



*C&D Landfill, Happy Valley, Wellington*

# **Landscape and Visual Assessment for Landfill Expansion**





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Date: April 2013  
Reference: 3-55619.00  
Status: Final



# Contents

<b>1</b>	<b>Introduction.....</b>	<b>1</b>
1.1	Background.....	1
1.2	Current Proposal .....	2
<b>2</b>	<b>Site Context and Character .....</b>	<b>3</b>
2.1	Location .....	3
2.2	Local Landscape .....	4
<b>3</b>	<b>Land Tenure.....</b>	<b>5</b>
<b>4</b>	<b>Planning Context.....</b>	<b>5</b>
<b>5</b>	<b>Description of proposal.....</b>	<b>6</b>
<b>6</b>	<b>Landscape and Visual Effects .....</b>	<b>7</b>
6.1	Landscape Effects.....	7
6.2	Visual Effects .....	8
6.3	Mitigation Recommendations.....	13
<b>7</b>	<b>Conclusion .....</b>	<b>14</b>

## Appendices

**Appendix A**            WCC District Plan Map 61

**Appendix B**            Drawing Set for C & D Landfill Expansion

# 1 Introduction

## 1.1 Background

C&D Landfill (the Landfill) is located at 50 Landfill Road within Happy Valley, Wellington. The landfill is adjacent to the Wellington City Council (WCC) sanitary landfill, and has been operating at that location since 1978. The Landfill is not open to the general public and only accepts cleanfill and non-hazardous construction and demolition material.

In 1994 Burrell Demolition Ltd (BDL) applied to the then Wellington Regional Council (GWRC) and Wellington City Council (WCC) for land use consents and permits to increase the height and footprint of the landfill. The application was processed as publicly notified, and after a hearing, a joint decision (ref WGN940057) granted the consents on 20/06/1995.

The factual description forming the basis of that consent approval has since been the subject of dispute between BDL/CDLL and the two Councils, mainly in the matter of determining the datum point for the surveyed height of the landfill as applied under the resource consents. Through a High Court decision it is currently recognised that the upper limit of landfill operations is set at 150m above mean sea level (AMSL).

In August 2012 CDLL made an application for consents from GWRC and WCC in relation to increasing the height of the landfill and seeking approval for development of the landfill beyond the 150m AMSL height. An assessment of landscape and visual effects was carried out<sup>1</sup> as part of the consent application in relation to Zone 4 of the landfill. The conclusion of that assessment was summarised as:

*"The use and nature of the proposed on-going fill of Zone 4 is consistent with current land use and character within the landfill site and to the broader visual catchment of the valley. The key landscape and visual effects specific to this site relate to the physical and visual extent of the operational site, the visible face of these areas along with the nature of the fill material."*

*"The proposed fill area (Zone 4) does not alter the physical extent of the operational area of the landfill, as it operates within the operational extent of the landfill. The height of the visible face of the fill is increased but this effect is expected to be no more than moderate. The type of fill material is expected to be consistent with previous fill. In addition, taking into account the viewing catchment (where only a limited number of locations used by mainly recreational users and also distant residential dwellings have a direct view), the potential for adverse landscape and visual effects are considered to be no more than minor. As previously described above, these effects can be at least in the short-term be partly mitigated and in the longer long term more comprehensively mitigated as part of a long term mitigation plan for the whole site."*

That application has been granted resource consents and permits by GWRC (ref WGN130070) on 1 February 2013 and WCC (ref SR265761) on 4 March 2013.

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<sup>1</sup> C & D Landfill, Happy Valley Wellington: Landscape and Visual Assessment for Temporary Landfill Consent, Opus International Consultants Ltd, August 2012.

BDL and CDLL are now seeking resource consents from GWRC and WCC to expand the Landfill activities beyond the existing resource consent.

## 1.2 Current Proposal

The current proposal will enable the landfill to continue on-going operations long term, providing capacity for the next 35-40 years. The proposal is located on an unmodified site to the north west of the existing landfill operation (Zones 4, 5 and 6). It will also involve additional landfill material over zones 4, 5 and 6 as the existing consent only provides for material up to 240m above mean sea level (AMSL). Zones 4, 5 and 6 at their final level will have final surface sloping downward to the northwest. The initial access road into the undeveloped gully will be from Zone 4, from 240m AMSL on the east side of Zone 4 up to approximately 252m AMSL which is the height of a cut platform on the spur between the existing and proposed landfill areas.

This report assesses the effects of the new fill site, as well as considering any effects which may result from the reworking of the Zone 4 site.



**Figure 1:** View north-east from within the current C&D Landfill looking towards the WCC Landfill. The residential area of the Ridgway (Mornington), Mt Victoria are visible in the mid ground, and in the background are the Wainuiomata Hills and Seaview foreshore.

