78033 POPE D&R #113

8-1-08 Letting, Item 112

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	111BR-1 & 111BR-2	POPE	69	1
FED. ROAD DIST. NO. 7	ILLINOIS	CONTRACT NO. 78033		

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3

100%
11-12-2009

AS BUILT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

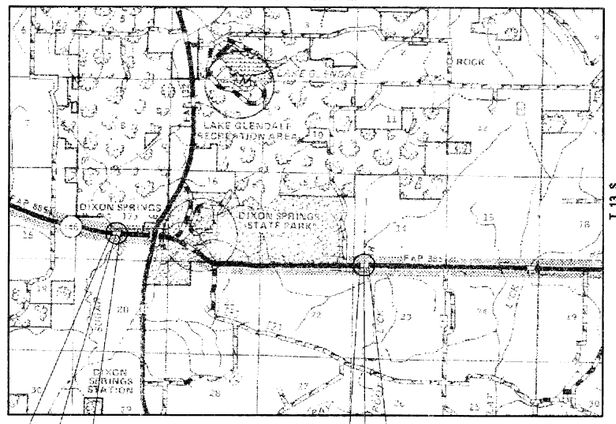
PROPOSED HIGHWAY PLANS

FAP ROUTE 885 (IL ROUTE 146)
SECTIONS 111BR–1, 111BR–2
PROJECT : BHF-0885(039)
POPE COUNTY

C–99–013–08

PPC DECK BEAM SUPERSTRUCTURE REPLACEMENTS
OVER SUGAR CREEK AND ROOT LICK BRANCH

R. 5 E. – 3RD PM



SECTION 111BR–1 BEGINS
STATION 669+45.00

SECTION 111BR–1
S.N. 076–0006
STATION 671+76.00
REMOVAL AND REPLACEMENT OF
EXISTING SUPERSTRUCTURE
OF A TWO SPAN BRIDGE
91'–8" BK. TO BK. ABUTMENTS

SECTION 111BR–1 ENDS
STATION 674+15.00

SECTION 111BR–2 ENDS
STATION 819+90.00

SECTION 111BR–2
S.N. 076–0008
STATION 818+03.50
REMOVAL AND REPLACEMENT OF
EXISTING SUPERSTRUCTURE
OF A SINGLE SPAN BRIDGE
44'–9" BK. TO BK. ABUTMENTS

SECTION 111BR–2 BEGINS
STATION 816+05.00

D–99–013–08

LOCATION OF SECTION INDICATED THUS: –

FAP ROUTE 885
FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL (NON–URBAN)
DESIGN SPEED: 55 MPH
POSTED SPEED: 55 MPH
ADT: 1,290 (2007), 2,160 (2007)
PV: 84%, 84%
TRUCKS: 16%, 16%

DESIGN DESIGNATION
N.A.

100' 200' 300' — 1" = 100'
0 10' 20' 30' — 1" = 10'
0 50' 100' — 1" = 50'
0 50' 100' — 1" = 40'
0 50' 100' — 1" = 30'
0 50' 100' — 1" = 20'

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

DAVID W. PETERMEIER
062-052553
LICENSED PROFESSIONAL ENGINEER
OF
ILLINOIS

David W. Petermeier 4/23/08
DAVID W. PETERMEIER
EDWARDSVILLE, ILLINOIS
ENGINEER NO. 062–052553
EXPIRES NOV. 30, 2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED May 1 20 08
Marc C. Ramirez
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
June 27, 2008
Erin E. Harrold
Interim ENGINEER OF DESIGN AND ENVIRONMENT
June 27, 2008
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

DISTRICT 9 NO. (618) 549–2171
PROJECT ENGINEER: DAVID PICHE

TOWNSHIPS: WEBSTER AND COLUMBUS

CONTRACT NO. 78033 076-0006

LOCATION MAPS

TOTAL LENGTH OF SECTION & PROJECT = 855.00 FEET = 0.162 MILES
NET LENGTH OF SECTION & PROJECT = 855.00 FEET = 0.162 MILES

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

APRIL 2008

Bench Mark: Chiseled square in S.E. headwall of SN 076-0006, Elevation 368.02.

Existing Structure: The original two-span structure was built in 1929 with a reinforced concrete deck girder on reinforced concrete closed abutments and pier with a length of 90'-5½" back-to-back of abutments. The structure was rehabilitated in 1981. The superstructure was replaced with P.P.C. deck beam with a total width of 33'-0" out-to-out of superstructure and substructure was modified accordingly.

Proposed Improvements: The existing superstructure is to be replaced with P.P.C. deck beams and a HMA surface course and waterproofing. Minor substructure repairs are required. Traffic to be maintained at all times utilizing stage construction.

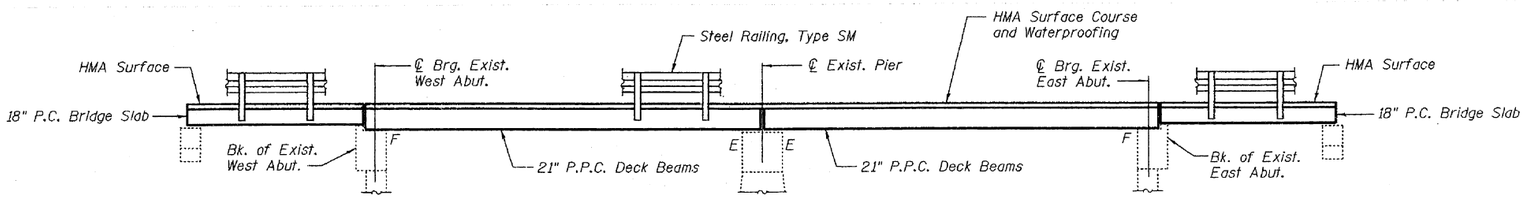
No Salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

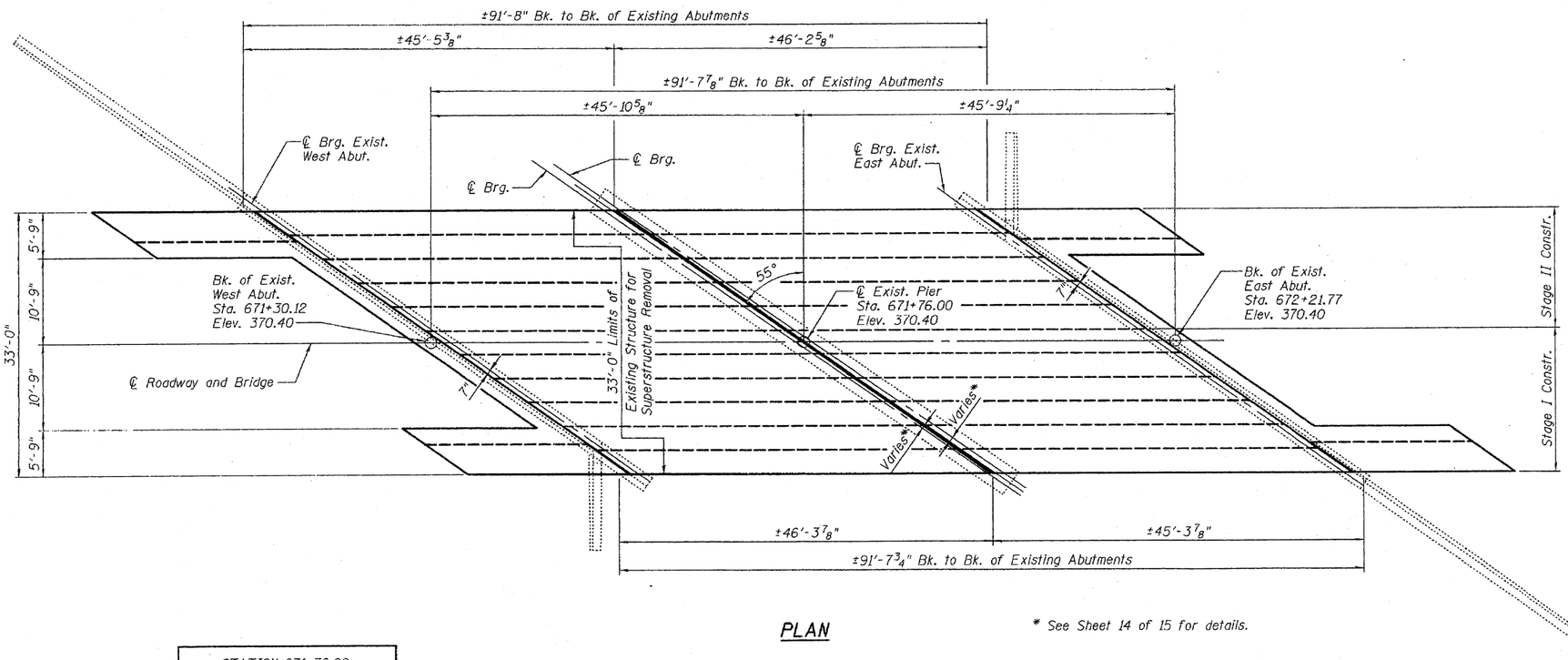
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	12
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 1
15 SHEETS

Contract #78033



ELEVATION



PLAN

* See Sheet 14 of 15 for details.

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications, 4th Edition

LOADING HL-93

No allowance for Future Wearing Surface.

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS

f'_c = 6,000 psi
f'_{ci} = 5,000 psi
f_{pu} = 270,000 psi (½"ϕ low lax. strands)
f_{pbt} = 201,960 psi (½"ϕ low lax strands)

PRECAST UNITS

f'_c = 4,500 psi
f_y = 60,000 psi (Reinforcement)

LOCATION SKETCH

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

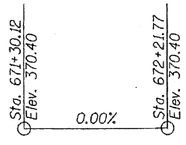
DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

04/22/08

STATION 671+76.00
REBUILT 200_ BY
STATE OF ILLINOIS
F.A.P. RT. 885 SEC. 111BR-1
LOADING HL93
STR. NO. 076-0006

NAME PLATE
See Std. 515001

Notes:
Existing name plate shall be cleaned and relocated adjacent to the new name plate. Cost included with Name Plates.
Locate name plates at outside face of top steel railing tube at southwest corner of bridge.



PROFILE GRADE
(Along ℄ Roadway)

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E Anderson (TDP)
ENGINEER OF BRIDGES AND STRUCTURES

DAVID W. PETERMEIER
081-005642
LICENSED STRUCTURAL ENGINEER OF ILLINOIS

David W Petermeier 4/23/08

DAVID W. PETERMEIER
EDWARDSVILLE, ILLINOIS
ILLINOIS LICENSED STRUCTURAL
ENGINEER NO. 081-005642
EXPIRES NOV. 30, 2008

GENERAL PLAN AND ELEVATION
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	13
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
15 SHEETS

Contract #78033

SCOPE OF WORK

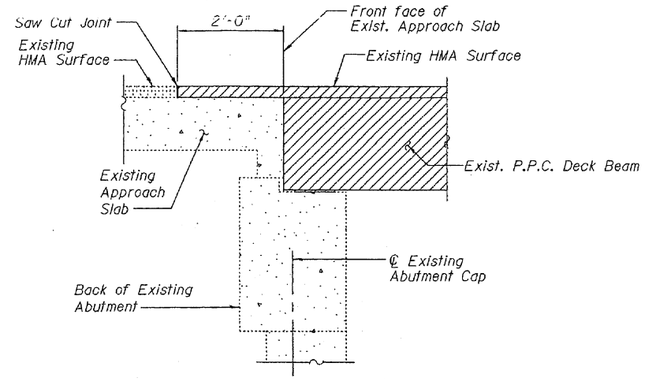
1. Remove existing surface, steel railing, deck beams, approach shoulder channel beams, and bearing pads.
2. Repair bearing seats and perform other repairs at abutments and pier as required.
3. Reconstruct a two-span P.P.C. deck beam superstructure with bituminous wearing surface and steel railing, Type SM. Reconstruct approach shoulders with P.C. bridge slabs with bituminous wearing surface and steel railing, Type SM.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Hot-Mix Asphalt Surface Course, Mix "C", N90	Ton	34	-	34
Removal of Existing Superstructures	Each	1	-	1
Concrete Structures	Cu. Yd.	2.6	-	2.6
Precast Concrete Bridge Slab	Sq. Ft.	299	-	299
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	2,921	-	2,921
Reinforcement Bars, Epoxy Coated	Pound	360	-	360
Bar Splicers	Each	6	-	6
Steel Railing, Type SM	Foot	258	-	258
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	58	-	58
Waterproofing Membrane System	Sq. Yd.	352	-	352
Concrete Sealer	Sq. Ft.	-	26	26
Epoxy Crack Injection	Foot	-	31	31
Removal of Existing Precast Concrete Units	Sq. Ft.	299	-	299
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	-	26	26
Asbestos Bearing Pad Removal	Each	-	52	52

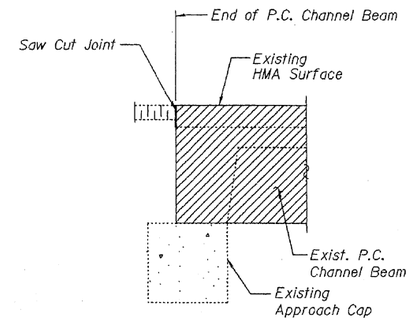
GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. Plan dimensions and details relative to existing plans are subject to routine 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 based upon the unit price bid for the work.
4. Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.
5. Concrete Sealer shall be applied to the abutments and pier where concrete repairs are performed.
6. No in-stream work will be allowed on this project.
7. The Contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal and replacement of the superstructure.
8. If the Contractor's procedures for existing beam removal or placement of new beams involves placement of heavy equipment on the new deck beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, sealed by an Illinois Licensed Structural Engineer, verifying the structural adequacy of the beams for the proposed loads. Cost included with Precast Prestressed Concrete Deck Beams (21" Depth).
9. The minimum thickness of the HMA surface course shall be $1\frac{1}{2}$" and varies as required to adjust for the existing profile grade and beam camber.
10. Repair of the substructure shall be completed prior to placement of the new deck beams.



SECTION AT CENTERLINE ROADWAY

Note:
Horizontal dimension shown is at right angles to beam ends.



SECTION AT APPROACH SHOULDER

LIMITS OF EXISTING STRUCTURE FOR SUPERSTRUCTURE REMOVAL

Notes:
HMA removal over approach slab included in the cost of Removal of Existing Superstructures.
HMA removal over approach shoulder channel beam and removal of P.C. channel beams included in the cost of Removal of Existing Precast Concrete Units.
Existing bearing pads at pier are made of graphited asbestos. The Contractor shall take appropriate precautions during the removal and disposal of these bearing pads.

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/18/08

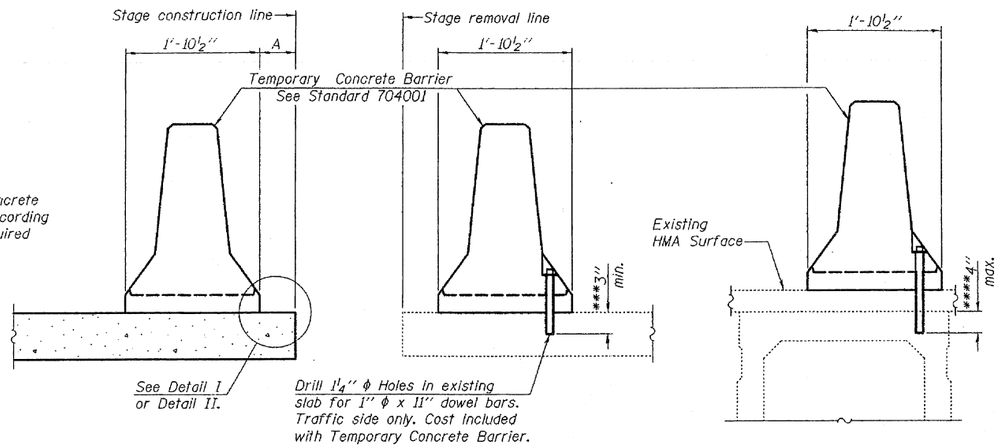
GENERAL STRUCTURE DATA
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	15
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 4
15 SHEETS

Contract #78033



NEW SLAB | EXISTING SLAB | EXISTING DECK BEAM

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel ℙ to the concrete slab or concrete wearing surface with 2-⅝"ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier.

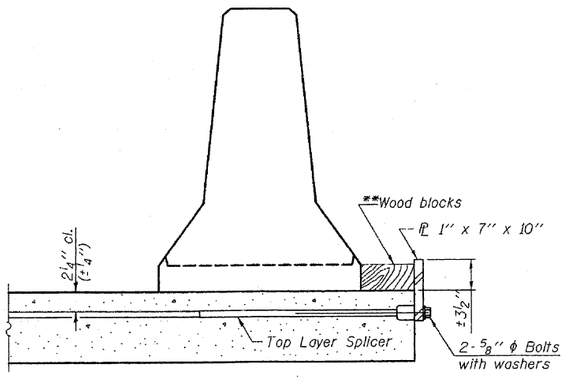
The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

See Roadway Plans for quantity of Temporary Concrete Barrier.

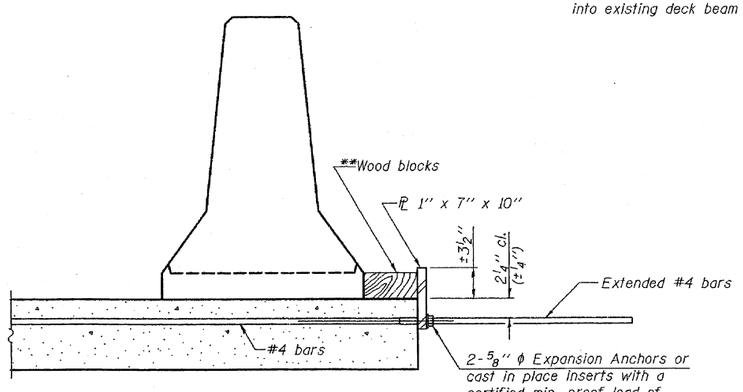
SECTIONS THRU SLAB OR DECK BEAM

***Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

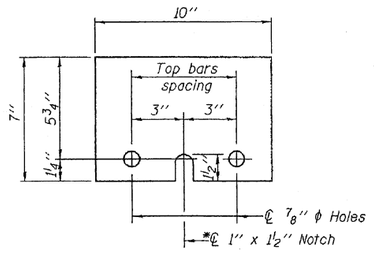
****If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER ℙ 1" x 7" x 10"

* Required only with Detail II

**Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

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Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/18/08

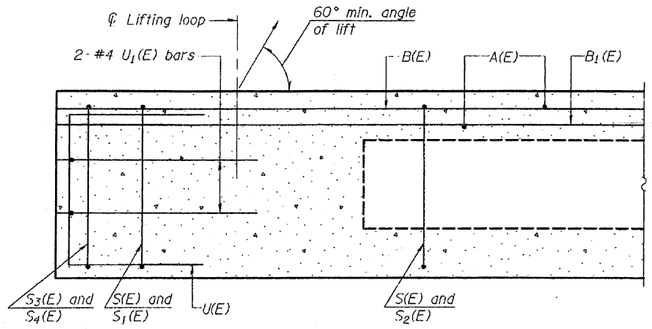
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION ILL. ROUTE 146 OVER SUGAR CREEK F.A.P. ROUTE 885 - SECTION 111BR-1 POPE COUNTY STATION 671+76.00 STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

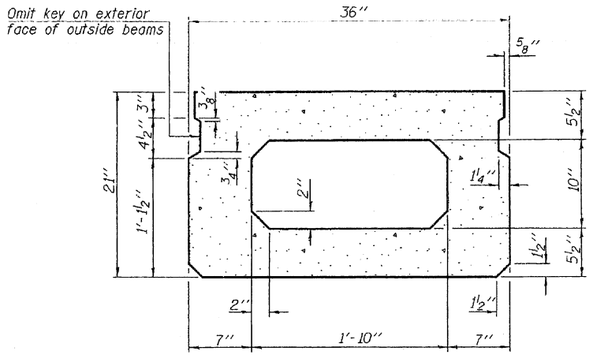
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	16
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
15 SHEETS

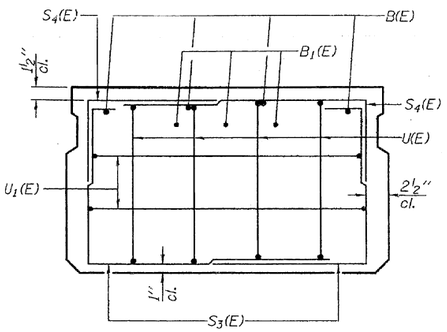
Contract #78033



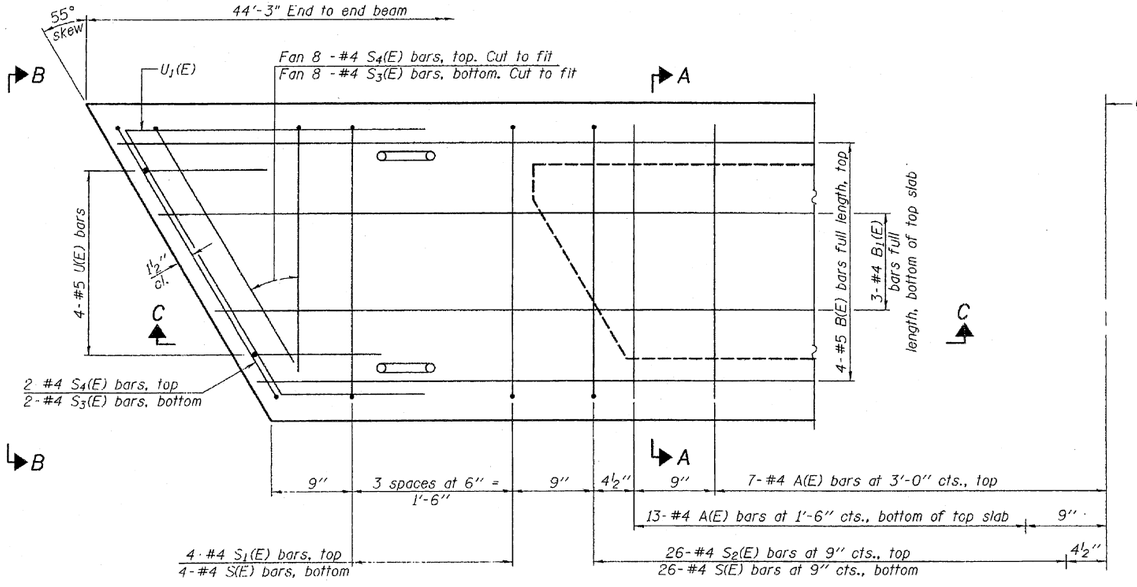
SECTION C-C



SECTION A-A
(Showing dimensions)



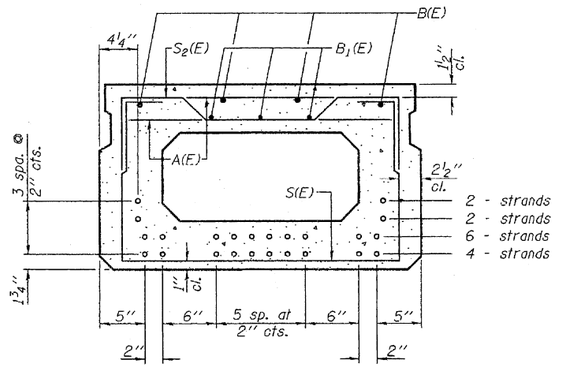
VIEW B-B



PLAN VIEW AT FIXED END

See sheet 6 of 15 for Expansion End Detail.

Note: Spacing of S(E) and $S_2(E)$ 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.



SECTION A-A
(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.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	39	#4	2'-7"	—
B(E)	4	#5	43'-1"	—
$B_1(E)$	3	#4	43'-1"	—
C(E)	5	#5	2'-8"	⊂⊃
E(E)	3	#5	2'-0"	⌐
S(E)	57	#4	6'-5"	⊔
$S_1(E)$	5	#4	5'-7"	⊓
$S_2(E)$	52	#4	5'-10"	⊓
$S_3(E)$	20	#4	6'-5"	⊔
$S_4(E)$	20	#4	6'-0"	⊔
$S_5(E)$	4	#4	5'-8"	⊔
$S_6(E)$	4	#4	5'-3"	⊔
U(E)	4	#5	4'-0"	⊏
$U_1(E)$	4	#4	10'-5"	◺
$U_2(E)$	4	#5	3'-3"	⊏

Notes: See sheet 6 and 7 of 15 for additional details.
See sheet 7 of 15 for Bill of Material.

