

127

F.A. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D9 BRIDGE REPAIR 2019-4	VARIOUS	GI	1	1
ILLINOIS			CONTRACT NO. 78650	

01-18-2019 LETTING ITEM 127

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

D-99-039-18

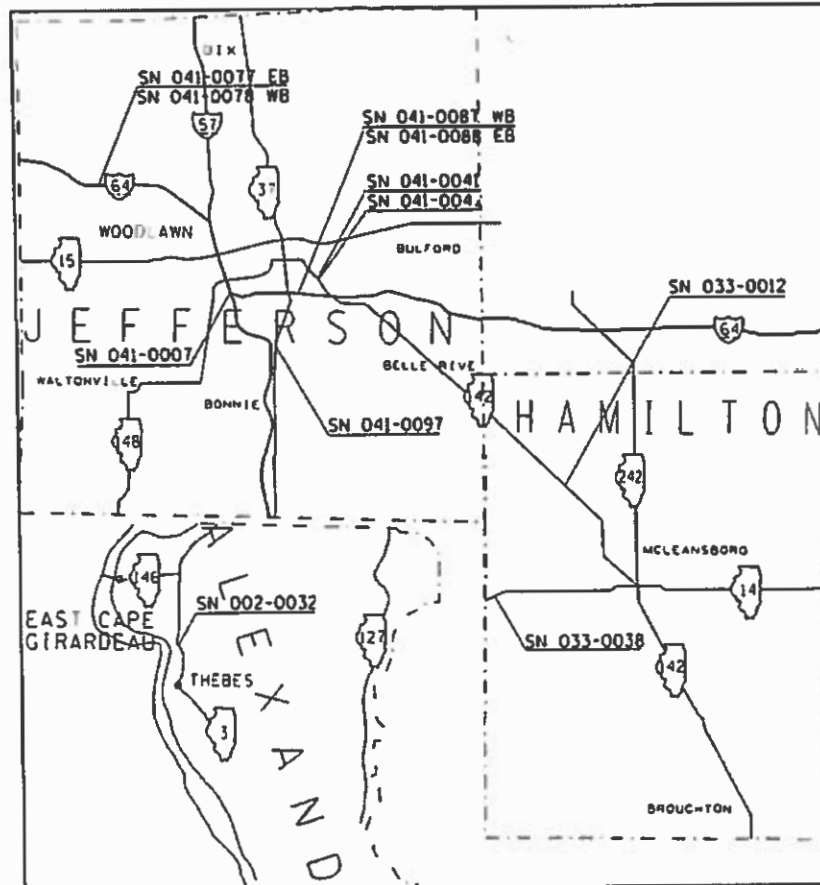
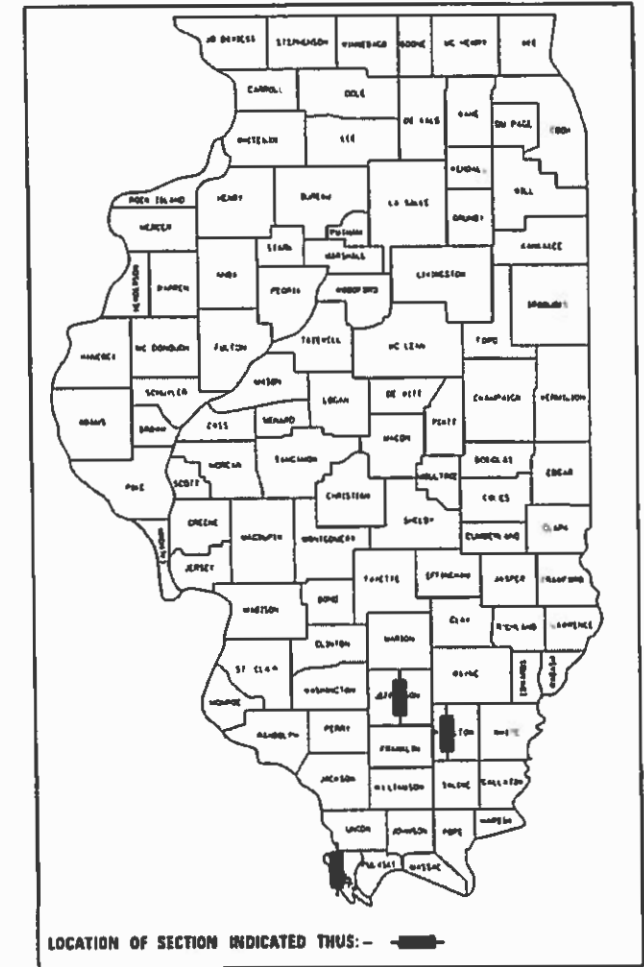
FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3-5
FOR STRUCTURAL PAVEMENT DESIGN INFORMATION, SEE SHEET NO. N/A

**PROPOSED
HIGHWAY PLANS**

**VARIOUS ROUTES
SECTION D9 BRIDGE REPAIR 2019-4
PROJECT NHPP-STP-GA3Q(235)
VARIOUS BRIDGE REPAIRS
VARIOUS COUNTIES**

C-99-069-18

- SN 002-0032 - IL 3 OVER SEXTON CREEK, 2017 ADT=3800
COUNTY UNIT ROAD DISTRICT 01
- SN 033-0012 - IL 142 OVER MIDDLE CREEK, 2017 ADT=3200
DAHLGREN TOWNSHIP
- SN 033-0038 - IL 14 OVER SULLIVAN BRANCH, 2017 ADT=2300
KNIGHTS PRAIRIE TOWNSHIP
- SN 041-0007 - I-57 N.B. OVER I-64 E.B., 2017 ADT=16,900
MCCLELLAN TOWNSHIP
- SN 041-0041 - IL 142 OVER CASEY FORK OVERFLOW, 2017 ADT=5800
DODDS TOWNSHIP
- SN 041-0042 - IL 142 OVER CASEY FORK, 2017 ADT=5800
DODDS TOWNSHIP
- SN 041-0077 - I-64 E.B. OVER TR-108A & B.N. RR, 2017 ADT=11,500
CASNER TOWNSHIP
- SN 041-0078 - I-64 W.B. OVER TR-108A & B.N. RR, 2017 ADT=11,500
CASNER TOWNSHIP
- SN 041-0087 - I-64 W.B. OVER CASEY FORK OVERFLOW, 2017 ADT=5650
DODDS TOWNSHIP
- SN 041-0088 - I-64 E.B. OVER CASEY FORK OVERFLOW, 2017 ADT=5650
DODDS TOWNSHIP
- SN 041-0097 - IL 37 OVER DODDS CREEK, 2017 ADT=4000
DODDS TOWNSHIP



DESIGN DESIGNATION : N/A
COORDINATE SYSTEM : EAST ZONE
POSTED SPEED : 55, 70 MPH

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: DAVID PICHE
PROJECT DESIGNER: BILL PORTER

CONTRACT NO. 78650

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED Oct 10 20 18

Jeffrey Z. Kuen
REGIONAL ENGINEER

Dec 7 2018
S. A. ETK
ENGINEER OF DESIGN AND ENVIRONMENT

Dec 7 2018
Paul P. [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

1 COVER SHEET
 2 INDEX OF SHEETS, STANDARDS, GENERAL NOTES AND SCOPE OF WORK
 3-5 SUMMARY OF QUANTITIES
 6-7 STAGING DETAILS
 8 WIDE LOAD SIGNING DETAILS
 9-15 SN 002-0032 REPAIR DETAILS
 16-19 SN 033-0012 REPAIR DETAILS
 20-31 SN 033-0038 REPAIR DETAILS
 32-40 SN 041-0007 REPAIR DETAILS
 41-47 SN 041-0041 REPAIR DETAILS
 48-52 SN 041-0042 REPAIR DETAILS
 53-57 SN 041-0077 & SN 041-0078 STRUCTURAL REPAIR DETAILS
 58 SN 041-0087 & SN 041-0088 STRUCTURAL REPAIR DETAILS
 59-61 SN 041-0097 REPAIR DETAILS

STANDARDS

000001-07 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
 001001-02 AREAS OF REINFORCEMENT BARS
 701001-02 OFF-ROAD, 2L2W MORE THAN 15' FROM PAVEMENT EDGE
 701006-05 OFF-ROAD, 2L2W 15' TO 24' FROM PAVEMENT EDGE
 701201-05 LANE CLOSURE, 2L2W DAY ONLY, FOR SPEEDS > 45 MPH
 701316-12 LANE CLOSURE, 2L2W BRIDGE REPAIR FOR SPEEDS > 45 MPH
 701400-09 APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
 701402-12 LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH BARRIER
 701406-12 LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
 701411-09 LANE CLOSURE, MULTILANE-ENTRANCE OR EXIT RAMP
 701426-09 LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATION, FOR SPEEDS > 45 MPH
 701428-01 TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY
 701901-08 TRAFFIC CONTROL DEVICES
 704001-08 TEMPORARY CONCRETE BARRIER

GENERAL NOTES

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING CONDITIONS HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NORMAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD 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 THE SCOPE OF WORK. THE CONTRACTOR, HOWEVER, WILL BE PAID FOR THE ACTUAL QUANTITY FURNISHED AT THE UNIT PRICE FOR THE WORK. CONSTRUCTION PLANS ARE AVAILABLE FOR REVIEW AT THE DISTRICT 9 OFFICE.

A CONTRACTOR'S RIGHT-OF-ENTRY PERMIT IS REQUIRED BEFORE ANY WORK CAN COMMENCE ON RAILROAD PROPERTY. THE COST TO OBTAIN THIS PERMIT SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

COMMITMENTS: NONE AS OF OCTOBER 19, 2018

SCOPE OF WORK

SN 002-0032	STRUCTURAL STEEL REPAIR & JOINT REPLACEMENT USING TC&P STD. 701316
SN 033-0012	JOINT REPLACEMENT USING TC&P STD. 701316
SN 033-0038	STRUCTURAL STEEL REPAIR & BEARING REPLACEMENT USING TC&P STD. 701201
SN 041-0007	JOINT RECONSTRUCTION, BEARING REPLACEMENT & PARTIAL DEPTH DECK REPAIR USING TC&P STD. 701402 & 701411
SN 041-0041	STRUCTURAL STEEL REPAIR & JOINT REPLACEMENT USING TC&P STD. 701316
SN 041-0042	STRUCTURAL STEEL REPAIR & JOINT REPLACEMENT USING TC&P STD. 701316
SN 041-0077 & 0078	JOINT RECONSTRUCTION USING TC&P STD. 701402
SN 041-0087 & 0088	BEARING REPLACEMENT USING TC&P STD. 701406
SN 041-0097	STRUCTURAL STEEL REPAIR & BEARING REPLACEMENT USING TC&P STD. 701201

Prepared By:	<i>[Signature]</i> DISTRICT STUDIES & PLANS ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT LAND ACQUISITION ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT PROGRAM DEVELOPMENT ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT OPERATIONS ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT PROJECT IMPLEMENTATION ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT CONSTRUCTION ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT MATERIALS ENGINEER

REV. - MS

FILE NAME : p:\118848310\INTEG\illinois.gov\p\1001\documents\DOT Offices\District 9\Projects\78650\BROADEN\CA0\sheetg\072858-Sheets.dgn	USER NAME : parterw	DESIGNED : [Blank]	REVISED : [Blank]
PLT SCALE : 100.0000 / in.	CHECKED : [Blank]	REVISED : [Blank]	REVISED : [Blank]

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

INDEX OF SHEETS, GENERAL DETAILS, AND STANDARDS			
SHEET	OF	SHEETS	STA. TO STA.

RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D9 BRIDGE REPAIR 2019-4	VARIOUS	61	2
			CONTRACT NO. 78650	
ILLINOIS FED. AID PROJECT				

SUMMARY OF QUANTITIES

S.N.:	002-0032	033-0012	033-0038	041-0007	041-0041	041-0042	041-0077	041-0078	041-0087	041-0088	041-0097
CODE:	0013	0013	0013	0013	0013	0013	0013	0013	0013	0013	0013
COUNTY:	ALEXANDER	HAMILTON	HAMILTON	JEFFERSON	JEFFERSON	JEFFERSON	JEFFERSON	JEFFERSON	JEFFERSON	JEFFERSON	JEFFERSON
ROUTE:	FAP 14	FAP 849	FAP 853	FAI 57 NB	FAP 849	FAP 849	FAI 64 EB	FAI 64 WB	FAI 64 WB	FAI 64 EB	FAS 2869
FUNDING:	80/20	80/20	80/20	90/10	80/20	80/20	90/10	90/10	90/10	90/10	80/20

CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
50102400	CONCRETE REMOVAL	CU YD	71.8	7.3	5.4		20.5	6.8	5.4	13.2	13.2		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	72.0	7.3	5.4		20.3	6.9	5.4	13.4	13.3		
50300300	PROTECTIVE COAT	SQ YD	177	21.9	15.2		47.4		16.5	38.0	38.0		
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	19,760			7900	1860					1575	1575 6850
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	9480	970	680		2250	1060	720	1900	1900		
50800515	BAR SPLICERS	EACH	130	12	12		26	12	12	28	28		
52000110	PREFORMED JOINT STRIP SEAL	FOOT	601	90	69		110	87	79	83	83		
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	36				12					12	12
52100520	ANCHOR BOLTS, 1"	EACH	256			80	48					24	24 80
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	18	1.5	1.5	2	2	2	2	2	2	1	1 1
67100100	MOBILIZATION	L SUM	1	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
70100100	TRAFFIC CONTROL AND PROTECTION, STANDARD 701316	EACH	4	1	1			1	1				
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	3				1			1	1		

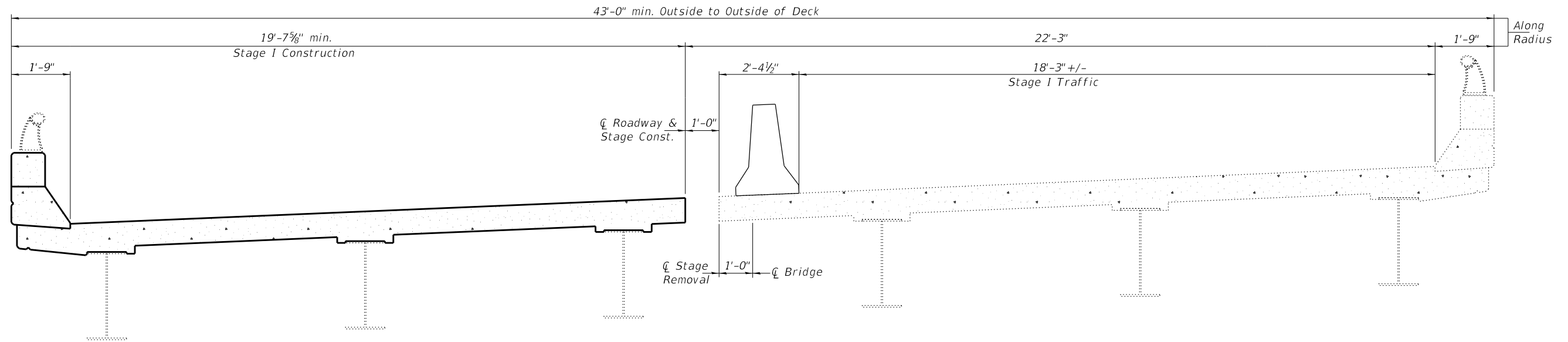
REV. - MS

SUMMARY OF QUANTITIES

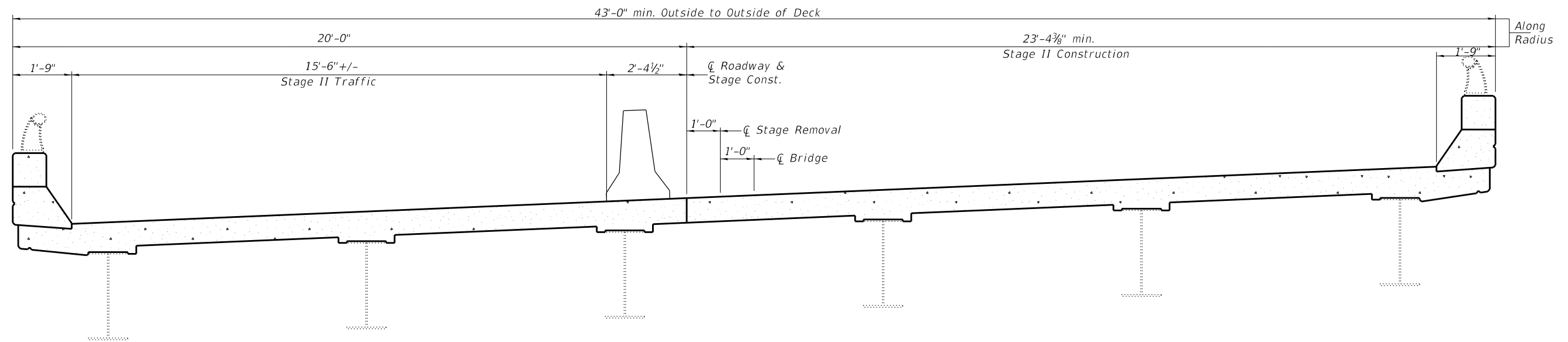
S.N.:	002-0032	033-0012	033-0038	041-0007	041-0041	041-0042	041-0077	041-0078	041-0087	041-0088	041-0097
CODE:	0013	0013	0013	0013	0013	0013	0013	0013	0013	0013	0013
COUNTY:	ALEXANDER	HAMILTON	HAMILTON	JEFFERSON	JEFFERSON	JEFFERSON	JEFFERSON	JEFFERSON	JEFFERSON	JEFFERSON	JEFFERSON
ROUTE:	FAP 14	FAP 849	FAP 853	FAI 57 NB	FAP 849	FAP 849	FAI 64 EB	FAI 64 WB	FAI 64 WB	FAI 64 EB	FAS 2869
FUNDING:	80/20	80/20	80/20	90/10	80/20	80/20	90/10	90/10	90/10	90/10	80/20

CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
70100420	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411	EACH	1				1						
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0.17	0.17	0.17		0.17	0.16				0.16
70100701	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	EACH	2								1	1	
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	118				38			40	40		
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	4	1	1			1	1				
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1825				600			612.5	612.5		
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1587.5				487.5			550	550		
70600250	IMPACT ATTENUATORS, TEMP. (NON-REDIRECTIVE), T.L. 3	EACH	3				1			1	1		
70600350	IMPACT ATTENUATORS, RELOC. (NON-REDIRECTIVE), T.L. 3	EACH	3				1			1	1		
* 86200300	UNINTERRUPTABLE POWER SUPPLY, EXTENDED	EACH	4	1	1			1	1				
X7010410	SPEED DISPLAY TRAILER	CAL MO	8				2			2	2	1	1
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	474	28	28	28	90	28	28	94	94	14	14

* SPECIALTY ITEM



STAGE I TRAFFIC & CONSTRUCTION
Looking North thru SN 041-0007



STAGE II TRAFFIC & CONSTRUCTION
Looking North thru SN 041-0007

TEMPORARY CONCRETE BARRIER SCHEDULE

Structure No.	Station to Station	Temporary Concrete Barrier Foot	Relocate Temporary Concrete Barrier Foot
SN 041-0007	Stage I Sta. 604B+34 to Sta. 610B+28	600	
	Stage II Sta. 605B+29 to Sta. 610B+28		487.5
	Total	600	487.5

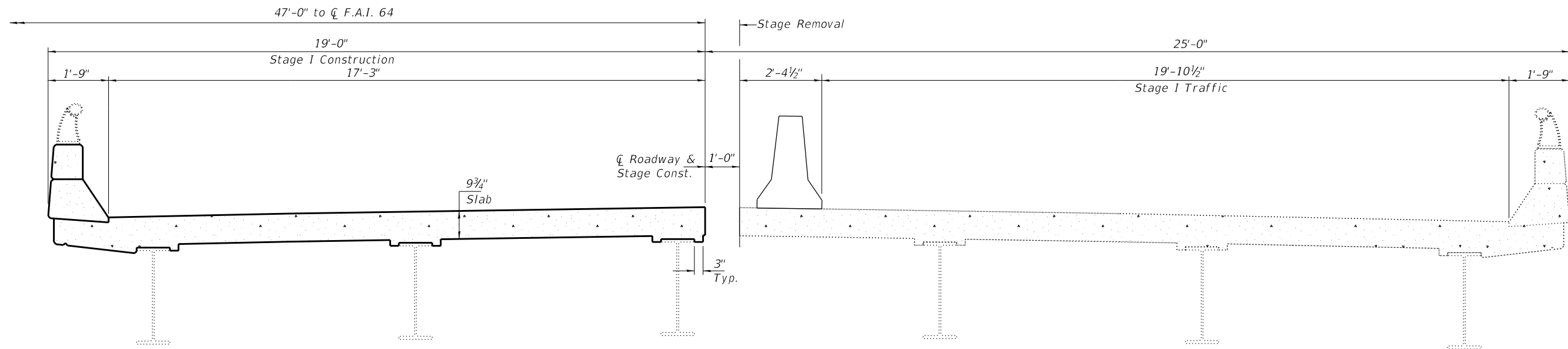
MODEL: Default
FILE: N:\mhc\p\110108\BRIEFD\ITEC\Illinois.gov\PWIDOT\Documents\DOT Office\DIR\etct 9\Projects\78650\CADD\Drawings\CAD\Drawings\0778650-Sheets.dgn

USER NAME = porterc	DESIGNED -	REVISED -
PLOT SCALE = 3.3400' / in.	DRAWN -	REVISED -
PLOT DATE = 10/15/2018	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

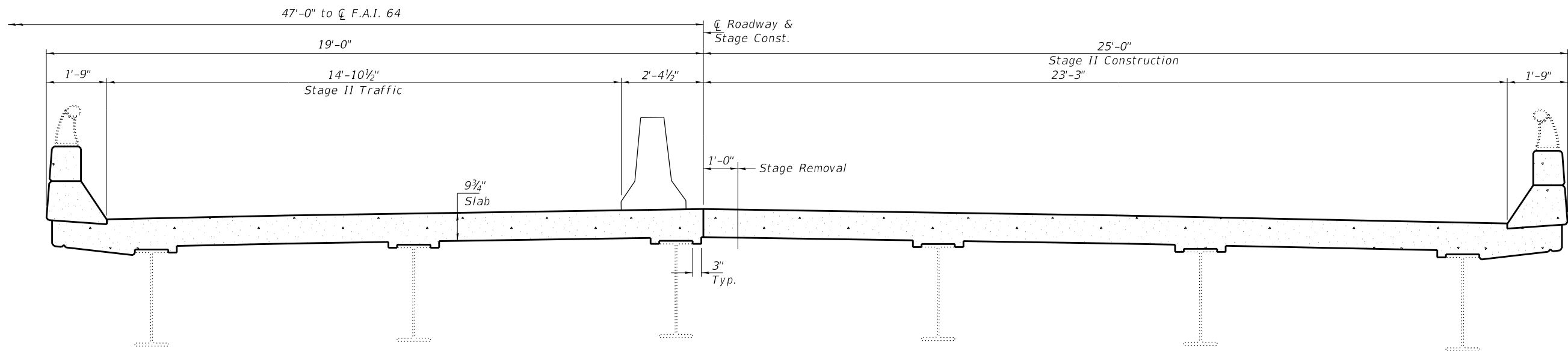
STAGING DETAILS			
SN 041-0007			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D9 BRIDGE REPAIR 2019-4	VARIOUS	61	6
			CONTRACT NO. 78650	
		ILLINOIS	FED. AID PROJECT	



STAGE I TRAFFIC & CONSTRUCTION

Looking East thru SN 041-0077 (E.B.)
Looking West thru SN 041-0078 (W.B.)



STAGE II TRAFFIC & CONSTRUCTION

Looking East thru SN 041-0077 (E.B.)
Looking West thru SN 041-0078 (W.B.)

TEMPORARY CONCRETE BARRIER SCHEDULE

Structure No.	Station to Station	Temporary Concrete Barrier Foot	Relocate Temporary Concrete Barrier Foot
SN 041-0077	Stage I Sta. 2028+45 to Sta. 2033+94	550	
	Stage II Sta. 2027+87 to Sta. 2033+94	62.5	550
SN 041-0078	Stage I Sta. 2030+98 to Sta. 2036+47	550	
	Stage II Sta. 2030+98 to Sta. 2037+10	62.5	550
Total		1225	1100

MODEL: Default
 FILE: \\nas01c.psu.edu\BEBID\NTEC\Illinois\gov\PIVDOT\Documents\DOT Office\Illinet\9\Projects\78650\CADDData\CAD\Sheet\0778650-Sheets.dgn

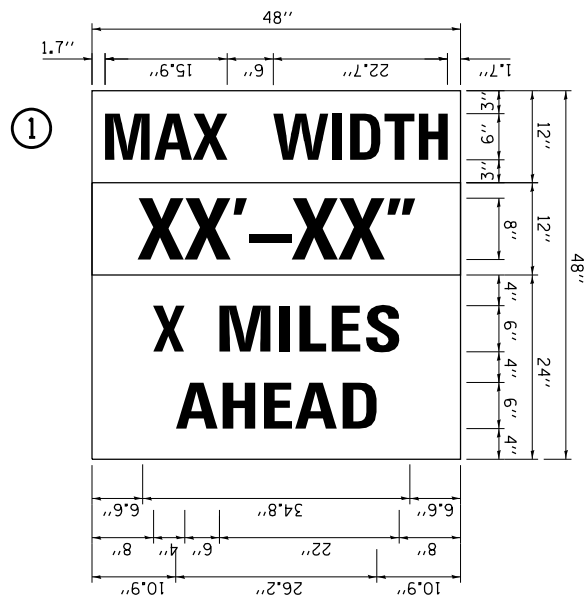
USER NAME = porterwc	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 3.3400' / in.	CHECKED -	REVISED -
PLOT DATE = 10/15/2018	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGING DETAILS			
SN 041-0077 & SN 041-0078			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

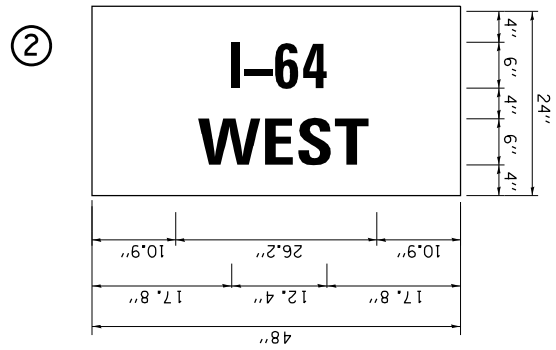
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D9 BRIDGE REPAIR 2019-4	VARIOUS	61	7
			CONTRACT NO. 78650	
		ILLINOIS	FED. AID PROJECT	

SIGN LEGEND



W12-1103

W12-1103 (WIDTH IS 8D);
NO BORDER, BLACK ON WHITE;
"MAX WIDTH" D;
NO BORDER, BLACK ON ORANGE;
"XX'-XX'" D;
NO BORDER, BLACK ON WHITE;
"X MILES" D; "AHEAD" D



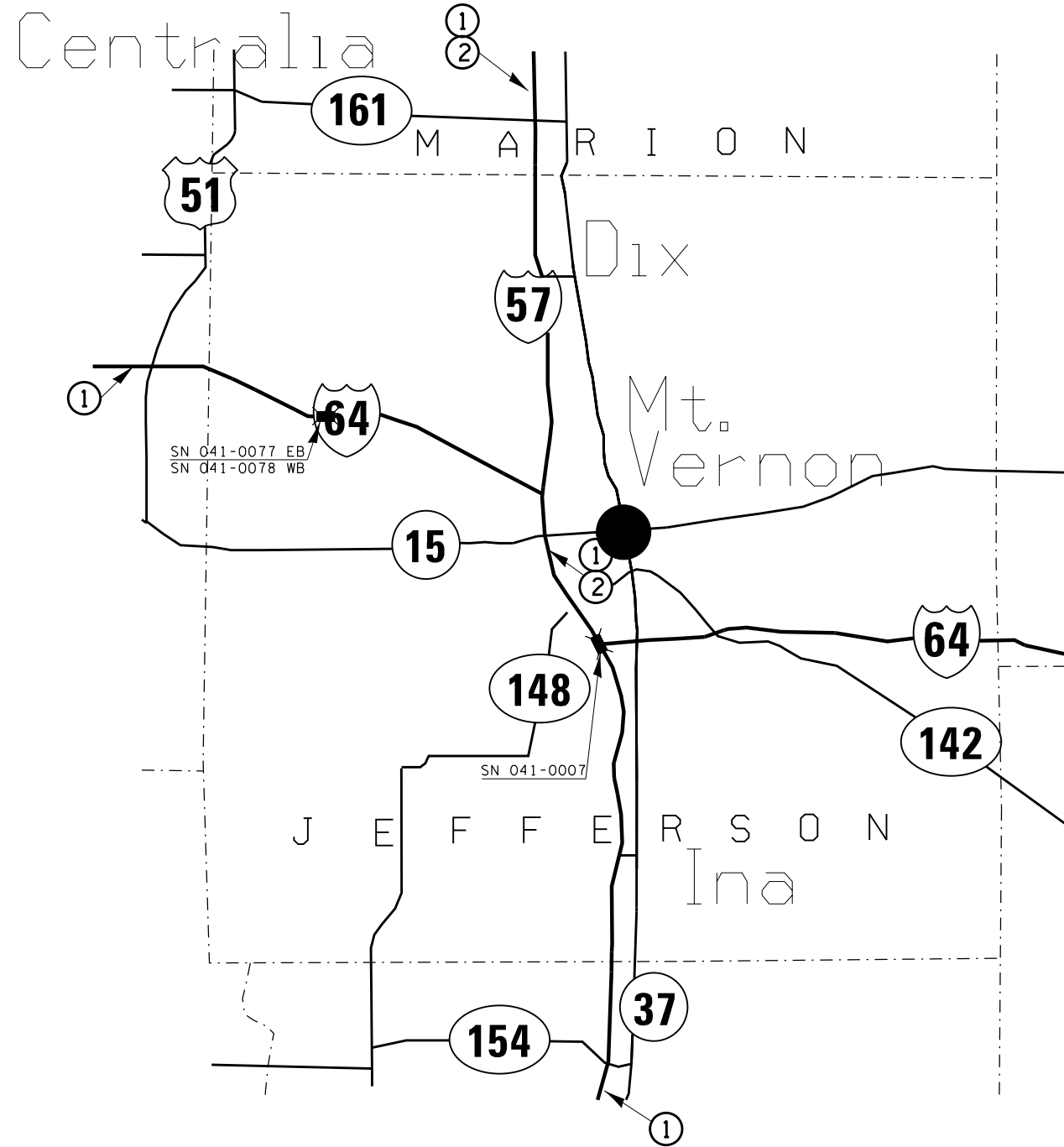
NO BORDER, BLACK ON WHITE;
"I-64" D;
NO BORDER, BLACK ON WHITE;
"WEST" D

DETOUR NOTES:

1. THE CONTRACTOR SHALL FURNISH THE POSTS AND ERECT THE SIGNS AT THE LOCATIONS AS DIRECTED BY THE ENGINEER. ALL SIGNS SHALL BE POST MOUNTED.

THE ABOVE NOTED WORK, INCLUDING SIGNS, POSTS, HARDWARE AND LABOR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE, EACH, FOR TRAFFIC CONTROL AND PROTECTION, STD 701402 AND NO OTHER COMPENSATION WILL BE ALLOWED.

THE WIDTH SHOWN ON THE W12-1103 SIGN SHALL BE 18' LESS THAN WHAT IS SHOWN IN THE STAGED LANE WIDTHS TABLE OR AS DIRECTED BY THE ENGINEER. THE "X" MILES AHEAD WILL BE DETERMINED BY THE ENGINEER.



DETOUR SIGNING PLAN

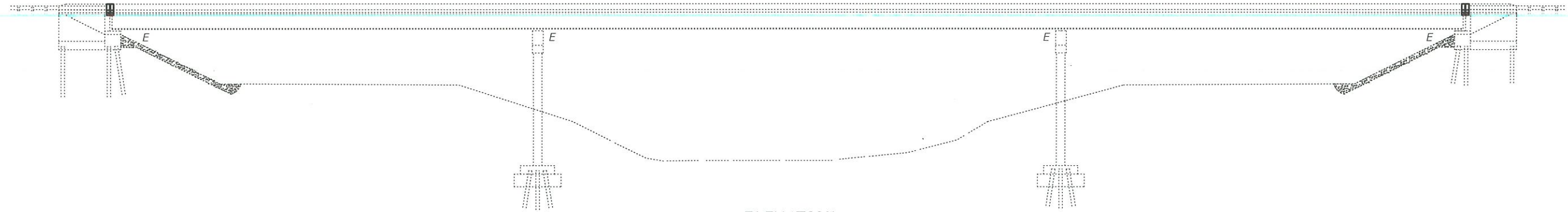
STAGED LANE WIDTHS

(FROM FACE OF DRUM OR TEMPORARY CONCRETE BARRIER TO TOE OF PARAPET)

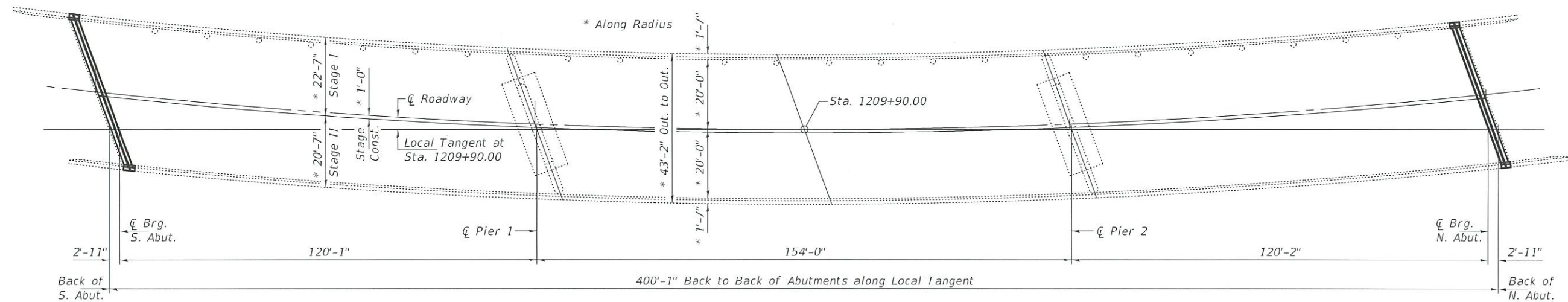
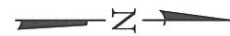
STRUCTURE	STAGE I	STAGE II
SN 002-0032	16'-0"	19'-0"
SN 033-0012	12'-0"	15'-0"
SN 041-0007	18'-3"	15'-6"
SN 041-0041	15'-0"	16'-0"
SN 041-0042	15'-0"	16'-0"
SN 041-0077	19'-10½"	14'-10½"
SN 041-0078	19'-10½"	14'-10½"

- ALL DRUMS OR BARRICADES SHALL BE PLACED 6" FROM THE STAGE REMOVAL LINE (STAGE I) AND 6" FROM THE STAGE CONSTRUCTION LINE (STAGE II).

TRAFFIC ON SN 033-0038, SN 041-0087/0088 AND SN 041-0097 SHALL NOT BE SHIFTED OVER ONTO THE SHOULDER AND SHALL REMAIN IN THE EXISTING LANE DURING THE STRUCTURAL STEEL REPAIRS AND OR BEARING REPLACEMENTS.



ELEVATION



PLAN

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

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

Reinforcement bars designated (E) shall be epoxy coated.

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

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

Fasteners shall be high strength bolts. Bolts 3/4"Ø, open holes 1 3/16"Ø, unless otherwise noted.

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

The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.

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

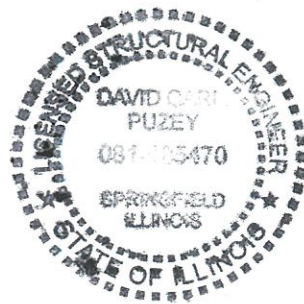
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the special provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	7.3
Concrete Superstructure	Cu. Yd.	7.3
Reinforcement Bars, Epoxy Coated	Pound	970
Bar Splicers	Each	12
Preformed Joint Strip Seal	Foot	90
Structural Steel Repair	Pound	480
Protective Coat	Sq. Yd.	21.8

* New Concrete Only.



Expires: November 30, 2020

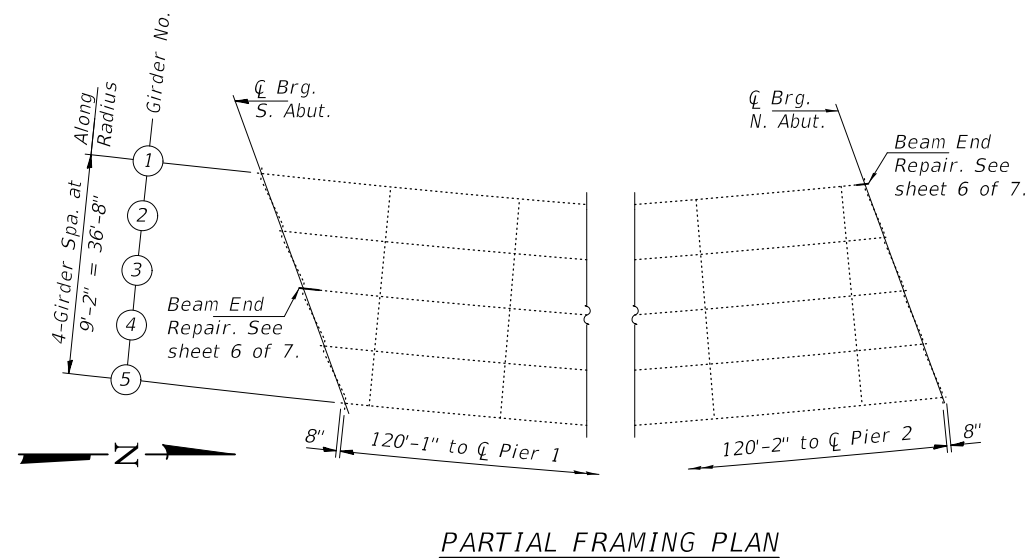
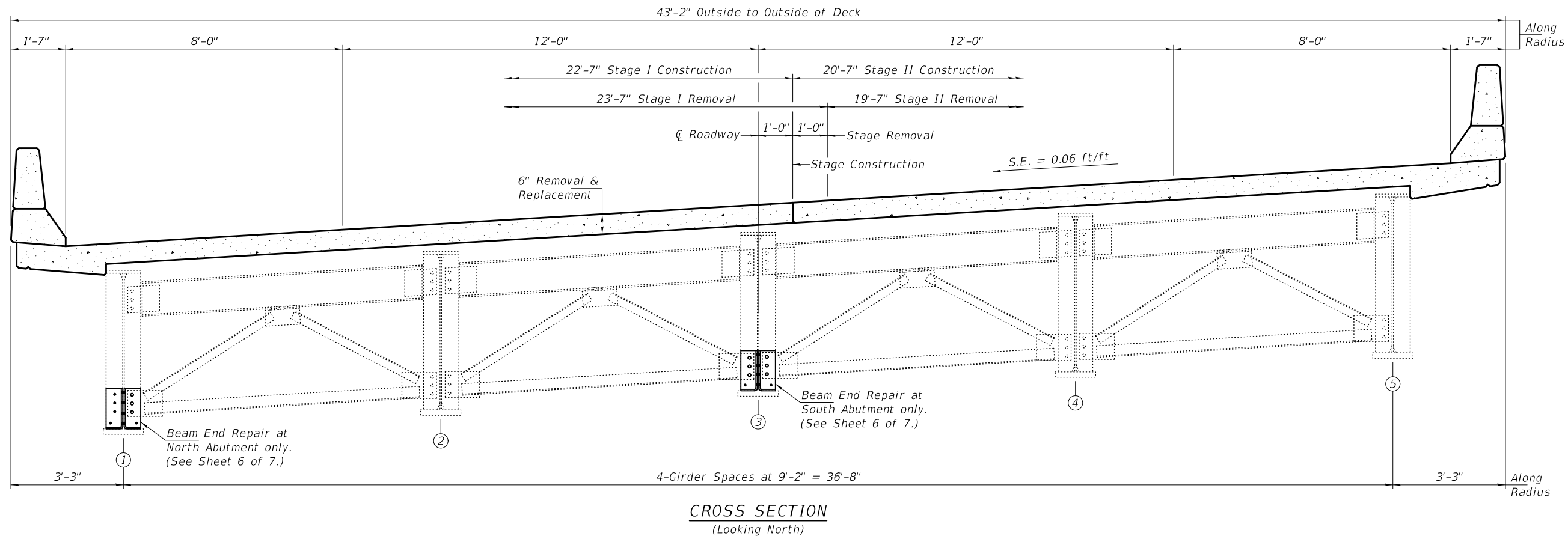
DESIGNED - <i>David Puze</i>	EXAMINED - <i>Timothy A. Agambrecht</i>	DATE - DECEMBER 5, 2018
CHECKED - <i>Steffen</i>	PASSED - <i>David Puze</i>	
DRAWN - STEFFEN		
CHECKED - <i>CDK JSB</i>		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 3 OVER SEXTON CREEK
SN 002-0032

SHEET 1 OF 7 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
14	D9 BRIDGE REPAIR 2019-4	ALEXANDER	61	9
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



DESIGNED - CDK
 CHECKED - JSB
 DRAWN - STEFFEN
 CHECKED - CDK JSB

EXAMINED
 PASSED
Timothy A. Daulton
 ENGINEER OF STRUCTURAL SERVICES
Carl R. Meyer
 ENGINEER OF BRIDGES AND STRUCTURES

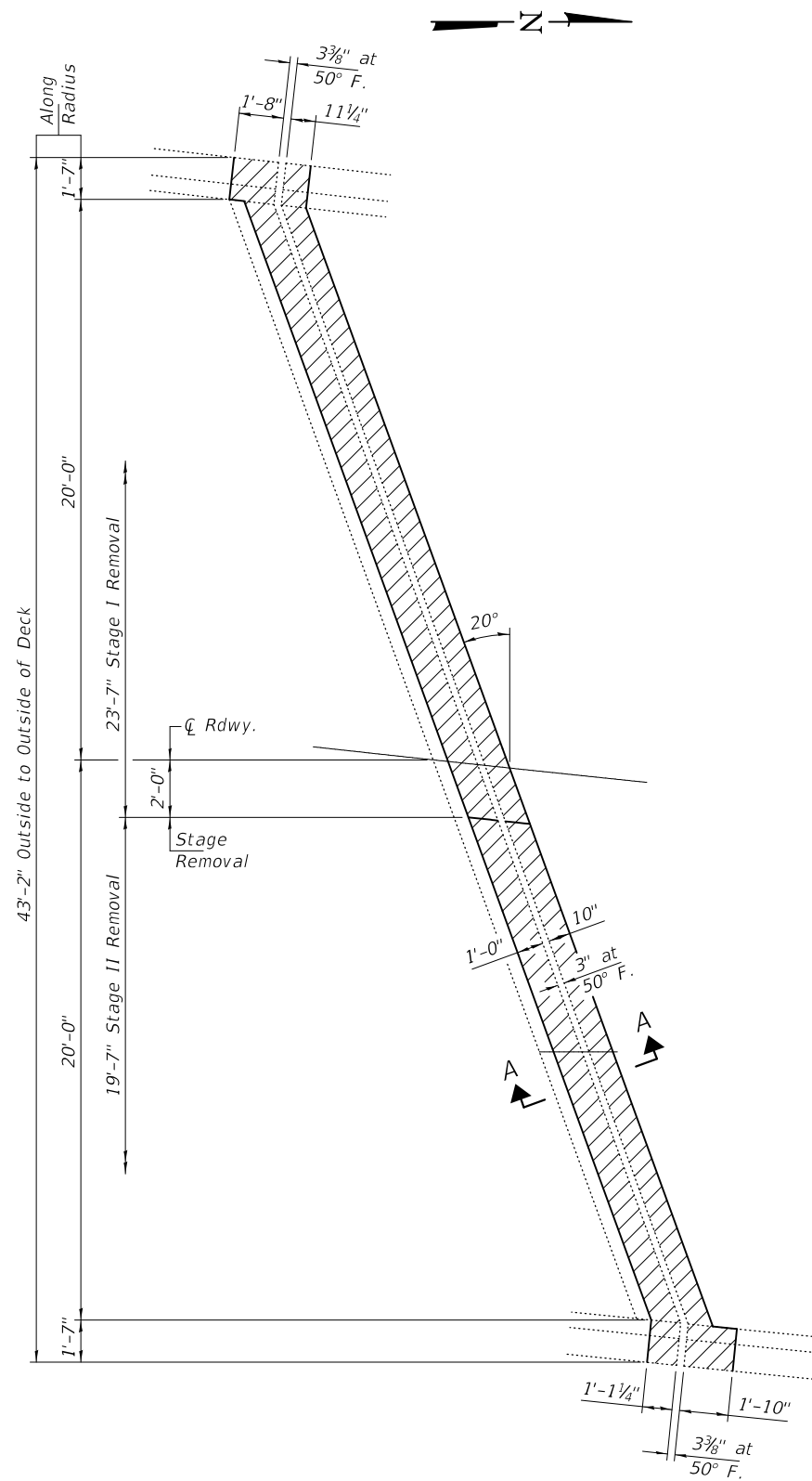
DATE - DECEMBER 5, 2018
 REVISED -
 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

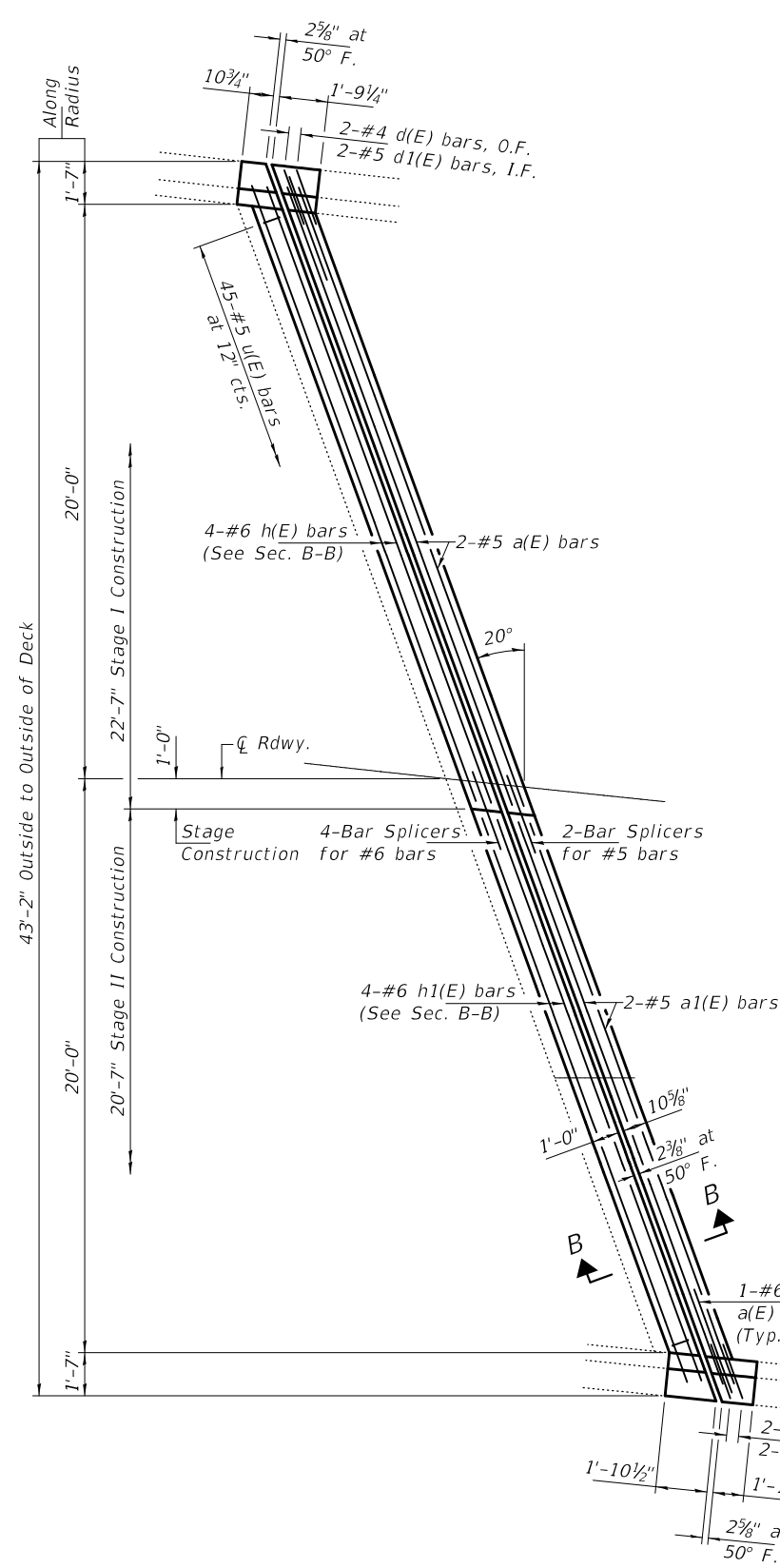
STAGING & REPAIR DETAILS
SN 002-0032

SHEET 2 OF 7 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
14	D9 BRIDGE REPAIR 2019-4	ALEXANDER	61	10
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

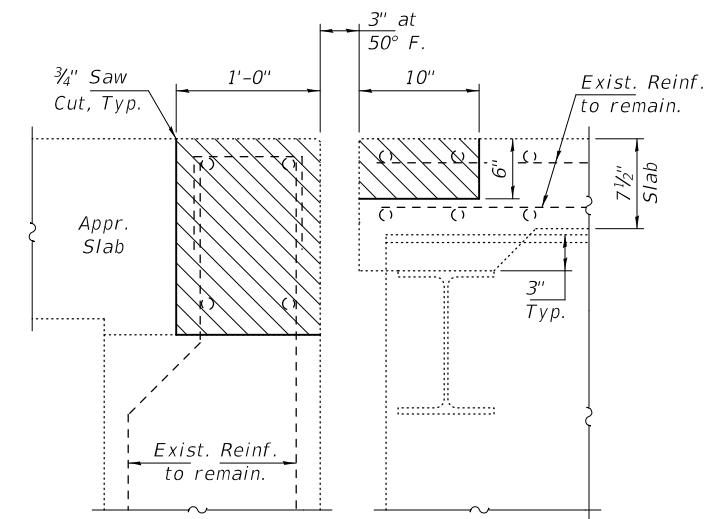


CONCRETE REMOVAL DETAILS

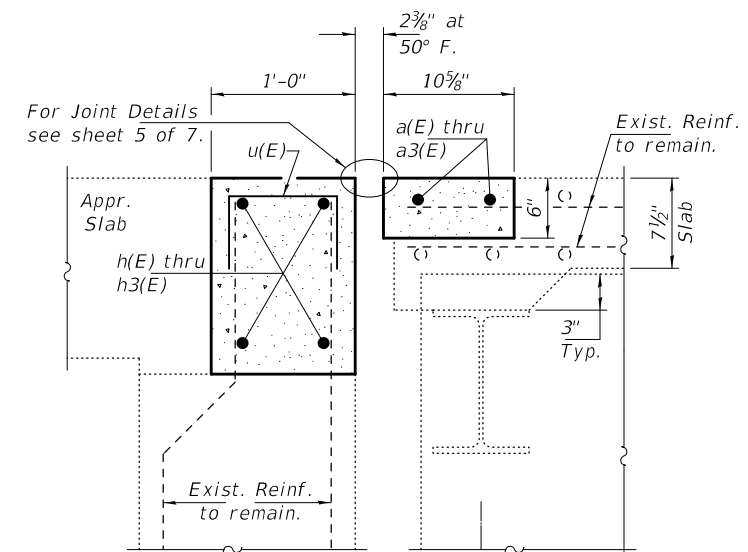


CONCRETE REPLACEMENT DETAILS

Notes:
 Hatched areas indicate Concrete Removal.
 For Parapet Details and Reinforcement
 Bending Details see sheet 4 of 7.



