

UNI-37-198

At ESSEX

Curve Data
 PI = Sta. 4+81.35
 $\Delta = 10^{\circ}10'10''$
 $D = 3^{\circ}00'$
 $R = 1909.86'$
 $T = 169.94'$
 $L = 338.98'$
 $E = 7.54'$

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod 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.

DRAINAGE AREA
 77.6 Sq. Mi.

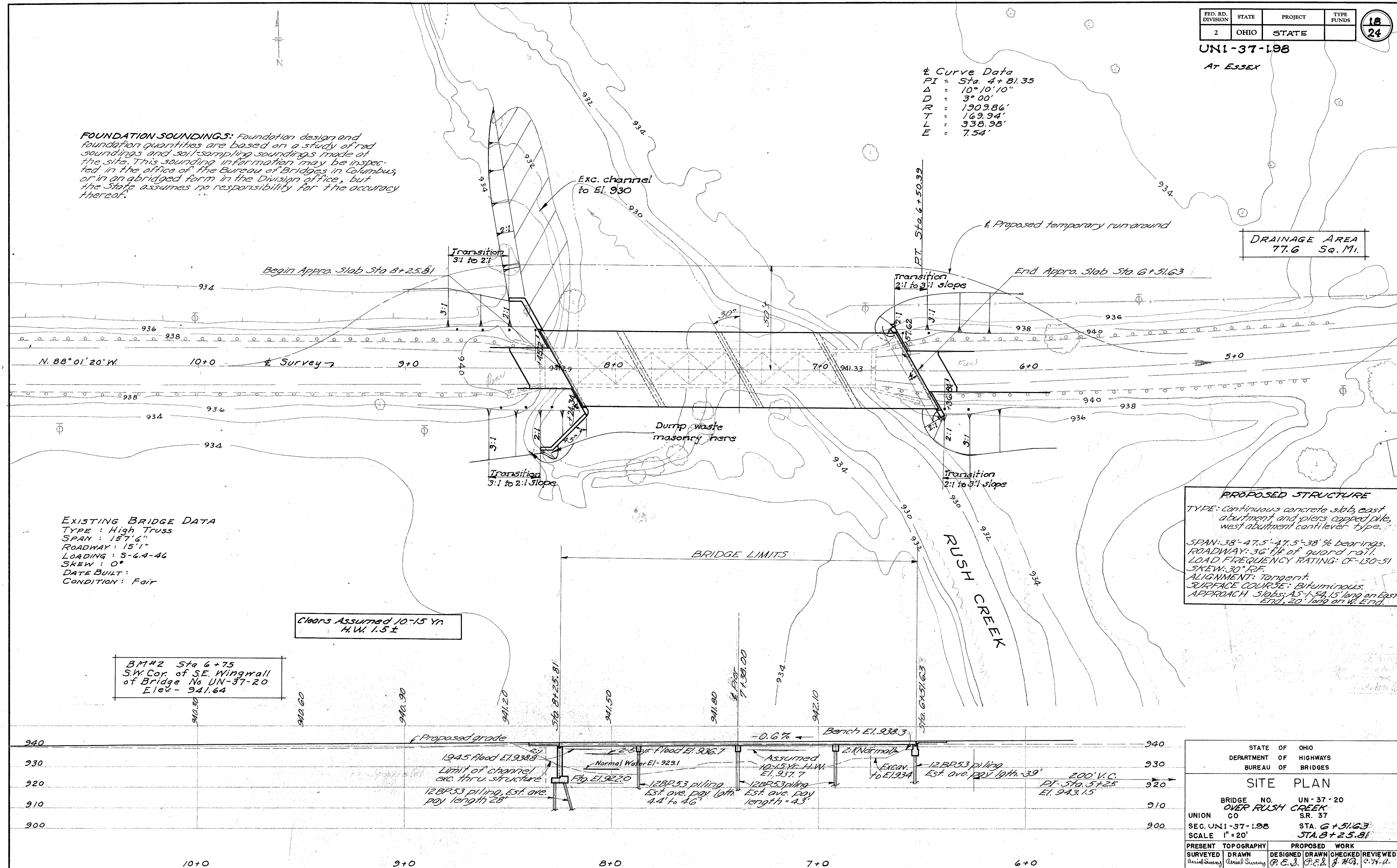
PROPOSED STRUCTURE

TYPE: Continuous concrete slab, cast abutment and piers capped pile, west abutment cantilever type.
 SPAN: 38'-47.5'-47.5'-38' % bearings.
 ROADWAY: 36' fl. of guard rail.
 LOAD FREQUENCY RATING: CF-130-51
 SKEW: 30° R.F.
 ALIGNMENT: Tangent.
 SURFACE COURSE: Bituminous.
 APPROACH Slopes: AS-1-54.15' long on East End, 20' long on W. End.

EXISTING BRIDGE DATA
 TYPE: High Truss
 SPAN: 157'6"
 ROADWAY: 15'1"
 LOADING: S-6.4-46
 SKEW: 0°
 DATE BUILT:
 CONDITION: Fair

Clears Assumed 10-15 Yr.
 H.W. 1.5±

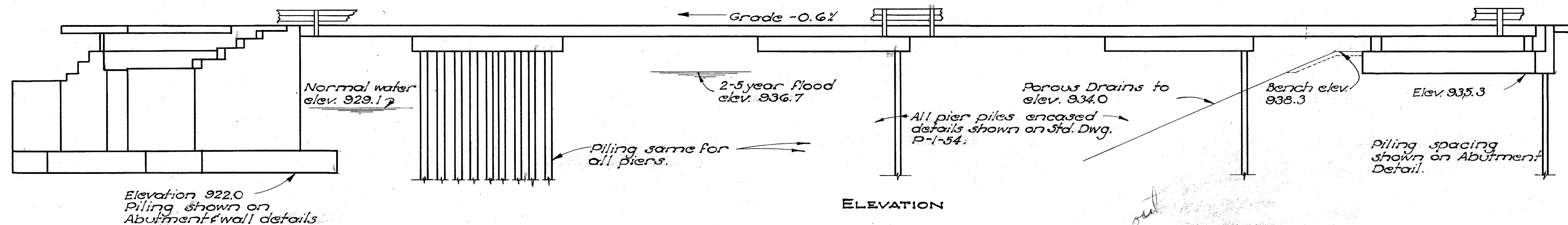
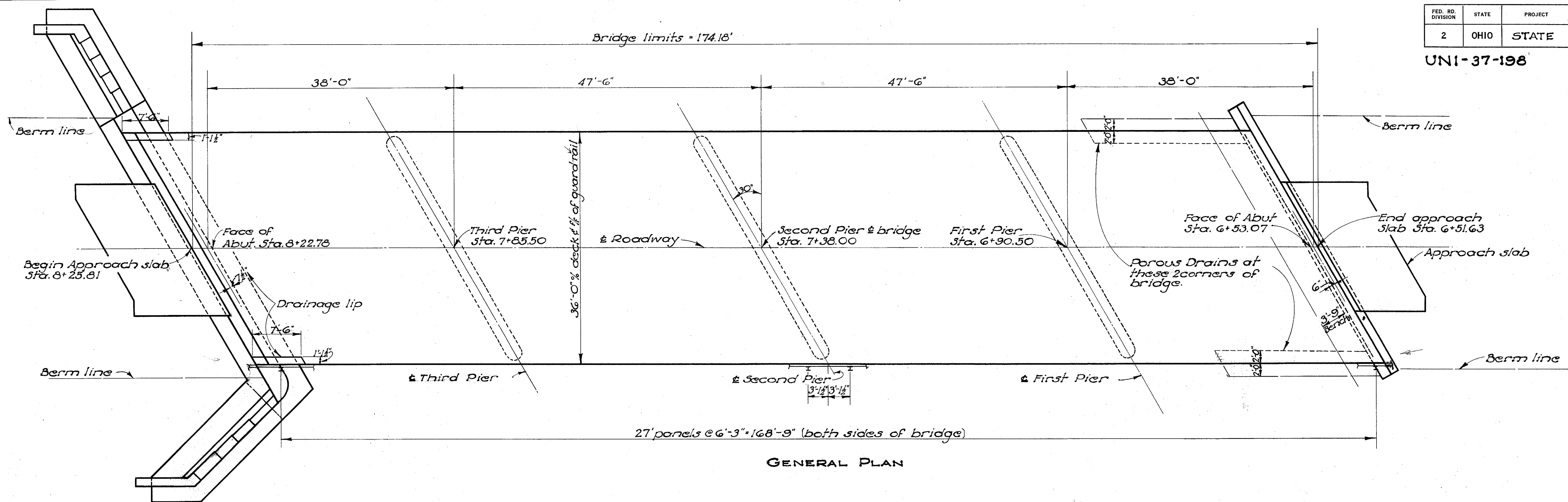
BM#2 Sta 6+75
 S.W. Cor. of SE. Wingwall
 of Bridge No UN-37-20
 Elev. - 941.64



STATE OF OHIO		DEPARTMENT OF HIGHWAYS		BUREAU OF BRIDGES	
SITE PLAN					
BRIDGE NO.		UN-37-20			
OVER RUSH CREEK					
UNION CO		S.R. 37			
SEC. UN-37-198		STA. 6+51.63			
SCALE 1" = 20'		STA. 8+25.81			
PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Aerial Survey	Aerial Survey	P. E. J.	P. E. J.	J. H. D.	C. H. A.

