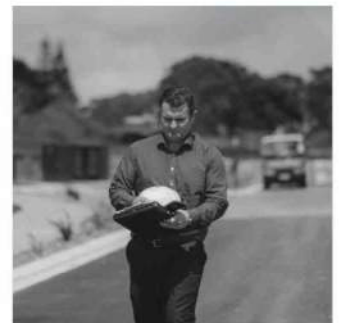


EROSION AND SEDIMENT CONTROL PLAN

Kapuni Green Hydrogen Project

for Hiringa Energy Limited and Ballance
Agri-Nutrients Limited

Rev A1 - 08/07/2021



Kapuni Green Hydrogen Project

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Agri-Nutrients Limited

Reviewed

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191149
Rev A1 - 08/07/2021

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1 INTRODUCTION

BTW Company Limited (BTW) has been engaged by Hiringa Energy Limited ('Hiringa') to prepare an erosion and sediment control plan (ESCP) for its proposed green hydrogen project ('the project') at Kapuni, South Taranaki. The project includes construction of four wind turbines on a farm located at 271 – 359 Kokiri Road, Kapuni ('the Wind Turbine Site') and installation of an electrolyser, electricity substation, hydrogen pipeline, refuelling station and hydrogen storage and offtake facilities at the Ballance Agri-Nutrients Ammonia Urea Plant, 309 Palmer Road, Kapuni ('the Ballance Plant'). Additionally, a power cable will connect the Wind Turbine Site with the facilities at the Ballance Plant.

The purpose of the ESCP is to minimise the actual and potential adverse effects of erosion and sedimentation associated with the project earthworks. The ESCP supports the application for resource consents for the project.

1.1.1 Location

The location of the project is identified in (Figure 1.1) below. The Wind Turbine Site is currently a series of grassed paddocks traversed by tributaries of the Kapuni and Waikoura Streams. At the Ballance Plant the development area is also a series of grassed paddocks that are used for irrigation of wastewater associated with the operation of the Ballance Plant. Land proposed for the installation of the power cable is a mix of grassed paddocks and road reserve. The bulk of the project earthworks will occur at the Wind Turbine Site.

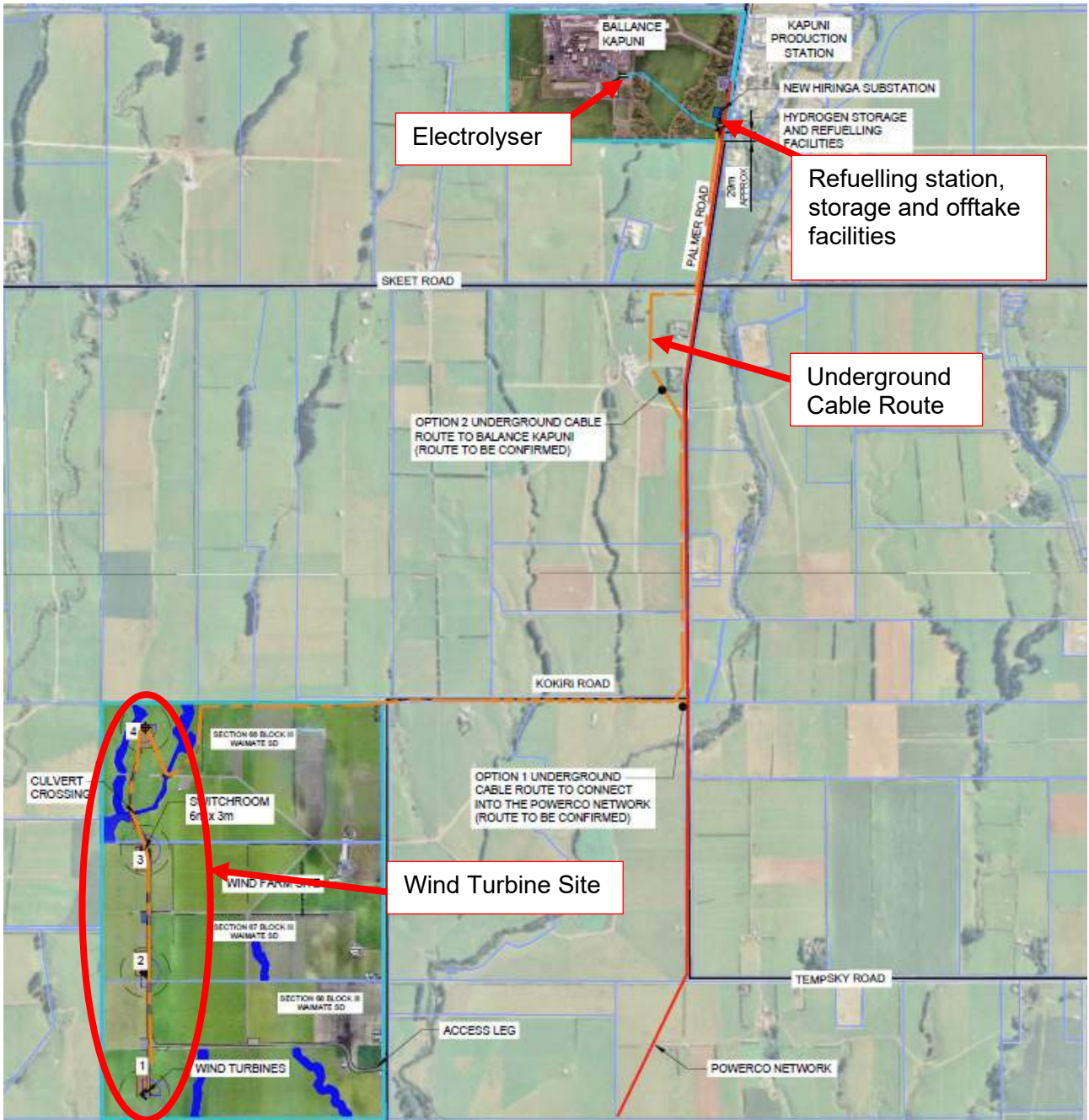


Figure 1.1: Location plan at Kapuni (Extract from BTW Drawing 191149-07)

2 EROSION, STORMWATER AND SEDIMENT CONTROL PLANNING

This ESCP is intended to ensure that Hiringa Energy's construction contractor/s avoid or minimise the adverse effects of erosion and sediment due to the earthworks associated with the construction of the project. The specific project earthworks are outlined in Section 2.6.

2.1 Objectives

The erosion and sediment control objectives of the civil construction contractor/s, as detailed within this plan, include:

- Avoiding or minimising adverse environmental effects related to erosion and sedimentation throughout the duration of the construction works.
- Providing guidance to the greater project team, including staff responsible for site works, on how to avoid or minimise such effects.
- Ensuring compliance with resource consent conditions.
- Ensuring compliance with applicable local and national laws and regulations.

2.2 Strategy

To meet the objectives defined in Section 2.1, the civil construction contractor/s will:

- Use current best practice including training and awareness.
- Use planning of site activities with awareness of avoiding or minimising adverse erosion and sediment effects.
- Place emphasis on erosion control as a primary approach to minimise sediment generation.
- Incorporate stormwater control into erosion and sediment control.
- Use pro-active installation, management, monitoring and improvement (if required) of erosion and sediment control for each specific site.

2.3 Factors considered

As part of the ongoing construction work, the following factors have been considered:

- Climate including season, local rainfall and regular rainfall events.
- Local topography including the slope and scope of planned activities.
- Soil type and characteristics.
- Extent of planned works.

2.4 Site information

Wind turbine site

The proposed development area at the Wind Turbine Site is generally located on gently sloping land (1.5%) dominated by the radial drainage of the Taranaki Volcanic Succession. Areas with steeper slopes are generally close to or part of the waterways as shown in Figure 2.1.



Figure 2.2: Areas of proposed work – Hydrogen Storage and Refuelling Facilities Palmer Road

Cable route

The proposed underground cable route options follow routes that go cross country and also within road reserve. The detailed cable route is shown within Appendix B. The cable route crosses streams by either underboring or trenching above existing culverts – thereby avoiding or minimising adverse effects on waterbodies.

2.4.1 Overland flow

The Wind Turbine Site has a general fall towards the southwest and south where the waterways direct runoff towards the western and southern boundaries. The northern/western half of the site drains to the Waiokura stream, and eastern/southern half to the Kapuni Stream, Figure 2.1.

2.5 Soil conditions

The anticipated ground conditions at the wind turbine locations, based on published geology and site investigations completed at the nearby Ballance Agri-Nutrient’s site, are Taranaki Brown Ash, of approximately 2-5 m thickness, overlying lahar deposits, either the Opunake Formation (debris flow deposits) or the Stratford Formation (debris avalanche deposits). Taranaki Ash is a composite record of 228 tephra layers (volcanic ash) which has been erupted from Mt Taranaki over the past 30 000 years. The ash showers have been weathered to form fine grained silt and clay soils.

These deeper soil units comprise as follows:

- The Opunake Formation comprises of andesitic conglomerates, sandstone breccia, buried forests, tuff, bedded sand, peat and silt lenses. This unit was formed as a result of a debris flow from the Egmont Volcano during its constructional phase approximately 31,700 to 35,600 years ago.
- The Stratford Formation has been mapped as comprising andesite blocks bound in a clay-rich matrix, interbedded with debris-hyper concentrated flow deposits.

