

FOR THE INDEX OF SHEETS, SEE SHEET NO. 2
FOR THE LIST OF APPLICABLE IDOT STANDARDS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NOS. 4-7

1999 TRAFFIC DATA

	ADT (vpd)	% TRUCKS
FAS 2937 (IL 169) - IL 37 TO KARNAK	2400	10.70
FAS 2937 (IL 169) - KARNAK TO US 45	2250	8.75

PROPOSED HIGHWAY PLANS

F.A.S. ROUTE 2937 (ILLINOIS ROUTE 169)
WIDENING, RESURFACING, CULVERT EXTENSIONS
& REPLACEMENT, INTERSECTION RECONSTRUCTION
SECTION 116W, RS-3; 13W, RS-4
PROJECT RS-2937(109)
PULASKI & MASSAC COUNTIES
C-99-021-02

EXISTING STRUCTURE (S.N. 077-0023)
OVER KITCHEL SLOUGH
STA. 78+41.90 TO STA. 79+43.41
BRIDGE DECK OVERLAY
REMOVAL & RESURFACING

STA. EQUATION:
STA. 67+42.54 (BK) =
STA. 67+49.84 (AH)

PROJECT BEGINS
STA. 0+00.00

STA. EQUATION:
STA. 71+17.85 (BK) =
STA. 71+18.94 (AH)

IL RTE 169
F.A.S. 2937

EXISTING STRUCTURE (SN 064-0039)
OVER PATTERSON BRANCH
STA. 261+25.04 TO STA. 262+62.48
PAVING OMISSION

BURLINGTON NORTHERN SANTA FE RAILROAD
STA. 314+25.18 TO STA. 314+35.67
PAVING OMISSION

PROJECT ENDS
STA. 315+58.02

STA. EQUATION:
STA. 120+04.72 (BK) =
STA. 120+06.11 (AH)

STA. EQUATION:
STA. 159+34.04 (BK) =
STA. 0+00.00 (AH)

STA. EQUATION:
STA. 20+83.64 (BK) =
STA. 20+99.01 (AH)

EXISTING STRUCTURE (SN 077-0039)
OVER POST CREEK CUTOFF
STA. 46+71.93 TO STA. 49+10.80
PAVING OMISSION

EXISTING STRUCTURE (SN 077-0036)
OVER A TRIBUTARY OF POST CREEK
STA. 82+23.91 TO STA. 83+66.54
PAVING OMISSION

STA. EQUATION:
STA. 263+13.13 (BK) =
STA. 261+13.76 (AH)

STA. EQUATION:
STA. 243+03.46 (BK) =
STA. 243+16.86 (AH)

STA. EQUATION:
STA. 196+16.61 (BK) =
STA. 196+16.30 (AH)

KARNAK & LOGAN TOWNSHIPS

LOCATION MAP

GROSS LENGTH OF PROJECT = 47,653.19 FEET (9.025 MILES)
NET LENGTH OF PROJECT = 47,123.76 FEET (8.925 MILES)

PLANS PREPARED BY

HORNER & SHIFRIN, INC.

ENGINEERS ■ ARCHITECTS ■ PLANNERS

141 MARKET PLACE SUITE 208 ■ FAIRVIEW HEIGHTS, ILLINOIS 62208
5200 OAKLAND AVENUE ■ ST. LOUIS, MISSOURI 63110
www.horner-shifrin.com

0 5' 10' — 1" = 5'
CROSS SECTIONS
STA. 135+00 TO STA. 10+00

0 10' 20' 30' — 1" = 10'
CROSS SECTIONS
STA. 0+00 TO STA. 135+00
STA. 10+00 TO STA. 315+58.60

0 50' 100' — 1" = 20'
PLAN/PROFILE & TEMPORARY EROSION CONTROL
STA. 135+00 TO STA. 10+00

0 50' 100' — 1" = 50'
PLAN/PROFILE & TEMPORARY EROSION CONTROL
STA. 0+00 TO STA. 135+00
STA. 10+00 TO STA. 315+58.02

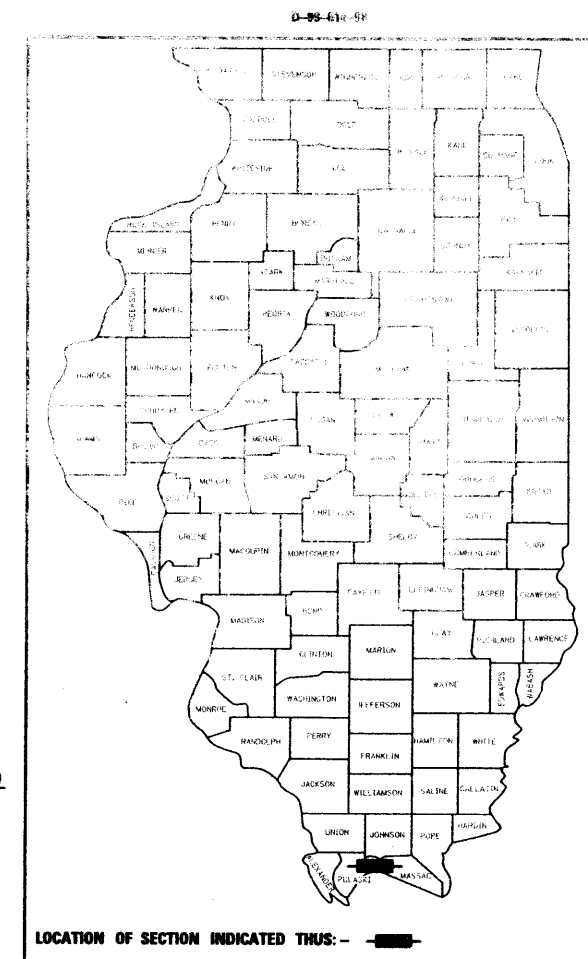
0 500' 1000' — 1" = 200'
GENERAL PLAN VIEW LAYOUT
STA. 0+00 TO STA. 315+58.02

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

CONTRACT NO. 98517

077-0023



DESIGN DESIGNATION
FAS 2937 (IL 169) - MAJOR COLLECTOR

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED February 6, 2003

Thomas A. Ziemann
DISTRICT ENGINEER

March 21, 2003
Michael R. Hin
ENGINEER OF DESIGN AND ENVIRONMENT

March 21, 2003
James R. Foster
DIRECTOR, DIVISION OF HIGHWAYS

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

9-179

SHEET NO.	SECTION	COUNTY	TOTAL SHEETS
233	RS-3	ILLINOIS	327
234	RS-4	ILLINOIS	328
235	RS-5	ILLINOIS	329
236	RS-6	ILLINOIS	330
237	RS-7	ILLINOIS	331
238	RS-8	ILLINOIS	332
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539	RS-309	ILLINOIS	633
540	RS-310	ILLINOIS	634
541	RS-311	ILLINOIS	635
542	RS-312	ILLINOIS	636
543	RS-313	ILLINO	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

F.A.S. ROUTE 2937 (ILL. 169)

PROJ. MABH-S-2937(102)

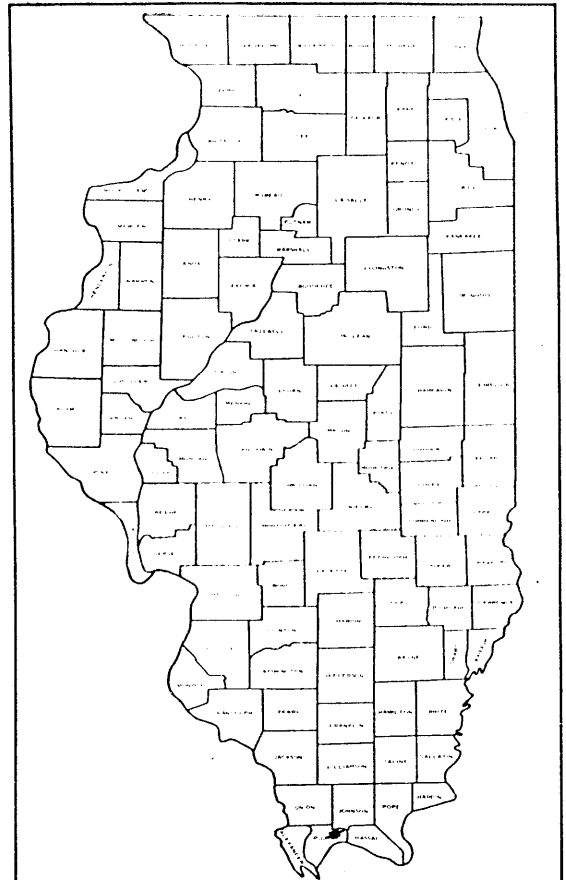
SECTION 116BR-1

PULASKI COUNTY

INDEX OF SHEETS ON SHEET NO. 3
SUMMARY OF QUANTITIES ON SHEET NO. 3

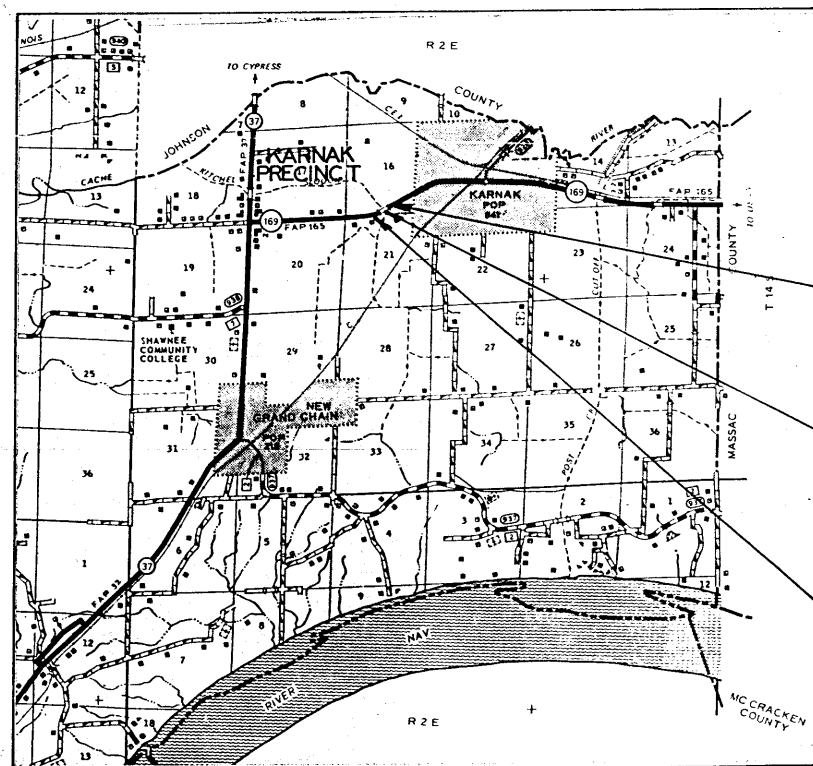
F.A.S. NO.	SECTION	COUNTY	TOTAL SHEETS
2937	116BR-1	PULASKI	20
P.O.A. REG. NO.	ILLINOIS	PROJECT	NO.

P-99-017-78



LOCATION OF SECTION INDICATED THUS: —

C99-078-79



PROP. PROJ. ENDS
STA. 83+10.00

PROP. STRUCTURE - STA 78+93.00
REPLACE EXIST. TRUSS SUPERSTRUCTURE
WITH PPC DECK BEAMS - 33' WIDE OUT-OUT
BK-BK. OF EXISTING ABUTMENTS = 59'-6"

PROP. PROJ. BEGINS
STA. 75+40.00

APPR. SCALE
0 1 MI. 2 MI.

NET LENGTH - STRUCTURE = 61.84 FT. = 0.012 MI.
NET LENGTH - ROADWAY = 708.16 FT. = 0.134 MI.
NET PROJECT LENGTH = 770.00 FT. = 0.146 MI.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	
SUBMITTED	Feb. 8 1983
EXAMINED	March 15 1983
PASSED	March 15 1983
APPROVED	March 15 1983
<i>J. F. Newton</i> DISTRICT ENGINEER <i>R. Williams</i> ENGINEER OF PLANS AND CONTRACTS <i>John R. Allen</i> ENGINEER OF DESIGN <i>W. J. Horvath</i> DIRECTOR, DIVISION OF HIGHWAYS	

9-15

KITCHEL SLOUGH

CONTRACT NO. 36007

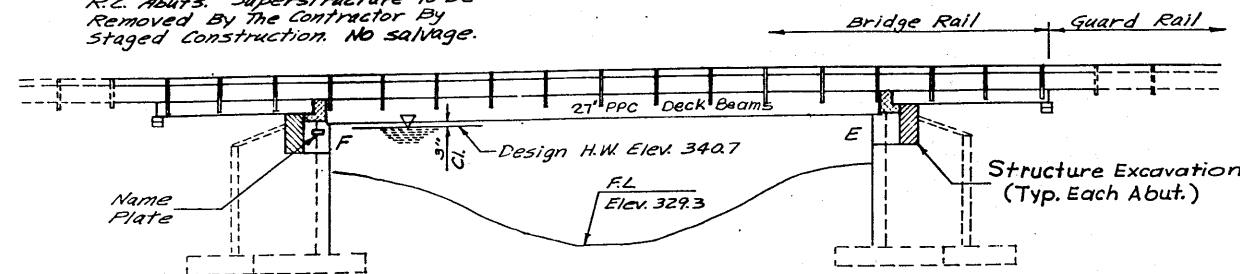
PULASKI COUNTY SECTION 116BR-1 F. A. ROUTE 2937 (ILL. 169)

B.M. - U.S.C. & G.S. Stamped 4 SAN 1965-342"
 19' Northwest of Northeast Corner of Concrete Platform
 of The Shelter at Karnak Lions Club Park.
 Standard Tablet in Concrete Post. Elev. 342.366
 EXISTING STRUCTURE - No. 077-0023-Built 1933 as SBI. 147
 Sec. 116, STA. 78+93, Pony Truss, Closed
 R.C. Abut. Superstructure To Be
 Removed By The Contractor By
 Staged Construction. No salvage.