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/18/08

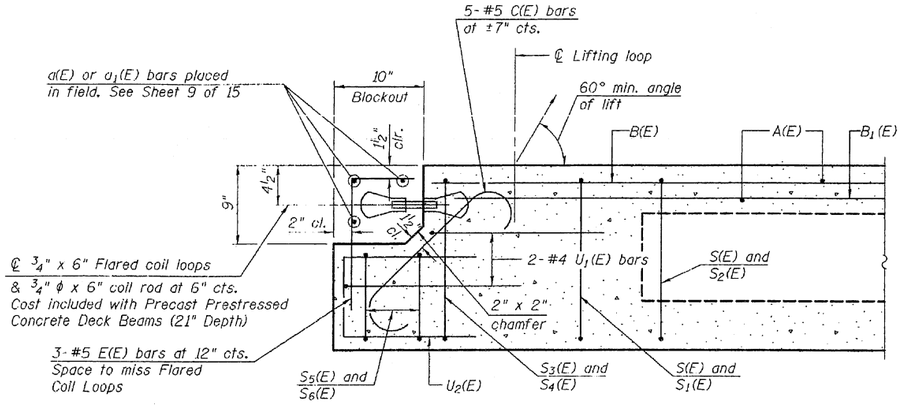
21" X 36" DECK BEAM
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	17
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

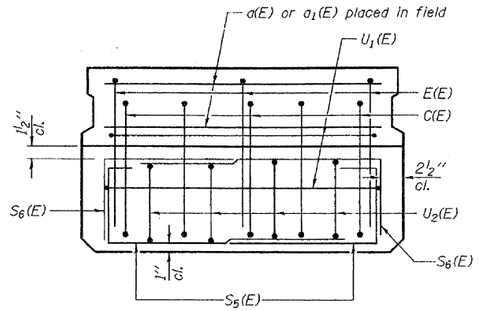
SHEET NO. 6
15 SHEETS

Contract #78033



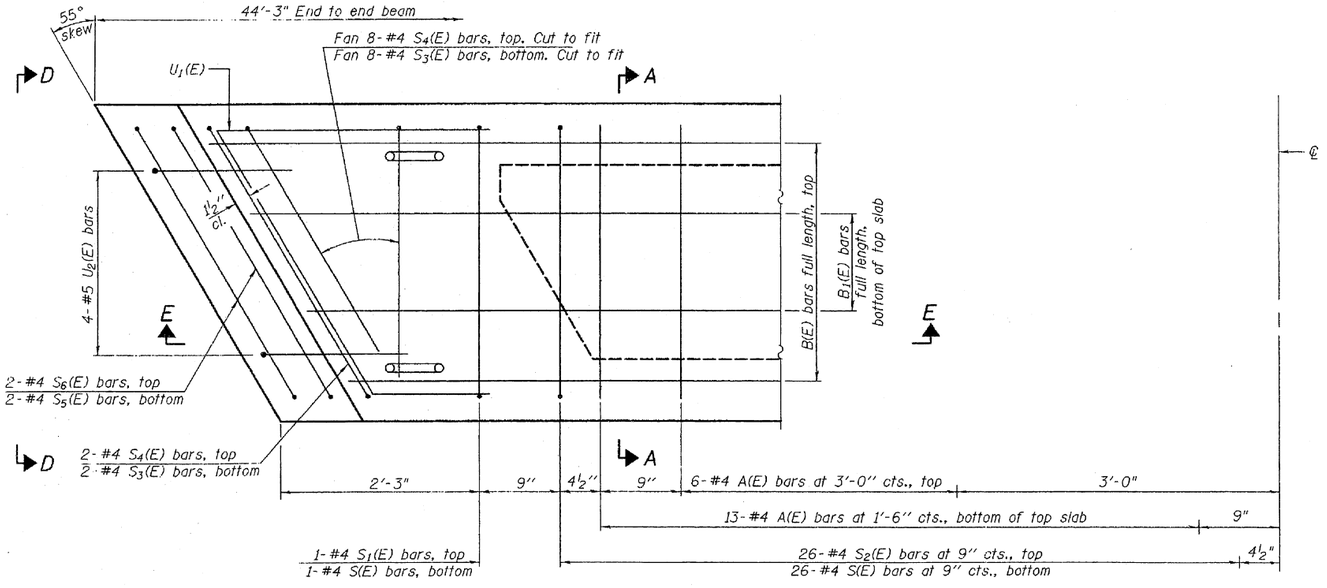
SECTION E-E

Horizontal dimensions at right angles.



VIEW D-D

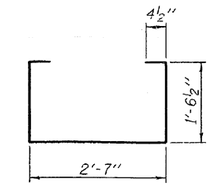
B(E), B_1(E), S_3(E) and S_4(E) bars not shown, see Sheet 5 of 15.



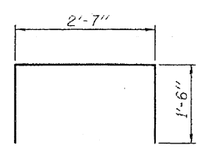
PLAN VIEW AT EXP. END

See Sheet 5 of 15 for Section A-A

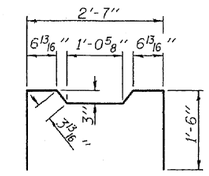
Note: Spacing of S(E) and S_2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



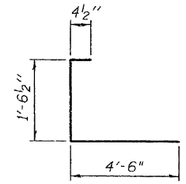
BAR S(E)



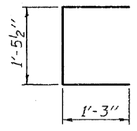
BAR S_1(E)



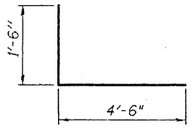
BAR S_2(E)



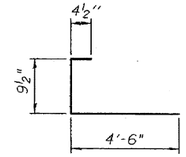
BAR S_3(E)



BAR U(E)



BAR S_4(E)



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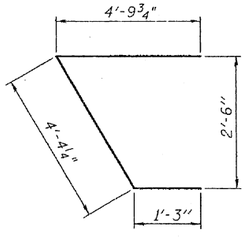
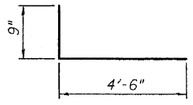


BAR U_1(E)



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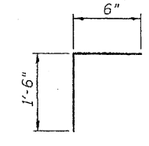
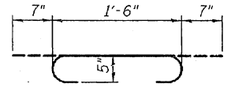
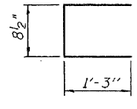


BAR E(E)



BAR C(E)



BAR U_2(E)

Notes: See sheet 5 of 15 for Bar List.
See sheet 7 of 15 for Bill of Material.

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/18/08

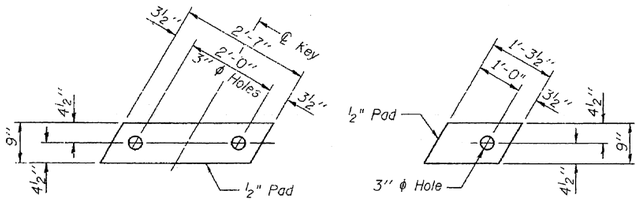
21" X 36" DECK BEAM DETAILS - 1
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	18
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 7
15 SHEETS

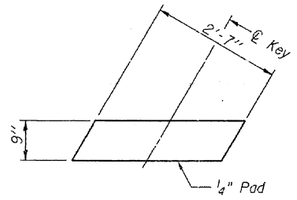
Contract #78033



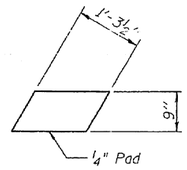
FABRIC BEARING PAD
(Interior)
(18 Required)

FABRIC BEARING PAD
(Exterior and Stage Constr. Line)
(8 Required)

FIXED

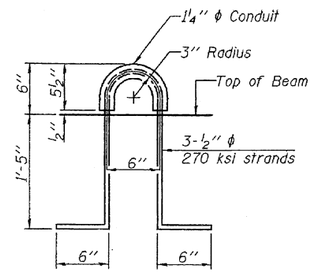


FABRIC BEARING PAD
(Interior)
(36 Required)

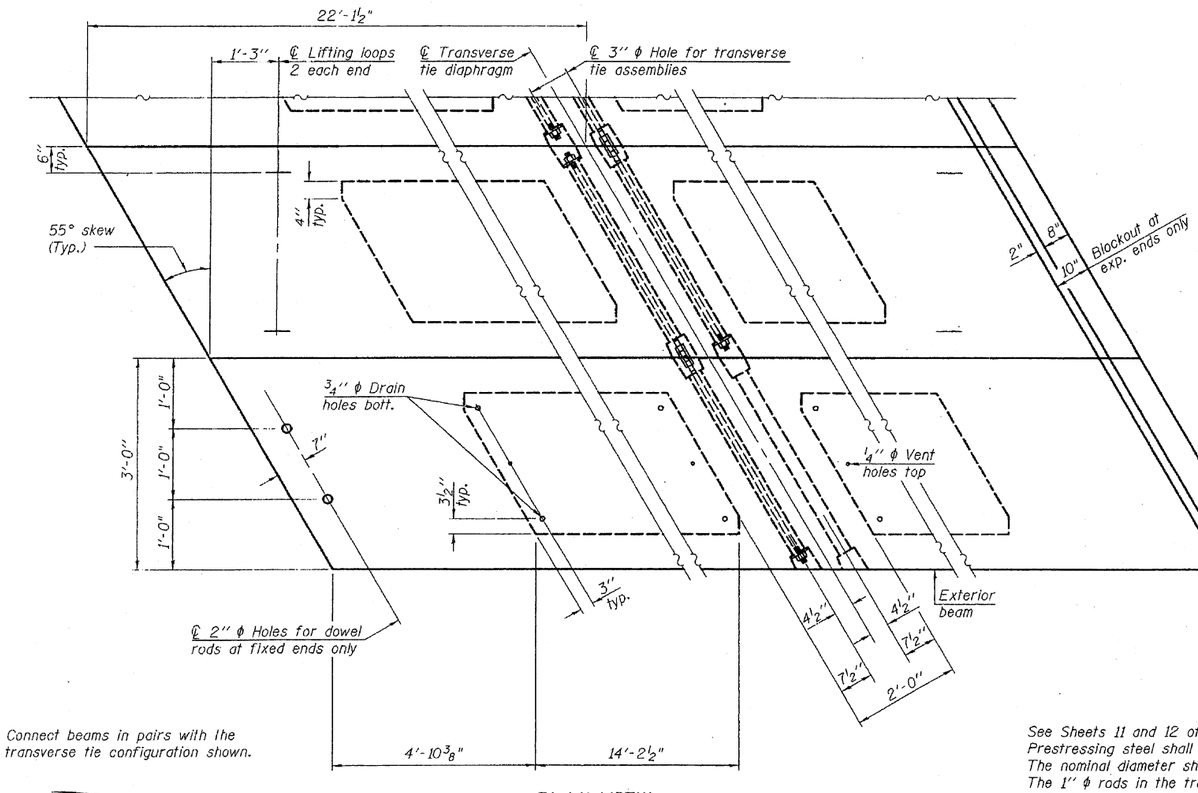


FABRIC BEARING PAD
(Exterior and Stage Constr. Line)
(16 Required)

EXPANSION

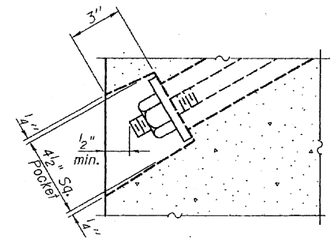


LIFTING LOOP DETAIL

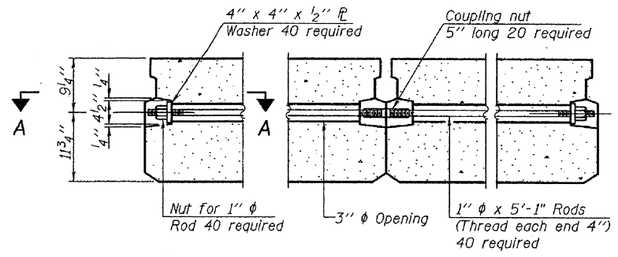


PLAN VIEW

Note: Connect beams in pairs with the transverse tie configuration shown.



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

NOTES

See Sheets 11 and 12 of 15 for fascia beam modifications for rail post anchorage.
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.
The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.
Lifting loops shall be burned off after beams have been erected.
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 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.
The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" Depth)	Sq. Ft.	2,921

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

04/29/08

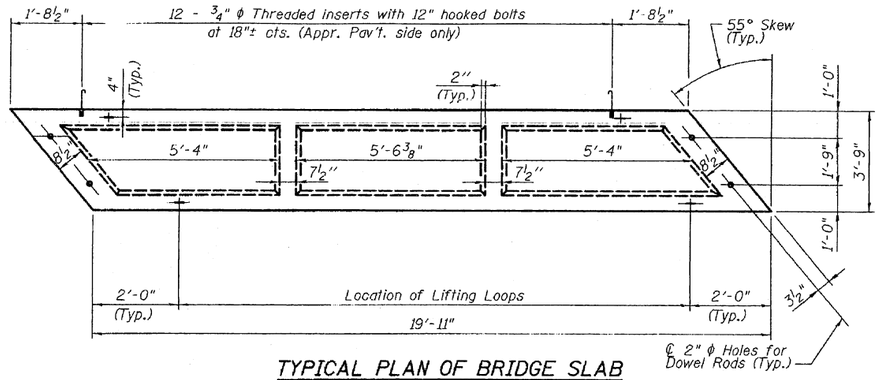
21" X 36" DECK BEAM DETAILS - 2
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

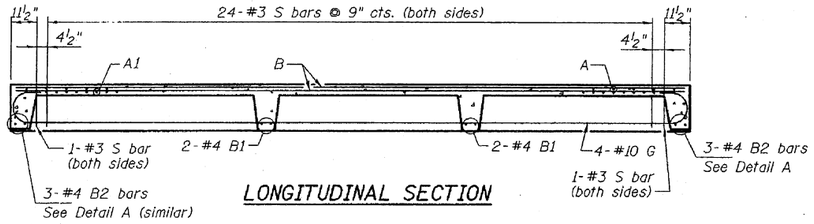
SHEET NO. 8
15 SHEETS

Contract #78033

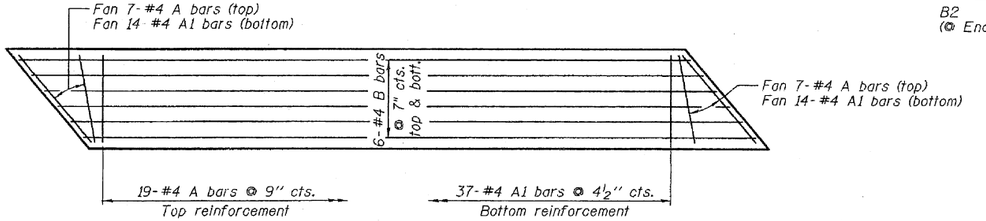


TYPICAL PLAN OF BRIDGE SLAB

(4 Required: 2 Right Hand Units and 2 Left Hand Units)

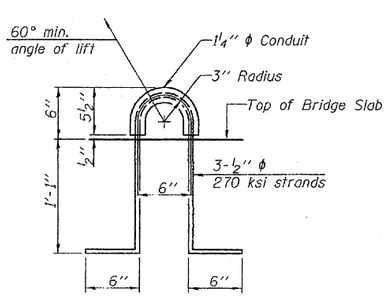


LONGITUDINAL SECTION

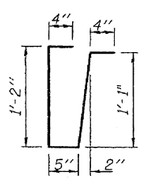


PLAN

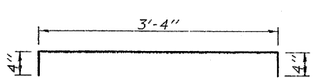
Showing Slab Reinforcement



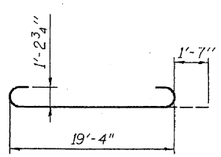
LIFTING LOOP DETAIL



BAR S

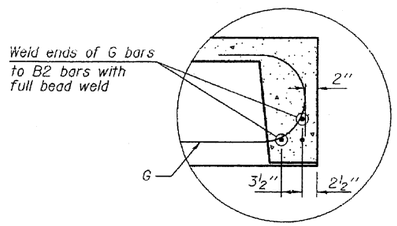


BAR A



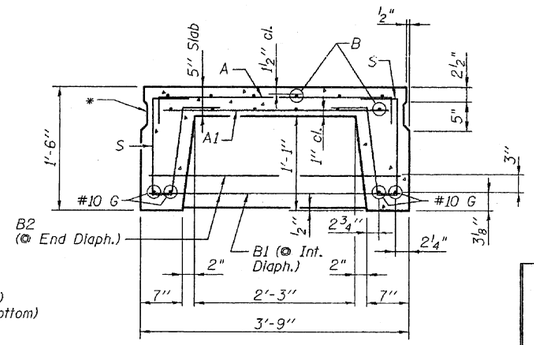
BAR G

Note:
Tack welding of stirrups to bottom longitudinal reinforcement bars will not be permitted except as otherwise authorized in writing by the Engineer.



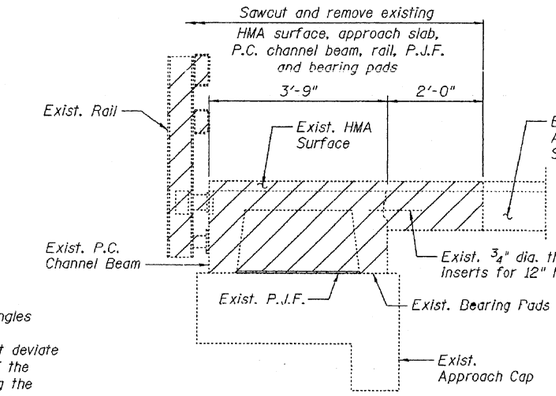
DETAIL A

Notes:
Horizontal dimensions are at right angles to slab ends.
The surface of the member shall not deviate more than 1/1200 of the full length of the member from a straight line connecting the two end points on the member's surface.

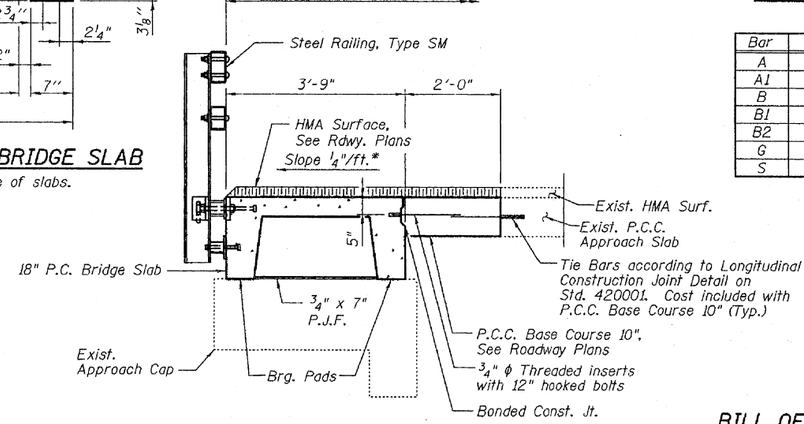


TYPICAL SECTION THRU BRIDGE SLAB

* Omit key on exterior face of slabs.

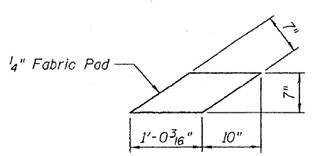


LIMITS OF REMOVAL AT APPROACH SHOULDERS



PROPOSED CROSS SECTION

* Cross slope shown applies to HMA Surface



BEARING PAD

(16 Required)

NOTES

Lifting loops shall be burned off after bridge slabs have been erected.
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Bearing Pad shall be provided for each bearing.
Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of bridge slabs. Cleaning shall be done by sandblasting the keyway areas between the top of the bridge slabs and the bottom edge of the key.
Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast concrete bridge slabs.
See Sheets 11 and 12 of 15 for required modifications for rail anchorage.
The precast concrete bridge slab shall be erected and aligned with the exterior face of the fascia deck beam after deck beams are in final position.
Cost of removing exist. P.C. channel beam, HMA Surface, and rail included with Removal of Exist. Precast Concrete Units. See Roadway Plans for measurements and payment for Approach Slab Removal and Replacement.

BAR LIST
ONE BRIDGE SLAB ONLY

(For information only)

Bar	No.	Size	Length	Shape
A	33	#4	4'-0"	⌐¬
A1	65	#4	3'-3"	—
B	12	#4	19'-4"	—
B1	4	#4	3'-6"	—
B2	6	#4	6'-1"	—
G	4	#10	22'-6"	⊂⊃
S	52	#3	3'-4"	⌐¬

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	299

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

04/22/08

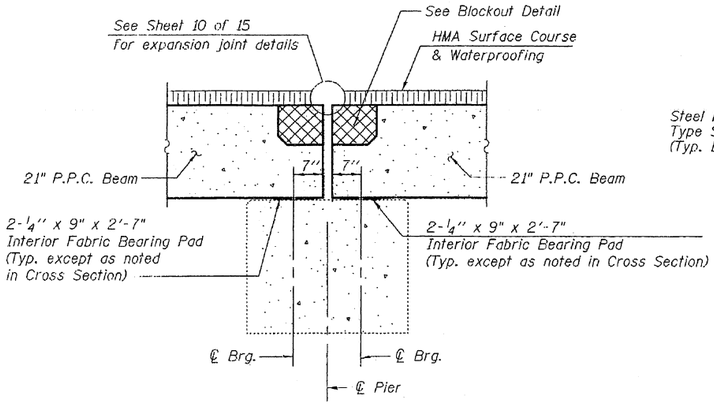
PRECAST CONCRETE BRIDGE SLAB
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

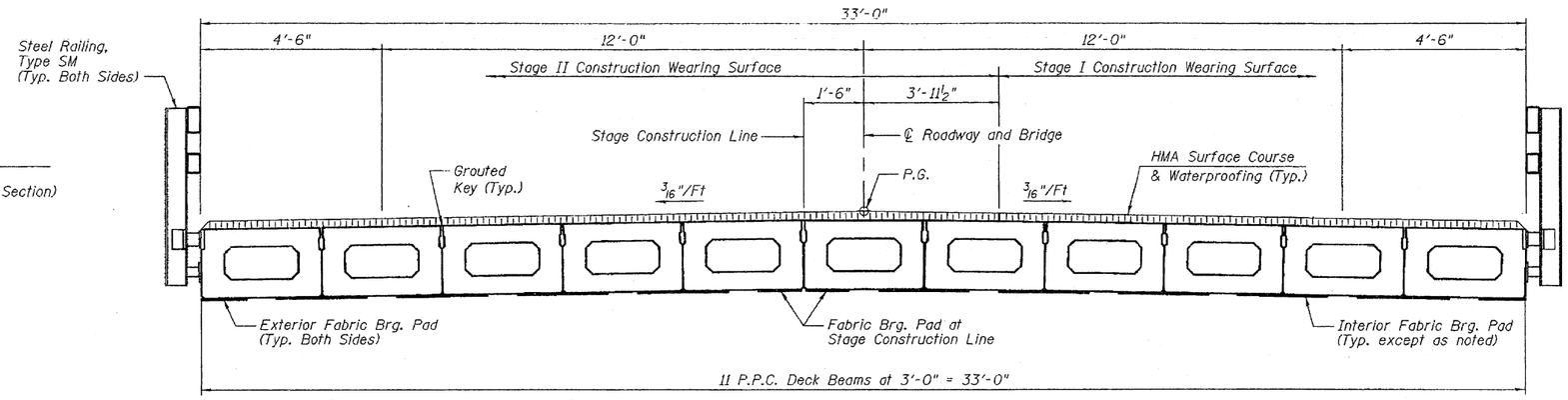
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	20
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 9
15 SHEETS

