Pipeline Construction Process

1. 

In order to make the right-of-way into a suitable work area, a **clearing and grading** crew prepares the pipeline corridor so the construction equipment can operate safely.

2. 

All **waterway crossings** are flagged prior to clearing to indicate the minimal disturbance zone where equipment and work activities are restricted until the waterway crossing takes place. Access over watercourses is facilitated by using portable bridges installed to span the waterway.

3. 

Next, the mechanical excavation of a trench, dug to a specified depth for pipe placement, is done by the **trenching** crew. Occasionally, rock drilling and blasting is required to break rock in a controlled manner.

4. 

After the pipe is delivered to the right-of-way, the contractor **"strings"** segments of steel pipe by laying the pipe joints on wooden skids adjacent to the trench.

5. 

A **bending** machine is used to tailor the shape of the pipe to conform to the contours of the terrain or to make changes in the direction of the line.

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6. 

The **welding** crew begins the process of joining the steel pipe into long continuous segments. Welds are then radiographically inspected (X-rayed) to assure pipe joints have been welded in accordance with project specifications.

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7. 

The pipe joints are cleaned and coated and the ditch bottom is cleared of rocks and debris or padded with soft dirt and the pipe is **lowered-in** to the ditch by sideboom tractors using belts or cradles in a carefully coordinated action. The ends of the pipe segments are then welded together to form one continuous pipeline.

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8. 

The trench is then **backfilled**. When soil conditions are not suitable to be directly placed on the pipe, specialized equipment designed to pad the pipe and protect it from sharp rocks and abrasion is utilized.

9.

The newly constructed pipeline must be subjected to **pressure testing** before it can be placed into service. The purpose of a pressure test is to assure that no defects exist within the pipeline that might threaten its structural integrity. After the test, the pipeline is dried, cleaned and connected to the existing pipeline system.

10.

The final phase of the construction is **cleanup and restoration** of the right-of-way. This involves replacing topsoil, replanting the right-of way, removing construction material, and restoring the area, as closely as possible, to its original pre-construction condition.