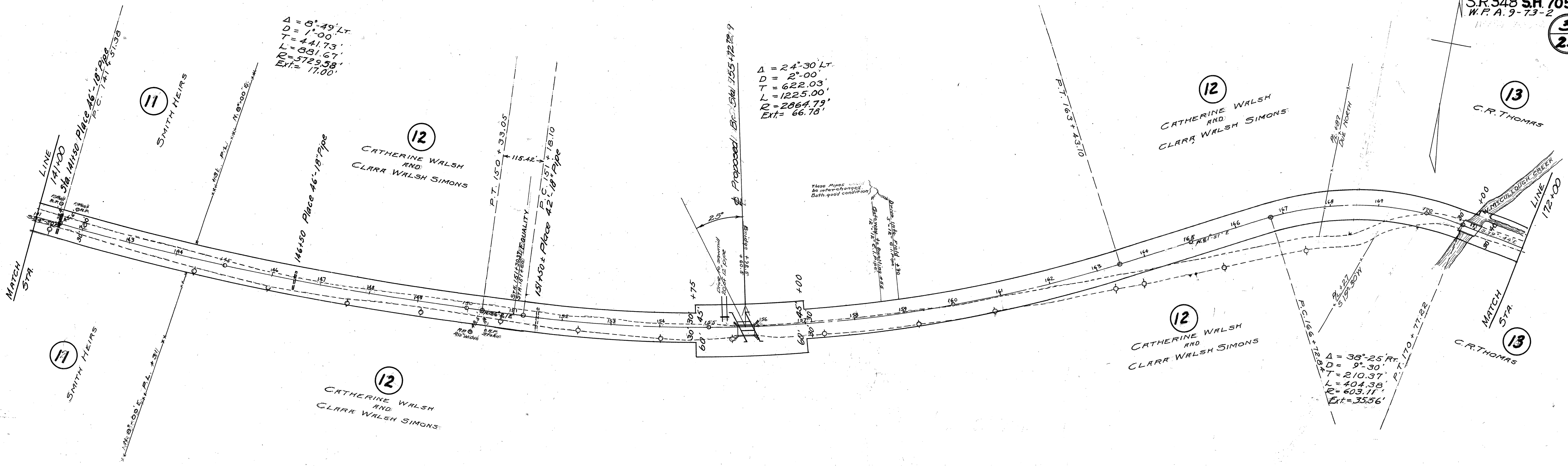
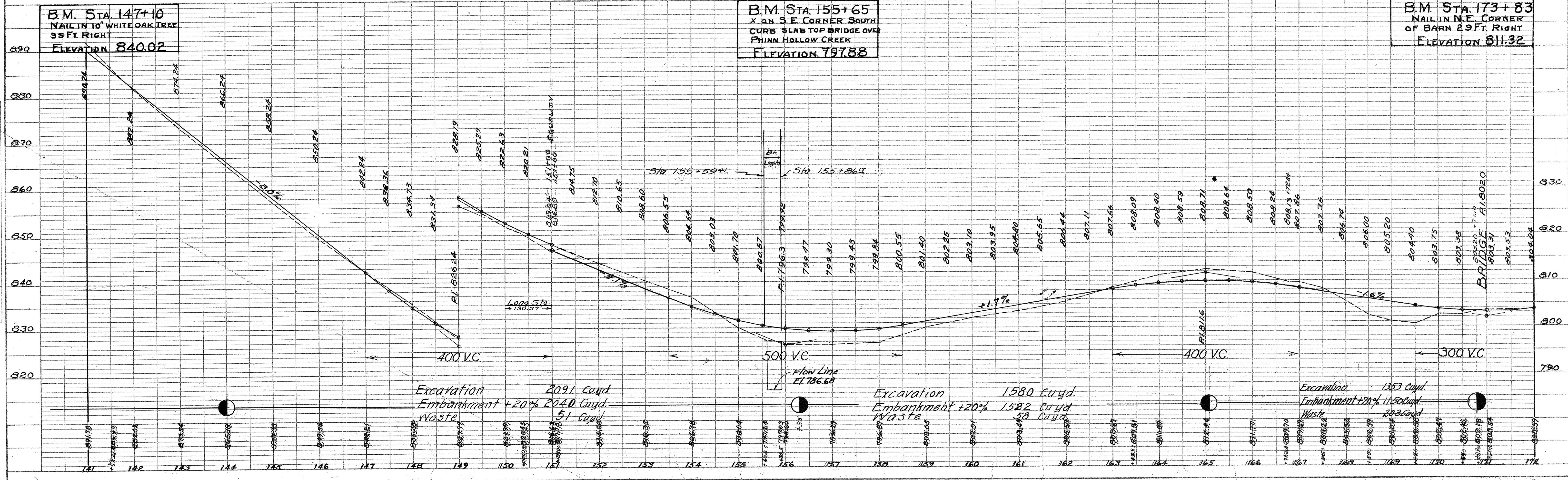


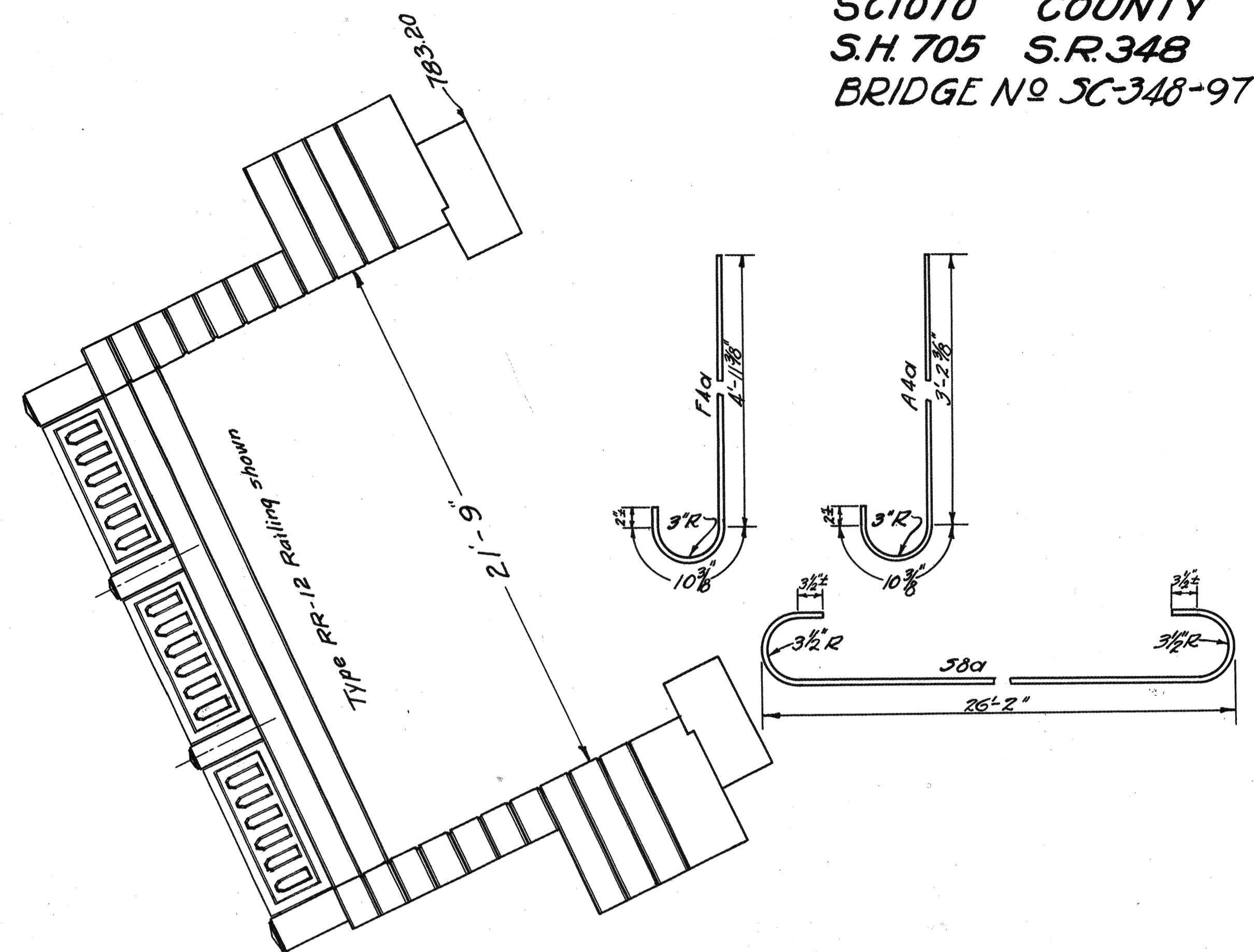
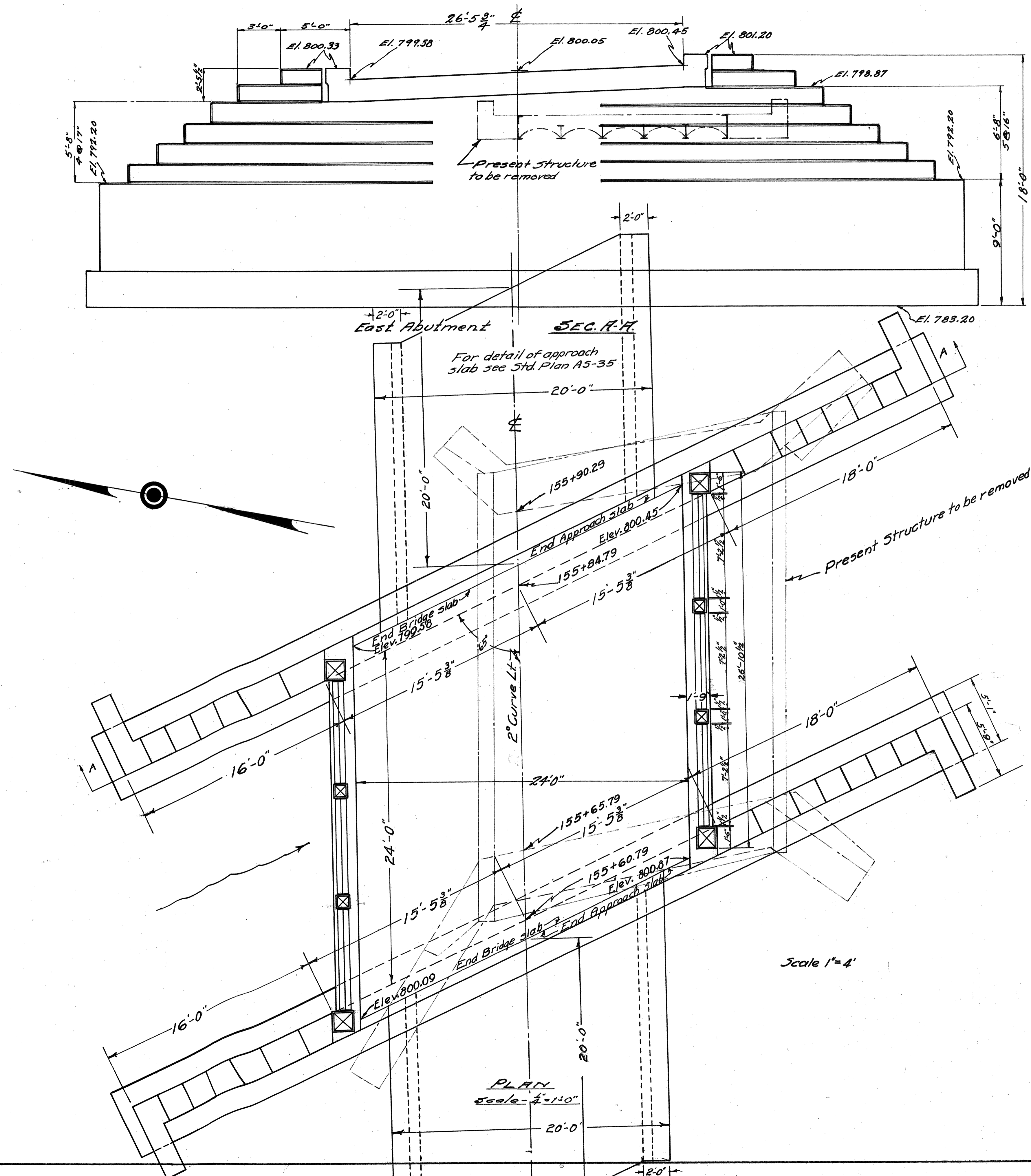
PLAN	SURVEYED	DATE
NO.	BY	
	NOTED	
	CHECKED	
	RT. OF WAY CHECKED	