## 2 Site Context and Character

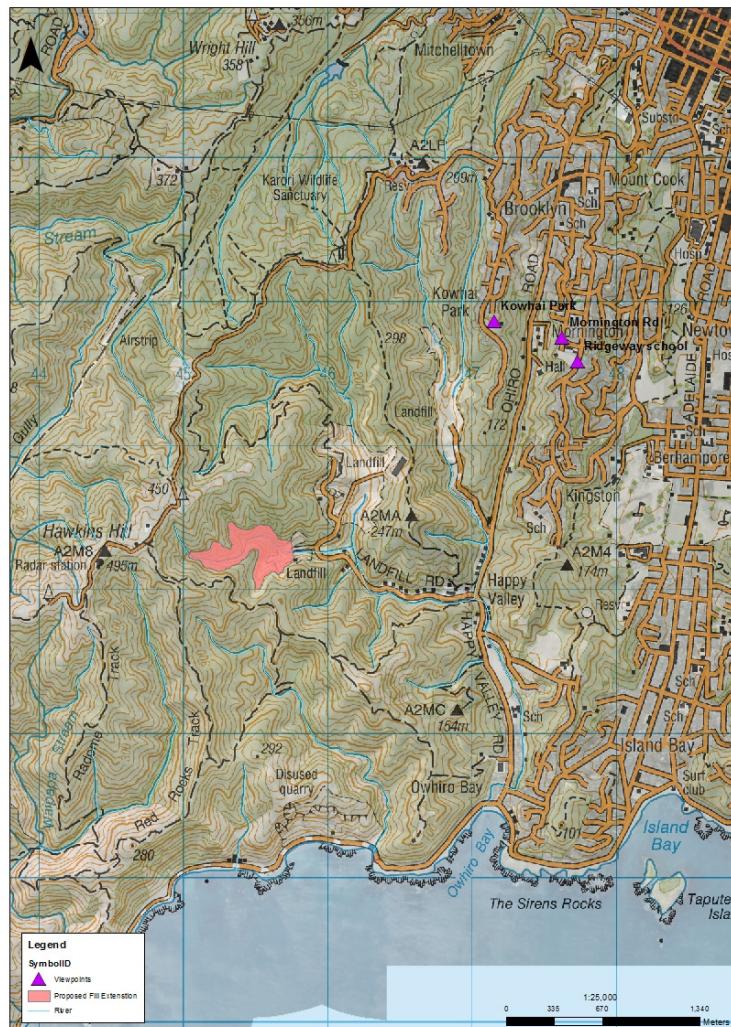
### 2.1 Location

The proposed expansion is located within the current landfill lease area that is accessed from Landfill Road, Happy Valley, south-west of central Wellington, inland from Owhiro Bay. The site faces east-north-east and is positioned within a steep-sided valley adjacent to the main WCC landfill. The landfill site is accessed from a gated entrance at 50 Landfill Road. The access road within the site winds up through benches of previously deposited fill (Figure 1). The C&D Landfill lease area is generally bound by two ridgelines and is up to (approximately) the 300m contour. The landfill has to date operated within land between contours 120m and 230m AMSL.

The current operational site is below the 230m contour and occupies approximately 7.7ha of land. It is characterised by a series of mostly un-vegetated open-fill terraces, steep banks and roads formed to provide access to diggers and trucks to the landfill deposition areas. The landfill terraces are numbered as Zones 1-6, with Zone 1 being the lowest, and Zones 5 & 6 the highest. Zone 4 is the location for current landfill deposition activities.

Figure 2 shows the extent of the proposed fill area and the ridgelines surrounding the site. Figure 3 also shows the WCC District Plan Ridgeline and Hilltop Overlay and areas of high visibility within the district community.

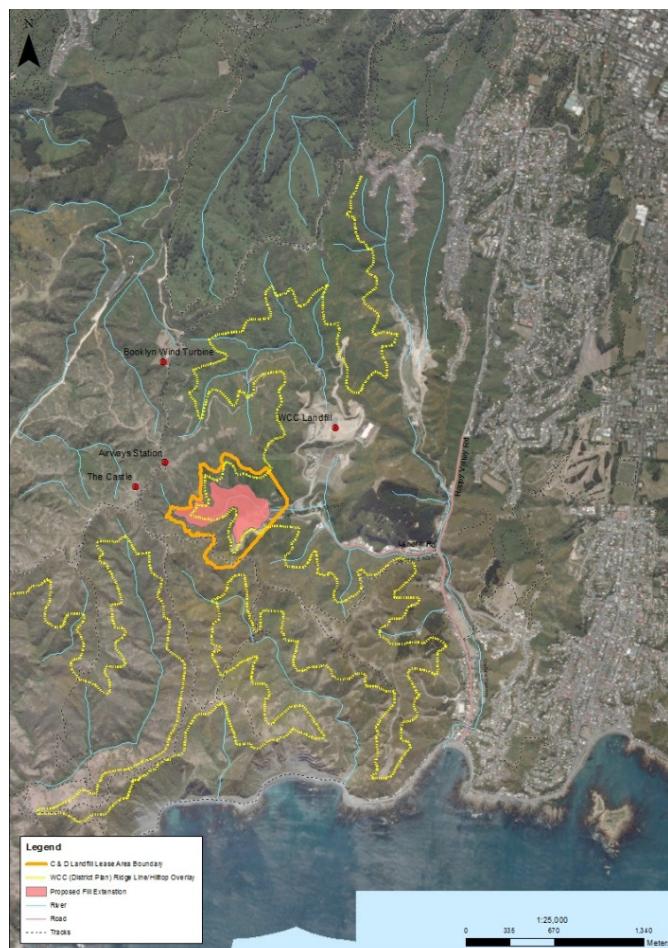
**Figure 2: Topographical map showing location of the proposed fill extension**



It can be seen from these that the proposed fill will extend up a series of gullies from the current fill site, and that the interlocking spur form coming off the main ridge remains undisturbed. The majority of the fill proposal is outside (below) the hilltop overlay except for at the head of the western most gully.

The operational site caters for clean fill (earth material) and ‘clean’ construction and demolition materials - typically concrete, masonry rubble, steel reinforcing and other general building waste (as specified in the current resource consents). The materials are generally sorted and mixed with soil and site excavations to form fill terraces. This process gradually continues – effectively infilling the valley over time.

Beyond the extents of the present operational landfill site are areas of gorse, scrub and regenerating native vegetation (former pastoral farm land), stretching up to the surrounding ridgelines.



**Figure 3: Aerial showing location of the proposed fill extension**

## 2.2 Local Landscape

The site is to the south of the city, and the general landscape character and form surrounding the site is steep hillsides and valleys, containing the application site. This is separated from the coastal landscape by the series of ridges to the south. The area once would have contained native forest,

but has been modified and was most likely cleared for grazing purposes. Native vegetation appears to be regenerating successfully to a shrubby cover from a grass and gorse matrix, with a more developed mix in the gully bottom and shaded slopes.

The deeply incised landform of hillsides and spurs largely enclose the site on the south, west and north; the ridgelines and hilltops associated with these hills are a feature of the Wellington landscape, and identified as significant in the WCC District Plan Ridgeline and Hilltop Landscape Overlay<sup>2</sup>. These ridges and spurs mean that the full extent of the landfill site is not visible at any one time.

Prominent Hawkins Hill (460m) lies to the west of the site and to the south is the ‘Tip Track Spur’ that runs from Hawkins Hill south-east down towards Owhiro Bay. The Te Kopahau Ridge also lies to the north, and to the east is the Tawatawa Ridge.

There are extensive views from these ridgelines over the Wellington area. The surrounding land is in Wellington City Council (WCC) ownership and is part of the Outer Green Belt, which is used for recreation and is identified as a landscape feature of the City. The Tip Track Ridge carries a track mainly used by walkers and mountain bikers, linking Happy Valley Road, Hawkins Hill and tracks towards Red Rock to the south-west and Polhill to the north. There are views over the landfill area from parts of the Tip Track and from local roads/paths along the Te Kopahau Ridge.

The land use in the area has been established over a number of years, the series of side valleys have been used for various infrastructure, service and land fill activity. The extent of the area with views of the landfill site is limited. Views to the area are limited by the landform and by the pattern of local development, except from the top of the immediate ridgeline surrounding the site.

## 3 Land Tenure

The landfill is located on Part Lot 1 DP 29398, Title WN21D/612 which is owned by WCC, part of a leased area of approximately 41.5ha. The land parcel is also gazetted for Sanitary Works (disposal of refuse) under NZGZ 6 April 1972 p733. The location of the lease area is shown on Figure 3.

