



*Resource Consent Application*

# Kaikorai Commons Sewer Renewal

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| Received by City Planning |          |      |
| Date                      | Initials |      |
| File No.                  |          |      |
| Attention                 | Initials | Date |
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3/10/2016  
PHIL MARSHALL

**Dunedin City Council**



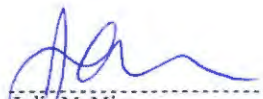
*Resource Consent Application*

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# Kaikorai Commons Sewer Renewal

**Dunedin City Council**

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Date: October 2016  
Reference: 6-CD085.01  
Status: Final

**APPLICATION FOR RESOURCE CONSENTS  
PURSUANT TO SECTION 88 OF THE RESOURCE MANAGEMENT ACT 1991**

To: Dunedin City Council  
PO Box 5045  
Dunedin 9058

1. **Dunedin City Council** hereby apply for the following resource consents:

| RMA Section | Resource Consent Sought                                                       | Term Sought |
|-------------|-------------------------------------------------------------------------------|-------------|
| Section 9   | Land Use consent to remove vegetation in an Urban Conservation Landscape Area | 15 Years    |

2. The activities to which this application relates are:

- Removal of vegetation from the Shetland Street Reserve and Kaikorai Commons to facilitate the renewal of the sewer and stormwater pipes.

A **fifteen year timeframe** is sought for this consent

3. **The site** is located at:

(a) At or about map co-ordinates:

| New Zealand Transverse Mercator Projection |         |
|--------------------------------------------|---------|
| Northing                                   | Easting |
| 5479863.1                                  | 2314933 |

4. The names and addresses of the **owners and occupiers** of land to which the application relates:

- The Dunedin City Council
- Crown Land

5. There are no **other activities** that are part of the proposal to which the application relates to.

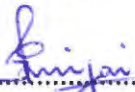
6. **Additional resource consents have been sought** from the Otago Regional Council to divert the stream bed in this location to facilitate the works as well as to disturb the bed to replace the School Street Culvert, the placement of rip rap and a concrete weir/pipe to protect the sewer pipe across the stream.

7. Included is an **assessment of actual and/or potential environmental effects** for the proposed activity is contained in the attached document as required by the Fourth Schedule of the RMA, which correspond to the scale and significance of the potential effects of the activity on the environment

8. Included is an assessment of the proposed activity against the matters set out in Part 2 of the Resource Management Act 1991.

9. I attach an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1)(b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.

10. Nothing in this application is affected by section 165ZH(1)(c) of the Resource Management Act 1991 (which relates to marine and coastal occupation).
11. The proposed activity is NOT within an area covered by a customary marine title group planning document under section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011.
12. The application is NOT for any form of subdivision under the Act.
13. Information, as required by the relevant District Plan is contained in the attached document.

  
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**Dunedin City Council**

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# 1 Introduction

Dunedin City Council (the Applicant) are currently in the process of renewing sections of sewer, water main and stormwater pipes in Kaikorai Valley. The proposed renewal programme will replace older cracked wastewater and stormwater pipes reducing infiltration and inflow and increasing the capacity of these networks. The upgrade of these networks will also improve the management of stormwater as a result of heavy rainfall as well as improving the quality of stormwater, reducing discharges of dilute wastewater to the adjacent Kaikorai Tributary.

Part of the renewal programme includes the replacement of the wastewater sewer and stormwater sewer that is located within the Shetland Street Reserve and Kaikorai Commons where native and other vegetation has been planted and maintained by the Dunedin Environmental Centre Trust (DECT) for the last 20 years. This vegetation will be affected by the construction process to upgrade the sewer. The renewal of the sewer in this location and how it affects this vegetation is the subject of the following application.

## 1.1 Background: Reason for the Works

The following description of the works includes a description of the entire wastewater renewal project for the Kaikorai area. The project is described in full below to give context on why these works are considered necessary. Only those works located in the Shetland Street Reserve and Kaikorai Common area are the subject of this application.

The existing 300mm diameter wastewater sewer between Lynn Street (FSMo4505) and School Street (FSMo4296) captures wastewater from the sub-catchments in the north end of the Kaikorai Valley catchment and conveys it southwards down the catchment. The 300 mm diameter earthenware (EW) pipe was constructed in 1914 and 1918 and services approximately 1,000 properties. The pipe stretches for approximately 950 metres (excluding branches) and is now at the end of its useful life.

The issues with the existing wastewater sewer include:

- low pipe velocities under dry weather flow conditions; and,
- surcharge risk in wet weather flow conditions e.g. upstream manhole overflows are known to occur in Lynn Street and historic property flooding has occurred in the catchment on School Street.

Further investigation of the pipeline indicates that it has been laid at a grade insufficient for minimum self-cleansing velocity ( $> 0.55$  m/s) flows.

Land use in the area around the existing pipe has also changed since the time it was installed. The result is that the existing pipe alignment now has the following constraints:

- Crosses the middle of Bishopscourt Playing Fields – DCC Parks and Reserves would like it moved to the boundary of the fields.
- Crosses Kaikorai Valley Stream once, adjacent to 26 Shetland St.

- Approximately 300 m (one third of the length) is in private property (9 properties) where adjacent DCC owned Parks and Reserves land is available.
- Crosses a 475 mm diameter concrete lined steel (1975) water trunk main in two locations.
- Crosses piped sections of the Kaikorai Valley Stream at Bishops court Playing Fields four times.
- Passes through the Kaikorai Common Plant Nursery, a volunteer / commercial nursery in DCC Parks and Reserves land with a Memorandum of Understanding to operate on DCC land and having been responsible for the re-vegetation of the Shetland Street Reserve and Kaikorai Common during the past 20 years.
- Includes approximately 72 metres at depth to invert between 3.9 – 4.2 metres.
- Includes approximately 25 metres with depth of cover less than 700 mm.

From recent investigations the proposed new design has addressed most of the identified constraints above and a new alignment (as identified in Appendix A) now shows the proposed alignment as mostly within DCC owned land (Shetland Street Reserve and the Kaikorai Common).

The project also includes the construction of the following stormwater sewers, manholes and outlet structures referred to below within the Kaikorai Common:

- i) Renewing existing 225mm diameter (with ID450mm) stormwater sewer from the outlet SWX02209 to the property boundary (refer to Drawing: 10656/6-CD085.01/D001).
- ii) New ID675mm stormwater sewer from manhole SWM02192 with a new outfall structure to the "Duck Pond" (Refer to Drawing: 10656/6-CD085.01/D003).

## 1.2 Site Description/ Environmental Setting

The Shetland Street Reserve and Kaikorai Commons is a DCC owned area of land within which the main sewer for the area is located. The area is zoned Residential 1 with an Urban Landscape Conservation Area 16 overlay in the Operative Dunedin District Plan. In the Proposed Dunedin City District Plan (2GP) the Shetland Street Reserve is zoned Recreation and the Kaikorai Common is zoned General Residential 1. The site location is shown in Figure 1 below:



**Figure 1: Site location plan showing location in relation to Dunedin City.**

The Shetland Street Reserve extends as a green corridor from the southern edge of Bishopscourt Recreation Reserve to Shetland Street and the Kaikorai Common extends from Shetland Street to School Street. Together these areas are considered to be the 'site' within which the works will be carried out. Within the site a tributary to the Kaikorai Stream flows along its length. The site is not continuous and is bisected by Shetland Street beneath which the Kaikorai Tributary flows through a culvert. The Kaikorai tributary also flows beneath School Street via a culvert where on the south side it is piped under the Nairn Street Recreation Reserve.

The Kaikorai Tributary within the site can be described as shallow and mainly consists of shallow runs and scattered riffles with a bed of fine gravels. Along its length in places it is shaded by native vegetation including mature trees planted and/or maintained by the Dunedin Environmental Centre Trust (DECT).

The site is bounded mostly by fenced residential properties. In the Shetland Street Reserve the Te Uru Marae is located to the west and the Somerset Retirement Village is located to the east of the site.

A pathway extends the length of the site and is used by the community as a pedestrian connection route. A number of the private properties including the Summerset Retirement Village have gates within their fences for access to the site.

The site although managed by the DCC is maintained in conjunction with the DECT who has planted and tended the length of the site with native and other plantings making the area attractive and high in natural character and amenity (Refer Figure 2 below). DECT have also planted an organic vegetable garden which will be unaffected by the works and created a small wetland area associated with the Kaikorai Tributary.



**Figure 2: Entrance to Kaikorai Commons from School Street.**

## 2 Proposed Works

Please refer to the drawings in Appendix A that show the extent of the proposed works within the site.

The proposed new trunk sewer from Bishops court to School St involves the replacement of the existing 300mm diameter EW pipes with new DN375mm SN16 PVC-U pipes running on a new alignment (quite close to the existing one for the section between School Street and Shetland Street). The new alignment falls within the site away from private property and private property boundaries. The old pipeline will be abandoned and capped with concrete.

As part of the works the following stormwater sewers, manholes and outlet structures referred in below have also been proposed within the Kaikorai Common:

- i) Renewing existing 225mm diameter (with ID450mm) stormwater sewer from the outlet SWX02209 to the property boundary (refer to Drawing" 10656/6-CD085.01/D001).
- ii) New ID675mm stormwater sewer from manhole SWM02192 with a new outfall structure to the "Duck Pond" (Refer to Drawing: 10656/6-CD085.01/D003).

The typical depth of the new sewer and stormwater pipes is between 1.5m to 2.0m with certain locations over 3m towards Bishops court. An approximately 8m wide construction access corridor along the length of the upgraded pipe alignment is required for construction machinery and staff to safely carry out the required works.

Where the stream is required to be diverted away from the construction works this will be the subject of a separate resource consent application to the Otago Regional Council.

The new sewer will be constructed using open trenches to lay the pipe along the new alignment. This will require the removal of vegetation within the ULCA along the new alignment as well as along the construction access required to construct the new sewer. It has been estimated that approximately 30 % of the vegetation within the Shetland Street Reserve and Kaikorai Common will be required to be removed as part of the works. This estimate is based on the amount of plants affected if the full 8m construction access corridor is required for construction.

It is however possible the successful contractor may come up with a methodology that does not require the full construction access width indicated on the plans in Appendix A. If this is the case less plants may be affected. However as the contract has not yet been let consent is sought for removal of plants within the maximum area indicated on the plans as a precautionary measure.

The plantings along the affected corridor will be replanted using either new plantings and/or plants held for transplanting back along corridor. Only shallow rooting plants will be planted back along the new sewer alignment and areas around the new manholes will be left clear for maintenance purposes.

### 2.1 Dunedin Environmental Centre

The DCC has undertaken that DECT will be the nominated secondary contractor for vegetation management for the project which includes the transplanting and replanting of vegetation throughout the site. DEC have also have had input into the Indicative Vegetation Management

Plans (IVMP) in Appendix B. These plans give guidelines on how the Common will be revegetated however the actual detail of the revegetation may vary depending on site conditions once construction is complete and the successful main contractor final methodology for construction. Therefore DEC will work with the tenderers during the tendering process to help them refine their methodology in terms of effect of construction on the vegetation and revegetation.

During the construction process DECT will work with the main contractor's proposed sequence and methodology to carry out the proposed transplanting and replanting work.

## 2.2 Methodology

The likely construction methodology is described below:

1. As the new trunk sewer alignment and stormwater pipe passes through the well planted out and established Kaikorai Commons, the vegetation within the required construction corridor will have to be relocated/transplanted (where feasible) prior to the formation of the construction access corridor. This vegetation management process is intended to be undertaken by the DEC as a nominated subcontractor to the main Contractor. This process will generally follow the guidelines/principles as set out in the Vegetation Management Plan. The DEC will be working closely with DCC Parks and Recreation for the management of the vegetation affected by the contract works.
2. Once the affected vegetation has been relocated/transplanted the construction access will be formed to allow access by construction plant. Due to the restricted access and to minimize damage to the existing ground small/light construction plant will be used wherever possible.
3. Where the existing stream is within the construction corridor the existing stream will be piped (or realigned first if required by the design) before being filled over for the construction access to be formed. Once the construction access is completed, construction equipment and materials can be brought in for the installation of the new trunk sewer.
4. Installation of the new trunk sewer will require a trench approximately 1.5m wide to be excavated to the required depth. Bedding materials will be placed and compacted before the new DN375mm SN16 PVC-U pipes are laid, joined and tested. This will be followed by backfill/compaction of pipe surround materials and suitable backfill materials.
5. The above process will be carried out for various sections of the new trunk sewer alignment depending on the Contractor's programme and phasing of the contract works.
6. The completed sections will be re-vegetated/replanted by DECT in accordance with the Vegetation Management Plan.

Preparation and translocation of the trees will begin as soon as it is appropriate within each tree growing cycle. Beginning in the middle of 2017. The works will also be undertaken consecutively in sections i.e. School Street to Shetland Street and Shetland St Bishopscourt. Overall the works including reinstatement of the vegetation are likely to take between 8-10 months to complete.

## 3 Consents Required

### 3.1 Dunedin City Council Operative Plan

The Shetland Street Reserve and Kaikorai Common are within the Residential 1 Zone which is overlain by the Urban Landscape Conservation Area (ULCA 16).

Under Rule 13.8.2 of the District Plan (refer Section 13 Urban Landscape Conservation Area – Rules) any removal of bush is a Discretionary Activity (Restricted). Council's discretion is restricted to the impact of the proposed work on amenity, natural character and landscape values of the locality and the values of the bush. The DCC propose to remove approximately 30% of the vegetation within the site within which the sewer pipe is to be realigned hence a resource consent for a Discretionary Activity (Restricted) is required.

In assessing any application the Council will consider:

- (i) The health and quality of the vegetation and the effect of the removal of plants on the health of the remaining plant community.
- (ii) The visual impact.
- (iii) The reasons for carrying out such work.
- (iv) The extent to which any adverse effects on the environment can be avoided, remedied or mitigated

### 3.2 Dunedin City Council Proposed Plan

The Shetland Street Reserve section of the site is zoned Recreation in the Dunedin City Council 2GP and the Kaikorai Common is zoned General Residential 1. Both areas are shown on the interactive zone maps as having a ULCA 16 overlay however this is not defined in the Proposed Plan.

Under Rule 10.3.2.3 Protected area vegetation must occur within 5m of any water body (10.3.2.3 iii) and indigenous vegetation must not occur within any recreation zone (10.3.2.3) and the proposed works are considered to be an upgrade rather than maintenance of the existing sewer network, a resource consent would be required under the 2GP. A further consent may have been required under Rule 10.3.2.4 Protected Species however Appendix 10A to which this rule relies does not seem to appear in the online version of the 2GP so the plants to be removed can't be compared against this Appendix.

It is therefore likely that resource would be required as a restricted discretionary activity under the 2GP. However the Proposed Plan rules which relate to this project do not yet have legal effect.

## 4 Alternative Location and Methods

Due to the numerous constraints on the existing alignment and the need to upgrade the pipes the opportunity to change alignment was explored. This involved analysis of a number of proposed alignments.

The various alternatives assessed included:

**Do nothing:** This was not considered as an option given the existing pipeline is close to the end of its life. Also the alignment was established prior to current landuse patterns and the sewer in some instance is on private property and has been built over. If the pipe fails for any reason it will be difficult to replace quickly and maintain into the future creating a public health risk to the community.

**Other Construction Methodologies:** An options study was carried out to identify if it was feasible to use horizontal directional drilling, pipe bursting and/or micro tunnelling for the sewer renewal along the Kaikorai Common rather than using open trenching. This study was commissioned once it was identified the open trenching would affect the site vegetation and the Kaikorai Tributary.

Investigations carried out as part of this option study include review of CCTV inspection log-sheets, potholing results from potholes on the existing sewer, geotechnical investigation (2016) into the ground conditions and notes, photos and site observations from a site walkover (2016). A summary of the assessment is outlined below:

- Directional drilling – Not suitable. Key reason is proposed low grades for the pipeline;
- Pipe-bursting – Not preferable, but possible (subject to significant risks to the alignment). Existing pipeline has concrete bedding and haunching and multiple known dips. These factors are highly likely to affect an acceptable installation. This makes it a high risk option, including the possibility of numerous dig downs (disturbing vegetation) to resolve issues;
- Micro-tunnelling – Possible. Soil conditions and proposed pipe depth are less than optimum and significantly increase the risk (both of a successful installation and financial implications);
- Open-cut trenching – Possible. Poor soil conditions and groundwater concerns are likely to mean the full 8m wide construction corridor may be necessary. Re-location of the stream and dewatering/trench support will incur costs.

As a result of the option report the DCC preferred option continues to be open – cut trenching mainly because of the technical issues that may be encountered from the other methodologies identified.

**Alternative Alignments:** Various alignments through the common were identified however some of the alignments initially assessed affected greater portions of the Common's vegetation.

The chosen alignment shown in the Appendix A provides the following advantages over the existing alignment.

- Total length - 959 metres versus 921 metres existing
- Number of manholes - 15 versus 12 existing manholes and 2 existing junctions
- Pipe route avoids main playing areas of Bishops court Playing Fields
- Elimination of the sewer main crossing the Kaikorai Stream
- Reduction of alignment in private property to 161 m and 5 properties versus 300 m and 9 properties.

- Reduction in number of crossings of 475 mm diameter concrete lined steel (1975) water trunk main from 2 to 1.
- Reduction in number of crossings of piped sections of the Kaikorai Valley Stream at Bishops court Playing Fields from 5 to 3 (with potential to reduce to 2 if swales constructed).
- Avoids Kaikorai Common Nursery.
- Increased the length of pipe in DCC owned Kaikorai Common land while length through heavily vegetated areas is reduced to approximately 52 m versus 143 m.
- Provides a 6.5 – 7.0 m wide margin on the fringes of Bishops court Playing Fields between the pipe route and vegetated areas for an open channel swale to allow opening out of parts of the piped sections of the Kaikorai Stream under the Bishops court Playing Fields.

**Note:** The Bishops court section of the works discussed above are not part of this application.

## 5 Consultation

In a general sense the community has been informed of the intent to renew the Kaikorai Valley Wastewater infrastructure as this project is within Section 1 of the Long Term Plan 2015/16 2024/25, Infrastructure Strategy, Significant project over the next 30 years – Wastewater projects. It was flagged that these renewals would occur in the period 2015-2030.

Consultation with adjacent landowners has been undertaken as follows:

- Kaikorai Community – the DCC held an open day on the 8 December 2015 at the Kaikorai Rugby Club inviting the local community to discuss the Kaikorai Pipeline Replacement. The open day covered proposed phases 1, 2 and 3.
- Investigation were required to be carried out for the preliminary design. Letters and land entry agreement were prepared for those properties on which the investigations were carried out. Residents were asked to sign and return an acknowledgement of notification and any site information to be considered before the investigation was carried out.
- June 2016 an information letter was sent out to the landowners directly affected by the works informing them of the Phase 3 renewal programme. The letter was sent out to those landowners whose property may be affected by the works either directly or indirectly.

DCC has consulted with DECT including the following:

- Introduction to the project and how it may affect the Common in 2015;
- Acceptance of an invitation to 2016 site visit to walk over the site and discuss the project with DCC project and Opus design engineers to discuss the project and issues/concerns they may have;
- Meeting to discuss results of construction methodology options report;
- Provision of the preliminary design drawings and comments requested and discussed at a subsequent meeting with DCC and comments requested on preliminary design drawings;
- Provision of re-vegetation plans for comment and inclusion of these comments that have been included in the IVMP in Appendix B.

Comment from DECT has included:

- Reluctant acceptance of open trenching required to undertake the work;
- Would like to help in identifying trees for transplanting and/or relocation;
- Would like to have input into re-vegetation plans;
- For DECT to be used as a subcontractor for the replanting of the Common;
- No spraying of weeds as in accordance with the ongoing memorandum of understanding with the DCC parks and Recreation Department for the maintenance of the site.

The DCC has responded to this consultation by undertaking to have DEC as the sub-contractor to the main contractor so they will carry out the replanting and maintenance of the Common once the sewer is replaced. They also have had a key input into the IVMP so the replanting is undertaken in accordance with their philosophy for the site.

Other stake holders consulted with has included:

DCC Park and Recreation Department has been met with on a number of occasions often alongside DECT to discuss the renewal project and the effects of the removal of the vegetation and proposed mitigation including commenting on the vegetation management plans:

Comments from the DCC Parks and Recreation include:

- Appreciated the ongoing communication through the development of the plans for the project including updates of options study carried out;
- Promoted opportunity that plants taken out that won't reused could be given to other community projects/groups;
- Promoted that the vegetation management plans needed to be prepared early so those plants that could be moved could be identified as soon as possible;
- When the draft vegetation management plans were produced the Parks Recreation were able to comment and these comments were included into the plans;
- They noted they would need to be involved in helping the DCC wastewater team to help develop appropriate long term maintenance plans and making the right decision with replanting;
- They noted any maintenance would need to be in accordance with the memorandum of understanding with DECT e.g. no spray is used by any contractor.

The DCC wastewater team has responded to the DCC parks and Recreation Department with ongoing communication on the project including seeking their input into the vegetation management plans and the contract process.

The DCC has also consulted with KTKO by extending an invitation to KTKO who came along to the initial site walkover to discuss the project at the beginning. A copy of the draft application has also been sent onto them for their assessment prior to lodgement.

The DCC will respond to any issues received from this assessment.

The DCC met the Council consent staff prior to preparation of the application as a result the extent of the project was discussed and potential consent requirements identified. This information has been incorporated into the application.

## 6 Assessment of Environmental Effects

Section 88 of the Resource Management Act 1991 (RMA) requires that all applications include an assessment of any actual or potential effects that a proposed activity may have on the environment and the ways in which any adverse effects may be avoided, remedied or mitigated. The scale and significance of the actual and potential effects that the activity may have on the environment should correspond with the level of detail provided in accordance with Section 88.

### 6.1 Effects on Natural Character and Landscape Values

#### 6.1.1 Effects on Vegetation

Approximately 30% of the vegetation (mixed native and exotics) within Kaikorai Common area will be removed for construction of the pipeline and for site access. To help mitigate the effect of these works the DCC in consultation with the DEC and the DCC Parks and Recreation Department have prepared IVMP which are included in Appendix B.

The existing plants list was surveyed by DCC's arborist along with the Dunedin Community Garden representative. As identified in the list, the site area is predominantly native species.

The IVMP in Appendix B specifies prior to undertaking works, in consultation with DECT important existing trees will be identified. These will be classes according to trees that could be removed and transplanted and those which could be left insitu but would require tree surgery or other trimming so they are able to survive the construction process. Trees would be removed at the appropriate time in their growth cycle. The trees identified will be prepared for removal and transplanted either elsewhere on site or other community projects and/or sites.

Once the works are completed the affected area will be tidied and revegetated. A total of approximately 3,200m<sup>2</sup> will be revegetated depending on the area. The IVMP identifies different planting areas including:

- Riparian planting along the Kaikorai Tributary up to a maximum of 2 m where not restricted by the pathway;
- Pedestrian edge planting;
- Entrance area plantings;
- Other areas outside those described above where new plantings should tie into existing plantings not affected by construction.

It is noted that although the vegetation will be replaced it will take some time for the plants to grow back

The effect of losing approximately 30% of vegetation within the Kaikorai Commons as a result of the renewal of the pipeline can be considered significant. These effects are mitigated in part by the proposed IVMP. However the re planting will take time to grow and this effect needs to be weighed against the positive effects resulting from the replacement of the sewer and the DCC being able to maintain the level of service for wastewater to the surrounding community.