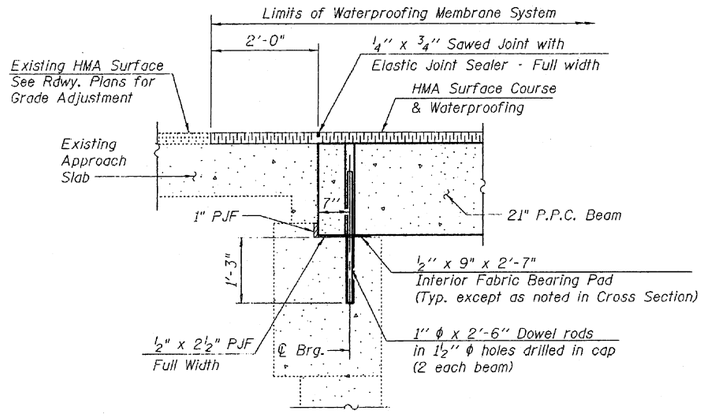
Contract #78033



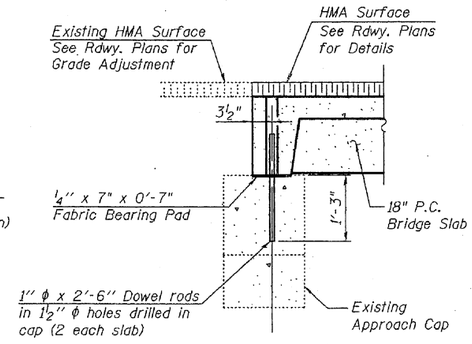
SECTION THRU PIER



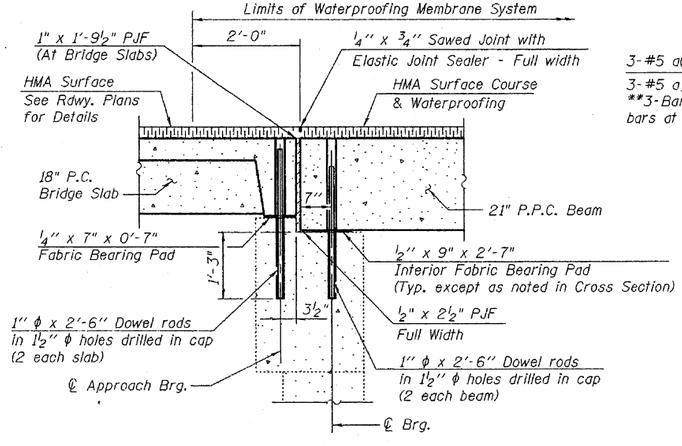
CROSS SECTION
(Looking Upstation)



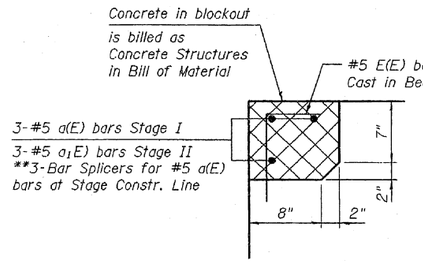
SECTION THRU ABUTMENT AT APPROACH SLAB



SECTION THRU APPROACH CAP



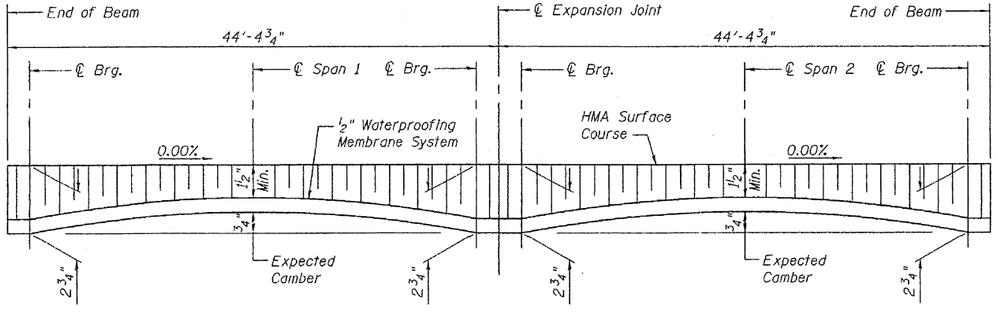
SECTION THRU ABUTMENT AT SHOULDER



BLOCKOUT DETAIL
**At Pier

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	6	#5	31'-2"	——
a1(E)	6	#5	25'-11"	——
Reinforcement Bars, Epoxy Coated			Pound	360
Concrete Structures			Cu. Yd.	2.6
Hot-Mix Asphalt Surface Course, Mix "C", N90			Ton	34
Waterproofing Membrane System			Sq. Yd.	352



HMA WEARING SURFACE PROFILE

Notes: Thickness shown for bridge spans is for all deck beams except the center deck beam.
Thickness for the center deck beam will vary from those shown at beam edges to 5/16" additional at ℄ Roadway.

Notes:
After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
All horizontal dimensions are at right angles to beam ends.
Crosshatched areas to be poured after P.P.C. deck beams are in place and shear keys are grouted and cured.
See Sheets 7 and 8 of 15 for bearing pad details.
See Section 581 of the Standard Specifications for Waterproofing Membrane System.
See Roadway Plans for HMA surface course, Mix "C", N90 mixture requirements. The HMA surface course shall be placed according to Section 582 of the Standard Specifications.

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/18/08

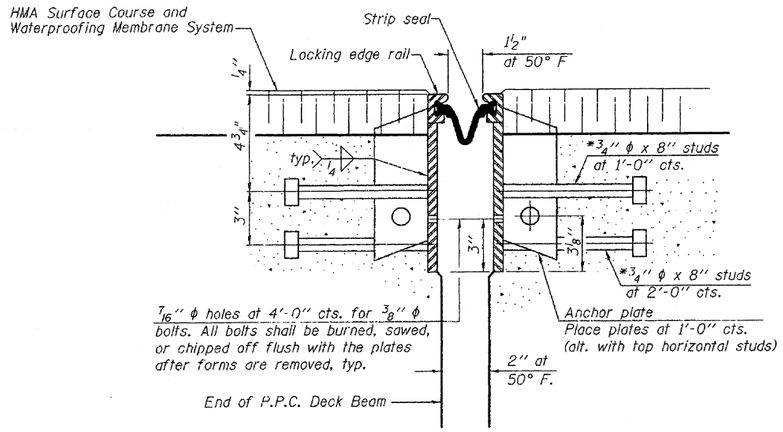
SUPERSTRUCTURE DETAILS
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	21
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 10
15 SHEETS

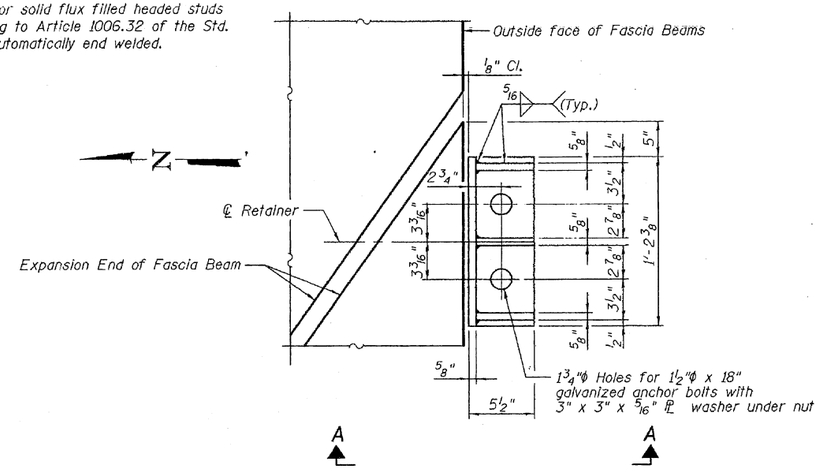
Contract #78033

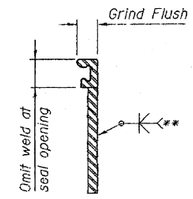
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



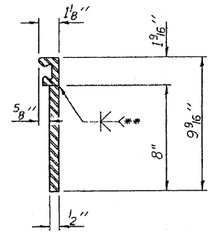
SECTION THRU STRIP SEAL JOINT

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

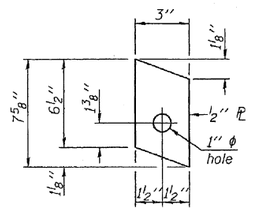




LOCKING EDGE RAIL SPLICE DETAIL



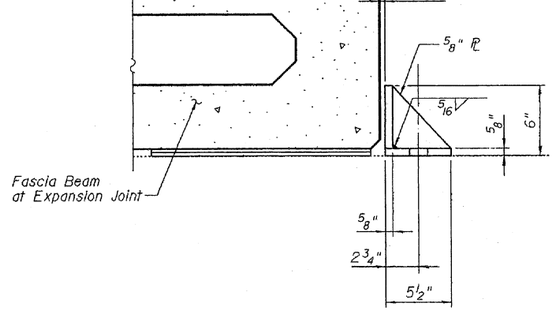
LOCKING EDGE RAIL



ANCHOR ℄

PLAN

(Southwest corner shown, others similar)



SECTION A-A SIDE RETAINER

(4 Required)

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

Notes:
The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "Webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed.
The inside of the Locking Edge Rail groove shall be free of weld residue.
Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.
The manufacturer's recommended installation methods shall be followed.

Notes:
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.
Fill ⅛" gap with shim ℄ to provide temporary lateral support until shear keys have been grouted and block-out has been poured and cured.
Anchor bolts shall be ASTM F1554 Gr. 55 all-thread.
The corresponding specified grade of AASHTO M 314 anchor bolts may be used in lieu of ASTM F1554.
Side retainers, anchor bolts, nuts and washers shall be galvanized according to AASHTO M 111 or M 232 (as applicable).
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Cost of retainer angles, anchor bolts, and accessories are included with Precast Prestressed Concrete Deck Beams (21" Depth).

BILL OF MATERIAL

Item	Unit	Quantity
Preformed Joint Strip Seal	Foot	58

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/18/08

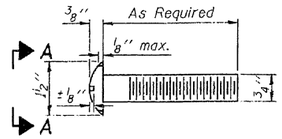
EXPANSION JOINT AND SIDE RETAINER DETAILS
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

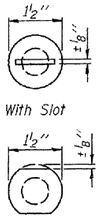
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	22
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
15 SHEETS
Contract #78033

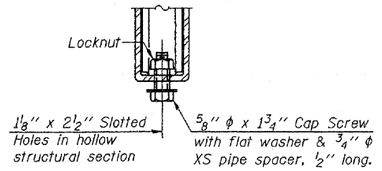
DETAIL OF 3/4" ϕ ROUND HEAD BOLT

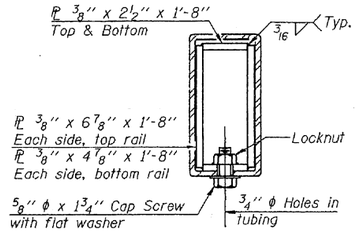




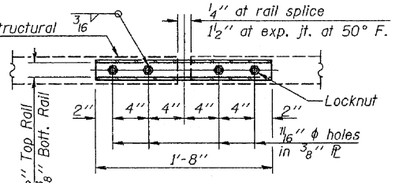
VIEW A-A

RAIL SPLICE CONNECTION AT EXPANSION JT.

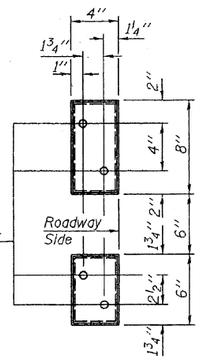




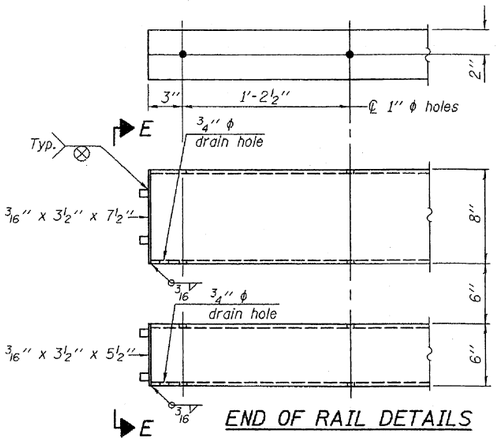
SECTION AT RAIL SPLICE



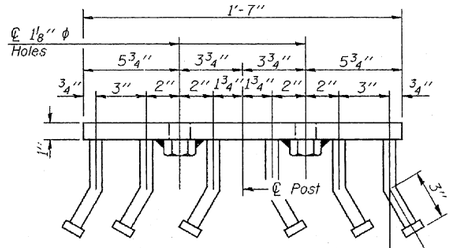
PLAN-BOTT. SPLICE ℄ TYPICAL



VIEW E-E

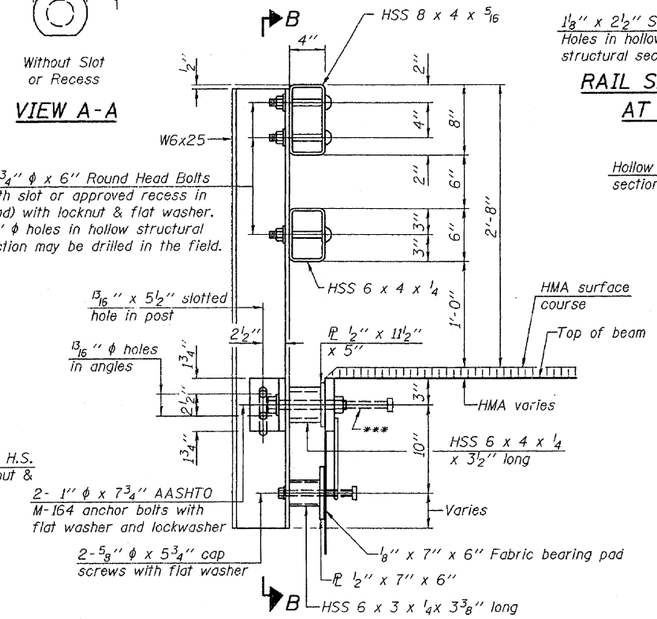


END OF RAIL DETAILS

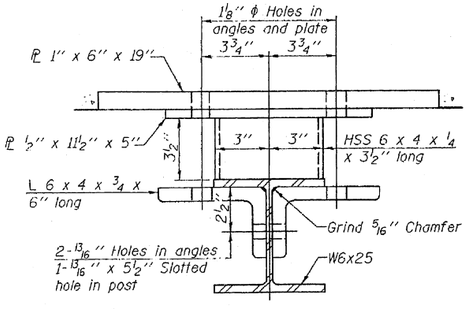


VIEW D-D

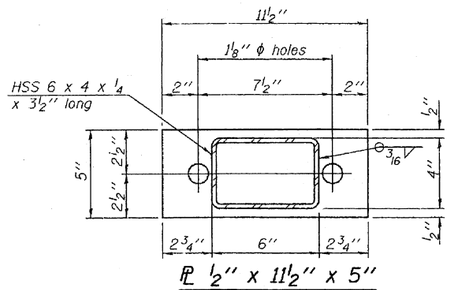
SECTION B-B



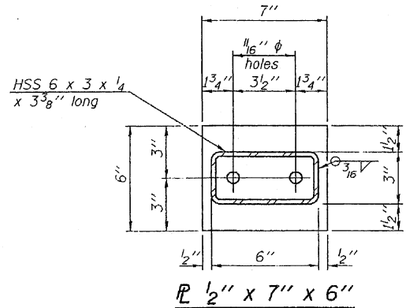
SECTION AT RAIL POST



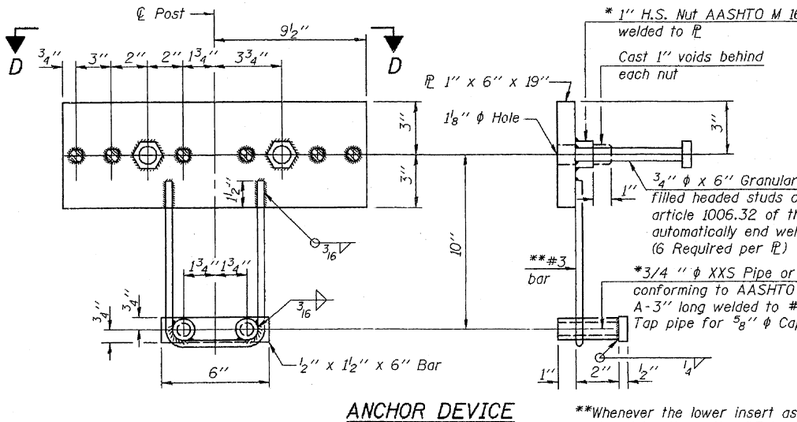
SECTION C-C



℄ 1/2" x 11 1/2" x 5"



℄ 1/2" x 7" x 6"



ANCHOR DEVICE

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

**Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".

Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.
All steel rail members 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.
See Sheet 12 of 15 for rail post locations.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	258

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Consulting Engineers
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DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

R-34HMAWS 9-3-07

(6'-3" Maximum Post Spacing) (1 1/4" minimum to 3 1/8" maximum HMA thickness)

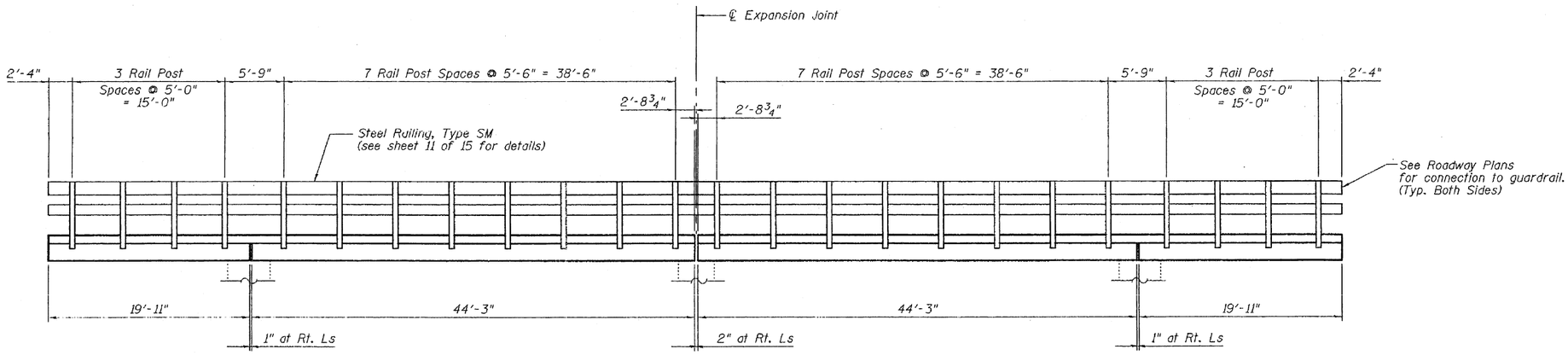
STEEL RAILING, TYPE SM
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	23
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 12
15 SHEETS

Contract #78033



RAIL POST SPACING DETAIL

South Elevation shown, North Elevation similar

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RI M
DRAWN	PRC
CHECKED	YSS

03/18/08

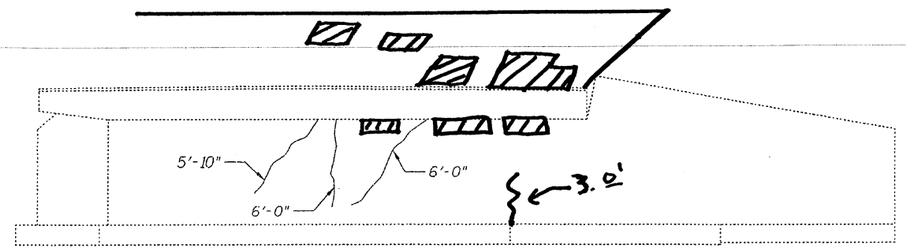
RAIL POST SPACING
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

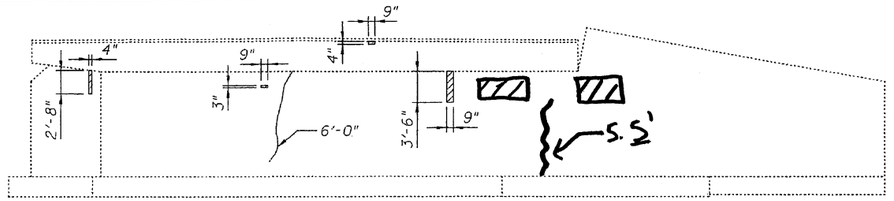
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	24
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
15 SHEETS

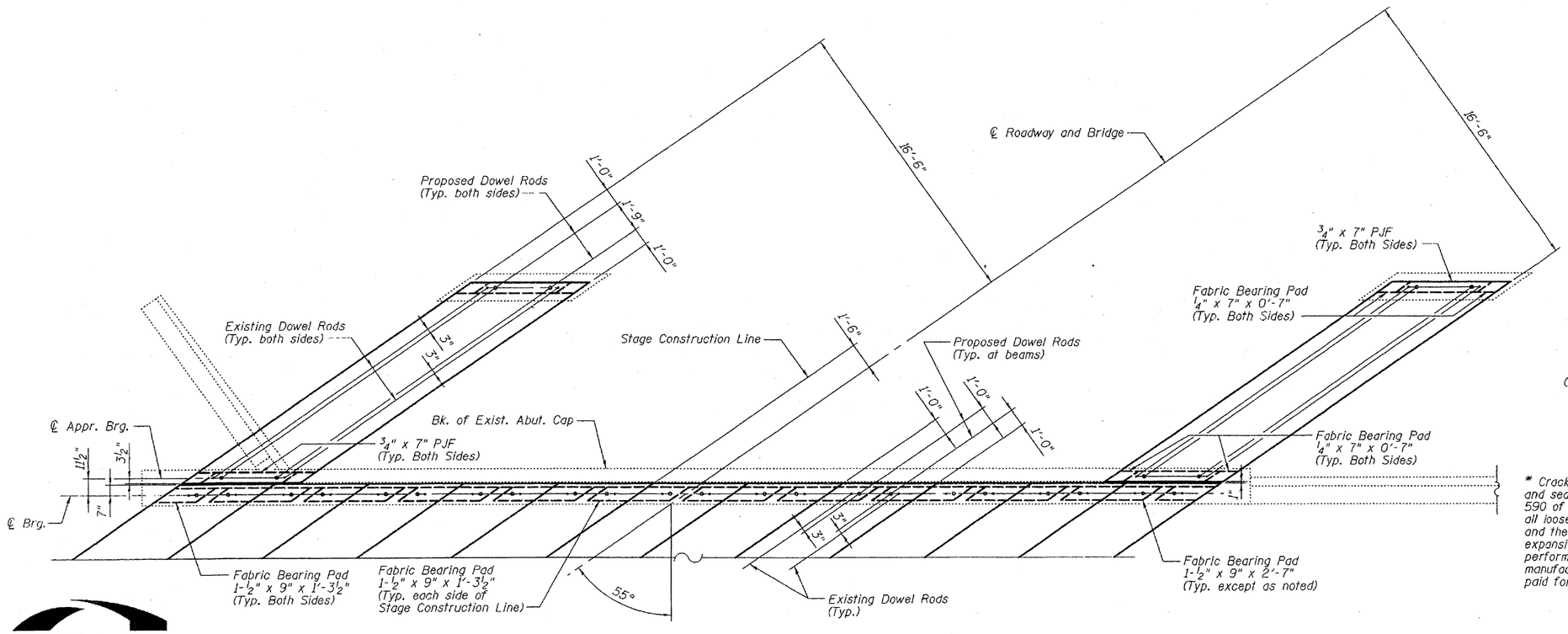
Contract #78033



ELEVATION - EAST ABUTMENT
(Looking East)



ELEVATION - WEST ABUTMENT
(Looking West)



PLAN - EAST ABUTMENT BEARING SEAT
(East Abutment shown, West Abutment similar)

Bituminous wearing surface and existing approach pavement not shown for clarity.

Notes:
Existing dowel rods shall be burned off flush with the existing concrete face, ground smooth, and sealed with epoxy. Costs are included with Removal of Existing Superstructure and Removal of Existing Precast Concrete Units, respectively.
Concrete sealer shall be applied to concrete repair areas.
See Sheet 14 of 15 for Substructure Repair Bill of Material.

LEGEND

- Structural Repair of Concrete (Depth equal to or less than 5")
- Crack Length — Epoxy Crack Injection*
- • Existing Dowel Rod
- ○ Proposed Dowel Rod

* Cracks with openings greater than 1/2 inch shall be prepared and sealed according to the applicable requirements of Section 590 of the Standard Specifications with the following exceptions: all loose material along the edges of the crack shall also be removed and the crack shall be sealed with an expansive cement grout. The expansive cement grout shall be approved by the Engineer prior to performing repairs and shall be installed according to the manufacturer's recommendations. This work shall be measured and paid for according to Articles 590.04 and 590.05, respectively.