2.6 Extent of planned works

The proposed work includes the construction of:

- The Wind Turbine Site (Figure 2.3 and Appendix C)
 - Access road
 - New culvert crossing
 - Turbine foundations
 - Turbine erection and rigging areas (crane pads and laydowns).
- The Hydrogen Storage and Refuelling Facilities (Figure 2.2)
- Underground Cable trench from the Wind Turbine Site to the Ballance Plant (Figure 1.1)

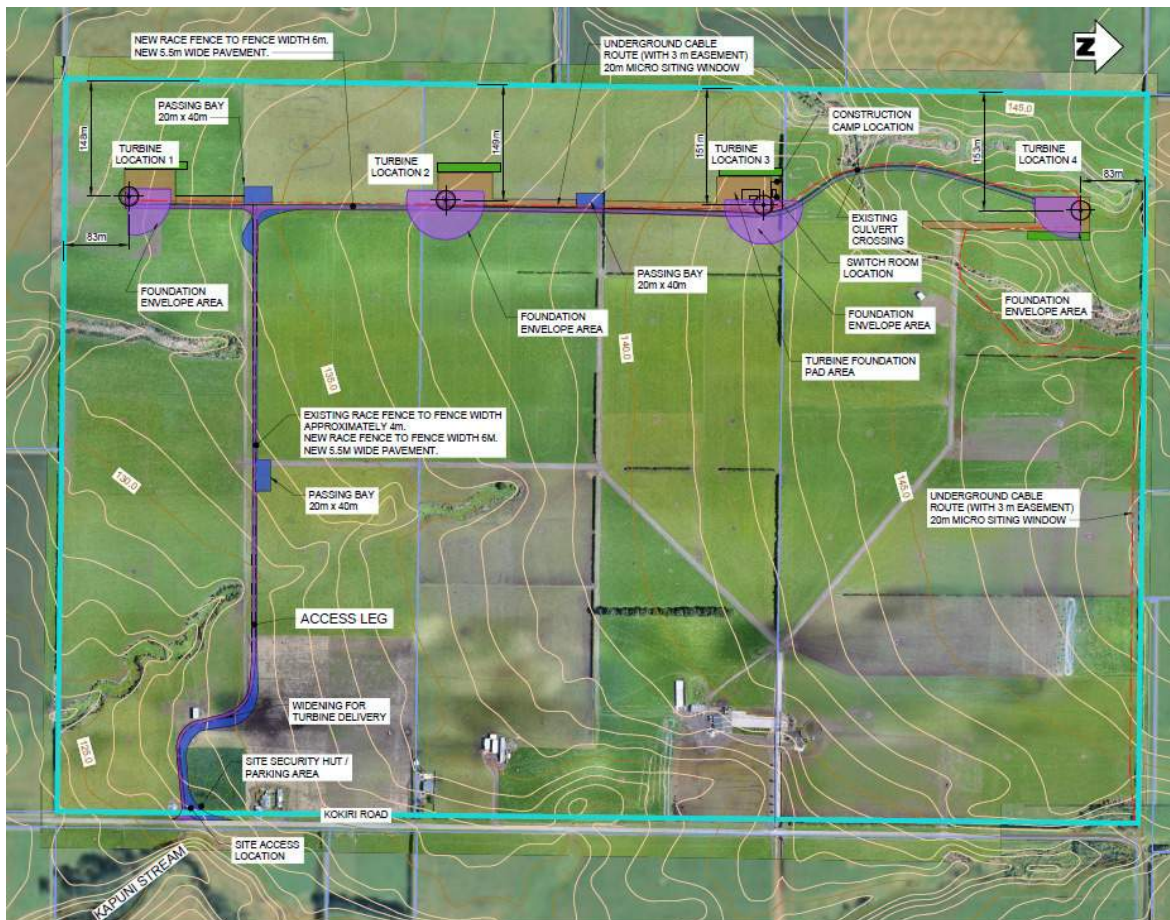


Figure 2.3: Areas of proposed work – Wind Turbine Site

2.6.1 Staging

For the Wind Turbine site, the work will be undertaken in stages, whereby the access roads and culvert crossings are constructed first, followed by the construction of the turbine foundations, and ultimately formation of the turbine assembly areas (gravelled laydowns and cranepads), Figure 2.3. All work related to roads will be constructed in the first instance, and each turbine foundation will be progressively constructed one by one commencing at the northern end of the site.

The construction of the Hydrogen Storage and Refuelling Facilities and installation of the underground cable to the Ballance Plant will be undertaken independent of the wind turbine construction timing.

3 CONTROL MEASURES

Control measures for the project are listed within this section, with further detail listed in Appendix A. Specific locations of control measures are shown in Appendix C.

The erosion and sediment control measures have been designed in accordance with the following guidelines which is considered to be best practice for earthworks in the Taranaki Region.

- Erosion & sediment control Guidelines for Soil Disturbing Activities January 2009, Waikato Regional Council.

At the time of this ESCP, the detailed design has not been completed, and therefore final sites for disposal of excess fill material from the turbine foundation work have not been selected. (Until detailed design is completed, the need for undercut and creation of excess material requiring disposal offsite cannot be confirmed). Should excess material be created from the site works, the ESCP will be updated including control measures and earthworks design for the dump area. It is expected that this will be on an PKW owner site within 20 km (or thereabouts) from the turbine site. This will be undertaken in discussion with the Taranaki Regional Council and be undertaken with their review and approval of the ESCP for the additional dump area.

3.1 Preparation

Prior to any physical works commencing:

- All vegetation and natural surfaces will be identified and retained where possible. This will be achieved by marking areas not to be disturbed.
- Slopes (to be disturbed) greater than 25% gradient will be identified, and a decision will be made as to whether special treatment for their protection is required.
- Control measures including stormwater control, silt catchment and surface preparation will be installed, as per Section 3.2.

3.2 Construction of erosion and sedimentation control measures

Prior to the commencement of bulk civil works, control measures will be implemented as per this plan (Refer to Appendix C). Specific measures have not been shown on the plan for the Hydrogen Storage and Refuelling Facilities works (including electrolyser) – given the contained site, and specific nature of the works these will be confirmed with the physical works contractor (not yet appointed) and TRC prior to commencement of physical works.

Control measures will be installed for the duration of construction activities.

Typical measures will include, but will not be limited to:

- Erosion control
 - Stormwater diversion channels (cut-off drains and/or bunding to divert upslope stormwater away from the disturbed ground).
- Sediment control
 - Silt fences.
 - Decanting Earth bunds.

- Stormwater diversion channels (cut-off drains and/or bunding to direct sediment laden stormwater towards decanting earth bunds).
- Diversion dam bund and diversion channel.

Control measures that may be utilised are listed in Appendix A. Plans showing the indicative location of control measures for this site are located in Appendix C.

3.3 Culvert installation

A new culvert is proposed for the turbine site access track. The ESCP and culvert drawings include details on these required steps, including control measures.

3.4 Stabilising disturbed ground

Upon the completion of the earthworks, these areas will be stabilised with gravel pavement layers. The disturbed ground outside of these areas, including any disposal areas, will be stabilised by revegetating the ground as soon as practical.

3.5 Dewatering

The likely extents of the foundations for the wind turbines are likely to encounter groundwater due to the depth of the excavation, Figure 3.1.

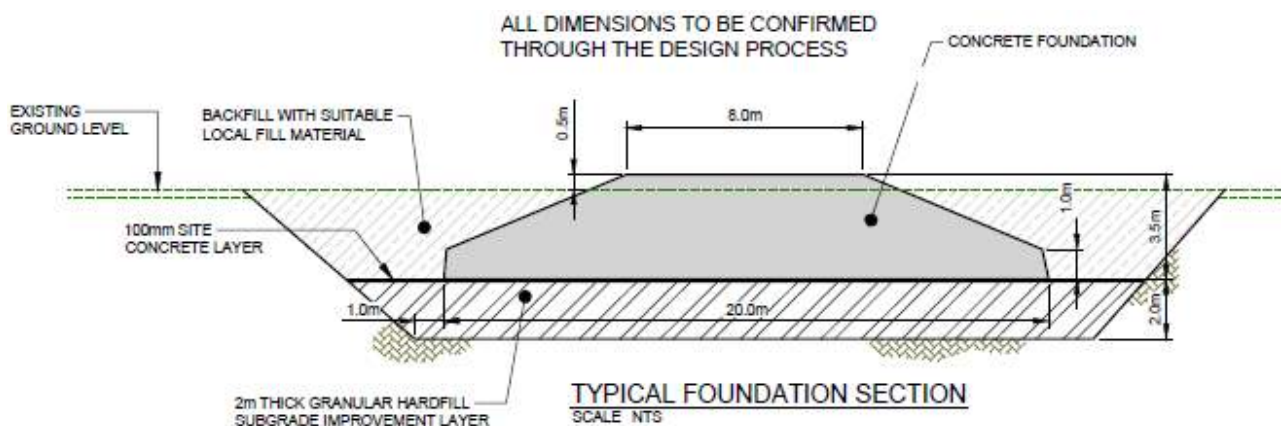


Figure 3.1: Likely foundation design (based off current known information)

The quantum and depth of groundwater will vary and depend on final timing of the excavation works, noting that the summer months will typically have lower ground water levels and therefore less expected quantities of groundwater that will intercept the works. At the time of writing this plan, specific design and investigation has not been completed (nor appointment of a physical works contractor), and therefore general guidance is provided here (only). Groundwater is not expected in cable/duct trenching or road construction.

Where the presence of groundwater is excessive and hinders or prevents subsurface works, dewatering of the excavation will be required. This may involve, but not be limited to:

- Sumps
- Dewatering wells
- Well pointing

The water discharge from any dewatering will be treated to avoid or mitigate adverse effects from discharge of suspended solids.

The dewatering system will be designed and planned to minimise loss of fines from in-situ soils and avoid ground settlement.

The treatment system of the water discharge will be planned to avoid or minimise adverse effects on waterbodies and may include discharge to land or water depending on the water quality and quantity of the discharge water.

Treatment may include, but not be limited to:

- Settling tanks or ponds
- Filtering through vegetation
- Sediment control bag / flocc sock

Specific planning will be undertaken as part of the detailed design for the site works, when more parameters are known.

3.6 Dust management

3.6.1 Site cleanliness

All roads are kept clean and tidy, and a stabilised site entrance and exit will be utilised. Road and access cleanliness must be monitored frequently to ensure off-site sediment dispersal is not occurring.

With the Electrolyser and refuelling works at the Ballance site, adjacent sites are not to be used for any purpose relating to the excavation, storage, loading or transportation of any excavated soils from site under any circumstances.

If soil is tracked off the site, it will be removed from the roadway using a street sweeper or similar.

3.6.2 Control measures

Should dry and/or windy conditions prevail, the following controls shall be put into place to minimise dust generation and off-site dust discharges.

