

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2020-5	JEFFERSON	21	1
ILLINOIS			CONTRACT NO. 78753	

FOR INDEX OF SHEETS, SEE SHEET NO. 2  
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4 - 7

# PROPOSED HIGHWAY PLANS

F.A.I. 64  
SECTION D9 BRIDGE REPAIR 2020-5  
PROJECT NHPP-BG27(280)  
BRIDGE REPAIRS  
JEFFERSON COUNTY

C-99-005-20

**TRAFFIC DATA**  
2018 ADT = 13,400  
WITH 27.4% TRUCKS

**TOWNSHIP**  
SHILOH

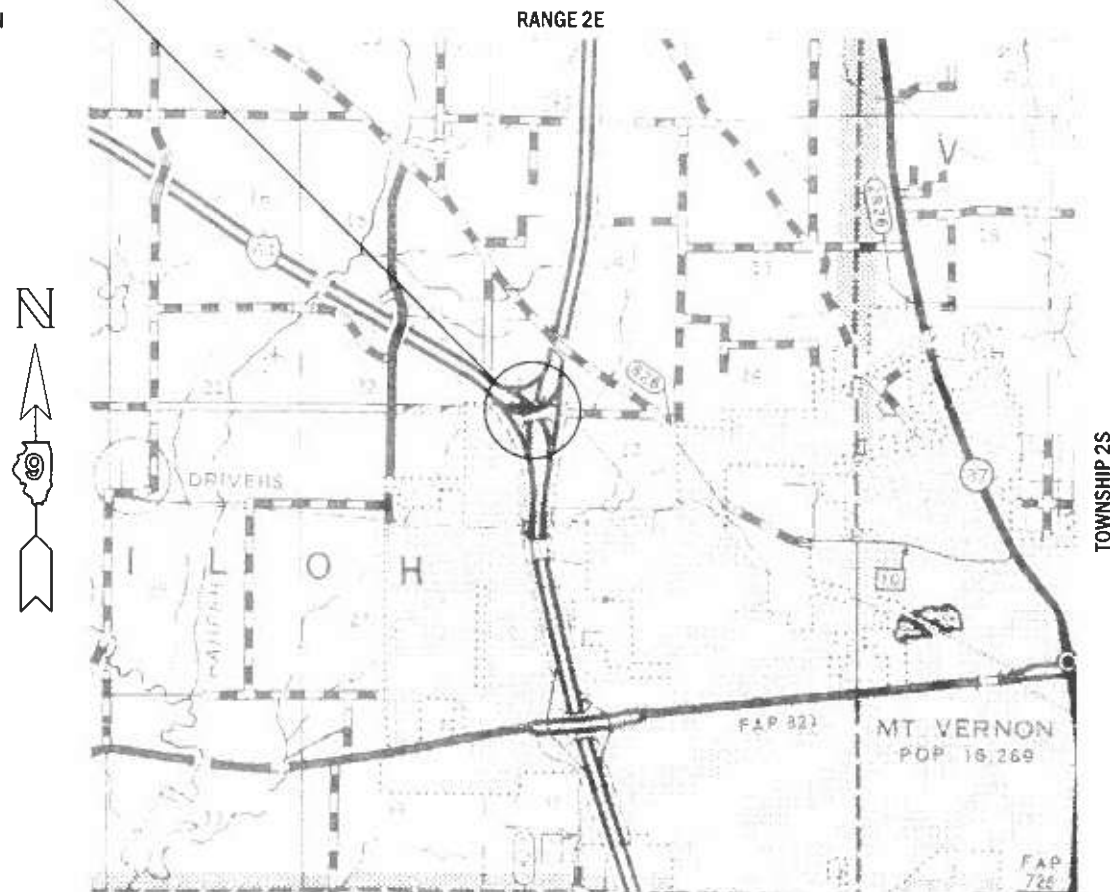
IMPROVEMENT LOCATION  
STRUCTURE 041-0060 (E)  
I-64 SECOND LEVEL OF  
TRI-LEVEL INTERCHANGE  
NORTH OF MT. VERNON

COORDINATE SYSTEM:  
POSTED SPEED: 65 MPH

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

PROJECT ENGINEER: DAVID PICHE  
DESIGN ENGINEER: ADRIAN ADAMS

CONTRACT NO. 78753



GROSS LENGTH = 329.92 FT. = 0.063 MILE  
STRUCTURE LENGTH = 224.17 FT. = 0.043 MILE



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED 03-13-20  
KPE REGIONAL ENGINEER

May 8, 2020 [Signature]  
ENGINEER OF DESIGN AND ENVIRONMENT

May 8, 2020 [Signature]  
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS

## GENERAL NOTES

1) AT ALL LOCATIONS WHERE PROPOSED CONCRETE PAVEMENT JOINS AN EXISTING HOT-MIX ASPHALT OF CONCRETE PAVEMENT, A FULL DEPTH SAWED JOINT SHALL BE CONSTRUCTED. THE COST OF THIS JOINT WILL BE INCLUDED IN THE COST OF THE TYPE OF PAVEMENT BEING CONSTRUCTED.

## INDEX OF SHEETS

1	COVER SHEET
2	GENERAL NOTES, INDEX OF SHEETS, STANDARDS, AND COMMITMENTS
3	SIGNATURE SHEET
4-7	SUMMARY OF QUANTITIES
8	SCHEDULES
9	GENERAL PLAN AND ELEVATION
10	STAGING DETAILS AND TYPICAL SECTION
11	JOINT RECONSTRUCTION DETAILS AT ABUTMENTS
12	BEARING DETAILS
13	BAR SPLICER ASSEMBLY DETAILS
14	PREFORMED JOINT STRIP SEAL DETAILS
15	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
16	BACKWALL REPLACEMENT AND SHEET PILING DETAILS
17	SLOPEWALL REPAIR
18-19	BRIDGE APPROACH SLAB DETAILS
20	FLOOR DRAIN EXTENSIONS AND RAIL POST DETAILS
21	DECK SLAB REPAIR

## STANDARDS

000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
420401-13	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB
483001-05	PCC SHOULDER
643001-02	SAND MODULE IMPACT ATTENUATORS
701101-05	OFF-RD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE
701106-02	OFF-RD OPERATIONS, MULTILANE, MORE THAN 15' AWAY
701400-09	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701401-12	LANE CLOSURE, FREEWAY/EXPRESSWAY
701402-12	LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH BARRIER
701901-08	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
780001-05	TYPICAL PAVEMENT MARKINGS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

## COMMITMENTS

NONE

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES, INDEX OF SHEETS,  
AND STANDARDS, AND COMMITMENTS**

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2020-5	JEFFERSON	21	2
CONTRACT NO. 78753				
		ILLINOIS	FED. AID PROJECT	

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Prepared By: Charles Stein  
 DISTRICT STUDIES & PLANS ENGINEER

Examined By: Nancy Bell  
 DISTRICT LAND ACQUISITION ENGINEER

Examined By: Conrad Nelson  
 DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: Kelley  
 DISTRICT OPERATIONS ENGINEER

Examined By: [Signature]  
 DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: Dayle Willis  
 DISTRICT CONSTRUCTION ENGINEER

Examined By: Robert Graeff (AWA)  
 DISTRICT MATERIALS ENGINEER

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DRAWN - _____	REVISED - _____	
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PLOT DATE = 2/27/2020	DATE - _____	REVISED - _____

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SIGNATURE SHEET**

SCALE: \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2020-5	JEFFERSON	21	3
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78753	

# SUMMARY OF QUANTITIES

**ROUTE:** FAI 64 (I-64)  
**COUNTY:** JEFFERSON  
**FUNDING:** 90% FED/10% STATE  
**LOCATION:** RURAL

CODE NUMBER	ITEM DESCRIPTION	UNIT	0013
4200080	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB	SQ YD	107
42001300	PROTECTIVE COAT	SQ YD	1,082
44000100	PAVEMENT REMOVAL	SQ YD	191
44004250	PAVED SHOULDER REMOVAL	SQ YD	32
48300500	PORTLAND CEMENT CONCRETE SHOULDERS 10"	SQ YD	32
50102400	CONCRETE REMOVAL	CU YD	35.4
50157300	PROTECTIVE SHIELD	SQ YD	180
50200100	STRUCTURE EXCAVATION	CU YD	53
50300225	CONCRETE STRUCTURES	CU YD	32.4
50300255	CONCRETE SUPERSTRUCTURE	CU YD	17.9
50300260	BRIDGE DECK GROOVING	SQ YD	972
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	49.5
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	1,590

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# SUMMARY OF QUANTITIES - CON

**ROUTE:** FAI 64 (I-64)  
**COUNTY:** JEFFERSON  
**FUNDING:** 90% FED/10% STATE  
**LOCATION:** RURAL

CODE NUMBER	ITEM DESCRIPTION	UNIT	0013
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	23,750
50800515	BAR SPLICERS	EACH	262
52000110	PREFORMED JOINT STRIP SEAL	FOOT	117
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	12
52100520	ANCHOR BOLTS, 1"	EACH	24
52200020	TEMPORARY SOIL RETENTION SYSTEM	SQ FT	42
58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	43
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	24
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	4
67100100	MOBILIZATION	L SUM	1
70100205	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	EACH	1
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	1
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	28

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.																		
64	D9 BRIDGE REPAIR 2020-4	JEFFERSON	21	5																		
CONTRACT NO. 78753																						
ILLINOIS FED. AID PROJECT																						

# SUMMARY OF QUANTITIES - CON

ROUTE: FAI 64 (I-64)  
 COUNTY: JEFFERSON  
 FUNDING: 90% FED/10% STATE  
 LOCATION: RURAL

CODE NUMBER	ITEM DESCRIPTION	UNIT	0013
70400100	TEMPORARY CONCRETE BARRIER	FOOT	538
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	438
70600250	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 3	EACH	1
70600350	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3	EACH	1
* 78003130	PREFORMED PLASTIC PAVEMENT MARKING, TYPE B - LINE 6"	FOOT	712
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	1
X0327979	PAVEMENT MARKING REMOVAL - GRINDING	SQ FT	78
X0327980	PAVEMENT MARKING REMOVAL - WATER BLASTING	SQ FT	174
X5030530	FLOOR DRAIN EXTENSION	EACH	13
* X7830074	GROOVING FOR RECESSED PAVEMENT MARKING 7"	FOOT	712
Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	12
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	3
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	111

\* SPECIALTY ITEM

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PLOT DATE = 3/13/2020	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2020-4	JEFFERSON	21	6
			CONTRACT NO. 78753	
		ILLINOIS	FED. AID PROJECT	

# SUMMARY OF QUANTITIES - CON

ROUTE: FAI 64 (I-64)  
 COUNTY: JEFFERSON  
 FUNDING: 90% FED/10% STATE  
 LOCATION: RURAL

CODE NUMBER	ITEM DESCRIPTION	UNIT	0013
Z0065700	SLOPE WALL REPAIR	SQ YD	8
Z0012167	BRIDGE DECK MICROSILICA CONCRETE OVERLAY 2 3/8"	SQ YD	972
Z0065730	SLOPE WALL SLURRY PUMPING	CU YD	6
Z0012147	BRIDGE DECK SCARIFICATION 2 3/8"	SQ YD	972

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PLOT DATE = 3/13/2020	DATE -	REVISED -			SCALE:	SHEET	OF	SHEETS	STA.	TO STA.
					ILLINOIS FED. AID PROJECT					

PAVEMENT MARKING SCHEDULE											
STATION				NOTES	PERFORMED PLASTIC PAVEMENT MARKINGS TYPE B - 6"			PAVT MKG REMOVAL WATER BL SQ FT	PAVT MKG REMOVAL GRINDING SQ FT		
					SOLID WHITE	SOLID YELLOW	WHITE SKIP DASH				
					FOOT	FOOT	FOOT				
2385+49.1	RT	TO	2386+00.8	RT			52		17		
2386+00.8	RT	TO	2388+24.0	RT			225	75			
2388+24.0	RT	TO	2388+59.0	RT			35		12		
2385+49.12		TO	2386+00.88		WHITE SKIP DASH			20	10		
2386+00.88		TO	2388+24.04		WHITE SKIP DASH			50	25		
2388+24.04		TO	2388+59.04		WHITE SKIP DASH			20	10		
2385+49.12	LT	TO	2386+00.88	LT			35		12		
2386+00.88	LT	TO	2388+24.04	LT			223	74			
2388+24.04	LT	TO	2388+59.04	LT			52		17		
SUBTOTAL							310	312	90	174	78
TOTAL								712		174	78