BFG 99-1-24-55 154

UN1-37-198



GENERAL NOTES

REFERENCE shall be made to Standard Drawings P-1-54, CS-1-54 and A-1-54, all revised 12-1-54.

TEMPORARY RUN-AROUND BRIDGE & APPROACHES Bridge Frequency rating CF-30 if new bridge is built. Existing bridge may be moved and used as temporary run-around if posting is retained. Roadway 26% of shoulders. Grade same as existing. Surface course on approaches Class B.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed. The joists and floor beams shall be carefully salvaged and piled near the site for use by State forces. The east abutment shall be removed to 6' below the finished ground line. The west abutment shall be removed to 3' below proposed grade. Both abutments shall be removed to whatever extent is necessary to avoid interference with new construction, including pile driving. Suitable waste masonry shall be dumped where shown on site plan and in East Abutment upstream spill-around corner. The remainder of the removed materials shall become the property of the Contractor.

PILES shall be driven with a hammer of not less than 7000* energy per blow, to firm contact with rock which shall be considered as attained when the capacity according to

the Formula in Sec. 5-1805 is at least 55+ tons per pile for the pier piles and 40 tons for the abutment and wingwall piles if a 7,000* steam hammer is used, or 40+ tons for the pier piles and 31 tons for the abutment and wingwall piles if a steam hammer or drop hammer of 15,000* or greater energy is used and if the length of penetration is approximately equal to the depth to rock 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 38 tons per pile for the pier piles and 31 tons for the abutment and wingwall piles.)

WELDING in End Finish shall be Class "A".

GRAVEL, if used as the coarse aggregate, shall be according to Sec. M-393 instead of M-391. For Class "C" concrete superstructure and pier caps. Gravel meeting the requirements of Sec. M-393 also may be used for other concrete in this structure.

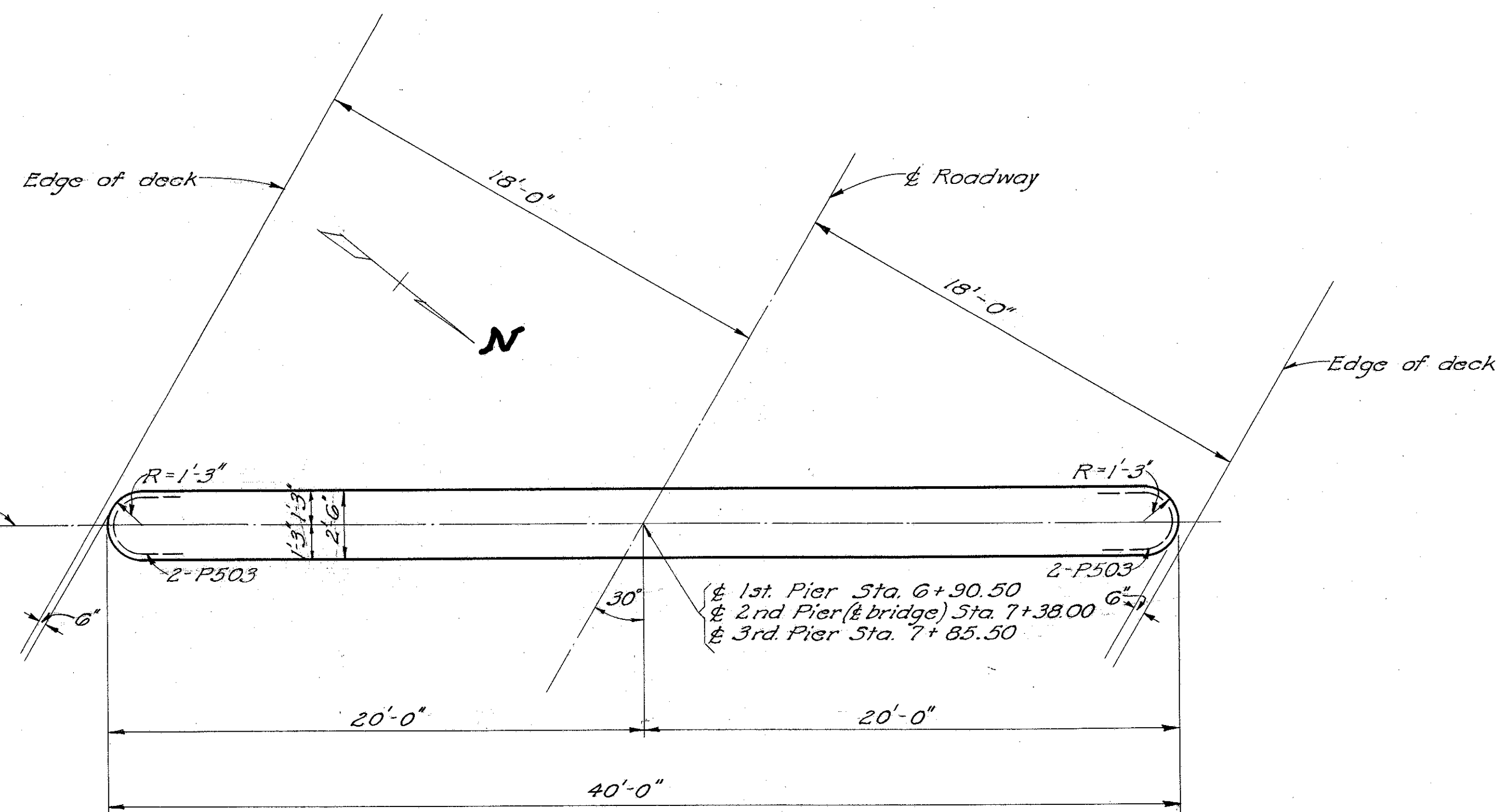
POROUS DRAINS, extending from face of abutment to Elev. 934 shall be provided at the two east corners of the bridge. The drains shall be 4ft. wide and one foot thick.

ASPHALTIC CONCRETE SURFACE COURSE, Item T-35, laid in two courses, shall be provided.

