

**DRURY QUARRY –
SUTTON BLOCK
EXPANSION**

QUARRY MANAGEMENT PLAN – SUTTON BLOCK

Prepared by: Stevenson

DOCUMENT DETAILS

Issue No: 000 | Date of issue: 28/03/2025

Prepared by: Jo Young	Position: Resource Consents Manager	Date: 28 March 2025
Reviewed by:	Position	Date
Approved by:	Position	Date

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1. INTRODUCTION

This Quarry Management Plan (QMP) outlines the practices and procedures to be adopted at the Sutton Block to ensure compliance with key operational requirements as required under Condition C24 of Consent ***.

In the event of any conflict in meaning or ambiguity between the terms and conditions of the resource consents and the provisions in the QMP, the resource consents take precedence.

1.1. Drury Quarry - Sutton Block

The Sutton Block Quarry is located at #####. Refer to the Site Plan attached as **Appendix A**.

1.2. General activities

Construction, operation and management of the Sutton Block will generally involve the following works:

- Earthworks, overburden removal, stockpiling, establishment and removal of bunds.
- Vegetation removal and planting.
- Stream works.
- Construction and operation of internal road infrastructure.
- Establishment of supporting infrastructure.
- Aggregate extraction, processing and distribution.
- Operational stormwater, dust, noise and vibration, groundwater, surface water and traffic control management.

2. STAGING PLANS

The Sutton Block pit will be generally developed in stages, with the expansion of the pit being incremental, deepening and widening as resource is extracted.

Indicative staging plans have been prepared and attached as Appendix B. These show five indicative stages and order of quarry development.

Note that the drawings provided in Appendix B in QMP Version 1.0 are based on preliminary design and will be updated as the pit design progresses.

2.1. Planned Overburden Removal and Rock Extraction for the following 12 months.

Stage 1 of the Sutton Block development will take approximately three years to complete.

Refer to the Erosion and Sediment Control Plans (ESCP) attached as Appendix B to the 'Erosion and Sediment Control Assessment Report Drury Quarry – Sutton Block', prepared by SouthernSkies Environmental Ltd., dated 7 March 2025. (attached as Appendix C in QMP)

2.2. Areas of Expected Quarry Operation for the following 12 months

Refer to Stage 1 plans attached as Appendix B.

Note, Sections 2.1 and 2.2 will need to be updated as required to reflect the quarry expansion plans.

3. HOURS OF OPERATION

Hours of operation for the proposed Sutton Block pit will be fluid and are impacted by various factors such as demand and staffing requirements. The Sutton Block pit will operate in some capacity 24 hours a day. Night-time activities are scaled down compared with daytime, to ensure night-time works do not exceed 45 dB LAeq at the nearest dwelling.

Table 3.1 below sets out the general peak hours of operation for key existing facilities. Note, these are the general peak hours as activities may occur 24 hours a day while complying with noise limits and any applicable consent conditions.

Table 3.1: General peak hours of operation

Activity	Current peak times of operation
Sales	Monday – Friday: 5am – 5pm Saturday: 6am – 12pm
Production (primary plant)	Monday – Friday: 7am – 9pm Saturday: 7am – 2pm
Production (tertiary plant)	Monday – Friday: 5.30am – 9pm Saturday: 7am – 2pm
Sealing chip	Monday – Friday: 5.00am/7.00am – 9pm / 2am (varies a lot) Saturday: 7am – 2pm
Portable processing plants	Monday – Friday: 6.00 am – 5pm (upper benches) Monday – Friday: 6.00 am – 5pm, 5pm – 3am (in pit) Saturday: 6am – 3pm
Asphalt Plant	Monday – Friday: 5.30am / 7am – 5pm / 7pm (operates longer at times) Saturday: 7am – 2pm

4. MANAGEMENT, MONITORING AND REPORTING

4.1. Erosion and Sediment Control – Site Establishment (construction works)

Refer to ESCP attached as **Appendix B** for general site preparation and overburden removal, including the establishment of the northern bund and temporary overburden stockpile.

4.2. Erosion and Sediment Control – Operational Earthworks (overburden removal)

All earthworks must be undertaken in accordance with the certified ESCP required under Condition C5 of Consent ***.