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Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/18/08

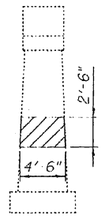
ABUTMENT REPAIRS
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

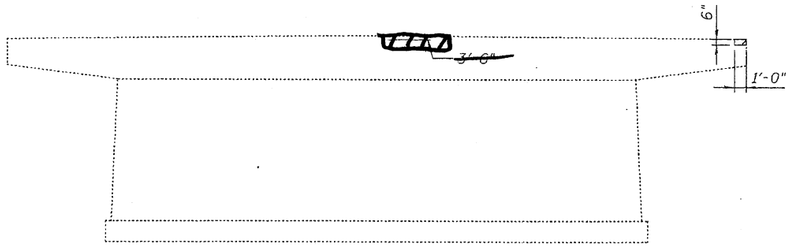
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	25
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 14
15 SHEETS

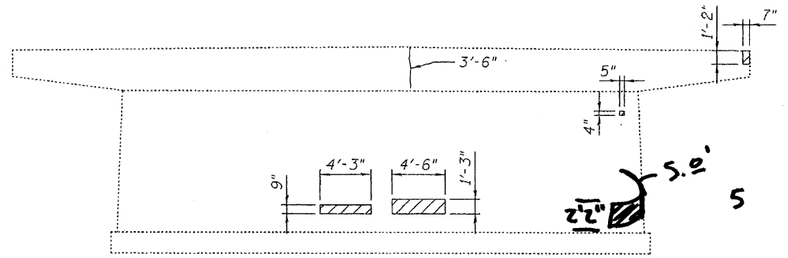
Contract #78033



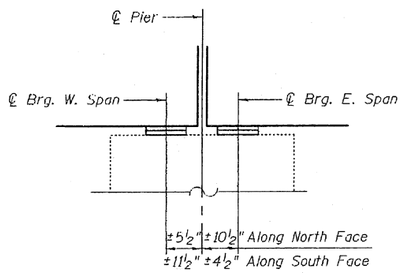
SOUTH
END VIEW



ELEVATION - PIER - EAST FACE
(Looking West)



ELEVATION - PIER - WEST FACE
(Looking East)



BEARING LOCATIONS
(Looking North)
Dimensions at Rt. Ls at outside face of beams

PLAN - PIER BEARING SEAT
Bituminous wearing surface not shown for clarity.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or less than 5 Inches)	Sq. Ft.	26
Concrete Sealer	Sq. Ft.	26
Epoxy Crack Injection	Foot	31

LEGEND

Structural Repair of Concrete (Depth equal to or less than 5")

Crack Length — Epoxy Crack Injection

Note:
Concrete sealer shall be applied to concrete repair areas.

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Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/18/08

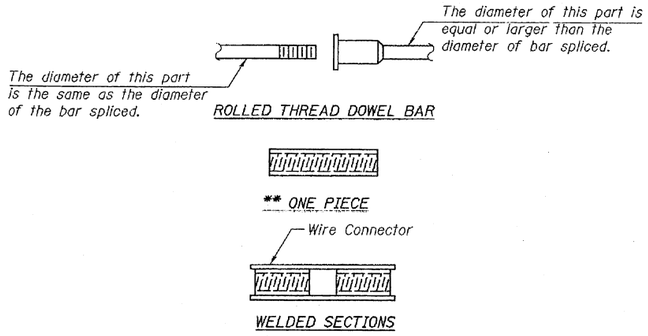
PIER REPAIR
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	111BR-1	POPE	69	26
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

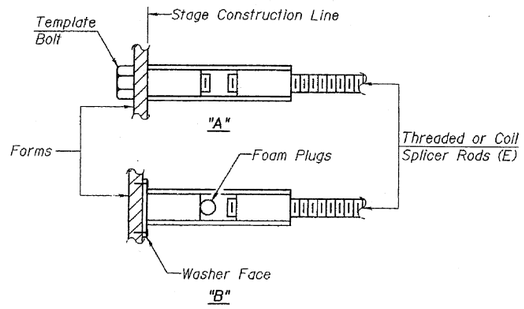
SHEET NO. 15
15 SHEETS

Contract #78033



BAR SPLICER ASSEMBLY ALTERNATIVES

**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



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.

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.

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

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

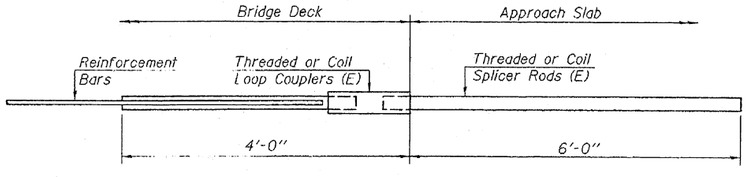
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$

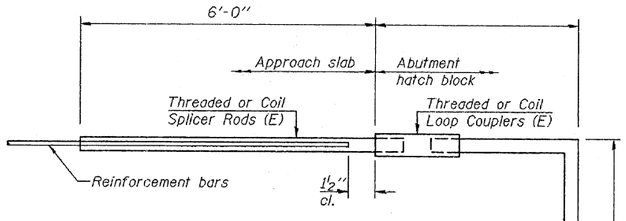
Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



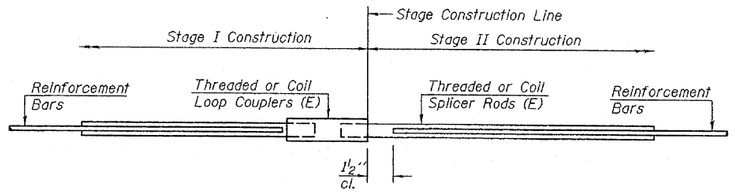
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 0



FOR STUB ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 0



STANDARD

Bar Size	No. Assemblies Required	Location
#5	6	Blockouts

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Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

BSD-1 11-1-06

BAR SPLICER ASSEMBLY DETAILS
ILL. ROUTE 146 OVER SUGAR CREEK
F.A.P. ROUTE 885 - SECTION 111BR-1
POPE COUNTY
STATION 671+76.00
STRUCTURE NO. 076-0006

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 885	IIIB-DR-1	POPE	22	1
F.H.W.A. REG. 4		ILLINOIS	PROJECT BH-F-885(15)	

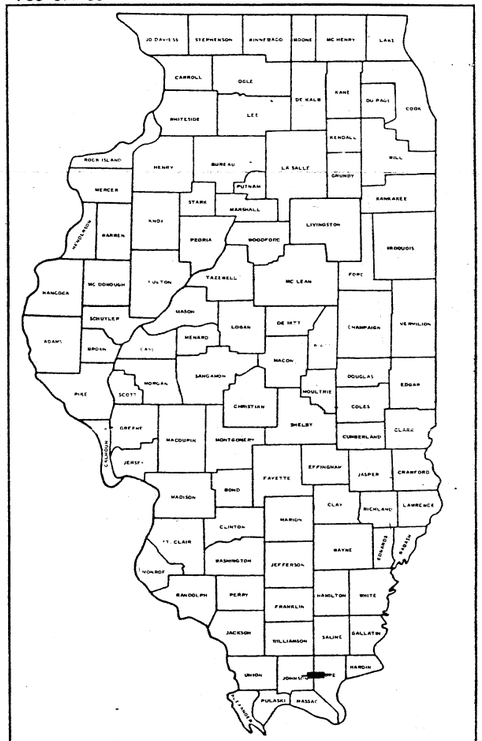
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

F.A. ROUTE 885 (ILL. 146)
PROJECT-BH-F-885(15)
SECTION IIIB-DR-1
POPE COUNTY

C-99-030-83

P99-014-80

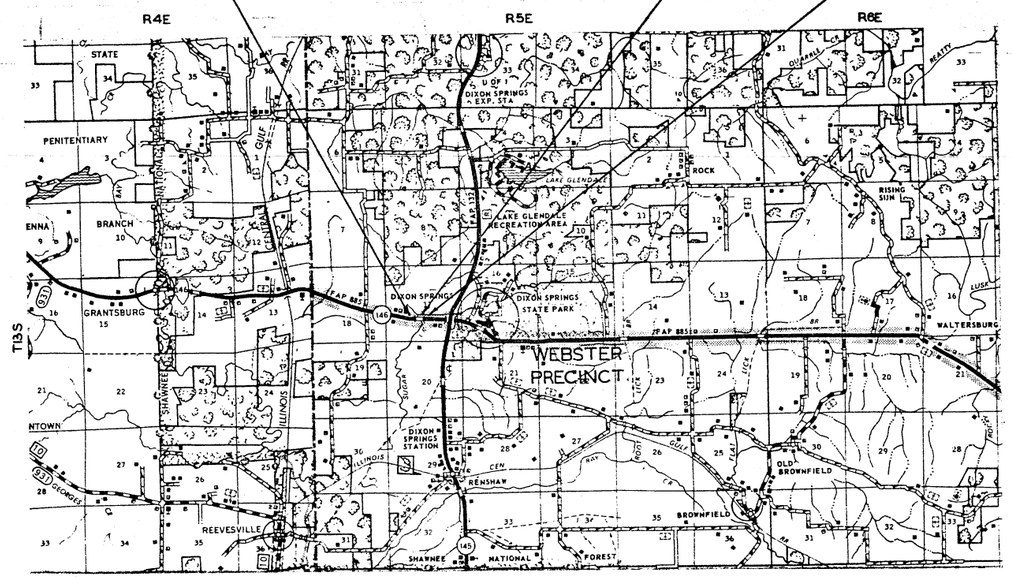


LOCATION OF SECTION INDICATED THUS: —

PROPOSED STRUCTURE - STATION 671+76
REPL. EXIST. 2 SPAN R.C. DECK GIRDER SUPERSTRUCTURE WITH P.P.C. DECK BEAMS: 2@44'-3"
LENGTH: BK. TO BK. OF ABUTMENT = 91'-9"
CONSTRUCT 1/2 AT A TIME UNDER TRAFFIC

PROPOSED IMPROVEMENT BEGINS
STATION 667+68

PROPOSED IMPROVEMENT ENDS
STATION 676+00



INDEX OF SHEETS	- SHEET NO. 2
SUMMARY OF QUANTITIES	- SHEET NO. 2

NET LENGTH STRUCTURE = 91.75 FT. = 0.017 MI.
NET LENGTH ROADWAY = 7402.5 FT. = 0.140 MI.
NET LENGTH PROJECT = 832.00 FT. = 0.157 MI.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED May 23 1983
J. F. Newton
DISTRICT ENGINEER

EXAMINED 7-21 1983
ENGINEER OF PLANS AND CONTRACTS

PASSED 7-21 1983
John A. Ahlberg
ENGINEER OF DESIGN

APPROVED 7-21 1983
DIRECTOR, DIVISION OF HIGHWAYS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

760006 076-0006
CONTRACT NO. 36481 SUGAR CREEK

9-116

B.M.: Sq. Cut S.W. Corner Bridge Wingwall Rt. Sta. 671+50 - Elev. 370.34.

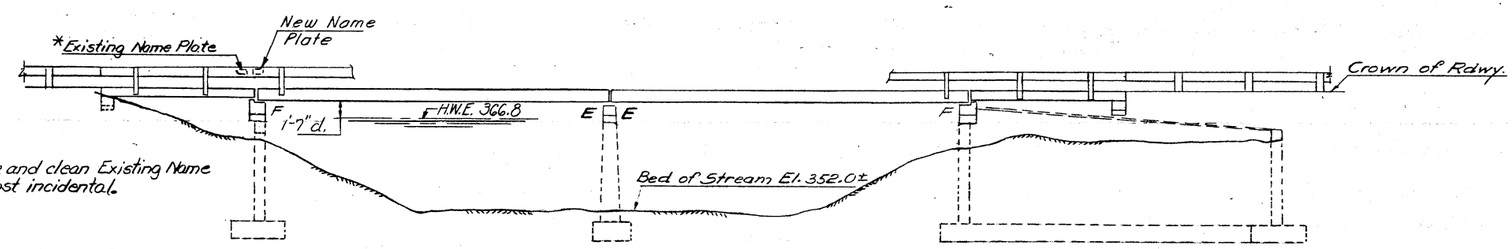
Existing Structure: 2 simple RCDG Spans at 45'-2¾" with RC closed abutments built as S.B.I. Rte. 146 sec. 111B in 1929 at station 671+76. Superstructure to be removed and replaced a portion at a time by contractor utilizing stage construction as shown.

Existing Structure Number 076-0006.

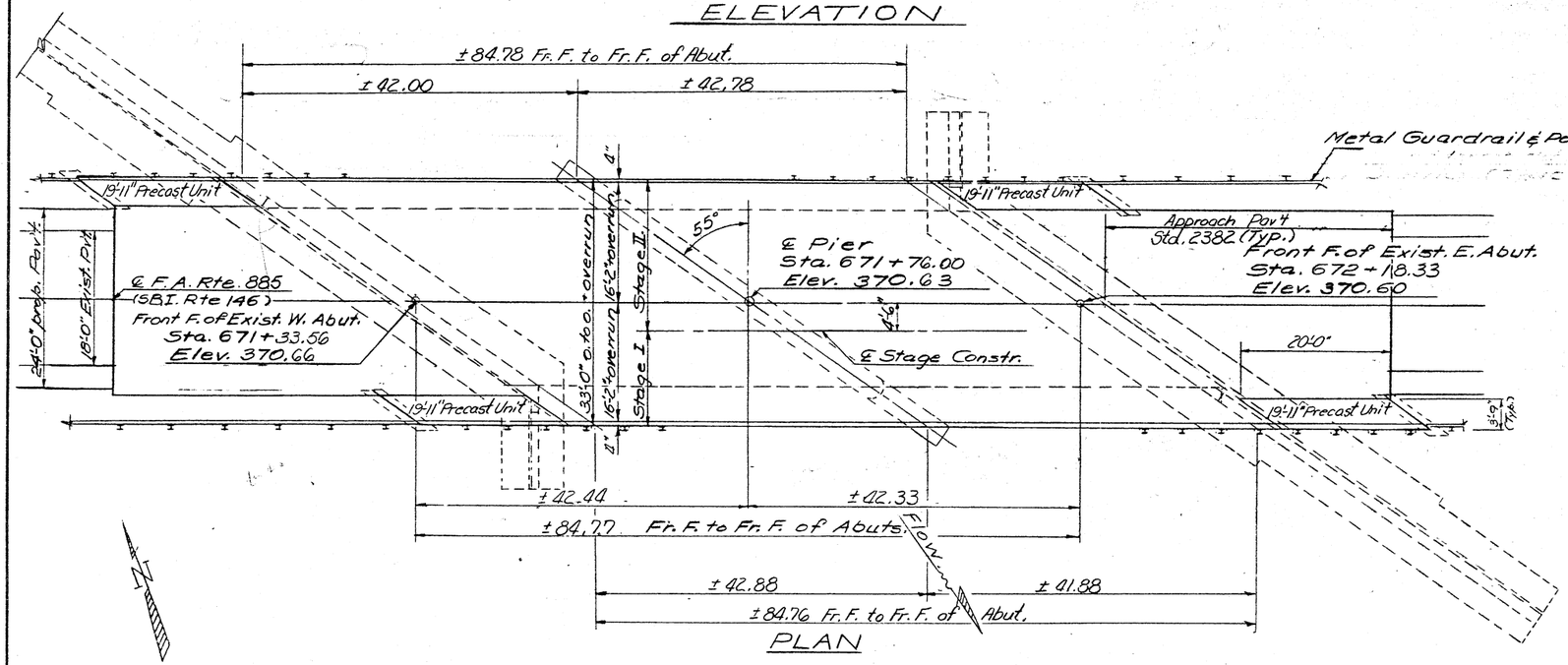
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 885	111B-DR-1	POPE	22	13
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:		

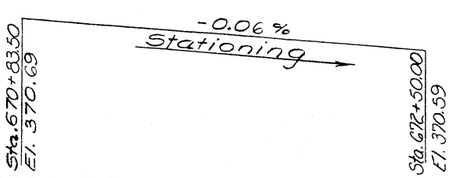
SHEET NO. 1
10 SHEETS



ELEVATION



PLAN



PROPOSED GRADE F.A.RT. 885 (SBI RTE 146)
Top of Class I

DESIGNED	Ch. Tien Chen	A.K
CHECKED	B. R. Hiskey	L.K JRS
DRAWN	A.K.	
CHECKED		A.K

October 13, 1981

EXAMINED _____ ENGINEER OF BRIDGE DESIGN

PASSED _____ ENGINEER OF BRIDGES AND STRUCTURES

APPROVED _____ DIRECTOR OF HIGHWAYS

WATERWAY INFORMATION

Drainage Area 13.7 sq. mi. Low Grade Elev. = 370.50 @ Sta. 673+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head-Ft. Exist.	Head-Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	3833	564	564	366.8	1.90	1.90	368.7	368.7
Base	100	4403	578	578	367.1	2.40	2.40	369.5	369.5
Overtopping									
Max. Calc.	500	5711	587	587	367.8	2.30	2.30	370.1	370.1

GENERAL NOTES

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The top surface of the beams shall be finished in accordance with Article 505.06 of the Standard Specification except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of ¼".

Reinforcement bars shall conform to the requirements of AASHTO M-31 or M53 Grade 60.

Limits of Bituminous Concrete Surface Course Class I and Waterproofing Membrane System shall be out to out of deck and 2'-0" beyond each end of deck.

A Calcium Nitrite Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.

STATION 671+76.00
REBUILT 19 BY
STATE OF ILLINOIS
F.A. RT. 885 SEC. 111B-DR-1
F.A. PROJ. BH-F-885 (15)
LOADING HS-20
*STR. NO.

NAME PLATE
Std. 2113

* Structure Number to be supplied by District.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Bituminous Conc. Surface course Class I	Ton	33		33
Removal of Existing Superstructure	Each	1		1
Concrete Removal	Cu. Yd.		35	35
Class X Concrete	Cu. Yd.	2.6	60.8	63.4
Precast Concrete Bridge Slab	Sq. Ft.	299		299
Precast Prestressed Conc. Dk Bms. (21" depth)	Sq. Ft.	2920		2920
Steel Railing, Type S-1	Lin. Ft.	258		258
Reinforcement Bars	Pound	370	6420	6790
Waterproofing Membrane System	Sq. Yd.	337		337
Temporary Bridge Rail	Lin. Ft.	165		165
Neoprene Expansion Joint 2"	Lin. Ft.	58		58
Nome Plates	Each	1		1
Portland Cement Mortar Fairing Course	Lin. Ft.	883		883

PRECAST PRESTRESSED UNITS

f'c = 5000 psi
f'ci = 4,200 psi
f's = 270,000 psi (Strands)
fsi = 189,000 psi (Strands)

Allow 25 #/Sq. Ft. for future W.S.

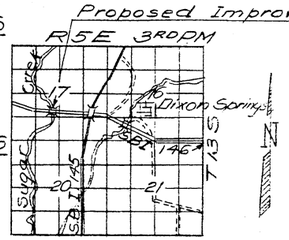
FIELD UNITS

f'c = 3500 psi
Fy = 60,000 psi (Reinf.)

PRECAST UNITS

f'c = 4,500 psi
fc = 1,800 psi
fs = 20,000 psi
n = 8

LOADING HS 20-44
Design Specifications: 1977 AASHTO, 1978 thru 1982 Interim Spec's.



LOCATION SKETCH

GENERAL PLAN & ELEVATION
PROJECT
F.A.RT. 885 OVER SUGAR CREEK
F.A.RT. 885 (SBI RTE 146) SEC. 111B-DR-1
POPE COUNTY
STATION 671+76.00

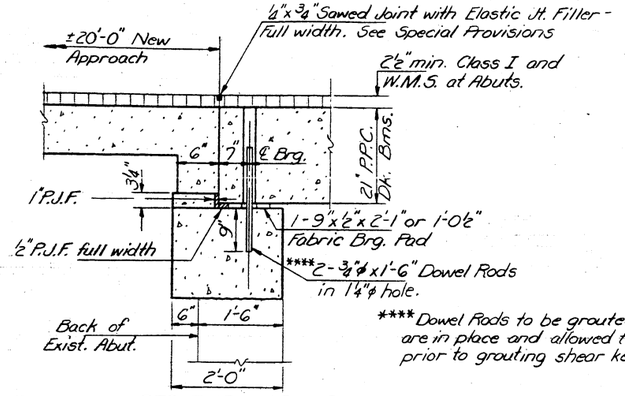
Revised 7-15-81 S.T.D Revised 10-1-81 JRS Revised 5-18-83 JRS

010.21

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

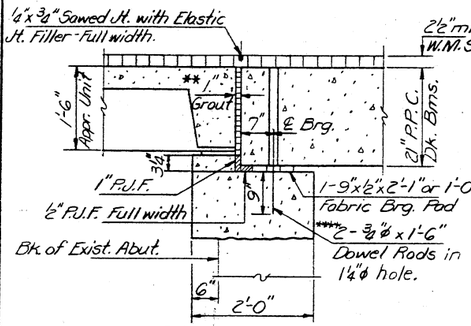
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S.I. 885	111B-DR-1	POPE	22	14
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
10 SHEETS



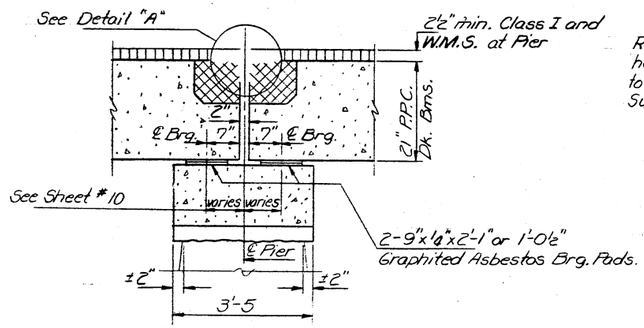
SEC. THRU ABUTS.
At ℄ Rdwy. (Dimensions at Right Angles)

****Dowel Rods to be grouted after beams are in place and allowed to cure (min. 24 hrs.) prior to grouting shear keys.

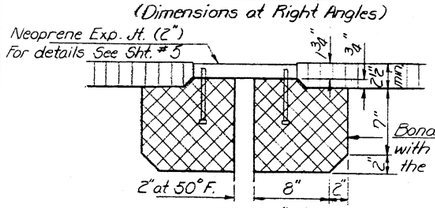


SEC. THRU ABUTS.
At outside beam (Dimensions at Right Angles)

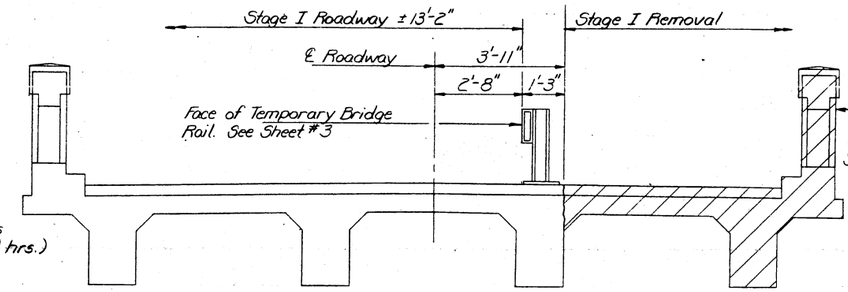
** 1" Joint shall be packed with a very dry mix of 2:1 sand and P.C. mortar. This dimension may vary plus or minus to accomodate tolerance in beam lengths.



SEC. THRU PIER
(Dimensions at Right Angles)

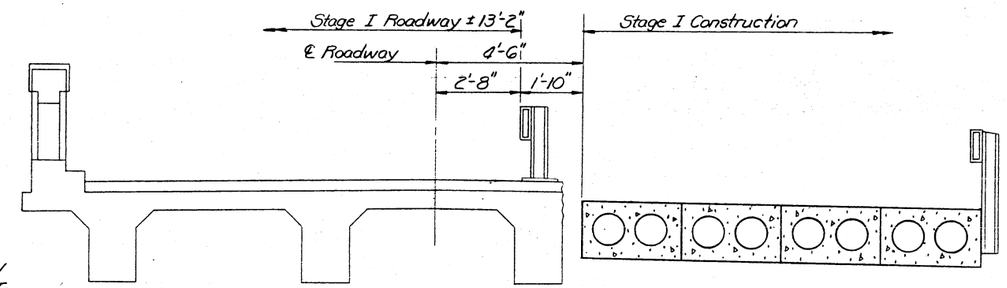


DETAIL "A"

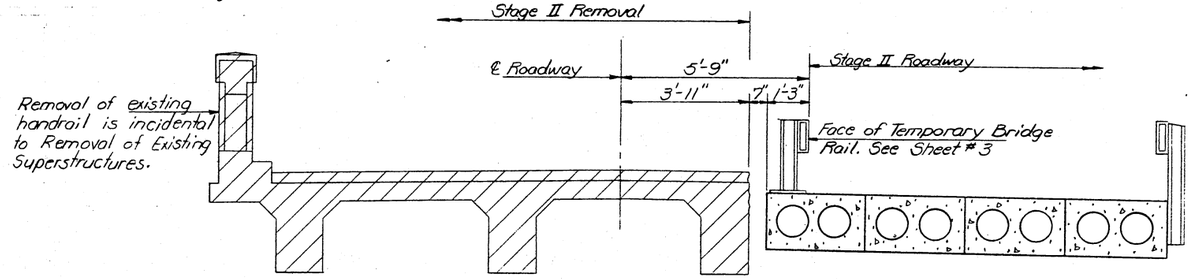


Removal of existing handrail is incidental to Removal of Existing Superstructures.

