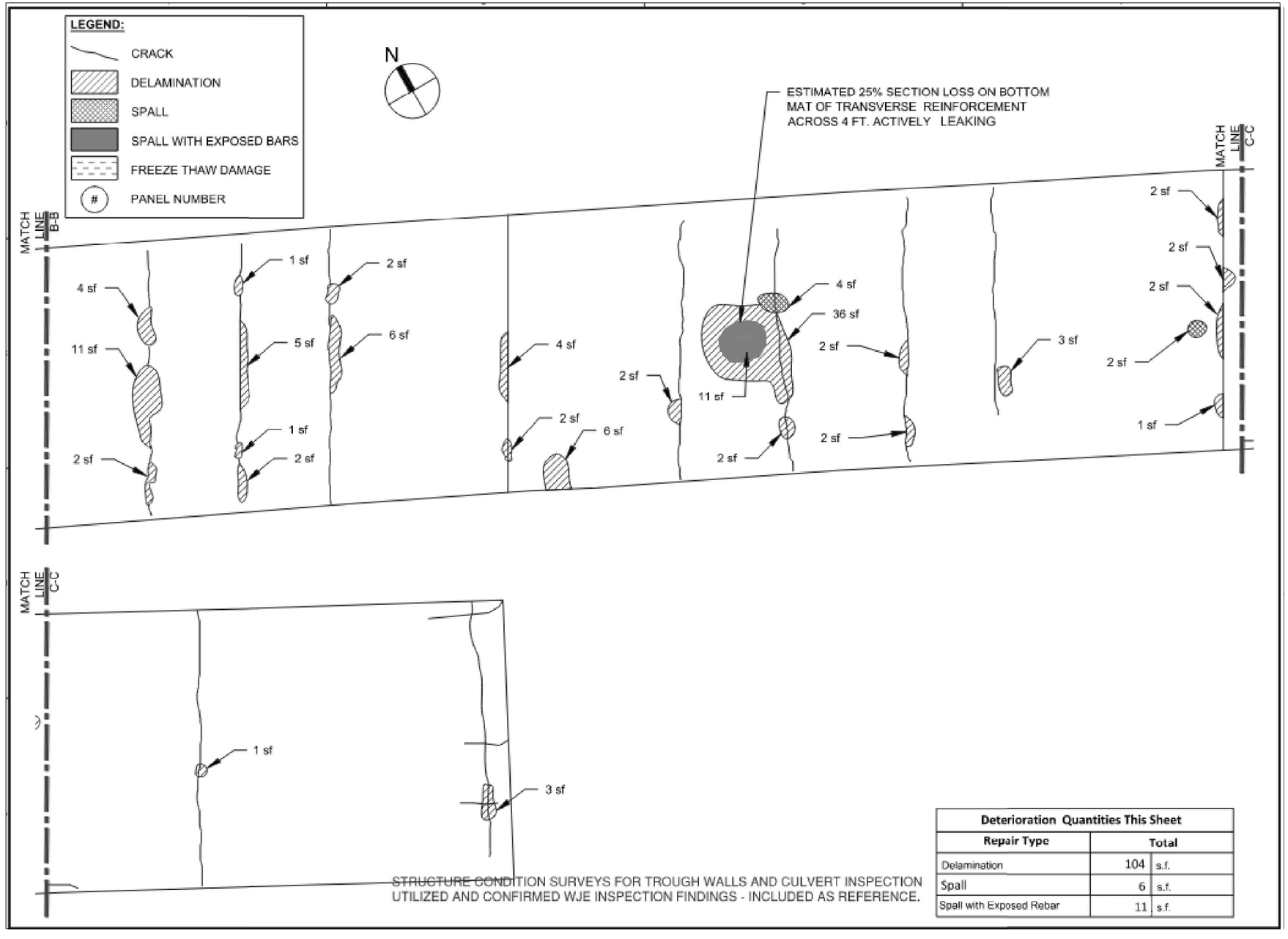

STRUCTURE CONDITION SURVEYS FOR TROUGH WALLS AND CULVERT INSPECTION UTILIZED AND CONFIRMED WJE INSPECTION FINDINGS - INCLUDED AS REFERENCE.

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	104	s.f.
Spall	6	s.f.
Spall with Exposed Rebar	11	s.f.

PLAN - BOTTOM OF TOP SLAB OF CULVERT

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.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Cleaning and Painting Exposed Rebar	Sq Ft	121

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Chicago, Illinois 60631; (773) 399-0112

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT REPAIRS II
SN 016-2459
SHEET S39-05 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1387
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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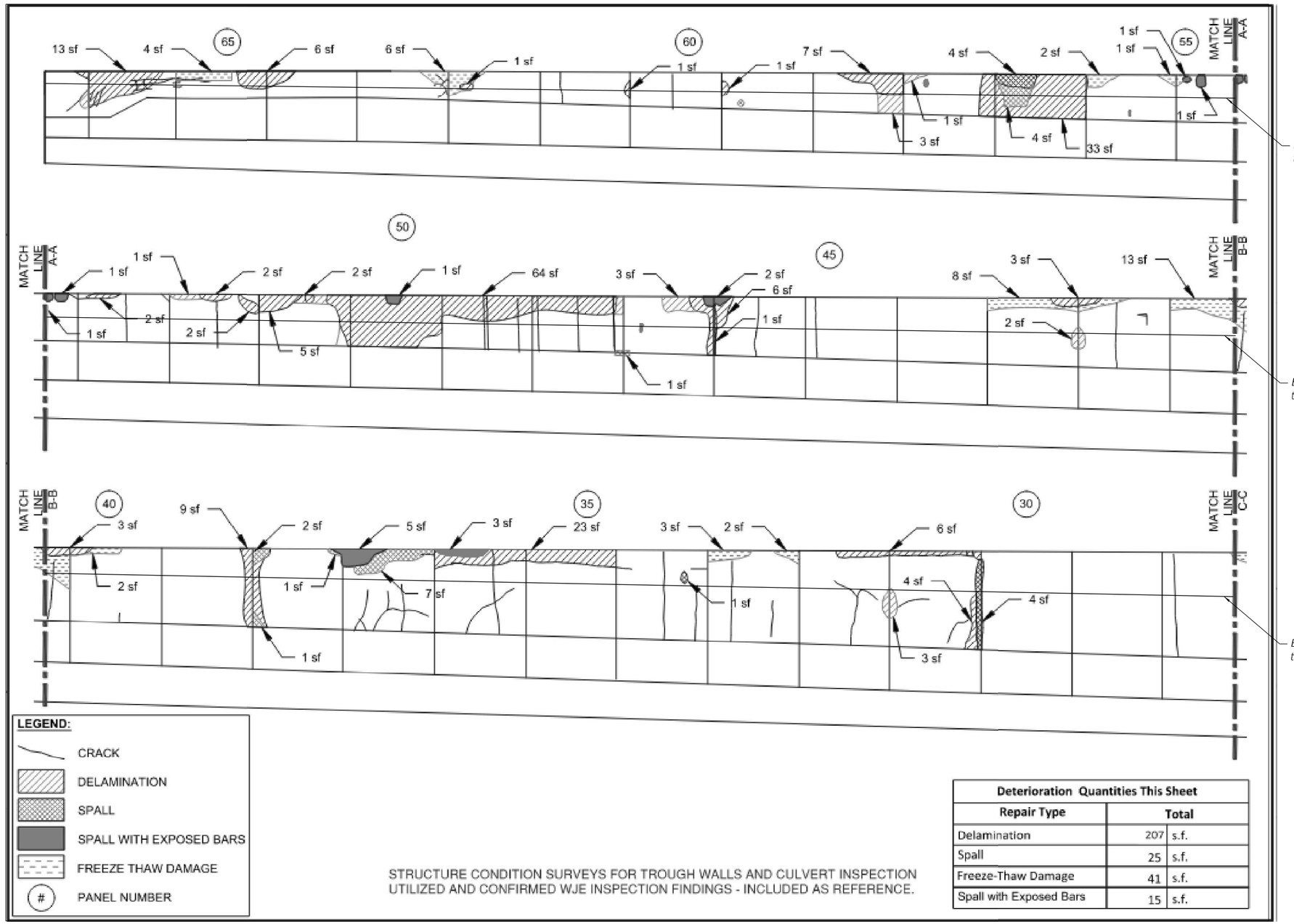

LEGEND:

- CRACK
- DELAMINATION
- SPALL
- SPALL WITH EXPOSED BARS
- FREEZE THAW DAMAGE
- (#) PANEL NUMBER

STRUCTURE CONDITION SURVEYS FOR TROUGH WALLS AND CULVERT INSPECTION UTILIZED AND CONFIRMED WJE INSPECTION FINDINGS - INCLUDED AS REFERENCE.

