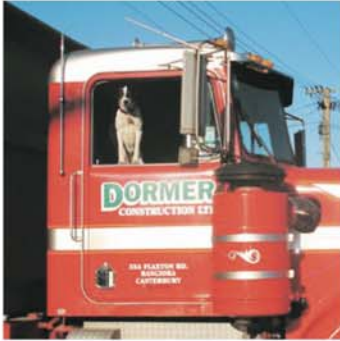


DRAINAGE • DEMOLITION • DE-WATERING • EARTHWORKS • CIVIL



South Kaiapoi Stormwater – Stage 4



NEW ZEALAND CONTRACTORS FEDERATION

CANTERBURY CONTRACTOR OF THE YEAR AWARDS 2008

CATEGORY: B - \$250,000 to \$1,000,000 & UNDERGROUND SERVICES SOUTH KAIAPOI STORMWATER – STAGE 4

INTRODUCTION

In September 2007 Dormer Construction Ltd submitted a tender for and was awarded “Contract 07/29, South Kaiapoi Stormwater – Stage 4” with the Waimakariri District Council. The value of the contract was \$879,678.

The contract involved the installation of 660 metres of 1050mm diameter stormwater pipes from a proposed pumping station in Stone Street, Kaiapoi, to the outfall into the Kaikanui Stream. The area of discharge was into a new stream realignment and treatment pond constructed as stage 3 of the overall project.

PROJECT BACKGROUND

The South Kaiapoi Stormwater Improvement Project was approved by the Waimakariri District Council in 2004 to alleviate various existing deficiencies within the stormwater system south of the Kaiapoi River.

The overall project has a budget of \$3.5M spread over 7 years with the final stage to be completed in 2013. Features of the project include the construction of a new stormwater pumpstation, outfall pipeline and stormwater treatment pond.

Stage 4, the outfall pipeline was the pipeline successfully completed by DCL in 2008. Stage 4 featured construction of a 660m long by 1050mm diameter concrete stormwater pipeline designed to transport stormwater from the proposed new pumpstation to the recently constructed Kaikanui Stormwater Treatment Pond

(completed in 2007)

CONTRACT ADMINISTRATION

With this contract traffic management was not straight forward because of the pipe jacking under the rail tracks. We decided that the best, safest, and least disruptive thing to do was to close the road to east bound traffic at the rail tracks and put a detour in place. We then had to write a notice to residents advising this and deliver it to all households in the catchment area. This worked reasonably well and did not involve us with any major headaches or extra work while this was done.

The other major problem was that we had a major clash of services at one intersection which involved cutting and joining 11Kv power cables, telecom cables and ducts, and also the relaying of a 200mm diameter water main and a 375mm diameter stormwater under the proposed new pipeline. This was all at an intersection which did cause some problems as most of the intersection had to excavated for the work to be done. Coordination of the work was very important for the work to be done over as short a timeframe as possible.





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HUMAN RELATIONSHIPS

A health & safety plan and a contract quality plan were both developed for the contract. These both worked very well because the staff on the site took ownership of them and made them work. This cooperation between site staff, office staff, and Council staff led to the fact that the job went well with very few problems and any variations required or requested were carried out in a positive and friendly manner.

for each end of this section which had a jacking section at one end and a normal pipe at the other. This they did and it worked very well.

- We advised WDC that we thought as a safety issue the open end of the pipeline was not good. Therefore as an extra to the contract a removable grille was installed to the end headwall at Kaikanui Stream.



INNOVATION

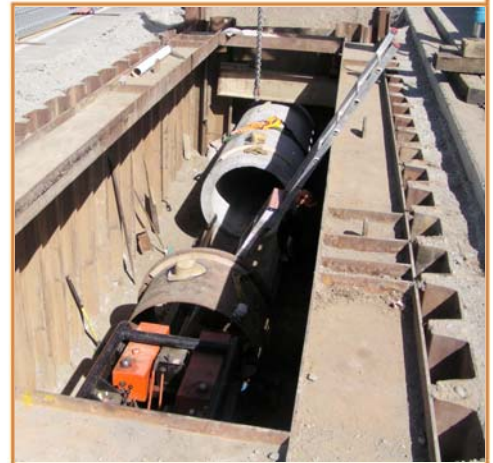
We showed innovation in the following areas of the contract:

- The section of piping under the rail tracks was specified as trenchless but the method was left up to the contractor to come up with a suitable and approved method. This we discussed with our subcontractor for this work, Denis Paku Ltd, and after much discussion regarding the type of ground, depth, and size of the pipe, it was decided that pipe jacking would be the best method. This worked well although initially he had trouble keeping the pipes on grade.
- With this method the jacking pipes and normal pipes were not compatible for joining so to save having to add an extra manhole at each end we suggested to Humes, the pipe supplier for the job, that it may be possible to manufacture a special pipe

CLIENT SATISFACTION

The client has advised us that they are very satisfied with the completed works and would not hesitate to use us again on similar works. The completed job was of a high standard.

Please refer to the appendix for a letter from Council.



DESIGN CHANGES

During the course of the contract we had several minor clashes with existing services and this involved some relaying of these services and some minor changes to the original design of the new pipeline.

PROJECT DIFFICULTIES

The contract itself involved a trenchless section which involved going under the main trunk railway line. The contract didn't specify which method was to be used for this and left it to the contractor to come up with an approved methodology.





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PROJECT DIFFICULTIES... continued

In conjunction with our trenchless piping subcontractor, Denis Paku Ltd, we decided the jacking was the best alternative.

We set up the jacking pit for the contractor on either side of the railway and maintained these for the duration of his work.

Approximately one third of the length of this pipeline involved dewatering of the ground. While this is not a major difficulty away from waterways this was carried out well and without any problems.

QUALITY ASSURANCE

With this contract the Waimakariri District Council had quality assurance requirements for everything to do with the contract works.

A comprehensive contract specific quality assurance plan was developed for this contract including check sheets for those involved with the contract. All of these check sheets were kept up to date and all of those involved took ownership of their own areas and at the end of the contract a set of quality assurance records were produced for this contract which more than covers all that the Council required.

ENVIRONMENTAL FACTORS

During this contract all pump discharges were checked on a regular basis to ensure no problems were caused.

ECAN monitored our works and were more than happy with our approach to the protection of the environment.

PROJECT COMPLETION

The completion date for the contract was set at no later than 30 June 2008. The contract period was set at 16 weeks. Because the pipes had to be specially manufactured, especially the jacking pipes for under the Railway lines, the works couldn't be started until late January 2008.

The contract was completed before the completion date despite the major clash of services and the extra work involved with this. We did not need nor did we request an extension of time for the project.

MORE INFORMATION:

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Client/Principal contractor: WDC
Consultant/Engineer: Chris Bacon, WDC
Project commencement date: Jan 08
Completion certificate date: prior to 30 June 08.

