



BRIDGE RENEWAL
OVER
COYOTE CREEK

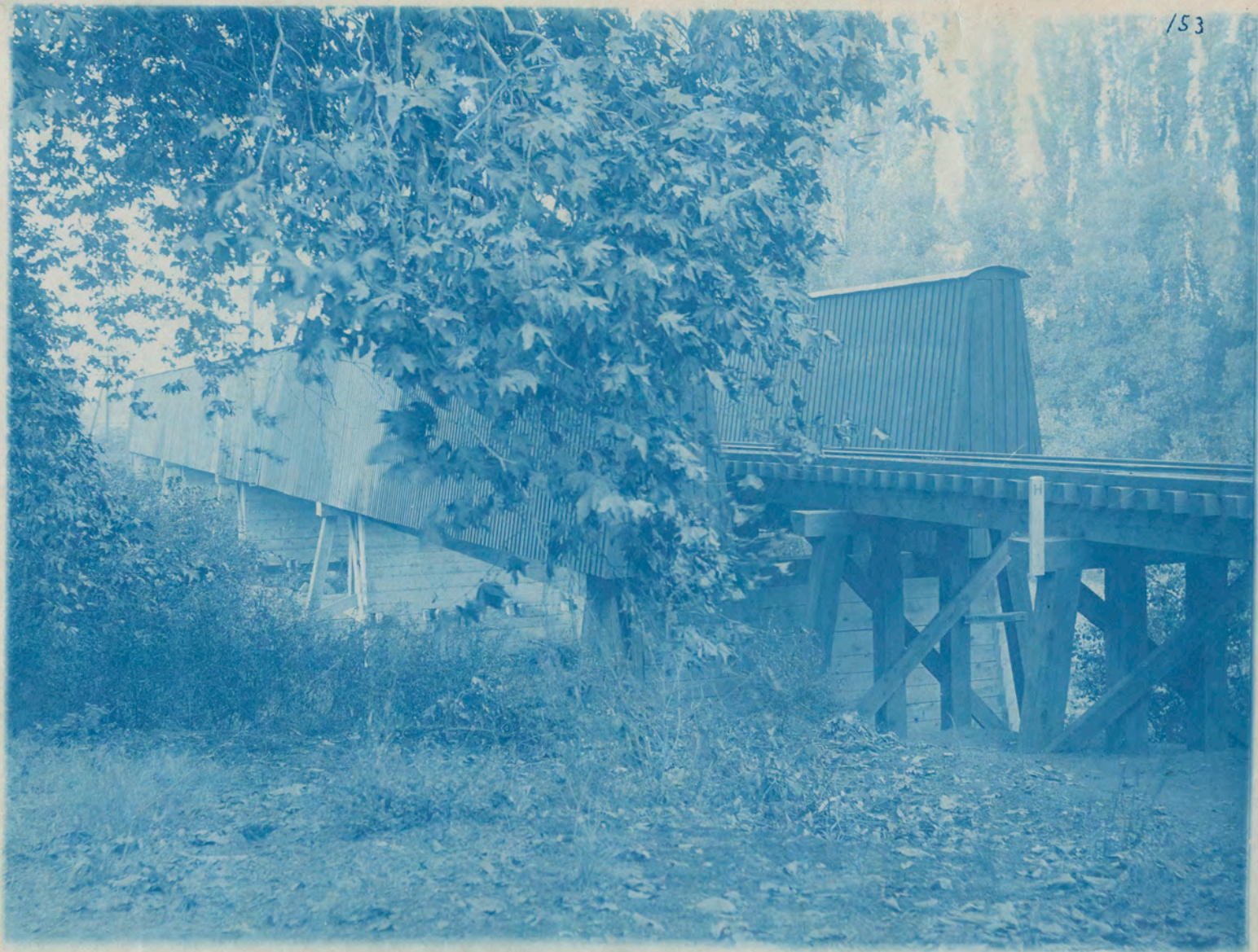
Near Wayne, Cal.

1900.

Central Pacific Railroad.

San Jose Branch.

WESTERN DIV.



OLD STRUCTURE LOOKING NORTHWEST.