## 4 Planning Context

At the time of the issue of the lease the land was zoned Rural in the WCC District Plan. The existing landfill and the currently undeveloped area of the lease are currently zoned as Open Space B – Natural Environment under the Operative WCC District Plan.

The site is also contained entirely within land designated by the WCC for “Refuse Disposal and Associated Works” in relation to the Carey’s Gully Landfill (Designation 61).

There is an additional landscape overlay that exists within the landfill lease area. This is known as the Ridgeline and Hilltop overlay and is shown as a yellow dashed line on Figure 3<sup>3</sup>. The overlay line was proposed under Plan Change 33 which is now part of the operative District Plan. The purpose for the overlay line is for managing development on the most visible parts of the Wellington Skyline which are primarily in Rural Activity Areas or, as here, Open Space B.

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<sup>2</sup> Refer Appendix A

<sup>3</sup> Refer Appendix A

There are also two non-statutory documents produced by WCC which relate to the overall area in which the application is located. The Outer Green Belt Management Plan<sup>4</sup>, which includes both private and public ownership. The C&D Landfill site falls within Sector 7, Carey's Gully/Landfill Management Area. Objectives within the plan recognise the need for the activity “while working where possible to achieve regeneration of bush where this is consistent with development.” Much of the land cover is juvenile regenerating native vegetation. This document is intended to support the objectives and principles of the District Plan.

The second, the South Coast Management Plan<sup>5</sup>, is a policy document relating to a management of the South Coast. The C&D Landfill lease area is within the legally described parcel which in part borders the foreshore of the South Coast. However, as the physical area of the Landfill site is to the north, inland facing slope of the Tip Track spur, it is not a fundamental part of the coastal hinterland, in terms of orientation, drainage or visibility.

## 5 Description of proposal

The proposal will extend the area of fill up the gully adjacent to that currently being filled, Zone 4/5/6, and will include some additional fill and reworking of the upper parts of the Zone 4 area. The final form of the extended landfill will create a flatter upland valley slope, as opposed to the current steeply incised valley, with a centralised overland flow path and will grade into the adjacent hillsides at the margin of the fill. It is proposed that the extension of fill over the temporary Zone 4 area will form a plateau area, sloping gently to drain to the new overland flow path and feather into the existing hillside at its margins.

The current approved height of the landfill on Zone 4 is up to an elevation of 240m AMSL. The proposal would increase this to 250m AMSL and the proposed height of the landfill within the adjacent undeveloped gully would be from 180m AMSL at the lower part of the valley (near the existing landfill control building) up to approximately 300m AMSL at the upper end of the gully. (Plans showing details of the proposed fill are included in Appendix B.)

There are a series of high points on the ridge surrounding the landfill valley, which include Hawkins Hill at 495m AMSL. The height of the ridge in close proximity to the landfill site at the top of the valley is between 400m and 440m AMSL. The ridge height reduces along the sides of the gully to about 340m AMSL.

The proposal indicates that the fill will be at its highest point at the head of the western most gully and will grade down towards the east as the ridge lines also grade down, so final fill level will be in the order of 100 metres below the top of the ridge, and it is estimated on average 250 metres horizontally from the top of the surrounding ridge.

The fill proposal will therefore be below and outside the area defined as of High Visibility within communities on the WCC Ridgelines and Hilltops Landscape Overlay Map, except for the area at the top of the westernmost gully. Here there is an overlap and it is this area which is visible from the residential areas, described later in this report.

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<sup>4</sup> Wellington's Outer Green Belt Management Plan WCC, May 2004

<sup>5</sup> South Coast Management Plan WCC 2002

It is understood that the landfill operation will be progressed in stages with each stage completed and the surface covered, apart from where access routes are required for other stages of the work. The applicant proposes to grass and revegetate these areas with indigenous plant species, which will in the long term return the area to a planted cover similar to that of the surrounding hillsides at each stage is completed.

The surface water overland flow will be facilitated by the land shaping. A report by Wildlands Consultants Ltd<sup>6</sup>, has assessed the ecological effects and proposed mitigation measures for the proposal in recreating a natural overland flow and habitat for fish.

The Wildlands reports states in its conclusion on page 28 that;

*"The revegetation and the stream habitat creation, provided the proposed mitigation is well executed and successful in establishing suitable indigenous vegetation, will largely offset the loss of indigenous terrestrial and aquatic habitat."*

## 6 Landscape and Visual Effects

### 6.1 Landscape Effects

As identified in the earlier Landscape and Visual Assessment for the Temporary Landfill<sup>7</sup>;

*"The topography of the development site has been modified on an on-going basis for the last 30 years. The practice of landfilling, by definition, changes the shape, form and volumes of the landscape. The history of the site is most recently as a landfill and it is adjacent to the city's main landfill. Given the scale of the modifications already made, and the history and immediate context of the site, the proposed expansion represents a continuation of this."*

The proposed expansion will extend the landfill footprint over a gully which has not yet been worked, and will result in clearance of the vegetation, reshaping of the gully to have a flatter profile to the natural one. It will be shaped to provide a central lower portion, so will provide a rolling contour which blends into the higher slopes of the ridgeline. The central stream will be piped but overland flow is provided by the new contours.

The fill will take place over a number of years and phases. It is understood that the site will be cleared in a phased sequence, therefore limiting the extent of bare area being worked at any one time. Each phase will require clearance of vegetation, expose bare ground and placed fill material during the working phase. While infill of the gully will modify the angle of slope in the area, the overall result will maintain a profile consistent with the hillsides. Each phase is likely to form a "terrace" across the slope and a graded access track during filling operations, which will be regraded and topsoiled prior to revegetating the final slope.

Existing land cover plays an important role in defining and shaping the character of the surrounding hillsides. Present land cover is a mix of grass transitioning to gorse, then pioneer

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<sup>6</sup> Assessment of Ecological Effects for a proposed Expansion of C&D Landfill, Happy Valley, Wellington. Wildlands Consultants Ltd 2012: Contract Report No. 2438b

<sup>7</sup> C & D Landfill, Happy Valley Wellington: Landscape and Visual Assessment for Temporary Landfill Consent, Opus International Consultants Ltd, August 2012.

native shrub species. Some parts of the slopes, generally the south facing ones and lower parts of the gullies have a wider range of species where growing conditions are not so hard. Clearance will be required and the cleared areas will contrast with the colour of the scrub on the adjacent hillsides. It is this aspect of the work which is likely to be most apparent. The applicant has demonstrated in his current operation that clearance is related to the working area only, and no unnecessary clearance has taken place. Maintaining vegetated cover helps to minimise both run off and dust effects. The Wildlands report has identified habitat loss related to the areas to be cleared and the relative ecological value of these. Much of the area affected has a lesser age and less complex species composition. Those areas of higher ecological value are limited in extent and not unique within the region.