Weather forecasting shall be used to determine potential for dusty conditions. High temperatures and strong winds shall be used as indicators.

Visible dust shall be adopted as a means of determining when dust suppression is required.

Dust shall be minimised by maintaining damp conditions of the earthworks area and if required a dust suppressant shall be used. The civil earthworks contractor shall provide a hose/watercart to suppress isolated dust around soil disturbance activities, however, if dust becomes a site wide issue it shall be mitigated by water truck.

It is the responsibility of the contractor/site supervisor to monitor water usage so that excessive usage does not generate stormwater runoff that requires collection and treatment.

Should the dust mitigation measures described above prove unsuccessful in keeping dust from becoming airborne, all works must stop immediately until conditions improve.

3.6.3 Inspection

Daily inspections of ESC measures and dust will be conducted (and documented) when works are being undertaken during development. This responsibility will be the lead earthworks contractor.

3.7 Maintenance and monitoring of erosion and sedimentation control measures

During the site works, including bulk earthworks and establishment, control measures will be inspected and, if required, maintained daily.

Inspection and maintenance will continue at suitable intervals after completion of the site works, including after significant rainfall events.

3.7.1 Runoff diversion channels / bunds and contour drains

Maintenance of diversion channels / bunds will include (as a minimum):

- Repair as required as identified by inspection.
- Removal of any accumulated sediment.
- Outlet maintenance including scour and sediment build-up.

3.7.2 Decanting earth bunds

Maintenance of earth bunds will include clearing of sediment and other debris from behind check dams whenever the build-up is 50% of the height of the dam.

3.7.3 Cut off drains

Maintenance of cut-off drains consists of clearing silt / debris. Periodic rehabilitation will be done by machine to re-form the shape.

3.7.4 Silt fences

Sediment and other debris will be removed when build up is noticed during routine inspection and will not exceed 50% depth of the fence.

Silt fences shall only be removed after the ground is stabilised.

3.8 Reinstatement and revegetation

Reinstatement and revegetation will be undertaken at the earliest opportunity and will not await the completion of all other works on site, provided that the revegetation will not be affected by future construction works and/or weather conditions.

Temporary erosion and sediment controls, such as the diversion channels and sediment fences, will be removed only after vegetation has established and the soil stabilised.

4 SITE CONSTRUCTION

4.1 Sequence and methodology of works

4.1.1 Wind Turbine Site

The construction sequence will include:

1. Stage 1 Access road and culvert
 - Site set out including establishment of erosion and sediment control measures (as described in Appendix A).
 - ◆ Form stabilised site entrance.
 - ◆ Construct diversion bunds.
 - ◆ Install Decanting Earth Bunds.
 - Strip topsoil and stockpile for reuse during reinstatement and spreading over paddocks.
 - Earthworks including cut to fill/dump to form access road.
 - Culvert installation (Perennial watercourse)
 - ◆ Construct diversion channel.
 - ◆ Install diversion berm bund upstream and downstream of works.
 - ◆ Install culvert structure including backfill.
 - ◆ Remove downstream bund first allowing stream water to backflow.
 - ◆ Remove upstream bund with minimal disturbance.
 - Completion of access road placing and compacting hardfill layers.
 - Reinstatement of any disturbed areas with stockpiled topsoil and seeding upon completion (reinstate each section before commencing new work).
2. Stage 2 Turbine foundation construction
 - Site set out including establishment of erosion and sediment control measures (as described in Appendix A).
 - ◆ Construct diversion bunds.
 - ◆ Install Decanting Earth Bunds
 - Strip topsoil and stockpile for reuse during reinstatement and spreading over paddocks.
 - Earthworks
 - ◆ Determine need for dewatering. Establish equipment and controls (if required)
 - ◆ cut to stockpile
 - ◆ cut to dump
 - ◆ stockpile to fill (after foundation constructed)
 - Reinstatement with stockpiled topsoil and seeding upon completion (reinstate each section before commencing new work).

3. Stage 3 Turbine Crane Pad and Laydown Area

- Site set out including establishment of erosion and sediment control measures (as described in Appendix A)
 - ◆ Install silt fence along the perimeter of the rigging area.
- Strip topsoil and stockpile for reuse during reinstatement and spreading over paddocks.
- Completion of foundation area placing and compacting hardfill layers.
- Reinstatement of disturbed ground about the site and hydro-seeding / mulching / grassing upon completion.

4.1.2 Palmer Road Hydrogen Storage and Refuelling Facilities

The sequence for the installation of the Hydrogen Storage and Refuelling Facilities at the Ballance Plant will generally be:

- Site set out including establishment of erosion and sediment control measures (as described in Appendix A).
 - ◆ Form stabilised site entrance.
 - ◆ Construct diversion bunds.
 - ◆ Install Decanting Earth Bunds.
- Strip topsoil and stockpile for reuse during reinstatement and spreading over paddocks.
- Earthworks including cut to fill/dump as required.
- Completion of works by placing and compacting hardfill layers.
- Reinstatement of any disturbed areas with stockpiled topsoil and seeding upon completion (reinstate each section before commencing new work).

4.1.3 Underground Power Cable and pipeline trenches

The installation of the power cable will generally involve:

- Site set out including establishment of erosion and sediment control measures (as described in Appendix A).
- Trench to stockpile for reuse during reinstatement
- Completion of works by placement of cable/pipe and backfill
- Reinstatement of any disturbed areas and seeding in paddock areas upon completion (reinstate each section before commencing new work).

Generally, only as much trench that can receive a length of cable or pipe in a given day will be opened and backfilled within the same day.

5 MONITORING

5.1 Regular inspection

To check the effectiveness of the erosion and sediment control measures, in addition to the maintenance inspections indicated in Section 3.7, inspections will be undertaken weekly, and before and after each storm event (forecast sustained rain or heavy rain warning) and recorded on check sheets referenced to the current ESCP site plan.

5.2 Planning review, feedback and improvement

5.2.1 *Initial review prior to construction – contractor engagement*

This ESCP in its current form has been prepared prior to engagement of a physical works contractor. One of the first reviews and updates will occur prior to implementation, when a suitably qualified contractor is appointed, and finer details and methodology (including staging) will be integrated into this plan. This iteration will be discussed and agreed with the TRC which is standard practice for consented earthworks in the Taranaki Region.

5.2.2 *Review during works*

Where planned or unplanned inspections identify any areas of deficiency or potential areas in need of improvement, the Contractor will undertake all general maintenance and minor improvements immediately. Where the inspections identify that additional erosion and sediment control measures are required, the Contractor will review the changing site conditions with the Site Engineer and site-specific improvements will be implemented in a timely manner.

Changes made to the erosion and sediment control measures will be captured with a revision to the site ESCP lay-out plan.

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Goldman SJ. Jackson K. Bursztynsky T. 1986. Erosion Sediment Control Handbook. McGraw Hill

Miline JDG. Clayden B. Singleton PL. Wilson AD. 1995. Soil Description Handbook (Revised edition). Manaaki Whenua Press. Lincoln. 157 p

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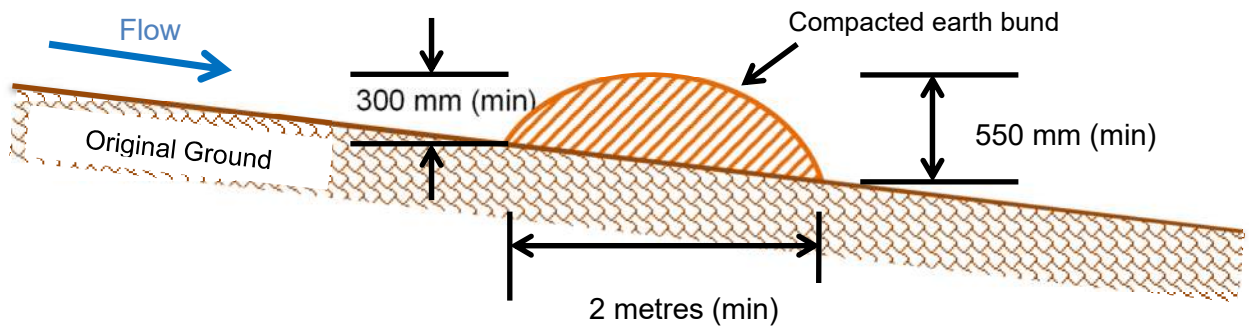
APPENDIX A CONTROL MEASURES

This appendix lists potential erosion and sediment controls. Actual controls used are shown in the ESCP, Appendix C.

A.1 Erosion control

Immediately above areas of significant earthworks (> 500 m²), where possible diversion channels / bunds will be installed to direct clean water away from the cut slope to prevent erosion and sediment runoff.

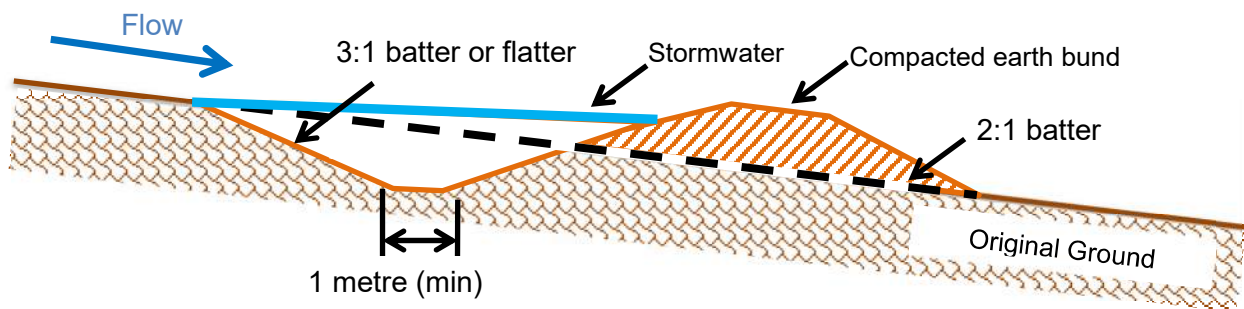
A.1.1 Diversion bund



- NB. 1. Soil to form bund to be taken from disturbed area.
- 2. Vegetation in undisturbed area to remain intact

Figure A 1: Cross section – Diversion bund

A.1.2 Diversion channel

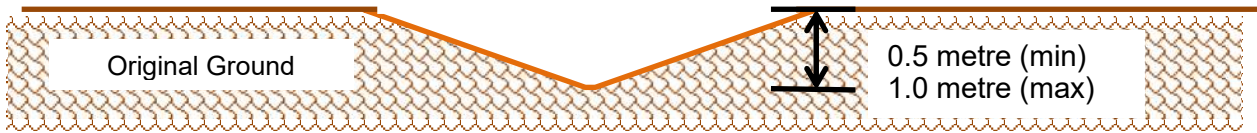


- NB. 1. Soil to form bund to be taken from disturbed area.
- 2. Vegetation in undisturbed area to remain intact

Figure A 2: Cross section – Diversion channel

A.1.3 Contour (catch) drains

Contour drains are to be installed (generally) as part of permanent stormwater management.



