

# STATE OF OHIO DEPARTMENT OF TRANSPORTATION

## LOG.C.R. 39-4.98 RICHLAND TOWNSHIP LOGAN COUNTY

BRZ-4604(I)

FHWA REGION	STATE	PROJECT
5	OHIO	BRZ-4604(I)

1  
18

MICROFILMED  
JUL 02 1986

LOGAN COUNTY  
C.R. 39-4.98

### DESIGN DESIGNATION

Current A.D.T. (1980)	475
Design Year A.D.T. (2000)	775
D.H.V. (@12% D.A.D.T.)	93
D. (Directional Distribution)	55%
T. (% B&C Trucks)	5%
V. (Design Speed)	30mph.

### CONVENTIONAL SIGNS

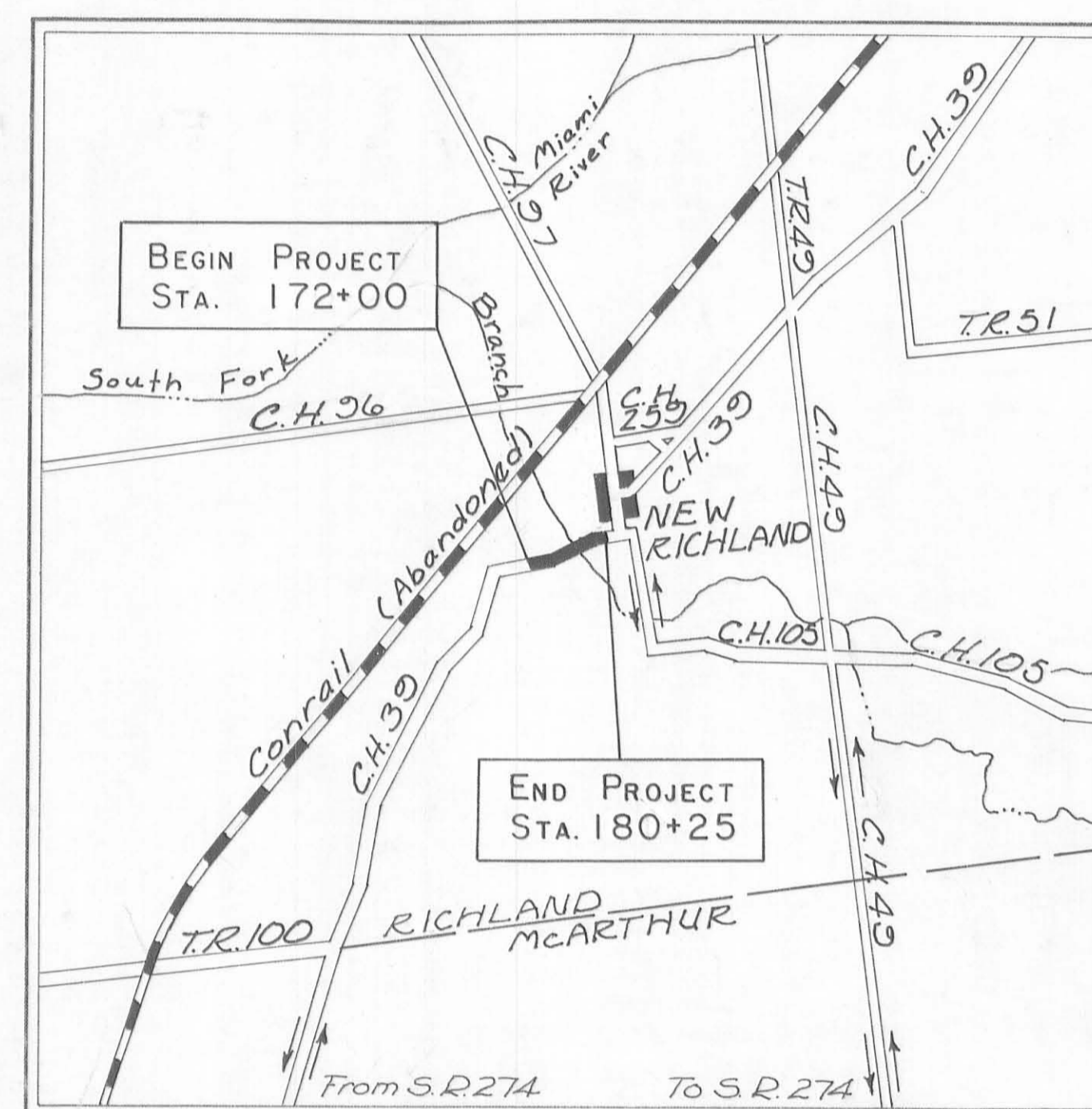
County Line	-----	Limited Access (only)	LA
Township Line	-----	Right of Way (only)	RW
Section Line	-----	Limited Access & Right of Way	LABRW
Corporation Line	----- or -----	Existing Right of Way	-----
Fence Line (existing)	---x---x---	Property Line	--- --- --- (in existing fence) ---x---x---
Center Line	----- 352 ----- 353 -----	Railroad	-----
Trees, Stumps, (to be removed)	⊗ ⊗ ⊗	Guardrail (existing)	---o---o---o--- (proposed) ---o---o---o---
Utility Poles: Telephone, Power, Light	⊕ ⊕ ⊕		

### INDEX OF SHEETS

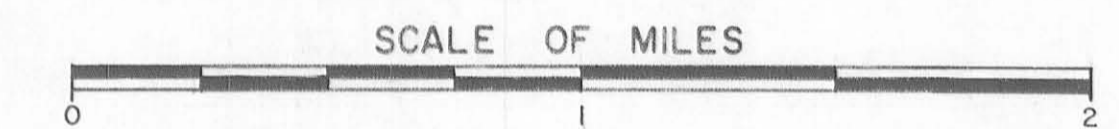
TITLE SHEET	1
TYPICAL SECTIONS	2
SUPERELEVATION, GENERAL NOTES & CALCULATIONS	3
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PLAN-PROFILE	5-6
CROSS SECTIONS C.R. 39	7-11
CROSS SECTIONS CHANNEL	12
STRUCTURES OVER 20'	13-17
RIGHT OF WAY	18

### LINE DATA

BEGIN PROJECT	STA. 172+00.00
END PROJECT	STA. 180+25.00
TOTAL LENGTH OF PROJECT=	825.00 LIN.FT. OR 0.156 MILES
BEGIN WORK	STA. 170+00.00
END WORK	STA. 181+50.00
TOTAL LENGTH OF WORK	= 1150.00 LIN.FT. OR 0.217 MILES



LOCATION MAP



Portion to be improved	-----
State Roads	-----
Other Roads	-----
Detour	↔

### SCALES

Plan	0 50 100
Profile: Horizontal	0 50 100
Profile: Vertical	0 5 10

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS			
			DBR-2-73 4-10-73
BP-5	4-16-79	MC-3	6-1-73
BP-6	6-1-65	MC-4	7-26-76
GR-1	12-6-76	MC-11	8-1-78
GR-2B	12-6-76	LA-1	6-1-79
GR-3	12-6-76		
GR-4	12-6-76		

SUPPLEMENTAL SPECIFICATIONS	
1001	1-3-77
836	3-12-75

### 1979 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

The right of way for this improvement will be provided by the County of Logan.

I hereby approve these plans and declare that the making of this improvement will require the closing to traffic of the highway and that detours will be provided as indicated on the plans.

