

06-12-2020 LETTING ITEM 080

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. SHEET	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
127	D7 BRIDGE REPAIRS 2020-1	CLAY	19	1
CONTRACT NO. 74874				

FOR INDEX OF SHEETS, SEE SHEET NO. 2

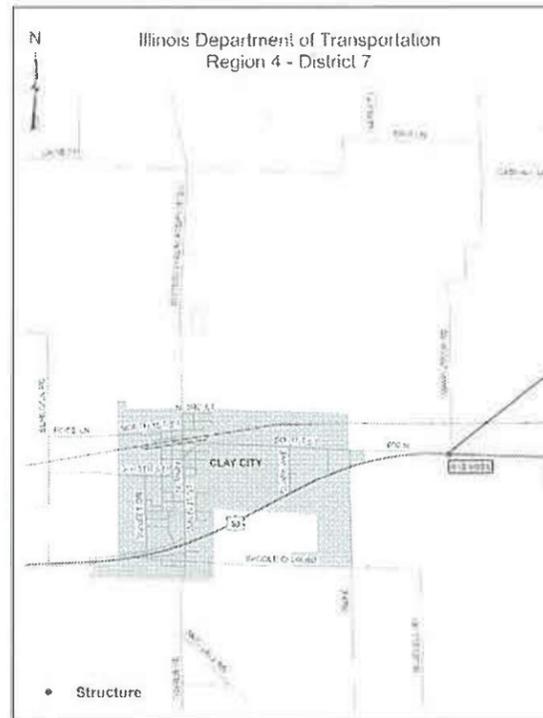
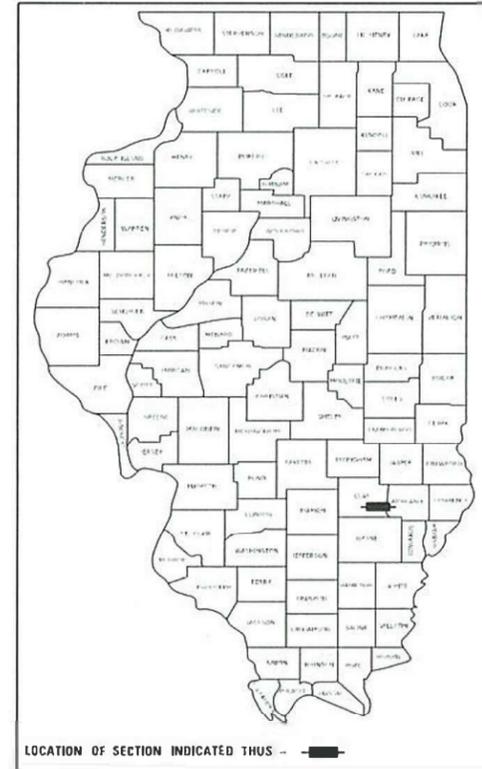
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PROPOSED HIGHWAY PLANS

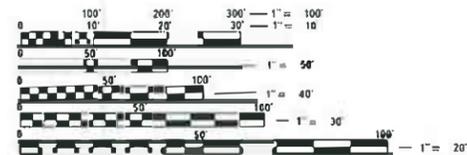
FAP ROUTE 327 (US 50)
SECTION D7 BRIDGE REPAIRS 2020-1
PROJECT NHPP-ZBKC(687)
BRIDGE JOINT REPAIR, BRIDGE DECK REPAIR
CLAY COUNTY

C-97-108-18

D-97061-18



BRIDGE DECK REPAIRS
SN 013-0004 STA. 1227+00



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT ENGINEER DEBRA BARRETT
PROJECT MANAGER KYLE PRICE

CONTRACT NO. 74874

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED April 8, 2020
Jeffrey P. Myer
REGIONAL ENGINEER

May 8, 2020
Scott A. Elk
ENGINEER OF DESIGN AND ENVIRONMENT

May 8, 2020
Demetrius J. [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION 13

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REV. - MS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
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3-4	SUMMARY OF QUANTITIES
5	TYPICAL CROSS SECTION
6	SCHEDULE OF QUANTITIES
7	BASE COURSE WIDENING, SHOULDERS
8-9	TRAFFIC CONTROL LAYOUT DETAILS
10-19	BRIDGE PLANS

GENERAL NOTES

THE WORK ON THIS PROJECT IS LOCATED ON US 50 OVER THE LITTLE WABASH RIVER, TWO MILES EAST OF CLAY CITY.

THE WORK ON THIS PROJECT CONSISTS OF HMA BASE COURSE WIDENING, BRIDGE JOINT REPAIR, AND BRIDGE DECK REPAIRS.

HIGHWAY STANDARDS

STANDARD NO.	DESCRIPTION
000001-07	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF INCH AND FOOT
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 M) AWAY
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT EDGE
701201-05	LANE CLOSURE 2L2W - DAY ONLY
701301-04	LANE CLOSURE 2L2W - SHORT TIME OPERATION
701321-18	LANE CLOSURE 2L2W - BRIDGE REPAIR WITH BARRIER
701326-04	LANE CLOSURE 2L2W - PAVEMENT WIDENING 45 MPH OR MORE
701901-08	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
780001-05	TYPICAL PAVEMENT MARKINGS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:

HOT MIX ASPHALT	112 LB/SQ YD/IN
BITUMINOUS MATERIALS (TACK COAT)	
MILLED SURFACE	0.05 LB/SQ FT
BETWEEN HMA LIFTS	0.025 LB/SQ FT
GRANULAR MATERIAL	2.05 TONS/CU YD

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**INDEX OF SHEETS, GENERAL NOTES,
& HIGHWAY STANDARDS**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 BRIDGE REPAIRS 2020-1	CLAY	19	2
CONTRACT NO. 74874			ILLINOIS FED. AID PROJECT	

SCALE: SHEET OF SHEETS STA. TO STA.

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0013 80% FED 20% STATE		
35650500	BASE COURSE WIDENING 10"	SO YD	219	219		
44004250	PAVED SHOULDER REMOVAL	SO YD	219	219		
50102400	CONCRETE REMOVAL	CU YD	32	32		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	31.7	31.7		
50300260	BRIDGE DECK GROOVING	SO YD	821	821		
50300300	PROTECTIVE COAT	SO YD	58	58		
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	2230	2230		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3240	3240		
50800515	BAR SPLICERS	EACH	68	68		
52000110	PREFORMED JOINT STRIP SEAL	FOOT	168	168		
52100520	ANCHOR BOLTS, 1"	EACH	48	48		
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3	3		
67100100	MOBILIZATION	L SUM	1	1		

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0013 80% FED 20% STATE		
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD	EACH	1	1		
	701321					
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD	L SUM	1	1		
	701201					
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD	L SUM	1	1		
	701326					
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	4	4		
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1		
70107005	PAVEMENT MARKING BLACKOUT TAPE, 5"	FOOT	1340	1340		
70107007	PAVEMENT MARKING BLACKOUT TAPE, 7"	FOOT	132	132		
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	28	28		
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SO FT	635	635		
70400100	TEMPORARY CONCRETE BARRIER	FOOT	600	600		
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	600	600		
70600250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2		

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

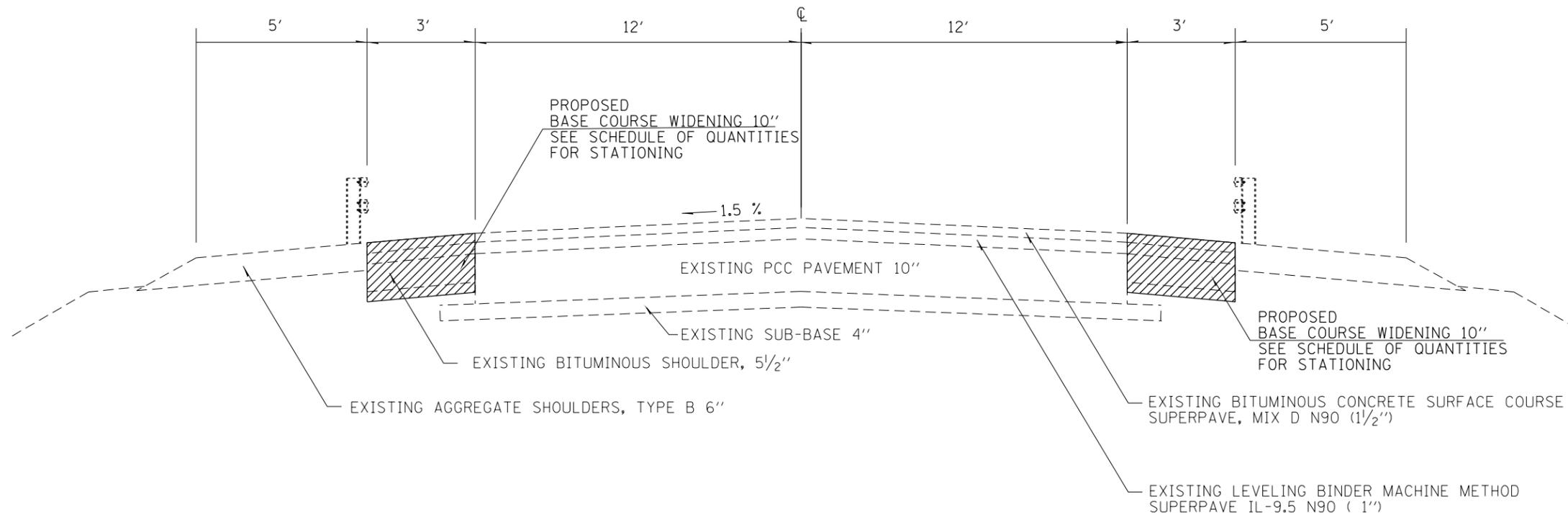
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 BRIDGE REPAIRS 2020-1	CLAY	19	3
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74874	

TYPICAL SECTION

STA 1222+49.16 TO STA 1225+65.83
 STA 1228+34.17 TO STA 1231+40.66

STA 1225+65.83 TO STA 1228+34.17 (BRIDGE OMISSION)



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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

