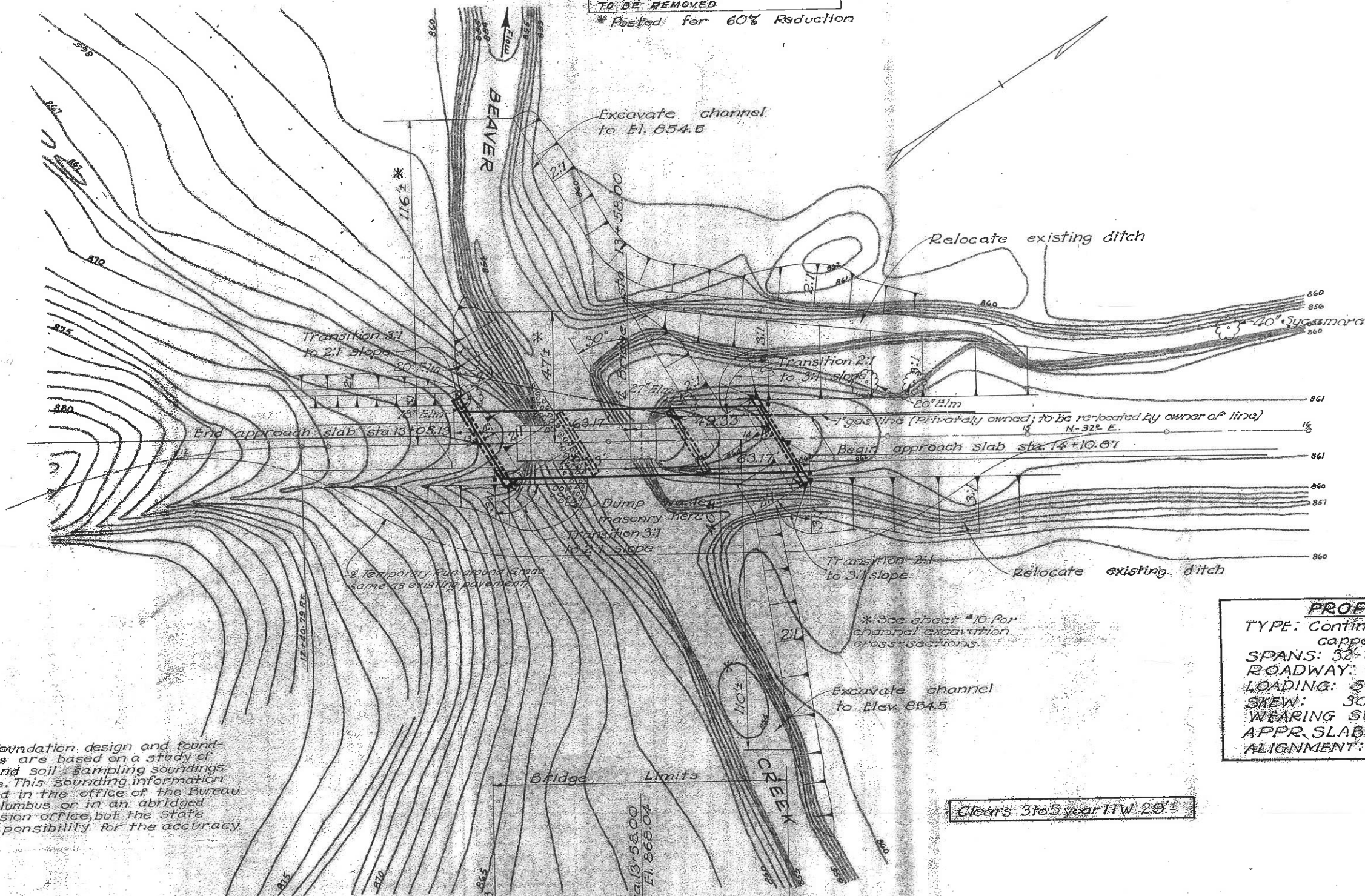


**EXISTING BRIDGE No. 513-92**  
 TYPE: WOOD TRUSS - COVERED  
 SPAN: CLEAR 20'-5" + FLOOR 5'-0"  
 WIDTH 12'-5" - PLANK FLOOR  
 CONDITION: POOR \*  
 TO BE REMOVED  
 \* Posted for 60% Reduction

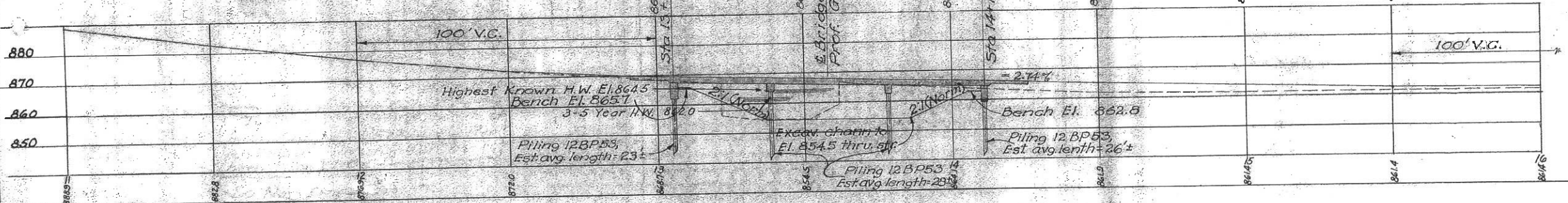


**PROPOSED STRUCTURE**  
 TYPE: Continuous reinf. concrete slab with capped pile abutments and piers  
 SPANS: 32'-40'-32' ctr. to ctr. of bearings  
 ROADWAY: 24'-0" face to face of guardrails.  
 LOADING: 5-12-46  
 SKEW: 30° R.F.  
 WEARING SURFACE: 1/2" Monolithic concrete  
 APPR. SLABS: AS-4-47  
 ALIGNMENT: Tangent.

**Sounding Note:** Foundation design and foundation quantities are based on a study of field soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in an abridged form in the Division office, but the State assumes no responsibility for the accuracy thereof.

**Clears 3 to 5 year HW 2.9'**

**DRAINAGE AREA = 9.5 SQ. MI.**

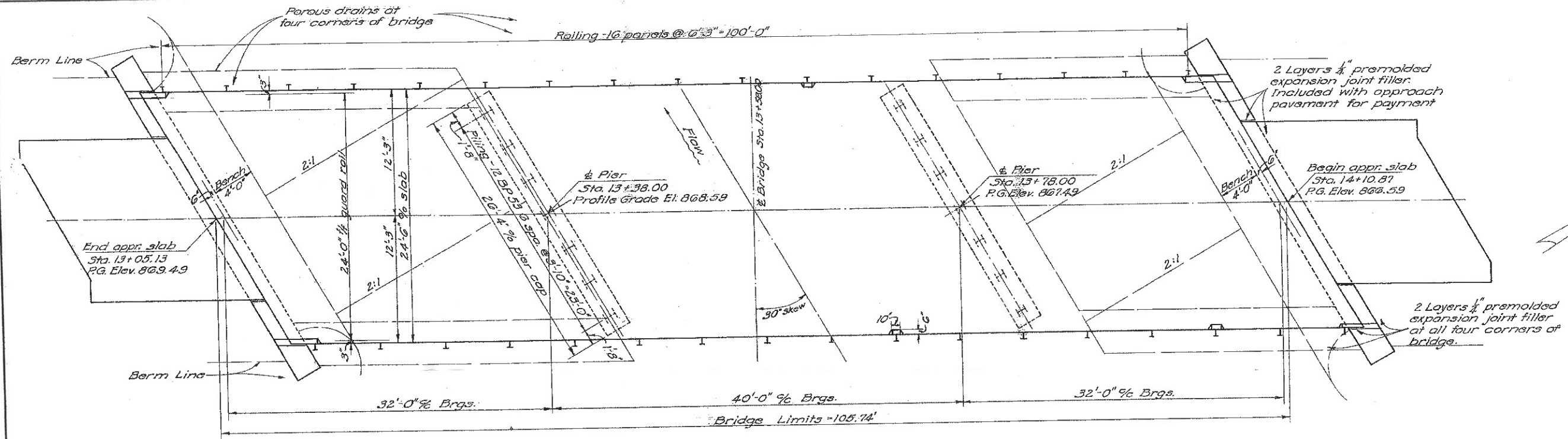


STATE OF OHIO  
 DEPARTMENT OF HIGHWAYS  
 BUREAU OF BRIDGES  
**SITE PLAN**  
**BRIDGE NO. NO. - 513-92**  
**OVER BEAVER CREEK**  
**NOBLE COUNTY**  
**SECTION NOB-513-(9.12-9.18)**  
**STATION 13+58.00**

