



surveying engineering property development

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EARTHWORKS MANAGEMENT PLAN

SPRINGSTON ROLLESTON ROAD,
ROLLESTON

SURVUS CONSULTANTS

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1. Introduction

This Earthworks Management Plan has been prepared for the subject site in Springston Rolleston Road to set out the earthworks methodology to be followed in the development of the subdivision.

The earthworks involve road stripping and some cut to stockpile of subgrade material on site, which is currently being used for general pasture land. The total land area of the site is **15.9235** hectares.

Some earthworks will be required. There are no large-scale earthworks associated with this development. Generally, sections are to retain pre-development levels and grades where possible.

The proposed bulk earthworks plans can be found on plan 15124 EN-100 and EN-101.

2. Legal Description

Lot 2 DP DP 61162
RT CB38C/605

3. General Description of the Proposal

3.1 Earthworks

As noted above, the works are required to convert the current land use of pastoral to the developed use of residential subdivision.

Total earthworks quantities for the whole site are assessed as follows (solid measure):

Cut to fill	10,000m ³
Cut to stockpile on site	NIL
Imported fill from off-site	NIL
Cut to waste off-site	NIL
Topsoil cut to stockpile	30,000m ³
Topsoil to waste off-site	NIL

Contour. The topography of the existing site is generally sloping from north west to south east, with a height difference of approximately 2.2 metres between the two points. Currently the majority of the site comprises agricultural fields and pasture. There are no existing houses on the site, but there is an old garage and deer sheds.

Land / Soil Type. The shallow soil test results indicate the site is underlain by a near surface soil profile consisting of topsoil to depths of 0.2 – 0.4m bgl underlain by silt to depths of at least 0.5m bgl where tests were terminated upon inferred gravels.

It is noted that the groundwater is far in excess of 6m which will mean that groundwater is not contaminated during the earthworks process.

3.2 Construction phase stormwater Disposal

Stormwater generated on site will be retained on site. It is proposed that there will be no stormwater discharges off site. Soakpits are to be installed at nominal points (as shown on the roading plans), which will be protected by appropriate filter cloth/fabric to ensure that no silts or fines enter.

3.3 Environmental Effects and Mitigation Measures

The actual and potential effects of this development with respect to the environment relate to the following:

- a) Site development and dust control
- b) Site development and sediment trapping
- c) Construction Noise
- d) Impact on Ecosystems
- e) Diesel spillage from equipment, on site storage tanks or delivery tankers

3.4 Water Extraction and Dust Control

Dust will be mitigated by a combination of methods:

- a) Application of water to the working areas to maintain adequate moisture content within the surface soils
- b) Management procedures to control plant movements and stabilise the running surface over dry areas and to restrict them within the work site
- c) The excavation of cut areas in a staged manner to reduce the working area.

The areas that are of **critical importance** for dust control are:

- Working areas in topsoil, i.e. stripping.
- Shallow cut to fill from relatively fine material
- Haul roads, where the process of cutting and filling is not active and movement of construction traffic contributes to dust generation
- Finished cut and fill areas prior to being topsoiled
- Newly topsoiled areas prior to grass establishment

It will be crucial to have enough water available to cater for the sum total of these areas at any time during the contract. In this regard, the highest risk times during the contract will be at the completion of an area of bulk cut and/or fill, when haul routes are being used to spread potentially dry topsoil from stockpile over a completed cut/fill area.

By following the schedule of work above, the largest area that would be exposed to this operation at any time will be limited to less than 2 hectares. This will be quite controllable with standard water trucks.

For a 2.0 ha working area water demand for 5-millimetre per day coverage equates to 100 m³ per day which can be accommodated easily by a single 12000 litre water tanker.

3.5 Dust Control Methodology

It is envisaged that the application of water during the working day will be by water cart. Water supply will be based from a water take off source, with the approval of SDC.

3.6 Sediment Trapping

As per the Erosion and Sediment Control Plan attached, construction-phase silts will be stopped from leaving the site via silt fences around the perimeter of the site where appropriate. Due to the topology of the site it is envisaged that the majority of stormwater will be contained on site.

All vehicles entering and leaving the site will pass via one of two site entries/exits with rock apron pads to prevent soil from truck tyres tracking off-site.

Topsoil stockpiles will be surrounded by a silt fence to prevent runoff outside stockpile area.

