

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
57	D9 BRIDGE REPA	IB Q 06	VAR 105	17
ILLINOIS			CONTRACT NO 78758	

FOR INDEX OF SHEETS, SEE SHEET NO. 3
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4 & 5
FOR STRUCTURAL PAVEMENT DESIGN INFORMATION, SEE SHEET NO. N/A

**PROPOSED
HIGHWAY PLANS**

F.A.I. ROUTE 57 (I-57)
SECTION D9 BRIDGE REPAIR 2020-6
PROJECT NHPP-YM1X(365)
BRIDGE REPAIRS
PULASKI & WILLIAMSON COUNTY

TRAFFIC DATA

	I-57		
077-0028:	2018 ADT (2 WAY) = 13,300 49.2 % TRUCKS	PERKS RD	2018 ADT = 325
077-0031:	2018 ADT (2 WAY) = 12,400 53 % TRUCKS	SCHUMAKER RD	2018 ADT = 75
100-0057:	2018 ADT (2 WAY) = 40,600 36.7 % TRUCKS	STOTLAR RD	2018 ADT = 3000

TOWNSHIPS

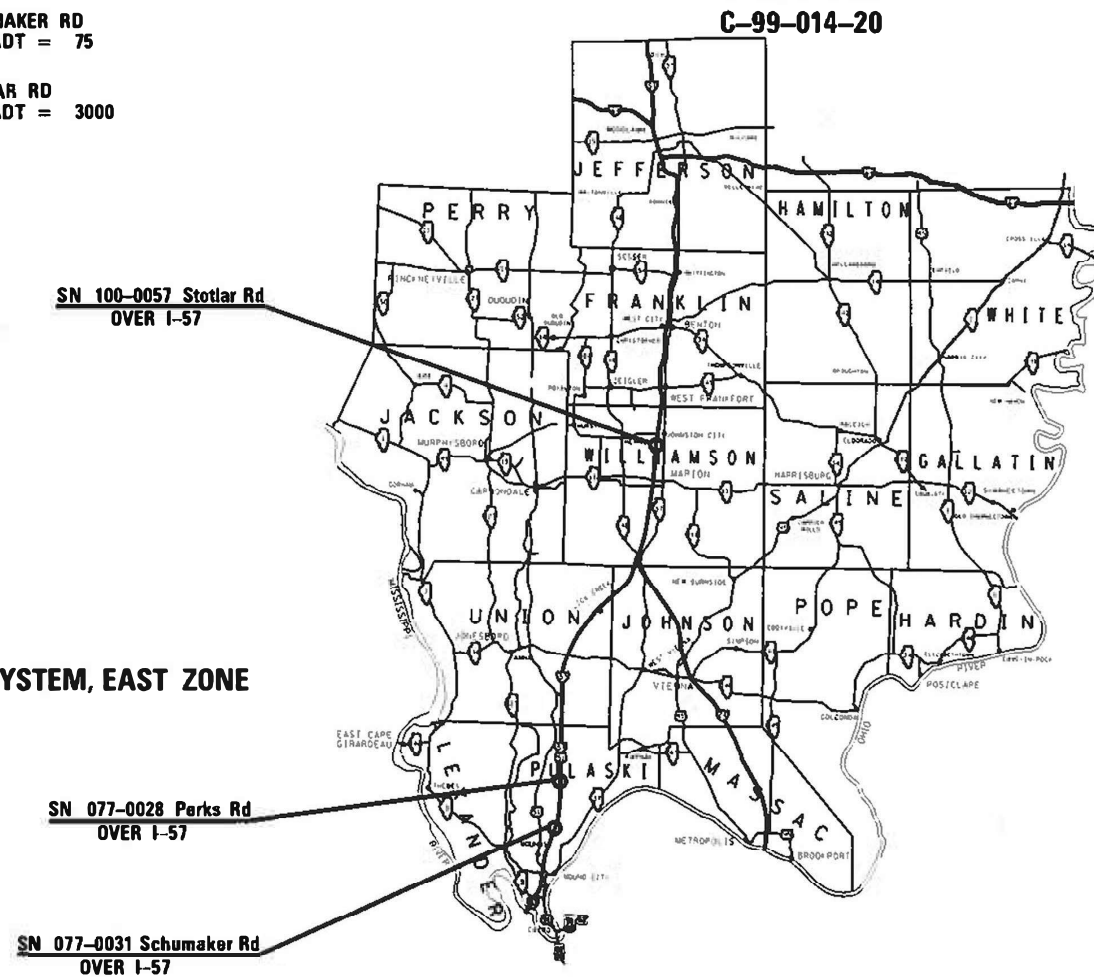
CO UNIT ROAD DIST 01

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

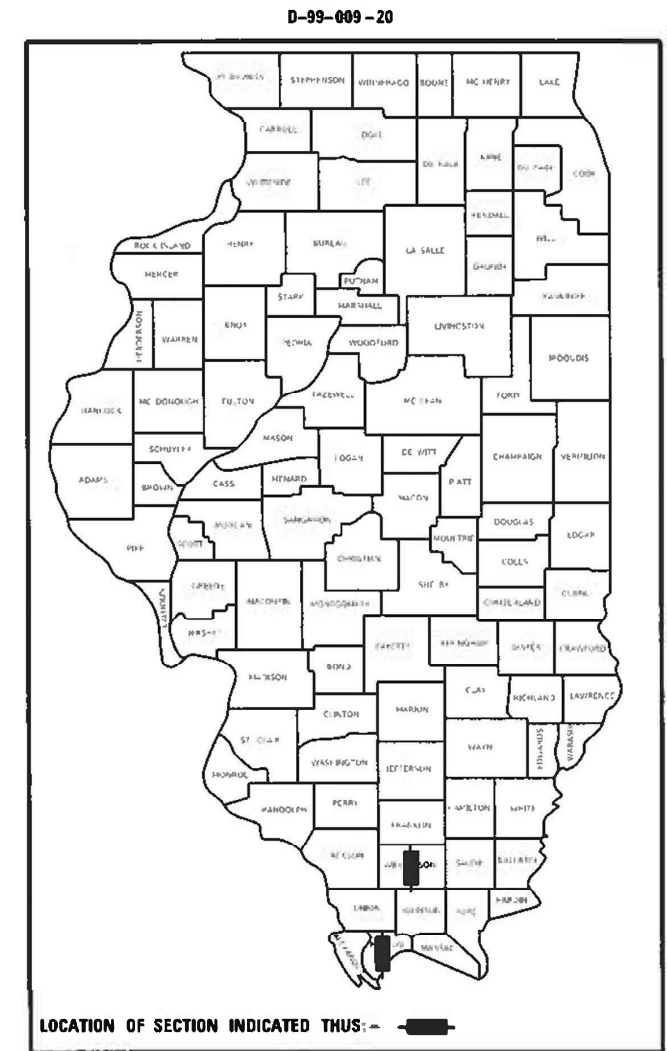
J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: DAVID PICHE
PROJECT DESIGNER: AUSTIN HENK

CONTRACT NO. 78758



GROSS LENGTH = 697 FT. = 0.13 MILES
NET LENGTH = 697 FT. = 0.13 MILES



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 05-13-2020
[Signature]
REGION FIVE ENGINEER

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

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

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

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	DRAWN - ASH	REVISED
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PLOT DATE = 2/24/2020	DATE - 12/31/19	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SIGNATURES
SCALE: _____ SHEET _____ OF _____ SHEETS STA _____ TO STA. _____

F.A.I. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
57	09 BRIDGE REPAIR 2020-6	VARIOUS	17	2
			CONTRACT NO. 78758	
ILLINOIS FID. AID PROJECT				

Prepared By: <u>Charles Stein</u> DISTRICT STUDIES & PLANS ENGINEER
Examined By: <u>Nancy [Signature]</u> DISTRICT LAND ACQUISITION ENGINEER
Examined By: <u>[Signature]</u> DISTRICT PROGRAM DEVELOPMENT ENGINEER
Examined By: <u>Keel [Signature]</u> DISTRICT OPERATIONS ENGINEER
Examined By: <u>ICP [Signature]</u> DISTRICT PROJECT IMPLEMENTATION ENGINEER
Examined By: <u>Daryl [Signature]</u> DISTRICT CONSTRUCTION ENGINEER
Examined By: <u>Robert Graeff (AWT)</u> DISTRICT MATERIALS ENGINEER

INDEX OF SHEETS

1	COVER SHEET
2	SIGNATURES
3	INDEX OF SHEETS, STANDARDS,AND GENERAL NOTES, COMMITMENTS, AND MIXTURE REQUIREMENTS
4 - 5	SUMMARY OF QUANTITIES
6	SN 077-0028 GENERAL PLAN AND ELEVATION
7	SN 077-0028 BEARING DETAIL
8	SN 077-0031 GENERAL PLAN AND ELEVATION
9	SN 077-0031 BEARING DETAIL
10	SN 100-0057 GENERAL PLAN AND ELEVATION
11	SN 100-0057 CROSS SECTIONS
12	SN 100-0057 DECK PATCHING
13	SN 100-0057 JOINT RECONSTRUCTION DETAILS
14	SN 100-0057 BEAM REPAIRS
15	SN 100-0057 BEARING DETAILS
16	SN 100-0057 PREFORMED JOINT STRIP SEAL DETAILS
17	SN 100-0057 BUTT JOINT DETAIL

GENERAL NOTES

FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:
 ALL HOT MIX ASPHALT 2.016 TONS/CU YD

COMMITMENTS

NONE

MIXTURE REQUIREMENTS

Locations	Hot-Mix Asphalt Surface Course
Mixture Use(s):	Hot-Mix Asphalt Surface Course, Mix C, N70
AB/PG:	PG64-22
ABR % (Max):	See Special Provision
Design Air Voids:	4.0 %, 70 Gyratation Design
Mixture Composition: (Gradation Mixture)	IL-9.5mm
Friction Aggregate:	C Surface
Mixture Weight:	112 lbs/Sq Yd/in
Quality Management Program:	QCQA
Sublot Size:	NA

STANDARDS

000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
701101-05	OFF-ROAD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE
701106-02	OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' AWAY
701201-05	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701400-09	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701401-12	LANE CLOSURE, FREEWAY/EXPRESSWAY
701428-01	TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY
701446-10	TWO LANE CLOSURE, FREEWAY/EXPRESSWAY
701901-08	TRAFFIC CONTROL DEVICES
B.L.R. 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

REV. - MS

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

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

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2020-6	VARIOUS	17	3
			CONTRACT NO. 78758	
ILLINOIS FED. AID PROJECT				

SUMMARY OF QUANTITIES

ROUTE:	PERKS RD OVER I-57	SCHUMAKER RD OVER I-57	STOTLAR RD OVER I-57
COUNTY:	PULASKI	PULASKI	WILLIAMSON
FUNDING:	90% FEDERAL 10% STATE	90% FEDERAL 10% STATE	90% FEDERAL 10% STATE
LOCATION:	RURAL	RURAL	RURAL
TOTAL QUANTITY	STRUCTURE 077-0028	STRUCTURE 077-0031	STRUCTURE 100-0057

CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	STRUCTURE 077-0028	STRUCTURE 077-0031	STRUCTURE 100-0057
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	312	0	0	312
40604002	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5FG, MIX "C", N70	TON	35	0	0	35
50102400	CONCRETE REMOVAL	CU YD	9	0	0	9
50157300	PROTECTIVE SHIELD	SQ YD	329	0	0	329
50300255	CONCRETE SUPERSTRUCTURE	CU YD	9	0	0	9
50300260	BRIDGE DECK GROOVING	SQ YD	698	0	0	698
50300300	PROTECTIVE COAT	SQ YD	732	0	0	732
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	6,160	1,260	1,650	3,250
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	1,080	0	0	1,080
52000110	PREFORMED JOINT STRIP SEAL	FOOT	64	0	0	64
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	32	10	10	12
52100520	ANCHOR BOLTS, 1"	EACH	64	20	20	24
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	7	2	2	3

REV. - MS

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PLOT DATE = 3/17/2020		

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.
57	D9 BRIDGE REPAIR 2020-6	VARIOUS	17	4
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78758	

