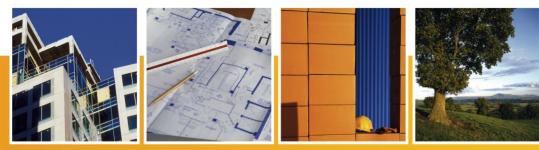
APPENDIX AA

VISUAL IMPACT ASSESSMENT



Visual Impact Assessment Report



For

Dalswinton Quarry Lot 72 DP 1199484 511 Dalswinton Road, Dalswinton

> Prepared for Rosebrook Sand and Gravel

> > June 2021 Report 19/047

Report 19/047 Revision D

Prepared by holds planning > design > development First Floor 44 Church Street (PO Box 40) Maitland NSW 2320

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Printed: File Reference: Applicant: HDB Project Manager: HDB Reference Number: 30 June 2021 19047 Rosebrook Sand & Gravel Mathew Egan 19/047

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Appendice A: Topographic Site Survey Plan



1.0 BACKGROUND

This Visual Impact Assessment has been prepared by HDB Town Planning and Design to support an Environmental Impact Statement (EIS) for the expansion of Dalswinton Quarry and its ongoing operations beyond the current consent period.

Dalswinton Quarry is situated on Lot 72 DP1199484 and operates under DA 410/1995 which allows sand and gravel extraction on the site until 13th November 2022. The owners, Rosebrook Sand and Gravel Pty Ltd (Rosebrook), are seeking to vary the footprint and continue the extraction operation for twenty-five years post 2022.

At present the quarrying activities are confined to the western part of the site and extraction occurs at an average production rate of 80,000 tonnes per annum. Sand and gravel extracted from the site are marketed in Sydney and Hunter Valley Regions for a range of uses including road base, stemming material, aggregates for concrete mix and decorative gravel for landscaping.

1.1 THE PROPOSAL

The proposed development will occur across 89 hectares of the site including expansion towards the east as well as reworking of the previously extracted areas to recover the discarded fines and larger aggregates.

Materials will be produced on demand at an average rate of 250,000 tonnes per year. During peak periods, the production rate may increase to a maximum of 500,000 tonnes per year, based on which it is estimated to extract a maximum of 12.5 million tonnes of material over an expected life of twenty-five years.

The proposed quarry expansion will involve up to 5 hectares of excavation area at any given time for improved workability and safety of the operations. A maximum of 60,000 tonnes of stockpiled materials of different grades/sizes will be stored on site to keep up with the higher production rate and market demand.

No other changes are anticipated for the extended operations and the proposal will adopt the existing method of operations, storage, and transfer of materials.

The proponent proposes progressive rehabilitation to minimise the extent of disturbed area at any given time. Extraction pits will be backfilled, reshaped, top soiled and sown with pasture species for grazing purposes at the end of the operations.

Figure 1 below shows the context and location of Dalswinton Quarry.

The methodology used in the visual assessment is based on the guidelines provided by *Landscape Institute and Institute for Environmental Management and Assessment, 2002;* and involves the following steps:

- Analysis of existing visual environment, identifying existing landform, landscape features, vegetation, land use, public domain, and vantage points.
- Description of the visual components of the project.
- Identifying the visual catchment and sensitive receptors within this area.
- Evaluation of the level of impact on the identified receptors, public domain, and the overall visual environment. The level of impact is determined by the extent to which the proposed development affects the existing landscape; and
- Proposed mitigation measures if necessary.