248

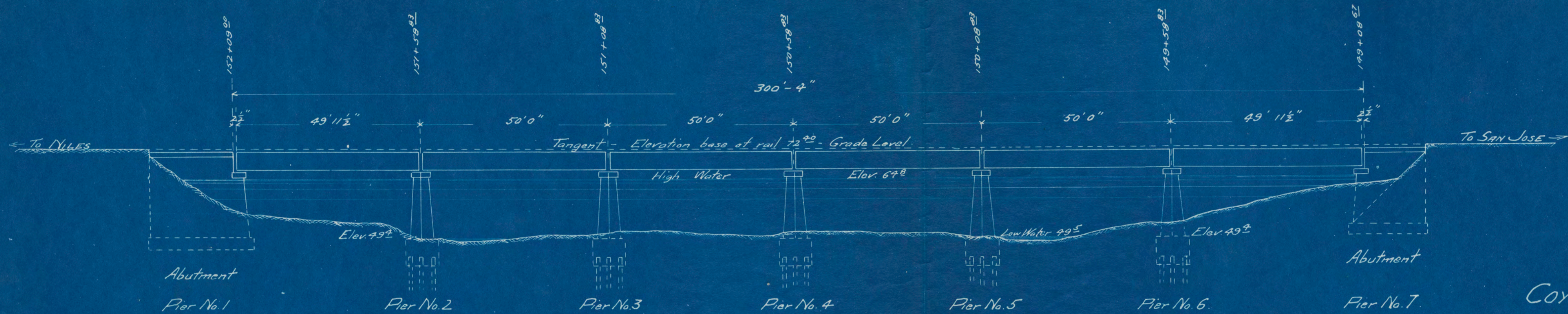


NEW STRUCTURE LOOKING NORTHWEST.

249



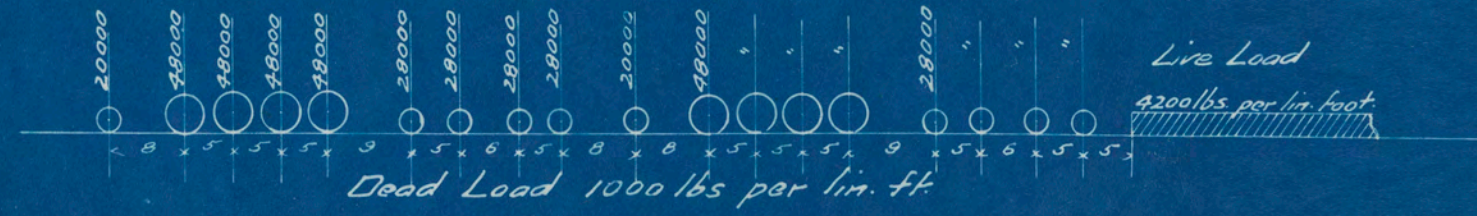
NEW STRUCTURE LOOKING SOUTHWEST.



COYOTE CREEK BRIDGE
 near WAYNE - SAN JOSE BRANCH.
 GENERAL PLAN
 Scale - 20' = 1"

JUNE 1900.
 F.A.B.

DATA FOR STRAINS



Page 3.

BRIDGE RENEWAL - COYOTE CREEK near WAYNE - 1900.

Central Pacific Railroad - San Jose Branch.

New Structure: - 6-50 ft. Single Track Steel Deck Plate Girder Spans - 180,276 lbs. medium steel - 600^g lbs. per foot.
Manufactured by Phoenix Bridge Co., Phoenixville, Pennsylvania.
Creosoted ties and guard rail, conforming to C.S.B. 35.

Piers: -

Piers 1 and 7: - Concrete abutments resting on clay, well below line of possible scour - plastered above ground with mixture of one part cement to two parts of sand.

2, 3, 4, 5, 6: - Concrete on untreated piles, cut off five feet below low water line.