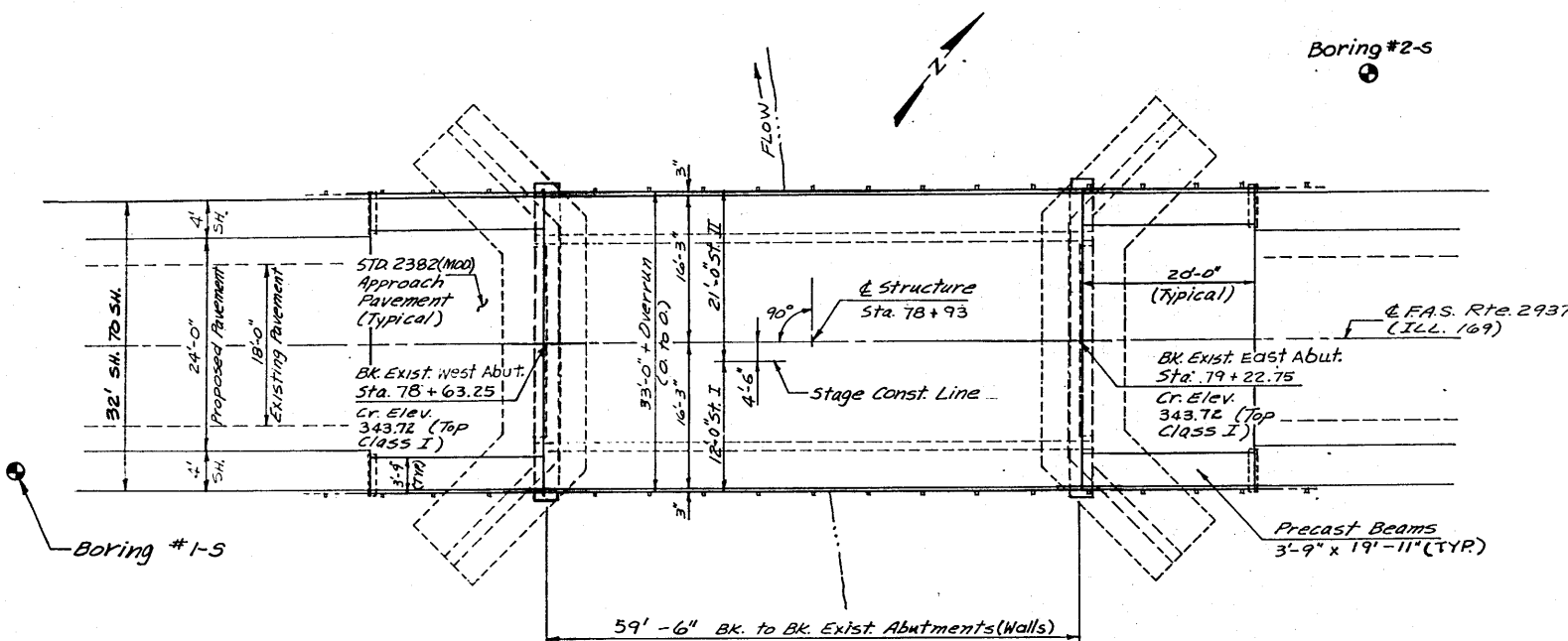
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

RTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 2937	116BR-1	PULASKI	20	11
FED. RD. DIST. NO.	ILLINOIS	PROJECT		

Sheet 1 of 10



- ELEVATION -



- PLAN -

STATION 78+93
 REBUILT 198 BY
 STATE OF ILLINOIS
 F.A.S. RTE 2937 SEC. 116 BR-1
 P.A. PROJ. MASH-S-2937(102)
 LOADING HS20
 STRUCTURE NO. *

NAME PLATE

See Std. 2113
 *Structure Number to be
 supplied by District

DESIGN STRESSES

PRECAST
 PRESTRESSED UNITS

$f'_c = 5,000$ psi.
 $f'_{ci} = 4,000$ psi.
 $f'_s = 270,000$ psi. $1/2$ " ϕ strands
 $f'_{si} = 189,000$ psi. $1/2$ " ϕ strands

FIELD UNITS

$f'_c = 3,500$ psi.
 $f_y = 60,000$ psi. (Reinforcement)
 $f_y = 36,000$ psi. (Temporary Support System)

PRECAST UNITS

$f'_c = 4,500$ psi.
 $f'_c = 1,800$ psi.
 $f'_s = 20,000$ psi.
 $n = 8$

LOADING HS20-44

Allowable Fut. W.S. 25#/ft.
 Design Specifications
 1977 AASHTO 1978, 1979,
 1980 Interim

GENERAL NOTES:

- All reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53 Grade 60.
- 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.
- All structural steel shall be shop painted with two coats of basic lead Silico Chromate paint.
- The top surface of the beams shall be finished in accordance with Article 505.06 of the Std. Spec's. 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 Kays shall be rounded or chamfered a minimum of 1/4".
- A calcium nitrate corrosion inhibitor as covered in the Special Provisions shall be used in the concrete for Precast/Prestressed Concrete Deck Beams.
- Expansion bolts shall consist of approved expansion anchors, providing minimum certified proof load=4080 lbs., and 3/4" x 12" hooked bolts.

TOTAL BILL OF MATERIAL

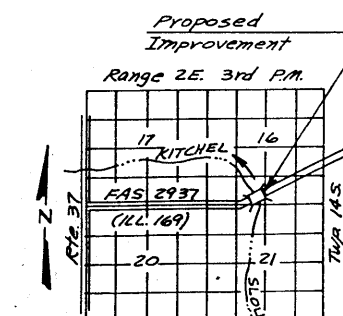
Item	Unit	Super	Sub.	Total
Bituminous Concrete Surface Course, Class I, Mix D	Tons	29		29
Concrete Removal	Cu. Yds.		20.0	20.0
Class X Concrete	Cu. Yds.	7.2	24.6	31.8
Precast Concrete Bridge Slab	Sq. Ft.	299		299
Precast Prestressed Concrete Deck Beams, 27" Depth	Sq. Ft.	1986		1986
Steel Railing, Type S-1	Lin. Ft.	204		204
Reinforcement Bars	Lbs.	110	4380	4490
Removal of Existing Superstructure	Each	1		1
Waterproofing Membrane System	Sq. Yds.	229		229
Name Plate	Each			1
Preformed Joint Seal (2 1/2")	Lin. Ft.	33		33
Temporary Support System	L. Sum.			1
Portland Cement Mortar Fairing Course	Lin. Ft.	602		602
Temporary Bridge Rail	Lin. Ft.	60		60
Structural Steel	Pound	2310		2310
Expansion Bolts (3/4" ϕ)	Each		52	52
Structure Excavation	Cu. Yds.		15	15

WATERWAY INFORMATION

Drainage Area = 7.52 Sq. Mi. Low Grade Elev = 341.25 @ Sta. 87+00									
Flood	Freq.	Q	Opening Sq. Ft.		Nat.	Head-Ft.		Headwater El.	
	Yr.	C.F.S.	Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
Design	50	1760	424	424	340.7	0.40	0.40	341.1	341.1
Base	100	2015	441	441	341.0	0.60	0.60	341.6	341.6
Overtopping	70	1850	430	430	340.8	0.45	0.45	341.25	341.25

APPROVED
 FOR STRUCTURAL ADVISORY ONLY

Carl E. Hummel
 Engineer of Bridges and Structures

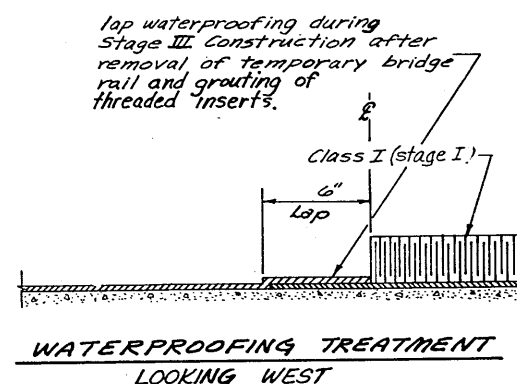
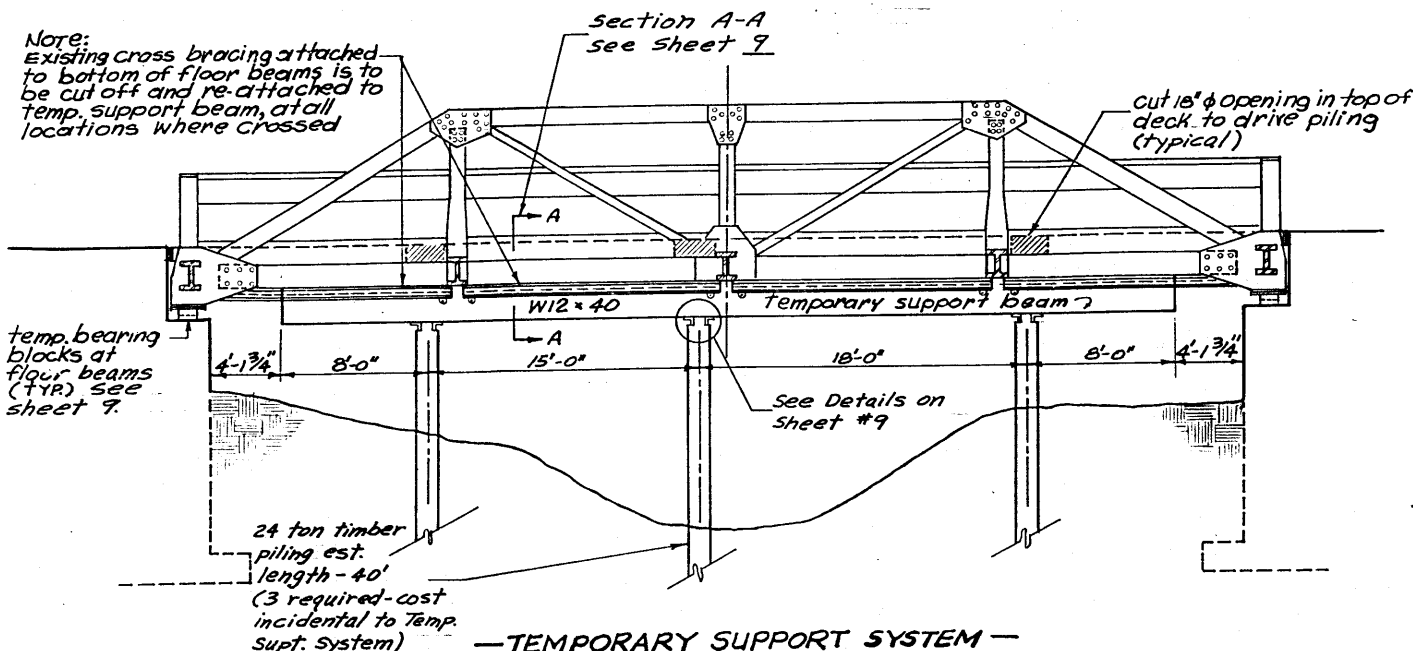


- LOCATION MAP -

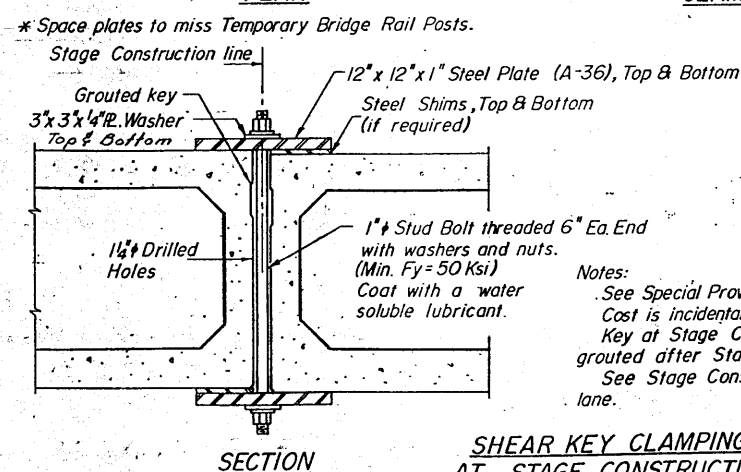
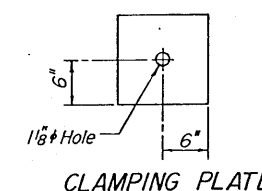
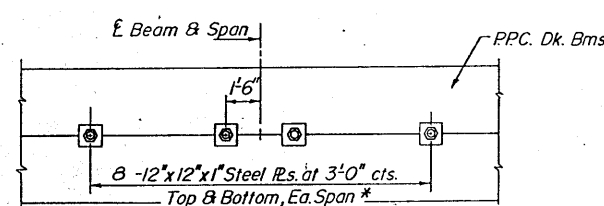
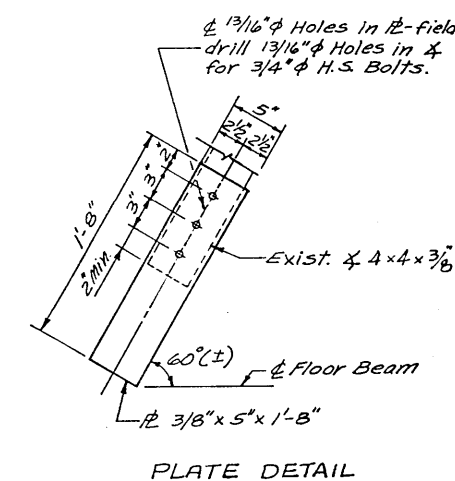
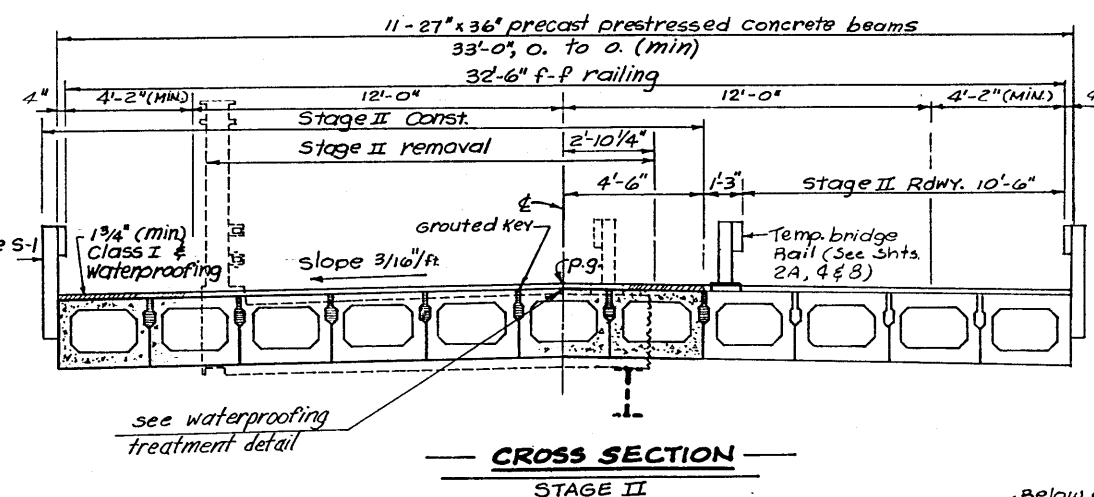
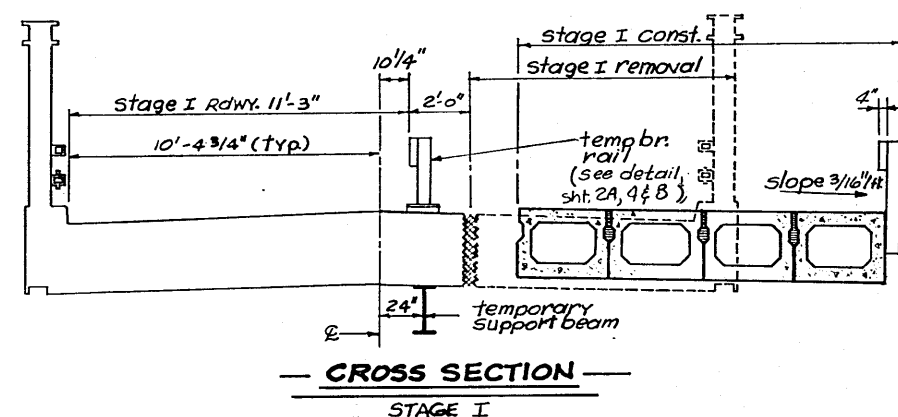
GENERAL PLAN & ELEVATION

F.A.S. ROUTE 2937 (ILL. 169)
 OVER KITCHEL SLOUGH
 SEC. 116 BR-1
 PULASKI COUNTY
 STA. 78+93

DESIGNED	RAN/D.A.J.
CHECKED	D.A.J.
DRAWN	H.D./M.D.G.
CHECKED	RAN/D.A.J.

