

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2192	D2 BRR 2020-2	WHITESIDE	12	1
		ILLINOIS	CONTRACT NO. 64P39	

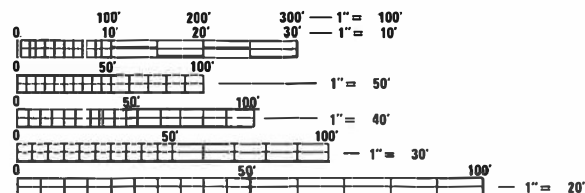
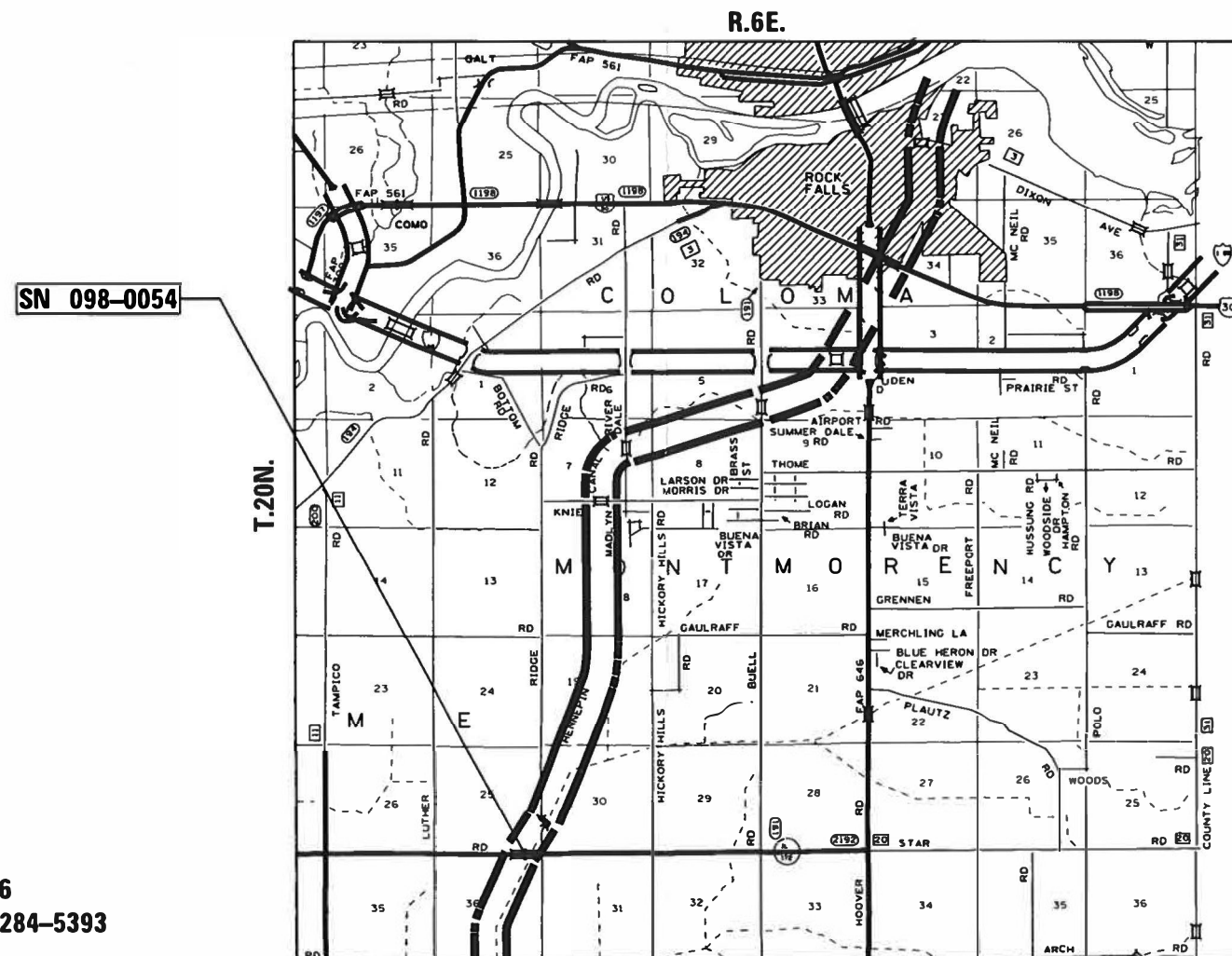
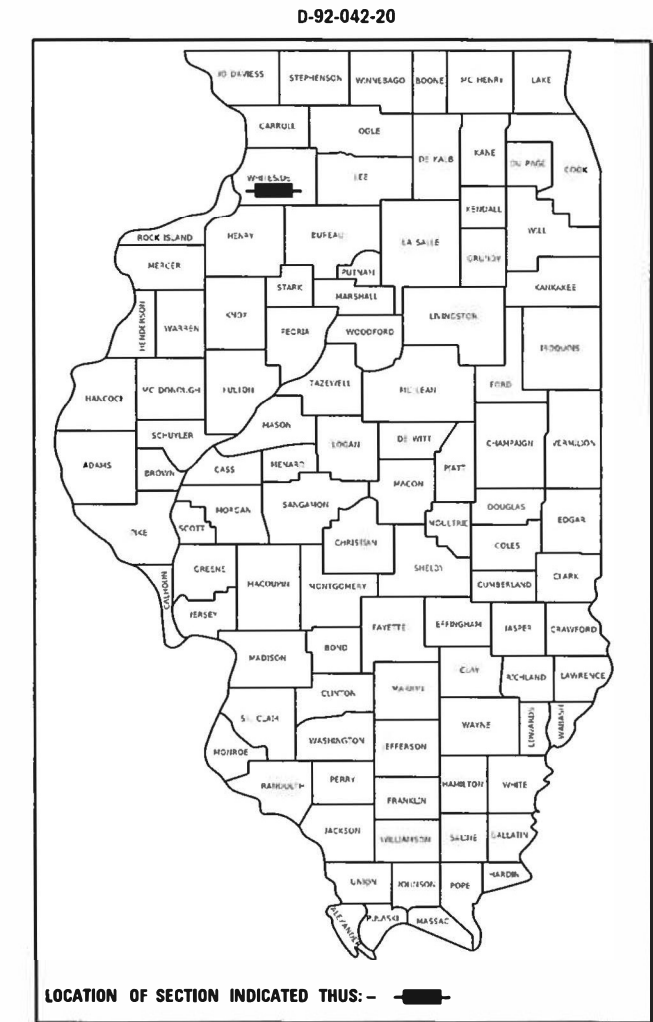
FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR STATE STANDARDS, SEE SHEET NO. 2

PROPOSED HIGHWAY PLANS

FAS ROUTE 2192 (IL 172)
SECTION: D2 BRR 2020-2
PROJECT:
TYPE of IMPROVEMENT: BEAM REPLACEMENT
WHITESIDE COUNTY

C-92-063-20

WHITESIDE COUNTY
HUME TOWNSHIP - SECTIONS 25 & 36



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 EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: DAVID DOSS (815) 284-5416
PROJECT MANAGER: MAHMOUD ETEMADI (815) 284-5393

CONTRACT NO. 64P39

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED March 19, 2020

[Signature]
REGIONAL 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

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX OF SHEETS / STATE STANDARDS / GENERAL NOTES
- 3 SUMMARY OF QUANTITIES
- 4 TRAFFIC CONTROL PLAN STAGING / TRAFFIC CONTROL TYPICAL
- 5-12 BEAM REPLACEMENT DETAILS

STATE STANDARDS

- 701006-05 OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5m) TO 24" (600mm) FROM PAVEMENT EDGE
- 701301-04 LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
- 701311-03 LANE CLOSURE, 2L, 2W, MOVING OPERATIONS-DAY ONLY
- 701321-18 LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
- 701901-08 TRAFFIC CONTROL DEVICES
- 704001-08 TEMPORARY CONCRETE BARRIER
- 720011-01 METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
- 728001-01 TELESCOPING STEEL SIGN SUPPORT
- 729001-01 APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS & MARKERS)

GENERAL NOTES

THE CONTRACTOR SHALL SEED ALL DISTURBED AREAS WITHIN THE PROJECT LIMITS. SEEDING CLASS 2A SHALL BE USED. THIS WORK WILL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR CONCRETE REMOVAL.

FERTILIZER SHALL BE APPLIED TO ALL DISTURBED AREAS AND INCORPORATED INTO THE SEEDBED PRIOR TO SEEDING OR PLACEMENT OF SOD AT THE RATE SPECIFIED IN SECTIONS 250 AND 252 OF THE STANDARD SPECIFICATIONS. THIS WORK WILL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR CONCRETE REMOVAL.

MULCH METHOD II SHALL BE APPLIED OVER ALL SEEDED AREAS. THIS WORK WILL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR CONCRETE REMOVAL.

ALL BORROW/WASTE/USE SITES MUST BE APPROVED BY THE DEPARTMENT PRIOR TO REMOVING ANY MATERIAL FROM THE PROJECT OR INITIATING ANY EARTHMOVING ACTIVITIES, INCLUDING TEMPORARY STOCKPILING OUTSIDE THE LIMITS OF CONSTRUCTION.

TEMPORARY IMPACT ATTENUATORS WILL BE MEASURED AS EACH FOR EACH ATTENUATOR SUPPLIED ON THE JOB AS SPECIFIED IN THE PLANS, AND SHALL INCLUDE THE COST OF RENTING/OWNING THE ATTENUATOR FOR THE TIME REQUIRED ON THE JOB PLUS HAULING TO AND FROM THE PROJECT SITE, AS WELL AS ONE PLACEMENT AND REMOVAL FROM THE ROADWAY. THIS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH FOR IMPACT ATTENUATORS, TEMPORARY OF THE TYPE SPECIFIED.