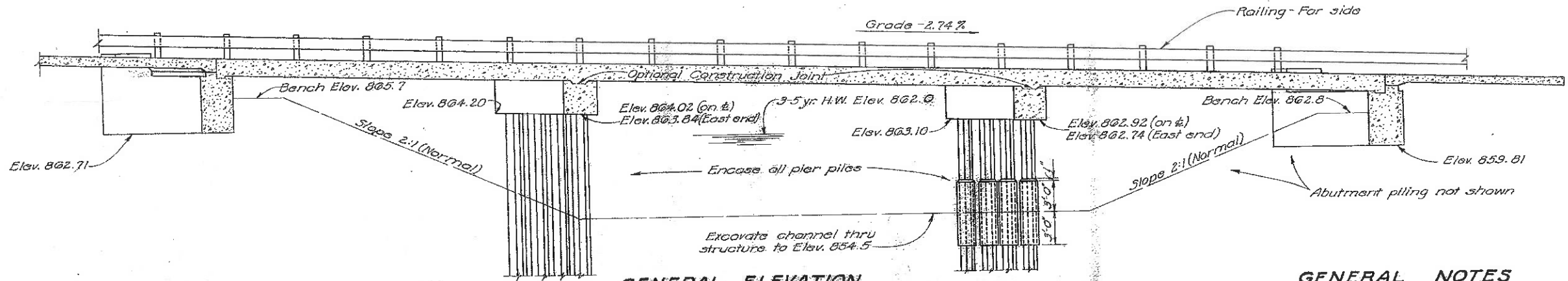
PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	TRACED	DESIGNED	DRAWN	CHECKED

CFB-BFG 9-18-46 8-20-33

NOB-513-(5.06) (9.12-9.18)



GENERAL PLAN



GENERAL ELEVATION  
( $\frac{1}{2}$  of Roadway)

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CS-1-47 revised 1-20-48, A-1-49 and P-1-49 dated 7-27-49.

TEMPORARY RUN-AROUND BRIDGE AND APPROACHES: Bridge frequency rating CF-30 with clear roadway width of 12 feet. Surface course on approaches 12' width of I-17. Approach embankment not less than 16 feet out to out of shoulders. I-17 and M-10 are included with roadway quantities for payment.

REMOVAL OF EXISTING STRUCTURE: Existing structure shall be removed. Substructure shall be removed to 6" below proposed ground lines. Suitable waste masonry shall be placed as bank protection where shown on plans. The remainder of the removed materials shall become the property of the Contractor.

PILING shall be driven with a steam hammer of not less than 7000<sup>lb</sup> energy per blow, to firm contact with shale, which shall be considered as obtained when the capacity according to the formula in Sec. 3-18.05 is at least 40 tons per pile for the pier piles and 30 tons for the abutment piles if a 7000<sup>lb</sup> hammer is used, or 35 tons for the pier piles and 25 tons for the abutment piles if a 15,000<sup>lb</sup> hammer is used and if the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report. If the energy rating of the hammer is

between these values, the required formula capacity shall be determined by interpolation. (The design load is 30 tons per pile for the pier piles and 25 tons for the abutment piles.)

METAL WASHERS of approximately 3" diameter shall be provided on the anchor bolts, between the railing posts and fascia of the deck, to hold the railing in accurate alignment. Washers shall be used only to the extent necessary for this purpose. The space between each railing post and the face of the concrete shall be thoroughly and neatly filled with "Leadite" or approved equivalent, to exclude moisture. Payment for washers and filling shall be considered as included in the contract price per lin. ft. of railing. Bush-hammering of edge of deck as provided on Std. Dwg. No. CS-1-47 shall not be done.

POROUS DRAINS, extending from face of abutment to Elev. 854.5, shall be placed on and flush with embankment slopes at all four corners of the bridge. The drains shall be 4 ft. wide and one ft. thick. They shall be centered under edge of deck. They shall be composed of No. 1 or No. 12 gravel, stone or slag. Construction procedure shall conform essentially to Item 1-9. Trench excavation shall be included for payment with the price per cu. yd. bid for "Porous drains on embankment slopes."

SURFACE FINISH OF CONCRETE: Fascia of deck slab shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item 5-1.

EXCAVATION QUANTITY includes the removal of fill material between top of earth bench and bottom of abutment cap.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superst	Abut.	Piers	Gen'l.	As Built
E-2	80	Cu. Yd.	Unclassified excavation		80			
E-3	1478	Cu. Yd.	Channel excavation				1478	1478
S-1	149	Cu. Yd.	Class "C" concrete, superstructure & pier caps	134		15		
S-1	39	Cu. Yd.	Class "C" concrete, abutments		39			
S-4	3742	Lb.	Reinforcing steel	3148	3784	2350	130	
S-9	16	Sq. Ft.	1/2" preformed expansion joint filler	16				
S-14	211.48	Lin. Ft.	Railing (Type I-15.13 with steel posts)	211.48				
S-15	Lump	Sum	Temporary run-around bridge and approaches				Lump	
S-16	Lump	Sum	First test pile				Lump	
S-19	640	Lin. Ft.	Steel piling (12" BP 53)		260	390		34.5 605.5
S-24	Lump	Sum	Removal of existing structure				Lump	
S-29	16	Cu. Yd.	Porous drains on embankment slopes				16	

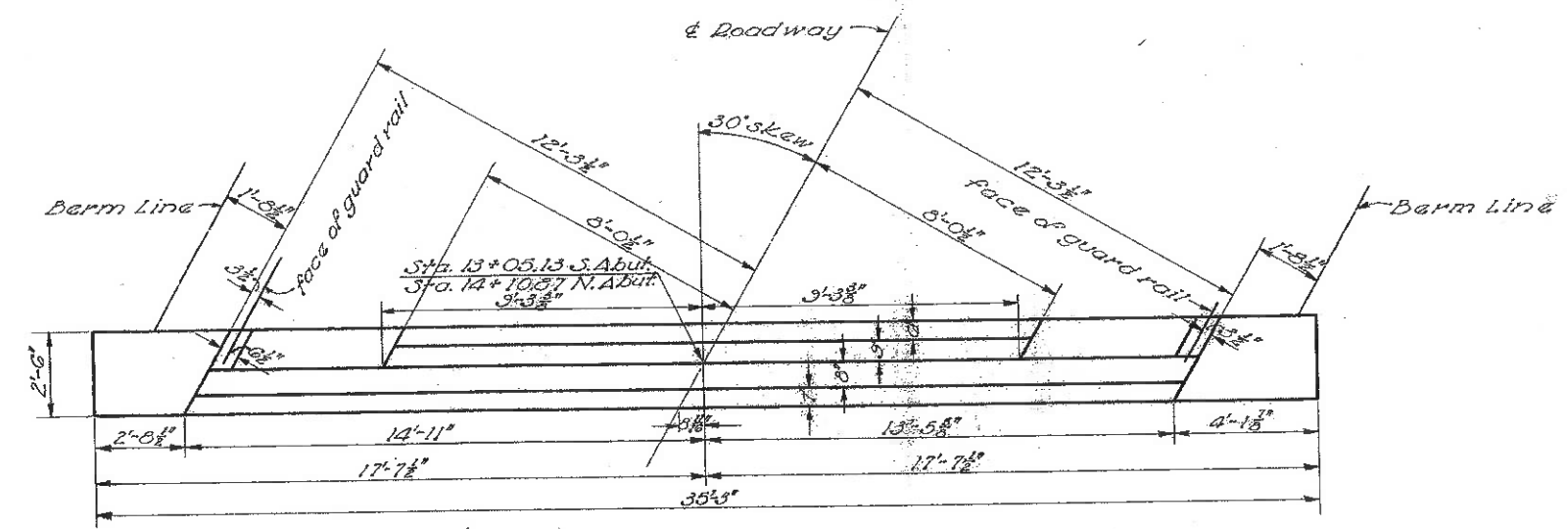
STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

**GENERAL PLAN & ELEVATION,  
NOTES & ESTIMATED QUANTITIES**  
BRIDGE NO. NO-513-92  
OVER BEAVER CREEK

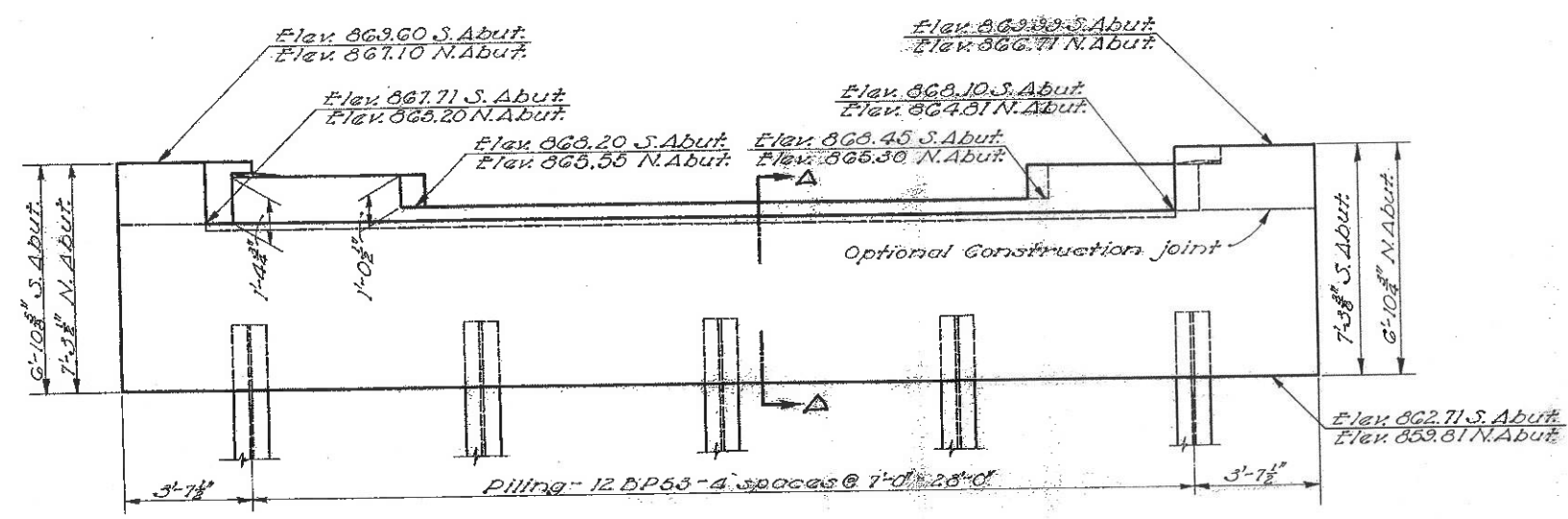
NOBLE COUNTY  
SEC. NOB-513 (9.12-9.18) STA. 13+58.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
REK	REK	JDJ	W.C.K.	CFB-BFC	8-20-53	

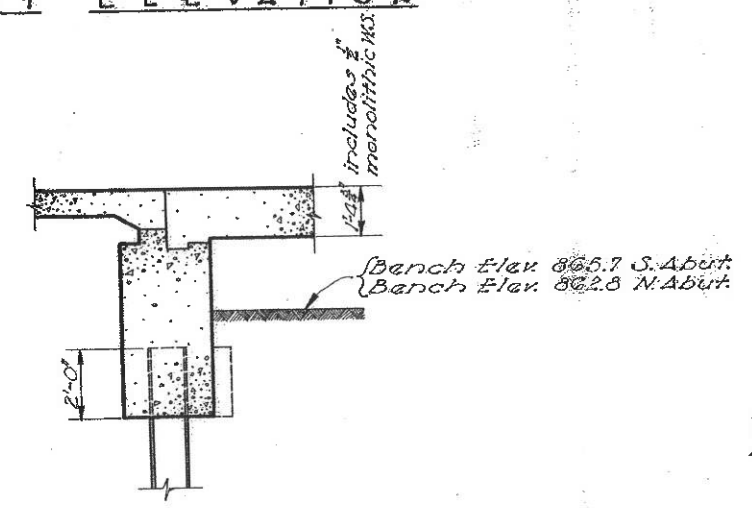
NOB-513-(5.06) (9.12-9.18)



ABUTMENT PLAN



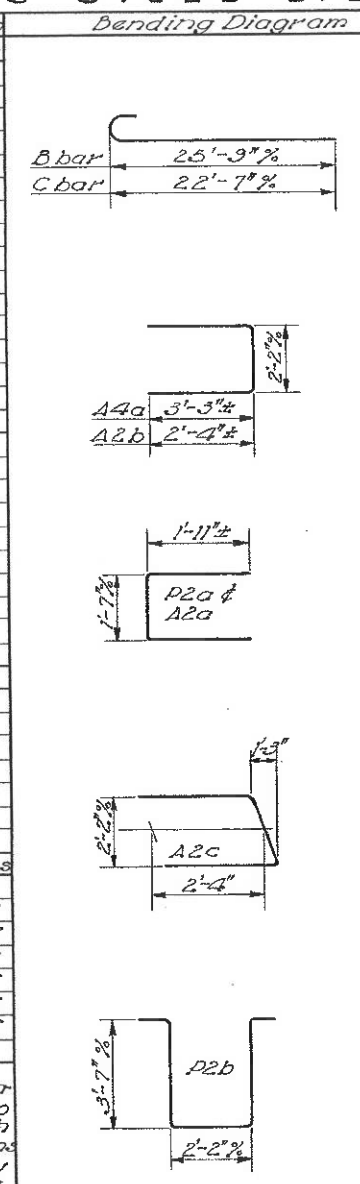
ABUTMENT ELEVATION



SECTION A-A

Notes: For additional abutment and pier details see Std. Dwg. A-1-43 and P-1-43.

REINFORCING STEEL LIST					
Mark	Size	No.	Length	Weight	Shp
<b>SUPERSTRUCTURE</b>					
A	1"φ	29	37'-3"	8739	S
B	1"φ	22	26'-10"	2007	B
C	1"φ	22	23'-8"	1770	B
D	1"φ	11	24'-0"	898	S
E	1"φ	11	19'-6"	729	S
F	1 1/2"φ	48	26'-6"	5473	S
G	1 1/2"φ	24	16'-9"	1730	S
H	1 1/2"φ	22	11'-3"	1065	S
J	3/4"φ	24	23'-6"	847	S
K	3/4"φ	12	22'-9"	410	S
L	3/4"φ	113	27'-8"	4696	S
M	3/4"φ	67	27'-8"	2784	S
<b>ABUTMENTS</b>					
A7a	1"φ	48	18'-8"	2333	S
A4a	3/4"φ	100	8'-5"	878	B
A4b	3/4"φ	30	3'-0"	94	S
A2a	1/2"φ	40	5'-3"	140	B
A2b	1/2"φ	8	6'-8"	36	B
A2c	1/2"φ	8	6'-10"	37	B
A2d	1/2"φ	88	3'-6"	206	S
<b>PIERS</b>					
P0d	1 1/2"φ	8	15'-6"	659	S
P7a	1"φ	32	14'-3"	1218	S
P2a	1/2"φ	56	5'-3"	197	B
P2b	1/2"φ	40	10'-2"	276	B
<b>REPLACEMENT BARS</b>					
RE0	1 1/2"φ	1	7'-6"	40	S
RE9	1 1/2"φ	1	7'-2"	31	S
RE8	1"φ	1	6'-10"	23	S
RE7	1"φ	1	6'-6"	17	S
RE5	3/4"φ	1	5'-10"	9	S
RE4	3/4"φ	1	5'-7"	6	S
RE2	1/2"φ	1	5'-3"	4	S



The bar size designations shown above do not correspond with the size designations given in the January 1, 1955 edition of the Construction and Material Specifications.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

**ABUTMENT DETAILS & REINFORCING STEEL LIST**

BRIDGE NO. NO-513-92  
OVER BEAVER CREEK  
Noble County  
Sec. Nob-513-9.12-9.18 Sta. 13+58.00

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	DATE	REVISED
REK	REK	J.G.N.	W.C.K.	CFB-BFG	9/7	8-20-53

NOTES

GENERAL: This drawing provides design and general construction details. The Project Plans for each structure will show spans, roadway width, skew, elevations, wearing surface, substructure details, estimated quantities, reinforcing steel list and other necessary special notes and details.

ADDITIONAL INTERMEDIATE SPANS, not to exceed two, may be incorporated into the structure without change in slab thickness or area of reinforcing steel. In case of added spans, Project Plans will show revised details and estimated quantities.

SKIEW: For bridges with skew, place longitudinal bars parallel to centerline of roadway and transverse bars parallel to piers and abutments. For skews, 10° or less, reinforcement as shown for square bridges may be used. For skews from 10° to 30°, 'F', 'G' and 'H' bars shall be lengthened an amount equal to RS tan θ and be placed as shown in Skew Diagram. (R = width of slab in feet, S = length of center span in feet). For skew greater than 30° another type of bridge should be used.

BRIDGE ROADWAY CROWN shall be used as shown. For bridges on curves the deck shall be super-elevated at the same rate as approach pavement for full width of deck.

APPROACH SLAB: Width of approach slab shall be uniform and be same as width of approach pavement. Details of approach slab will be shown on Project Plans.

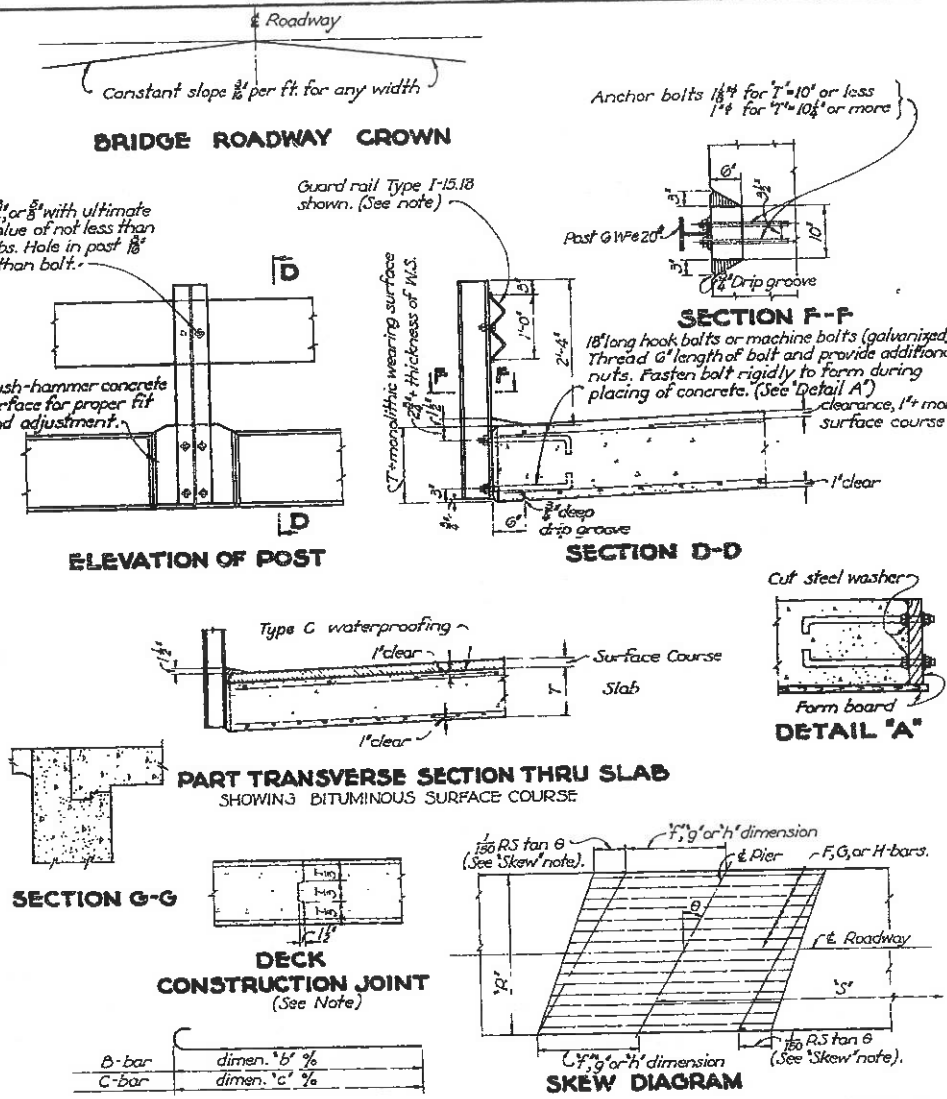
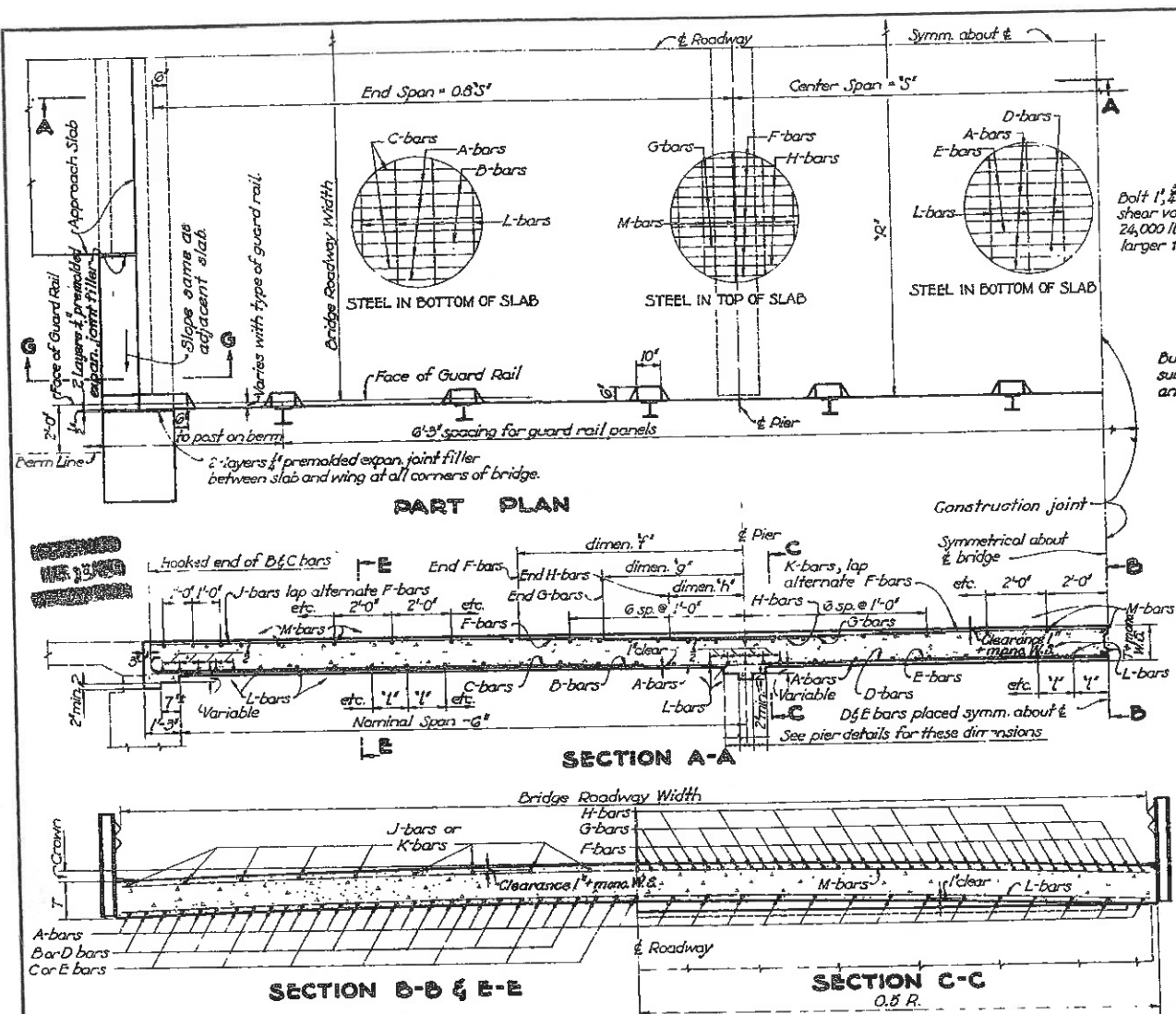
GUARD RAIL shall be of the same type as used on approaches or as specified on Project Plans, using posts as shown hereon. Transition between rail height on bridge and on approaches shall be made in a distance of 100 ft. at each end of bridge.

Field paint for rails and posts shall be same color as railing on approaches. Tabulated railing quantity includes posts and rails, and is for bridge length (face to face of abutments plus 2'-0").

MONOLITHIC WEARING SURFACE shall be 1/2" for S-12-46 loading and 3/4" for S-15-46 and S-20-46 loadings; concrete quantities have been computed on this basis.

CONCRETE shall be Class 'C'.

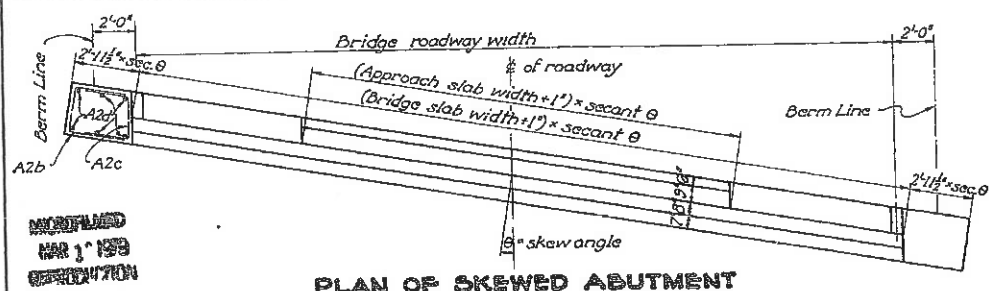
CONSTRUCTION JOINT: one transverse construction joint in bridge slab shall be placed on center of middle span or 1'-0" off center if necessary to miss railing posts. One longitudinal joint will be permitted on center line of roadway.



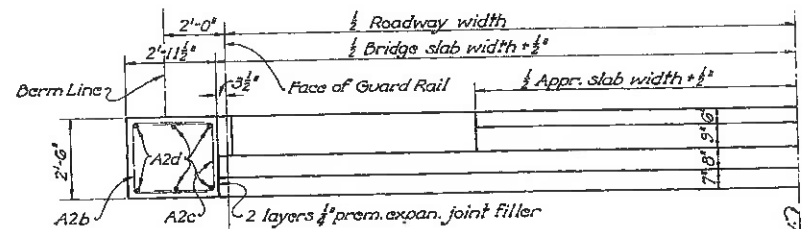
SLAB DATA table with columns for SFAN, T, A-bars, E-bars, C-bars, D-bars, E-bars, F-bars, G-bars, H-bars, J-bars, K-bars, L-bars, M-bars. Includes dimensions and quantities for various bar types.

QUANTITIES PER FOOT OF WIDTH 'R' table with columns for SPAN, Concrete cu yd, 2 1/2" Df. Surf. Course, Type C Water-proofing, Reinf. Steel lbs., Prem. Expan. Joint Fil. Sq. Ft., Guard Rail No. of Full Panels, Ln. Ft.

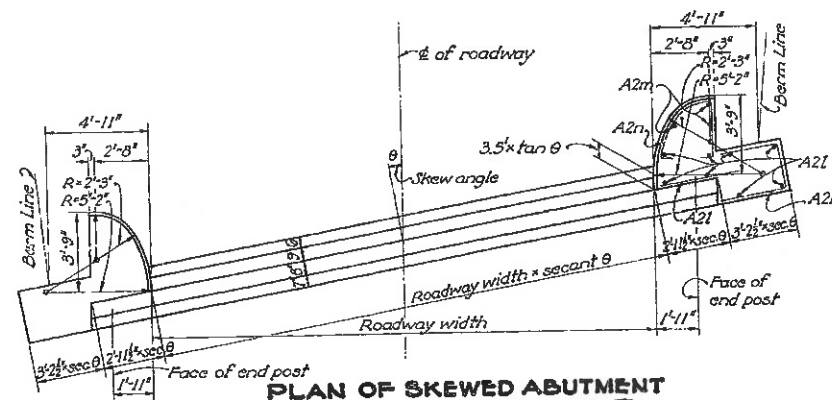
REVISIONS 1-20-46, STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES, STANDARD CONTINUOUS SLAB BRIDGE WITHOUT CURBS WITH HIGHWAY GUARD RAIL, MIDDLE SPAN 25 FT. TO 40 FT., LOADINGS S-12-46, S-15-46 AND S-20-46, APPROVED DATE: 9-12-49, DESIGNED DRAWN CHECKED REVIEWED H.S.R., DRAIVING NUMBER CS-147



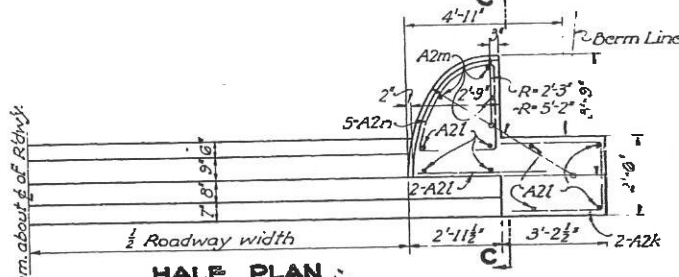
PLAN OF SKEWED ABUTMENT



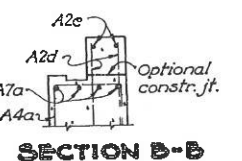
HALF PLAN



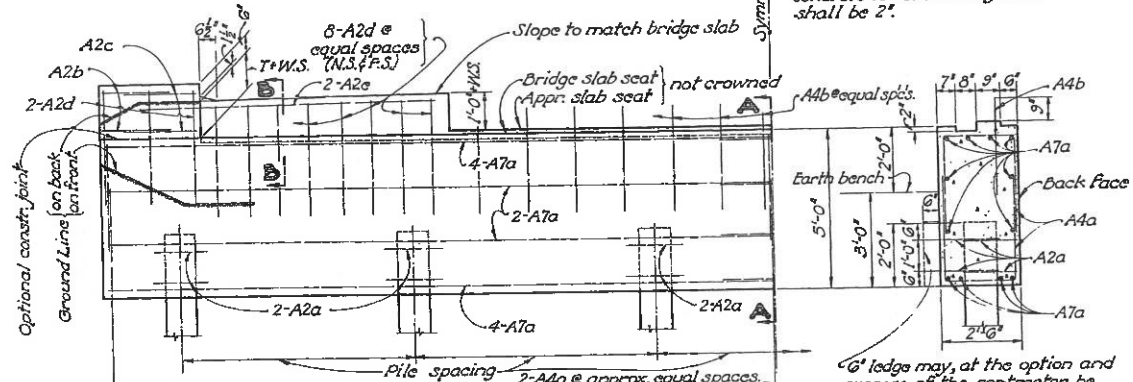
PLAN OF SKEWED ABUTMENT



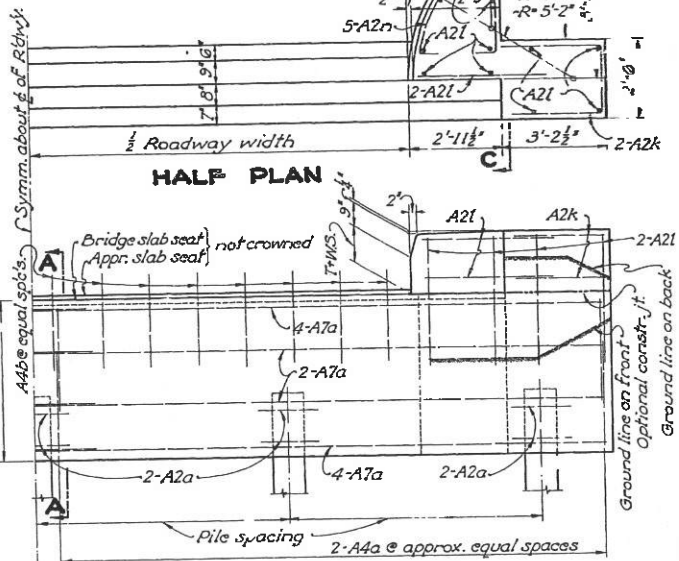
HALF PLAN



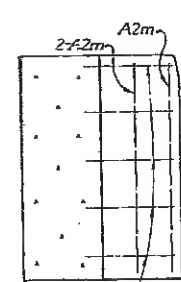
NOTE: Clearance from face of concrete to reinforcing steel shall be 2".



HALF ELEVATION  
FOR BRIDGES WITHOUT CURBS



HALF ELEVATION  
FOR BRIDGES WITH CURBS



SECTION C-C

GENERAL NOTES

GENERAL: This drawing provides design and general construction details and is to be used with Std. Dwg. CS-1-47, CS-2-47, CS-3-47 and CS-4-47. The Project Plans for each structure will show spans, roadway width, skew, elevations, wearing surface, estimated quantities, reinforcing steel list and other necessary notes and details.

CONCRETE shall be Class 'C'.

PILING shall be driven to a minimum bearing capacity in tons as shown in table and preferably to an indicated bearing capacity 10% greater than tabulated. Pile spacing for skewed abutments shall be the tabulated spacing length times secant θ.

SKEW: This drawing may be used for skews up to 30° maximum. Concrete quantity for skewed abutments will be Tabulated quantity times secant θ.

PROCEDURE: All earth fill around abutments shall be made full height of earth bench. Excavation shall then be made for abutment cap, after which piling shall be driven. If bottom forms for abutment cap are used they shall be left in place.

GUARD RAIL: For bridges without curbs is assumed to be Type 1-15.13 (depth 3" from face of rail to face of post). If another type of guard rail is used, details shall be revised accordingly.

PILING may be cross-tied timber, 10" or 12" steel H, 14" precast concrete or 12" cast-in-place concrete, depending upon required capacity and conditions. The type and size will be indicated on the project plans.

TABULATED DATA are for abutments without skew.

\* For skewed abutments, multiply bar lengths by secant of skew angle.

PILING DATA

Loading	Span	BRIDGES WITHOUT CURBS																BRIDGES WITH CURBS																																							
		32' Roadway				34' Roadway				36' Roadway				40' Roadway				42' Roadway				44' Roadway				20' Roadway				24' Roadway				28' Roadway																							
		Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other	Timber	Other																								
		No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs	No. f Spcgs	Reqd. Spcgs																								
5-12-46	20'-25'-20"	5@8'-0"	20T	6@7'-2"	20T	6@7'-8"	20T	6@7'-10"	20T	6@8'-0"	20T	7@7'-2"	20T	7@7'-6"	20T	5@7'-0"	20T	5@7'-10"	20T	7@7'-2"	20T	7@7'-6"	20T	7@7'-10"	20T	5@7'-0"	20T	5@7'-10"	20T	7@7'-2"	20T	7@7'-6"	20T	7@7'-10"	20T	5@7'-0"	20T	5@7'-10"	4200	38	4390	40	4550	42	4720	44	4880	46	5070	48	5230	50	3600	37	3930	40	

APPROX QUANTITIES (For 2 Abutments)

REINFORCING STEEL DATA

Roadway	Straight	L'gth	A2a		A2b		A2c		A2k		A2l		A2m		A2n	
			No.	Str.	No.	Str.	No.	Str.	No.	Str.	No.	Str.	No.	Str.		
20'	17'-8"	92	8		8		8		8		8		40	12	20	
24'	19'-8"	100	8		8		8		8		8		40	12	20	
28'	21'-8"	112	8		8		8		8		8		40	12	20	
32'	20'-9"	112	8		8		8		8		8		40	12	20	
34'	21'-9"	110	8		8		8		8		8		40	12	20	
36'	22'-9"	120	8		8		8		8		8		40	12	20	
38'	23'-9"	124	8		8		8		8		8		40	12	20	
40'	24'-9"	128	8		8		8		8		8		40	12	20	
42'	25'-9"	132	8		8		8		8		8		40	12	20	
44'	26'-9"	136	8		8		8		8		8		40	12	20	

REVISIONS

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

STANDARD  
CAPPED PILE ABUTMENTS  
FOR CONTINUOUS SLAB BRIDGES  
WITH OR WITHOUT CURBS  
MIDDLE SPAN 25 FT. TO 40 FT.  
LOADINGS 5-12-46, 5-15-46 & 5-20-46

APPROVED: *Richard B. Pugh* CHIEF ENGINEER OF BRIDGES  
DATE: 7-27-54  
DESIGNED: mfu DRAWN: mfu TRACED: JAMES CHECKED: W.C.K. REVIEWED: BFG  
DRAWING NUMBER: A-1-49

**GENERAL:** This drawing provides design and general construction details and is intended to be used with Std. Drawgs. CS-1-47, CS-2-47, CS-3-47 and CS-4-47. The project plans for each structure will show spans, roadway width, skew, elevations, type and size of piling, estimated quantities, reinforcing steel list and other necessary notes and details.

- The pier design shown on this drawing should generally not be used for the following conditions:-
- Where sloped embankment will introduce horizontal pressures against the pile bent. In such cases a pier-i which battered piling may be incorporated should be used.
  - Where rock or other firm material will prevent driving piling at least ten feet below stream bed.
  - Where unbraced length of piling, from stream bed to bottom of cap, will exceed fifteen feet.

**CONCRETE** shall be Class 'C'.

**PILES** shall be driven to a minimum bearing capacity of 35 tons or to the capacity indicated on the project plans. Piles may be steel H (12 BP53), 12" cast-in-place reinforced concrete of the type for which the casing is left in place, or 14" precast reinforced concrete. Precast piles may, at the option of the Contractor, be either square, octagonal or circular in section.

For steel H and cast-in-place concrete piles, protective concrete encasement shall be provided as shown hereon unless otherwise called for on the project plans, and the exposed portion of the piles above the encasement shall be painted in accordance with Item S-8 using two coats M-9.9, M-9.20 or M-9.21 and two coats M-9.12. If metal forms for encasement are left in place the exposed portions shall be similarly painted unless galvanized. Payment for encasement, for painting and for necessary excavation shall be included in the price per lin. ft. of piles.

The metal casing of cast-in-place concrete piles shall have, above the concrete encasement, a minimum thickness of No. 7 gage and a uniform section (not tapered).

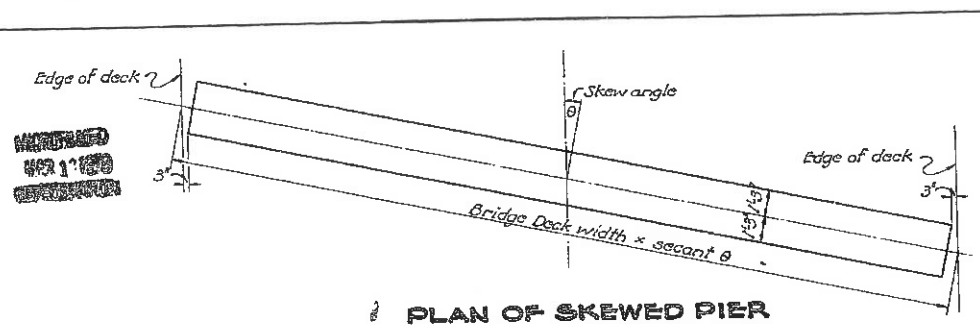
At the option of the Contractor, reinforced concrete piles may project into the cap a minimum of 2' instead of 2'-0" as shown hereon, provided that suitable reinforcing steel extends from the pile into the cap a minimum of 2'-0". For precast piles such steel may be the regularly specified pile reinforcement with the concrete cut away after the pile is driven. For cast-in-place piles such steel shall be a cage of reinforcement extending at least 2'-3" below the top of the casing and consisting of 6 bars 1/2" x 4'-0", with hoops of 1/4" bars spaced 10" or equivalent. Payment for the above cage of reinforcement shall be included in the price per lin. ft. of piling.

Cut-off elevation of piles, for measurement of pay length, shall be considered as 2'-0" above bottom of cap.

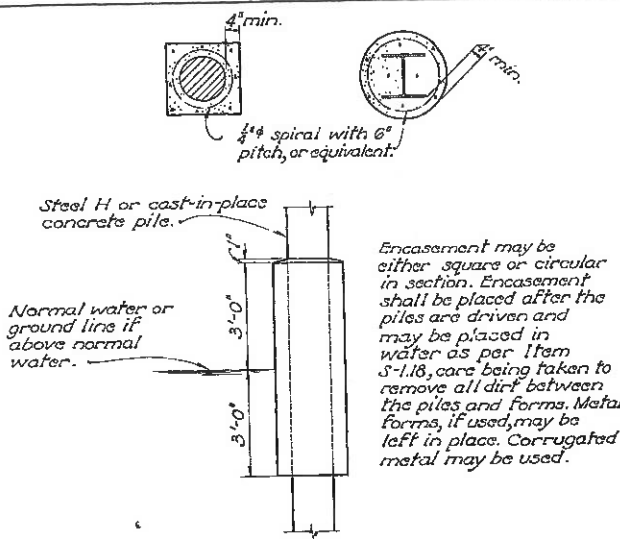
**SKREW:** This drawing may be used for skews up to 30° maximum. Greater skew will require special design. Pile spacing for skewed piers shall be the tabulated spacing times secant  $\theta$ . Concrete quantity for skewed pier will be: (tabulated quantity  $\times$  secant  $\theta$ ) minus  $0.7 \times$  tangent  $\theta$ .

**PIER-CAP CONCRETE QUANTITY** will usually be added to the quantity of superstructure concrete when listed on project plans. Deduction should be made from the tabulated quantity for the volume of encased piles as provided in Sec. S-1.26.

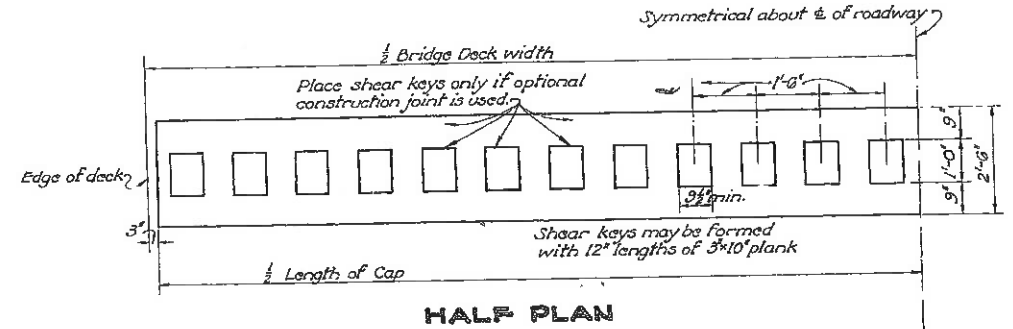
**FALSEWORK SUPPORT:** Pier cap shall not be used to support falsework for slab.



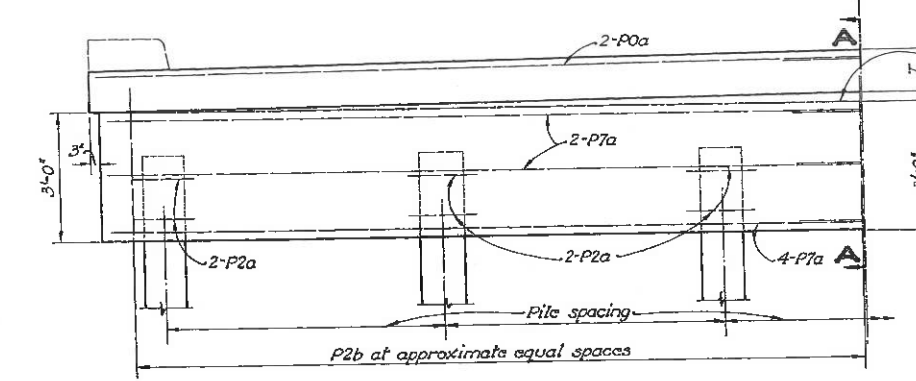
PLAN OF SKEWED PIER



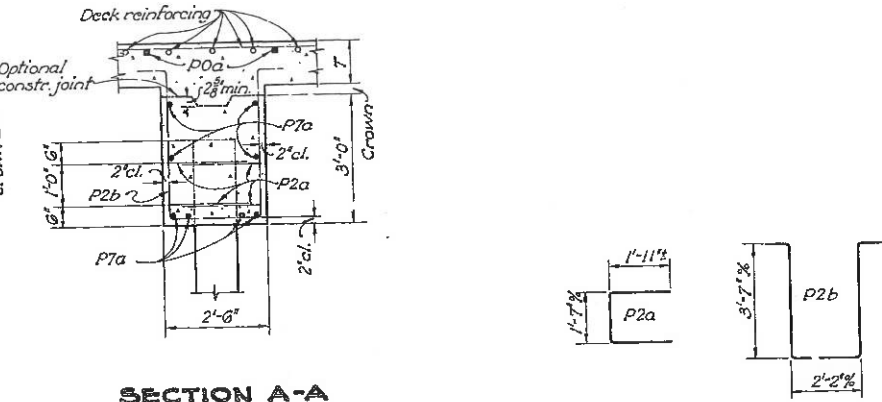
DETAIL OF PILE ENCASEMENT FOR STEEL H OR CAST-IN-PLACE CONCRETE PILES



HALF PLAN



HALF ELEVATION



SECTION A-A

LOADING	NUMBER AND SPACING OF PILES FOR NON-SKEWED PIERS												
	SPAN	BRIDGES WITHOUT CURBS						BRIDGES WITH CURBS					
		32' Rdwy.	34' Rdwy.	36' Rdwy.	38' Rdwy.	40' Rdwy.	42' Rdwy.	44' Rdwy.	20' Rdwy.	24' Rdwy.	28' Rdwy.		
S-12-46	20'-25'-20'	5 @ 7'-3"	5 @ 7'-9"	6 @ 6'-7"	6 @ 7'-0"	6 @ 7'-5"	6 @ 7'-10"	7 @ 6'-10"	4 @ 6'-10"	5 @ 6'-1 1/2"			
	22'-27.5'-22'	5 @ 7'-3"	5 @ 7'-9"	6 @ 6'-7"	6 @ 7'-0"	6 @ 7'-5"	6 @ 7'-10"	7 @ 6'-10"	4 @ 6'-10"	5 @ 6'-1 1/2"			
	24'-30'-24'	5 @ 7'-3"	5 @ 7'-9"	6 @ 6'-7"	6 @ 7'-0"	6 @ 7'-5"	6 @ 7'-10"	7 @ 6'-10"	4 @ 6'-10"	5 @ 6'-1 1/2"			
	26'-32.5'-26'	6 @ 5'-9"	6 @ 6'-2"	6 @ 6'-7"	6 @ 7'-0"	7 @ 6'-2"	7 @ 6'-6"	7 @ 6'-10"	5 @ 5'-1 1/2"	6 @ 4'-11"			
	28'-35'-28'	6 @ 5'-9"	6 @ 6'-2"	7 @ 5'-6"	7 @ 5'-10"	7 @ 6'-2"	7 @ 6'-6"	8 @ 5'-10"	5 @ 5'-1 1/2"	6 @ 4'-11"			
S-15-46	30'-37.5'-30'	7 @ 4'-10"	7 @ 5'-2"	7 @ 5'-6"	8 @ 5'-0"	8 @ 5'-3 1/2"	8 @ 5'-7"	8 @ 5'-10"	6 @ 4'-0"	6 @ 4'-11"			
	32'-40'-32'	7 @ 4'-10"	7 @ 5'-2"	8 @ 4'-8 1/2"	8 @ 5'-0"	9 @ 4'-7 1/2"	9 @ 5'-1 1/2"	9 @ 5'-5"	6 @ 4'-0"	7 @ 4'-11"			
	20'-25'-20'	5 @ 7'-3"	5 @ 7'-9"	6 @ 6'-7"	6 @ 7'-0"	6 @ 7'-5"	6 @ 7'-10"	7 @ 6'-10"	4 @ 6'-10"	5 @ 6'-1 1/2"	5 @ 7'-1 1/2"		
	22'-27.5'-22'	5 @ 7'-3"	5 @ 7'-9"	6 @ 6'-7"	6 @ 7'-0"	6 @ 7'-5"	6 @ 7'-10"	7 @ 6'-10"	4 @ 6'-10"	5 @ 6'-1 1/2"	5 @ 7'-1 1/2"		
	24'-30'-24'	6 @ 5'-9"	6 @ 6'-2"	6 @ 6'-7"	6 @ 7'-0"	7 @ 6'-2"	7 @ 6'-6"	8 @ 5'-10"	5 @ 5'-1 1/2"	6 @ 4'-11"	6 @ 5'-8"		
S-20-46	26'-32.5'-26'	6 @ 5'-9"	6 @ 6'-2"	7 @ 5'-6"	7 @ 5'-10"	8 @ 5'-3 1/2"	8 @ 5'-7"	8 @ 5'-10"	6 @ 4'-0"	6 @ 4'-11"	6 @ 5'-8"		
	28'-35'-28'	7 @ 4'-10"	7 @ 5'-2"	7 @ 5'-6"	7 @ 5'-10"	8 @ 5'-3 1/2"	8 @ 5'-7"	8 @ 5'-10"	6 @ 4'-0"	6 @ 4'-11"	6 @ 5'-8"		
	30'-37.5'-30'	7 @ 4'-10"	7 @ 5'-2"	8 @ 4'-8 1/2"	8 @ 5'-0"	9 @ 4'-7 1/2"	9 @ 5'-1 1/2"	9 @ 5'-5"	6 @ 4'-0"	7 @ 4'-11"	7 @ 4'-9"		
	32'-40'-32'	8 @ 4'-1 1/2"	8 @ 4'-5"	8 @ 4'-8 1/2"	9 @ 4'-4 1/2"	9 @ 4'-7 1/2"	10 @ 4'-4 1/2"	10 @ 4'-8 1/2"	6 @ 4'-0"	7 @ 4'-11"	8 @ 4'-0"		
	20'-25'-20'	5 @ 7'-3"	5 @ 7'-9"	6 @ 6'-7"	6 @ 7'-0"	6 @ 7'-5"	6 @ 7'-10"	7 @ 6'-10"			5 @ 7'-1 1/2"		
S-25-46	22'-27.5'-22'	6 @ 5'-9"	6 @ 6'-2"	6 @ 6'-7"	6 @ 7'-0"	6 @ 7'-5"	7 @ 6'-6"	7 @ 6'-10"			5 @ 7'-1 1/2"		
	24'-30'-24'	6 @ 5'-9"	6 @ 6'-2"	7 @ 5'-6"	7 @ 5'-10"	7 @ 6'-2"	7 @ 6'-6"	8 @ 5'-10"			6 @ 5'-8"		
	26'-32.5'-26'	7 @ 4'-10"	7 @ 5'-2"	7 @ 5'-6"	7 @ 5'-10"	8 @ 5'-3 1/2"	8 @ 5'-7"	8 @ 5'-10"			6 @ 5'-8"		
	28'-35'-28'	7 @ 4'-10"	7 @ 5'-2"	8 @ 4'-8 1/2"	8 @ 5'-0"	9 @ 4'-7 1/2"	9 @ 5'-1 1/2"	9 @ 5'-5"			7 @ 4'-9"		
	30'-37.5'-30'	8 @ 4'-1 1/2"	8 @ 4'-5"	9 @ 4'-1 1/2"	9 @ 4'-4 1/2"	9 @ 4'-7 1/2"	10 @ 4'-4 1/2"	10 @ 4'-8 1/2"			8 @ 4'-0"		
32'-40'-32'	8 @ 4'-1 1/2"	9 @ 3'-10"	9 @ 4'-1 1/2"	10 @ 3'-10 1/2"	10 @ 4'-1 1/2"	10 @ 4'-4 1/2"	11 @ 4'-1 1/2"			8 @ 4'-0"			

DATA FOR ONE NON-SKEWED PIER				
Roadway Width	REINFORCING STEEL DATA			QUANTITIES
	P0a 1/2"(Str-1) 4 req'd	P7a 1/2"(Str-1) 16 req'd	P2a 1/2"(Str-1) (Bent)	Concrete (Add to Deck Cap) Cu. Yds.
20'	15'-7"	13'-2"		16
24'	15'-7"	15'-2"		20
28'	17'-7"	17'-2"		22
32'	17'-11"	17'-6"		22
36'	18'-11"	18'-6"		24
38'	19'-11"	19'-6"		26
40'	20'-11"	20'-6"		28
42'	22'-11"	22'-6"		29
44'	23'-11"	23'-6"		30
				32

\* For skewed piers multiply tabulated length by secant of skew angle.

REVISIONS		STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES	
<b>STANDARD CAPPED PILE PIERS FOR CONTINUOUS SLAB BRIDGES WITH OR WITHOUT CURBS</b>			
LOADING: S-12-46, S-15-46 & S-20-46			
APPROVED: <i>Richard D. ...</i>	DESIGNED: <i>...</i>		DRAWING NUMBER: P-1-49
DATE: 7-2-46	DRAWN: <i>...</i>	TRACED: <i>...</i>	CHECKED: <i>...</i>
			REVIEWED: <i>...</i>