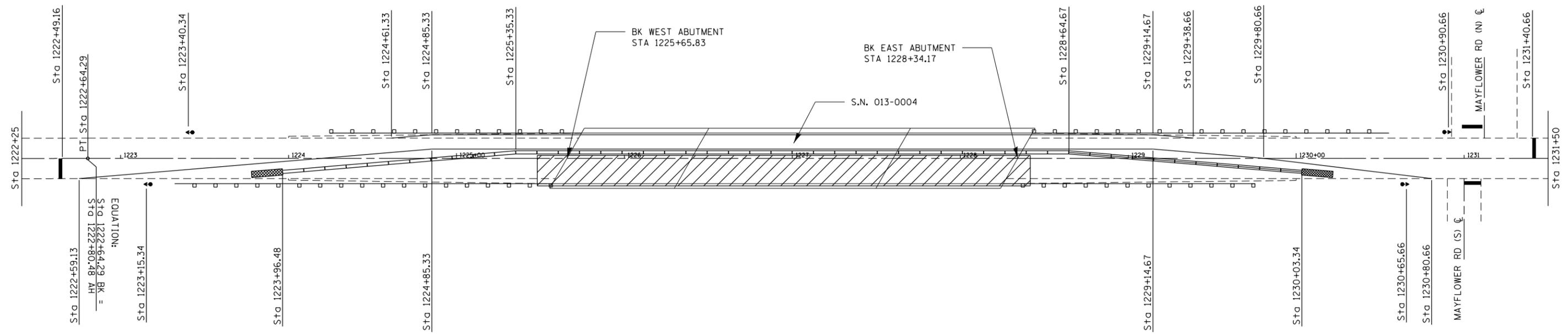
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 BRIDGE REPAIRS 2020-1	CLAY	19	5
CONTRACT NO. 74874				
ILLINOIS FED. AID PROJECT				

S.N. 013-0004 TRAFFIC CONTROL LAYOUT - STAGE 1



CURVE C4
 PI STA. = 1197+73.88
 $\Delta = 29^{\circ} 00' 07''$ (RT)
 $D = 0^{\circ} 34' 10''$
 $R = 10,060.48'$
 $T = 2,602.00'$
 $L = 5,092.42'$
 $E = 331.04'$
 $e = \dots$
 $T.R. = \dots$
 $S.E. RUN = \dots$
 P.C. STA = 1171+71.88
 P.T. STA = 1222+64.29



NOTE: SEE TRAFFIC CONTROL STANDARD 701321 FOR LAYOUT OF TRAFFIC CONTROL DEVICES NOT SHOWN ON THIS DETAIL. ALL PAVEMENT MARKING SHOWN ON THIS DETAIL AS WELL AS THE CORRESPONDING TRAFFIC CONTROL STANDARD SHALL BE INCLUDED IN THE COST OF THE TRAFFIC CONTROL STANDARD BEING UTILIZED AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. REMOVAL OF THESE PAVEMENT MARKINGS SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL STANDARD AS WELL.

NOTE:
 IN ADDITION TO THE TYPICAL SIGNING AND STOP BARS ASSOCIATED WITH TRAFFIC CONTROL STANDARD 701321, THERE SHALL BE TWO ADDITIONAL STOP BARS, ONE "NO RIGHT TURN", AND ONE "NO LEFT TURN" SIGNS INCLUDED. THE ADDITIONAL STOP BARS AND SIGNS WILL BE UTILIZED AT THE INTERSECTION OF MAYFLOWER ROAD AND US 50. MAYFLOWER ROAD FROM THE NORTH WILL USE THE "NO RIGHT TURN" SIGN AND MAYFLOWER ROAD FROM THE SOUTH WILL USE THE "NO LEFT TURN" SIGN. THERE SHALL BE NO ADDITIONAL COMPENSATION FOR THE TWO SIGNS AND STOP BARS. THE STOP BARS AND SIGNS WILL BE PLACED IN LOCATIONS APPROVED BY THE RESIDENT ENGINEER.

POINTS OF INTREST FOR TRAFFIC CONTROL LAYOUT

STOP BAR	TEMP BARRIER	TEMP EOP LEFT	TEMP EOP RIGHT	TRAFFIC SIGNAL
1222+49.16	1223+96.48	1224+61.33	1222+59.13	1223+15.34 RT
1231+40.66	1225+35.33	1224+85.33	1224+85.33	1223+40.34 LT
MAYFLOWER RD N	1228+64.67	1229+14.67	1229+14.67	1230+65.66 RT
MAYFLOWER RD S	1230+03.34	1229+14.66	1229+80.66	1230+90.66 LT
			1230+80.66	

SYMBOLS

- Temporary edge of pavement line
- Stop bar
- Work area
- Temporary concrete barrier
- Traffic signal
- Impact attenuator

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC CONTROL LAYOUT
STAGE 1**

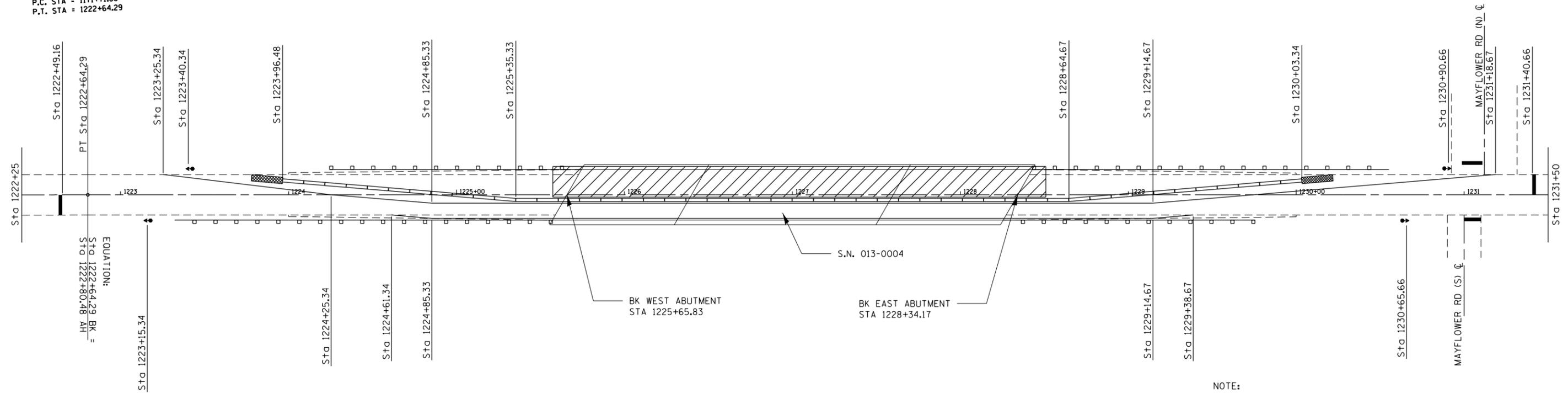
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 BRIDGE REPAIRS 2020-1	CLAY	19	8
CONTRACT NO. 74874				
ILLINOIS FED. AID PROJECT				

S.N. 013-0004 TRAFFIC CONTROL LAYOUT - STAGE 2



CURVE C4
 PI STA. = 1197+73.88
 $\Delta = 29^{\circ} 00' 07''$ (RT)
 $D = 0^{\circ} 34' 10''$
 $R = 10,060.48'$
 $T = 2,602.00'$
 $L = 5,092.42'$
 $E = 331.04'$
 $e = \text{-----}$
 $T.R. = \text{-----}$
 $S.E. \text{ RUN} = \text{-----}$
 $P.C. \text{ STA} = 1171+71.88$
 $P.T. \text{ STA} = 1222+64.29$



NOTE: SEE TRAFFIC CONTROL STANDARD 701321 FOR LAYOUT OF TRAFFIC CONTROL DEVICES NOT SHOWN ON THIS DETAIL. ALL PAVEMENT MARKING SHOWN ON THIS DETAIL AS WELL AS THE CORRESPONDING TRAFFIC CONTROL STANDARD SHALL BE INCLUDED IN THE COST OF THE TRAFFIC CONTROL STANDARD BEING UTILIZED AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. REMOVAL OF THESE PAVEMENT MARKINGS SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL STANDARD AS WELL.

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POINTS OF INTREST FOR TRAFFIC CONTROL LAYOUT

STOP BAR	TEMP BARRIER	TEMP EOP LEFT	TEMP EOP RIGHT	TRAFFIC SIGNAL
1222+49.16	1223+96.48	1223+25.34	1224+61.34	1223+15.34 RT
1231+40.66	1225+35.33	1224+25.34	1224+85.33	1223+40.34 LT
MAYFLOWER RD N	1228+64.67	1224+85.33	1229+14.67	1230+65.66 RT
MAYFLOWER RD S	1230+03.34	1229+14.67	1229+38.67	1230+90.66 LT
		1231+18.67		

SYMBOLS

- Temporary edge of pavement line
- Stop bar
- Work area
- Temporary concrete barrier
- Traffic signal
- Impact attenuator

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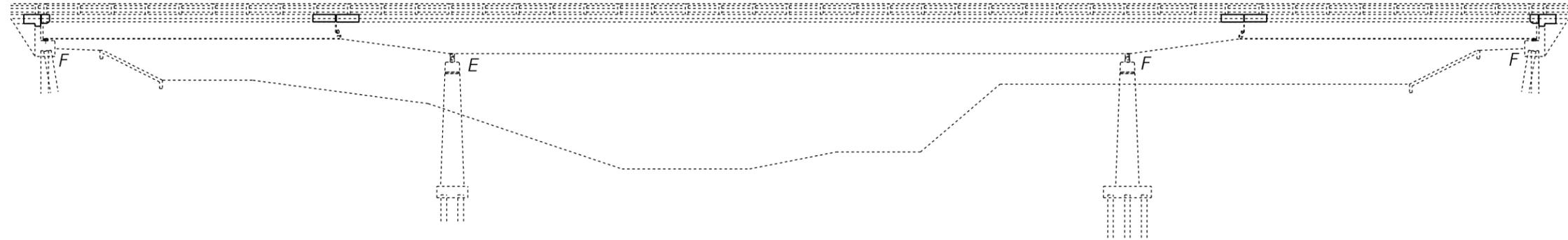
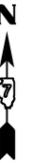
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC CONTROL LAYOUT
STAGE 2**

