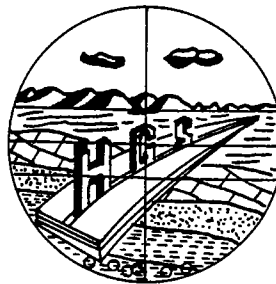
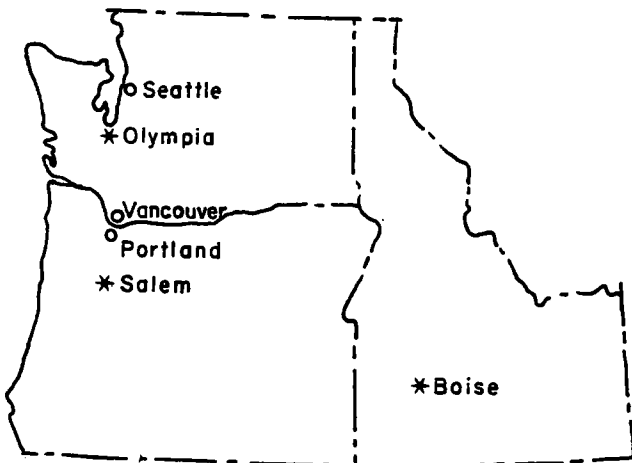
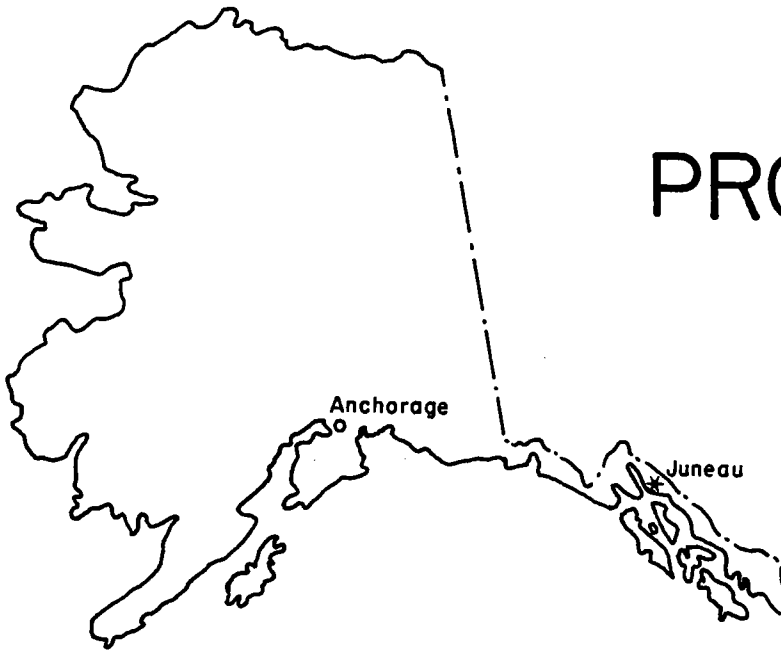


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AUGUST 8-10, 1979

PORTLAND, OREGON

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Table of Contents

Titles and Speakers

LANDSLIDE TESTS REINFORCED EARTH WALL Ronald G. Chassie	1
FABRICS IN THE HIGHWAY: THE STATE OF THE ART IN CIVIL ENGINEERING APPLICATIONS (Synopsis) J. Ray Mullarkey	13
STRUCTURAL PERFORMANCE OF BURIED CORRUGATED POLYETHYLENE TUBING Reynold K. Watkins	15
REVISION OF THE 1967 <u>AASHTO</u> MANUAL ON FOUNDATION INVESTIGATIONS (Synopsis and Outline) Allen W. Hatheway	37
SUMMARY OF USE OF SAWDUST FOR HIGHWAY FILLS Newton C. Jackson	45
MODELING EROSION AND SEDIMENTATION FROM ROADWAYS Timothy J. Ward	61
DECISION AND RISK ANALYSIS AS A PRACTICAL TOOL FOR GEOTECHNICAL ENGINEERS AND GEOLOGISTS Robert L. Plum	71
STABILIZATION OF THE UPPER PORTION OF THE HAT CREEK LANDSLIDE James R. Kuenzli	95
LANDSLIDE REMEDIAL MEASURES David L. Royster	119
PETROGRAPHIC EXAMINATION OF AGGREGATES USED IN BITUMINOUS OVERLAYS FOR INDIANA PAVEMENTS AS RELATED TO THEIR POLISHING CHARACTERISTICS Terry R. West	185
GEOPHYSICAL INVESTIGATIONS OF HAMPTON ROADS FOR CROSSING OF ROUTE I-664 Henry J. Miller	211
A DEMONSTRATION PROJECT FOR DEICING OF BRIDGE DECKS David H. Pope	263
COMPACTION PRESTRESS MAKES A DIFFERENCE C. W. Lovell	287
A CASE FOR UTILIZING PEDOGENIC AND GEOLOGIC STRATIGRAPHY TO REDUCE SAMPLING AND TESTING VARIABILITY FOR HIGHWAY SOILS INVESTIGATIONS Nyle C. Wollenhaupt	309

