

76883

RANDOLPH

#161

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
312	73BR-II	RANDOLPH	5	1
FED. ROAD DIST. NO. 8		ILLINOIS	CONTRACT NO. 76883	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

100%  
8-18-2011

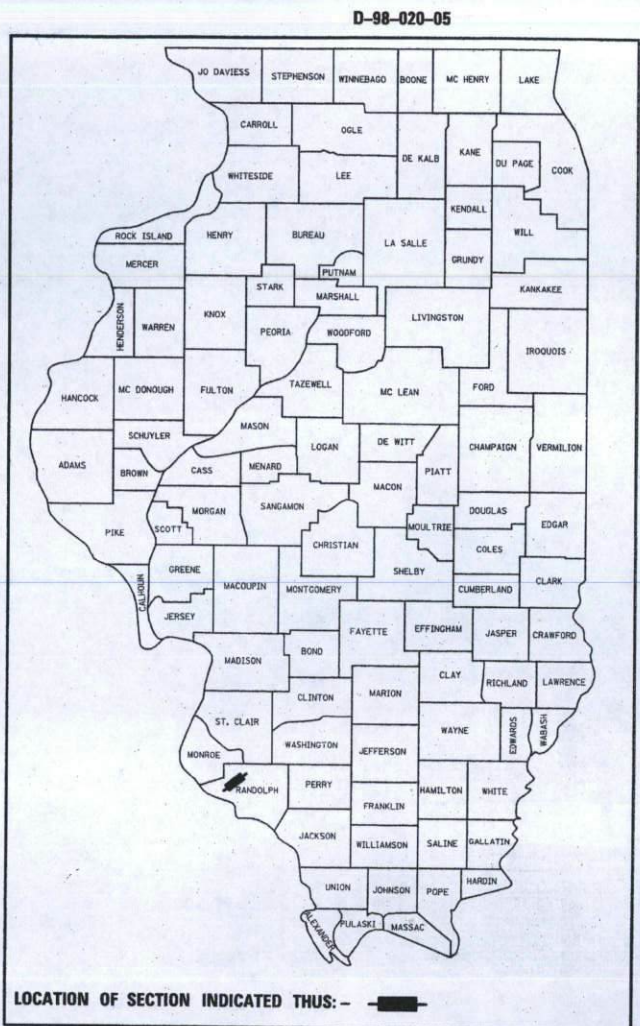
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS  
**PROPOSED  
HIGHWAY PLANS**

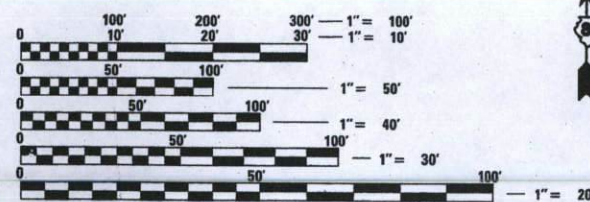
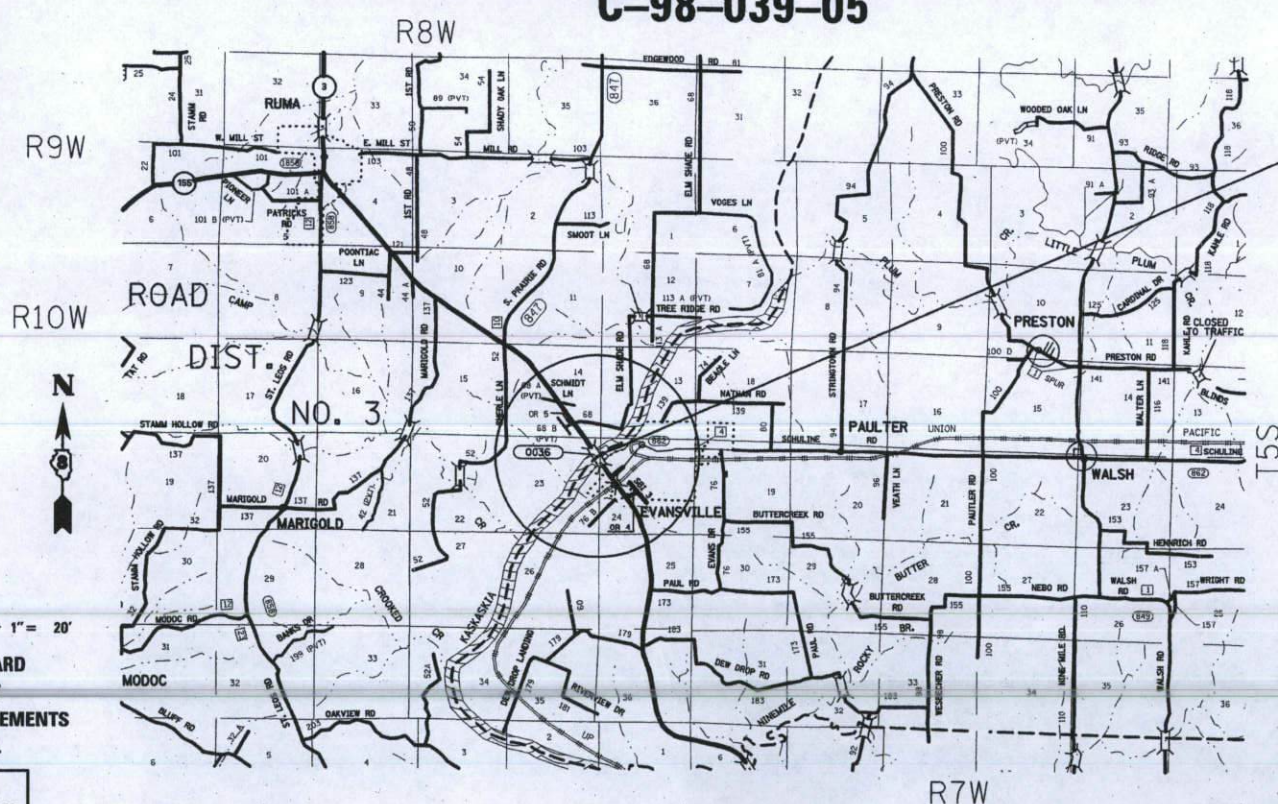
FAP ROUTE 312 (IL 3)  
SECTION 73BR-11  
PROJECT: F-0312 (035)  
RANDOLPH COUNTY

**MICROSILICA OVERLAY AND DECK REPAIRS W/  
SEISMIC RETROFITTING AND NAVIGATIONAL  
LIGHTING SYSTEM REPLACEMENT**

C-98-039-05

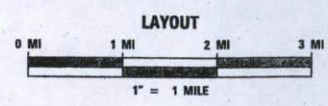


PROJECT LOCATION -  
STA. 789+11.83 TO STA. 798+81.75  
7 SPAN COMPOSITE STEEL PLATE BEAMS  
CONSISTING OF STEEL PLATE GIRDERS  
W/SHOP SPliced FLANGE THICKNESS  
TRANSITIONS, CARRIES IL ROUTE 3 OVER  
KASKASKIA RIVER ON WALL PIERS W/PILE  
FOOTING AND NON-INTEGRAL PILE BENT  
ABUTMENTS. SPANS - 1 @ 83'-11 1/2", 1 @  
85'-1 1/2", 2 @ 181'-2", 1 @ 231'-0", 1 @  
101'-11", AND 1 @ 100'-9"  
☺ SPAN 4 - STA. 793+80



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD  
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT  
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS  
ON REDUCED SIZED PLANS, THE ABOVE SCALES MAY BE USED.

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



LAYOUT  
0 MI 1 MI 2 MI 3 MI  
1" = 1 MILE  
LATITUDE = 38.089908  
LONGITUDE = 89.944828

ADT -  
2009 = 4000 (ESTIMATED)  
2029 = 5100 (ESTIMATED)  
SU = 5.3% MU = 5.9%

GROSS LENGTH = 969.92 FT. = .18 MILE  
NET LENGTH = 969.92 FT. = .18 MILE

PROJECT ENGINEER: PATTI LEBEAU (618) 346-3179  
SQUAD CONTACT: ART MUEHLFELD (618) 346-3209

CONTRACT NO. 76883 079-0036

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED January 28 20 10

*Mary C. J. [Signature]*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

March 19, 20 10  
*Scott E. Stitt, P.E. [Signature]*  
Acting ENGINEER OF DESIGN AND ENVIRONMENT

March 19, 20 10  
*Christine M. Reed [Signature]*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS



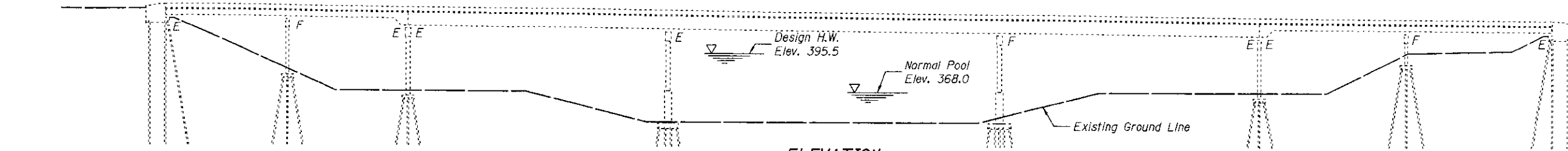
EXISTING STRUCTURE: S.N. 079-0036, originally constructed in 1971 as SBI Route 3 Sec. 73B-1 at Station 793+80.00, using 48" and 108" welded steel I-girders with 8 1/2" concrete deck, 7 spans, 969'-11" back-back abutments, 46'-0" out-width, open pile bent abutments on steel bearing piles, wall/hammerhead piers with footings on steel bearing piles.

Staged construction shall be used to maintain one lane of traffic.

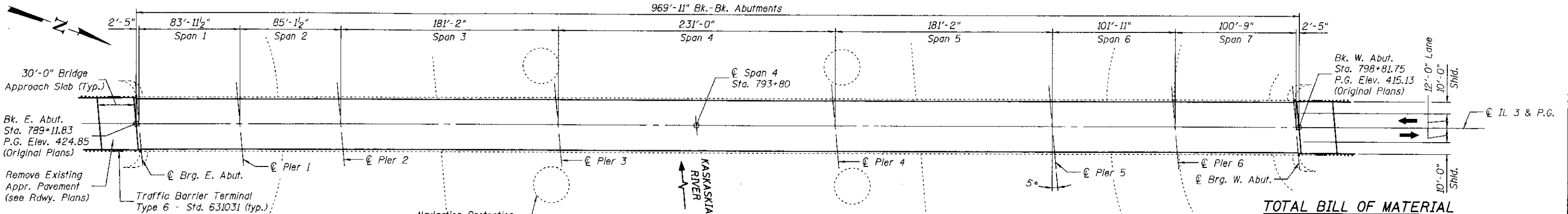
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS

Sheet No.	Description
1	Gen Plan, Gen Notes, Bill of Mat'l
2	Temporary Concrete Barrier
3-5	Superstructure
6-7	Bridge Approach Slab Details
8	Preformed Joint Strip Seal
9	Finger Plate Expansion Joints
10-13	Bearings
14	East & West Abutments
15-16	Piers 2 & 5
17	Miscellaneous Details
18	Slopewall Joint Filling
19	Bar Splicer Assembly Details
20-22	Steel Girder Repairs



ELEVATION



PLAN

GENERAL NOTES

Fasteners shall be AASHTO M164 Type I, mechanically galvanized bolts. Bolts 7/8 in.  $\phi$ , holes 15/16 in.  $\phi$ , unless otherwise noted. No field welding is permitted except as specified in the contract documents. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions. Reinforcement bars designated (E) shall be epoxy coated. Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by an individual acceptable to the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

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.

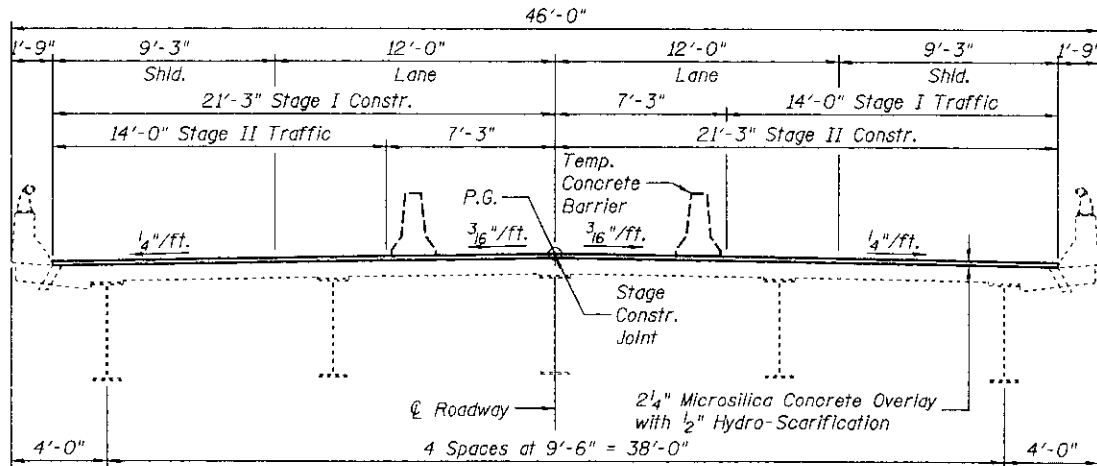
Bearing seat surfaces shall be constructed or adjusted to their designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project. The SSPC QP-1 and QP-2 Painting Contractor Certification will be required for this Contract.

Existing and new structural steel that will be inaccessible after installation of the trough at Piers 2 & 5 shall be cleaned and painted according to the notes on sheet 9 of 22. Other existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures". All new structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Complete field painting of structural steel shall be done under a separate painting contract.

The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR permit number as shown in the contract plans.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A2	Ton	--	27	27
Stone Dumped Riprap, Class A6	Ton	--	570	570
Joint or Crack Filling	Pound	--	1629	1629
Concrete Removal	Cu Yd	13.4	--	13.4
Concrete Structures	Cu Yd	27.9	36.8	64.7
Concrete Superstructure	Cu Yd	143.5	--	143.5
Bridge Deck Grooving	Sq Yd	4621	--	4621
Protective Coat	Sq Yd	5555	--	5555
Floor Drain Extension	Each	12	--	12
Furnishing and Erecting Structural Steel	Pound	17810	13960	31770
Jack and Remove Existing Bearings	Each	--	35	35
Structural Steel Repair	Pound	400	--	400
Cont. & Disp. of Lead Paint Cleaning Residues	L Sum	1	--	1
Cleaning and Painting Structural Steel, Loc. 1	L Sum	1	--	1
Reinforcement Bars, Epoxy Coated	Pound	36080	7520	43600
Bar Splicers	Each	334	6	340
Preformed Joint Strip Seal	Foot	90	--	90
Fabric Reinforced Elastomeric Trough	Foot	--	96	96
Elastomeric Bearing Assembly, Type I	Each	--	30	30
Elastomeric Bearing Assembly, Type II	Each	--	10	10
Anchor Bolts, 1"	Each	--	140	140
Anchor Bolts, 1/2"	Each	--	20	20
Concrete Sealer	Sq Ft	--	886	886
Plug Existing Deck Drains	Each	302	--	302
Stiffener Intersection Modification	Each	104	--	104
Structural Repair of Concrete (Depth < 5")	Sq Ft	--	400	400
Navigation Lighting System	L Sum	1	--	1
Bridge Deck Microsilica Concrete Overlay 2 1/4"	Sq Yd	4526	--	4526
Bridge Deck Hydro-Scarification 1/2"	Sq Yd	4526	--	4526
Deck Slab Repair (Full Depth, Type II)	Sq Yd	95	--	95
Vertical Clearance Gauge	Each	--	2	2



CROSS SECTION  
(Looking North-West)

LOADING HS20-44

Allow 25#/sq. ft. for proposed wearing surface

DESIGN SPECIFICATIONS

2002 AASHTO LFD Bridge Design Specs.  
1995 FHWA Seismic Retrofitting Manual  
for Highway Bridges

DESIGN STRESSES

**EXISTING STRUCTURE**  
 $f_c = 1,200/1,400$  psi (super/sub-structure)  
 $f_s = 20,000$  psi (reinforcement)  
 $f_s = 20,000$  psi (A36 structural steel)  
**NEW CONSTRUCTION**  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 36,000$  psi (M270 Grade 36)

SEISMIC DATA

Seismic Performance Category (SPC) = C  
 Bedrock Acceleration Coefficient (A) = 0.13g  
 Site Coefficient (S) = 1.5

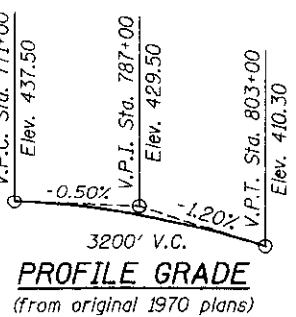
APPROVED  
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson (T)D  
ENGINEER OF BRIDGES AND STRUCTURES

Note:  
Engineer's stamp below applies  
to Sheets 1-19 of 22.



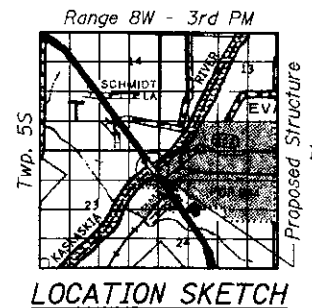
Signed: David Depp  
Date: 2-15-2010  
Lic. Expires: 11-30-2010



PROFILE GRADE  
(from original 1970 plans)

JD Johnson, Depp & Quisenberry  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDQ	DRAWN: P. Roy
CHECKED: DCD	CHECKED: DCD



LOCATION SKETCH

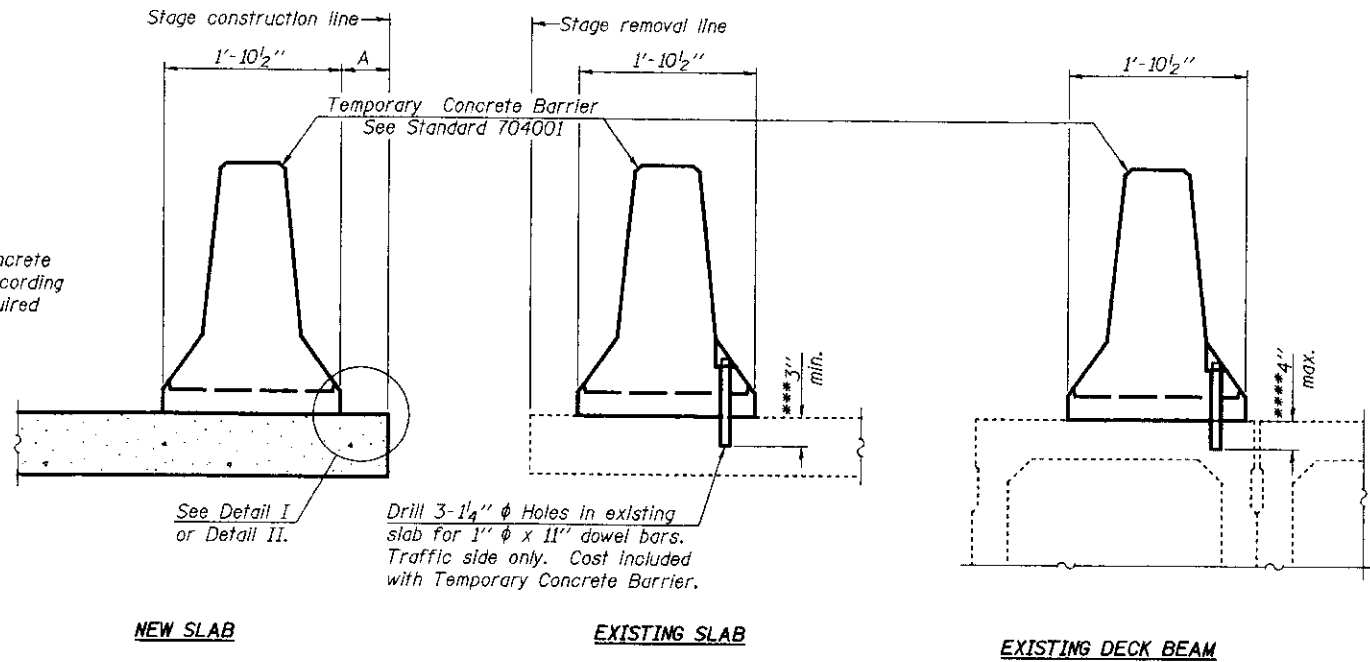
GENERAL PLAN & ELEVATION  
ILLINOIS 3 OVER KASKASKIA RIVER  
"PUBLIC WATER"  
F.A.P. RTE. 312 SEC. 73BR-II  
RANDOLPH COUNTY  
STATION 793+80  
STRUCTURE NO. 079-0036

SHEET 1 OF 22	F.A.P. RTE. 312	SECTION 73BR-II	COUNTY RANDOLPH	TOTAL SHEETS 51	SHEET NO. 24
	STA. 793+80		CONTRACT NO. 76883		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

FILE: J:\JQA\W075 IL-08VVV4 IL 3 Kaskaskia River-FINAL\0790036-76883-001.gplan.dgn  
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

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".



Drill 3-1/4"  $\phi$  Holes in existing slab for 1"  $\phi$  x 11" dowel bars. Traffic side only. Cost included with Temporary Concrete Barrier.

**NOTES**

**Detail I - With Bar Splicer or Couplers:**  
Connect one (1) 1"x7"x10" steel  $\bar{P}$  to the top layer of couplers with 2-5/8"  $\phi$  bolts screwed to coupler at approximate  $\bar{C}$  of each barrier panel.

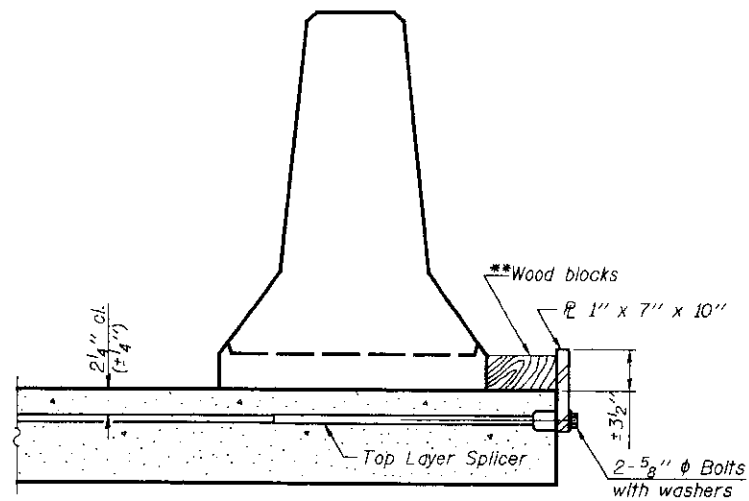
**Detail II - With Extended Reinforcement Bars:**  
Connect one (1) 1"x7"x10" steel  $\bar{P}$  to the concrete slab or concrete wearing surface with 2-5/8"  $\phi$  Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate  $\bar{C}$  of each barrier panel.

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.

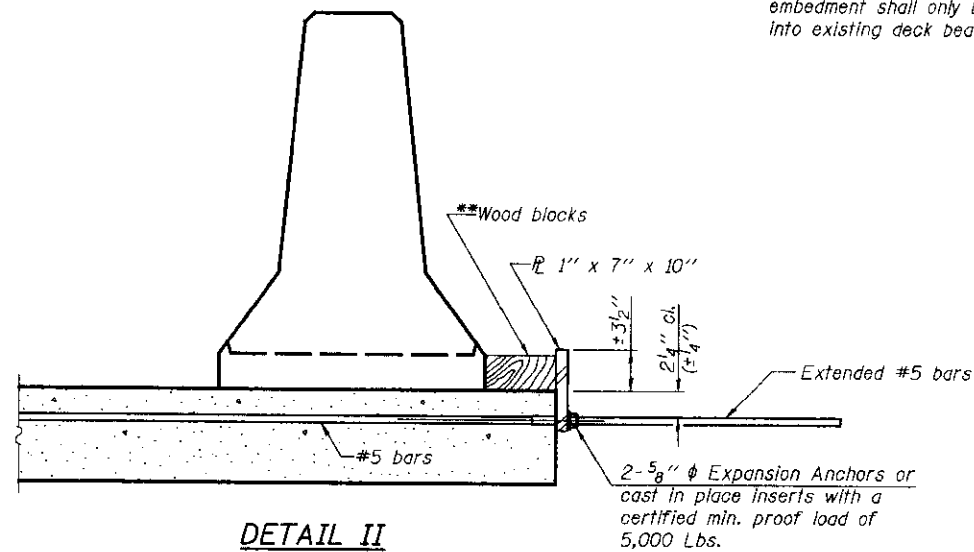
**SECTIONS THRU SLAB OR DECK BEAM**

\*\*\* 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.

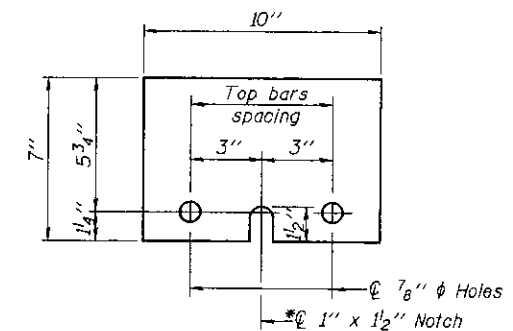
\*\*\*\* If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



**DETAIL I**



**DETAIL II**



**STEEL RETAINER  $\bar{P}$  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.

DESIGNED: JDQ	DRAWN: SJS
CHECKED: DCD	CHECKED: DCD

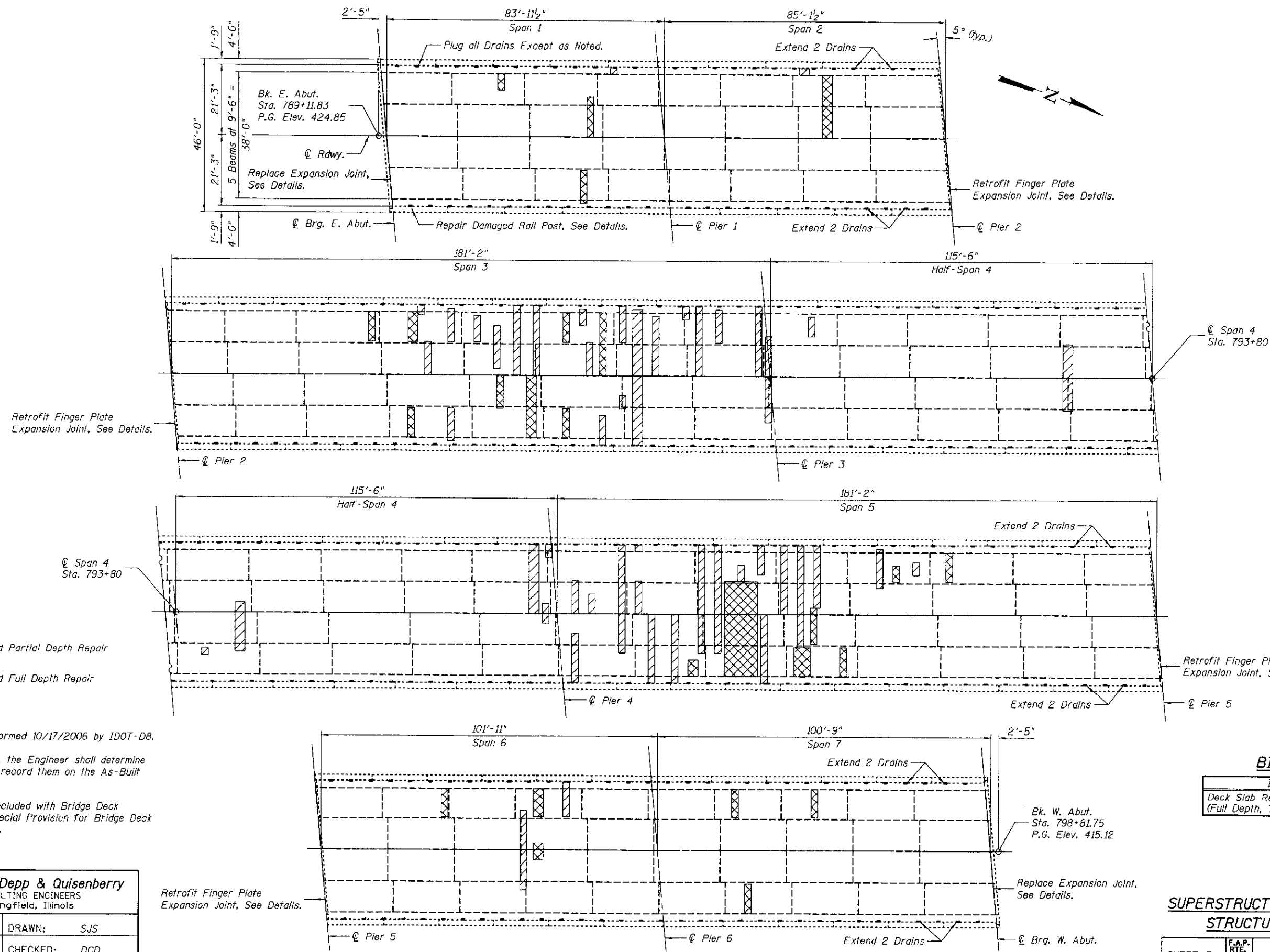
R-27

10-1-08

**TEMPORARY CONCRETE BARRIER  
FOR STAGE CONSTRUCTION  
STRUCTURE NO. 079-0036**

SHEET 2 OF 22	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	312	73BR-11	RANDOLPH	51	25
		STA. 793+80	CONTRACT NO. 76883		
		FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



- LEGEND**
- Estimated Partial Depth Repair
  - Estimated Full Depth Repair

**Notes:**  
Deck Condition Survey performed 10/17/2006 by IDOT-D8.  
Repair areas are estimated, the Engineer shall determine actual repair locations and record them on the As-Built plans.  
Partial depth repairs are included with Bridge Deck Hydro-scarification, see Special Provision for Bridge Deck Microsilica Concrete Overlay.

**BILL OF MATERIAL**

Item	Unit	Total
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	95

**Johnson, Depp & Quisenberry**  
CONSULTING ENGINEERS  
Springfield, Illinois

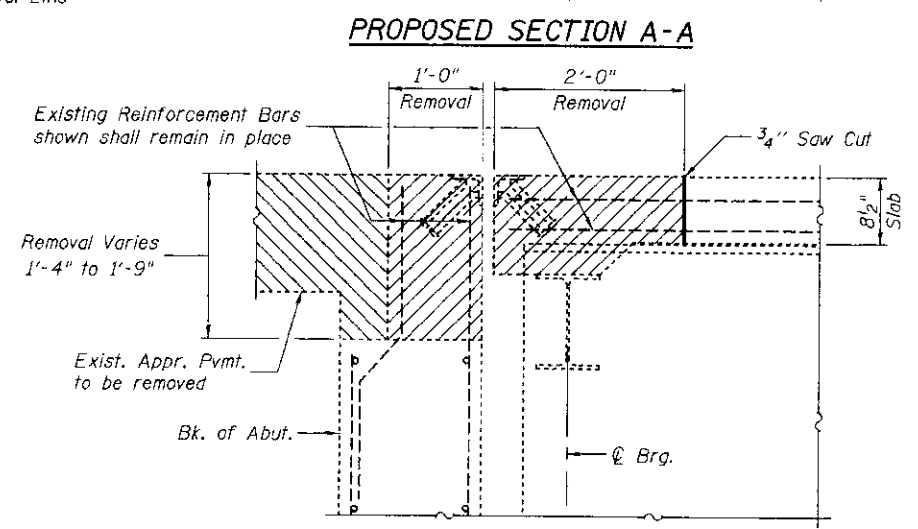
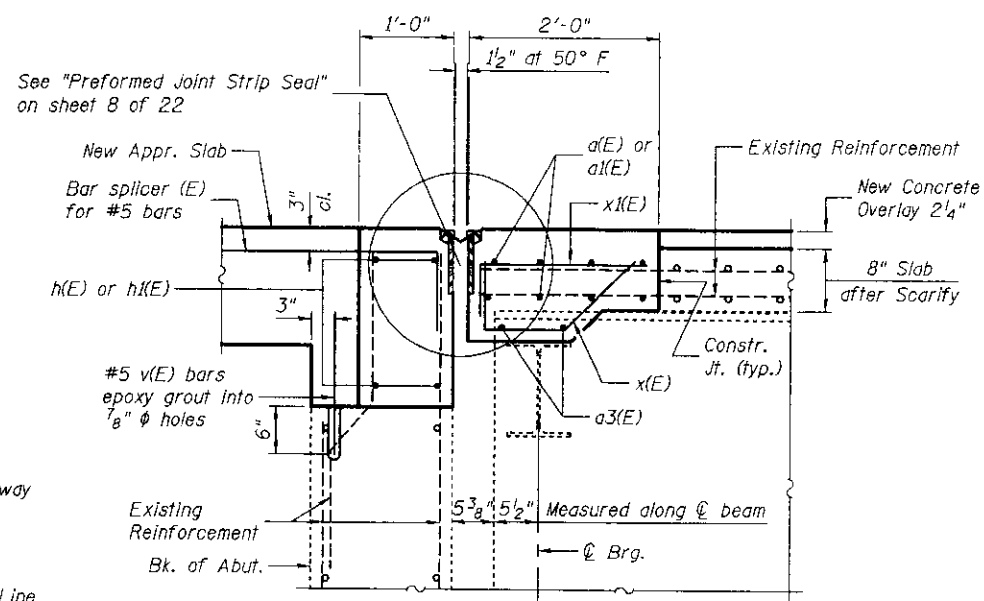
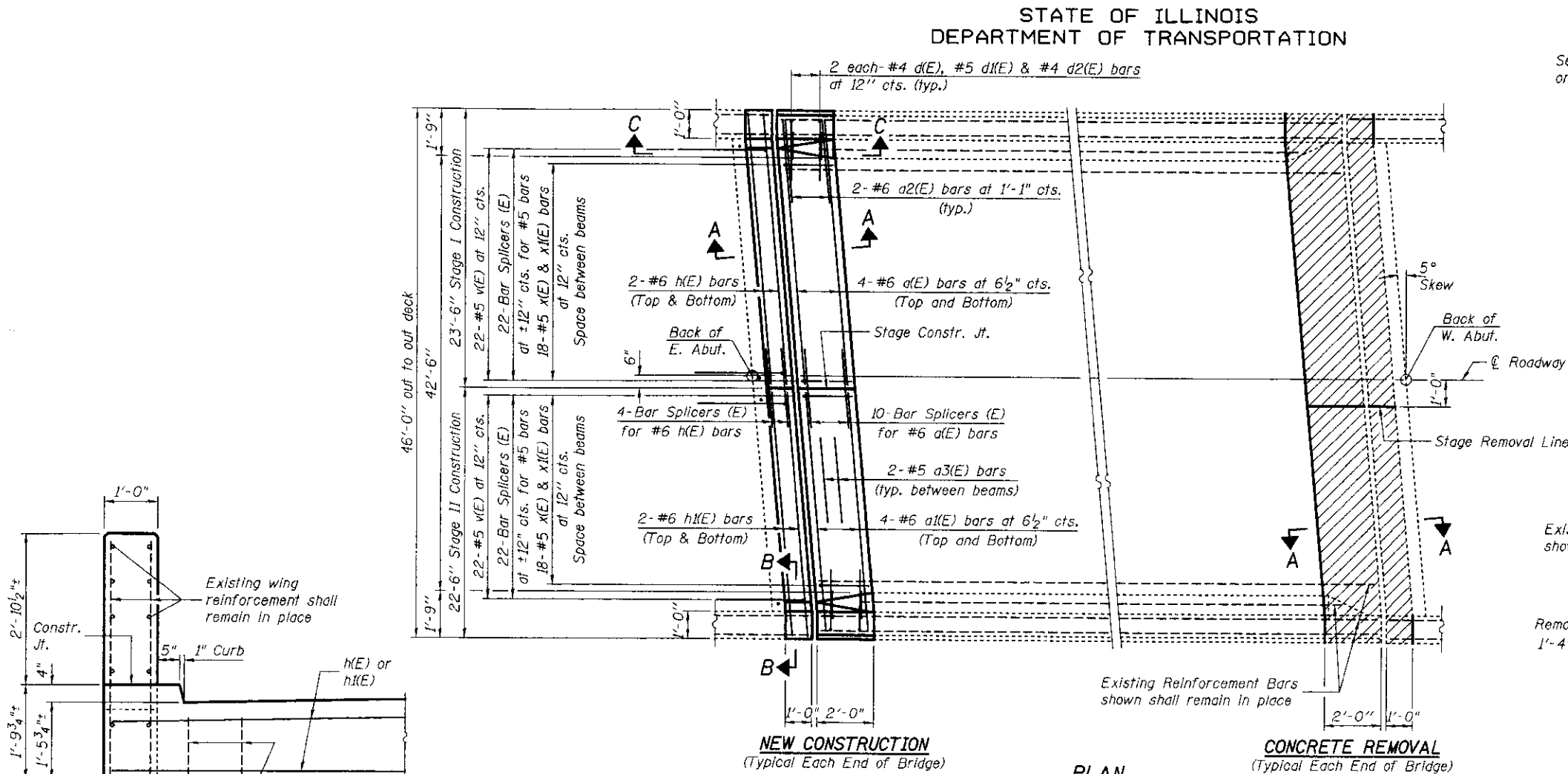
DESIGNED: JDO	DRAWN: SJS
CHECKED: DCD	CHECKED: DCD

**SUPERSTRUCTURE - DECK REPAIRS**  
**STRUCTURE NO. 079-0036**

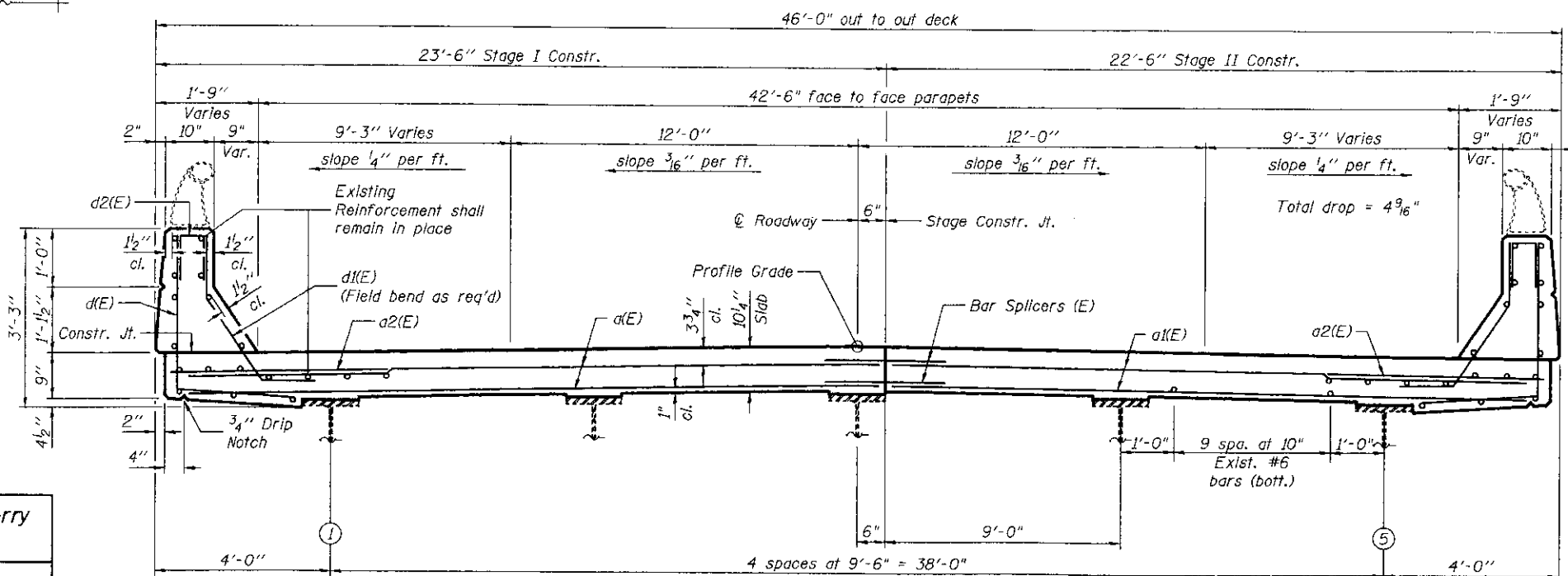
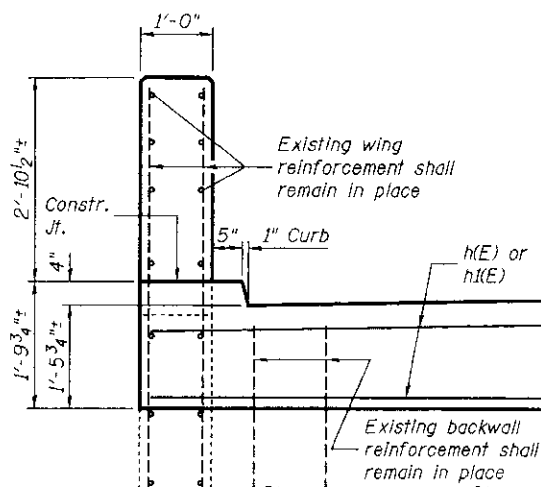
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	STA. 793+80			CONTRACT NO. 76883	
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT					

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



SECTION B-B



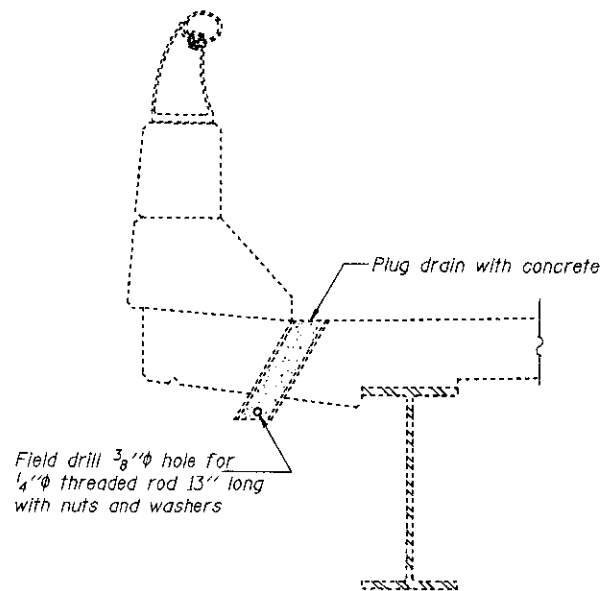
Notes:  
For Section C-C see Sheet 5 of 22.  
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

DESIGNED: JDU	DRAWN: PTR
CHECKED: DCD	CHECKED: DCD

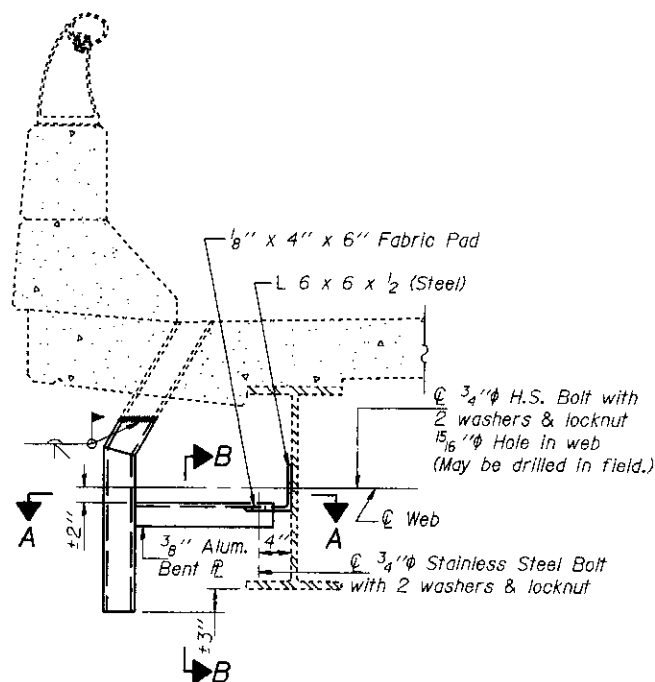
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<b>STRUCTURE NO. 079-0036</b>				
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		STA. 793+80	CONTRACT NO. 76883	SHEET NO. 27
		FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	

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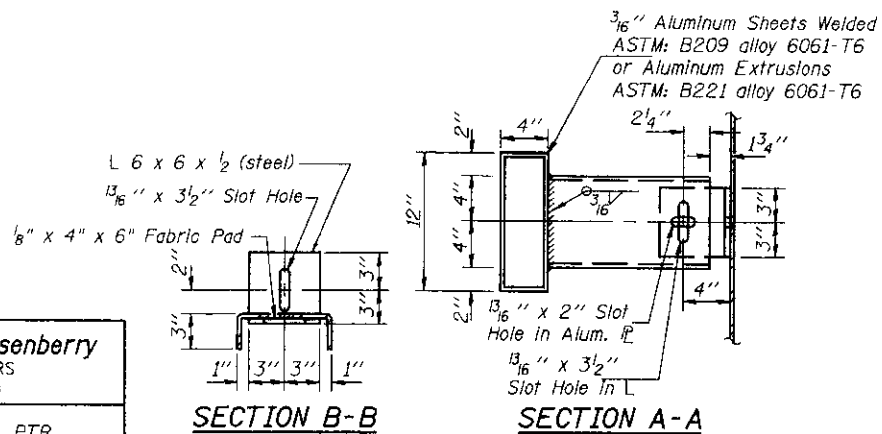
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DEPARTMENT OF TRANSPORTATION



SECTION AT DRAIN PLUG

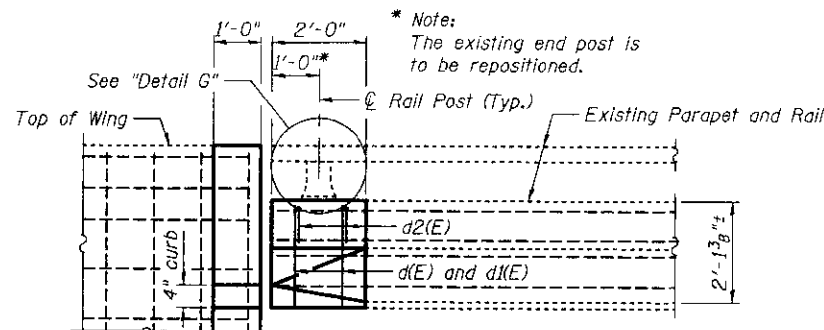


SECTION AT DRAIN EXTENSION

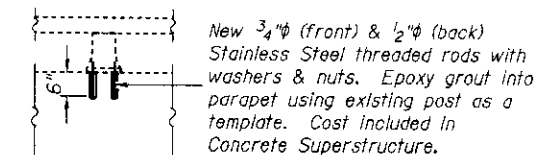


SECTION B-B

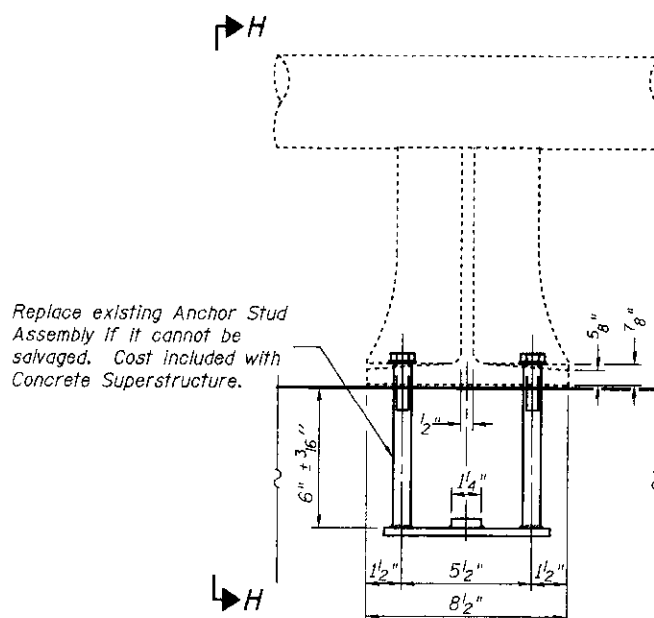
SECTION A-A



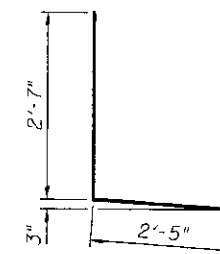
SECTION C-C  
PARTIAL INSIDE ELEVATION OF PARAPET



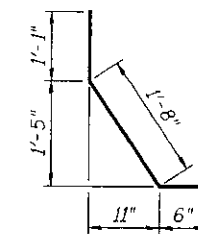
RAIL POST REPAIR  
(See Deck Repair sheet for location)



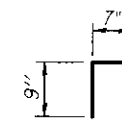
DETAIL G



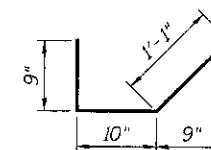
BAR d(E)



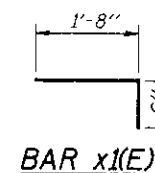
BAR d1(E)



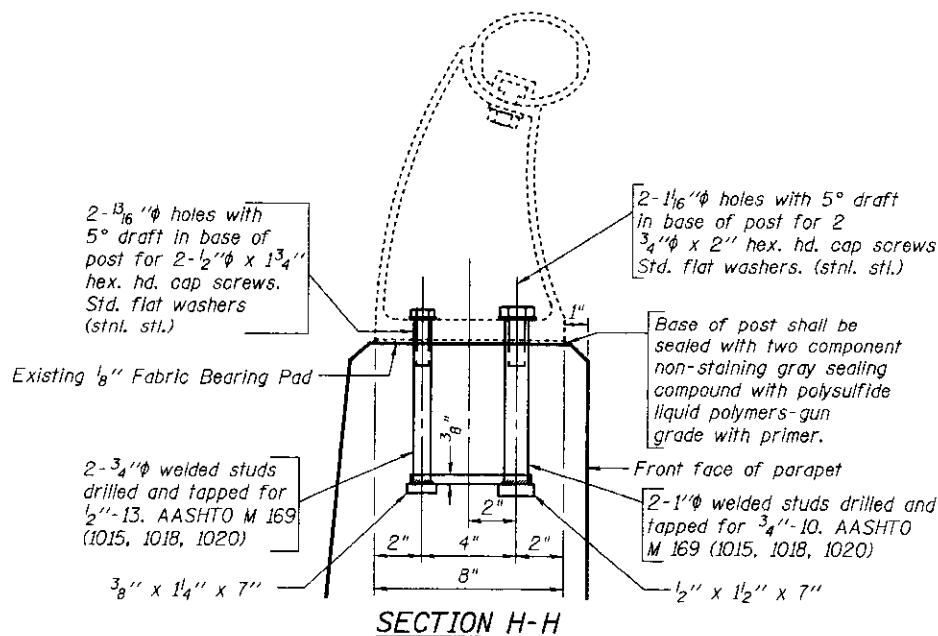
BAR d2(E)



BAR x(E)



BAR x1(E)



SECTION H-H

SUPERSTRUCTURE  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	16	#6	23'-0"	—
d1(E)	16	#6	22'-0"	—
d2(E)	8	#6	5'-0"	—
d3(E)	16	#5	9'-2"	—
d(E)	8	#4	5'-0"	L
d1(E)	8	#5	3'-3"	L
d2(E)	8	#4	2'-1"	π
h(E)	8	#6	23'-3"	—
h1(E)	8	#6	22'-3"	—
x(E)	72	#5	2'-8"	L
x1(E)	72	#5	2'-2"	L
v(E)	88	#5	1'-9"	—
Reinforcement Bars, Epoxy Coated			Pound	2430
Concrete Superstructure			Cu. Yd.	14.4
Plug Existing Deck Drains			Each	302
Floor Drain Extension			Each	12
Concrete Removal			Cu. Yd.	13.4

SUPERSTRUCTURE DETAILS  
STRUCTURE NO. 079-0036

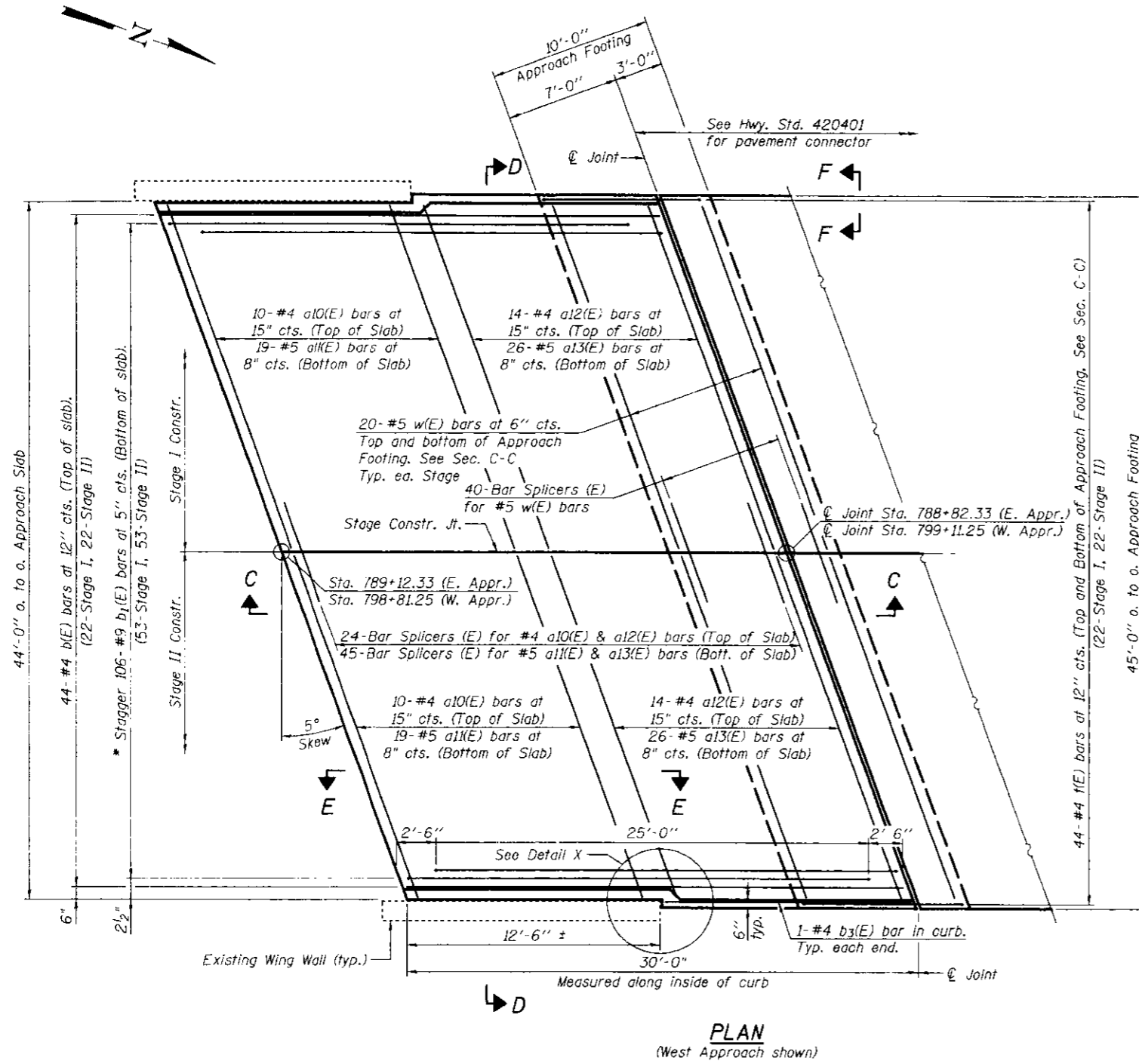
SHEET	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5	312	73BR-11	RANDOLPH	51	28
OF 22		STA. 793+80			CONTRACT NO. 76883
		FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	

**JD** Johnson, Depp & Quisenberry  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDQ DRAWN: PTR  
CHECKED: DCD CHECKED: DCD

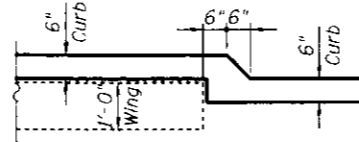
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

Notes:  
See sheet 7 of 22 for Sections C-C & D-D and View E-E.  
a10(E), a11(E), a12(E) and a13(E) bar spacings measured parallel to  $\phi$  Rdwy.