SECTION A-A
 (Dims. at Rt. L's)



SECTION B-B
 (Dims. at Rt. L's)

**SOUTH ABUTMENT
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	2	#5	23'-6"	—
a1(E)	2	#5	21'-4"	—
a4(E)	2	#6	4'-0"	—
d(E)	2	#4	5'-3"	L
d1(E)	4	#5	3'-11"	L
d2(E)	2	#4	5'-3"	L
h(E)	4	#6	23'-6"	—
h1(E)	4	#6	21'-4"	—
u(E)	45	#5	1'-11"	Π
Concrete Removal			Cu. Yd.	3.7
Concrete Superstructure			Cu. Yd.	3.7
Bar Splicers			Each	6
Reinforcement Bars, Epoxy Coated			Pound	500

DESIGNED - CDK
 CHECKED - JSB
 DRAWN - STEFFEN
 CHECKED - CDK JSB

EXAMINED
 PASSED
Timothy A. Daulton
 ENGINEER OF STRUCTURAL SERVICES
Carl R. Roper
 ENGINEER OF BRIDGES AND STRUCTURES

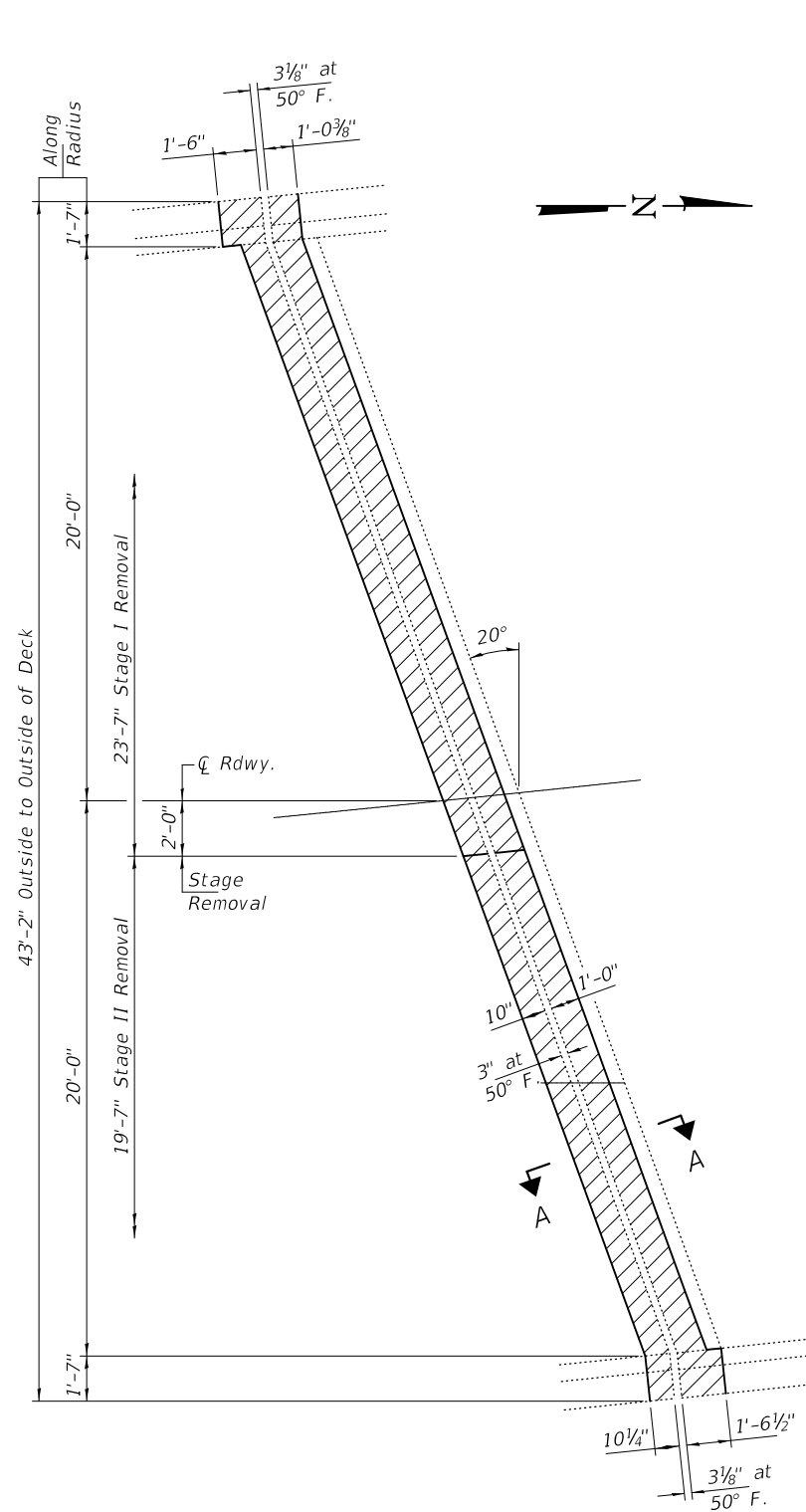
DATE - DECEMBER 5, 2018
 REVISED -
 REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

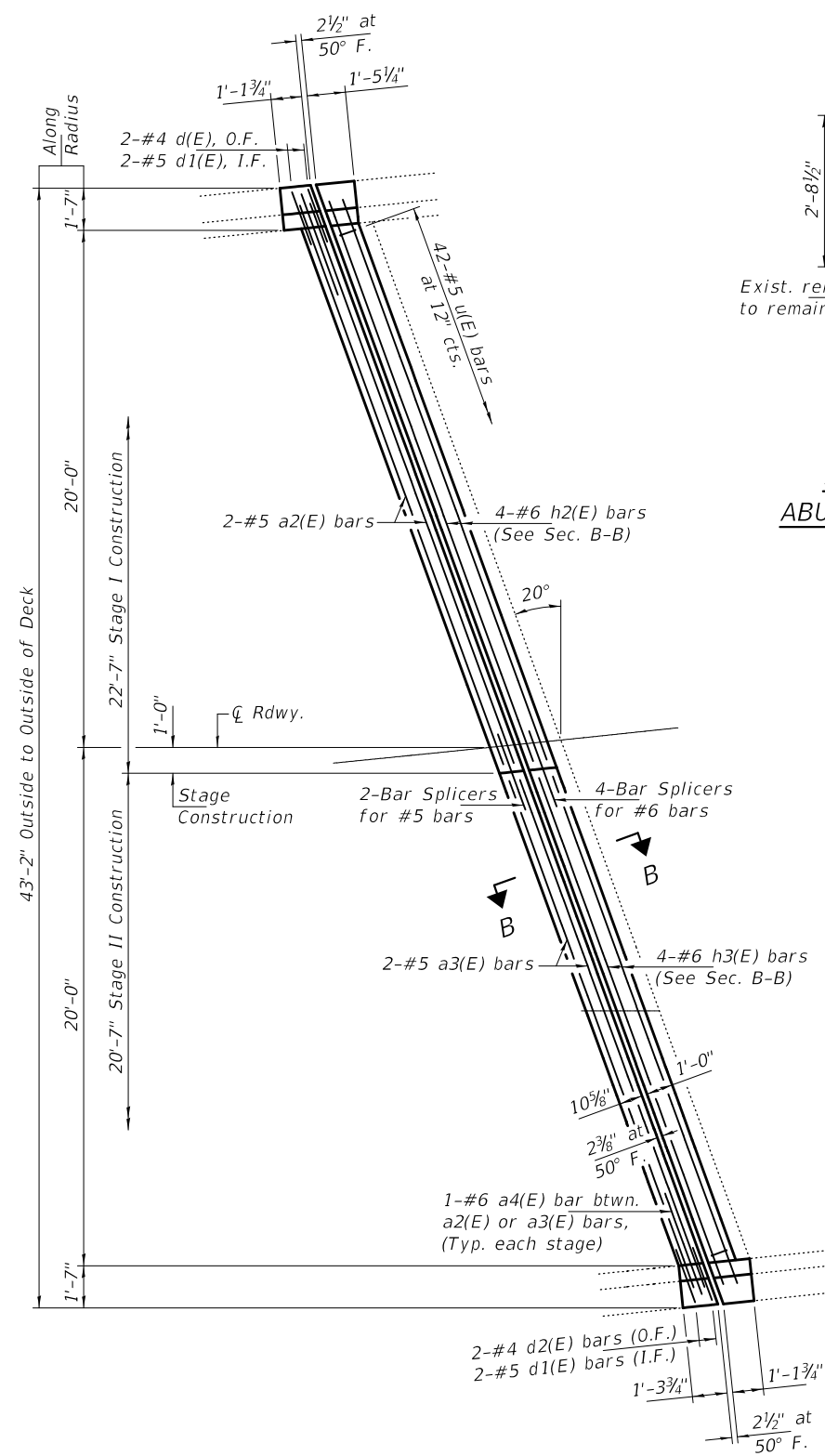
**SOUTH ABUTMENT JOINT REPLACEMENT DETAILS
 SN 002-0032**

SHEET 3 OF 7 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
14	D9 BRIDGE REPAIR 2019-4	ALEXANDER	61	11
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

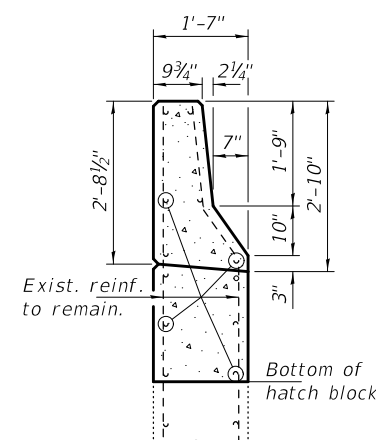


CONCRETE REMOVAL DETAILS

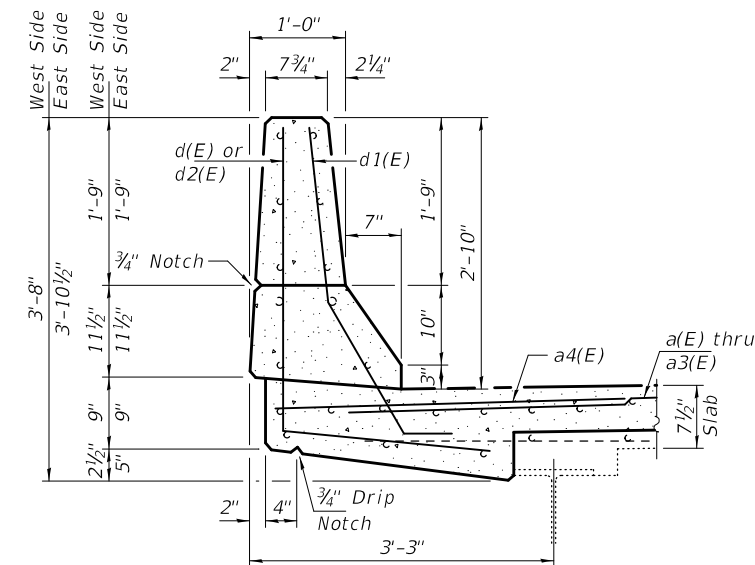


CONCRETE REPLACEMENT DETAILS

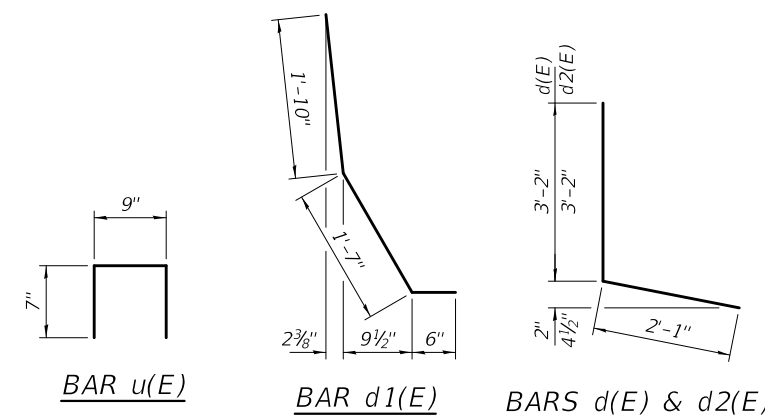
Notes:
 Hatched areas indicate Concrete Removal.
 For Sections A-A & B-B see sheet 3 of 7.



SECTION THRU ABUTMENT WINGWALL



SECTION THRU BRIDGE PARAPET



NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a2(E)	2	#5	22'-5"	—
a3(E)	2	#5	20'-3"	—
a4(E)	2	#6	4'-0"	—
d(E)	2	#4	5'-3"	L
d1(E)	4	#5	3'-11"	L
d2(E)	2	#4	5'-3"	L
h2(E)	4	#6	22'-5"	—
h3(E)	4	#6	20'-3"	—
u(E)	42	#5	1'-11"	U
Concrete Removal			Cu. Yd.	3.6
Concrete Superstructure			Cu. Yd.	3.6
Bar Splicers			Each	6
Reinforcement Bars, Epoxy Coated			Pound	470

DESIGNED - CDK
 CHECKED - JSB
 DRAWN - STEFFEN
 CHECKED - CDK JSB

EXAMINED
 PASSED
 ENGINEER OF STRUCTURAL SERVICES
 ENGINEER OF BRIDGES AND STRUCTURES

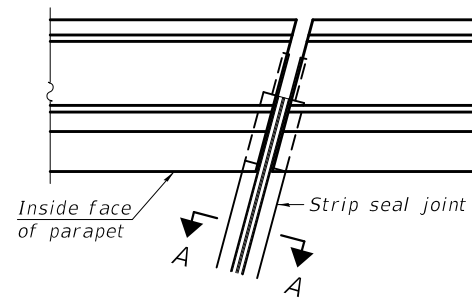
DATE - DECEMBER 5, 2018
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT JOINT REPLACEMENT DETAILS
 SN 002-0032

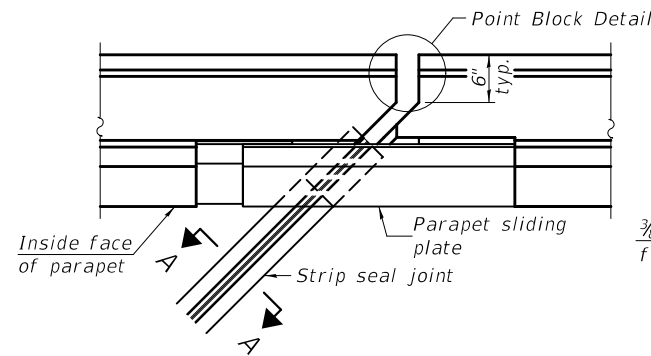
SHEET 4 OF 7 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
14	D9 BRIDGE REPAIR 2019-4	ALEXANDER	61	12
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

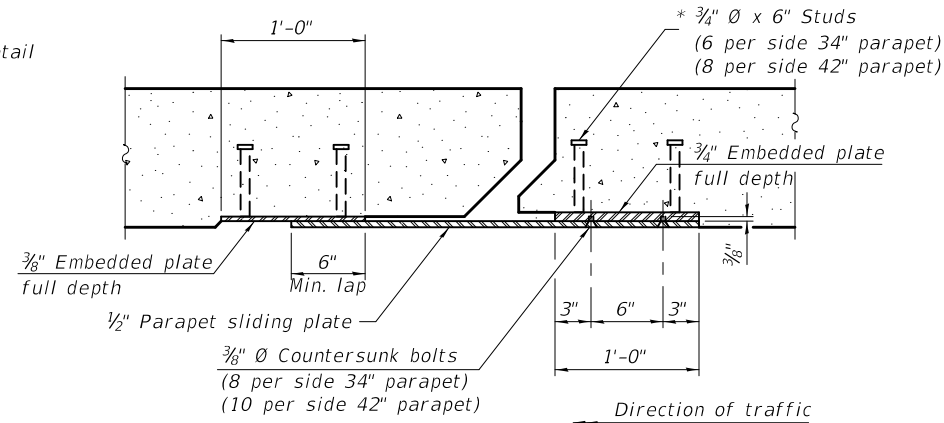


FOR SKEWS $\leq 30^\circ$

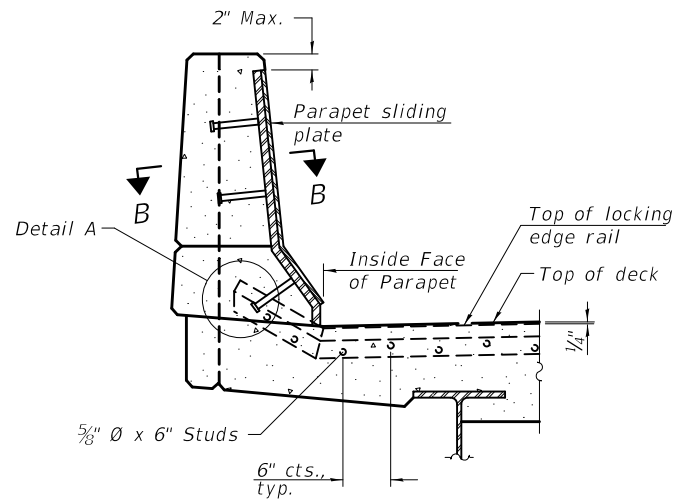
PLAN AT PARAPET



FOR SKEWS $> 30^\circ$

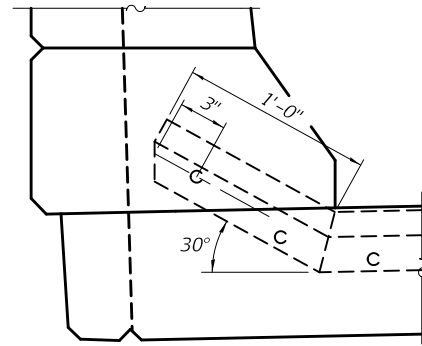


SECTION B-B

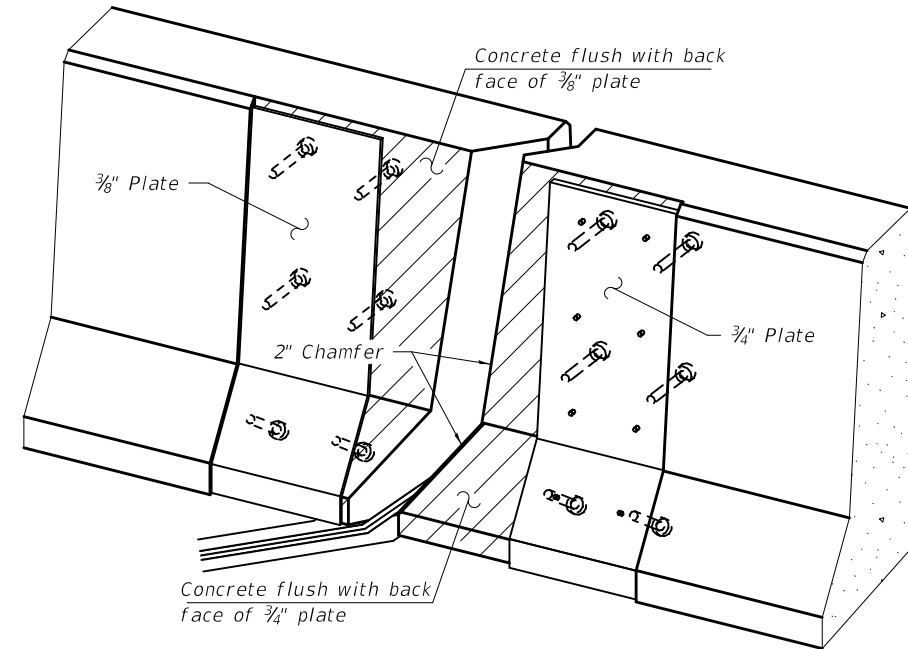


ELEVATION AT PARAPET

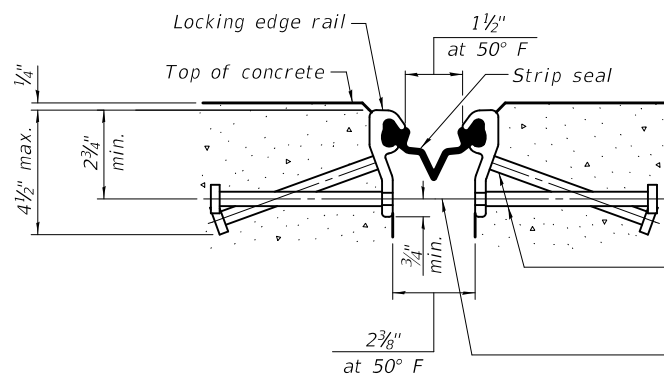
(Skews $> 30^\circ$ shown. Skews $\leq 30^\circ$ similar except as shown in plan view.)



DETAIL A



TRIMETRIC VIEW
(Showing embedded plates only)



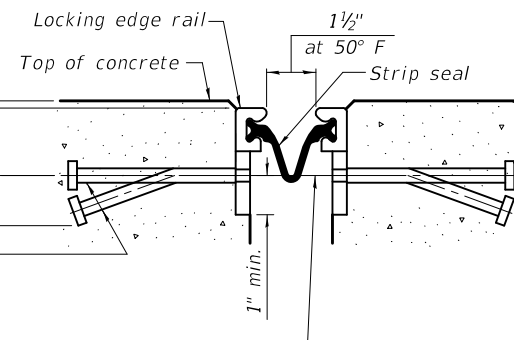
SHOWING ROLLED RAIL JOINT

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

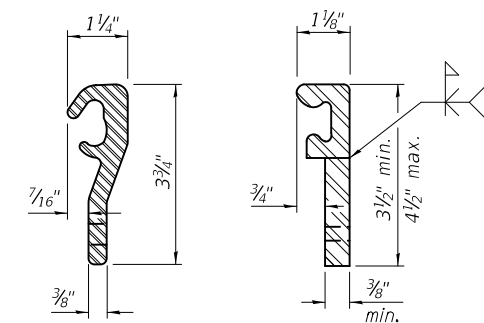
$3/8"$ \varnothing threaded rods in $7/16"$ \varnothing holes at $\pm 4"-0"$ cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

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

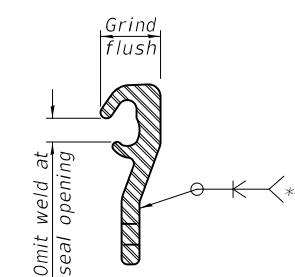


SHOWING WELDED RAIL JOINT



LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	90

EJ-SS

8-11-17

DESIGNED - CDK	EXAMINED
CHECKED - JSB	PASSED
DRAWN - STEFFEN	
CHECKED - CDK JSB	

 ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018
 ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS

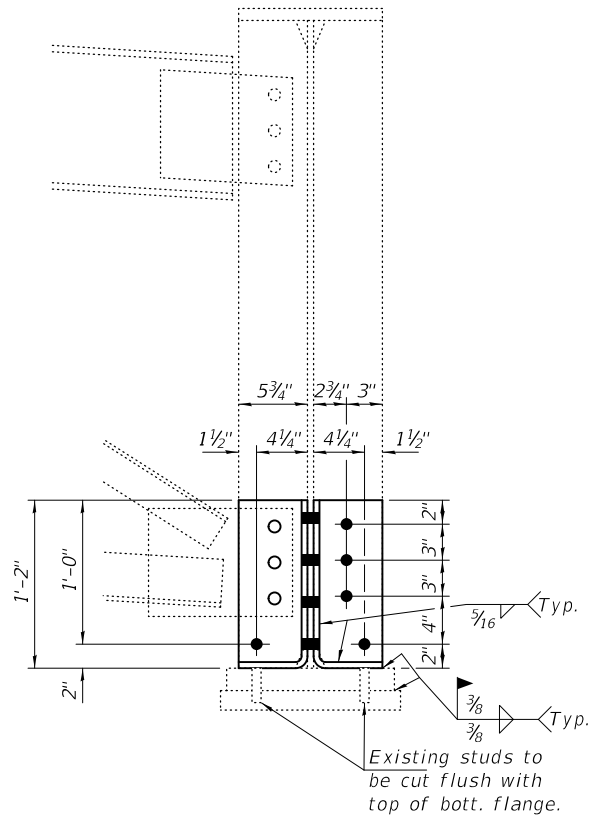
REVISIONS
REVISIONS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

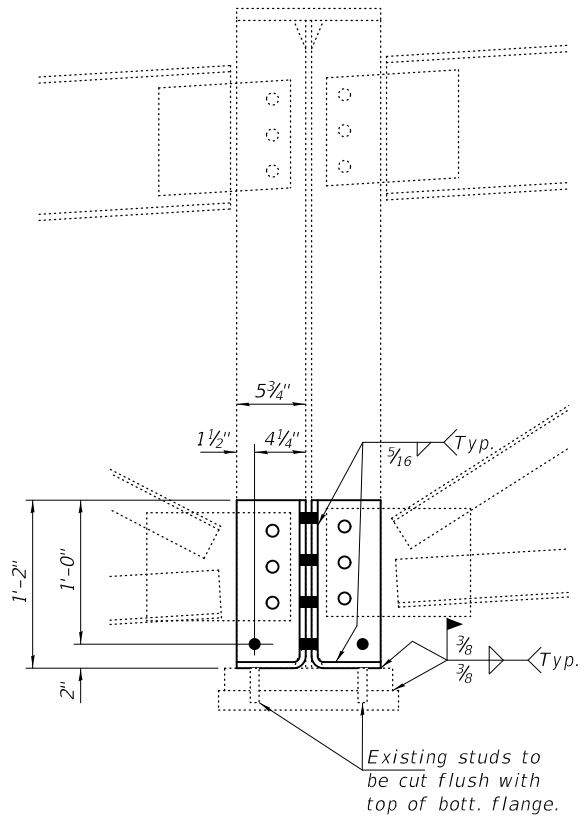
PREFORMED JOINT STRIP SEAL DETAILS
SN 002-0032

SHEET 5 OF 7 SHEETS

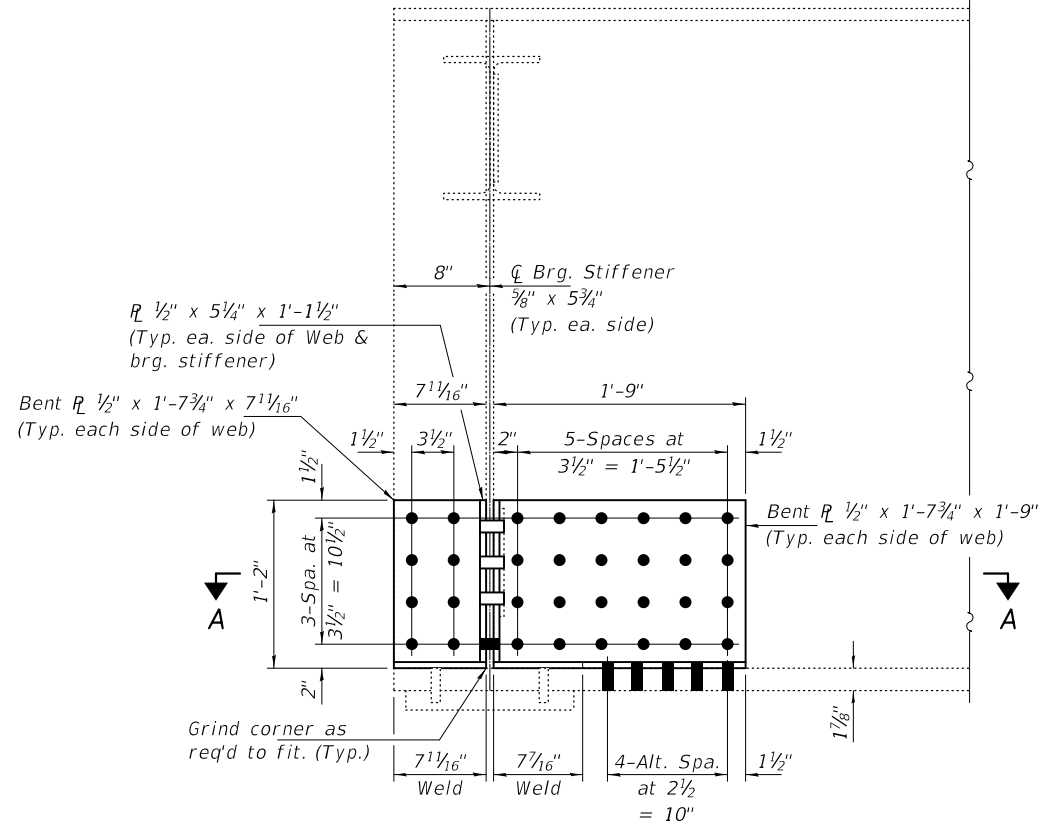
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
14	D9 BRIDGE REPAIR 2019-4	ALEXANDER	61	13
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



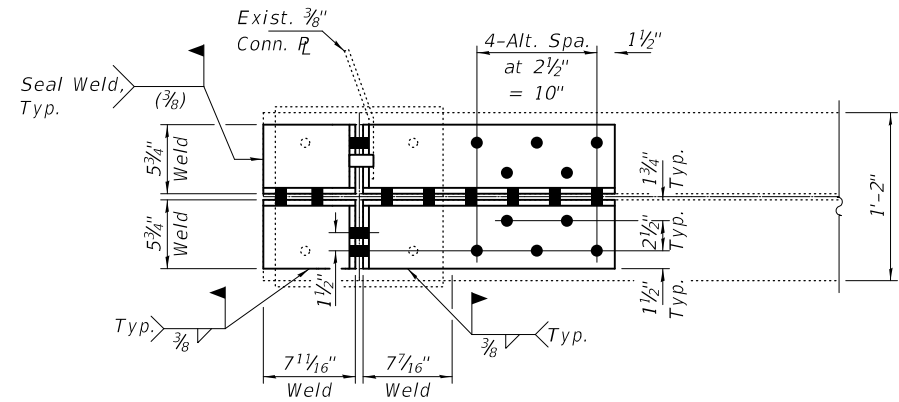
END VIEW AT N. ABUT., BEAM 1
(Looking South)



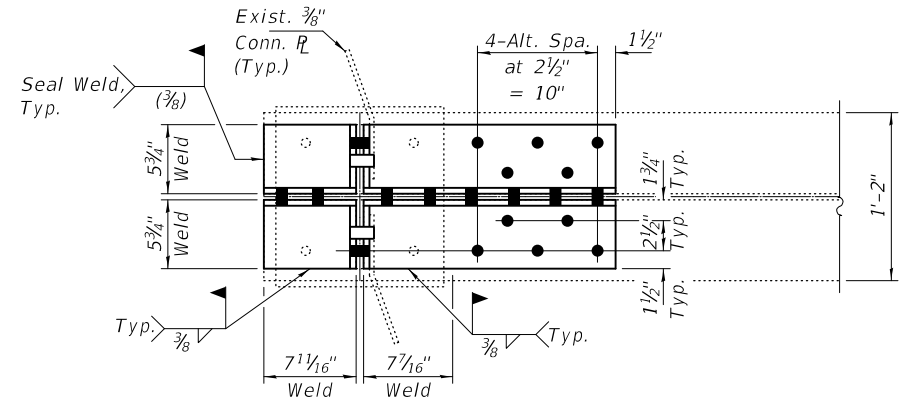
END VIEW AT S. ABUT., BEAM 3
(Looking North)



TYPICAL BEAM END REPAIR DETAIL



SECTION A-A
AT N. ABUT., BEAM 1



SECTION A-A
AT S. ABUT., BEAM 3

BOLT HOLE LEGEND

- Field drill holes in existing steel using new steel as template.
- Field Drill holes in new steel using existing steel as template.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	480

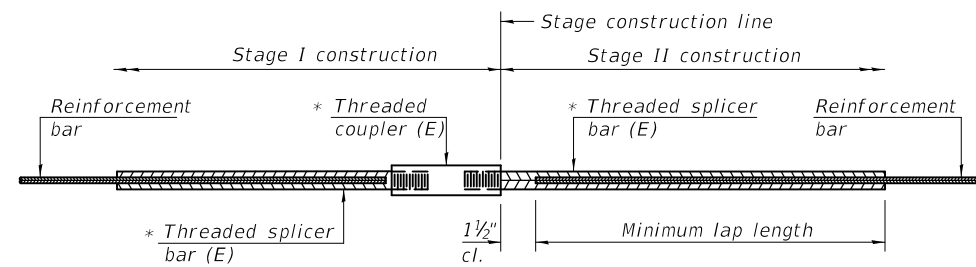
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018
CHECKED - JSB	PASSED - <i>Carl R. Meyer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
DRAWN - STEFFEN		REVISED -
CHECKED - CDK JSB		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM END REPAIR DETAILS
SN 002-0032

SHEET 6 OF 7 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
14	D9 BRIDGE REPAIR 2019-4	ALEXANDER	61	14
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

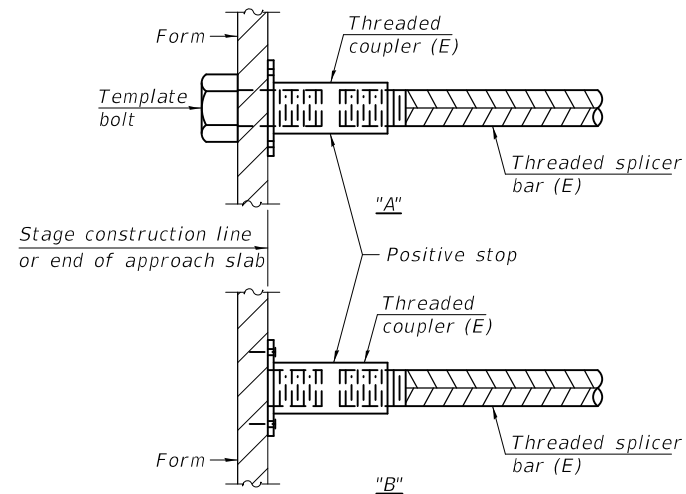


STANDARD BAR SPLICER ASSEMBLY

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

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

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	4	3'-1"
Abutment	#6	8	4'-5"

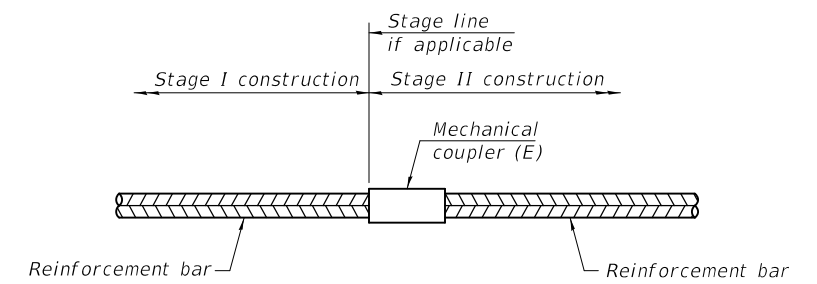


INSTALLATION AND SETTING METHODS

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

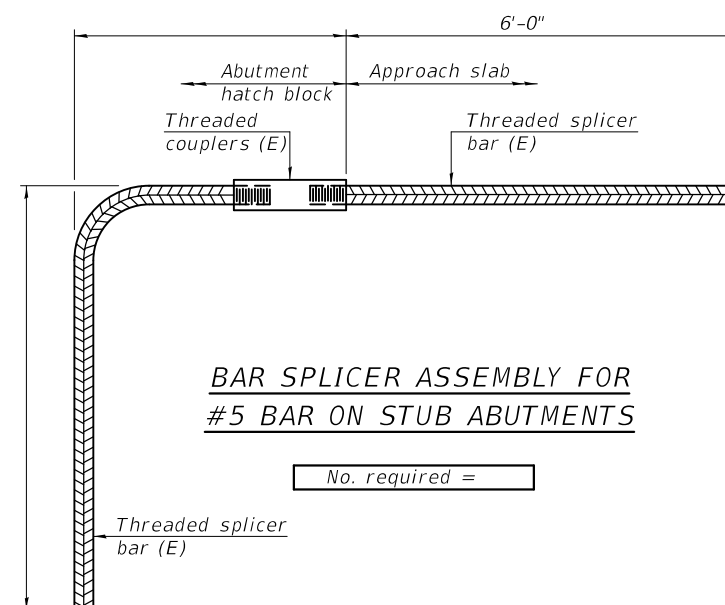
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

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

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

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

BSD-1

2-17-2017

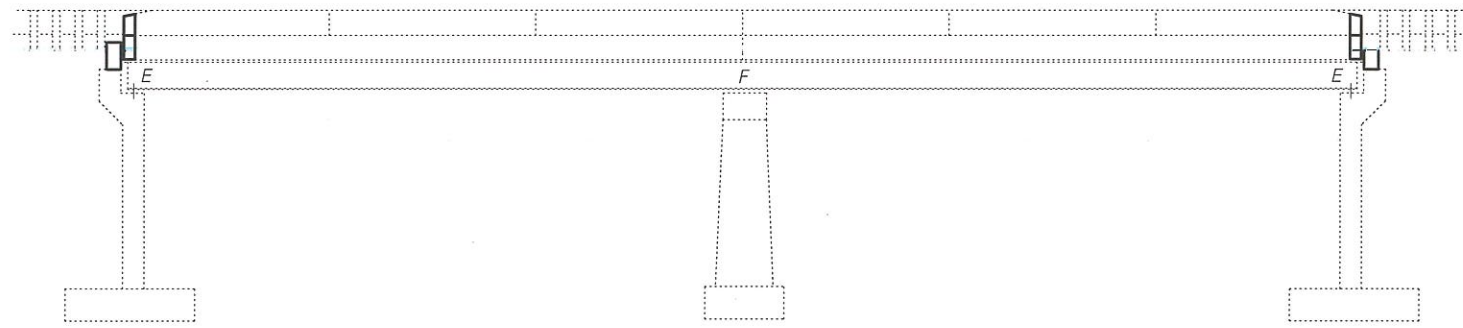
DESIGNED - CDK	EXAMINED	DATE - DECEMBER 5, 2018
CHECKED - JSB	<i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES	REVISOR -
DRAWN - STEFFEN	PASSED	REVISOR -
CHECKED - CDK JSB	<i>Carl R. Meyer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

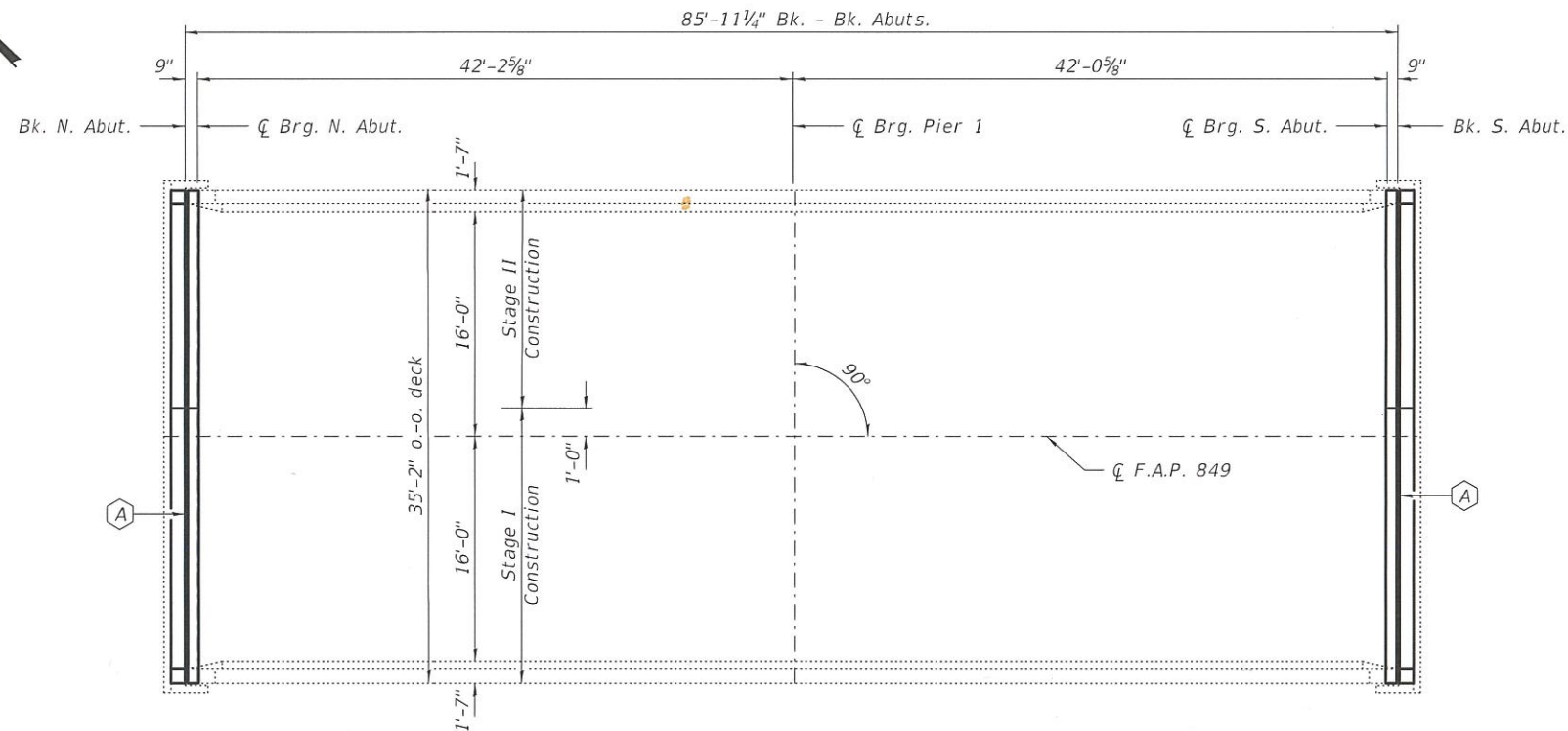
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 002-0032

SHEET 7 OF 7 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
14	D9 BRIDGE REPAIR 2019-4	ALEXANDER	61	15
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



ELEVATION

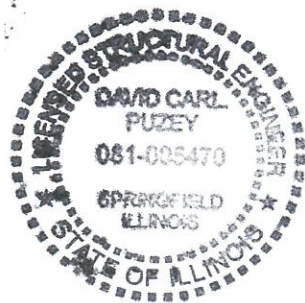


PLAN

(A) - Remove and Replace Expansion Joints.

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
 Reinforcement bars designated (E) shall be epoxy coated.
 Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
 Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
 Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
 The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.
 Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.



TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	5.4
Concrete Superstructure	Cu. Yd.	5.4
Preformed Joint Strip Seal	Foot	69
Reinforcement Bars, Epoxy Coated	Pound	680
Bar Splicers	Each	12
Protective Coat	Sq. Yd.	15.1

* On new concrete only.

EXPIRES 11-30-2020

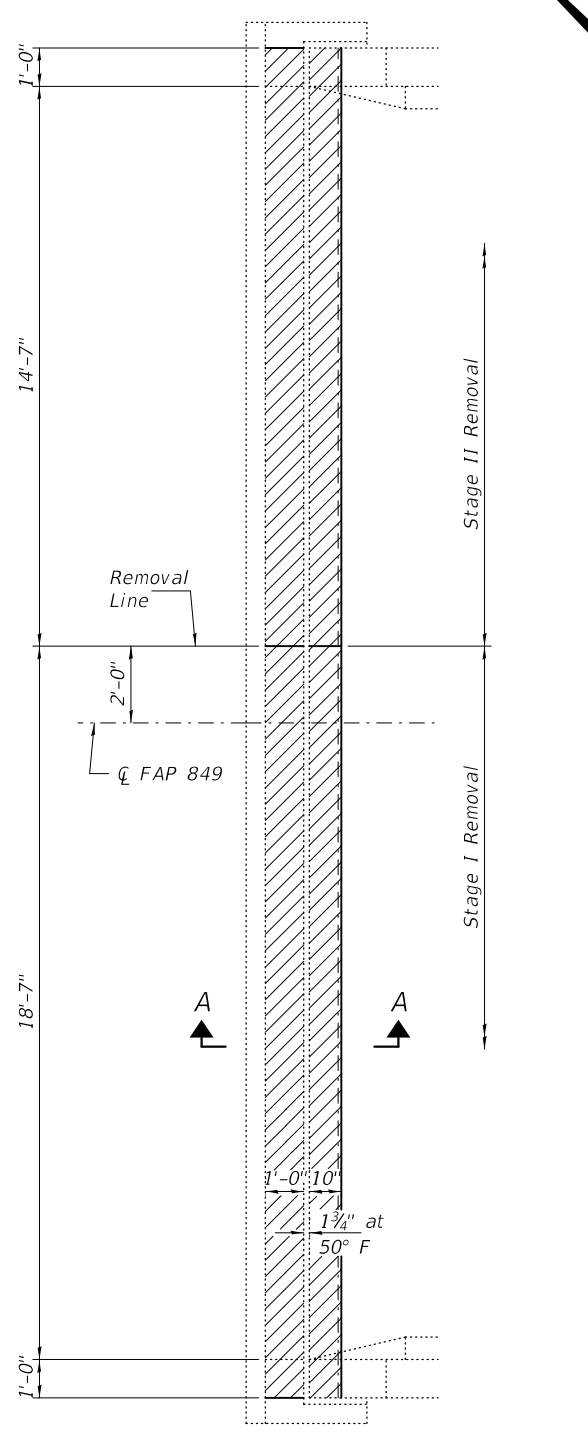
DESIGNED <i>David Carl Puzey</i>	EXAMINED <i>Timothy A. Bombardieri</i>	DATE - DECEMBER 5, 2018
CHECKED <i>Stephen M. Ryan</i>	PASSED <i>David Carl Puzey</i>	REVISED -
DRAWN <i>daburdell</i>		REVISED -
CHECKED <i>HSS SMR</i>		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
FAP 849 OVER MIDDLE CREEK
SN 033-0012

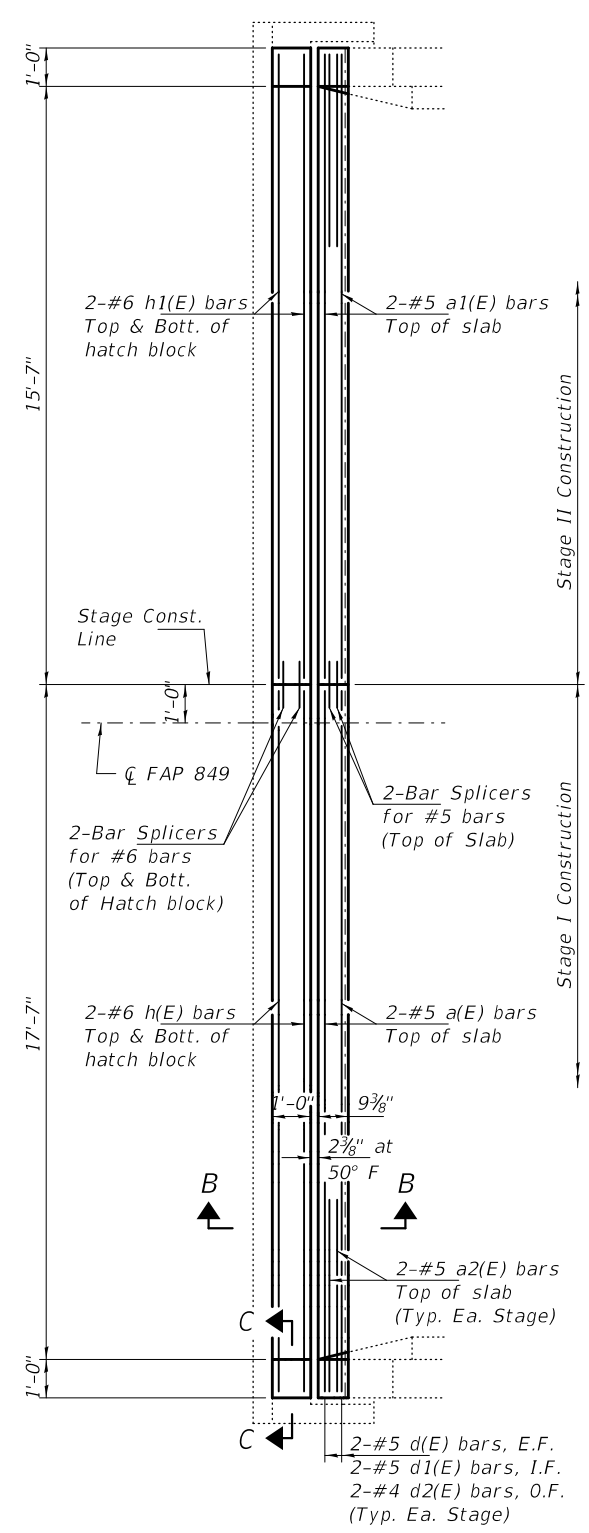
SHEET NO. 1 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	16
CONTRACT NO. 78650				
ILLINOIS		FED. AID PROJECT		

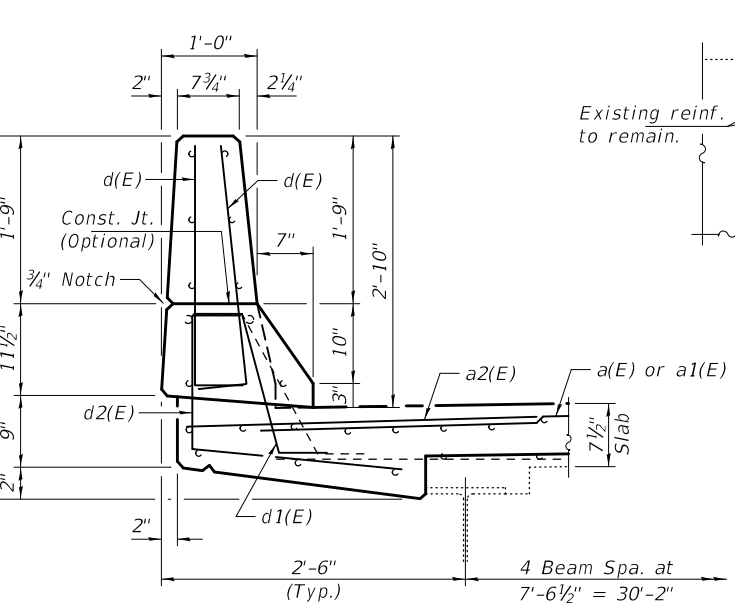
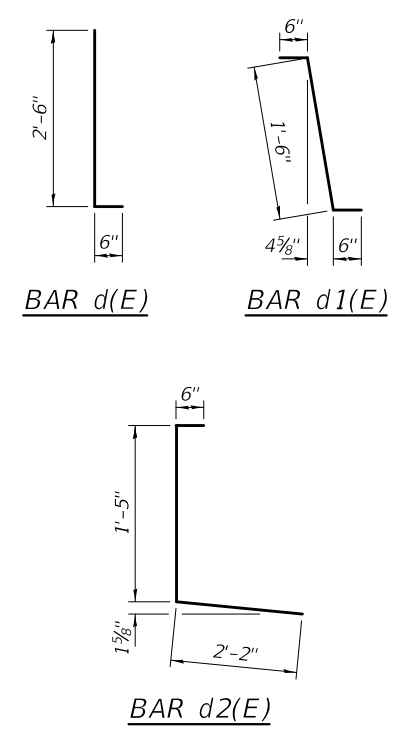


CONCRETE REMOVAL DETAILS
(North Abut. shown; South Abut. similar)

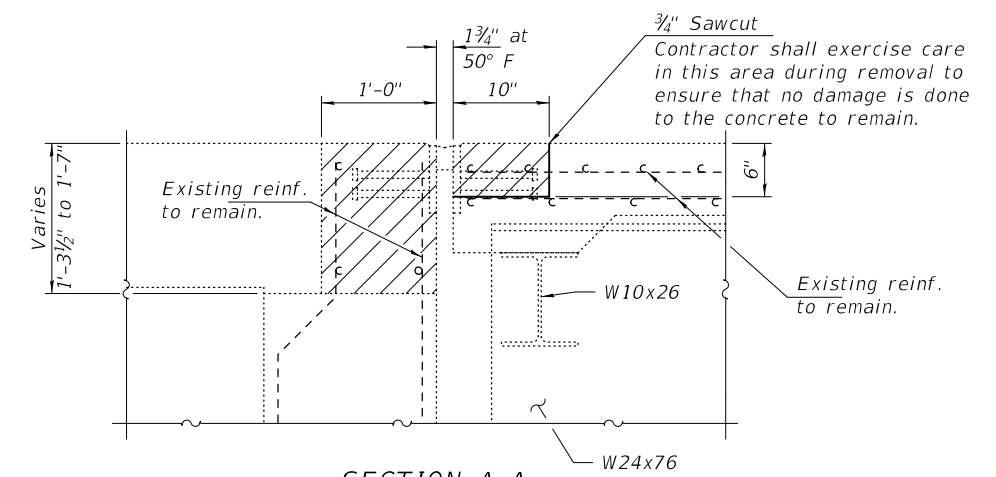
Note:
Hatched areas indicate
Concrete Removal.