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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

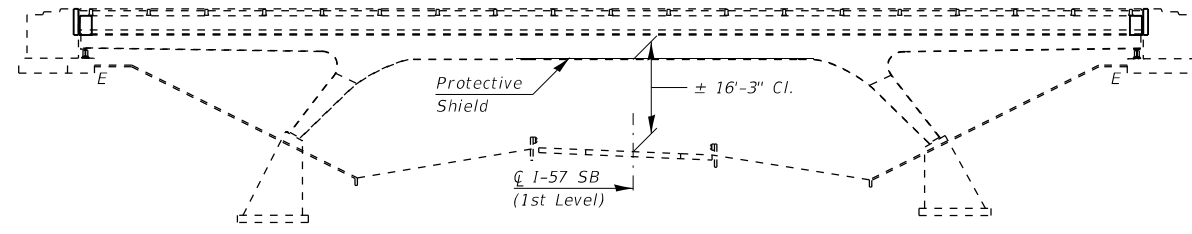
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64	D9 BRIDGE REPAIR 2020-4	JEFFERSON	21	8
CONTRACT NO. 78753			ILLINOIS FED. AID PROJECT	

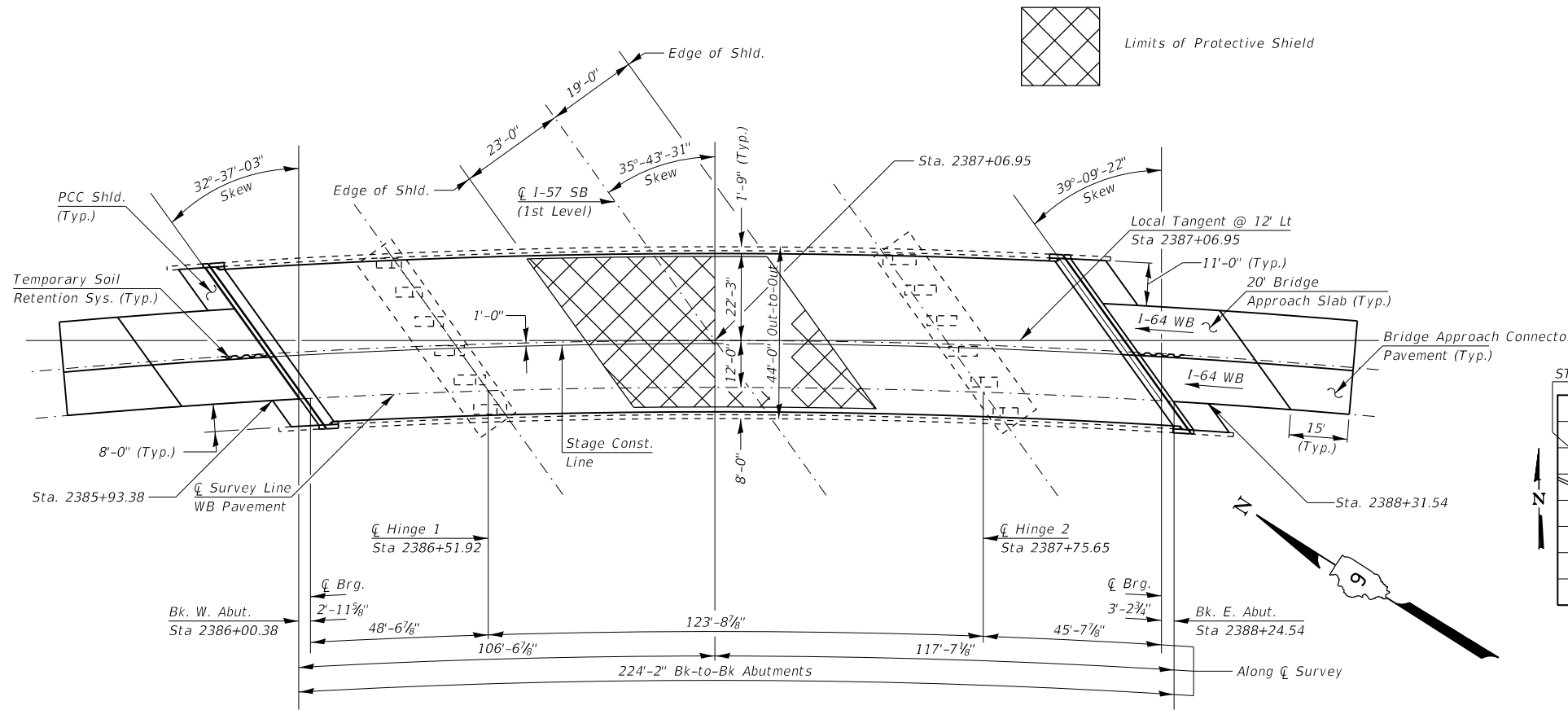


**GENERAL NOTES**

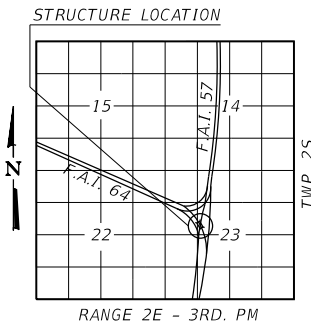
Reinforcement bars designated (E) shall be epoxy coated.  
 Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior 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.  
 In addition to the requirements of article 107.16 the contractor shall protect the surface of all bridge decks and bridge approach pavements in a manner satisfactory to the engineer before any equipment is allowed to cross the structure. Protection shall be provided for all equipment as defined in article 101.16 regardless if track mounted or wheeled.  
 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.  
 The cost of any saw cuts made to complete the work as described in plan details shall not be paid for separately but shall be included in the various pay items involved.  
 Protective coat shall be applied to all new concrete surfaces on bridge parapet areas, concrete overlay, and bridge approach slabs. Seasonal limits for application shall not apply.  
 All structural steel shall conform to AASHTO Classification M-270 Gr. 36, 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".  
 Synthetic fibers shall be added to the Bridge Deck Microsilica Concrete Overlay, see Special Provisions.  
 The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.  
 The reference line for stationing on this project follows the original construction survey line of the bridge and coincides with the outer edge of the traffic lane.  
 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.  
 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.  
 All new structural steel and bearing assembly shall be hot-dip galvanized. See Special Provisions for "Hot Dip Galvanizing For Structural Steel."



**ELEVATION**



**PLAN**



STRUCTURE LOCATION

**CURVE DATA**

(From Existing Plans)  
 P.I. STA. 2392+44.25  
 $\Delta = 66^\circ-20'-10''$   
 $D = 3^\circ-00'-00''$   
 $R = 1909.86'$   
 $L = 2211.21'$   
 $T = 1248.26'$   
 $E = 371.74'$

S.E. = 0.08 FT/FT  
 Attained in 240'

**DESIGN STRESSES**

(From Existing Plans)  
 $f_c = 1,400$  psi (Super and Sub)  
 $vc = 75$  psi (Footings)  
 $f_s = 20,000$  psi (Structural A-36)  
 $f_s = 20,000$  psi (Existing Reinforcement)  
 $n = 10$

**SCOPE OF WORK**

1. Set up traffic control with temporary concrete barrier
2. Install protective shield
3. Replace abutment backwalls, bridge approach slabs, and bridge approach connectors
4. Perform work at joints
5. Remove existing overlay by mechanical scarification and hydro-scarification
6. Install microsilica concrete overlay
7. Replace bearings and install drain extensions
8. Switch stages and repeat
9. Repair slope walls



Expires 11-30-2020

*David Carl Puzey*

5/11/2020

**TOTAL BILL OF MATERIAL**

	UNIT	QUANTITY
Paved Shoulder Removal	Sq. Yd.	32
PCC Shoulders, 10"	Sq. Yd.	32
Pavement Removal	Sq. Yd.	191
Concrete Removal	Cu. Yd.	35.4
Protective Shield	Sq. Yd.	180
Concrete Structures	Cu. Yd.	32.4
Concrete Superstructure	Cu. Yd.	17.9
Concrete Superstructure (Approach Slab)	Cu. Yd.	49.5
Bridge Deck Grooving	Sq. Yd.	972
Reinforcement Bars, Epoxy Coated	Pound	23,750
Bar Splicers	Each	262
Preformed Joint Strip Seal	Foot	117
Elastomeric Bearing Assembly, Type I	Each	12
Jack and Remove Existing Bearings	Each	12
Furnishing and Erecting Structural Steel	Pound	1,590
Anchor Bolts, 1"	Each	24
Floor Drain Extensions	Each	13
Bridge Deck Microsilica Concrete Overlay, 2 3/8"	Sq. Yd.	972
Bridge Deck Scarification, 2 3/8"	Sq. Yd.	972
Slope Wall Repair	Sq. Yd.	8
Slope Wall Slurry Pumping	Cu. Yd.	6
Geocomposite Wall Drain	Sq. Yd.	24
Pipe Underdrains for Structures, 4"	Foot	111
Granular Backfill for Structures	Cu. Yd.	43
Temporary Soil Retention System	Sq. Ft.	42
Structure Excavation	Cu. Yd.	53
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	3
Protective Coat	Sq. Yd.	1,082

**BRIDGE REPAIRS**  
**2ND LEVEL STRUCTURE**  
**I-64 WB OVER I-57 SB**  
**F.A.I. RTE 64 - D9 BRIDGE REPAIR 2020-5**  
**JEFFERSON COUNTY**  
**STATION 2387+06.95**  
**STRUCTURE NO. 041-0060**

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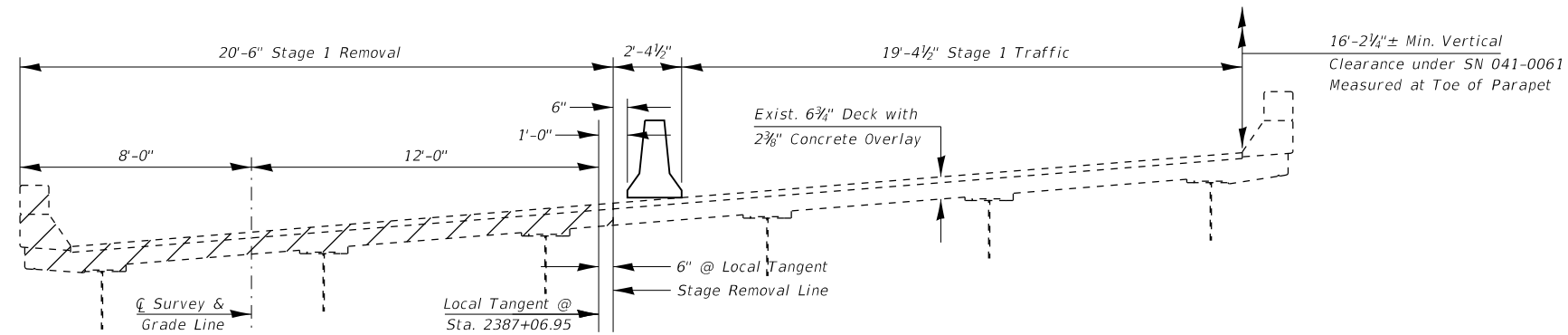
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN & ELEVATION**  
**SN 041-0060**