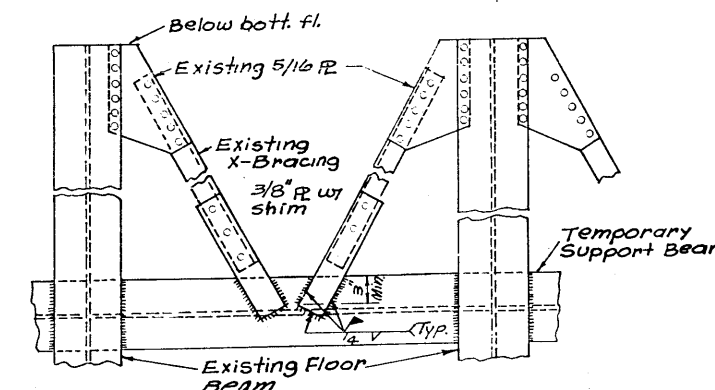


- GENERAL NOTES:**
- Prior to stage I removal the contractor shall install the Temporary Support System as follows prior to cutting existing floor beams:
1. Cut holes through bridge deck as located.
 2. Drive pilings to the required bearing capacity.
 3. Cut off pilings to the correct elevation.
 4. Attach Ls to the pilings and place temporary bearing blocks at the floor beams as shown on sheet 9.
 5. Install the Temporary Support I-Beam, cutting the existing cross bracing and attaching them to the beam as shown.
 6. Use shim plates between top of support beam and bottom of existing floor beams as required. Painting of Temporary Support Components is not required.
- The cost of Removal of the Temporary Support System shall be included in "Temporary Support System," and material shall remain property of the contractor.



Notes:
See Special Provisions.
Cost is incidental to PPC. Dk. Bms.
Key at Stage Constr. Jt. shall be grouted after Stage II keys have cured.
See Stage Constr. Detail for traffic lane.

SHEAR KEY CLAMPING DETAIL
AT STAGE CONSTRUCTION JOINT



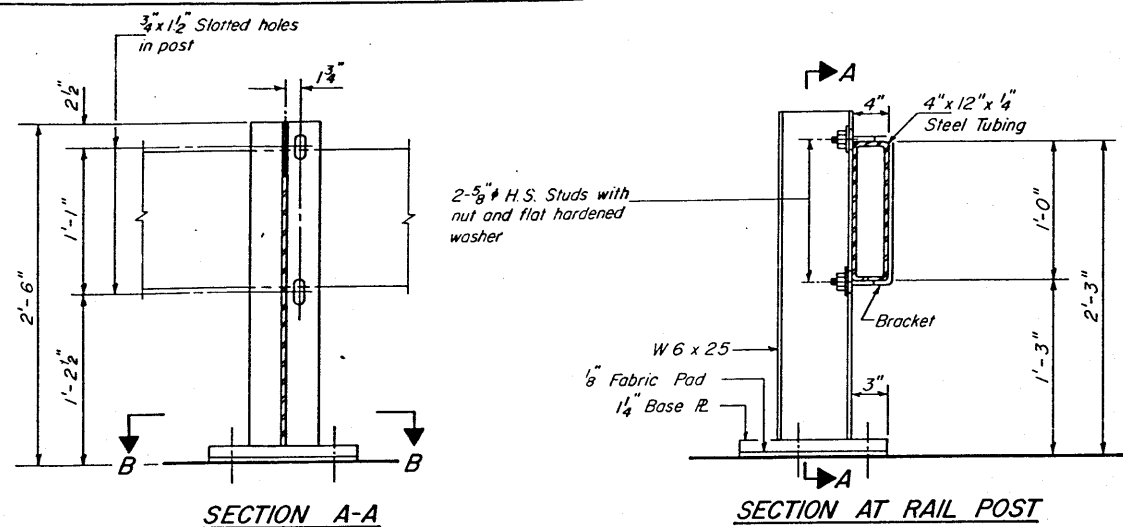
BILL OF MATERIAL

Item	Unit	Quantity
Temporary Bridge Rail	Lin.ft.	60

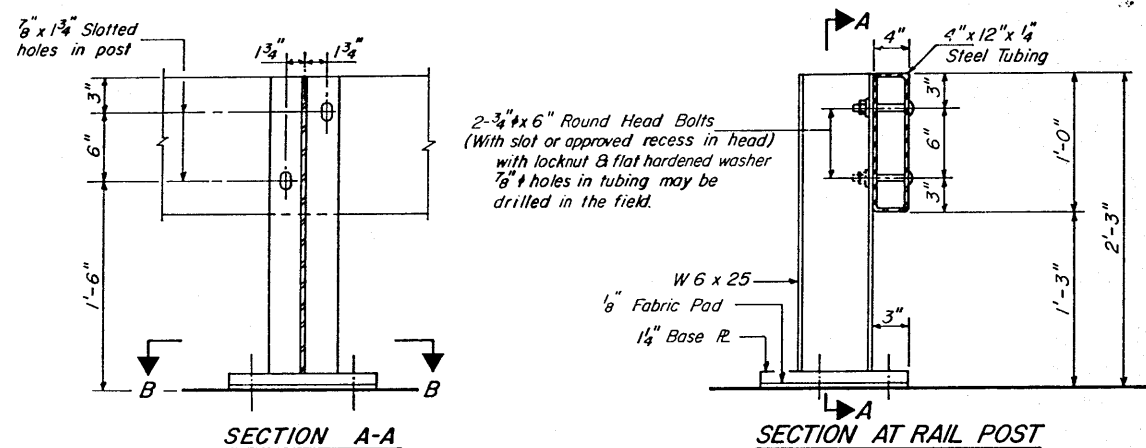
STAGE CONSTRUCTION DETAILS

F.A.S. ROUTE 2937 (ILL. 169)
OVER KITCHEL SLOUGH
SEC. 116 BR-1
PULASKI COUNTY
STA. 78+ 93

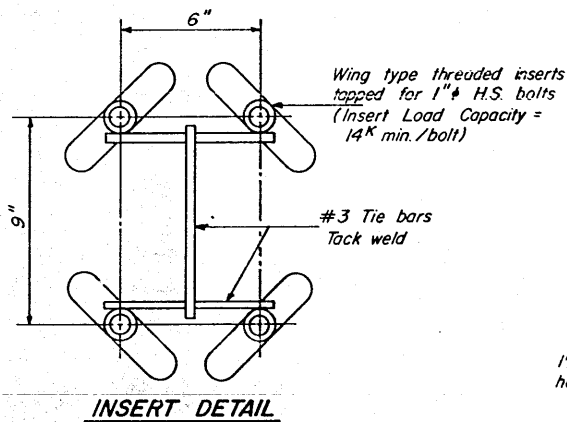
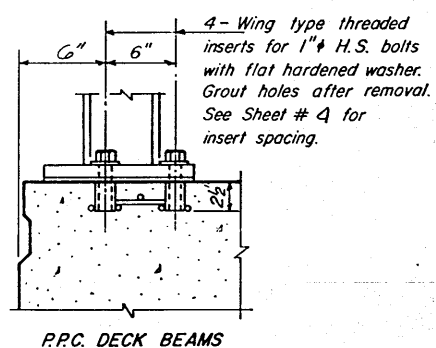
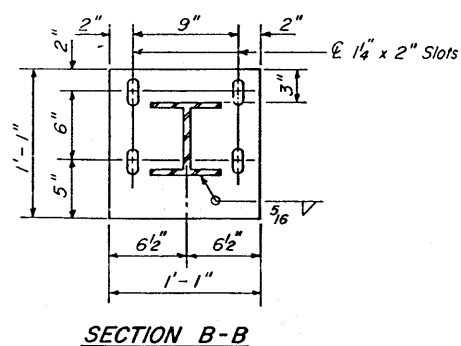
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CHECKED	D.A.J.
DRAWN	H.D./M.R.G.
CHECKED	R.A.N./D.A.J.



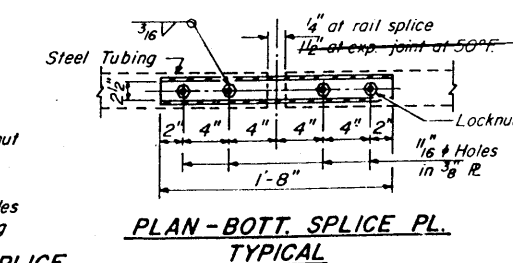
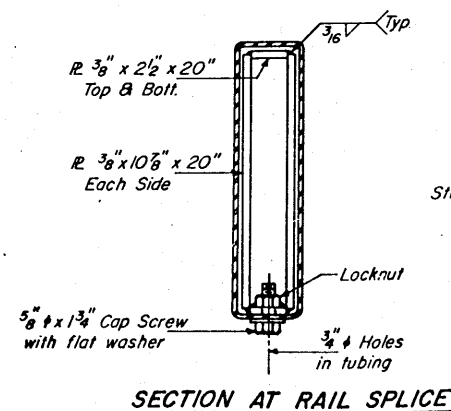
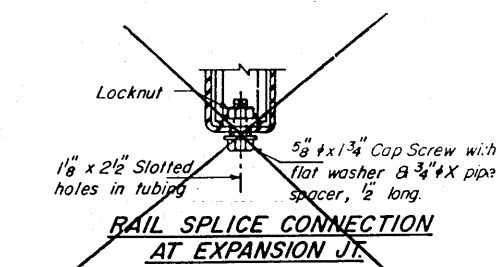
ALTERNATE I



ALTERNATE II



END OF RAIL DETAILS



NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM 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 brackets 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, studs, 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" high strength bolts or threaded rods used to connect the railposts shall be tightened in accordance with Article 50704(g)(3) of the Standard Specification.

See *Special Provisions for Temporary Bridge Rail.*

See sheet # 4 for Rail Post spacing.

The contact surfaces between post flange, rail and inside face of bracket for Alternate J shall be free of all lubricants.

The nut for $\frac{5}{8}$ " high strength studs used in Alternate I to connect bracket to post shall be tightend to a snug fit and given an additional one half turn.

BILL OF MATERIAL

Item	Unit	Quantity
Temporary Bridge Rail	Lin. Ft.	60

TEMPORARY BRIDGE RAIL
F.A.S. ROUTE 2937 (ILL. 169)
SECTION 116 BR-1
PULASKI COUNTY
STATION 78+93

DESIGNED
CHECKED
DRAWN
CHECKED

Approach Pavement - See Roadway Plans

13 - 3/4" ϕ Threaded inserts with 12" hooked bolts at $\pm$ 18" cts.

11 1/2"

1"

8'-7"

2'-7"

8'-7"

2'-7"

9"

9"

2'-3"

9"

3'-9"

10'-6"

+ Overrun

4"

4"

2" ϕ holes for 3/4" ϕ dowel bars

3'-0"

Location of lifting loops (2 each end)

3'-0"

19'-11"

Diagram illustrating the cross-section of a reinforced concrete beam with dimensions and reinforcement details:

- Top reinforcement: 4-#1 wires at all dowel holes.
- Bottom reinforcement: 2-#4 B, bars.
- Internal reinforcement: 2-#4 B, bars.
- Dimensions:
 - Overall width: 11 1/2"
 - Effective depth: 16"
 - Clearance from bottom: 4"
 - Clearance from top: 4"
 - Clearance from side: 8"
 - Clearance from bottom: 4"
- Reinforcement spacing: 16 spaces @ 12" centers, 21-#4s bar spaces each leg.

LONGITUDINAL SECTION

3'-0" (width)

7'-1 1/2" (height)

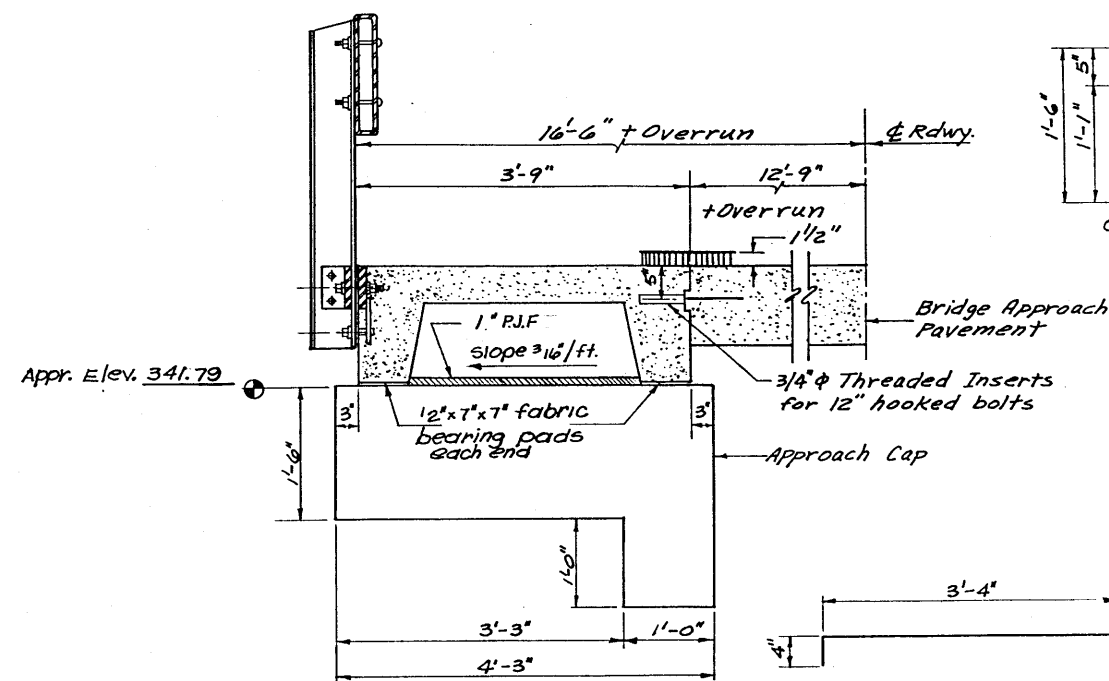
26-#4A bars at 9" cts. Top

4-#49 bars at 12" cts. Top

6-#49 bars at 6" cts. bot.

52-#4A bars at 4 1/2" cts. bottom

DESIGNED	R.A.N./D.A.J.
CHECKED	D.A.J.
DRAWN	H.D./M.D.G.
CHECKED	R.A.N./D.A.J.