SUMMARY OF QUANTITIES - CONT

ROUTE:	PERKS RD OVER I-57	SCHUMAKER RD OVER I-57	STOTLAR RD OVER I-57
COUNTY:	PULASKI	PULASKI	WILLIAMSON
FUNDING:	90% FEDERAL 10% STATE	90% FEDERAL 10% STATE	90% FEDERAL 10% STATE
LOCATION:	RURAL	RURAL	RURAL
TOTAL QUANTITY	STRUCTURE 077-0028	STRUCTURE 077-0031	STRUCTURE 100-0057

CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	STRUCTURE 077-0028	STRUCTURE 077-0031	STRUCTURE 100-0057
67100100	MOBILIZATION	L SUM	1	0.3	0.3	0.4
70100205	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	EACH	2	0	0	2
70100430	TRAFFIC CONTROL AND PROTECTION, STANDARD 701446	EACH	2	0	0	2
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0.5	0.5	0
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	28	0	0	28
X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1	0	0	1
Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	32	10	10	12
Z0001903	STRUCTURAL STEEL REMOVAL	POUND	1,620	0	0	1,620
Z0001905	STRUCTURAL STEEL REPAIR	POUND	2,540	0	0	2,540
Z0012164	BRIDGE DECK MICROSILICA CONCRETE OVERLAY, 2 1/2"	SQ YD	732	0	0	732
Z0012130	BRIDGE DECK SCARIFICATION 3/4"	SQ YD	732	0	0	732

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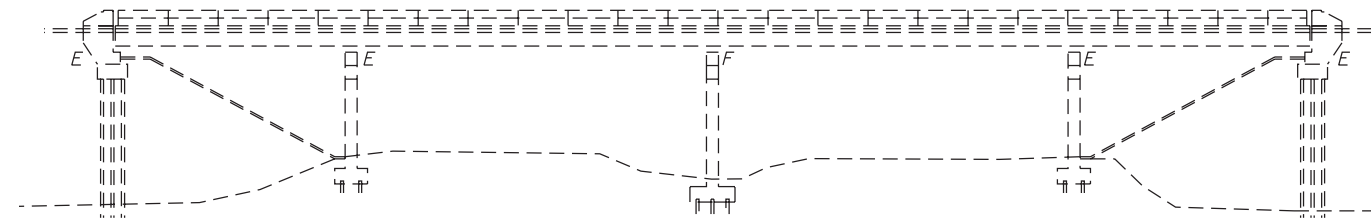
REV. - MS

GENERAL NOTES

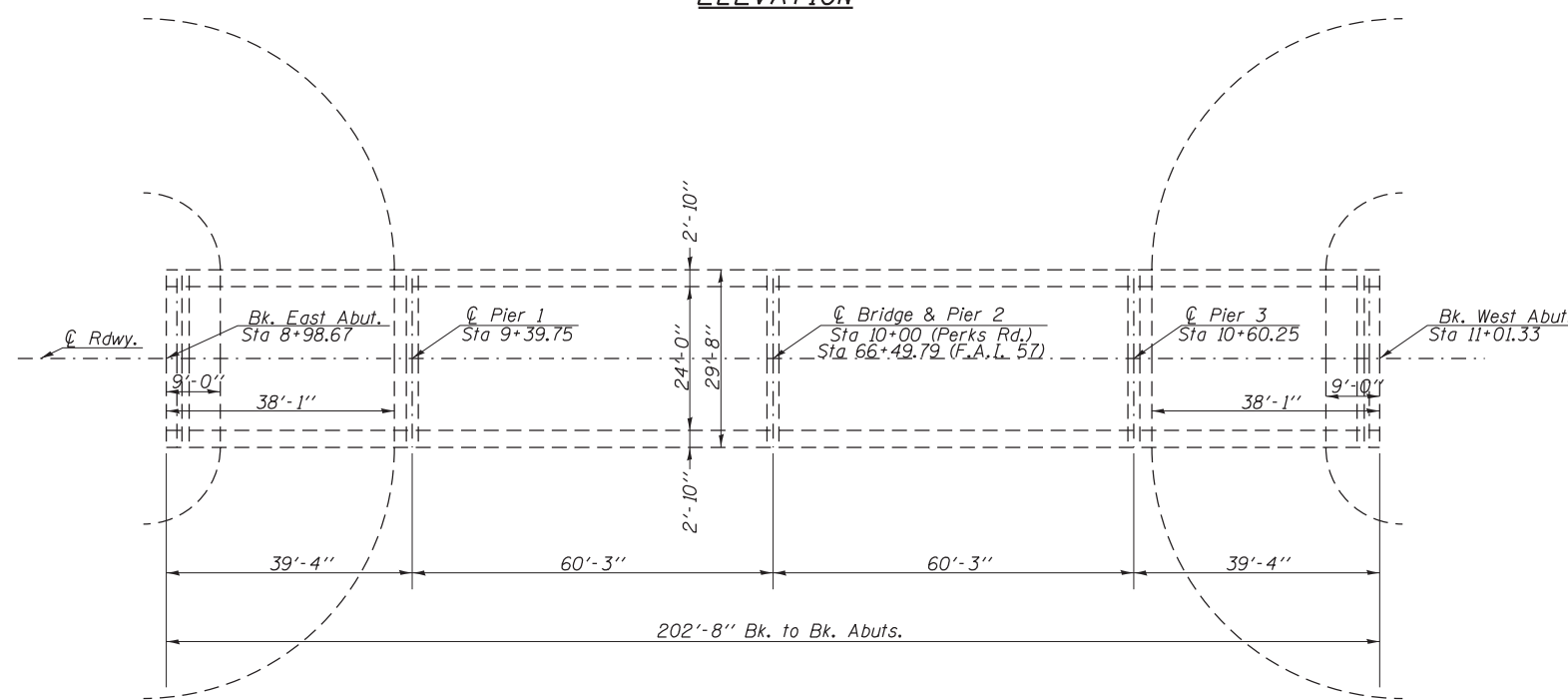
All structural steel shall be AASHTO M 270 Grade 36 unless otherwise noted.

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.

All new structural steel and bearing assembly shall be hot-dip galvanized. See Special Provisions for "hot dip galvanizing for structural steel."



ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Jack and Remove Existing Bearings	Each	10
Elastomeric Bearing Assembly, Type I	Each	10
Anchor Bolts, 1"	Each	20
Furnishing and Erecting Structural Steel	Pound	1260

SCOPE OF WORK

- 1. Replace bearings at both abutments.



David Carl Puzey 04/22/2020
 Expires: 11/30/2020

DESIGN STRESSES (EXISTING)

- $f_c = 1,400$ psi Super & Sub
- $v = 75$ psi (Footings)
- $f_s = 20,000$ psi Reinf.
- $f_s = 18,000$ psi Struct.
- $n=10$

BRIDGE REPAIRS
PERKS ROAD OVER FAI-57
PULASKI COUNTY
S.N. 077-0028

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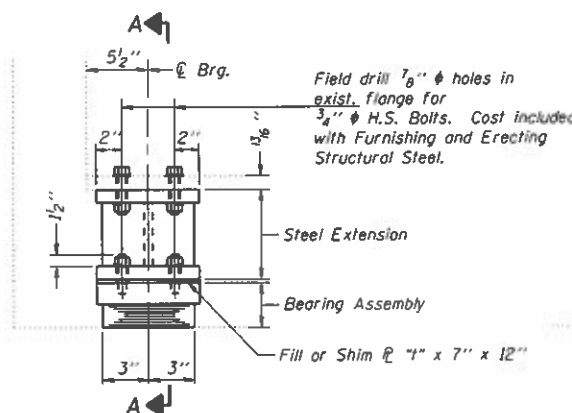
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

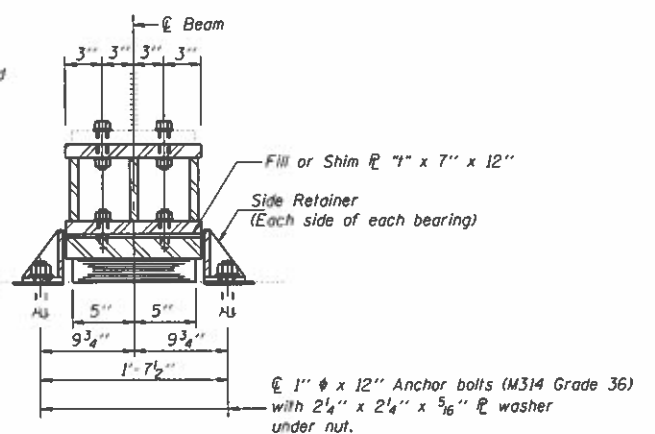
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SN 077-0028

SCALE: SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2020-6	VARIOUS	17	6
			CONTRACT NO. 78758	
		ILLINOIS	FED. AID PROJECT	



ELEVATION AT ABUTS.

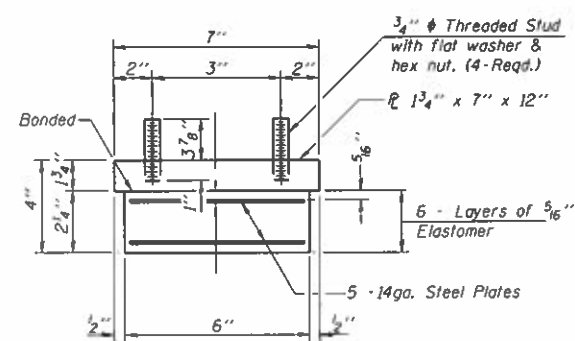


SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

GIRDER REACTIONS

R _P	(K)	11.7
R _L	(K)	28.4
Imp.	(K)	8.5
R (Total)	(K)	48.6

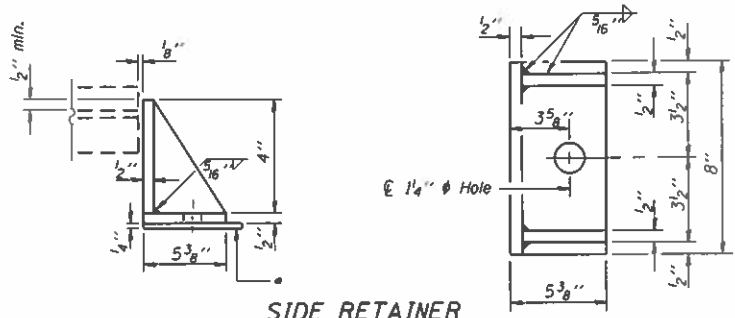


BEARING ASSEMBLY

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

This view should show the elevation not Sec. A-A

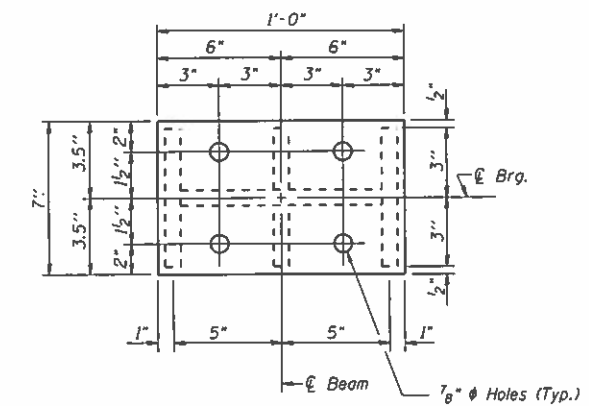
1/4" stainless steel plate, Type 304, No. 1 finish.



SIDE RETAINER

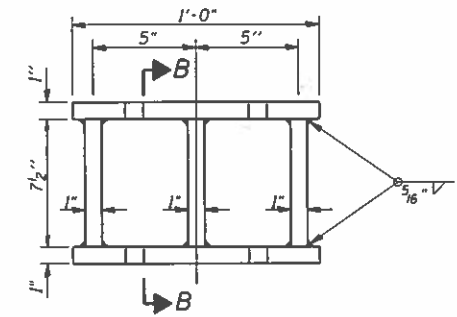
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

Notes:
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.
Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
The minimum jack capacity required is 30 Tons.
Existing diaphragm removal and reinstallation may be required to facilitate drilling holes, cost to be 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).

