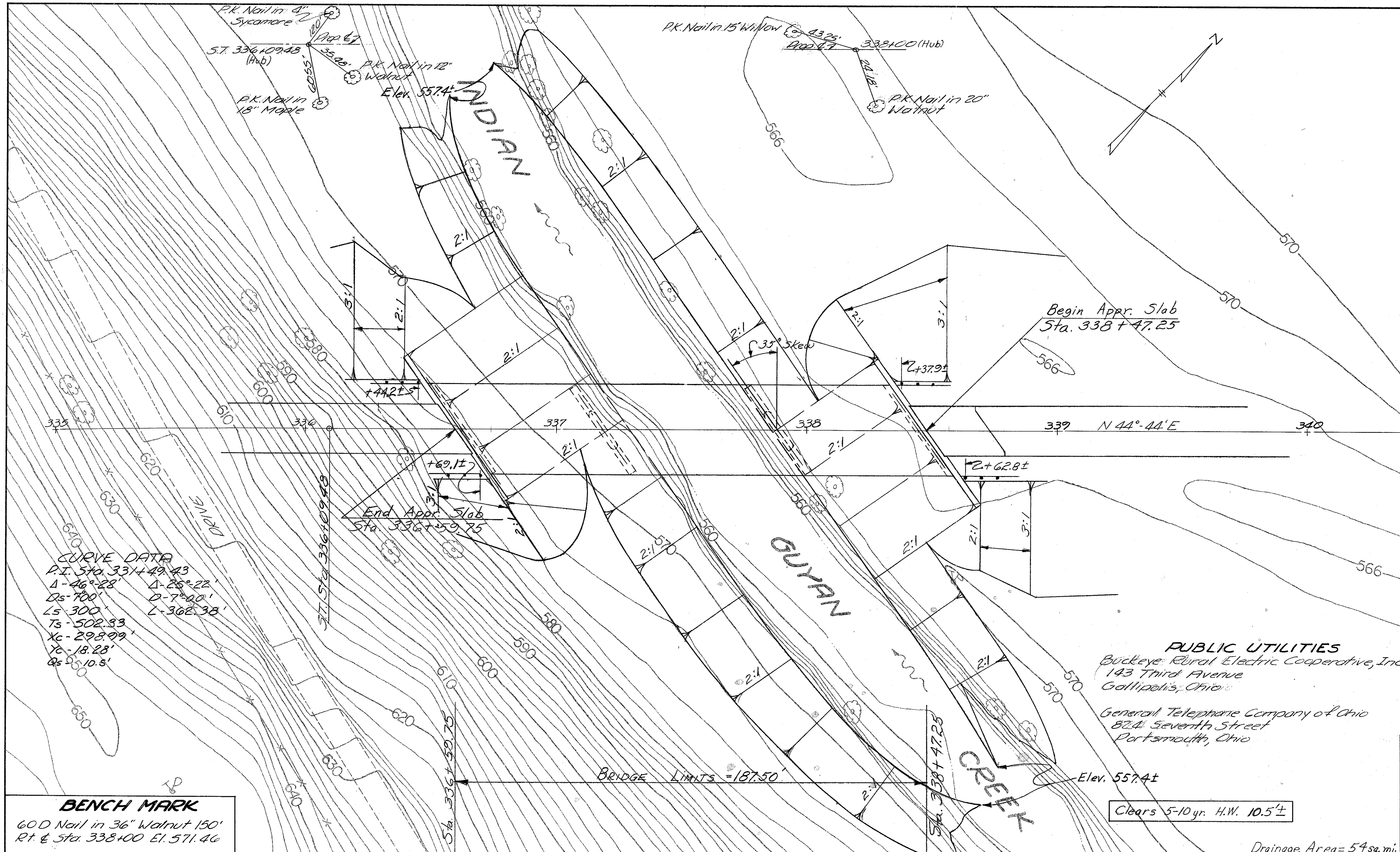


LAW-775-(271)(5.97)  
6.3 ± Mi. N. of Proctorville



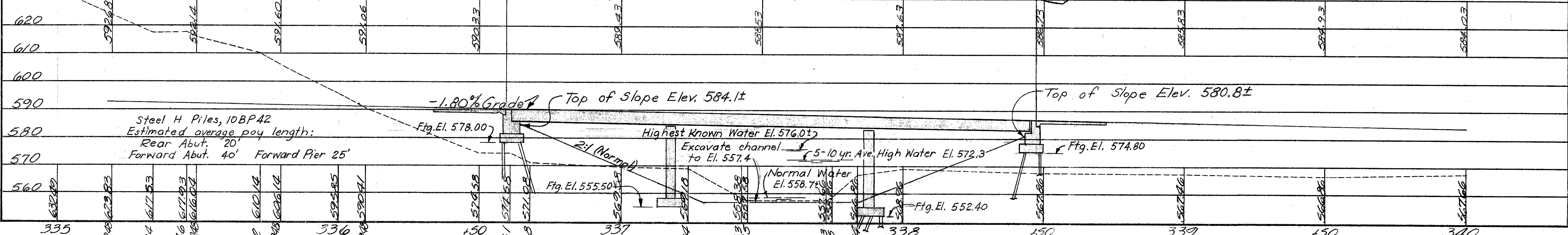
**CURVE DATA**  
 P.I. Sta. 331+49.43  
 $\Delta - 46^{\circ} 28'$   $\Delta - 25^{\circ} 22'$   
 $D_s - 700'$   $D - 7^{\circ} 00'$   
 $L_s - 300'$   $L - 368.38'$   
 $T_s - 502.33'$   
 $X_c - 298.99'$   
 $Y_c - 18.28'$   
 $R_s - 510.8'$

**Existing Structure**  
 TYPE: Steel Deck Girder  
 SPAN: 53'-2" c.l.  
 ROADWAY 13'-9" c.l.  
 SKEW: None  
 WEARING COURSE: Bit. on strip flooring  
 SUBSTRUCTURE: Stone, concrete cap  
 Q<sub>25</sub> = 5,300 cfs.

**PUBLIC UTILITIES**  
 Buckeye Rural Electric Cooperative, Inc.  
 143 Third Avenue  
 Gallipolis, Ohio  
 General Telephone Company of Ohio  
 824 Seventh Street  
 Portsmouth, Ohio

**PROPOSED STRUCTURE**  
 TYPE: Continuous steel beams with reinf. concrete deck and substructure  
 SPANS: 56'-70'-56' 1/2 brg's.  
 ROADWAY: 36' ± guard rails  
 LOADING: HS 20-44  
 SKEW: 35° R.F.  
 WEARING SURFACE: 1" Mono. Conc.  
 APPR. SLABS: AS-1-67 (25' long)  
 ALIGNMENT: Tangent  
 SUPERELEVATION: None

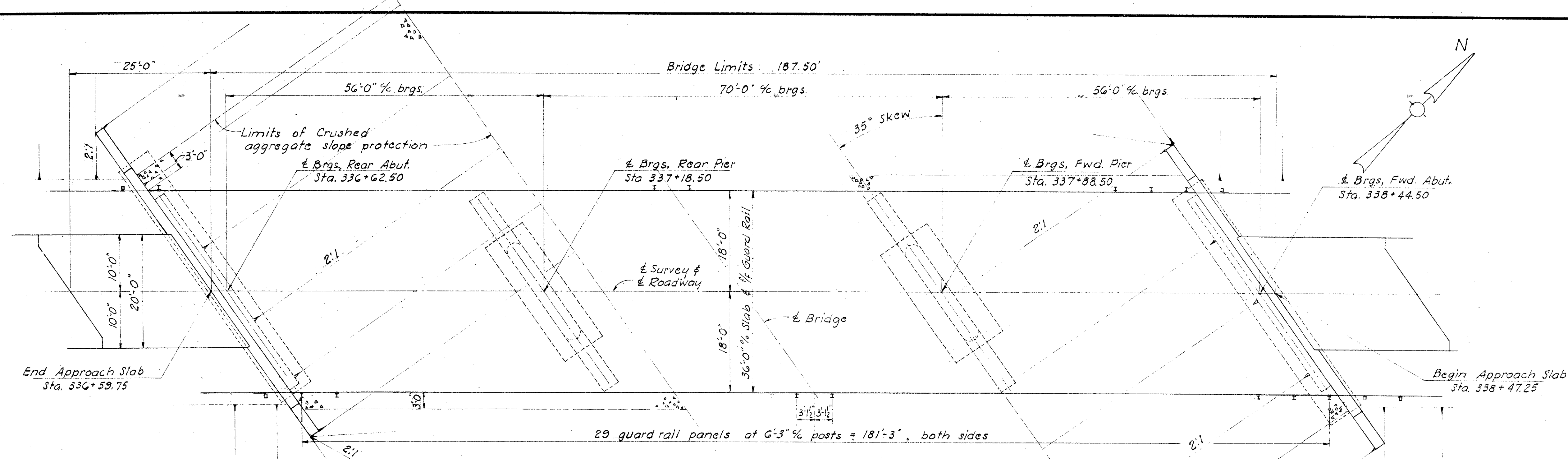
**BENCH MARK**  
 60D Nail in 36" Walnut 150'  
 Rt. & Sta. 338+00 El. 571.46



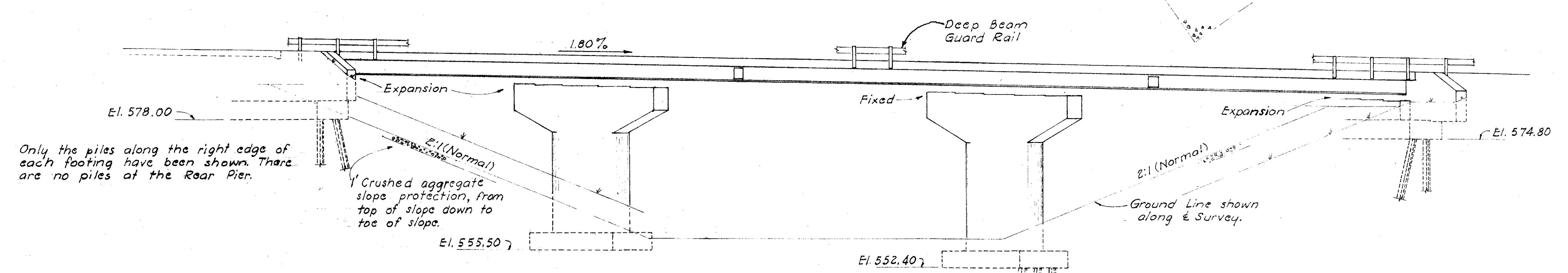
STATE OF OHIO  
 DEPARTMENT OF HIGHWAYS  
 BUREAU OF BRIDGES

**SITE PLAN**  
 BRIDGE NO. LAW-775-0637  
 OVER  
 INDIAN GUYAN CREEK  
 SEC. STA. 336+59.75  
 SCALE 0" = 10' = 20' = 40'  
 PRESENT TOPOGRAPHY  
 SURVEYED DRAWN DESIGNED  
 PROPOSED WORK  
 DRAWN CHECKED REVIEWED  
 B.D.H. B.D.H. D.G.M. P.E. S.  
 BFG 1-22-69 JAN 31 1969

LAW-775-(2.71)(5.97)



GENERAL PLAN



ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawings SD-1-65 (Sheets 1, 2 & 3), dated 11-8-65, and RB-1-55, revised 2-2-59, and to Supplemental Specifications 808, 811 and 825, all dated 1-1-69.