Coping: - Quarry-faced granite from Rocklin, rough-pointed on joints and top, pedestal seats paen-hammered

Coping set with traveling crane

Concrete: - Mixed by Drake's Concrete Mixer. In the case of Piers 6 & 7, it was carried in wheelbarrows up runways from the mixing platform (on East bank of stream) and dumped. It was carried to the rest of the piers by the traveling crane, being raised from the mixing platform in coal-buckets and dumped from them. Crushed or broken rock from Folsom, sand and gravel from Niles, cement "K.B. & S." brand. Proportions are Broken rock 39%, sand and gravel 48%, cement 13%.

Miscellaneous: -

This bridge was built on same line as the old one, the grade being raised 3¹/₂ feet. Falsework consisted of standard 4-pile bents - 17 feet center to center. Piles were driven and capped, and the members of the lower chords of the old bridge used as stringers, the old spans being taken down by means of a mast and boom attached to the pile-driver. After the piers had been completed, the girders were placed on skids on the ends of the piers, by means of the pile-driver, the floor system of the falsework removed, the girders skidded into position, and the floor system replaced, the moving of the floor-system and the final placing of the girders being accomplished after the last evening train had passed and requiring only six hours time.

The siding at Wayne, one-half mile distant, was used for storage purposes.

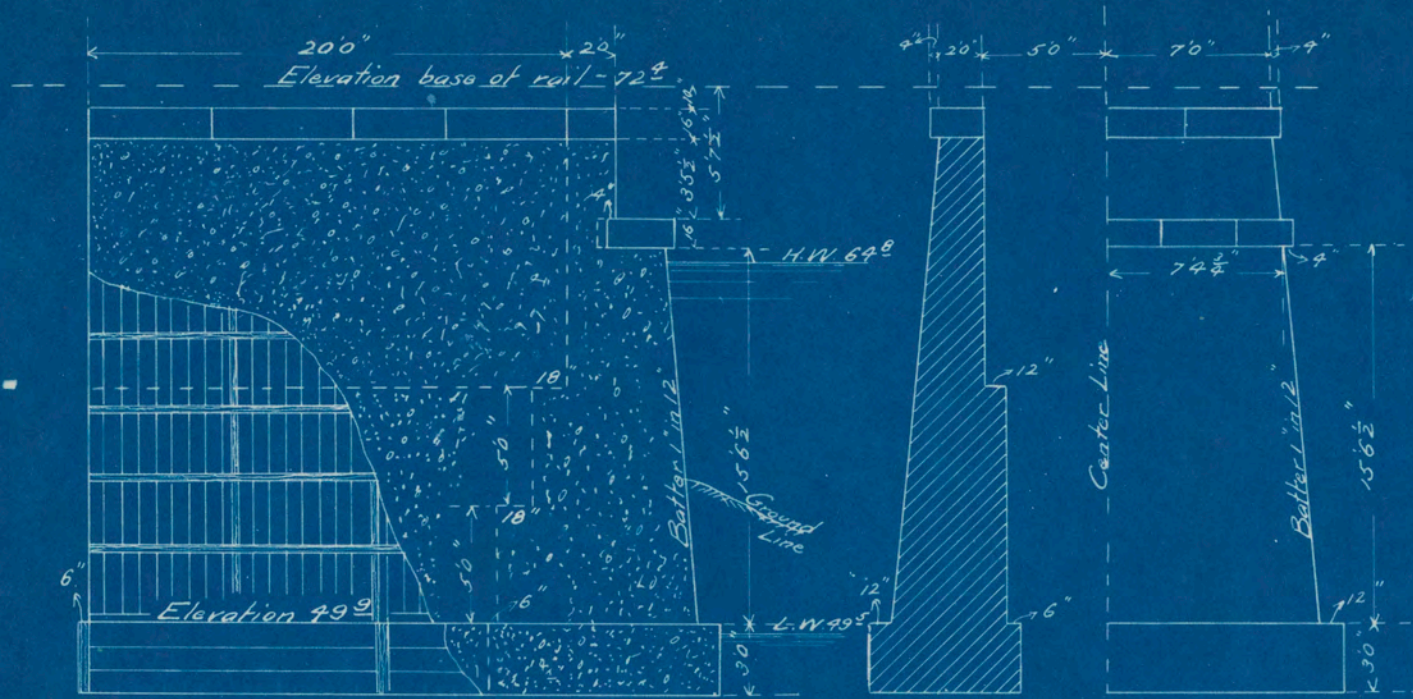
Old Structure: -

Consisted of 4-64' straining-beam spans (on concrete abutments and framed piers with pile foundations), and 74 ft. old three-stringer trestle - East approach.