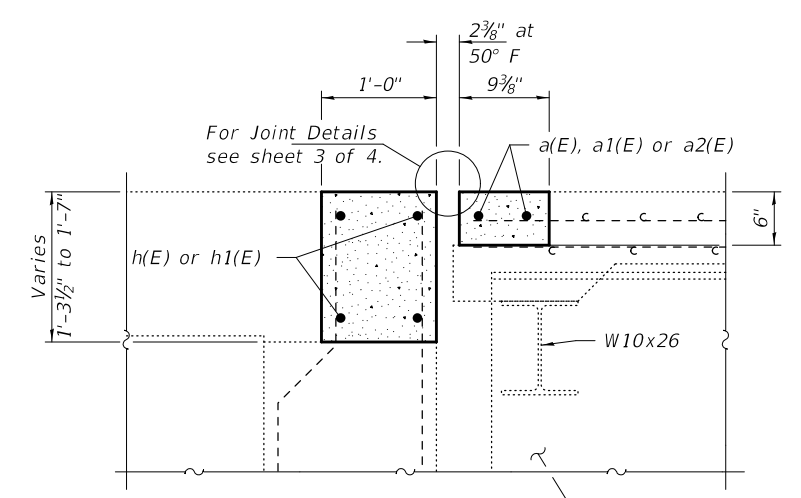
CONCRETE REPLACEMENT DETAILS
(North Abut. shown; South Abut. similar)



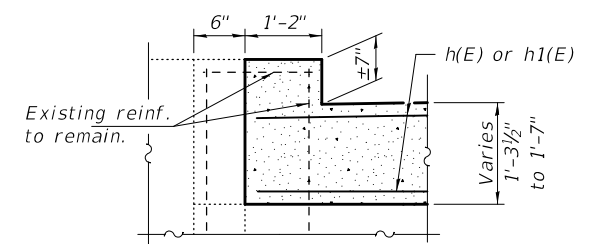
SECTION THRU BRIDGE PARAPET



SECTION A-A



SECTION B-B



SECTION C-C

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	4	#5	17'-7"	—
a1(E)	4	#5	15'-7"	—
a2(E)	8	#5	4'-0"	—
h(E)	8	#6	18'-3"	—
h1(E)	8	#6	16'-3"	—
d(E)	16	#5	3'-0"	L
d1(E)	8	#5	2'-6"	L
d2(E)	8	#4	4'-1"	L
Concrete Removal		Cu. Yd.	5.4	
Concrete Superstructure		Cu. Yd.	5.4	
Bar Splicers		Each	12	
Reinforcement Bars, Epoxy Coated		Pound	680	

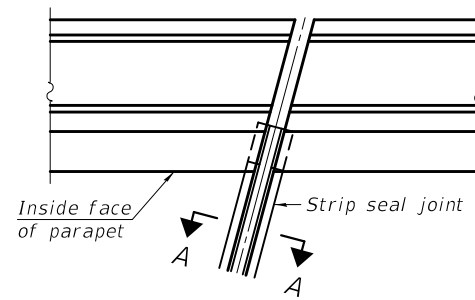
DESIGNED - HSS	EXAMINED - <i>Timothy A. Daburdell</i>	DATE - DECEMBER 5, 2018
CHECKED - JSB	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - <i>daburdell</i>	PASSED - <i>Carl R. Berger</i>	REVISED -
CHECKED - HSS JSB	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

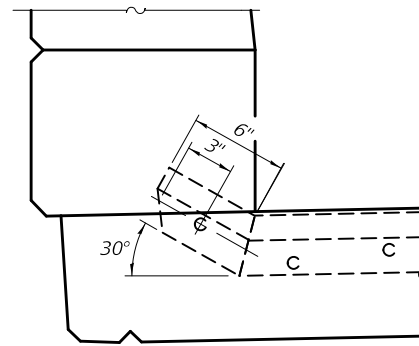
JOINT REMOVAL AND REPLACEMENT
SN 033-0012

SHEET NO. 2 OF 4 SHEETS

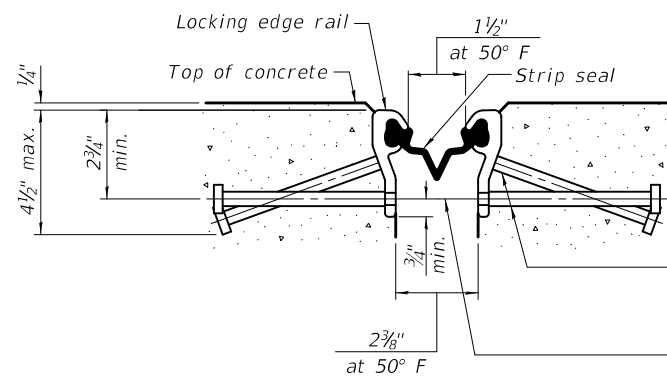
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	17
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



FOR SKEWS $\leq 30^\circ$
PLAN AT PARAPET



ELEVATION AT PARAPET
 (Skews $\leq 30^\circ$)

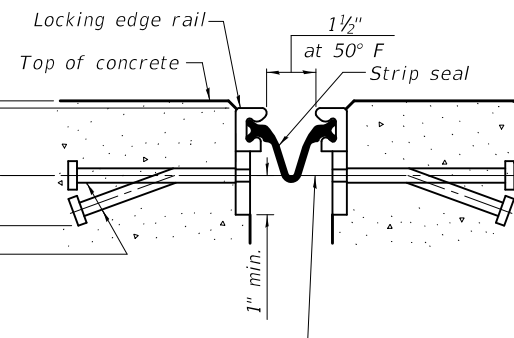


SHOWING ROLLED RAIL JOINT

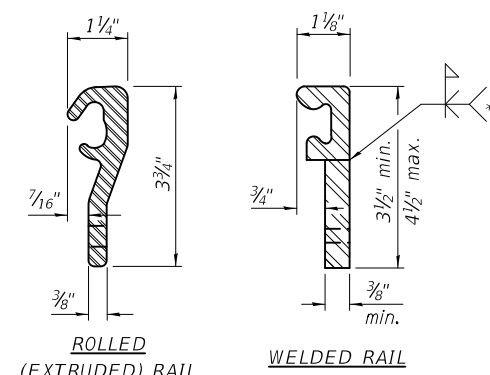
* $\frac{5}{8}$ " ϕ x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)
 $\frac{3}{8}$ " ϕ threaded rods in $\frac{7}{16}$ " ϕ holes at ± 4 "-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, 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.

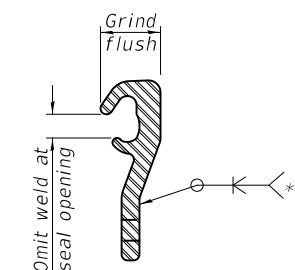


SHOWING WELDED RAIL JOINT



LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	69

EJ-SS1 LT30/REPS

6-22-18

DESIGNED - HSS
 CHECKED - JSB
 DRAWN - daburdell
 CHECKED - HSS JSB

EXAMINED
 PASSED

Timothy A. Daulton
 ENGINEER OF STRUCTURAL SERVICES
 Carl R. Meyer
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - DECEMBER 5, 2018

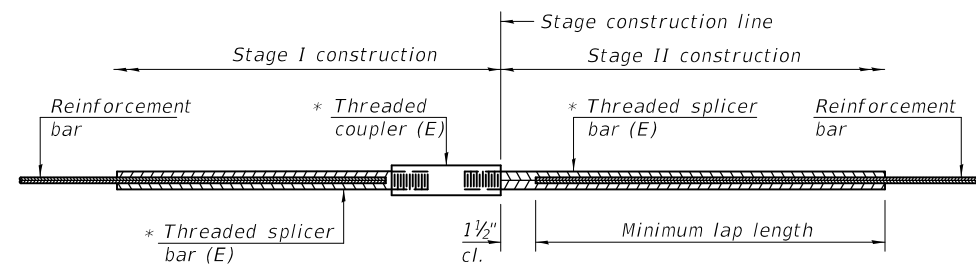
REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
 SN 033-0012

SHEET NO. 3 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	18
ILLINOIS			CONTRACT NO. 78650	
FED. AID PROJECT				

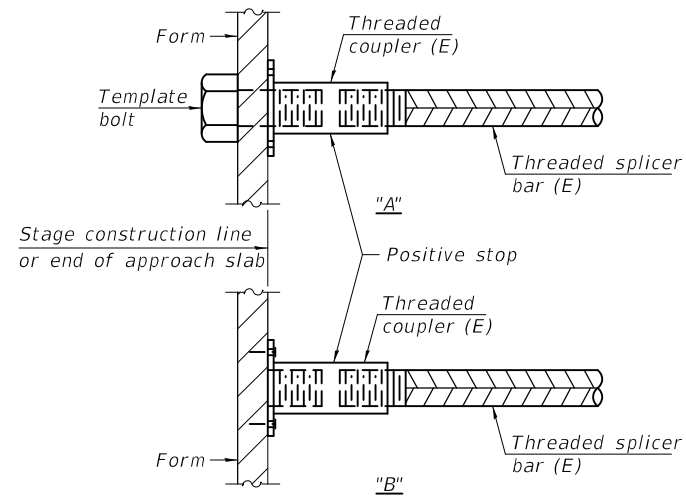


STANDARD BAR SPLICER ASSEMBLY

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

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

Location	Bar size	No. assemblies required	Minimum lap length
Exp. Jt. - Deck	#5	4	3'-1"
Exp. Jt. - Abut.	#6	8	4'-0"

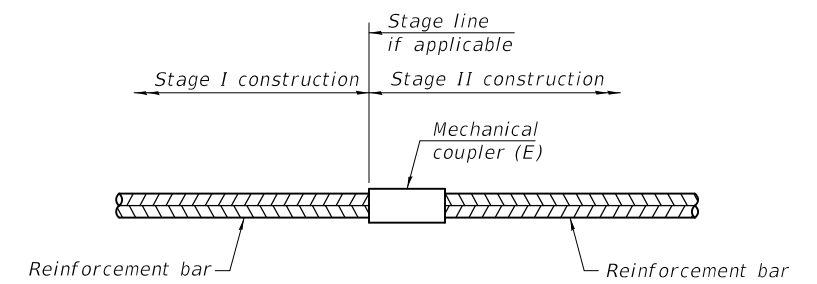


INSTALLATION AND SETTING METHODS

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

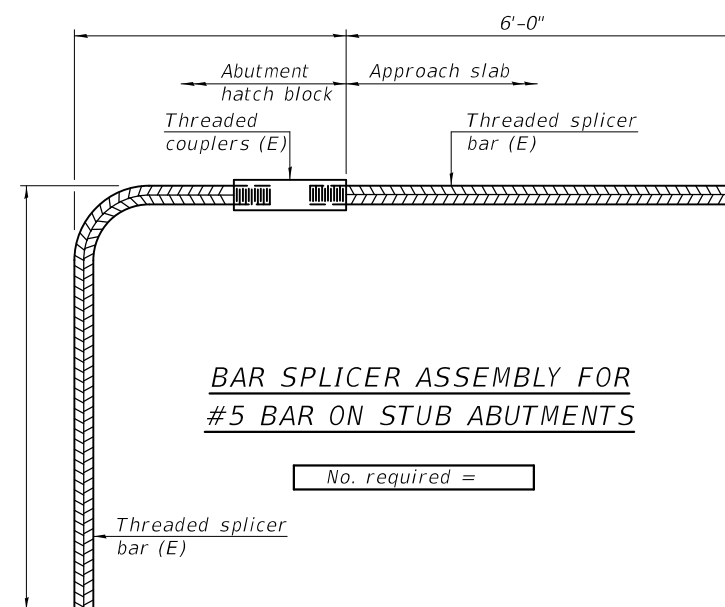
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(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

2-17-2017

DESIGNED - HSS	EXAMINED	DATE - DECEMBER 5, 2018
CHECKED - JSB	<i>Timothy A. Daburdell</i> ENGINEER OF STRUCTURAL SERVICES	REVISED -
DRAWN - daburdell	PASSED	REVISED -
CHECKED - HSS JSB	<i>Carl R. Berger</i> ENGINEER OF BRIDGES AND STRUCTURES	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 033-0012

SHEET NO. 4 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	19
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

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

Fasteners shall be high strength bolts. Bolts $\frac{3}{4}"\varnothing$, open holes $1\frac{3}{16}"\varnothing$, unless otherwise noted.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

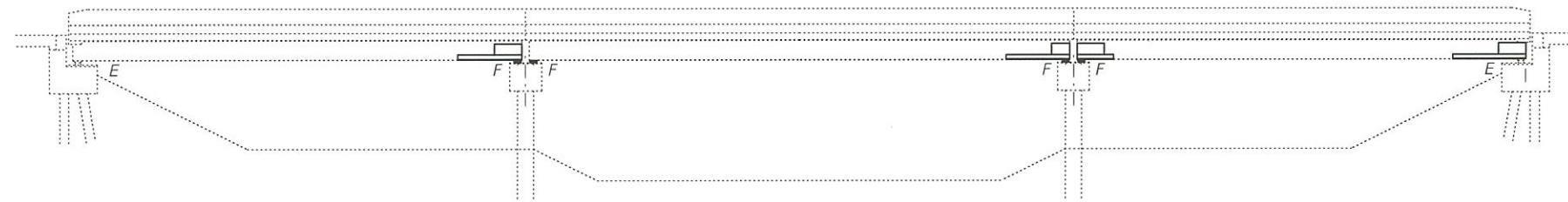
Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Furnishing and Erecting Structural Steel.

Diaphragm connection holes shall be $1\frac{3}{16}"\varnothing$ for $\frac{3}{4}"\varnothing$ bolts. Two hardened washers shall be required at diaphragm connections.

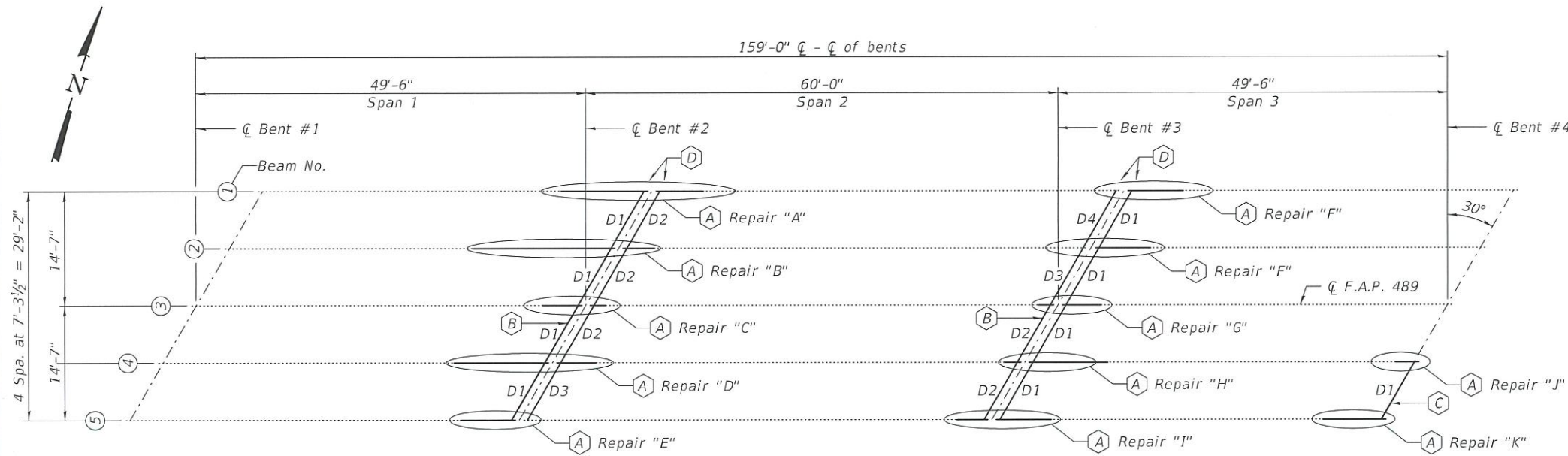
Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Furnishing and Erecting Structural Steel.

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

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



ELEVATION

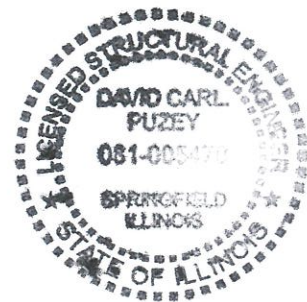


PLAN

- (A) - Beam End Repairs
- (B) - Remove and Replace all Diaphragms at Piers
- (C) - Remove and Replace Diaphragm at Abutment
- (D) - Remove and Replace all Fixed Bearings at Piers.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	7900
Structural Steel Removal	Pound	5640
Structural Steel Repair	Pound	9110
Jack and Remove Existing Bearings	Each	20
Anchor Bolts, 1"Ø	Each	80



EXPIRES 11-30-2020

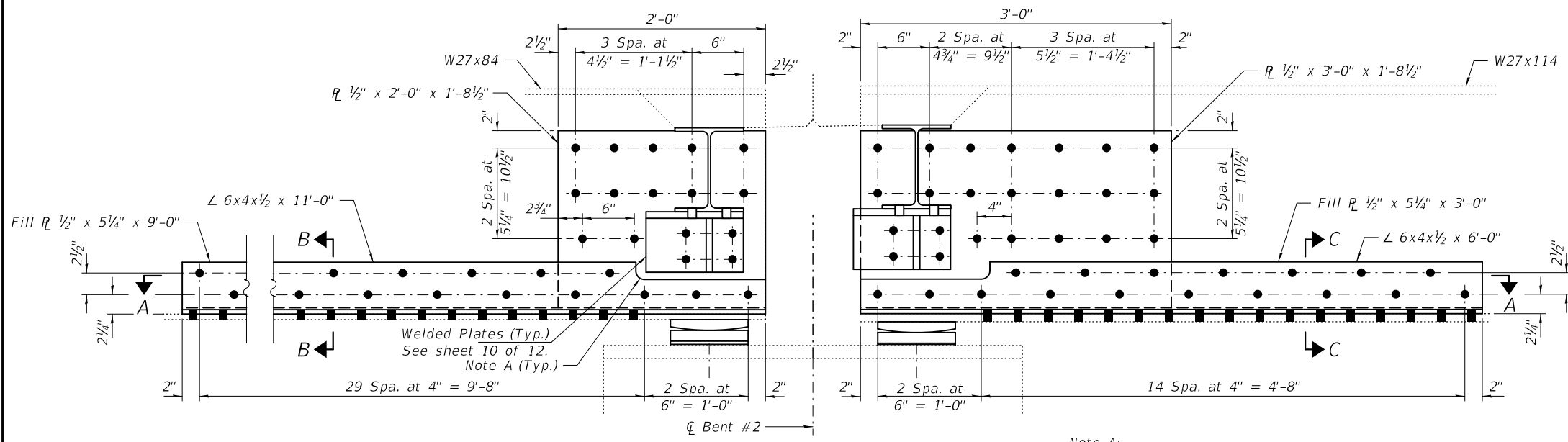
DESIGNED <i>Chris D. Kuntz</i>	EXAMINED <i>Timothy A. Ammerlaan</i>	DATE - DECEMBER 5, 2018
CHECKED <i>Flammar Salis</i>	PASSED <i>Debra K. Puzey</i>	REVISIONS
DRAWN <i>daburdell</i>		REVISIONS
CHECKED <i>CDK HSS</i>		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN AND ELEVATION
FA RTE 853
SN 033-0038**

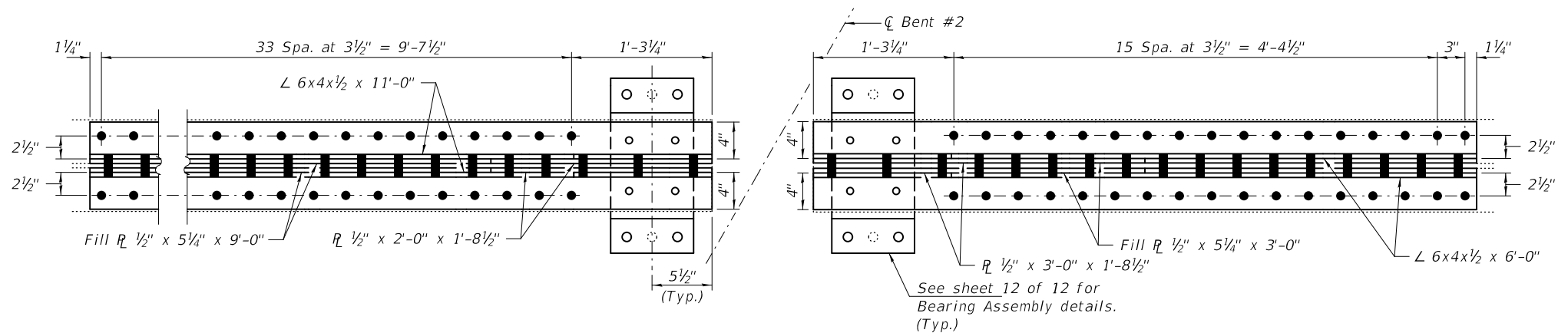
SHEET NO. 1 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	20
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

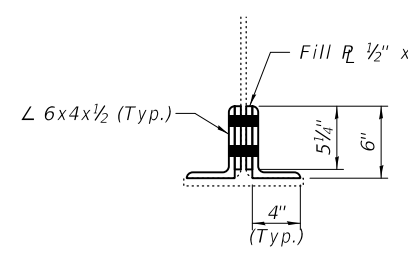


REPAIR "A"
Bent 2 - Beam 1
(Looking North)

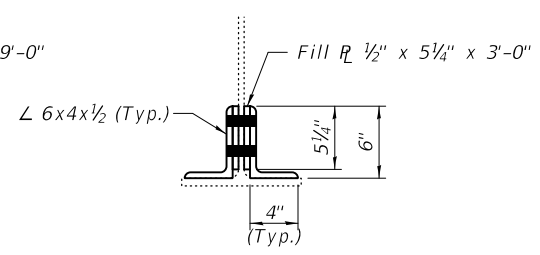
Note A:
Notch angle 2" x 1'-3" with
3/4" min. inside radius.



SECTION A-A



SECTION B-B



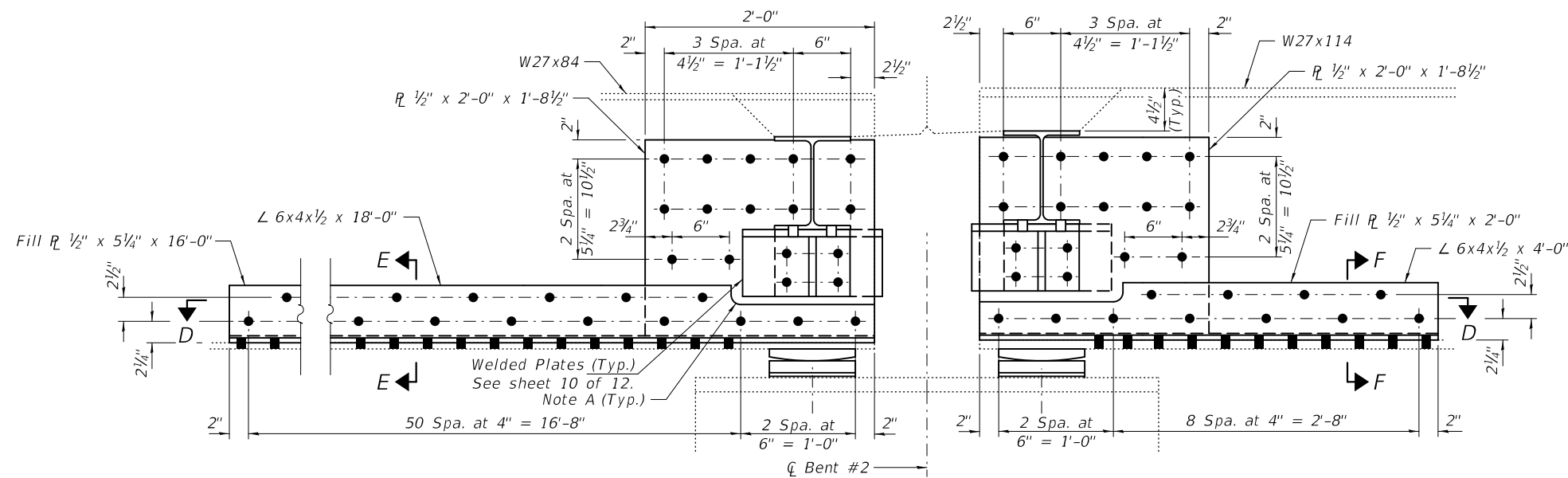
SECTION C-C

Notes:
All new diaphragms and diaphragm supporting angles to be paid for as Furnishing and Erecting Structural Steel.
All new beam end repairs and bolts not associated with diaphragm supports to be paid for as Structural Steel Repair.
Removal of existing diaphragms and support angles to be paid for Structural Steel Removal.
See sheet 10 of 12 for additional details.
See sheet 10 of 12 for diaphragm details.

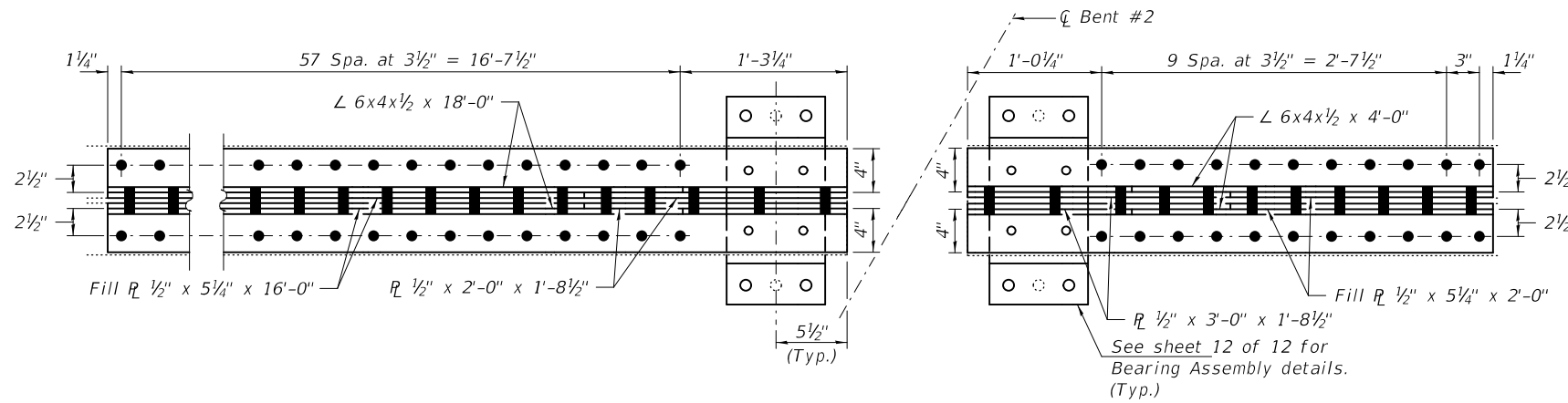
BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	5510
Structural Steel Removal	Pound	5640
Structural Steel Repair	Pound	9110

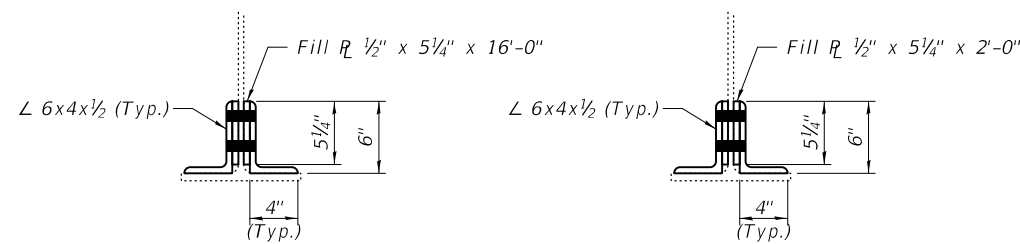
- - Use holes in new steel as template
- - Use holes in existing steel as template



REPAIR "B"
Bent 2 - Beam 2
(Looking North)



SECTION D-D



SECTION E-E

SECTION F-F

Note A:
Notch angle 2" x 1'-3" with
3/4" min. inside radius.

Notes:
All new diaphragms and diaphragm supporting angles to be paid for as Furnishing and Erecting Structural Steel.
All new beam end repairs and bolts not associated with diaphragm supports to be paid for as Structural Steel Repair.
Removal of existing diaphragms and support angles to be paid for Structural Steel Removal.
See sheet 10 of 12 for additional details.
See sheet 10 of 12 for diaphragm details.
See sheet 2 of 12 for Bill of Material.

- - Use holes in new steel as template
- - Use holes in existing steel as template

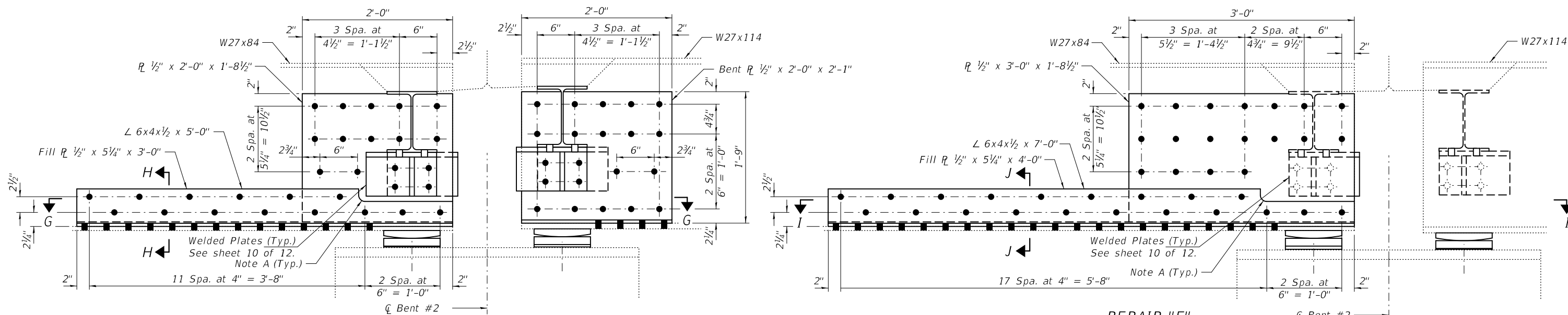
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daburdell</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018
CHECKED - HSS	PASSED - <i>Carl R. HSS</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
DRAWN - <i>daburdell</i>		REVISED -
CHECKED - CDK HSS		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REPAIR DETAILS
SN 033-0038

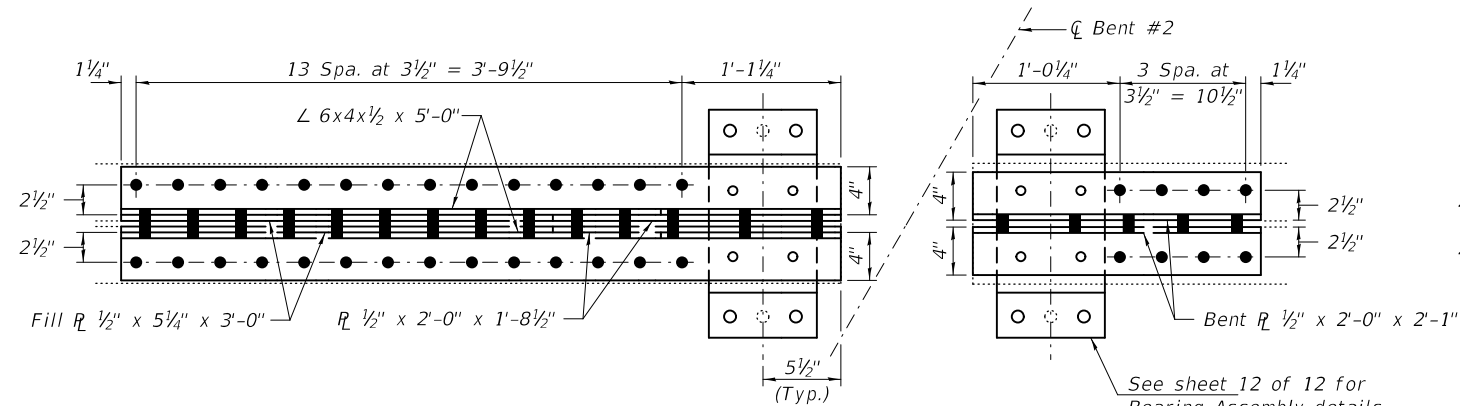
SHEET NO. 3 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	22
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

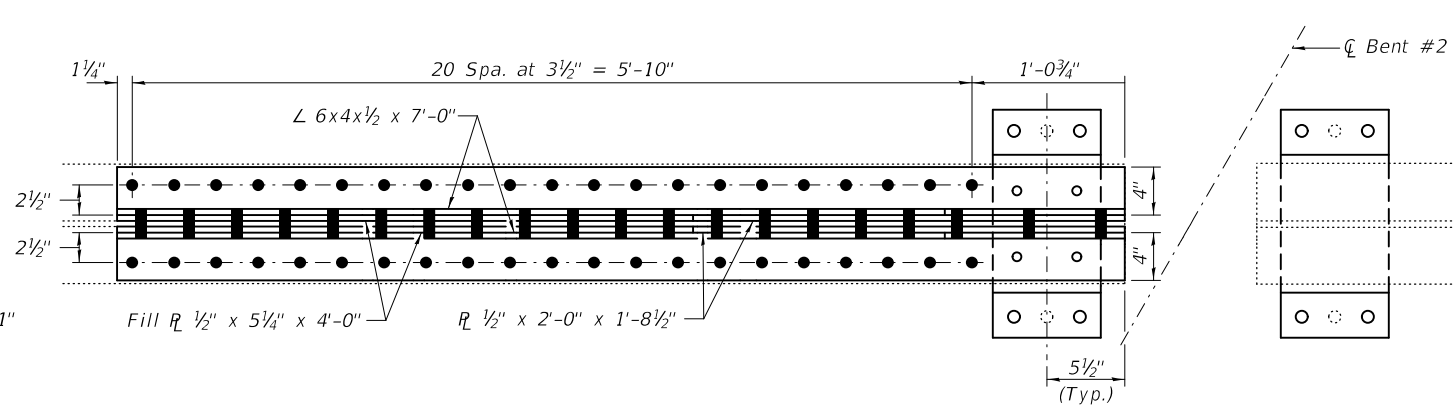


REPAIR "C"
Bent 2 - Beam 3
(Looking North)

REPAIR "E"
Bent 2 - Beam 5
(Looking North)

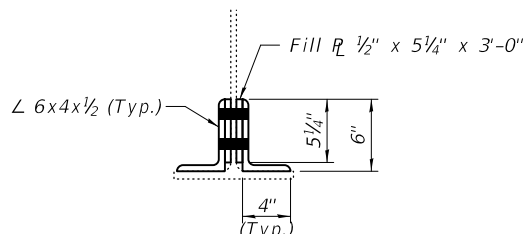


SECTION G-G

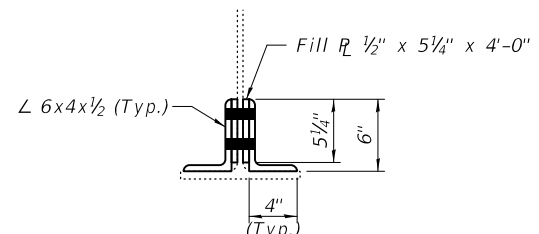


SECTION I-I

Note A:
Notch angle 2" x 1'-3" with
3/4" min. inside radius.



SECTION H-H



SECTION J-J

Notes:
All new diaphragms and diaphragm supporting angles to be paid for as Furnishing and Erecting Structural Steel.
All new beam end repairs and bolts not associated with diaphragm supports to be paid for as Structural Steel Repair.
Removal of existing diaphragms and support angles to be paid for Structural Steel Removal.
See sheet 10 of 12 for additional details.
See sheet 10 of 12 for diaphragm details.
See sheet 2 of 12 for Bill of Material.

- - Use holes in new steel as template
- - Use holes in existing steel as template

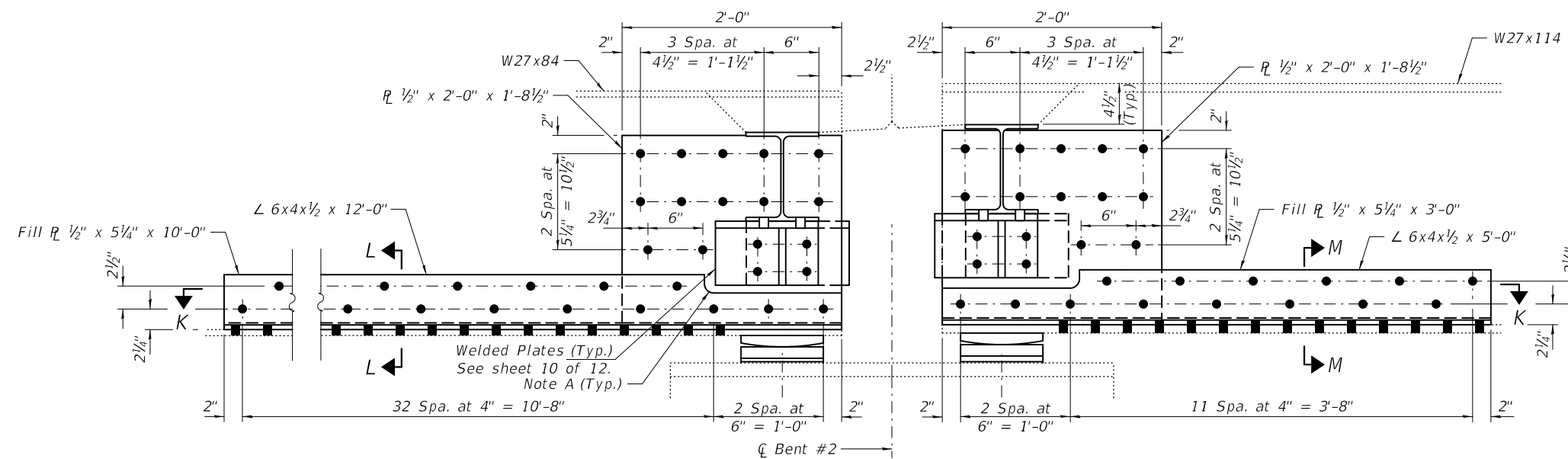
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daburdell</i>	DATE - DECEMBER 5, 2018
CHECKED - HSS	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - <i>daburdell</i>	PASSED - <i>Carl R. Hoyer</i>	REVISED -
CHECKED - CDK HSS	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

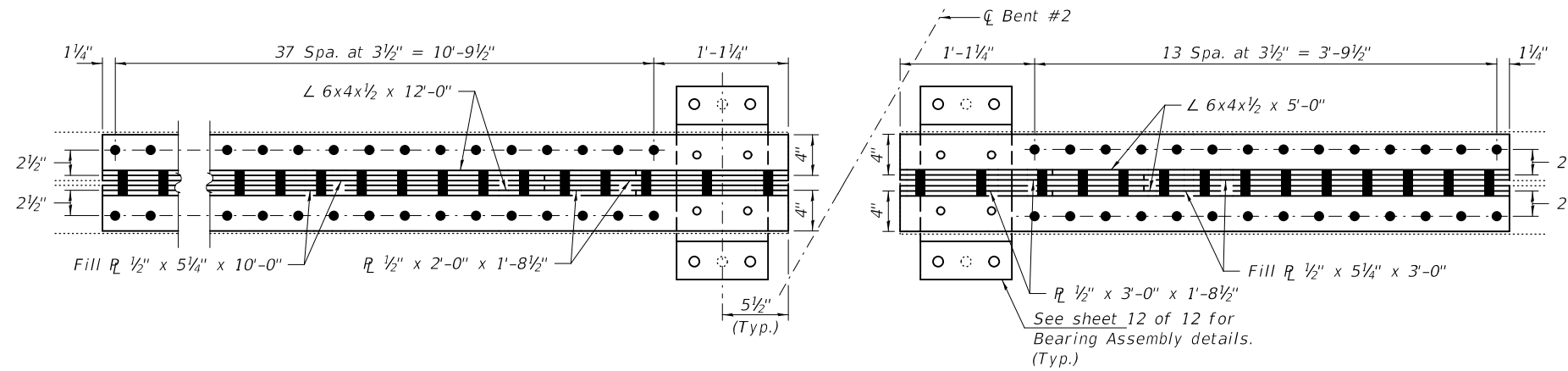
REPAIR DETAILS
SN 033-0038

SHEET NO. 4 OF 12 SHEETS

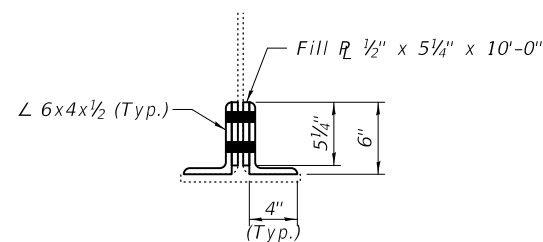
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	23
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



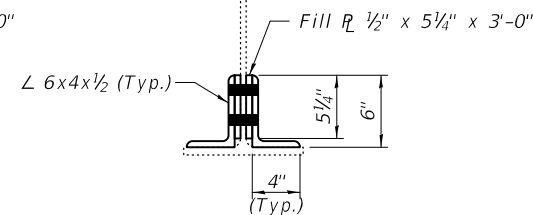
REPAIR "D"
Bent 2 - Beam 4
(Looking North)



SECTION K-K



SECTION L-L



SECTION M-M

Note A:
Notch angle 2" x 1'-3" with
3/4" min. inside radius.

- - Use holes in new steel as template
- - Use holes in existing steel as template

Notes:
All new diaphragms and diaphragm supporting angles to be paid for as Furnishing and Erecting Structural Steel.
All new beam end repairs and bolts not associated with diaphragm supports to be paid for as Structural Steel Repair.
Removal of existing diaphragms and support angles to be paid for Structural Steel Removal.
See sheet 10 of 12 for additional details.
See sheet 10 of 12 for diaphragm details.
See sheet 2 of 12 for Bill of Material.

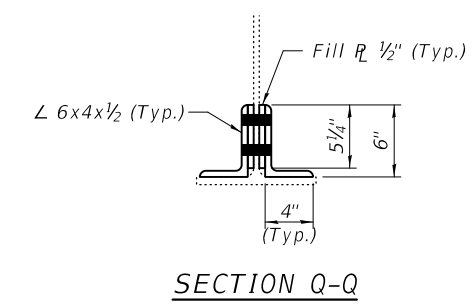
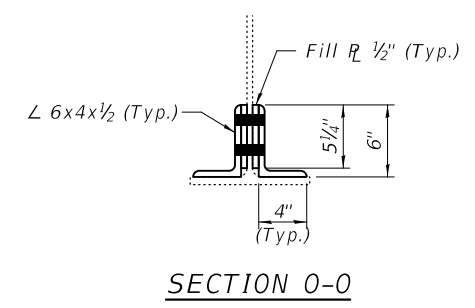
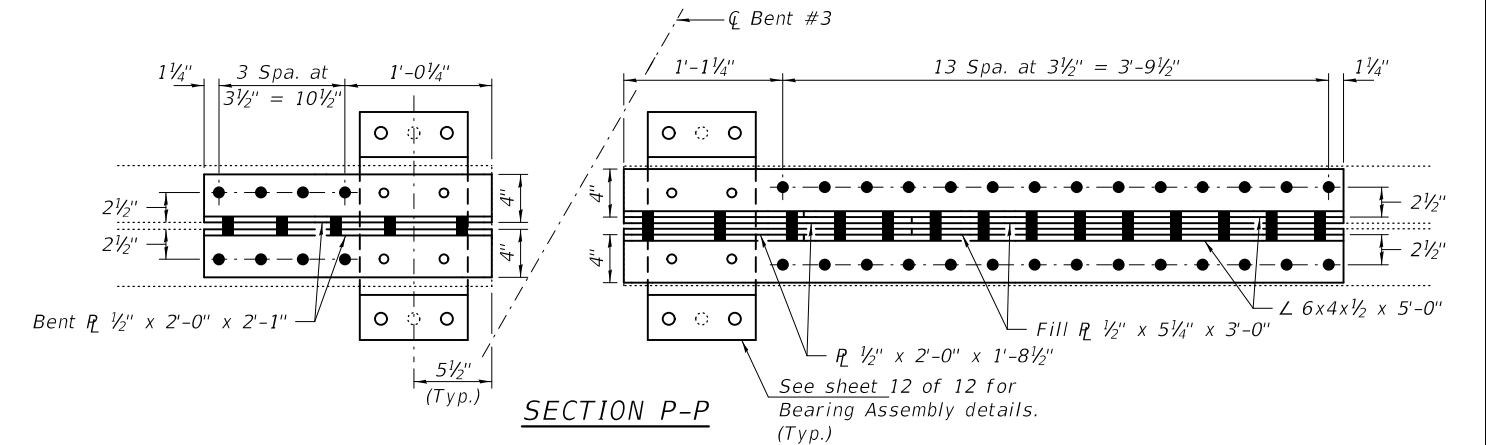
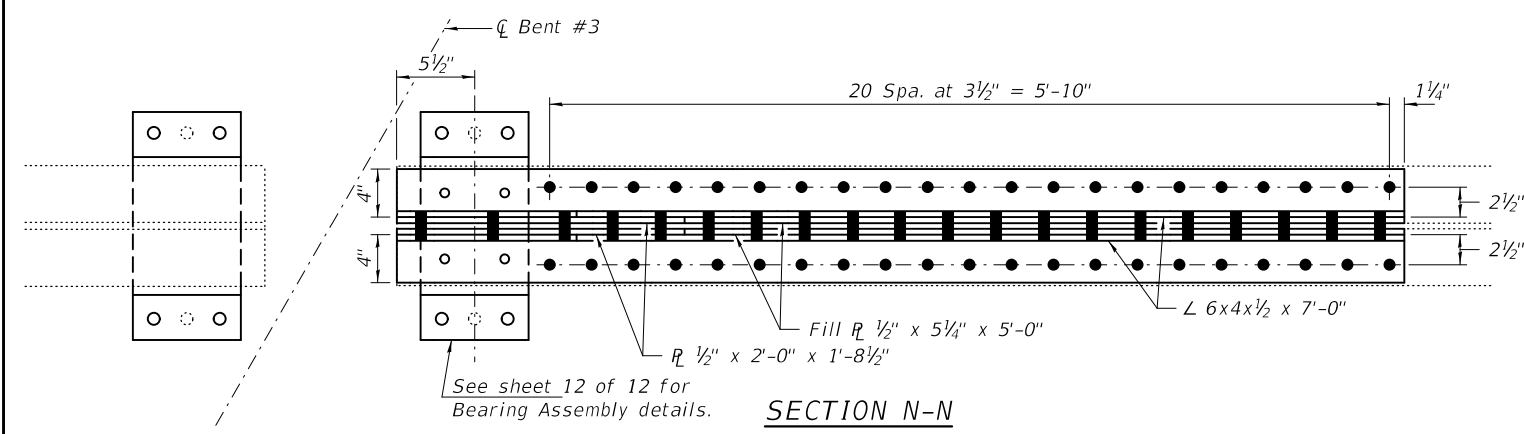
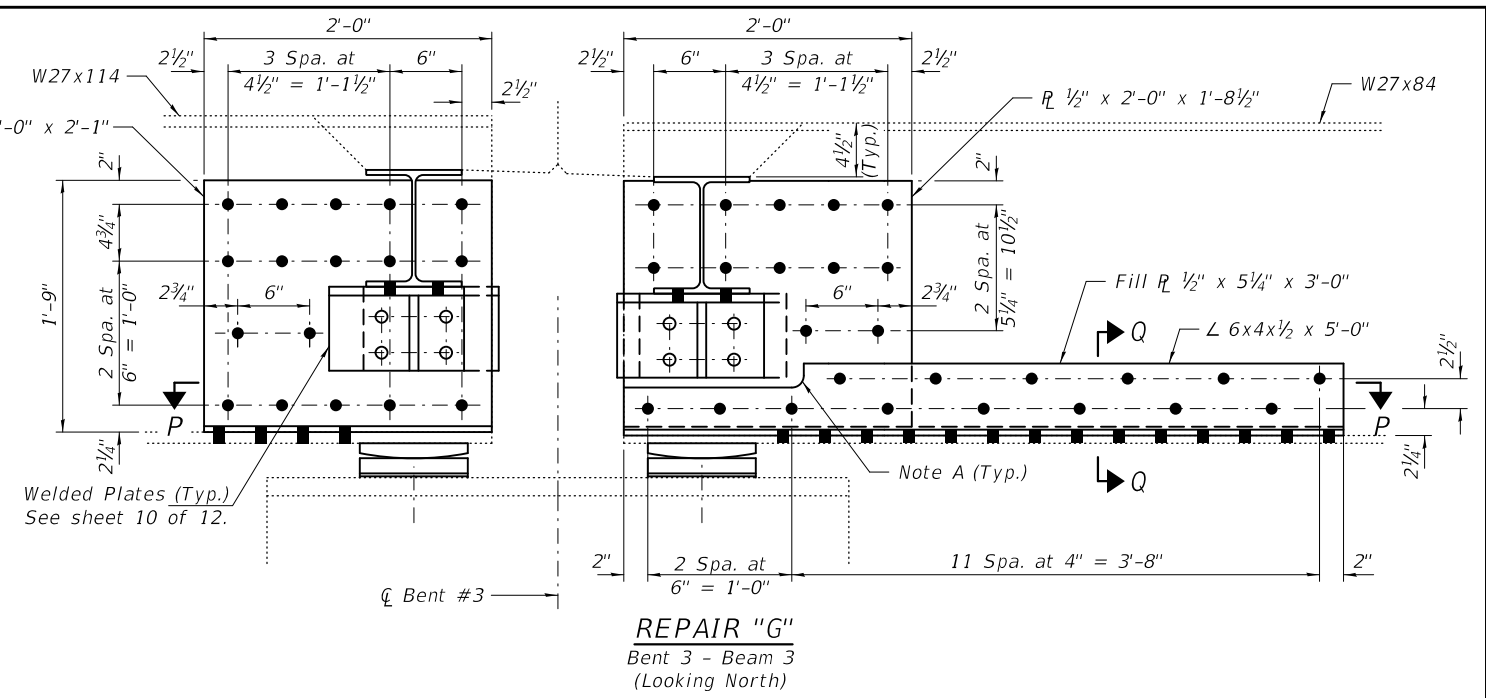
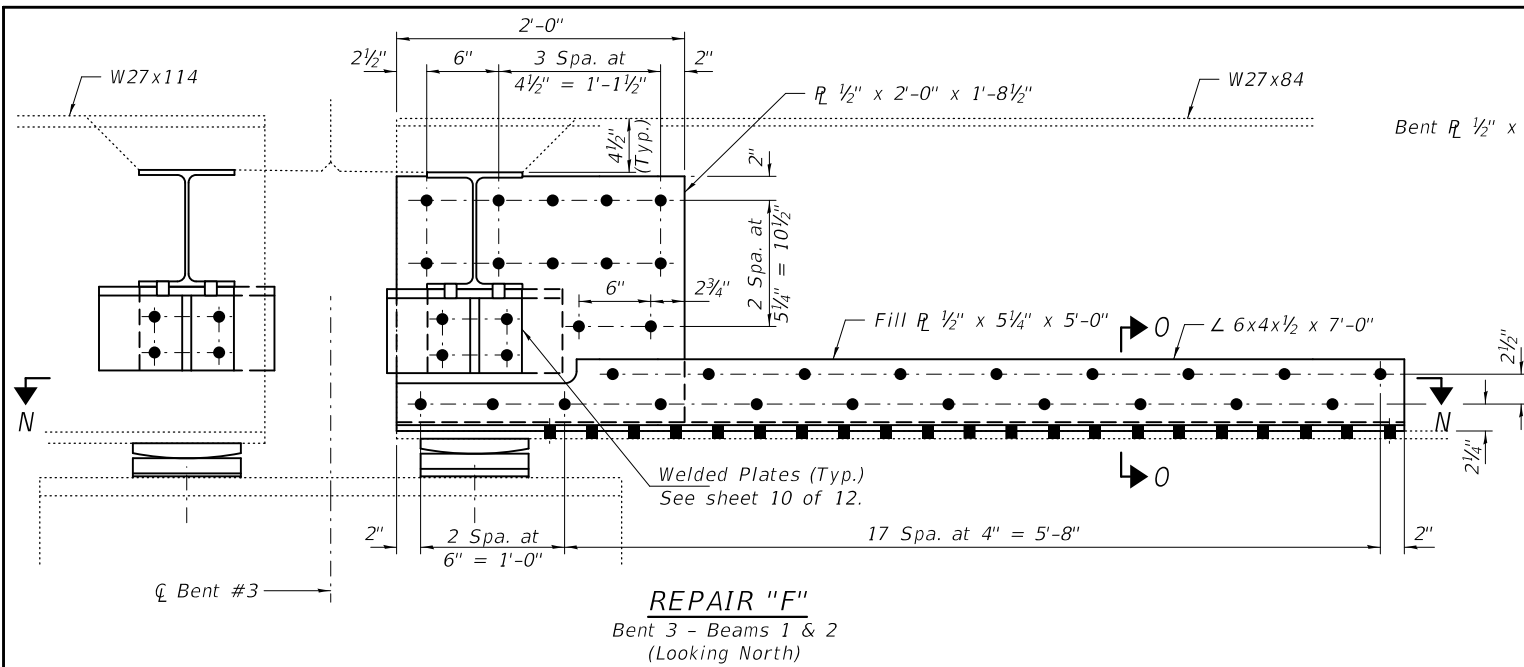
DESIGNED - CDK	EXAMINED	DATE - DECEMBER 5, 2018
CHECKED - HSS	<i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES	REVISED -
DRAWN - daburdell	PASSED	REVISED -
CHECKED - CDK HSS	<i>Carl R. Roper</i> ENGINEER OF BRIDGES AND STRUCTURES	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REPAIR DETAILS
SN 033-0038

SHEET NO. 5 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	24
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



Note A:
Notch angle 2" x 1'-3" with
3/4" min. inside radius.

- - Use holes in new steel as template
- - Use holes in existing steel as template

Notes:
All new diaphragms and diaphragm supporting angles to be paid for as Furnishing and Erecting Structural Steel.
All new beam end repairs and bolts not associated with diaphragm supports to be paid for as Structural Steel Repair.
Removal of existing diaphragms and support angles to be paid for Structural Steel Removal.
See sheet 10 of 12 for additional details.
See sheet 10 of 12 for diaphragm details.
See sheet 2 of 12 for Bill of Material.