The diagram shows a cross-section of a reinforced concrete slab. The overall width is 7'-9". The top reinforcement consists of bars A₁ and B, with a center-to-center spacing of 1 1/2' c.c. Bar A₁ has a diameter of 1" c.l. Bar B has a diameter of 1" c.l. The bottom reinforcement consists of bars A and B₁, with a center-to-center spacing of 1' c.c. Bar A has a diameter of 1" c.l. Bar B₁ has a diameter of 1" c.l. The slab thickness is 1'-6". The effective depth is 1'-1" 5". The clear height of the column is 5'. The column width is 2'-0". The column reinforcement includes bars G and H, with a center-to-center spacing of 2'-0". The column has a diameter of 2'-0". The column reinforcement also includes bars I and J, with a center-to-center spacing of 2'-0". The column has a diameter of 2'-0". The column reinforcement also includes bars K and L, with a center-to-center spacing of 2'-0". The column has a diameter of 2'-0".

Bar	No.	Size	Length	Shape
A	52	#4	3'-3"	—
A ₁	26	#4	4'-0"	┌
B	10	#4	19'-6"	—
B ₁	6	#4	3'-6"	—
G	4	#10	19'-6"	—
S	42	#4	3'-4"	└

Unless otherwise approved by the Engineer, lifting loops shall be 12" ϕ , 6x25 class wire rope with fiber core and shall have a minimum ultimate strength of 21,000 lbs. Loops shall be burned off after slab has been erected.

Holes in approach cap & abutment 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 3/4" ϕ 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

<i>Item</i>	<i>Unit</i>	<i>Quantity</i>
<i>Precast Concrete Bridge Slab</i>	<i>Sq. Ft.</i>	<i>299</i>
<i>Class X Concrete</i>	<i>Cu. Yds.</i>	<i>16</i>

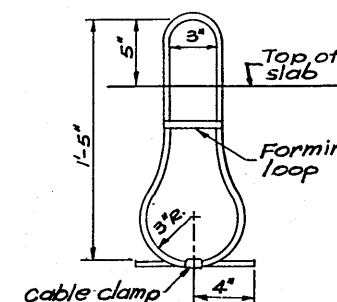
F.A.S. ROUTE 2937 (ILL.169)
OVER KITCHEL SLOUGH
SEC. 116 BR.-1
PULASKI COUNTY
STA. 78+93

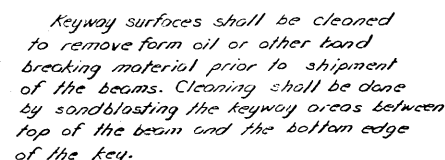
STRESSES

$f_c = 4,500$	psi.
$f_c = 1,800$	psi.
$f_s = 20,000$	psi.
$n = 8$	

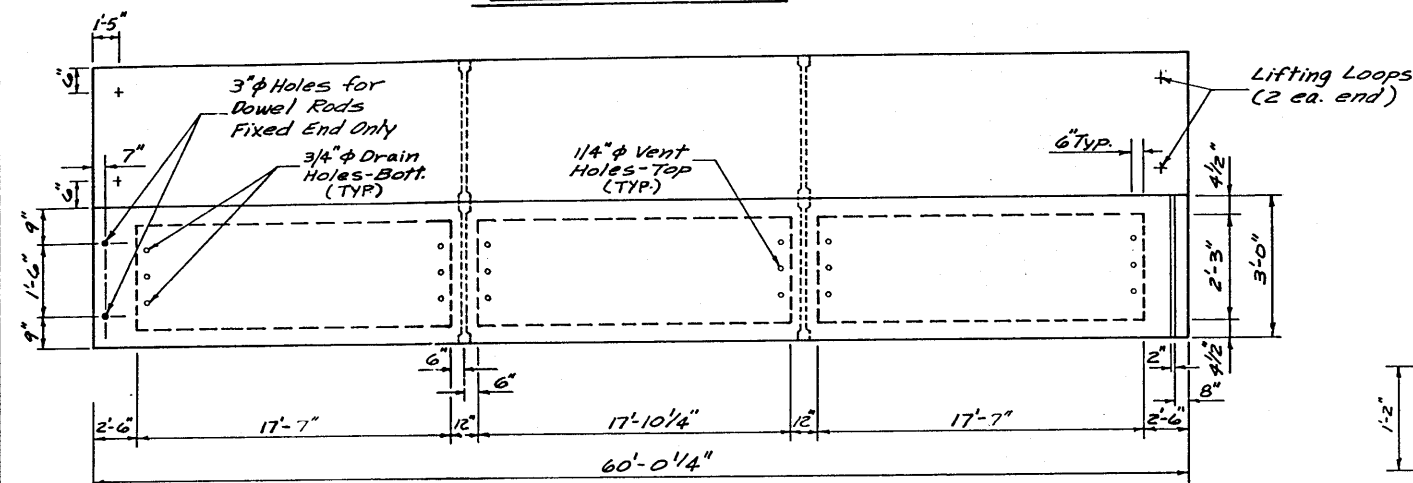
LOADING HS 20-44

LIFTING LOOP DETAIL

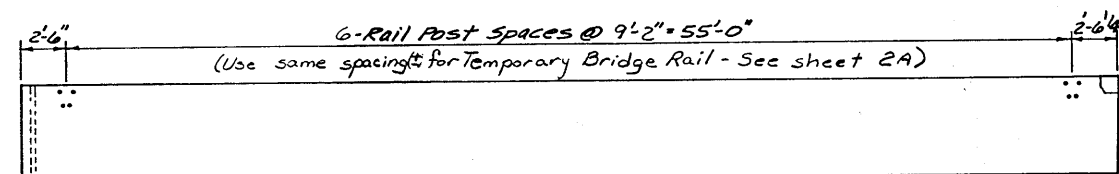




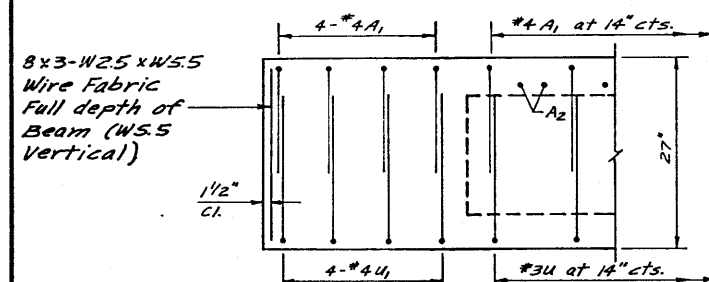
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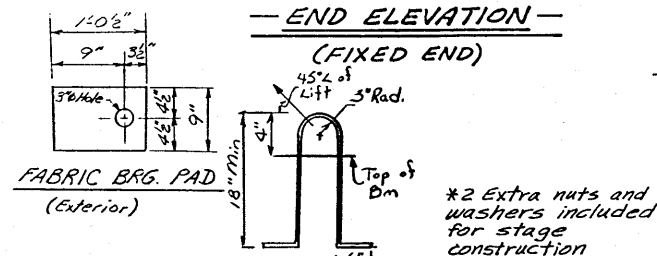
- PLAN -



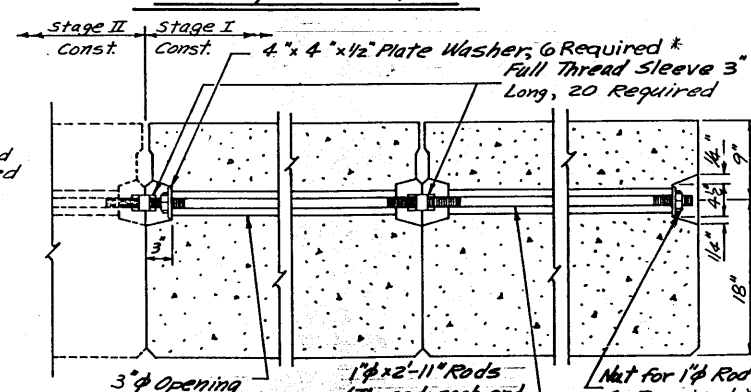
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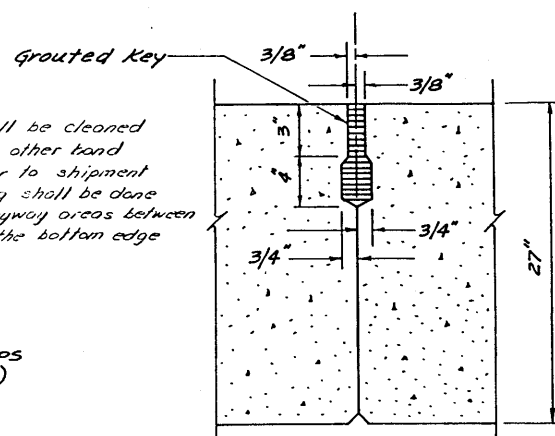
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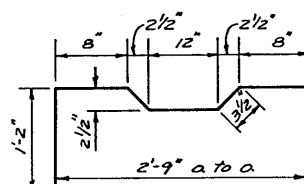
-LIFTING LOOPIDETAIL-



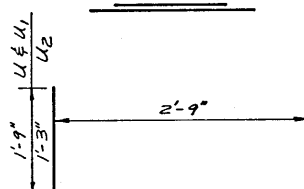
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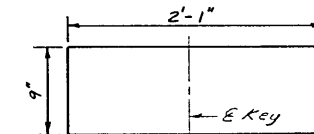
—TYPICAL KEYWAY DETAIL—



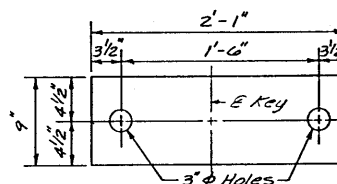
- BAR A, -



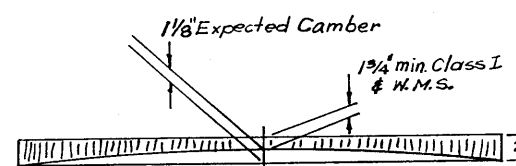
-BARS $u, u_1 \notin u_2$ -



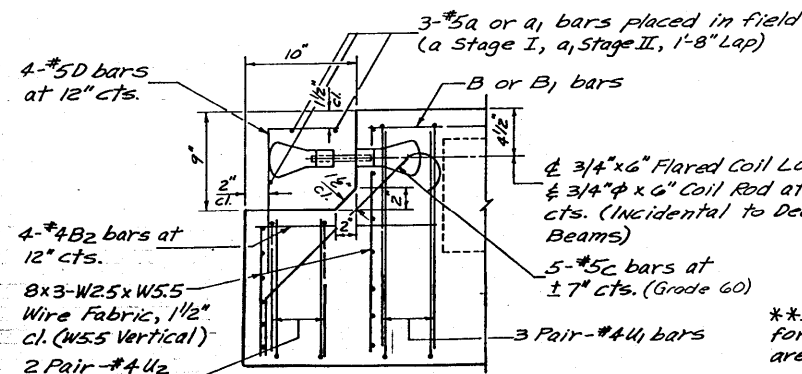
GRAPHITED ASBESTOS
BEARING PAD



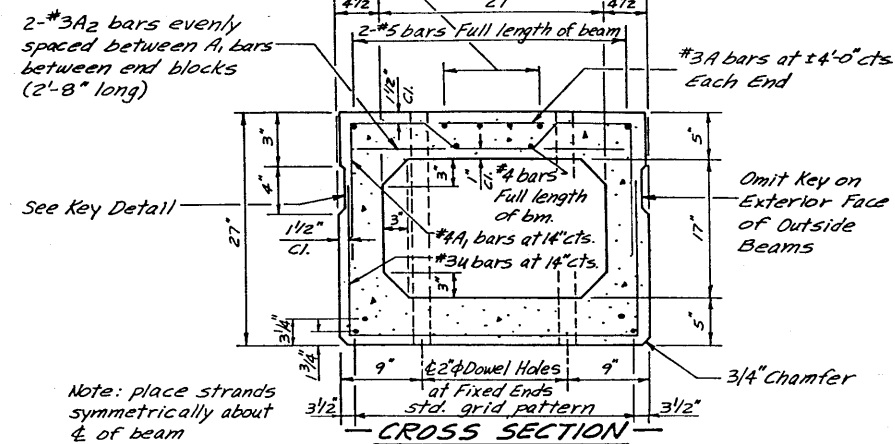
-FABRIC BEARING PAD-
(Interior)



CAMBER DIAGRAM



END OF BEAM (EXP. END)



Note: place strands symmetrically about $\frac{1}{2}$ of beam

13-1/2" ϕ strands each strand stressed to 28,900 Lbs.
9 strands 1 3/4' up & 4 strands 3 1/4' up from bottom.

NOTES

A calcium nitrite corrosion inhibitor as covered in the special provisions, shall be used in the concrete for Precast Prestressed Concrete Deck Beams.

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.53 sq.in..

Lifting loop I shall be 5/8" diameter, 6x25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 33,000 lbs.

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

After beams have been erected, holes for the dowel anchors shall be drilled into the sub-structure and the anchor dowels shall be grouted in place.

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

Cost of reinforcement and accessories cast into the beam, of bearing pads, and of grouting longitudinal shear keys is included in unit price bid for "Precast Prestressed Concrete Deck Beams."