NB. 1. Vegetation in undisturbed area to remain intact

Figure A 3: Cross section – contour (catch) drain

A.1.4 Check dams

Check dams (generally sandbags) shall be placed in open channels (specifically road table drains and cut-off drains) at regular intervals so as to reduce stormwater velocities and act as catchpits for migrating silt.

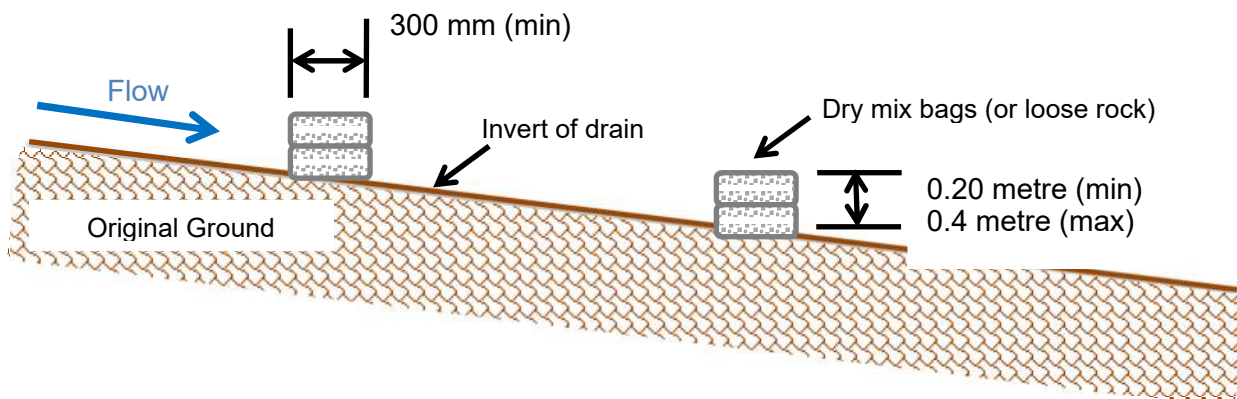
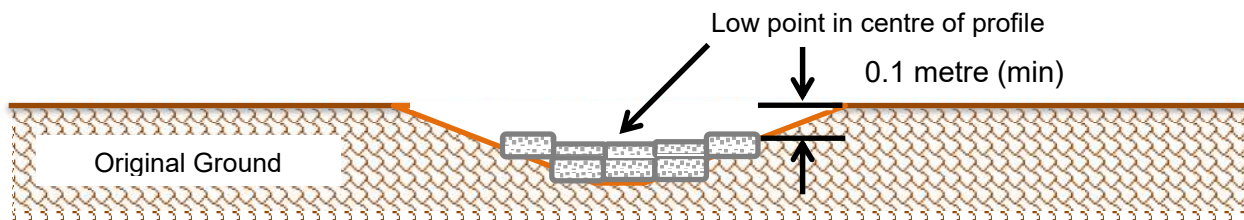


Figure A 4: Profile – check dam



NB. 1. Vegetation in undisturbed area to remain intact

Figure A 5: Cross section – check dam

A.1.5 Cut off drains

Cut off drains shall be used in areas where soil type, suitable discharge point and geometry allow. They should terminate in a suitable location, at a gradient less than the road table drains.

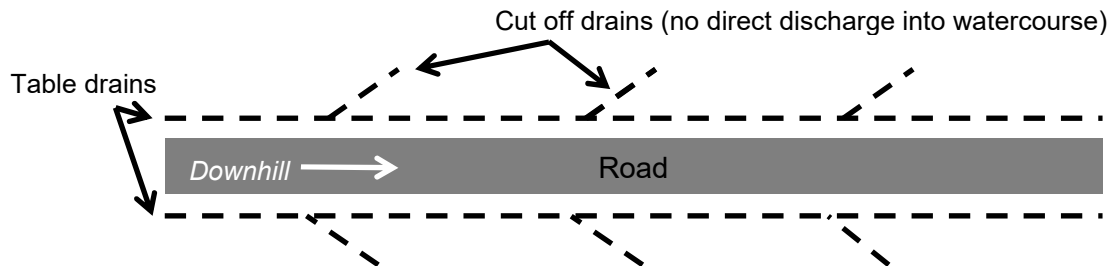


Figure A 6: Plan view – cut off drain schematic

Cut off drains shall be installed (where appropriate):

- 50 – 100 metre centres.
- No deeper than 1 metre.
- With silt retention fence (at time of construction).

A.1.6 Drop structures (pipe or flume)

Identified risk areas where water from channels and drains must rapidly descend to a lower level, a control structure such as a culvert pipe fitted with an aqua sock/duct is used.

The drop structure must extend beyond the toe of the slope and dissipate with adequate protection (such as rip rap) to minimise erosion and undermining of the slope.



Figure A 7: Aqua Duct – drop structure photo

A.1.7 Culvert protection

Inlet protection

Any replaced or new culverts shall have inlet protection. Generally stacked dry mix bags will be used. For pipes greater than 375 mm diameter rip rap erosion protection will be used.

Outlet protection

Any replaced or new culverts shall have outlet protection, generally consisting of rip rap.

A.1.8 Benched slope

To minimise the velocity of stormwater over slope faces, benched slopes shall be used (where safe) on slopes greater than 25% slope, using the spacings in Table A 1. Benches will typically be:

- 2 metre width minimum.
- Reverse slope of 15%.
- Longitudinal gradient of bench less than 2%.

Table A 1: Benched slope design

Slope (%) (H:V)	Vertical height between benches (m)
50% (1:1)	10
33% (3:1)	15
25% (4:1)	20

Source: HBRC 2009

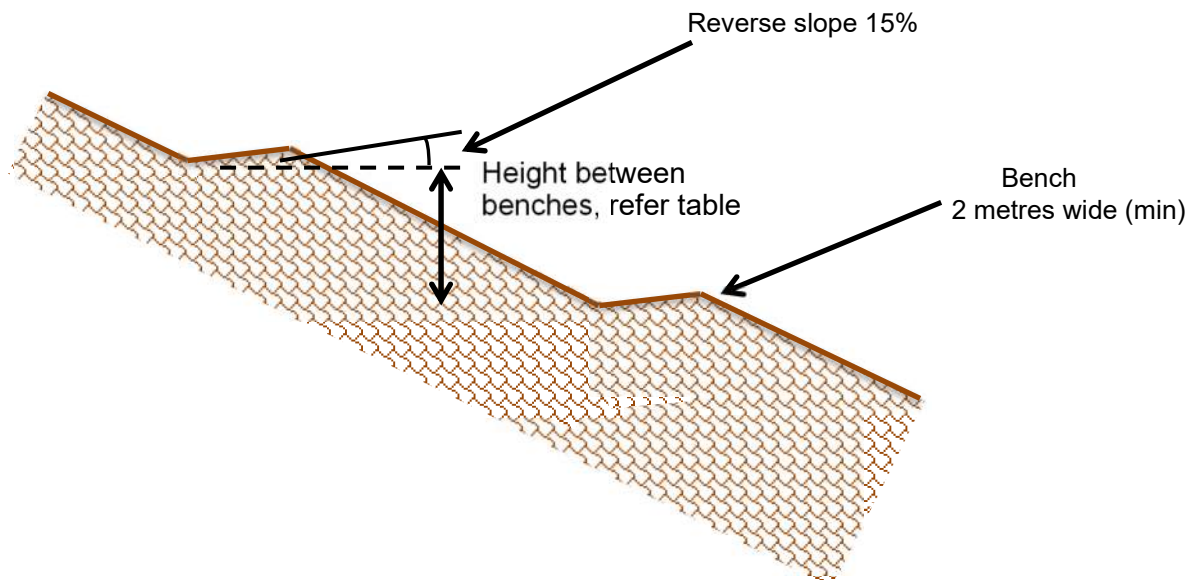


Figure A 8: Cross section – bench slope

A.2 Silt control

A.2.1 Silt fences

Silt fences are to be constructed from geotextile minimum 600 mm height, with minimum 200 mm into ground.

Silt fences are to be installed to prevent the migration of loose construction material towards waterways.

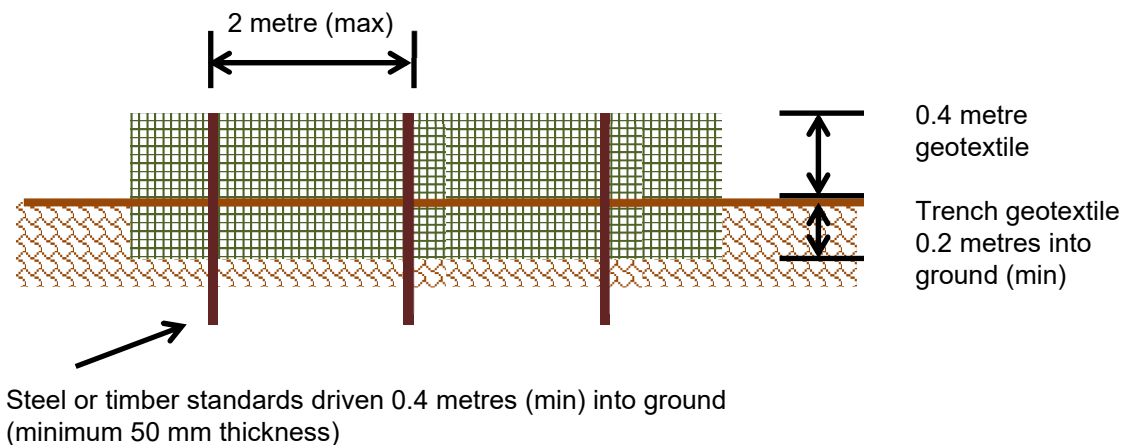


Figure A 9: Indicative silt fence design

They should be installed so that:

- There are no gaps between joins in the fabric.
- The geotextile is appropriate as per manufacturers specifications.
- The geotextile is buried so that water cannot pass under the fence.
- Returns are installed as support at right angles to the main fence as required (minimum 2 metre length).