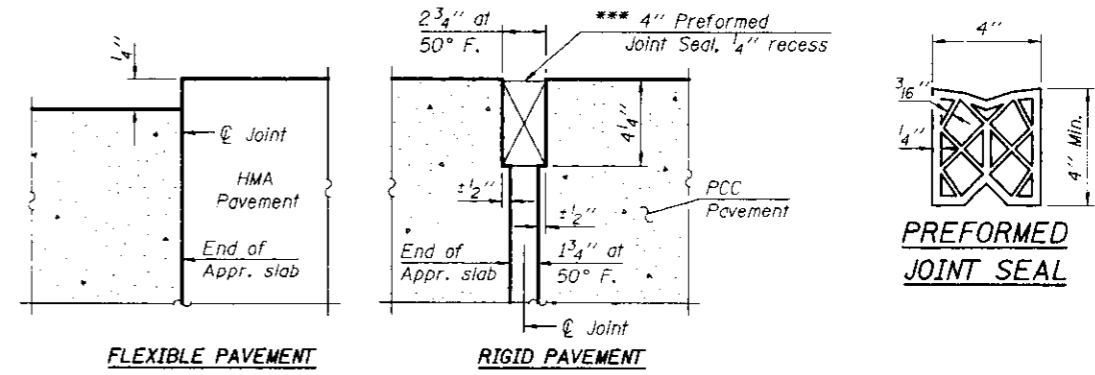
PLAN  
(West Approach shown)

\* Tilt #9 b1(E) bars as required to maintain clearance.

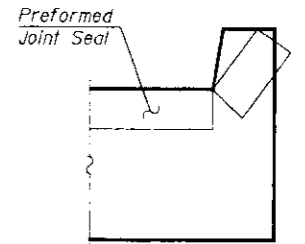


DETAIL X

\*\*\* Cost included with Concrete Superstructure.

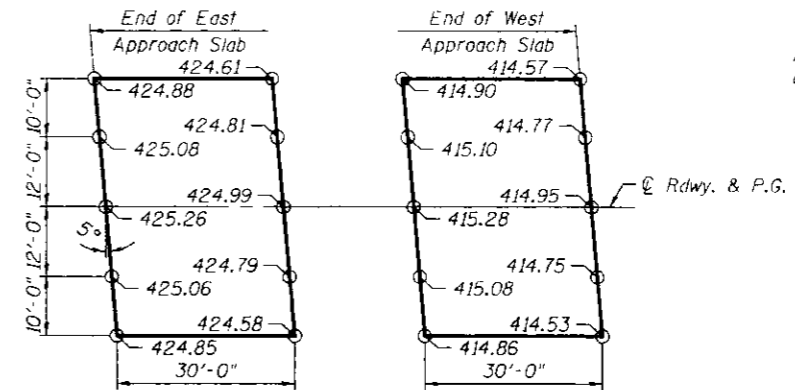


DETAIL A



VIEW F-F

Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.



TOP OF APPROACH SLAB ELEVATIONS

NOTE:  
Proposed elevations are based on the original 1970 plan elevations, increased by 0.15' (1 3/8") to account for the proposed deck overlay. The top of the existing abutment backwall can be used as a temporary benchmark by assuming the following elevations:  
Back of East Abut. original PG Elev. 424.85  
Back of West Abut. original PG Elev. 415.13

(Sheet 1 of 2)  
BRIDGE APPROACH SLAB DETAILS  
STRUCTURE NO. 079-0036

SHEET	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6	312	730R-11	RANDOLPH	51	29
OF 22		STA. 793+80			CONTRACT NO. 76883
		FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

**JD** Johnson, Depp & Quisenberry  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDQ DRAWN: SJS  
CHECKED: DCD CHECKED: DCD

BA-R 10-31-08 (Modified)

FILE: J:\JDO\10175 IL-08VW4 IL 3 Kasakaskia River-FINAL\0790036-76883-006-approachslab.dgn

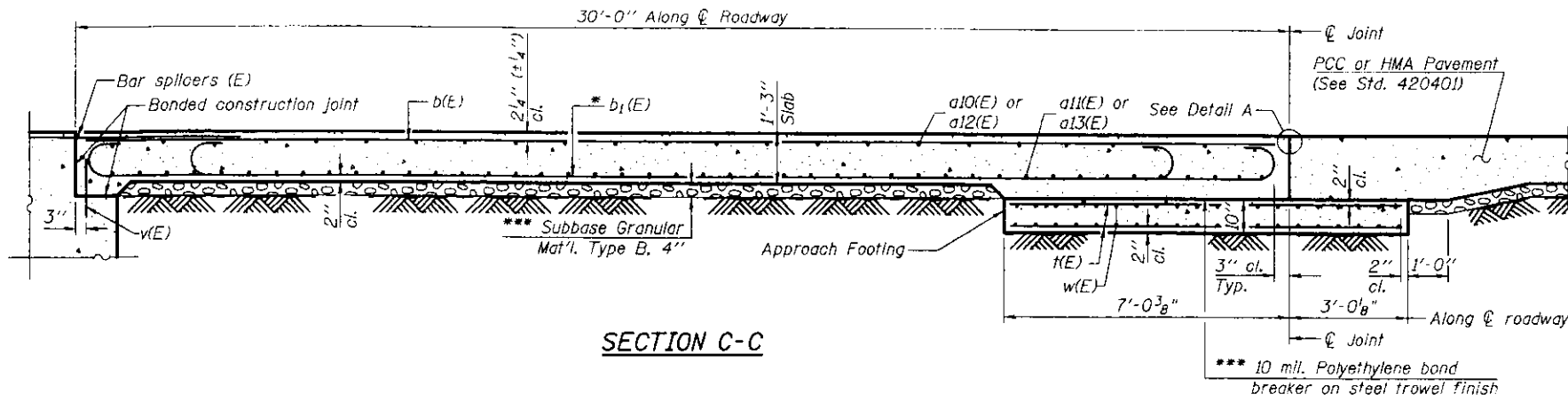
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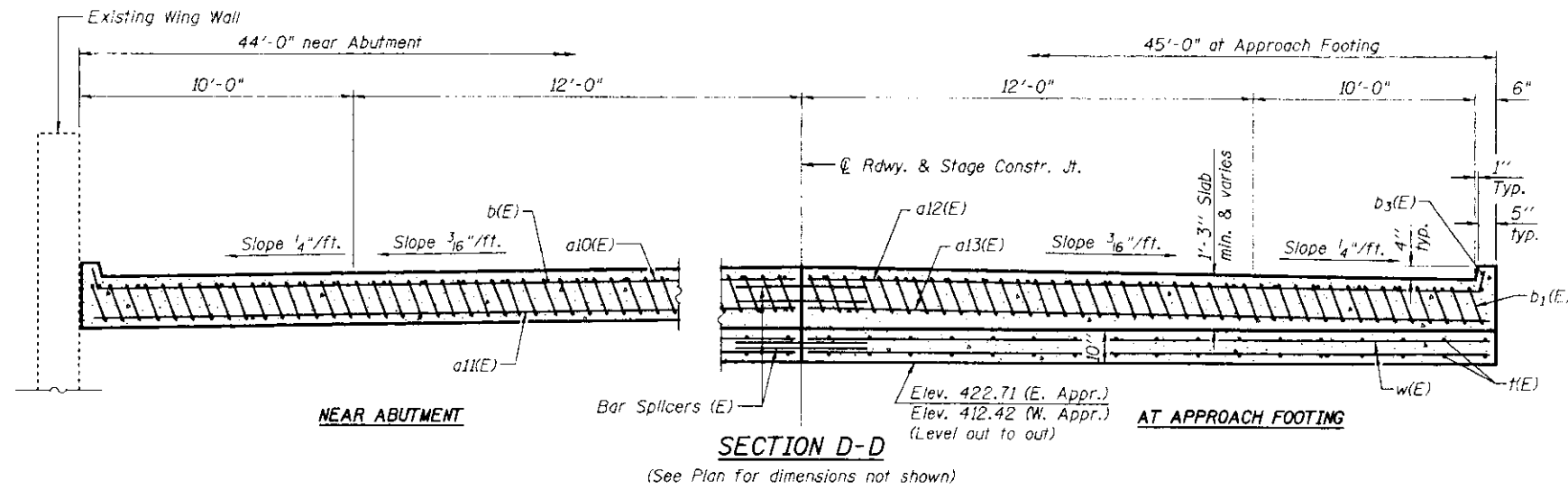
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

Notes:

See sheet 6 of 22 for Detail A and View B-B.  
Approach slab and parapet concrete shall be paid for as Concrete Superstructure.  
Approach footing concrete shall be paid for as Concrete Structures.  
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.  
For v(E) bar details, see sheet 4 of 22.  
The approach footing maximum applied service bearing pressure ( $Q_{max}$ ) = 2.0 ksf.  
For bar splicer details, see sheet 19 of 22.  
Cost of excavation for approach footing included with Concrete Structures.



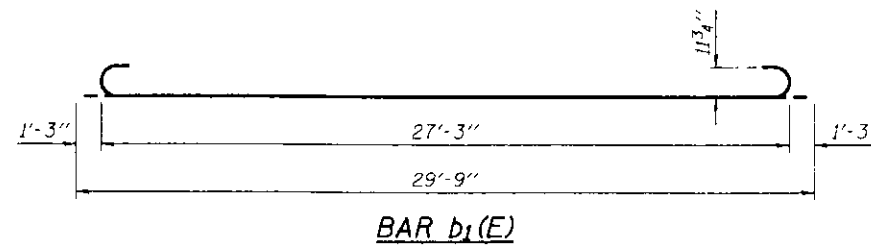
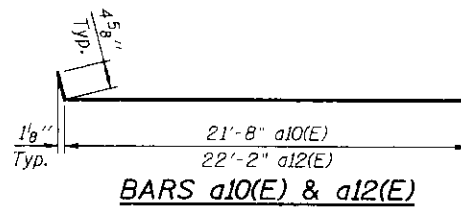
SECTION C-C



NEAR ABUTMENT

SECTION D-D  
(See Plan for dimensions not shown)

\* Tilt #9 b<sub>1</sub>(E) bars as required to maintain clearance.  
\*\*\* Cost included with Concrete Superstructure.



TWO APPROACHES  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	40	#4	22'-0"	┌
a11(E)	76	#5	21'-9"	┌
a12(E)	56	#4	22'-6"	┌
a13(E)	104	#5	22'-3"	┌
b(E)	88	#4	29'-8"	┌
b1(E)	212	#9	29'-9"	┌
b3(E)	4	#4	17'-2"	┌
t(E)	176	#4	9'-8"	┌
w(E)	160	#5	22'-3"	┌
Concrete Superstructure		Cu. Yd.	129.1	
Concrete Structures		Cu. Yd.	27.9	
Reinforcement Bars, Epoxy Coated		Pound	33650	

**JD Johnson, Depp & Quisenberry**  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDQ      DRAWN: SJS  
CHECKED: DCD      CHECKED: DCD

BA-R      10-31-08 (Modified)

(Sheet 2 of 2)  
BRIDGE APPROACH SLAB DETAILS  
STRUCTURE NO. 079-0036

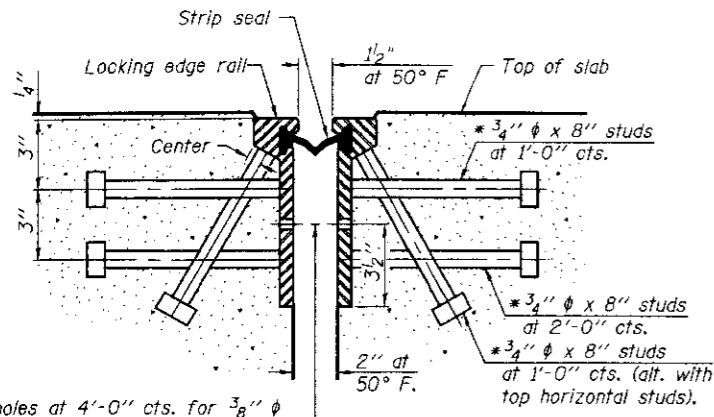
SHEET 7 OF 22	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	312	73BR-11	RANDOLPH	51	30
	STA. 793+80		CONTRACT NO. 76883		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

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USER: DCD  
DATE: 02/15/2010 13:56:16



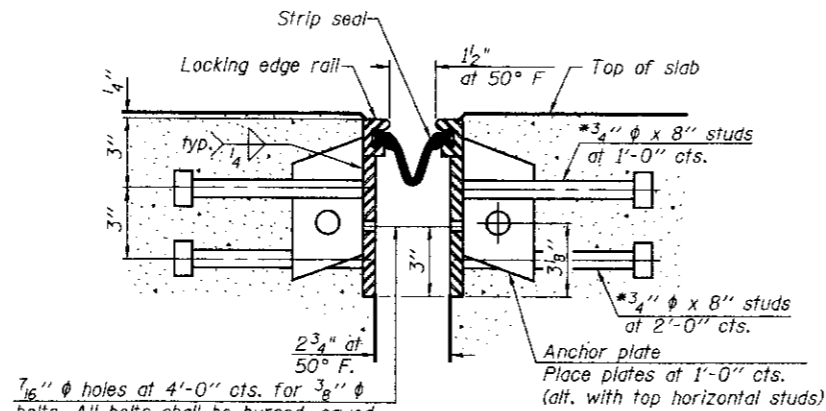
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

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



7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU  
ROLLED RAIL JOINT



7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU  
WELDED RAIL JOINT

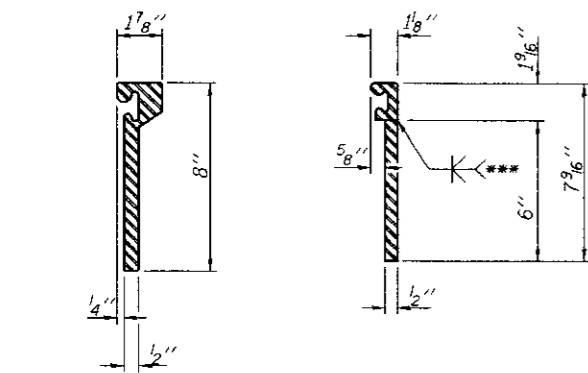
Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". 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.

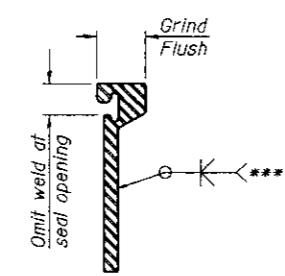
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.



ROLLED  
EXTRUDED RAIL      WELDED RAIL

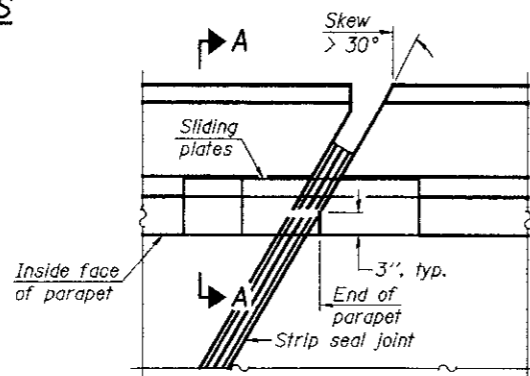


\*\*\*Back gouge not required if complete joint penetration is verified by mock-up.

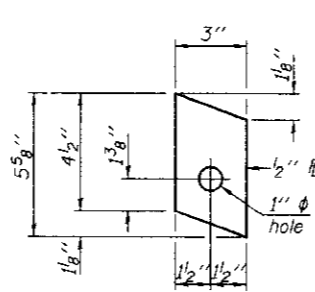
LOCKING EDGE  
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

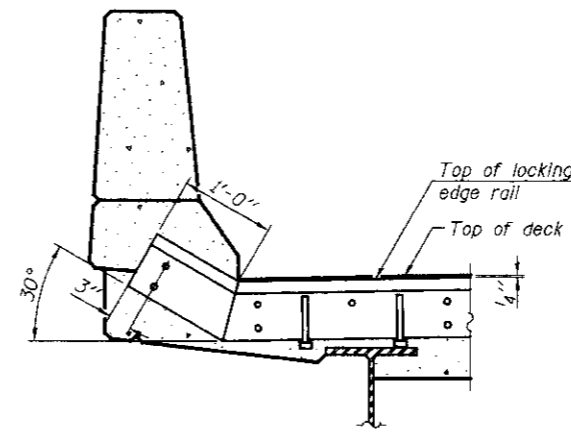
LOCKING EDGE RAILS



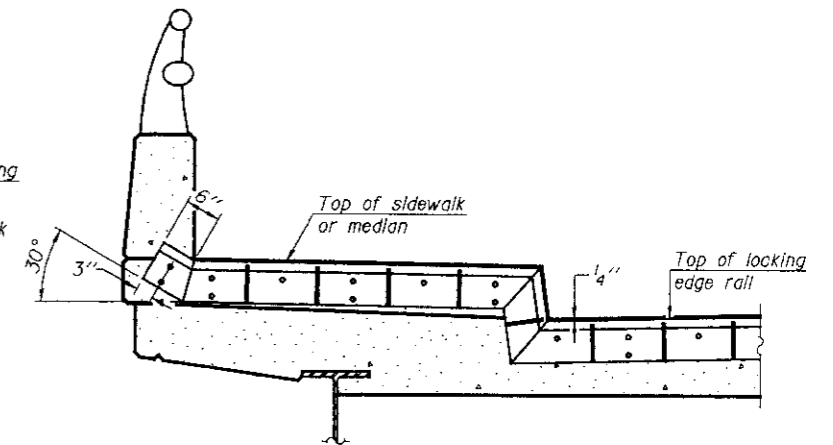
PLAN



ANCHOR PL  
(for welded rail)



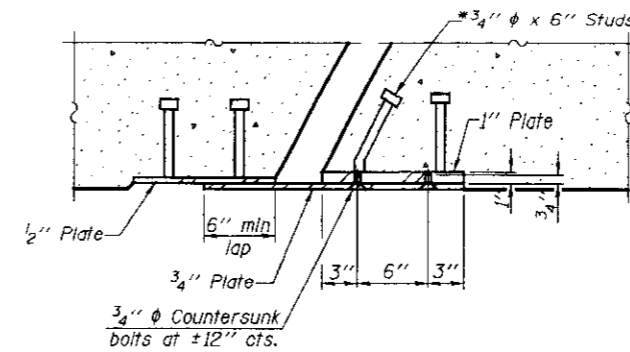
AT PARAPET



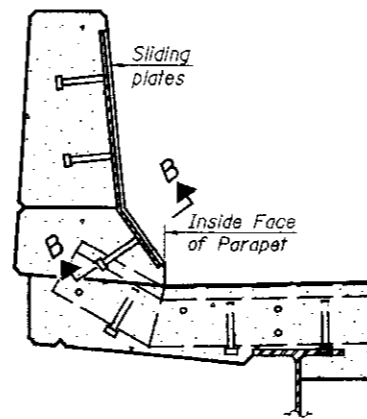
AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

TYPICAL END TREATMENTS



SECTION B-B



SECTION A-A

POINT BLOCK DETAILS  
(for skews > 30°)

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	90

PREFORMED JOINT STRIP SEAL  
STRUCTURE NO. 079-0036

SHEET	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
8 OF 22	312	73BR-11	RANDOLPH	51	31
STA. 793+80			CONTRACT NO. 76883		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

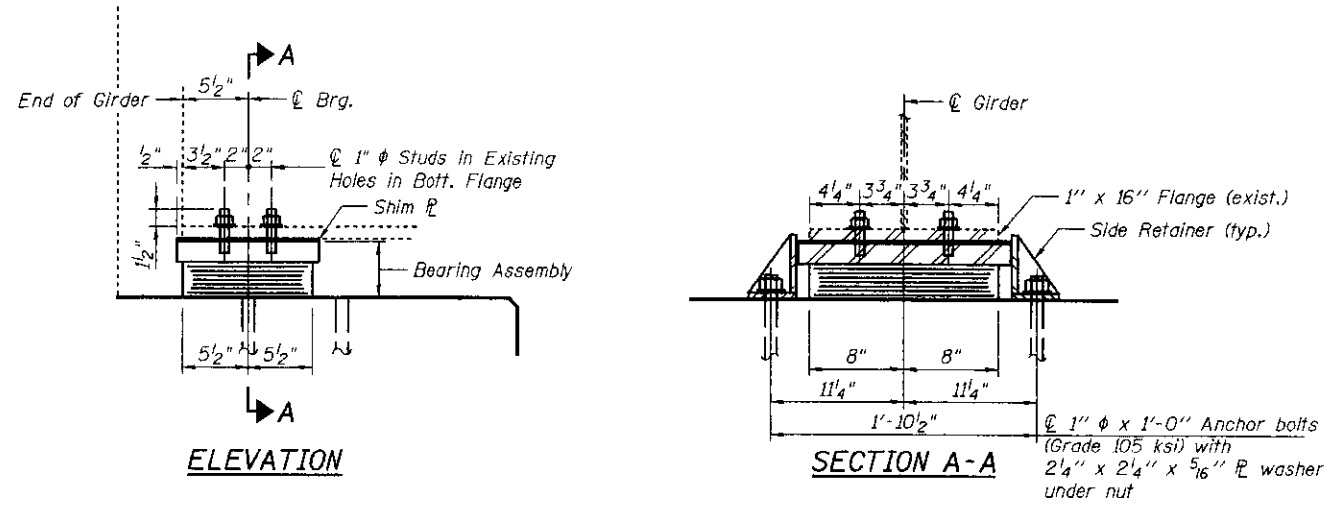
**JD** Johnson, Depp & Quisenberry  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDO	DRAWN: PTR
CHECKED: DCD	CHECKED: DCD

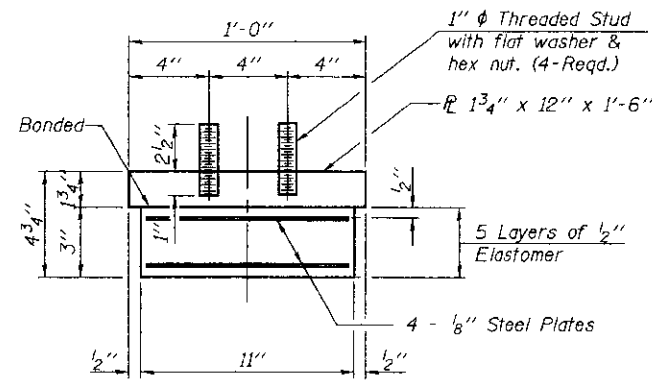
EJ-SSJ 10-1-08



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

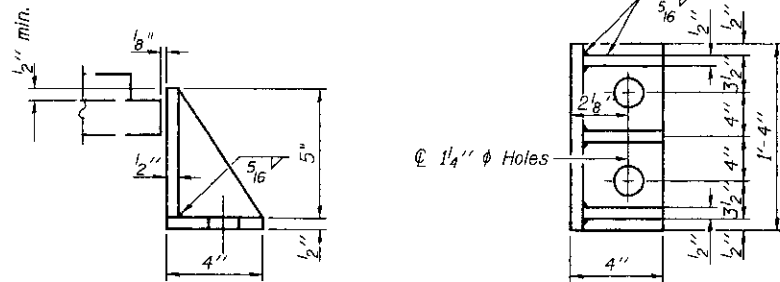


**TYPE I ELASTOMERIC EXP. BRG.**



**BEARING ASSEMBLY**

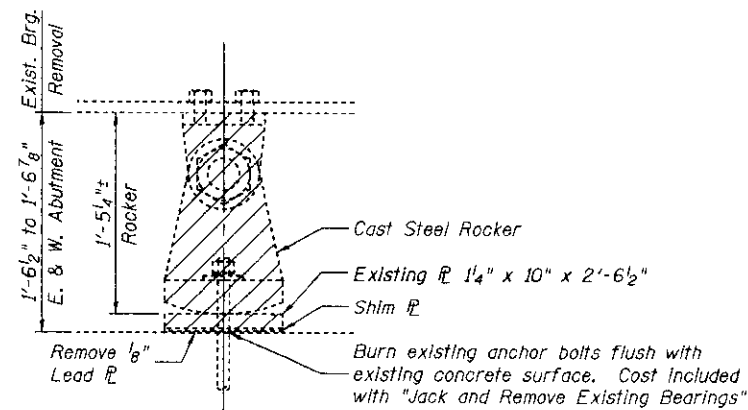
Note:  
Shim plates shall not be placed under Bearing Assembly.



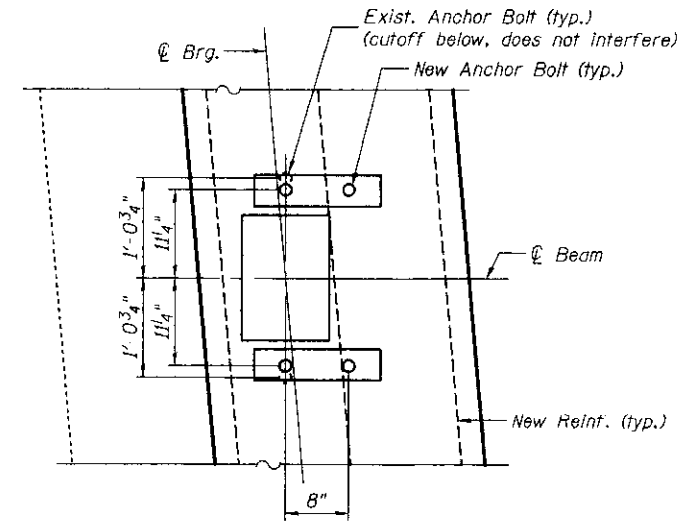
**SIDE RETAINER**

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

Notes:  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Anchor bolts for side retainers shall be installed in holes drilled after members are in place.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.



**EXISTING BEARING REMOVAL**



**ANCHOR BOLT LAYOUT**

Notes:  
Existing expansion bearings shall be removed and replaced according to the plans. Jacking shall be according to the Special Provisions for "JACK AND REMOVE EXISTING BEARINGS". If web stiffeners are not present directly over the jack location, hardwood timbers shall be installed tightly between top and bottom flanges to prevent rotation.  
The abutment bearings shall be in place and the jacks lowered before the new concrete deck is poured at the abutments.  
Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included with Furnishing and Erecting Structural Steel.  
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. The Shim Thickness Table is copied from the original plans.  
Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.  
New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.  
The structural steel bearing plates for the expansion bearings shall conform to the requirements of AASHTO M 270 Grade 50. The plates for the side retainers and steel extensions may be Grade 36 or 50.

**BILL OF MATERIAL**

Item	Unit	E. Abut.	W. Abut.
Jack and Remove Existing Bearings	Each	5	5
Elastomeric Bearing Assembly Type I	Each	5	5
Furnishing and Erecting Structural Steel	Pound	-	-
Anchor Bolts, 1"	Each	20	20

		E. Abut.	W. Abut.
R (DL)	(K)	51.5	44.0
R (LL)	(K)	53.8	55.3
R (Imp)	(K)	12.9	12.2
R (Total)	(K)	118.2	111.5
Minimum Jack Capacity	(Tons)	65	65

**SHIM THICKNESS TABLE**

Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5
East Abut.	-	-	-	1/4"	3/8"
West Abut.	-	-	-	1/4"	3/8"

**BEARINGS - ABUTMENTS  
STRUCTURE NO. 079-0036**

SHEET	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10	312	73BR-11	RANDOLPH	51	33
OF 22		STA. 793+80			CONTRACT NO. 76883

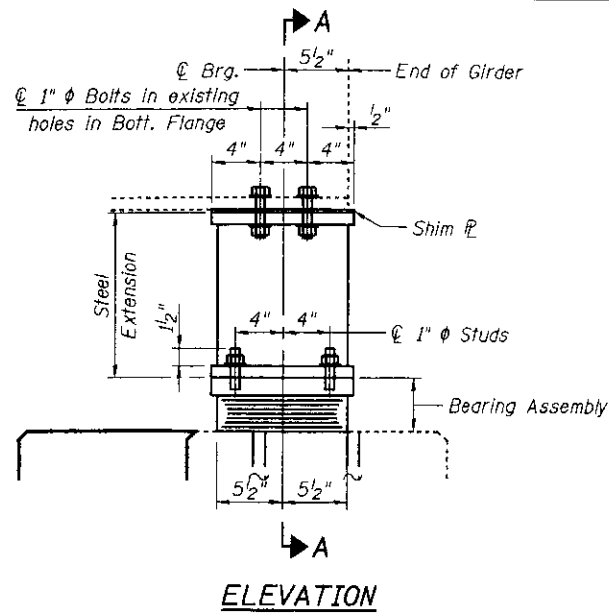
**JD** Johnson, Depp & Quisenberry  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDQ	DRAWN: PTR
CHECKED: DCD	CHECKED: DCD

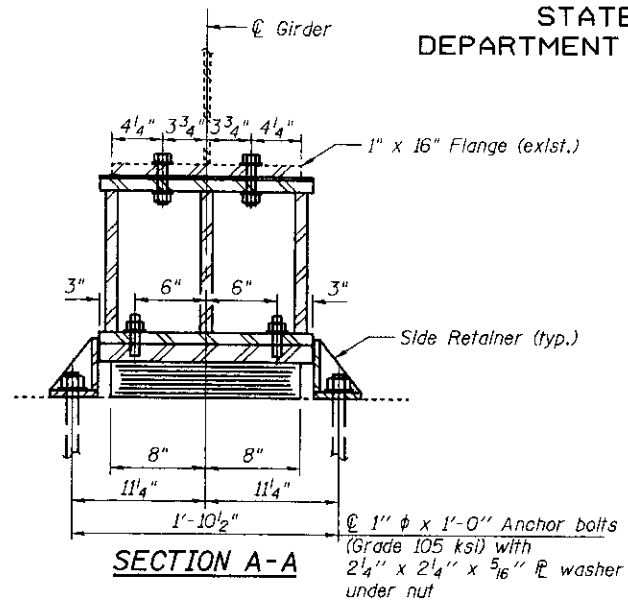
I-2E-1 10-1-08 (Modified)



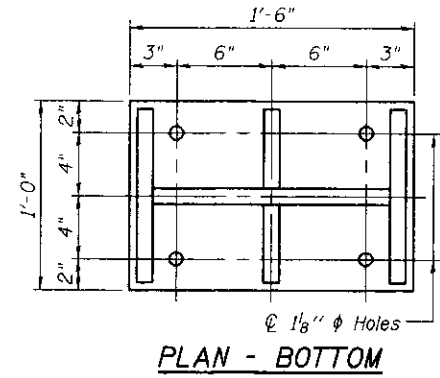
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



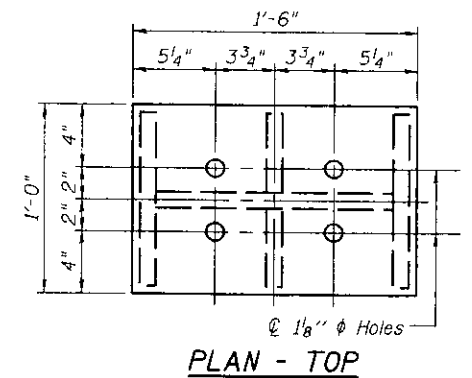
**TYPE I ELASTOMERIC EXP. BRG.**



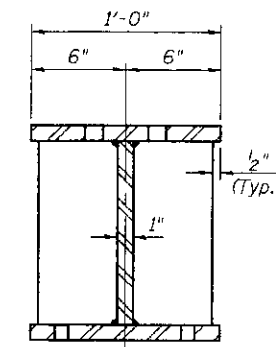
**SECTION A-A**



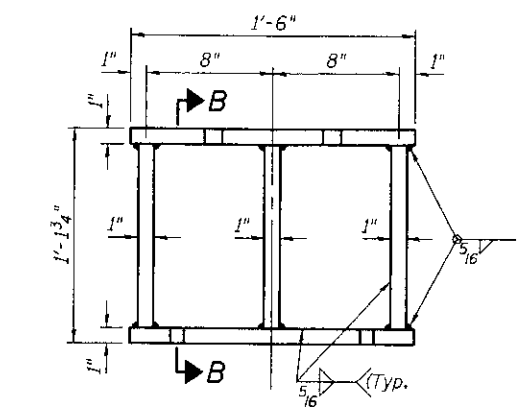
**PLAN - BOTTOM**



**PLAN - TOP**

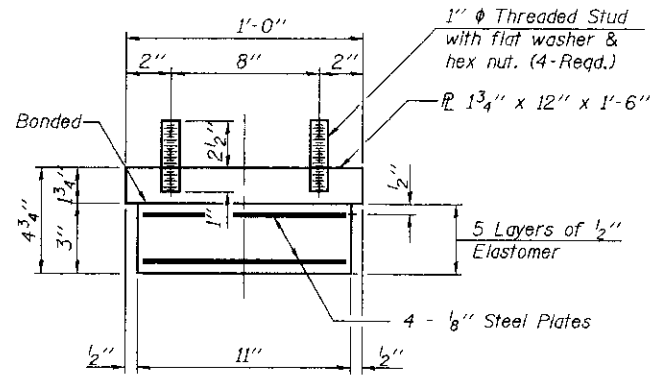


**SECTION B-B**



**ELEVATION**

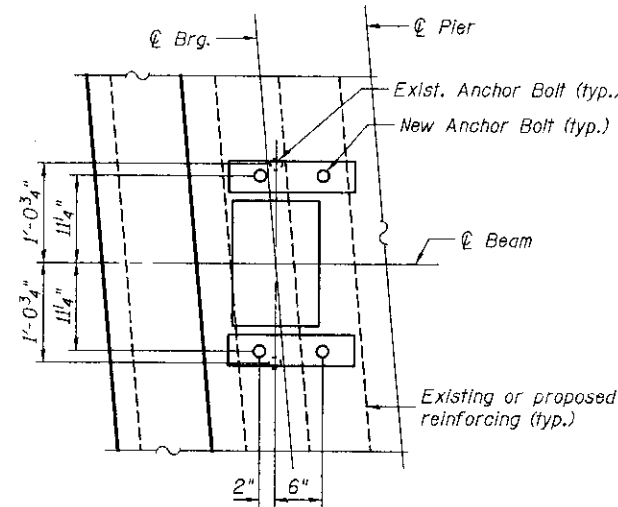
**STEEL EXTENSION**



**BEARING ASSEMBLY**

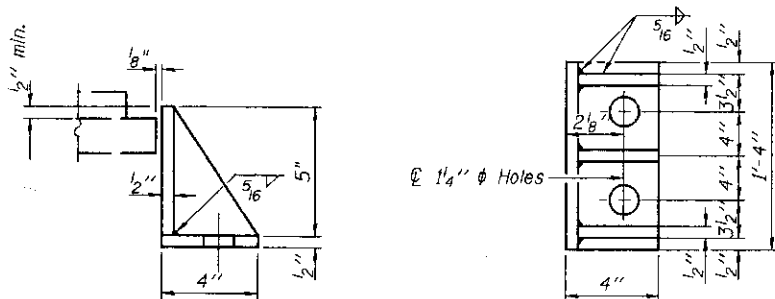
Note:  
Shim plates shall not be placed under Bearing Assembly.

Notes:  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Anchor bolts for side retainers shall be installed in holes drilled after members are in place.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.



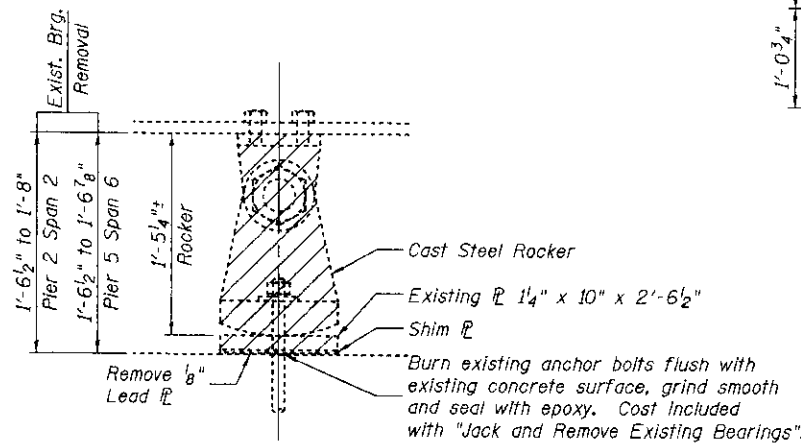
**ANCHOR BOLT LAYOUT**

Notes:  
See Additional Notes on Sheet 10 of 22.



**SIDE RETAINER**

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



**EXISTING BEARING REMOVAL**

**SHIM THICKNESS TABLE**

Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5
Pier 2 - Span 2	1 1/8"	-	-	1/4"	1/2"
Pier 5 - Span 6	-	-	-	1/4"	3/8"

INTERIOR GIRDER REACTION TABLE			
		Pier 2 -Span 2	Pier 5 -Span 6
R (DL)	(K)	51.5	44.0
R (LL)	(K)	53.8	55.3
R (Imp)	(K)	12.9	12.2
R (Total)	(K)	118.2	111.5
Minimum Jack Capacity	(Tons)	65	65

**BILL OF MATERIAL**

Item	Unit	Pier 2	Pier 5
Jack and Remove Existing Bearings	Each	5	5
Elastomeric Bearing Assembly Type I	Each	5	5
Furnishing and Erecting Structural Steel	Pound	1570	1430
Anchor Bolts, 1"	Each	20	20

**BEARINGS  
PIER 2-SPAN 2 & PIER 5-SPAN 6  
STRUCTURE NO. 079-0036**

SHEET 11 OF 22	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	312	73BR-11	RANDOLPH	51	34
STA. 793+80			CONTRACT NO.	76883	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

**JD Johnson, Depp & Qulsenberry**  
CONSULTING ENGINEERS  
Springfield, Illinois

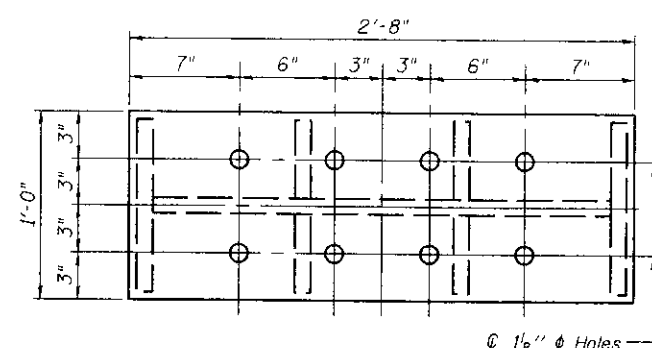
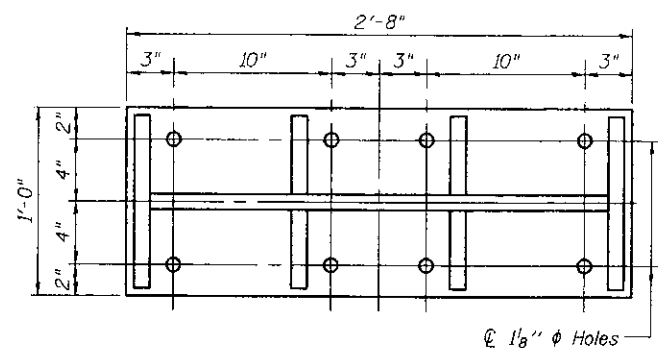
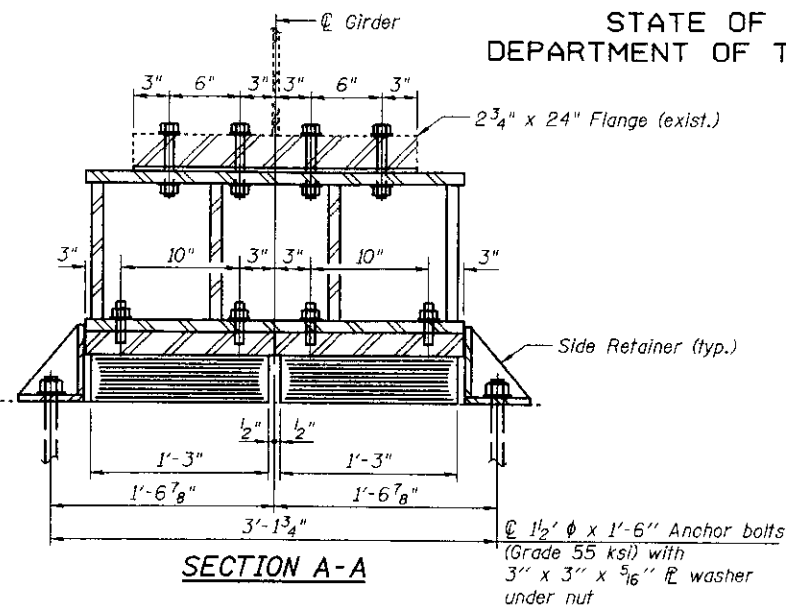
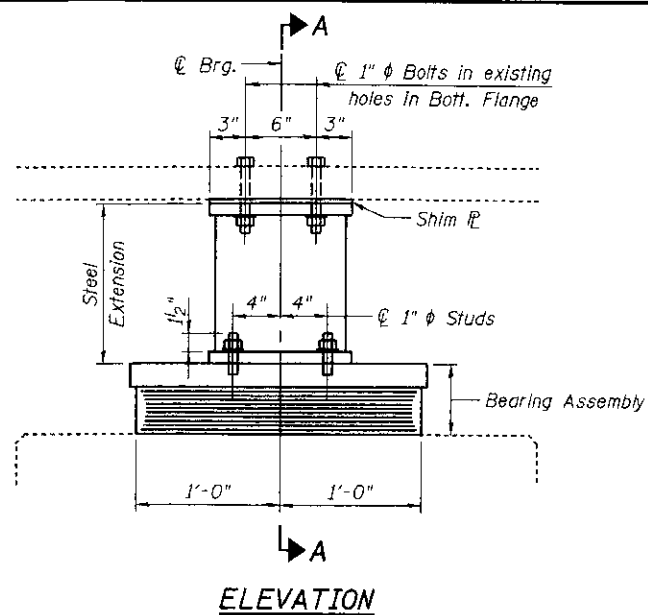
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**I-2E-1**      10-1-08 (Modified)

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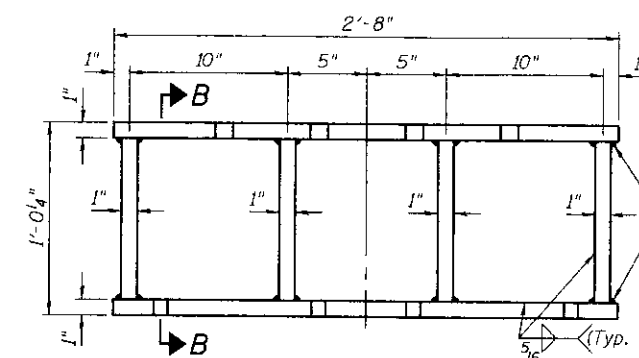
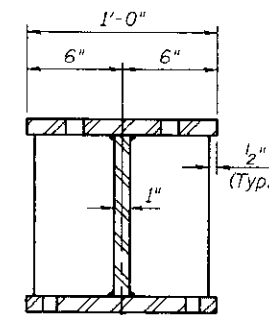


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**PLAN - BOTTOM**

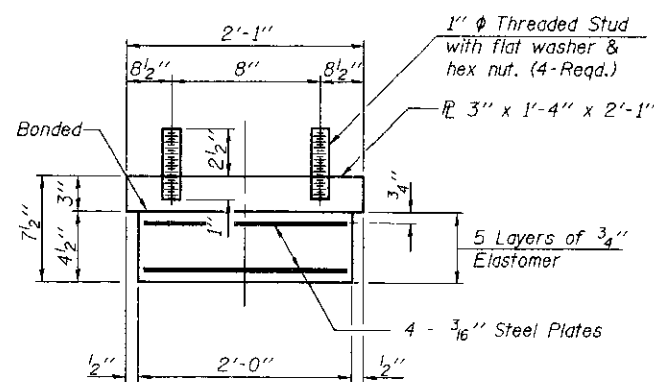
**PLAN - TOP**



**SECTION B-B**

**STEEL EXTENSION**

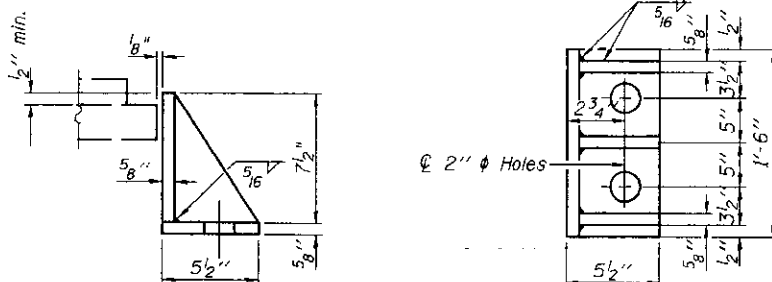
**TYPE I ELASTOMERIC EXP. BRG.**



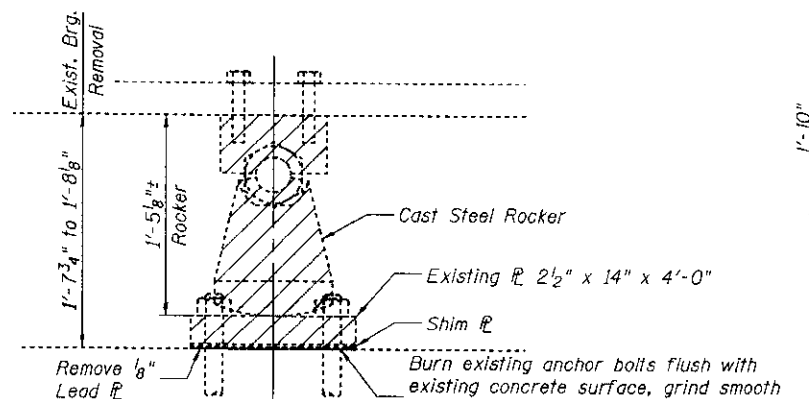
Notes:  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts for side retainers shall be installed in holes drilled after members are in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications. Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

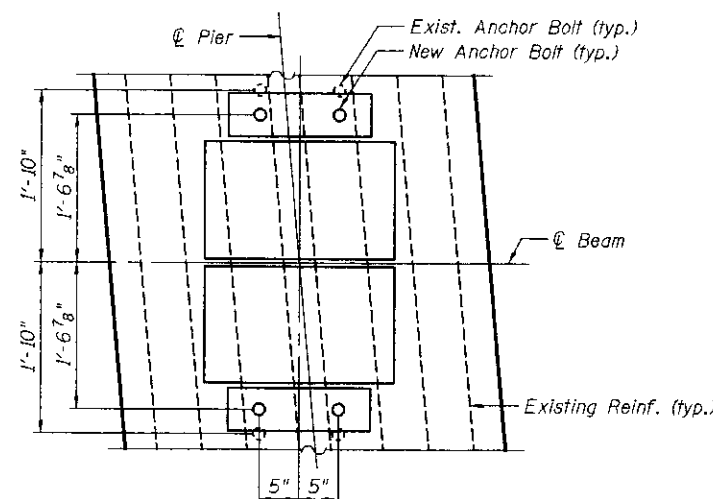
Note:  
Shim plates shall not be placed under Bearing Assembly.