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway Officials, 1965, including the Ohio Supplement to these specifications.

DESIGN DATA  
 Design Loading HS 20-44  
 Concrete Class C  
 Unit stress 1200 psi for superstructure  
 Unit stress 1333 psi for substructure  
 Structural Steel ASTM A36, unit stress 20,000 psi  
 Reinforcing Steel ASTM A615, A616, A617, unit stress 20,000 psi.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed.

PROCEDURE: The embankment shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the Forward Abutment and until original ground line is intersected behind the Rear Abutment. Benching into the existing slope, as defined by 203.09, will be required below the Rear Abutment. The benches shall be the minimum required width of 6 feet. The material cut out for the 6 ft. benches (plus any excess if the bench widths should exceed 6 ft.) shall be recompacted along with the new embankment material at the Contractor's expense. Excavation shall then be made for the abutments and piers.

PILES shall be driven to a minimum bearing capacity of 30 tons per pile at the Forward Pier and Forward Abutment.

PILES at the Rear Abutment shall be driven to firm contact with bedrock. If the length of penetration is approximately equal to the depth to bedrock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in 507.05 is not less than the following value for a pile hammer of the indicated energy rating:  
 42 tons per pile using a 11000 ft. lb. hammer  
 35 tons per pile using a 15000 ft. lb. or greater hammer.  
 If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 30 tons per pile.

FOUNDATION BEARING PRESSURE: Rear Pier Footing is designed for a maximum bearing pressure of 3.5 tons per sq. ft.

REAR PIER FOOTING shall be placed in bedrock at the elevation shown.

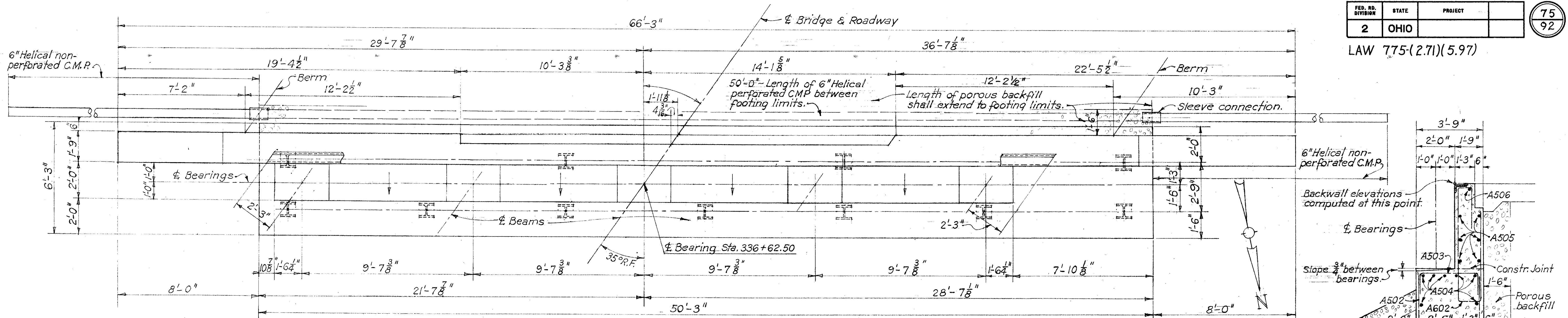
WELDS on non-stress-carrying members are shown thus:

ESTIMATED QUANTITIES

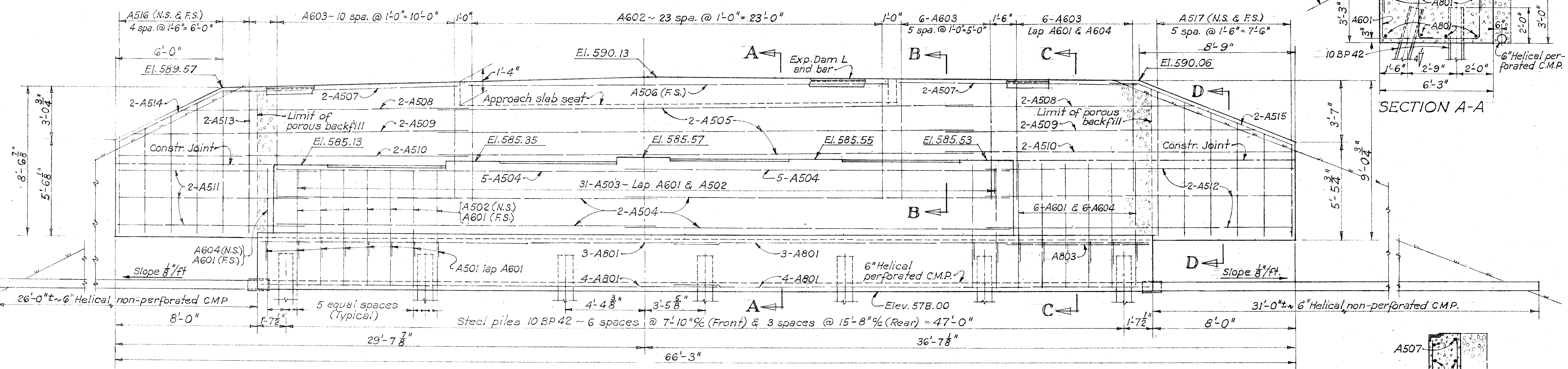
Item	Total	Unit	Description	Superstr.	Abuts.	Piers	General	As Built
202	Lump	Sum	Existing structure removed				Lump	
503	Lump	Sum	Cofferdams, cribs and sheeting				Lump	
503	Cu.yd.	327	Unclassified excavation		238	89		
503	Cu.yd.	22	Shale excavation			22		
505	Lump	Sum	First test pile				Lump	
507	Lin. ft.	1110	Steel piles, 10 BP 42		660	450		
509	Lb.	72,287	Reinforcing steel	48,460	9991	13,836		
511	Cu.yd.	178	Class C concrete, superstructure	178				
511	Cu.yd.	147	Class C concrete, piers above Footings			147		
511	Cu.yd.	96	Class C concrete, abutments above footings		96			
511	Cu.yd.	113	Class C concrete, footings		73	40		
513	Lb.	170,700	Structural steel	170,700				
514	Lb.	170,700	Field painting of structural steel	170,700				
517	Lin. ft.	375	Railing (deep beam rail with steel posts and bolts)		375			
518	Cu.yd.	57	Porous backfill		57			
518	Lin. ft.	100	6" perforated, helical corrugated metal pipe including specials, 707.01		100			
518	Lin. ft.	110	6" non-perforated helical corrugated metal pipe, 707.01		110			
801	Sq.yd.	850	Crushed aggregate slope protection				850	
808	Units	178	Water-reducing, set-retarding admixture	178				
825	Sq.yd.	803	Concrete surface treatment	784	19			

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						2 / 7
GENERAL PLAN AND ELEVATION NOTES AND ESTIMATED QUANTITIES						
BRIDGE No. LAW-775-0637 OVER INDIAN GUYAN CREEK						
DESIGNED JVG CPD	DRAWN CPD	TRACED	CHECKED JVG 12-30-68	REVIEWED BFG	DATE 1-22-69	REVISED

LAW 775-(2.71)(5.97)