A.2.2 Sediment traps, soakage pits

Temporary sediment traps, soakage pits are installed by excavating ponds at strategic locations to intercept silt laden run-off from disturbed areas.

- Inlet and outlets protected either by using rock rip rap, geotextile or aqua socks where required (unstable or disturbed ground).

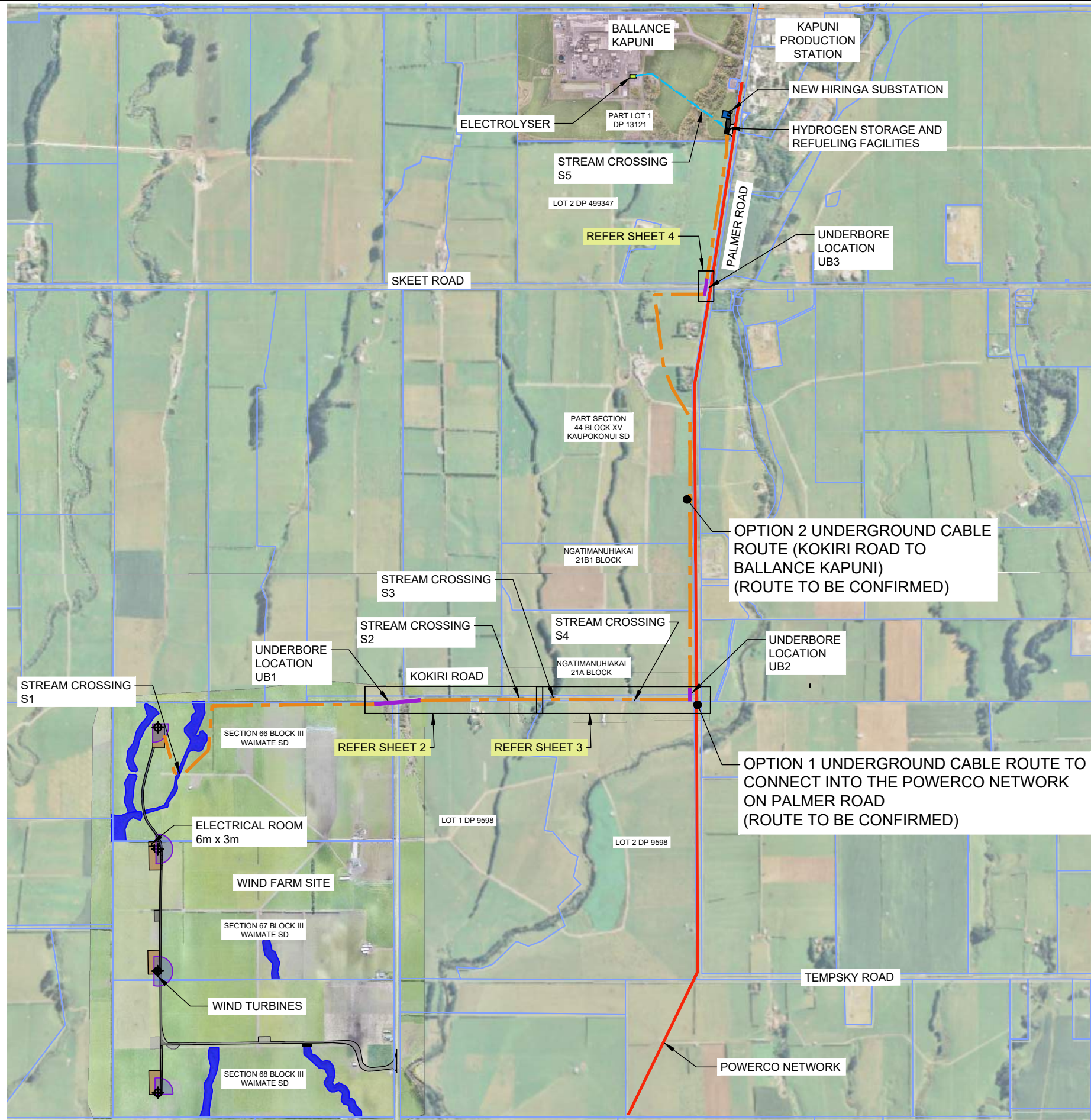


Figure A10: Indicative sediment trap

Permanent sediment retention ponds are installed by excavating ponds at strategic locations where the ponds will remain in-place indefinitely.

- Inlets protected with geotextiles and/or rock rip rap. Surrounding area stabilised by grassing as soon as practical.

APPENDIX B CABLE ROUTE DRAWINGS



LEGEND

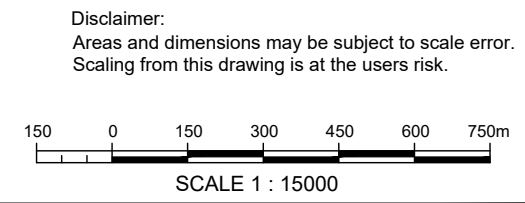
	UNDER BORED
	OPEN TRENCHED

EARTHWORKS VOLUMES	TURBINE 4 TO PALMER ROAD	KOKIRI TO BALLANCE KAPUNI
CABLE ROUTE TRENCHED LENGTH	1800 m	2000 m
TRENCH VOLUME (0.3 m W x 1 m D x LENGTH)	540 m ³	600 m ³

CROSSING NAME	OPEN CUT	DIRECTIONAL	COMMENT
S1	10m		OVER EXISTING CULVERT
UB1		180m	FROM FARM TO ROAD RESERVE, UNDER CULVERT AND ROAD
S2	10m		OVER EXISTING CULVERT
S3	10m		OVER EXISTING CULVERT
S4	10m		OVER EXISTING CULVERT
UB2		50m	UNDER KOKIRI RD INTO FARM LAND
UB3		50m	UNDER SKEET RD INTO FARM LAND
S5	15m		OVER EXISTING CULVERT

- NOTES:**
- POSITION OF SERVICES IS INDICATIVE ONLY. CONTACT THE RESPECTIVE NETWORK UTILITY OPERATORS FOR LOCATION AND MARKING PRIOR TO EXCAVATION.
 - ALL SERVICES TO BE PHYSICALLY LOCATED BEFORE COMMENCEMENT OF WORKS.
 - ALL WORK TO BE DONE IN ACCORDANCE WITH SOUTH TARANAKI DISTRICT COUNCIL BYLAWS AND NZS 4404:2010
 - CABLE TO BE INSTALLED A MINIMUM 1.0m FROM EXISTING EDGE OF SEAL WHERE PRACTICAL WITH 900mm MINIMUM COVER. FINAL LOCATION OF NEW CABLE TO BE CONFIRMED ON SITE BY THE ENGINEER.
 - ALL EARTHWORKS TO COMPLY WITH THE TRC GUIDELINES FOR EARTHWORKS IN THE TARANAKI REGION.
 - ANY DISTURBANCE TO THE ROAD CARRIAGEWAY IS TO BE REINSTATED AND MADE GOOD.

ISSUED FOR CONSENT



File Name: J:\2018\180000\191382 syn file\201295-02 new addition.dwg - SH1 Plot Date: 07/07/2021 Plot Time: 19:00



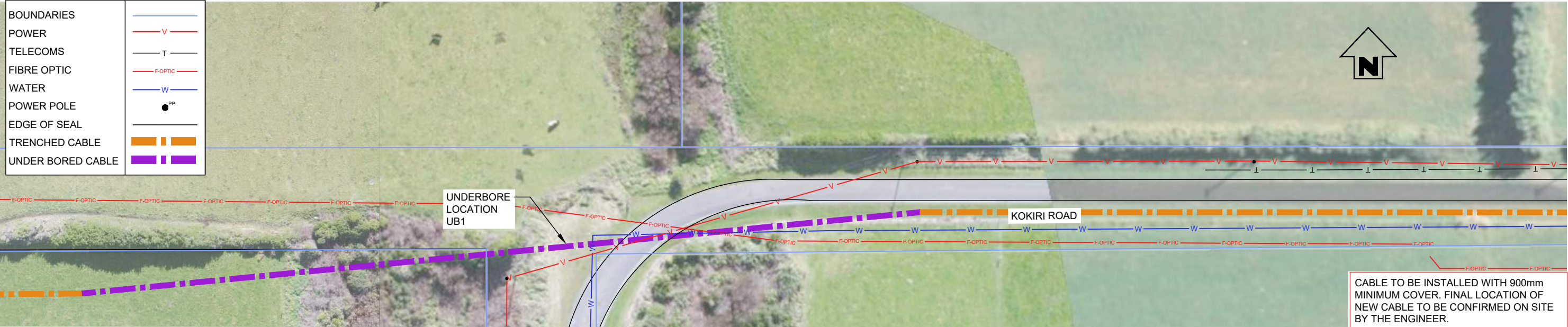
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REVISIONS						DESCRIPTION	NUMBER	TITLE
REVISIONS						DESCRIPTION	NUMBER	TITLE