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	207	s.f.
Spall	25	s.f.
Freeze-Thaw Damage	41	s.f.
Spall with Exposed Bars	15	s.f.

PLAN – NORTH WALL

(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.*

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	273
Structural Repair of Concrete (Depth Equal Greater Than 5 Inches)	Sq Ft	15

MODEL: SMODELNAMES
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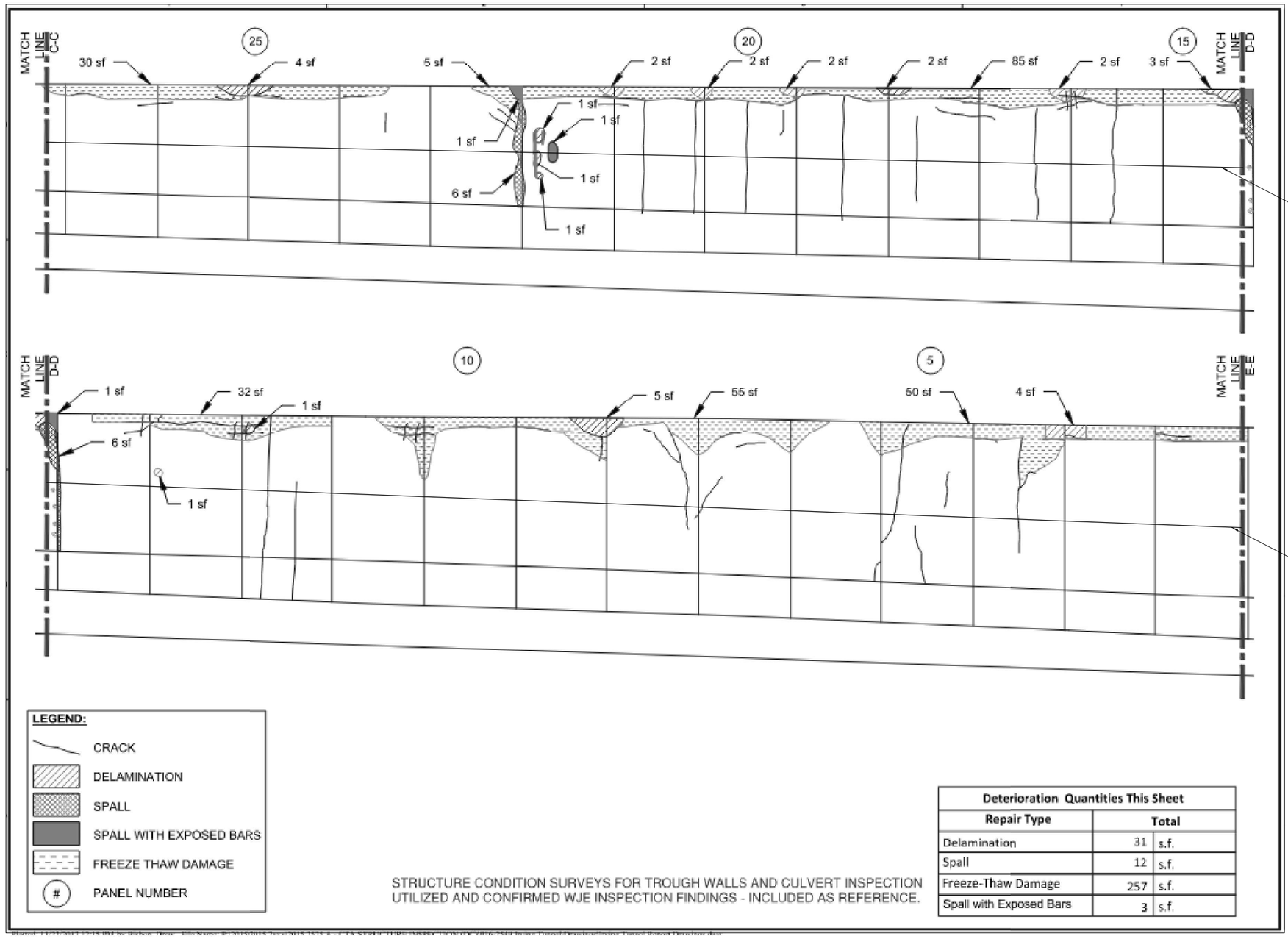
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH WALL REPAIRS I
SN 016-2459
SHEET S39-06 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1388
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



STRUCTURE CONDITION SURVEYS FOR TROUGH WALLS AND CULVERT INSPECTION UTILIZED AND CONFIRMED WJE INSPECTION FINDINGS - INCLUDED AS REFERENCE.

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	31	s.f.
Spall	12	s.f.
Freeze-Thaw Damage	257	s.f.
Spall with Exposed Bars	3	s.f.

PLAN – NORTH WALL

(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.*

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	300
Structural Repair of Concrete (Depth Equal Greater Than 5 Inches)	Sq Ft	3

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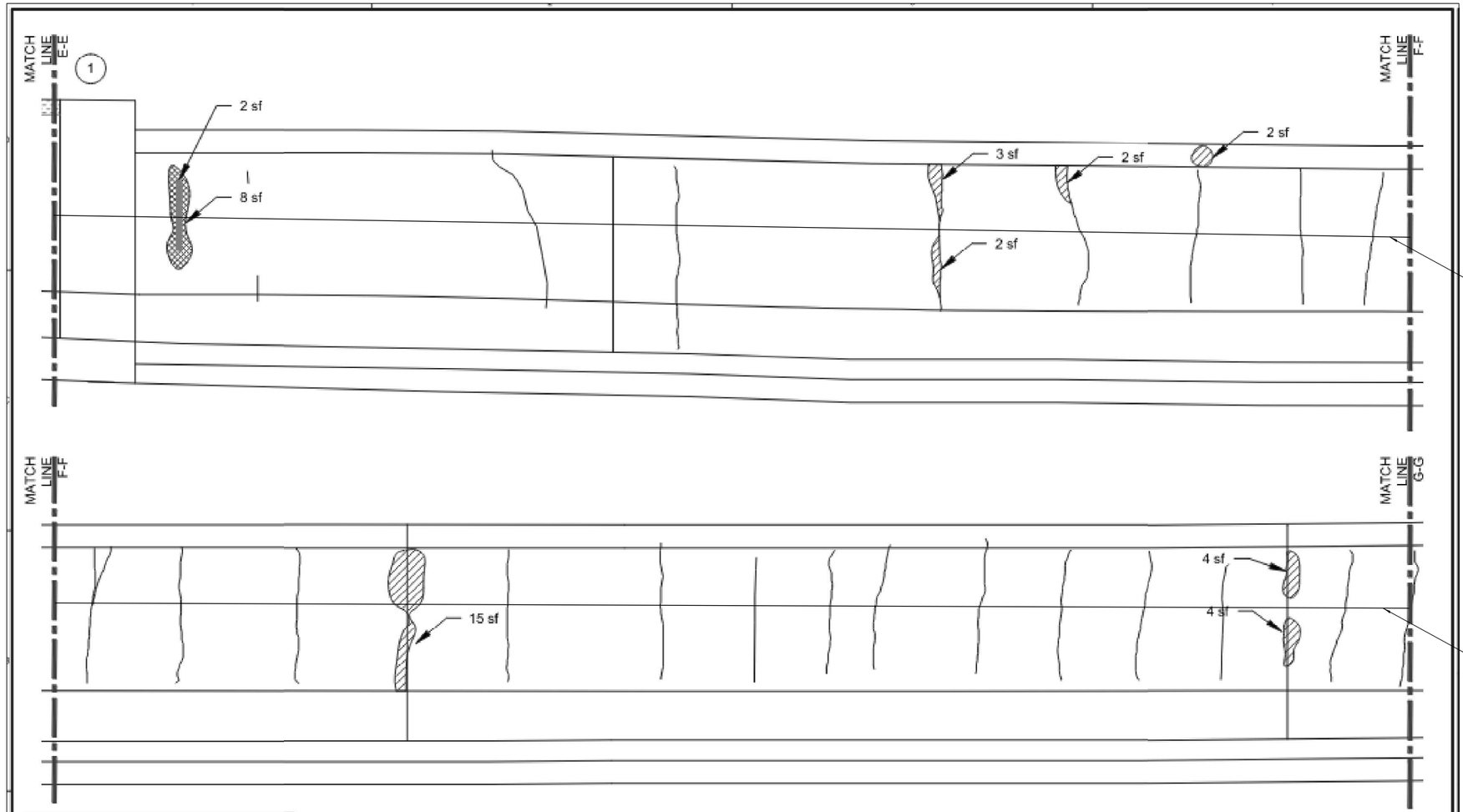
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH WALL REPAIRS II
SN 016-2459
SHEET S39-07 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1389
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