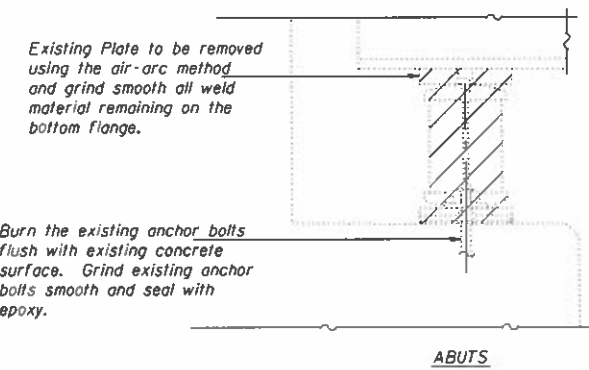


PLAN-TOP & BOTTOM PLATE

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 steel extensions, connection bolts, Fill P's and Shim P's are included in "Furnishing and Erecting Structural Steel".

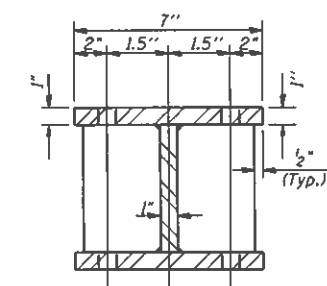


STEEL EXTENSION DETAIL



EXISTING BEARING REMOVAL DETAIL

Cost is included with Jack and Remove Existing Bearings



SECTION B-B

FILL P "I" DIMENSIONS

Beam #	1	2	3	4	5
E. Abut.	0	1"	1 1/2"	1"	0
W. Abut.	0	1"	1 1/2"	1"	0

BILL OF MATERIAL (Both Abuts.)

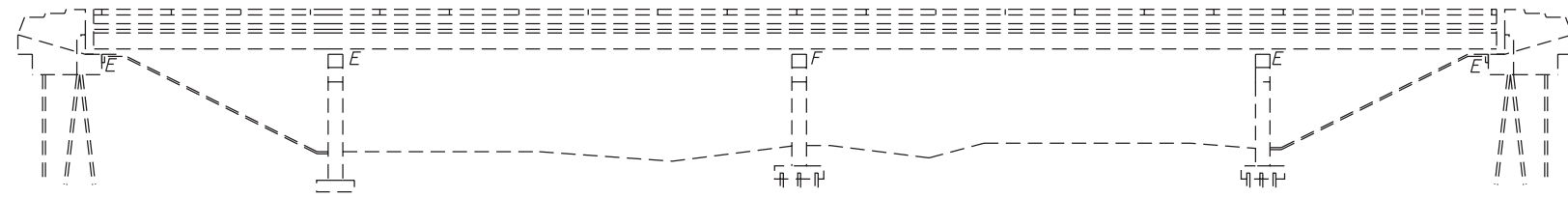
Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	10
Anchor Bolts, 1"	Each	20
Jack and Remove Existing Bearings	Each	10
Furnishing and Erecting Structural Steel	Pound	1,260

BEARING DETAILS
STRUCTURE NO. 077-0028

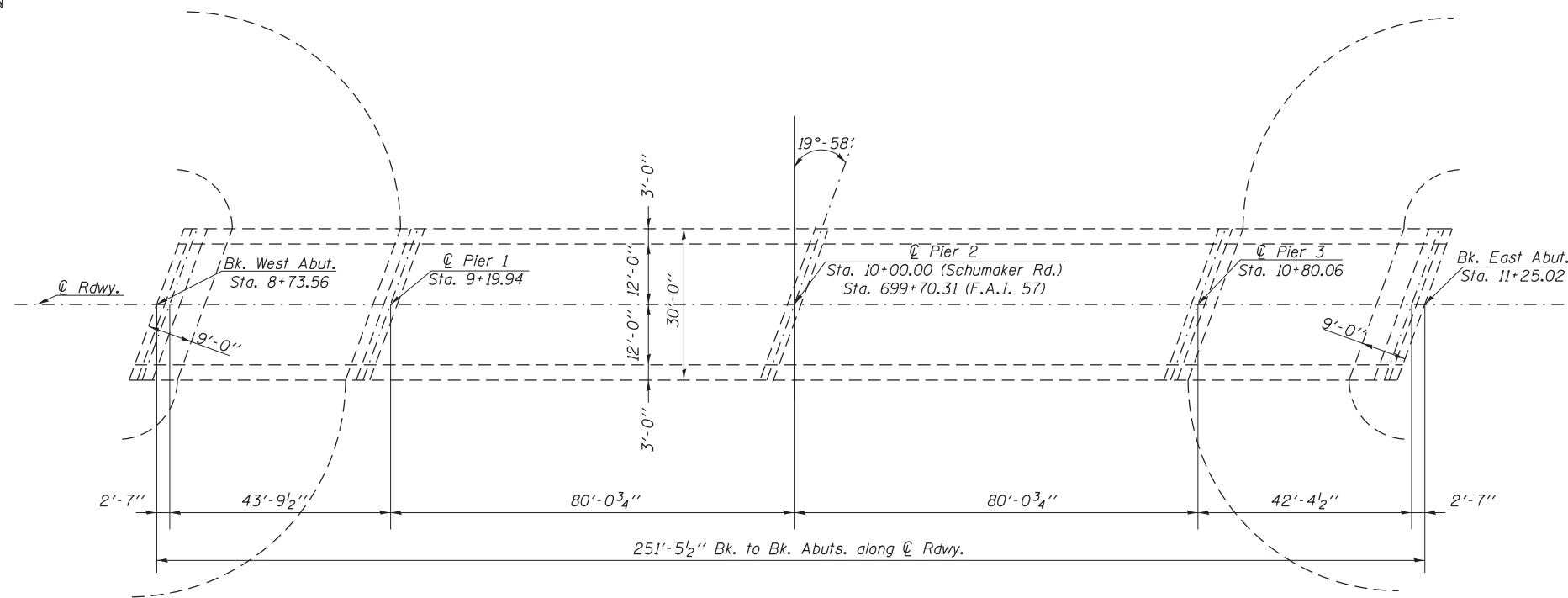
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 REVISED: _____
 REVISED: _____
 REVISED: _____
 REVISED: _____
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 BEARING DETAILS
 STRUCTURE NO. 077-0028
 SCALE: _____ SHEET 2 OF 2 SHEETS STA. _____ TO STA. _____
 COUNTY: VARIOUS
 TOTAL SHEETS: 15
 SHEET NO.: 7
 CONTRACT NO. 78758
 ILLINOIS FED. AID PROJECT

GENERAL NOTES

All structural steel shall be AASHTO M 270 Grade 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.
 All new structural steel and bearing assembly shall be hot-dip galvanized. See Special Provisions for "Hot-Dip Galvanizing for Structural Steel."



ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Jack and Remove Existing Bearings	Each	10
Elastomeric Bearing Assembly, Type I	Each	10
Anchor Bolts, 1"	Each	20
Furnishing and Erecting Structural Steel	Pound	1,650

SCOPE OF WORK

1. Replace bearings at both abutments.



David Carl Puzey 04/22/2020
 Expires: 11/30/2020

DESIGN STRESSES (EXISTING)

f_c = 1,400 psi Super & Sub
 v_c = 75 psi (Footings)
 f_s = 20,000 psi Reinf.
 f_s = 20,000 psi Struct.
 $n=10$

BRIDGE REPAIRS
SCHUMAKER ROAD OVER FAI-57
PULASKI COUNTY
S.N. 077-0031

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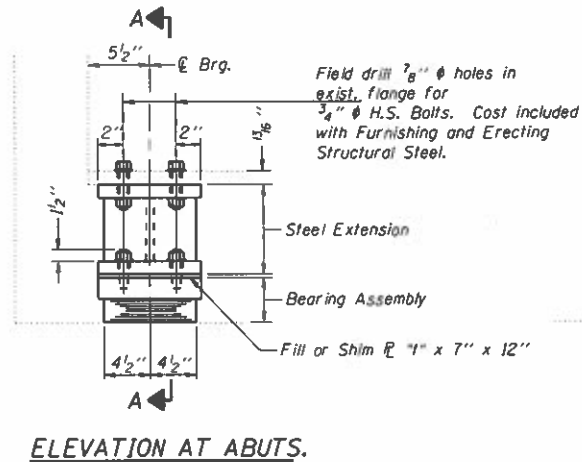
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
SN 077-0031

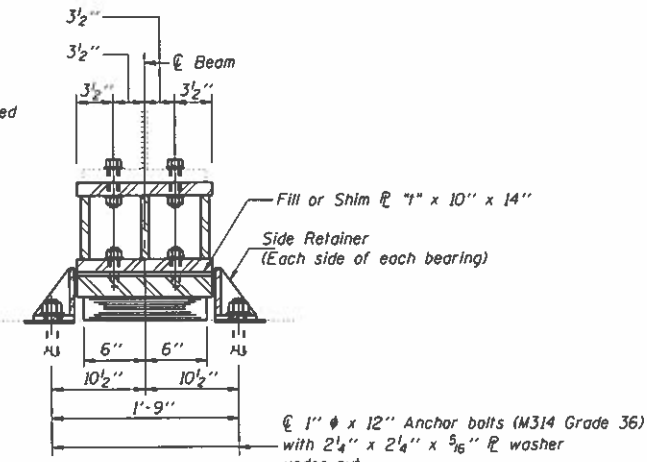
SCALE: SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2020-6	VARIOUS	17	8
			CONTRACT NO. 78758	
		ILLINOIS	FED. AID PROJECT	

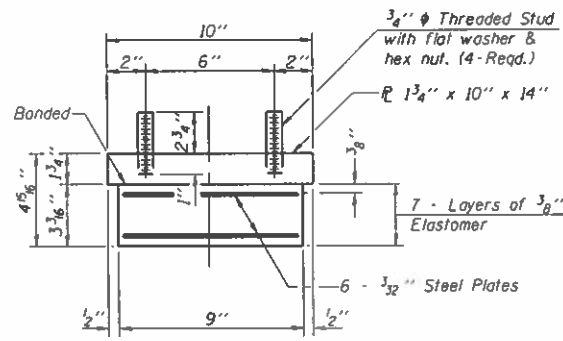


ELEVATION AT ABUTS.

TYPE I ELASTOMERIC EXP. BRG.

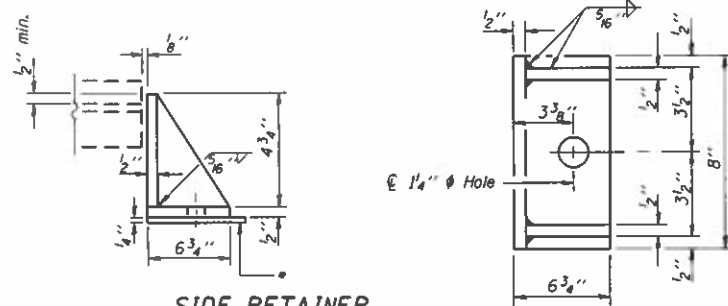


SECTION A-A



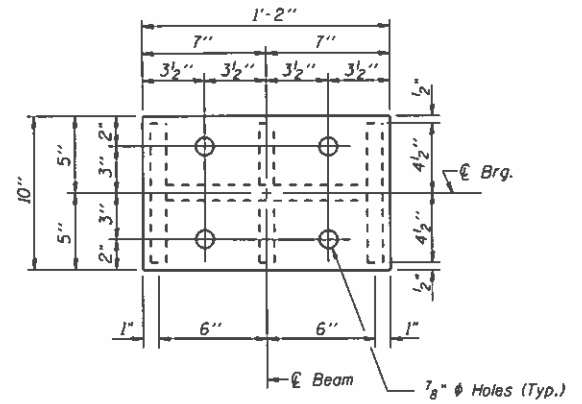
BEARING ASSEMBLY

* 1/4" stainless steel plate,
Type 304, No. 1 finish.