GENERAL NOTES

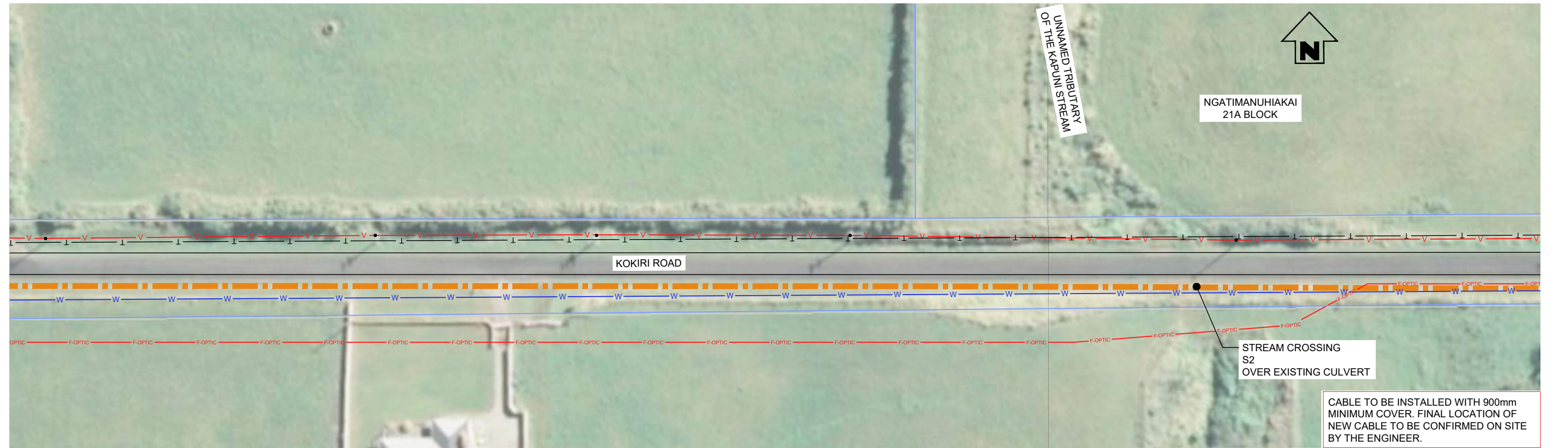
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- Elevations in terms of : NA
- Contour interval is : -

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PROJECT No.	201295		KAPUNI 'GREEN' HYDROGEN PROJECT - CABLE ROUTE OVERVIEW PLAN - CABLE IN ROAD RESERVE			
A3 SCALE	1:15000		ORIGINAL SIZE	DRAWING No		
SURVEYED	NAME	DATE	A3	191149-06		
DRAWN	LV	18.12.20	SHEET	1		
CHECKED	GJ	18.12.20	REVISION	B		

LEGEND	
BOUNDARIES	
POWER	
TELECOMS	
FIBRE OPTIC	
WATER	
POWER POLE	
EDGE OF SEAL	
TRENCHED CABLE	
UNDER BORED CABLE	



CABLE ROUTE PLAN - KOKIRI ROAD
SCALE 1:750



CABLE ROUTE PLAN - KOKIRI ROAD
SCALE 1:750

Disclaimer:
Areas and dimensions may be subject to scale error.
Scaling from this drawing is at the users risk.



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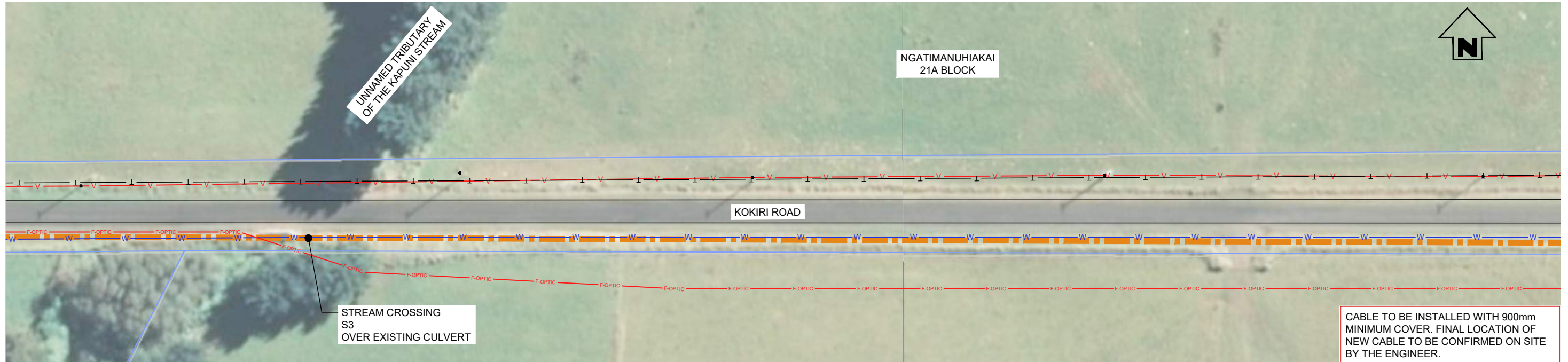
BTWCOMPANY
SURVEYING | ENGINEERING | PLANNING & ENVIRONMENT

NO	DATE	BY	CHKD	APPR	OPER	DESCRIPTION	NUMBER	TITLE
B	07.07.21	LV	GJ			ISSUED FOR CONSENT		
REVISIONS						DESCRIPTION	NUMBER	TITLE
REFERENCE DRAWINGS								

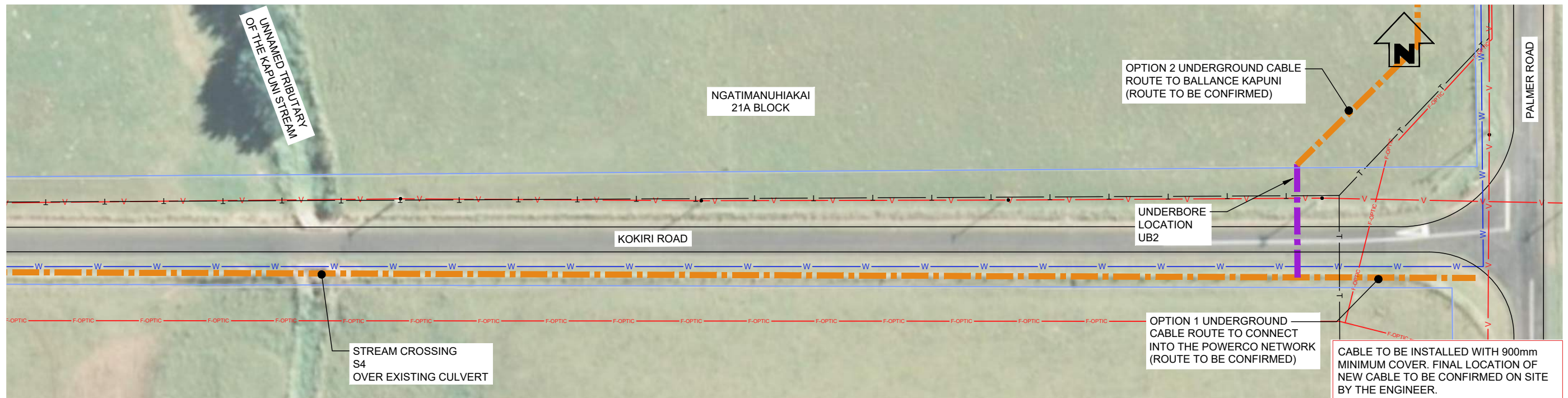
GENERAL NOTES
1. Coordinates in terms of : NA
2. Elevations in terms of : NA
3. Contour interval is : -

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PROJECT No	201295	
A3 SCALE	1:750	
SURVEYED	NAME	DATE
DRAWN	LV	18.12.20
CHECKED	GJ	18.12.20

TITLE		HIRINGA ENERGY LTD	
		KAPUNI 'GREEN' HYDROGEN PROJECT - CABLE ROUTE	
		KOKIRI ROAD	
ORIGINAL SIZE	DRAWING No	SHEET	REVISION
A3	191149-06	2	B



CABLE ROUTE PLAN - KOKIRI ROAD
SCALE 1:750



CABLE ROUTE PLAN - KOKIRI ROAD
SCALE 1:750

Disclaimer:
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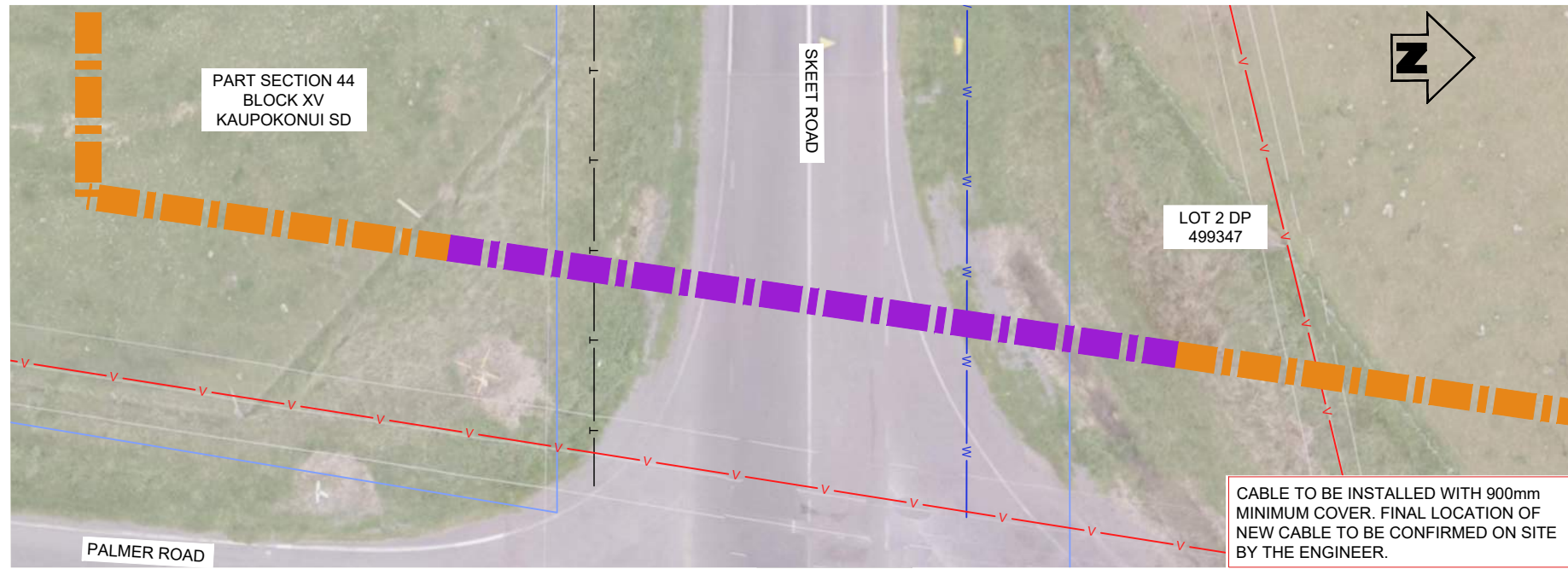
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B	07.07.21	LV	GJ			ISSUED FOR CONSENT		
REVISIONS						REFERENCE DRAWINGS		