PROFILE	SURVEYED	DATE
NO.	BY	
	NOTED	
	CHECKED	
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	



SCIOTO COUNTY
S.H. 705 S.R. 348
BRIDGE NO SC-348-97



STEEL LIST FOR BRIDGE

Mark	Size	Shape	Spacing	No.	Length	Weight #
F4a	3/8" φ	Bent	1'-0"	130	5'-11 1/4"	810
A4b	3/8" φ	Strt.	3'-0"	36	11'-6"	432
"	3/8" φ	Strt.	3'-0"	4	9'-3"	39
"	3/8" φ	Strt.	3'-0"	4	7'-9"	32
A5b	3/4" φ	Strt.	3'-0"	36	11'-6"	622
"	3/4" φ	Strt.	3'-0"	4	9'-3"	56
"	3/4" φ	Strt.	3'-0"	4	7'-9"	47
A4c	3/8" φ	Strt.	2'-0"	12	33'-6"	419
"	3/8" φ	Strt.	2'-0"	8	31'-9"	263
"	3/8" φ	Strt.	2'-0"	4	23'-9"	107
A4a	3/8" φ	Bent	4'-0"	12	4'-2 3/4"	59
A4d	3/8" φ	Strt.		24	4'-0"	100
A4e	3/8" φ	Strt.	1'-6"	42	2'-0"	88
W4a	3/8" φ	Strt.		16	6'-9"	113
W4b	3/8" φ	Bent	1'-0"	24	3'-9"	144
W4c	3/8" φ	Bent	1'-0"	24	8'-0"	200
W4d	3/8" φ	Bent	1'-0"	24	3'-9"	144
S8a	1" φ	Bent	0'-6"	54	28'-0"	5292
T4a	3/8" φ	Strt.	1'-0"	30	29'-4"	918
T4b	3/8" φ	Strt.	3'-0"	11	29'-4"	336
D4a	3/8" φ	Bent		16	8'-7 1/2"	144
D5a	3/4" φ	Bent		12	8'-3 1/2"	103
R4a	3/8" φ	Strt.		12	6'-11 1/2"	123
R1a	3/8" φ	Strt.		12	6'-11 1/2"	31
R1b	3/8" φ	Strt.		42	2'-6"	39
R3a	3/8" φ	Bent		12	8'-8 1/2"	157
STEEL LIST FOR APPROACH SLAB						
1" φ	Bent	0'-7 1/4"		64	20'-1"	3434
1" φ	Bent			12	23'-1"	740
1/2" φ	Strt.	2'-8"		14	21'-6 3/4"	202
TOTAL WEIGHT						15192

ESTIMATED QUANTITIES
BRIDGE QUANTITIES

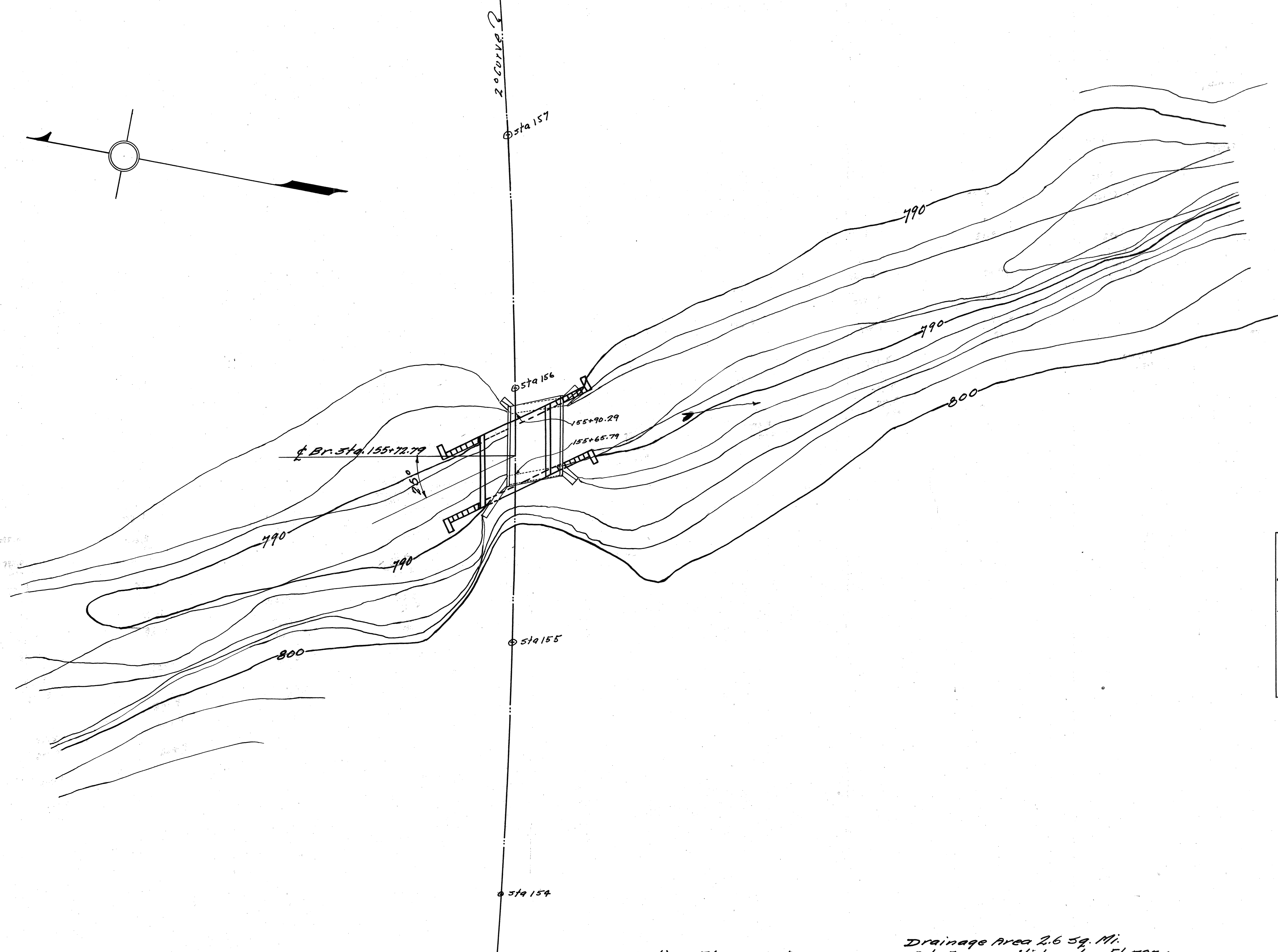
Concrete	196.3 Cu.Yds.
Type 'B' Waterproofing	27 Sq.Yds.
1/4" Bitu. Expansion Jt. Filler	35 Sq.Ft.
Reinforcing Steel	10816 Lbs.
Removal of Existing Structure	1 Unit
Bridge Excavation (50% Back)	300 Cu.Yds.