While loss of the integrity of the developing vegetation cover is unfortunate, and the form and character of the gully will be altered, the character of the overall area will not change. The Wildlands report has stated that the remediation proposed will re-establish appropriate vegetation; this will blend the modified land form into the surrounding hillsides, and in the long term, re-establish the same vegetation composition and thus the colour and texture of the slope. Provided the fill is carried out and closed down in sequence, the amount of area which differs from the surrounding, and so stands out from a distance, will be limited. Completion of Zone 4 prior to starting on the proposed expansion area will also limit the effect to a single gully which is contained by unaffected ridges. It is understood that approximately one quarter to one third of the proposed landfill expansion area will be open at any one time.

The proposal represents a continuation of the existing uses in the immediate area such as the current landfill and the WCC sanitary landfill in the neighbouring valley. This proposal is an extension of activity rather than a change in land use and the appearance is similar to the land uses already being undertaken. While the landfill will be carried out over a larger area and closer to recreational walking or cycling tracks on the ridge line, it is considered that track users are already accustomed to landfill activity taking place in this location.

The nature of the activity and change is consistent with the nature of current and past activities within the landfill. There will be an effect in extending the fill area, but the effect on overall landscape values of the area in terms of landform, land cover, land use and character will be limited. Most views of the site are already of an active landfill site and while the area will be greater and closer to recreational users on the ridgeline, the elements of the view are similar.

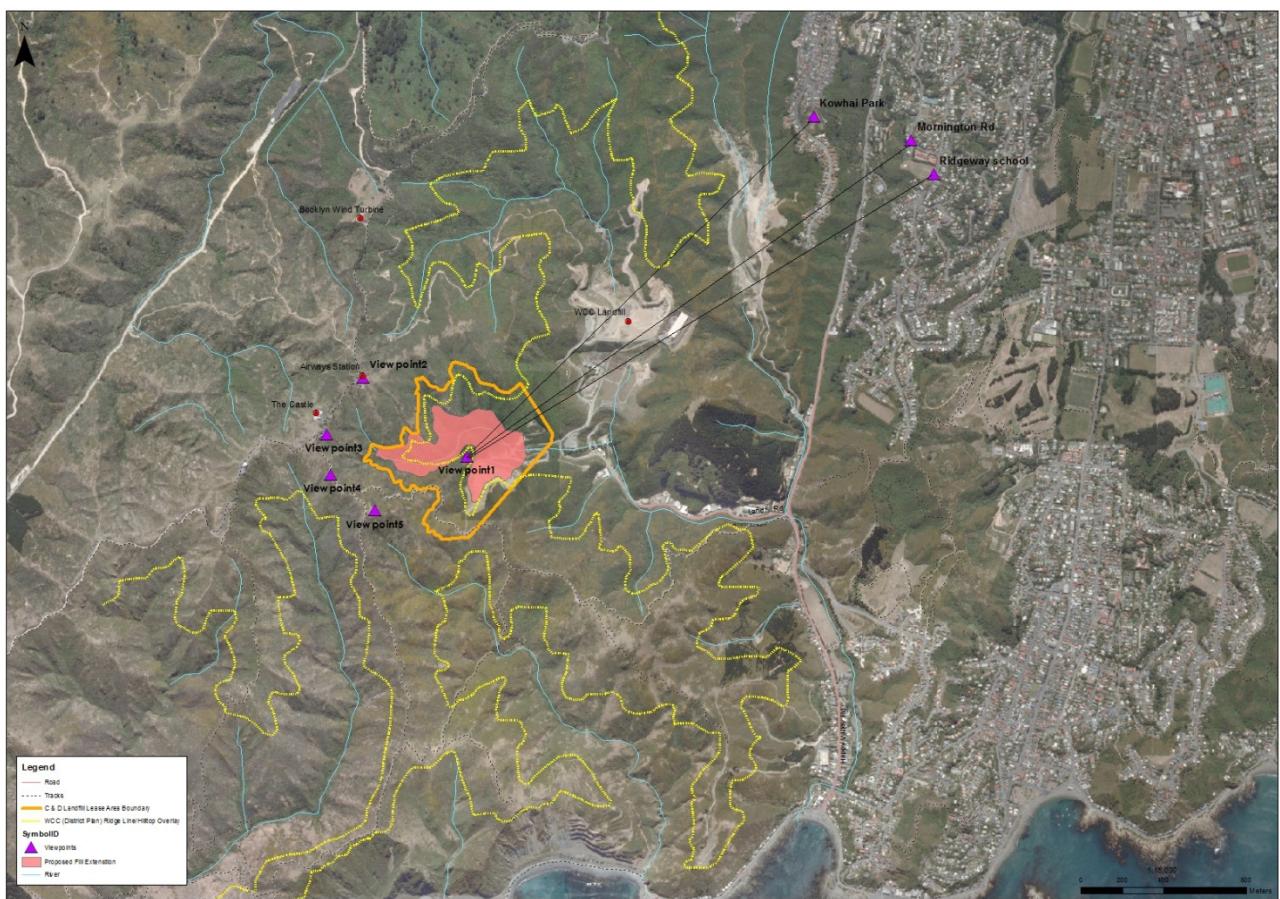
## 6.2 Visual Effects

The form of the landscape, with series of ridges and narrow gullies with interlocking spurs, and the location of the proposed fill within these gullies will mean that the total area of fill is not seen at any one time. The previous Landscape and Visual Assessment report identified representative view points and demonstrated the limited areas from where the Zone 4 temporary land fill could be seen. These points have been used to assess the effect of the current proposal, with additional points investigated from where the extended fill area may also be visible.

These viewpoints were chosen as they are where the C&D Landfill and the proposed expansion, was judged to be most obvious in the landscape by people from either recreation spaces or residential areas. From these views, the landscape and visual effects were assessed.

The area of fill shown in red on these images is an indication of the volume of fill which will be visible from various viewpoints and has been modelled from the plans (Appendix B), and overlaid on the images. It demonstrates how the fill is contained within the land form, and that the full extent of the landfill expansion area is not seen at any one time. The proposed perimeter of fill has not been surveyed on the ground at this stage.

The assessment of effect has been based on factors such as how the proposal contrasts or conflicts with its context, how large a part of the view is taken up by the proposed expansion and where the proposal is placed in the view. Other factors include whether distance diminishes the effect and the extent to which mitigation can modify any effect.



**Figure 4: Location of viewpoints (purple triangles) relative to proposed landfill expansion.**

There are two main areas and groups of viewpoints where the proposal will cause an effect. The assessment excludes Viewpoint 1 which is within the landfill site and not accessible to the public.

