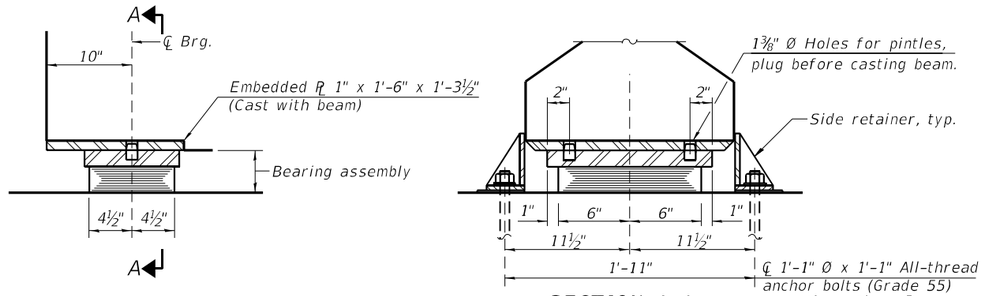
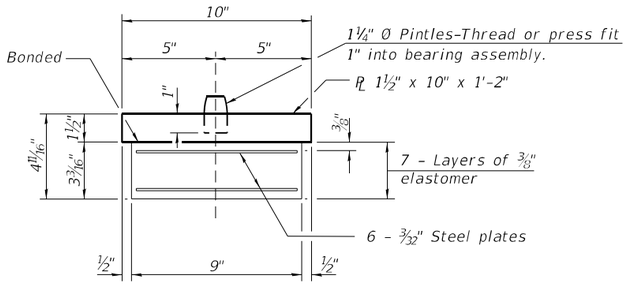


ELEVATION AT PIERS

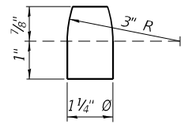
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. FOR 36" PPC I-BEAM

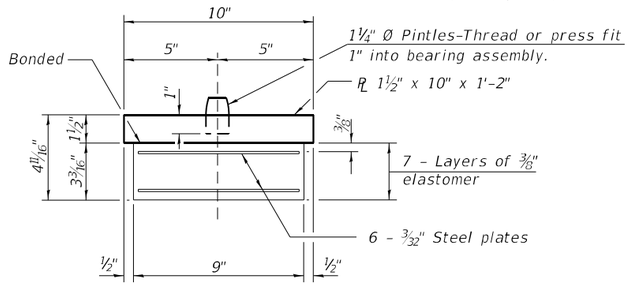
(2 Required)



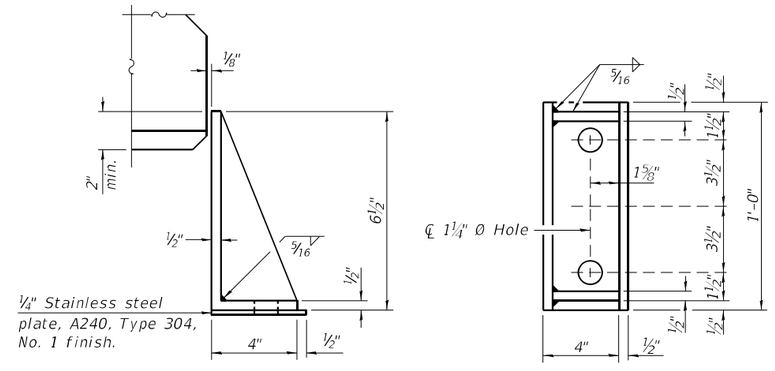
BEARING ASSEMBLY



PINTLE



BEARING ASSEMBLY



SIDE RETAINER

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

Notes:

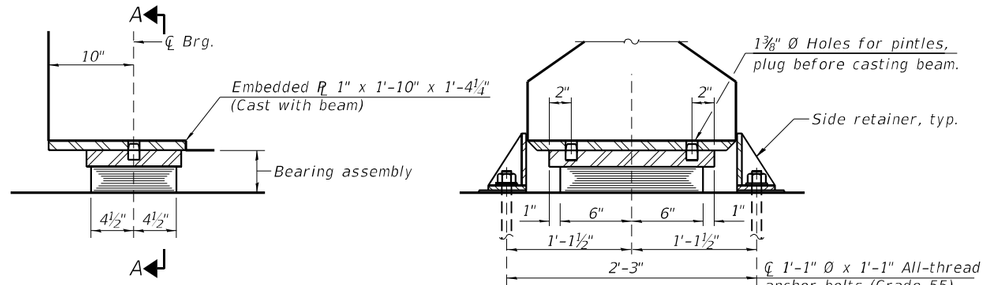
Side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.

See sheets S08-101 and S08-103 for additional details of embedded plate.

Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

All exposed bearing plates and side retainers shall be hot dip galvanized according to AASHTO M111.

Burn existing anchor bolts flush with existing concrete surface. Grind existing anchor bolt smooth and seal with epoxy. Cost shall be included in Removal of Existing Bearings.

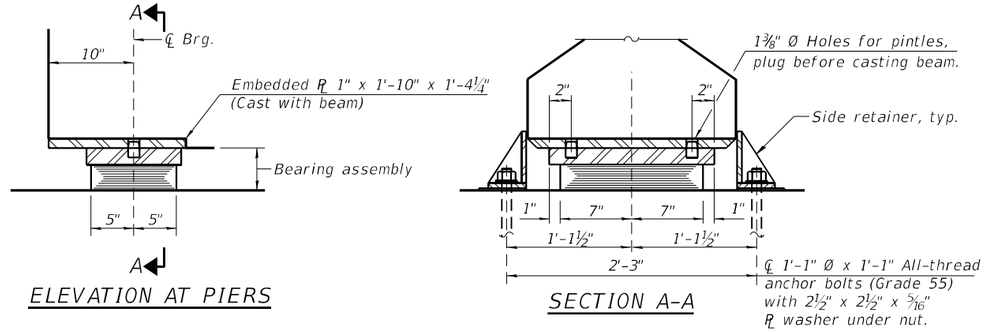


ELEVATION AT PIERS

SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. FOR 48" PPC I-BEAM EXCEPT SPAN 24

(26 Required)

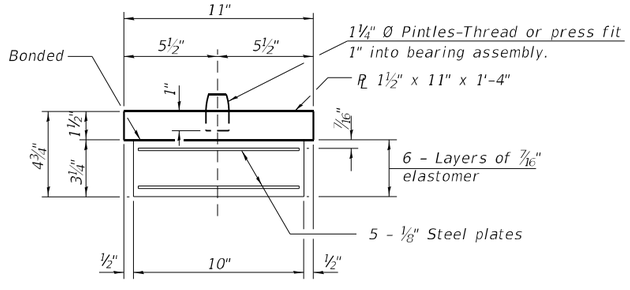


ELEVATION AT PIERS

SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. FOR 48" PPC I-BEAM SPAN 24 ONLY

(2 Required)



BEARING ASSEMBLY

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	30
Anchor Bolts	Each	60

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS I
SN 016-0133 (SB)

SHEET S08-105 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	800
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
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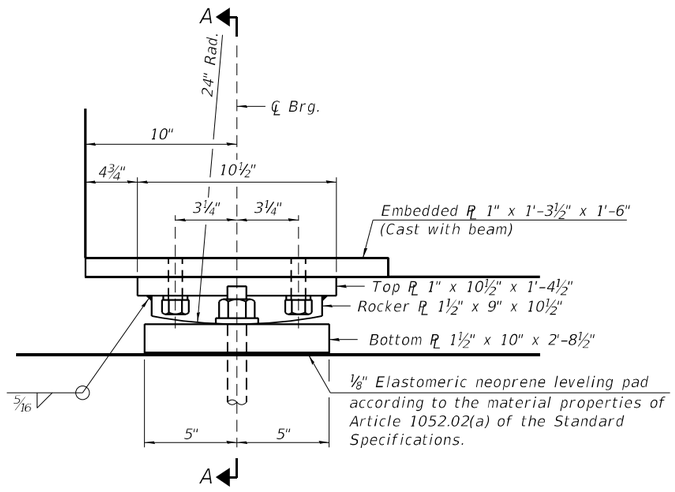
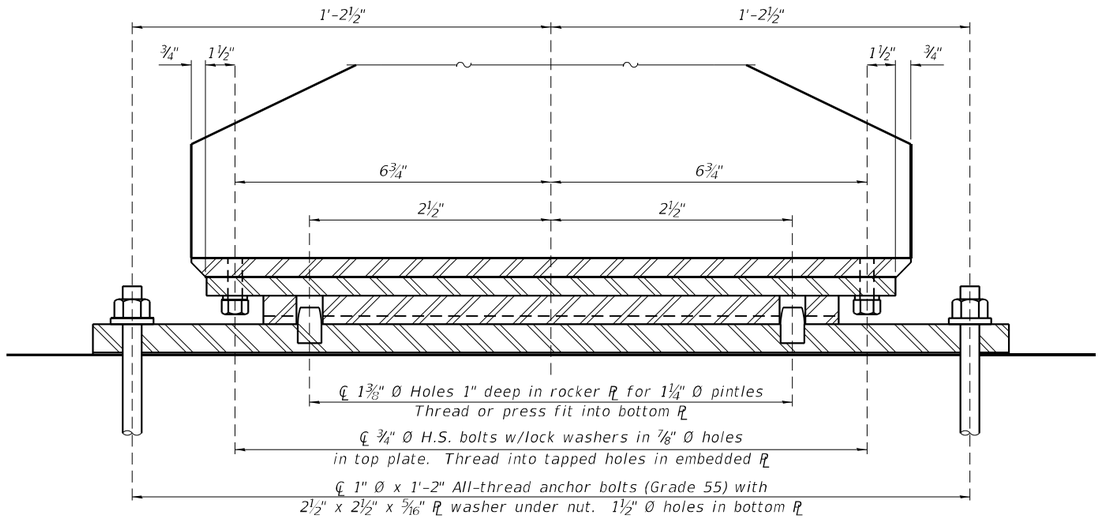
12/5/2022 8:33:57 PM

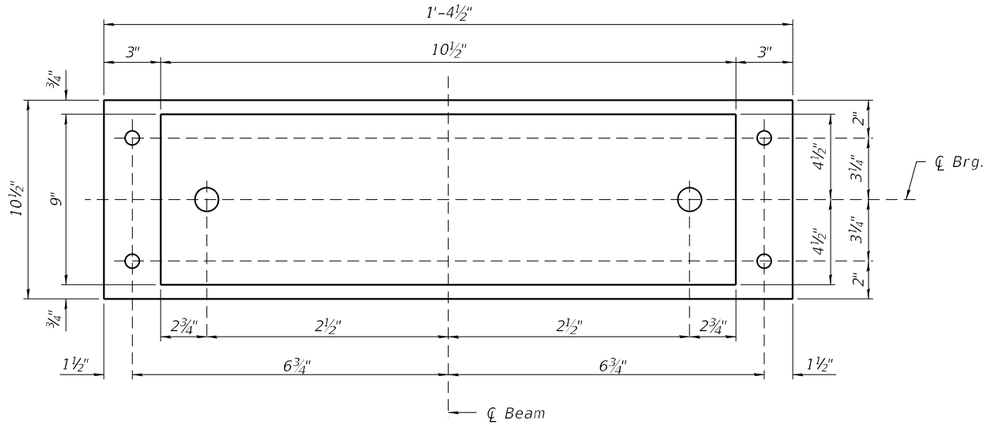


ELEVATION AT PIERS FOR 36" PPC I-BEAM

(2 Required)

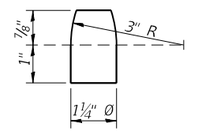


SECTION A-A



PLAN OF TOP PLATE & ROCKER PLATE

(Looking from below at top plate and rocker plate only)



PINTLE

Notes:

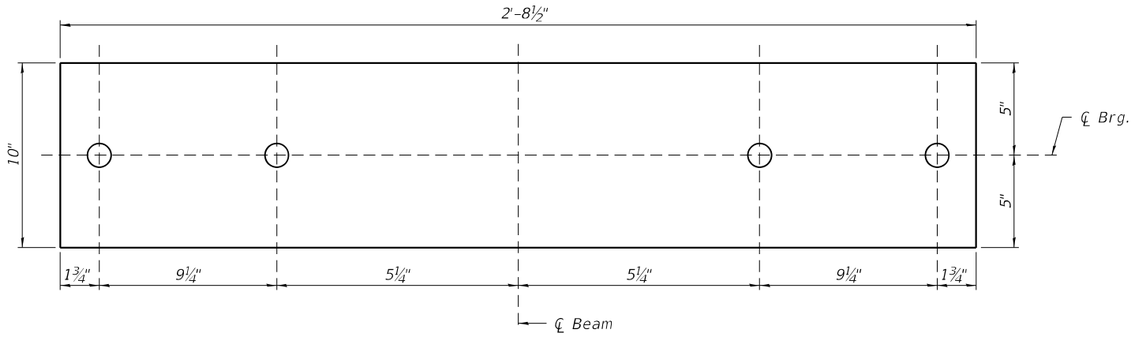
Anchor bolts shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

See sheet S08-101 for additional details of embedded plate.

All plates, hardware, and leveling pads required for the bearing, except anchor bolts, shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete 36" Beams.

All plate material for bearings shall be hot dip galvanized according to AASHTO M111.

All bolts and washers shall be galvanized according to AASHTO M232.



PLAN OF BOTTOM PLATE

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts	Each	4

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS II
SN 016-0133 (SB)

SHEET S08-106 OF S08-138 SHEETS

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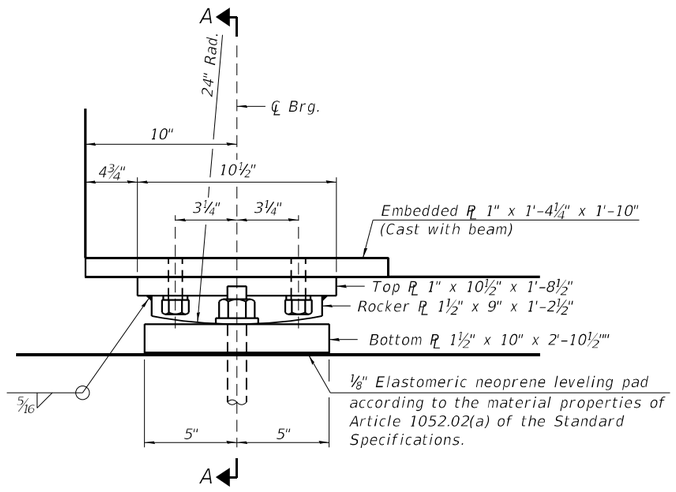
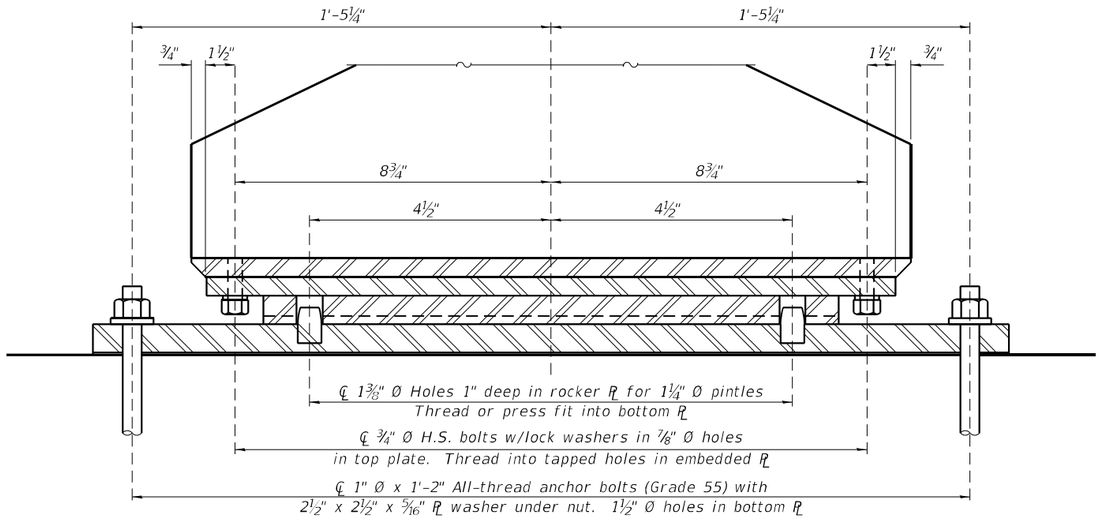
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

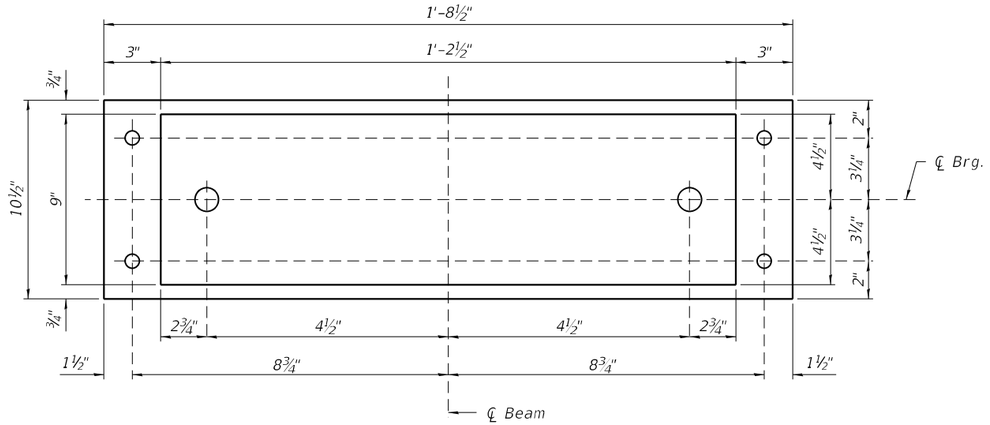


ELEVATION AT PIERS FOR 48" PPC I-BEAM

(28 Required)

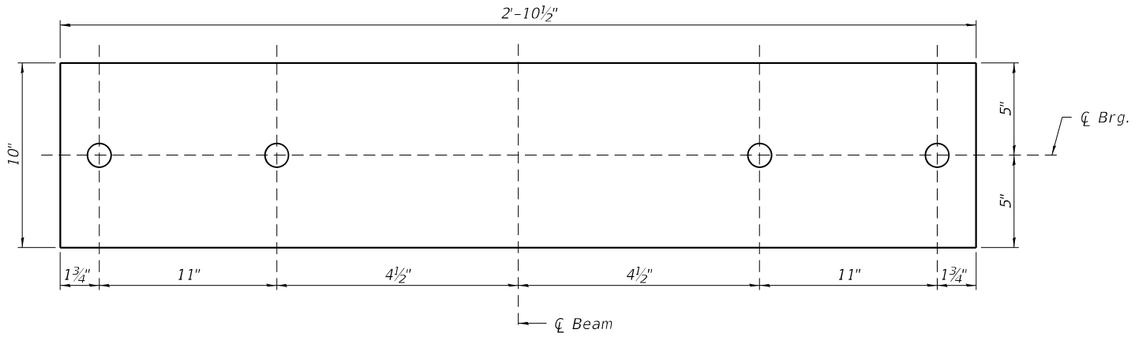


SECTION A-A

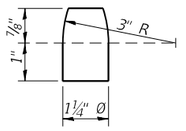


PLAN OF TOP PLATE & ROCKER PLATE

(Looking from below at top plate and rocker plate only)



PLAN OF BOTTOM PLATE



PINTLE

Notes:

Anchor bolts shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

See sheet S08-103 for additional details of embedded plate.

All plates, hardware, and leveling pads required for the bearing, except anchor bolts, shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete 48" Beams.

All plate material for bearings shall be hot dip galvanized according to AASHTO M111.

All bolts and washers shall be galvanized according to AASHTO M232.

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts	Each	56

MODEL: SMODELNAMES
FILE NAME: X:\DH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0133_AshlandSB\0160133-62K74-S107-BRGS.dgn

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

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

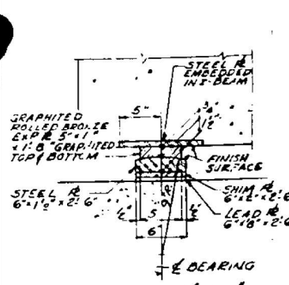
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS III
SN 016-0133 (SB)

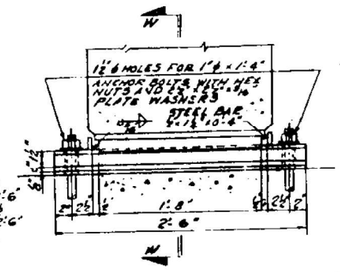
SHEET S08-107 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	802
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

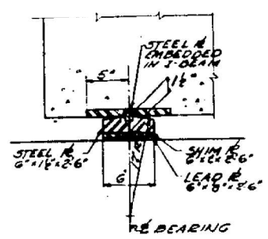
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 2	05063-1H	COOK	136	36
STA.	TO STA.			
FED. ROAD DIST. NO. 4	ILLINOIS	PROJECT	S-02 2(6)	



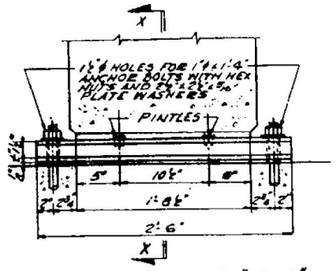
SECTION "W-W"



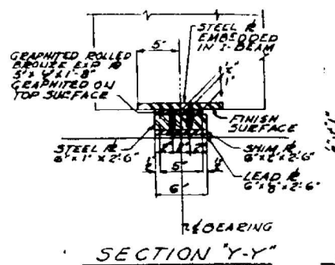
EXPANSION BEARING "B1"



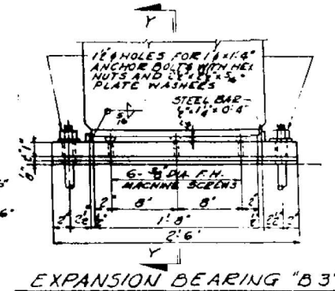
SECTION "X-X"



FIXED BEARING "B 2"



SECTION "Y-Y"



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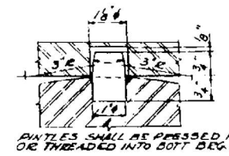
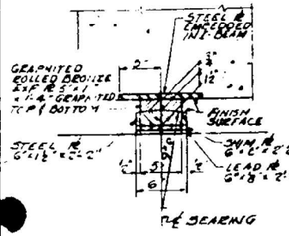
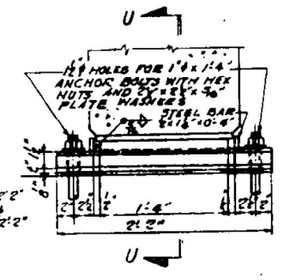


PINTLES SHALL BE PRESSED FIT OR THREADED INTO BOTT. BRG. PL.

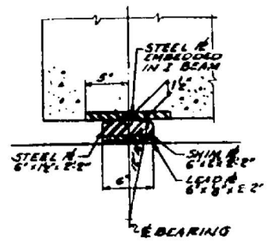
PINTLE DETAIL



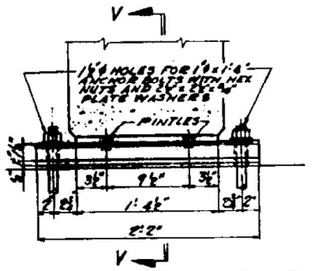
SECTION U-U



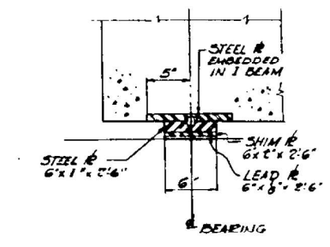
EXPANSION BEARING "B5"



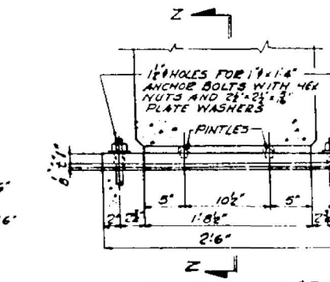
SECTION V-V



FIXED BEARING "B6"



SECTION Z-Z



FIXED BEARING "B4"

NOTE!
SHIMPLATES TO BE USED ONLY WHEN REQUIRED.
SEE FRAMING PLANS FOR LOCATION AND THICKNESS OF SHIMPLATES.

SUPPLEMENTARY I-BEAM DATA

MARK	BRG TYPE NO.	BRG TYPE SO.	END OVERHANG NORTH	END OVERHANG SOUTH	END BLOCK LGTH NORTH	END BLOCK LGTH SOUTH	LOCATION OF ADJ. BOLTS NORTH	LOCATION OF ADJ. BOLTS SOUTH	REMARKS
CB2A	B1	B2							
CB2B, CB2C	B2	B1							
CB3A	B1	B2							
CB3B	B2	B1							
CB5A, CB5B	B1	B2							
CB5C	B1	B2							
CB5D, CB5E	B2	B1							
CB5F	B2	B1							
CB7			13½"	10"	3'-4½"	3'-1"			
CB8							3"	3"	
CB9							3"	3"	
CB10							3"	3"	
CB11							3"	3"	
CB12							3"	3"	
CB13							3"	3"	
CB14							3"	3"	
CB15							3"	3"	
CB31			13½"	10"	3'-4"	3'-0½"			
CB32			10"	13½"	3'-0"	3'-4"			
CB53			10"	13½"	3'-2"	3'-2½"			
CB54							3"	3"	
CB5GF, CB5G							3"	3"	
CB5GH							3"	3"	
CB60			10"	2'-2½"	3'-4½	5'-4½"			
CB61			2'-0½"	10"	6'-4½"	3'-4½"			
CB700, C070E							3"	3"	
CB81			15"	10"	3'-4½"	2'-8½"			
CB82			15"	10"	3'-6"	3'-1"			
CB100			16½"	13"	3'-8"	3'-4½"			
CB127			16½"	16"	3'-9½	3'-8"			
CB128			10"	16½"	3'-4½"	3'-8"			
CB145			10"	16½"	3'-0½"	3'-7"			

NOTE!
ALL DIMENSIONS OR DETAILS NOT SHOWN ARE SAME AS SHOWN IN CONCRETE I-BEAM SCHEDULE FOR BEAM OF SAME NUMBER

CLEANING AND PAINTING BEARINGS

FOR INFORMATION ONLY

SCALE OF TRACING
1/2"=1'-0"
0 3" 6" 1' 2' 3'

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
CHICAGO, ILLINOIS

CITY OF CHICAGO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
GRADE SEPARATION
WABANSIA AVE. TO CORTLAND ST.
SECTION 0606.3-1H
BEARING DETAILS
SHEET NO. 36 OF 136 SHEETS DATE:

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CLEANING AND PAINTING BEARINGS I
SN 016-0133 (SB)
SHEET S08-108 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	803
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
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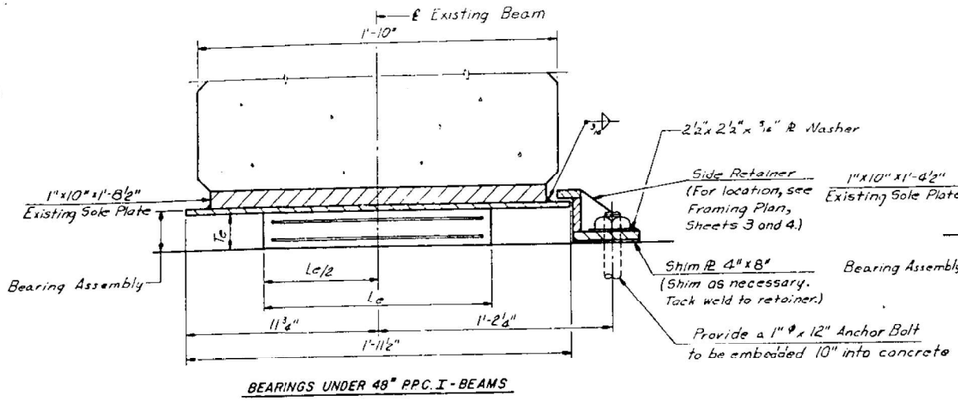
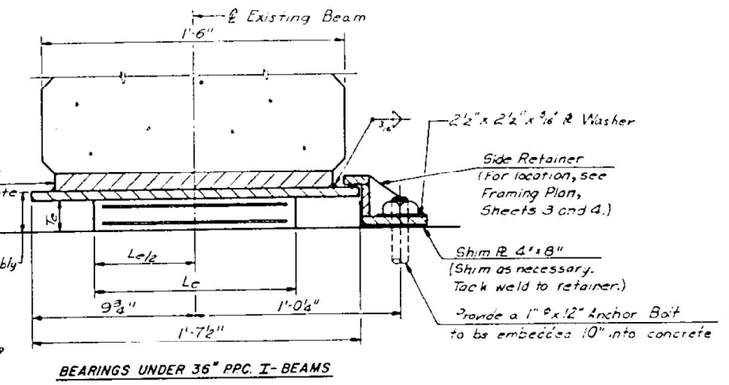
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	1976.135 BR	COOK	-	-
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT NO.		

SHEET NO. 5 OF 26 SHEETS



BEARINGS UNDER 48" PPC. I-BEAMS



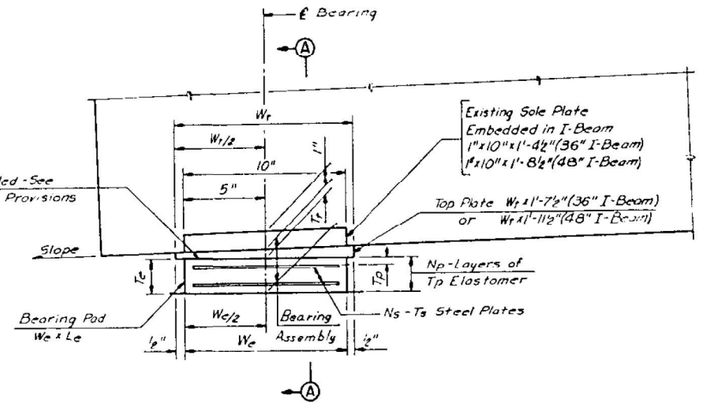
BEARINGS UNDER 36" PPC. I-BEAMS

TABLE OF DIMENSIONS - TYPE I ELASTOMERIC EXPANSION BEARINGS

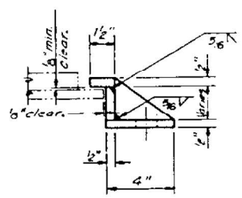
We	Le	Series	Tp	Np	Ts	Ns	Te
7"	12"	a	¾"	3	3/32"	2	1¾"
8"	15"	a	¾"	4	1/8"	3	1⅞"
9"	12"	a	¾"	3	3/32"	2	1¾"
9"	12"	b	¾"	4	3/32"	3	1⅞"
10"	14"	a	¾"	3	1/8"	2	1¾"
10"	14"	b	¾"	4	1/8"	3	1⅞"
10"	14"	c	¾"	4	1/8"	3	2¼"
10"	14"	d	¾"	5	1/8"	4	2⅝"
10"	14"	e	¾"	6	1/8"	5	2¾"

Tp denotes thickness of each elastomeric layer.
Np denotes number of elastomeric layers.
Ts denotes thickness of each steel plate.
Ns denotes number of steel plates.

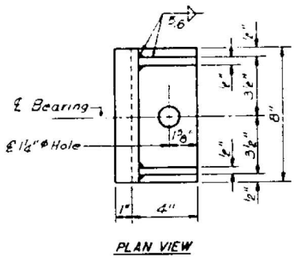
SECTION A-A



SIDE VIEW



END VIEW



PLAN VIEW

SIDE RETAINER

Note:
Cost of side retainers, complete and in place, including anchor bolts, nuts and washers shall be incidental to Furnishing and Installing Elastomeric Bearings, Type I.

Notes:
Work this sheet with sheet no. 6.
All existing anchor bolts shall be cut at concrete surface.
Top plate shall be placed such that the bottom of the plate is level.
The replacement bearings shown on this sheet are Type I Elastomeric Bearings.

CLEANING AND PAINTING BEARINGS

HOWARD, NEEDLES, TAMMEN, & BERGENDOFF CONSULTING ENGINEERS CHICAGO | HNTB
MADE P.C.A. DATE 1-14-77 CHECKED R.a.l. DATE 3-15-77

FOR INFORMATION ONLY

NO.	DATE	REVISION	BY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELASTOMERIC EXPANSION REPLACEMENT BEARINGS UNDER CONCRETE I-BEAMS

JOHN F. KENNEDY EXPRESSWAY
W. WARANSIA AVENUE TO
W. CORTLAND STREET

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CLEANING AND PAINTING BEARINGS II
SN 016-0133 (SB)
SHEET S08-109 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	804
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

MODEL: SMODELNAMES
FILE NAME: X:\DH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0133_Ashland(SB)016133-62K74-S109-BRGS.dgn
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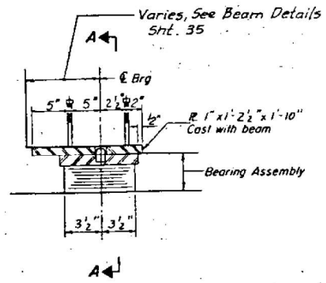
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

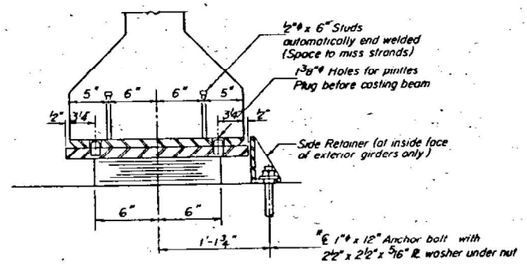
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
	*		434	305
F. HWY. A. REG. #		ILLINOIS	FED. AID PROJECT	

SHEET NO. 44
SHEETS

* 1990-073BY SHEET NO. C227 OF C317



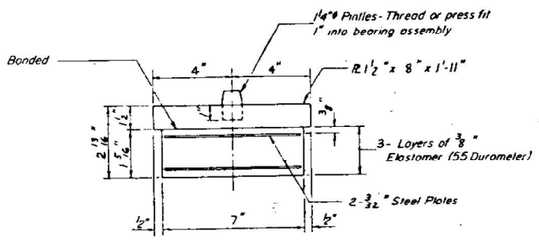
SECTION AT PIER



SECTION A-A

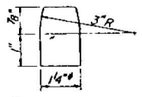
TYPE I ELASTOMERIC EXP. BRG.
(Size 7-a, See Beam Schedules Sht. 37 & 38 for location)
(8 Required)

*Note. After beams have been erected holes at expansion bearings shall be drilled and anchor bolts grouted in place. See Sheet #82 for anchor bolt installation.

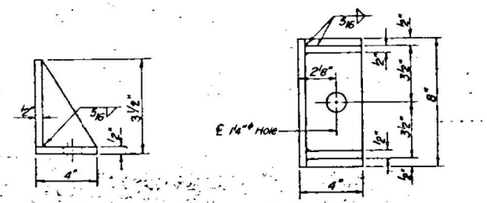


BEARING ASSEMBLY

Note: Shim plates shall not be placed under bearing assembly.



PINTLE



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (3 Req'd)

STANLEY CONSULTANTS

PI-2E-1 · 12-31-85

BILL OF MATERIAL

Item	Unit	Total
Install Elastomeric Bearing Assembly, Type I (7"x12")	Each	8

CLEANING AND PAINTING BEARINGS

FOR INFORMATION ONLY

FOR ERECTION ONLY - COST INCIDENTAL TO "ERECTING STRUCTURAL STEEL"

BEARING DETAILS

SECTION
F.A.I. ROUTE 90/94 OVER ASHLAND AVENUE
COOK COUNTY
STATION 409+49

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CLEANING AND PAINTING BEARINGS III
SN 016-0133 (SB)
SHEET S08-110 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	805
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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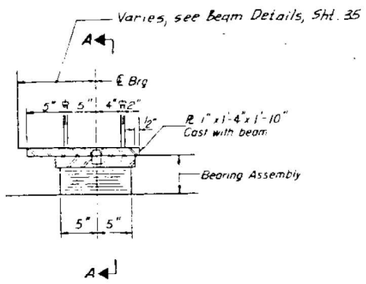
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

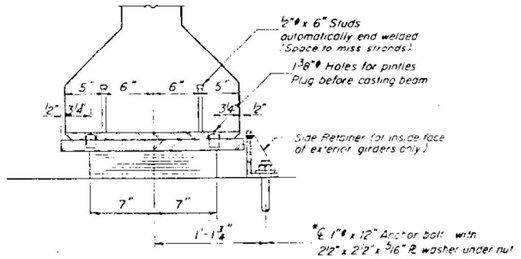
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			434	396

SHEET NO. 45
SHEETS

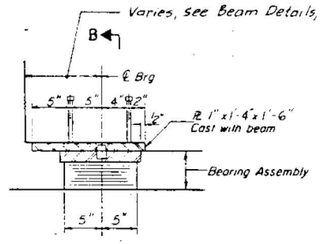
* 1990-073BY SHEET NO. C228 OF C317



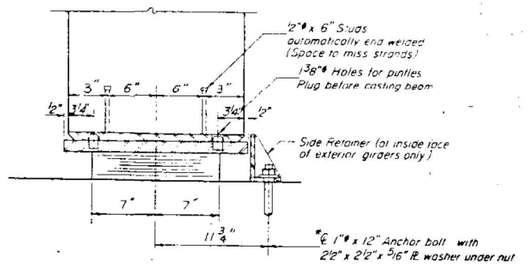
SECTION AT PIERS



SECTION A-A



SECTION AT PIER NO. 10



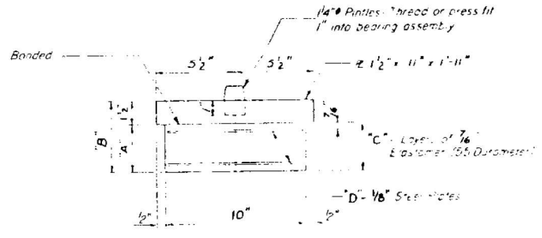
SECTION B-B

* Note After beams have been erected holes at expansion bearings shall be drilled and anchor bolts grouted in place. See Sheet #82 for anchor bolt installation.

* Note After beams have been erected holes at expansion bearings shall be drilled and anchor bolts grouted in place. See sheet #82 for anchor bolt installation.

TYPE I ELASTOMERIC EXP BRG.
(Size 10-a, 10-b & 10-c, see Beam Schedules Sht. 37 & 38 for location.)

TYPE I ELASTOMERIC EXP BRG.
(Size 10-aa ; Span 11 South End for 18" x 30" Prestressed Beams)
(8 Required)

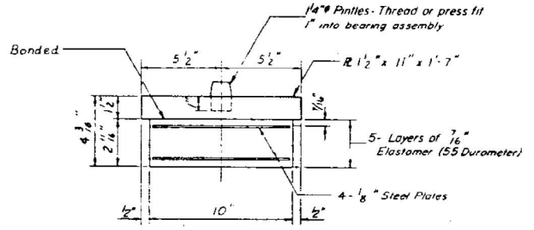


BEARING ASSEMBLY

PINTLE

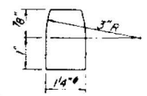
TABLE OF VARIABLES

Bearing Size	A	B	C	D	E	No Req'd
10-a	2 11/16"	4 3/16"	5	4	5"	57
10-b	3 1/16"	4 3/16"	6	5	5¼"	17
10-c	3 5/16"	5 5/16"	7	6	6"	13

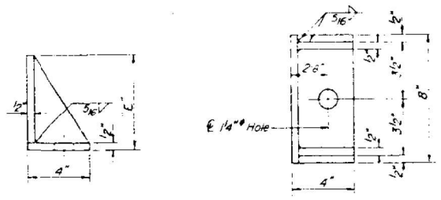


BEARING ASSEMBLY

Note: Shim plates shall not be placed under bearing assembly.

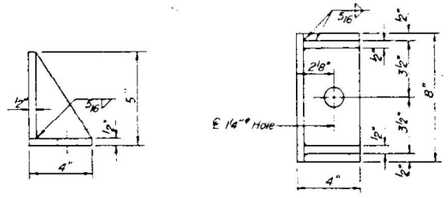


PINTLE



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (35 Req'd.)



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (2 Req'd.)

BILL OF MATERIAL

Item	Unit	Total
Install Elastomeric Bearing Assembly, Type I (10"x14")	Each	98

CLEANING AND PAINTING BEARINGS

BEARING DETAILS

SECTION
F.A.I. ROUTE 90/94 OVER ASHLAND AVENUE
COOK COUNTY
STATION 409+49

STANLEY CONSULTANTS

PI-2E-1 12-31-84

FOR INFORMATION ONLY

FOR ERECTION ONLY - COST INCIDENTAL TO "ERECTING STRUCTURAL STEEL"

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CLEANING AND PAINTING BEARINGS IV
SN 016-0133 (SB)
SHEET S08-111 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	806
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: sMODELNAMES
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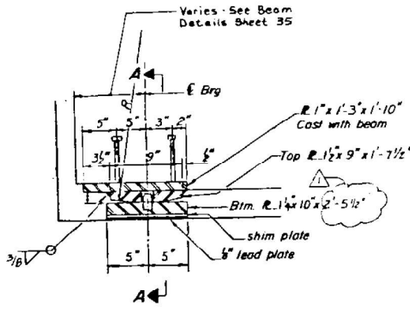
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

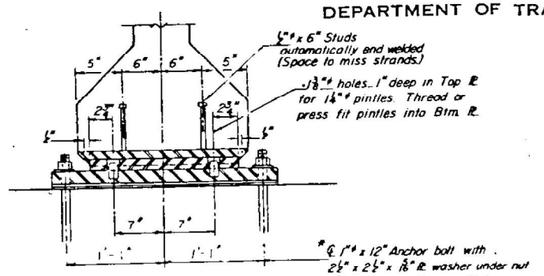
SHEET NO.	DESCRIPTION	TOTAL SHEETS	SHEET NO.
		434	307

SHEET NO. 46 OF SHEETS

* 1990-073BY SHEET NO. C229 OF C317



SECTION AT ABUT. OR PIER

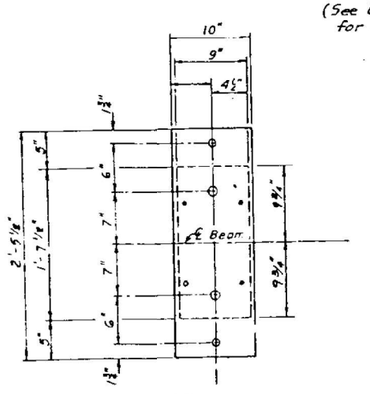


SECTION A-A

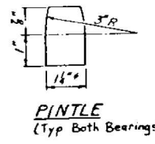
* ANCHOR BOLTS SHALL BE DRILLED AND GROUTED IN PLACE AFTER BEAMS HAVE BEEN ERECTED.

See Sheet #82 for anchor bolt installation.

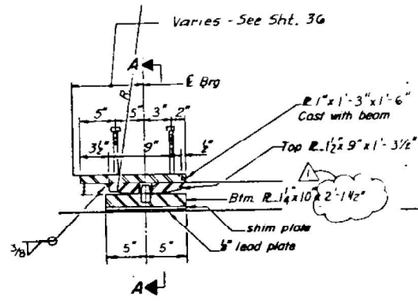
FIXED BEARING
(See Beam Schedules, Sht. 37 & 38 for location)
(49 Required)



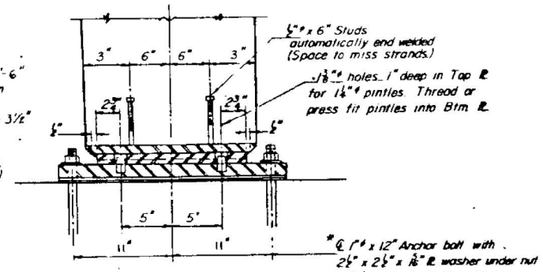
PLAN OF TOP & BOTTOM PLATES



PINTLE
(Typ Both Bearings)



SECTION AT PIER #11

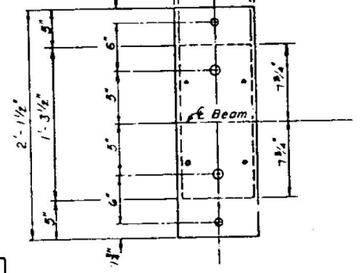


SECTION A-A

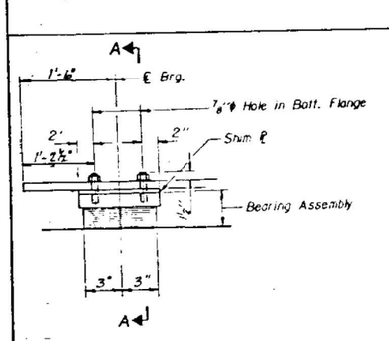
*ANCHOR BOLTS SHALL BE DRILLED AND GROUTED IN PLACE AFTER BEAMS HAVE BEEN ERECTED.

See Sheet #82 for anchor bolt installation.

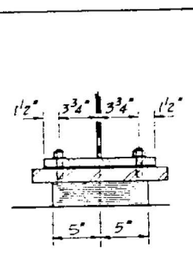
FIXED BEARING
(Span 11 North End For 18" x 30" Prestressed Beams)
(8 Required)



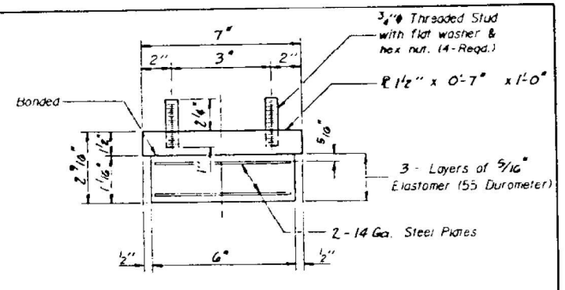
PLAN OF TOP & BOTTOM PLATES



ELEVATION AT PIER



SECTION A-A



BEARING ASSEMBLY

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

TYPE I ELASTOMERIC EXP. BRG.
(BEAM NO. N231 AT PIER 23)
(1 Required)

Item	Unit	Total
Install Elastomeric Bearing Assembly Type I (6" x 10")	Each	1

STANLEY CONSULTANTS

PI-2FB 12-31-85

CLEANING AND PAINTING BEARINGS

FOR ERECTION ONLY - COST INCIDENTAL TO "ERECTING STRUCTURAL STEEL"

FOR INFORMATION ONLY

△ Rev. 11-26-90

BEARING DETAILS
SECTION
F.A.I. ROUTE 90/94 OVER ASHLAND AVENUE
COOK COUNTY
STATION 2020+04

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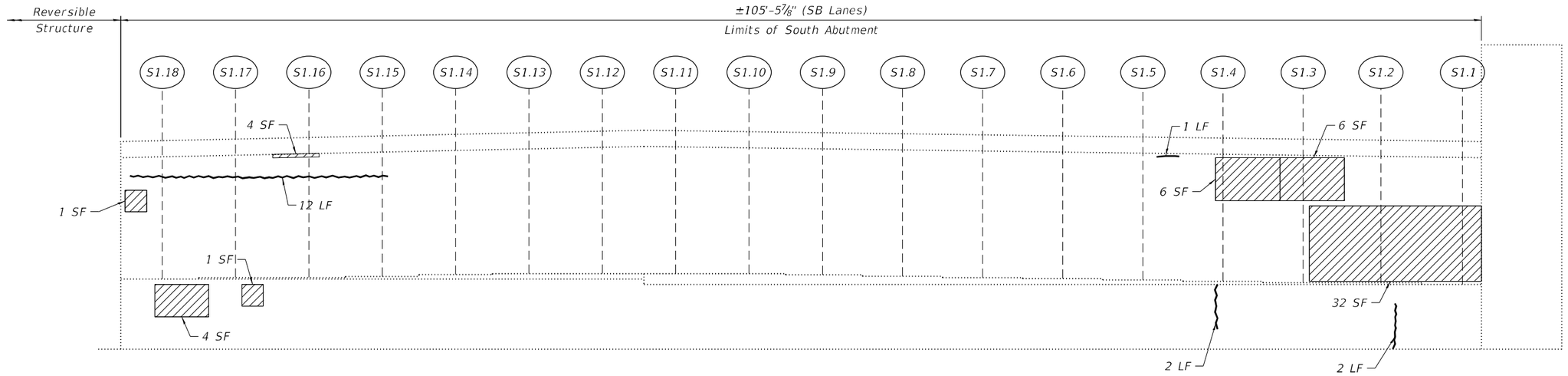
GRÄEF
8501 W. Higgins Road; Suite 280
Chicago, Illinois 60631; (773) 399-0112

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

EXISTING BEARING DETAILS V
SN 016-0133 (SB)
SHEET S08-112 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	807
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		



ELEVATION – SOUTH ABUTMENT

(Looking South)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the lower 2 feet of the backwall and to the seats of the abutments.
3. For Slope Wall Repairs see Sheet S08-137.

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	451
Epoxy Crack Injection	Foot	17
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	54

GRAEF
8501 W. Higgins Road; Suite 280
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

SOUTH ABUTMENT REPAIRS
SN 016-0133 (SB)
SHEET S08-113 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	808
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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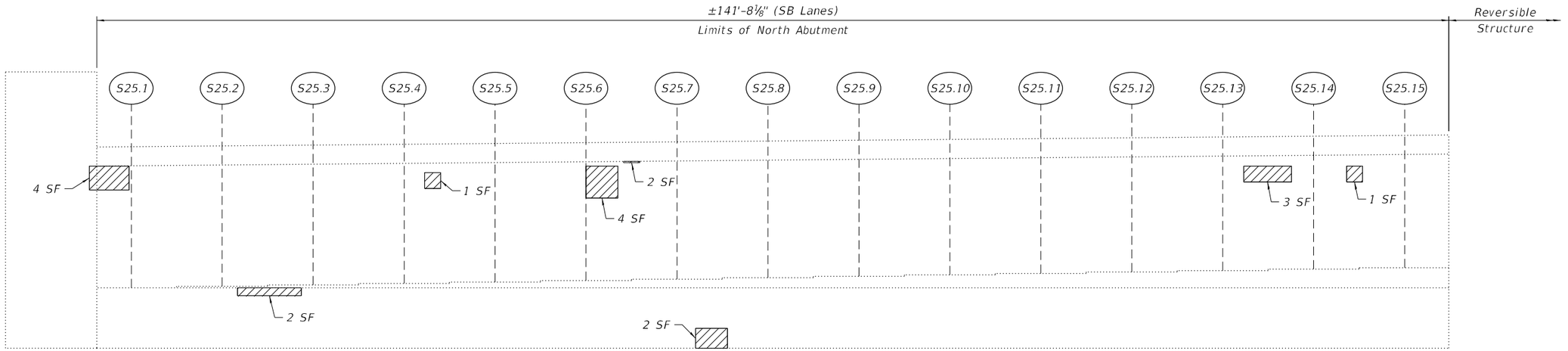

ELEVATION - NORTH ABUTMENT

(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 backwall and to the seats of the abutments.
3. For Slope Wall Repairs see Sheet S08-137.

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 Yd	597
Structural Repair of Concrete (Depth Equal to Less Than 5")	Sq Ft	19

GRAEF
8501 W. Higgins Road; Suite 280
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

NORTH ABUTMENT REPAIRS
SN 016-0133 (SB)

SHEET S08-114 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	809
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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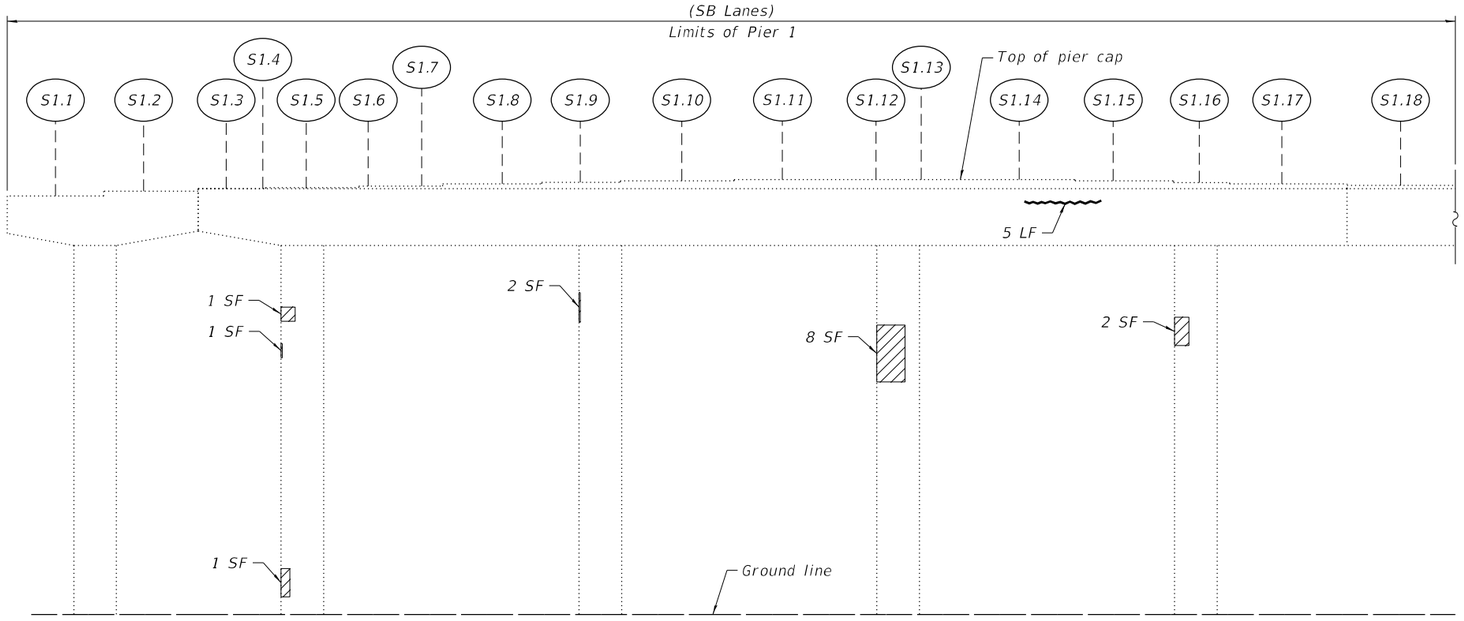
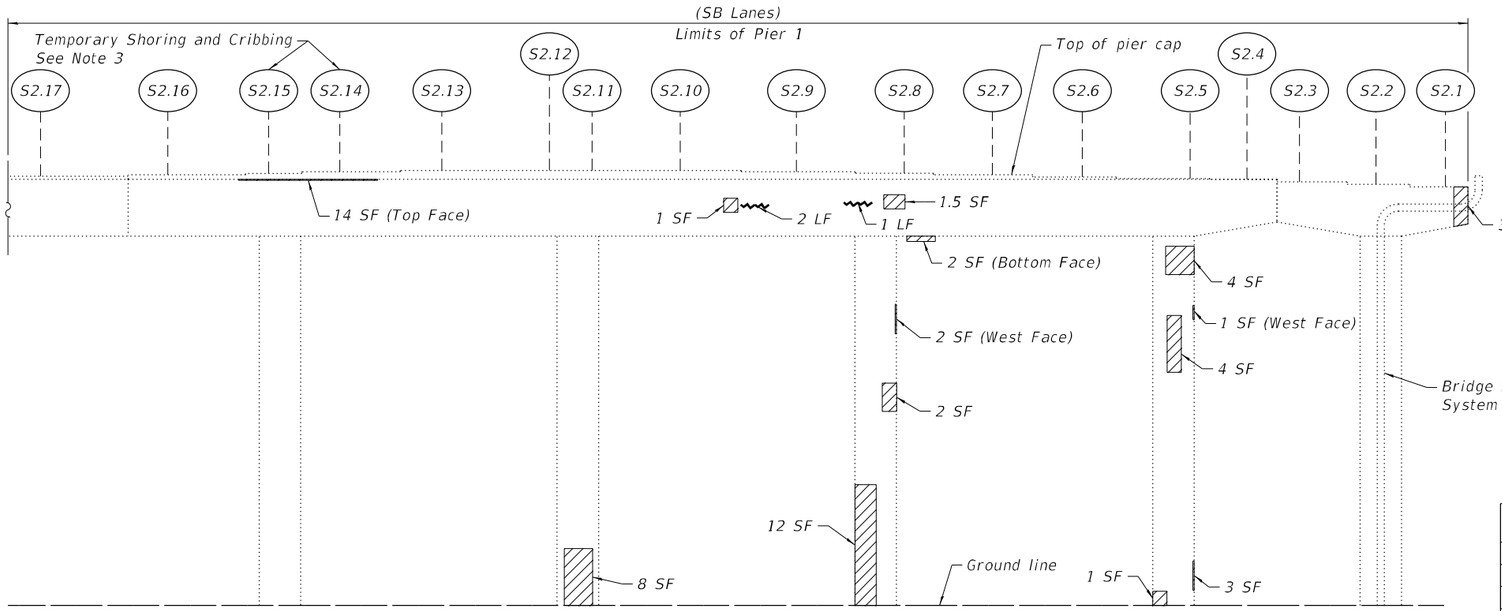


ELEVATION – PIER 1

(Looking North)



ELEVATION – PIER 1

(Looking South)

SUMMARY OF REACTIONS PIER 1	
	Span 2
R DL (k)	59.2
R LL (k)	30.6
R IM (k)	7.7
R Total (k)	97.5

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. Apply Concrete Sealer to the top of the pier cap.
3. Temporary Shoring and Cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.

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	225
Epoxy Crack Injection	Foot	8
Bridge Drainage System Repair	Foot	5
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	74
Temporary Shoring and Cribbing	Each	2

GRAEF
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

PIER 1 REPAIRS
SN 016-0133 (SB)

SHEET S08-115 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	810
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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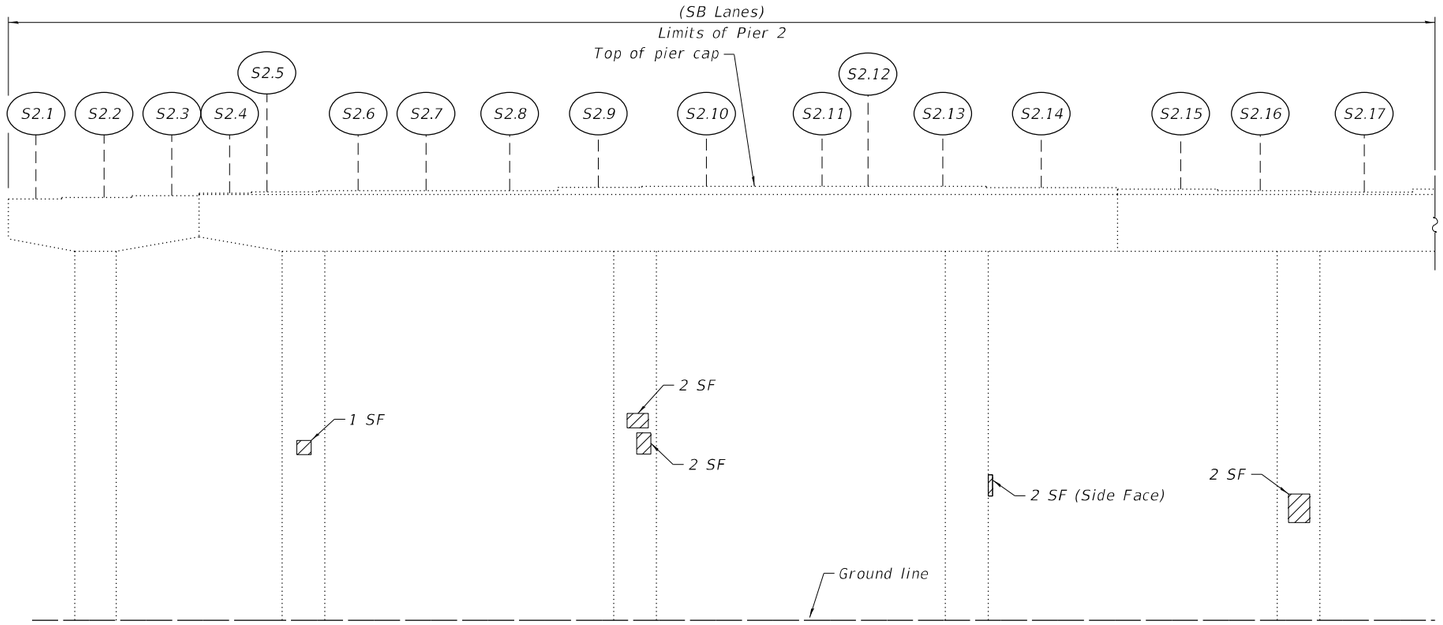
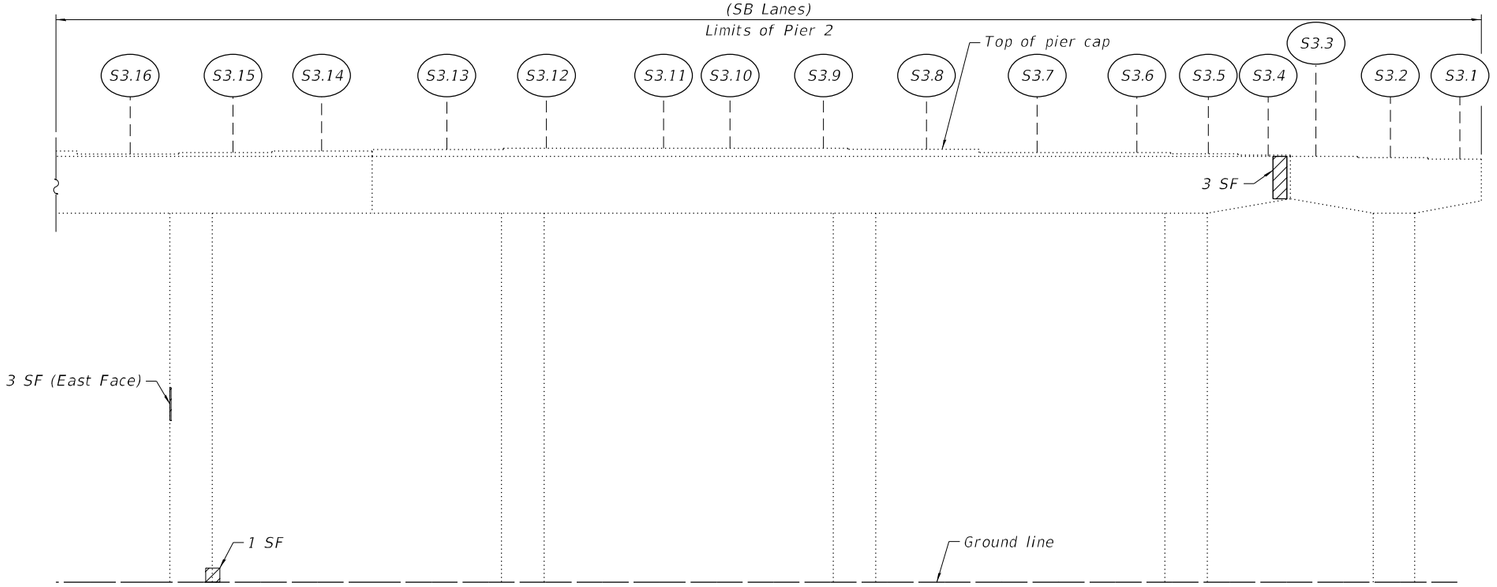


ELEVATION - PIER 2

(Looking North)



ELEVATION - PIER 2

(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. Apply Concrete Sealer to the top of the pier cap.