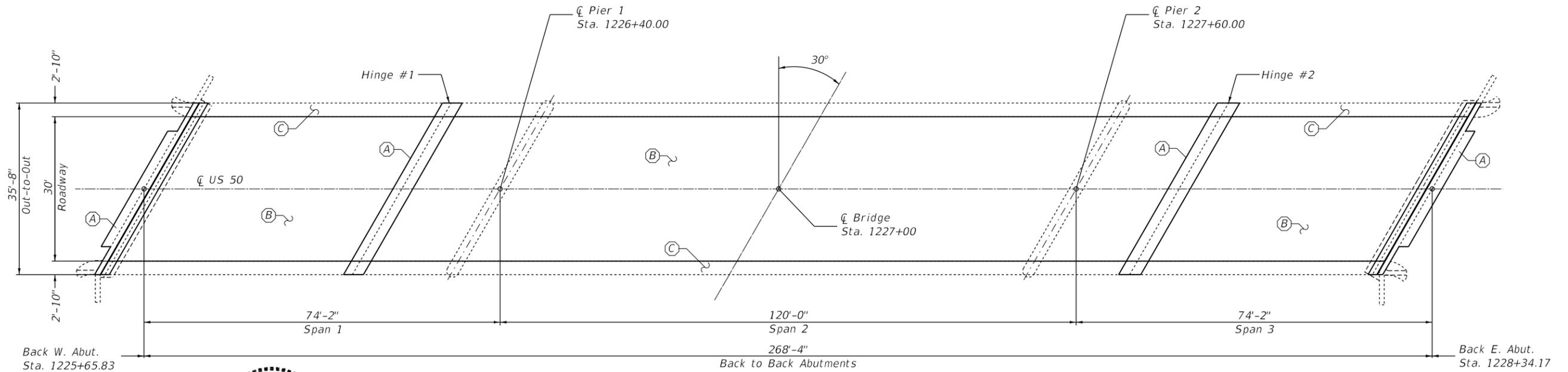
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 BRIDGE REPAIRS 2020-1	CLAY	19	9
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74874	

The existing three span hinged plate girder structure was constructed in 1953 as U.S. Route 50 Section 7-2-B. SN 013-0004 carries FAP Route 327 (US-50) across the Little Wabash River. The joints were replaced in 1987, Pin & Link assemblies were replaced in 1999 and a 2 1/4" Microsilica Overlay was placed in 2003. The proposed project consists of bridge deck scarification 2 1/4", full and partial depth deck patching, structural repair of concrete (depth ≤ 5"), new expansion joints, new fixed bearings at the abutments, and placing Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4".



ELEVATION VIEW



PLAN VIEW



Expires 11-30-2020

David Carl Puzey

5/7/2020

- (A) - Remove and Replace Exp. Jt.
- (B) - Scarification, Deck Slab Repair, Concrete Overlay & Grooving
- (C) - Structural Repair of Concrete (Depth ≤ 5")

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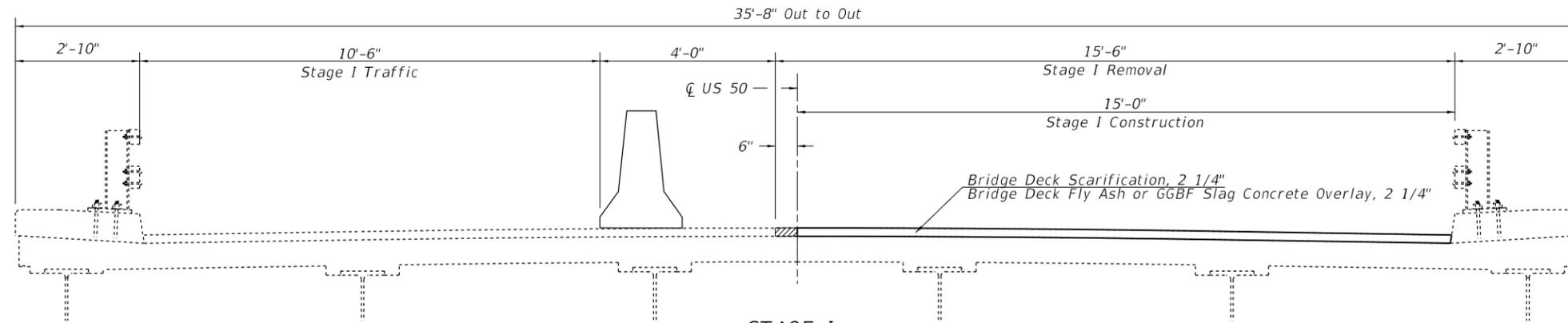
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

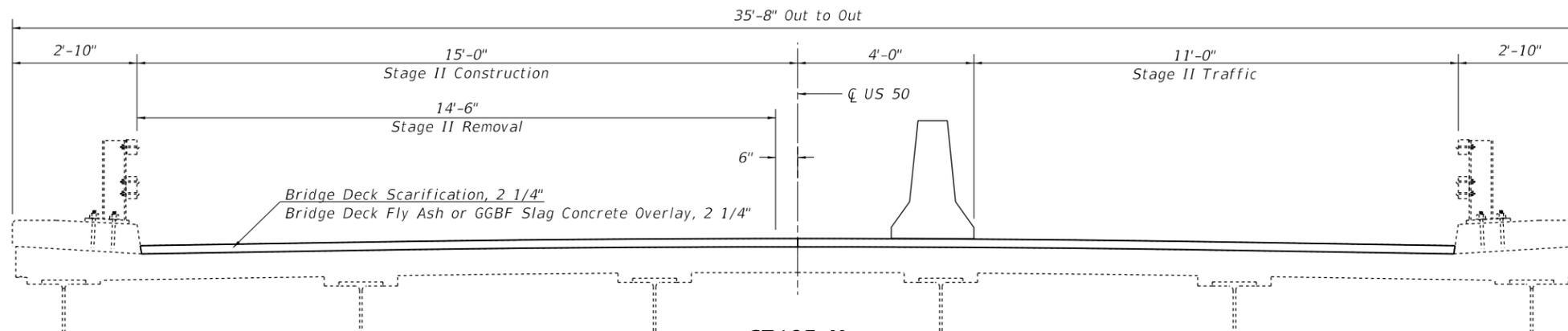
GENERAL PLAN & ELEVATION
SN 013-0004

SCALE: SHEET 1 OF 10 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 Bridge Repairs 2020-1	Clay	19	10
CONTRACT NO. 74874				
ILLINOIS FED. AID PROJECT				



STAGE I
Looking East SN 013-0004



STAGE II
Looking East SN 013-0004

GENERAL NOTES

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.

Plans 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 operations shall be replaced using an approved bar splicer or anchorage system. Cost included with Concrete Removal.

Protective coat shall be applied to new concrete areas adjacent to reconstructed joints and the bridge deck overhangs.

Reinforcement Bars designated (E) shall be epoxy coated.

Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on the as-built plans.

Synthetic fibers should be added to the Bridge Deck Fly Ash or GGBF Slag Overlay, 2 1/4". See Special Provisions.

The Designer's intent is to repair a maximum width of 18' of concrete measured from the face of the curb. Areas of curb outside these limits should be left unrepaired.

Full depth deck slab repairs performed in the exterior bays of the bridge deck (between the parapet walls and the first interior beams) shall be limited to individual lengths no greater than 10'. In these portions of the deck, repair areas longer than 10' shall be divided into segments not greater than 10' in length, and the segments shall be poured in alternating sequence.

Subsequent segments repaired in sequence shall not be removed until 72 hours has elapsed from the end of the previous, adjacent pour and the adjacent pour has attained a minimum modulus of rupture of 650 psi.

Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications

when the deck is poured at an ambient temperature other than 50 °F.

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

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	32
Concrete Superstructure	Cu. Yd.	31.7
Bar Splicers	Each	68
Protective Coat	Sq. Yd.	58
Reinforcement Bars, Epoxy Coated	Pound	3240
Preformed Joint Strip Seal	Foot	168
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	6
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	62
Structural Repair of Concrete ≤ 5"	Sq. Ft.	74
Bridge Deck Scarification 2 1/4"	Sq. Yd.	845
Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4"	Sq. Yd.	845
Bridge Deck Grooving	Sq. Yd.	821
Furnishing and Erecting Structural Steel	Pound	2230
Jack and Remove Existing Bearings	Each	12
Anchor Bolts, 1"	Each	48