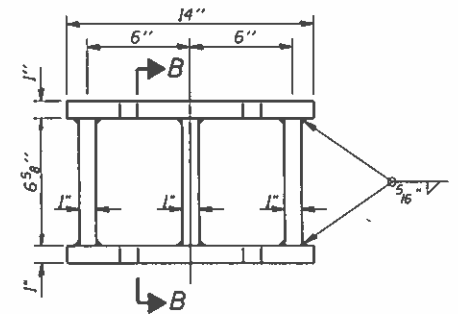


SIDE RETAINER
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

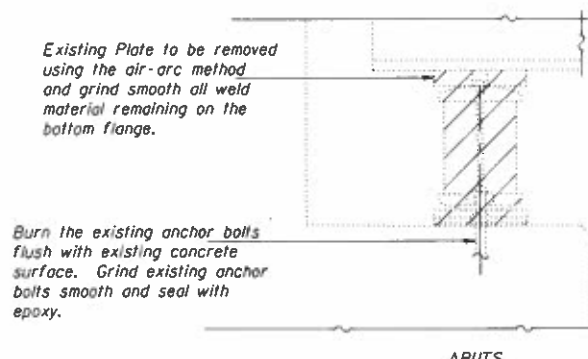
Notes:
Anchor bolts shall be ASTM F1554 all-thread for an Engineer-approved alternate material of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
The minimum jack capacity required is 30 Tons.
Existing diaphragm removal and reinstallation may be required to facilitate drilling holes, cost to be 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).
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 steel extensions, connection bolts, Fill R's and Shim R's are included in "Furnishing and Erecting Structural Steel".



PLAN-TOP & BOTTOM PLATE

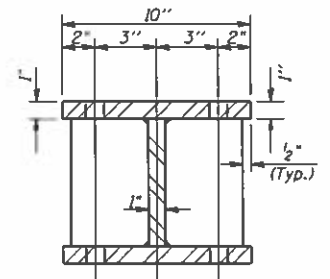


STEEL EXTENSION DETAIL



EXISTING BEARING REMOVAL DETAIL

Cost is included with Jack and Remove Existing Bearings



SECTION B-B

GIRDER REACTIONS

R ₁	(K)	12.9
R ₂	(K)	32.1
Imp.	(K)	9.6
R (Total)	(K)	54.6

BILL OF MATERIAL (Both Abuts.)

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	10
Anchor Bolts, 1"	Each	20
Jack and Remove Existing Bearings	Each	10
Furnishing and Erecting Structural Steel	Pound	1,650

**BEARING DETAILS
STRUCTURE NO. 077-0031**

MODEL: Default
FILE NAME: B:\p001\p001.dwg
DATE: 3/17/2020

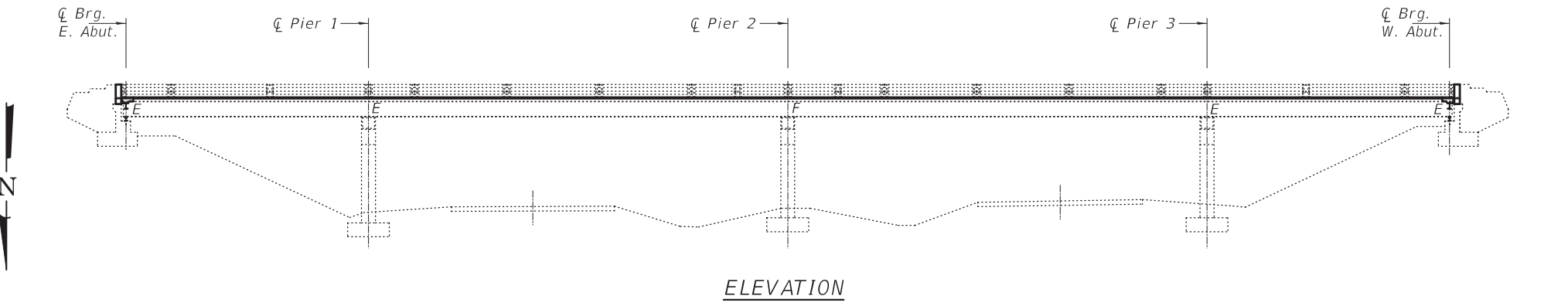
USER NAME = adam@amr	DESIGNED - ASH	REVISED -
PLOT SCALE = 2.0000' / in	DRAWN - ASH	REVISED -
PLOT DATE = 3/17/2020	CHECKED - MAS	REVISED -
	DATE - 12/31/19	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

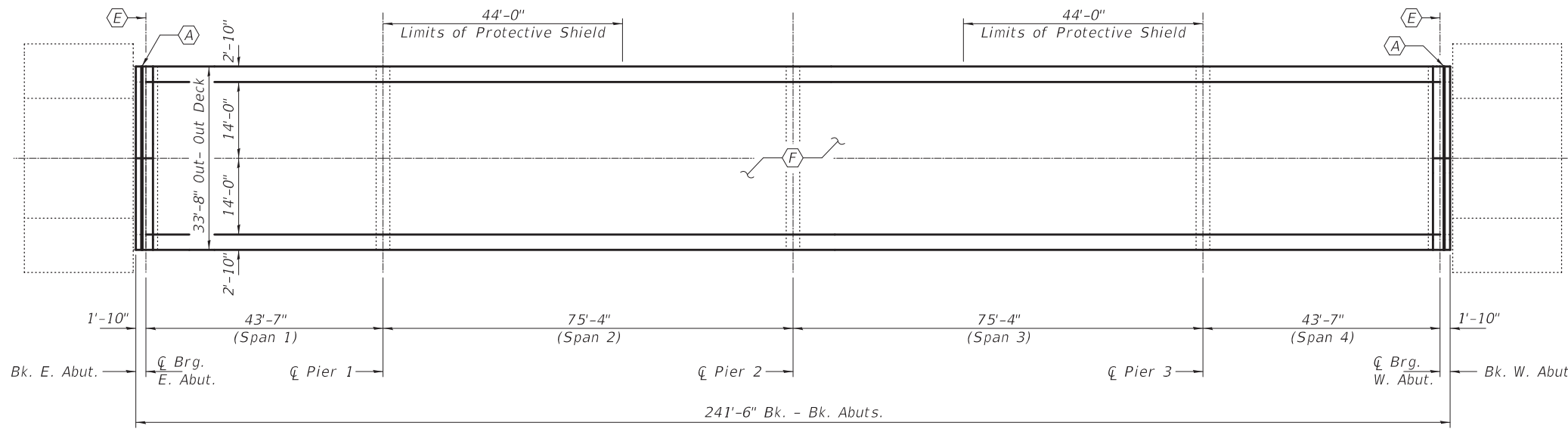
**BEARING DETAILS
SN 077-0031**

SCALE _____ SHEET 2 OF 2 SHEETS STA _____ TO STA _____

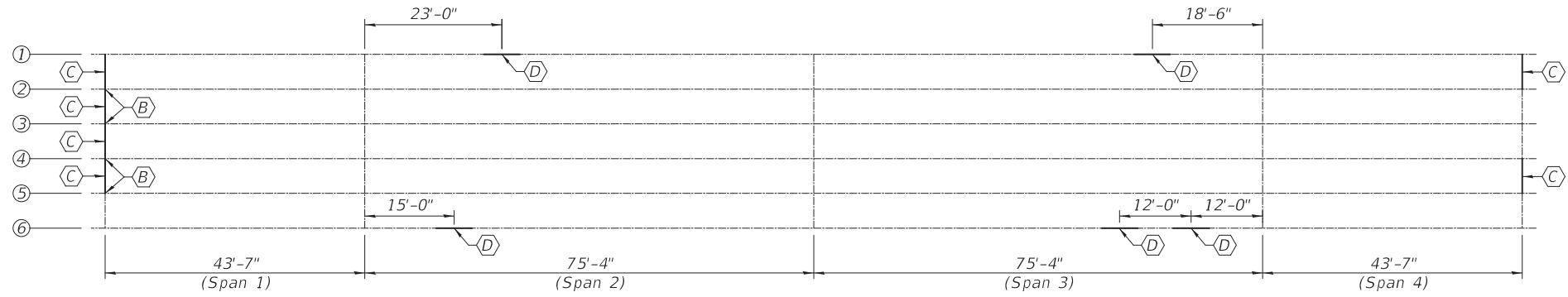
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
D9 BRIDGE REPAIR 2020 6	VARIOUS	17	9
CONTRACT NO. 78758		ILLINOIS FED. AID PROJECT	



ELEVATION



PLAN



FRAMING PLAN



- (A) - Remove existing Neoprene Joints and install new Preformed Joint Strip Seal.
- (B) - Beam End Repair
- (C) - Remove and Replace Diaphragms & Clip Angles
- (D) - Beam Repair
- (E) - Remove & Replace Bearings (Typ. at each Beam)
- (F) - Scarify original deck 3/4" and install new 2 1/2" Microsilica Concrete Overlay on the existing deck. See sheet 2 of 7 for details.

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.

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.

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

All new structural steel and bearing assemblies shall be hot dip galvanized according to Special Provision "Hot Dip Galvanizing for Structural Steel".

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

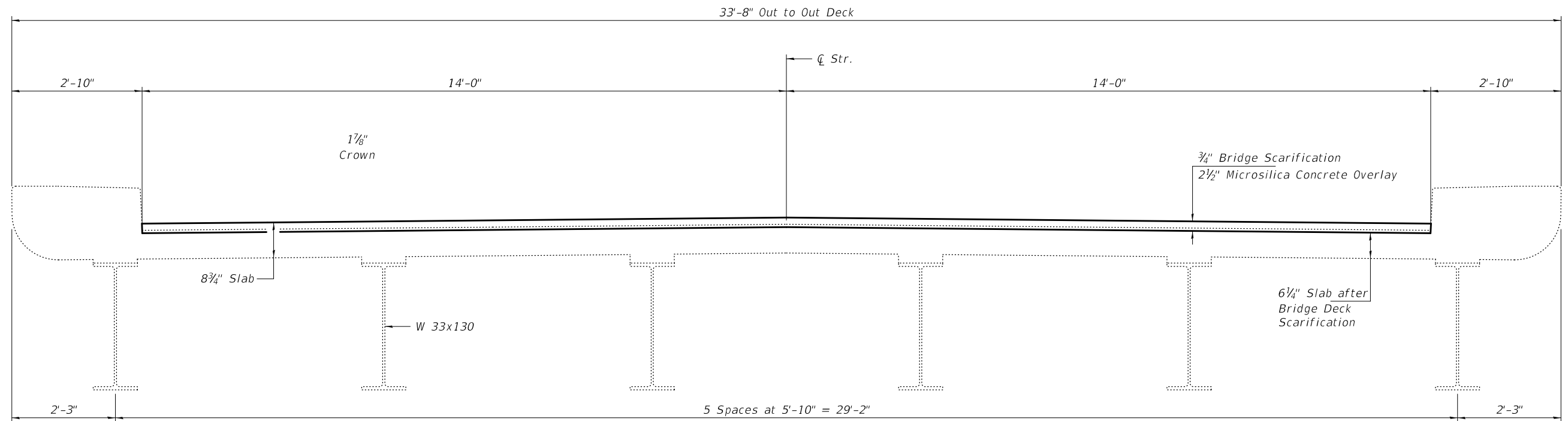
Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on As-built Plans.