THIS WORK SHALL BE DONE IN ACCORDANCE WITH SECTION 704 OF THE STANDARD SPECIFICATIONS. TEMPORARY CONCRETE BARRIER WILL BE MEASURED IN FEET ALONG THE CENTERLINE OF THE BARRIER AND SHALL INCLUDE THE COST OF RENTING/OWNING THE BARRIER FOR THE TIME REQUIRED ON THE JOB PLUS HAULING TO AND FROM THE PROJECT SITE, AS WELL AS ONE PLACEMENT AND REMOVAL FROM THE ROADWAY IN ACCORDANCE WITH SECTION 704 OF THE STANDARD AND SPECIFICATION. THIS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER FOOT FOR TEMPORARY CONCRETE BARRIER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY DURING CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. A MINIMUM OF 48 HOURS ADVANCE NOTICE IS REQUIRED FOR NON-EMERGENCY WORK. THE JULIE NUMBER IS 800-892-0123.

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 2: Projects\Operations\Bridges

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PLOT DATE = May-07-2020 07:05:52 AM	DATE - _____	REVISED - _____			SCALE: _____	SHEET ____ OF ____ SHEETS	STA. _____	TO STA. _____	ILLINOIS FED. AID PROJECT	

SUMMARY OF QUANTITIES

CODE NUMBER	ITEM	UNIT	0013 100% STATE WHITESIDE COUNTY	TOTAL QUANTITY
42001300	PROTECTIVE COAT	SQ YD	14.5	14.5
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	110	110
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	250	250
50800530	MECHANICAL SPLICERS	EACH	42	42
67100100	MOBILIZATION	L SUM	1	1
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1
70106700	TEMPORARY RUMBLE STRIPS	EACH	6	6
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	FOOT	1260	1260
70300904	PAVEMENT MARKING TAPE, TYPE IV 4"	FOOT	1260	1260
70400100	TEMPORARY CONCRETE BARRIER	FOOT	400	400
70600250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2
X0320047	REMOVAL OF EXISTING PRECAST PRESTRESSED CONCRETE DECK BEAMS	SQ FT	110	110
X0323078	REMOVE AND RE-ERECT EXISTING BRIDGE RAIL	FOOT	37	37
X5030305	CONCRETE WEARING SURFACE	SQ YD	14.5	14.5

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 PROJECT: P:\1100\Documents\DOT Offices\District 2\Projects\Operations\Bridges_Section\Whiteside\08_05_16\64P39\CADD\02-sht-cover.dgn

USER NAME = dossdd PLOT SCALE = 40.0000' / in. PLOT DATE = Mar-23-2020 09:50:07 AM	DESIGNED - _____ DRAWN - _____ CHECKED - _____ DATE - _____	REVISED - _____ REVISED - _____ REVISED - _____ REVISED - _____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	F.A.S. RTE. 2192 SECTION D2 BRR 2020-2 COUNTY WHITESIDE TOTAL SHEETS 17 SHEET NO. 3 CONTRACT NO. 64P39	SCALE: _____ SHEET ____ OF ____ SHEETS STA. _____ TO STA. _____	ILLINOIS FED. AID PROJECT
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GENERAL NOTES

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

The contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the contractors responsibility to account for the condition of the beams when developing construction procedures.

If the contractor's procedure for existing beam removal or placement of new beams involves placement of cranes or other heavy equipment on the bridge, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the new or existing beams. To distribute load to multiple beams and protect the existing surface, in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams. If heavy equipment will be placed on new PPC deck beams, the following shall be done prior to placement of the timber mats: placement and tightening of transverse tie assemblies, grouting and curing the dowel rods 24 hours minimum and grouting and curing the shear keys.

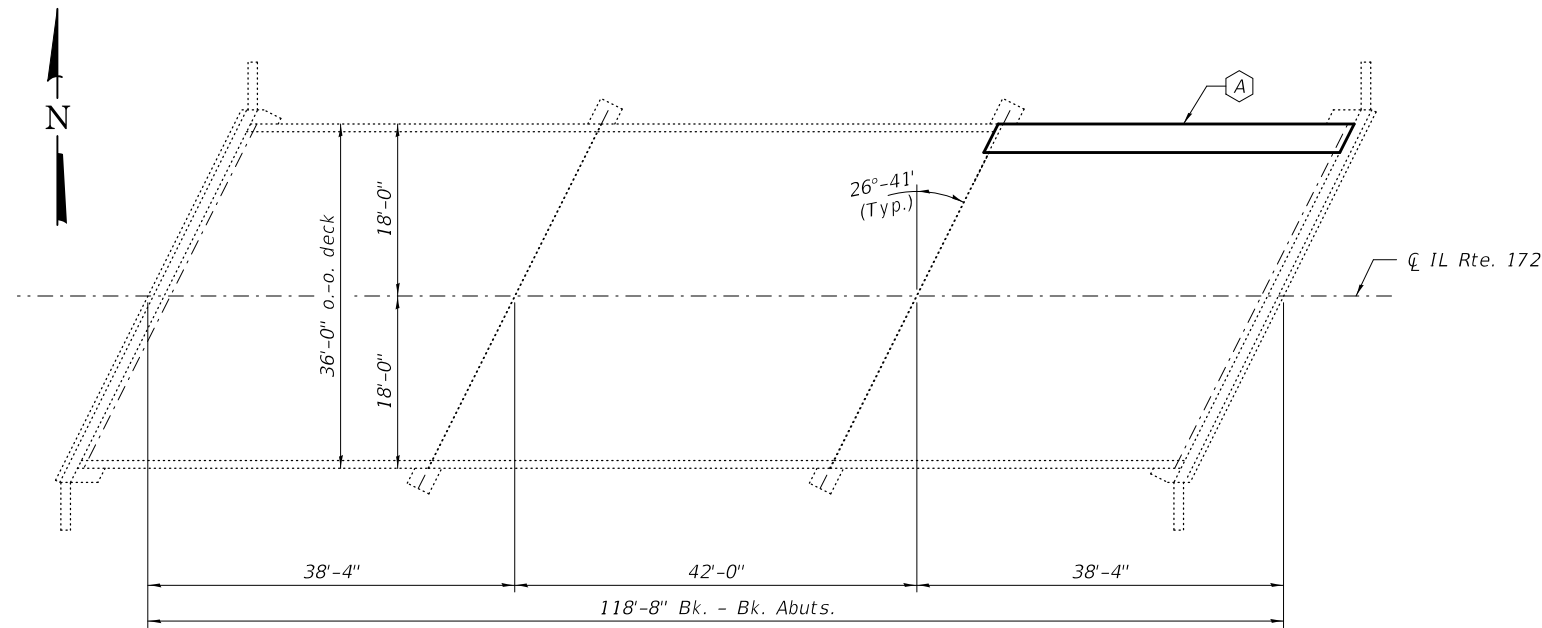
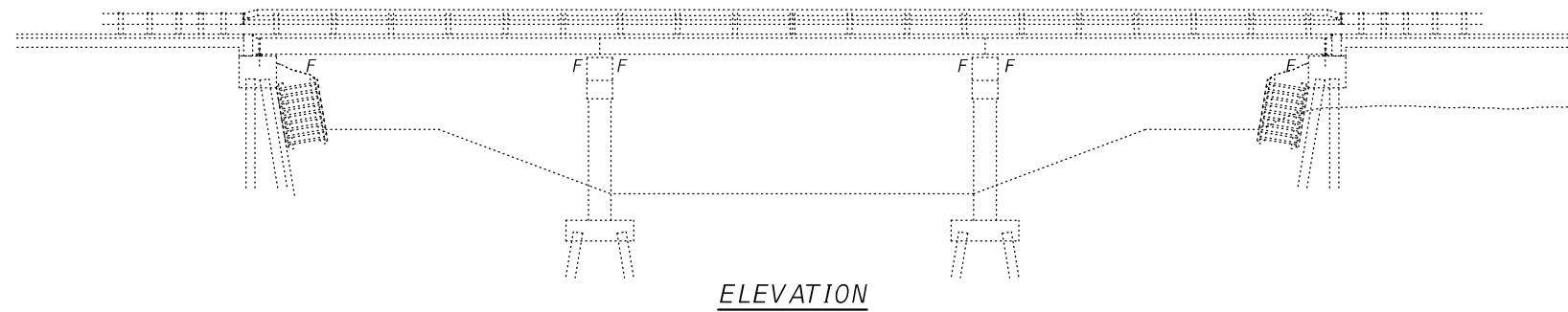
Any damage done to the bridge during beam removal shall be repaired by the Contractor. Cost to be included in the cost of Removal of Existing PPC Deck Beams.

The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

Temporary concrete barrier shall only be anchored into the overlay and not into the PPC Deck Beams.

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

Reinforcement bars designated (E) shall be epoxy coated.