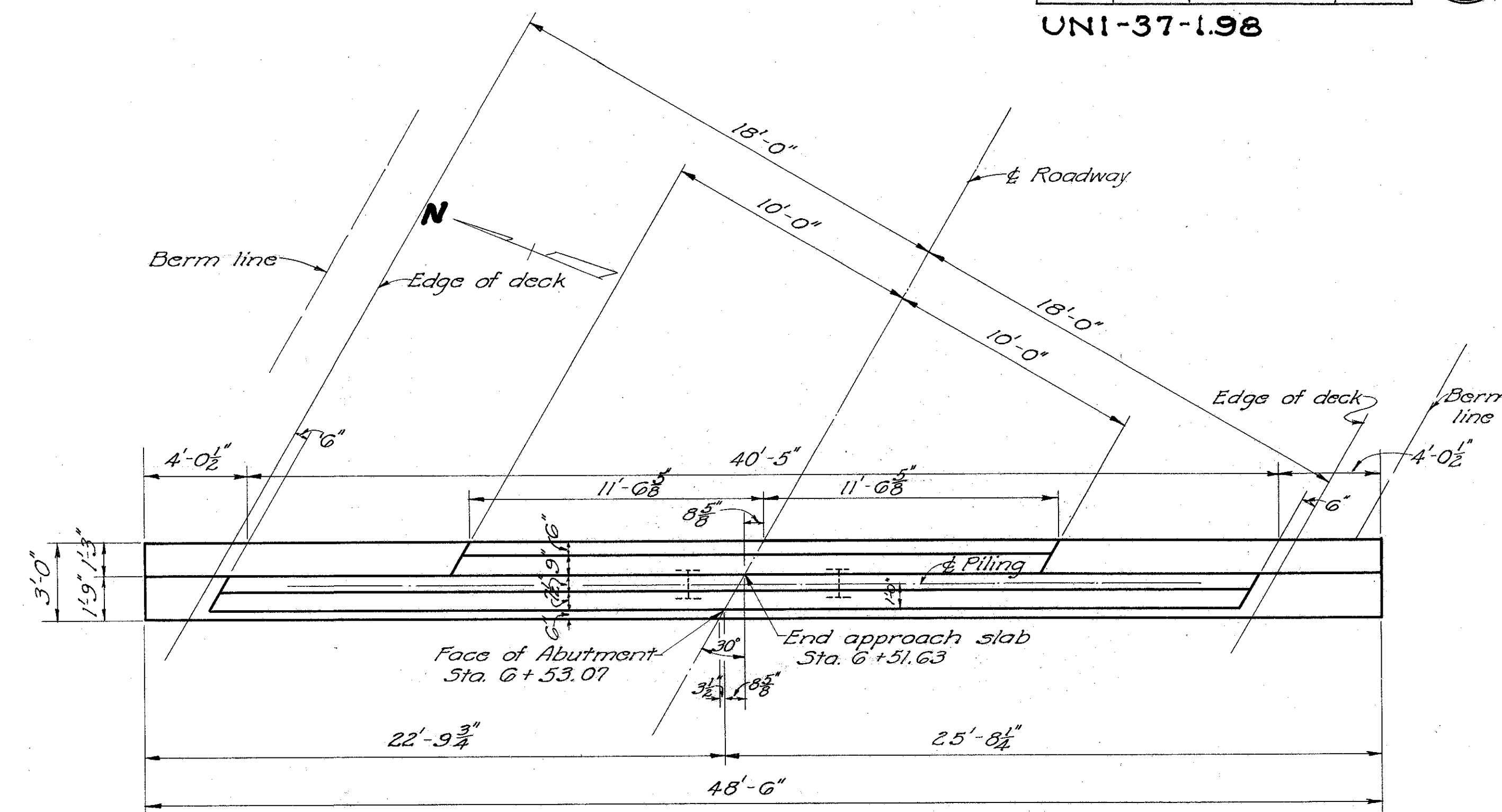
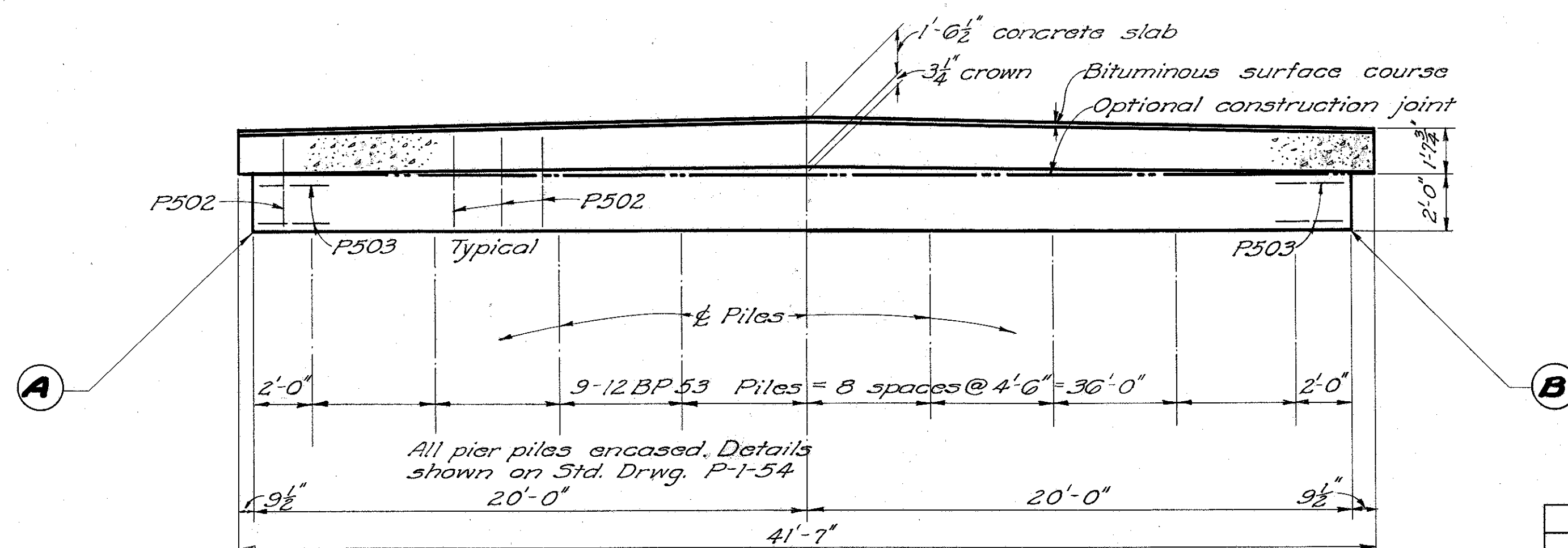
ESTIMATED QUANTITIES									
ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT.	WING WALLS	PIER	GENERAL	
E-2	Lump	Sum	Cofferdams, cribs and sheeting						
E-2	340	Cu.Yd.	Unclassified excavation		30	310			
E-3	320	Cu.Yd.	Channel excavation					320	
S-1	380	Cu.Yd.	Class "C" concrete, superstructure & pier caps	358			22		
S-1	75	Cu.Yd.	Class "E" concrete, footings		45	30			
S-1	136	Cu.Yd.	Class "E" concrete, abutment & wingwalls		25	75	36		
S-3	752	Sq.Yd.	Type "C" waterproofing	752					
S-4	104,505	Lbs.	Reinforcing steel	89,483	2,784	4,569	2,317	5,107	245
S-9	223	Lbs.	1" leaded bronze sliding plates	223					
S-9	2600	Lbs.	Structural steel expansion joint	2600					
S-9	50	Sq.Ft.	1/2" premolded expansion joint filler	50					
S-14	348.36	Lin.Ft.	Railings (Type I-15.13 with galvanized steel posts)	348.36					
S-15	Lump	Sum	Temporary run-around bridge & approaches					Lump	
S-16	Lump	Sum	First test pile					Lump	
S-18	2460	Lin.Ft.	Steel piling, 12BP53		270	620	390	1180	
S-24	Lump	Sum	Removal of existing structure					Lump	
S-29	73	Cu.Yd.	Porous backfill		14	59			
S-29	5	Cu.Yd.	Porous drains on embankment slopes		5				
T-35	43	Cu.Yd.	Asphaltic concrete surface course Type "A" or "C" (10-80)	43					

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						
GENERAL PLAN, ELEVATION, NOTES AND ESTIMATED QUANTITIES						
BRIDGE No. UN-37-20 OVER RUSH CREEK						
UNION COUNTY			STA. 6+51.63 6+25.81			
SEC. UN1-37-1.98						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LD	LD	LD	LD	LD	4-24-55	

UNI-37-1.98

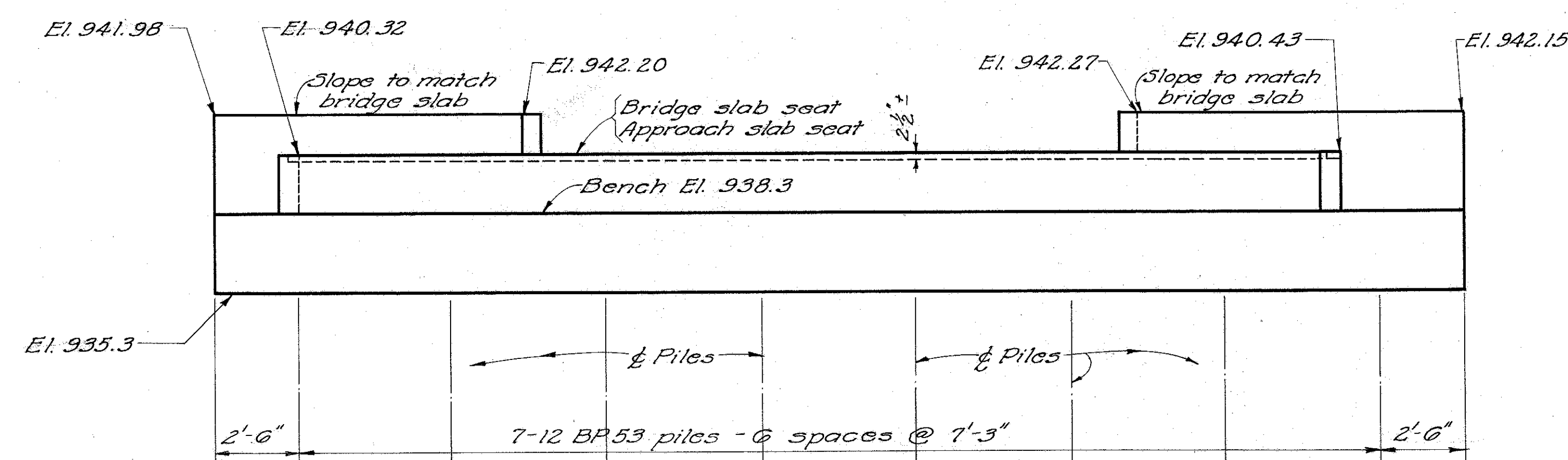

PIER PLAN

NOTE: All piers have same dimensions


EAST ABUTMENT PLAN

PIER ELEVATION

Looking West
NOTE: For reinforcing steel and other details not shown see Std. Drwg. P-1-54.