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

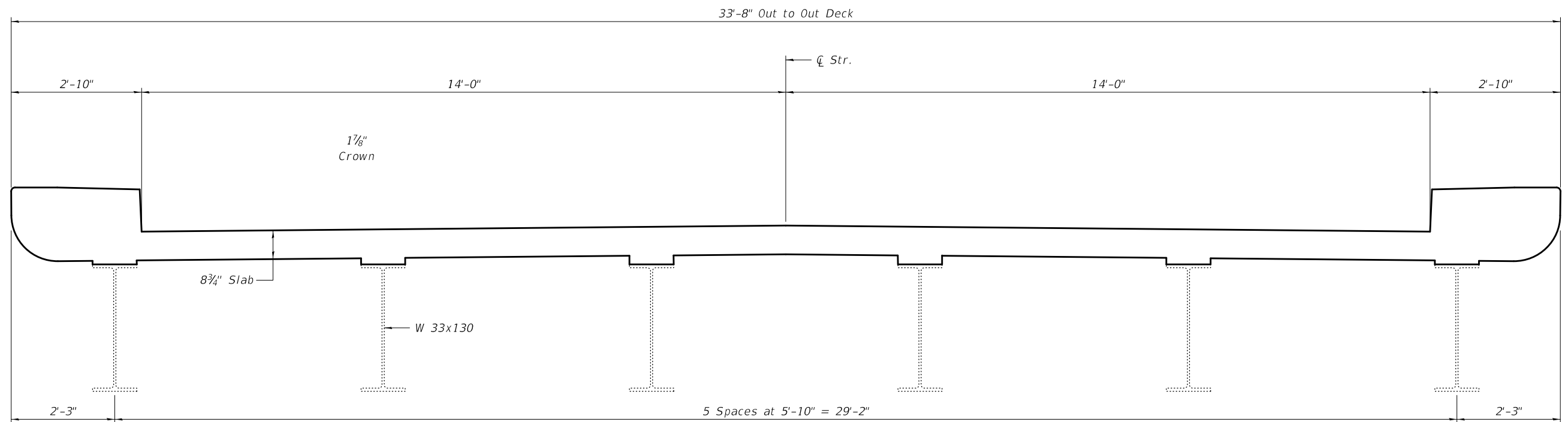
TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	8.8
Concrete Superstructure	Cu. Yd.	8.8
Preformed Joint Strip Seal	Foot	64
Reinforcement Bars, Epoxy Coated	Pound	1080
Structural Steel Removal	Pound	1620
Structural Steel Repair	Pound	2540
Furnishing & Erecting Structural Steel	Pound	3250
Anchor Bolts 1" φ	Each	24
Jack and Remove Existing Bearings	Each	12
Elastomeric Bearings Assembly Type I	Each	12
Bridge Deck Scarification 3/4"	Sq. Yd.	732
Bridge Deck Microsilica Concrete Overlay 2 1/2"	Sq. Yd.	732
Bridge Deck Grooving	Sq. Yd.	698
Protective Coat	Sq. Yd.	732
Protective Shield	Sq. Yd.	329

* Apply to new concrete overlay.



CROSS SECTION AT MID-SPAN
(Looking West)



CROSS SECTION AT ABUTMENTS
(Looking West)

DESIGNED - AJR
 CHECKED - CCC
 DRAWN - Venkat Reddy
 CHECKED - AJR CCC

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

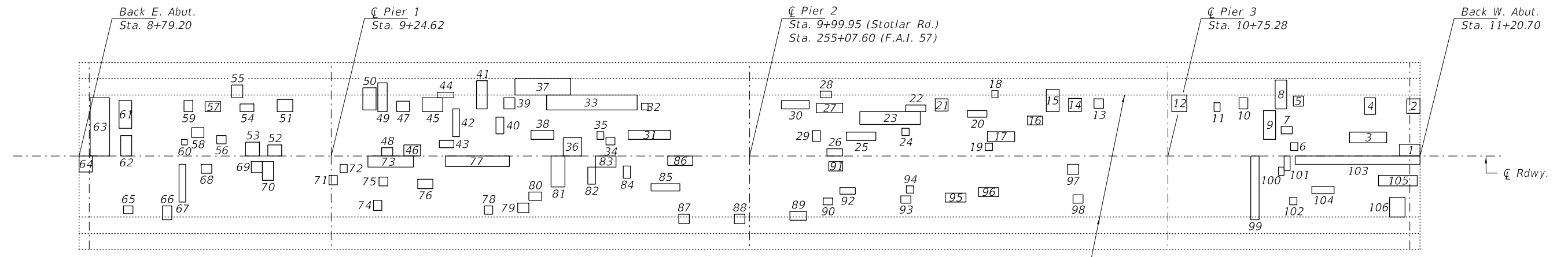
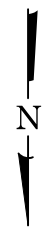
DATE - APRIL 21, 2020
 REVISED -
 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
SN 100 - 0057

SHEET NO. 2 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2020-6	WILLIAMSON	17	11
CONTRACT NO. 78758				
ILLINOIS FED. AID PROJECT				



PLAN
 □ Indicates Deck Slab Repair
 (Partial Depth) = 82 Sq. Yd.

Longitudinal Construction Joints

EASTBOUND

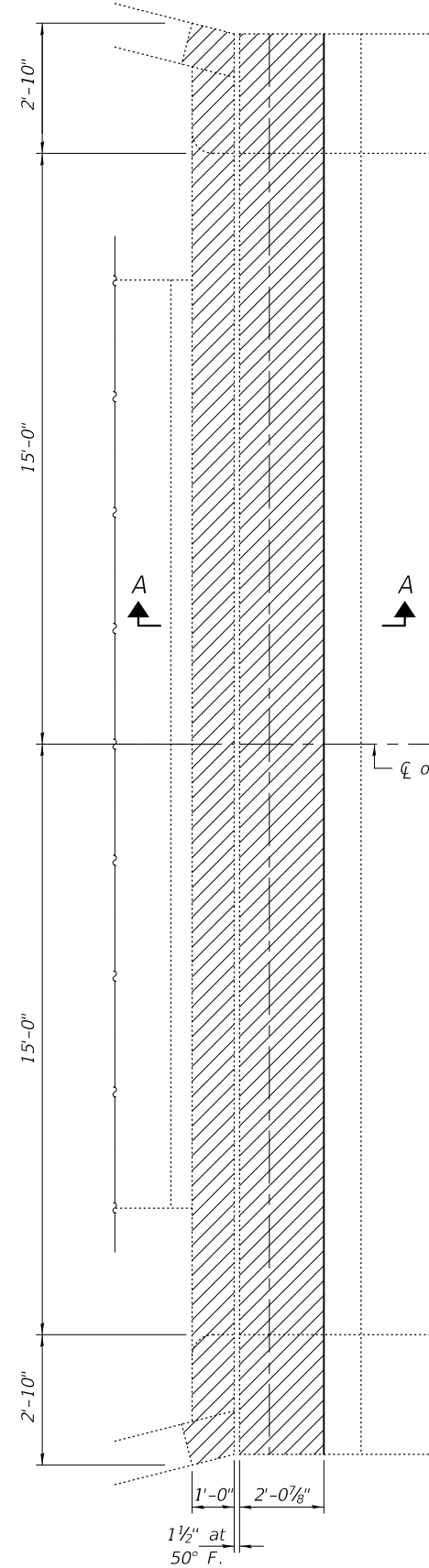
PATCH NUMBER	STATION	OFFSET FROM CENTERLINE	WIDTH	LENGTH	AREA (SQ. FT.)	AREA (SQ. YD.)
1	11+20.7	0.0	3.7	2.1	7.8	0.9
2	11+20.7	7.7	2.4	2.6	6.2	0.7
3	11+14.7	2.4	6.7	1.9	12.7	1.4
4	11+12.7	7.5	2.0	3.0	6.0	0.7
5	10+99.7	9.0	1.8	1.8	3.2	0.4
6	10+98.7	1.0	1.3	1.4	1.8	0.2
7	10+97.7	4.0	2.0	1.3	2.6	0.3
8	10+96.7	8.5	2.1	5.2	10.9	1.2
9	10+94.7	3.0	5.2	2.2	11.4	1.3
10	10+89.7	8.5	1.6	2.0	3.2	0.4
11	10+84.7	8.0	1.1	1.6	1.8	0.2
12	10+78.7	8.0	2.7	3.0	8.1	0.9
13	10+63.7	8.6	1.7	1.7	2.9	0.3
14	10+59.7	8.0	2.3	2.4	5.5	0.6
15	10+55.7	8.0	2.3	4.0	9.2	1.0
16	10+52.7	5.6	2.7	1.6	4.3	0.5
17	10+47.7	2.6	4.9	1.8	8.8	1.0
18	10+44.7	10.5	1.1	1.3	1.4	0.2
19	10+43.7	1.0	1.3	1.3	1.7	0.2
20	10+42.7	7.0	3.5	1.2	4.2	0.5
21	10+35.7	8.1	2.3	2.2	5.1	0.6
22	10+31.7	8.0	3.6	1.2	4.3	0.5
23	10+30.7	8.0	2.3	10.9	25.1	2.8
24	10+28.7	3.7	1.3	1.3	1.7	0.2
25	10+22.7	2.8	5.3	1.5	8.0	0.9
26	10+16.7	0.0	2.8	1.3	3.6	0.4
27	10+16.7	7.8	4.7	1.7	8.0	0.9
28	10+14.7	10.5	2.0	1.2	2.4	0.3
29	10+12.7	2.6	1.4	2.0	2.8	0.3
30	10+10.7	8.5	5.0	1.5	7.5	0.8
31	9+85.7	3.0	7.6	1.6	12.2	1.4
32	9+81.7	8.3	1.2	1.2	1.4	0.2
33	9+79.7	8.3	2.7	16.3	44.0	4.9
34	9+75.7	2.0	1.6	1.4	2.2	0.2

PATCH NUMBER	STATION	OFFSET FROM CENTERLINE	WIDTH	LENGTH	AREA (SQ. FT.)	AREA (SQ. YD.)
35	9+73.7	3.0	1.2	1.4	1.7	0.2
36	9+69.7	0.0	3.3	3.3	10.9	1.2
37	9+67.7	11.0	3.0	10.0	30.0	3.3
38	9+64.7	3.0	4.1	1.6	6.6	0.7
39	9+57.7	8.5	2.0	2.0	4.0	0.4
40	9+55.7	4.0	1.4	3.0	4.2	0.5
41	9+52.7	8.5	1.9	5.1	9.7	1.1
42	9+47.7	3.5	1.2	5.0	6.0	0.7
43	9+46.7	1.5	2.6	1.3	3.4	0.4
44	9+46.7	10.5	3.0	1.0	3.0	0.3
45	9+44.7	8.0	2.5	3.7	9.3	1.0
46	9+40.7	0.0	2.0	3.0	6.0	0.7
47	9+38.7	8.0	2.3	1.9	4.4	0.5
48	9+35.7	0.0	2.0	1.5	3.0	0.3
49	9+34.7	8.0	5.2	1.7	8.8	1.0
50	9+32.7	8.3	2.4	4.0	9.6	1.1
51	9+17.7	8.0	2.8	2.2	6.2	0.7
52	9+15.7	0.0	2.5	2.0	5.0	0.6
53	9+11.7	0.0	2.5	2.5	6.3	0.7
54	9+10.7	8.0	2.5	1.4	3.5	0.4
55	9+08.7	10.5	2.0	2.3	4.6	0.5
56	9+05.7	2.2	1.7	1.5	2.6	0.3
57	9+04.7	8.0	2.8	1.8	5.0	0.6
58	9+01.7	3.3	2.2	1.8	4.0	0.4
59	8+99.7	8.0	1.6	2.0	3.2	0.4
60	8+98.7	2.0	1.0	1.0	1.0	0.1
61	8+88.7	5.0	5.0	2.3	11.5	1.3
62	8+88.7	0.0	2.0	3.7	7.4	0.8
63	8+84.7	0.0	10.5	3.5	36.8	4.1
EASTBOUND TOTAL					51.1	