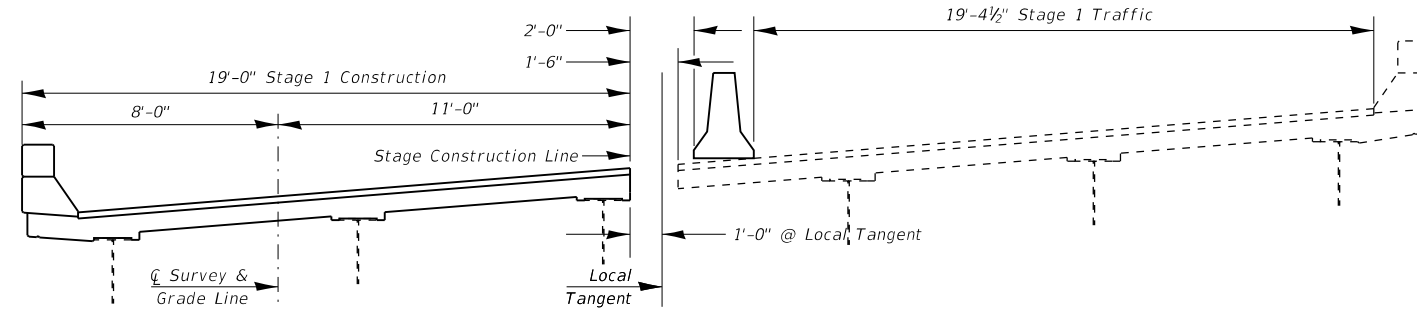
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2020-5	JEFFERSON	21	9
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78753	

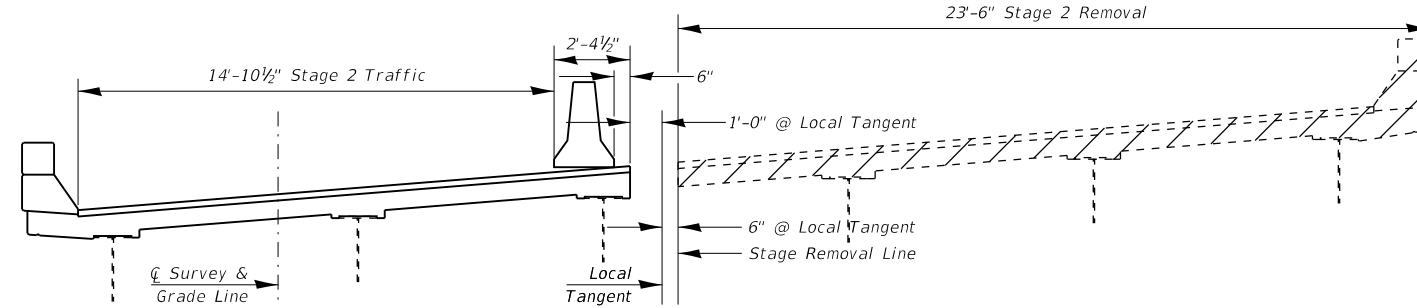
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REMOVAL**



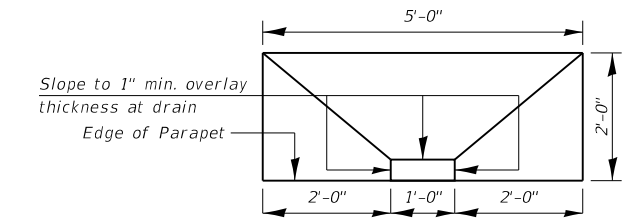
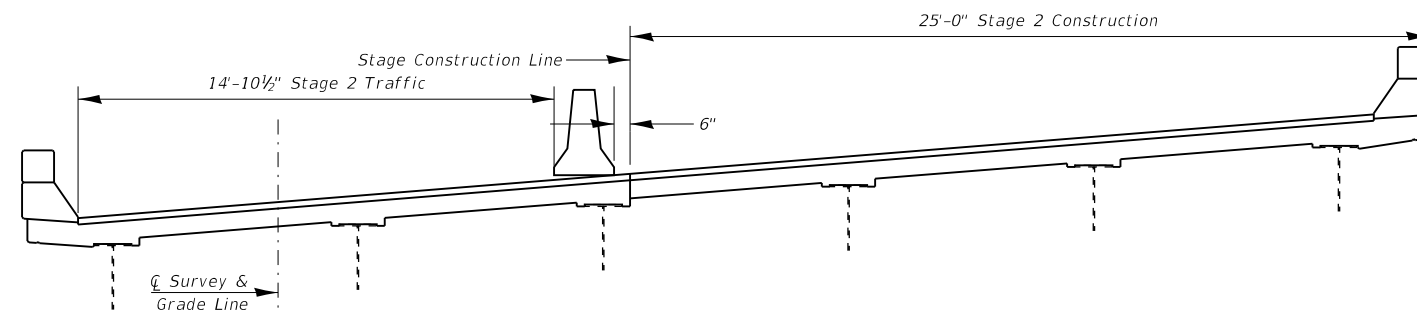
**STAGE I  
CONSTRUCTION**



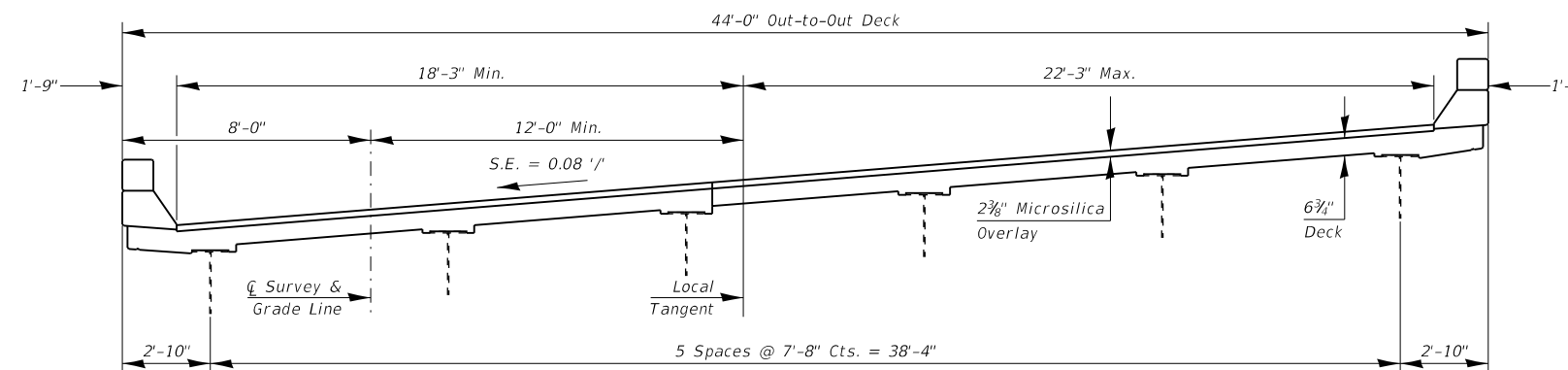
**STAGE II  
REMOVAL**



**STAGE II  
CONSTRUCTION**



**TOP PLAN - SURFACE AT DRAINS**  
Slope Concrete Overlay of Drains



**SECTION THROUGH ABUTMENTS SHOWING JOINT RECONSTRUCTION**

All Sections Looking West  
All Dimensions are Along Radius

**STAGING DETAILS AND TYPICAL SECTION  
SECOND LEVEL STRUCTURE  
I-64 WB OVER I-57 SB  
F.A.I. RTE 64 - D9 BRIDGE REPAIR 2020-5  
JEFFERSON COUNTY  
STATION 2387+06.95  
STRUCTURE NO. 041-0060**

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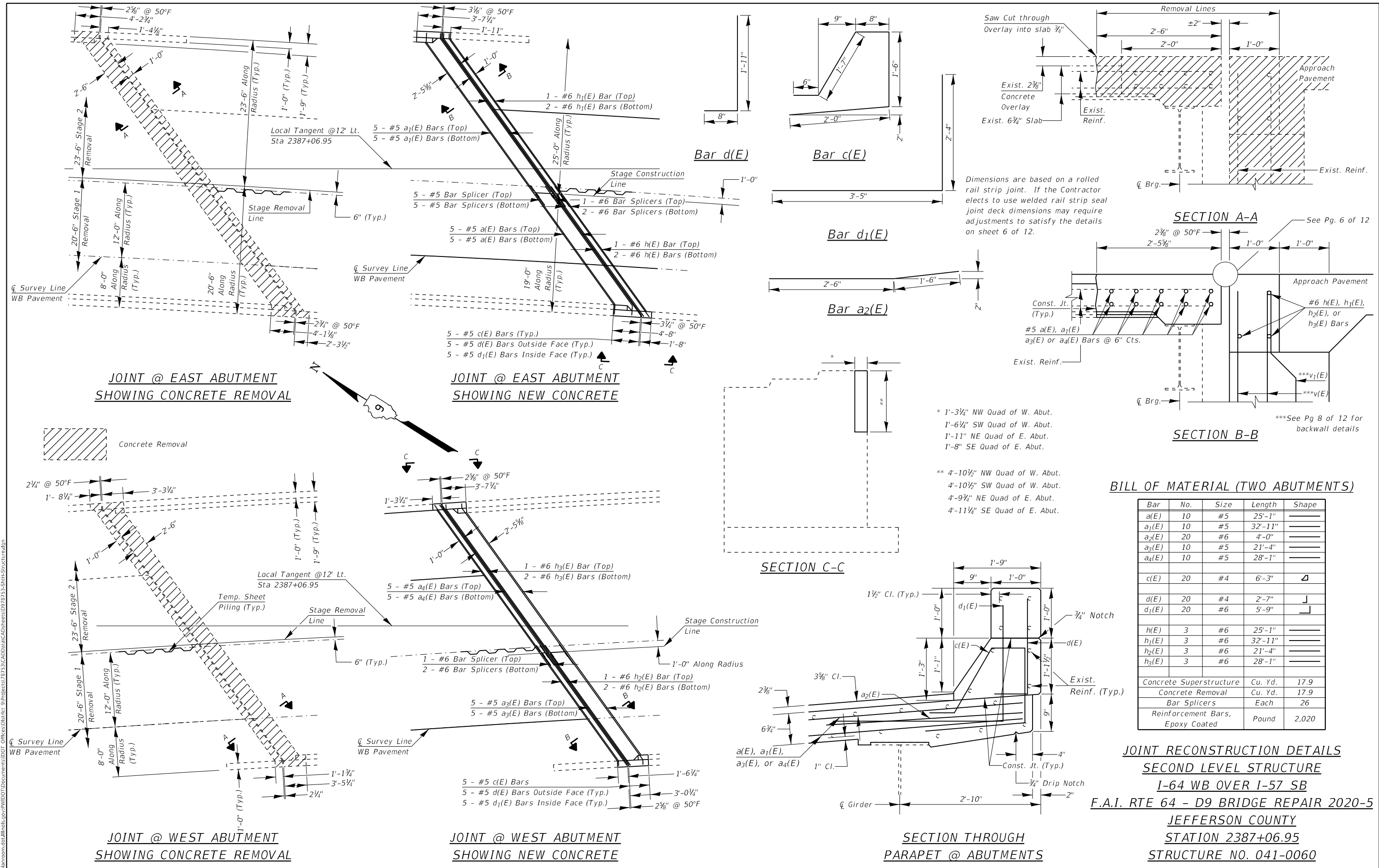
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>STAGING DETAILS AND TYPICAL SECTION</b>	
SCALE:	SHEET 2 OF 13 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2020-5	JEFFERSON	21	10
CONTRACT NO. 78753				
ILLINOIS FED. AID PROJECT				

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 OFFICE: JEFFERSON COUNTY  
 DATE: 5/8/2020



**BILL OF MATERIAL (TWO ABUTMENTS)**

Bar	No.	Size	Length	Shape
a(E)	10	#5	25'-1"	—
a <sub>1</sub> (E)	10	#5	32'-11"	—
a <sub>2</sub> (E)	20	#6	4'-0"	—
a <sub>3</sub> (E)	10	#5	21'-4"	—
a <sub>4</sub> (E)	10	#5	28'-1"	—
c(E)	20	#4	6'-3"	◀
d(E)	20	#4	2'-7"	┘
d <sub>1</sub> (E)	20	#6	5'-9"	┘
h(E)	3	#6	25'-1"	—
h <sub>1</sub> (E)	3	#6	32'-11"	—
h <sub>2</sub> (E)	3	#6	21'-4"	—
h <sub>3</sub> (E)	3	#6	28'-1"	—
Concrete Superstructure			Cu. Yd.	17.9
Concrete Removal			Cu. Yd.	17.9
Bar Splicers			Each	26
Reinforcement Bars, Epoxy Coated			Pound	2,020