#### **6.1.1.1 Effects on Health Quality of Vegetation**

The vegetation removed will include a variety of different plants. For those trees identified as being able to be transplanted they will be prepared within the appropriate timeframe in their growing cycle and removed prior to construction. Trees that are able to remain that can be trimmed or cut back to avoid being affected by the construction will also be identified. Approximately 30% of vegetation will be removed along the construction corridor. However 70 % will remain and will not be affected by the proposed works. . The new planting over the new sewer alignment will leave gaps for ease of access to manholes and over the sewer pipe and only shallow rooting plants will be planted to ensure the sewer will be able to be maintained in the future. The new plantings will replace the vegetation to be removed and will complement remaining and existing vegetation adjacent to the construction corridor.

The proposed revegetation and maintenance of these new plantings will be undertaken by DECT in accordance with their philosophy for the site as they have developed and maintained it for the last 20 years. Once revegetated the new plants will be nurtured along with the existing vegetation. Overall given time the effect of the construction process and the proposed replanting on the health and quality of the vegetation within in the site is considered to be minor.

#### **6.1.2 Effects on the Kaikorai Tributary**

Another key natural character attribute to the Common is the Kaikorai Tributary. The works will affect the stream. The new alignment of the sewer will bring the pipeline close to the stream in places and the stream will be required to be diverted so the sewer pipe can be realigned and constructed.

The temporary and in one place permanent diversion of the stream is the subject of a separate resource consent application to the Otago Regional Council. These works also fall within the construction access corridor area affected by this application and riparian vegetation will be removed in places to facilitate the works.

The methodology is to divert the tributary through a piped water course over which in places the construction access will be constructed. The alternative is to divert the stream into an open channel the open channel will occur at an appropriate distance from the proposed works. Piped diversion bunds will be constructed as required where the diversion interface meets the existing stream alignment. If diverted into an open channel care will be taken to avoid sediment being discharged into the channel using either sediment fences, hay bales or some other means. The proposed methods will be detailed in the contractor's construction management plan.

Once the work is completed the stream will either be directed back to its old alignment or permanently diverted so it does not follow the new alignment of the sewer. The riparian margins will re-planted at a maximum width of 2 m in accordance with the IVMP in Appendix B and the area will be maintained by the DECT.

The new stormwater pipes one of which discharges directly into the stream tributary and the other into the Duck Pond replace existing pipes and discharges at similar locations. The replacement of the stormwater pipes and discharge locations are also the subject of a separate resource consent to the ORC.

The construction access to replace the stormwater pipes will be part of the construction access required to the replace the sewer in the same locations. At the Duck Pond the access will be located

around but avoiding the edge of the existing pond, avoiding any riparian plantings where possible. Once construction in this areas is complete the area will be replanted in accordance with the IVMP.

Therefore the effects of the removal of the riparian vegetation and replanting of the stream and Duck Pond margins are considered to be temporary and of a short duration and will only affect those sections of the stream on site that are within the construction access corridor.

### **6.1.3 Landscape Values**

The removal of the vegetation will change the look and feel of the Common by opening up the area along the sewer alignment and where the stormwater pipes will be renewed. The existing mature vegetation adjacent to the pathway and other places give the common an enclosed feel in some locations. It is proposed that public access and the vegetation will be reinstated in accordance with the IVMP guidelines (refer Appendix B). It is acknowledged it will take time for the new vegetation to grow and the Common along the alignment will change in terms of its character while this occurs. Once grown the new planting is likely to give a different feel to space but will also achieve an equal amount of amenity as previously and blend in with the surrounding vegetation. Therefore the effects from construction on the landscape values are considered to be more than minor but will be of a temporary nature and short time frame.

## **6.2 Effects on Amenity**

### **6.2.1 Effect on Public Access**

Public access will also be restricted to the section of the site where the work is being undertaken for public safety reasons. The effect on public access will be temporary and not all of the site will be restricted to the public as the work will be undertaken in sections.

### **6.2.2 Effects on Visual Amenity**

During the construction process the visual amenity of the site will be affected due to the removal of vegetation and construction machinery and staff on site. However once complete the site will be revegetated in accordance with the IVMP's. The construction process is also likely to be staggered hence the effects on visual amenity from construction will be temporary and last only as long as the works are being undertaken (8-10 months in total).

The effect on visual amenity once the works are complete will in part be mitigated by the proposed revegetation of the site. The proposal is to replant shallow rooting plants over the alignment of the sewer e.g. toi tois and flaxes etc. These plants won't take as long to grow as, for example, some other deep rooting plants, however it will take time for the new plantings to grow to the same maturity of the vegetation removed. Therefore the effects of removing the planting will be of limited duration as it will take time for the new plantings to be established to completely mitigate the effects of the construction.

### **6.3 National Environmental Standard: for Assessing and Managing Contaminants in Soil to protect Human Health (NES)**

A preliminary site investigation (PSI) has been carried out to investigate whether an activity or industry has been undertaken on the site. The report identified the Bishopscourt sports fields, Balmecewan School and the Recreation Reserve south of School Street where pesticides use is or likely have occurred. These areas are outside the area which are the subject of this application. Hence no consent under the NES is required in this instance. The PSI is included in Appendix C.

### **6.4 Archaeological Authority**

An archaeological assessment was carried out and it was identified the site would fall partially within in an area of pre 1900 occupation. Therefore an archaeological authority under Heritage New Zealand Pouhere Taonga Act 2014 has been applied for and gained. This authority is included in Appendix D.

### **6.5 Positive Effects**

The existing wastewater sewer between Lynn Street and School Street is now at the end of its useful life. It is proposed to replace the old and cracked earthen ware pipes with new up to date technology. In replacing the sewer it will prevent inflow and infiltration of the stormwater into the wastewater network.

This will help prevent the capacity of the network being exceeded during heavy rainfall events. Currently during heavy rainfall if the capacity of the network is over loaded there is a risk of surcharge of dilute wastewater through manhole covers and private plumbing.

The replacement of the sewer will reduce this public health risk as well reducing any dilute wastewater from old sewer system discharging into the Kaikorai Tributary.

The realignment of the sewer into the site will also mean it is within land owned by the DCC and the access to the alignment will be easier if the sewer requires maintenance in the future.

## 7 Statutory Considerations

### 7.1 Section 104

Section 104 of the RMA outlines the matters that the consent authority shall have regard to when considering the application. Section 104 (1) states:

*(1) When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to—*

*(a) any actual and potential effects on the environment of allowing the activity; and*

*(b) any relevant provisions of—*

*(i) a national environmental standard:*

*(ii) other regulations:*

*(iii) a national policy statement:*

*(iv) a New Zealand coastal policy statement:*

*(v) a regional policy statement or proposed regional policy statement:*

*(vi) a plan or proposed plan; and*

*(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.*

The actual and potential effects and proposed mitigation to avoid, remedy or mitigate any adverse effects arising from the activity were discussed in section 6.

The following statutory instruments have been assessed.

- Operative Otago Regional Policy Statements;
- Proposed Regional policy Statement
- The Operative Dunedin City District Plan; and
- The Proposed Dunedin City District Plan (2GP)

#### 7.1.1 Otago Regional Policy Statement

**Objective 9.4.2:** *To promote the sustainable management of Otago's infrastructure to meet the present and reasonably foreseeable needs of Otago's communities.*

**Objective 9.4.3:** *To avoid, remedy or mitigate the adverse effects of Otago's built environment on Otago's natural and physical resources.*

**Policy 9.5.2:** *To promote and encourage efficiency in the development and use of Otago's infrastructure through:*

- (a) Encouraging development that maximises the use of existing infrastructure while recognising the need for more appropriate technology; and
- (b) Promoting co-ordination amongst network utility operators in the provision and maintenance of infrastructure; and
- (c) Encouraging a reduction in the use of non-renewable resources while promoting the use of renewable resources in the construction, development and use of infrastructure; and
- (d) Avoiding or mitigating the adverse effects of subdivision, use and development of land on the safety and efficiency of regional infrastructure.

**Policy 9.5.4:** To minimise the adverse effects of urban development and settlement, including structures, on Otago's environment through avoiding, remedying or mitigating:

- (a) Discharges of contaminants to Otago's air, water or land; and
- (b) The creation of noise, vibration and dust; and
- (c) Visual intrusion and a reduction in landscape qualities; and
- (d) Significant irreversible effects on:
  - (i) Otago community values; or
  - (ii) Kai Tahu cultural and spiritual values; or
  - (iii) The natural character of water bodies and the coastal environment; or
  - (iv) Habitats of indigenous fauna; or
  - (v) Heritage values; or
  - (vi) Amenity values; or
  - (vii) Intrinsic values of ecosystems; or
  - (viii) Salmon or trout habitat.

**Comment:** The proposed works are considered to be sustainable management of the existing wastewater and stormwater network while upgrading it and realigning it in places. There will be construction effects during the replacement of the pipes including the loss of vegetation within the Shetland and Street Reserve and the Kaikorai Common this will include the loss of riparian vegetation along the stream edge where it will be diverted and affected by construction. Amenity values will also be affected during construction because of the loss of vegetation. However the proposed re-planting of the riparian margin and other replacement planting within the construction access corridor will help mitigate these effects and over time will replace the vegetation removed.

Therefore the project is considered to be consistent with these objectives and policies.

### 7.1.2 The Proposed Otago Regional Policy Statement

**Objective 3.4:** Good quality infrastructure and services meet community needs

**Policy 3.4.1:** Integrating infrastructure with land use

Achieve the strategic integration of infrastructure with land use, by:

- a) Recognising functional needs of infrastructure of regional or national importance; and
- b) Designing infrastructure to take into account:
  - i. Actual and reasonably foreseeable land use change; and
  - ii. The current population and projected demographic changes; and
  - iii. Actual and reasonably foreseeable change in supply of, and demand for, infrastructure services; and
  - iv. Natural and physical resource constraints; and
  - v. Effects on the values of natural and physical resources; and

- vi. Co-dependence with other infrastructural services; and
- vii. The effects of climate change on the long term viability of that infrastructure; and
- c) Managing urban growth:
  - i. Within areas that have sufficient infrastructure capacity; or
  - ii. Where infrastructure services can be upgraded or extended efficiently and
- d) Co-ordinating the design and development of infrastructure with the staging of land use change, including with:
  - i. Structural design and release of land for new urban development; or
  - ii. Structural redesign and redevelopment within existing urban areas.

**Policy 3.4.2: Managing infrastructure activities**

Manage infrastructure activities, to:

- a) Maintain or enhance the health and safety of the community; and
- b) Reduce adverse effects of those activities, including cumulative adverse effects on natural and physical resources; and
- c) Support economic, social and community activities; and
- d) Improve efficiency of use of natural resources; and
- e) Protect infrastructure corridors for infrastructure needs, now and for the future; and
- f) Increase the ability of communities to respond and adapt to emergencies, and disruptive or natural hazard events; and
- g) Protect the functioning of lifeline utilities and essential or emergency services.

**Comment:** The proposed works are to upgrade and realign the trunk sewer and replace and install new stormwater pipes in the Kaikorai area. The existing sewer services approximately a 1000 residents. As the EW pipes are near the end of their life they need to be replaced to allow the level of service to be retained. The DCC are taking the opportunity to upgrade and realign the sewer and stormwater pipes so the level of service is maintained and is able to be maintained more easily moving into the future in line with their objective as outlined in the Long Term Plan. The proposed upgrade will help reduce the effect of I&I into the sewer including the uncontrolled discharge of dilute wastewater and reduce the discharge from the constructed overflow in the area into the Kaikorai Tributary during heavy rainfall. The upgrade and realignment is considered to be sustainable management of an existing physical resource as well maintaining the health and safety of the community. The proposed removal of the vegetation in the ULCA will have short term effects but the proposed replanting and maintenance into the future of the panting will help maintain and potentially enhance the natural resources and amenity values of the site.

The proposal is considered to be consistent with these objectives and policies.

### 7.1.3 The Operative Dunedin City District Plan

The following objective and policy are relevant to this application.

**Objective 13.2.1:** *Ensure that the important values and characteristics of the natural features and areas which provide the setting for the urban areas are protected.*

**Policy 13.3.1:** *Protect and enhance the natural character of those areas identified as Urban Landscape Conservation Areas in the District Plan Maps through: • protection of natural landforms and waterways • protection of trees and areas of bush • control over the erection of buildings and other development.*

**Comment:** The proposed construction process will remove a maximum of 30% of the sites vegetation which will affect the amenity of the area over construction. However this will be mitigated in part by the proposed replanting in accordance with IVMPs. The Kaikorai Tributary will be diverted away from the construction zone and will be reinstated in places and diverted permanently to avoid the realigned sewer in others. Once complete riparian planting will be undertaken for a maximum of 2m on either side of the stream unless restricted by the pathway or people's property boundaries. The replanting and maintenance of the planting will be undertaken by the DECT in accordance with their philosophy for the site which they have maintained for the last 20 years. Overall it is considered the natural character of the site affected by the works will be reinstated and be enhanced by the proposed replanting. The proposed works are therefore considered to be consistent with the objectives and policies listed above.

#### 7.1.4 The Proposed Dunedin City District Plan (2GP)

**Objective 10.2.1:** *Areas of indigenous vegetation and the habitats of indigenous fauna are maintained and enhanced.*

**Objective 10.2.2:** *The biodiversity values and natural character of the coast and riparian margins are maintained and enhanced.*

**Policy 10.2.2.2:** *Require buildings, structures, storage and use of hazardous substances, network utilities activities, and earthworks - large scale to be set back from the coast and water bodies an adequate distance to enable the biodiversity and natural character values of coastal and riparian margins to be maintained or enhanced.*

**Policy 10.2.2.3:** *Require vegetation clearance to be set back an adequate distance from the coast and water bodies to minimise the risk of erosion and protect, or enable the enhancement of, biodiversity and natural character values.*

**Comment:** The proposed works will require the removal of indigenous vegetation including riparian vegetation adjacent the Kaikorai Tributary to upgrade and realign the trunk sewer in the Kaikorai Area. However the effects of removing the vegetation will be mitigated in part due to the proposed re-planting (including transplanting of plants) of vegetation removed including riparian plantings. This replanting will be undertaken so it merges with the remaining vegetation on site and will be maintained by DECT according to how they have managed the site for the last 20 years. Although it will take time for the plantings to regrow the natural character of the area will be maintained and enhanced in the long term.

Overall when weighed against the positive effects of the works this proposal is considered to be consistent with these objectives and policies.

## 7.2 Part 2 of the RMA

All resource consent application must be considered against Part 2 of the RMA. To grant a resource consent applicant, Council must be satisfied that by granting the application, Part 2 of the RMA will be achieved.

The principles of the RMA are outlined in sections 6-8 of the RMA the relevant matters are outlined as follows:

Section 6 of the RMA lists the matters of national importance that are to be recognised. The relevant matters within Section 6 are:

- a. The preservation of the natural character of rivers and their margins, and the protection of them from inappropriate subdivision, use and development; and
- c. the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna; and
- d. The maintenance and enhancement of public access to and along rivers.

The Kaikorai Tributary will be affected by the construction process of replacing and realigning the pipeline. The stream will be diverted and to protect water quality however riparian vegetation in places will be removed. When the construction works are complete the stream will be re-diverted back on its original alignment or in places permanently diverted away from the sewer alignment. Riparian planting will also be re-established.

The construction process will affect approximately 30% of the vegetation with the Shetland Street Reserve and the Kaikorai Common area which includes mostly indigenous plants. Some of the trees and plants will be able to be transplanted and once the project is complete the area will be replanted according to the re vegetation plans. The overall effect of construction requiring the removal of the indigenous and other vegetation needs to be weighed against the positive effects from the proposal and the DCC responsibility to provide the residents in the area an adequate level of service moving into the future. In this instance the works are considered necessary subject to the proposed mitigation of establishing the vegetation in the area for the efficient management of wastewater in this area in accordance with the DCC's objective to manage infrastructure by renewing ageing assets like the trunk sewer.

Section 7 of the RMA sets "Other Matters" that Council must have particular regards to when making a decision. The relevant Section 7 matters are:

- a kaitiakitanga and (aa) the ethic of stewardship;
- b. the efficient use and development of natural and physical resources
- c. The maintenance and enhancement of amenity values;
- d. Intrinsic values of ecosystems; and
- f. Maintenance and enhancement of the quality of the environment.

KTKO has been invited to a site visit at which the proposed works were discussed and a draft application has been sent for their assessment.

The proposal is to upgrade and realign the existing sewer while mitigating the effects of construction on the amenity values of the site. These effects need to be weighed against the upgrade of the sewer close to the end of its design life that provides a service to a 1000 plus homes in the Kaikorai.

The proposed works are considered to be an efficient and sustainable use of an existing physical resource the trunk sewer. The upgrade will also allow the DCC to provide the current level of service to the community moving into the future.

The construction process will involve removing approximately 30% of the Kaikorai Common vegetation. Proposed mitigation to help maintain the amenity of the Common over time is to re-plant the Common in accordance with plans in Appendix B. The replanting will include riparian planting, replanting in accordance with CPTED principles and to merge the planting with remaining 70% of the vegetation on site. Once grown the visual amenity of the site will be returned and enhanced in places.

The intrinsic value of the ecosystem will also be maintained as the majority of the vegetation on site will not be removed during the works and the areas affected by the works will be replanted.

The proposed upgrade will also reduce the amount of discharge dilute wastewater into the Kaikorai Tributary during heavy rainfall because of the replacement of old earthen and cracked piping. This will help enhance the quality of the stream environment.

The proposal is therefore considered consistent with Section 7.

Section 8 taking into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi). The proposal includes consultation with KTKO and this is ongoing.

Section 5 outlines the purpose of the RMA and its relevance is as follows:

Section 5 sets out that the purpose of the RMA is to promote the sustainable management of natural and physical resources. It requires activities to be managed so that adverse effects on the environment are avoided, remedied or mitigated.

The proposed replacement and realignment of the Kaikorai sewer and replacement/new installation of the stormwater pipes is considered to be sustainable management of the wastewater system which is an existing physical resource. The effects of the construction process will mean the loss of 30% of vegetation from the site an Urban Landscape Conservation Area. This will be mitigated in part with the proposed translocation and/or trimming of trees as well as a revegetation plan that will guide replanting of the site including riparian planting, entrance planting and mixed vegetation planting so the new planting can eventually grow and merge with existing vegetation not affected by construction. The effects of construction must be weighed against the positive effect resulting from the sewer upgrade and realignment. In this instance the EW pipe-work is at the end of its life and if not replaced it will continue to age resulting in increased risk of surcharge during heavy rainfall resulting in dilute wastewater being discharged into private property with the associated public health risk. Also replacing the sewer will reduce the discharge of dilute wastewater into the Kaikorai Tributary. The realignment of the sewer will make it easier to replace and will allow better access to the alignment if it needs to be maintained in the future. The upgrade and realignment will also enable the DCC to continue the level of the wastewater service to the Kaikorai area into the future.

Overall the proposed realignment and replacement of the sewer and replacement/new installation of the stormwater pipes is considered to be consistent with purpose and the principles of the RMA.

## 8 Conclusion

The Applicant seeks consent for the removal of vegetation in a ULCA so the Kaikorai trunk sewer can be upgraded and realigned so that it is located within DCC owned land within the Shetland Street Reserve and the Kaikorai Common. As detailed in Section 6 of this report, the effects of the proposed works on the environment are considered to be of a temporary nature. The proposal is also considered to be consistent with the objectives and policies of the relevant statutory documents.

## Appendix A: Drawings and Certificate of Titles



LOCALITY PLAN  
M.T.S

| SHEET INDEX LEGEND                     |                               |
|----------------------------------------|-------------------------------|
| <span style="color: blue;">—</span>    | WATER (PROPOSED)              |
| <span style="color: red;">---</span>   | SEWER (PROPOSED)              |
| <span style="color: green;">---</span> | STORMWATER (PROPOSED)         |
| <span style="color: blue;">—</span>    | STORMWATER CULVERT (PROPOSED) |
| <span style="color: blue;">—</span>    | OPEN WATERCOURSE (EX.)        |

WATER SHEET INDEX PLAN  
Scale: 1:2000

SEWER SHEET INDEX PLAN  
Scale: 1:2000

STORMWATER SHEET INDEX PLAN  
Scale: 1:2000

DETAILED DESIGN

|           |  |                                       |  |          |  |               |  |                                        |  |  |  |  |  |
|-----------|--|---------------------------------------|--|----------|--|---------------|--|----------------------------------------|--|--|--|--|--|
|           |  |                                       |  |          |  |               |  | DETAILED DESIGN                        |  |  |  |  |  |
| Revisions |  | Assessment                            |  | Approved |  | Revision Date |  | Project                                |  |  |  |  |  |
| A         |  | PRELIMINARY DESIGN - DRAFT            |  | ASM      |  | 16.09.16      |  | DUNEDIN CITY COUNCIL CONTRACT No: 6067 |  |  |  |  |  |
| B         |  | DETAILED DESIGN SHEET NUMBERS CHANGED |  | ANW      |  | 16.09.16      |  | KAIKORAI VALLEY RENEWAL PROGRAMME      |  |  |  |  |  |
|           |  |                                       |  |          |  |               |  | PHASE 3                                |  |  |  |  |  |
|           |  |                                       |  |          |  |               |  | Sheet                                  |  |  |  |  |  |
|           |  |                                       |  |          |  |               |  | LOCALITY & SHEET PLAN                  |  |  |  |  |  |
|           |  |                                       |  |          |  |               |  | DOC Drawing No.                        |  |  |  |  |  |
|           |  |                                       |  |          |  |               |  | Open Project No.                       |  |  |  |  |  |
|           |  |                                       |  |          |  |               |  | Sheet No.                              |  |  |  |  |  |
|           |  |                                       |  |          |  |               |  | Revision                               |  |  |  |  |  |
|           |  |                                       |  |          |  |               |  | 10656                                  |  |  |  |  |  |
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| DRAWING SCHEDULE - GENERAL |                                            |
|----------------------------|--------------------------------------------|
| SHEET                      | SHEET NAME                                 |
| C000                       | COVER SHEET                                |
| C001                       | INDEX SHEET                                |
| C002                       | LOCALITY AND SHEET PLAN                    |
| C003                       | LEGEND AND GENERAL NOTES                   |
| C004                       | WATER, SEWER & STORMWATER STANDARD DETAILS |

| DRAWING SCHEDULE - WATER (SP1) |                                        |
|--------------------------------|----------------------------------------|
| SHEET                          | SHEET NAME                             |
| C101                           | SHETLAND ST WATERMAIN - PLAN & DETAILS |
| C102                           | SCHOOL ST WATERMAIN - PLAN & DETAILS   |

| DRAWING SCHEDULE - STORMWATER & SEWER (SP1) |                                                                                               |
|---------------------------------------------|-----------------------------------------------------------------------------------------------|
| SHEET                                       | SHEET NAME                                                                                    |
| C201                                        | SHETLAND ST SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                         |
| C202                                        | SHETLAND ST PRIVATE SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                 |
| C203                                        | SHETLAND ST STORMWATER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                    |
| C204                                        | SHETLAND ST BOX CULVERT - CONNECTION PLAN & DETAILS (SEPARABLE PORTION 1)                     |
| C205                                        | SHETLAND ST BOX CULVERT - LONGITUDINAL SECTION (SEPARABLE PORTION 1)                          |
| C211                                        | SCHOOL ST SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                           |
| C212                                        | SCHOOL ST CONCRETE BOX CULVERT - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)            |
| C213                                        | SCHOOL ST CONCRETE BOX CULVERT - DETAILS (SEPARABLE PORTION 1)                                |
| C214                                        | SCHOOL ST CONCRETE BOX CULVERT - BOX CULVERT TO PIPE TRANSITION CHAMBER (SEPARABLE PORTION 1) |
| C221                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C222                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C223                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C224                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C225                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C226                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C227                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C228                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C229                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C230                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C231                                        | TRUNK SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                               |
| C232                                        | BISHOPSCOURT WESTERN SEWER - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 1)                |
| C233                                        | MARAE SEWER - PLAN & LONGITUDINAL SECTION                                                     |

| DRAWING SCHEDULE - ROADING (SP1) |                                                                       |
|----------------------------------|-----------------------------------------------------------------------|
| SHEET                            | SHEET NAME                                                            |
| C401                             | OPTION 2 - ROAD LOWERING - ROADWAY PLAN & LONGITUDINAL SECTION        |
| C402                             | OPTION 2 - ROAD LOWERING - ROADWAY CROSS SECTIONS                     |
| C403                             | OPTION 2 - ROAD LOWERING - ROADWAY TYPICAL SECTION & PAVEMENT DETAILS |

| DRAWING SCHEDULE - STORMWATER & SEWER (SP2) |                                                                                         |
|---------------------------------------------|-----------------------------------------------------------------------------------------|
| SHEET                                       | SHEET NAME                                                                              |
| C310                                        | BISHOPSCOURT OVERVIEW (SEPARABLE PORTION 2)                                             |
| C311                                        | BISHOPSCOURT EASTERN WATERWAY - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 2)       |
| C312                                        | BISHOPSCOURT EASTERN WATERWAY - SECTIONS (SEPARABLE PORTION 2)                          |
| C313                                        | BISHOPSCOURT EASTERN SW PIPE - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 2)        |
| C314                                        | BISHOPSCOURT WESTERN WATERWAY - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 2)       |
| C315                                        | BISHOPSCOURT WESTERN WATERWAY - SECTIONS (SEPARABLE PORTION 2)                          |
| C316                                        | BISHOPSCOURT WESTERN SW PIPE - PLAN & LONGITUDINAL SECTION (SEPARABLE PORTION 2)        |
| C317                                        | BISHOPSCOURT WESTERN WATERWAY - 4500 WATER PIPE DIVERSION DETAIL (SEPARABLE PORTION 2)  |
| C318                                        | BISHOPSCOURT WESTERN WATERWAY - RIPRAP PROTECTION TYPICAL DETAILS (SEPARABLE PORTION 2) |