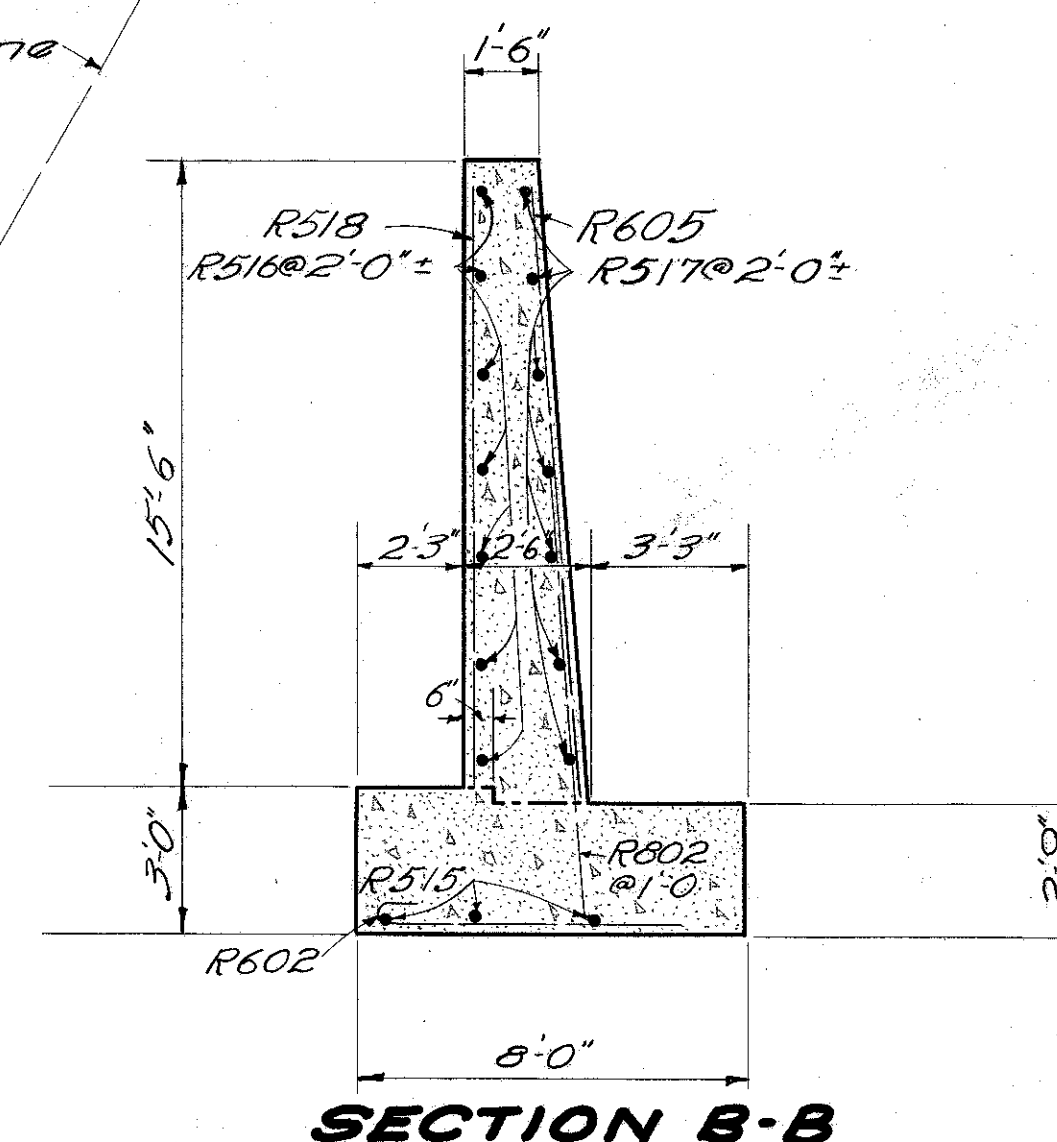
ELEVATIONS		
	A	B
1st Pier	938.20	938.08
2nd Pier (bridge)	937.91	937.79
3rd Pier	937.63	937.51


EAST ABUTMENT ELEVATION

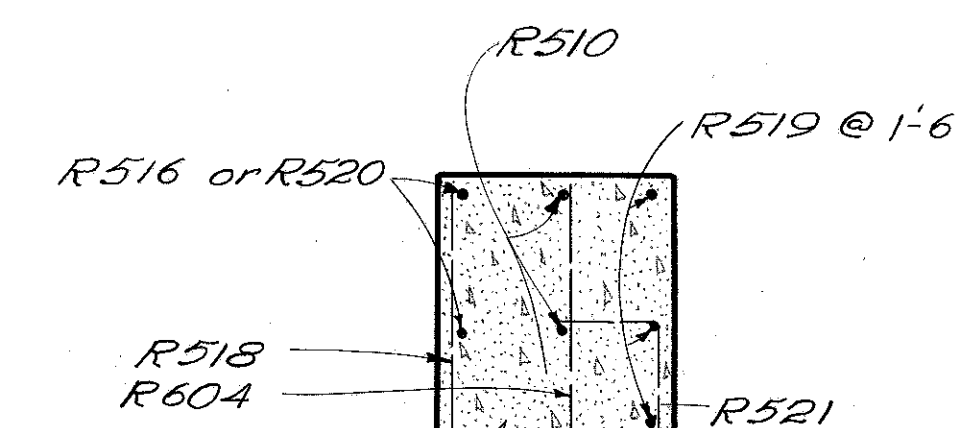
NOTE: For reinforcing steel and all details not shown see Std. Drwg. A-1-54.

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					
PIER & EAST ABUTMENT DETAILS					
BRIDGE NO. UN-37-20					
OVER RUSH CREEK					
UNION COUNTY			STA. 6+51.63		
SEC. UNI-37-1.98			3+25.81		
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
JD	JD	JD	JD	BFG	1-24-55