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	260
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	16

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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

PIER 2 REPAIRS
SN 016-0133 (SB)

SHEET S08-116 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	811
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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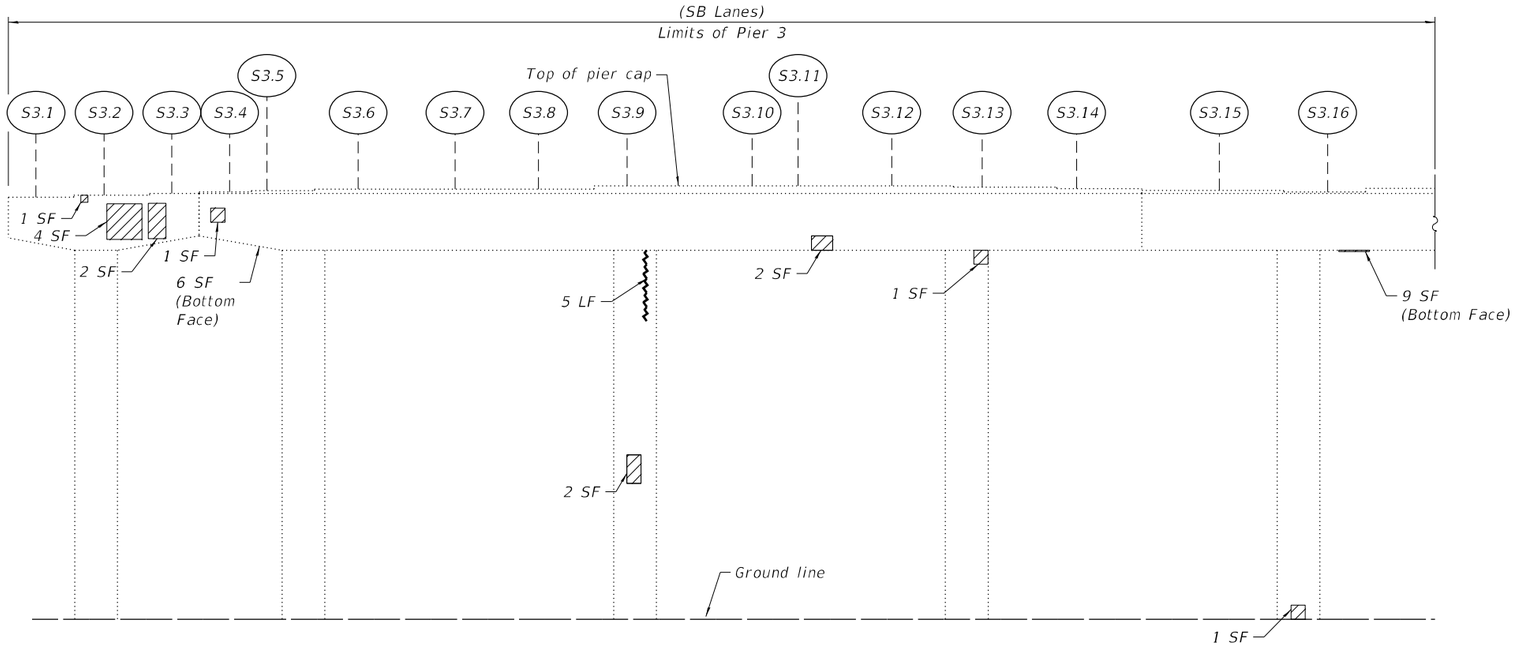
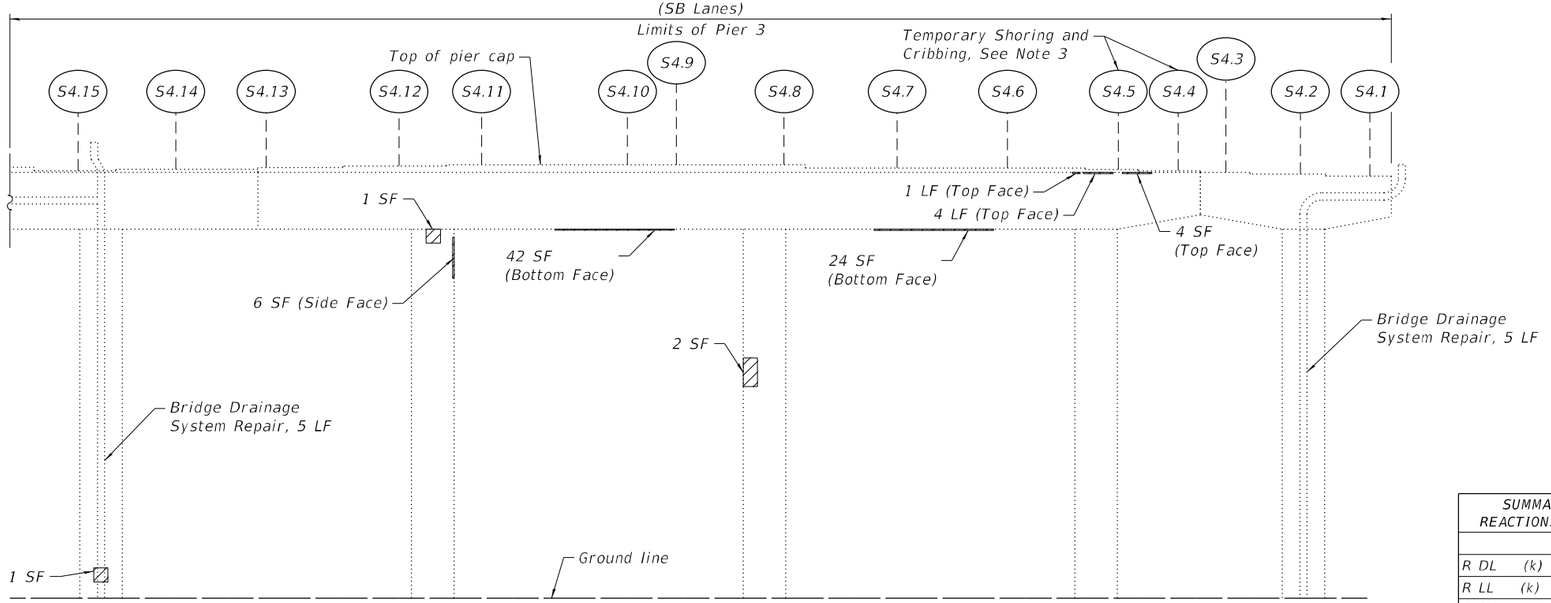


ELEVATION – PIER 3

(Looking North)



ELEVATION – PIER 3

(Looking South)

SUMMARY OF REACTIONS PIER 3	
	Span 4
R DL (k)	59.2
R LL (k)	30.6
R IM (k)	7.7
R Total (k)	97.5

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. Apply Concrete Sealer to the top of the pier cap.
3. Temporary Shoring and Cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.

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	271
Epoxy Crack Injection	Foot	5
Bridge Drainage System Repair	Foot	10
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	114
Temporary Shoring and Cribbing	Each	2

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 REPAIRS
SN 016-0133 (SB)

SHEET S08-117 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	812
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
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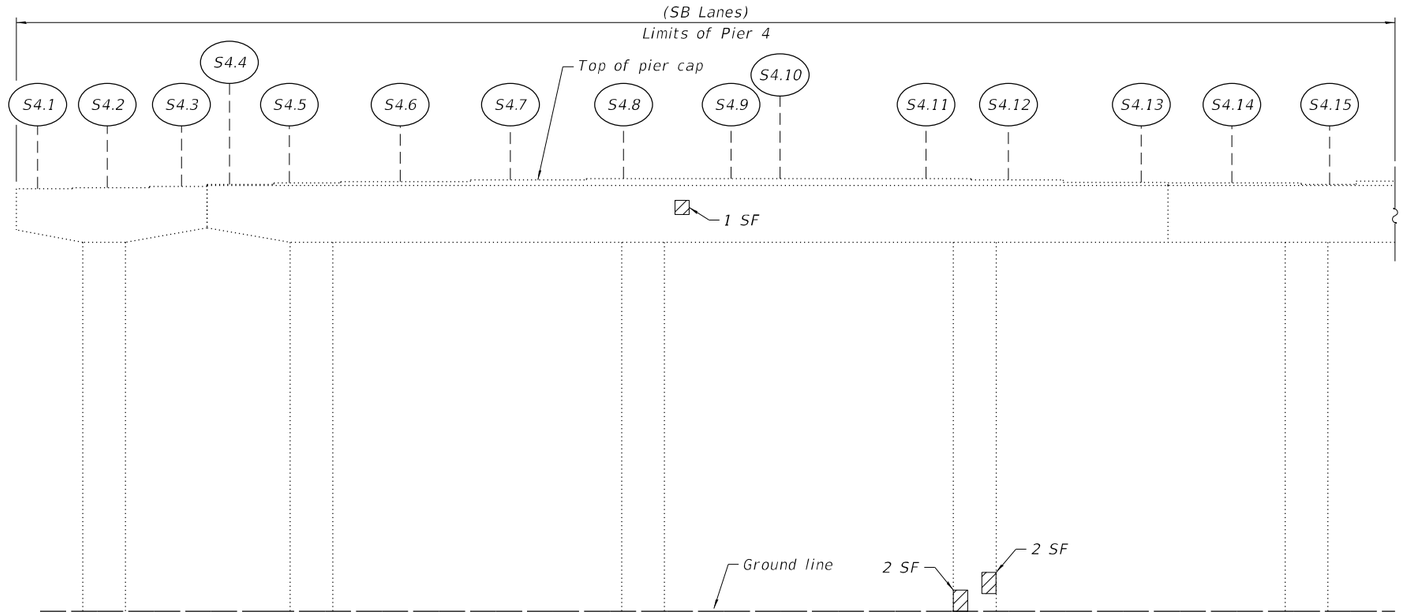
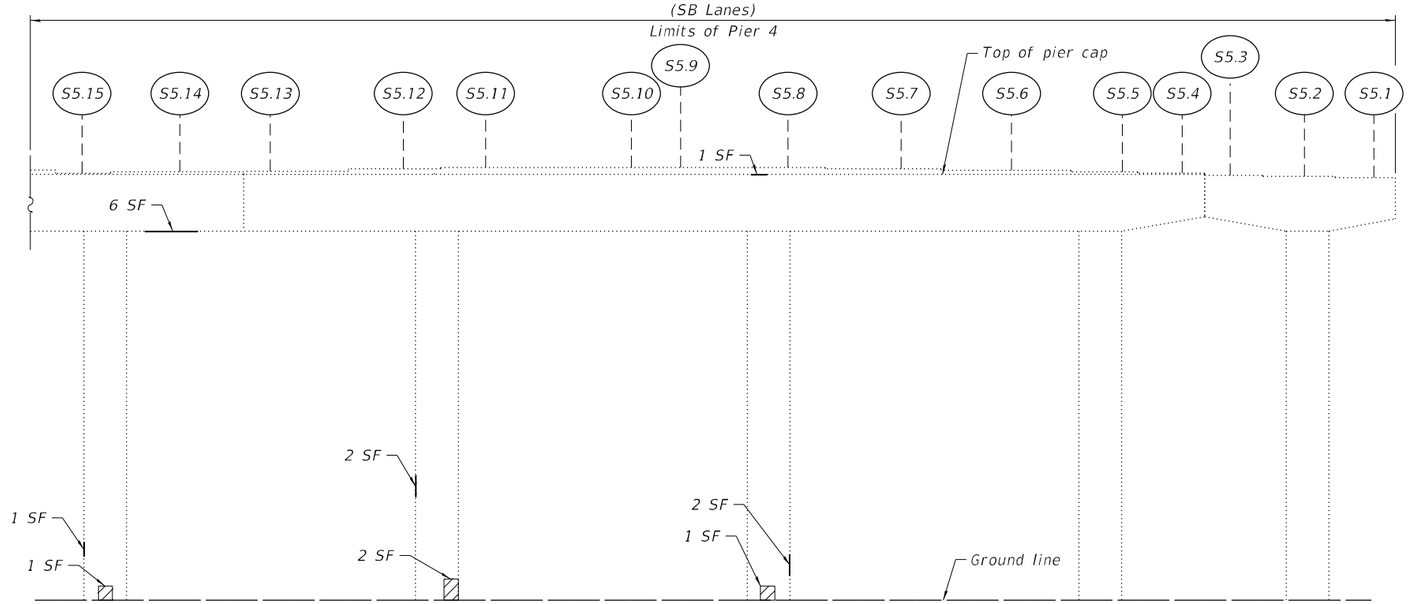


ELEVATION - PIER 4
(Looking North)



ELEVATION - PIER 4
(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.

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	21

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4 REPAIRS
SN 016-0133 (SB)
SHEET S08-118 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	813
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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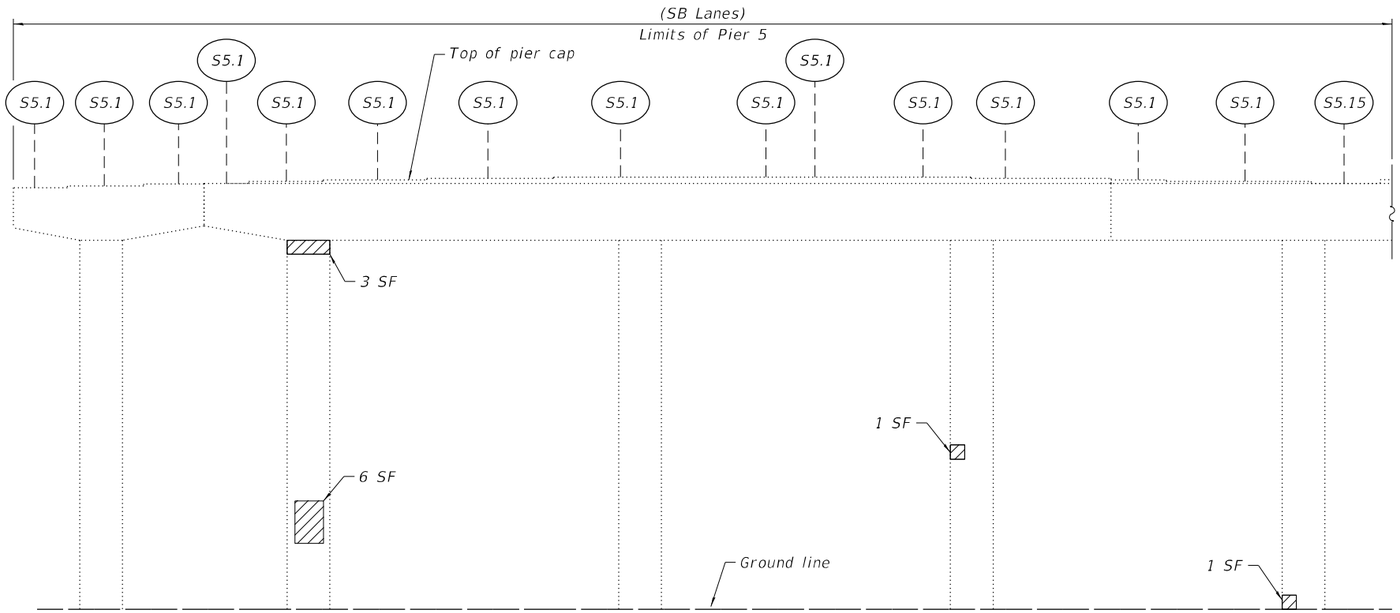
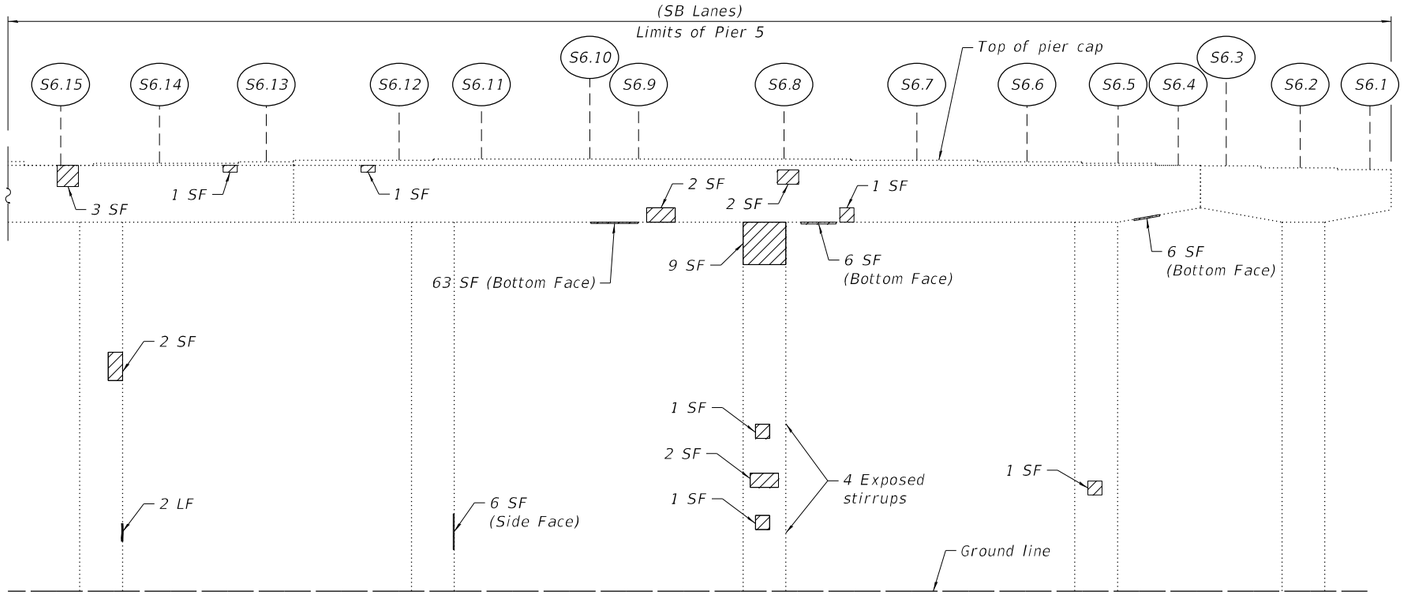


ELEVATION – PIER 5
(Looking North)



ELEVATION – PIER 5
(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. Apply Concrete Sealer to the top of the pier cap.

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	254
Epoxy Crack Injection	Foot	2
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	118

GRAEF
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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

PIER 5 REPAIRS
SN 016-0133 (SB)
SHEET S08-119 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	814
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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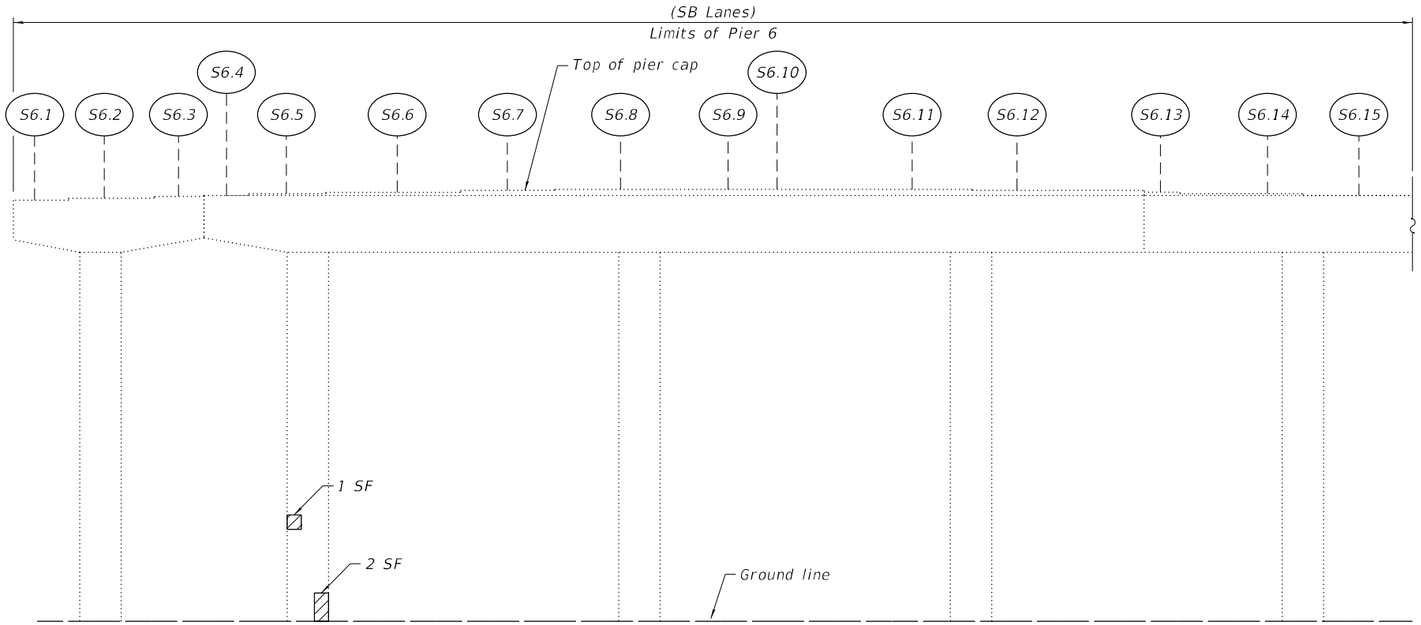
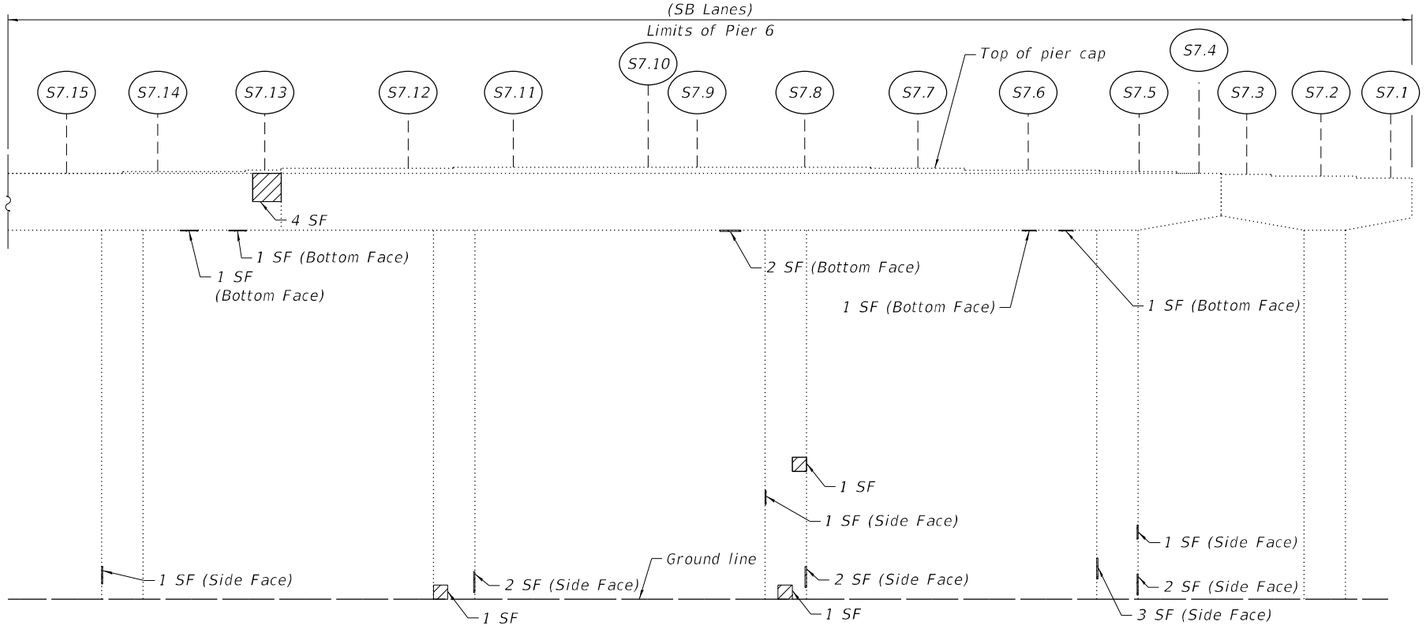


ELEVATION – PIER 6
(Looking North)



ELEVATION – PIER 6
(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.

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	28

GRAEF
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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

PIER 6 REPAIRS
SN 016-0133 (SB)
SHEET S08-120 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	815
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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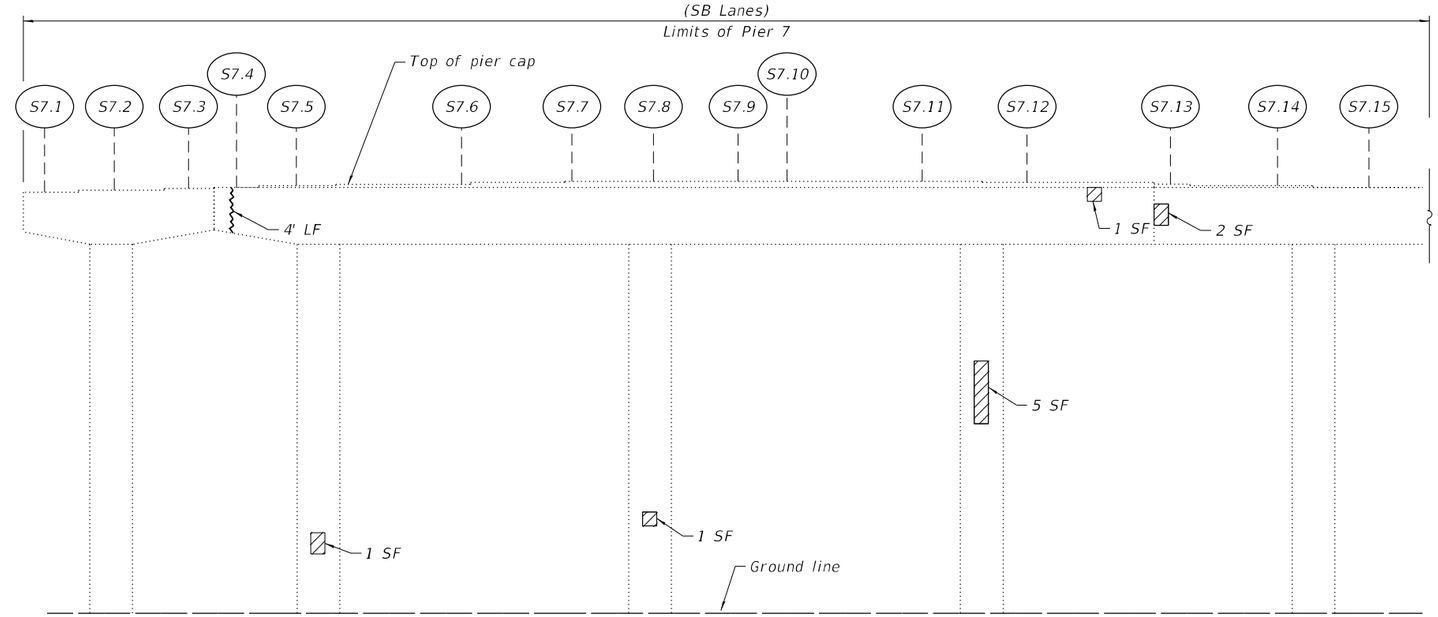
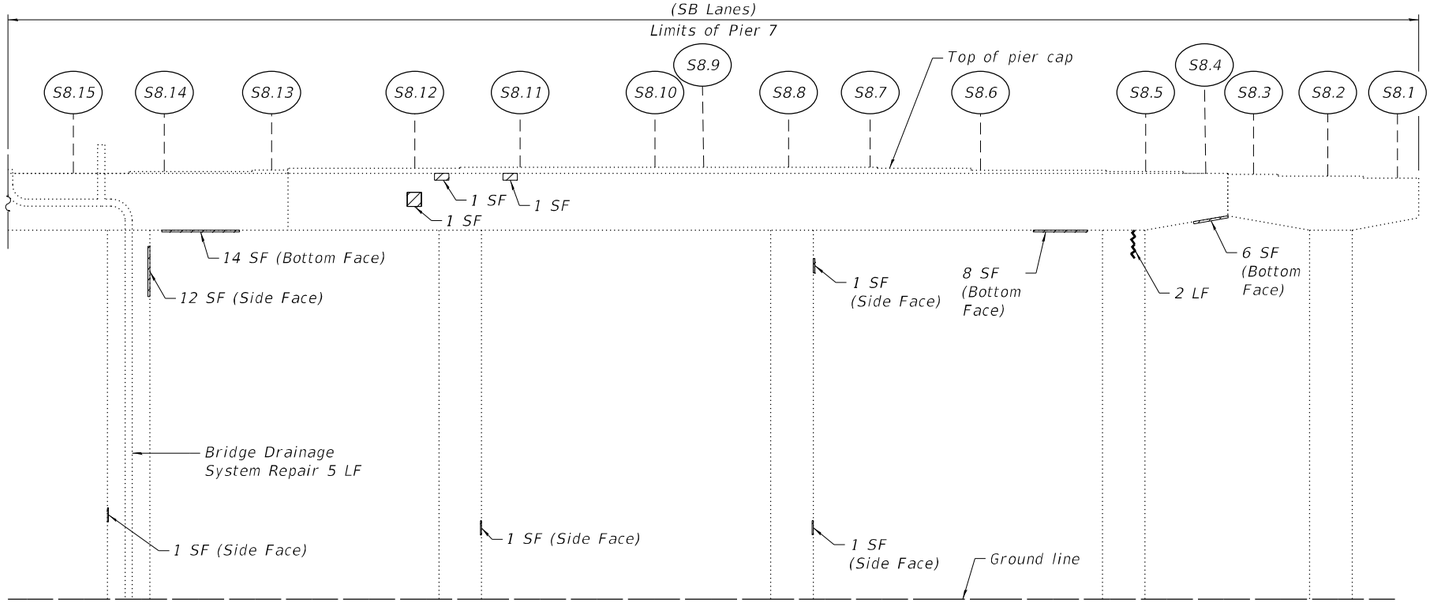


ELEVATION - PIER 7

(Looking North)



ELEVATION - PIER 7

(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. Apply Concrete Sealer to the top of the pier cap.

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	255
Epoxy Crack Injection	Foot	6
Bridge Drainage System Repair	Foot	5
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	57

GRAEF
8501 W. Higgins Road; Suite 280
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 7 REPAIRS
SN 016-0133 (SB)
SHEET S08-121 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	816
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
FILE NAME: X:\DH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0133_AshlandSB\01601333-62K74-S121-PR75.dgn
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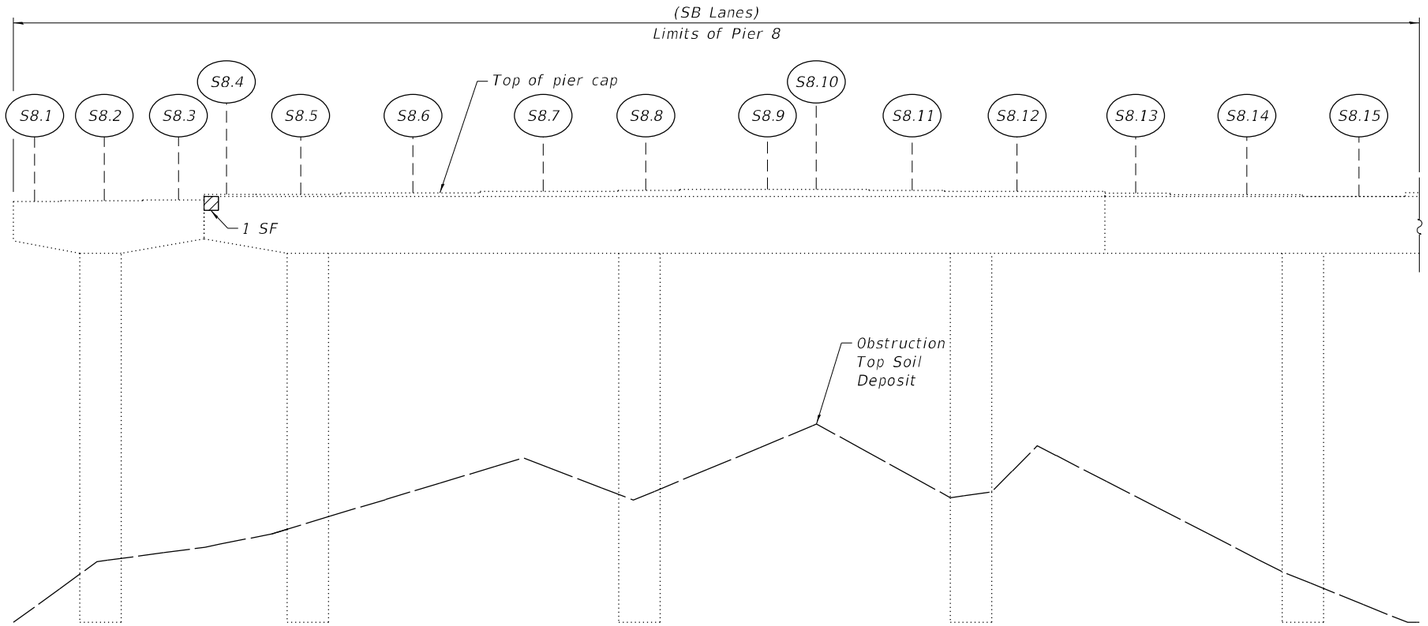
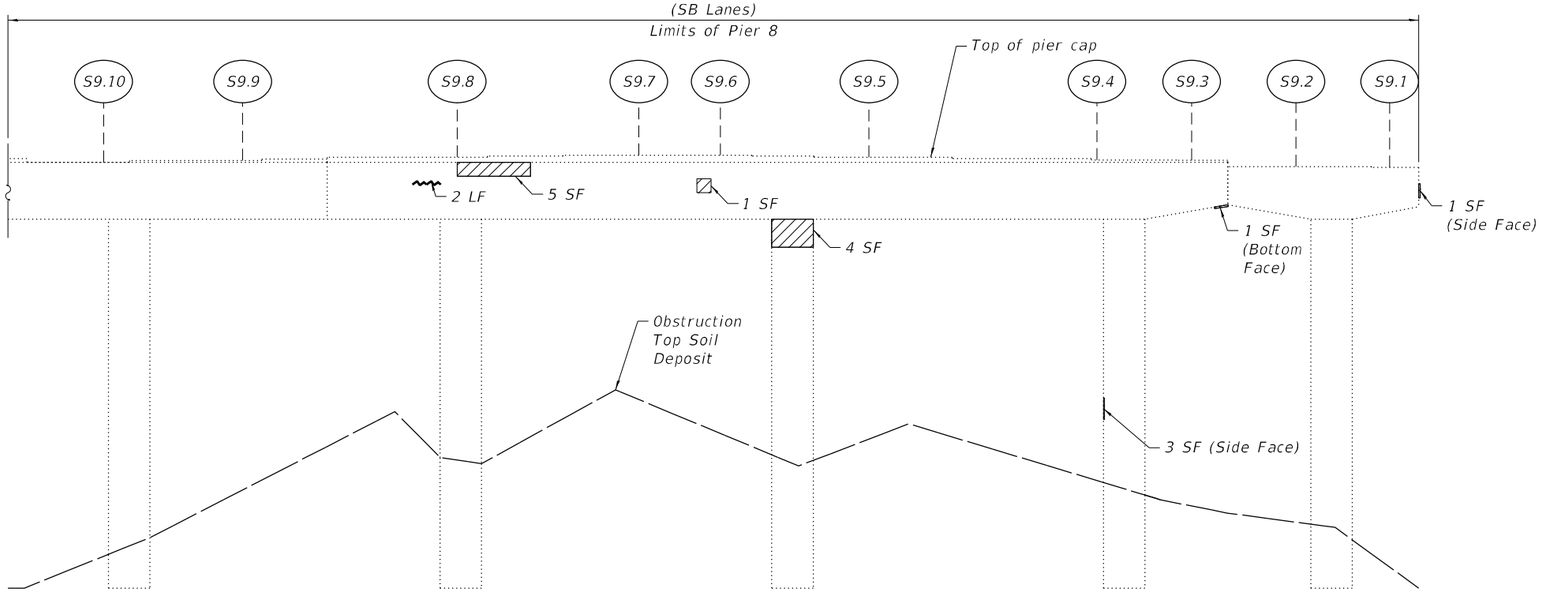


ELEVATION - PIER 8

(Looking North)



ELEVATION - PIER 8

(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. Apply Concrete Sealer to the top of the pier cap.

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	255
Epoxy Crack Injection	Foot	2
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	16
Debris Removal	L Sum	0.5

MODEL: sMODELNAMES
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0133_AshlandSB\0160133+62K74+S122+PR8S.dgn

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 8 REPAIRS
SN 016-0133 (SB)

SHEET S08-122 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	817
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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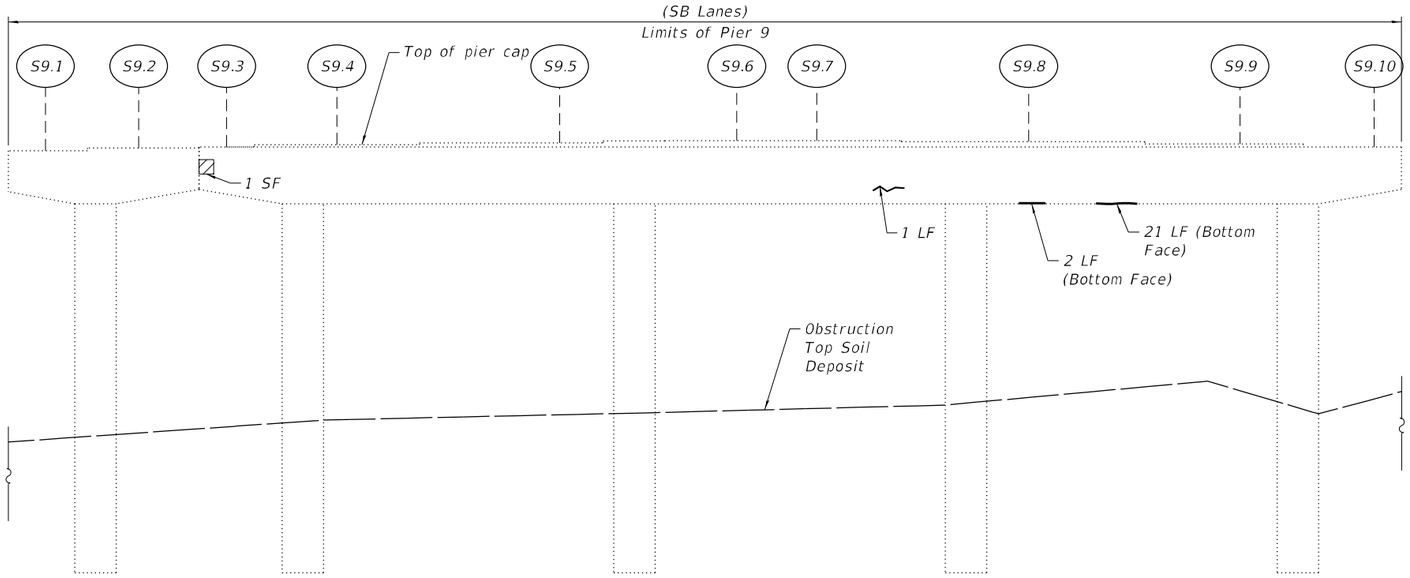
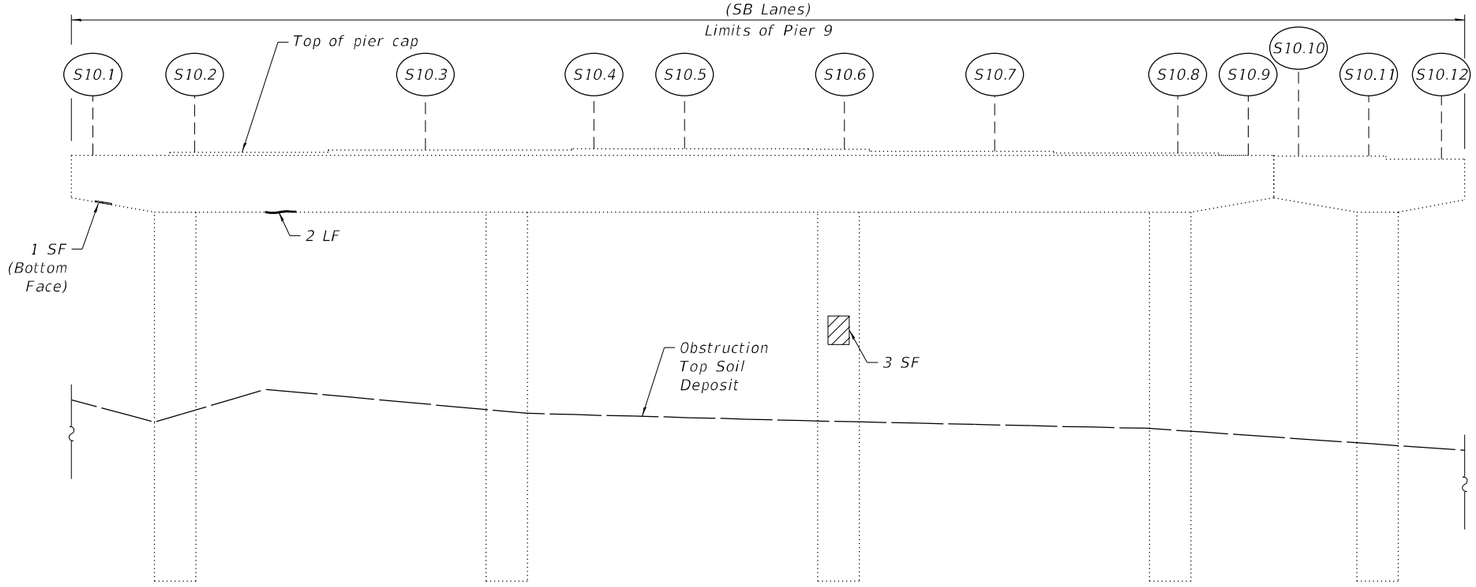


ELEVATION - PIER 9

(Looking North)



ELEVATION - PIER 9

(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. Apply Concrete Sealer to the top of the pier cap.

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	291
Epoxy Crack Injection	Foot	26
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	5

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 9 REPAIRS
SN 016-0133 (SB)

SHEET S08-123 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	818
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
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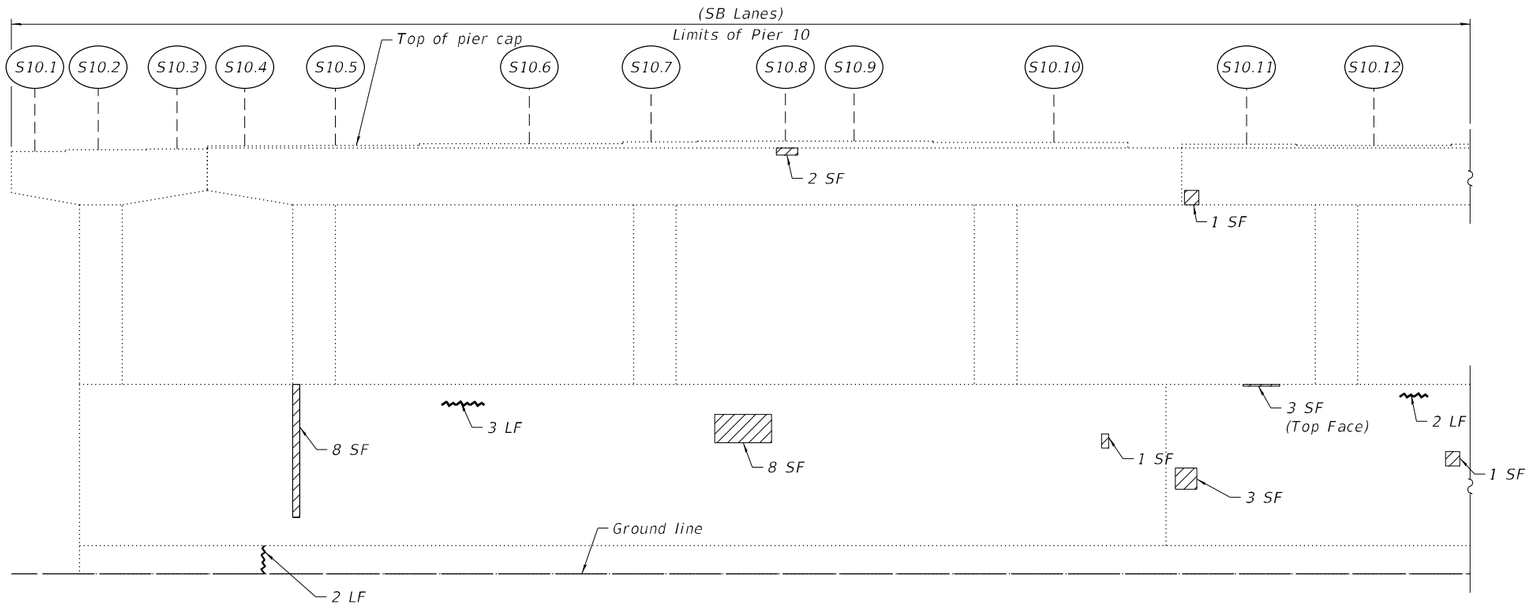
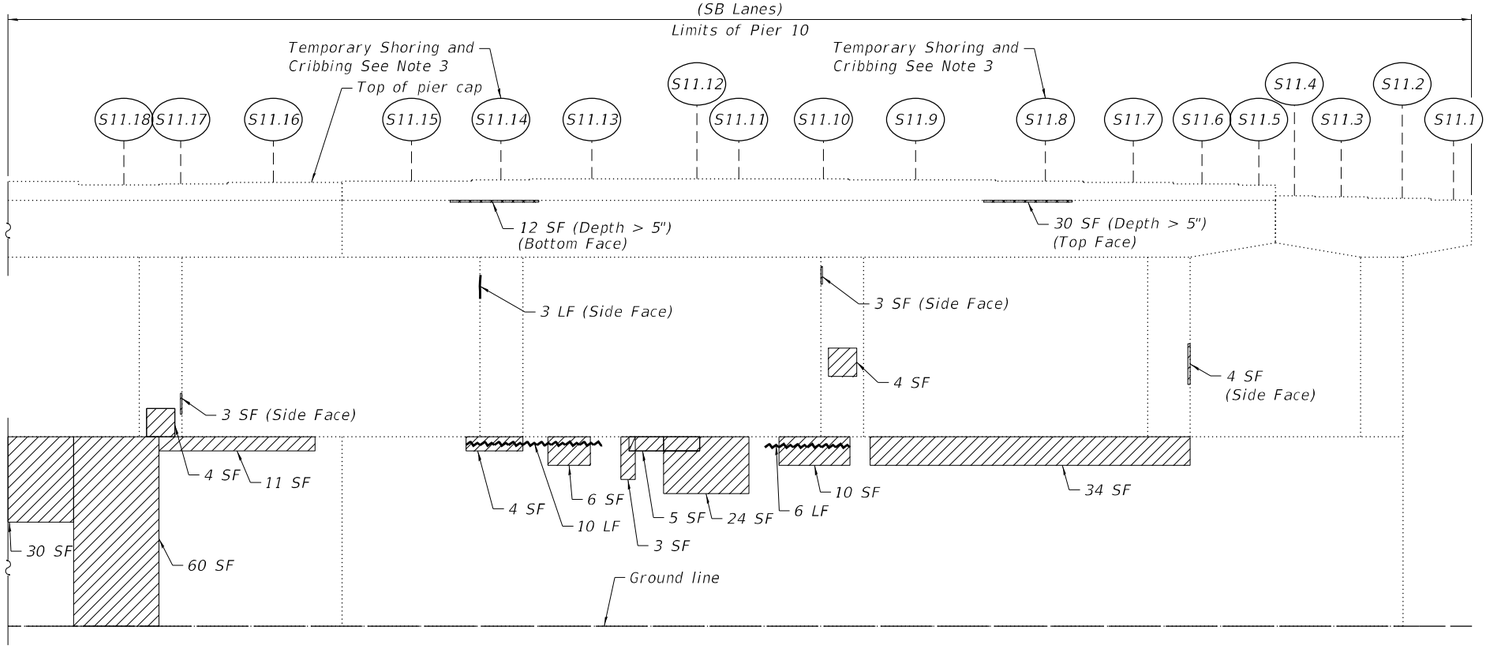


ELEVATION - PIER 10

(Looking North)



ELEVATION - PIER 10

(Looking South)

SUMMARY OF REACTIONS PIER 10	
	Span 11
R DL (k)	32.9
R LL (k)	24.9
R IM (k)	6.9
R Total (k)	64.7

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. Apply Concrete Sealer to the top of the pier cap.
3. Temporary Shoring and Cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.

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 Ft	361
Epoxy Crack Injection	Foot	26
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	232
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	42
Temporary Shoring And Cribbing	Each	2

MODEL: SMODELNAMES
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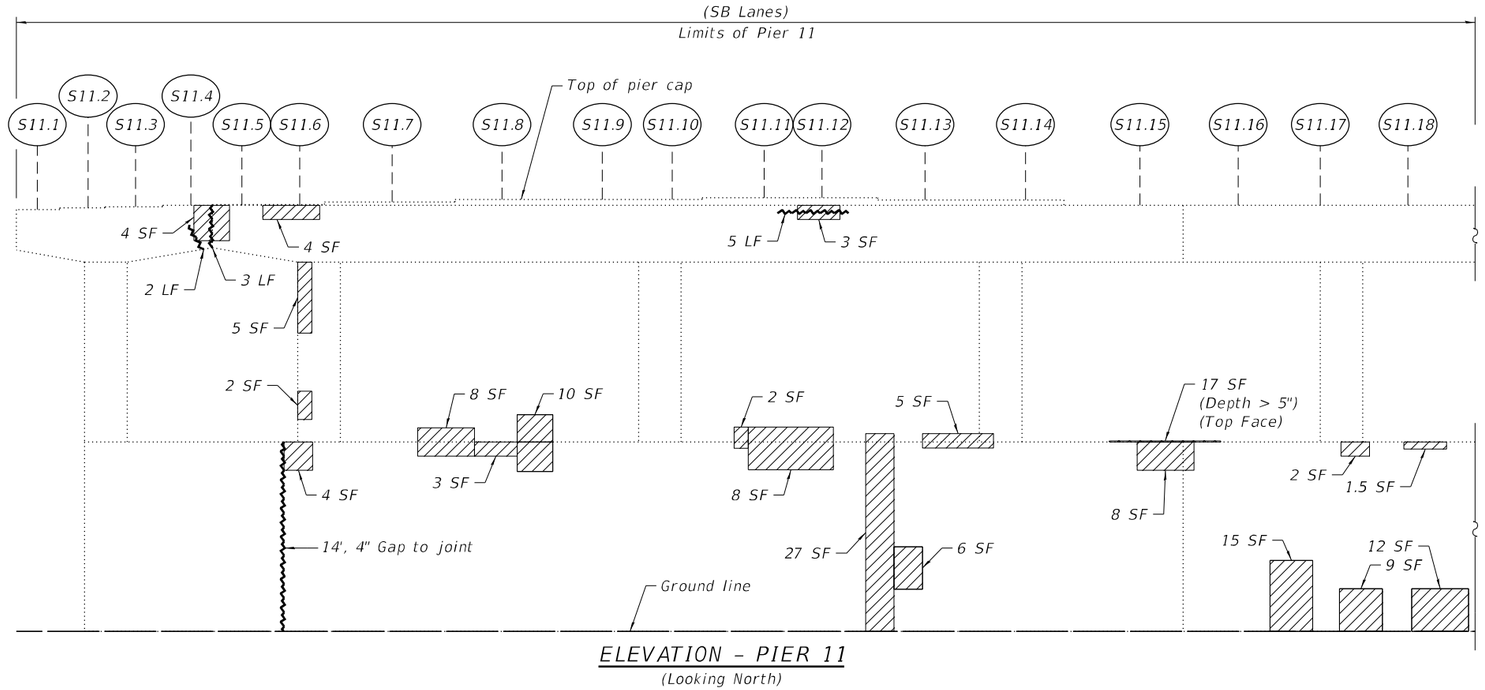
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 10 REPAIRS
SN 016-0133 (SB)

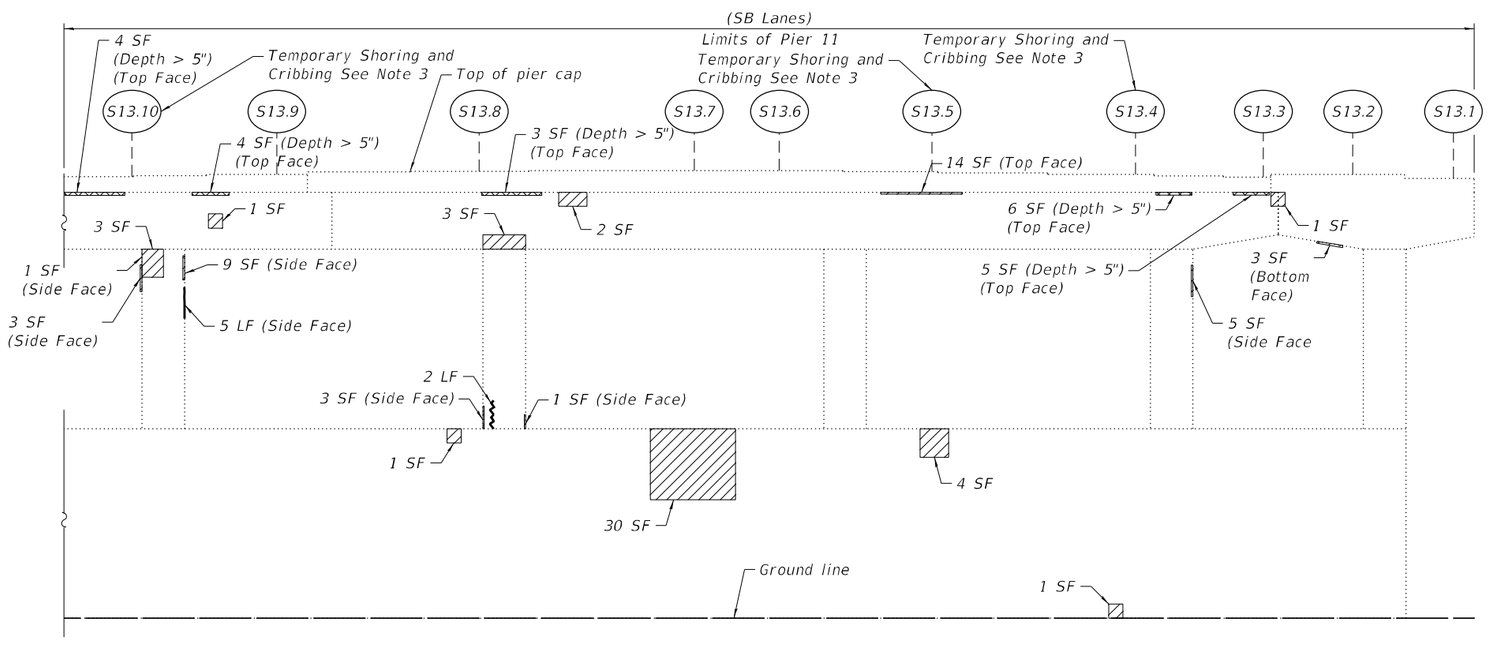
SHEET S08-124 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	819
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		



ELEVATION - PIER 11

(Looking North)



ELEVATION - PIER 11

(Looking South)

SUMMARY OF REACTIONS PIER 11	
	Span 11
R DL (k)	32.9
R LL (k)	24.9
R IM (k)	6.9
R Total (k)	64.7

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. Apply Concrete Sealer to the top of the pier cap.
3. Temporary Shoring and Cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.

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	361
Epoxy Crack Injection	Foot	31
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	224
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	39
Temporary Shoring and Cribbing	Each	3

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PIER 11 REPAIRS
SN 016-0133 (SB)

SHEET S08-125 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	820
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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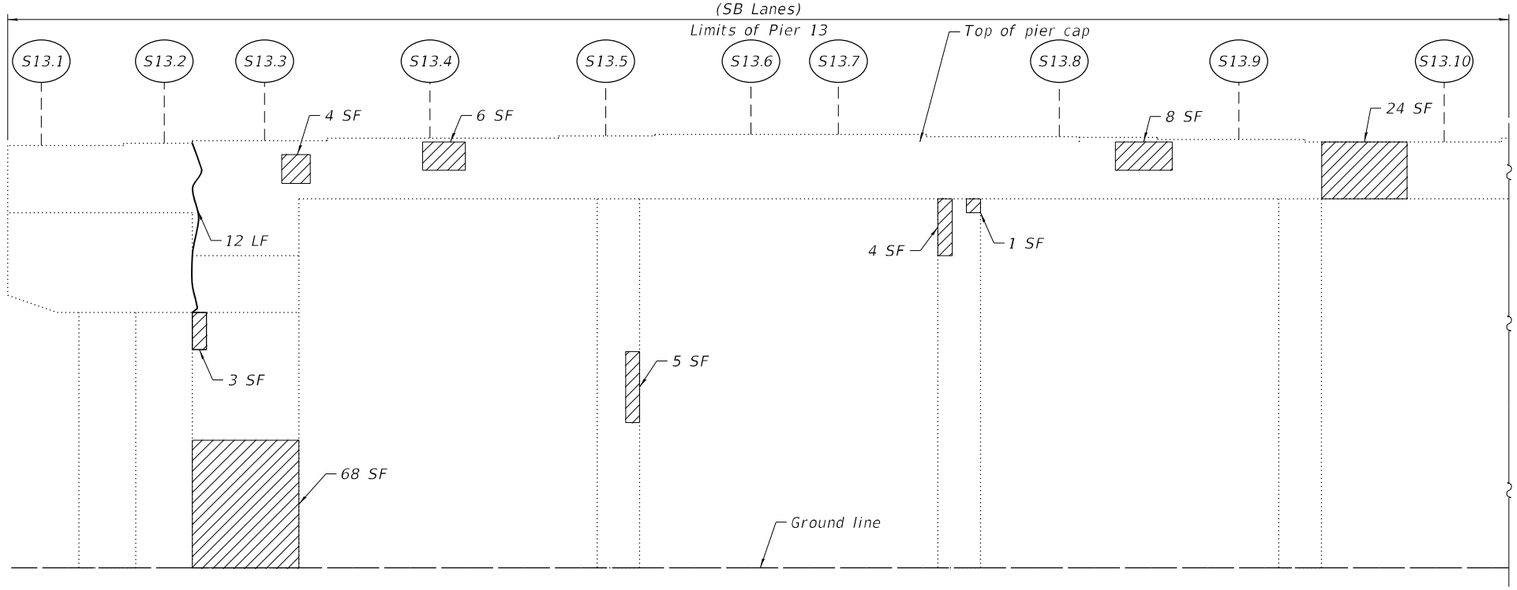
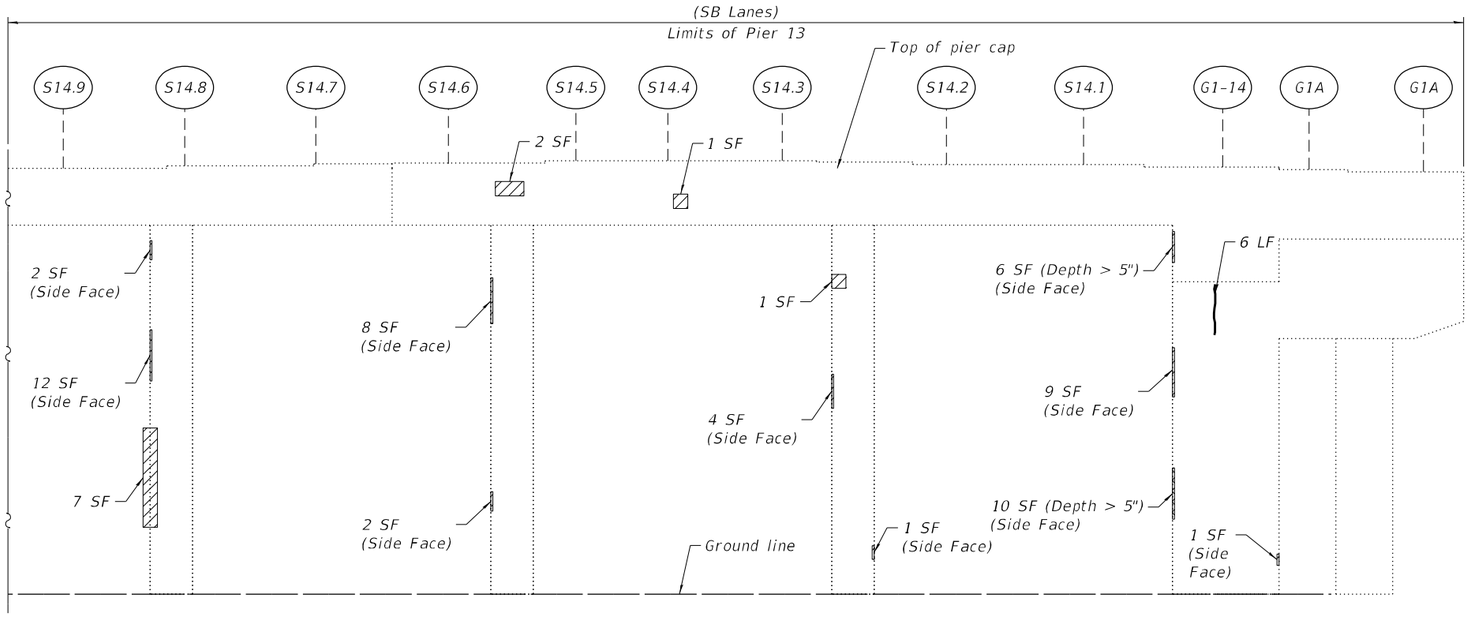


ELEVATION - PIER 13

(Looking North)



ELEVATION - PIER 13

(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. Apply Concrete Sealer to the top of the pier cap.