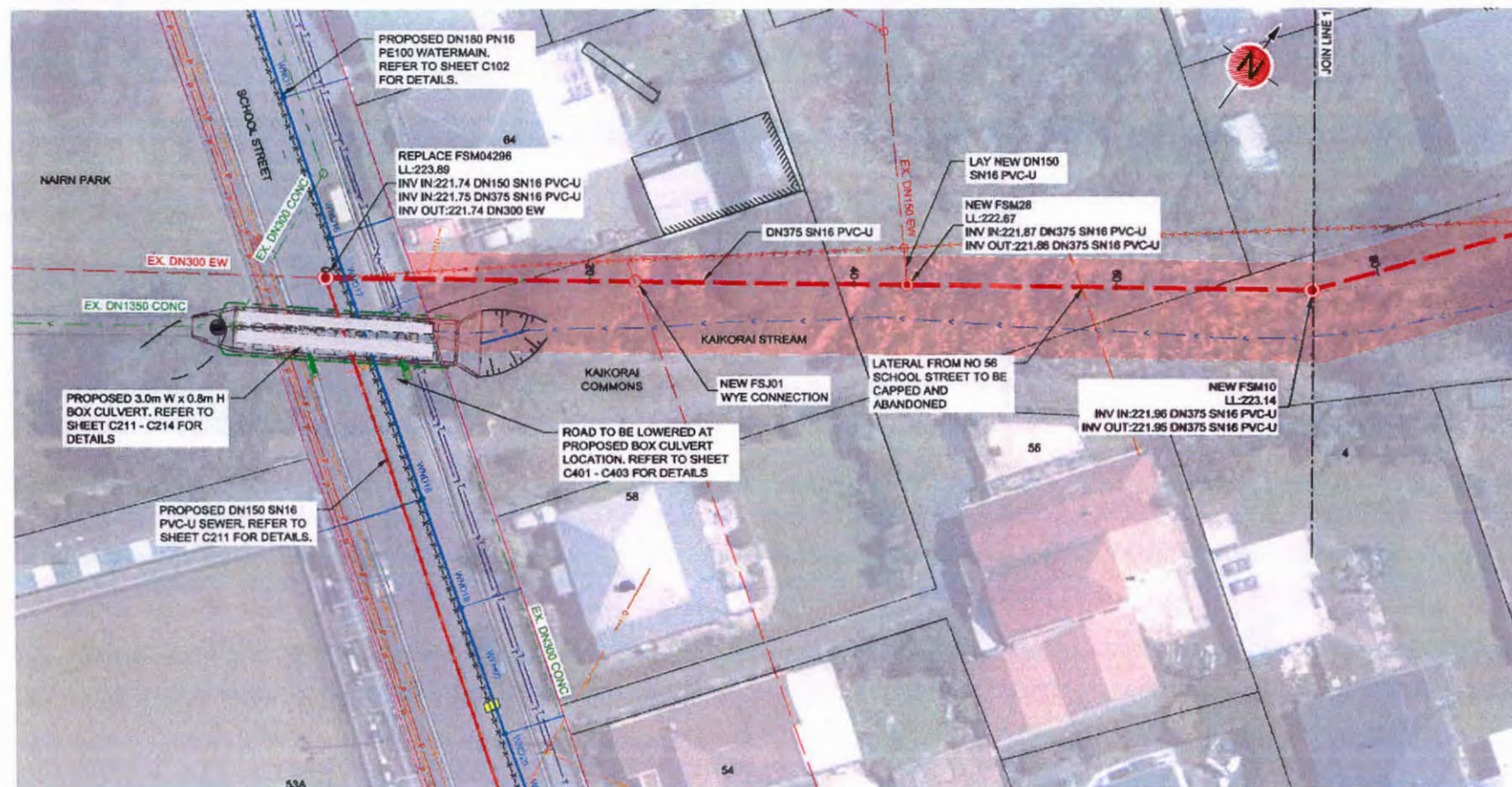
DETAILED DESIGN

| Revision | Description     | Appointed | Revision Date |
|----------|-----------------|-----------|---------------|
| A        | DETAILED DESIGN | ANW       | 16.09.16      |
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| <b>OPUS</b><br>Christchurch Environmental<br>+64 3 363 5400<br>PO Box 1482<br>Christchurch 8140<br>New Zealand |                                     |
| Designed<br>-                                                                                                  | Approved<br>A.WHELDON<br>16.09.2016 |
| Drawn<br>G.HAMBLYN                                                                                             | Scale<br>N.T.S.                     |

|                                                                                                   |                                |
|---------------------------------------------------------------------------------------------------|--------------------------------|
| Project<br>DUNEDIN CITY COUNCIL CONTRACT No: 6067<br>KAIKORAI VALLEY RENEWAL PROGRAMME<br>PHASE 3 |                                |
| Sheet<br>INDEX SHEET                                                                              |                                |
| DCC Drawing No.<br>10656                                                                          | Open Project No.<br>6-CD085.01 |
| Sheet No.<br>C001                                                                                 | Revision<br>A                  |



**PLAN**  
Scale: 1:250 @ A1; 1:500 @ A3

| SERVICES LEGEND |                                                            |
|-----------------|------------------------------------------------------------|
|                 | POWER (OVERHEAD)                                           |
|                 | POWER (HV)                                                 |
|                 | POWER (LV)                                                 |
|                 | TELECOM                                                    |
|                 | ABANDONED GAS                                              |
|                 | WATER (EX.)                                                |
|                 | WATER (PROPOSED)                                           |
|                 | IRRIGATION (EX.)                                           |
|                 | SEWER (EX.)                                                |
|                 | SEWER (PROPOSED)                                           |
|                 | STORMWATER (EX.)                                           |
|                 | STORMWATER (PROPOSED)                                      |
|                 | PIPED WATERCOURSE (EX.)                                    |
|                 | STORMWATER CULVERT                                         |
|                 | OPEN WATERCOURSE                                           |
|                 | SUBSOIL (EX.)                                              |
|                 | PIPE TO BE ABANDONED                                       |
|                 | NEW SEWER MANHOLE                                          |
|                 | NEW STORMWATER MANHOLE                                     |
|                 | POWER POLE                                                 |
|                 | INDICATIVE CONSTRUCTION ACCESS CORRIDOR (MAXIMUM WIDTH 8m) |
|                 | SURVEYED BUILDING OUTLINE                                  |

| MANHOLE # | NORTHING   | EASTING    | ELEVATION |
|-----------|------------|------------|-----------|
| FSM04296  | 4917933.67 | 1404959.83 | 223.91    |
| FSM10     | 4917977.55 | 1405020.59 | 223.14    |

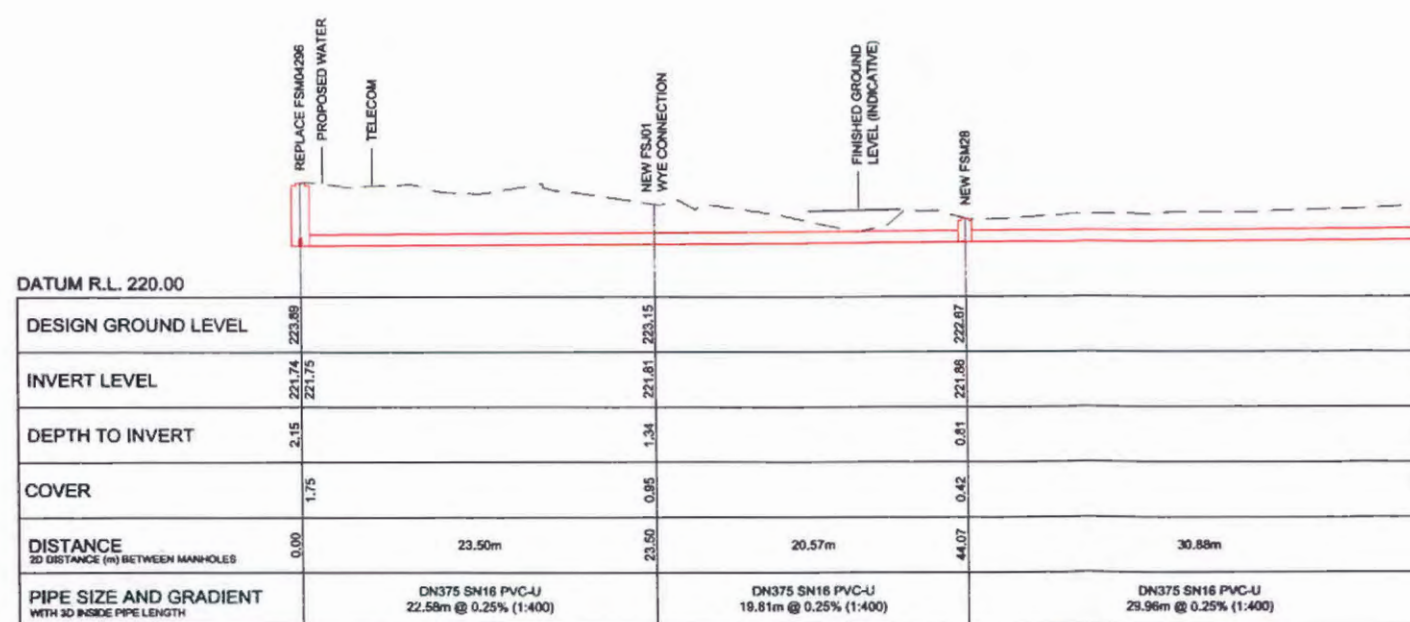
PROJECTION BASED ON NZTM  
VERTICAL DATUM BASED ON MSL

#### GENERAL NOTES:

- REFER TO "GENERAL NOTES" AND "GENERAL NOTES SEWER AND STORMWATER" ON SHEET C003.

#### SITE SPECIFIC NOTES:

- PROPOSED SEWER TRUNK MAIN AND SEWER CONNECTION WORKS ARE LOCATED NEXT TO KAIAKORAI STREAM. CONTRACTOR SHALL PROVIDE CONSTRUCTION METHODOLOGY TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION, INCLUDING EROSION & SEDIMENT CONTROL, PLUS MITIGATION AGAINST SEWER SPILLS.



#### LONGITUDINAL SECTION - TRUNK SEWER DISTANCE: 0.0m - 74.9m

Scale: 1:250 (H) 1:125 (V) @ A1; 1:500 (H) 1:250 (V) @ A3

1:250 @ A1  
1:500 @ A3  
0 4 8 12 16 20 24 m

Original Sheet Size A1 [B41x564] Plot Date: 2016-09-16 at 4:59:24 p.m. Path G:\Projects\Other Projects (SWT)...6-CD085.00 Kaikorai Valley Phase 3 Pipeline Renewals\500 Technical\510 Drawings-CD085.00\_C221-C233.dwg C221

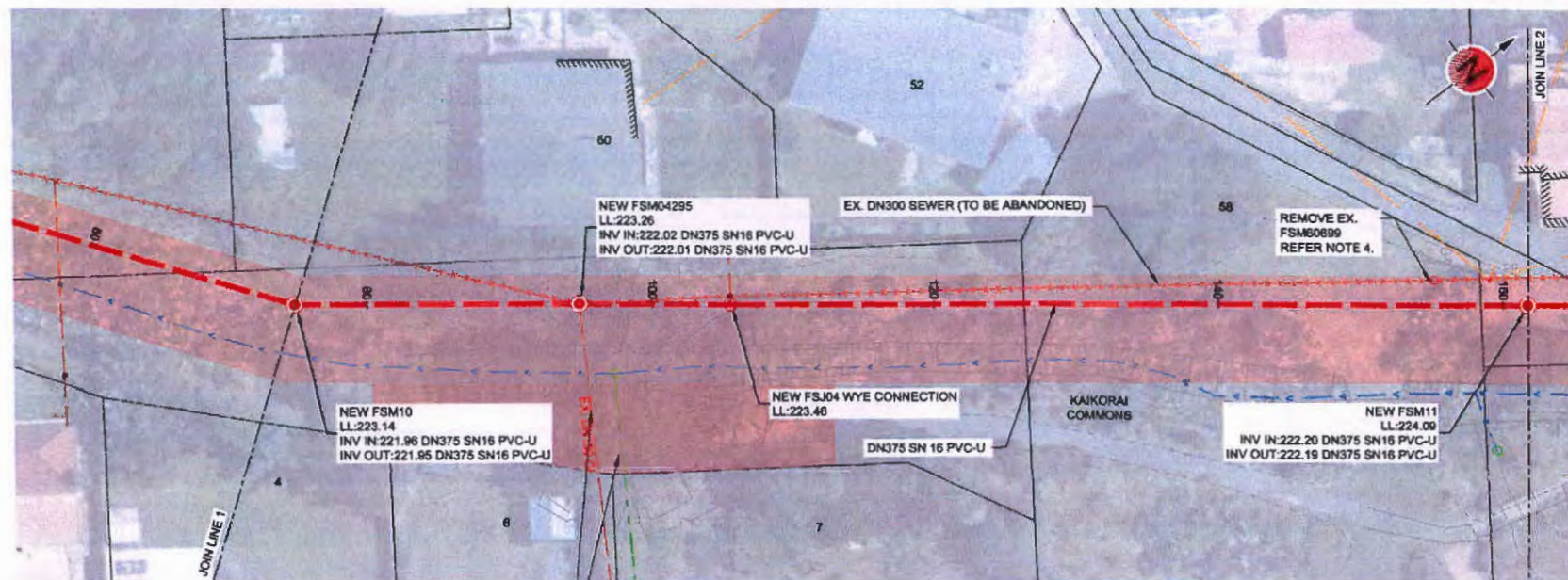
|   |                                    |     |          |
|---|------------------------------------|-----|----------|
| A | PRELIMINARY DESIGN                 | ANW | 27.05.16 |
| B | CONSTRUCTION ACCESS CORRIDOR ADDED | ASM | 01.06.16 |
| C | DETAILED DESIGN                    | ANW | 16.09.16 |



|          |               |          |               |               |            |
|----------|---------------|----------|---------------|---------------|------------|
| Designed | A.McEWAN      | Approved | A.WHELDON     | Approved Date | 16.09.2016 |
| Drawn    | R. SUNDERLAND | Scale    | AS SHOWN @ A1 |               |            |

|                  |                                                                                         |
|------------------|-----------------------------------------------------------------------------------------|
| Project          | DUNEDIN CITY COUNCIL CONTRACT No: 6067<br>KAIAKORAI VALLEY RENEWAL PROGRAMME<br>PHASE 3 |
| Sheet            | TRUNK SEWER - SEP. PORTION 1<br>PLAN & LONGITUDINAL SECTION                             |
| 3000 Drawing No. | 10656                                                                                   |
| Open Project No. | 6-CD085.01                                                                              |
| Sheet No.        | C221                                                                                    |
| Revision         | C                                                                                       |

#### DETAILED DESIGN



**PLAN**  
Scale: 1:250 @ A1; 1:500 @ A3

REFER TO DWG No:  
10656/6-CD085.01/D001  
& D002 FOR PROPOSED  
WORK HERE

| SERVICES LEGEND |                                                            |
|-----------------|------------------------------------------------------------|
|                 | POWER (OVERHEAD)                                           |
|                 | POWER (HV)                                                 |
|                 | POWER (LV)                                                 |
|                 | TELECOM                                                    |
|                 | ABANDONED GAS                                              |
|                 | WATER (EX.)                                                |
|                 | WATER (PROPOSED)                                           |
|                 | IRRIGATION (EX.)                                           |
|                 | SEWER (EX.)                                                |
|                 | SEWER (PROPOSED)                                           |
|                 | STORMWATER (EX.)                                           |
|                 | STORMWATER (PROPOSED)                                      |
|                 | PIPED WATERCOURSE (EX.)                                    |
|                 | STORMWATER CULVERT                                         |
|                 | OPEN WATERCOURSE                                           |
|                 | SUBSOIL (EX.)                                              |
|                 | PIPE TO BE ABANDONED                                       |
|                 | NEW SEWER MANHOLE                                          |
|                 | NEW STORMWATER MANHOLE                                     |
|                 | POWER POLE                                                 |
|                 | INDICATIVE CONSTRUCTION ACCESS CORRIDOR (MAXIMUM WIDTH 8m) |
|                 | SURVEYED BUILDING OUTLINE                                  |

| MANHOLE # | NORTHING   | EASTING    | ELEVATION |
|-----------|------------|------------|-----------|
| FSM10     | 4917977.55 | 1405020.59 | 223.14    |
| FSM11     | 4918046.47 | 1405073.39 | 224.00    |

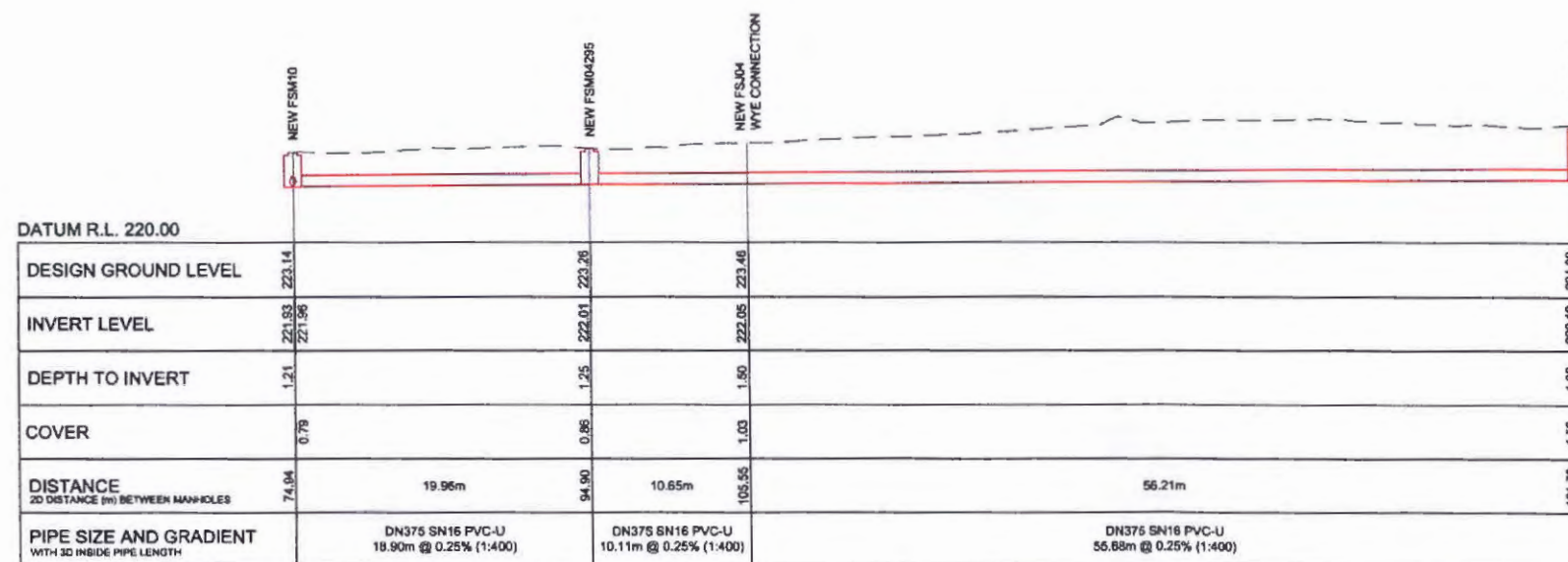
PROJECTION BASED ON NZTM  
VERTICAL DATUM BASED ON MSL

#### GENERAL NOTES:

1. REFER TO "GENERAL NOTES" AND "GENERAL NOTES SEWER AND STORMWATER" ON SHEET C003.

#### SITE SPECIFIC NOTES:

1. PROPOSED SEWER TRUNK MAIN AND SEWER CONNECTION WORKS ARE LOCATED NEXT TO KAIKORAI STREAM. CONTRACTOR SHALL PROVIDE CONSTRUCTION METHODOLOGY TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION, INCLUDING EROSION & SEDIMENT CONTROL, PLUS MITIGATION AGAINST SEWER SPILLS.



