

MAGELLAN HOUSTON TO HEARNE PIPELINE CONSTRUCTION PROJECT

A large pipeline construction project is typically broken down into manageable sections referred to as "spreads." Each spread is managed by a highly qualified, specialized construction company who in turn may utilize a number of subcontractors. The entire pipeline construction process is overseen by qualified, independent inspectors.

1 Pre-Construction Activity

Once the pipeline route has been finalized but before construction begins, the right of way (ROW) and temporary work area are surveyed and staked. Environmental, cultural and wildlife evaluations are also conducted. Utility lines and water bodies, wetlands and drainage areas are marked to prevent accidental damage during construction.



2 Clearing and Grading

Clearing and Grading – the ROW corridor is cleared of trees, boulders and debris and the land is graded to provide an acceptable working surface. Prior to any earth moving activities, temporary control measures such as silt fences, etc. are installed where needed to prevent the erosion of the soil.



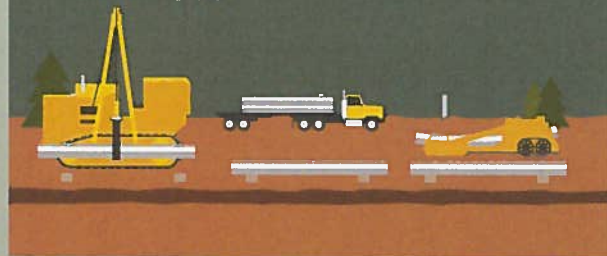
3 Trenching

Trenching – the topsoil is stripped and stockpiled for future reclamation. Trenching machines or backhoes are used to excavate a trench. Pipe is typically buried a minimum of 36 inches below the surface (and even deeper at river and road crossings). In place of a trench, pipelines are bored under roads and water bodies, as required.



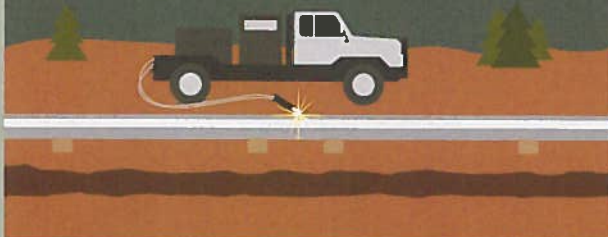
4 Pipe Stringing

Pipe Stringing – lengths of pipe are brought from nearby storage yards and laid end to end along the ROW. A pipe bending machine makes slight bends in the pipe where there are changes in the direction of the route or in order to conform to the topography.



5 Welding and Coating

Welding and Coating – the individual pieces of pipe are aligned on temporary supports ("skids") and welded together. Welds are inspected visually and by x-ray or ultrasonic method. Although the pipe is pre-coated, the welded joints must also be coated.



6 Lowering the Pipe

The assembled pipe is lowered into the trench by special cranes called sidebooms. Sand bags, foam blocks or other padding, if required, are placed in the trench to protect the pipe and coating from damage. The excavated soil is returned to the trench in reverse order – the subsoil is replaced first followed by the topsoil. No foreign materials are allowed in the trench.



7 Testing

After backfilling the trench, the pipe is filled with water and pressure tested in accordance with US Department of Transportation regulations. The test pressure is held for a specific period of time to assure that pipeline design strength requirements are met.



8 Restoration

The ROW corridor will be restored to as close as possible to its original condition. Restoration may include the removal of large rocks, regrading of the land, planting grass seed, repairing fences, etc.