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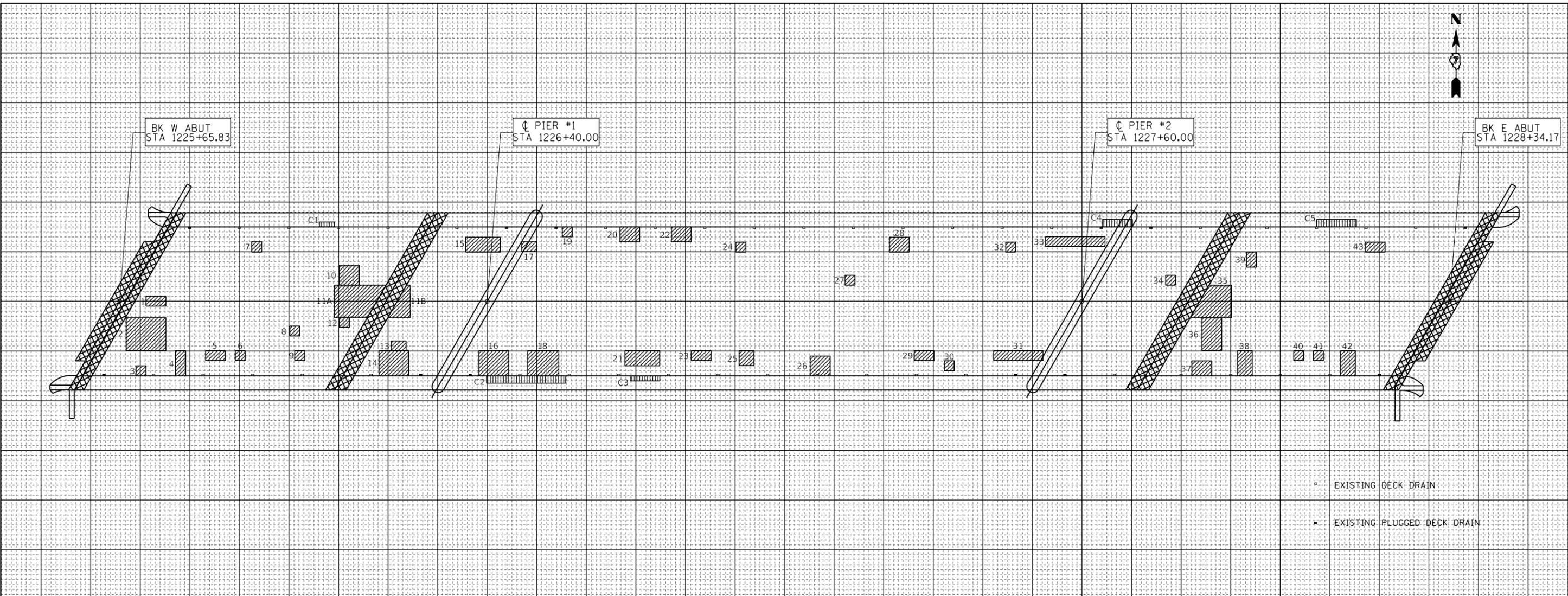
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES &
CONSTRUCTION STAGING**

SCALE: SHEET 2 OF 10 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 Bridge Repairs 2020-1	Clay	19	11
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74874	

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EXISTING DECK DRAIN
 EXISTING PLUGGED DECK DRAIN

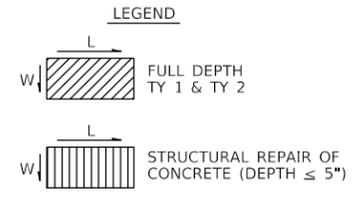
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1	4.0	2.0		0.9
2	8.0	6.7		6.0
3	2.0	2.0	0.4	
4	2.0	5.0		1.1
5	4.0	2.0		0.9
6	2.0	2.0	0.4	
7	2.0	2.0	0.4	
8	2.0	2.0	0.4	
9	2.0	2.0	0.4	
10	4.0	4.0		1.8
11A	8.5	6.5		6.1
11B	2.5	6.5		1.8
12	2.0	2.0	0.4	
13	3.0	2.0		0.7
14	6.0	5.0		3.3
15	7.0	3.0		2.3

PATCH NO.	SIZE		DECK SLAB REPAIR (FD TY 1) SQ YD	DECK SLAB REPAIR (FD TY 2) SQ YD
	LENGTH	WIDTH		
16	6.0	5.0		3.3
17	3.0	2.0		0.7
18	6.0	5.0		3.3
19	2.0	2.0	0.4	
20	4.0	3.0		1.3
21	7.0	3.0		2.3
22	4.0	3.0		1.3
23	4.0	2.0		0.9
24	2.0	2.0	0.4	
25	3.0	3.0		1.0
26	4.0	4.0		1.8
27	2.0	2.0	0.4	
28	4.0	3.0		1.3
29	4.0	2.0		0.9
30	2.0	2.0	0.4	
31	10.0	2.0		2.2

PATCH NO.	SIZE		DECK SLAB REPAIR (FD TY 1) SQ YD	DECK SLAB REPAIR (FD TY 2) SQ YD
	LENGTH	WIDTH		
32	2.0	2.0	0.4	
33	12.0	2.0		2.7
34	2.0	2.0	0.4	
35	6.5	6.5		4.7
36	4.0	6.7		3.0
37	4.0	3.0		1.3
38	3.0	5.0		1.7
39	2.0	3.0		0.7
40	2.0	2.0	0.4	
41	2.0	2.0	0.4	
42	3.0	5.0		1.7
43	4.0	2.0		0.9
TOTAL(S)			6.2	61.9

CURB REPAIR NO.	SIZE			STRUC. REPAIR OF CONCRETE (DEPTH ≤ 5") SQ FT
	LENGTH	WIDTH	HEIGHT	
C1	3.0	1.0	0.5	4.5
C2	16.0	1.5	0.5	32.0
C3	6.0	1.0	0.5	9.0
C4	6.0	1.5	0.5	12.0
C5	8.0	1.5	0.5	16.0
TOTAL(S)				73.5

THE LOCATIONS AND SIZES SHOWN GRAPHICALLY ABOVE ARE APPROXIMATE. SEE THIS TABLE FOR ACTUAL SIZES.



DATE OF SURVEY: 3-6-2019
 SURVEY BY: DPM & RAW
 METHOD OF SURVEY: VISUAL

Note: If the existing railing must be removed and re-erected in order to complete curb repairs cost will be included with Structural Repair of Concrete (Depth ≤ 5")

ESTIMATED PAY QUANTITIES:
 FULL DEPTH, TYPE 1 = 6.0 SQ YD
 FULL DEPTH, TYPE 2 = 62 SQ YD
 STRUCTURAL REPAIR OF CONCRETE (DEPTH ≤ 5") = 74 SQ FT

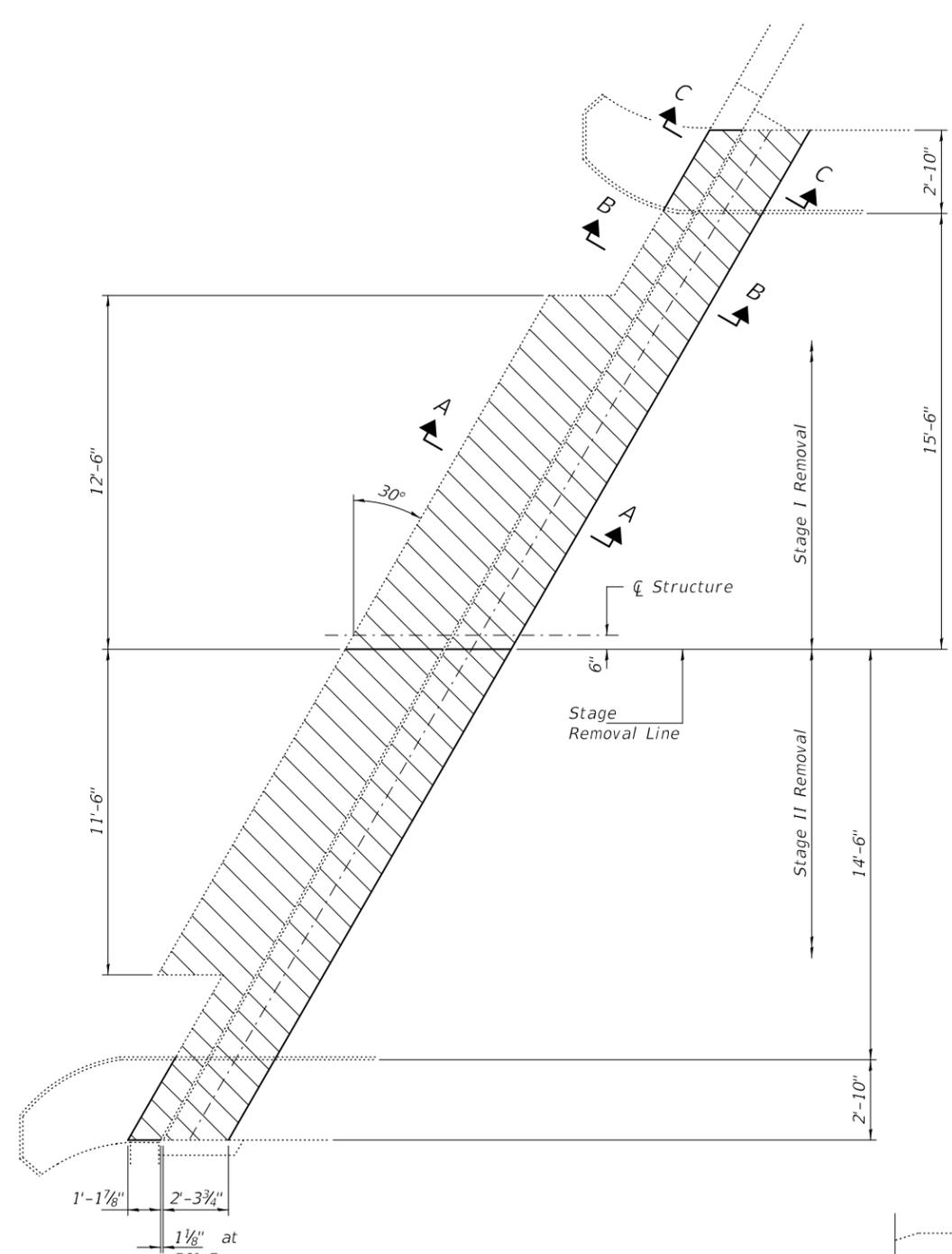
USER NAME = steffemk	DESIGNED - R. WALKER	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN - R. WALKER	REVISED -
PLOT DATE = 4/8/2020	CHECKED -	REVISED -
	DATE - 1/8/2020	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BRIDGE DECK PATCHING
 SN 013-0004

SCALE: SHEET 3 OF 10 SHEETS STA. TO STA.