*STAGE I REMOVAL

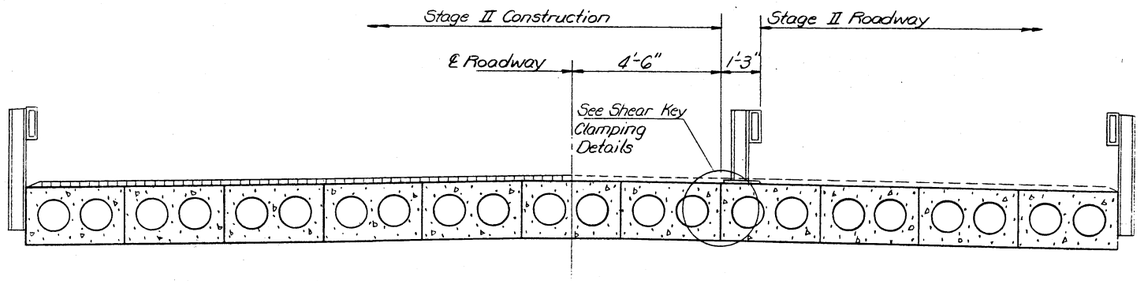


*STAGE I CONSTRUCTION

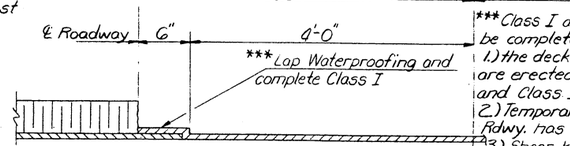


Removal of existing handrail is incidental to Removal of Existing Superstructures.

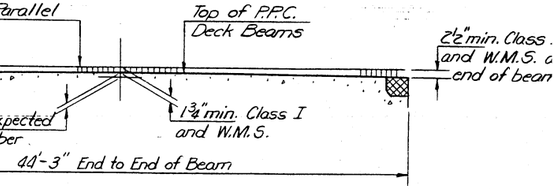
*STAGE II REMOVAL



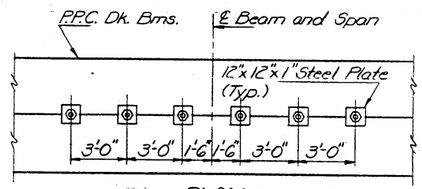
*STAGE II CONSTRUCTION
*Looking East



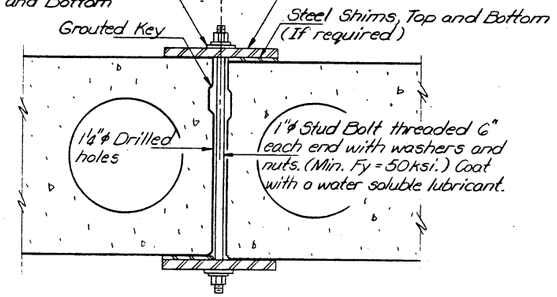
WATERPROOFING TREATMENT



BITUMINOUS PROFILE

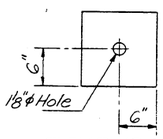


PLAN



SECTION

Notes:
See Special Provisions.
Cost is incidental to Precast Prestressed Concrete Deck Beams.



CLAMPING PLATE

SHEAR KEY CLAMPING DETAILS AT STAGE CONST. JT.

Notes for Detail "A":
Dimensions are at right angles.
Cross hatched areas to be poured after beams are in place.
Ends of beams shall be aligned at the expansion joints. Any lineal variation in the beam lengths shall be placed at the fixed joint.
See End of Beam Detail on sheet # 4 for the reinforcement.

***Class I and Waterproofing Lap shall be completed after:
1.) the deck beams for Stage II Constr. are erected, grouted and waterproofing and Class I are in place.
2.) Temporary Bridge Rail for Stage II Rdwy. has been removed.
3.) Shear key clamping devices have been removed.

DESIGNED	Chi Tzen Chen AK
CHECKED	Lance Kidd
DRAWN	Joe Sutherland
CHECKED	Abe Kasham

October 13, 1981

EXAMINED _____ ENGINEER OF BRIDGE DESIGN

PASSED _____

APPROVED _____ ENGINEER OF BRIDGES AND STRUCTURES

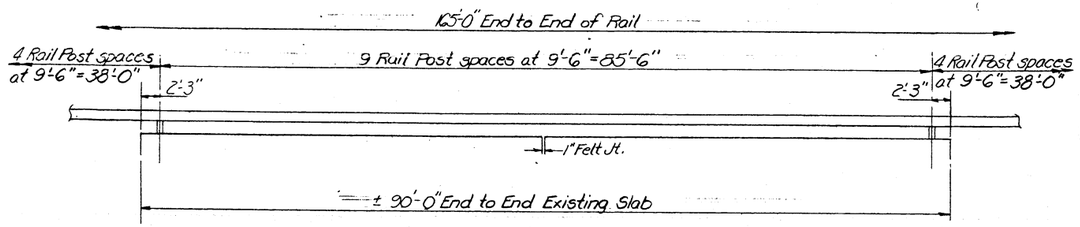
DIRECTOR OF HIGHWAYS

SUPERSTRUCTURE DETAILS
F.A. RT. 885 SEC. 111B-DR-1
POPE COUNTY
STATION 671+76.00

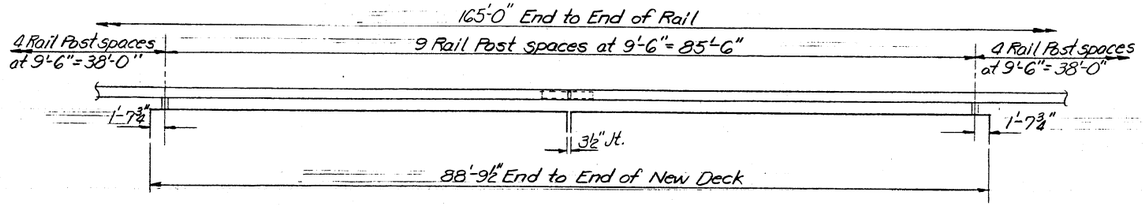
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. 885	111B-DR-1	POPE	22	15
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

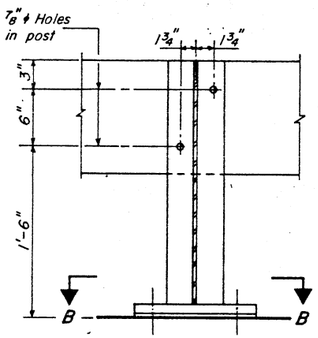
SHEET NO. 3
10 SHEETS



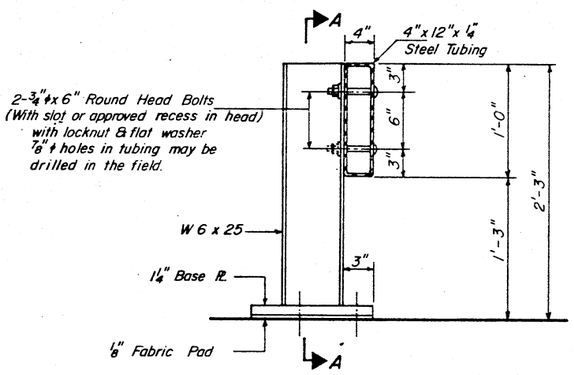
ELEVATION
Existing Deck



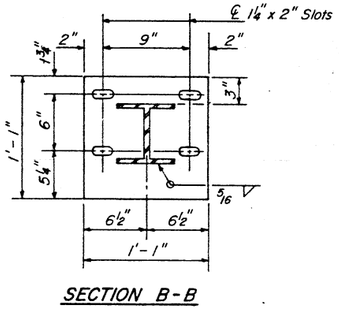
ELEVATION
New Deck



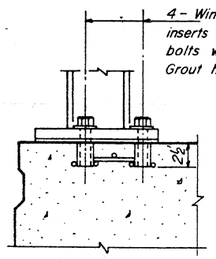
SECTION A-A



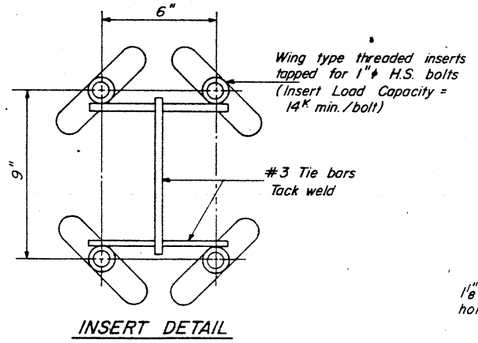
SECTION AT RAIL POST



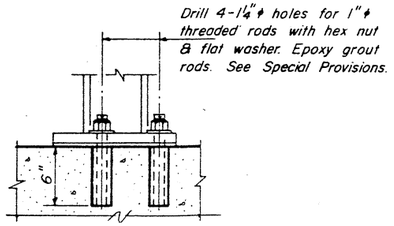
SECTION B-B



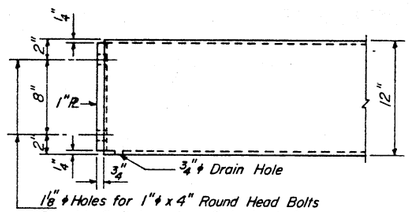
P.P.C. DECK BEAMS



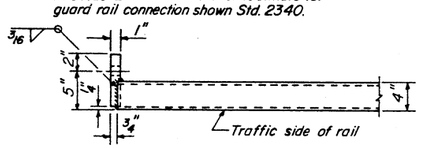
INSERT DETAIL



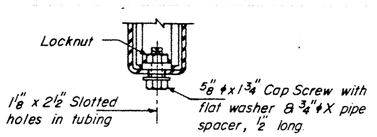
NEW & EXISTING DECKS
ANCHORAGE DETAILS



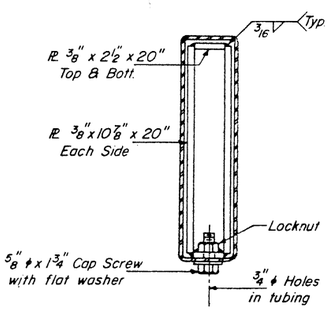
1 1/8"ϕ Holes for 1"ϕx4" Round Head Bolts
Provide 2 flat washers & locknuts for guard rail connection shown Std. 2340.



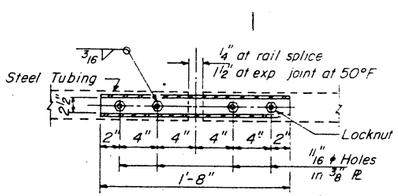
END OF RAIL DETAILS



RAIL SPLICE CONNECTION AT EXPANSION JT.



SECTION AT RAIL SPLICE



PLAN-BOTT. SPLICE PL.
TYPICAL

NOTES

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. M-183 except posts shall conform to A.A.S.H.T.O. M-223 Grade 50.

Bolts; cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, threaded rods, nuts and washers noted which shall conform to A.A.S.H.T.O. M-164.

The bridge rail shall receive one shop coat of a steel prime paint.

The 1"ϕ high strength bolts or threaded rods used to connect the railposts shall be tightened in accordance with Article 507.04(g)(3) of the Standard Specification.

See Special Provisions for Temporary Bridge Rail.

BILL OF MATERIAL

Item	Unit	Quantity
Temporary Bridge Rail	Lin. Ft	165

TEMPORARY BRIDGE RAIL
F.A. RT. 885 SEC. 111B-DR-1
POPE COUNTY
STATION 671+76.00

DESIGNED	Chi Tsen Chen AK
CHECKED	Lance Kidd
DRAWN	Joe Sutherland
CHECKED	Abe Kashani

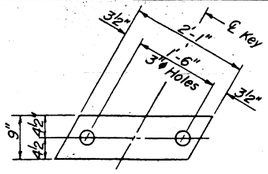
October 13, 1981
EXAMINED James T. Roybutis
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

R-25 8-30-80 (10'-9" Maximum Post Spacing)

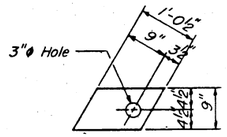
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. RT. 885	111B-DR-1	POPE	22	16
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

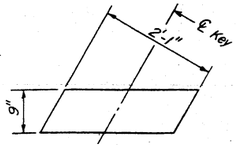
SHEET NO. 4
10 SHEETS



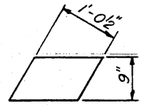
FABRIC BEARING PAD
(Interior)



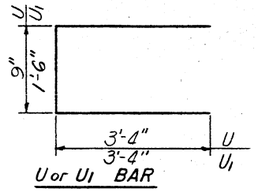
FABRIC BEARING PAD
(Exterior)



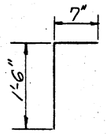
GRAPHITED ASBESTOS BEARING PAD
(Interior)



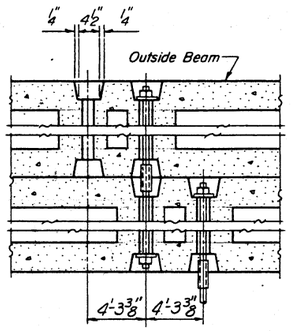
GRAPHITED ASBESTOS BEARING PAD
(Exterior)

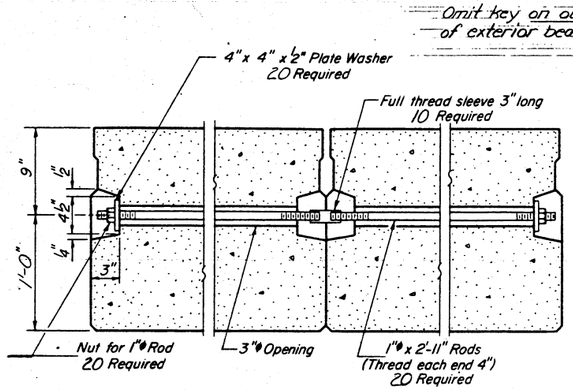


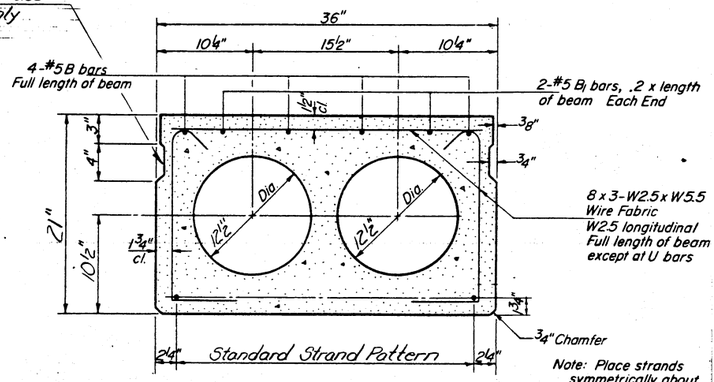
U or U1 BAR



E BAR



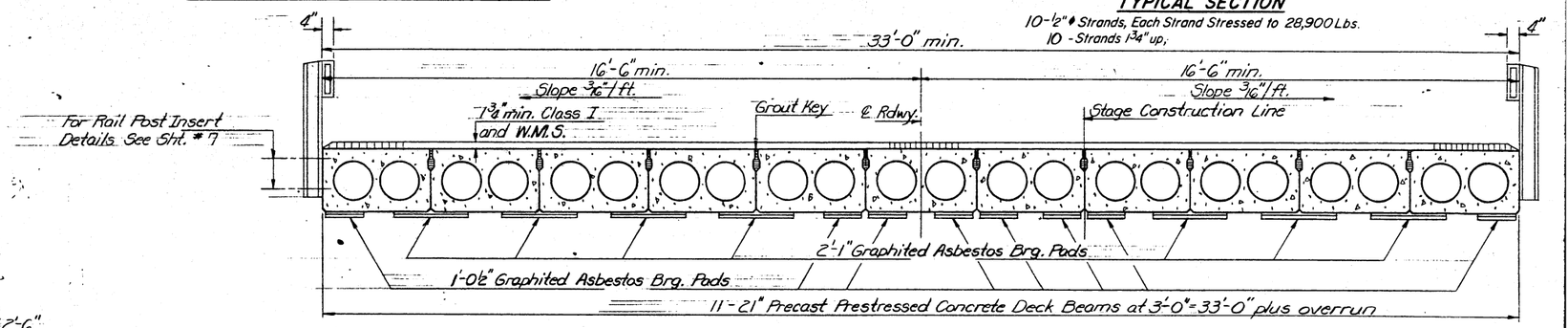




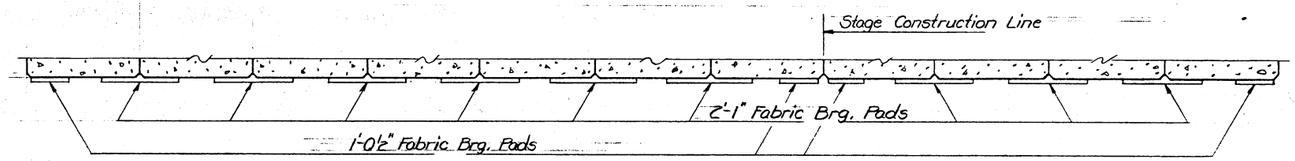
Note: Place strands symmetrically about ℄ of beam.

TYPICAL TRANSVERSE TIE ASSEMBLY

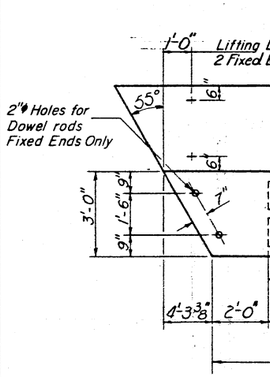
TYPICAL SECTION
10-½"ϕ Strands, Each Strand Stressed to 28,900 Lbs.
10 - Strands 13¾" up,



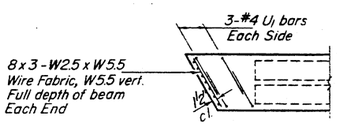
CROSS SECTION
Showing expansion bearings



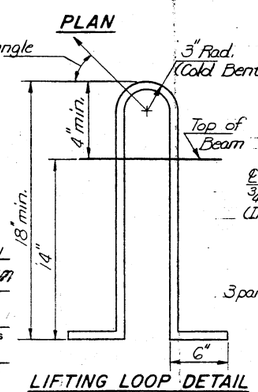
CROSS SECTION
Showing fixed bearings



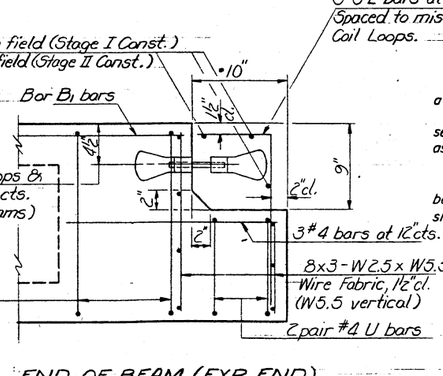
PLAN



END PLAN



LIFTING LOOP DETAIL



END OF BEAM (EXP. END)
(Dimensions are at right angles)

NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

Lifting loops shall be ⅜" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 33,000 lbs. or 2 -½"ϕ - 270 ksi strands, as shown.

The 1"ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to AASHTO: M-31 or M-53, Grade 60

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

Key way surfaces shall be cleaned to remove form oil or other bond breaking materials prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	6	#5	22'-0"	——
a1	6	#5	36'-9"	——
Precast Prestressed Concrete Deck Beams (21" Depth)			Sq. Ft.	2920
Reinforcement Bars			Pound	370
Class X Concrete			Cu. Yd.	2.6

DESIGNED	Chi Tsen Chen A.K.
CHECKED	Lance Kidd
DRAWN	Joe Sutherland
CHECKED	Abe Kashani

October 13 1981
EXAMINED James J. Kamburan
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

PD-3-R 6-15-80

SUPERSTRUCTURE
F.A. RT. 885 SEC. 111B-DR-1
POPE COUNTY
STATION 671+76.00

II/4.23

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. F.A. 885	111B-DR-1	POPE	22	17
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
10 SHEETS

Joint Size	"C" at 50°F	"D" at 50°F
2	2"	1½" min.
2½	2½"	1¾" min.
4	3"	2½" min.

INSTALLATION NOTES

Use anchor blocks and continuous seal as anchor bolt location templates.

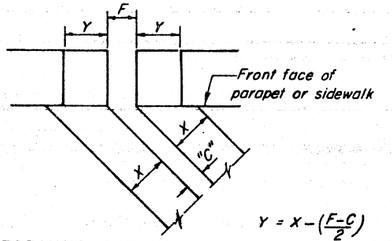
1. Install sponge mandrels into positions shown to form flap convolution.
2. Install parapet or sidewalk piece (trim roadway flap to fit before applying epoxy).
3. Install continuous seal in roadway.
4. Install anchor blocks as indicated.

NOTE A... Maximum spacing of anchor bolts shall be 12" centers

SKEW LIMITATIONS

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.

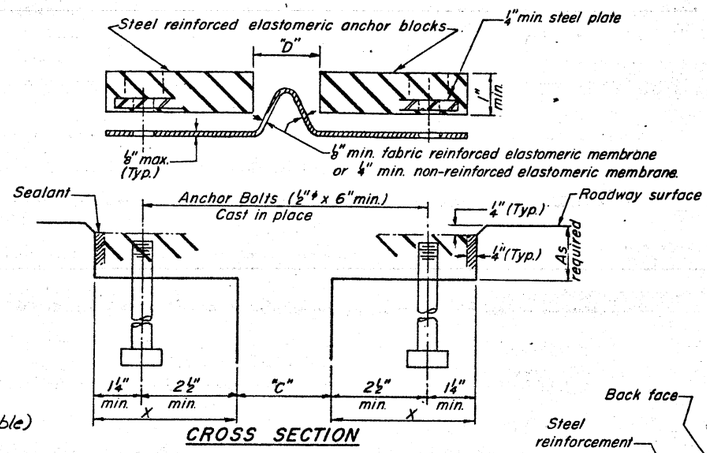
For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of ½" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



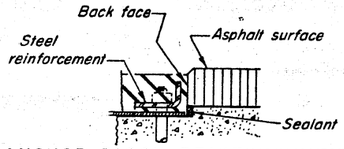
FORMING BLOCKOUT SKETCH

$Y = X - \left(\frac{F-C}{2}\right)$

For dimension "F" see sheet # (Not applicable)



CROSS SECTION



ANCHOR BLOCK REINFORCEMENT with ASPHALT SURFACE

GENERAL NOTES

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane. See Special Provisions.

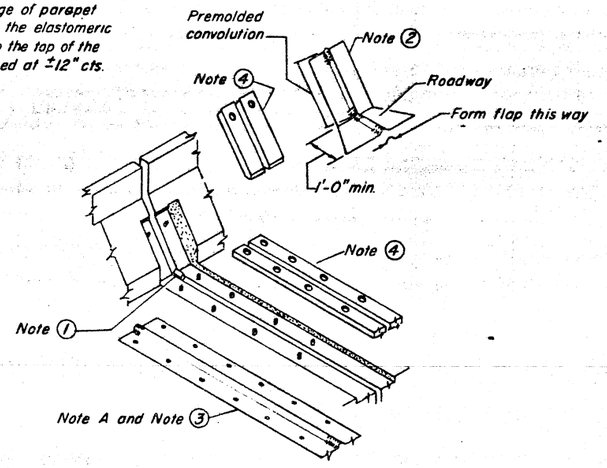
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.