PLAN

(A) - Remove and Replace Precast Prestressed Concrete Deck Beam

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Removal of Existing PPC Deck Beams	Sq. Ft.	110
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	110
Reinforcement Bars, Epoxy Coated	Pound	250
Removing & Re-erecting Existing Railing	Foot	37
Concrete Wearing Surface, 5"	Sq. Yd.	14.5
Protective Coat	Sq. Yd.	14.5
Mechanical Splicers	Each	42

DESIGN STRESSES

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$ psi

$f'_{ci} = 5,000$ psi

$f'_s = 270,000$ psi ($\frac{1}{2}$ " \emptyset low lax strands)

$f_{si} = 201,960$ psi ($\frac{1}{2}$ " \emptyset low lax strands)

$f_y = 60,000$ psi (Reinforcement)

CONCRETE WEARING SURFACE

$f'_c = 6,000$ psi



EXPIRES 11-30-2020

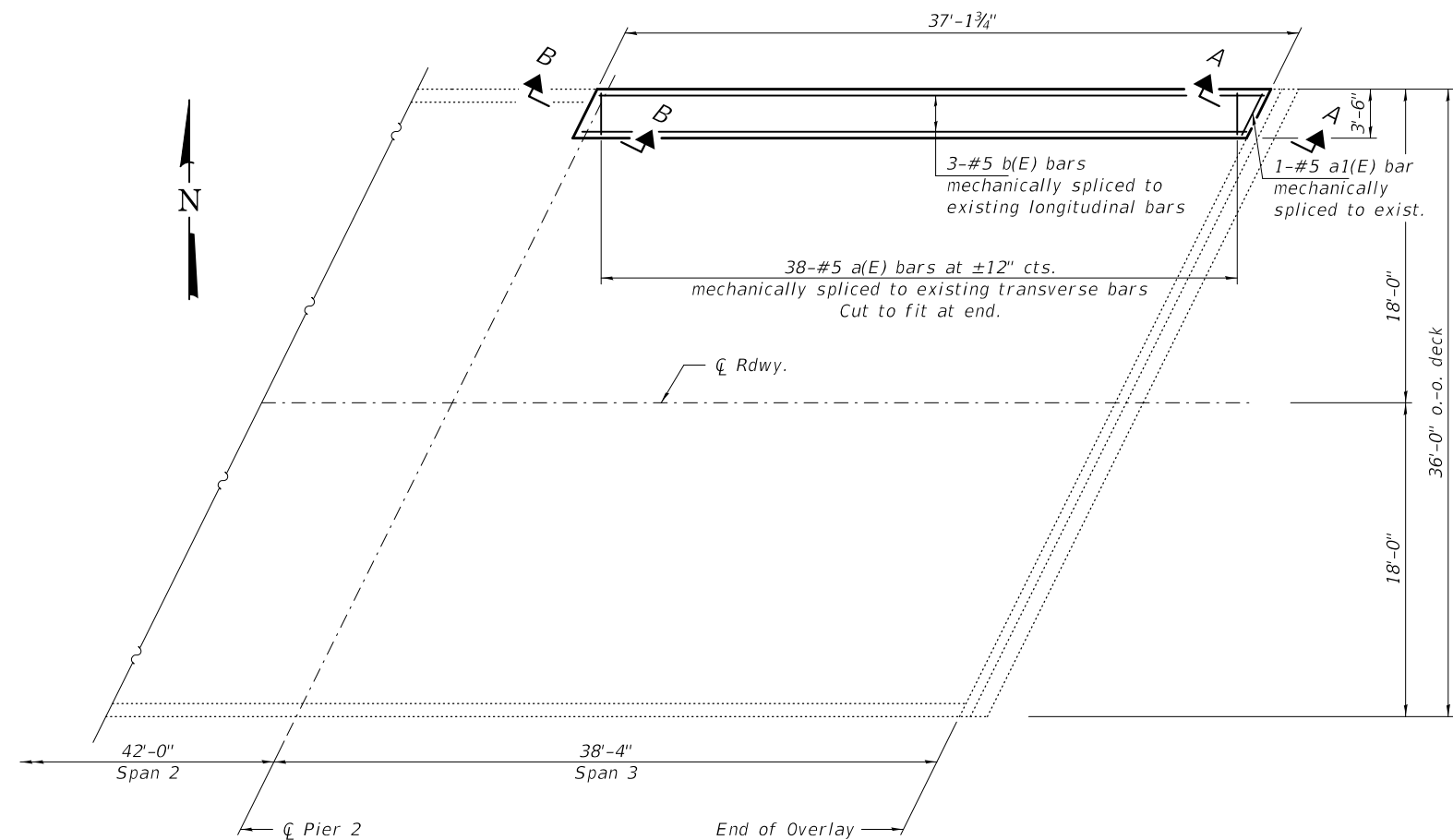
DESIGNED - Adrian T. Halloway	EXAMINED - <i>Twg A. Beck</i>	DATE - MAY 8, 2020
CHECKED - Jeffrey S. Burke	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - <i>daburdell</i>	PASSED - <i>Dr. Carl Puzey</i>	REVISED -
CHECKED - ATH JSB	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN AND ELEVATION
F.A.S. 2192 OVER HENNEPIN CANAL
SN 098-0054**

SHEET NO. 1 OF 8 SHEETS

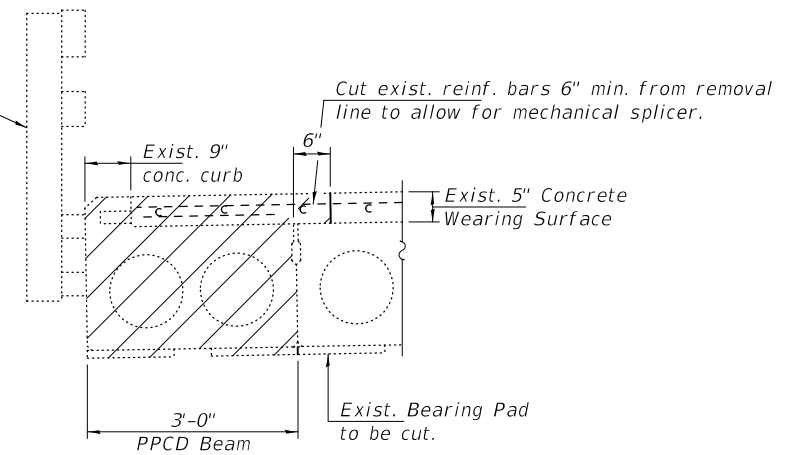
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2192	D2 BRR 2020-2	WHITESIDE	12	5
CONTRACT NO. 64P39				
ILLINOIS		FED. AID PROJECT		



PLAN

PARTIAL PLAN

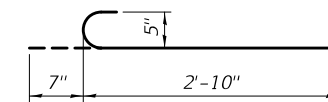
Exist. Bridge Rail to be removed and re-erected.



REMOVAL DETAIL

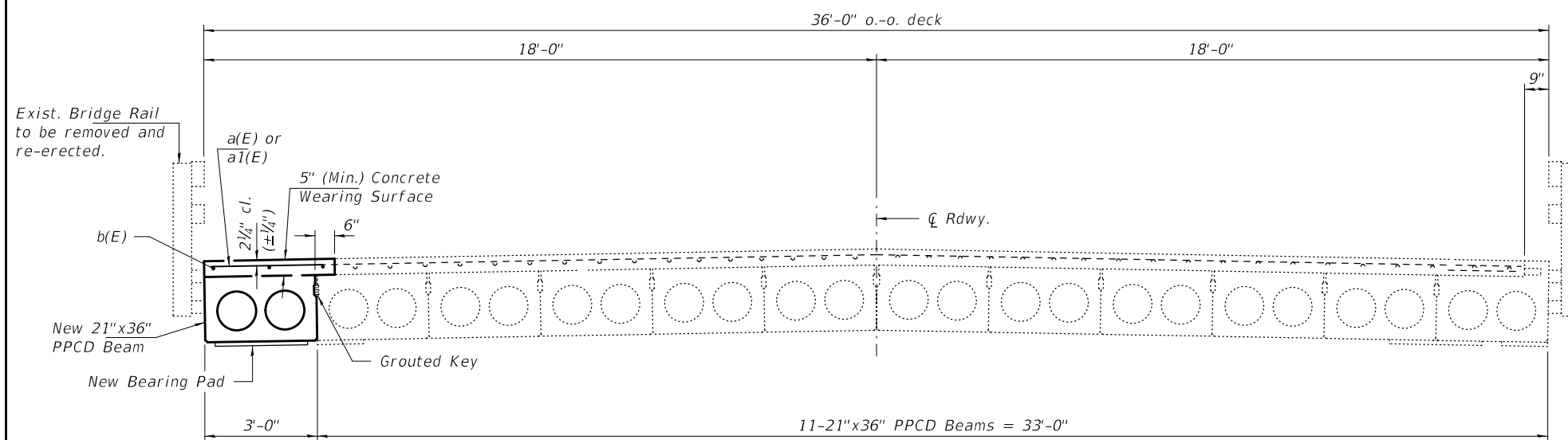
(Looking East)

Cost included with Removal of Existing PPC Deck Beam.



BAR a(E)

Notes:
 See Sheet 4 of 10 for Steel Bridge Rail inserts.
 For Sections A-A and B-B, see sheet 3 of 8.
 For additional superstructure details, see sheet 3 of 8.



CROSS SECTION

(Looking East)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	38	#5	3'-5"	
a1(E)	1	#5	3'-2"	
b(E)	3	#5	36'-6"	
Concrete Wearing Surface			Sq. Ft.	130
Reinforcement Bars, Epoxy Coated			Pound	250
Mechanical Splicers			Each	42

DESIGNED - ATH
 CHECKED - JSB
 DRAWN - daburdell
 CHECKED - ATH JSB

EXAMINED
 PASSED
 ENGINEER OF STRUCTURAL SERVICES
 ENGINEER OF BRIDGES AND STRUCTURES

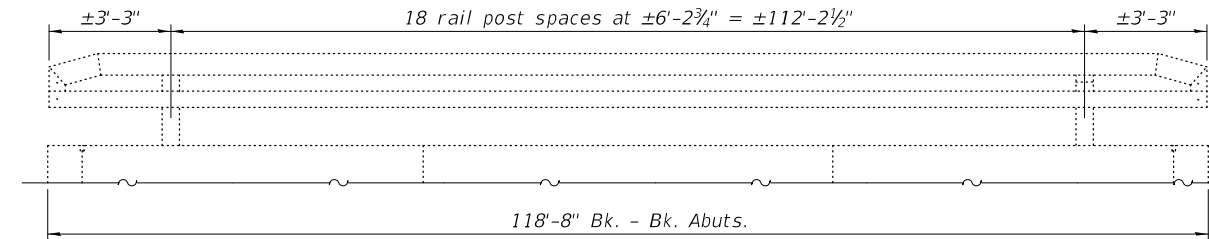
DATE - MAY 8, 2020
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