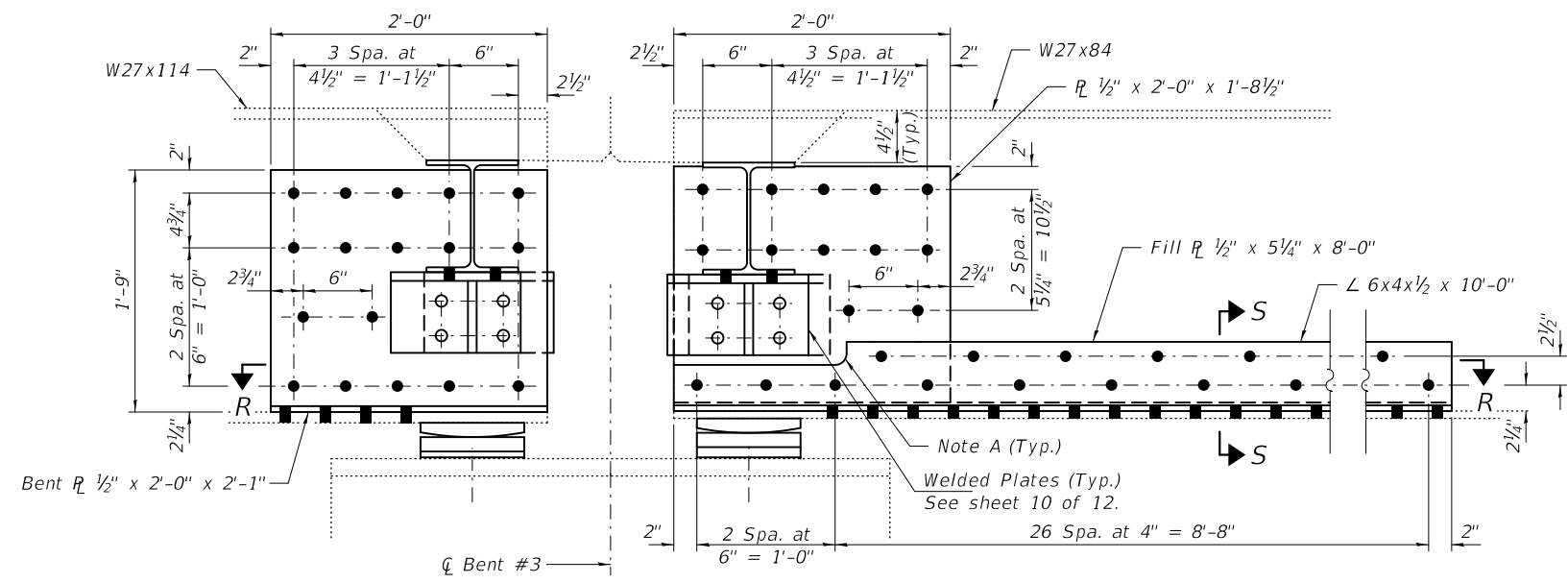
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daburdell</i>	DATE - DECEMBER 5, 2018
CHECKED - HSS	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - <i>daburdell</i>	PASSED - <i>Carl Ringer</i>	REVISED -
CHECKED - CDK HSS	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

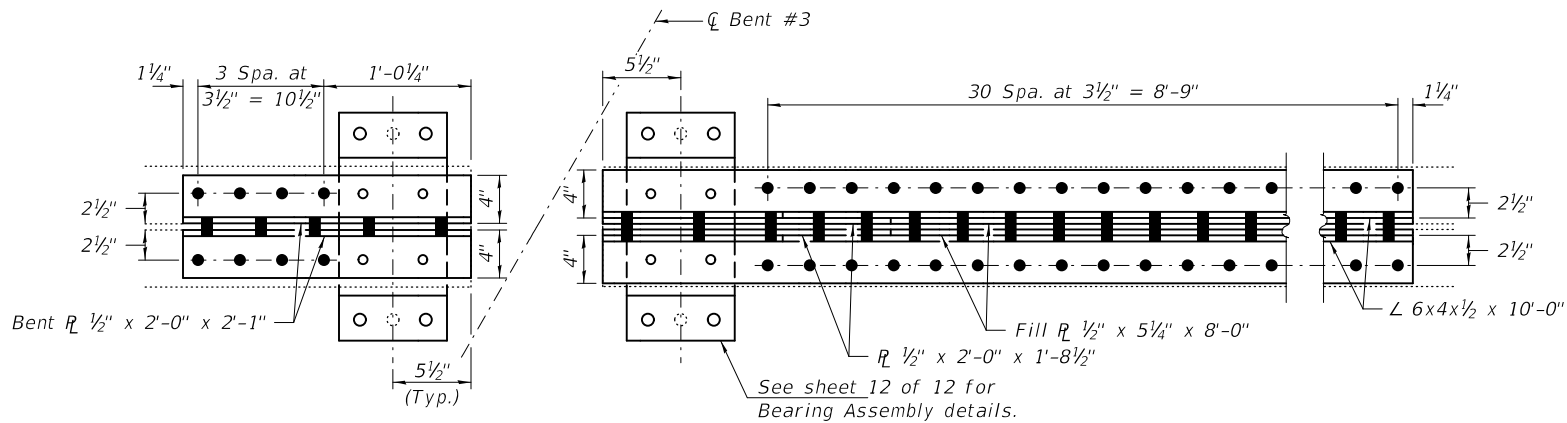
REPAIR DETAILS
SN 033-0038

SHEET NO. 6 OF 12 SHEETS

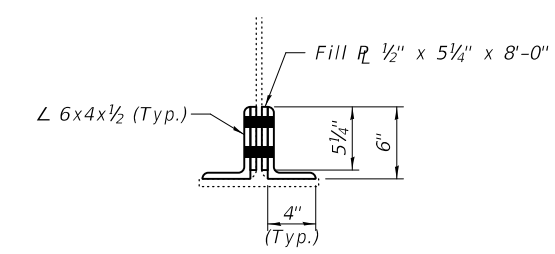
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	25
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



REPAIR "H"
Bent 3 - Beam 4
(Looking North)



SECTION R-R



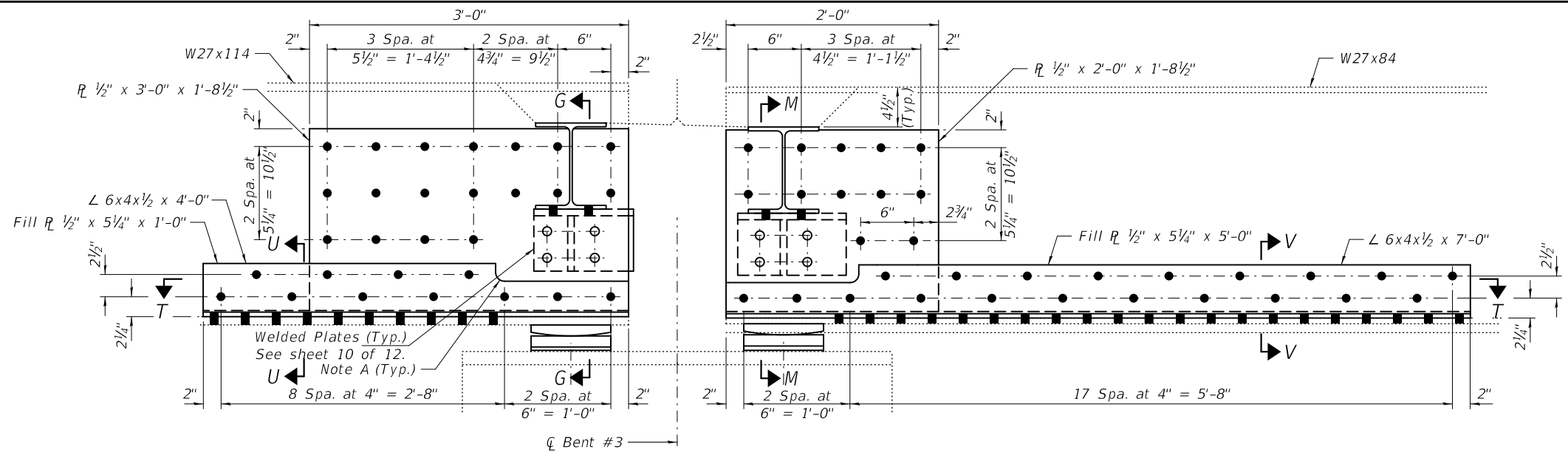
SECTION S-S

Note A:
Notch angle 2" x 1'-3" with
3/4" min. inside radius.

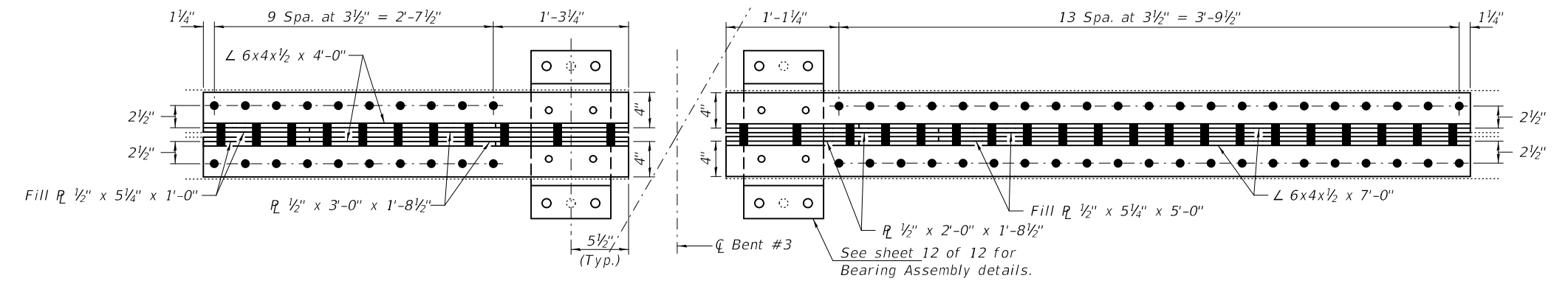
Notes:
All new diaphragms and diaphragm supporting angles to be paid for as Furnishing and Erecting Structural Steel.
All new beam end repairs and bolts not associated with diaphragm supports to be paid for as Structural Steel Repair.
Removal of existing diaphragms and support angles to be paid for Structural Steel Removal.
See sheet 11 of 12 for additional details.
See sheet 10 of 12 for diaphragm details.
See sheet 2 of 12 for Bill of Material.

- - Use holes in new steel as template
- - Use holes in existing steel as template

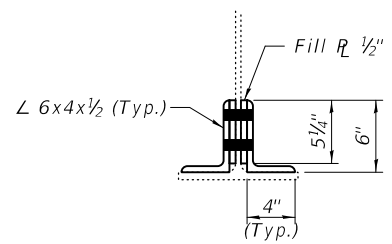
DESIGNED - CDK	EXAMINED - <i>Timothy A. Doolittle</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REPAIR DETAILS SN 033-0038	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - HSS	PASSED - <i>Carl Ringer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -			853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	26
DRAWN - daburdell		REVISED -	SHEET NO. 7 OF 12 SHEETS		ILLINOIS FED. AID PROJECT				
CHECKED - CDK HSS									



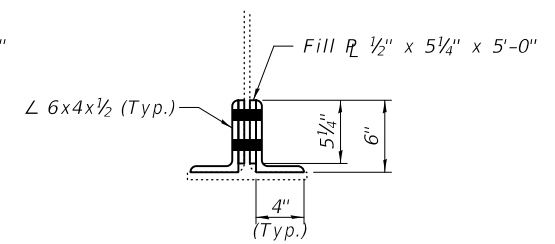
REPAIR "I"
Bent 3 - Beam 5
(Looking North)



SECTION T-T



SECTION U-U



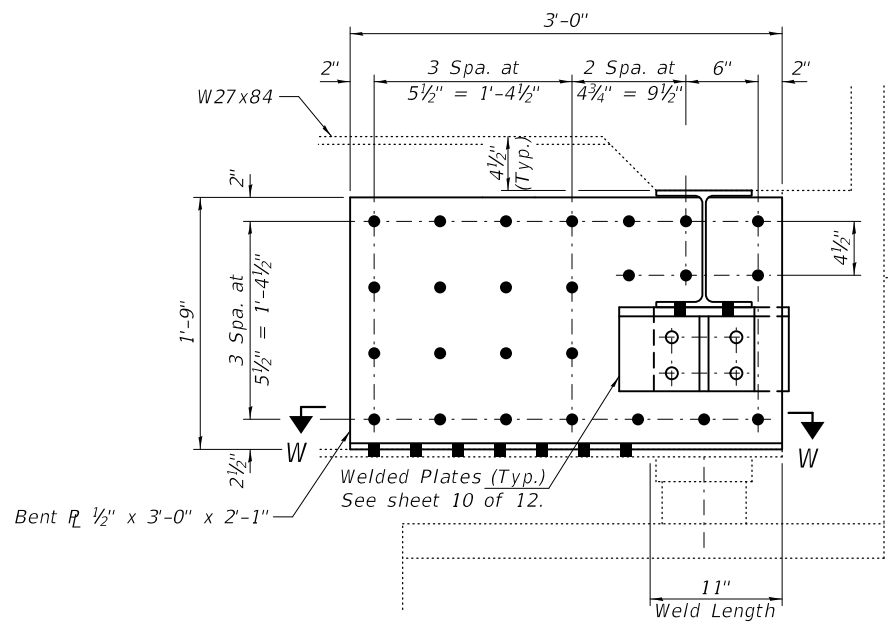
SECTION V-V

Note A:
Notch angle 2" x 1'-3" with
3/4" min. inside radius.

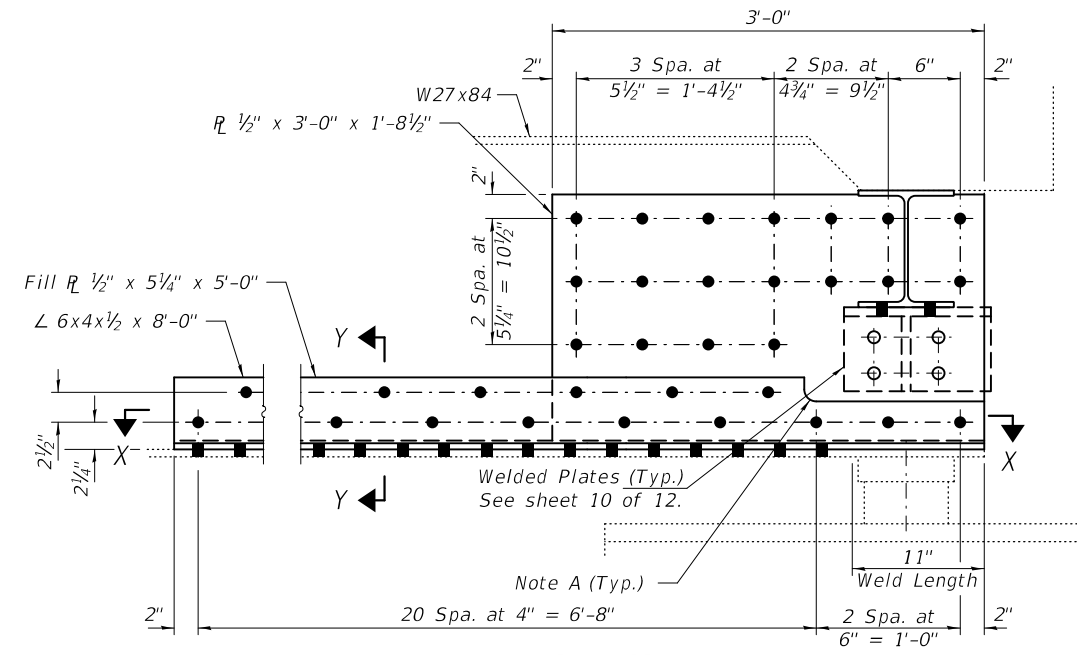
Notes:
All new diaphragms and diaphragm supporting angles to be paid for as Furnishing and Erecting Structural Steel.
All new beam end repairs and bolts not associated with diaphragm supports to be paid for as Structural Steel Repair.
Removal of existing diaphragms and support angles to be paid for Structural Steel Removal.
See sheet 11 of 12 for additional details.
See sheet 10 of 12 for diaphragm details.
See sheet 2 of 12 for Bill of Material.

- - Use holes in new steel as template
- - Use holes in existing steel as template

DESIGNED - CDK	EXAMINED - <i>Timothy A. Daburdell</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REPAIR DETAILS SN 033-0038	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - HSS	PASSED - <i>Carl Ringer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -			853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	27
DRAWN - <i>daburdell</i>		REVISED -	SHEET NO. 8 OF 12 SHEETS		ILLINOIS FED. AID PROJECT				
CHECKED - CDK HSS									

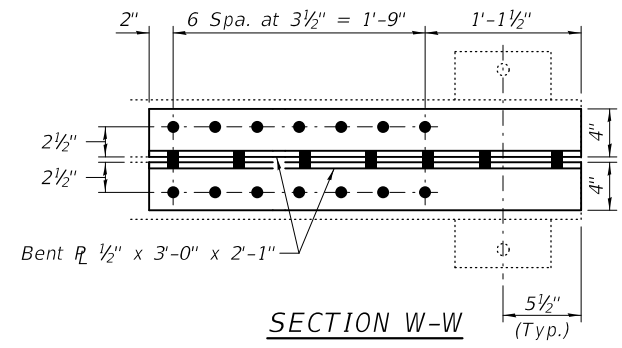


REPAIR "J"
(Beam 4)

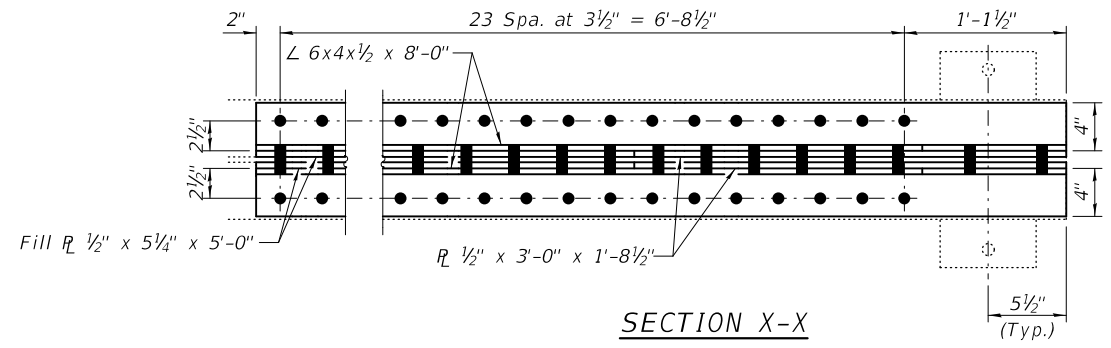


REPAIR "K"
(Beam 5)

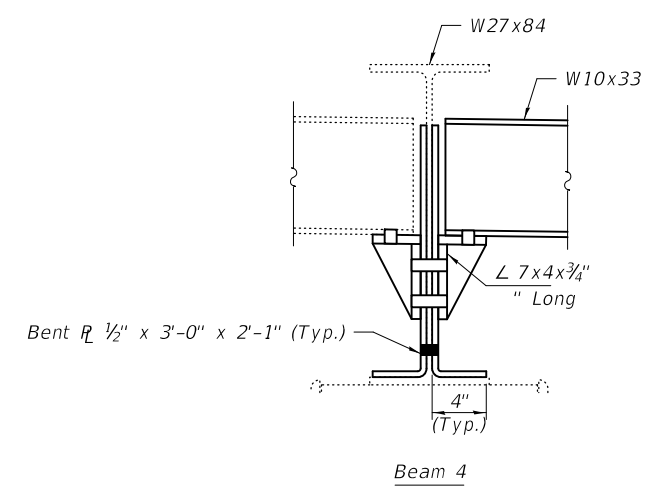
Note A:
Notch angle x 1'-3" with
3/4" min. inside radius.



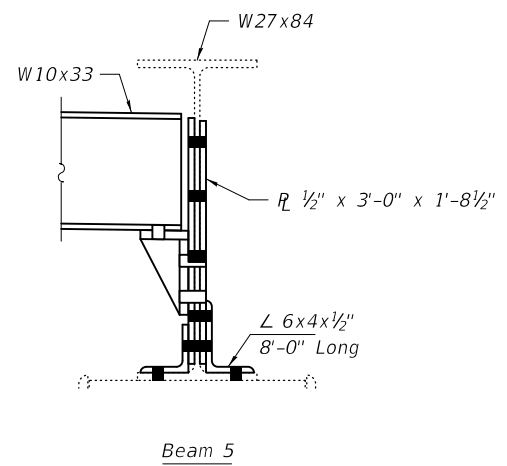
SECTION W-W
(Typ.)



SECTION X-X
(Typ.)

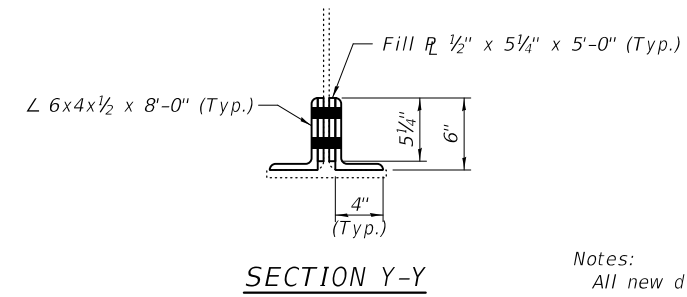


Beam 4



Beam 5

CROSS SECTION AT BENT #4
(Looking East)

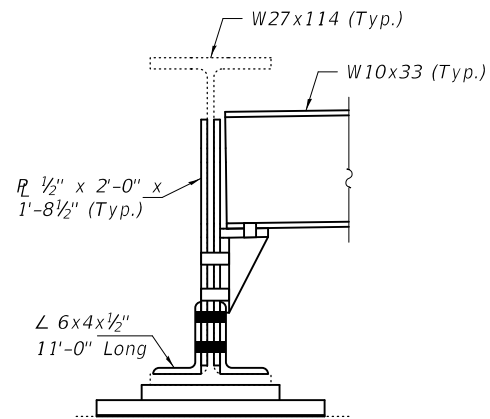


SECTION Y-Y

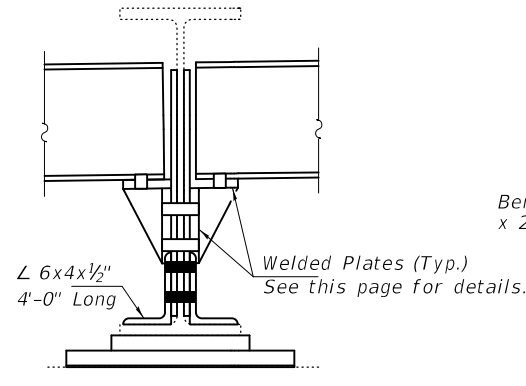
Notes:
All new diaphragms and diaphragm supporting angles to be paid for as Furnishing and Erecting Structural Steel.
All new beam end repairs and bolts not associated with diaphragm supports to be paid for as Structural Steel Repair.
Removal of existing diaphragms and support angles to be paid for Structural Steel Removal.
See sheet 11 of 12 for additional details.
See sheet 10 of 12 for diaphragm details.
See sheet 2 of 12 for Bill of Material.

- - Use holes in new steel as template
- - Use holes in existing steel as template

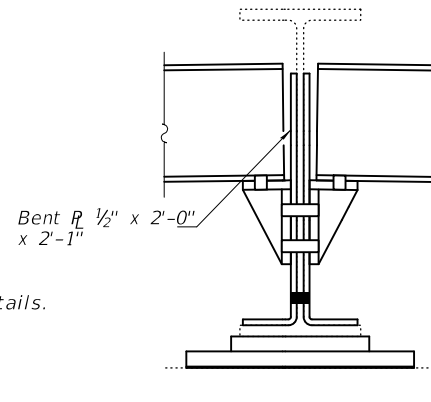
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daburdell</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REPAIR DETAILS SN 033-0038	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
CHECKED - HSS	PASSED - <i>Carl R. Ringer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -			853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	28	
DRAWN - <i>daburdell</i>		REVISED -			CONTRACT NO. 78650					
CHECKED - CDK HSS					ILLINOIS FED. AID PROJECT					



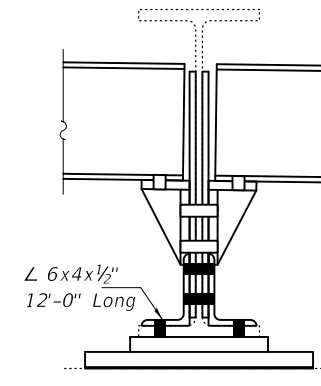
Beam 1



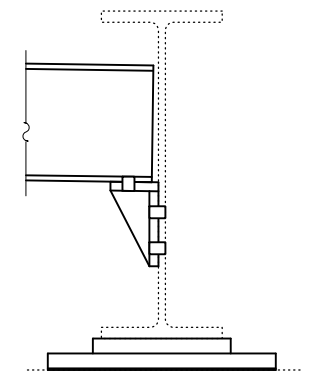
Beam 2



Beam 3

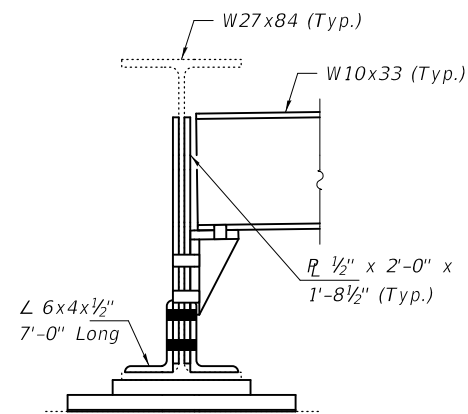


Beam 4

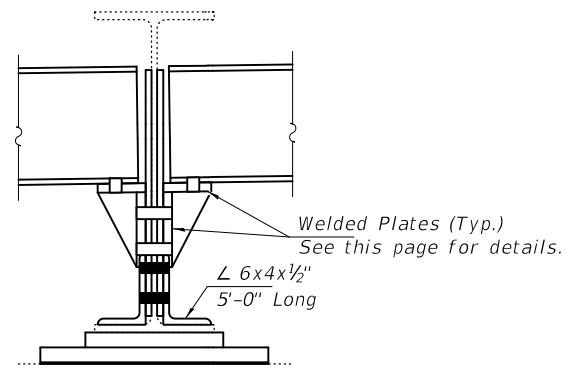


Beam 5

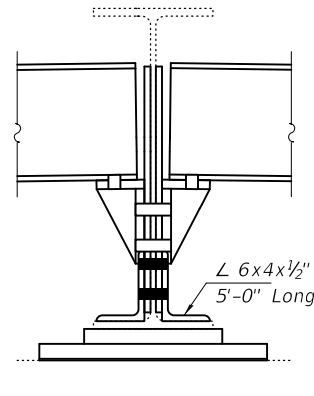
CROSS SECTION AT BENT #2
(Looking East)



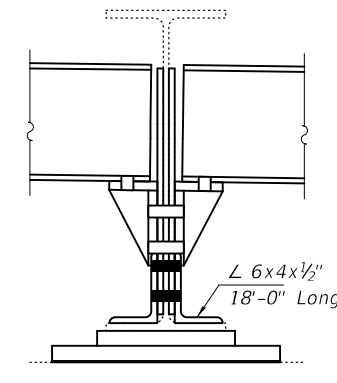
Beam 5



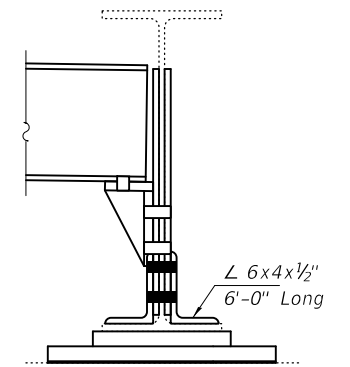
Beam 4



Beam 3

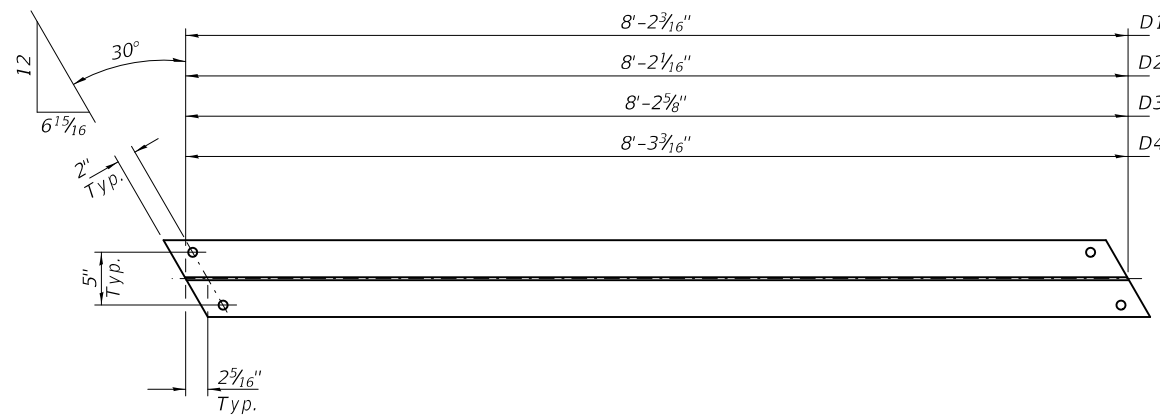


Beam 2

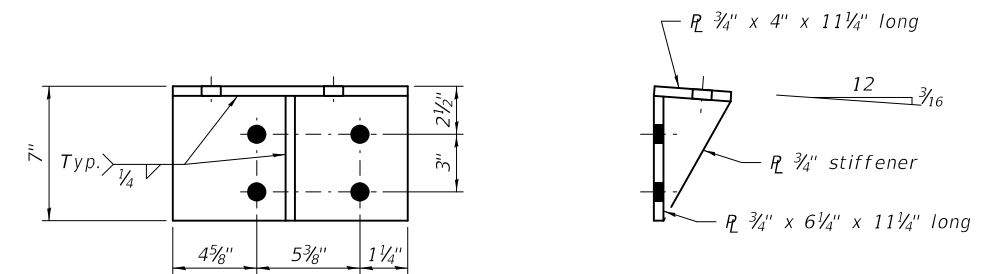
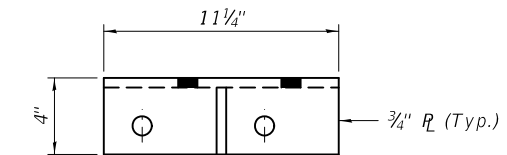


Beam 1

CROSS SECTION AT BENT #2
(Looking West)



DIAPHRAGMS
(See sheet 1 of 12 for locations.)



WELDED PLATES

DESIGNED - CDK
CHECKED - HSS
DRAWN - daburdell
CHECKED - CDK HSS

EXAMINED
PASSED
ENGINEER OF STRUCTURAL SERVICES
ENGINEER OF BRIDGES AND STRUCTURES

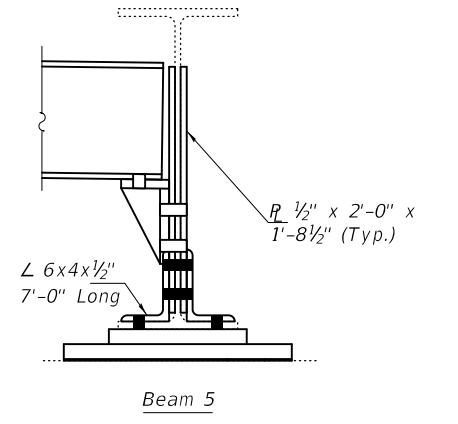
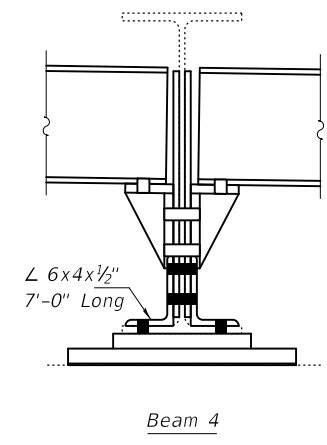
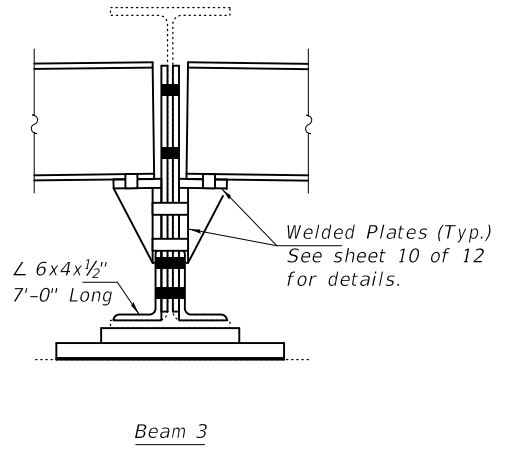
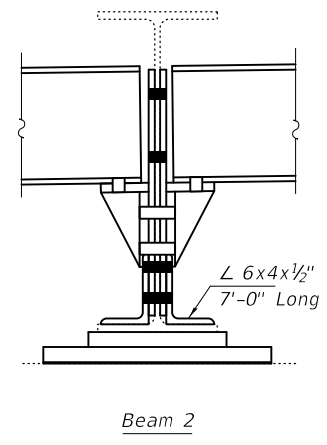
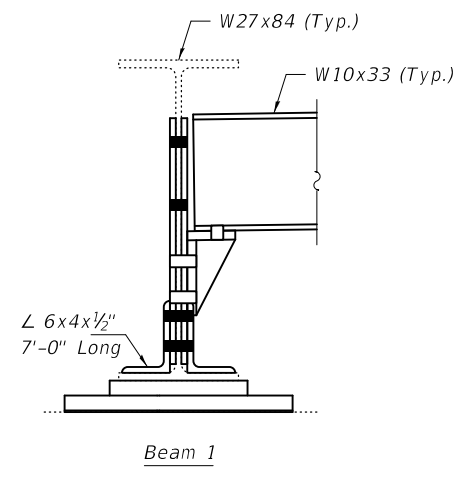
DATE - DECEMBER 5, 2018
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

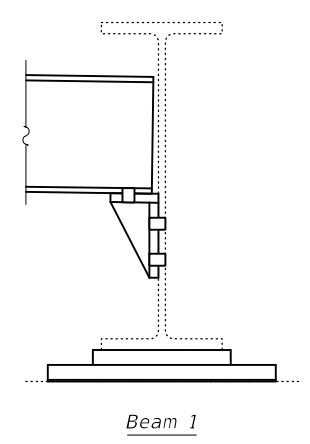
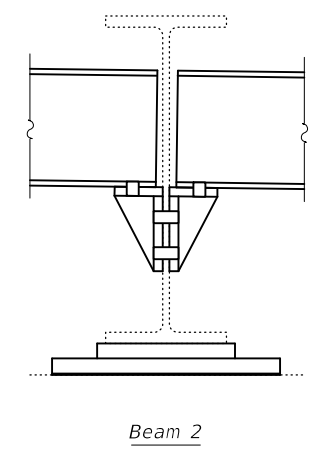
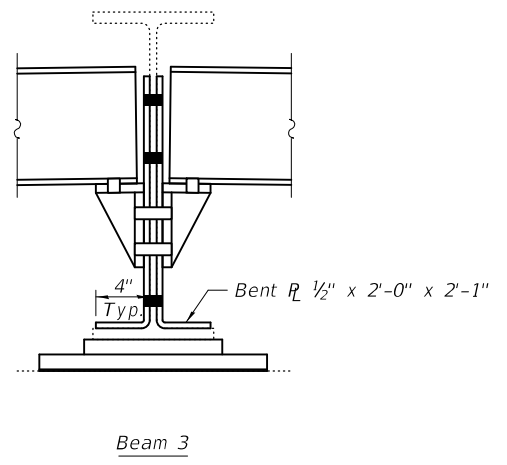
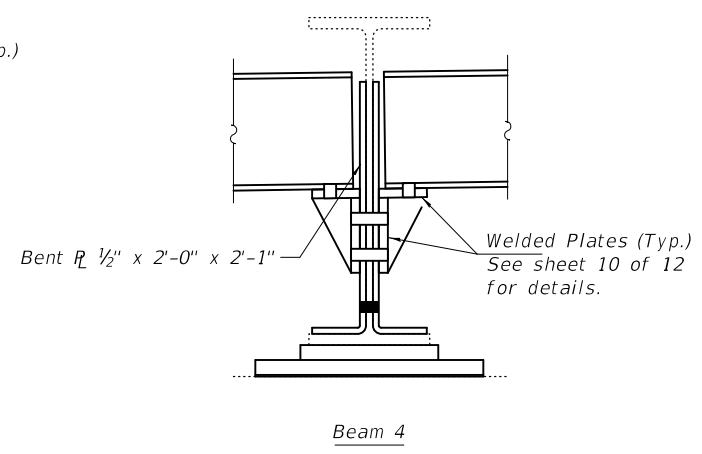
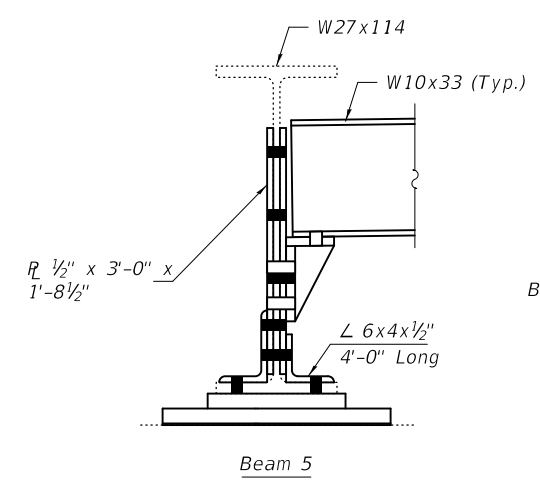
REPAIR DETAILS
SN 033-0038

SHEET NO. 10 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	29
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



CROSS SECTION AT BENT #3
(Looking East)



CROSS SECTION AT BENT #3
(Looking West)

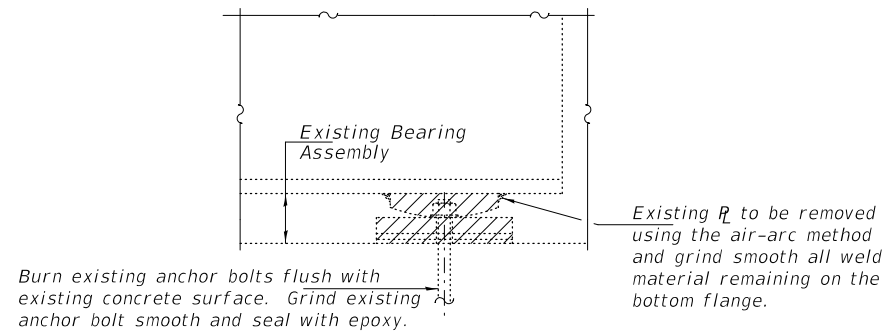
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daburdell</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018
CHECKED - HSS	PASSED - <i>Carl R. Hoyer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
DRAWN - <i>daburdell</i>		REVISED -
CHECKED - CDK HSS		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REPAIR DETAILS
SN 033-0038

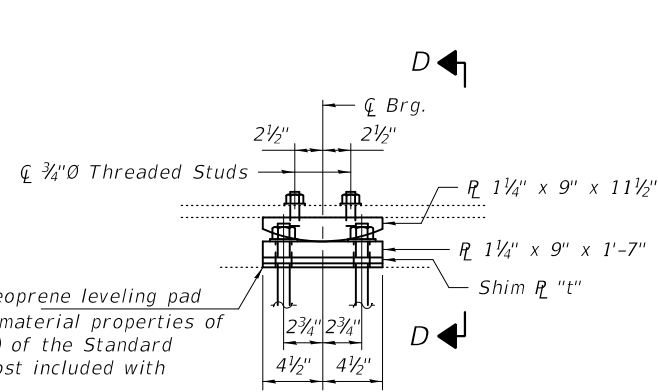
SHEET NO. 11 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	30
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

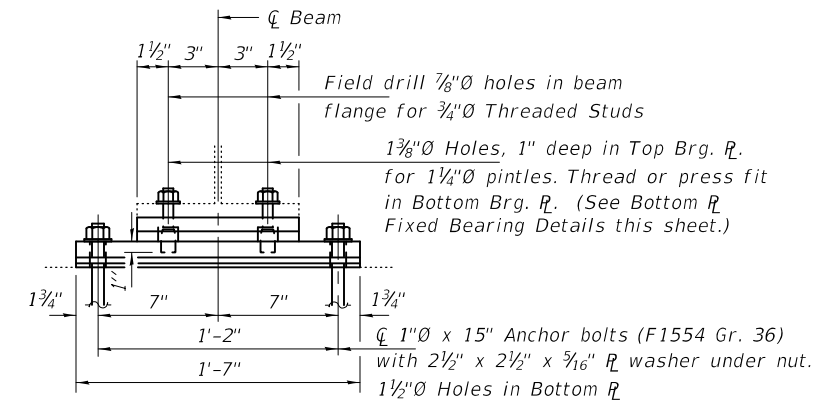


EXISTING BEARING REMOVAL DETAIL
Cost included with Jack and Remove Existing Bearings.

1/8" elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Structural Steel.

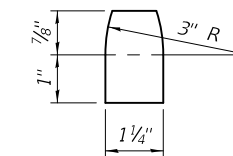


ELEVATION AT PIER



SECTION D-D

FIXED BEARINGS PIER



PINTLE

Bent	Span	Beam	Shim "t"
2	1	1	3/8"
		2	3/8"
		3	1/2"
		4	3/8"
		5	1/2"
2	2	1	1/4"
		2	3/8"
		3	3/8"
		4	5/8"
		5	1/8"

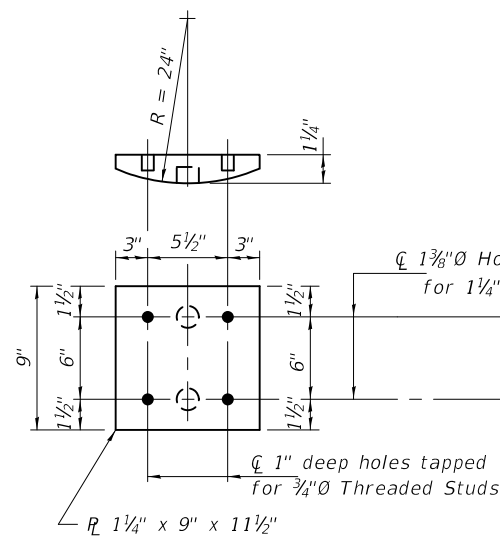
SPANS 1 & 3 BEAM REACTIONS

R _∅	(K)	24.1
R _L	(K)	38.8
Imp.	(K)	11.7
R (Total)	(K)	74.6

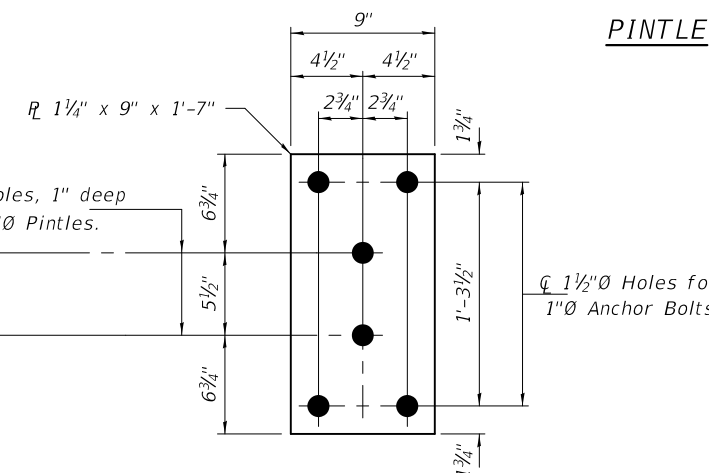
Bent	Span	Beam	Shim "t"
3	2	1	1/8"
		2	3/8"
		3	1/4"
		4	1/2"
		5	3/8"
3	3	1	3/8"
		2	5/8"
		3	1/4"
		4	1/8"
		5	1/2"

SPAN 2 BEAM REACTIONS

R _∅	(K)	40.0
R _L	(K)	40.3
Imp.	(K)	12.1
R (Total)	(K)	92.4



PLAN - TOP PLATE FIXED BEARINGS



PLAN - BOTTOM PLATE FIXED BEARINGS

Notes:

Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

New shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).

Min. jack capacity = 40 Tons for spans 1 & 3. Min. jack capacity = 50 Tons for span 2.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	2390
Jack and Remove Existing Bearings	Each	20
Anchor Bolts, 1"∅	Each	80

DESIGNED - CDK
CHECKED - HSS
DRAWN - daburdell
CHECKED - CDK HSS

EXAMINED
PASSED
Timothy A. Daburdell
ENGINEER OF STRUCTURAL SERVICES
Carl R. HSS
ENGINEER OF BRIDGES AND STRUCTURES

DATE - DECEMBER 5, 2018
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
SN 033-0038

SHEET NO. 12 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
853	D9 BRIDGE REPAIR 2019-4	HAMILTON	61	31
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

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

Reinforcement bars designated (E) shall be epoxy coated.

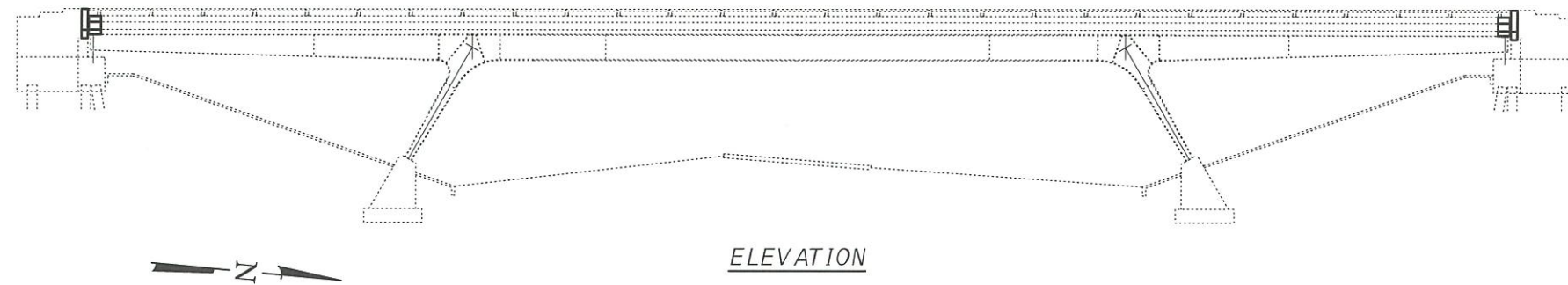
Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

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

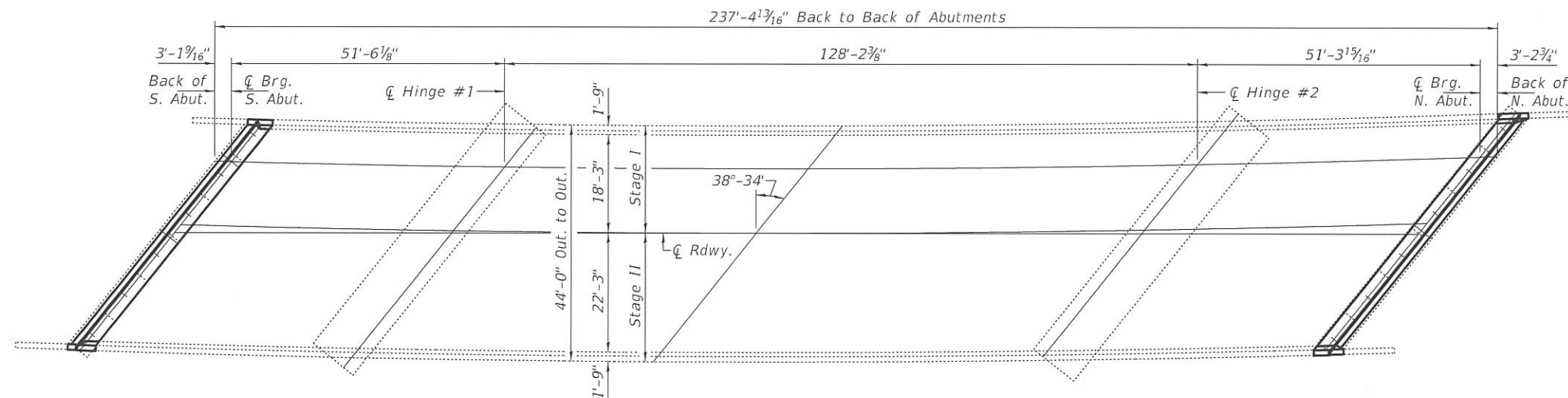
Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.

The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.

New bearing plates, steel extensions, shim plates, side retainers, anchor bolts, connection bolts, nuts and washers shall be hot dip galvanized according to Special Provision "Hot Dip Galvanizing for Structural Steel".



ELEVATION



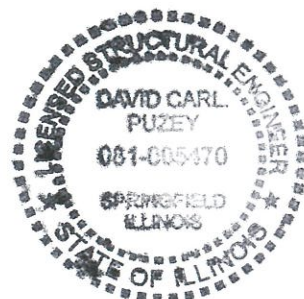
PLAN

- (A) - Remove & Replace Expansion Joints at Abutments
- (B) - Remove & Replace Bearings at Abutments
- (C) - Deck Patching (See sheet 9 of 9.)

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	20.5
Concrete Superstructure	Cu. Yd.	20.3
Reinforcement Bars, Epoxy Coated	Pound	2250
Bar Splicers	Each	26
Preformed Joint Strip Seal	Foot	110
Jack & Remove Existing Bearings	Each	12
Elastomeric Bearing Assembly, Type 1	Each	12
Furnishing & Erecting Structural Steel	Pound	1860
Anchor Bolts, 1"Ø	Each	48
Deck Slab Repair (Partial)	Sq. Yd.	6.0
* Protective Coat	Sq. Yd.	47.3

* On new concrete areas only.