Approved: Albert Leistner  
Date: 1-27-81 District Deputy Director of Transportation

Approved: Robert B. Pfeiffer  
Date: 2-25-81 Engineer, Bureau of Bridges and Structural Design

Approved: Howard E. Nolan  
Date: 3-25-81 Chief Engineer, Planning and Design

Approved: David L. Weir  
Date: 3-25-81 Director, Department of Transportation

Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Deputy Director of Right of Way

Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Deputy Director of Planning & Programming

Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ First Assistant Director

Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Director of Highways

MICROFILMED  
JUN 16 1986

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: \_\_\_\_\_

DIVISION ADMINISTRATOR \_\_\_\_\_ DATE \_\_\_\_\_

Plan Prepared By:  
CHESTER R. KURTZ  
LOGAN COUNTY ENGINEER  
BELLEFONTAINE, OHIO

SEAL

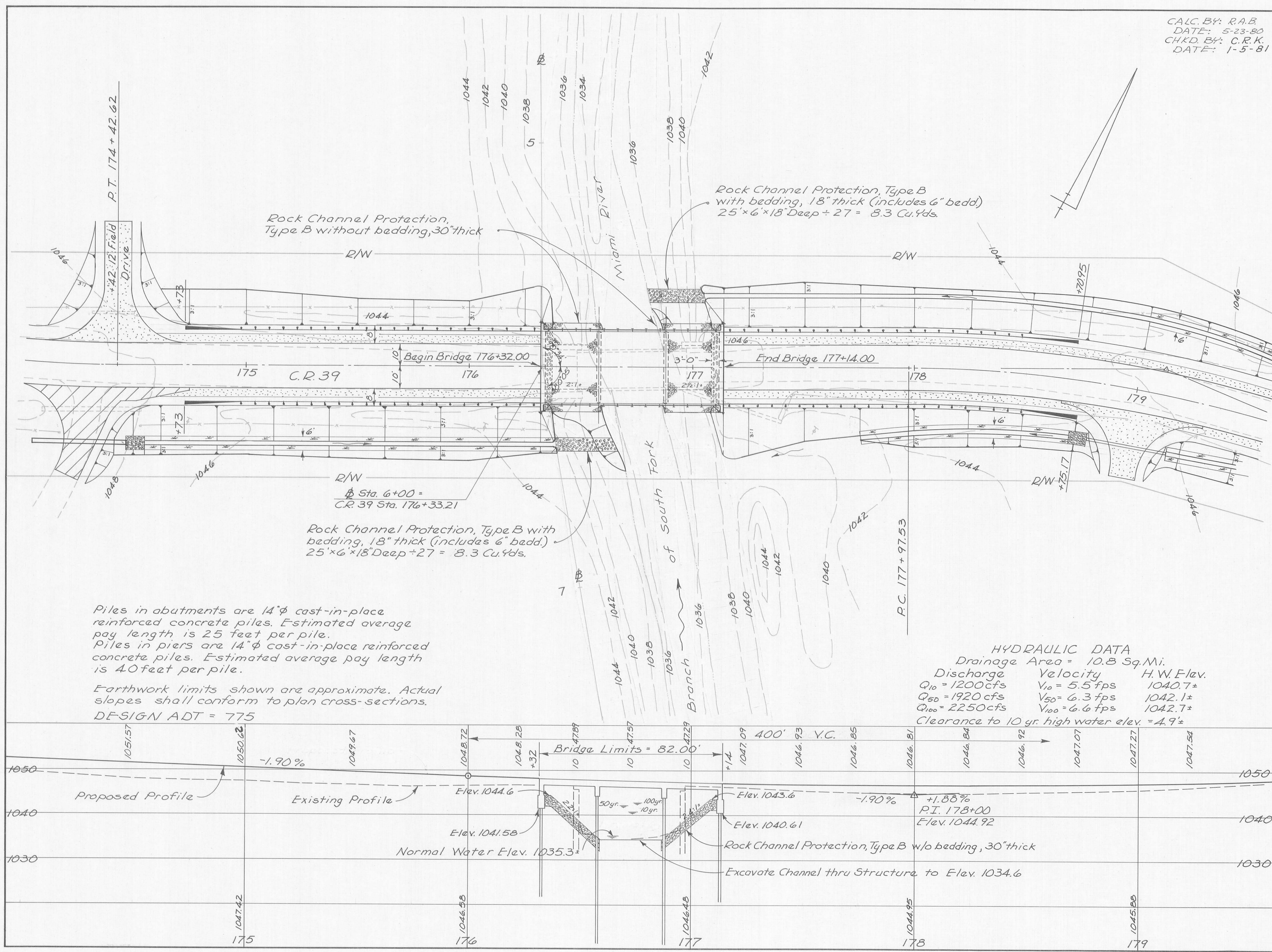
Project: LOG. C.R. 39-4.98  
Date of Letting: 19\_\_\_\_, Contract No. \_\_\_\_\_

CALC. BY: R.A.B.  
 DATE: 5-23-80  
 CHKD. BY: C.R.K.  
 DATE: 1-5-81

FHWA REGION	STATE	PROJECT
5	OHIO	

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LOGAN COUNTY  
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**EXISTING STRUCTURE**

Type: Pratt Steel Truss  
 Span: 49'-0"  
 Roadway: 15.8'  
 Loading: Unknown, 20% Legal  
 Skew: 0°  
 Wearing Surface: Bituminous  
 Alignment: Tangent  
 Condition: Poor, to be removed