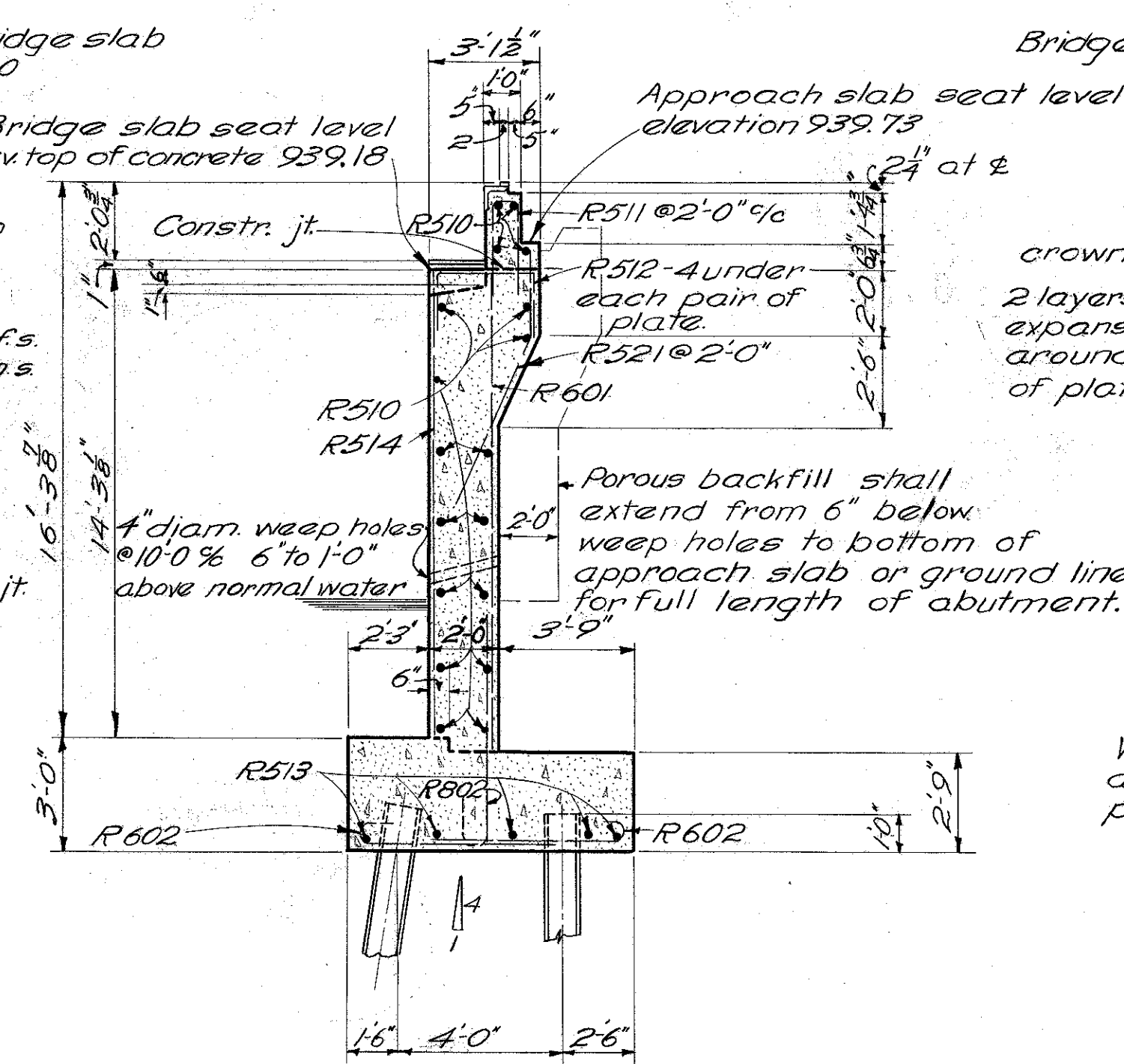
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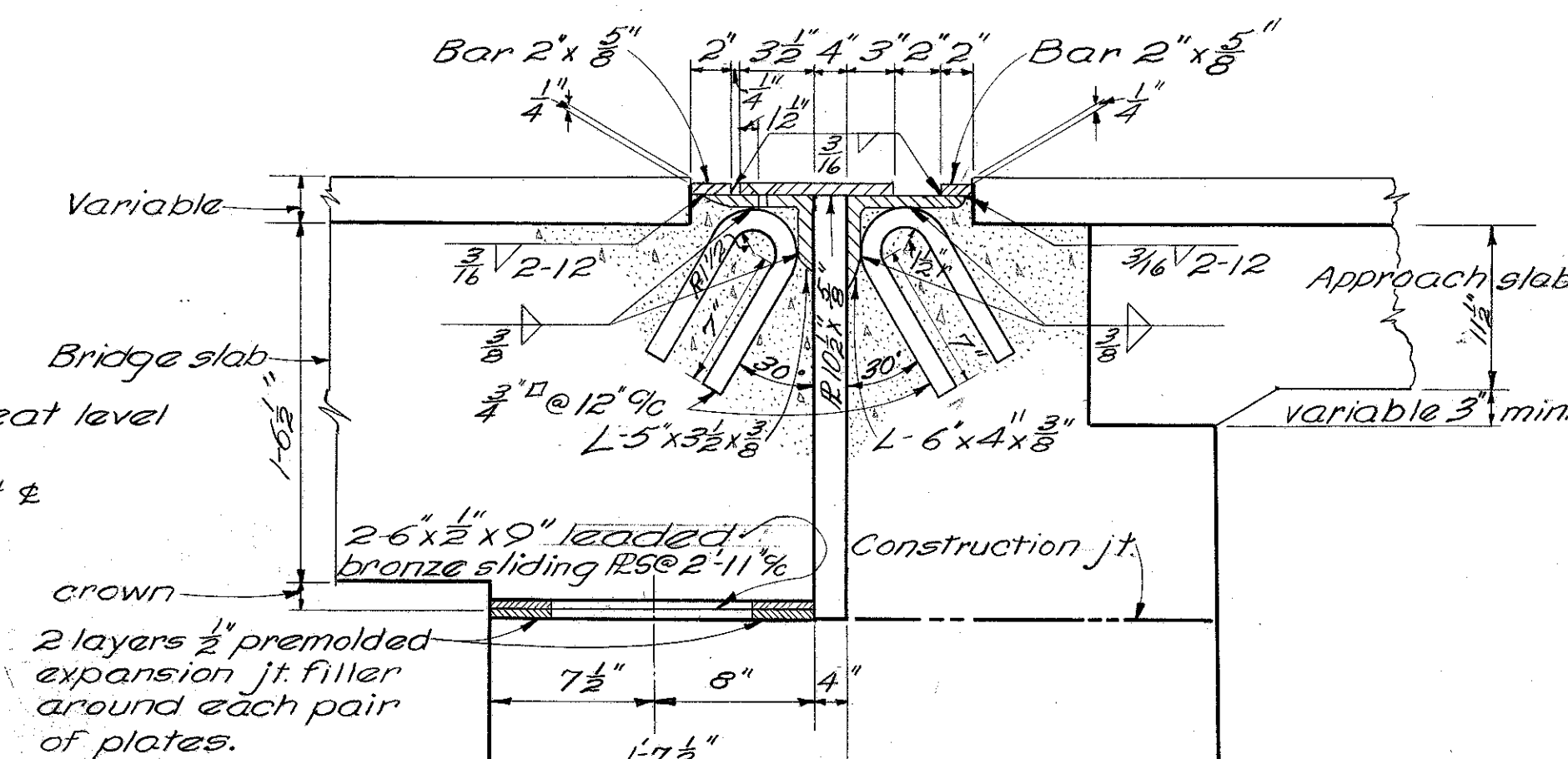
SECTION B-B