APPROACH SLAB QUANTITIES

Concrete	89 Cu.Yds.
Reinforcing Steel	4376 Lbs.

STANDARD 24 FT. SLAB BR.
BRIDGE LIMITS STA. 155+59.41 TO 155+91.17
STANDARD PLANS 5B-35, A5-35,
H-15-33 LOADING
Scale 1"=4'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED
	Div. Off.			



PROPOSED STRUCTURE
 TYPE - 5th Reinf. Conc. Slab Bridge
 SPAN - 24' Clear
 ROADWAY - 24'
 LOADING - H-15-33
 SKEW - 25° R.F.
 YEAR SURF - 3/4" Mono. CONCR.
 APPR. SLABS - 20' long x 20' wide
 ALIGNMENT - 2° Curve L.
 SUPERELEVATION - .042 Per Foot

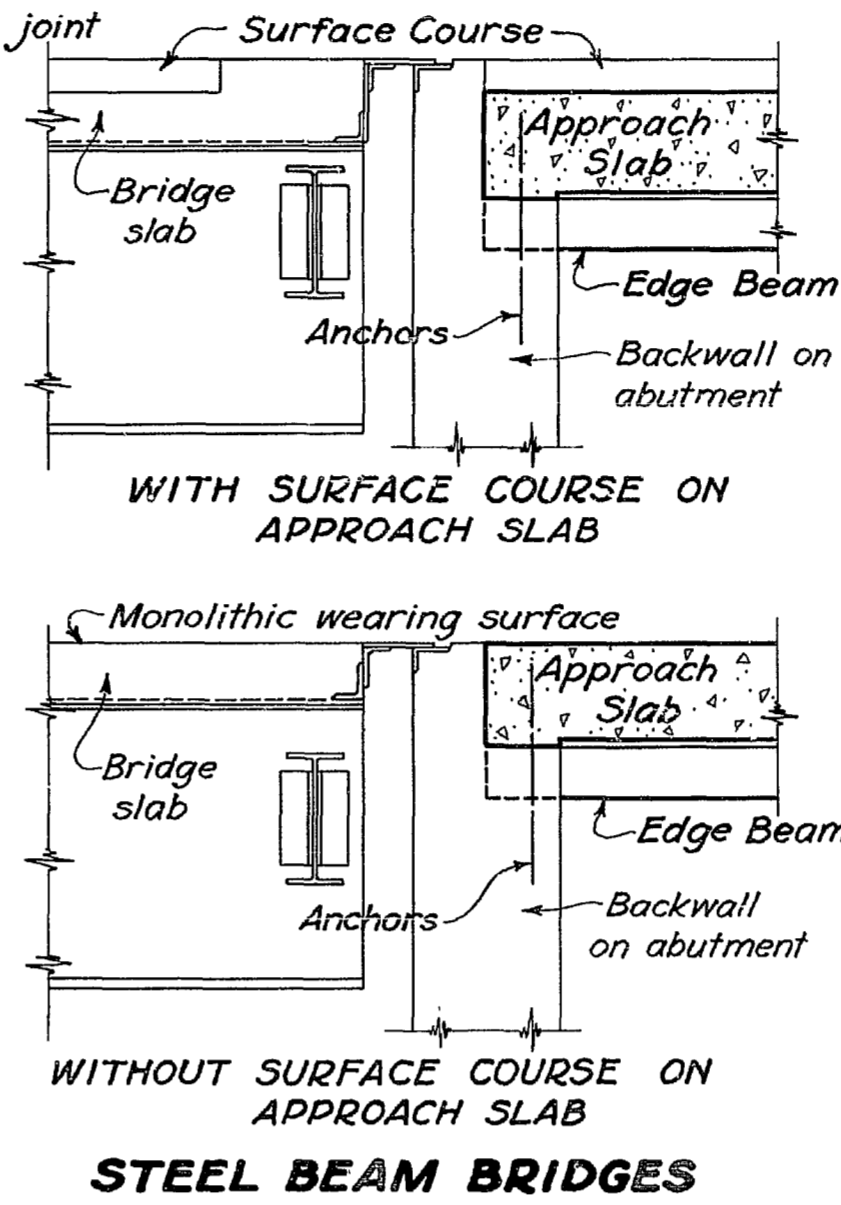
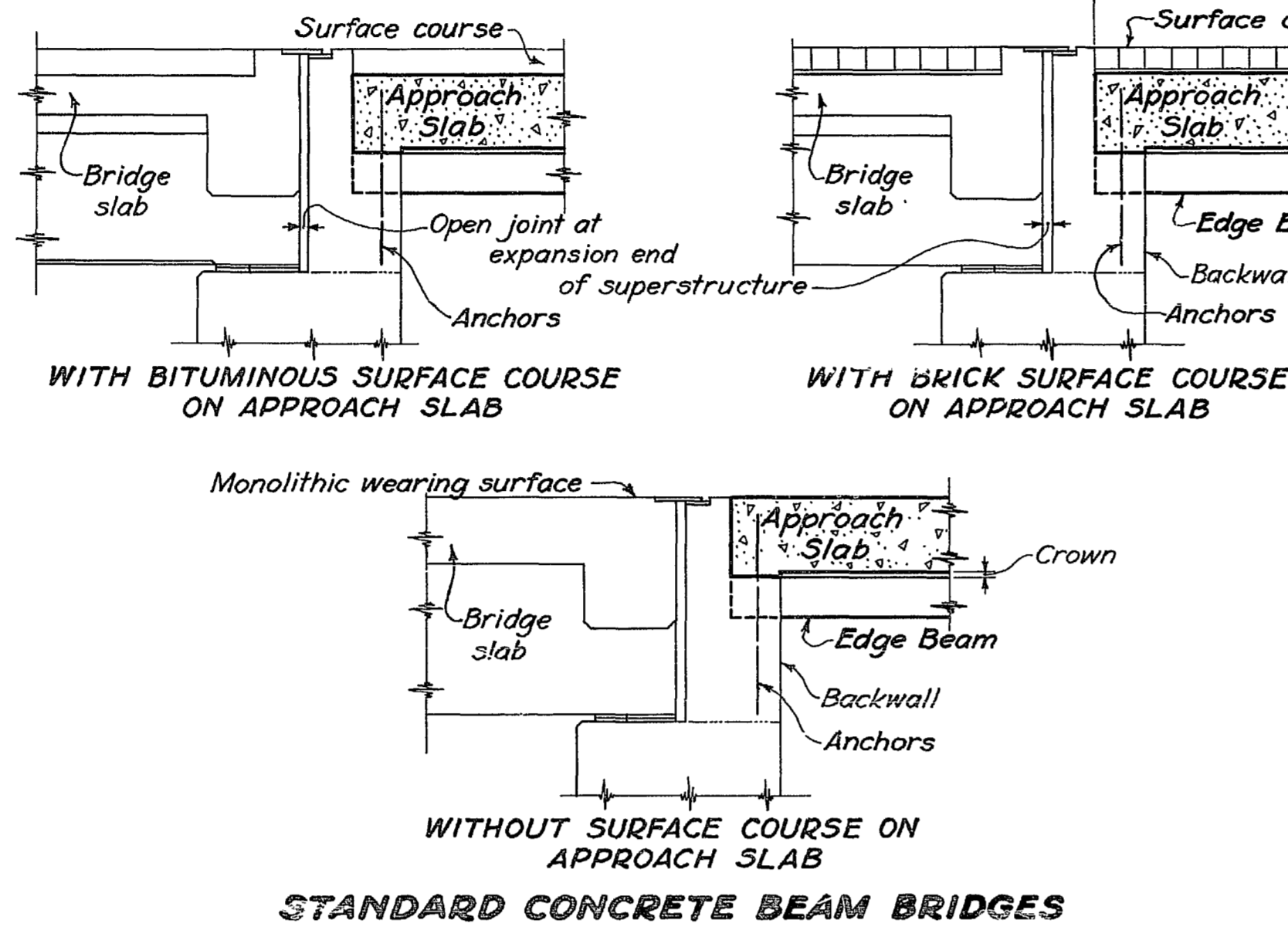
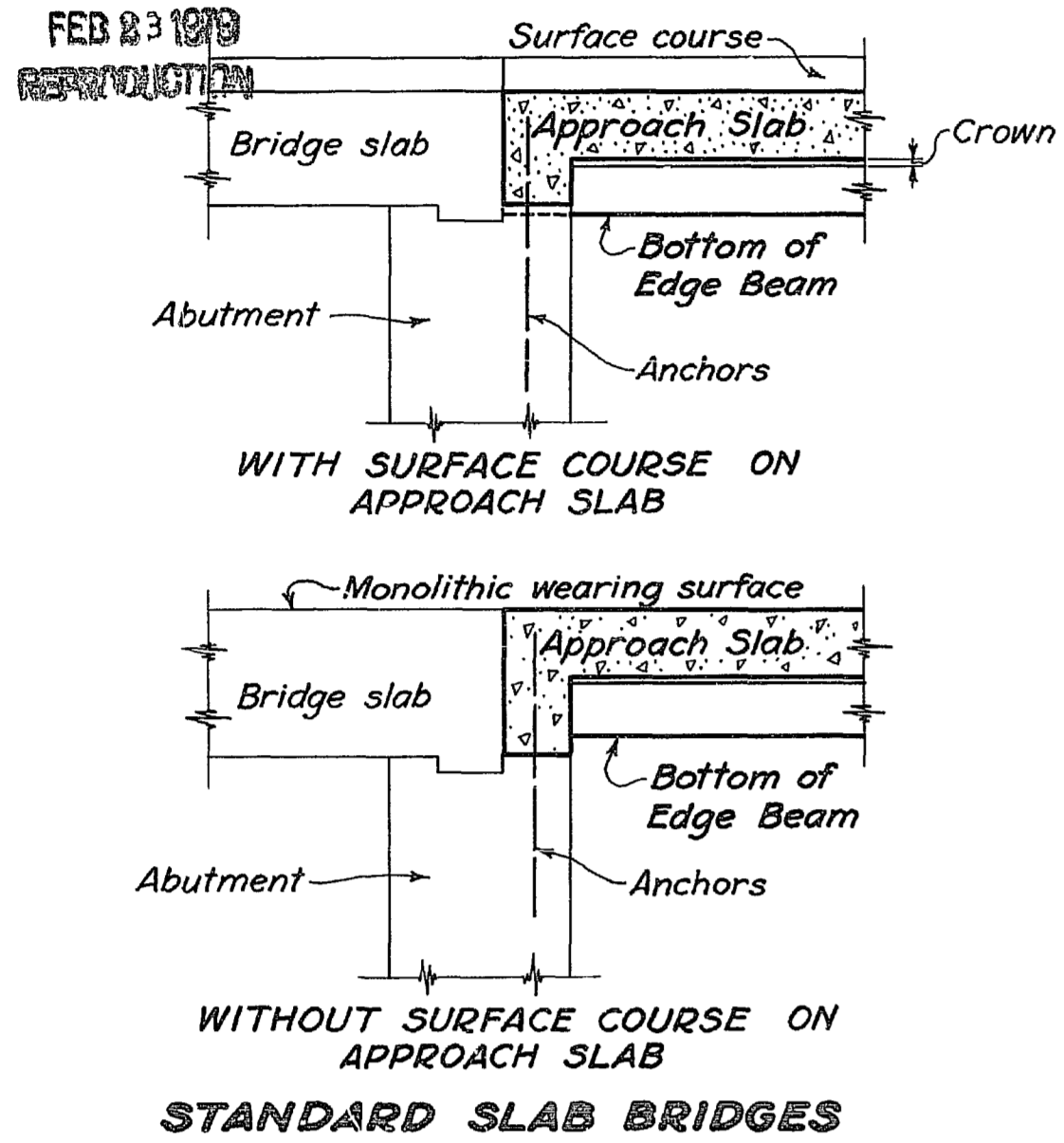
SITE PLAN
 BRIDGE No. S.C. - 348-97
 OVER
 A BRANCH OF Mc GULLOUGH CREEK
 S.H. 705 SEC. B. STA. 155+72.79
 SCIOTO COUNTY
 STATE OF OHIO