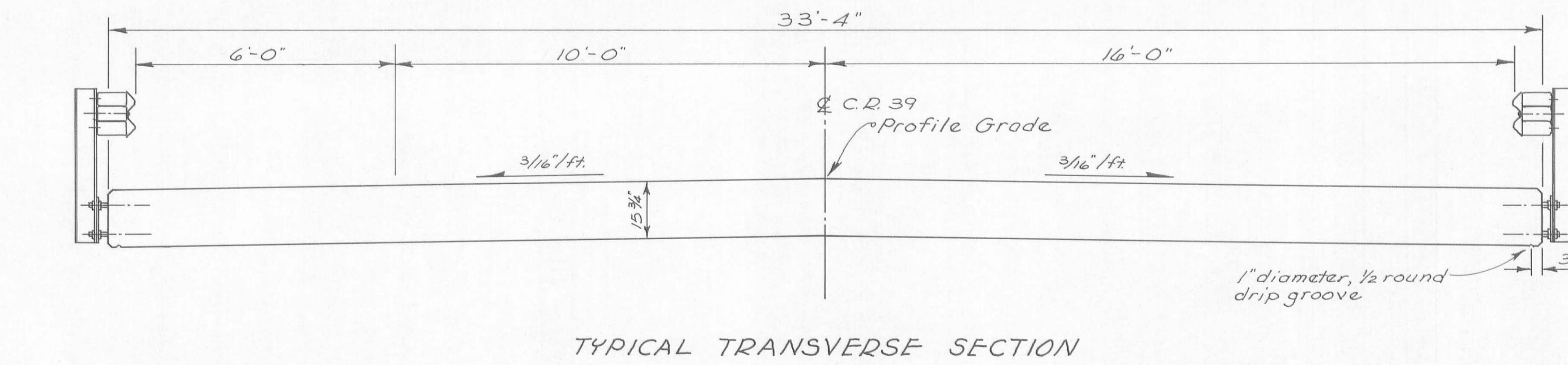
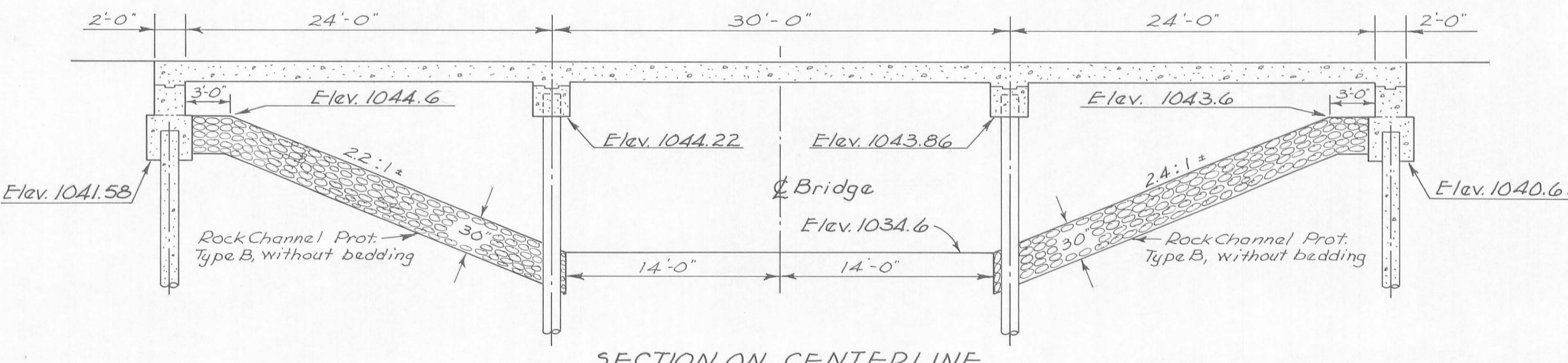
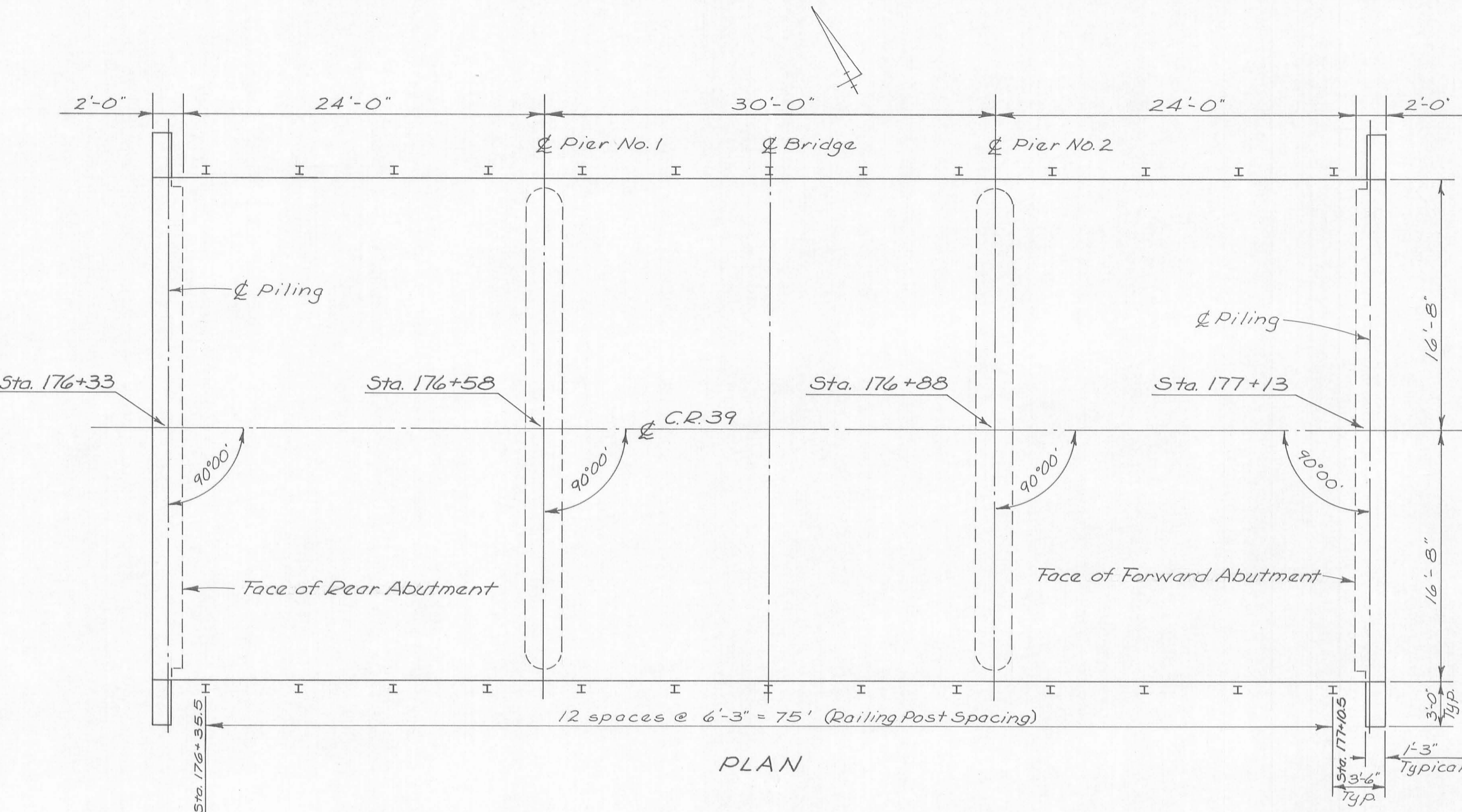
**PROPOSED STRUCTURE**

Type: Three span continuous reinforced concrete and capped pile substructures  
 Spans: 24'-0", 30'-0", 24'-0"  
 Roadway: 32'-0" w/ Guardrails  
 Loading: HS 20-44 and the Interstate Alternate Loading  
 Skew: 0°  
 Wearing Surface: Monolithic concrete  
 Alignment: Tangent  
 Approach Slab: None

LOGAN COUNTY HIGHWAY DEPT. 115  
 CHESTER R. KURTZ, CO. ENGINEER

**SITE PLAN**  
 BR No. 39-4.98  
 Richland Township  
 Logan County  
 Over a Branch South Fork Miami River  
 Sta. 176+32 to Sta. 177+14

DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
R.A.B.	R.A.B.	C.R.K.	C.R.K.	R.A.B. 3-12-80



ESTIMATED QUANTITIES							
ITEM	SUPER	PIERS	ABUT.	GEN.	QUANT.	UNIT	DESCRIPTION
202				Lump	Lump	Lump	Structure removed
503			87		87	Cu.Yd.	Unclassified excavation
505				Lump	Lump	Lump	Test Pile
507		480	350		830	Lin.Ft.	14" Cast-in-place reinforced concrete piles
509	18,295	1,507	4,090		23,892	Lb.	Reinforcing steel
Special	9,421	1,130			10,551	Lb.	Epoxy coated reinforcing steel (See Proposal Note)
511	134				134	Cu.Yd.	Class S concrete, superstructure
511		11			11	Cu.Yd.	Class C concrete, pier caps
511			37		37	Cu.Yd.	Class C concrete, abutments
516	7				7	Sq.Ft.	1" Preformed Expansion Joint Filler
517	164.00				164.00	Lin.Ft.	Railing (deep beam rail with steel tubular backup and steel posts and bolts)
518			18		18	Cu.Yd.	Porous backfill
601				197	197	Cu.Yd.	Rock Channel Protection, Type B w/o bedding

GENERAL NOTES

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway Officials, 1973, including the Ohio "Supplement" to these specifications.

DESIGN DATA:  
 Design Loading - HS 20-44 and the Interstate Alternate Loading  
 Concrete Class S -  $f'_c = 4500$  psi, unit stress = 1200 psi, superstructure  
 Concrete Class C -  $f'_c = 4000$  psi, unit stress = 1333 psi, substructure  
 Reinforcing Steel - ASTM A615, A616, or A617, unit stress 20,000 p.s.i.  
 Monolithic Wearing Surface - thickness is assumed for design purposes to be 1".

EMBANKMENT CONSTRUCTION: The embankments shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the abutments. Excavation shall then be made for the abutments.

PILE CAPACITY: Piles shall be driven to a minimum bearing capacity of 22 tons per pile for the abutments and 36 tons per pile for the piers.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed. Suitable waste masonry may be placed as Bank Protection as directed by the Engineer.

DECK PROTECTION METHOD: Epoxy coated reinforcing steel, top mat only.

REFERENCE shall be made to Standard Drawing DBR-2-73, dated April 10, 1973 and to Supplemental Specification 836, dated March 12, 1975.