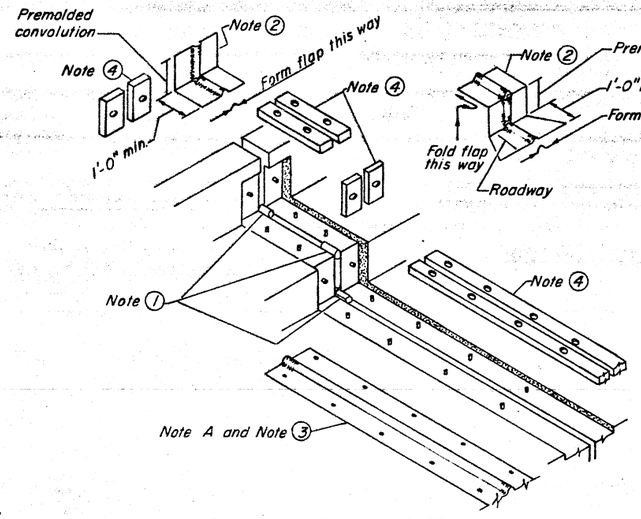
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.

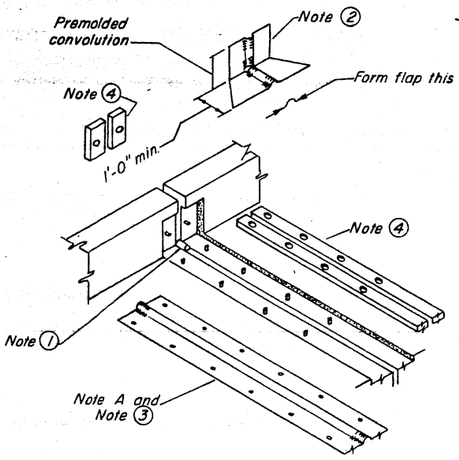
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.



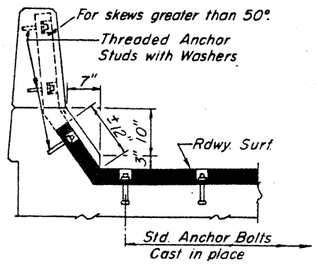
AT PARAPET



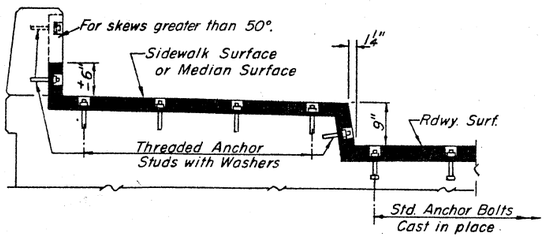
AT SIDEWALK or MEDIAN



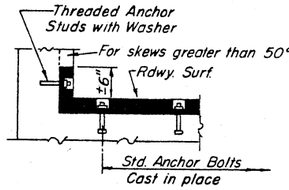
AT WALL



AT PARAPET



AT SIDEWALK or MEDIAN



AT WALL

TYPICAL END TREATMENTS

DESIGNED	
CHECKED	
DRAWN	Joe Sutherland
CHECKED	

May 26, 1983
EXAMINED James T. Sanburn ENGINEER OF BRIDGE DESIGN
PASSED ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

EJ-CS 2-1-83

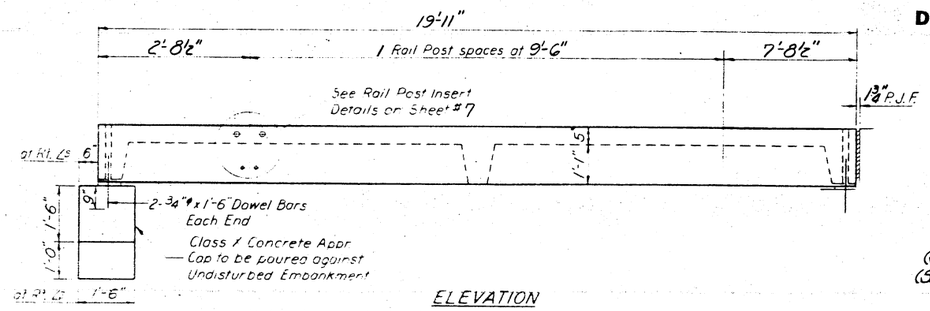
CONTINUOUS SEAL TYPE
NEOPRENE EXPANSION JOINTS
For 2", 2½" and 4" Movement

F.A. RT. 885 SEC. 111B-DR-1
POPE COUNTY
STATION 671+76.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

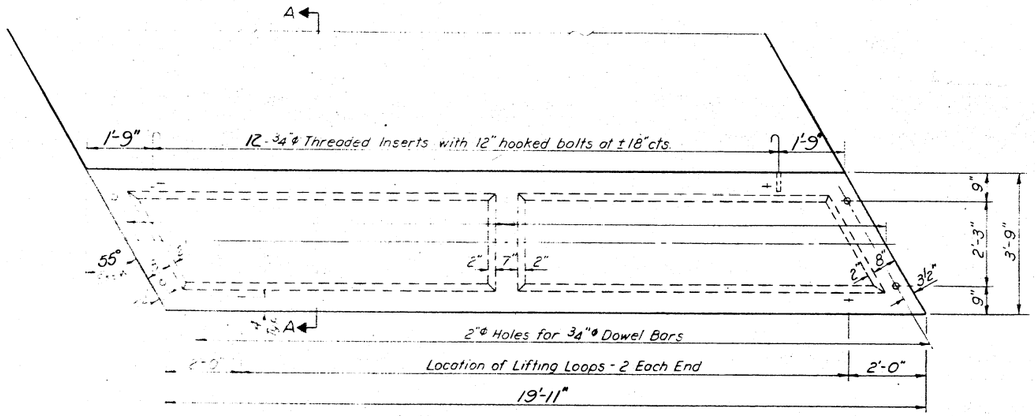
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 885	111B-DR-1	POPE	22	18
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO 6
10 SHEETS

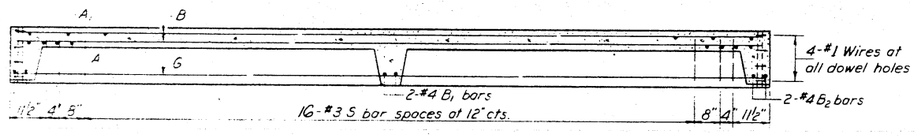


ELEVATION

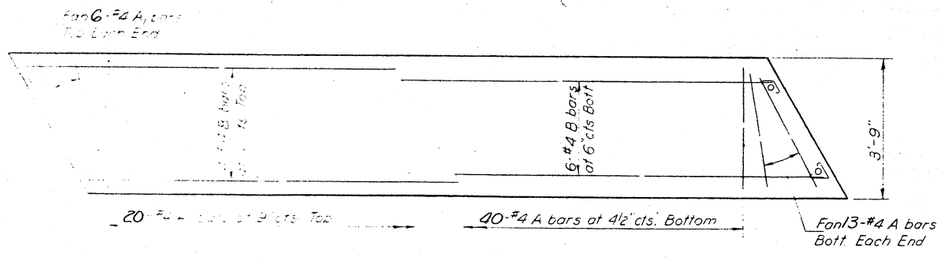
Note: Furnish 2 Right Hand Units & 2 Left Hand Units



PARTIAL PLAN OF APPROACH



LONGITUDINAL SECTION

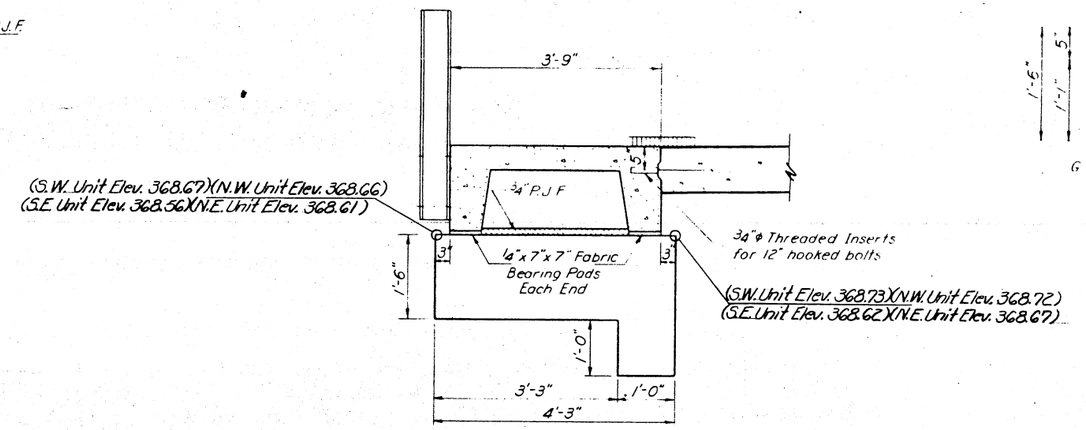


SLAB REINFORCEMENT

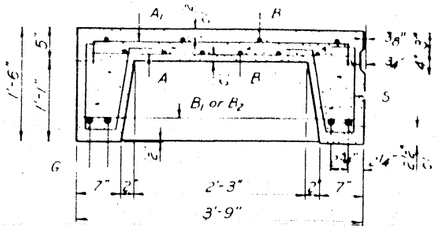
Chi Tsen Chen
Lance Kidd
Joe Sutherland
Abe Kashani

EXAMINED October 13, 1981
ASSEMBLED
APPROVED

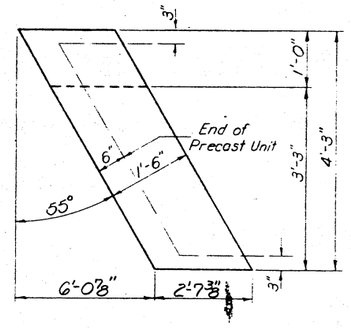
ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES
DIRECTOR OF HIGHWAYS



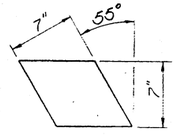
SECTION A-A



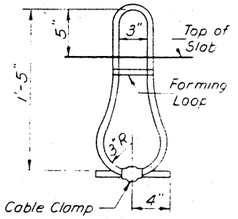
SECTION THRU PRECAST UNIT



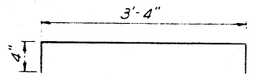
PLAN - APPR. CAP



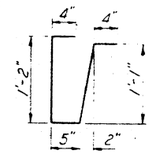
FABRIC BRG. PAD



LIFTING LOOP DETAIL



BAR A1



BAR S

BAR LIST - ONE UNIT

Reinforcement to be cast into slab

Bar	No	Size	Length	Shape
A	66	#4	3'-3"	
A1	32	#4	4'-0"	
B	10	#4	19'-6"	
B1	2	#4	3'-6"	
B2	4	#4	6'-3"	
G	4	#10	19'-6"	
S	42	#3	3'-4"	

NOTES

Unless otherwise approved by the Engineer, lifting loops shall be 1½"ø, 6x19 class wire rope with fiber core and shall have a minimum ultimate strength of 18,700 lbs. Loops shall be burned off after slab has been erected.

Holes shall be drilled and anchor dowels grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and ¾"ø hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

BILL OF MATERIAL

Item	Unit	Quant.
Precast Concrete Bridge Slab	Sq Ft	299
Class X Concrete	Cu. Yds.	2.9

STRESSES

fc = 4,500 psi.
fc = 1,800 psi.
fs = 20,000 psi.
n = 8

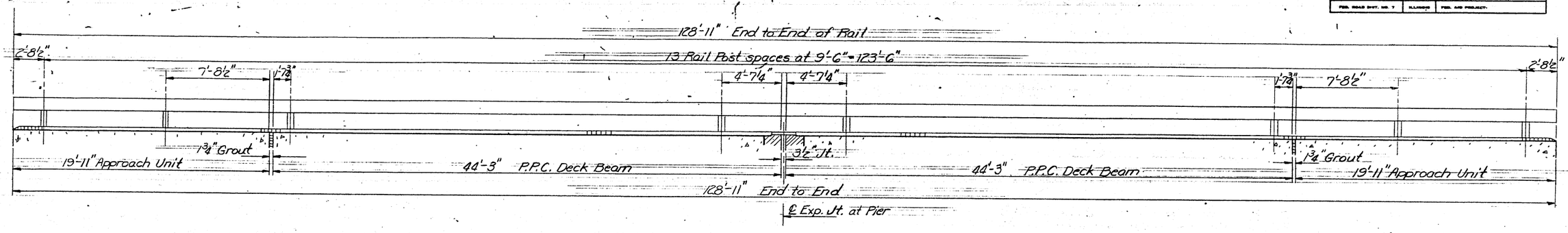
LOADING HS-20

APPROACH DETAILS
FA. RT. 885 SEC. 111B-DR-1
POPE COUNTY
STATION 671+76.00

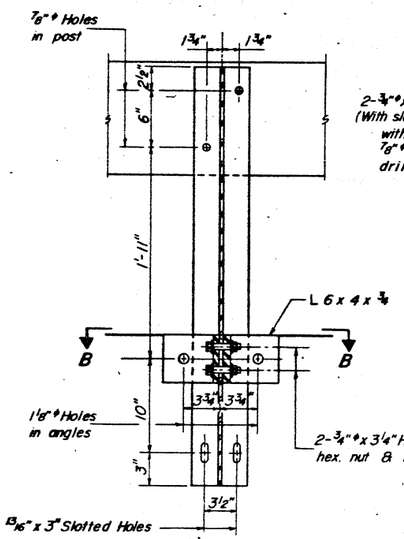
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 885	111B-DR-1	POPE	22	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

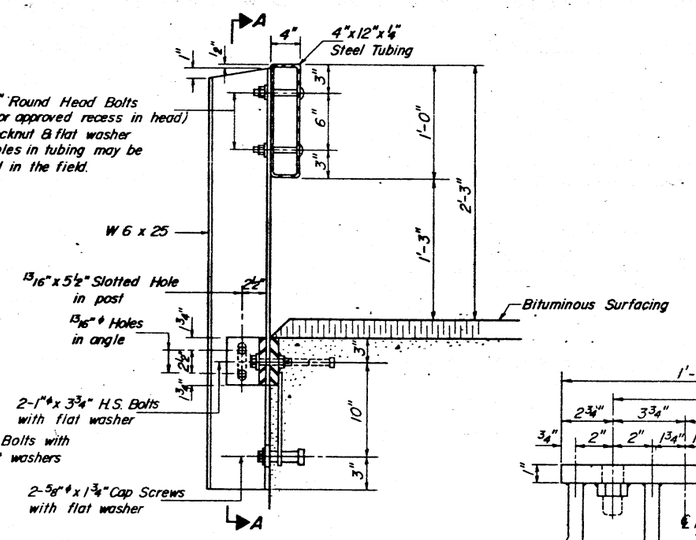
SHEET NO. 7
10 SHEETS



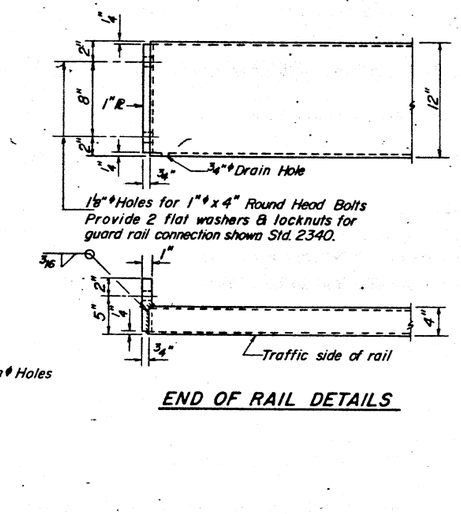
ELEVATION
Showing inside face



SECTION A-A



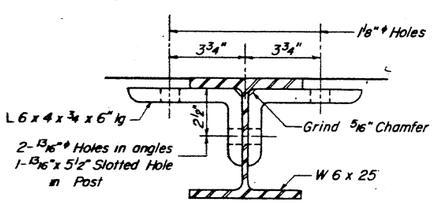
SECTION AT RAIL POST



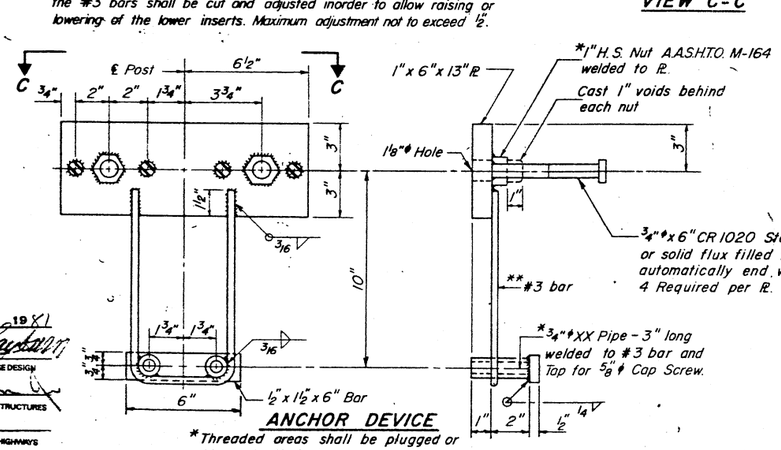
VIEW C-C

END OF RAIL DETAILS

** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted inorder to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed ½".

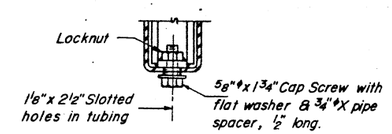


SECTION B-B

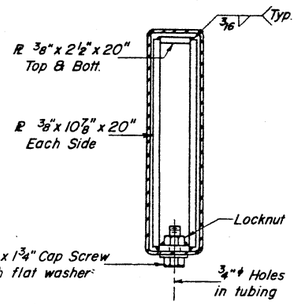


ANCHOR DEVICE

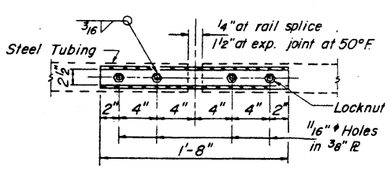
*Threaded areas shall be plugged or blocked off during casting of beam.



RAIL SPLICE CONNECTION AT EXPANSION JT.



SECTION AT RAIL SPLICE



PLAN - BOTT. SPLICE PL. TYPICAL

NOTES

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. M-183 except posts and angles shall conform to A.A.S.H.T.O. M-223, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.A.S.H.T.O. M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with A.A.S.H.T.O. M-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.A.S.H.T.O. M-111 and A.S.T.M. A-385. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per lineal foot for STEEL RAILING, TYPE S-1.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place ⅛" fabric bearing pad between the post and concrete.

The ¾"ϕ high strength bolts used to connect the 6 x 4 x ¾ angles to the post shall be tightened in accordance with Article 507.04(g)(3) of the Standard Specifications. The 1"ϕ high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional ⅛ turn. The ⅝"ϕ cap screws in bottom of posts shall be tightened to a snug fit only.

For multi-span bridges, sufficient ¼"x 6"x 1'-4" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Lin. Ft.	258

TYPE S-1
STEEL RAILING
F.A. RT. 885 SEC. 111B-DR-1
POPE COUNTY
STATION 671+76.00

DESIGNED	Chi-Tsen Chen
CHECKED	Lance Kidd
DRAWN	Joe Sutherland
CHECKED	Abe Kashani

October 13, 19XX
EXAMINED James T. Kaufman
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

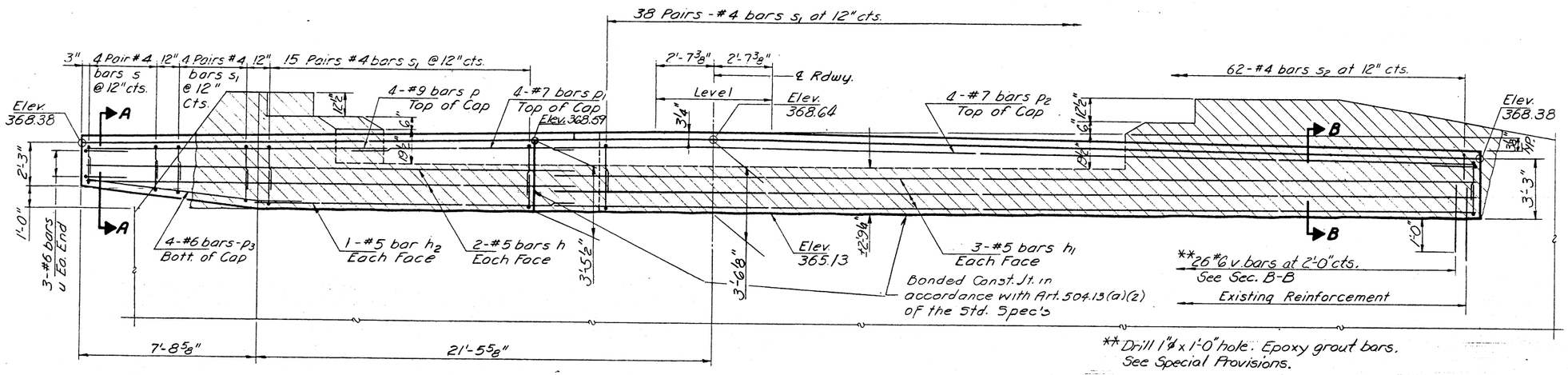
R-23A 8-30-80 (10'-9" Maximum Post Spacing)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. I. R. 885	111B-DR-1	POPE	22	20
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:		

SHEET NO. 8
10 SHEETS

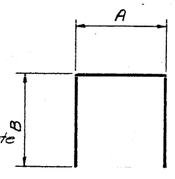
* Portion of Abut. above construction joint shall be poured after the beams are in place.



** Drill 1"ø x 1'-0" hole. Epoxy grout bars. See Special Provisions.

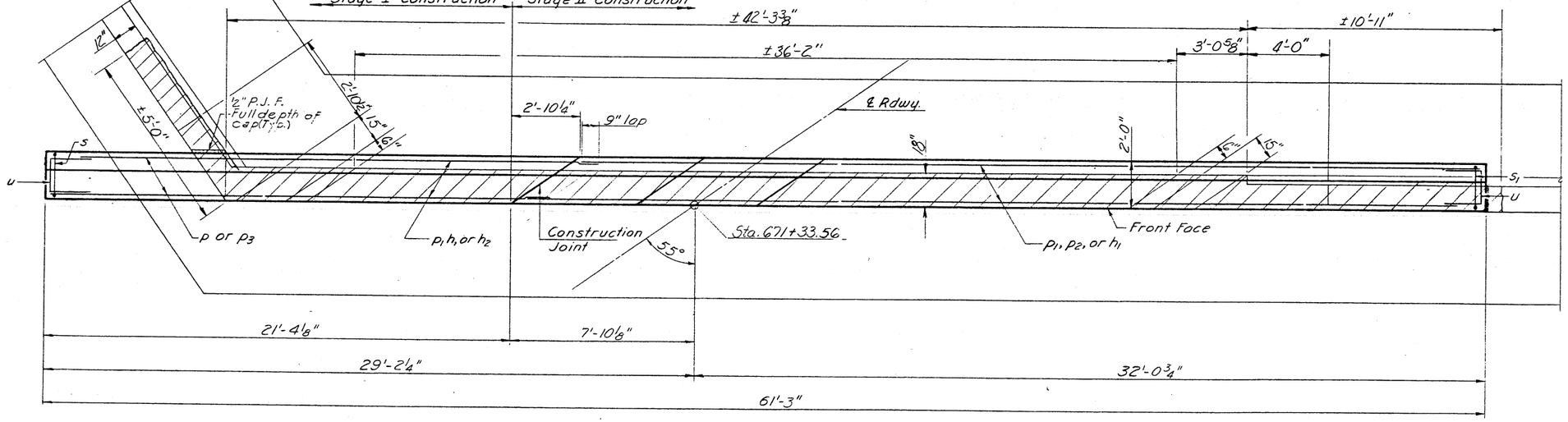
ELEVATION
LOOKING WEST

NOTE:
Remove hatched portion of existing abutment above Elev. 365.13
Straighten, clean, and incorporate existing reinforcement into new concrete.