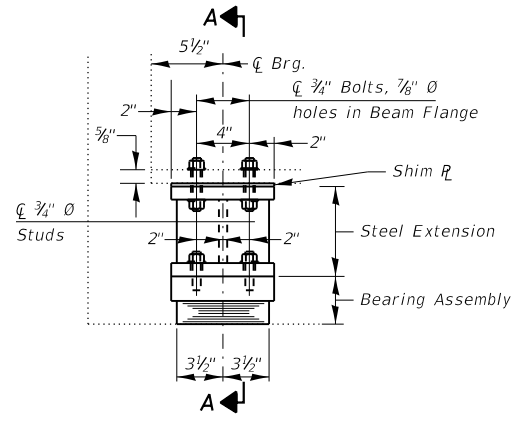
**JOINT RECONSTRUCTION DETAILS  
SECOND LEVEL STRUCTURE  
I-64 WB OVER I-57 SB  
F.A.I. RTE 64 - D9 BRIDGE REPAIR 2020-5  
JEFFERSON COUNTY  
STATION 2387+06.95  
STRUCTURE NO. 041-0060**

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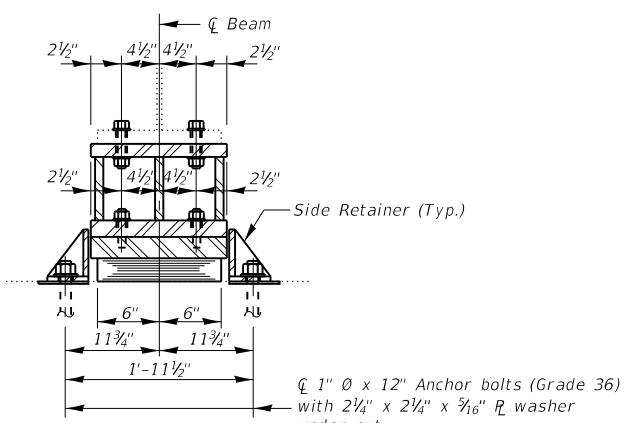
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>JOINT RECONSTRUCTION DETAILS AT ABUTMENTS SN 041-0060</b>			
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CONTRACT NO. 78753				
ILLINOIS FED. AID PROJECT				

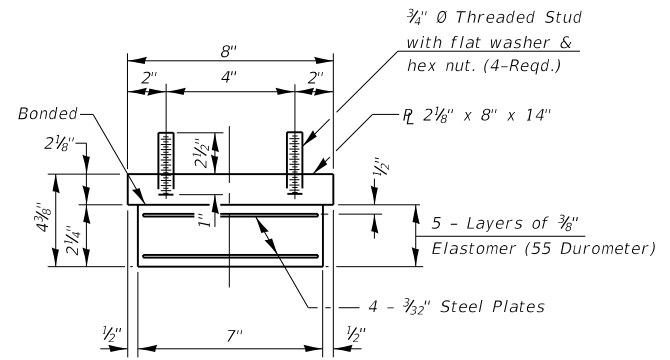


**ELEVATION AT ABUTMENTS**



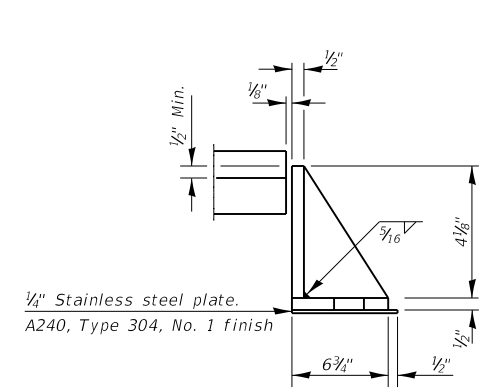
**SECTION A-A**

**TYPE I ELASTOMERIC EXP. BRG.**



**BEARING ASSEMBLY**

Note: Shim plates shall not be placed under Bearing Assembly



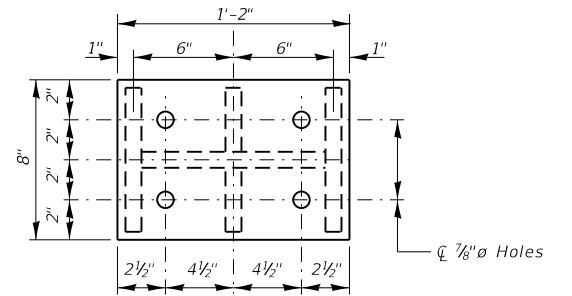
**SIDE RETAINER**

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

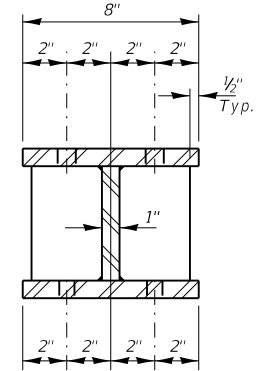
**BEAM REACTIONS**

R <sub>D</sub>	(K)	17.7
R <sub>L</sub>	(K)	39.0
Imp.	(K)	10.0
R (Total)	(K)	66.7

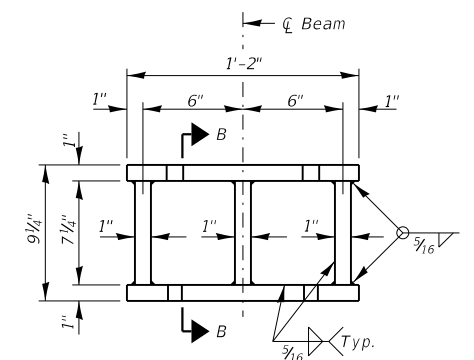
Notes:  
 Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
 New steel extensions, shim plates, and connection bolts are included with Furnishing and Erecting Structural Steel.  
 Prior to ordering any material, 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 (F<sub>y</sub> = 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.  
 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.  
 \* Gr 50 Steel used for bearings



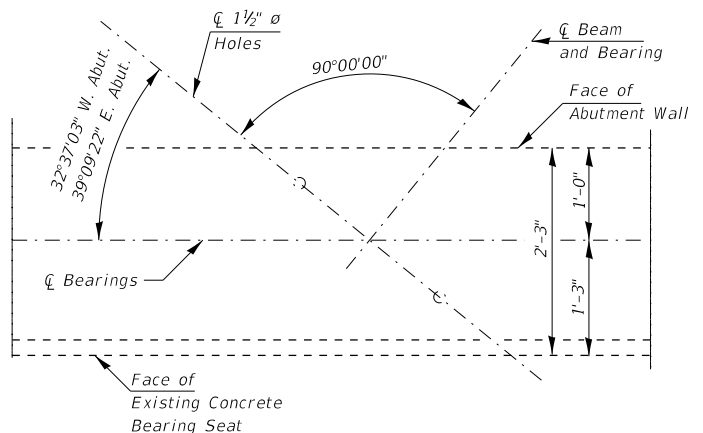
**PLAN TOP AND BOTTOM PLATE**



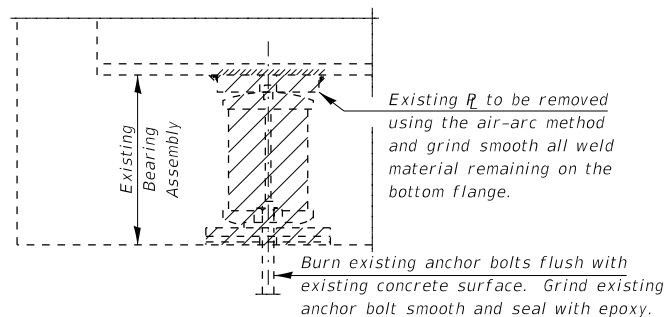
**SECTION B-B**



**STEEL EXTENSION DETAIL**



**PLAN-BEARING SEAT**



**EXISTING BEARING REMOVAL DETAIL**

Cost included in Jack and Remove Existing Bearings.

**BILL OF MATERIAL (2 ABUTMENTS)**

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	12
Jack and Remove Existing Bearings	Each	12
Furnishing and Erecting Structural Steel	Pound	1,590
Anchor Bolts 1"Ø	Each	24

**BEARING DETAILS  
 SECOND LEVEL STRUCTURE**

**I-64 WB OVER I-57 SB  
 F.A.I. RTE 64 - D9 BRIDGE REPAIR 2020-5  
 JEFFERSON COUNTY  
 STATION 2387+06.95  
 STRUCTURE NO. 041-0060**

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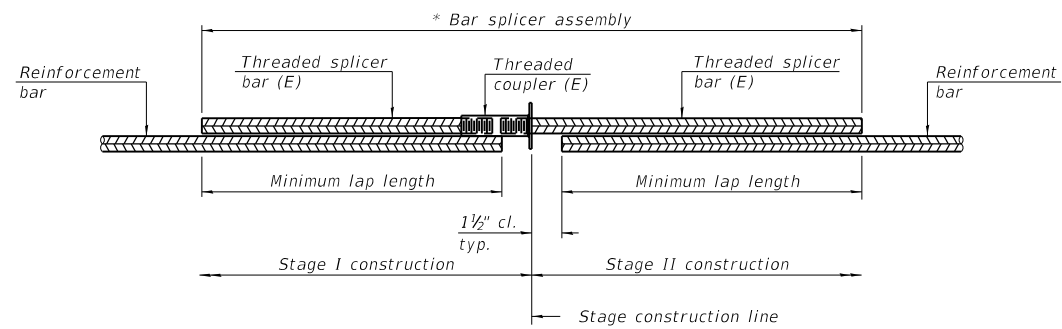
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	DATE -	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**BEARING DETAILS**

SCALE: SHEET 4 OF 13 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 78753				
ILLINOIS FED. AID PROJECT				

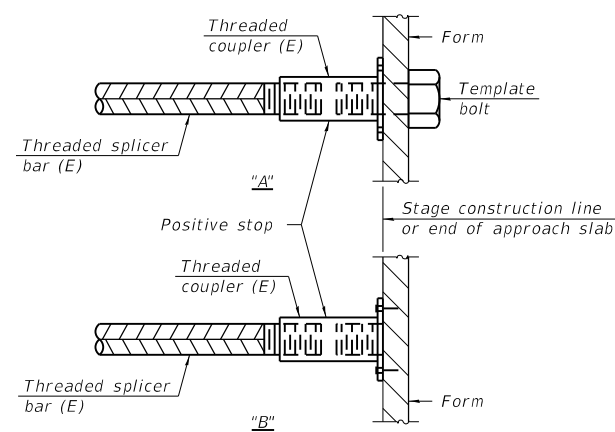


**STANDARD BAR SPLICER ASSEMBLY PLAN**  
(All components shall be provided from one supplier)

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

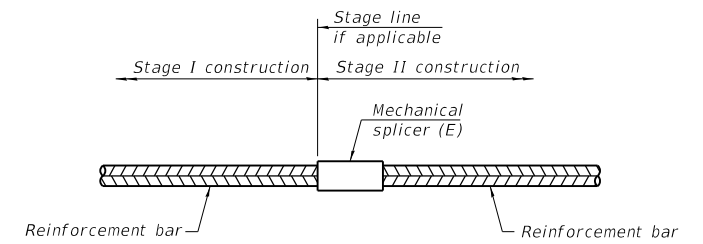
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	20	3'-6"
Hatch Block	#6	6	4'-0"
Back Walls	#5	16	3'-4"
Top Appr. Slab	#5	60	2'-3"
Bot. Appr. Slab	#8	80	3'-8"
Top Appr. Ftg.	#5	40	2'-3"
Bot. Appr. Ftg.	#5	40	2'-3"



**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.

**BAR SPLICER ASSEMBLY DETAILS**  
**2ND LEVEL STRUCTURE**  
**I-64 WB OVER I-57 SB**  
**F.A.I. RTE 64 - D9 BRIDGE REPAIR 2020-5**  
**JEFFERSON COUNTY**  
**STATION 2387+06.95**  
**STRUCTURE NO. 041-0060**

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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