PRESENT PROGRAM		PROPOSED YORK			
SURVEYED	DRAWN	T.S. & L.	DES. BY	DRAWN BY	CHECK BY
		10-31-39	J.E.M.	J.E.M.	[Signature]

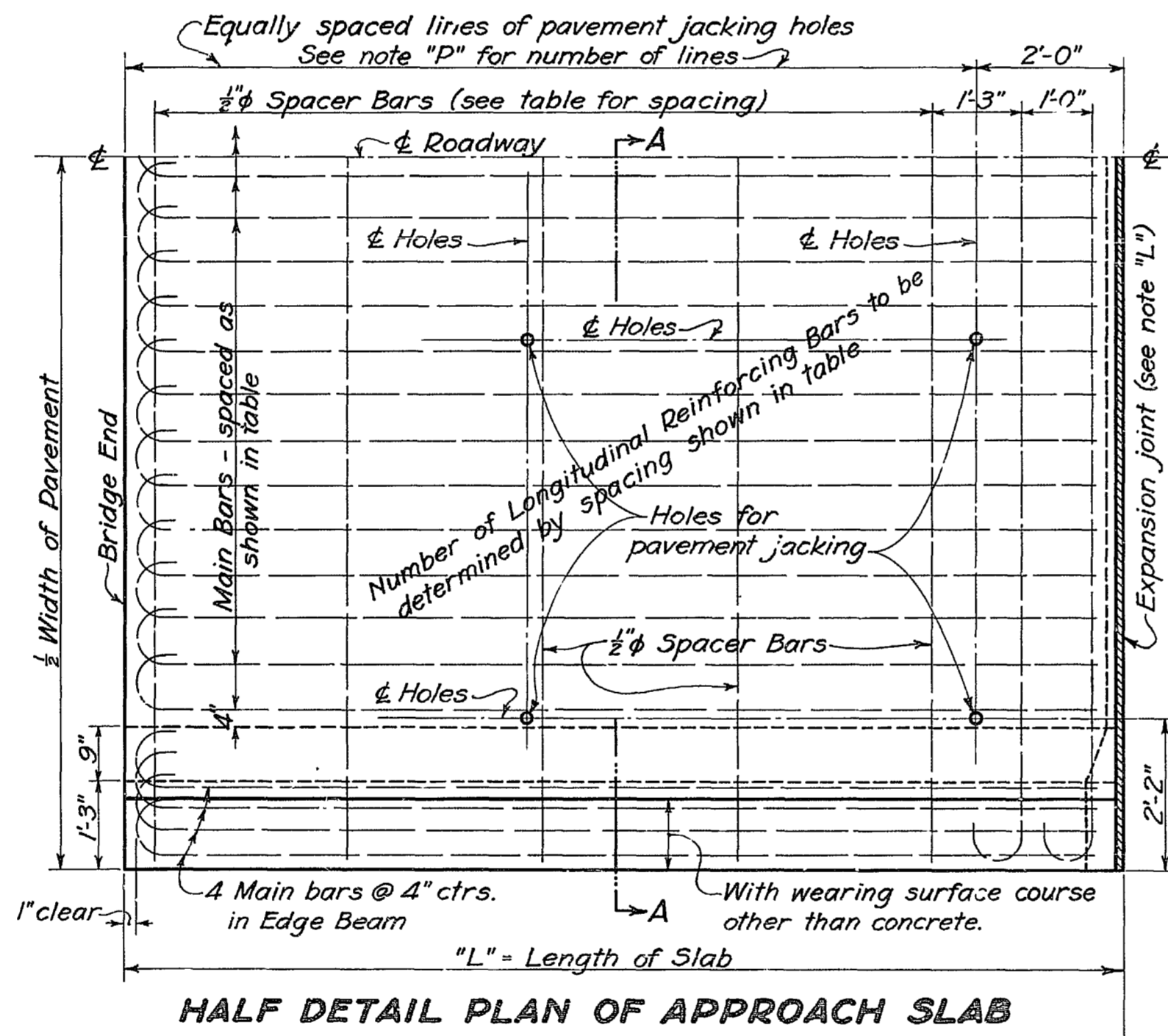
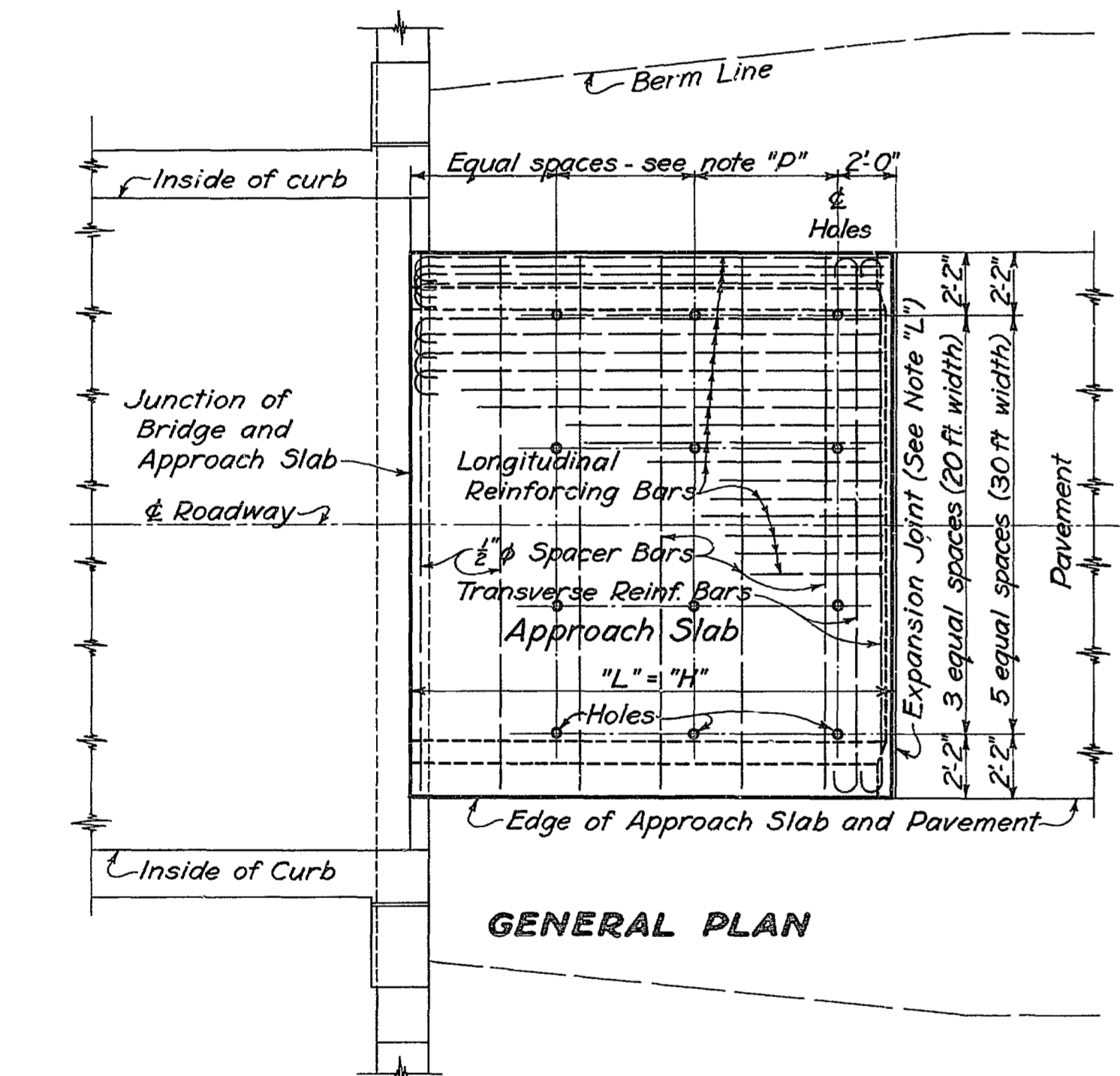
Footing El. 783.2 ±