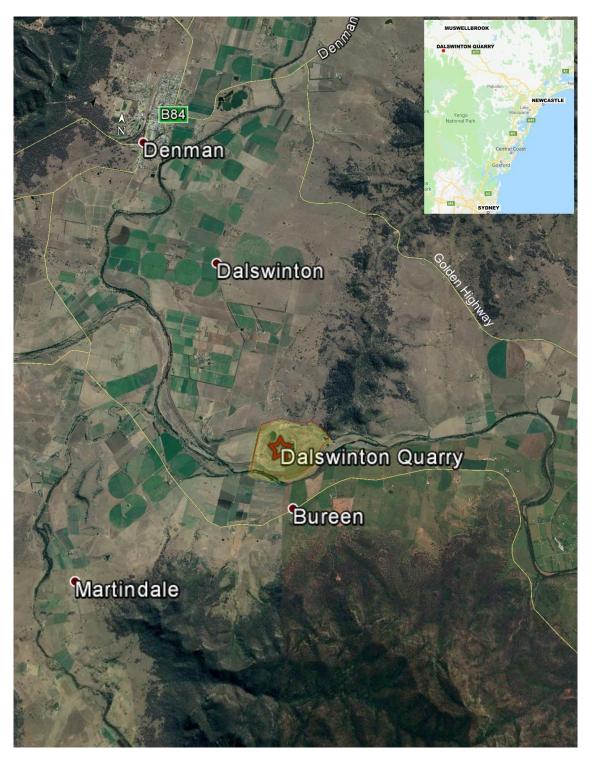


Figure 1: Site Context Source: Google Earth, accessed December 2019



2.0 SITE CONTEXT

2.1 GENERAL

The site is located to the south-east of the township of Denman, in the locality of Dalswinton, to the north of the Hunter River. The locality of Bureen sits to the south of the site across the Hunter River. There appears to be only minor changes to the surrounding landscape over the past decade.

2.2 SURROUNDING LAND USES

The site and broader areas are rural in nature with agriculture, equine, viticulture and quarrying/mining being the major economic activities in the LGA. Surrounding parcels are large rural parcels with limited agricultural activities. The closest dwelling to the quarry is located across the river, approximately 600m from the south-east boundary of the site.

The surrounding land uses are depicted in Figures 2 to 4 below.



Figure 2: Surrounding Site Source: Nearmaps, accessed January 2020





Figure 3: Northern Boundary of Subject Site Source: HDB Town Planning & Design, June 2020



Figure 4: Site from northern boundary looking south Source: HDB Town Planning & Design, June 2020



2.3 SITE ATTRIBUTES

The site lies at the bottom of a hill and falls gently towards Hunter River in a south-easterly direction. The levels drop from 98m AHD at its northern boundary to 92m AHD at the south-eastern boundary (appoximately 0.5%). A drainage depression at the base of the hill diverts stormwater away from the extraction site towards the river.

Past quarrying activities have resulted in a heavily disturbed environment on the site. The site generally lacks any vegetation with the exception of a line of trees along the western boundary and the riparian vegetation along the banks of Hunter River. The topographic survey plan of the site is provided in *Figure 5* and *Appendix A*.

The Hunter River forms the southern boundary of the site. A drainge depression running parallel to the northern and eastern boundaries joins the river at the downstream end.

A 1.5m levee bank in the southern part of the site assists in minimising the impact of floodwater from the Hunter River and maintaining the current alignment and stability of the river. Another levee at the upper end in the northern part of the site diverts clean water away from the extraction area.

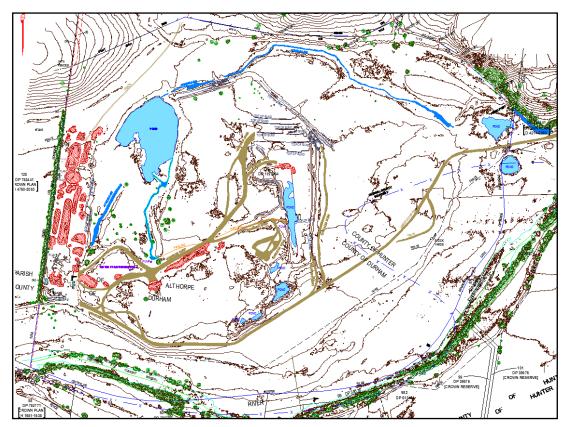


Figure 5: Topographic survey of the site Source: FYFE



3.0 VISUAL ENVIRONMENT

Dalswinton sits primarily within a rural and agricultural landscape with undulating hills and sparse vegetation. Structures including dwellings, rural sheds and outbuildings are dotted throughout the landscape, with the closest dwelling to the subject site being some 600m to the south.