GENERAL NOTES
1. Coordinates in terms of : NA
2. Elevations in terms of : NA
3. Contour interval is : -

LOCATION	KAPUNI	
PROJECT No	201295	
A3 SCALE	1:750	
SURVEYED	NAME	DATE
DRAWN	LV	18.12.20
CHECKED	GJ	18.12.20

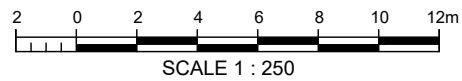
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		KAPUNI 'GREEN' HYDROGEN PROJECT - CABLE ROUTE	
		KOKIRI ROAD	
ORIGINAL SIZE	DRAWING No	SHEET	REVISION
A3	191149-06	3	B

LEGEND	
BOUNDARIES	
POWER	
TELECOMS	
FIBRE OPTIC	
WATER	
POWER POLE	
EDGE OF SEAL	
TRENCHED CABLE	
UNDER BORED CABLE	



CABLE ROUTE PLAN - SKEET ROAD
SCALE 1:250

Disclaimer:
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NO	DATE	BY	CHKD	APPR	OPER	DESCRIPTION	NUMBER	TITLE
B	07.07.21	LV	GJ			ISSUED FOR CONSENT		
REVISIONS						REFERENCE DRAWINGS		

GENERAL NOTES
1. Coordinates in terms of : NA
2. Elevations in terms of : NA
3. Contour interval is : -

LOCATION	KAPUNI	
PROJECT No	201295	
A3 SCALE	1:250	
SURVEYED	NAME	DATE
DRAWN	LV	18.12.20
CHECKED	GJ	18.12.20

TITLE		HIRINGA ENERGY LTD	
		KAPUNI 'GREEN' HYDROGEN PROJECT - CABLE ROUTE	
		SKEET ROAD	
ORIGINAL SIZE	DRAWING No	SHEET	REVISION
A3	191149-06	4	B

APPENDIX C ESCP LAYOUT DRAWINGS

LEGEND	
	SILT FENCE
	CLEAN WATER DIVERSION CHANNEL
	DIRTY WATER DIVERSION CHANNEL
	DECANTING EARTH BUND



LOCALITY DIAGRAM
SCALE 1:10000

ISSUED FOR CONSENT

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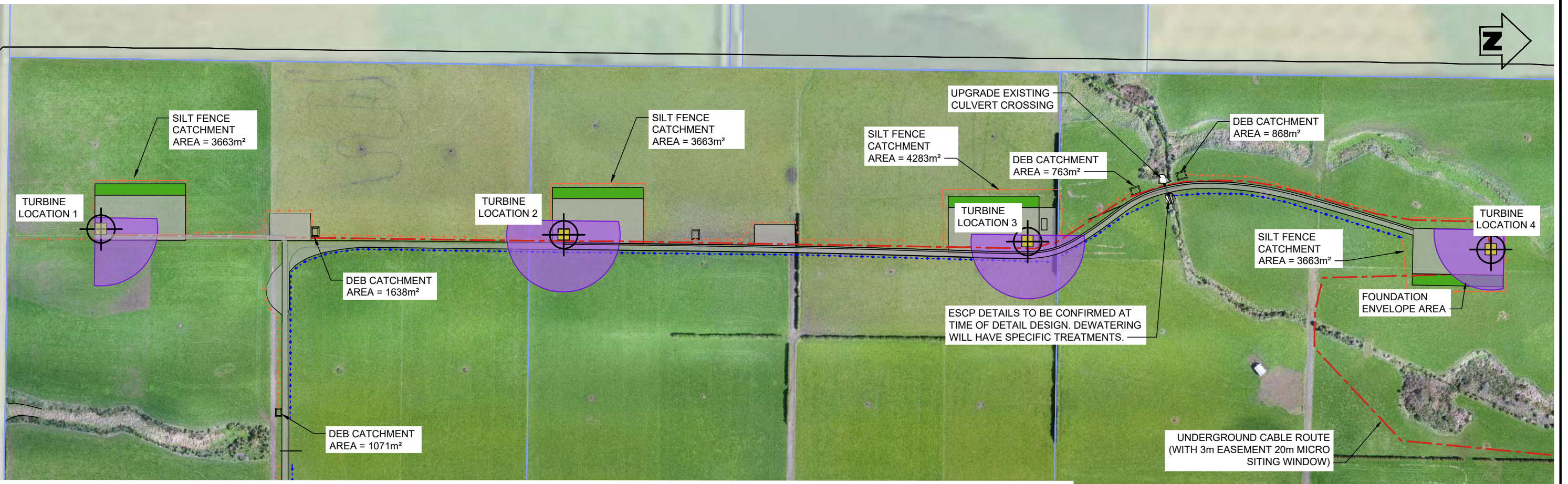
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B	07.07.21	LV	IS			ISSUED FOR CONSENT		
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REFERENCE DRAWINGS								

GENERAL NOTES
2. Elevations in terms of : NA
3. Contour interval is : -

LOCATION			KAPUNI		
PROJECT No			191149		
A3 SCALE			AS SHOWN		
SURVEYED	NAME	DATE			
DRAWN	LV	17.09.20			
CHECKED	IS	17.09.20			

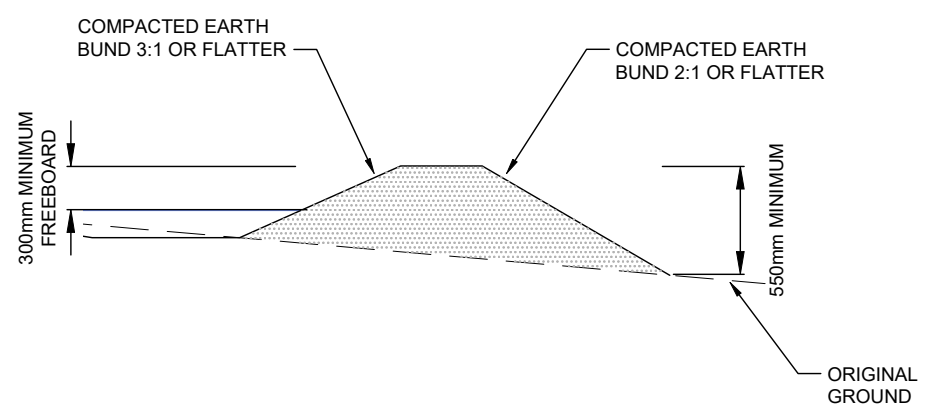
TITLE
HIRINGA ENERGY LTD
KAPUNI 'GREEN' HYDROGEN PROJECT - ESCP
SITE PLAN - CONCEPT LAYOUT