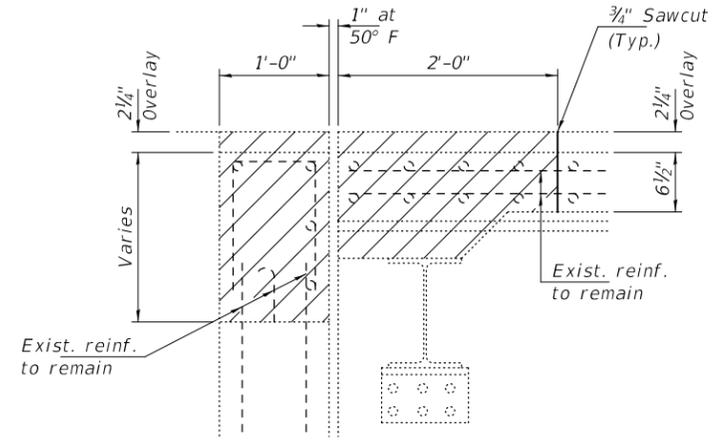
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 Bridge Repairs 2020-1	Clay	19	12
CONTRACT NO. 74874				
ILLINOIS FED. AID PROJECT				



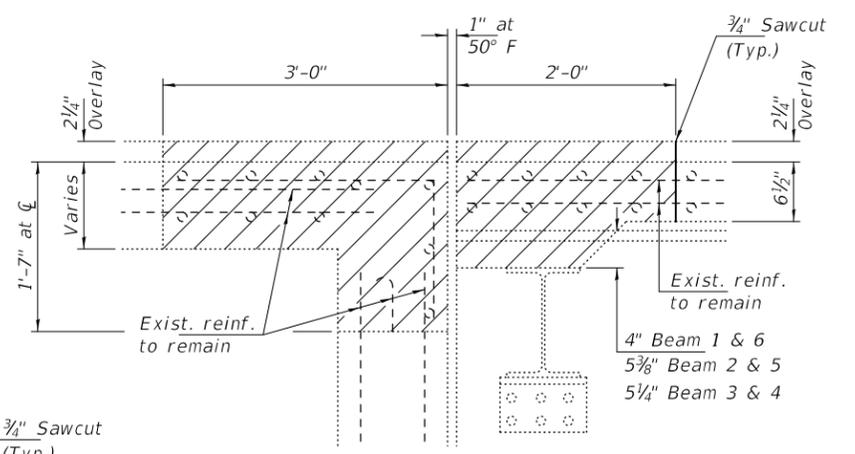
JOINT REMOVAL DETAILS

(West Abutment shown, East Abutment typ. by rotation)

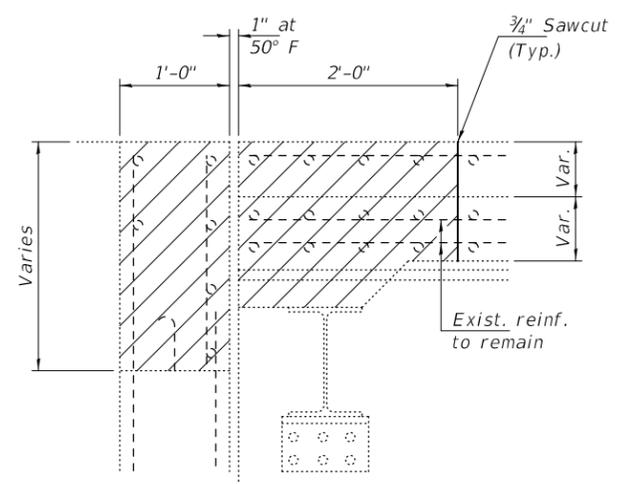
Notes:
 Hatched areas indicate Concrete Removal.
 Any existing railing interfering in the joint removal, shall be removed and reinstalled as necessary. Cost included with Concrete Superstructures.