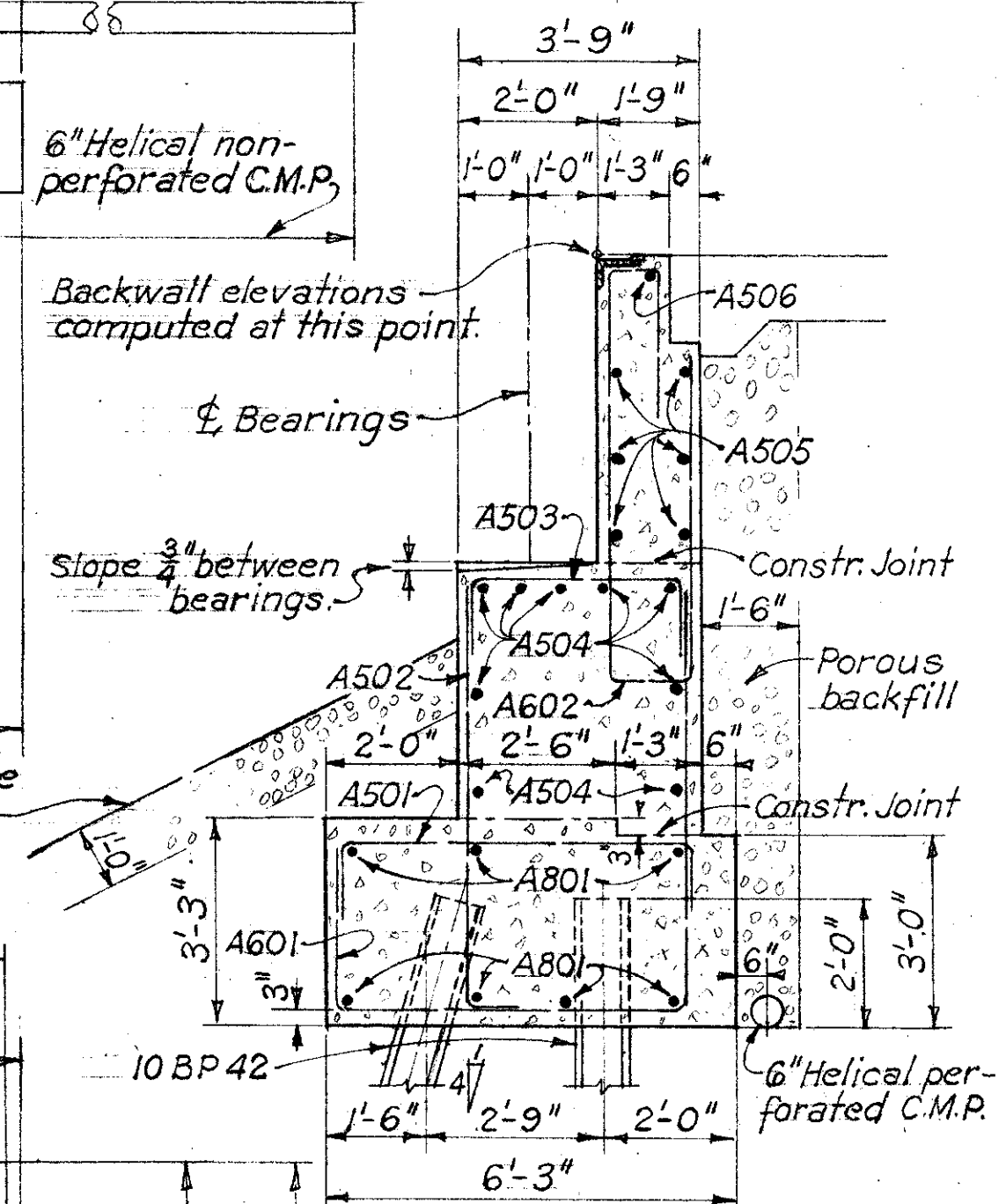
REAR ABUTMENT PLAN



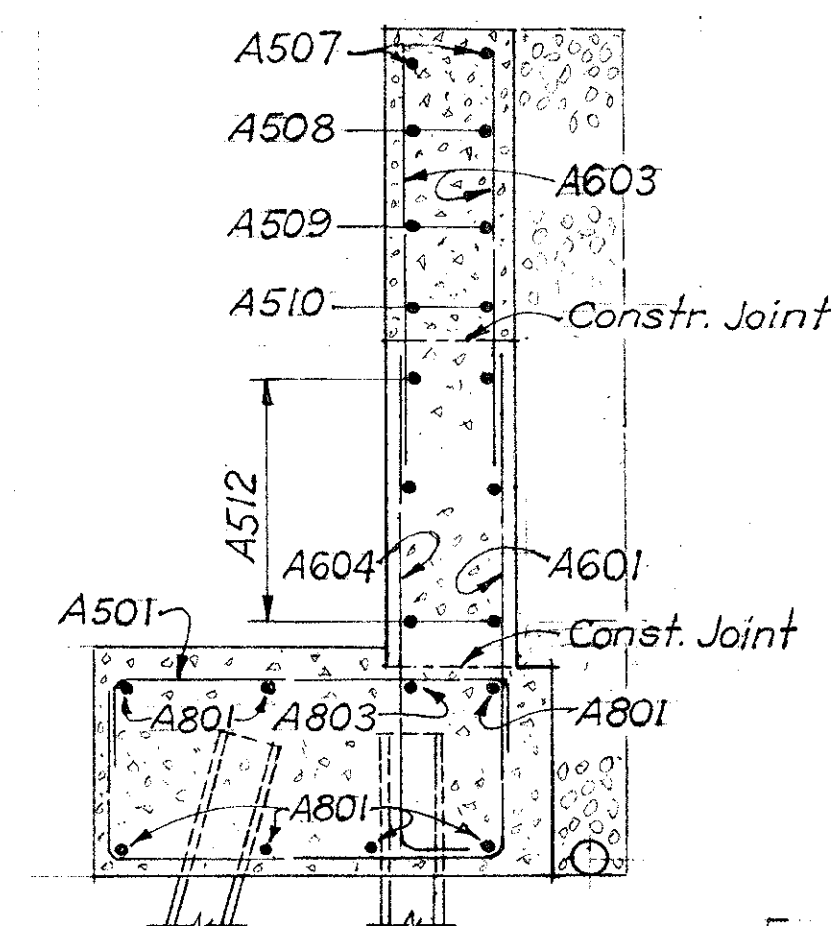
REAR ABUTMENT ELEVATION

POROUS BACKFILL shall extend from the bottom of the footing upward to the underside of the approach slab or to the finished grade surface and outward to the limits of the abutment footing.

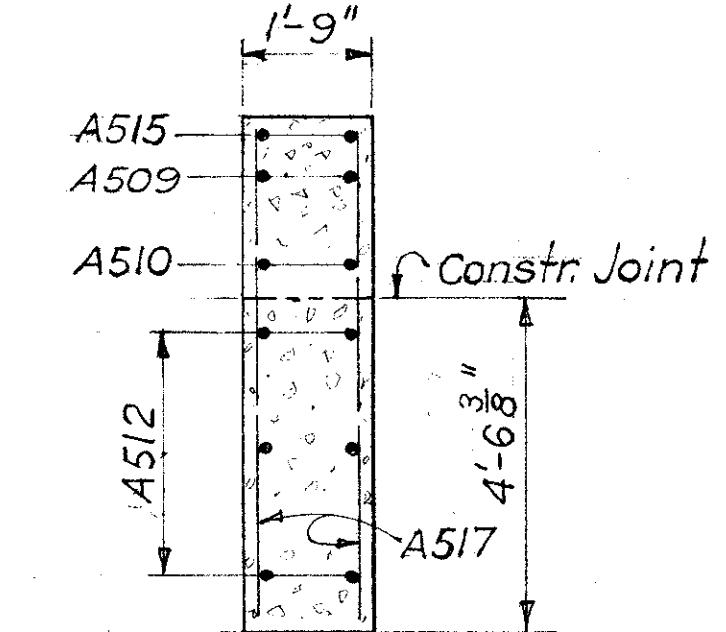
LEGEND: N.S. denotes near side.  
F.S. denotes far side.



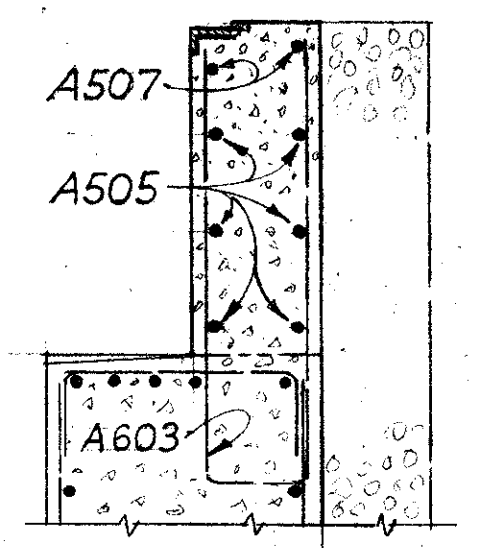
SECTION A-A



SECTION C-C



SECTION D-D



SECTION B-B

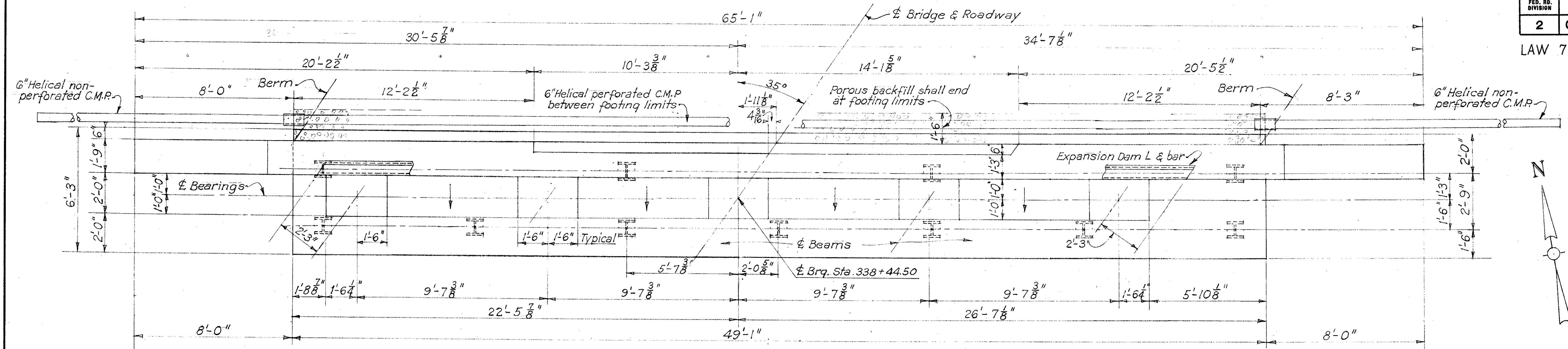
STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
DIVISION OF DESIGN AND CONSTRUCTION  
BUREAU OF BRIDGES

REAR ABUTMENT  
BRIDGE NO. LAW-775-0637  
OVER INDIAN GUYAN CREEK

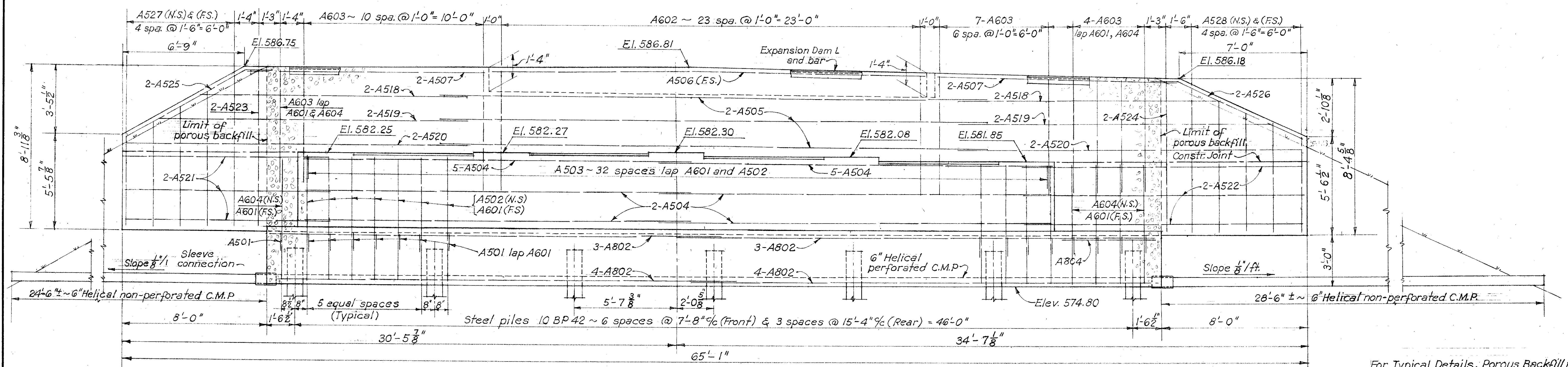
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.W.G.	J.W.G.			B.F.G.	1-22-69	

For notes and dimensions not shown on the above details see Section A-A.