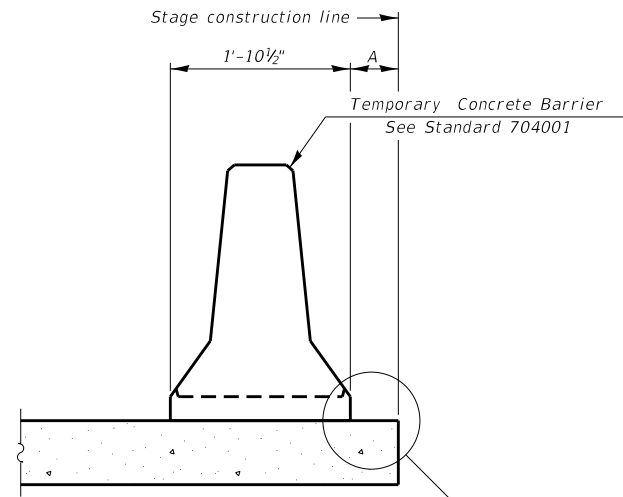
**BAR SPLICER ASSEMBLY DETAILS**

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										ILLINOIS FED. AID PROJECT	

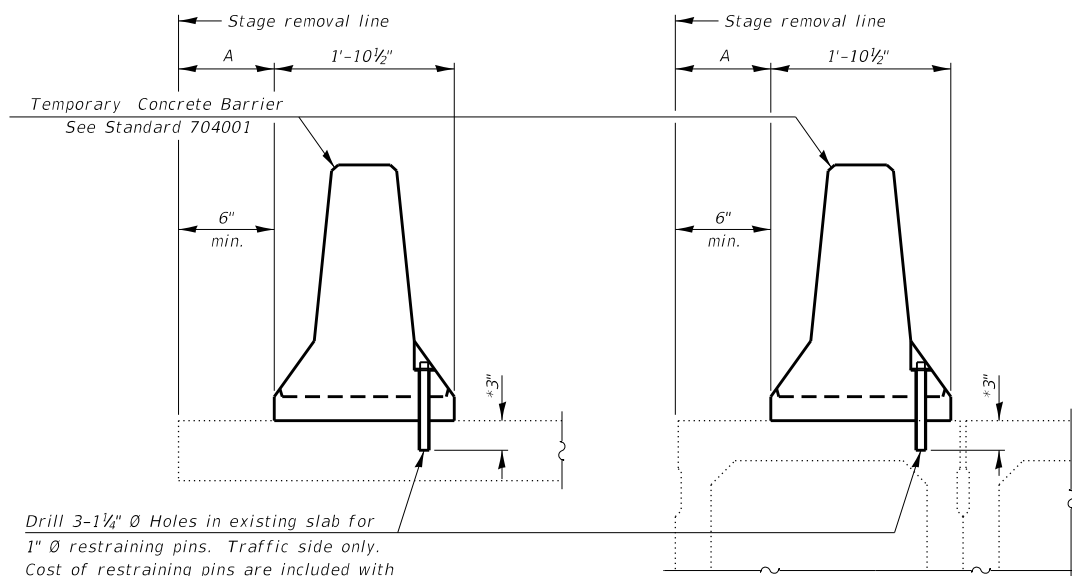
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When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

**NEW SLAB OR NEW DECK BEAM**



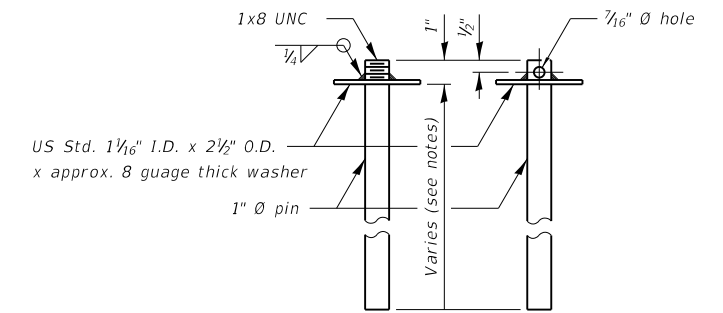
Drill 3-1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

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

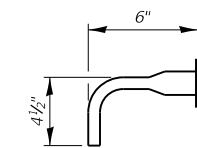
**EXISTING SLAB**

**EXISTING DECK BEAM**

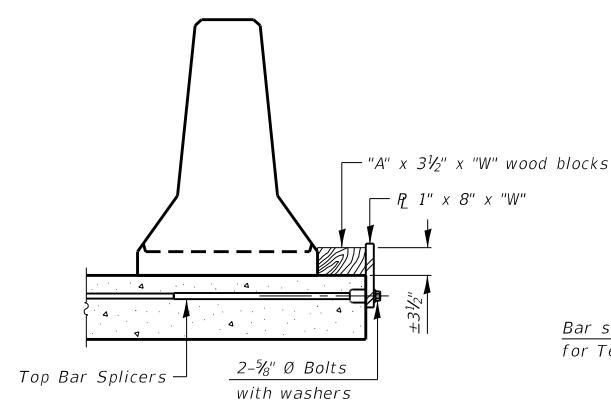
**SECTIONS THRU SLAB OR DECK BEAM**



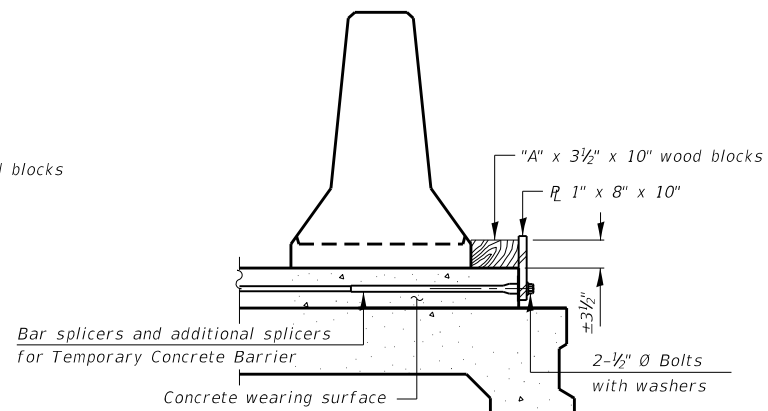
**RESTRAINING PIN**



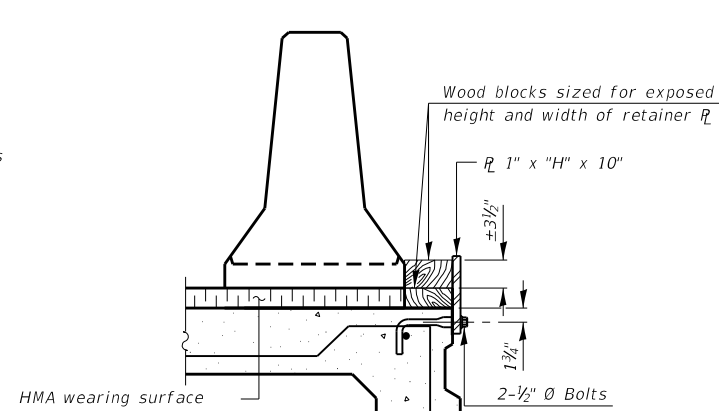
**BAR SPLICER FOR #4 BAR - DETAIL III**



**DETAIL I**



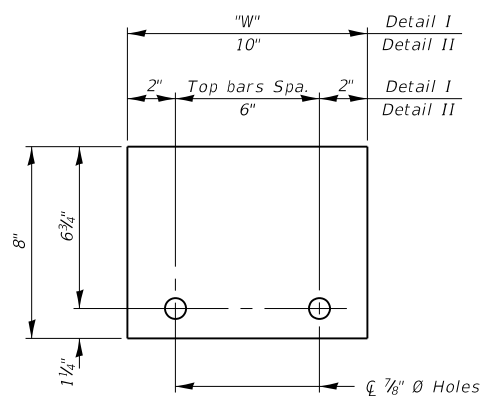
**DETAIL II**



**DETAIL III**

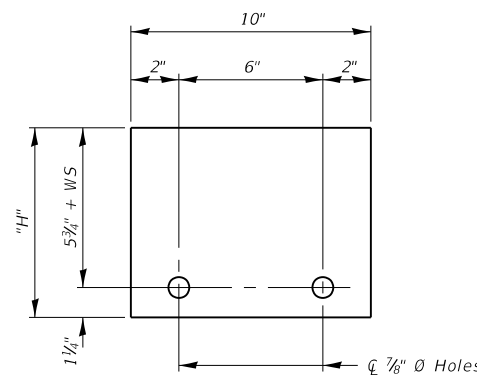
Notes:  
 Cost of retainer assembly is included with Temporary Concrete Barrier.  
 A retainer assembly shall be located at the approximate  $\bar{C}$  of each temporary concrete barrier.  
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.  
 When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

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



**STEEL RETAINER 1" x 8" x "W"**

(Detail I and II)



**STEEL RETAINER 1" x "H" x 10"**

(Detail III)

**TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION DETAILS**

**2ND LEVEL STRUCTURE**

**I-64 WB OVER I-57 SB**

**F.A.I. RTE 64 - D9 BRIDGE REPAIR 2020-5**

**JEFFERSON COUNTY**

**STATION 2387+06.95**

**STRUCTURE NO. 041-0060**

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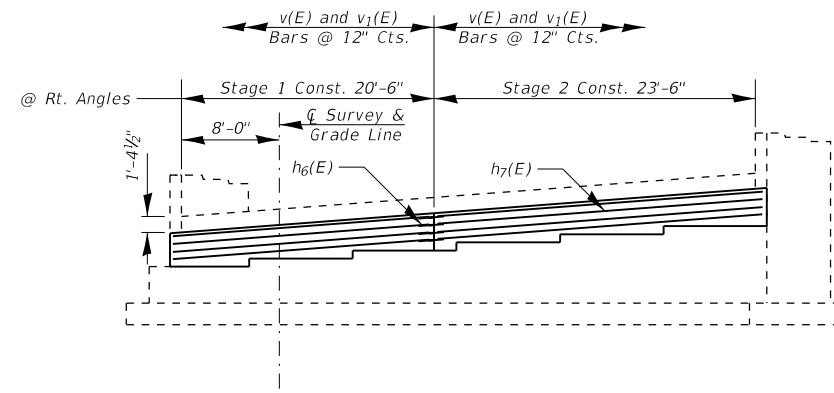
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TEMPORARY CONCRETE BARRIER  
FOR STAGE CONSTRUCTION**

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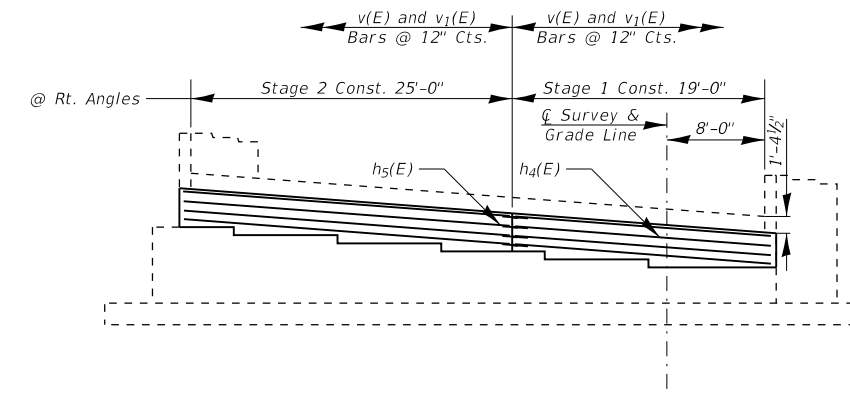
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CONTRACT NO. 78753				
ILLINOIS FED. AID PROJECT				

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**WEST ABUTMENT**

Looking West



**EAST ABUTMENT**

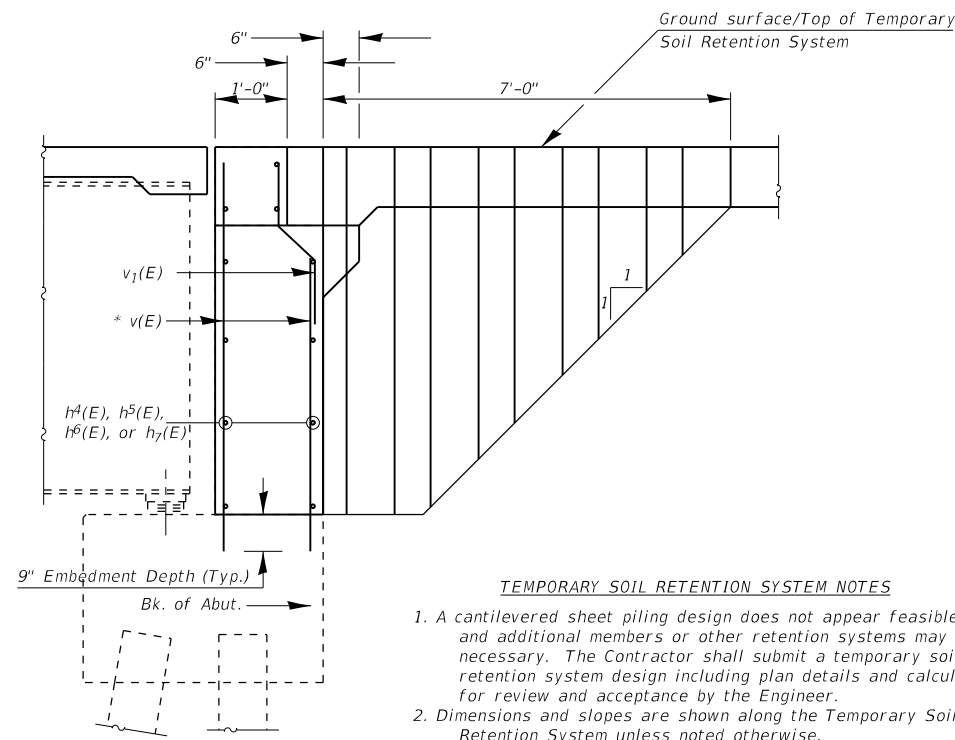
Looking East

**ABUTMENT BACKWALL REPLACEMENT**

\* Drill and epoxy grout v(E) bars 9" into existing abutment according to Article 584 of the Standard Specifications.

