

CONTECH A-2000 PVC SEWER PIPE

SR-224 West Richland to SR-240

WA-RD 422.1

Final Report
August 1996



**Washington State
Department of Transportation**

Washington State Transportation Commission
Planning and Programming Service Center
in cooperation with the U.S. Department of Transportation
Federal Highway Administration

TECHNICAL REPORT STANDARD TITLE PAGE

1. REPORT NO. WA-RD 422.1		2. GOVERNMENT ACCESSION NO.		3. RECIPIENT'S CATALOG NO.	
4. TITLE AND SUBTITLE Contech A-2000 PVC Sewer Pipe, SR-224 West Richland to SR-240				5. REPORT DATE August 1996	
				6. PERFORMING ORGANIZATION CODE	
7. AUTHOR(S) C. Michael Miner				8. PERFORMING ORGANIZATION REPORT NO. WA92-05	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Washington State Department of Transportation Materials Laboratory PO Box 47365 Tumwater, Washington 98504-7365				10. WORK UNIT NO.	
				11. CONTRACT OR GRANT NO. Contract 4085	
12. SPONSORING AGENCY NAME AND ADDRESS Washington State Department of Transportation Transportation Building PO Box 47370 Olympia, Washington 98504-7370				13. TYPE OF REPORT AND PERIOD COVERED Final Report Experimental Feature WA92-05	
				14. SPONSORING AGENCY CODE	
15. SUPPLEMENTARY NOTES This study was conducted in cooperation with the U.S. Department of Transportation, Federal Highway Administration.					
16. ABSTRACT The construction and pressure testing of a field installation of Contech A-2000 PVC sewer pipe are documented in this report.					
17. KEY WORDS drainage, pipe, PVC			18. DISTRIBUTION STATEMENT No restrictions. This document is available to the public through the National Technical Information Service, Springfield, VA 22616		
19. SECURITY CLASSIF. (of this report) None		20. SECURITY CLASSIF. (of this page) None		21. NO. OF PAGES 6	
				22. PRICE	

CONTECH A-2000 PVC SEWER PIPE

SR-224
West Richland to SR-240

by

C. Michael Miner
Special Projects Manager

Experimental Feature WA92-05
Final Report

Prepared for
Washington State Department of Transportation
and in cooperation with
U.S. Department of Transportation
Federal Highway Administration

August 1996

DISCLAIMER

The contents of this report reflect the views of the authors who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Washington State Transportation Commission, the Washington State Department of Transportation, or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