Prior to bulk earthworks commencing, an 'As Built Certification Statement', signed by a Suitably Qualified Experienced Person(s) (SQEP confirming that erosion and sediment controls have been constructed in accordance with the certified ESCP must be provided to Auckland Council.

4.2.1. Erosion and Sediment Control Monitoring

Erosion and sediment controls as outlined in the ESCP will be monitored and maintained in accordance with the Auckland Council Guideline Document 2016/005 *Erosion and Sediment Control Guideline for Land Disturbing Activities in the Auckland Region (GD05)*.

The following inspections and responses must be undertaken and recorded:

- **Weekly inspection:**

Site inspections must be undertaken by the Quarry Manager (or representative) to inspect all ESC measures, identify any maintenance or corrective actions necessary, assign timeframes for completion, and identify any devices that are not performing as anticipated through the ESCPs.

- **Pre-rain event inspection:**

Prior to 15 mm rainfall events that cause surface water runoff, inspections must be made of ESC devices, including chemical treatment systems, to ensure that they are fully functioning in preparation for the forecast event. Any maintenance will be documented and must be undertaken immediately.

- **Post-rain event inspection:**

Following all rainfall events that cause surface water runoff, inspections must be made of all ESC measures to ensure that all controls have performed as expected and to identify any maintenance requirements. All maintenance items must be documented must be undertaken immediately.

Records must be kept detailing the following and included in the Annual Report (refer to Section 5.2):

- The monitoring undertaken;
- The erosion and sediment controls that require maintenance; and
- The time when the maintenance was completed.

Where silt fences are utilised, sediment deposits and/or bulges against the fence that reach 20% of the fence height will be cleared.

Sediment must not exceed 20% of the total volume of the sediment retention ponds and decanting earth bunds.

If there is failure of an erosion and sediment control device that results in a discharge to the receiving environment occurring the consent holder must:

- Repair failure (as appropriate);
- Undertake an immediate visual inspection of affected reaches; and
- Notify the Project Ecologist to undertake an assessment of potential sediment deposition within affected reaches.

4.3. Construction Noise and Vibration Management

Construction Noise and Vibration will be managed in accordance with the Construction Noise and Vibration Management Plan (CNVMP) (required under Condition C4 of Consent **).

4.4. Operational Noise

All activities on site must comply with the following noise standards. Noise must be measured and assessed in accordance with New Zealand Standard on Acoustics – Measurement of Environmental Sound (MZS 6801:2008) and New Zealand Standard on Acoustics – Environmental Noise (NZS:6802:2008).

Times	Noise levels
7am-9pm Monday to Friday	LAeq 55dB
7am-4pm Saturday	LAeq 55dB
All other times and on public holidays	LAeq 45dB LAFmax 75dB

4.4.1. Noise Monitoring

One noise monitor to the west (i.e., near MacWhinney Drive) and one to the north-east (i.e. near Sonja or Laurie Drive) of the Sutton Block pit must be established. The purpose of these monitors is to undertake measurements to demonstrate whether the noise levels arising from activities authorised by this consent are compliant with the maximum noise levels permitted by the Auckland Unitary Plan.

4.5. Blast Vibration and Noise

Various blasting techniques will be implemented to reduce noise and vibration effects, including:

- Blast design optimization of blasting MIC, size and shape to reduce vibration levels;
- Blast timing manipulation through the use of electronic detonators;
- Creation of buffer zones or setbacks between blasting operations and sensitive receivers;
- Alterations to blast design to reduce blast gases, excess rock movement and velocity of detonation;
- Alterations to quarry design to change face direction away from neighbouring receivers; and
- Schedule blasting on days with favourable wind and weather conditions.

Blast Vibration and noise generated from quarrying activities must not exceed the limits set out in Tables J4.4.2.1 and J4.5(A) in the AUSTRALIAN STANDARD AS2187.2:2006 Explosives – Storage and Use, Part 2: Use of Explosives (AS2187.2:2006) when measured at or within the notional boundary of any dwelling, or on the dwelling itself (not including the source site).