Expires: November 30, 2020

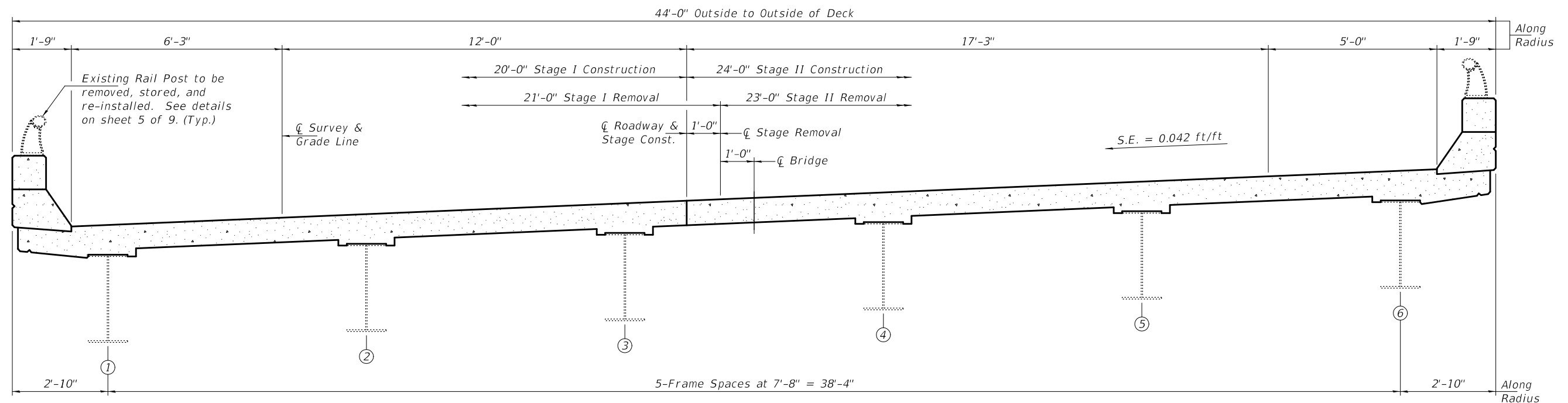
DESIGNED - <i>David Puzey</i>	EXAMINED - <i>Tigritus A. Anandachandran</i>	DATE - DECEMBER 5, 2018
CHECKED - <i>Steffen</i>	PASSED - <i>David Puzey</i>	REVISER -
DRAWN - STEFFEN		REVISER -
CHECKED - <i>CDK</i>		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

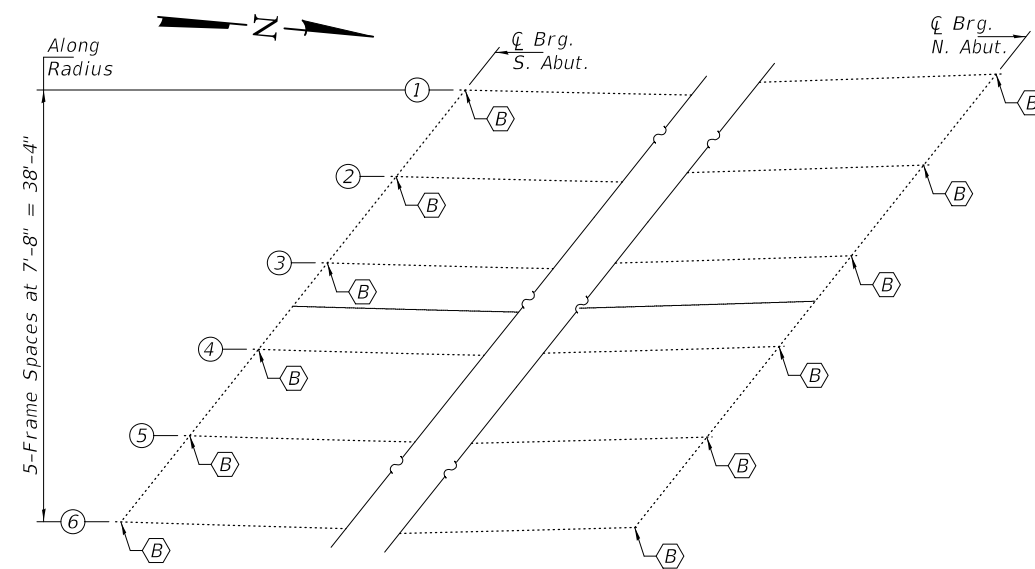
**GENERAL PLAN & ELEVATION
F.A.I. ROUTE 57 (N.B.) OVER F.A.I. ROUTE 64 (E.B.)
SN 041-0007**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	32
CONTRACT NO. 78650			ILLINOIS FED. AID PROJECT	

SHEET 1 OF 9 SHEETS





CROSS SECTION
(Looking North)



PARTIAL FRAMING PLAN

Ⓟ - Remove & Replace Expansion Bearings

DESIGNED - CDK
CHECKED - JSB
DRAWN - STEFFEN
CHECKED - CDK JSB

EXAMINED
PASSED


 ENGINEER OF STRUCTURAL SERVICES
 ENGINEER OF BRIDGES AND STRUCTURES

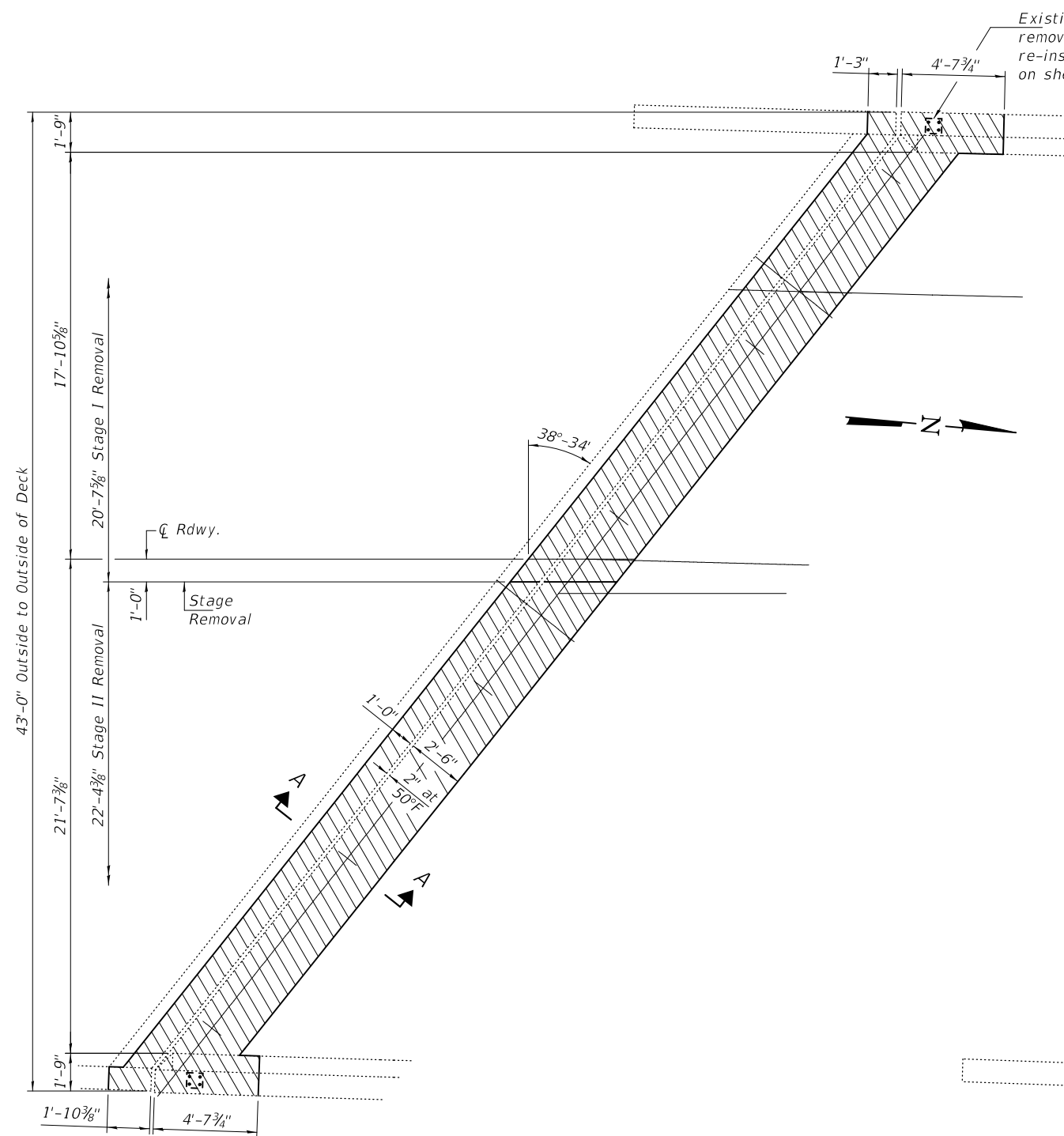
DATE - DECEMBER 5, 2018
 REVISED -
 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTION, STAGING DETAILS & FRAMING PLAN
SN 041-0007

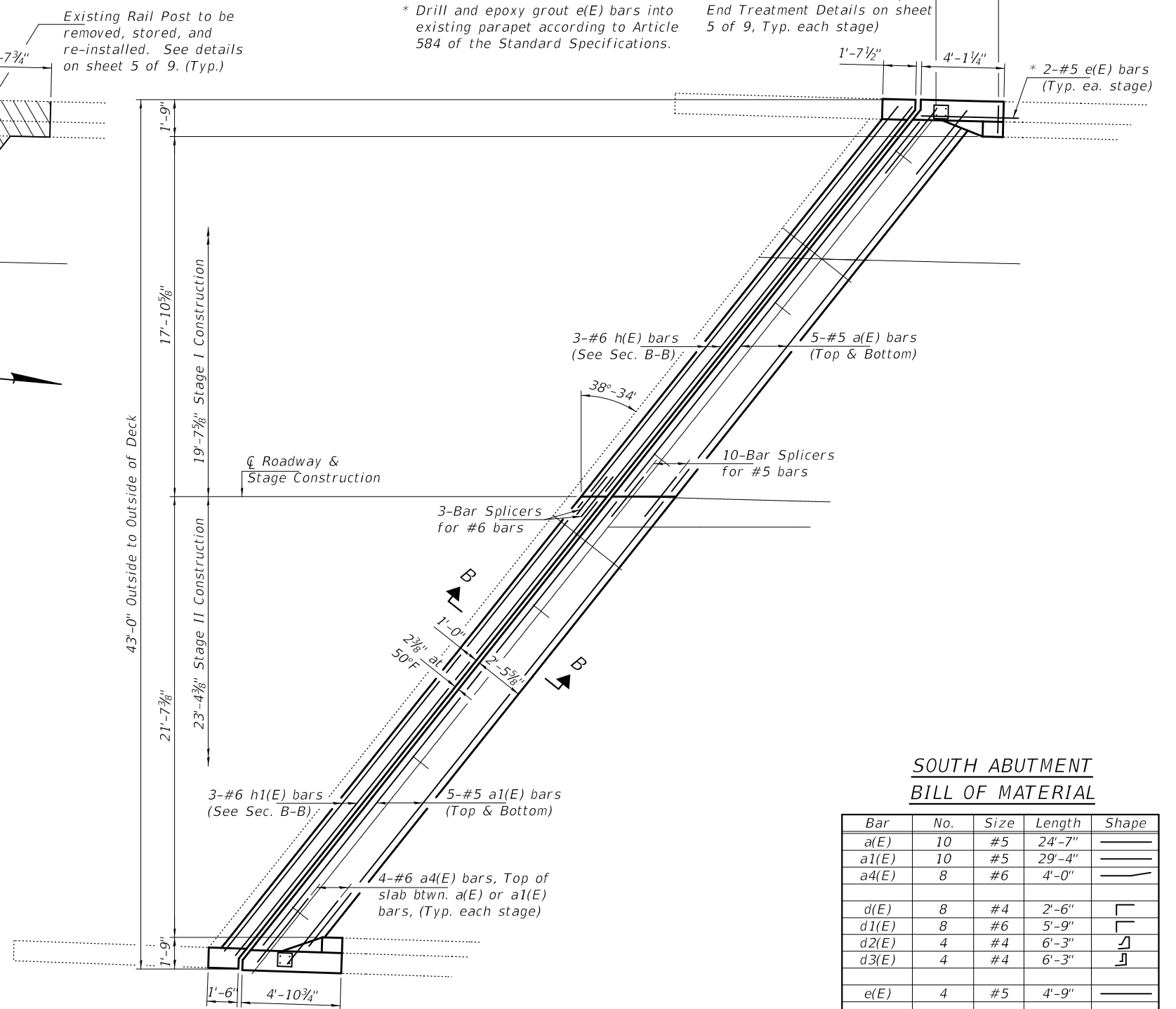
SHEET 2 OF 9 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	33
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



REMOVAL DETAILS

Notes:
 Hatched areas indicate Concrete Removal.
 For Sections A-A, B-B, Parapet Details, and
 Reinforcement Bending Details see sheet 5 of 9.



REPLACEMENT DETAILS

* Drill and epoxy grout e(E) bars into existing parapet according to Article 584 of the Standard Specifications.

4-#4 d(E) bars, O.F.
 4-#6 d1(E) bars, I.F.
 2-#4 d2(E) bars (Bend to fit)
 2-#4 d3(E) bars
 (See Sec. C-C, D-D & Parapet End Treatment Details on sheet 5 of 9, Typ. each stage)

* 2-#5 e(E) bars (Typ. ea. stage)

**SOUTH ABUTMENT
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	10	#5	24'-7"	—
a1(E)	10	#5	29'-4"	—
a4(E)	8	#6	4'-0"	—
d(E)	8	#4	2'-6"	┌
d1(E)	8	#6	5'-9"	┌
d2(E)	4	#4	6'-3"	┌
d3(E)	4	#4	6'-3"	┌
e(E)	4	#5	4'-9"	—
h(E)	3	#6	24'-7"	—
h1(E)	3	#6	29'-4"	—
x(E)	43	#4	3'-10"	┌
Concrete Removal			Cu. Yd.	10.0
Concrete Superstructure			Cu. Yd.	9.9
Bar Splicers			Each	13
Reinforcement Bars, Epoxy Coated			Pound	1100

DESIGNED - CDK	EXAMINED - <i>Timothy A. Doolittle</i>	DATE - DECEMBER 5, 2018
CHECKED - JSB	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - STEFFEN	PASSED - <i>Carl R. Meyer</i>	REVISED -
CHECKED - CDK JSB	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SOUTH ABUTMENT JOINT REPLACEMENT DETAILS
 SN 041-007**

SHEET 3 OF 9 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	34
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

* Drill and epoxy grout e(E) bars into existing parapet according to Article 584 of the Standard Specifications.

4-#4 d(E) bars, O.F.
 4-#6 d1(E) bars, I.F.
 2-#4 d2(E) bars (Bend to fit)
 2-#4 d3(E) bars
 (See Sec. C-C, D-D & Parapet End Treatment Details on sheet 5 of 9, Typ. each stage)

* 2-#5 e(E) bars (Typ. ea. stage)

4-#6 a4(E) bars, Top of slab btwn. a2(E) or a3(E) bars, (Typ. each stage)

5-#5 a2(E) bars (Top & Bottom)

3-#6 h2(E) bars (See Sec. B-B)

10-Bar Splicers for #5 bars

3-Bar Splicers for #6 bars

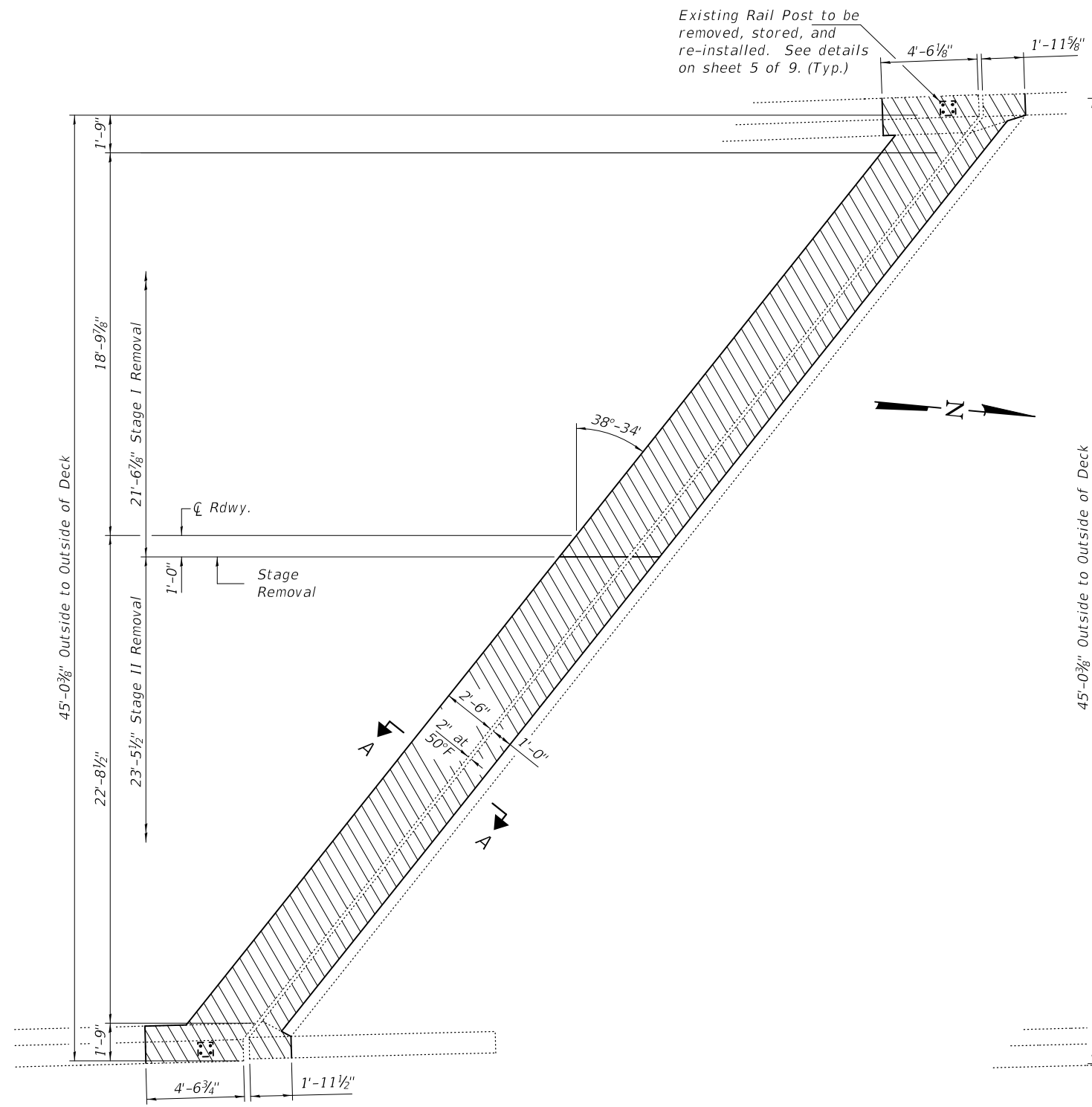
5-#5 a3(E) bars (Top & Bottom)

3-#6 h3(E) bars (See Sec. B-B)

**NORTH ABUTMENT
 BILL OF MATERIAL**

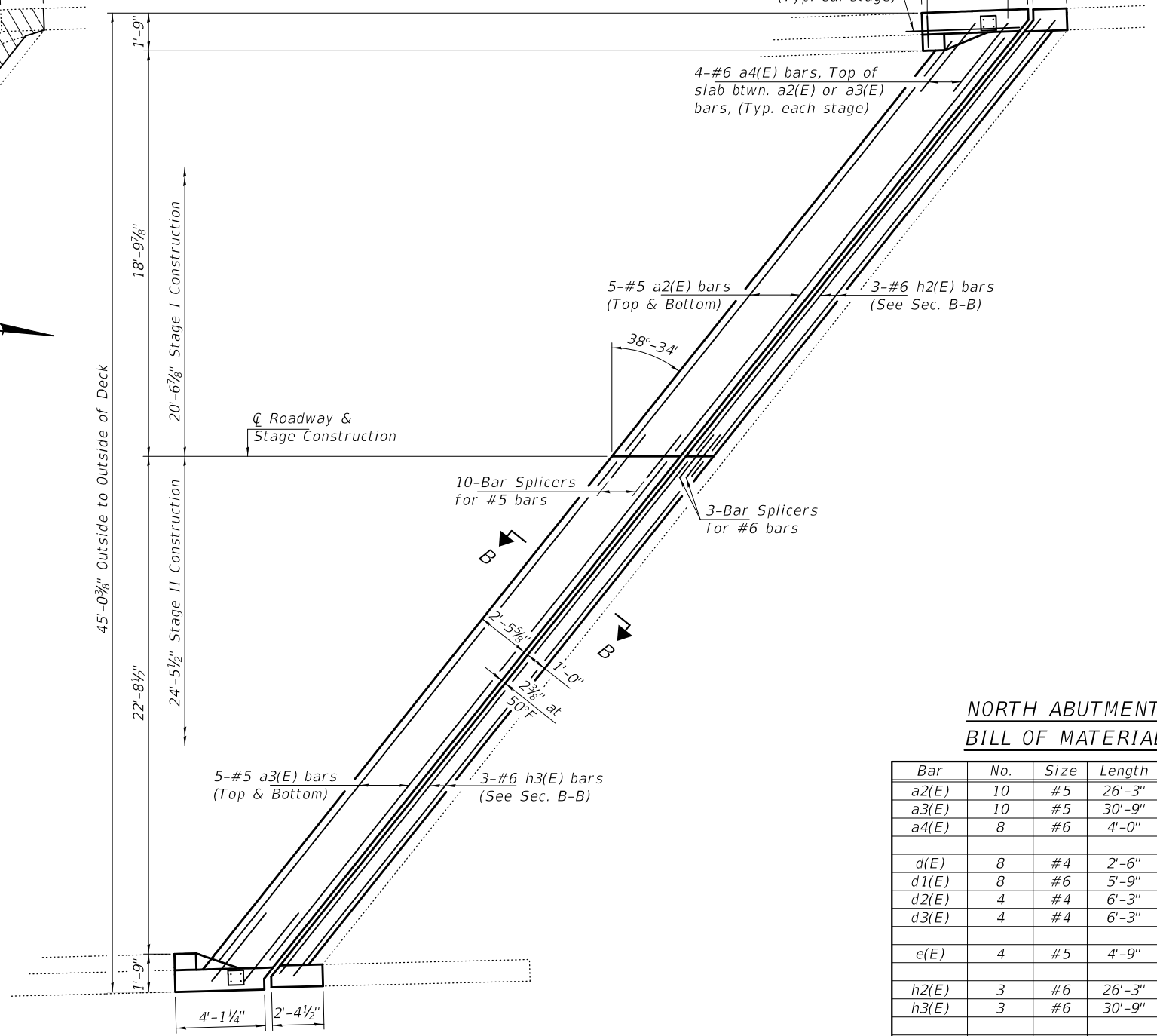
Bar	No.	Size	Length	Shape
a2(E)	10	#5	26'-3"	—
a3(E)	10	#5	30'-9"	—
a4(E)	8	#6	4'-0"	—
d(E)	8	#4	2'-6"	┌
d1(E)	8	#6	5'-9"	┌
d2(E)	4	#4	6'-3"	└
d3(E)	4	#4	6'-3"	└
e(E)	4	#5	4'-9"	—
h2(E)	3	#6	26'-3"	—
h3(E)	3	#6	30'-9"	—
x(E)	45	#4	3'-10"	└
Concrete Removal			Cu. Yd.	10.5
Concrete Superstructure			Cu. Yd.	10.4
Bar Splicers			Each	13
Reinforcement Bars, Epoxy Coated			Pound	1150

Existing Rail Post to be removed, stored, and re-installed. See details on sheet 5 of 9. (Typ.)



REMOVAL DETAILS

Notes:
 Hatched areas indicate Concrete Removal.
 For Sections A-A, B-B, Parapet Details, and Reinforcement Bending Details see sheet 5 of 9.



REPLACEMENT DETAILS

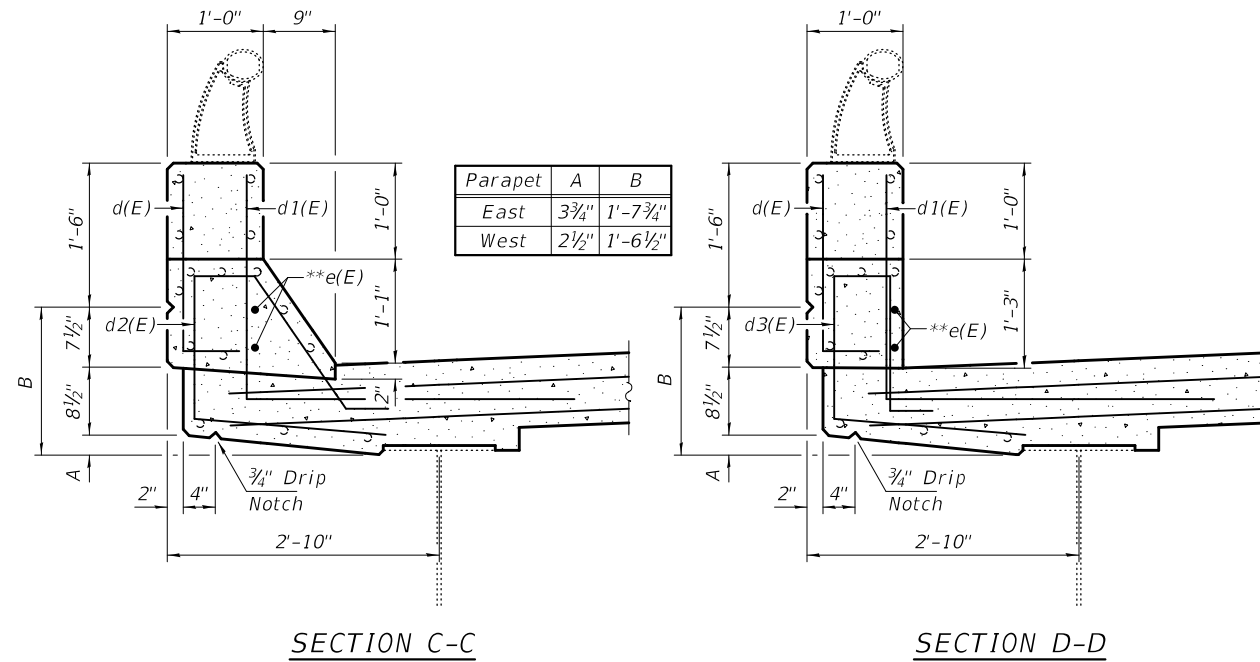
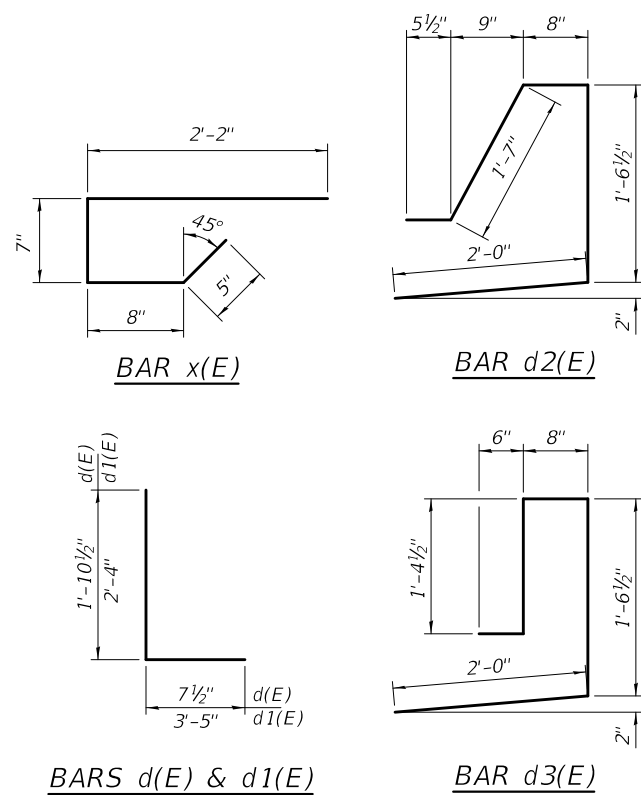
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018
CHECKED - JSB	PASSED - <i>Carl R. Roper</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
DRAWN - STEFFEN		REVISED -
CHECKED - CDK JSB		

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

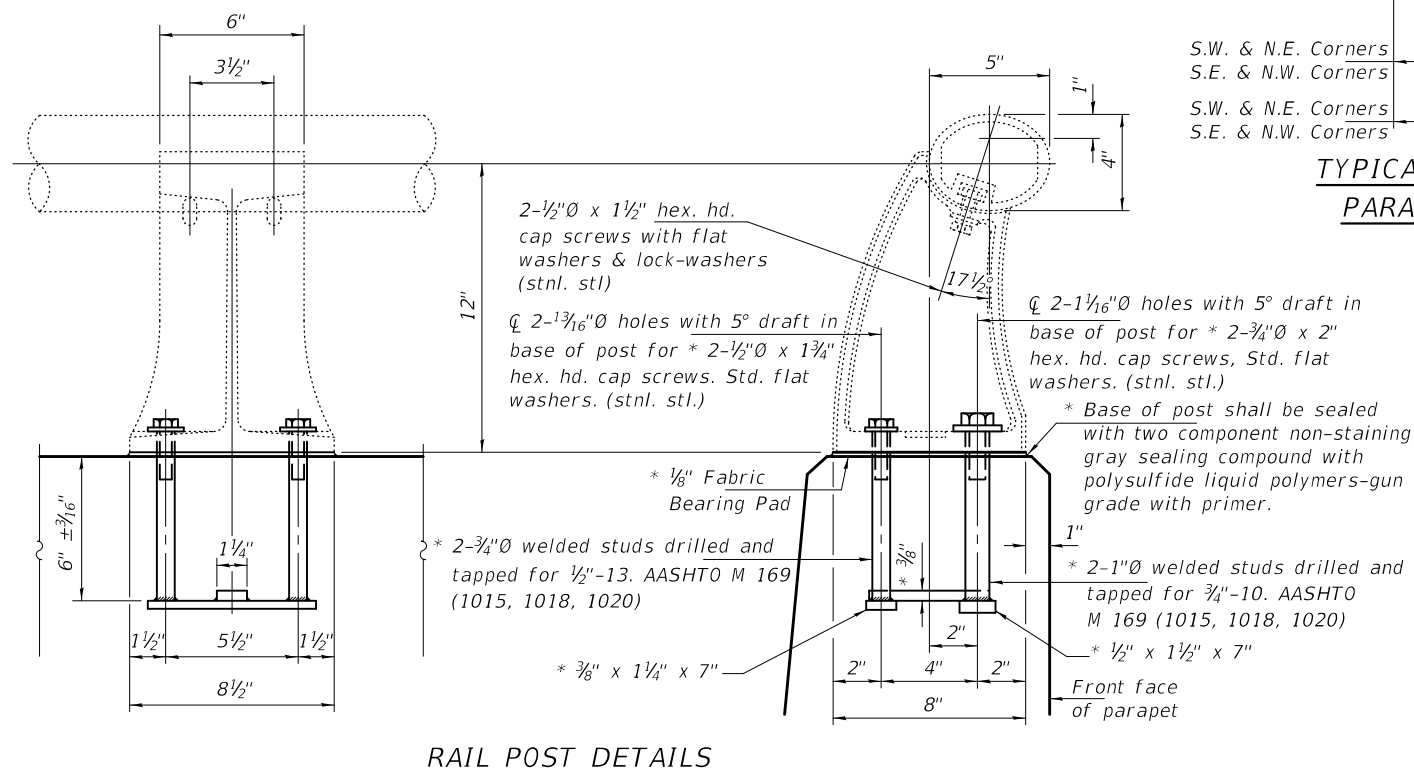
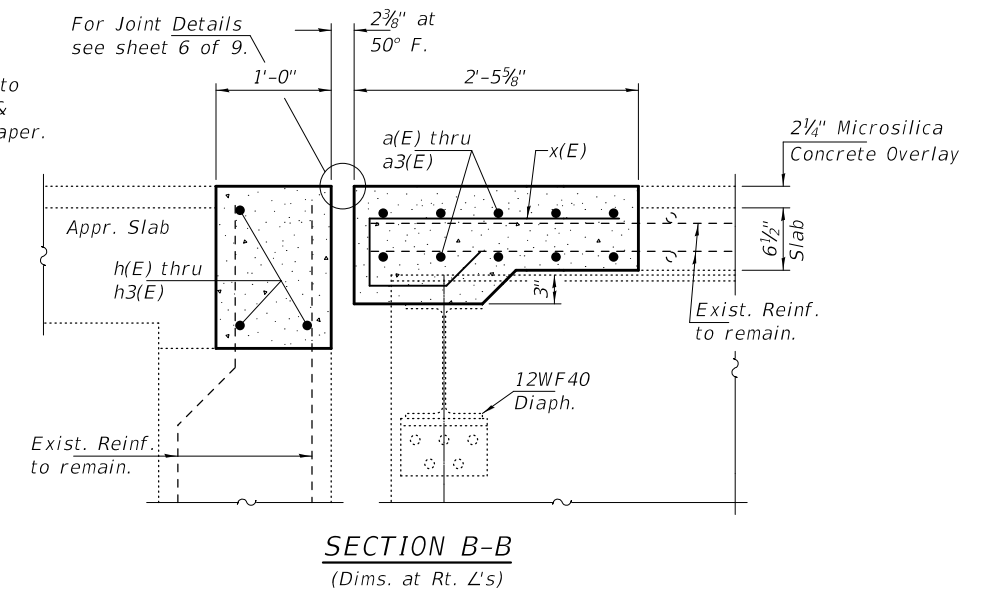
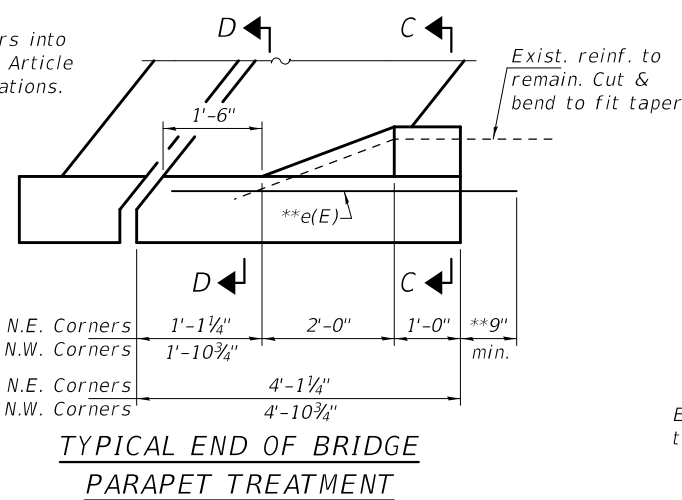
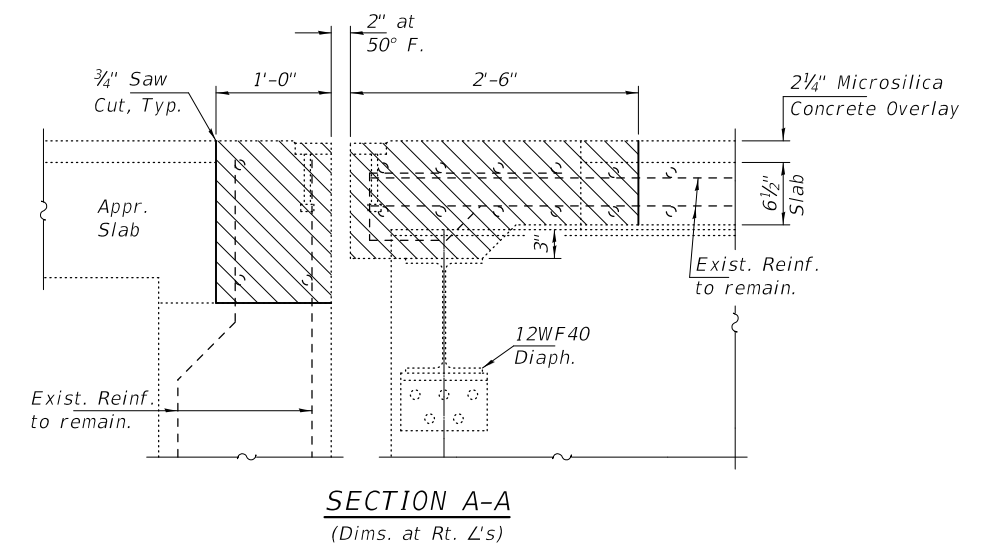
**NORTH ABUTMENT JOINT REPLACEMENT DETAILS
 SN 041-007**

SHEET 4 OF 9 SHEETS

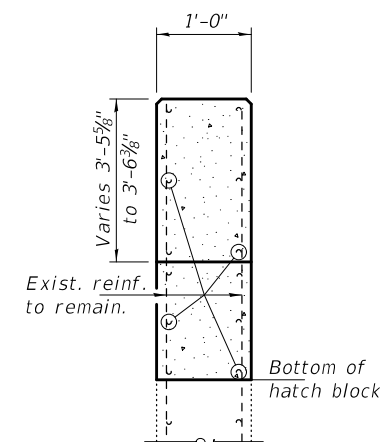
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	35
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



** Drill and epoxy grout e(E) bars into existing parapet according to Article 584 of the Standard Specifications.



* New Rail Post anchorage devices will be required at each location where posts are connected to new construction. Cost included with Concrete Superstructure.



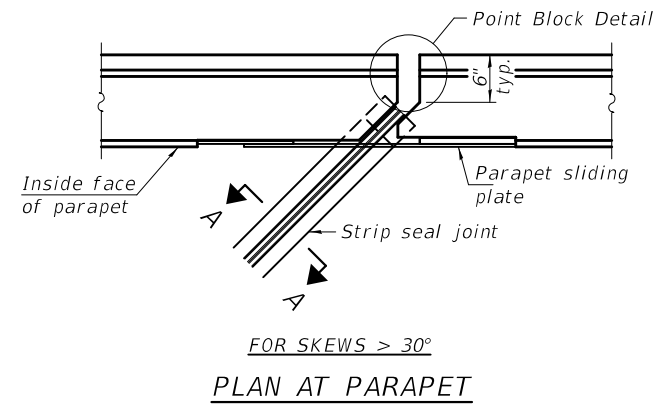
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daulton</i>	DATE - DECEMBER 5, 2018
CHECKED - JSB	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - STEFFEN	PASSED - <i>Carl R. Roper</i>	REVISED -
CHECKED - CDK JSB	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

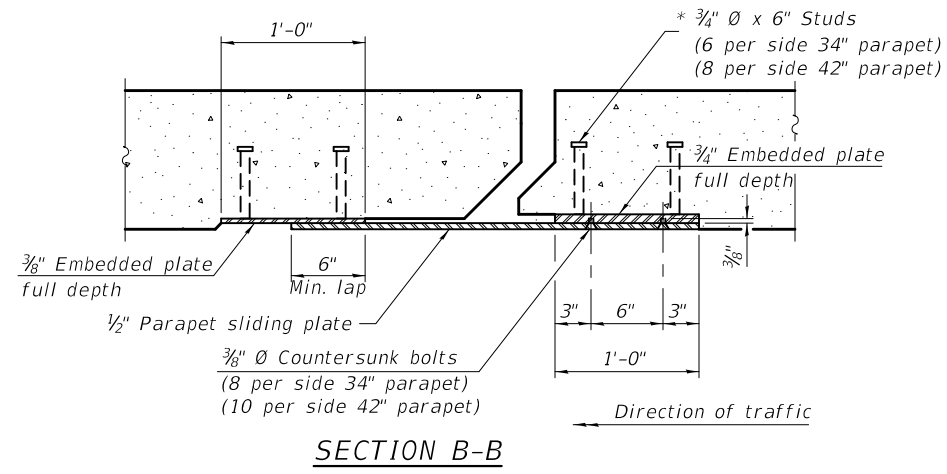
REPAIR DETAILS
SN 041-007

SHEET 5 OF 9 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	36
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



FOR SKEWS > 30°
PLAN AT PARAPET



SECTION B-B

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

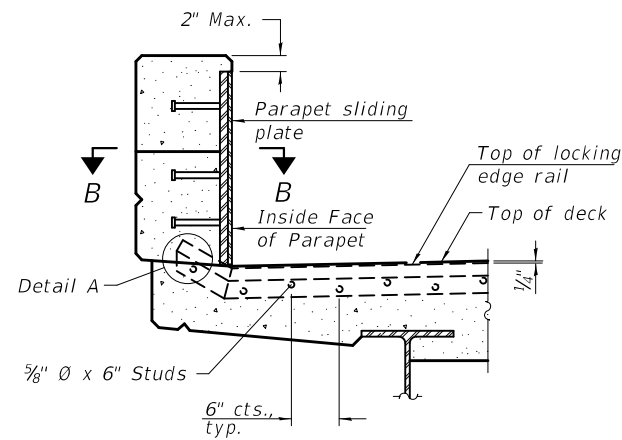
The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4 1/2" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

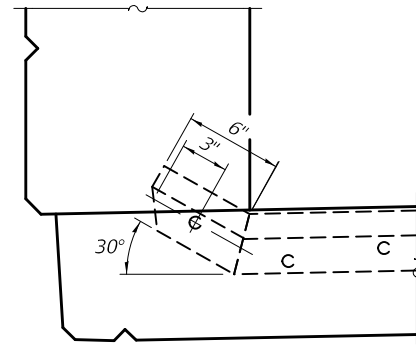
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

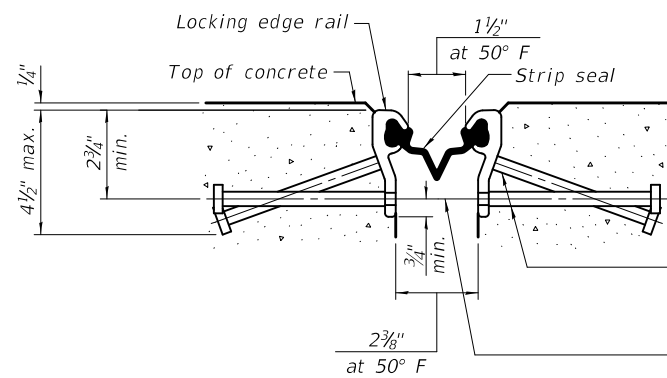
The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to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



ELEVATION AT PARAPET



DETAIL A

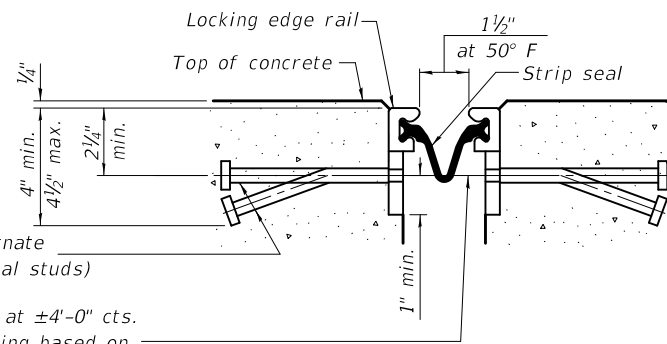


SHOWING ROLLED RAIL JOINT

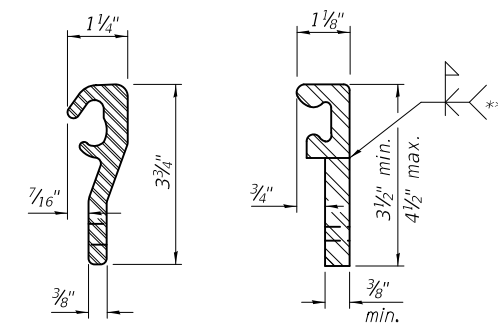
* 3/8" Ø x 6" studs at 6" cts. (alternate angled/bent studs with horizontal studs)
3/8" Ø threaded rods in 7/16" Ø holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

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

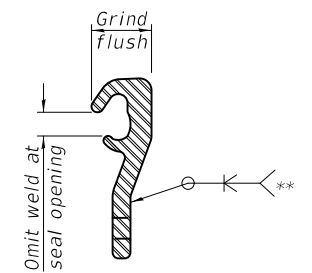


SHOWING WELDED RAIL JOINT



LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	110

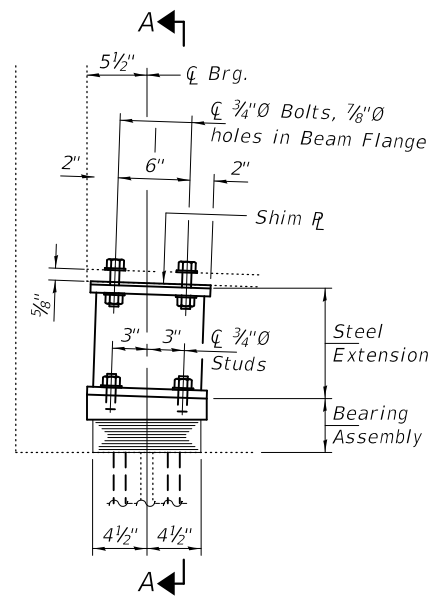
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daulton</i>	DATE - DECEMBER 5, 2018
CHECKED - JSB	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - STEFFEN	PASSED - <i>Carl Ringer</i>	REVISER -
CHECKED - CDK JSB	ENGINEER OF BRIDGES AND STRUCTURES	REVISER -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

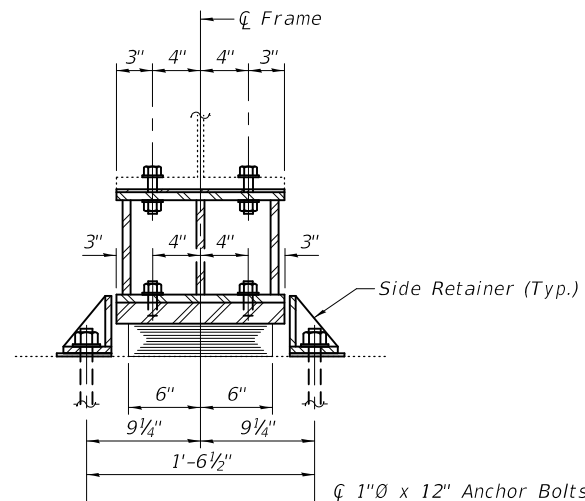
PREFORMED JOINT STRIP SEAL DETAILS
SN 041-0007

SHEET 6 OF 9 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	37
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



ELEVATION AT ABUTMENT



SECTION A-A

ϕ 1" \times 12" Anchor Bolts with 2 1/2" \times 2 1/2" \times 5/16" R washer under nut.

BEAM REACTIONS

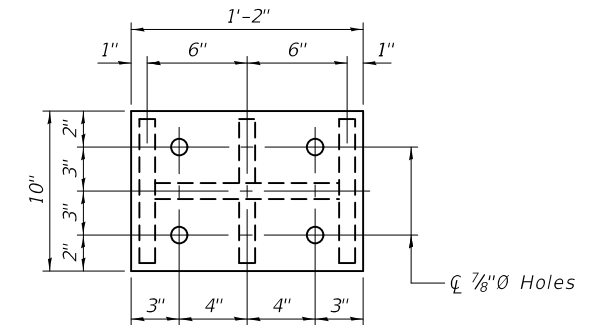
R _D	(K)	16.9
R _L	(K)	40.1
Imp.	(K)	10.7
R (Total)	(K)	67.7

Notes:
Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.

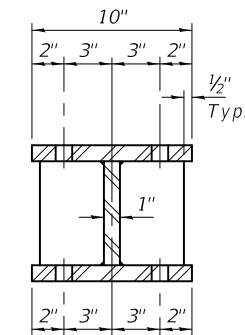
New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel. Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).

Min. jack capacity = 32 Tons.
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

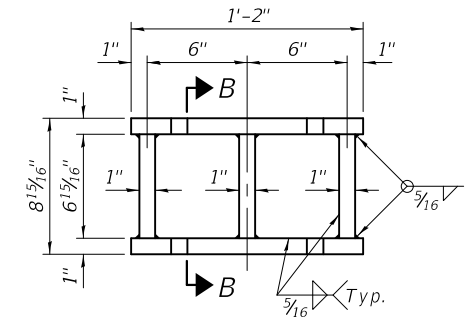
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications. Cost of Side retainers and Stainless Steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.



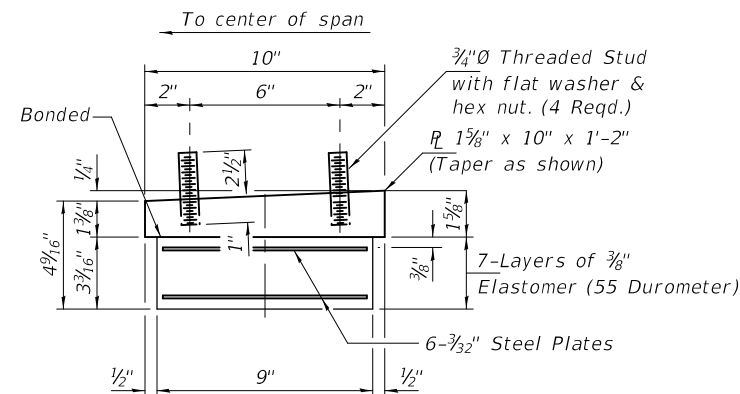
PLAN TOP AND BOTTOM PLATE



SECTION B-B

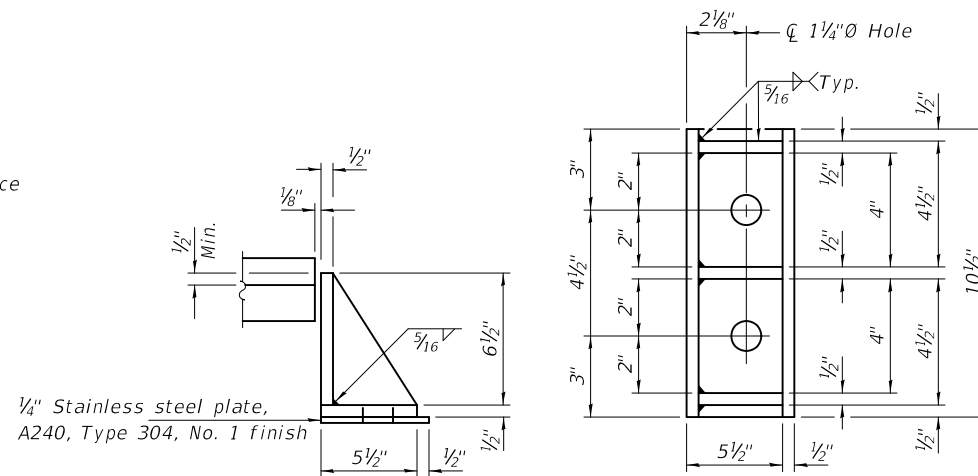


STEEL EXTENSION DETAIL



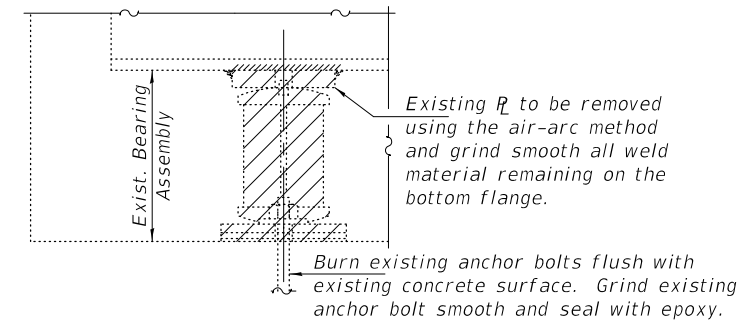
BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.
Place 3/4" ϕ Threaded Studs in Bearing Assembly perpendicular to the top surface of the Bearing Plate



SIDE RETAINER

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



EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	12
Jack and Remove Existing Bearings	Each	12
Furnishing and Erecting Structural Steel	Pound	1860
Anchor Bolts, 1" ϕ	Each	48

DESIGNED - CDK
CHECKED - JSB
DRAWN - STEFFEN
CHECKED - CDK JSB

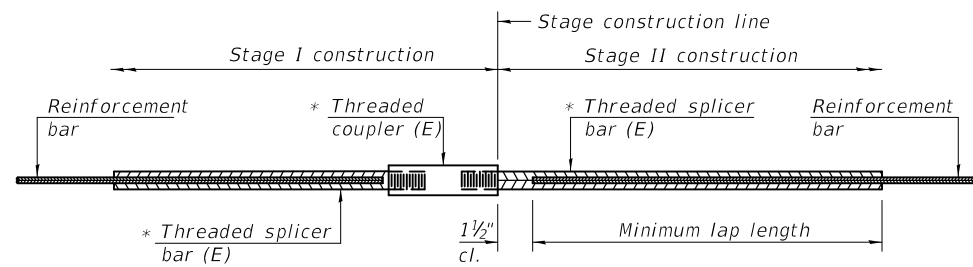
EXAMINED	<i>Timothy A. Daulton</i>	DATE -	DECEMBER 5, 2018
PASSED	<i>Carl Ringer</i>	REVISED -	
	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -	

DATE -	DECEMBER 5, 2018
REVISED -	
REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELASTOMERIC BEARING ASSEMBLY DETAILS
SN 041-0007

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	38
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

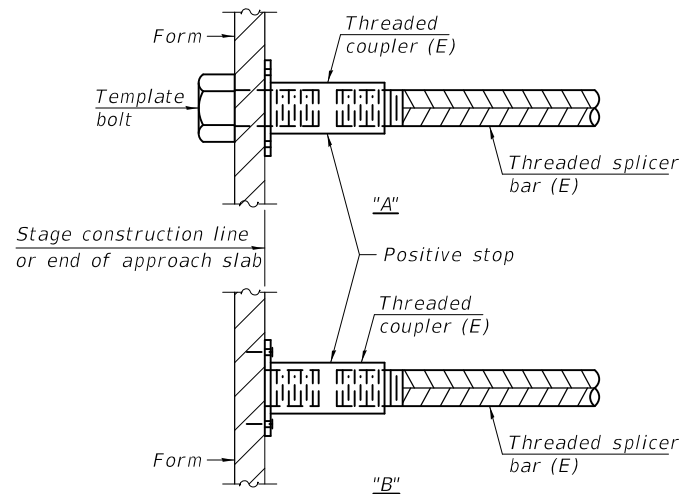


STANDARD BAR SPLICER ASSEMBLY

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

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

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	20	3'-1"
Abutment	#6	6	4'-5"

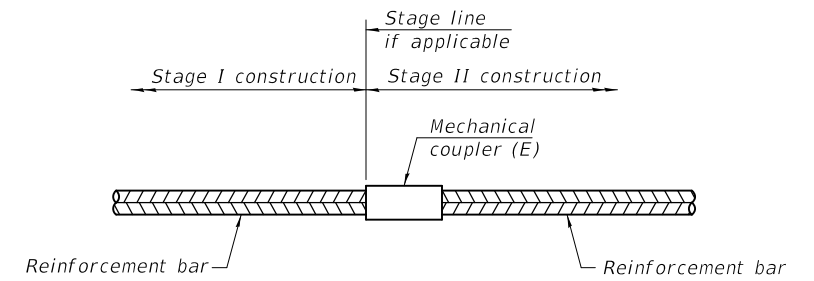


INSTALLATION AND SETTING METHODS

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

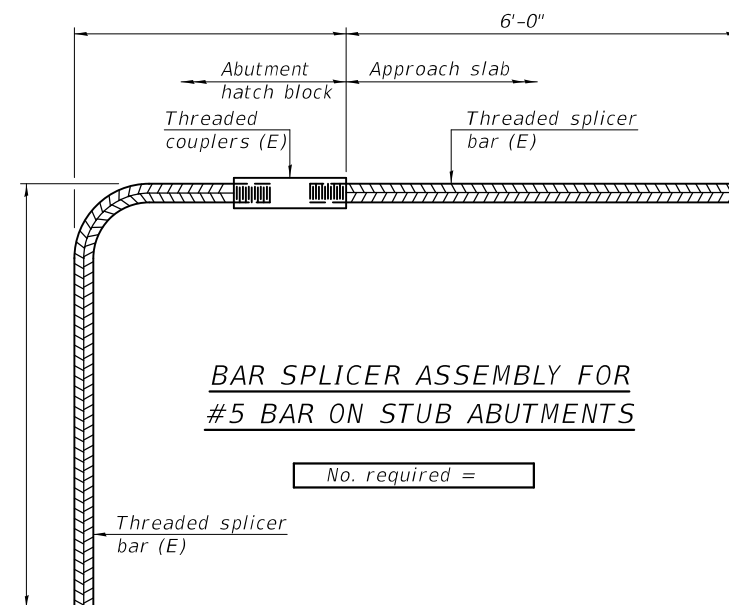
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

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

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

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

BSD-1

2-17-2017

DESIGNED - CDK
 CHECKED - JSB
 DRAWN - STEFFEN
 CHECKED - CDK JSB

EXAMINED
 PASSED

Timothy A. [Signature]
 ENGINEER OF STRUCTURAL SERVICES
 [Signature]
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - DECEMBER 5, 2018

REVISED -
 REVISED -

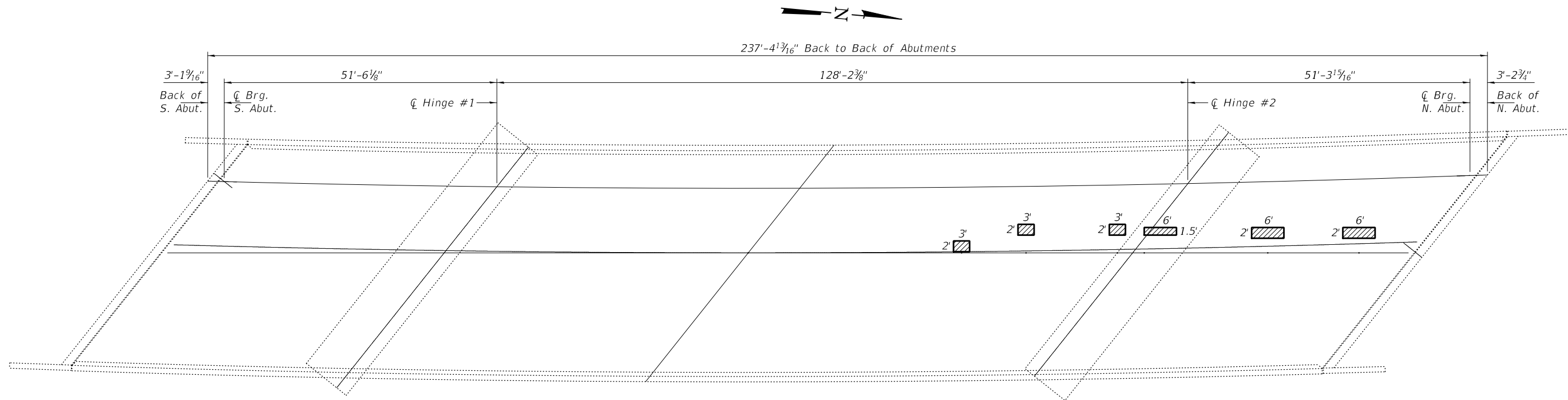
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 SN 041-0007

SHEET 8 OF 9 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	39
CONTRACT NO. 78650				

ILLINOIS FED. AID PROJECT



DECK PATCHING PLAN

Note:
Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on As-built Plans.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Deck Slab Repair (Partial)	Sq. Yd.	6.0

DESIGNED - CDK	EXAMINED - <i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018
CHECKED - JSB	PASSED - <i>Carl R. Meyer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
DRAWN - STEFFEN		REVISED -
CHECKED - CDK JSB		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PATCHING DETAILS
SN 041-0007

SHEET 9 OF 9 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	40
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

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

Reinforcement bars designated (E) shall be epoxy coated.

