

## Construction Techniques

As proposed, the MVP Southgate project is a natural gas pipeline system that spans approximately 75 miles from southern Virginia to central North Carolina – and as an interstate pipeline will be regulated by the Federal Energy Regulatory Commission (FERC). MVP Southgate will be developed, constructed, and owned by Mountain Valley Pipeline, LLC (Mountain Valley).

As currently proposed, the pipeline will be 24 and 16 inches in diameter and will require approximately 50 feet of permanent easement, with up to an additional 50 feet of temporary easement during construction (for a total of up to 100 feet during construction, depending on conditions). As proposed, the project will require one compressor station. After appropriate approvals and permits have been received, construction of the project is expected to begin in the spring of 2020. Any construction noise, dust, and traffic issues will be kept to a minimum and all construction mitigation measures and safety procedures set by the FERC and other agencies will be followed.

### Clearing, Grading, and Trenching

Before construction of the pipeline occurs, surveys must be conducted and the crew must clear the area by removing trees, large rocks, and debris from the right-of-way. After clearing occurs, grading takes place to prepare a level surface for heavy construction activity. Equipment is then mobilized to dig the trench where the pipeline will lay, at a minimum of 36 inches below the surface, which surpasses the required minimum of 30 inches as regulated by the U.S. Department of Transportation. As dirt is removed, the topsoil and subsoil are often saved for later use in the restoration process.



### Stringing, Welding, and Coating Pipeline

Pipelines typically consist of pipe segments that are 40 to 80 feet long. These segments must be moved to the trench location, assembled, and welded before being placed in the trench. A bending machine will be utilized to make bends in the pipe to allow the pipeline to conform to unique topography of each segment of pipe along the route. Pipe segments are welded together to ensure maximum strength and integrity of the pipeline, and when necessary, an external coating will be applied to prevent moisture from causing any type of possible corrosion. The MVP Southgate team will X-ray 100% of the individual welds to ensure the integrity and longevity of the pipeline prior to placing the line in-service.

### Depositing, Backfilling, and Testing

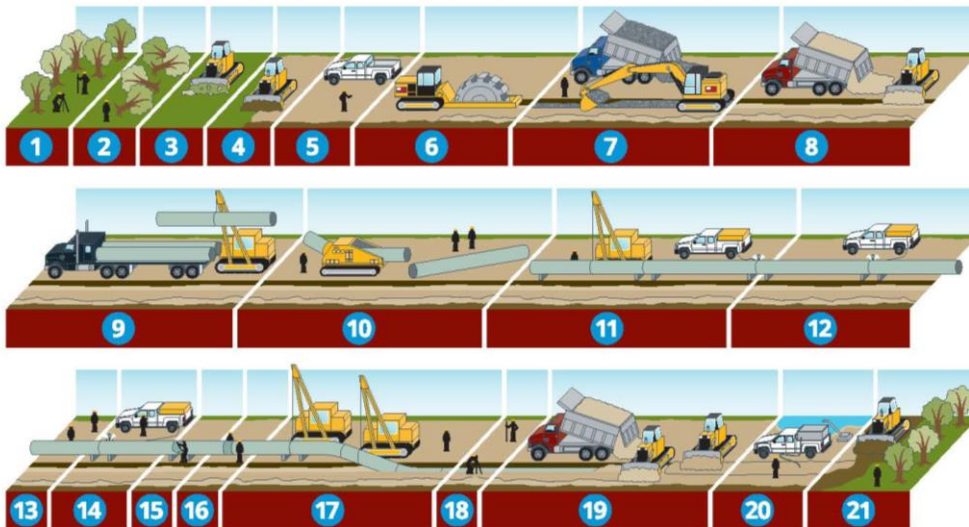
Once the pipeline is properly and accurately welded, it is lowered into the trench using equipment with side-booms and slings to prevent the pipe from falling. When the pipe is successfully laid, the construction crew will begin to backfill the trench. Careful measures are taken to ensure the topsoil is returned to its original position, while special precaution is given to preserving the integrity of the pipeline and coating during this process. Before placing the pipeline in-service, the line is water-pressure tested as a final quality assurance test.

## Restoration

The final step of the construction process is to restore the right-of-way and easement property as closely as possible to its original condition. Steps in this process may include; replacing topsoil, removing rocks, spreading fertilizer, or restoring fences. The MVP Southgate team will work with landowners and agencies to ensure the proper restoration of both private and public property.



### TYPICAL PIPELINE CONSTRUCTION SEQUENCE



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|---|---|---|
| <b>1</b> Survey and Staking             | <b>9</b> Stringing Pipe                 | <b>16</b> Inspection and Repair of Coating                  |
| <b>2</b> Clearing                       | <b>10</b> Field Bending Pipe            | <b>17</b> Lowering Pipe into Trench                         |
| <b>3</b> Front-End Grading              | <b>11</b> Line Up, Initial Weld         | <b>18</b> As-Built Survey                                   |
| <b>4</b> ROW Topsoil Stripping          | <b>12</b> Fill and Cap, Final Weld      | <b>19</b> Pad, Backfill, Rough Grade                        |
| <b>5</b> Restaking Centerline of Trench | <b>13</b> As-Built Footage              | <b>20</b> Hydrostatic Testing, Final Tie-In                 |
| <b>6</b> Trenching (Wheel Ditcher)      | <b>14</b> X-Ray Inspection, Weld Repair | <b>21</b> Replace Topsoil, Final Clean-Up, Full Restoration |
| <b>7</b> Trenching (Rock)               | <b>15</b> Coating Field Welds           |   |
| <b>8</b> Padding Trench Bottom          |   |   |