Alternate Lifting Loop 2 shall be 2-7 wire, stress relieved 270 ksi strands, either $7/16"$ or $2"$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	3	#5	13'-6"	—
a ₁	3	#5	20'-10"	—
Precast Prestressed Concrete Deck Beams(27")			Sq. Ft.	1986
Class X Concrete **			Cu. Yds.	7.2
Reinforcement Bars			Lbs.	110

SUPERSTRUCTURE

F.A.S. ROUTE 2937 (ILL. 169)
OVER KITCHEN SLOUGH
SEC. 116 BR-1
PULASKI COUNTY
STA. 78 + 93

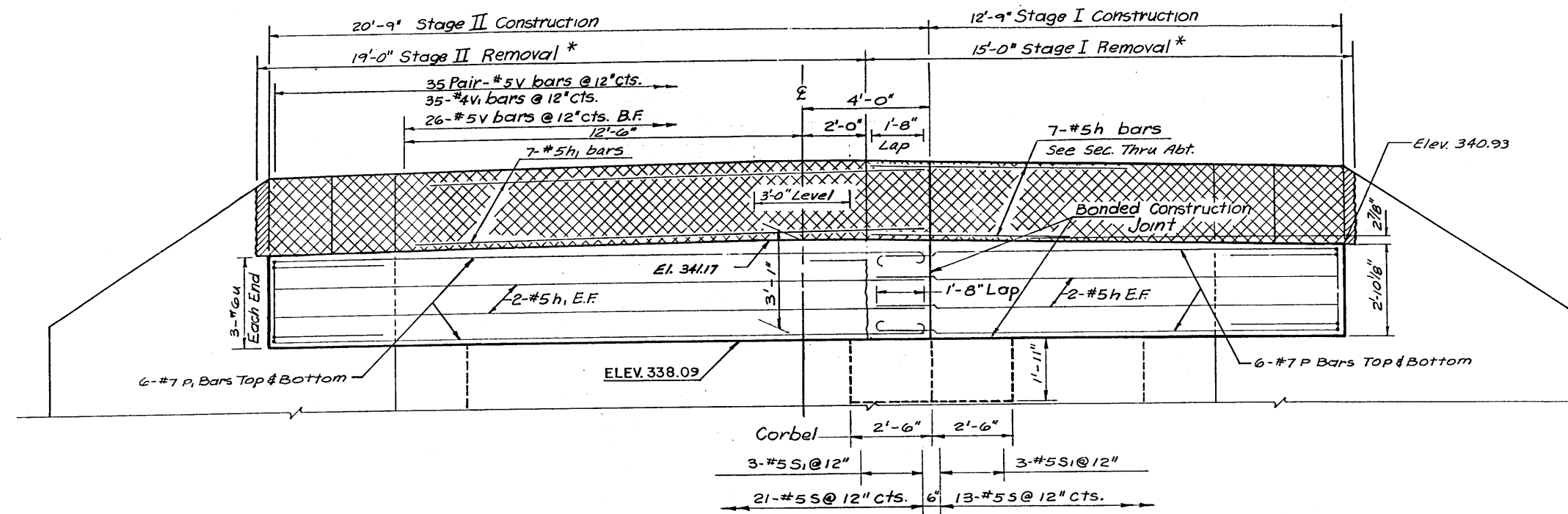
****Includes concrete for the cross hatched areas on Abutments**

DESIGNED	R.A.N./D.A.J.
CHECKED	D.A.J.
DRAWN	H.D./M.D.G.
CHECKED	R.A.N./D.A.J.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

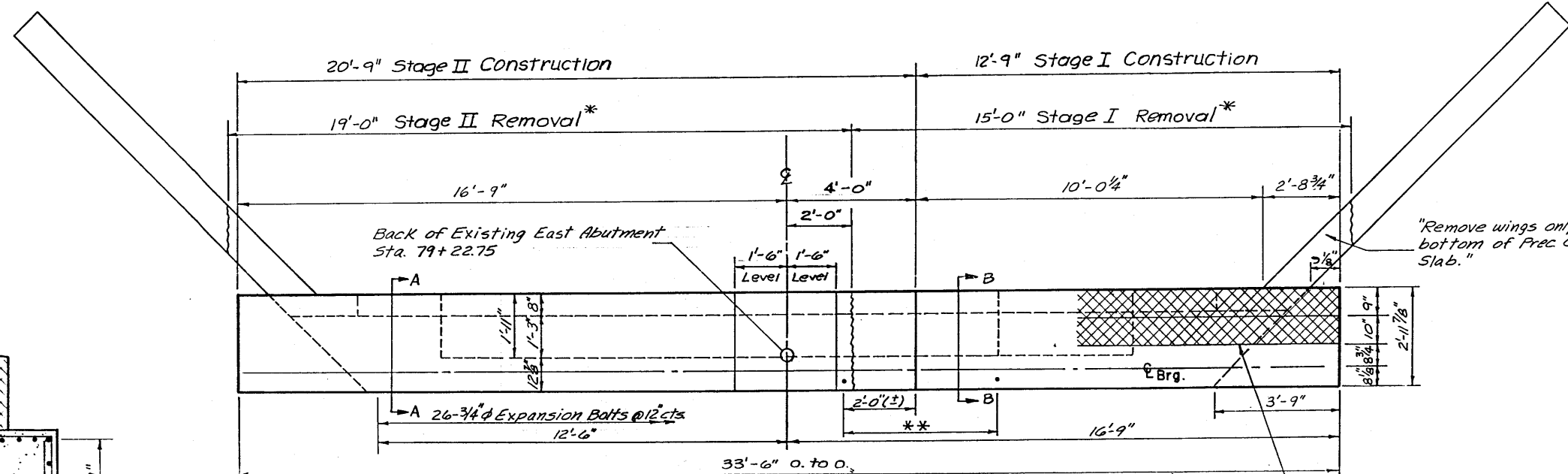
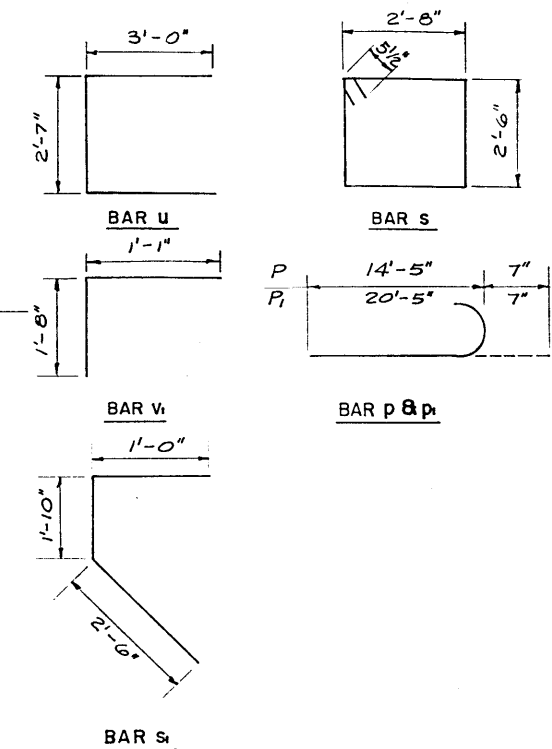
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FA5 2937	116 BR-1	PULASKI	20	16
FED. RD. DIST. NO.	ILLINOIS	PROJECT		

Sheet 6 of 10



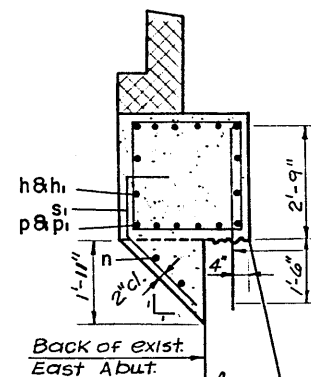
ELEVATION

*Minimum, plus additional as required for overrun. See Sht. 7 for removal details.



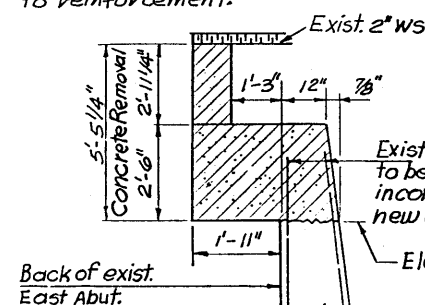
PLAN

Cross hatched area to be poured after Superstructure is in place. Class x concrete is included with Superstructure.

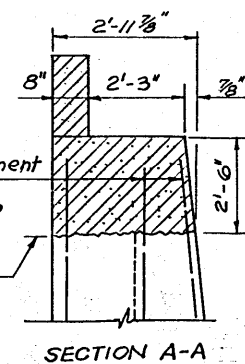


SECTION B-B

**5-#6n bars epoxy grouted into 1" holes @ 12" cts. Alternate with 3/4" expansion bolts. Cost of drilling and grouting is incidental to reinforcement.

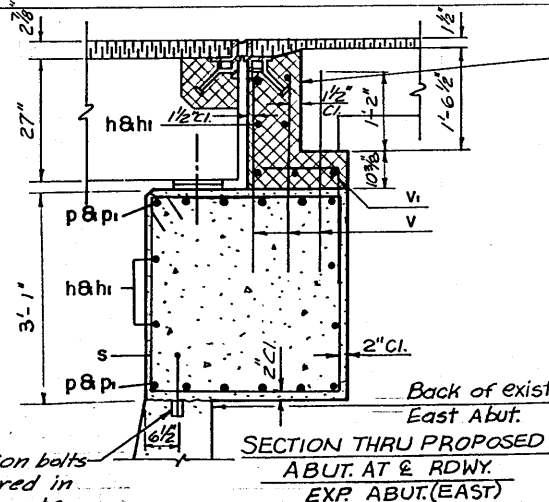


SECTION THRU EXISTING ABUT. AT & RDWY.



SECTION A-A

3/4" Expansion bolts to be anchored in sound concrete.



SECTION THRU PROPOSED ABUT. AT & RDWY. EXP. ABUT. (EAST)

EAST ABUTMENT
BILL OF MATERIAL

BAR NO	SIZE	LENGTH	SHAPE
h	#5	14'-7"	—
h _i	#5	20'-7"	—
n	#6	4'-3"	—
p	#7	15'-0"	C
p _i	#7	21'-0"	—
s	#5	11'-3"	□
s _i	#5	5'-4"	—
u	#6	8'-7"	□
v	#5	3'-0"	—
v _i	#4	2'-9"	□
CLASS X CONCRETE			CU. YDS. 11.5
REINFORCEMENT BARS			LBS. 2190
EXPANSION BOLTS (3/4") EACH			26

EAST ABUTMENT DETAILS

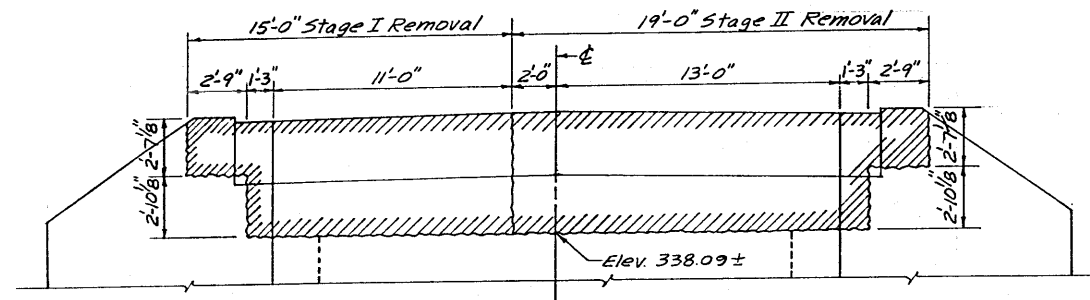
F.A.S. ROUTE 2937 (ILL. 169)
OVER KITCHEN SLOUGH
SEC. 116 BR-1
PULASKI COUNTY
STA. 78+93

DESIGNED	R.A.N./D.A.J.
CHECKED	D.A.J.
DRAWN	H.D., M.D.G.
CHECKED	R.A.N./D.A.J.

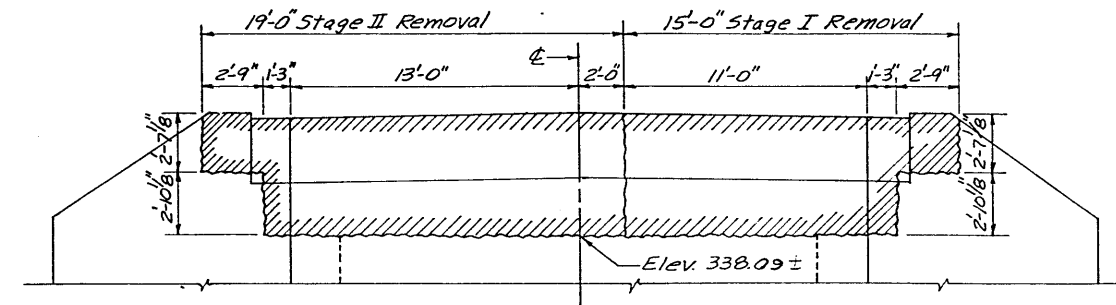
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 2937	116BR-1	PULASKI	20	17
FED. RD. DIST. NO.	ILLINOIS PROJECT			

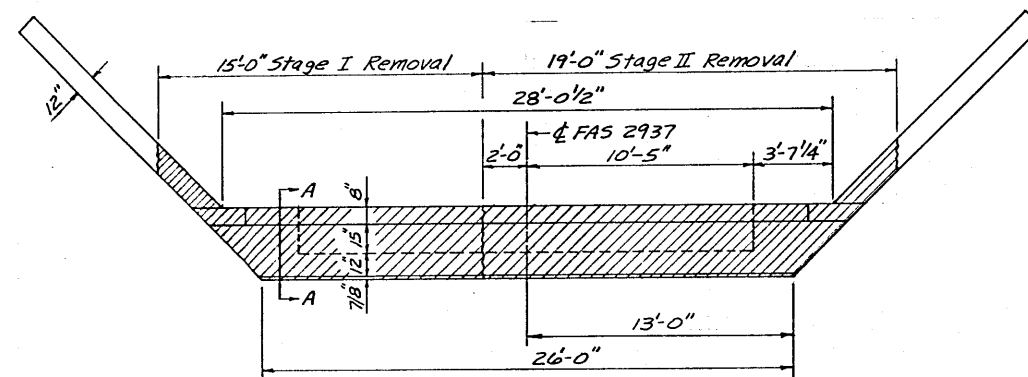
Sheet 7 of 10



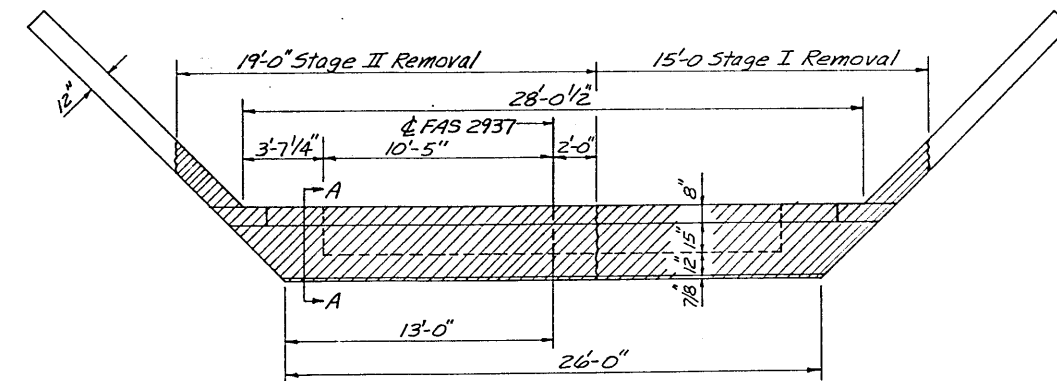
ELEVATION
(West Abutment)



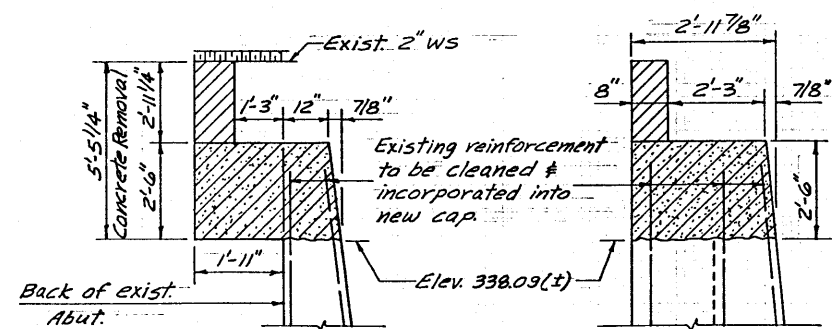
ELEVATION
(East Abutment)



PLAN
(West Abutment)



PLAN
(East Abutment)