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



**EXISTING BEARING REMOVAL**



**ANCHOR BOLT LAYOUT**

Notes:  
See Additional Notes on Sheet 10 of 22.

**BILL OF MATERIAL**

Item	Unit	Total
Jack and Remove Existing Bearings	Each	5
Elastomeric Bearing Assembly Type I	Each	10
Furnishing and Erecting Structural Steel	Pound	2180
Anchor Bolts, 1 1/2"	Each	20

**SHIM THICKNESS TABLE**

Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5
Pier 3	-	-	-	1/4"	3/8"

**INTERIOR GIRDER REACTION TABLE**

	Pier 3
R (DL)	(K) 431.0
R (LL)	(K) 160.5
R (Imp)	(K) 24.1
R (Total)	(K) 615.6
Minimum Jack Capacity (Tons)	400

**BEARINGS - PIER 3  
STRUCTURE NO. 079-0036**

SHEET NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
13	73BR-11	RANDOLPH	51	36
OF 22	STA. 793+80	CONTRACT NO.	76883	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

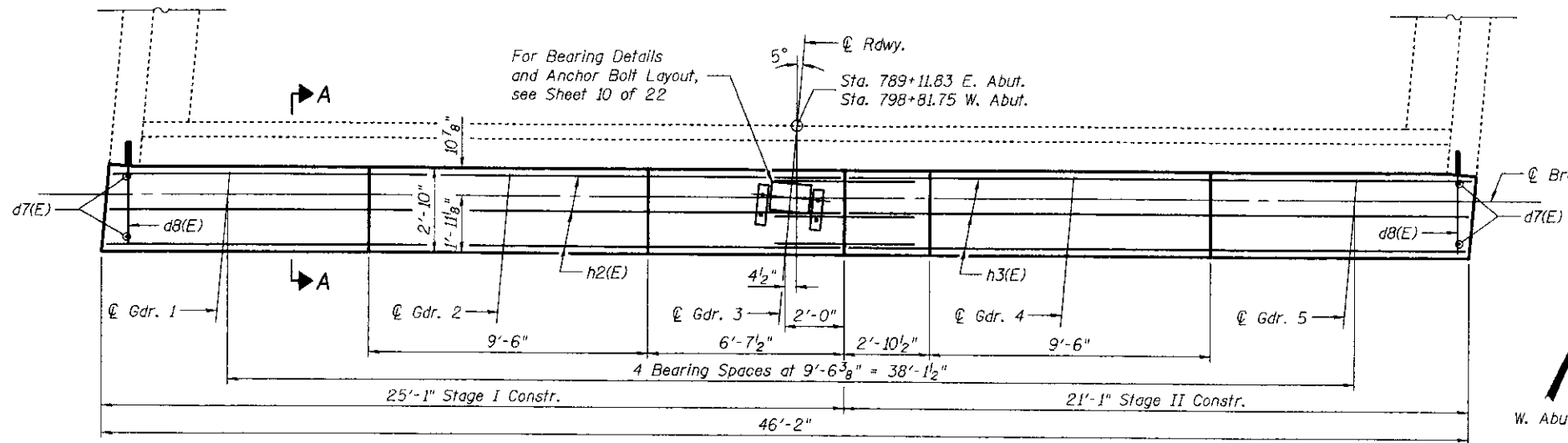
**JD** Johnson, Depp & Quisenberry  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDQ	DRAWN: PTR
CHECKED: DCD	CHECKED: DCD

I-2E-1 10-1-08 (Modified)

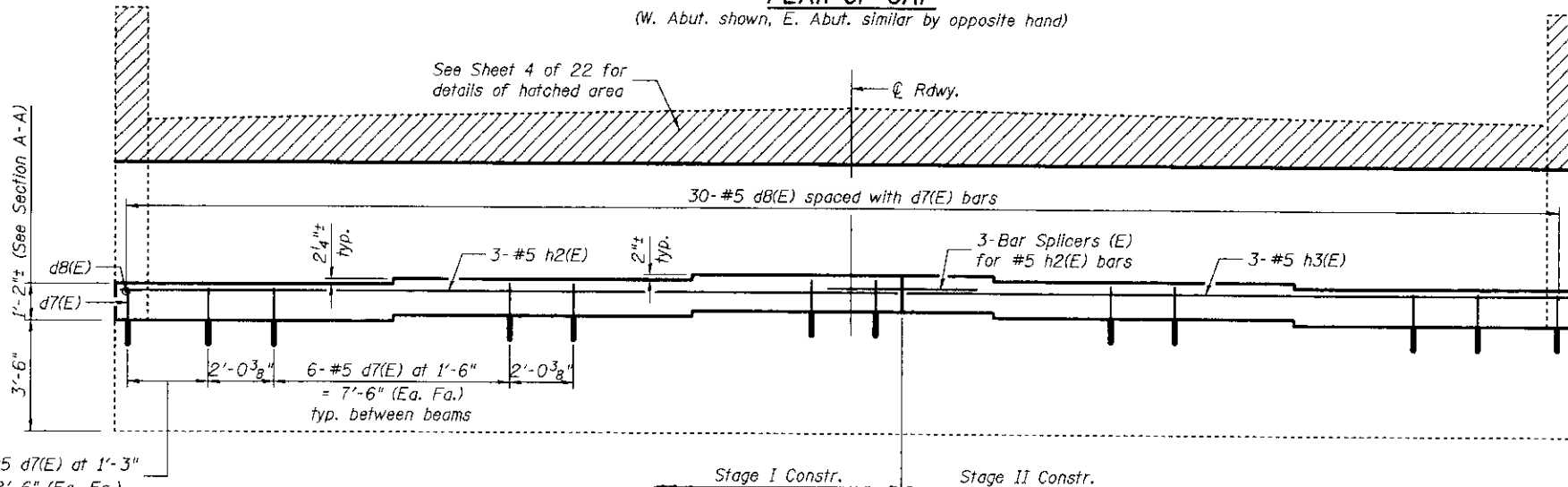


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



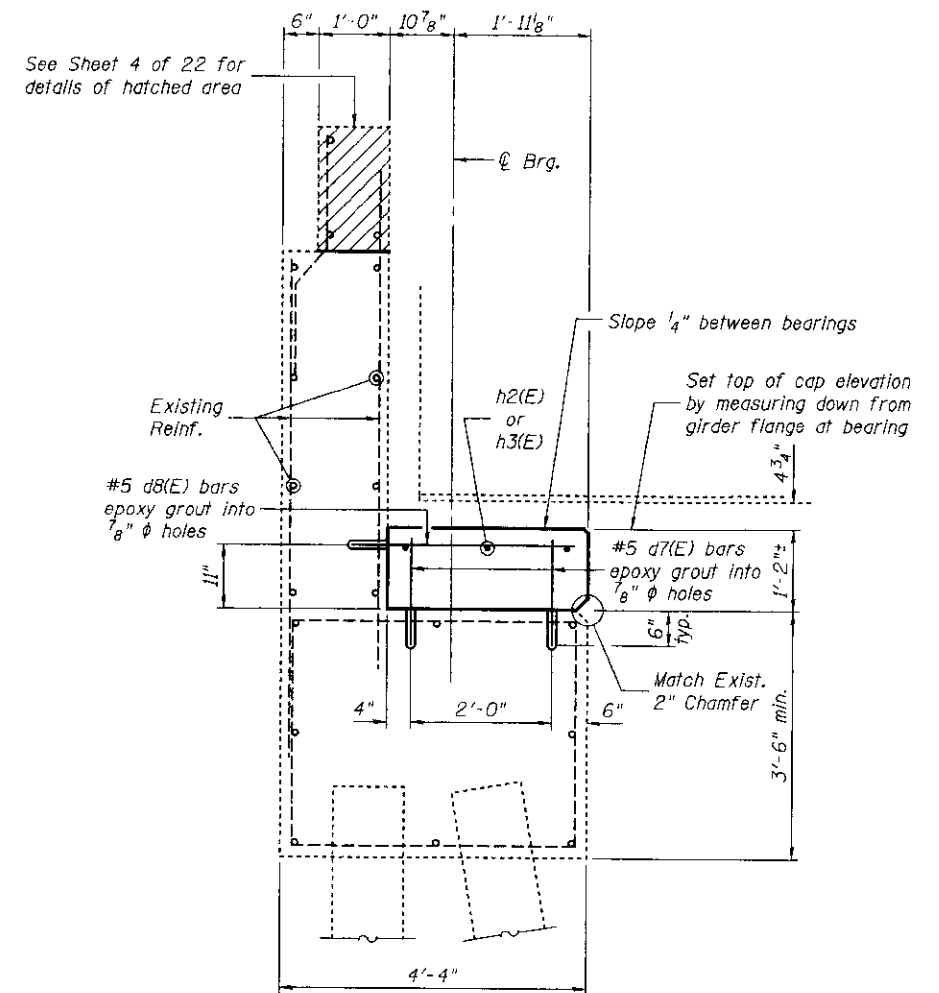
PLAN OF CAP

(W. Abut. shown, E. Abut. similar by opposite hand)



ELEVATION

Stage I Constr. Stage II Constr.



SECTION A-A

Note:  
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

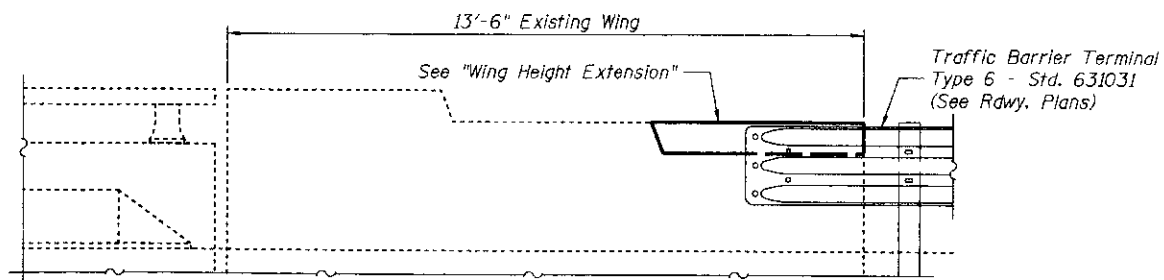
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d5(E)	8	#5	1'-6"	L
d6(E)	8	#4	1'-6"	Π
d7(E)	60	#5	1'-6"	—
d8(E)	30	#5	3'-2"	—
e1(E)	8	#4	3'-11"	—
h2(E)	3	#5	24'-6"	—
h3(E)	3	#5	20'-9"	—

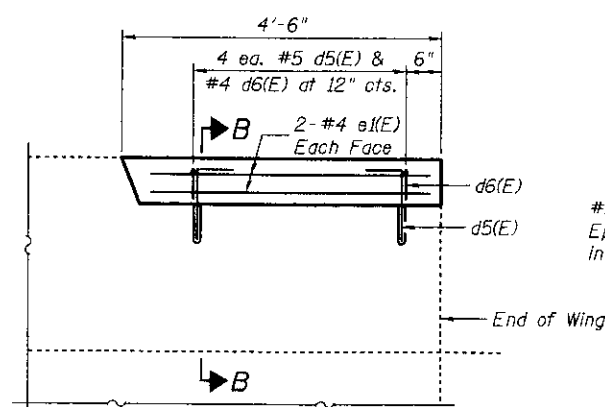
  

		E. Abut.	W. Abut.
Concrete Structures	Cu. Yd.	5.7	5.7
Reinforcement Bars, Epoxy Coated	Pound	380	380
Concrete Sealer	Sq. Ft.	131	131

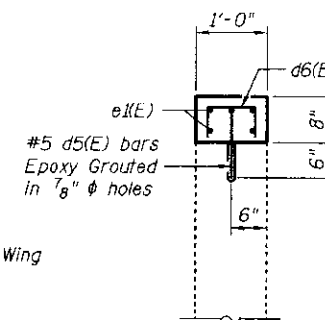
Reinforcement Bar list is for one Abutment only. Space cap reinforcement to miss anchor bolts. Apply Concrete Sealer to new beam seat areas (full length of cap).



GUARDRAIL CONNECTION AT ABUT. WINGS  
(Replace existing guardrail connection)



WING HEIGHT EXTENSION



SECTION B-B



**JD Johnson, Depp & Quisenberry**  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDO	DRAWN: PTR
CHECKED: DCD	CHECKED: DCD

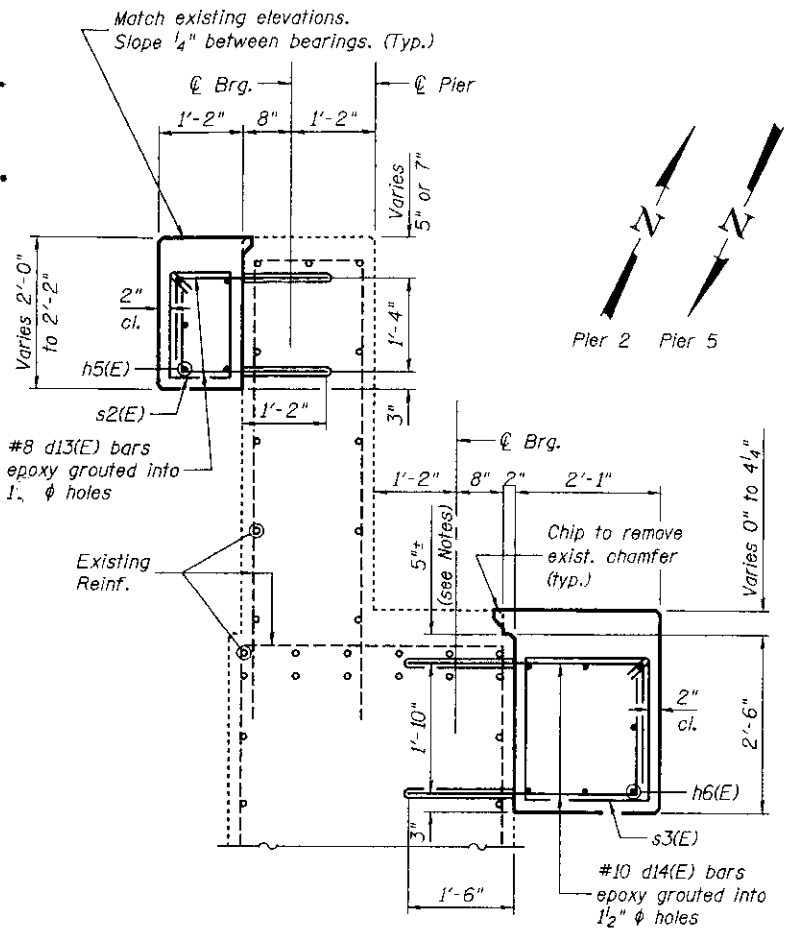
EAST & WEST ABUTMENTS  
STRUCTURE NO. 079-0036

SHEET 14 OF 22	F.A.P. RTE. 312	SECTION 73BR-11	COUNTY RANDOLPH	TOTAL SHEETS 51	SHEET NO. 39
	STA. 793+80		CONTRACT NO. 76883		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

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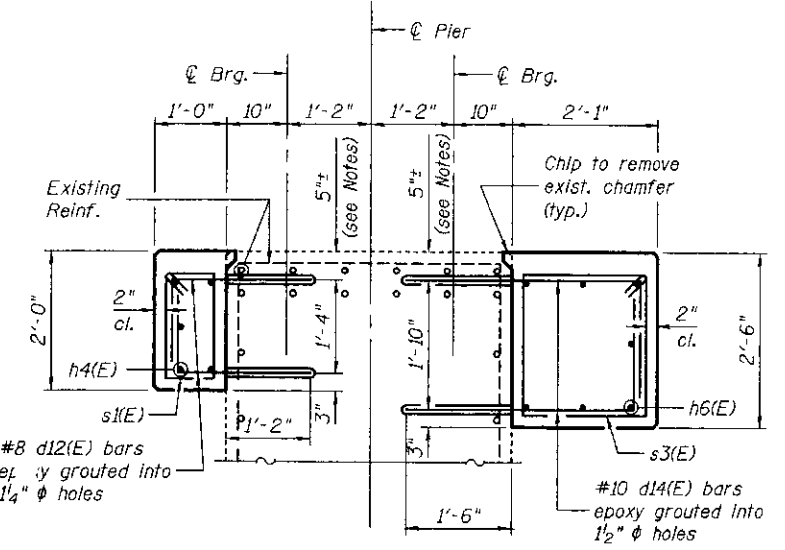
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

For Bearing Details and  
Anchor Bolt Layout, see  
Sheets 11 and 12 of 22



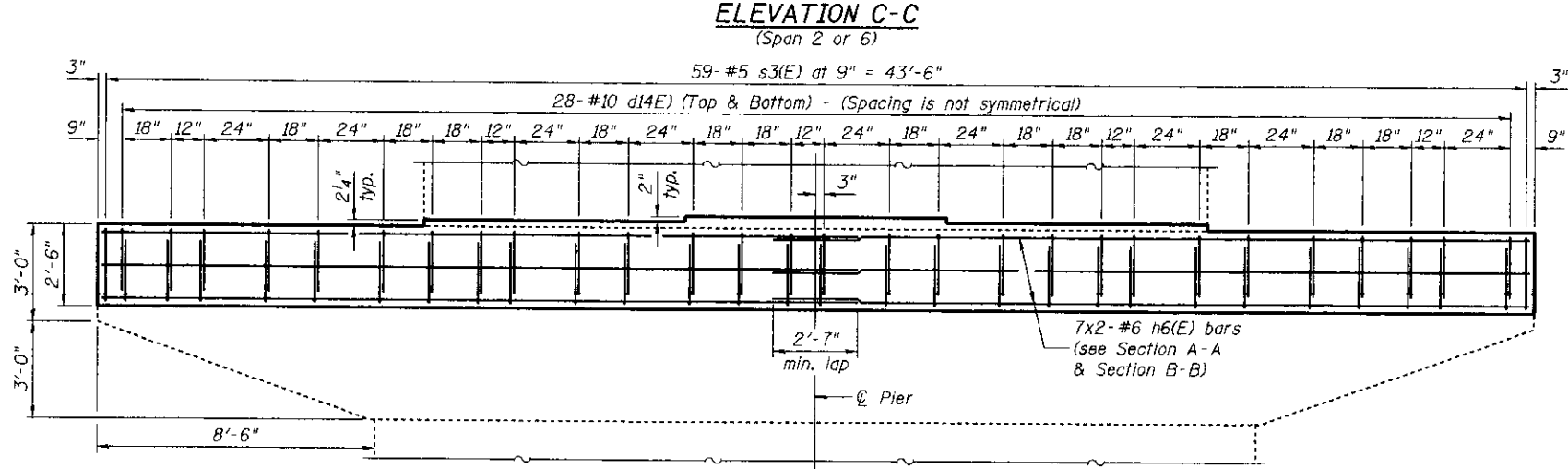
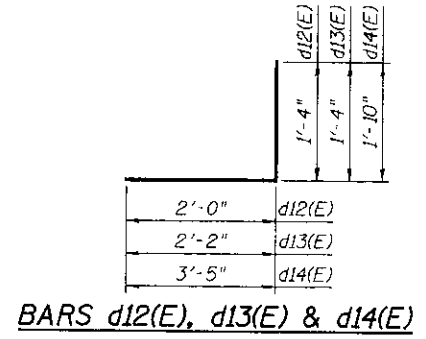
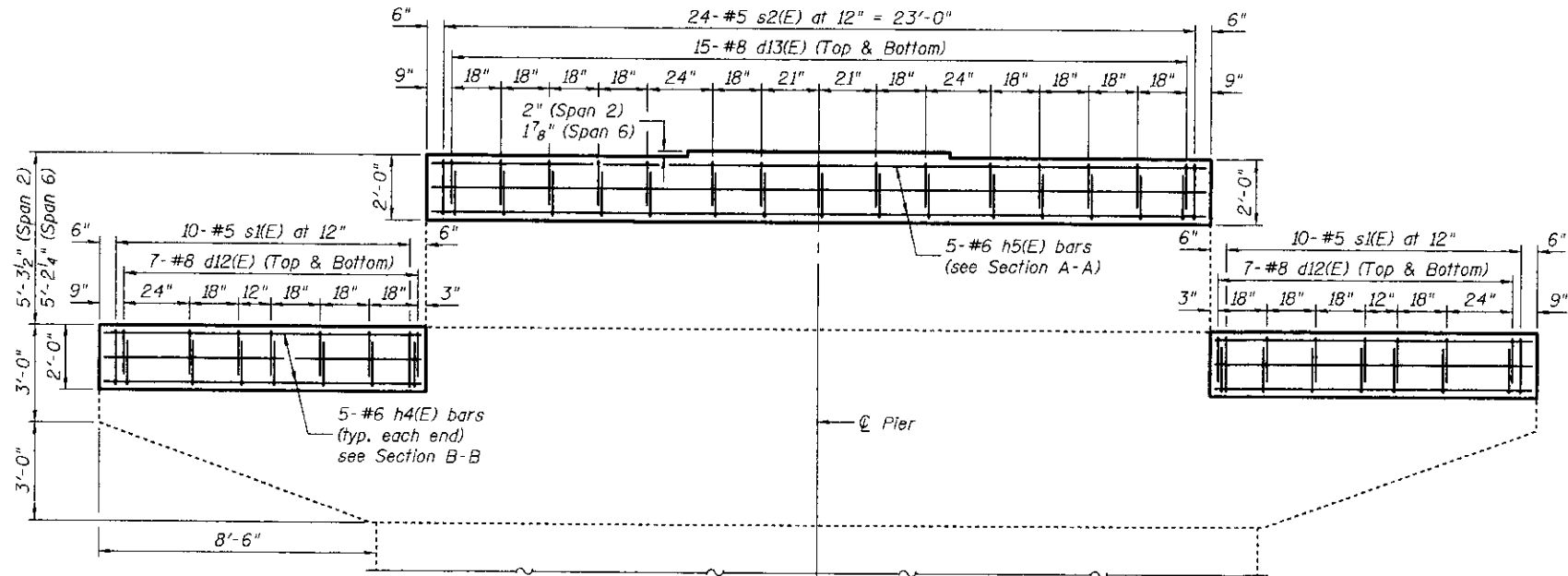
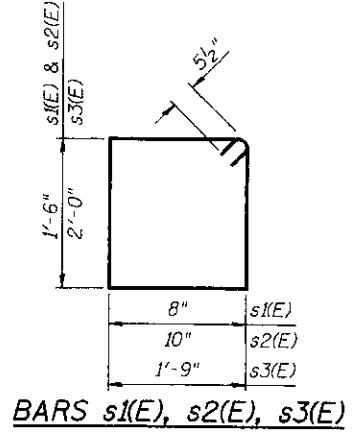
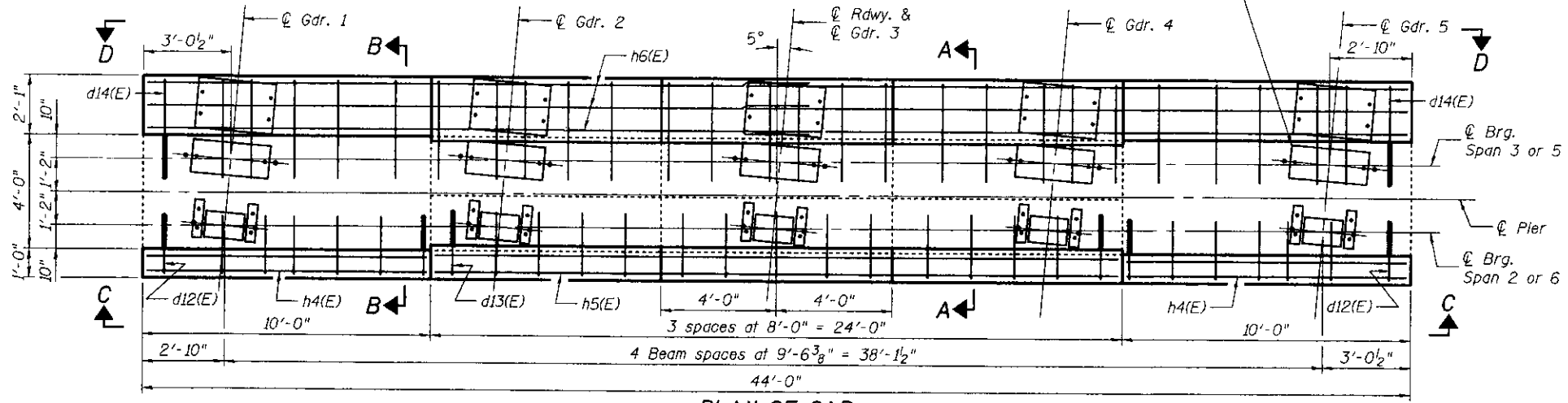
SPAN 2 OR 6      SPAN 3 OR 5

SECTION A-A  
(Interior Girders)



SPAN 2 OR 6      SPAN 3 OR 5

SECTION B-B  
(Exterior Girders)



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d12(E)	28	#8	3'-4"	J
d13(E)	30	#8	3'-6"	J
d14(E)	56	#10	5'-3"	J
h4(E)	10	#6	9'-8"	—
h5(E)	5	#6	23'-8"	—
h6(E)	14	#6	23'-2"	—
s1(E)	20	#5	5'-3"	□
s2(E)	24	#5	5'-7"	□
s3(E)	59	#5	8'-5"	□

		Pier 2	Pier 5
Concrete Structures	Cu. Yd.	12.7	12.7
Reinforcement Bars, Epoxy Coated	Pound	3380	3380
Concrete Sealer	Sq. Ft.	312	312

Reinforcement Bar list is for one Pier only.  
Space cap reinforcement to miss anchor bolts.  
Apply Concrete Sealer to existing and new beam seat areas (full length of cap).

**JD Johnson, Depp & Qulsenberry**  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDQ      DRAWN: PTR  
CHECKED: DCD      CHECKED: DCD

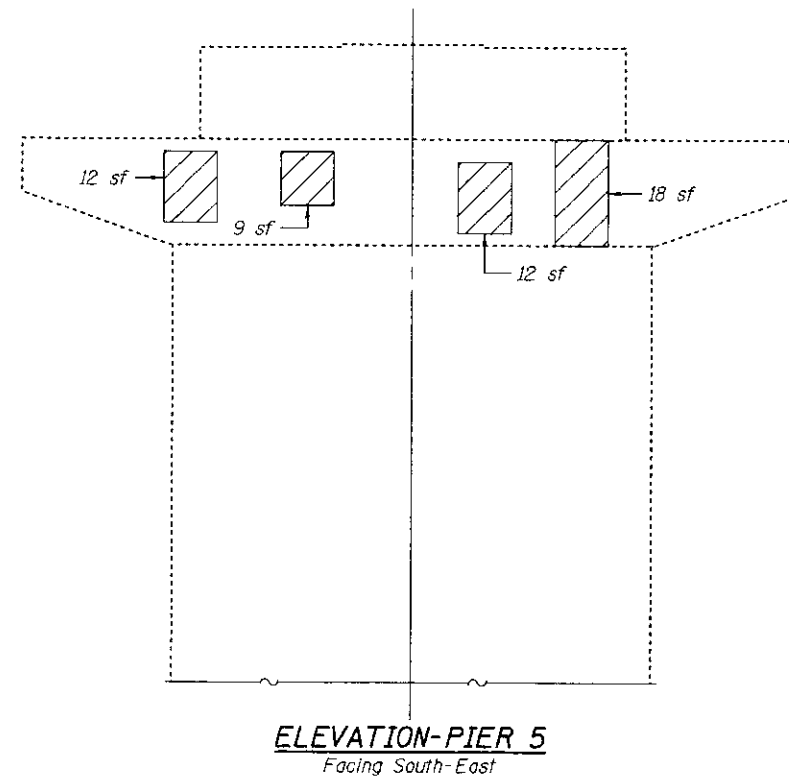
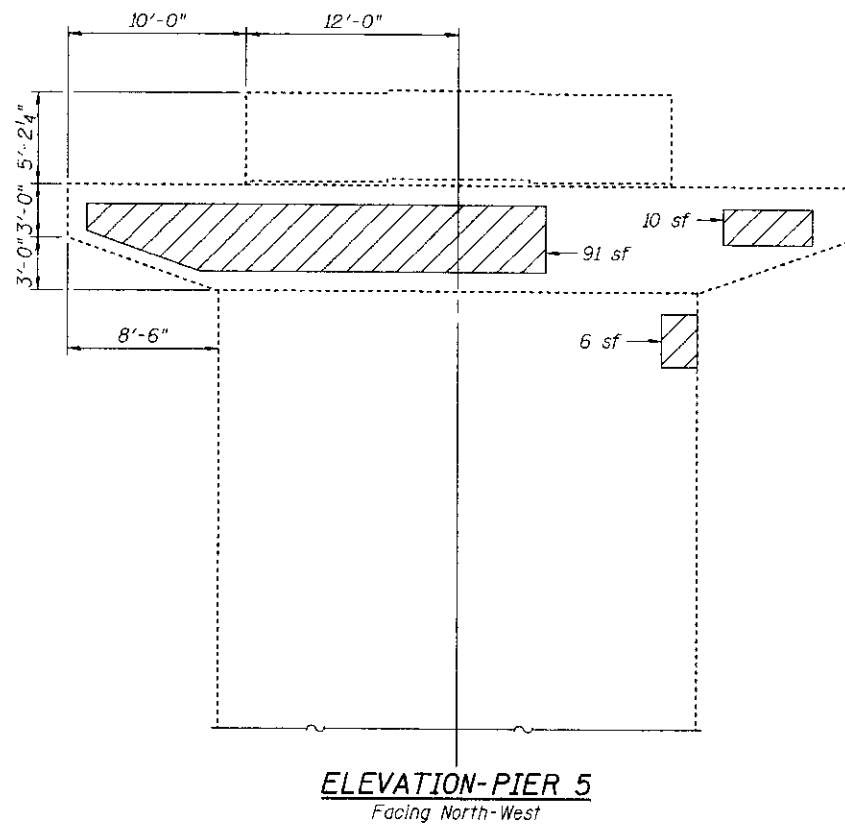
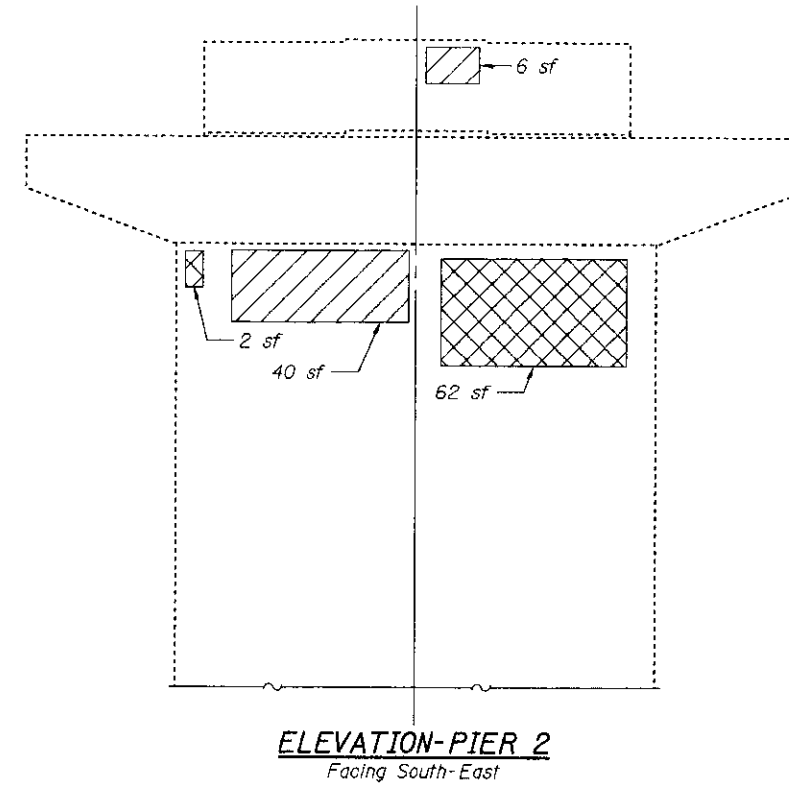
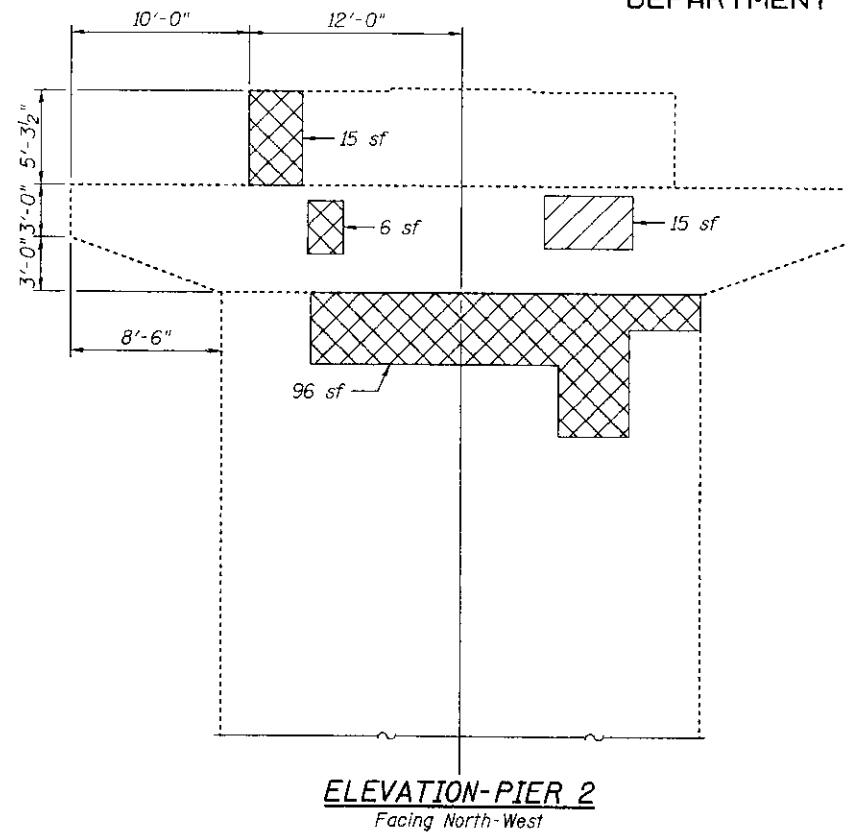
Notes:  
Prior to drilling holes for the top d12(E) and d14(E) bars, the top two rows of the existing longitudinal reinforcing bars shall be located by removing the concrete side cover for a small area at intermittent locations (about 8-10 foot spacing). The vertical position of the drilled holes shall be adjusted if necessary to be centered between the existing reinforcing rows.  
The proposed horizontal spacing for the d12(E) thru d14(E) bars is intended to avoid the existing and proposed anchor bolts and the existing vertical reinforcing.

PIERS 2 & 5  
STRUCTURE NO. 079-0036

SHEET 15 OF 22	F.A.P. RTE. 312	SECTION 73BR-11	COUNTY RANDOLPH	TOTAL SHEETS 51	SHEET NO. 38
		STA. 793+60	CONTRACT NO. 76883		
		FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**LEGEND**

- Hollow or Unsound Concrete
- Spalled Concrete with Exposed Rebar

**Notes:**

Concrete for repair areas on the upper sides of the pier cap that overlap with the proposed pier cap extensions shall be placed monolithically with the cap extensions, to avoid an undesired construction joint.

For repair areas at the top of the pier column/wall just below the cap, if the remaining sound portion of the existing #5 vertical reinforcing does not provide the required minimum lap length below the cap, then replacement reinforcing bars shall be epoxy grouted vertically to provide a minimum embedment of 12" above the bottom of the cap. Epoxy grout for this shall be suitable for "overhead" application.

The Engineer shall record actual repair locations on the As-Built plans.

**BILL OF MATERIAL**

Item	Unit	Pier 2	Pier 5
Structural Repair of Concrete (Depth = < 5")	Sq. Ft.	242	158

**JD** Johnson, Depp & Quisenberry  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDA	DRAWN: SJS
CHECKED: DCD	CHECKED: DCD

**PIERS 2 & 5 REPAIRS**  
**STRUCTURE NO. 079-0036**

SHEET 16 OF 22	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	312	73BR-LI	RANDOLPH	51	39
STA. 793+80			CONTRACT NO. 76883		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

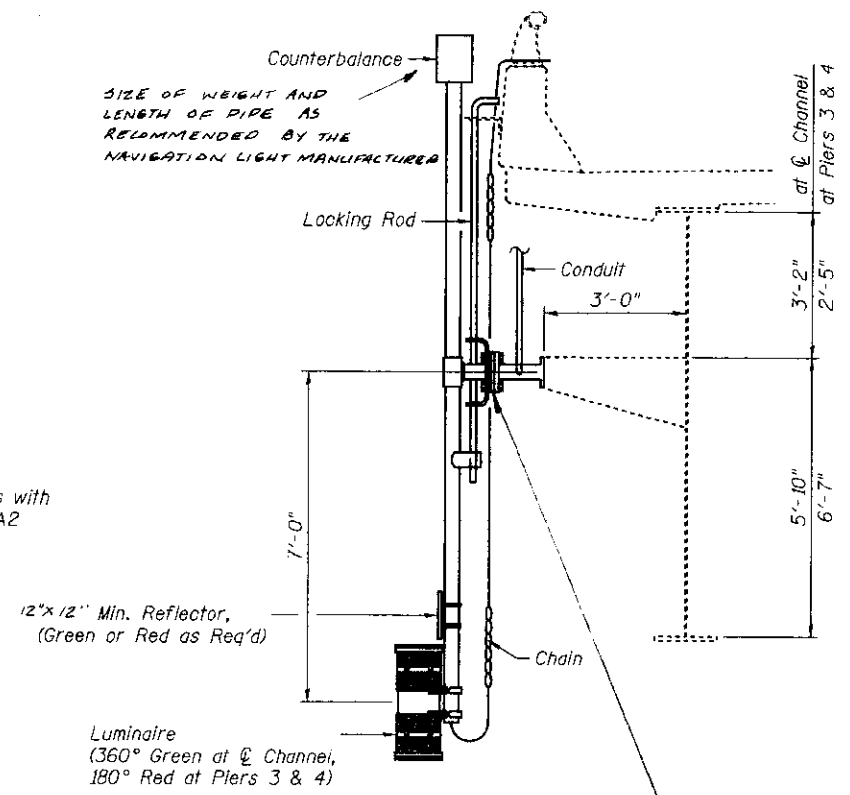
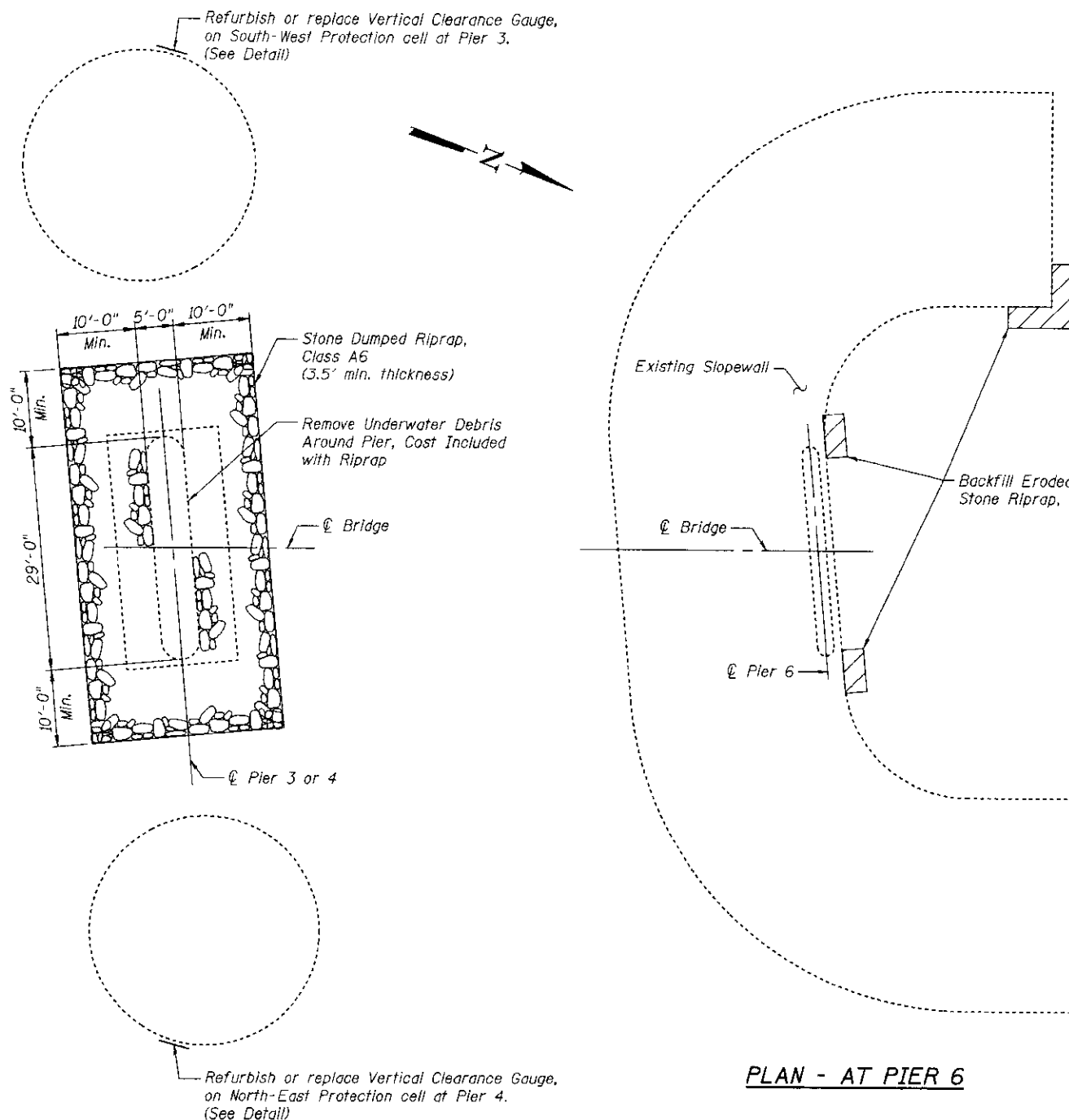
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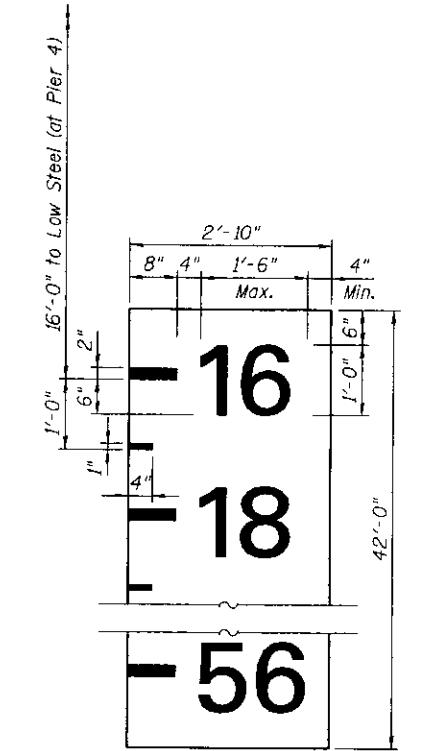
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



SECTION AT NAVIGATION LIGHT

Navigation Light System shall be replaced, including light assemblies and conduit. See Special Provisions.

The existing navigation lights shall remain the property of Illinois Department of Transportation. The Contractor shall deliver the existing navigation lights to the IDOT maintenance facility at 12540 Sportsman Road, Highland, IL, 62249; phone number 618-654-5110.



VERTICAL CLEARANCE GAUGE

Also see Special Provisions.

MOUNTING SHALL INCLUDE A MAINTENANCE FREE, FULLY SEALED BEARING AT THE SWIVEL POINT.

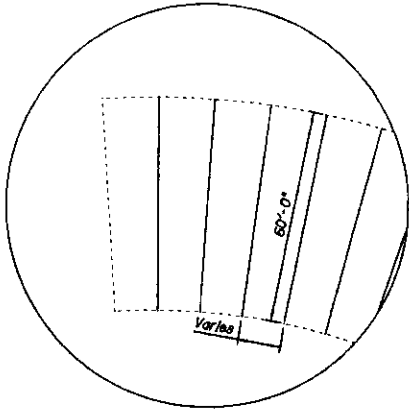
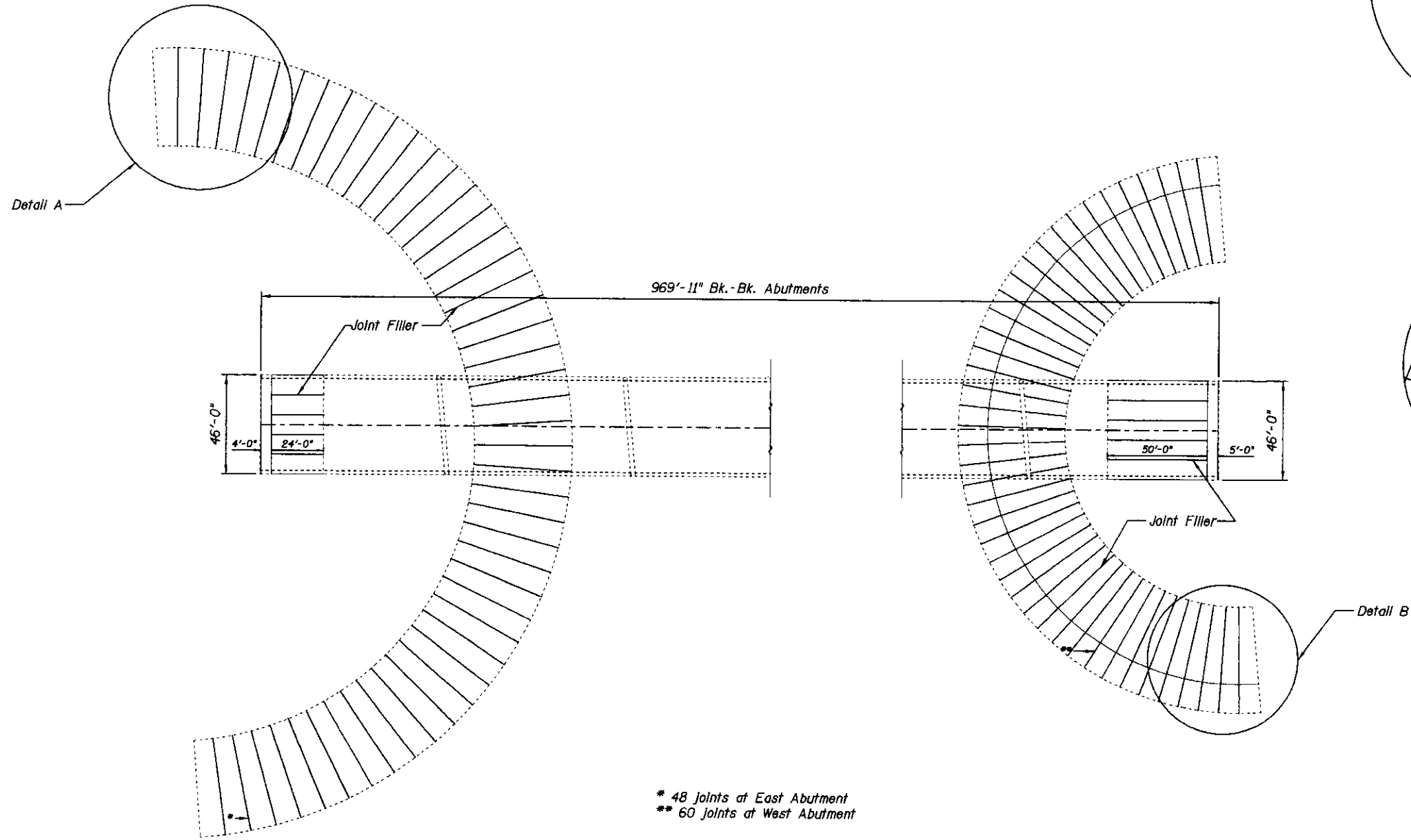
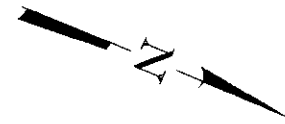
DESIGNED: JDQ	DRAWN: SJS/PTR
CHECKED: DCD	CHECKED: DCD

MISCELLANEOUS DETAILS  
STRUCTURE NO. 079-0036

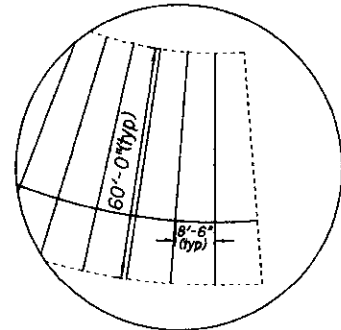
SHEET 17 OF 22	F.A.P. RTE. 312	SECTION 73BR-11	COUNTY RANDOLPH	TOTAL SHEETS 51	SHEET NO. 40
STA. 793+80		CONTRACT NO. 76883			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

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 DATE: 02/15/2010 11:36:46

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



DETAIL "A"



DETAIL "B"

\* 48 joints at East Abutment  
\*\* 60 joints at West Abutment

JOINT OR CRACK FILLING SCHEDULE

E Abutment Pounds	W Abutment Pounds	Comments
35.8	62.1	Sloped Wall
702.8	827.7	Abutment Cone
738.6	889.8	Subtotals
1628.4		TOTAL

**JD** Johnson, Depp & Quisenberry  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: IDOT-D8    DRAWN: IDOT-D8  
CHECKED: IDOT-D8    CHECKED: IDOT-D8

SLOPEWALL JOINT FILLING  
STRUCTURE NO. 079-0036

SHEET 18 OF 22	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	312	73BR-11	RANDOLPH	51	41
		STA. 793+80	CONTRACT NO. 76883		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

FILE: J:\JDO\10175 IL-08\114 IL 3 Kaskaskia River-FINAL\0790036-76883-08-slopedwall.dgn

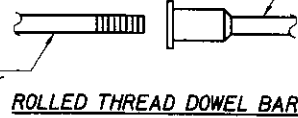
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DATE: 02/15/2010 10:36:48

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

The diameter of this part is equal or larger than the diameter of the bar spliced.

