1. SITE I.D. NO

HAER INVENTORY

Historic American Engineering Record
Department of the Interior, Washington, D.C. 20240

2. INDUSTRIAL CLASSIFICATION: Bridges, Trestles, and Aqueducts
Suspension: steel
#503/26 503000278300

3. PRIORITY: 1

5. DATE: 7610 — 1932/57

4. DANGER OF DEMOLITION? (SPECIFY THREAT) ☒ YES ☐ NO ☐ UNKNOWN

6. GOVT SOURCE OF THREAT: ☐ OWNER ☐ ADMIN

7. OWNER/ADMIN: State Department of Transportation

8. NAME(S) OF STRUCTURE: Yale Bridge

9. OWNER'S ADDRESS: Highway Administration Building
Olympia, Washington 98504

10. STATE: WA — COUNTY: 011 — COUNTY NAME: Clark — CITY/VICINITY: Yale — CONG. DIST.: 04

STATE ___ COUNTY ___ COUNTY NAME ___ CITY/VICINITY ___ CONG. DIST. ___

11. SITE ADDRESS (STREET & NO.)
Crossing: Lewis River
19.8 North Junction State Route 502

12. EXISTING SURVEYS: ☐ NR ☐ NHL ☐ HABS ☐ HAER—I ☐ HAER ☐ NPS ☐ CL6 ☐ CONF ☐ STATE ☐ COUNTY ☐ LOCAL ☐ OTHER

13. SPECIAL FEATURES (DESCRIBE BELOW)
☐ INTERIOR INTACT ☐ EXTERIOR INTACT ☐ ENVIRONS INTACT

14. UTM ZONE 10 — EASTING 548680 — NORTHING 5089700 — SIGN
SCALE ☐ 1:24 ☒ 1:62.5 ☐ OTHER ___ QUAD NAME: Yacolt, Washington

UTM ZONE ___ EASTING ___ NORTHING ___ SIGN ___
SCALE ☐ 1:24 ☐ 1:62.5 ☐ OTHER ___ QUAD NAME ___

15. CONDITION: 70 ☐ EXCELLENT 71 ☐ GOOD 72 ☐ FAIR 73 ☐ DETERIORATED 74 ☐ RUINS 75 ☐ UNEXPOSED 76 ☐ ALTERED 82 ☐ DESTROYED 85 ☐ DEMOLISHED

16. INVENTORIED BY: Lisa Soderberg — AFFILIATION: HAER/Washington State Bridge Inventory — DATE: August 1979

17. DESCRIPTION AND BACKGROUND HISTORY, INCLUDING CONSTRUCTION DATE(S), HISTORICAL DATE(S), PHYSICAL DIMENSIONS, MATERIALS, EXTANT EQUIPMENT, AND IMPORTANT BUILDERS, ENGINEERS, ETC.

In 1932, Clark and Cowlitz County jointly constructed a short-spanned steel suspension bridge across the Lewis River to replace a steel truss that had been demolished as a result of the construction of the Ariel Dam. Because the backwater from the dam created a depth of 90 feet at the bridge site, it made it unusually difficult to build falsework, a prerequisite for the construction of the traditional type of highway bridge. Consequently, it was necessary to turn to other, less conventional solutions to forge the river.

Originally, a 532 foot structure was built which consisted of a 300 foot steel truss span supported by 2 7/8 inch galvanized steel cables suspended from two 332 foot steel towers. The 17 foot roadway is carried 50 feet above high water. The 20 panels of the steel stiffening truss are made up of rolled H sections, and have a depth of 7 feet 6 inches. In 1957 five 30 foot steel beam approach spans were added.

In order to simplify the erection of the span, a number of innovative details were developed. The four (CONT OVER)

18. ORIGINAL USE: vehicular — PRESENT USE: vehicular — ADAPTIVE USE:

19. REFERENCES—HISTORICAL REFERENCES, PERSONAL CONTACTS, AND/OR OTHER

State Department of Transportation Files.
H.O. Blair, "Short-Span Suspension Bridge Uses Prestressed Rope Cables," Engineering News-Record, 20 July 1933, pp. 70-71.

(CONT OVER)

20. URBAN AREA 50,000 POP. OR MORE? ☐ YES ☒ NO

21. NPS REGION: NW

22. PUBLIC ACCESSIBILITY: ☐ YES, LIMITED ☒ YES, UNLIMITED ☐ NO ☐ UNKNOWN

23. EDITOR INDEXER

24. LOCATED IN AN HISTORIC DISTRICT? ☐ YES ☒ NO NAME ___ DISTRICT I.D. NO ___

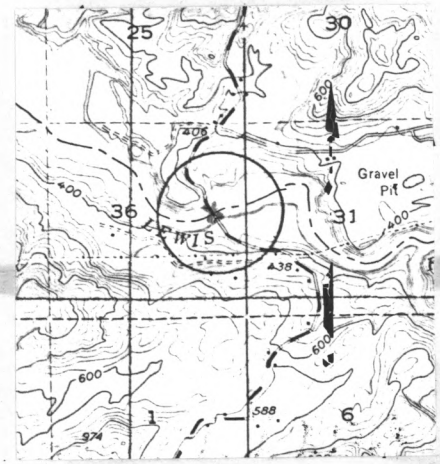
USDI—NATIONAL PARK SERVICE FORM 10-292 (10/77)

Description (continued)
rope cables which were manufactured by the Hazard Wire Rope Company of Wilkes-Barre, Pennsylvania, were prestressed to 75 tons. The main stay and back stay cables which were attached to steel castings at the tops of the towers, were discontinuous at the towers. Fastenings were fitted to the castings with links and pins, and approximated the function of a swivel joint. This detail simplified erection, and avoided wear on the main cables, subsequently reducing the cost by permitting the use of smaller-sized cables.

Gravity anchorages were designed. To provide greater resistance to overturning, the base of the anchorages were pyramid-shaped, and were keyed into the rock banks.

The bridge was designed by Harold H. Gilbert, and was built by the Gilpin Construction Company of Portland, Oregon.

Although there are numerous examples of timber suspension bridges throughout the State, the Yale Bridge is the only example of a short-span steel suspension bridge. The visual impact of the form of the parabolic curve of the cable stretching between two towers, has an unrelenting, universal appeal. However, the short-span steel suspension bridge has remained rare, because cost factors have prevented it from competing with simple steel trusses, cantilevers, or arches for ordinary highway structures.



ABSTRACT

HAER NO | LC | TECH REPORT | HIST REPORT | CONTEMP PHOTO | HIST PHOTO | CONTEMP DRWG | HIST DRWG | COLOR PLATE | PHOTOGRAM | SW | FILM