

7-31-09 Letting, Item 081

KNOX

JAR

#181

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(48-29B)I-2	KNOX	9	1
FED. ROAD DIST. NO. 4		ILLINOIS	CONTRACT NO. 68858	

DESIGNER: CLARK JONES  
PHONE: (309)671-3452

- INDEX OF SHEETS:
1. COVER SHEET
  2. COMMITMENTS & GENERAL NOTES
  3. SUMMARY OF QUANTITIES
  4. EXISTING CROSS SECTIONS
  5. SCHEDULE OF QUANTITIES
  6. PROPOSED TRAFFIC CONTROL
  7. ROADWAY PLAN REPAIR DETAILS
  - 8-9. REPAIR DETAILS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

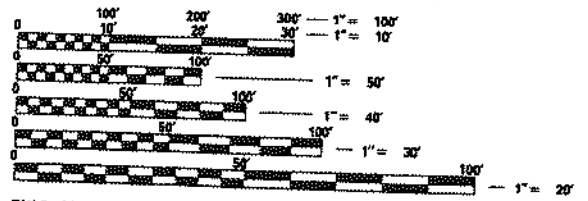
**PROPOSED  
HIGHWAY PLANS**

FAI 74 (I-74)  
SECTION (48-29B)I-2  
REPAIR IMPACT DAMAGE  
KNOX COUNTY

100%  
11-07-09

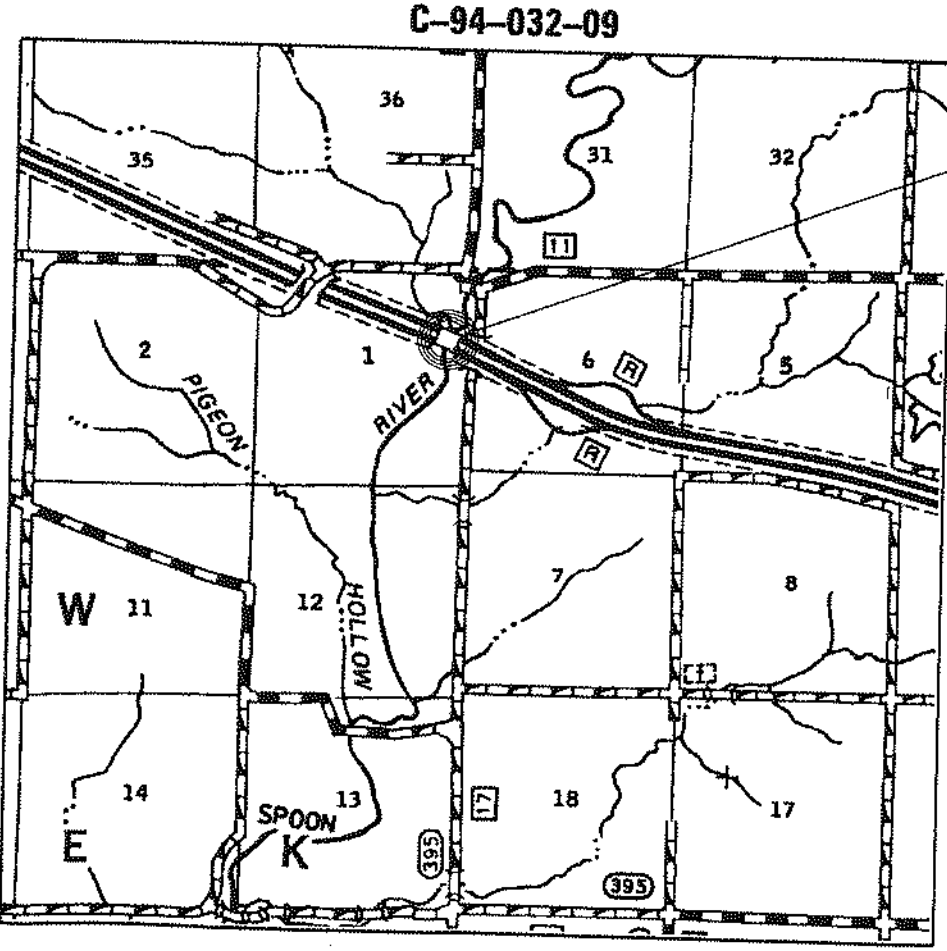


<b>STANDARDS:</b>	<b>DISTRICT STANDARDS:</b>
420401-07	780001-D4
483001-04	701402-07
701101-02	701901-01
701106-02	704001-05
701400-03	780001-02



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

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



LOCATION MAP

PROJECT CONSISTS OF COLLISION DAMAGE REPAIR TO EAST ABUTMENT WALL AND WINGWALL OF STRUCTURE CARRYING EB. I-74 (SN.048-0052) OVER SPOON RIVER.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED April 29, 2009

Joseph E. Crowson  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

June 26, 2009  
Charles J. Ingersoll  
ENGINEER OF DESIGN AND ENVIRONMENT

June 26, 2009  
Christine M. Reed  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

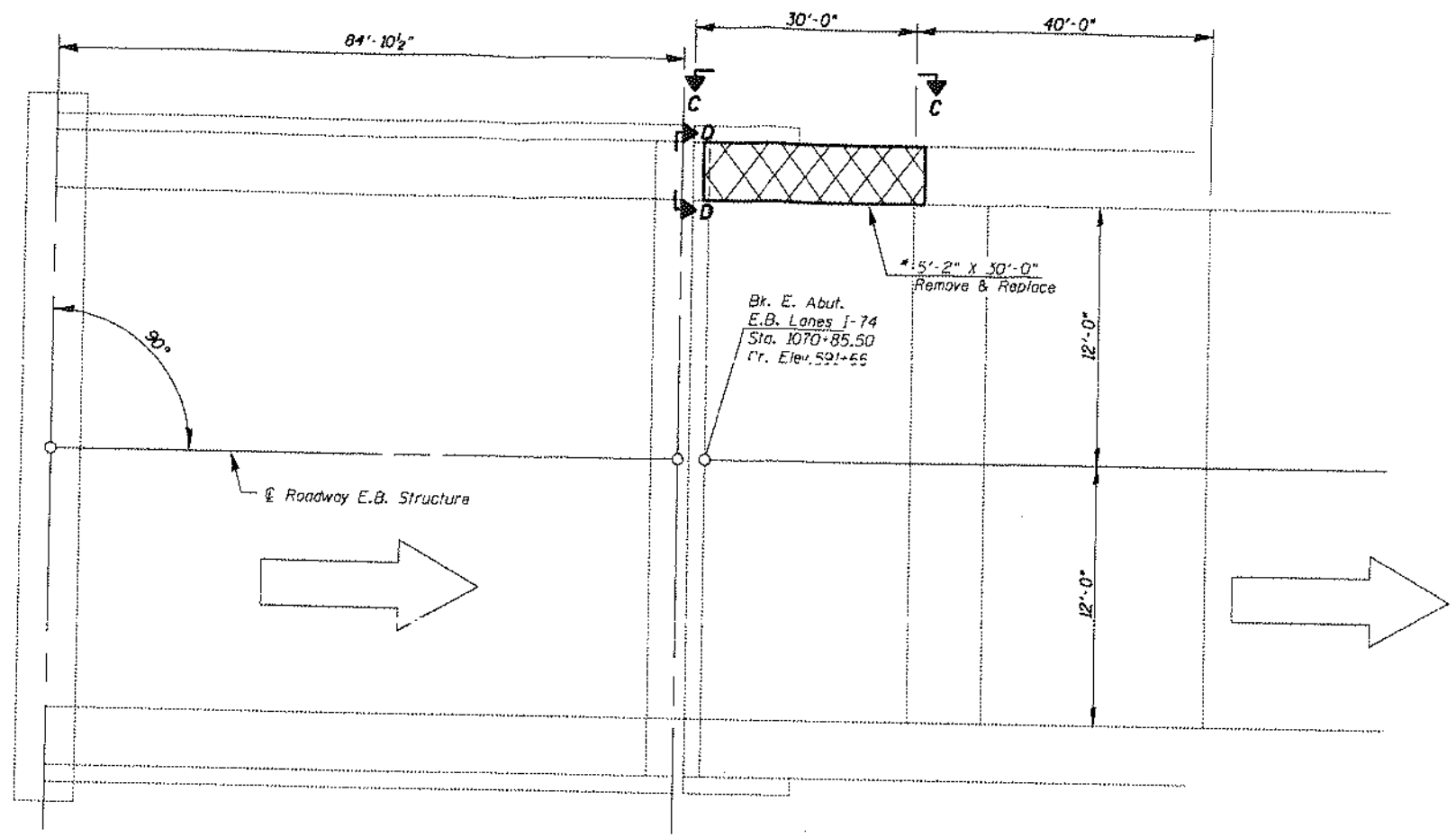
PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

048-0051 & -0052

PROJECT ENGINEER: JIM MILLER  
PHONE: (309)671-3451

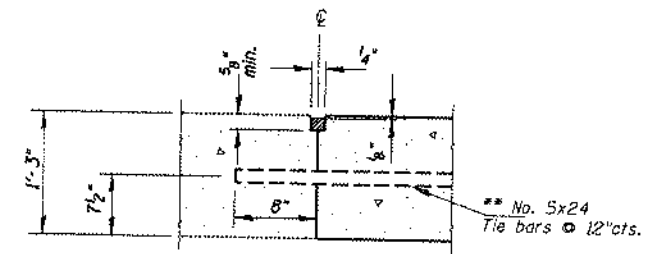
CONTRACT NO. 68858 CAT. NO. 034176-00D

48-0051  
-0052

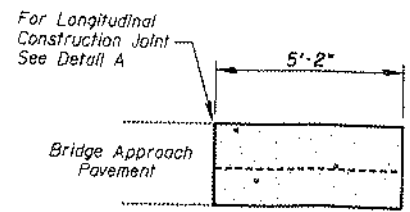


**PLAN**

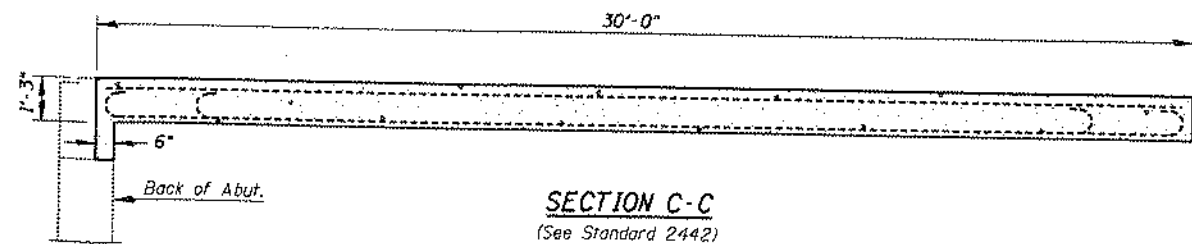
\* Full depth saw-cut following existing saw-cut. Beginning at midpoint joint shall be drilled & epoxied for #5 tie bars @ 12" centers. See slab reinforcement detail and sizing on "Bridge Approach" Standard 2442.



**DETAIL A**  
(Tie Bar Grouted in Place)



**SECTION D-D**



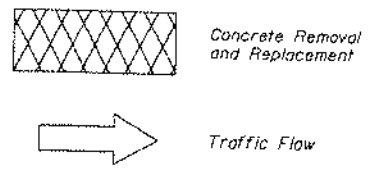
**SECTION C-C**  
(See Standard 2442)

**BILL OF MATERIALS**

Bar	No.	Size	Length	Shape
a(E)	10	#9	29'-6"	
a1(E)	4	#4	29'-6"	
b(E)	30	#5	4'-10"	
b1(E)	8	#4	4'-10"	
***Tie Bars				EACH 30
Bridge Approach Pavement Removal				SQYD 17.2
Bridge Approach Pavement				SQYD 17.2
***Reinforcement Bars, Epoxy coated				POUND 1560

\*\*\* (Cast of item incidental to BRIDGE APPROACH PAVEMENT)

**SYMBOLS**



**NOTE**  
Reinforcement bars shall conform to the requirements of ATSM A 706 Gr 60. See Special Provisions.  
The cost of subbase, tie bars, reinforcement bars, excavation and placement of all materials necessary to perform this work shall be considered included in the unit cost of BRIDGE APPROACH PAVEMENT.  
Seeding, fertilizing, and mulching repair of disturbed embankment shall be done in accordance with Article 250 of the Standard Specifications. All materials and placement shall be included in the unit cost of EROSION CONTROL BLANKET.

FILE NAME = S:\048-0052 EB.1-74 over SpoonRiv.dgn	USER NAME = jones	DESIGNED - CEJ	REVISED -
		DRAWN - CEJ	REVISED -
		CHECKED - MSE	REVISED -
		DATE - 04/20/2009	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**ROADWAY PLAN**  
**REPAIR DETAILS**

F.A.I. RTE. 74	SECTION 148-29B11-2	COUNTY KNOX	TOTAL SHEET NO. 9
REPAIR IMPACT DAMAGE		SHEETS 7	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT		CONTRACT NO. 68858	

SN.048-0052 I-74  
over Spoon Riv.

SCALE: SHEET NO. OF SHEETS STA. TO STA.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

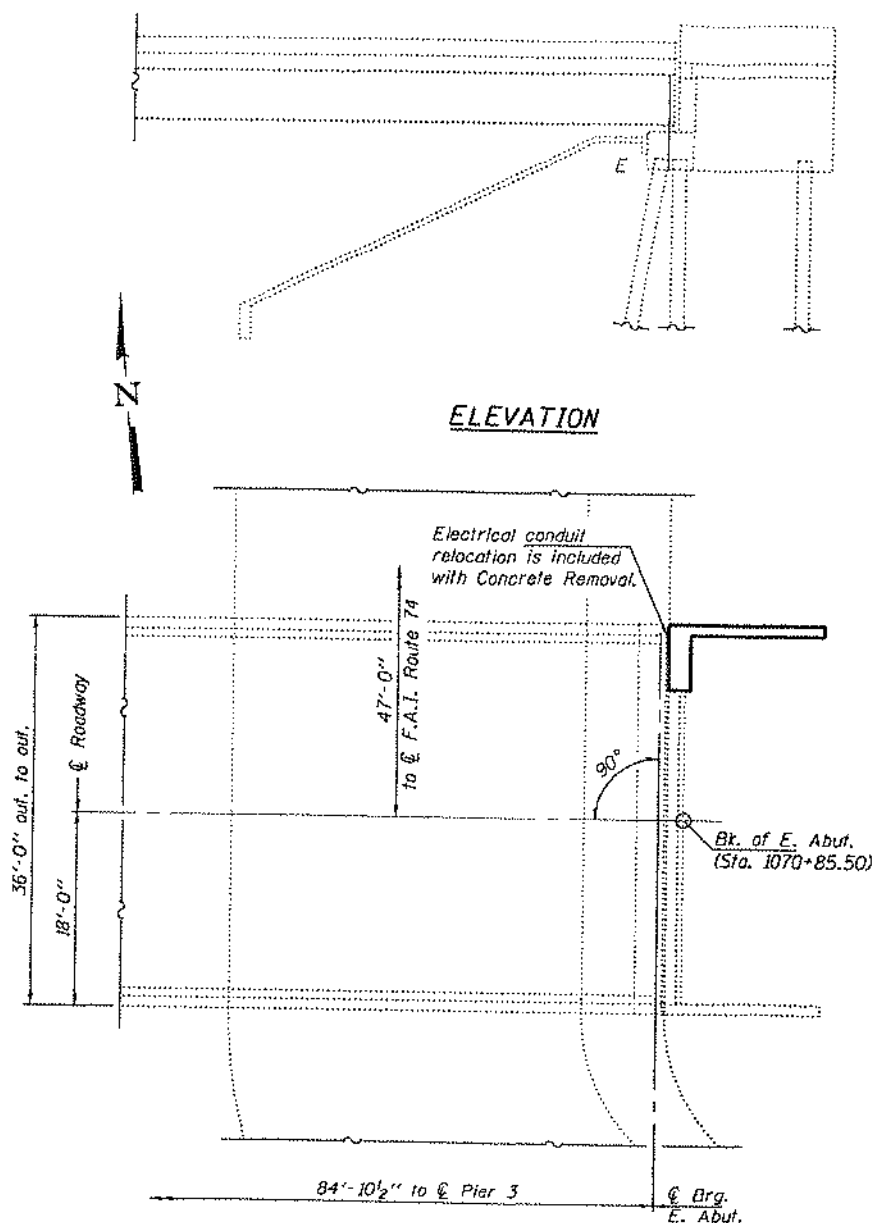
Reinforcement bars designated (E) shall be epoxy coated. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to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

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.

\*\* Re-use existing neoprene expansion joint. (New studs to be installed as needed) See sheet 2 of 2 for anchor bolt locations. Cost included with Concrete Superstructure.

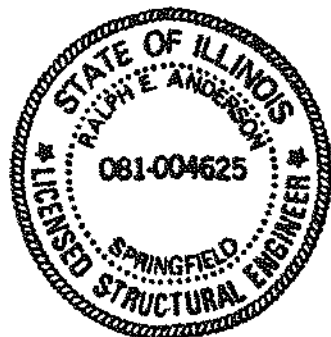
\*\*\* See Roadway Plans for Approach Pavement Removal and Replacement Details.



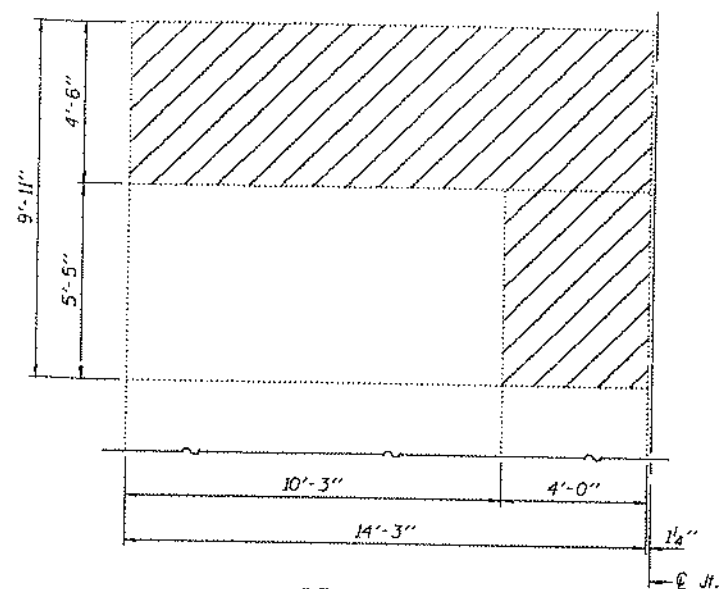
ELEVATION

PLAN

\* Epoxy grout  $v_1(E)$  bars in 9" min. holes according to Article 584 of the Standard Specifications.

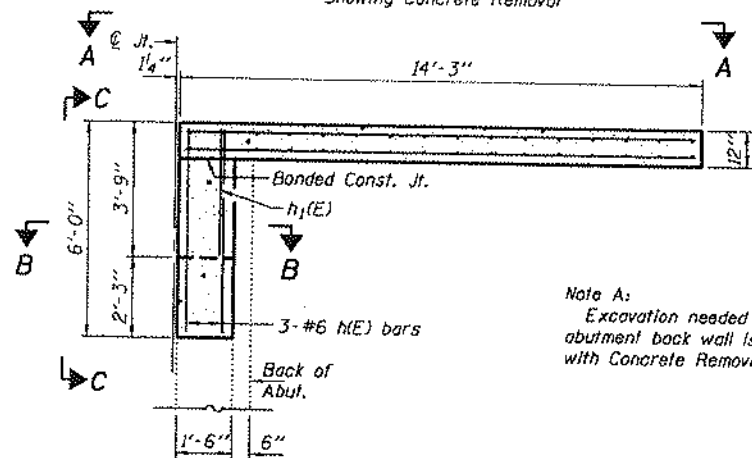


Expires: November 30, 2010



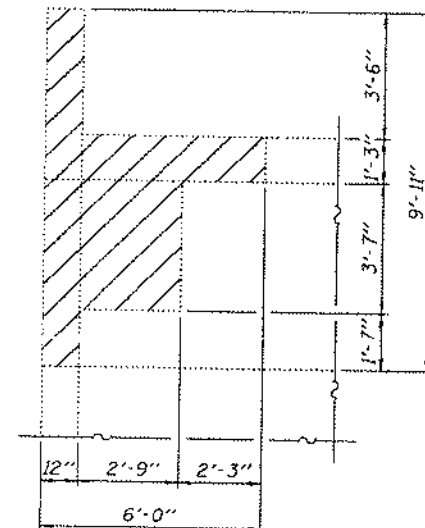
SECTION A-A

Showing Concrete Removal



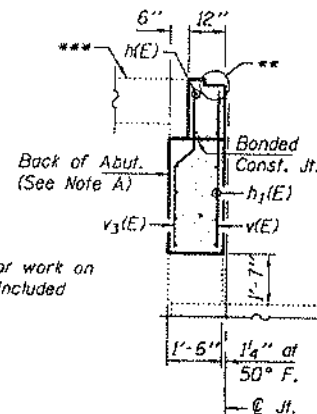
PARTIAL PLAN - EAST ABUT.

Note A:  
Excavation needed for work on abutment back wall is included with Concrete Removal.

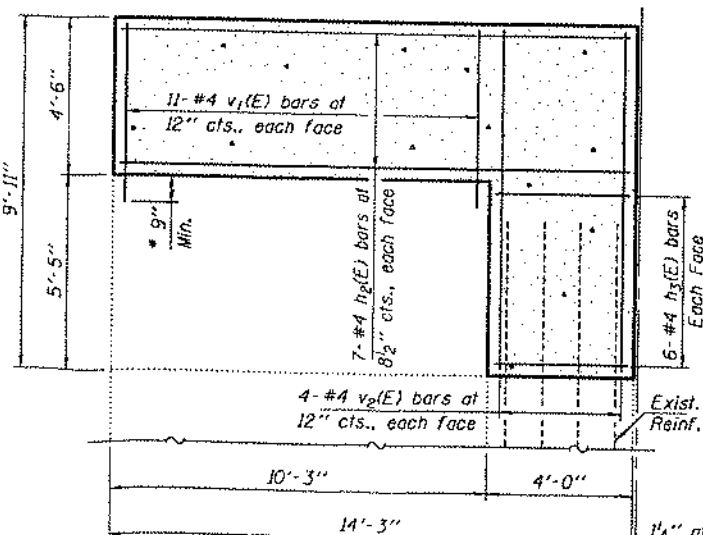


SECTION C-C

Showing Concrete Removal

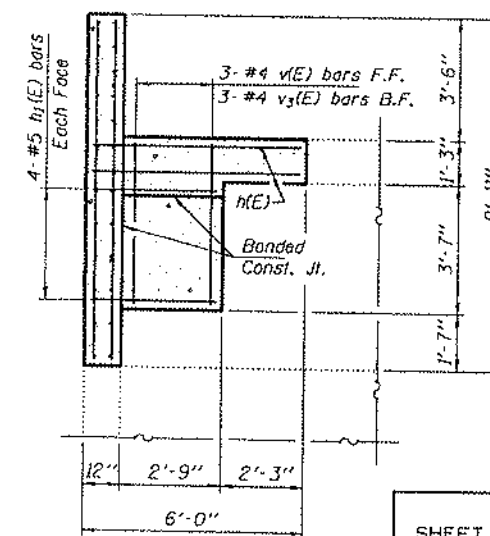


SECTION B-B



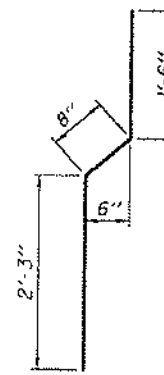
SECTION A-A

Showing proposed



SECTION C-C

Showing proposed



BAR  $v_3(E)$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_1(E)$	3	#6	5'-9"	
$h_2(E)$	8	#5	3'-6"	
$h_3(E)$	14	#4	14'-0"	
$h_4(E)$	12	#4	3'-9"	
$v_1(E)$	3	#4	4'-5"	
$v_2(E)$	22	#4	5'-2"	
$v_3(E)$	8	#4	9'-8"	
$v_4(E)$	3	#4	5'-4"	
Concrete Removal			Cu. Yd.	3.0
Concrete Superstructure			Cu. Yd.	4.0
Reinforcement Bars, Epoxy Coated			Pound	360

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	3.0
Concrete Superstructure	Cu. Yd.	4.0
Reinforcement Bars, Epoxy Coated	Pound	360

PLAN, ELEVATION, & REPAIR DETAILS  
E.B. F.A.I. RT. 74 OVER SPOON RIVER  
SN 048-0052

DESIGNED	Angie Boyer UHW
CHECKED	[Signature]
DRAWN	Kyle M. Steffen
CHECKED	ASB GLE

EXAMINED	[Signature]	JUNE 18, 2009
PASSED	[Signature]	

SHEET NO. 1	F.A.I. RTE. 74	SECTION (48-298)1-2	COUNTY KNOX	TOTAL SHEETS 9	SHEET NO. 8
2 SHEETS	CONTRACT NO. 68858		FED. ROAD DIST. NO. [ ] ILLINOIS FED. AID PROJECT		

SN. 048-0051  
0052

PROJECT ENGINEERS: ERIC THERKILDSEN (309) 671-3453  
JOHN ABBOTT (309) 671-3454

DESIGN BY: TERRY RASMUSSEN (309) 671-3466  
CHRIS EVERS (309) 671-3475

98%  
10-14-95

# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANS FOR PROPOSED FEDERAL AID INTERSTATE HIGHWAY

F.A.I. 74 (I-74)  
SECTION 48-28RS-3, 48-29RS-5,  
(48-29B)I, (48-29B)I-1  
PROJECT NO. ACIM-74-3(58)54  
KNOX COUNTY  
C-94-012-93

## INDEX OF SHEETS

- 1 COVER SHEET
- 2 GENERAL NOTES
- 3 TYPICAL SECTIONS
- 4-5 SUMMARY OF QUANTITIES
- 6-9 QUANTITIES NOT OTHERWISE SHOWN
- 10 GENERAL PLAN
- 11 STAGING PLAN - STAGE 1
- 12 STAGING PLAN - STAGE 2
- 13-20 PLAN SHEETS
- 21-24 MEDIAN CROSSOVERS FOR TRAFFIC CONTROL
- 25-28 TEMPORARY HIGHWAY LIGHTING (CROSSOVERS)
- 30-33 TRAFFIC CONTROL (CROSSOVERS)
- 34-36 DETAIL - TRAFFIC CONTROL
- 37-43 DETAIL - CRC PAVEMENT OVERLAY
- 44 DETAIL - PCC SHOULDER
- 45 DETAIL - MAINTENANCE CROSSOVER
- 46 DETAIL - PAVEMENT PATCHING PARTIAL DEPTH
- 47 DETAIL - EXISTING LOG SYSTEM TO BE REMOVED
- 48 DETAIL - PIPE ELBOW
- 49 DETAIL - MEDIAN DRAINAGE STA. 897+94
- 50 DETAIL - STONE DUMPED RIP-RAP DITCH
- 51 DETAIL - MEDIAN SAND MODULE IMPACT ATTENUATOR
- 52 DETAIL - GUARDRAIL REPAIR
- 53-58 DETAIL - REFLECTOR AND TERMINAL MARKER
- 59 DETAIL - GUARDRAIL AGGREGATE EROSION CONTROL
- 60 DETAIL - CONCRETE SHOULDER CURB
- 61-63 DETAIL - SLOPE WALL REPAIR
- 64-63 DETAIL - DOUBLE EXPANSION JOINT
- 84-109 STRUCTURE PLANS
- 84-109 CROSS SECTIONS

## LIST OF STANDARDS

1527-10	2300-4	2327-12	2362-4
1686-4	2308-1	2336-5	2363-2
2113-5	2313-5	2337-7	2381-1
2149-12	2314-1	2339-3	2383-4
2225-10	2315-7	2340-5	2396
2228-5	2316-7	2341-6	2397-1
2230-11	2317-7	2350-4	2419
2298-10	2322-5	2354-4	2438-1
2299-14	2323-14	2357-3	2442-2
2307-8			

## DESIGN DESIGNATION

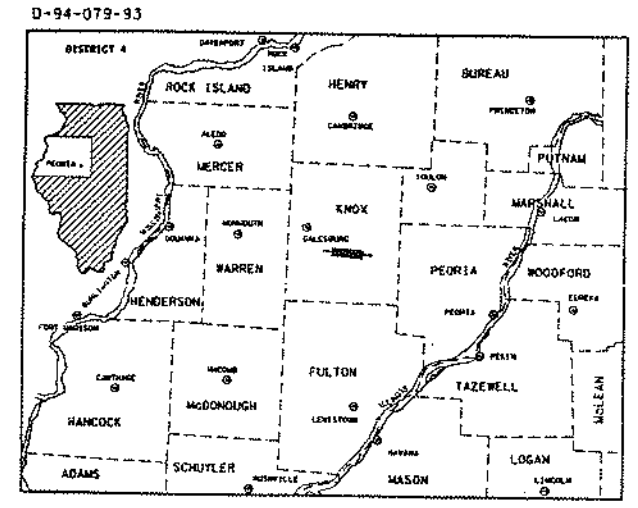
1524 (05) TRUNK 22.3 (PCC-201)

## SURVEY BOOK NOS.

480051 2696 & 2726

CONTRACT NO. 88484  
CATALOG NO. 030006-00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 74		KNOX	109	1
F.H.W.A. REG. 4	ILLINOIS	PROJECT ACIM-74-3(58)54		
* 48-28RS-3, 48-29RS-5, (48-29B)I, (48-29B)I-1				



LOCATION OF SECTION INDICATED THUS: -

## DESCRIPTION OF WORK

THIS IMPROVEMENT INCLUDES PAVEMENT PATCHING, BITUMINOUS PAVING, P.C.C. PAVEMENT, PIPE UNDERDRAINS, GUARDRAIL REMOVAL AND REPLACEMENT, BRIDGE DECK PATCHING AND OVERLAY, BRIDGE APPROACH PAVEMENT AND TEMPORARY HIGHWAY LIGHTING.

SIGNATURE BLOCK ON SHEET NO. 2

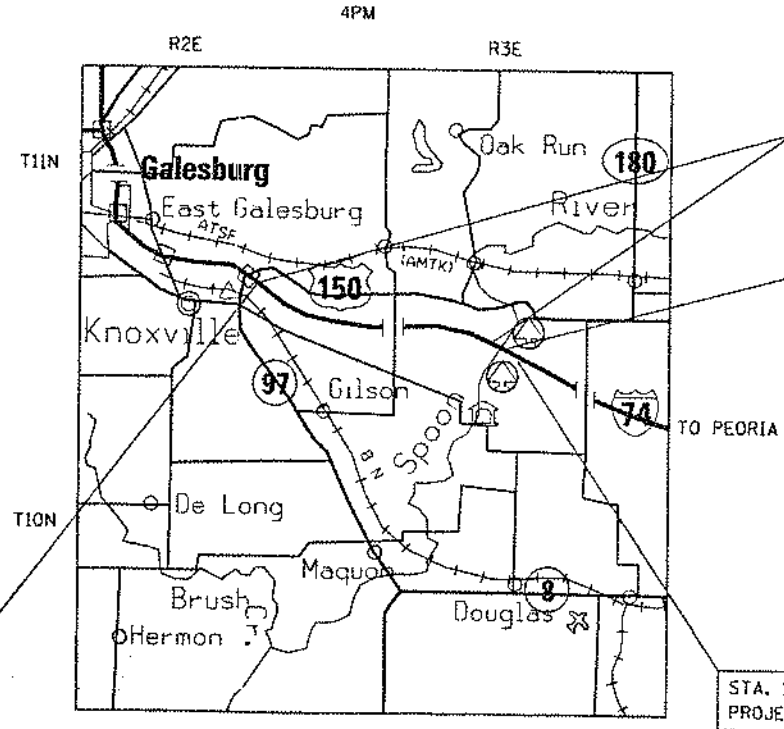
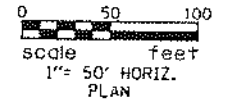
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED: 8-4-94  
EXAMINED: 8-7-94  
PASSED: 8-9-94  
APPROVED: 8-9-94

1524 (05) TRUNK 22.3 (PCC-201)

AOT = 11,500  
MU = 24 %

QC/QA CONCRETE  
N.P.D.E.S. PERMIT REQUIRED  
LONG 90° 08' W  
LAT 40° 54' N



STA. 650+00 TO STA. 1066+64.00  
CRC PCC PAVEMENT OVERLAY  
WEST BOUND LANES ONLY

STA. 1066+94.00 TO STA. 1070+85.50  
FAI 74 STRUCTURES OVER SPOON RIVER & TR 238A  
SEC. (48-29B)I, (48-29B)I-1  
S.N. 048-0051 (W.B.)  
048-0052 (E.B.)

STA. 645+00  
PROJECT BEGINS

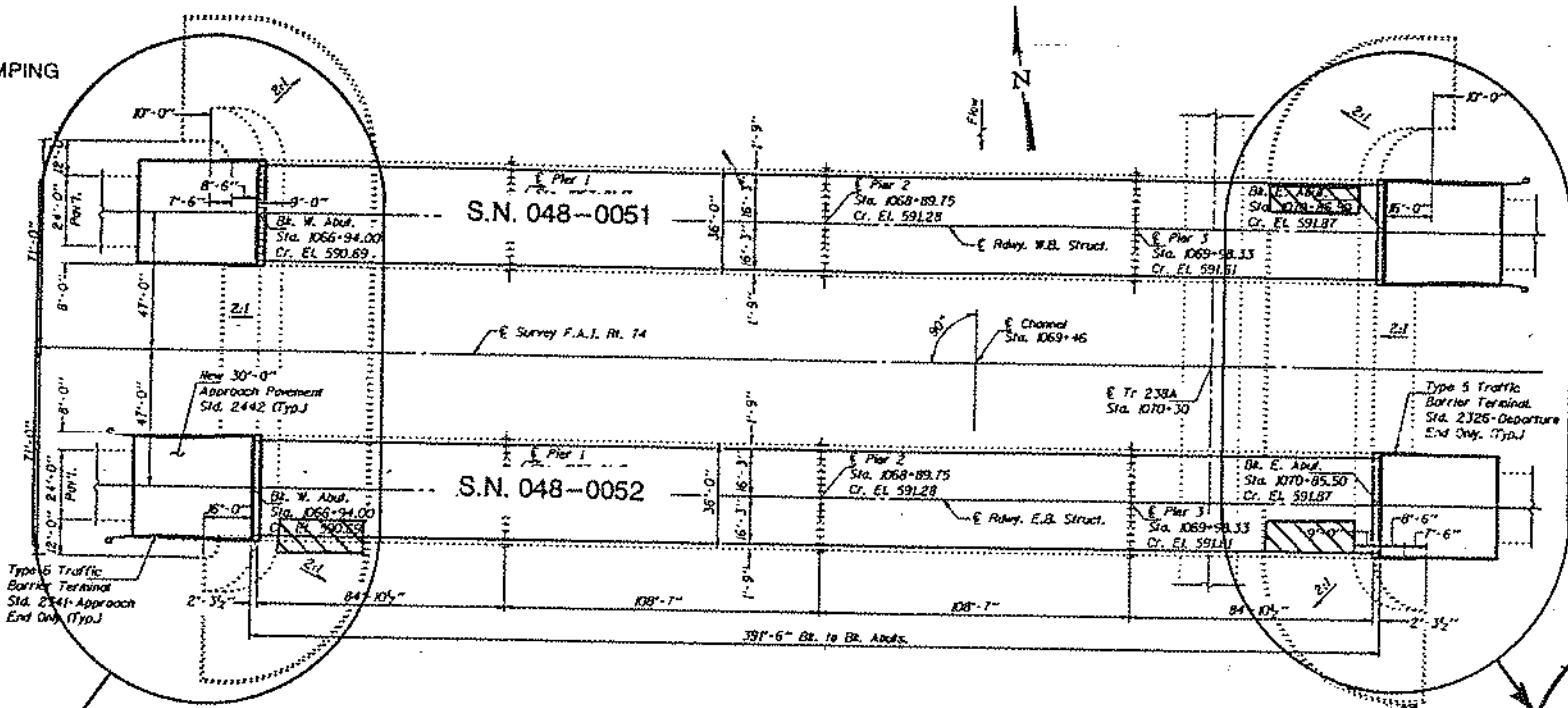
STA. 1092+71.80  
PROJECT ENDS



F.A.I. 74 EASTBOUND:	GROSS LENGTH OF IMPROVEMENT	=	44771.80	FEET	=	8.48	MILES
F.A.I. 74 EASTBOUND:	NET LENGTH OF IMPROVEMENT	=	595.50	FEET	=	0.11	MILES
F.A.I. 74 WESTBOUND:	GROSS LENGTH OF IMPROVEMENT	=	44771.80	FEET	=	8.48	MILES
F.A.I. 74 WESTBOUND:	NET LENGTH OF IMPROVEMENT	=	42189.50	FEET	=	7.99	MILES

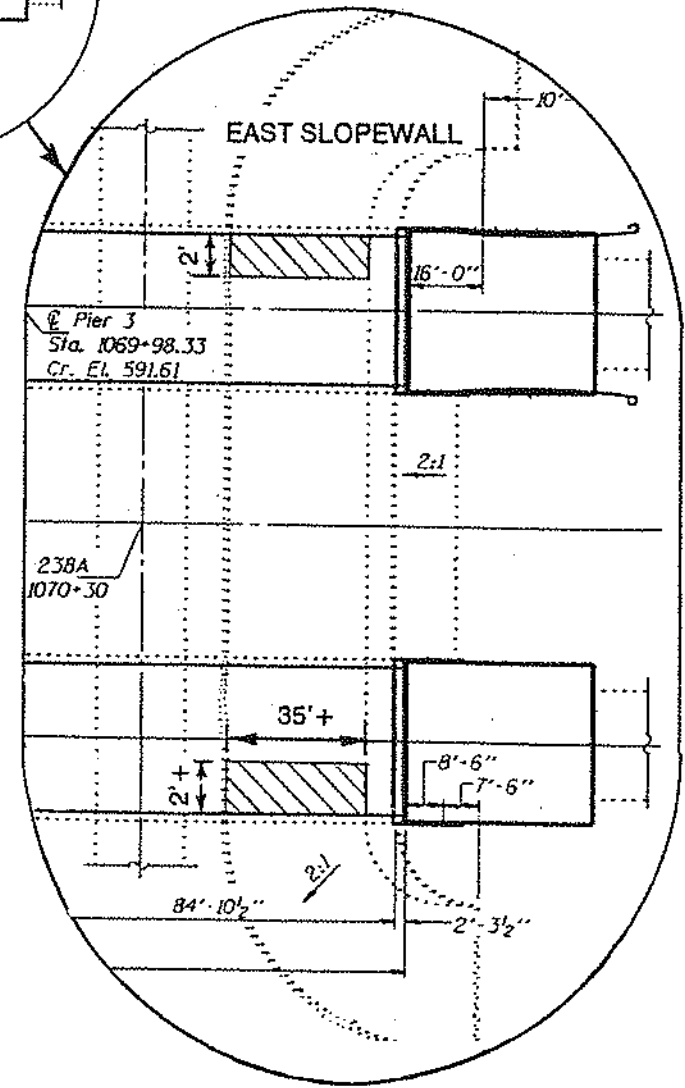
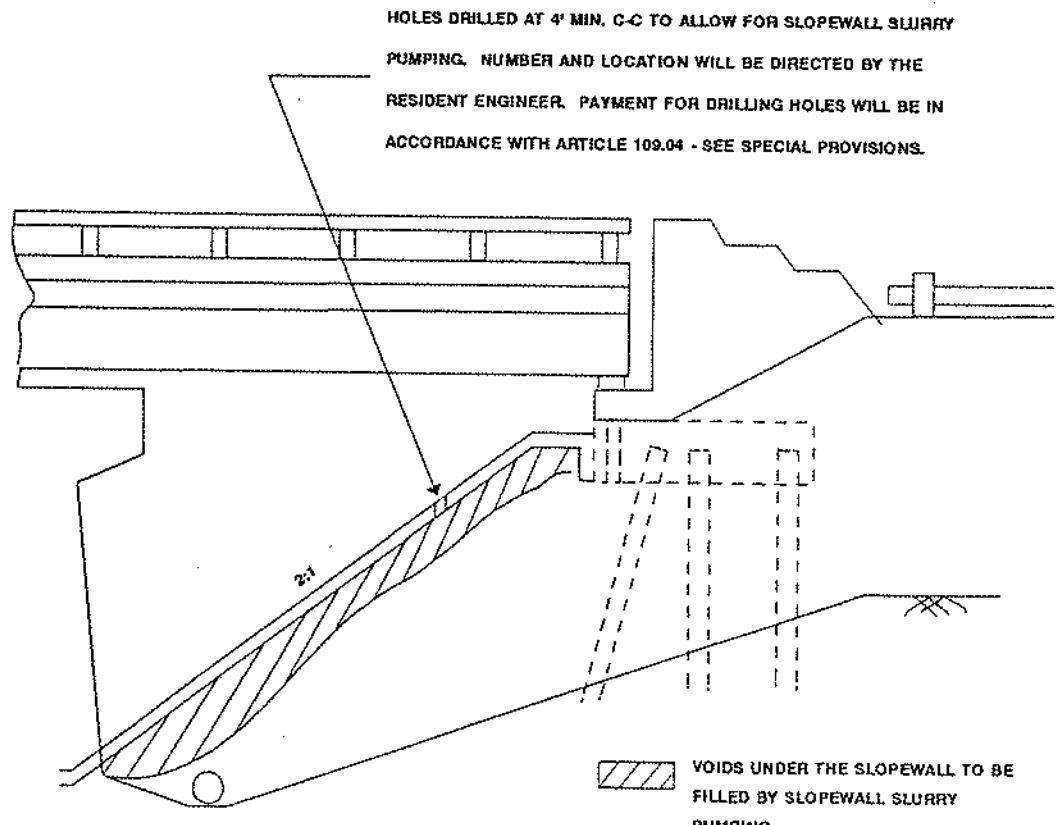
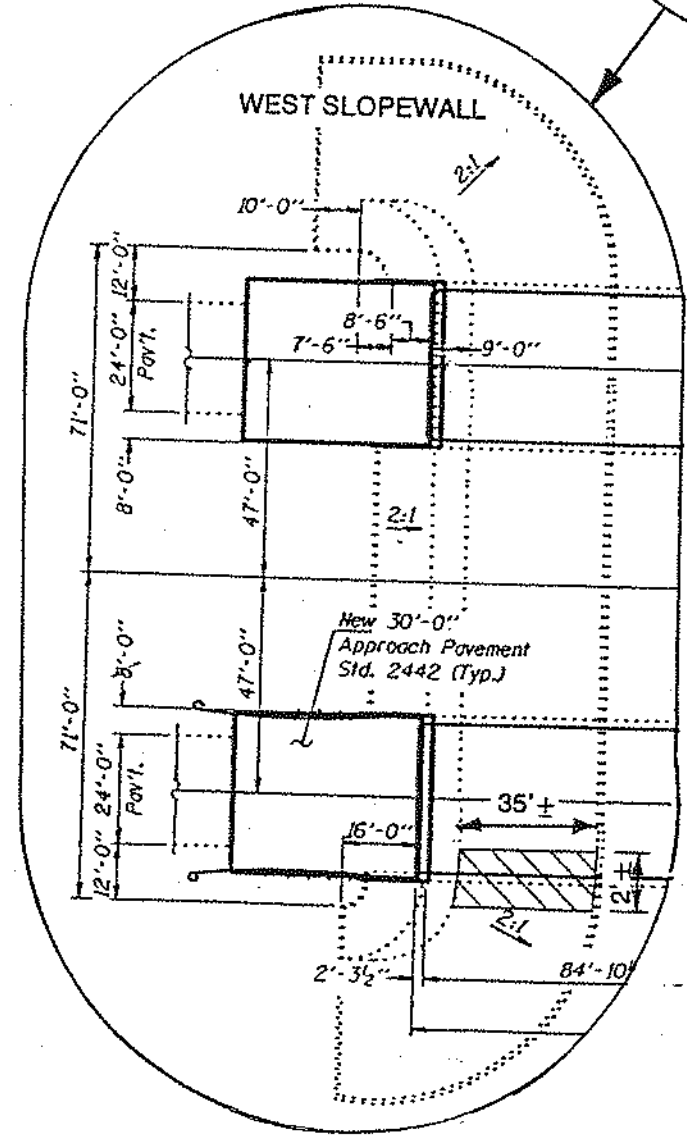
4-197

<b>CRACK FILLING</b>	
S.N. 048-0051	328
S.N. 048-0052	328
ESTIMATED QUANTITY 656 LIN FT	
<b>SLOPEWALL SLURRY PUMPING</b>	
S.N. 048-0051	3
S.N. 048-0052	6
ESTIMATED QUANTITY 9 CU YD	



**NOTE:**  
LIMITS TO BE FILLED ARE TO BE DETERMINED BY THE RESIDENT ENGINEER.

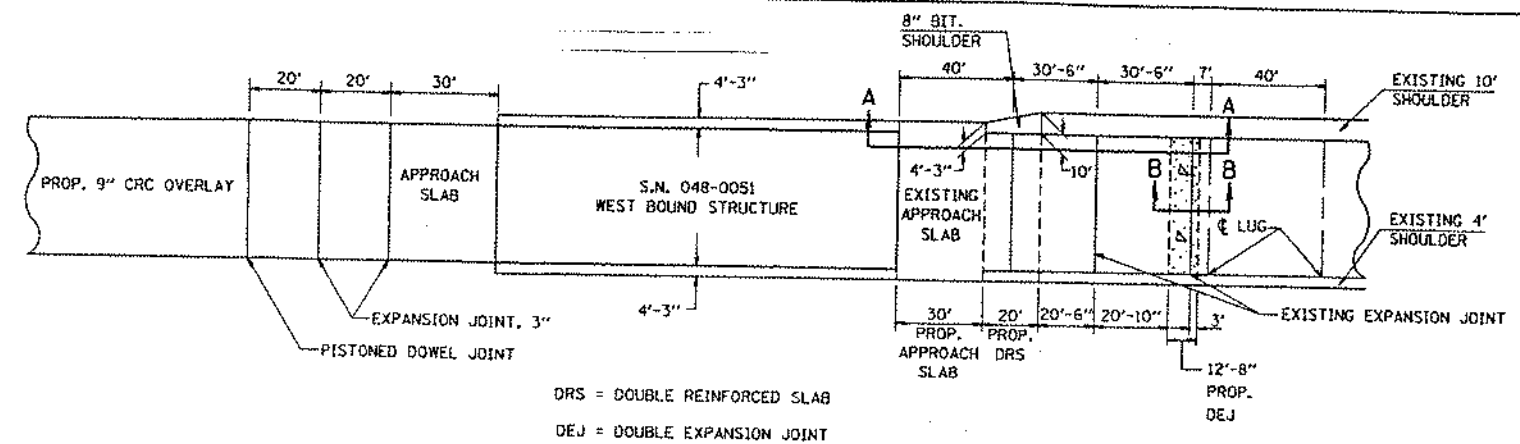
PAYMENT FOR SLOPEWALL SLURRY PUMPING WILL BE IN ACCORDANCE WITH ARTICLE 109.04 - SEE SPECIAL PROVISIONS.



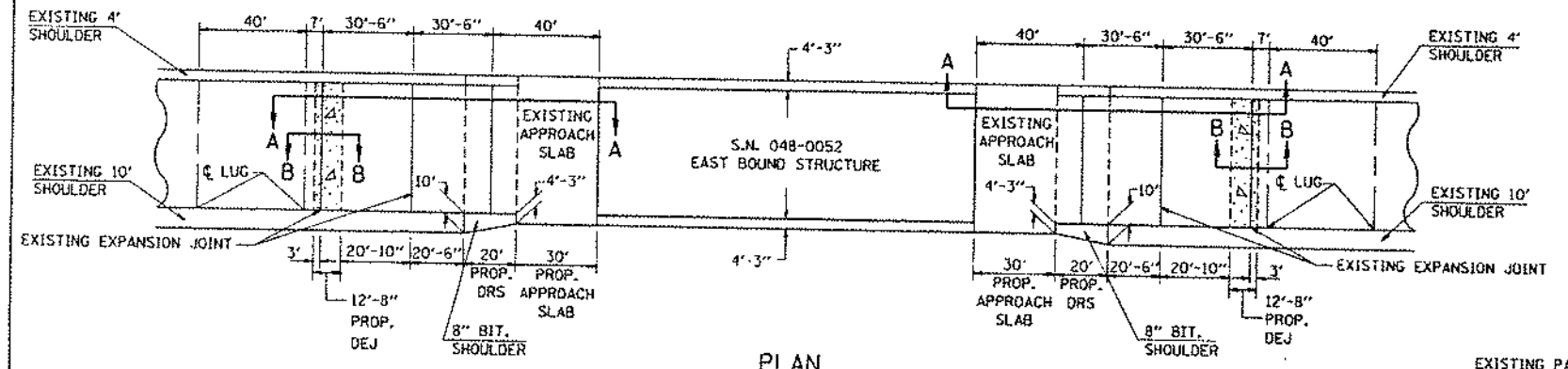
VOIDS UNDER THE SLOPEWALL TO BE FILLED BY SLOPEWALL SLURRY PUMPING

**SLOPEWALL REPAIR DETAIL**  
FAI ROUTE 74  
(48-29B)/I-1 KNOX COUNTY  
S.N. 048-0051 & S.N. 048-0052  
I-74 OVER SPOON RIVER

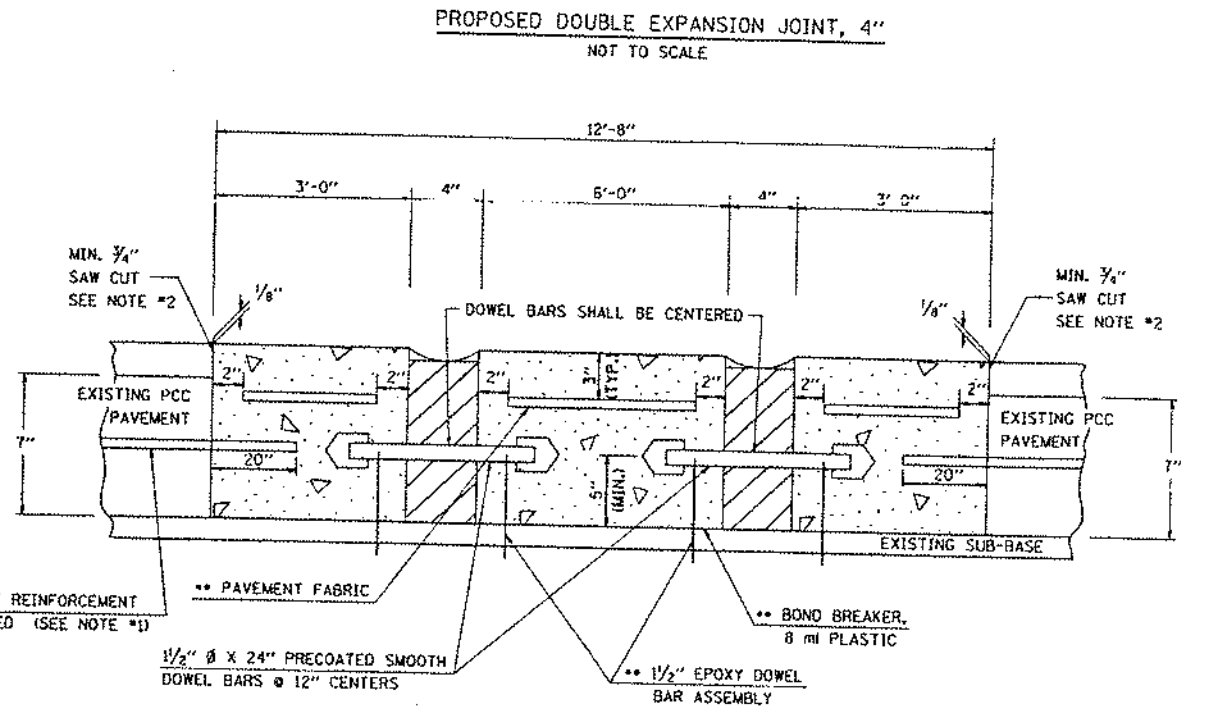
SECTION	COUNTY	NO.	POST NO.
74	KNOX		61
STA.	TO STA.	FILE NO.	
		(48-308)1-1	



DRS = DOUBLE REINFORCED SLAB  
DEJ = DOUBLE EXPANSION JOINT



PLAN



SECTION B-B

	PROPOSED CONCRETE, FULL DEPTH
	PREFORMED EXPANSION JOINT FILLER

\*\* SEE SPECIAL PROVISIONS

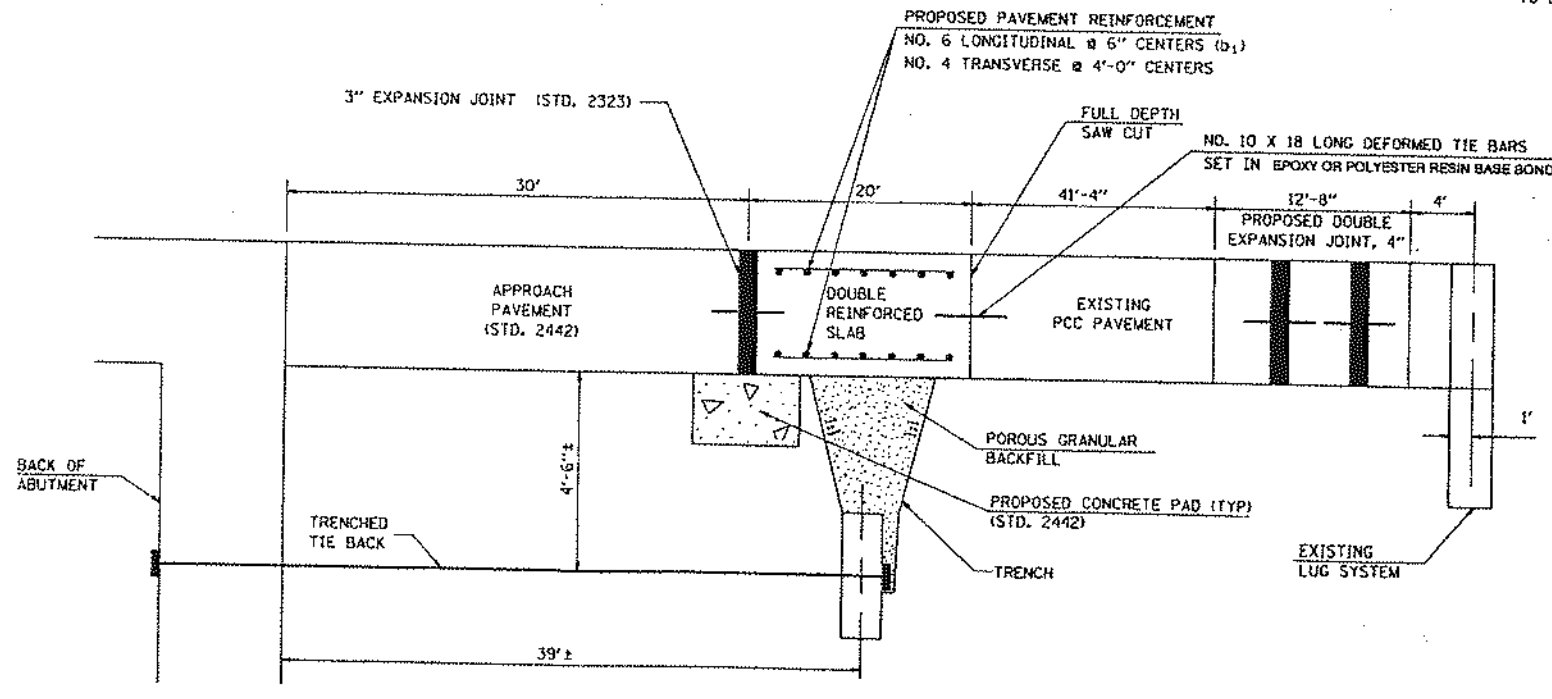
PROPOSED PAVEMENT REINFORCEMENT  
NO. 6 LONGITUDINAL @ 6" CENTERS (b<sub>1</sub>)  
NO. 4 TRANSVERSE @ 4'-0" CENTERS

FULL DEPTH SAW CUT

NO. 10 X 18 LONG DEFORMED TIE BARS  
SET IN EPOXY OR POLYESTER RESIN BASE BONDING SYSTEM (ART. 725.05) AT 12" CENTERS

NOTES:

1. THE EXISTING PAVEMENT REINFORCEMENT BARS SHALL BE CUT SO THAT 20" ARE INCORPORATED INTO THE PROPOSED DOUBLE EXPANSION JOINT CONCRETE. THE EXISTING REINFORCEMENT SHALL BE CLEANED AND STRAIGHTENED BEFORE INCORPORATION IN THE NEW CONSTRUCTION. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE PER SQUARE YARD FOR DOUBLE EXPANSION JOINT 4" AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
2. AFTER PERFORMING SAW CUT, PROVIDE AN ANGLE IRON AT THE FACE OF THE SAW CUT TO PREVENT SPALLING OF THE EXISTING OVERLAY DURING PAVEMENT REMOVAL AND DRILLING OF DOWEL BAR HOLES.



SECTION A-A

No. 6 b<sub>1</sub>

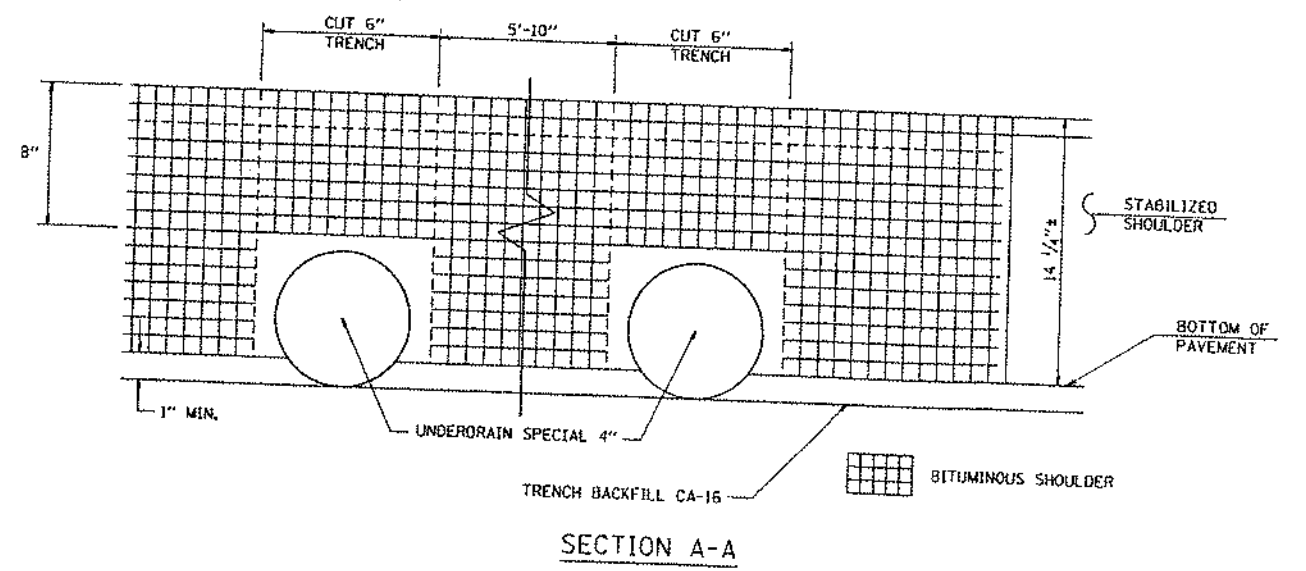
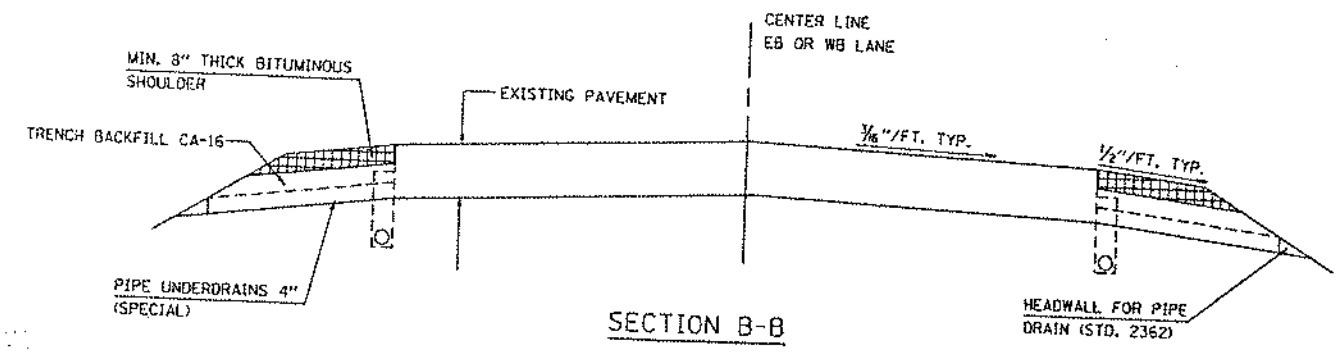
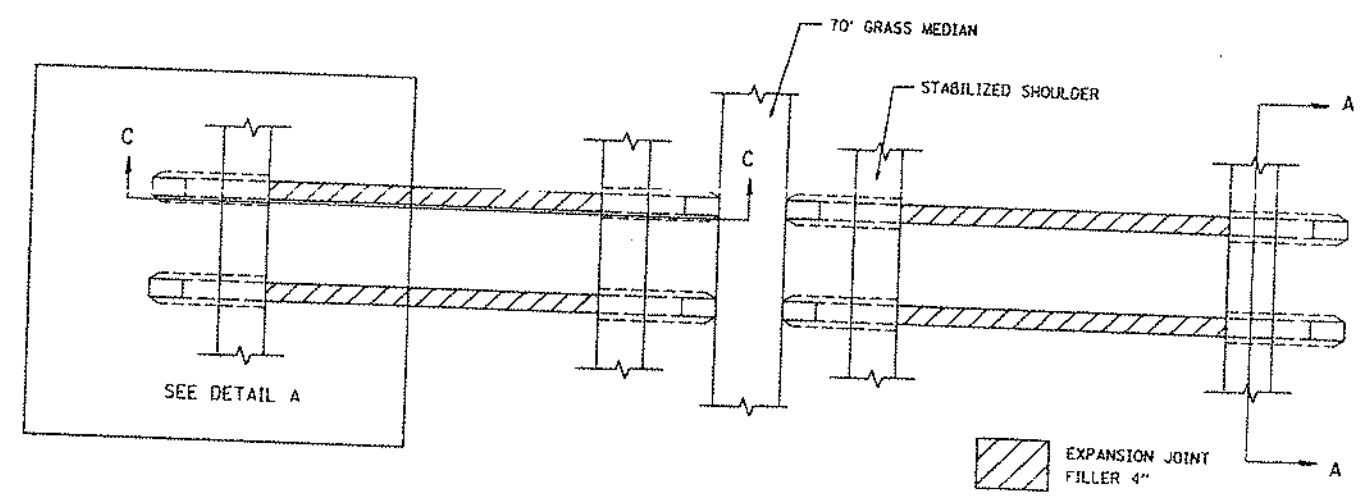
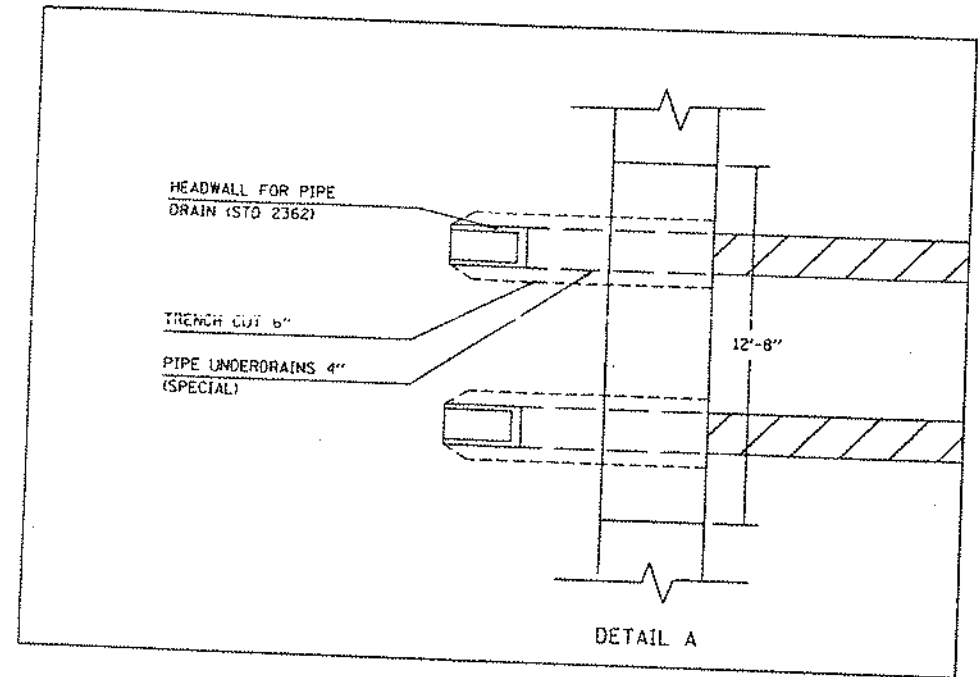
08/03/94 /usr/project/p422587/cevers.dgn

REVISIONS	
NAME	DATE
CE	8-8-94

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 DETAIL OF PROPOSED DOUBLE EXPANSION JOINT, 4"  
 FAI ROUTE 74 SEC. (48-29B)1-1  
 KNOX COUNTY  
 STRUCTURE NO. 048-0051  
 STRUCTURE NO. 048-0052  
 SCALE: NONE  
 DATE 08/03/94  
 DRAWN BY: CADD  
 CHECKED BY: C. EVERS

P.L. NO.	SECTION	COUNTY	TOWNSHIP	SHEET NO.
74		KNOX		62
STA.	TO STA.			
FILE AND REF. NO.	REVISION	FOR THE PROJECT		

• (48-308)1/I-1



08/03/94  
/usr/project/p422587/covers.dgn

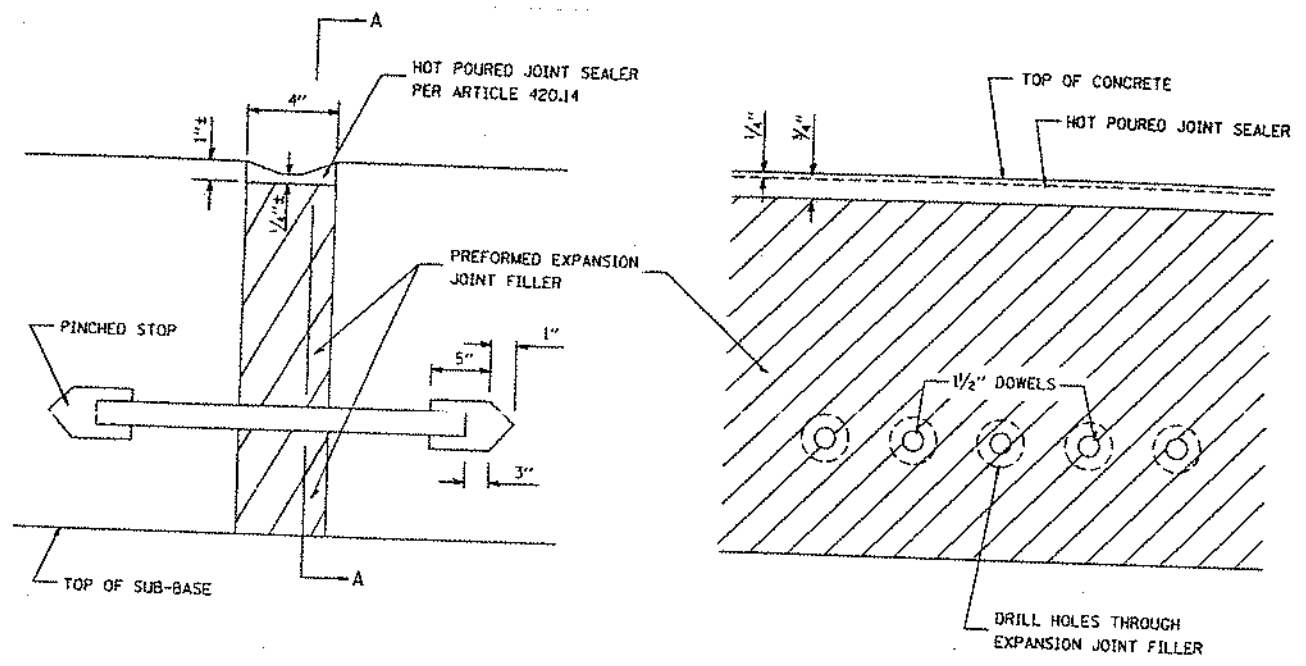
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 DETAIL OF PROPOSED DOUBLE  
 EXPANSION JOINT, 4"  
 FAI ROUTE 74 SEC. (48-298)1/I-1  
 KNOX COUNTY  
 STRUCTURE NO. 048-0051  
 STRUCTURE NO. 048-0052  
 SCALE: NONE  
 DATE 08/03/94  
 DRAWN BY: CADD  
 CHECKED BY: C. EVERS

S. N.	SECTION	COUNTY	TITLE	NO.
74		KNOX		63
STA.		TO STA.		
FED. ROAD DIST. NO.		BLANK	FED. AID PROJECT	

(48-308)(I)-1

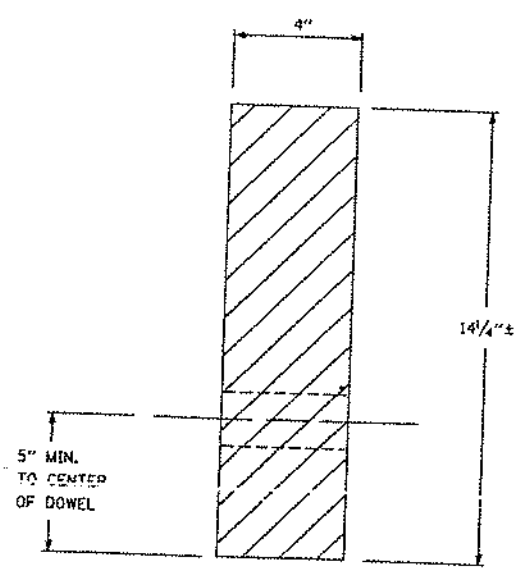
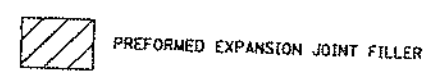
SECTION A-A



DETAIL OF EXPANSION JOINT

WORK SEQUENCE

1. TRANSVERSE SAW CUTS SHALL BE PARTIAL DEPTH THROUGH THE BITUMINOUS AND CONCRETE TO THE TOP OF THE EXISTING REINFORCING BARS.
2. LONGITUDINAL SAW CUTS AT THE EDGE OF PAVEMENT AND ALONG THE CENTERLINE SHALL BE FULL DEPTH.
3. REMOVE BITUMINOUS, CONCRETE, AND ANY EXISTING DOWEL BARS, SAVE EXISTING REINFORCEMENT BARS.
4. PLACE DOWEL BAR ASSEMBLY AND PREFORMED EXPANSION JOINT FILLER.
5. PLACE CLASS SI CONCRETE, FULL DEPTH.
6. AFTER CURE, PLACE HOT POURED JOINT SEALER PER ARTICLE 420.14.



ELEVATION

PREFORMED EXPANSION JOINT FILLER

DAMAGE OCCURRING TO THE SUB-BASE IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REPLACED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 DETAIL OF PROPOSED DOUBLE EXPANSION JOINT, 4"  
 FAI ROUTE 74 SEC. (48-29B)(I)-1  
 KNOX COUNTY  
 STRUCTURE NO. 048-0051  
 STRUCTURE NO. 048-0052  
 SCALE: NONE  
 DATE: 06/23/94  
 DRAWN BY: CAD0  
 CHECKED BY: C. EVERS

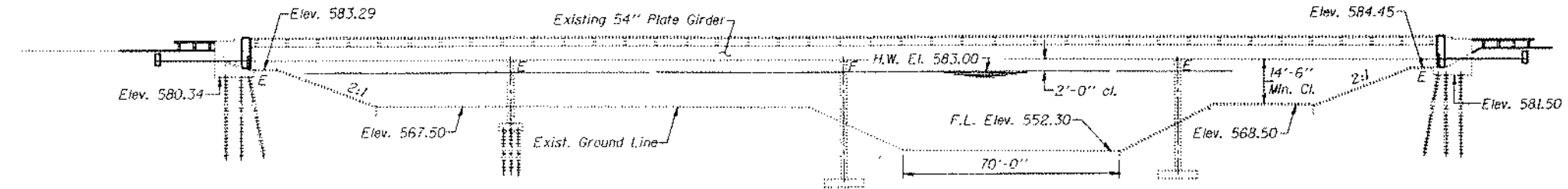
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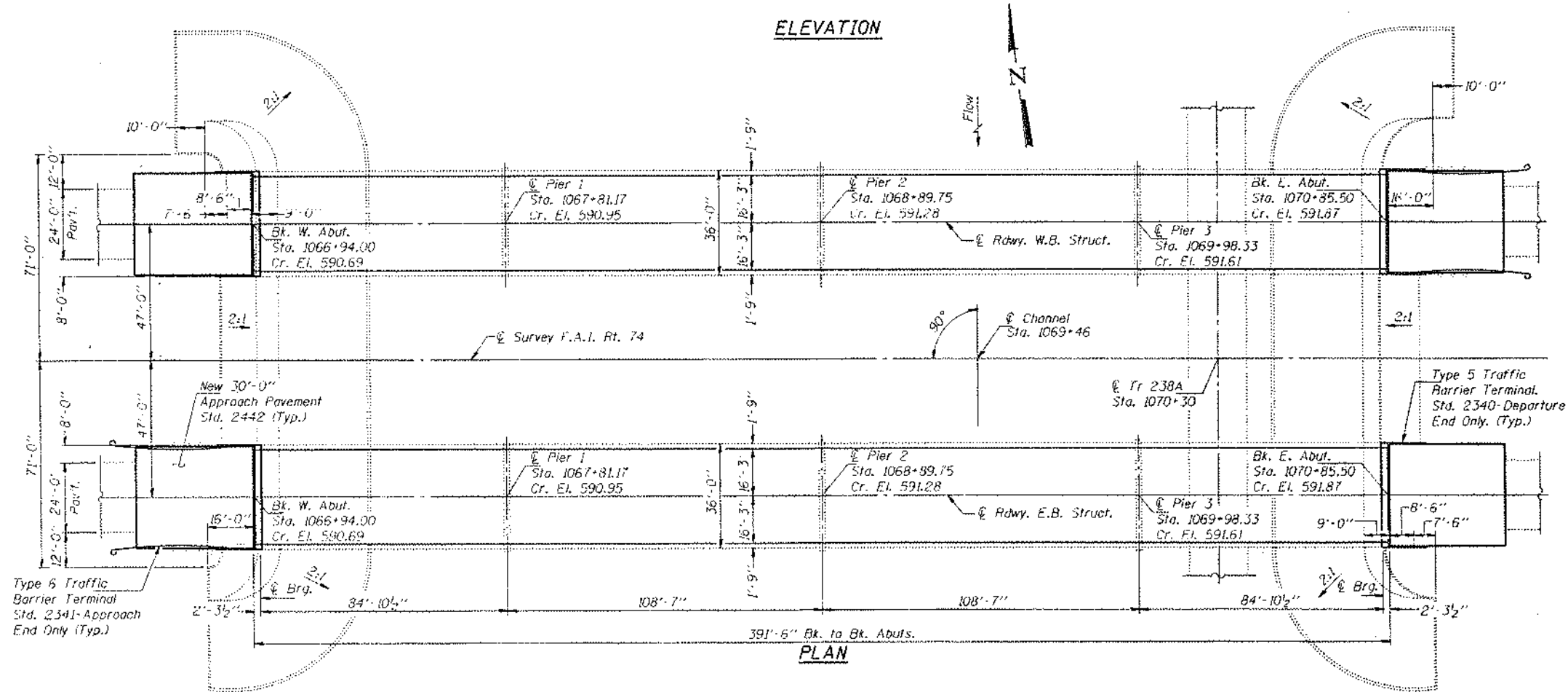
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DATE	SCALE	SHEET NO.
48-298	1/1-1	KNOX	1/2"	20 SHEETS
DATE	BY	CHECKED	APPROVED	

Bench Mark: Chiseled "□" on abut. seat. S.W. corner of E. Abut. Elev. = 584.78 of Structure 048-0051.  
Existing Structure: 048-0051 (W.B.) 048-0052 (E.B.) Built as F.A.I. Route 74, Sec. 48-29B in 1966.  
Superstructure consists of R.C. deck supported on 4 span 54" plate girders with a constant +0.3% grade.  
Traffic to be maintained by median cross overs, See Roadway plans for details.  
No Salvage.



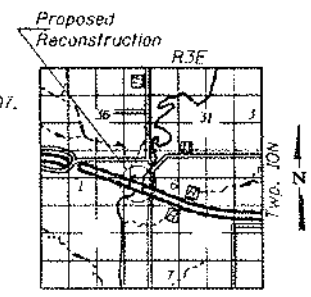
ELEVATION



PLAN

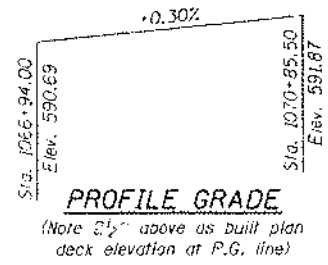
**DESIGN SPECIFICATIONS**  
1992 AASHTO, and Seismic Retrofitting Guidelines for Highway Bridges, FHWA/RD-83/007.  
**LOADING HS20-44 & ALT.**

**DESIGN STRESSES**  
FIELD UNITS  
(New Construction)  
 $f_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinf.)  
(Old Construction)  
 $f_s = 20,000$  psi (Structural Steel)



LOCATION SKETCH

**GENERAL PLAN**  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT.74 SEC. (48-29B)1/1-1  
KNOX COUNTY  
STA. 1068+89.75  
STRUCTURE NUMBER 048-0051(W.B.)  
STRUCTURE NUMBER 048-0052(E.B.)



PROFILE GRADE  
(Note 2 1/2" above as built plan deck elevation at P.G. line)

DESIGNED	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>
DRAWN	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>

Aug. 12, 1994  
EXAMINED *[Signature]*  
PASSED *[Signature]*  
CHIEF ENGINEER  
DIVISION OF BRIDGES AND STRUCTURES



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	LEGA	SHEET
F.A.I. 74	(48-298)	KNOX		165
SHEET NO. 2 20 SHEETS				

GENERAL NOTES

Field welding of construction accessories will not be permitted to the bottom flange of beams nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

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

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of  $\frac{1}{8}$  inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two  $\frac{1}{8}$ " adjusting shims, of the dimension of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

Cleaning and painting of the existing structural steel shall be as specified in the Special Provisions for "Cleaning and Painting Existing Steel Structures". All existing structural steel within 5 feet of either side of expansion joints shall be cleaned by Method 1. All remaining existing structural steel shall be cleaned by Method 2. The Lead and Chromate Free Alkyd Paint System shall be used for painting of existing structural steel. The prime and intermediate coats shall be applied as specified in the special provisions, followed by a spot final finish coat over all newly primed steel surfaces. The color of the final finish coat shall be as shown in table.

The Inorganic Zinc-Silicate/Acrylic/Acrylic Paint System shall be used for shop and field painting of new Structural Steel except where otherwise noted. The color of the acrylic finish coat shall be as shown in table. See Special Provisions.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale and all other loose, detrimental foreign material shall be removed from the embedded portions of flanges of stringers (girders). The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP-3 for power tool cleaning or SP-2 for hand tool cleaning. Cost shall be incidental to Concrete Removal.

TOTAL BILL OF MATERIAL\*\*

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	12.5	61.6	74.1
Elastomeric Bearing Assembly Type II	Each		24	24
Reinforcement Bars, Epoxy Coated	Pound	2580	1070	9650
Bituminous Concrete Removal (Deck)	Sq. Yd.	2760		2760
Deck Slab Repair (Partial)	Sq. Yd.	319		319
Deck Slab Repair (Full Depth) Type I	Sq. Yd.	18		18
Deck Slab Repair (Full Depth) Type II	Sq. Yd.	214		214
Bridge Deck Concrete Overlay Option	Sq. Yd.	2760		2760
Concrete Bridge Deck Scarification (1/4")	Sq. Yd.	2760		2760
Protective Coat	Sq. Yd.	10.0		10.0
Jack and Remove Existing Bearings	Each		24	24
Cleaning and Painting Steel Bridge	L.S.	1		1
Neoprene Expansion Joint 2 1/2"	Foot	138		138
Porous Granular Embankment	Cu. Yd.		374	374
Feedback System	L.S.		1	1
Structure Excavation	Cu. Yd.		136	136
Earth Excavation	Cu. Yd.		238	238
Concrete Superstructure	Cu. Yd.	22.9		22.9
Concrete Structures	Cu. Yd.		60.5	60.5
Furnishing & Erecting Structural Steel	Pound	10,820		10,820
Power Tool Cleaning Residue Containment and Disposal	L.S.	1		1
Blasting Residue Containment and Disposal	L.S.	1		1
Cathodic Protection System Complete	L.S.	1		1

\* Quantity is for top & inside surfaces of parapets (New Construction Only).  
\*\* Quantity is for both Bridge Structures.

FINAL COAT PAINT COLOR TABLE

Interior Beams & Diaphragms plus inside face of Fascia Beams	Light Grey Munsell No. 10Y 7/1
Outside Face of Fascia Beams	Interstate Green Munsell No. 7.5G 4/8

DESIGNED	<i>Chas. A. Ferguson</i>
CHECKED	<i>Jerry P. Vetter</i>
DRAWN	SHANE GUNBERG
CHECKED	<i>CAS JPV</i>

Aug. 12, 1994  
EXAMINED *Roy J. Kasco*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGE STRUCTURES

GENERAL NOTES & BILL OF MATERIAL  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT. 74 SEC. (48-298)1/1-1  
KNOX COUNTY  
STA. 1068+89.75

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DATE	SCALE	SHEET NO. 3
F.A.I. RT. 74	(48-298) I/I-1	KNOX	1/66	20 SHEETS
DESIGNED BY	CHECKED BY	DRAWN BY	CHECKED BY	

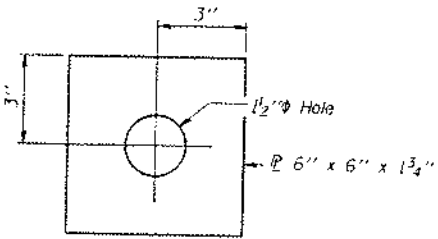
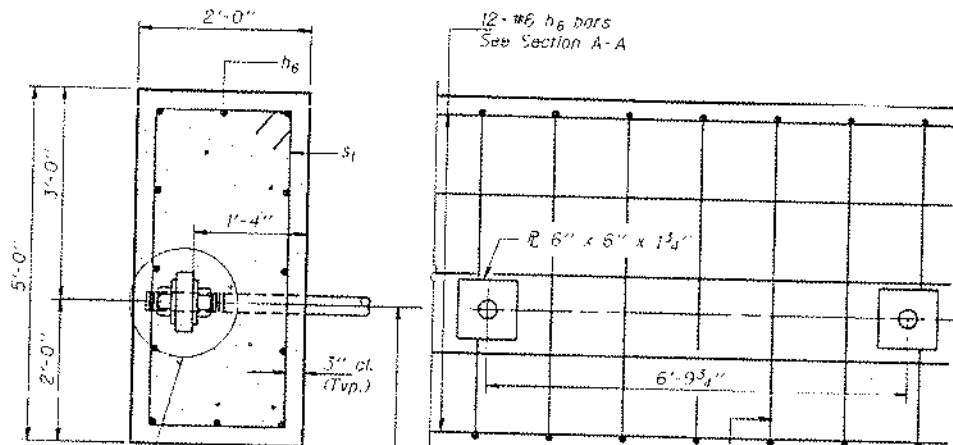


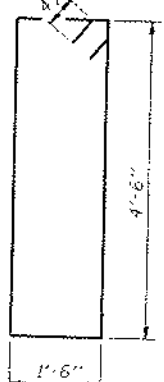
PLATE DETAIL

40 R's req'd

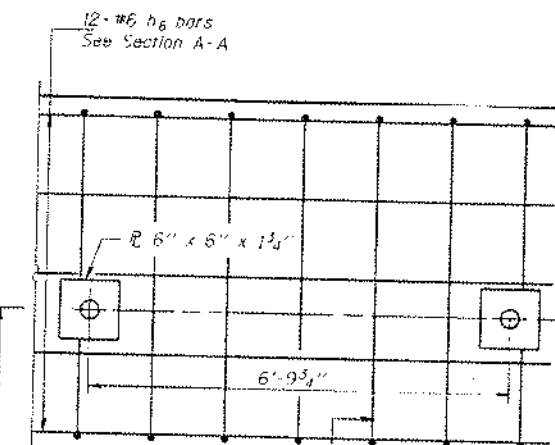


SEC. A-A

See Detail "A"



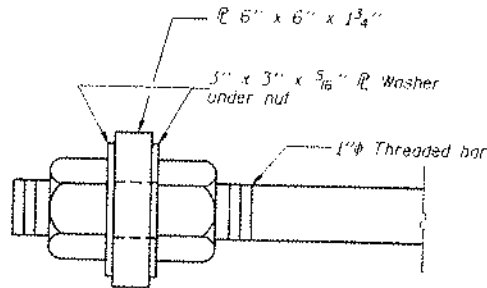
BAR S1



ELEVATION

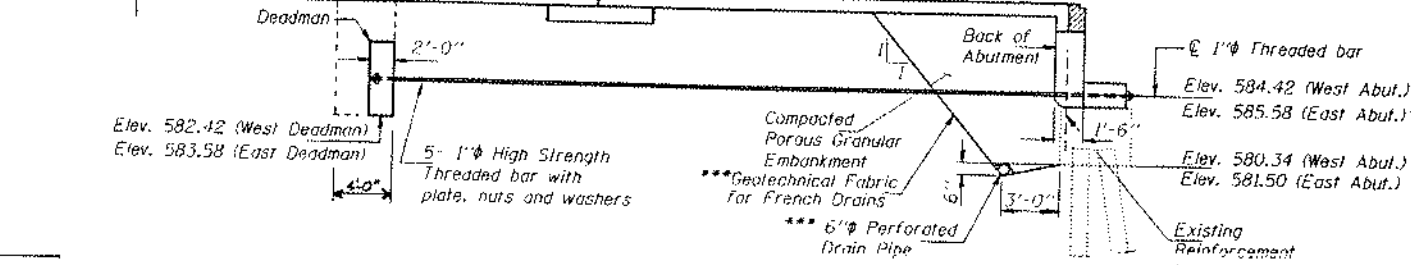
(Showing Reinforcement)

12 #6 h<sub>6</sub> bars  
See Section A-A



DETAIL "A"

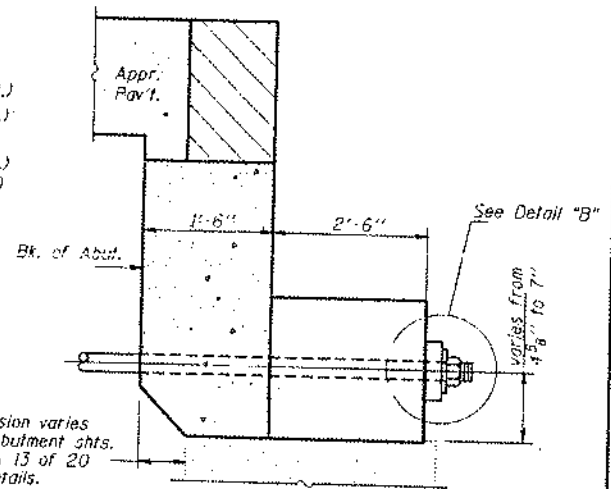
Elev. 590.39 at shldr. (West Deadman)  
Elev. 591.80 at shldr. (East Deadman)



ELEVATION

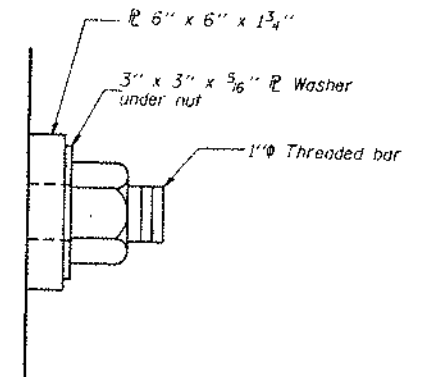
A 6" perforated drain shall be situated at the bottom of an approximate 2'x2' area of porous granular embankment. The 2'x2' area shall be wrapped completely in geotechnical fabric for french drains. Extend pipe parallel with the cap until intersecting with the sideslope.

\*\*\* Cost incidental to Porous Granular Embankment.



SEC. B-B

Dimension varies  
See Abutment gts.  
#12 & 13 of 20  
for details.



DETAIL "B"

\* BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h <sub>6</sub>	48	#6	37'-6"	—
s <sub>1</sub>	152	#4	12'-9"	□
Concrete Structures			Cu. Yd.	56.3
Furnishing & Erecting Structural Steel			Lbs.	840
Reinforcement Bars			Lbs.	4000
Tie Rods			Each	20

\* For Reference Only. All of these items are included in the pay item "Tieback System", L. Sum. Quantities are for four locations.

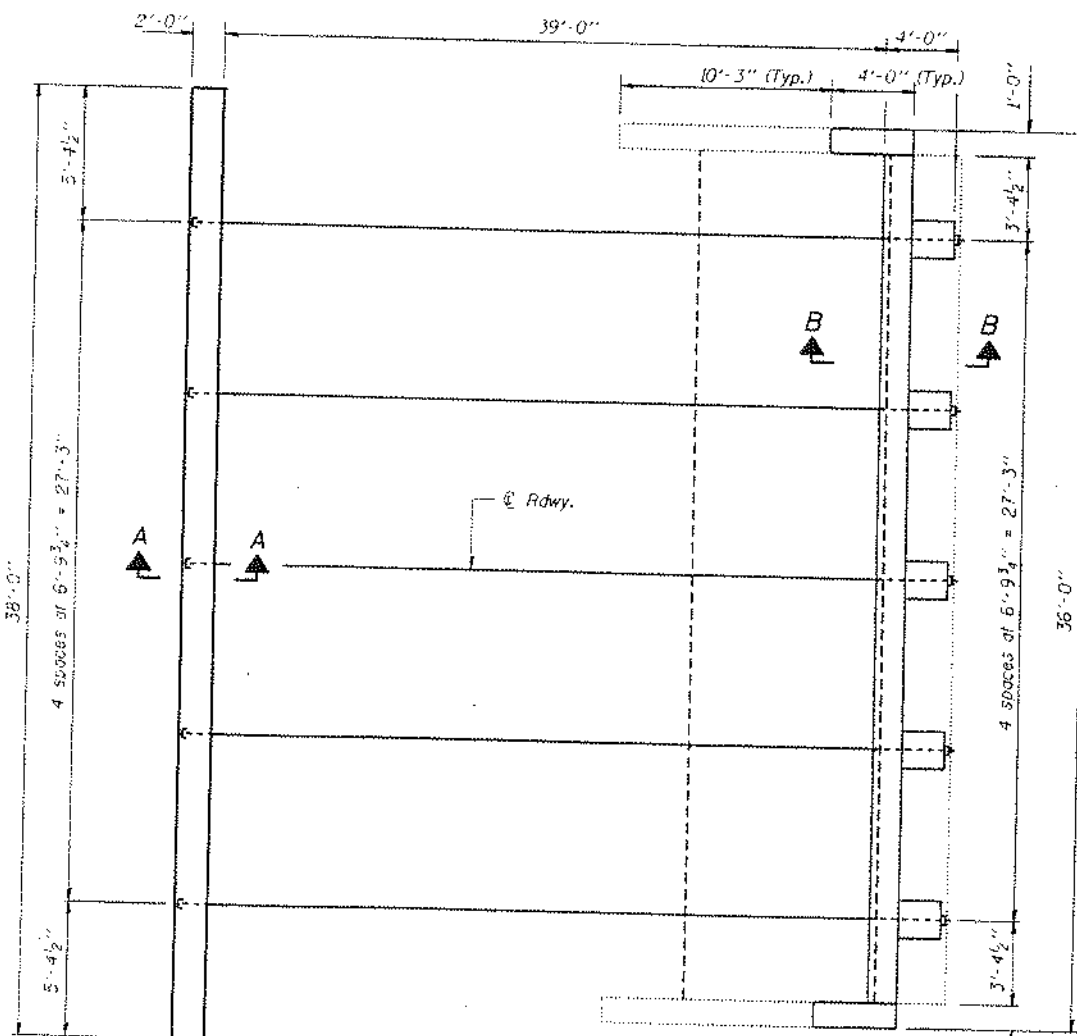
TIEBACK SYSTEM

F.A.I. RT. 74 OVER SPOON RIVER & TR 238A

F.A.I. RT. 74 SEC. (48-298) I/I-1

KNOX COUNTY

STA. 1068+89.75



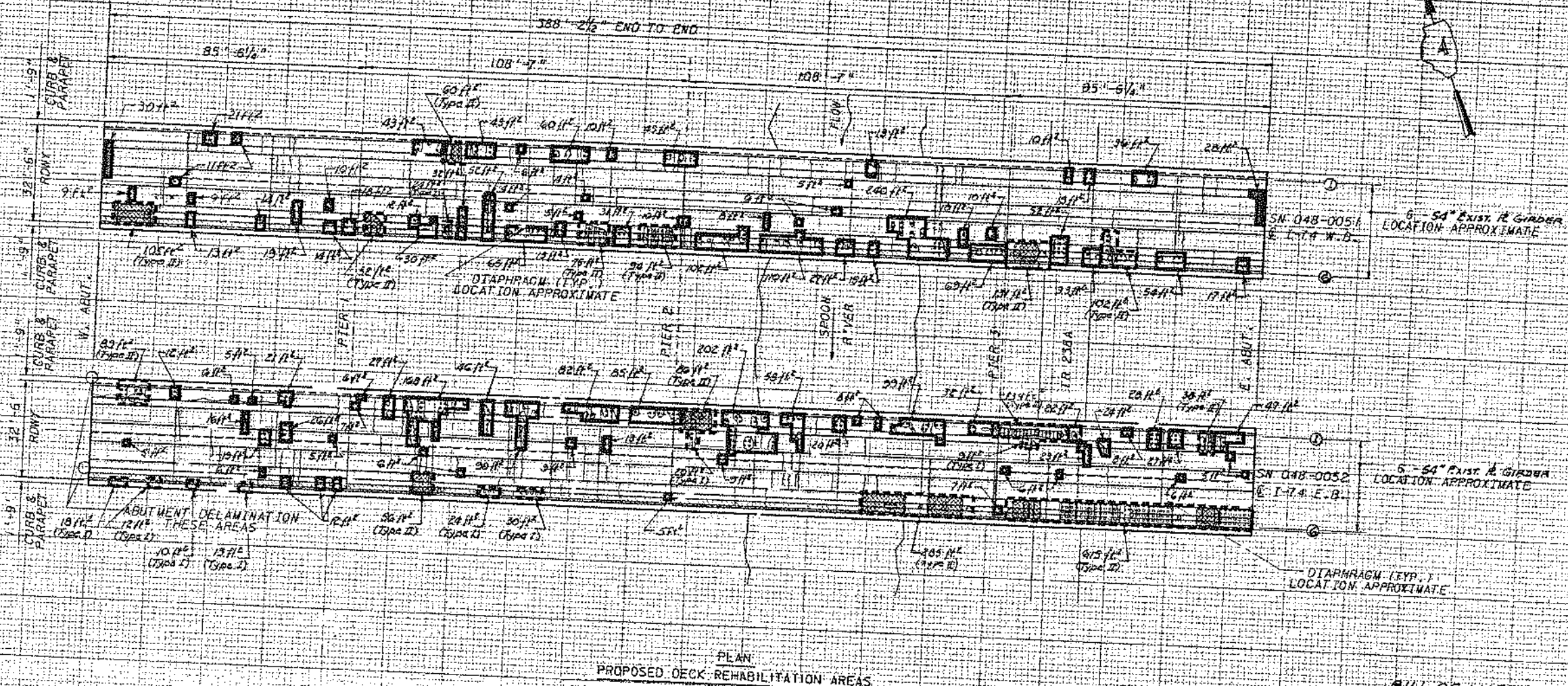
PLAN

Notes:  
Plan view shown is for W. Abut.,  
E. Abut. is similar by 180° rotation.

Tie rods shall be installed by  
pushing through the soil. Any  
other methods shall be approved  
by the Engineer.

DESIGNED	Aug 12, 1994
CHECKED	
DRAWN	
CHECKED	

EXAMINED	
PASSED	



**BILL OF MATERIAL**

ITEM	UNIT	S.N. 048-0051 (W.B.)	S.N. 048-0052 (E.B.)	TOTAL
DECK SLAB REPAIR (PART)	SQ. YD.	103	150	253
DECK SLAB REPAIR (FD-T1)	SQ. YD.	3	12	15
DECK SLAB REPAIR (FD-T2)	SQ. YD.	65	163	228

Notes: Any Full Depth Patching adjacent to the safety walls is to be repaired in alternate sections of 10 feet or less, measured longitudinally.

FIELD OBSERVATIONS SUMMARY	ITEM	UNIT	STRUCTURE NO. 048-0051		STRUCTURE NO. 048-0052	
			TOPSIDE	UNDERSIDE	TOPSIDE	UNDERSIDE
TOTAL AREA	SF		12617	13976	12617	13976
AREA IN SHADE	SF		970	N/A	970	13976
AREA INSPECTED	SF		11647	13976	11647	13976
CRACKS	LF		N/A	642	N/A	890
DELAMINATION	SF		425	119	513	413
SPALL	SF		0	0	0	45
DEBOND	SF		0	0	0	0
ASPHALT PATCH	SF		0	0	0	0
CONCRETE PATCH	SF		55	0.5	0	0
SUBSURFACE PATCH	SF		0	0	0	0
REHAB. AREA PARTIAL DEPTH	SF		1520	12.0	0	0
REHAB. AREA FULL DEPTH	SF		643	4.6	1354	10.7
					1439	10.3

**LEGEND**

DECK TOPSIDE		DECK UNDERSIDE	
DELAMINATION		CRACK	
SPALL		DELAMINATION	
DEBOND		SPALL	
ASPHALT PATCH		EXPOSED REINF.	
CONCRETE PATCH		DISCOLORATION	
SUBSURFACE PATCH			
AREA IN SHADE			
REHAB. AREA PART.			
REHAB. AREA FULL			

TOPSIDE INSPECTION DATE: 11/93  
UNDERSIDE INSPECTION DATE: 11/93

**RUST ENVIRONMENT & INFRASTRUCTURE**

PROJECT NUMBER 70267 DATE PLOTTED 1/4/94  
RUST FILE NAME 51\_52-93.00N

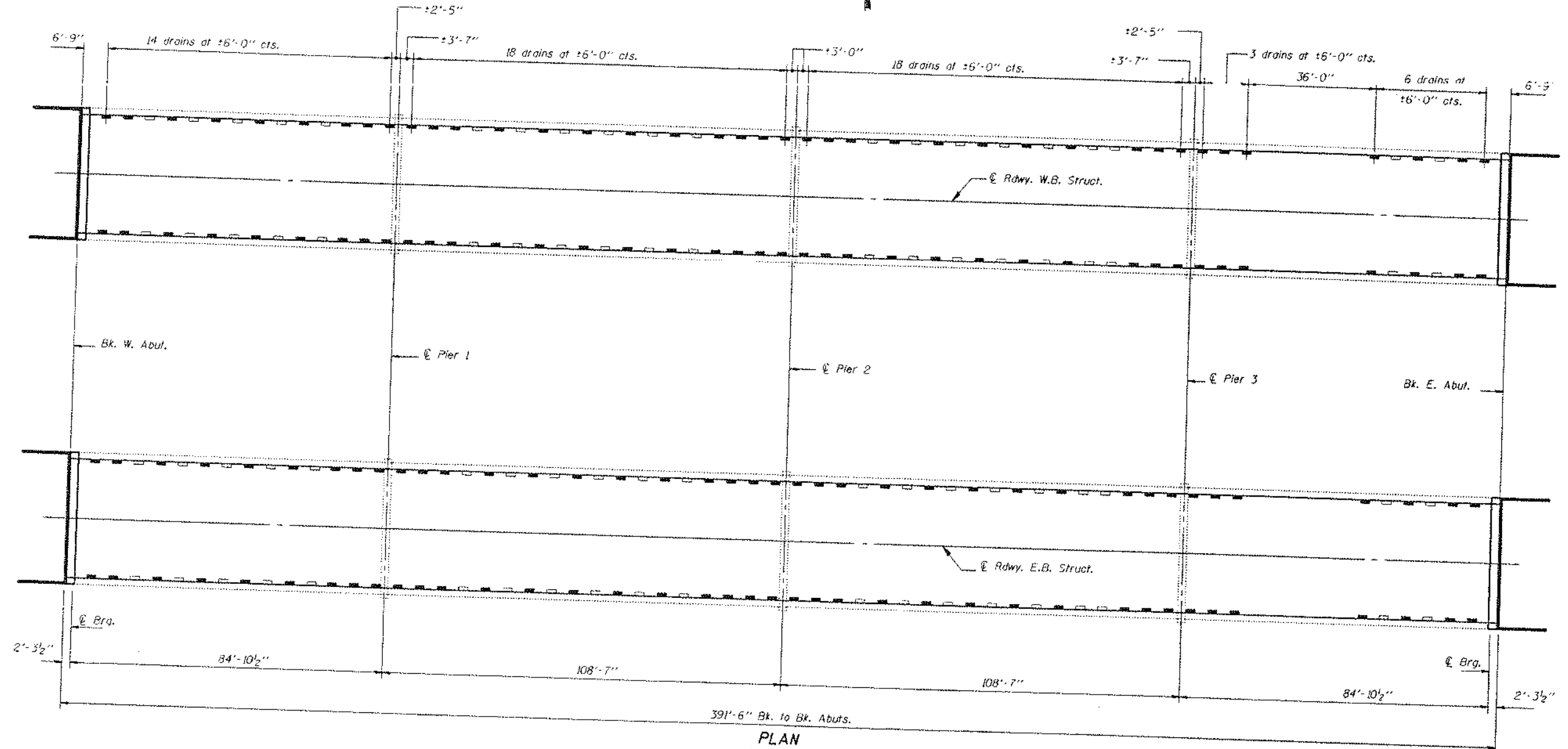
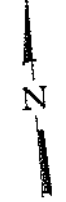
INSPECTED BY: HS BF  
CHECKED BY: PF  
DRAWN BY: JCL  
CHECKED BY: HS

ILLINOIS DEPARTMENT OF TRANSPORTATION  
I-74 (WB) & I-74 (EB) OVER  
SPOON RIVER AND TR 238A  
KNOX COUNTY  
PROPOSED DECK REHABILITATION AREAS  
S.N. 048-0051 (W.B.)  
S.N. 048-0052 (E.B.)



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNT	DATE	SHEET
F.A.I. 74	(48-29B)	KNOX	1/1-1	69
SHEET NO. 6				20 SHEETS



PLAN

Notes: The Contractor shall remove existing deck drain extensions where drains are to be plugged. At drains with missing deck drain extensions that are not specified to be plugged, the Contractor shall reattach existing deck drain extensions. Cost incidental to "Deck Slab Repair (Full Depth)".

■ Indicates locations where deck drains are to be plugged. See sheet #8 of 20 for details.

DESIGNED *Chris A. Ferguson*  
 CHECKED *Jeffrey P. Vetter*  
 DRAWN **SHANE GUNBER**  
 CHECKED *CAS* *JPV*

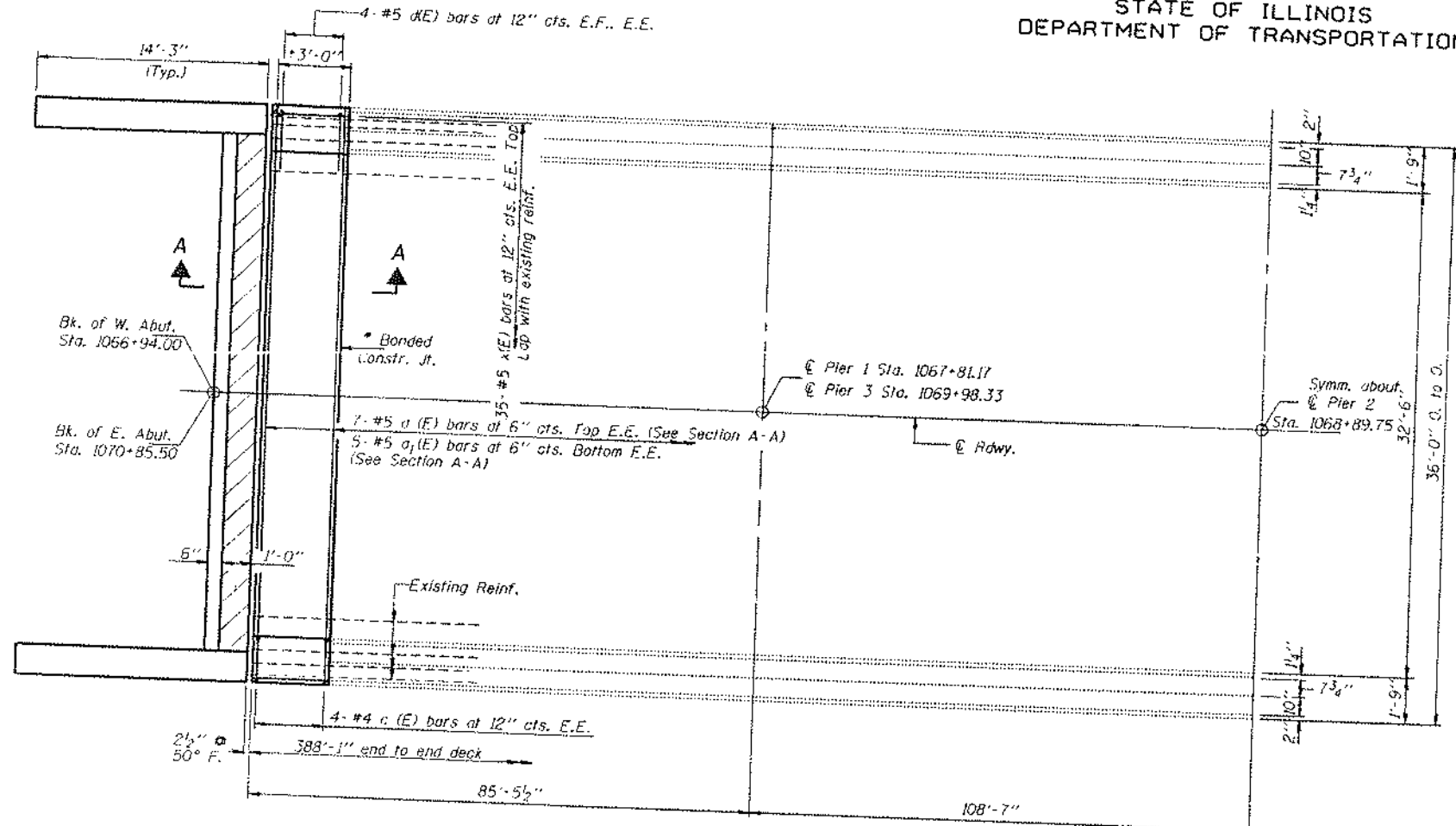
EXAMINED *Gregory J. Kaspar*  
 PASSED *Ralph E. Anderson*  
 ENGINEER IN CHARGE OF DESIGN  
 ENGINEER IN CHARGE OF STRUCTURES

Aug. 12, 1944

DECK DRAIN REPAIRS  
 F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
 F.A.I. RT. 74 SEC. (48-29B) 1/1-1  
 KNOX COUNTY  
 STA. 1068+89.75

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	PLANS	SHEETS	NO.
	(48-29B)			
PLAN 74	1/1-1	KNOX		70
SHEET NO. 7		20 SHEETS		

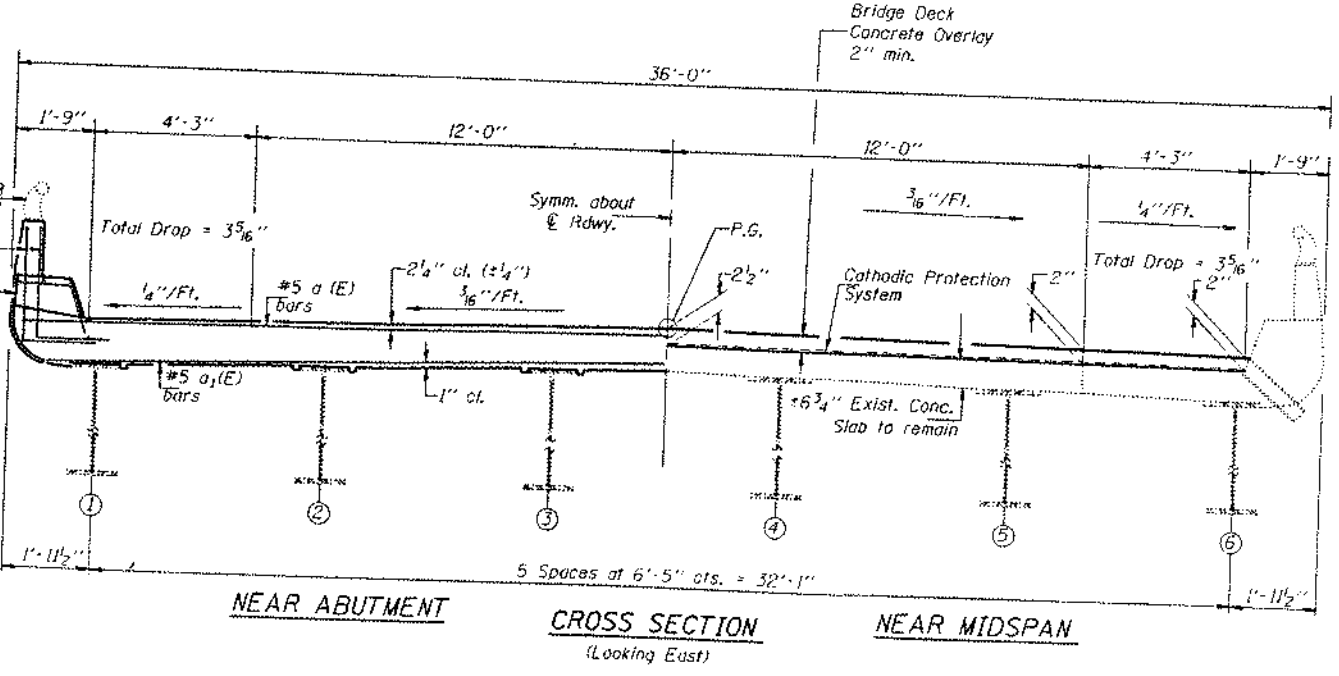


\*Bonded Construction Joint in accordance with Article 503.09(a)(2) of the Standard Specifications.

**Legend**  
E.E. = Each End  
E.F. = Each Face

**HALF PLAN**  
(E.B. Structure Shown, W.B. Structure Similar)

Notes: See Sheet #8 of 20 for superstructure details and Bill of Material.  
See sheets #12 & 13 of 20 for wingwall and abutment details.  
Reinforcement bars designated (E) shall be epoxy coated.  
See Section A-A sheet #8 of 20.  
Existing Reinforcement extending into removal area shall be cleaned, straightened and incorporated into new construction. Cost incidental to "Concrete Removal".  
Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with "Concrete Superstructure."  
See sheets 15 thru 20 of 20 for Cathodic Protection System details.



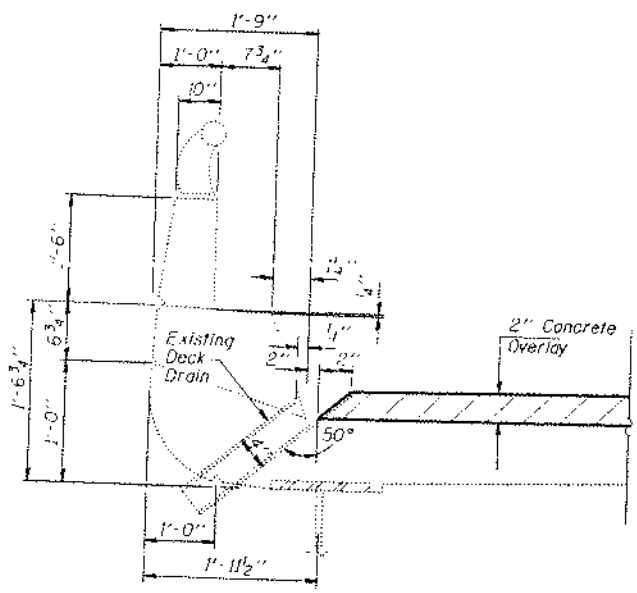
DESIGNED *[Signature]*  
CHECKED *[Signature]*  
DRAWN SHANE BURNER  
CHECKED CAS *[Signature]*

EXAMINED *[Signature]*  
PASSED *[Signature]*  
AUG 12, 1994

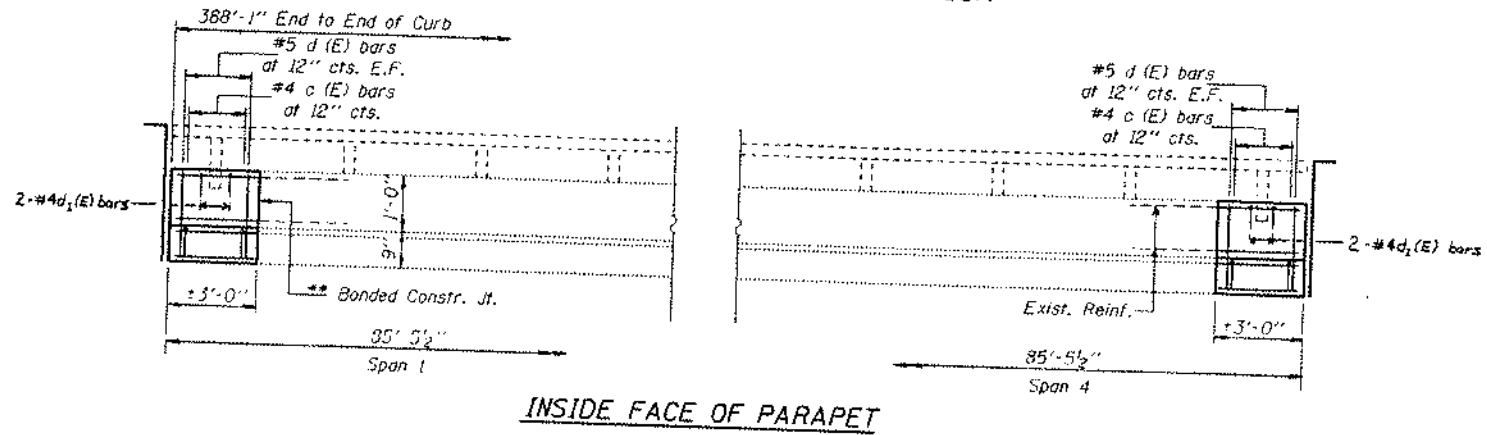
**SUPERSTRUCTURE**  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT.74 SEC. (48-29B)1/1-1  
KNOX COUNTY  
STA. 1068+89.75

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

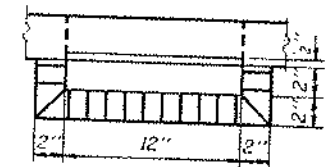
PROJECT NO.	SECTION	QUANTITY	DATE	NO.	SHEET NO. 8 20 SHEETS
48-298					
FILE NO. 78	1/1-1	KNOX		71	
DESIGNED BY	ENGINEER	CHECKED BY	DATE		



SECTION SHOWING OPEN DECK DRAIN

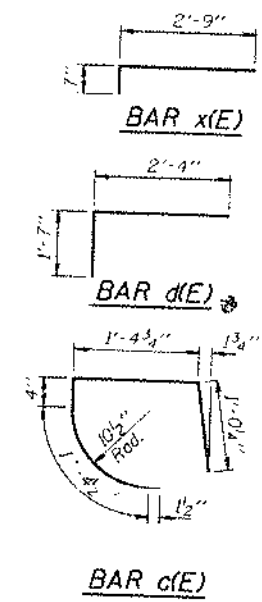
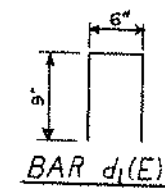


INSIDE FACE OF PARAPET



DECK DRAIN DETAIL

Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with "Concrete Superstructure".

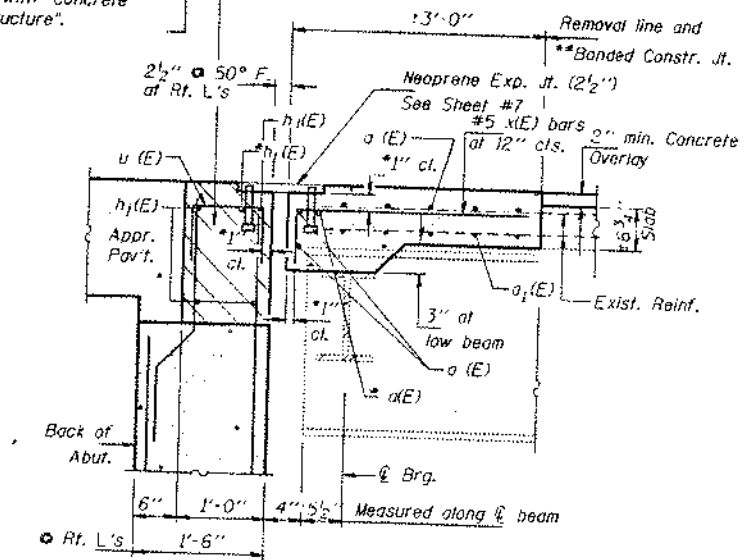


Legend  
E.F. = Each Face  
E.E. = Each End

SUPERSTRUCTURE  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	28	#5	35'-8"	
d1(E)	20	#5	35'-2"	
c(E)	32	#4	4'-3"	□
d(E)	64	#5	5'-5"	
d(E)	16	#4	2'-0"	□
x(E)	140	#5	3'-4"	□
Reinforcement Bars (Epoxy Coated)			Lbs.	2580
Concrete Superstructure			Cu. Yds.	22.9
Concrete Removal			Cu. Yds.	12.5

Reinforcement bars designated (E) shall be epoxy coated.

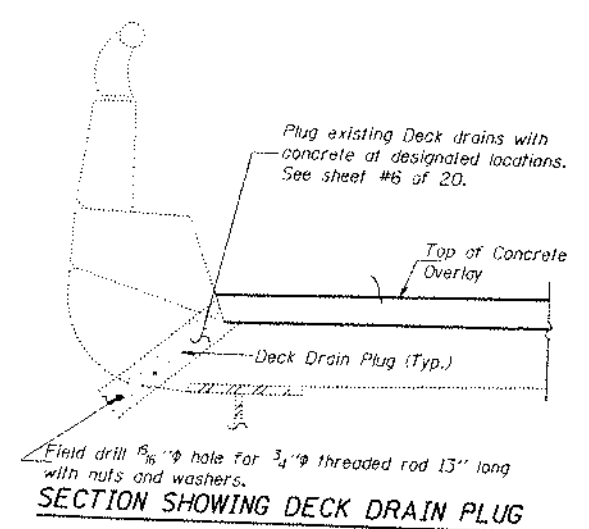


SECTION A-A

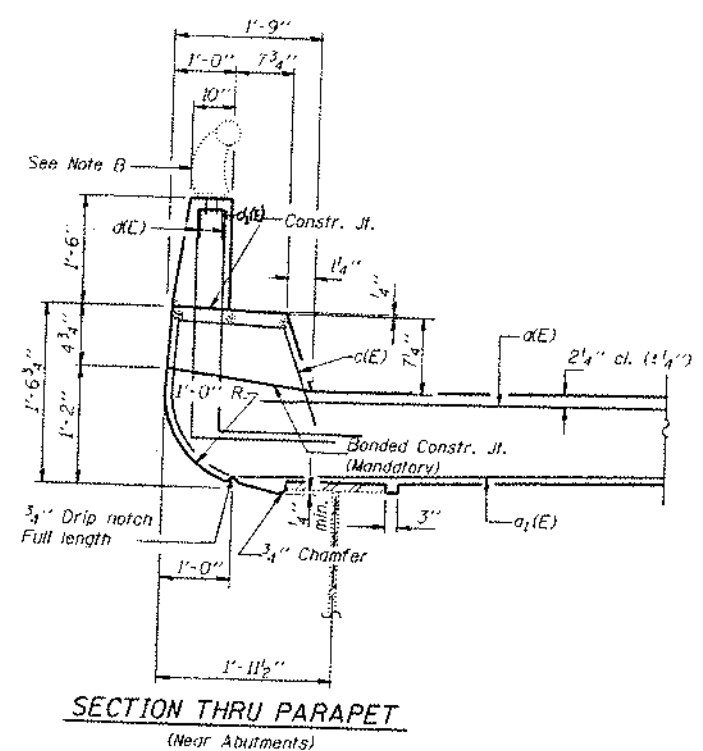
Existing reinforcement bars extending into removal area shall be cleaned, straightened and incorporated into new construction. Cost incidental to "Concrete Removal".  
\*Place a(E) and h1(E) bars in back of anchor bolts as shown if required to maintain 1" cl. (10-8"). Anchor bolts should be tied to a(E) and h1(E) bars.  
\*\*Bonded Construction Joint in accordance with Article 503.09(a)(2) of the Standard Specifications.

Note B:  
The hardware for the B end posts of the existing Aluminum hand rail (machine bolts & welded stud assembly) shall be removed and reused in new construction. Cost included in Concrete Superstructure.

SUPERSTRUCTURE DETAILS  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT. 74 SEC. (48-298)1/1-1  
KNOX COUNTY  
STA. 1068+89.75



SECTION SHOWING DECK DRAIN PLUG



SECTION THRU PARAPET  
(Near Abutments)

DESIGNED *Chris A. Spoor*  
CHECKED *John P. Vitte*  
DRAWN SHANE SUMNER  
CHECKED CAS JPV

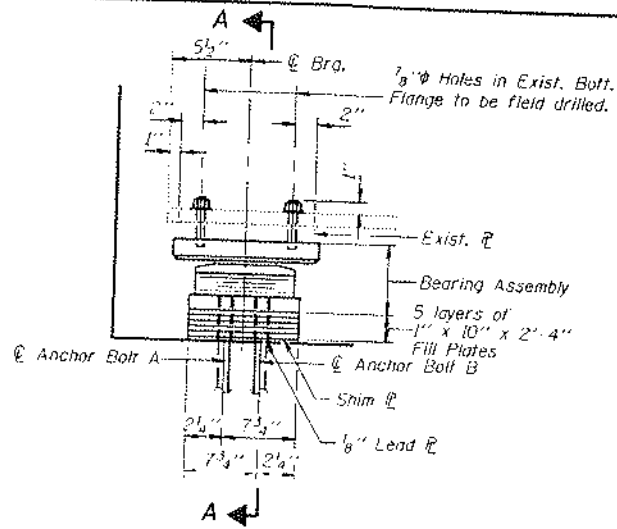
EXAMINED *Greg J. Kaspar*  
PASSED *Ralph E. Anderson*

Aug. 12, 1994

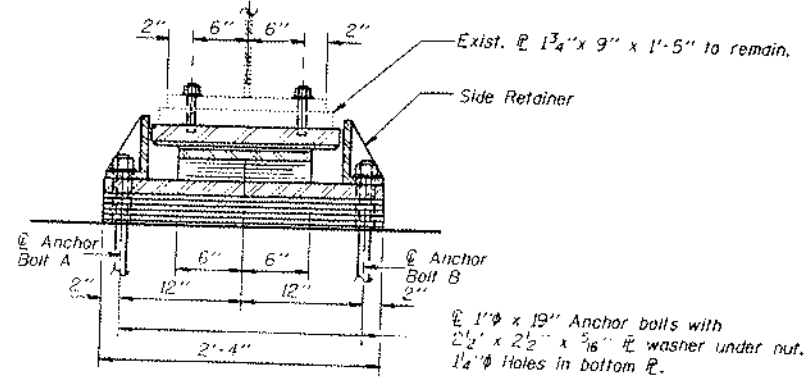


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	DATE	SHEET NO.
48-298		KNOX		9
PAGE 76	1/1-1			20 SHEETS

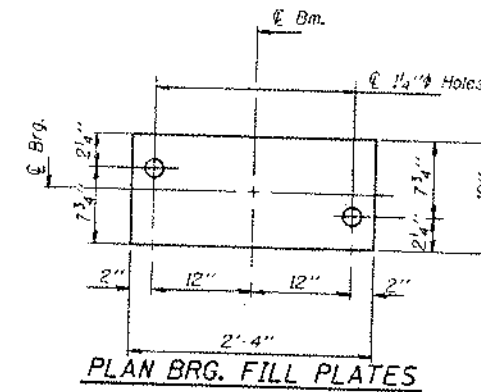


ELEVATION AT ABUT.



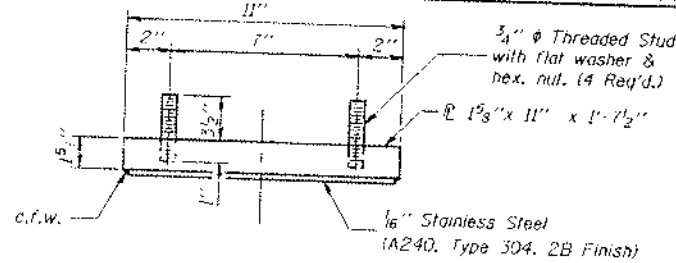
SECTION A-A

Note: See sht. #14 of 20 for Anchor Bolt installation.

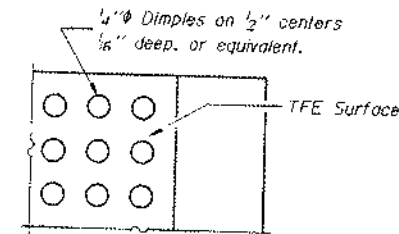


PLAN BRG. FILL PLATES

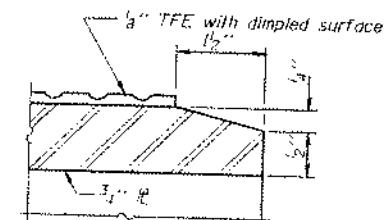
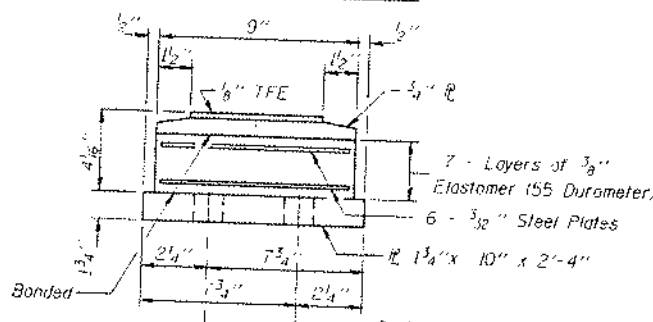
TYPE II TFE ELASTOMERIC EXP. BRG.



TOP BEARING ASSEMBLY



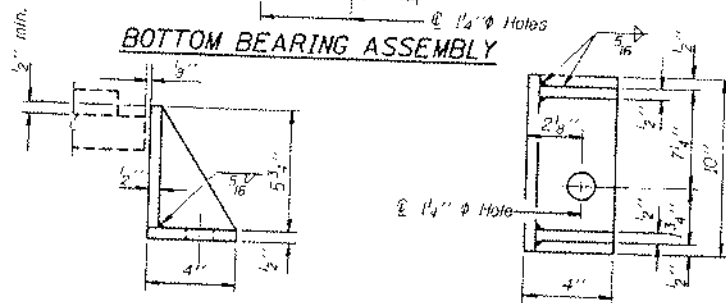
PLAN-TFE SURFACE



SECTION THRU TFE

Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

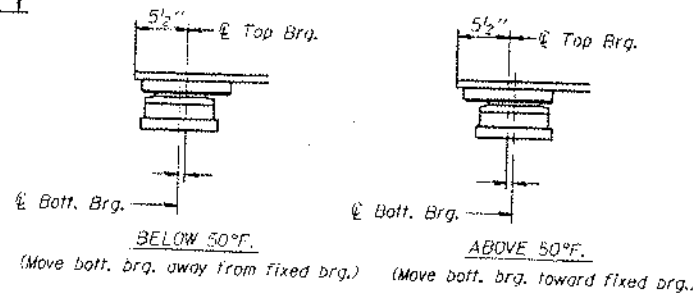
Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



BOTTOM BEARING ASSEMBLY

SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (48 Required)



SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/4" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

JACK AND REMOVE EXISTING BEARINGS PROCEDURE

- The Contractor shall submit for approval by the Engineer, plans for jacking prior to commencing any work at the bearings. The maximum dead load reaction per bearing at each abutment is 34.8K.
- Jacking shall be limited to removing and replacing of existing expansion bearings at abutments.
- All beams at one abutment shall be lifted simultaneously.
- Anchor bolts shall be removed or cut off and ground flush with top of concrete and sealed with epoxy. If anchor bolts are removed, existing holes shall be filled with non-shrink grout.
- Minimum jack capacity shall be 26 tons.
- With new bearing in position and used as a template, new holes shall be drilled into the abutment cap for new anchor bolts.
- Jacking shall be limited to a maximum of 1/8"
- The cost of field drilling 7/8" holes in existing bottom flange shall be included in "Elastomeric Brg. Assembly, Type II." Each.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	24
Jack and Remove Existing Bearings	Each	24

Weight of Side Retainers and Anchor Bolts are included with Structural Steel.

ABUTMENT BEARING DETAILS  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT. 74 SEC. (48-29B)1/1-1  
KNOX COUNTY  
STA. 1068+89.75

DESIGNED	Chris A. Engler
CHECKED	John P. Vittoria
DRAWN	SHANE SUMNER
CHECKED	CAS JRV

EXAMINED	Aug. 12, 1994
PASSED	Ralph E. Anderson

I-2-E2 2-26-93

Joint Size	"C" at 50°F	"D" at 50°F
2"	2"	1 1/2" Min.
2 1/2"	2 1/2"	1 3/4" Min.
4"	3"	2 1/2" Min.

PROJECT NO.	SECTION	DATE	SCALE	SHEET NO.
148-2981	KNOX	1/1-1		10
I-74 OVER SPOON RIVER & TR 238A				20 SHEETS

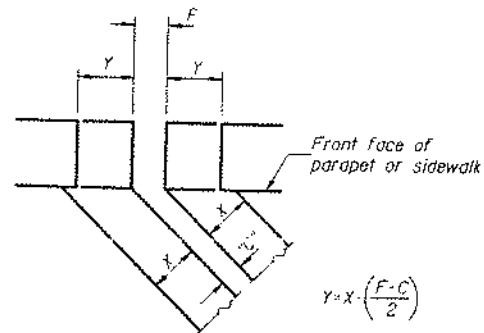
### INSTALLATION NOTES

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

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

### SKREW LIMITATIONS

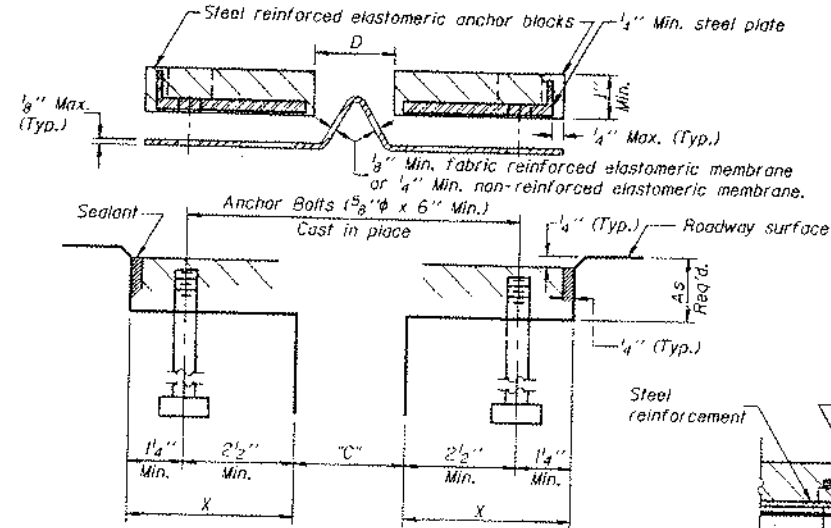
The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews. For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1/2" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



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

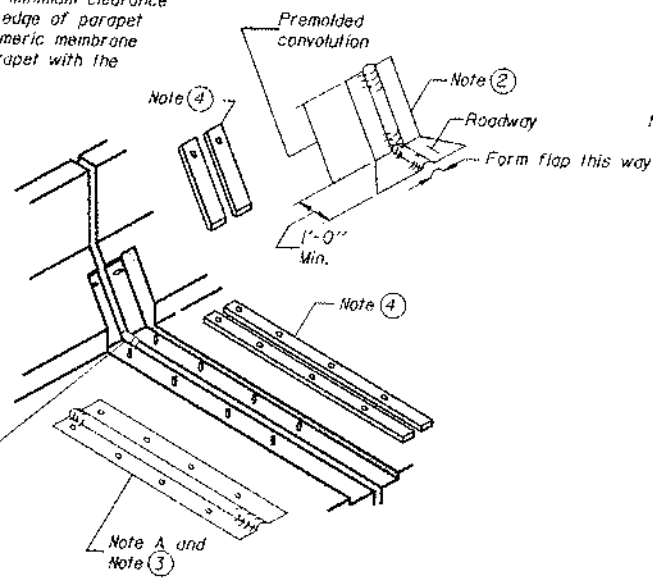
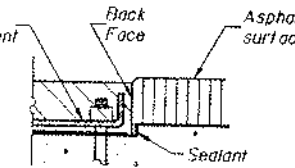
For dimension "F" see sheet # 7 of 20.

### FORMING BLOCKOUT SKETCH

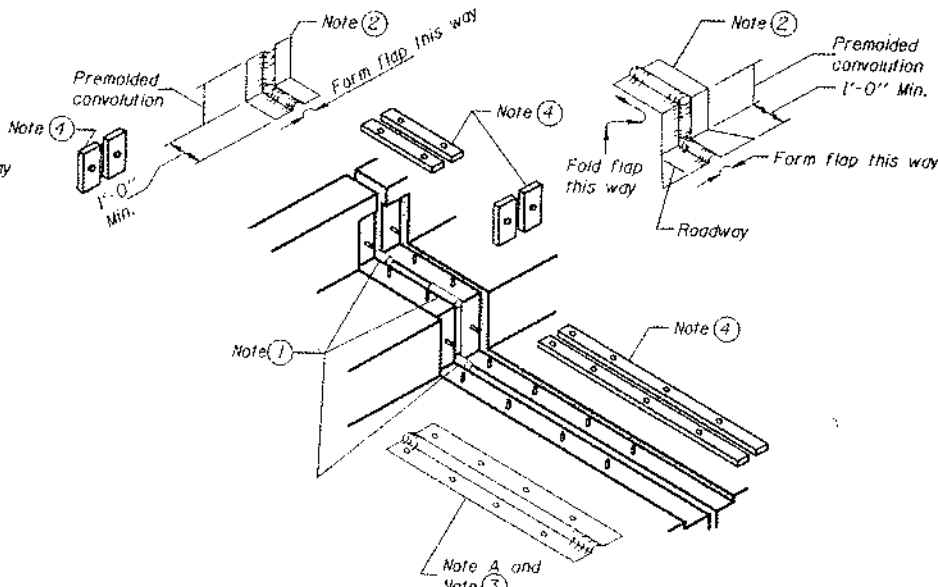


### CROSS SECTION

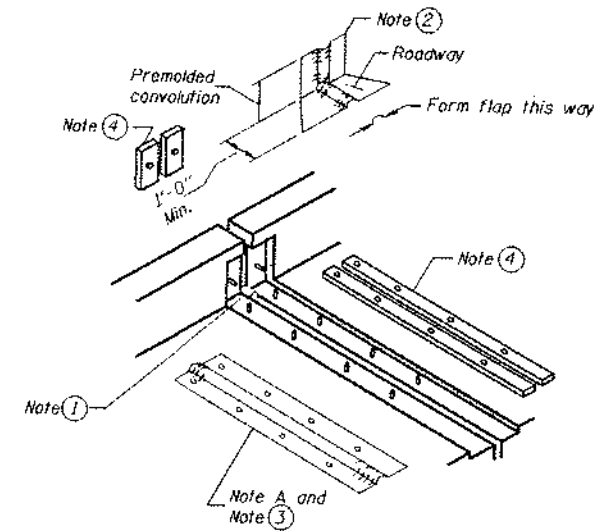
### ANCHOR BLOCK REINFORCEMENT WITH ASPHALT SURFACE



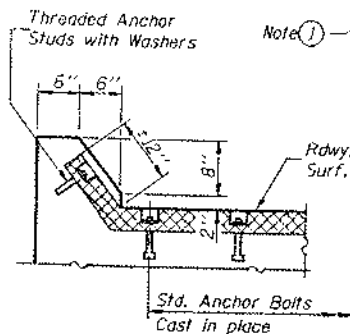
### AT PARAPET



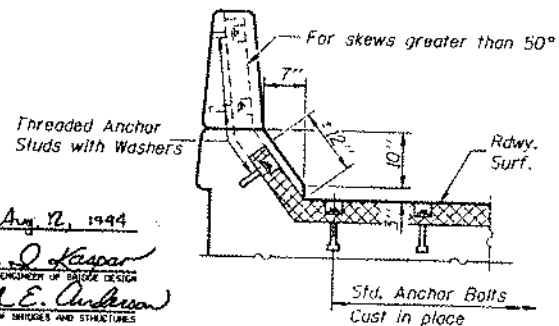
### AT SIDEWALK OR MEDIAN



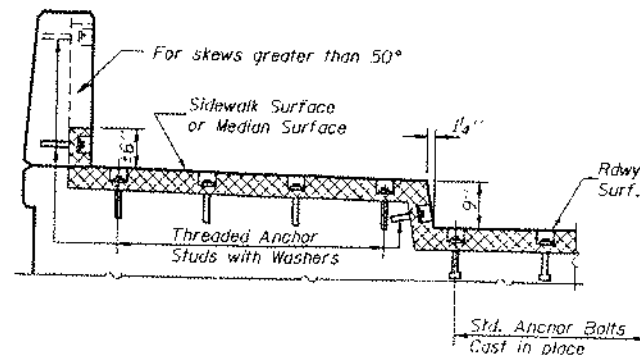
### AT WALL



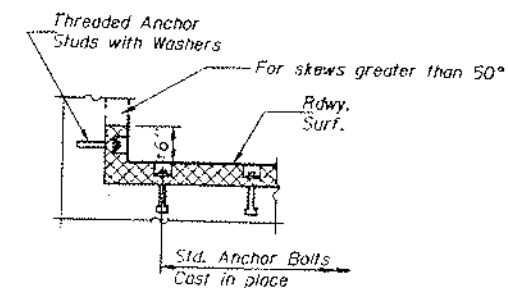
### AT CURB



### AT PARAPET



### AT SIDEWALK OR MEDIAN TYPICAL END TREATMENTS



### AT WALL

DESIGNED *Chas. A. ...*  
 CHECKED *Jerry P. ...*  
 DRAWN SHANE SUMNER  
 CHECKED CAS JPV

EXAMINED *Rafael J. ...*  
 PASSED *Rafael E. ...*  
 AUG 12, 1944

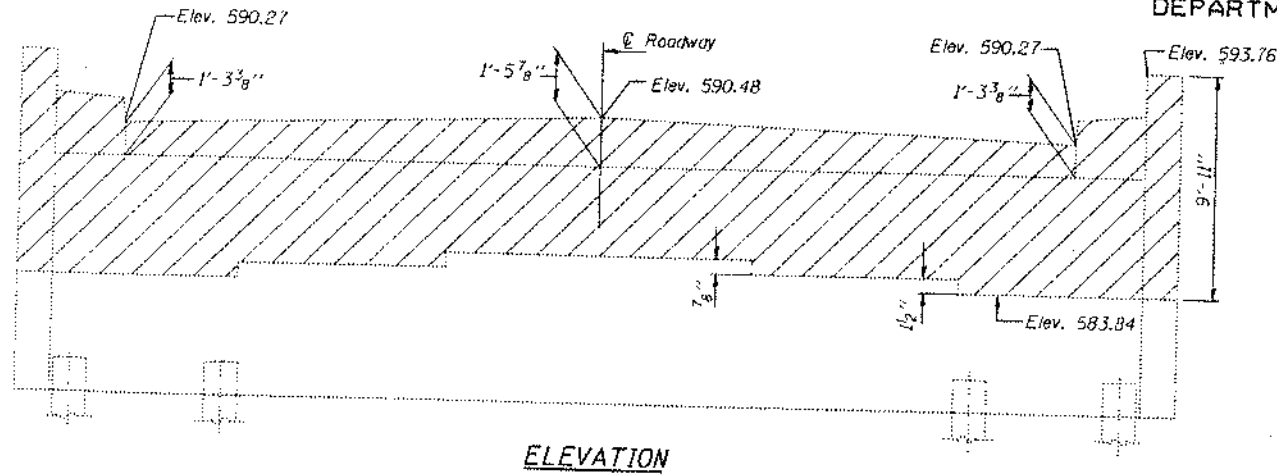
EJ-CS 2-26-93

CONTINUOUS SEAL TYPE  
 NEOPRENE EXPANSION JOINTS  
 For 2", 2 1/2" and 4" Movement

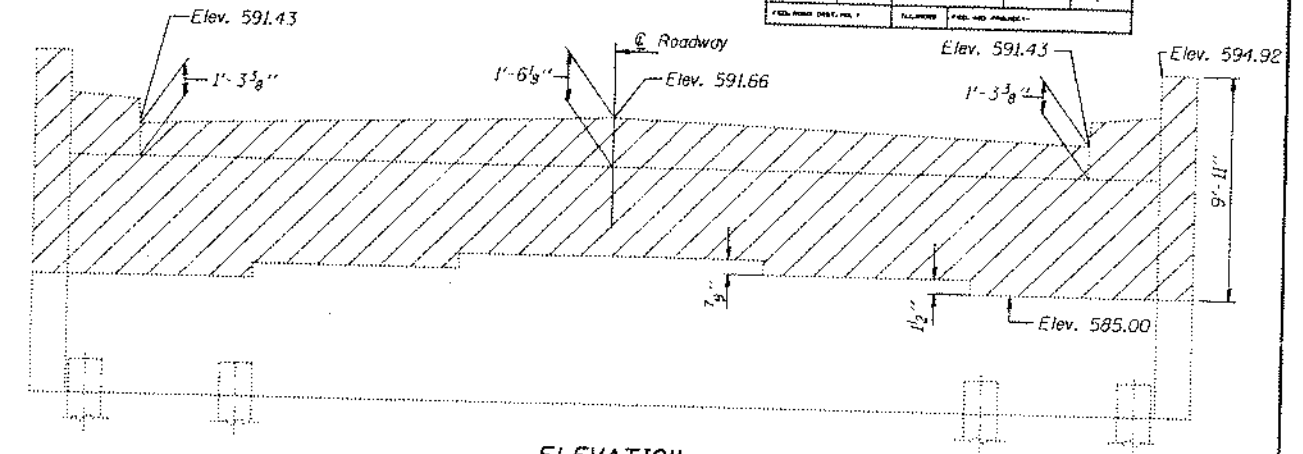
I-74 OVER SPOON RIVER & TR 238A  
 F.A.I. RTE. 74  
 SEC. (48-29B)1/1-1  
 KNOX COUNTY  
 STATION 1068+89.75

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

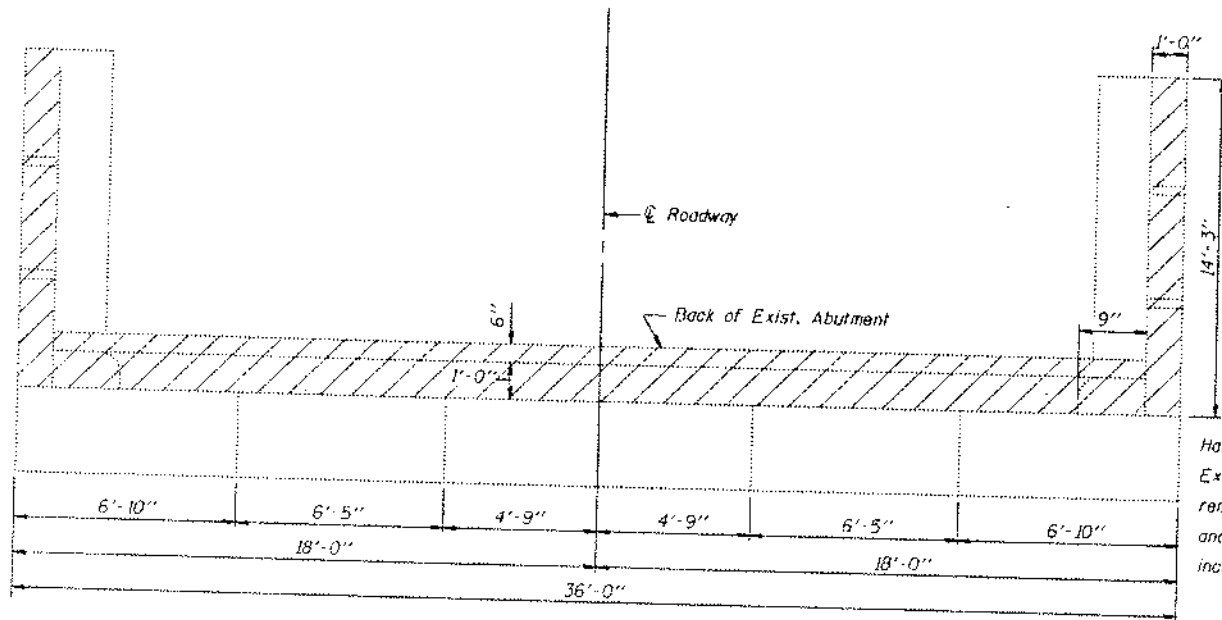
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO. 11
74	1/1-1	AMUX	74	20 SHEETS



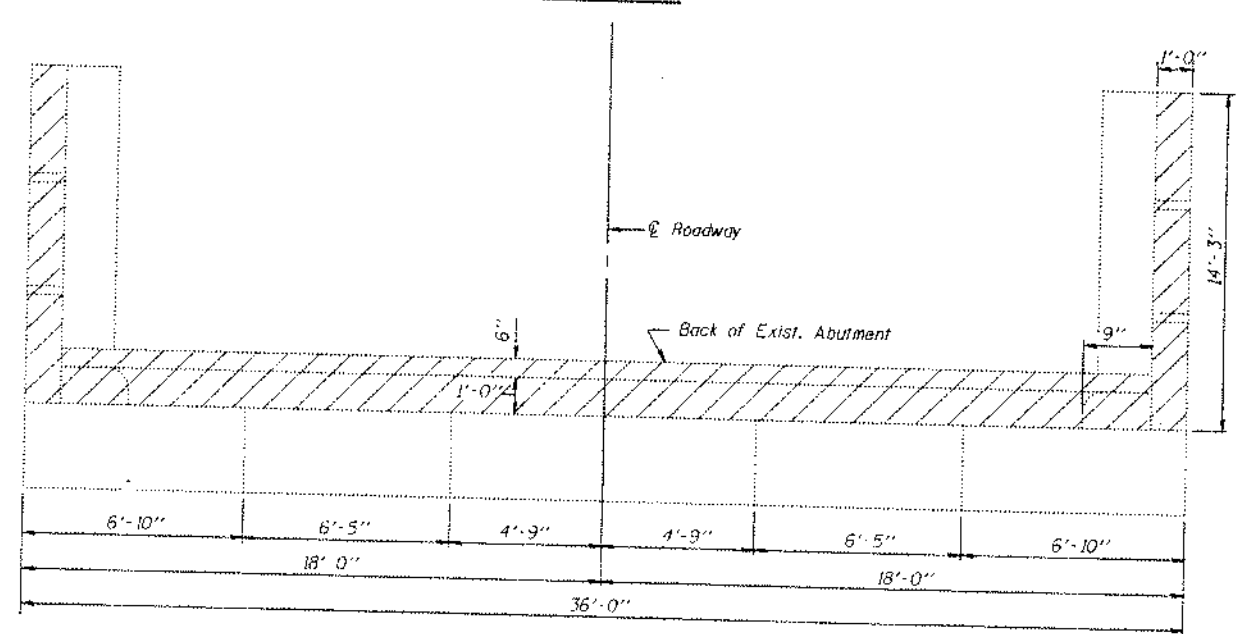
ELEVATION



ELEVATION



PLAN  
WEST ABUT. DETAILS  
(Westbound & Eastbound Lanes)

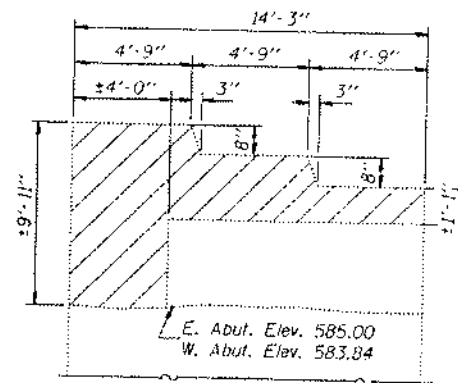


PLAN  
EAST ABUT. DETAILS  
(Westbound & Eastbound Lanes)

Hatched Area Indicates Concrete Removal.  
Existing reinforcement extending into  
removal area shall be cleaned, straightened,  
and incorporated into new construction. Cost  
incidental to "Concrete Removal".

FOUR ABUTMENTS  
BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	61.6



WINGWALL ELEVATION

ABUTMENTS CONCRETE REMOVAL DETAILS  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT. 74 SEC. (48-29B)1/1-1  
KNOX COUNTY  
STA. 1068+89.75

DESIGNED	<i>Chris A. Simpson</i>
CHECKED	<i>John P. Vetter</i>
DRAWN	SHANE BUNNELL
CHECKED	CAS JPV

Aug. 12, 1994  
EXAMINED *Draj D. Kaspar*  
PASSED *Ralph E. Anderson*  
ENGINEER OF PUBLIC WORKS  
LICENSED IN ILLINOIS  
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DATE	BY	SHEET NO. 12
(48-298)				20 SHEETS
PLAN NO. 74	1/1-1	KNOX	75	

Notes: Hatched area to be poured after superstructure forms have been removed. Quantity is billed with "Concrete Superstructure". See sht. #8 of 20 for quantity.  
Reinforcement bars designated (E) shall be epoxy coated.  
Exist. reinforcement bars extending into removal area shall be cleaned, straightened and incorporated into new construction. Cost incidental to "Concrete Removal".  
Work this sheet with sht. #13 of 20.

**Legend**

E.F. - Each Face  
R.F. - Rear Face  
F.F. - Front Face

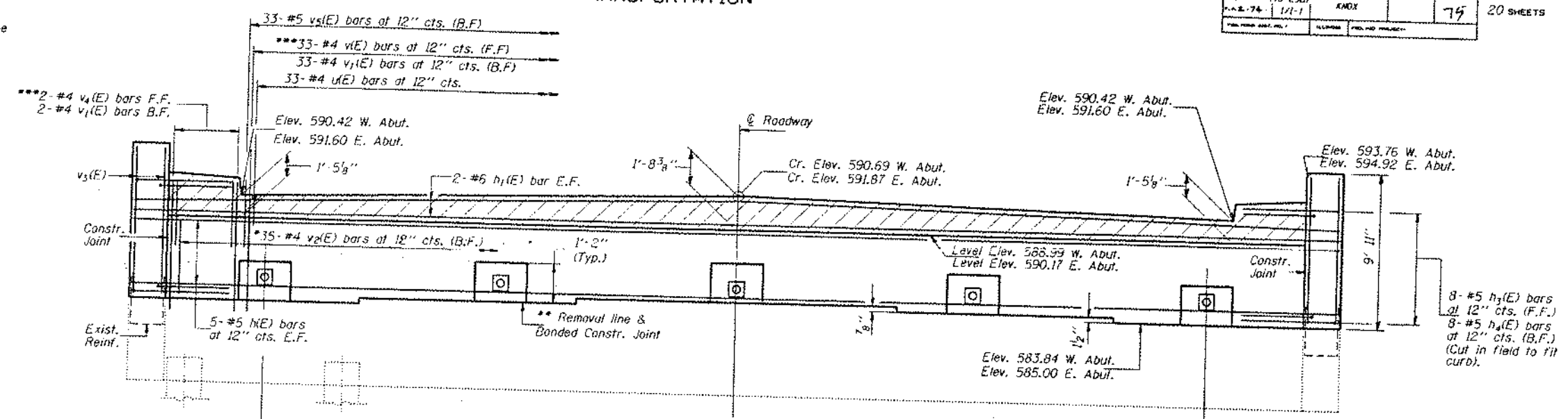
- \*Bend to fit as Req'd.
- \*\*Banded Construction Joint in accordance with Article 505.09(a)(2) of the Standard Specifications.
- \*\*\*Epoxy Grout  $u_1(E)$ ,  $v_1(E)$ ,  $v_4(E)$  &  $v_6(E)$  bars in  $\frac{3}{4}$ "  $\phi$  x 9" min drilled holes. The grout and the method of application shall be approved by the Department

**STR. NO. 048-0051 (W.B.)**

Location	Abut.	X"	Y"	Z"
Beam #1	West	2' 4"	2' - 0 3/4"	1' 3"
Beam #1	East	2' 4"	2' - 0 3/8"	2' 8"
Beam #6	West	2' 4"	2' - 1 3/8"	1' 3"
Beam #6	East	2' 4"	2' - 1 1/8"	2' 4"

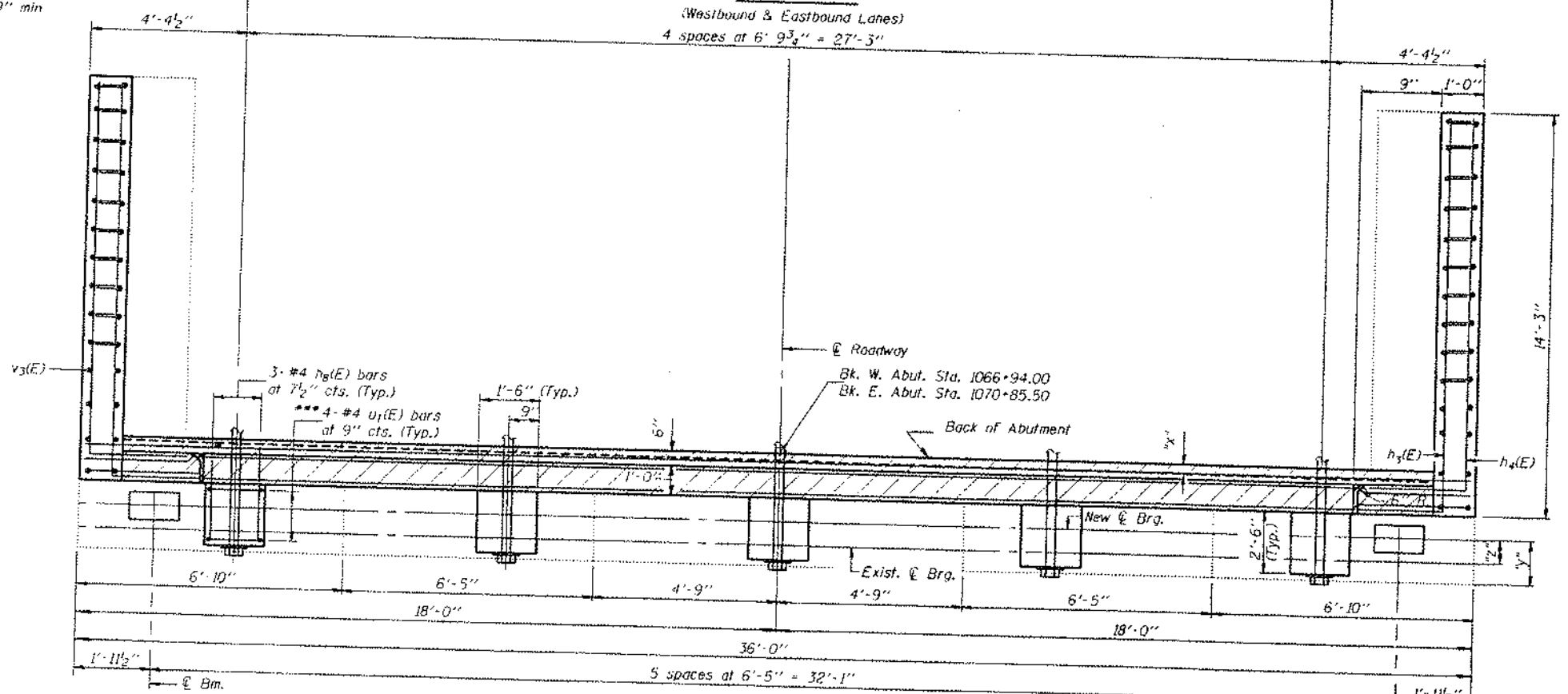
**STR. NO. 048-0052 (E.B.)**

Location	Abut.	X"	Y"	Z"
Beam #1	West	3' 1/2"	2' - 1 3/4"	1' 3"
Beam #1	East	1' 3/8"	1' - 11 1/8"	2' 8"
Beam #6	West	2' 1/8"	2' - 0 3/4"	1' 4"
Beam #6	East	1' 3/8"	1' - 11 1/8"	1' 5"



**ELEVATION**

(Westbound & Eastbound Lanes)  
4 spaces at 6' 9 3/4" = 27'-3"



**PLAN**

(Westbound & Eastbound Lanes)

DESIGNED	John A. [Signature]
CHECKED	John P. [Signature]
DRAWN	SHANE SUMNER
CHECKED	CAS JPV

Aug 12, 1994  
EXAMINED [Signature]  
PASSED [Signature]

ABUTMENTS  
CONCRETE REPLACEMENT DETAILS  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT.74 SEC. (48-298)1/1-1  
KNOX COUNTY  
STA. 1068+89.75

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	STA.	SHEET NO.
F.A.I. 74	(48-29B) 1/1-1	KNOX	76	20 SHEETS

Notes: Hatched area to be poured after superstructure forms have been removed. Quantity is billed with "Concrete Superstructure". See sht. #8 of 20 for quantity.  
Reinforcement bars designated (E) shall be epoxy coated.

Exist. reinforcement bars extending into removal area shall be cleaned, straightened and incorporated into new construction. Cost incidental to "Concrete Removal".

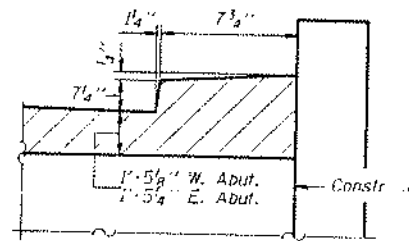
Work this sheet with sht. #12 of 20.

\*Bend to fit as Req'd.

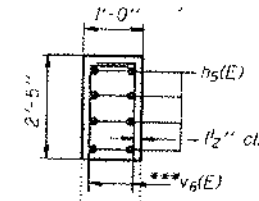
\*\*Bonded Construction Joint in accordance with Article 503.09(a)(2) of the Standard Specifications.

\*\*\* Epoxy Grout  $u_1(E)$ ,  $v_1(E)$ ,  $v_4(E)$  &  $v_5(E)$  bars in  $3/4"$   $\phi$  x  $9"$  min. drilled holes. The grout and the method of application shall be approved by the Department

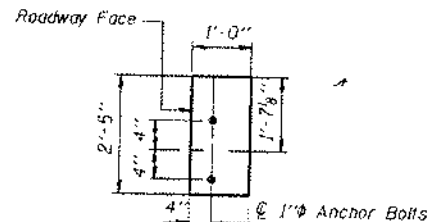
Note A: Exist. vert. reinf. not incorporated into new construction shall be cut off and ground flush with top of concrete and sealed with epoxy. Cost incidental to "Concrete Removal".



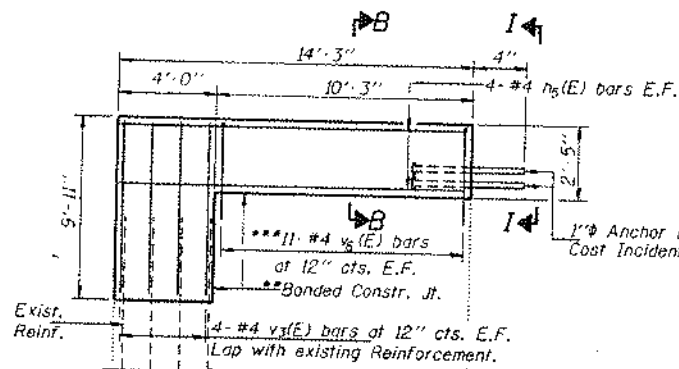
SEC. AT CURB



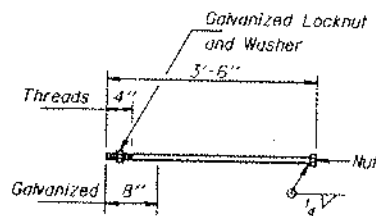
Sec. B-B



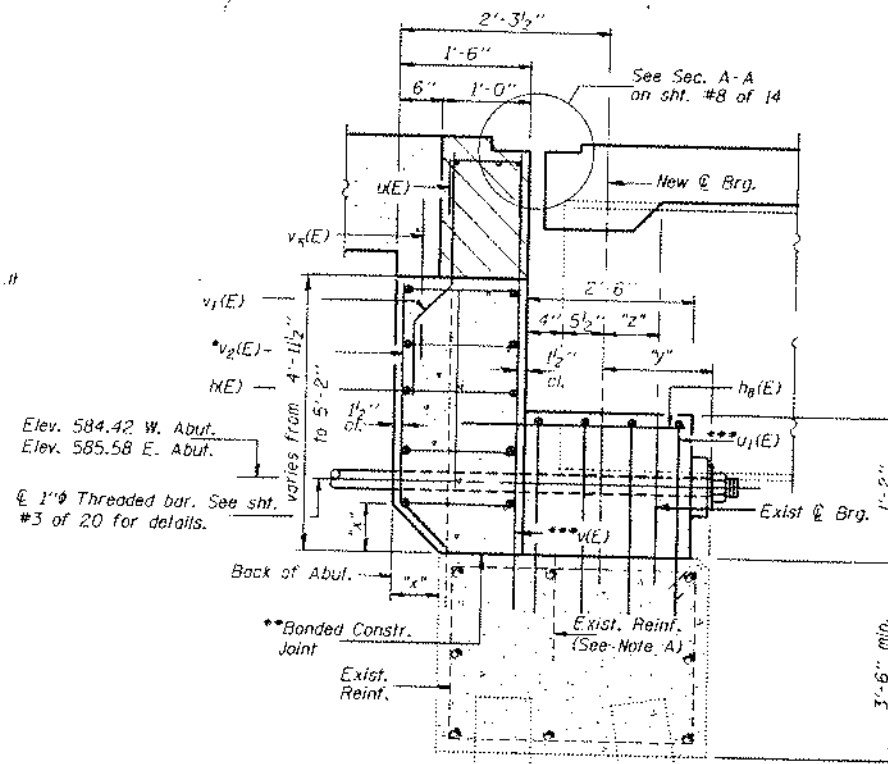
VIEW I-I



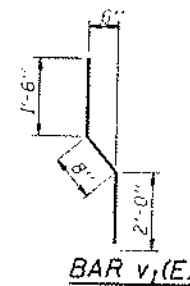
WINGWALL ELEVATION



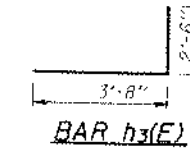
1"  $\phi$  ANCHOR BOLT



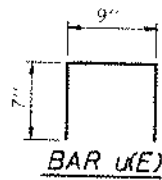
SEC. THRU ABUT.



BAR  $v_1(E)$



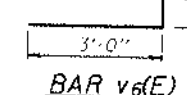
BAR  $h_3(E)$



BAR  $u_1(E)$



BAR  $h_4(E)$



BAR  $v_5(E)$

FOUR ABUTMENTS  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_1(E)$	40	#5	35'-9"	
$h_2(E)$	16	#6	33'-9"	
$h_3(E)$	64	#5	6'-2"	
$h_4(E)$	64	#5	6'-2"	
$h_5(E)$	64	#4	14'-0"	
$h_6(E)$	60	#4	3'-0"	
$u_1(E)$	132	#5	1'-11"	
$u_2(E)$	80	#4	4'-9"	
$v_1(E)$	132	#4	7'-2"	
$v_2(E)$	148	#4	4'-2"	
$v_3(E)$	140	#4	5'-0"	
$v_4(E)$	64	#4	9'-7"	
$v_5(E)$	16	#4	7'-8"	
$v_6(E)$	132	#5	2'-0"	
$v_7(E)$	176	#4	3'-8"	
Structure Excavation		Cu. Yd.	136	
Concrete Structures		Cu. Yd.	60.5	
Reinforcement Bars (Epoxy Coated)		Lbs.	7070	

ABUTMENT DETAILS  
CONCRETE REPLACEMENT DETAILS  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT. 74 SEC. (48-29B)1/1-1  
KNOX COUNTY  
STA. 1068+89.75

DESIGNED: *[Signature]*  
CHECKED: *[Signature]*  
DRAWN: SHANE BUNNER  
CHECKED: CAS

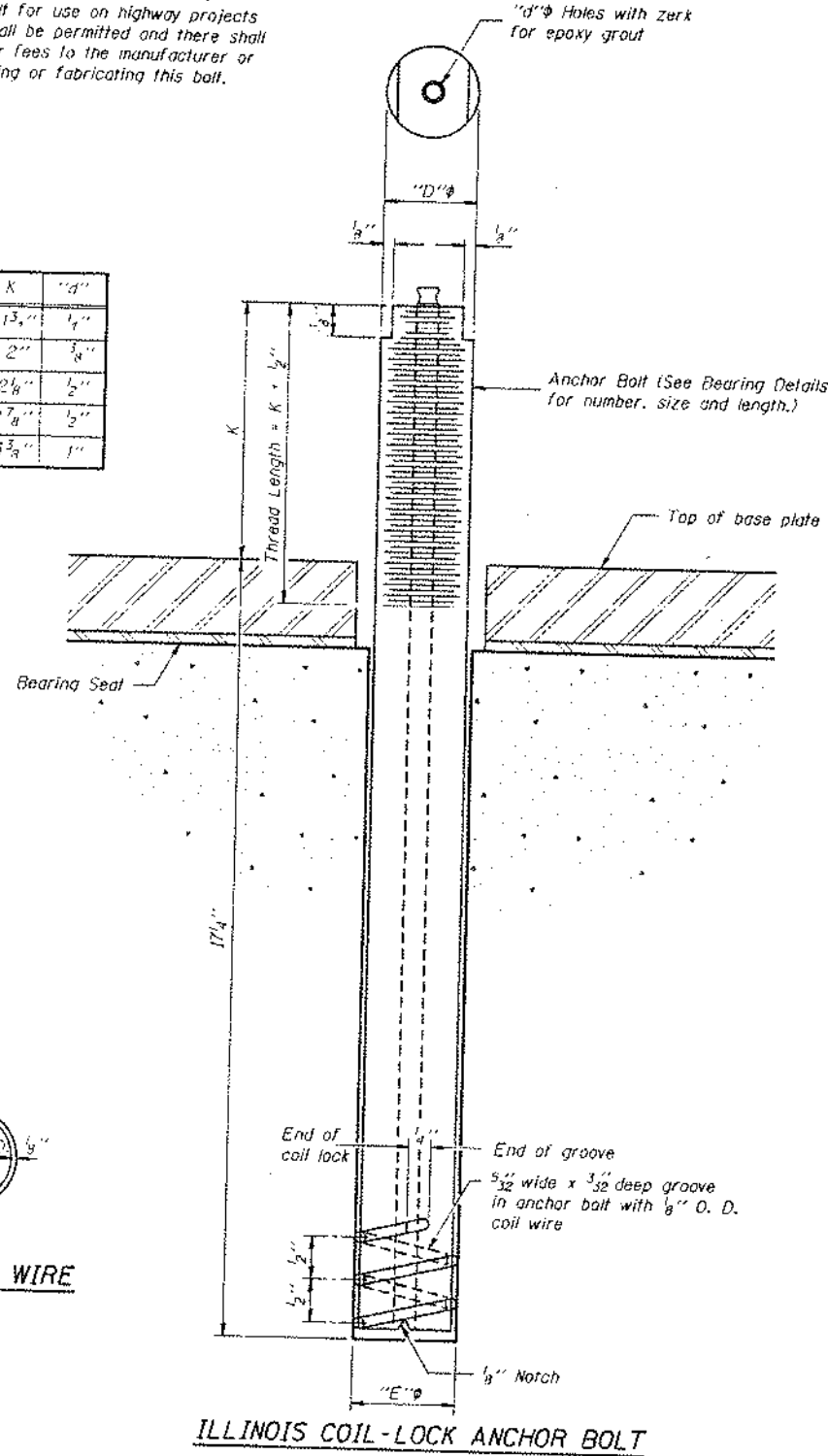
Aug. 12, 1914  
EXAMINED: *[Signature]*  
PASSED: *[Signature]*  
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DRAWN	DATE	SHEET NO.
F.A.I. 74	(48-298)	KNOX	77	20 SHEETS
SHEET NO. 14				

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 3/8"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/2"	2"	3/8"
1 1/2"	1 5/8"	1 5/8"	2 1/4"	1/2"
2"	2 1/8"	1 11/16"	2 7/8"	3/4"
2 1/2"	2 5/8"	2 5/8"	3 3/4"	1"



MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing & Erecting Structural Steel".

DESIGNED *Chris A. Engeman*  
CHECKED *Jeffrey P. Vitek*  
DRAWN SHANE SUMNER  
CHECKED CAS JPV

Aug 12 1994  
EXAMINED *Greg J. Kaspar*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

ABB-1 7-1-91

ANCHOR BOLT DETAILS  
FOR BEARINGS  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT.74 SEC. (48-298)I/I-1  
KNOX COUNTY  
STA. 1068+89.75

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DATE	SCALE	SHEET NO. 15
145-1957	A-MIX			20 SHEETS
DATE: 7-4	11-17			
DESIGNED BY: [ ]	CHECKED BY: [ ]	DATE: [ ]	SCALE: [ ]	

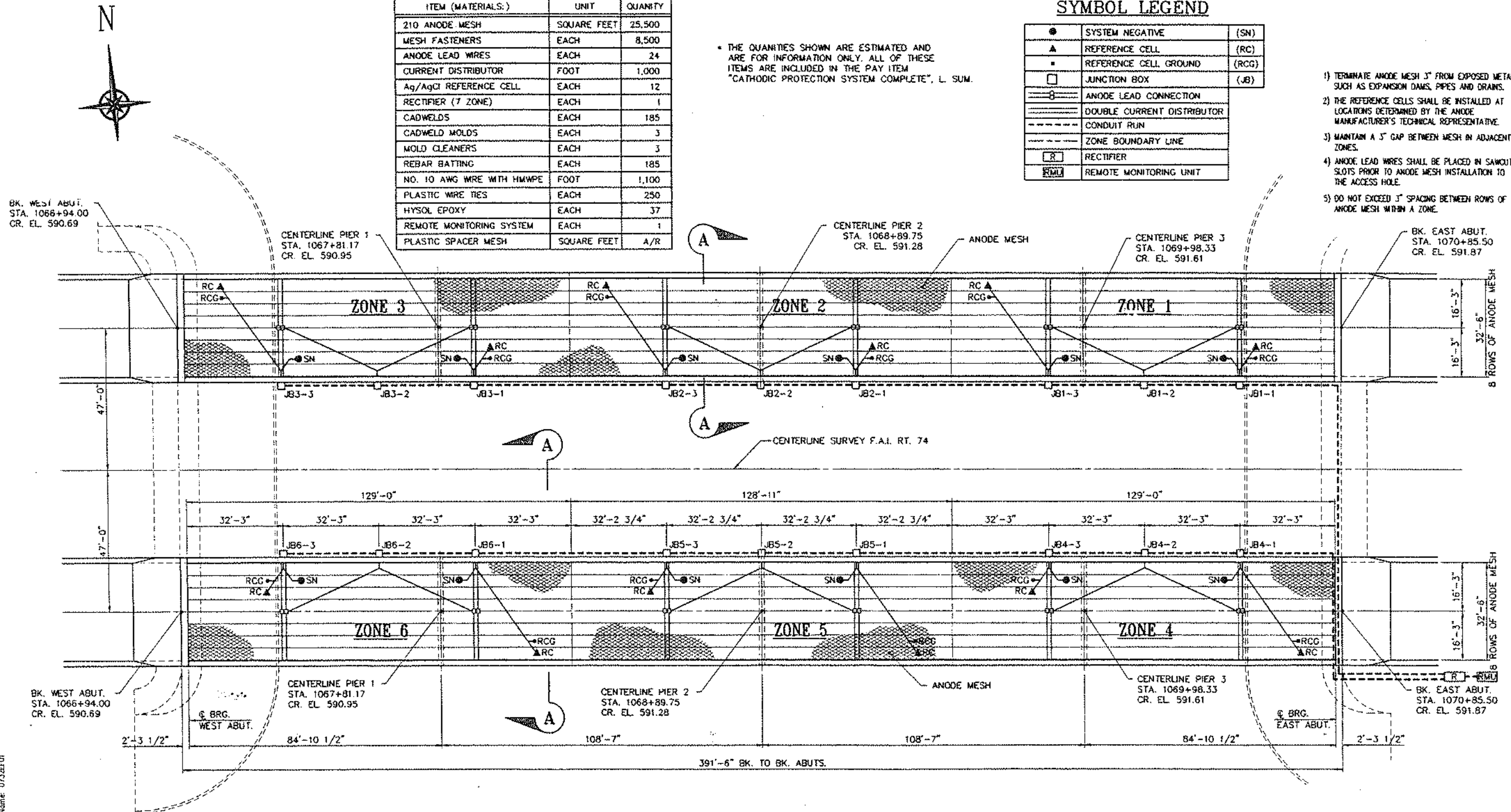
BILL OF MATERIALS		
ITEM (MATERIALS:)	UNIT	QUANTITY
210 ANODE MESH	SQUARE FEET	25,500
MESH FASTENERS	EACH	8,500
ANODE LEAD WIRES	EACH	24
CURRENT DISTRIBUTOR	FOOT	1,000
Ag/AgCl REFERENCE CELL	EACH	12
RECTIFIER (7 ZONE)	EACH	1
CADWELDS	EACH	185
CADWELD MOLDS	EACH	3
MOLD CLEANERS	EACH	3
REBAR BATTING	EACH	185
NO. 10 AWG WIRE WITH HMWPE	FOOT	1,100
PLASTIC WIRE TIES	EACH	250
HYSOL EPOXY	EACH	37
REMOTE MONITORING SYSTEM	EACH	1
PLASTIC SPACER MESH	SQUARE FEET	A/R

THE QUANTITIES SHOWN ARE ESTIMATED AND ARE FOR INFORMATION ONLY. ALL OF THESE ITEMS ARE INCLUDED IN THE PAY ITEM "CATHODIC PROTECTION SYSTEM COMPLETE", L. SUM.

SYMBOL LEGEND

●	SYSTEM NEGATIVE	(SN)
▲	REFERENCE CELL	(RC)
■	REFERENCE CELL GROUND	(RCG)
□	JUNCTION BOX	(JB)
—○—	ANODE LEAD CONNECTION	
—○—	DOUBLE CURRENT DISTRIBUTOR	
---	CONDUIT RUN	
---	ZONE BOUNDARY LINE	
R	RECTIFIER	
RMU	REMOTE MONITORING UNIT	

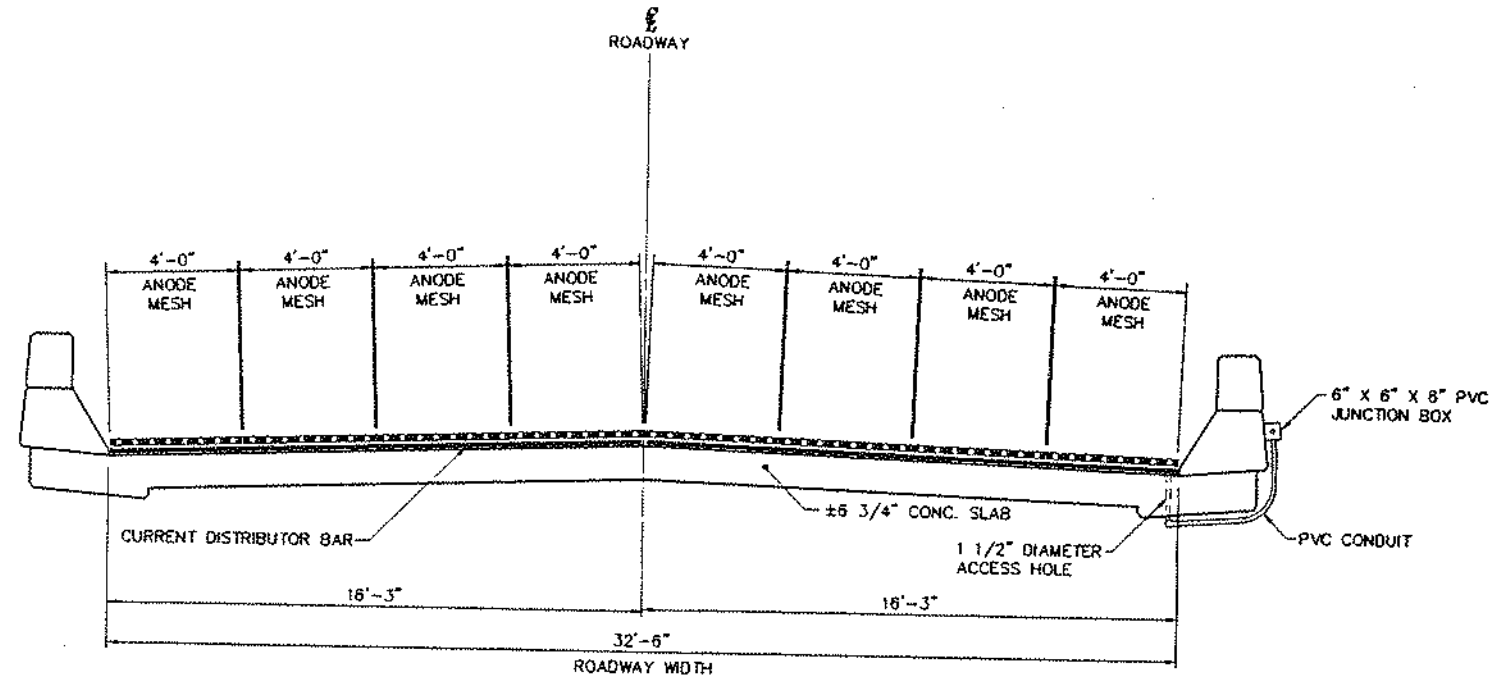
- 1) TERMINATE ANODE MESH 3" FROM EXPOSED METAL SUCH AS EXPANSION DAMS, PIPES AND DRAINS.
- 2) THE REFERENCE CELLS SHALL BE INSTALLED AT LOCATIONS DETERMINED BY THE ANODE MANUFACTURER'S TECHNICAL REPRESENTATIVE.
- 3) MAINTAIN A 3" GAP BETWEEN MESH IN ADJACENT ZONES.
- 4) ANODE LEAD WIRES SHALL BE PLACED IN SAWCUT SLOTS PRIOR TO ANODE MESH INSTALLATION TO THE ACCESS HOLE.
- 5) DO NOT EXCEED 3" SPACING BETWEEN ROWS OF ANODE MESH WITHIN A ZONE.



CATHODIC PROTECTION SYSTEM DETAILS  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT.74 SEC. (48-29B)/I-1  
KNOX COUNTY  
STA. 1068+89.75

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	DATE	SHEET NO. 15
	(48-29B)	KNOX		20 SHEETS
DATE: 74	1/1-1			
FILE NO. (REV. 1-74)	FILE NO. (REV. 1-74)	FILE NO. (REV. 1-74)	FILE NO. (REV. 1-74)	



SECTION A-A  
(N.T.S.)

CATHODIC PROTECTION SYSTEM DETAILS  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT.74 SEC. (48-29B)I-I  
KNOX COUNTY  
STA. 1068+89.75

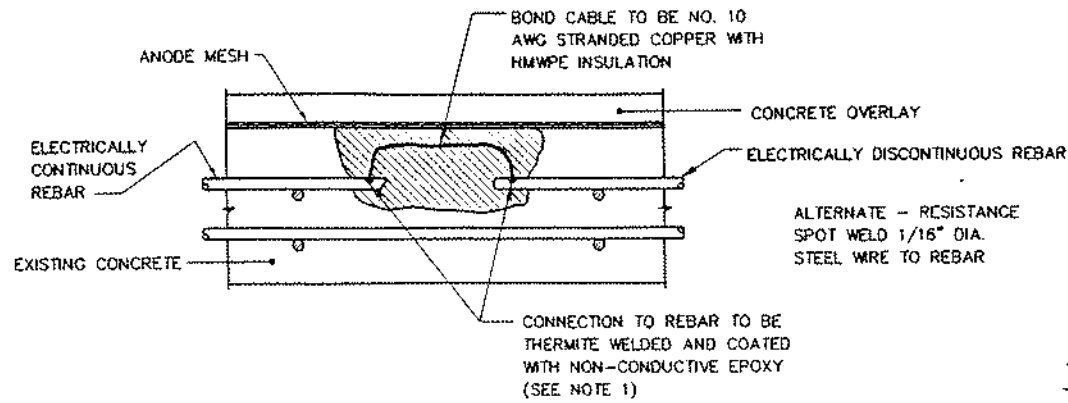
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*DPH*

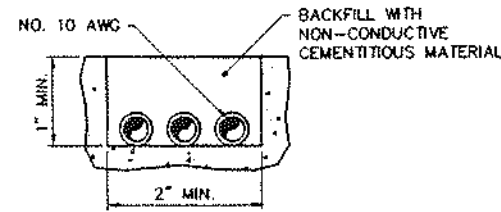


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DATE	BY	CHKD	SHEET NO. 17
48-29B					20 SHEETS
DATE 74	1/1-1	KNOX			
DESIGNER	ILLINOIS	PROJECT			

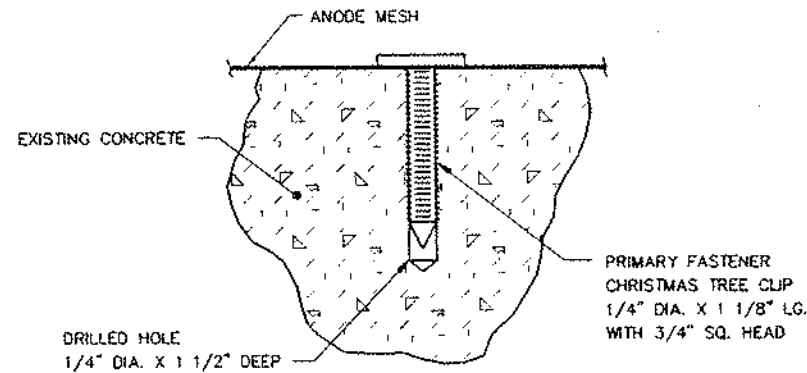


**REBAR CONTINUITY DETAIL**  
(N.T.S.)

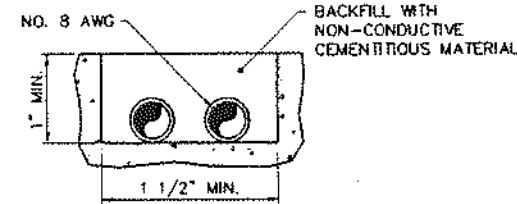


**SYSTEM NEGATIVE REFERENCE CELL AND GROUND WIRE PLACEMENT IN SLOT ON DECK DETAIL**  
(N.T.S.)

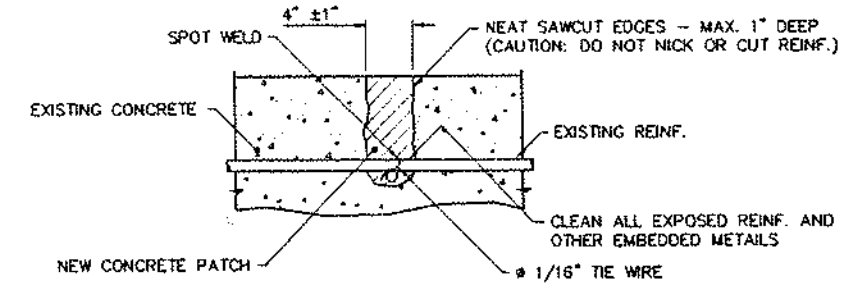
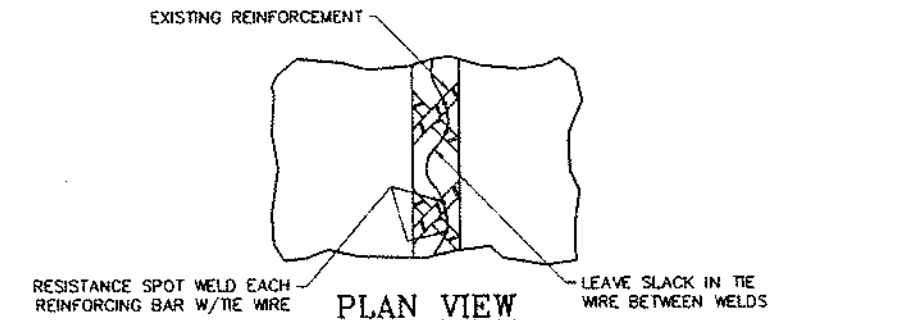
1) AFTER THERMITE WELDED CONNECTION IS MADE GENTLY TAP AND REMOVE SLAG FROM WELD.



**ANODE FASTENER DETAIL**  
CHRISTMAS TREE CLIP  
(N.T.S.)

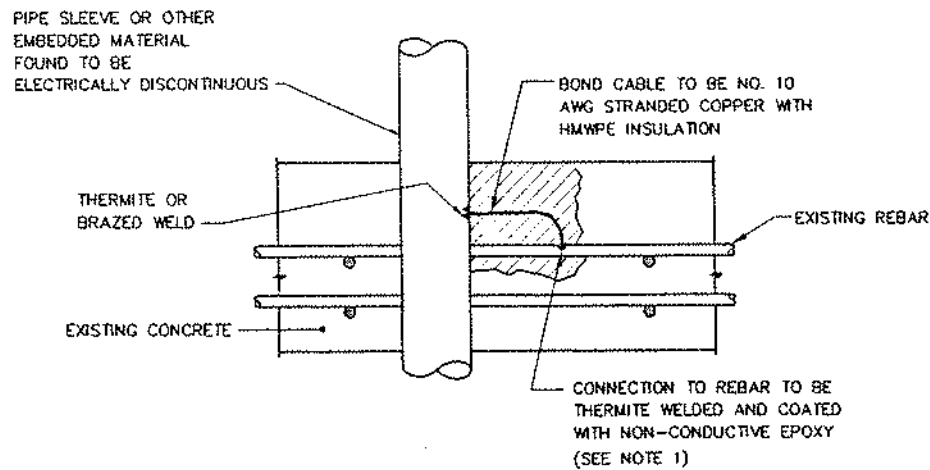


**ANODE LEAD WIRE PLACEMENT IN SLOT ON DECK DETAIL**  
(N.T.S.)

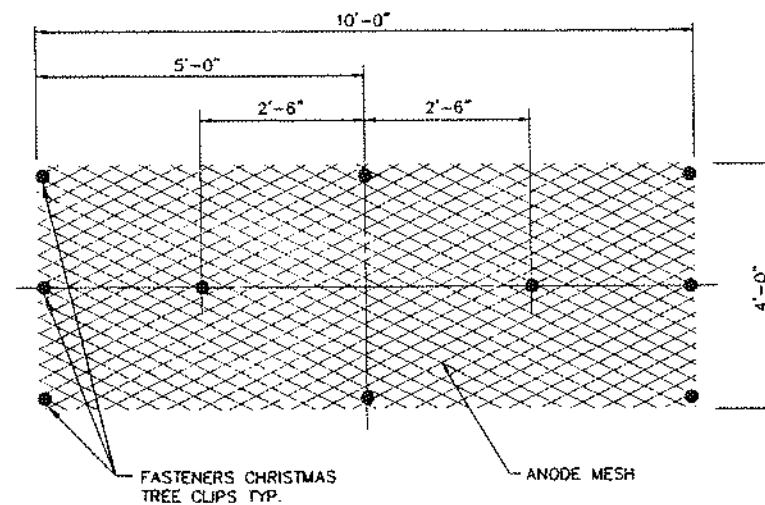


**SECTION VIEW CONTINUITY TRENCH DETAIL**  
(N.T.S.)

NOTE: EXISTING REINF. SHOWN IS ILLUSTRATIVE ONLY, ACTUAL CONDITIONS MAY VARY.



**EMBEDDED STEEL BONDING DETAIL**  
(N.T.S.)



**ANODE FASTENER LAYOUT**  
(ONE FASTENER PER FIVE SQ. FT. OF MESH)  
(N.T.S.)

CATHODIC PROTECTION SYSTEM DETAILS  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT. 74 SEC. (48-29B)1/1-1  
KNOX COUNTY  
STA. 1068+89.75

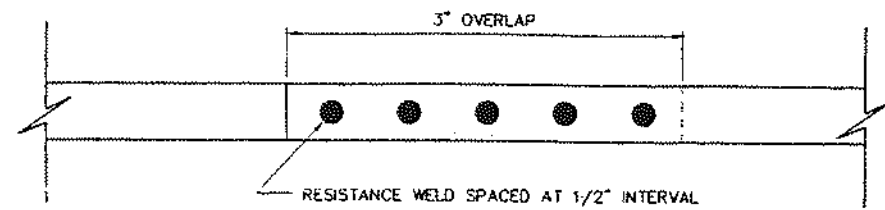
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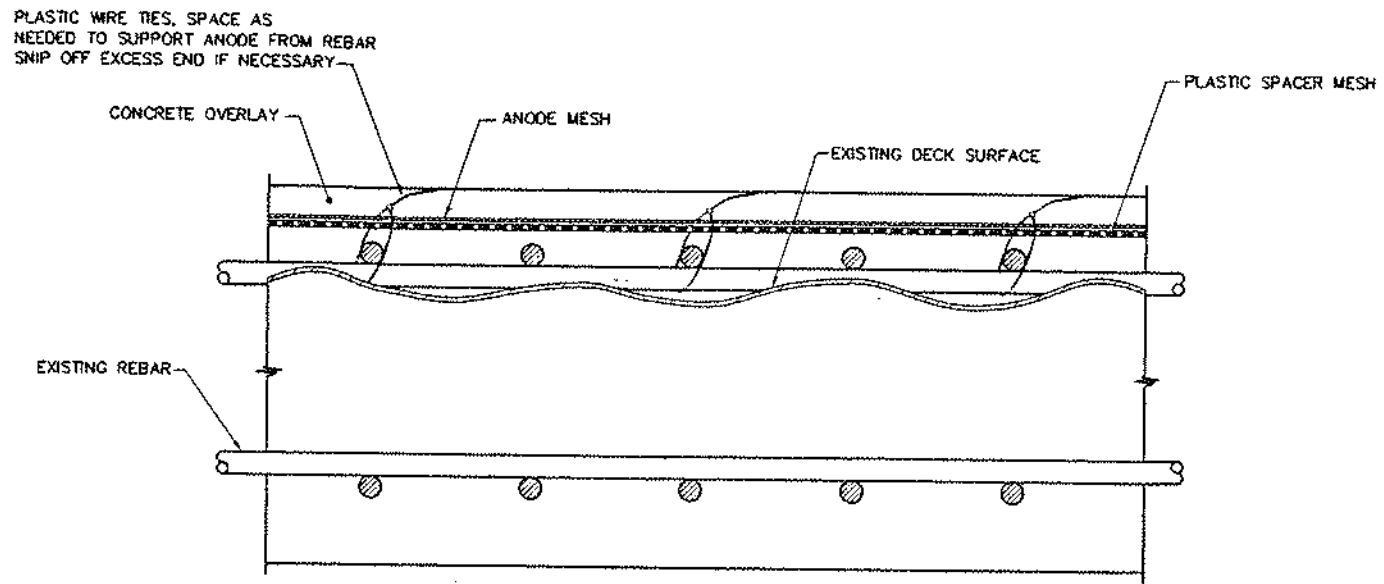
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	SHEET	TOTAL
48-2981		KNOX		
F.A.I. RT. 74	1/1-1			
FILE AND DELIVER TO:	ENGINEER	FOR HIS PROJECT:		

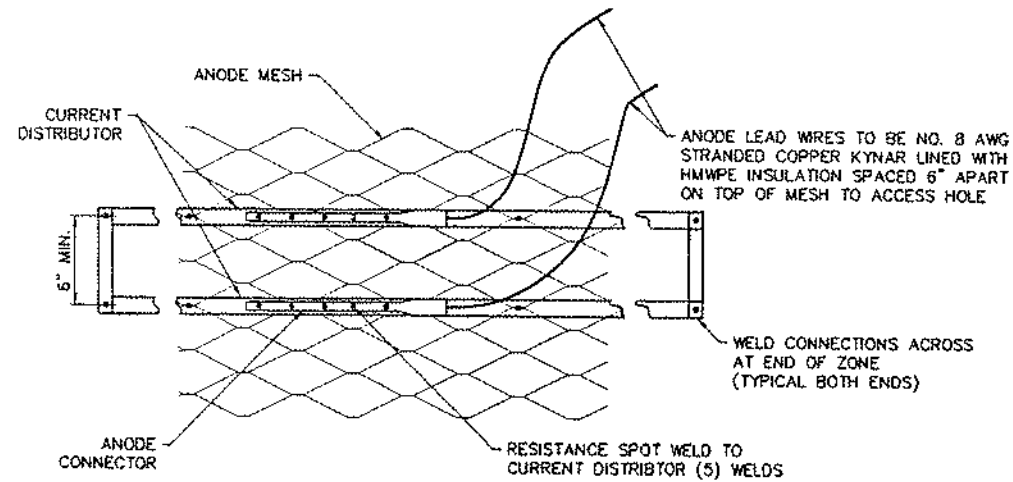
SHEET NO. 18  
20 SHEETS



**CURRENT DISTRIBUTOR SPLICING DETAIL**  
(N.T.S.)

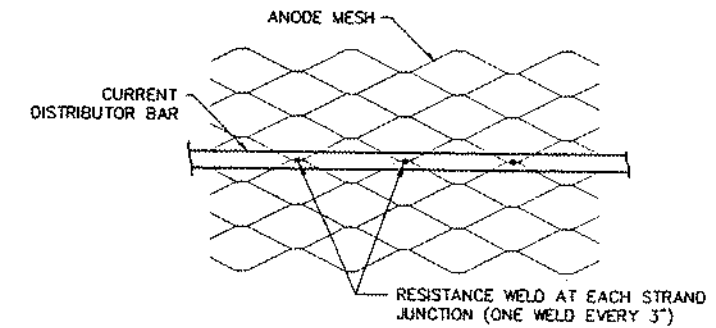


**PLASTIC SPACER MESH DETAIL**  
(FOR AREAS WITH EXPOSED REBAR)  
(N.T.S.)

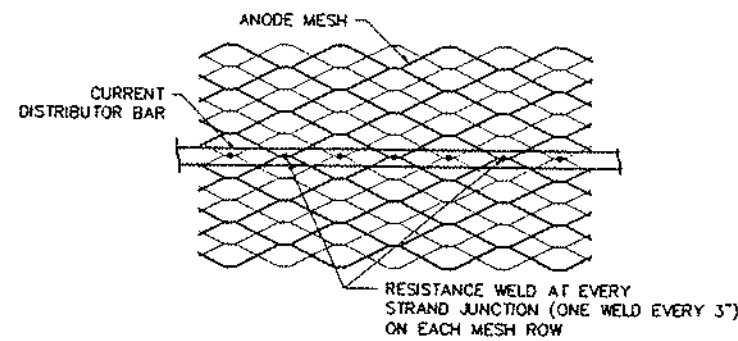


**DOUBLE CURRENT DISTRIBUTOR/  
ANODE CONNECTOR WELDING DETAIL**  
(N.T.S.)

*RAH*



**CURRENT DISTRIBUTOR WELDING DETAIL**  
(N.T.S.)



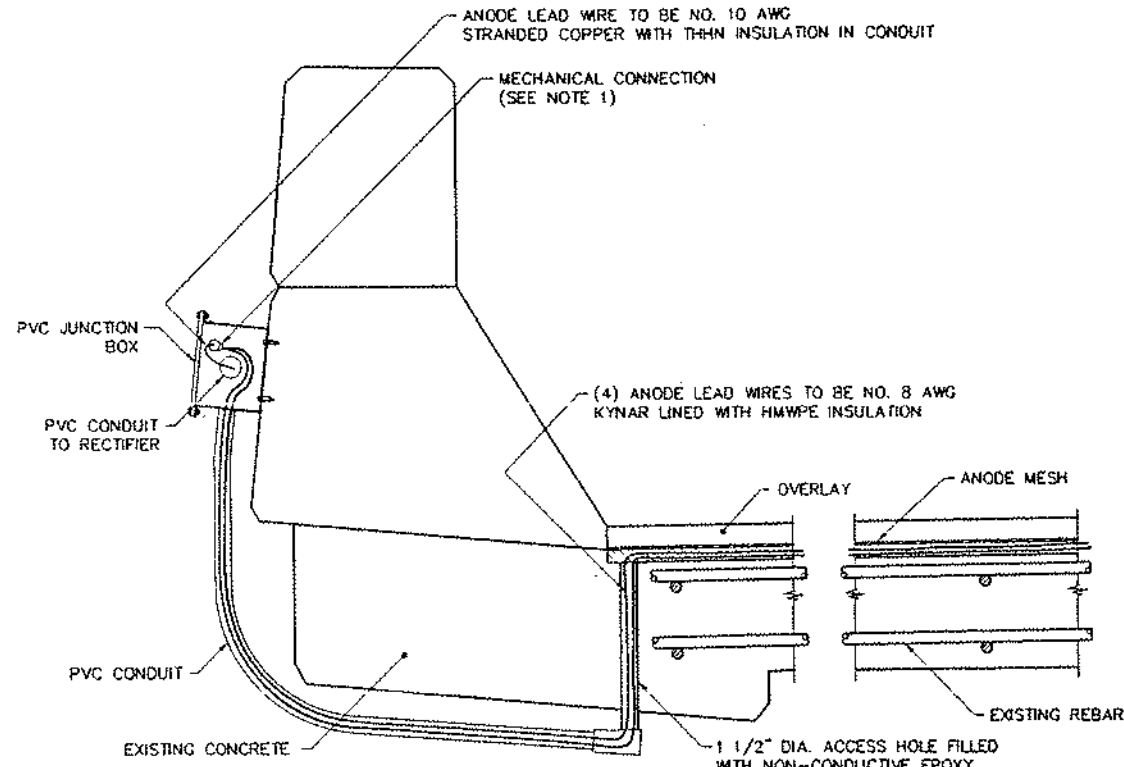
**ANODE MESH SPLICE DETAIL**  
(N.T.S.)

**CATHODIC PROTECTION SYSTEM DETAILS**  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT.74 SEC. (48-2981)/1-1  
KNOX COUNTY  
STA. 1068+89.75

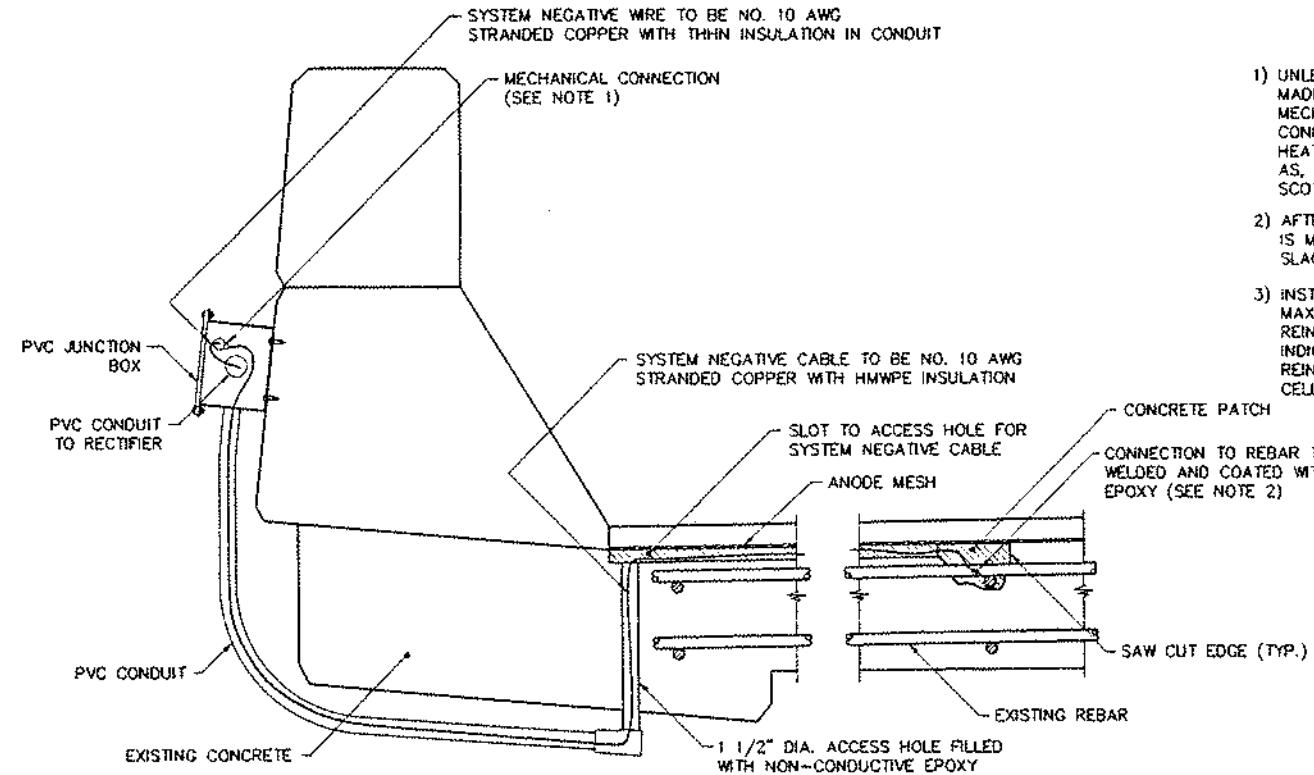
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

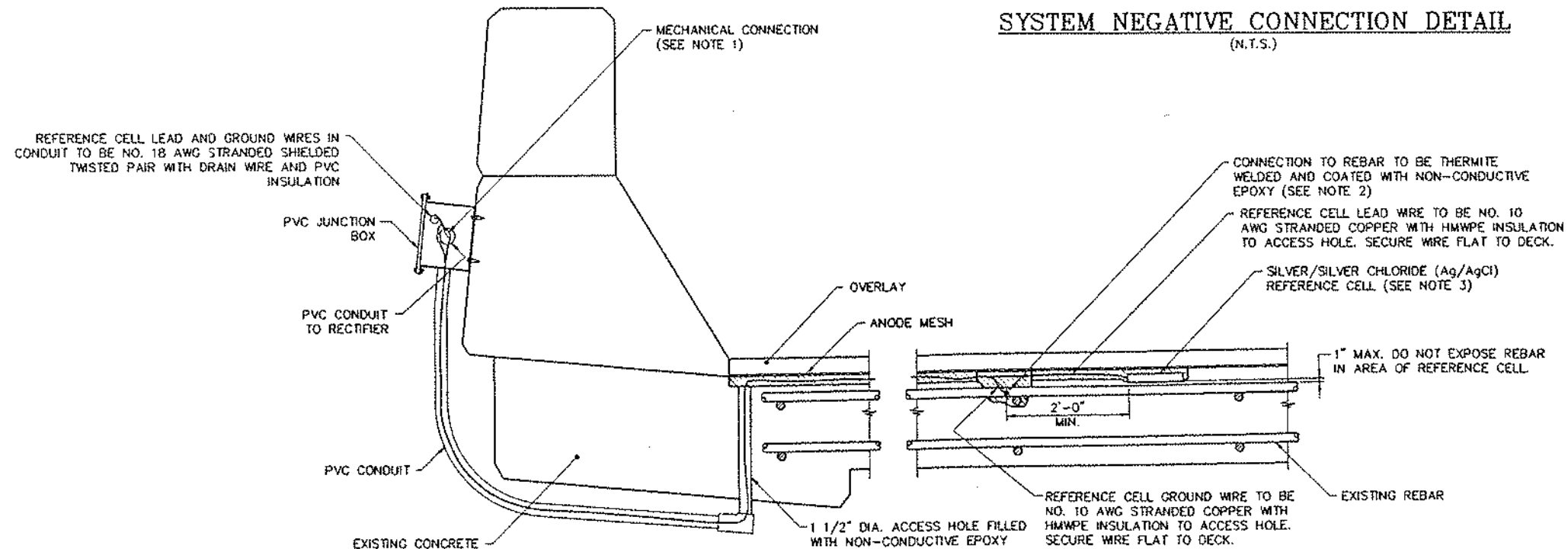
DATE	REVISION	BY	CHKD	APP'D	SHEET NO. 19 20 SHEETS
11/1/1					



**ANODE CONNECTION DETAIL**  
(N.T.S.)



**SYSTEM NEGATIVE CONNECTION DETAIL**  
(N.T.S.)



**REFERENCE CELL DETAIL**  
(N.T.S.)

- 1) UNLESS OTHERWISE NOTED, SPICES MADE IN JUNCTION BOXES SHALL BE MECHANICALLY CONNECTED (CRIMP CONNECTION) AND INSULATED IN A HEAT-SHRINKABLE MATERIAL, SUCH AS, ALPHA'S SERIES FIT-700 OR 3M SCOTCH E-Z SEAL 2200.
- 2) AFTER THERMITE WELDED CONNECTION IS MADE, GENTLY TAP AND REMOVE SLAG FROM WELD.
- 3) INSTALL REFERENCE CELL AT A MAXIMUM OF 1" BUT NOT TOUCHING REINFORCING STEEL AT LOCATIONS INDICATED. DO NOT EXPOSE REINFORCING STEEL AT REFERENCE CELL LOCATION.

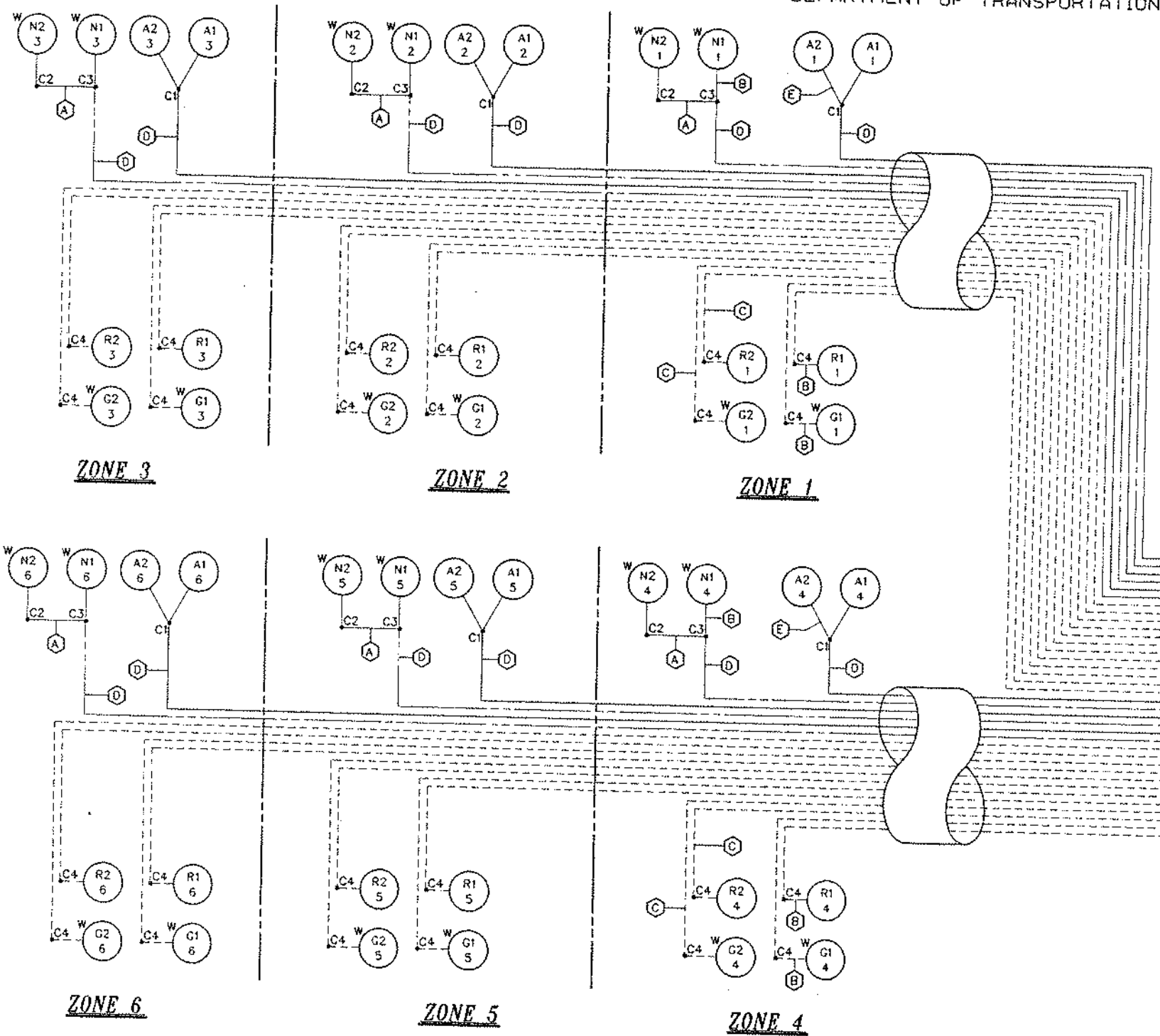
**CATHODIC PROTECTION SYSTEM DETAILS**  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT.74 SEC. (48-29B)1/1-1  
KNOX COUNTY  
STA. 1068+89.75

08-01-94 PM 2:05 RUSS File Name: 07122705

*RAH*

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

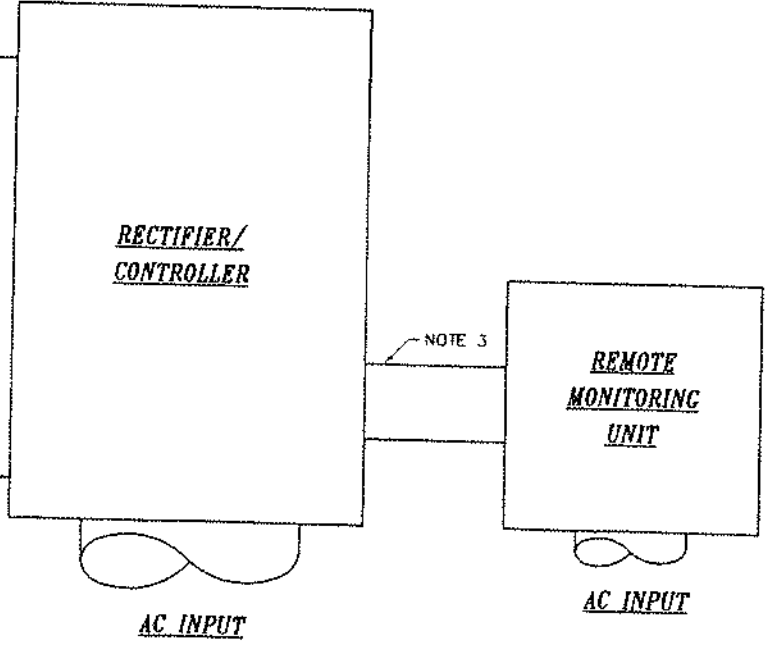
PROJECT NO.	SECTION	COUNT	SHEET	SHEET NO. 20
48-29B			83	20 SHEETS
DATE 7/1/11	KNOX			
DESIGNED BY	DRAWN BY	CHECKED BY	DATE	



**SYMBOL LEGEND**

- ANODE
- ANODE NO.
- ZONE NO.
- SYSTEM NEGATIVE
- THERMITE WELD
- SYSTEM NEGATIVE NO.
- ZONE NO.
- REFERENCE CELL
- REFERENCE CELL NO.
- ZONE NO.
- REFERENCE CELL GROUND
- THERMITE WELD
- REFERENCE CELL GROUND NO.
- ZONE NO.

- 1) THE PURPOSE OF THIS DRAWING IS TO SHOW THE RECTIFIER TO INDIVIDUAL ZONE WIRING RELATIONSHIP. ACTUAL ORIENTATION OF THE RECTIFIER AND CONDUIT RUNS IS THE RESPONSIBILITY OF THE ELECTRICAL SUB-CONTRACTOR.
- 2) WIRES SHALL BE IDENTIFIED WITH CLOTH MARKERS AT SPOUSE CONNECTIONS AND RECTIFIER.
- 3) PVC CONDUIT CONTAINING THIRTY (30) NO. 18 AWG STRANDED COPPER SHIELDED TWISTED PAIR WITH DRAIN AND PVC INSULATION.



**SPLICE CONNECTIONS**

- C1: (4) NO. 8 AWG TO (1) NO. 10 AWG
- C2: (1) NO. 10 AWG TO (1) NO. 10 AWG
- C3: (2) NO. 10 AWG TO (1) NO. 10 AWG
- C4: (1) NO. 10 AWG TO (1) NO. 18 AWG

- (A) SYSTEM NEGATIVE HEADER WIRE TO BE NO. 10 AWG STRANDED COPPER WIRE WITH THHN INSULATION, IN CONDUIT.
- (B) SYSTEM NEGATIVE, REFERENCE CELL, AND REFERENCE CELL GROUND LEAD WIRES TO BE NO. 10 AWG STRANDED COPPER WIRE WITH HMWPE INSULATION ON DECK TO JUNCTION BOX.

- (C) REFERENCE CELL LEAD AND GROUND WIRE TO BE NO. 18 AWG STRANDED COPPER SHIELDED TWISTED PAIR WITH DRAIN AND PVC INSULATION, IN CONDUIT.
- (D) ANODE LEAD AND SYSTEM NEGATIVE LEAD WIRE TO BE NO. 10 AWG STRANDED COPPER WIRE WITH THHN INSULATION, IN CONDUIT.

- (E) ANODE LEAD WIRE TO BE NO. 8 AWG WIRE WITH HMWPE INSULATION ON DECK TO JUNCTION BOX.

*P.D.H.*

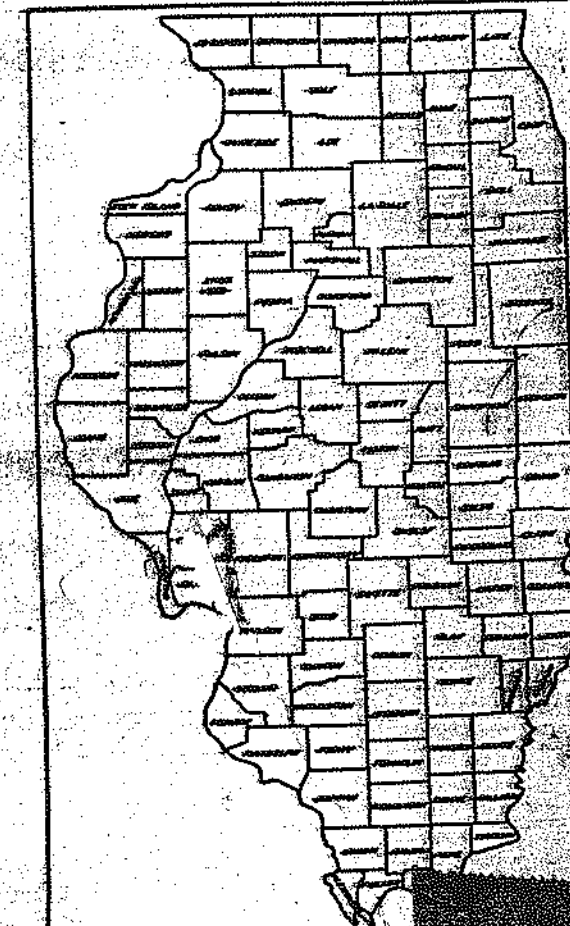
CATHODIC PROTECTION SYSTEM DETAILS  
F.A.I. RT. 74 OVER SPOON RIVER & TR 238A  
F.A.I. RT.74 SEC. (48-29B)I/I-1  
KNOX COUNTY  
STA. 1068+89.75

08-01-84 PW 2.06 RUSS File Name: 0732E08

**STATE OF ILLINOIS**  
**DEPARTMENT OF PUBLIC WORKS AND BUILDINGS**  
**DIVISION OF HIGHWAYS**  
**PLANS FOR PROPOSED**  
**FEDERAL AID INTERSTATE**  
**HIGHWAY**

PROJECT NO.	SEC.	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 74	48-29B	KNOX	47	1

P- 94-008-63



LOCATION OF SECTION INDICATED

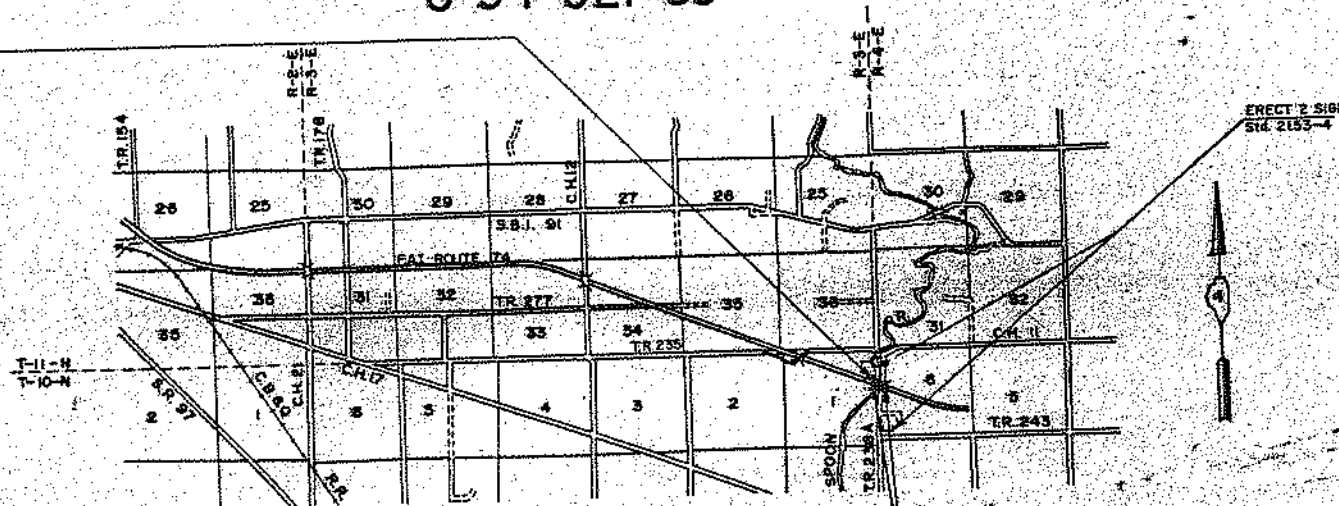
INDEX TO PLAN SHEETS ON SHEET 2  
 SUMMARY OF QUANTITIES ON SHEET 2

SCALE: PLAN 1" = 100'  
 PROFILE (HORZ. 1" = 100', VERT. 1" = 10')  
 CROSS SECTIONS (NORMAL HORZ. 1" = 10', VERT. 1" = 10'; SPECIAL HORZ. 1" = 20', VERT. 1" = 10')  
 OTHER AS NOTED

**F.A.I. ROUTE 74**

PROJECT I-74-3(19)60  
 SECTION 48-29 B  
 KNOX COUNTY  
 C-94-021-65

SECTION 48-29B INCLUDES THE CONSTRUCTION OF TWO PARALLEL 4-SPAN CONTINUOUS STEEL WELDED PLATE GIRDER CONCRETE DECK BRIDGES CARRYING F.A.I. ROUTE 74 OVER THE SPOON RIVER AND T.R. 238A. TWO SPANS AT 108'-7", TWO SPANS AT 84'-10 1/2", WITH ROADWAY WIDTHS OF 30'-0" AND 2' SAFETY WALKS EACH SIDE, HAMMERHEADED CONCRETE PIERS AND OPEN TYPE CONCRETE ABUTMENTS AT STA. 1066+94.00 AND STA. 1070+85.50 ON THE E. OF F.A.I. 74. SECTION 48-29B ALSO INCLUDES THE EXCAVATION OF THE SPOON RIVER CHANNEL FROM APPROX. 225' LT. TO 190' RT. OF F.A.I. 74. STA. 1069+46.00 AND THE RELOCATION OF T.R. 238A FROM STA. 46+90.90 TO STA. 82+20.00 AT STA. 1070+30.00 ON THE E. OF F.A.I. 74.



LAYOUT

APPROXIMATE SCALE: 1" = 100'  
 LENGTH OF IMPROVEMENT AND PROJECT  
 F.A.I. ROUTE 74 PROJECT I-74-3(19)60- 391.5 P- 00742 Miles

PROJECT I-74-3(19)60  
 BEGINS STA. 1066+94.00  
 ENDS STA. 1070+85.50

SUBMITTED Nov. 30, 1966  
 EXAMINED Nov. 30, 1966  
 EXAMINED  
 EXAMINED Nov. 30, 1966  
 DATE 11-20-66

DESIGNED	11-30
CHECKED	12-7
APPROVED	12-14
DATE	12-14

FILE COPY  
 #60  
 5-26-67

JOHNSTON, WESTERHOFF AND NOVICK, INC.  
 CONSULTING ENGINEERS  
 CHICAGO, ILL. E. ST. LOUIS, ILL.

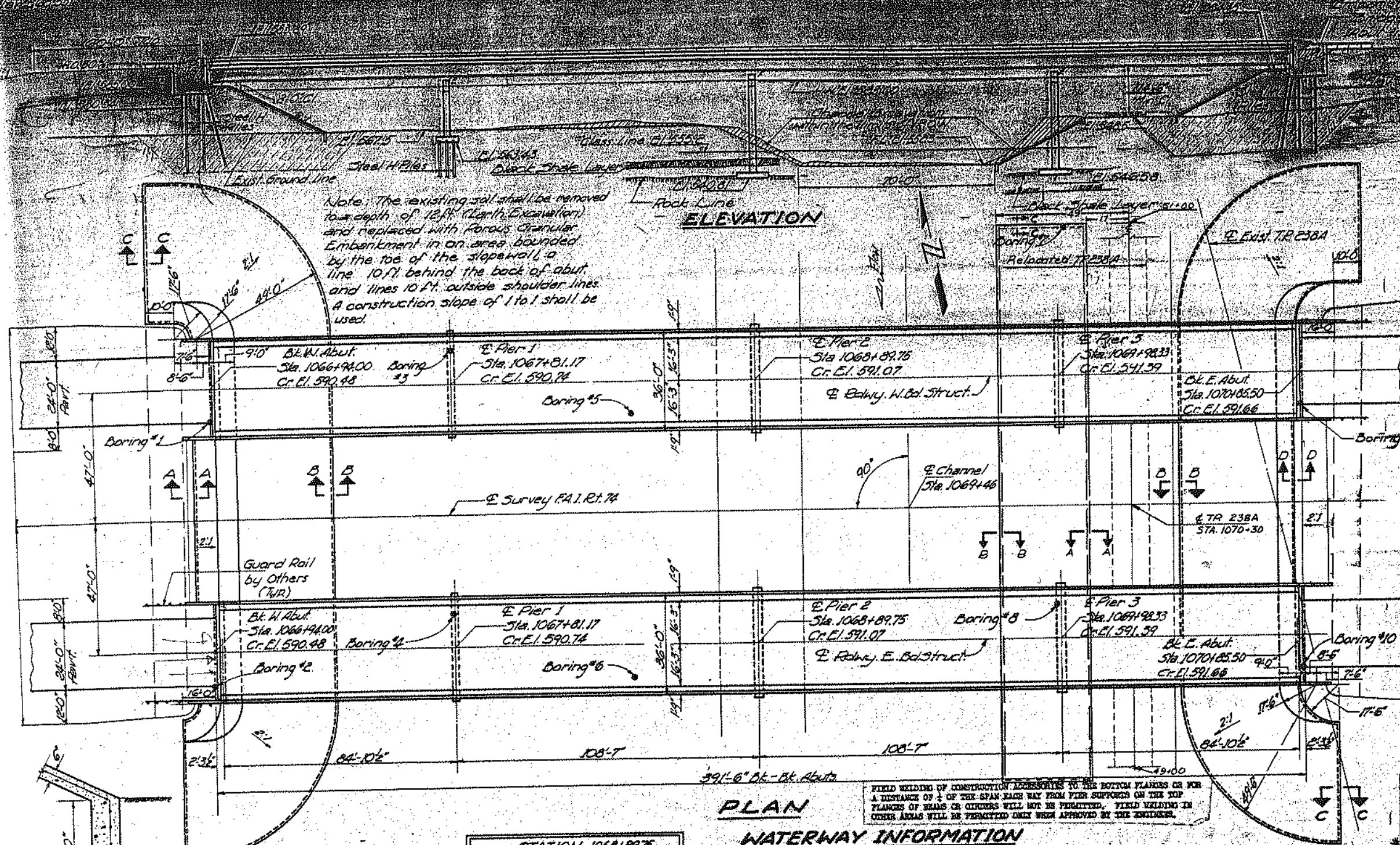
DEPARTMENT OF COMMERCE  
 BUREAU OF PUBLIC ROADS  
 APPROVED  
 DIVISION ENGINEER DATE

4-69

1977 RESURFACING  
 PLANS ON REEL 4-124 REEL

9999

440051



**GENERAL NOTES**

Coarse aggregate to be used in parapets and end post must be absolutely free of chert, flint, limonite, lignite and soft sandstone.

The concrete floor slab shall be finish in accordance with Art 31.9 of the Standard Specifications.

Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 30# per 100 Sq. Ft.

Layout of slope walls may be varied to suit ground conditions in the field as directed by the Engineer.

All reinforcement bars shall be lapped 20 diam unless otherwise shown.

PERMANENT FORMS SHALL NOT BE SUBMITTED IN WRITING AND CONCRETE SHALL BE PLACED IN ALL STRUCTURAL STEEL SHALL CONFORM TO A.S.T.M. Specification #36.

Rivets 3/8" open holes 1/2" unless otherwise noted. Anchor bolts shall be set before framing cross frames over supports.

All welding shall conform to the current specifications for welded Highway and Railway Bridges of the American Welding Society, except as noted.

Exposed surfaces of the expansion guard, after erection shall receive two shop coats of red lead paint. All other surfaces shall receive one coat of red lead paint. Anchor studs shall not be painted.

Expansion guards are included in the quantity of structural steel. Est. Wt = 3340 lbs.

Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint. See Art 56.1 to 56.5 inclusive of the Standard Specifications.

The Contractor shall drive three test piles, one at the West Abut. of the East Bound Structure, one at the East Abut. of Pier 1 of the West Bd. Struct. all in permanent locations, as directed by the Engineer before ordering the remainder of piles.

All piles shall be driven to refusal.

**TOTAL BILL OF MATERIAL**

ITEM	SUPER.	SUB.	TOTAL
POROUS GRANULAR EMBANKMENT CU.YDS.			17600
CLASS "A" EXC. FOR STRUCTURES CU.YDS.			358
CLASS "B" EXC. FOR STRUCTURES CU.YDS.			265
ROCK EXC. FOR STRUCTURES CU.YDS.			97
CLASS "X" CONCRETE CU.YDS.	191.5	5802	1386.7
PROTECTIVE COAT SQ.YDS.	3553		3553
STRUCTURAL STEEL LBS.	833,490		833,490
ALUMINUM HANDRAIL LIN.FT.	1333		1333
REINFORCEMENT BARS LBS.	194780	68710	263490
STEEL PILES (88P16) LIN.FT.			120
TEST PILES STEEL (88P16) EA.			1
NAME PLATES EA.			2
SLOPE WALL "B" SQ.YDS.			1343
BRIDGE SEAT SEALANT LBS.			1

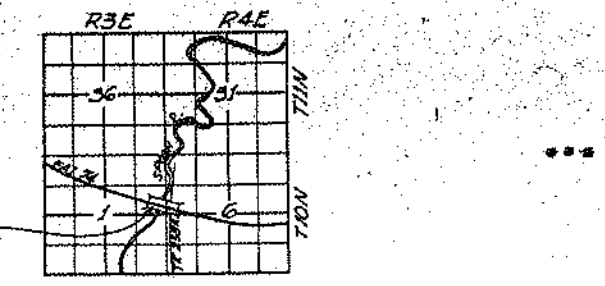
**PLAN**

**WATERWAY INFORMATION**

Drainage Area - 483,280 Acres  
Character - Rolling to hilly, clay wooded/cultivated  
Required Opening (50yr) - 6,600 Sq. Ft.  
Proposed Opening 6,600 Sq. Ft.  
Ordinary Water El. 555.5  
Low Water El. 554.8

**DESIGN STRESSES**

$f_c = 14,000$  psi (Superf. Sub.)  
 $f_s = 20,000$  psi (Reinf.)  
 $f_s = 20,000$  psi (Struct.)  
 $w_c = 75$  psi (Flgs)  
 $n = 10$   
 $\delta$  Deflection = 1/800



STATION 1068+89.75  
BUILT 196 BY  
STATE OF ILLINOIS  
FAI RT 74 SEC. 48-298  
FA. PROJ. 174-3(19)  
LOADING HS20-44LT

**NAME PLATE**  
See Std. 2113-1

**SEC. B-B**

**SEC. A-A**

**SEC. C-C**

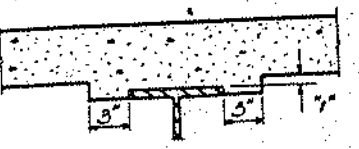
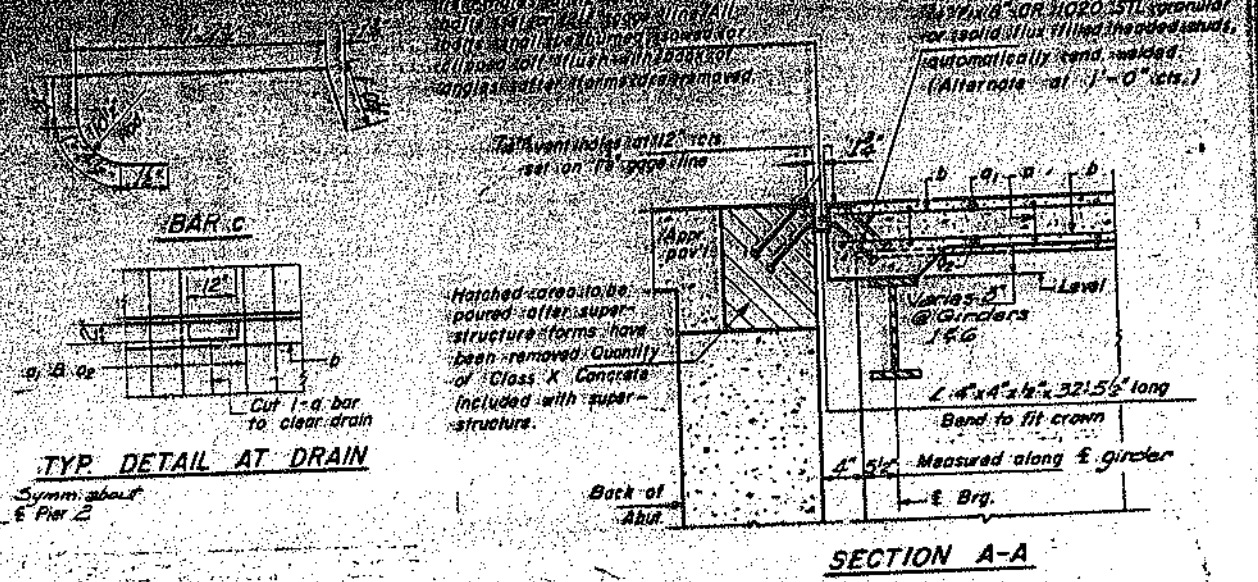
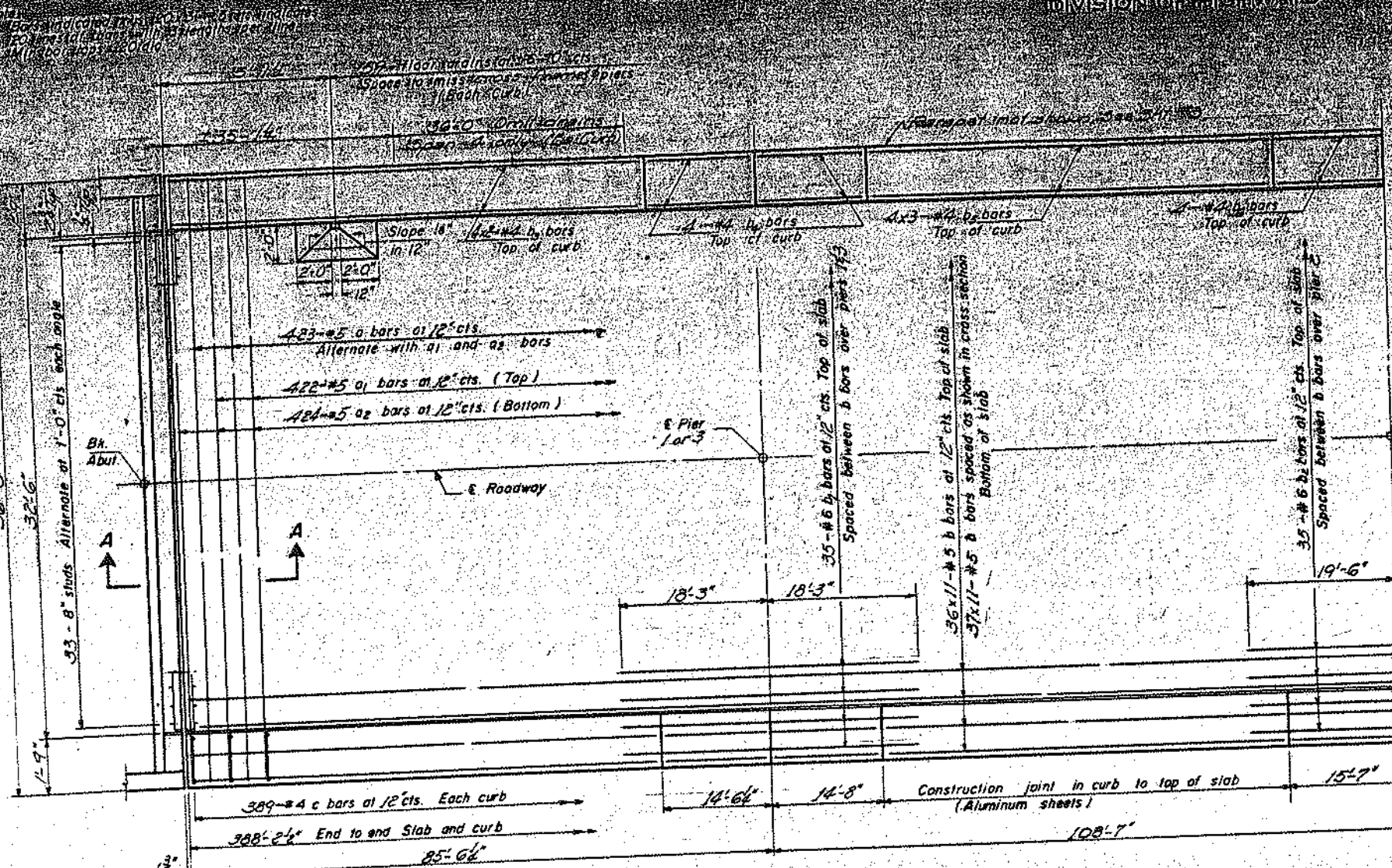
**SEC. D-D**

DESIGNED *H. Schuster*  
CHECKED R. D. FAYEL  
DRAWN DEL A. BARRAZA  
CHECKED FDP

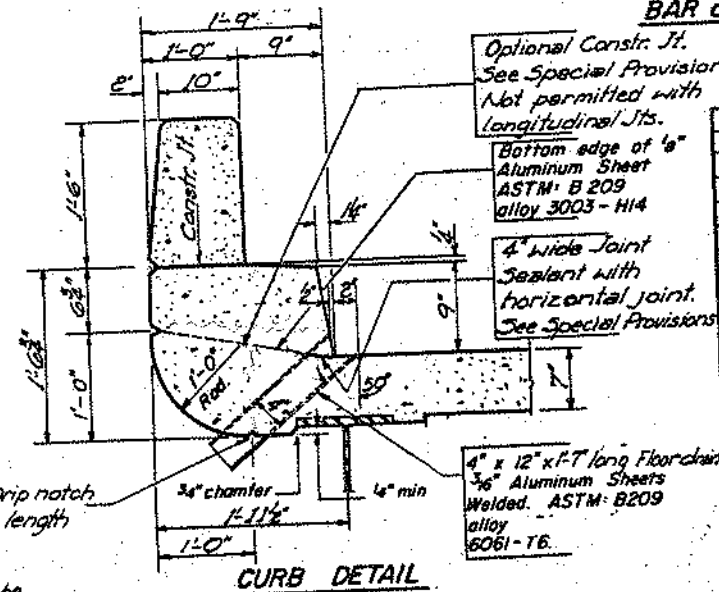
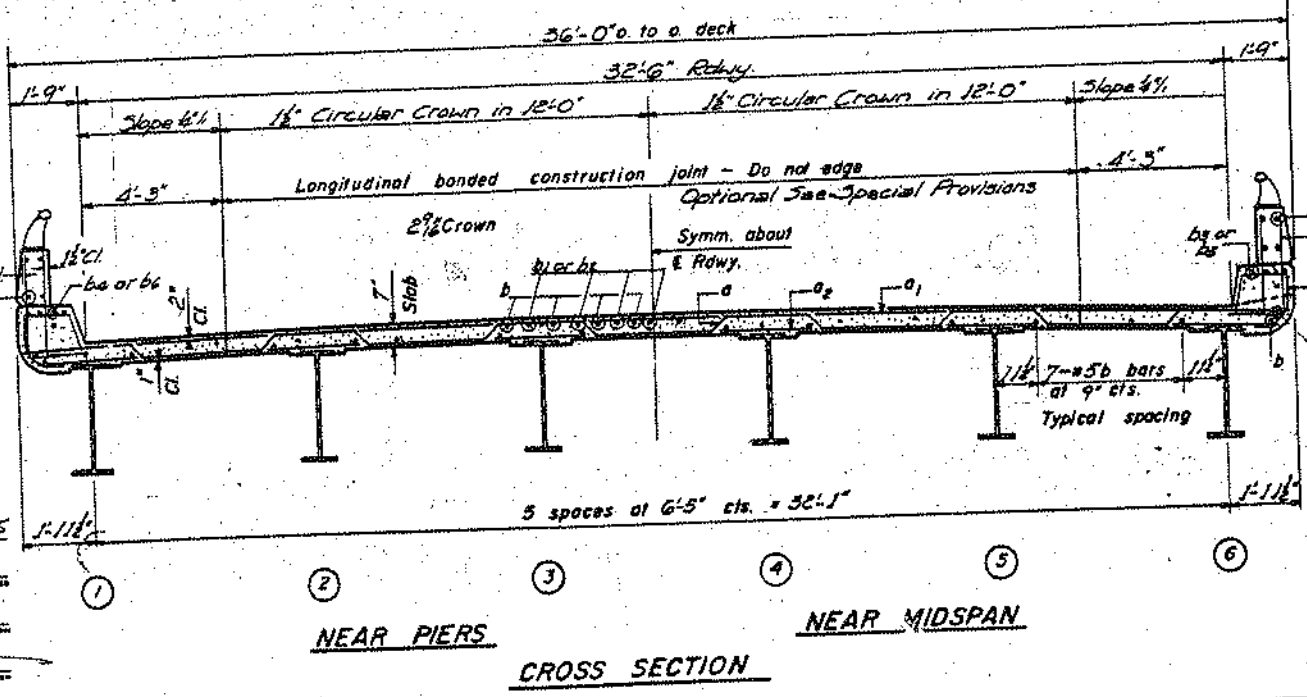
EXAMINED *Carl Hummer*  
PASSED *H. J. Allen*  
APPROVED *J. E. Staff*

June 7 1955

**GENERAL PLAN & ELEVATION**  
FAI RT 74 OVER SPOON RIVER TR 238A  
FAI RT 74 SEC. 48-298  
KNOX COUNTY  
STA. 1068+89.75

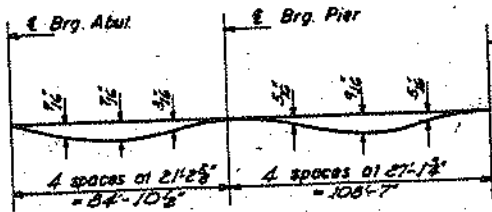


To determine "Y": After all structural steel has been erected, elevations of the top flanges of the girders shall be taken at intervals shown on sheet #9. These elevations subtracted from the "Grade Elevations Adjusted for Dead Load Deflections" shown on sheet #9, minus slab thickness, equals the fillet heights "Y" above top of girders.



2 SUPERSTRUCTURES  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	846	#5	36'-10"	~
a1	844	#5	35'-8"	~
a2	848	#5	35'-2"	~
b	1606	#5	36'-5"	~
b1	140	#6	36'-6"	~
b2	70	#6	39'-0"	~
b3	64	#4	35'-10"	~
b4	64	#4	14'-2"	~
b5	96	#4	26'-8"	~
b6	32	#4	15'-3"	~
b7	128	#5	17'-5"	~
b8	64	#5	14'-2"	~
b9	128	#5	19'-5"	~
b10	32	#5	15'-5"	~
c	1556	#4	6'-3"	~
d	3446	#5	5'-3"	~
Reinforcement Bars		Lbs.	19470	
Structural Steel		Lbs.	853490	
Class X Concrete		Cu Yds.	776.5	



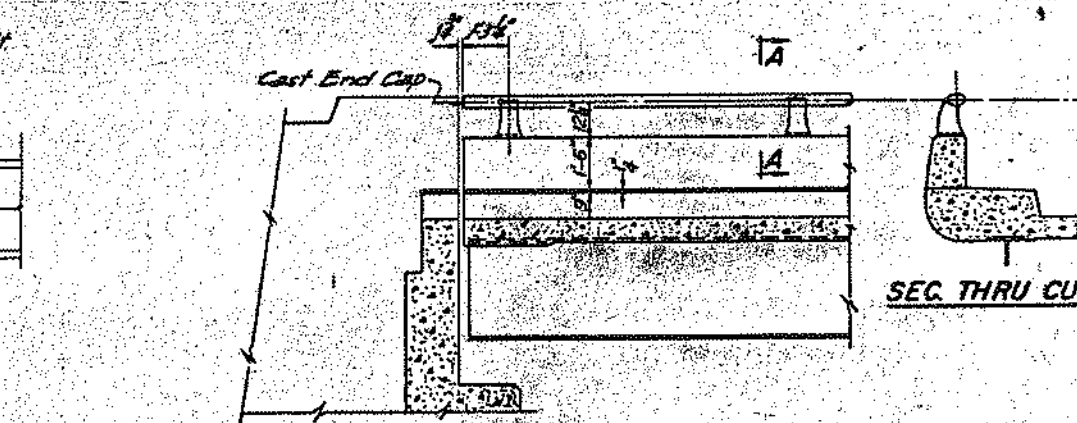
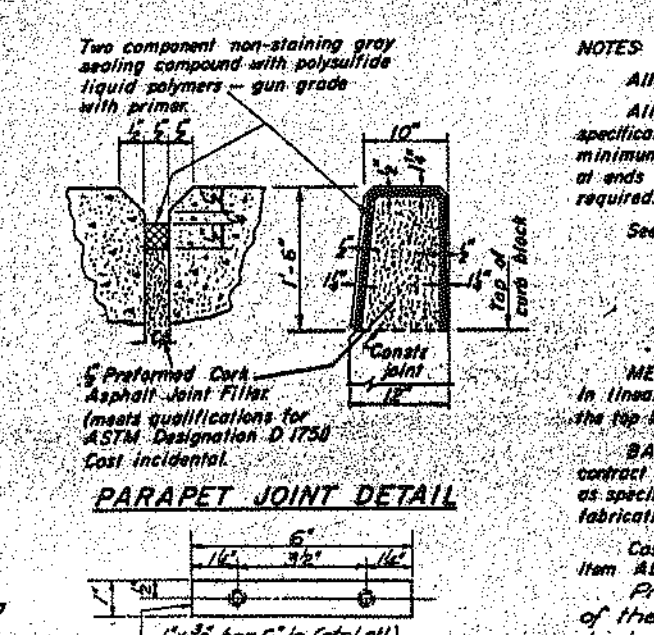
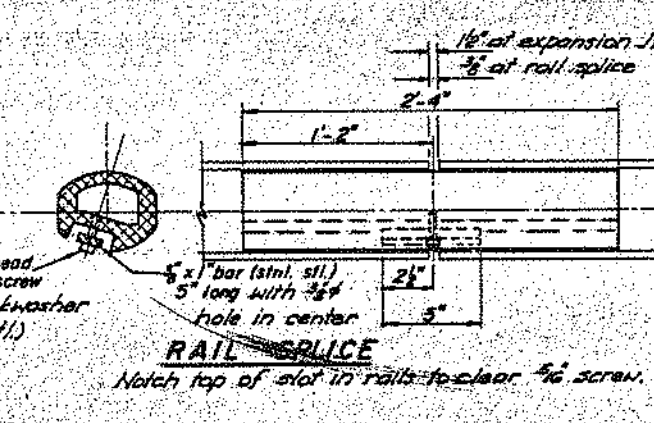
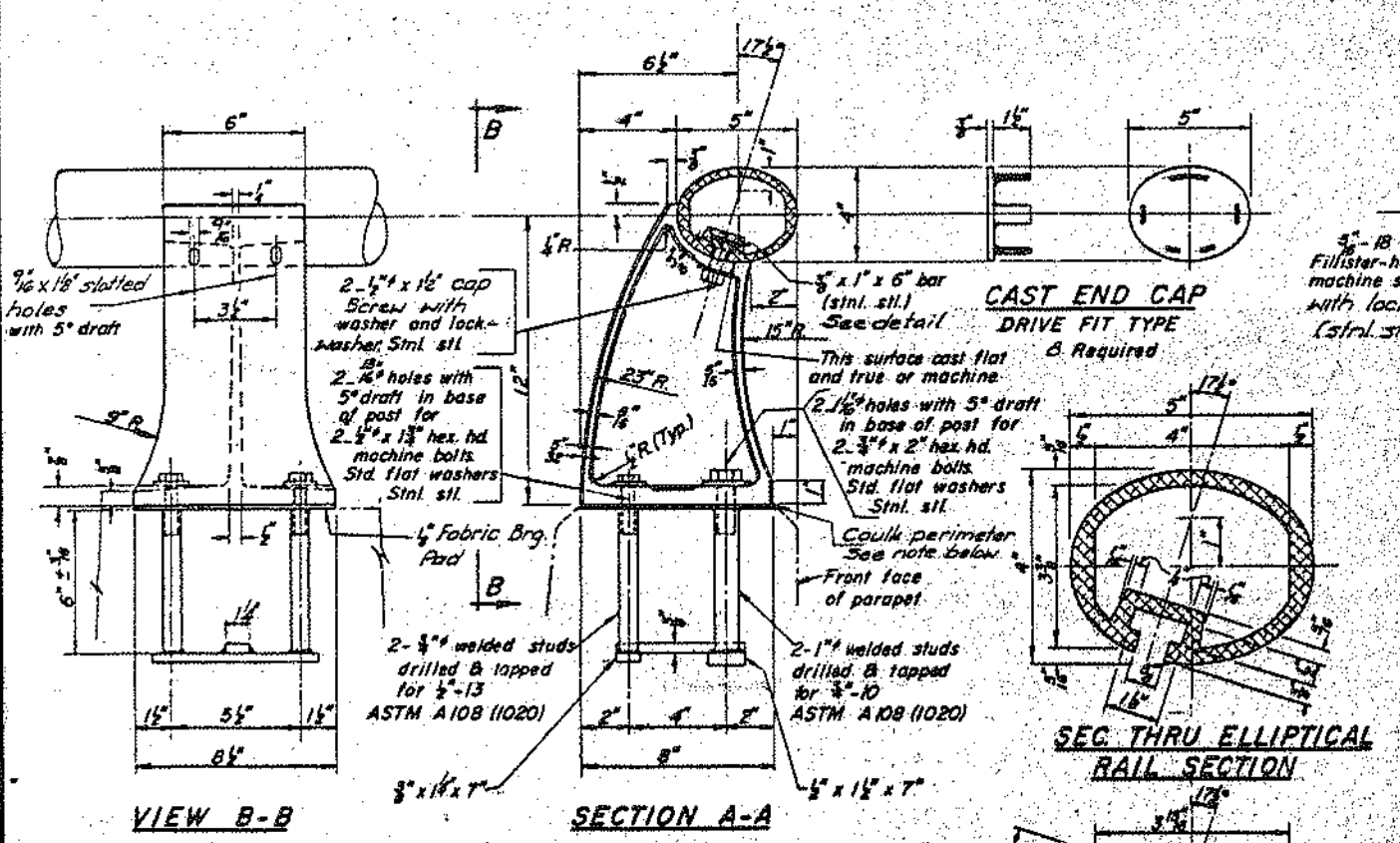
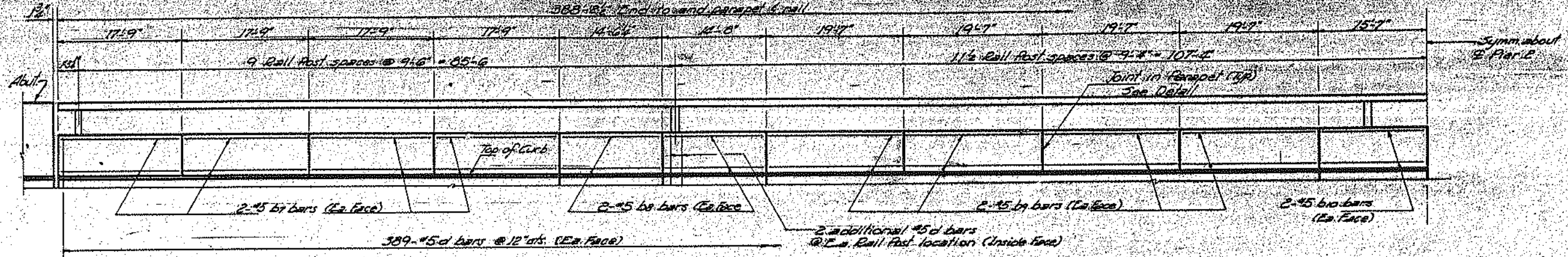
SUPERSTRUCTURE  
F.A.I. RT. 74 SEC. 48-298  
KNOX COUNTY  
STA. 106818975

DESIGNED: P. DeSousa  
CHECKED: R.D. PATEL  
DRAWN: DEL A. BARRAZA  
APPROVED: D.L. Boemer

EXAMINED: C.R. Hummer  
PASSED: L.J. Utton  
APPROVED: V.E. Stoff

JUNE 7 1965

DA	APR 25	KNOX	440
NO.	17	ST.	11



**NOTES:**

All Posts shall be normal to parapet.

All Aluminum Alloy Extruded Rail shall conform to ASTM specification B-221 alloy 6061-T6, and shall extend a minimum of 2 panel lengths (attached to minimum of 3 posts) beyond at ends or at open joints where a minimum of 1 panel length is required. All joints in railing must be spliced per detail.

See Special Provisions for following Material Specifications:

- Cast Aluminum Alloy Bridge Post - Alloy A344-T4
- Stainless Steel Bars, Cap Screws, Washers, and Lockwashers.
- Fabric Bearing Pad

**METHOD of MEASUREMENT:** Aluminum handrail shall be measured in lineal feet. The length paid for shall be the over all length along the top longitudinal railing member thru all posts and caps.

**BASIS of PAYMENT:** Aluminum handrail shall be paid for at the contract unit price per lineal foot for ALUMINUM HANDRAIL, measured as specified, which price shall be payment in full for all materials, fabrication, transportation, and erection.

Cost of rail splice, and caps, and hardware to be incidental to item ALUMINUM HANDRAIL.

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

**BILL OF MATERIAL**

Item	Unit	Quantity
ALUMINUM HANDRAIL	Lin. Ft.	1553

**ALUMINUM HANDRAIL**  
 ILL. RT. 74 SEC. 48-298  
 KNOX COUNTY  
 STA. 1068+89.75

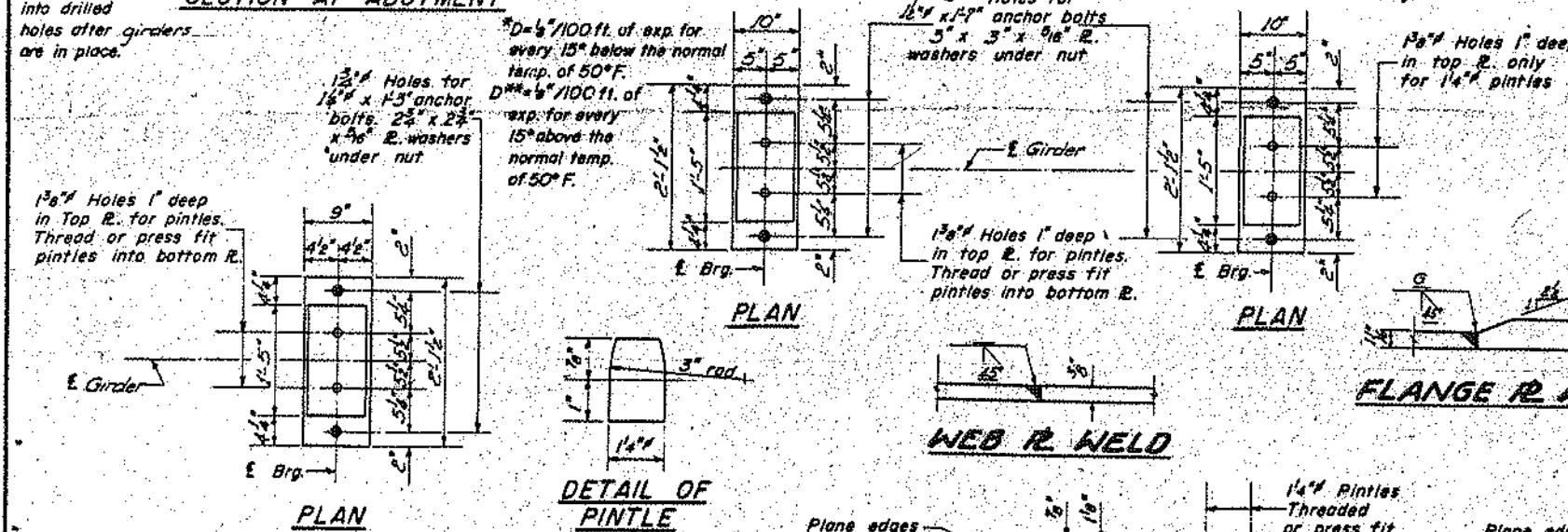
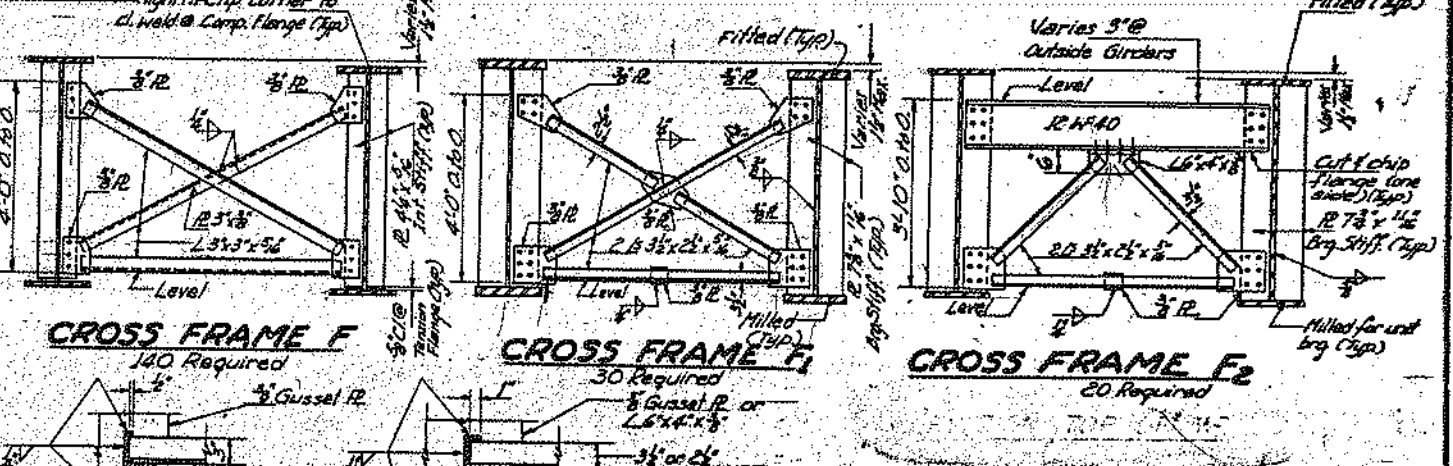
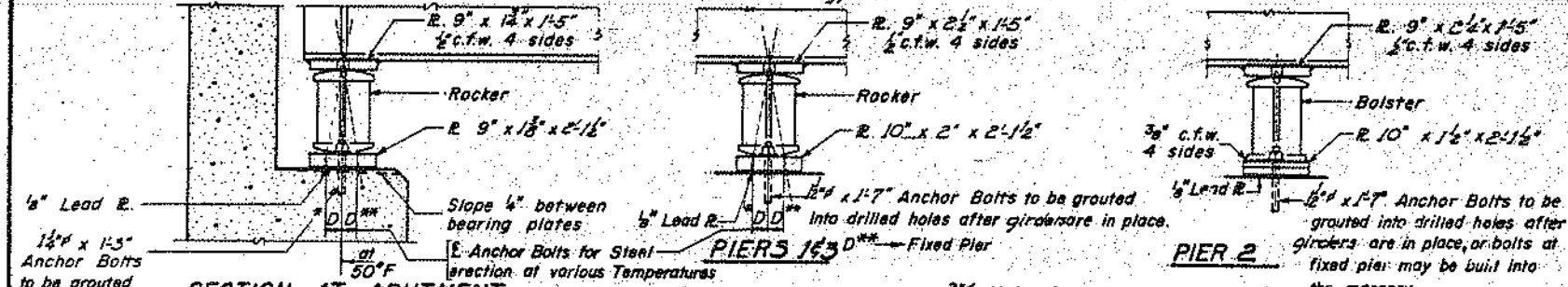
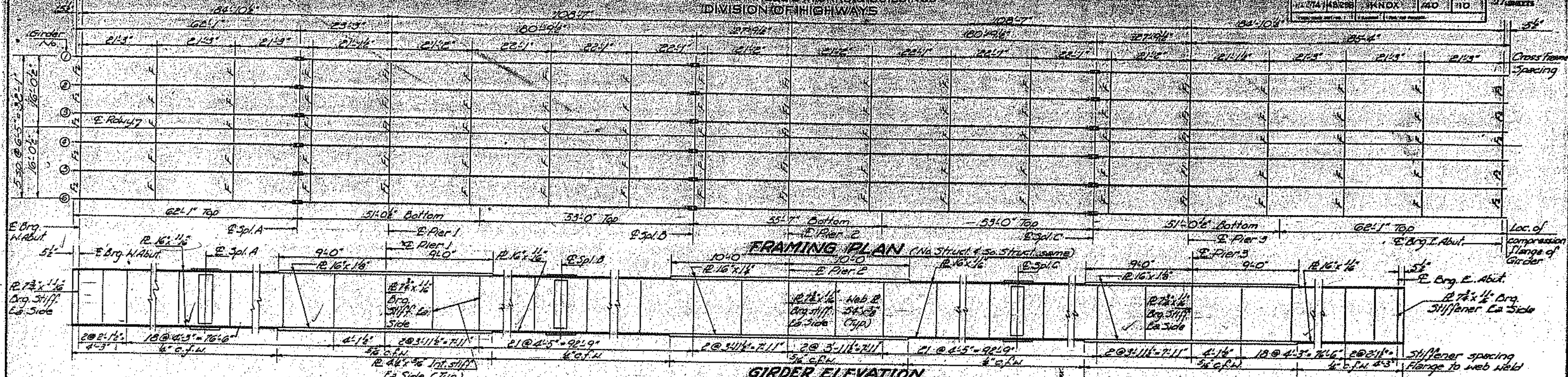
DESIGNED <i>St. Chamberlain</i>	EXAMINED <i>Carl J. Hummel</i>
CHECKED <i>R. D. Patel</i>	PASSED <i>H. J. Atton</i>
DRAWN <i>Wm. M. Best</i>	APPROVED <i>V. E. Scott</i>
CHECKED <i>PCB</i>	

June 7 1965

Note: Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers - gun grade with primer.







**ELEVATION TOP OF GIRDER**

Girder	E. Abut.	E. Pier 1	E. Pier 2	E. Pier 3	E. Abut.
14 G	589,851	589,985	590,941	590,148	590,611
21 G	589,774	589,964	590,070	590,277	590,407
31 G	589,851	590,035	590,161	590,348	590,478

**MIN. ANGLE TO GUSSET R WELDS**

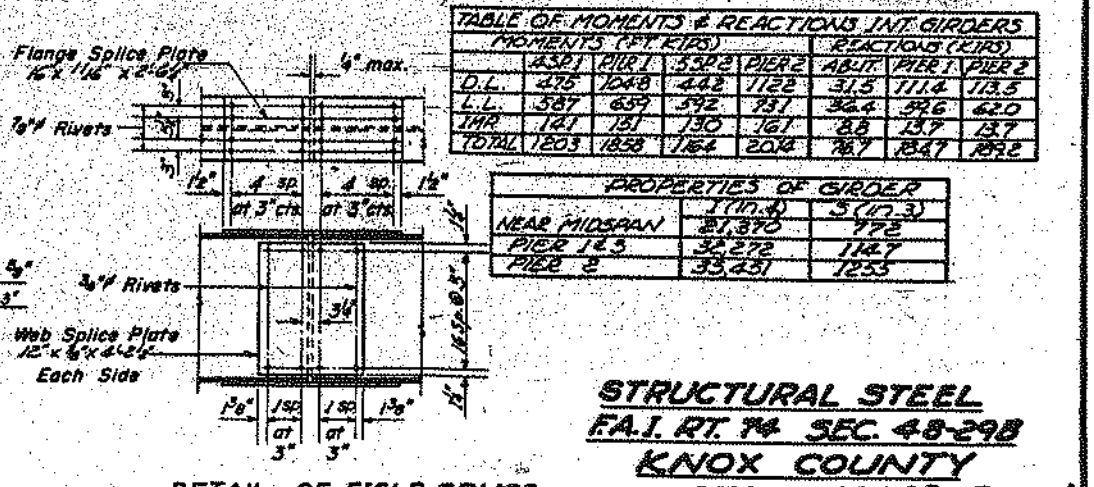
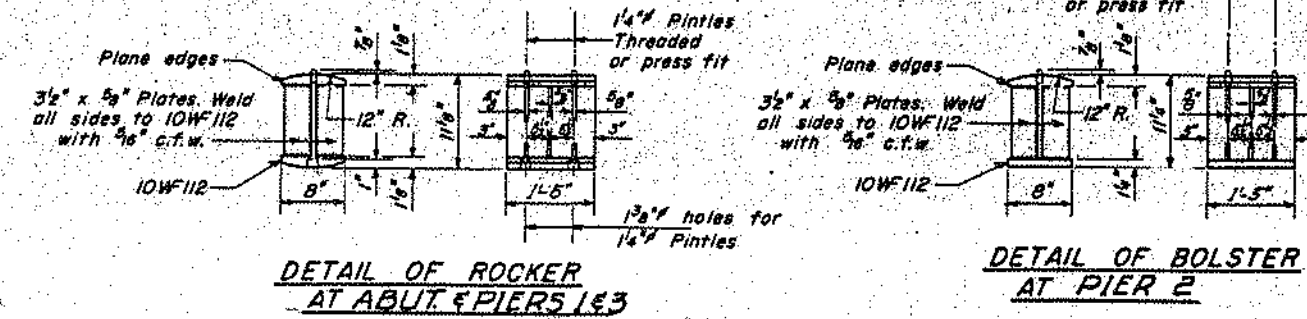
**TABLE OF MOMENTS & REACTIONS INT. GIRDERS**

MOMENTS (FT. KIPS)	REACTIONS (KIPS)		
4301 PIERT	5302 PIERT	ABUT. PIERT	
D.L.	475	1048	442
L.L.	587	659	392
THR	187	151	130
TOTAL	1203	1838	1164

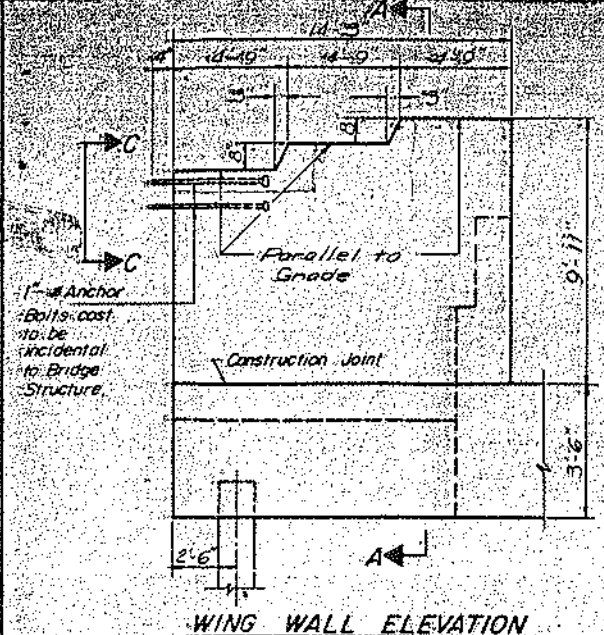
**PROPERTIES OF GIRDER**

	1 (11.4)	3 (17.3)
NEAR MIDSPAN	21,370	772
PIER 1 & 2	32,272	118.7
PIER 3	33,451	1255

DESIGNED: D. Schaefer  
 CHECKED: R. P. ...  
 DRAWN: W. A. Sausaman Jr.  
 APPROVED: V. E. ...

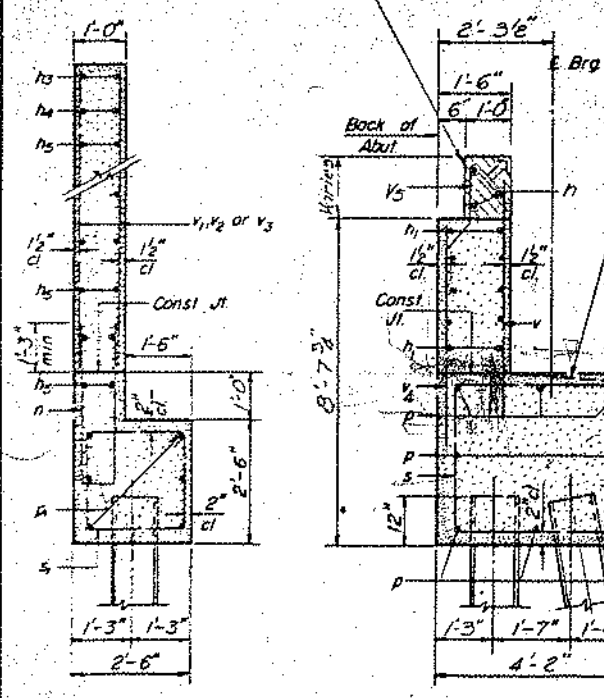


**STRUCTURAL STEEL**  
**F.A.I. RT. 14 SEC. 48-298**  
**KNOX COUNTY**  
**STA. 1068+09.75**



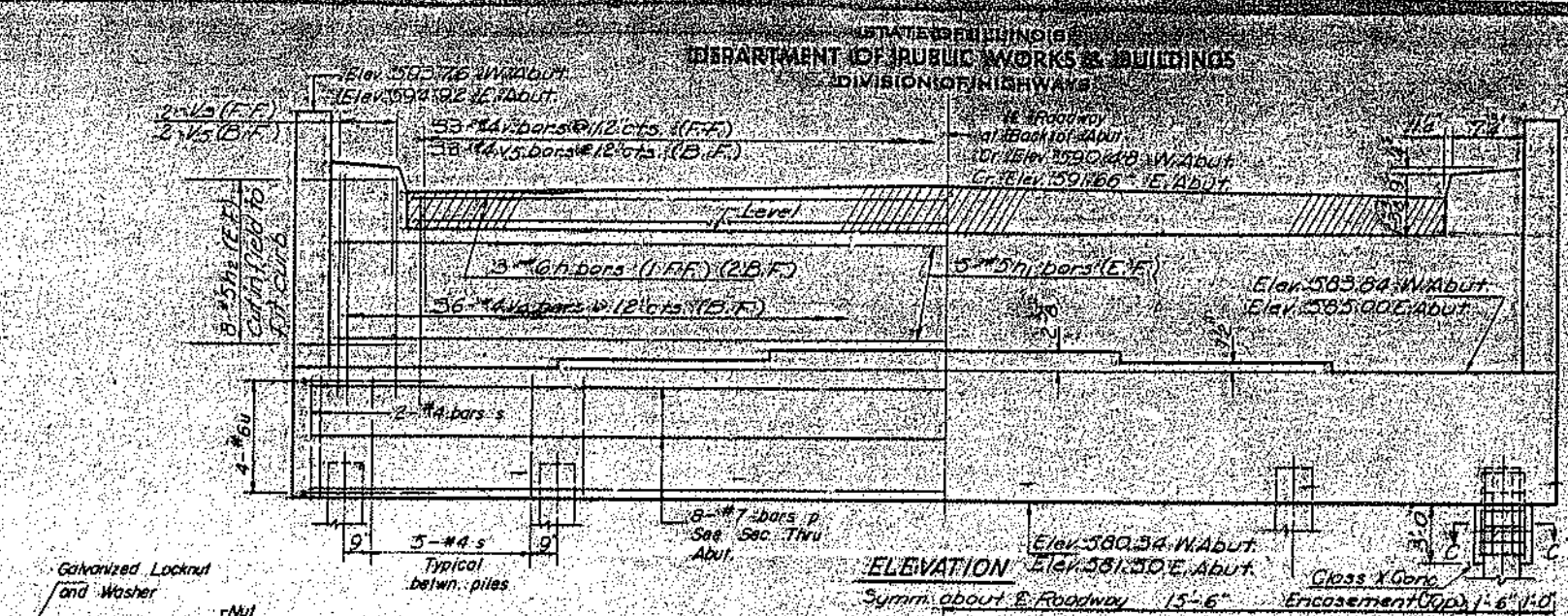
WING WALL ELEVATION

Cross hatched area to be poured after Superstructure forms have been removed. Quantity of Class X Concrete included with Superstructure. See Sp. #2

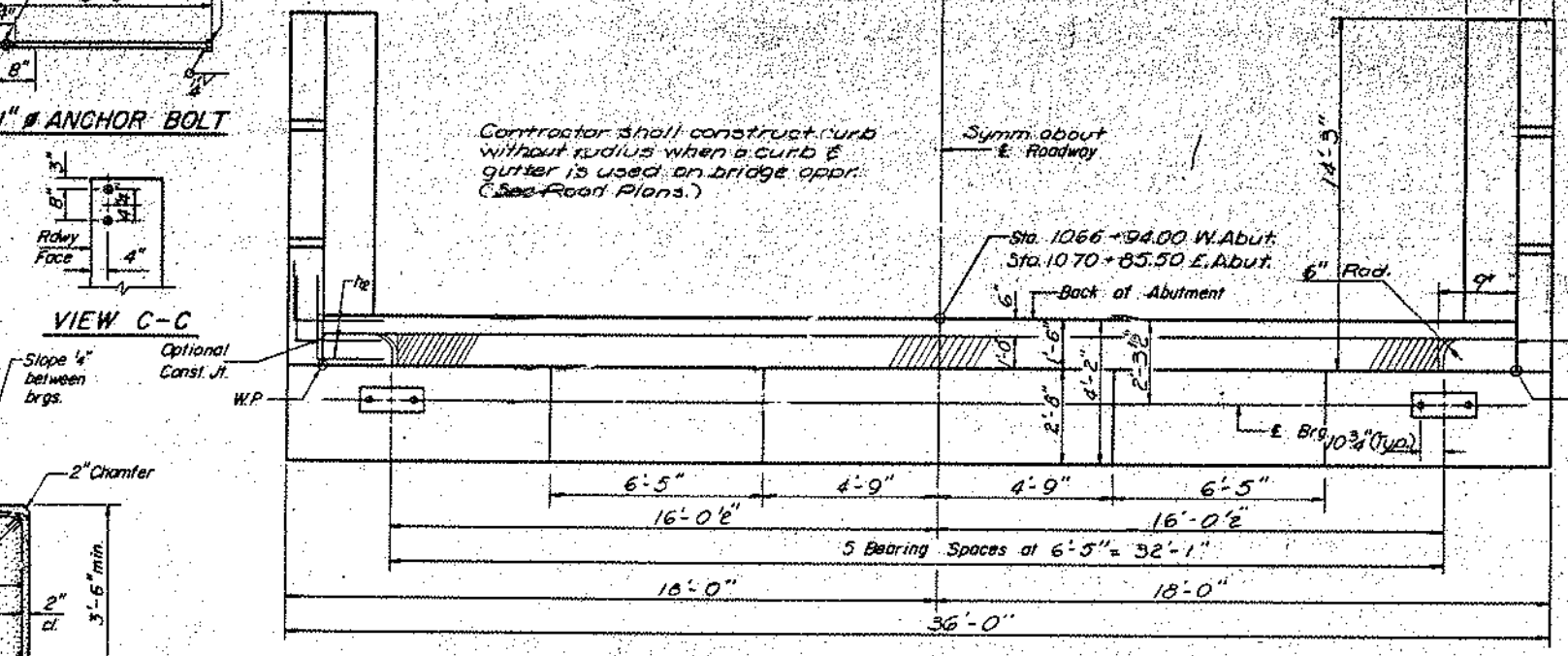


SEC A-A

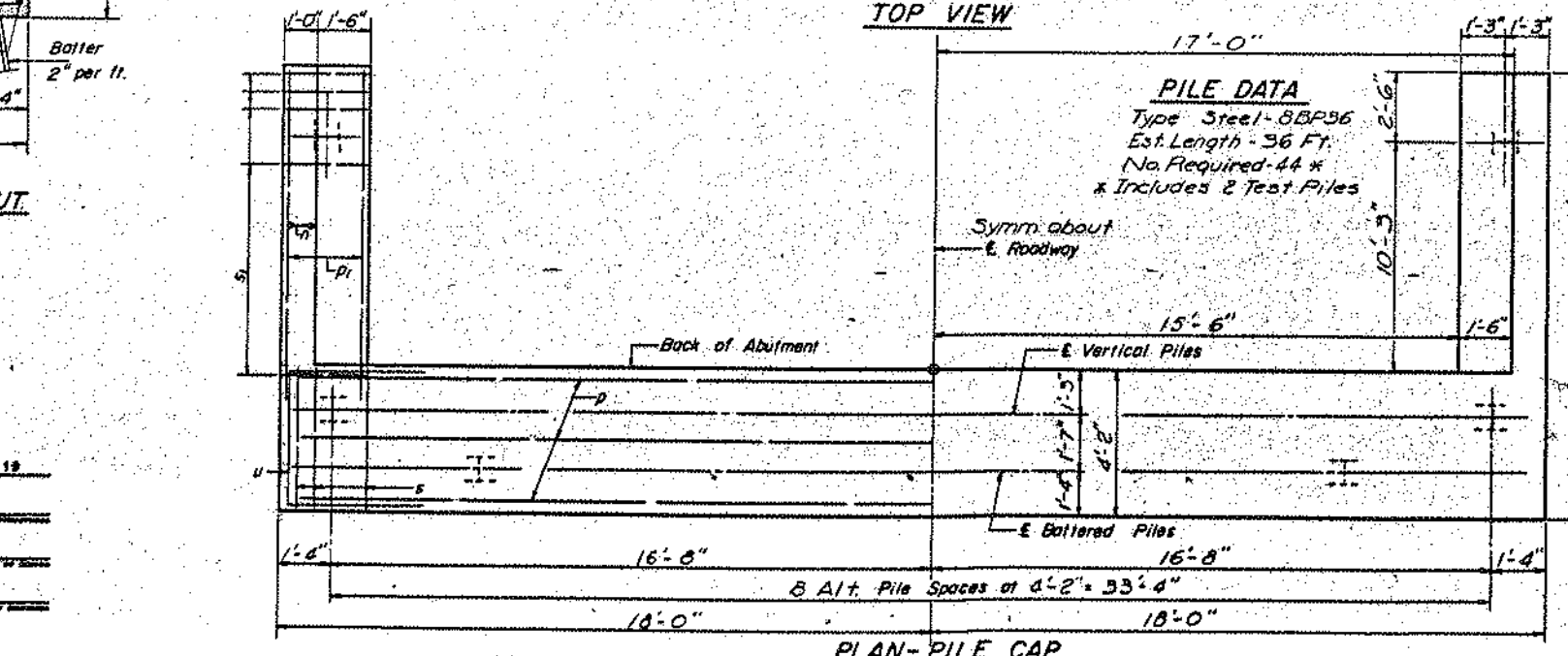
SEC THRU ABUT



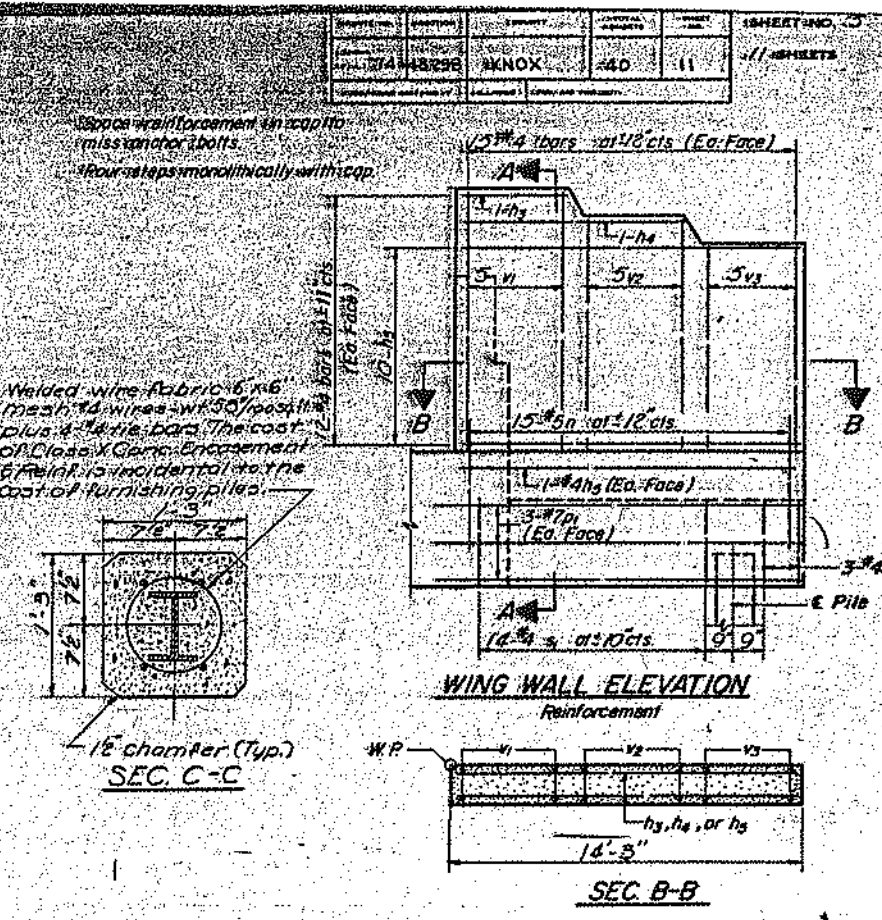
ELEVATION



TOP VIEW



PLAN - PILE CAP



WING WALL ELEVATION Reinforcement

SEC B-B

4 ABUTMENTS  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	12	#6	3'-2"	—
h1	47	#5	33'-9"	—
h2	128	#5	4'-9"	—
h3	16	#4	4'-6"	—
h4	16	#4	9'-3"	—
h5	176	#4	14'-0"	—
n	120	#5	7'-9"	U
p	32	#7	35'-8"	—
q	48	#7	14'-0"	—
s	176	#4	14'-0"	□
s1	156	#4	9'-5"	□
u	32	#6	6'-9"	—
v	132	#4	7'-0"	—
v1	80	#4	9'-9"	—
v2	80	#4	9'-1"	—
v3	96	#4	8'-5"	—
v4	184	#4	6'-0"	—
v5	148	#4	4'-2"	—
Class X Concrete			cu. Yds.	1845
Reinforcement Bars			Lbs.	15,160
Steel Piles (B.P.36)			Lin. Ft.	1512
Test Piles (B.P.36)			#	2

ABUTMENTS  
F.A. I. RT. 74 SEC. 48-298  
KNOX COUNTY  
STA. 1068+89.75

DESIGNED	EXAMINED	DATE
CHECKED	PASSED	
DRAWN	APPROVED	

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

PROJECT NO.	SECTION	DATE	SHEET NO.
1008	4B-29B	KNOX	12
SHEET NO. 12		OF SHEETS 11	

TRIAL DATA

Type *Steel (C/B/P/D/G)*

Est. Length *284.54*

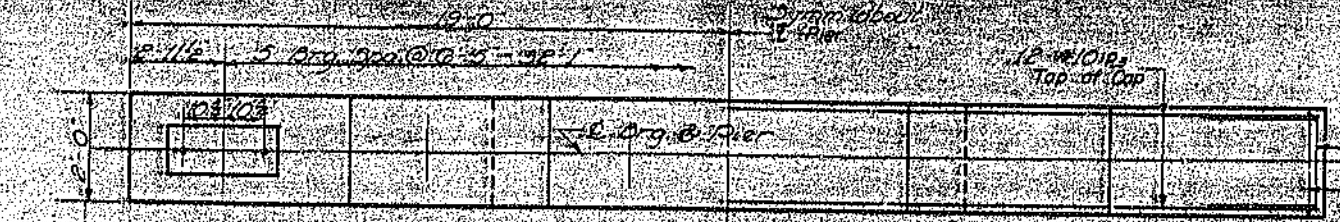
No. Reqd. *23 (2 Piers)*

*No. includes 1 test pile*

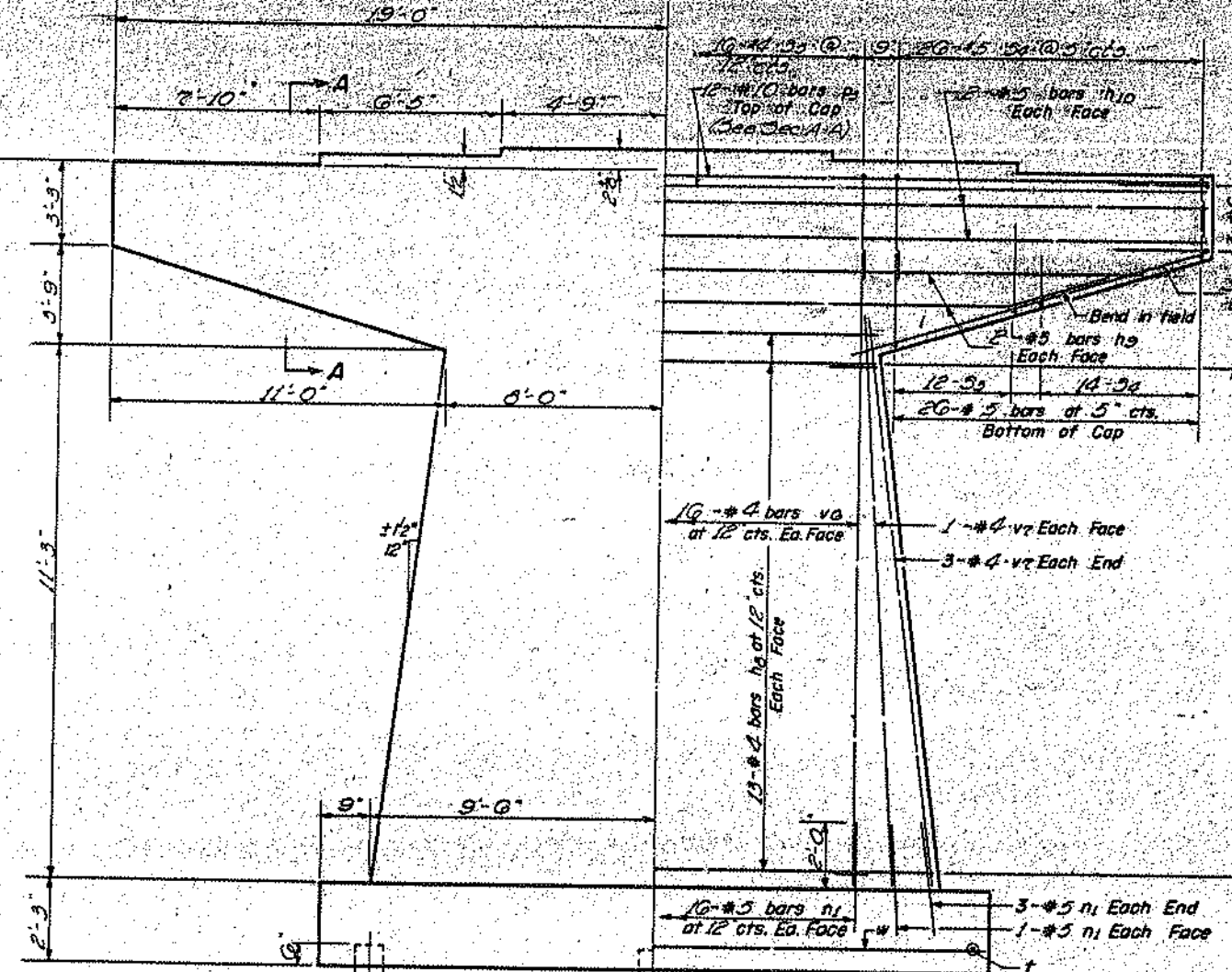
Pier #1  
Sta. 1067+81.17  
Cr. Elev. 590.24

Elev. 583.93

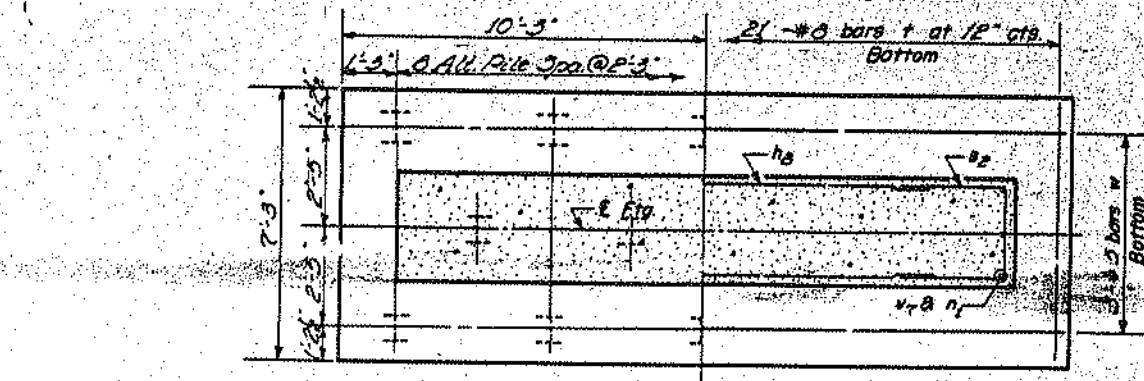
Elev. 563.43



TOP PLAN

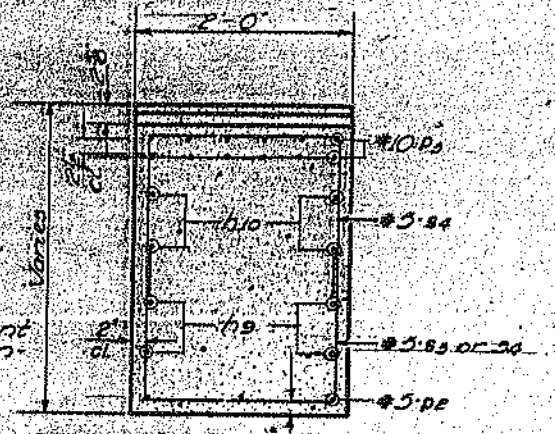


ELEVATION

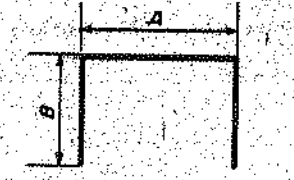


FOOTING PLAN

Note: All edges shall have standard chamfers except footings. Four steps monolithically with cap. Space reinforcement up cap to miss on anchor bolts.



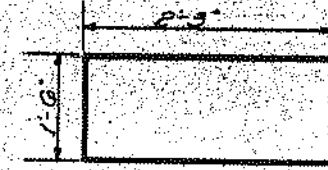
SECTION A-A



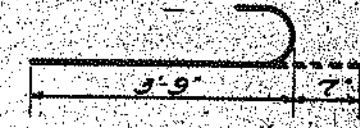
A & B DIMENSIONS

Bar	A	B
s2	1'-8"	2'-6"
s3	1'-8"	4'-7"
s4	1'-8"	3'-0"
s5	1'-8"	3'-0"

s BARS



u1 BAR



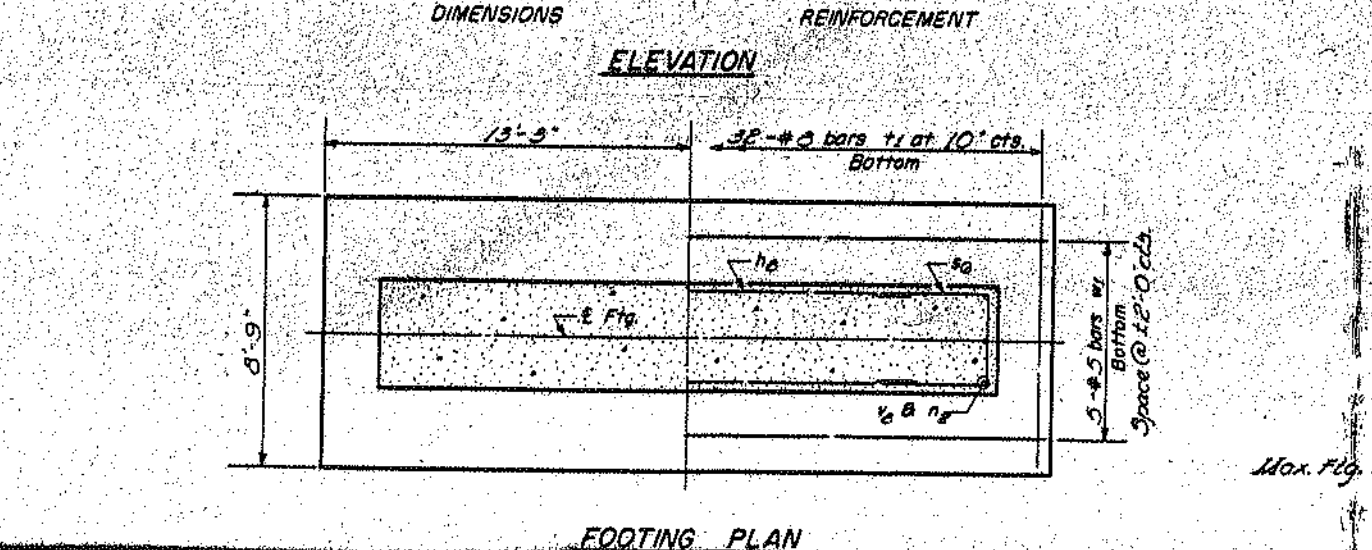
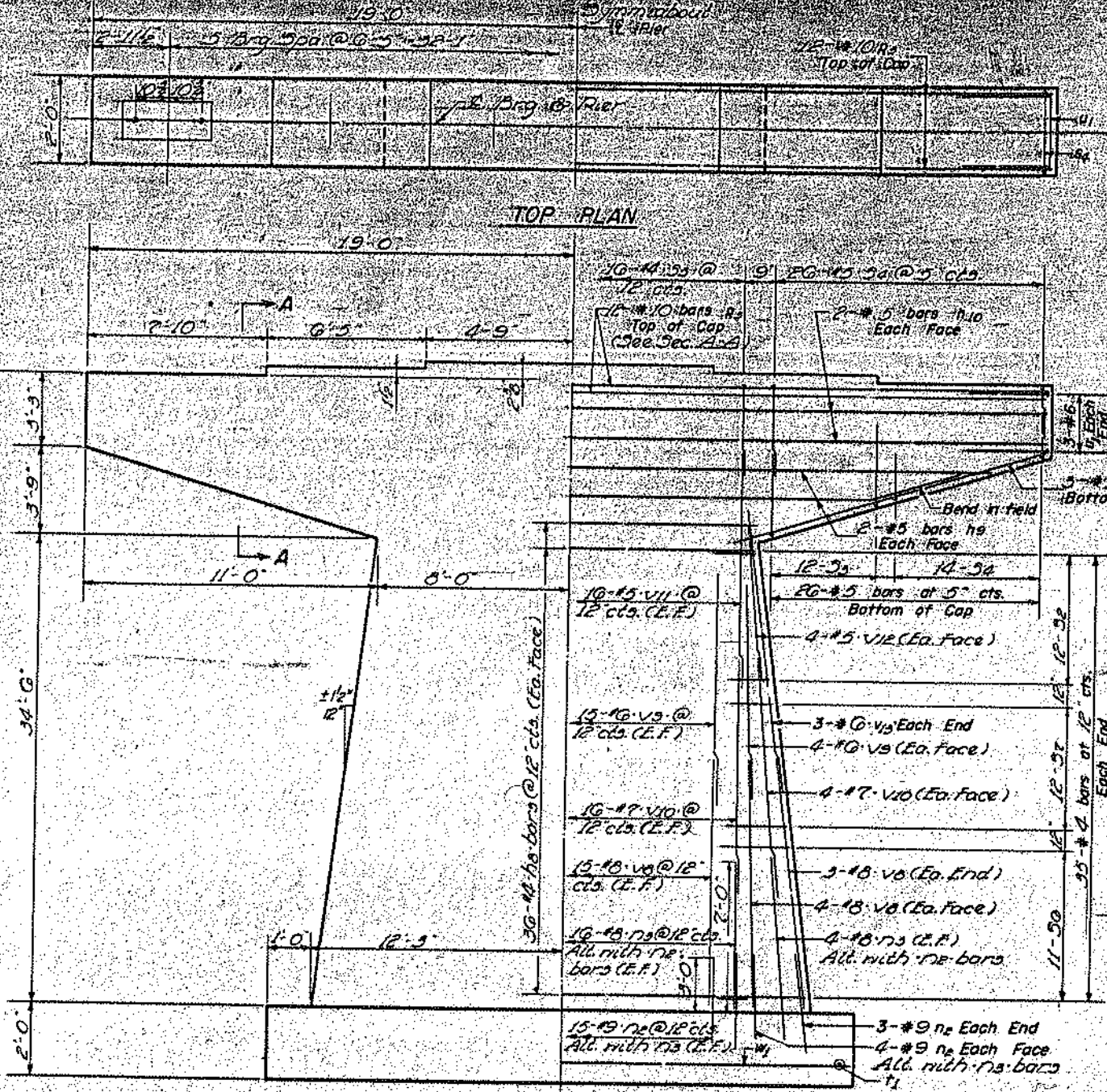
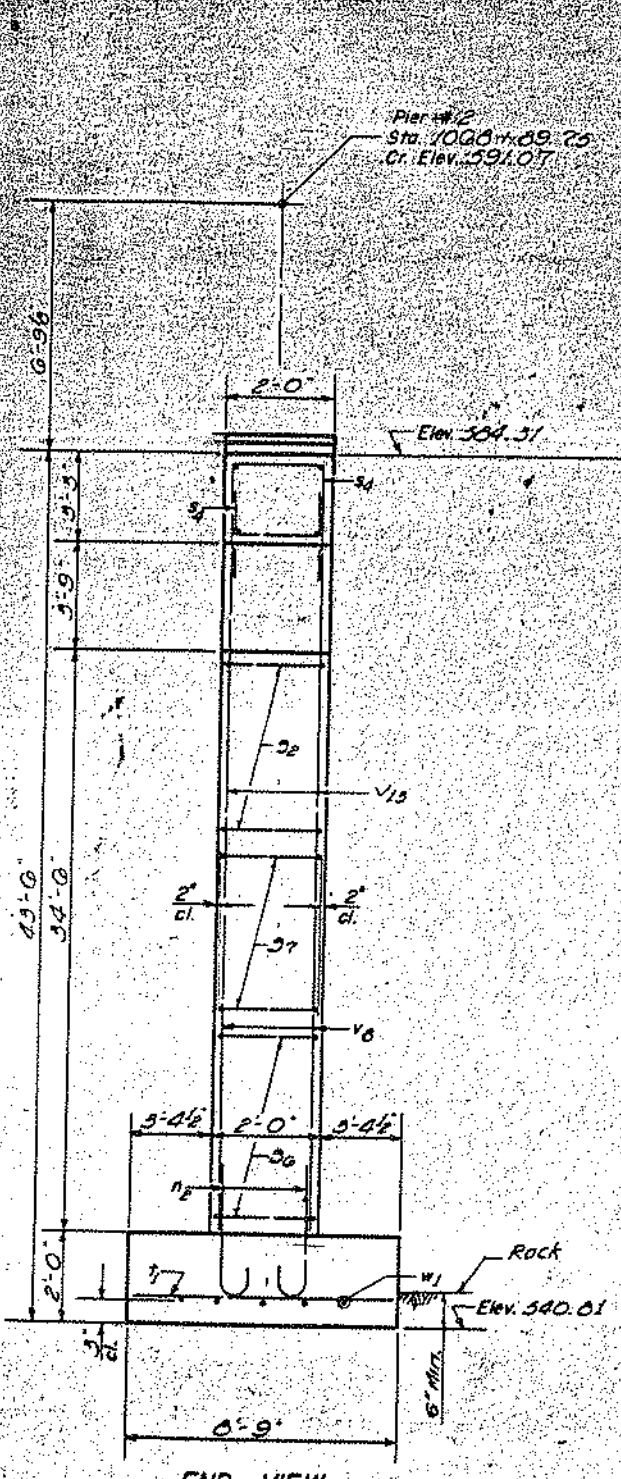
n1 BAR

2 PIERS  
BILL OF MATERIAL

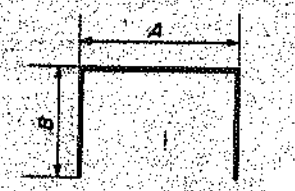
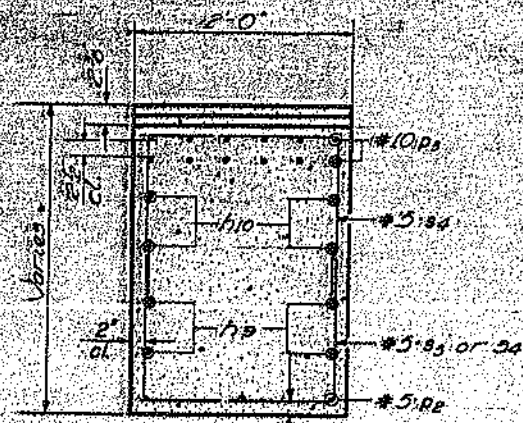
Bar	No.	Size	Length	Shape
h8	52	#4	15'-6"	—
h9	8	#3	33'-0"	—
h10	8	#5	37'-6"	—
n1	84	#5	4'-4"	⌋
p2	12	#5	12'-0"	—
p3	24	#10	37'-6"	—
s2	40	#4	6'-8"	⌋
s3	28	#5	10'-10"	⌋
s4	100	#5	7'-8"	⌋
s5	32	#4	7'-8"	⌋
t	42	#8	6'-9"	—
u1	12	#6	6'-0"	⌋
v8	64	#4	16'-3"	—
v9	20	#4	12'-0"	—
w	6	#3	20'-0"	—
Class A Concrete			Cu Yds	877
Reinforcement Bars			Lbs	9570
Steel Plates (C/B/P/D/G)			Lin. Ft	640
Test Pile 5L65P30			Eq.	1

PIER 1  
EAL PT 74-SEC 4B-29B  
KNOX COUNTY  
STA. 1068+89.75

DESIGNED *R. DeBorja*  
EXAMINED *C. E. Thumm*  
CHECKED *R. D. PATEL*  
DRAWN *W. A. Sausaman*  
APPROVED *W. E. Hoff*  
June 7 1965

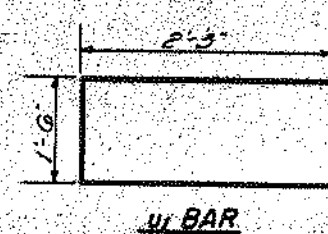


Note: All edges shall have standard 3/4" chamfers except footings. Footings mono lithically with cap. Space reinforcement in cap to miss anchor bolts.

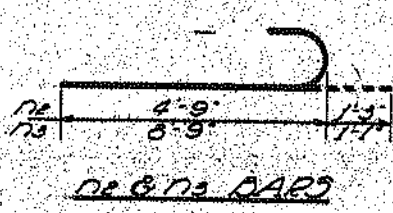


Bar	A	B
h8	1'-8"	2'-0"
h9	1'-8"	4'-7"
h4	1'-8"	3'-0"
h5	1'-8"	3'-0"
h6	1'-8"	5'-3"
h7	1'-8"	4'-0"

3 BARS



h1 BAR



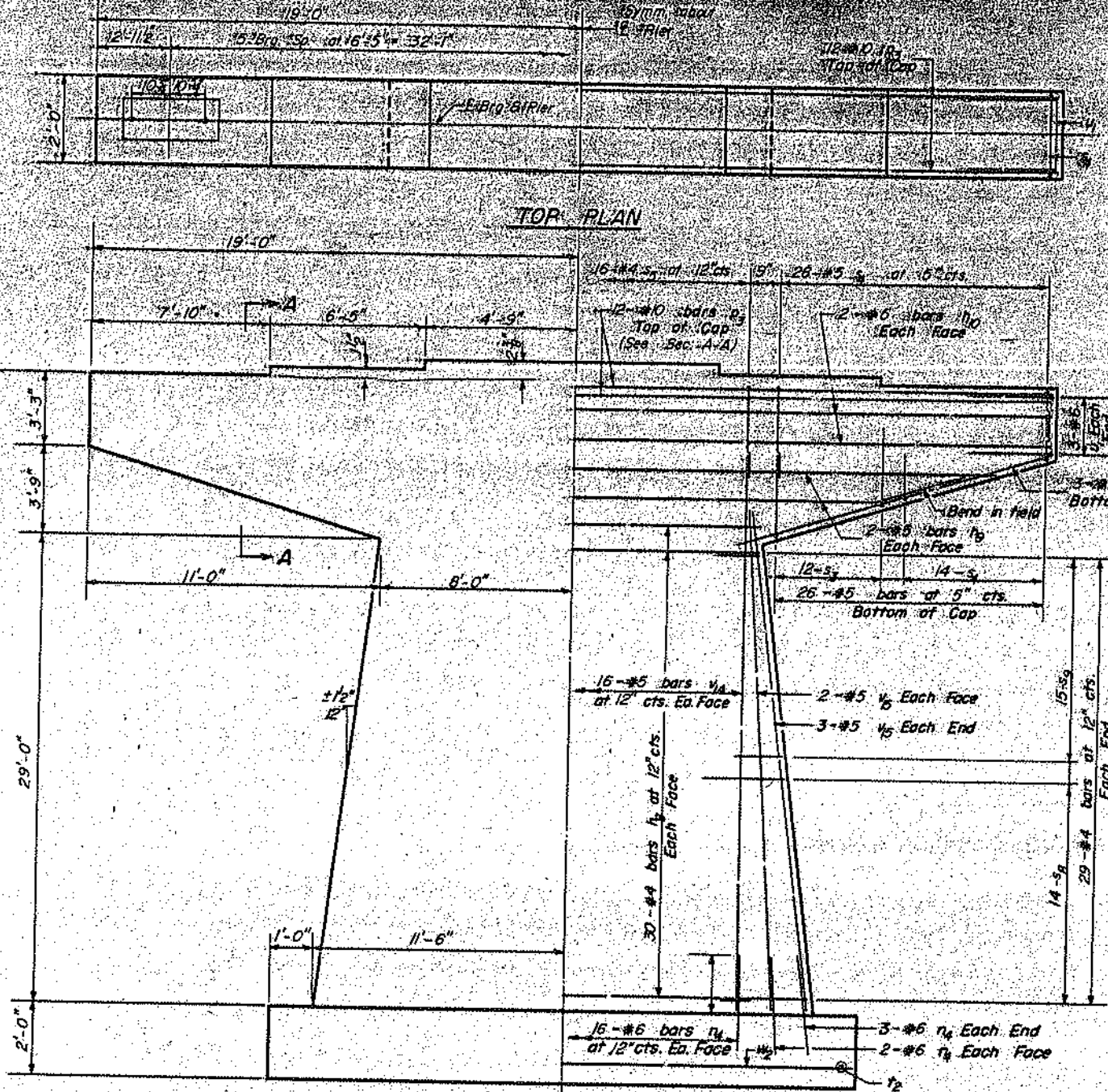
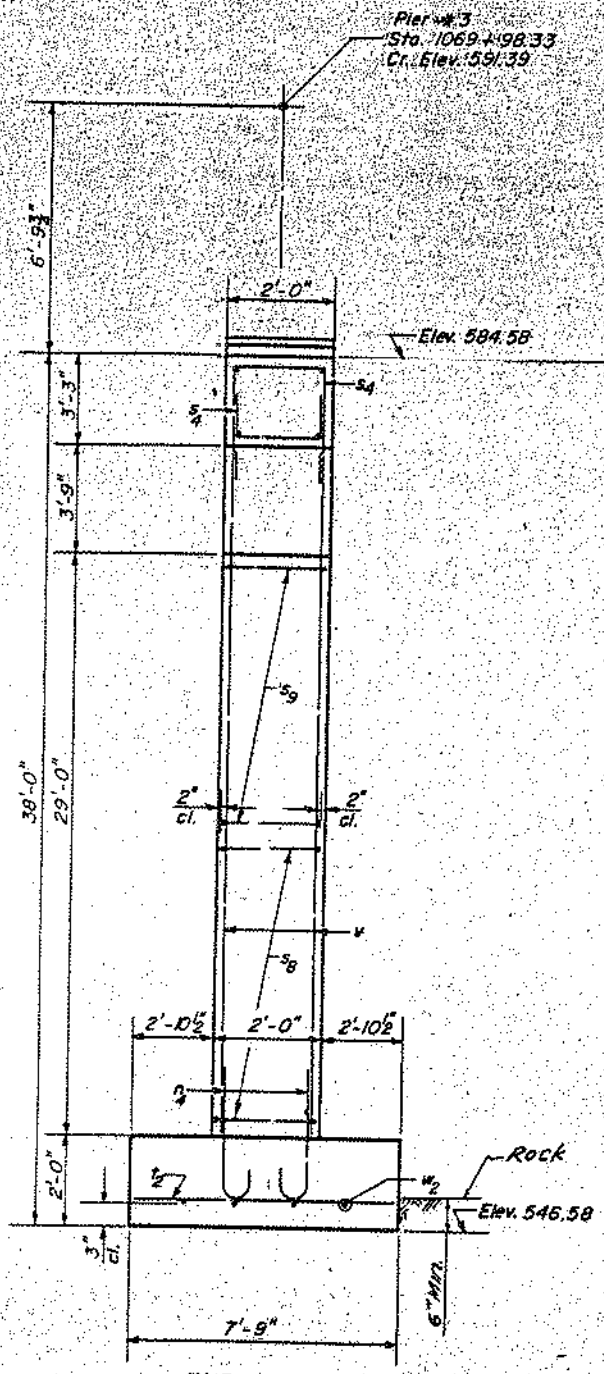
h6 & h5 BARS

2 PIERS  
BILL OF MATERIAL

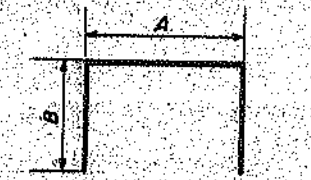
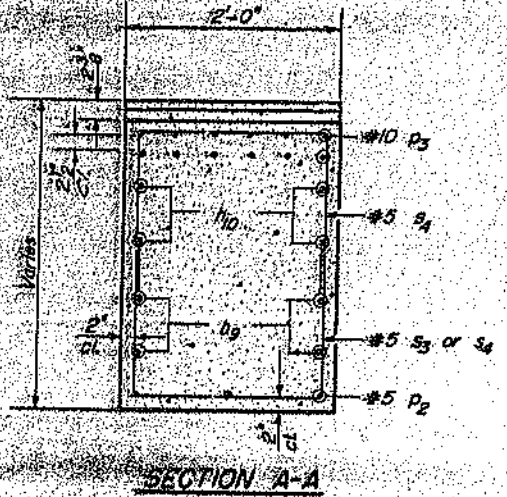
Bar No.	Size	Length	Shape
h8	#4	15'-0"	—
h9	#5	53'-0"	—
h10	#5	37'-0"	—
h2	#9	6'-0"	⌋
h3	#8	9'-10"	⌋
h4	#5	7'-8"	□
h5	#4	7'-8"	□
h6	#5	23'-0"	□
h7	#4	9'-8"	□
h1	#6	6'-0"	□
h8	#6	14'-9"	—
h9	#6	16'-0"	—
h10	#7	15'-3"	—
h11	#5	20'-0"	—
h12	#5	16'-0"	—
h13	#6	23'-0"	—
h14	#5	26'-0"	—
Class X Concrete Cu Yds.			171.7
Reinforcement Bars Lbs.			26760

Max. Flg. Pressure = 3.00 Tons/Sq. Ft.

DESIGNED: *D. Elman*  
CHECKED: R. D. PATEL  
DRAWN: W. A. SOUBOTKA  
APPROVED: *[Signature]*  
June 7 1965

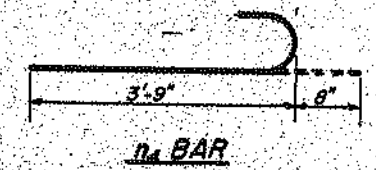
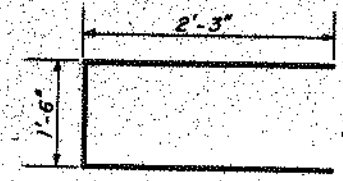


Note: All edges shall have standard chamfers except footings. Reinforcement shall be monolithically with cap. Space reinforcement in cap to miss anchor bolts.



Bar	A	B
s <sub>3</sub>	1'-8"	4'-7"
s <sub>4</sub>	1'-8"	3'-0"
s <sub>5</sub>	1'-8"	3'-0"
s <sub>6</sub>	1'-8"	2'-9"
s <sub>7</sub>	1'-8"	4'-6"

s BARS



2 PIERS  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h <sub>2</sub>	120	#4	15'-6"	—
h <sub>3</sub>	8	#5	33'-0"	—
h <sub>4</sub>	8	#5	37'-6"	—
r <sub>4</sub>	92	#6	4'-5"	⌋
P <sub>2</sub>	12	#5	12'-0"	—
P <sub>3</sub>	24	#10	37'-6"	—
s <sub>3</sub>	48	#5	10'-10"	⌋
s <sub>4</sub>	160	#5	7'-8"	⌋
s <sub>5</sub>	32	#4	7'-8"	⌋
s <sub>6</sub>	56	#4	7'-2"	⌋
s <sub>7</sub>	60	#4	10'-8"	⌋
r <sub>2</sub>	50	#8	7'-3"	—
u <sub>1</sub>	12	#6	6'-0"	⌋
v <sub>14</sub>	64	#5	34'-3"	—
v <sub>15</sub>	28	#5	30'-6"	—
w <sub>2</sub>	8	#5	24'-6"	—
Class X Concrete		Cu. Yds.	146.3	
Reinforcement Bars		Lbs.	13,600	

DESIGNED *W.A. Sausaman*

CHECKED R.D. PATEL

J. Schneller

DRAWN W.A. Sausaman

CHECKED R.D.P.

EXAMINED *W.A. Sausaman*

PASSED *W.A. Sausaman*

APPROVED *W.A. Sausaman*

June 7 1965

Max. Fig. Pressure = 3.62 Tons/Sq. Ft.

PIER 3  
FAI. RT. 74 SEC. 48-29B  
KNOX COUNTY  
STA. 1068+89.75



DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

NO. 1068+89.75  
KNOX COUNTY  
KNOX COUNTY

Soil Description	Depth (ft)	W (%)	L (%)	P (%)
Ground Surface	567.170			
Medium Brown Silty CLAY LOAM	0-10	20.2	19	
Medium Brown Silty CLAY LOAM	10-16	17.0	18	
Med. Light Brown Silty CLAY LOAM	16-20	10.1	18	
Med. Light Brown Silty CLAY LOAM	20-30	0.1	18	
Loose Brown Well Graded Sub-angular SAND	30-35			
Very Stiff Dark Gray CLAY	35-40	2.8	8	
Hard Black SHALE (High carbon content)	40-50			9
Hard Light Gray CLAY	50-55	6.8	8	
Hard Light Gray CLAY	55-60	2.9	8	
END OF BORING	60	1.8	9	

Surface Water El. ---  
Groundwater El. at Completion 560.3  
After --- Hours ---

Soil Description	Depth (ft)	W (%)	L (%)	P (%)
Ground Surface	563.7			
Medium Brown Silty CLAY LOAM	0-10	17.5	18	
Medium Brown Silty CLAY LOAM	10-15	17.5	18	
Med. Light Brown Silty CLAY LOAM	15-20	10.1	18	
Loose Brown Poorly Graded Sub-angular SAND	20-25			
Hard Black SHALE	25-30			
Hard Black SHALE (High carbon content)	30-35			
Very Stiff Light Gray CLAY	35-40	4.2	8	
Very Stiff Light Gray CLAY	40-50	3.3	8	
Hard Light Gray CLAY	50-55	2.4	8	
END OF BORING	55	2.4	8	

Surface Water El. ---  
Groundwater El. at Completion 563.5  
After 24 Hours 567.5

Soil Description	Depth (ft)	W (%)	L (%)	P (%)
Ground Surface	548.5			
Med. Light Brown Silty CLAY LOAM	0-10	17.5	18	
Med. Light Brown Silty CLAY LOAM	10-15	17.5	18	
Med. Light Brown Silty CLAY LOAM	15-20	10.1	18	
Loose Brown Well Graded Sub-angular SAND (Trace of gravel)	20-25			
Medium Brown Silty CLAY LOAM (Trace of Sand)	25-30	0.7	18	
Medium Gray CLAY LOAM (Trace of SAND)	30-35			
Loose Brown Well Graded Sub-angular SAND (Trace of gravel)	35-40			
Hard Black SHALE (High carbon content)	40-50			
Stiff Light Gray CLAY	50-55	1.96	8	
Hard Light Gray SILTSTONE	55-60	4.95	8	
END OF BORING	60	1.96	8	

Note: Reason for high surface water elevation is that at time of boring Spoon River was out at its banks in this area. Moisture content comparable with boring #6.

Surface Water El. 547.4  
Groundwater El. at Completion ---  
After --- Hours ---

Soil Description	Depth (ft)	W (%)	L (%)	P (%)
Ground Surface	544.7			
Med. Light Brown Silty CLAY LOAM	0-10	17.5	18	
Med. Light Brown Silty CLAY LOAM	10-15	17.5	18	
Med. Light Brown Silty CLAY LOAM	15-20	10.1	18	
Loose Brown Well Graded Sub-angular SAND	20-25			
Loose Brown Well Graded Sub-angular SAND	25-30			
Loose Brown Well Graded Sub-angular SAND	30-35			
Hard Light Gray CLAY	35-40			
Hard Light Gray CLAY	40-50			
Hard Light Gray SILTSTONE	50-55			
Hard Light Gray CLAY	55-60	1.2	8	
Hard Light Gray Silty CLAY	60-65	3.3	8	
END OF BORING	65	3.3	8	

Surface Water El. ---  
Groundwater El. at Completion 540.3  
After --- Hours ---

Soil Description	Depth (ft)	W (%)	L (%)	P (%)
Ground Surface	540.3			
Medium Brown Silty CLAY LOAM	0-10	17.5	18	
Medium Brown Silty CLAY LOAM	10-15	17.5	18	
Medium Brown Silty CLAY LOAM	15-20	10.1	18	
Medium Brown Silty CLAY LOAM	20-25	0.8	18	
Medium Gray Silty CLAY LOAM	25-30	0.8	18	
Loose Brown Well Graded Sub-angular SAND	30-35	0.5	18	
Medium Brown Well Graded Sub-angular SAND	35-40			
Medium Black SHALE (High Carbon Content)	40-50			
Hard Light Gray CLAY	50-55	2.0	8	
Medium Light Gray SILTSTONE	55-60			
END OF BORING	60			

Surface Water El. ---  
Groundwater El. at Completion 536.2  
After --- Hours ---

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split-Spoon Sample "2" with 140# hammer falling 30"  
Cu - Unconfined Compressive Strength (psi)  
w - Water Content - percentage of oven dry weight - %  
Type Values:  
1 - Blow Followed  
2 - Blow Followed  
3 - Blow Followed  
4 - Estimated Value

DESIGNED *H. H. ...*  
CHECKED *R. PATEL*  
DRAWN *H. H. ...*  
CHECKED *H. H. ...*  
EXAMINED *Carl ...*  
PASSED *H. H. ...*  
APPROVED *H. H. ...*  
June 7, 1965

BORINGS  
FAI RT. 74 SEC. 48-29B  
KNOX COUNTY  
STA. 1068+89.75

DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

Boring No.	Station	Depth (ft)	Soils	W	L	U	Q	W	U
1	1068+89.75	0	Stiff Brown Silty LOAM						
		10	Medium Brown Silty CLAY LOAM						
		20	Soft Brown Silty LOAM						
		30	Medium Brown and Gray Silty CLAY LOAM						
		40	Stiff Gray Silty CLAY LOAM (Trace of Gravel)						
		50	Medium Brown Well Graded Sub-angular SAND (Trace of Gravel)						
		60	Medium Black SHALE (High carbon content)						
		70	Hard Light Gray CLAY						
		80	Medium Light Gray SILTY SAND						
		89.75	End of Boring						

Surface Water El. -  
Groundwater El. at Completion 556.3  
After 24 Hours -

Boring No.	Station	Depth (ft)	Soils	W	L	U	Q	W	U
2	1068+89.75	0	Medium Brown Silty CLAY LOAM						
		10	Soft Brown Silty LOAM						
		20	Medium Gray Sandy CLAY LOAM (Trace of Gravel)						
		30	Hard Dark Gray CLAY						
		40	Medium Black SHALE (High carbon content)						
		50	Hard Light Gray CLAY						
		89.75	End of Boring						

Surface Water El. -  
Groundwater El. at Completion 556.9  
After 24 Hours 556.9

Boring No.	Station	Depth (ft)	Soils	W	L	U	Q	W	U
3	1068+89.75	0	Medium Dark Brown Silty CLAY LOAM						
		10	Soft Dark Brown Silty LOAM						
		20	Soft Brown CLAY LOAM						
		30	Soft Brown Silty CLAY LOAM						
		40	Soft Gray Silty LOAM (Trace of fine sand)						
		50	Soft Black CLAY						
		60	Medium Black SHALE (High carbon content)						
		70	Hard Light Gray Silty CLAY						
		80	Hard Light Gray Shaly CLAY						
		89.75	End of Boring						

Surface Water El. -  
Groundwater El. at Completion 557.7  
After 24 Hours 556.9

Boring No.	Station	Depth (ft)	Soils	W	L	U	Q	W	U
4	1068+89.75	0	Medium Dark Brown Silty CLAY LOAM						
		10	Very Silty Dark Brown Silty CLAY LOAM						
		20	Soft Brown Sandy CLAY LOAM						
		30	Soft Gray Silty CLAY LOAM						
		40	Very Loose Gray Well Graded Angular SAND and GRAVEL						
		50	Hard Dark Gray CLAY						
		60	Hard Dark Gray Shaly CLAY						
		70	Hard Black Shaly CLAY						
		80	Medium Black SHALE (High carbon content)						
		90	Hard Light Gray Shaly CLAY						
		89.75	End of Boring						

Surface Water El. -  
Groundwater El. at Completion 556.9  
After 24 Hours 556.9

Boring No.	Station	Depth (ft)	Soils	W	L	U	Q	W	U
5	1068+89.75	0	Medium Brown Silty CLAY LOAM						
		10	Soft Brown Silty LOAM						
		20	Soft Gray Silty CLAY LOAM (Trace of Gravel)						
		30	Hard Dark Gray CLAY						
		40	Hard Dark Gray Shaly CLAY						
		50	Hard Gray CLAY						
		60	Medium Black SHALE (High carbon content)						
		89.75	End of Boring						

Surface Water El. -  
Groundwater El. at Completion 556.9  
After 24 Hours 556.9

W - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Sp. or Sampler 12" with 140# hammer (falling 30")

Q - Unconfined Compressive Strength - 1/4" w - Water Content - percentage of oven dry weight - %

Type Failure:  
S - Slips Failure  
T - Shear Failure  
E - Estimated Value

DESIGNED *D. E. Sproule*  
CHECKED *R. PITEL*  
DRAWN *DEB*  
CHECKED *RP*

EXAMINED *C. E. Thumma*  
PASSED *A. J. Altma*  
APPROVED *D. E. Staff*

June 7 1965

BORINGS  
F.A.I. RT. 74 SEC. 48-29B,  
KNOX COUNTY  
STA. 1068+89.75