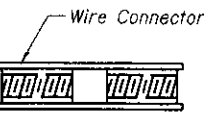
The diameter of this part is the same as the diameter of the bar spliced.



ROLLED THREAD DOWEL BAR



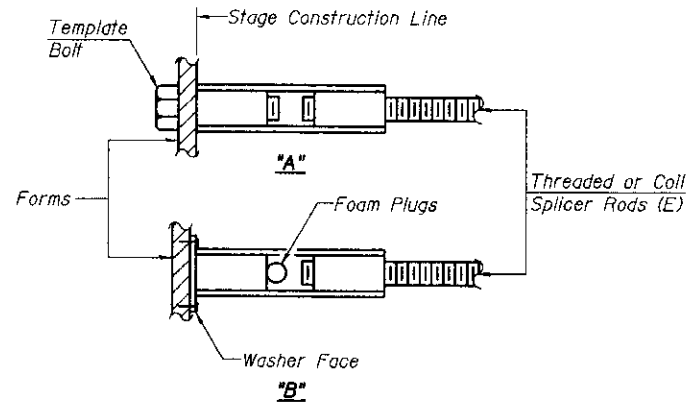
\*\* ONE PIECE



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

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



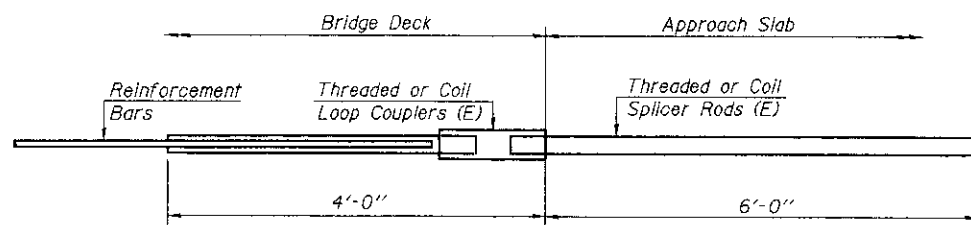
INSTALLATION AND SETTING METHODS

"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:

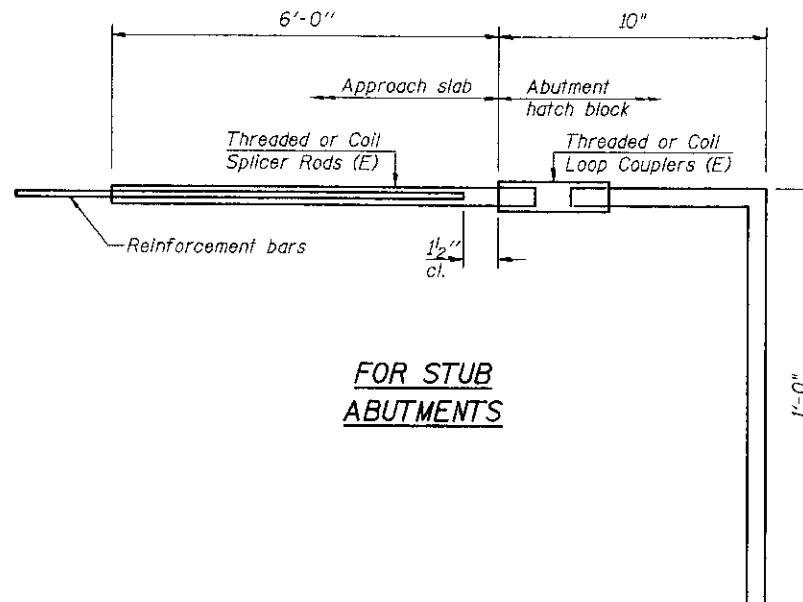
- ① Minimum Capacity =  $1.25 \times f_y \times A_l$   
(Tension in kips)
  - ② Minimum Pull-out Strength =  $0.66 \times f_y \times A_l$   
(Tension in kips)
- Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.  
 $A_l$  = Tensile stress area of lapped reinforcement bars.  
\* = 28 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'-2"	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



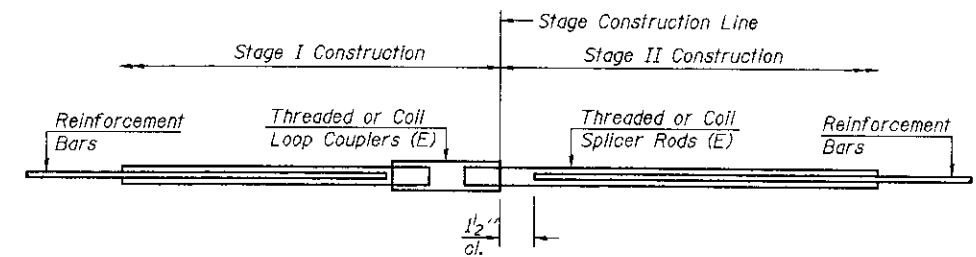
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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



FOR STUB ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 88



STANDARD

Bar Size	No. Assemblies Required	Location
#6	28	Deck/Abut.
#4	48	Appr. Slab
#5	170	Appr. Slab
#5	6	Abutments

BAR SPLICER ASSEMBLY DETAILS  
STRUCTURE NO. 079-0036

SHEET 19 OF 22	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	312	73BR-11	RANDOLPH	51	42
STA. 793+80			CONTRACT NO. 76883		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

**JD** Johnson, Depp & Quisenberry  
CONSULTING ENGINEERS  
Springfield, Illinois

DESIGNED: JDA	DRAWN: SJS
CHECKED: DCD	CHECKED: DCD

BSD-1 10-1-08

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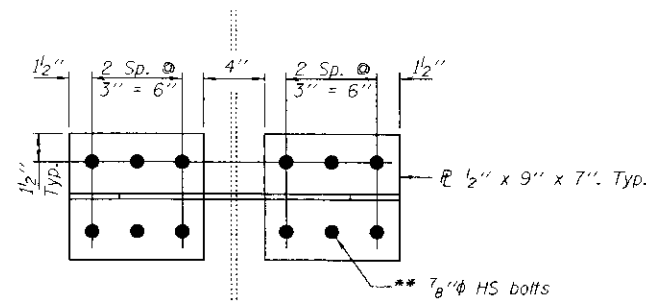
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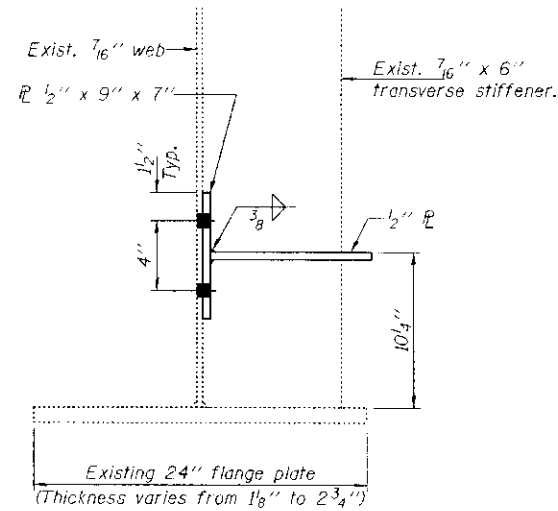




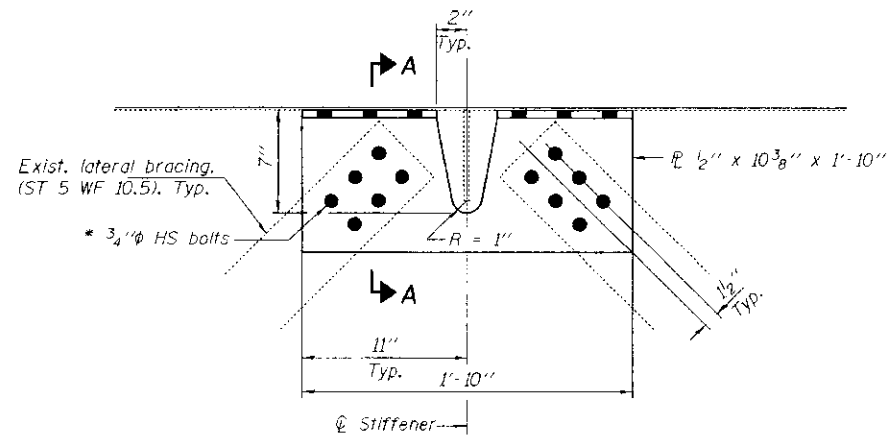
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



ELEVATION



SECTION A-A

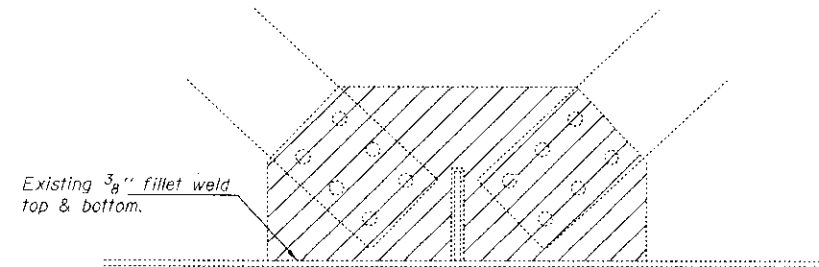


PLAN

REPAIR A

(6 req'd.)

- \* Use holes in existing lateral bracing as a template for drilling holes on new plate.
- \*\* Use holes in new 1/2" x 7" P as a template for drilling holes in existing web.



REPAIR A  
EXISTING CONNECTION PLATE REMOVAL

(6 req'd.)

Procedure for Lateral Bracing Retrofit Detail:  
(Cost included with Structural Steel Repair)

1. Remove existing 1/2" connecting plate. The minimum distance from cut to face of web shall be the larger of 1/4" or web to plate weld size, with removal of remaining material by grinding as described below. The cut shall be made parallel to the web without angling the cut towards the web. Equipment and method of cutting shall be approved by the Engineer. Any method of removal to be used shall ensure that no damage is done to the existing web, vertical stiffener or welds connecting these elements. Cutting shall be done in a manner such that the paint on the opposite face of the web is not damaged. If damage occurs, the damaged area shall be repainted at the contractor's expense and procedures shall be modified to prevent damage at subsequent removal locations.

2. Remove material between cut and web by grinding and grind smooth at web surface. Web plate surfaces shall have a roughness average (Ra) of 250µ in. or less. Grinding equipment shall be approved by the Engineer. The grinding operation should not gouge the girder web plate.

3. The web surface at the modification shall be inspected using dye penetrant or magnetic particle (MT) methods. Any cracks found shall be identified and reported to the Bureau of Bridges and Structures for further disposition.

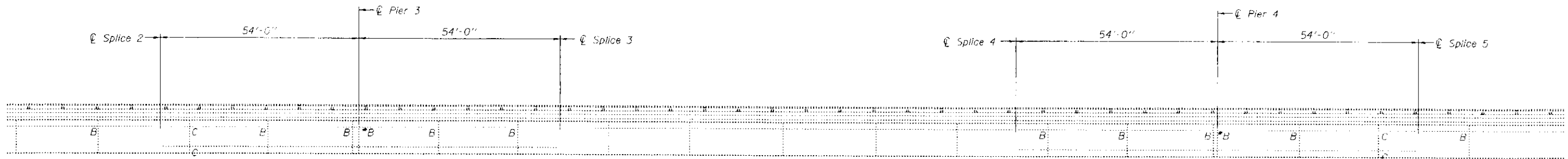
DESIGNED	ATH
CHECKED	VHV
DRAWN	bativa
CHECKED	ATH VHV

FEBRUARY 26, 2010  
EXAMINED *Carl P...  
ENGINEER OF STRUCTURAL SERVICES*  
PASSED *Ralph E. Anderson  
ENGINEER OF BRIDGES AND STRUCTURES*

REPAIR DETAILS  
SBI RT. 3  
OVER THE KASKASKIA RIVER  
SN 079-0036

SHEET NO. 21	SBI RTE. 3	SECTION 73-BR-11	COUNTY RANDOLPH	TOTAL SHEETS 51	SHEET NO. 44
22 SHEETS	CONTRACT NO. 76883				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

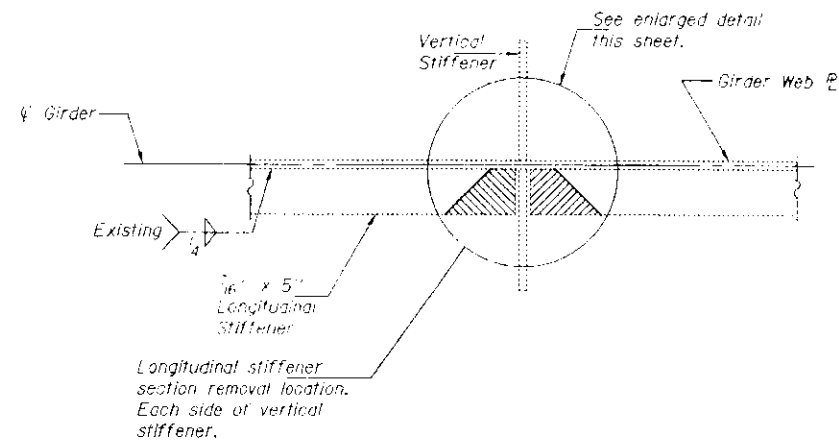
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**PARTIAL GIRDER ELEVATION**

(Typical beams 2, 3 & 4)

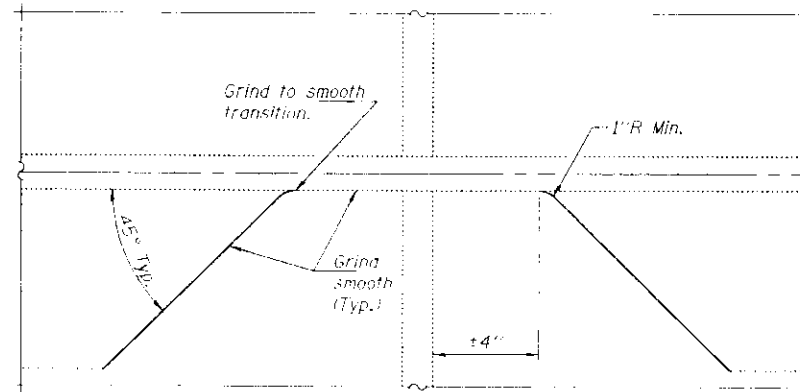
\* Perform repair on fascia beams also.



**REPAIR DETAIL B & C**

Hatched area indicates section removal.  
(Showing 2 Locations)

Note:  
Repair B to be performed at the top stiffener intersection only.  
Repair C to be performed at the top & bottom stiffener intersection.



**Procedure for Stiffener Intersection Modification:**

1. Cut existing longitudinal stiffener 4" from face of vertical stiffener and along web as shown, with a 1"R (Min) at Web. The minimum distance from cut to face of web shall be the larger of 4" or web to plate weld size, with removal of remaining material by grinding as described below. The cut shall be made parallel to the web without angling the cut towards the web. Equipment and method of cutting shall be approved by the Engineer. Any method of removal to be used shall ensure that no damage is done to the existing web, vertical stiffener or welds connecting these elements. Cutting shall be done in a manner such that the point on the opposite face of the web is not damaged. If damage occurs, the damaged area shall be repaired at the contractor's expense and procedures shall be modified to prevent damage at subsequent removal locations.
2. Remove material between cut and web by grinding and grind smooth at web surface and cut end of stiffener. Web plate surfaces and cut end of stiffener shall have a roughness average (Ra) of 250µin. or less. Grinding equipment shall be approved by the Engineer. The grinding operation should not gouge the girder web plate.
3. The web surface at the modification shall be inspected using dye penetrant or magnetic particle (MT) methods. Any cracks found shall be identified and reported to the Bureau of Bridges and Structures for further disposition.
4. The exposed steel surfaces shall be cleaned and painted using an aluminum epoxy mastic primer according to Article 506.05.

Each 4" stiffener removal area is to be considered as one retrofit. Accepted above referenced work will be paid for at the contract unit price each for Stiffener Intersection Modification, which price shall include all materials, equipment, labor, cleaning, testing and painting.

Note:  
Cost of grinding, testing and painting shall be included with Stiffener Intersection Modification.

**REPAIR DETAILS  
SBI RT. 3  
OVER THE KASKASKIA RIVER  
SN 079-0036**

DESIGNED	ATH
CHECKED	VHV
DRAWN	bdvlg
CHECKED	ATH, VHV

FEBRUARY 26, 2010  
EXAMINED *Carl Kung*  
ENGINEER OF STRUCTURAL SERVICES  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

SIMD/REPS 04-26-2004

SHEET NO. 22	SBI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	3	73-BR-II	RANDOLPH	51	45
22 SHEETS	CONTRACT NO. 76883				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF WATER RESOURCES

INDEX	
GENERAL NOTES, PLAN AND DETAILS	2
LADDER CAGE AND CLEARANCE CAGE DETAILS	3
RED REFLECTOR AND CONSTRUCTION SIGN	4
BORINGS	5-6



*Leon D. Winn*  
REGISTERED PROFESSIONAL ENGINEER NO. 62-22282

079-0036

*Leon D. Winn*  
REGISTERED STRUCTURAL ENGINEER NO. 81-2792

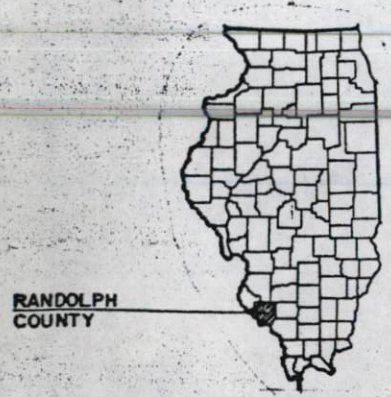
# KASKASKIA RIVER

# BRIDGE PIER PROTECTION

# RANDOLPH COUNTY

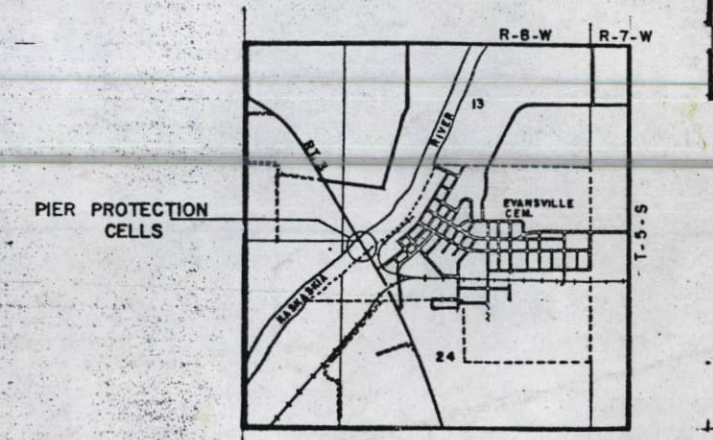
SUBMITTED BY *Leon D. Winn* DATE *March 30 1979*  
CHIEF, BUREAU OF PROJECT IMPLEMENTATION  
APPROVED BY *Frank K. ...* DATE *March 30 1979*  
DIRECTOR

FR-304  
1979



REGIONAL MAP

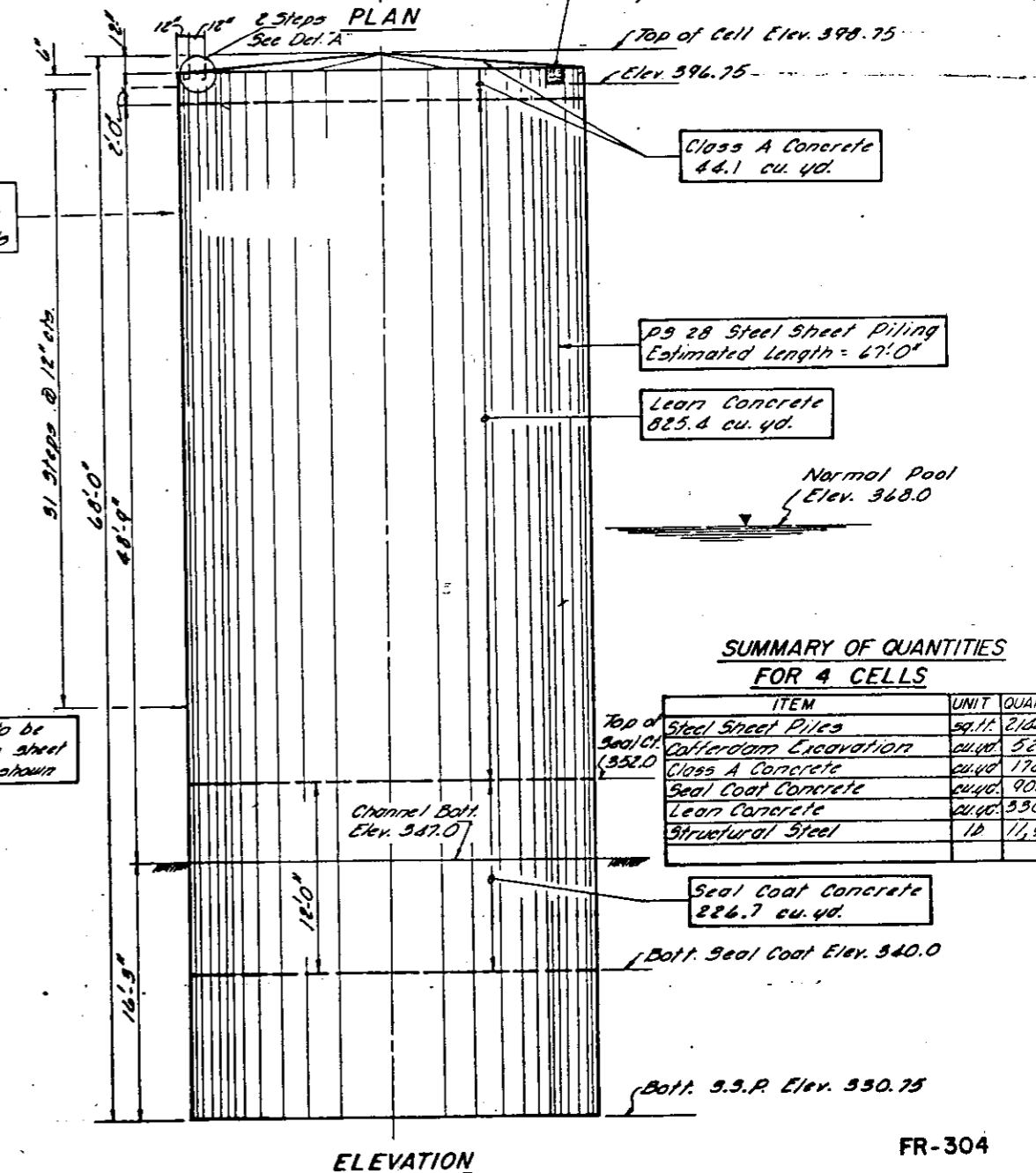
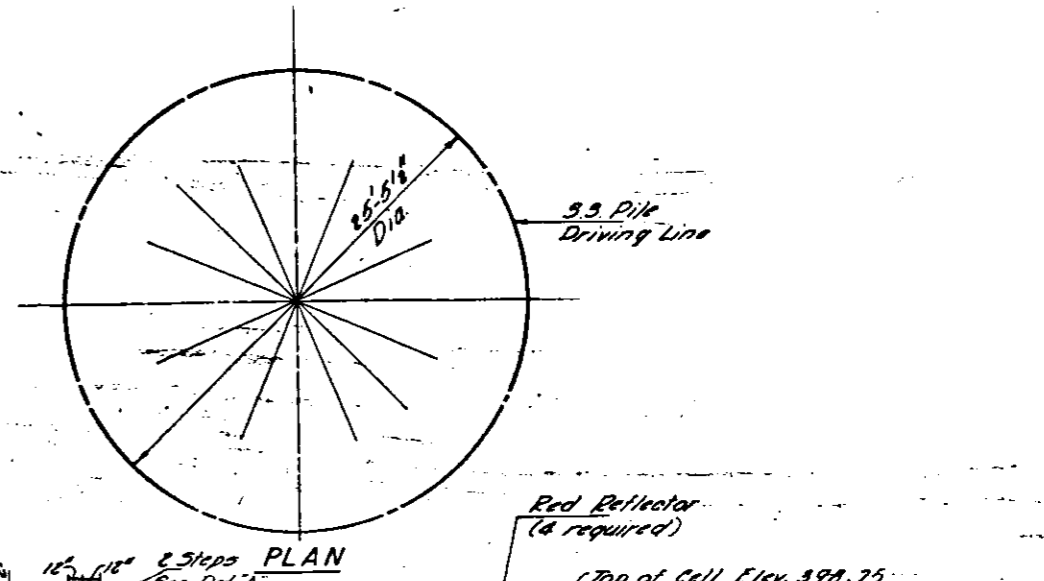
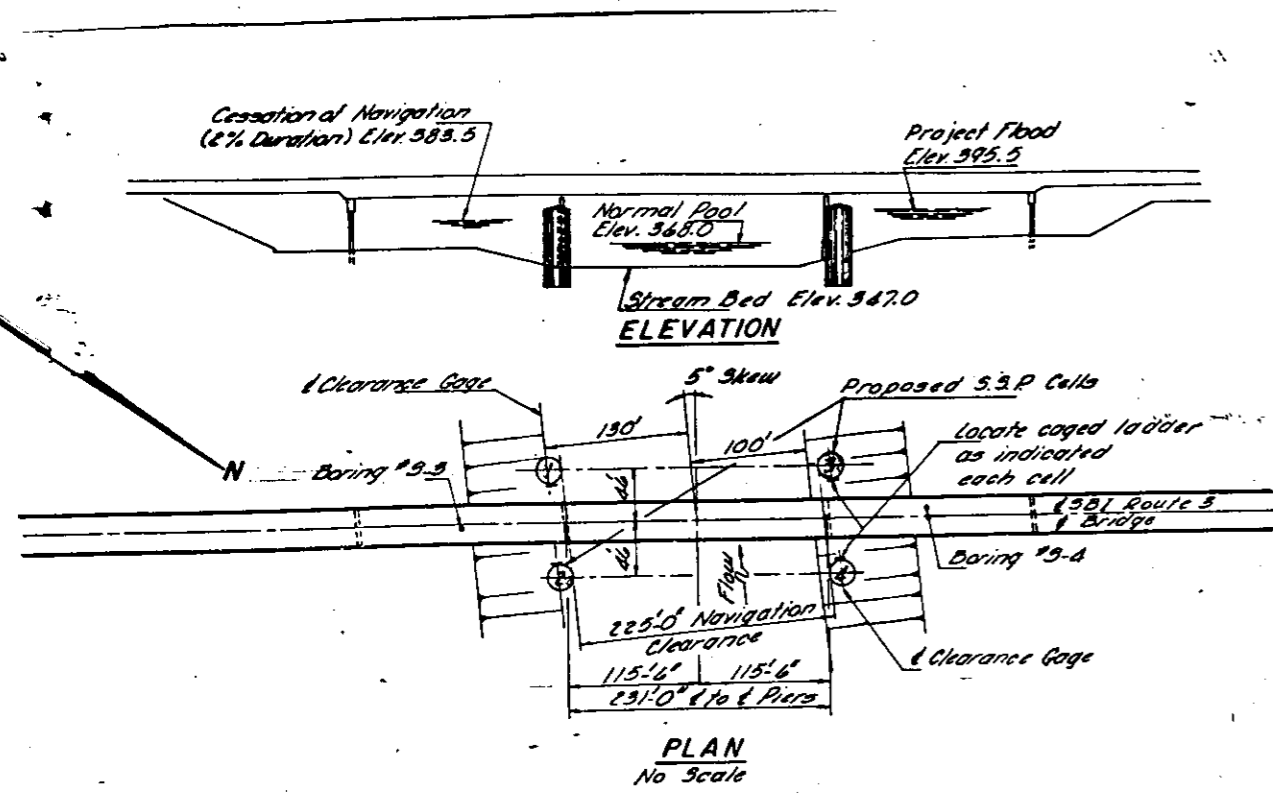
079-0036



LOCATION MAP

SCALE 0 1000 2000 3000 4000 5000 6000 7000 FEET

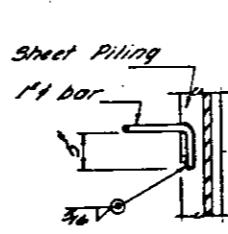




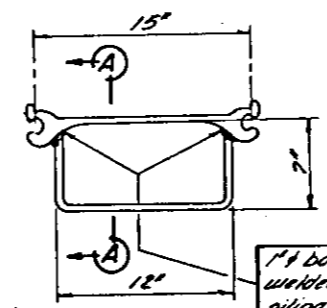
Note:  
See Sheet #3  
for Cage Details

**GENERAL NOTES**

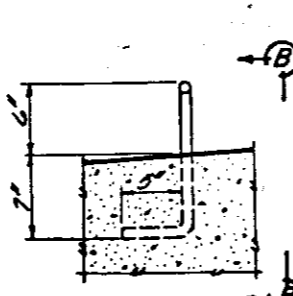
All elevations refer to mean sea level 1929 adj.  
 The Contractor's construction procedures shall conform to EPA #43019-73-007 entitled, Processes, Procedures and Methods to Control Pollution Resulting from all Construction Activities dated October, 1973.  
 The Contractor shall furnish, erect and when directed by the Engineer, shall completely remove two (2) construction signs. The exact location of the signs shall be established by the Engineer in the field.  
 If and when cobbles or boulders are encountered care shall be taken to prevent driving of sheet piling out of interlock.  
 The depth of the seal coat has been computed based on the theoretical elevation of the bottom of the cell as shown on the plans and a water surface elevation of 379.0. If the water surface elevation rises above elevation 379.0 during construction, the protective cell shall be flooded.  
 Cost of furnishing and installing the steps for the ladder shall be incidental to the contract.  
 All exterior metal work of the cells shall be coated with a coal tar epoxy protective coating, Koppers Bitumastic No. 300M or approved equal. The coal tar epoxy protective coating shall be used for coating the steel sheet piling, steel ladders, steps and cage. See Specifications.  
 Before construction is begun, the Contractor shall submit to the Engineer for approval, detailed plans showing his proposed method of bracing the inside of the cell during construction.  
 Spoil from excavated area shall be disposed of at an area away from the river in a manner conforming to all existing State, Federal and Local regulations. The spoil area shall be furnished by the Contractor at his expense and approved by the Engineer.



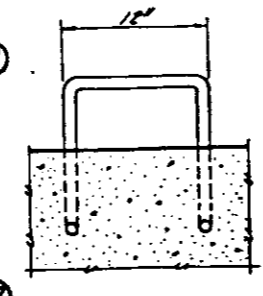
SEC. A-A



LADDER DETAIL  
(See Plan for Location)



DETAIL "A"



SEC. B-B

**SUMMARY OF QUANTITIES FOR 4 CELLS**

ITEM	UNIT	QUANTITY
Top of Steel Sheet Piles	sq. ft.	21440
Bottom Excavation	cu. yd.	529
Class A Concrete	cu. yd.	176.8
Seal Coat Concrete	cu. yd.	906.8
Lean Concrete	cu. yd.	3301.6
Structural Steel	lb.	11,900

Seal Coat Concrete  
226.7 cu. yd.

Bott. Seal Coat Elev. 340.0

Bott. S.S.P. Elev. 350.75

**KASKASKIA RIVER BRIDGE PIER PROTECTION**

GENERAL NOTES, PLAN AND DETAILS - S.S.P. CELLS - ROUTE 3 BRIDGE - EVANSVILLE

FR-304

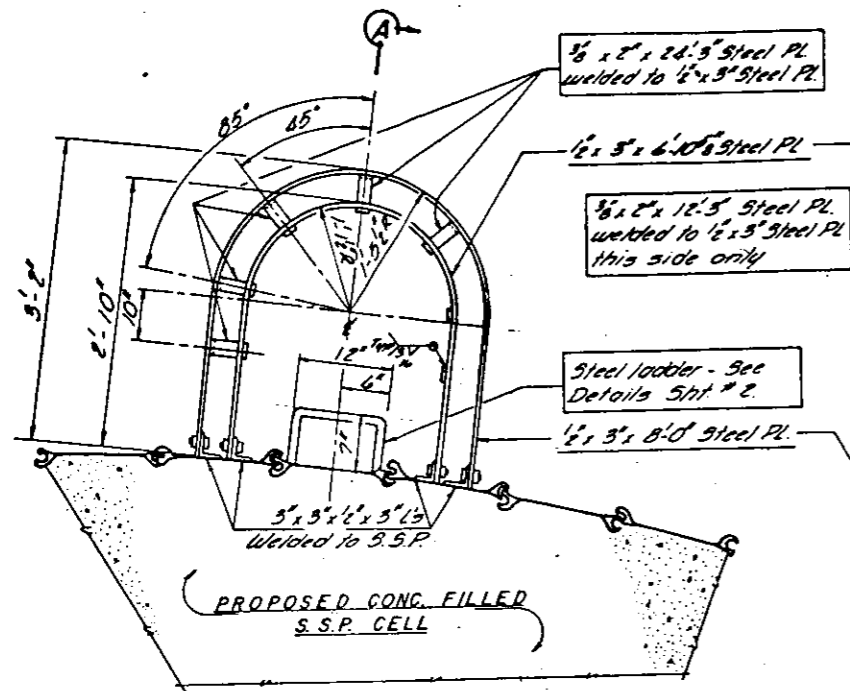
FILE NO. CLASSIFICATION NO.

SHEET NO. 2 OF 6 SHEETS

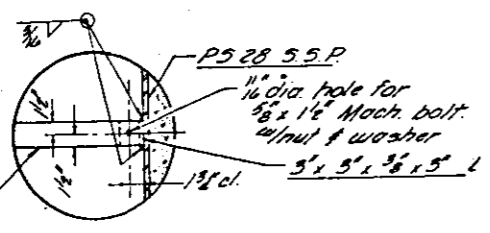
NO.	REVISION LETTER	REVISION BY	DATE

SCALE: AS SHOWN

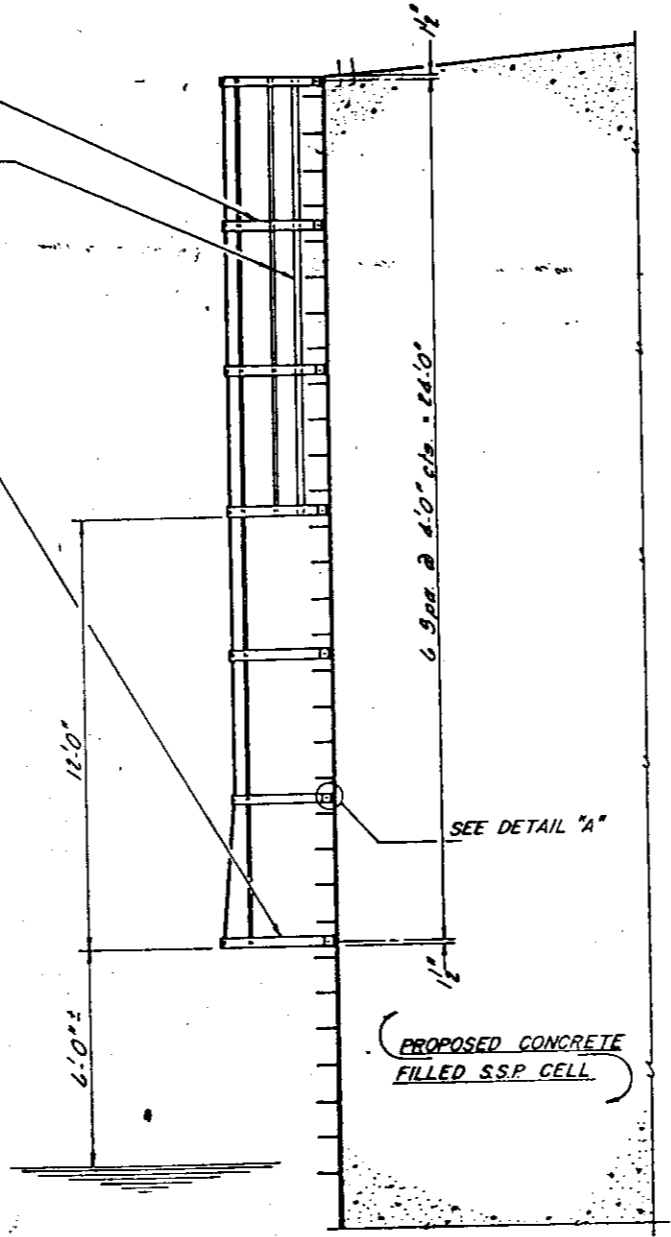




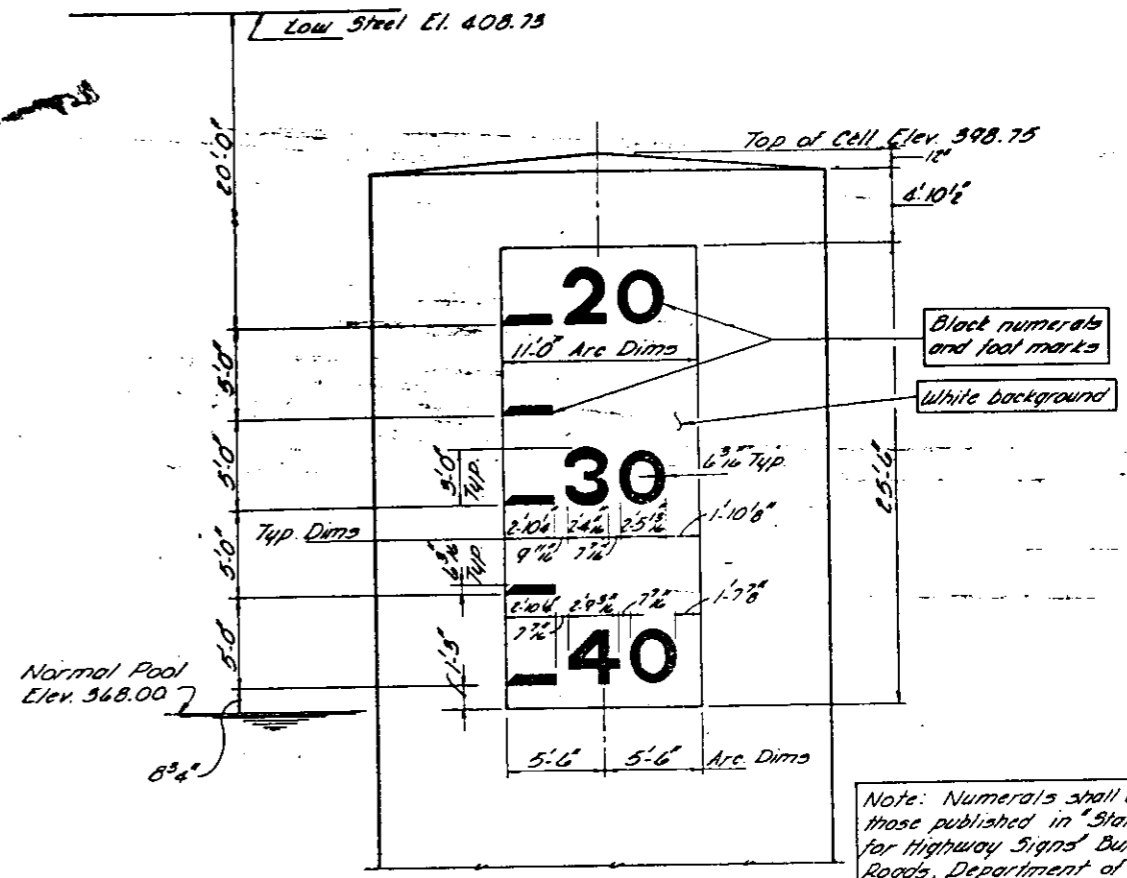
CAGE DETAIL



DETAIL "A" TYPICAL



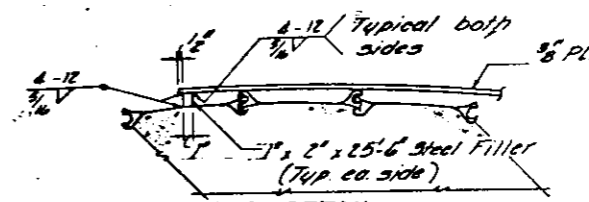
SECTION A-A



CLEARANCE GAGE DETAIL CELLS NO. 1 & NO. 4

Note: Numerals shall conform with those published in "Standard Alphabets for Highway Signs" Bureau of Public Roads, Department of Transportation Series E.

Note: The Navigation Clearance Gage shall not be attached to Pier Protection Cell until all concrete within the cell is poured.



WELD DETAIL

Note: The Cell Coating and Gage paint shall be touched up after field welding.  
The 1/2 x 25.6 fillers may be welded into position before coating the exterior surfaces of the steel sheet piling provided they can be properly located and are protected from the coating so the gage plates can be welded to the fillers.

Note: Total mt. of Clearance Gages..... 9280.0  
Total mt. of Ladder Cages..... 2620.0  
Total mt. of Structural Steel..... 11,900.0

KASKASKIA RIVER BRIDGE PIER PROTECTION

LADDER CAGE AND CLEARANCE GAGE DETAILS - RT. 3 BRIDGE - EVANSVILLE

FR-304

FILE NO. CLASSIFICATION NO.

SHEET NO. 3 OF 6 SHEETS

SCALE: AS SHOWN

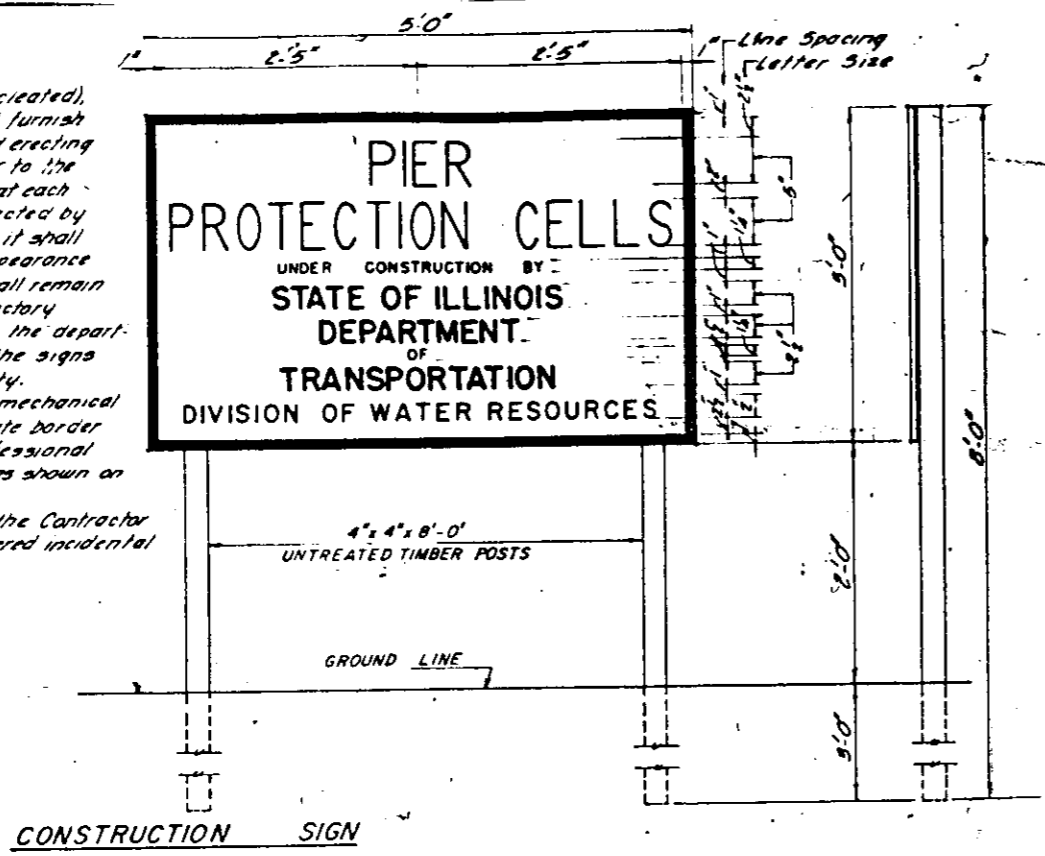
NO.	REVISION LETTER	REVISED BY	DATE

**GENERAL NOTES**

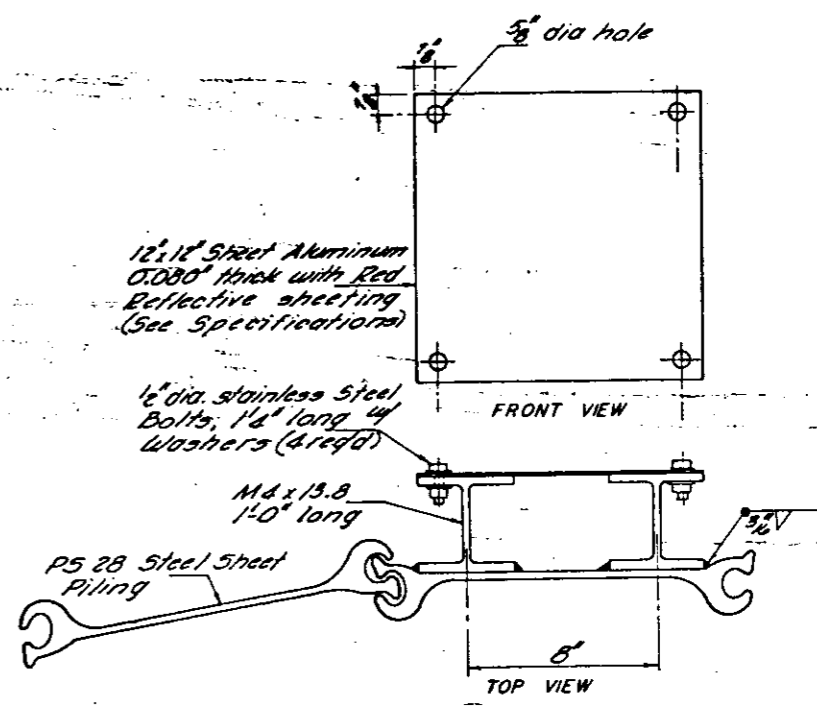
Signs shall be made of (1" lumber rigidly cleated), or of metal (18 ga) The Contractor shall furnish all material and labor for constructing and erecting the signs. The signs shall be placed prior to the starting of actual construction operations at each end of the construction section, or as directed by the Engineer. Before any sign is erected, it shall be approved by the Engineer as to its appearance and quality of construction. The signs shall remain in place and shall be maintained in satisfactory condition until the project is accepted by the department. The Contractor shall then remove the signs and the material will become his property.

The letters on the signs shall be black mechanical style on a white background and appropriate border line. The signs shall be painted by a professional painter and the size of the letters shall be as shown on these Plans.

No extra compensation will be allowed the Contractor for these signs and the cost shall be considered incidental to the Contract.

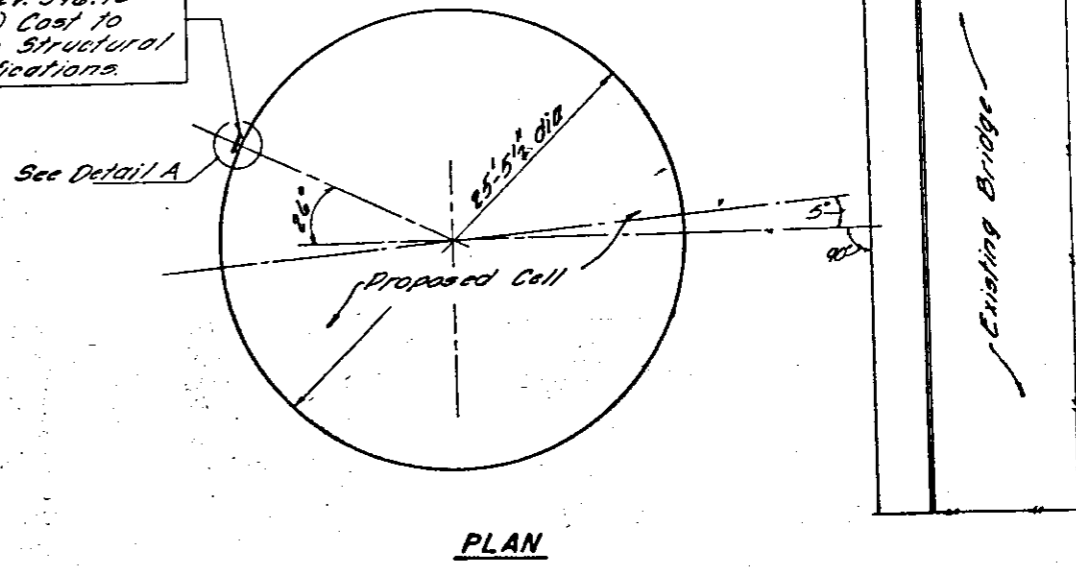


**CONSTRUCTION SIGN**



**DETAIL "A"**

Red Reflector mounted to Pier Cells @ Elev. 396.75 (Typical all cells) Cost to be incidental to Structural Steel. See Specifications.