#### LONGITUDINAL SECTION - TRUNK SEWER DISTANCE: 74.9m - 161.8m

Scale: 1:250 (H) 1:125 (V) @ A1; 1:500 (H) 1:250 (V) @ A3

1:250 @ A1  
1:500 @ A3

Original Sheet Size A1 (841x594) Plot Date: 2016-09-16 at 5:00:13 p.m. Path: G:\Projects\Other Projects (SHT)...16-CD085.00 Kaikorai Valley Phase 3 Pipeline Renewals\300 Technical\10 Dwg\6-CD085.00\_C221-C233.dwg C222

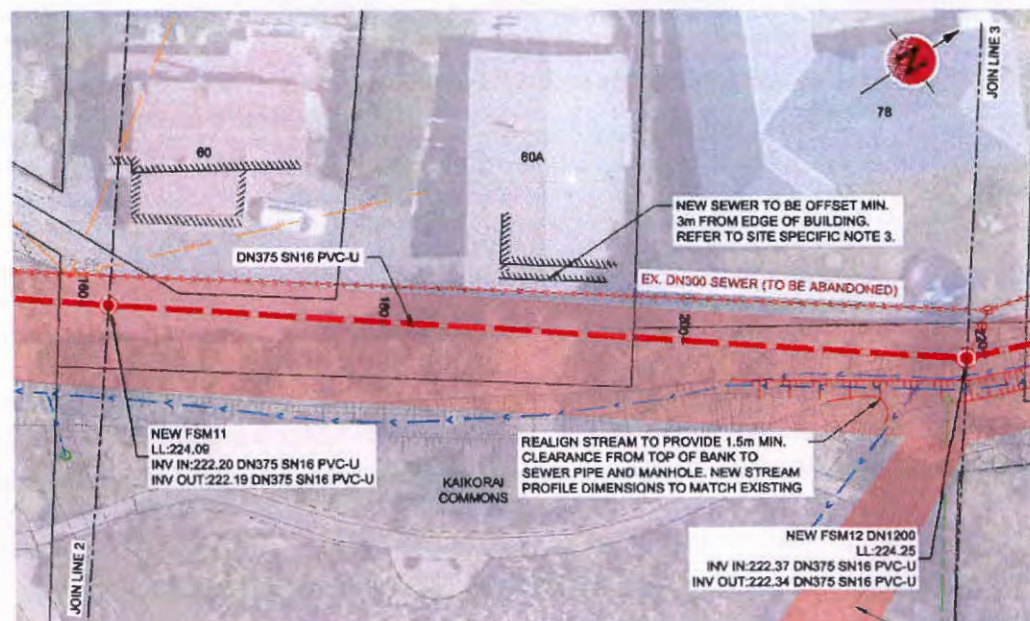
|   |                                    |      |          |
|---|------------------------------------|------|----------|
| A | PRELIMINARY DESIGN                 | ANW  | 27.05.16 |
| B | CONSTRUCTION ACCESS CORRIDOR ADDED | ASM  | 01.06.16 |
| C | DETAILED DESIGN                    | ANW  | 16.06.16 |
| D | RESOURCE CONSENT                   | M.H. | 19.9.16  |



|               |               |               |
|---------------|---------------|---------------|
| Designed      | Approved      | Approved Date |
| A.McEWAN      | A.WHELDON     | 15.09.2016    |
| Drawn         | Revised       |               |
| R. SUNDERLAND | AS SHOWN @ A1 |               |

|                                                                                        |                  |           |          |
|----------------------------------------------------------------------------------------|------------------|-----------|----------|
| Project                                                                                |                  |           |          |
| DUNEDIN CITY COUNCIL CONTRACT No: 6067<br>KAIKORAI VALLEY RENEWAL PROGRAMME<br>PHASE 3 |                  |           |          |
| Sheet                                                                                  |                  |           |          |
| TRUNK SEWER - SEP. PORTION 1<br>PLAN & LONGITUDINAL SECTION                            |                  |           |          |
| DCC Drawing No.                                                                        | Open Project No. | Sheet No. | Revision |
| 10656                                                                                  | 6-CD085.01       | C222      | D        |

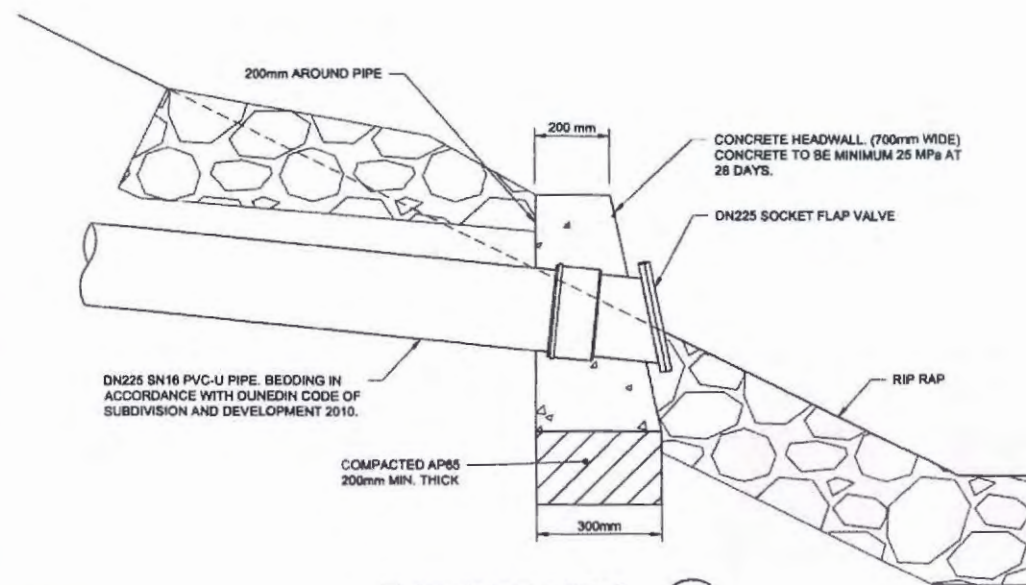
#### DETAILED DESIGN



**PLAN**

Scale: 1:250 @ A1; 1:500 @ A3

REFER TO DWG No:  
10656/6-CD085.01/D003 FOR  
PROPOSED WORK HERE



**FLAP VALVE DETAIL 1**

Scale: 1:10 @ A1; 1:20 @ A3

| SERVICES LEGEND |                                                            |
|-----------------|------------------------------------------------------------|
|                 | POWER (OVERHEAD)                                           |
|                 | POWER (HV)                                                 |
|                 | POWER (LV)                                                 |
|                 | TELECOM                                                    |
|                 | ABANDONED GAS                                              |
|                 | WATER (EX.)                                                |
|                 | WATER (PROPOSED)                                           |
|                 | IRRIGATION (EX.)                                           |
|                 | SEWER (EX.)                                                |
|                 | SEWER (PROPOSED)                                           |
|                 | STORMWATER (EX.)                                           |
|                 | STORMWATER (PROPOSED)                                      |
|                 | PIPED WATERCOURSE (EX.)                                    |
|                 | STORMWATER CULVERT                                         |
|                 | OPEN WATERCOURSE                                           |
|                 | SURFACE (EX.)                                              |
|                 | PIPE TO BE ABANDONED                                       |
|                 | NEW SEWER MANHOLE                                          |
|                 | NEW STORMWATER MANHOLE                                     |
|                 | POWER POLE                                                 |
|                 | INDICATIVE CONSTRUCTION ACCESS CORRIDOR (MAXIMUM WIDTH 8m) |
|                 | SURVEYED BUILDING OUTLINE                                  |

| MANHOLE # | NORTHING   | EASTING    | ELEVATION |
|-----------|------------|------------|-----------|
| FSM11     | 4918046.47 | 1405073.39 | 224.09    |
| FSM12     | 4918096.00 | 1405109.16 | 223.90    |

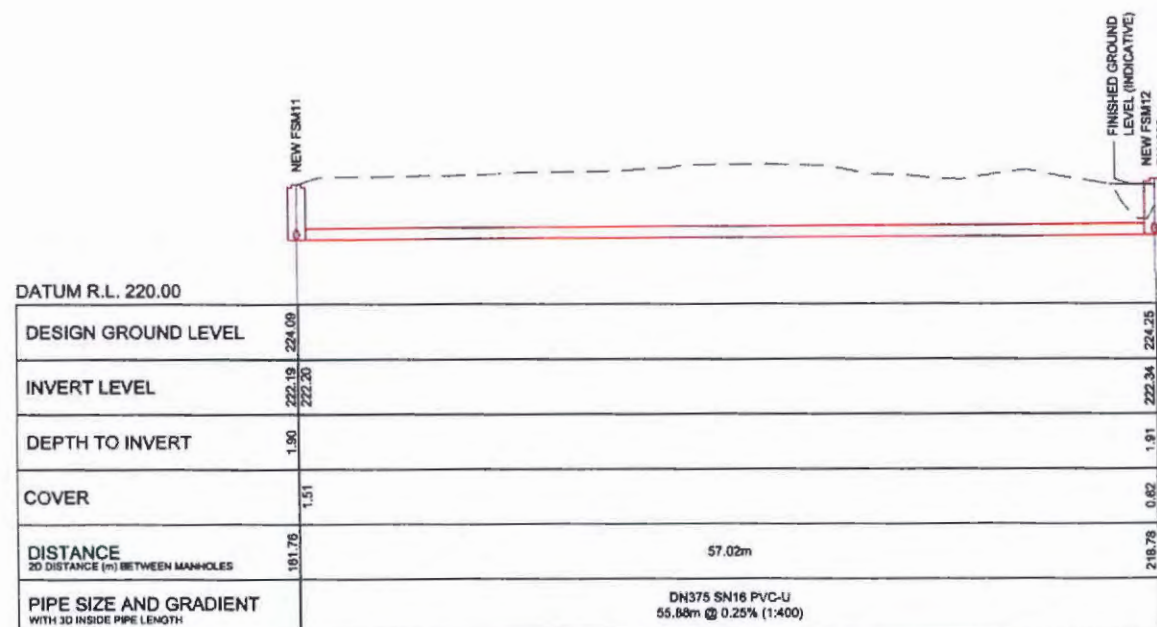
PROJECTION BASED ON NZTM  
VERTICAL DATUM BASED ON MSL

**GENERAL NOTES:**

1. REFER TO "GENERAL NOTES" AND "GENERAL NOTES SEWER AND STORMWATER" ON SHEET C003.

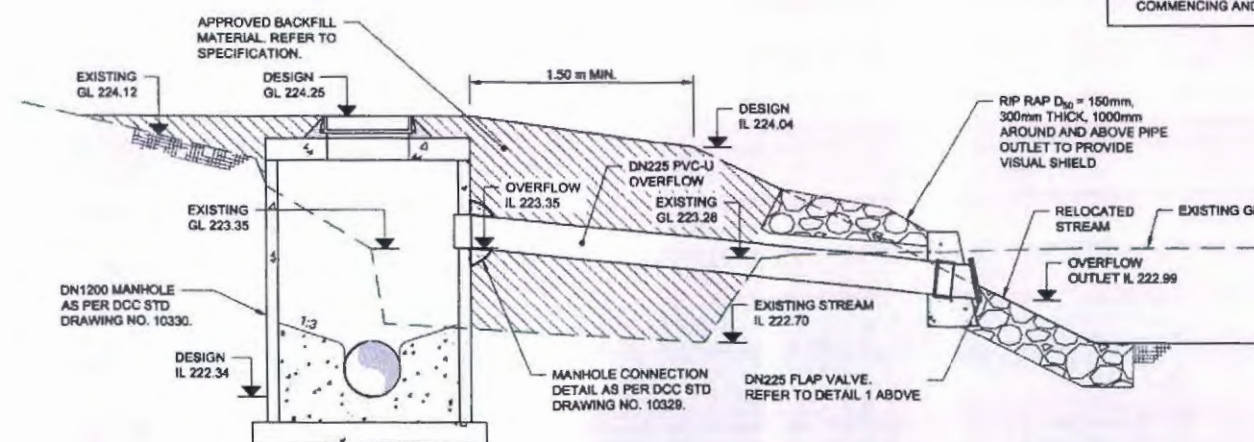
**SITE SPECIFIC NOTES:**

1. PROPOSED SEWER TRUNK MAIN AND SEWER CONNECTION WORKS ARE LOCATED NEXT TO KAIKORAI STREAM. CONTRACTOR SHALL PROVIDE CONSTRUCTION METHODOLOGY TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION, INCLUDING EROSION & SEDIMENT CONTROL, PLUS MITIGATION AGAINST SEWER SPILLS.
2. PROPOSED CHANNEL SLOPES ASSUMED TO BE 2H:1V. EXISTING SURVEY INDICATES STEEPER SLOPES MAY BE STABLE.
3. DILAPIDATION SURVEY REQUIRED PRIOR TO CONSTRUCTION COMMENCING AND SUBMITTED TO THE ENGINEER.



**LONGITUDINAL SECTION - TRUNK SEWER DISTANCE: 161.8m - 218.8m**

Scale: 1:250 (H) 1:125 (V) @ A1; 1:500 (H) 1:250 (V) @ A3



**CROSS SECTION AT FSM12 CH 218.8**

Scale: 1:25 @ A1; 1:50 @ A3

**DETAILED DESIGN**

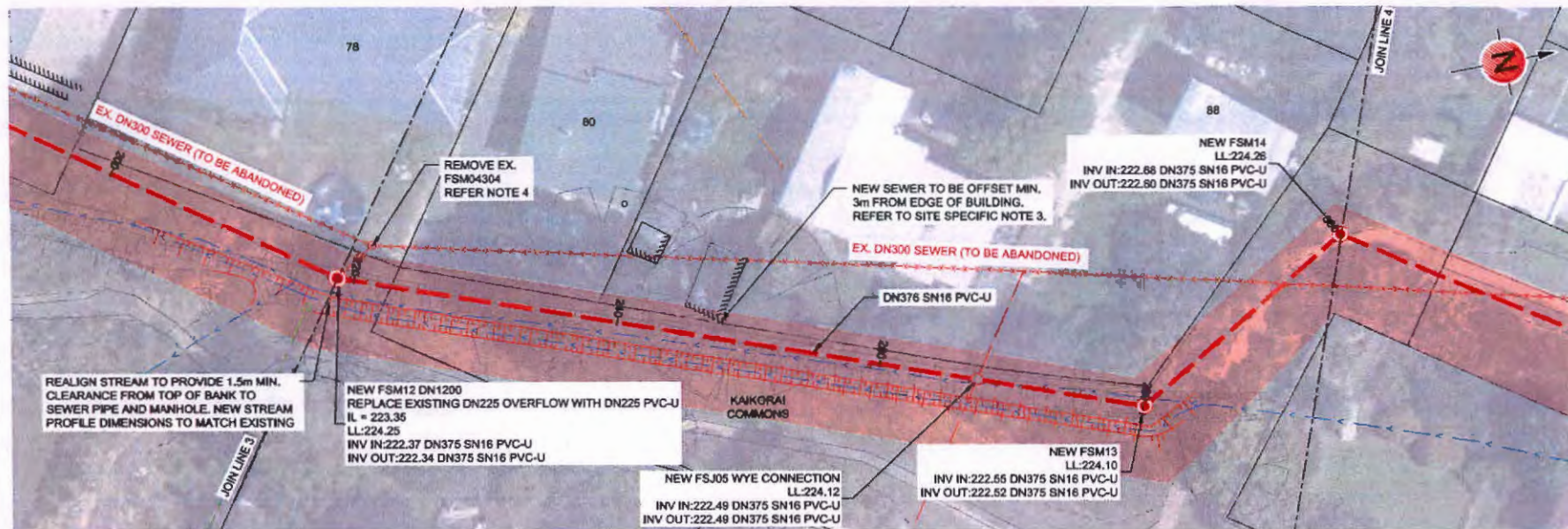
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|---|------------------------------------|------|----------|
| A | PRELIMINARY DESIGN                 | ANW  | 27.05.16 |
| B | CONSTRUCTION ACCESS CORRIDOR ADDED | ASM  | 01.06.16 |
| C | DETAILED DESIGN                    | ANW  | 16.09.16 |
| D | RESOURCE CONSENT                   | M.H. | 19.9.16  |



|                                                                                           |                         |
|-------------------------------------------------------------------------------------------|-------------------------|
| <b>OPUS</b><br>Christchurch Environmental PO Box 1482<br>Christchurch 8140<br>New Zealand |                         |
| Designed<br>A. McEWAN                                                                     | Approved<br>A. WHEELDON |
| Drawn<br>R. SUNDERLAND                                                                    | Scale<br>AS SHOWN @ A1  |
| Approved Date<br>16.09.2016                                                               |                         |

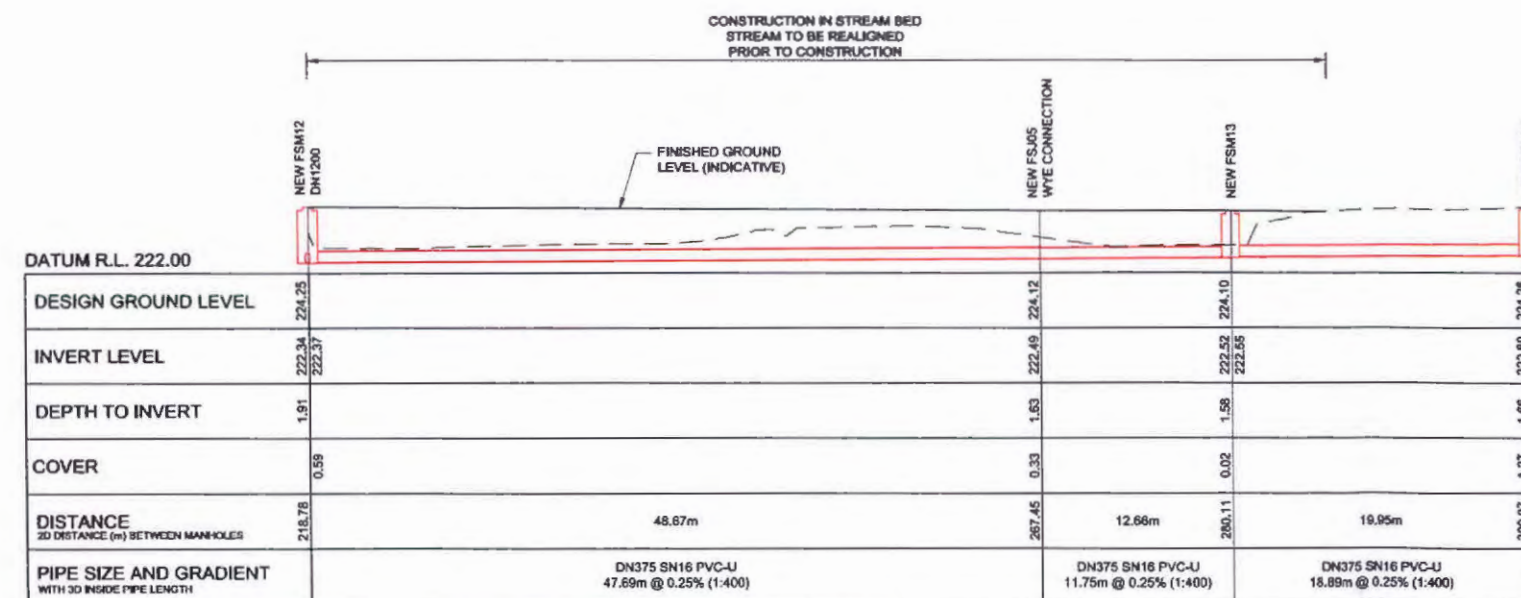
|                                                                                                   |                                  |
|---------------------------------------------------------------------------------------------------|----------------------------------|
| Project<br>DUNEDIN CITY COUNCIL CONTRACT No: 6067<br>KAIKORAI VALLEY RENEWAL PROGRAMME<br>PHASE 3 |                                  |
| Sheet<br>TRUNK SEWER - SEP. PORTION 1<br>PLAN & LONGITUDINAL SECTION                              |                                  |
| DCC Drawing No.<br>10656                                                                          | Client Project No.<br>6-CD085.01 |
| Sheet No.<br>C223                                                                                 | Revision<br>D                    |

1:250 @ A1  
1:500 @ A3



### PLAN

Scale: 1:250 @ A1; 1:500 @ A3



### LONGITUDINAL SECTION - TRUNK SEWER DISTANCE: 218.8m - 300.1m

Scale: 1:250 (H) 1:125 (V) @ A1; 1:500 (H) 1:250 (V) @ A3

| SERVICES LEGEND |                                                            |
|-----------------|------------------------------------------------------------|
|                 | POWER (OVERHEAD)                                           |
|                 | POWER (HV)                                                 |
|                 | POWER (LV)                                                 |
|                 | TELECOM                                                    |
|                 | ABANDONED GAS                                              |
|                 | WATER (EX.)                                                |
|                 | WATER (PROPOSED)                                           |
|                 | IRRIGATION (EX.)                                           |
|                 | SEWER (EX.)                                                |
|                 | SEWER (PROPOSED)                                           |
|                 | STORMWATER (EX.)                                           |
|                 | STORMWATER (PROPOSED)                                      |
|                 | PIPED WATERCOURSE (EX.)                                    |
|                 | STORMWATER CULVERT                                         |
|                 | OPEN WATERCOURSE                                           |
|                 | SUITSOIL (EX.)                                             |
|                 | PIPE TO BE ABANDONED                                       |
|                 | NEW SEWER MANHOLE                                          |
|                 | NEW STORMWATER MANHOLE                                     |
|                 | POWER POLE                                                 |
|                 | INDICATIVE CONSTRUCTION ACCESS CORRIDOR (MAXIMUM WIDTH 8m) |
|                 | SURVEYED BUILDING OUTLINE                                  |

| MANHOLE # | NORTHING   | EASTING    | ELEVATION |
|-----------|------------|------------|-----------|
| FSM12     | 4018096.00 | 1405102.16 | 223.90    |
| FSM13     | 4018149.37 | 1405129.39 | 223.15    |
| FSM14     | 4018166.64 | 1405119.39 | 224.26    |

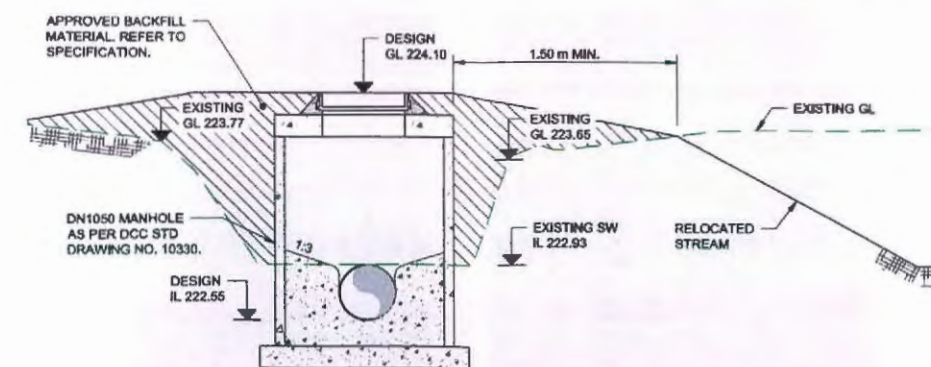
PROJECTION BASED ON NZTM  
VERTICAL DATUM BASED ON MSL

### GENERAL NOTES:

- REFER TO "GENERAL NOTES" AND "GENERAL NOTES SEWER AND STORMWATER" ON SHEET C003.

### SITE SPECIFIC NOTES:

- PROPOSED SEWER TRUNK MAIN AND SEWER CONNECTION WORKS ARE LOCATED NEXT TO KAIKORAI STREAM. CONTRACTOR SHALL PROVIDE CONSTRUCTION METHODOLOGY TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION, INCLUDING EROSION & SEDIMENT CONTROL, PLUS MITIGATION AGAINST SEWER SPILLS.
- PROPOSED CHANNEL SLOPES ASSUMED TO BE 2H:1V. EXISTING SURVEY INDICATES STEEPER SLOPES MAY BE STABLE.
- DILAPIDATION SURVEY REQUIRED PRIOR TO CONSTRUCTION COMMENCING AND SUBMITTED TO THE ENGINEER.