4.5.1. Blast Vibration and Noise Monitoring

Vibration monitoring stations must be installed prior to blasting in accordance with consent condition H5 of Consent ***. All vibration monitoring equipment must be calibrated and comply with AS2187.2:2006 (or any amendment thereto).

The blast vibration and noise levels must be measured according to AS2187.2:2006 (or any amendment thereto).

On-going monitoring of vibration levels will be undertaken throughout the development and operation of the Sutton Block. This monitoring will be used for continued seed wave analysis and calibration, and to adjust blasting parameters to ensure vibration levels are compliant with AUSTRALIAN STANDARD AS2187.2:2006 Explosives – Storage and Use, Part 2: Use of Explosives (AS2187.2:2006).

For each blast, Stevenson must run vibration estimates to update and calibrate the blasting model to maintain accuracy.

Data collected from the monitoring stations must be uploaded at each monitoring location and used for analysis and modelling of future blasts to ensure compliance with consent conditions.

4.6. Dust Management

Dust will be managed in accordance with the Dust Management Plan (DMP) required under Condition C8 of Consent ***.

In summary, dust management and monitoring measures to be implemented onsite, as necessary include:

- Daily monitoring of weather forecast, and plan work scheduled and dust management responses accordingly.
- Continuous dust monitoring with telemetry at a number of locations around the Sutton Block and Drury pits.
- Ongoing operation of a meteorological monitoring site around both pits.
- Minimise un-stabilised areas.
- Static and tertiary processing plants connected to water source which continually releases water via spray bar.
- Portable water tanks used to wet material feed into plants and equipment.
- Keep exposed surfaces damp with water carts and/or fixed sprinklers when required.
- Controlling vehicle speeds to 30 km/h on site.
- Water supplying the dust suppression equipment is connected to the water management system.

4.6.1. Crushing activities – no crush zone

No crushing activities must occur within 200 m of 359 MacWhinney Drive, within the area demarcated purple on Figure 7 of the 'Sutton Block - Air Quality Assessment' prepared by Pattle Delamore Partners Ltd, dated March 2025 and shown in Figure 1 below.