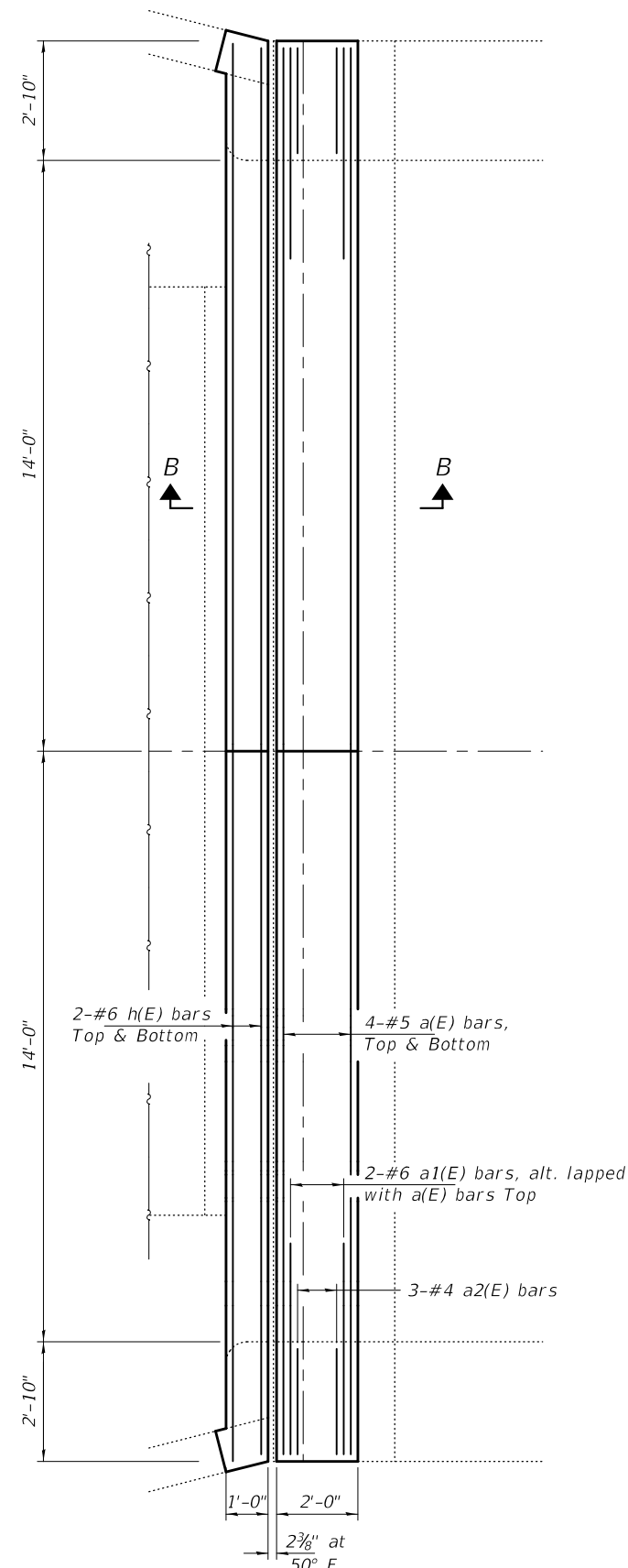
Note:
 These areas of deck repairs are for information only.

WESTBOUND

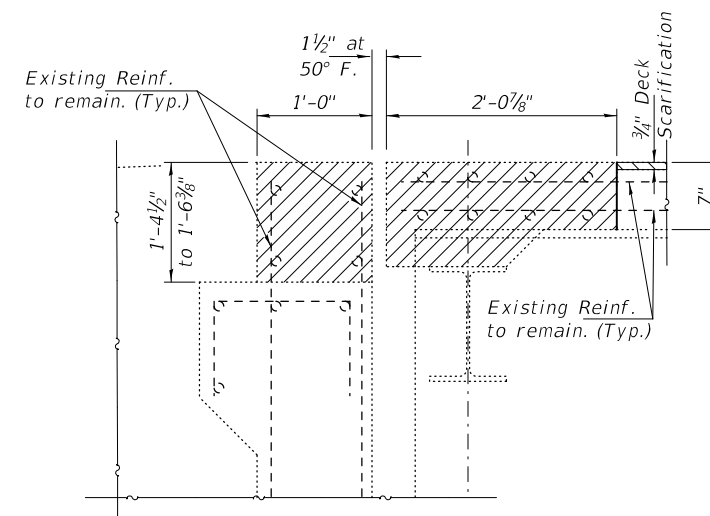
PATCH NUMBER	STATION	OFFSET FROM CENTERLINE	WIDTH	LENGTH	AREA (SQ. FT.)	AREA (SQ. YD.)
64	8+79.2	0.0	2.4	2.9	7.0	0.8
65	8+87.2	9.0	1.7	1.4	2.4	0.3
66	8+94.2	9.0	1.7	2.5	4.3	0.5
67	8+97.2	1.5	6.8	1.2	8.2	0.9
68	9+01.2	1.5	1.9	1.6	3.0	0.3
69	9+10.2	1.0	2.0	2.0	4.0	0.4
70	9+12.2	1.0	3.4	2.0	6.8	0.8
71	9+24.2	3.5	1.5	1.7	2.6	0.3
72	9+26.2	1.5	1.3	1.5	2.0	0.2
73	9+31.2	0.0	2.0	8.2	16.4	1.8
74	9+32.2	8.3	1.5	1.8	2.7	0.3
75	9+33.2	3.8	1.6	1.6	2.6	0.3
76	9+40.2	4.2	2.7	1.7	4.6	0.5
77	9+45.2	0.0	11.5	1.9	21.9	2.4
78	9+52.2	9.0	1.5	1.5	2.3	0.3
79	9+58.2	8.5	2.0	1.7	3.4	0.4
80	9+60.2	6.5	2.3	1.5	3.5	0.4
81	9+64.2	0.0	2.5	5.6	14.0	1.6
82	9+71.2	1.3	3.1	1.4	4.3	0.5
83	9+72.2	1.3	2.0	3.7	7.4	0.8
84	9+77.2	1.8	1.3	2.2	2.9	0.3
85	9+82.2	5.0	5.2	1.3	6.8	0.8
86	9+85.2	0.0	4.5	1.7	7.7	0.9
87	9+87.2	10.5	1.9	1.7	3.2	0.4
88	9+97.2	10.5	1.9	1.7	3.2	0.4
89	10+07.2	10.0	3.0	1.6	4.8	0.5
90	10+13.2	7.6	1.7	1.2	2.0	0.2
91	10+14.2	1.0	2.5	1.7	4.3	0.5
92	10+16.2	5.7	2.8	1.2	3.4	0.4
93	10+27.2	7.2	1.8	1.3	2.3	0.3
94	10+28.2	5.4	1.3	1.3	1.7	0.2
95	10+35.2	6.7	3.7	1.6	5.9	0.7
96	10+41.2	5.7	3.6	1.6	5.8	0.6
97	10+57.2	1.5	2.0	1.8	3.6	0.4
98	10+58.2	7.0	1.8	1.5	2.7	0.3
99	10+90.2	0.0	11.5	1.5	17.3	1.9
100	10+95.2	2.0	1.0	1.5	1.5	0.2
101	10+96.2	0.0	2.6	1.1	2.9	0.3
102	10+97.2	7.5	1.3	1.3	1.7	0.2
103	10+98.2	0.0	25.0	1.5	37.5	4.2
104	11+01.2	5.5	4.0	1.3	5.2	0.6
105	11+13.2	3.5	7.0	1.9	13.3	1.5
106	11+15.2	7.5	2.8	3.5	9.8	1.1
WESTBOUND TOTAL					30.3	



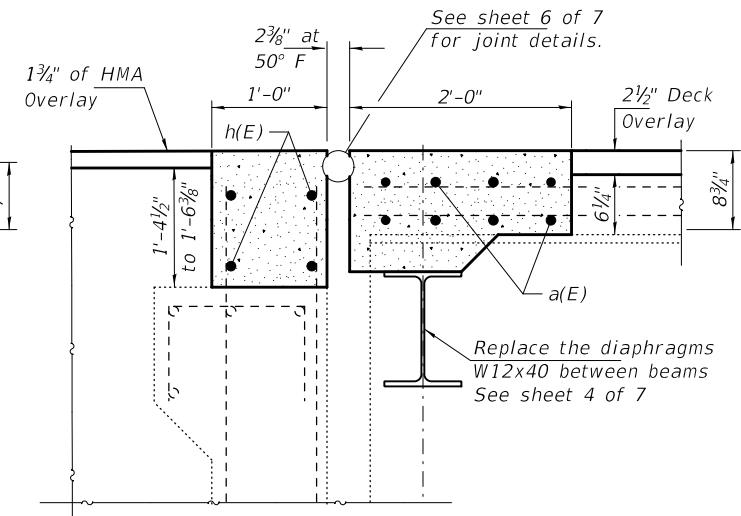
REMOVAL PLAN



REPLACEMENT PLAN

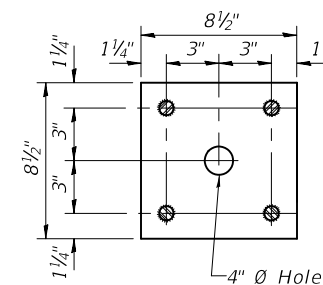


SECTION A-A



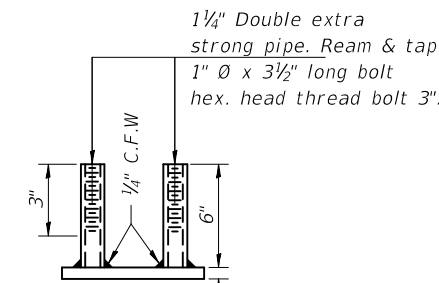
SECTION B-B

Notes:
 East Abutment shown, west abutment is similar by rotation.
 Hatched areas indicate Concrete Removal.

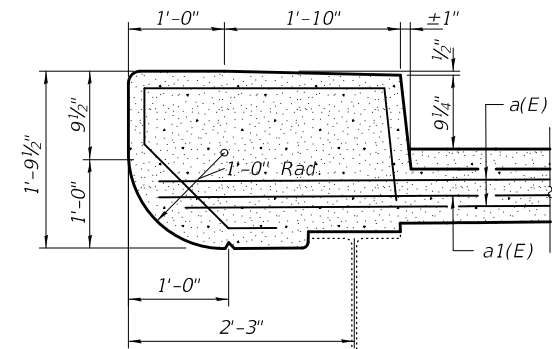


ANCHOR DEVICE

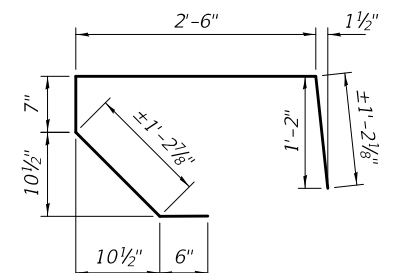
For Single Post at each end of panel



END VIEW



SECTION THRU CURB



BARS a2(E)

**BILL OF MATERIAL
(2 ABUTMENTS)**

Bar	No.	Size	Length	Shape
a(E)	16	#5	32'-9"	—
a1(E)	16	#6	4'-0"	—
a2(E)	12	#4	6'-0"	U
h(E)	8	#6	32'-9"	—
Concrete Removal			Cu. Yd.	8.8
Concrete Superstructure			Cu. Yd.	8.8
Reinforcement Bars, Epoxy Coated			Pound	1080

Note:
 Existing rail and posts to be removed or supported during concrete removal and replacement. Existing anchor bolts and anchor devices to be replaced. In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 3/8" Ø by 6" long anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications. Cost included in Concrete Removal.

