Overview of Pipeline Construction Process

ALASKA PipelineProject

The Alaska Pipeline Project is advancing plans for the construction and operation of a long-distance, high capacity pipeline capable of moving a large volume of gas from the North Slope of Alaska to new markets.

While project-specific details of construction plans are still being refined, the project's plans for pipeline construction are in line with typical construction procedures. ***The following pages provide an overview of the sequence of construction procedures that the project would implement to construct the gas transmission pipelines*.***

All construction procedures would be implemented to meet Alaska Pipeline Project objectives to:

- Ensure public, contractor and employee safety
- Mitigate impact to the land, recognizing its original use
- Maintain protection of the surrounding environment
- Comply with all applicable laws and regulations
- Provide benefits to the surrounding community and establish positive relationships
- Use proven technology and techniques to create a pipeline that will operate safely, reliably and cost-effectively
- Finish on budget / on schedule

* In order to illustrate the construction process, the following pages feature photos from previous TransCanada pipeline projects.

Procedures in the Pipeline Construction Process

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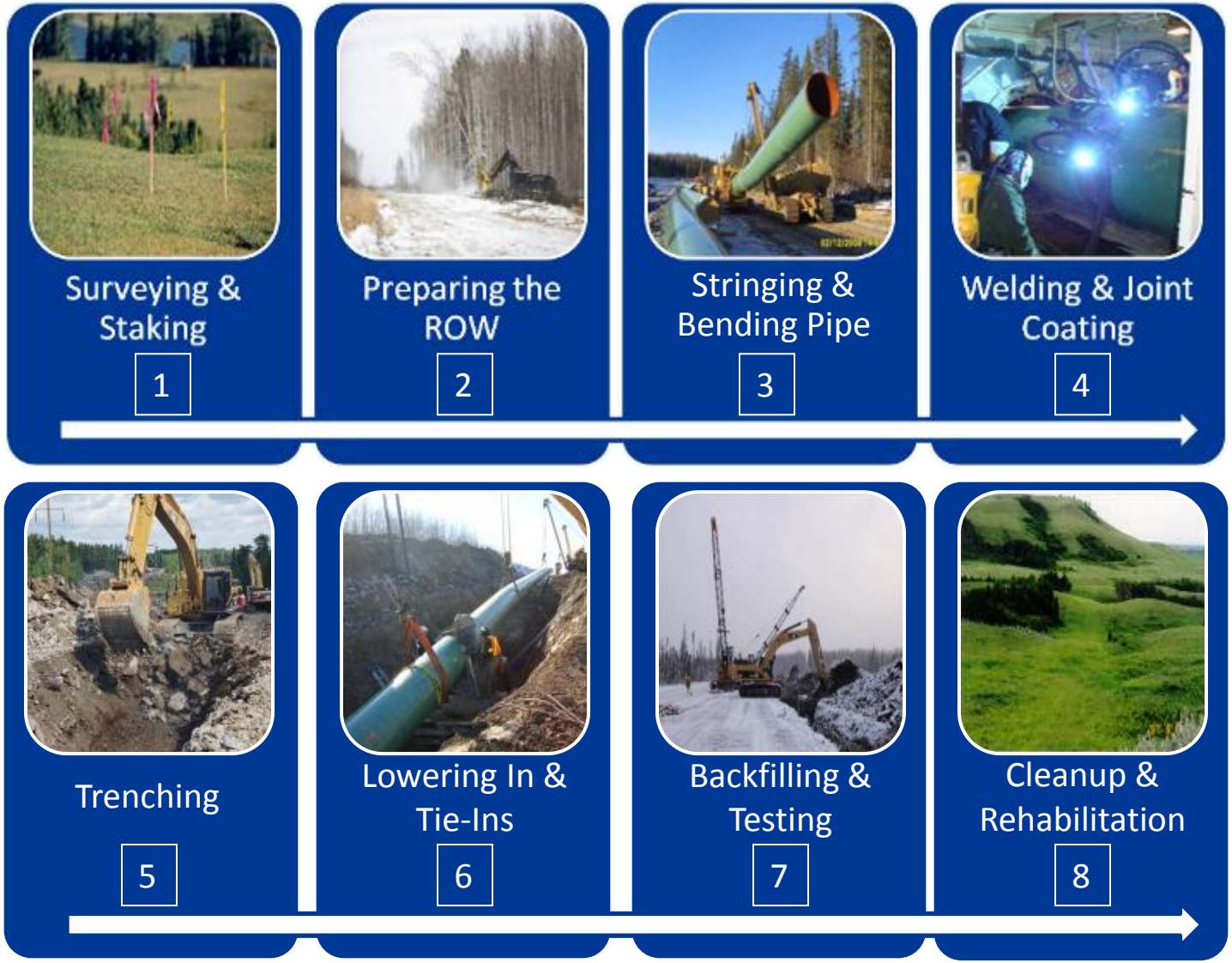
The Alaska Pipeline Project plans to implement the following sequence of construction activities, in accordance with typical procedures for pipeline construction.