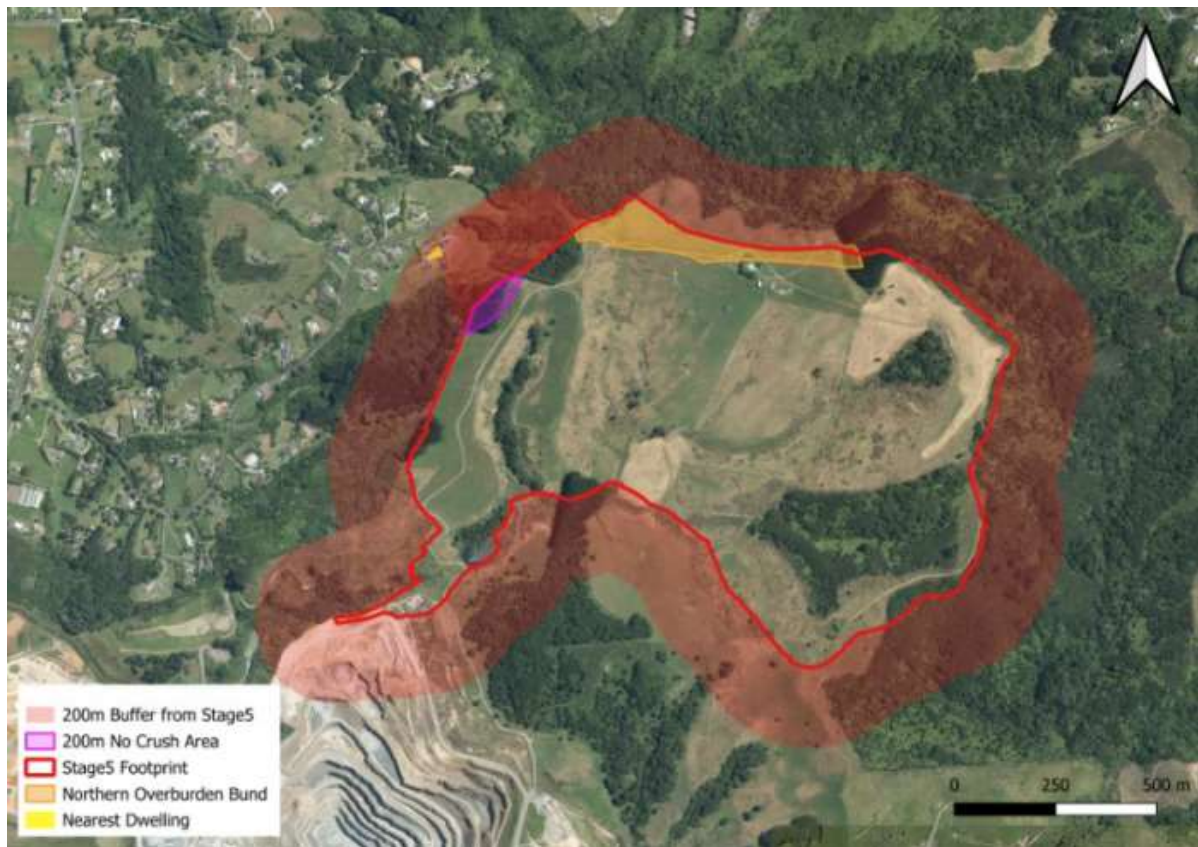


Figure 1: 200 m crushing exclusion area within Sutton Block footprint.

4.7. Lighting

Any lighting, security or other, shall be designed and operated so as not to cause any light spill or disturbance glare for occupiers of any other properties. Any spill or glare onto adjoining sites shall comply with E24.6.1 General Standard of the Auckland Unitary Plan (AUP).

The following methods are to be adopted:

- Lighting limits must be measured and assessed in accordance with Standard AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting. Any calculation undertaken for the purposes of these assessing lighting limits must be based on a maintenance factor of 1.0 (i.e. no depreciation);
- Where measurements of any illuminance above background levels from the use of artificial lighting cannot be made because the artificial lighting cannot be turned off, measurements will be made in areas of a similar nature that are not affected by the artificial lighting; and
- All permanent exterior lighting must be downward facing, with zero upward tilt, emits zero direct upward light and is not located on the ridgelines (unless there is no practicable alternative, or it is required for safety reasons).

5. COMPLAINTS PROCEDURE AND REPORTING

5.1. Complaints procedure

If a complaint is received, the following details are to be recorded (includes dust, noise, vibration, light):

- Date, time, and nature of the complaint;
- Complainant's name, address, and phone number (unless the complainant wishes to remain anonymous);
- Weather conditions at the time of the concern or complaint, including wind direction and cloud cover if the complaint relates to noise, dust or air quality;
- The outcome of the investigations of the complaint;
- Measures taken to respond to the complaint (including a record of the response provided to the complainant) or confirmation of no action if deemed appropriate; and
- Any other activity in the area, unrelated to the Project that may have contributed to the complaint, such as construction works, fires or unusually dusty conditions generally.

A copy of the Complaints Register must be kept up to date and made available to the Council upon request as soon as practicable after the request has been made.

5.2. Annual Report

An Annual Report must be provided to Auckland Council Manager by **** date**** of each year, or on an alternative date as agreed with Council, an Annual Monitoring Report.

The purpose of this report is to provide an overview of the monitoring and reporting work undertaken, and any environmental issues that have arisen during Construction Works or Operations.

As a minimum, this report must include:

- Records of inspection and maintenance undertaken associated with ESC monitoring (refer to Section 4.2.1 above);
- Records of noise measurements from noise monitoring stations (refer to Section 4.4.1 above);
- Records of vibration from permanent vibration monitoring stations (refer to Section 4.5.1);
- Any other monitoring data required under conditions of Consent ******* that is not specified in this QMP;
- Any reasons for non-compliance with the conditions of Consent *******;
- Measures taken to address compliance issues; and
- Recommendation on alterations to any monitoring required.

6. CLOSURE AND REHABILITATION

Closure and rehabilitation plans are to be included within five years of confirmed closure of the Sutton Block (as required under Condition C24 of Consent ***).