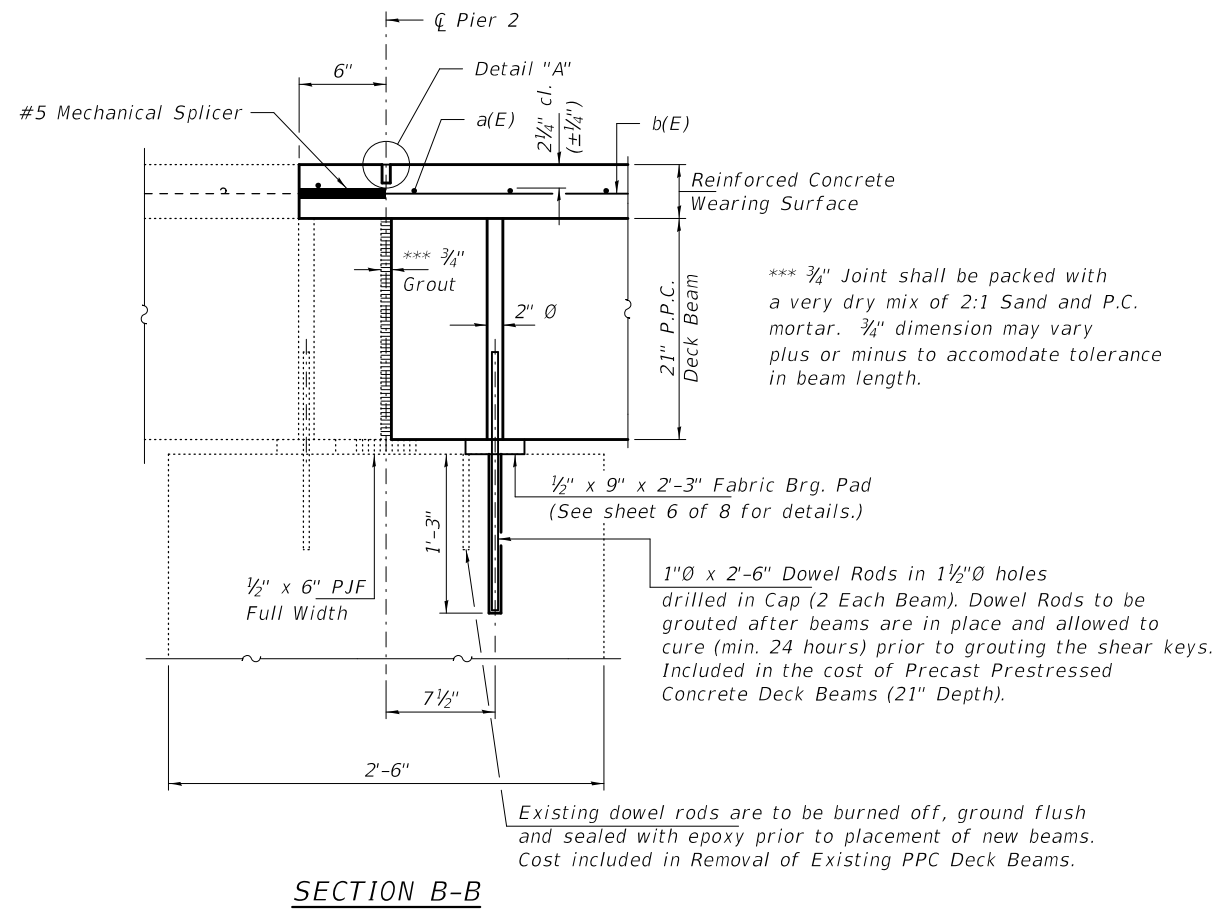
SUPERSTRUCTURE DETAILS
 SN 098-0054

SHEET NO. 2 OF 8 SHEETS

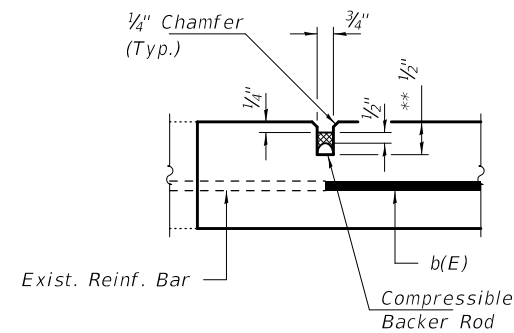
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2192	D2 BRR 2020-2	WHITESIDE	12	6
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64P39	



RAIL POST SPACING FOR STEEL BRIDGE RAIL

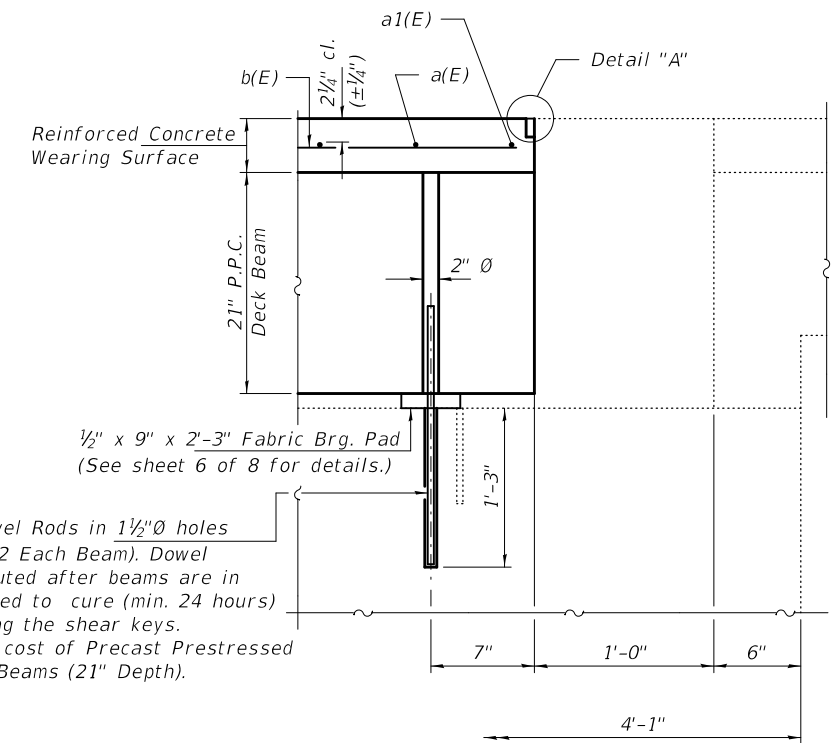


SECTION B-B

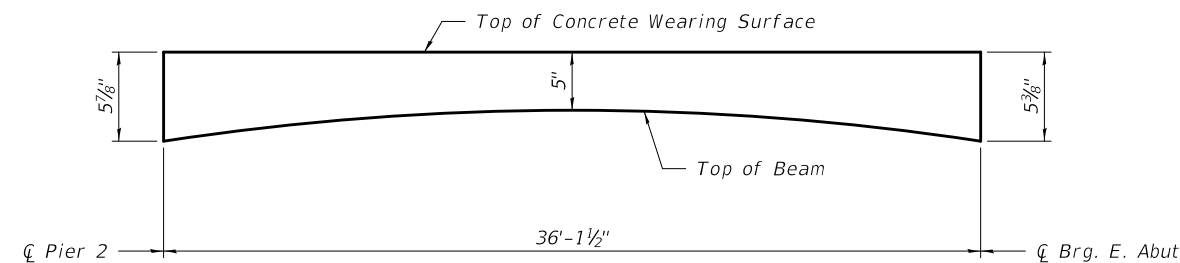


DETAIL "A"
(Shown at Pier 2 similar at E. Abut.)

** Formed joint opening with Silicone Joint Sealer. See Special Provisions.



SECTION A-A



ANTICIPATED INITIAL CAMBER DIAGRAM

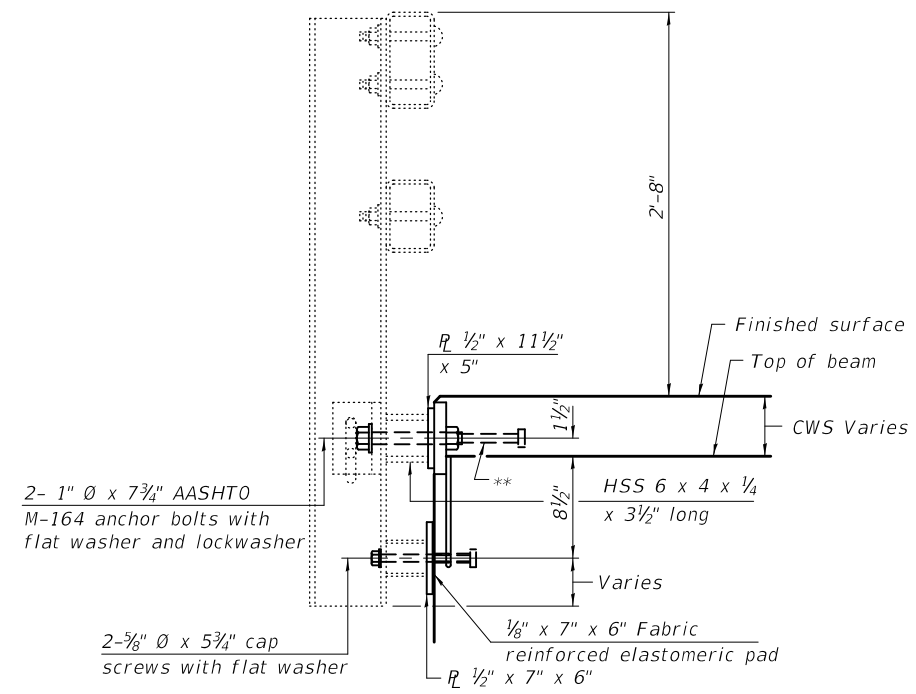
DESIGNED - ATH	EXAMINED - <i>Timothy A. Daburdell</i>	DATE - MAY 8, 2020
CHECKED - JSB	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - <i>daburdell</i>	PASSED - <i>Carl R. Meyer</i>	REVISED -
CHECKED - ATH JSB	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