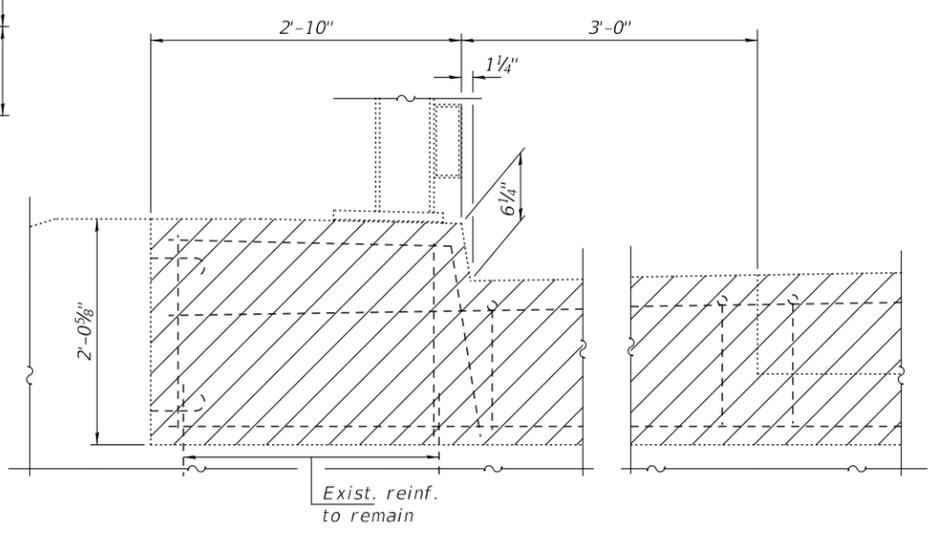
SECTION B-B



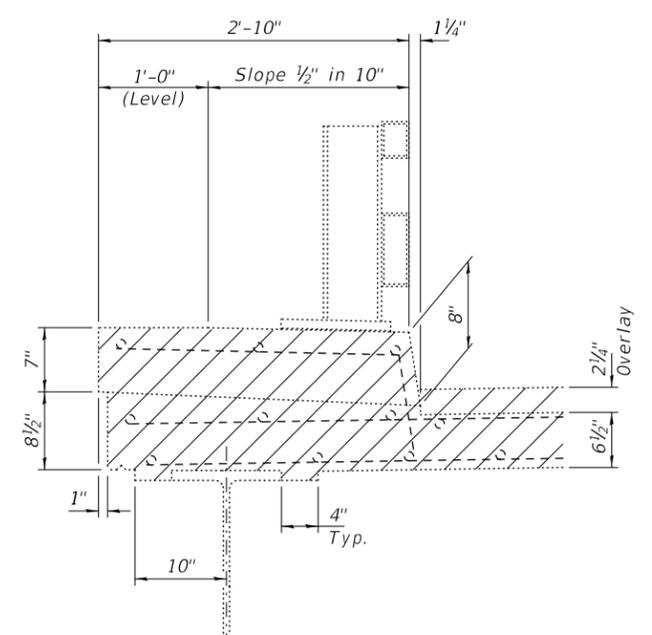
SECTION A-A



SECTION C-C



TYPICAL SECTION THRU CURB ON APPROACH



TYPICAL SECTION THRU CURB ON BRIDGE

EXPIRES 11-30-2020

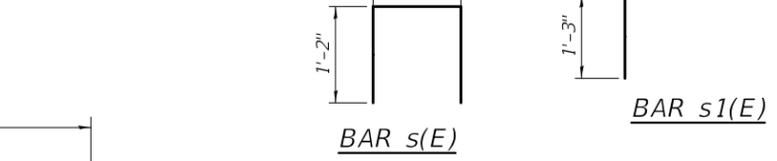
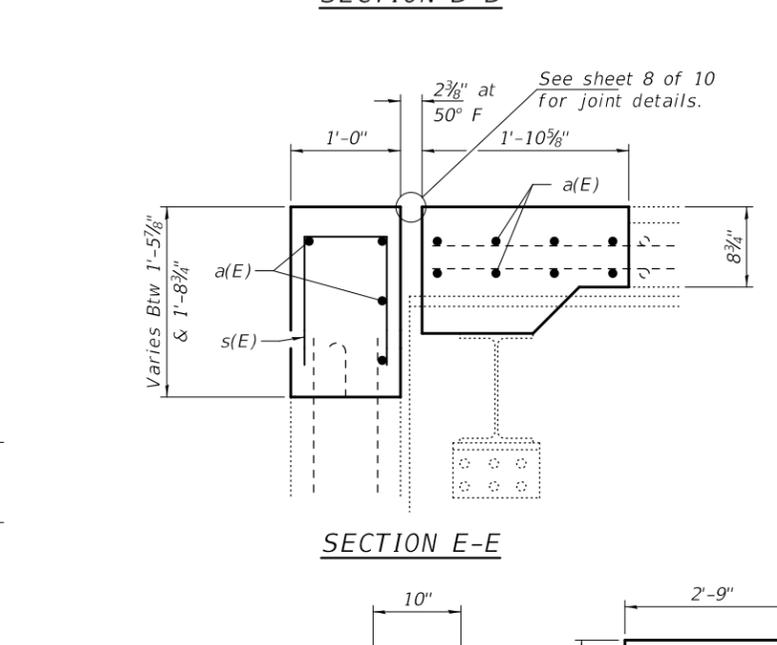
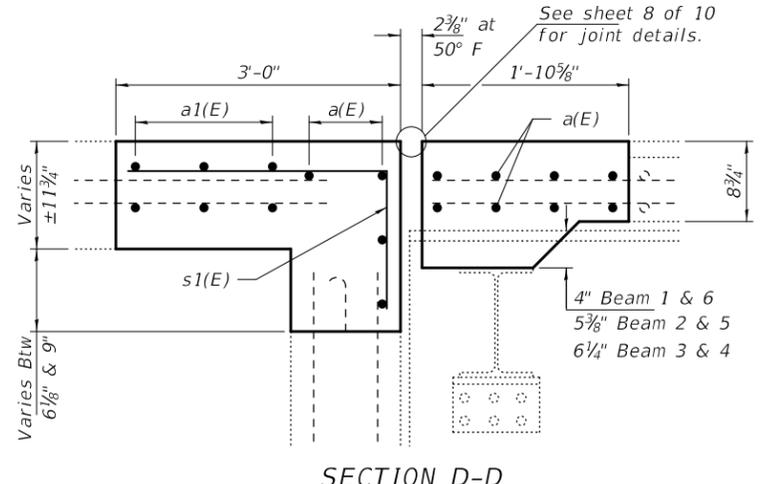
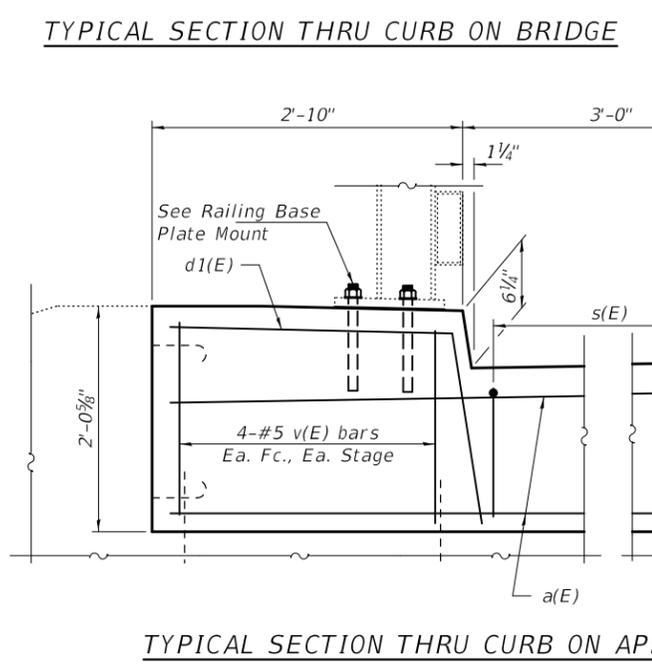
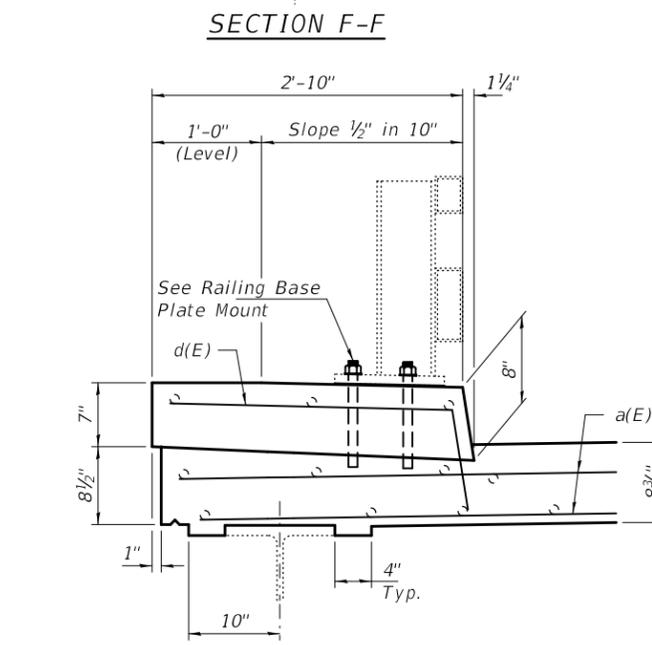
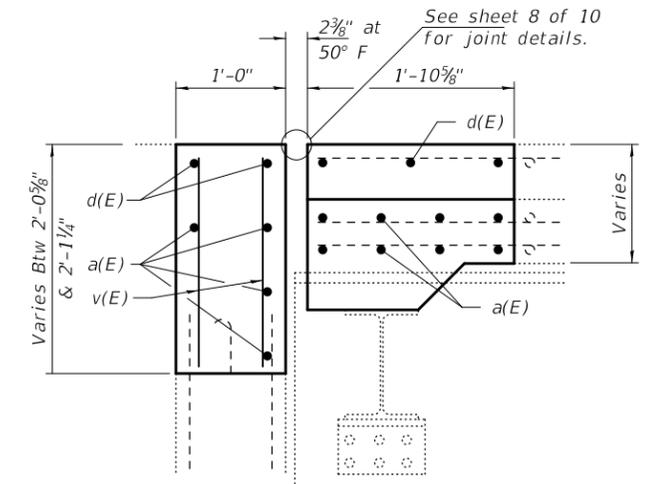
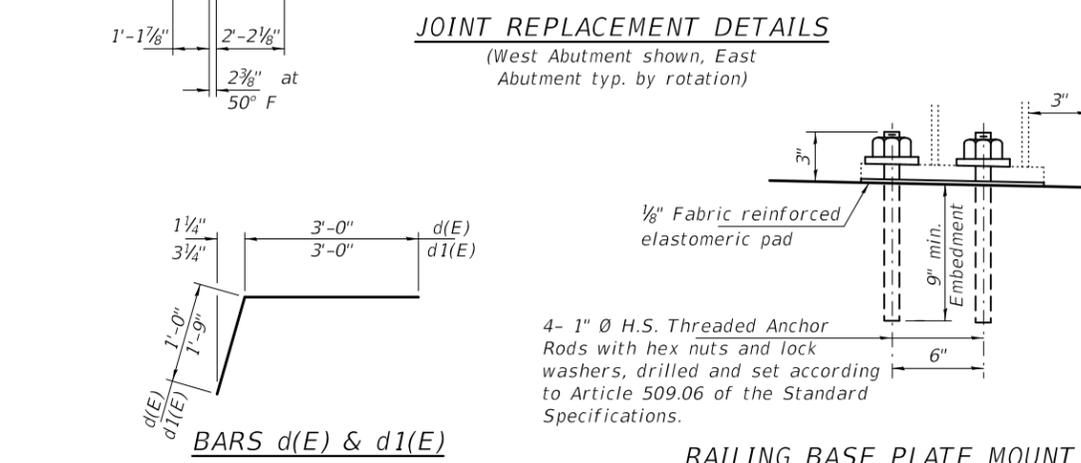
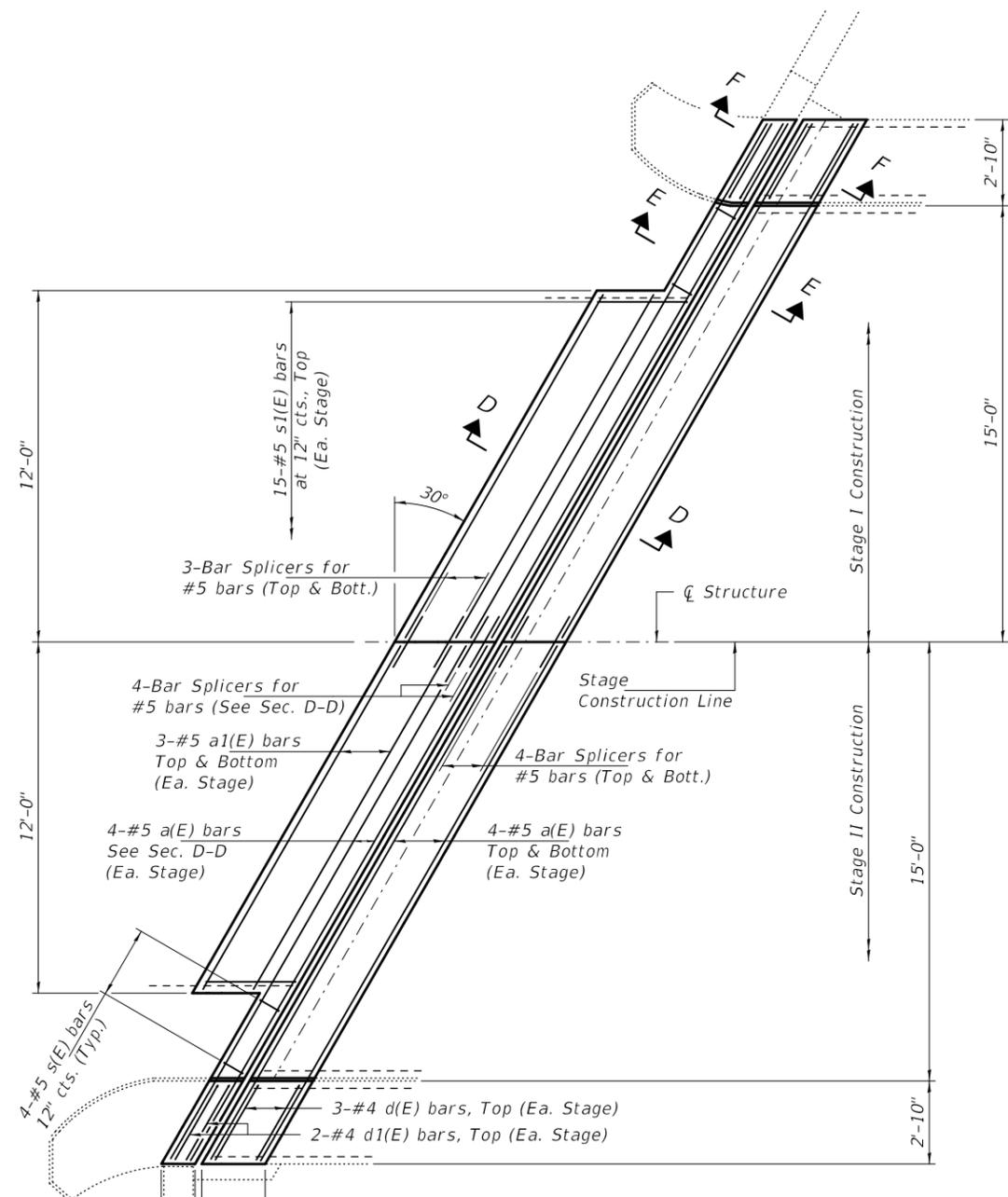
DESIGNED -	EXAMINED	DATE - APRIL 29, 2020
CHECKED -	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - daburdell	PASSED	REVISED -
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**JOINT REMOVAL DETAILS - ABUTMENTS
 SN 013-0004**

