

Ashburton
Lyndhurst
Irrigation
Limited



Monadelphous

 WATER INFRASTRUCTURE

**ASHBURTON LYNDHURST
IRRIGATION SCHEME
STAGE 2
PIPELINE CONSTRUCTION
OVERVIEW**

PRE-START MEETING, ROUTE MARKING AND PROPERTY OFFTAKE LOCATION

Prior to construction, ALIL and Monadelphous Engineering NZ (MWI) will arrange a meeting with the land owner. The purpose of this meeting is to discuss the construction process and any specific needs of Health and Safety requirements with the land owner.

Monadelphous will also mark out the pipe route as per the final design with markers similar to the ones shown in the photograph. For this a Surveyor will be contacting the land owner, to be provided access to the property.



OVERVIEW

In some cases drones will assist the overview of the construction corridor to capture any potential design changes that need to happen, update the imagery and to help us make sure everything is reinstated afterwards.



PIPE DELIVERY

Following the pipeline design, pipes will be delivered to sites ahead of welding and installation. In general sites can be located at 2-3 Km intervals, but in some cases further sites will be agreed with the land owner prior to pipes being delivered. In many cases this will take place prior to the construction pre-start meetings being held due to the lead in time between deliveries and installation.





PIPE PRODUCTION WELDING

Pipe welding plans will be set up at pipe delivery sites to weld the HDPE pipes into strings of approximately 100 m length. They are usually welded in advance of installation (pipes can be installed faster than they can be welded).

Pipe strings will be stockpiled for the period between welding and install.

This process is also very sensitive to weather conditions as dust and moisture can damage the integrity of the pipe welds.

PIPE LAYOUT AND STRING WELDING

Immediately prior to pipeline installation (1-2 days) pipe strings will be pulled out along the pipe route and will be welded together to form a continuous string for installation.

TRENCH DIGGING

Once the strings are welded together the earthworks contractor will dig the trench to install the pipe. Top soil will be kept separate from the sub soil and lower shingle layers to ensure the materials is returned in the same order. The lower shingle layer will be run through a screen to separate out the smaller aggregates to be used for bedding material. The construction corridor widths will vary depending on the pipe size being installed, in eg., 110-450 diameter pipe required 17.5m and for 500-1000 diameter require 23m



PIPE LAYING AND BACK FILLING

The pipe is then installed in the trench on a layer of the screened bedding material, this material is also used around the pipe for protection. Where practicable the pipeline will be picked up by GPS prior to backfilling, so the exact location and depth of the pipeline is recorded. The remaining trench is then back-filled in layers. Depending on the size of the pipe installed there will be varying degrees of surplus shingle or subsoil to be removed. This material can be carted off the property or can be stockpiled on the farm if the landowner wishes to use it for tracks or yards.



AIR VALVES

Most properties will require air valves to prevent air locks in the pipe. Air valves can often be located near boundaries or fences, however in some cases the location is restricted by design requirements and topography.



TIDY UP

On completion of all pipe laying operations, the topsoil windrow is spread back over the work zone and graded level ready for grassing by the client. The fencing contractor will then re-instate fences to their previous condition.





PROPERTY OFFTAKES

Civil works for installation of property offtakes will often take place after pipeline installation has been completed. This work can often be completed with minimal disturbance to the landowners farming operations. There are two types of offtakes: POTs and Secondary POTs.

SECONDARY PROPERTY OFFTAKES



SURVEY AND EASEMENT

Once infrastructure construction is complete surveyors will plot the pipe route with survey equipment to allow for easements to be placed on property titles.



COMMISSIONING

The final step in the construction process is commissioning of the pipeline and construction infrastructure. This work will take place once all the construction components have been installed and this includes, flushing of the lines, pressure testing, calibration of equipment and functionality checks. This process could involve multiple visits by a technician whilst the commissioning stage is underway.