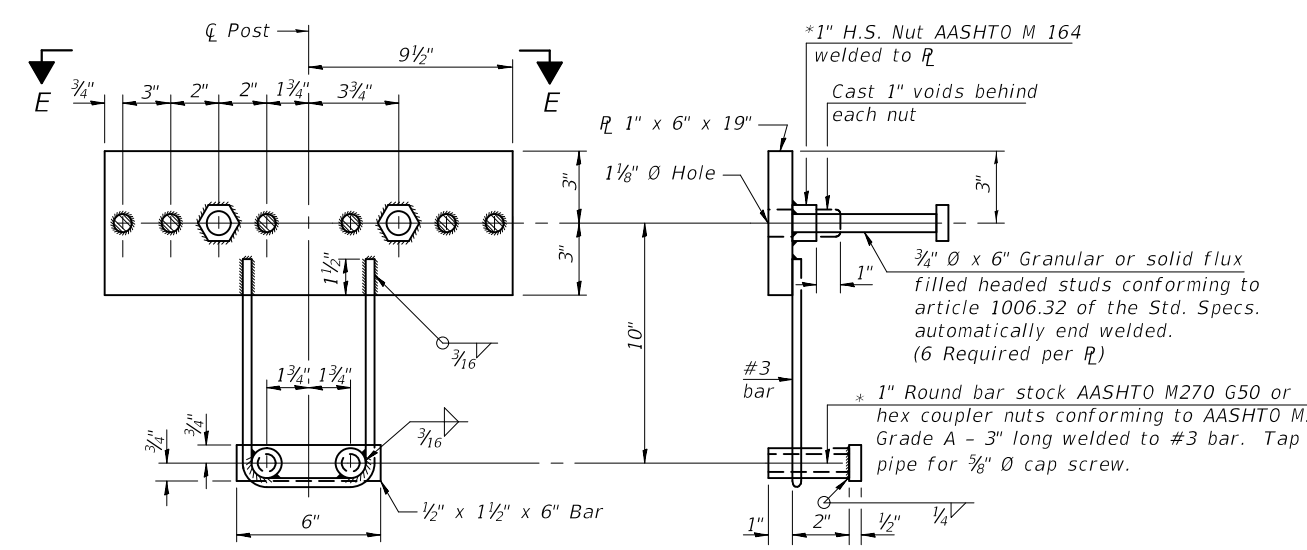
**SUPERSTRUCTURE DETAILS
SN 098-0054**

SHEET NO. 3 OF 8 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 64P39				
ILLINOIS		FED. AID PROJECT		

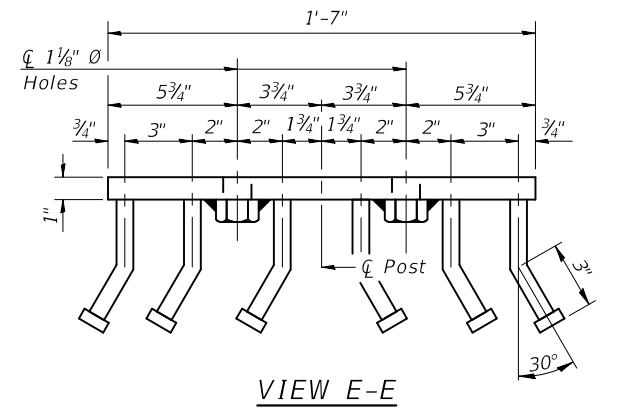


SECTION AT RAIL POST



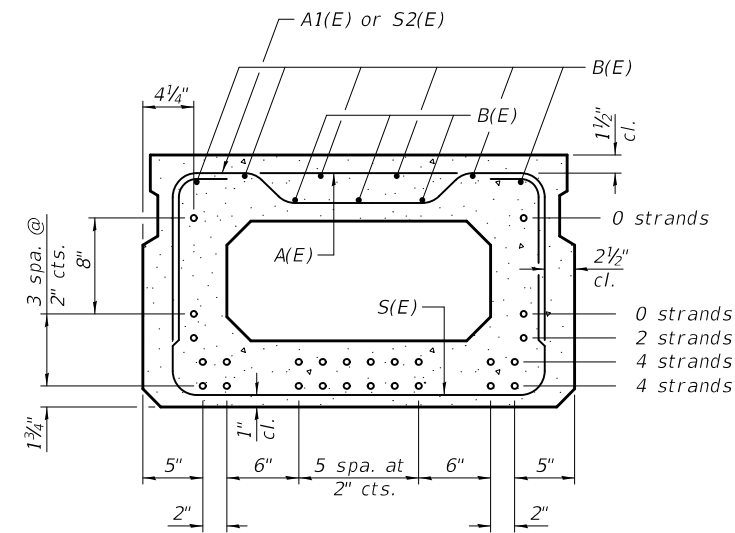
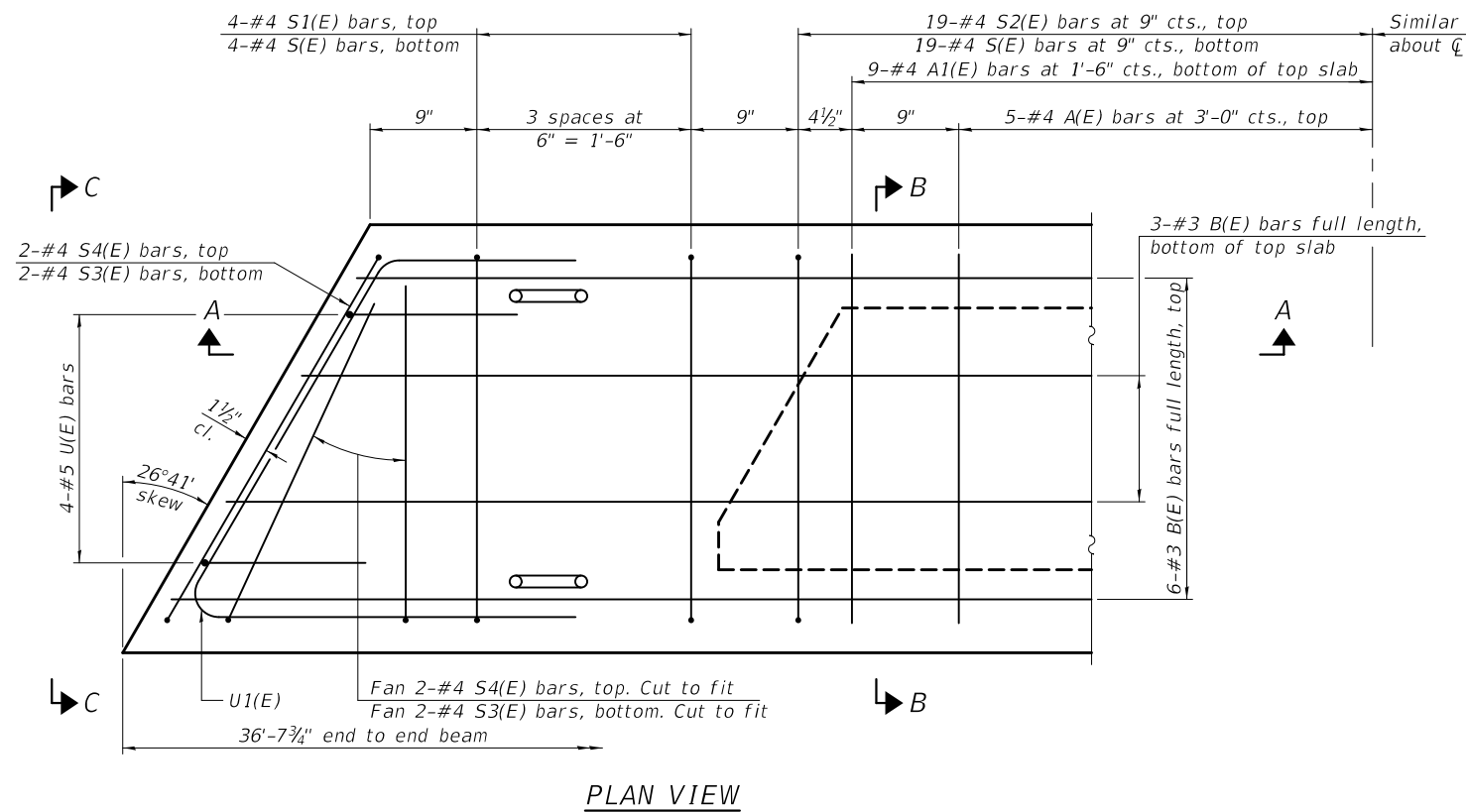
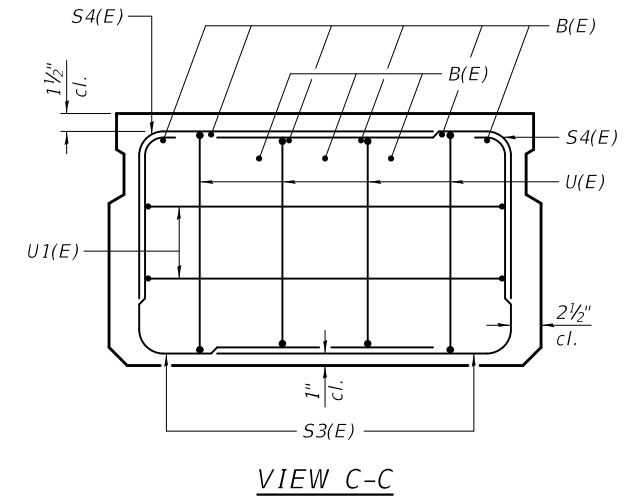
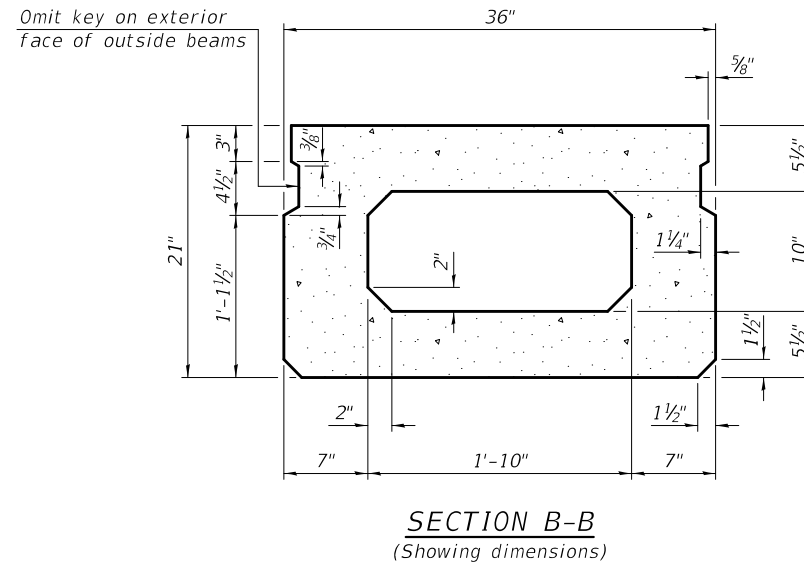
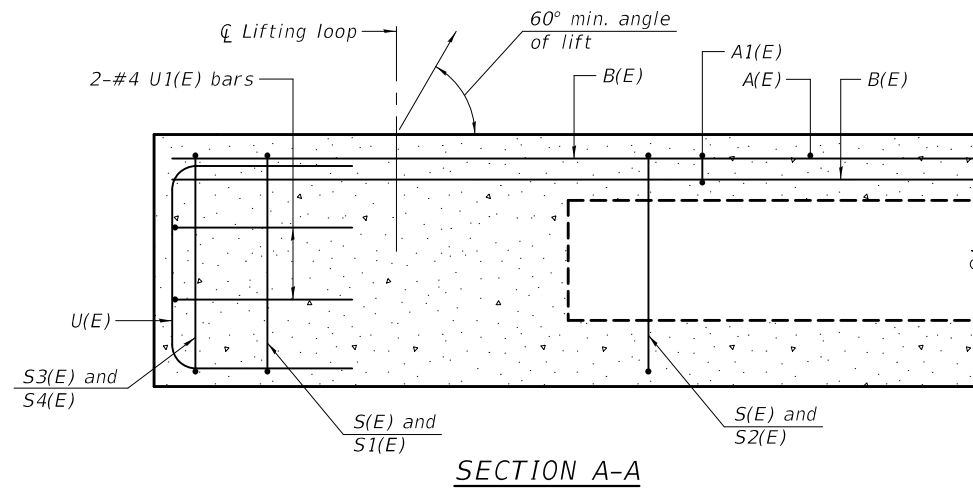
ANCHOR DEVICE

*Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.



VIEW E-E

Notes:
 For multi-span bridges, sufficient 1/4 inch x 6 inch x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans.
 Cost included with Removing and Re-erecting Existing Railing.
 Steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
 ** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



SECTION B-B
(Showing reinforcement and permissible strand locations)

Note:
Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

MINIMUM BAR LAP
#3 bar = 1'-6"

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	18	#4	2'-7"	—
A1(E)	10	#4	2'-10"	—
B(E)	9	#3	36'-3"	—
D(E)	12	#4	2'-9"	┌
S(E)	45	#4	6'-5"	┌
S1(E)	8	#4	4'-11"	┌
S2(E)	38	#4	5'-2"	┌
S3(E)	8	#4	4'-8"	┌
S4(E)	8	#4	3'-11"	┌
U(E)	8	#5	4'-0"	┌
U1(E)	4	#4	6'-7"	┌

Note:
See sheet 6 of 8 for additional details and Bill of Material.

Note:
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

PD-2136-L

1-1-2020

DESIGNED - ATH
CHECKED - JSB
DRAWN - daburdell
CHECKED - ATH JSB

EXAMINED
PASSED
Timothy A. Daburdell
ENGINEER OF STRUCTURAL SERVICES
C. Paul Ringer
ENGINEER OF BRIDGES AND STRUCTURES

DATE - MAY 8, 2020
REVISED -
REVISED -

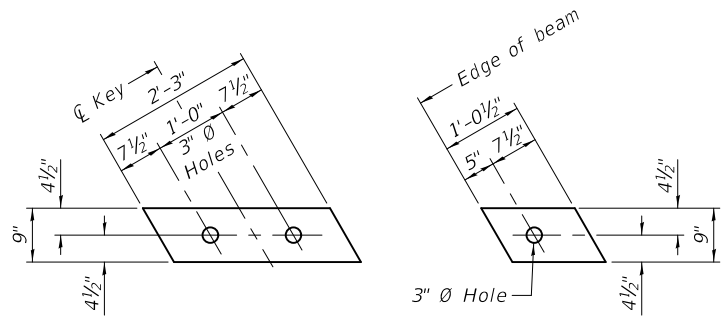
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

21" x 36" PPC DECK BEAM
SN 098-0054

SHEET NO. 5 OF 8 SHEETS

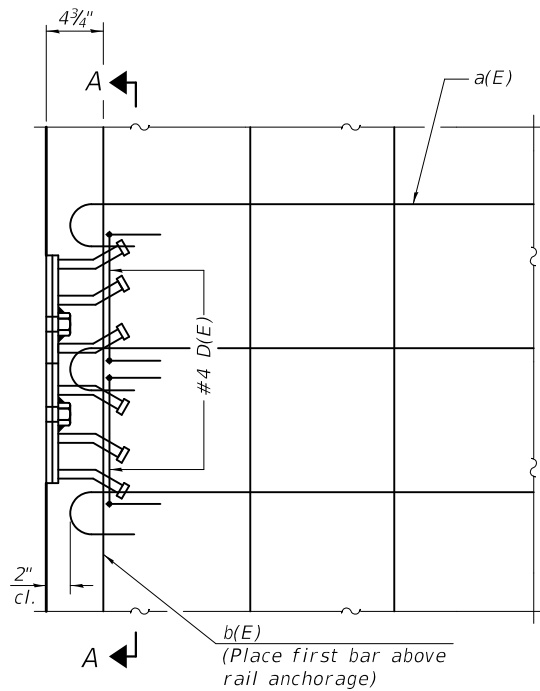
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT



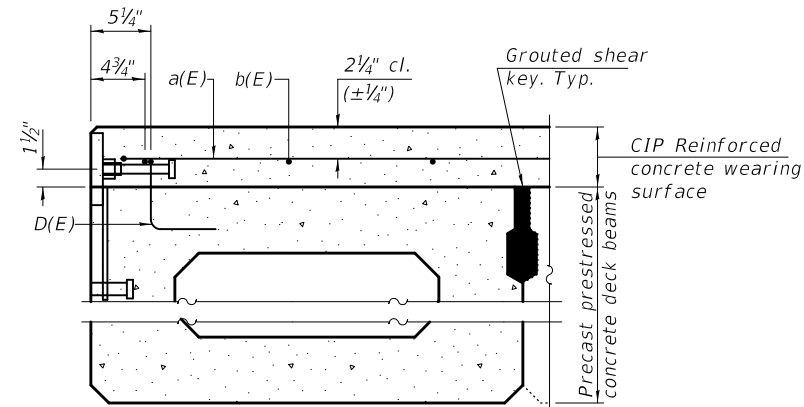
FABRIC BEARING PAD **FABRIC ADJUSTING SHIM**
FIXED

Notes:
All bearing pads shall be 1/2" thick.

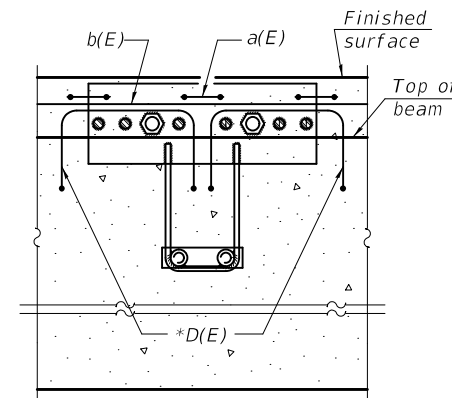


PLAN

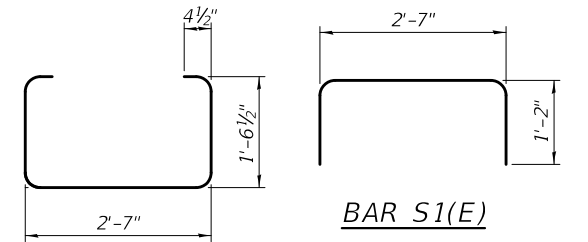
Notes:
Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam.