The first grouping (Viewpoints 2-5) is on the ridgeline above the proposal, which is accessed by residents (the Castle, 48F Ashton Fitchett Dr), service users (e.g. Airways), and recreational users (walkers or mountain-bikers), and is where tracks are located. Users of this area spend a limited amount of time, generally passing through the area engaged in active recreation, or to experience the view. The views from this ridgeline are extensive and dramatic, looking out over the city and harbour and to the south coast and across to the Eastbourne Hills and these broader longer vistas are the dominant feature which will be experienced in this area, as shown in Figure 5 below.



**Figure 5: View northeast from ridgeline above the proposed site overlooking the Wellington Harbour**

The fill operation will affect the integrity and 'natural' character of the ridge line experience for users of the recreational area and the tracks which are contoured below the ridgeline. Users of the rough 4WD access on the Tip Track Spur (refer Fig. 2, and Appendix A) already pass above the existing landfill and can look directly into Zone 4-6. The proposed landfill expansion will extend closer to the Te Kopahu ridgeline and mountain bike track than at present. However, the fill area is below the viewer's eye line, and both the contouring of the tracks, local spurs and intervening ground mean that only part of the proposal will be seen at any one time. This is demonstrated in Figure 6 where the likely extent of fill (shown in red) has been imposed on a photograph taken from the top of Te Kopahu ridge at Viewpoint 3.

There is a single dwelling<sup>8</sup> in this location and it is likely that residents at that location will also be affected as a small part of the proposed landfill expansion in the upper part of the gully, will become part of their view (no photographs were taken from private property to assess the extent of this change). This impact will be significant during the initial stage of the proposed landfill expansion development (estimated to occur during 2018-2033), but once this stage of the landfill is completed, with subsequent surface restoration and planting the land cover would revert to become similar to that of the surrounding unmodified hill sides, and any adverse effect would be no more than minor.

From the surrounding ridgelines, the visual effect of the proposed landfill expansion would be moderate during the development phase due to the proximity of the proposal to public recreation

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<sup>8</sup> Known as the 'Ashton Castle' located on Section 1 SO Plan 1179, addressed as 48F Ashton Fitchett Drive.

routes and the type of activity which contrasts with the recreational experience and ‘naturalness’ of the ridgeline.



**Figure 6: View from ridgeline showing the area of fill visible, receding down the gully (View point 3)**

In the long term, and particularly if the landfill operation is phased and sequentially closed down and revegetated, the effect will diminish when restoration of the surface area is carried out, and further lessen when the vegetation establishes over time.

The second grouping is that of the closest residential areas which are sufficiently elevated to see the site. These are approximately 3 kilometres away.

A series of parallel ridges and spurs lie between these houses, and the area of hillside where the proposal is located, and only a small portion of the landfill will be visible above those intervening ridges. Because of the distance from the proposed expansion site, the landfill area also comprises only a small portion of the view. This is demonstrated in Figures 7, 8 and 9. The likely extent of landfill is shown as red, to be visible on the images. There is no fill visible from the Kowhai Reserve (Figure 9). The views have been taken from publicly accessible areas, however, at these locations it also appears that a limited number of residential properties containing houses are sufficiently elevated to see parts of the proposed landfill expansion (in addition to existing landfill).

The extent of the proposed landfill expansion which can be seen is limited to the upper areas of the proposal. While the colour contrast will be noticeable when the area is cleared and worked, the distance and intervening ridges diminishes the effect. The ridge line forming the horizon of the views remains undisturbed. If the currently approved landfill Zones 4-6 are revegetated when

finished, and then upper levels of the proposed landfill expansion are progressed and revegetated early in the programme, the extent to the change in view will be limited and any adverse visual effects on this neighbourhood would be no more than minor.



**Figure 7: View from The Ridgway, Mornington – fill area indicated in red**



**Figure 8: View from roadside 108 Coleridge St, Mornington – fill area indicated in red**



**Figure 9: Viewpoint 3: View from Kowhai Reserve – fill area is masked by intervening ridgelines.**

### 6.3 Mitigation Recommendations

It is recommended that development of the proposed landfill expansion is carried out in sections, with each part closed down, shaped and revegetated as it is completed as the colour change is the element which will be most apparent to viewers. This will also enable a more complex plant community to develop over a shorter period, contributing to the area's ecology. Pioneer shrub species are recommended which will maintain the open aspect of the hillsides and not, in themselves, create a visual feature.

The Wildlands report sets out proposals for revegetation and this information is also further referenced in the C&D Landfill Site Management Plan (under Section 9 'Rehabilitation of the Site') which forms part of the information for the proposed landfill expansion. This information and the indicative design would form a suitable basis for a re-vegetation strategy for the site, and align with the aspirations of the WCC Outer Green Belt Management Plan.

Where landfill slopes of the proposed expansion remain open or have not been formed to their final levels for periods of time, or form embankment for access roads and tracks, these could be hydroseeded with appropriate seed mixes (including grass) to stabilise and 'green' the exposed faces. The natural progression of the ridgelines has been from grass to shrub cover, often through a gorse mix and will merge the landform into the backdrop.

## 7 Conclusion

A landscape and visual assessment is required to understand the actual or potential effects of a proposed landfill expansion upon a landform of district and region wide significance. This assessment considers that the use and nature of the proposal is consistent with current land use and character within the landfill site and to the broader visual catchment of the valley.

The key landscape and visual effects specific to this activity relate to the physical and visual extent of the operational site, the visible cleared working face of these areas along with the nature of the landfill material.

The proposed landfill expansion does affect the existing land form and vegetation of the hillside and will be closer to the recreational areas of the ridge than at present. The landfill area is mostly outside of the WCC District Plan Ridgeline and Hilltops Overlay notation, apart from the expansion location at the upper end of the gully. This area will also be visible from some residential areas as identified in this assessment.

The final formation of the fill area will sit within a gullied area, surrounded by ridgelines and while the hill slopes will be shallower with a central overland flow path compared to the present steep sided gully form, the final form will blend into the surrounding hill slopes, particularly when revegetated.

The most visual impact in terms of change would be experienced by those accessing the Te Kopahu ridgeline and Tip Track spur where visitors are close to the works. While the activity will be evident, the broader vistas of the Wellington Harbour and southern coast are likely to be a greater draw to the viewer than the landfill area down slope.