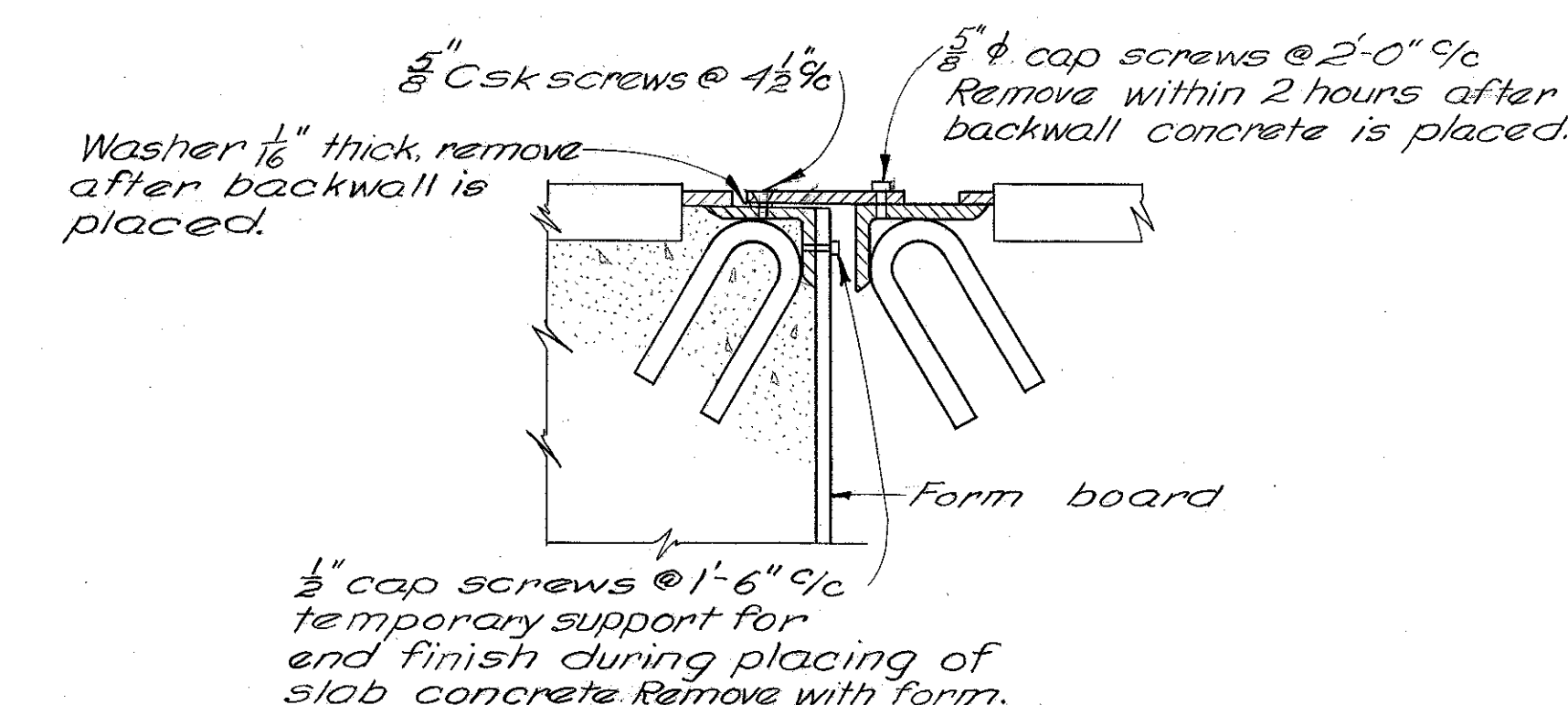
SECTION C-C



SECTION A-A @ ϕ

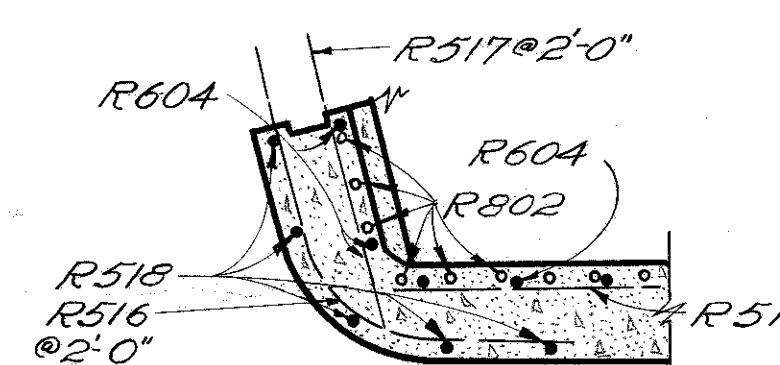


**PART SECTION A-A
END FINISH DETAILS**

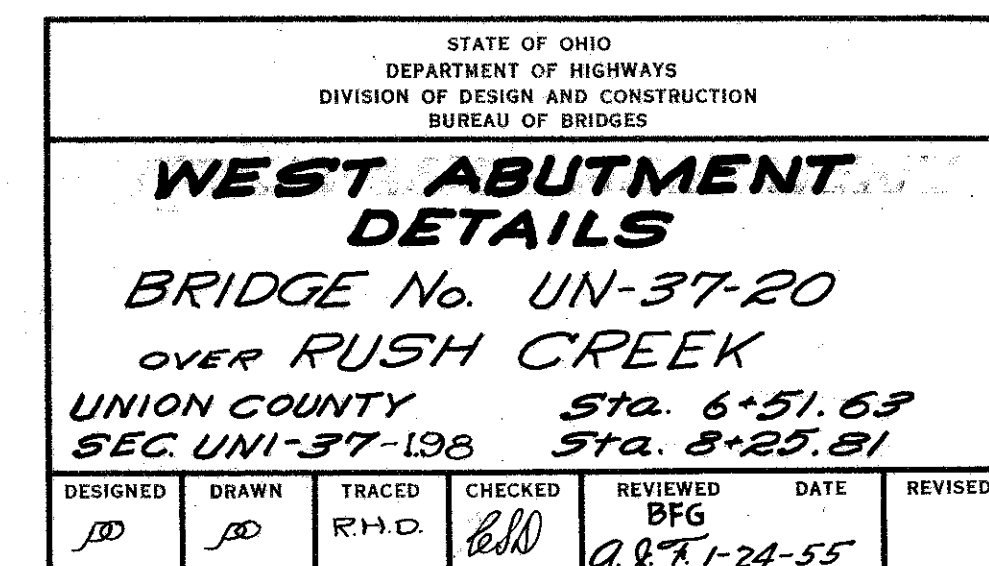


END FINISH DETAILS

NOTE. f.s. indicates far side; n.s. indicates near side. Clearance of reinforcing steel from face of concrete shall be 3" in footing, #2" elsewhere.



SECTION D-D



WEST ABUTMENT DETAILS

BRIDGE No. UN-37-20

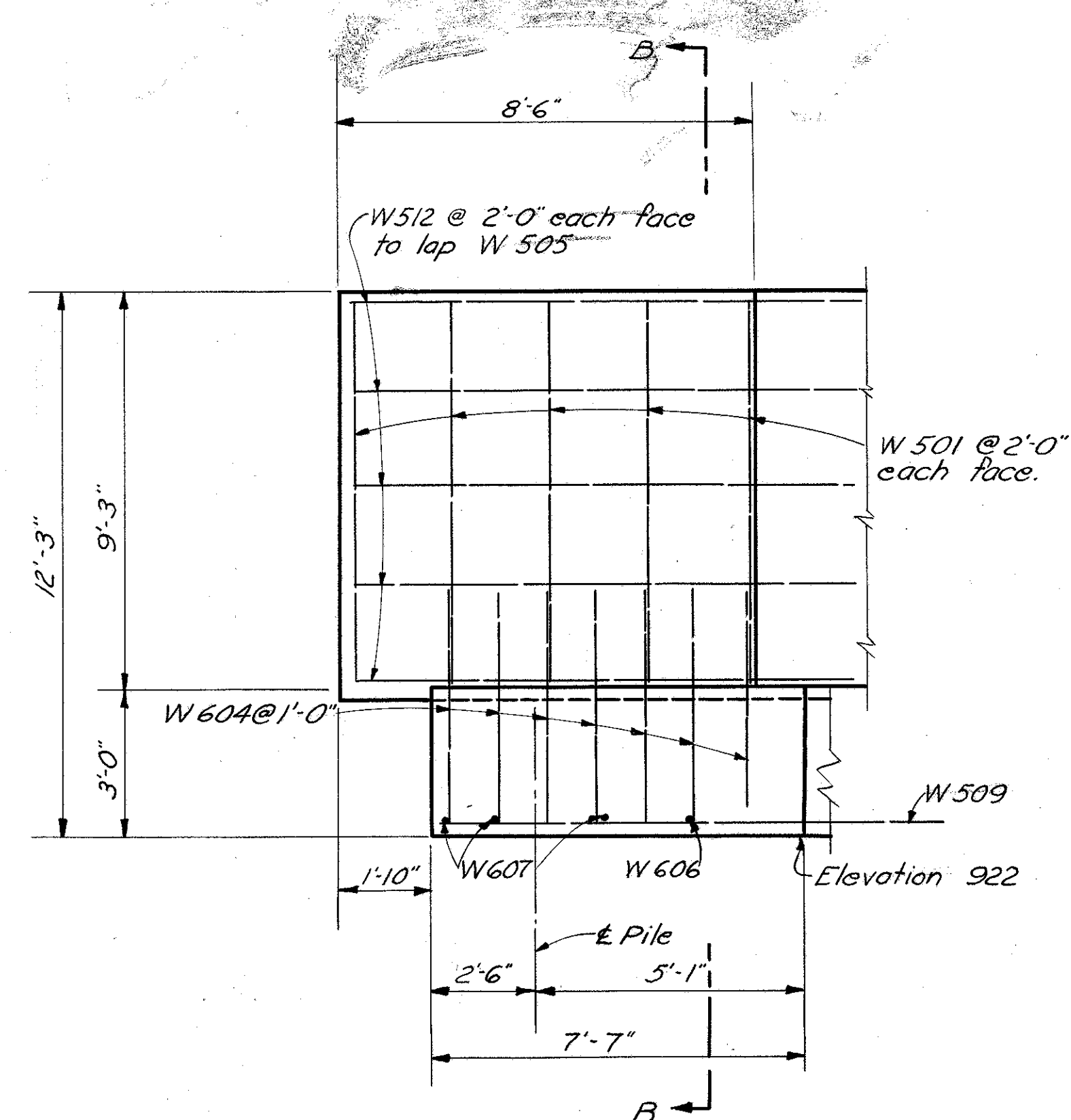
OVER RUSH CREEK

UNION COUNTY Sta. 6+51.

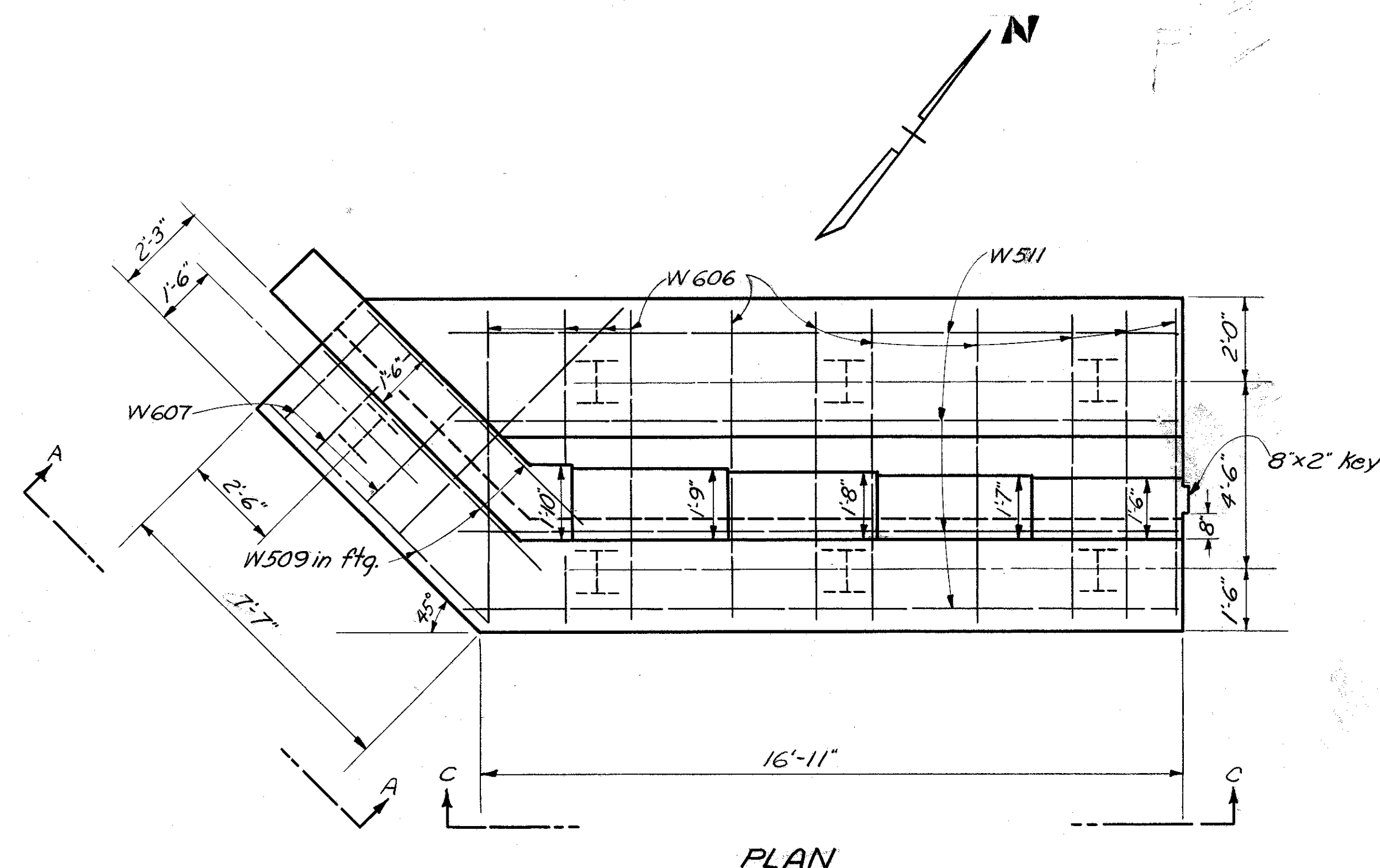
DESIGNED		DRAWN		TRACED		CHECKED		REVIEWED		DATE	
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SEARCHED	INDEXED	SERIALIZED	FILED	BFG 98-1-24-55
<i>[Signature]</i>	<i>[Signature]</i>	R.H.D.	<i>[Signature]</i>	