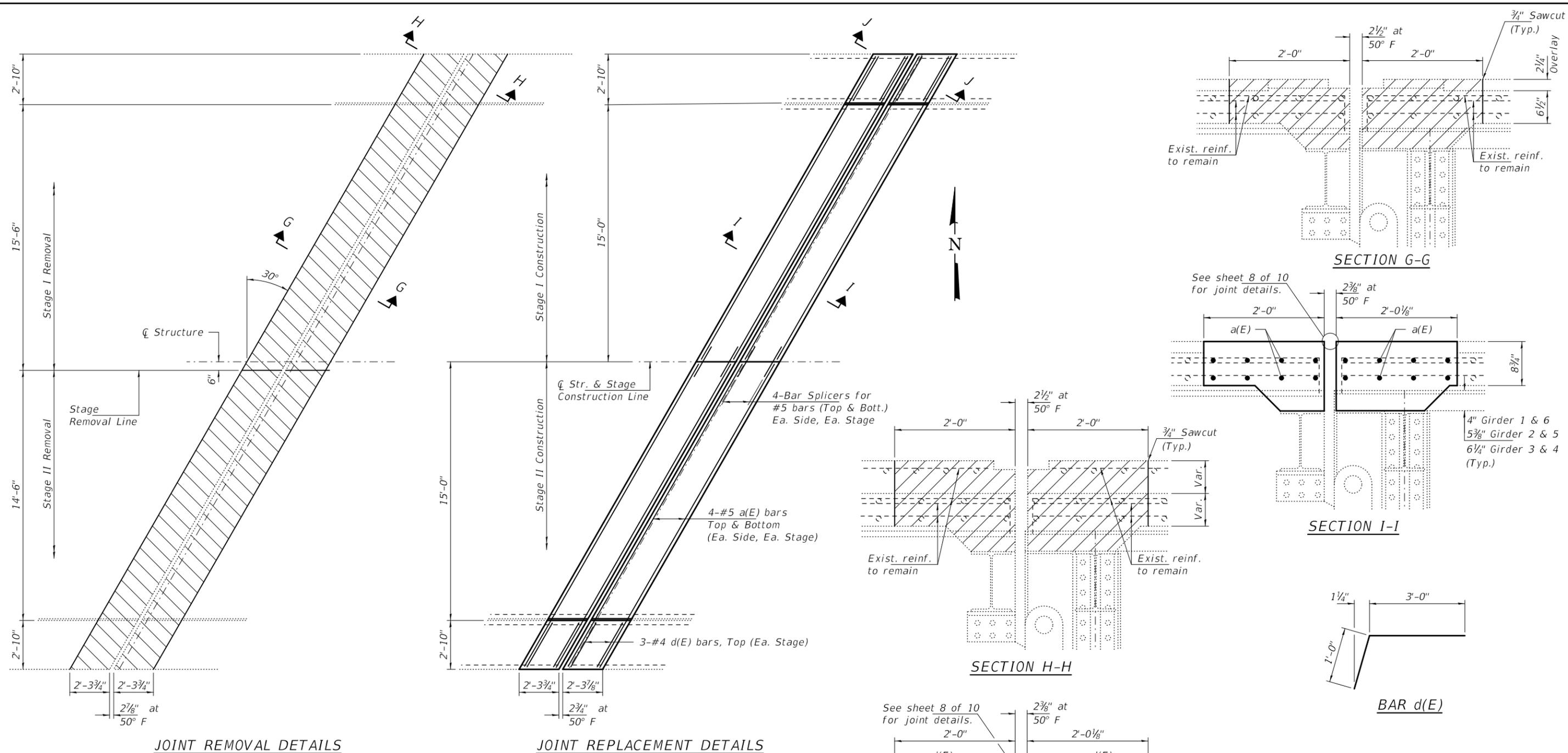
SHEET NO. 4 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 BRIDGE REPAIRS 2020-1	CLAY	19	13
CONTRACT NO. 74874				
ILLINOIS FED. AID PROJECT				



BILL OF MATERIAL - BOTH ABUTS.

Bar	No.	Size	Length	Shape
a(E)	48	#5	20'-2"	—
a1(E)	24	#5	13'-6"	—
d(E)	12	#5	4'-0"	┌
d1(E)	8	#5	4'-9"	┌
s(E)	16	#5	3'-2"	┌
s1(E)	60	#5	4'-0"	┌
v(E)	32	#5	1'-9"	—
Concrete Removal			Cu. Yd.	16.4
Concrete Superstructure			Cu. Yd.	16.1
Bar Splicers			Each	36
Protective Coat			Sq. Yd.	20.3
Reinforcement Bars, Epoxy Coated			Pound	1800



JOINT REMOVAL DETAILS

JOINT REPLACEMENT DETAILS

Notes:
 Hatched areas indicate Concrete Removal.
 Any existing railing interfering in the joint removal, shall be removed and reinstalled as necessary. Cost included with Concrete Superstructures.
 See sheet 5 of 10 for Railing Base Plate Mount.

BILL OF MATERIAL - HINGE #1

Bar	No.	Size	Length	Shape
a(E)	32	#5	20'-2"	—
d(E)	12	#5	4'-0"	┌
Concrete Removal			Cu. Yd.	7.8
Concrete Superstructure			Cu. Yd.	7.8
Bar Splicers			Each	16
Protective Coat			Sq. Yd.	18.8
Reinforcement Bars, Epoxy Coated			Pound	720

DESIGNED - SMR
 CHECKED - ATH
 DRAWN - daburdell
 CHECKED - SMR ATH

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

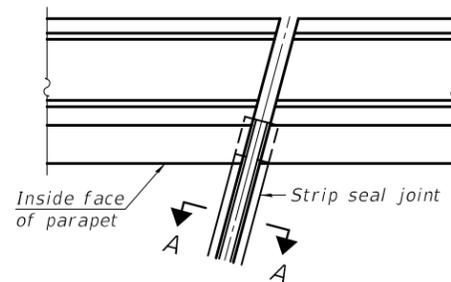
DATE - APRIL 29, 2020
 REVISED -
 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

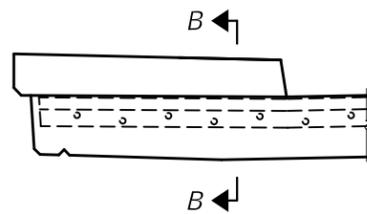
JOINT REMOVAL & REPLACEMENT DETAILS - HINGE #1
SN 013-0004

SHEET NO. 6 OF 10 SHEETS

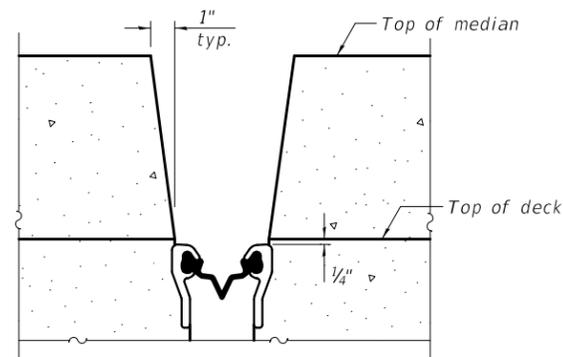
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 BRIDGE REPAIRS 2020-1	CLAY	19	15
CONTRACT NO. 74874				
ILLINOIS FED. AID PROJECT				



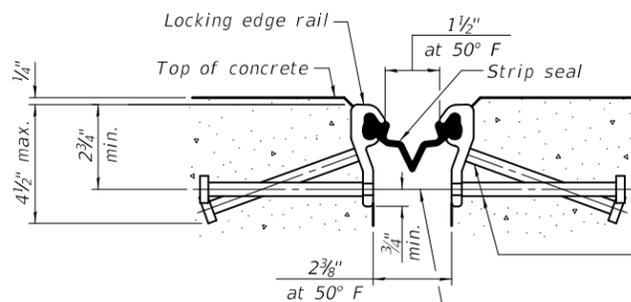
FOR SKEWS $\leq 30^\circ$
PLAN AT PARAPET



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



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

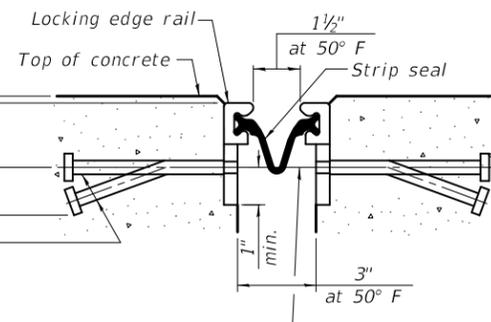


SHOWING ROLLED RAIL JOINT

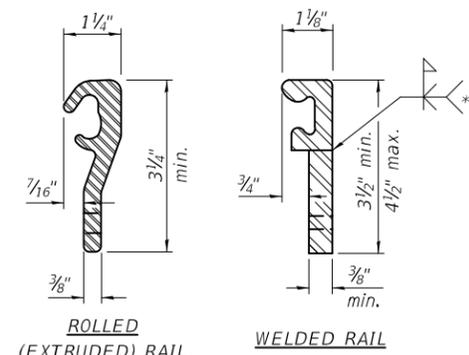
* $\frac{5}{8}$ " ϕ x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)
 $\frac{3}{8}$ " ϕ threaded rods in $\frac{7}{16}$ " ϕ holes at ± 4 "-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned,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

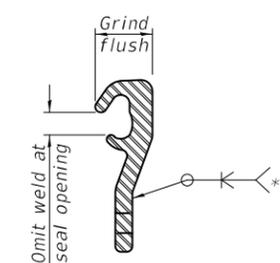


SHOWING WELDED RAIL JOINT



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	168

EJ-SS1 LT30/REPS

2-25-20

DESIGNED - SMR
 CHECKED - ATH
 DRAWN - daburdell
 CHECKED - SMR ATH

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

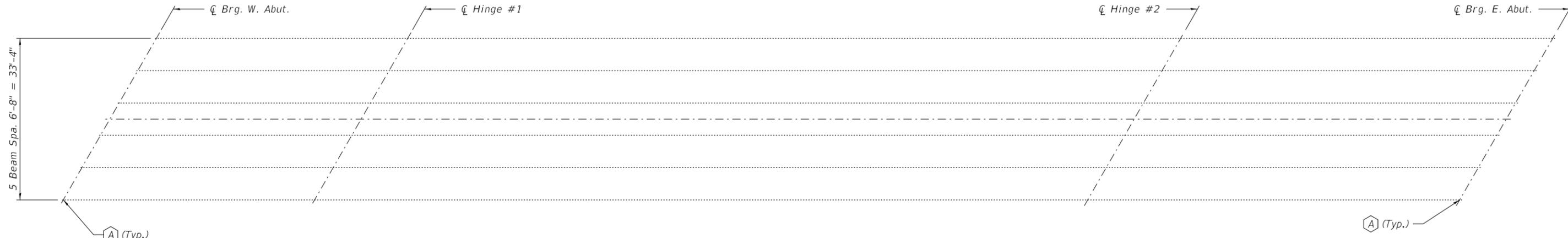
DATE - APRIL 29, 2020
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
 SN 013-0004