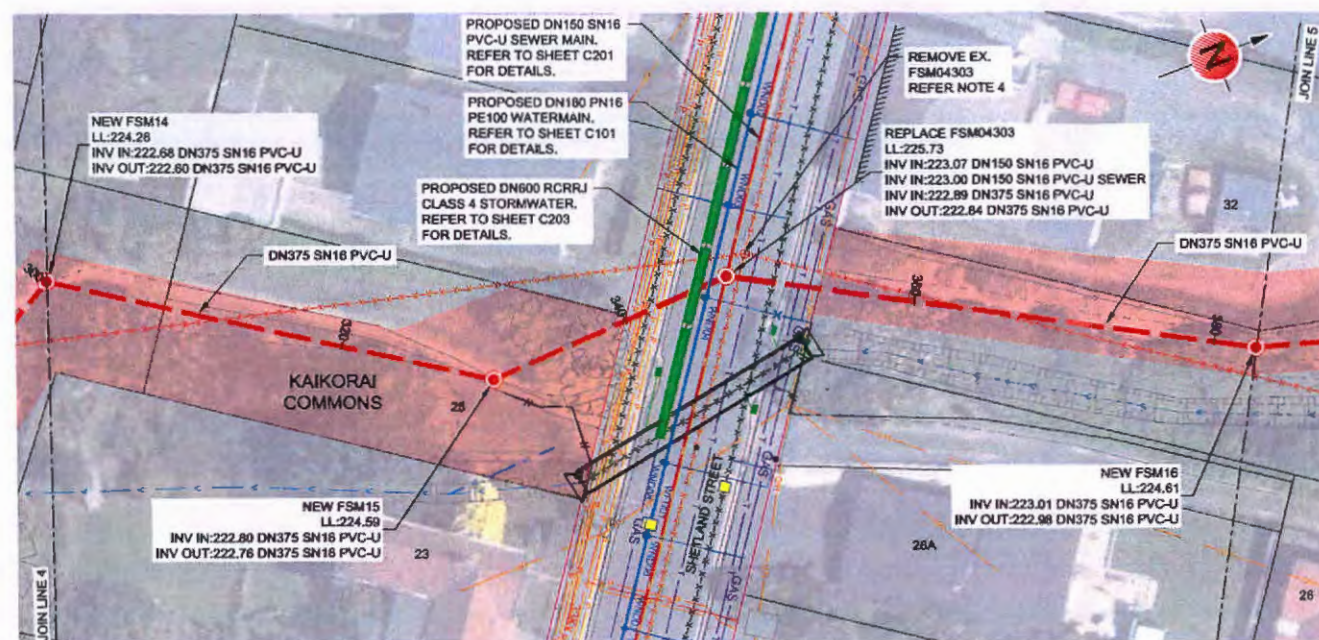
### CROSS SECTION AT FSM13 CH 280.1

Scale: 1:25 @ A1; 1:50 @ A3

### DETAILED DESIGN

|                                                         |  |                                                                                              |  |                                                                                                    |  |
|---------------------------------------------------------|--|----------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------|--|
| <b>DUNEDIN CITY COUNCIL</b><br>Kaunihare-e-rohe o Otago |  | <b>OPUS</b><br>Christchurch Environmental<br>PO Box 1482<br>Christchurch 8140<br>New Zealand |  | Project:<br>DUNEDIN CITY COUNCIL CONTRACT No: 6067<br>KAIKORAI VALLEY RENEWAL PROGRAMME<br>PHASE 3 |  |
| Design:<br>A.McEWAN                                     |  | Approved:<br>A.WHEELDON                                                                      |  | Approved Date:<br>15.09.2016                                                                       |  |
| Drawn:<br>R. SUNDERLAND                                 |  | Scale:<br>AS SHOWN @ A1                                                                      |  | DCC Drawing No:<br>10656                                                                           |  |
|                                                         |  |                                                                                              |  | Design Project No:<br>6-CD085.01                                                                   |  |
|                                                         |  |                                                                                              |  | Sheet No:<br>C224                                                                                  |  |
|                                                         |  |                                                                                              |  | Revision:<br>C                                                                                     |  |

1:250 @ A1  
1:500 @ A3



**PLAN**  
Scale: 1:250 @ A1; 1:500 @ A3

| SERVICES LEGEND |                                                            |
|-----------------|------------------------------------------------------------|
|                 | POWER (OVERHEAD)                                           |
|                 | POWER (HV)                                                 |
|                 | POWER (LV)                                                 |
|                 | TELECOM                                                    |
|                 | ABANDONED GAS                                              |
|                 | WATER (EX.)                                                |
|                 | WATER (PROPOSED)                                           |
|                 | IRRIGATION (EX.)                                           |
|                 | SEWER (EX.)                                                |
|                 | SEWER (PROPOSED)                                           |
|                 | STORMWATER (EX.)                                           |
|                 | STORMWATER (PROPOSED)                                      |
|                 | PIPED WATERCOURSE (EX.)                                    |
|                 | STORMWATER CULVERT                                         |
|                 | OPEN WATERCOURSE                                           |
|                 | SUBSOIL (EX.)                                              |
|                 | PIPE TO BE ABANDONED                                       |
|                 | NEW SEWER MANHOLE                                          |
|                 | NEW STORMWATER MANHOLE                                     |
|                 | POWER POLE                                                 |
|                 | INDICATIVE CONSTRUCTION ACCESS CORRIDOR (MAXIMUM WIDTH 8m) |
|                 | SURVEYED BUILDING OUTLINE                                  |

| MANHOLE # | NORTHING   | EASTING    | ELEVATION |
|-----------|------------|------------|-----------|
| FSM14     | 4918166.64 | 1405119.39 | 224.26    |
| FSM15     | 4918191.71 | 1405136.41 | 224.59    |
| FSM4303   | 4918208.81 | 1405135.60 | 225.73    |
| FSM16     | 4918239.63 | 1405152.92 | 224.61    |

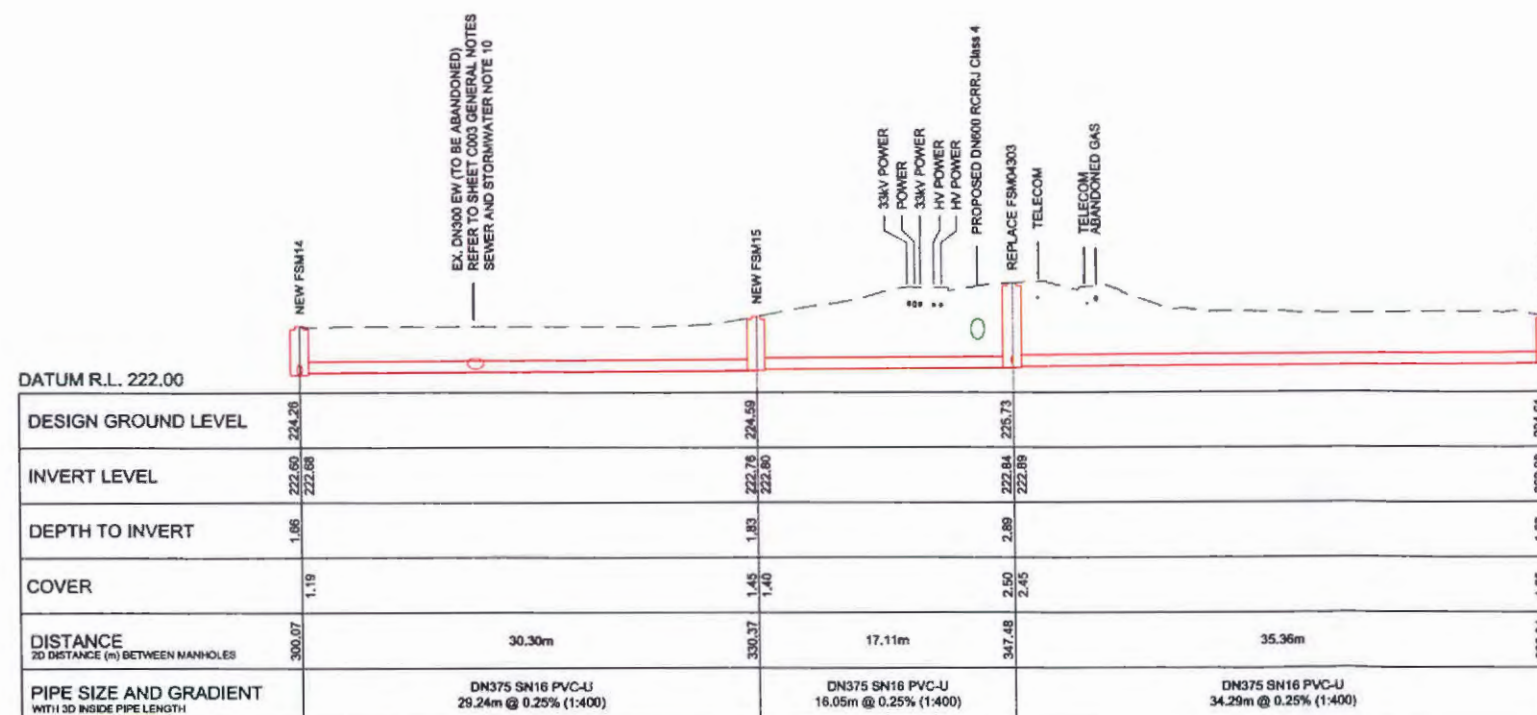
PROJECTION BASED ON NZTM  
VERTICAL DATUM BASED ON MSL

#### GENERAL NOTES:

- REFER TO "GENERAL NOTES" AND "GENERAL NOTES SEWER AND STORMWATER" ON SHEET C003.

#### SITE SPECIFIC NOTES:

- PROPOSED SEWER TRUNK MAIN AND SEWER CONNECTION WORKS ARE LOCATED NEXT TO KAIKORAI STREAM. CONTRACTOR SHALL PROVIDE CONSTRUCTION METHODOLOGY TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION, INCLUDING EROSION & SEDIMENT CONTROL, PLUS MITIGATION AGAINST SEWER SPILLS.



#### LONGITUDINAL SECTION - TRUNK SEWER DISTANCE: 300.1m - 382.8m

Scale: 1:250 (H) 1:125 (V) @ A1; 1:500 (H) 1:250 (V) @ A3

#### DETAILED DESIGN

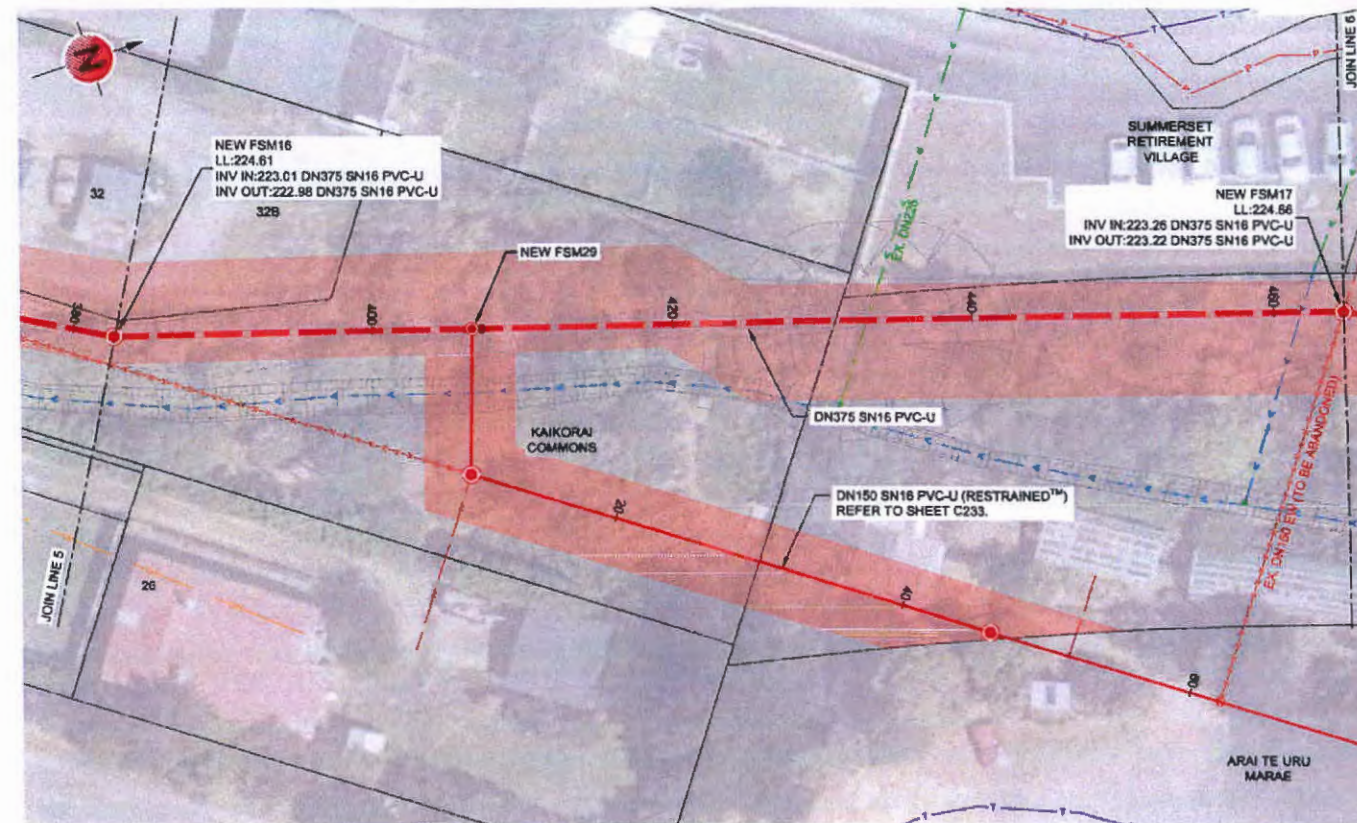
|   |                                    |     |          |
|---|------------------------------------|-----|----------|
| A | PRELIMINARY DESIGN                 | ANW | 27.05.16 |
| B | CONSTRUCTION ACCESS CORRIDOR ADDED | ASM | 01.06.16 |
| C | DETAILED DESIGN                    | ANW | 16.09.16 |



|                                                                                           |                        |
|-------------------------------------------------------------------------------------------|------------------------|
| <b>OPUS</b><br>Christchurch Environmental PO Box 1482<br>Christchurch 8140<br>New Zealand |                        |
| Designed<br>A.McEWAN                                                                      | Approved<br>A.WHEELDON |
| Drawn<br>R. SUNDERLAND                                                                    | AS SHOWN @ A1          |

|                                                                                        |                                |
|----------------------------------------------------------------------------------------|--------------------------------|
| DUNEDIN CITY COUNCIL CONTRACT No: 6067<br>KAIKORAI VALLEY RENEWAL PROGRAMME<br>PHASE 3 |                                |
| TRUNK SEWER - SEP. PORTION 1<br>PLAN & LONGITUDINAL SECTION                            |                                |
| DCC Drawing No.<br>10656                                                               | Opus Project No.<br>6-CD085.01 |
| Sheet No.<br>C225                                                                      | Revision<br>C                  |

1:250 @ A1 1:500 @ A3 0 4 8 12 16 20 24 m



**PLAN**  
Scale: 1:250 @ A1; 1:500 @ A3

| SERVICES LEGEND |                                                            |
|-----------------|------------------------------------------------------------|
|                 | POWER (OVERHEAD)                                           |
|                 | POWER (HV)                                                 |
|                 | POWER (LV)                                                 |
|                 | TELECOM                                                    |
|                 | ABANDONED GAS                                              |
|                 | WATER (EX.)                                                |
|                 | WATER (PROPOSED)                                           |
|                 | IRRIGATION (EX.)                                           |
|                 | SEWER (EX.)                                                |
|                 | SEWER (PROPOSED)                                           |
|                 | STORMWATER (EX.)                                           |
|                 | STORMWATER (PROPOSED)                                      |
|                 | PIPED WATERCOURSE (EX.)                                    |
|                 | STORMWATER CULVERT                                         |
|                 | OPEN WATERCOURSE                                           |
|                 | SUBSOIL (EX.)                                              |
|                 | PIPE TO BE ABANDONED                                       |
|                 | NEW SEWER MANHOLE                                          |
|                 | NEW STORMWATER MANHOLE                                     |
|                 | POWER POLE                                                 |
|                 | INDICATIVE CONSTRUCTION ACCESS CORRIDOR (MAXIMUM WIDTH 8m) |
|                 | SURVEYED BUILDING OUTLINE                                  |

| MANHOLE # | NORTHING   | EASTING    | ELEVATION |
|-----------|------------|------------|-----------|
| FSM16     | 4916239.63 | 1405102.92 | 224.61    |
| FSM17     | 4916317.93 | 1405170.46 | 224.68    |

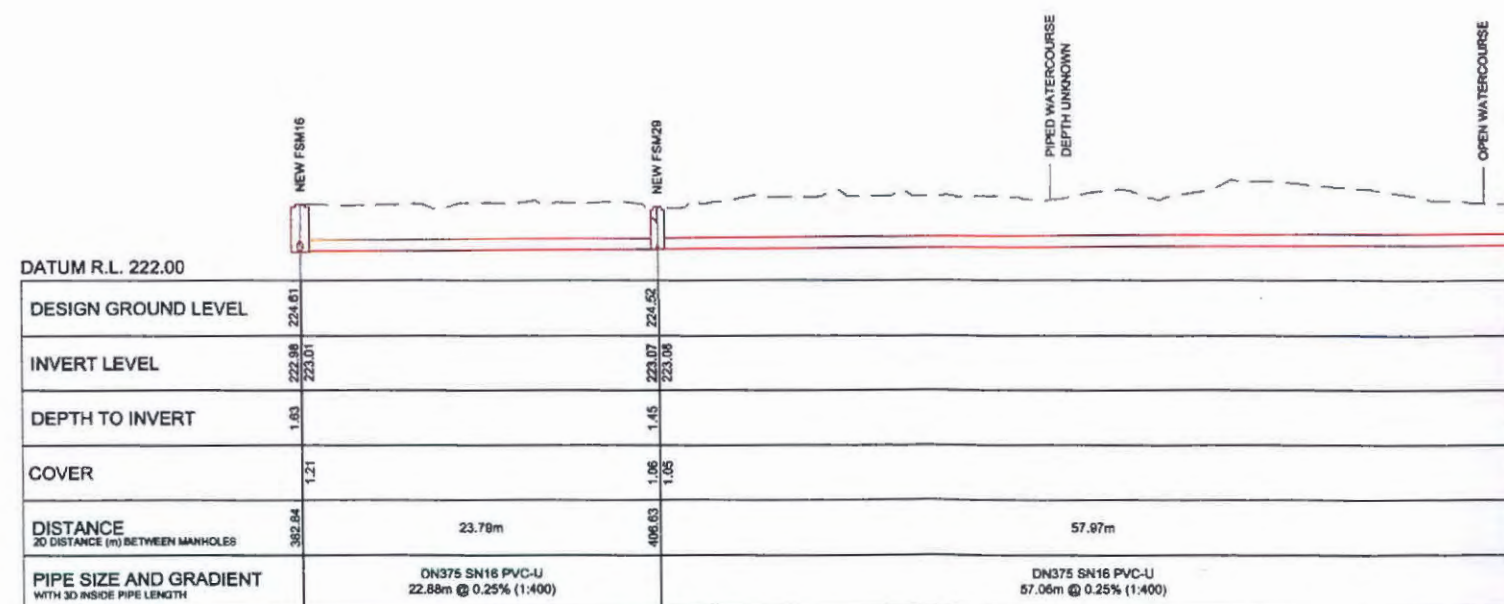
PROJECTION BASED ON NZTM  
VERTICAL DATUM BASED ON MSL

#### GENERAL NOTES:

- REFER TO "GENERAL NOTES" AND "GENERAL NOTES SEWER AND STORMWATER" ON SHEET C003.

#### SITE SPECIFIC NOTES:

- PROPOSED SEWER TRUNK MAIN AND SEWER CONNECTION WORKS ARE LOCATED NEXT TO KAIKORAI STREAM. CONTRACTOR SHALL PROVIDE CONSTRUCTION METHODOLOGY TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION, INCLUDING EROSION & SEDIMENT CONTROL, PLUS MITIGATION AGAINST SEWER SPILLS.



**LONGITUDINAL SECTION - TRUNK SEWER DISTANCE: 382.8m - 464.6m**  
Scale: 1:250 (H) 1:125 (V) @ A1; 1:500 (H) 1:250 (V) @ A3

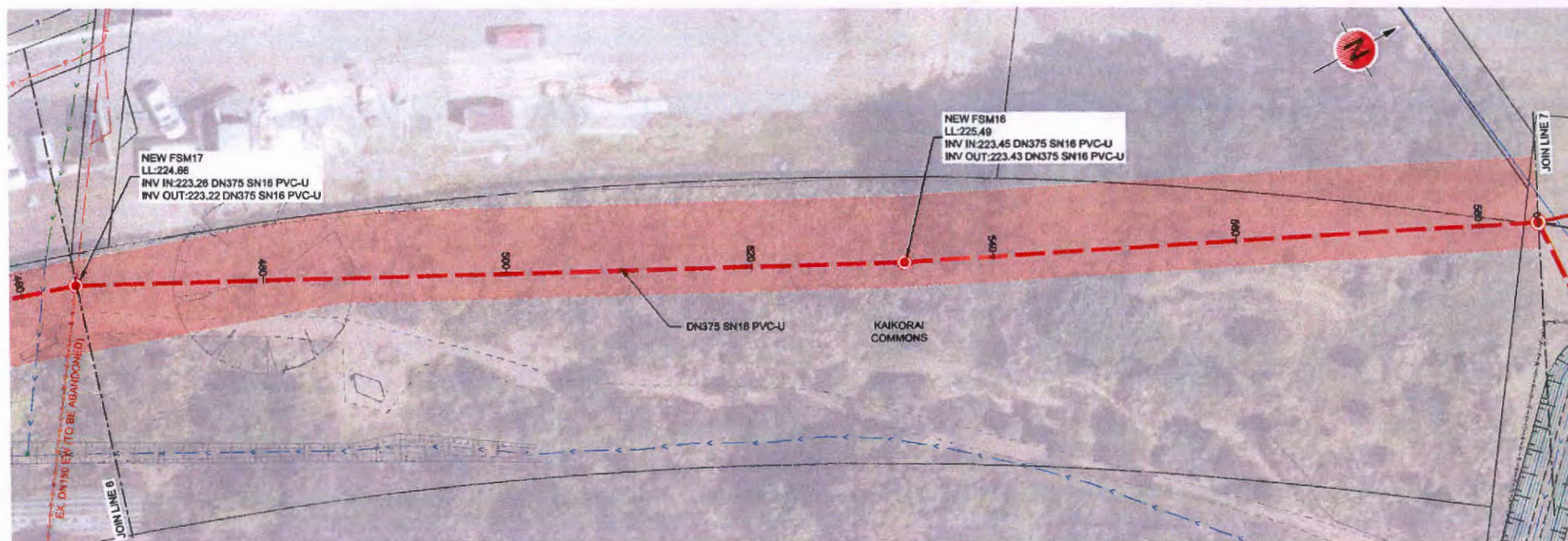
#### DETAILED DESIGN

|   |                                    |      |          |
|---|------------------------------------|------|----------|
| A | PRELIMINARY DESIGN                 | ANW  | 27.05.16 |
| B | CONSTRUCTION ACCESS CORRIDOR ADDED | ASM  | 01.06.16 |
| C | DETAILED DESIGN                    | ANW  | 16.09.16 |
| D | RESOURCE CONSENT                   | M.H. | 19.9.16  |



|                |               |                                                                                        |               |
|----------------|---------------|----------------------------------------------------------------------------------------|---------------|
| Project        |               | DUNEDIN CITY COUNCIL CONTRACT No: 6067<br>KAIKORAI VALLEY RENEWAL PROGRAMME<br>PHASE 3 |               |
| Sheet          |               | TRUNK SEWER - SEP. PORTION 1<br>PLAN & LONGITUDINAL SECTION                            |               |
| Design         | A. McEWAN     | Approved                                                                               | A. WHEELDON   |
| Drawn          | R. SUNDERLAND | Scale                                                                                  | AS SHOWN @ A1 |
| DOC Drawing No | 10656         | Doc Project No                                                                         | 6-CD085.01    |
| Sheet No       | C226          | Revision                                                                               | D             |