LOGAN COUNTY HIGHWAY DEPT. 2/5  
CHESTER R. KURTZ, CO. ENGINEER

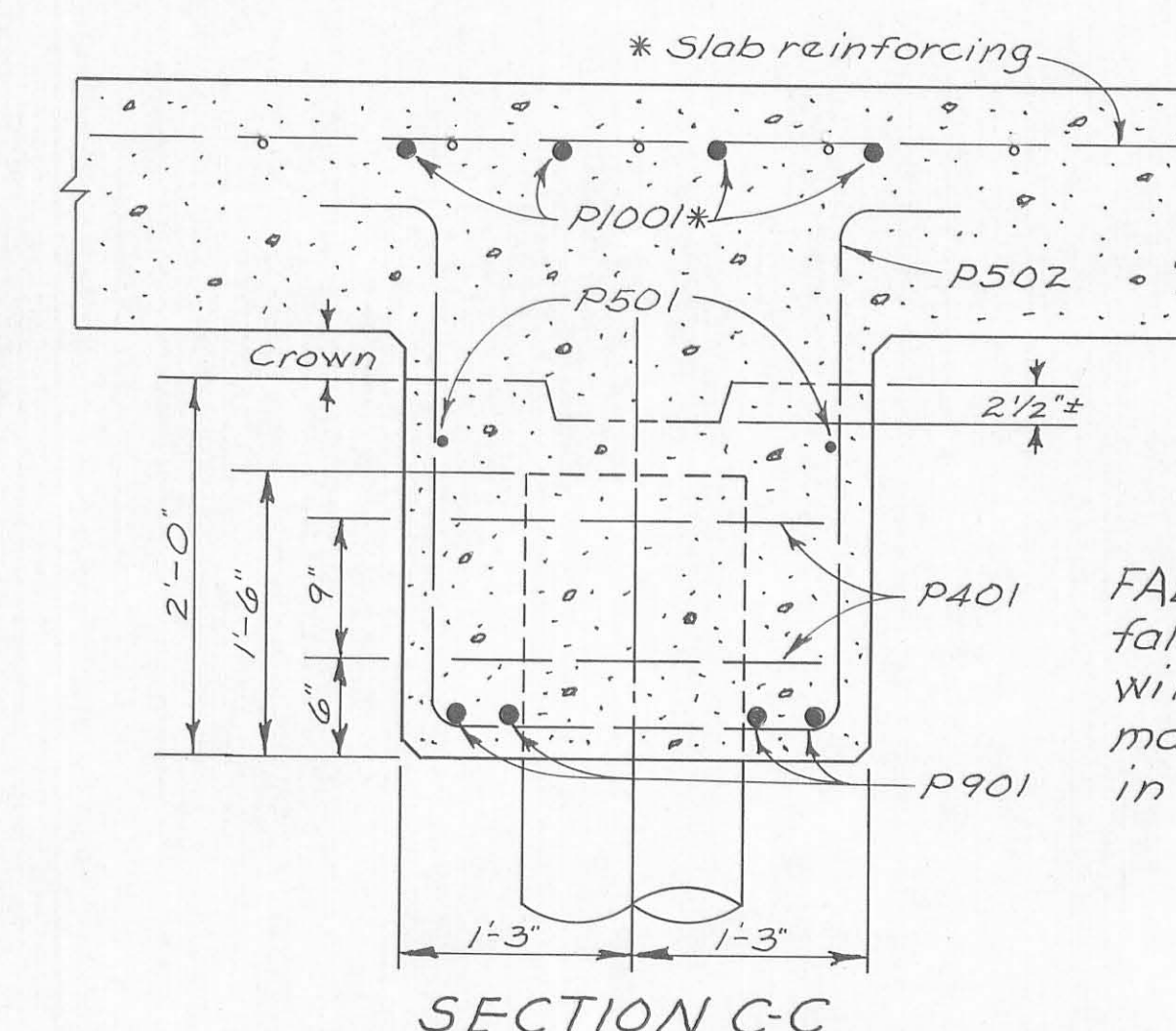
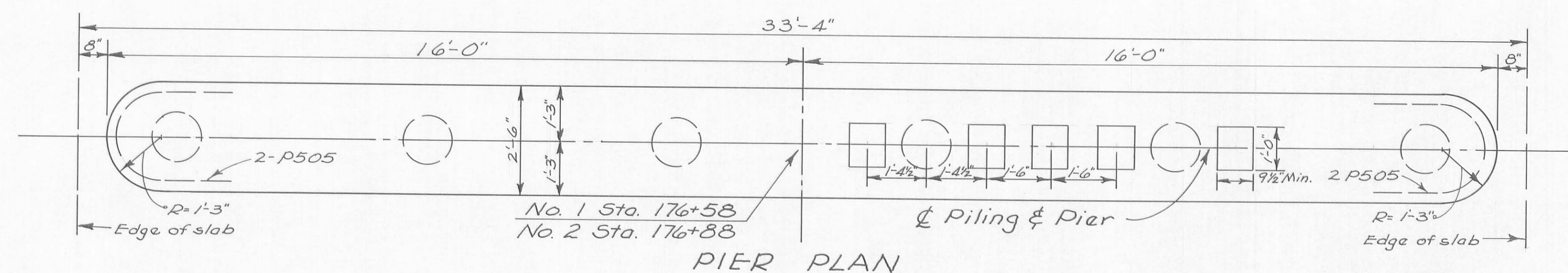
BRIDGE PLAN  
BR. No. 39-4.98  
Richland Township  
Logan County

DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
R.A.B.	R.A.B.	C.R.K.	C.R.K.	

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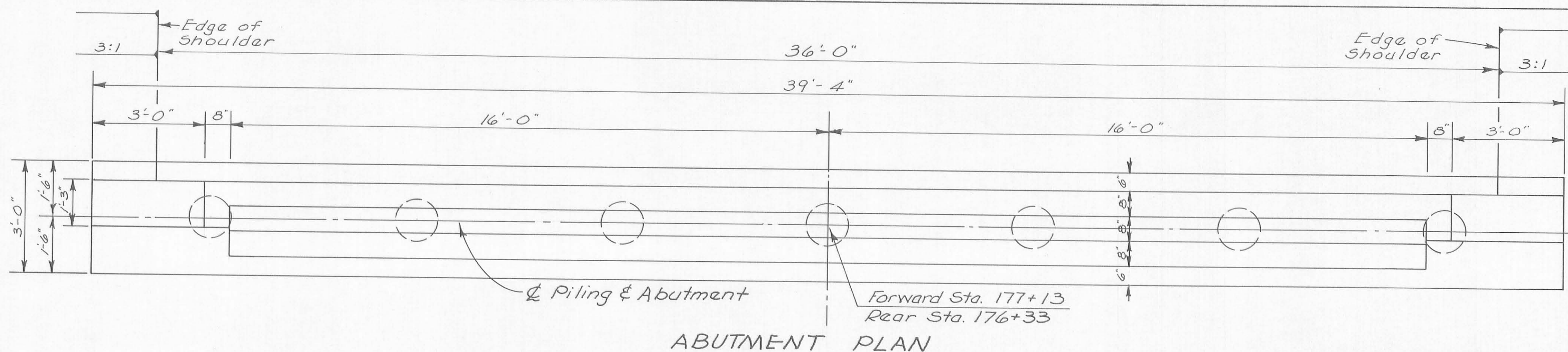
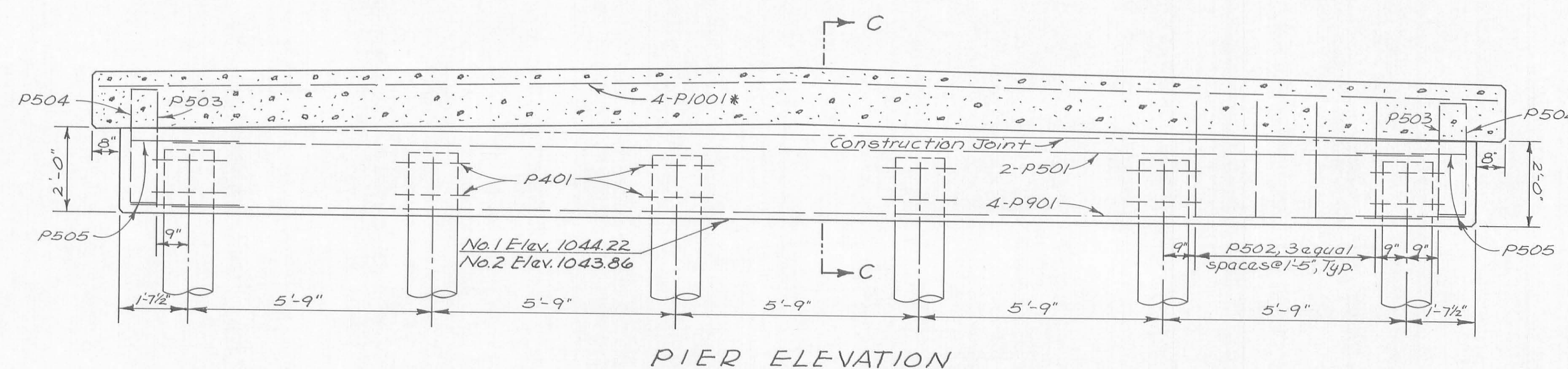
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LOGAN COUNTY  
C.R. 39-4.98