LEGEND:

- CRACK
- DELAMINATION
- SPALL
- SPALL WITH EXPOSED BARS
- FREEZE THAW DAMAGE
- (#) PANEL NUMBER

STRUCTURE CONDITION SURVEYS FOR TROUGH WALLS AND CULVERT INSPECTION UTILIZED AND CONFIRMED WJE INSPECTION FINDINGS - INCLUDED AS REFERENCE.

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	32	s.f.
Spall	8	s.f.
Spall with Exposed Rebar	2	s.f.

PLAN – NORTH WALL

(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.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	40
Structural Repair of Concrete (Depth Equal Greater Than 5 Inches)	Sq Ft	2

MODEL: SMODELNAMES
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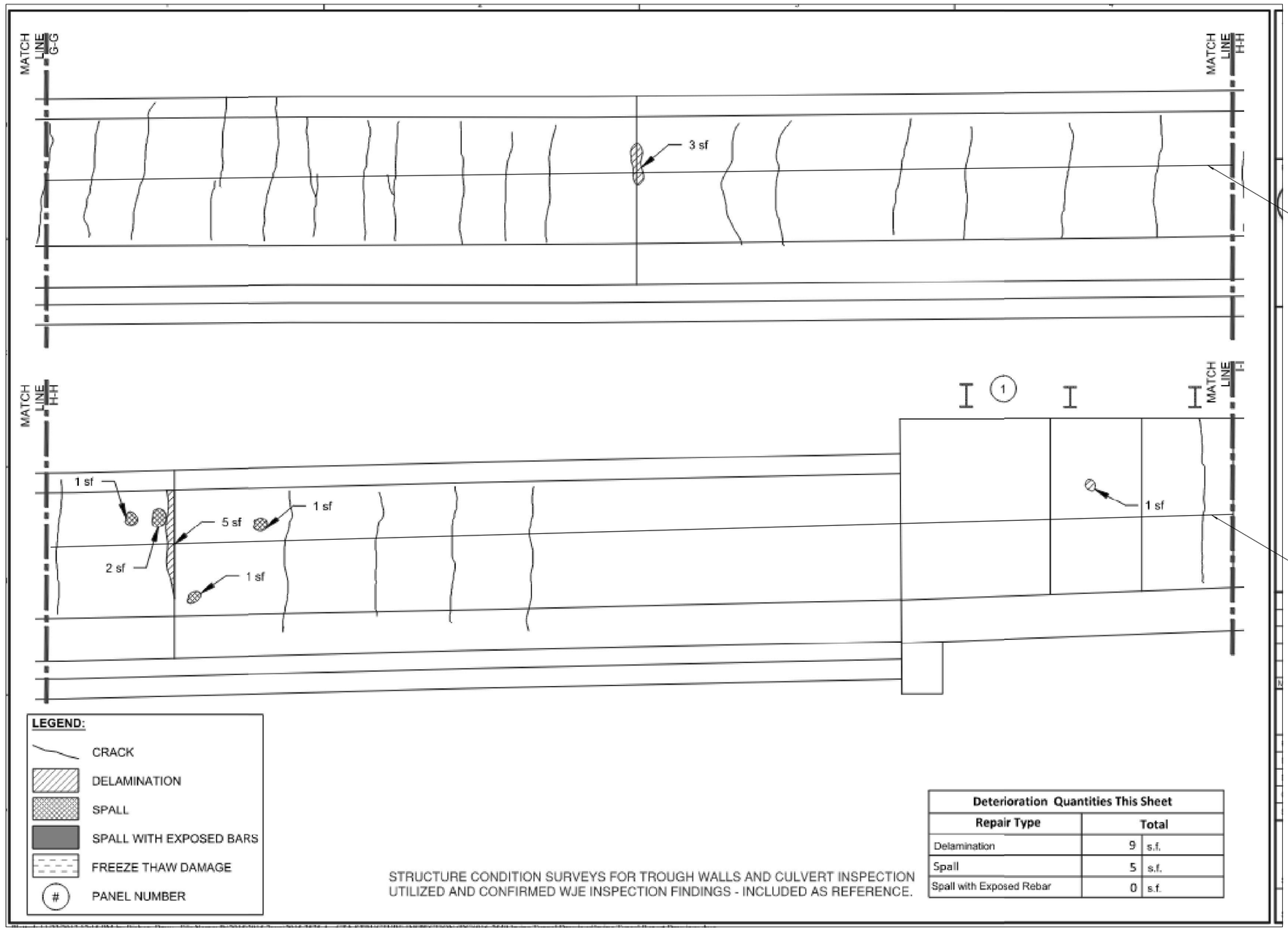
PLOT SCALE =	DRAWN -	J.T.B.	REVISED -	
PLOT DATE =	CHECKED -	K.G.W.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH WALL REPAIRS III
SN 016-2459
SHEET S39-08 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1390
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		



Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	9	s.f.
Spall	5	s.f.
Spall with Exposed Rebar	0	s.f.

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.

BILL OF MATERIAL

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

PLAN – NORTH WALL

(Looking North)

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH WALL REPAIRS IV
SN 016-2459
SHEET S39-09 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1391
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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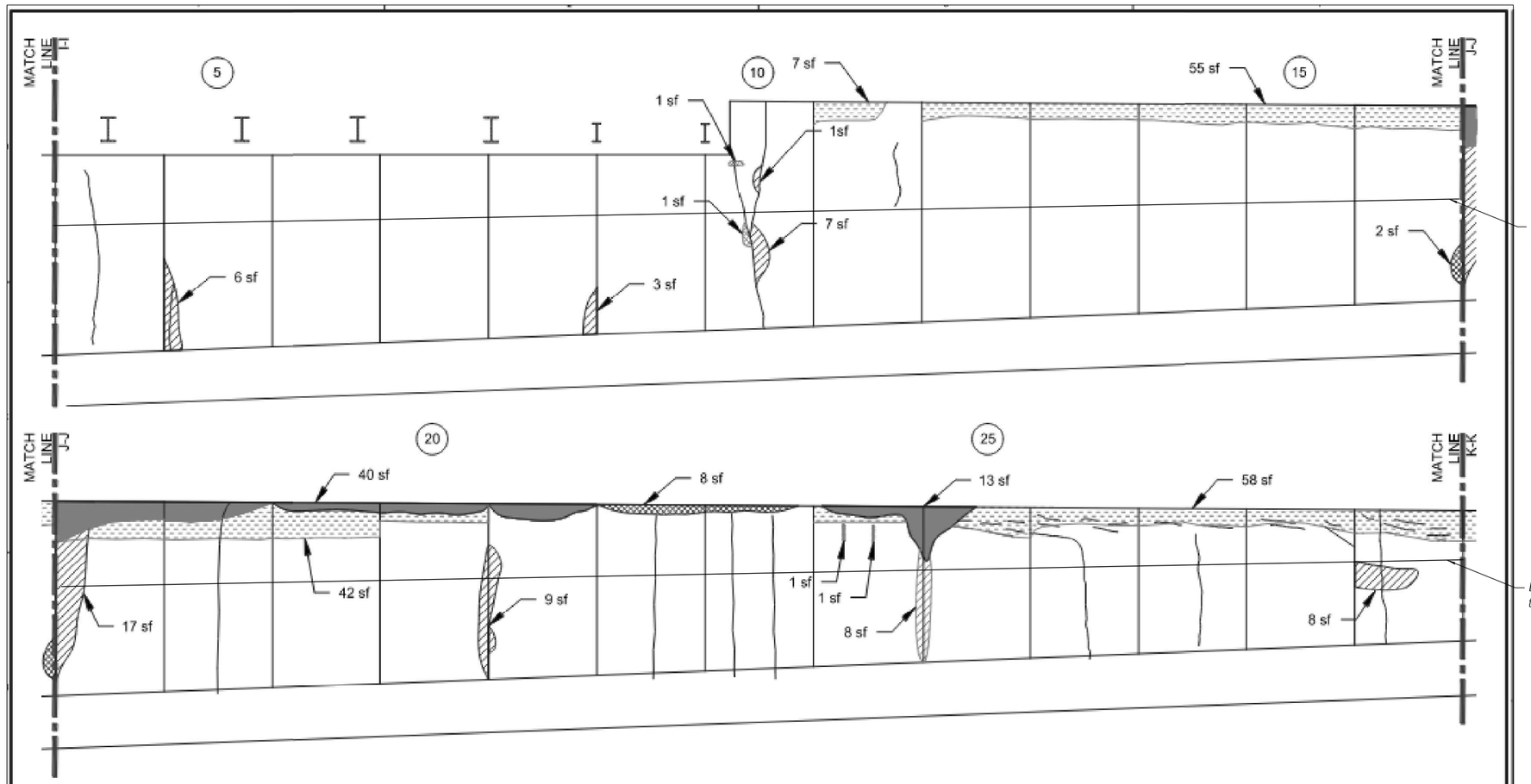