1:250 @ A1  
1:500 @ A3



# PLAN

Scale: 1:250 @ A1; 1:500 @ A3

| SERVICES LEGEND |                                                            |
|-----------------|------------------------------------------------------------|
|                 | POWER (OVERHEAD)                                           |
|                 | POWER (HV)                                                 |
|                 | POWER (LV)                                                 |
|                 | TELECOM                                                    |
|                 | ABANDONED GAS                                              |
|                 | WATER (EX.)                                                |
|                 | WATER (PROPOSED)                                           |
|                 | IRRIGATION (EX.)                                           |
|                 | SEWER (EX.)                                                |
|                 | SEWER (PROPOSED)                                           |
|                 | STORMWATER (EX.)                                           |
|                 | STORMWATER (PROPOSED)                                      |
|                 | PIPED WATERCOURSE (EX.)                                    |
|                 | STORMWATER CULVERT                                         |
|                 | OPEN WATERCOURSE                                           |
|                 | SUBSOIL (EX.)                                              |
|                 | PIPE TO BE ABANDONED                                       |
|                 | NEW SEWER MANHOLE                                          |
|                 | NEW STORMWATER MANHOLE                                     |
|                 | POWER POLE                                                 |
|                 | INDICATIVE CONSTRUCTION ACCESS CORRIDOR (MAXIMUM WIDTH 8m) |
|                 | SURVEYED BUILDING OUTLINE                                  |

| MANHOLE # | NORTHING   | EASTING    | ELEVATION |
|-----------|------------|------------|-----------|
| FSM17     | 4918317.93 | 1405176.46 | 224.66    |
| FSM18     | 4918378.64 | 1405207.35 | 225.49    |
| FSM19     | 4918426.02 | 1405229.29 | 226.93    |

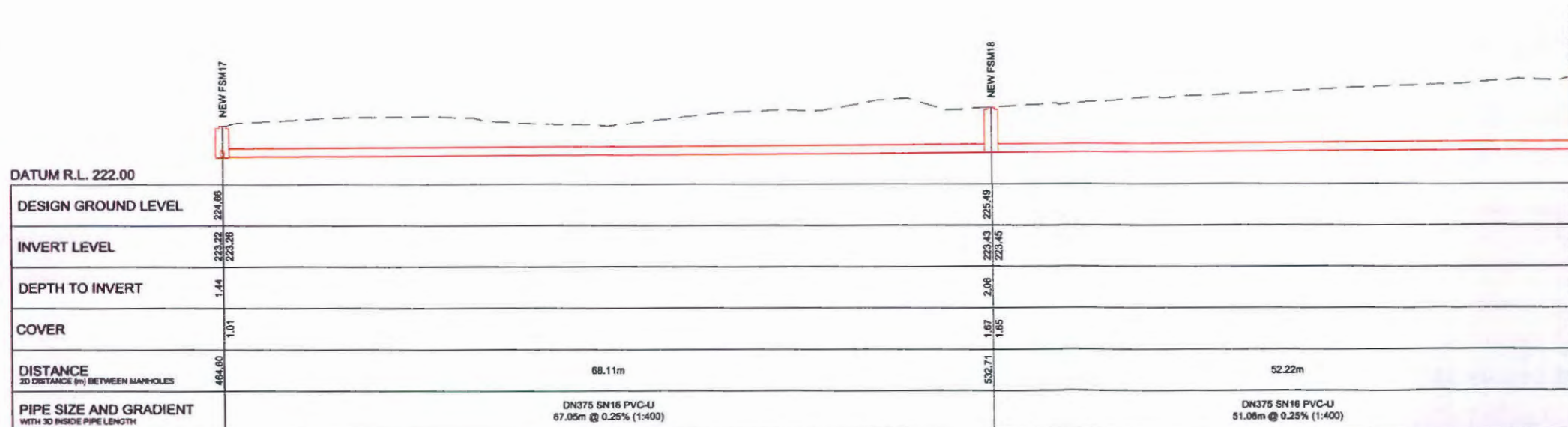
PROJECTION BASED ON NZTM  
VERTICAL DATUM BASED ON MSL

## GENERAL NOTES:

- REFER TO "GENERAL NOTES" AND "GENERAL NOTES SEWER AND STORMWATER" ON SHEET C003.

## SITE SPECIFIC NOTES:

- PROPOSED SEWER TRUNK MAIN AND SEWER CONNECTION WORKS ARE LOCATED NEXT TO KAIKORAI STREAM. CONTRACTOR SHALL PROVIDE CONSTRUCTION METHODOLOGY TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION, INCLUDING EROSION & SEDIMENT CONTROL, PLUS MITIGATION AGAINST SEWER SPILLS.



DATUM R.L. 222.00

| DESIGN GROUND LEVEL    | 224.66                                     | 225.49                                     | 226.93 |
|------------------------|--------------------------------------------|--------------------------------------------|--------|
| INVERT LEVEL           | 223.22                                     | 223.43                                     | 223.58 |
| DEPTH TO INVERT        | 1.44                                       | 2.06                                       | 3.35   |
| COVER                  | 1.01                                       | 1.67                                       | 2.96   |
| DISTANCE               | 464.60                                     | 52.22m                                     | 584.83 |
| PIPE SIZE AND GRADIENT | DN375 SN16 PVC-U<br>67.05m @ 0.25% (1:400) | DN375 SN16 PVC-U<br>51.08m @ 0.25% (1:400) |        |

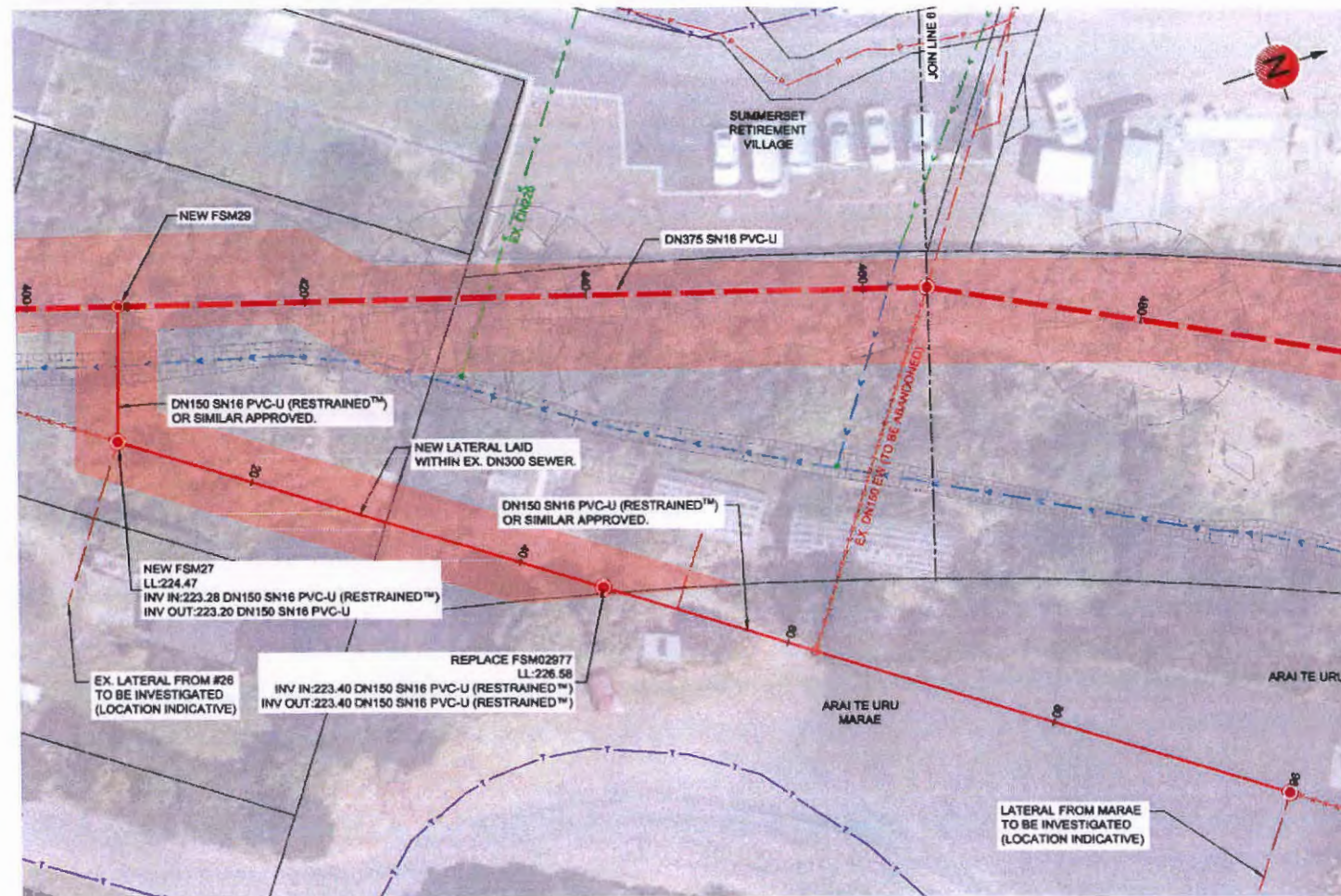
## LONGITUDINAL SECTION - TRUNK SEWER DISTANCE: 464.6m - 584.9m

Scale: 1:250 (H) 1:125 (V) @ A1; 1:500 (H) 1:250 (V) @ A3

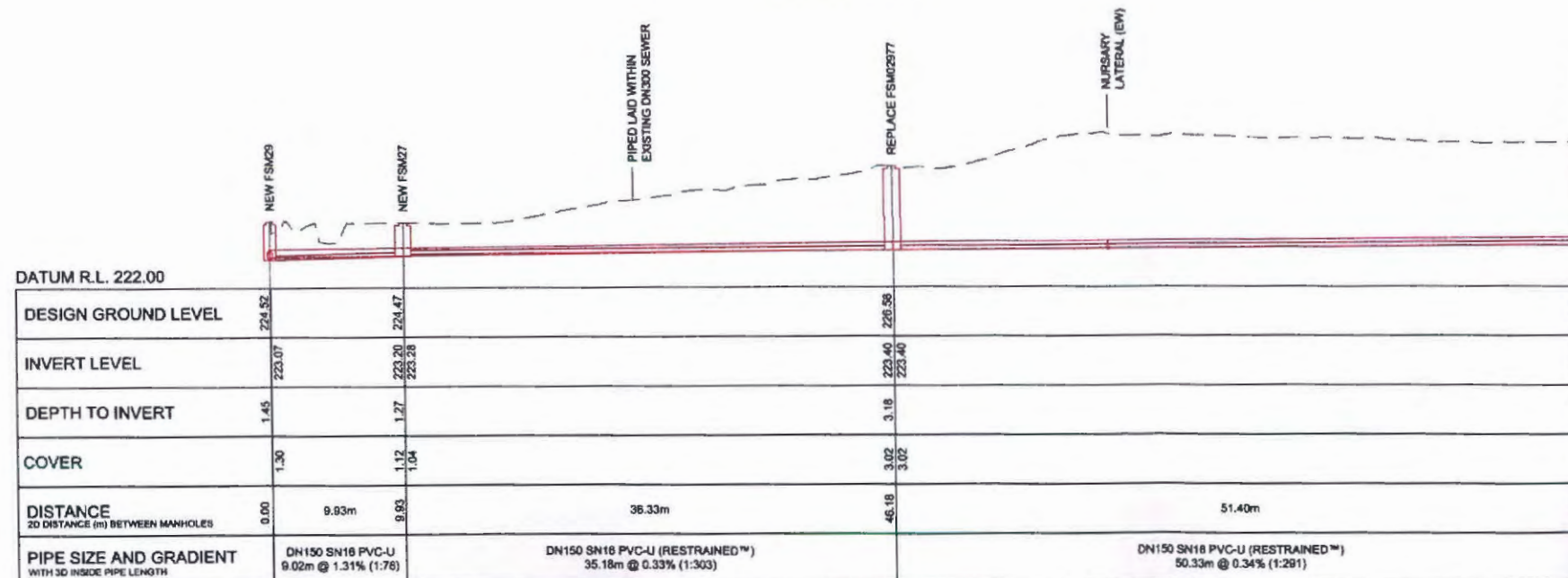
## DETAILED DESIGN

|                                                                            |               |                                                                                        |               |
|----------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------|---------------|
| A PRELIMINARY DESIGN                                                       |               | ANW                                                                                    | 27.05.16      |
| B CONSTRUCTION ACCESS CORRIDOR ADDED                                       |               | ASM                                                                                    | 01.06.16      |
| C DETAILED DESIGN                                                          |               | ANW                                                                                    | 16.09.16      |
|                                                                            |               |                                                                                        |               |
|                                                                            |               |                                                                                        |               |
| Christchurch Environmental PO Box 1482<br>Christchurch 8140<br>New Zealand |               |                                                                                        |               |
| Designed                                                                   | ALMEWAN       | Approved                                                                               | ALWHEELDON    |
| Drawn                                                                      | R. SUNDERLAND | Checked                                                                                | AS SHOWN @ A1 |
| Approved Date                                                              |               | 16.09.2016                                                                             |               |
| Project                                                                    |               | DUNEDIN CITY COUNCIL CONTRACT No: 6067<br>KAIKORAI VALLEY RENEWAL PROGRAMME<br>PHASE 3 |               |
| Sheet                                                                      |               | TRUNK SEWER - SEP. PORTION 1<br>PLAN & LONGITUDINAL SECTION                            |               |
| OCC Drawing No.                                                            |               | 10656                                                                                  |               |
| Open Project No.                                                           |               | 6-CD085.01                                                                             |               |
| Sheet No.                                                                  |               | C227                                                                                   |               |
| Revision                                                                   |               | C                                                                                      |               |

1:250 @ A1  
1:500 @ A3



**PLAN**  
Scale: 1:250 @ A1; 1:500 @ A3



**LONGITUDINAL SECTION - MARAE SEWER DISTANCE: 0.0m - 97.6m**  
Scale: 1:250 (H) 1:125 (V) @ A1; 1:500 (H) 1:250 (V) @ A3

| SERVICES LEGEND |                                                            |
|-----------------|------------------------------------------------------------|
|                 | POWER (OVERHEAD)                                           |
|                 | POWER (HV)                                                 |
|                 | POWER (LV)                                                 |
|                 | TELECOM                                                    |
|                 | ABANDONED GAS                                              |
|                 | WATER (EX.)                                                |
|                 | WATER (PROPOSED)                                           |
|                 | IRRIGATION (EX.)                                           |
|                 | SEWER (EX.)                                                |
|                 | SEWER (PROPOSED)                                           |
|                 | STORMWATER (EX.)                                           |
|                 | STORMWATER (PROPOSED)                                      |
|                 | PIPED WATERCOURSE (EX.)                                    |
|                 | STORMWATER CULVERT                                         |
|                 | OPEN WATERCOURSE                                           |
|                 | SUBSIDY (EX.)                                              |
|                 | PIPE TO BE ABANDONED                                       |
|                 | NEW SEWER MANHOLE                                          |
|                 | NEW STORMWATER MANHOLE                                     |
|                 | POWER POLE                                                 |
|                 | INDICATIVE CONSTRUCTION ACCESS CORRIDOR (MAXIMUM WIDTH 8m) |
|                 | SURVEYED BUILDING OUTLINE                                  |

| MANHOLE # | NORTHING   | EASTING    | ELEVATION |
|-----------|------------|------------|-----------|
| FSM16     | 4918239.83 | 1405152.92 | 224.61    |
| FSM17     | 4918317.93 | 1405176.46 | 224.68    |

PROJECTION BASED ON NZTM  
VERTICAL DATUM BASED ON MSL

#### GENERAL NOTES:

- REFER TO "GENERAL NOTES" AND "GENERAL NOTES SEWER AND STORMWATER" ON SHEET C003.

#### SITE SPECIFIC NOTES:

- DILAPIDATION SURVEY REQUIRED PRIOR TO CONSTRUCTION COMMENCING AND THEN BACKFILLED TO GROUND LEVEL.

#### DETAILED DESIGN

|   |                                    |      |          |
|---|------------------------------------|------|----------|
| A | PRELIMINARY DESIGN                 | ANW  | 27.05.16 |
| B | CONSTRUCTION ACCESS CORRIDOR ADDED | ASM  | 01.06.16 |
| C | DETAILED DESIGN                    | ANW  | 16.09.16 |
| D | RESOURCE CONSENT                   | M.H. | 19.9.16  |



**DUNEDIN CITY COUNCIL**  
Kaitiaki a-rohe o Otago

**OPUS**  
Christchurch Environmental  
PO Box 1402  
Christchurch 8140  
New Zealand

Project  
DUNEDIN CITY COUNCIL CONTRACT No: 6067  
KAIKORAI VALLEY RENEWAL PROGRAMME  
PHASE 3

Sheet  
MARAE SEWER  
PLAN & LONGITUDINAL SECTION

|               |               |               |
|---------------|---------------|---------------|
| Designed      | Approved      | Approved Date |
| A.McEWAN      | A.WHEELDON    | 15.09.2016    |
| Drawn         | Scale         |               |
| R. SUNDERLAND | AS SHOWN @ A1 |               |

|                |                   |          |          |
|----------------|-------------------|----------|----------|
| DCC Drawing No | Client Project No | Sheet No | Revision |
| 10656          | 6-CD085.01        | C233     | D        |

1:250 @ A1  
1:500 @ A3

UNKNSWX02209

Existing stormwater 225mm stormwater pipe from SWM02208 to SWX02209 to be renewed with ID450mm pipe, new manhole at SWM 02208 and with a suitable outfall structure to the Kaikorai Stream on the existing or different alignment. It is preferred existing Oak tree is undisturbed during construction.

225mm (1931) 1739

150mm

225mm

SWM02208  
225.617gl  
223.179  
222.813

224.678gl  
223.417 SWM02207

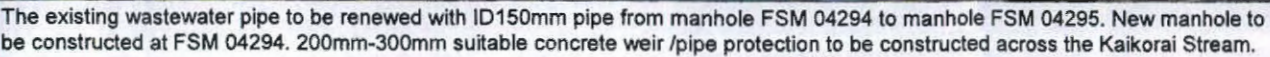
PROJECT: DCC 6067 KAIKORAI VALLEY RENEWAL PROGRAM PHASE 3  
TITLE: STORMWATER & FOUL SEWER INTERFACE WORK WITH PHASE 4 (SHEET 1)  
DWG No: 10656/6-CD085.01/D001

Scale at A3:  
1:113  
20/09/2016 09:11:02 AM



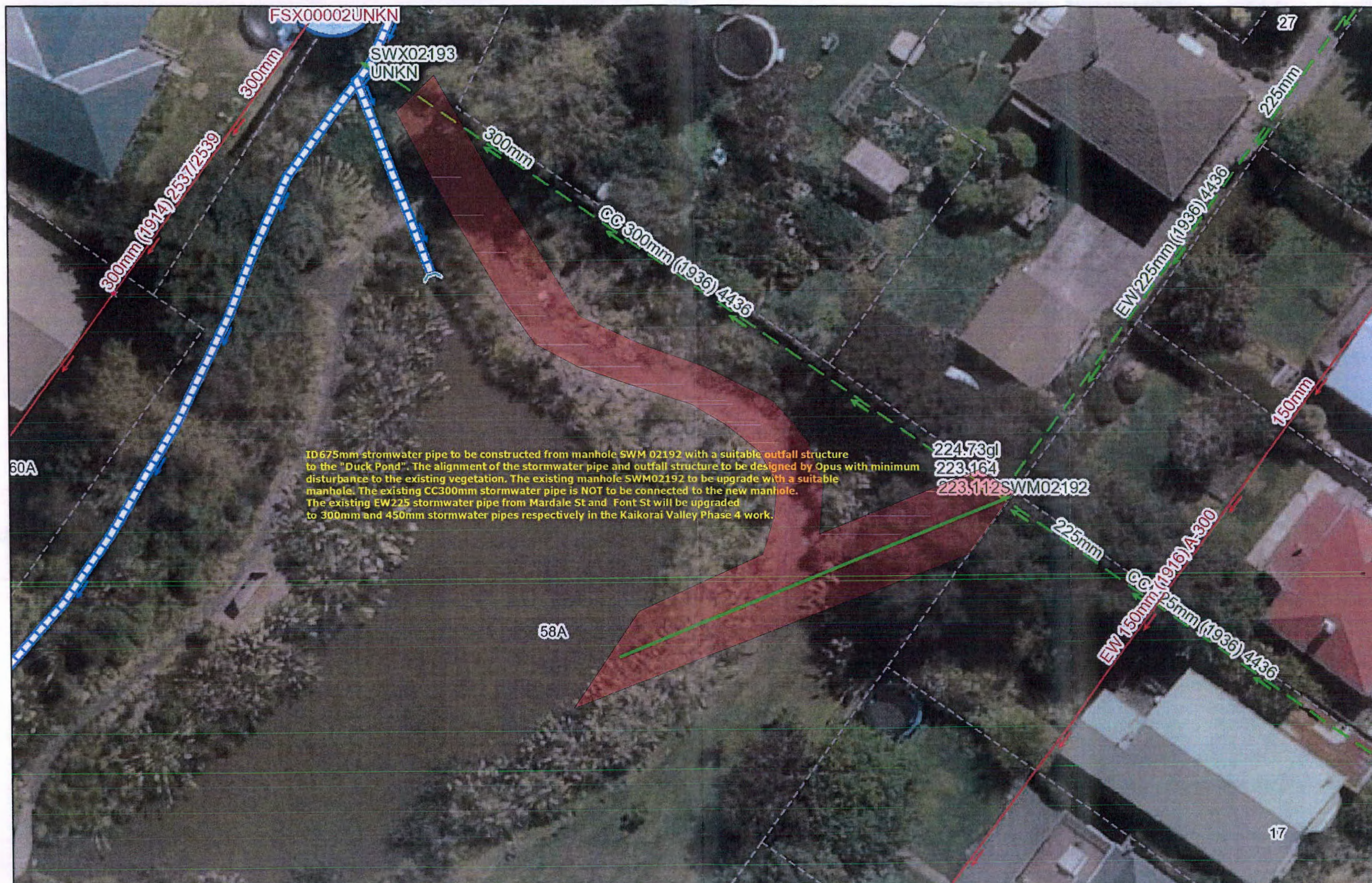
PARCEL LINES CAN VARY FROM  
LEGAL PARCEL BOUNDARIES  
This map is for illustration purposes only  
and is not accurate to surveying, engineering  
or orthophotographic standards. Every effort  
has been made to ensure correctness and  
timeliness of the information presented.

2013 Urban and rural photography January /  
February 2013. Dunedin City Council  
CC BY 3.0 NZ.  
2006/2007 Urban photography March 2007.  
copyright NZAM. Rural photography March  
2006. copyright Terralink International Ltd.



2013 Urban and rural photography January  
February 2013. Dunedin City Council  
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ID675mm stormwater pipe to be constructed from manhole SWM 02192 with a suitable outfall structure to the "Duck Pond". The alignment of the stormwater pipe and outfall structure to be designed by Opus with minimum disturbance to the existing vegetation. The existing manhole SWM02192 to be upgrade with a suitable manhole. The existing CC300mm stormwater pipe is NOT to be connected to the new manhole. The existing EW225 stormwater pipe from Mardale St and Font St will be upgraded to 300mm and 450mm stormwater pipes respectively in the Kaikorai Valley Phase 4 work.

# **CERTIFICATE OF TITLES**

Area affected by project  
between Bishopscourt and  
School Street.