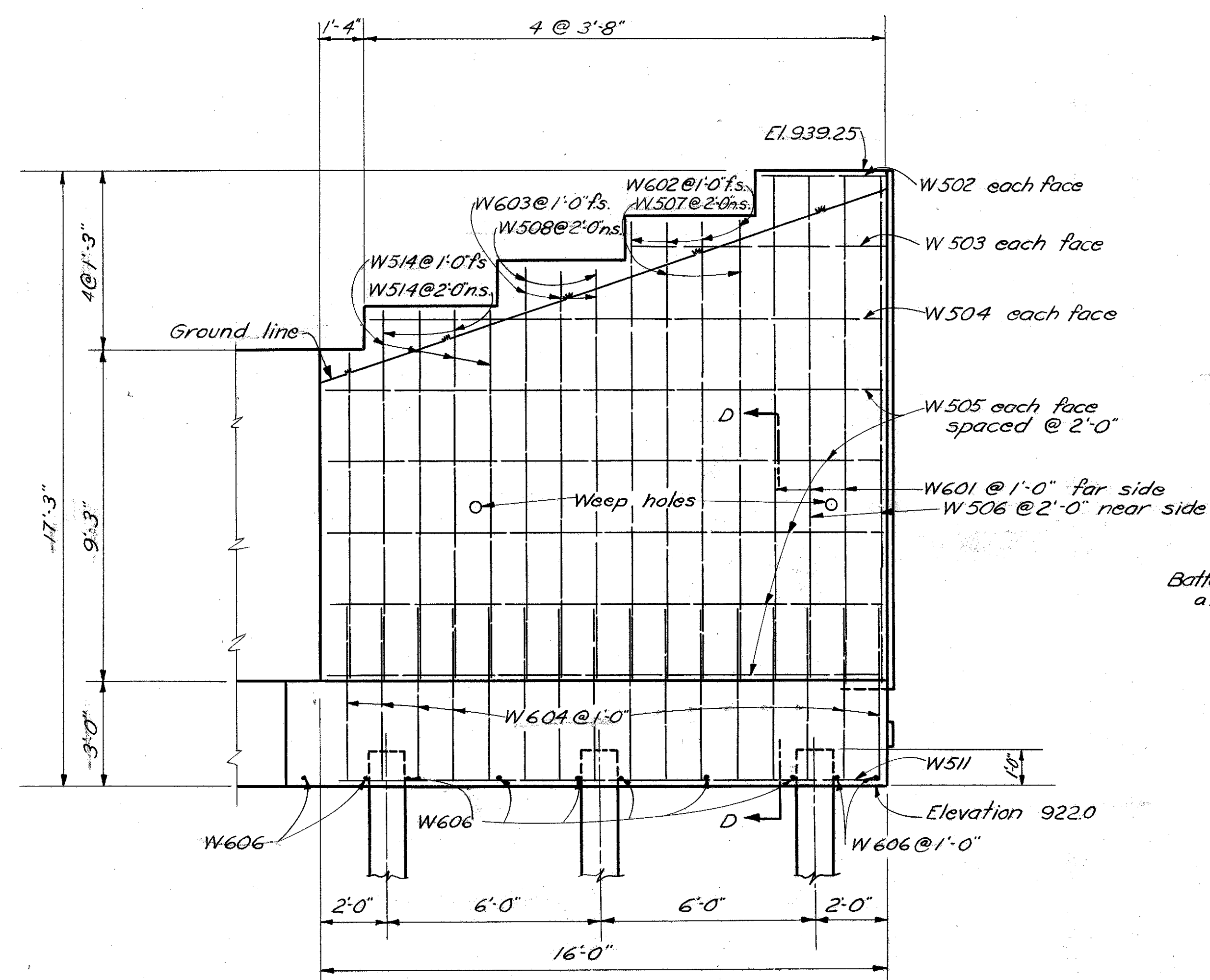
UNI-37-1.98



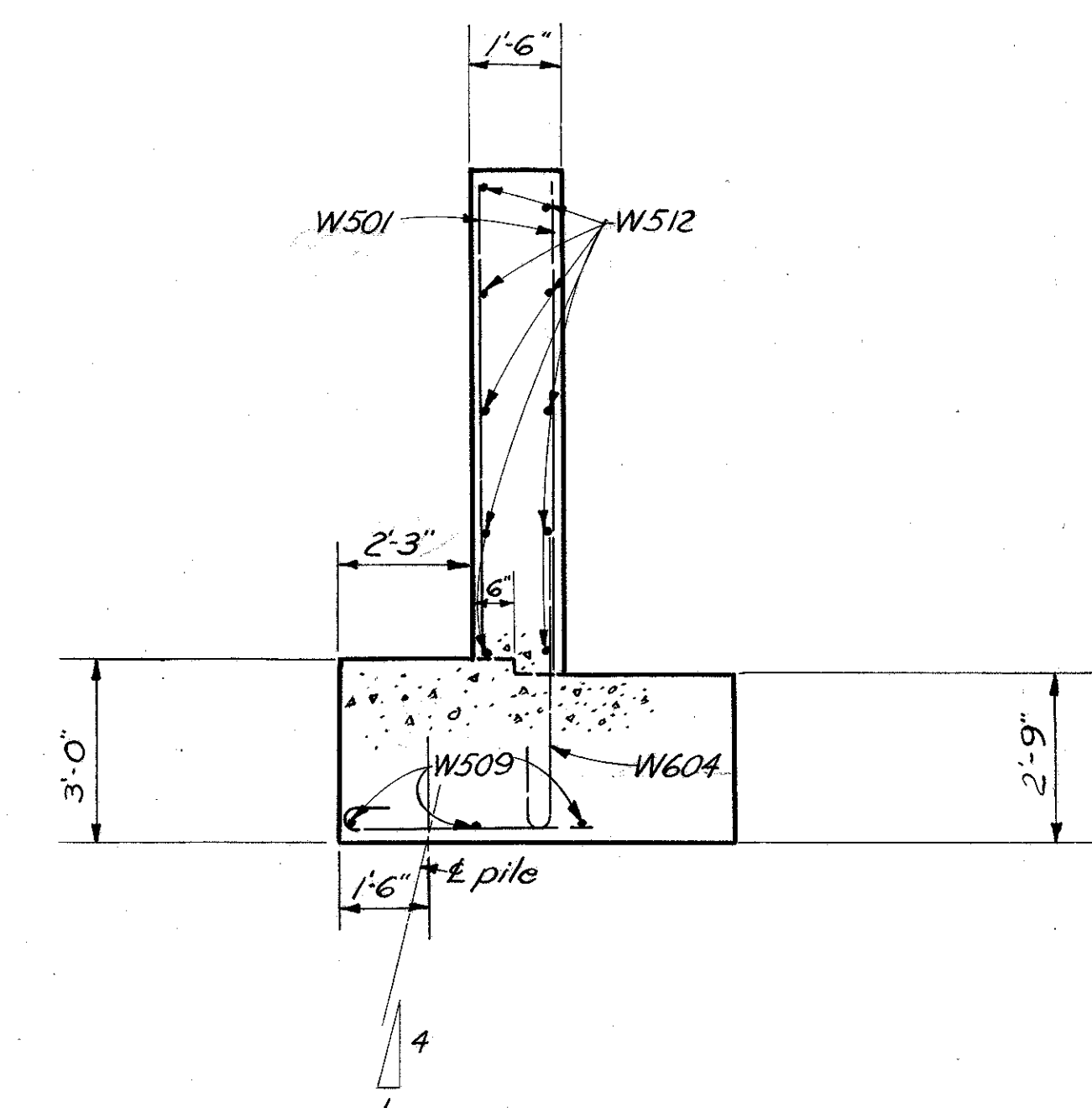
VIEW A-A



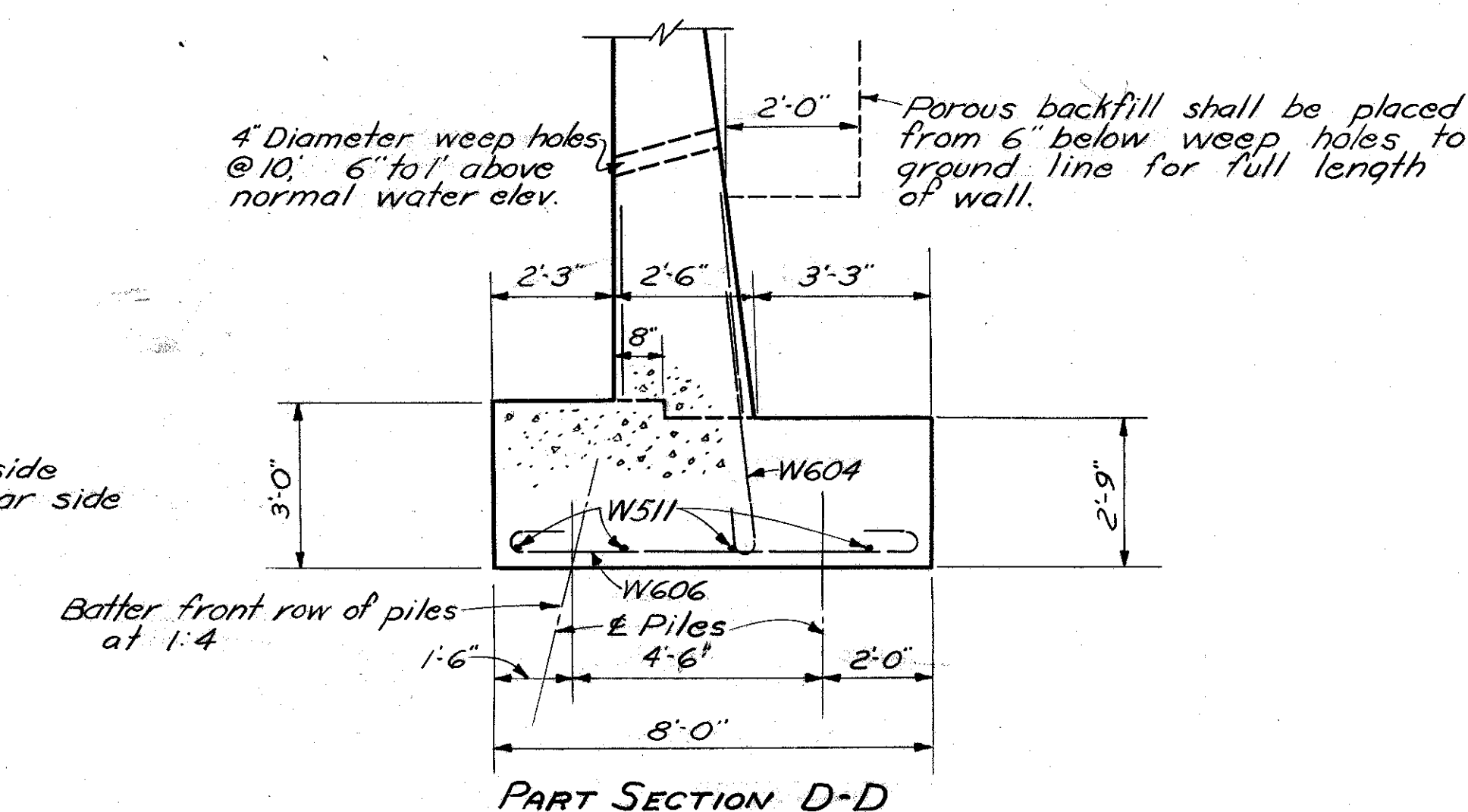
PLAN



VIEW C-C



SECTION B-B



PART SECTION D-D

CLEARANCE of reinforcing steel from face of concrete shall be 3" in footings & 2" elsewhere. In the bar designation n.s. indicates near side f.s. indicates far side

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					
SOUTHWEST WINGWALL DETAILS BRIDGE No. UN-37-20 over RUSH CREEK					
UNION COUNTY					
Sec. UNI-37-1.98 STA. 6+51.63 8+25.81					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
JGM	JGM	JGM	JGM	JGM	1-24-55

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	SHR.	BENDING DIAGRAMS	MARK	NO.	LENGTH	WEIGHT	SHR.	BENDING DIAGRAMS	MARK	NO.	LENGTH	WEIGHT	SHR.	BENDING DIAGRAMS
Piers						West Abutment (cont'd)						Northwest Wingwall (cont'd)					
P1001	12	41'-0"	2117	S		R514	21	13'-6"	296	S		W516	2	5'-6"	11	S	
P901	12	38'-0"	1550	S		R515	3	8'-3"	26	S		W517	5	14'-6"	76	S	
P501	6	38'-0"	238	S		R516	8	9'-2"	76	B		W518	2	15'-10"	33	S	
P502	78	9'-0"	732	B		R517	8	6'-0"	50	S		W519	2	13'-2"	27	S	
P503	12	6'-4"	79	B		R518	7	15'-4"	112	S		W520	4	10'-2"	42	S	
P401	108	5'-5"	391	B		R519	6	11'-0"	69	S		W521	10	8'-10"	92	B	
Superstructure						R520	2	5'-9"	12	S		W522	10	12'-10"	134	S	
A1031	120	46'-0"	23753	S		R521	26	7'-4"	199	B		Southwest Wingwall					
B1031	30	30'-9"	3970	B		East Abutment						W601	4	14'-2"	85	S	