SECTION THRU EXISTING
ABUT. AT & RDWY

SECTION A-A

TWO ABUTMENTS
BILL OF MATERIAL

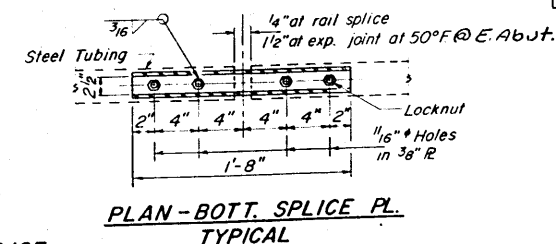
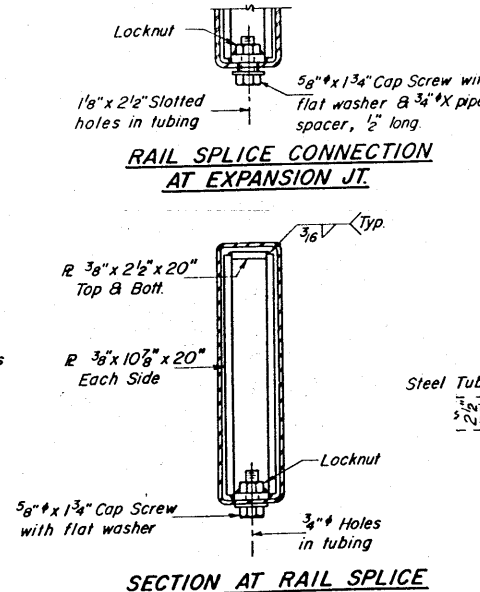
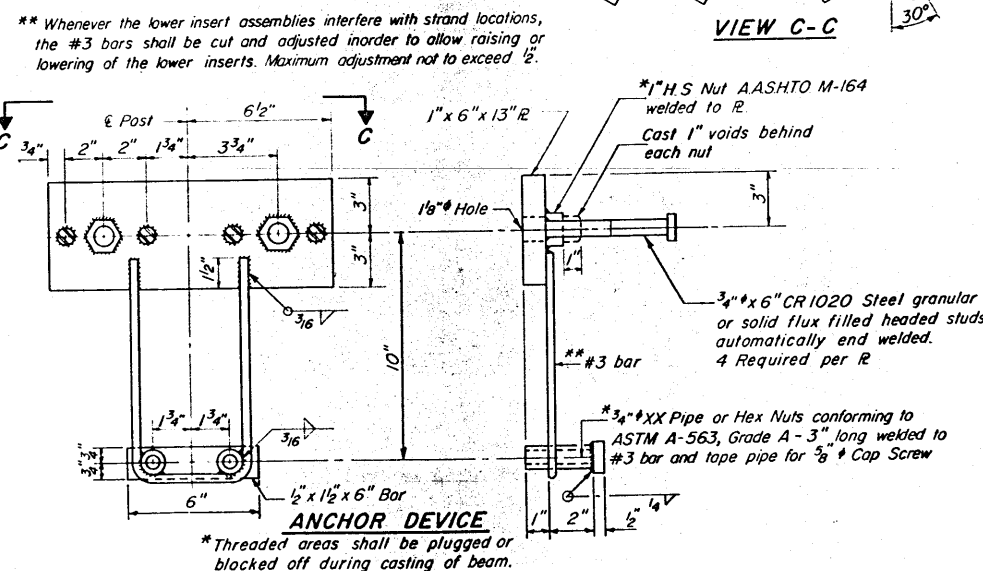
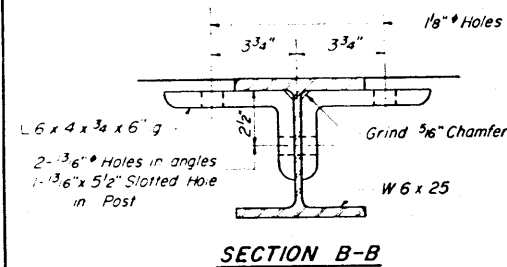
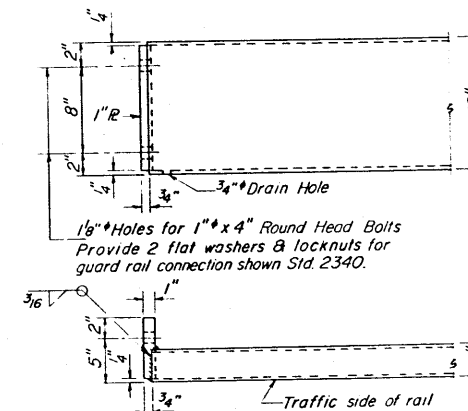
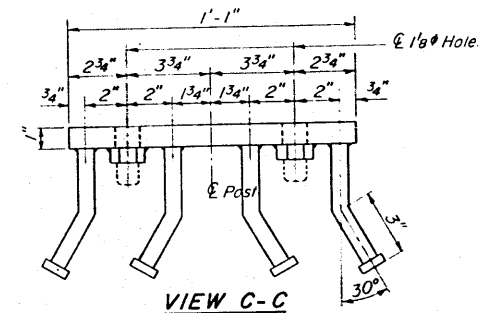
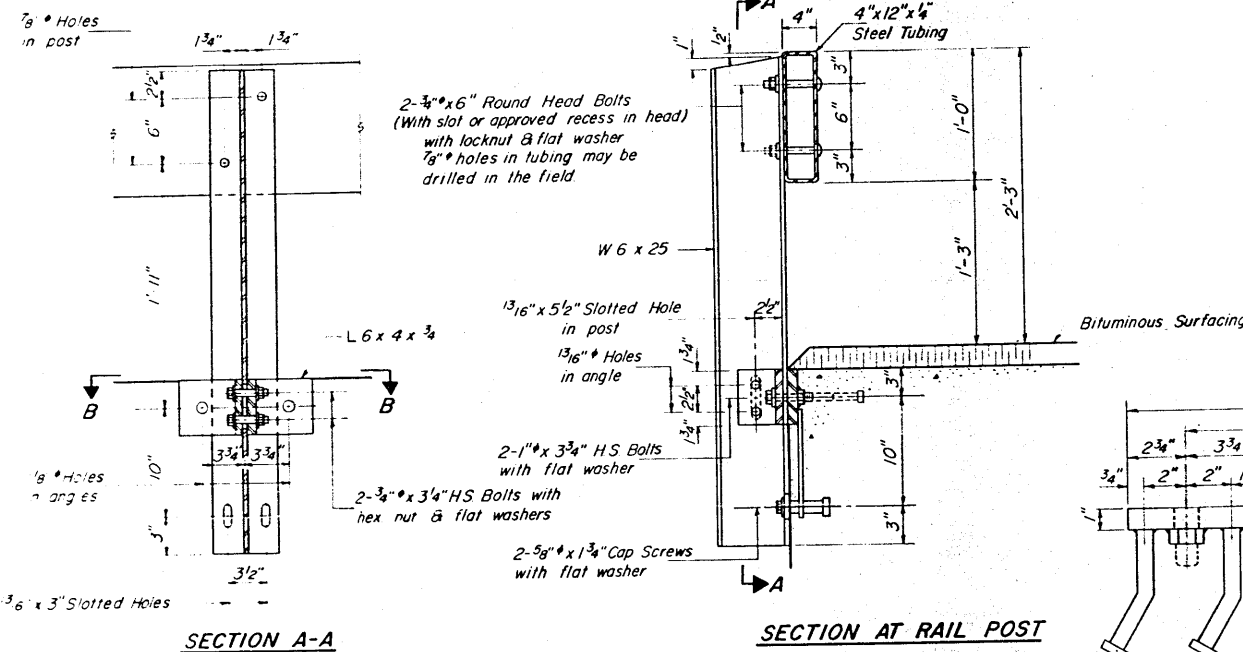
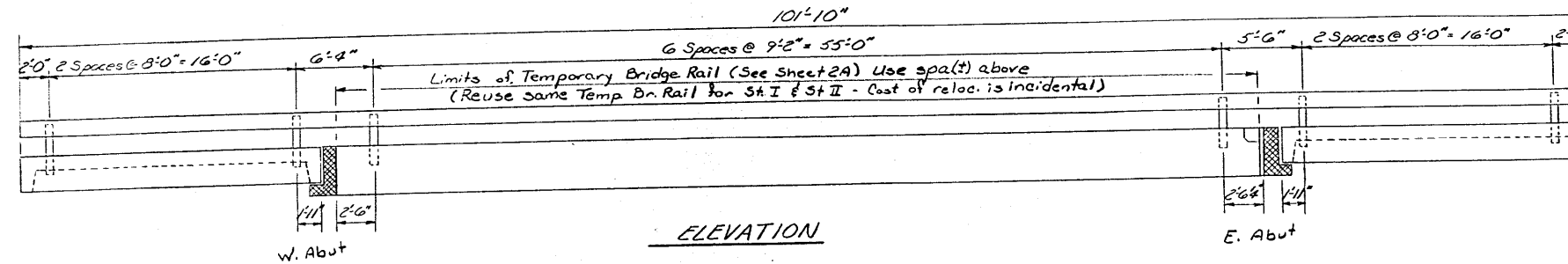
Item	Unit	Quantity
Concrete Removal	Cu. Yds.	20.0

DESIGNED	RAN/DAJ
CHECKED	D.A.J.
DRAWN	M.D.G.
CHECKED	RAN/DAJ

CONCRETE REMOVAL DETAILS
F.A.S. ROUTE 2937 (ILL. 169)
OVER KITCHEL SLOUGH
SEC. 116 BR-1
PULASKI COUNTY
STA. 78+93

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

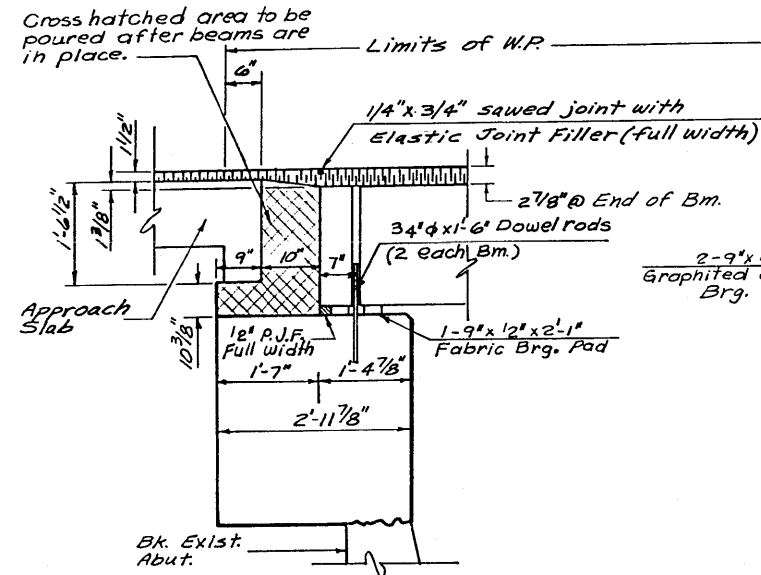
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 5
145 2937	116 BR-1	WAYNE	20	18	10 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



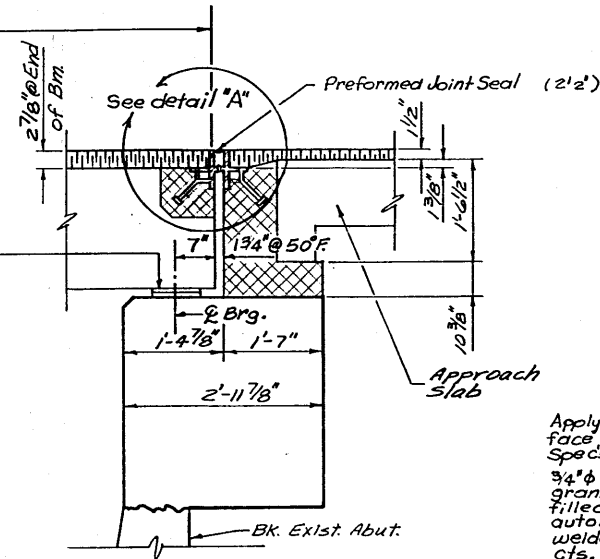
BILL OF MATERIAL		
Item	Unit	Quantity
Steel Railing, Type S-1	Lin. Ft.	204

TYPE S-1
STEEL RAILING
F.A.S. ROUTE 2937 (ILL. 169)
SECTION 116 BR-1
PULASKI COUNTY
STATION 78 + 93

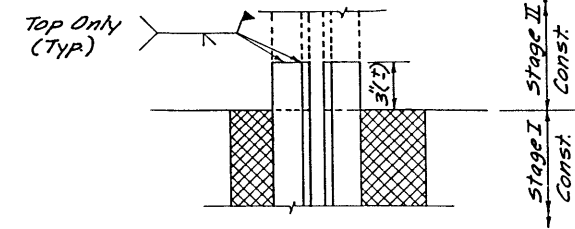
DESIGNED
CHECKED
DRAWN
CHECKED



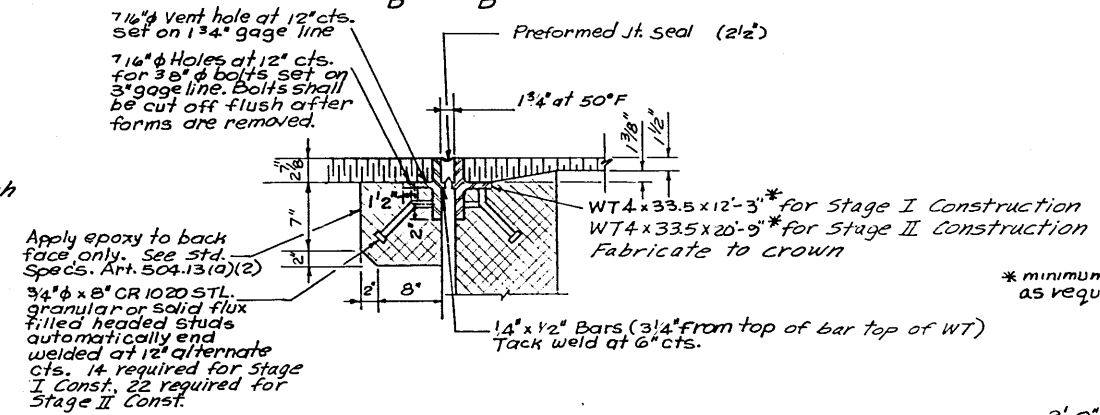
FIXED ABUT. (WEST)



EXP. ABUT. (EAST)

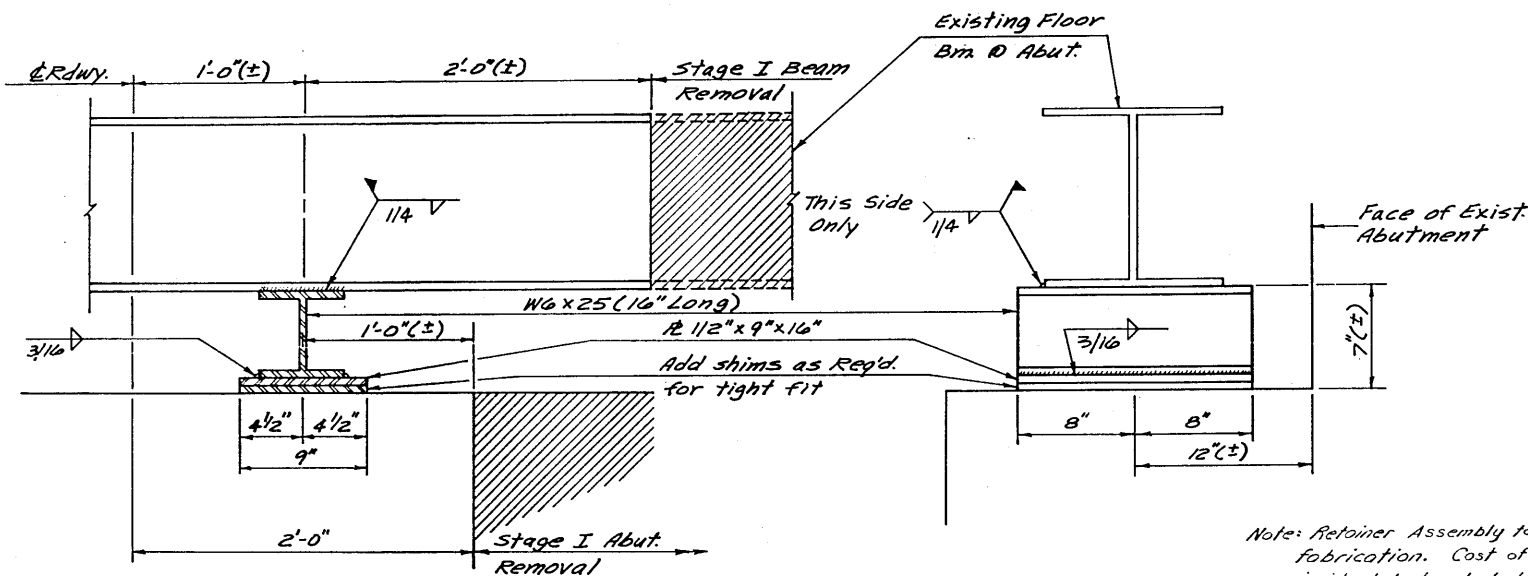


VIEW B-B
@ Stage Const. Jt.