LANDSLIDE TESTS REINFORCED EARTH WALL

By

Ronald G. Chassie (1)

ABSTRACT

In October, 1977, a landslide occurred on an Oregon Highway project in Southwestern Oregon, U.S.A. The landslide occurred during construction through an area where the roadway fill was retained by a 30 foot high Reinforced Earth (RE) retaining wall. The slide failure surface passed behind and below the RE wall. The slide affected the middle 300 feet of the 800 foot long wall. This paper describes (1) the cause of the landslide, (2) the wall movement caused by the slide, (3) the effects of the movement on the RE wall, (4) the remedial measures undertaken, and (5) the lessons learned.

(1) Regional Geotechnical Engineer, Federal Highway Administration, Region 10, Portland, Oregon

DESCRIPTION OF PROJECT

The landslide occurred on October 5, 1977, on a section of the Roseburg-Coos Bay highway (SR 42) that was being reconstructed approximately 30 miles west of Roseburg, Oregon. The project is located in Coast Range of southwestern Oregon. The natural terrain is very rugged with the roadway constructed in a sidehill cut-fill section near the base of a steep canyon. The north fork of the Coquille River flows along the base of the canyon parallel to the highway (photo 1).

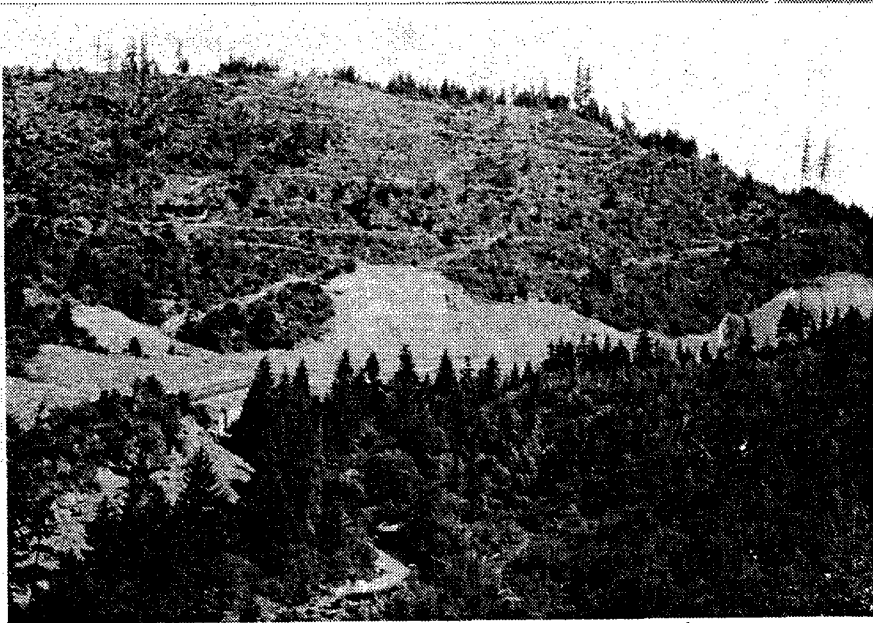


Photo 1 View of Terrain Through Project Area

GEOLOGY

The project area is underlain by sedimentary rocks composed primarily of sandstone and siltstone. Some massive sandstone outcrops are between 30 and 40 feet thick. The sandstone is well cemented and competent. The siltstone beds are up to 60 feet thick. When exposed in highway cuts or outcrops, the siltstone weathers rapidly. This characteristic is the principal cause of landslides and rock falls in the project area. The overburden soil is shallow colluvium consisting of a mixture of boulders, rock fragments, silt, clay, and sand.

ROADWAY DESIGN

The roadway design through the area where the landslide occurred has the roadway placed in a sidehill cut-fill approximately 105 feet above the river. A maximum 30 foot high Reinforced Earth (RE) wall was located