3.7 Construction Issues

Construction noise will be short term and typical of a confined earthworks operation. Mitigation measures to be undertaken in respect of construction noise will be in the form of defined hours of site operation, with noise not exceeding 90 dB measured at the nearest boundary.

Proposed work hours will be:

- a) 7.00 am to 6.00 pm Monday to Friday
- b) 8.00 am to 6.00 pm Saturday
- c) No work Sundays and Public Holidays.
- d) Unplanned emergency work would take place as and when required outside of these hours.

Construction noise will comply with the requirements of NZS 6803:1999.

3.8 Impact on Ecosystem

The site is currently pastoral land. Although the proposed development is expected to contribute to further change in the landscape character, there is no evidence to suggest that this will contribute to the disturbance or loss of any significant ecosystem.

The site is currently used for raising stock.

3.9 Diesel Containment.

During construction, the earthmoving machinery working the site will be fuelled either direct from diesel tankers, mobile tanks (towed) or possibly from static diesel storage tanks sited at strategic locations within the site. All tanks (static or mobile) will be fitted with :-

- Dry break couplings to minimise drips
- Over-fill prevention devices
- Catch trays under connection points
- Spill kits available and instruction on how to use
- Padlocks on valves
- Staff training to include spill response procedure and reporting

4. Consultation

4.1 Selwyn District Council

Communication with the Selwyn District Council is to be regular and ongoing through the continued development of the site. During this process the Council has been advised of the proposal to carry out earthworks and roading on this site.

4.2 Iwi Consultation

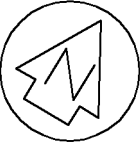
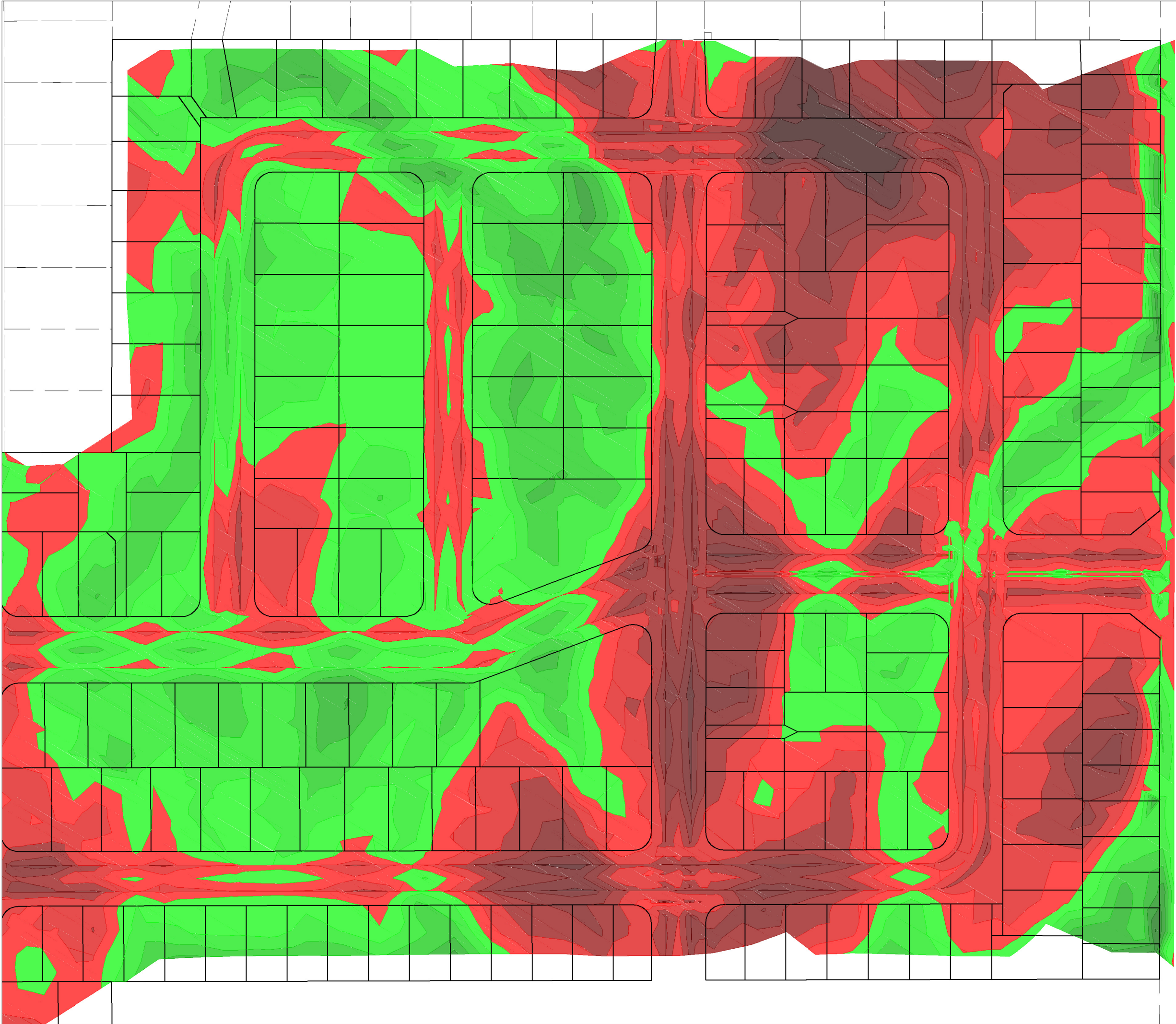
No Iwi consultation has been undertaken at this point. Te Rūnanga o Ngai Tahu will be informed if any human skeletal remains or artefacts are found.