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	309
Epoxy Crack Injection	Foot	18
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	173
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	16

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PIER 13 REPAIRS
SN 016-0133 (SB)
SHEET S08-126 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	821
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
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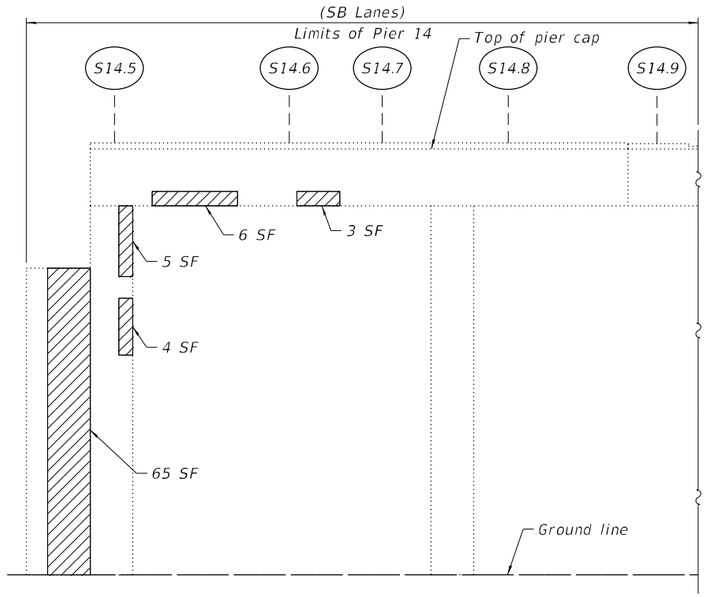
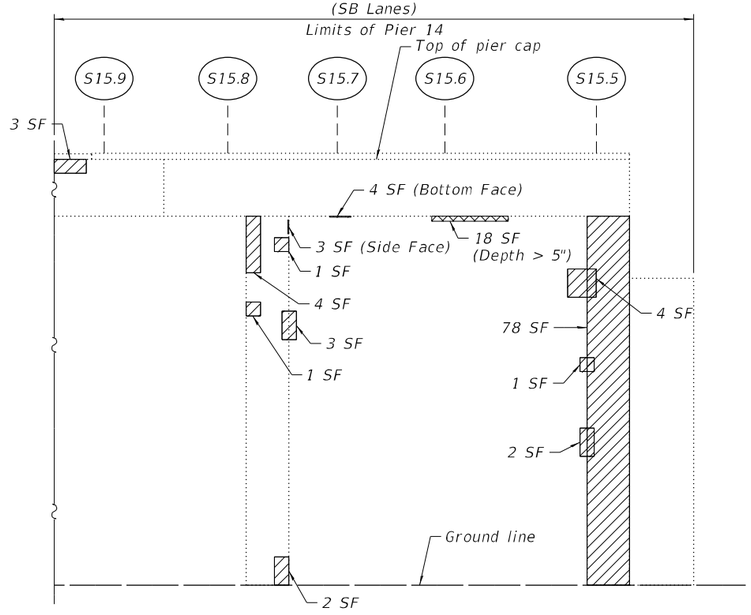


ELEVATION - PIER 14

(Looking North)



ELEVATION - PIER 14

(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. Apply Concrete Sealer to the top of the pier cap.

LEGEND

	Structural Repair of Concrete (Depth greater than 5 Inches)
	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	170
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	189
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	18

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PIER 14 REPAIRS
SN 016-0133 (SB)

SHEET S08-127 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	822
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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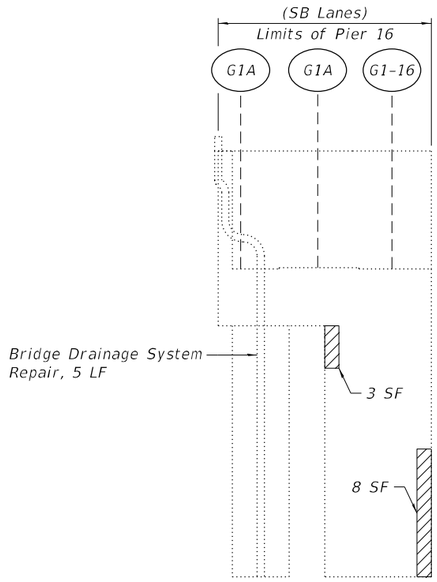
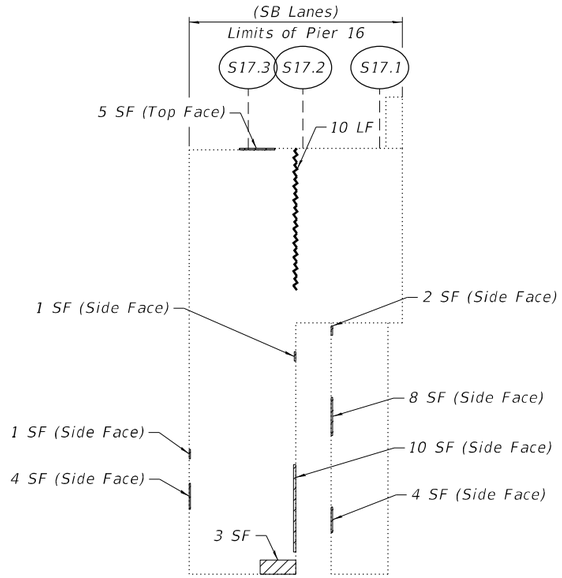


ELEVATION – PIER 16

(Looking North)



ELEVATION – PIER 16

(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. Apply Concrete Sealer to the top of the pier cap.

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 Ft	221
Epoxy Crack Injection	Foot	10
Bridge Drainage System Repair	Foot	5
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	49

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PIER 16 REPAIRS
SN 016-0133 (SB)

SHEET S08-128 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	823
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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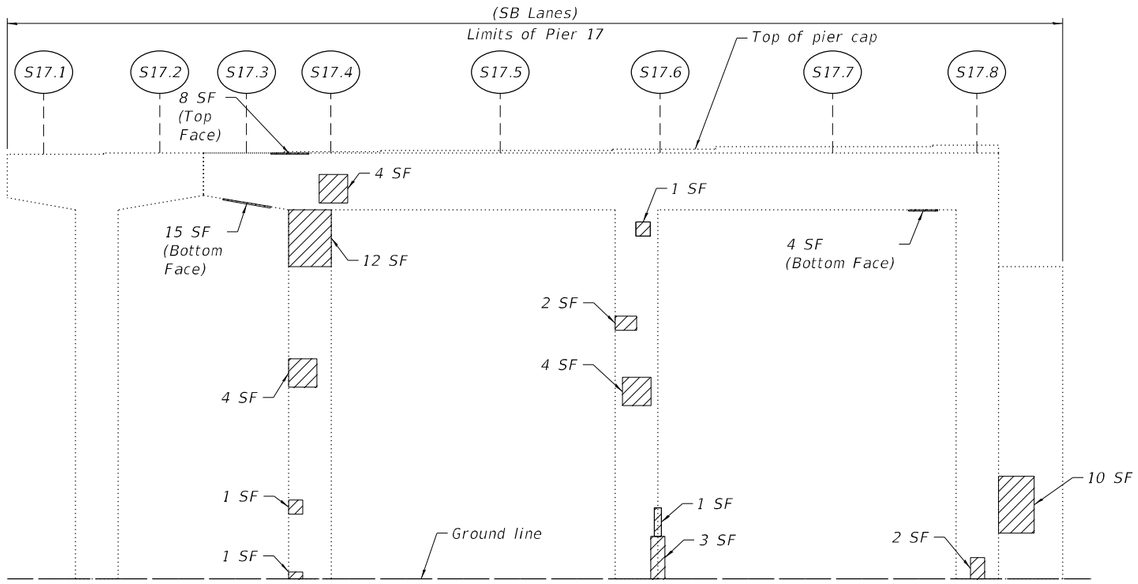
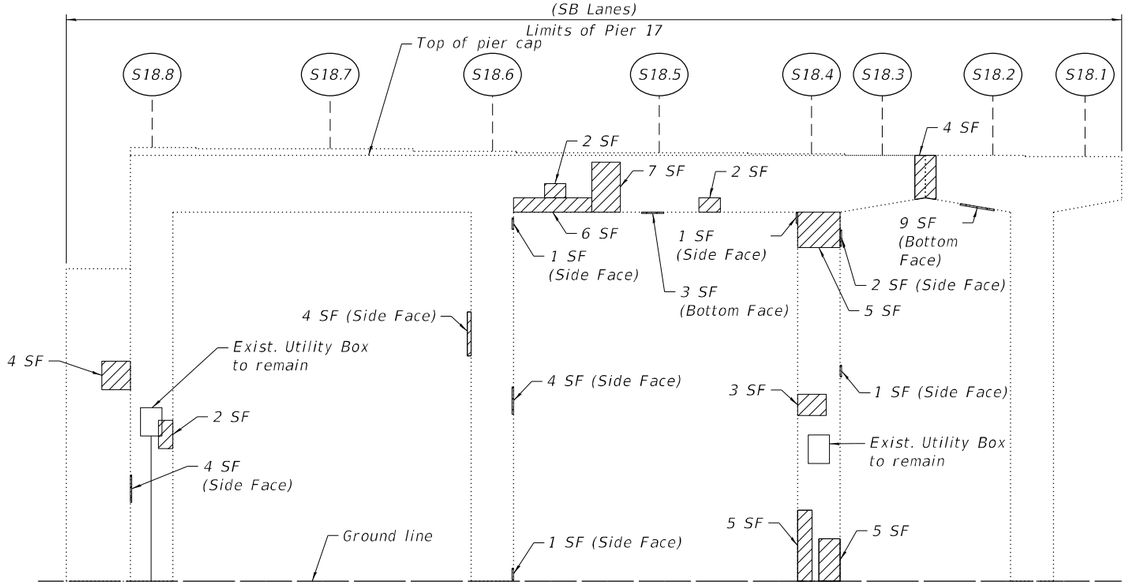


ELEVATION - PIER 17

(Looking North)



ELEVATION - PIER 17

(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. Apply Concrete Sealer to the top of the pier cap.

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	197
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	147

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PIER 17 REPAIRS
SN 016-0133 (SB)

SHEET S08-129 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	824
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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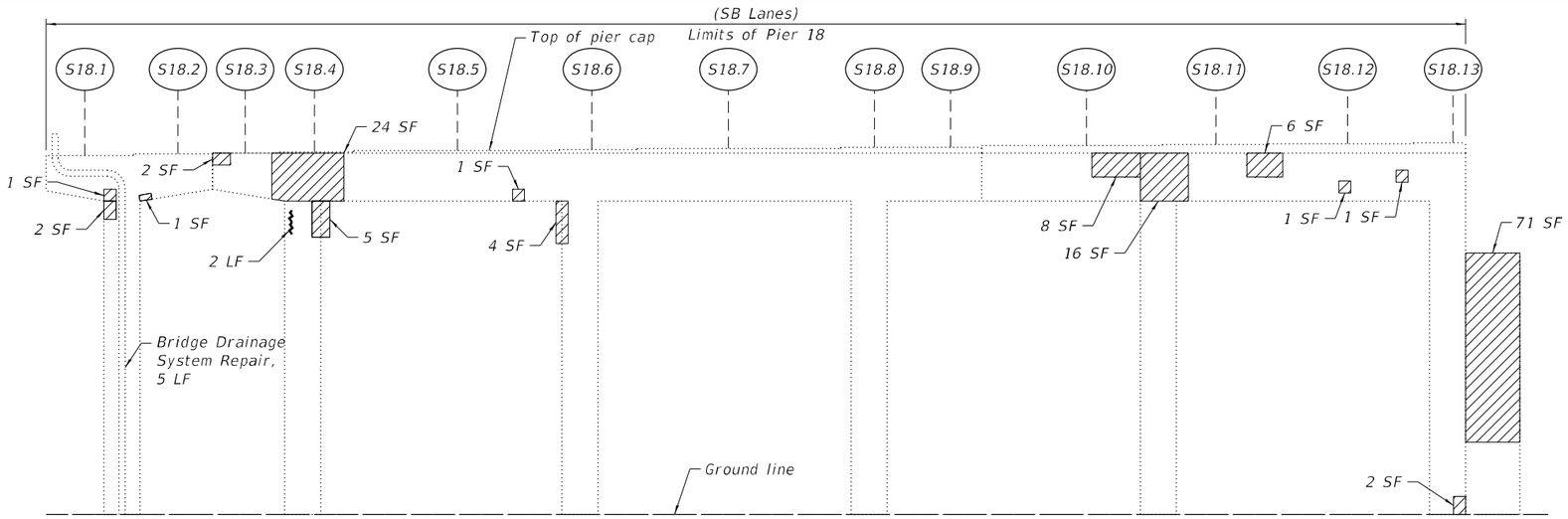
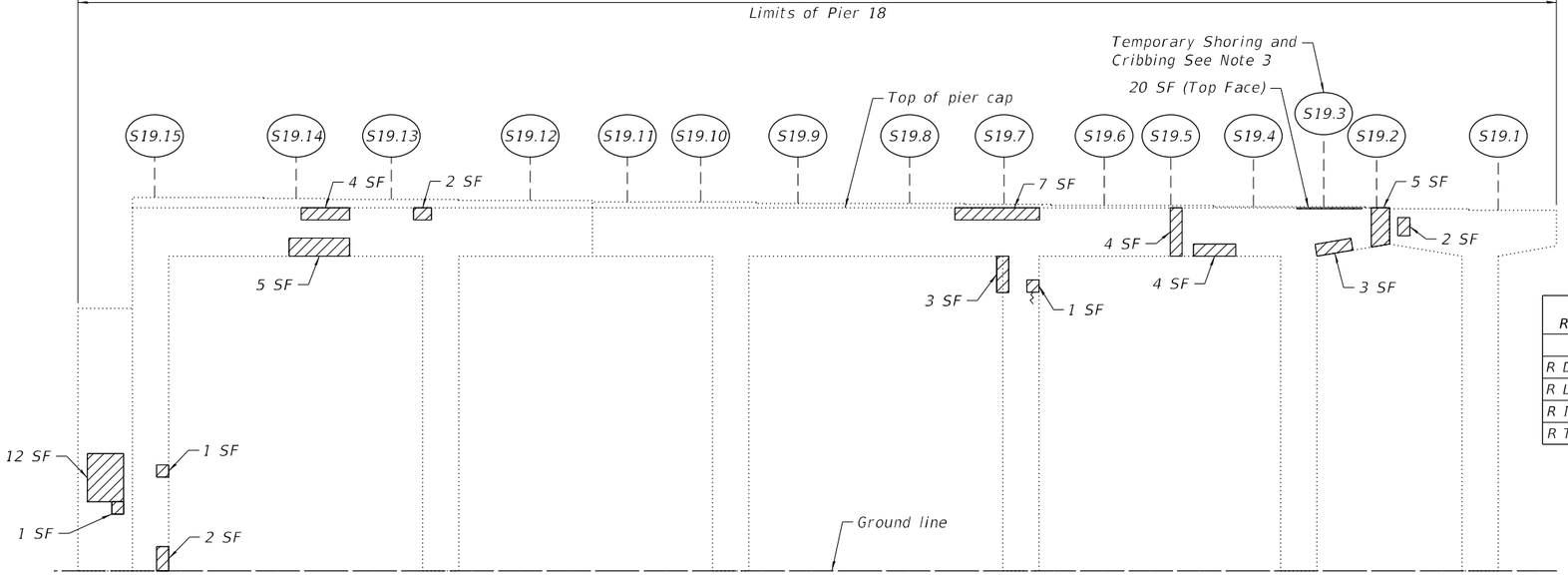


ELEVATION - PIER 18
(Looking North)



ELEVATION - PIER 18
(Looking South)

SUMMARY OF REACTIONS PIER 18	
	Span 19
R DL (k)	69.1
R LL (k)	37.5
R IM (k)	9.2
R Total (k)	115.8

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. Apply Concrete Sealer to the top of the pier cap.
3. Temporary Shoring and Cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.

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	215
Epoxy Crack Injection	Foot	2
Bridge Drainage System Repair	Foot	5
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	76
Temporary Shoring and Cribbing	Each	1

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PIER 18 REPAIRS
SN 016-0133 (SB)
SHEET S08-130 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	825
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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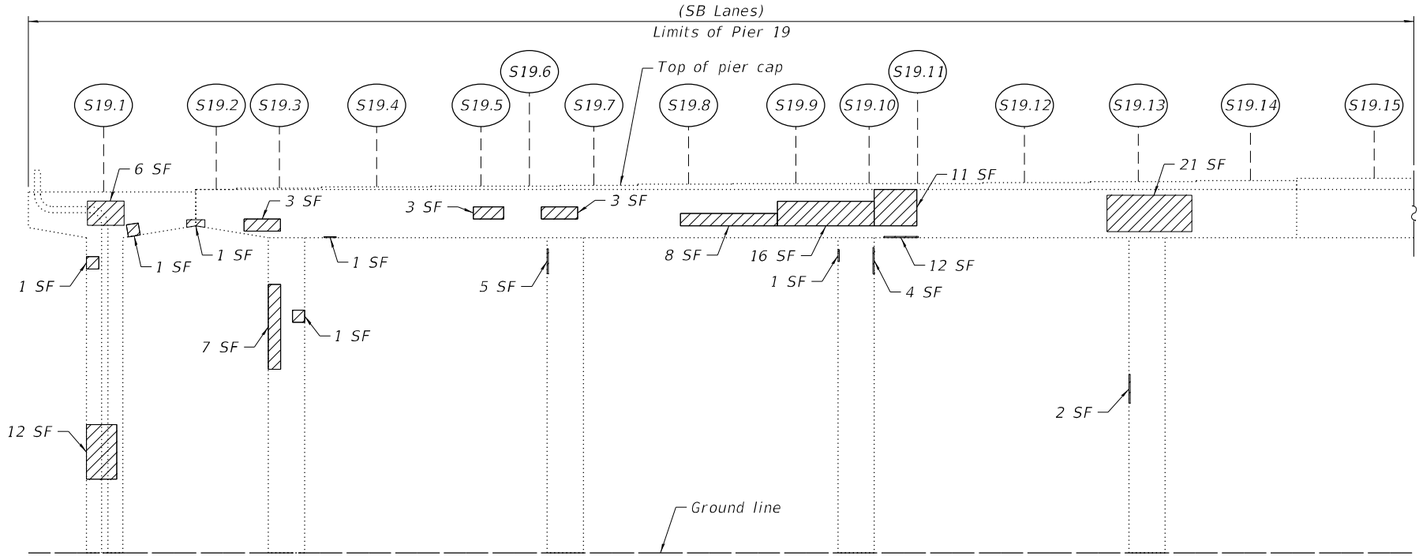
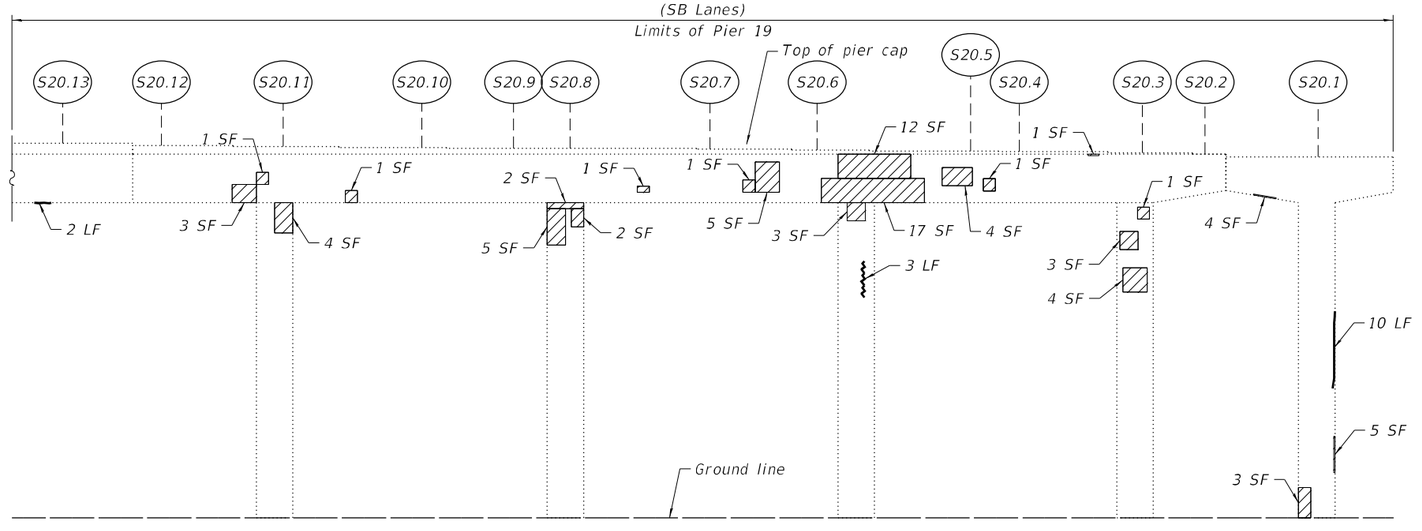


ELEVATION - PIER 19

(Looking North)



ELEVATION - PIER 19

(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. Apply Concrete Sealer to the top of the pier cap.

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	297
Epoxy Crack Injection	Foot	15
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	202

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PIER 19 REPAIRS
SN 016-0133 (SB)
SHEET S08-131 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	826
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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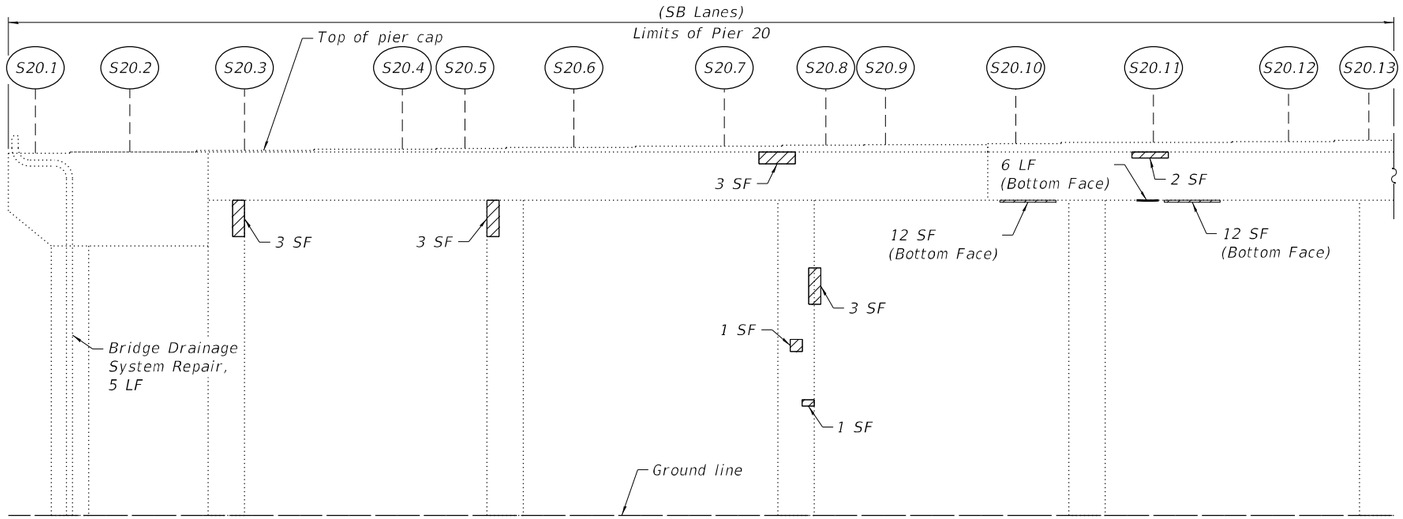
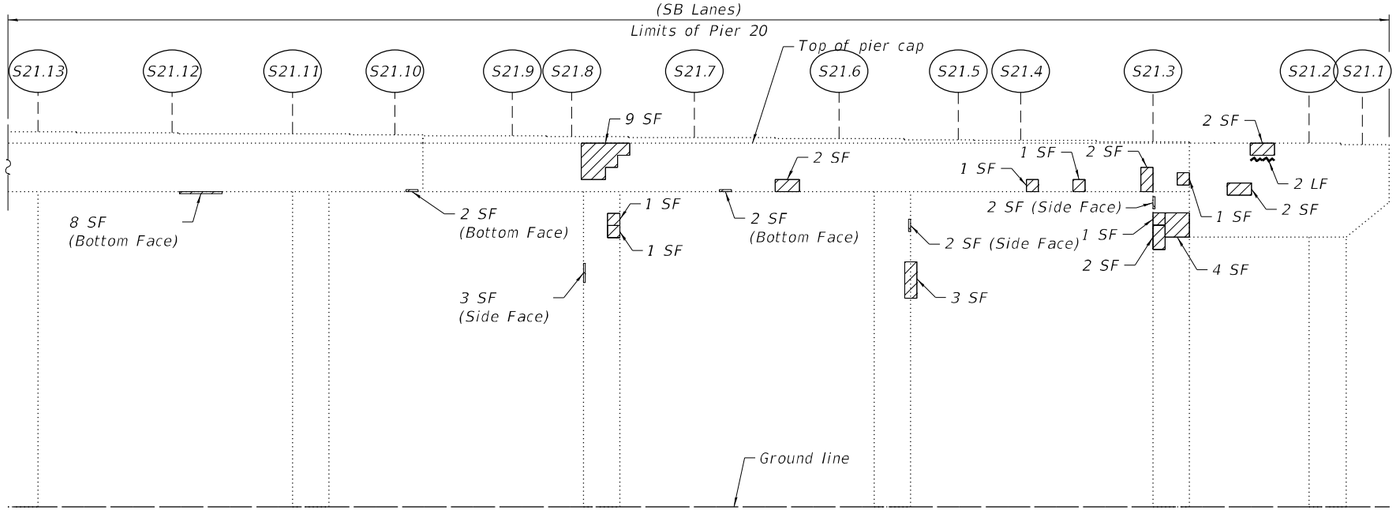


ELEVATION - PIER 20

(Looking North)



ELEVATION - PIER 20

(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.

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
Epoxy Crack Injection	Foot	8
Bridge Drainage System Repair	Foot	5
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	91

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PIER 20 REPAIRS
SN 016-0133 (SB)

SHEET S08-132 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	827
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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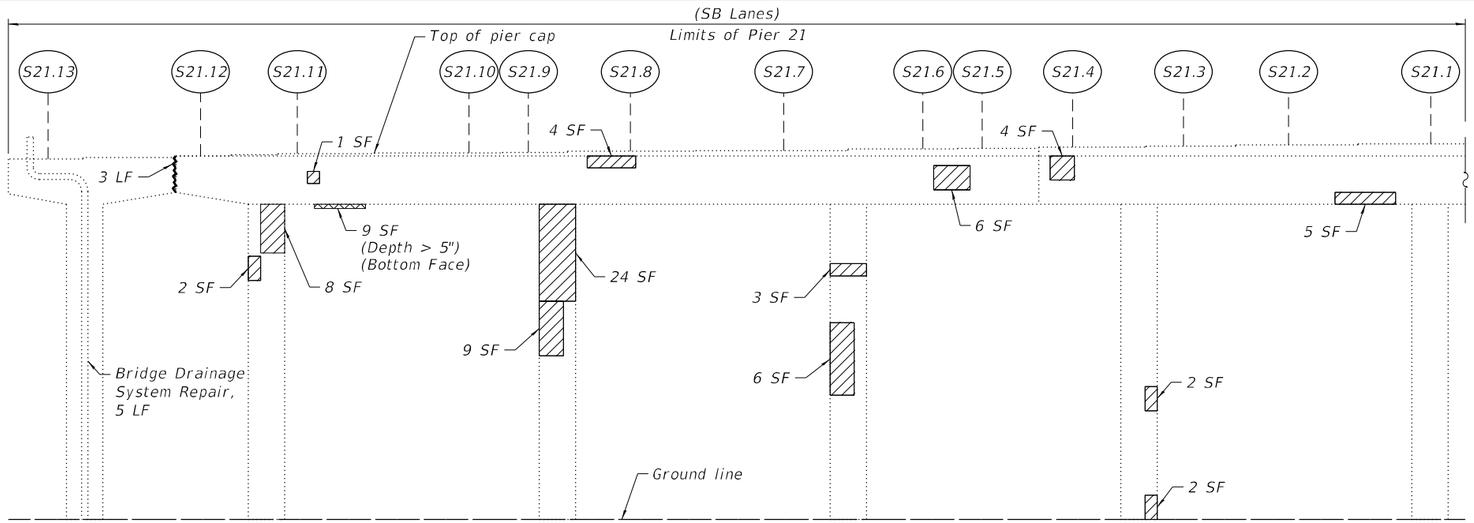
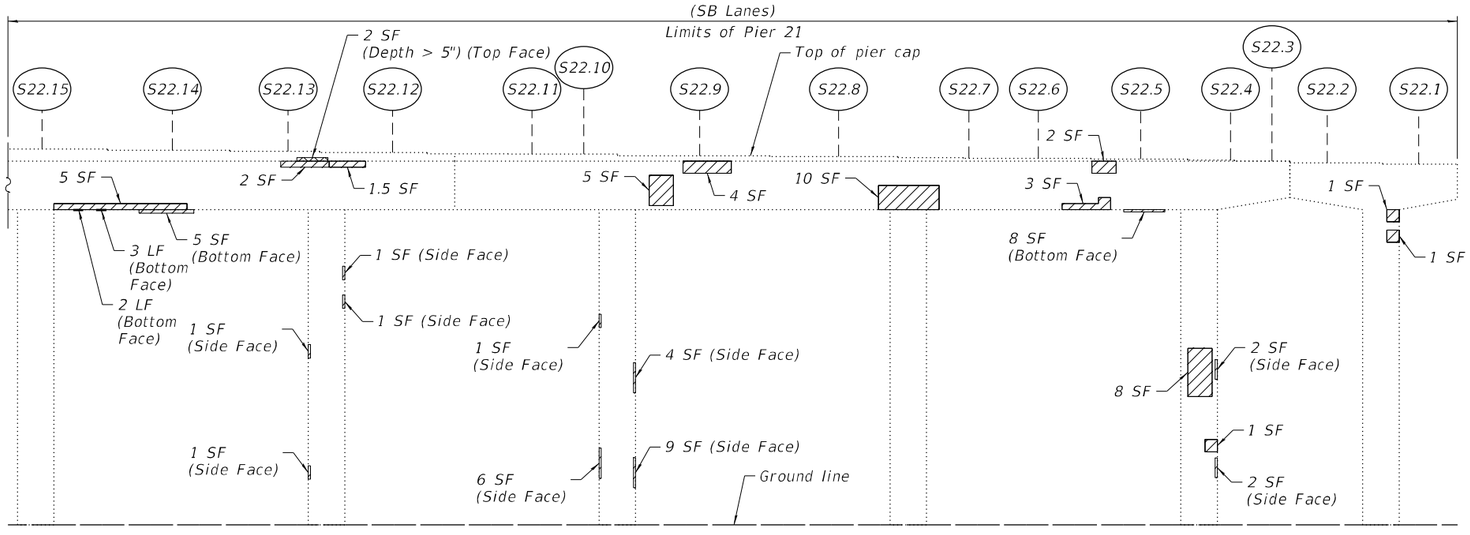


ELEVATION - PIER 21

(Looking North)



ELEVATION - PIER 21

(Looking South)

LEGEND

	Structural Repair of Concrete (Depth equal to or less than 5 Inches)
	Structural Repair of Concrete (Depth greater 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	244
Epoxy Crack Injection	Foot	8
Bridge Drainage System Repair	Foot	5
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	161
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	11
Temporary Shoring and Cribbing	Each	1

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PIER 21 REPAIRS
SN 016-0133 (SB)

SHEET S08-133 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	828
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
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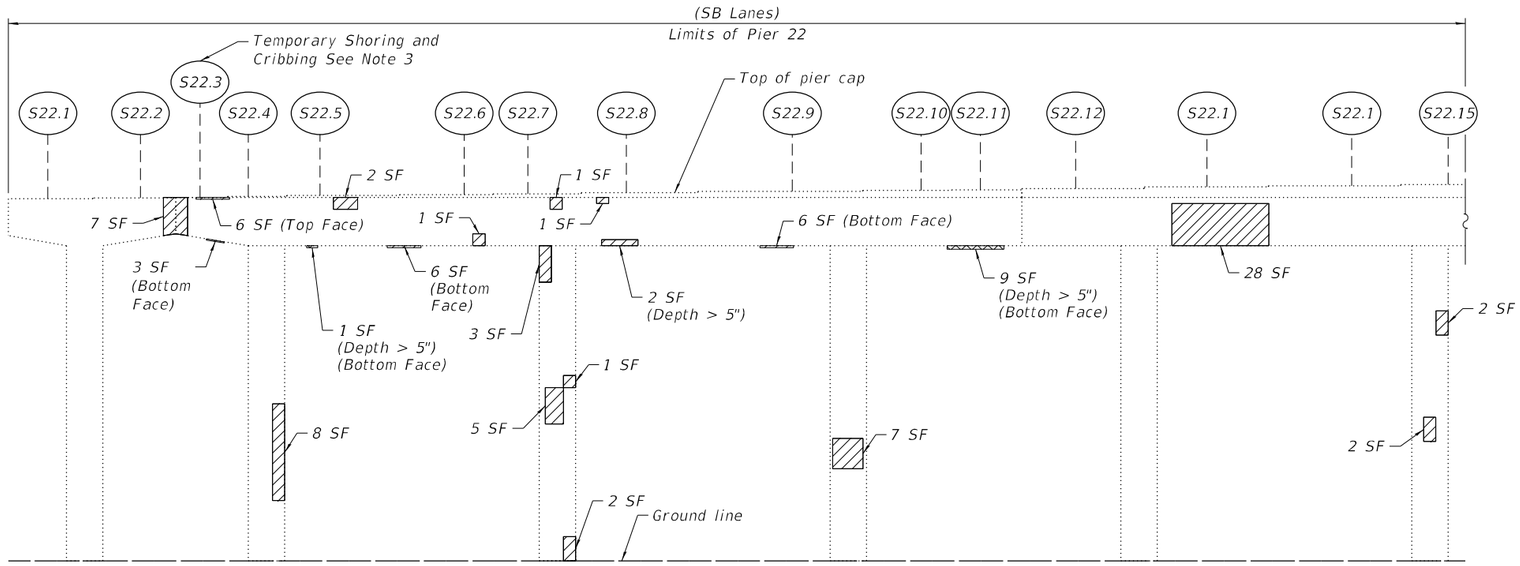
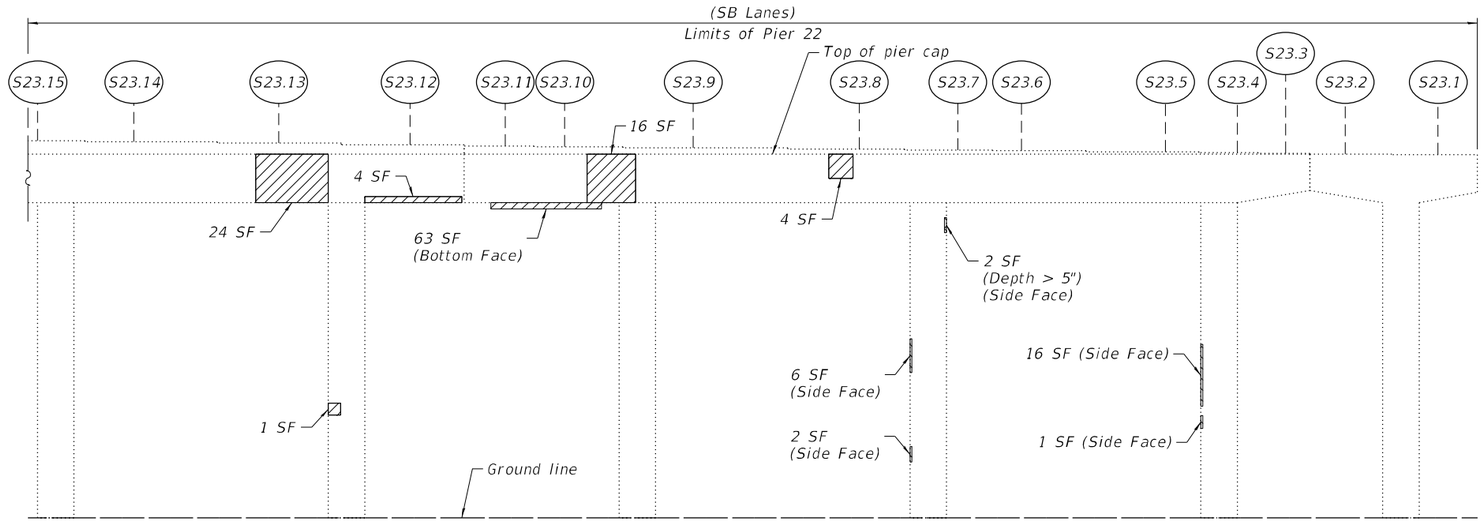


ELEVATION - PIER 22

(Looking North)



ELEVATION - PIER 22

(Looking South)

SUMMARY OF REACTIONS PIER 22	
	Span 22
R DL (k)	46.8
R LL (k)	37.4
R IM (k)	10.6
R Total (k)	94.8

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. Apply Concrete Sealer to the top of the pier cap.
3. Temporary Shoring and Cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the structural repair of concrete.

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	241
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	228
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	14
Temporary Shoring and Cribbing	Each	1

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 22 REPAIRS
SN 016-0133 (SB)

SHEET S08-134 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	829
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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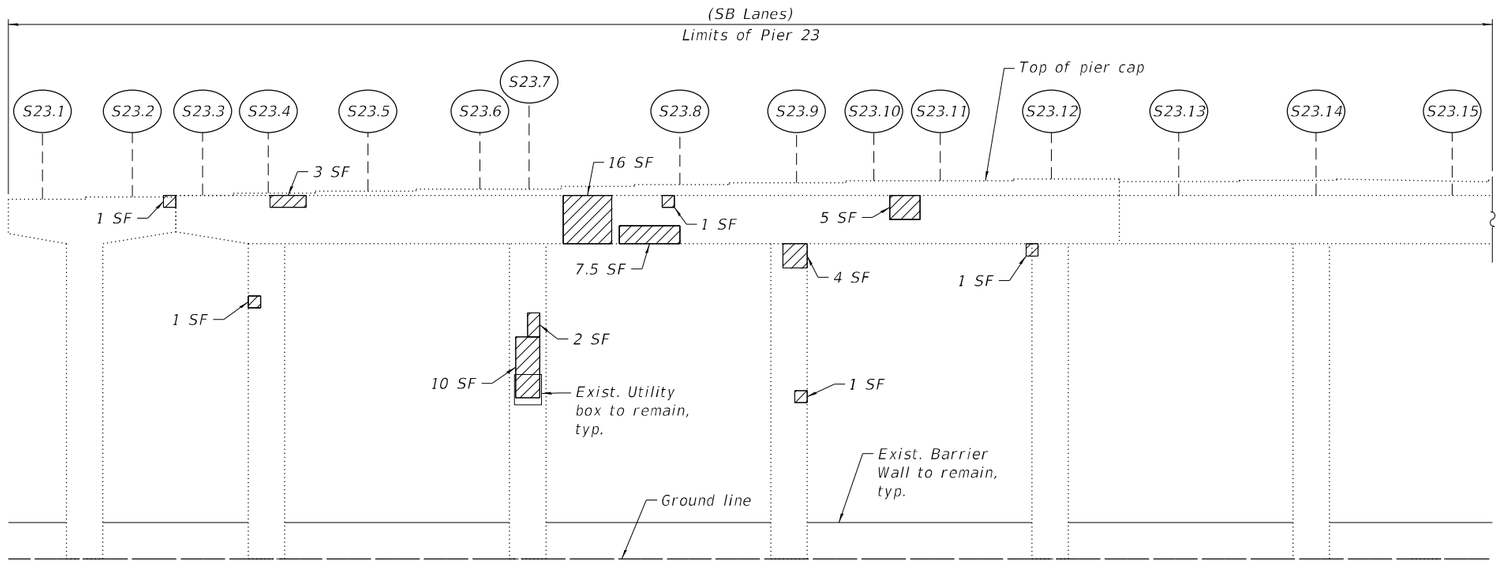
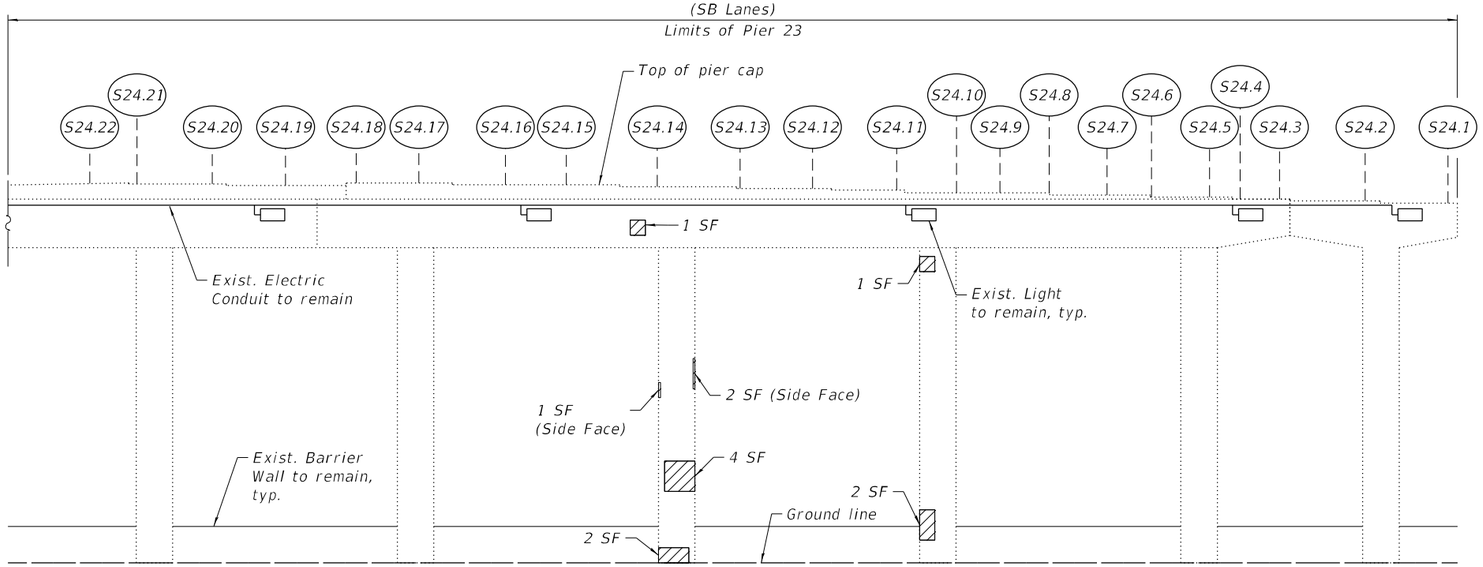


ELEVATION – PIER 23

(Looking North)

EXISTING LIGHTING: PIER 23

(Looking Southwest)



ELEVATION – PIER 23

(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. Apply Concrete Sealer to the top of the pier cap.

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	440
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	66

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 23 REPAIRS
SN 016-0133 (SB)
SHEET S08-135 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	830
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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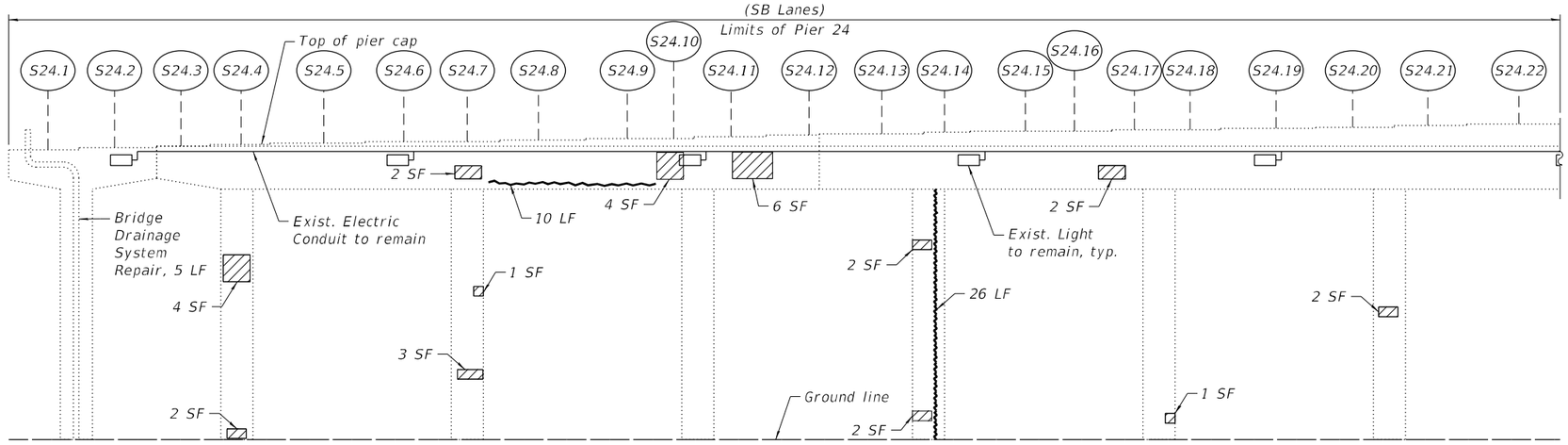
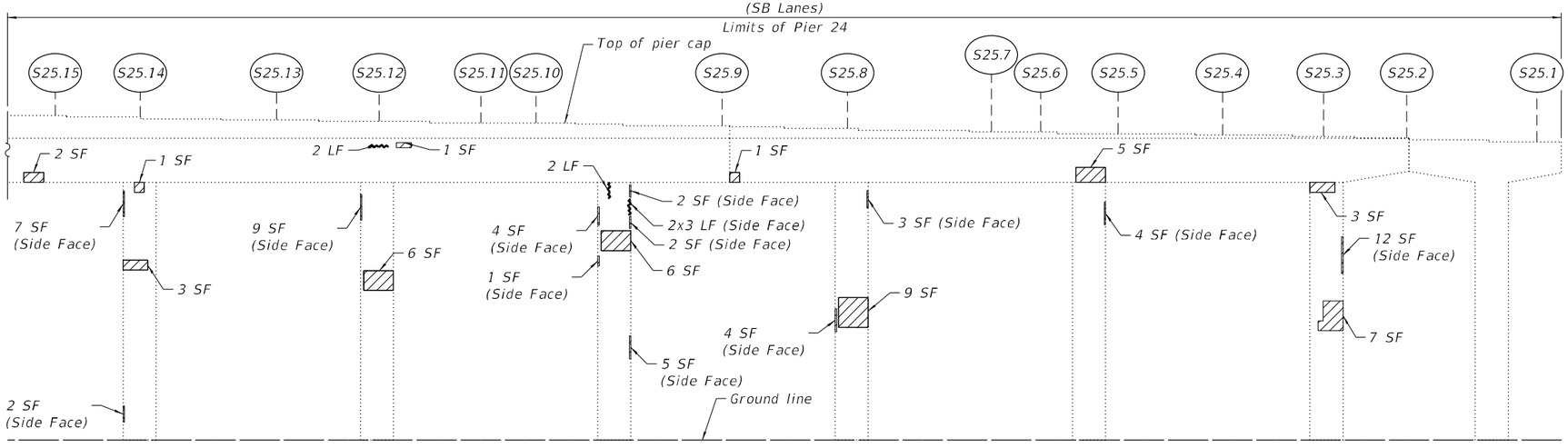


ELEVATION - PIER 24

(Looking North)

EXISTING LIGHTING PIER 24

(Looking Northwest)



ELEVATION - PIER 24

(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. Apply Concrete Sealer to the top of the pier cap.

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	344
Epoxy Crack Injection	Foot	46
Bridge Drainage System Repair	Foot	5
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	130

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DEPARTMENT OF TRANSPORTATION

PIER 24 REPAIRS
SN 016-0133 (SB)

SHEET S08-136 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	831
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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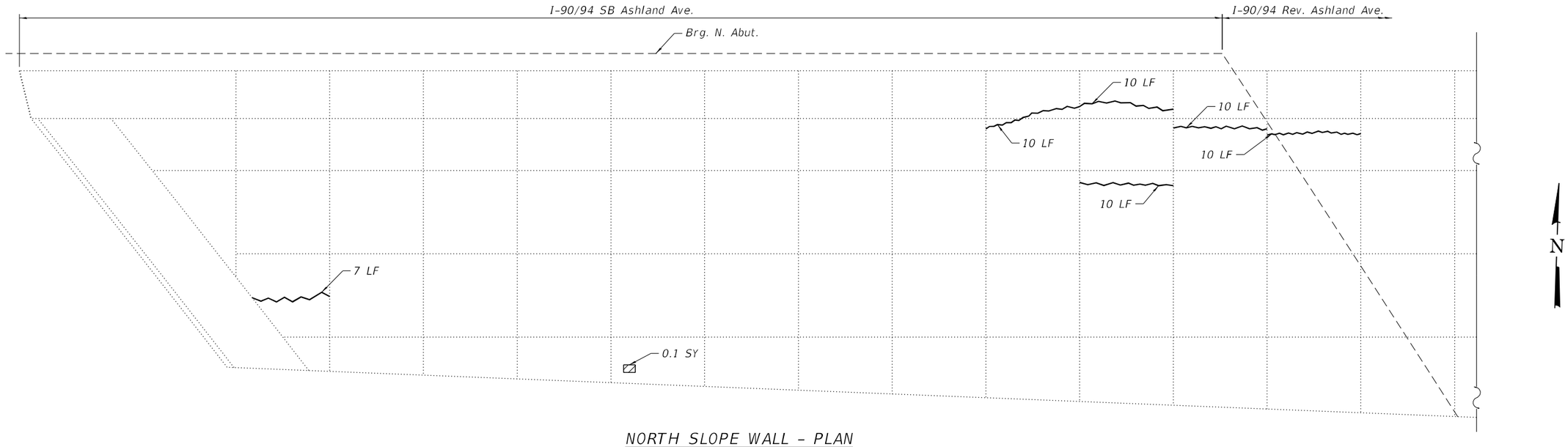
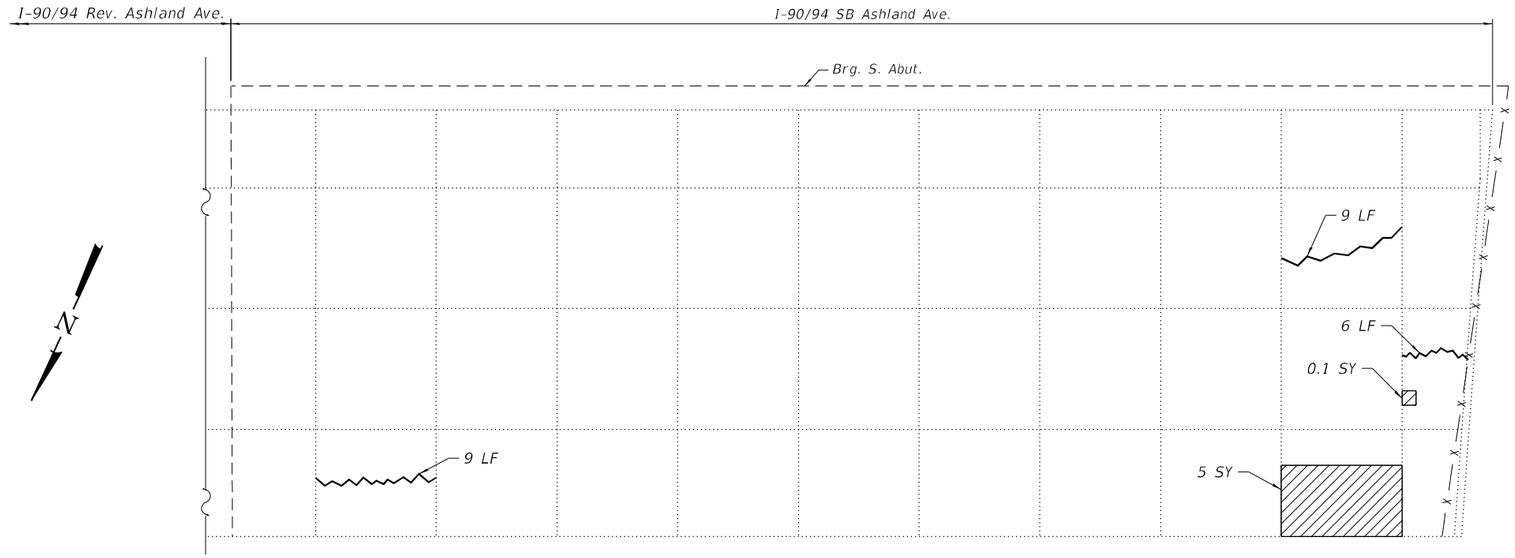


NORTH SLOPE WALL - PLAN
(Looking North)



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

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	6
Slope Wall Removal	Sq Yd	6
Slope Wall 4 Inch	Sq Yd	6
Slope Wall Crack Sealing	Foot	81

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	832
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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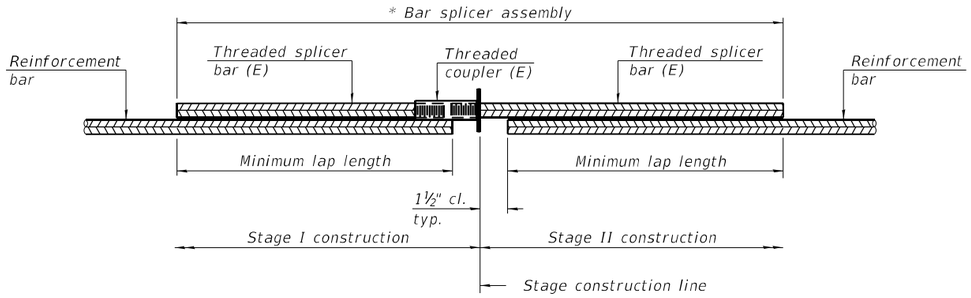


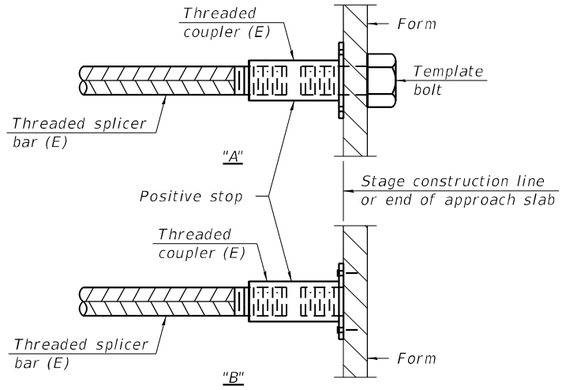
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

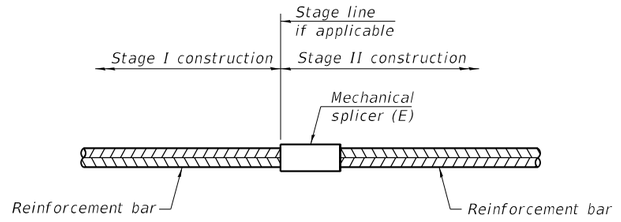
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length
Pier 1	#7	4	5'-2"
Pier 2	#7	4	5'-2"
Pier 3	#7	4	5'-2"
Pier 5	#7	4	5'-2"
Pier 7	#7	4	5'-2"
Pier 8	#7	4	5'-2"
Pier 9	#7	4	5'-2"
Pier 10	#6	4	4'-5"
Pier 11	#6	4	4'-5"
Pier 13	#7	4	5'-2"
Pier 14	#6	2	4'-5"
Pier 16	#7	4	5'-2"
Pier 17	#7	6	5'-2"
Pier 18	#7	4	5'-2"
Pier 19	#7	4	5'-2"
Pier 21	#7	4	5'-2"
Pier 22	#7	4	5'-2"
Pier 23	#6	4	4'-5"
Pier 24	#6	4	4'-5"



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	Bar size	Bar size	Bar size
	#4	#5	#6	#7
Span 3-Deck	-	362	16	20
Span 3-Diaphragm	32	-	8	-
Span 5-Deck	-	384	20	8
Span 5-Diaphragm	36	-	8	-
Span 6-Deck	-	384	20	8
Span 6-Diaphragm	36	-	8	-
Span 11-Deck	-	274	4	-
Span 11-Diaphragm	20	-	8	-
Span 14-Deck	-	232	10	8
Span 14-Diaphragm	16	-	4	-
Span 18-Deck	-	188	10	8
Span 18-Diaphragm	16	-	4	-
Span 19-Deck	-	380	20	16
Span 19-Diaphragm	32	-	8	-
Span 20-Deck	-	392	10	8
Span 20-Diaphragm	28	-	4	-
Span 21-Deck	-	848	32	16
Span 21-Diaphragm	72	-	16	-
Span 22-Deck	-	548	40	32
Span 22-Diaphragm	40	-	16	-
Span 23-Deck	-	650	224	16
Span 23-Diaphragm	46	-	16	-
Span 24-Deck	-	272	4	-
Span 24-Diaphragm	32	-	8	-
Span 25-Deck	-	438	4	-
Span 25-Diaphragm	20	-	8	-
Pier 14-Deck	-	-	-	2
Pier 17-Deck	-	-	-	2

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.

GRAEF
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DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 016-0133 (SB)

SHEET S08-138 OF S08-138 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	833
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

Existing Structure: *S.N. 016-0132 was originally built in 1959 from BCR. The bridge was widened and redecked between 1990 and 1993, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 263'-7⅛" 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 72'-6⅝", 113'-0⅞", and 72'-6⅝". The substructure consists of reinforced concrete abutments and piers supported on reinforced concrete drilled shafts.*

Traffic will be maintained utilizing stage construction.

No salvage.

LOADING

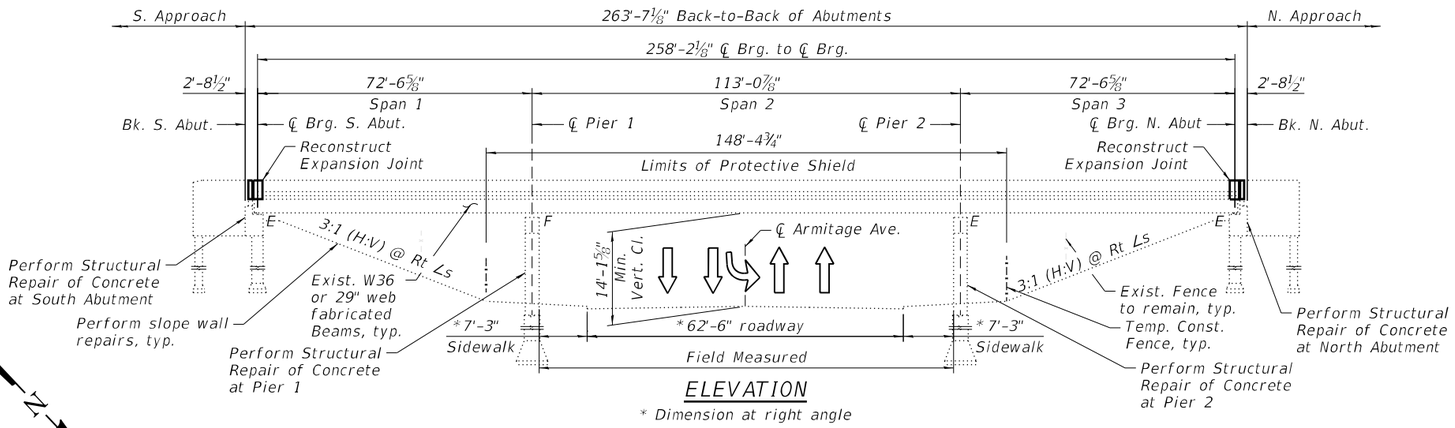
HS20-44 and alternate military loading

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition

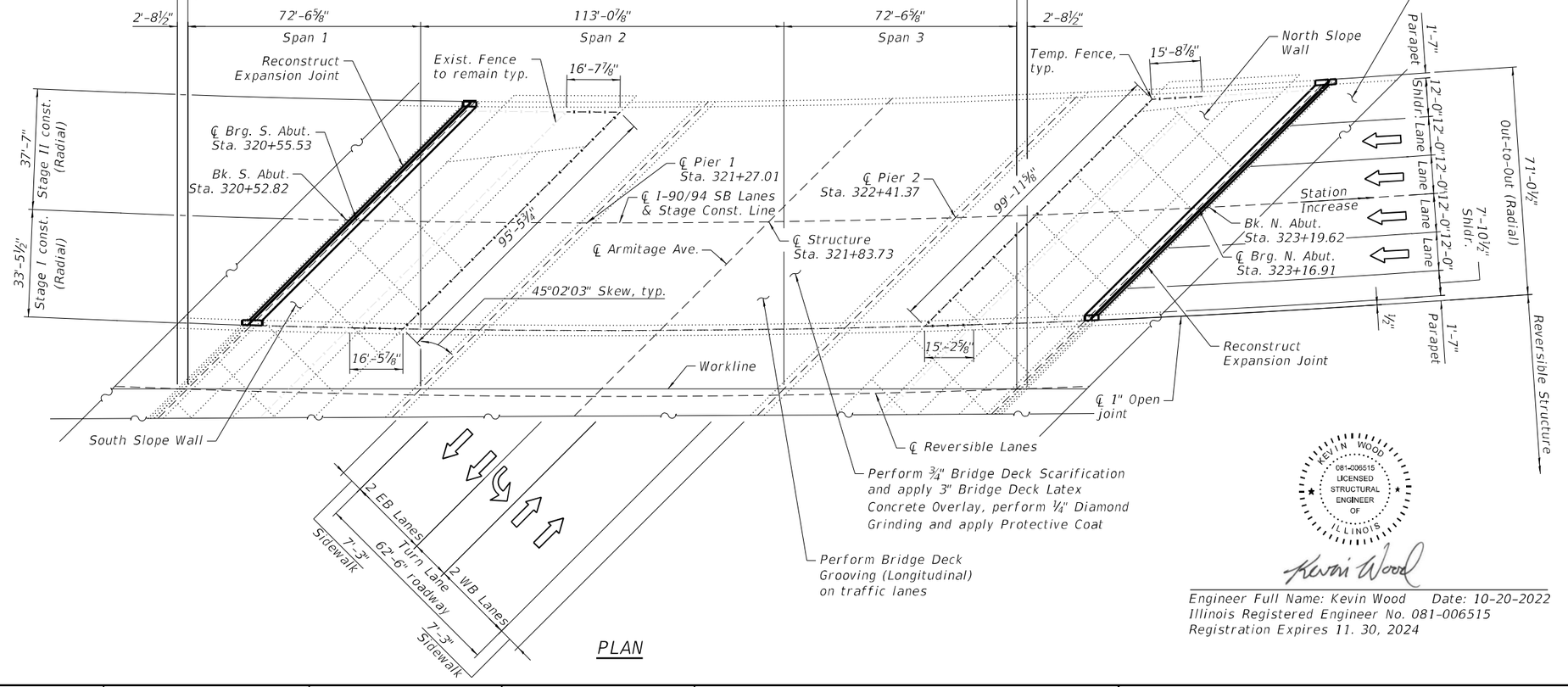
NOTE:

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

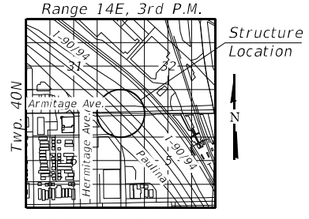


ELEVATION

* 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
SB I-90 OVER ARMITAGE AVE
F.A.I. SEC 2020-004-BR
COOK COUNTY
STATION: 321+83.73
STRUCTURE NO. 016-0132 (SB)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S09-01 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	834
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

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GENERAL NOTES

1. Fasteners shall be ASTM A325 Type 1, galvanized according to ASTM F 2329. Bolts ¾ in., holes 13/16 in., unless otherwise noted. Diaphragm connection holes be 15/16" for ¾" bolts. Two hardened washers shall be required at diaphragm connections.

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

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

4. 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.

5. 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.

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

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

8. 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.

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

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

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

12. 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.

13. 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.

14. 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".

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

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

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

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

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

20. The Contractor is responsible to protect the existing conduit 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.

21. 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.

22. 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.