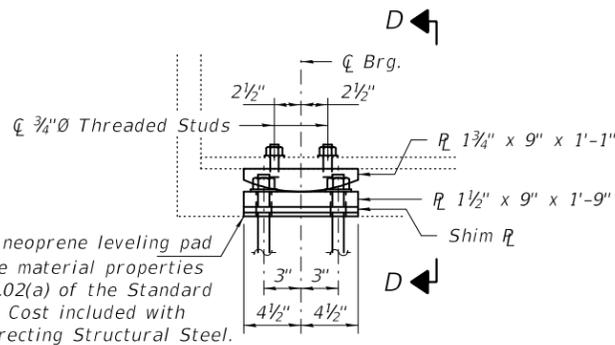
SHEET NO. 8 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 BRIDGE REPAIRS 2020-1	CLAY	19	17
CONTRACT NO. 74874				
ILLINOIS FED. AID PROJECT				

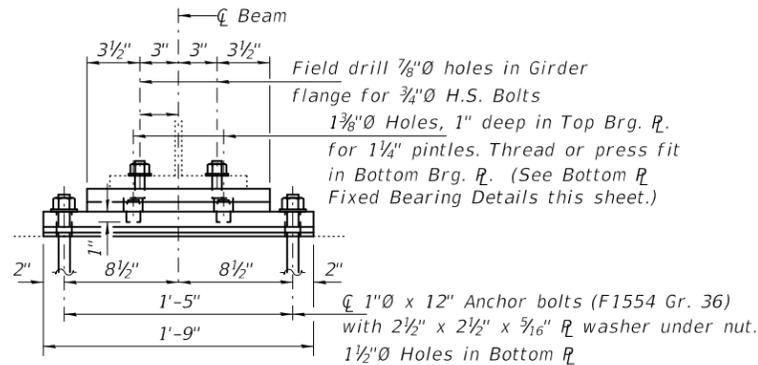


FRAMING PLAN

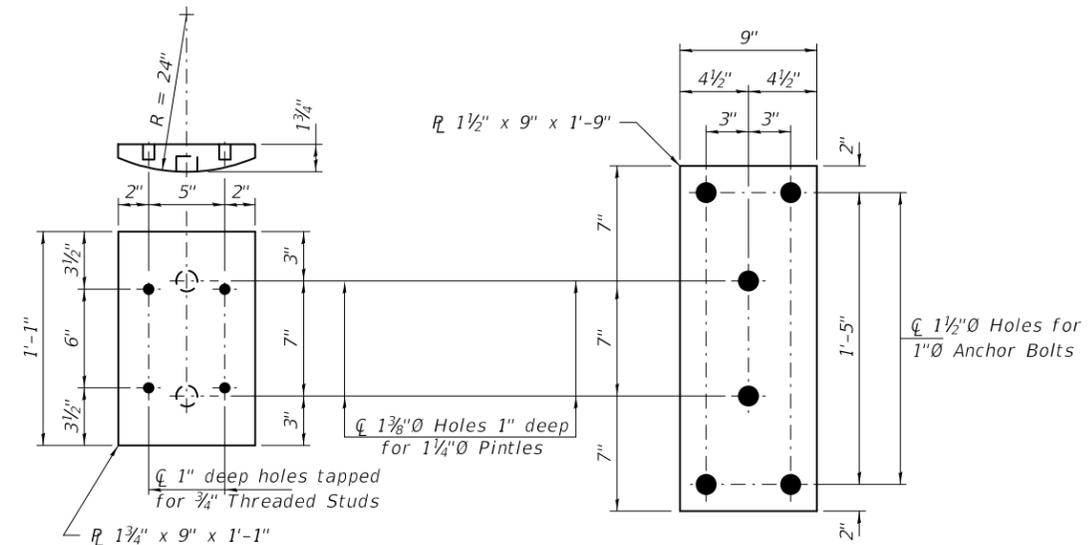
(A) Remove and replace fixed bearings at abutments.



ELEVATION AT ABUTMENTS



SECTION D-D



**PLAN - TOP PLATE
FIXED BEARINGS**

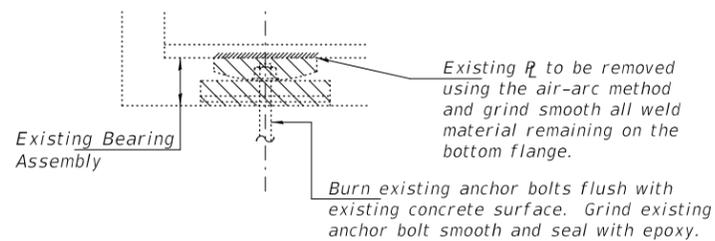
**PLAN - BOTTOM PLATE
FIXED BEARINGS**

**BEAM REACTIONS TABLE
AT TEMP. SUPPORTS**

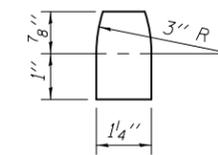
	Abutments	
R _ϕ	(K)	26
R _L	(K)	34
Imp.	(K)	10
R (Total)	(K)	70

NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
 All new structural steel and bearing assemblies shall be hot-dip galvanized. See Special Provision for "Hot Dip Galvanizing for 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 = 36 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 bearing assemblies is included with Furnishing and Erecting Structural Steel.
 Fasteners shall be high strength bolts. Bolts 3/4"Ø, open holes 1 3/16"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".



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



PINTLE

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	2230
Jack and Remove Existing Bearings	Each	12
Anchor Bolts, 1"	Each	48

DESIGNED - SMR
 CHECKED - ATH
 DRAWN - daburdell
 CHECKED - SMR ATH

EXAMINED
 PASSED
 ENGINEER OF STRUCTURAL SERVICES
 ENGINEER OF BRIDGES AND STRUCTURES

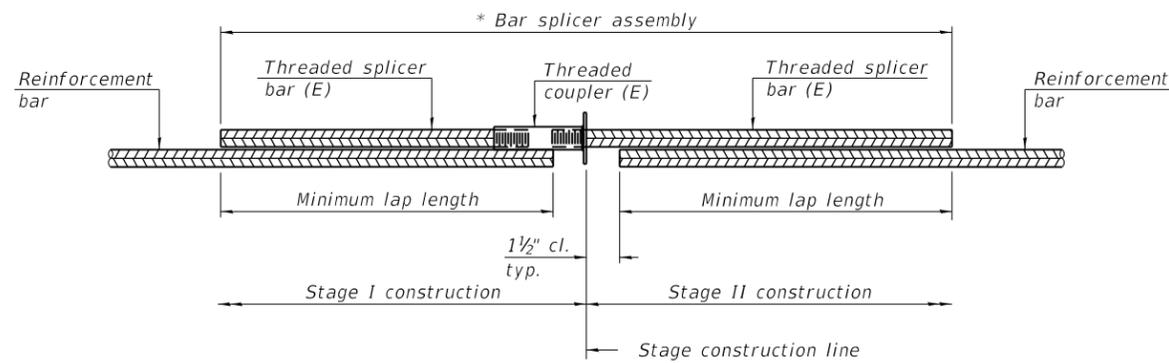
DATE - APRIL 29, 2020
 REVISED -
 REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BEARING DETAILS
SN 013-0004**

SHEET NO. 9 OF 10 SHEETS

F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 327 D7 BRIDGE REPAIRS 2020-1 CLAY 19 18
 CONTRACT NO. 74874
 ILLINOIS FED. AID PROJECT

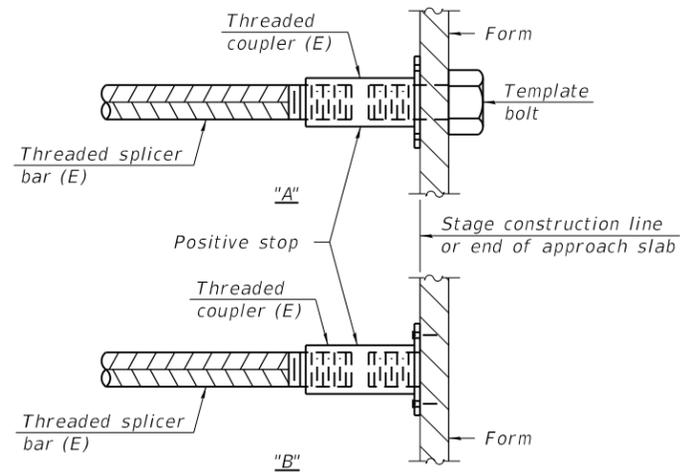


STANDARD BAR SPLICER ASSEMBLY
 (All components shall be provided from one supplier)

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

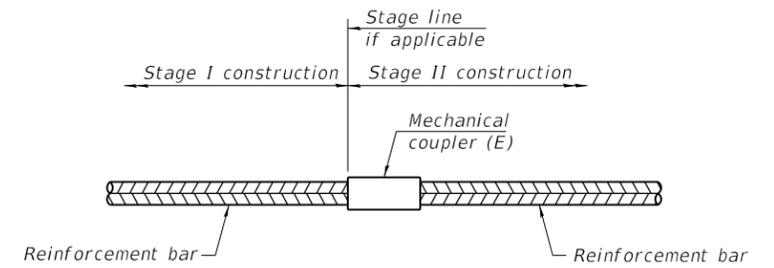
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
013-0004	#5	68	3'-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.

MODEL: Default
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 4/30/2020 7:43:44 AM

BSD-1

1-1-2020

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

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 STRUCTURE NO. 013-0004**

SHEET 10 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 Bridge Repairs 2020-1	Clay	19	19
CONTRACT NO. 74874			ILLINOIS FED. AID PROJECT	