Drainage Area 2.6 Sq. Mi.
 3 to 5 years High water El. 797.0

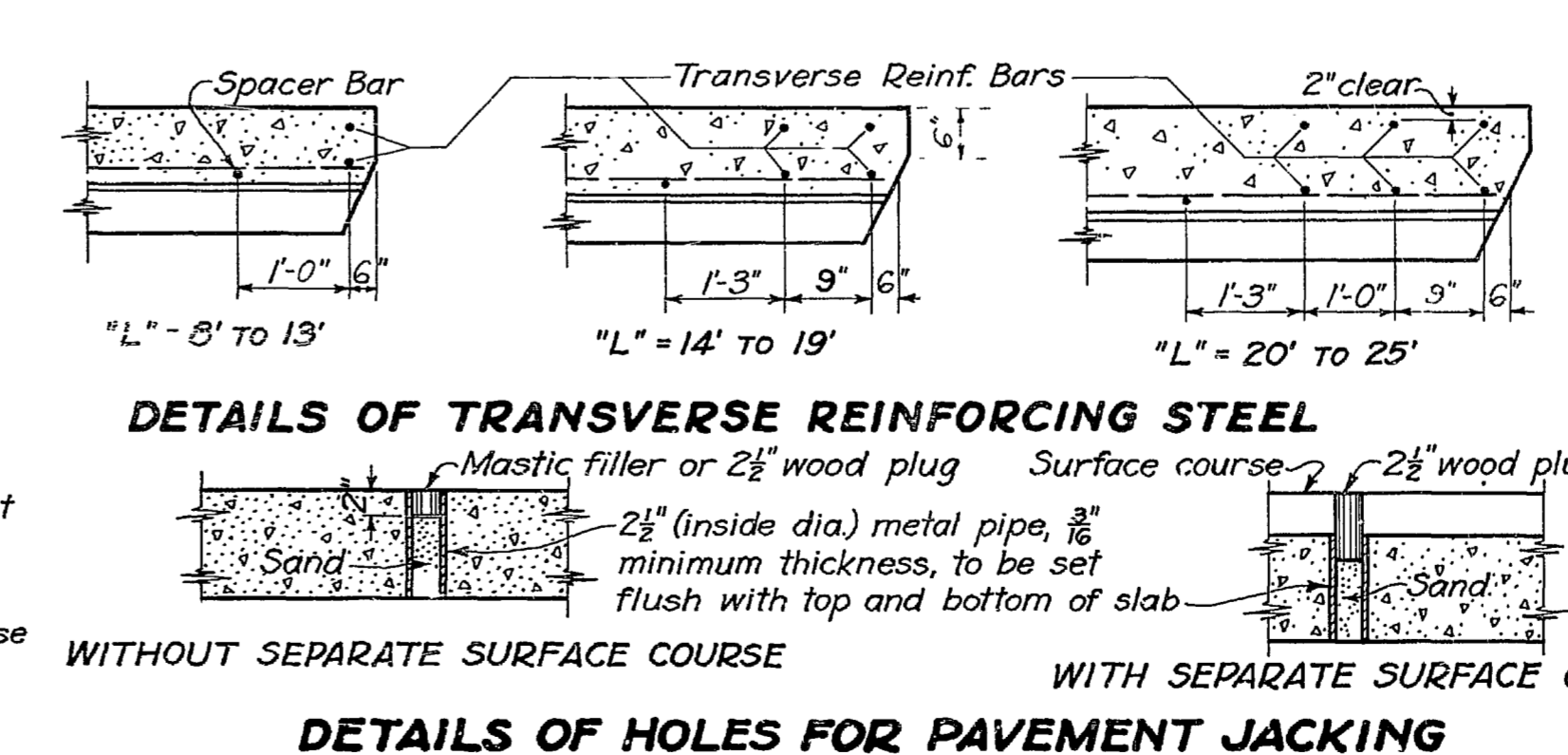
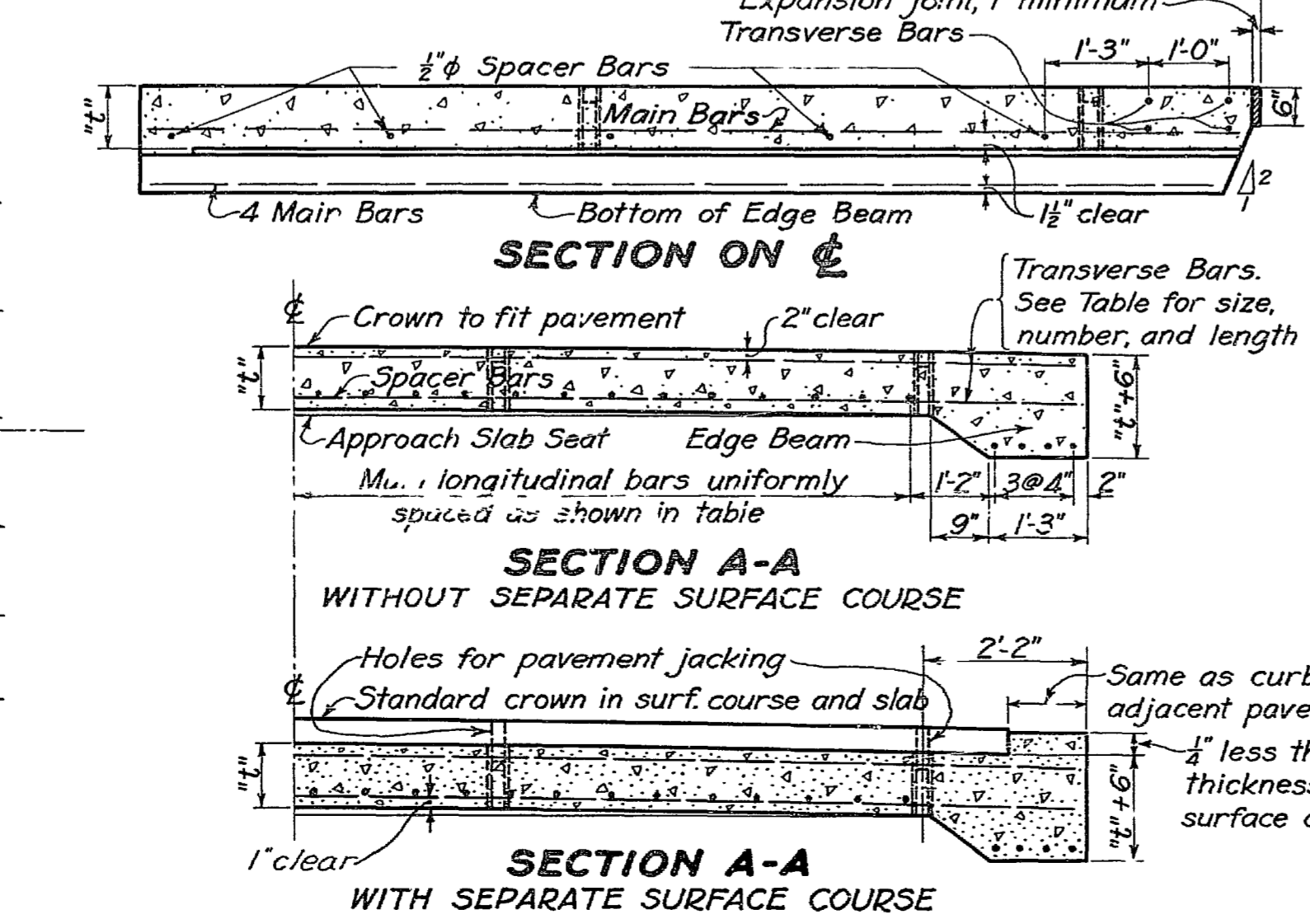
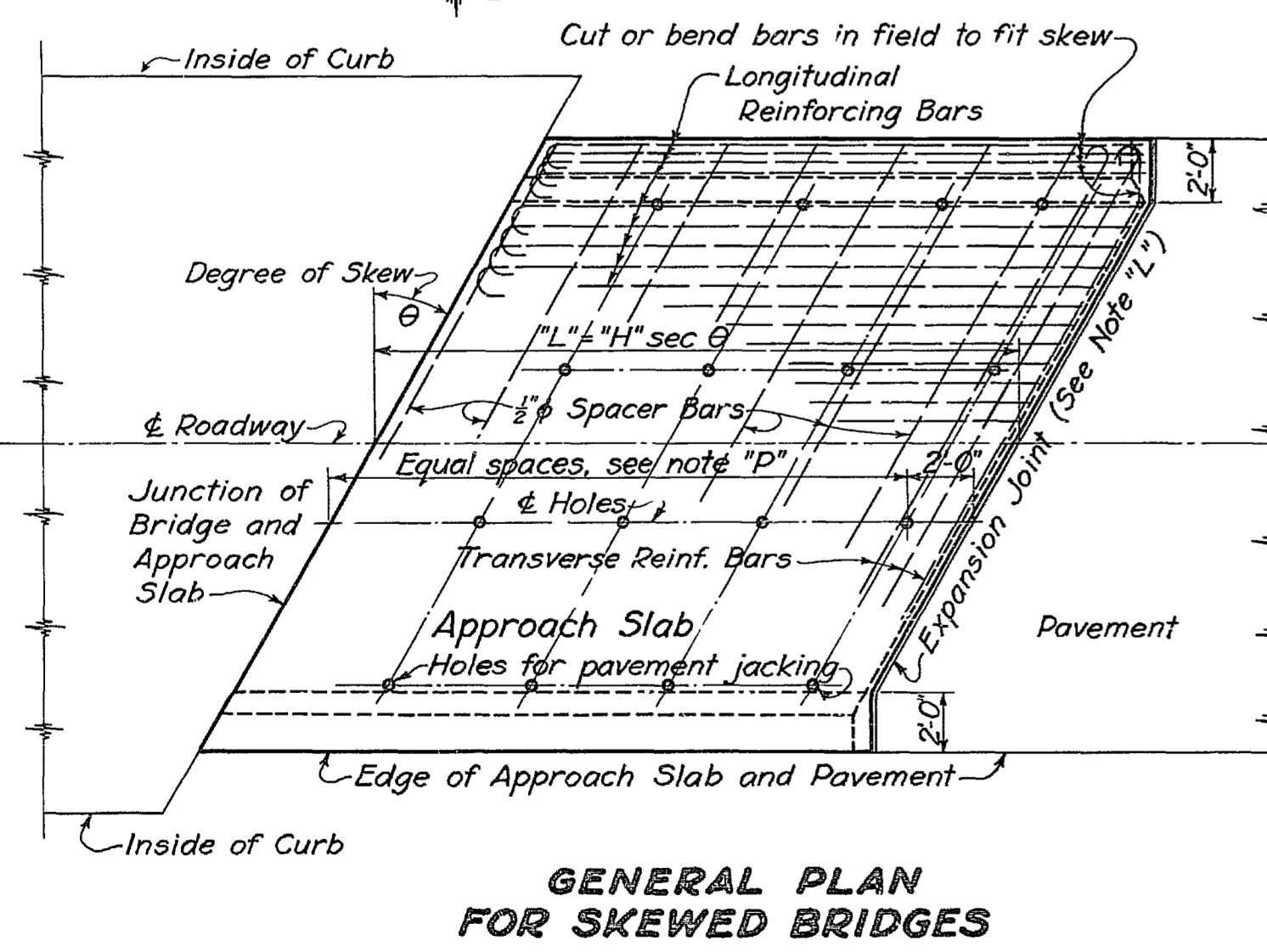
MICROFILMED
FEB 23 1979
REPRODUCTION