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

24. 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. Repair steel diaphragms as shown on the plans.
6. 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.
7. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatched block.
8. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
9. Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse expansion joints and to the surface of the new overlay.
10. Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.
11. Perform slope wall repairs.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd		33	33
Concrete Removal	Cu Yd	27.9		27.9
Slope Wall Removal	Sq Yd		33	33
Protective Shield	Sq Yd	1,171		1,171
Concrete Superstructure	Cu Yd	30.5		30.5
Protective Coat	Sq Yd	2,242		2,242
Furnishing and Erecting Structural Steel	Pound	1,830		1,830
Reinforcement Bars, Epoxy Coated	Pound	5,700		5,700
Bar Splicers	Each	32		32
Slope Wall 4 Inch	Sq Yd		33	33
Preformed Joint Strip Seal	Foot	205		205
Concrete Sealer	Sq Ft		882	882
Slope Wall Crack Sealing	Foot		121	121
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,384		1,384
Structural Steel Removal	Pound	1,800		1,800
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,916		1,916
Bridge Deck Scarification 3/4"	Sq Yd	1,916		1,916
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		94	94
Diamond Grinding (Bridge Section)	Sq Yd	1,957		1,957
Maintenance of Lighting System	Cal Mo		6	6
Temporary Construction Fence	Foot		264	264

GRAEF
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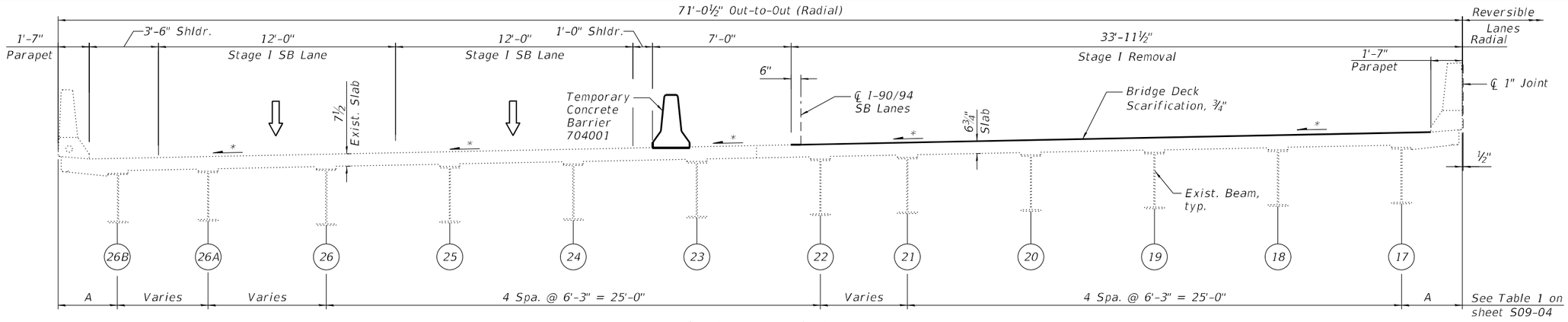
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

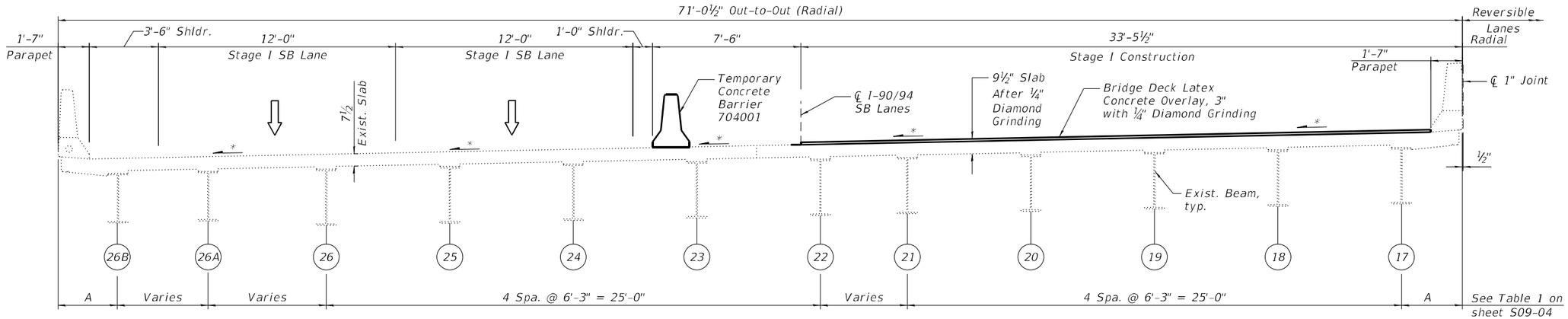
GENERAL DATA
SN 016-0132 (SB)
SHEET S09-02 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	835
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		



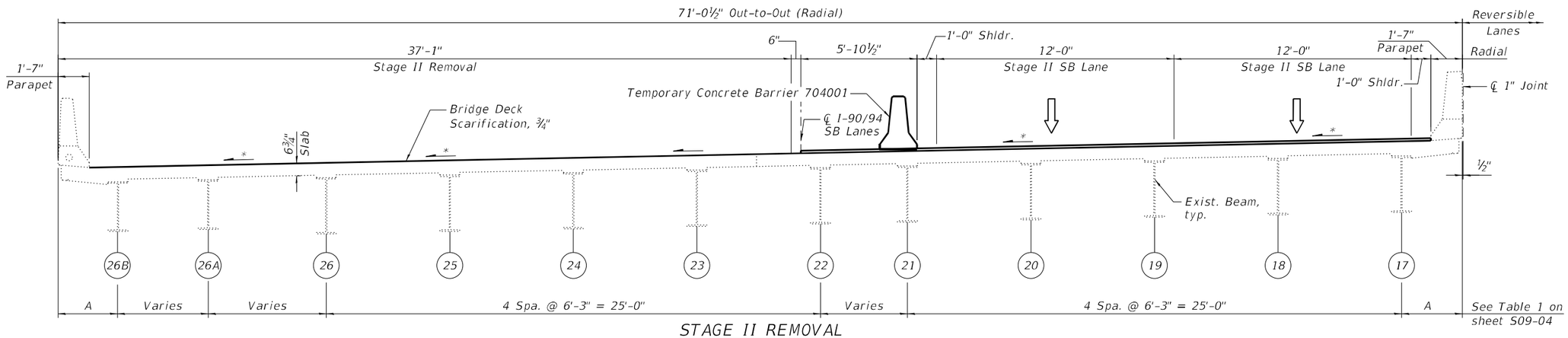
STAGE I REMOVAL

(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 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 -	K.G.W.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS I
SN 016-0132 (SB)

SHEET S09-03 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	836
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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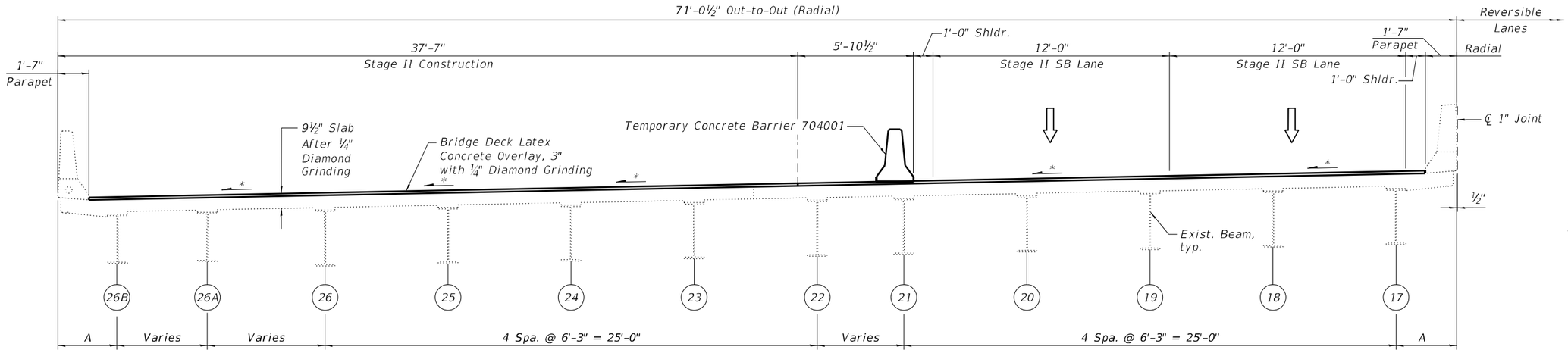
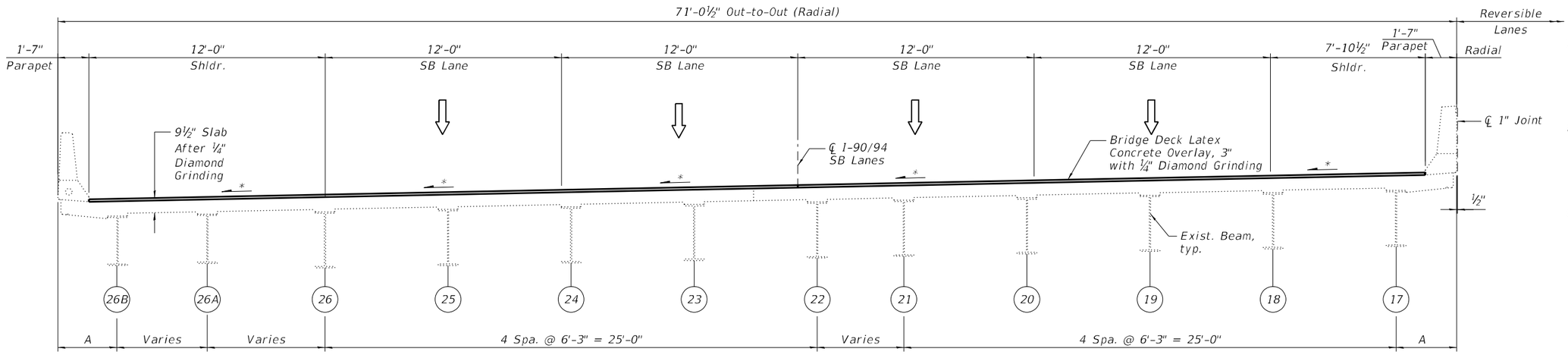


STAGE II CONSTRUCTION

(Looking North)

Table 1		
	A Dimension	
	West Side	East Side
℄ Brg. S. Abut.	3'-2⅞"	8¾"
℄ Pier 1	3'-0⅜"	3'-0⅛"
℄ Pier 2	3'-0⅜"	3'-11⅛"
℄ Brg. N. Abut.	3'-3¼"	2'-8½"



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 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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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS II
SN 016-0132 (SB)

SHEET S09-04 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	837
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

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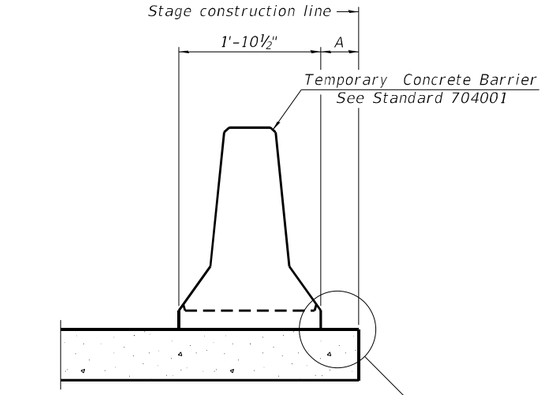
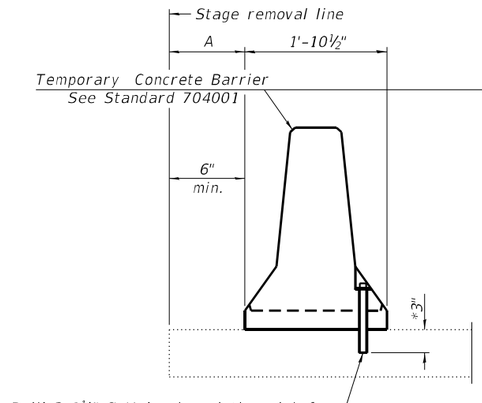


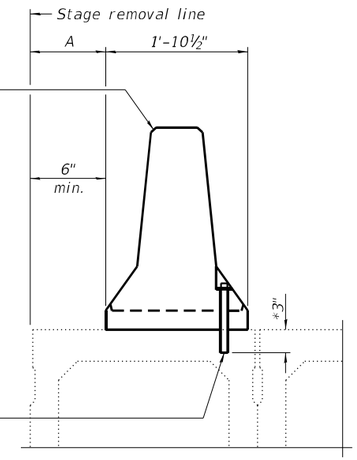
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

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".

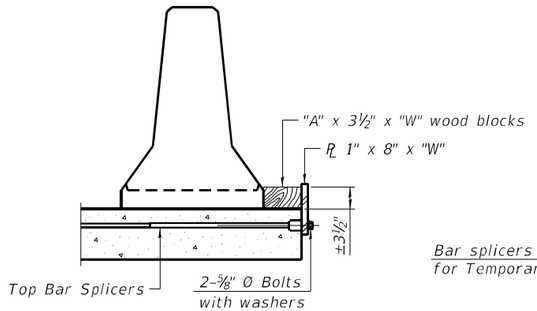
EXISTING SLAB



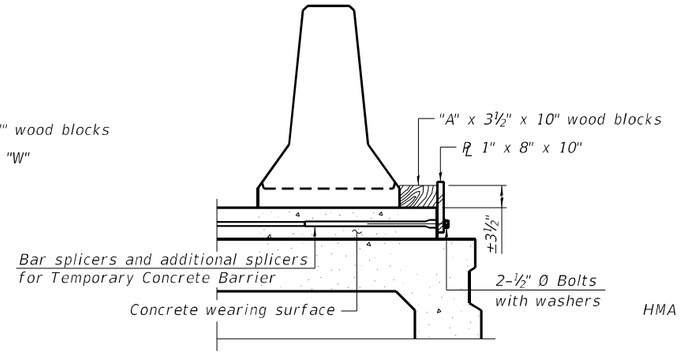
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

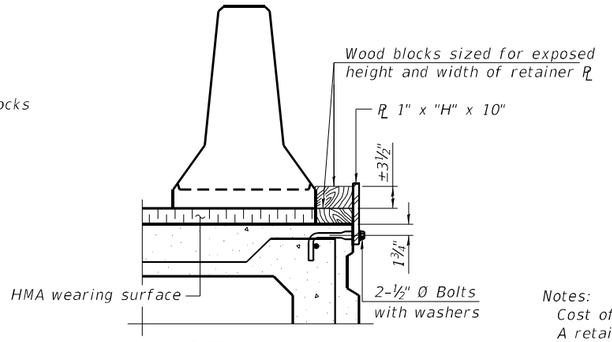
SECTIONS THRU SLAB OR DECK BEAM



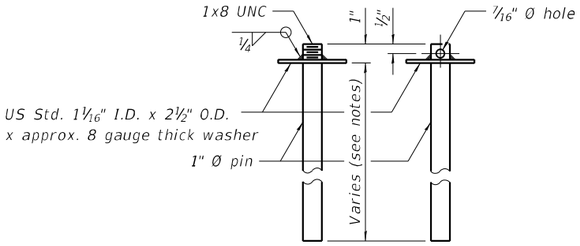
DETAIL I



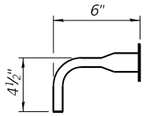
DETAIL II



DETAIL III



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

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

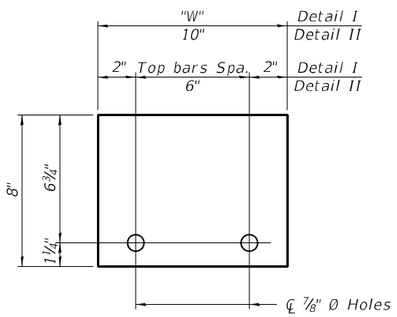
The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.

When the 'A' dimension is less than 1½", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

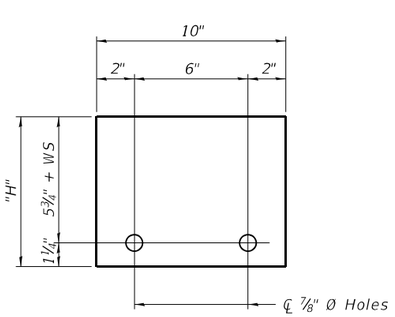
Detail I - Installation for a new bridge deck or bridge slab.

Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

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



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



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

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27

10-12-2021

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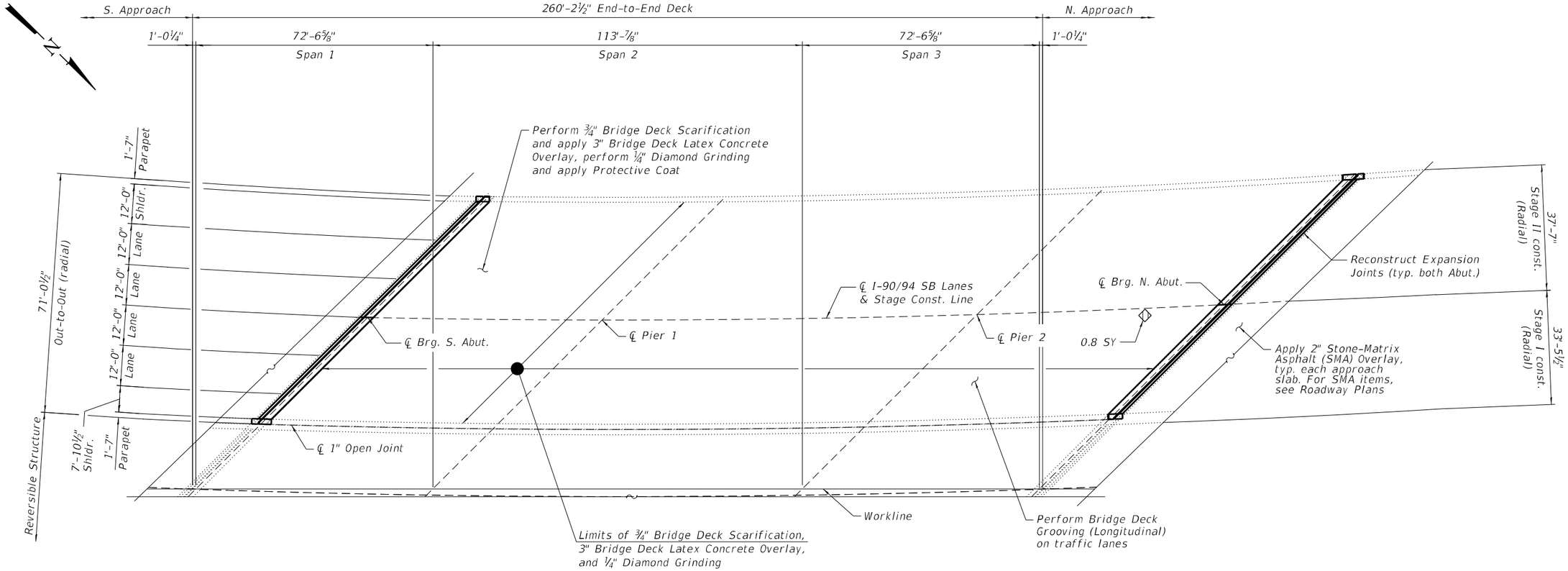
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
SN 016-0132 (SB)

SHEET S09-05 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	838
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



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 S09-04.
3. For North and South transverse joint removal and reconstruction, see Sheet S09-07 thru S09-12.
5. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatched block.
4. 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 (Partial Depth)

SY Square Yard

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	1,171
Protective Coat	Sq Yd	2,242
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,384
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,916
Bridge Deck Scarification 3/4"	Sq Yd	1,916
Diamond Grinding (Bridge Section)	Sq Yd	1,957
Maintenance of Lighting System	Cal Mo	6

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE DECK REPAIR PLAN AND DETAILS
SN 016-0132 (SB)

SHEET S09-06 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	839
		CONTRACT NO. 62K74		
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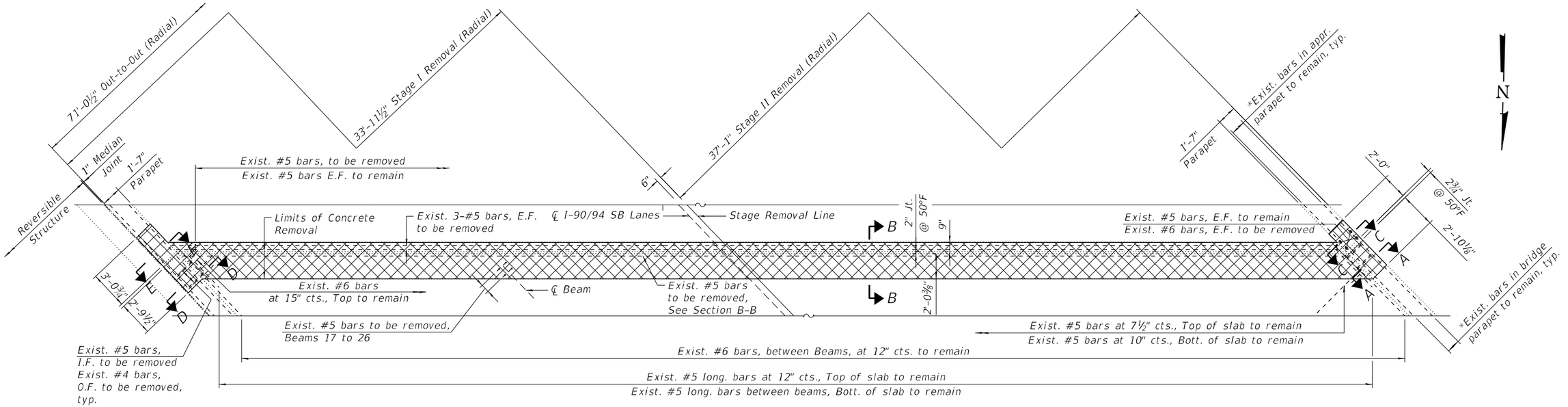
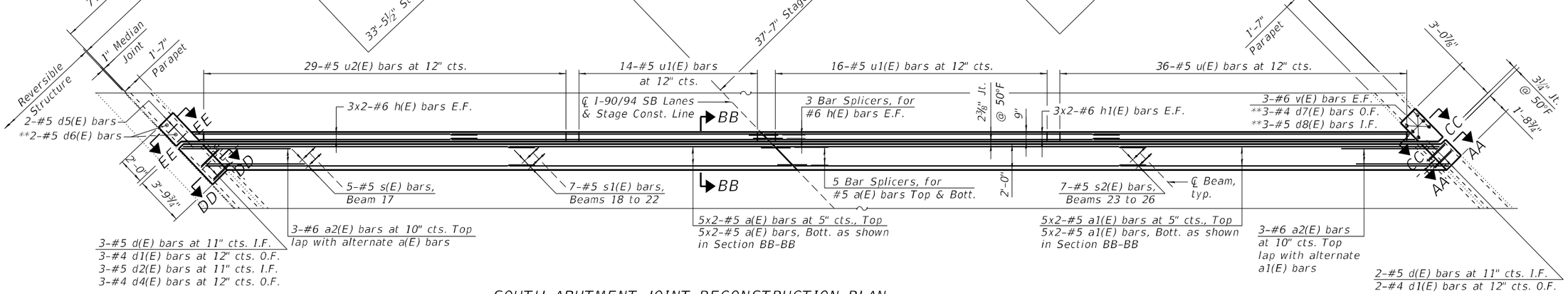


SOUTH ABUTMENT JOINT REMOVAL PLAN



SOUTH ABUTMENT JOINT RECONSTRUCTION PLAN

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

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

NOTES:

1. *For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S09-08.*
2. *For sections D-D, E-E, DD-DD and EE-EE, see sheet S09-09.*

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

SOUTH ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0132 (SB)

SHEET S09-07 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	840
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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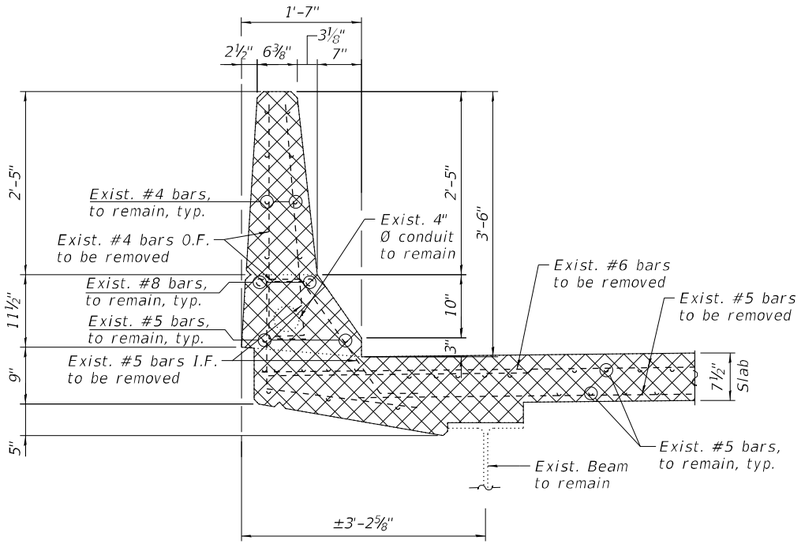
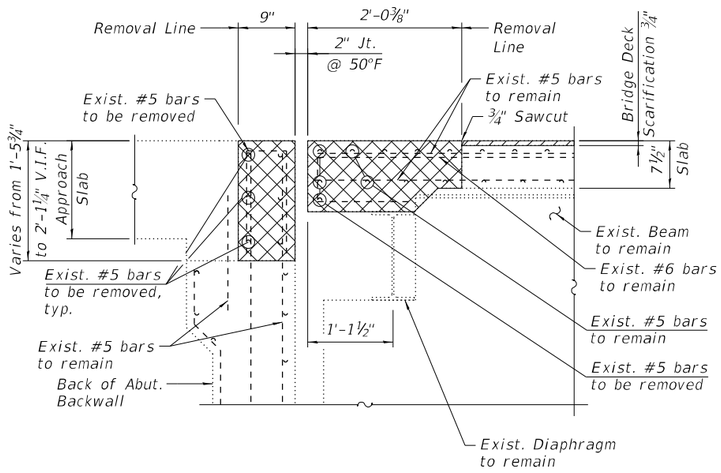
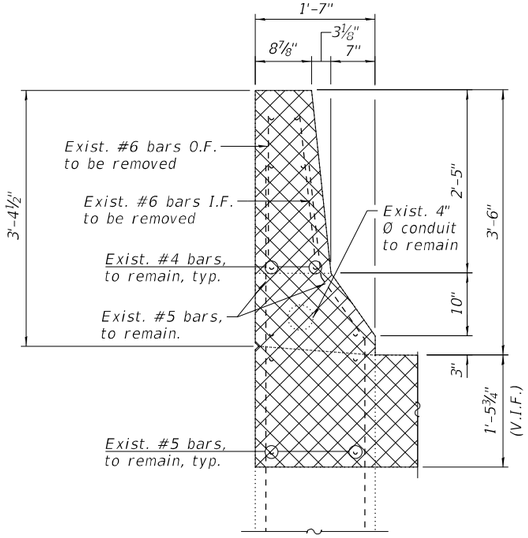


SECTION A-A

(West parapet removal)

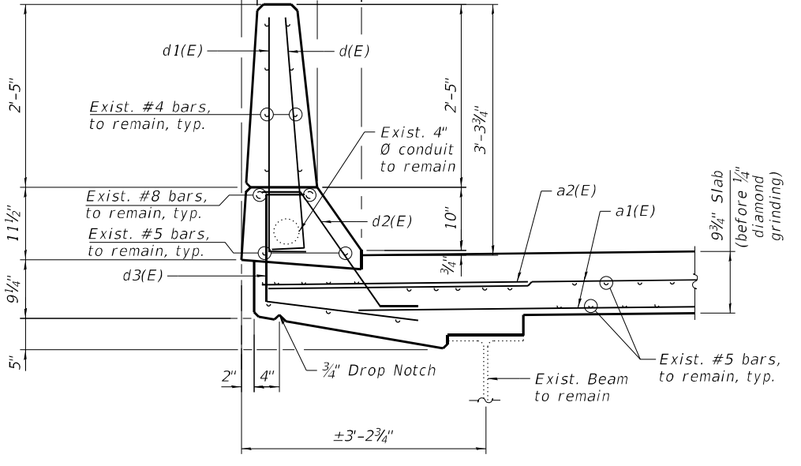


SECTION B-B



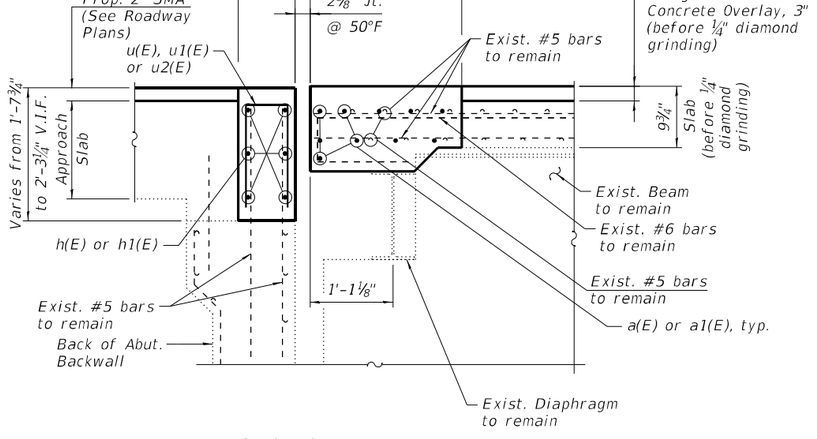
SECTION C-C

(West parapet removal)

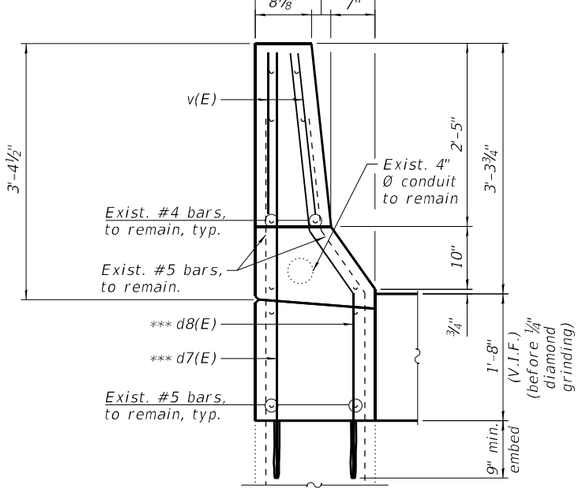


SECTION AA-AA

(West parapet reconstruction)



SECTION BB-BB



SECTION CC-CC

(West parapet reconstruction)

LEGEND

**	Dimension is taken at the Back of Abut.		Concrete Removal
***	Epoxy grout #4 d7(E) & #5 d8(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.	I.F.	Inside Face
		O.F.	Outside Face
		V.I.F.	Verify in Field

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0132 (SB)

SHEET S09-08 OF S09-24 SHEETS

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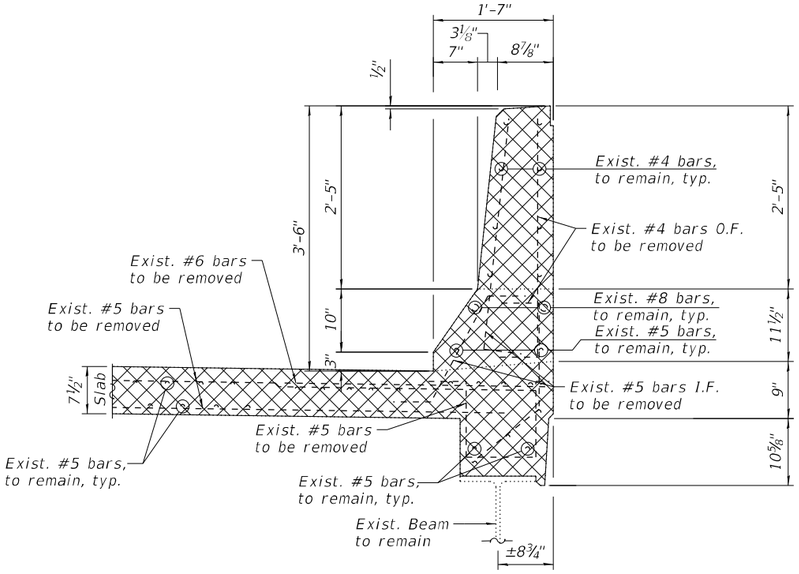
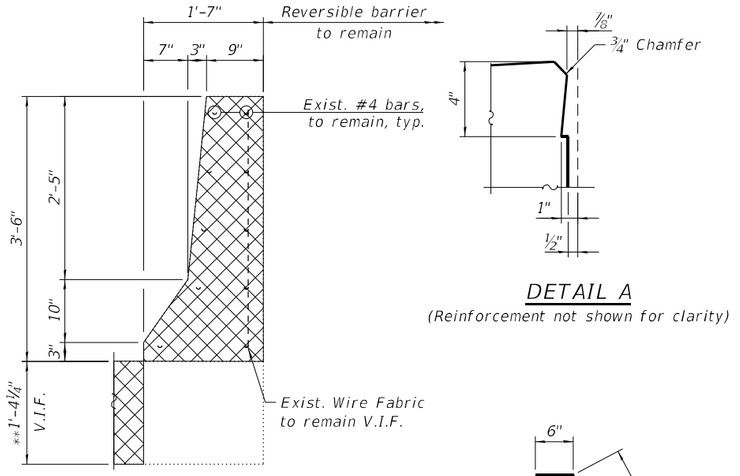
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		



SECTION D-D

(East parapet removal)

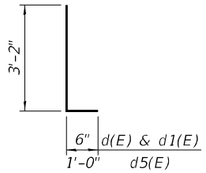


SECTION E-E

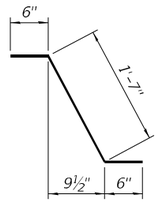
(East parapet removal)

DETAIL A

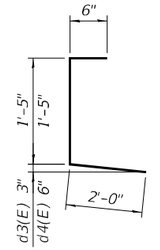
(Reinforcement not shown for clarity)



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



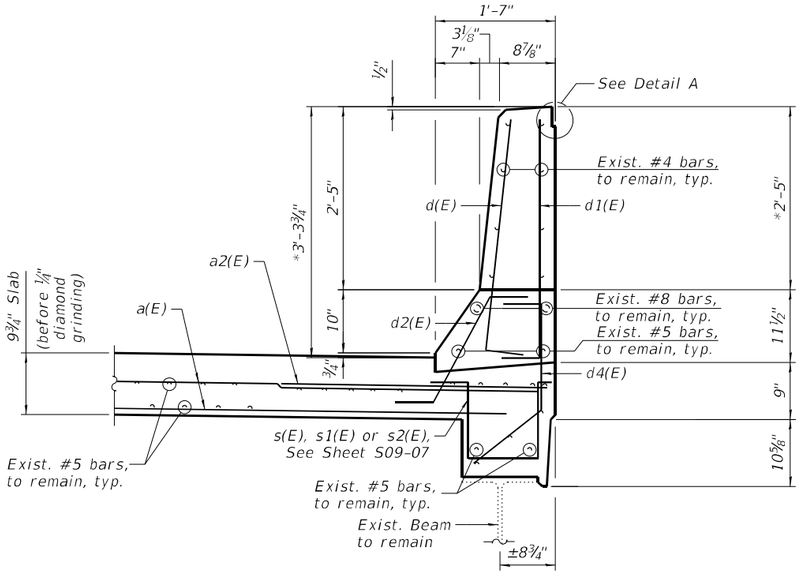
BAR d2(E)



BARS d3(E) & d4(E)

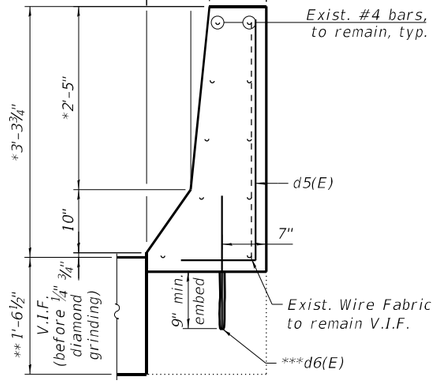
BILL OF MATERIAL
SOUTH ABUTMENT

Bar	No.	Size	Length	Shape
a(E)	20	#5	24'-9"	
a1(E)	20	#5	27'-10"	
a2(E)	6	#6	6'-6"	
d(E)	5	#5	3'-8"	
d1(E)	5	#4	3'-8"	
d2(E)	5	#5	2'-7"	
d3(E)	2	#4	3'-11"	
d4(E)	3	#4	3'-11"	
d5(E)	2	#5	4'-2"	
d6(E)	2	#5	1'-10"	
d7(E)	3	#4	5'-8"	
d8(E)	3	#5	5'-10"	
h(E)	12	#6	23'-9"	
h1(E)	12	#6	25'-11"	
s(E)	5	#5	4'-0"	
s1(E)	35	#5	3'-8"	
s2(E)	28	#5	3'-4"	
u(E)	36	#5	2'-9"	
u1(E)	30	#5	3'-3"	
u2(E)	29	#5	3'-9"	
v(E)	6	#6	2'-0"	
Concrete Removal			Cu Yd	14.0
Reinforcement Bars, Epoxy Coated			Pound	2,740
Concrete Superstructure			Cu Yd	15.0



SECTION DD-DD

(East parapet reconstruction)



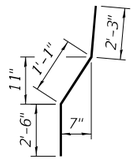
SECTION EE-EE

(East parapet reconstruction)

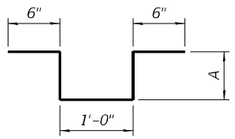
* Adjust in field as required to match reversible parapet

** Dimension is taken at the Back of Abut.

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

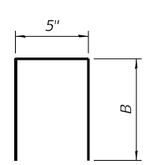


BAR d8(E)



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

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



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

Bar	B
u(E)	1'-2"
u1(E)	1'-5"
u2(E)	1'-8"

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S09-13.
2. For Bar Splicer Assembly details, see sheet S09-24.
3. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost 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"

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 ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0132 (SB)

SHEET S09-09 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	842
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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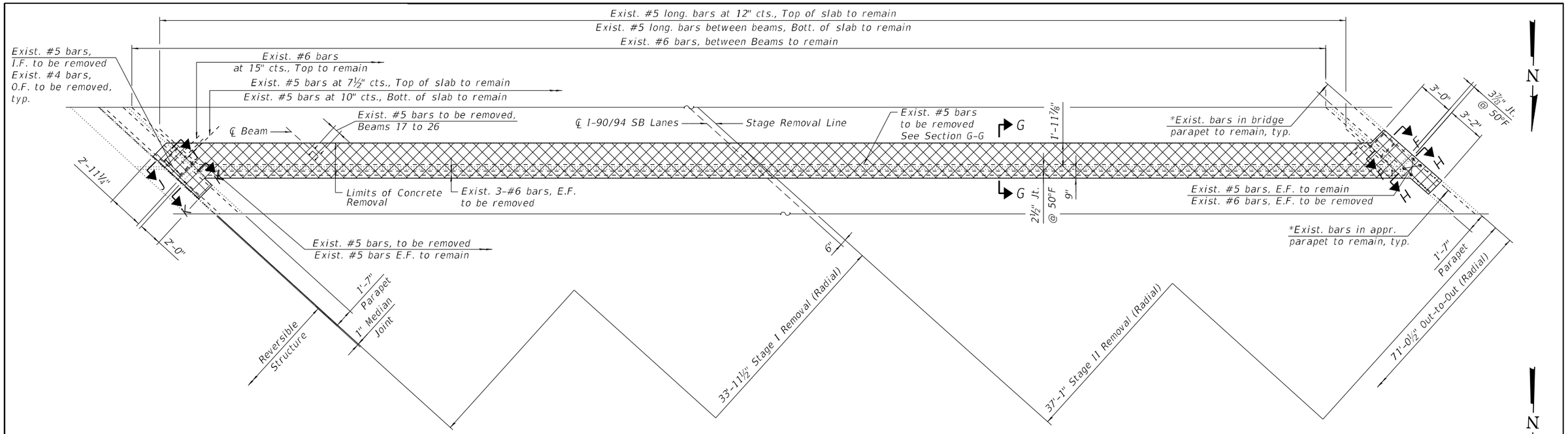
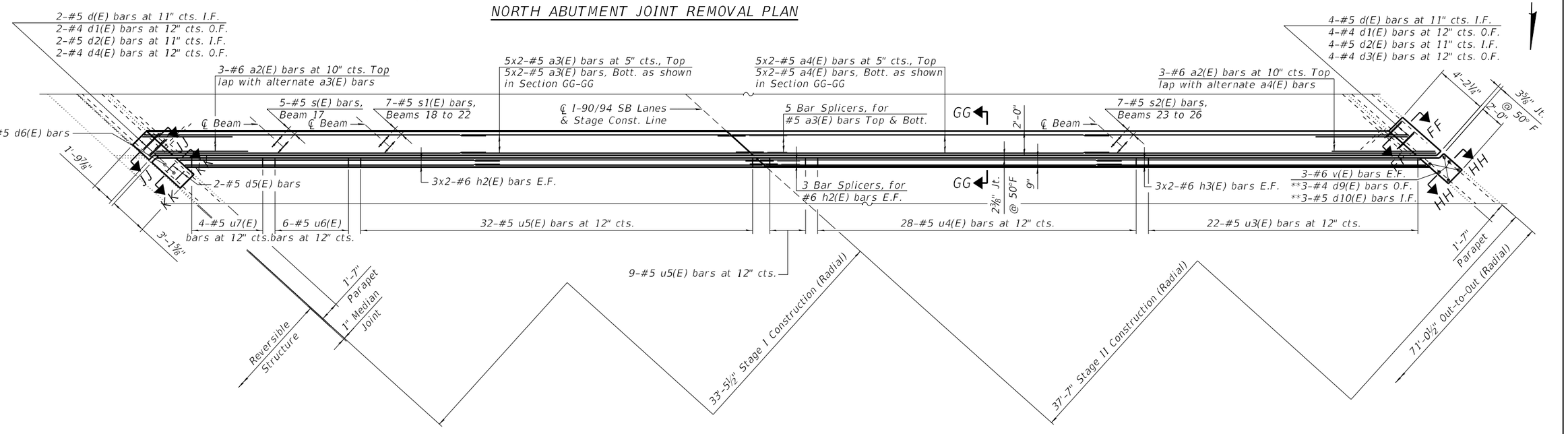


NORTH ABUTMENT JOINT REMOVAL PLAN



NORTH ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S09-11.
2. For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S09-12.

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

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

*** Cut in field to fit skew.

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 -
		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 I
SN 016-0132 (SB)
SHEET S09-10 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	843
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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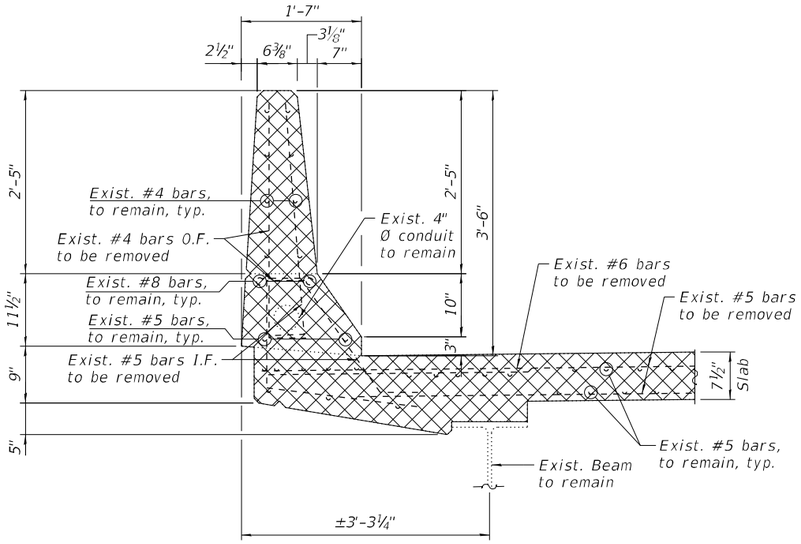
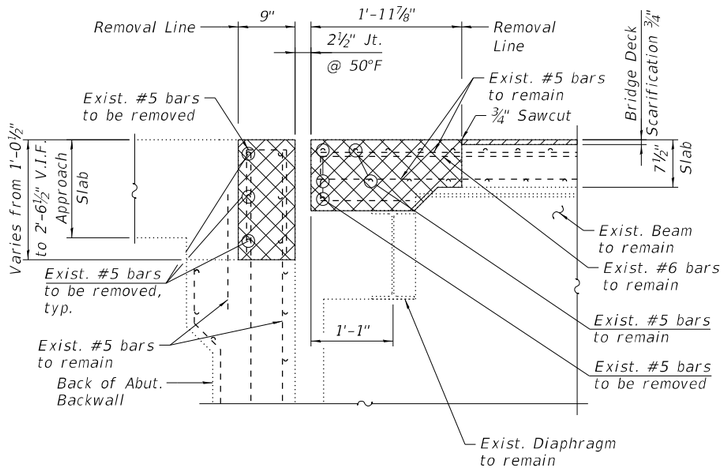
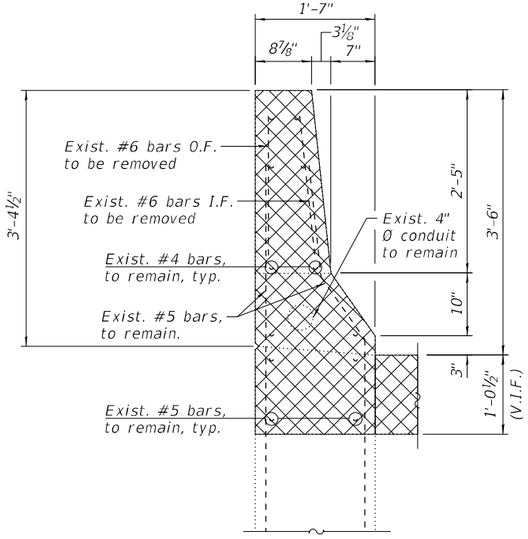


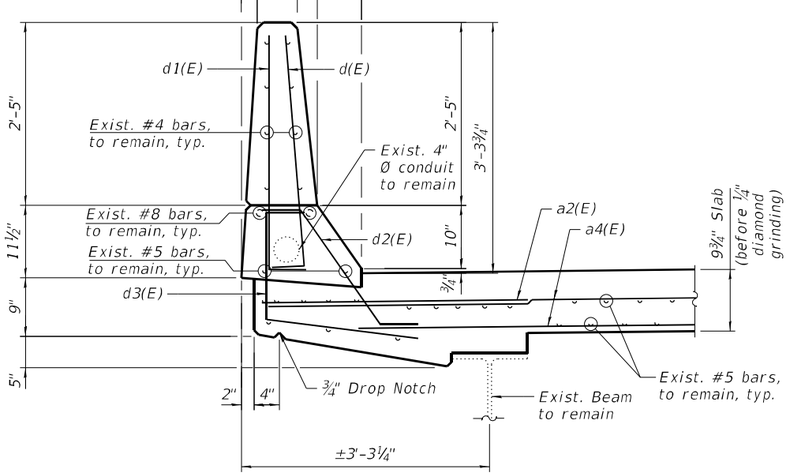
SECTION F-F
(West parapet removal)



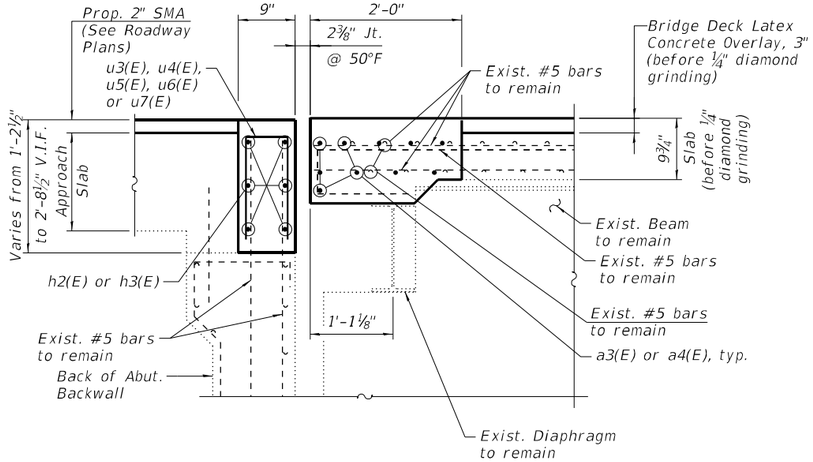
SECTION G-G



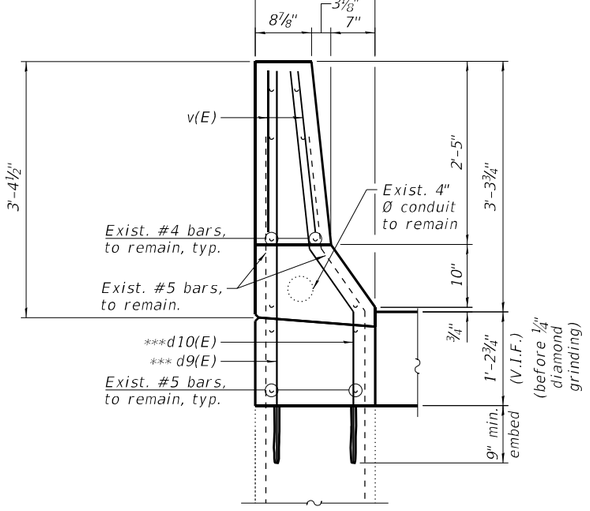
SECTION H-H
(West parapet removal)



SECTION FF-FF
(West parapet reconstruction)



SECTION GG-GG



SECTION HH-HH
(West parapet reconstruction)

LEGEND

**	Dimension is taken at the Back of Abut.	Concrete Removal
***	Epoxy grout #4 d9(E) & #5 d10(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.	I.F. Inside Face
		O.F. Outside Face
		V.I.F. Verify in Field

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 II
SN 016-0132 (SB)
SHEET S09-11 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	844
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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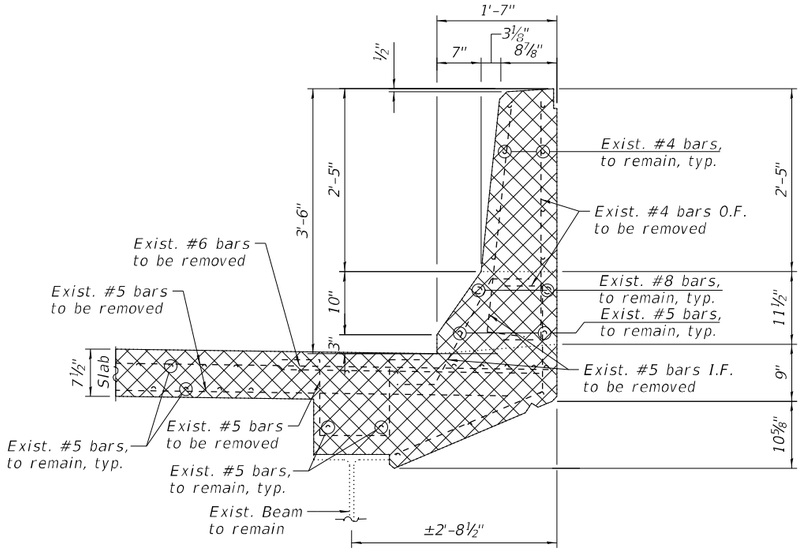
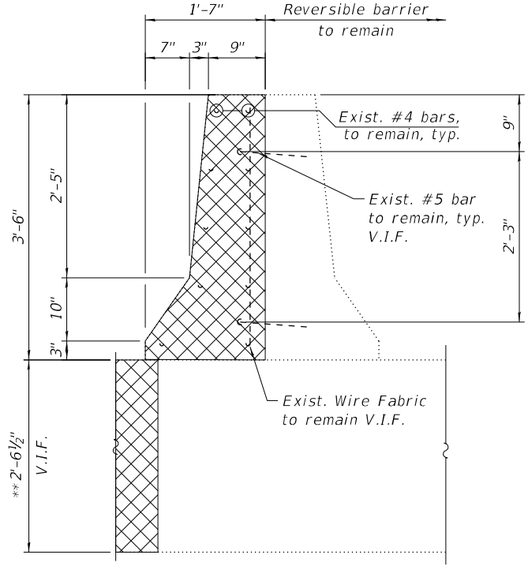
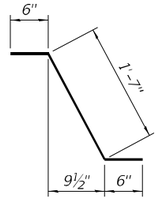


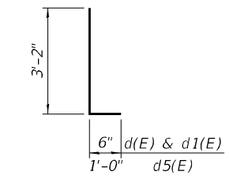
SECTION J-J
(East parapet removal)



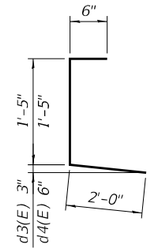
SECTION K-K
(East parapet removal)



BAR d2(E)



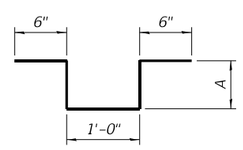
BARS d(E), d1(E), & d5(E)



BARS d3(E) & d4(E)

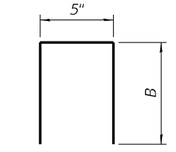
BILL OF MATERIAL
NORTH ABUTMENT

Bar	No.	Size	Length	Shape
a2(E)	6	#6	6'-6"	
a3(E)	20	#5	26'-6"	
a4(E)	20	#5	29'-10"	
d(E)	6	#5	3'-8"	
d1(E)	6	#4	3'-8"	
d2(E)	6	#5	2'-7"	
d3(E)	4	#4	3'-11"	
d4(E)	2	#4	3'-11"	
d5(E)	2	#5	4'-2"	
d6(E)	2	#5	1'-10"	
d9(E)	3	#4	5'-2"	
d10(E)	3	#5	5'-4"	
h2(E)	12	#6	26'-8"	
h3(E)	12	#6	29'-3"	
s(E)	5	#5	4'-0"	
s1(E)	35	#5	3'-8"	
s2(E)	28	#5	3'-4"	
u3(E)	22	#5	2'-5"	
u4(E)	28	#5	3'-1"	
u5(E)	41	#5	3'-5"	
u6(E)	6	#5	3'-11"	
u7(E)	4	#5	4'-5"	
v(E)	6	#6	2'-0"	
Concrete Removal			Cu Yd	13.9
Reinforcement Bars, Epoxy Coated			Pound	2,960
Concrete Superstructure			Cu Yd	15.5



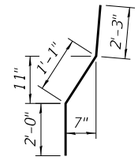
Bar	A
s(E)	1'-0"
s1(E)	10"
s2(E)	8"

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

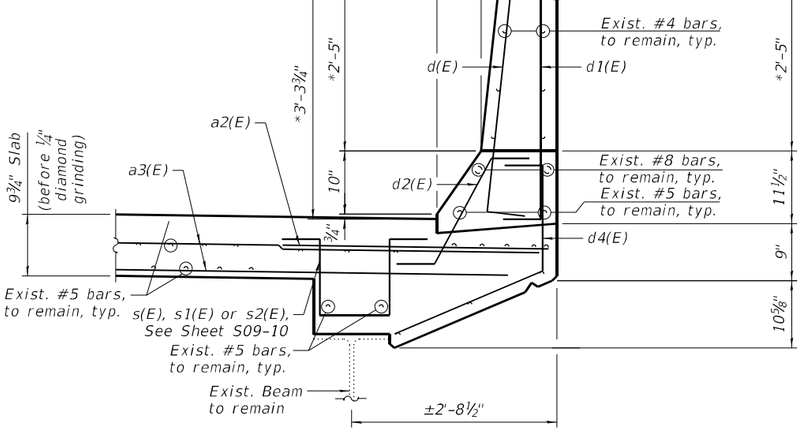


BARS u3(E), u4(E), u5(E) u6(E) & u7(E)

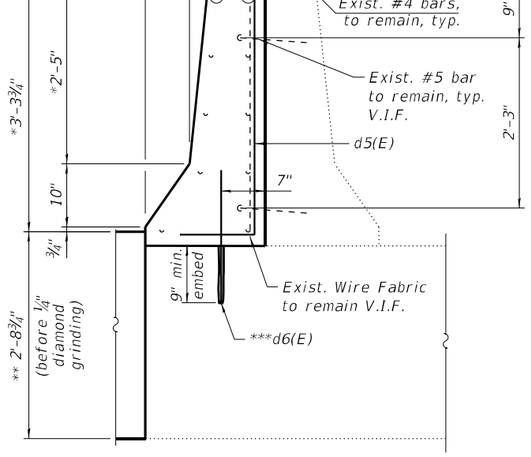
Bar	B
u3(E)	1'-0"
u4(E)	1'-4"
u5(E)	1'-6"
u6(E)	1'-9"
u7(E)	2'-0"



BAR d10(E)



SECTION JJ-JJ
(East parapet reconstruction)



SECTION KK-KK
(East parapet reconstruction)

* Adjust in field as required to match reversible parapet

** Dimension is taken at the Back of Abut.

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

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S09-13.
2. For Bar Splicer Assembly details, see sheet S09-24.
3. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost 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
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 016-0132 (SB)
SHEET S09-12 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	845
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: $MODELNAME$
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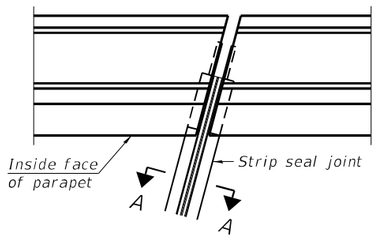
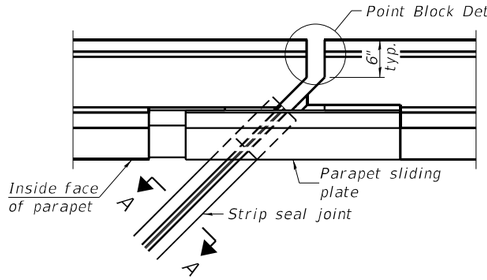
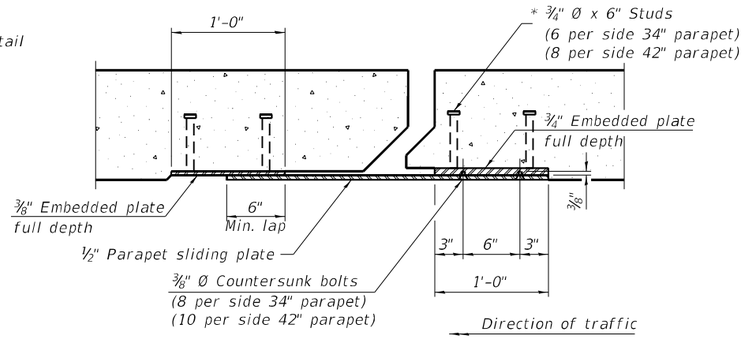


FOR SKEWS ≤ 30°

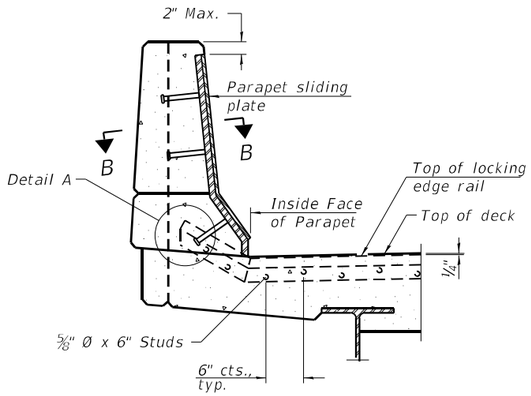


FOR SKEWS > 30°

PLAN AT PARAPET

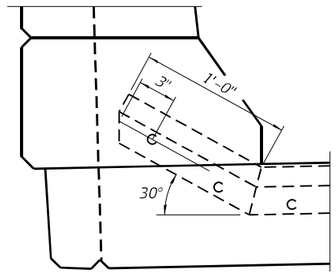


SECTION B-B

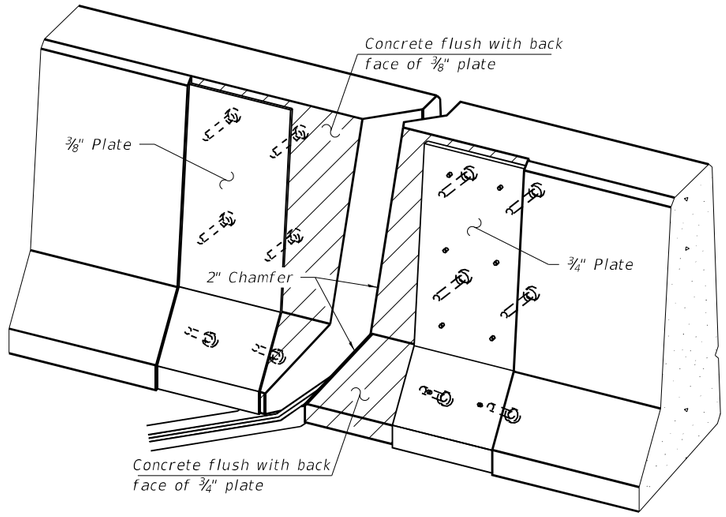


ELEVATION AT PARAPET

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

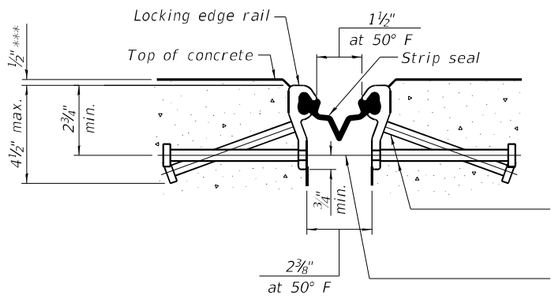


DETAIL A

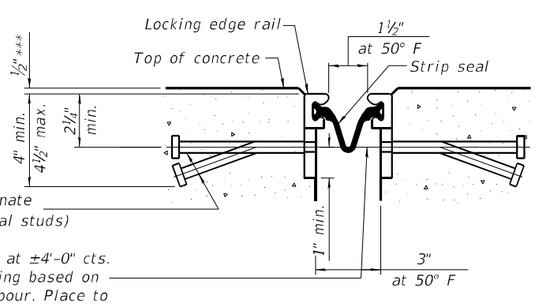


TRIMETRIC VIEW

(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT



SHOWING WELDED RAIL JOINT

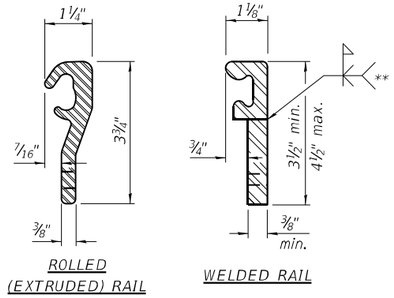
* ⅜" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

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

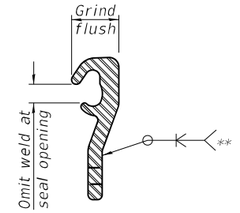
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

*** Before ¼" Diamond Grinding.



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	205

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

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DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
SN 016-0132 (SB)

SHEET S09-13 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	846
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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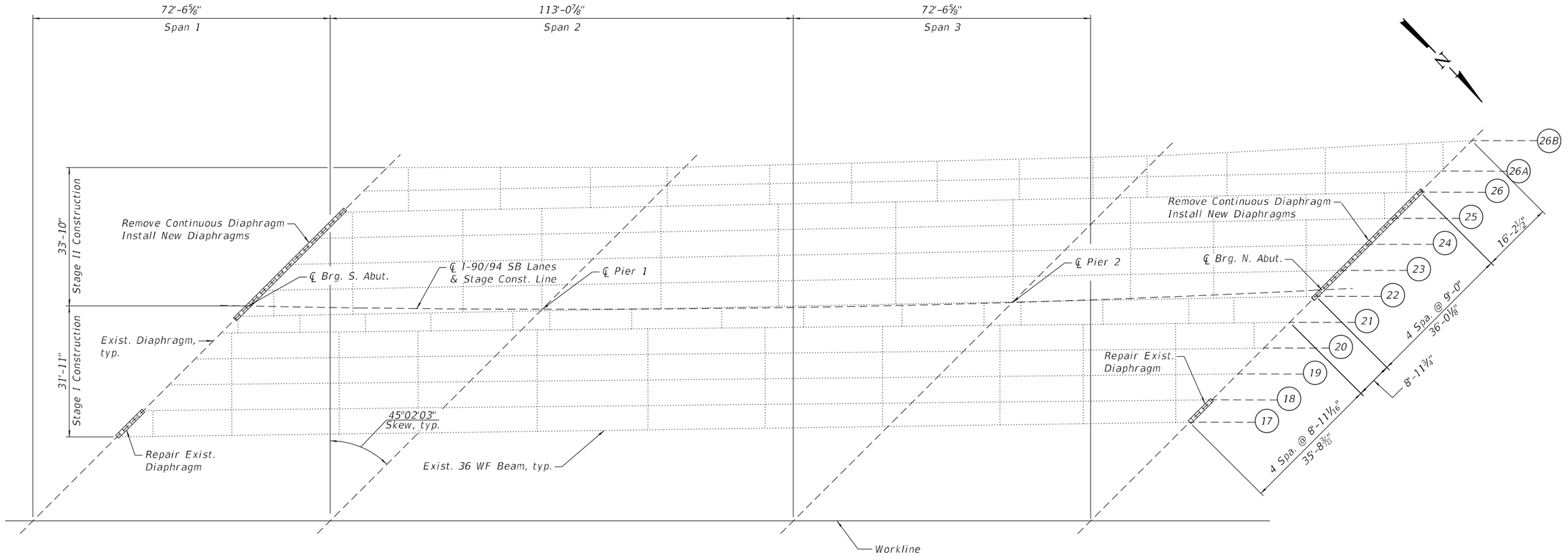

FRAMING PLAN

NOTES:

1. All work is to be preformed utilizing staged construction. See Sheets S09-03 & S09-04 for details.
2. For Diaphragm Repair Details, see Sheet S09-15.
3. For New Diaphragm Details, see Sheets S09-16 and S09-17.