SECTION THRU FASCIA BEAM

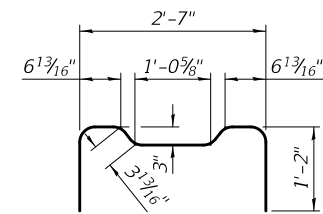


SECTION A-A

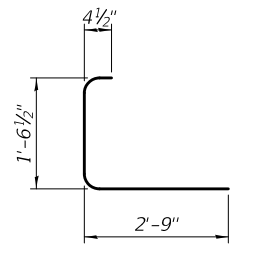


BAR S1(E)

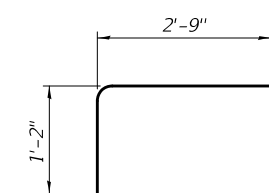
BAR S(E)



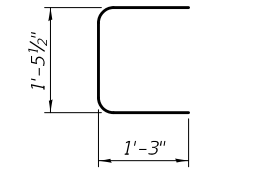
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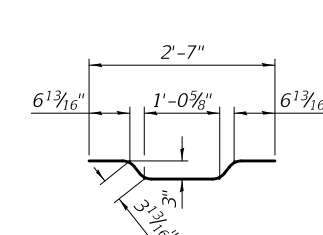
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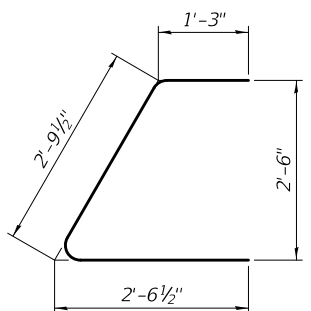
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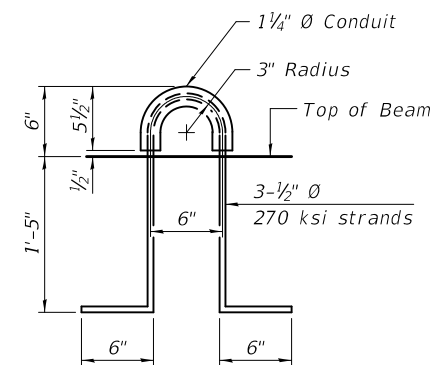
BAR U(E)



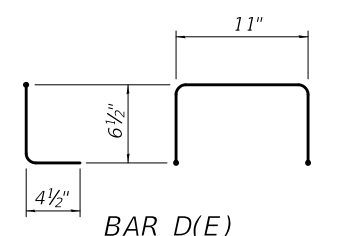
BAR A1(E)



BAR U1(E)



LIFTING LOOP DETAIL

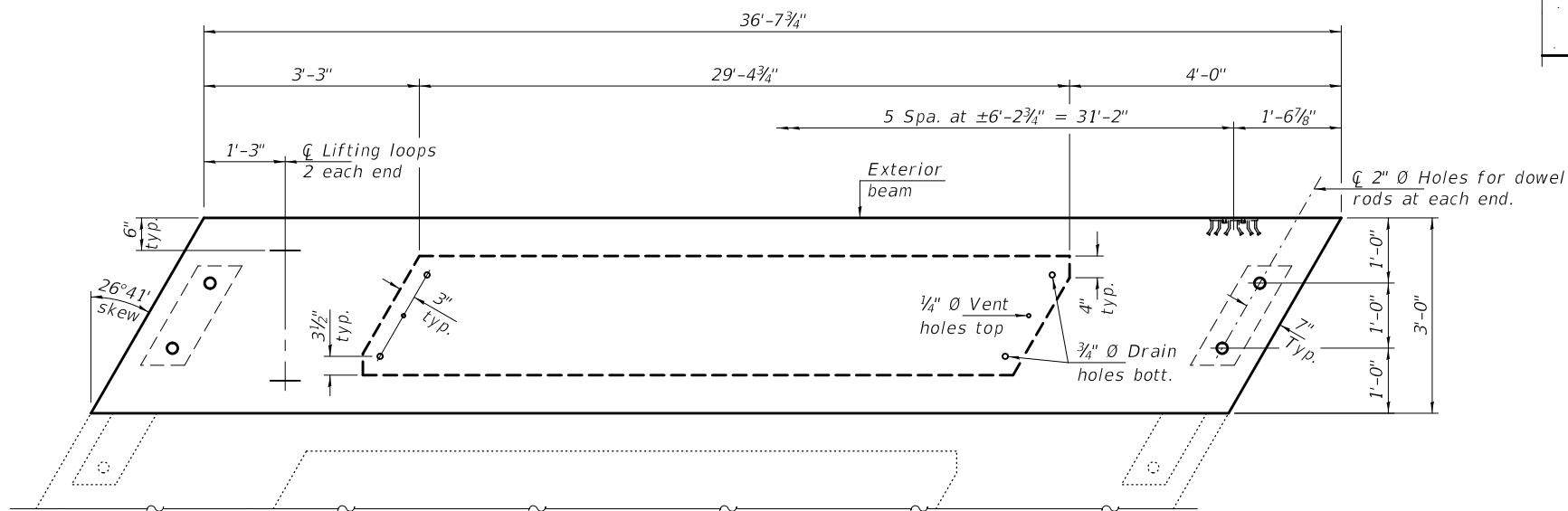


BAR D(E)

* Place 2-#4 D(E) bars in beam at each post location as shown. D(E) bar included in cost of beam.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	110
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PLAN VIEW

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Two 1/2" fabric adjusting shims of the dimensions of shown pad shall be provided for each bearing pad location. A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi. Cost of reinforcement and accessories cast into the beam, of bearing pads, of grouting longitudinal shear keys, and of dowel rods is included in the unit price bid for "Precast Prestressed Concrete Deck Beams".

DESIGNED - ATH
CHECKED - JSB
DRAWN - daburdell
CHECKED - ATH JSB

EXAMINED
PASSED
ENGINEER OF STRUCTURAL SERVICES
ENGINEER OF BRIDGES AND STRUCTURES

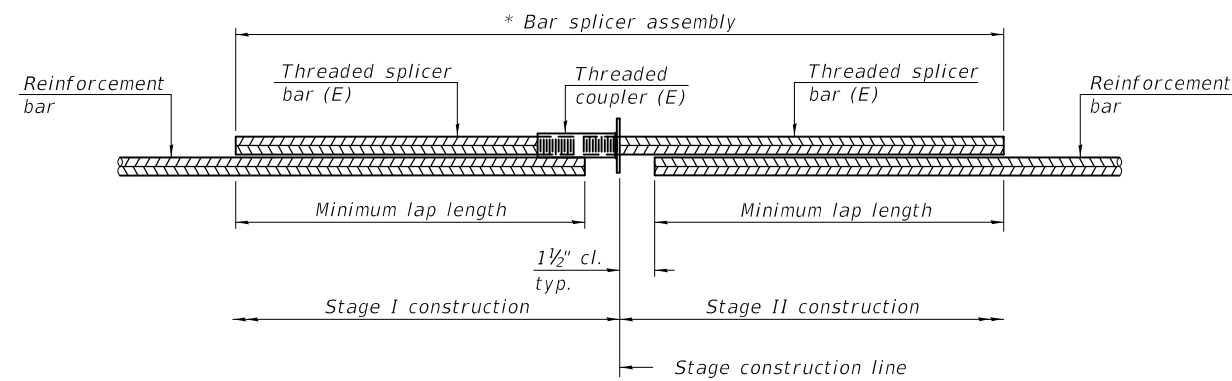
DATE - MAY 8, 2020
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

21" x 36" PPC DECK BEAM DETAILS
SN 098-0054

SHEET NO. 6 OF 8 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2192	D2 BRR 2020-2	WHITESIDE	12	10
CONTRACT NO. 64P39				
ILLINOIS FED. AID PROJECT				

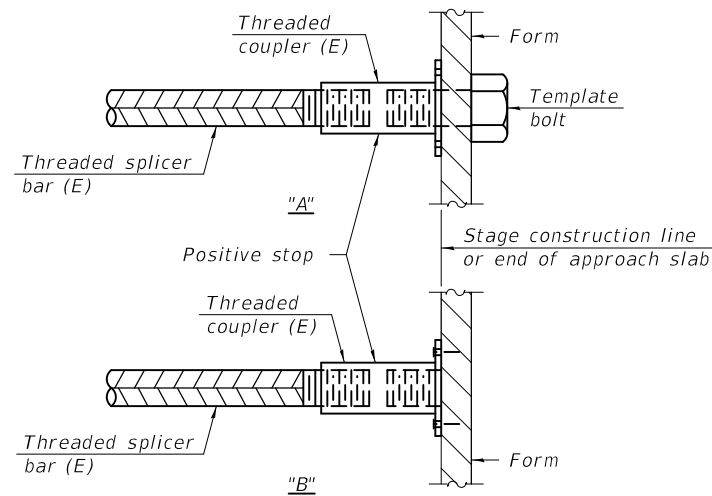


STANDARD BAR SPLICER ASSEMBLY PLAN
 (All components shall be provided from one supplier)

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

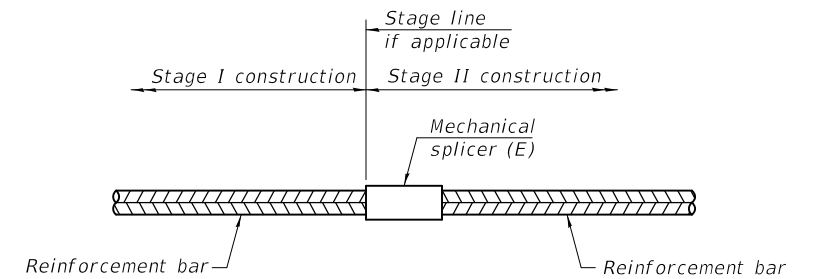


INSTALLATION AND SETTING METHODS

"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
C.W.S.	#5	42

Notes:

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

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

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

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

BSD-1

1-1-2020

DESIGNED - ATH	EXAMINED	DATE - MAY 8, 2020
CHECKED - JSB	<i>Timothy A. Daburdell</i> ENGINEER OF STRUCTURAL SERVICES	REVISED -
DRAWN - daburdell	PASSED	REVISED -
CHECKED - ATH JSB	<i>Carl R. Berger</i> ENGINEER OF BRIDGES AND STRUCTURES	

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

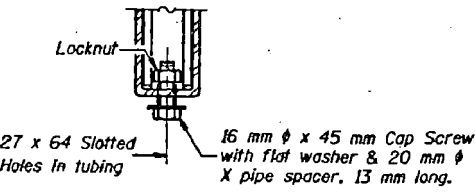
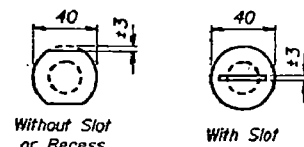
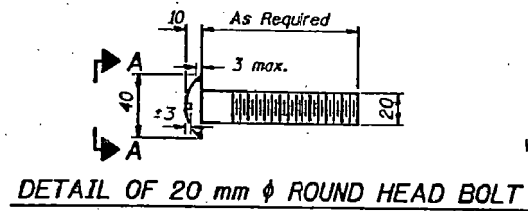
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 SN 098-0054