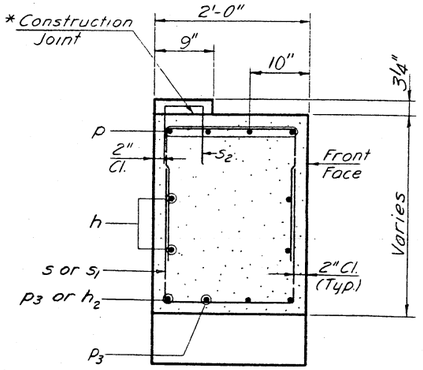


	A	B
s	1'-8"	1'-11"
s_1	1'-8"	2'-2"
s_2	3"	1'-0"
u	1'-8"	4'-0"

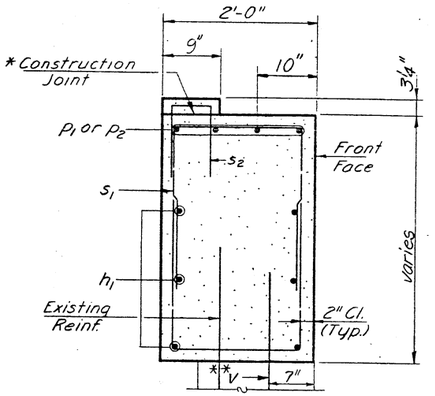
BARS s, s_1, s_2 & u



TOP VIEW



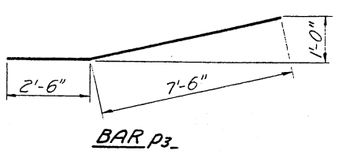
SECTION A-A



SECTION B-B

WEST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	4	#5	22'-0"	——
h_1	6	#5	36'-9"	——
h_2	2	#5	17'-3"	——
p	4	#9	11'-0"	——
p_1	4	#7	16'-0"	——
p_2	4	#7	36'-11"	——
p_3	4	#6	10'-0"	⌐——
s	8	#4	5'-6"	□
s_1	114	#4	6'-0"	□
s_2	62	#4	2'-3"	□
u	6	#6	9'-8"	⊓
V	26	#6	2'-6"	——
Reinforcement Bars			Pound	1760
Class X Concrete			Cu. Yd.	15.5
Concrete Removal			Cu. Yd.	10



BAR p_3

DESIGNED	Chi Tsen Chen AK
CHECKED	B. R Thakar L.K JRS
DRAWN	L. M. R.
CHECKED	A.K

October 13, 1981
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

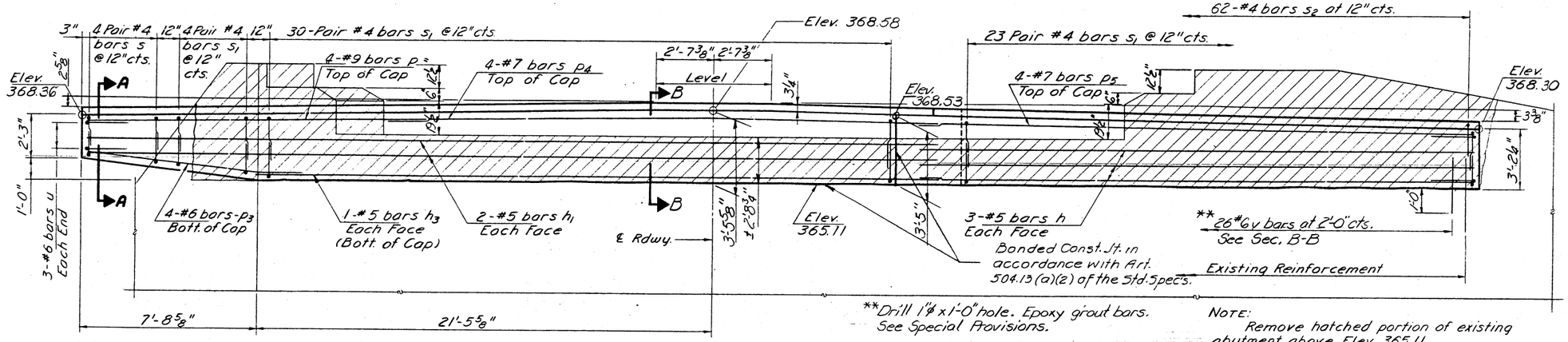
WEST ABUTMENT
F.A. RT. 885 (S.B.I. RT. 146) - SEC. 111B-DR-1
POPE COUNTY
STA. 671+76.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Portion of Abut. above construction joint shall be poured after the beams are in place.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. I. F. A. 885	111B-DR-1	POPE	22	21
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

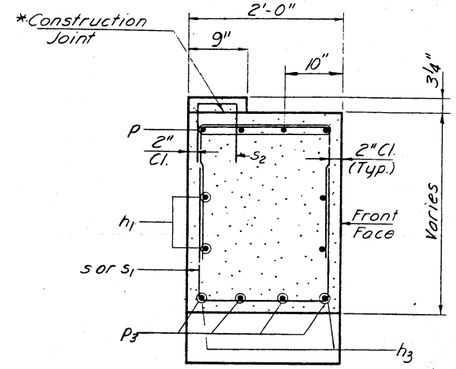
SHEET NO. 9
10 SHEETS



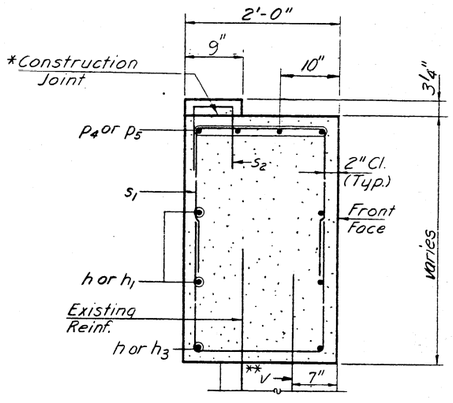
**Drill 1" ø x 1'-0" hole. Epoxy grout bars. See Special Provisions.

ELEVATION

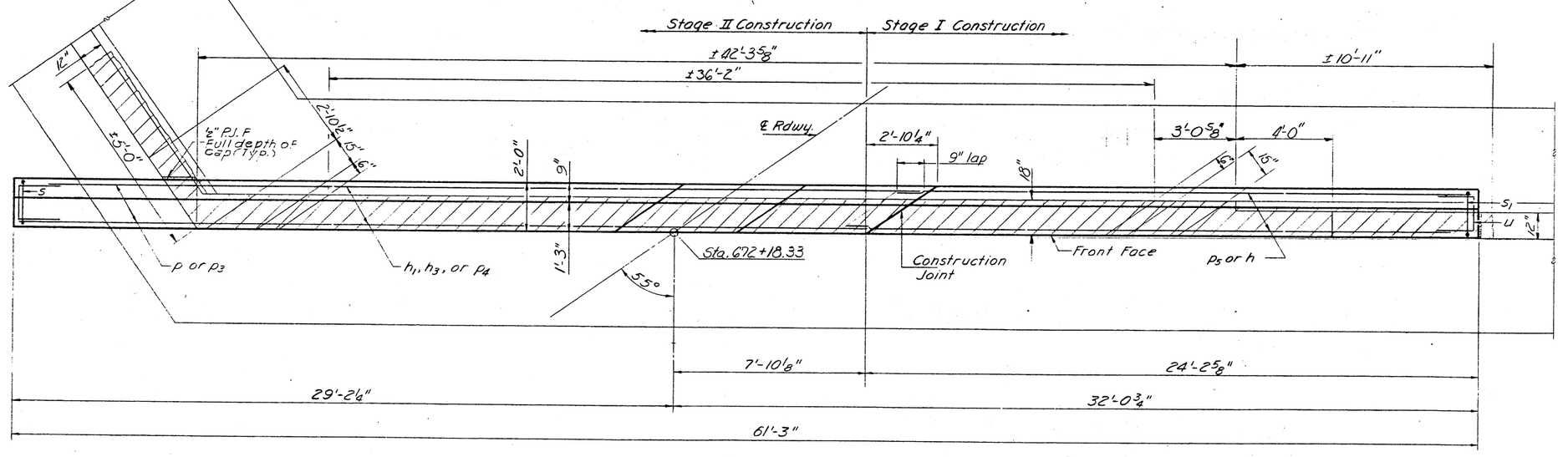
NOTE:
Remove hatched portion of existing abutment above Elev. 365.11
Straighten, clean, and incorporate existing reinforcement into new concrete.



SECTION A-A



SECTION B-B



TOP PLAN

EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	6	#5	22'-0"	——
h1	4	#5	36'-9"	——
h3	2	#5	32'-0"	——
p	4	#9	11'-0"	——
p3	4	#6	10'-0"	⟋
p4	4	#7	31'-0"	——
p5	4	#7	22'-0"	——
s	8	#4	5'-6"	□
s1	114	#4	6'-0"	□
s2	62	#4	2'-3"	□
u	6	#6	9'-8"	⊏
v	26	#6	2'-6"	——
Reinforcement Bars			Pound	1760
Class X Concrete			Cu. Yd	15.3
Concrete Removal			Cu. Yd	10

DESIGNED	Chu Tsun Chen C.T.C.
CHECKED	B. R. Thakar L.K. JRS
DRAWN	G.H.R.
CHECKED	N.T. R.W.

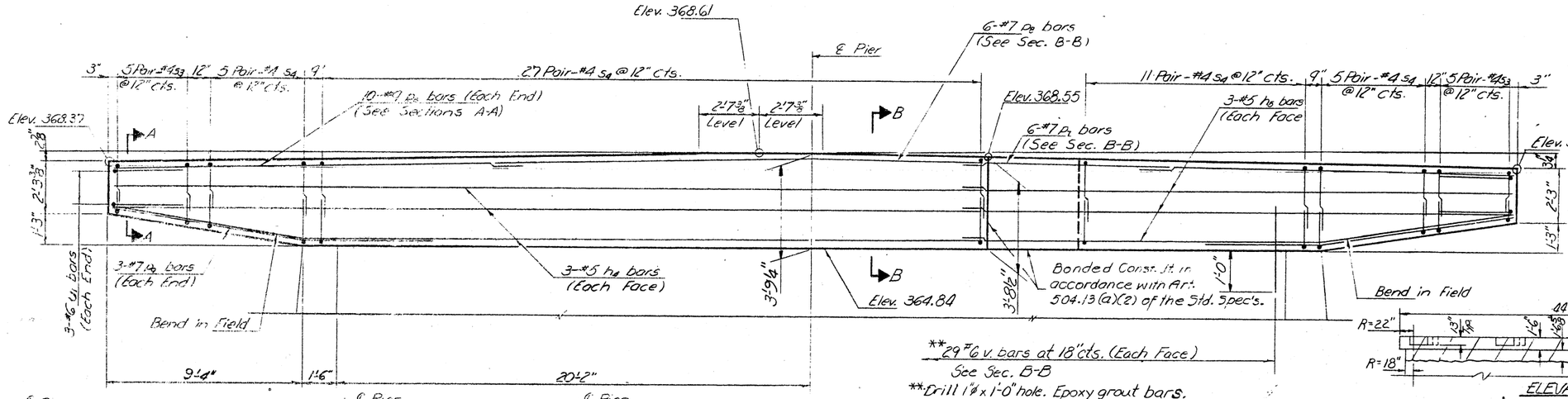
October 13 1981
EXAMINED Robert J. Schaefer
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

EAST ABUTMENT
F.A. RT. 885 (S.B.I. RT. 146) - SEC. 111B-DR-1
POPE COUNTY
STA. 671+76.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. BBS	111B DR 1	POPE	22	22
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

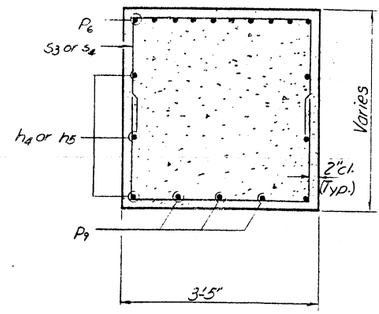
SHEET NO. 10
10 SHEETS



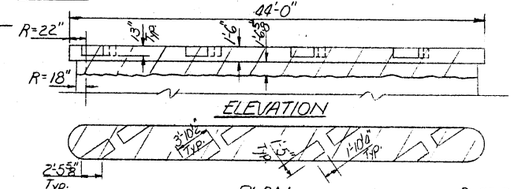
ELEVATION
(LOOKING EAST)

**29 #6 v. bars at 18" c/s. (Each Face) See Sec. B-B

**Drill 1 1/4" x 1'-0" hole. Epoxy grout bars. See Special Provisions.



SECTION A-A

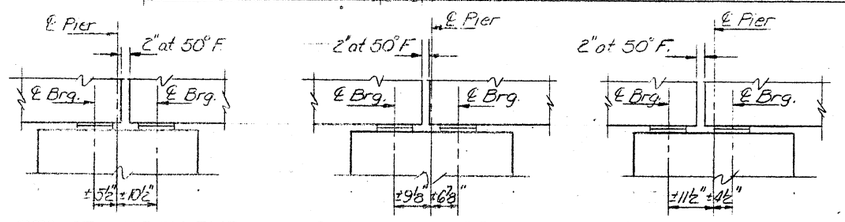


ELEVATION

PLAN

EXISTING CONCRETE REMOVAL
Hatched area indicates Concrete Removal.

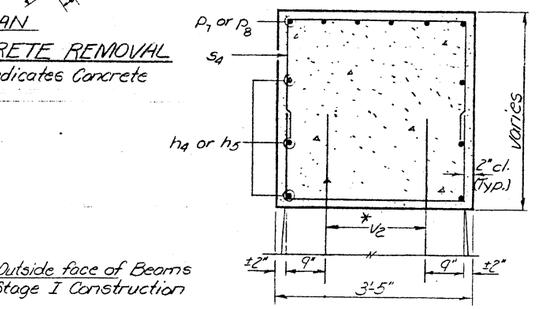
Notes:
Remove the portion of existing Pier above Elev. 364.84. Straighten, clean and incorporate existing reinforcement into new construction.



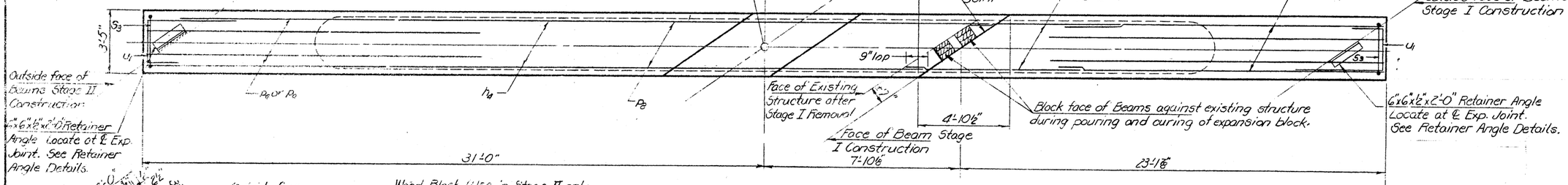
SEC. AT NORTH END
(Looking North)
Dimensions at Rt. ℄s at outside face of beams

SEC. AT STAGE LINE
(Looking North)
Dimensions at Rt. ℄s at Stage Construction Line.

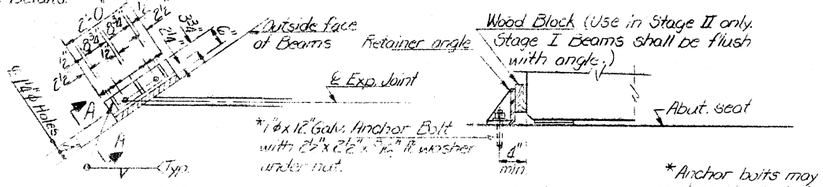
SEC. AT SOUTH END
(Looking North)
Dimensions at Rt. ℄s at outside face of beams.



SECTION B-B



TOP PLAN



PLAN

SEC. A-A

RETAINER ANGLE DETAILS

DESIGNED	C. F. C.	A.S.
CHECKED	A. C. St. L.	A.S.
DRAWN	R. Doty	
CHECKED		

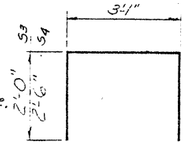
October 13, 1981

EXAMINED
PASSED — ENGINEER OF BRIDGE DESIGN
APPROVED — ENGINEER OF BRIDGES AND STRUCTURES
DIRECTOR OF HIGHWAYS

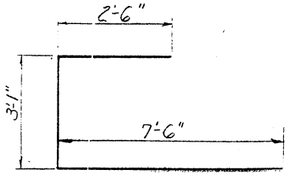
*Anchor bolts may be cast into the masonry or placed in drilled holes and grouted in place. Cost including Retainer Angle and Accessories incidental to Beams

Note: After block-outs are poured and cured the retainer angles shall be removed. Anchor bolts may be left in place.

BAR P9



BARS S3 & S4



BAR U1

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h4	6	#5	35'-0"	—
h5	6	#5	20'-6"	—
P6	20	#9	13'-0"	—
P7	6	#7	15'-0"	—
P8	6	#7	30'-6"	—
P9	6	#7	13'-0"	—
S3	20	#4	7'-2"	⊓
S4	96	#4	8'-1"	⊓
U1	6	#6	13'-1"	⊏
V	58	#6	2'-6"	—

Concrete Removal	Cu. Yd.	15.0
Class X Concrete	Cu. Yd.	27.1
Reinforcement Bars	Pound	2900

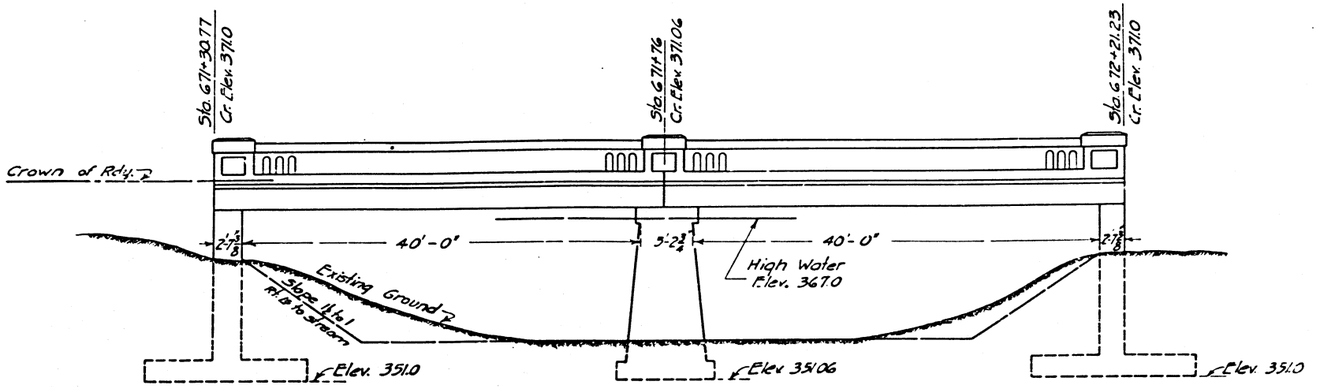
PIER
F.A. RT. 885 SEC. 111B-DR-1
POPE COUNTY
STA. 671+76.00

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

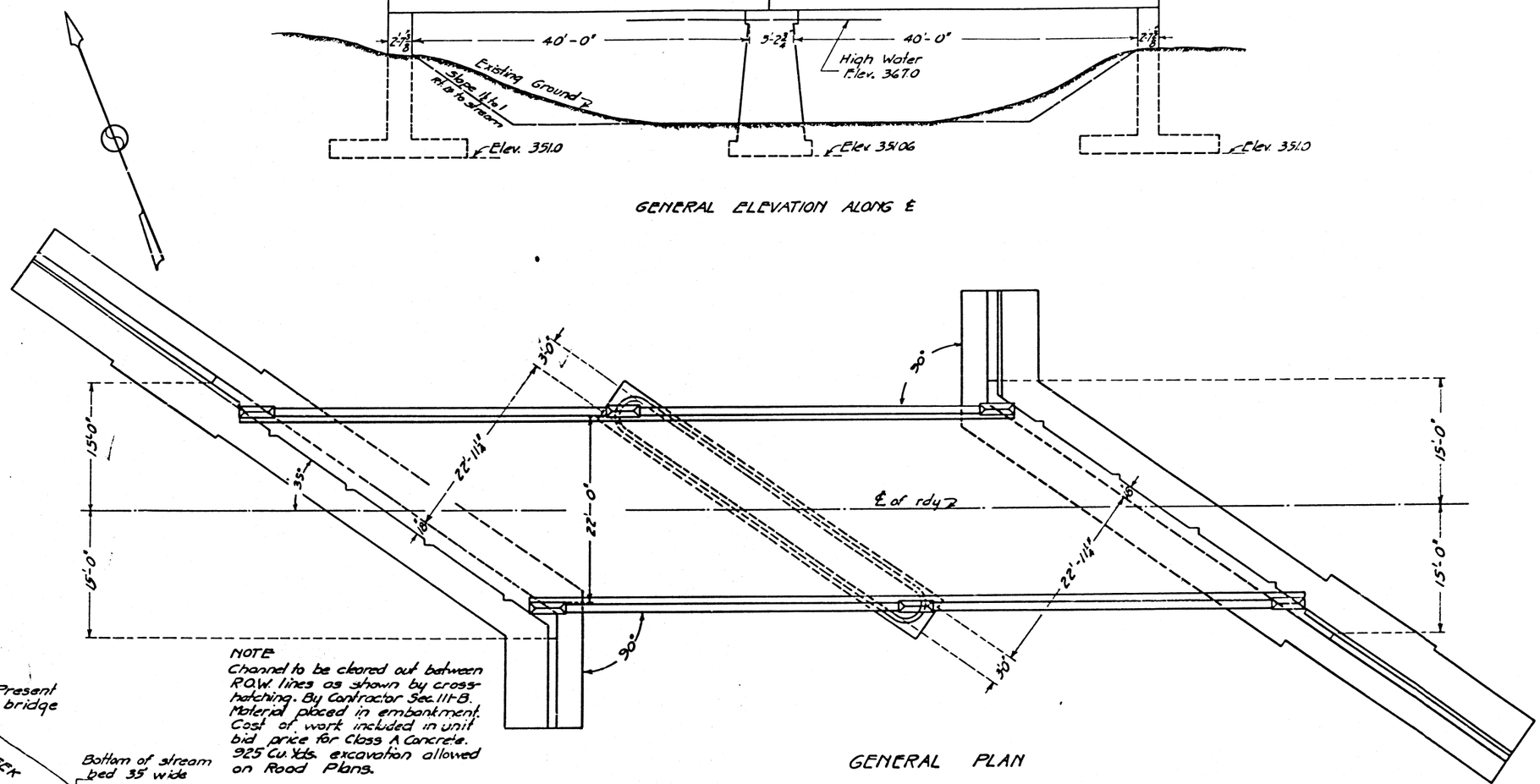
SHEET NO 1
4 SHEETS

BOND ISSUE ROUTE NO.	COUNTY	SEC.	TOTAL SHEETS	SHEET NO.
146	Pope	1118	63	59

Existing structure to be left in place.
B.M. Sand W. in root of 6" Block Oak 30' Lt. of sta. 678+30 Elev. 400.86

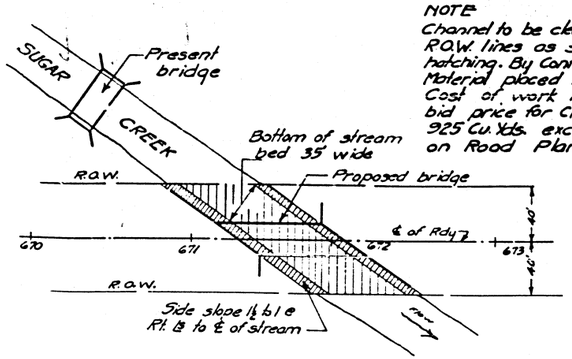


GENERAL ELEVATION ALONG ℄



GENERAL PLAN

NOTE
Channel to be cleared out between R.O.W. lines as shown by cross-hatching. By Contractor Sec. 111-B. Material placed in embankment. Cost of work included in unit bid price for Class A Concrete. 925 Cu. Yds. excavation allowed on Road Plans.