LEGEND

Remove and Repair or Replace Exist. Diaphragm

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing And Erecting Structural Steel	Pound	1,830
Structural Steel Removal	Pound	1,800

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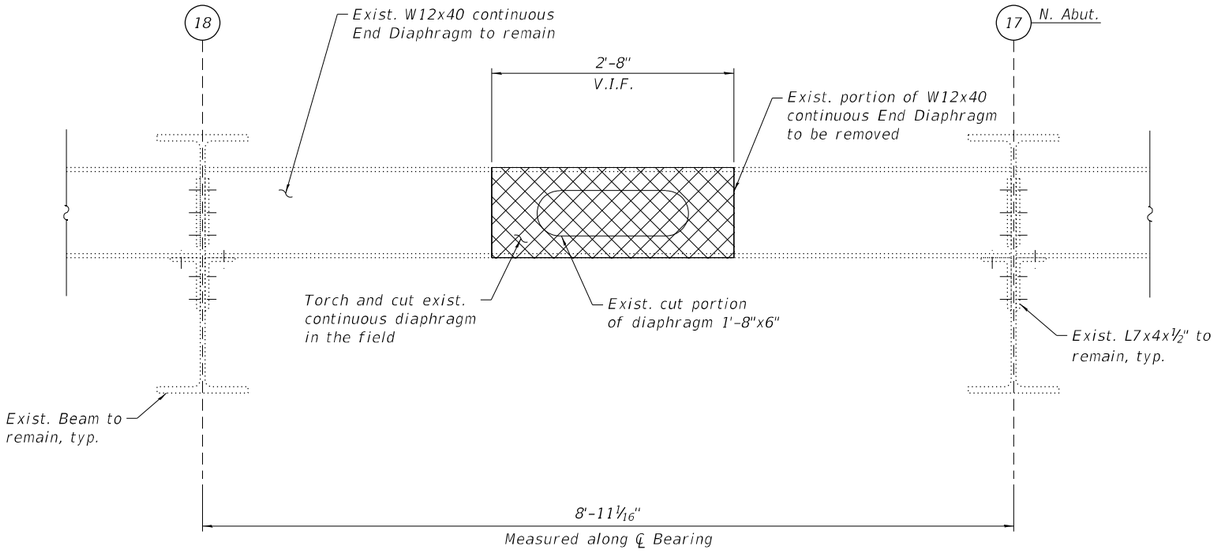
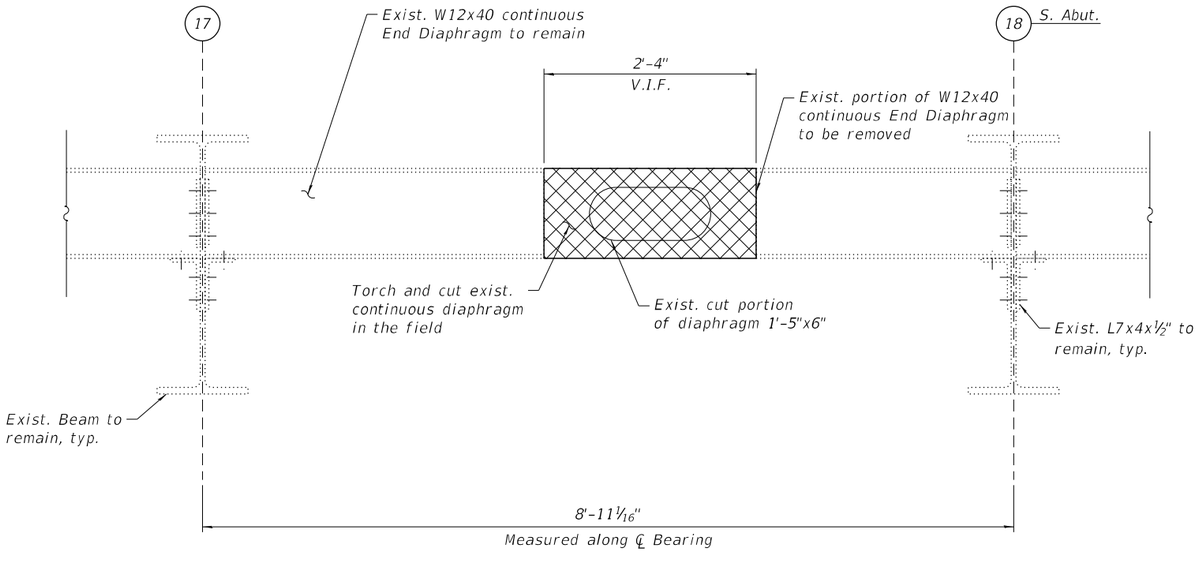
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
SN 016-0132 (SB)
SHEET S09-14 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	847
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	



END DIAPHRAGM REPAIR
(Showing approximate size & hole location)



END DIAPHRAGM REPAIR
(Showing approximate size & hole location)

NOTES:

1. For location of Diaphragm Repair and Bill of Material, see Sheet S09-14.
2. All Structural Steel shall conform to the requirements of AASHTO M270 Grade 36.
3. Diaphragm repair plate holes shall be 13/16" for 3/4" bolts. Fasteners shall be ASTM A325 Type I, mechanically galvanized bolts.
4. All proposed diaphragm repair plates, angles, bolts, nuts and washers shall be paid for as Furnishing and Erecting Structural Steel.

LEGEND

Structural Steel Removal

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS
SN 016-0132 (SB)
SHEET S09-15 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	848
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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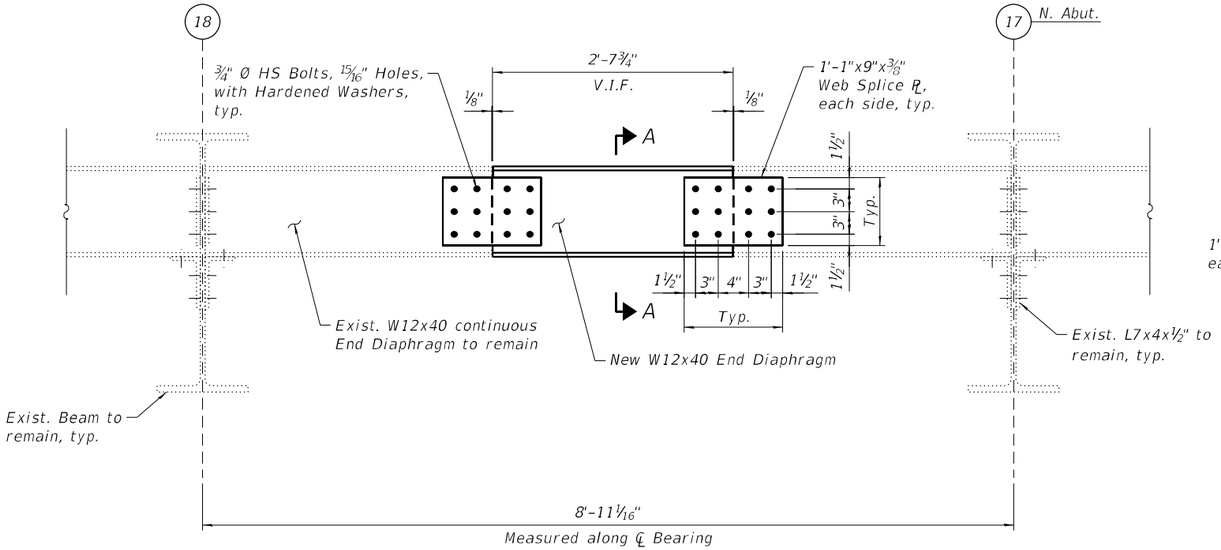
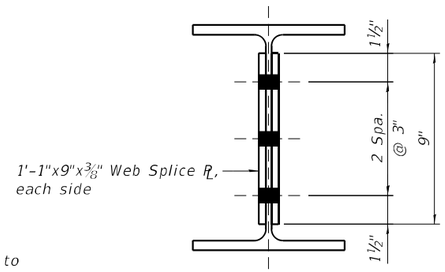
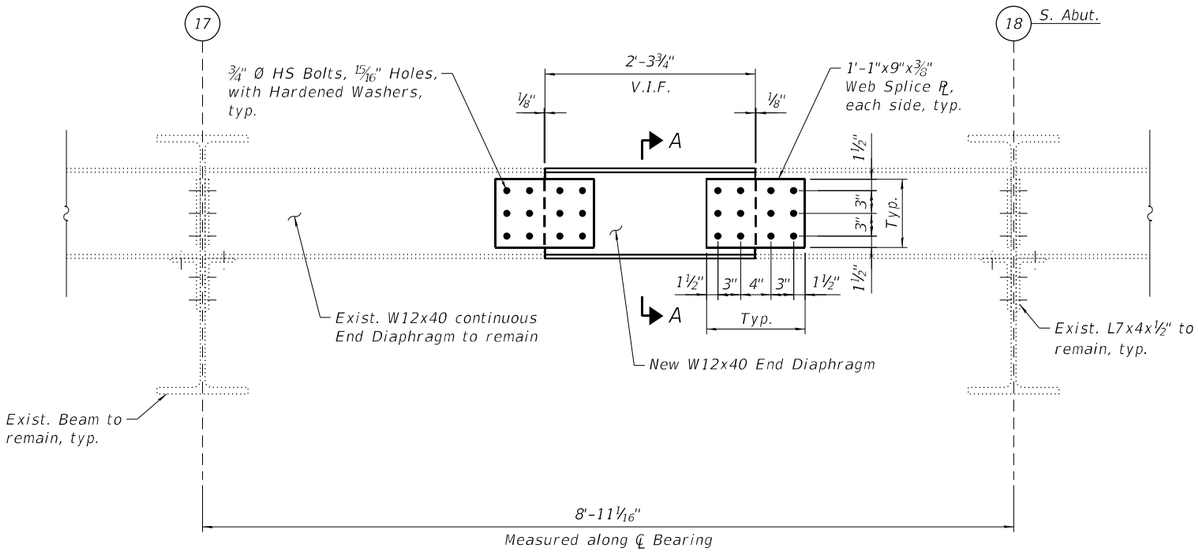


END DIAPHRAGM REPAIR
(Showing approximate size & hole location)



SECTION A-A



END DIAPHRAGM REPAIR
(Showing approximate size & hole location)

NOTES:

1. For location of Diaphragm Repair and Bill of Material, see Sheet S09-14.
2. All Structural Steel shall conform to the requirements of AASHTO M270 Grade 36.
3. Diaphragm repair plate holes shall be 13/16" for 3/4" bolts. Fasteners shall be ASTM A325 Type I, mechanically galvanized bolts.
4. All proposed diaphragm repair plates, angles, bolts, nuts and washers shall be paid for as Furnishing and Erecting Structural Steel.
5. The cost of all field drilling shall be included in the cost of Furnishing and Erecting Structural Steel.

LEGEND

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS II
SN 016-0132 (SB)
SHEET S09-16 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	849
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: sMODELNAMES
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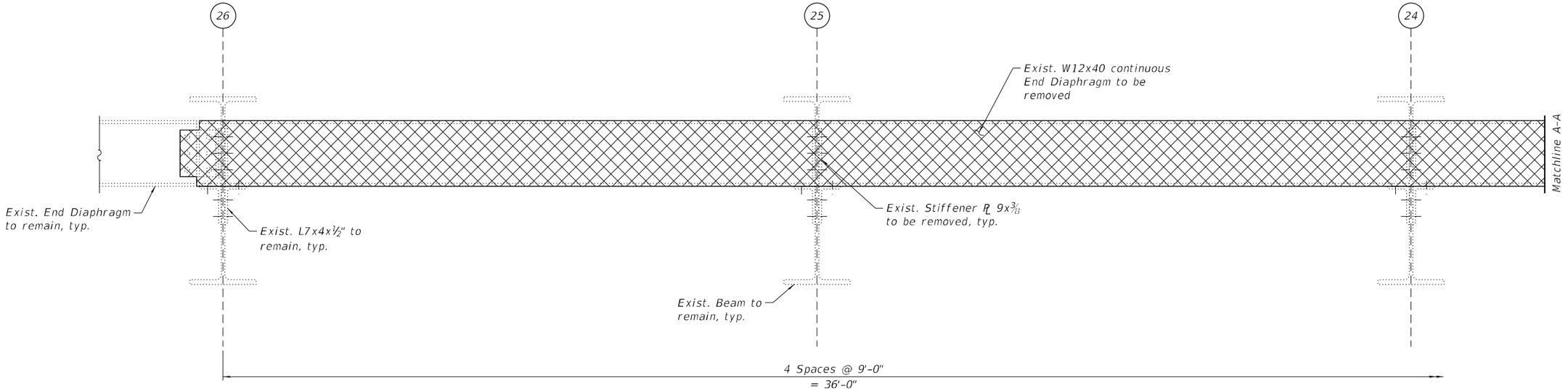
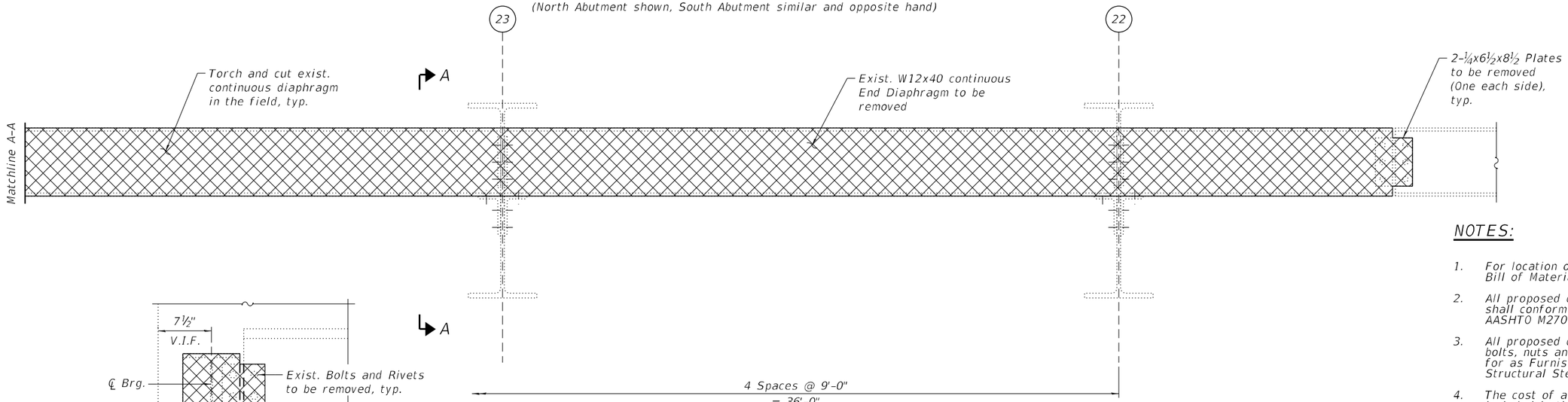


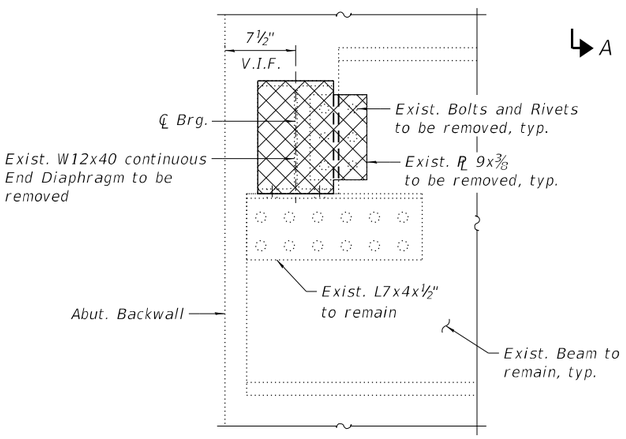
EXISTING CONTINUOUS END DIAPHRAGM REMOVAL

(North Abutment shown, South Abutment similar and opposite hand)



EXISTING CONTINUOUS END DIAPHRAGM REMOVAL

(North Abutment shown, South Abutment similar and opposite hand)



SECTION A-A

NOTES:

1. For location of Diaphragm Removal and Bill of Material, see Sheet S09-14.
2. All proposed diaphragm repair plates shall conform to the requirements of AASHTO M270 Grade 36.
3. All proposed diaphragm repair plates, bolts, nuts and washers shall be paid for as Furnishing and Erecting Structural Steel.
4. The cost of all field drilling shall be included in the cost of Furnishing and Erecting Structural Steel.
5. Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection. Cost shall be included with Furnishing and Erecting Structural Steel.
6. Existing diaphragm and connection plate removal shall be paid for as Structural Steel Removal.

LEGEND

Structural Steel Removal

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS III
SN 016-0132 (SB)

SHEET S09-17 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	850
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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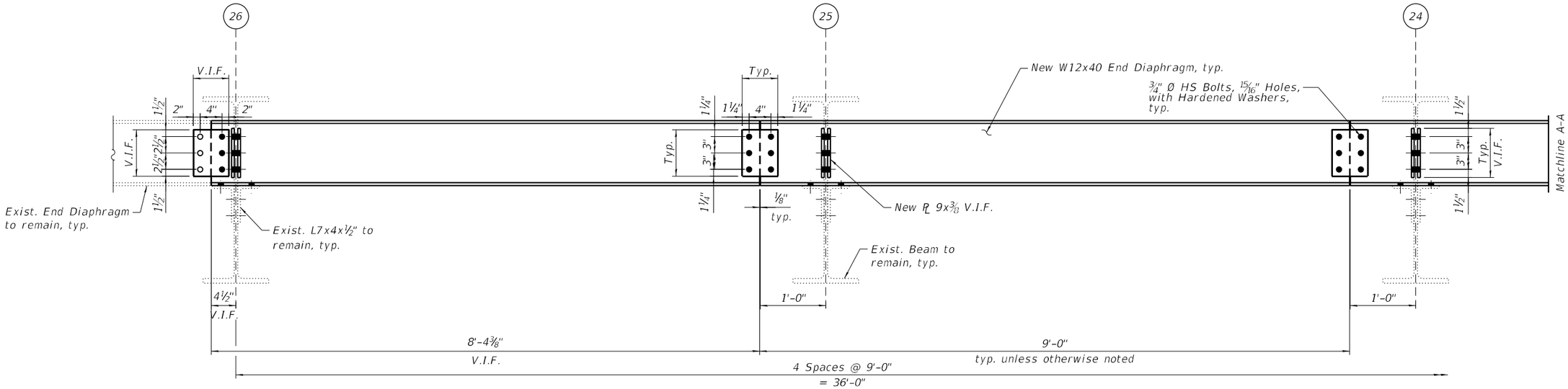
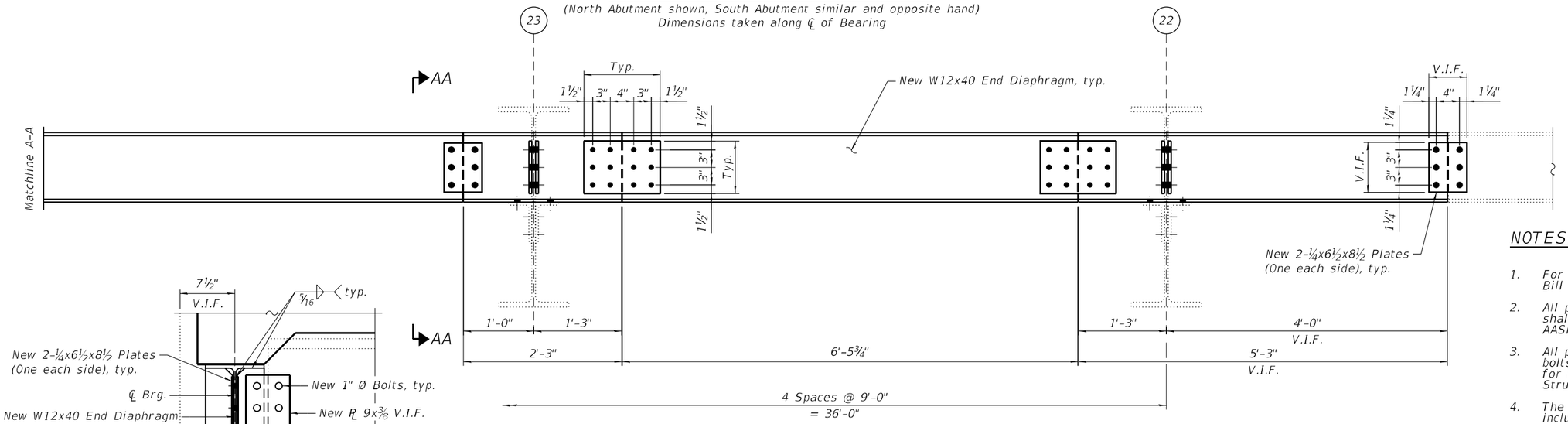


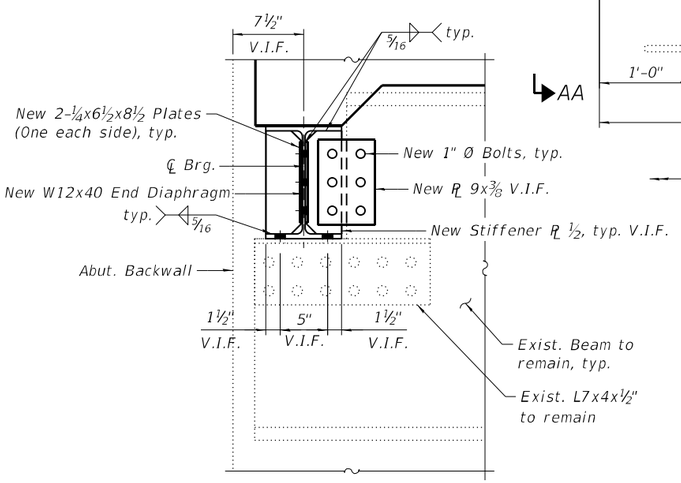
NEW END DIAPHRAGM REPLACEMENT

(North Abutment shown, South Abutment similar and opposite hand)
Dimensions taken along ℄ of Bearing



NEW END DIAPHRAGM REPLACEMENT

(North Abutment shown, South Abutment similar and opposite hand)
Dimensions taken along ℄ of Bearing



SECTION AA-AA

NOTES:

1. For location of Diaphragm Repair and Bill of Material, see Sheet S09-14.
2. All proposed diaphragm repair plates shall conform to the requirements of AASHTO M270 Grade 36.
3. All proposed diaphragm repair plates, bolts, nuts and washers shall be paid for as Furnishing and Erecting Structural Steel.
4. The cost of all field drilling shall be included in the cost of Furnishing and Erecting Structural Steel.
5. Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection. Cost shall be included with Furnishing and Erecting Structural Steel.
6. Existing diaphragm and connection plate removal shall be paid for as Structural Steel Removal.

LEGEND

- ● Shop drill holes in new steel.
- ○ Field drill holes in new steel using existing steel as template

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS IV
SN 016-0132 (SB)

SHEET S09-18 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	851
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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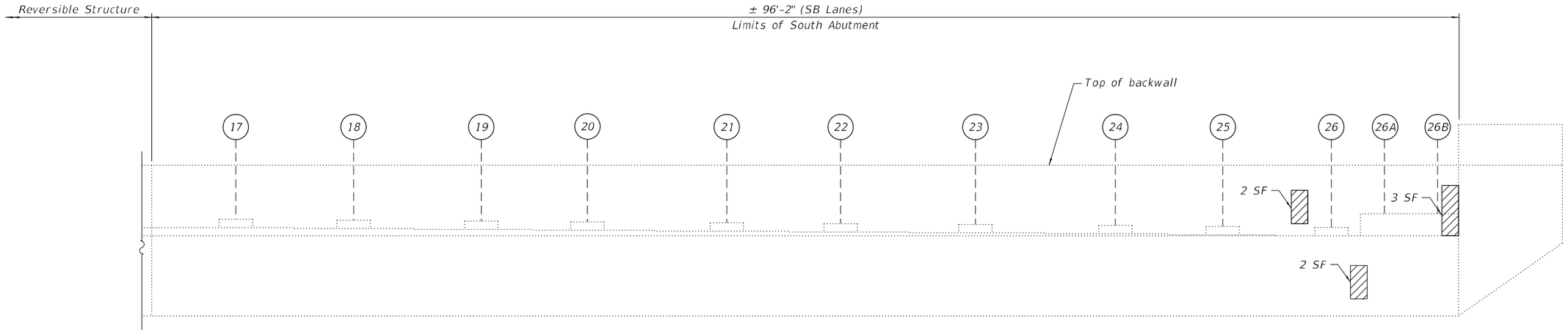

ELEVATION - SOUTH ABUTMENT

(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.
3. For Slope Wall repairs, see Sheet S09-23.

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	430
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	7

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SOUTH ABUTMENT REPAIRS
SN 016-0132 (SB)
SHEET S09-19 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	852
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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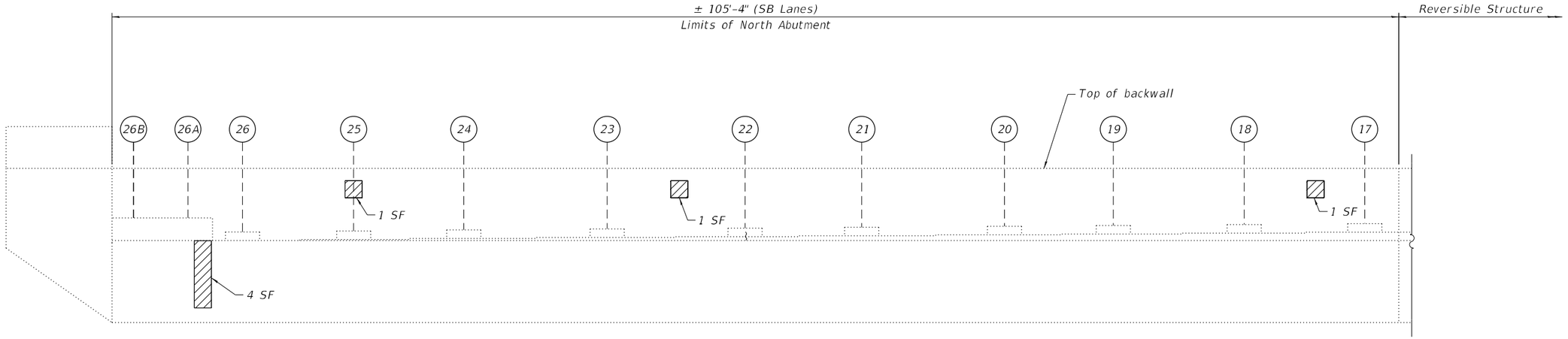

ELEVATION - NORTH ABUTMENT

(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.
3. For Slope Wall repairs, see Sheet S09-23.

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	452
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	7

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

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NORTH ABUTMENT REPAIRS
SN 016-0132 (SB)

SHEET S09-20 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	853
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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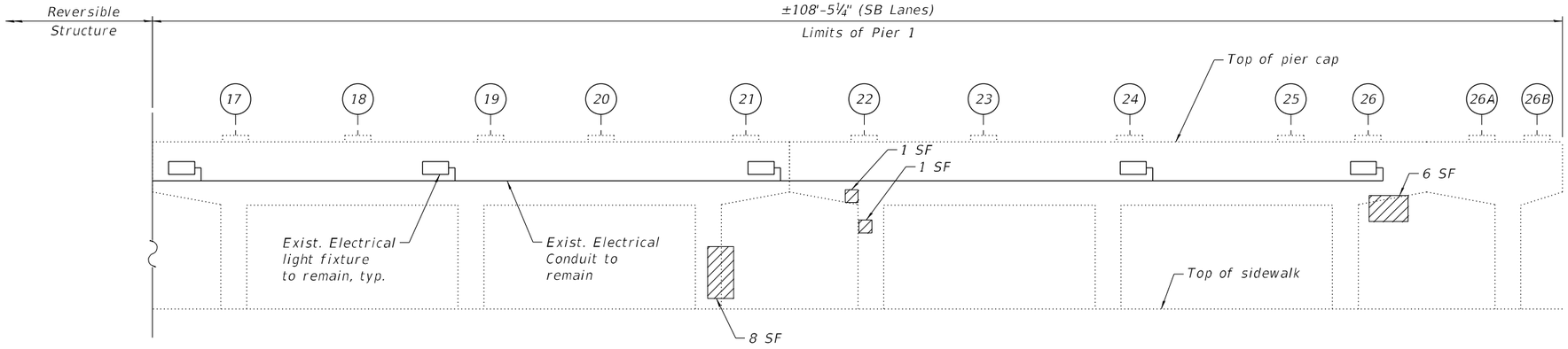
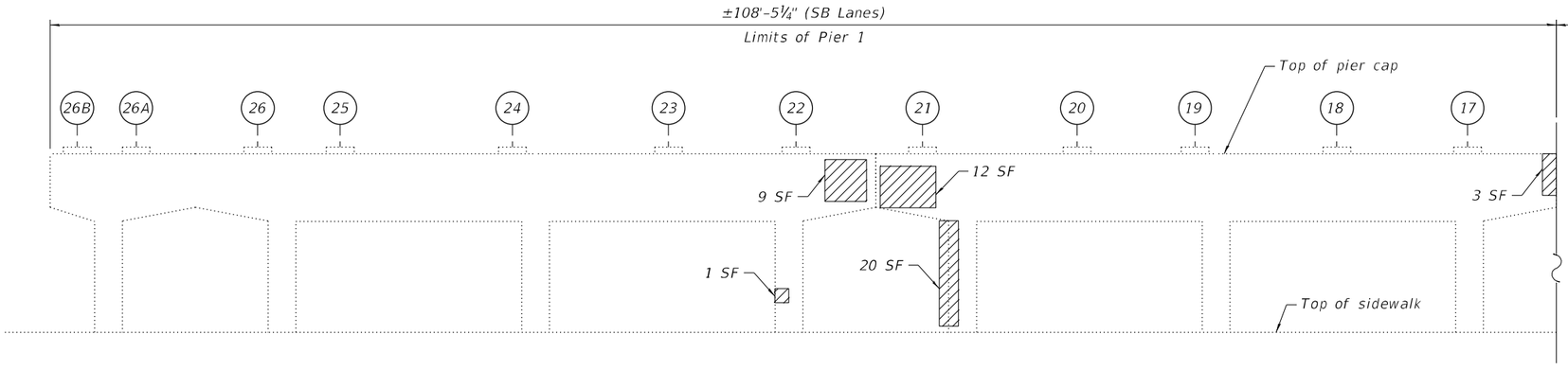


ELEVATION - PIER 1

(Looking South)

EXISTING LIGHTING: PIER 1

(Looking Southwest)



ELEVATION - PIER 1

(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.

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	61

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

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DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
SN 016-0132 (SB)
SHEET S09-21 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	854
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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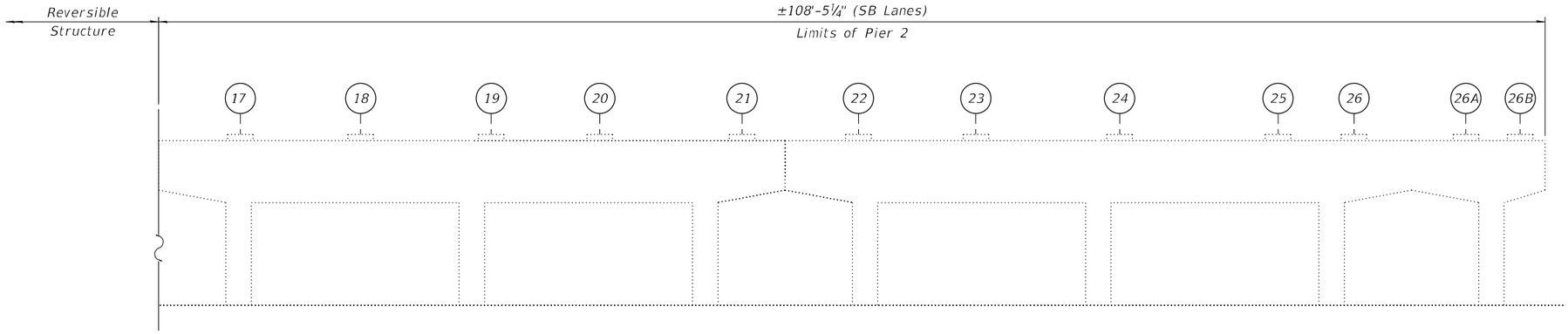
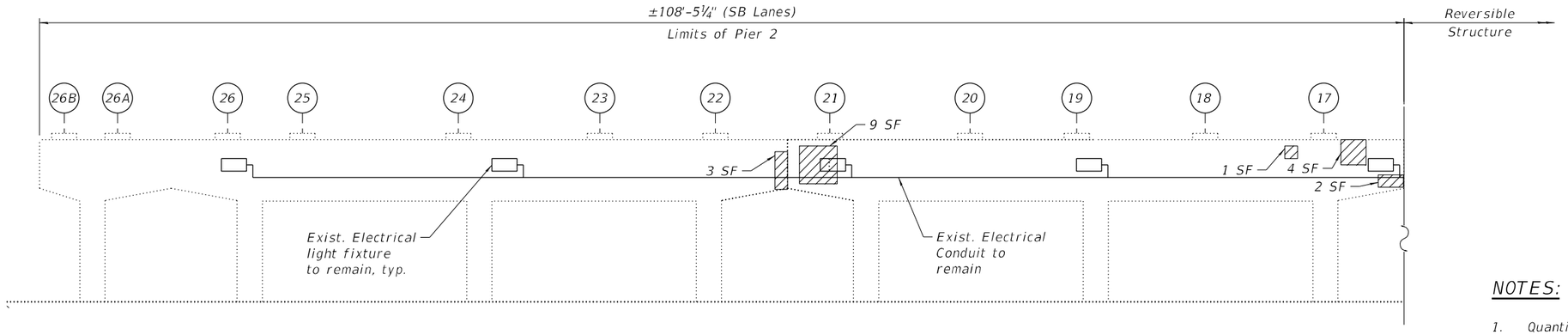


ELEVATION – PIER 2

(Looking South)

EXISTING LIGHTING: PIER 2

(Looking Northeast)



ELEVATION – PIER 2

(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.

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	19

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

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DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIRS
SN 016-0132 (SB)

SHEET S09-22 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	855
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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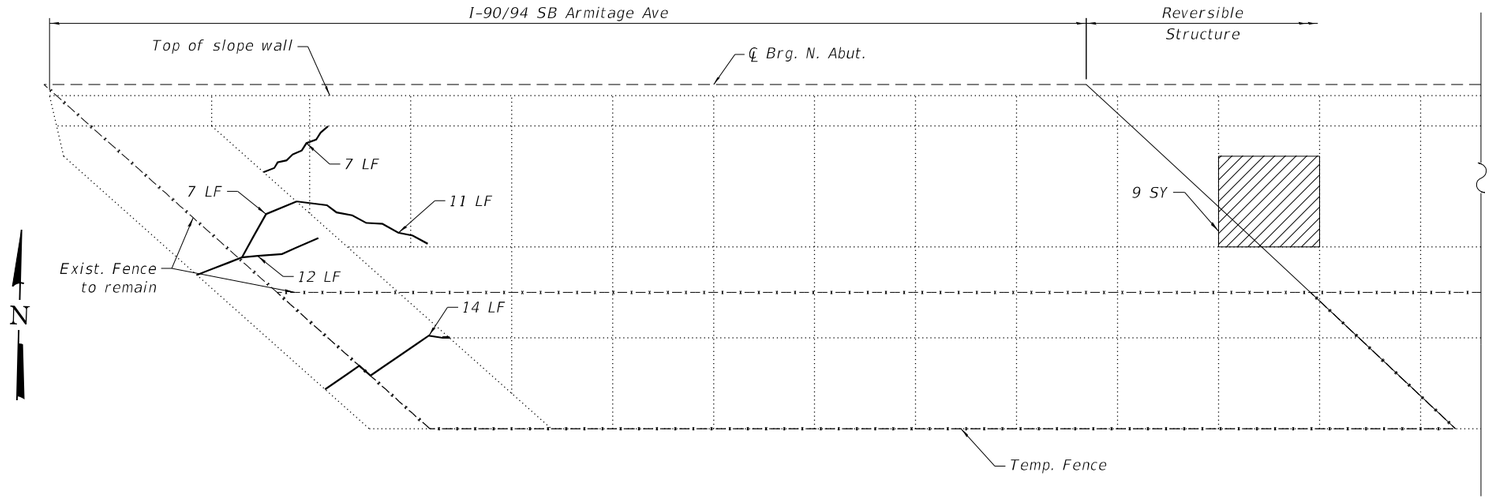
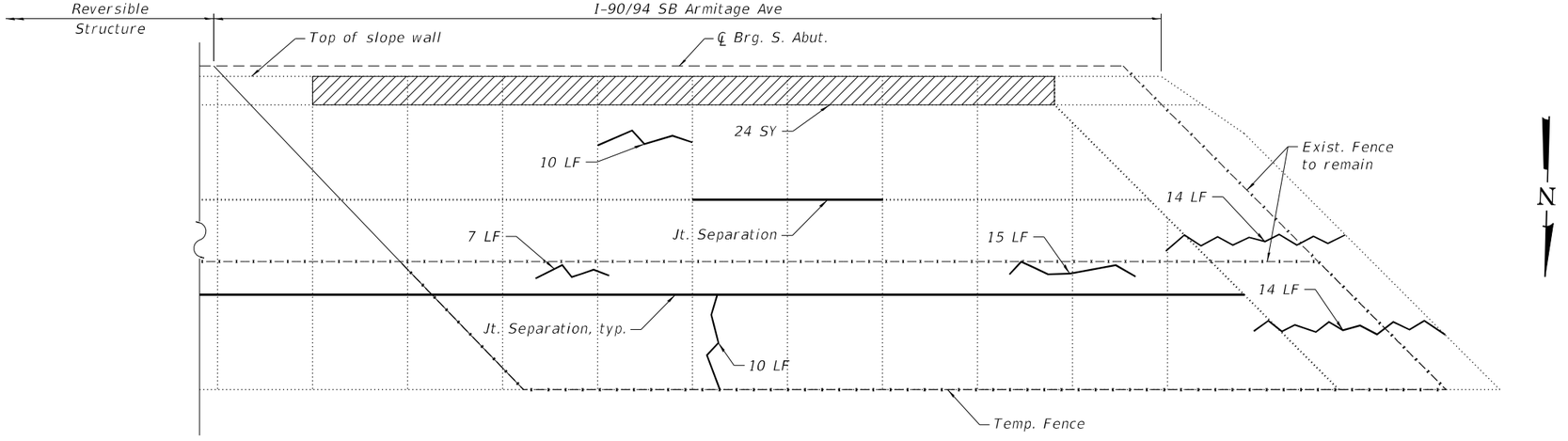


NORTH SLOPE WALL - PLAN

(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

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	33
Slope Wall Removal	Sq Yd	33
Slope Wall 4 Inch	Sq Yd	33
Slope Wall Crack Sealing	Foot	121

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL REPAIRS
SN 016-0132 (SB)

SHEET S09-23 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	856
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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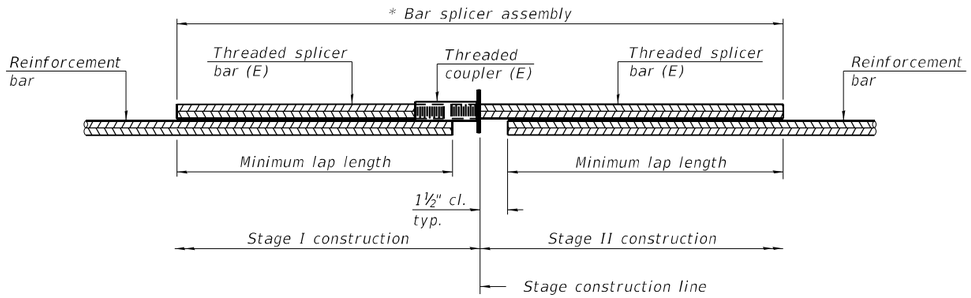


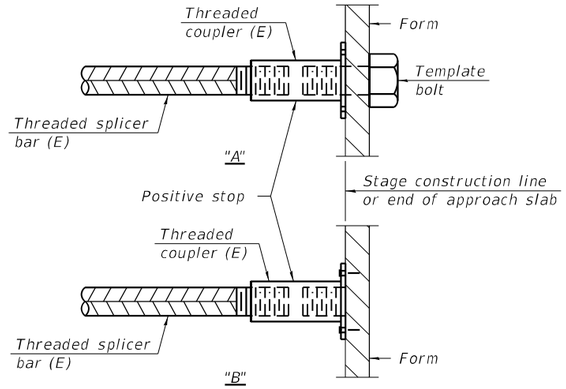
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

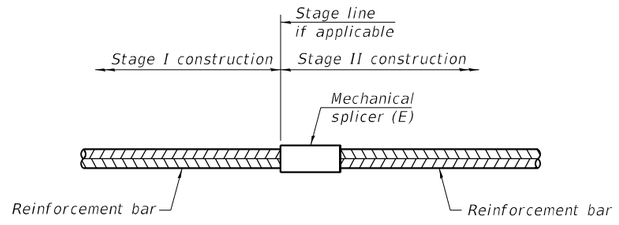
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

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



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

BSD-1

1-1-2020

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 016-0132 (SB)

SHEET S09-24 OF S09-24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	857
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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Existing Structure: S.N. 016-0132 was originally built in 1959 from BCR. The bridge was widened and redecked between 1990 and 1993, and expansion joint repairs were performed in 2013. The structure has a back-to-back abutment length of 263'-7⅛" and an out-to-out deck width of 35'-11". The superstructure consists of a 7½" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 72'-6⅝", 113'-0⅞", and 72'-6⅝". The substructure consists of reinforced concrete abutments and piers supported on reinforced concrete drilled shafts.

The reversible lanes will be closed to traffic during construction.

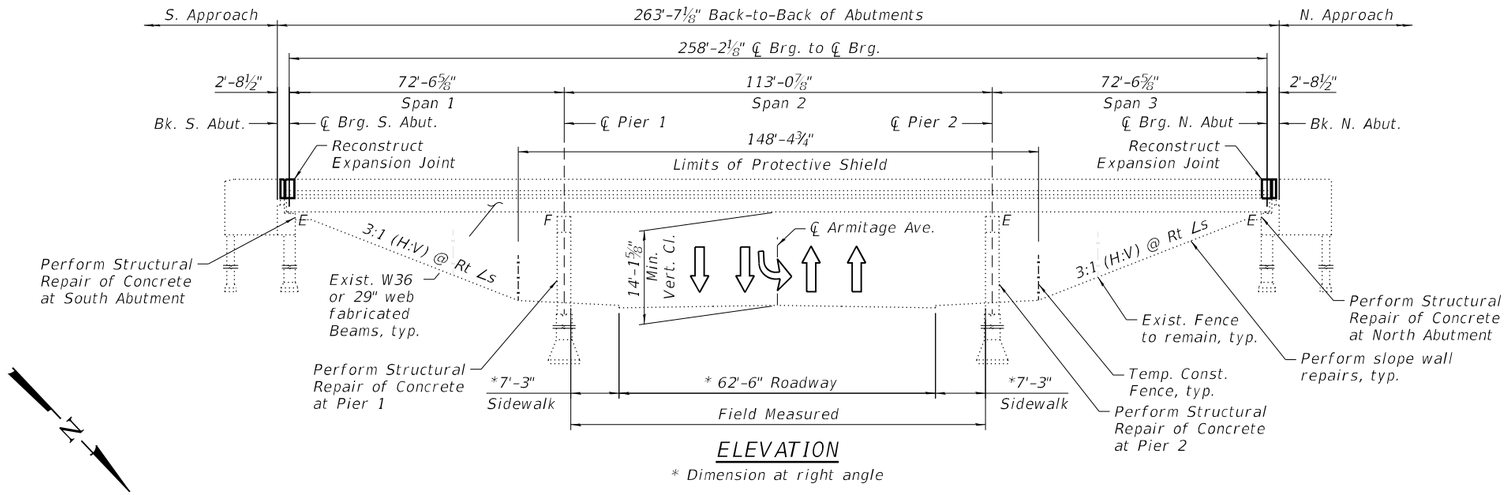
No salvage.

LOADING

HS20-44 and alternate military loading

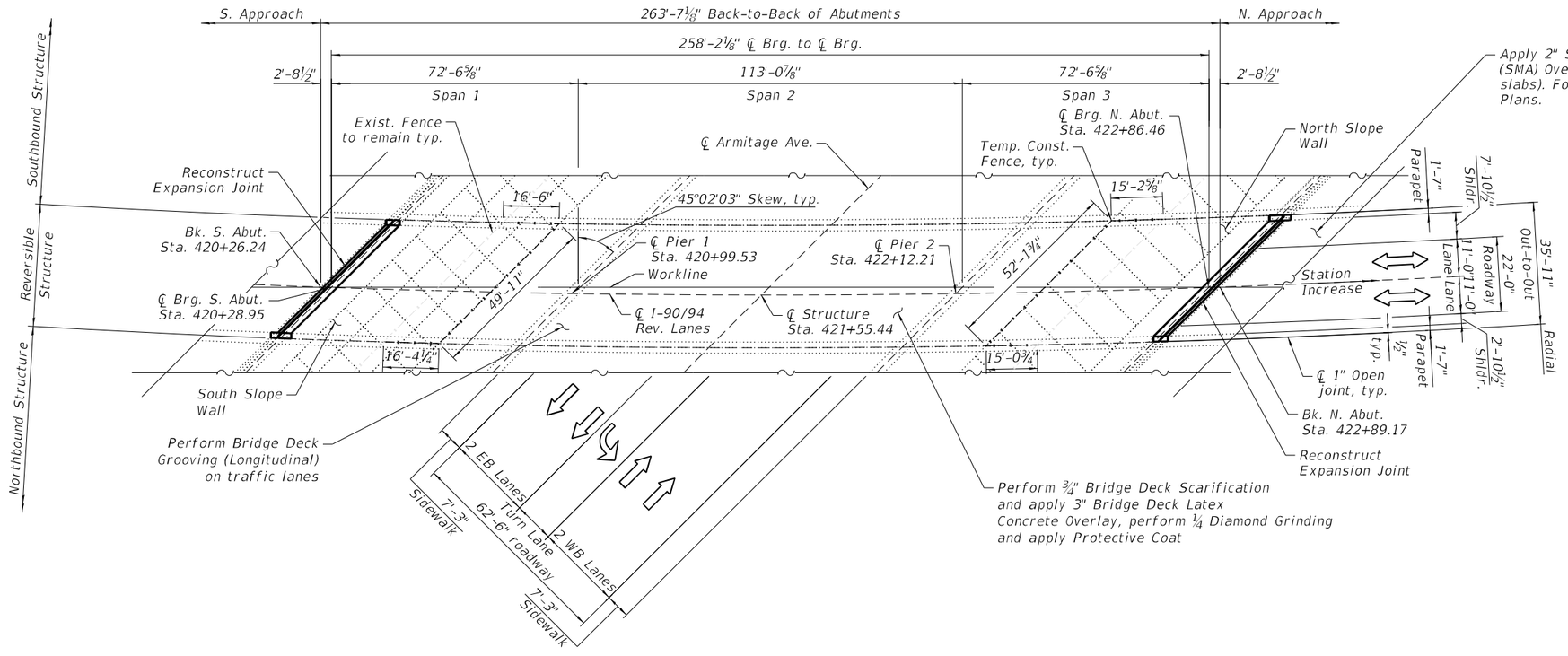
DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition



ELEVATION

* Dimension at right angle



PLAN

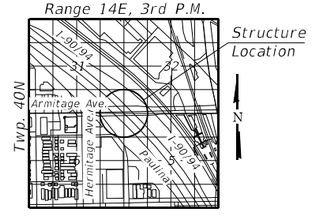
NOTE:

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



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
REVERSIBLE I-90 OVER ARMITAGE AVE
F.A.I. SEC 2020-004-BR
COOK COUNTY
STATION: 421+55.44
STRUCTURE NO. 016-0132 (REV)

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S10-01 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	858
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

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GENERAL NOTES

1. Fasteners shall be ASTM A325 Type 1, galvanized according to ASTM F 2329. Bolts $\frac{3}{4}$ in., holes $\frac{13}{16}$ in., unless otherwise noted. Diaphragm connection holes be $\frac{15}{16}$" for $\frac{3}{4}$" bolts. Two hardened washers shall be required at diaphragm connections.

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

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

4. 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 $\frac{1}{4}$" deep shall be identified and reported to the Bureau of Bridges and Structures for further dispositions. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

5. 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.

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

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

8. 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.

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

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

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

12. 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.

13. 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.

14. 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".

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

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

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

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

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

20. The Contractor is responsible to protect the existing conduit 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.

21. 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.

22. 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.

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

24. 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

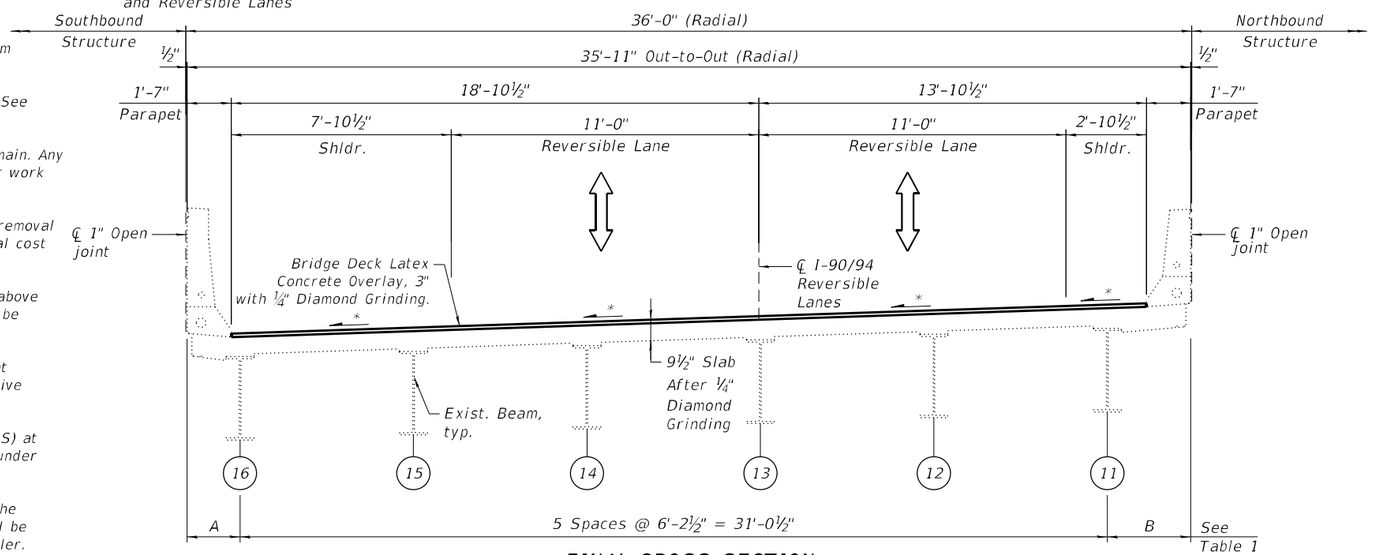
1. Provide Protective Shield within limits indicated on the plans.
2. Scarify $\frac{3}{4}$" from the bridge deck slab.
3. Perform deck repairs.
4. Remove and reconstruct expansion joints at north and south abutments and install new Preformed Joint Strip Seals.
5. Repair steel diaphragms as shown on the plans.
6. Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs.
7. Perform $\frac{1}{4}$" Diamond Grinding to top of bridge deck and abutment hatched block.
8. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes
9. Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse expansion joints and to the surface of the new overlay.
10. Perform Structural Concrete repairs to the Abutments and Piers as noted in the plans.
11. Epoxy crack injection at the abutments and piers for cracks greater than hairline.
12. Perform slope wall repairs.
13. Install 2½" Preformed joint seal along the top of the parapet between I-90/94 Southbound and Reversible Lanes

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd		3	3
Concrete Removal	Cu Yd	16.4		16.4
Slope Wall Removal	Sq Yd		3	3
Protective Shield	Sq Yd	592		592
Concrete Superstructure	Cu Yd	18.0		18.0
Protective Coat	Sq Yd	1,257		1,257
Furnishing and Erecting Structural Steel	Pound	320		320
Reinforcement Bars, Epoxy Coated	Pound	3,020		3,020
Slope Wall 4 Inch	Sq Yd		3	3
Preformed Joint Seal 2 1/2"	Foot	264		264
Preformed Joint Strip Seal	Foot	106		106
Concrete Sealer	Sq Ft		449	449
Slope Wall Crack Sealing	Foot		10	10
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	692		692
Structural Steel Removal	Pound	220		220
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	925		925
Bridge Deck Scarification 3/4"	Sq Yd	925		925
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		54	54
Deck Slab Repair (Full Depth, Type II)	Sq Yd	17.2		17.2
Diamond Grinding (Bridge Section)	Sq Yd	945		945
Maintenance of Lighting System	Cal Mo		6	6
Temporary Construction Fence	Foot		166	166

Table 1

	A	B
℄ Brg. S. Abut.	± 3'-1"	± 8¾"
℄ Pier 1	± 1'-4½"	± 3'-0"
℄ Pier 2	± 1'-5¼"	± 3'-10½"
℄ Brg. N. Abut.	± 3'-4"	± 2'-7"



FINAL CROSS SECTION

(Looking North)

* Match existing deck surface profile

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
SN 016-0132 (REV)

SHEET S10-02 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	859
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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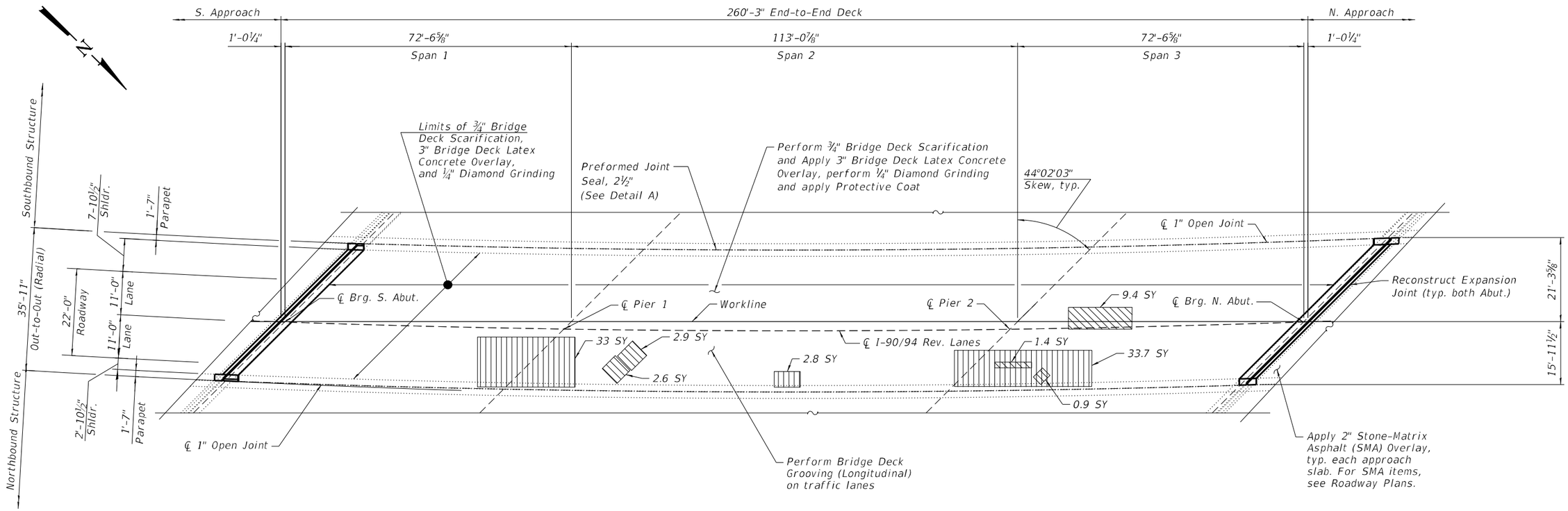
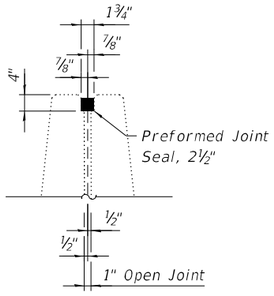


DECK PLAN



DETAIL A

(Reinforcement not shown for clarity)

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

NOTES:

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S10-02.
3. For North and South transverse joint removal and reconstruction, see Sheet S10-04 thru S10-09.
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	592
Protective Coat	Sq Yd	1,257
Preformed Joint Seal 2 1/2"	Foot	264
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	692
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	925
Bridge Deck Scarification 3/4"	Sq Yd	925
Deck Slab Repair (Full Depth, Type II)	Sq Yd	17.2
Diamond Grinding (Bridge Section)	Sq Yd	945
Maintenance of Lighting System	Cal Mo	6

GRÄEF
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE DECK REPAIR PLAN AND DETAILS
SN 016-0132 (REV)
SHEET S10-03 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	860
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	ILLINOIS	FED. AID PROJECT		

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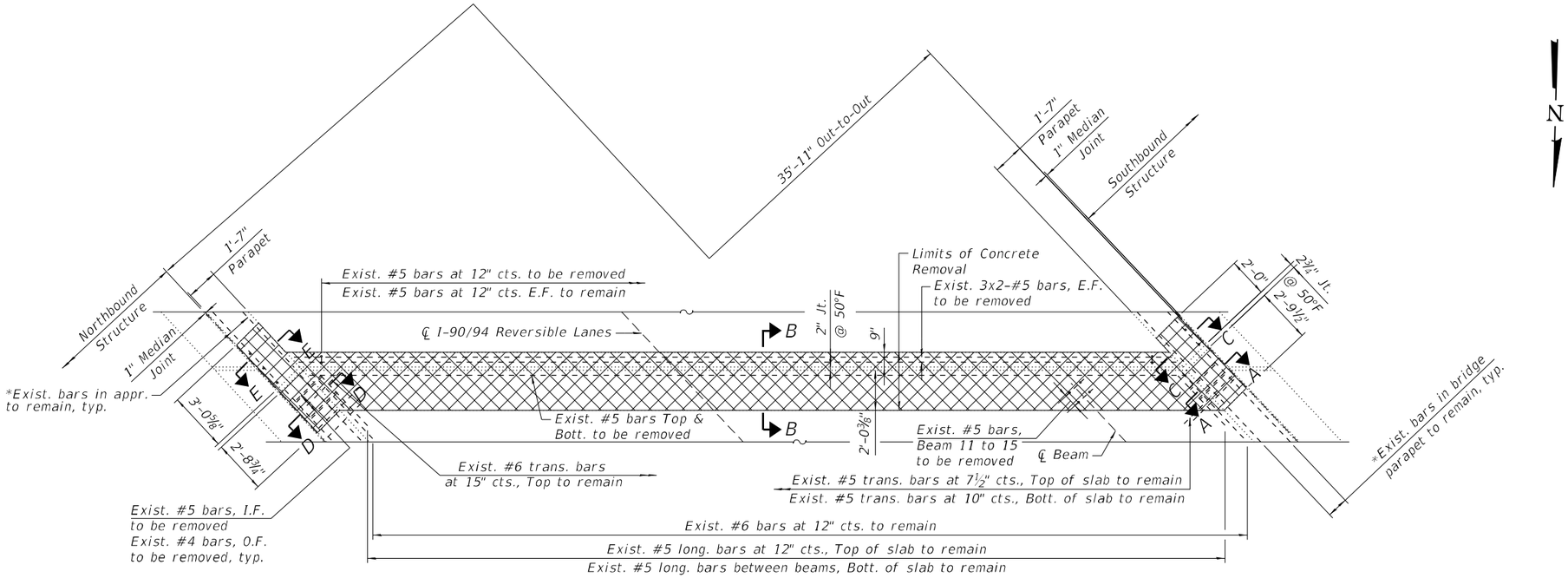
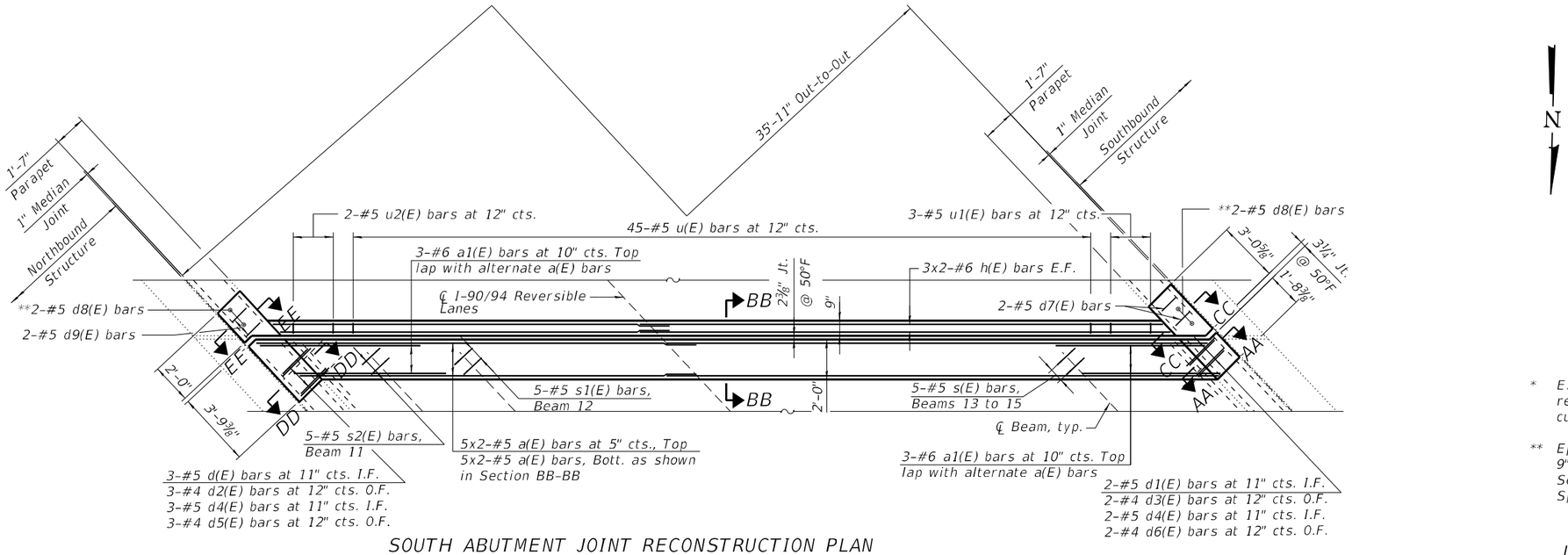


SOUTH ABUTMENT JOINT REMOVAL PLAN



SOUTH ABUTMENT JOINT RECONSTRUCTION PLAN

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

** *Epoxy grout #5 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

NOTES:

1. For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S10-05.
2. For sections D-D, E-E, DD-DD and EE-EE, see sheet S10-06.