LEGEND:

- CRACK
- DELAMINATION
- SPALL
- SPALL WITH EXPOSED BARS
- FREEZE THAW DAMAGE
- (#) PANEL NUMBER

STRUCTURE CONDITION SURVEYS FOR TROUGH WALLS AND CULVERT INSPECTION UTILIZED AND CONFIRMED WJE INSPECTION FINDINGS - INCLUDED AS REFERENCE.

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	59	s.f.
Spall	12	s.f.
Freeze-Thaw Damage	162	s.f.
Spall with Exposed Bars	55	s.f.

PLAN – NORTH WALL

(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.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	233
Structural Repair of Concrete (Depth Equal Greater Than 5 Inches)	Sq Ft	55

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH WALL REPAIRS V
SN 016-2459
SHEET S39-10 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1392
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: SMODELNAMES
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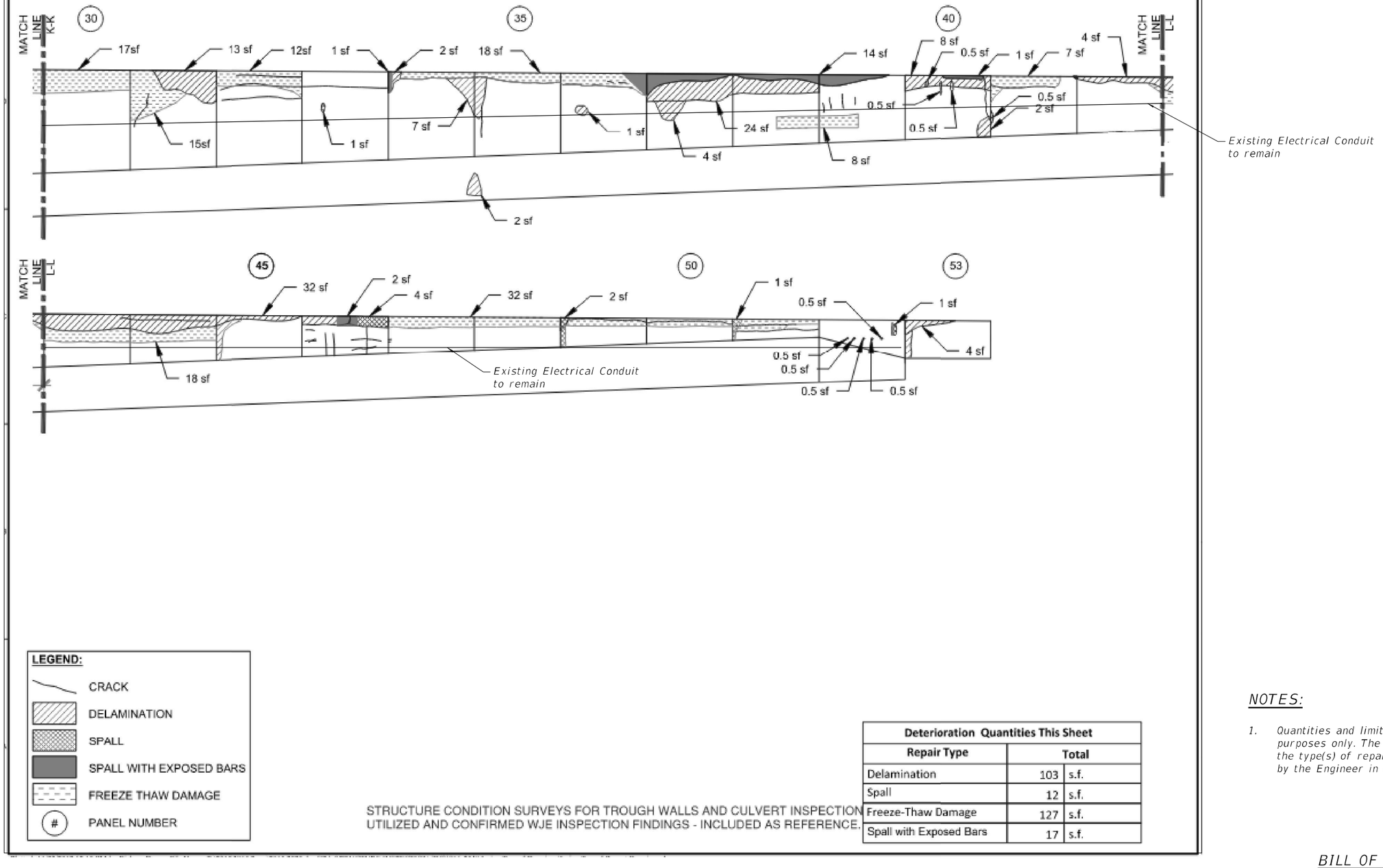


LEGEND:

- CRACK
- DELAMINATION
- SPALL
- SPALL WITH EXPOSED BARS
- FREEZE THAW DAMAGE
- (#) PANEL NUMBER

STRUCTURE CONDITION SURVEYS FOR TROUGH WALLS AND CULVERT INSPECTION UTILIZED AND CONFIRMED WJE INSPECTION FINDINGS - INCLUDED AS REFERENCE.

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	103	s.f.
Spall	12	s.f.
Freeze-Thaw Damage	127	s.f.
Spall with Exposed Bars	17	s.f.

PLAN – NORTH WALL

(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.*

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	244
Structural Repair of Concrete (Depth Equal Greater Than 5 Inches)	Sq Ft	18