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APPENDIX A: SITE PLAN

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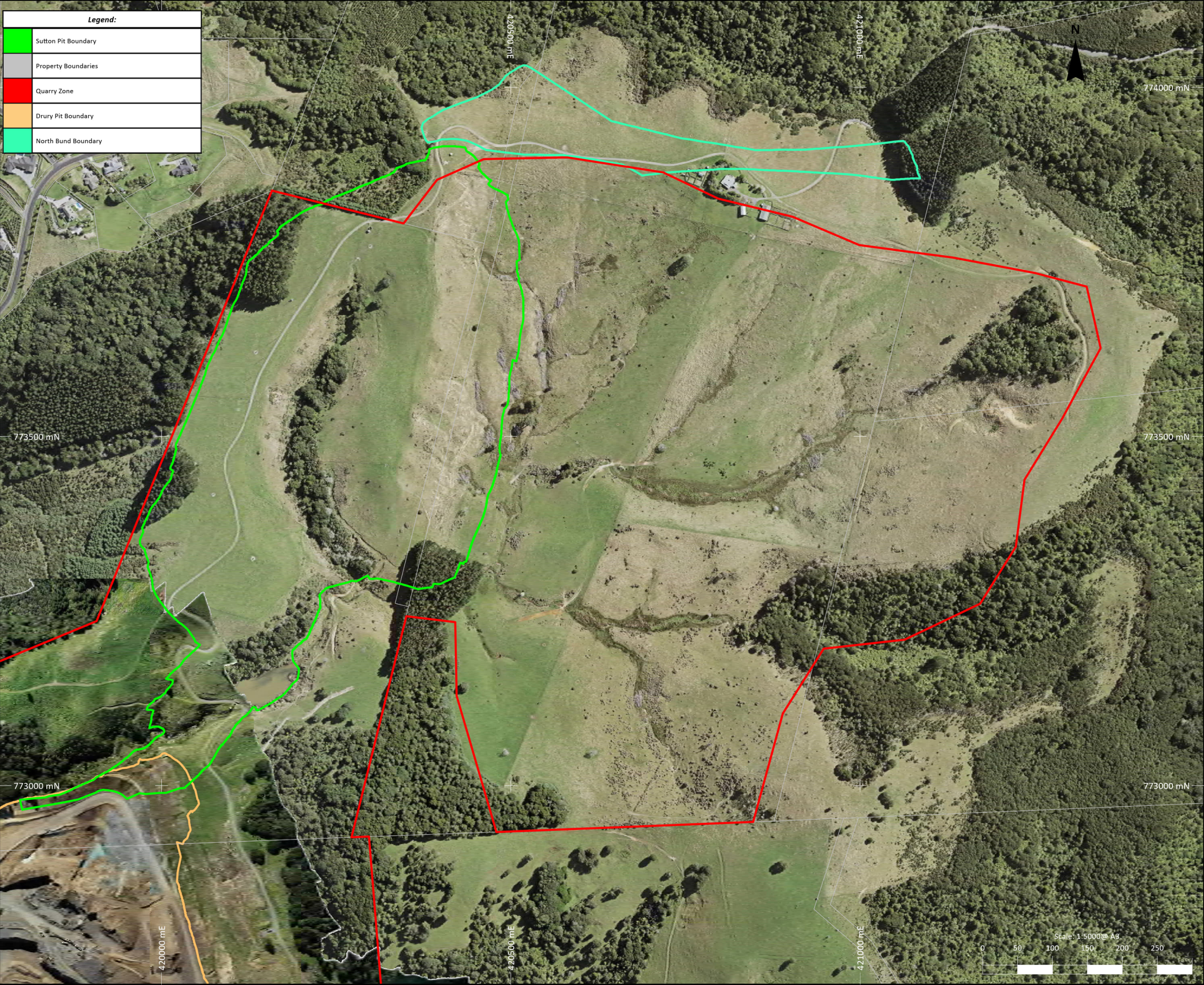