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

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the special provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.

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

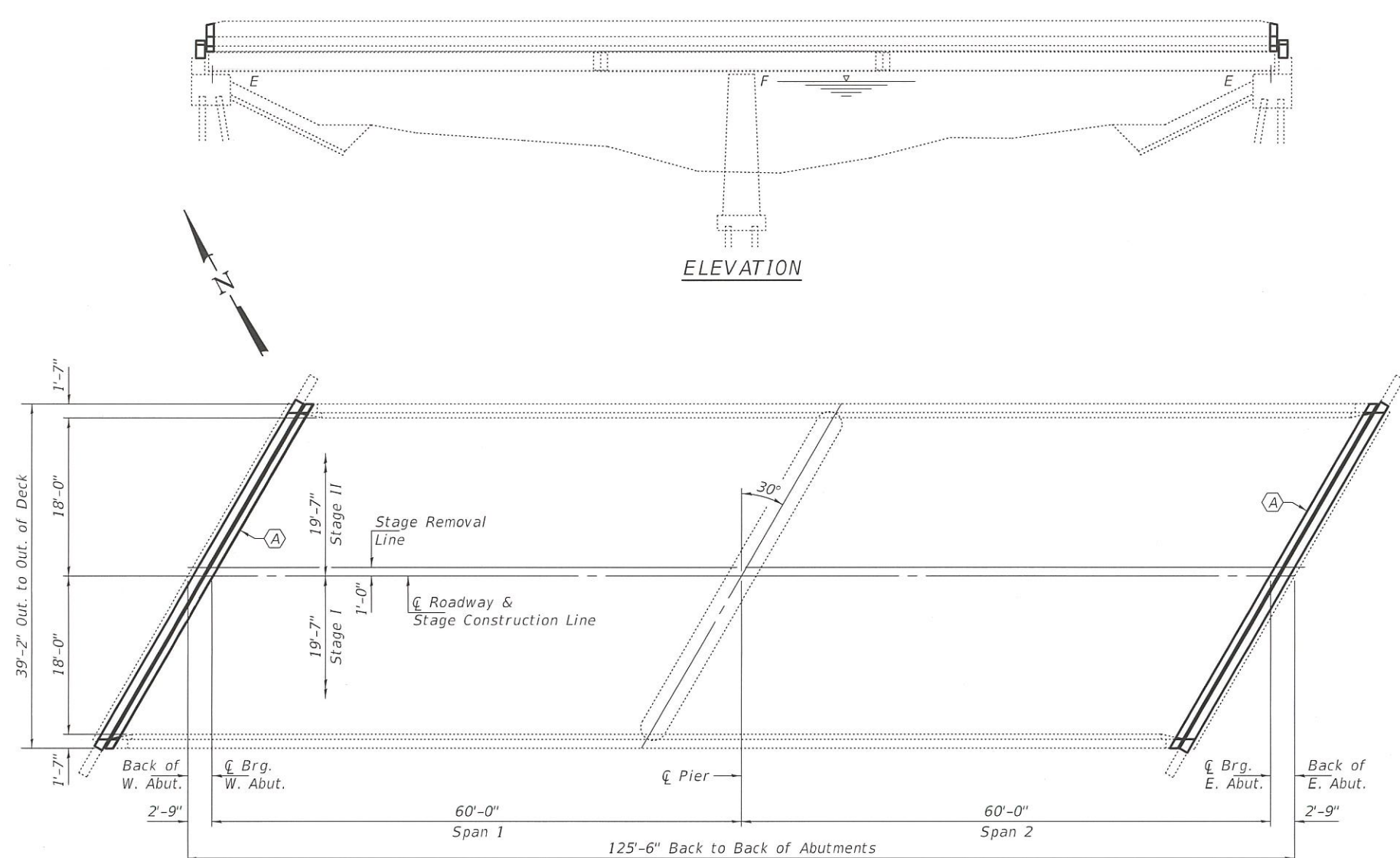
Fasteners shall be high strength bolts. Bolts 3/4"Ø, open holes 13/16"Ø, unless otherwise noted.

Diaphragm connection holes shall be 15/16"Ø for 3/4"Ø bolts. Two hardened washers shall be required at diaphragm connections.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

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

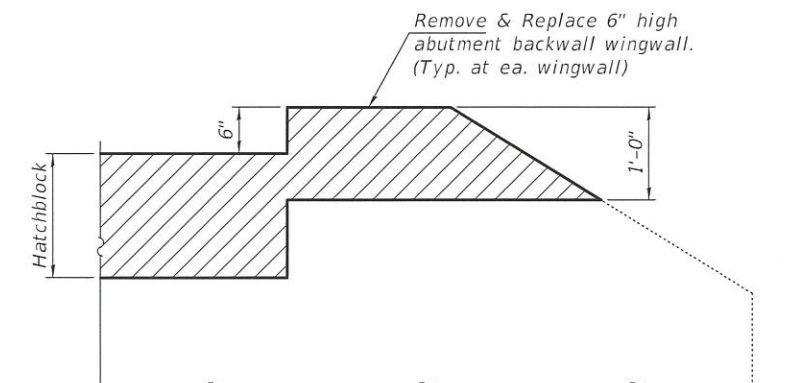
All new structural steel shall be hot-dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel."



ELEVATION

PLAN

(A) - Replace existing expansion joint with Preformed Joint Strip Seal.



WINGWALL REMOVAL & REPLACEMENT DETAILS

Hatched areas indicate Concrete Removal & Replacement.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	6.8
Concrete Superstructure	Cu. Yd.	6.9
Reinforcement Bars, Epoxy Coated	Pound	1060
Bar Splicers	Each	12
Preformed Joint Strip Seal	Foot	87
Structural Steel Repair	Pound	2850



Expires: November 30, 2020

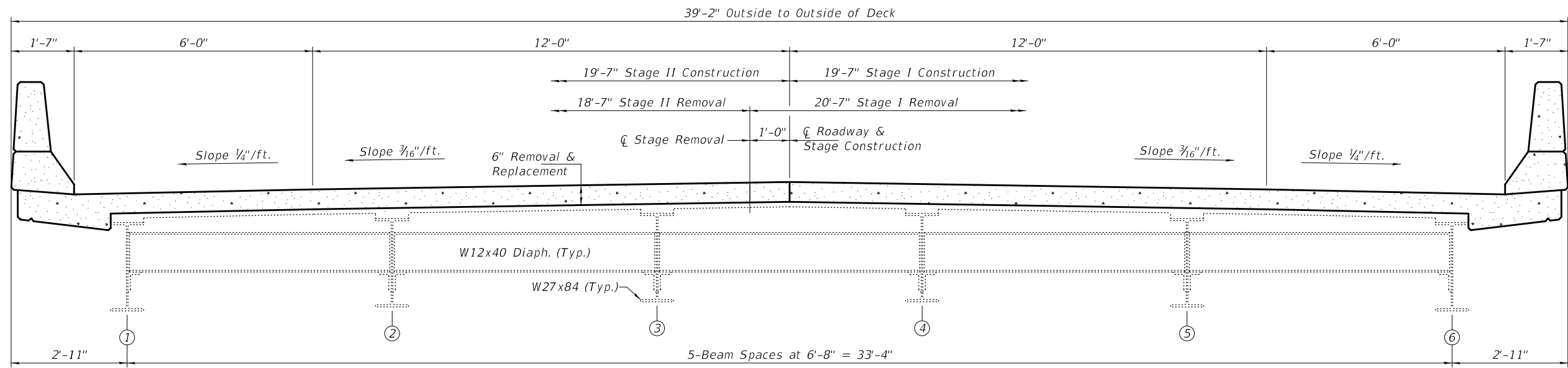
DESIGNED - <i>Hameed Saad</i>	EXAMINED - <i>Timothy A. Appenbrock</i>	DATE - DECEMBER 5, 2018
CHECKED - <i>Stefan M. Ryan</i>	PASSED - <i>Dr. Carl Puzey</i>	REVISOR -
DRAWN - STEFFEN		REVISOR -
CHECKED - HSS SMR		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

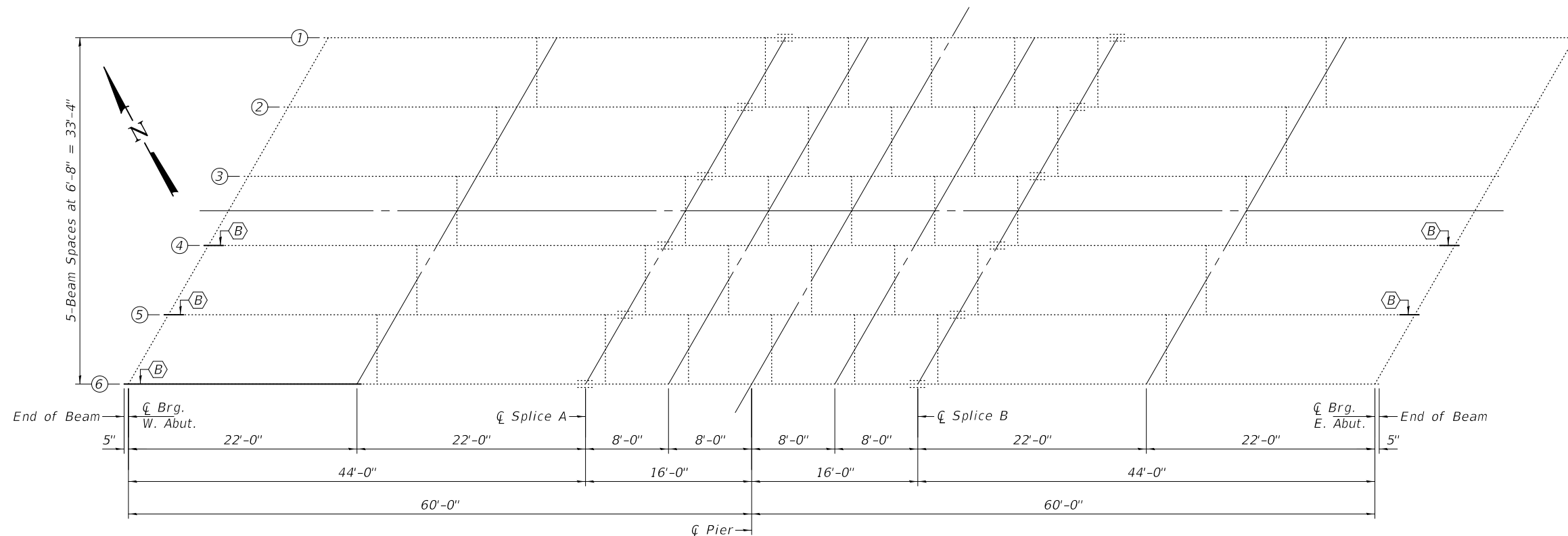
**GENERAL PLAN & ELEVATION
F.A. RTE. 849 (ILLINOIS 142) OVER CASEY FORK CREEK
SN 041-0041**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	41
				CONTRACT NO. 78650
				ILLINOIS FED. AID PROJECT

SHEET 1 OF 7 SHEETS



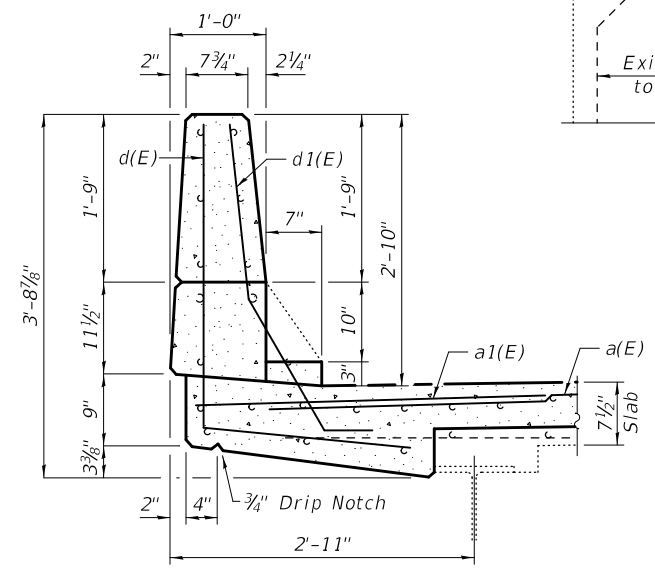
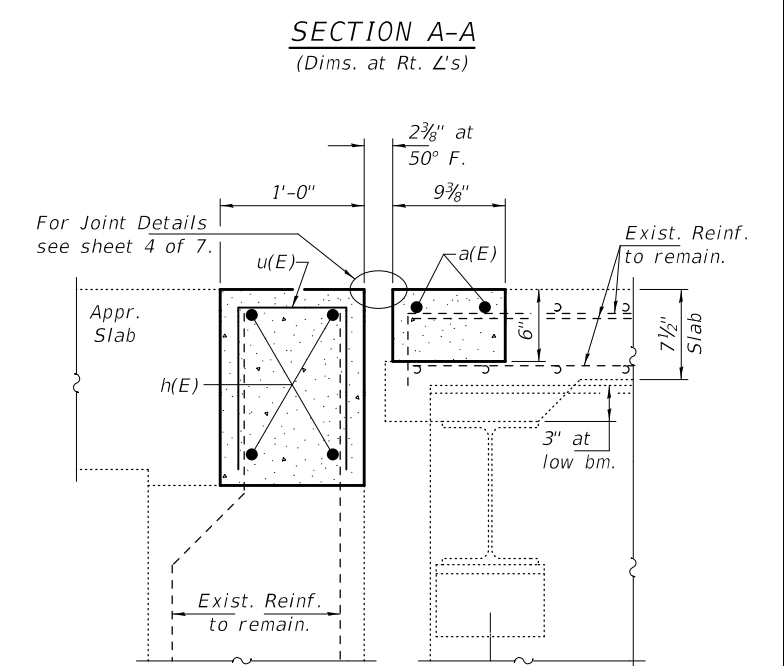
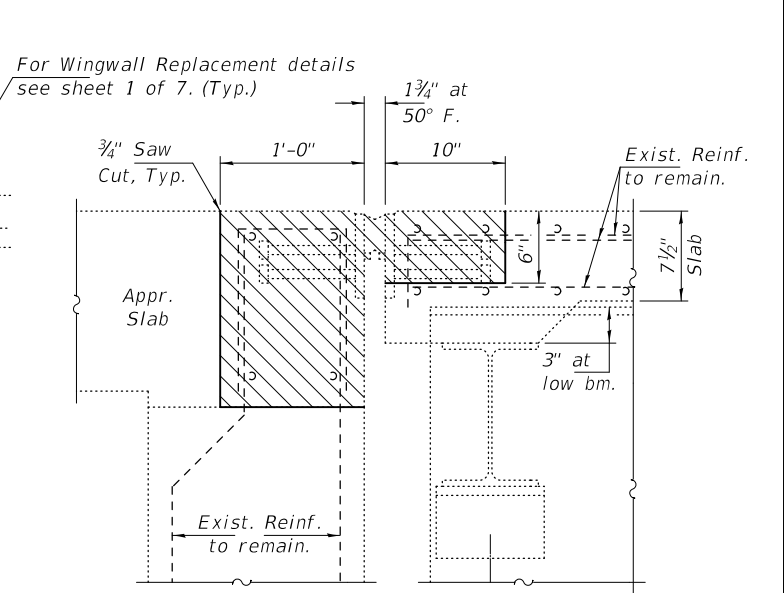
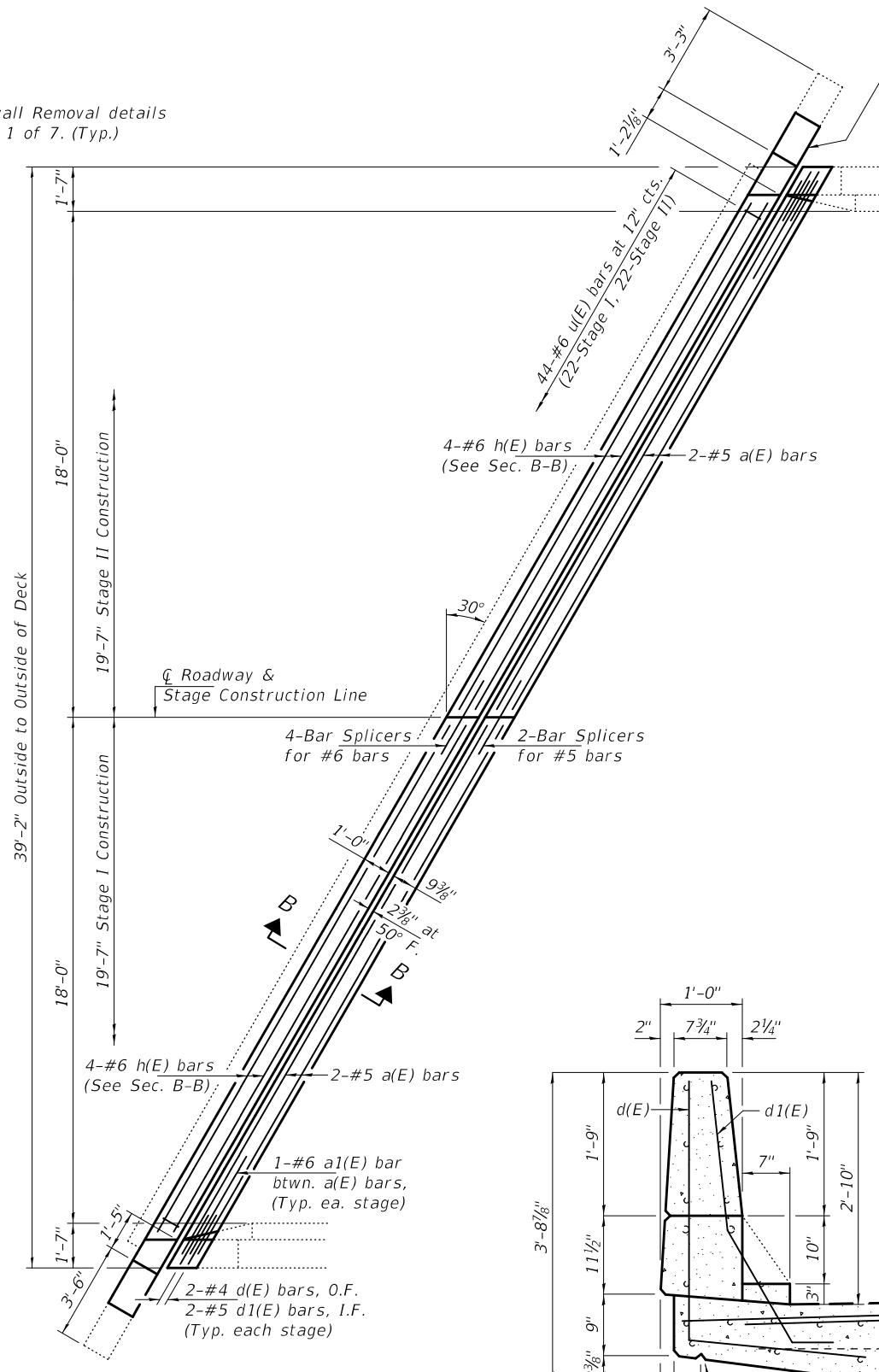
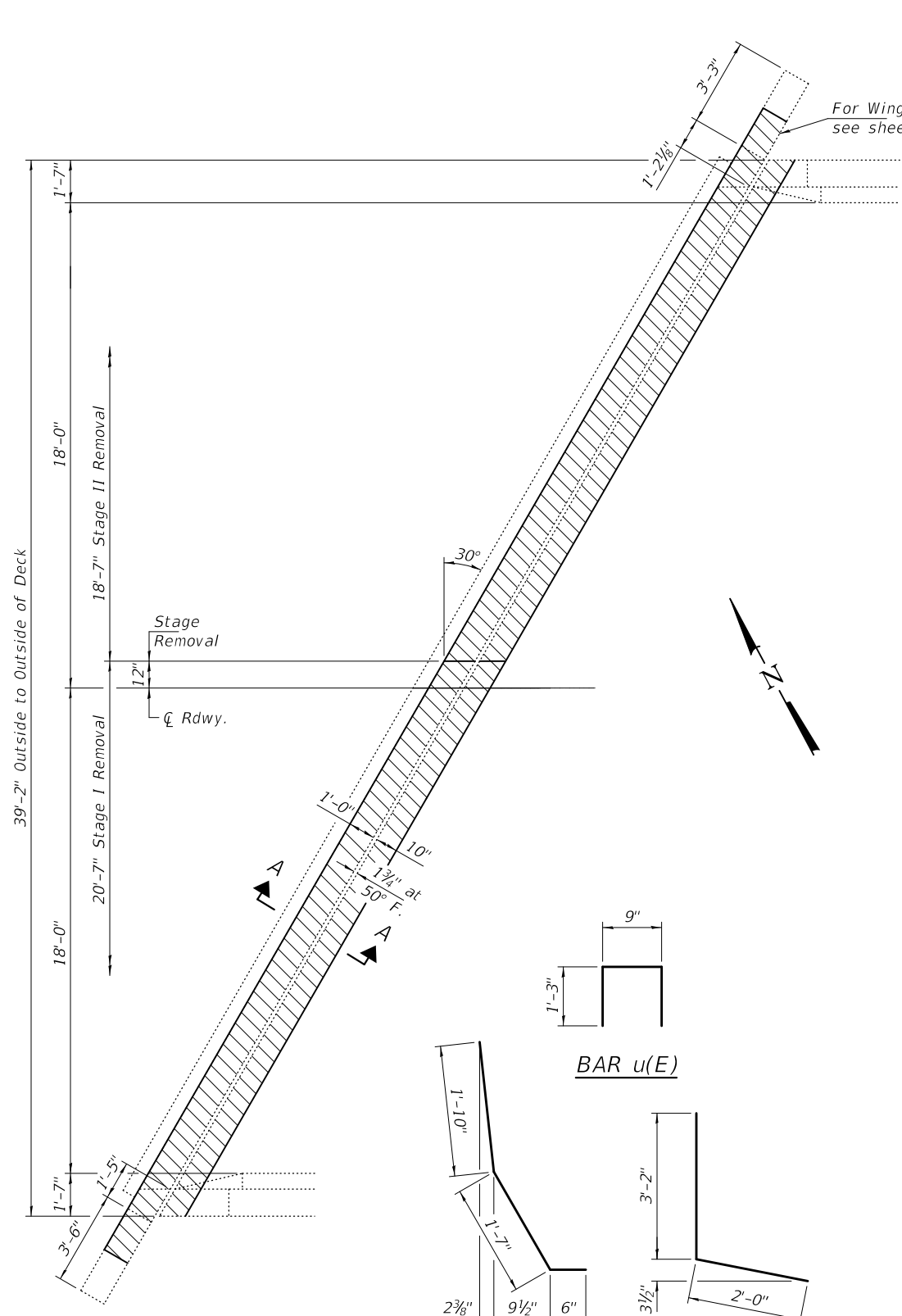
CROSS SECTION
(Looking East)



FRAMING PLAN

ⓑ - Beam End Repairs (see sheets 5 & 6 of 7)

DESIGNED - HSS	EXAMINED	DATE - DECEMBER 5, 2018	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CROSS SECTION AND FRAMING PLAN SN 041-0041	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - SMR	PASSED	REVIS			849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	42
DRAWN - STEFFEN		REVIS	SHEET 2 OF 7 SHEETS		CONTRACT NO. 78650				
CHECKED - HSS SMR					ILLINOIS FED. AID PROJECT				



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	8	#5	21'-4"	—
a1(E)	4	#6	4'-0"	—
d(E)	8	#4	5'-2"	L
d1(E)	8	#5	3'-11"	L
h(E)	16	#6	20'-10"	—
u(E)	88	#5	3'-3"	□
Concrete Removal		Cu. Yd.	6.8	
Concrete Superstructure		Cu. Yd.	6.9	
Bar Splicers		Each	12	
Reinforcement Bars, Epoxy Coated		Pound	1060	

DESIGNED - HSS
 CHECKED - SMR
 DRAWN - STEFFEN
 CHECKED - HSS SMR

EXAMINED
 PASSED

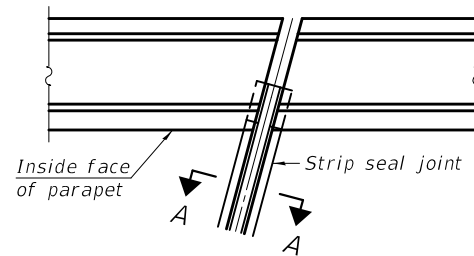
DATE - DECEMBER 5, 2018

REVISIONS

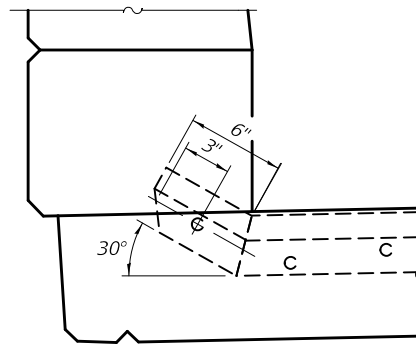
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

JOINT REPLACEMENT DETAILS
 SN 041-0041
 SHEET 3 OF 7 SHEETS

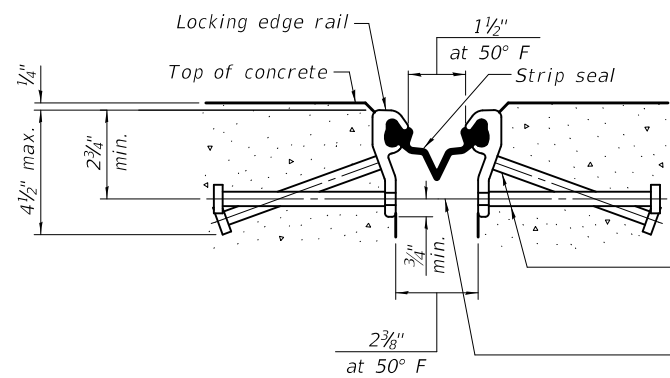
F.A. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 849 D9 BRIDGE REPAIR 2019-4 JEFFERSON 61 43
 CONTRACT NO. 78650
 ILLINOIS FED. AID PROJECT



FOR SKEWS $\leq 30^\circ$
PLAN AT PARAPET



ELEVATION AT PARAPET
 (Skews $\leq 30^\circ$)



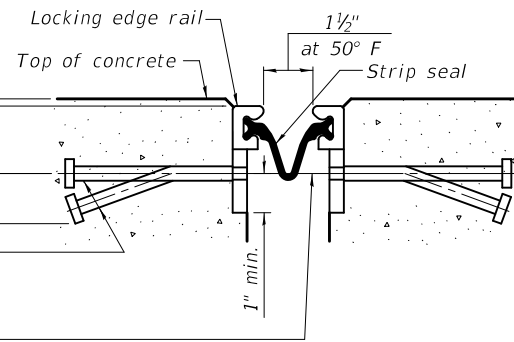
SHOWING ROLLED RAIL JOINT

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

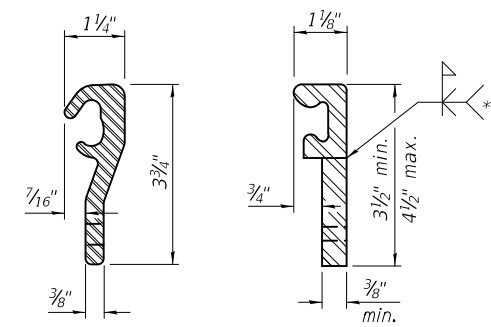
$\frac{3}{8}$ " ϕ threaded rods in $\frac{7}{16}$ " ϕ holes at ± 4 "-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

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



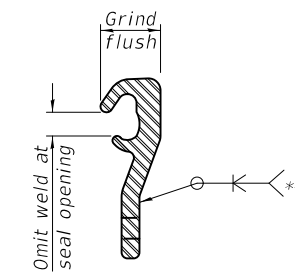
SHOWING WELDED RAIL JOINT



ROLLED (EXTRUDED) RAIL
WELDED RAIL

LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	87

EJ-SS1 LT30/REPS

6-22-18

DESIGNED - HSS	EXAMINED
CHECKED - SMR	PASSED
DRAWN - STEFFEN	
CHECKED - HSS SMR	

Timothy A. Daulton
 ENGINEER OF STRUCTURAL SERVICES
 Carl R. Meyer
 ENGINEER OF BRIDGES AND STRUCTURES

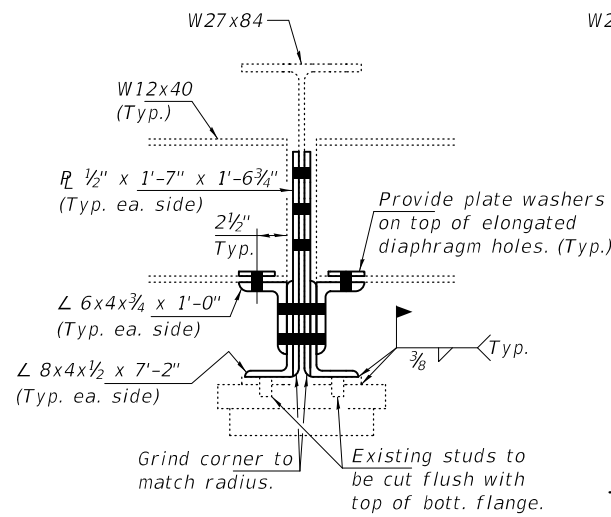
DATE - DECEMBER 5, 2018
REVISED -
REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

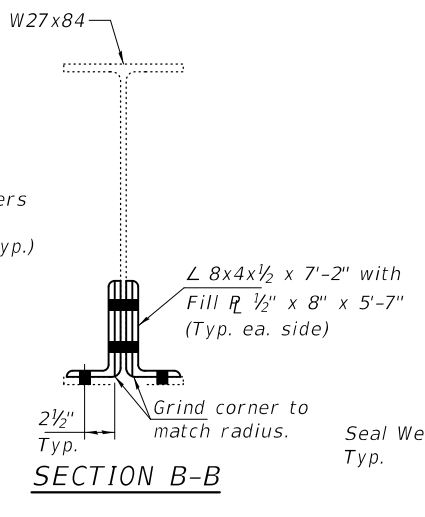
PREFORMED JOINT STRIP SEAL DETAILS
 SN 041-0041

SHEET 4 OF 7 SHEETS

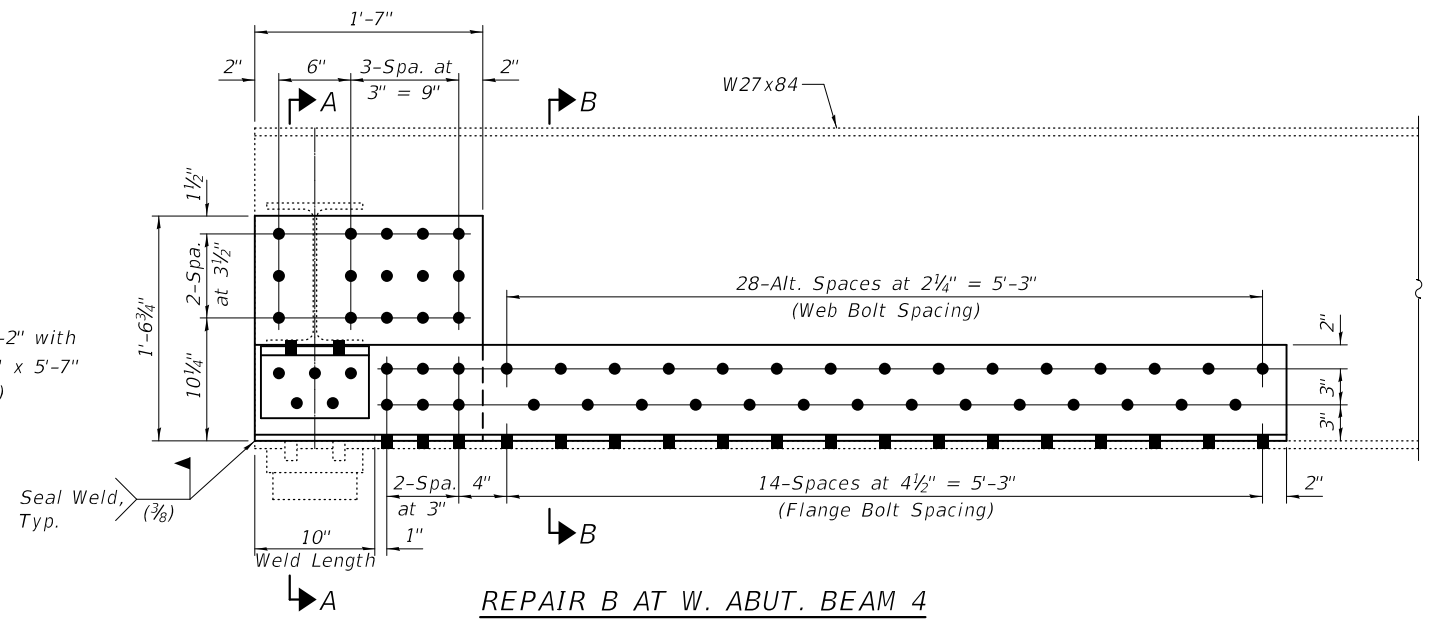
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	44
ILLINOIS			CONTRACT NO. 78650	
FED. AID PROJECT				



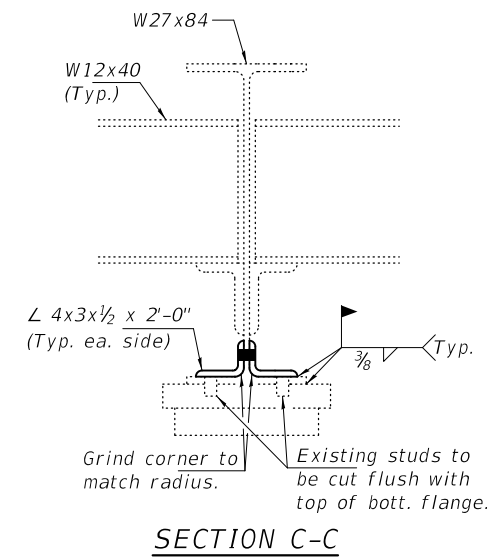
SECTION A-A



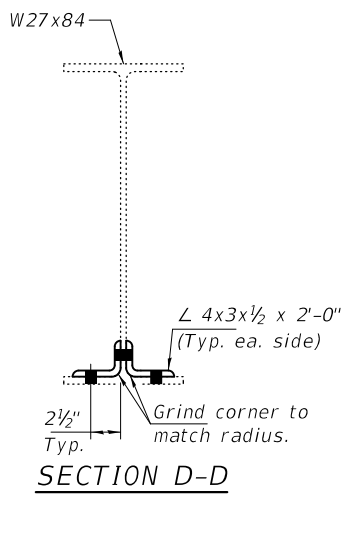
SECTION B-B



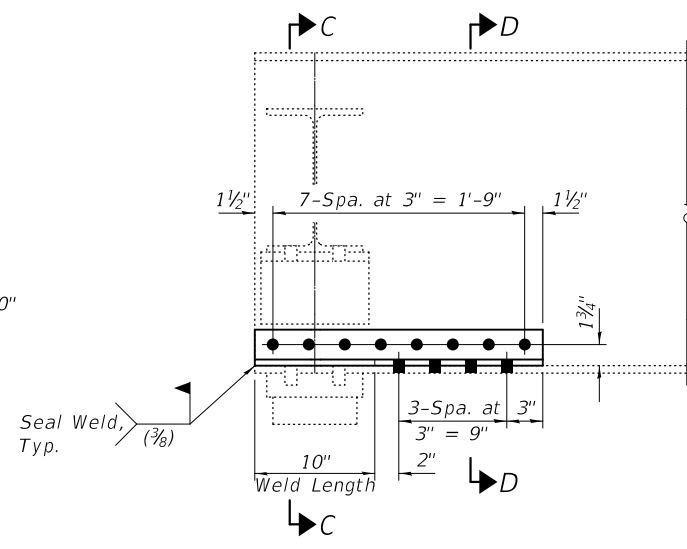
REPAIR B AT W. ABUT. BEAM 4



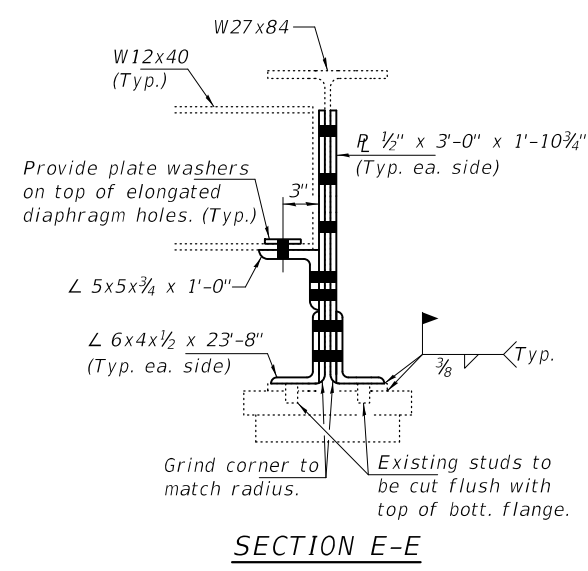
SECTION C-C



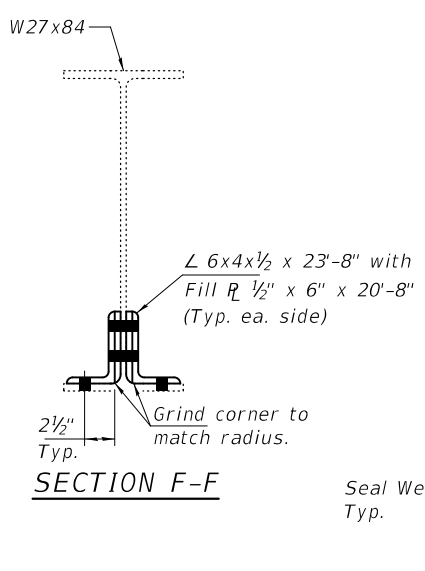
SECTION D-D



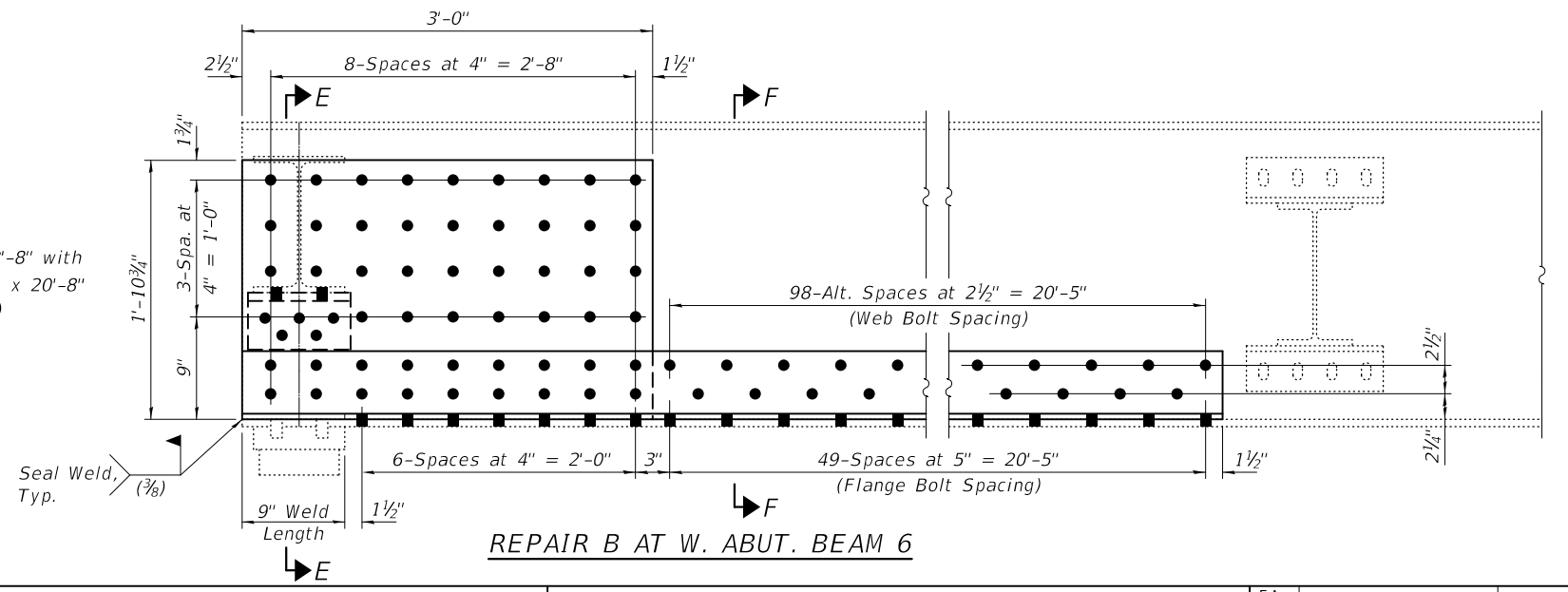
REPAIR B AT W. ABUT. BEAM 5



SECTION E-E



SECTION F-F



REPAIR B AT W. ABUT. BEAM 6

Notes:
Trim diaphragms as required for proper fit.
Remove existing clip angles using the air-arc method and grind smooth all remaining weld material.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	2360

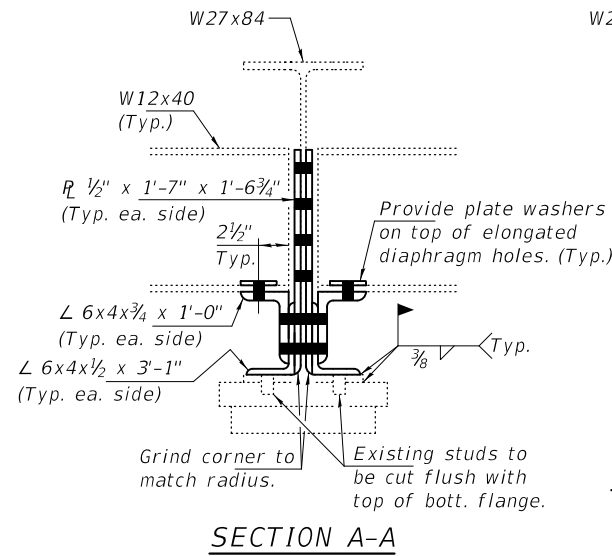
DESIGNED - HSS	EXAMINED - <i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018
CHECKED - SMR	PASSED - <i>Carl R. Ruyter</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
DRAWN - STEFFEN		REVISED -
CHECKED - HSS SMR		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

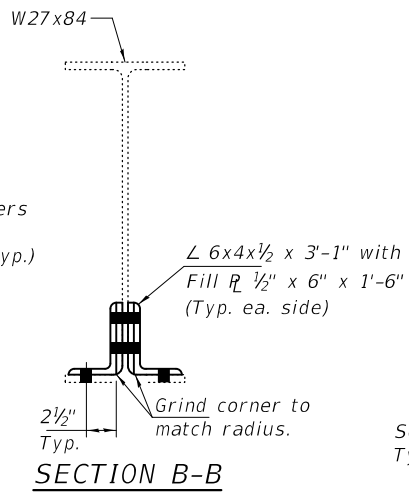
W. ABUT. BEAM END REPAIR DETAILS
SN 041-0041

SHEET 5 OF 7 SHEETS

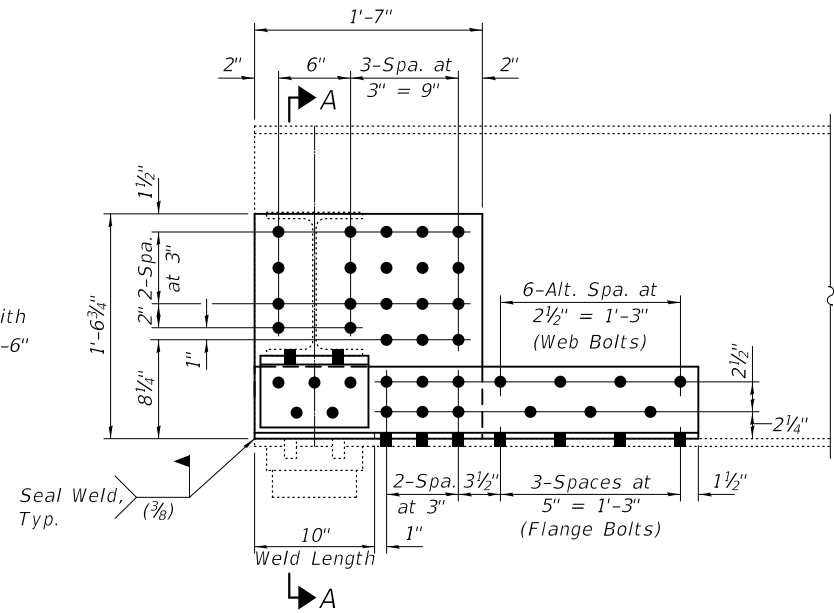
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	45
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



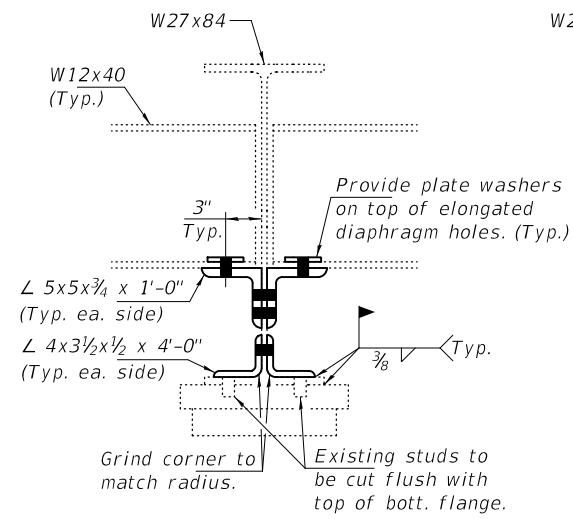
SECTION A-A



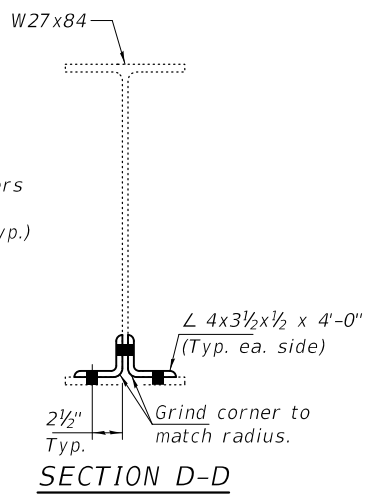
SECTION B-B



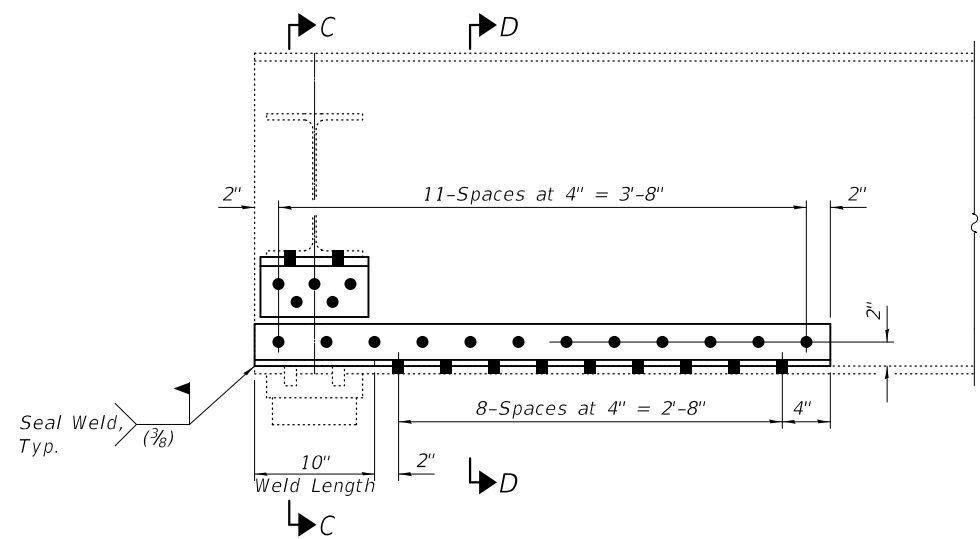
REPAIR B AT E. ABUT. BEAM 4



SECTION C-C



SECTION D-D



REPAIR B AT E. ABUT. BEAM 5

Notes:
 Trim diaphragms as required for proper fit.
 Remove existing clip angles using the air-arc method and grind smooth all remaining weld material.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	490

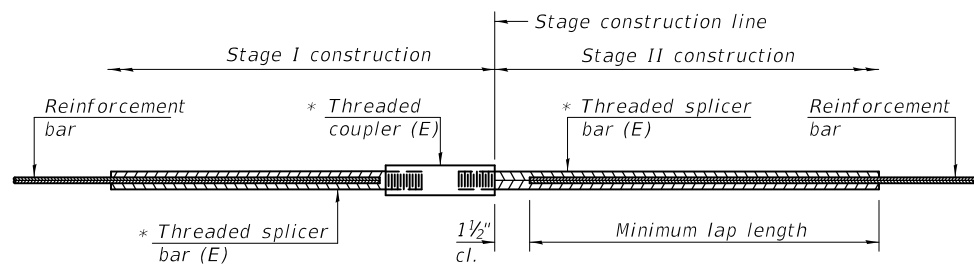
DESIGNED - HSS	EXAMINED - <i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018
CHECKED - SMR	PASSED - <i>Carl R. Meyer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
DRAWN - STEFFEN		REVISED -
CHECKED - HSS SMR		

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

E. ABUT. BEAM END REPAIR DETAILS
 SN 041-0041

SHEET 6 OF 7 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	46
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

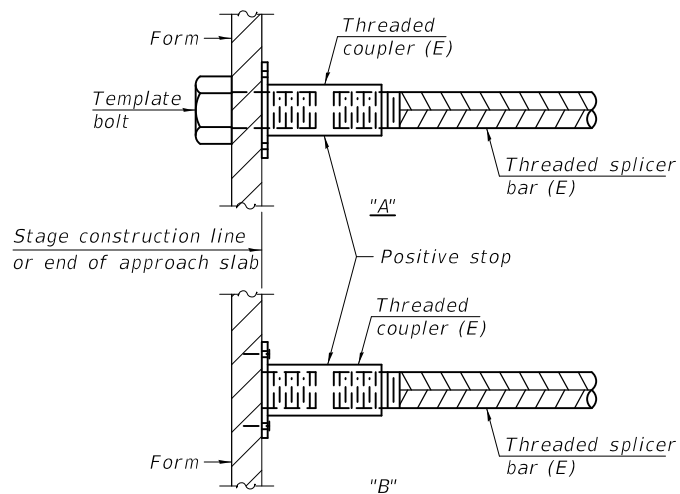


STANDARD BAR SPLICER ASSEMBLY

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

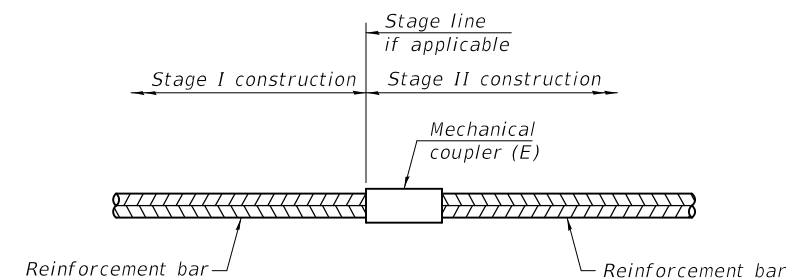
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	4	3'-0"
Abutment	#6	8	4'-0"



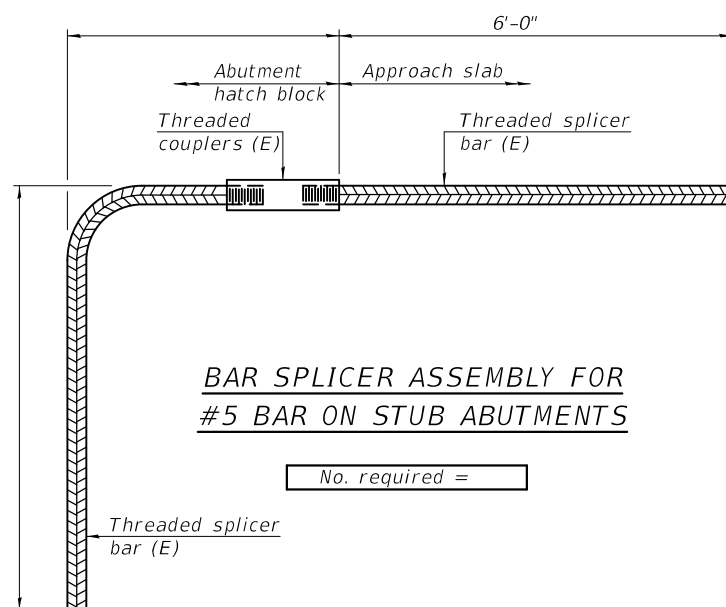
INSTALLATION AND SETTING METHODS

"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



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

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

BSD-1 2-17-2017

DESIGNED - HSS
 CHECKED - SMR
 DRAWN - STEFFEN
 CHECKED - HSS SMR

EXAMINED
 PASSED

Timothy A. [Signature]
 ENGINEER OF STRUCTURAL SERVICES
 [Signature]
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - DECEMBER 5, 2018
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 SN 041-0041

SHEET 7 OF 7 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	47
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

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

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

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

The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.