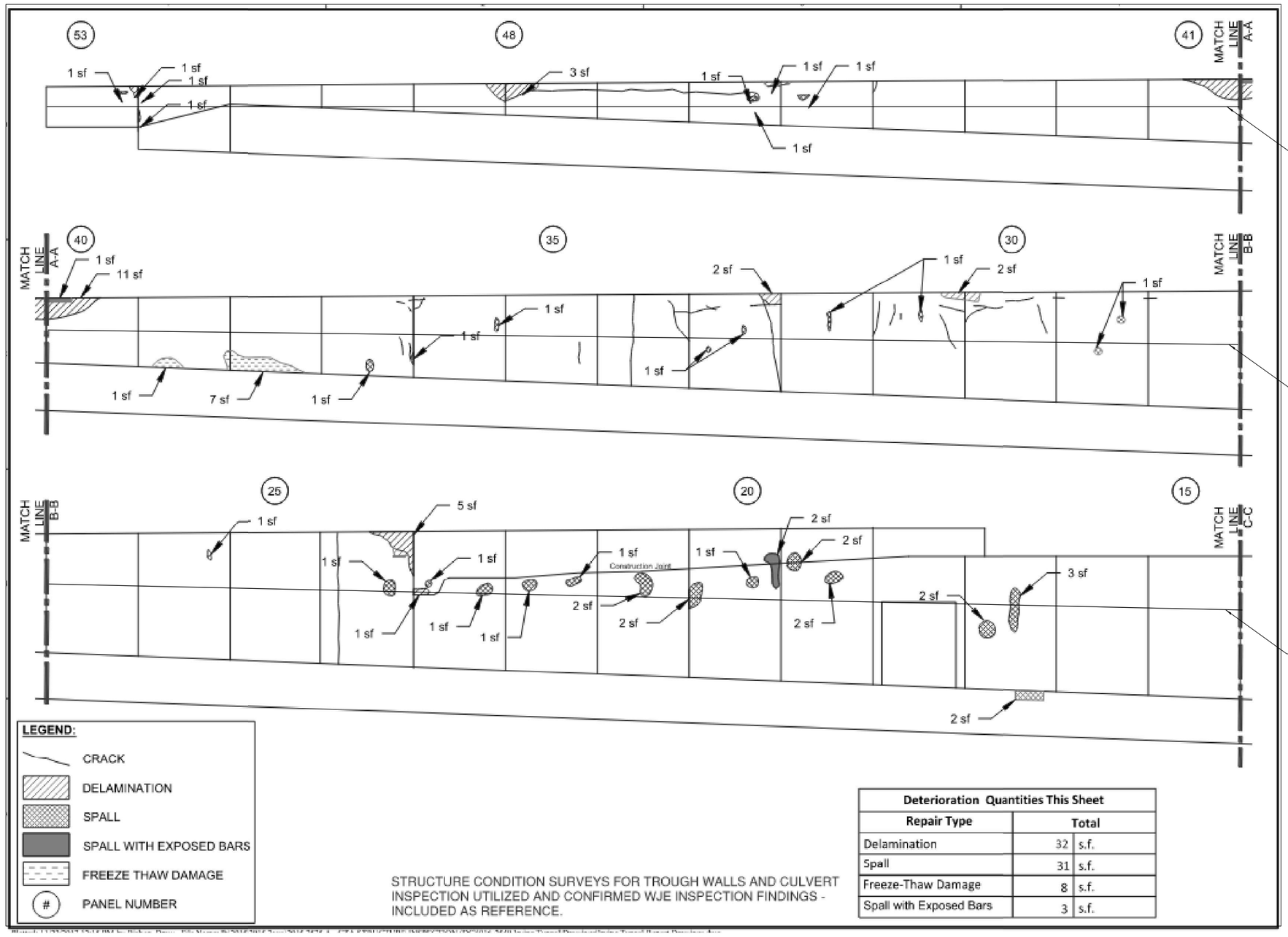
GRAEF
8501 W. Higgins Road; Suite 280
Chicago, Illinois 60631; (773) 399-0112

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH WALL REPAIRS VI
SN 016-2459
SHEET S39-11 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1393
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



STRUCTURE CONDITION SURVEYS FOR TROUGH WALLS AND CULVERT INSPECTION UTILIZED AND CONFIRMED WJE INSPECTION FINDINGS - INCLUDED AS REFERENCE.

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	32	s.f.
Spall	31	s.f.
Freeze-Thaw Damage	8	s.f.
Spall with Exposed Bars	3	s.f.

PLAN – SOUTH WALL

(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.*

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	71
Structural Repair of Concrete (Depth Equal Greater Than 5 Inches)	Sq Ft	3

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH WALL REPAIRS I
SN 016-2459
SHEET S39-12 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1394
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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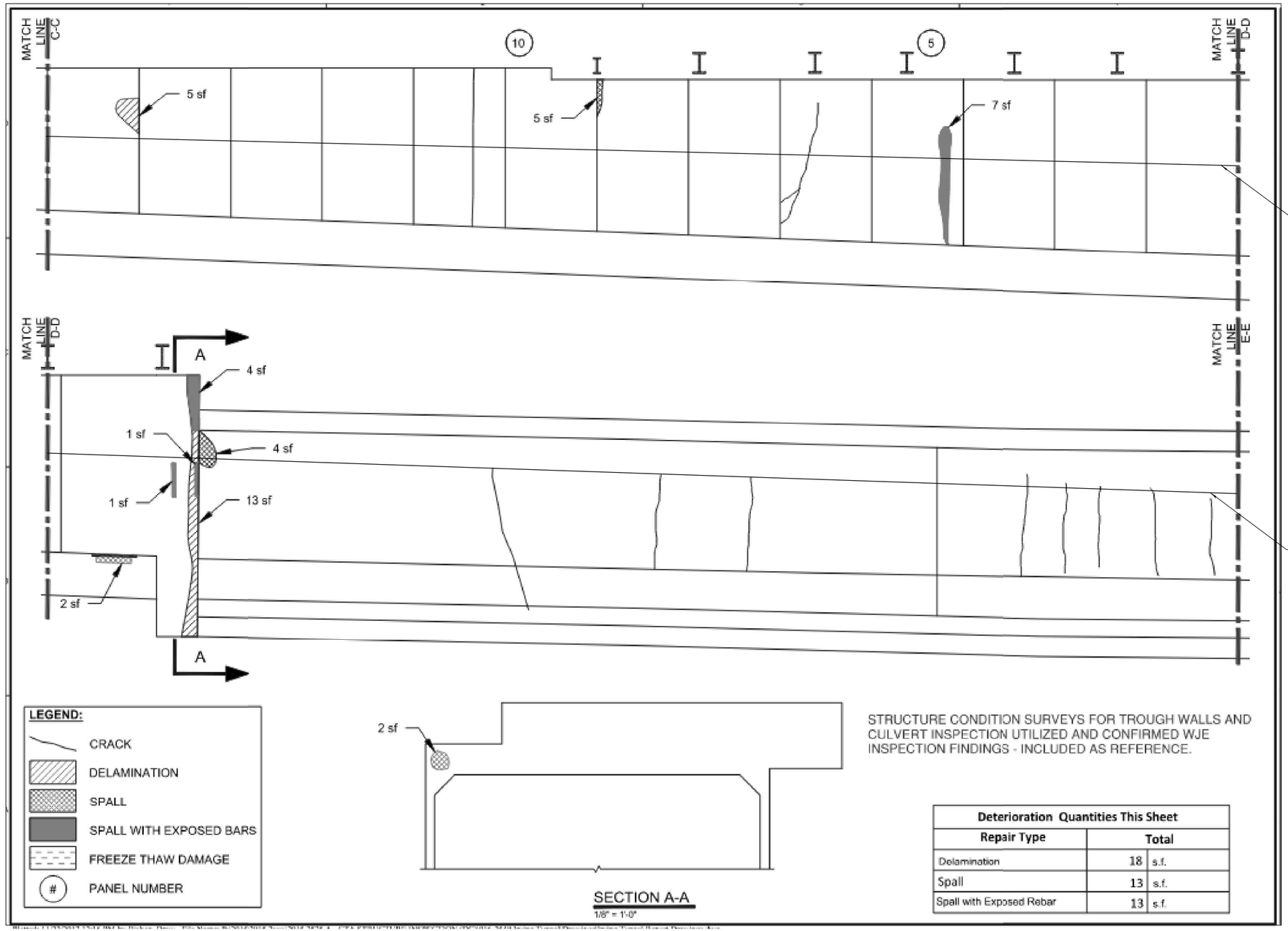


STRUCTURE CONDITION SURVEYS FOR TROUGH WALLS AND CULVERT INSPECTION UTILIZED AND CONFIRMED WJE INSPECTION FINDINGS - INCLUDED AS REFERENCE.

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	18	s.f.
Spall	13	s.f.
Spall with Exposed Rebar	13	s.f.