APPENDIX B: STAGING PLANS

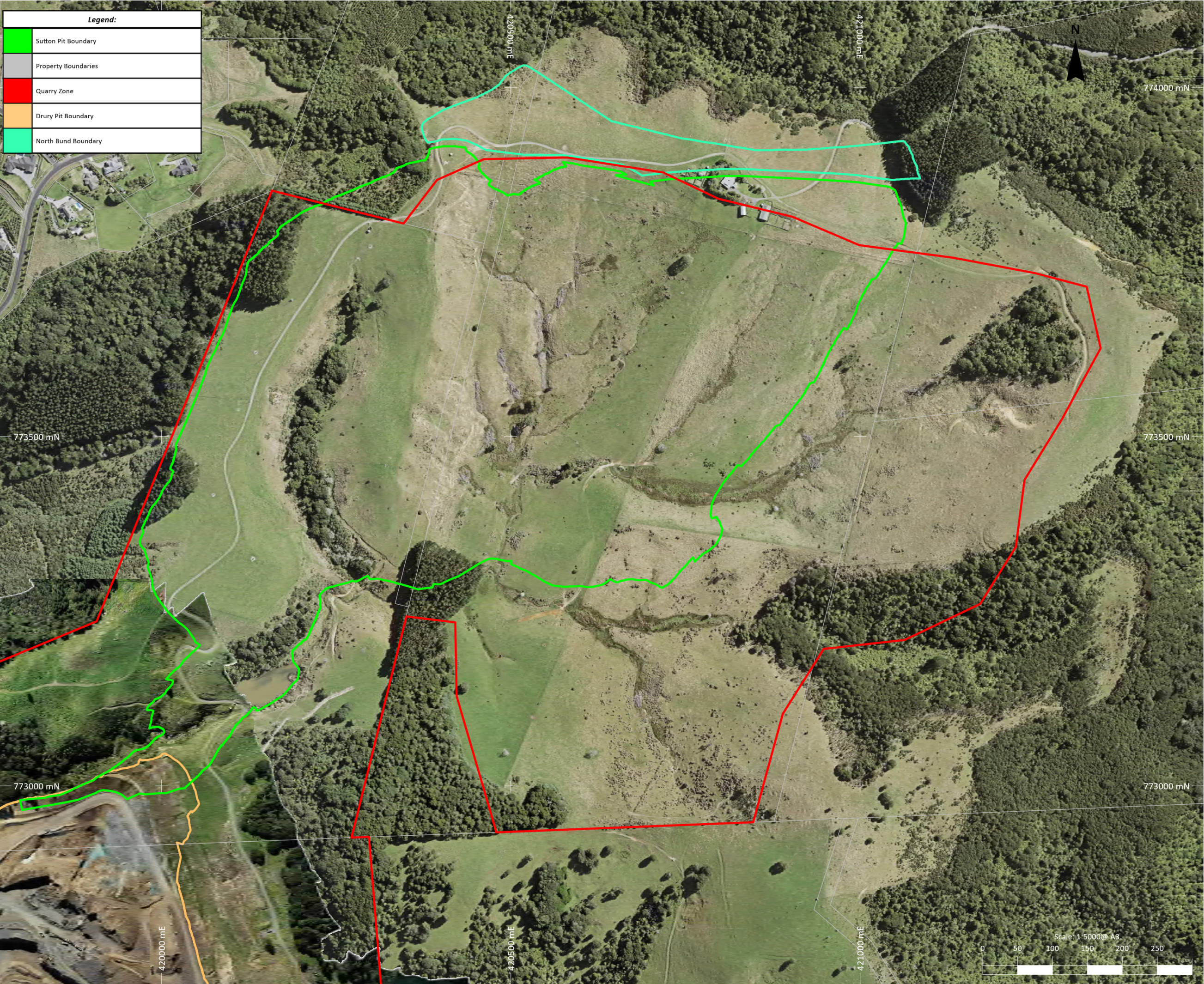
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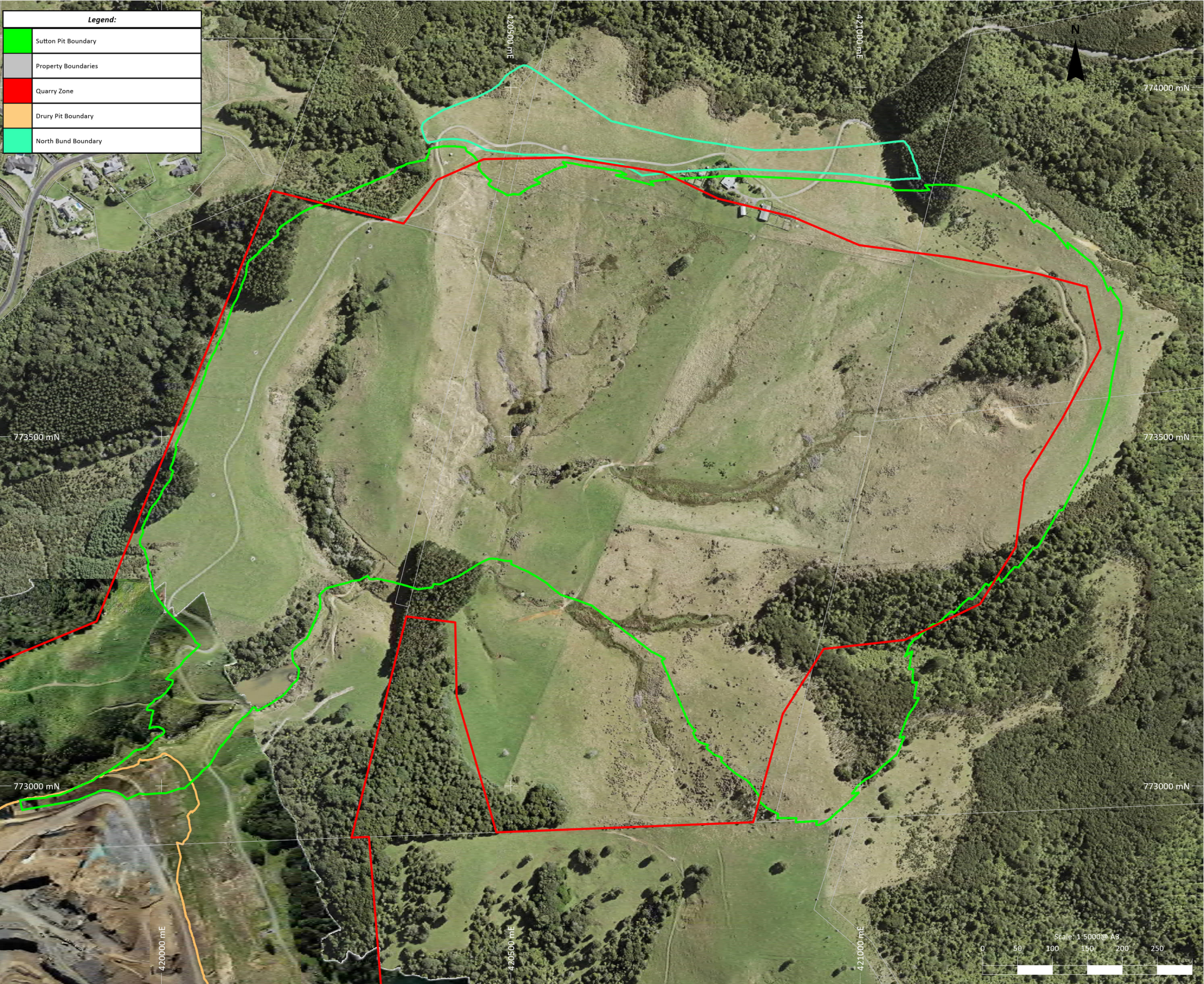
Project:	
Sutton Block Project	
Title:	
Stage 1 Infrastructure Development Timeline: 3 Years	
Projection:	
Plan View	
Location:	
Drury Quarry, Drury	
DRAWING REFERENCE	
Issue Date:	September 2024
Drawing No:	SSQ_24_401
Revision No:	03
Requested By:	JY/KH
Drawn By:	GWf
SURVEY/TOPOGRAPHIC INFORMATION	
Survey/Photogrammetry:	LINZ
Survey Date:	2017 Aerials
Survey Reference:	92-M7 Series Aerials
Coord Circuit:	Mount Eden Circuit
Datum:	Geodetic 2000 Auckland 2016
GENERAL	
Pit Floor Elevation: 60m RL	
Quarry Stage Area: 11ha	
STEVENSON	
 Terra Mining Consultants Ltd	
24 King Edward Parade, Devonport Auckland, 0624, New Zealand Mobile: +64-21-380-624 (NZ) +60-17-820-4056 (Malaysia)	