**BILL OF MATERIAL (TWO BACKWALLS)**

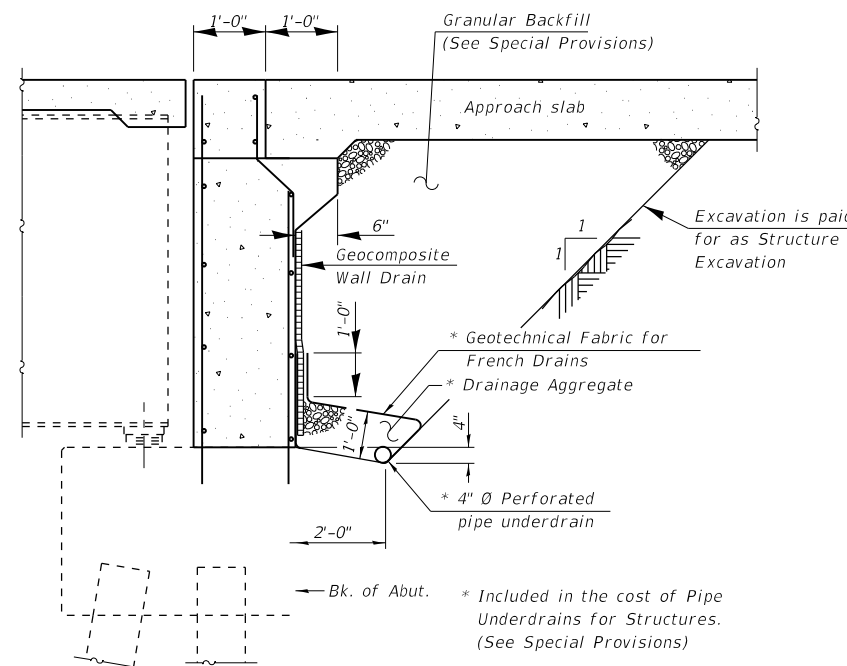
Bar	No.	Size	Length	Shape
$h_4(E)$	8	#5	25'-1"	—
$h_5(E)$	8	#5	32'-11"	—
$h_6(E)$	8	#5	21'-4"	—
$h_7(E)$	8	#5	28'-1"	—
v(E)	208	#4	5'-1"	—
$v_1(E)$	104	#4	3'-3"	—
Concrete Structures			Cu. Yd.	17.5
Concrete Removal			Cu. Yd.	17.5
Bar Splicers			Each	16
Reinforcement Bars, Epoxy Coated			Pound	1,830
Structure Excavation			Cu. Yd.	53
Geocomposite Wall Drain			Sq. Yd.	24
Pipe Underdrains for Structures, 4"			Foot	111
Temporary Soil Retention System			Sq. Ft.	42
Granular Backfill for Structures			Cu. Yd.	43



**TEMPORARY SOIL RETENTION SYSTEM NOTES**

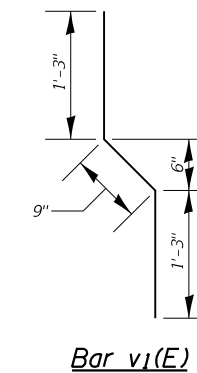
1. A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.
2. Dimensions and slopes are shown along the Temporary Soil Retention System unless noted otherwise.

**TEMPORARY SOIL RETENTION SYSTEM**



**ABUTMENT DRAIN DETAIL**

(Horizontal dimensions at right angles)  
Temporary Sheet Piling not shown for clarity. See Detail this sheet.



Bar  $v_1(E)$

**BACKWALL REPLACEMENT AND SHEET PILING DETAILS**

**2ND LEVEL STRUCTURE**

**I-64 WB OVER I-57 SB**

**F.A.I. RTE 64 - D9 BRIDGE REPAIR 2020-5**

**JEFFERSON COUNTY**

**STATION 2387+06.95**

**STRUCTURE NO. 041-0060**

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BACKWALL REPLACEMENT AND SHEET PILING DETAILS  
SN 041-0060**

SCALE: SHEET 8 OF 13 SHEETS STA. TO STA.

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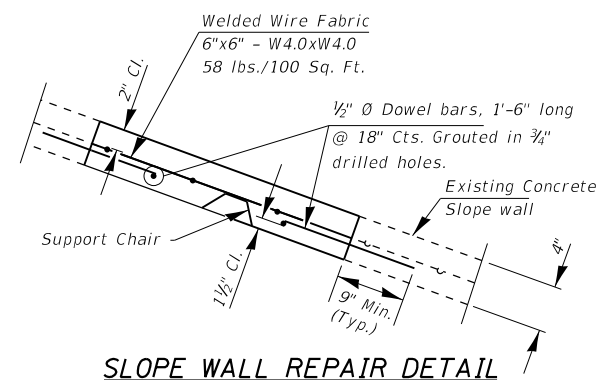
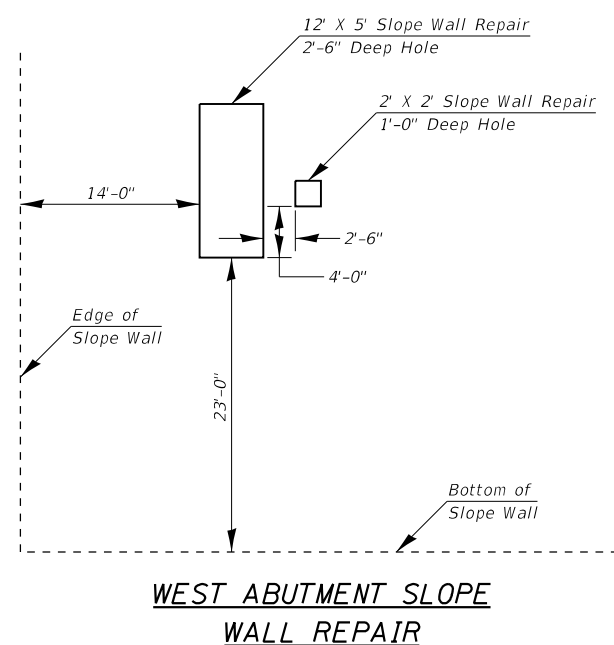
**NOTES**

Voids beneath the existing concrete slope wall shall be filled with Controlled Low Strength Material (CLSM) in accordance with the special provision "Slope Wall Slurry Pumping", and as directed by the Engineer. Existing dislodged concrete slope wall may be broken and used to partially fill voids before CLSM is placed. Sawed openings may be required. The cost of any new opening is included in the cost of Slope Wall Slurry Pumping.

After the Controlled Low Strength Material has set, the slope wall shall be cast in accordance with Section 511 of the Standard Specifications. Slope wall repair area shall be rectangular in shape. The cost of welded wire fabric, dowel bars, supports, saw cuts, and all labor, equipment, and material for slope wall repair are included in the cost of Slope Wall Repair measured in place in square yards.

The location and quantities of Slope wall Slurry Pumping and Slope Wall Repair are based on a field survey done at the time of plan preparation. The exact locations and actual quantities will be determined in the field by the Engineer. The Contractor will be paid for the actual quantity at the contract unit price bid for the item.

All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



**SLOPE WALL REPAIR BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Slope Wall Repair	Sq. Yd.	8
Slope Wall Slurry Pumping	Cu. Yd.	6

**SLOPEWALL REPAIR**  
**2ND LEVEL STRUCTURE**  
**1-64 WB OVER 1-57 SB**  
**F.A.I. RTE 64 - D9 BRIDGE REPAIR 2020-5**  
**JEFFERSON COUNTY**  
**STATION 2387+06.95**  
**STRUCTURE NO. 041-0060**

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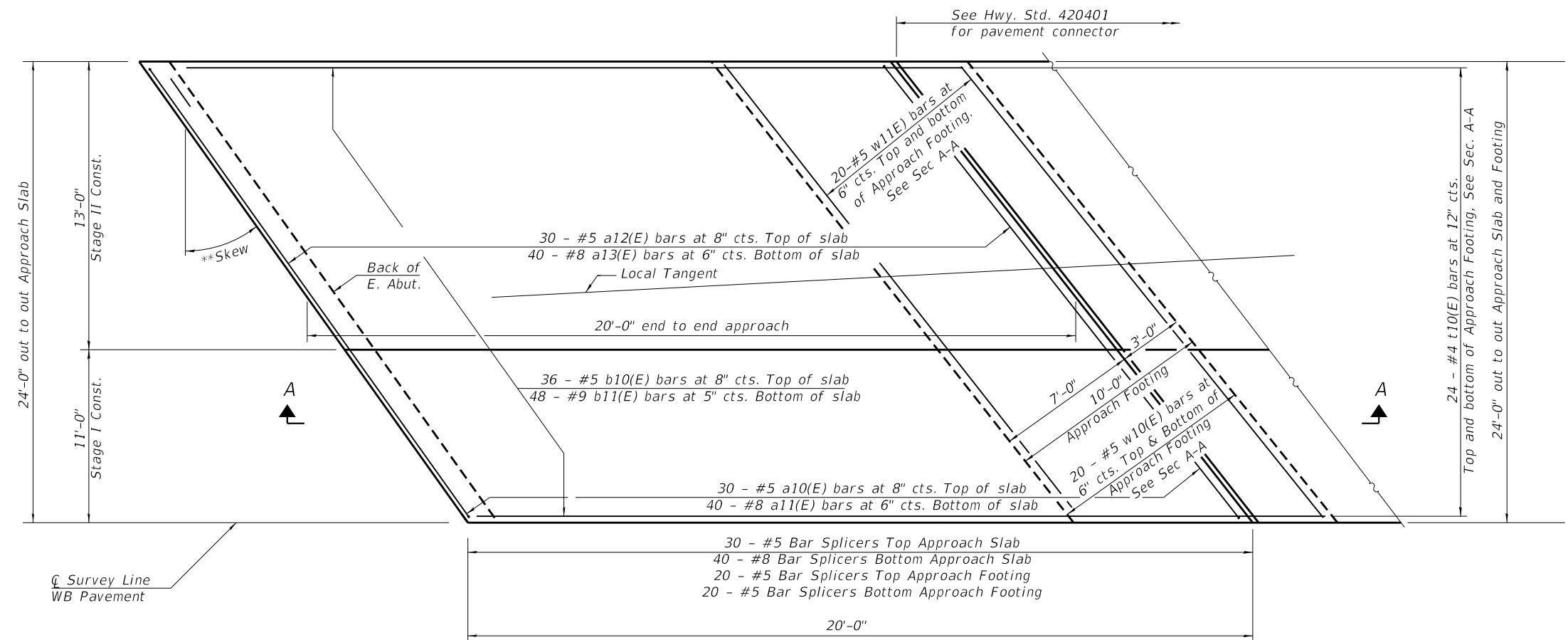
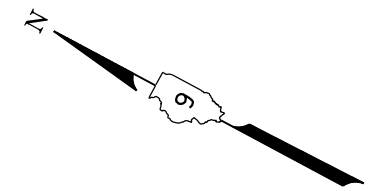
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SLOPEWALL REPAIR**  
**SN 041-0060**