In order to identify the visual impacts of a development, it is important to consider the existing landscape setting and the how the site is seen from different locations around it. This includes consideration of the existing topographic and hydrological features, vegetation and landforms and the land use pattern in the locality. These elements combine in different ways to create visual interest from various locations where the site is visible. Again, the significance of these viewing locations will depend on their distances from the project site and the degree of visibility.

The quarry site is located on the lower and mid river terraces in undulating terrain. Spur Hill in the north and Hunter River traversing the southern boundary form the two dominant landscape features in the vicinity of the subject site. The alluvial flats and terrace deposits along the meander of the river merge into the low vegetated hills in the background, isolating the quarry site from the north-bound Golden Highway and the rural properties to the east and west. An additional visual buffer to the west is provided by line of trees along the western boundary as shown in *Figure 6* below.



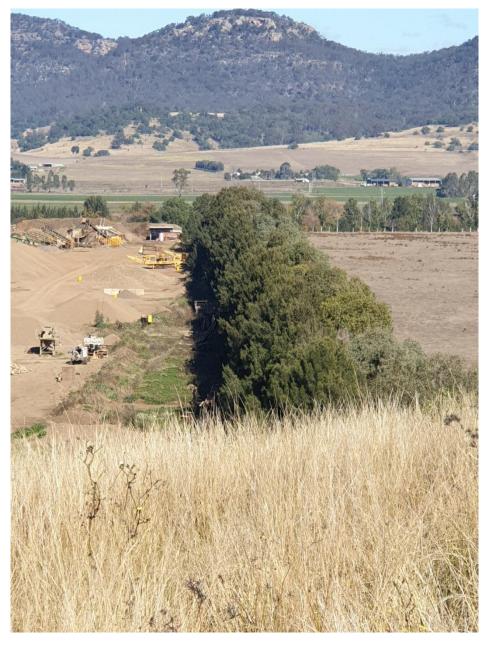


Figure 6: Western boundary looking south showing vegetation planting Source: HDB Town Planning & Design, June 2020

The quarry site itself is not a densely built-up environment and forms part of the existing landscape. All the above-ground structures including ATCO offices, sheds, machinery and stockpiles are situated within the processing area in the western part of the site. This area is screened off by a visual bund in the south and a line of trees along the western boundary as shown in *Figure 6* above. Earthworks outside this area comprises a flood levee bank to the south and a similar bund along the northern boundary for surface water management. Excavation and earthmoving equipment operating between these earth banks are of minor scale when compared to the broader views of the hill in the background.

The haul road to the quarry winds around Spur Hill at the southern end, close to the quarry entrance blocking off any direct views from Golden Highway.



The subject site in its current shape, scale and form is well integrated with the surrounding rural lands and undulating hills. There are no visually intrusive elements that affect the amenity of the area and hence the visual effect of the existing quarry is considered to be very low in the current landscape setting.

3.1 DESCRIPTION OF VISUAL COMPONENTS OF THE PROPOSED DEVELOPMENT

As the proposal is an extension to the existing quarry, the existing visual environment will not vary significantly except for the expansion of extraction area to the east. The existing location of the processing and stockpile area will remain and the only notable change with respect to the visual character is the increase in maximum stockpile heights to 6m. Another insignificant modification is the extension of stormwater management bund in the northern part of the site.

Expansion of the extraction footprint to the east will involve excavation machinery and dump trucks operating in this area, however, excavation will generally occur below ground level reducing their exposure to off-site receptors.

On the whole, the expansion of the excavation pit towards the east will not result in a perceivable change in the form, scale, contrast or colour or any other attributes that affect its visual quality. This implies a low visual effect from the proposal.

3.2 IDENTIFYING THE VISUAL CATCHMENT AND SENSITIVE RECEPTORS IN THE AREA

Visual catchment contains viewing points/locations where the various features of the site are expressed in terms of scale, form, contrast and colour, as part of the existing landscape. Identifying the sensitive receptors that are likely to experience any changes that occur in the landscape is an important step in assessing the visual impact from a development.