Report on Cost of Coyote Creek Bridge - Near Wayne - Western Div.

Work commenced April 1900 - Completed June 1900.

ITEMS	Cost			Name of Unit	ITEMS	Cost			Name of Unit	ITEMS.	Cost			Name of Unit.
	Total.	Per Unit	Per Unit			Total.	Per Unit	Per Unit			Total.	Per Unit	Per Unit	
FOUNDATION					Pier No 7.					TAKING DOWN OLD SPANS & CLEANING UP GROUND				
Pier No 1					Excav. & Pumping					Material	340 68			
Excav. & Pumping					Material					Labor	503 06			
Material					Labor	423 96				Total	843 74			
Labor	461 34				Total	423 96	423 96		Less material credit	416 60				
Total	461 34				Concrete 139 ⁹ cu. yds.				Balance	427 14				
Concrete - 204 ⁶ cu. yds.					Material	611 80								
Material	894 75				Labor	339 04		2.42 cu. yd.						
Labor	496 20				Total	950 84		6.80 cu. yd.						
Total	1390 95	6.80	cu. yd.		Coping - 6 ⁵⁸ cu. yds.					GRADING APPROACHES.				
Coping - 7 ⁹⁶ cu. yds.					Material	174 75				7500 cubic yards				
Material	210 00				Labor	46 90				Material	1692 76	0.23	cu. yd.	
Labor	56 31				Total	221 65		33.69 cu. yd.		Labor	522 46			
Total	266 31	33.46	cu. yd.		Total Pier 7.	1596 45		10.90 cu. yd.		Total	2215 22	20.30	cu. yd.	
Total Pier 1	2118 60	9.97	cu. yd.		TOTAL SUBSTRUCTURE	8705 47								
					STEEL SPAN					MISCEL. ITEMS.				
Piers 2, 3, 4, 5 & 6.					Phoenix Br. Co. Bill	6165 45		0.0392	Per lb.	Freight	324 34			
Excav. & Pumping					180,276 lbs.					Material	537 60			
Material					Eastern Freight	1120 11				Labor	623 11			
Labor	675 41				Ex. Material, Work Train etc.	350 14				Total	1485 05			
Total	675 41				Labor erecting	418 20		0.0023	lb.					
Cofferdam - 15200 ft.					Total	8053 90		0.0497	"	GRAND TOTAL.				
Material	178 79				FLOOR SYSTEM - 304 lin. ft.					Material	1606 261			
Labor	367 71				Material	789 60				Labor	7268 69			
Total	546 50	35.95	Mft. sq.		Labor	265 34				Total	23331 30			
Filing - 1356 lin. ft.					Total	1054 94		3.97	lin. ft.					
Material	186 89				PAINTING					Description: -				
Labor	271 61				Material	44 66				6-50ft. single track				
Total	458 50	0.34	lin. ft.		Labor	256 50				steel deck plate girder spans				
Concrete 393 ⁵ cu. yds.					Total	301 16		3.34	Ton of Bridge on concrete piers.					
Material	1786 96				FALSE WORK. - 338 lin. ft.					Phoenix Bridge Co. Mts.				
Labor	1032 77				Material	690 93								
Total	2819 73	2.62	cu. yd.		Labor	397 49								
Coping - 14 ³⁵ cu. yds.					Total	1088 42		3.22	lin. ft.					
Material	379 00													
Labor	111 28													
Total	490 28	34.16	cu. yd.											
Total less piling	4531 92	11.11	cu. yd.											