Pt Section 9  
Blk III Upper Kaikorai SD  
0.3700

Lot 1  
DP 17227  
1.3942

Lot 2  
DP 370382  
0.0838

Lot 1  
DP 370382  
0.0559

Lot 2  
DP 405552  
1.8876

Pt Lot 78  
DP 1028  
0.0988

Lot 1  
DP 21484  
0.0700

Lot 2  
DP 21484  
0.1276

Lot 2  
DP 376822  
0.0684

Lot 3  
DP 5823  
0.0880

Lot 2  
DP 17227  
0.2911

Lot 2  
DP 8310  
0.0981

Lot 1  
DP 8310  
0.1568

Pt Lot 3  
DP 468  
0.0454

Pt Lot 3  
DP 468  
0.0454

Pt Lot 78  
Deed 85

Pt Lot 79  
Deed 85

Pt Lot 78  
Deed 85

Pt 3  
DP 3912  
0.0384

Lot 4  
DP 3912  
0.0384

Lot 5  
DP 3912

Lot 1  
DP 5823  
0.0506

Lot 1  
DP 468  
0.0511

Pt Lot 82  
DP 1028  
0.0989

Lot 1  
DP 376822  
0.0556

Shetland Street

QuickMap  
Custom Software Ltd

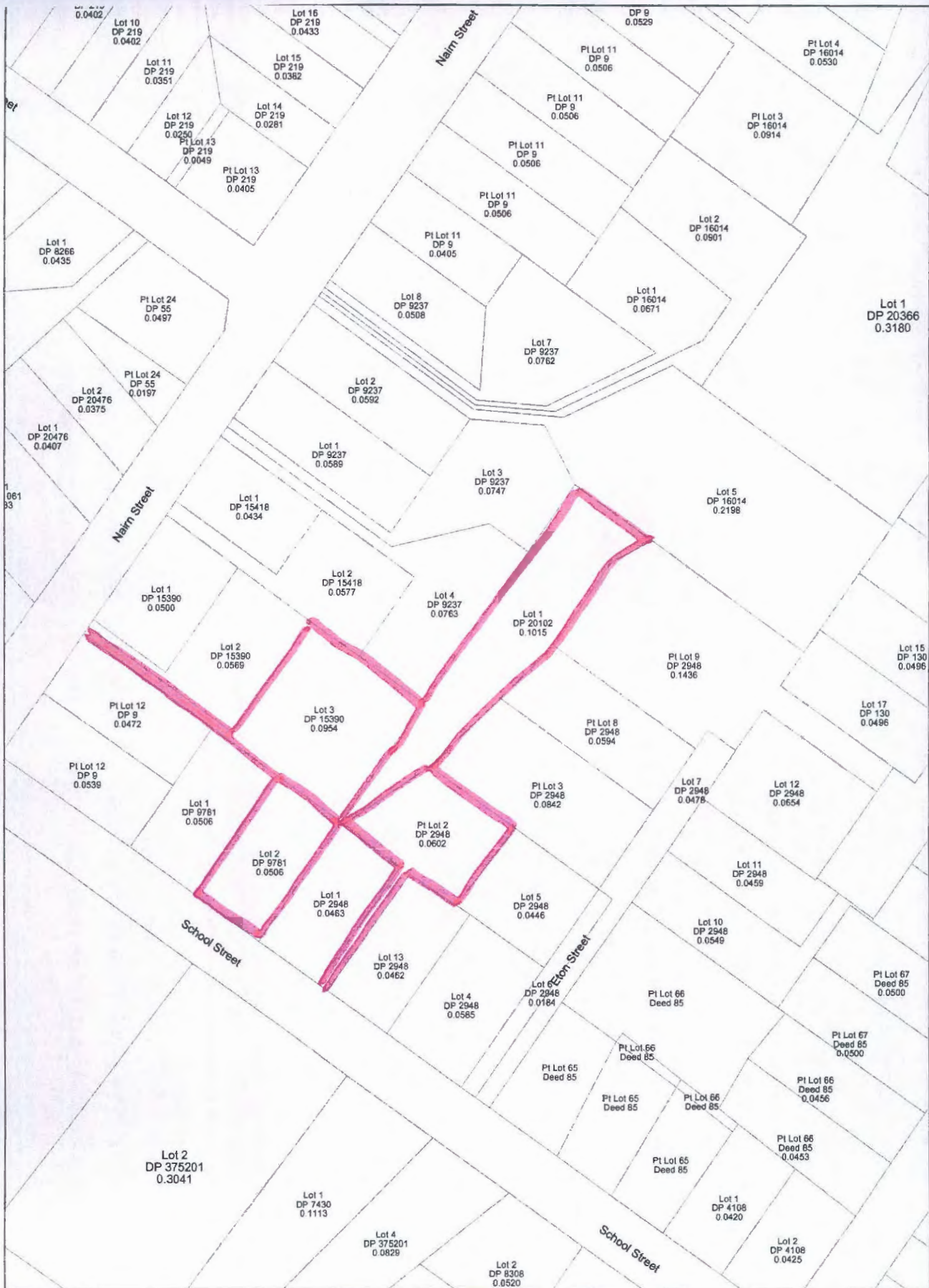
0 20 40 60 80 100 120 140

Any person wishing to rely on the information shown on this map must independently verify the information

Scale 1:1000

Topographical and Cadastral map derived from LINZ data. Printed: 21/08/2016 09:27.





S.O. Plan No. 13355

[illegible]

293031

PARTICULARS ENTERED IN THE REGISTER-BOOK

VOL 27 FOLIO 164

THE 3 NOV 1965 DAY OF

AT O'CLOCK.

1965  
D

Assistant Land Registrar

OTAGO

W.A. 10.11.65

ENTERED IN ERROR.

528644 Gazette Notice hereby setting apart the leasehold estate of the within land as a Maori reservation for the purpose of a dance or meeting place for the common use and benefit of the Maori people residing in Dunedin and surrounding districts 17.1.1980 by 1.56pm

Lease 80/1055 issued for foot (1.683314)

herein.

ALR.

RECALL FILE LABEL

F5000002601342

S.N. Proc.

C.C.L.

3 NOV 1965

11.32

Abstract no. 48

PROC 293031 Proclamat

99-0343 P10-012 12/04/04 18.31



1000 1125041

Extract from *N.Z. Gazette*, 21 October 1965, No. 41, page 1779

*Declaring Land in Otupo Land District, Vested in the Otupo Education Board as a Site for a Public School, to be Vested in Her Majesty the Queen*

BERNARD FERGUSON, Governor-General

A PROCLAMATION

PURSUANT to subsection (5) of section 5 of the Education Lands Act 1949, I, Brigadier Sir Bernard Edward Ferguson, the Governor-General of New Zealand, hereby proclaim and declare that the land described in the Schedule hereto, being so now vested in the Otupo Education Board as a site for a public school, shall be vested in Her Majesty the Queen, freed and discharged from every educational trust affecting the same, but subject to all leases, encumbrances, liens, or easements affecting the same at the date hereto.

SCHEDULE

OTUPO LAND DISTRICT—CITY OF DUNEDIN  
Part Sections 7 and 9 (D.P. 3864), Block III, Upper Kaituna Survey District: Area, 5 acres and 12-4 perches, more or less, part outfalls of this Volume 274 folio 164, as shown on the plan marked L and S 6/6/1165, deposited in the Head Office, Department of Lands and Survey at Wellington, and thereon coloured orange and blue (S.O. 15153).

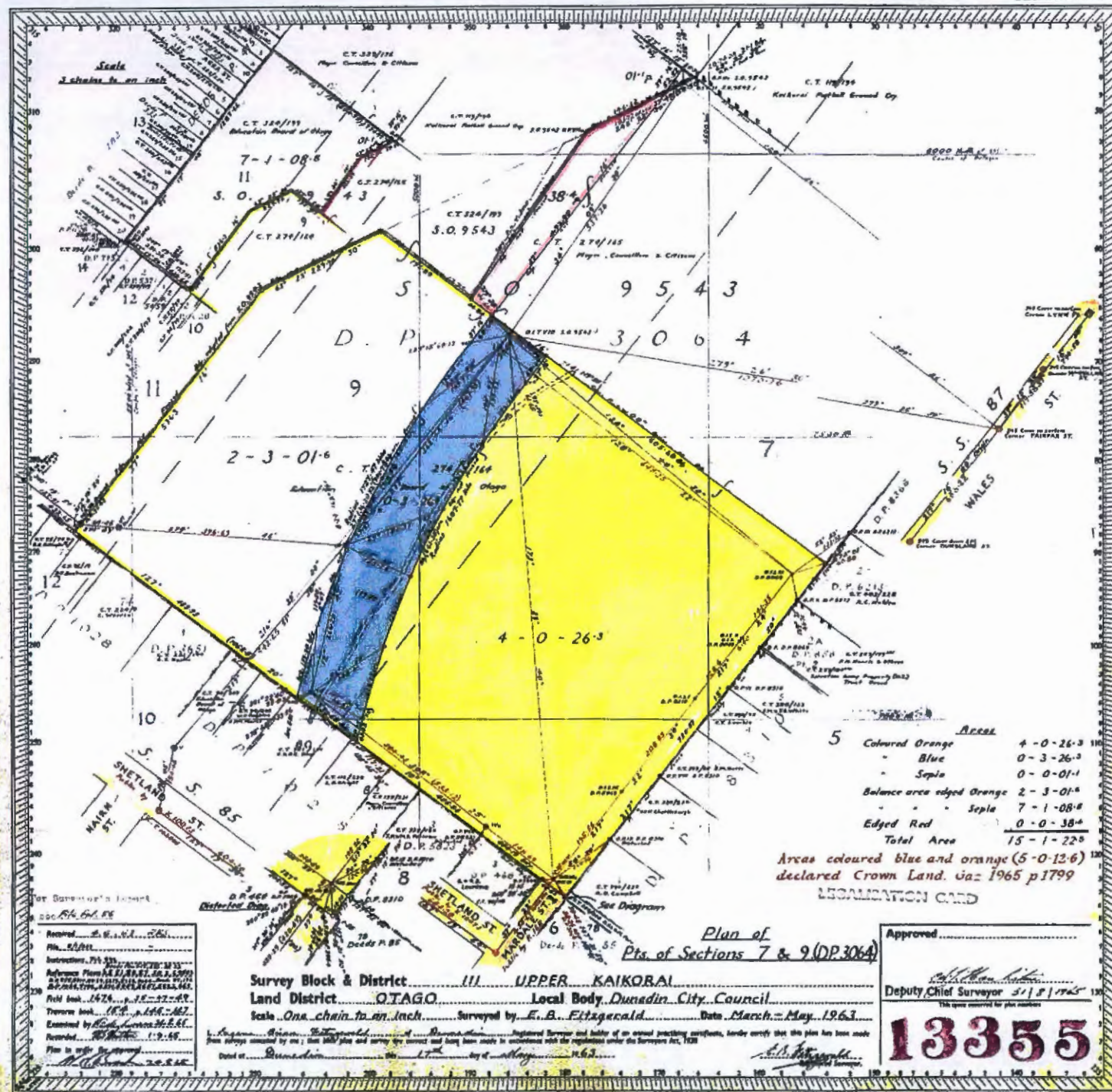
Given under the hand of His Excellency the Governor-General, and issued under the Seal of New Zealand, this 18th day of October 1965.

[L-] B. O. GERRARD, Minister of Lands.

God Save the Queen!

(L- and S. H.O. 6/6/1165; D.O. 4/1/247)

R. E. OWEN, Government Printer, Wellington, New Zealand.





**COMPUTER FREEHOLD REGISTER  
UNDER LAND TRANSFER ACT 1952**



Search Copy

  
R. W. Muir  
Registrar-General  
of Land

**Identifier** OT274/165  
**Land Registration District** Otago  
**Date Issued** 16 December 1935

**Part-Cancelled**

**Prior References**  
OT198/31

---

|                          |                                                                               |
|--------------------------|-------------------------------------------------------------------------------|
| <b>Estate</b>            | Fee Simple                                                                    |
| <b>Area</b>              | 1.8403 hectares more or less                                                  |
| <b>Legal Description</b> | Part Section 7 and Part Section 9 Block III<br>Upper Kaikorai Survey District |

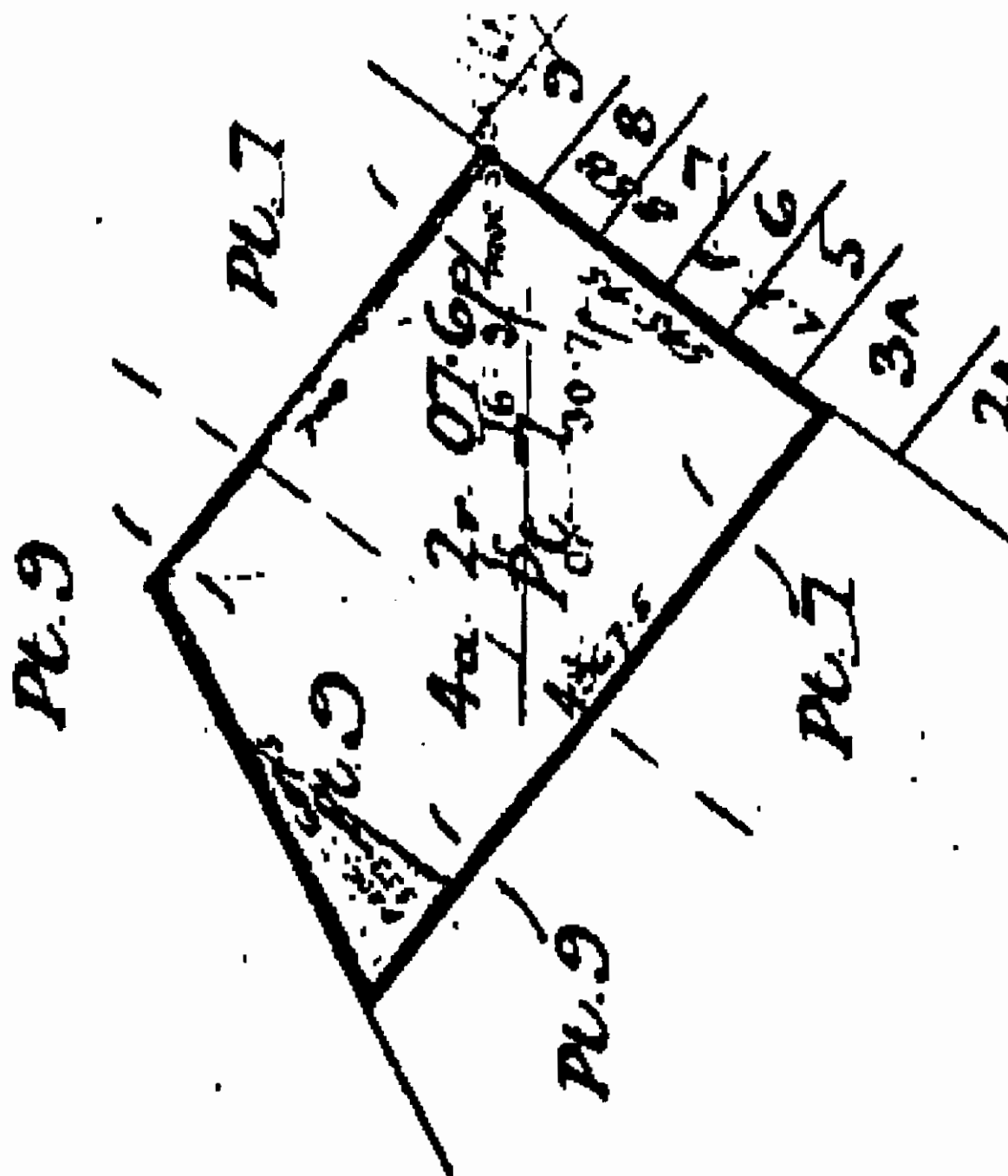
**Proprietors**  
The Dunedin City Council

---

**Interests**

The within land has no road frontage

5596 Proclamation taking part Section 9 coloured red hereon (1r 16.9p) for a public school and vesting it in the Education Board of the District of Otago - 14.4.1947 at 10.00 am





**COMPUTER FREEHOLD REGISTER  
UNDER LAND TRANSFER ACT 1952**



**Search Copy**

  
R. W. Muir  
Registrar-General  
of Land

**Identifier** OT13B/124  
**Land Registration District** Otago  
**Date Issued** 19 June 1990

**Prior References**  
OT381/141

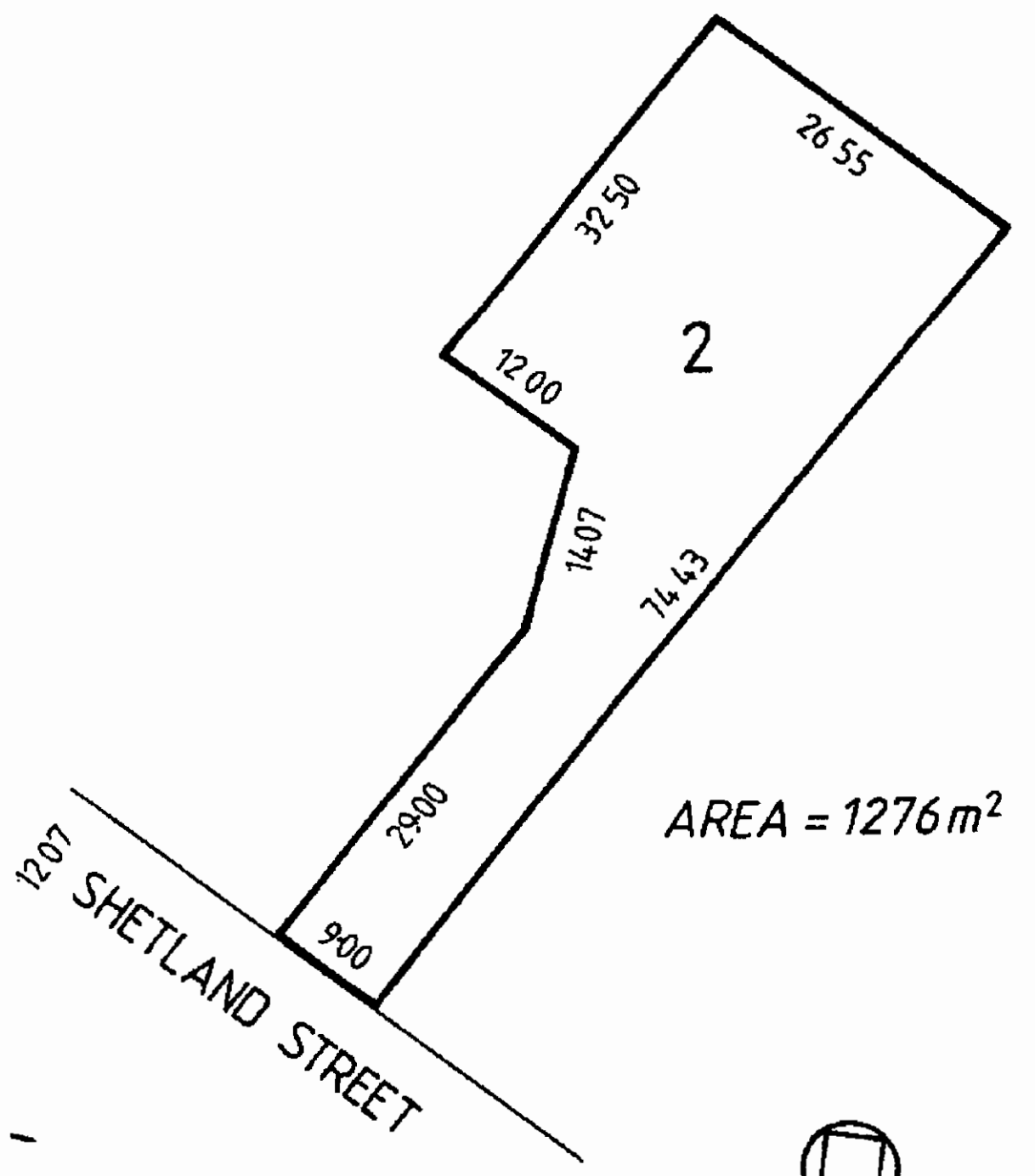
---

|                          |                                 |
|--------------------------|---------------------------------|
| <b>Estate</b>            | Fee Simple                      |
| <b>Area</b>              | 1276 square metres more or less |
| <b>Legal Description</b> | Lot 2 Deposited Plan 21484      |

**Proprietors**  
The Dunedin City Council

---

**Interests**





**COMPUTER FREEHOLD REGISTER  
UNDER LAND TRANSFER ACT 1952**

**Search Copy**



R. W. Muir  
Registrar-General  
of Land

**Identifier** OT238/11  
**Land Registration District** Otago  
**Date Issued** 06 September 1929

**Prior References**  
OT192/58

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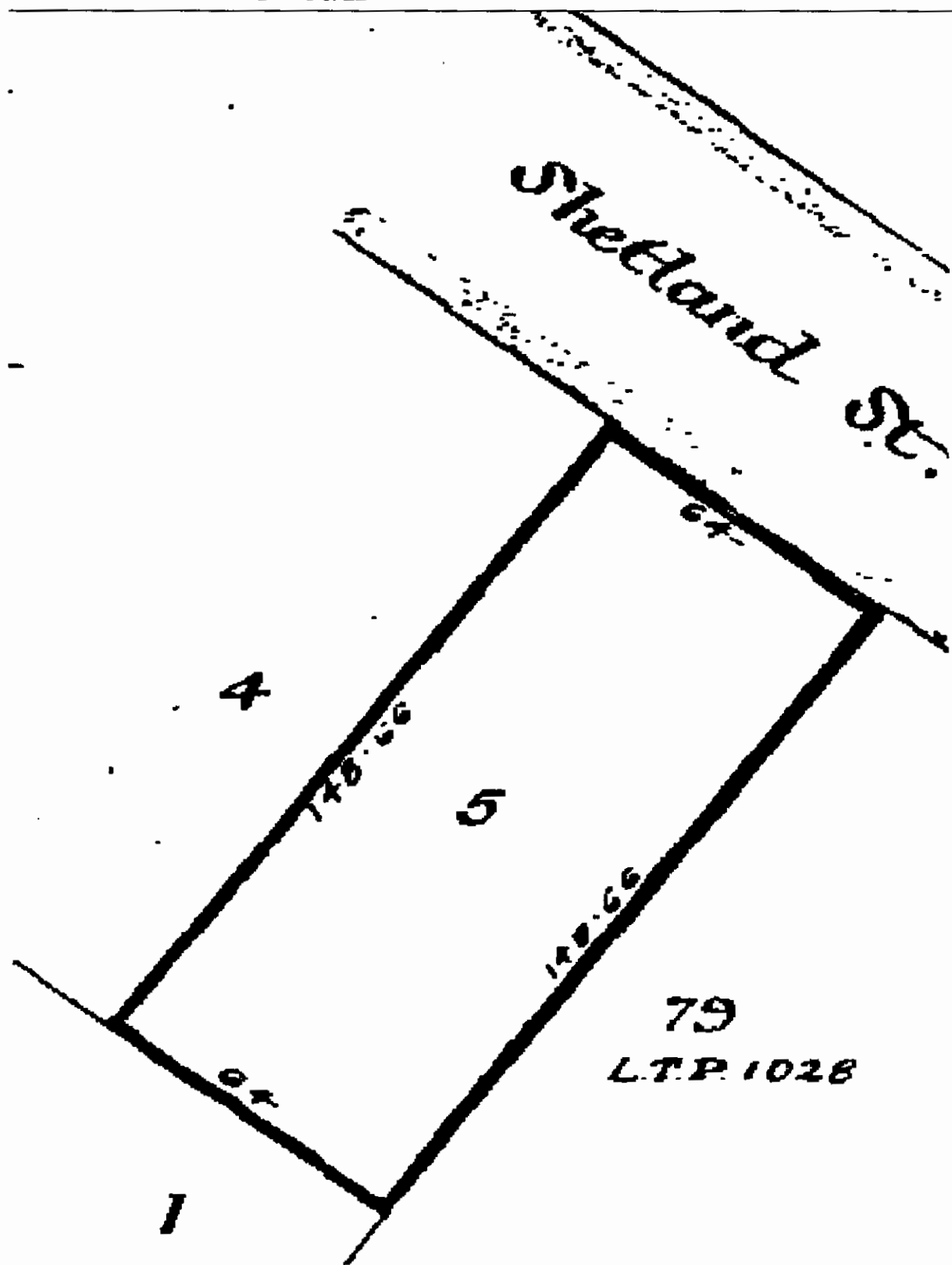
**Estate** Fee Simple  
**Area** 384 square metres more or less  
**Legal Description** Allotment 5 Deposited Plan 3912