SHEET NO. 7 OF 8 SHEETS

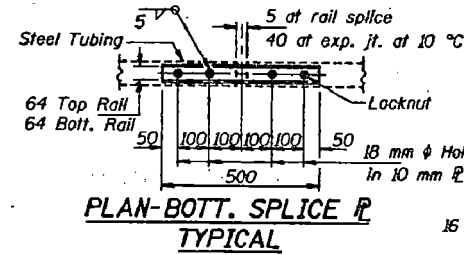
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2192	D2 BRR 2020-2	WHITESIDE	12	11
CONTRACT NO. 64P39				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

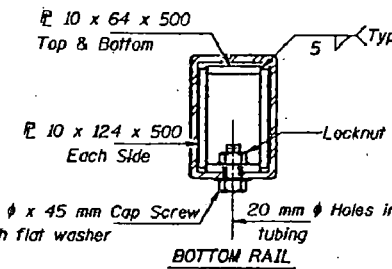
PROJECT NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
FAS 2192		WHITESIDE	335	76
TOTAL SHEETS				10 SHEETS



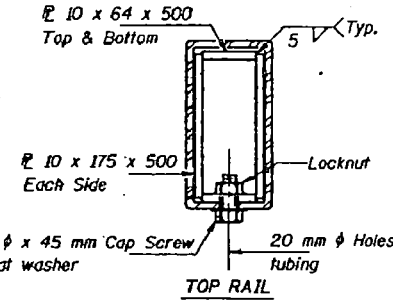
RAIL SPLICE CONNECTION
AT EXPANSION JT.



PLAN-BOTT. SPLICE R
TYPICAL

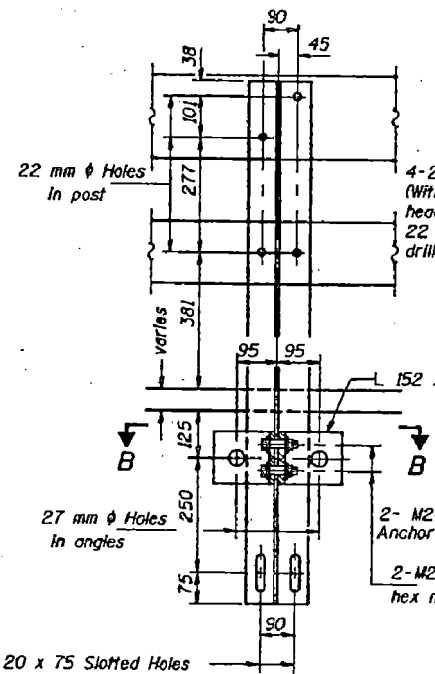


BOTTOM RAIL

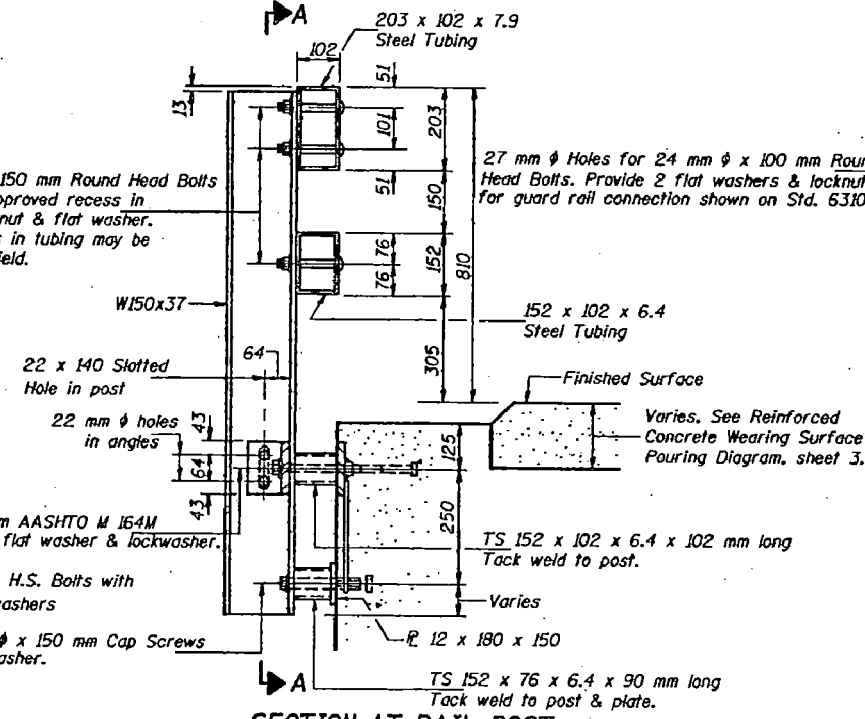


TOP RAIL

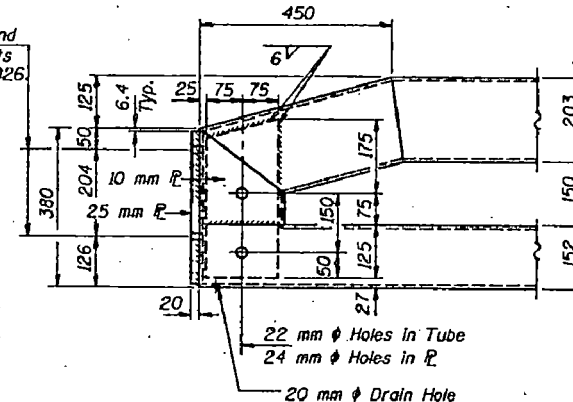
SECTIONS AT RAIL SPLICE



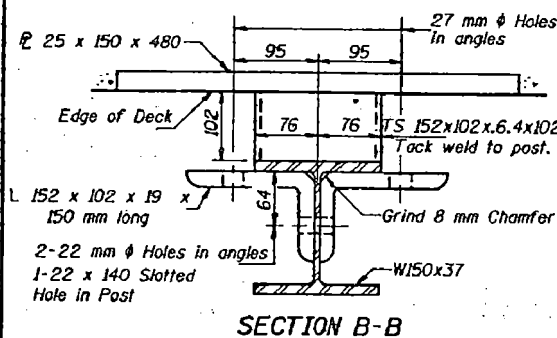
SECTION A-A



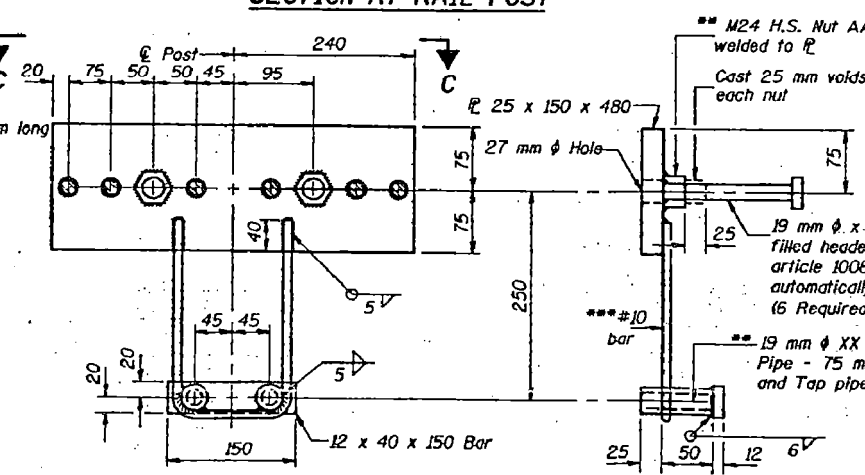
SECTION AT RAIL POST



END OF RAIL DETAILS

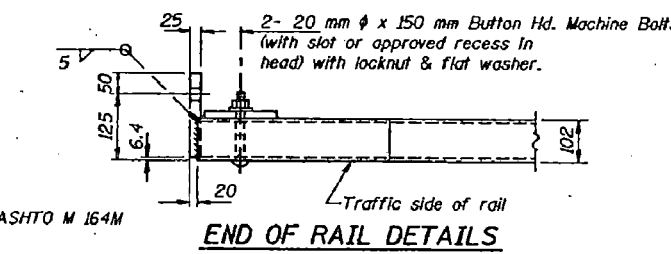


SECTION B-B



ANCHOR DEVICE

*** Whenever the lower insert assemblies interfere with strand locations, the #10 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 12 mm.



VIEW C-C

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 20 N·m at -18 °C.
All other steel shapes and plates shall conform to the requirements of AASHTO M 270M, Grade 250 except posts and angles shall conform to AASHTO M 270M, Grade 345.
Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164M.
All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.
All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.
Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per meter for STEEL BRIDGE RAIL, TYPE SM.
All field drilled holes shall be coated with an approved zinc rich paint before erection.
For multi-span bridges, sufficient 6 x 150 x 350 galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL BRIDGE RAIL, TYPE SM.
The 12 x 180 x 150 plates that come in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 3 mm fabric bearing pads between the plates and concrete.
The M20 high strength bolts used to connect the 152 x 102 x 19 angles to the post shall be tightened according to Article 505.04(f)(3) of the Standard Specifications. The M24 high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 16 mm φ cap screws in bottom of posts shall be tightened to a snug fit only.
All dimensions are in millimeters (mm) except as noted.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Bridge Rail, Type SM	m	72.5

TYPE SM
STEEL BRIDGE RAIL SIDE MOUNTED
F.A.S. RTE. 2192 - SEC. 140W&RS-1
AND 141W&RS-3
WHITESIDE COUNTY
STATION 14+193.628

FOR
INFORMATION
ONLY

DESIGNED E.J.C.
CHECKED C.M.E.
DRAWN Becky M. Leach
CHECKED E.J.C. & C.M.E.
March 14, 2000
EXAMINED *Thomas J. Donoghue*
PASSED *Robert E. Carlson*
R-34 (M) 4-30-99 (1.9 m Maximum Post Spacing)