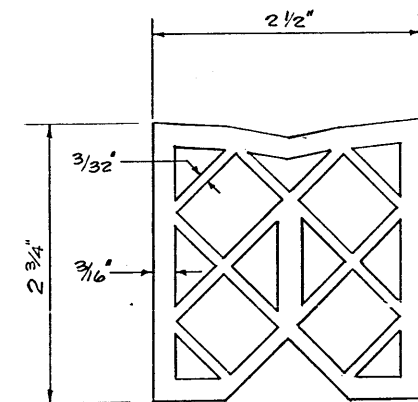
* minimum plus additional as required for overrun.

DETAIL "A"

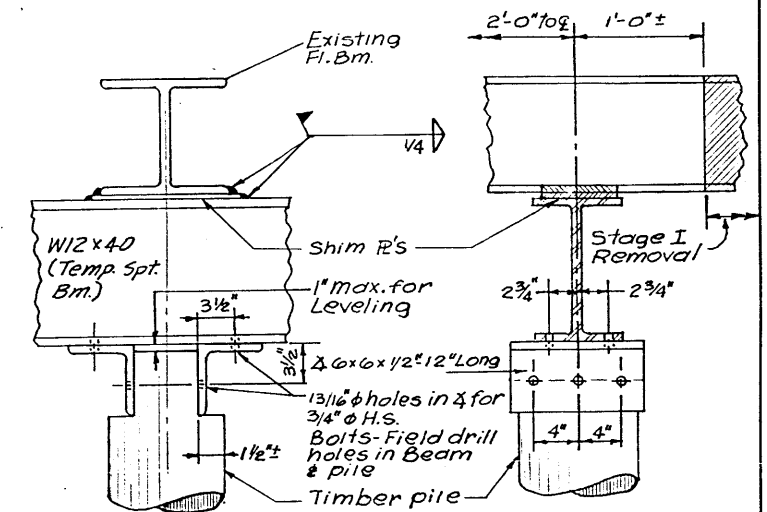


TEMPORARY BEARING BLOCK DETAIL
(Cost Incidental to "Temp. Support System")

Note: Retainer Assembly to be gov. after fabrication. Cost of assembly & inserts incidental to deck beams. Retainers to be removed after blockouts are poured and cured. Retainer assemblies to be installed on both sides of abutment.

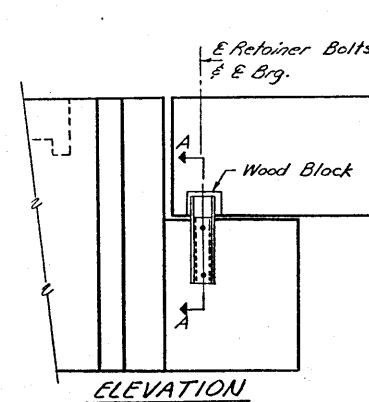


PREFORMED JOINT SEAL (2'2")

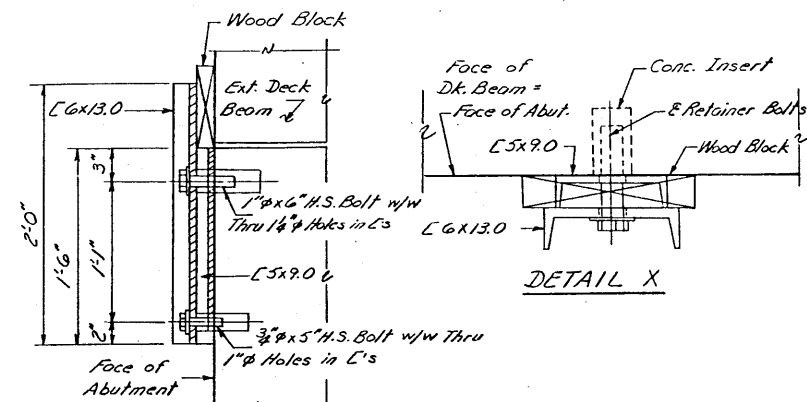


A-A
(SHEET 2)

TEMP. SUPPORT BEAM



RETAINER DEVICE AT EXP. END



SECTION A-A

DETAILS

F.A.S. ROUTE 2937 (ILL. 169)
OVER KITCHEN SLOUGH
SEC. 116 BR-1
PULASKI COUNTY
STA. 78+93

DESIGNED	RAN/DAJ
CHECKED	DAJ
DRAWN	H.D./MDG
CHECKED	RAN/DAJ

FAS 1168 R I PULASKI 20 20
2937

FED POST ST NO JULY 1967 ECT

SINCE 10-10

PORTION NO. 1-S	Elevation	N	Qu 1/4 f.	2 1/4 f.
VERY STIFF MOIST TO VERY MOIST GREY CLAY A-7-6	-85	17	3.3B	22
295.5				
STIFF VERY MOIST GREY CLAY A-7-6	-50	8	1.4B	27
288.0				
MEDIUM VERY MOIST GREY CLAY A-7-6 WITH SOME GRAVEL MIXED	-55	13	0.9B	43
283.0				
STIFF VERY MOIST GREY CLAY A-7-6	-60	6	1.0B	33
278.0				
STIFF VERY MOIST GREY CLAY TO CLAY LOAM A-4 WITH GRAVEL MIXED	-65	12	1.2B	18
273.0				
VERY DENSE VERY MOIST BROWN COARSE GRAVEL	-70			
271.5		52	-	
VERY DENSE MOIST BROWN WEATHERED SANDSTONE	-75			
268.0				
MEDIUM VERY MOIST REDDISH BROWN COARSE GRAVEL W/CLAY LOAM BINDER	-75	15	-	
266.5				
BOTTOM OF HOLE = 76.5'.				
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 15.5'.	-80			
<u>STRUCTURE LOCATION:</u>				
SE 1/4, CW 1/4, SECTION 16, T14S, R2E, 3RD P.M., POLASKI COUNTY, ILLINOIS.				
	-85			
	-90			
	-95			

Soil Description	Elevation	N	Qu / L
Excav No. 2-S			
Station 79+54			
Offset 30' LT. CL			
Ground Surface	333.5	0	
VERY STIFF MOIST BROWN MOTTLED GREY CLAY A-7-6	337.0		
MEDIUM MOIST BROWN MOTTLED GREY SILTY CLAY LOAM TO SILTY CLAY A-6	334.5	7	0.5B
VERY STIFF MOIST BROWN MOTTLED GREY CLAY A-7-6	332.0	9	2.3B
STIFF MOIST TO VERY MOIST BROWN MOTTLED GREY CLAY A-7-6 WITH SOME GRAVEL MIXED	329.5	11	1.7B
STIFF MOIST TO VERY MOIST BROWN MOTTLED GREY CLAY A-7-6	327.0	9	1.5B
VERY STIFF MOIST BROWN MOTTLED GREY CLAY A-7-6		16	3.3S
		14	3.4S
		18	3.5S
	319.5	20	
VERY STIFF MOIST TO VERY MOIST BROWN CLAY A-7-6	317.0	16	2.9B
STIFF VERY MOIST GREY CLAY A-7-6	314.5	6	1.1B
VERY STIFF MOIST TO VERY MOIST GREY CLAY A-7-6	312.0	14	2.5B
STIFF VERY MOIST GREY CLAY A-7-6		9	1.2B
		7	1.2B
SOFT VERY MOIST GREY CLAY A-6	304.5	5	3.4B
STIFF VERY MOIST GREY CLAY A-7-6		15	4.5B
		1	1.5B
MEDIUM VERY MOIST GREY CLAY A-7-6		10	0.5B

	Elevation	N	Qu 1/4 ft.	γ (°)
	-45			
STIFF VERY MOIST GREY CLAY A-7-6		8	1.1B	23
		13	1.6B	23
	-50			
		10	1.2B	30
287.0				
STIFF VERY MOIST GREY CLAY TO CLAY LOAM A-5		8	1.1B	23
	-55			
		10	1.7B	23
278.5				
STIFF VERY MOIST GREY CLAY A-7-6		14	1.9B	21
274.5				
STIFF VERY MOIST GREY CLAY LOAM A-5	273.0	10	1.0B	16
HARD TAMP TO MOIST BROWN GRAVEL & CLAY LOAM BINDER				
269.5				
BOTTOM OF HOLE = 76.0'.				
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 20.5'.				
	-75			
	-80			
	-85			
	-90			
	-95			

BOTTOM OF HOLE = 76.0'.

DURING DRILLING OPERATIONS IT
APPEARED THAT FREE WATER WAS
ENCOUNTERED AT 20.5'.

F.A.S. ROUTE 2937 (ILL. 169)
OVER KITCHEL SLOUGH
SEC. 116 BR.-1
PULASKI COUNTY
STA. 79+93

DESIGNED	R.A.N./D.A.J.
CHECKED	D.A.J.
DRAWN	H.D./M.D.G.
CHECKED	R.A.N./D.A.J.

Type Failure
B-Bulge failure
S-Shear failure
E-Estimated value
P-Penetrometer

-INDEX TO SHEETS-

Sheet No. 1	Title Page
2	Standards 1505 and 1463
3	1359 " 1354
4	Gen. Notes and Schedule of Culverts and Gutter
5	Detail Layout of Intersection of S.B.I. Rt. 147 and Karnak Spur
6	Plan and Profile Sta. 1515+00 to Sta. 1545+00
7	" " " " 1545+00 " " 1575+00
8	" " " " 1575+00 " " 1605+00
9	" " " " 1605+00 " " 1635+00
10	" " " " 1635+00 " " 1665+00
11	" " " " 1665+00 " " 1695+00
12	" " " " 1695+00 " " 1725+00
13	" " " " 1725+00 " " 1755+00
14	" " " " 1755+00 " " 1785+00
15	" " " " 1785+00 " " 1815+00
16	" " " " 1815+00 " " 1845+00
17	" " " " 1845+00 " " 1875+00
18	" " " " 1875+00 " " 1905+00 (Karnak Spur)
19	" " " " 1905+00 " " 1935+00
20	" " " " 1935+00 " " 1965+00
21	" " " " 1965+00 " " 1995+00
22	" " " " 1995+00 " " 2025+00
23	" " " " 2025+00 " " 2055+00
24 to 25 inc.	Cross Sections
26	Standard Culvert Design 1204-1
27	Special Culvert Designs Sta. 17+48, 28+89, 35+90.
28	" " " " 41+99, 49+89, 69+46, 70+50.
29	" " " " 90+00, 105+00, 114+58, 123+00.
30	" " " " 133+27, 159+10.
31	Bridge 1162, 1203 and 1471.
32	Standards 1063 and 1472.
33	" " " " 1063 and 1472.

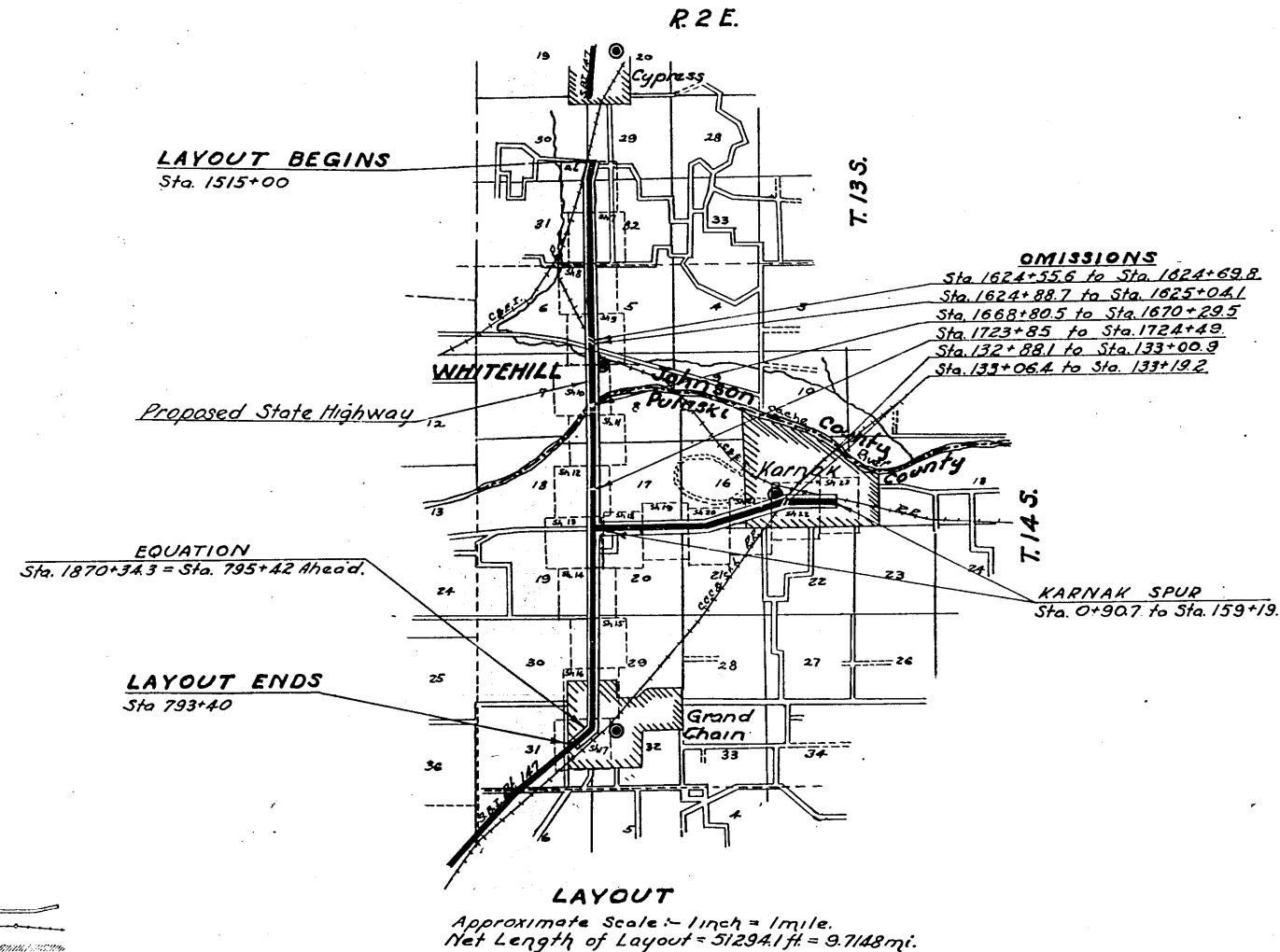
STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS PLANS FOR PROPOSED STATE BOND ISSUE HIGHWAY

SCALES

PLAN	1 INCH = 100 FT.
PROFILE, HOR.	1 INCH = 100 FT.
PROFILE, VERT.	1 INCH = 10 FT.
CROSS-SECTIONS	1 INCH = 5 FT.