The undulating hills and vegetation along the western boundary and Hunter River create a visual barrier around the site limiting its visual catchment to the confines of Bureen Road and rural dwellings in its vicinity. Panoramic open flood plains and river terraces contrasted by the distant the hills form the primary view towards the quarry from these locations. These views are furthered filtered by the vegetation along the riverbank and the visual bund located to the south of the processing area.

Figure 7 shows the visual catchment of the site located between Hunter River and the mountain ranges of Martindale, from where distant views of the site are available. Bureen Road is the only public domain within the visual catchment bisecting it into two distinct parts. The northern side of the road is characterised by expansive alluvial flats interspersed with sparsely located farm buildings, scattered trees and a RFS (Rural Fire Service) building. This area provides additional visual buffer between the quarry and the identified sensitive receptors located across the road. Four homesteads namely, the Metulla, Bell Reve, Coolong and Craigston as shown in *Figure 8* are located on the southern side of Bureen Road at higher elevations of 10-20m above the





road level. These are the closest receptors to the site and are largely surrounded by managed landscaping which reduces direct views of the site across the flood plains.

Figure 7: Visual Catchment Area Source: HDB Town Planning & Design, June 2020

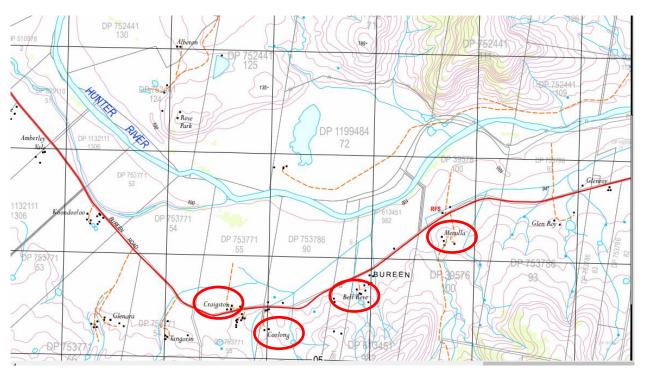


Figure 8: Location of Homesteads in Bureen *Source: HDB Town Planning & Design, June 2020*

Two important factors that affect the visual amenity of an area are the extent of change on the project site and the level of sensitivity of the receptors in its visual catchment. For example, a close receptor in direct view of a site is likely to be affected by minor changes and therefore considered to be highly sensitive as compared to a distant receptor. The visual sensitivity of a receptor depends on:



- Type of view whether it is direct or obscured;
- Distance from the project site The receptor is highly sensitive to a foreground object and the level of sensitivity decreases with the distance;
- Existence of the site in the visual context A site creating a high level of contrast and prominence will have a greater impact on the receptor than a low-key site; and
- Orientation of viewing location with respect to the project site The viewing points directly addressing the project site will have a high level of sensitivity.

A field investigation was undertaken on 30 June 2020 and the following observations are made in respect to the visual effect of the site and the sensitivity of the visual catchment:

- Due to the large distances in excess of 1km to the viewing points, the quarry is visible as a distant background feature.
- Spur Hill in the background is a visually dominant feature which significantly reduces the presence of the quarry site in the view frame.
- There are very few receptors in the visual catchment of the site, with Bureen Road being the only public domain
- Trees along the riverbank reduces the exposure of the site although some views are available through gaps in the vegetation assemblage.
- Due to the higher elevation of the homesteads, there will be partial views of the site over the floodplains. However, these are diminished by the large distance and the visually dominating farm buildings in the foreground and hills in the background.

All the sensitive receptors identified in the visual catchment are well separated from the quarry by the flood plains and vegetation along the river. As a result, the quarry site will always appear as an insignificant feature in the background, against a visually prominent Spur Hill, even from the most sensitive location in the visual catchment refer to *Figures 9 and 10*. The site is therefore considered to have very low visual sensitivity where small changes in the built environment cannot be easily perceived by the receptors in its vicinity. This is summarised in *Table 1* which describes the different receptors and the level of sensitivity. The distance of these receptors is measured from the processing area as it the only potential visually intrusive component of the project.