**Proprietors**  
The Dunedin City Council

---

**Interests**

3719 Order in Council imposing Building Line Restriction - 6.5.1929 at 10.00am





## View Statutory Action

Parcel **Lot 2 Deposited Plan 22287**

Parcel Status Current

Current Purpose **Local Purpose Reserve (Recreation)**

| Statutory Action | Type               | Recorded   | Action | Status  |
|------------------|--------------------|------------|--------|---------|
| DP 22287         | Vesting on Deposit | 31/03/2000 | Create | Current |

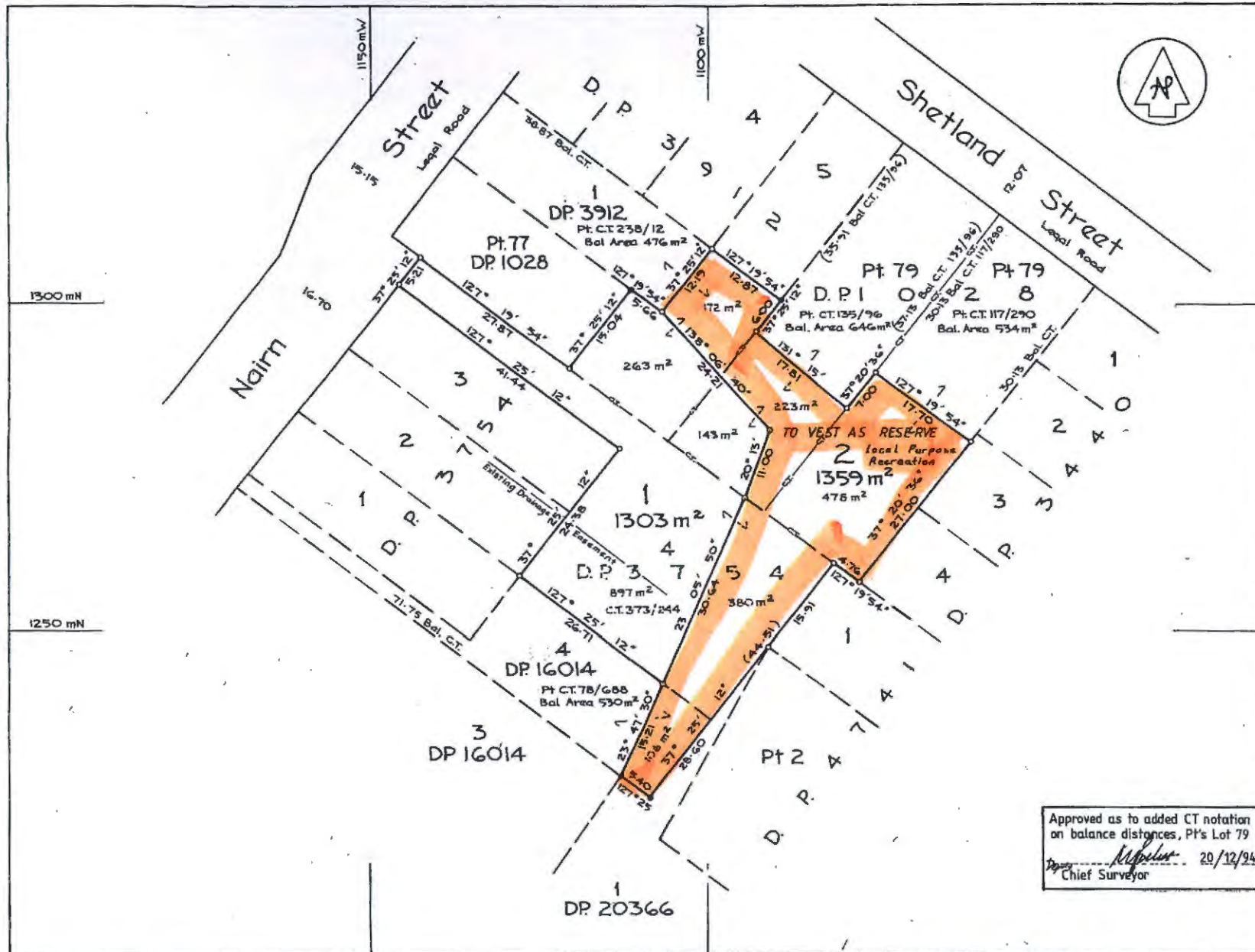
Statute

Purpose **Local Purpose Reserve (Recreation)**

Name

Comments

\*\*\* End of Report \*\*\*



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>Approvals</p> <p>J.C. Conway C.T. 117/290</p> <p>L. J. Fisher C.T. 135/96</p> <p>J. E. Larsen C.T. 238/12</p> <p>D.A. &amp; A.M. Pierce C.T. 373/244</p> <p>C.F. Still C.T. 78/688</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| <p>The Dunedin City Council certifies that:</p> <p>(1) This plan of subdivision is approved pursuant to Section 305(1) of the Local Government Act 1974 by a resolution of the said Council passed on the 20th day of August 1991, subject to such conditions as are set out in paragraph (3) hereon;</p> <p>(2) This plan is in accordance with the requirements of the provisions of the said Council's operative district planning scheme at that date; and that</p> <p>(3) The conditions referred to in paragraph (1) hereon are:</p> <p>a) All Conditions hereon and all other conditions on the approved scheme plan have been complied with.</p> <p>IN WITNESS whereof the Common Seal of the said Council was hereunto affixed in the presence of:</p> <p>Mayor</p> <p>Principal Administrative Officer</p> |  |
| <p>DUNEDIN CITY COUNCIL</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <p>Total Area 2662 m²</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| <p>Comprised in Pt. CT. 117/290, 135/96, 238/12, 78/688 &amp; all CT. 373/244</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| <p>I, Nicholas James Dunckley, Registered Surveyor and holder of an annual practicing certificate for who may act as a registered surveyor pursuant to section 25 of the Survey Act 1980 hereby certify that this plan has been made from surveys executed by me or under my directions, that both plan and survey are correct and have been made in accordance with the Survey Regulations 1972 or any regulations made in substitution thereof.</p> <p>Dated at Dunedin, this 20th day of August 1991</p> <p>Signature of Surveyor</p>                                                                                                                                                                                                                                                                             |  |
| <p>Field Book 245B, p. 71-73, Traverse Book 256 p. 3</p> <p>Reference Plans ST. 85, DP. 3912, 3754, 4741, 899, 16014, 20366, 21484, 1028</p> <p>Examined under TC 1978/12 Correct</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| <p>Approved as to Survey</p> <p>18/10/91</p> <p>Deposited this 18th day of October 1991</p> <p>Assistant District Land Registrar</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| <p>File 5250/515</p> <p>Received 30/9/91</p> <p>Instructions</p> <p>SP 936</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <p>DP 22287</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |

LAND DISTRICT Otago

Survey Blk. & Dist. III Upper Kaikorai S.D.

NZMS 261 Sheet 144 Record Map No. 524

Lots 1 & 2 Being

Subdn of Pts Lot 79 DP 1028,

Lot 4 DP 3754, Lot 1 DP 3912 & Lot 4 DP 16014

TERRITORIAL AUTHORITY Dunedin City

Surveyed by N.J. Dunckley

Scale 1:400 Date August 1991

ID 144/5-3

W.A. ROBERTSON, DIRECTOR GENERAL/SURVEYOR GENERAL, DEPARTMENT OF SURVEY AND LAND INFORMATION, NEW ZEALAND



# COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



R. W. Muir  
Registrar-General  
of Land

## Search Copy

**Identifier** OT12A/169  
**Land Registration District** Otago  
**Date Issued** 23 February 1988

### Prior References

OT277/189 OT7B/687 OT7B/689

**Estate** Fee Simple  
**Area** 5378 square metres more or less  
**Legal Description** Lot 5 Deposited Plan 16014 and Lot 1  
Deposited Plan 20366

### Proprietors

The Dunedin City Council

### Interests

209509 Transfer creating the following easements

| Type         | Servient Tenement                          | Easement Area  | Dominant Tenement                          | Statutory Restriction                                 |
|--------------|--------------------------------------------|----------------|--------------------------------------------|-------------------------------------------------------|
| Right of way | Lot 7 Deposited Plan<br>9237 - CT OT7B/797 | Yellow DP 9237 | Lot 5 Deposited Plan<br>16014 - herein     | Section 351E(1)(a) Municipal<br>Corporations Act 1954 |
| Right of way | Lot 5 Deposited Plan<br>16014 - herein     | Yellow DP 9237 | Lot 7 Deposited Plan<br>9237 - CT OT7B/797 | Section 351E(1)(a) Municipal<br>Corporations Act 1954 |

313667 Transfer creating the following easements

| Type         | Servient Tenement                      | Easement Area  | Dominant Tenement                          | Statutory Restriction |
|--------------|----------------------------------------|----------------|--------------------------------------------|-----------------------|
| Right of way | Lot 5 Deposited Plan<br>16014 - herein | Yellow DP 9237 | Lot 3 Deposited Plan<br>9237 - CT OT412/49 |                       |

The right of way created by Transfer 313667 is subject to the Council's conditions of consent endorsed on DP 9237

The right of way created by Transfer 209509 is subject to the Council's conditions of consent endorsed on DP 9237

Subject to Section 308 (4) and (5) Local Government Act 1974 - (see DP 20366)

X18875 Memorandum of Acceptance imposing Building Line Restriction (affects Lot 5 DP 16014 herein)

489222.3 Transfer creating the following easements - 9.12.1977 at 12.12 pm

| Type         | Servient Tenement                      | Easement Area  | Dominant Tenement                           | Statutory Restriction                                 |
|--------------|----------------------------------------|----------------|---------------------------------------------|-------------------------------------------------------|
| Right of way | Lot 5 Deposited Plan<br>16014 - herein | Yellow DP 9237 | Lot 1 Deposited Plan<br>16014 - CT OT7B/685 | Section 351E(1)(a) Municipal<br>Corporations Act 1954 |
| Right of way | Lot 5 Deposited Plan<br>16014 - herein | Yellow DP 9237 | Lot 2 Deposited Plan<br>16014 - CT OT7B/686 | Section 351E(1)(a) Municipal<br>Corporations Act 1954 |

The rights of way created by Transfer 489222.3 are subject to the Council's conditions of consent endorsed on DP 16014

Appurtenant to Lot 5 DP 16014 herein are rights of way over part Lots 1 and 2 DP 16014 formerly contained in Lot 6 DP 9237 now part of ROW A & B on DP 16014 created by Transfer 489222.3 - 9.12.1977 at 12.12 pm (Subject to Section 351E(1)(a) Municipal Corporations Act 1954)

Identifier

OT12A/169

**APPROVED**

EX. TRAILWAY *22/7/87*

CT. 277/87

**AREAS TAKEN FROM C.E.T.**

| CT     | AREA     |
|--------|----------|
| 277/87 | 122.0 m² |
| 277/87 | 3058 m²  |

The OLIVER CITY Council

(1) This plan of subdivision is approved pursuant to Section 213(1) of the Local Government Act 1974 by a resolution of the said Council passed on the 17th day of JULY 1987 subject to such conditions as are set out in paragraph (2) hereof.

(2) This plan is in accordance with the requirements and provisions of the said Council's operative zoning planning scheme of that date and that (a) the conditions referred to in paragraph (1) above are:

NO TING LOT 1 HEREON BEING SUBDIVIDED TO THE OWNER OF LOT 3 HEREON (CT 277/87) AND THAT THE CONDITIONS OF TITLE BE GRANTED TO INCLUDE BOTH PARCELS (I.E. 277/87 & 16014)

(3) NO OTHER CONDITIONS APPLIED TO THE APPROVED SCHEME PLAN.

IN WITNESS whereof the Common Seal of the said Council was hereunto affixed in the presence of:

*[Signature]* Mayor

*[Signature]* Councillor

SECTION 1 - OLD CADASTRAL COORDINATE S IN TERMS OF 1:50 CORNER OF SECTION

Total Area **3180.0 m²**

Completed in C.E.T. **277/87 & 78/87**

I, KEITH FRANKLIN KIMMELTON OF DUNEDIN, Registered Surveyor and holder of an annual practicing certificate in the City of Dunedin, do hereby certify that this plan has been made with surveys conducted by me or under my direction, that both plan and survey are correct and have been made in accordance with the Survey Regulations 1953.

Plan as deposited on 17th JULY 1987

File No. 2036 & 43-47 Section 235 & 17

Reference Plan 277/87 & 78/87

Approved on to Survey

**4.1.91.87**

Deposited this **23** day of JULY 1987

By 4000

Proved 27/7/87

Signature

**DP 20366**

4/1/87

LAND DISTRICT OTAGO

SURVEY BLK. & DIST. III UPPER KAIKORAL

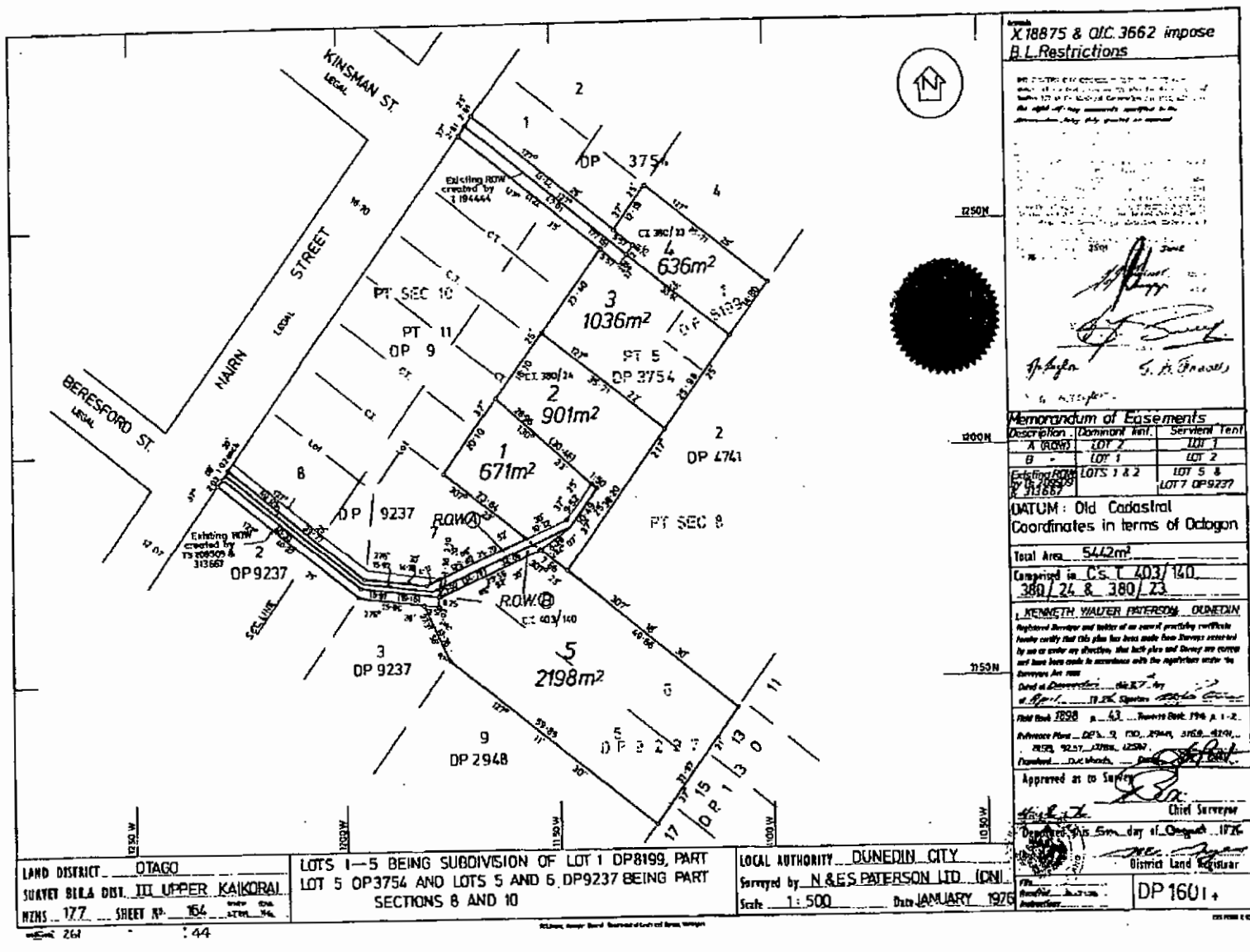
NZMS 261 SHT 14-4 RECORD MAP No. 243524

LOT 1 BEING SUBDIVISION OF LOT 2 DP4741 & LOT 3 DP16014 BEING PT SEC. 8

TERRITORIAL AUTHORITY DUNEDIN CITY

Surveyed by LAMBOURNE & McLEAN

Scale 1:400 Date JULY 1987





COMPUTER FREEHOLD REGISTER  
UNDER LAND TRANSFER ACT 1952



Search Copy

R. W. Muir  
Registrar-General  
of Land

Identifier OT12A/97  
Land Registration District Otago  
Date Issued 01 March 1988

Part-Cancelled

Prior References

|           |           |           |
|-----------|-----------|-----------|
| OT10A/940 | OT116/168 | OT191/289 |
| OT192/119 | OT194/66  | OT6C/701  |

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|                   |                                                                                               |
|-------------------|-----------------------------------------------------------------------------------------------|
| Estate            | Fee Simple                                                                                    |
| Area              | 2475 square metres more or less                                                               |
| Legal Description | Lot 1 Deposited Plan 20102 and Lot 3<br>Deposited Plan 15390 and Lot 2 Deposited<br>Plan 9781 |
| Purpose           | in trust for the purpose of a recreation<br>reserve                                           |

Proprietors  
Dunedin City Council

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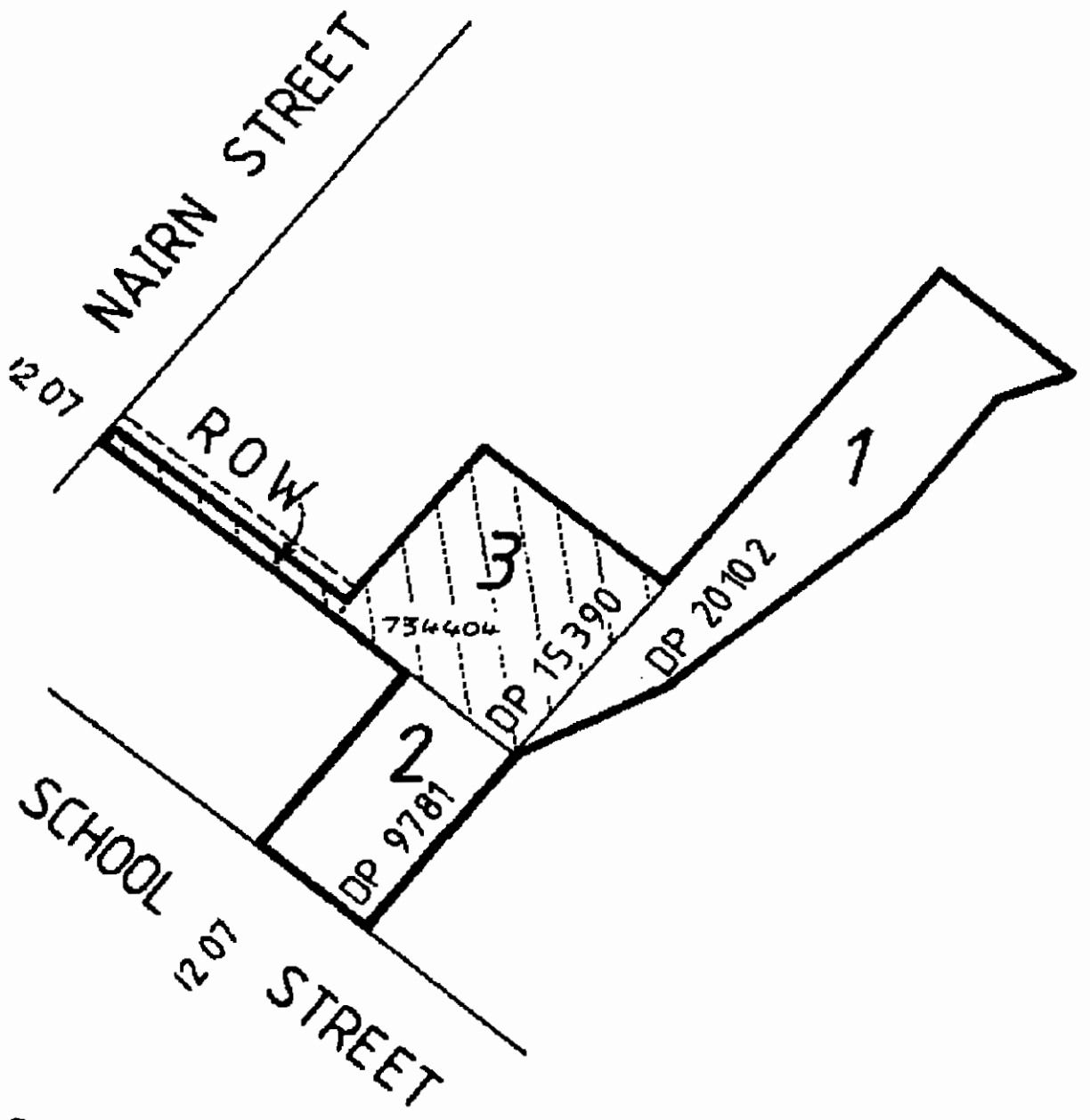
Interests

X20914 Memorandum of Acceptance imposing a Building Line Restriction (affects the School Street frontage of Lot 2) - 7.5.1959 at 11:22 am

Subject to the Reserves Act 1977

Subject to Section 308 (4) Local Government Act 1974 - see Councils condition on DP 20102

734404 Gazette Notice declaring part of the within land Lot 3 DP 15390 to be a recreation reserve by virtue of Section 14 of the Reserves Act 1977 - 1.8.1089 at 10.54 am

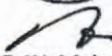




**COMPUTER FREEHOLD REGISTER  
UNDER LAND TRANSFER ACT 1952**



**Search Copy**

  
R. W. Muir  
Registrar-General  
of Land

**Identifier** OT12A/203  
**Land Registration District** Otago  
**Date Issued** 01 March 1988

**Prior References**  
OT191/289

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|                          |                                |
|--------------------------|--------------------------------|
| <b>Estate</b>            | Fee Simple                     |
| <b>Area</b>              | 602 square metres more or less |
| <b>Legal Description</b> | Part Lot 2 Deposited Plan 2948 |

**Proprietors**  
Dunedin City Council

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**Interests**