LAW 775-(2.71)(5.97)



FORWARD ABUTMENT PLAN



FORWARD ABUTMENT ELEVATION

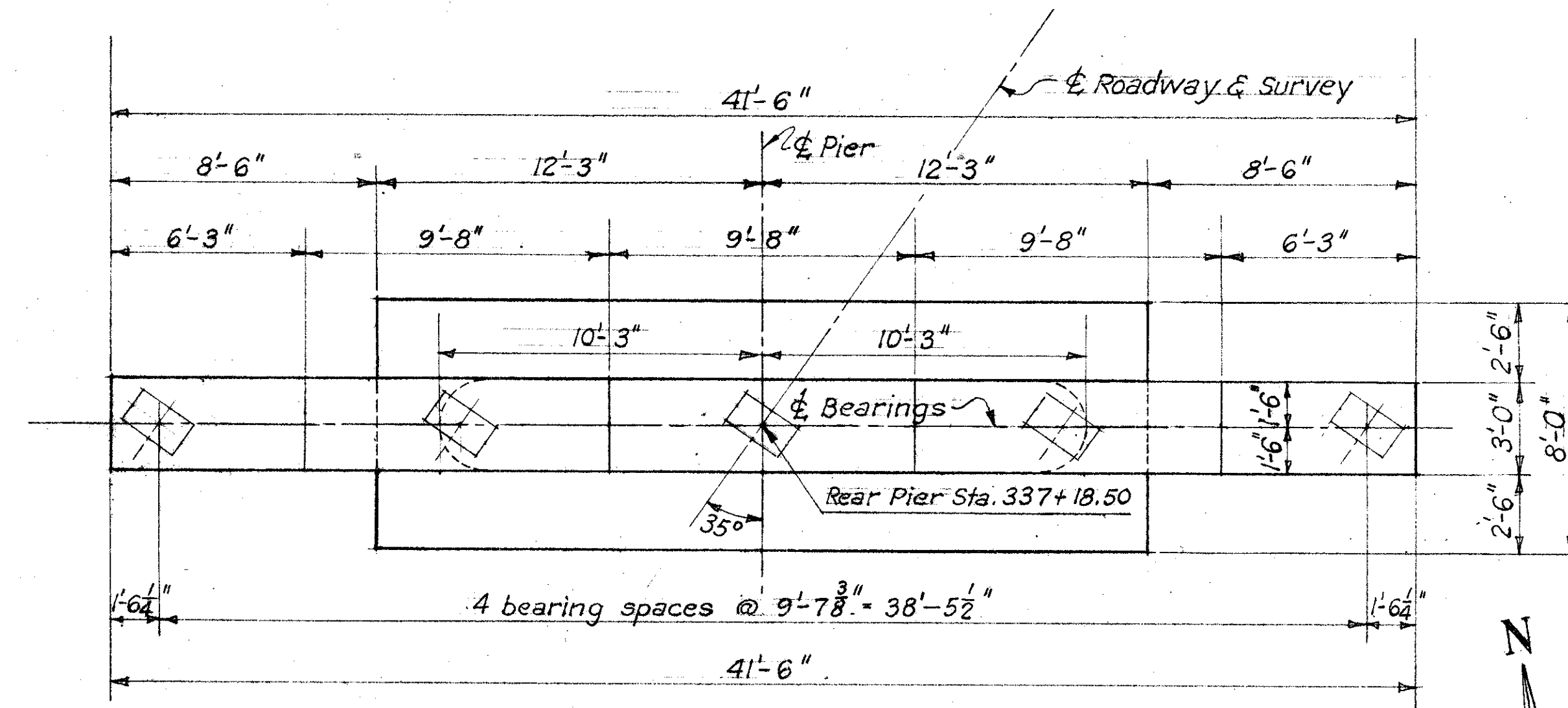
For Typical Details, Porous Backfill note see Rear Abutment Details.

LEGEND: N.S. denotes near side  
F.S. denotes far side

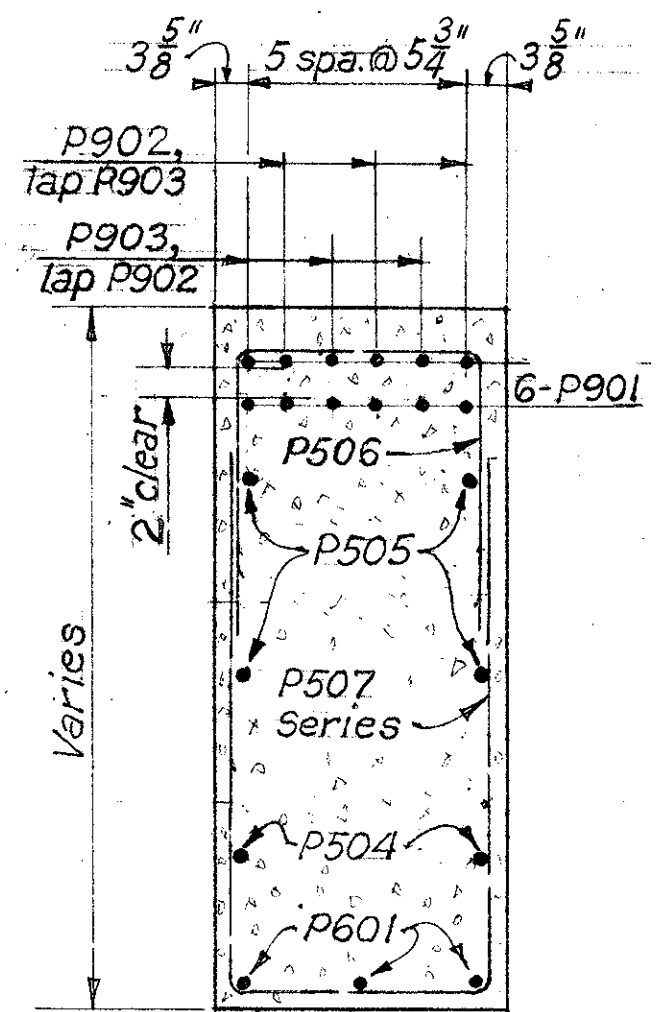
**FORWARD ABUTMENT**  
BRIDGE NO. LAW-775-0637  
OVER INDIAN GUYAN CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.			BFG	1-22-69	

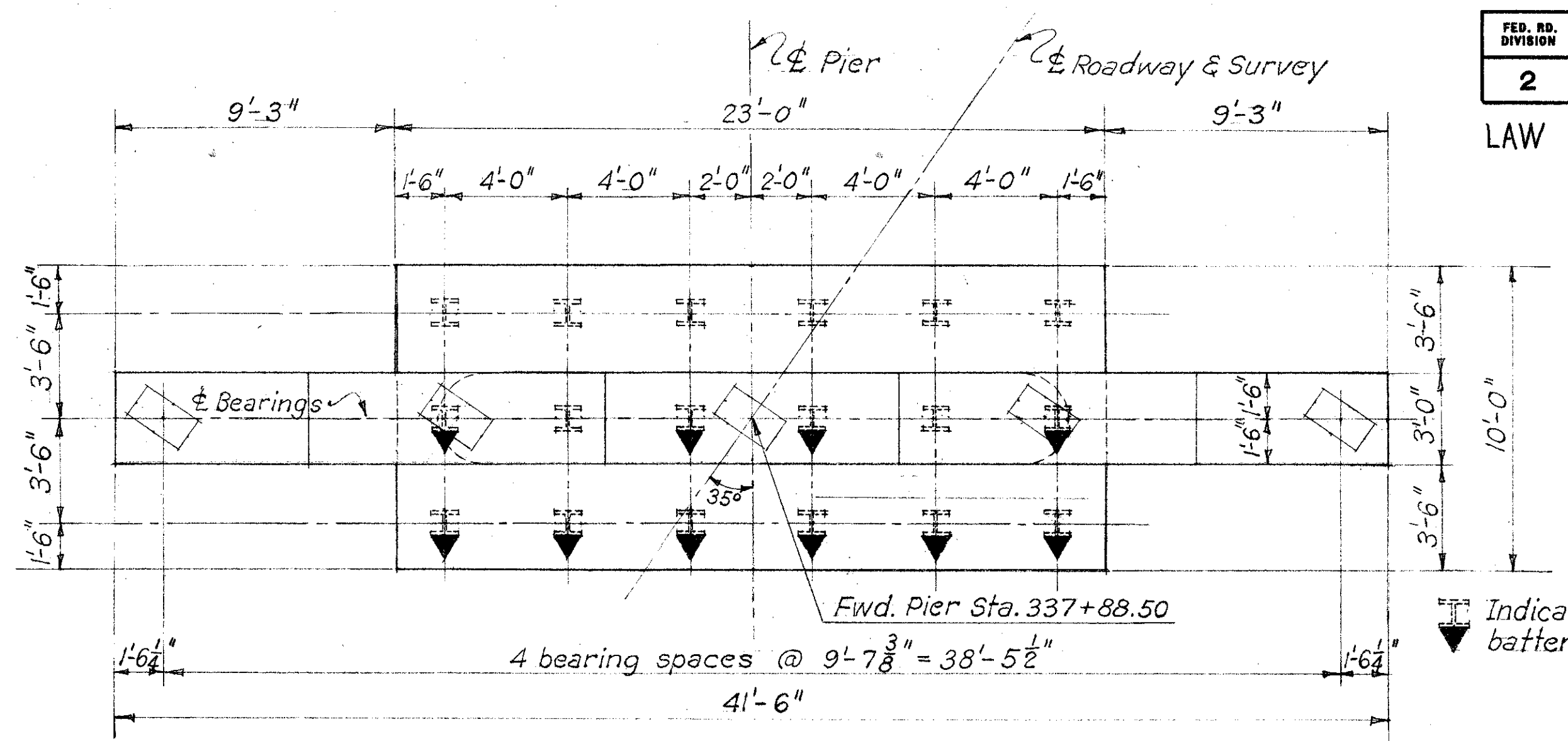
LAW 775-(2.71)(5.97)