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DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0132 (REV)
SHEET S10-04 OF S10-18 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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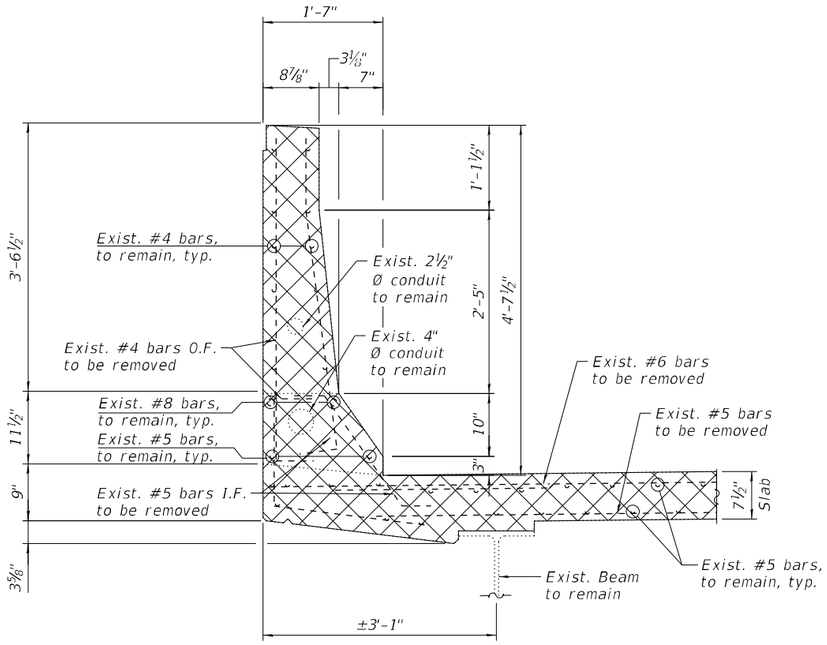
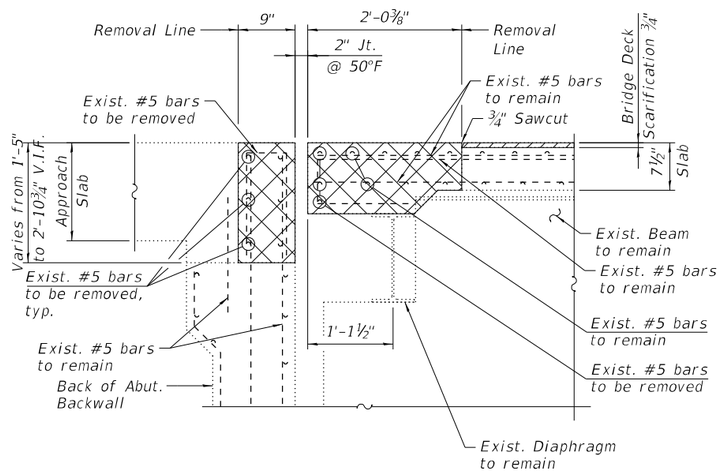
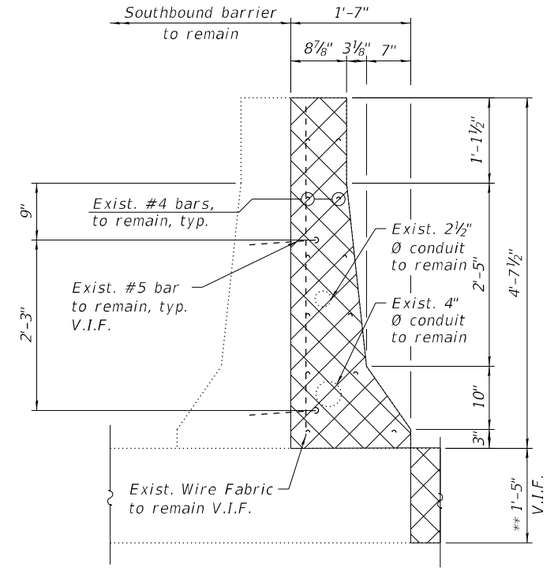


SECTION A-A

(West parapet removal)

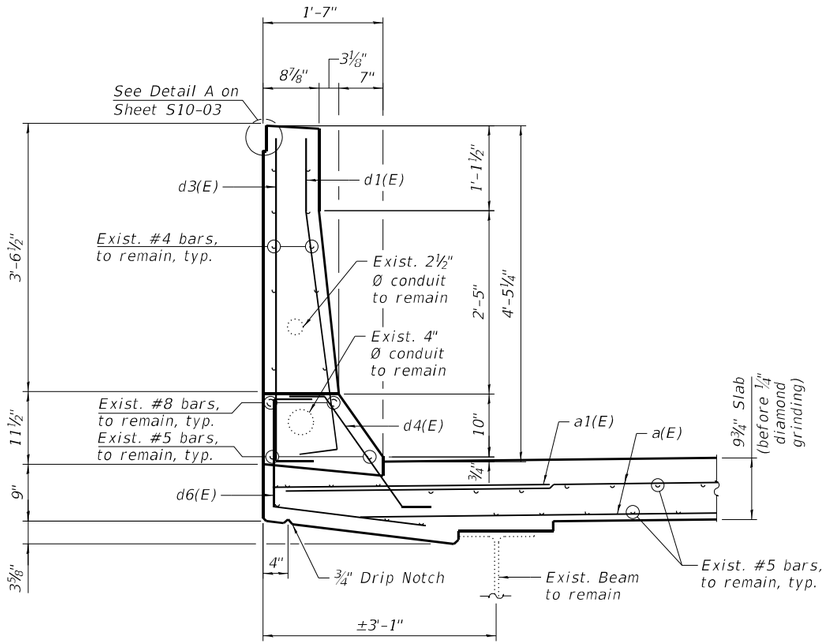


SECTION B-B



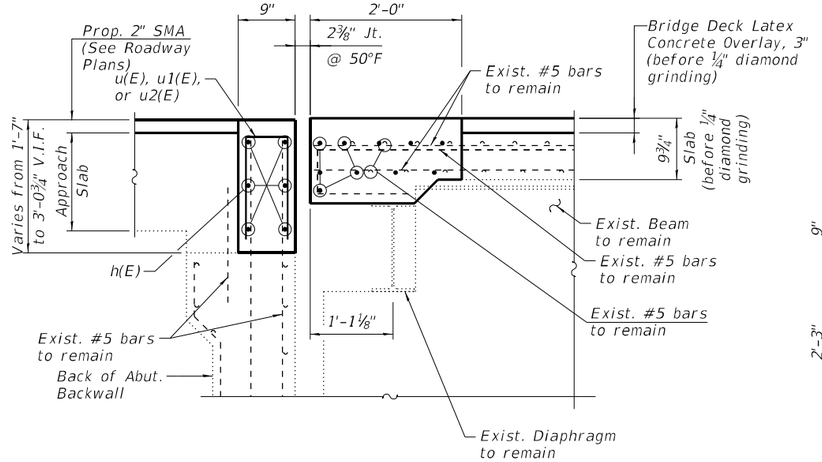
SECTION C-C

(West parapet removal)

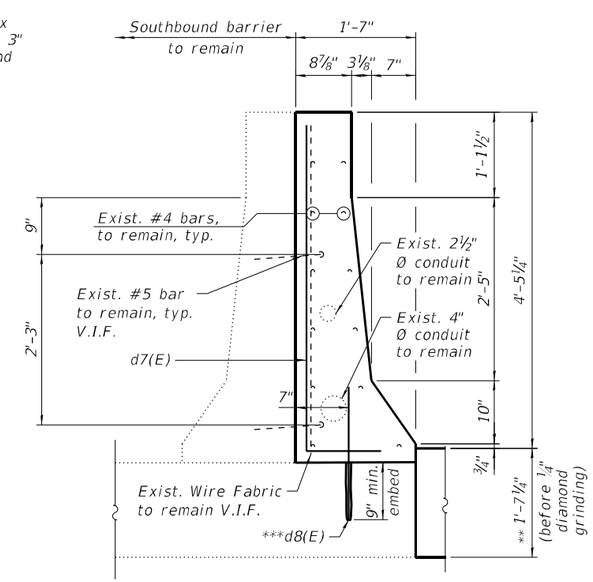


SECTION AA-AA

(West parapet reconstruction)



SECTION BB-BB



SECTION CC-CC

(West parapet reconstruction)

LEGEND

**	Dimension is taken at the Back of Abut.
***	Epoxy grout #5 d8(E) bars in 9" min. holes in accordance with Section 508 of the Standard Specifications.

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

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

SOUTH ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0132 (REV)

SHEET S10-05 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	862
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
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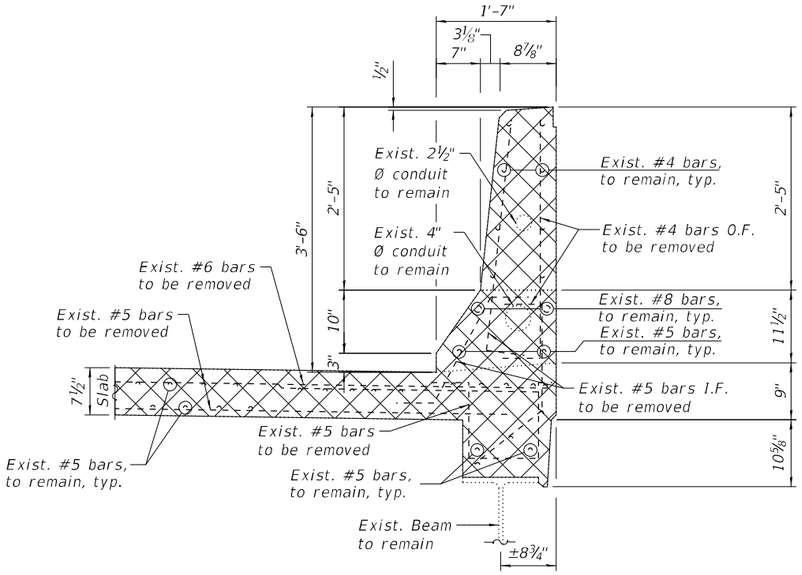
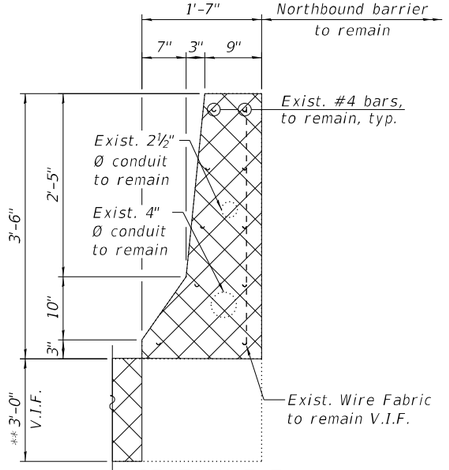


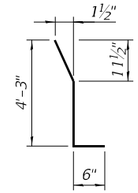
SECTION D-D

(East parapet removal)

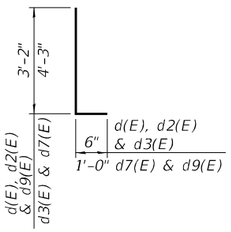


SECTION E-E

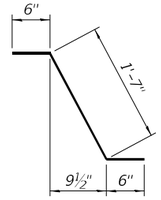
(East parapet removal)



BAR d1(E)



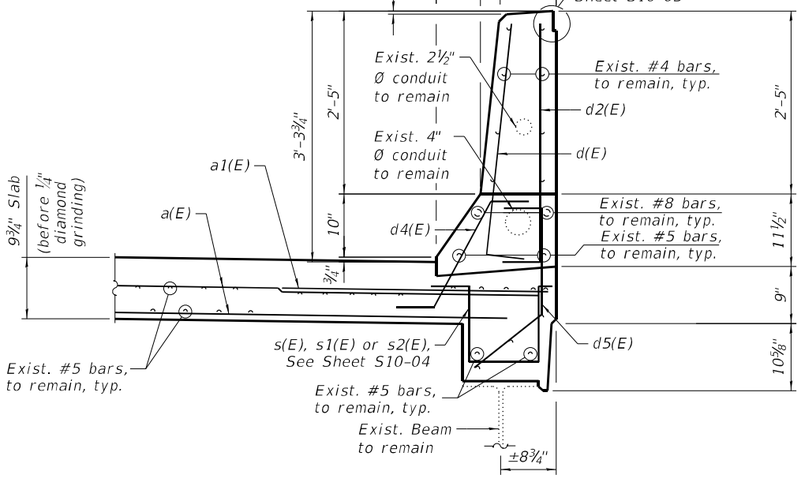
BARS d(E), d2(E), d3(E), d7(E) & d9(E)



BAR d4(E)

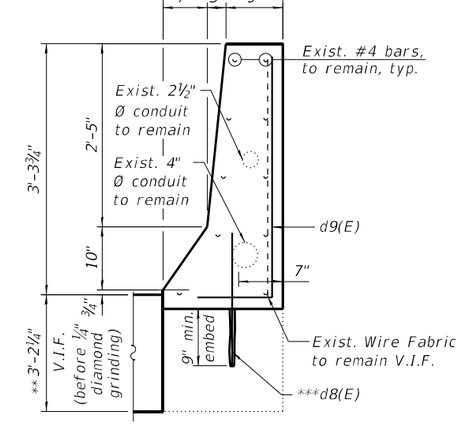
BILL OF MATERIAL
SOUTH ABUTMENT

Bar	No.	Size	Length	Shape
a(E)	20	#5	26'-3"	
a1(E)	6	#6	6'-6"	
d(E)	3	#5	3'-8"	
d1(E)	2	#5	4'-9"	
d2(E)	3	#4	3'-8"	
d3(E)	2	#4	4'-9"	
d4(E)	5	#5	2'-7"	
d5(E)	3	#4	3'-11"	
d6(E)	2	#4	3'-11"	
d7(E)	2	#5	5'-3"	
d8(E)	4	#5	1'-10"	
d9(E)	2	#5	4'-2"	
h(E)	12	#6	26'-3"	
s(E)	15	#5	3'-4"	
s1(E)	5	#5	3'-8"	
s2(E)	5	#5	4'-0"	
u(E)	45	#5	4'-6"	
u1(E)	3	#5	3'-0"	
u2(E)	2	#5	5'-4"	
Concrete Removal			Cu Yd	8.2
Reinforcement Bars, Epoxy Coated			Pound	1,430
Concrete Superstructure			Cu Yd	9.0



SECTION DD-DD

(East parapet reconstruction)

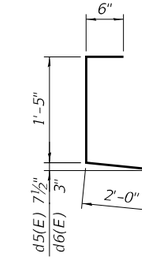


SECTION EE-EE

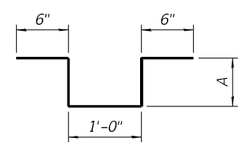
(East parapet reconstruction)

** Dimension is taken at the Back of Abut.

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

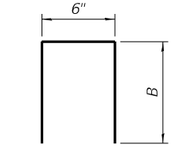


BARS d5(E) & d6(E)



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

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



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

Bar	B
u(E)	2'-0"
u1(E)	1'-3"
u2(E)	2'-5"

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S10-10.
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 of Existing Expansion Joint will not be paid for separately but will be included in the cost of Concrete Removal.

LEGEND

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

MIN BAR LAPS

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0132 (REV)

SHEET S10-06 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	863
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\0160132_AmitageRev\0160132-62K74-S006-EXPR.dgn
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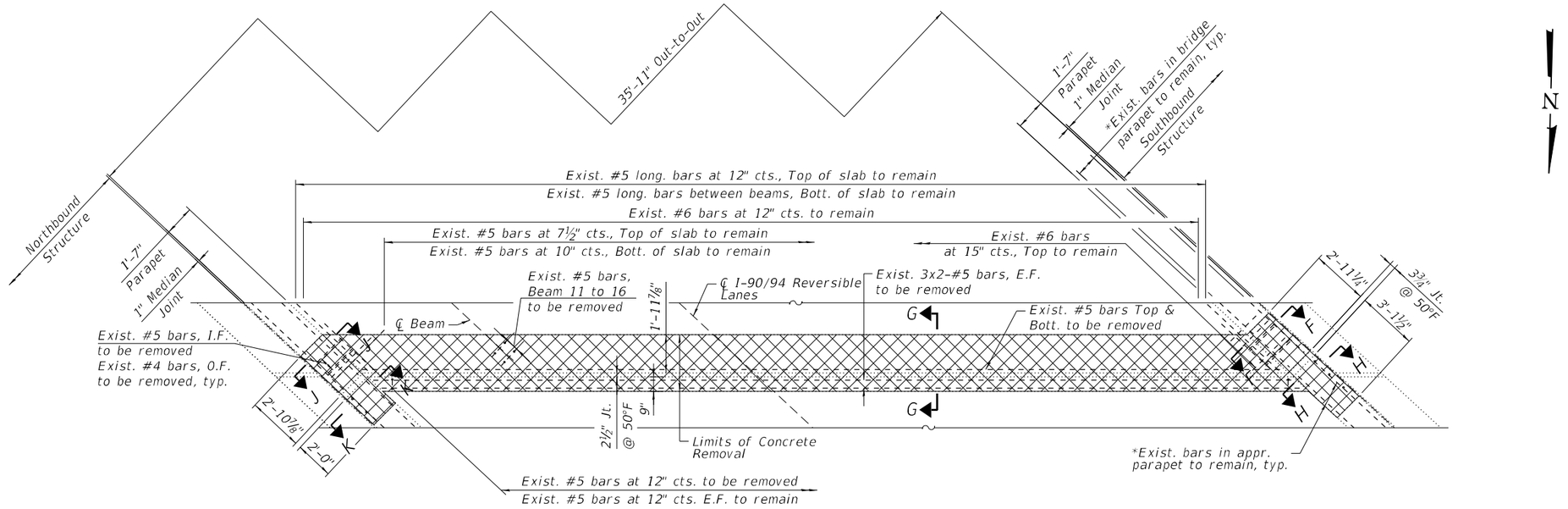
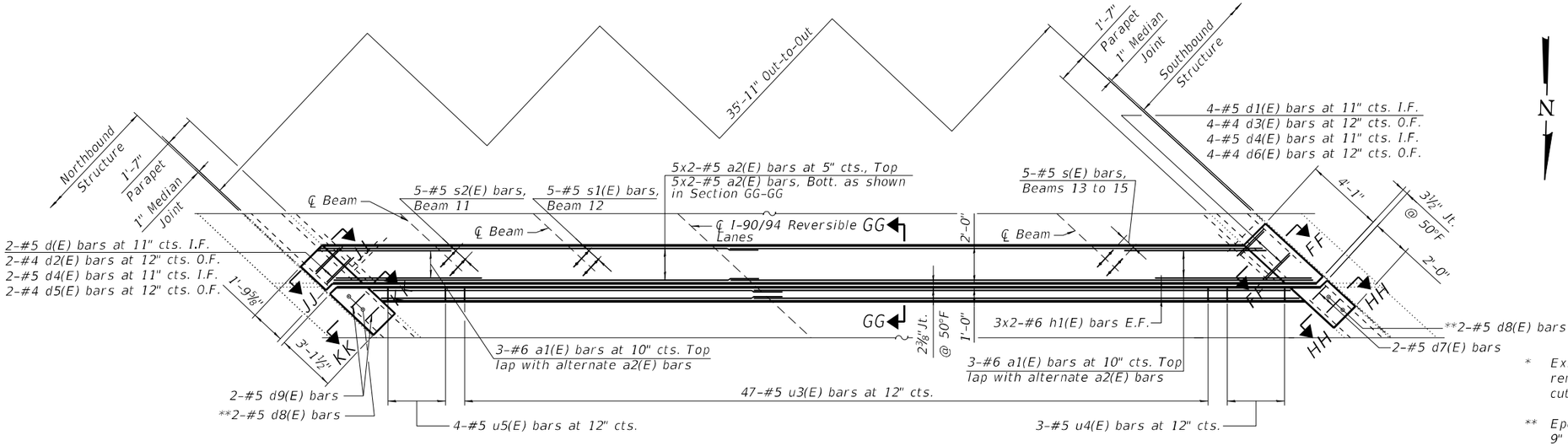


NORTH ABUTMENT JOINT REMOVAL PLAN



NORTH ABUTMENT JOINT RECONSTRUCTION PLAN

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

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

NOTES:

1. *For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S10-08.*
2. *For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S10-09.*

LEGEND

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

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

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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

NORTH ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0132 (REV)

SHEET S10-07 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	864
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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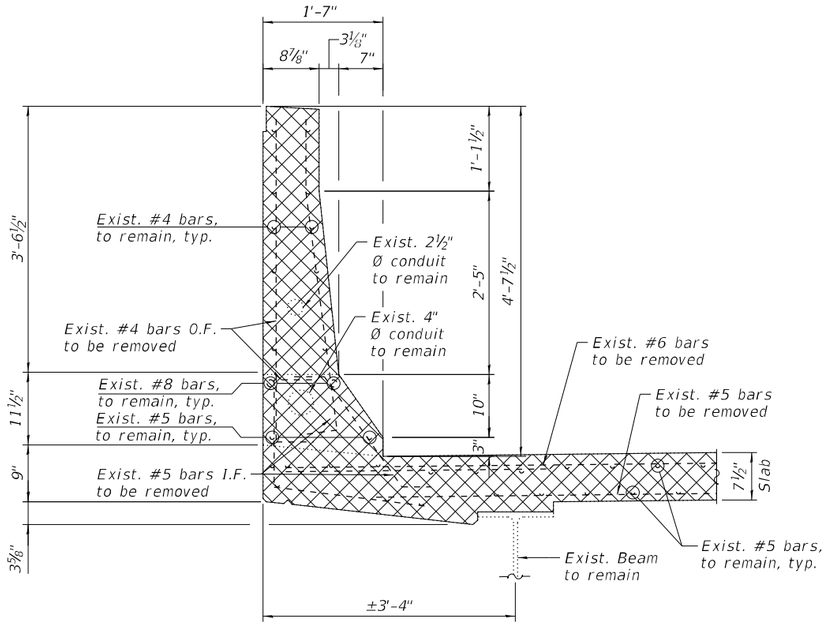
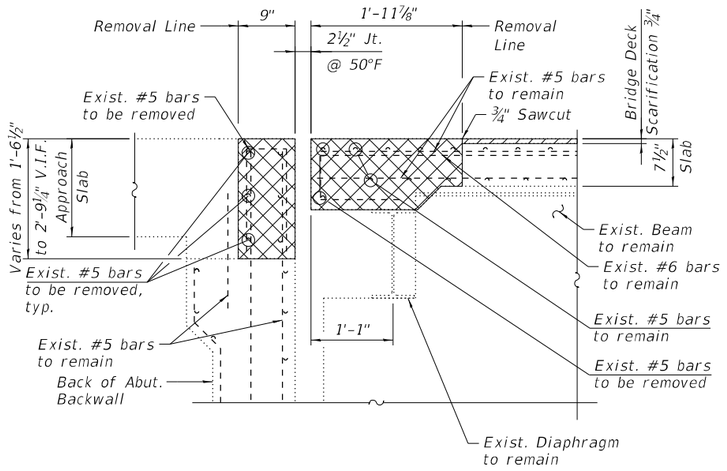
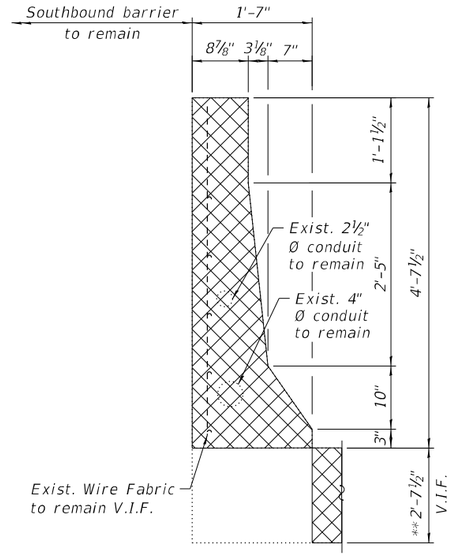


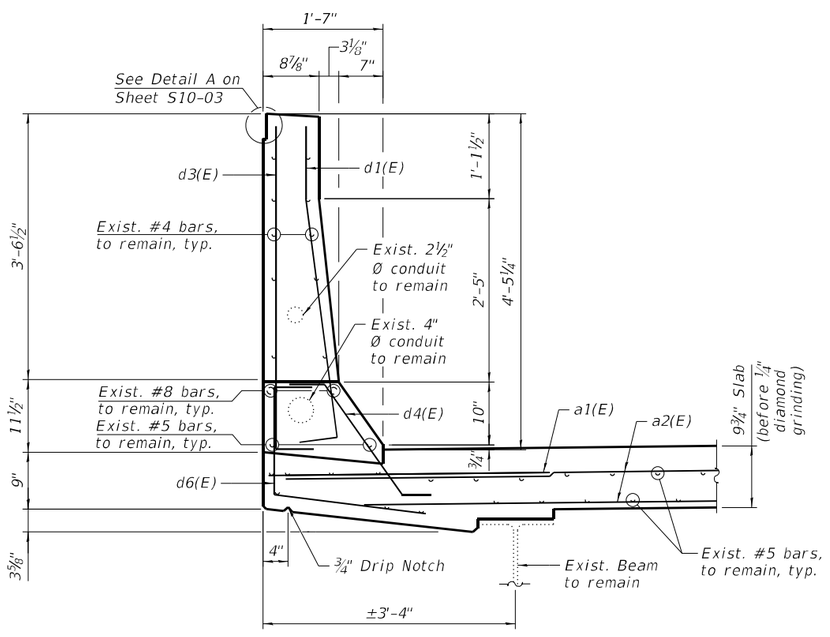
SECTION F-F
(West parapet removal)



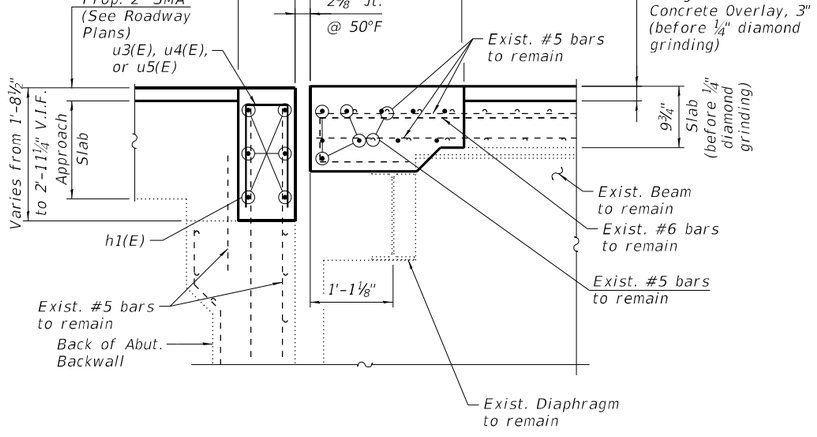
SECTION G-G



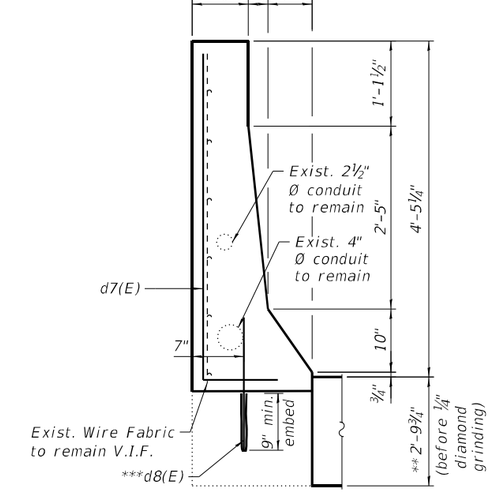
SECTION H-H
(West parapet removal)



SECTION FF-FF
(West parapet reconstruction)



SECTION GG-GG



SECTION HH-HH
(West parapet reconstruction)

LEGEND

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

** Dimension is taken at the Back of Abut.

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

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 II
SN 016-0132 (REV)
SHEET S10-08 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	865
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: SMODELNAMES
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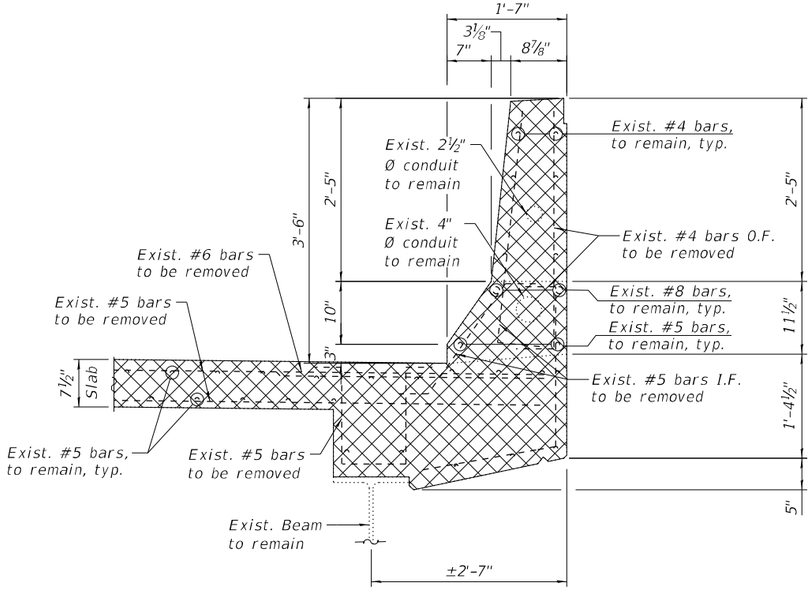
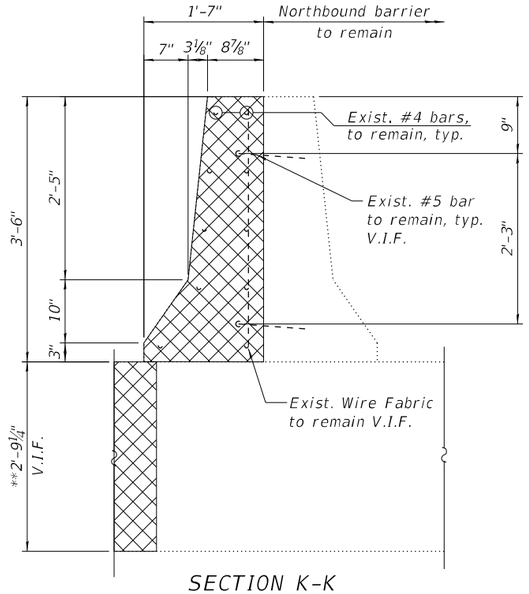


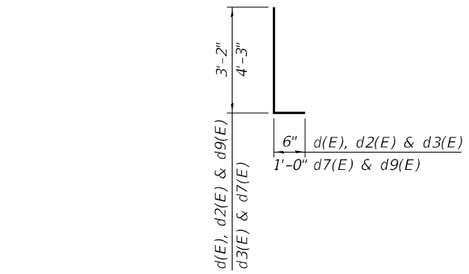
SECTION J-J

(East parapet removal)

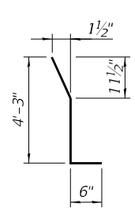


SECTION K-K

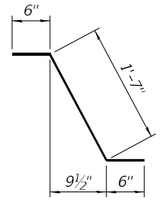
(East parapet removal)



BARS d(E), d2(E), d3(E), d7(E) & d9(E)



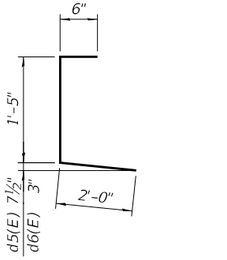
BAR d1(E)



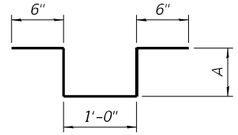
BAR d4(E)

BILL OF MATERIAL
NORTH ABUTMENT

Bar	No.	Size	Length	Shape
a1(E)	6	#6	6'-6"	
a2(E)	20	#5	28'-0"	
d(E)	2	#5	3'-8"	
d1(E)	4	#5	4'-9"	
d2(E)	2	#4	3'-8"	
d3(E)	4	#4	4'-9"	
d4(E)	6	#5	2'-7"	
d5(E)	2	#4	3'-11"	
d6(E)	4	#4	3'-11"	
d7(E)	2	#5	5'-3"	
d8(E)	4	#5	1'-10"	
d9(E)	2	#5	4'-2"	
h1(E)	12	#6	28'-0"	
s(E)	15	#5	3'-4"	
s1(E)	5	#5	3'-8"	
s2(E)	5	#5	4'-0"	
u3(E)	47	#5	4'-4"	
u4(E)	3	#5	2'-10"	
u5(E)	4	#5	5'-2"	
Concrete Removal		Cu Yd	8.2	
Reinforcement Bars, Epoxy Coated		Pound	1,590	
Concrete Superstructure		Cu Yd	9.0	

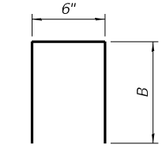


BARS d5(E) & d6(E)



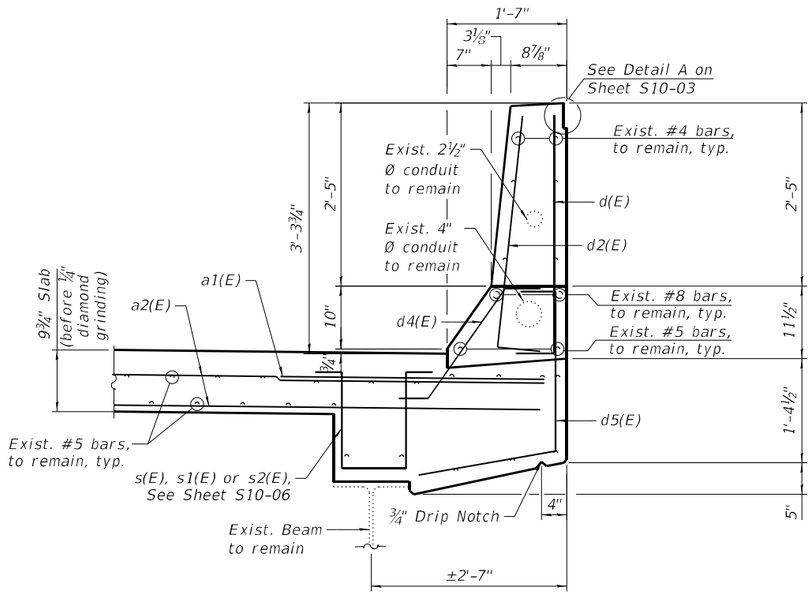
BARS s(E), s1(E) & s2(E)

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



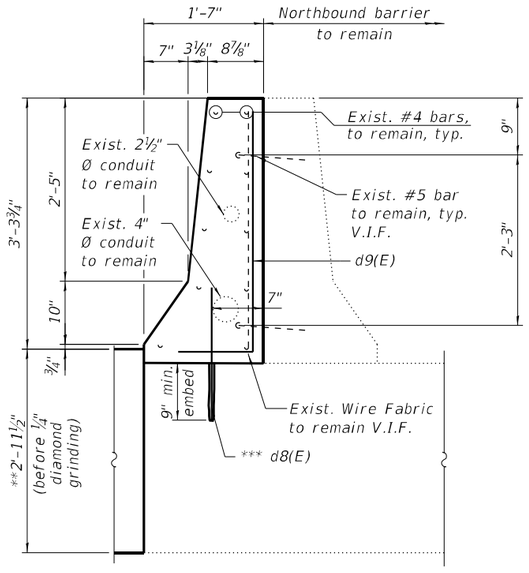
BARS u3(E), u4(E) & u5(E)

Bar	B
u3(E)	1'-11"
u4(E)	1'-2"
u5(E)	2'-4"



SECTION JJ-JJ

(East parapet reconstruction)



SECTION KK-KK

(East parapet reconstruction)

** Dimension is taken at the Back of Abut.

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

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S10-10.
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 of Existing Expansion Joint will not be paid for separately but will be included in the cost of Concrete Removal.

LEGEND

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

MIN BAR LAPS

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

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 -	K.G.W.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0132 (REV)

SHEET S10-09 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	866
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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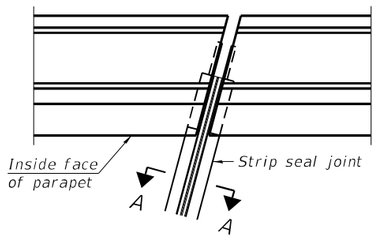
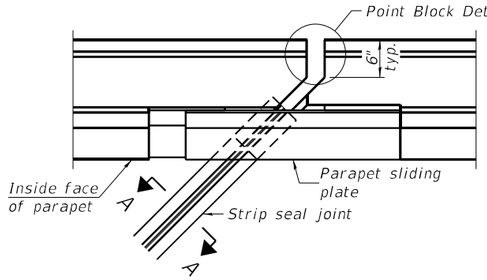
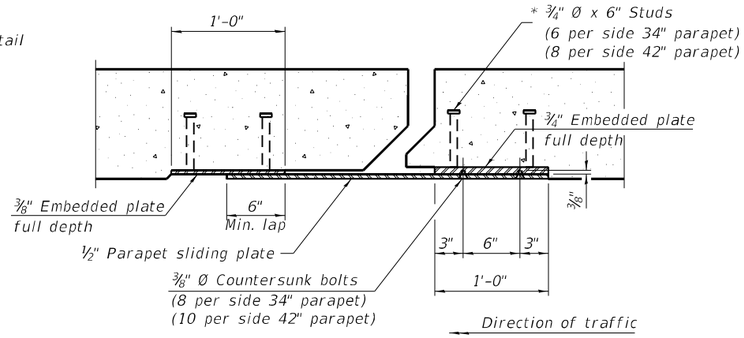


FOR SKEWS ≤ 30°

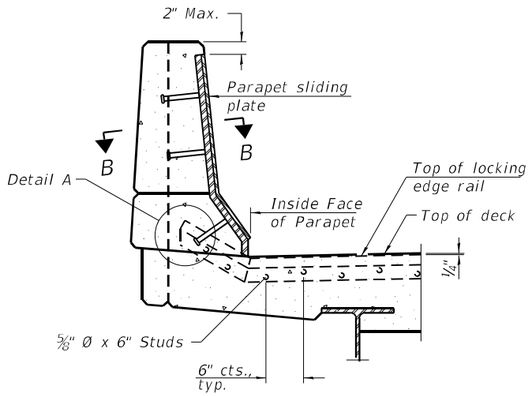


FOR SKEWS > 30°

PLAN AT PARAPET

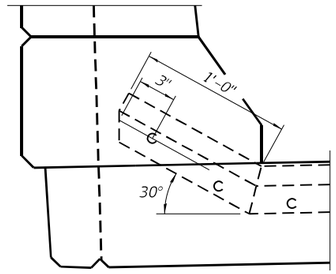


SECTION B-B

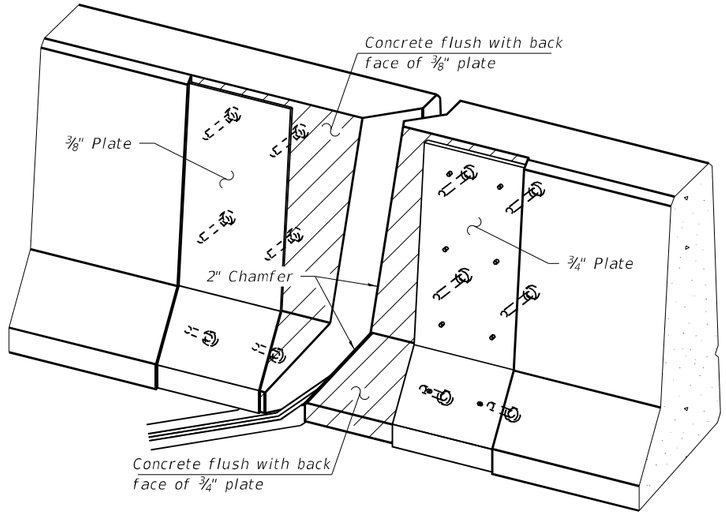


ELEVATION AT PARAPET

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

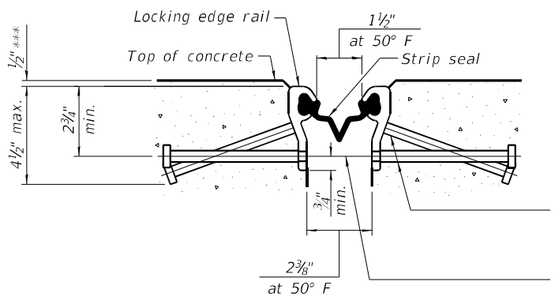


DETAIL A



TRIMETRIC VIEW

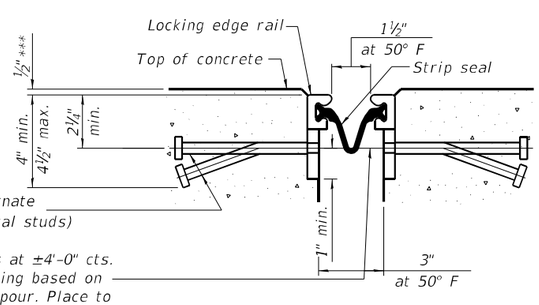
(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT

* 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.

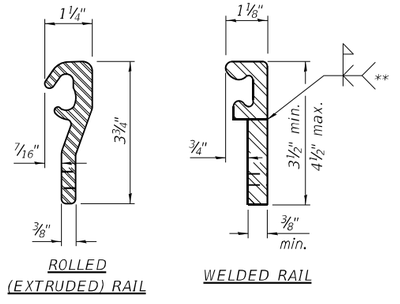


SHOWING WELDED RAIL JOINT

SECTION A-A

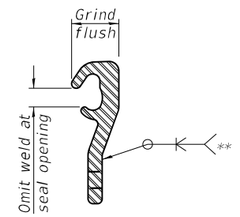
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

*** Before ¼" Diamond Grinding.



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	106

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DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
SN 016-0132 (REV)
SHEET S10-10 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	867
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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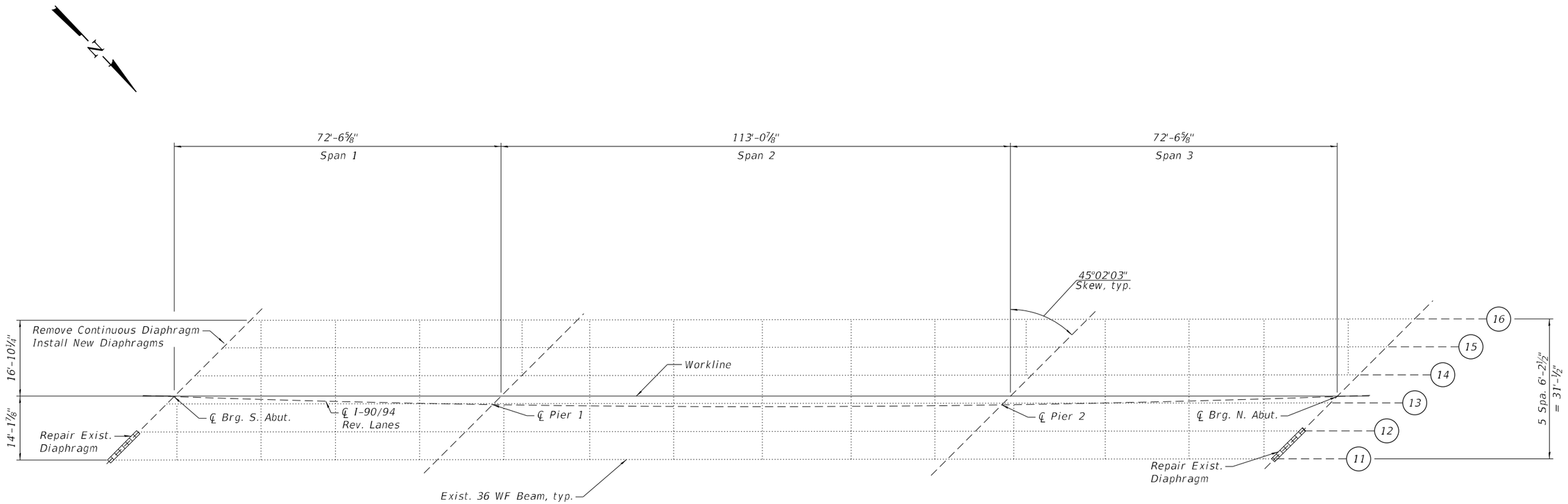

FRAMING PLAN

NOTES:

1. For Diaphragm Repair Details see Sheets S10-12 and S10-13.

LEGEND

Remove and Replace Exist. Diaphragm

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	320
Structural Steel Removal	Pound	220

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FRAMING PLAN
SN 016-0132 (REV)
SHEET S10-11 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	868
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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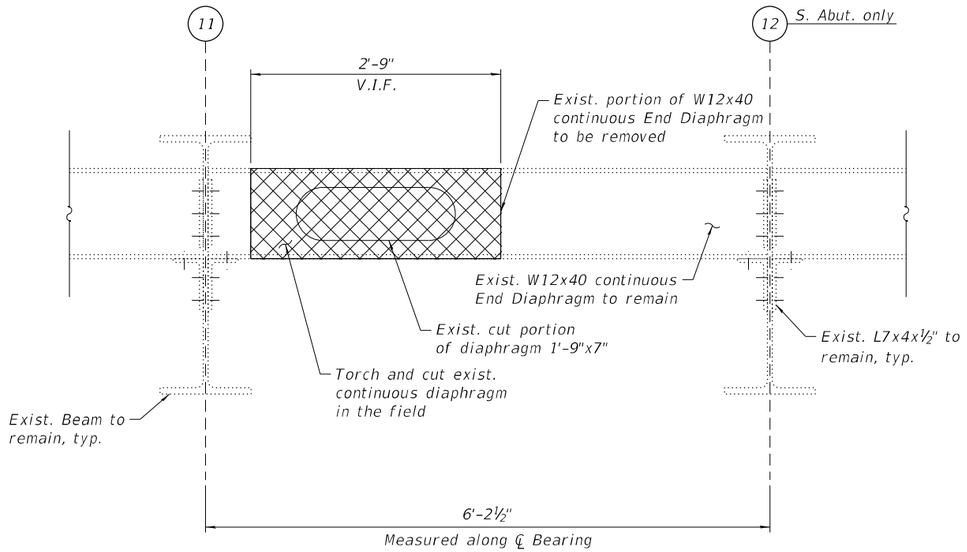
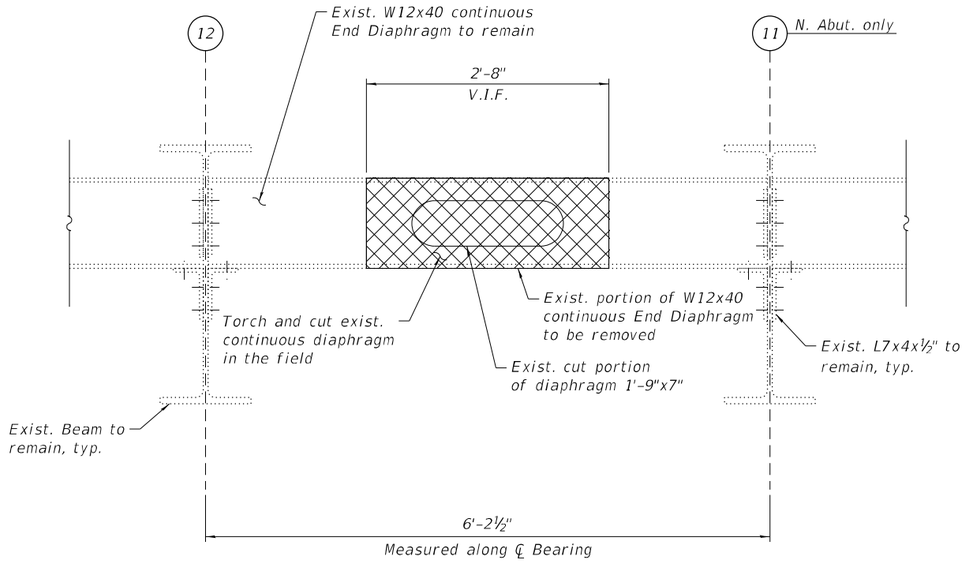


END DIAPHRAGM REPAIR
(Showing approximate size & hole location)



END DIAPHRAGM REPAIR
(Showing approximate size & hole location)

NOTES:

1. For location of Diaphragm Repair and Bill of Material, see Sheet S10-11.
2. All Structural Steel shall conform to the requirements of AASHTO M270 Grade 36.
3. Diaphragm repair plate holes shall be $^{15}/_{16}$" for $^{3}/_{4}$" bolts. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts.
4. All proposed diaphragm repair plates, angles, bolts, nuts and washers shall be paid for as Furnishing and Erecting Structural Steel.

LEGEND

Structural Steel Removal

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STRUCTURAL STEEL REPAIR DETAILS
SN 016-0132 (REV)
SHEET S10-12 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	869
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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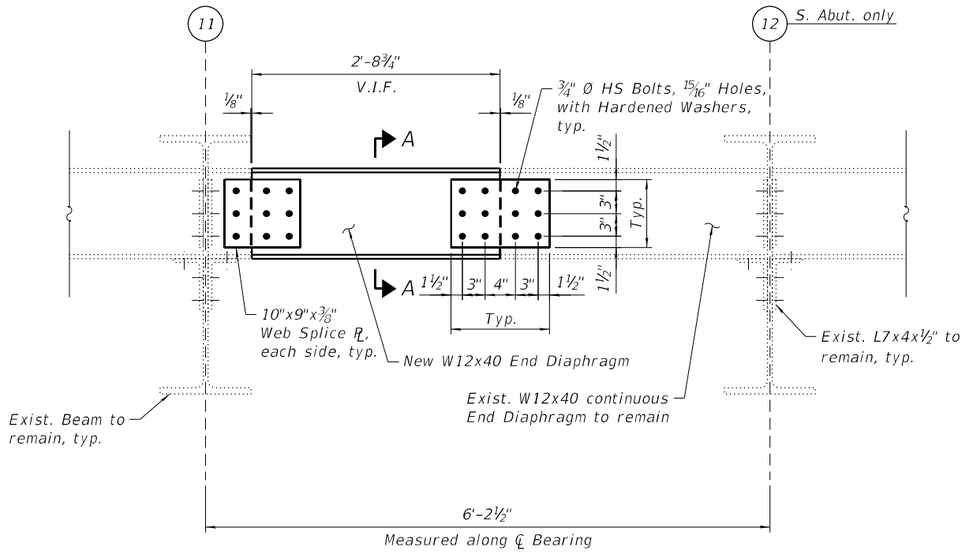
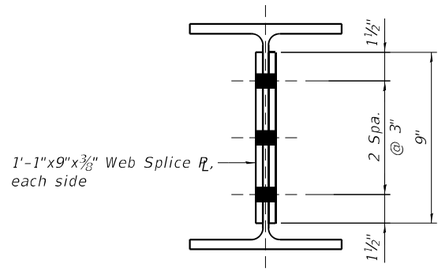
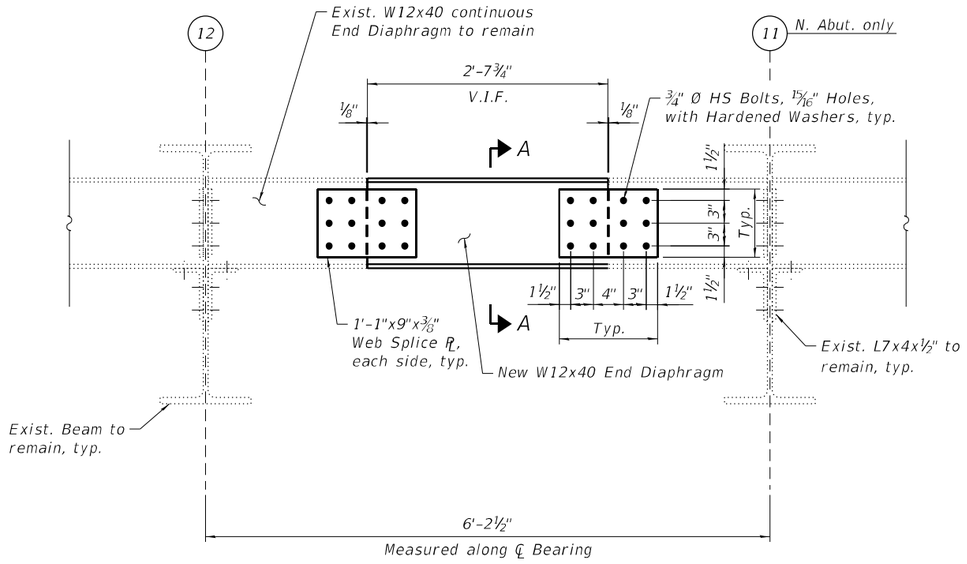


END DIAPHRAGM REPAIR
(Showing approximate size & hole location)



SECTION A-A



END DIAPHRAGM REPAIR
(Showing approximate size & hole location)

NOTES:

1. For location of Diaphragm Repair and Bill of Material, see Sheet S10-11.
2. All Structural Steel shall conform to the requirements of AASHTO M270 Grade 36.
3. Diaphragm repair plate holes shall be 15/16" for ¾" bolts. Fasteners shall be ASTM A325 Type I, mechanically galvanized bolts.
4. All proposed diaphragm repair plates, angles, bolts, nuts and washers shall be paid for as Furnishing and Erecting Structural Steel.
5. The cost of all field drilling shall be included in the cost of Furnishing and Erecting Structural Steel.

LEGEND

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

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STRUCTURAL STEEL REPAIR DETAILS II
SN 016-0132 (REV)
SHEET S10-13 OF S10-18 SHEETS

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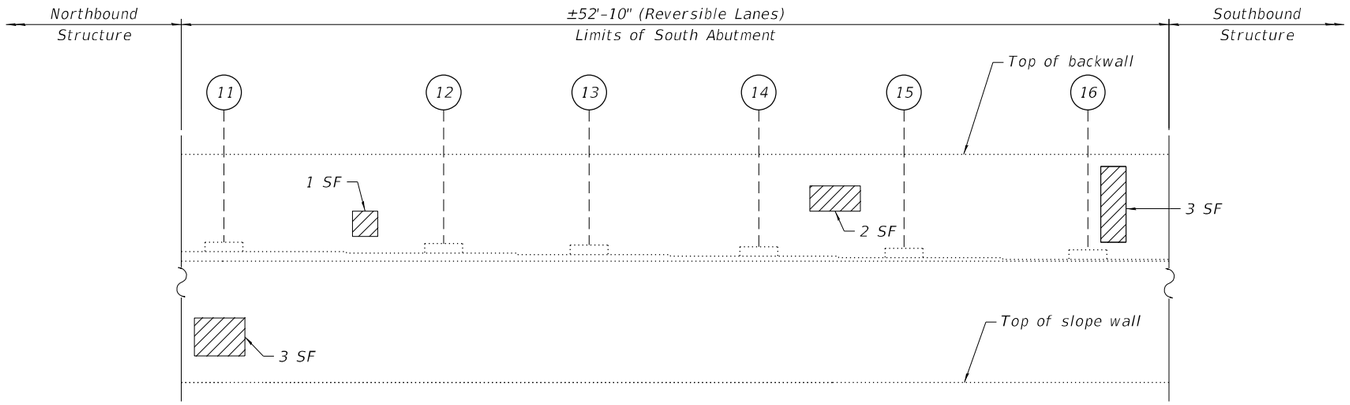
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		



ELEVATION - SOUTH ABUTMENT

(Looking South)

NOTES:

1. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
2. Concrete Sealer is to be applied to the lower 2 feet of the backwalls and to the seats of the abutments.
3. For Slope Wall repairs, see Sheet S10-18.

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	216
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	9

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SOUTH ABUTMENT REPAIRS
SN 016-0132 (REV)
SHEET S10-14 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	871
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	ILLINOIS	FED. AID PROJECT		

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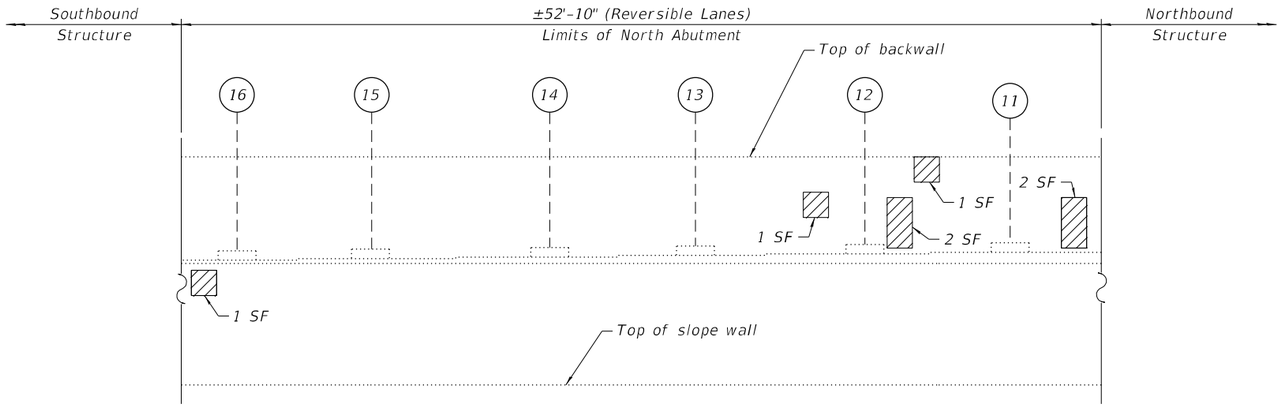

ELEVATION - NORTH ABUTMENT

(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.
3. For Slope Wall repairs, see Sheet S10-18.

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	233
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	7

GRAEF
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NORTH ABUTMENT REPAIRS
SN 016-0132 (REV)
SHEET S10-15 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	872
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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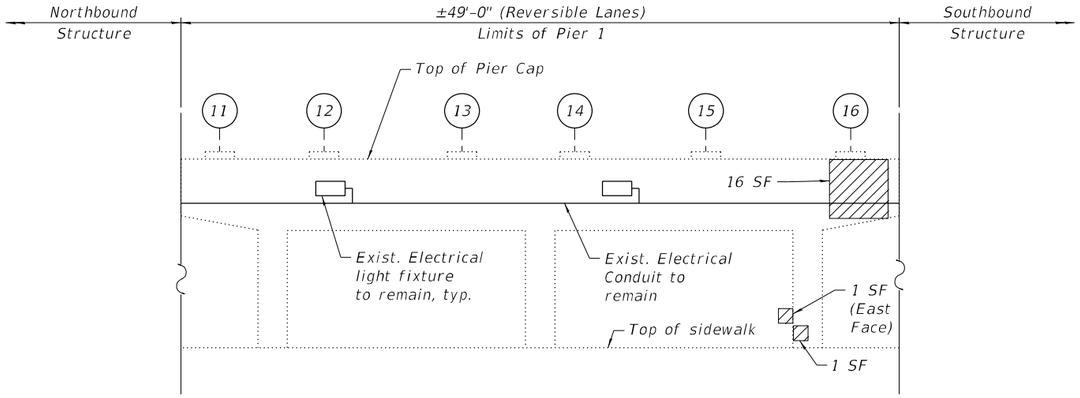
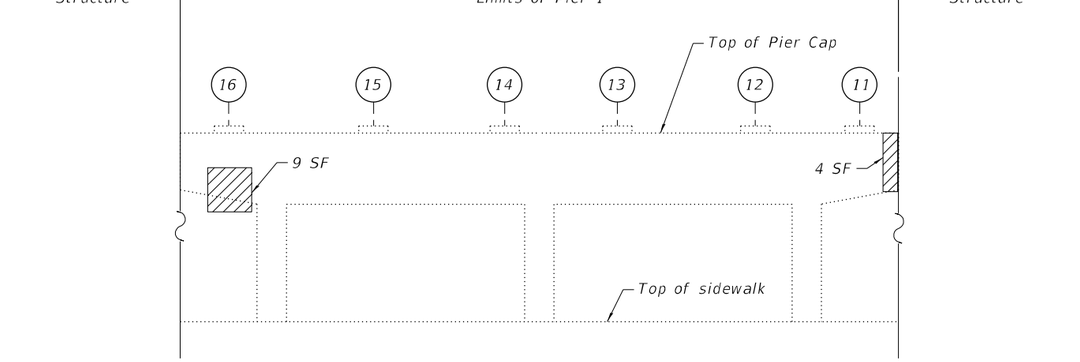


ELEVATION - PIER 1

(Looking South)

EXISTING LIGHTING: PIER 1

(Looking Southeast)



ELEVATION - PIER 1

(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.