4.3 Affected Parties

There are no other parties considered to be affected as a result of this application.

5. Conclusion

Implementation of the above procedures should ensure that all the requirements of the Canterbury Regional Council and Selwyn District Council resource consents for earthworks/roading for the site are comfortably met or exceeded.



LEGEND:
CUT / FILL DEPTH BANDS

- CUT -0.40m to -0.50m UNDERCUT AREA
- CUT -0.30m to -0.40m UNDERCUT AREA
- CUT -0.20m to -0.30m UNDERCUT AREA
- CUT -0.10m to -0.20m UNDERCUT AREA
- CUT -0.00m to -0.10m UNDERCUT AREA
- FILL 0.00m to 0.10m TOPSOIL RESHAPE
- FILL 0.10m to 0.20m NON ENGINEERED FILL
- FILL 0.20m to 0.30m ENGINEERED FILL
- FILL 0.30m to 0.40m ENGINEERED FILL
- FILL 0.40m to 0.50m ENGINEERED FILL
- FILL 0.50m to 0.60m ENGINEERED FILL
- ENGINEERED FILL AREA

NOTES:

- DEPTH BANDING SHOWS A CUT/FILL FROM EXISTING SURFACE TO FINISHED LEVEL IN LOT AREAS.

REV	DATE	REVISION DETAILS	ISSUED
1	30/09/22	FOR INFORMATION	CWH

PROJECT

HARROW GREEN

CLIENT

KEVLER DEVELOPMENT

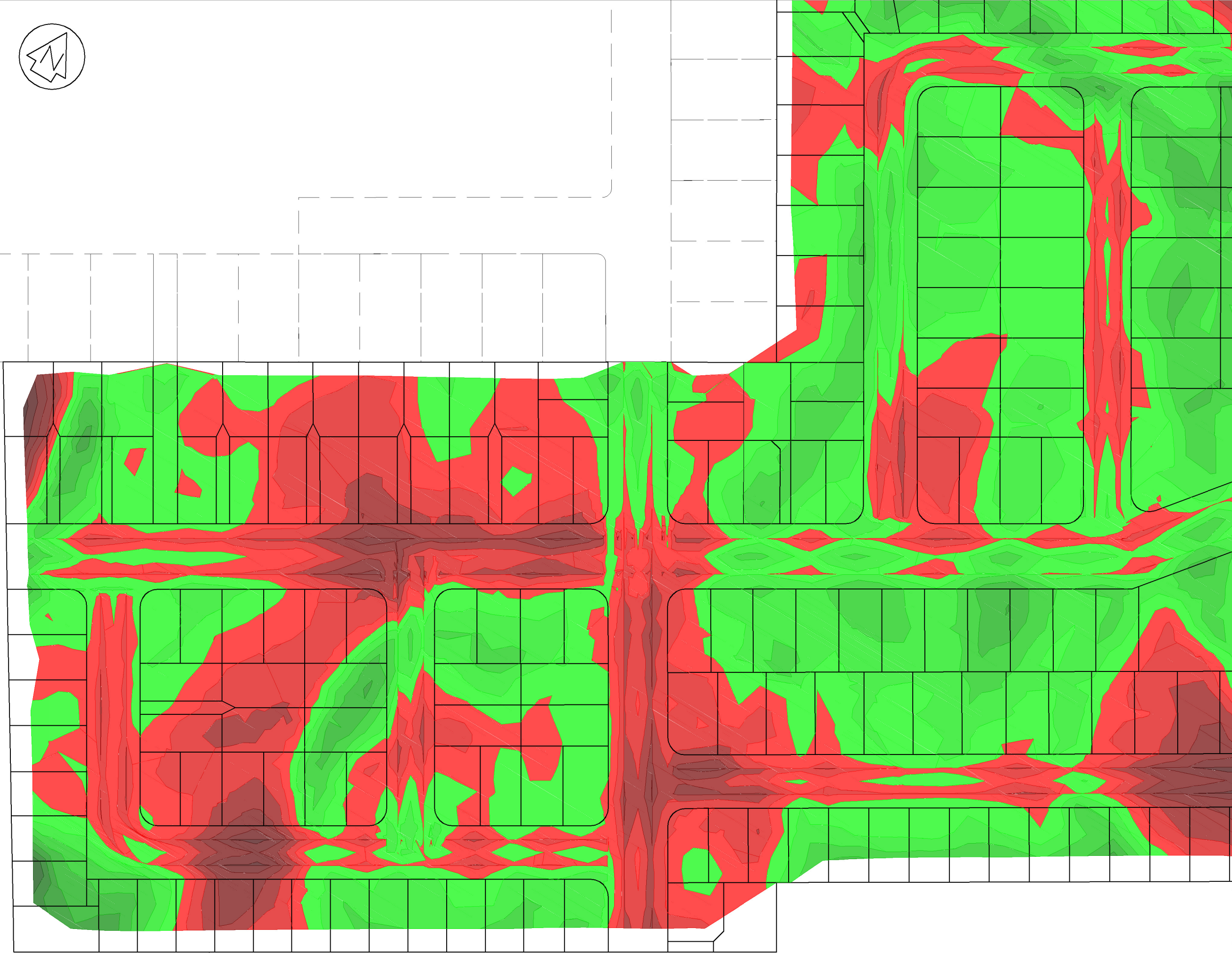
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DRAWING TITLE

BULK EARTHWORKS
SHEET 1 OF 2

STATUS	SCALE	SIZE
FOR INFORMATION	1:600	A1
PROJECT NO	DRAWING NO	REVISION
15124	EN-100	A



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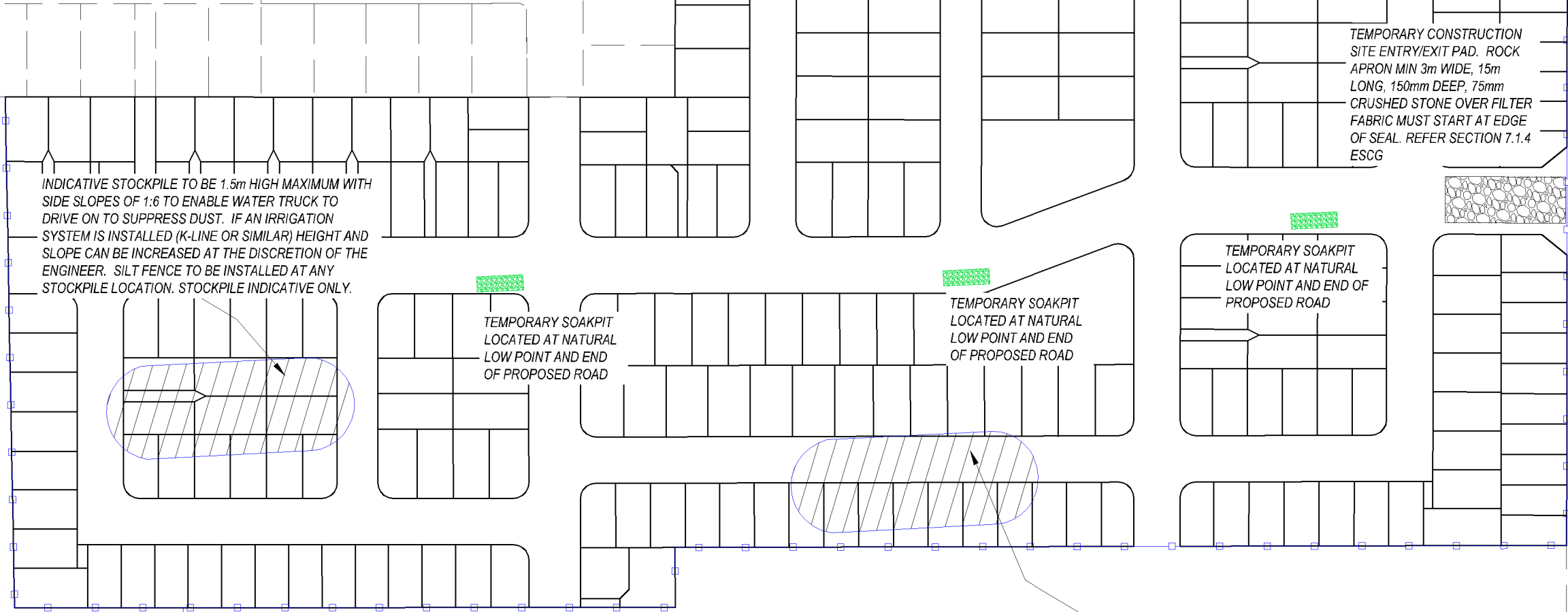
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DRAWING TITLE

