CASE STUDY

HP Storm Pipe & Fittings Perfect Choice for Curvilinear Roadway

Box Elder, SD

OWNER

City of Box Elder, SD

ENGINEER

Avid4 Engineering, Rapid City, SD

CONTRACTOR

Dream Construction, Rapid City, SD

INSTALLATION DATE

Summer 2024

PRODUCTS

1,250' (381 m) of 48" (1200 mm) HP Storm pipe Four 18" (450 mm) Inserta Tee®
Two 38° HP Storm 48" (1200 mm) mitered bends Three 33° HP Storm 48" (1200 mm) mitered bends Three 30° HP Storm 48" (1200 mm) mitered bends One 24° HP Storm 48" (1200 mm) mitered bend Four 22.5° HP Storm 48" (1200 mm) mitered bends Two 7.5° HP Storm 48" (1200 mm) mitered bends

DESCRIPTION

The City of Box Elder constructed a new road between Interstate 90 and an adjacent railroad off of exit 61. In this vicinity are numerous hotels and the Box Elder Events Center. The new road was built to serve as an artery to move area traffic.

As part of the project, storm drainage needed to be installed beneath the roadway including parallel curvilinear 48" (1200 mm) storm sewer runs. As a result of the parallel pipe's proximity, the project's design engineer specified flowable fill to the spring line for all pipe types.







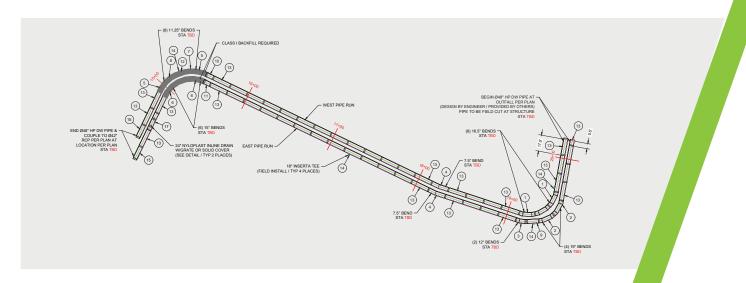
The project was initially designed to utilize reinforced concrete pipe (RCP) with HP Storm allowed as an equal. HP Storm was selected for cost savings, ease of installation and HP Storm is approved by Box Elder.

Advanced Drainage Systems' internal engineering team, using the plans pipe line layout as reference, were able to design a conveyance system with numerous custom bends, such as the 7° and 38° bends among others, in order to meet the curvilinear installation demands. The visual design, reflected below, identified each project component was reviewed and approved by the design engineer.

HP Storm and the provided 15 custom bends were utilized to complete the parallel curvilinear runs rather than the multitudes of small RCP fittings that would otherwise be required. HP Storm allowed for field flexibility with 3.0° maximum angular misalignment in each joint and 2" (50 mm) allowed gap from the home position. The installer, Dream Construction, was particularly pleased with the light weight of HP Storm and the ability to move the pipe easily on the project.

HP Storm polypropylene pipe provides a greater pipe stiffness for a longer service life and a premium joint performance. The smooth interior wall offers additional strength as well as superior flow. HP Storm pipe meets or exceeds ASTM F2881 and AASHTO M330, while the extended bell and spigot meets ASTM D3212.

Polypropylene is an inert material and is resistant to the effects of chemicals, abrasion, hot soils and effluent. The lightweight product is easy to deliver and is readily available in convenient locations across North America to service local projects.







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