TOTAL BILL OF MATERIAL

Item	Super.	Pier	Abut.	Total
Reinforcing Steel - Lbs.	34120		23740	57860
Class X Concrete - Cu. Yds.	13.4			13.4
Class A Concrete - Cu. Yds.	105.9		310.9	416.8
Class B. Concrete - Cu. Yds.		101.5		101.5
Rockers & Plates - Lbs	2028			2028
Structural Steel (Estim.) Lbs.	940			940
15 Ton Untr. Pile - Lineal ft.		480	1120	1600
12 Ton Untr. Pile - Lineal ft.			480	480
10 Ton Untr. Pile - Lineal ft.			1230	1230
4" P.C.C. Pavt. Sq. Yds.	211.0			2110
Name Plate	1			1

STANDARD	COMPUTED —	P. R. Patterson
	CHECKED —	Leo Jansen
	DRAWN —	P.R.P.
	CHECKED —	Leo J.
SPECIAL	ASSEMBLED —	
	CHECKED —	

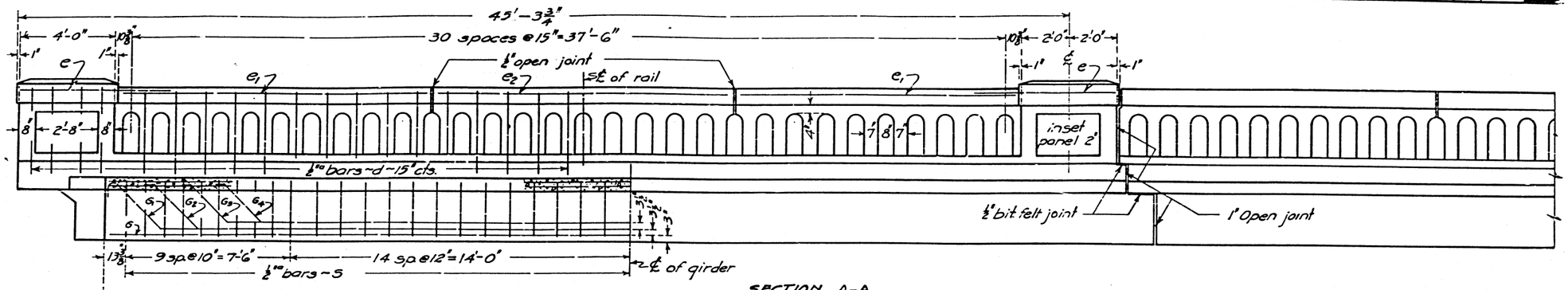
EXAMINED July 14, 1928
H. F. Burch
BRIDGE ENGINEER
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

SUGAR CREEK
S.B.I. ROUTE 146 ~ SECT. 111-B
POPE COUNTY
STA 671+76

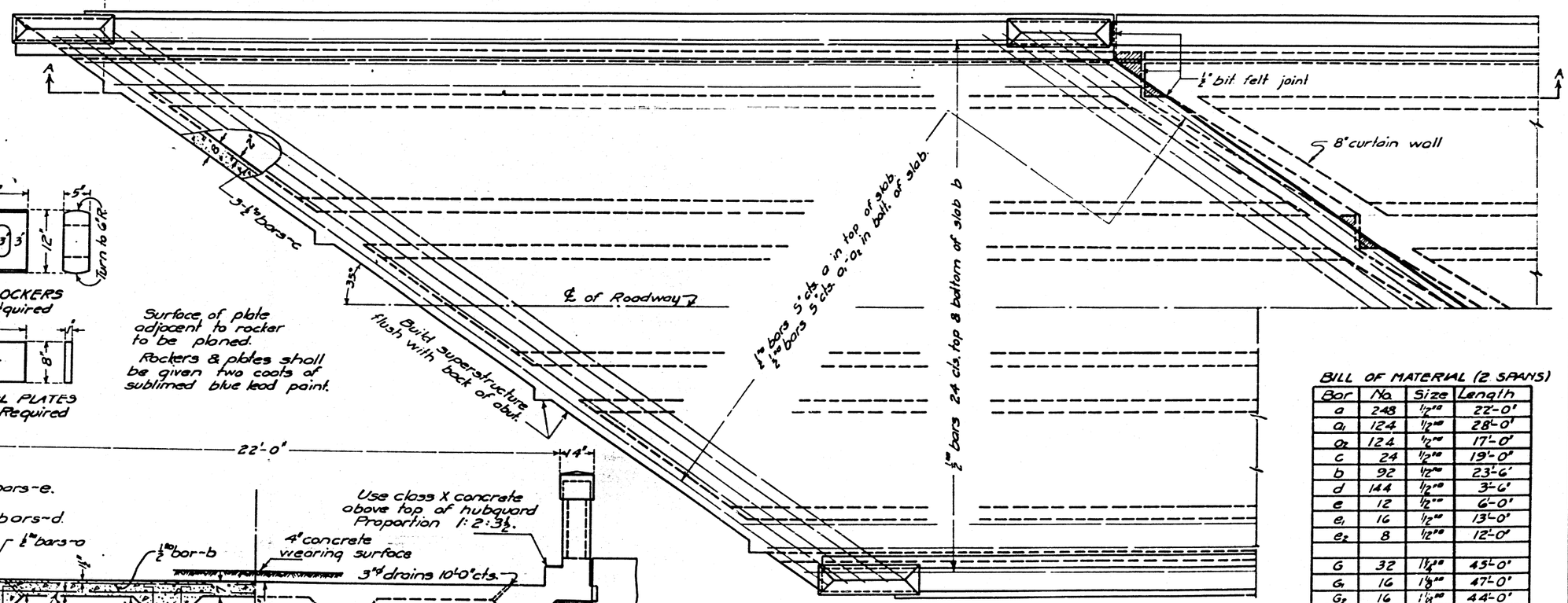
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

SHEET NO. 2
4 SHEETS

BOND ISSUE ROUTE NO.	COUNTY	SEC.	TOTAL SHEETS	SHEET NO.
146	Johnson	111B	63	60



SECTION A-A



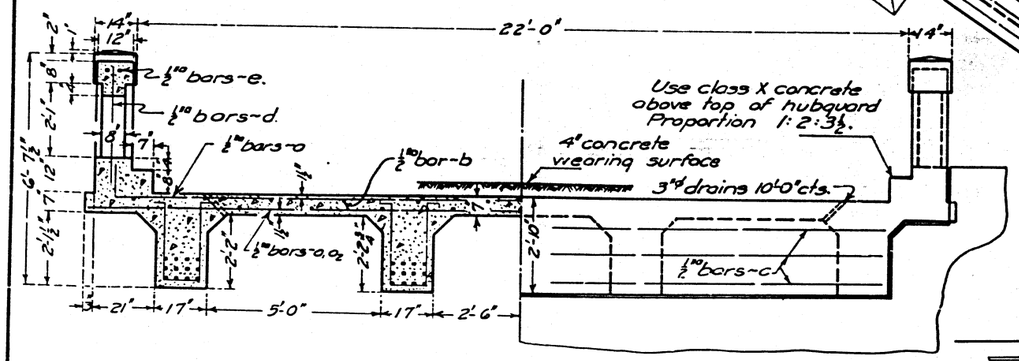
PLAN

C.I. ROCKERS
8 Required

STEEL PLATES
16 Required

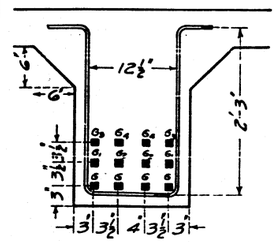
Surface of plate adjacent to rocker to be planed.

Rockers & plates shall be given two coats of sublimed blue lead paint.

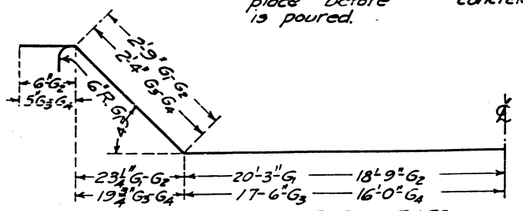


HALF CROSS SECTION

HALF END ELEVATION



STIRRUP BAR-S



DETAIL OF GIRDER BARS

Use class A concrete below top of hubguard. Proportions 1:2½:4.

All reinforcing steel shall be wired securely in place before concrete is poured.

BILL OF MATERIAL (2 SPANS)

Bar	No.	Size	Length
a	248	½"	22'-0"
a₁	124	½"	28'-0"
a₂	124	½"	17'-0"
c	24	½"	19'-0"
b	92	½"	23'-6"
d	144	½"	3'-6"
e	12	½"	6'-0"
e₁	16	½"	13'-0"
e₂	8	½"	12'-0"
G	32	1¼"	45'-0"
G₁	16	1⅛"	47'-0"
G₂	16	1¼"	44'-0"
G₃	16	1⅛"	40'-6"
G₄	16	1⅛"	37'-6"
s	376	½"	7'-9"

Reinforcing Steel-Lbs.	34120
Concrete Cl. X-Cu. Yds.	13.4
Concrete Cl. A-Cu. Yds.	105.9
C.I. Rockers-Lbs.	1488
Steel Plates-Lbs.	540
Name Plate	1
4" PCC Pav't-Sq. Yds.	2110

STANDARD	COMPUTED	P.R. Patterson
	CHECKED	E.E. Hansen
	DRAWN	P.R.P.
	CHECKED	E.E.H.
SPECIAL	ASSEMBLED	
	CHECKED	

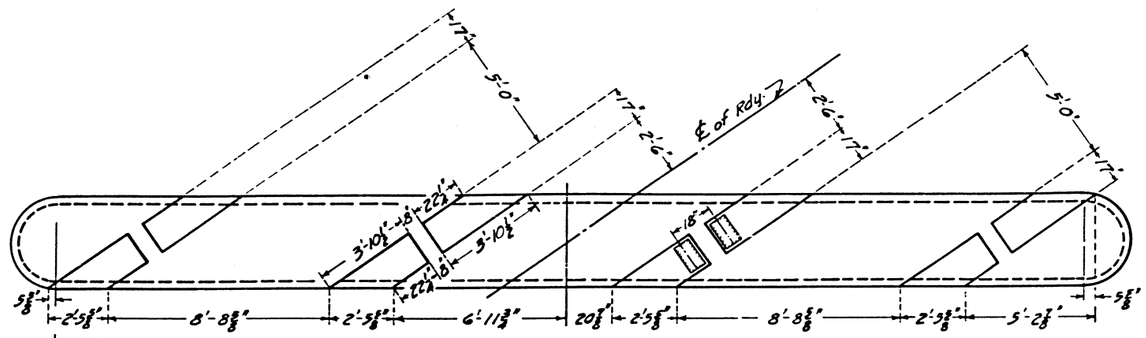
EXAMINED Feb 14, 1928
H. T. Bruce BRIDGE ENGINEER
PASSED [illegible] ENGINEER OF DESIGN
APPROVED [illegible] CHIEF HIGHWAY ENGINEER

SUGAR CREEK
S.B.I. ROUTE 146 ~ SECT. 111-B
POPE COUNTY
STA. 671+76

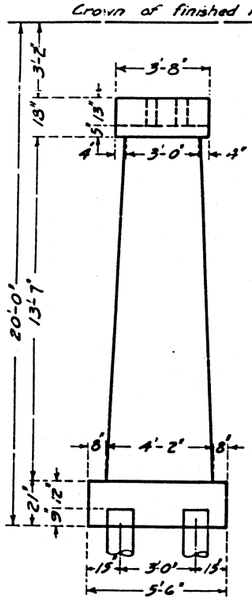
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

SHEET NO. 3
4 SHEETS

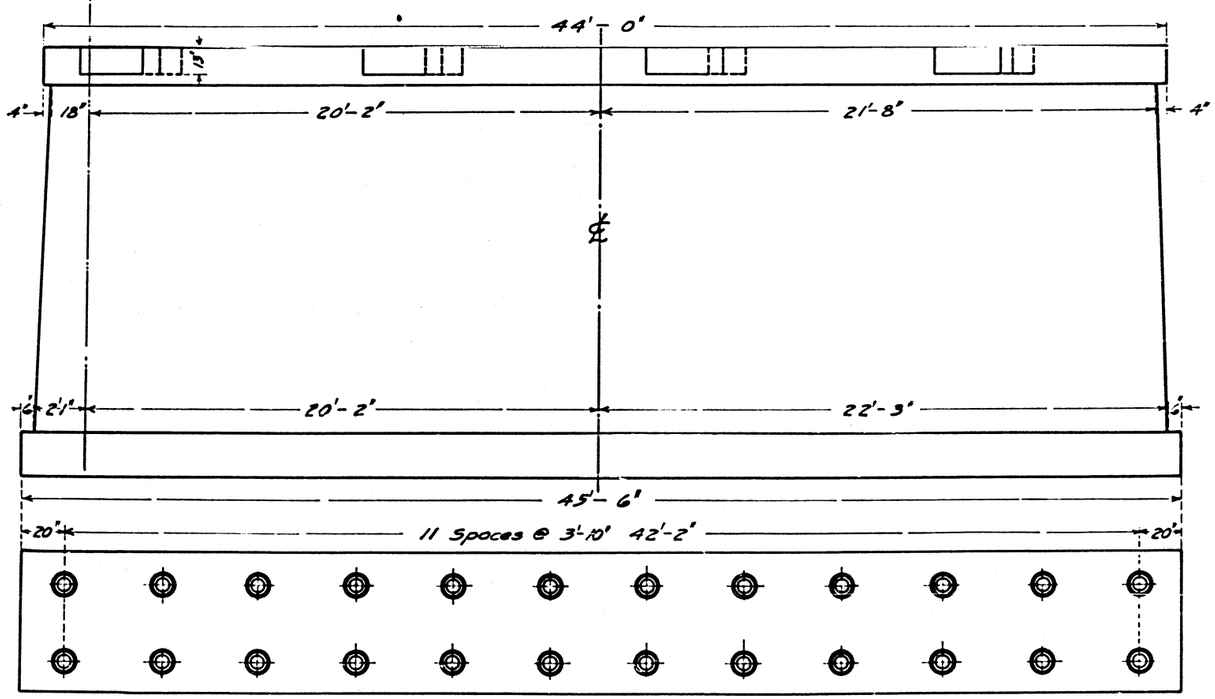
BOND ISSUE ROUTE NO.	COUNTY	SEC.	TOTAL SHEETS	SHEET NO.
146	Johnson	111B	63	61



PLAN OF COPING



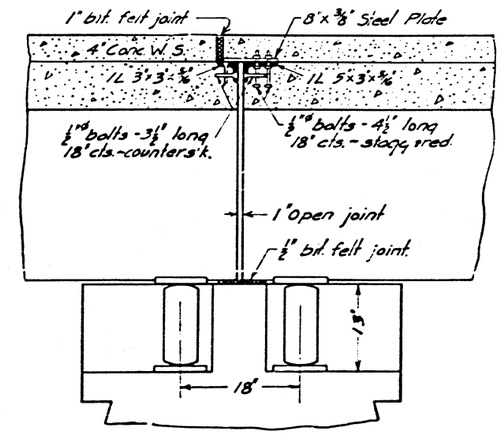
END ELEVATION

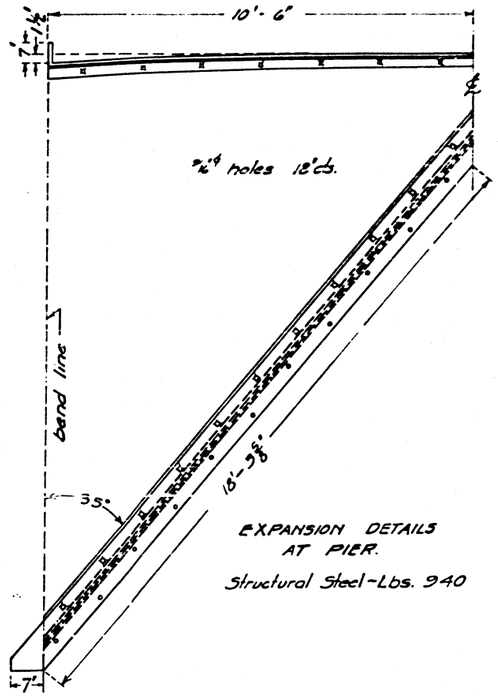


PLAN OF FOOTING

Use class B concrete throughout
Cu. Yds. 101.5
Proportions 1:3:5.

15 ton untr. pile 10 tip 12 butt
24 required (est. length 480 lin. ft.)





EXPANSION DETAILS
AT PIER.
Structural Steel - Lbs. 940

STANDARD	COMPUTED	P.R. Patterson
	CHECKED	W.T. Hayson
SPECIAL	DRAWN	P.R.P.
	CHECKED	A.D.D.
	ASSEMBLED	
	CHECKED	

EXAMINED Oct. 14, 1928
H. C. Bunch BRIDGE ENGINEER
PASSED [illegible] ENGINEER OF DESIGN
APPROVED [illegible] CHIEF HIGHWAY ENGINEER

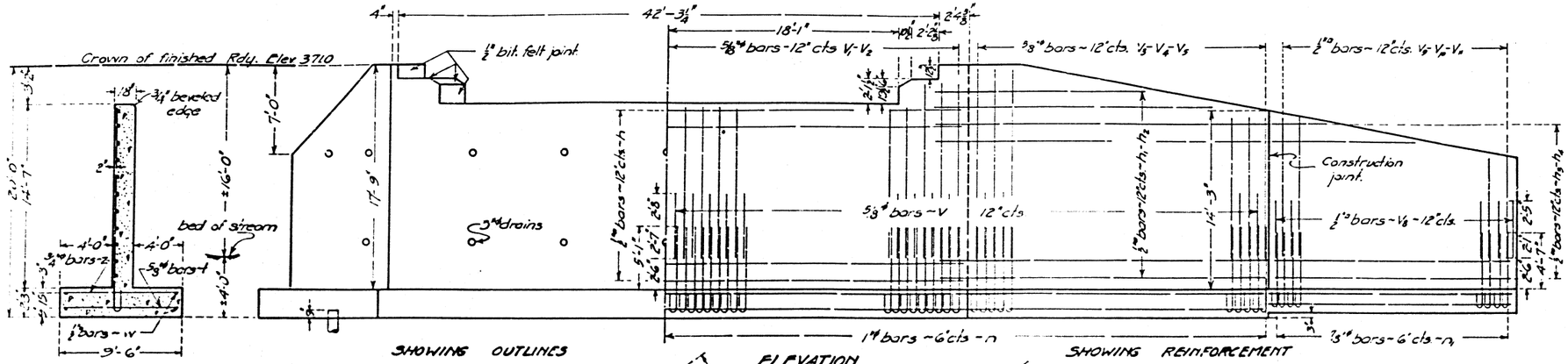
SUGAR CREEK
S.B.I. ROUTE 146 - SECT. 111-B
POPE COUNTY
STA. 671+76

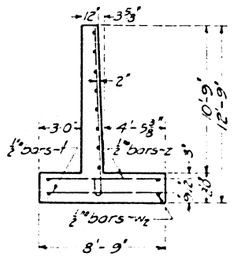
3M. 32 Min root of 6" Block
Oak 30' Lt. of 31a 678+30
Elevation 400.86

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

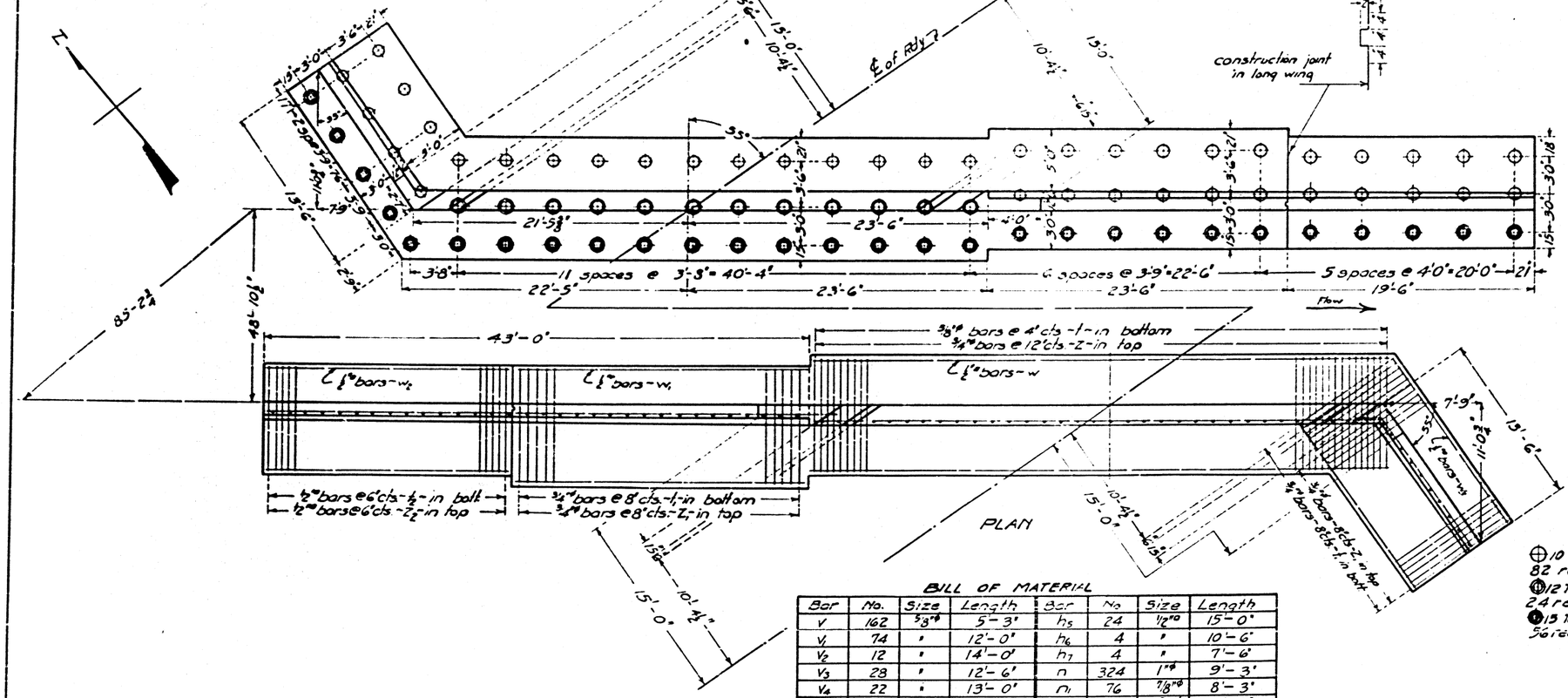
SHEET NO. 4
4 SHEETS

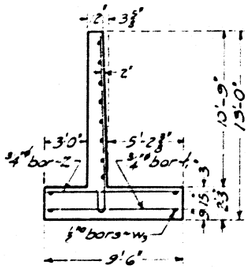
BOND ISSUE ROUTE NO.	COUNTY	SEC.	TOTAL SHEETS	SHEET NO.
146	Johnson	111B	63	62





END OF LONG WING





END OF SHORT WING

Use class A concrete throughout
Proportions 1:2 1/2:4.

All reinforcing steel shall be wired securely in place before concrete is poured.

⊕ 10 Ton untr. pile 8" tip 10" butt
82 reqd (est. length 1230 lin. ft)
⊕ 12 Ton untr. pile 10" tip 12" butt
24 reqd (est. length 480 lin. ft)
⊕ 13 Ton untr. pile 10" tip 12" butt
56 reqd (est. length 1120 lin. ft)

BILL OF MATERIAL

Bar	No.	Size	Length	Bar	No.	Size	Length
V	162	5/8" sq	5'-3"	h_5	24	1/2" sq	15'-0"
V_1	74	"	12'-0"	h_6	4	"	10'-6"
V_2	12	"	14'-0"	h_7	4	"	7'-6"
V_3	28	"	12'-6"	n	324	1" sq	9'-3"
V_4	22	"	13'-0"	n_1	76	7/8" sq	8'-3"
V_5	18	"	11'-6"	t	276	5/8" sq	9'-3"
V_6	4	"	10'-6"	t_1	120	3/4" sq	9'-3"
V_7	4	"	8'-6"	t_2	39	1/2" sq	8'-6"
V_8	38	1/2" sq	4'-6"	z	92	3/4" sq	9'-3"
V_9	4	"	11'-6"	z_1	110	3/4" sq	9'-3"
V_{10}	16	"	10'-0"	z_2	33	1/2" sq	8'-6"
V_{11}	18	"	8'-6"	w	16	"	24'-0"
h	60	"	23'-6"	w_1	8	"	23'-0"
h_1	30	"	25'-0"	w_2	8	"	19'-0"
h_2	4	"	11'-0"	w_3	8	"	16'-0"
h_3	22	"	19'-0"	Reinforcing Steel - Lbs			23740
h_4	4	"	12'-0"	Concrete - Cu Yds.			310.9

STANDARD	COMPUTED	P.B. Patterson
	CHECKED	
	DRAWN	B.R.P.
SPECIAL	CHECKED	
	ASSEMBLED	
	CHECKED	

EXAMINED July 14, 1928
H. F. Bunnin
BRIDGE ENGINEER
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

SUGAR CREEK
S.B.I. ROUTE 146 - SECT. 111-B
POPE COUNTY
STA. 671+76