Figure 9: Filtered views of the quarry from Bureen Road Source: HDB Town Planning & Design, November 2018



Figure 10: Open views of the quarry from Burreen Road (Note: The Plant Site is barely visible in the foreground)
Source: HDB Town Planning & Design, November 2018



Sensitivity Identified Land use/ receptors	Distance from the southern boundary of the Subject Site	Description of views	Sensitivity
Bureen Road	570m	Open and filtered views of the distant Plant Site. View of the plant, stockpiles and machinery in the background is diminished by the hills and the distance from the viewing point. Vegetation along Hunter River acts as a natural visual buffer.	Low
Craigston Homestead	1.1km	Open and filtered views of the distant Plant Site. View of the plant, stockpiles and machinery in the background is diminished by the hills and the distance from the viewing point. Vegetation along Hunter River acts as a natural visual buffer.	Low
Coolong	1.2km	Open and filtered views of the distant Plant Site. View of the plant, stockpiles and machinery in the background is diminished by the hills and the distance from the viewing point. Vegetation along Hunter River acts as a natural visual buffer.	Low
Bell Reve	900m	Open and filtered views of the distant Plant Site. View of the plant, stockpiles and machinery in the background is diminished by the hills and the distance from the viewing point. Vegetation along Hunter River acts as a natural visual buffer.	Low



Metulla	730m	Open and filtered views of the	Low
		distant Plant Site. View of the	
		plant, stockpiles and machinery in	
		the background is diminished by	
		the hills and the distance from the	
		viewing point. Vegetation along	
		Hunter River acts as a natural	
		visual buffer.	

Table 1: Receptor Sensitivity Assessment

Source: HDB Town Planning & Design, June 2020

3.3 PLANNING ENVIRONMENT

The planning environment is described in the Environmental Impact Statement, but in summary the planning framework encourages sustainable resource extraction within and surrounding the Dalswinton area.



4.0 VISUAL IMPACTS

4.1 VISUAL CHANGES DUE TO PROPOSED DEVELOPMENT

The site currently contains no significant vegetation or visually prominent structures. The primary visual change will be an increase in the stockpiles and their size. The stockpiles will be limited to approximately 60,000 tonnes and 6 metres high at any given time during peak demand periods.

The proposed development is for the expansion of the quarry over a 25-year period, therefore the impacts on the visual landscape will be intermittent dependant on the demand for product.

4.2 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

The site is not in a critical coastal catchment or viewshed, but in a rural landscape broadly framed by a rural landscape, with Denman being the nearest residential area, some 7km to the north-west.

The impacts of the development are mitigated in large part by compliance with the planning controls for the site that have shaped the following:

- Stockpile amounts and heights that limit the amount of material to be stored onsite;
- Landscaping including mature trees which provide a visual relief along the western boundary of the site and the levee bank which also acts a visual buffer, refer *Figure 6* above; and
- Allowable setbacks from the boundary that provide a visual buffer.

The visual impact is a measure of the level of visual sensitivity at various receptors and public vantage points, as a result of the changes in natural and built forms from the proposal. Site modifications resulting from the development include:

- Increase in the stockpile height 6 metres;
- Expansion of excavation area to the east which will involve operation of excavator and dump truck which are below ground level for majority of the duration of works;
- Expansion of earth levee banks that merge into the hills in the background. Hence no additional skyline or contrast created from these earthworks.



5.0 CONCLUSION

The proposed development has appropriately managed and mitigated any visual impacts by:

- Landscaping, including retaining the existing planting along the western boundary;
- Limiting the stockpile heights to 6 metres; and
- The re-alignment and extension of the levee bank.

The proposal is similar to the existing uses on the site and is an expansion on the current development, therefore there is expected to be minimal visual impacts.

Additional works from the proposal are of an insignificant scale and form to be visible from the distant receptors. The view of the site in the background is further diminished by the visually dominant hills in its setting. The proposed works will be well integrated with the surrounding landforms without creating any contrasting elements that can be sensed at the viewing locations.