TYPICAL SECTIONS SHOWING JUNCTION OF BRIDGE AND APPROACH SLAB



Length "L"	Thickness "t"	Sq Yds in One Approach Slab for Width of		MAIN REINFORCING STEEL						SPACER BARS 1/2" φ		
		20 ft	30 ft	Longitudinal			Transverse			Length	No.	
				Size	Spccg.	Length	Size	Number				
8'	7 1/2"	29	17.8	3/4" φ	8"	8'-3"	3/4" φ	1	1	3	3'-0"	
9'	8"	30	20.0	3/4" φ	7 1/2"	9'-3"	3/4" φ	1	1	4	2'-4"	
10'	8 1/2"	31	22.2	3/4" φ	7"	10'-3"	3/4" φ	1	1	4	2'-8"	
11'	9"	32	24.4	3/4" φ	6 1/2"	11'-3"	3/4" φ	1	1	4	3'-0"	
12'	9 1/2"	33	26.7	3/4" φ	6"	12'-3"	3/4" φ	1	1	5	2'-6"	
13'	9 3/4"	35	28.9	3/4" φ	6"	13'-3"	7/8" φ	1	1	5	2'-9"	
14'	10"	39	31.1	7/8" φ	7 1/2"	14'-2"	7/8" φ	2	2	5	2'-9"	
15'	10 1/2"	40	33.3	7/8" φ	7 1/2"	15'-2"	7/8" φ	2	2	5	3'-0"	
16'	11"	42	35.6	7/8" φ	7"	16'-2"	7/8" φ	2	2	6	2'-7"	
17'	11"	43	37.8	7/8" φ	6 1/2"	17'-2"	7/8" φ	2	2	6	2'-9"	
18'	11 1/2"	46	40.0	1" φ	8"	18'-2"	1" φ	2	2	6	3'-0"	
19'	12"	47	42.2	1" φ	8"	19'-1"	1" φ	2	2	7	2'-8"	
20'	12 1/2"	50	44.4	1" φ	7 3/4"	20'-1"	1" φ	3	3	7	2'-8"	
21'	13"	51	46.7	1" φ	7 3/4"	21'-1"	1" φ	3	3	7	2'-10"	
22'	13"	52	48.9	1" φ	7"	22'-1"	1" φ	3	3	7	3'-0"	
23'	13 1/2"	53	51.1	1" φ	6 3/4"	23'-1"	1" φ	3	3	8	2'-9"	
24'	14"	54	53.3	1" φ	6 3/4"	24'-0"	1" φ	3	3	8	2'-10"	
25'	14 1/2"	55	55.6	1" φ	6 3/4"	25'-0"	1" φ	3	3	8	3'-0"	



- (A) **GENERAL.** This drawing illustrates approach slab design and shall also be a working drawing for the contractor.
- (B) **WHEN TO BE USED.** Except for filled-spandrel arches, approach slabs shall be used in connection with all new abutments where the approach pavement is concrete, or brick, or bituminous with curbs.
- (C) **METHOD OF MEASUREMENT.** Approach slabs shall be measured and estimated by the square yard. Payment per sq. yd. shall include the slab concrete, reinforcing steel, headers and side curbs (if required), edge beams, expansion joint, any extra concrete needed under the slab of its seat, and holes for pavement jacking. **CONCRETE shall be Class C.**
- (D) **ADAPTATION.** For bridges other than the types indicated hereon, the approach slab shall be adapted to fit the end of the bridge.
- (E) **BEARING.** One end of the approach slab will rest on the bridge abutment; the other end shall have at least two feet bearing on solid earth.
- (F) **EXTRA LENGTH.** If, because of the contractor's operations, a longer slab than specified on project plans is required in order to provide this bearing, the contractor shall, at his own expense, provide the necessary additional length with additional thickness and reinforcing steel as tabulated or required hereon (see Note "H").
- (G) **LENGTH LIMITATIONS.** The length "L" may generally be selected by the designer as equal to "H" (the height of abutment from bottom of footing to top of curb), or in the case of a skewed bridge as "H" multiplied by the secant of the angle of skew (to nearest foot). However, the estimated distance from the abutment to solid ground should be taken into account, and the length, as computed by the above rule, increased or decreased to fit. The length shall be not less than 8 ft nor more than 25 ft, except that the latter should be exceeded if it is anticipated that by a slightly greater length an appreciably better bearing can be obtained. A length shorter than the computed "L" should be used only in case of bearing on rock, shale, or old masonry. A length greater than 25 ft may also be required as per Note "G". In case such greater length is required, the slab thickness and reinforcing steel can be determined by extrapolation from tabulated dimensions and quantities.
- (I) **APPROACH SLABS FOR STEEL TRUSS BRIDGE** same as indicated for steel beam bridge.
- (J) **SURFACE COURSE.** In case of brick or bituminous surface course on adjacent pavement, the same shall be carried over approach slabs. Where the adjacent pavement is concrete, the top of the approach slab shall be made flush with top of pavement.
- (K) **SIDE CURBS** shall be provided at edges of slab when a separate surface course is used on the approach slab.
- (L) **EXPANSION JOINT** at the approach end of the slab shall be constructed similar to the expansion joints in the approach pavement, but in no case shall be less than one inch.
- (M) **FINISH** shall be the same as specified for concrete base course in case of separate surface course and shall be the same as for concrete pavement when so used.
- (N) **CONSTRUCTION SPECIFICATIONS** in force on date of contract shall govern.
- (O) **ANCHOR** all approach slabs to abutments. If approach slabs are added to existing abutments, with no provision for anchorage, holes shall be drilled in slab seats and anchors grouted in place. Anchors shall be 3/4" φ @ 3'-0" ctrs. unless otherwise indicated on abutment details. If anchors are added to existing abutments, they shall extend at least 1'-6" into slab seats and hooks provided on ends projecting into approach slabs.
- (P) **HOLES FOR PAVEMENT JACKING** shall be provided on all approach slabs. The number of transverse lines of holes shall be: Two lines for slab length "L" = 8' to 14' inclusive. Three lines for slab length "L" = 15' to 20' inclusive. Four lines for slab length "L" = 21' to 25' inclusive.