REAR PIER PLAN

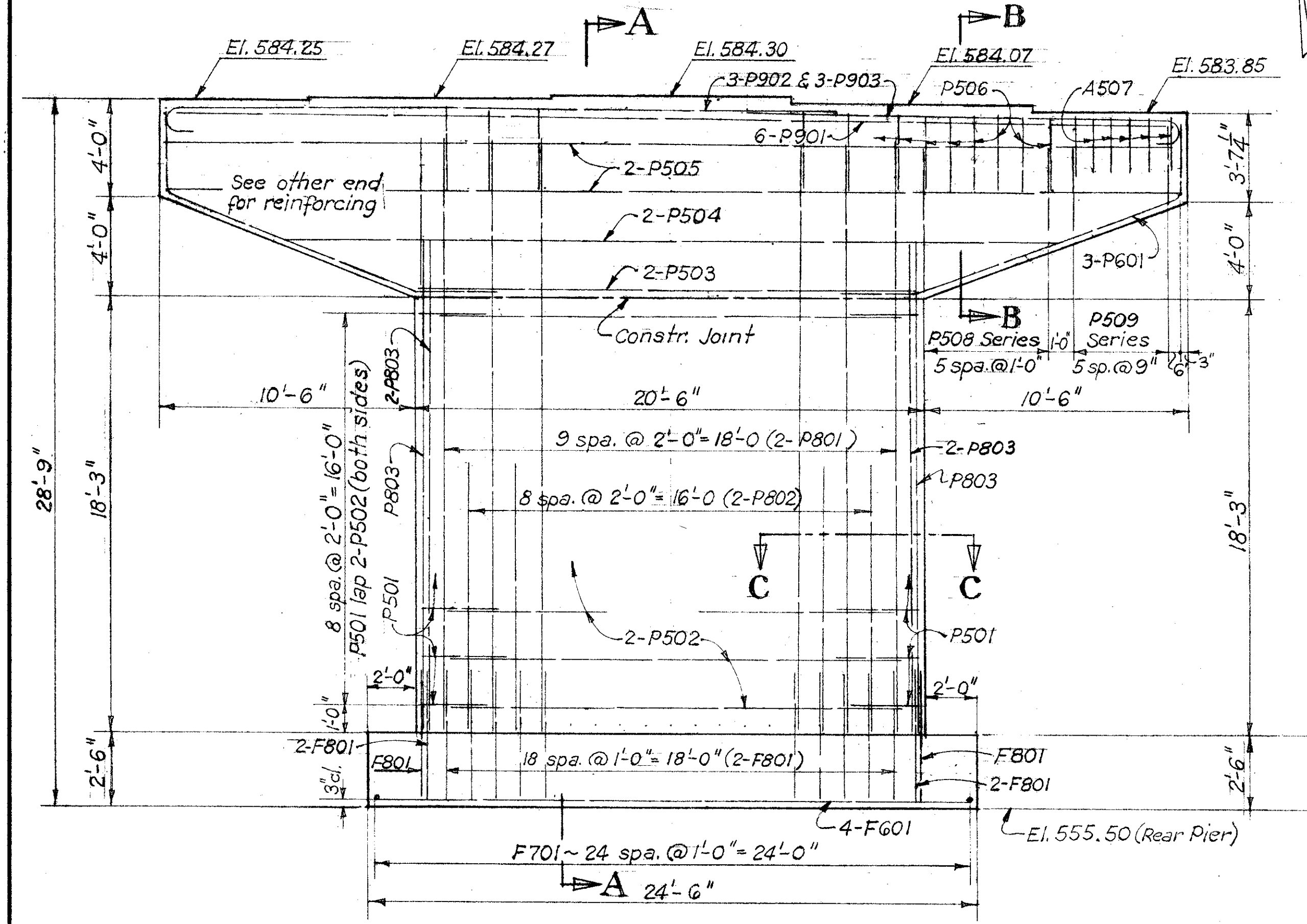


SECTION B-B (Typical)