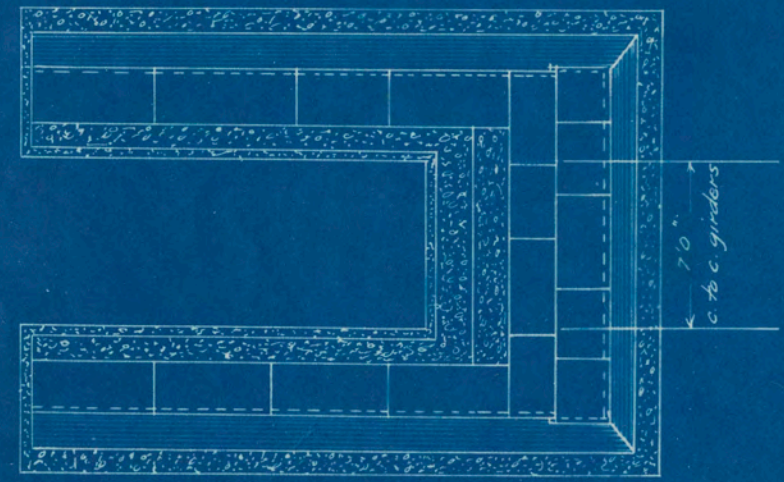


Notes: -

47 cu yds of the excavation was concrete from the old pier, which had to be removed by blasting. The balance - stiff clay - was partly removed by shovel and partly in coal buckets by means of the derrick. The water was bailed out by hand.

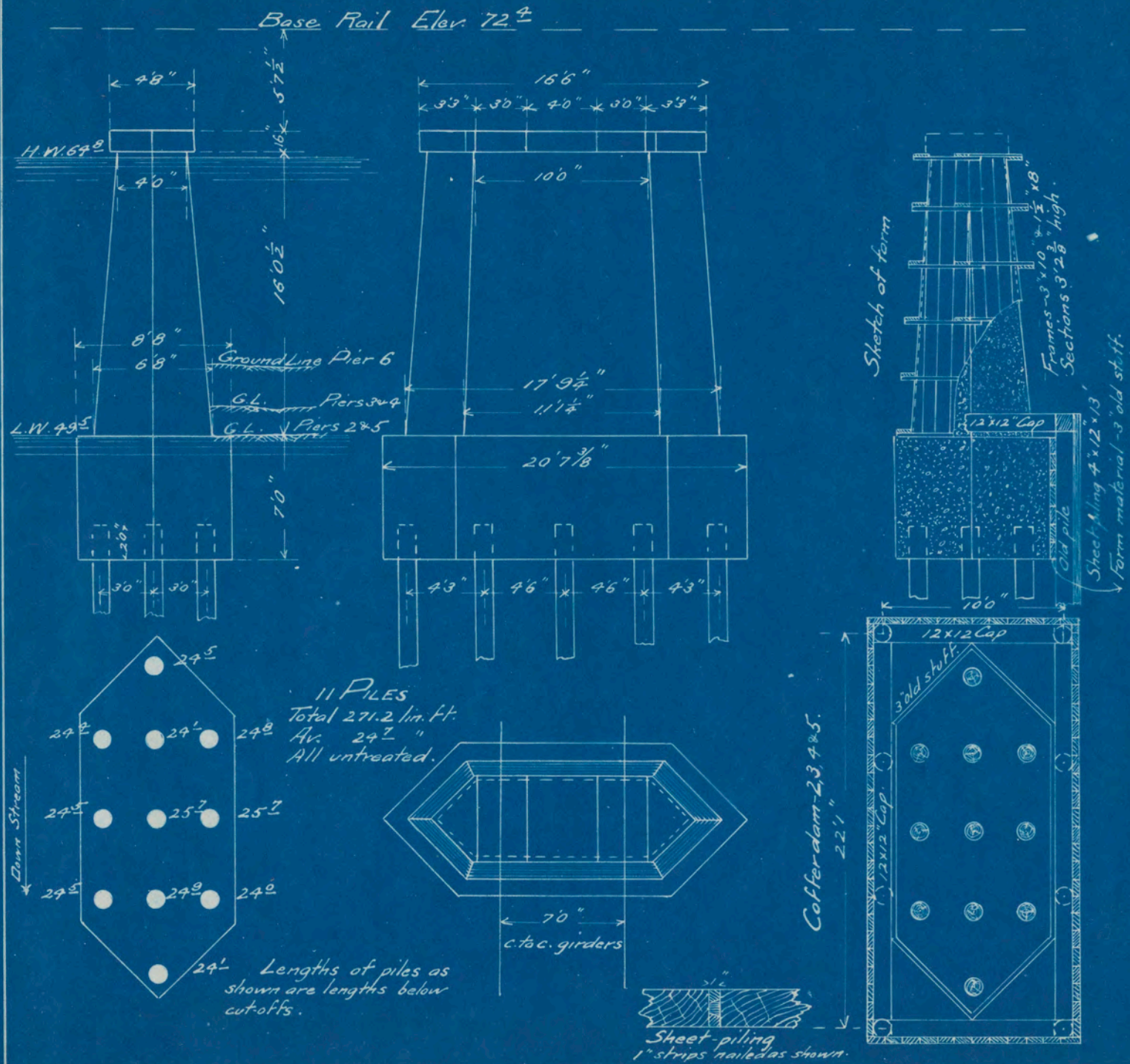
Quantities: -

Concrete	204.6 cu yds.
Broken Rock	100.1 " "
Sand and Gravel	123.4 " "
Cement in Concrete	248.5 bbls.
" " Plastering - 55 sq. yds.	0.9 "
" " Setting Copping	5.0 "
Coping Stone	7.96 cu yds.
Excavation above water	375 " "
" below " "	80 " "
Backfilling	200 " "
Lumber in form - Old stuff 5150 ft. B.M.	
" New 2750 (1 1/2" x 8" x 3" x 10")	



COYOTE CREEK BRIDGE
 near WAYNE - SAN JOSE BRANCH
 PIER No. 1
 Scale - 1/8" = 1'

JUNE 1900.
 F.A.B.



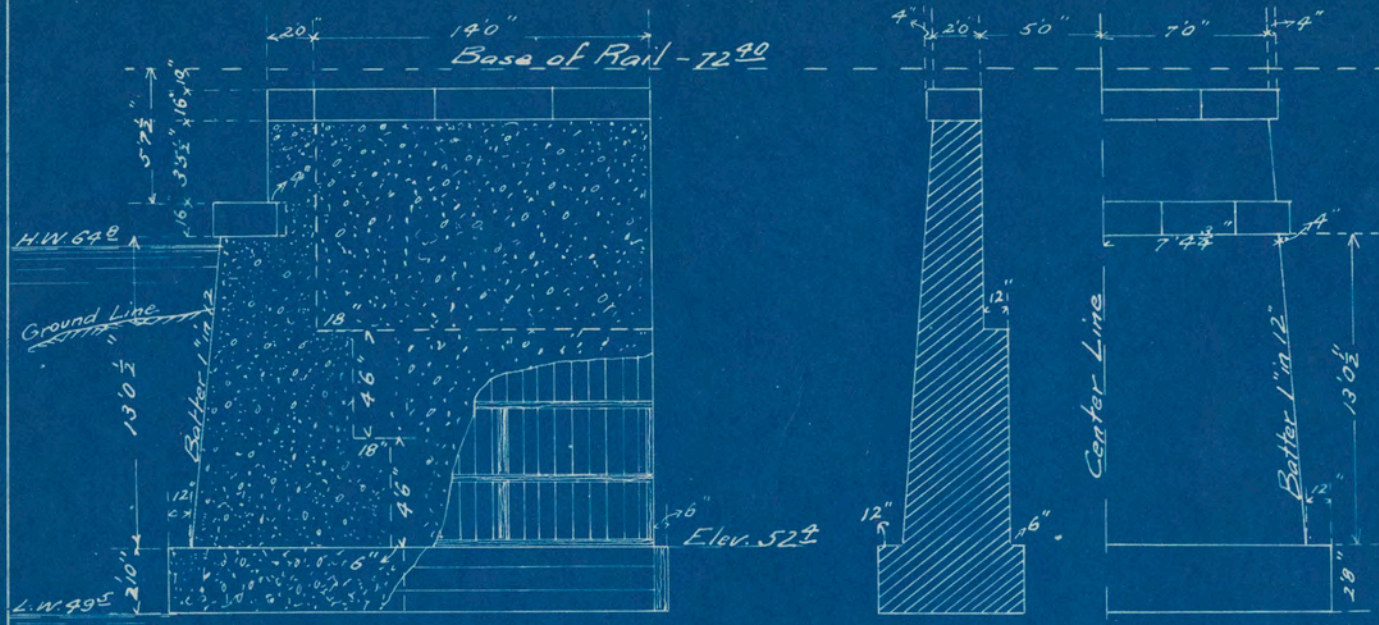
Notes:—
 Piers 2, 3, 4, 5 & 6 are alike and the quantities given are an average for any one of them. With the exception of pier 6, all required cofferdams in building. The foundation piles were first driven by large driver from the bridge, and then the cofferdam piles and sheet piling by small land driver below. After the cofferdam was in place, excavation was carried on inside by shovel, the water being kept down by the 8" centrifugal pump.
 In the case of piers 4, 5 & 6, excavation was through stiff blue clay. At pier 6, part of an old concrete pier had first to be removed by blasting. Piers 2 & 3 had a two foot stratum of gravel overlying the clay.