REVISIONS: 3/8/39 (Conc. Class.)	STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES
STANDARD APPROACH SLAB FOR BRIDGES FOR PAVEMENT WIDTHS OF 20 FT. TO 30 FT.	
H-15-33 LOADING	
APPROVED: [Signature] DATE: 3-8-39 DESIGNED: [Signature]	DRAWING NUMBER: AS-35

22

17

11

8.5

8.5

11

17

22

22

17

11

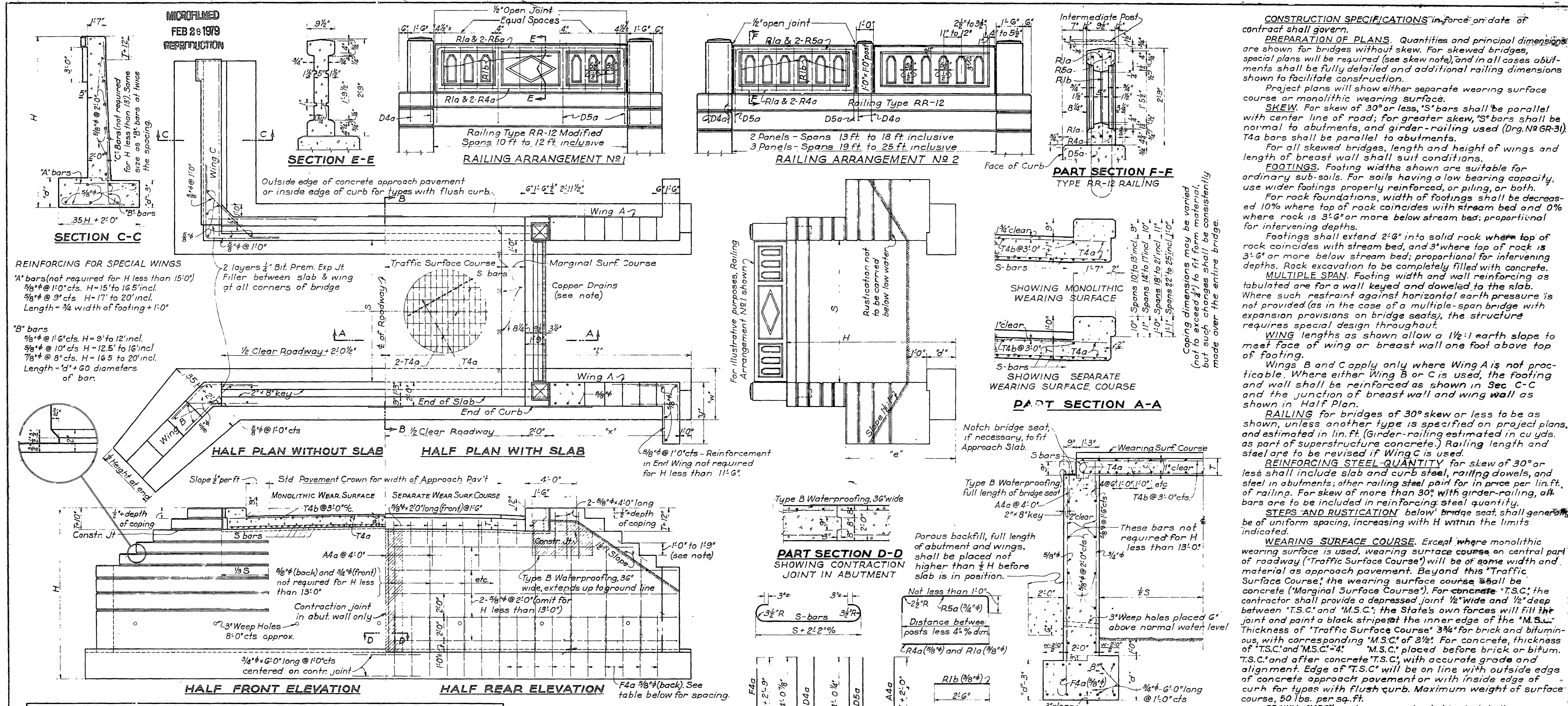
8.5

8.5

11

17

22



CONSTRUCTION SPECIFICATIONS in force on date of contract shall govern.

PREPARATION OF PLANS. Quantities and principal dimensions are shown for bridges without skew. For skewed bridges, special plans will be required (see skew note), and in all cases abutments shall be fully detailed and additional railing dimensions shown to facilitate construction.

Project plans will show either separate wearing surface course or monolithic wearing surface.

SKEW. For skew of 30° or less, 'S' bars shall be parallel with center line of road; for greater skew, 'S' bars shall be normal to abutments, and girder-railing used (Drg. No. GR-3). T4 bars shall be parallel to abutments.

For all skewed bridges, length and height of wings and length of breast wall shall suit conditions.

FOOTINGS. Footing widths shown are suitable for ordinary sub-soils. For soils having a low bearing capacity, use wider footings properly reinforced, or piling, or both.

For rock foundations, width of footings shall be decreased 10% where top of rock coincides with stream bed and 0% where rock is 3'-6" or more below stream bed; proportional for intervening depths.

Footings shall extend 2'-6" into solid rock where top of rock coincides with stream bed, and 3'-6" where top of rock is 3'-6" or more below stream bed; proportional for intervening depths. Rock excavation to be completely filled with concrete.

MULTIPLE SPAN. Footing width and wall reinforcing as tabulated are for a wall keyed and doweled to the slab. Where such restraint against horizontal earth pressure is not provided (as in the case of a multiple-span bridge with expansion provisions on bridge seats), the structure requires special design throughout.

WING lengths as shown allow a 1 1/2:1 earth slope to meet face of wing or breast wall one foot above top of footing.

Wings B and C apply only where Wing A is not practicable. Where either Wing B or C is used, the footing and wall shall be reinforced as shown in Sec C-C and the junction of breast wall and wing wall as shown in Half Plan.

RAILING for bridges of 30° skew or less to be as shown, unless another type is specified on project plans, and estimated in lin. ft. (Girder-railing estimated in cu yds. as part of superstructure concrete.) Railing length and steel are to be revised if Wing C is used.

REINFORCING STEEL QUANTITY for skew of 30° or less shall include slab and curb steel, railing dowels, and steel in abutments; other railing steel paid for in price per lin. ft. of railing. For skew of more than 30° with girder-railing, all bars are to be included in reinforcing steel quantity.

STEEL AND RUSTICATION below bridge seat shall generally be of uniform spacing, increasing with H within the limits indicated.

WEARING SURFACE COURSE. Except where monolithic wearing surface is used, wearing surface course on central part of roadway ("Traffic Surface Course") will be of some width and material as approach pavement. Beyond this "Traffic Surface Course", the wearing surface course shall be concrete ("Marginal Surface Course"). For concrete, T.S.C. the contractor shall provide a depressed joint 1/2" wide and 1/2" deep between T.S.C. and M.S.C.; the State's own forces will fill the joint and paint a black stripe at the inner edge of the "M.S.C." thickness of "Traffic Surface Course" 3/4" for brick and bituminous, with corresponding "M.S.C." of 1/2". For concrete, thickness of T.S.C. and M.S.C. - 4". M.S.C. placed before brick or bitum. T.S.C. and after concrete T.S.C. with accurate grade and alignment. Edge of T.S.C. will be on line with outside edge of concrete approach pavement or with inside edge of curb for types with flush curb. Maximum weight of surface course, 50 lbs. per sq. ft.

CROWN. M.S.C. (except on a super-elevated bridge) shall serve as gutter, with lateral slope of 1/2" per ft. T.S.C. shall be crowned to fit approach pavement. On super-elevated bridges, the full width between curbs shall conform to super-elevation. Top of slab and bridge seat shall be parallel with top of wearing surface course.

COPPER DRAINS shall be provided, as indicated, only where brick or bitum. T.S.C. is used. Drain to consist of 1" copper tubing, flush with top of slab, and projecting 1" below and covered with copper screen, 16 mesh, 3/8". Provide six drains for all spans less than 15 ft. and eight for greater spans. Payment included with concrete.

CONCRETE in slab, curb and railing, Class C; in walls and footings, Class E. Wall and footing concrete to be listed separately in quantities.