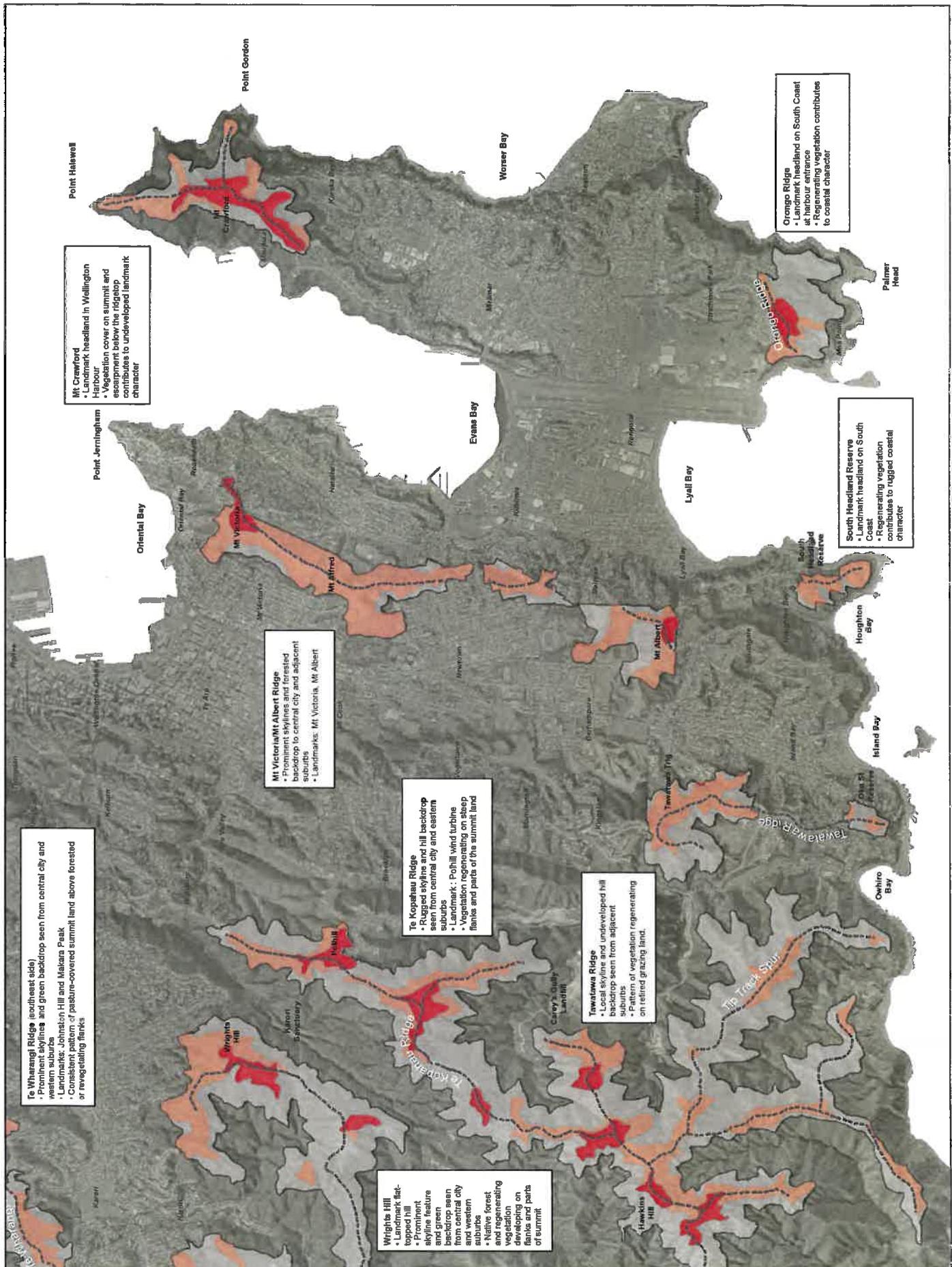
The proposal is consistent with the aspirations of the Outer Green Belt Management Plan and in the long term can contribute to the open space and recreation quality of the area, and does not affect the aims of the South Coast Management Plan. While the underlying zoning of the area is Open Space B, in the long term this activity is not inconsistent with that future use, particularly if the activity is programmed for phased completion and revegetation, with restoration carried out as part of a comprehensive plan.

Overall, the effect of the proposed extension is limited, and the proposed mitigation works as described in the Site Management Plan, this report, and the Wildlands report, would integrate the proposal final landform into the existing landscape in the long term.

# **Appendices**

## **Appendix A**

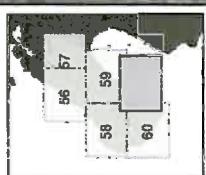
WCC Overlay Map - Ridgelines and Hilltops Map 61



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The main visual values for each ridgeline or hilltop are summarised on these maps. For more information, including the nature, heritage and recreation values, see Wellington's Ridgelines and Hilltops, the Natural and Aronui Values, 2011.