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	31

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DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIRS
SN 016-0132 (REV)

SHEET S10-16 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	873
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: sMODELNAME
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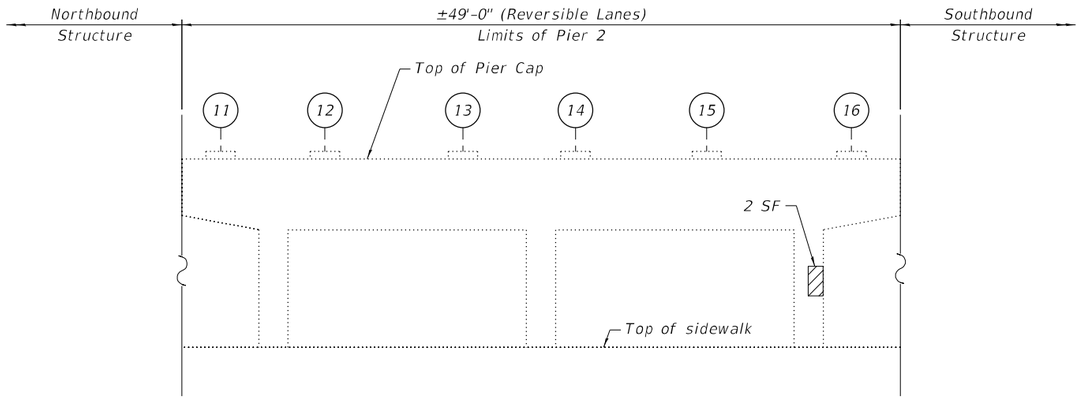
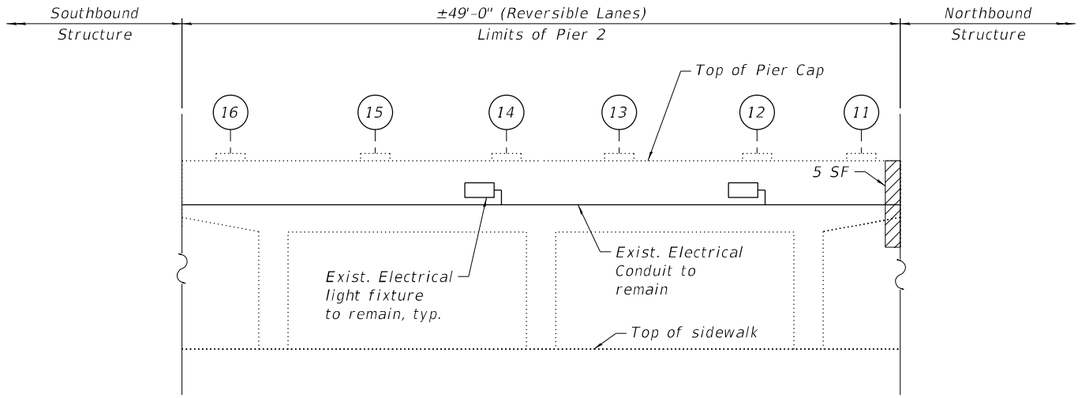


ELEVATION - PIER 2

(Looking South)

EXISTING LIGHTING: PIER 2

(Looking Northwest)



ELEVATION - PIER 2

(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.

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 016-0132 (REV)

SHEET S10-17 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	874
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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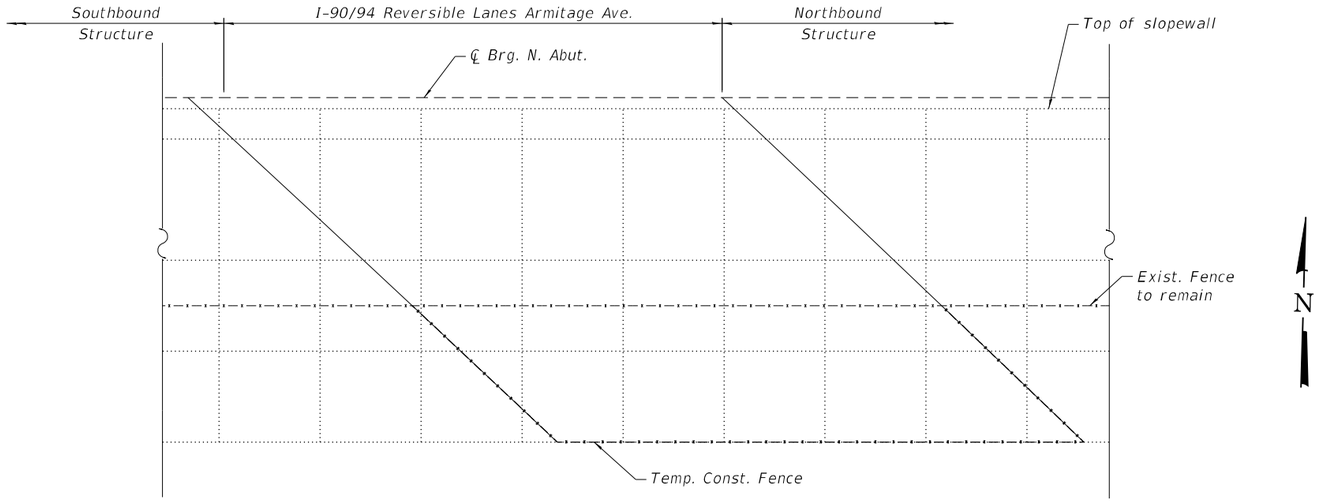
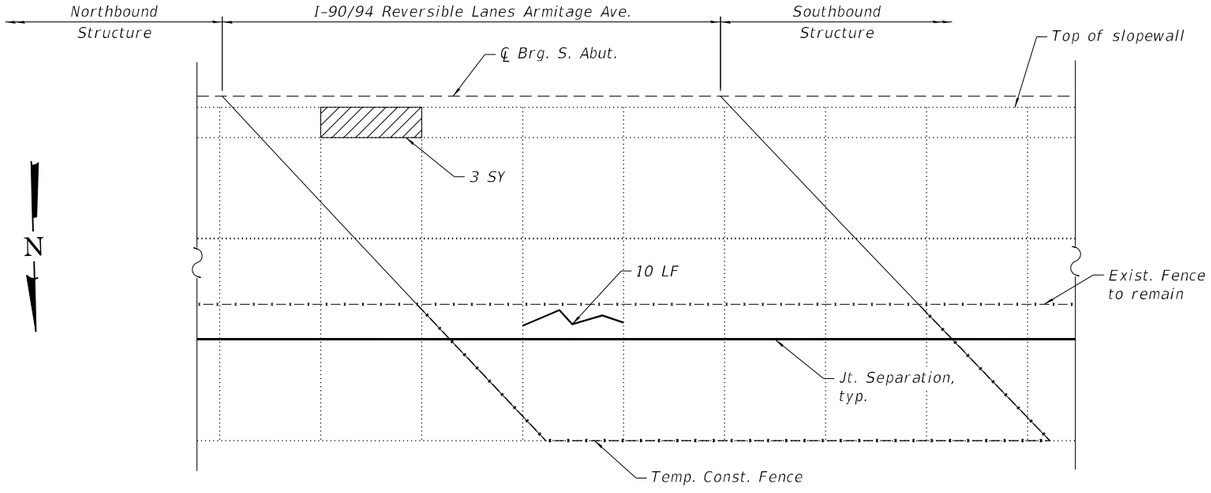


NORTH SLOPE WALL – PLAN

(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.

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	3
Slope Wall Removal	Sq Yd	3
Slope Wall 4 Inch	Sq Yd	3
Slope Wall Crack Sealing	Foot	10

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL REPAIRS
SN 016-0132 (REV)

SHEET S10-18 OF S10-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	875
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

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Existing Structure: S.N. 016-0131 was originally built in 1959 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 236'-2½" 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 68'-0", 93'-0", and 68'-0". The substructure consists of reinforced concrete abutments and piers supported on reinforced concrete cast-in-place piles.

Traffic will be maintained utilizing stage construction

No salvage.

LOADING

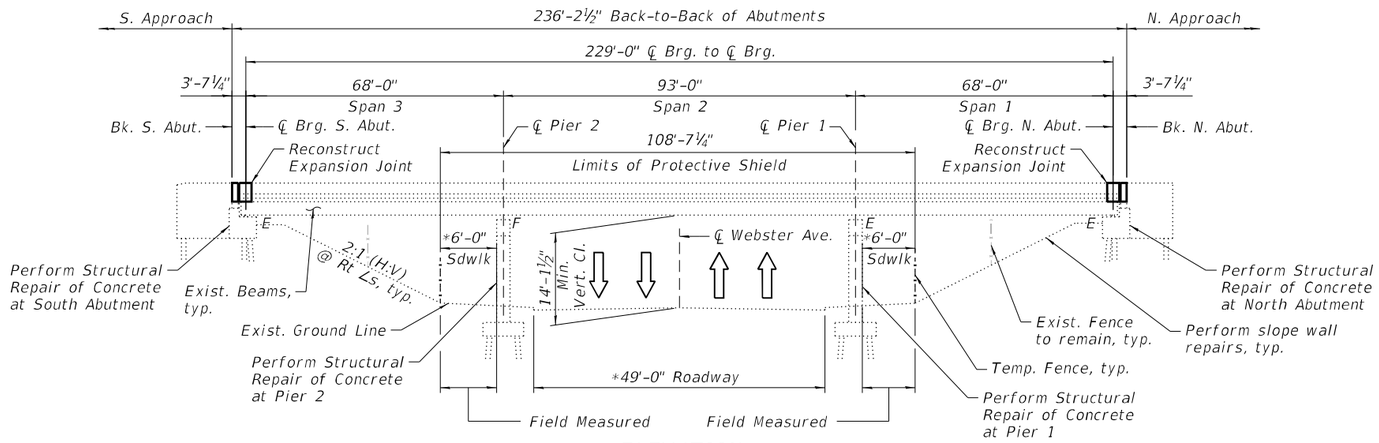
HS20-44 and alternate military loading

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition

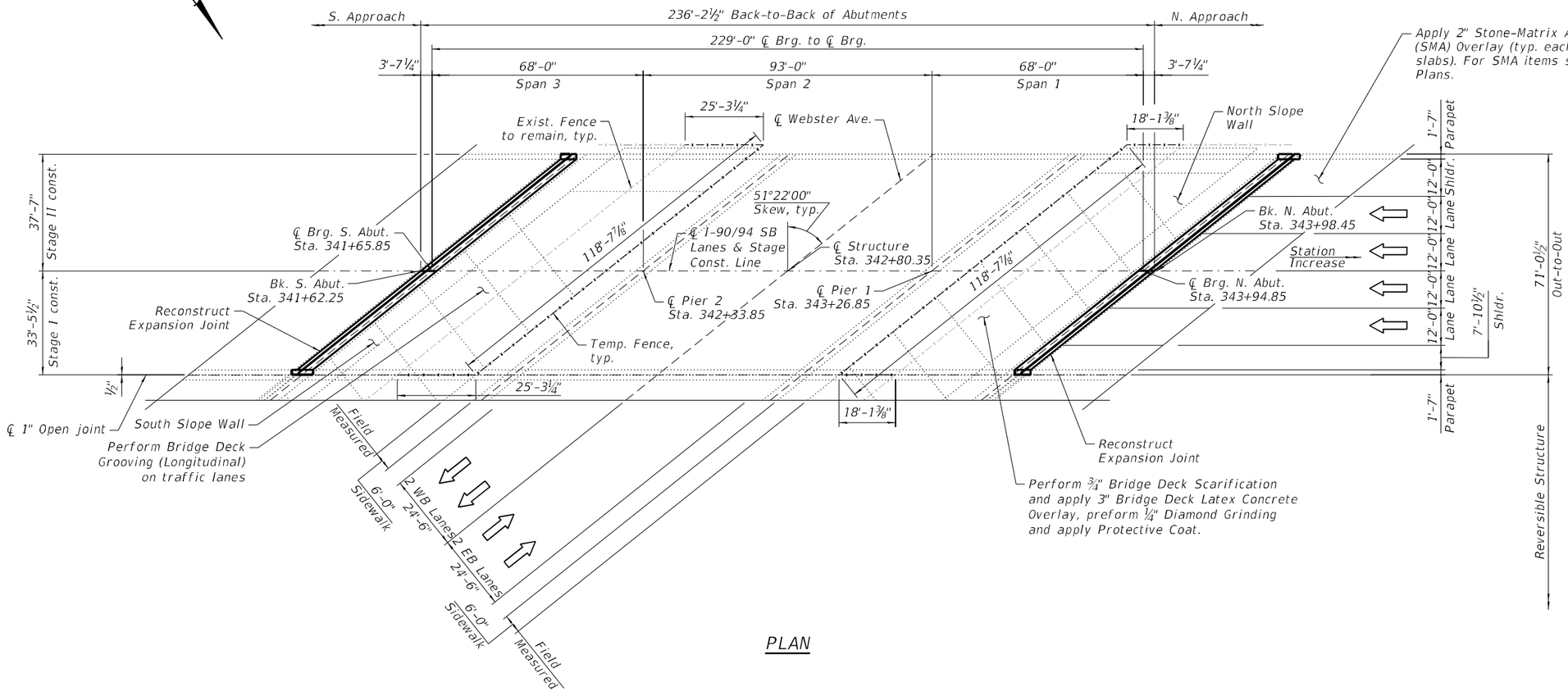
NOTE:

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

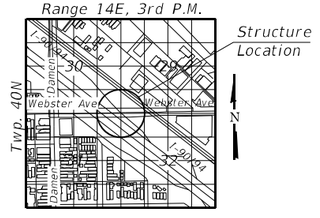


ELEVATION

* 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
SB I-90 OVER WEBSTER AVE.
F.A.I. SEC 2020-004-BR
COOK COUNTY
STATION: 342+80.35
STRUCTURE NO. 016-0131 (SB)

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S11-01 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	876
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

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GENERAL NOTES

1. Fasteners shall be ASTM A325 Type 1, galvanized according to ASTM F 2329. Bolts ¾ in., holes 13/16 in., unless otherwise noted. Diaphragm connection holes be 15/16" for ¾" bolts. Two hardened washers shall be required at diaphragm connections.

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

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

4. 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.

5. 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.

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

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

8. 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 and straightening shall be included in the cost of Concrete Removal.

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

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

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

12. 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.

13. 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.

14. 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".

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

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

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

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

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

20. The Contractor is responsible to protect the existing conduit 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.

21. 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.

22. 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.

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

24. 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. Repair steel diaphragms as shown on the plans.
6. 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.
7. Perform ¼" Diamond Grinding to top of bridge deck and abutment hatched block.
8. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes.
9. Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse expansion joints and to the surface of the new overlay.
10. Perform Structural Repair of Concrete to the Abutments and Piers as noted in the plans.
11. Perform slope wall repairs.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu Yd		12	12
Concrete Removal	Cu Yd	34.4		34.4
Slope Wall Removal	Sq Yd		12	12
Protective Shield	Sq Yd	924		924
Concrete Superstructure	Cu Yd	38.7		38.7
Protective Coat	Sq Yd	2,047		2,047
Furnishing and Erecting Structural Steel	Pound	1,260		1,260
Reinforcement Bars, Epoxy Coated	Pound	5,860		5,860
Bar Splicers	Each	32		32
Slope Wall 4 Inch	Sq Yd		12	12
Preformed Joint Strip Seal	Foot	222		222
Concrete Sealer	Sq Ft		1,237	1,237
Slope Wall Crack Sealing	Foot		237	237
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,238		1,238
Structural Steel Removal	Pound	1,260		1,260
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,705		1,705
Bridge Deck Scarification 3/4"	Sq Yd	1,705		1,705
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		70	70
Deck Slab Repair (Full Depth, Type I)	Sq Yd	0.3		0.3
Deck Slab Repair (Full Depth, Type II)	Sq Yd	0.6		0.6
Diamond Grinding (Bridge Section)	Sq Yd	1,751		1,751
Maintenance of Lighting System	Cal Mo		6	6
Temporary Construction Fence	Foot		325	325

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
SN 016-0131 (SB)
SHEET S11-02 OF S11-21 SHEETS

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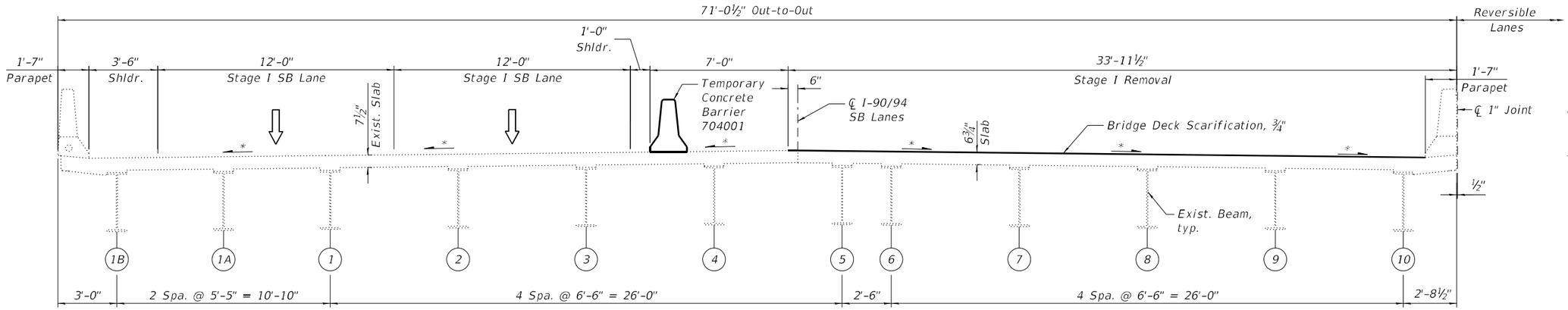
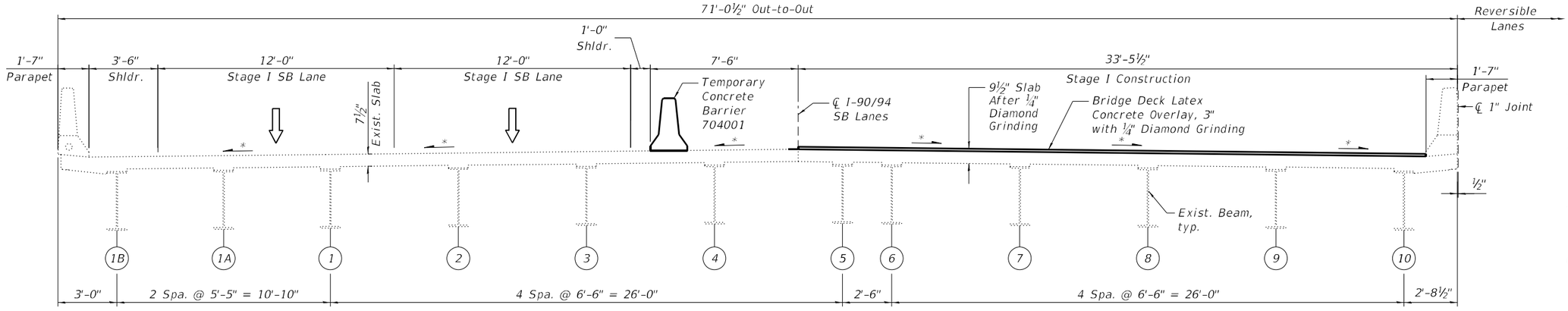
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		



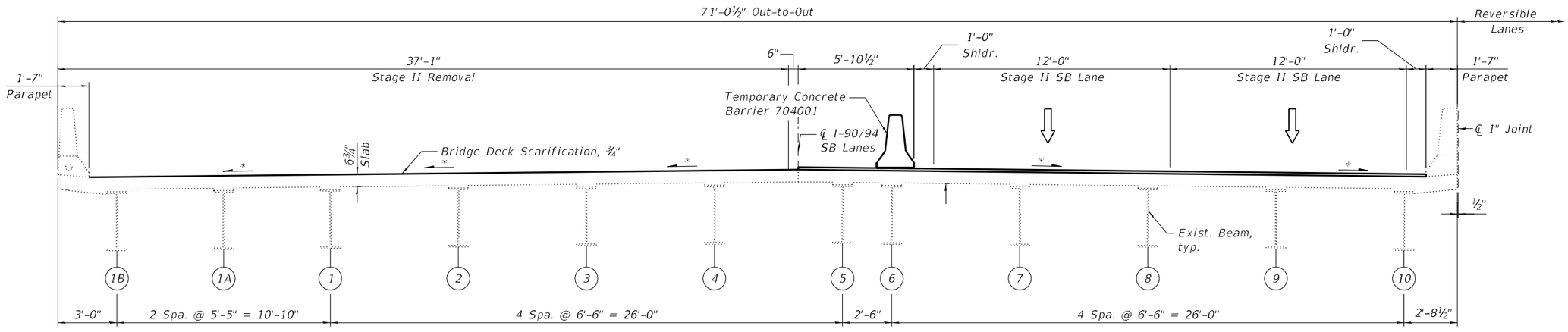
STAGE I REMOVAL

(Looking 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 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.

GRāEF
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS I
SN 016-0131 (SB)

SHEET S11-03 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	878
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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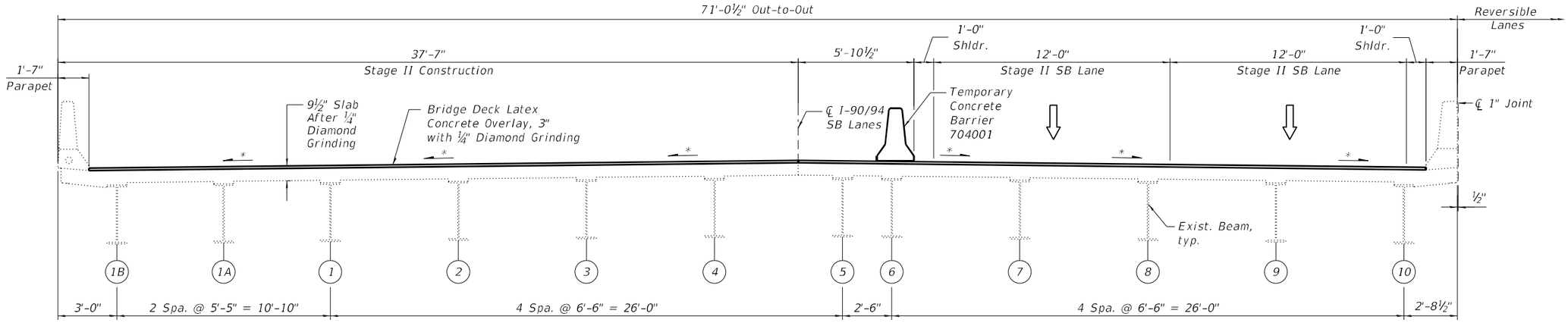
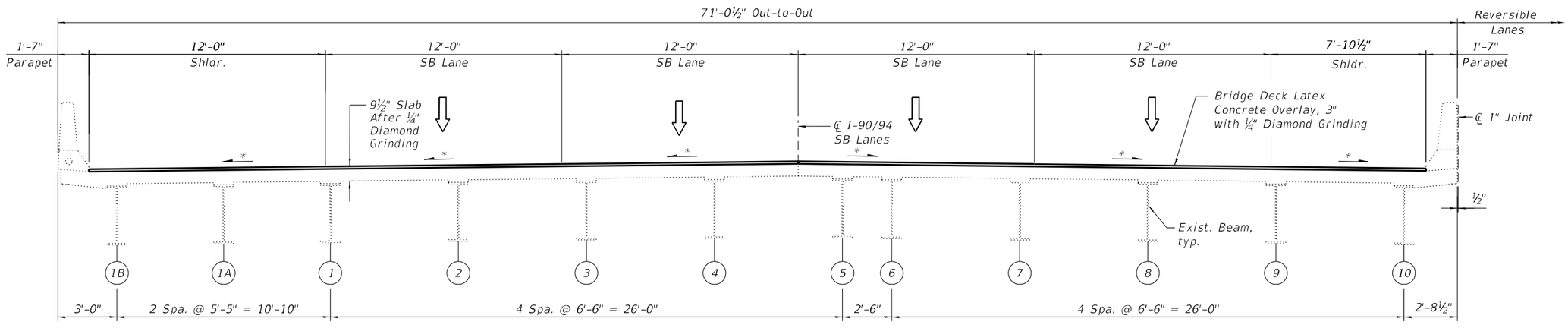


STAGE II CONSTRUCTION

(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 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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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS II
SN 016-0131 (SB)
SHEET S11-04 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	879
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

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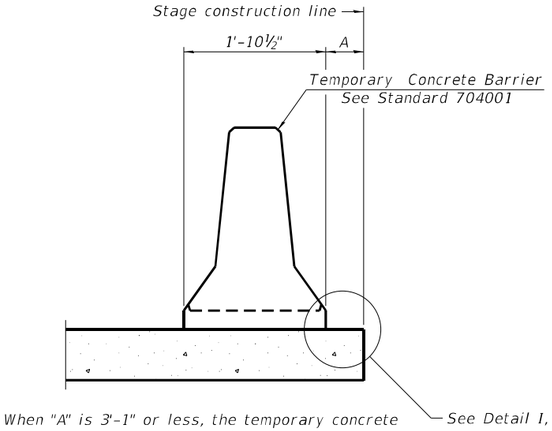
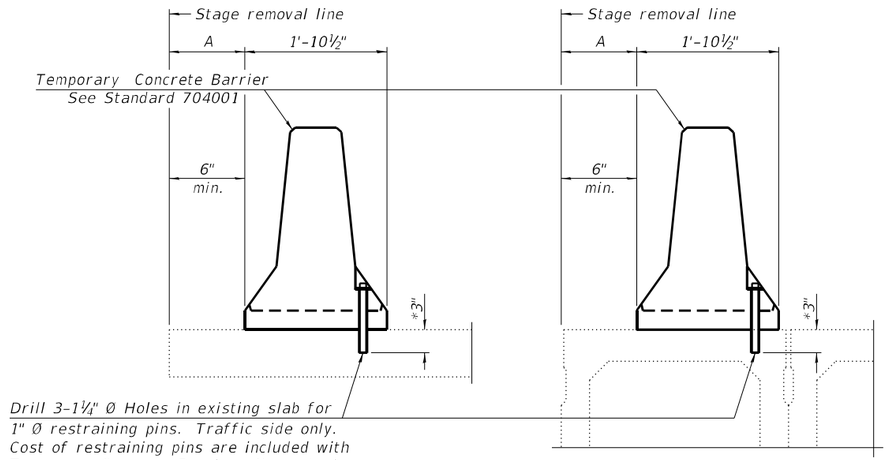


When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



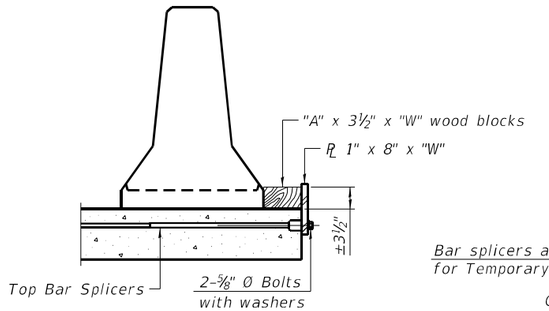
Drill 3-1¼" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

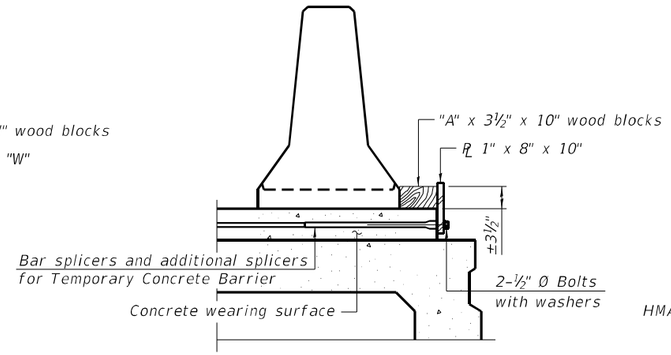
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

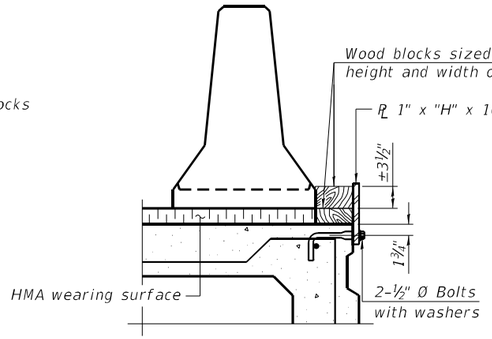
SECTIONS THRU SLAB OR DECK BEAM



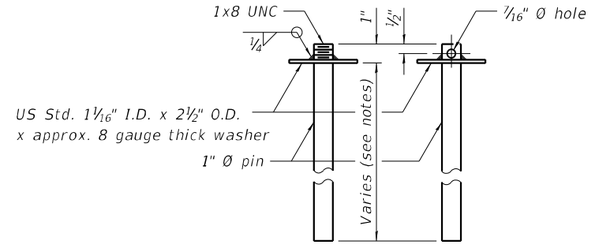
DETAIL I



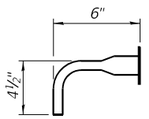
DETAIL II



DETAIL III



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

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

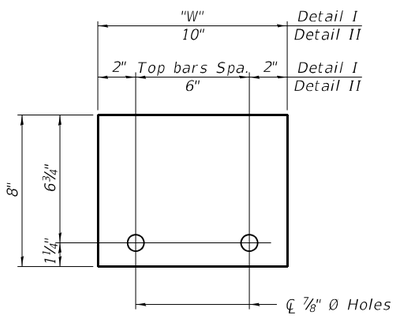
The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.

When the 'A' dimension is less than 1½", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

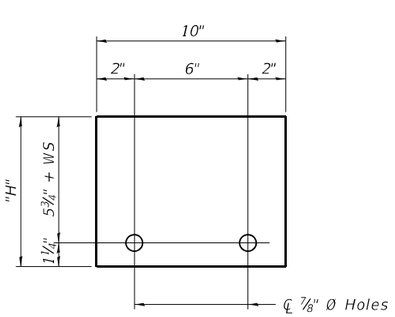
Detail I - Installation for a new bridge deck or bridge slab.

Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

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



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



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

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27

10-12-2021

MODEL: SMODELNAMES
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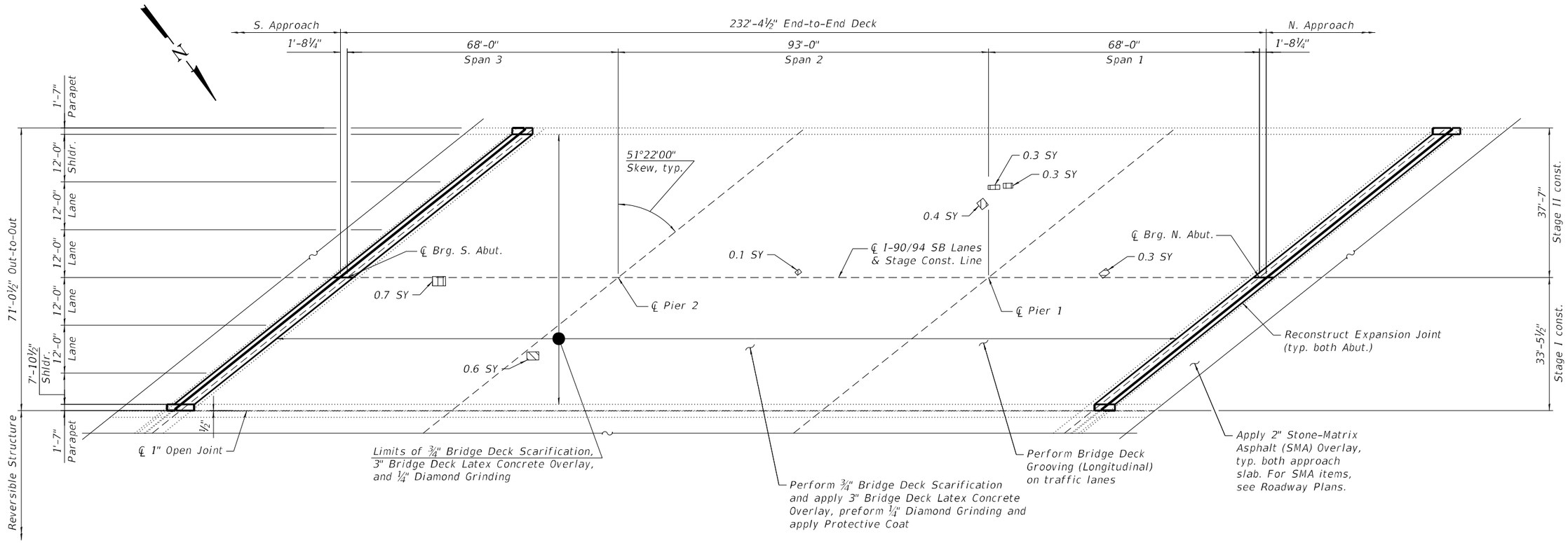
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
SN 016-0131 (SB)

SHEET S11-05 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	880
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



DECK PLAN

LEGEND

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

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

NOTES:

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For bridge deck final cross section, see Sheet S11-04.
3. For North and South transverse joint removal and reconstruction, see Sheet S11-07 thru S11-12.
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.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Shield	Sq Yd	924
Protective Coat	Sq Yd	2,047
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,238
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	1,705
Bridge Deck Scarification 3/4"	Sq Yd	1,705
Deck Slab Repair (Full Depth, Type I)	Sq Yd	0.3
Deck Slab Repair (Full Depth, Type II)	Sq Yd	0.6
Diamond Grinding (Bridge Section)	Sq Yd	1,751
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 016-0131 (SB)
SHEET S11-06 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	881
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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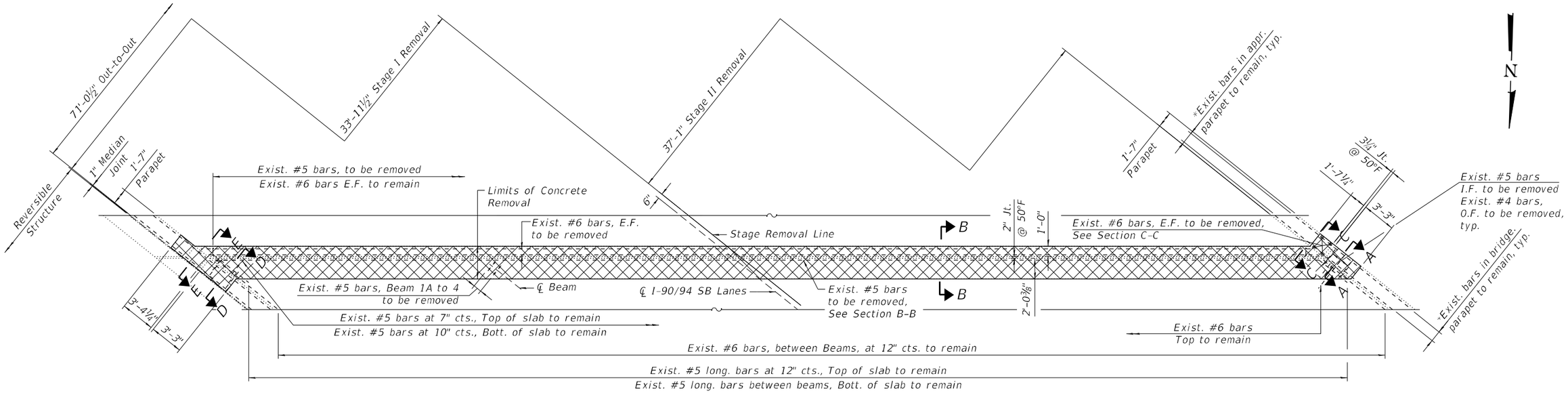
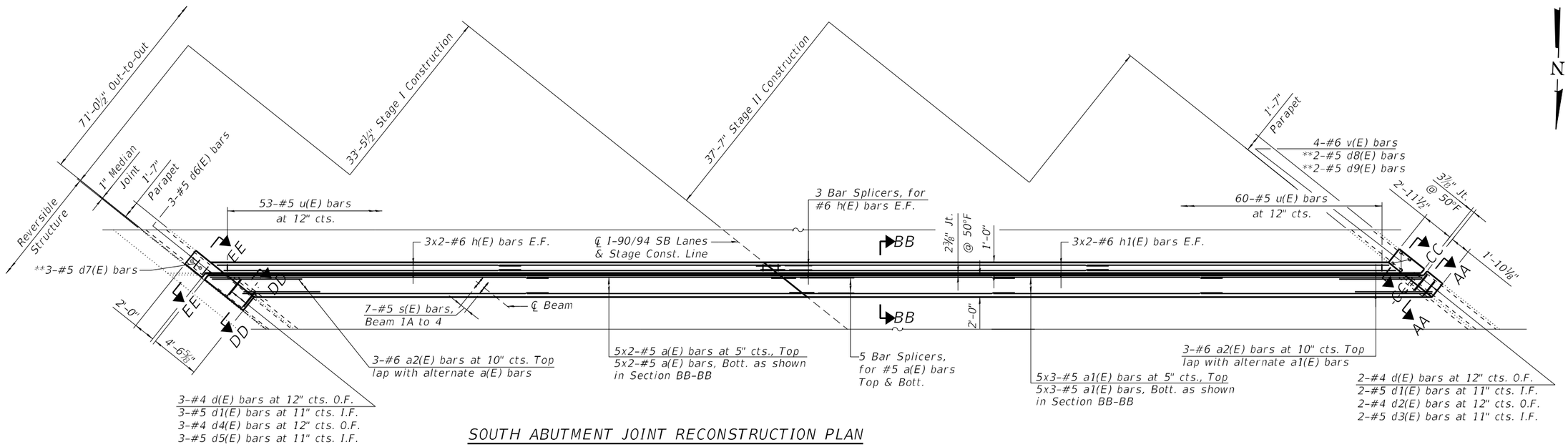


SOUTH ABUTMENT JOINT REMOVAL PLAN



SOUTH ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections A-A, B-B, C-C, AA-AA, BB-BB and CC-CC, see sheet S11-08.
2. For sections D-D, E-E, DD-DD and EE-EE, see sheet S11-09.

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

** Epoxy grout #5 d7(E), d8(E), & d9(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

LEGEND

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

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

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

SOUTH ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0131 (SB)

SHEET S11-07 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	882
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: SMODELNAMES
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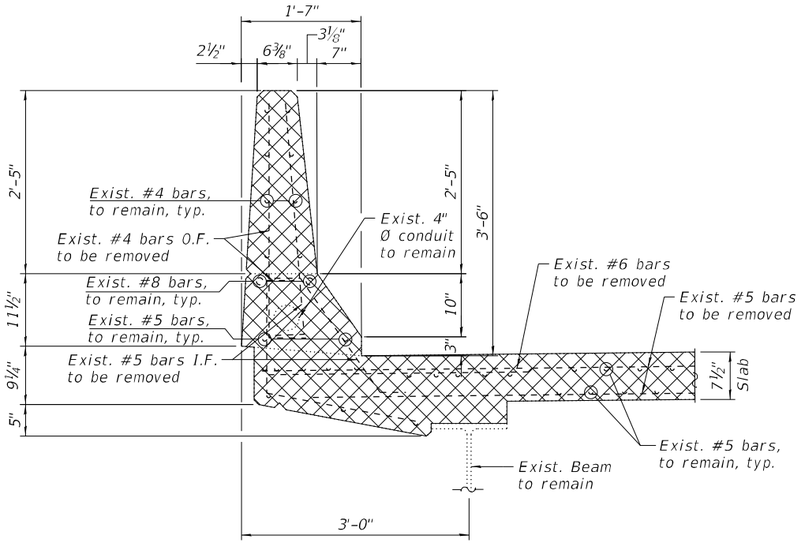
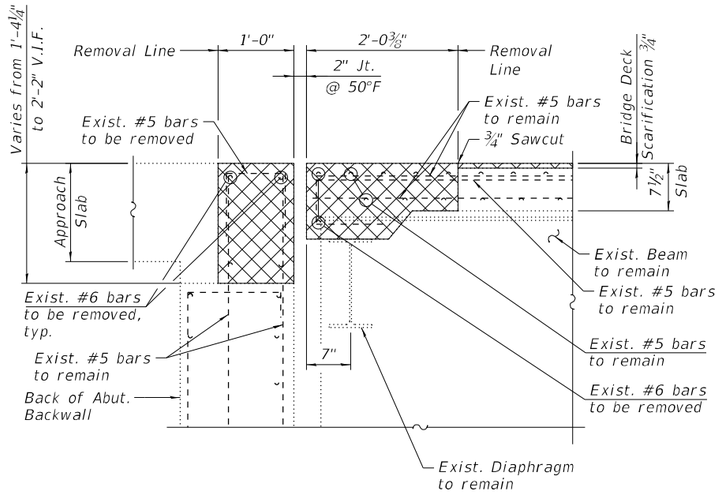
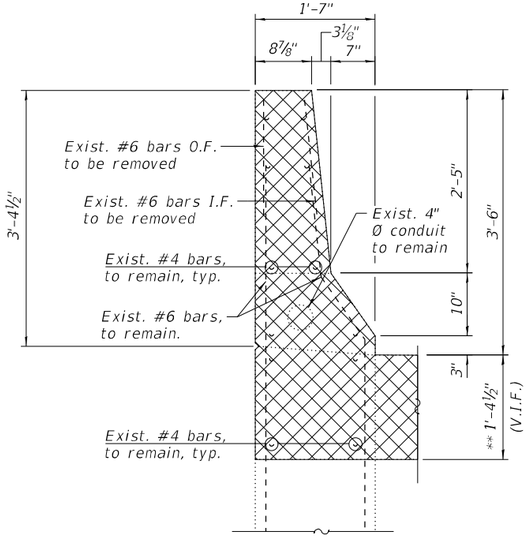


SECTION A-A

(West parapet removal)

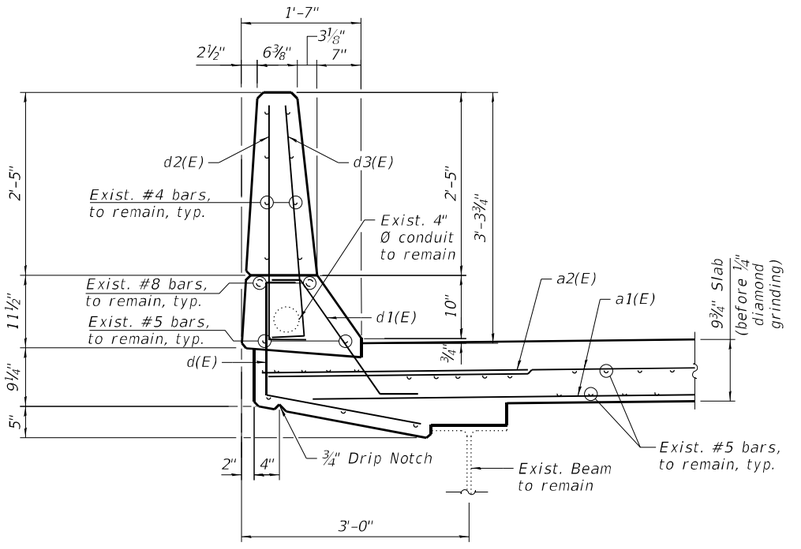


SECTION B-B



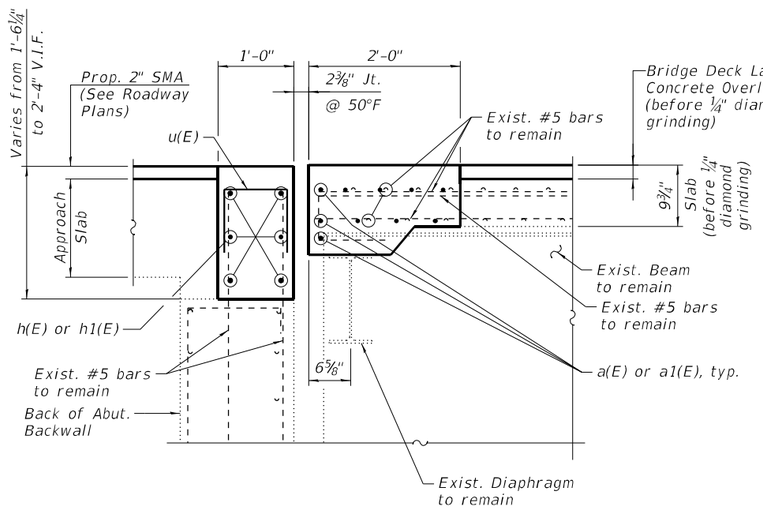
SECTION C-C

(West parapet removal)

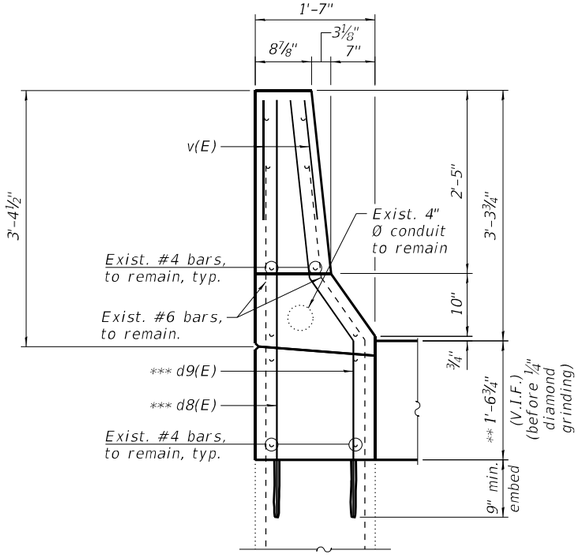


SECTION AA-AA

(West parapet reconstruction)



SECTION BB-BB



SECTION CC-CC

(West parapet reconstruction)

LEGEND

** Dimension is taken at the Back of Abut.

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

Concrete Removal

I.F. Inside Face

O.F. Outside Face

V.I.F. Verify in Field

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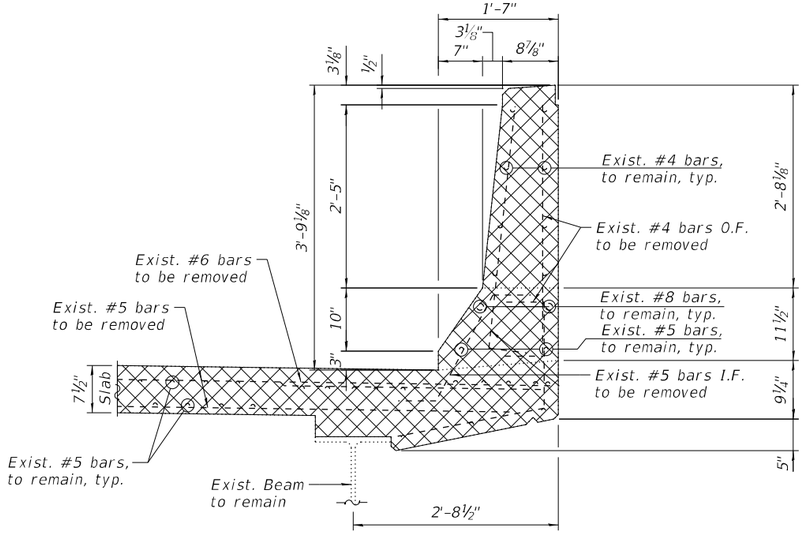
PLOT DATE =		CHECKED -	K.G.W.	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

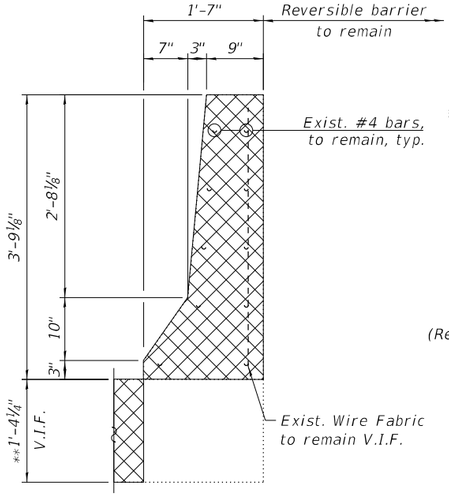
SOUTH ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0131 (SB)

SHEET S11-08 OF S11-21 SHEETS

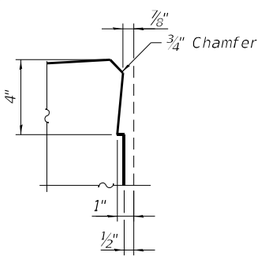
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	883
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



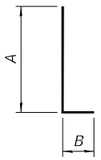
SECTION D-D
(East parapet removal)



SECTION E-E
(East parapet removal)

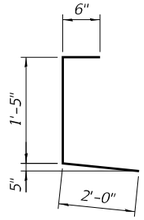


DETAIL A
(Reinforcement not shown for clarity)

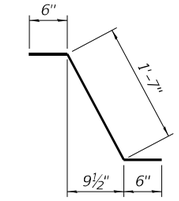


BARS d2(E), d3(E), d4(E), d5(E), & d6(E)

Bar	A	B
d2(E)	3'-2"	6"
d3(E)	3'-2"	6"
d4(E)	3'-5"	6"
d5(E)	3'-5"	6"
d6(E)	3'-6"	1'-0"



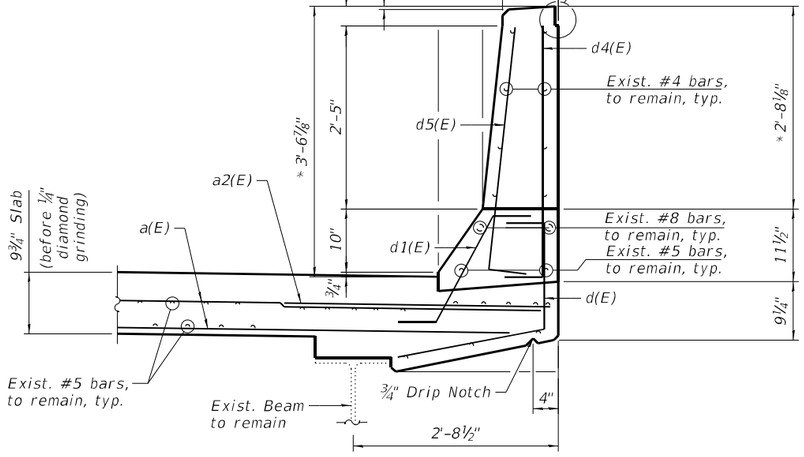
BAR d(E)



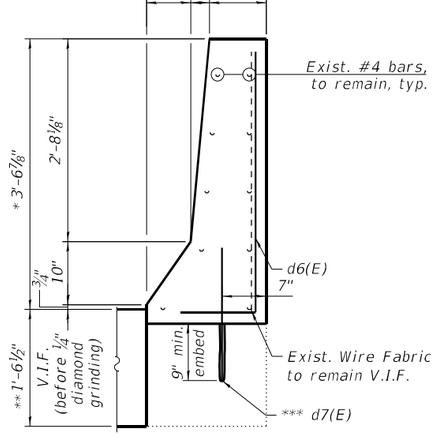
BAR d1(E)

BILL OF MATERIAL
SOUTH ABUTMENT

Bar	No.	Size	Length	Shape
a(E)	20	#5	28'-5"	
a1(E)	30	#5	22'-4"	
a2(E)	6	#6	6'-6"	
d(E)	5	#4	3'-11"	
d1(E)	5	#5	2'-7"	
d2(E)	2	#4	3'-8"	
d3(E)	2	#5	3'-8"	
d4(E)	3	#4	3'-11"	
d5(E)	3	#5	3'-11"	
d6(E)	3	#5	4'-6"	
d7(E)	3	#5	1'-10"	
d8(E)	2	#5	5'-6"	
d9(E)	2	#5	5'-8"	
h(E)	12	#6	28'-0"	
h1(E)	12	#6	31'-3"	
s(E)	35	#5	2'-10"	
u(E)	113	#5	2'-5"	
v(E)	4	#6	2'-0"	
Concrete Removal		Cu Yd	17.3	
Reinforcement Bars, Epoxy Coated		Pound	2,930	
Concrete Superstructure		Cu Yd	19.5	



SECTION DD-DD
(East parapet reconstruction)

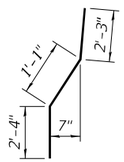


SECTION EE-EE
(East parapet reconstruction)

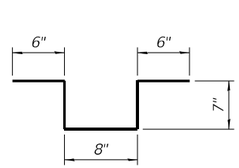
* Adjust in field as required to match reversible parapet

** Dimension is taken at the Back of Abut.

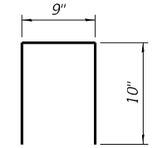
*** Epoxy grout #5 d7(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.



BAR d9(E)



BAR s(E)



BAR u(E)

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S11-13.
2. For Bar Splicer Assembly details, see sheet S11-21.
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 016-0131 (SB)
SHEET S11-09 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	884
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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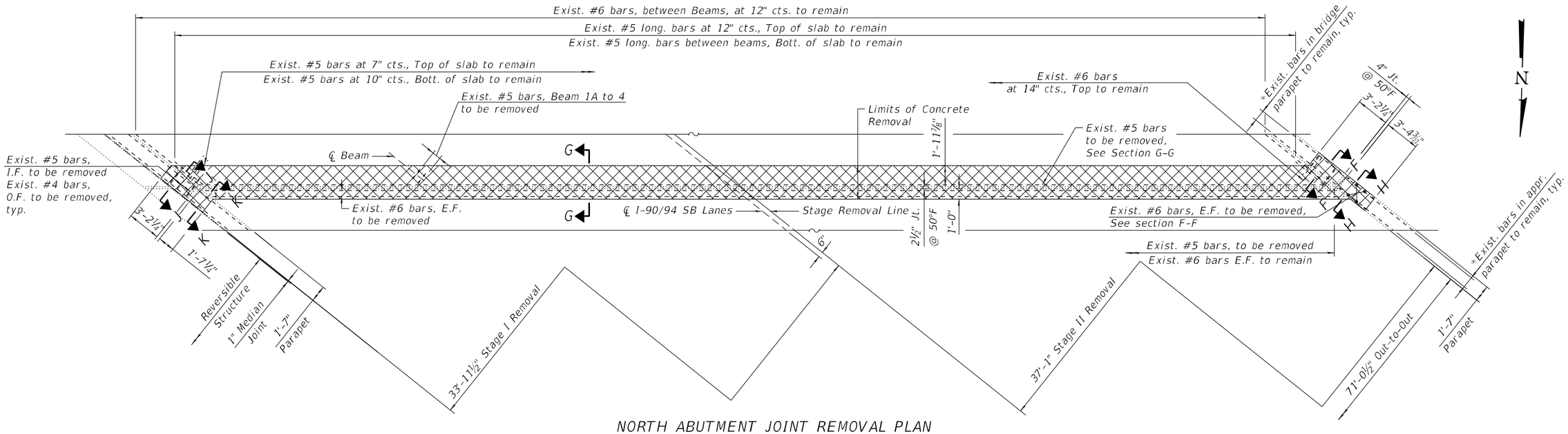
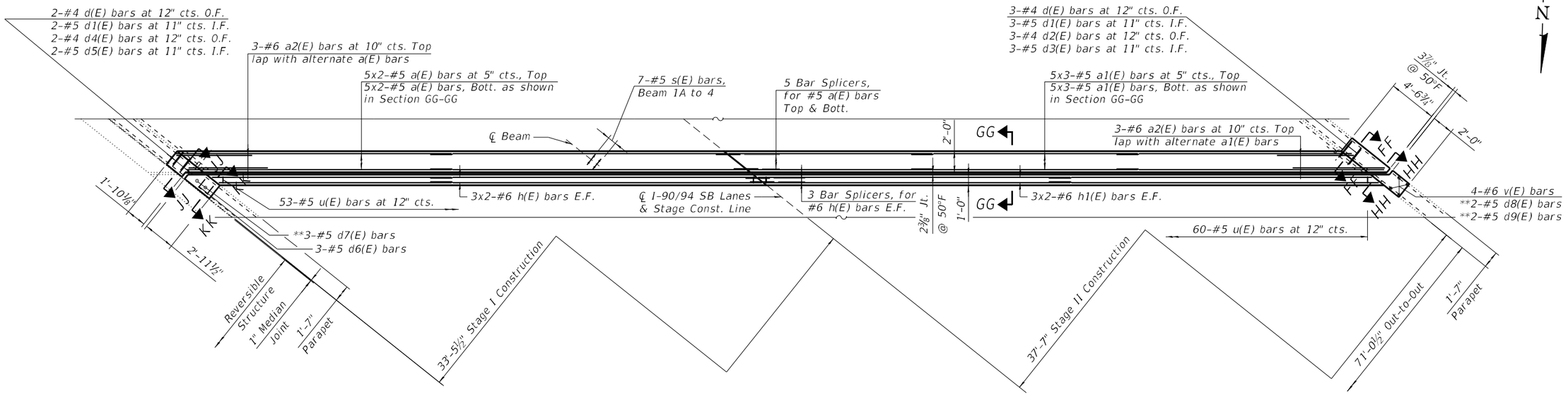


NORTH ABUTMENT JOINT REMOVAL PLAN



NORTH ABUTMENT JOINT RECONSTRUCTION PLAN

NOTES:

1. For sections F-F, G-G, H-H, FF-FF, GG-GG and HH-HH, see sheet S11-11.
2. For sections J-J, K-K, JJ-JJ and KK-KK, see sheet S11-12.