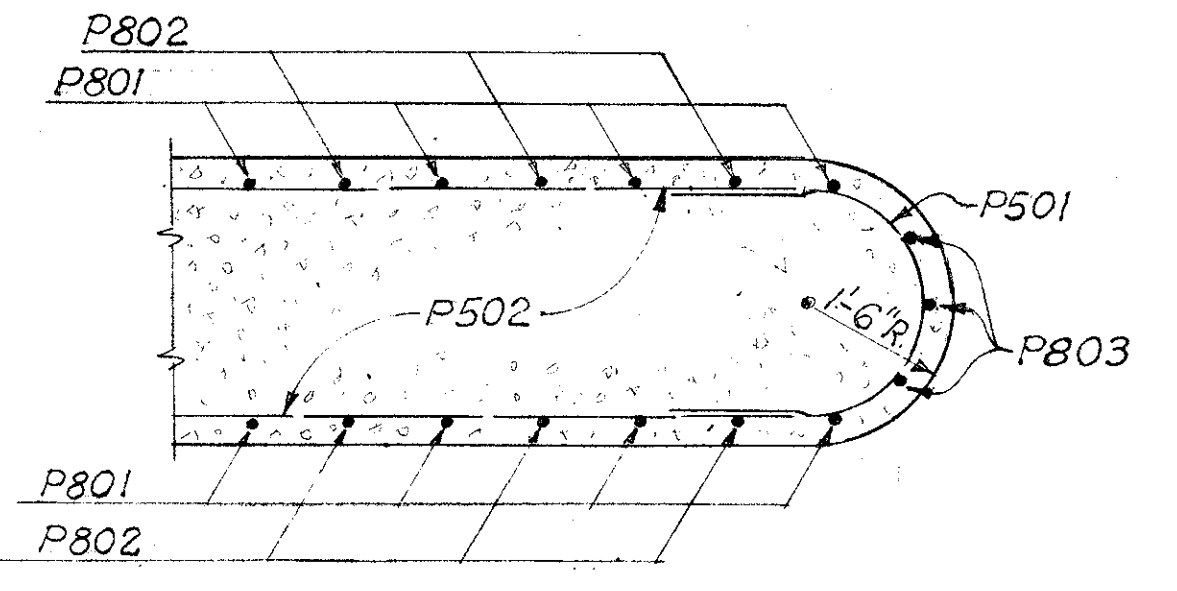
FORWARD PIER PLAN

Indicates pile battered 1:4

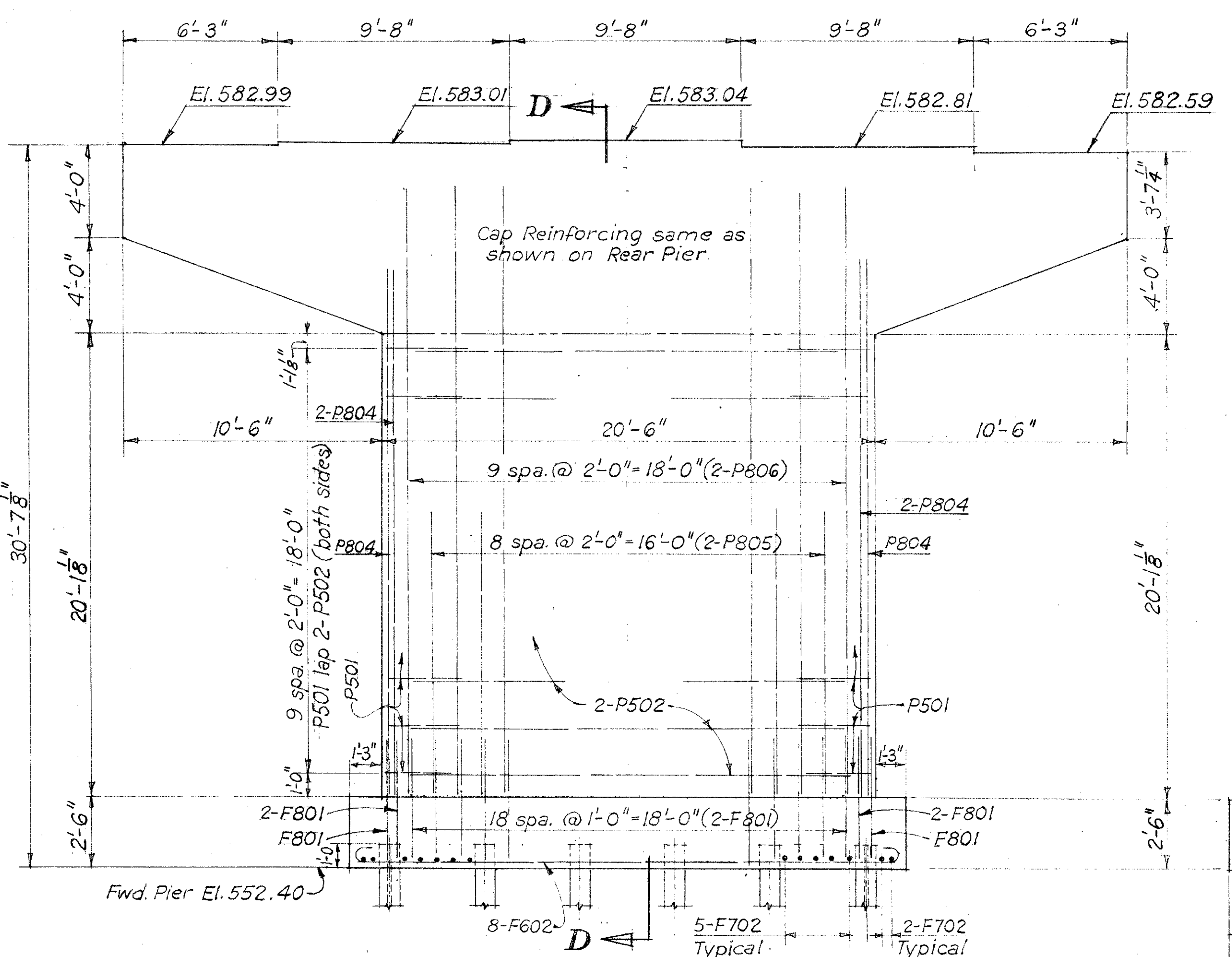


REAR PIER ELEVATION

SECTION A-A



SECTION C-C



FORWARD PIER ELEVATION

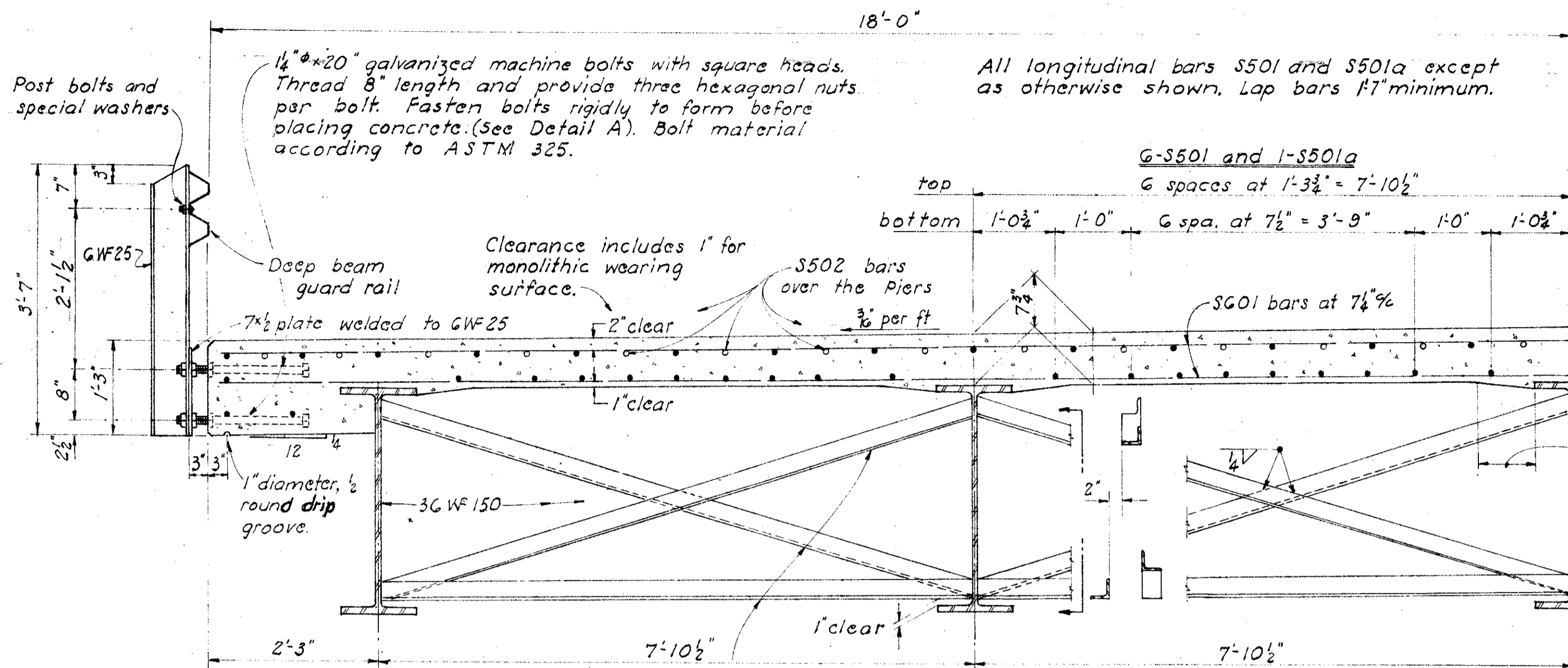
SECTION D-D

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with drilling of anchor bolt holes.

PIER DETAILS  
BRIDGE No. LAW-775-0637  
OVER INDIAN GUYAN CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.			BFG	1-22-69	

LAW 775-(2.71)(5.97)

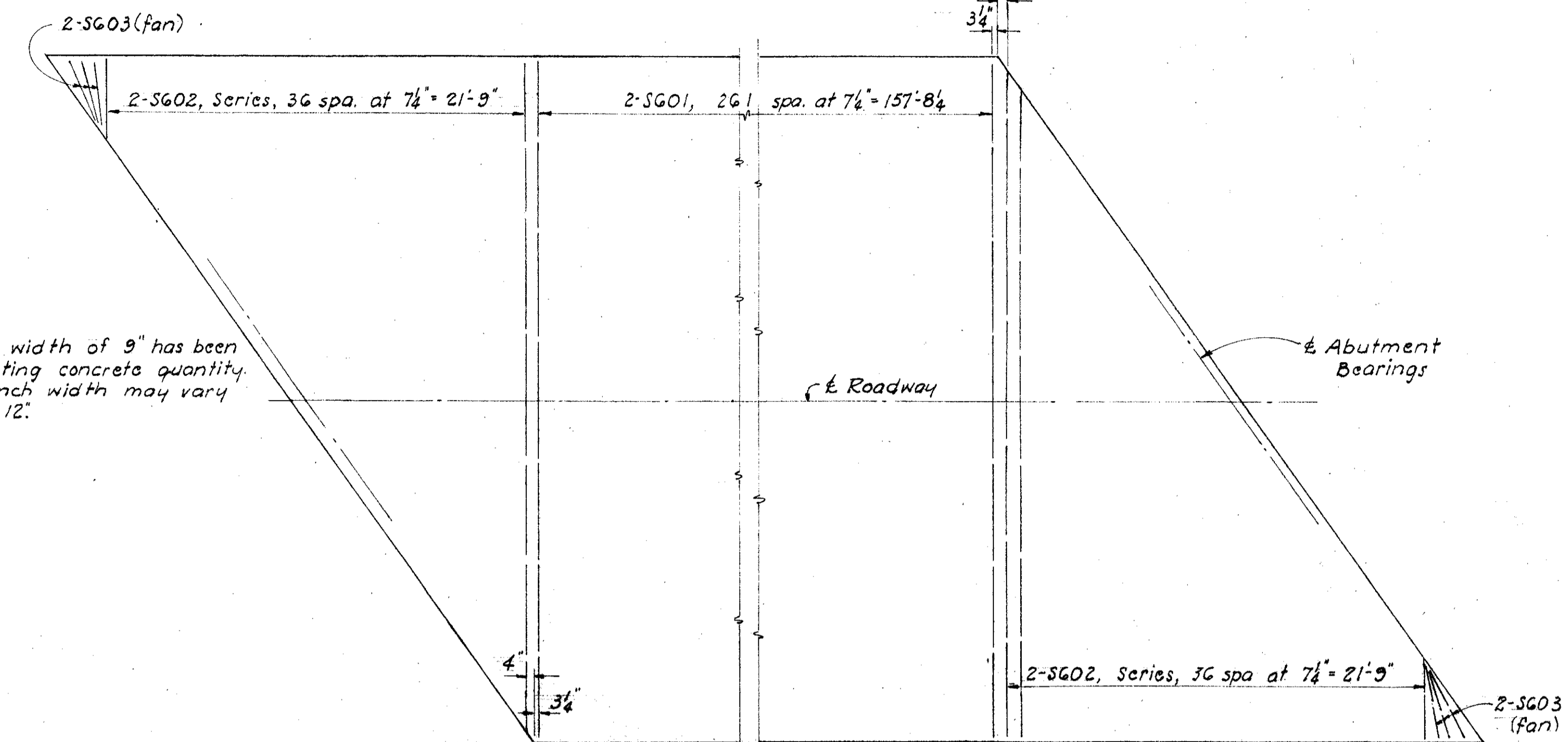


Symmetrical about  
Center Roadway

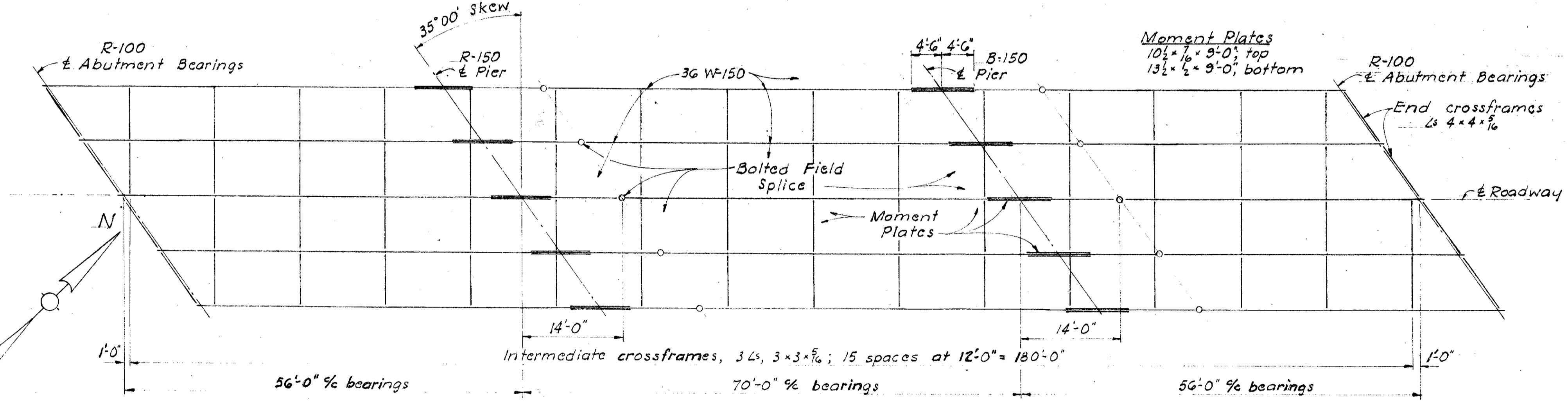
**DECK SLAB DEPTH:** The distance shown from top of deck slab to top of steel beam is the nominal dimension. The quantity of concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

Intermediate crossframe angles  $3 \times 3 \times \frac{5}{16}$ . Weld both sides of vertical leg and top side of horizontal leg to beam with  $\frac{1}{4}$ " continuous fillet weld.