PLAN – SOUTH WALL

(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.*

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	31
Structural Repair of Concrete (Depth Equal Greater Than 5 Inches)	Sq Ft	13

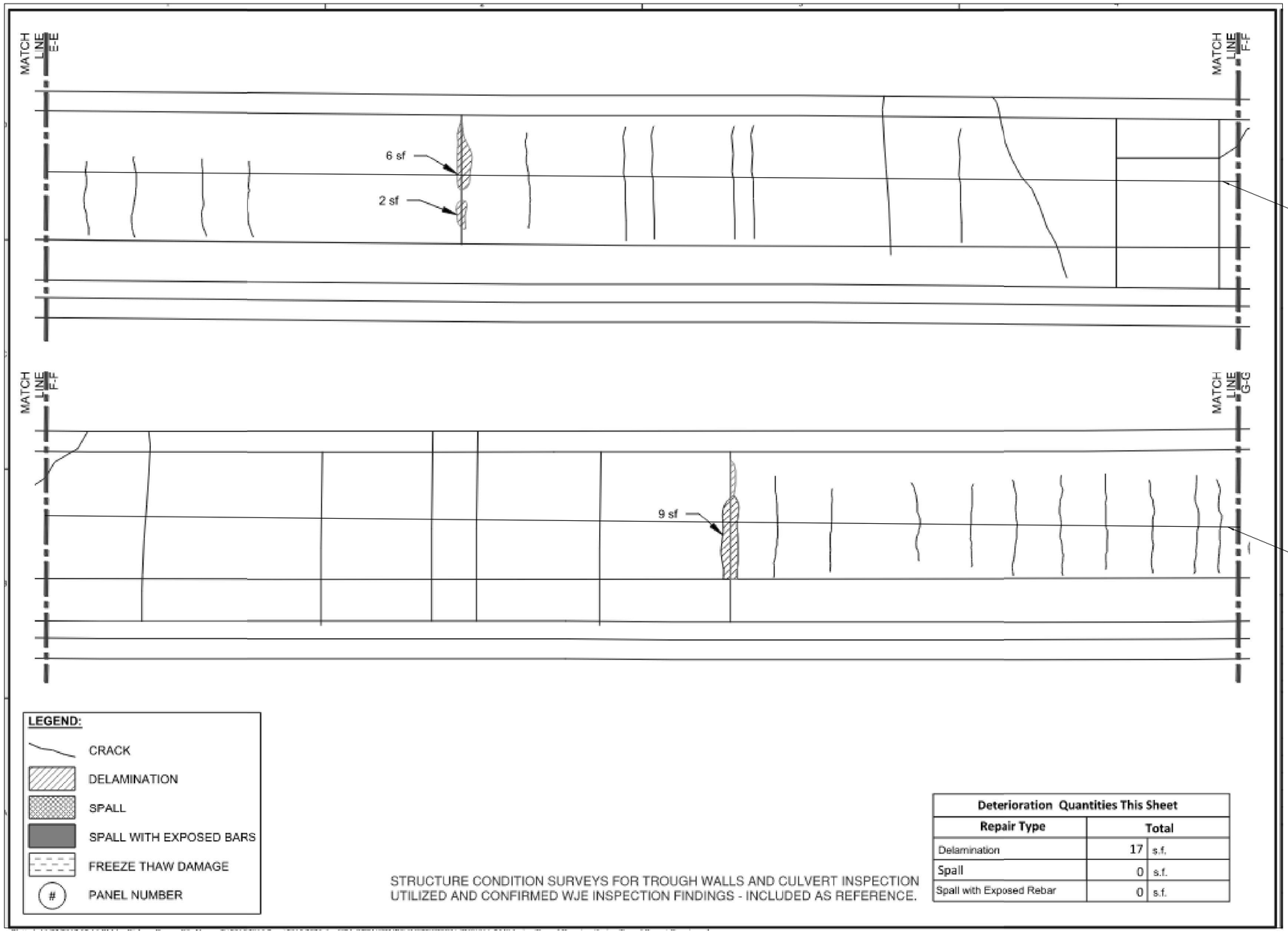
GRAEF
8501 W. Higgins Road; Suite 280
Chicago, Illinois 60631; (773) 399-0112

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH WALL REPAIRS II
SN 016-2459
SHEET S39-13 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1395
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		



Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	17	s.f.
Spall	0	s.f.
Spall with Exposed Rebar	0	s.f.

PLAN – SOUTH WALL

(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.

BILL OF MATERIAL

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

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH WALL REPAIRS III
SN 016-2459

SHEET S39-14 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1396
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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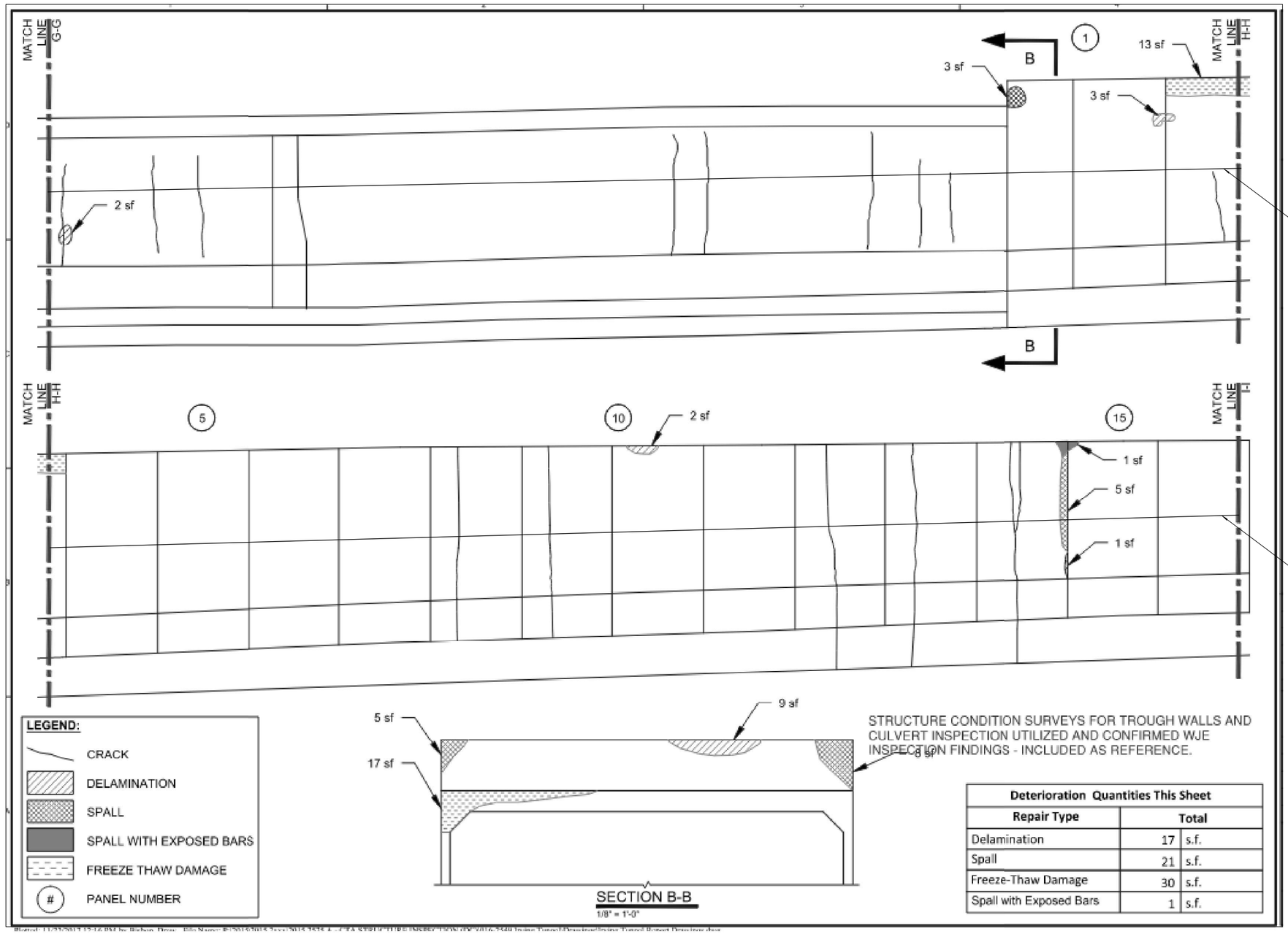

STRUCTURE CONDITION SURVEYS FOR TROUGH WALLS AND CULVERT INSPECTION UTILIZED AND CONFIRMED WJE INSPECTION FINDINGS - INCLUDED AS REFERENCE.