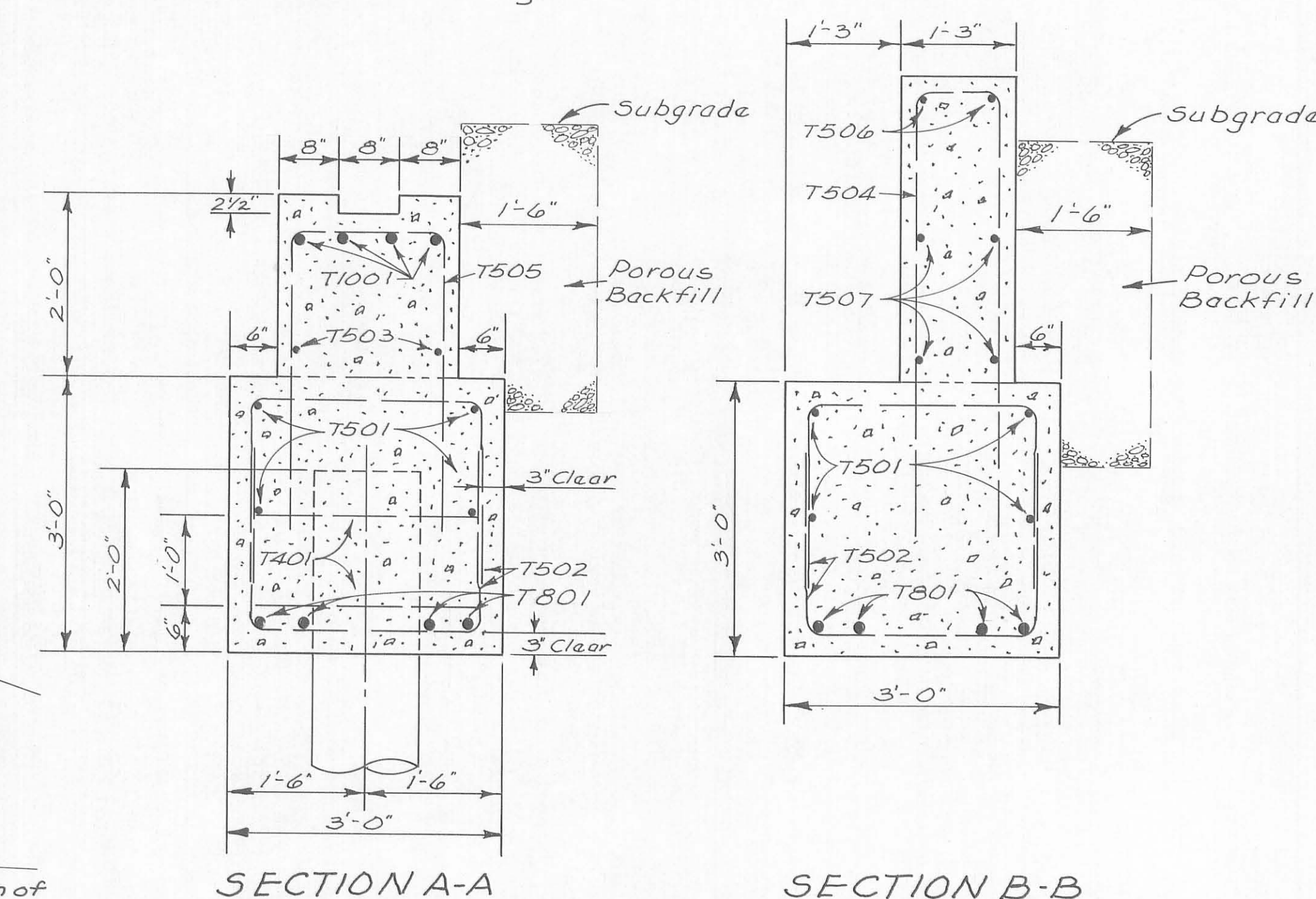
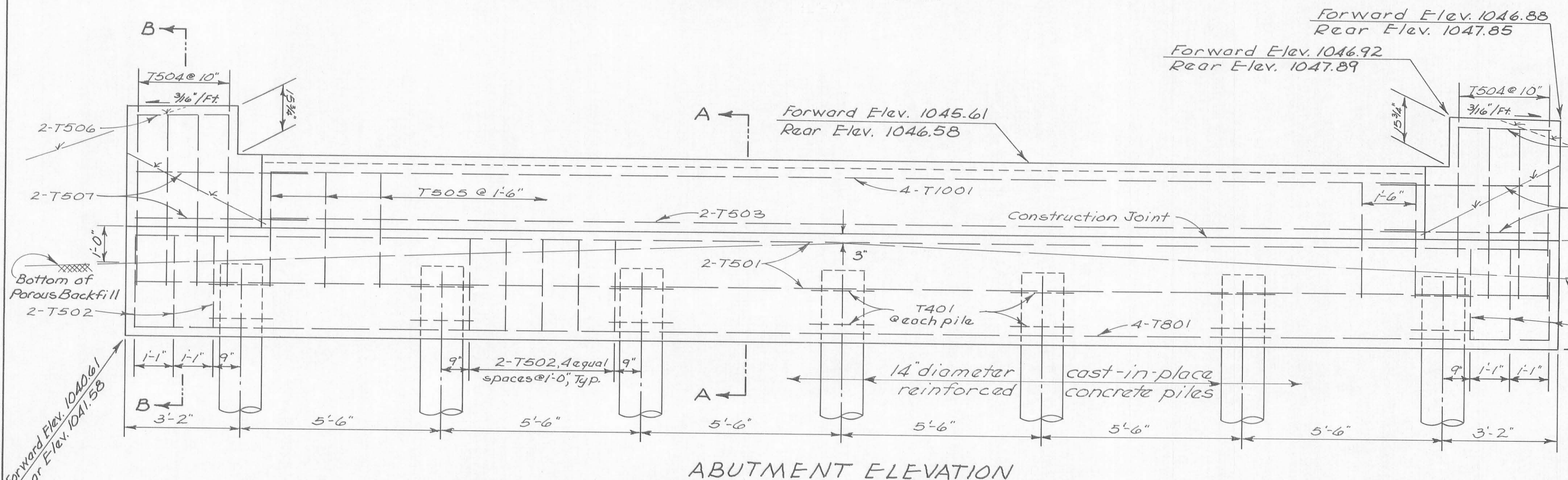


\* denotes epoxy coated  
FALSEWORK SUPPORT: Attachment of falsework support members to pier piles will be permitted, if the attachment is made to that portion of pile encased in the pier cap.

PIER PILE TYPE shall be 14" diameter cast-in-place reinforced concrete. The casings shall be of the type that is left in place and is designed to resist both direct compression and bending. The portion above the proposed surface of the ground shall be of uniform diameter (not tapered) and shall have a thickness of metal not less than 0.179 inches.



ABUTMENT PILES: 12" diameter cast-in-place reinforced concrete piles may be substituted for the 14" diameter cast-in-place reinforced concrete piles at the Contractor's option, for the abutments only.