SCALE: SHEET 9 OF 13 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 78753	
		ILLINOIS	FED. AID PROJECT	

\*\* E. Abut. 39°-09'-22"  
W. Abut. 32°-37'-03"

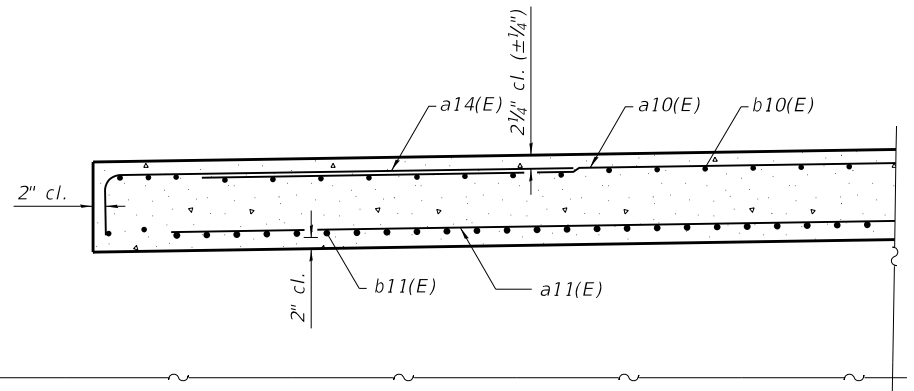


**PLAN**  
(E. Approach Slab; W. Approach Slab Similar)

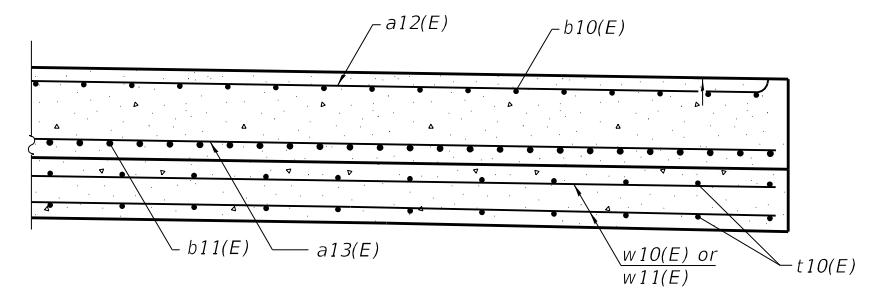


Match Superelevation %

Match Superelevation %



**NEAR ABUTMENT**



**AT APPROACH FOOTING**

**CROSS SECTION**  
(Looking West)

(Sheet 1 of 2)

MODEL: Default  
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 PROJECT: 78753  
 OFFICE: JEFFERSON  
 DATE: 5/8/2020

USER NAME = adamsam	DESIGNED -	REVISED -
	DRAWN -	REVISED -
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PLOT DATE = 5/8/2020	DATE -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**BRIDGE APPROACH SLAB DETAILS**  
**SN 041-0060**

SCALE: SHEET 10 OF 13 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2020-5	JEFFERSON	21	18
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ILLINOIS FED. AID PROJECT				

**Notes:**

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.

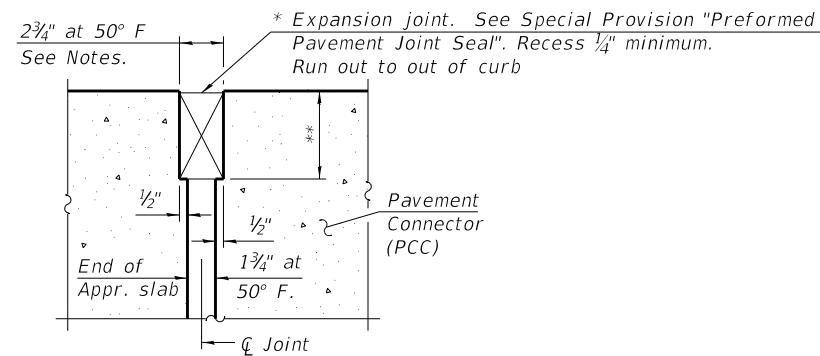
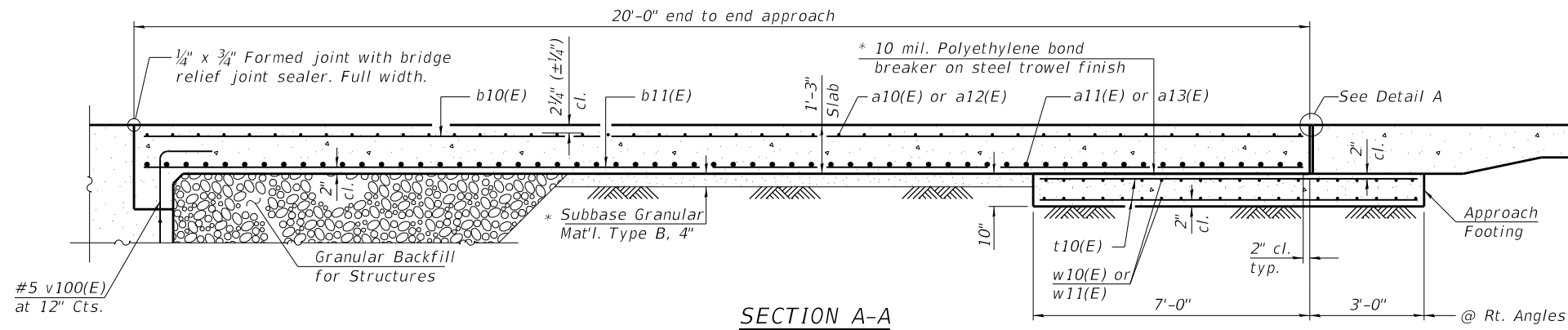
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

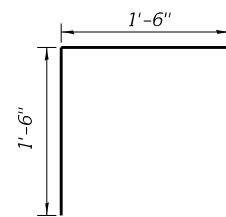
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

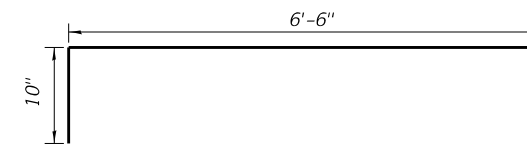
For Granular Backfill for Structures and drainage treatment details, see sheet 8 of 12.



**DETAIL A**  
(@ Rt. L's)



**Bar v100(E)**



**Bar a14(E)**

**TWO APPROACHES  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a10(E)	60	#5	13'-1"	—
a11(E)	80	#8	13'-1"	—
a12(E)	60	#5	15'-7"	—
a13(E)	80	#8	15'-7"	—
a14(E)	120	#5	7'-4"	┌
b10(E)	72	#5	19'-8"	—
b11(E)	96	#9	19'-8"	—
t10(E)	96	#4	9'-8"	—
w10(E)	80	#5	13'-1"	—
w11(E)	80	#5	15'-7"	—
v100(E)	48	#5	3'-0"	┌
Concrete Superstructure (Approach Slab)		Cu. Yd.	49.5	
Concrete Structures		Cu. Yd.	14.9	
Bar Splicers		Each	220	
Reinforcement Bars, Epoxy Coated		Pound	19,900	

\* Cost included with Concrete Superstructure (Approach Slab).

\*\* Per manufacturer recommendations

(Sheet 2 of 2)

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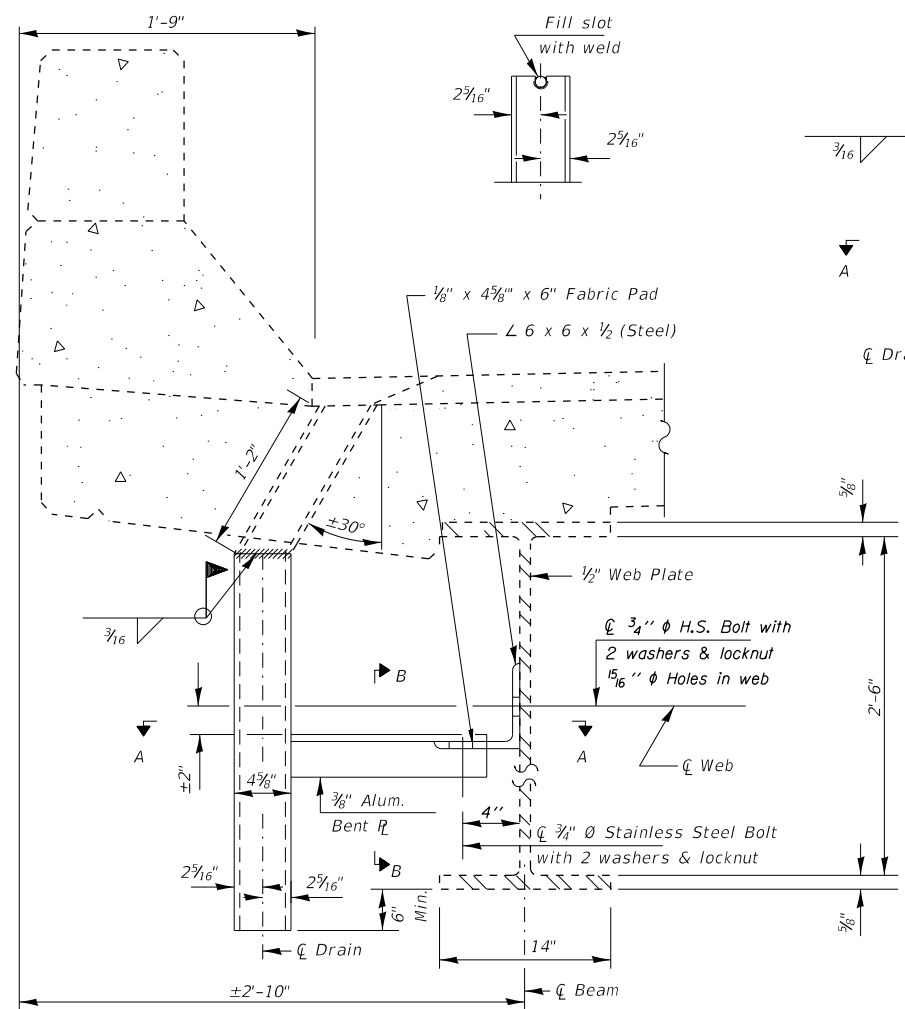
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

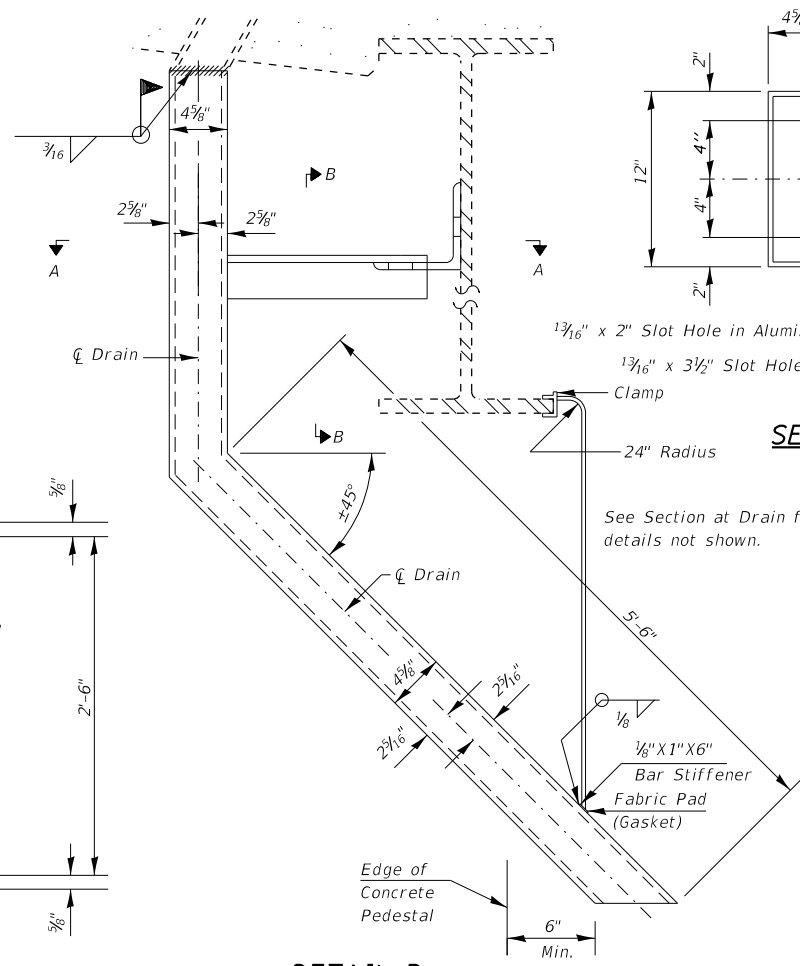
**BRIDGE APPROACH SLAB DETAILS  
SN 041-0060**