DESIGNED - AJR
 CHECKED - CCC
 DRAWN - Venkat Reddy
 CHECKED - AJR CCC

EXAMINED
 PASSED
 ENGINEER OF STRUCTURAL SERVICES
 ENGINEER OF BRIDGES AND STRUCTURES

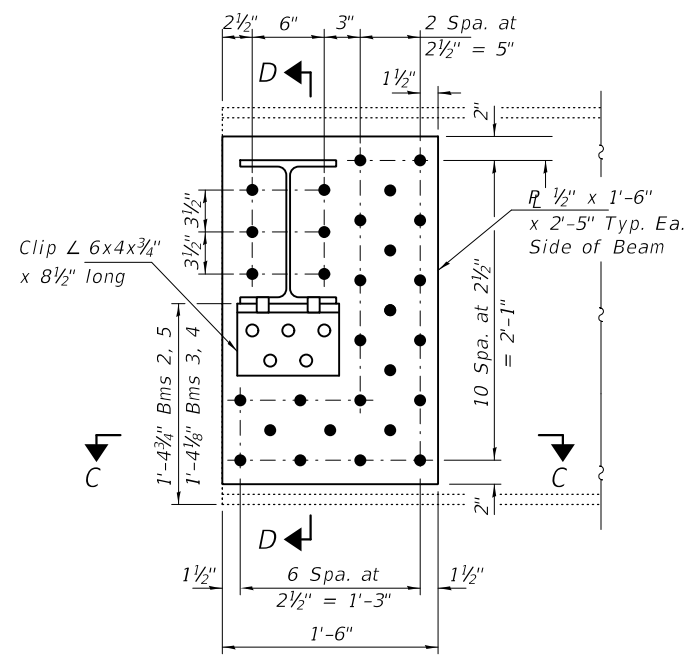
DATE - APRIL 21, 2020
 REVISED -
 REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**JOINT REPLACEMENT DETAILS - EAST ABUTMENT
 SN 100-0057**

SHEET NO. 4 OF 7 SHEETS

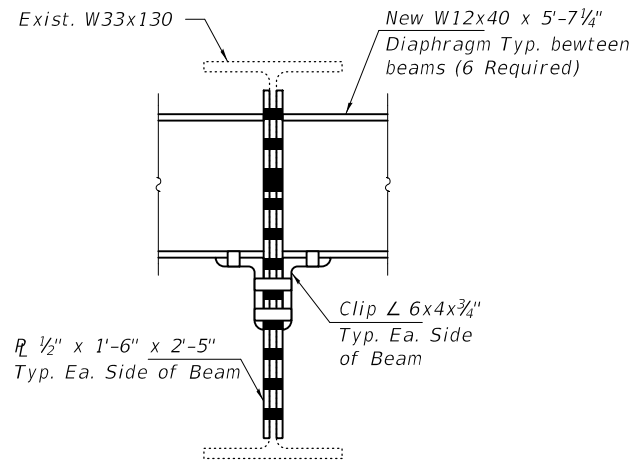
F.A.I. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 57 D9 BRIDGE REPAIR 2020-6 WILLIAMSON 17 13
 CONTRACT NO. 78758
 ILLINOIS FED. AID PROJECT



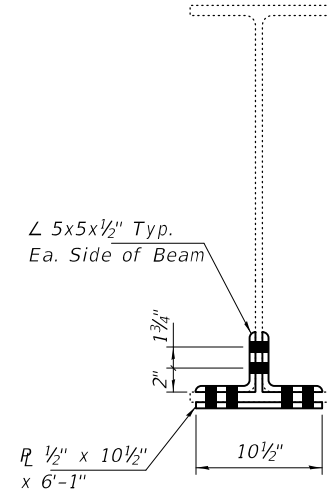
REPAIR B
(4 Locations)

$R \frac{1}{2}'' \times 1'-6'' \times 2'-5''$ Typ. Ea. Side of Beam

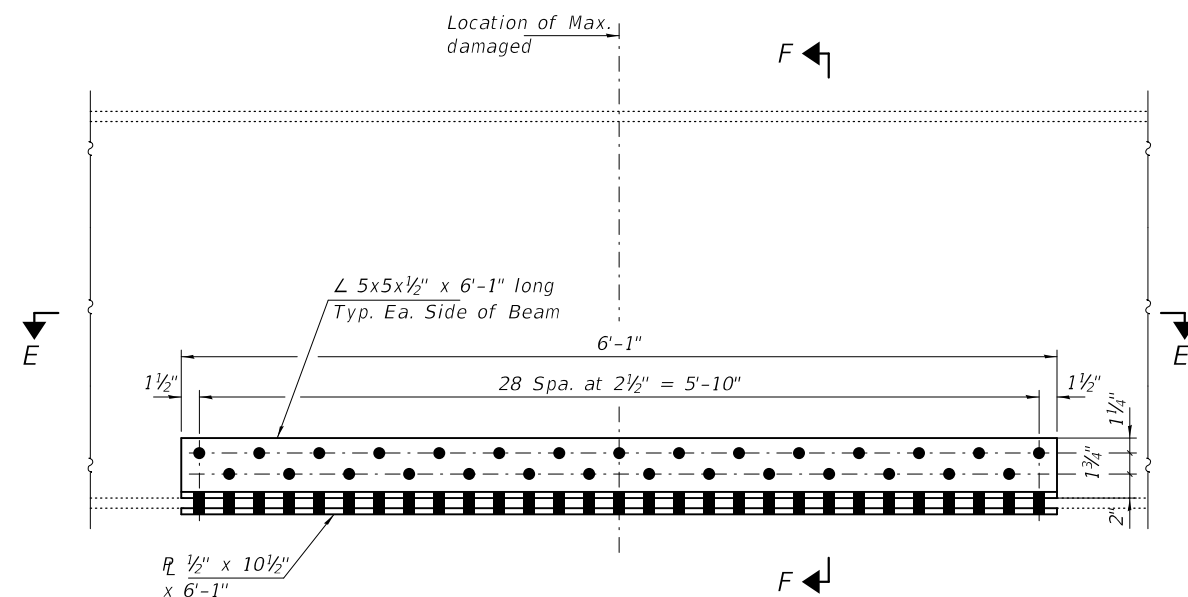
SECTION C-C



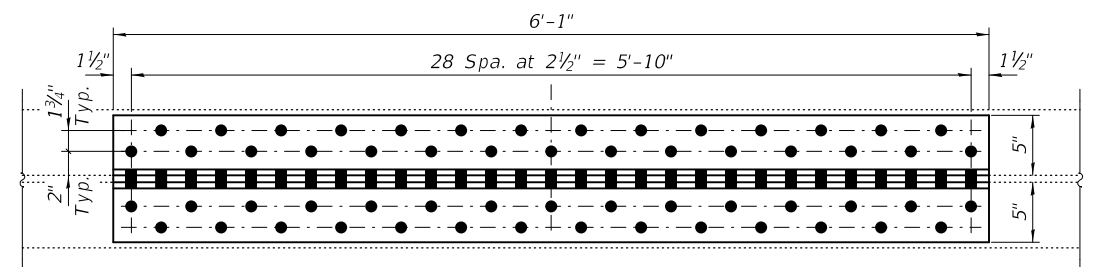
SECTION D-D



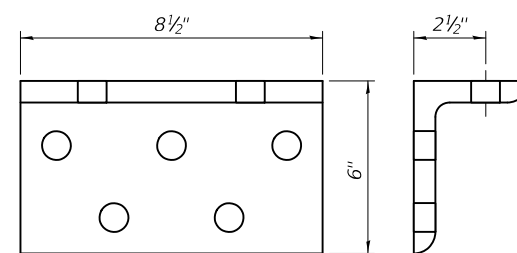
SECTION F-F



REPAIR D
(5 Locations)



SECTION E-E



CLIP ANGLE DETAILS

$L 6x4x\frac{3}{4}'' \times 8\frac{1}{2}''$ long
(12 Required)

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Removal	Pound	1620
Structural Steel Repair	Pound	2540
Furnishing and Erecting Structural Steel	Pound	1600

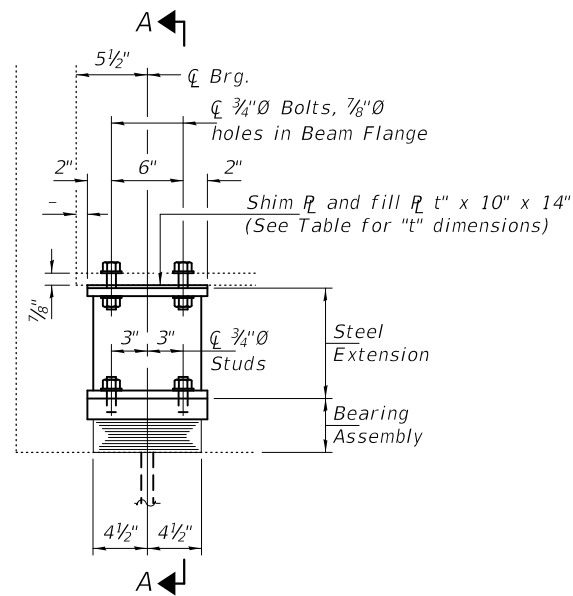
DESIGNED - AJR	EXAMINED - <i>Timothy A. Dredge</i> ENGINEER OF STRUCTURAL SERVICES	DATE - APRIL 21, 2020
CHECKED - CCC	PASSED - <i>Carl R. Rupp</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
DRAWN - Venkat Reddy		REVISED -
CHECKED - AJR CCC		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM REPAIRS
SN 100-0057

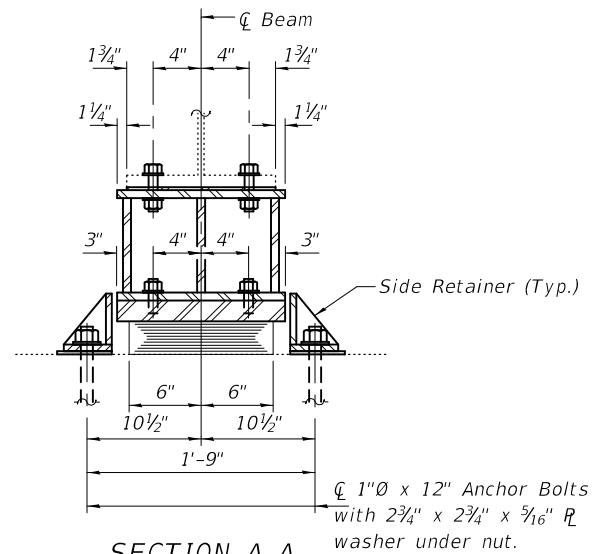
SHEET NO. 5 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2020-6	WILLIAMSON	17	14
CONTRACT NO. 78758				
ILLINOIS FED. AID PROJECT				



ELEVATION AT ABUTMENT

TYPE I ELASTOMERIC EXP. BRG.



SECTION A-A

BEAM REACTIONS

R _l	(K)	12.2
R _t	(K)	28.6
Imp.	(K)	8.5
R (Total)	(K)	49.3

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.

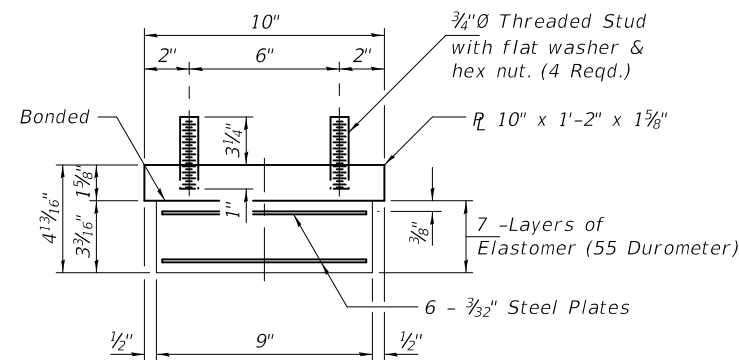
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).

Min. jack capacity = 24 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.

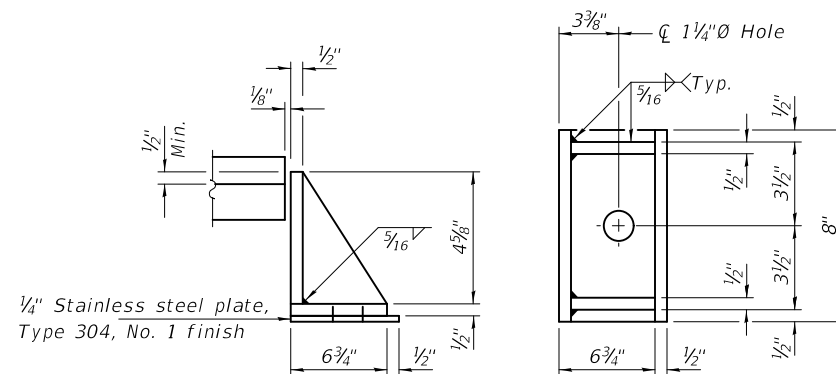
Cost of Side retainers and Stainless Steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.



BEARING ASSEMBLY

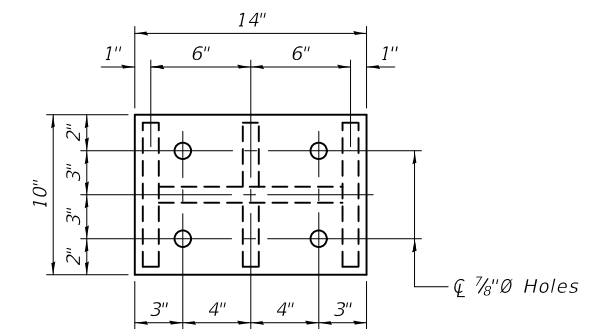
Note:

Shim plates shall not be placed under Bearing Assembly.