As demonstrated in *Table 1*, the identified receptors are well separated from the quarry site and they are located addressing the open farmland along Bureen. The site is only visible as a distant background object from the dwellings and vantage points on Bureen Road. The proposed changes in stockpile heights are insignificant when viewed from a distance. The site will still maintain a high level of visual integration with the surroundings, as with the current operations. Screening provided by the managed landscaping and vegetation along the riverbank reduces the site's contribution in the landscape attributes of the locality. In summary the site has very little influence on the visual amenity of the area due to the high visual absorption capacity of the topographical features in its vicinity and it will remain unchanged with the proposed development.

The development is considered to be consistent with zone objectives and outcomes of the Muswellbrook LEP 2009 and development controls that have been formulated to reinforce and deliver Council's scenic outcomes for the locality.



APPENDIX A

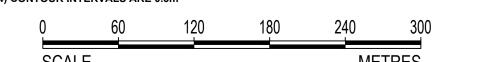
TOPOGRAPHIC SITE SURVEY PLAN





l	
	DALSWINTON SITE

SUBSTANTIAL DESIGN AND/OR CIVIL WORKS BEING UNDERTAKEN.
(2) TITLE BOUNDARIES ARE SUBJECT TO FINAL SURVEY CONFIRMATION
(3) PLAN IS ON MGA CO-ORDINATES & ORIENTATION AND HEIGHTS ARE BASED OFF AUSTRALIA
HEIGHT DATUM (A.H.D.)
 (4) CONTOUR INTERVALS ARE 0.5m



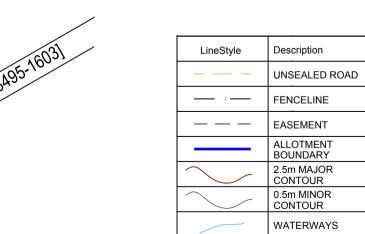
ROSEBROOK SAND & GRAVELS



LOCALITY

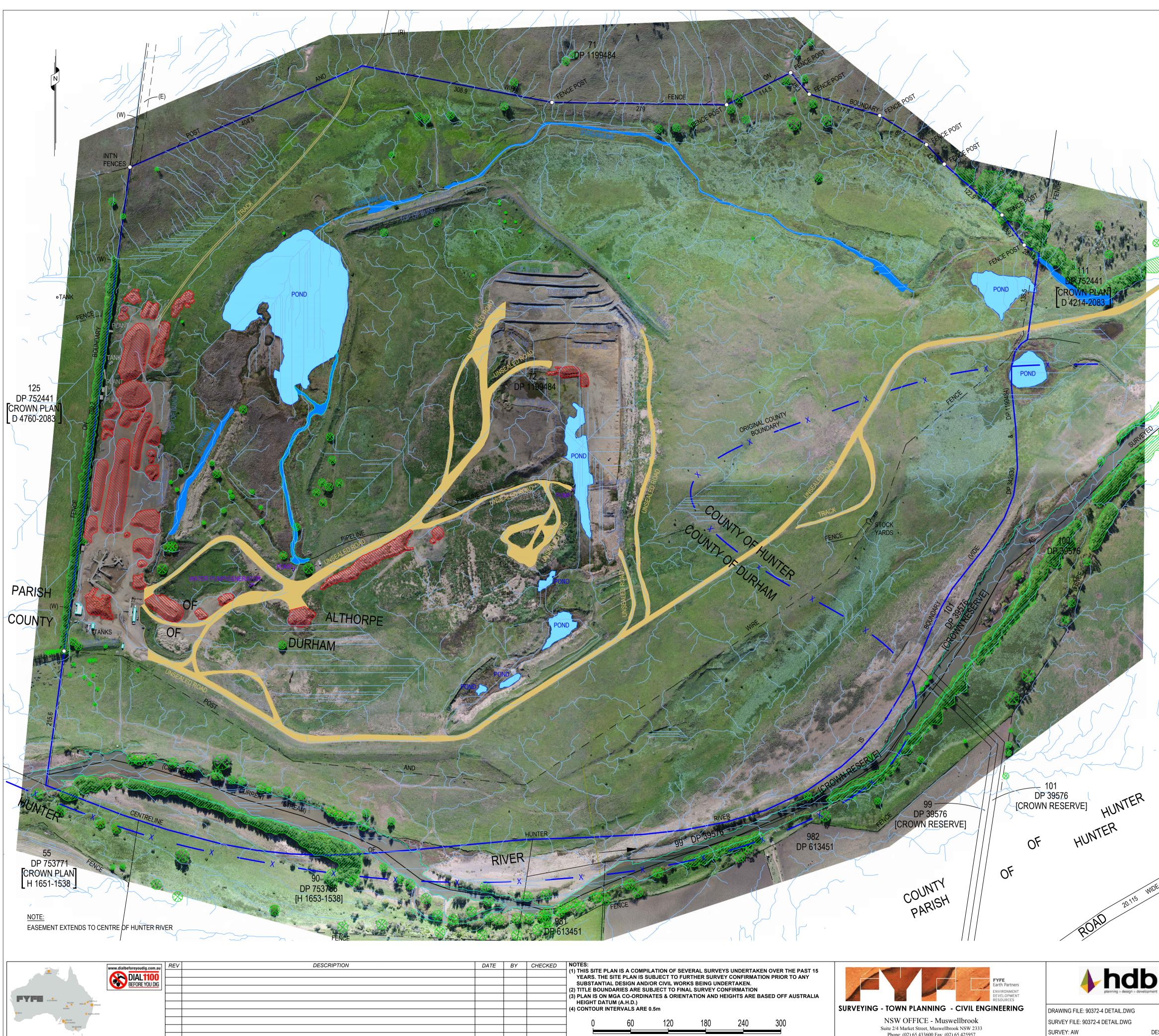
EASEMENTS (E) EASEMENT FOR ELECTRICITY & OTHER PURPOSES 15 WIDE (VIDE DP 1199484) (W) EASEMENT FOR WATER SUPPLY 3 WIDE (VIDE DP 1199484) (R) RIGHT OF CARRIAGEWAY OVER TRACK IN USE