**PLAN**

NO.	REVISION	DATE

SCALE: AS SHOWN

**KASKASKIA RIVER BRIDGE PIER PROTECTION**

RED REFLECTOR AND CONSTRUCTION SIGN - RT 3 BRIDGE - EVANSVILLE

FR-304

FILE NO CLASSIFICATION NO SHEET NO OF 54

Boring #5-3 Pier #3

	Elevation	Blows Per Ft.	Qu
Ground Surface	371.7		
Very Damp Brown Fine Grained Sand	369.2	8	
Very Stiff Damp Brown Mottled Gray Silty Clay A-6 (10-11)	366.7	20	3.95
		17	4.5
		11	5.0
Hard Damp Brown Mottled Gray Clay Loam A-6 (8) to A-6 (9)	359.2	12	1.88
		13	1.5
Stiff Moist Brown Mottled Gray Silty Clay A-7-6 (13)	356.7	8	1.2
Stiff Moist Brown Mottled Gray Clay Loam A-6 (10)	356.2	8	0.7
		8	0.7
Medium Moist Brown Mottled Gray Silty Clay A-6 (11)	349.2	4	0.6
Very Soft Wet Sandy Loam A-4	348.7	15	0.2
		19	2.4
		21	2.9
		23	2.4
Stiff to Very Stiff Brown to Gray Clay with some Gravel A-7-6 (17-18)		19	3.5
		36	9.6
		77	4.9
Hard Moist Gray Gravel & Shale	331.7	104	12

Bottom of Hole = 40'0"

Boring #5-4 Pier #4

	Elevation	Blows Per Ft.	Qu
Ground Surface	366.8		
Medium Moist Dark Brown Silty Clay A-7-6 (13)	366.8	6	1.0
		11	1.1
Stiff to Medium Moist Brown Mottled Gray Silty Clay to Silty Clay Loam A-6 (10)	357.5		
Medium Moist Brown Gray Silty Clay A-6 (11)	356.8	7	0.9
Stiff Moist Gray Mottled Brown Clay A-7-6 (14)	352.5	8	1.2
Medium Moist to Very Moist Gray Mottled Brown Silty Clay Loam A-6	349.8	4	0.6
Soft Very Moist Gray Clay Loam to Sandy Loam A-4 (6-8)	347.5	2	0.3
		10	
Medium Moist Gray Fine Grained Sand	342.5		
Medium Moist Gray Fine Grained Sand some Gravel	339.8	15	
		8	0.2
Very Soft Very Moist Gray Sandy Loam A-4 (0)	334.8	9	0.2
		4	0.7
Med. Moist Gray Clay	333.8	4	0.7
Medium Moist Gray Clay Loam	332.5	5	0.6
Med. Moist Gr. Silty Cl.	331.5		
Medium Moist Gray Clay A-7-6 (15)	327.5	27	0.6
		15	
Medium Moist Gray Mottled Brown Coarse Grained Sand & Gravel	326.5	104	12

Bottom of Hole = 42.5'

Note: See Sheet #2 for Boring Location.

Note: Blows per ft. = Blows per foot of penetration of sampling spoon. Hammer weight = 350 lbs. Drop = 12". Qu = Unconfined compressive strength in tons per square foot.

NO.	REVISION LETTER	REVISED BY	DATE

Boring # 2  
Elevation 366.1'

Water		0.0'
Wet Very Soft Silt		10.0'
Wet Grey Silt w/ Rock Rip Rap	ws	16.5'
Wet Grey Loose Silty Very Fine to Fine Sand w/ wood Trace Small Gravel Deposit	ws	20.0'
Wet Grey Soft Silty Clay Some Sand & Small Gravel	ws	25.0'
Moist Grey Some Reddish Grey Hard Silty Clay Some Sand Trace Gravel & Cobbles	47	28.0'
Moist Grey Hard Clay Some Silt Trace Sand	57	32.0'
Damp Grey to Reddish Grey Hard Shaley Shale or Shaley Clay	64 1/2	37.0'
Hard to Very Hard Shale	80 1/2	40.0'

Used 28.0' BX Casing

Boring # 3  
Elevation 365.9'

Water		0.0'
Wet Very Soft Silt		12.0'
Rock Rip Rap		19.5'

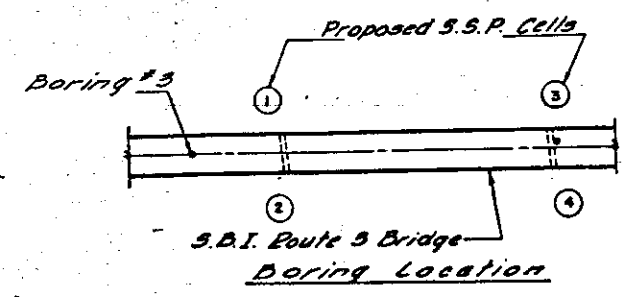
Rip Rap Very Hard. Penetration Rate Very Slow w/ Tri-cone Bit. Boring Offset 4' East - See D-3A for Continuation.

Boring # 3A  
Elevation 365.9'

Water Surface		0.0'
Wet Very Soft Silt		12.0'
Rip Rap, Very Soft Silt		21.0'
Wet Very Soft Grey Clayey Silt Some sand		23.5'
Wet Grey Loose Fine to Coarse Sand Some Gravel & Silt Trace Wood	5*	27.0'
Wet Grey Soft Silty Clay		28.5'
Grey Compact Silty Clay (Cemented) Sand Some Gravel & Cobbles (Sub-rounded to Angular)	40 1/2 40 1/2	32.0'
Boulder		32.8'
Grey Compact (Cemented) Sandy Silty Clay Some Gravel Trace Cobbles (Sub-rounded to Angular)	40 1/2 40 1/2	40.0'

\* No Recovery  
Used 28.0' BX Casing

Note:  
Borings shown are for informational purpose only. Furnished by Raymond International Inc. August 19, 1975



FR-304

KASKASKIA RIVER BRIDGE PIER PROTECTION

BORINGS - ROUTE 3 BRIDGE - EVANSVILLE

FILE NO.  
CLASSIFICATION NO.  
SHEET NO. 6 OF 6 SHEETS

SCALE AS SHOWN

REVISIONS			
NO.	REVISION LETTER	REVISED BY	DATE





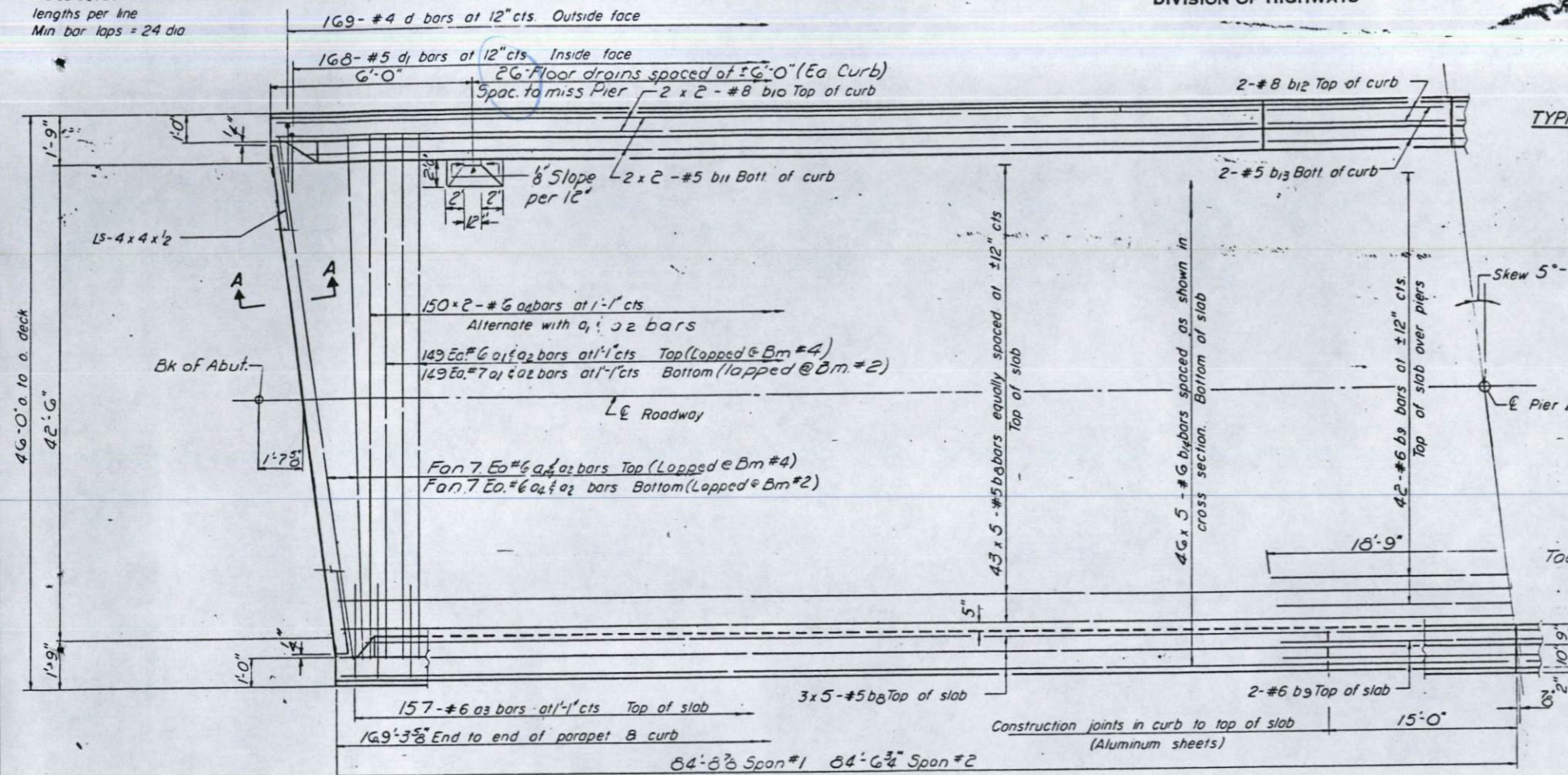


STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

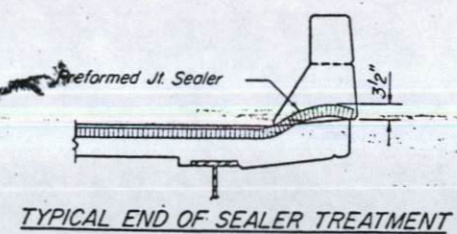
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH	159	63
				27 SHEETS

SHEET NO. 2

NOTE:  
Bars indicated thus 20-x-3-#5 etc  
indicates 20 lines of bars with 3  
lengths per line  
Min bar laps = 24 dia



HALF PLAN



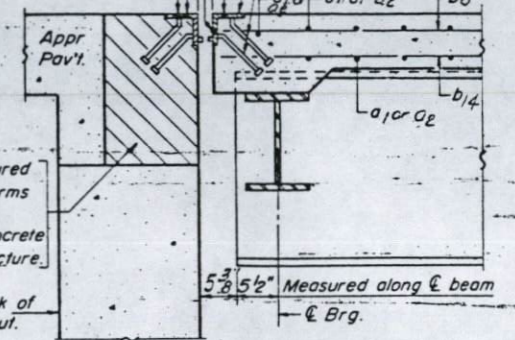
TYPICAL END OF SEALER TREATMENT

7/16" holes at 12" cts for 3/8" bolts set on 2 1/2" gage line. All bolts shall be burned, sawed or clipped off flush with back of angles after forms are removed.

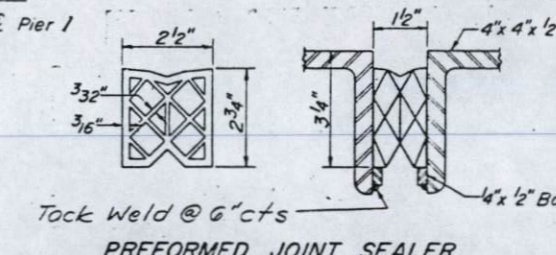
7/16" vent holes at 12" cts. set on 1 3/8" gage line.

3/4" x 8" CR. 1020 STL. granular or solid flux filled headed studs, automatically end welded. (44 studs at 12" alt. cts - each angle)

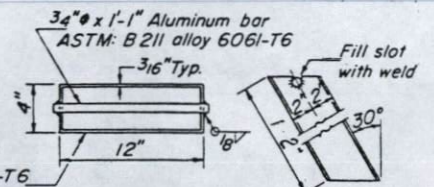
Hatched area to be poured after superstructure forms have been removed. Quantity of Class X Concrete included with superstructure.



SECTION A-A



PREFORMED JOINT SEALER



FLOOR DRAIN

Aluminum Sheets Welded  
ASTM: B209 alloy 6061-T6  
or Aluminum Extrusions  
ASTM: B221 alloy 6061-T6

Cost incidental to Class X Concrete

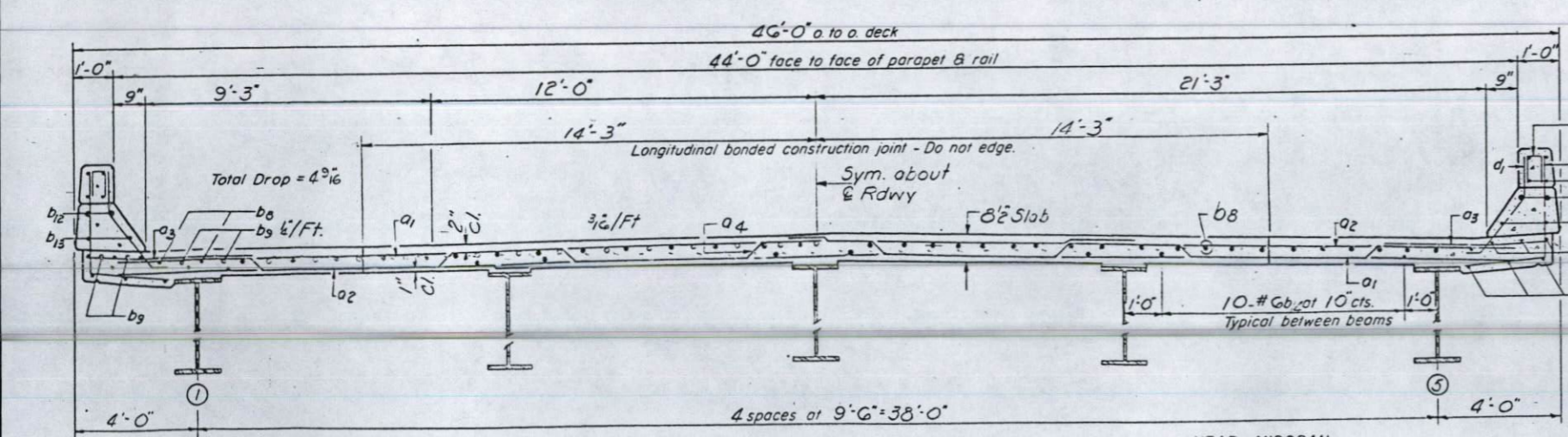
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a3	314	#6	5'-0"	
a4	320	#6	33'-0"	
a2	320	#6	14'-0"	
a4	300	#6	24'-9"	
b6	245	#5	35'-0"	
b9	46	#6	37'-6"	
b10	16	#8	35'-9"	
b11	16	#5	35'-6"	
b12	8	#8	14'-9"	
b13	8	#5	14'-9"	
b14	230	#6	35'-0"	
d	338	#4	5'-0"	J
d1	336	#5	3'-3"	J
Reinforcement Bars		Lbs	64,980	
Class X Concrete		Cu Yds.	2388	
Structural Steel		Lbs.	193,200	

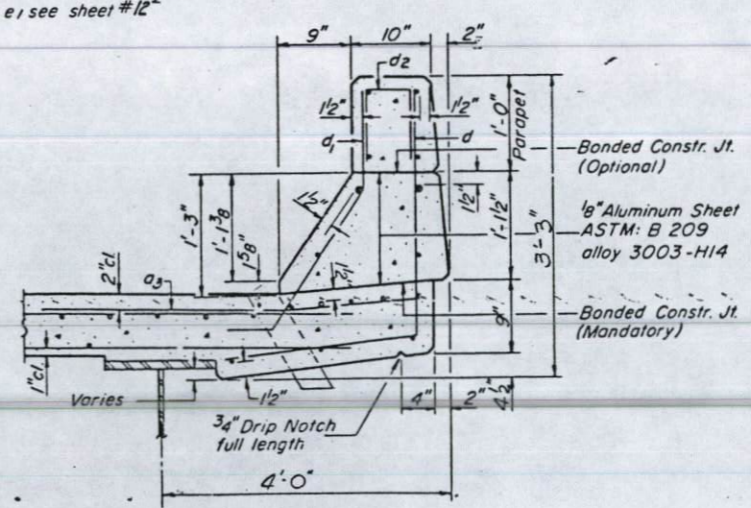
\* Weight of bearing assemblies with lead plates and anchor bolts are included as Structural Steel. Wt. = 9865 lbs.

Parapet Reinforcement and Class X Concrete are billed on sheet #12

NOTE: For placement of bars d2 and e OR e1 see sheet #12



CROSS SECTION

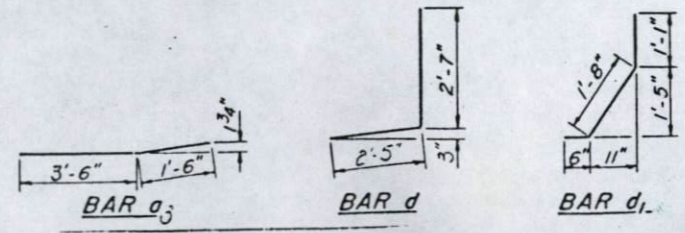
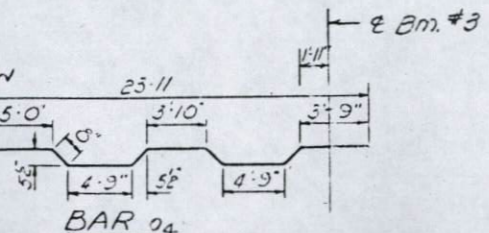


CURB SECTION

Cost of Aluminum Sheets shall be incidental to Class X Concrete.

DESIGNED	Harold Singb
CHECKED	Harold Singb
DRAWN	Dickerson
CHECKED	Harold Singb

EXAMINED	Mar 24 1970 Carl E. Thompson
PASSED	W. E. Baumann
APPROVED	Richard J. Holloman



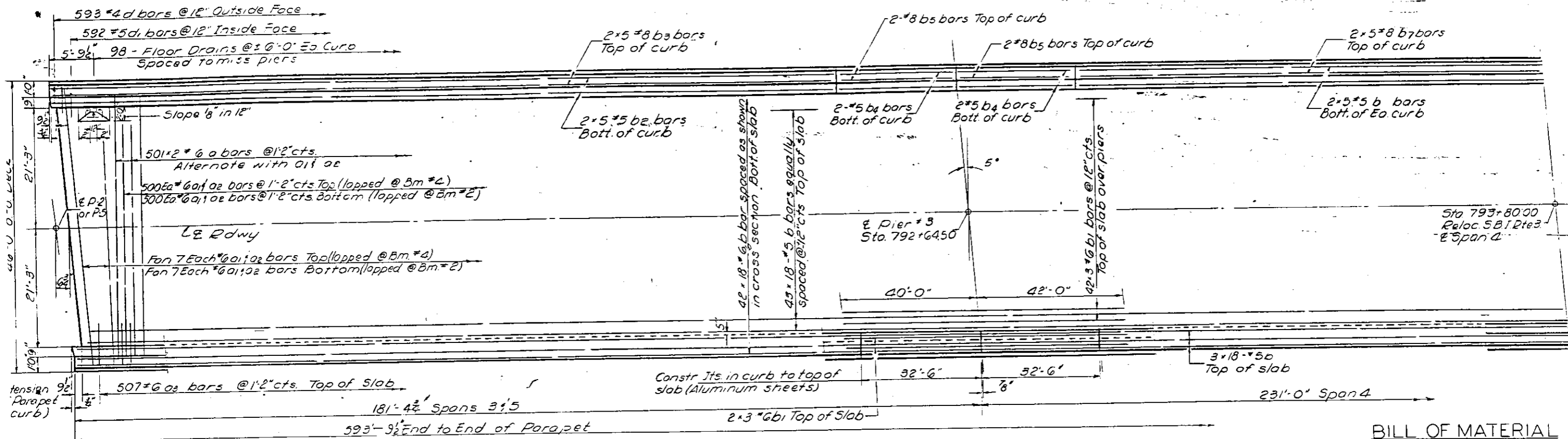
SUPERSTRUCTURE SPANS 1/2  
S.B.I. RTE 3 SEC. 73B-1  
RANDOLPH COUNTY  
STA. 793+80



Note: Bars indicated minus 20x3-5 etc indicates 20 lines of bars with 3 lengths per line. Min. bar lap = 24 dia.

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH	159	64
SHEET NO. 3				
27 SHEETS				

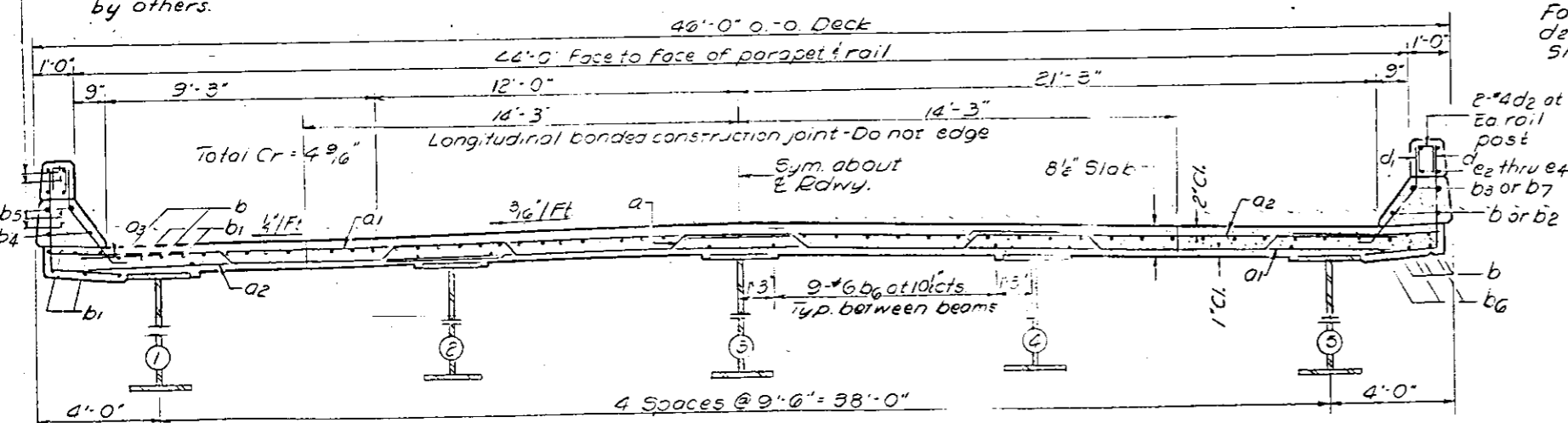
STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS



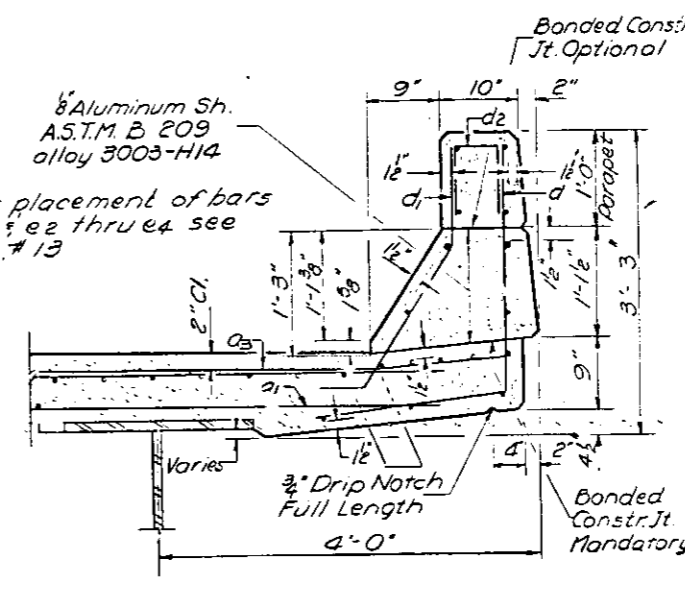
HALF PLAN

Note: 4 @ 3/4" x 12" Stainless Steel Anchor Bolts by Bridge Contractor for Sign Bracket @ Sta. 392+64. Spacing of bolts to be determined by the Engineer. Cost will be incidental to the contract. Sign to be constructed by others.

Note: For Floor Drain Details See Sheet #2  
For Expansion Devices @ P-2 & P-5 See Sh. #11



CROSS SECTION



CURB SECTION

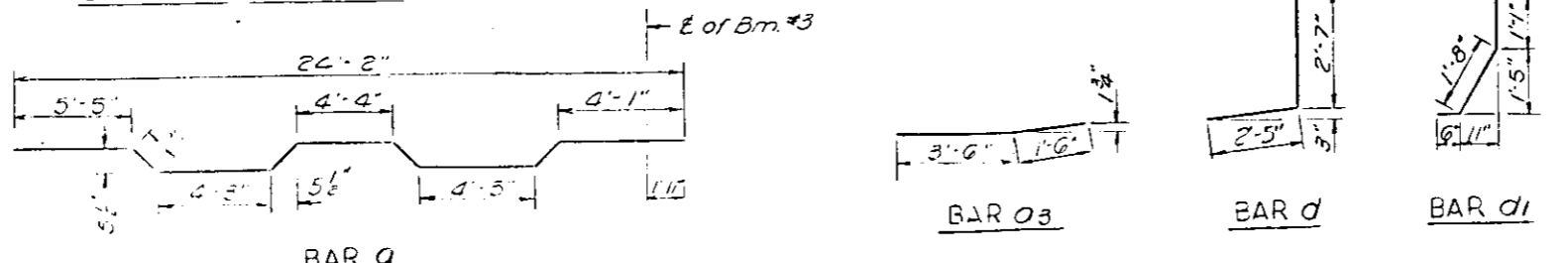
BILL OF MATERIAL

BAR	No	SIZE	LENGTH	SHAPE
a	1002	#6	25'-0"	~
a1	1028	#6	33'-0"	—
a2	1028	#6	14'-0"	—
a3	1014	#6	5'-0"	~
b	902	#5	34'-3"	—
b1	276	#6	28'-6"	—
b2	40	#5	30'-9"	—
b3	40	#8	31'-3"	—
b4	16	#5	22'-3"	—
b5	16	#8	32'-3"	—
b6	756	#6	34'-3"	—
b7	20	#8	34'-9"	—
d	1186	#4	5'-0"	~
d1	1184	#5	3'-3"	~

Reinforcement Bars Lbs. 217,110  
Class X Concrete Cu Yds. 825.1  
\* Structural Steel Lbs. 1360,480

Weight of bearing assemblies with lead plates and anchor bolts are included as Structural Steel. Wt = 24,200 lbs  
Parapet Reinforcement and Class X Concrete are billed on sheet #13

DESIGNED	Harold Singh	EXAMINED	Paul E. ...
CHECKED	James Hamilton	PASSED	W. E. Bauman
DRAWN	F. Mercado	APPROVED	Richard H. ...
CHECKED	J. H.		

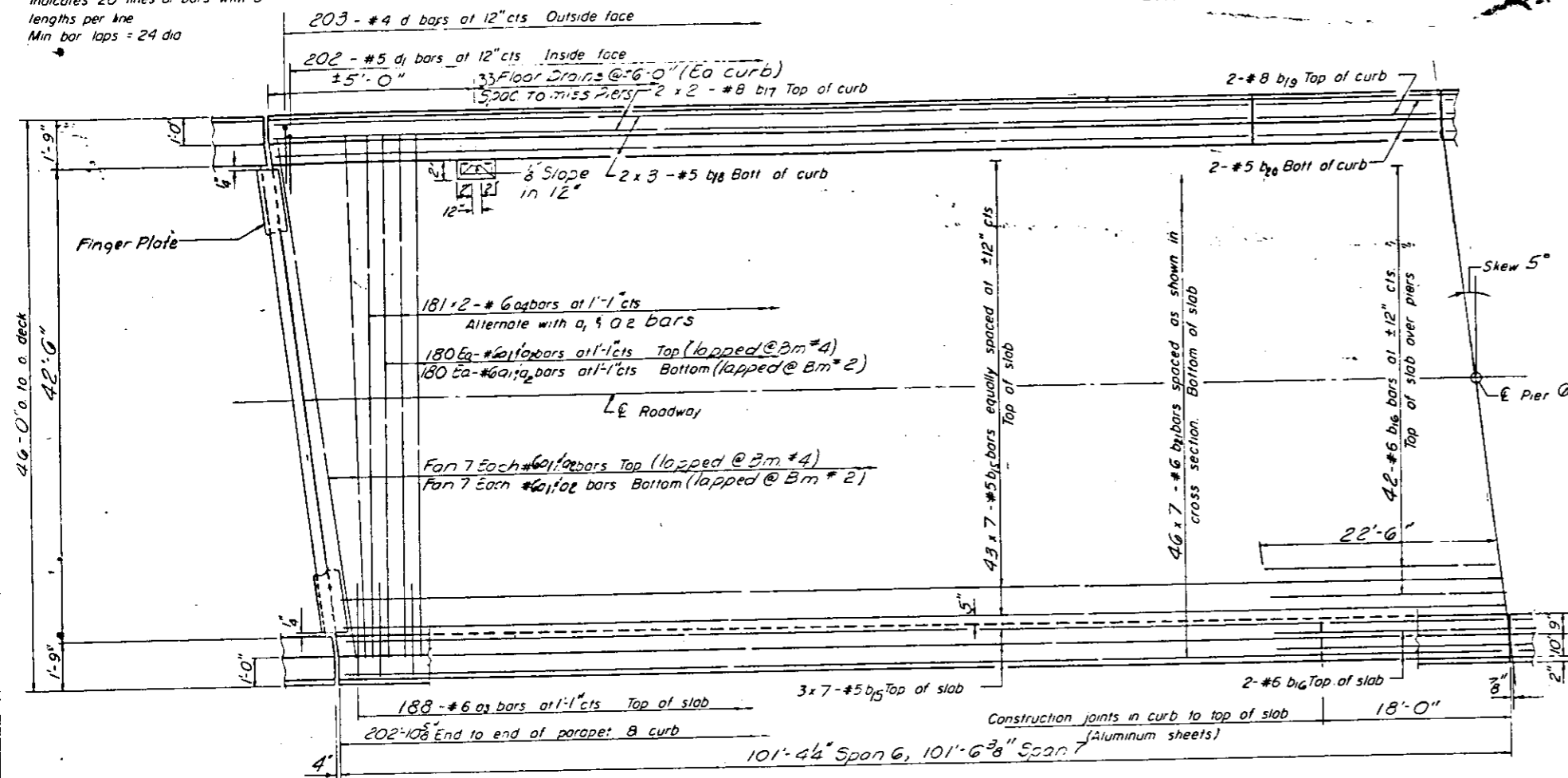


SUPERSTRUCTURE SPANS 3, 4 & 5  
S.B.I.R.T.E. 3 SEC. 73B-1  
RANDOLPH COUNTY  
STA. 793+80

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

PROJECT NO.	SECTION	CITY	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH	159	65
				27 SHEETS

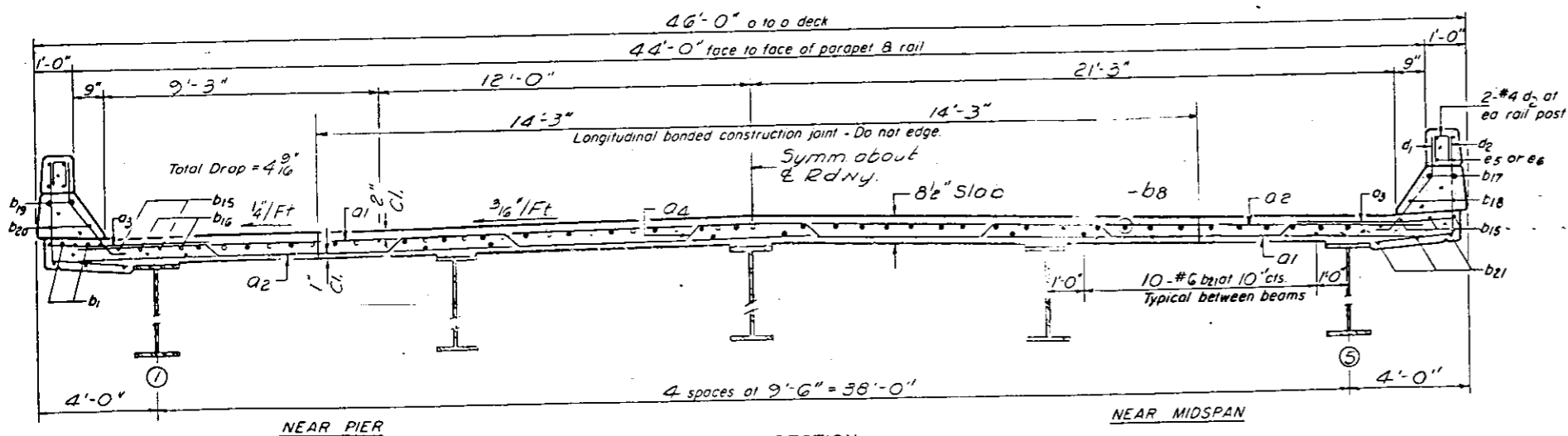
NOTE:  
Bars indicated thus 20-x3-#5 etc  
indicate's 20 lines of bars with 3  
lengths per line  
Min bar laps = 24 dia



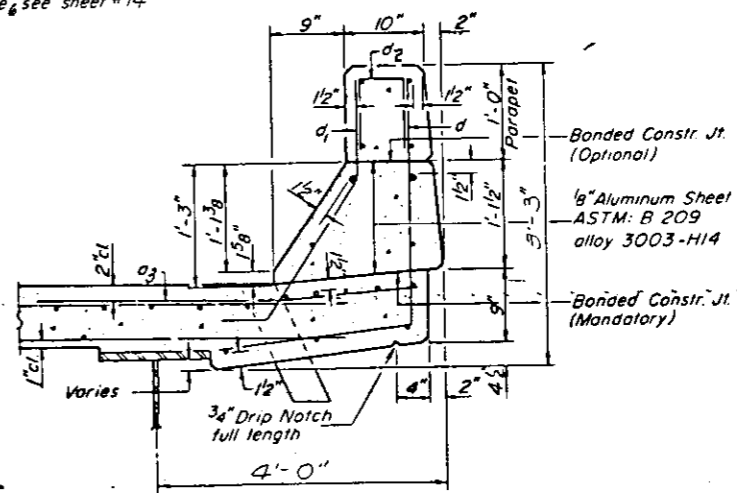
NOTE: For Sec. Thru Abut. Floor Drain Detail,  
Preformed Joint Sealer and  
Typical End of Sealer Treatment  
See Sheet #2  
For Sec. Thru Expansion Device  
at Pier 5 See Sheet #11

**HALF PLAN**  
Note: For Floor Drain Details See  
Sheet # 2

NOTE: For placement of bars  $d_2$ ,  
 $e_3$  and  $e_4$  see sheet #14



**CROSS SECTION**



**CURB SECTION**  
Cost of Aluminum Sheets shall be  
incidental to Class X Concrete.

**BILL OF MATERIAL**

Bar	No	Size	Length	Shape
a3	376	#5	5'-0"	—
a1	388	#6	33'-0"	—
a2	388	#6	12'-0"	—
a4	362	#6	24'-9"	—
b15	343	#5	30'-2"	—
b16	46	#6	25'-0"	—
b17	16	#8	42'-6"	—
b18	24	#5	23'-9"	—
b19	8	#8	17'-3"	—
b20	3	#5	17'-3"	—
c21	322	#6	30'-0"	—
d	206	#4	5'-0"	J
d1	204	#5	3'-3"	J
Reinforcement Bars			Lbs	78030
Class X Concrete			Cu Yds	2855
Structural Steel			Lbs	272,650

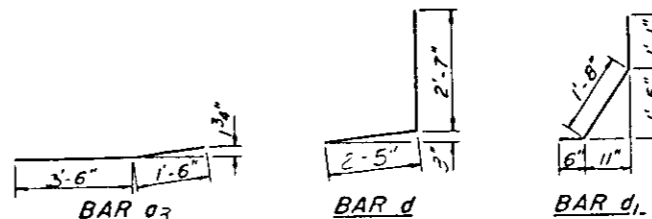
\*Weight of bearing assemblies with lead  
plates and anchor balls are included  
as Structural Steel Wt = 9665 lbs

Parapet Reinforcement and Class X  
Concrete are billed on sheet # 14

DESIGNED	Harold Singh
CHECKED	Keith Miller
DRAWN	F. Mercado
CHECKED	Keith Miller

EXAMINED	Paul E. Thompson
PASSED	W. Baumann
APPROVED	Richard A. Galbreath

For Detail of Bar a4  
See Sheet # 2



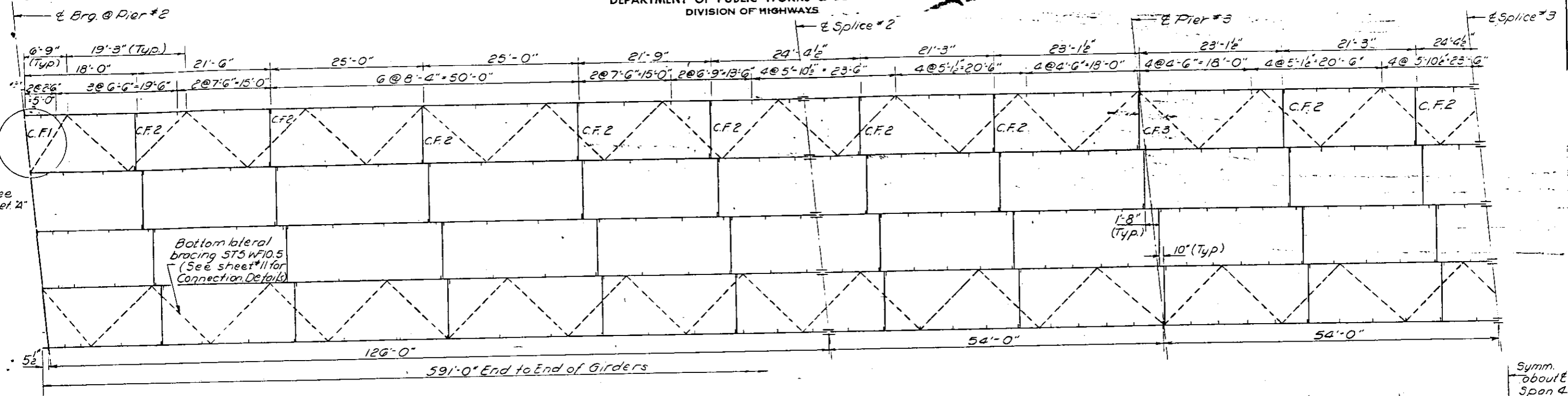
SUPERSTRUCTURE SPANS 6:7  
S. B. I. R. T. E. 3 SEC. 73 B-1  
RANDOLPH COUNTY  
STA. 793+80.00



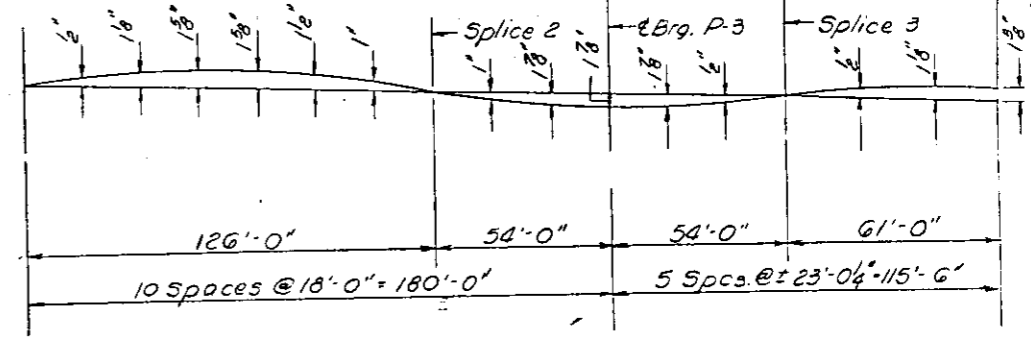
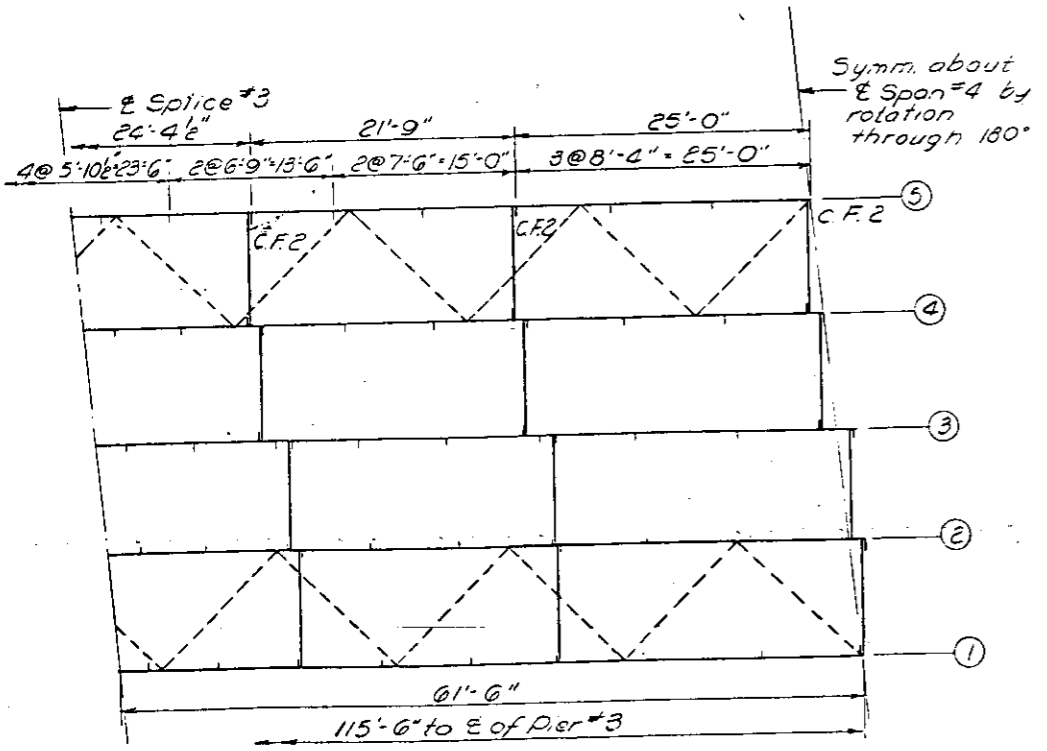


ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH	159	67
SHEET NO. 6				
27 SHEETS				

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

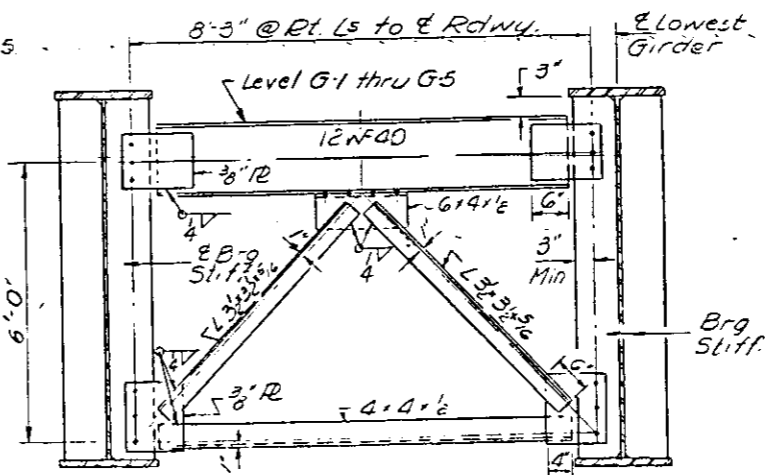
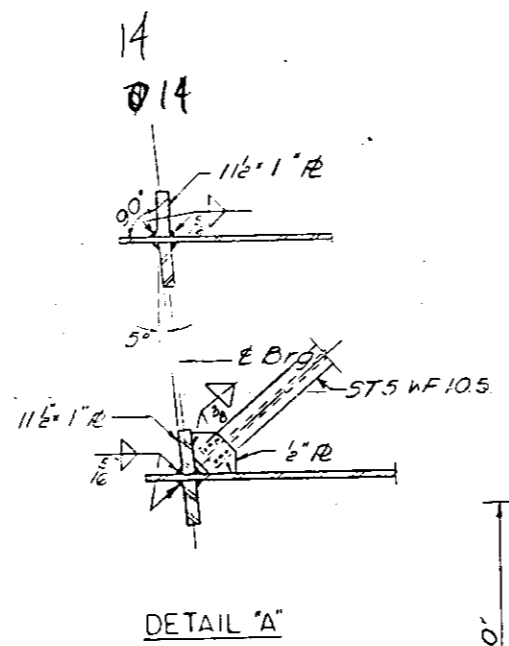


HALF PLAN - SPANS 3,4,5



SPANS 3,4,5  
CAMBER DIAGRAM

NOTES: For Girder Detail see sheet #7,  
For Top of Web Elevations,  
Moment and Reaction Table,  
also Connection of Lateral  
Bracing, See sheet #11.  
See sheet #10 for C.F.2 and C.F.3



CROSS FRAME 1  
No. Required 8

DESIGNED	Walter Singh
CHECKED	James Hamilton
DRAWN	F. Mercado
CHECKED	JH.

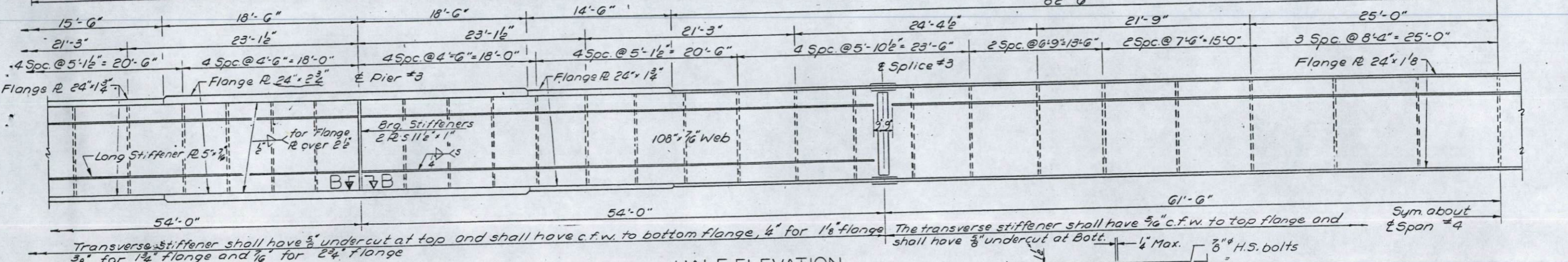
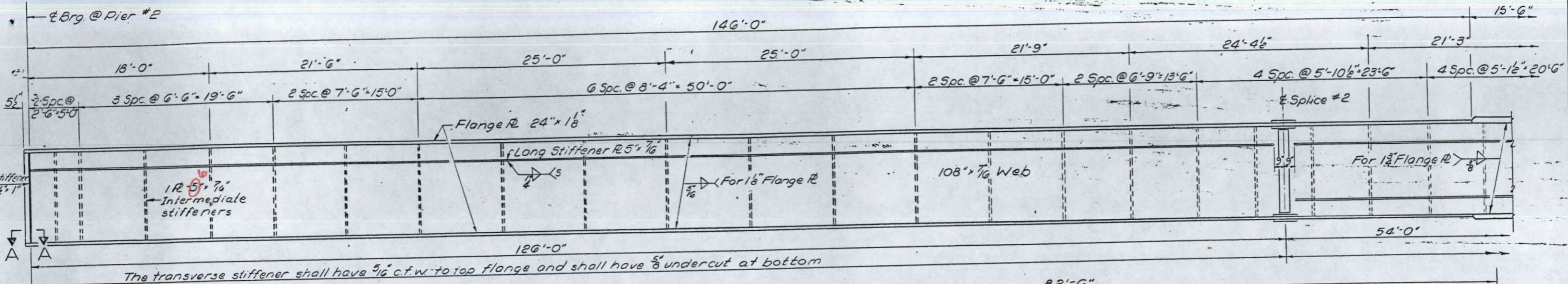
EXAMINED	Paul E. T. [Signature]
PASSED	[Signature]
APPROVED	Richard A. [Signature]

SPANS 3,4,5  
STRUCTURAL STEEL  
SBI RTE. 3 SEC. 73 B-1  
RANDOLPH COUNTY  
STA. 793+80.00



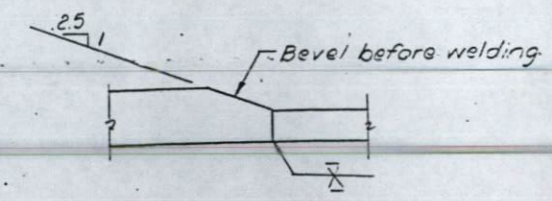
STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH	159	68
F.L.A.		ILLINOIS	FED. AID PROJECT	27 SHEETS



Note: See Navigation Lighting System Sheet for the location of angle used to support the Navigation light.