SCALE: SHEET 11 OF 13 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2020-5	JEFFERSON	21	19
CONTRACT NO. 78753				
ILLINOIS FED. AID PROJECT				



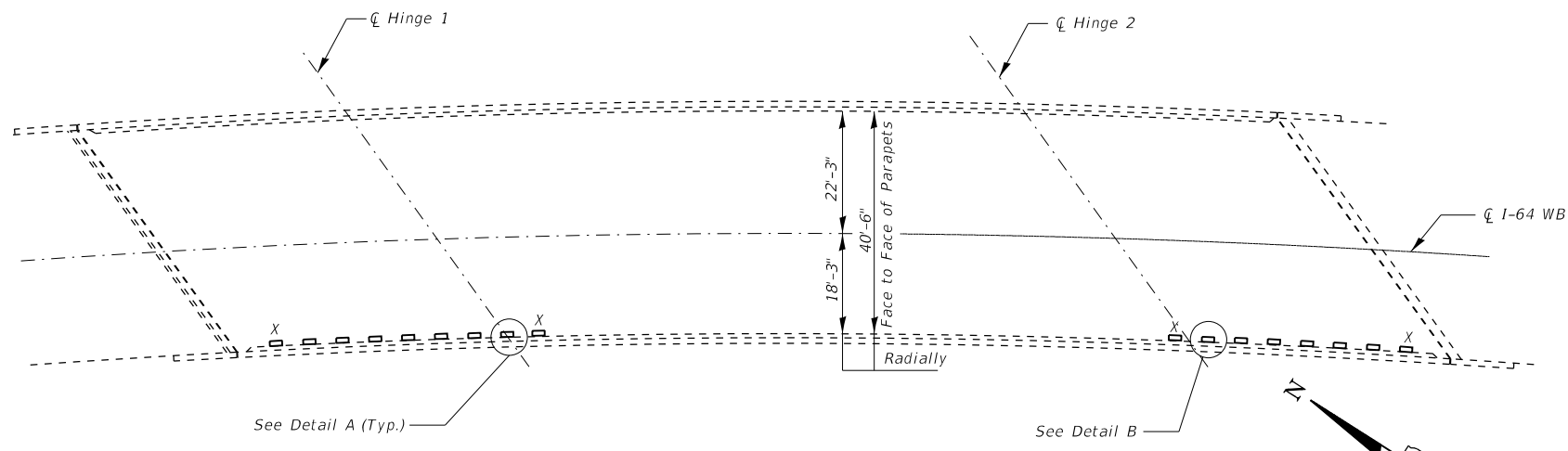
**DETAIL A**  
12 Locations



**DETAIL B**  
1 Location

**DRAIN EXTENSION DETAIL**  
13 Locations

Pop rivet the 1/8"X1" bar to the Drain Extension. Weld or securely attach rid to both the clamp and bar stiffener. Use 3/16" stainless steel pop rivets of sufficient length.  
Clamp shown in approximate dimensions. Similar commercially available may be substituted.  
An aluminum extrusion drain extension of similar dimensions may be substituted.



**PLAN**

X Existing concrete plug to remain as is  
□ Floor drain extension

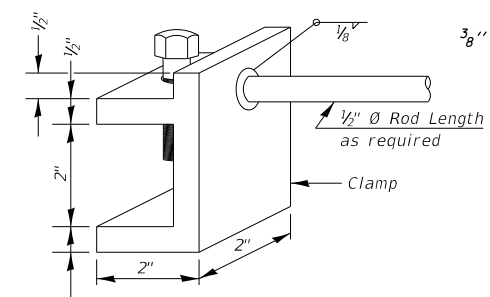
**SECTION A-A**

**SECTION B-B**

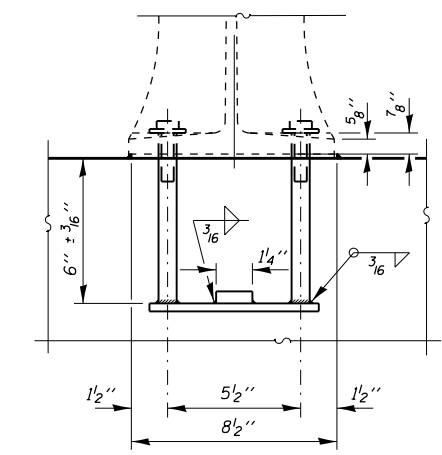
3/4" Ø x 1'-1" Aluminum Bar  
ASTM: B 211 alloy 6061-T6

Aluminum Sheets Welded  
ASTM: B 209 alloy 6061-T6  
or Aluminum Extrusions  
ASTM: B 221 alloy 6061-T6

**TOP PLAN**



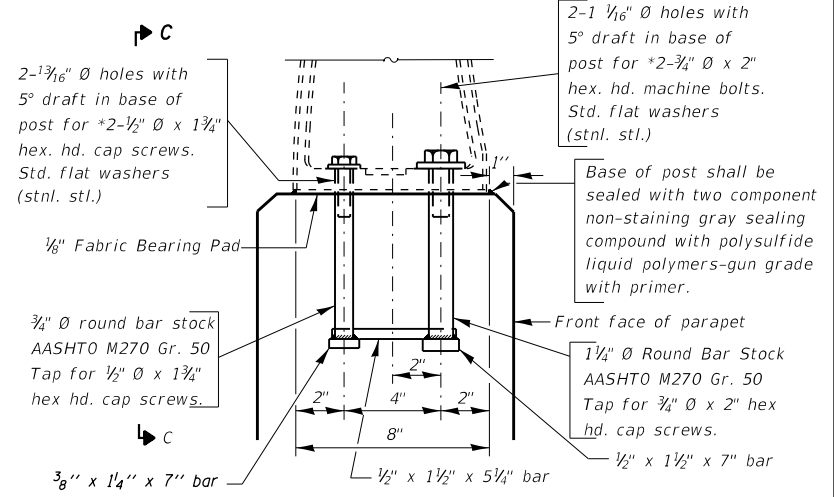
**STEEL CLAMP**



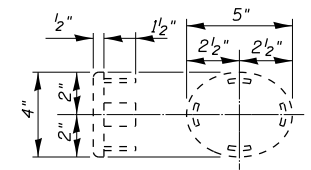
**VIEW C-C**

**NOTES**  
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drain shall be cleaned and given a washcoat pretreatment in accordance with Society of Protective Coatings Spec. SSPC-SP1 & SSPC Paint 27 prior to painting. The color of exterior surfaces shall be Blue (Munsell No. 10B 3 / 6).  
Existing floor drains are 4" X 12" aluminum drains. Removal of old drain extensions is included in the cost of Floor Drain Extension. No Salvage.  
\*Verify dimensions in the field before ordering materials.

Post shall be normal to parapet.  
\*In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



**RAIL POST DETAILS**  
4 Locations



**CAST END CAP**  
Drive Fit Type

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Deck Drain Extension	Each	13

**FLOOR DRAIN EXTENSIONS  
AND RAIL POST DETAILS  
2ND LEVEL STRUCTURE  
I-64 WB OVER I-57 SB  
F.A.I. RTE 64 - D9 BRIDGE REPAIR 2020-5  
JEFFERSON COUNTY  
STATION 2387+06.95  
STRUCTURE NO. 041-0060**

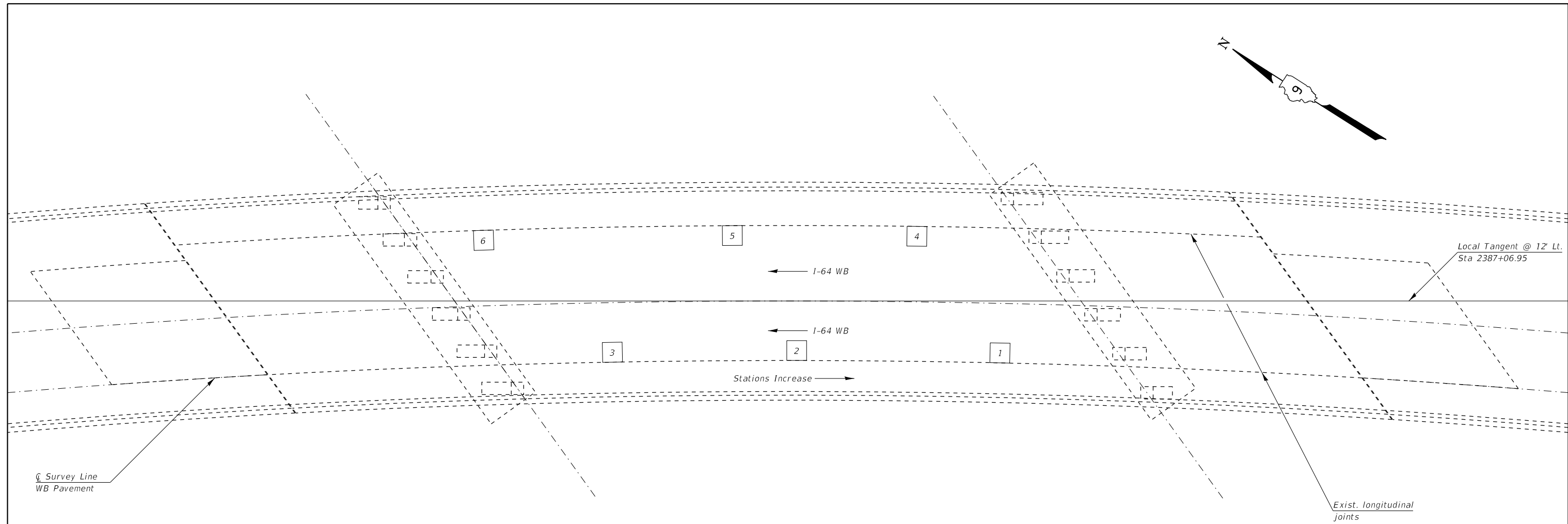
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	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FLOOR DRAIN EXTENSIONS AND RAIL POST DETAILS  
SN 041-0060**  
SCALE: SHEET 12 OF 13 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2020-5	JEFFERSON	21	20
			CONTRACT NO. 78753	
		ILLINOIS	FED. AID PROJECT	



PLAN

DECK SLAB REPAIR (FULL DEPTH, TYPE I)

STATION	PATCH NO.	LENGTH	WIDTH	AREA
2387+50 Rt	1	2'	2'	4 Sq Ft
2387+09 Rt	2	2'	2'	4 Sq Ft
2386+70 Rt	3	2'	2'	4 Sq Ft
2387+44 Lt	4	2'	2'	4 Sq Ft
2386+95 Lt	5	2'	2'	4 Sq Ft
2386+57 Lt	6	2'	2'	4 Sq Ft
Subtotal				24 Sq Ft
Total				3 Sq Yd

DECK SLAB REPAIR  
2ND LEVEL STRUCTURE  
I-64 WB OVER I-57 SB  
F.A.I. RTE 64 - D9 BRIDGE REPAIR 2020-5  
JEFFERSON COUNTY  
STATION 2387+06.95  
STRUCTURE NO. 041-0060

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DECK SLAB REPAIR**

SCALE: SHEET 13 OF 13 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D9 BRIDGE REPAIR 2020-5	JEFFERSON	21	21
CONTRACT NO. 78753				
ILLINOIS FED. AID PROJECT				