OLYMPIA, WASHINGTON

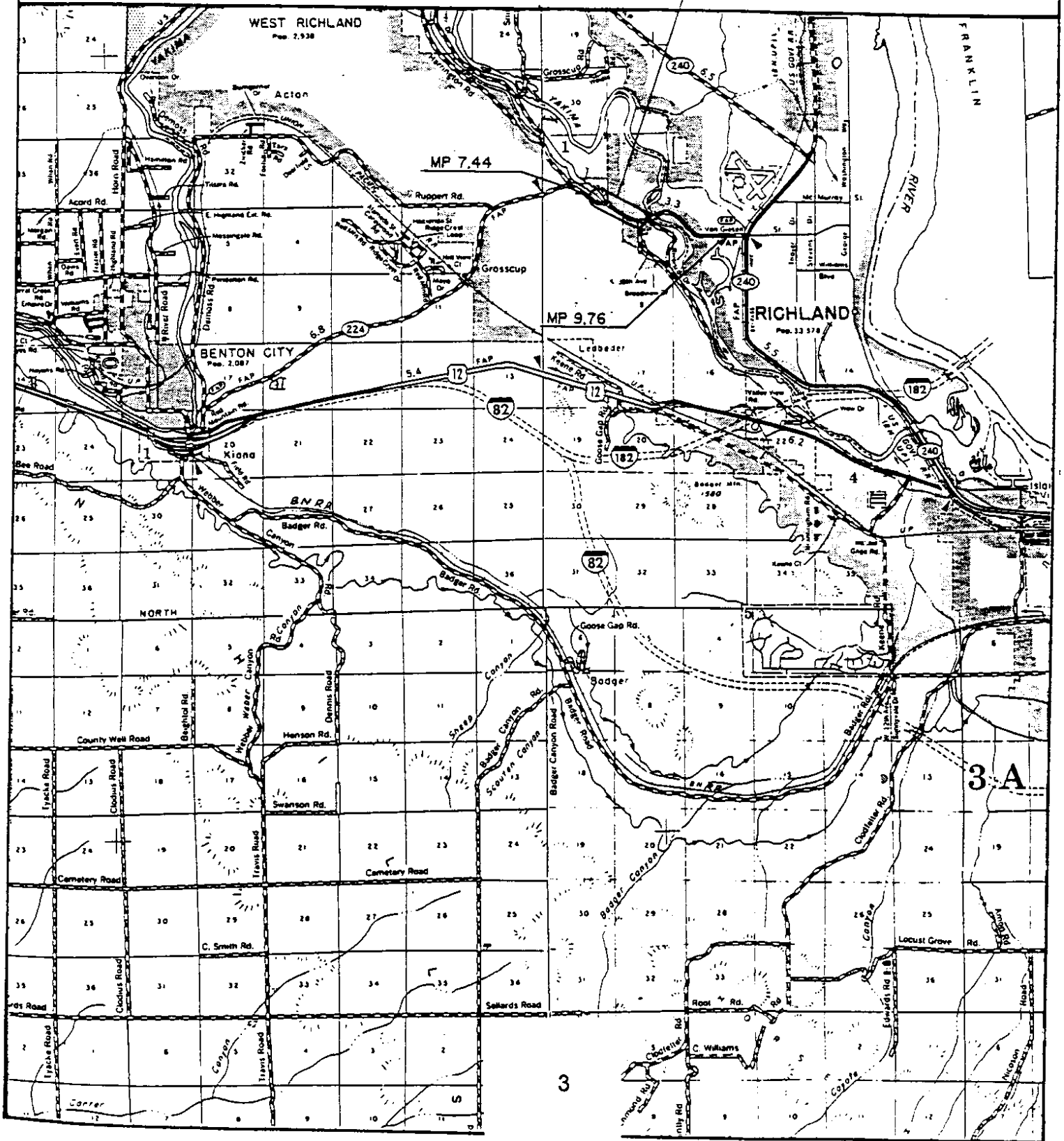
MAP OF STATE HIGHWAYS

BENTON COUNTY

Proposed Improvement Shown in Red

CONTECH A-2000 PVC

SEWER PIPE MP 7.64 TO B.36



Introduction

The objective of this experimental feature was to evaluate the performance of CONTECH A-2000 PVC sewer pipe in a field installation.

Study Site

The CONTECH A-2000 PVC sewer pipe was installed on a project located on SR-224 as shown on the vicinity map. The South Central Region contract for the installation of the A-2000 pipe is described below in tabular form for easy reference.

Contract Number: 4085
Title: West Richland to SR-240
Route Number: SR-224
County: Benton
Milepost Limits: MP 7.44 to MP 9.76
Storm Sewer Location: Parallel to SR-224 from MP 7.64 to 8.36
Location Stations: L-397+50 Lt. To L-441+10 Rt.
Plan Quantity: 4,896 L.F.

Project Description

The CONTECH A-2000 PVC pipe is a double walled (smooth interior) corrugated polyethylene pipe meeting the requirements of AASHTO M 294. It was used in this contract by change order for plain concrete storm sewer pipe in diameters of 12, 15 and 18 inches.

Construction Costs

The following quantities of A-2000 pipe were installed at the noted cost:

PVC A-2000 SEWER PIPE 12 IN. DIAM.	2,422 L.F. at \$42, 992
PVC A-2000 SEWER PIPE 15 IN. DIAM.	1,599 L.F. at \$28, 933
PVC A-2000 SEWER PIPE 18 IN. DIAM.	1,076 L.F. at \$22, 876

A \$19, 463 credit was received by WSDOT for the use of the A-2000 pipe in place of the concrete pipe.

Construction Summary

Installation of the A-2000 pipe began the week of August 17, 1992. Installation procedures for this pipe differed from other pipe in that less manpower and no equipment was needed to lift and place the pipe. The pipe trench was excavated and the bottom was compacted to 95% maximum density (no gravel backfill was necessary due to the sandy nature of native soil). The pipe was then laid and the trench backfilled and compacted to a minimum of 95% maximum density.

The Project Engineer reported that the A-2000 could withstand rougher handling since it more resistant to breaking, cracking, chipping or denting than a concrete or metal pipe. Also, a more accurate grade could be maintained with the 20 foot sections of pipe. The 20 foot lengths also provided for better alignment at the joints since there was less tipping or misalignment of the pipe.

Performance Testing

The A-2000 pipe was installed and successfully tested using the low pressure air test per Section 7-04.3(4)D of the 1991 WSDOT Standard Specifications. In addition, from Station 404+20 to 410+00, 580 linear feet of 12 inch pipe was video taped. Although some difficulty was encountered with snaking the camera line through the pipe, the results indicated that the pipe was in good shape. An effort was made to pull the camera through a portion of 18 inch pipe, but it was unsuccessful because of the same problems encountered with the 12 inch pipe.

Construction Evaluation

The use of A-2000 pipe is much more cost effective because it is less expensive than other materials and requires less manpower and equipment to install. A-2000 pipe is also less susceptible to damage during installation as compared to concrete or metal pipe because it is more resistant to breaking, cracking, chipping or denting.