

# **ADS HDPE SEWER PIPE**

## **I-90, Third Lake Washington Bridge Maintenance Facility**

WA-RD 344.1

Post-Construction Report  
April 1994



**Washington State  
Department of Transportation**

Washington State Transportation Commission  
Transit, Research, and Intermodal Planning (TRIP) Division  
in cooperation with the U.S. Department of Transportation  
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I-90  
Third Lake Washington Bridge  
Maintenance Facility

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**Experimental Feature WA92-07**  
Post-Construction Report

Prepared for  
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and in Cooperation with  
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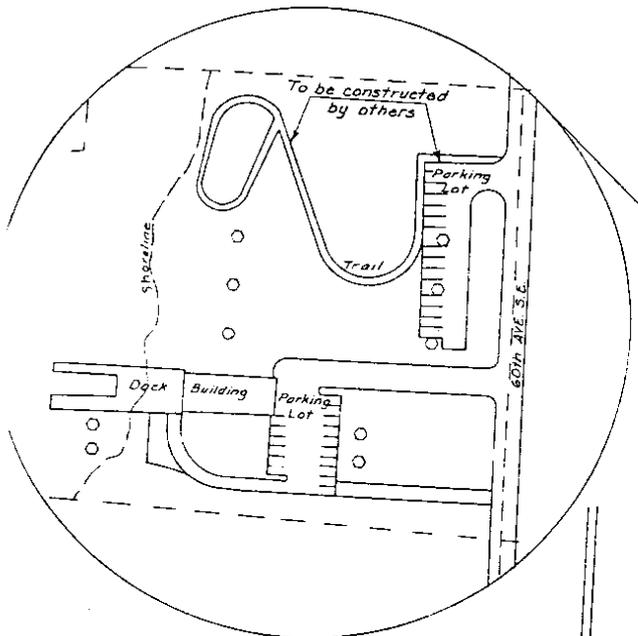
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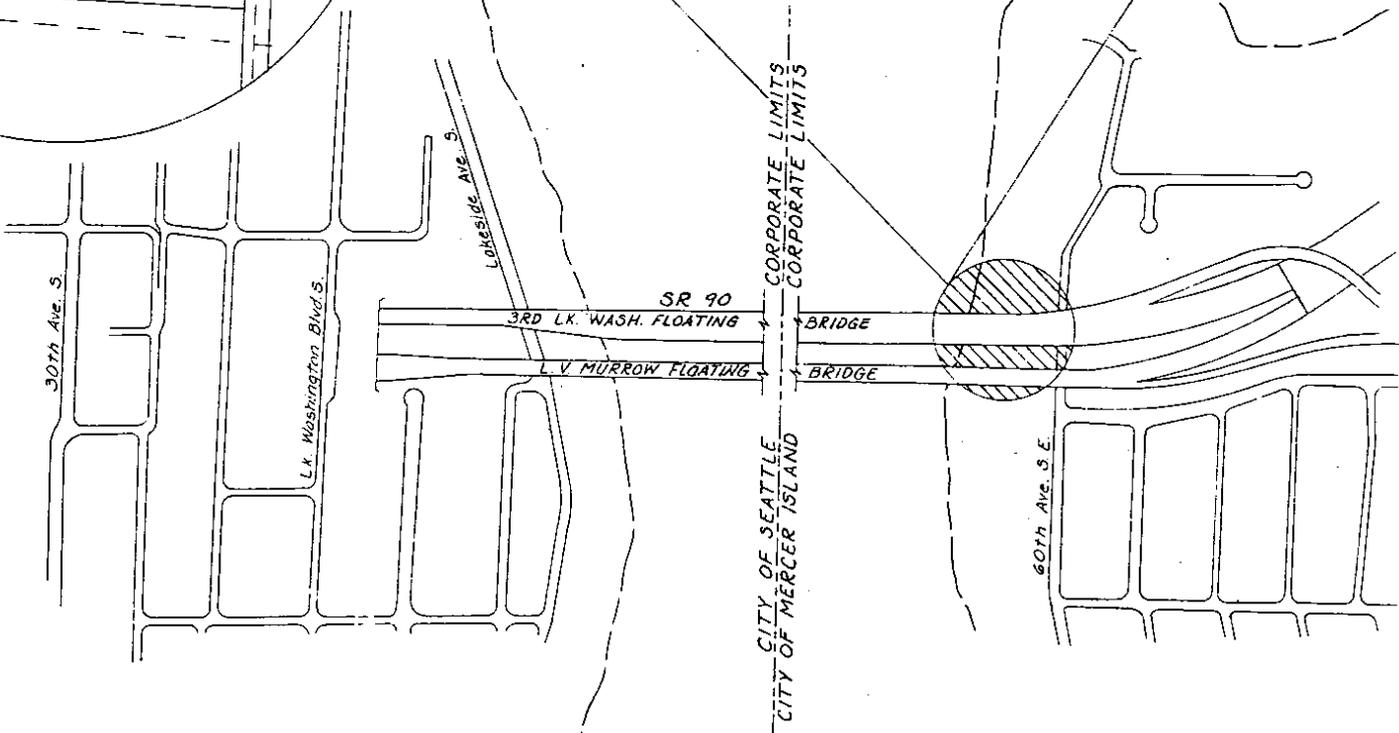
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## Introduction