Route 147 Sec 116 Johnson Cos. Pulaski Federal Aid Project E-154-E.

From a point near the NW Corner of the SW 1/4 of the SW 1/4 of Sec. 29, T. 13 S., R. 2 E. of the 3rd RM. in Johnson Co. to a point near the SW Corner of the SE 1/4 of the NE 1/4 of Sec. 31, T. 14 S., R. 2 E. of the 3rd RM. in Pulaski Co.



BOND ISSUE	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
147	E116	Pulaski	93	1
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT 154				



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

SUBMITTED August 8, 1932
G. A. Somerville DISTRICT ENGINEER

EXAMINED August 17, 1932
E. D. Dufford SOLE ENGINEER

PASSED August 17, 1932
K. L. Johnson ENGINEER OF DESIGN

APPROVED August 17, 1932
E. W. West CHIEF HIGHWAY ENGINEER
ACTING SUPERINTENDENT OF HIGHWAYS

APPROVED August 17, 1932
W. H. Cleveland DIRECTOR

RECOMMENDED FOR APPROVAL

DISTRICT ENGINEER, Bureau of Public Roads

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER, Bureau of Public Roads

APPROVED

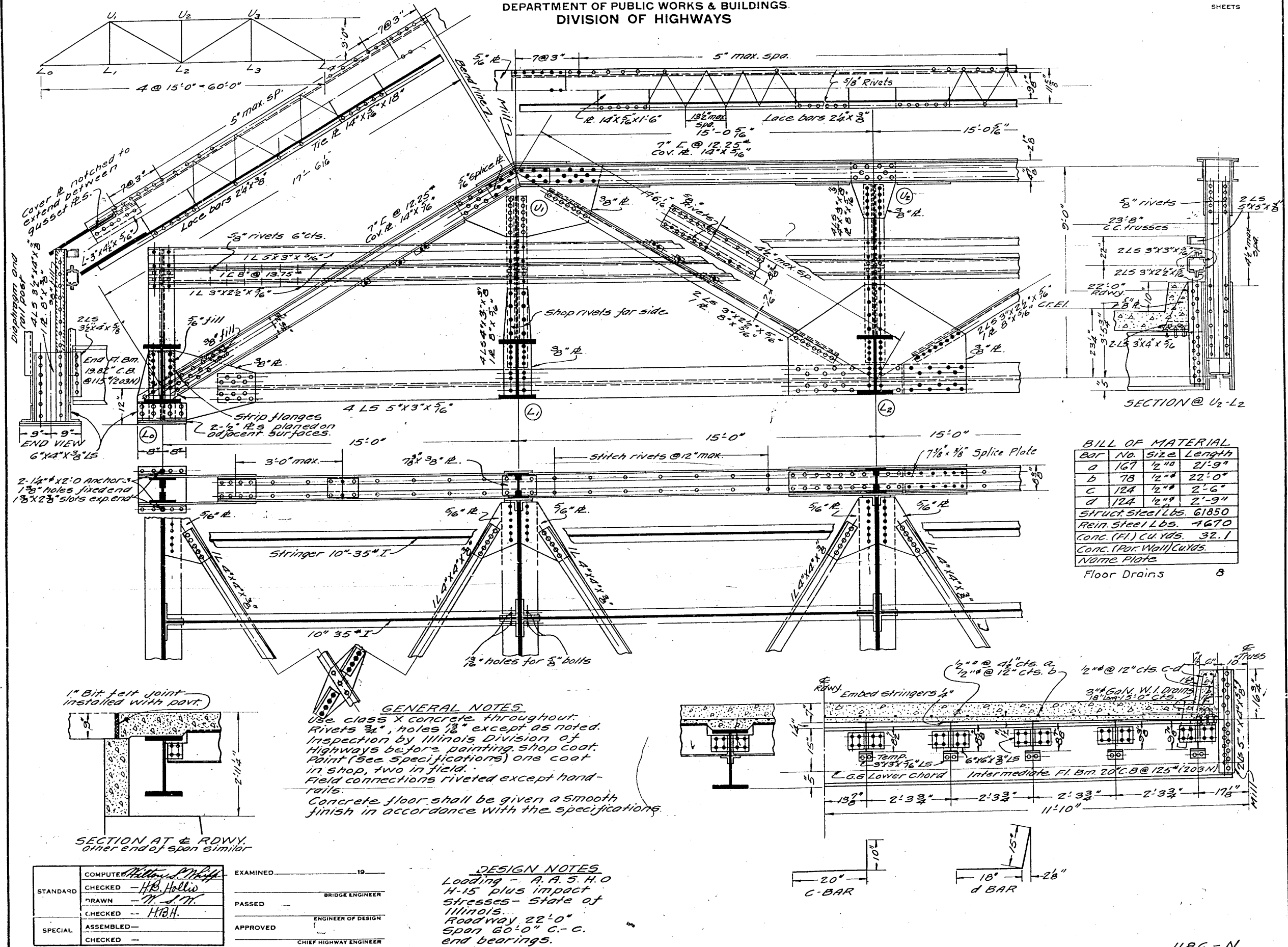
CHIEF, Bureau of Public Roads

9-19

STATE LINE	RETAINING WALL
COUNTY LINE	BASE OR SURVEY LINE
CITY, VILLAGE OR TOWN	LEVEE
TOWNSHIP LINE	CULVERT
SECTION LINE	STORM SEWER
GRANT LINE	TILE DRAIN
SECTION CORNER	DROP INLET
FENCE LINE	TROLLEY POLE
UNFENCED PROPERTY	POWER POLE
RIGHT OF WAY LINE	TELEPHONE OR TELEGRAPH POLE
GUARD RAIL	MARSH
STEAM RAILROAD	HEDGE
ELECTRIC RAILROAD	

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

SHEET NO.
SHEETS



BOND ISSUE ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
147	E116	Johnson - Pulaski	93	90
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	154

2

2.8

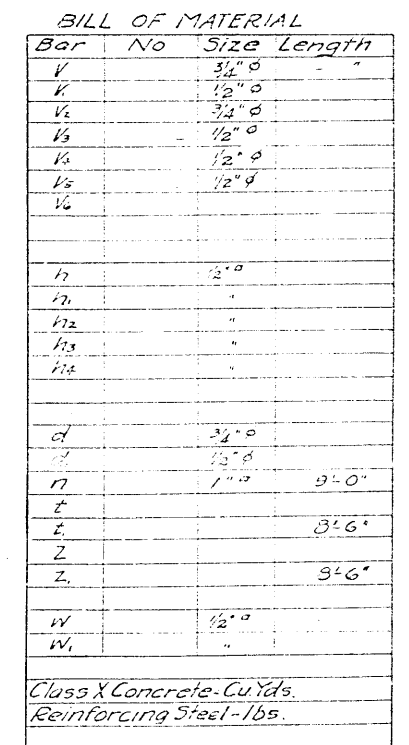
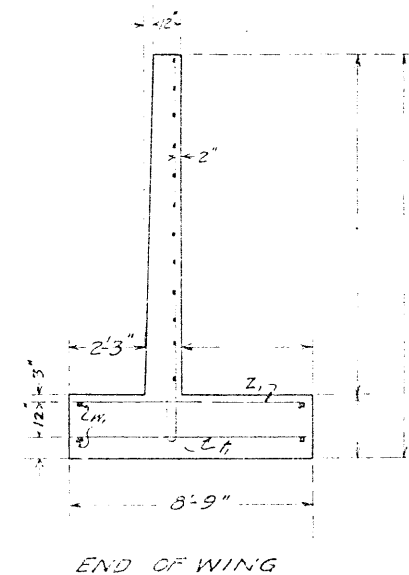
Milton S. Miff
H.B. Hollis

5-13- 32.
L.F. Bunch
McJannet
Frank T. Hart

S.B.I. RT. 147 SEC. 116
PULASKI CO.
STA. 78+93

1186-N

SHEET NO.
SHEETS

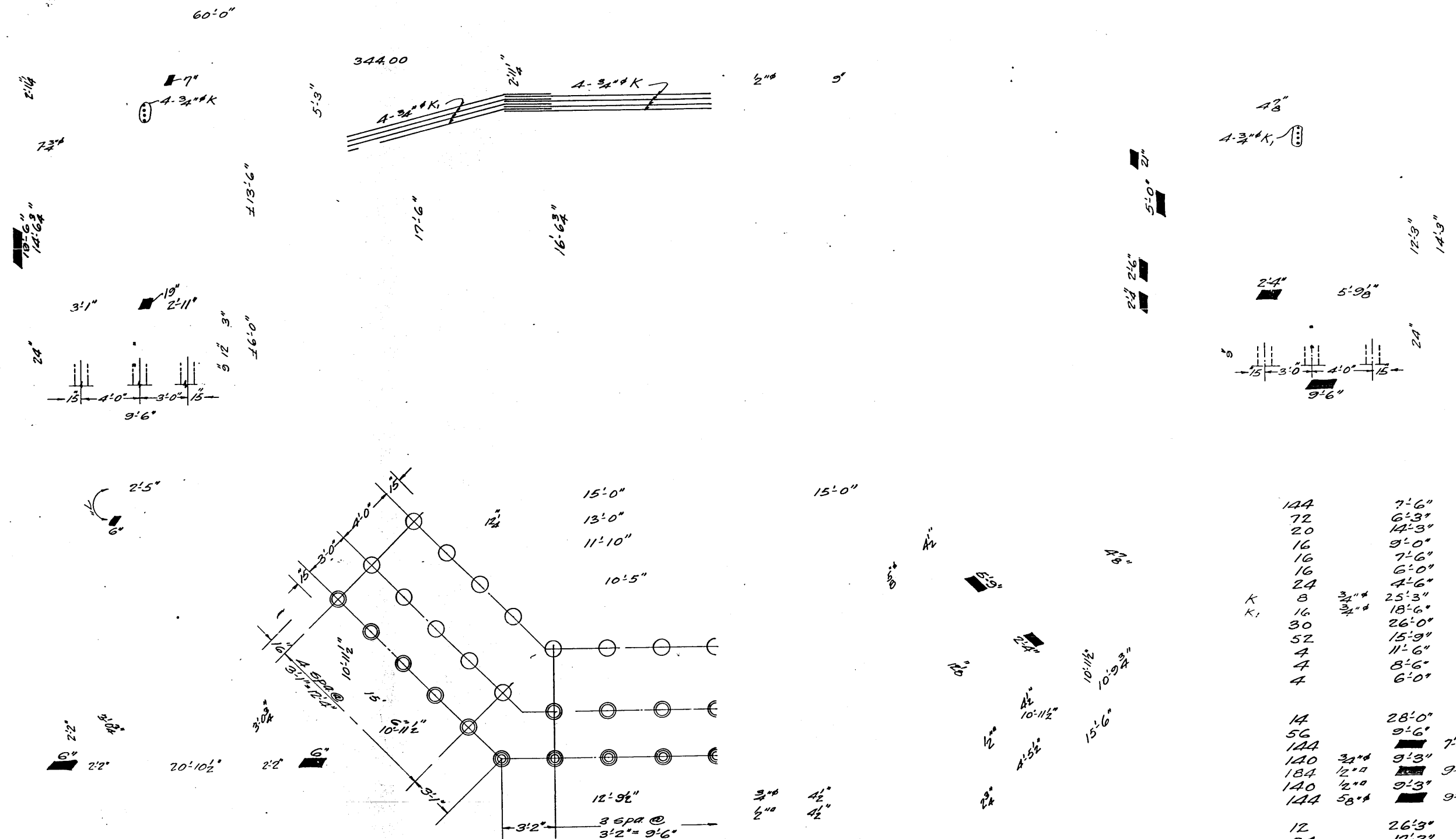


Notes:
Use Class X Concrete throughout.
All reinforcing Steel shall be wired
securely in place before concrete is poured.

STANDARD	COMPUTED — <i>C.E.M.</i>	EXAMINED —	19
	CHECKED — <i>J.J.</i>		
	DRAWN — <i>C.E.M.</i>		
SPECIAL	CHECKED — <i>J.J.</i>	PASSED	BRIDGE ENGINEER
	ASSEMBLED —		
	CHECKED —	APPROVED	ENGINEER OF DESIGN
			CHIEF HIGHWAY ENGINEER

No Existing Structure.
B.M. Spike and washer root of 24" Oak
60 ft right Sta. 79+60 Elev. 338.70

BOND ISSUE	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
147	E116	Johnson-Pulaski	93	91
PER. ROAD BMT. NO. 7 RAILROAD FED. AID PROJECT 154				



- ⊙ 15 Ton untr. Piles
10 Required
- ⊙ 12 Ton untr. Piles
34 Required
- ⊙ 10 Ton untr. Piles
50 Required
- Drive one test pile at each
abutment before ordering Piles

5-13-32
H. F. Burch
H. B. Holder
Frank T. O'Leary

Michael D. White
H. B. Holder

144	7'-6"
72	6'-3"
20	14'-3"
16	9'-0"
16	7'-6"
16	6'-0"
24	4'-6"
K 8	34" 25'-3"
K 16	34" 18'-6"
30	26'-0"
52	15'-9"
4	11'-6"
4	8'-6"
4	6'-0"
14	28'-0"
56	9'-6"
144	7'-3"
140	34" 9'-3"
184	1/2" 9'-3"
140	1/2" 9'-3"
144	58" 9'-3"
12	26'-3"
24	17'-3"

170.7
16100
15 Ton untr. Piles Lin. Ft. 360
12 Ton untr. Piles Lin. Ft. 680
10 Ton untr. Piles Lin. Ft. 1000

S. B. I. R. T. 147 SEC. 116-
PULASKI CO.
STA. 78+93