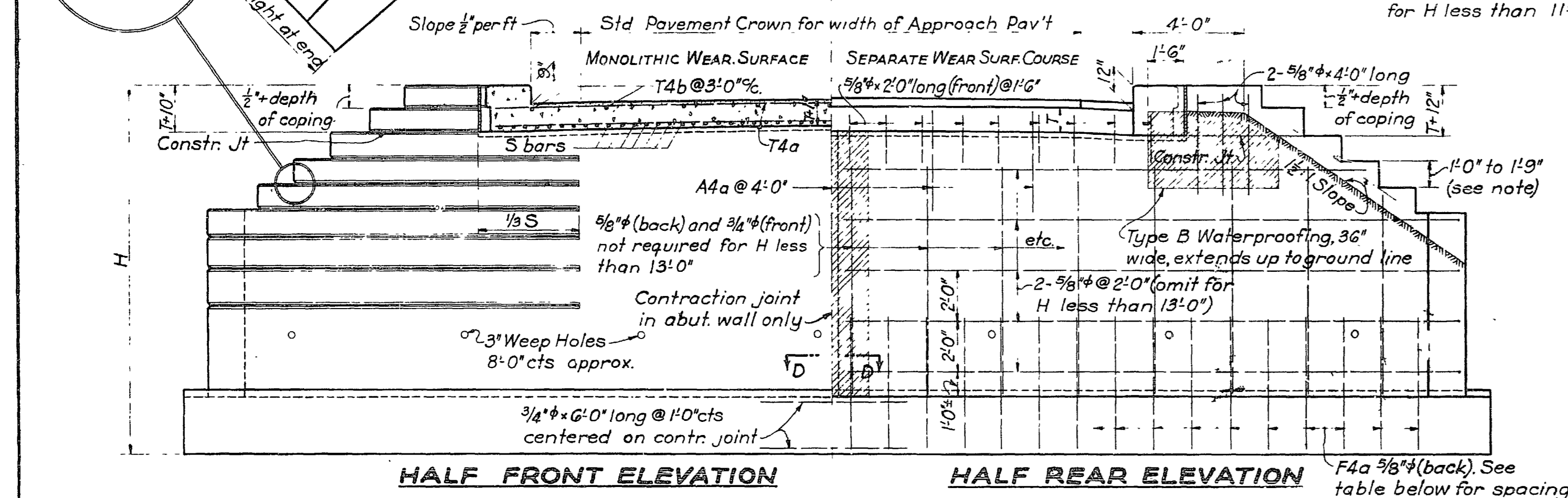
CAMBER. Bridge camber shall conform to profile of highway except that on a straight grade a slight camber (max. 1/100 of span) will be allowed to insure against sag.

REINFORCING FOR SPECIAL WINGS

'A' bars (not required for H less than 15'-0")
 2 layers 1/2" Bit. Prem. Exp. Jt. Filler between slab & wing at all corners of bridge

5/8" @ 1'-0" cts. H = 15' to 16'-5" incl.
 5/8" @ 3" cts. H = 17' to 20' incl.
 Length = 3/4 width of footing + 1'-0"

'B' bars
 5/8" @ 1'-6" cts. H = 9' to 12' incl.
 5/8" @ 10" cts. H = 12.5' to 16' incl.
 5/8" @ 8" cts. H = 16.5 to 20' incl.
 Length = d + 60 diameters of bar.



Dimensions		One-half Abutment with Wing A				F4a bars 5/8"
		Cu. Yds. of Concrete	Sq. Yds. Type B Waterproofing	Lbs. of Steel		
H	w d x y e	30'Rdy	24'Rdy	30'Rdy	24'Rdy	Spac.
9'-0"	3'-6" 2'-6" 6'-9" 2'-0" 6'-10"	24'-9"	21'-9"	9	7.54	7
9'-6"	3'-6" 2'-6" 7'-6" 2'-0" 6'-10"	25'-6"	22'-6"	10	7.77	8
10'-0"	3'-6" 2'-6" 8'-3" 2'-0" 6'-10"	26'-3"	23'-3"	11	8.00	9
10'-6"	3'-6" 2'-6" 9'-0" 2'-0" 6'-10"	27'-0"	24'-0"	12	8.23	10
11'-0"	3'-6" 2'-6" 9'-9" 2'-0" 6'-10"	27'-9"	24'-9"	13	8.46	11
11'-6"	3'-6" 2'-6" 8'-6" 4'-0" 8'-2"	26'-6"	23'-6"	15	8.09	13
12'-0"	3'-6" 2'-6" 9'-0" 4'-3" 8'-4"	27'-0"	24'-0"	16	8.43	14
12'-6"	3'-6" 2'-6" 9'-6" 4'-3" 8'-6"	27'-6"	24'-6"	17	8.69	15
13'-0"	3'-6" 2'-6" 10'-0" 4'-9" 8'-8"	28'-0"	25'-0"	19	9.54	16
13'-6"	4'-1" 2'-6" 10'-6" 5'-0" 8'-10"	28'-6"	25'-6"	20	10.15	17
14'-0"	4'-2" 2'-6" 11'-3" 5'-0" 8'-10"	29'-3"	26'-3"	21	10.63	19
14'-6"	4'-4" 2'-6" 11'-9" 5'-3" 8'-10"	29'-9"	26'-9"	23	11.25	20
15'-0"	4'-6" 2'-6" 12'-6" 5'-3" 9'-0"	30'-6"	27'-6"	24	11.99	21
15'-6"	4'-8" 2'-6" 13'-0" 5'-6" 9'-2"	31'-0"	28'-0"	26	12.43	25
16'-0"	4'-10" 2'-6" 13'-9" 5'-6" 9'-2"	31'-9"	28'-9"	27	13.35	24
16'-6"	4'-11" 2'-6" 14'-3" 5'-9" 9'-4"	32'-3"	29'-3"	28	13.85	25
17'-0"	5'-1" 2'-6" 15'-0" 5'-9" 9'-4"	33'-0"	30'-0"	30	14.65	27
17'-6"	5'-3" 2'-6" 15'-6" 6'-0" 9'-6"	33'-6"	30'-6"	32	15.37	28
18'-0"	5'-5" 2'-6" 15'-10" 6'-0" 9'-8"	33'-10"	30'-10"	32	15.74	29
18'-6"	5'-7" 2'-6" 16'-4" 6'-3" 9'-11"	34'-4"	31'-4"	34	16.94	30
19'-0"	5'-9" 2'-6" 16'-9" 6'-3" 10'-4"	34'-9"	31'-9"	35	18.06	31
19'-6"	5'-10" 2'-6" 17'-3" 6'-3" 10'-4"	35'-3"	32'-3"	36	19.93	35
20'-0"	6'-0" 2'-6" 18'-0" 6'-6" 10'-4"	36'-0"	33'-0"	38	22.99	34
					20.98	7.5
					19.04	7.5
					17.00	9"
					15.00	9"
					13.00	10"
					11.00	11"
					9.00	12"
					7.00	13"
					5.00	14"
					3.00	15"
					1.00	16"

Approximate Quantities

Slab Details		Separate Wear Surf. Course				1" Monolithic Wearing Surface				Railing Dowels				
		30'Rdy	24'Rdy	30'Rdy	24'Rdy	30'Rdy	24'Rdy	30'Rdy	24'Rdy					
S	T	Mark	Size	Spac.	Length	Cu. Yds.	Lbs.	Cu. Yds.	Lbs.	Cu. Yds.	Lbs.	D4a	D5a	Wt.
		30'Rdy	24'Rdy	30'Rdy	24'Rdy	30'Rdy	24'Rdy	30'Rdy	24'Rdy	30'Rdy	24'Rdy	N#	N#	Lbs.
10'-0"	10 1/2"	S5a	3/4"	4 1/2"	14'-0"	84	69	17.8	3090	13.4	2290	405	84	16.7
11'-0"	11"	S5a	3/4"	4 1/2"	15'-0"	88	72	19.6	3410	15.0	2530	458	94	18.7
12'-0"	11 1/2"	S6a	7/8"	5 1/2"	13'-0"	69	57	19.6	3410	16.6	2810	515	104	20.8
13'-0"	12"	S6a	7/8"	5 1/2"	17'-0"	72	60	21.9	3740	18.4	3090	574	114	23.0
14'-0"	12 1/2"	S6a	7/8"	5 1/2"	18'-0"	76	62	24.1	4080	20.2	3390	637	123	25.2
15'-0"	13"	S6a	7/8"	5"	19'-0"	79	65	26.4	4470	22.2	3640	732	135	27.6
16'-0"	13 1/2"	S6a	7/8"	5"	20'-0"	80	65	28.8	4860	24.2	3910	771	141	30.1
17'-0"	14"	S6a	7/8"	4 3/4"	21'-0"	84	69	31.4	5090	26.3	4180	843	154	32.7
18'-0"	14 1/2"	S7a	1"	6"	22'-0"	66	54	34.0	5410	28.4	4430	917	164	35.4
19'-0"	15"	S7a	1"	5 1/2"	23'-0"	69	57	36.7	5850	30.7	4820	995	177	38.2
20'-0"	15 1/2"	S7a	1"	5 1/2"	24'-0"	72	60	39.6	6270	33.0	5200	1076	191	41.2
21'-0"	16"	S7a	1"	5 1/2"	25'-0"	76	62	42.5	6810	35.5	5560	1160	206	44.1
22'-0"	16 1/2"	S7a	1 1/4"	5"	26'-0"	80	65	46.2	7340	38.5	5970	1267	221	47.9
23'-0"	17 1/4"	S7a	1 1/4"	4 3/4"	27'-0"	84	69	49.9	7920	41.1	6500	1358	239	51.2
24'-0"	18"	S8a	1 1/2"	6"	28'-0"	66	54	53.9	8200	44.4	6700	1472	249	55.2
25'-0"	18 1/2"	S8a	1 1/2"	5 1/2"	29'-0"	69	57	56.7	8790	47.2	7250	1570	267	58.6

STANDARD SLAB BRIDGES

SPANS 10 TO 25 FT. HEIGHTS 9 TO 20 FT. ROADWAYS 24 AND 30 FT. H-15-33 LOADING

APPROVED:	DATE: 4-25-35	DRAWN:	TRACED:	CHECKED:	REVIEWED:	DRAWING NUMBER:
						SB-35

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES