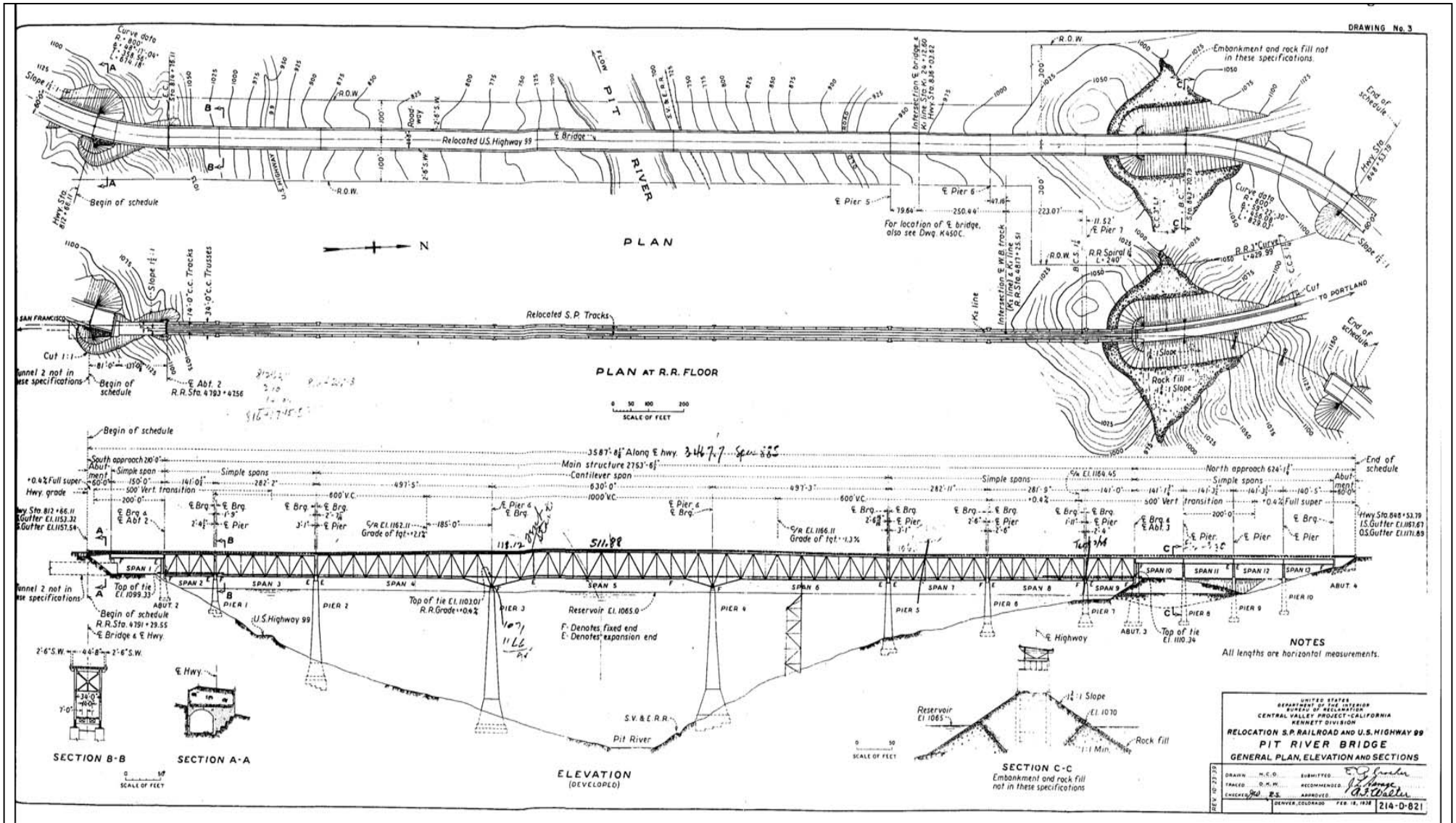
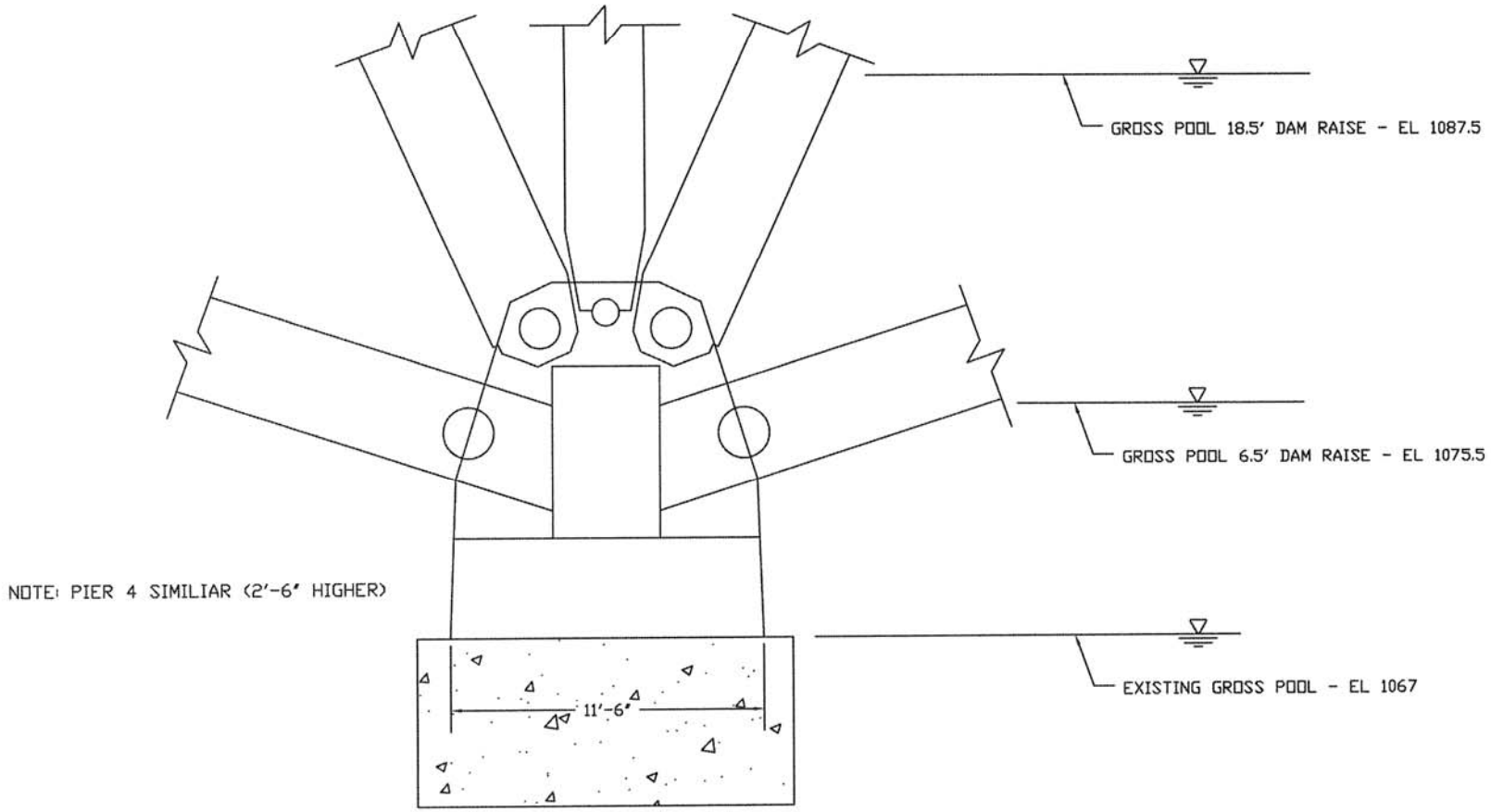


Source: U.S. Bureau of Reclamation, Abutments and Piers, Pit River Bridge, Relocation of Southern Pacific Railroad and U.S. Highway 99, 1939.

Shasta Lake Water Resources Investigation, California

PIT RIVER BRIDGE – EXISTING PLAN AND PROFILE

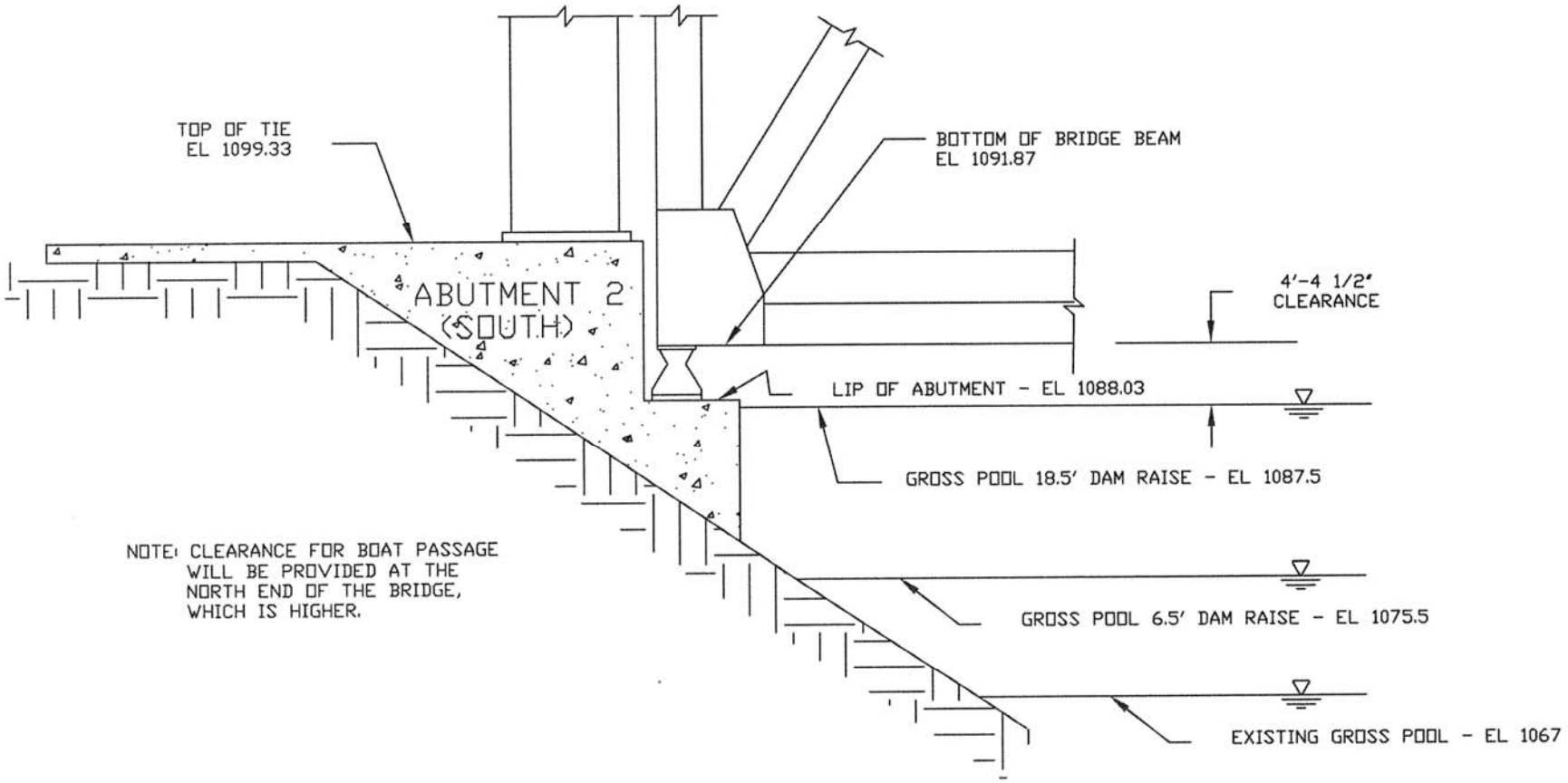
U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004



Shasta Lake Water Resources Investigation, California

PIT RIVER BRIDGE – WATER LEVELS AT PIER 3

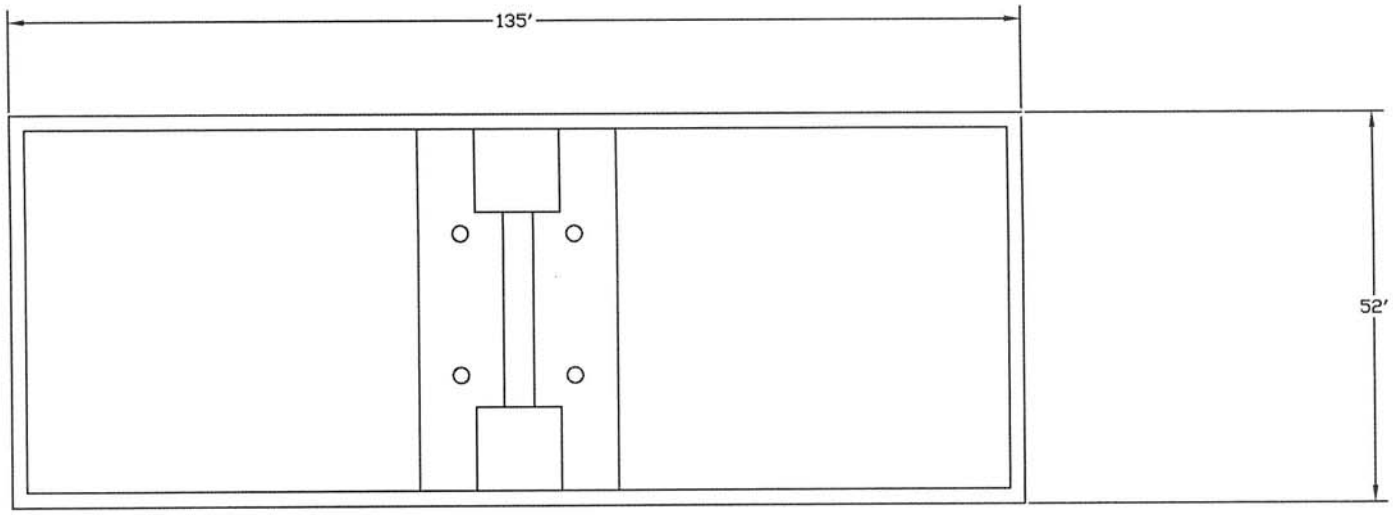
U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004



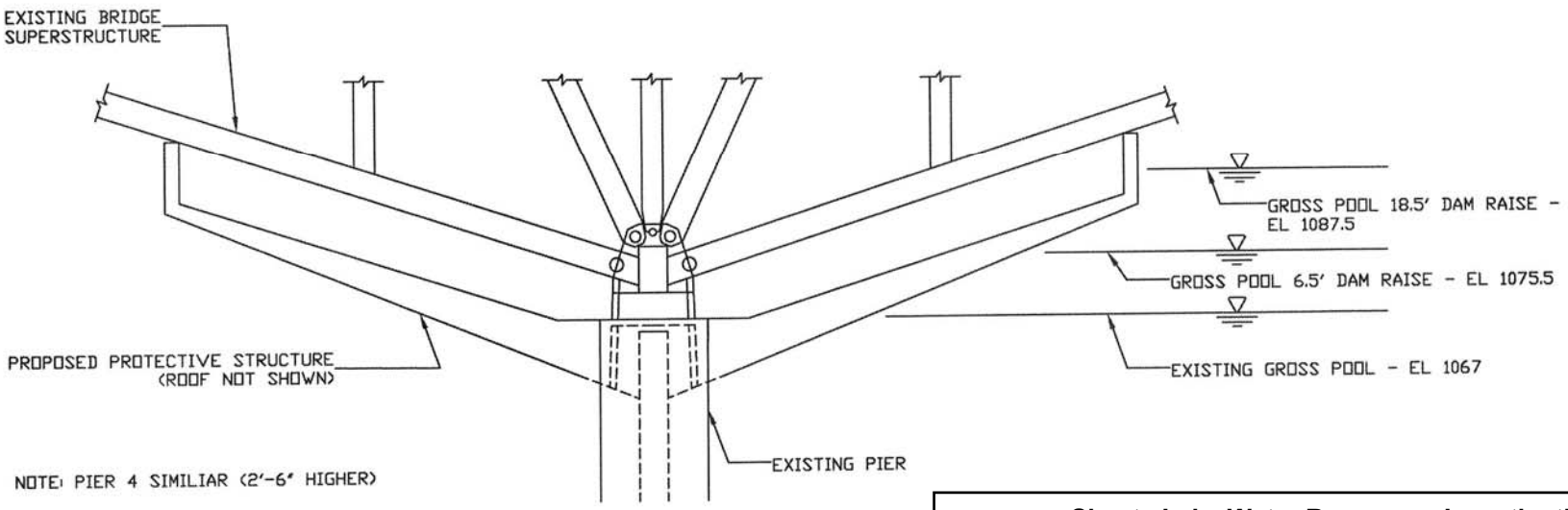
Shasta Lake Water Resources Investigation, California

PIT RIVER BRIDGE – WATER LEVELS AT ABUTMENT 2

U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004



PLAN

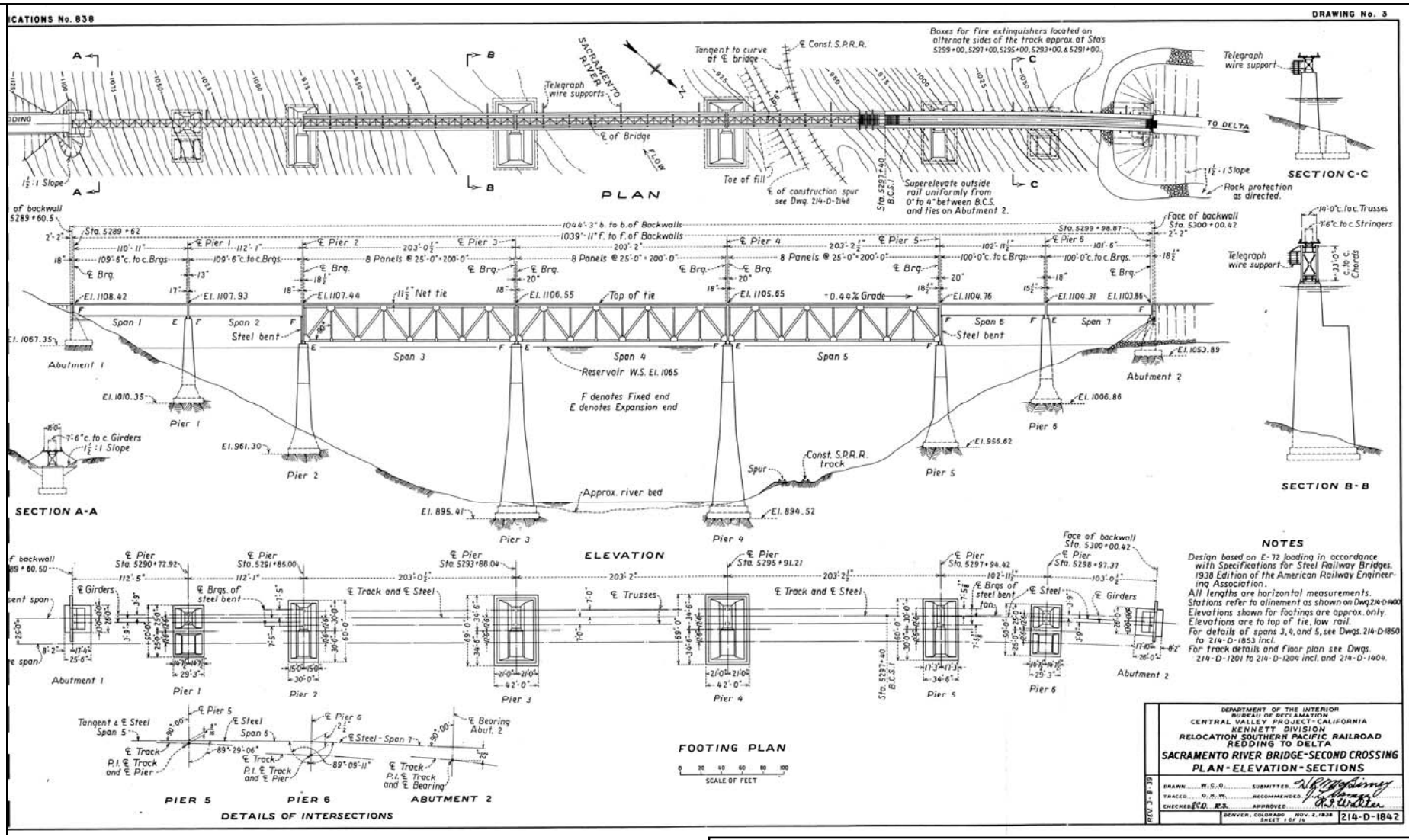


SECTION

Shasta Lake Water Resources Investigation, California

PIT RIVER BRIDGE – PROTECTION AT PIERS 3 AND 4

U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004

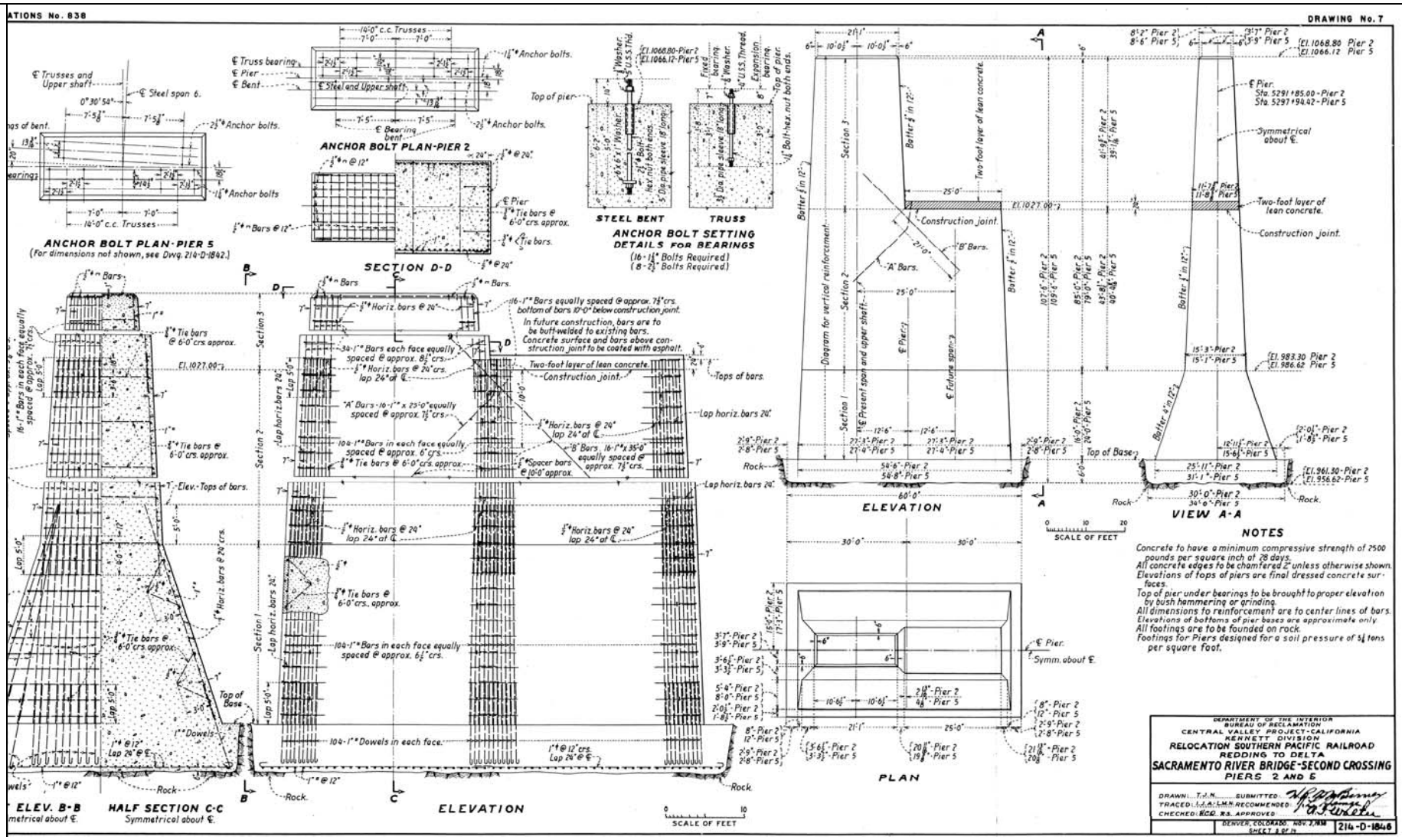


Source: U.S. Bureau of Reclamation, Sacramento River Bridge Second Crossing, Doney Creek Bridge, Highway Underpass Station 5350+02.33, and Highway Underpass Station 5350+82.39, Southern Pacific Railroad Relocation, 1939.

Shasta Lake Water Resources Investigation, California

SACRAMENTO RIVER RAILROAD BRIDGE, SECOND CROSSING – EXISTING PLAN AND PROFILE

U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004

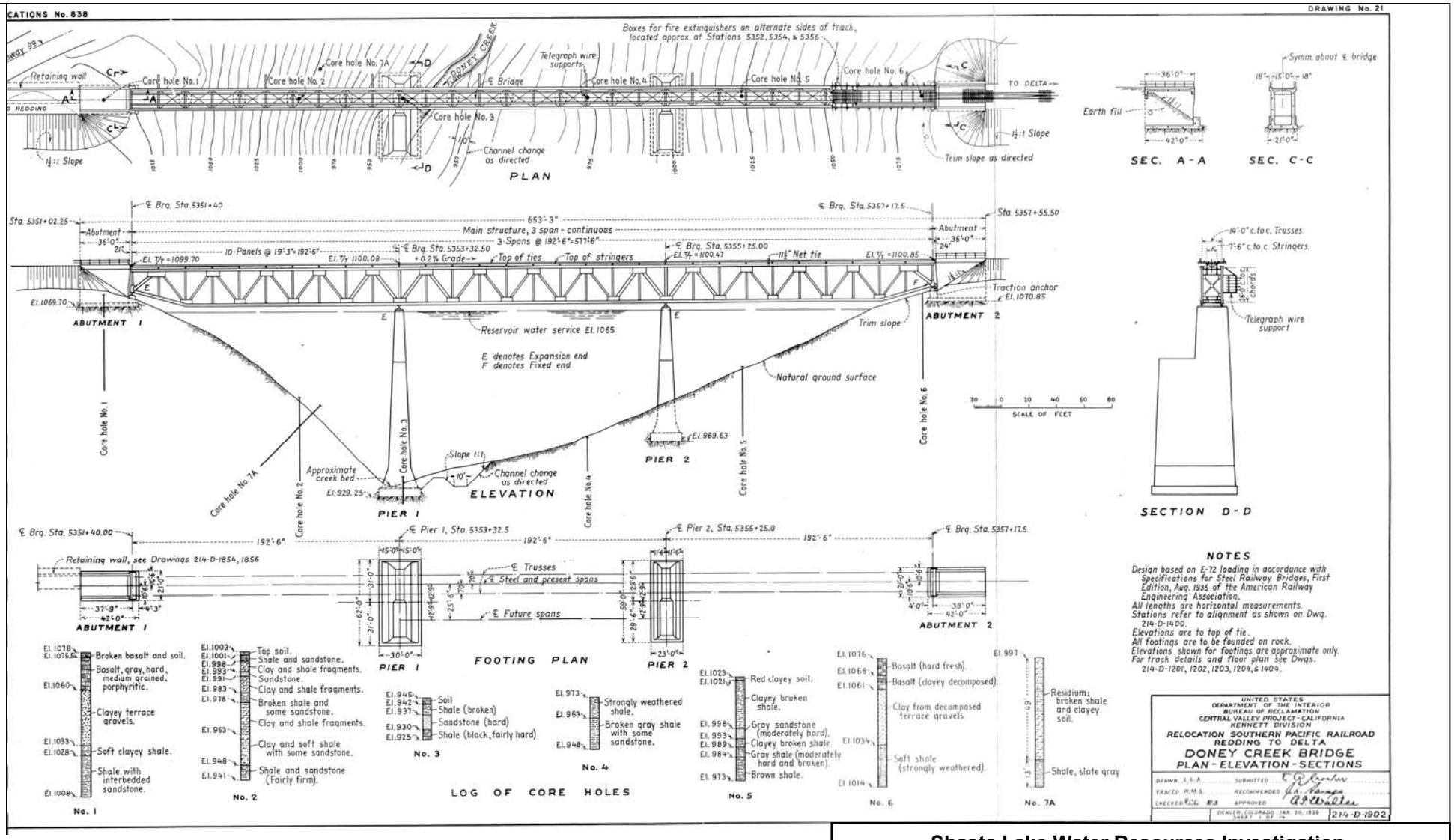


Source: U.S. Bureau of Reclamation, Sacramento River Bridge Second Crossing, Doney Creek Bridge, Highway Underpass Station 5350+02.33, and Highway Underpass Station 5350+82.39, Southern Pacific Railroad Relocation, 1939.

Shasta Lake Water Resources Investigation, California

SACRAMENTO RIVER RAILROAD BRIDGE, SECOND CROSSING – EXISTING PIERS

U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004

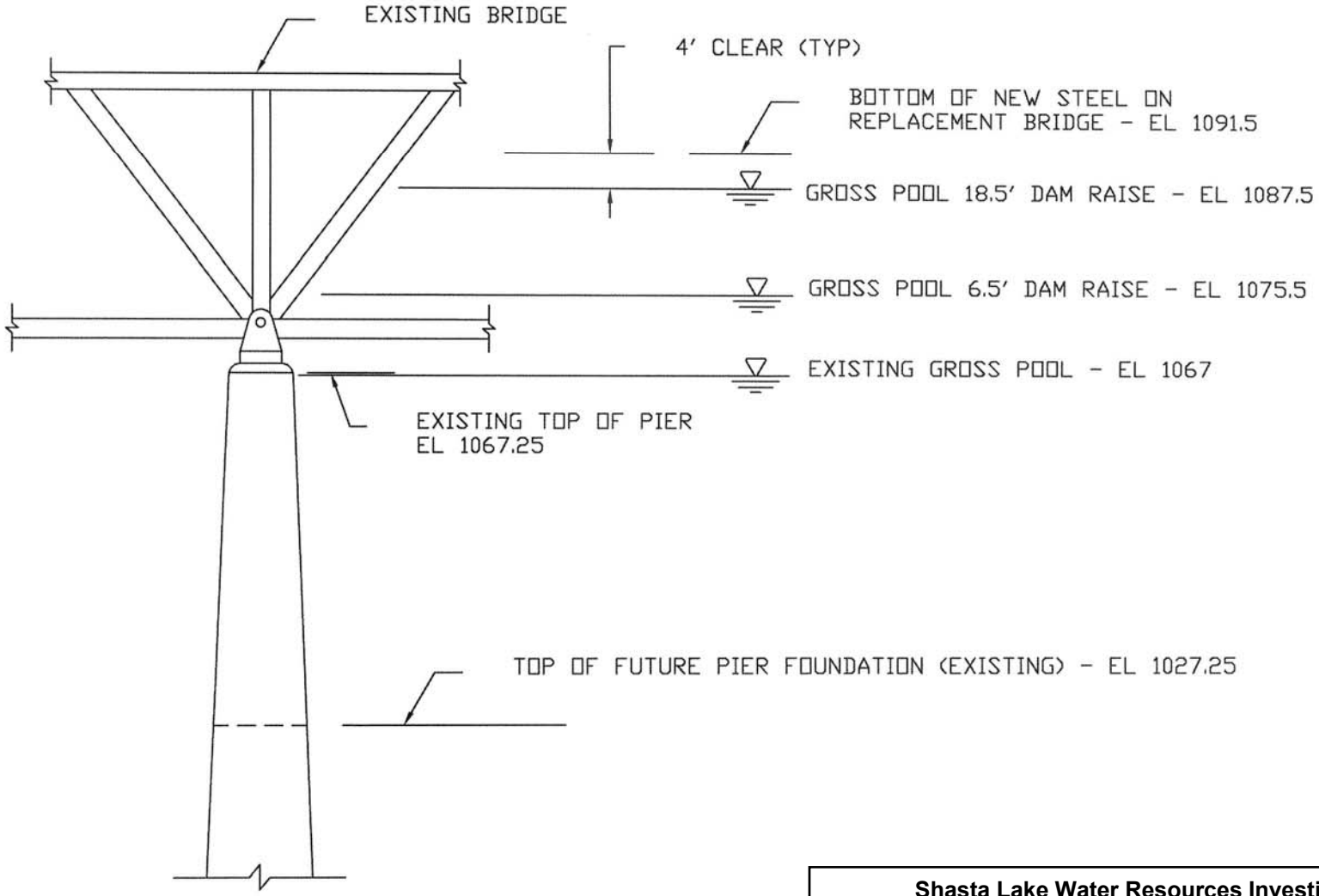


Source: U.S. Bureau of Reclamation, Sacramento River Bridge Second Crossing, Doney Creek Bridge, Highway Underpass Station 5350+02.33, and Highway Underpass Station 5350+82.39, Southern Pacific Railroad Relocation, 1939.

Shasta Lake Water Resources Investigation, California

DONEY CREEK RAILROAD BRIDGE – EXISTING PLAN AND PROFILE

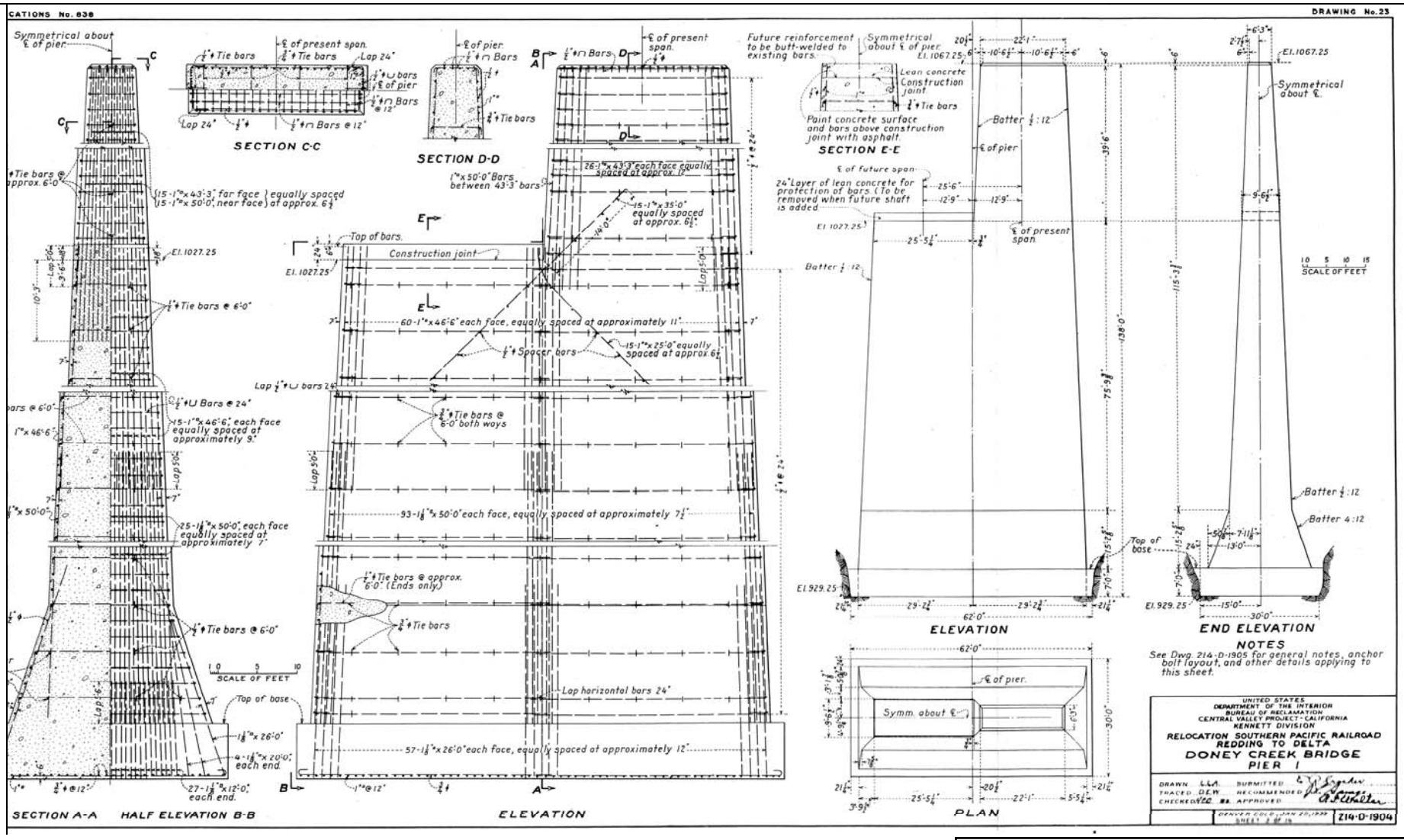
U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004



Shasta Lake Water Resources Investigation, California

DONEY CREEK RAILROAD BRIDGE – WATER LEVELS AT PIER 1

U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004

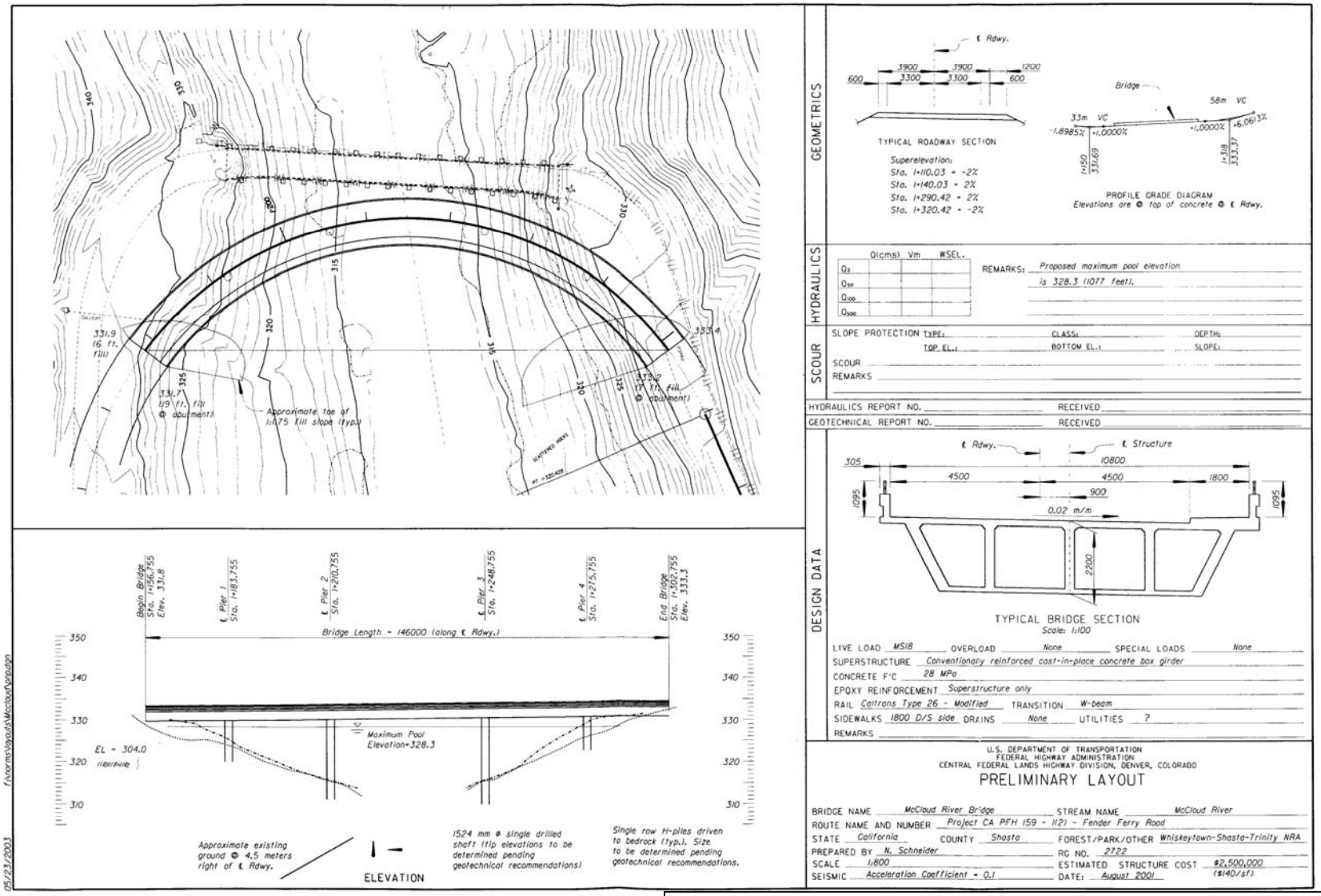


Source: U.S. Bureau of Reclamation, Sacramento River Bridge Second Crossing, Doney Creek Bridge, Highway Underpass Station 5350+02.33, and Highway Underpass Station 5350+82.39, Southern Pacific Railroad Relocation, 1939.

Shasta Lake Water Resources Investigation, California

DONEY CREEK RAILROAD BRIDGE – EXISTING PIERS

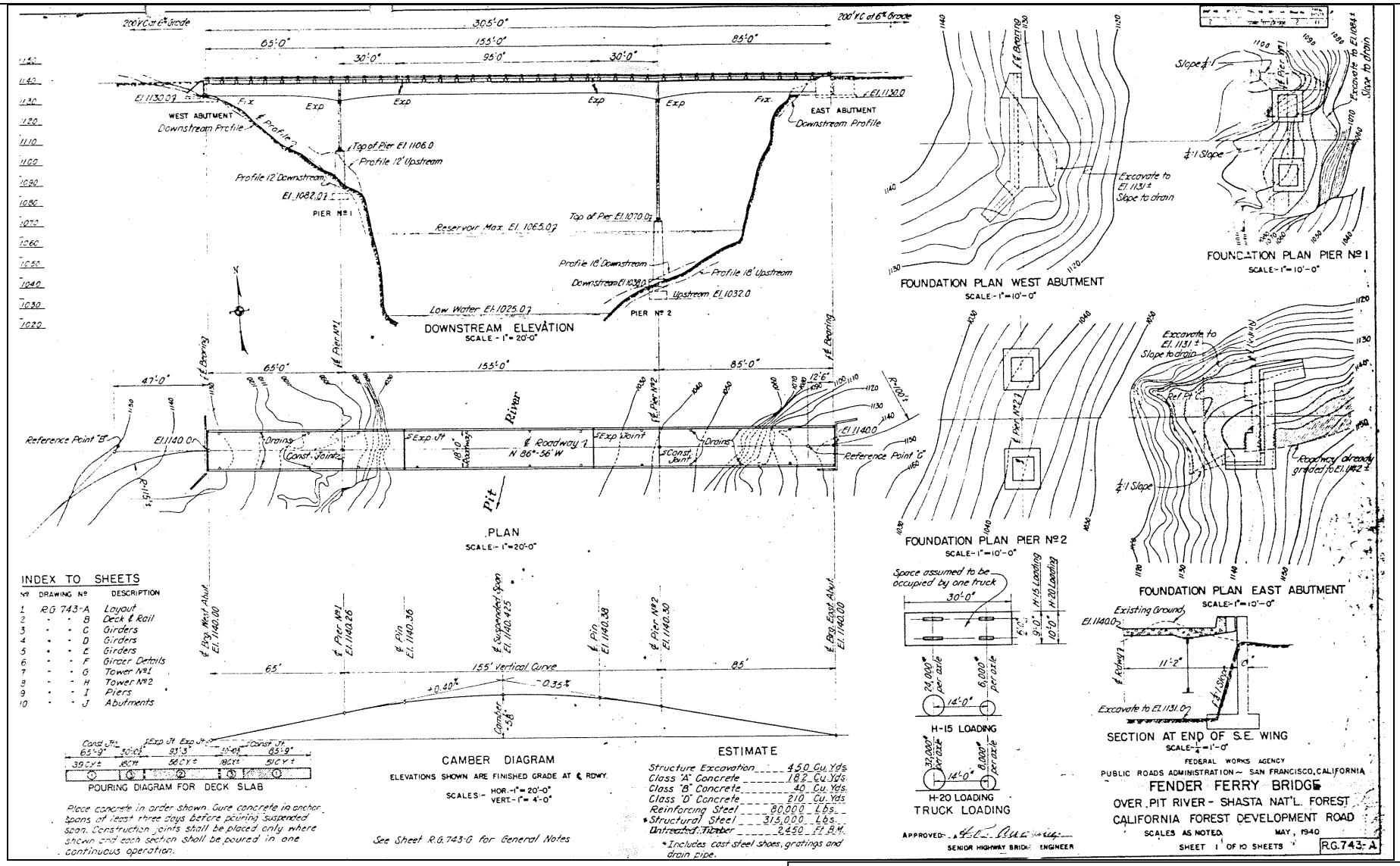
U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004



Shasta Lake Water Resources Investigation, California

McCLOUD RIVER BRIDGE – POTENTIAL REPLACEMENT DESIGN

U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004



Note: This bridge would not need to be relocated for the low level dam raise options, but some type of protective structure/enclosure would be needed at pier no. 2 to protect the steel from inundation due to a raised gross pool.

Shasta Lake Water Resources Investigation, California

FENDER FERRY BRIDGE – EXISTING PLAN AND PROFILE

U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES

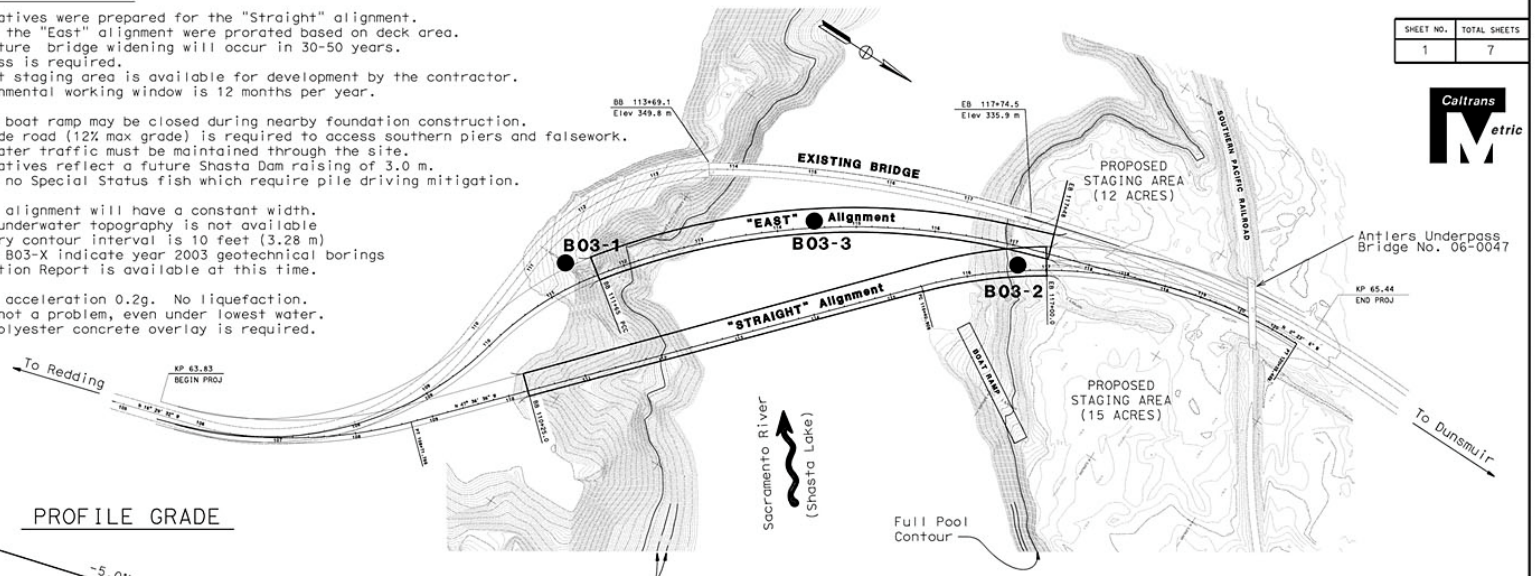
DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT
02	Sha	5	R 64.7

SHEET NO.	TOTAL SHEETS
1	7

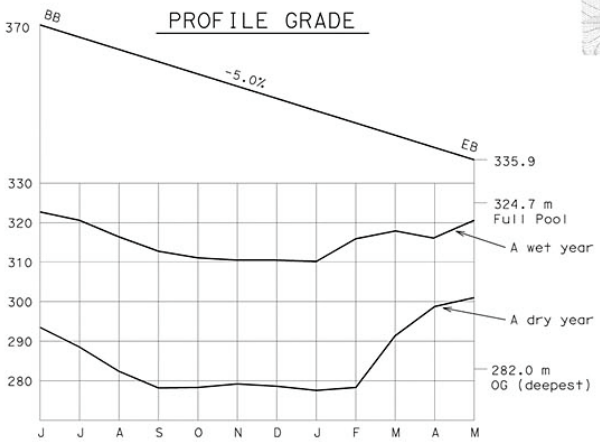
Caltrans Metric

General Notes and Assumptions

1. The Alternatives were prepared for the "Straight" alignment. Costs for the "East" alignment were prorated based on deck area.
2. A 7.2 m future bridge widening will occur in 30-50 years.
3. Barge access is required.
4. A lakefront staging area is available for development by the contractor.
5. The environmental working window is 12 months per year.
6. The public boat ramp may be closed during nearby foundation construction.
7. A 9.0 m wide road (12% max grade) is required to access southern piers and falsework.
8. Road and water traffic must be maintained through the site.
9. The Alternatives reflect a future Shasta Dam raising of 3.0 m.
10. There are no Special Status fish which require pile driving mitigation.
11. The final alignment will have a constant width.
12. Accurate underwater topography is not available
13. The primary contour interval is 10 feet (3.28 m)
14. Locations B03-X indicate year 2003 geotechnical borings
15. No Foundation Report is available at this time.
16. Peak rock acceleration 0.2g. No liquefaction.
17. Scour is not a problem, even under lowest water.
18. A 20 mm polyester concrete overlay is required.



PLAN
1:1000



SHASTA LAKE SURFACE ELEVATION SEASONAL VARIATION

GEOLOGY

The existing bridge is on spread footings. Borings in 2003 show 5-10 m clayey gravel and boulders over fractured to sound metashale with undrained shear strength up to 30,000 kPa. Driven piles are not recommended. Spread footings are recommended on land. Hard-drilled CIDH piles are recommended at piers in the water.

APS ESTIMATE SUMMARY

SHEET	ALTERNATIVE	ALIGNMENT	
		EAST (L=583 m)	STRAIGHT (L=675 m)
2	CIP-200	$74,962,000	$85,992,000
3	CIP-200-LW	$82,426,000	$94,634,000
4	CIP-200-CISS	$66,797,000	$76,538,000
5	CIP-70-CISS	$63,829,000	$73,102,000
6	ARCH-SYD	N/A	$284,736,000
7	DEMOLITION	ALL ALT's INCLUDE $5.1M DEMO	

COST INDEX = 270

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DESIGNED BY Jason Lynch	DATE 10/03	STRUCTURE DESIGN BRANCH 2
DRAWN BY Jason Lynch	DATE 10/03	
CHECKED BY	DATE	
APPROVED Gudmund Setberg	DATE 10/03	

PLANNING STUDY

SACRAMENTO RIVER - ANTLERS (REPLACE)

SITE PLAN

BRIDGE NO. 06-0089	CU 02
SCALE:	EA 02-378900

USERNAME => CFiguerr DATE PLOTTED => 21-NOV-2003 TIME PLOTTED => 13:28

STRUCTURES PLANNING STUDY SHEET (METRIC) (REV. 3/5/97)

Shasta Lake Water Resources Investigation, California

ANTLERS BRIDGE – POTENTIAL REPLACEMENT ALTERNATIVE ALIGNMENTS

U.S. Bureau of Reclamation, Mid-Pacific Region
June 2004