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	17	s.f.
Spall	21	s.f.
Freeze-Thaw Damage	30	s.f.
Spall with Exposed Bars	1	s.f.

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.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	68
Structural Repair of Concrete (Depth Equal Greater Than 5 Inches)	Sq Ft	1

PLAN – SOUTH WALL

(Looking South)

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH WALL REPAIRS IV
SN 016-2459

SHEET S39-15 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1397
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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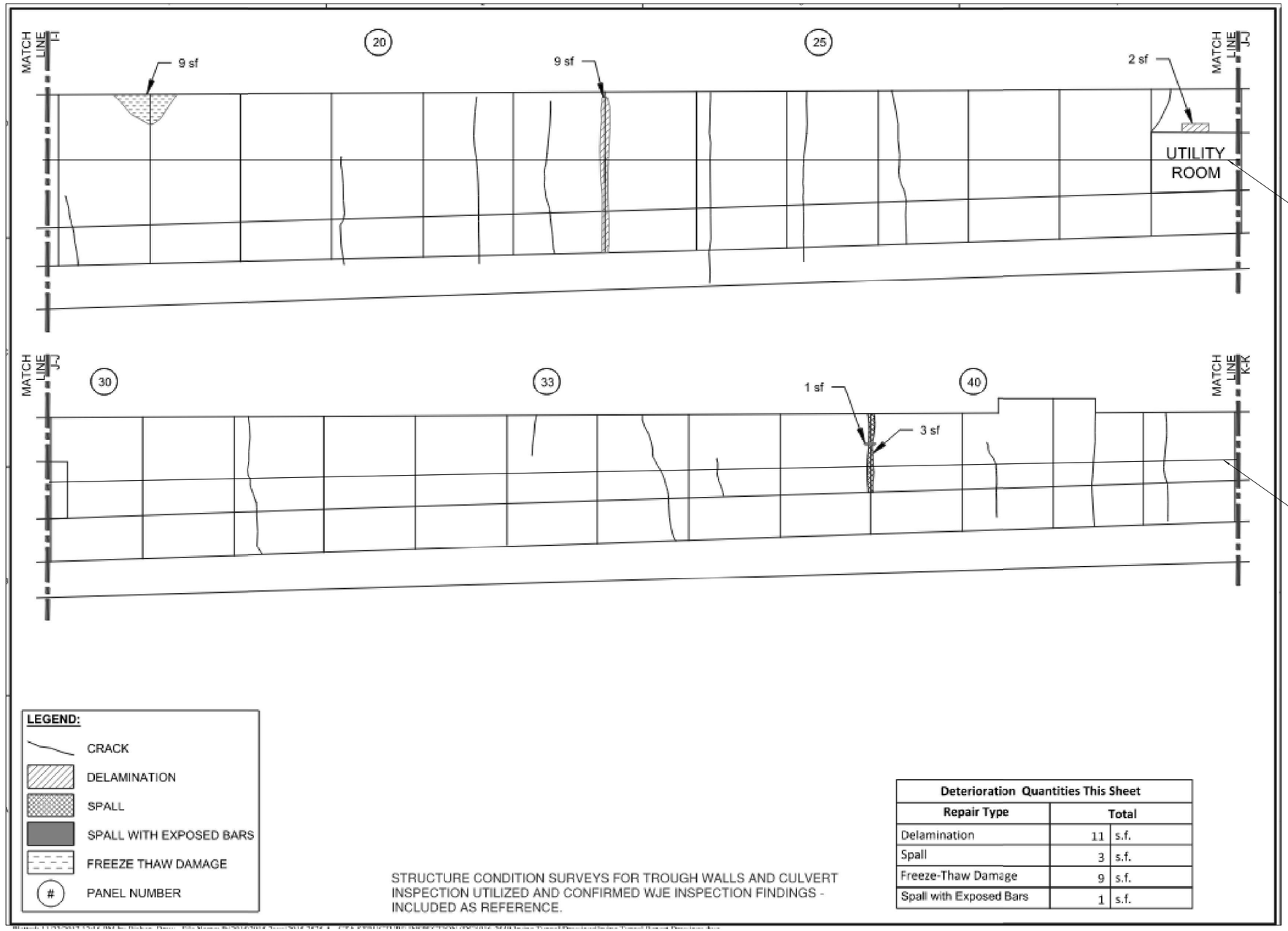

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	11	s.f.
Spall	3	s.f.
Freeze-Thaw Damage	9	s.f.
Spall with Exposed Bars	1	s.f.

PLAN – SOUTH WALL

(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.*

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	23
Structural Repair of Concrete (Depth Equal Greater Than 5 Inches)	Sq Ft	1

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH WALL REPAIRS V
SN 016-2459

SHEET S39-16 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1398
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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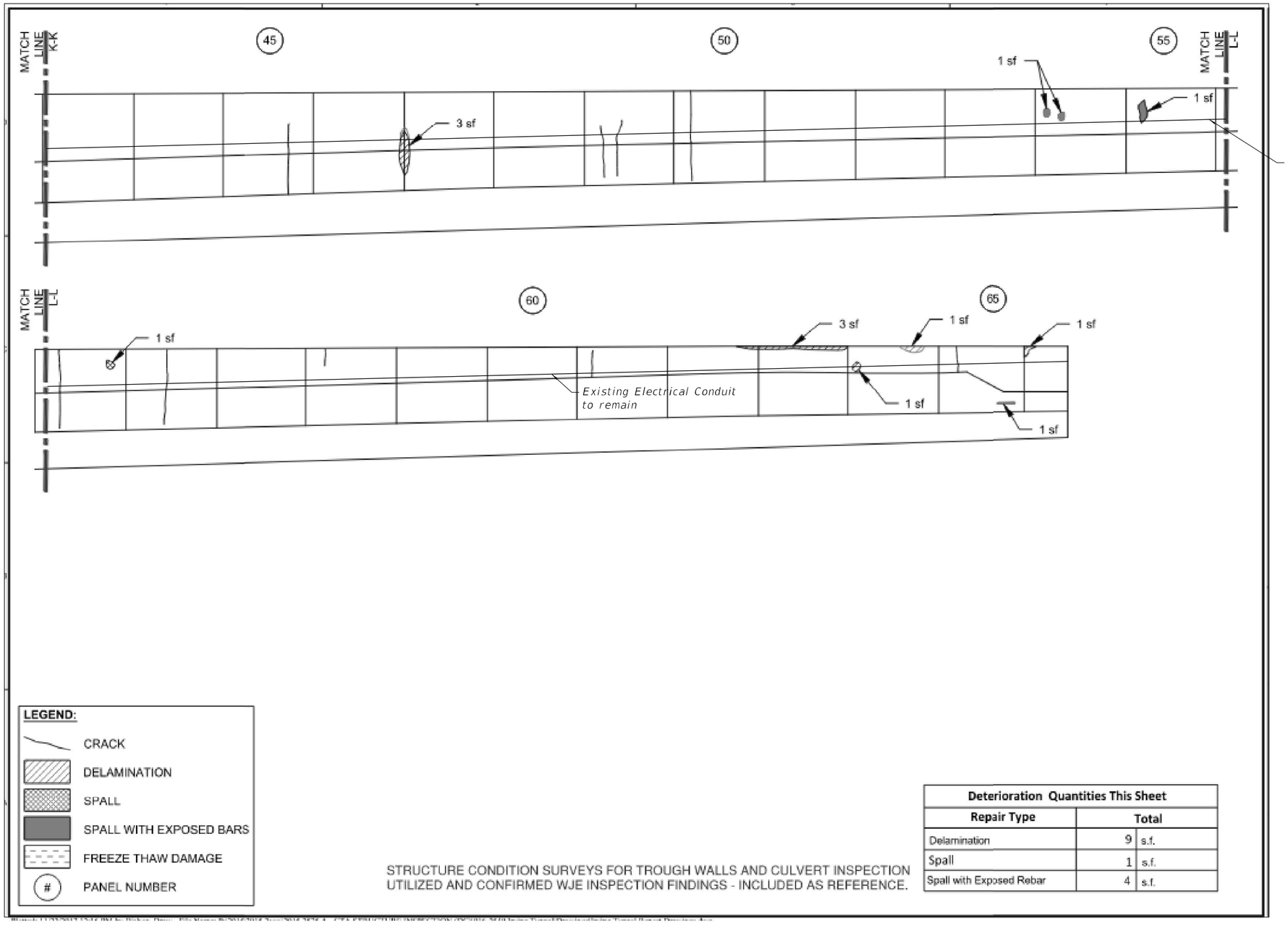


LEGEND:

- CRACK
- DELAMINATION
- SPALL
- SPALL WITH EXPOSED BARS
- FREEZE THAW DAMAGE
- (#) PANEL NUMBER

STRUCTURE CONDITION SURVEYS FOR TROUGH WALLS AND CULVERT INSPECTION UTILIZED AND CONFIRMED WJE INSPECTION FINDINGS - INCLUDED AS REFERENCE.