HALF TRANSVERSE SECTION



PART PLAN OF DECK



STEEL FRAMING PLAN

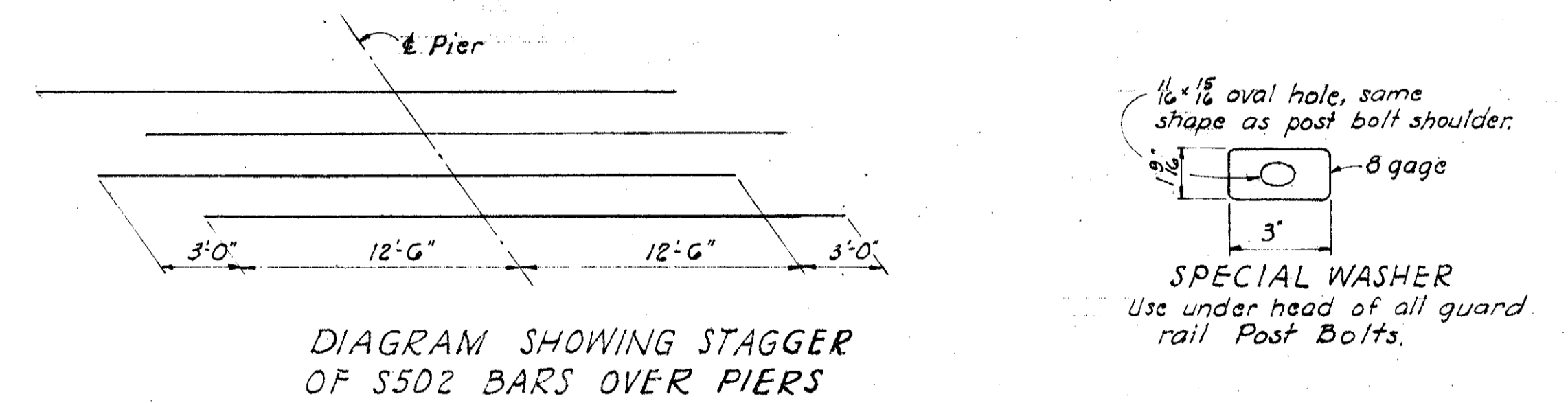
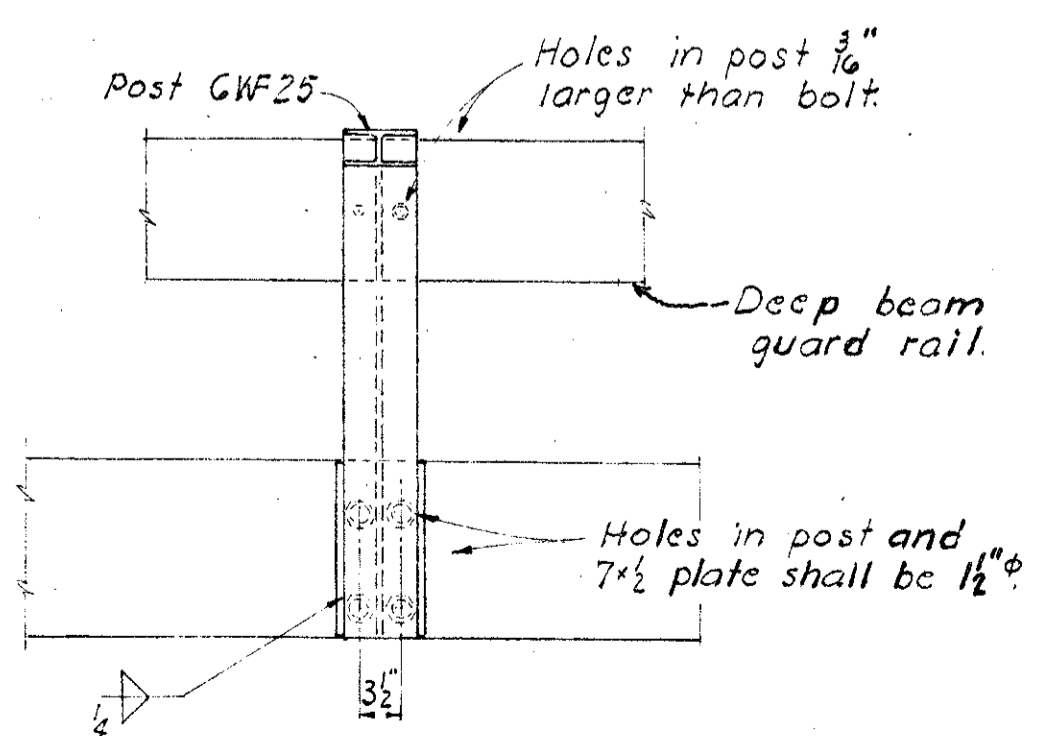
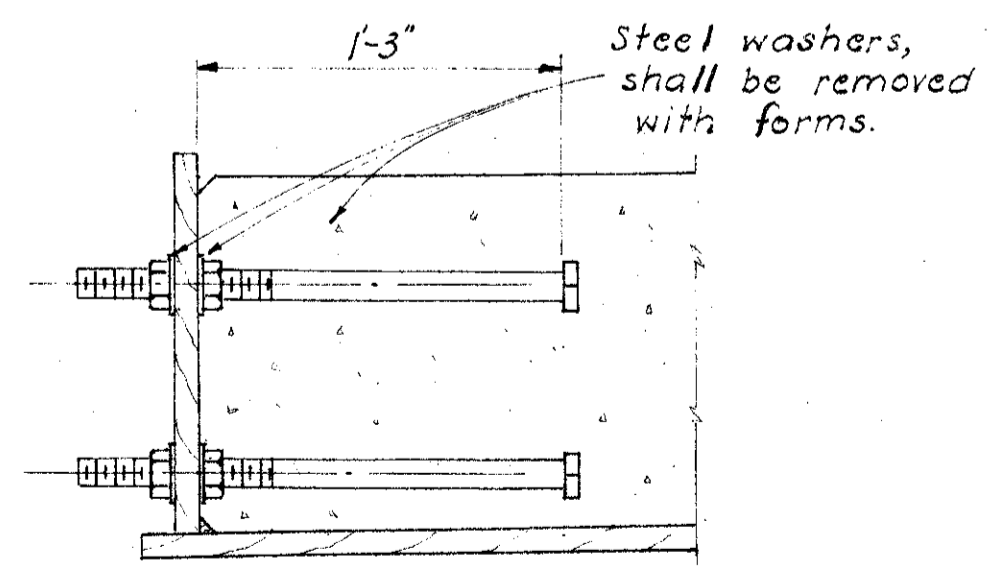


DIAGRAM SHOWING STAGGER OF S502 BARS OVER PIERS

$\frac{1}{8}$ " oval hole, same shape as post bolt shoulder.  
8 gage  
3"  
**SPECIAL WASHER**  
Use under head of all guard rail Post Bolts.



ELEVATION OF RAILING POST



DETAIL A

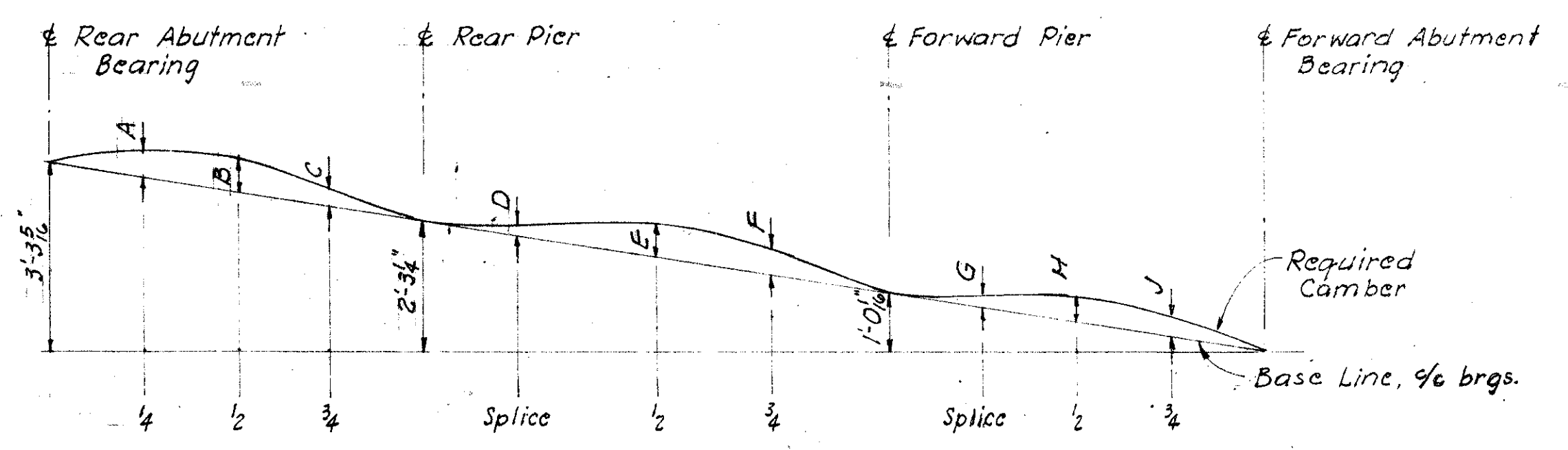
Refer to Standard Drawing SD-1-G5, sheets 1, 2 and 3 for the following details:  
Bolted Beam Splice  
Moment Plate Connection  
End Crossframes  
Roadway End Dam. Use CF-2000.  
Item 828 Joint Sealer including bond breaker. Shown in Section A-A, shall be omitted.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
DIVISION OF DESIGN AND CONSTRUCTION  
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS  
BRIDGE No LAW-775-0637  
OVER INDIAN GUYAN CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JVG	CPD			BFG	1-22-69	

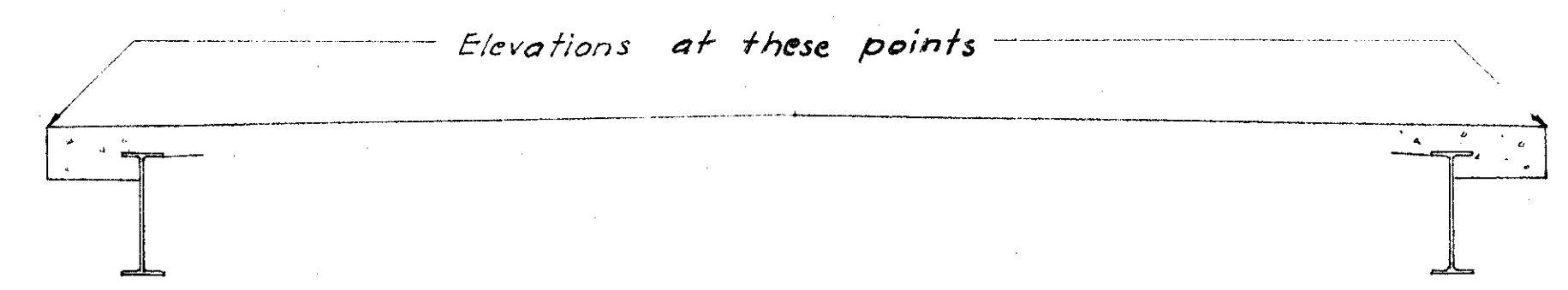
LAW 775-(2.71)(5.97)