HALF ELEVATION

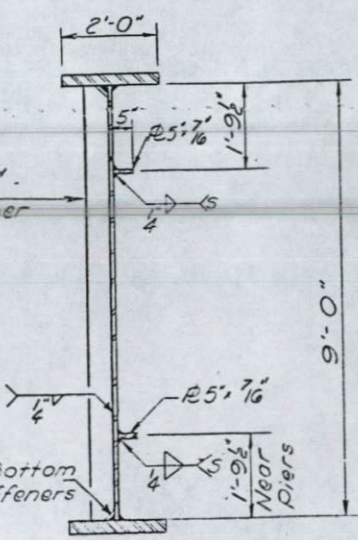


SHOP FLANGE SPLICE  
(For different R thickness only)

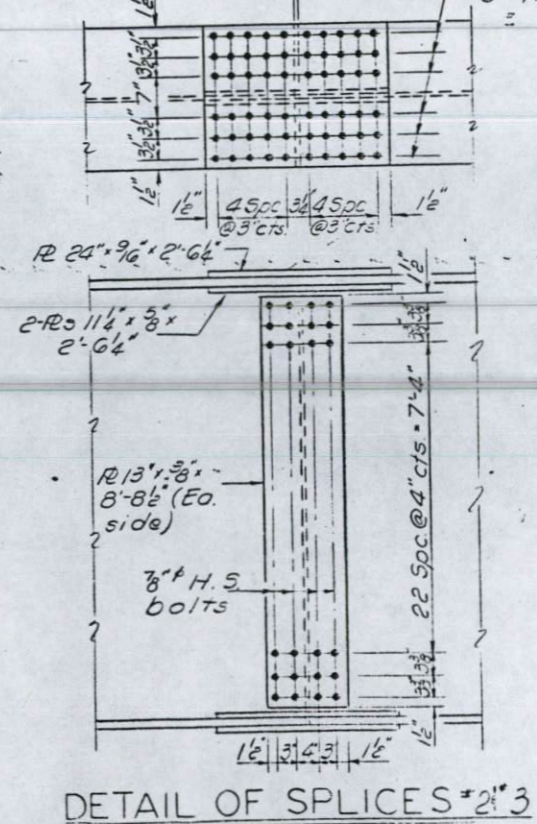
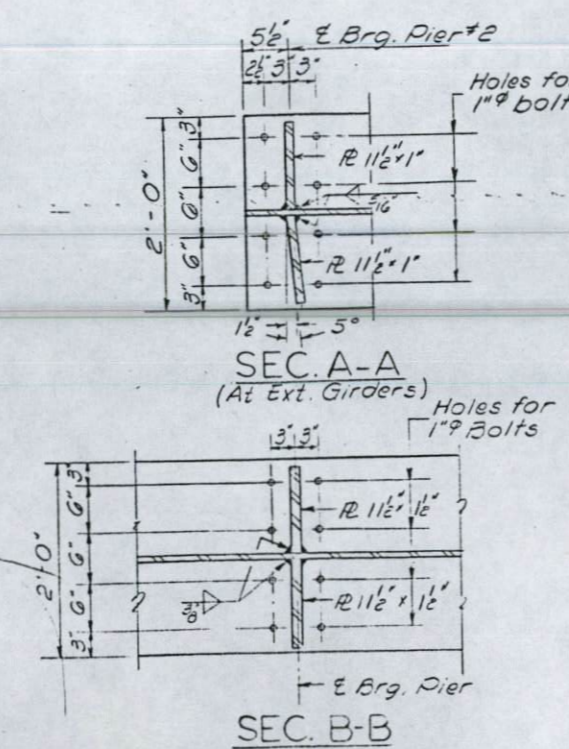
DESIGNED	Harold Singh
CHECKED	James Hamilton
DRAWN	F Mercado
CHECKED	JH

EXAMINED	1970
PASSED	W. Bausman
APPROVED	Richard Gatterman

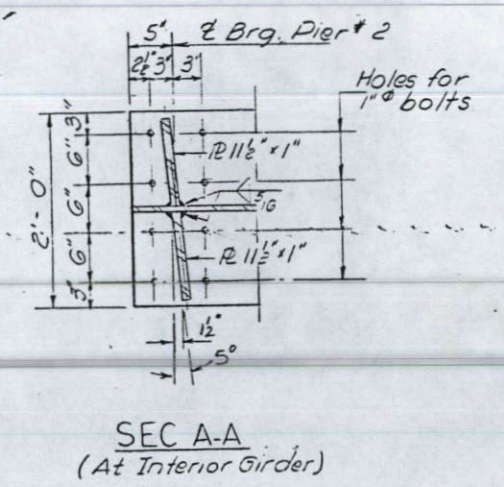
1/10 1" x 1" Top & Bottom Typ. for all stiffeners



CROSS SECTION



DETAIL OF SPLICES #2 & #3

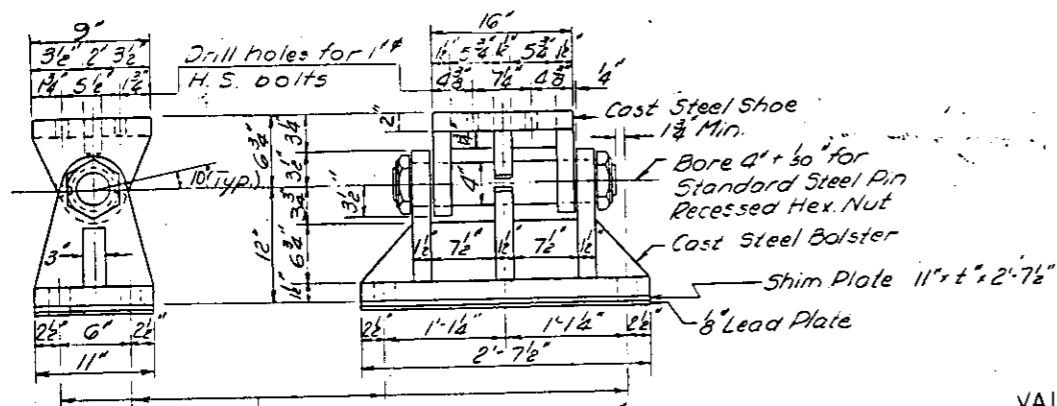


SEC. A-A  
(At Interior Girder)

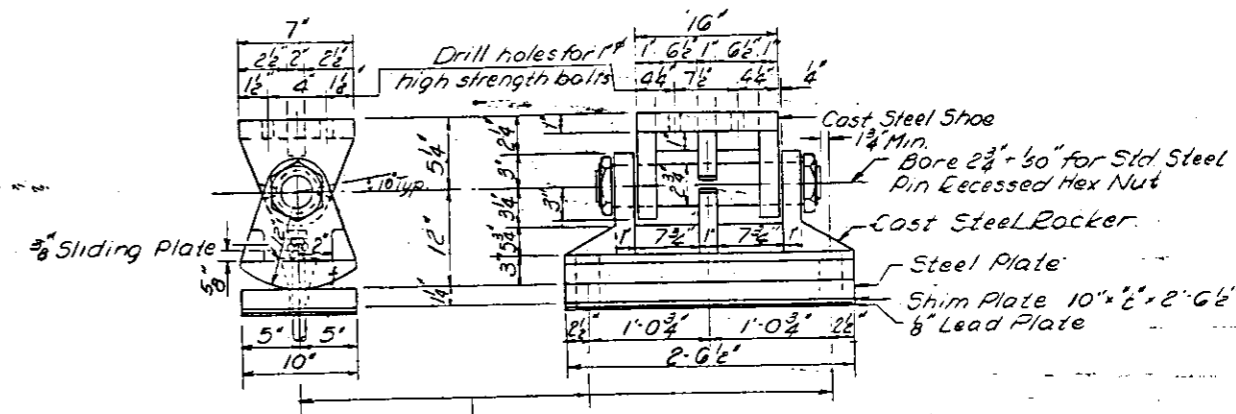
SPANS 3, 4 & 5  
GIRDER ELEVATION  
S.B.I.R.T.E. 3 SEC. 73-B-1  
RANDOLPH COUNTY  
STA. 793+80.00







1 1/2" Cored holes for 1 1/2" x 1' 6" Anchor Bolts with Hex nuts; 3/4" x 3/4" x 5/16" R washer under each nut.  
**PIER # 1:6**  
FIXED BEARING  
No. Req'd. 10



2 1/2" x 1 1/2" Cored holes in Rocker for 1 1/2" x 1' 6" Anchor Bolts with self locking nuts. 1 1/2" Holes in bottom plate.  
**ABUTS, PIER 2 SPAN 2 - PIER 5 SPAN 6**  
EXPANSION BEARING  
No Required 20

VALUES OF 't'

Location	G1	G-4	G-5
E. Abut.	0	4"	3/8"
P-2 Span 2	1 1/2"	4"	1 1/2"
P-5 Span 6	0	4"	3/8"
W. Abut.	0	4"	3/8"
P-1: P-6	0	4"	3/8"

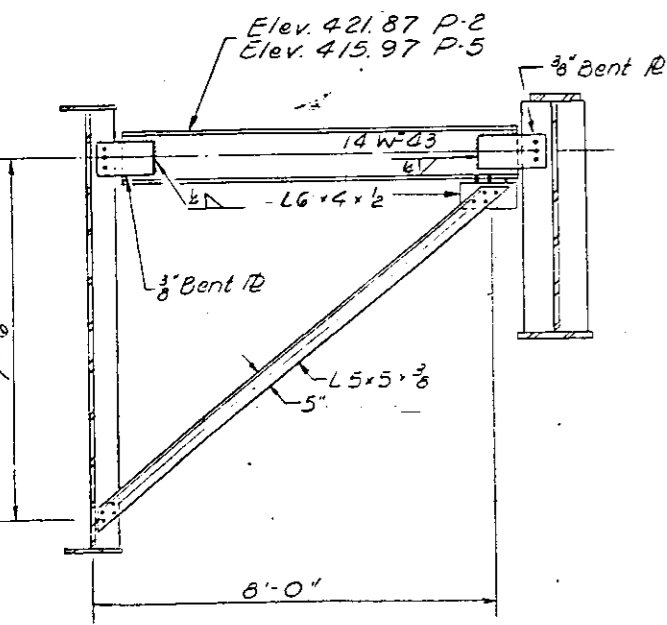
SPANS 1:2  
TABLE OF MOMENTS AND REACTIONS

INTERIOR GIRDER - MOMENT TABLE	INTERIOR GIRDER - REACTION TABLE				
	4 Span 1	Pier 1	Abut. or P-2	P-1	
$I_s$ (in <sup>4</sup> )	18,960	39,258	$R_D$ (K)	5,149	18,252
$I_c$ (in <sup>4</sup> )	51,160		$R_D$ (K)	5,384	78,97
$S_s$ (in <sup>3</sup> )	883	1,524	$Imp$ (K)	1,292	18,95
$S_c$ (in <sup>3</sup> )	1,242		$R_{Total}$ (K)	118,25	280,44
$I_D$ (K/ft)	122	122			
$M_D$ (K)	506,4	1,255,37			
$F_s D$ (KSI)	688	988			
$S_D$ (K/ft)	50	50			
$M_s D$ (K)	255,47	394,66			
$M_E$ (K)	868,52	664,10			
$V_R$ (K)	208,45	159,39			
<b>TOTAL (K)</b>	<b>1,332,46</b>	<b>1,216,15</b>			
$F_s$ (KSI)	12,87	2,59			
$F_s$ (KSI)	1,975	1,947			
$V_R$ (K)	60,12				

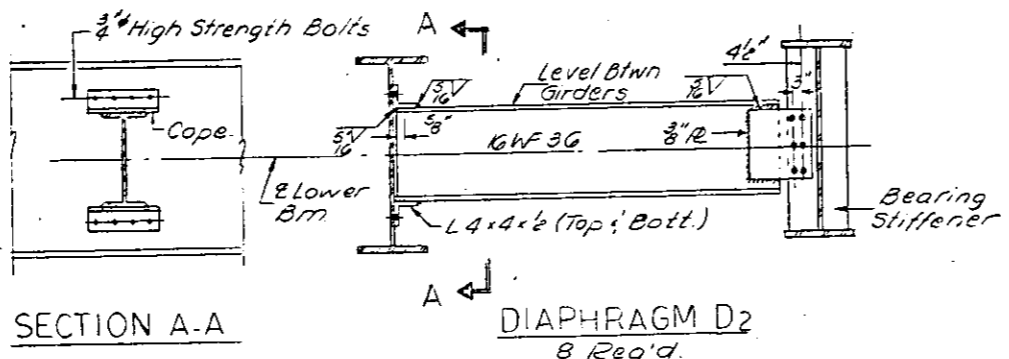
BILL OF MATERIAL (BRGS)

Item	Unit	Quantity
Carbon Steel	Lbs	14,410
Cast Steel	Lbs	5,120
<b>Total</b>		<b>19,530</b>

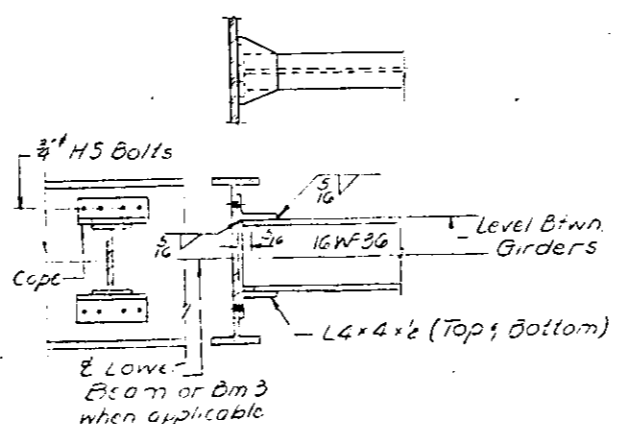
$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section.  $I_c$  and  $S_c$  are the moment of inertia and section modulus of composite section used in computing  $F_s$ .  $V_R$  is maximum  $1/4$  - Impact shear range.  
Notes: For Moment & Reaction Table for Spans 6 & 7 See sheet # 11 Pins, Steel Plates, Bolts, Anchor Bolts and Lead Plates are included in Carbon Steel. The above quantities are included in Structural Steel on sheet # 2. Cast Steel shall conform to ASTM A-486 class 90



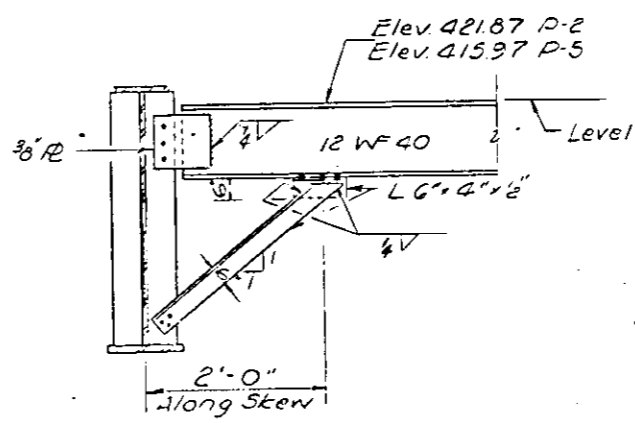
**DIAPHRAGM D3**  
4 Req'd



**DIAPHRAGM D2**  
8 Req'd



**DIAPHRAGM D1**  
56 Req'd



**DIAPHRAGM D**

DESIGNED: Halpel Singh  
CHECKED: A. J. Miller  
DRAWN: F. Mercado  
CHECKED: A. J. Miller  
EXAMINED: [Signature]  
PASSED: [Signature]  
APPROVED: [Signature]

SPANS 1, 2, 6 & 7  
STRUCTURAL STEEL DETAIL  
S.B.I. RTE. 3 SEC 73B-1  
RANDOLPH COUNTY  
STA 793+80.00



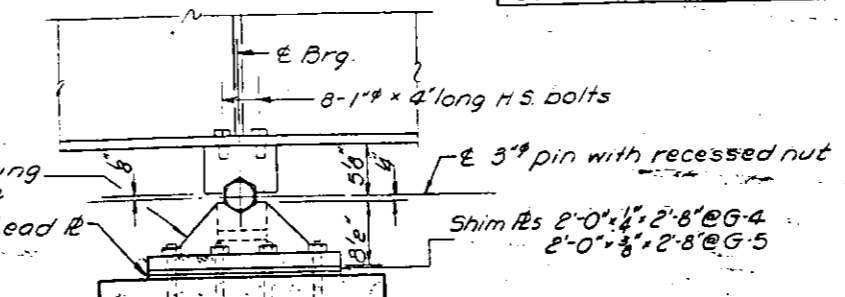
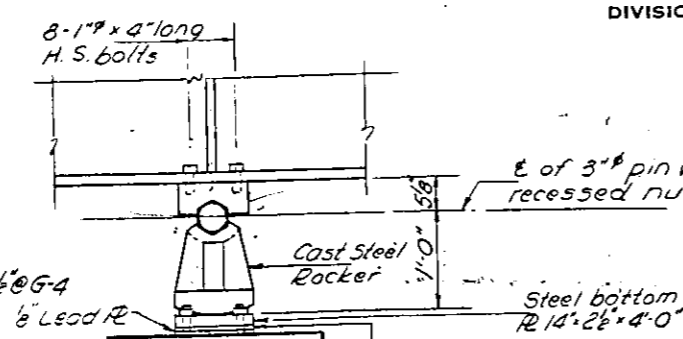
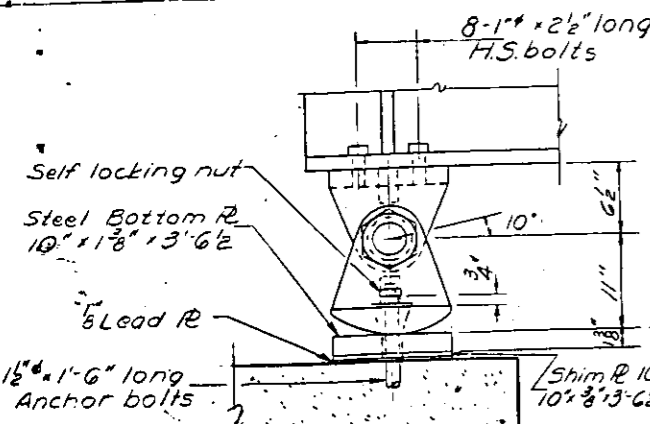
STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

BILL OF MATERIAL  
BEARINGS

Item	Unit	Quantity
Carbon Steel	Lbs.	7570
Cast Steel	Lbs.	17200
Total		24770

ROUTE NO.	SECTION	QUANTITY	TOTAL SHEETS	SHEET NO.	SHEET NO.
73B-1	RANDOLPH	159	71	27	10

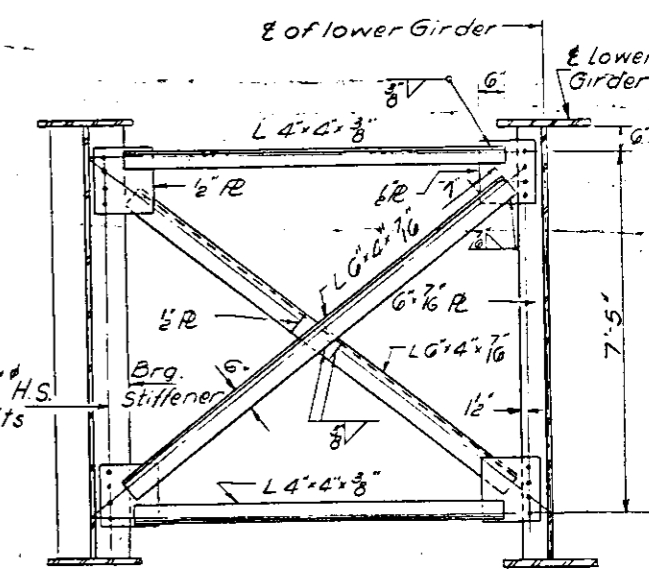
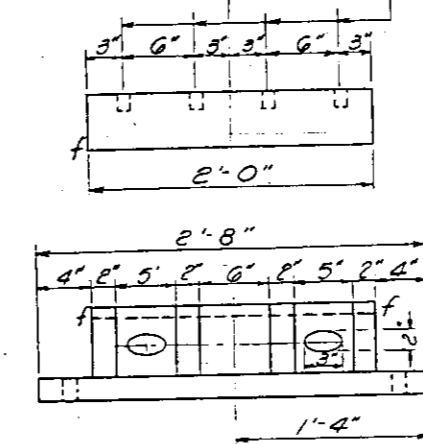
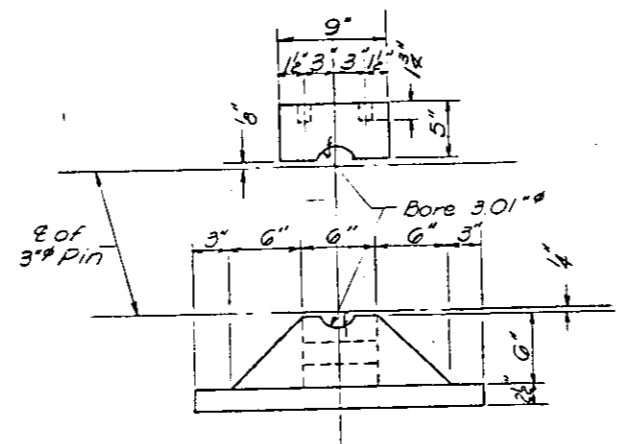
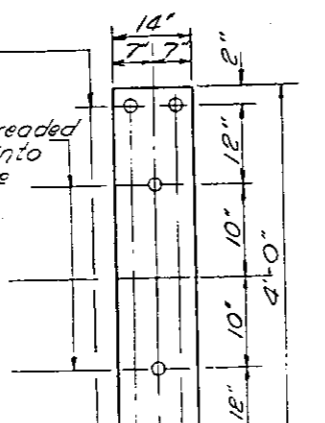
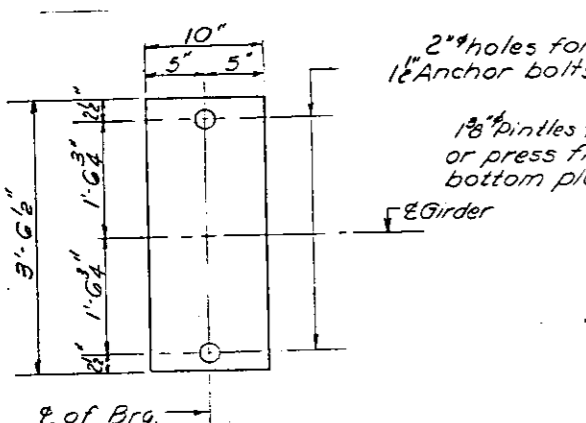
NOTES: Pins, Steel Rs, Bolts, Anchor Bolts and Lead Rs are included in Carbon Steel.  
The above quantities are included in Structural Steel on sheet #3  
Cast Steel shall conform to ASTM A-486 Class 90.  
For C.F. 1 See sheet #6.



PIER 2 SPAN 3  
PIER 5 SPAN 5

PIER #3

PIER #4

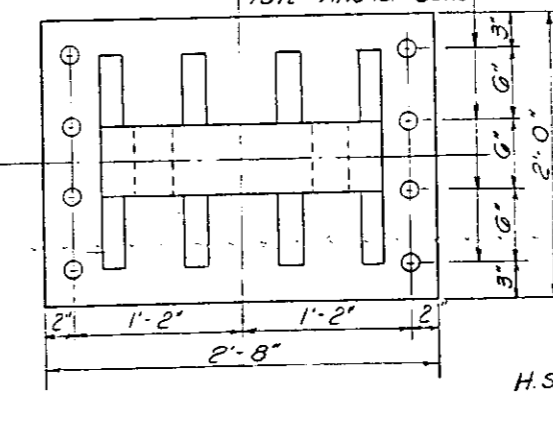


CROSS FRAME - 3  
8 Req'd.

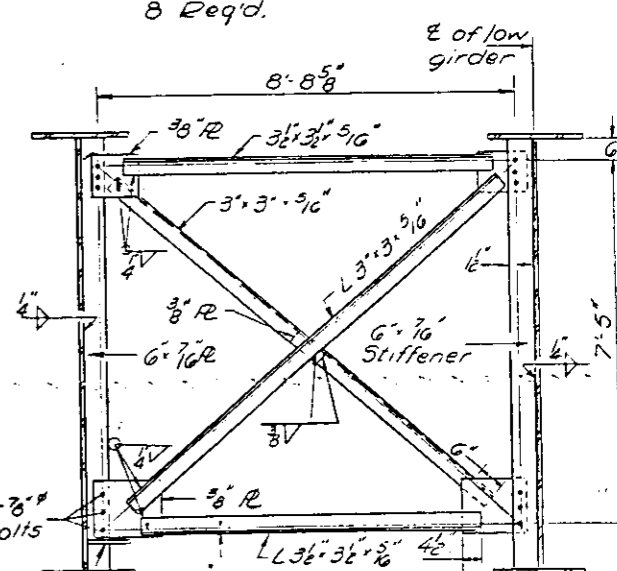
PLAN BOTTOM PLATE

PLAN BOTTOM PLATE

DETAIL OF CAST STEEL BRG. SHOE

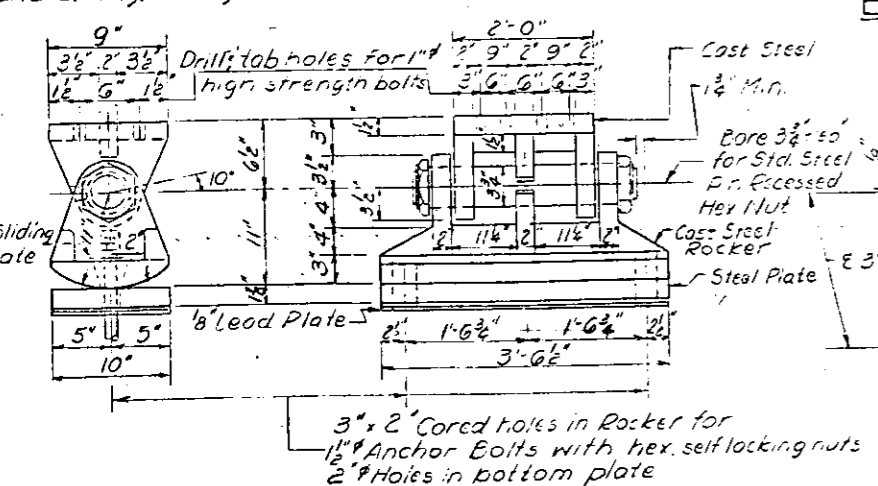


PLAN BRG. SHOE

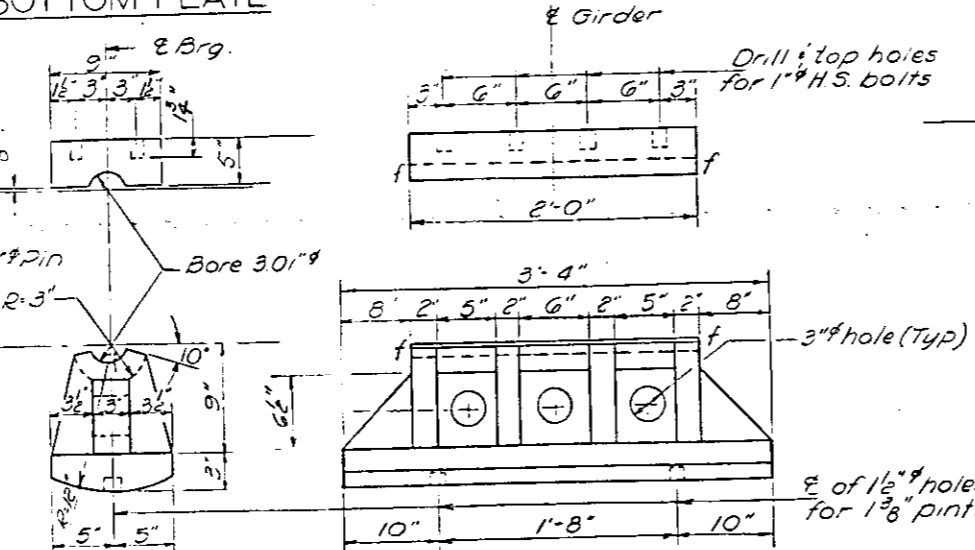


CROSS FRAME-2  
92 Req'd.

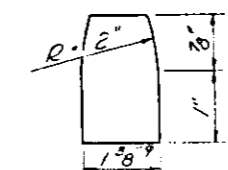
NOTE: Structural Steel Weldments of equal sections and strength may be substituted for the castings



BEARING DETAILS  
(P-2 Span 3, P-5 Span 5)



CAST STEEL ROCKER

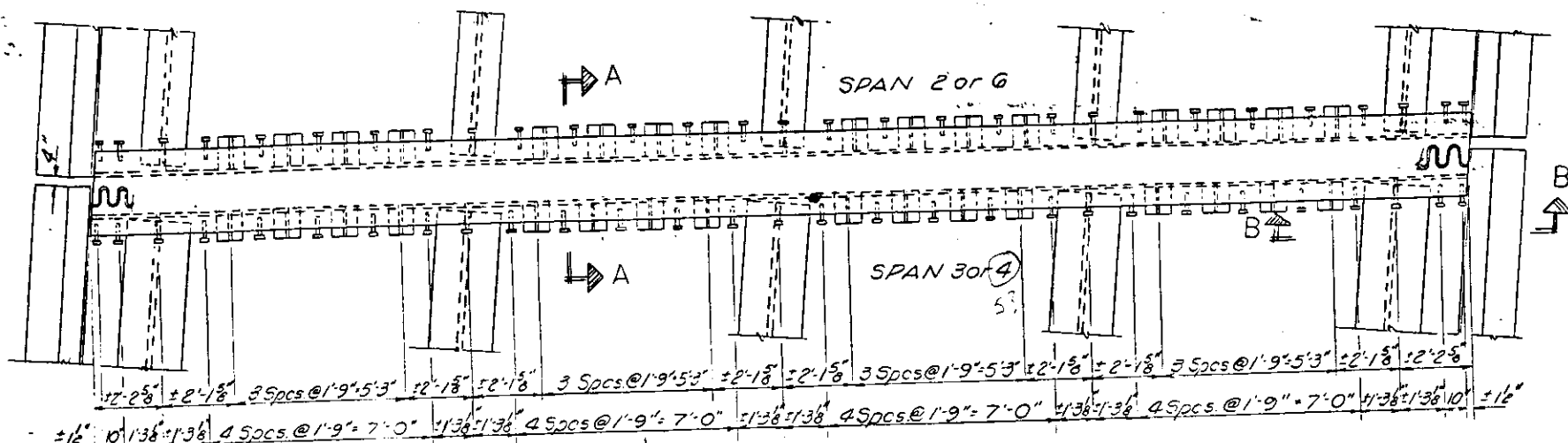


DETAIL OF PINTLE

NOTE: All Anchor Bolts shall have 3 1/2" x 3 1/4" x 5/16" R washer under each nut except @ Piers 1 & 5

DESIGNED <i>Harpal Singh</i>	EXAMINED <i>Richard H. Galtzman</i>
CHECKED <i>James Hamilton</i>	PASSED <i>W. Baumann</i>
DRAWN <i>F. Mercado</i>	APPROVED <i>Richard H. Galtzman</i>
CHECKED <i>J.H.</i>	

SPANS 3, 4 & 5  
BEARING DETAILS  
S.B.I. RTE. 3 SEC. 73-B-1  
RANDOLPH COUNTY  
STA. 793+80



PLAN  
EXPANSION DEVICE AT PIERS 2+5

SPANS 3:4:5

	4 Spcs @ 1'-9" x 5'-3"	5 Spcs @ 1'-9" x 5'-3"
I (in <sup>4</sup> )	206685	450705
W (K/I)	1855	1855
M <sub>D</sub> (IK)	36259	89659
M <sub>4</sub> (IK)	23824	37631
M <sub>Imp</sub> (IK)	3815	5645
M Total (IK)	63918	132935
f <sub>s</sub> (K/S)	205	198

	P-2 or P-6	P-3 or P-4
R <sub>D</sub> (K)	1171	4310
R <sub>4</sub> (K)	675	1605
R <sub>Imp</sub> (K)	108	241
R Total (K)	1954	6156

SPAN 6:7

	4 Spcs @ 6'	Pier 6
I <sub>s</sub> (in <sup>4</sup> )	23662	55608
I <sub>c</sub> (in <sup>4</sup> )	63902	
S <sub>s</sub> (in <sup>3</sup> )	1198 (Boil)	2098
S <sub>c</sub> (in <sup>3</sup> )	1622 (Boil)	
W (K/I)	125	125
M <sub>D</sub> (IK)	758.3	1910.7
f <sub>s</sub> (K/S)	7.6	10.9
S <sub>D</sub> (K/I)	5	5
M <sub>s</sub> (IK)	377.2	579.6
M <sub>4</sub> (IK)	1102.0	915.4
M <sub>Imp</sub> (IK)	243.3	202.3
Total (IK)	1722.5	1697.3
f <sub>s</sub> + S <sub>D</sub> (K/S)	12.7	9.7
f <sub>s</sub> Total (K/S)	20.3	20.60
V <sub>R</sub> (K)	628	

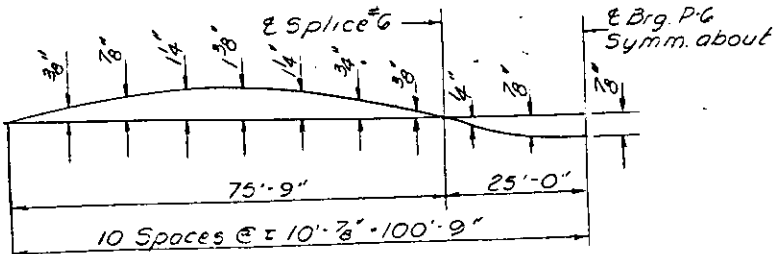
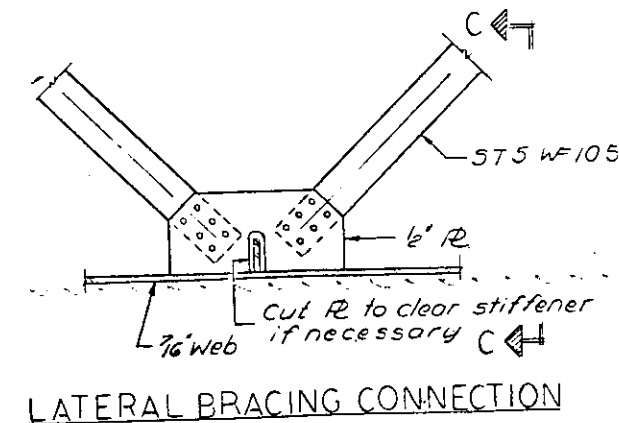
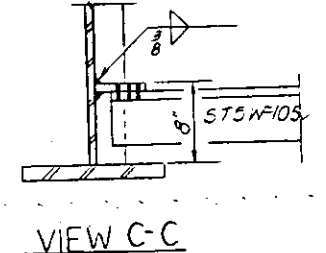
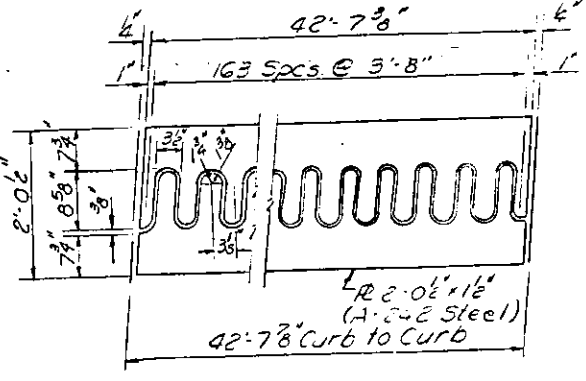
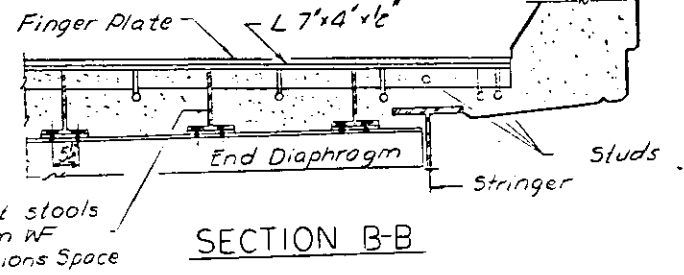
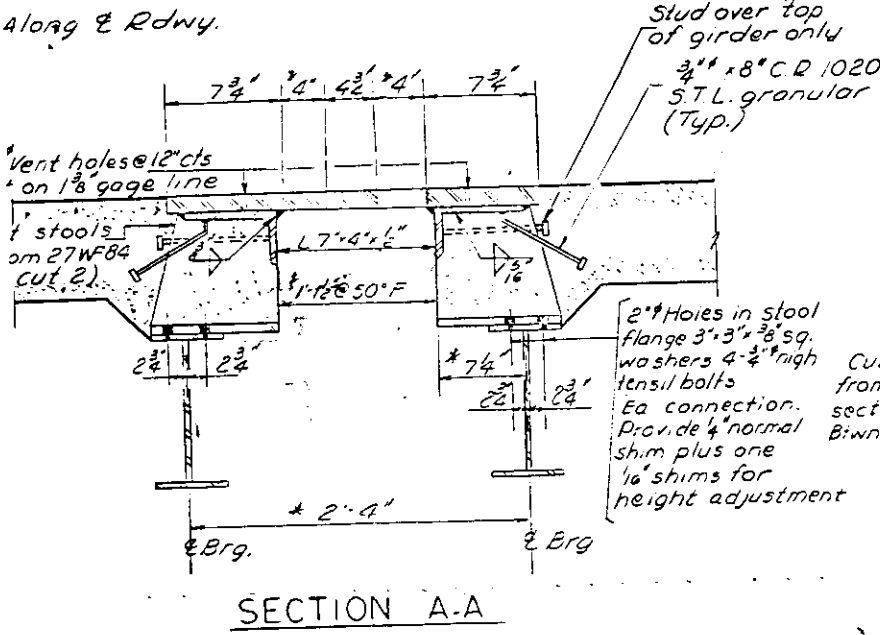
	ADU: P-5	P-6
R <sub>D</sub> (K)	400	1639
R <sub>4</sub> (K)	553	91.0
Imp (K)	122	201
R Total (K)	111.5	275.0

I<sub>s</sub> and S<sub>s</sub> are the moment of inertia and section modulus of the steel section. I<sub>c</sub> and S<sub>c</sub> are the moment of inertia and section modulus of composite section used in computing f<sub>s</sub>. V<sub>R</sub> is maximum 4' Impact shear range.

TOP OF WEB ELEVATIONS (SPANS 3:4:5)

LOCATION	G-1	G-2	G-3	G-4	G-5
E Brg. Span 3 - P-2	422.12	422.31	422.47	422.33	422.15
E of Splice #2*	420.95	421.14	421.30	420.16	420.98
E Brg. P-3	420.26	420.45	420.61	420.47	420.29
E of Splice #3*	419.90	420.09	420.25	420.11	419.93
E of Splice #4*	418.67	418.86	419.02	418.88	418.70
E Brg. P-4	417.96	418.15	418.31	418.17	417.99
E of Splice #5*	417.56	417.75	417.91	417.77	417.59
E Brg. Span 5 - P-5	416.22	416.41	416.57	416.43	416.25

For Fabrication only  
\* Corrected for Camber

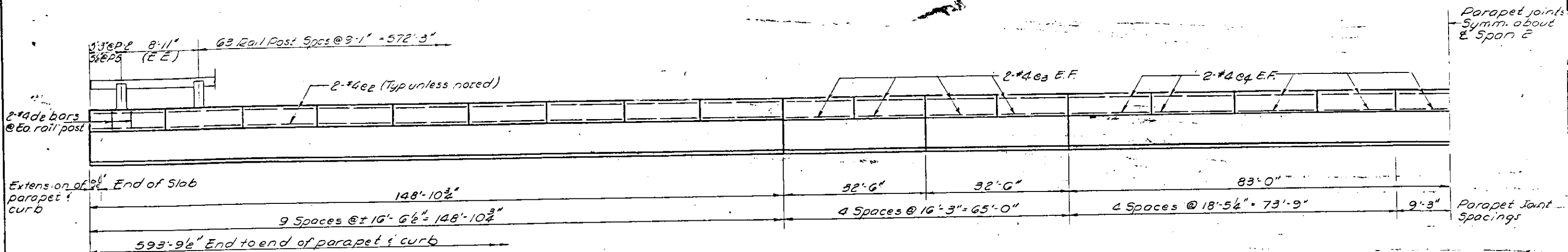


SPANS 6:7  
CAMBER DIAGRAM

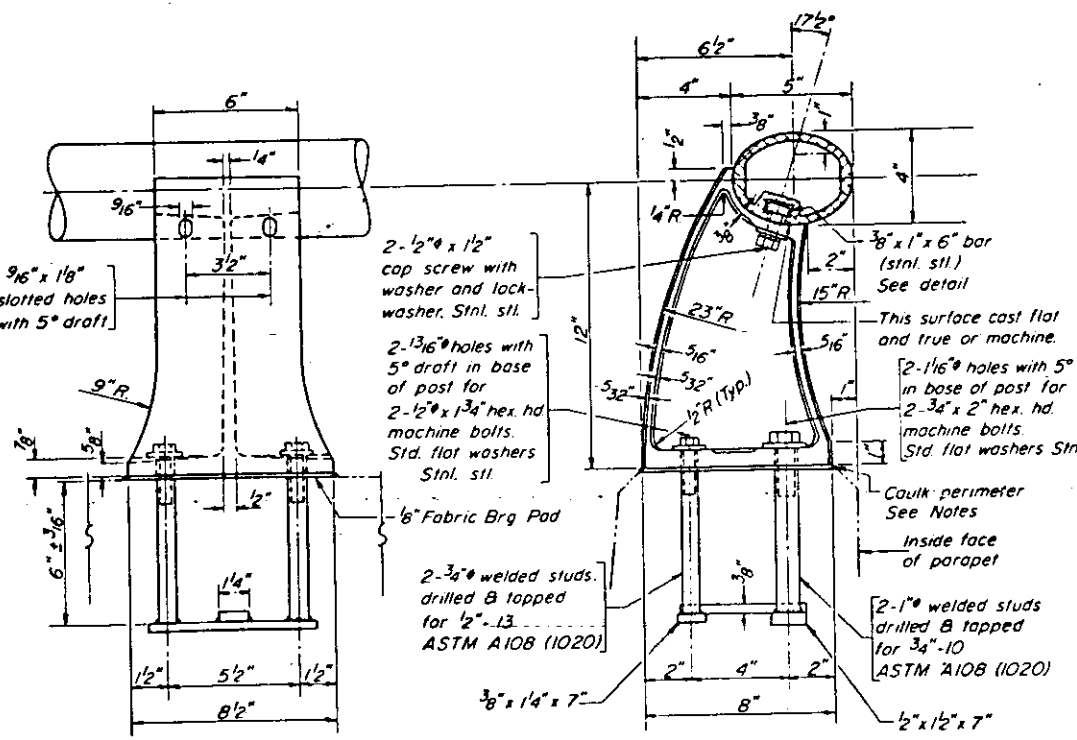
STRUCTURAL STEEL DETAILS  
S.B.I. RTE. 3 SEC. 73 B-1  
RANDOLPH COUNTY  
STA. 793+8000

DESIGNED	Walter Singh	EXAMINED	Mark S. T. [Signature]
CHECKED	James Hamilton	PASSED	[Signature]
DRAWN	F. Mercado	APPROVED	Richard H. Halterman
CHECKED	[Signature]		

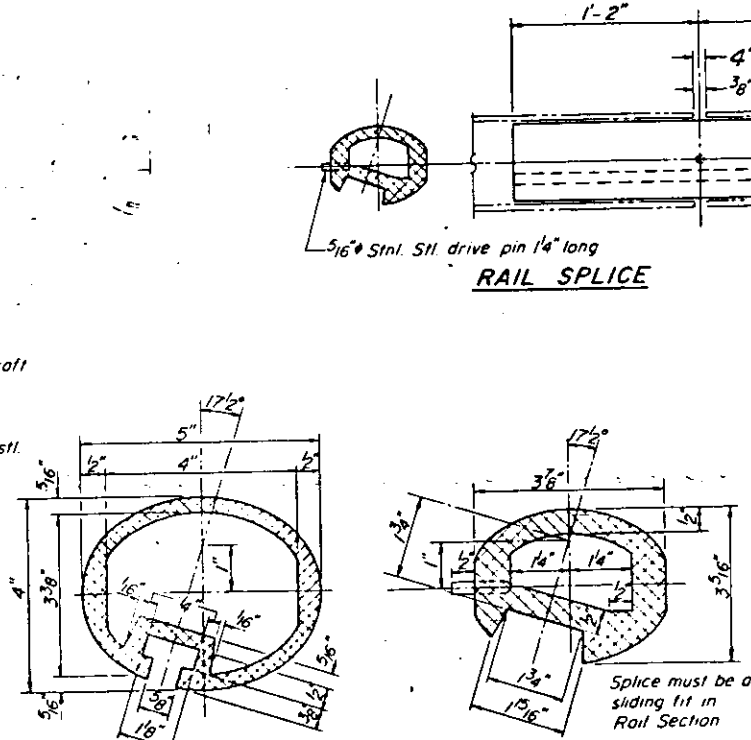




ELEVATION SPANS 3, 4 & 5

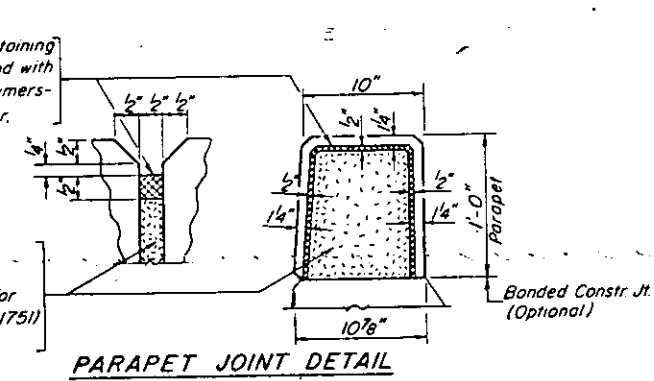


RAIL POST DETAILS



SEC. THRU ELLIPTICAL RAIL SECTION

SEC. THRU SPLICE



NOTES:

All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.

All joints in rail shall be spliced per detail.

Provide 1-1/8" and 2-1/16" Aluminum Shims for 25% of the Posts. Rail element shall be parallel to Grade - high spots shall be ground and low spots shimmed.

Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.

Aluminum alloy rail shall conform to ASTM B221 alloy 6061-T6 or 6351-T5 with min yield 35 ksi, min tensile 38 ksi, and elongation of 10% in 2 inches.



PARAPETS & RAILS  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
d2	264	#4	2'-1"		
e2	144	#4	16'-3"		
e3	64	#4	16'-0"		
e4	72	#4	18'-2"		
Reinforcement Bars				Lbs	3000
Class X Concrete				Cu Yds	25.3
Aluminum Railing				Lin Ft	1165

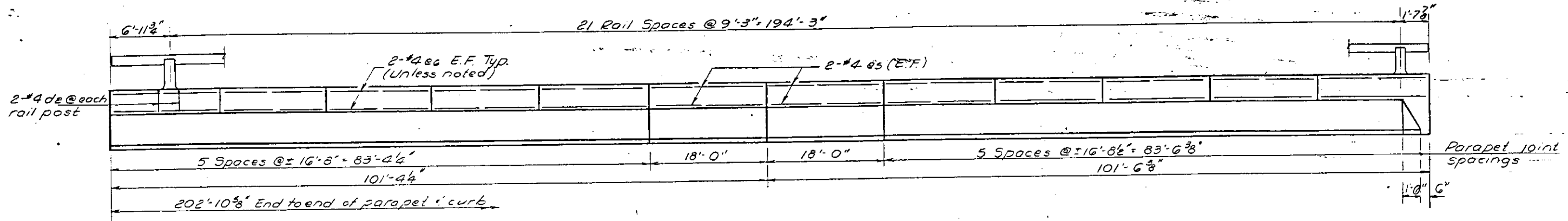
ALUMINUM RAILING

SPANS 3, 4 & 5  
S.B.I. RTE 3 SEC. 73 B-1  
RANDOLPH COUNTY  
STA. 793+80.00

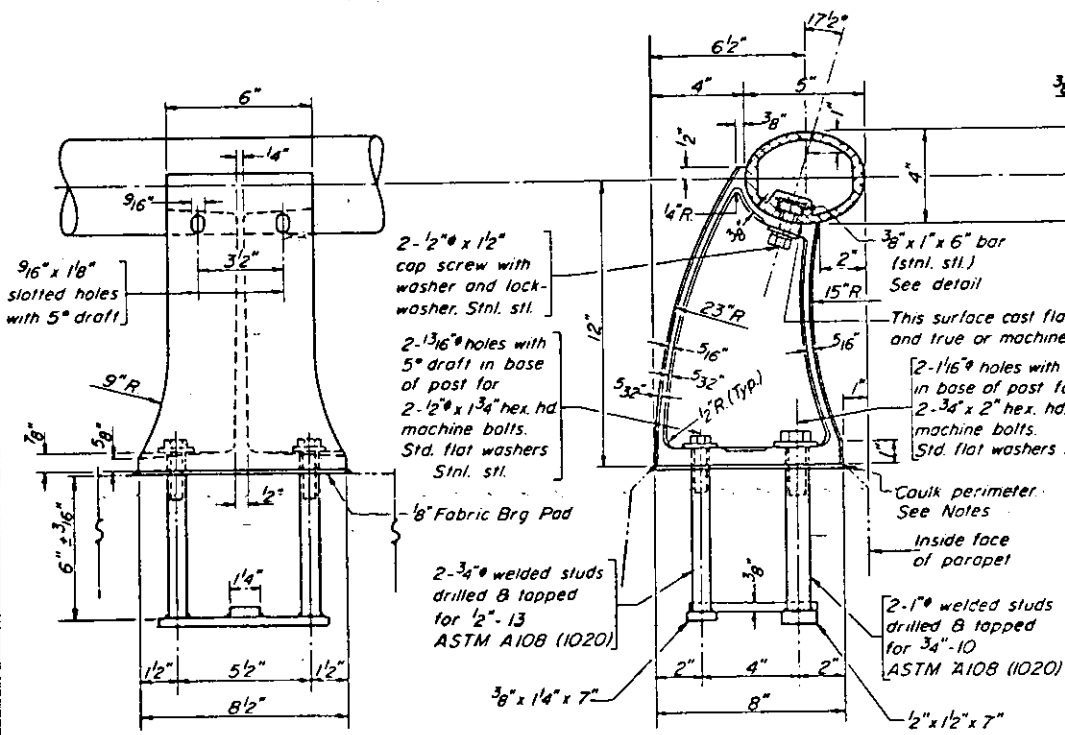
DESIGNED Harjit Singh  
CHECKED H. P. Williams  
DRAWN F. Mercado  
CHECKED H. P. Williams

EXAMINED Carl E. Thurman  
PASSED W. G. Brannaman  
APPROVED Richard H. Plattman

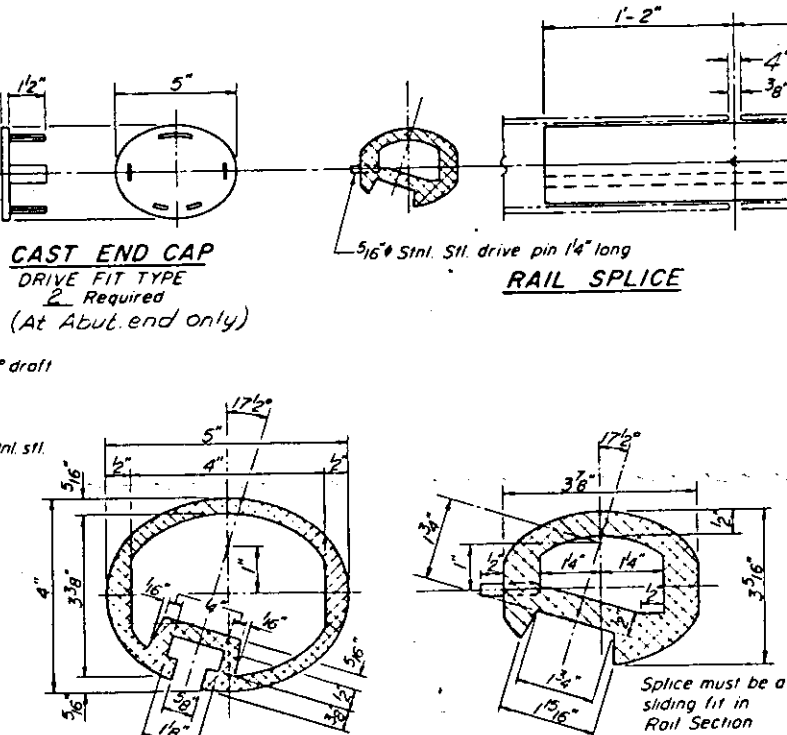
Mar 24 1970



ELEVATION SPANS 6 & 7

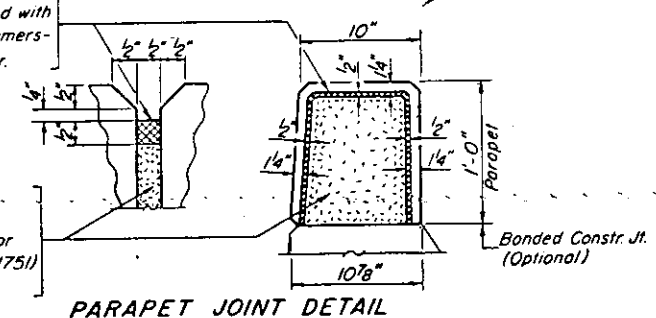
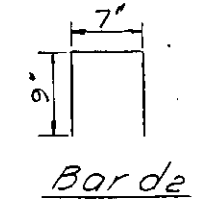


RAIL POST DETAILS



SEC. THRU ELLIPTICAL RAIL SECTION

SEC. THRU SPLICE

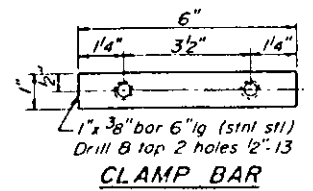


PARAPETS & RAILS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d2	88	#4	2'-1"	□
e5	16	#4	17'-9"	□
e6	80	#4	16'-2"	□
Reinforcement Bars		Lbs	1180	
Class X Concrete		Cu. Yds	13	
Aluminum Railing		Lin Ft	406	

DESIGNED	Harbel Singh
CHECKED	Harbel Singh
DRAWN	F. Mercado
CHECKED	Harbel Singh

EXAMINED	Mar 24 1970 Paul S. Thompson
PASSED	W. G. Baumgardner
APPROVED	Richard H. Galtman



NOTES:

All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.

All joints in rail shall be spliced per detail.

Provide 1-8" and 2-1/8" Aluminum Shims for 25% of the Posts. Rail element shall be parallel to Grade - high spots shall be ground and low spots shimmed.

Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.

Aluminum alloy rail shall conform to ASTM B221 alloy 6061-T6 or 6351-T5 with min. yield 35 ksi, min. tensile 38 ksi, and



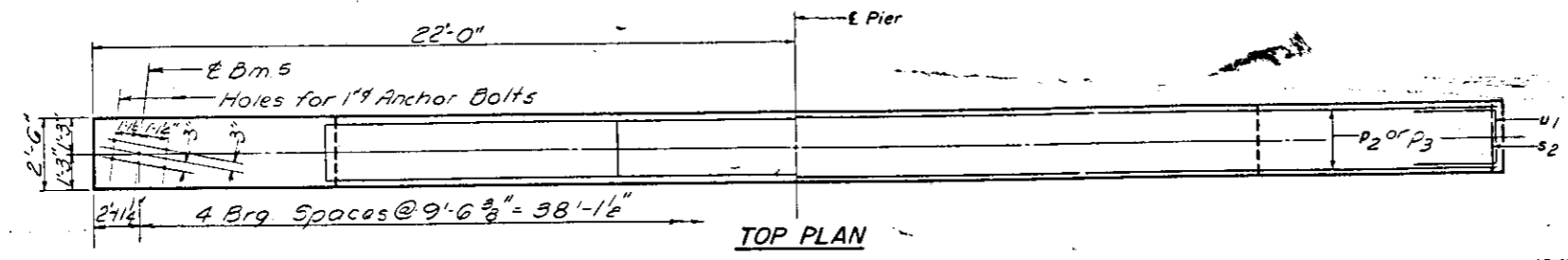
STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH	159	76
PROJECT			SHEET NO. 15	
ILLINOIS			27 SHEETS	

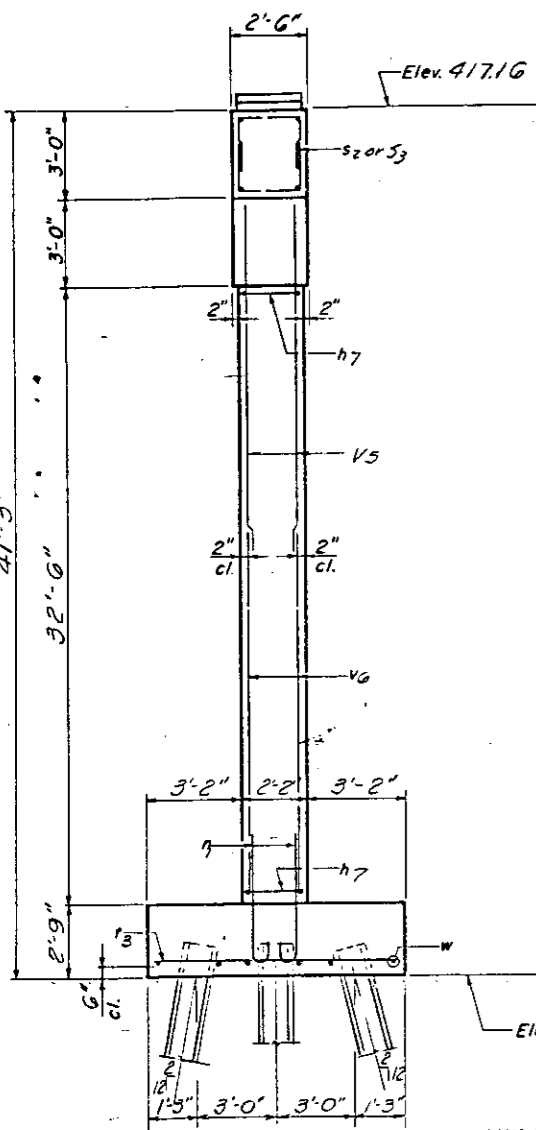
Note:  
Space reinforcement in cap to miss anchor bolts.  
Minimum bar laps = 24 dia. unless otherwise noted.  
All edges shall have standard chamfers except as noted.  
Pour steps monolithically with cap.

PILE DATA

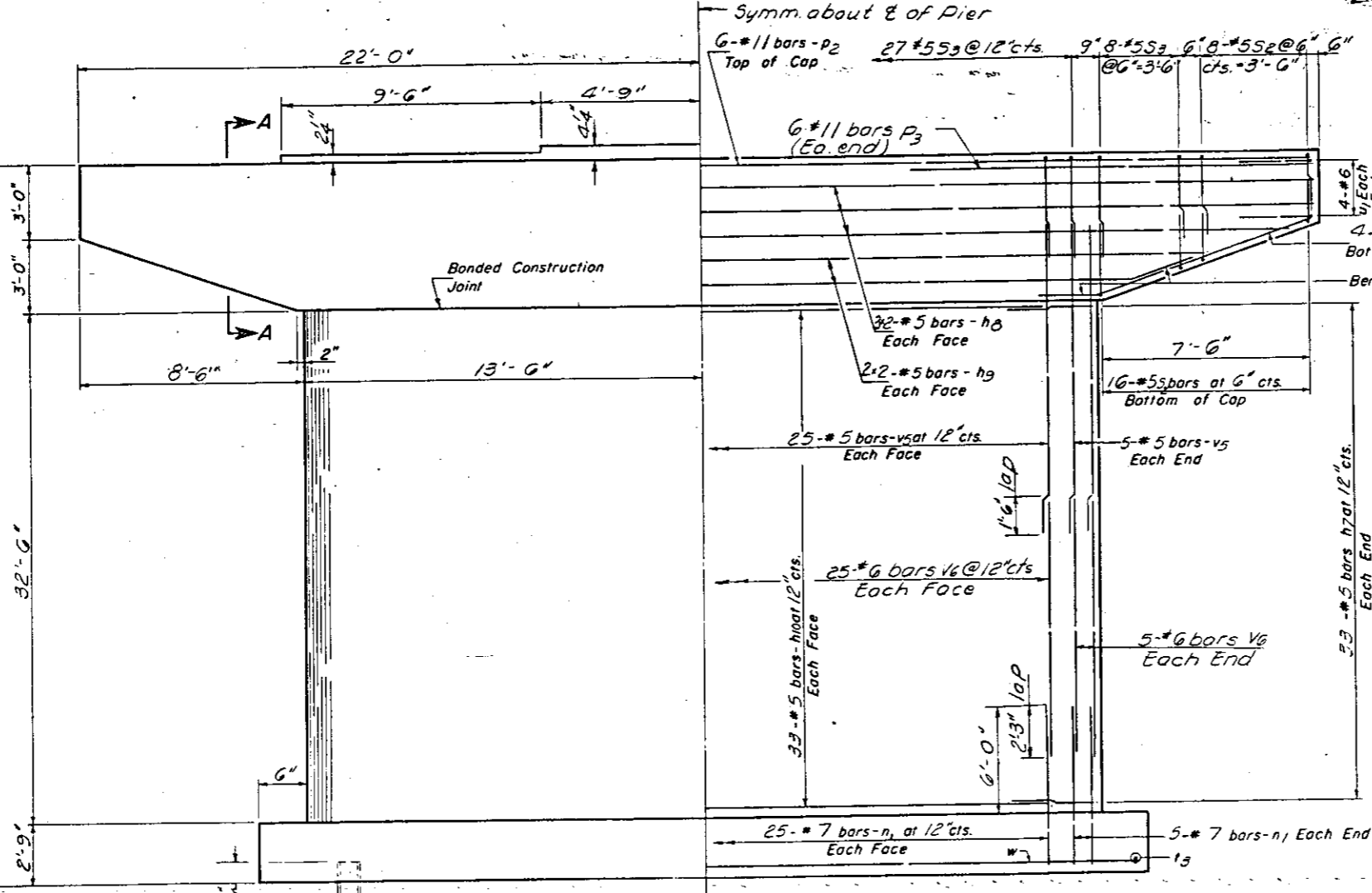
Type Steel (12BP53)  
Capacity Drive to refusal  
Est. Length 48 Ft.  
No. Req'd. 20 plus one test pile



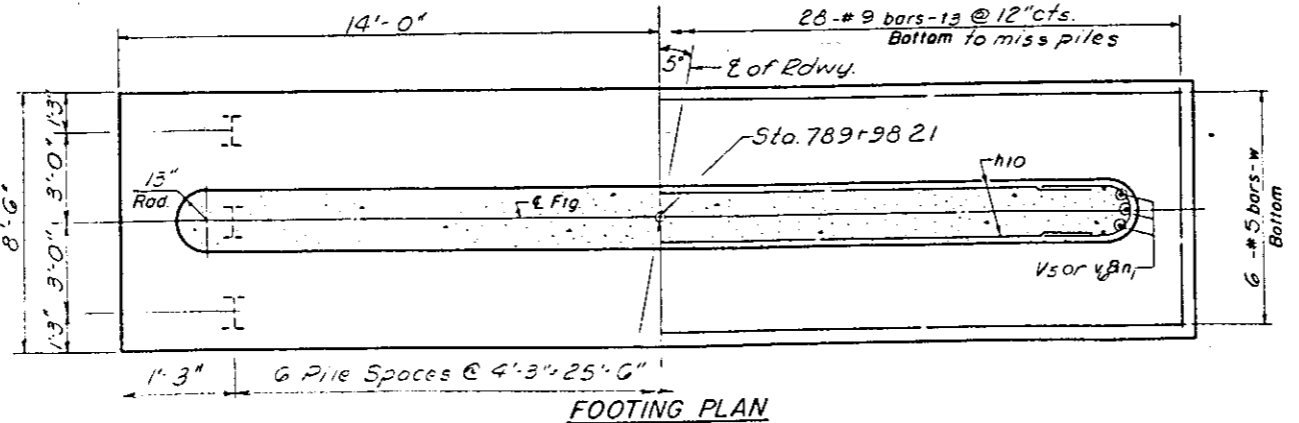
TOP PLAN



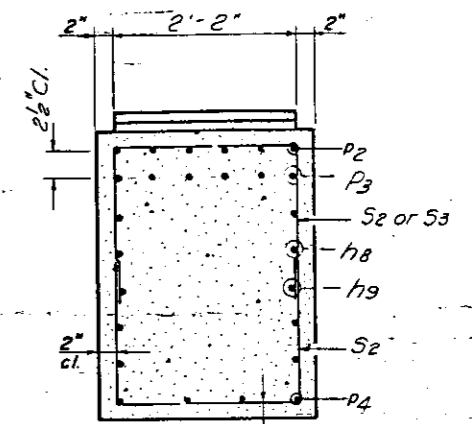
END VIEW



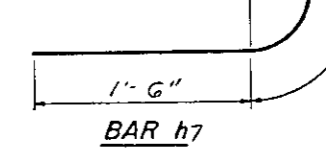
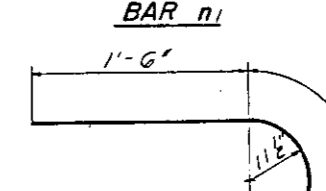
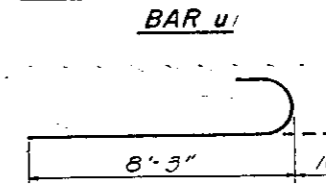
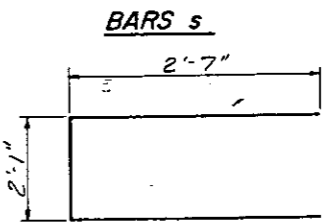
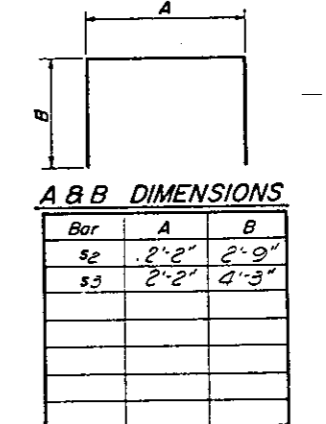
ELEVATION  
LOOKING WEST



FOOTING PLAN



SECTION A-A



PIER # 1  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7	66	#5	6'-0"	U
h8	72	#5	22'-6"	—
h9	8	#5	20'-0"	—
h10	66	#5	20'-6"	—
n1	60	#7	9'-1"	U
p2	6	#11	43'-9"	—
p3	12	#11	14'-0"	—
p4	8	#6	11'-0"	—
s2	48	#5	7'-8"	□
s3	43	#5	10'-8"	□
v5	60	#5	18'-0"	—
v6	60	#6	15'-0"	—
w	6	#5	27'-9"	—
Class X Concrete		Cu. Yds.	116.2	
Reinforcement Bars		Lbs.	10470	
Test Piles (Steel) Each			1	
Steel Piles (12BP53) Lin. Ft.			960	

PIER # 1  
SBI RTE. 3 SEC. 73 B-1  
RANDOLPH COUNTY  
STA. 793+80.00

DESIGNED: *Harold Singb*  
CHECKED: *Harold Singb*  
DRAWN: *G. Ritchie*  
EXAMINED: *Man 24 1970*  
PASSED: *Carl E. Thum*  
APPROVED: *Richard S. Holzman*

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

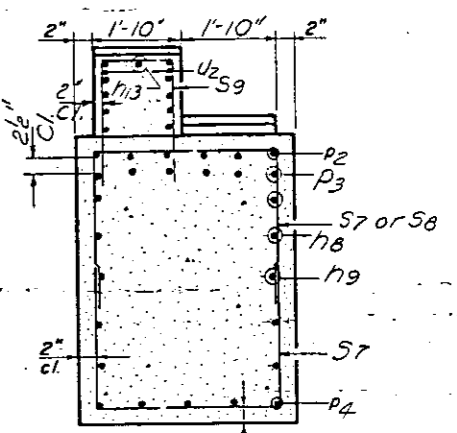
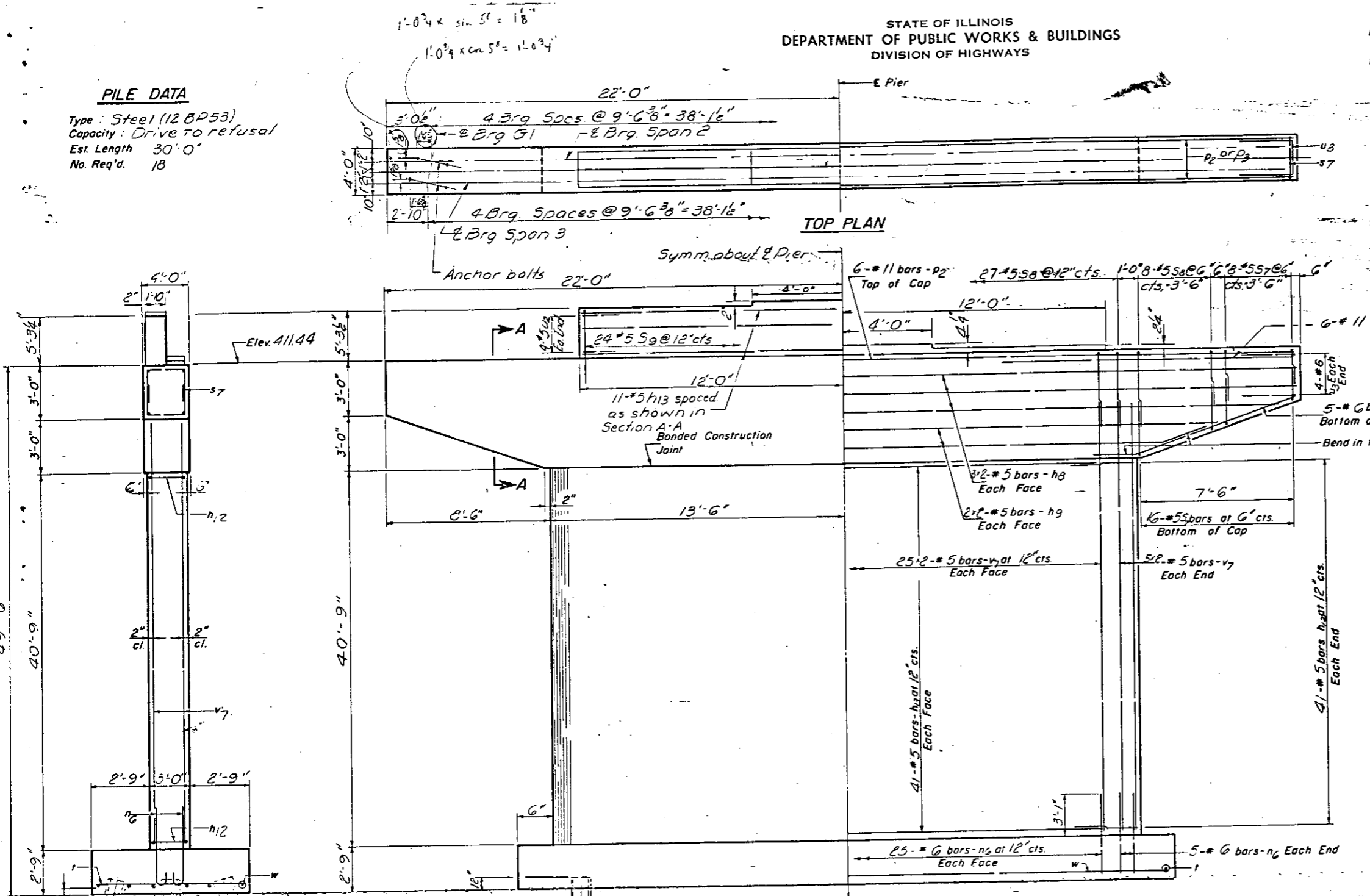
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH	159	77
FED. ROAD DIST. NO. 1		HAZARD	FED. AID PROJECT	

SHEET NO. 16  
27 SHEETS

Note:  
Space reinforcement in cap to miss anchor bolts.  
Minimum bar laps = 24 dia. unless otherwise noted.  
All-edges shall have standard 3/4" chamfers except as noted.  
Four steps monolithically with cap.

**PILE DATA**

Type: Steel (12 BP53)  
Capacity: Drive to refusal  
Est. Length 30'-0"  
No. Req'd. 18



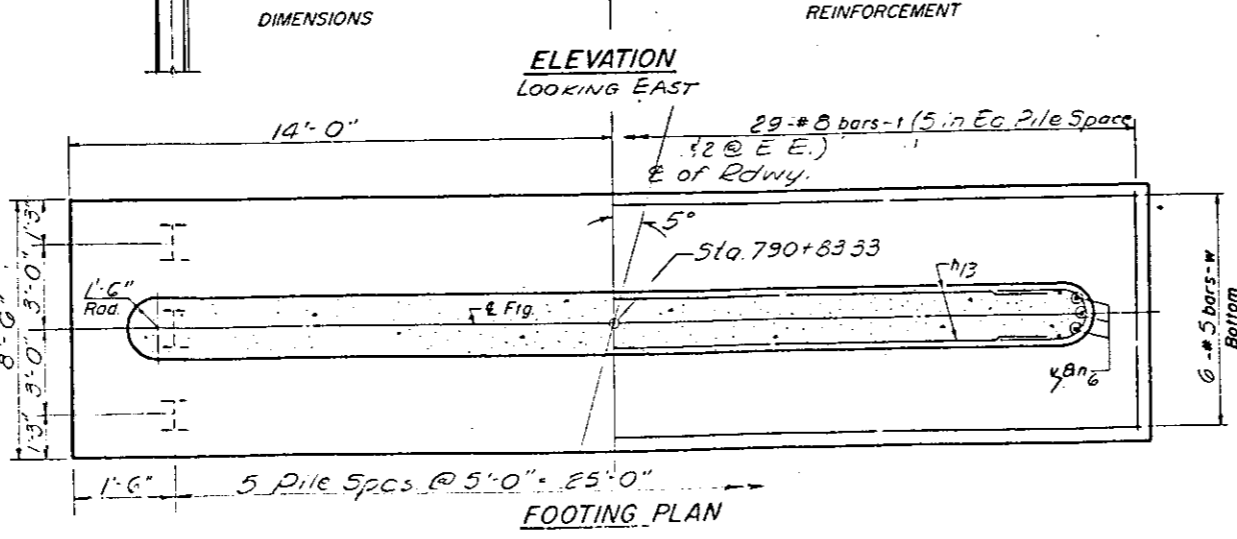
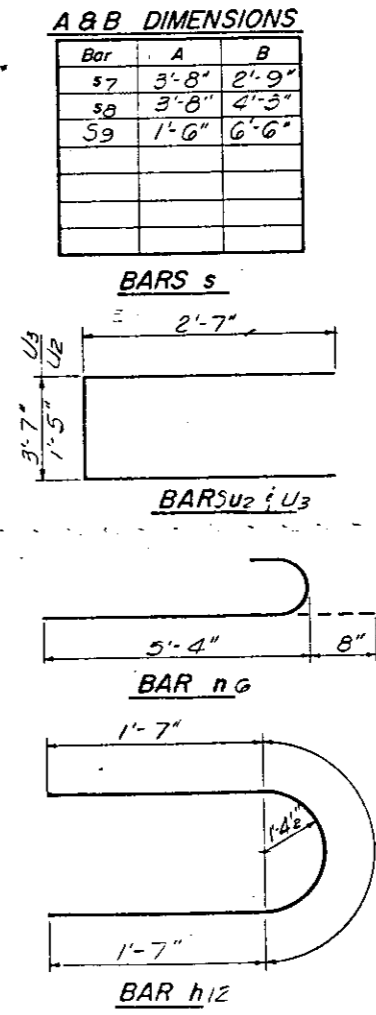
**A & B DIMENSIONS**

Bar	A	B
57	3'-8"	2'-9"
58	3'-8"	4'-3"
59	1'-6"	6'-6"

**PIER 2  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h8	12	#5	22'-6"	—
h9	8	#5	20'-0"	—
h12	82	#5	7'-5"	U
h13	93	#5	23'-8"	—
n6	60	#6	6'-0"	U
P2	6	#11	23'-9"	—
P3	12	#11	14'-0"	—
P4	10	#6	11'-0"	—
s7	48	#5	9'-2"	□
s8	43	#5	12'-2"	□
s9	24	#5	14'-6"	□
u1	29	#8	8'-3"	—
u3	8	#6	8'-9"	—
u2	8	#5	6'-7"	—
v7	120	#5	22'-0"	—
w	6	#5	27'-9"	—

Class X Concrete Cu. Yds. 1830  
Reinforcement Bars Lbs. 11470  
Steel Piles (12BP53) Lin. Ft. 540



DESIGNED: H. Singh  
CHECKED: H. Singh  
DRAWN: G. Ritchie  
EXAMINED: Paul E. Thompson  
PASSED: H. Baumann  
APPROVED: Richard H. Gelsman

Mar 21 1970

**PIER 2**  
S.B.I. RTE. 3 SEC. 73B-1  
RANDOLPH COUNTY  
STA. 793+80.00

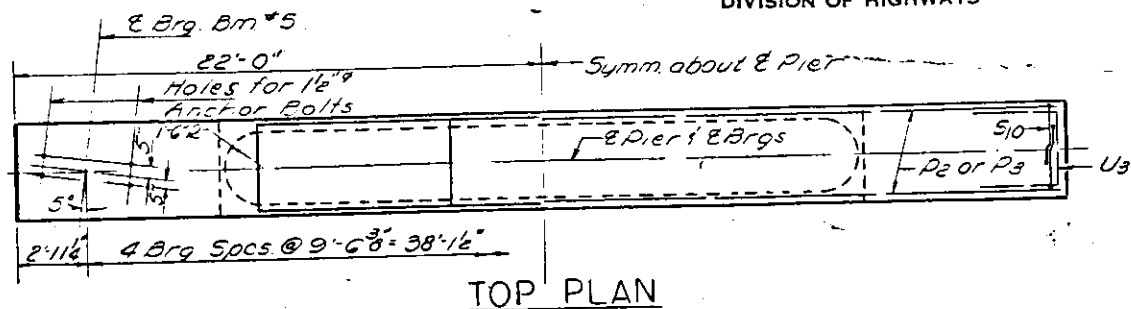
STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH	159	78

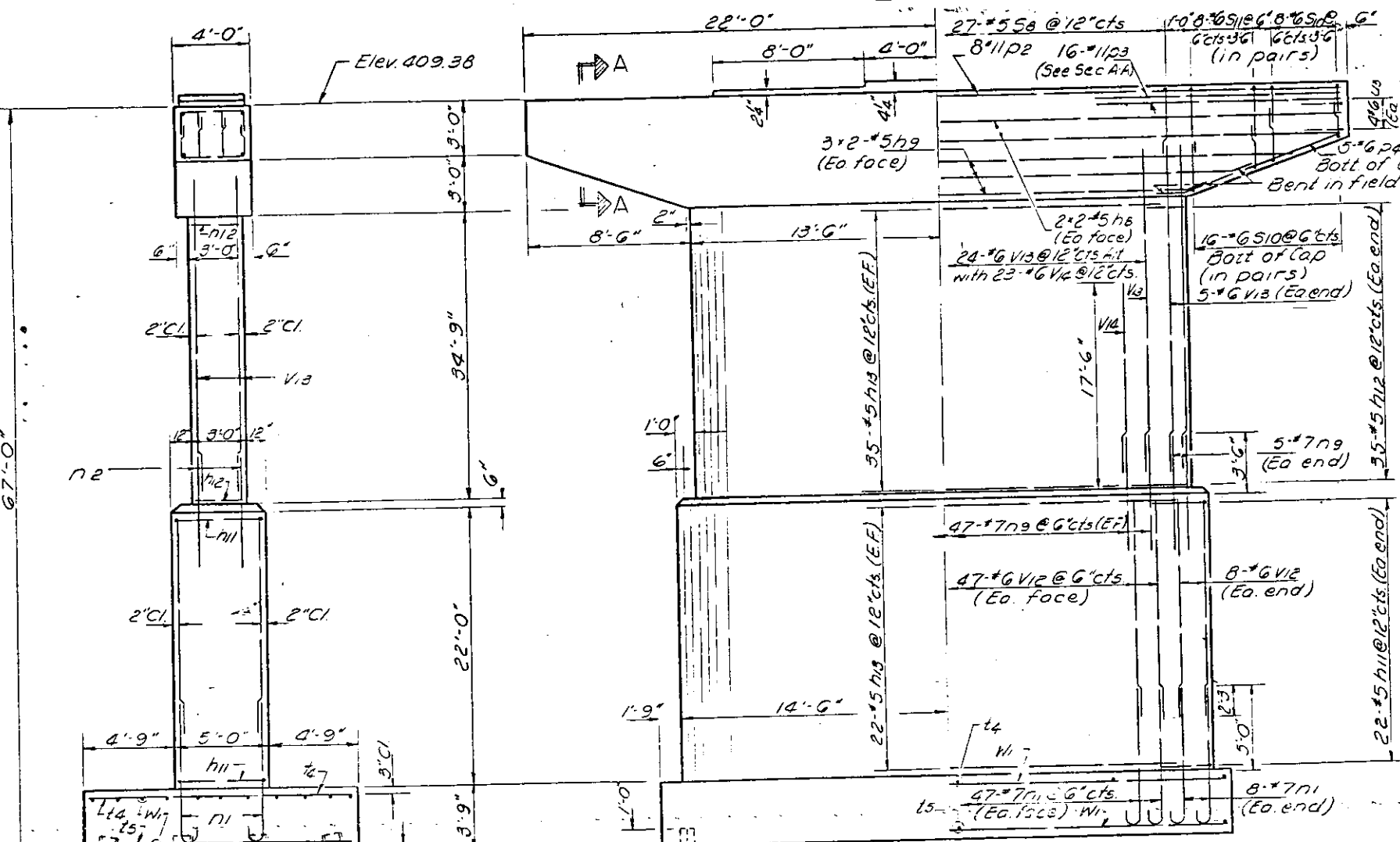
27 SHEETS

PILE DATA

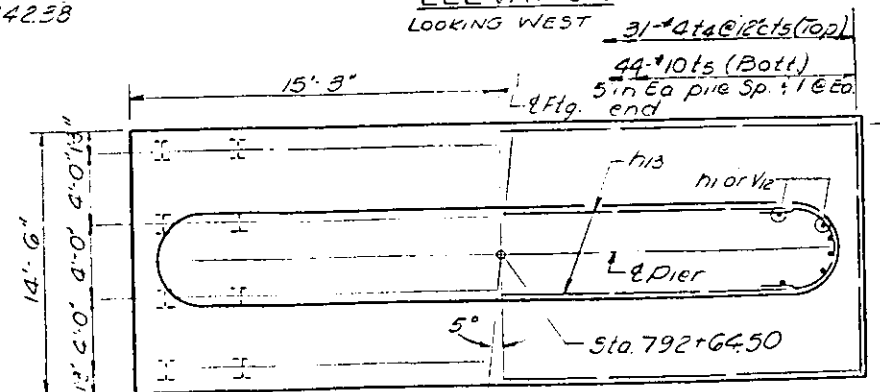
Type: Steel (12BP-53)  
Capacity: Drive to refusal  
Estimated Length: 17'-0"  
No. Required: 35 plus one test pile



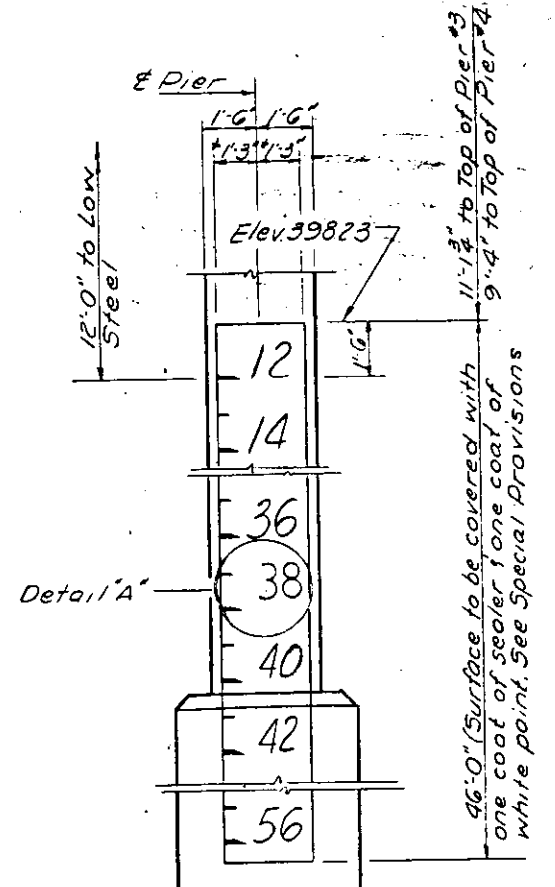
TOP PLAN



ELEVATION



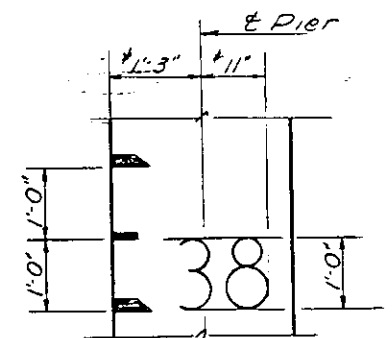
FOOTING PLAN



END VIEW

(Showing Clearance Gage, South End of Pier 3, North End of Pier 4)

Notes: Space reinforcement in cap to miss anchor bolts.  
Minimum bar laps = 24 dia. unless otherwise noted.  
All edges shall have standard 3/4" chamfers except as noted.  
Pour steps monolithically with cap.  
For Sec. A-A, Detail of Bars h11, h12, h13, h14, h15, h16, h17, h18, h19, h20, h21, h22, h23, h24, h25, h26, h27, h28, h29, h30, h31, h32, h33, h34, h35, h36, h37, h38, h39, h40, h41, h42, h43, h44, h45, h46, h47, h48, h49, h50, h51, h52, h53, h54, h55, h56, h57, h58, h59, h60, h61, h62, h63, h64, h65, h66, h67, h68, h69, h70, h71, h72, h73, h74, h75, h76, h77, h78, h79, h80, h81, h82, h83, h84, h85, h86, h87, h88, h89, h90, h91, h92, h93, h94, h95, h96, h97, h98, h99, h100, h101, h102, h103, h104, h105, h106, h107, h108, h109, h110, h111, h112, h113, h114, h115, h116, h117, h118, h119, h120, h121, h122, h123, h124, h125, h126, h127, h128, h129, h130, h131, h132, h133, h134, h135, h136, h137, h138, h139, h140, h141, h142, h143, h144, h145, h146, h147, h148, h149, h150, h151, h152, h153, h154, h155, h156, h157, h158, h159, h160, h161, h162, h163, h164, h165, h166, h167, h168, h169, h170, h171, h172, h173, h174, h175, h176, h177, h178, h179, h180, h181, h182, h183, h184, h185, h186, h187, h188, 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DETAIL 'A'

\* Dimensions shall adjust to allow circular Pier End.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h8	8	#5	22'-6"	—
h9	12	#5	20'-0"	—
h11	44	#5	10'-8"	—
h12	70	#5	7'-5"	—
h13	114	#5	23'-8"	—
h1	110	#7	9'-1"	—
h2	104	#7	6'-0"	—
P2	8	#11	43'-9"	—
P3	32	#11	14'-0"	—
P4	10	#6	11'-0"	—
S8	27	#5	12'-2"	—
S10	96	#6	8'-0"	—
S11	32	#6	11'-0"	—
t4	31	#4	14'-3"	—
t5	44	#10	14'-3"	—
U3	8	#6	8'-9"	—
V12	110	#6	19'-3"	—
V13	58	#6	37'-3"	—
V14	46	#6	17'-0"	—
W1	22	#5	30'-3"	—
Class 1 Concrete		Cu. Yds.	315.8	
Reinforcement Bars		Lbs.	25,430	
Steel Piles (12BP53)		in Ft.	595	
Test Pile (Steel)		Each	1	

DESIGNED: H. J. Smith  
CHECKED: H. J. Smith  
DRAWN: F. Mercado  
CHECKED: H. J. Smith  
EXAMINED: H. J. Smith  
PASSED: H. J. Smith  
APPROVED: H. J. Smith

PIER # 3  
S.B.I. RTE. 3 SEC. 73 B-1  
RANDOLPH COUNTY  
STA. 793+80.00



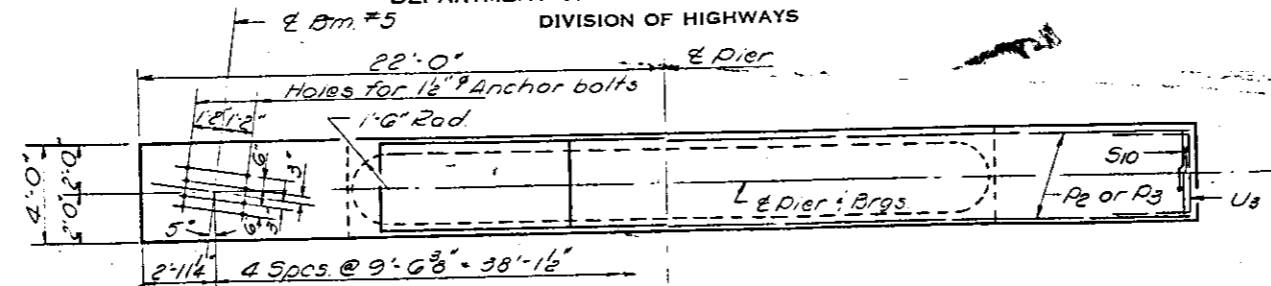
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH	159	79

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

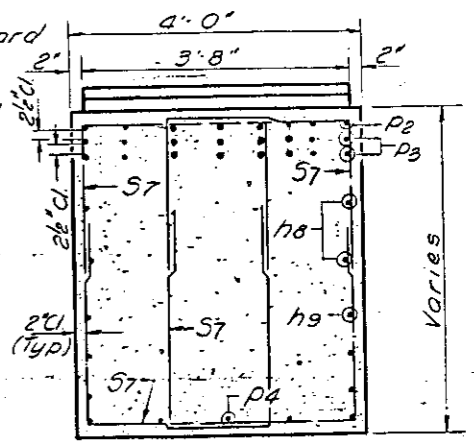
Notes: Space reinforcement in cap to miss anchor bolts.  
Min. bar laps = 24 dia.  
Unless otherwise noted, All edges shall have standard 3/4" chamfers except as noted.  
Pour steps monolithically with cap.

PILE DATA

Type: Steel (12 B.P.53)  
Capacity: Drive to refusal  
Estimated Length: 20'  
No. Required: 49 plus one test pile

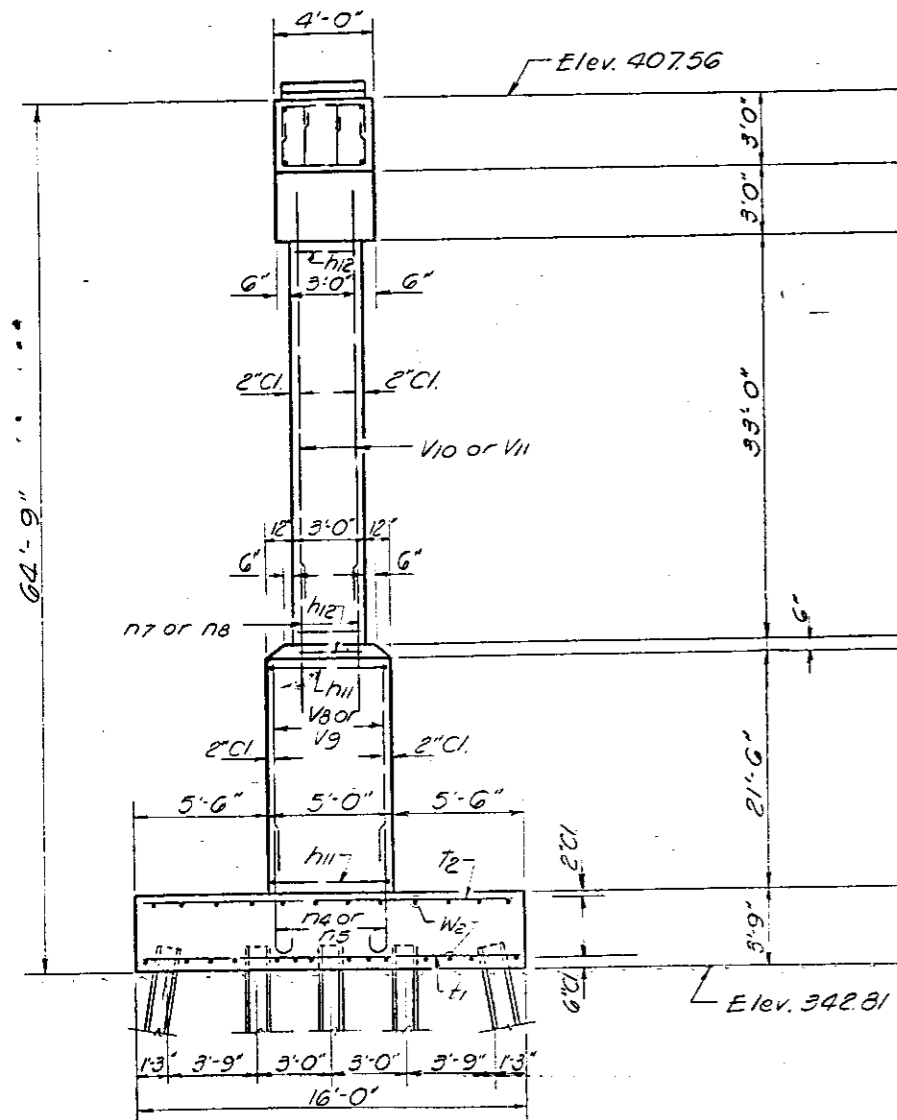


PLAN



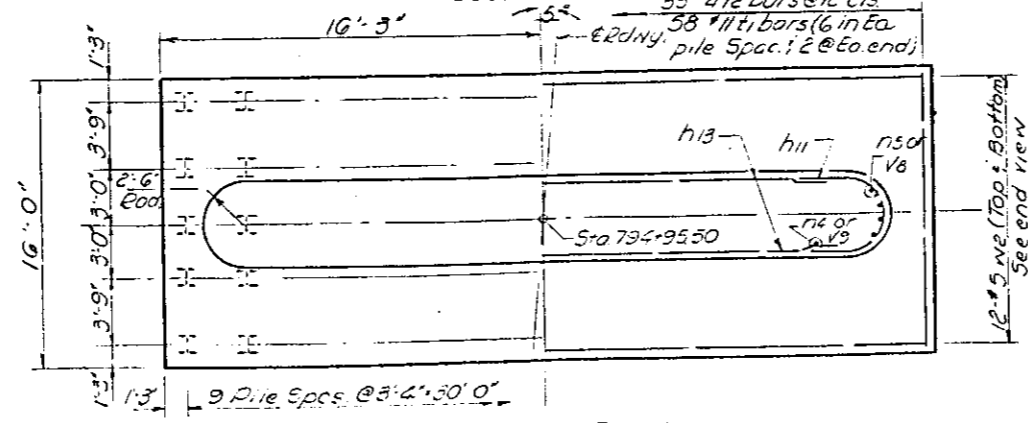
SEC. A-A  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h8	8	#5	22'-6"	—
h9	12	#5	20'-0"	—
h11	42	#5	10'-8"	U
h12	66	#5	7'-5"	U
h13	108	#5	23'-8"	—
n4	48	#8	7'-5"	U
n5	62	#9	10'-6"	U
n7	56	#10	8'-6"	—
n8	48	#9	6'-6"	—
p2	8	#11	43'-9"	—
p3	32	#11	14'-0"	—
p4	10	#6	11'-0"	—
U3	8	#6	8'-9"	□
V8	62	#8	18'-3"	—
V9	48	#7	21'-0"	—
V10	56	#9	32'-9"	—
VII	48	#8	16'-6"	—
WE	24	#5	32'-3"	—
t1	58	#11	15'-9"	—
t2	33	#2	15'-9"	—
U3	8	#6	8'-9"	□
V8	62	#8	18'-3"	—
V9	48	#7	21'-0"	—
V10	56	#9	32'-9"	—
VII	48	#8	16'-6"	—
WE	24	#5	32'-3"	—
Class I Concrete			Cu. Yds.	3225
Reinforcement Bars			Lbs.	36,350
Steel Piles (12 B.P.53)			Lin. Ft.	980
Test Piles (Steel)			Each	1

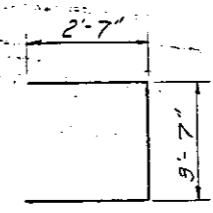


ELEVATION

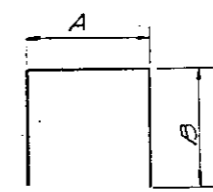
LOOKING WEST  
33 #4 te bars @ 12' cts.  
58 #11 ti bars (6 in Ea. end) pile Spac. 12' @ Ea. end



FOOTING PLAN

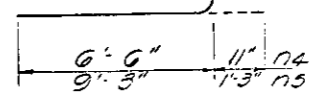


Bar U3

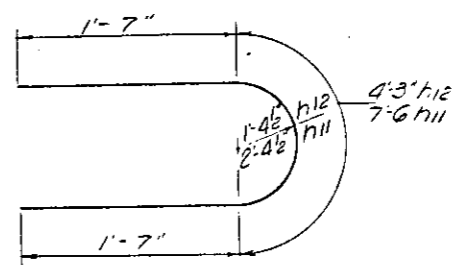


BARS 5

	A	B
S8	3'-8"	4'-3"
S10	2'-6"	2'-9"
S11	2'-6"	4'-3"



BARS n4/n5



BARS h11/h12

DESIGNED	J. L. Sing L.
CHECKED	M. J. ...
DRAWN	F. Mercado
CHECKED	...

EXAMINED	...
PASSED	J. G. Baumann
APPROVED	Richard H. Holterman

PIER # 4  
SBI RTE 3 SEC. 73B-1  
RANDOLPH COUNTY  
STA 793+80.00



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

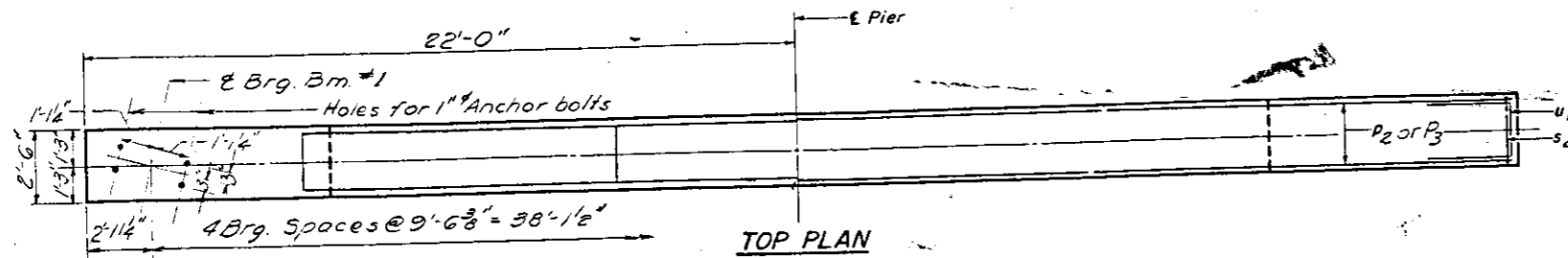
ROUTE NO.	SECTION	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH 159	81
PER. ROAD DIST. NO. 1		ILLINOIS	PER. AID PROJECT

SHEET NO. 27

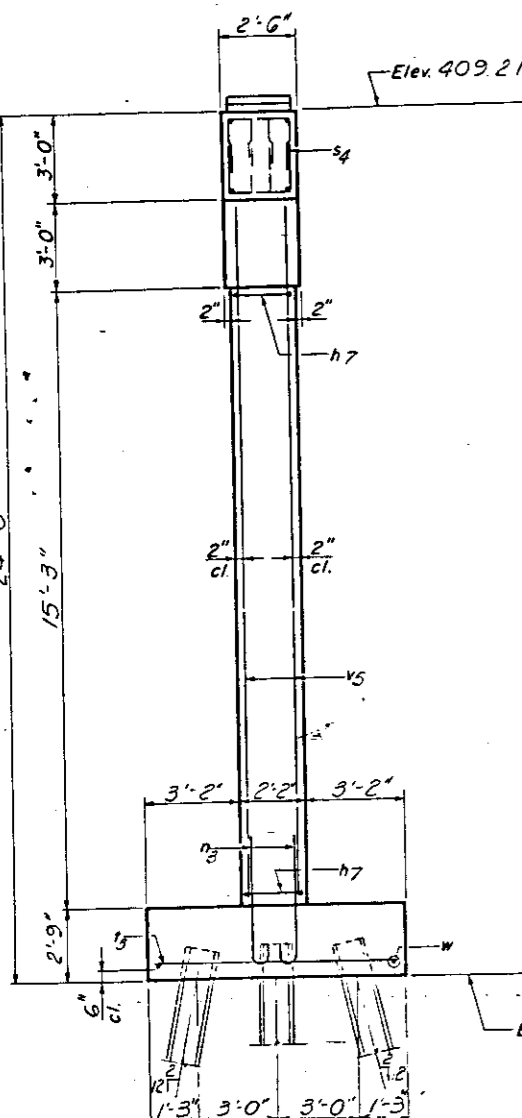
Note:  
Space reinforcement in cap to miss anchor bolts.  
Minimum bar laps = 24 dia. unless otherwise noted.  
All edges shall have standard 3/4" chamfers except as noted.  
Four steps monolithically with cap.