Deterioration Quantities This Sheet		
Repair Type	Total	
Delamination	9	s.f.
Spall	1	s.f.
Spall with Exposed Rebar	4	s.f.

PLAN - SOUTH WALL

(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.*

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	10
Structural Repair of Concrete (Depth Equal Greater Than 5 Inches)	Sq Ft	4

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH WALL REPAIRS VI
SN 016-2459
SHEET S39-17 OF S39-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	1399
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

Existing Structure: S.N. 016-0112 was originally built in 1957. 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 213'-7¾" and an out-to-out deck width of 89'-0½". The superstructure consists of a reinforced concrete deck with thickness varying from 7½" to 10" supported on three span continuous steel beams of span lengths 65'-4", 76'-0", and 65'-4". The substructure consists of reinforced concrete piers on spread footings and reinforced concrete abutments on concrete piles.

Traffic is to be maintained utilizing stage construction.

No salvage.

DESIGN SPECIFICATION

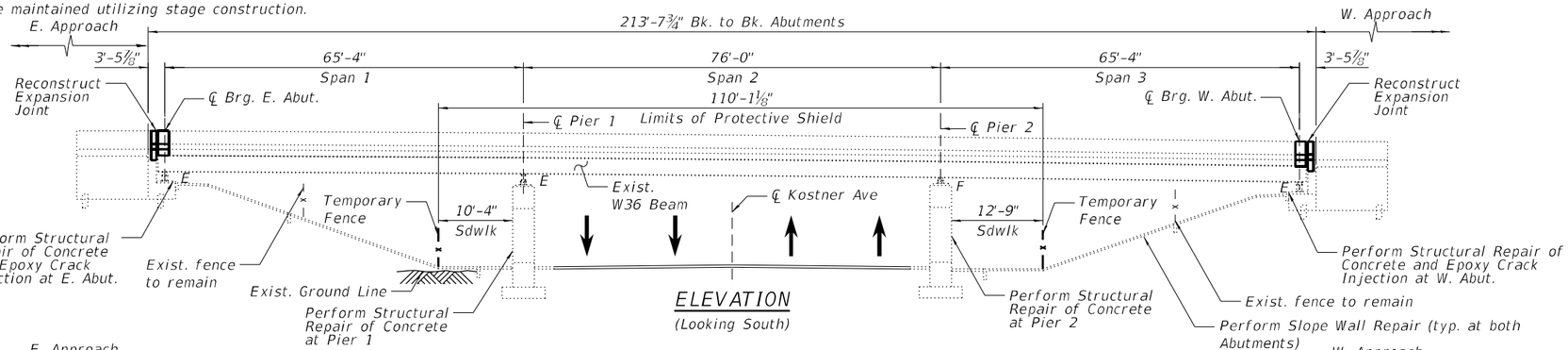
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

RECONSTRUCTION 2013

2002 AASHTO Standard Specifications for Highway Bridges

RECONSTRUCTION 1993

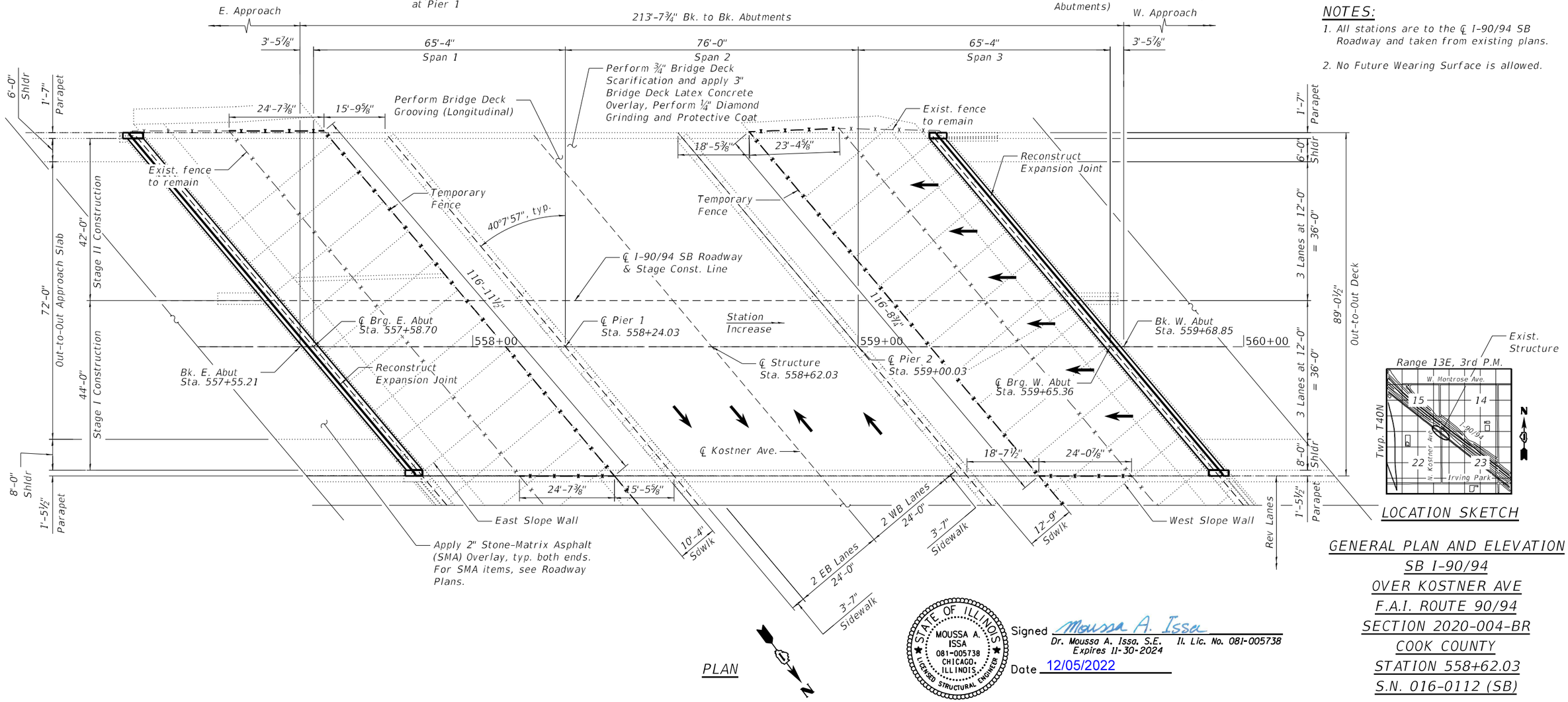
1989 AASHTO Standard Specifications for Highway Bridges with 1990 & 1991 Interim Specifications



ELEVATION
(Looking South)

NOTES:

1. All stations are to the ℄ I-90/94 SB Roadway and taken from existing plans.
2. No Future Wearing Surface is allowed.



PLAN

LOCATION SKETCH

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 12/05/2022

GENERAL PLAN AND ELEVATION
SB I-90/94
OVER KOSTNER AVE
F.A.I. ROUTE 90/94
SECTION 2020-004-BR
COOK COUNTY
STATION 558+62.03
S.N. 016-0112 (SB)

HBM ENGINEERING GROUP, LLC

USER NAME =	DESIGNED - LAB, CP	REVISED -	
	CHECKED - MI	REVISED -	
PLOT SCALE =	DRAWN - CP	REVISED -	
PLOT DATE =	DATE - 12/5/2022	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-0112 (SB)
SHEET S40-01 OF S40-19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2020-004-BR	COOK	1492	1400
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

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