Pipeline Construction Process: Surveying & Preparing the Right of Way

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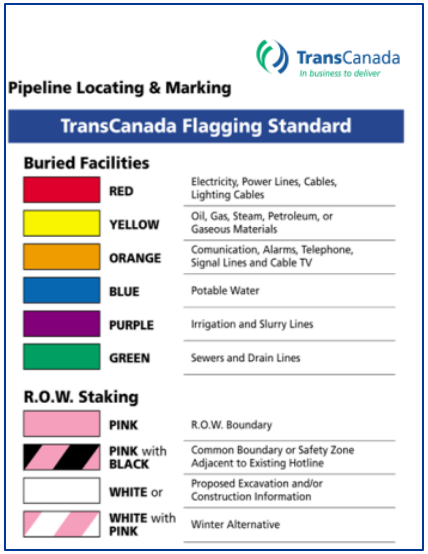
Surveying & Staking

1

After finalizing route selection, the Alaska Pipeline Project will survey and stake reference points along the entire right of way (ROW). The ROW includes the pipeline route as well as nearby areas intended to be used for other construction activities.

Construction surveying ensures that all of project activities are contained within the boundaries of ROWs and permissible access and working spaces.



Preparing the ROW

2

In the winter season prior to pipeline installation, the project will prepare the ROW by clearing trees and brush and removing top-soil, as needed. Merchantable timber is de-limbed and salvaged according to landowner requirements while non-merchantable timber is mulched and spread along the ROW. Removed top soil is stock piled for future reclamation.

The project will level and grade the ROW so that construction equipment and materials can be safely transported and moved along the pipeline route.

The project will also install erosion controls such as drainage ditches or silt fences to stabilize the ROW and reduce surface erosion and siltation.

Pipeline Construction Process: Stringing, Bending & Welding Pipe

ALASKA PipelineProject

Stringing & Bending Pipe

3

The Alaska Pipeline Project will transport the pipe to the ROW and prepare the pipe for welding. Using specialized trailers, the project will string pipe joints to align the individual pieces of pipe along the entire ROW.

After stringing, the pipe will need to be bent to accommodate the contours of the land along the ROW. The project's engineering team will first calculate the amount of curvature needed to fit the topography. Then, the project will use a hydraulic bending machine to pull a small degree of bend into the pipe, as specified by the engineering team.

Welding & Joint Coating

4

The project will join the individual lengths of pipe together using automated welding machines. Mechanized welding provides consistency in a number of key parameters of the welding process, and multiple welding passes would be used to complete the weld. Welding shelters are placed over pipe joints to protect the welding process from the elements. After welding is complete, the project will test the integrity of each weld using a radiographic or ultrasonic non-destructive examination procedure.

The project will then coat the welded joints to prevent corrosion, which can occur when welds make direct contact with steel. Before the pipe is placed in the trench, each section of welded pipe will be inspected using an electrical device called a holiday detector to detect flaws in external pipe coating.

Pipeline Construction Process: Trenching, Lowering & Tie-In Welds

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Trenching

5

The project will excavate the pipe trench with specialized equipment according to site conditions. Possible excavation tools include bucket wheel and chain trenching machines. To remove solid rock and permafrost, the project will use rock trenchers or hammers. When necessary, the project will carefully use drilling and blasting techniques, in accordance with state and federal guidelines, to ensure a safe and controlled blast.

Before welded sections of pipe are lowered into the trench, the project will be inspect the walls and bottom of the trench for rocks and other debris to prevent damage to the pipe or its protective coating.

Lowering In & Tie-Ins

6

The Alaska Pipeline Project will then lower the pipeline into the trench and position the pipe using specialized cranes on bulldozers, called side-booms. Sections of welded pipe are lifted and lowered simultaneously to protect the pipe and coating.

In areas where soil conditions include boulders or rock trench conditions, the project will pad the trench bottom before the pipe sections are lowered in to ensure the pipe and pipe coating are protected.

Once the pipeline is in the trench, the project will perform tie-in welds to join sections of welded pipe together.

Pipeline Construction Process: Backfilling, Testing, Cleanup, Rehabilitation

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Backfilling & Testing

7

Once the pipeline is in place, the project will carefully pad and backfill the trench to prevent damage to the pipe and pipe coating. The project will use trench breakers such as sandbags or foam padding to prevent subsurface water from moving along the pipe ditch.

The project will then conduct a hydrostatic test to evaluate the integrity of the completed pipe. During hydrostatic testing, the pipeline is filled with water and pressurized to a higher level then the maximum operations level to assess pipeline strength and determine if any leaks are present. Hydrostatic testing is the final quality assurance test during the construction process. After testing, the project will clean the pipeline and complete final tie-ins.

Cleanup & Rehabilitation

8

In the final step of pipeline construction, the Alaska Pipeline Project will restore the ROW. The project will take measures to restore specific topography by re-establishing surface drainage patterns and installing permanent erosion control devices. The project will grade the ROW and spread organic materials or top soil on the ROW surface, and after erosion control devices have been installed, the project will re-seed work areas, as needed, using approved seed mixes.

In accordance with government regulations, the project will install markers at fence and road crossings. These markers will show the pipeline location and will also convey safety information requirements and emergency contact information.