**PILE DATA**

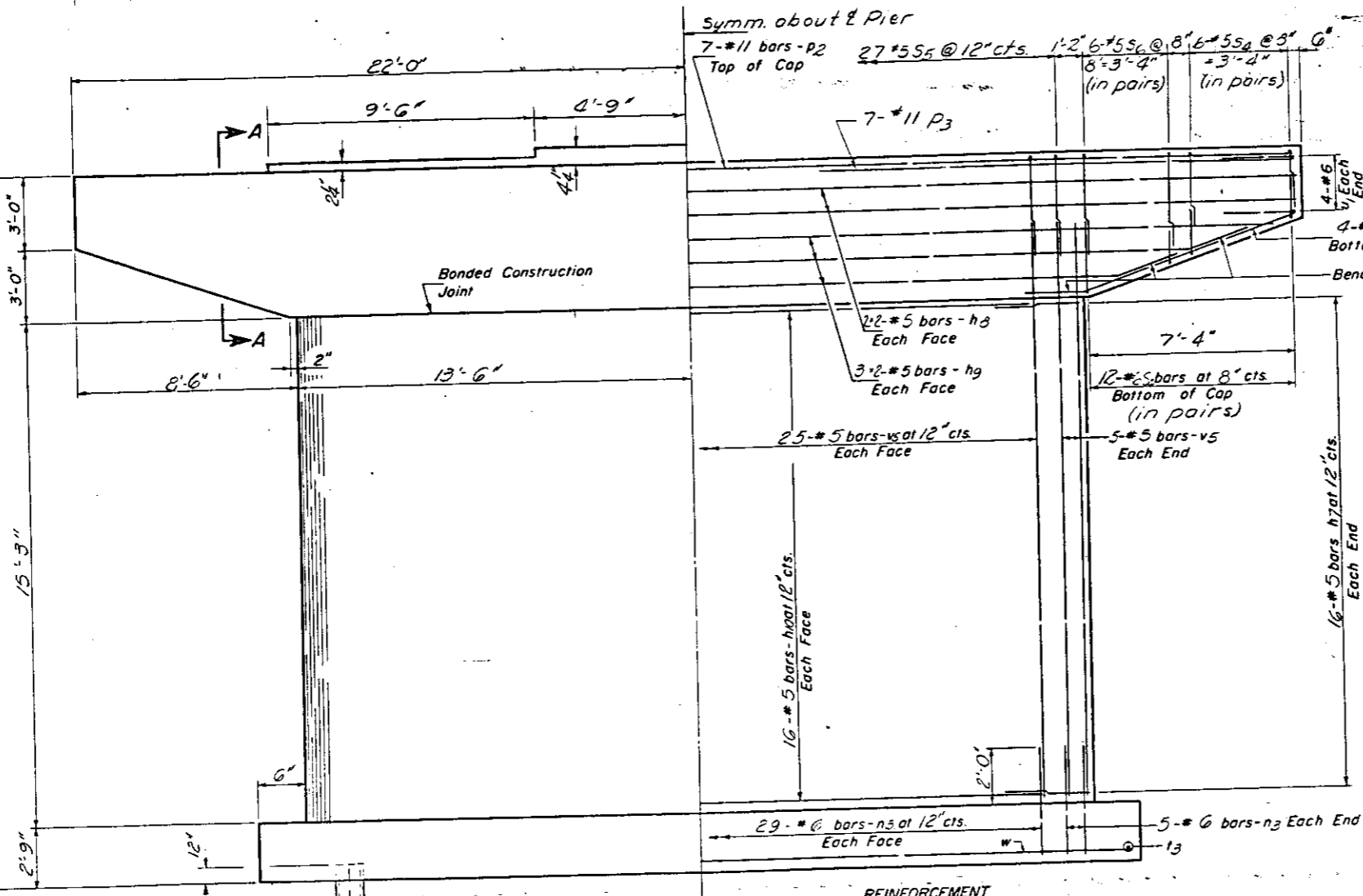
Type Steel (12BP53)  
Capacity Drive to refusal  
Est. Length 80 Ft.  
No. Req'd. 18



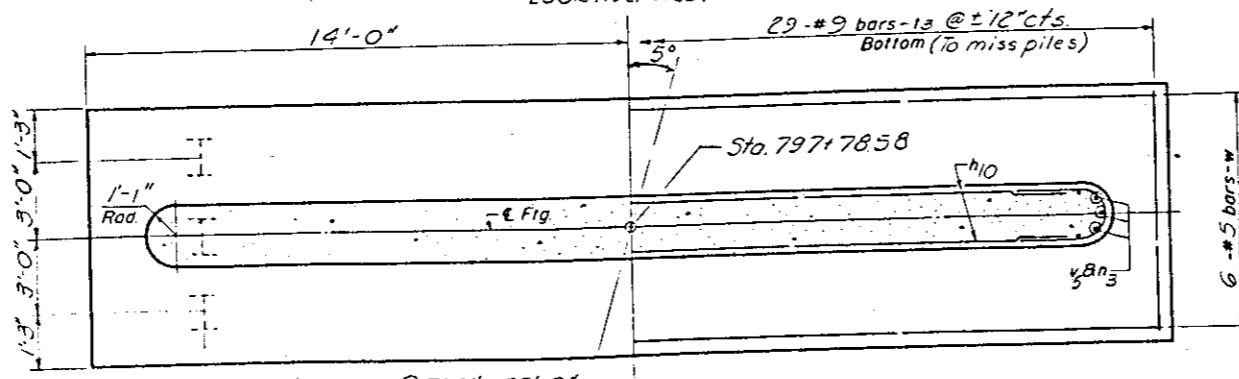
TOP PLAN



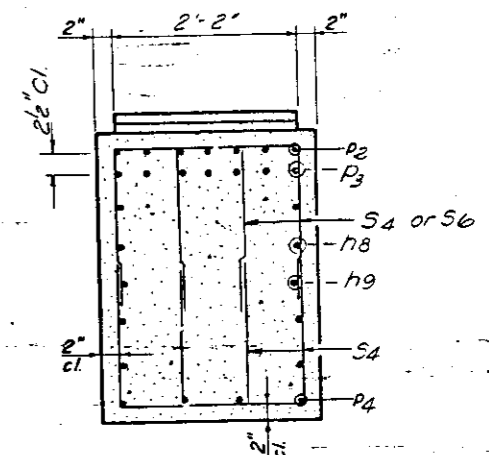
END VIEW



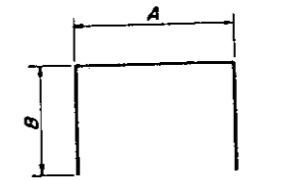
ELEVATION  
LOOKING WEST



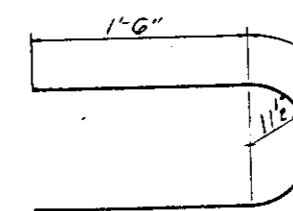
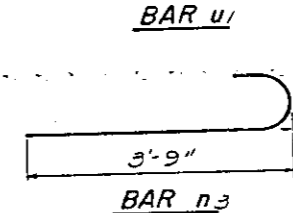
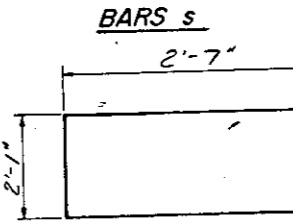
FOOTING PLAN



SECTION A-A



Bar	A	B
S4	1'-6"	2'-9"
S5	2'-2"	4'-6"
S6	1'-6"	4'-6"



**PIER #6  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h7	32	#5	6'-0"	U
h8	8	#5	22'-6"	—
h9	12	#5	20'-0"	—
h10	32	#5	24'-6"	—
n3	60	#6	4'-5"	U
P2	7	#11	43'-9"	—
P3	14	#11	14'-0"	—
P4	8	#6	11'-0"	—
S4	72	#5	7'-0"	U
S5	27	#5	11'-2"	U
S6	24	#5	10'-6"	U
u1	8	#6	7'-3"	U
v5	60	#5	18'-0"	—
w	6	#5	27'-9"	—
Class X Concrete			Cu. Yds.	79.2
Reinforcement Bars			Lbs.	7960
Steel Piles (12BP53)			Lbs.	1440

**PIER #6**

SBI RTE. 3 SEC. 73B-1  
RANDOLPH COUNTY  
STA 795+80.00

DESIGNED *Harold Singh*  
CHECKED *H. O. Miller*  
DRAWN *G. Ritchie*  
CHECKED *H. O. Miller*

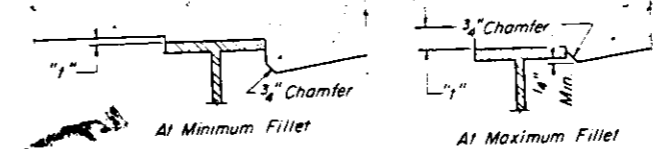
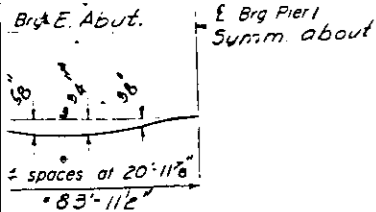
EXAMINED *Carl E. Therman*  
PASSED *J. E. Bauman*  
APPROVED *Richard H. Therman*

Mar 24 1970





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



To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "f" above top flange of beams.

DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)  
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below

Bm. #1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	78913.492	15.000	424.507	424.507
& Brg. E. Abut.	78915.412	15.000	424.481	424.481
A	78925.912	15.000	424.391	424.477
B	78925.912	15.000	424.361	424.352
C	78945.912	15.000	424.211	424.267
D	78945.912	15.000	424.120	424.195
E	78965.912	15.000	424.030	424.079
F	78965.912	15.000	423.939	423.973
G	78985.912	15.000	423.848	423.867
H	78985.912	15.000	423.756	423.762
& Brg. Pier 1	78999.872	15.000	423.720	423.720
I	79009.872	15.000	423.629	423.643
J	79019.872	15.000	423.536	423.565
K	79029.872	15.000	423.444	423.448
L	79039.872	15.000	423.352	423.410
M	79049.872	15.000	423.259	423.317
N	79059.872	15.000	423.167	423.221
O	79069.872	15.000	423.074	423.109
P	79079.872	15.000	422.980	422.991
& Brg. Pier 2	79083.832	15.000	422.947	422.943

Bm. #3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	78911.830	0.0	424.850	424.850
& Brg. E. Abut.	78914.250	0.0	424.829	424.829
A	78924.250	0.0	424.739	424.764
B	78934.250	0.0	424.649	424.700
C	78944.250	0.0	424.559	424.615
D	78954.250	0.0	424.468	424.524
E	78964.250	0.0	424.377	424.432
F	78974.250	0.0	424.287	424.341
G	78984.250	0.0	424.196	424.251
H	78994.250	0.0	424.104	424.110
& Brg. Pier 1	78999.210	0.0	424.068	424.068
I	79008.210	0.0	423.922	423.941
J	79018.210	0.0	423.844	423.836
K	79028.210	0.0	423.762	423.836
L	79038.210	0.0	423.700	423.758
M	79048.210	0.0	423.608	423.666
N	79058.210	0.0	423.515	423.564
O	79068.210	0.0	423.422	423.457
P	79078.210	0.0	423.329	423.339
& Brg. Pier 2	79083.170	0.0	423.262	423.262

Bm. #4

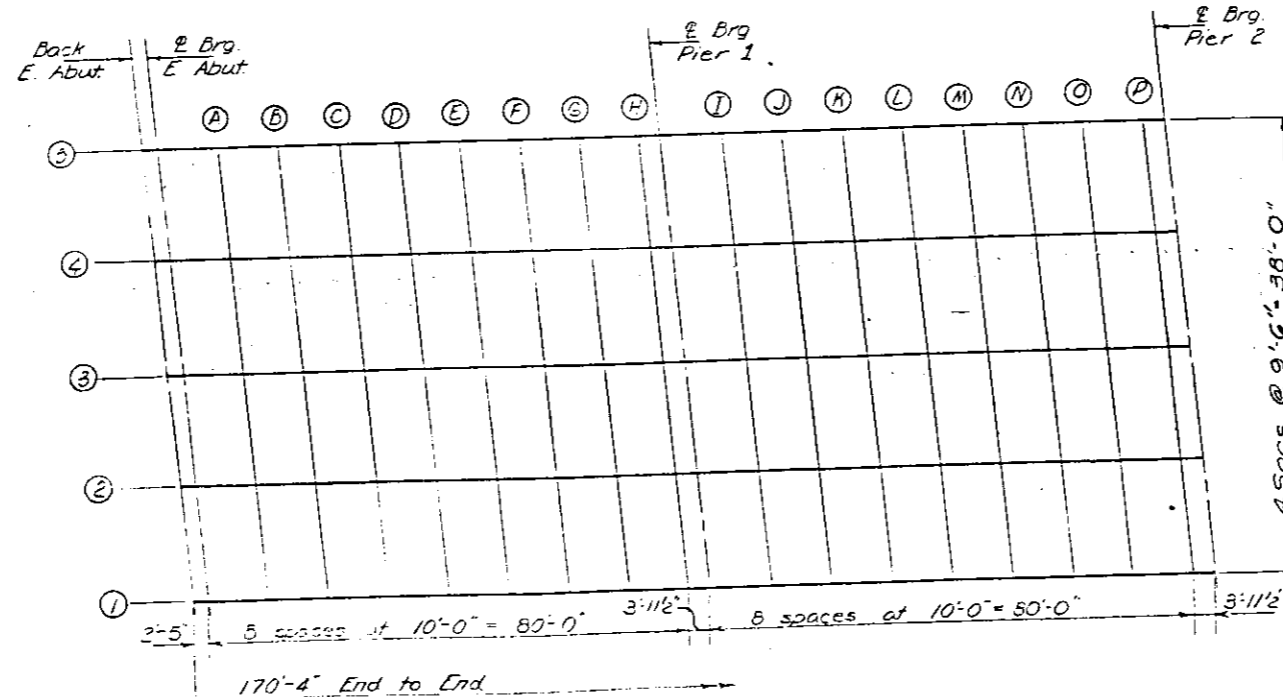
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	78910.599	-9.500	424.710	424.710
& Brg. E. Abut.	78912.419	-9.500	424.698	424.698
A	78923.419	-9.500	424.598	424.624
B	78933.419	-9.500	424.508	424.559
C	78943.419	-9.500	424.418	424.474
D	78953.419	-9.500	424.327	424.388
E	78963.419	-9.500	424.237	424.296
F	78973.419	-9.500	424.146	424.180
G	78983.419	-9.500	424.055	424.075
H	78993.419	-9.500	423.964	423.969
& Brg. Pier 1	78997.379	-9.500	423.927	423.927
I	79007.379	-9.500	423.836	423.850
J	79017.379	-9.500	423.744	423.772
K	79027.379	-9.500	423.652	423.695
L	79037.379	-9.500	423.560	423.614
M	79047.379	-9.500	423.467	423.525
N	79057.379	-9.500	423.374	423.429
O	79067.379	-9.500	423.281	423.317
P	79077.379	-9.500	423.188	423.178
& Brg. Pier 2	79081.339	-9.500	423.151	423.151

Bm. #5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	78910.168	-14.000	424.532	424.532
& Brg. E. Abut.	78912.588	-14.000	424.511	424.511
A	78922.588	-14.000	424.421	424.446
B	78932.588	-14.000	424.331	424.342
C	78942.588	-14.000	424.241	424.297
D	78952.588	-14.000	424.150	424.211
E	78962.588	-14.000	424.060	424.109
F	78972.588	-14.000	423.969	424.033
G	78982.588	-14.000	423.878	423.898
H	78992.588	-14.000	423.787	423.792
& Brg. Pier 1	78996.548	-14.000	423.750	423.750
I	79006.548	-14.000	423.659	423.673
J	79016.548	-14.000	423.567	423.596
K	79026.548	-14.000	423.475	423.518
L	79036.548	-14.000	423.383	423.441
M	79046.548	-14.000	423.290	423.348
N	79056.548	-14.000	423.198	423.252
O	79066.548	-14.000	423.105	423.140
P	79076.548	-14.000	423.011	423.022
& Brg. Pier 2	79080.508	-14.000	422.975	422.975

Bm. #2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	78912.661	9.500	424.695	424.695
& Brg. E. Abut.	78915.081	9.500	424.673	424.673
A	78925.081	9.500	424.583	424.609
B	78935.081	9.500	424.493	424.544
C	78945.081	9.500	424.403	424.459
D	78955.081	9.500	424.312	424.371
E	78965.081	9.500	424.222	424.271
F	78975.081	9.500	424.131	424.164
G	78985.081	9.500	424.040	424.060
H	78995.081	9.500	423.948	423.954
& Brg. Pier 1	78999.041	9.500	423.912	423.912
I	79009.041	9.500	423.820	423.835
J	79019.041	9.500	423.729	423.757
K	79029.041	9.500	423.637	423.680
L	79039.041	9.500	423.544	423.602
M	79049.041	9.500	423.452	423.510
N	79059.041	9.500	423.359	423.413
O	79069.041	9.500	423.266	423.321
P	79079.041	9.500	423.173	423.189
& Brg. Pier 2	79083.001	9.500	423.136	423.136



PLAN

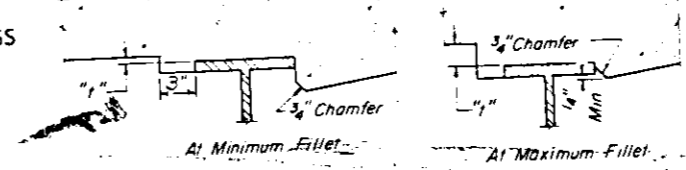
SPANS 1 & 2  
TOP OF SLAB ELEVATIONS  
SBI RT 3 SEC 73B-1  
RANDOLPH COUNTY  
STA. 793+80.00

DESIGNED: Harsh Singh  
CHECKED: H. Miller  
DRAWN: C.E. WILKINS  
EXAMINED: Paul E. ...  
PASSED: H.E. Bauman  
APPROVED: Richard H. ...

Mar 24 1970

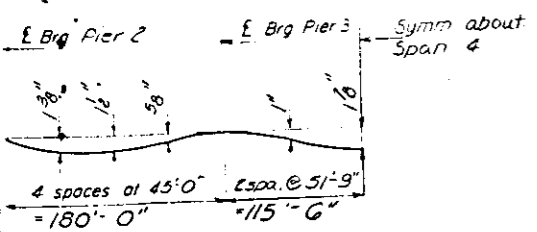
E-5 8-1-65

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



To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "f" above top flange of beams.

FILLET HEIGHTS



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)  
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below

Bm. #1				
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. Pier 2				
A	79086.162	19.000	422.922	422.922
B	79096.162	19.000	422.828	422.853
C	79106.162	19.000	422.734	422.744
D	79116.162	19.000	422.640	422.715
E	79126.162	19.000	422.546	422.666
F	79136.162	19.000	422.452	422.565
G	79146.162	19.000	422.357	422.473
H	79156.162	19.000	422.262	422.330
I	79166.162	19.000	422.167	422.267
J	79176.162	19.000	422.072	422.194
K	79186.162	19.000	421.977	422.101
L	79196.162	19.000	421.881	421.966
M	79206.162	19.000	421.785	421.857
N	79216.162	19.000	421.689	421.744
O	79226.162	19.000	421.592	421.634
P	79236.162	19.000	421.495	421.527
Q	79246.162	19.000	421.399	421.420
R	79256.162	19.000	421.302	421.312
E Brg. Pier 3				
R	79276.162	19.000	421.204	421.204
S	79286.162	19.000	421.107	421.121
T	79296.162	19.000	421.009	421.034
U	79306.162	19.000	420.911	420.944
V	79316.162	19.000	420.813	420.870
W	79326.162	19.000	420.715	420.786
X	79336.162	19.000	420.616	420.701
Y	79346.162	19.000	420.517	420.616
Z	79356.162	19.000	420.418	420.530
AA	79366.162	19.000	420.319	420.444
BB	79376.162	19.000	420.219	420.357
CC	79386.162	19.000	420.120	420.270
DD	79396.162	19.000	420.020	420.172
EE	79406.162	19.000	419.920	420.058
FF	79416.162	19.000	419.819	419.945
GG	79426.162	19.000	419.719	419.832
HH	79436.162	19.000	419.618	419.718
II	79446.162	19.000	419.517	419.604
JJ	79456.162	19.000	419.416	419.489
KK	79466.162	19.000	419.314	419.375
LL	79476.162	19.000	419.213	419.257
MM	79486.162	19.000	419.111	419.141
NN	79496.162	19.000	419.009	419.025
E Brg. Pier 4				
OO	79507.162	19.000	418.906	418.906
PP	79517.162	19.000	418.794	418.874
QQ	79527.162	19.000	418.681	418.822
RR	79537.162	19.000	418.568	418.767
SS	79547.162	19.000	418.455	418.707
TT	79557.162	19.000	418.341	418.643
UU	79567.162	19.000	418.227	418.574
VV	79577.162	19.000	418.114	418.500
WW	79587.162	19.000	417.999	418.422
XX	79597.162	19.000	417.885	418.340
YY	79607.162	19.000	417.769	418.254
ZZ	79617.162	19.000	417.654	418.164
1	79627.162	19.000	417.538	418.070
2	79637.162	19.000	417.422	417.972
3	79647.162	19.000	417.306	417.870
4	79657.162	19.000	417.189	417.764
5	79667.162	19.000	417.072	417.654
E Brg. Pier 5				
	79677.162	19.000	417.017	417.517

Bm. #2				
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. Pier 2				
A	79085.331	9.500	423.114	423.114
B	79095.331	9.500	423.021	423.046
C	79105.331	9.500	422.927	422.977
D	79115.331	9.500	422.833	422.927
E	79125.331	9.500	422.739	422.878
F	79135.331	9.500	422.644	422.828
G	79145.331	9.500	422.550	422.778
H	79155.331	9.500	422.455	422.727
I	79165.331	9.500	422.360	422.677
J	79175.331	9.500	422.264	422.627
K	79185.331	9.500	422.169	422.577
L	79195.331	9.500	422.073	422.527
M	79205.331	9.500	421.977	422.477
N	79215.331	9.500	421.881	422.427
O	79225.331	9.500	421.785	422.377
P	79235.331	9.500	421.689	422.327
Q	79245.331	9.500	421.593	422.277
R	79255.331	9.500	421.497	422.227
E Brg. Pier 3				
R	79275.331	9.500	421.397	421.397
S	79285.331	9.500	421.295	421.314
T	79295.331	9.500	421.194	421.230
U	79305.331	9.500	421.092	421.147
V	79315.331	9.500	420.990	421.063
W	79325.331	9.500	420.888	420.979
X	79335.331	9.500	420.786	420.894
Y	79345.331	9.500	420.684	420.809
Z	79355.331	9.500	420.582	420.724
AA	79365.331	9.500	420.480	420.639
BB	79375.331	9.500	420.378	420.554
CC	79385.331	9.500	420.276	420.469
DD	79395.331	9.500	420.174	420.384
EE	79405.331	9.500	420.072	420.299
FF	79415.331	9.500	419.970	420.214
GG	79425.331	9.500	419.868	420.129
HH	79435.331	9.500	419.766	420.044
II	79445.331	9.500	419.664	419.959
JJ	79455.331	9.500	419.562	419.874
KK	79465.331	9.500	419.460	419.789
LL	79475.331	9.500	419.358	419.704
MM	79485.331	9.500	419.256	419.619
NN	79495.331	9.500	419.154	419.534
E Brg. Pier 4				
OO	79515.331	9.500	419.052	419.449
PP	79525.331	9.500	418.950	419.364
QQ	79535.331	9.500	418.848	419.279
RR	79545.331	9.500	418.746	419.194
SS	79555.331	9.500	418.644	419.109
TT	79565.331	9.500	418.542	419.024
UU	79575.331	9.500	418.440	418.939
VV	79585.331	9.500	418.338	418.854
WW	79595.331	9.500	418.236	418.769
XX	79605.331	9.500	418.134	418.684
YY	79615.331	9.500	418.032	418.599
ZZ	79625.331	9.500	417.930	418.514
1	79635.331	9.500	417.828	418.429
2	79645.331	9.500	417.726	418.344
3	79655.331	9.500	417.624	418.259
4	79665.331	9.500	417.522	418.174
5	79675.331	9.500	417.420	418.089
E Brg. Pier 5				
	79685.331	9.500	417.318	418.004

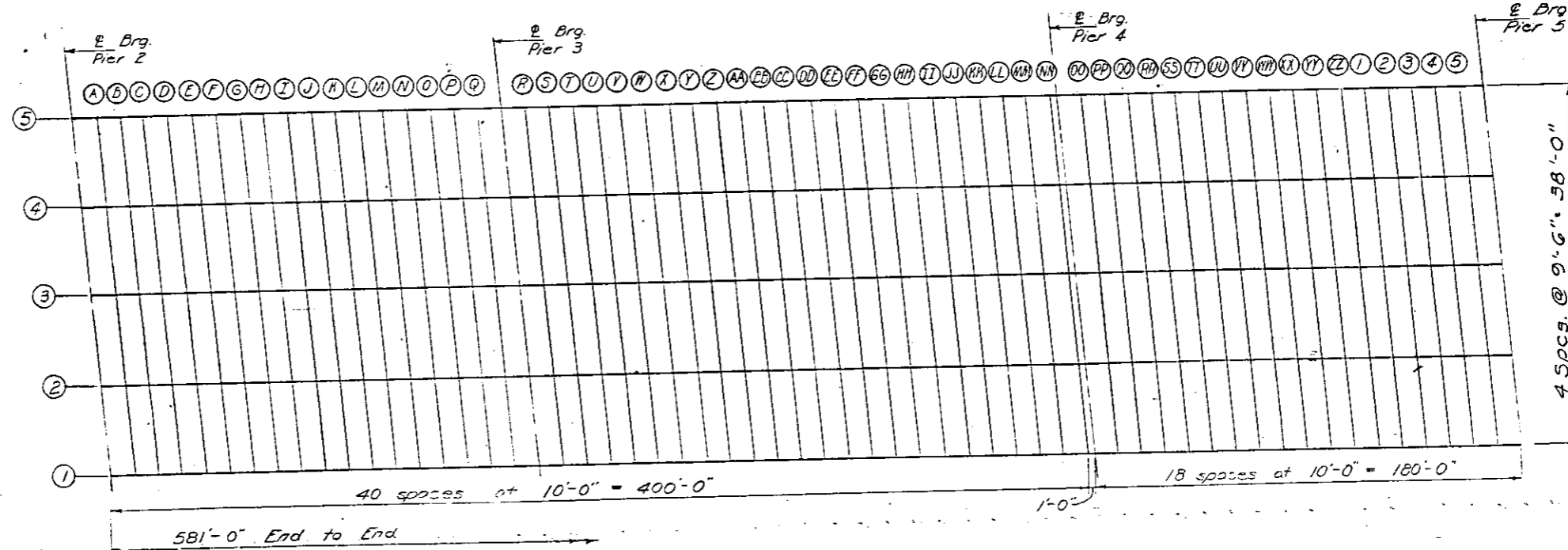
Bm. #3				
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. Pier 2				
A	79084.500	0.0	423.270	423.270
B	79094.500	0.0	423.177	423.222
C	79104.500	0.0	423.083	423.133
D	79114.500	0.0	422.989	423.064
E	79124.500	0.0	422.895	422.995
F	79134.500	0.0	422.800	422.926
G	79144.500	0.0	422.706	422.857
H	79154.500	0.0	422.611	422.788
I	79164.500	0.0	422.517	422.719
J	79174.500	0.0	422.422	422.650
K	79184.500	0.0	422.328	422.581
L	79194.500	0.0	422.233	422.512
M	79204.500	0.0	422.139	422.443
N	79214.500	0.0	422.044	422.374
O	79224.500	0.0	421.949	422.305
P	79234.500	0.0	421.854	422.236
Q	79244.500	0.0	421.759	422.167
R	79254.500	0.0	421.664	422.098
E Brg. Pier 3				
R	79264.500	0.0	421.569	421.569
S	79274.500	0.0	421.466	421.470
T	79284.500	0.0	421.363	421.387
U	79294.500	0.0	421.260	421.303
V	79304.500	0.0	421.157	421.219
W	79314.500	0.0	421.054	421.135
X	79324.500	0.0	420.951	421.051
Y	79334.500	0.0	420.848	420.967
Z	79344.500	0.0	420.745	420.883
AA	79354.500	0.0	420.642	420.799
BB	79364.500	0.0	420.539	420.715
CC	79374.500	0.0	420.436	420.631
DD	79384.500	0.0	420.333	420.547
EE	79394.500	0.0	420.230	420.463
FF	79404.500	0.0	420.127	420.379
GG	79414.500	0.0	420.024	420.295
HH	79424.500	0.0	419.921	420.211
II	79434.500	0.0	419.818	420.127
JJ	79444.500	0.0	419.715	420.043
KK	79454.500	0.0	419.612	419.959
LL	79464.500	0.0	419.509	419.875
MM	79474.500	0.0	419.406	419.791
NN	79484.500	0.0	419.303	419.707
OO	79494.500	0.0	419.200	419.623
PP	79504.500	0.0	419.097	419.539
QQ	79514.500	0.0	418.994	419.455
RR	79524.500	0.0	418.891	419.371
SS	79534.500	0.0	418.788	419.287
TT	79544.500	0.0	418.685	419.203
UU	79554.500	0.0	418.582	419.119
VV	79564.500	0.0	418.479	419.035
WW	79574.500	0.0	418.376	418.951
XX	79584.500	0.0	418.273	418.867
YY	79594.500	0.0	418.170	418.783
ZZ	79604.500	0.0	418.067	418.699
1	79614.500	0.0	417.964	418.615
2				



DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

Bm. #5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. Pier 2	79082.838	-19.000	422.953	422.953
A	79082.838	-19.000	422.859	422.854
B	79102.838	-19.000	422.766	422.816
C	79112.838	-19.000	422.672	422.747
D	79122.838	-19.000	422.578	422.678
E	79132.838	-19.000	422.483	422.597
F	79142.838	-19.000	422.389	422.524
G	79152.838	-19.000	422.294	422.411
H	79162.838	-19.000	422.199	422.318
I	79172.838	-19.000	422.104	422.225
J	79182.838	-19.000	422.008	422.113
K	79192.838	-19.000	421.912	422.001
L	79202.838	-19.000	421.817	421.889
M	79212.838	-19.000	421.720	421.776
N	79222.838	-19.000	421.624	421.656
O	79232.838	-19.000	421.528	421.539
P	79242.838	-19.000	421.431	421.452
Q	79252.838	-19.000	421.334	421.344
E Brg. Pier 3	79262.838	-19.000	421.237	421.237
R	79272.838	-19.000	421.139	421.153
S	79282.838	-19.000	421.042	421.070
T	79292.838	-19.000	420.944	420.987
U	79302.838	-19.000	420.846	420.893
V	79312.838	-19.000	420.747	420.810
W	79322.838	-19.000	420.648	420.734
X	79332.838	-19.000	420.550	420.648
Y	79342.838	-19.000	420.451	420.562
Z	79352.838	-19.000	420.352	420.476
AA	79362.838	-19.000	420.253	420.390
BB	79372.838	-19.000	420.153	420.303
CC	79382.838	-19.000	420.053	420.205
DD	79392.838	-19.000	419.953	420.092
EE	79402.838	-19.000	419.853	419.978
FF	79412.838	-19.000	419.752	419.865
GG	79422.838	-19.000	419.652	419.751
HH	79432.838	-19.000	419.551	419.637
II	79442.838	-19.000	419.450	419.522
JJ	79452.838	-19.000	419.348	419.407
KK	79462.838	-19.000	419.247	419.291
LL	79472.838	-19.000	419.145	419.175
MM	79482.838	-19.000	419.043	419.058
NN	79492.838	-19.000	418.941	418.947
E Brg. Pier 4	79493.838	-19.000	418.930	418.930
OO	79503.838	-19.000	418.828	418.838
PP	79513.838	-19.000	418.725	418.746
QQ	79523.838	-19.000	418.622	418.654
RR	79533.838	-19.000	418.519	418.561
SS	79543.838	-19.000	418.416	418.472
TT	79553.838	-19.000	418.312	418.394
UU	79563.838	-19.000	418.208	418.297
VV	79573.838	-19.000	418.104	418.210
WW	79583.838	-19.000	418.000	418.122
XX	79593.838	-19.000	417.896	418.035
YY	79603.838	-19.000	417.791	417.939
ZZ	79613.838	-19.000	417.686	417.862
1	79623.838	-19.000	417.581	417.795
2	79633.838	-19.000	417.476	417.736
3	79643.838	-19.000	417.370	417.684
4	79653.838	-19.000	417.264	417.634
5	79663.838	-19.000	417.159	417.584
E Brg. Pier 5	79673.838	-19.000	417.052	417.052



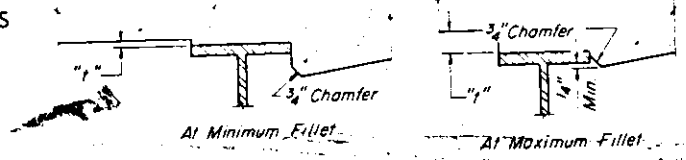
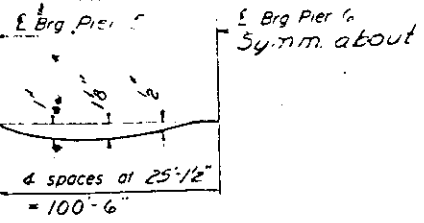
PLAN

SIGNED Harold Singler  
 EXAMINED Carl E. Johnson  
 CHECKED C. E. Wilkins  
 PASSED H. E. Bauman  
 DRAWN Richard H. Holtzman

Mar 24 1970

SPANS 3, 4 & 5  
 TOP OF SLAB ELEVATIONS  
 S.B.I. RT. 3 SEC. 73B-1  
 RANDOLPH COUNTY  
 STA. 793+80.00

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



To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "f" above top flange of beams.

DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)  
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.

Bm. #1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. Pier 5	79679.492	19.000	416.992	416.992
A	79689.492	19.000	416.886	416.886
B	79699.492	19.000	416.779	416.849
C	79709.492	19.000	416.672	416.751
D	79719.492	19.000	416.565	416.659
E	79729.492	19.000	416.457	416.556
F	79739.492	19.000	416.350	416.427
G	79749.492	19.000	416.242	416.256
H	79759.492	19.000	416.134	416.157
I	79769.492	19.000	416.025	416.043
J	79779.492	19.000	415.917	415.919
E Brg. Pier 6	79780.242	19.000	415.909	415.909
K	79791.242	19.000	415.800	415.816
L	79800.242	19.000	415.691	415.724
M	79810.242	19.000	415.562	415.634
N	79820.242	19.000	415.473	415.542
O	79830.242	19.000	415.363	415.461
P	79840.242	19.000	415.253	415.374
Q	79850.242	19.000	415.143	415.232
R	79860.242	19.000	415.033	415.104
S	79870.242	19.000	414.922	414.959
T	79880.242	19.000	414.812	414.814
E Brg. W. Abut.	79880.992	19.000	414.803	414.803
Bk. W. Abut.	79895.412	19.000	414.776	414.776

Bm. #3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. Pier 5	79677.830	0.0	417.343	417.343
A	79687.830	0.0	417.236	417.271
B	79697.830	0.0	417.129	417.198
C	79707.830	0.0	417.023	417.112
D	79717.830	0.0	416.915	417.006
E	79727.830	0.0	416.808	416.917
F	79737.830	0.0	416.700	416.777
G	79747.830	0.0	416.593	416.645
H	79757.830	0.0	416.485	416.518
I	79767.830	0.0	416.376	416.394
J	79777.830	0.0	416.268	416.269
E Brg. Pier 6	79778.580	0.0	416.260	416.260
K	79788.580	0.0	416.151	416.167
L	79798.580	0.0	416.042	416.074
M	79808.580	0.0	415.933	415.985
N	79818.580	0.0	415.824	415.896
O	79828.580	0.0	415.714	415.812
P	79838.580	0.0	415.604	415.699
Q	79848.580	0.0	415.494	415.584
R	79858.580	0.0	415.384	415.465
S	79868.580	0.0	415.273	415.310
T	79878.580	0.0	415.163	415.165
E Brg. W. Abut.	79879.330	0.0	415.154	415.154
Bk. W. Abut.	79891.750	0.0	415.128	415.128

Bm. #4

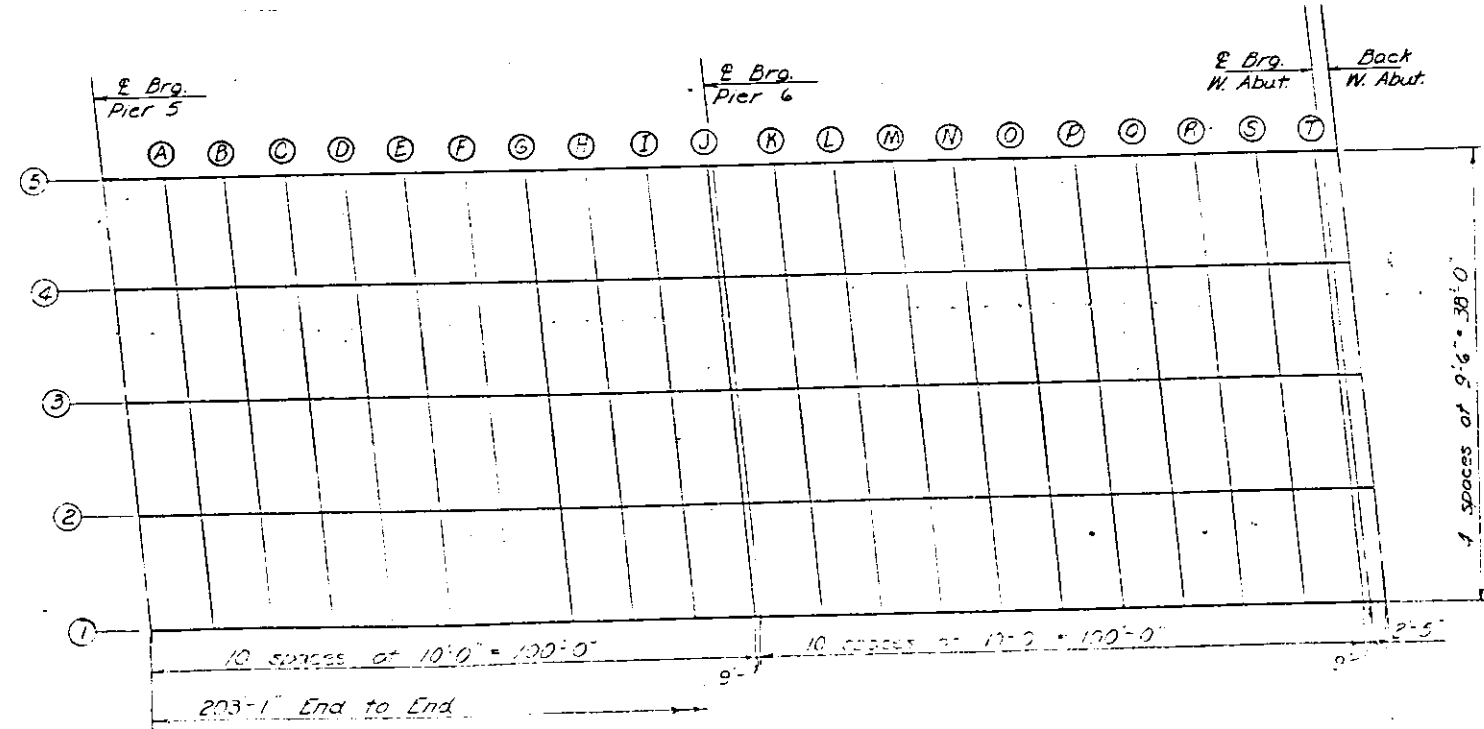
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. Pier 5	79676.999	-9.500	417.203	417.203
A	79686.999	-9.500	417.097	417.131
B	79696.999	-9.500	416.990	417.059
C	79706.999	-9.500	416.883	416.972
D	79716.999	-9.500	416.776	416.870
E	79726.999	-9.500	416.669	416.768
F	79736.999	-9.500	416.561	416.658
G	79746.999	-9.500	416.453	416.507
H	79756.999	-9.500	416.345	416.379
I	79766.999	-9.500	416.237	416.255
J	79776.999	-9.500	416.129	416.130
E Brg. Pier 6	79777.749	-9.500	416.121	416.121
K	79787.749	-9.500	416.012	416.028
L	79797.749	-9.500	415.903	415.935
M	79807.749	-9.500	415.794	415.846
N	79817.749	-9.500	415.684	415.760
O	79827.749	-9.500	415.575	415.673
P	79837.749	-9.500	415.465	415.560
Q	79847.749	-9.500	415.355	415.445
R	79857.749	-9.500	415.245	415.316
S	79867.749	-9.500	415.134	415.171
T	79877.749	-9.500	415.024	415.026
E Brg. W. Abut.	79878.499	-9.500	415.016	415.016
Bk. W. Abut.	79890.919	-9.500	414.989	414.989

Bm. #5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. Pier 5	79676.168	-19.000	417.028	417.028
A	79686.168	-19.000	416.921	416.955
B	79696.168	-19.000	416.814	416.853
C	79706.168	-19.000	416.707	416.757
D	79716.168	-19.000	416.600	416.624
E	79726.168	-19.000	416.493	416.592
F	79736.168	-19.000	416.385	416.462
G	79746.168	-19.000	416.278	416.331
H	79756.168	-19.000	416.170	416.203
I	79766.168	-19.000	416.061	416.079
J	79776.168	-19.000	415.953	415.954
E Brg. Pier 6	79776.918	-19.000	415.945	415.945
K	79786.918	-19.000	415.836	415.852
L	79796.918	-19.000	415.727	415.760
M	79806.918	-19.000	415.618	415.670
N	79816.918	-19.000	415.509	415.584
O	79826.918	-19.000	415.399	415.498
P	79836.918	-19.000	415.290	415.374
Q	79846.918	-19.000	415.180	415.269
R	79856.918	-19.000	415.069	415.161
S	79866.918	-19.000	414.959	414.996
T	79876.918	-19.000	414.848	414.851
E Brg. W. Abut.	79877.768	-19.000	414.840	414.840
Bk. W. Abut.	79890.088	-19.000	414.813	414.813

Bm. #2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. Pier 5	79679.661	9.500	417.186	417.186
A	79688.661	9.500	417.079	417.114
B	79698.661	9.500	416.972	417.041
C	79708.661	9.500	416.865	416.954
D	79718.661	9.500	416.758	416.852
E	79728.661	9.500	416.651	416.750
F	79738.661	9.500	416.543	416.650
G	79748.661	9.500	416.435	416.549
H	79758.661	9.500	416.327	416.461
I	79768.661	9.500	416.219	416.373
J	79778.661	9.500	416.111	416.285
E Brg. Pier 6	79779.411	9.500	416.102	416.102
K	79789.411	9.500	415.994	416.010
L	79799.411	9.500	415.885	415.917
M	79809.411	9.500	415.776	415.828
N	79819.411	9.500	415.666	415.741
O	79829.411	9.500	415.557	415.655
P	79839.411	9.500	415.447	415.547
Q	79849.411	9.500	415.337	415.426
R	79859.411	9.500	415.227	415.298
S	79869.411	9.500	415.116	415.153
T	79879.411	9.500	415.005	415.038
E Brg. W. Abut.	79880.161	9.500	414.997	414.997
Bk. W. Abut.	79892.581	9.500	414.970	414.970



DESIGNED: Harold Singh  
CHECKED: [Signature]  
DRAWN: C. E. Wilkins  
CHECKED: [Signature]

EXAMINED: [Signature]  
PASSED: [Signature]  
APPROVED: [Signature]

Mar 24 1970

SPANS 6 & 7  
TOP OF SLAB ELEVATIONS  
S.B.I. RT. 3 SEC 738-1  
RANDOLPH COUNTY  
STA. 793+500

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3	73B-1	RANDOLPH	159	87
F.A.		ILLINOIS		YES & PROJECT

SHEET NO. 26  
27 SHEETS

Boring No.	Station	Offset	Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After Hours
S-1	789+29.2	8 ft. Rt.	372.2	0			None	356.1	
			17	4.5P	14		See previous column		
			22	2.9B	14		Very stiff to hard moist brown mottled grey silty clay loam A-6(9-10)		
			18	5.85	15				
			21	3.35	11				
			362.7						
			14	1.9S	21		Stiff moist brown mottled grey silty clay A-6(10-11)		
			5	1.0B	25		Medium very moist grey mottled brown silty clay loam A-4(8)		
			8		22		Loose very moist brown fine grained sand with clay seams		
			22	3.6B	18		Very stiff moist brown clay A7-6(14-15) with some gravel		
			13	1.6B	28				
			327.7				Medium grey clay shale		
			326.7				Medium grey sandstone		
			323.7				Hard grey dense limestone		
			322.2				Bottom of hole = 50.0 feet		
							During drilling operations, it appeared that free water was encountered at 17.0 feet		
							Locations: N.W. 1/4, Sec. 24, T5S, R5W, 3rd P.M.		

Boring No.	Station	Offset	Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After Hours
S-2	790+48.50	3 ft. Lt.	367.6	0			None		
			5	0.7B	31		Soft moist brown mottled grey clay to clay A-6(12)		
			10	0.7B	22		Medium moist brown mottled grey to black silty clay loam A-6(10)		
			12	1.0S	2.3		Very stiff moist grey clay A7-6(15) with some gravel		
			4	0.4B	32		Soft to very soft moist grey silty clay loam A-4(8)		
			3	0.2B	20				
			4	0.2B	41		Very soft very moist grey clay loam A-4(7-8) with rotten vegetation		
			14	1.6B	24		Very stiff moist grey clay shale		
			27	1.9S	13		Stiff moist grey clay A7-6(15) with some gravel		
			57	3.8B	13				
			324.5				Bottom of hole = 43.1 feet		

Boring No.	Station	Offset	Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After Hours
S-4	755+73.25	8 ft. Lt.	366.8	0			None		
			6	1.0B	33		See previous column		
			11	1.1S	27		Medium moist grey fine grained sand some gravel		
			5		35		Very soft very moist grey sandy loam A-4(0)		
			9		27				
			7	0.9B	33		Medium moist grey clay A7-6(13-14)		
			8	1.2S	34		Medium moist grey silty clay A-6(11-12)		
			4	0.6B	35		Medium moist grey clay A7-6(15)		
			2	0.3B	34		Soft very moist grey clay loam to sandy loam A-4(4-5)		
			10				Medium moist grey fine grained sand		
							Bottom of hole = 42.3 feet		
							During drilling operation, it appeared that free water was encountered at 17.0 feet		
							Washing procedure was used in drilling between 19.5 feet and 32.0 feet, and 40.5 feet to 41.5 feet		

Boring No.	Station	Offset	Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After Hours
S-3	791+70.75	13 ft. Rt.	371.7	0			None	349.7	
			13	0.2B	26		See previous column	349.2	
			19	2.4B	23		Loose damp brown fine grained sand		
			20	3.3S	16		Very stiff damp brown mottled grey silty clay A-6(10-11)		
			17	4.5P	11		Hard damp brown mottled grey clay loam A-4(8) to A-6(9)		
			11	5.0S	11		Stiff to very stiff brown to grey clay A7-6(17-18) with some gravel		
			12	1.8S	15				
			13	1.5S	23		Stiff moist brown mottled grey silty clay A7-6(13)		
			8	1.2B	21		Stiff moist brown mottled grey clay loam A-6(10)		
			77	4.9B	19		Hard moist grey gravel and shale		
			3	0.7B	29		Medium moist brown mottled grey silty clay A-6(11)		
			4	0.6B	30				
			349.2				Bottom of hole = 40.0 feet		

DRAWN: *Harpal Singh*  
 EXAMINED: *Paul E. Thompson*  
 PASSED: *W.E. Bass*  
 APPROVED: *Richard A. Goltzman*  
 DATE: *Jan 24 1970*

BORINGS  
 S.B.I. RT. 3 SEC. 73B-1  
 RANDOLPH COUNTY  
 STA. 793+80.00

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

Elevation	N	Qu 1/2	Qu 1/4	Surface Water El. None	Groundwater El. at Completion	After Hours	Elevation	N	Qu 1/2	Qu 1/4
366.5	0			See previous column						
362.5	9	0.78	26	Medium very moist grey medium to coarse grained sand			342.5	13	21	
362.5	5	10	4.50	Hard to medium moist brown mottled grey silty clay loam A-6(9)			340.0	2	.45	5
355.0	7	1.65	4	Soft to medium very moist to moist grey clay A7-6(20)			330.0	3	.65	4
352.5	10	6	.25	Medium moist brown mottled grey clay loam A-4(8) to A-6(9)			322.5	3	.85	5
350.0	15	5	.25	Very soft very moist brown sandy loam to sand A-4(0)			320.0	2		
347.5	5	1.15	2	Very soft very moist grey sandy clay loam A-4(4)			317.5	5		
347.5	4			Loose to very loose very moist grey fine grained sand			315.0	10		
322.5	3			Soft moist grey clay A7-6(20)			312.0	4	0.38	
320.0				Loose very moist grey fine grained sand			311.7	5		
317.5				Medium moist grey silt loam A-4(8) and gravel			311.2	10		
315.0				Very stiff damp grey clay shale			310.5	94	3.15	
312.0				Hard damp grey broken limestone			310.5	10	3.75	
311.7				Bottom of hole = 54.8 feet						
				During drilling operations, it appeared that free water was encountered at 14.0 feet.						
				Washing procedure was used in drilling from 19.0 feet to 29.0 feet and from 36.5 feet to 49.0 feet						

Elevation	N	Qu 1/2	Qu 1/4	Surface Water El. None	Groundwater El. at Completion	After Hours	Elevation	N	Qu 1/2	Qu 1/4
376.1	0			Loose to medium moist to very moist light brown fine grained sand			351.1	25		
373.6	6	0.78	26	Hard moist light brown silty clay loam A-6(9)			348.6	8		
371.1	17	4.50	14	Hard moist light brown clay loam A-4(7-8)			343.6	17		
368.6	14	4.85	13	Very stiff moist brown mottled grey clay loam A-4(8)			341.1	35		
366.1	10			Stiff moist brown mottled grey sandy clay loam A-4(6)			341.1	35		
363.6	10	1.45	12	Stiff moist brown mottled grey silty loam to silty clay loam A-4(8) with sand seams			341.1	35		
361.1	15			Medium moist to very moist brown mottled grey silty clay loam A-6(9-10)			341.1	35		
356.1	20			Soft to medium very moist grey clay A7-6(14-15)			341.1	35		
				See next column			341.1	35		

Elevation	N	Qu 1/2	Qu 1/4	Surface Water El. None	Groundwater El. at Completion	After Hours	Elevation	N	Qu 1/2	Qu 1/4
40				See previous column			311.1	25		
3	0.68	38		Soft to medium very moist grey clay A7-6(14-15)			306.1	30		
4.5				Medium to dense wet grey clay loam A-4(8) with some gravel			306.1	30		
4	0.78	39		Dense wet grey clay loam A-6(9-10) with some gravel			304.1	42		
4	0.78	40		Loose to dense wet coarse sand and gravel			304.1	42		
328.6				Hard grey limestone			299.0			
323.6				Bottom of hole = 77.1 feet						
323.6				Medium wet grey coarse grained sand						
17				During drilling operations, it appeared that free water was encountered at 23.5 feet						
25				Washing procedure was used in drilling between 23.5 feet to 35.0 feet and from 47.5 feet to 72.0 feet						

DESIGNED *Harold Smith*  
CHECKED *J.F. Miller*  
DRAWN *C.E. Wilkins*  
CHECKED *J.F. Miller*

EXAMINED *Richard H. Galtman*  
PASSED *Richard H. Galtman*  
APPROVED *Richard H. Galtman*

BORINGS  
SBI RT. 3 SEC 7-B-1  
RANDOLPH COUNTY  
STA. 793+8000