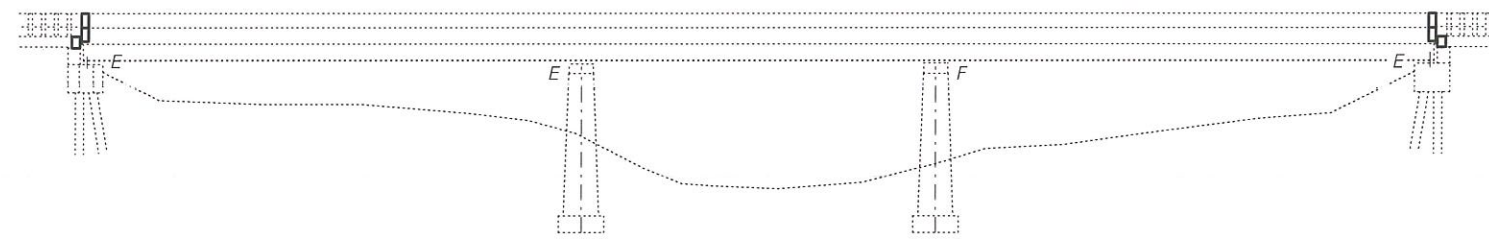
Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.

Fasteners shall be high strength bolts. Bolts 3/4"Ø, open holes 13/16"Ø, unless otherwise noted.

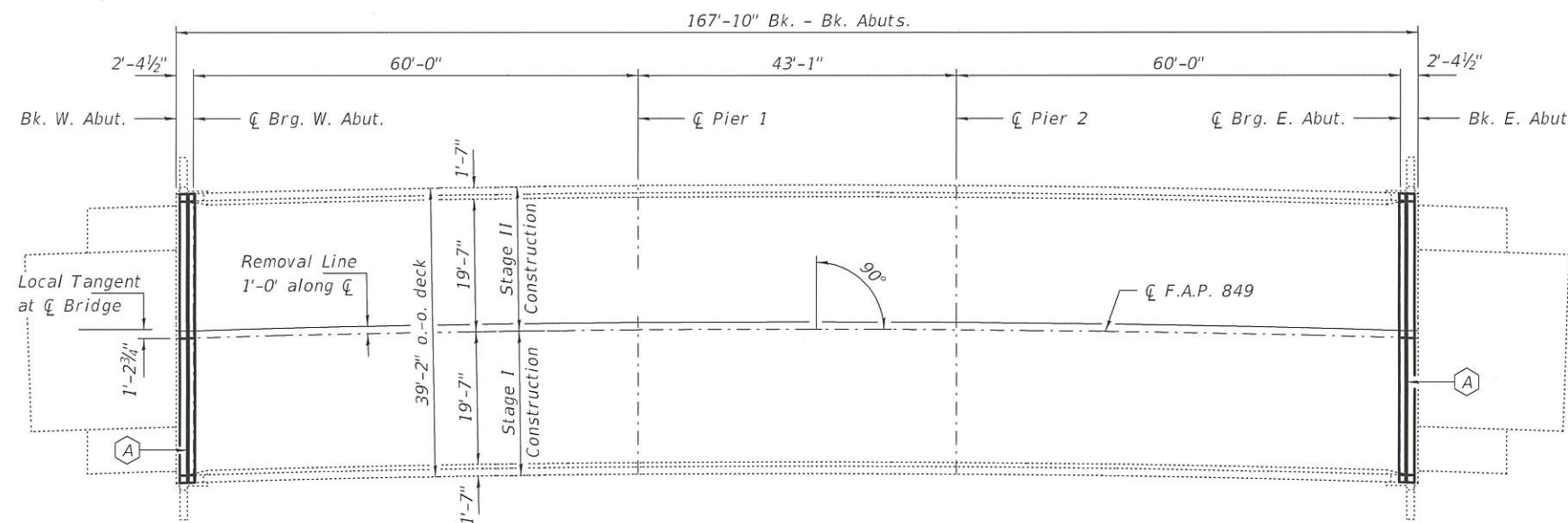
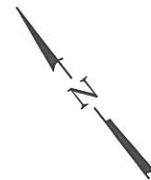
Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

Diaphragm connection holes shall be 13/16"Ø for 3/4"Ø bolts. Two hardened washers shall be required at diaphragm connections.

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

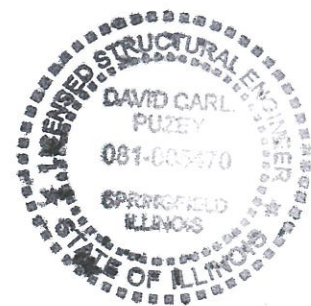


ELEVATION



PLAN

- (A) - Remove and Replace Expansion Joints at Abutments.
- (B)(C) - Beam End Repairs - See sheet 4 of 5.



EXPIRES 11-30-2020

DESIGNED <i>Stephen M Ryan</i>	EXAMINED <i>Timothy A. ...</i>	DATE - DECEMBER 5, 2018
CHECKED <i>Chris P. ...</i>	PASSED <i>David Carl Puzey</i>	REVISD -
DRAWN <i>daburdell</i>		REVISD -
CHECKED <i>SMR CDK</i>		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN AND ELEVATION
FAP 849 (IL 142) OVER CASEY FORK
SN 041-0042**

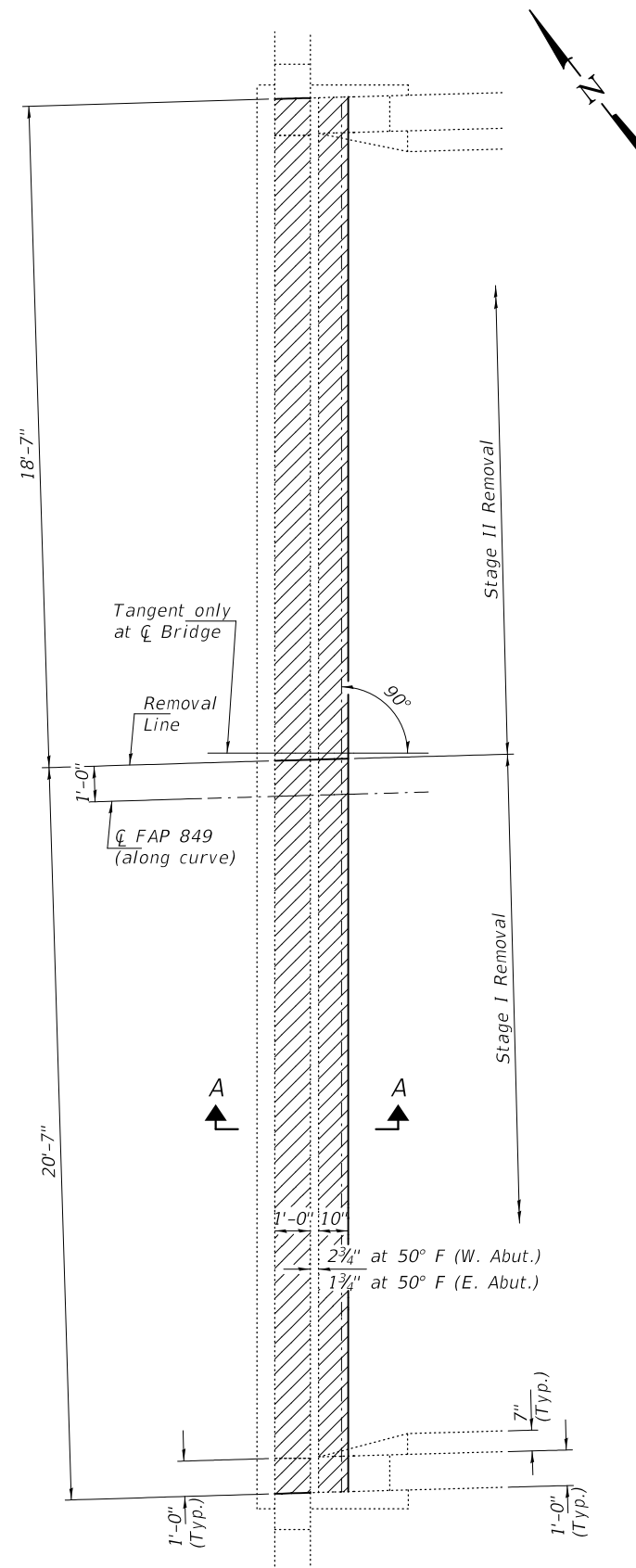
SHEET NO. 1 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	48
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

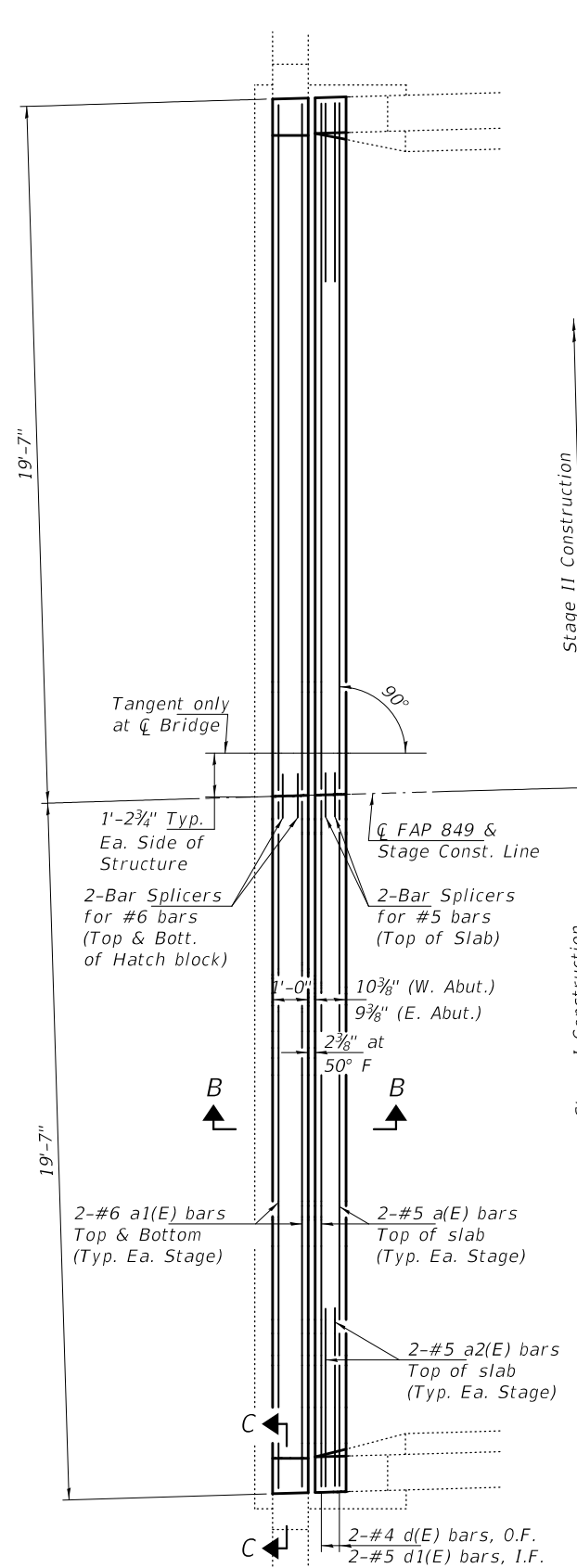
TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	5.4
Concrete Superstructure	Cu. Yd.	5.4
Structural Steel Repair	Pound	2500
Reinforcement Bars, Epoxy Coated	Pound	720
Bar Splicers	Each	12
Prefomed Joint Strip Seal	Foot	79
* Protective Coat	Sq. Yd.	16.5

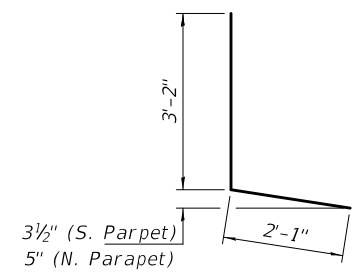
* On new deck surface and top and inside face of new concrete only.



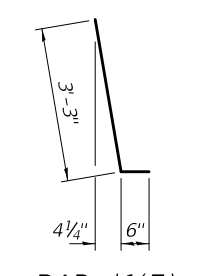
CONCRETE REMOVAL DETAILS
(West Abut. shown; East Abut. typ by rotation)



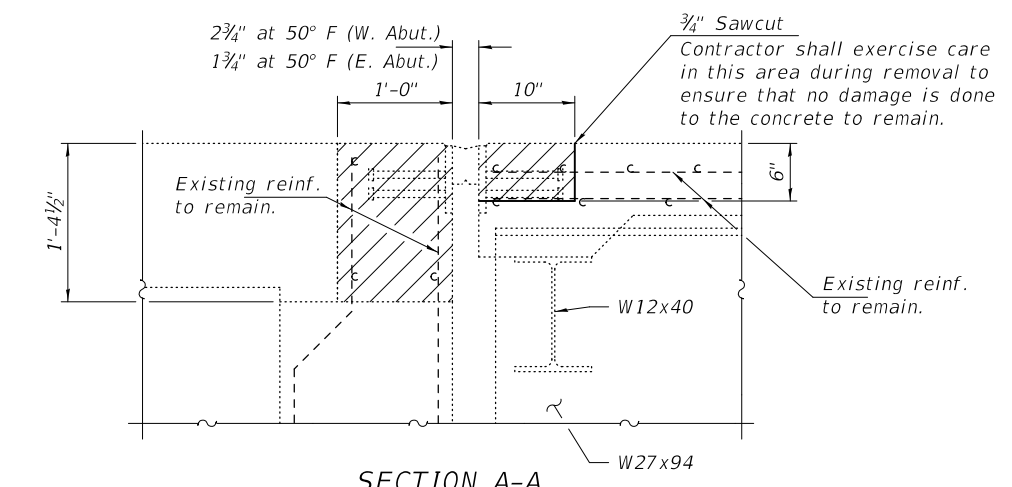
CONCRETE REPLACEMENT DETAILS
(West Abut. shown; East Abut. typ by rotation)



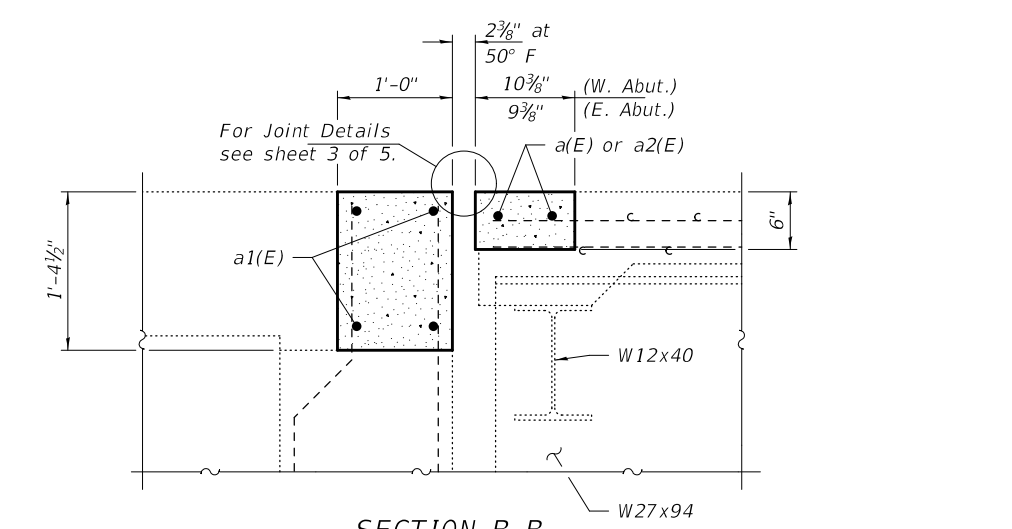
BAR d(E)



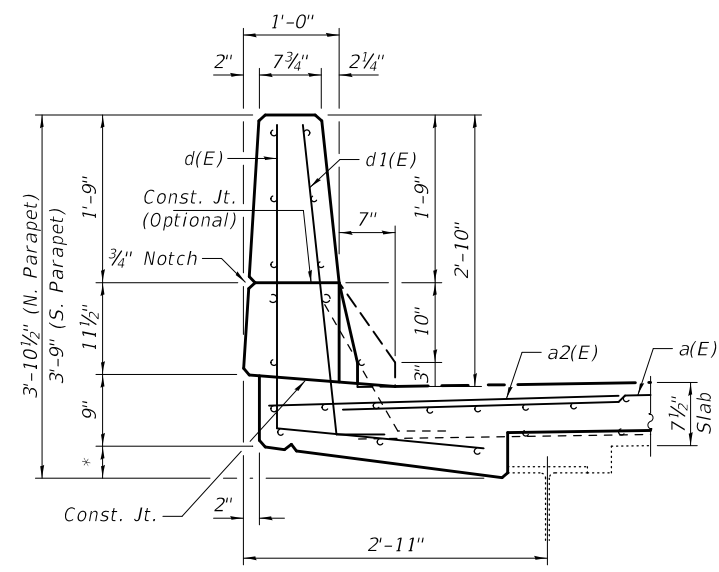
BAR d1(E)



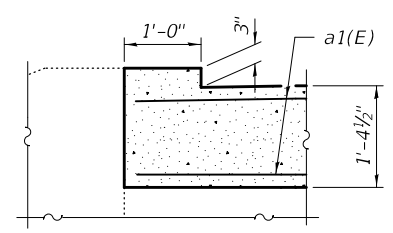
SECTION A-A



SECTION B-B



SECTION THRU BRIDGE PARAPET



SECTION C-C

BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
a(E)	8	#5	19'-3"	—	
a1(E)	16	#6	19'-3"	—	
a2(E)	8	#5	4'-0"	—	
d(E)	8	#4	5'-3"	L	
d1(E)	8	#5	3'-9"	L	
Concrete Removal				Cu. Yd.	5.4
Concrete Superstructure				Cu. Yd.	5.4
Bar Splicers				Each	12
Reinforcement Bars, Epoxy Coated				Pound	720

I-2E-1

8-11-2017

Note:
Hatched areas indicate
Concrete Removal.

DESIGNED - SMR	EXAMINED
CHECKED - CDK	PASSED
DRAWN - daburdell	
CHECKED - SMR CDK	

Timothy A. ...
ENGINEER OF STRUCTURAL SERVICES

Carl ...
ENGINEER OF BRIDGES AND STRUCTURES

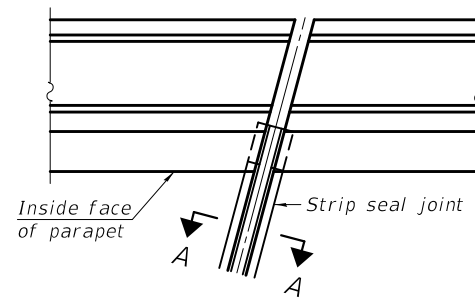
DATE - DECEMBER 5, 2018
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

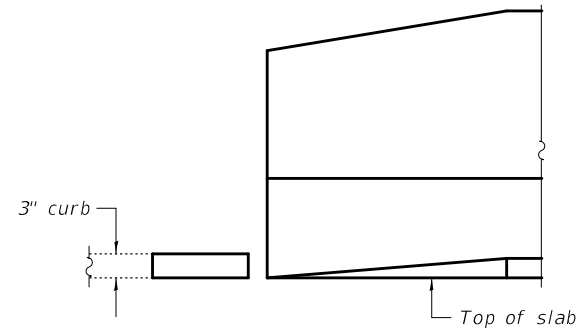
JOINT REMOVAL AND REPLACEMENT
SN 041-0042

SHEET NO. 2 OF 5 SHEETS

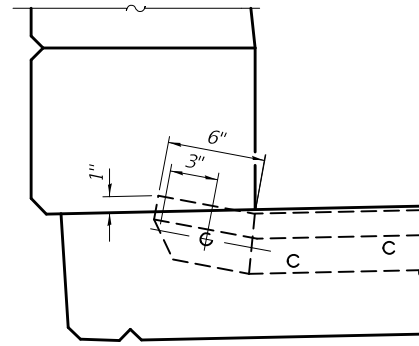
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	49
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



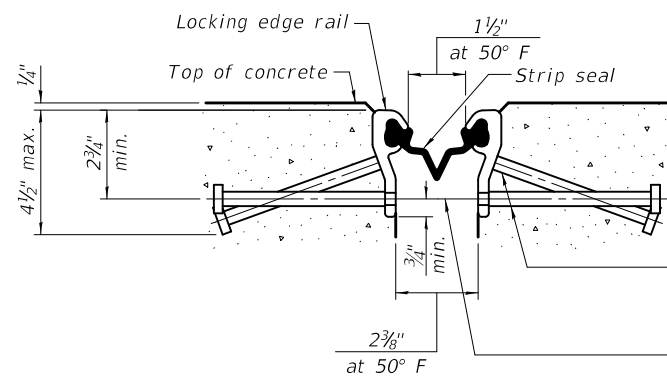
FOR SKEWS $\leq 30^\circ$
PLAN AT PARAPET



ELEVATION AT PARAPET
 (Inside Face)



ELEVATION AT PARAPET
 (Skews $\leq 30^\circ$)



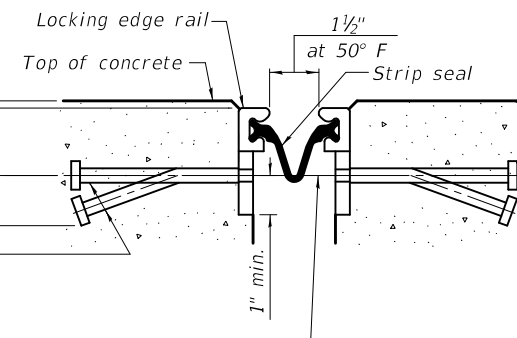
SHOWING ROLLED RAIL JOINT

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

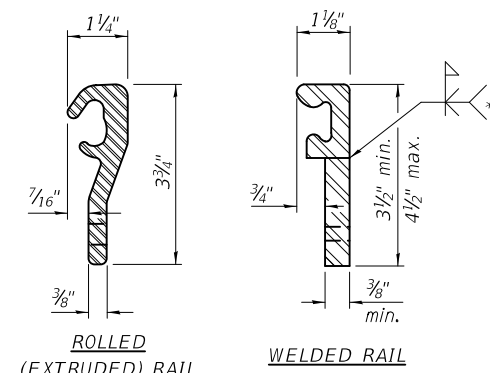
$\frac{3}{8}$ " ϕ threaded rods in $\frac{7}{16}$ " ϕ holes at ± 4 "-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

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

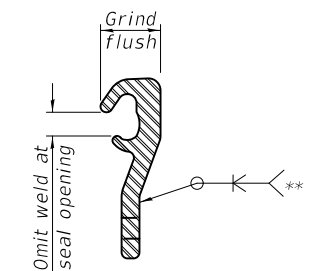


SHOWING WELDED RAIL JOINT



LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	79

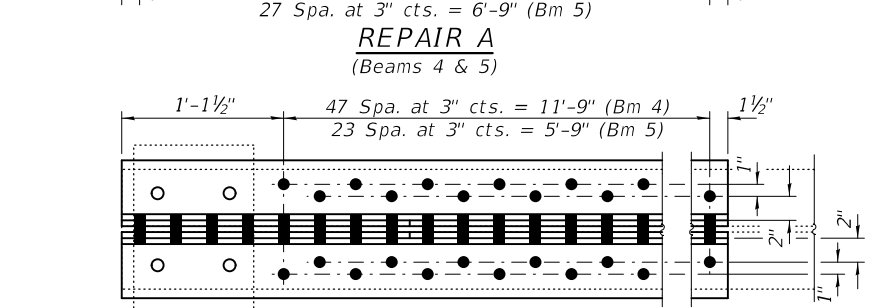
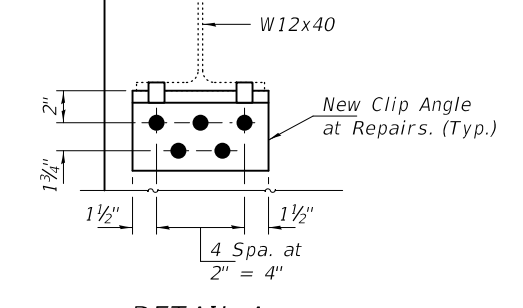
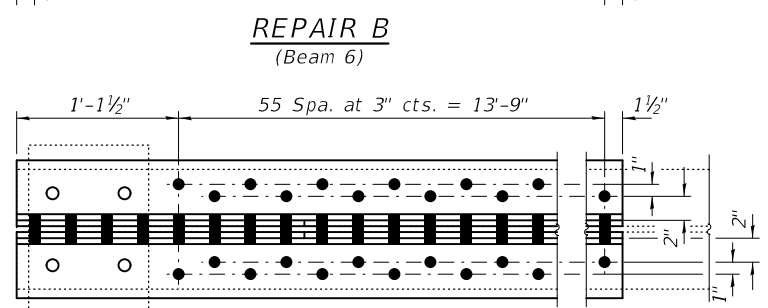
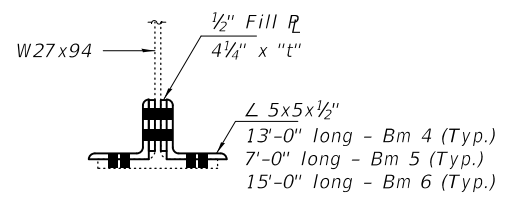
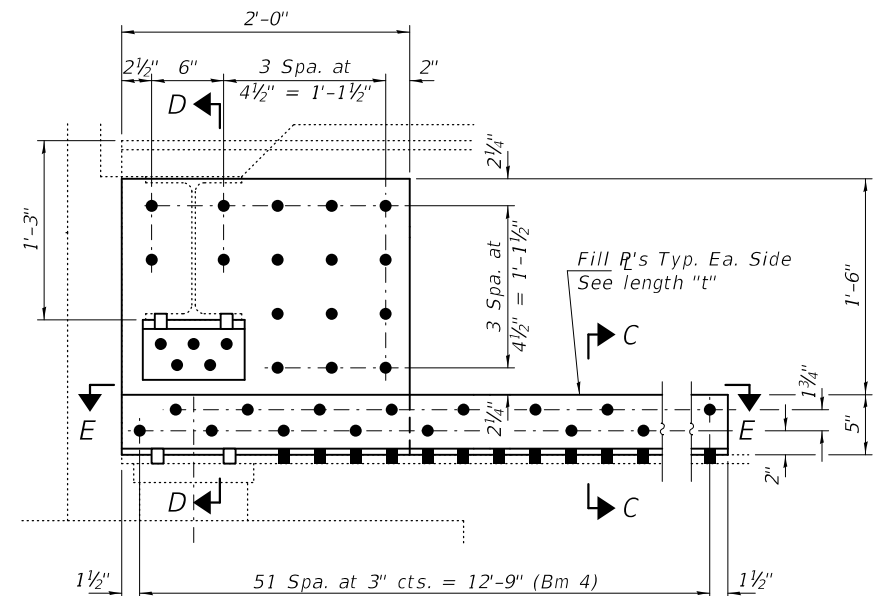
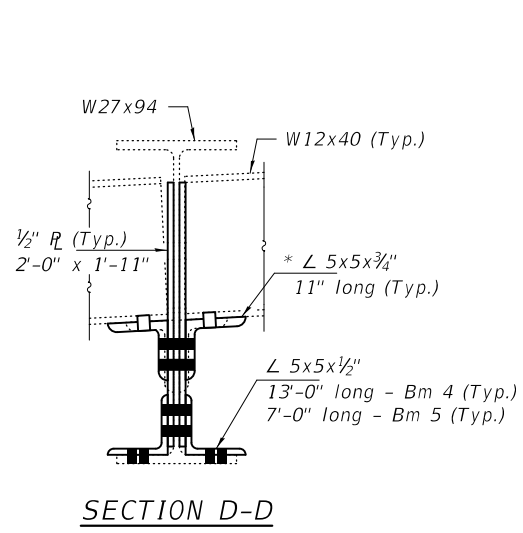
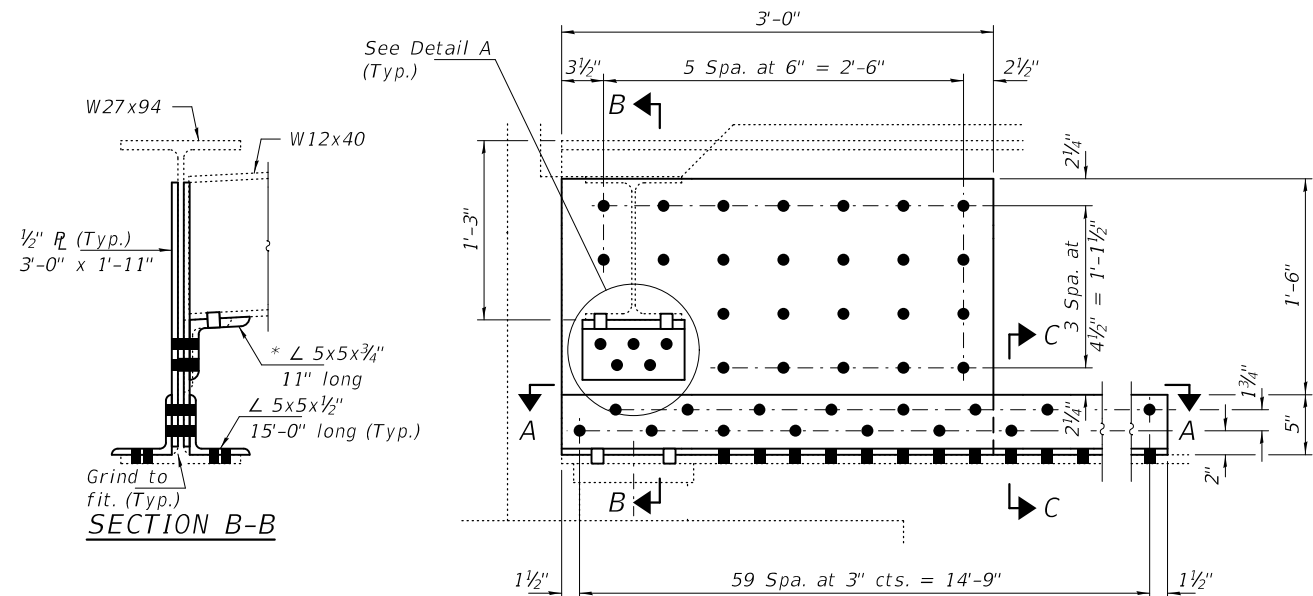
DESIGNED - SMR	EXAMINED - <i>Timothy A. Daburdell</i> ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018
CHECKED - CDK	PASSED - <i>Carl R. Meyer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
DRAWN - <i>daburdell</i>		REVISED -
CHECKED - SMR CDK		

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

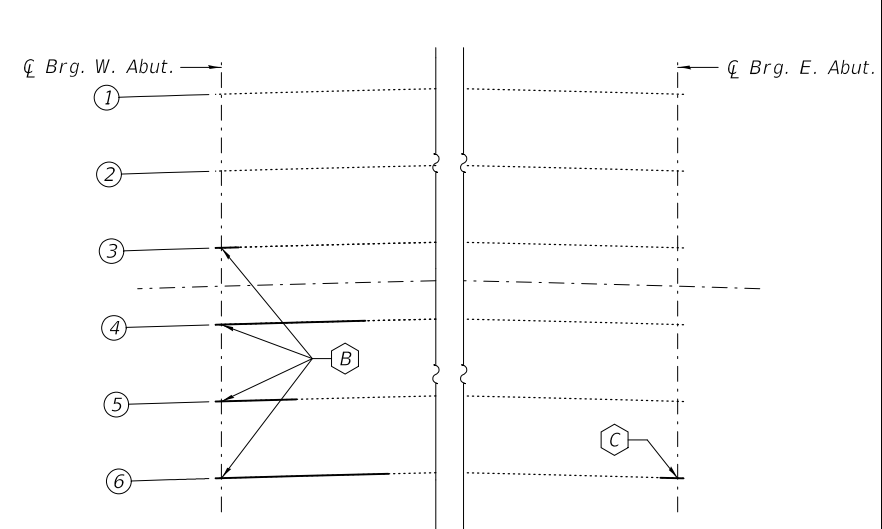
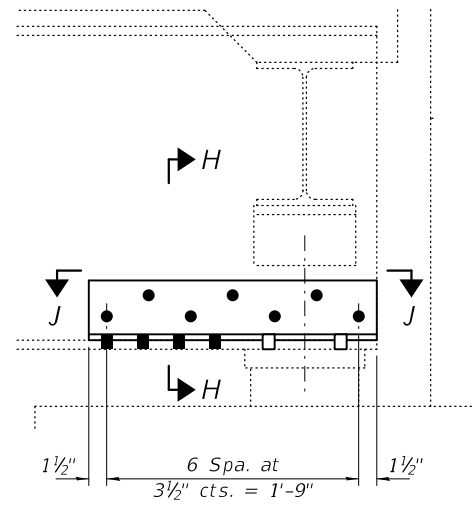
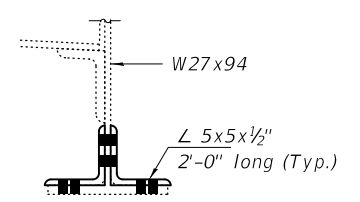
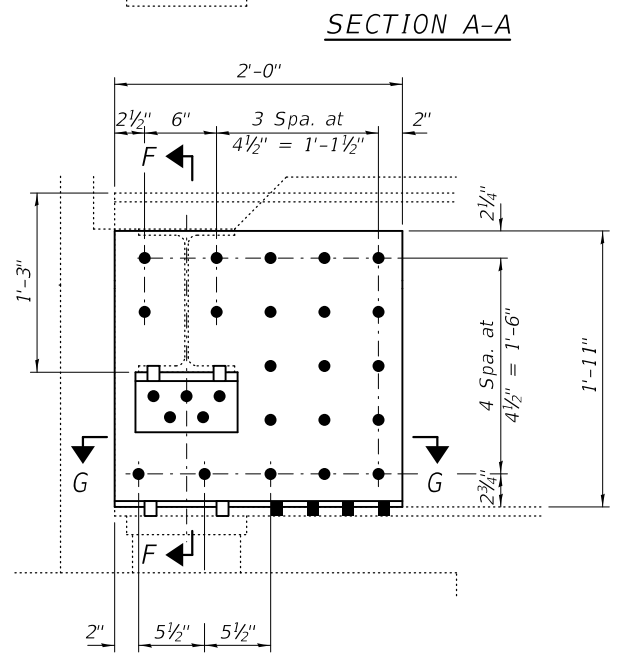
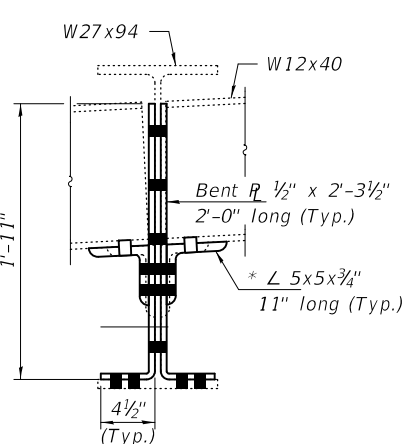
PREFORMED JOINT STRIP SEAL
 SN 041-0042

SHEET NO. 3 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	50
ILLINOIS			CONTRACT NO. 78650	
FED. AID PROJECT				



FILL R LENGTH "t"
 Bm 4 = 11'-0"
 Bm 5 = 5'-0"
 Bm 6 = 12'-0"

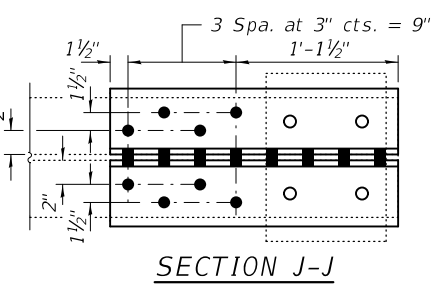
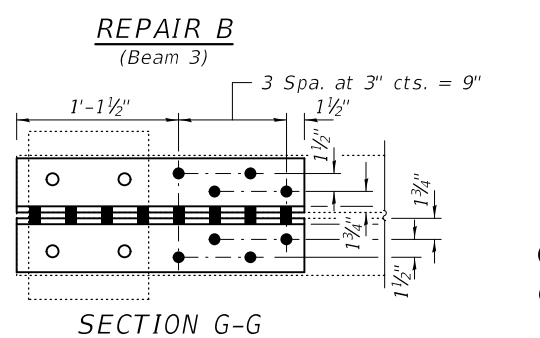


* Bend to match existing.
 Welded steel plates can be used in lieu of the angle.

Notes:
 Trim diaphragms as required for proper fit.
 Remove existing clip angles using the air-arc method and grind smooth all remaining weld material.

BOLT HOLE LEGEND

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



BILL OF MATERIAL

Item	Unit	Total
Structural Steel Repair	Pound	2500

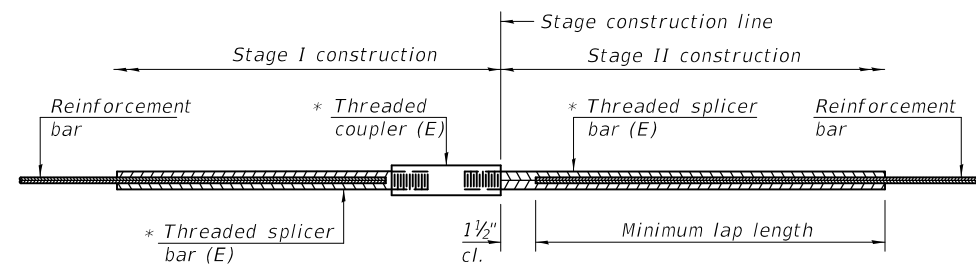
DESIGNED - SMR	EXAMINED - Timothy A. Daburdell	DATE - DECEMBER 5, 2018
CHECKED - CDK	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - daburdell	PASSED - Carl Ringer	REVISER -
CHECKED - SMR CDK	ENGINEER OF BRIDGES AND STRUCTURES	REVISER -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

REPAIR DETAILS
 SN 041-0042

SHEET NO. 4 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	51
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

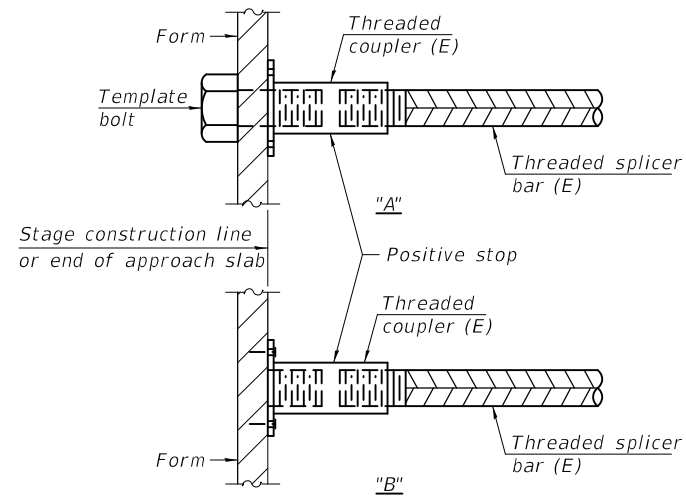


STANDARD BAR SPLICER ASSEMBLY

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

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

Location	Bar size	No. assemblies required	Minimum lap length
Bridge Deck	#5	4	3'-0"
Abutment	#6	8	4'-0"

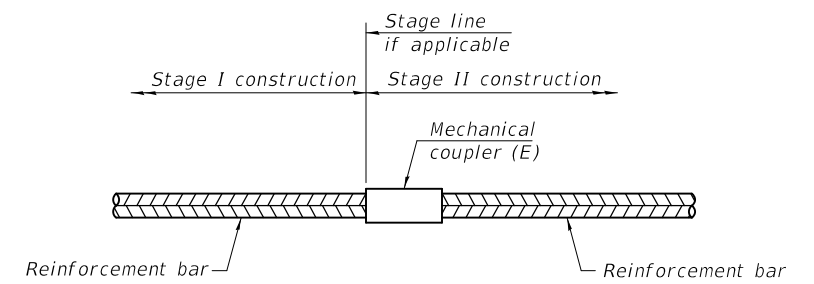


INSTALLATION AND SETTING METHODS

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

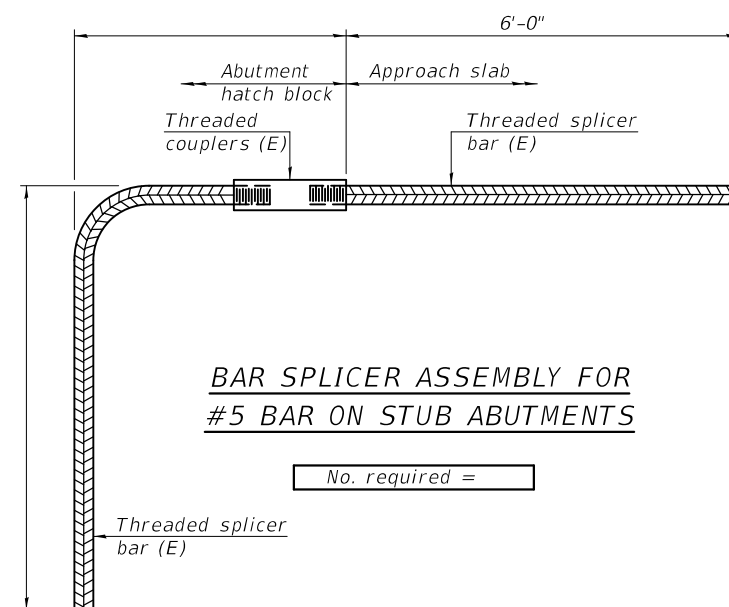
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

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

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

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

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

BSD-1

2-17-2017

DESIGNED - SMR
 CHECKED - CDK
 DRAWN - daburdell
 CHECKED - SMR CDK

EXAMINED
 PASSED

Timothy A. Daburdell
 ENGINEER OF STRUCTURAL SERVICES
 Carl R. Ringer
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - DECEMBER 5, 2018

REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 SN 041-0042

SHEET NO. 5 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
849	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	52
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

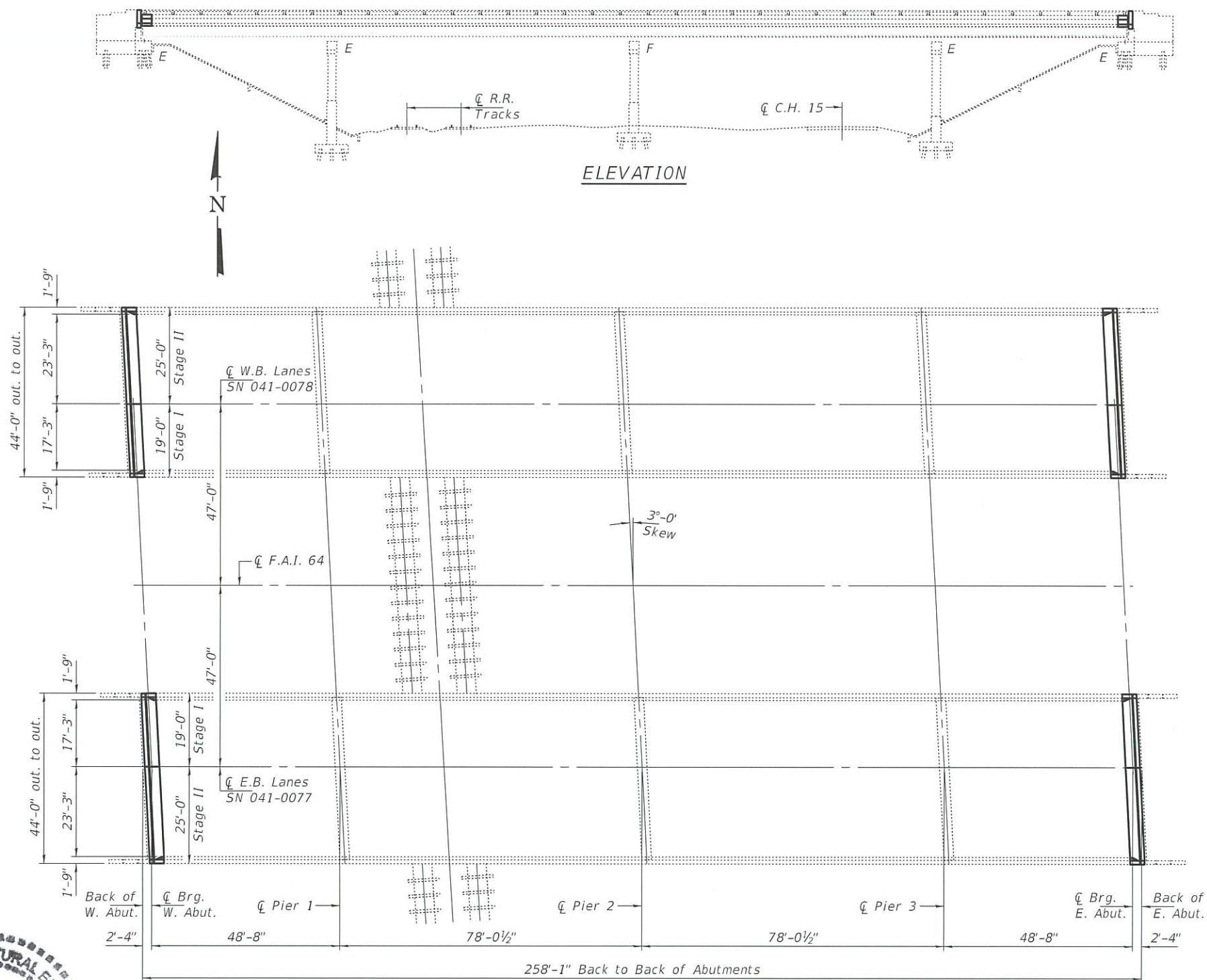
GENERAL NOTES

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

Reinforcement bars designated (E) shall be epoxy coated.
 Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

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

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



ELEVATION

PLAN



Expires: November 30, 2020

DESIGNED - <i>Flamgeed Salih</i>	EXAMINED - <i>Tijetha A. Agam</i>	DATE - DECEMBER 5, 2018
CHECKED - <i>Wesley S. B.</i>	PASSED - <i>Dr. Carl Puzey</i>	REVISID -
DRAWN - STEFFEN		REVISID -
CHECKED - HSS JSB		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN & ELEVATION
F.A.I. ROUTE 64 OVER RAILROAD & C.H. 15
SN 041-0077 (E.B.) & -0078 (W.B.)**

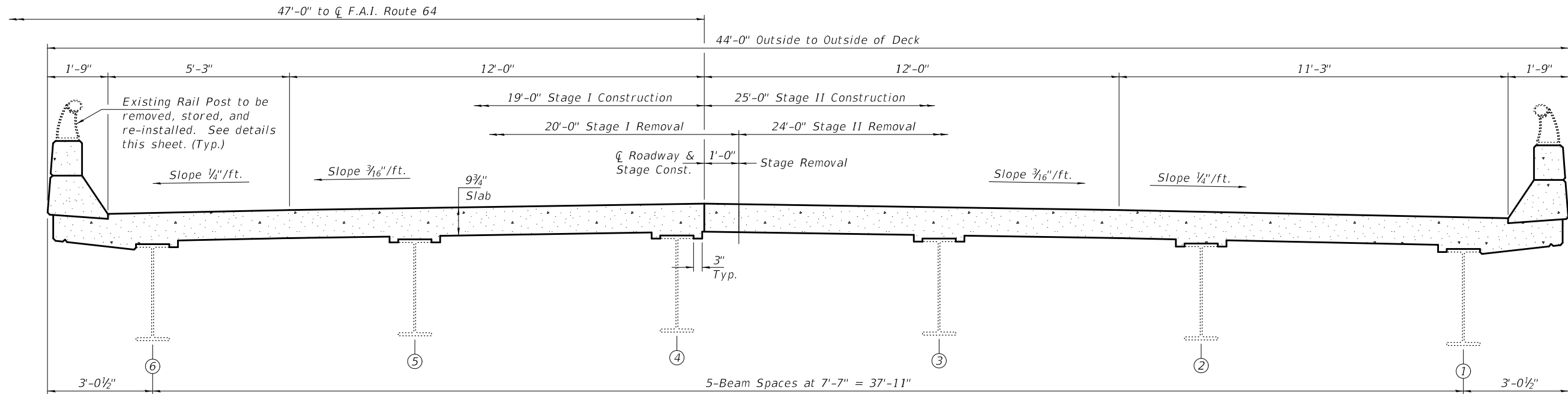
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	53
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

SHEET 1 OF 5 SHEETS

TOTAL BILL OF MATERIAL

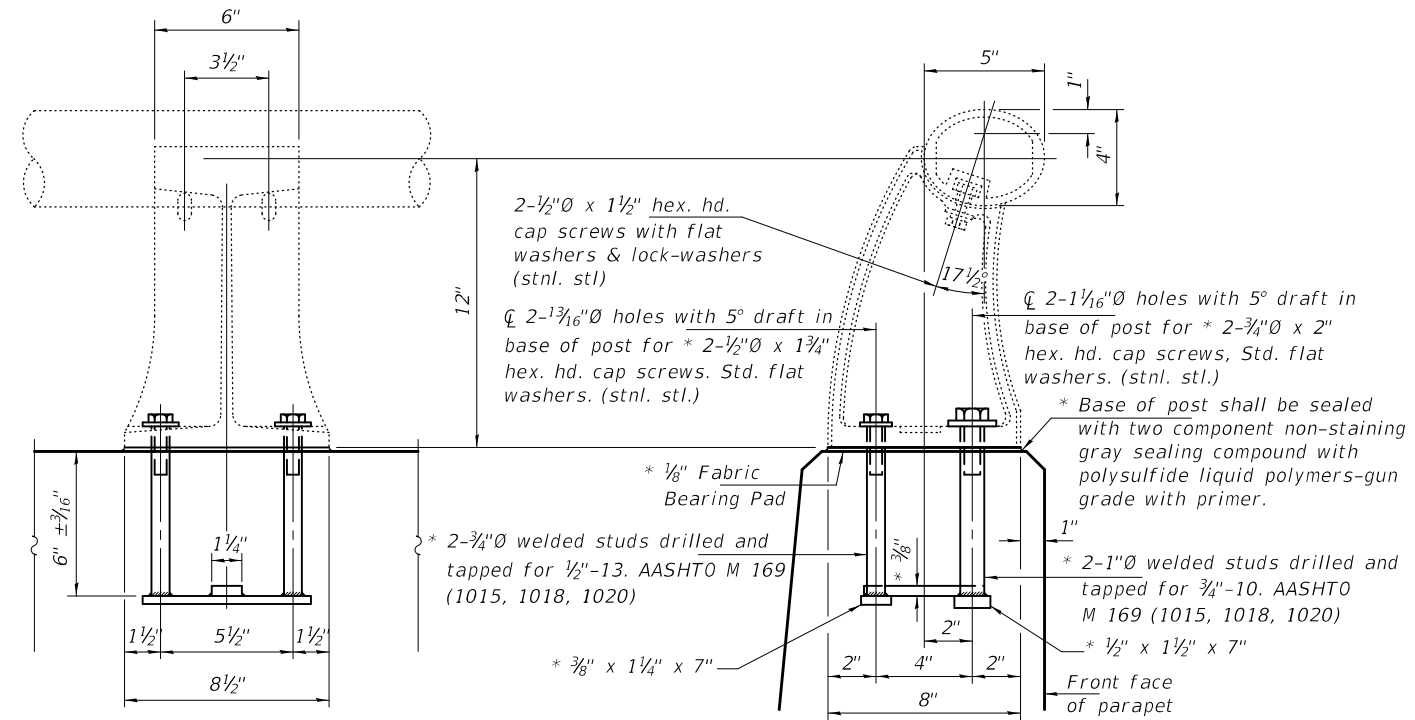
ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	26.4
Concrete Superstructure	Cu. Yd.	26.7
Reinforcement Bars, Epoxy Coated	Pound	3800
Bar Splicers	Each	56
Preformed Joint Strip Seal	Foot	166
* Protective Coat	Sq. Yd.	76

* New Concrete Only.



CROSS SECTION



Looking East thru SN 041-0077 (E.B.)
Looking West thru SN 041-0078 (W.B.)



RAIL POST DETAIL

* New Rail Post anchorage devices will be required at each location where posts are connected to new construction. Cost included with Concrete Superstructure.