WELLINGTON CITY COUNCIL RIDGELINES AND HILLTOPS



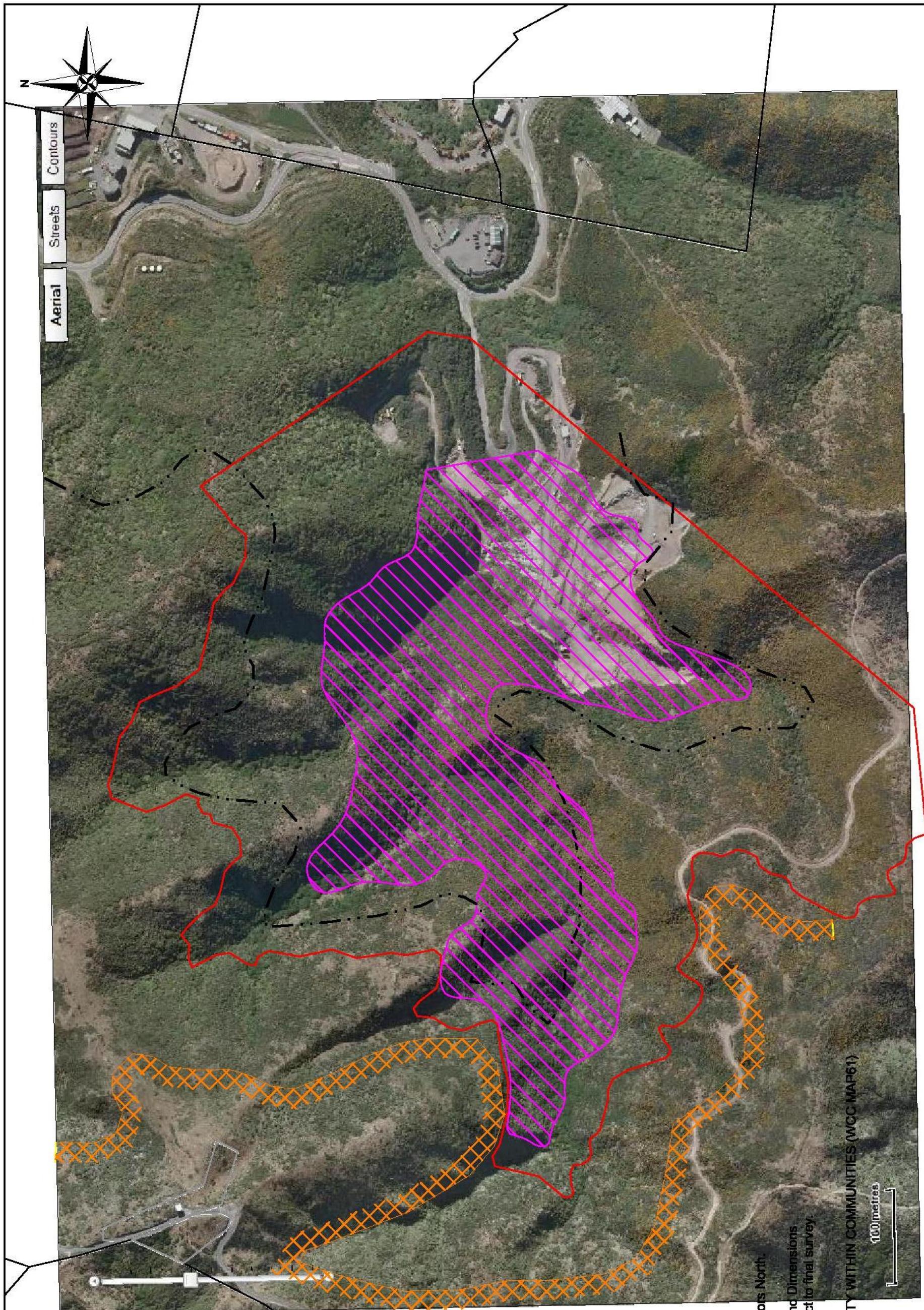
## **Appendix B**

Surveyors North – Construction and Demolition Landfill – Sheet 1 Series 1 ref 6513

MWA Solutions Ltd – 9402/02 - Site plan of landfill development

MWA Solutions Ltd – 9402/03 - Site plan of Landfill Culvert Drain

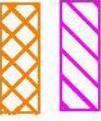
MWA Solutions Ltd – 9402/04 - Longitudinal section



NOTE:

- This plan is Copyright to Surveyors North.
- This is a concept plan. Areas and Dimensions are approximate only and subject to final survey.

KEY



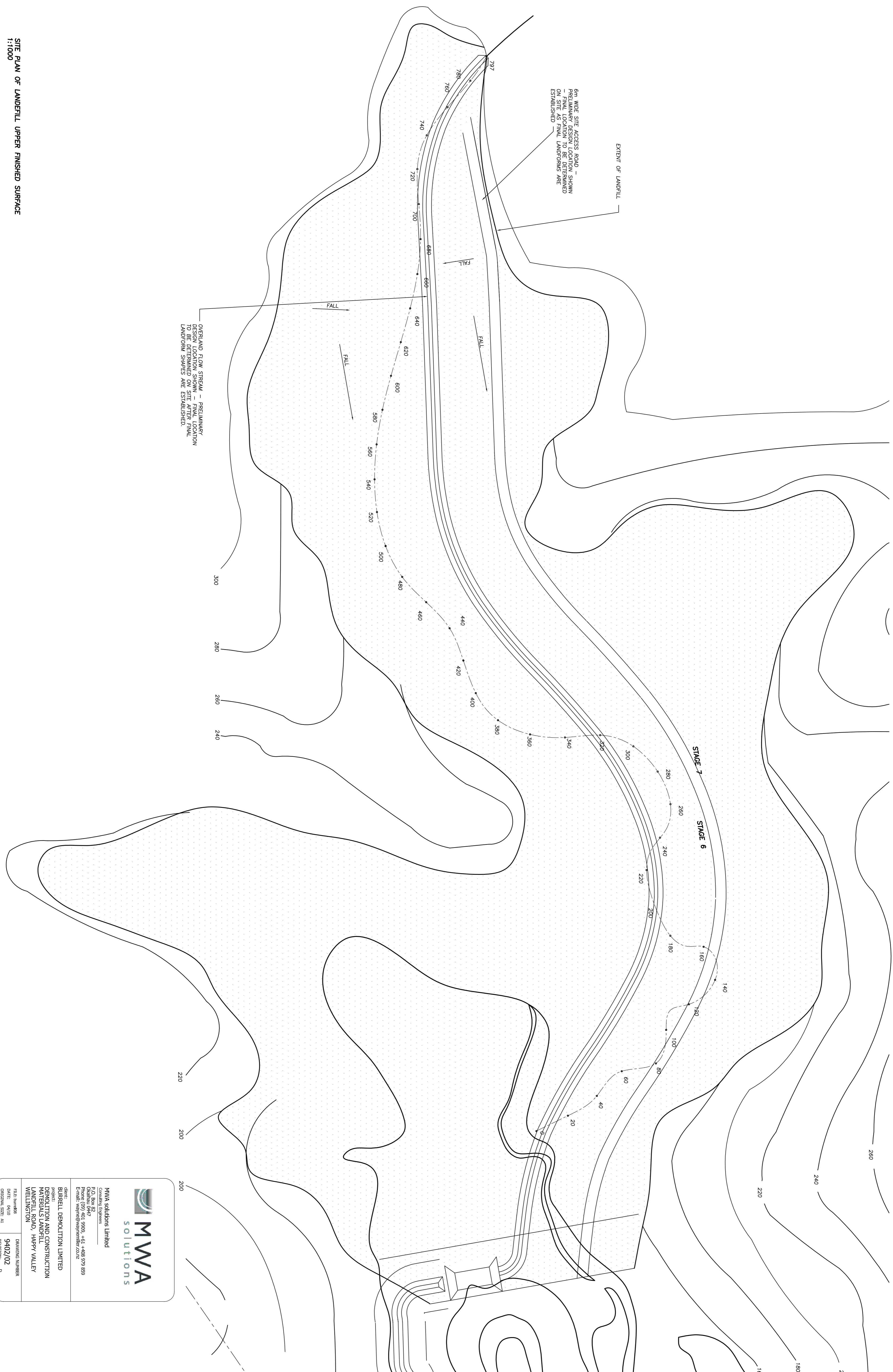
— — RIDGE LINE (WCC MAP02)

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## CONSTRUCTION AND DEMOLITION LANDFILL

Prepared For:		Sheet 1	
BURRELL DEMOLITION LTD		Series 1	
Drawn JSL	Scale 1:4000(A3)	Ref 6513	SD\Client\file
Checked	Date OCT 2010	Data\Comparison.dwg	Data\Comparison.dwg

