

EXPERIMENTAL PROJECTS WORK PLAN

EVALUATION CONTECH[®] A-2000 POLYVINYL CHLORIDE (PVC) PLASTIC PIPE

Location: U. S. Highway 12/P-14 (C000014), Meagher County, Butte District

Project Name: Checkerboard - Martinsdale (CN 4803000)

Project Number: STPP 14-2(20)63

Type of Project: Polyvinyl Chloride (PVC) Irrigation Pipeline Installation

Principal Investigator: Craig Abernathy, Experimental Project Manager (ExPM)

Objective

Determine the effectiveness and long-term durability of the Contech A-2000 PVC pipe in an irrigation application. This type of pipe may prove to be a viable alternative to reinforced concrete pipe (RCP).

Experimental Design

A-2000 is a corrugated PVC plastic pipe with a smooth interior wall that is design for use in storm drain and sanitary sewer applications. Contech Construction Products Inc. manufactures the pipe. Two diameter sizes for three locations have been chosen for use; 18" (45.7 cm) and 24" (61 cm).

At each of the three locations irrigation water will be piped parallel to the roadway. The following is the proposed layout of the installation plan:

Location #1: size = 24", type A-2000, Length = 300 ft.
Inlet Station 99+85, offset 61.23 ft Rt
Outlet Station 102+90.99, offset 86.66 ft Rt

Location #2: size = 24", type A-2000, Length = 245 ft.
Inlet Station 107+38.91, offset 70.93 ft Rt
Outlet Station 109+91.15, offset 68.62 ft Rt

Location #3: size = 18", type A-2000, Length = 2,084 ft
Inlet Station 196+47.44, offset 104.22 ft Rt
Outlet Station 217+16.93, offset 74.29 ft Rt

Evaluation Procedures

Research will document the installation for best practice and any constructions concerns germane to the performance of the product. Semi-annual inspections will report on pipe components integrity and any other measurable outcomes. Additional site inspections may supplement the semi-annual visits based on need. District Maintenance will be asked to report on level of upkeep required.

Construction Documentation: will include information specific to the PVC joints; ease of obtaining 2% joint deflections; efficient connection to manholes and headwalls; ease of handling and seal integrity of the gaskets; issues with backfill, floatation, and compaction of the bedding; and overall pipe installation with setting of grade and rate of installation (ft/hr).

Quality control of gasket/pipe integrity will be documented by video pipe inspection.

Post Documentation: Will entail semi-annual inspections of outlet, inlet and manhole connection integrity; topical inspection of pipe trench area for signs of leaching or earth displacement due to potential breach of gasket or pipe wall. Currently it is proposed to conduct another video pipe inspection at the thirty-six (36) month mark from installation.

Evaluation Schedule

Research will monitor performance for a minimum period of five years annually, with every year up to *ten years (informally). This is in accordance with the Department's "Experimental Project Procedures". Delivery of a construction/installation report, interim, annual or semi-annual reports is required as well as a final project report (responsibility of Research). A web page will be dedicated to display all reporting from the project.

2012:	Installation/Construction Report
2013-2016:	Semi-Annual Inspection/ Annual Evaluation Reports
2017:	Final Evaluation/Final Report
2018-2023:	Annual Evaluation/Annual Reports (Informal-if required)