DESIGNED - HSS	EXAMINED
CHECKED - JSB	PASSED
DRAWN - STEFFEN	
CHECKED - HSS JSB	


 ENGINEER OF STRUCTURAL SERVICES

 ENGINEER OF BRIDGES AND STRUCTURES

DATE - DECEMBER 5, 2018
REVISED -
REVISED -

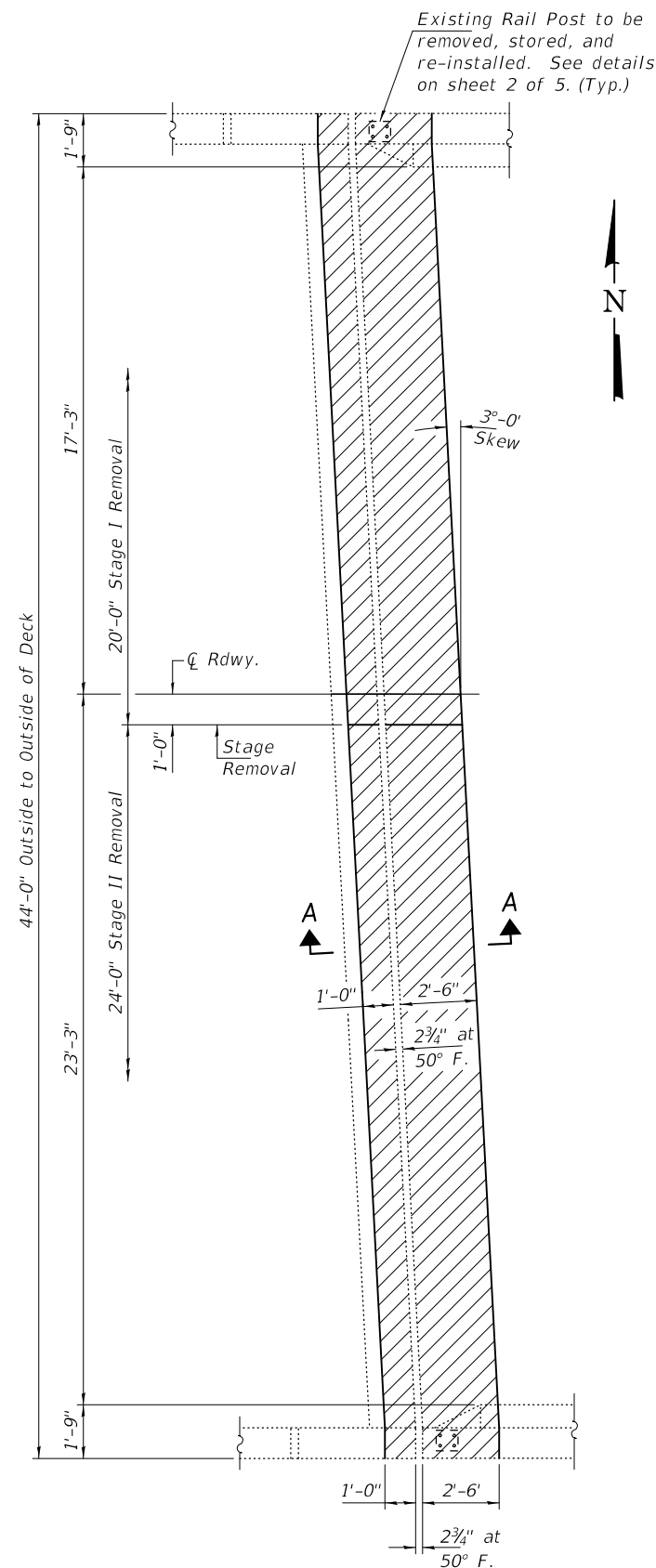
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STAGING DETAILS
SN 041-0077 (E.B.) & -0078 (W.B.)**

SHEET 2 OF 5 SHEETS

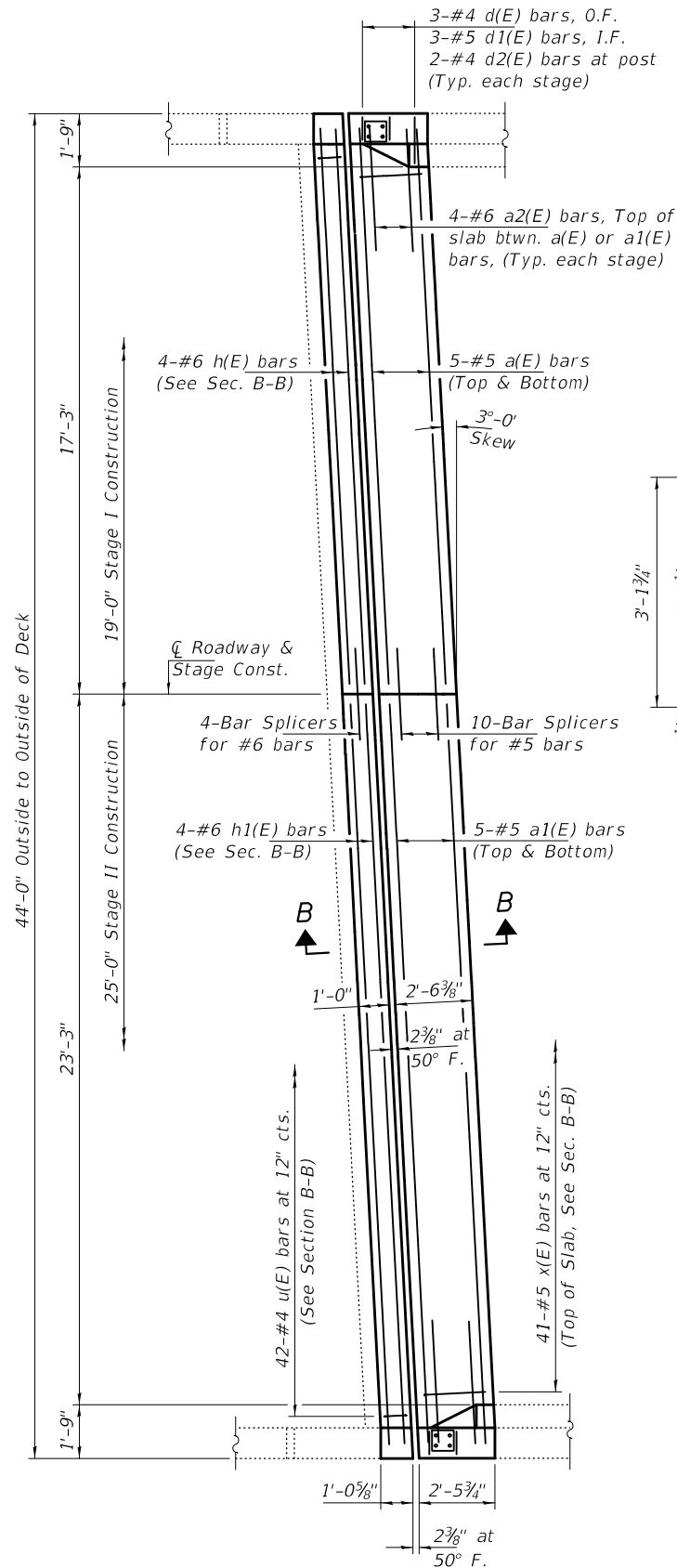
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	54
CONTRACT NO. 78650				

ILLINOIS FED. AID PROJECT



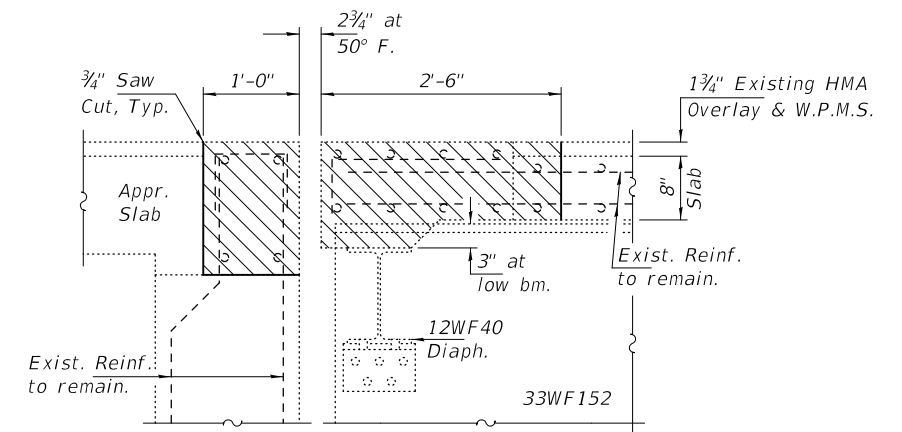
CONCRETE REMOVAL PLAN

SN 041-0077 W. Abut. shown; E. Abut. similar.
SN 041-0078 similar by 180° rotation.

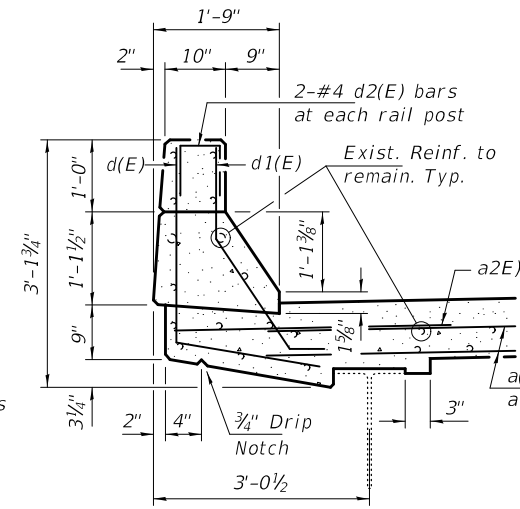


CONCRETE REPLACEMENT PLAN

SN 041-0077 W. Abut. shown; E. Abut. similar.
SN 041-0078 similar by 180° rotation.

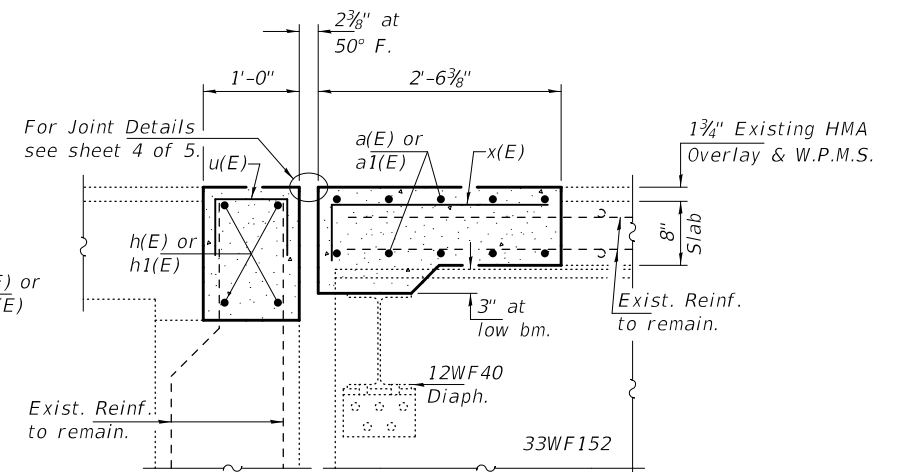


SECTION A-A
(Dims. at Rt. L's)

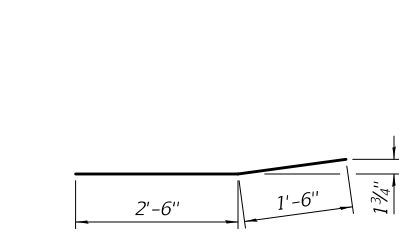


TYPICAL PARAPET SECTION

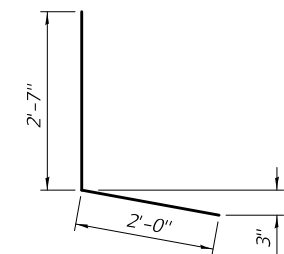
Note:
Hatched areas indicate concrete removal.



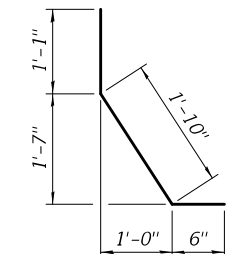
SECTION B-B
(Dims. at Rt. L's)



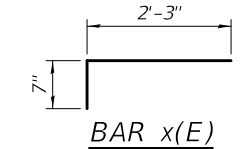
BAR a4(E)



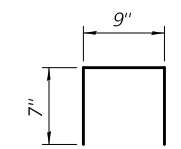
BAR d(E)



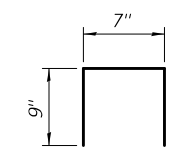
BAR d1(E)



BAR x(E)



BAR u(E)



BAR d2(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	40	#5	17'-2"	—
a1(E)	40	#5	23'-2"	—
a2(E)	32	#6	4'-0"	—
d(E)	24	#5	4'-7"	L
d1(E)	24	#4	3'-5"	L
d2(E)	16	#4	2'-1"	U
h(E)	16	#6	18'-6"	—
h1(E)	16	#6	24'-6"	—
u(E)	168	#4	1'-11"	U
x(E)	164	#5	2'-10"	—
Concrete Removal			Cu. Yd.	26.4
Concrete Superstructure			Cu. Yd.	26.7
Bar Splicers			Each	56
Reinforcement Bars, Epoxy Coated			Pound	3800

DESIGNED - HSS
CHECKED - JSB
DRAWN - STEFFEN
CHECKED - HSS JSB

EXAMINED
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

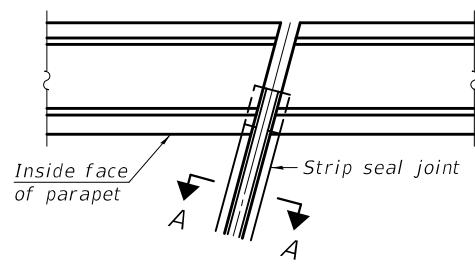
DATE - DECEMBER 5, 2018
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

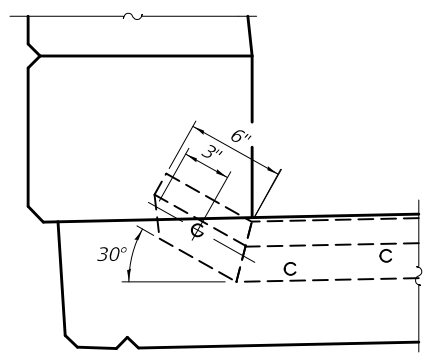
JOINT REMOVAL & REPLACEMENT DETAILS
SN 041-0077 (E.B.) & -0078 (W.B.)

SHEET 3 OF 5 SHEETS

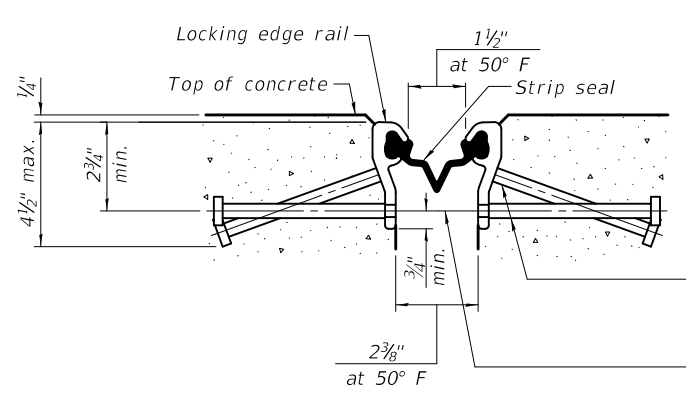
F.A.I. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
64 D9 BRIDGE REPAIR 2019-4 JEFFERSON 61 55
CONTRACT NO. 78650
ILLINOIS FED. AID PROJECT



FOR SKEWS $\leq 30^\circ$
PLAN AT PARAPET



ELEVATION AT PARAPET
 (Skews $\leq 30^\circ$)

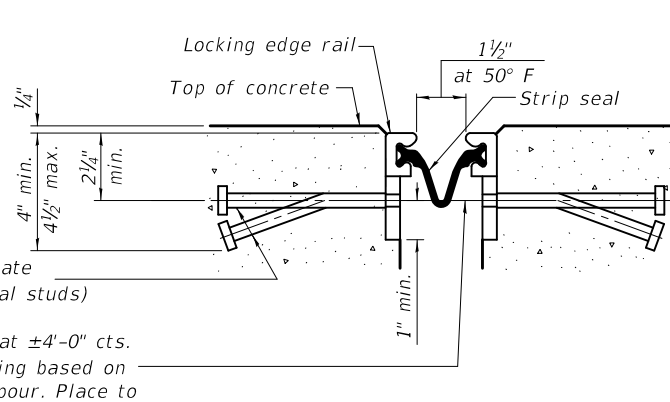


SHOWING ROLLED RAIL JOINT

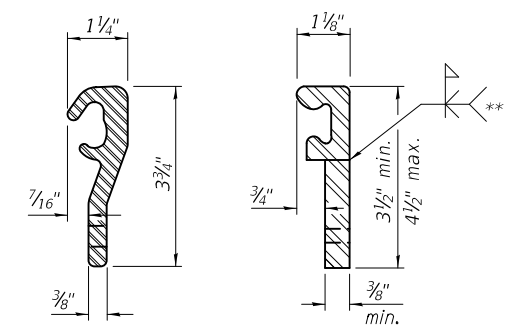
* $\frac{3}{8}$ " \varnothing x 6" studs at 6" cts. (alternate angled/bent studs with horizontal studs)
 $\frac{3}{8}$ " \varnothing threaded rods in $\frac{7}{16}$ " \varnothing holes at $\pm 4'-0"$ cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

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

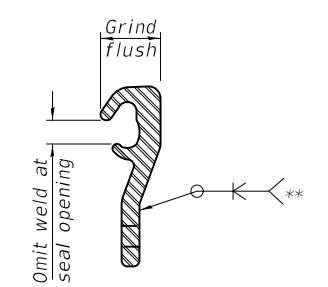


SHOWING WELDED RAIL JOINT



LOCKING EDGE RAILS
 ROLLED (EXTRUDED) RAIL WELDED RAIL

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



LOCKING EDGE RAIL SPLICE

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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	166

EJ-SS1 LT30/REPS 6-22-18

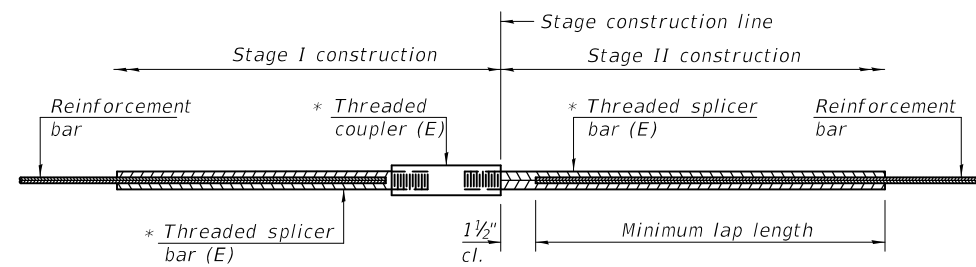
DESIGNED - HSS	EXAMINED	DATE - DECEMBER 5, 2018
CHECKED - JSB	<i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES	
DRAWN - STEFFEN	PASSED	REVISER -
CHECKED - HSS JSB	<i>Carl Ruyter</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISER -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PREFORMED JOINT STRIP SEAL DETAILS
 SN 041-0077 (E.B.) & -0078 (W.B.)**

SHEET 4 OF 5 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	56
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78650	

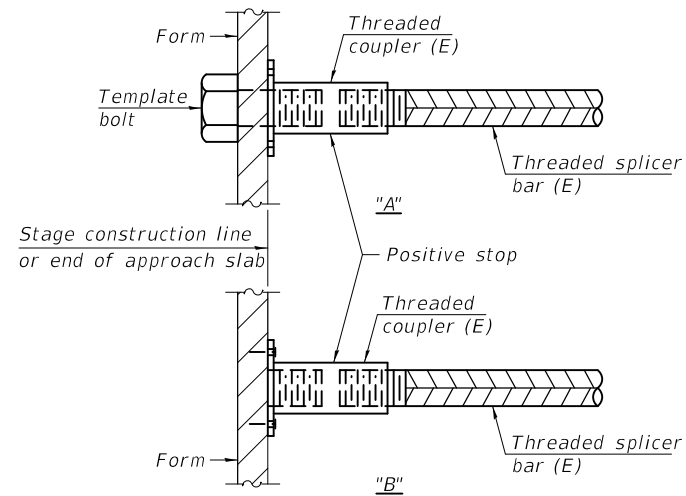


STANDARD BAR SPLICER ASSEMBLY

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

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

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	40	3'-6"
Abutment	#6	16	4'-0"

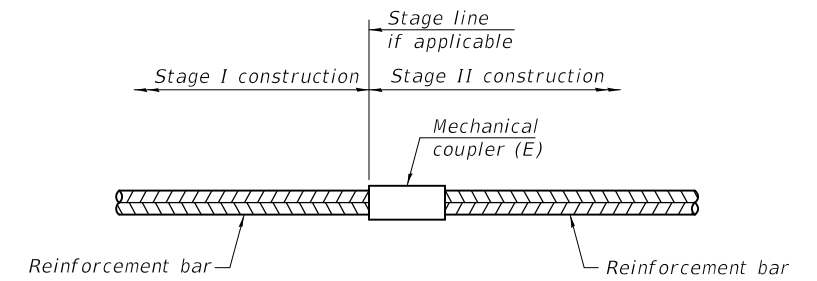


INSTALLATION AND SETTING METHODS

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

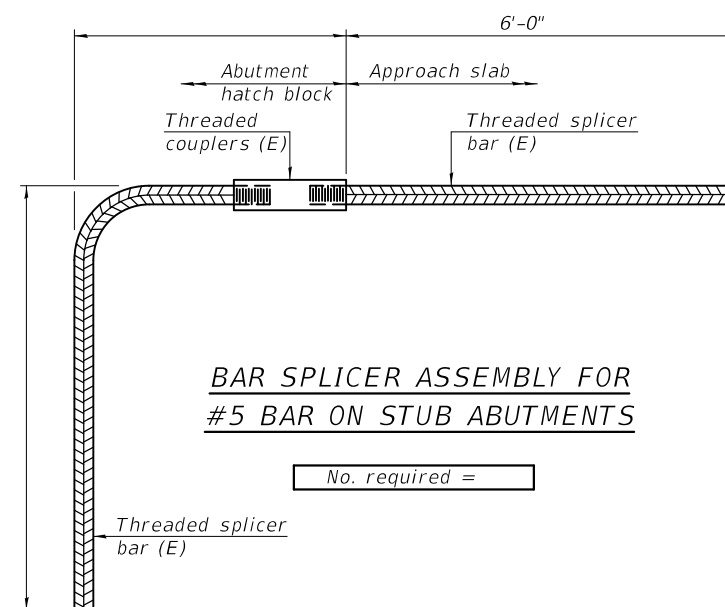
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(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.

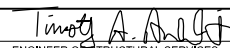
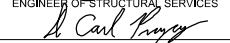
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

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

BSD-1

2-17-2017

DESIGNED - HSS	EXAMINED
CHECKED - JSB	PASSED
DRAWN - STEFFEN	
CHECKED - HSS JSB	


 ENGINEER OF STRUCTURAL SERVICES

 ENGINEER OF BRIDGES AND STRUCTURES

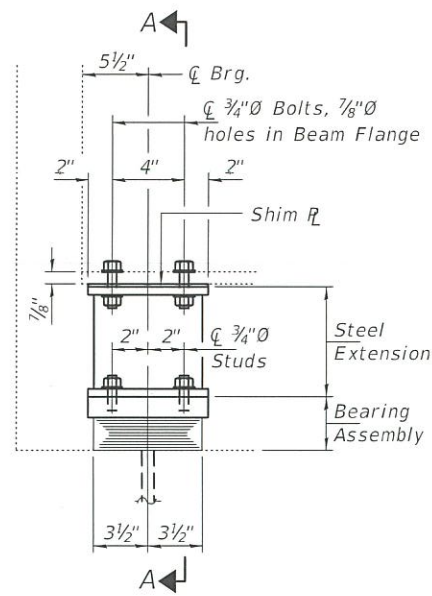
DATE - DECEMBER 5, 2018	REVISED -
	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

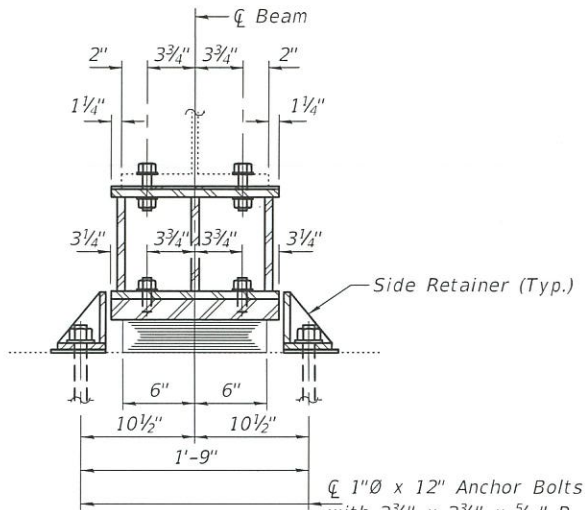
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 041-0077 (E.B.) & -0078 (W.B.)

SHEET 5 OF 5 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	57
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



ELEVATION AT ABUTMENT

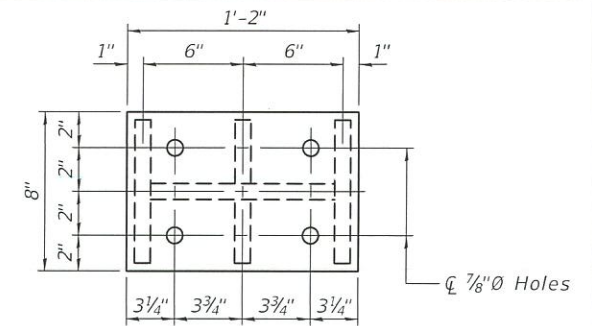


SECTION A-A

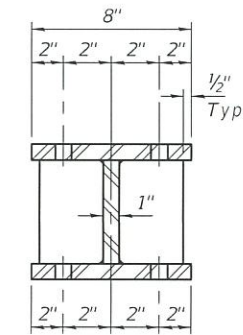
BEAM REACTIONS

R _l	(K)	20.1
R _t	(K)	36.2
Imp.	(K)	10.5
R (Total)	(K)	66.8

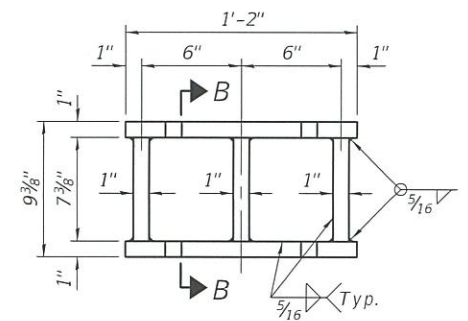
Notes:
 Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.
 New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel. Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).
 Min. jack capacity = 35 Tons.
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (F_y=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
 Cost of Side retainers and Stainless Steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.
 All new structural steel and bearing assembly shall be hot-dip galvanized. See Special Provisions for "Hot Dip Galvanizing for Structural Steel".



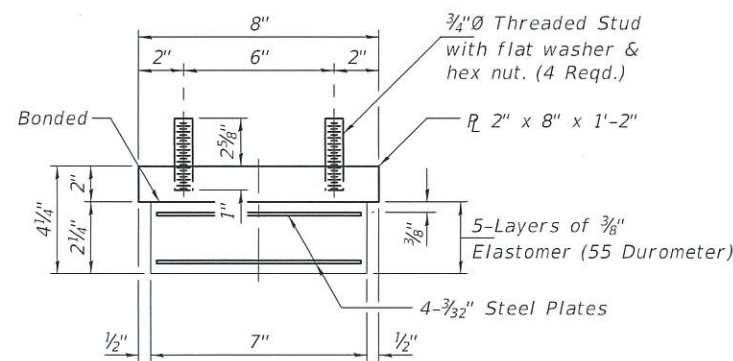
PLAN TOP AND BOTTOM PLATE



SECTION B-B

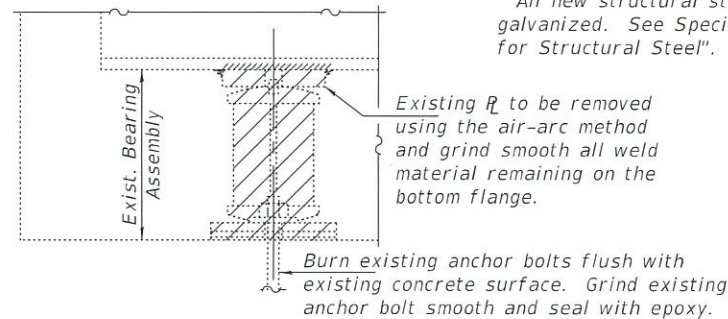


STEEL EXTENSION DETAIL



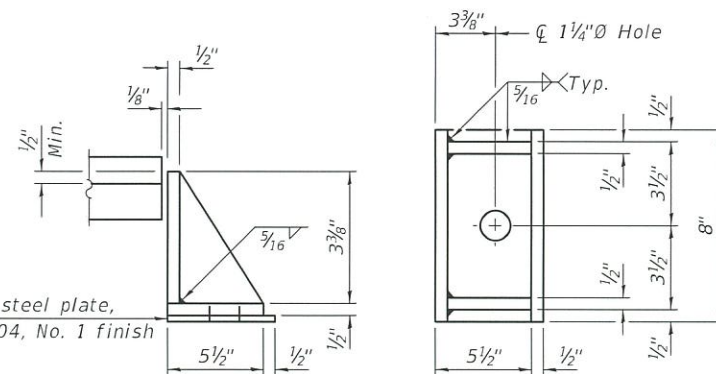
BEARING ASSEMBLY

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



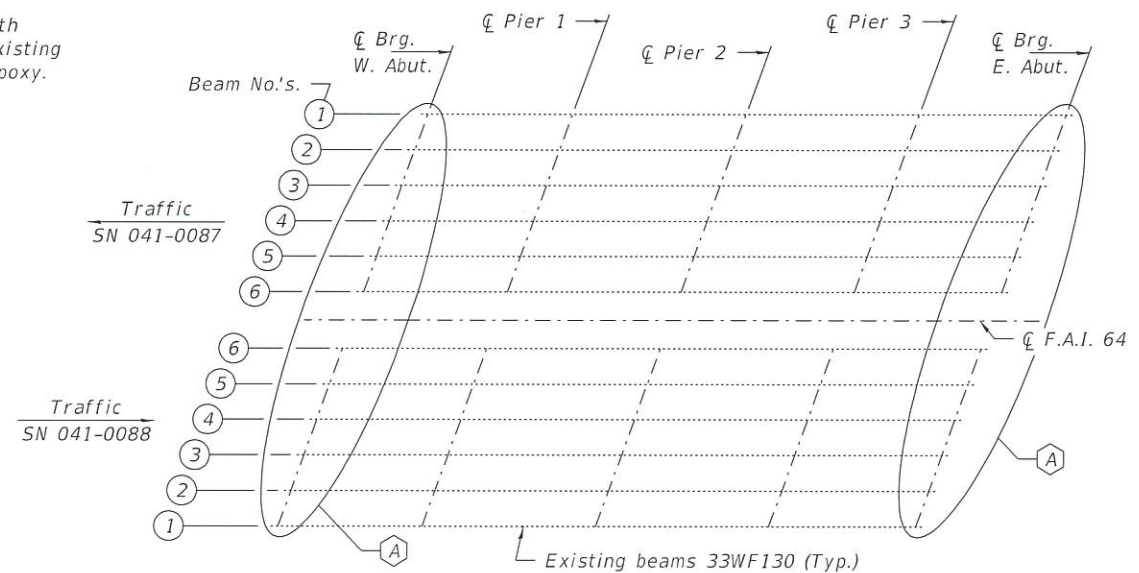
EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.



SIDE RETAINER

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

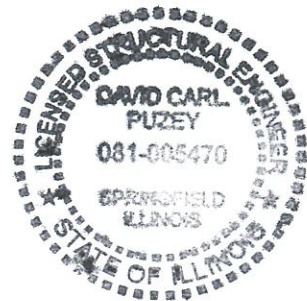


PLAN

(A) - Remove and Replace Bearings

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	24
Jack and Remove Existing Bearings	Each	24
Furnishing and Erecting Structural Steel	Pound	3150
Anchor Bolts, 1"Ø	Each	48



EXPIRES 11-30-2020

TYI/REPS 5-11-2018

DESIGNED Victor K. Veliz
 CHECKED Nameed Selik
 DRAWN daburdell
 CHECKED HSS

EXAMINED Timothy A. Armbrecht
 PASSED [Signature]
 ENGINEER OF STRUCTURAL SERVICES
 ENGINEER OF BRIDGE AND STRUCTURES

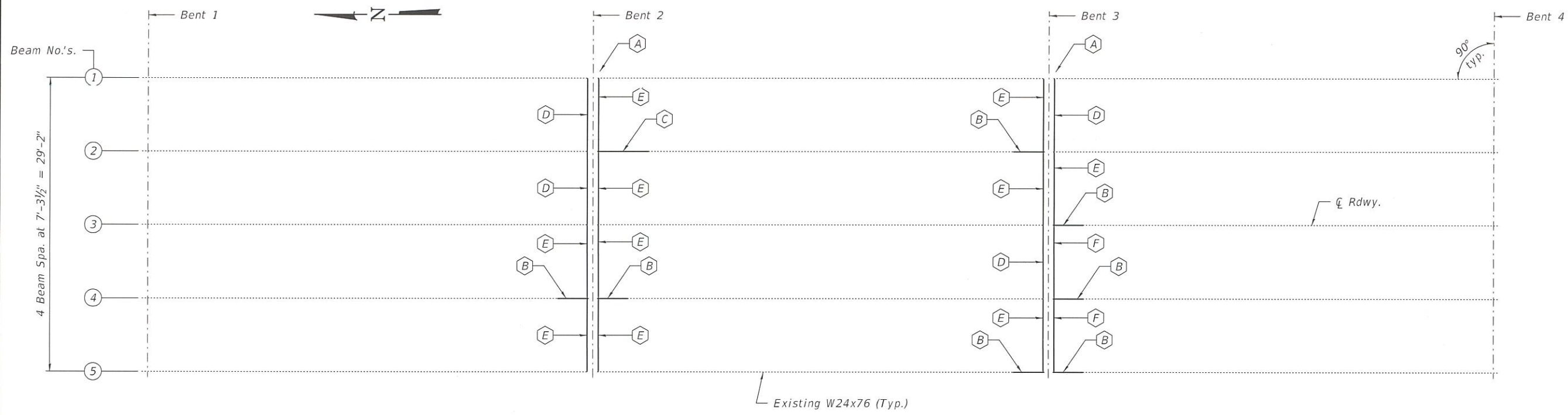
DATE - DECEMBER 5, 2018
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
 FAI 64 over CASEY FORK OVERFLOW
 SN 041-0087 (WB) & 0088 (EB)

SHEET NO. 1 OF 1 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	58
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				



FRAMING PLAN

- (A) - Remove and Replace Fixed Bearings at Bents 2 & 3 (20 Total)
- (B) - 3'-0" Beam End Repair (See Repair B)
- (C) - 5'-0" Beam End Repair (See Repair C)
- (D) - Diaphragm Remove and Replace (7'-2" length)
- (E) - Diaphragm Remove and Replace (7'-1½" length)
- (F) - Diaphragm Remove and Replace (7'-1" length)

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 50, unless otherwise noted.

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

Fasteners shall be high strength bolts. Bolts ¾"Ø, open holes 1⅜"Ø, unless otherwise noted.

Diaphragm connection holes shall be 1⅜"Ø for ¾"Ø bolts. Two hardened washers shall be required at diaphragm connections.

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

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



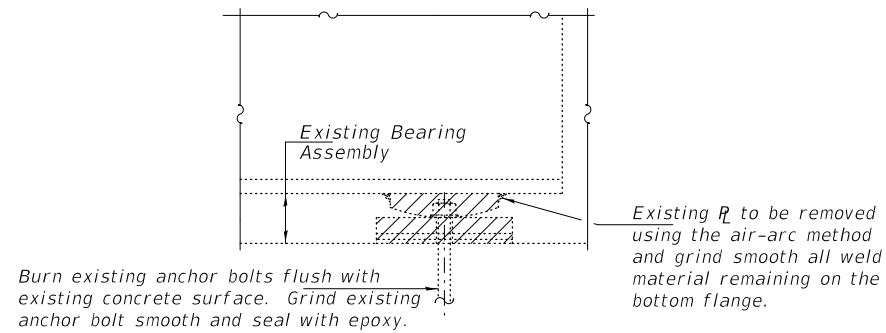
EXPIRES 11-30-2020

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	6850
Structural Steel Removal	Pound	4780
* Structural Steel Repair	Pound	2180
Anchor Bolts 1"Ø	Each	80
Jack and Remove Existing Bearings	Each	20

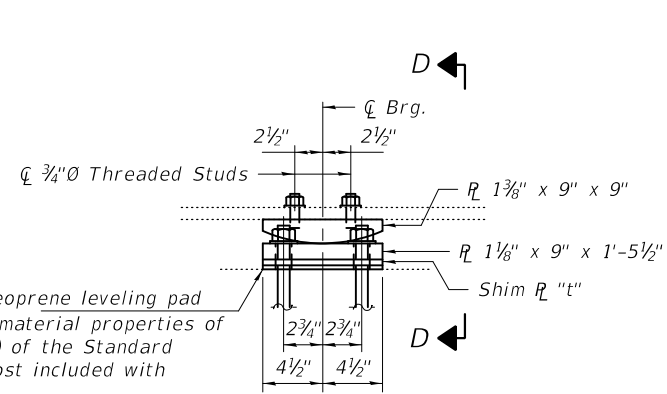
* Includes beam end repair only.

DESIGNED <i>Stephen M. Ryan</i>	EXAMINED <i>Tijuntha A. Arambam</i>	DATE - DECEMBER 5, 2018	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REPAIR DETAILS FAS 2869 (IL 37) OVER DODDS CREEK STRUCTURE NO. 041-0097	F.A.S. RTE. 2869	SECTION D9 BRIDGE REPAIR 2019-4	COUNTY JEFFERSON	TOTAL SHEETS 61	SHEET NO. 59	
CHECKED <i>Harmed Saleh</i>	PASSED <i>David Carl Puzey</i>	REVISD -			CONTRACT NO. 78650					
DRAWN <i>daburdell</i>	ENGINEER OF BRIDGE AND STRUCTURES	REVISD -			SHEET NO. 1 OF 3 SHEETS					
CHECKED <i>SMR H.S.S.</i>					ILLINOIS FED. AID PROJECT					

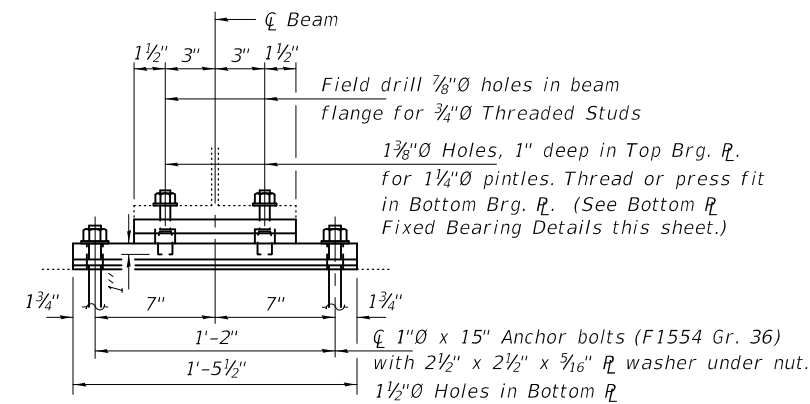


EXISTING BEARING REMOVAL DETAIL
Cost included with Jack and Remove Existing Bearings.

1/8" elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Structural Steel.

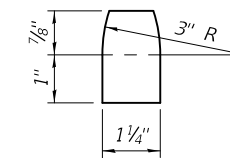


ELEVATION AT PIER



SECTION D-D

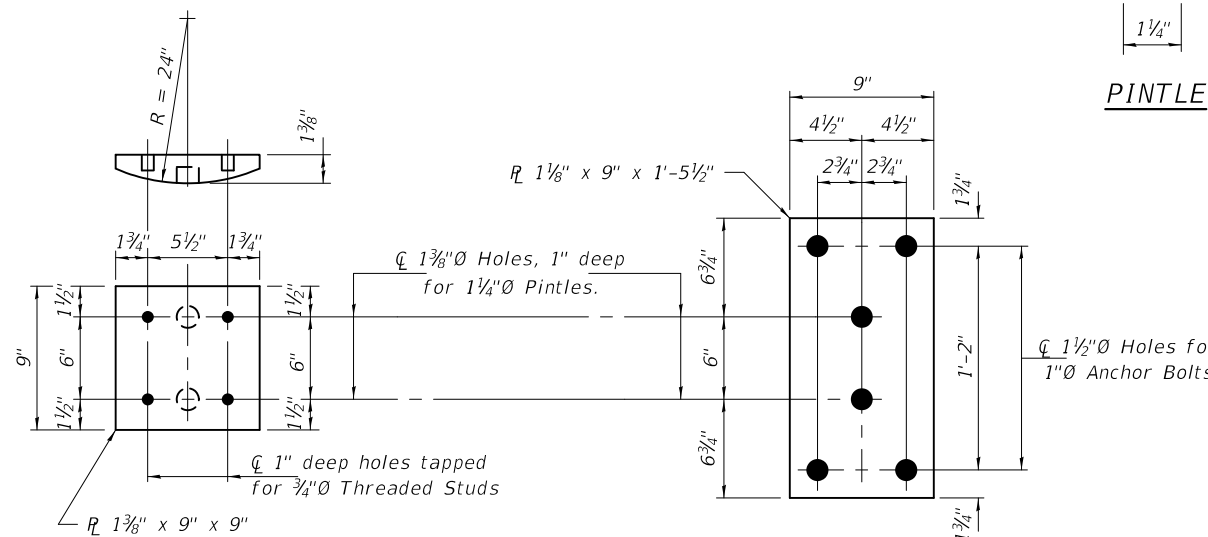
FIXED BEARINGS PIER



PINTLE

Bent	Span	Beam	Shim "t"
2	1	1	1/4"
		2	1/2"
		3	3/8"
		4	3/8"
		5	1/4"
2	2	1	1/4"
		2	1/2"
		3	1/2"
		4	1/4"
		5	1/4"

Bent	Span	Beam	Shim "t"
3	1	1	1/4"
		2	1/4"
		3	3/8"
		4	1/4"
		5	1/4"
3	2	1	1/8"
		2	3/8"
		3	1/4"
		4	1/4"
		5	1/4"



PLAN - TOP PLATE FIXED BEARINGS

PLAN - BOTTOM PLATE FIXED BEARINGS

BEAM REACTIONS

R _v	(K)	24.0
R _t	(K)	35.9
Imp.	(K)	10.8
R (Total)	(K)	70.7

Note:
Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
New shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).
Min. jack capacity = 40 Tons.
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	1980
Jack and Remove Existing Bearings	Each	20
Anchor Bolts, 1" Ø	Each	80

I-2E-1

8-11-2017

DESIGNED - SMR	EXAMINED
CHECKED - HSS	PASSED
DRAWN - daburdell	
CHECKED - SMR HSS	

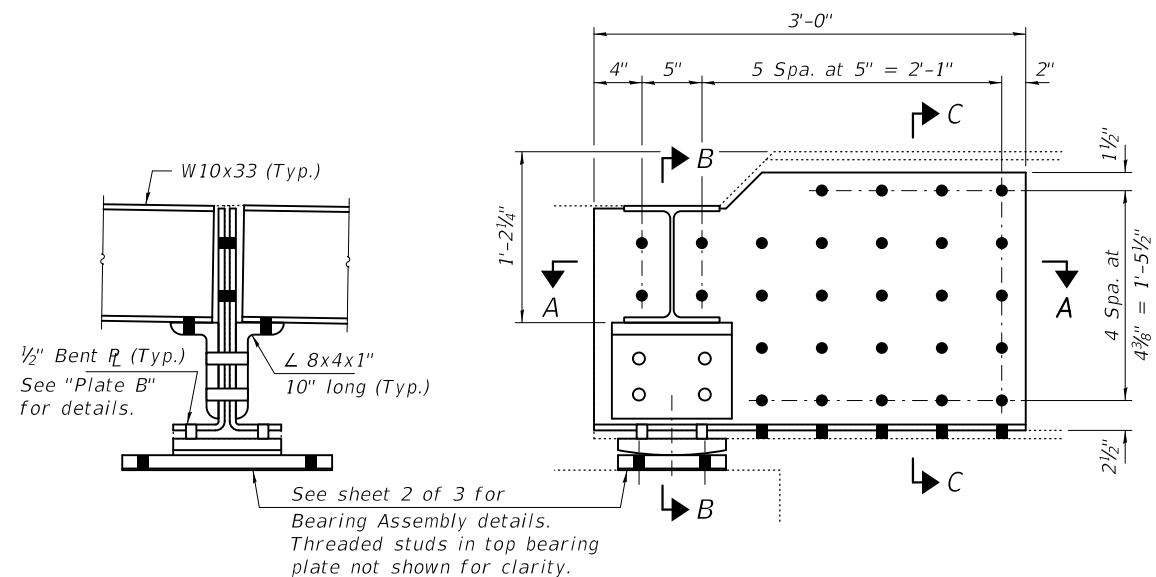
 ENGINEER OF STRUCTURAL SERVICES	DATE - DECEMBER 5, 2018
 ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 041-0097

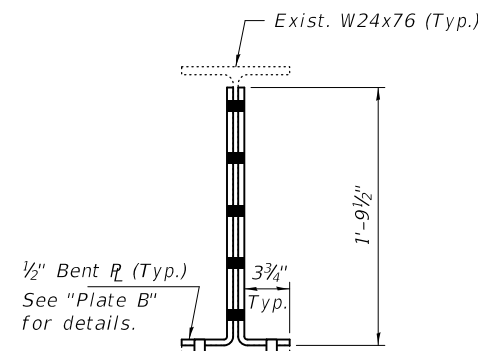
SHEET NO. 2 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2869	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	60
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				

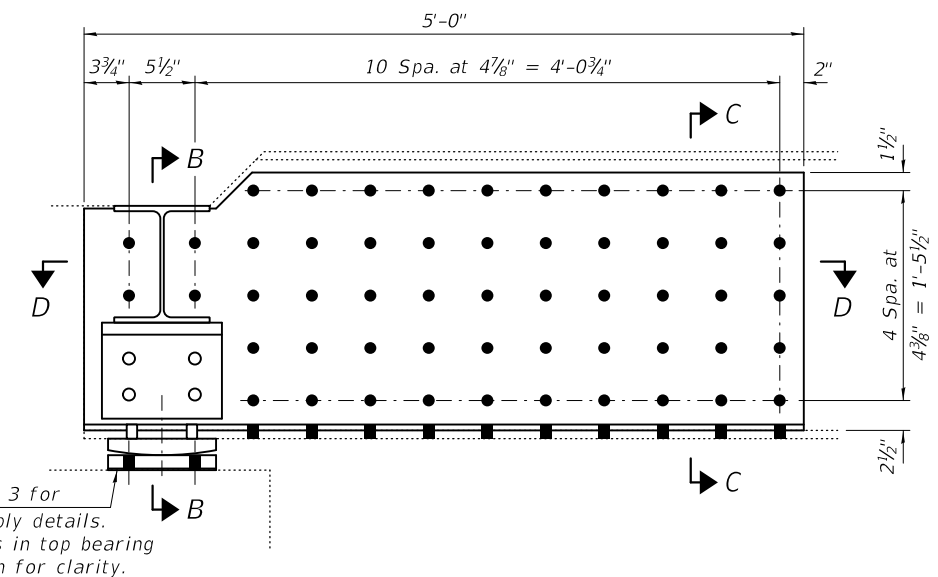


SECTION B-B

REPAIR B

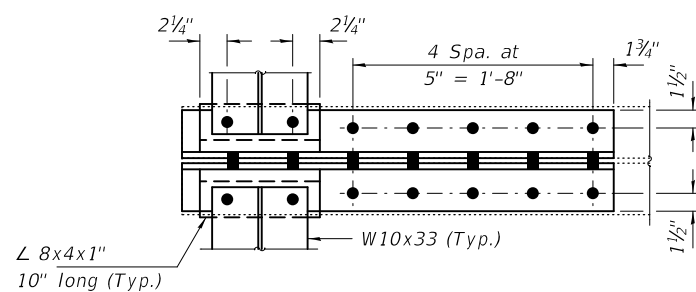


SECTION C-C

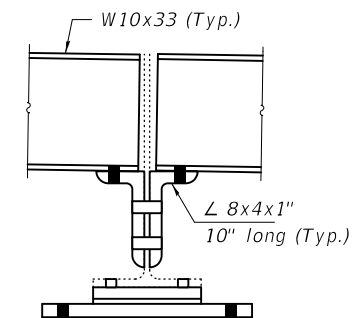


REPAIR C

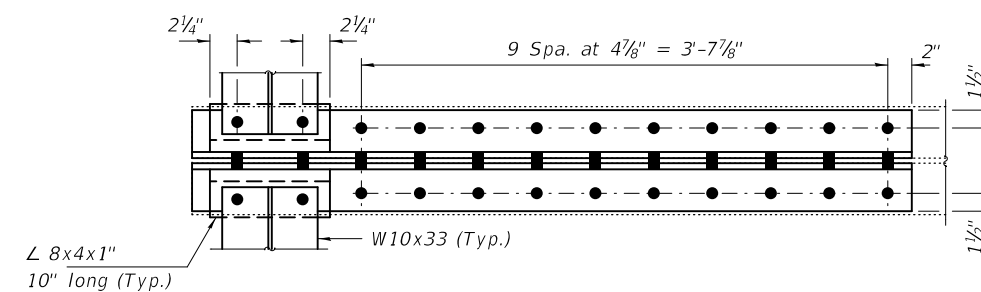
SECTION D-D



SECTION A-A



DIAPHRAGM CONNECTION
AT INTERIOR BEAM
NON-REPAIRED BEAM END



Notes:
All new diaphragms and diaphragm supporting angles to be paid for as Furnishing and Erecting Structural Steel.
All new beam end repairs and bolts not associated with diaphragm supports to be paid for as Structural Steel Repair.
Removal of existing diaphragms and support angles to be paid for Structural Steel Removal.

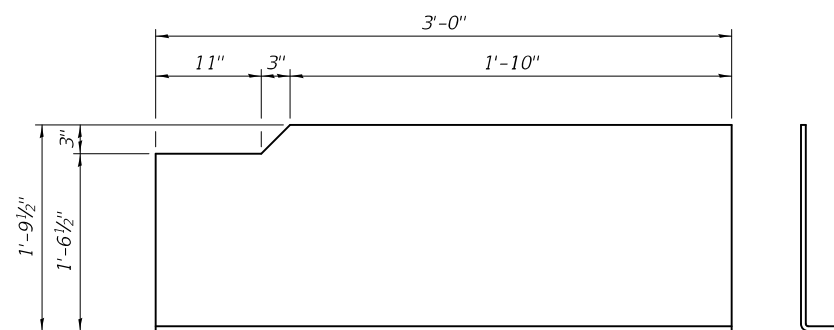


PLATE B
Bent $R \frac{1}{2}'' \times 2'-1 \frac{3}{4}'' \times 3'-0''$

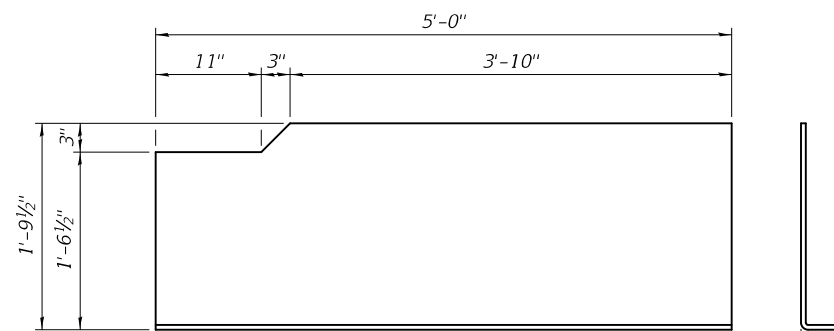
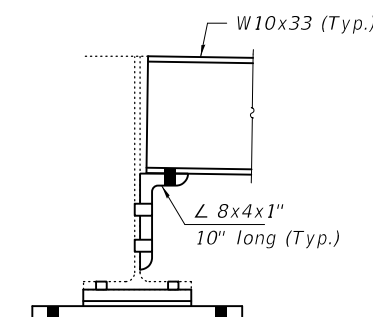
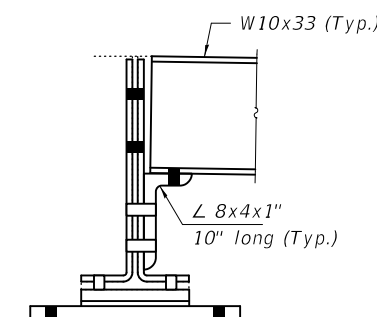


PLATE C
Bent $R \frac{1}{2}'' \times 2'-1 \frac{3}{4}'' \times 5'-0''$



DIAPHRAGM CONNECTION
AT EXTERIOR BEAM
NON-REPAIRED BEAM END



DIAPHRAGM CONNECTION
AT EXTERIOR BEAM
REPAIRED BEAM END

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

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	4870
Structural Steel Removal	Pound	4780
* Structural Steel Repair	Pound	2180

* Includes beam end repair only.

DESIGNED - SMR	EXAMINED - <i>Timothy A. Daulton</i>	DATE - DECEMBER 5, 2018
CHECKED - HSS	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - daburdell	PASSED - <i>Carl R. Meyer</i>	REVISED -
CHECKED - SMR HSS	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REPAIR DETAILS
STRUCTURE NO. 041-0097

SHEET NO. 3 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2869	D9 BRIDGE REPAIR 2019-4	JEFFERSON	61	61
CONTRACT NO. 78650				
ILLINOIS FED. AID PROJECT				