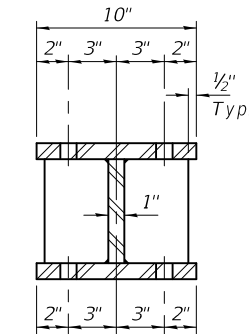


SIDE RETAINER

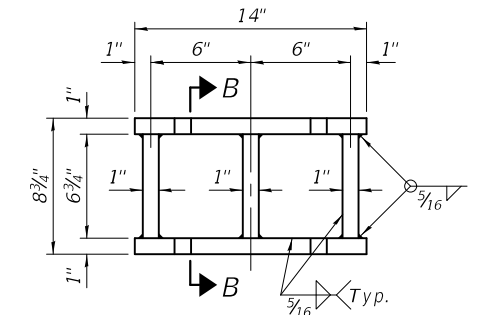
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



PLAN TOP AND BOTTOM PLATE



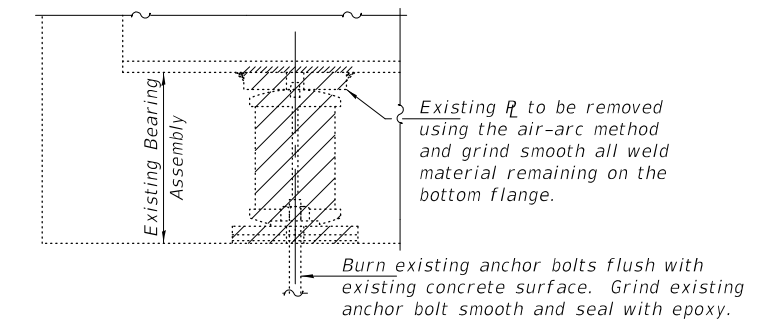
SECTION B-B



STEEL EXTENSION DETAIL

FILL R "t" DIMENSIONS

R _l	SN 100-0057
Beams	1 2 3 4 5 6
W. Abut.	- - 5/8" 5/8" - -
E. Abut.	- - 5/8" 5/8" - -



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	1650
Anchor Bolts, 1"Ø	Each	24

TYI/REPS 5-17-2018

DESIGNED - AJR
CHECKED - CCC
DRAWN - Venkat Reddy
CHECKED - AJR CCC

EXAMINED	<i>Timothy A. Dredge</i> ENGINEER OF STRUCTURAL SERVICES
PASSED	<i>Carl R. Roper</i> ENGINEER OF BRIDGES AND STRUCTURES

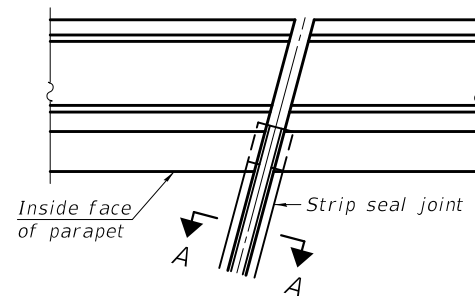
DATE - APRIL 21, 2020
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

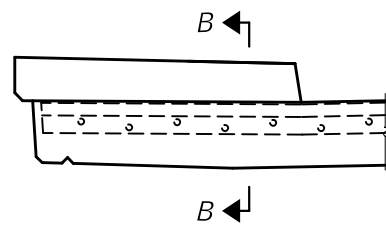
**ABUTMENT BEARING DETAILS
SN 100-0057**

SHEET NO. 6 OF 7 SHEETS

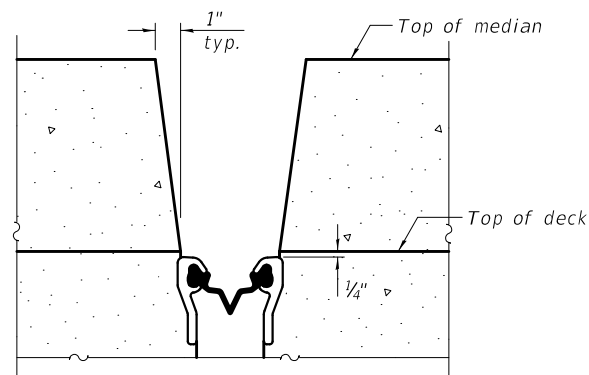
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2020-6	WILLIAMSON	17	15
CONTRACT NO. 78758				
ILLINOIS FED. AID PROJECT				



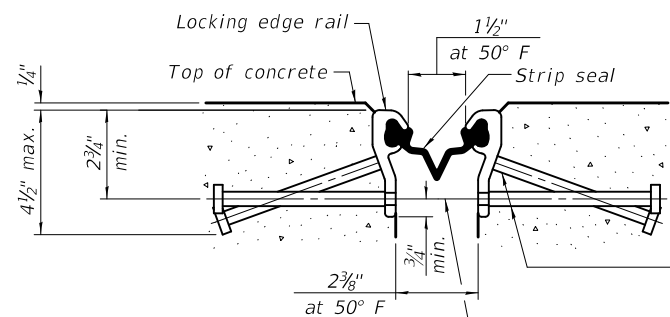
FOR SKEWS $\leq 30^\circ$
PLAN AT PARAPET



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



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

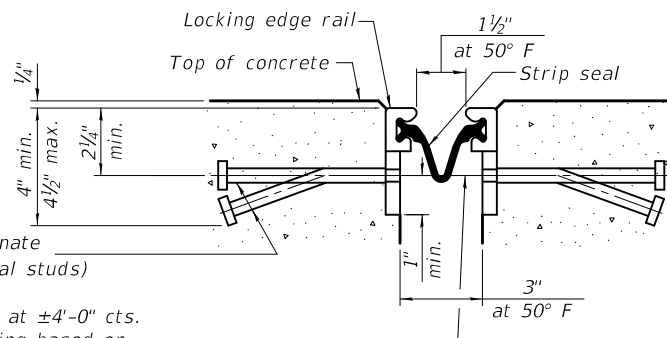


SHOWING ROLLED RAIL JOINT

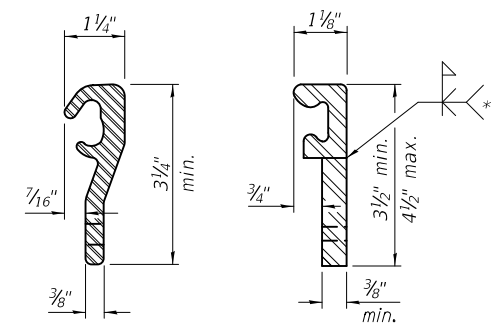
* $\frac{5}{8}$ " ϕ x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)
 $\frac{3}{8}$ " ϕ threaded rods in $\frac{7}{16}$ " ϕ holes at ± 4 "-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned,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

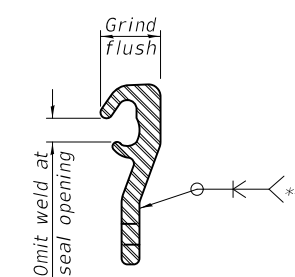


SHOWING WELDED RAIL JOINT



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	64

EJ-SS1 LT30/REPS

2-25-20

DESIGNED - AJR	CHECKED - CCC
DRAWN - Venkat Reddy	CHECKED - AJR CCC

EXAMINED	<i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES
PASSED	<i>Carl Berger</i> ENGINEER OF BRIDGES AND STRUCTURES

DATE -	APRIL 21, 2020
REVISED -	
REVISED -	

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

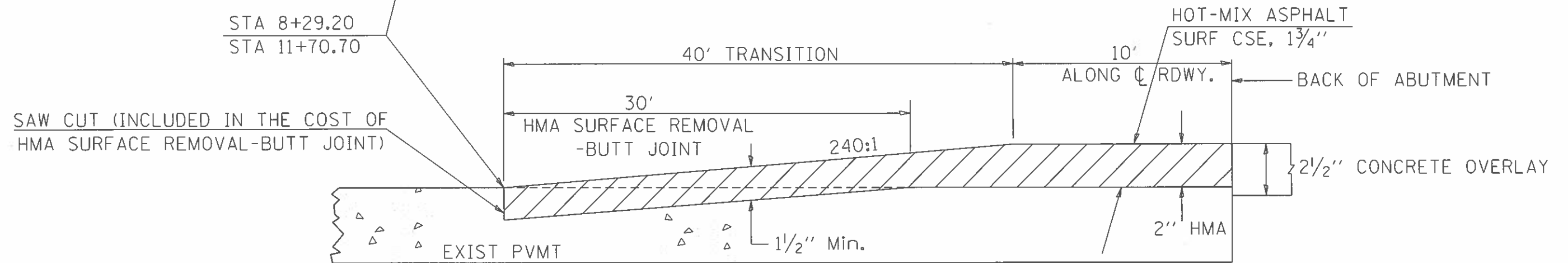
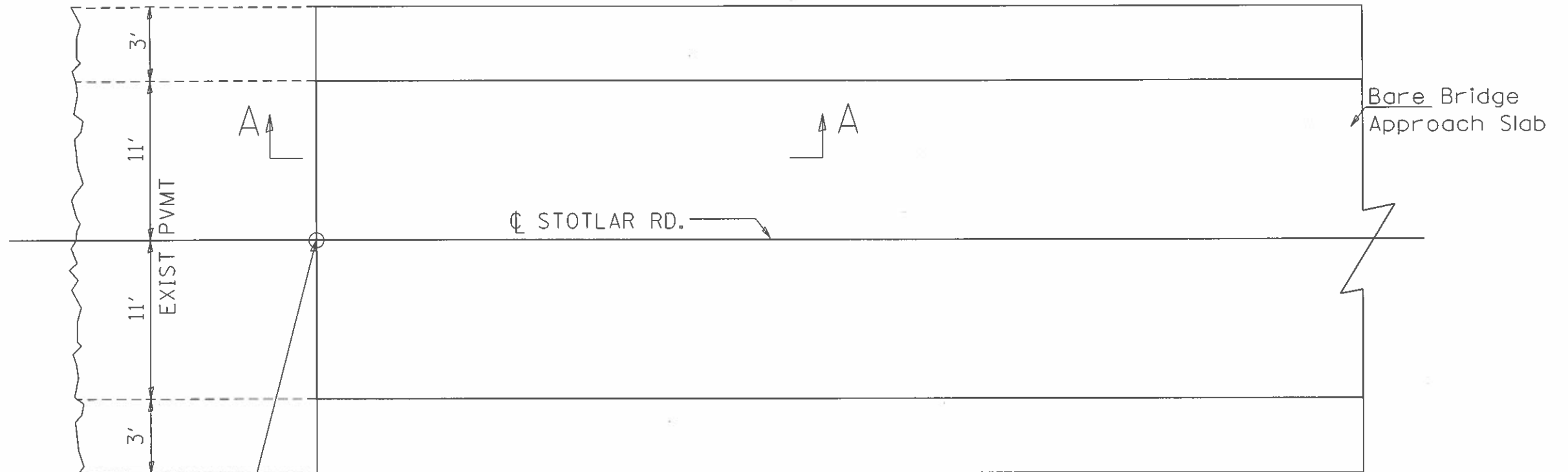
PREFORMED JOINT STRIP SEAL - SIDEWALK
 SN 100 - 0057

SHEET NO. 7 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2020-6	WILLIAMSON	17	16
CONTRACT NO. 78758				

ILLINOIS FED. AID PROJECT

BUTT JOINT



SECTION A-A

REVISIONS	
DRAWN	03-09-17
REVISED	
REVISED	
REVISED	

STD. 9-118

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USER NAME	DESIGNED	REVISIONS
ASH	ASH	
PLOT SCALE	CHECKED	REVISIONS
50.0000	MAS	
PLOT DATE	DATE	REVISIONS
3/17/2020	12/31/19	

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

BUTT JOINT DETAIL

F.A.I. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	09 BRIDGE REPAIR 2020-6	VARIOUS	17	17
ILLINOIS FED. AID PROJECT				

SCALE _____ SHEET 6 OF 6 SHEETS STA _____ TO STA _____