BULK EARTHWORKS
SHEET 2 OF 2

STATUS	SCALE	SIZE
FOR INFORMATION	1:600	A1
PROJECT NO	DRAWING NO	REVISION
15124	EN-101	A

- NOTES:
- 1. TOPSOIL STOCKPILES ARE CONCEPTUAL ONLY.
 - 2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND INSPECTED BY ENGINEER/LOCAL AUTHORITY PRIOR TO COMMENCING EARTHWORKS.
 - 3. ALL SURFACES SHALL BE STABILISED ONCE EARTHWORKS ARE COMPLETE.
 - 4. ANY STOCKPILE OF MATERIAL ONSITE SHOULD BE COVERED TO MINIMISE LOSSES AND NOT BE LOCATED IN OVERLAND FLOW PATHS OR SITE LOW POINTS.
 - 5. ALL RUBBISH, VEGETATION, DEBRIS ETC SHOULD BE REMOVED FROM THE EARTHWORKS AREA AND DISPOSED OFF SITE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF TOPSOIL STRIPPING.
 - 6. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE OPERATIONAL PRIOR TO ANY OTHER WORK COMMENCING ON SITE. THE CONTRACTOR SHALL ARRANGE FOR AND ATTEND A PRELIMINARY SEDIMENT CONTROL MEETING ON-SITE WITH THE ENGINEER AND SELWYN COUNCIL'S REPRESENTATIVE.
 - 7. THE CONTRACTOR SHALL ENSURE COUNCIL BEST MANAGEMENT PRACTICES ARE IN PLACE DURING THE CONSTRUCTION PERIOD OF THE DEVELOPMENT, INCLUDING AT SITE ENTRANCES AND EXITS, TO CONTROL ALL DUST, SILT, MUD AND SEDIMENT GENERATED BY THE WORKS AS TO NOT DISCHARGE FROM THE SITE OR ENTER A WATER BODY.
 - 8. FURTHER SEDIMENT CONTROL MAYBE REQUIRED BY THE ENGINEER AS THE PROJECT ADVANCES. THESE WILL BE INSTALLED AS AND WHERE DIRECTED BY THE ENGINEER. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT THE SITE HAS EFFECTIVE SILT DETENTION FACILITIES OPERATING AT ALL TIMES.
 - 9. ALL SEDIMENT AND EROSION CONTROL FEATURES SHALL BE IN ACCORDANCE WITH ENVIRONMENT CANTEBURY'S EROSION AND SEDIMENT CONTROL GUIDELINES 2007 (ESCG)



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DRAWING TITLE

EROSION SEDIMENT CONTROL PLAN
SHEET 1 OF 1

STATUS	SCALE	SIZE
FOR INFORMATION	1:600	A1

PROJECT NO	DRAWING NO	REVISION
15124	EN-101	A