The objective of this experimental feature is to evaluate the performance of ADS HDPE pipe in a field installation.

## Study Site

The ADS HDPE pipe was installed on a project located on I-90 underneath the west approach to the Third Lake Washington Floating Bridge as shown on the vicinity map. The District 1 contract for the installation of the ADS pipe is described below in tabular form for easy reference.

Contract Number: 4140  
Title: Third Lake Washington Bridge Maintenance Facility  
Route Number: I-90  
County: King  
Project Mileposts: MP 5.28 Vic.  
Storm Sewer Location: Under the West End of the Third Lake Washington Bridge  
Plan Quantity: 290 L.F. of 12 inch diameter pipe  
Pipe Fill Height: 2 to 5 feet  
Project Engineer: Ingo Goller

## Project Description

The ADS HDPE pipe is a double walled (smooth interior) corrugated polyethylene pipe meeting the requirements of AASHTO M 294. It was substituted by change order for plain concrete sewer pipe.

## Construction Summary

Installation of the 12 inch diameter pipe began on November 12, 1992. The pipe was installed as concrete pipe would be, with the exception that a backhoe was not needed to lift the pipe into the excavation. The pipe was installed by two workers, laying 10 foot sections at a time, and pushing the ends into a gasketed coupling. Connections to catch basins were performed the same as would be with concrete pipe by grouting the gap between the catch basin wall and the pipe.

The types of bedding and backfill material and methods of their placement were no different than what would be used for concrete pipe. The material was brought up to grade in the required lifts and compacted. The ADS pipe showed no deformation during compaction.

#### Performance Testing

Testing of the pipe was done by the low pressure air test per section 7-04.3(4)D of the 1991 Standard Specifications. All pipe runs between catch basins were plugged and filled with air to a pressure of 4 psi which was held for 3 minutes. Three of the four runs had a pressure of 4 psi at the end of the three minutes and the fourth run had a pressure of 3.5 psi. Based on these test results the pipe was accepted.

During other construction activities on the project, one section of the installed pipe suffered damage. A repair section consisting of a sliding collar was installed, but the pipe failed to pass the air test. Two 20 foot section of the pipe were then replaced and the run then passed the air test.

#### Construction Evaluation

The use of the ADS pipe saved time and money by not having to use a backhoe to set the pipe sections. A \$507.50 credit was received by WSDOT for the use of the ADS pipe in lieu of plain concrete pipe.

#### Evaluation Plan

This installation will be inspected over a three year period to document any problems that might occur over the long term with this type of pipe.