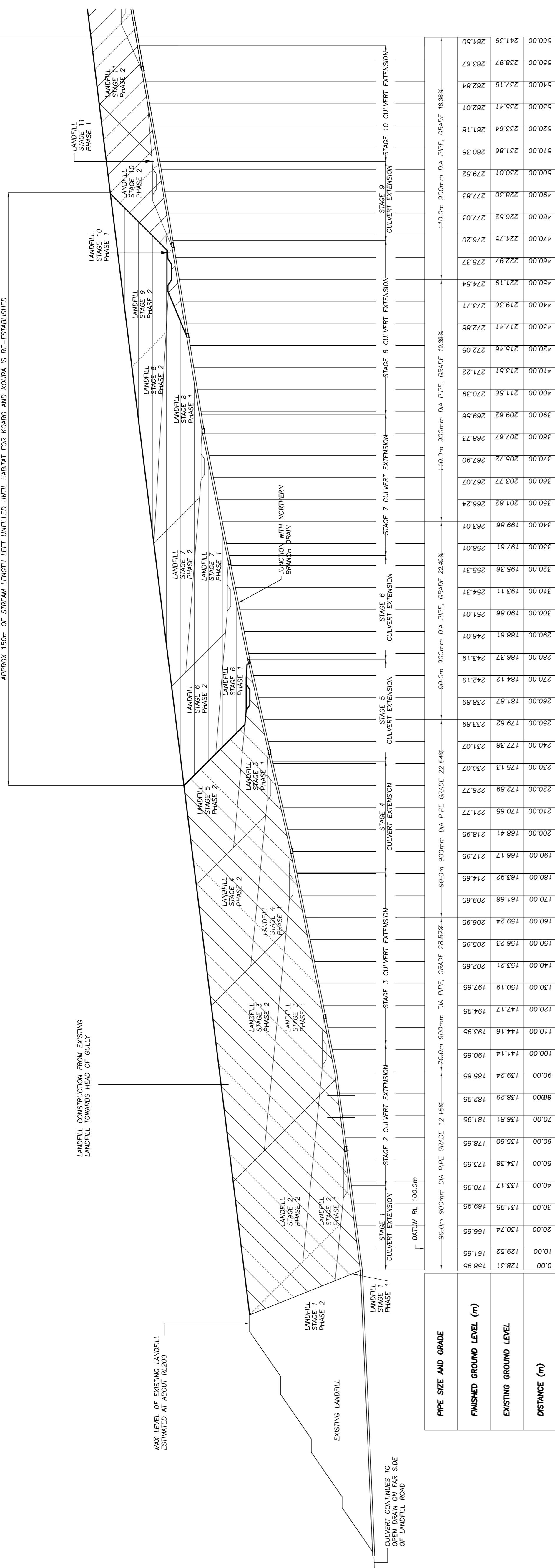


Project:  
BLARRELL DEMOLITION LIMITED  
DEMOLITION AND CONSTRUCTION  
MATERIALS LANDFILL  
LANDFILL ROAD, HAPPY VALLEY  
WELLINGTON

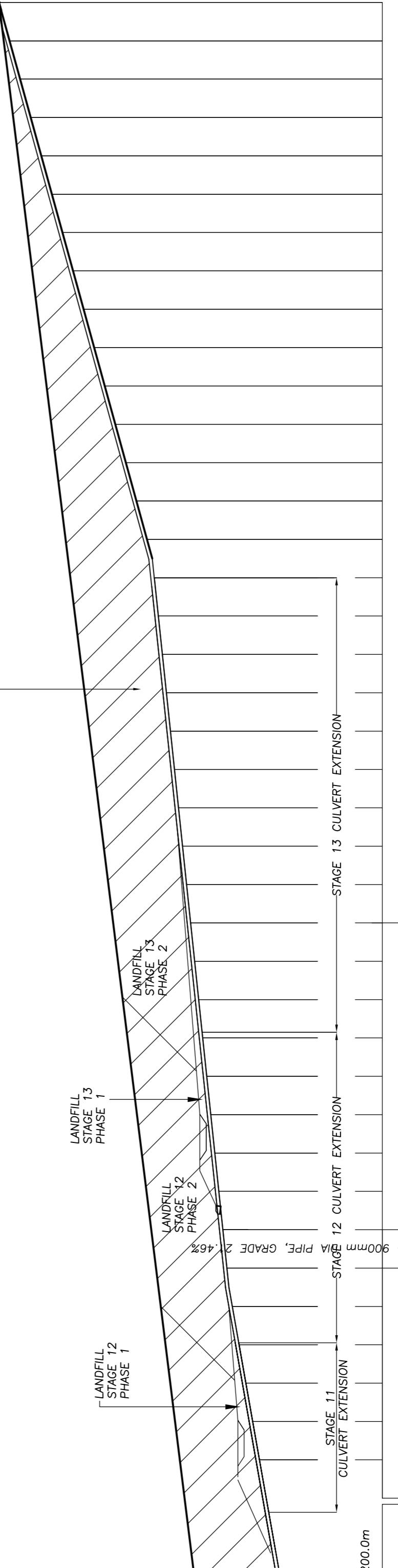
File: Drawing  
Date: 07/02/02  
Drawing No.: 9402/02  
On Site: A1  
Revision: D



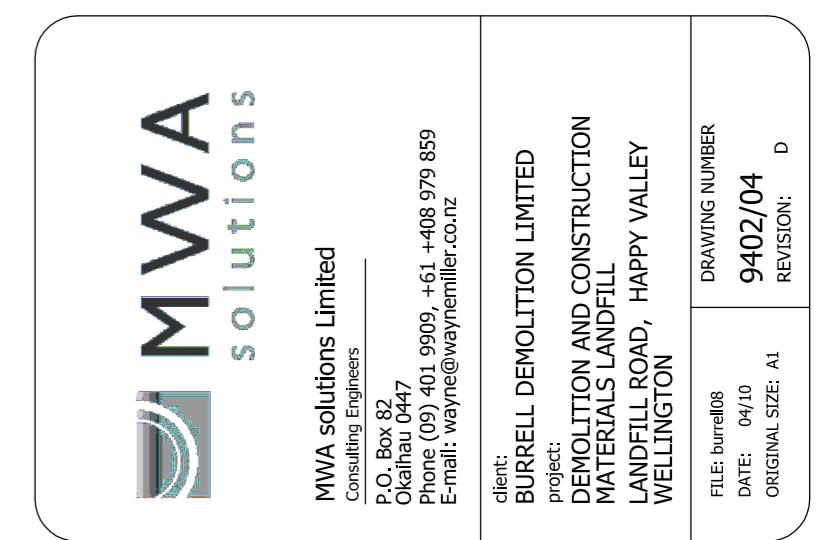
APPROX 150m OF STREAM LENGTH LEFT UNFILLED UNTIL HABITAT FOR KOARO AND KOURA IS RE-ESTABLISHED



NOTE:  
LEVELS ARE GIVEN IN TERMS OF WELLINGTON 1953 DATUM



LONGITUDINAL SECTION ON IDEALISED CENTRINE OF DRAIN  
1:1000





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