

**Water and Environmental Programs  
Engineering Success Stories**

**State:** Iowa

**Borrower Name:** Rathbun Regional Water Association  
City of Exline

**Engineering Firm:** McClure Engineering Company

**RD Contact:** James Carroll, P.E., State Engineer, (515)284-4136

**Congressional Information:** Congressman Leonard Boswell

**Counties:** Southeast Iowa

**Keywords:** Directional Boring

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## **Directional Boring of Conventional Sanitary Sewer Gravity Lines**

**Description:**

Sanitary sewer construction costs for very small towns.

**Solution:**

We have used directional boring on water main projects for the past five years. Why not on sanitary sewer lines? We first tried directional boring on a gravity line through a deep cut, through a hill. We then tried directional boring on conventional gravity lines with slopes down to 0.5%. This has worked very well. We check the grade at all service line connections.

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