C1031	32	27'-3"	3752	B		R1001	8	21'-10"	752	S		W602	4	12'-11"	78	S	
D1031	30	27'-6"	3550	S		R801	8	25'-6"	545	S		W603	3	11'-8"	53	S	
E1031	32	20'-10"	2868	S		R501	8	24'-11"	208	S		W604	23	5'-6"	190	S	
F1131	108	35'-5"	20,322	S	R502	68	6'-7"	467	B	W606		11	8'-10"	146	B		
G1131	51	20'-3"	5487	S	R503	4	20'-11"	87	S	W607		3	4'-5"	20	B		
H1131	54	16'-7"	4614	S	R504	12	5'-4"	66	S	W501		10	9'-0"	94	S		
J601	36	25'-10"	1397	S	R505	16	7'-11"	132	B	W502		2	3'-6"	7	S		
K601	36	16'-8"	901	S	R506	4	11'-8"	49	S	W503		2	7'-0"	15	S		
M701	148	41'-0"	12403	S	R507	8	5'-8"	47	S	W504		2	14'-6"	30	S		
N601	105	41'-0"	6466	S	R508	22	7'-4"	168	B	W505		10	15'-10"	165	S		
West Abutment					R509	12	8'-5"	105	B	W506		2	14'-0"	29	S		
R802	53	6'-10"	967	B	R401	28	5'-5"	158	B	W507		2	12'-9"	27	S		
R601	21	13'-6"	426	S	Northwest Wingwall					W508		2	11'-6"	24	S		
R602	66	5'-5"	537	B	W603	4	11'-8"	70	S	W509		3	7'-6"	24	S		
R604	6	15'-7"	140	S	W604	17	5'-6"	140	B	W511		4	17'-0"	71	S		
R510	36	26'-8"	1001	S	W606	10	8'-10"	133	B	W512	10	8'-4"	87	B			
R511	21	5'-8"	124	B	W607	3	4'-5"	20	B	W514	6	10'-3"	64	S			
R512	52	4'-9"	258	B	W608	3	16'-0"	72	S	Replacement Steel							
R513	10	26'-6"	276	S	W609	3	14'-10"	67	S	RE1101	2	7'-6"	80	S			
					W610	3	13'-4"	60	S	RE1001	3	7'-2"	93	S			
					W508	2	11'-6"	24	S	RE901	1	6'-10"	23	S			
					W510	2	8'-9"	18	S	RE801	1	6'-6"	17	S			
					W514	7	10'-3"	76	S	RE701	1	6'-2"	13	S			
					W515	2	6'-0"	13	S	REG01	1	5'-11"	9	S			
										RE501	1	5'-7"	6	S			
										RE401	1	5'-3"	4	S			