CAMBER DIAGRAM

DEFLECTIONS AND CAMBER									
	A	B	C	D	E	F	G	H	J
Deflection due to weight of steel	-	1/16	-	-	1/16	-	-	1/16	-
Deflection due to remaining dead load	3/16	1/4	5/8	1/4	3/8	1/4	5/8	1/4	3/16
Total equals required shop camber	3/16	5/16	5/8	1/4	7/16	1/4	5/8	5/16	3/16

ELEVATIONS AT EDGE OF DECK - PRIOR TO PLACING CONCRETE												
Location	ℓ Brg. R.A.	1/4 pt	1/2 pt	3/4 pt	ℓ R. Pier	1/4 pt	1/2 pt	3/4 pt	ℓ F. Pier	1/4 pt	1/2 pt	ℓ Brg. F.A.
Left Side	589.05	589.82	589.57	589.31	589.04	588.75	588.44	588.12	587.78	587.54	587.30	586.78
Right Side	589.00	589.36	589.11	588.85	588.59	588.30	587.99	587.67	587.33	587.09	586.85	586.32



REINFORCING STEEL LIST

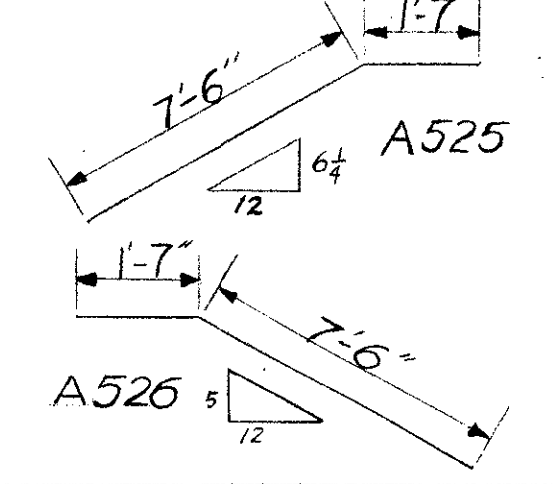
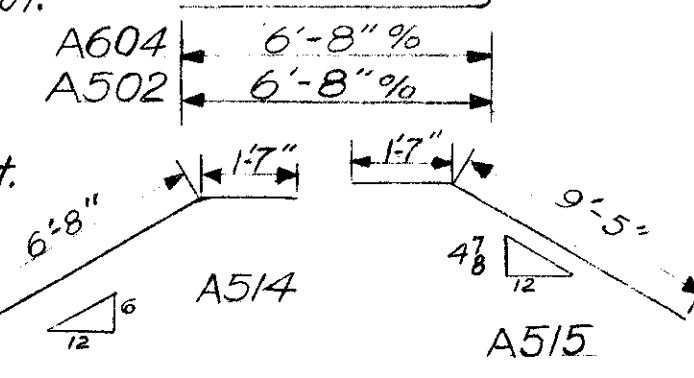
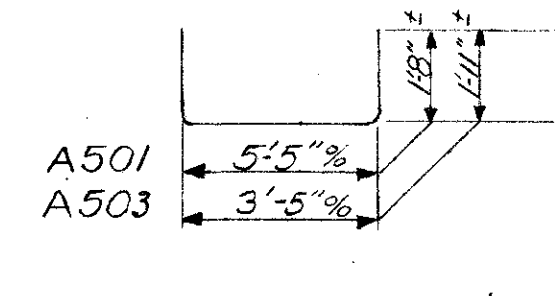
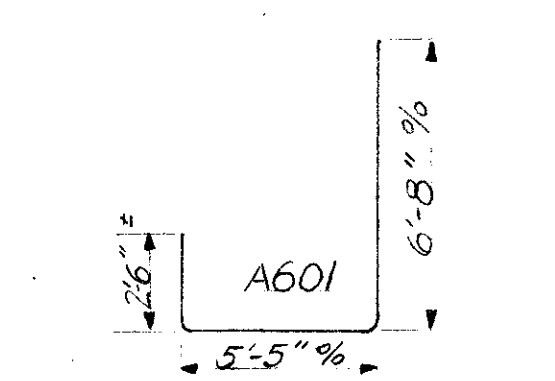
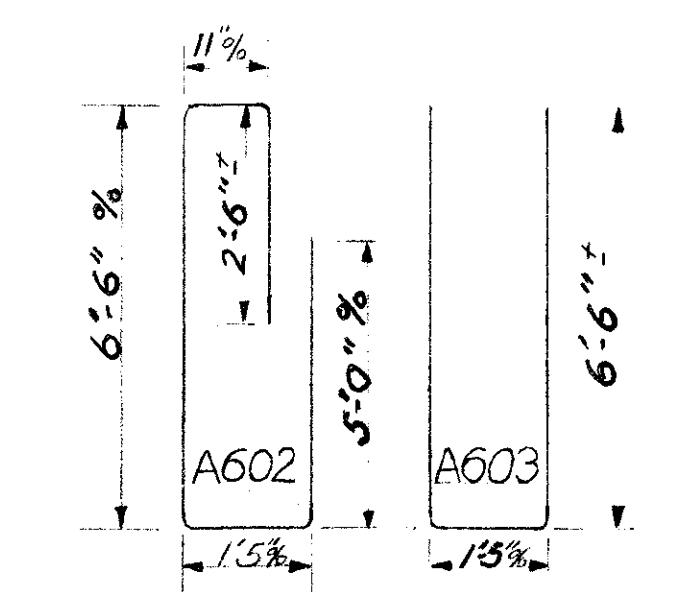
Mark	No.	Length	Weight	Spd.
SUPERSTRUCTURE				
S601	524	35'-8"	28,071	S
	4	4'-2 1/2"		
S602	37	35'-4"	4,395	S
S603	12	4'-0"	72	S
S501	426	30'-0"	13,330	S
S501a	71	12'-11"	957	S
S502	56	28'-0"	1,635	S

Vary by 10% increments

ABUTMENTS					Rear	Fwd.
A801	14	26'-3"	981	St.	14	
A802	14	25'-8"	959	St.		14
A803	1	8'-0"	21	St.	1	
A804	1	5'-0"	13	St.		1
A601	76	14'-3"	1,627	Bt.	38	38
A602	48	15'-8"	1,130	Bt.	24	24
A603	46	14'-1"	973	Bt.	23	23
A604	12	7'-4"	132	Bt.	7	5
A501	76	8'-6"	674	Bt.	38	38
A502	64	7'-2"	478	Bt.	31	33
A503	64	7'-0"	467	Bt.	31	33
A504	36	21'-6"	807	St.	18	18
A505	12	30'-0"	375	St.	6	6
A506	2	25'-0"	52	St.	1	1
A507	8	13'-0"	108	St.	4	4
A508	4	15'-2"	63	St.	4	-
A509	4	18'-2"	76	St.	4	-
A510	4	19'-8"	82	St.	4	-
A511	6	10'-6"	66	St.	6	-
A512	6	17'-6"	110	St.	6	-
A513	2	8'-2"	17	St.	2	-
A514	2	8'-3"	17	Bt.	2	-
A515	2	11'-0"	23	Bt.	2	-

A516	Series 2 to 5	5'-2" to 8'-2"	70	St.	Vary by 9" Rear Abut. Increments	
A517	Series 2 to 6	5'-2" to 8'-1"	83	St.	Vary by 7" Rear Abut. Increments	

A518	4	14'-8"	61	St.	-	4
A519	4	17'-4"	72	St.	-	4
A520	4	19'-0"	79	St.	-	4
A521	6	11'-4"	71	St.	-	6
A522	6	15'-6"	97	St.	-	6
A523	2	8'-6"	18	St.	-	2
A524	2	8'-0"	17	St.	-	2
A525	2	9'-1	19	Bt.	-	2
A526	2	9'-1	19	Bt.	-	2



Mark	No.	Length	Weight	Spd.	
ABUTMENTS (Cont.)					
A527	Series 2 to 5	5'-0" to 8'-1"	68	St.	Vary by 9" Fwd Abut Increments
A528	Series 2 to 5	5'-0" to 7'-7"	66	St.	Vary by 7 1/2" Fwd Abut Increments

PIERS					Rear	Fwd
F801	88	5'-8"	1,331	Bt.	44	44
F701	25	7'-6"	383	St.	25	
F702	29	11'-2"	662	Bt.		29
F601	4	24'-0"	147	St.	4	
F602	8	23'-10"	286	Bt.		8
P901	12	40'-6"	1,652	St.	6	6
P902	12	28'-3"	1,153	Bt.	6	6
P903	12	18'-7"	768	Bt.	6	6
P801	20	24'-8"	1,317	St.	20	
P802	18	11'-0"	529	St.	18	
P803	6	20'-4"	326	St.	6	
P804	6	22'-2"	355	St.		6
P805	18	12'-0"	577	St.		18
P806	20	26'-6"	1,415	St.		20
P601	12	16'-6"	297	Bt.	6	6
P501	38	7'-1"	281	Bt.	18	20
P502	38	17'-5"	694	St.	18	20
P503	4	20'-0"	83	St.	2	2
P504	4	31'-0"	129	St.	2	2
P505	8	40'-10"	341	St.	4	4
P506	44	8'-5"	386	Bt.	22	22
P507	24	7'-1"	177	Bt.	12	12

P508	Series 4 to 6	10'-5" to 14'-2"	308	Bt.	Varies by 9 1/8" Increments	
P509	Series 4 to 6	8'-3" to 11'-1 1/2"	242	Bt.	Varies by 6 5/8" Increments	

REPLACEMENT BARS				
RE900	1	7'-10"	-	S
RE800	1	7'-6"	-	S
RE700	1	7'-2"	-	S
RE600	2	6'-11"	-	S
RE500	2	6'-7"	-	S

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.

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						7/7
SUPERSTRUCTURE DETAILS REINFORCING STEEL LIST						
BRIDGE No. LAW-775-0637 OVER INDIAN GUYAN CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD		WJF	BFG	1-22-69	