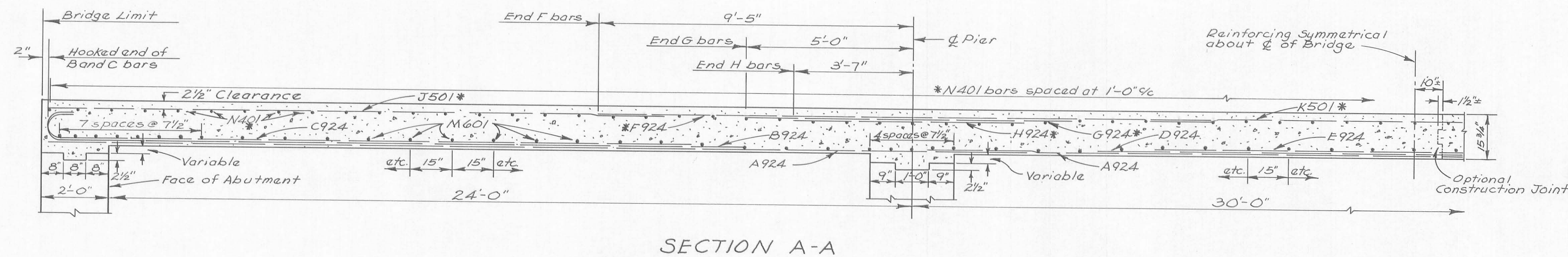
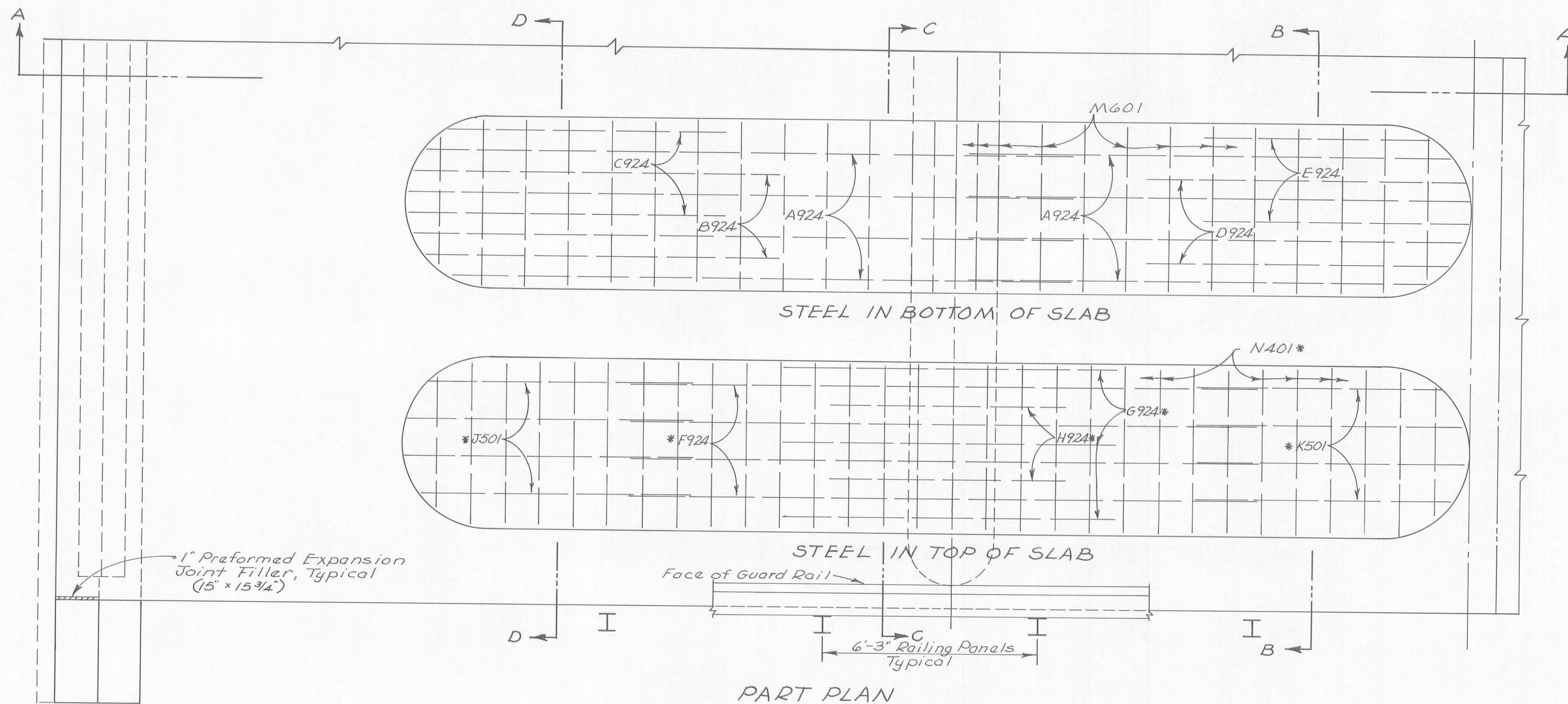
POROUS BACKFILL shall extend upward to the plane of the subgrade, and laterally to the surface of the embankment slopes.  
NOTE: In the abutment plan and elevation "Forward" denotes Forward Abutment and "Rear" denotes Rear Abutment.

LOGAN COUNTY HIGHWAY DEPT. 3/5  
CHESTER B. KURTZ, CO. ENGINEER

ABUTMENTS & PIERS  
BR. No. 39-4.98  
Richland Township  
Logan County

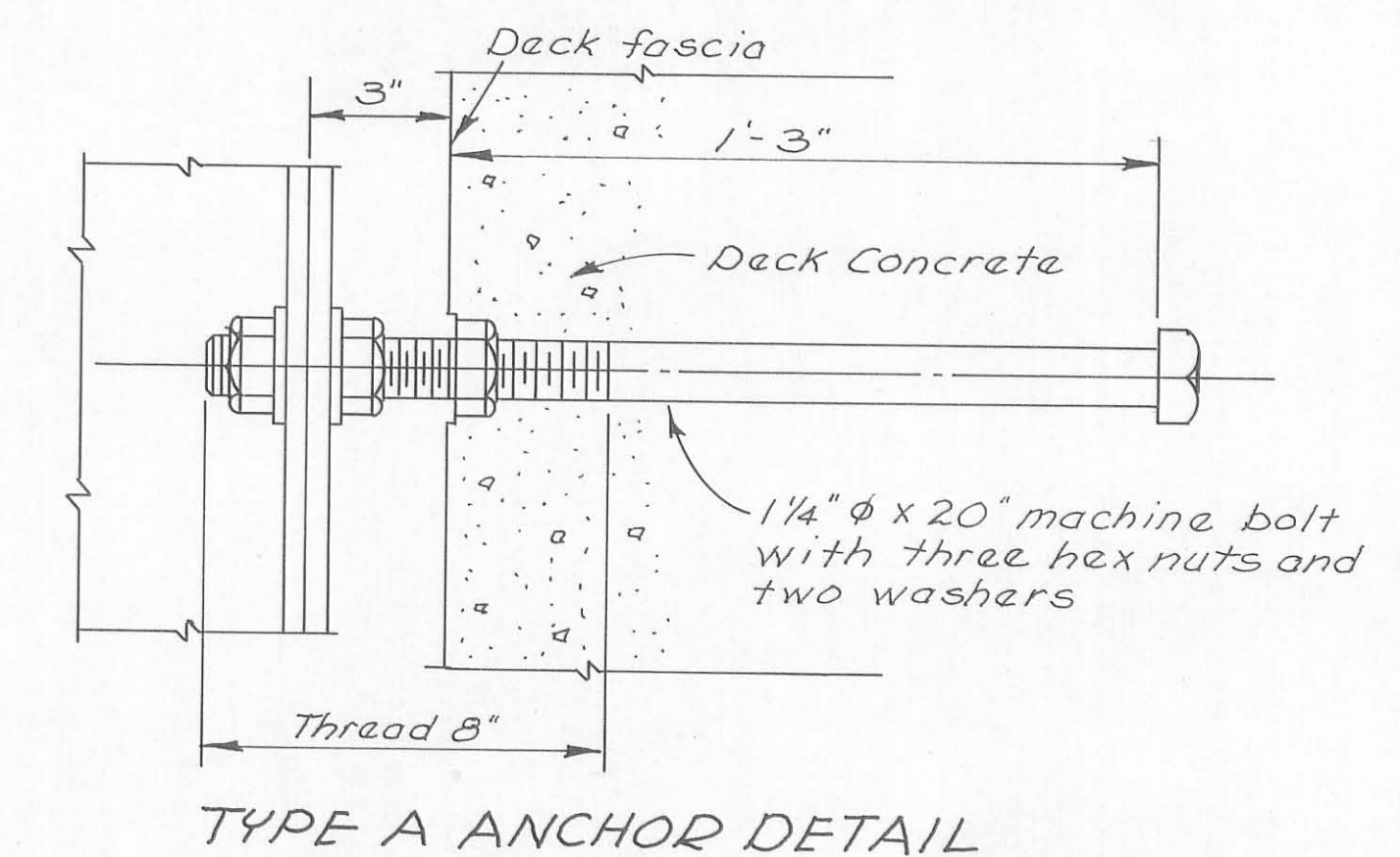
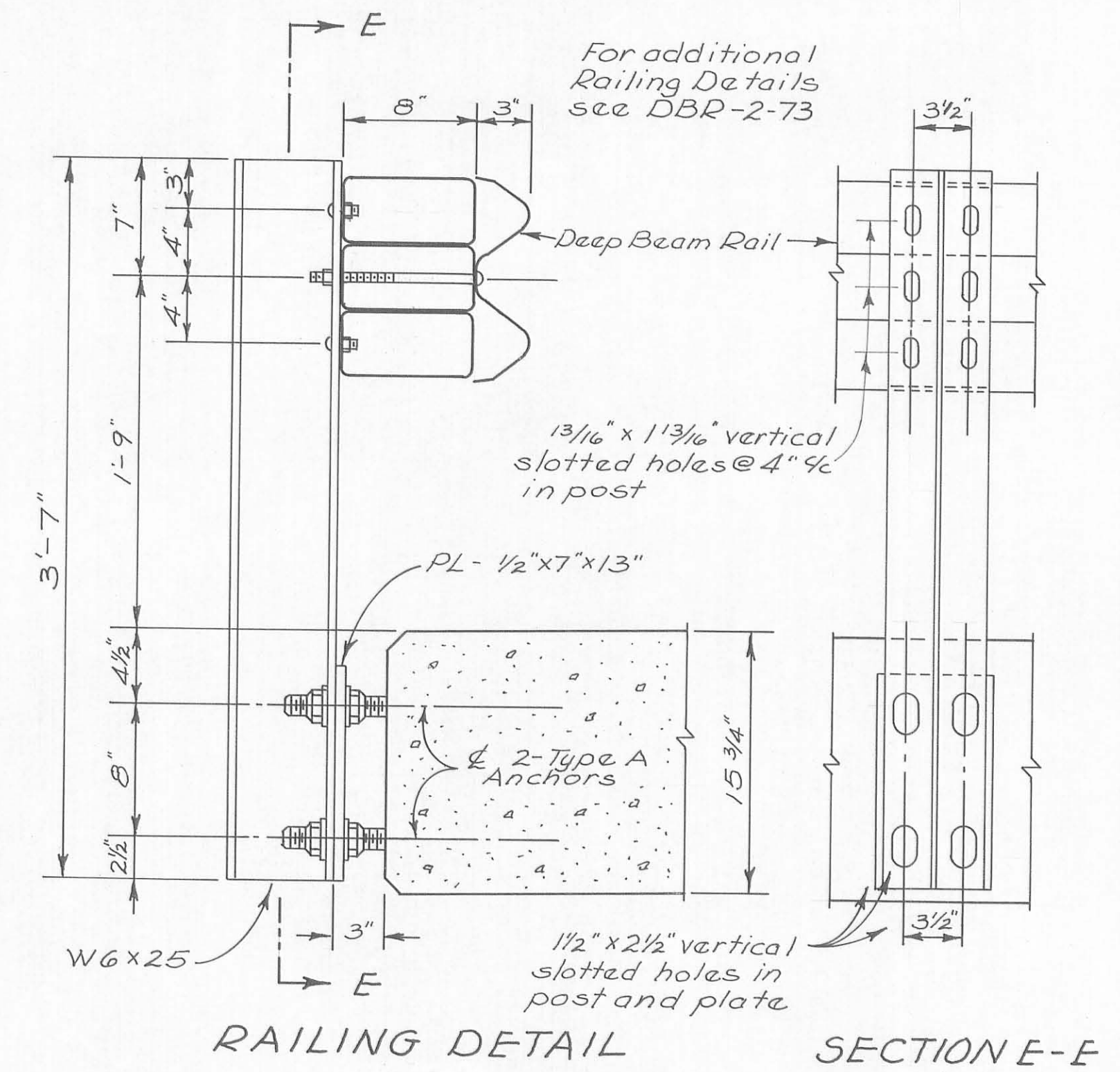
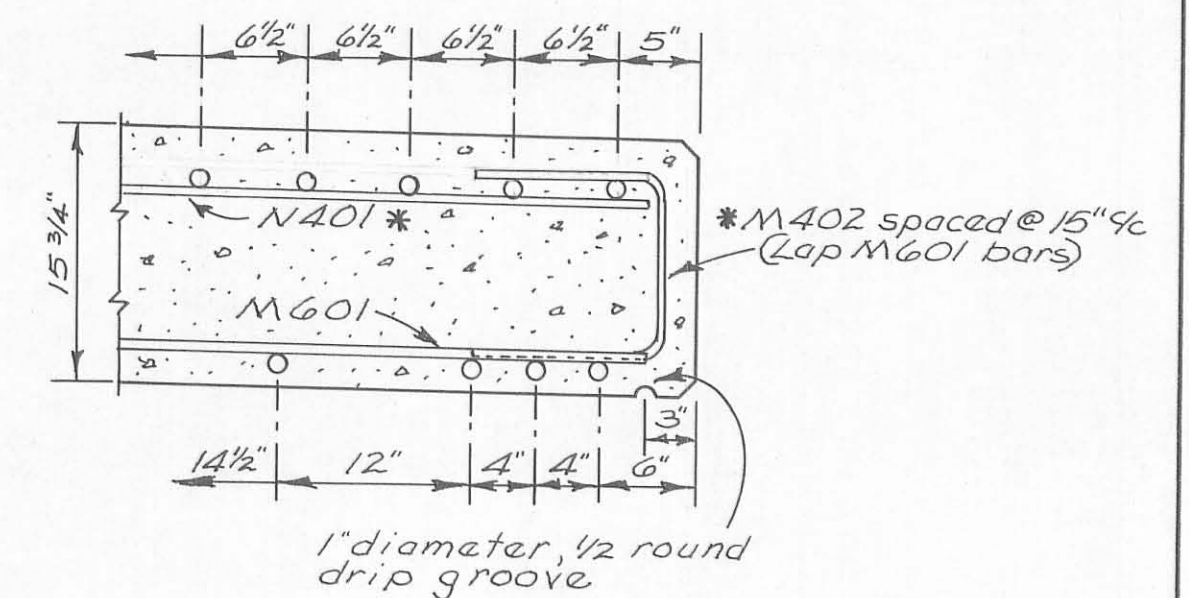
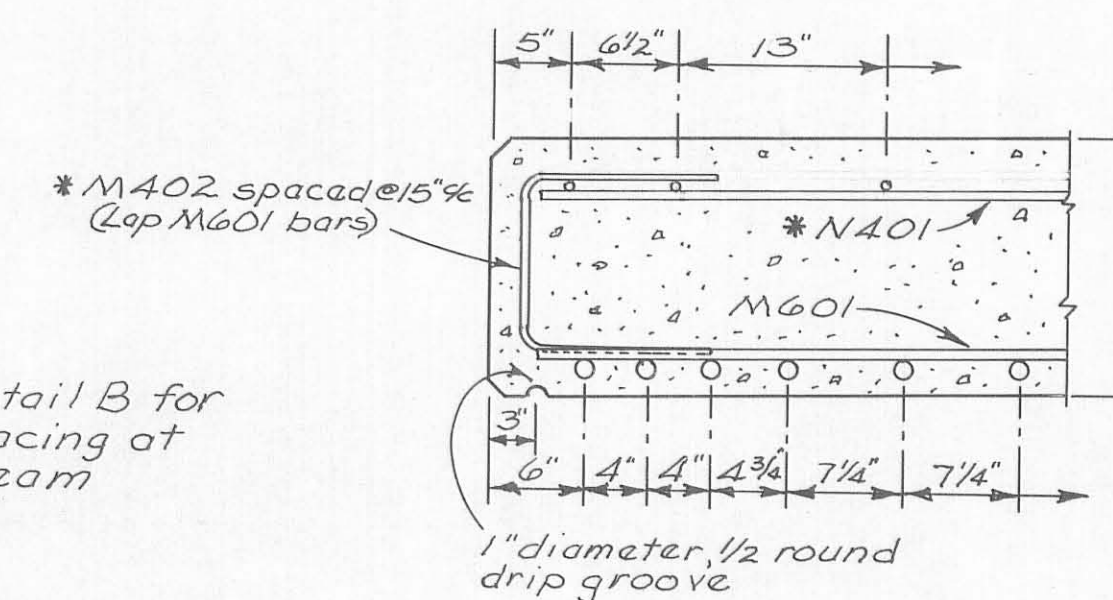
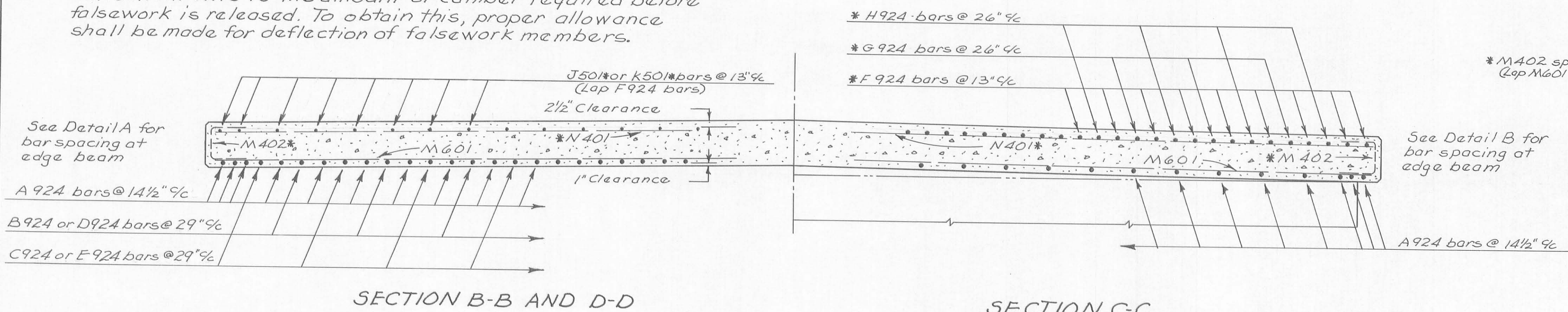
DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
R.A.B.	R.A.B.	C.R.K.	C.R.K.	

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CAMBER of 1/800 of the span shall be provided in each span (in addition to that required for conformance with the profile of the highway) to allow for dead load deflection. This is the amount of camber required before falsework is released. To obtain this, proper allowance shall be made for deflection of falsework members.

\* denotes epoxy coated bars



DESIGNED	DRAWN	CHECKED	REVIEWED	4/5
R.A.B.	R.A.B.	C.R.K.	C.R.K.	REVISED

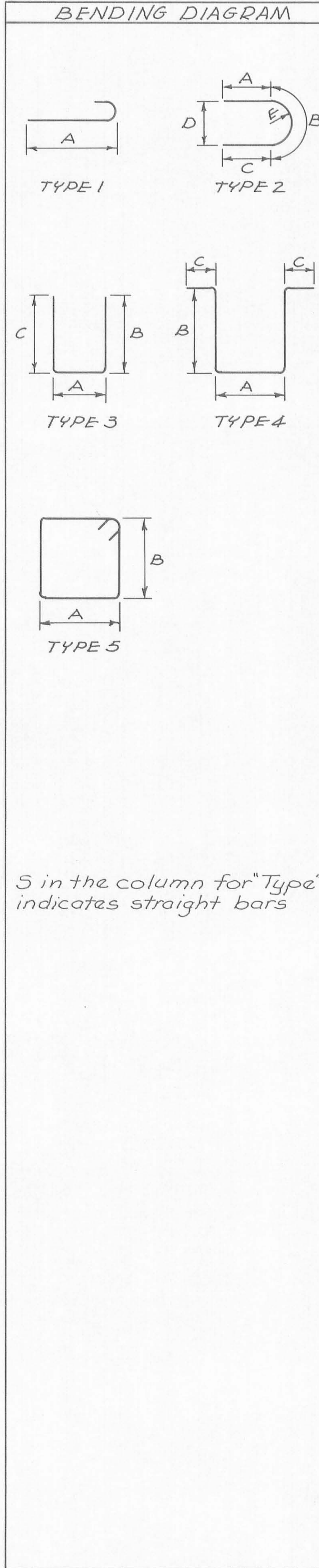
# REINFORCING STEEL LIST

CALC. BY: R.A.B.  
DATE: 5-23-80  
CHKD. BY: C.R.K.  
DATE: 1-5-81

FHWA REGION	STATE	PROJECT			
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**LOGAN COUNTY**  
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MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
<i>ABUTMENTS</i>									
T401	28	8'-8"	162	5	1'-9"	2'-4 3/4"			
T501	8	38'-10"	324	S					
T502	144	6'-3"	939	3	2'-6"	2'-0"	2'-0"		
T503	4	31'-6"	131	S					
T504	16	10'-2"	170	3	0'-11"	4'-9"	4'-9"		
T505	44	7'-11"	363	3	1'-8"	3'-3"	3'-3"		
T506	4	2'-6"	10	S					
T507	16	4'-8"	78	S					
T801	8	38'-10"	829	S					
T1001	8	31'-6"	1084	S					
			4,090	LBS					
<i>PIERS</i>									
P401	24	8'-0"	128	5	1'-9"	2'-0 1/4"			
P501	4	29'-6"	123	S					
P502	40	8'-5"	351	4	2'-2"	2'-9"	0'-7 1/2"		
P503	4	8'-3"	34	4	2'-0"	2'-9"	0'-7 1/2"		
P504	4	3'-9"	16	3	2'-9"	0'-7 1/2"	0'-7 1/2"		
P505	8	6'-4"	53	2	1'-7"	3'-1"	1'-7"	2'-0 1/4"	0'-11 1/2"
P901	8	29'-6"	802	S					
			1,507	LBS					
<i>Epoxy Coated Bars</i>									
P1001	8	32'-10"	1130	S					
			1,130	LBS					
<i>SUPERSTRUCTURE</i>									
M601	77	32'-10"	3797	S					
A924	93	29'-2"	9223	S					
B924	26	22'-0"	1945	1	20'-9"				
C924	26	20'-5"	1805	1	19'-2"				
D924	13	18'-11"	836	S					
E924	13	15'-7"	689	S					
			18,295	LBS					
<i>Epoxy Coated Bars</i>									
F924	64	18'-4"	3989	S					
G924	28	9'-9"	928	S					
H924	30	6'-11"	706	S					
J501	64	18'-3"	1218	S					
K501	32	15'-10"	528	S					
MA02	130	2'-8"	232	3	0'-11"	1'-0"	1'-0"		
NA01	83	32'-10"	1820	S					
			9,421	LBS					

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A700 is a No. 7 size bar and A1014 is a No. 10 size bar.

REINFORCING STEEL: At the option of the contractor, the T1001, T801, T501, T503, P1001, P901 and P501 bars may be furnished in one length as shown on Sheet No. 15 or in pairs lapped at or near the centerline of the roadway, the M601 and N401 bars as shown on Sheet No. 16 may be furnished in pairs of equal length or in pairs of different lengths in order to place the lap beyond a longitudinal construction joint at the centerline of the roadway. The pay quantity shall be according to the number and length of bars as shown in the reinforcing steel list at the left. The following lap splice lengths shall be used:

T1001, P1001	5'-10"
P901	4'-1"
T801	3'-3"
M601	1'-11"
T501, T503, P501	1'-7"
N401	1'-3"

*ADDITIONAL GENERAL NOTES, from page 3/18*

**FARM DRAINS:** All farm drains, which are encountered during construction, shall be provided with unobstructed outlets under the direction of the Engineer. Existing collectors which are located below the roadway ditch elevations, and which cross the roadway, shall be replaced within the construction limits by Item 603 Conduit, Type B, one commercial size larger than the existing conduit. Existing collectors and isolated farm drains, which are encountered above the elevation of the roadway ditches, shall be outletted into the roadway ditch by 603 Type F Conduit. The optimum outlet elevation shall be, if possible, one foot above the flowline elevation of the ditch. The location, type, size and grade of required replacements shall be determined by the Engineer during construction, and payment shall be made on final measurements. The following estimated quantities have been included in the General Summary for the work noted above:

- Item 603 6" Conduit, Type B      100 Lin. Ft.
- Item 603 6" Conduit, Type F      100 Lin. Ft.
- Item 603 6" Conduit, Type F      50 Lin. Ft.
- Item 601 Rock Channel Protection, Type B, w/bed. (18" thick) - 2 Cu. Yd.

Necessary bends or branches shall be included for payment in the pertinent conduit item.  
None of the above materials shall be ordered by the Contractor until requested by the Engineer.

S in the column for "Type" indicates straight bars

LOGAN COUNTY HIGHWAY DEPT. 5/5  
CHESTER R. KURTZ, CO. ENGINEER

STEEL LIST  
BR. No. 39-4.98  
Richland Township  
Logan County

DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
R.A.B.	R.A.B.	C.R.K.	C.R.K.	