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

** Epoxy grout #5 d7(E), d8(E), & d9(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.

LEGEND

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

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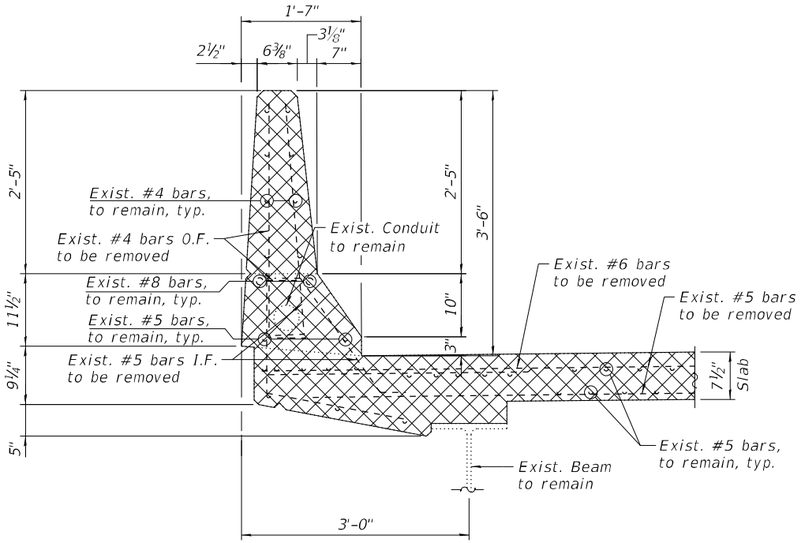
PLOT DATE =		CHECKED -	K.G.W.	REVISED -	

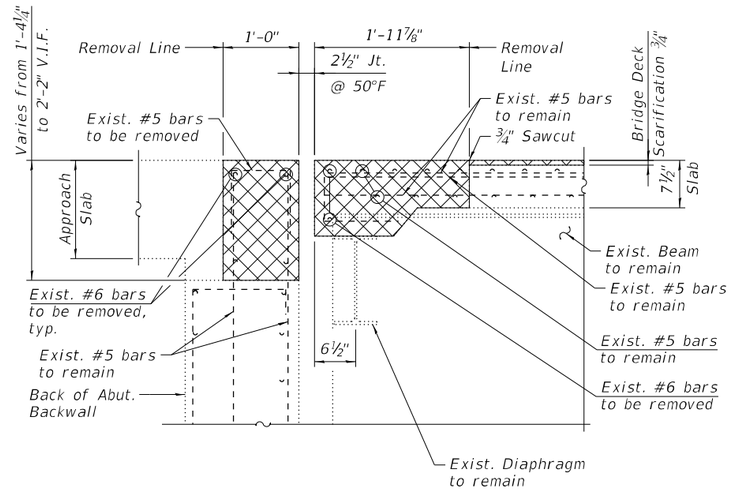
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXPANSION JOINT DETAILS I
SN 016-0131 (SB)
SHEET S11-10 OF S11-21 SHEETS

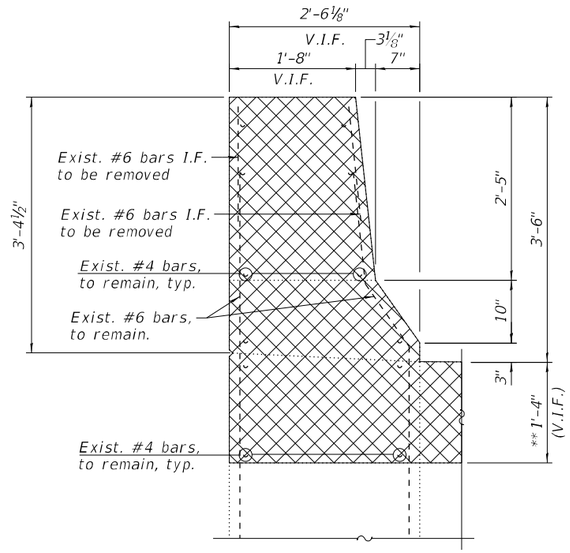
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	885
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		



SECTION F-F
(West parapet removal)



SECTION G-G



SECTION H-H

SECTION FF-FF
(West parapet reconstruction)

SECTION GG-GG

SECTION HH-HH
(West parapet reconstruction)

LEGEND

**	Dimension is taken at the Back of Abut.		Concrete Removal
***	Epoxy grout #5 d8(E) & d9(E) bars in 9" min. holes accordance to Section 508 of the Standard Specifications.	I.F.	Inside Face
		O.F.	Outside Face
		V.I.F.	Verify in Field

MODEL: SMODELNAMES
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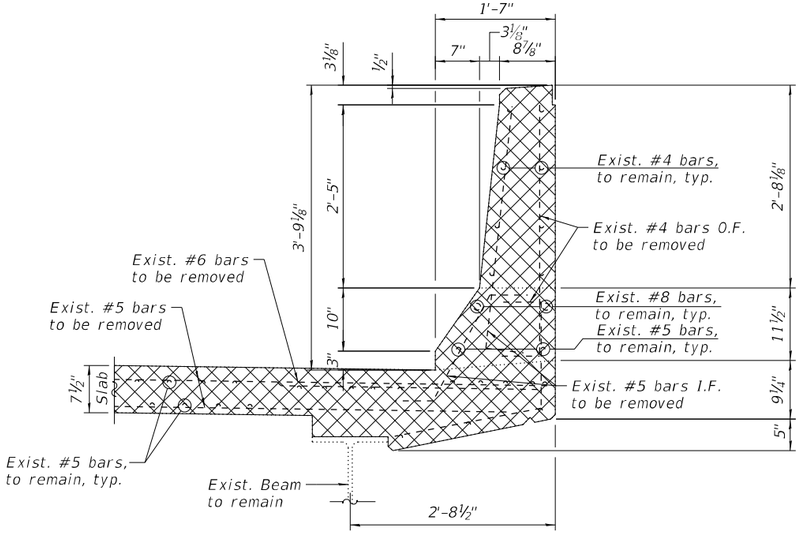
DEPARTMENT OF TRANSPORTATION

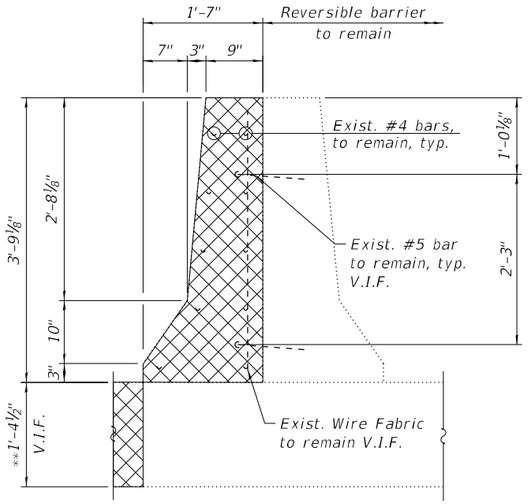
NORTH ABUTMENT EXPANSION JOINT DETAILS II
SN 016-0131 (SB)

SHEET S11-11 OF S11-21 SHEETS

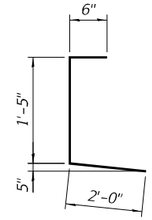
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	886
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			



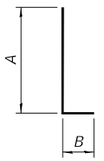
SECTION J-J
(East parapet removal)



SECTION K-K
(East parapet removal)

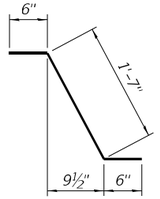


BAR d(E)



BARS d2(E), d3(E), d4(E), d5(E), & d6(E)

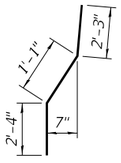
Bar	A	B
d2(E)	3'-2"	6"
d3(E)	3'-2"	6"
d4(E)	3'-5"	6"
d5(E)	3'-5"	6"
d6(E)	3'-6"	1'-0"



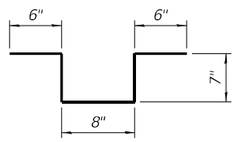
BAR d1(E)

BILL OF MATERIAL
NORTH ABUTMENT

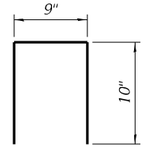
Bar	No.	Size	Length	Shape
a(E)	20	#5	28'-5"	
a1(E)	30	#5	22'-4"	
a2(E)	6	#6	6'-6"	
d(E)	5	#4	3'-11"	
d1(E)	5	#5	2'-7"	
d2(E)	3	#4	3'-8"	
d3(E)	3	#5	3'-8"	
d4(E)	2	#4	3'-11"	
d5(E)	2	#5	3'-11"	
d6(E)	3	#5	4'-6"	
d7(E)	3	#5	1'-10"	
d8(E)	2	#5	5'-6"	
d9(E)	2	#5	5'-8"	
h(E)	12	#6	28'-0"	
h1(E)	12	#6	31'-3"	
s(E)	35	#5	2'-10"	
u(E)	113	#5	2'-5"	
v(E)	4	#6	2'-0"	
Concrete Removal			Cu Yd	17.1
Reinforcement Bars, Epoxy Coated			Pound	2,930
Concrete Superstructure			Cu Yd	19.2



BAR d9(E)



BAR s(E)



BAR u(E)

SECTION JJ-JJ
(East parapet reconstruction)

SECTION KK-KK
(East parapet reconstruction)

* Adjust in field as required to match reversible parapet

** Dimension is taken at the Back of Abut.

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

NOTES:

1. For Preformed Joint Strip Seal details, see sheet S11-13.
2. For Bar Splicer Assembly details, see sheet S11-21.
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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PLOT DATE =		CHECKED -	K.G.W.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXPANSION JOINT DETAILS III
SN 016-0131 (SB)
SHEET S11-12 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	887
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

MODEL: sMODELNAMES
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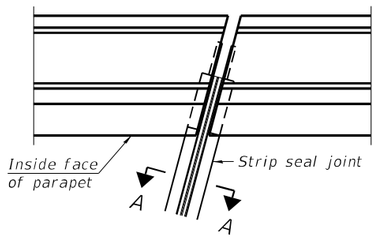
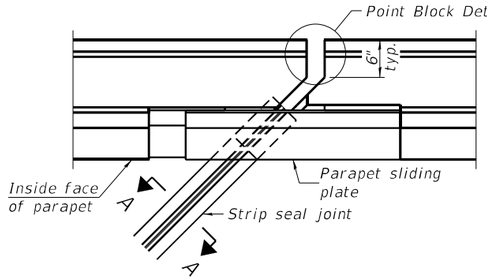
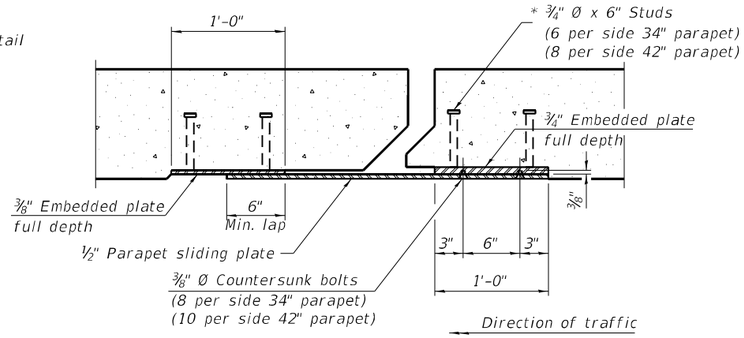


FOR SKEWS ≤ 30°

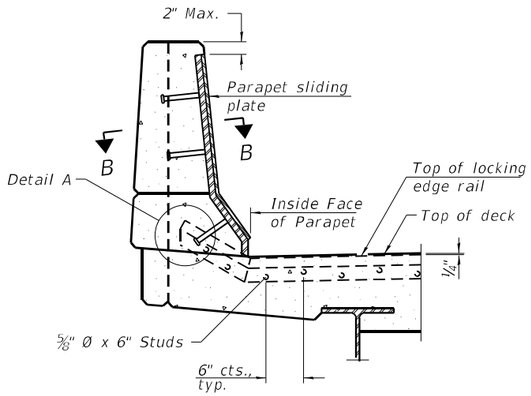


FOR SKEWS > 30°

PLAN AT PARAPET

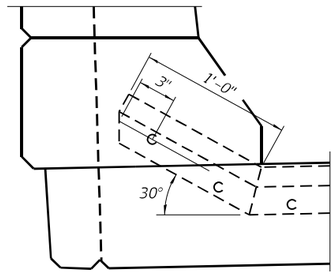


SECTION B-B

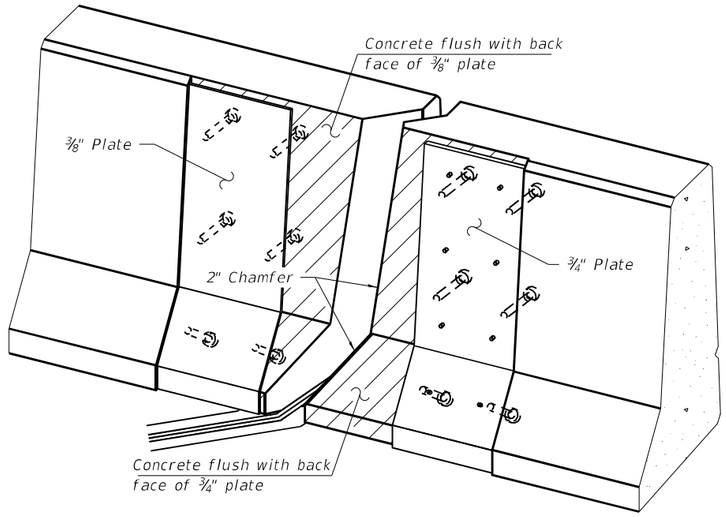


ELEVATION AT PARAPET

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

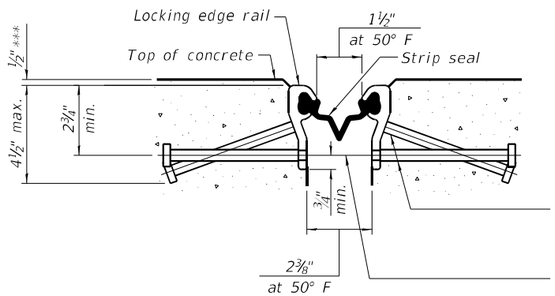


DETAIL A



TRIMETRIC VIEW

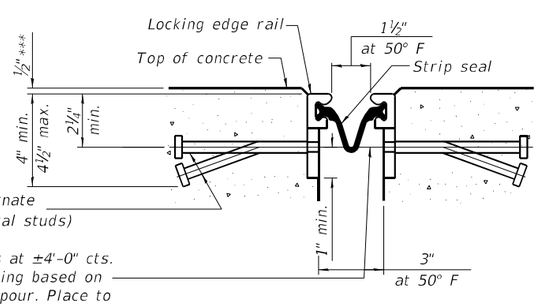
(Showing embedded plates only)



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.

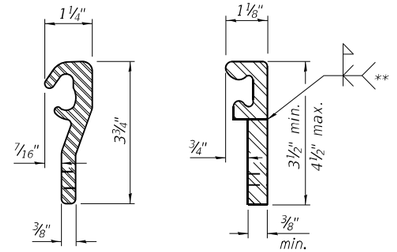


SHOWING WELDED RAIL JOINT

SECTION A-A

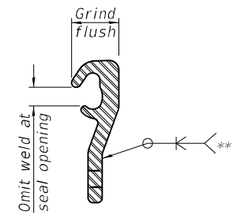
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

*** Before ¼" Diamond Grinding.



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	222

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
SN 016-0131 (SB)

SHEET S11-13 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	888
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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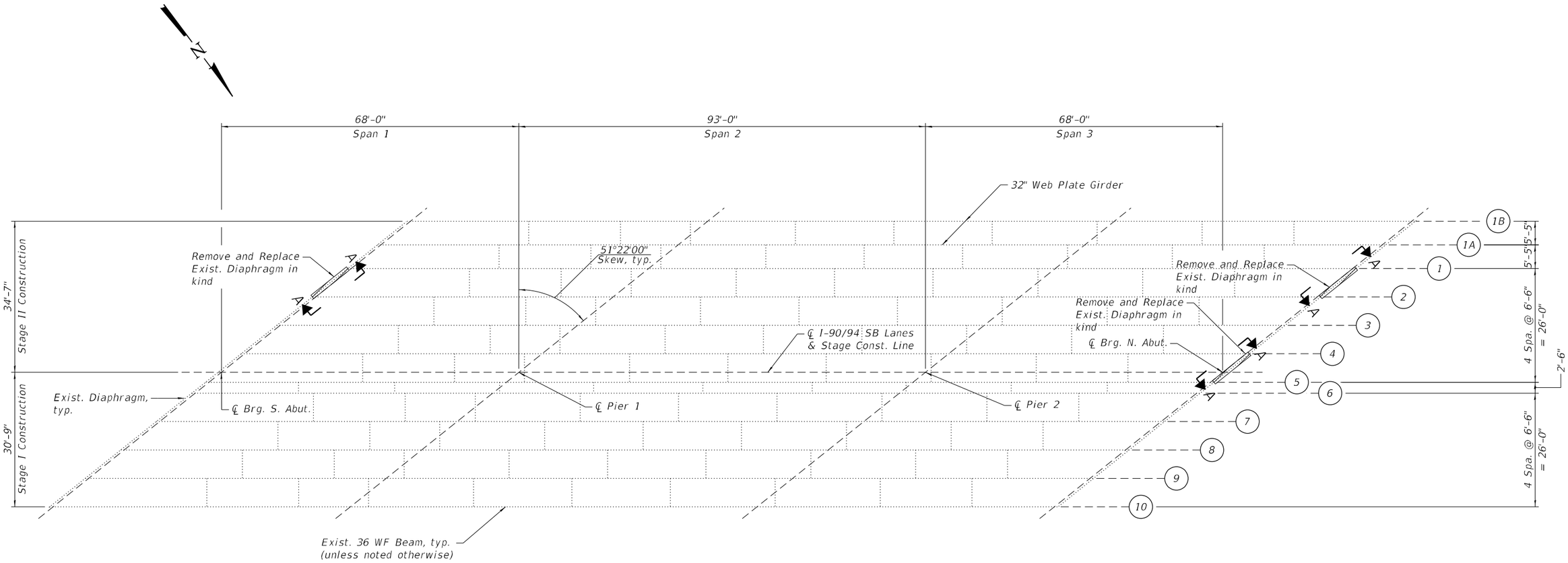

FRAMING PLAN

NOTES:

1. All work is to be preformed utilizing staged construction. See Sheets S11-03 and S11-04 for details.
2. For Section A-A, see Sheet S11-15.

LEGEND

Remove and Replace Exist. Diaphragm

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	1,260
Structural Steel Removal	Pound	1,260

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DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
SN 016-0131 (SB)

SHEET S11-14 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	889
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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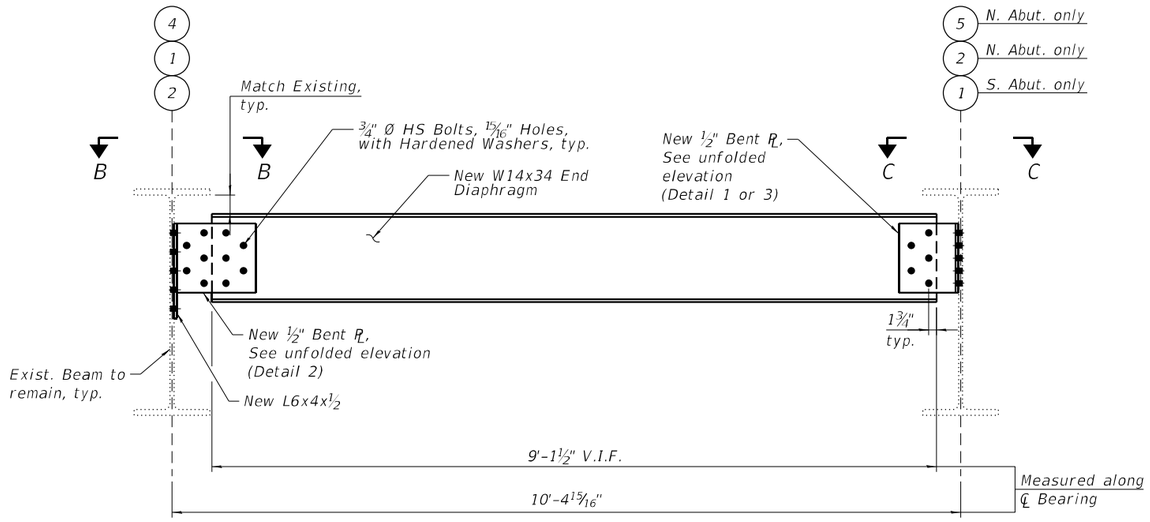
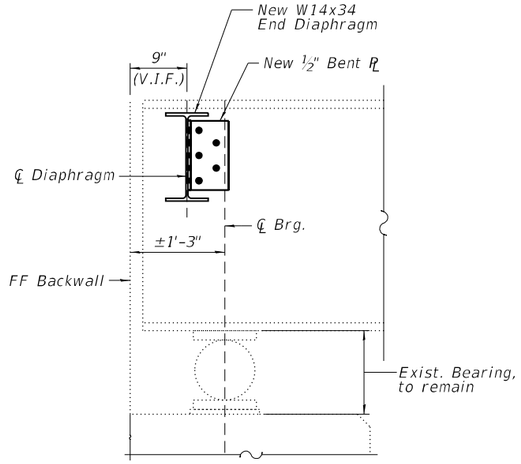
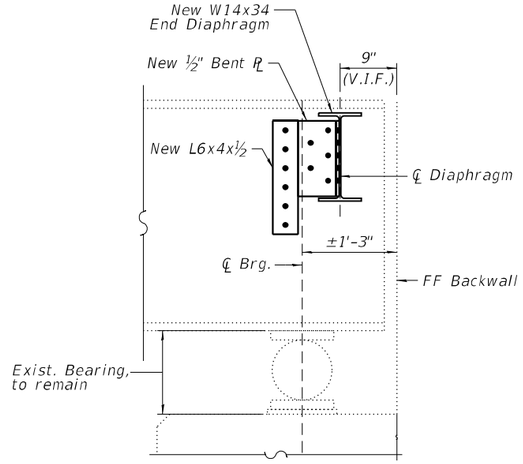


SECTION A-A

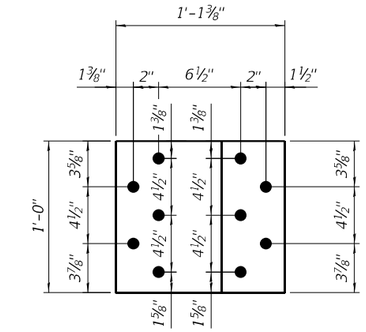
South Abutment shown, North Abutment similar and opposite hand.
(3 Required)



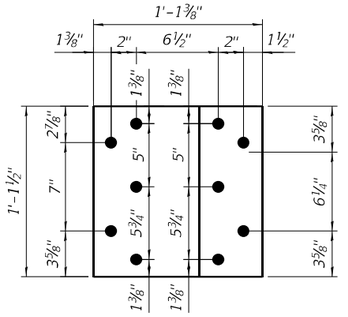
SECTION D-D



SECTION E-E

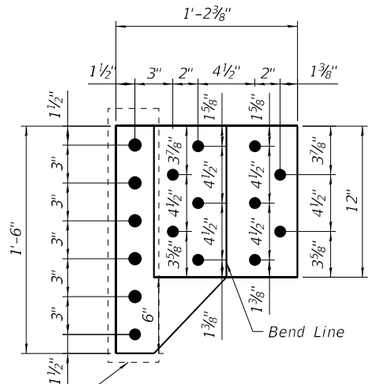


DETAIL 1



DETAIL 3

(Only for North Abutment Diaphragm between Beams 4 & 5)



DETAIL 2

SECTION B-B

SECTION C-C

NOTES

1. For location of Diaphragm Repair and Bill of Material, see Sheet S11-14.
2. All proposed diaphragm repair plates and angles shall conform to the requirements of AASHTO M270 Grade 36.
3. All proposed diaphragm repair plates, angles, bolts, nuts and washers shall be paid for as Furnishing and Erecting Structural Steel.
4. The cost of all field drilling shall be included in the cost of Furnishing and Erecting Structural Steel.
5. Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection. Cost shall be included with Furnishing and Erecting Structural Steel.
6. Existing diaphragm and connection angle removal shall be paid for as Structural Steel Removal.
7. All proposed steel dimension shall be verified in the field prior to fabrication.

LEGEND

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

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DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS
SN 016-0131 (SB)

SHEET S11-15 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	890
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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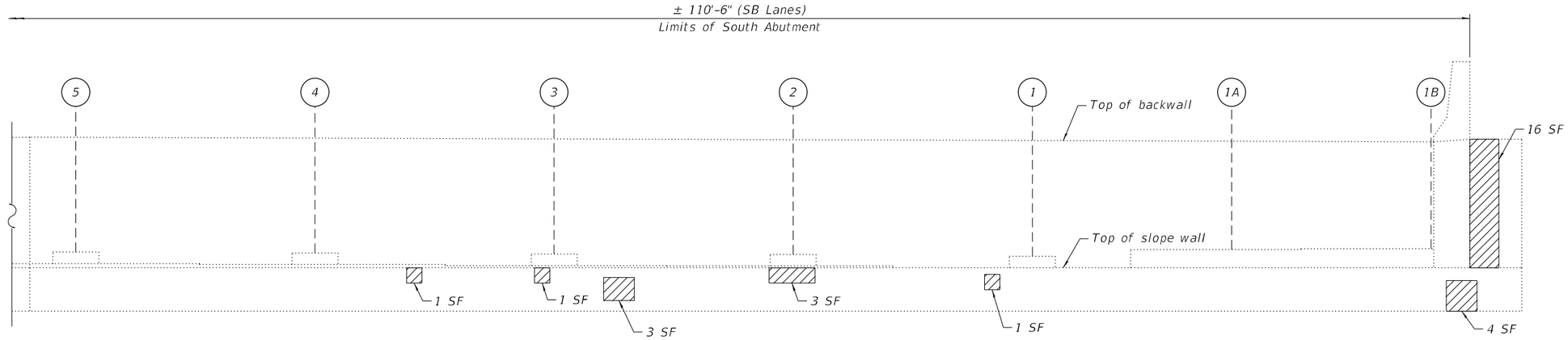
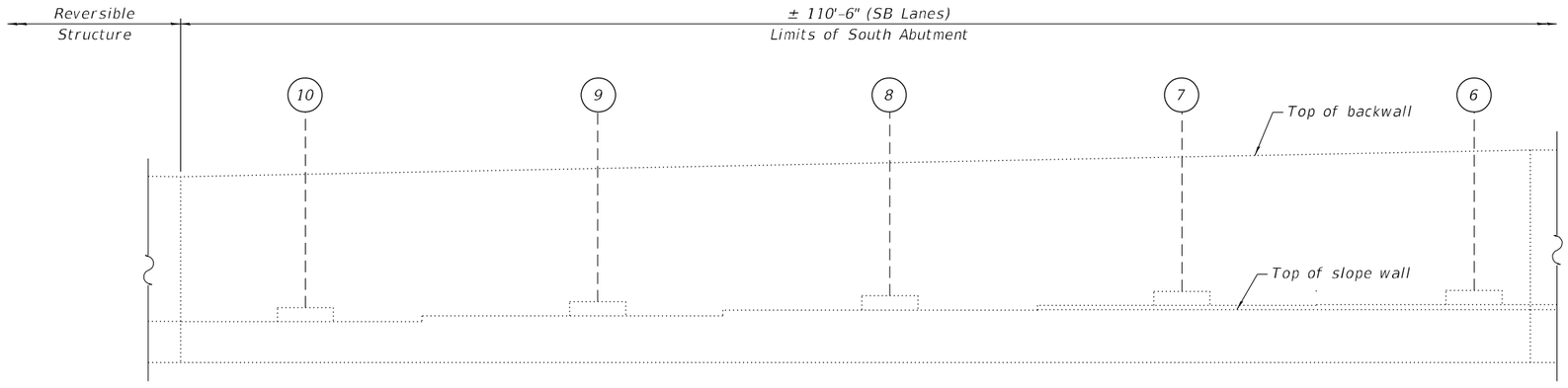


ELEVATION - SOUTH ABUTMENT
(Looking South)



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 S11-20.

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	610
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	29

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SOUTH ABUTMENT REPAIRS
SN 016-0131 (SB)
SHEET S11-16 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	891
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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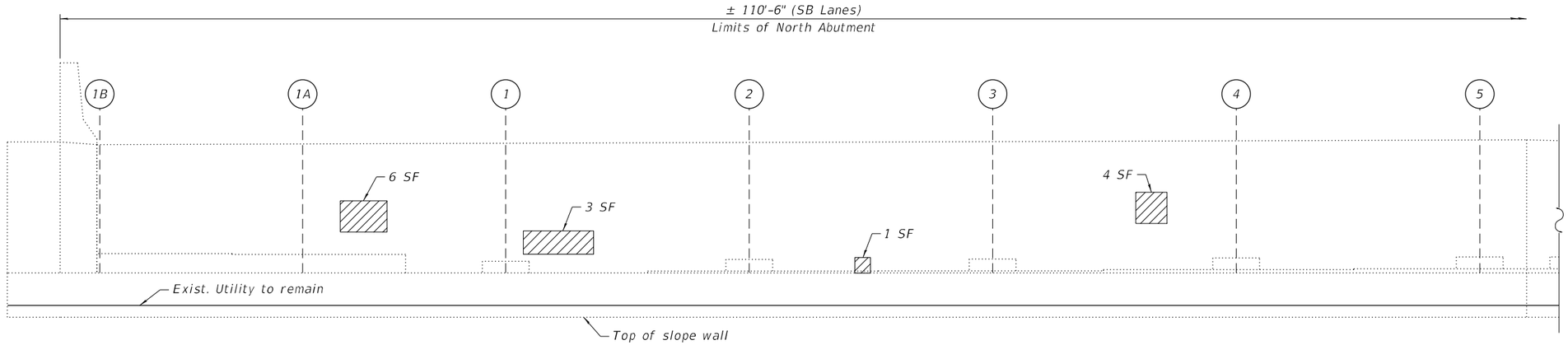
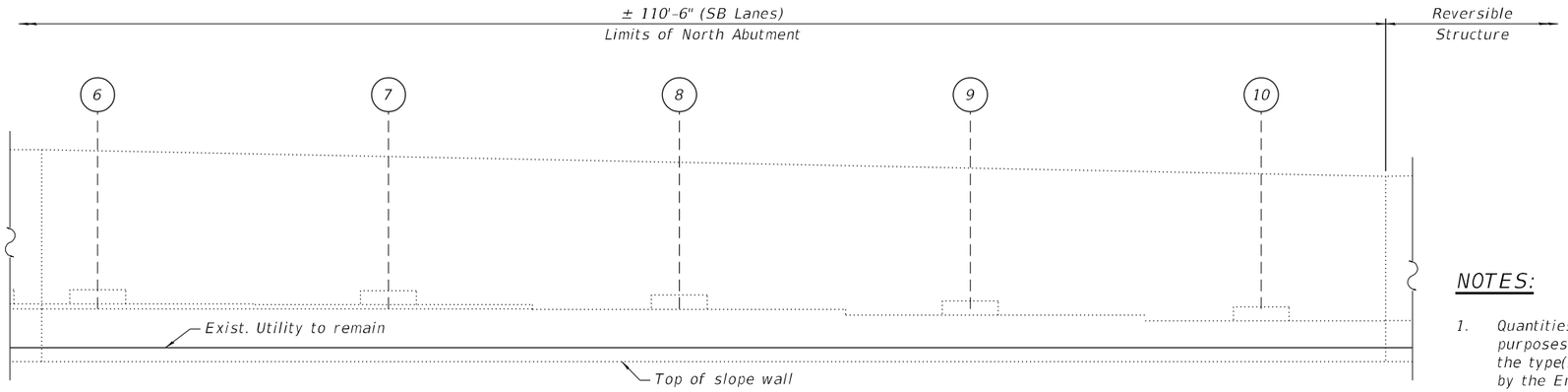


ELEVATION - NORTH ABUTMENT
(Looking North)



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 S11-20.

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	627
Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Sq Ft	14

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DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIRS
SN 016-0131 (SB)
SHEET S11-17 OF S11-21 SHEETS

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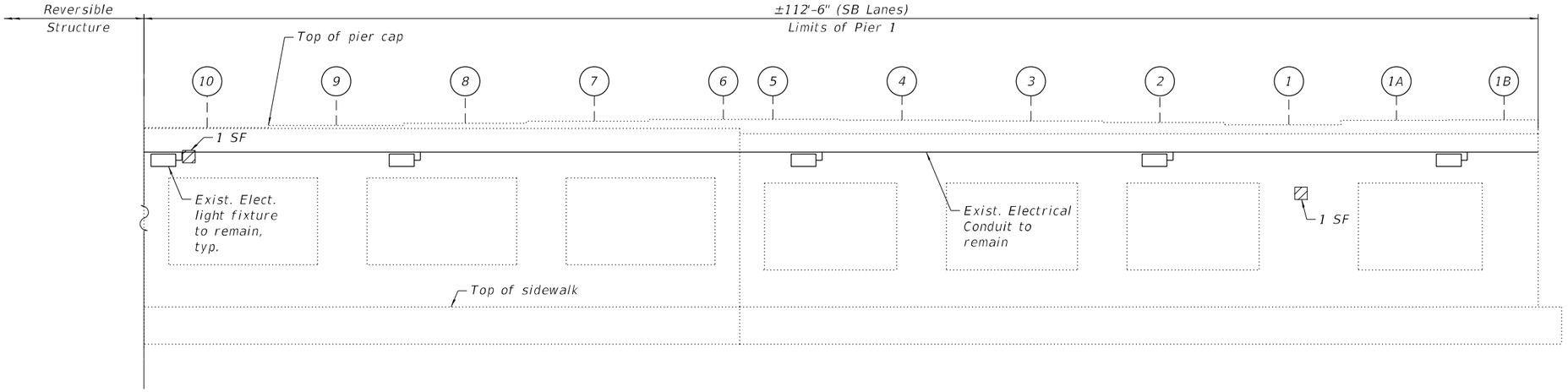
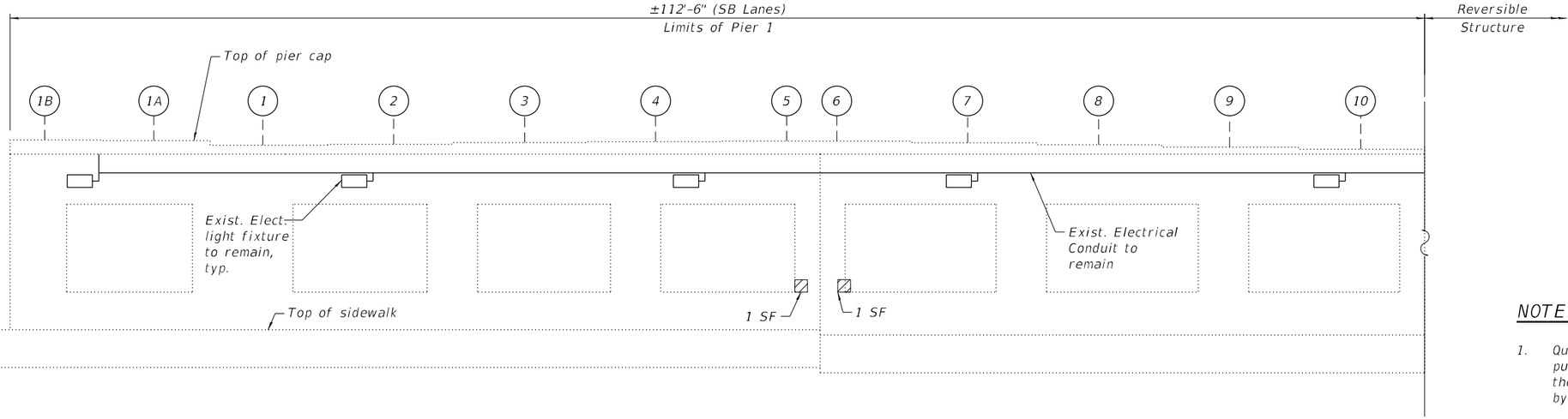
	ILLINOIS	FED. AID PROJECT		



ELEVATION - PIER 1

(Looking South)



ELEVATION - PIER 1

(Looking North)

EXISTING LIGHTING: PIER 1

(Looking Southwest)

EXISTING LIGHTING: PIER 1

(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.

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	4

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PIER 1 REPAIRS
SN 016-0131 (SB)

SHEET S11-18 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	893
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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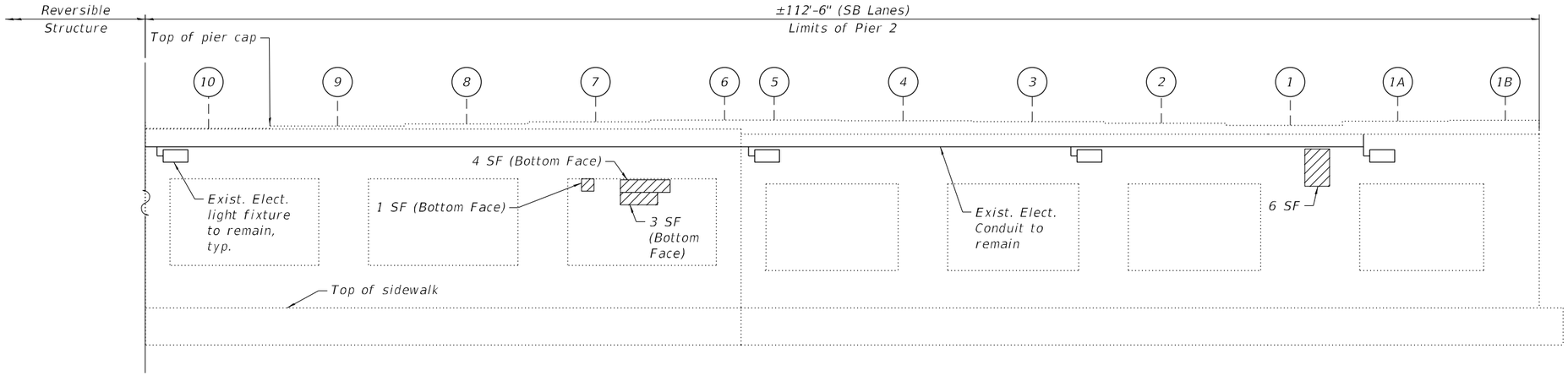


ELEVATION - PIER 2

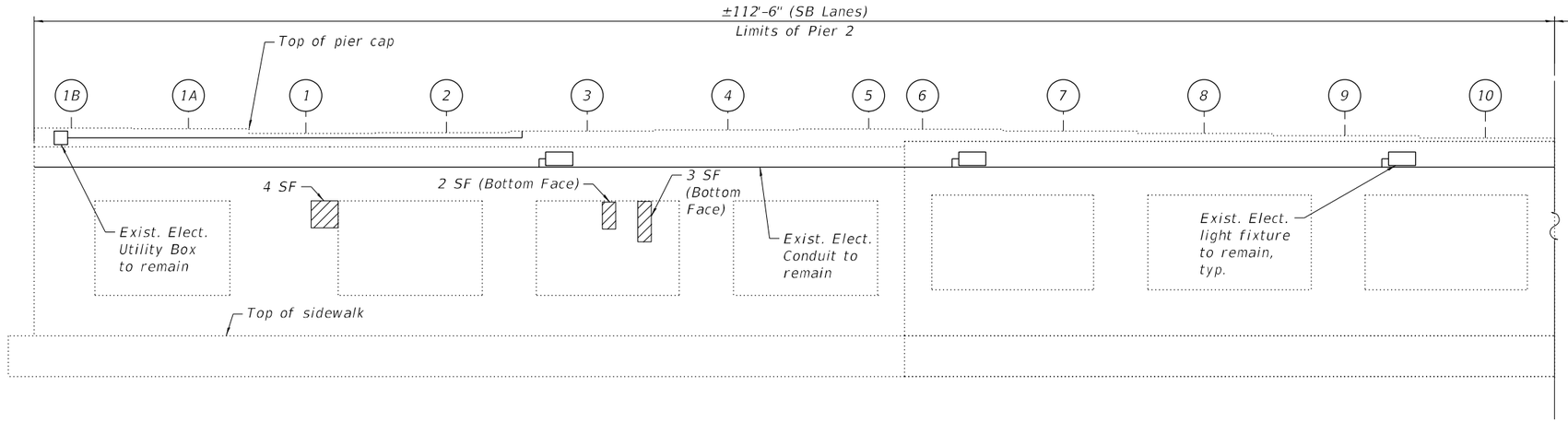
(Looking South)

EXISTING LIGHTING: PIER 2

(Looking Southeast)

EXISTING LIGHTING: PIER 2

(Looking Northeast)



ELEVATION - PIER 2

(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.

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	23

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIRS
SN 016-0131 (SB)

SHEET S11-19 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	894
		CONTRACT NO. 62K74		
	ILLINOIS	FED. AID PROJECT		

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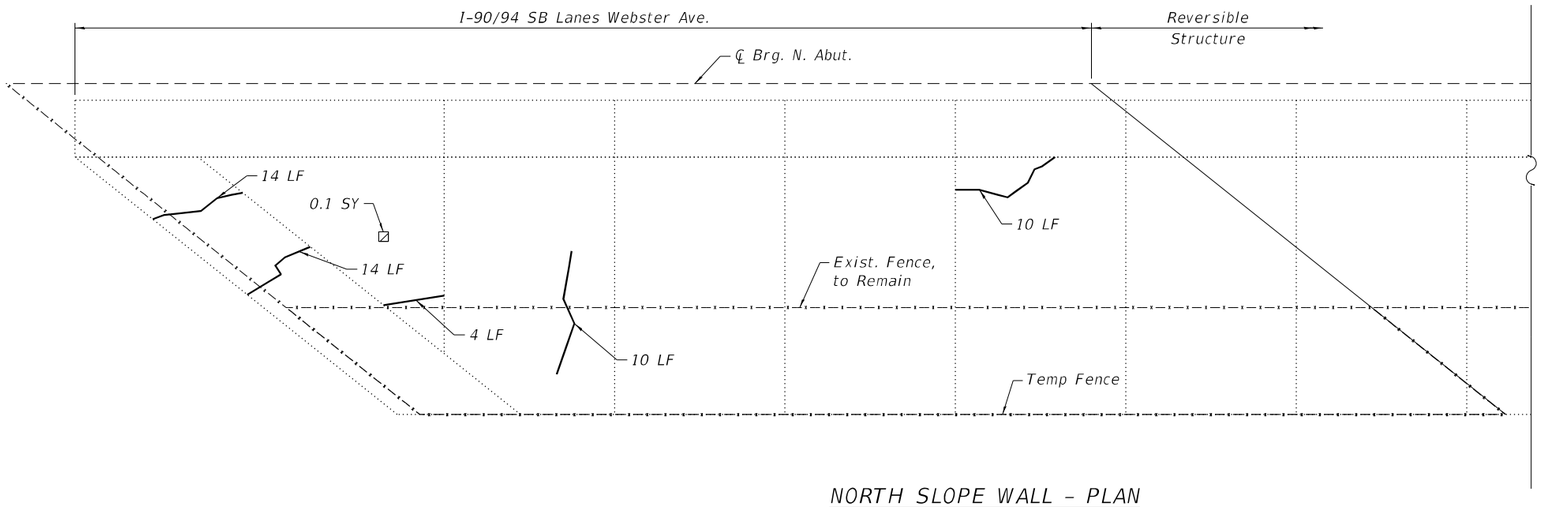
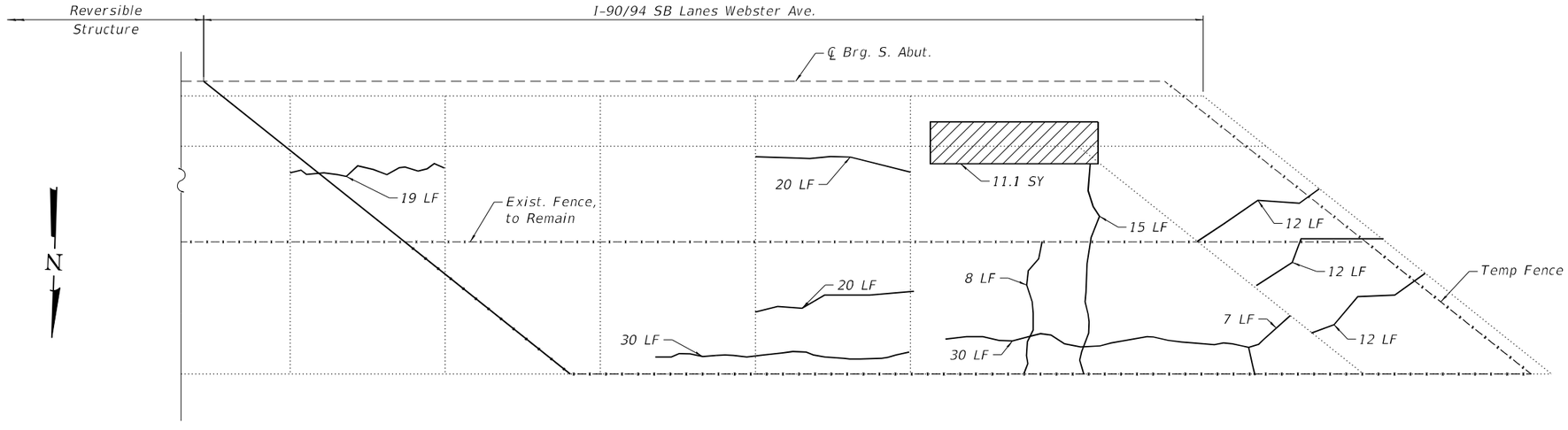


NORTH SLOPE WALL - PLAN
(Looking North)



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

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	12
Slope Wall Removal	Sq Yd	12
Slope Wall 4 Inch	Sq Yd	12
Slope Wall Crack Sealing	Foot	237

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL REPAIRS
SN 016-0131 (SB)
SHEET S11-20 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	895
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		ILLINOIS	FED. AID PROJECT	

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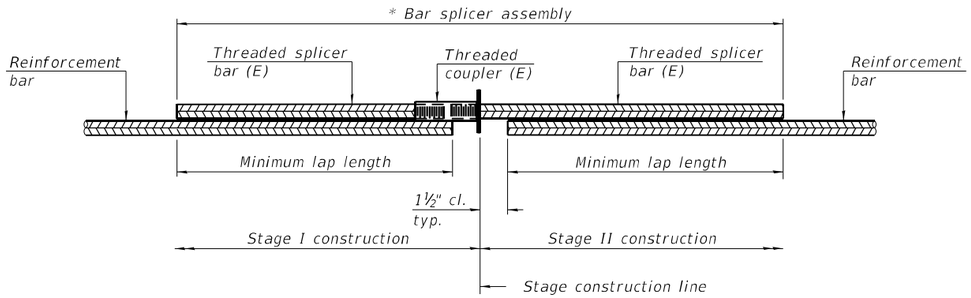


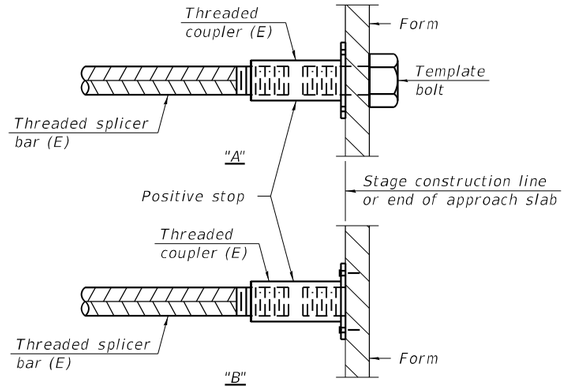
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

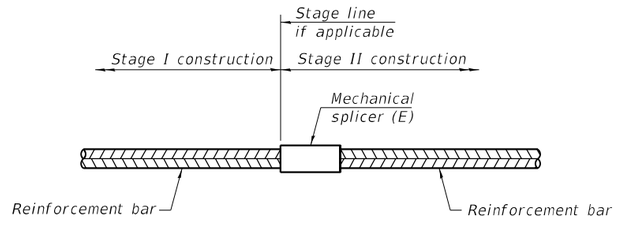
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

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



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

BSD-1

1-1-2020

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DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 016-0131 (SB)

SHEET S11-21 OF S11-21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	896
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

Existing Structure: S.N. 016-0131 was originally built in 1959 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 236'-2½" and an out-to-out deck width of 35'-11". The superstructure consists of a 7½" thick reinforced concrete deck supported on three span continuous steel beams of span lengths 68'-0", 93'-0", and 68'-0". The substructure consists of reinforced concrete abutments and piers supported on reinforced concrete cast-in-place piles.

The reversible lanes will be closed to traffic during construction.

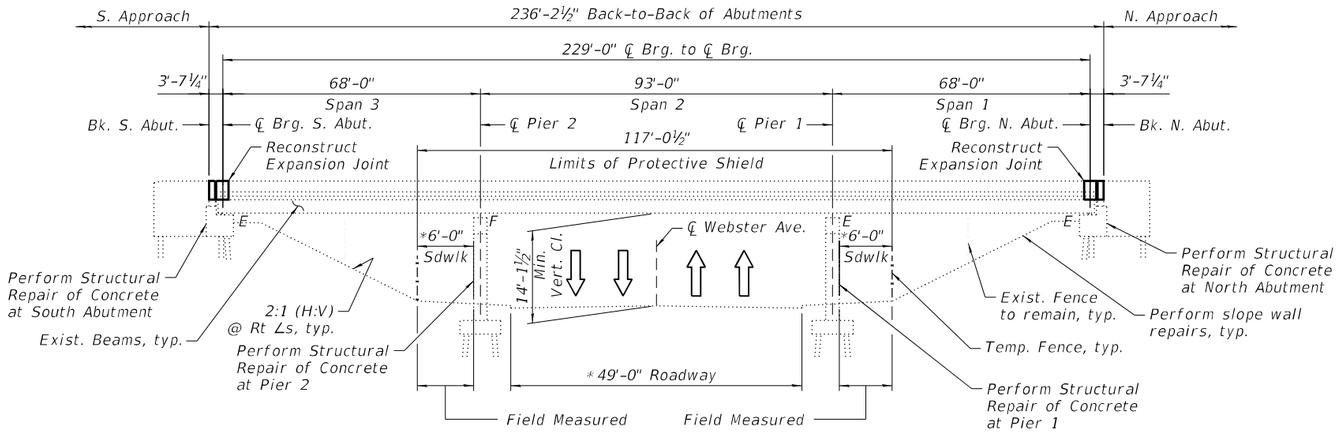
No salvage.

LOADING

HS20-44 and alternate military loading

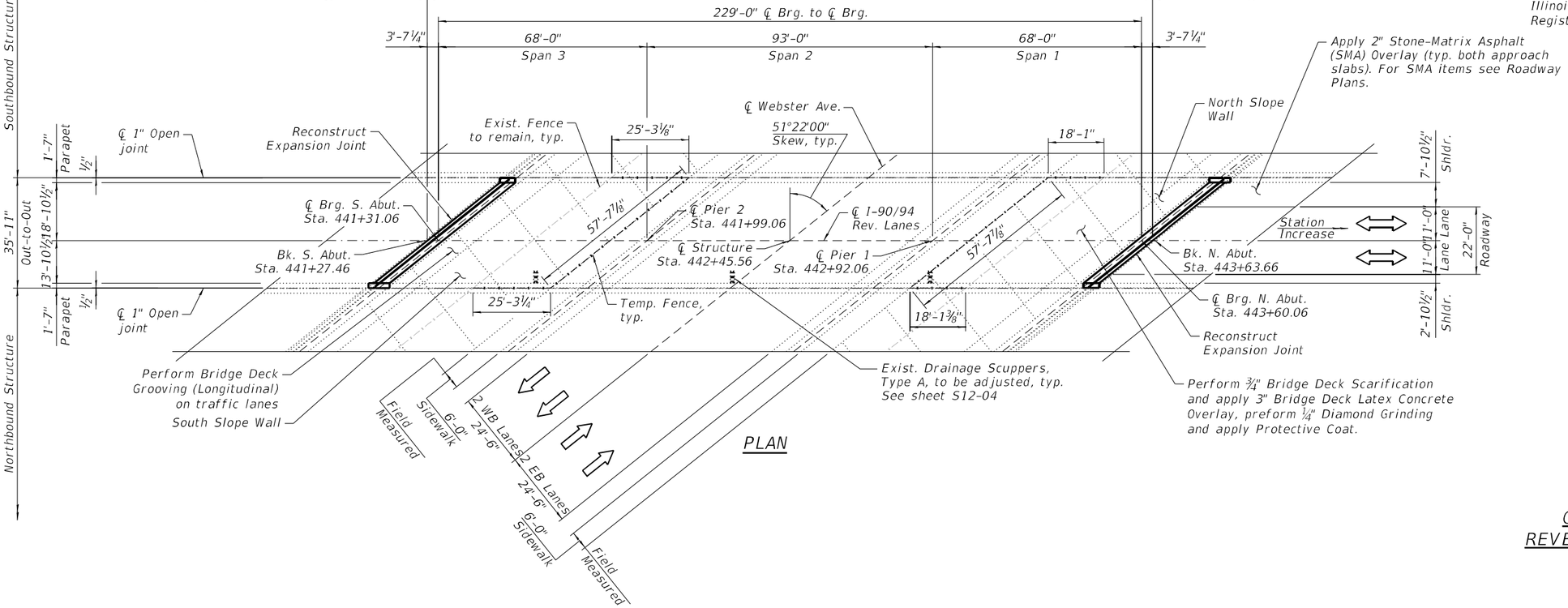
DESIGN SPECIFICATIONS

2002 AASHTO Standard Specification for Highway Bridges, 17th Edition



ELEVATION

* Dimension at right angle



PLAN

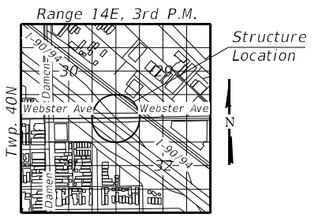
NOTE:

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



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
REVERSIBLE I-90 OVER WEBSTER AVE.
F.A.I. SEC 2020-004-BR
COOK COUNTY
STATION: 442+45.56
STRUCTURE NO. 016-0131 (REV)

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET S12-01 OF S12-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	897
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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GENERAL NOTES

1. Fasteners shall be ASTM A325 Type 1, galvanized according to ASTM F 2329. Bolts $\frac{3}{4}$ in., holes $\frac{13}{16}$ in., unless otherwise noted. Diaphragm connection holes be $\frac{15}{16}$" for $\frac{3}{4}$" bolts. Two hardened washers shall be required at diaphragm connections.

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

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

4. 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 $\frac{1}{4}$" deep shall be identified and reported to the Bureau of Bridges and Structures for further dispositions. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

5. 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.

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

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

8. 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.

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

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

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

12. 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.

13. 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.

14. 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".

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

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

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

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

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

20. The Contractor is responsible to protect the existing conduit 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.

21. 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.

22. 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.

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

24. 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.

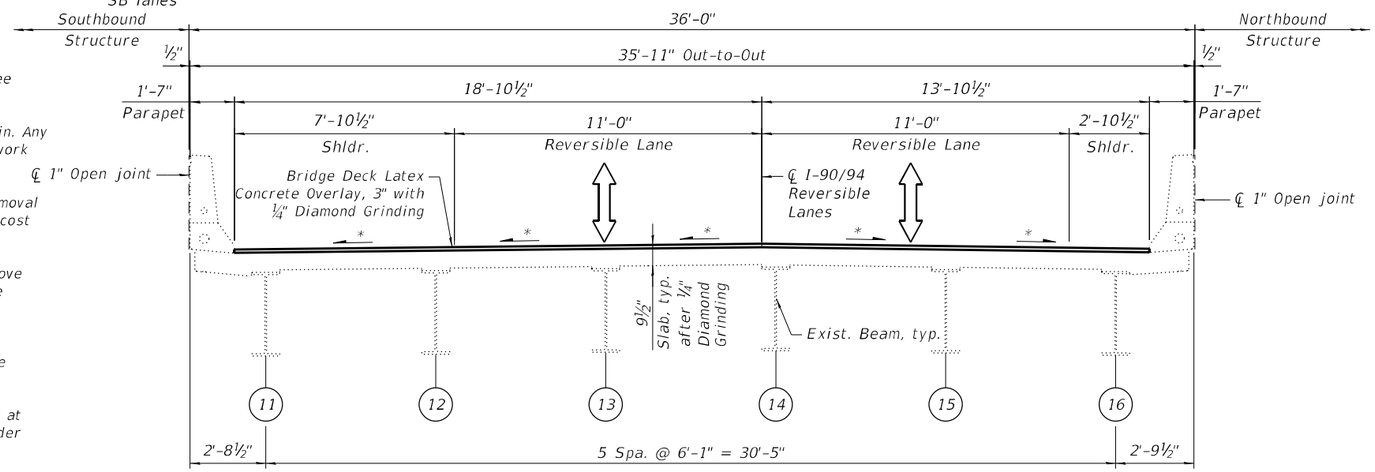
INDEX OF SHEETS

SCOPE OF WORK

1. Provide Protective Shield within limits indicated on the plans.
2. Scarify $\frac{3}{4}$" 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. Repair steel diaphragm as shown on the plans.
6. Apply a 3" Bridge Deck Latex Concrete Overlay on Bridge Deck. Apply a 2" Stone-Matrix Asphalt (SMA) Overlay on the Approach Slabs.
7. Perform $\frac{1}{4}$" Diamond Grinding to top of bridge deck and abutment hatched block.
8. Perform Bridge Deck Grooving (Longitudinal) on traffic lanes
9. Apply Protective Coat to the top and inside faces of parapets, reconstructed transverse expansion joints and to the surface of the new overlay.
10. Perform Structural Concrete repairs to the Abutments and Piers as noted in the plans.
11. Perform slope wall repairs.
12. Adjust Drainage Scuppers.
13. Install Longitudinal Preformed Joint Strip Seal along top of parapet between Reversible and SB lanes

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	17.7		17.7
Protective Shield	Sq Yd	468		468
Concrete Superstructure	Cu Yd	19.8		19.8
Protective Coat	Sq Yd	1,084		1,084
Furnishing and Erecting Structural Steel	Pound	400		400
Reinforcement Bars, Epoxy Coated	Pound	3,150		3,150
Preformed Joint Seal 2 1/2"	Foot	233		233
Performed Joint Strip Seal	Foot	116		116
Concrete Sealer	Sq Ft		636	636
Slope Wall Crack Sealing	Foot		122	122
Protect and Maintain Existing Underpass Luminaire	L Sum		0.022	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	568		568
Structural Steel Removal	Pound	400		400
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq Yd	823		823
Cleaning Drainage System	L Sum	0.05		0.05
Bridge Deck Scarification 3/4"	Sq Yd	823		823
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq Ft		64	64
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq Ft		8	8
Deck Slab Repair (Full Depth, Type II)	Sq Yd	42.2		42.2
Drainage Scuppers To Be Adjusted	Each	3		3
Diamond Grinding (Bridge Section)	Sq Yd	845		845
Maintenance of Lighting System	Cal Mo		6	6
Temporary Shoring and Cribbing	Each		1	1
Temporary Construction Fence	Foot		202	202



FINAL CROSS SECTION

(Looking North)

* Match existing deck surface profile

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

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DEPARTMENT OF TRANSPORTATION

GENERAL DATA
SN 016-0131 (REV)
SHEET S12-02 OF S12-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	898
		CONTRACT NO. 62K74		
		ILLINOIS	FED. AID PROJECT	

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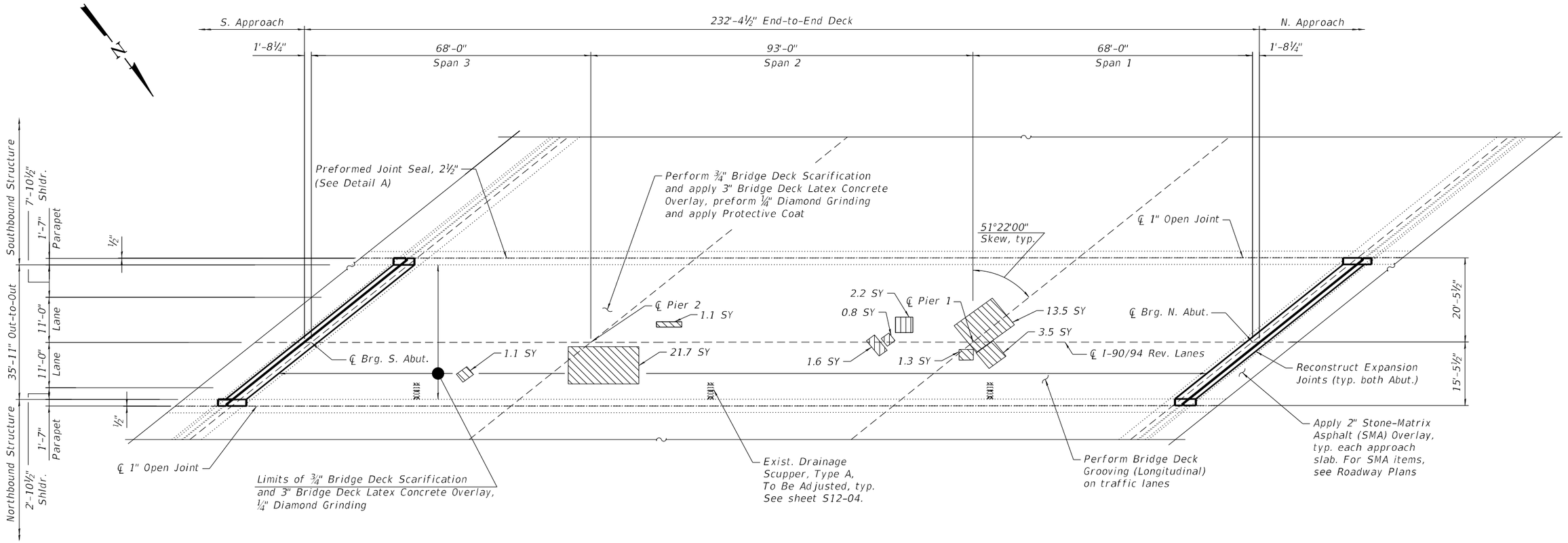
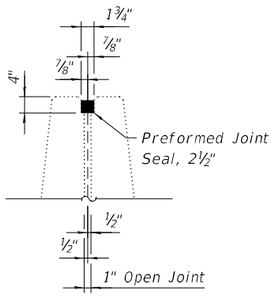


DECK PLAN



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 S12-02.
3. For North and South transverse joint removal and reconstruction, see Sheet S12-05 thru S12-10.
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 (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	468
Protective Coat	Sq Yd	1,084
Preformed Joint Seal 2 1/2"	Foot	233
Protect and Maintain Existing Underpass Luminaire	L Sum	0.022
Bridge Deck Grooving (Longitudinal)	Sq Yd	568
Bridge Deck Latex Concrete Overlay, 3"	Sq Yd	823
Bridge Deck Scarification 3/4"	Sq Yd	823
Deck Slab Repair (Full Depth, Type II)	Sq Yd	42.2
Diamond Grinding (Bridge Section)	Sq Yd	845
Maintenance of Lighting System	Cal Mo	6

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE DECK REPAIR PLAN AND DETAILS
SN 016-0131 (REV)
SHEET S12-03 OF S12-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	899
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

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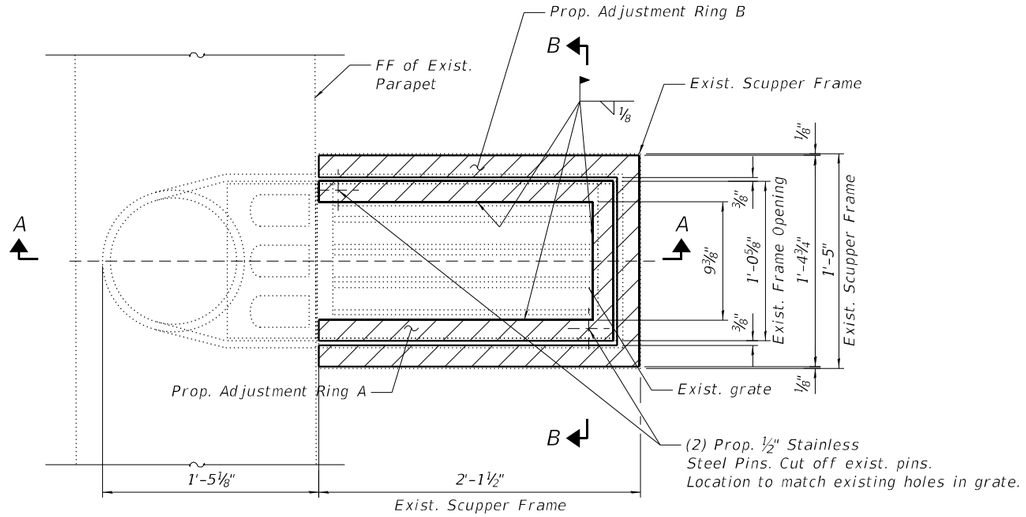
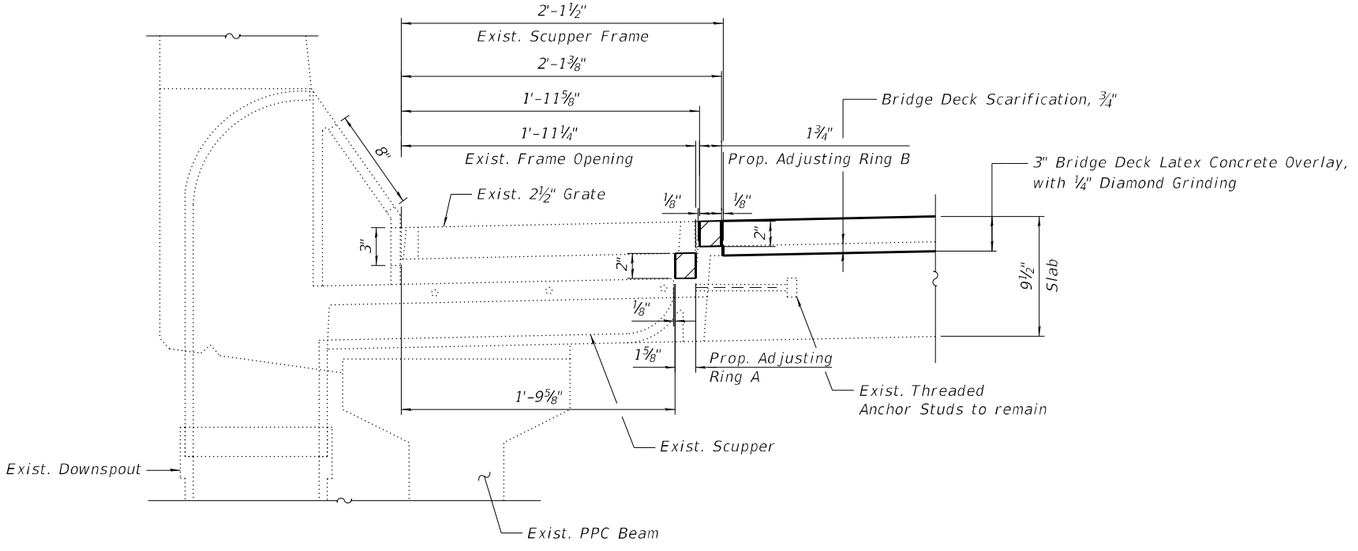


TYPICAL SCUPPER TYPE A PLAN

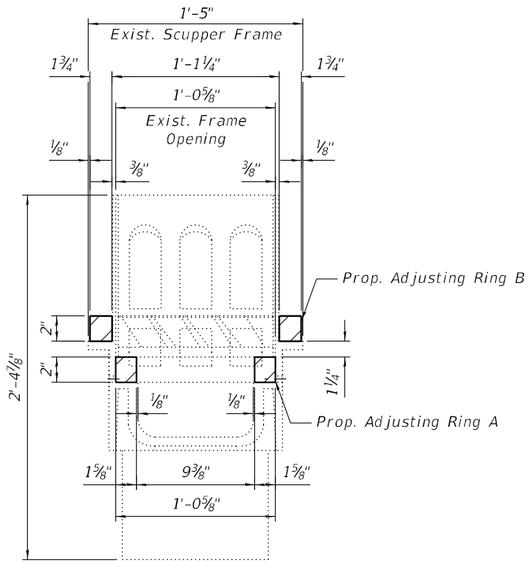
(3 Locations)

NOTES

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



SECTION A-A



SECTION B-B

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Cleaning Drainage System	L Sum	0.05
Drainage Scuppers To Be Adjusted	Each	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 -	D.C.P.	REVISED -
PLOT DATE =	CHECKED -	K.G.W.	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER TYPE A ADJUSTMENT DETAILS
SN 016-0131 (REV)

SHEET S12-04 OF S12-18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	2020-004-BR	COOK	1492	900
		CONTRACT NO. 62K74		
	ILLINOIS FED. AID PROJECT			

MODEL: sMODELNAMES
FILE NAME: X:\OH\2020\20200221-03\Design\Structural\Design Files\CADD\SHT\016-0131_Webster\Rev\016013162K74-S004-DNAR.dgn

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