	CONTENTS
SHEET	DESCRIPTION
1	SITE PLAN WITH CONTOURS
2	PHOTOGRAPHIC OVERLAY
3	PLOYGONS OVERLAY



	Symbol	Description
	\bigotimes	TREE
		TREE CLUSTER
		EXISTING STRUCTURES
		STOCK PILES
1		

	DALSWINTON SITE PLAN LOT 72 IN DP 1199484 DALSWINTON	Sheet No. 1 of 3 Sheets Job No. 90372-4 Plan No. 001
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DAI SWINTON SITE

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11/05/2017 KGH CZN

SCALE

METRES

NSW OFFICE - Muswellbrook Suite 2/4 Market Street, Muswellbrook NSW 2333 Phone: (02) 65 433600 Fax: (02) 65 425957 www.fyfe.com.au

DRAWN: KGH

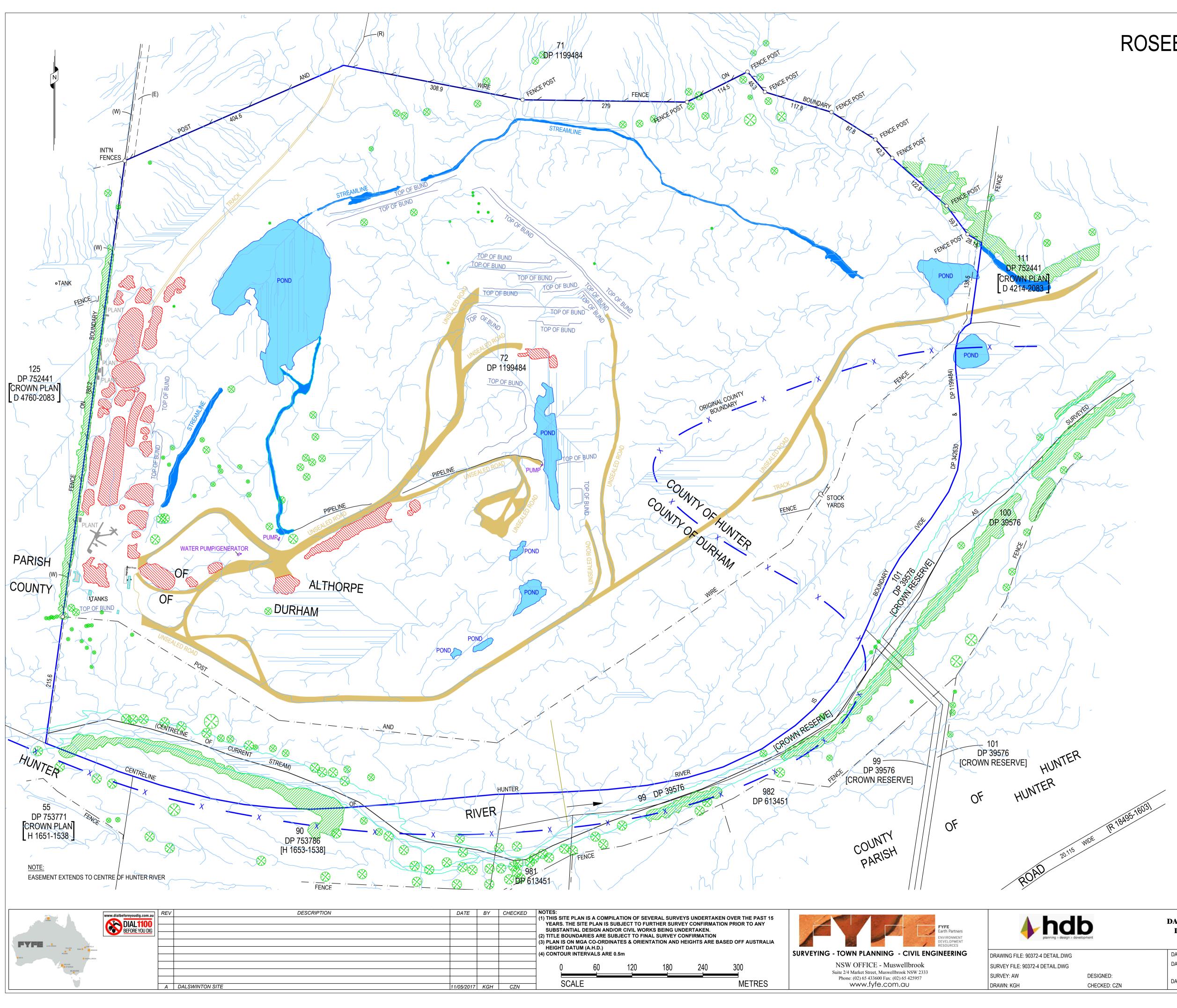
ROSEBROOK SAND & GRAVELS

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	CONTENTS
SHEET	DESCRIPTION
1	SITE PLAN WITH CONTOURS
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LineStyle	Description		Symbol	Description
	UNSEALED ROAD		\bigotimes	TREE
/	FENCELINE			TREE CLUSTER
	EASEMENT			EXISTING STRUCTURES
	ALLOTMENT BOUNDARY	ĺ		STOCK PILES
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	WATERWAYS			

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SHEET	DESCRIPTION
1	SITE PLAN WITH CONTOURS
2	PHOTOGRAPHIC OVERLAY
3	PLOYGONS OVERLAY

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LineStyle	Description	Symbol	Description
	UNSEALED ROAD	\bigotimes	TREE
/	FENCELINE		TREE CLUSTER
	EASEMENT		EXISTING STRUCTURES
	ALLOTMENT BOUNDARY		STOCK PILES
\sim	2.5m MAJOR CONTOUR		
$\overline{}$	0.5m MINOR CONTOUR		
	WATERWAYS		

1	DALSWINTON SITE PLAN LOT 72 IN DP 1199484 DALSWINTON	Sheet No. 3 of 3 Sheets Job No. 90372-4 Plan No. 001
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