ORIGINAL SIZE	DRAWING No	SHEET	REVISION
A3	191149-04	1	B



LEGEND

- SILT FENCE
- CLEAN WATER DIVERSION CHANNEL
- DIRTY WATER DIVERSION CHANNEL
- DECANTING EARTH BUND



CLEAN/DIRTY WATER DIVERSION BUND
SCALE 1:20

ISSUED FOR CONSENT

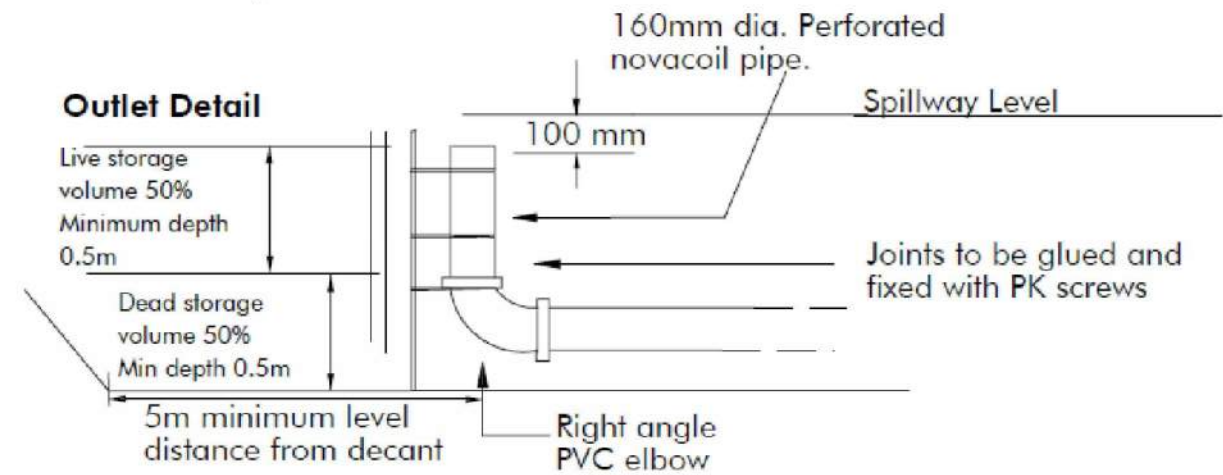
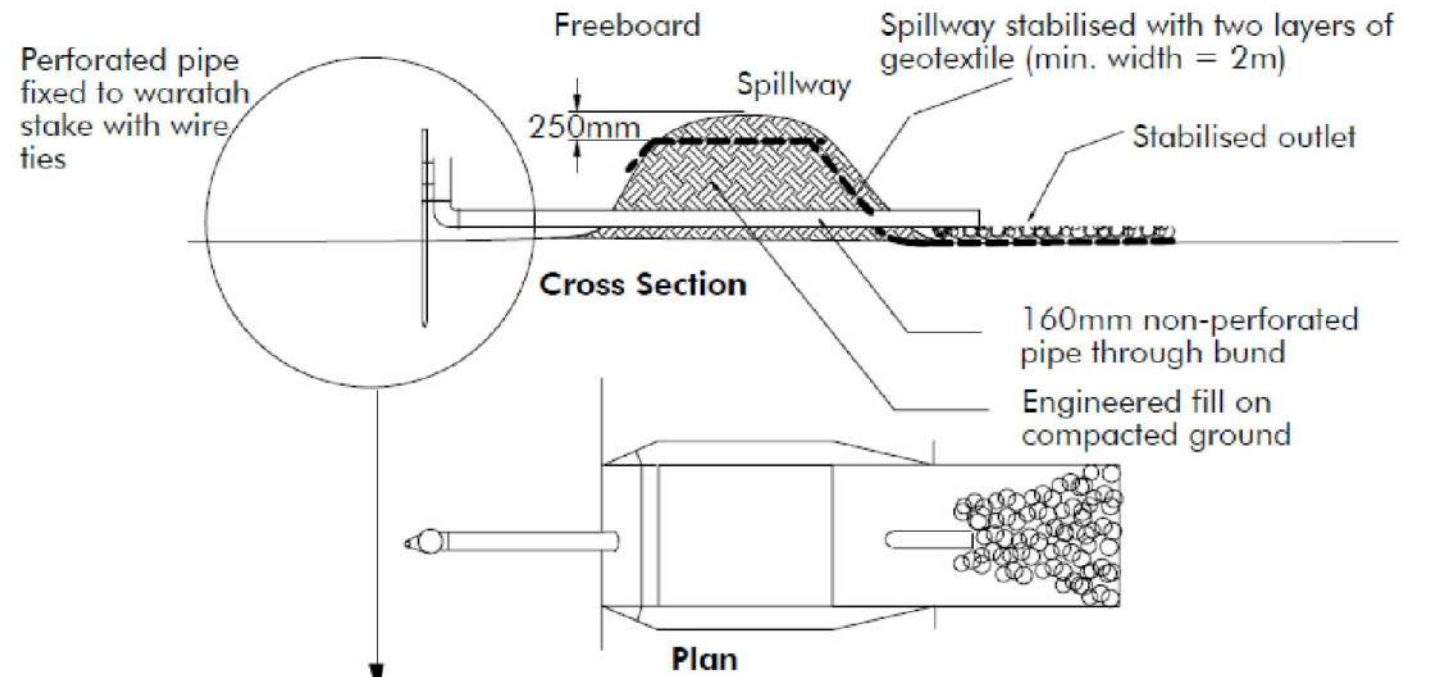
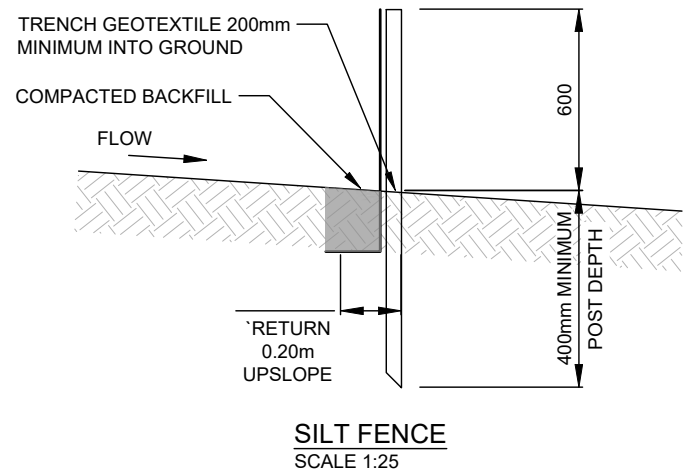
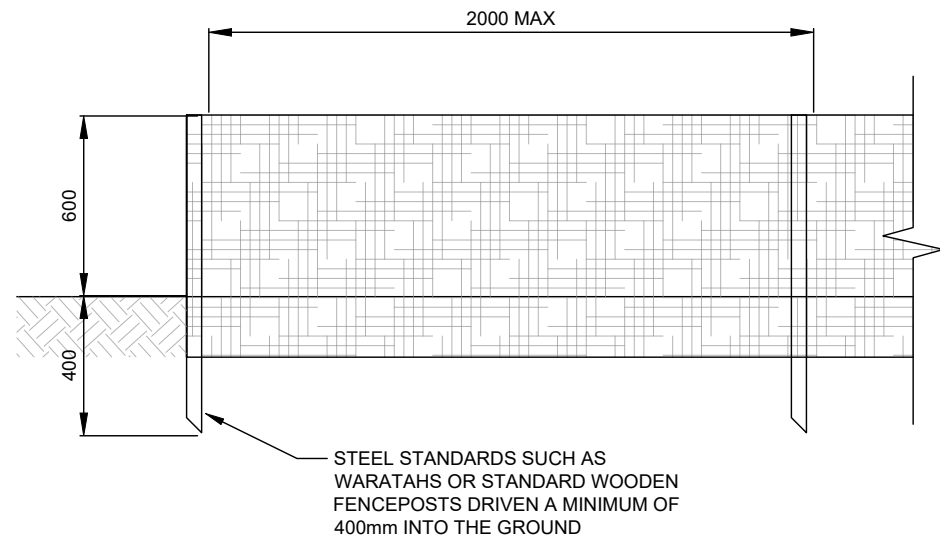
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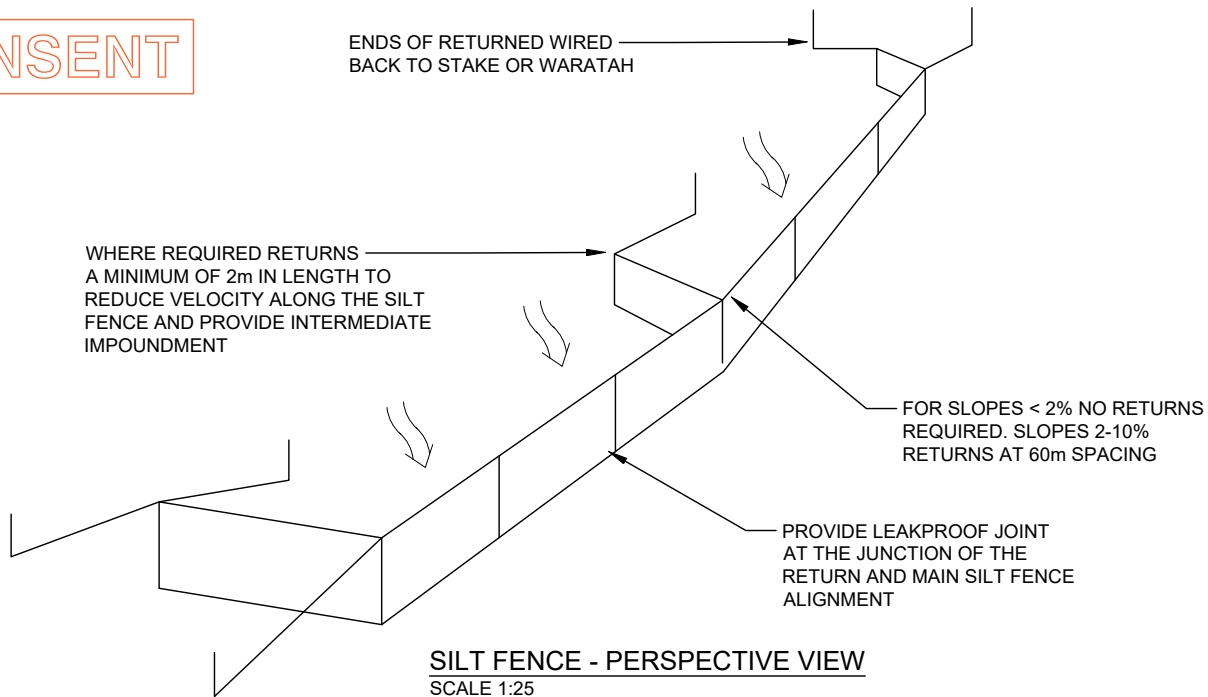
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REVISIONS								
							REFERENCE DRAWINGS	

GENERAL NOTES
2. Elevations in terms of : NA
3. Contour interval is : -

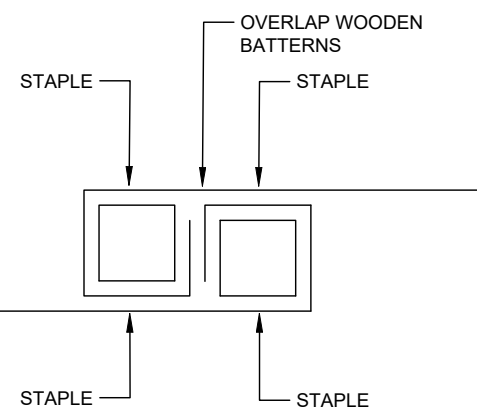
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PROJECT No. 191149			DRAWING No. 191149-04		
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SURVEYED	NAME	DATE	SHEET	2	
DRAWN	LV	17.09.20	REVISION	B	
CHECKED	IS	17.09.20			



ISSUED FOR CONSENT



DECANTING EARTH BUND (WRC ESC 2009)
NTS



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NO	DATE	BY	CHKD	APPR	OPER	DESCRIPTION	NUMBER	TITLE
B	07.07.21	LV	IS			ISSUED FOR CONSENT		
REVISIONS						DESCRIPTION	NUMBER	TITLE
REVISIONS						DESCRIPTION	NUMBER	TITLE

GENERAL NOTES
2. Elevations in terms of : NA
3. Contour interval is : -

LOCATION	KAPUNI	
PROJECT No	191149	
A3 SCALE	1:500	
SURVEYED	NAME	DATE
DRAWN	LV	17.09.20
CHECKED	IS	17.09.20

TITLE		HIRINGA ENERGY LTD	
PROJECT No		191149-04	
ORIGINAL SIZE	DRAWING No	SHEET	REVISION
A3	191149-04	3	B