Quantities:—

Concrete	78.7 cu. yds.
Broken Rock	38.5 " "
Sand and Gravel	47.4 " "
Cement in concrete	94 bbls.
" plastering - 63 ⁵ sq. yds.	1.1 "
" setting coping	1.5 "
Coping stone	2.87 cu. yds.
Excavation above water	14.6 cu. yds.
" below "	62.0 " "
Back-filling	15 " "
Lumber in cofferdam - 4' x 12' x 12' "	3800 ft. B.M.
" " form - 3' x 12' x 1 1/2' x 8' & 3' x 10' "	3500 " "
11 Piles - total length 271 1/2 lin. ft. - average length 24 1/2 ft.	
Dead load on pier	25.0 tons
Live	102.4 "
Weight of coping and concrete	146.5 "
Total weight on piles	273.9 "
Maximum load per pile	24.9 "
Safe load allowable - (S = $\frac{swk}{2(p+1)}$)	35.5 "

COYOTE CREEK BRIDGE
 near WAYNE - SAN JOSE BRANCH
 PIERS 2, 3, 4, 5 & 6.
 Scale - 1/8" = 1'

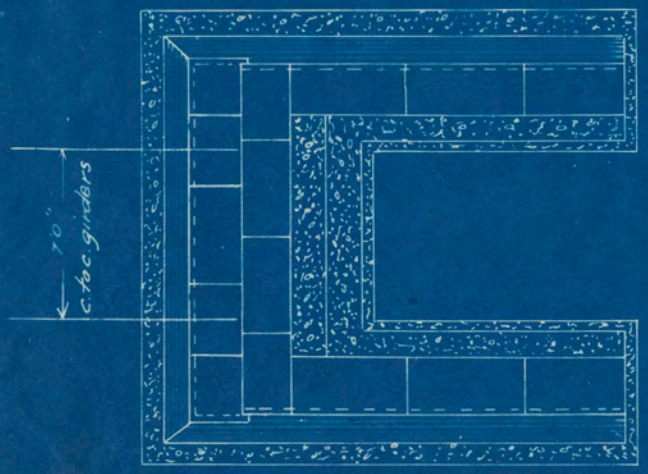
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Notes:
 Excavation was through stiff clay by shovel. Part of the water was removed by the centrifugal pump and part by bailing.

Quantities:-

Concrete	139.9 cu. yds.
Broken Rock	69.0 " "
Sand and Gravel	84.3 " "
Cement in Concrete	170.0 bbls.
" " Plastering - 35 ^o sq yds	0.6 "
" " setting coping	5.0 "
Coping Stone	6.58 cu. yds.
Excavation above water	213.0 " "
" " below "	22.0 " "
Backfilling	125.0 " "
Lumber in form - New	1900 " " (1 1/2" x 8" x 9' x 10')
	old stuff 6750 ft. B.M.



COYOTE CREEK BRIDGE
 near WAYNE - SAN JOSE BRANCH
 PIER No. 7.
 Scale - 1/8" = 1'

JUNE 1900.
 F.A.B.