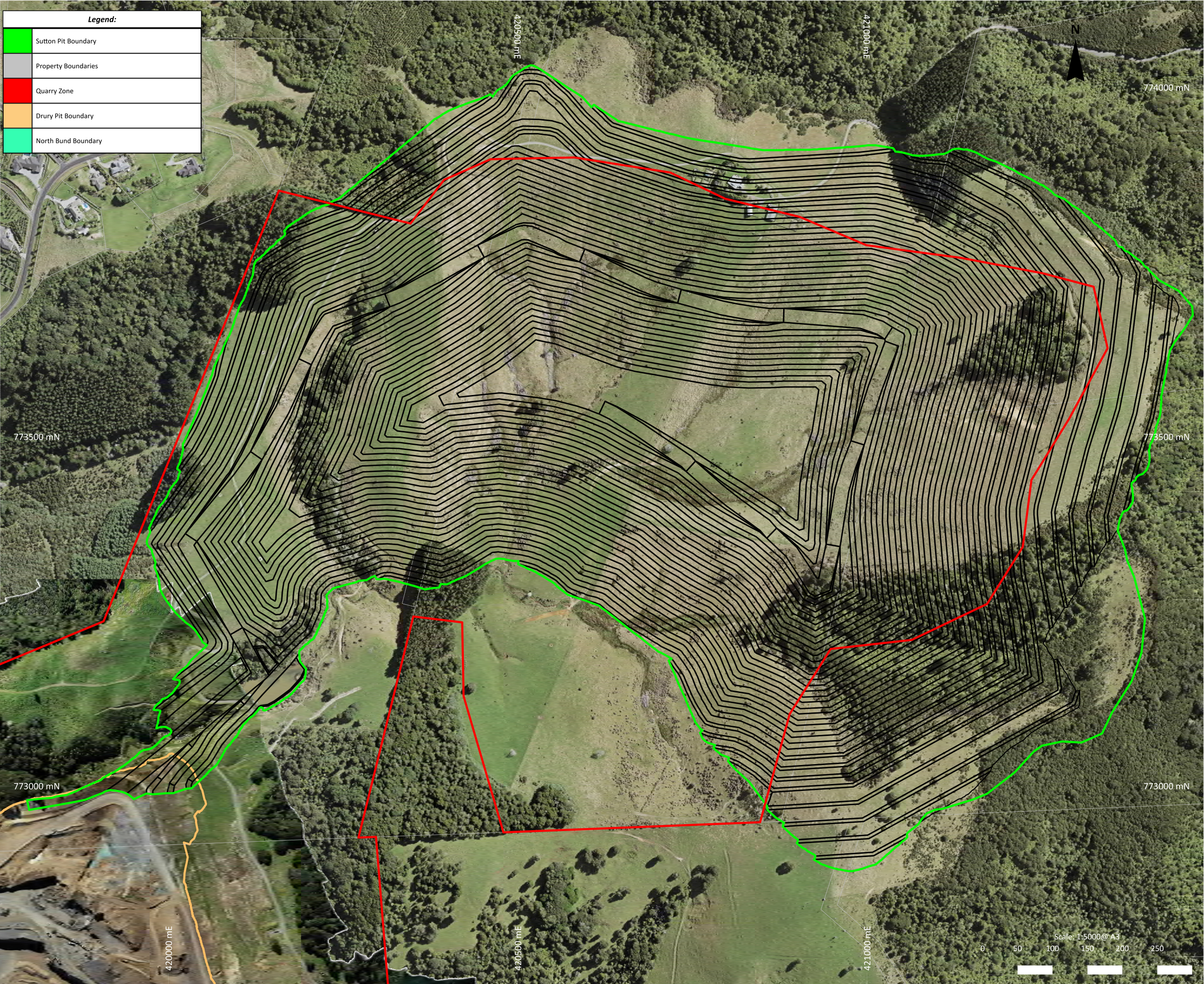
Project:	
Sutton Block Project	
Title:	
Stage 2 Operating Quarry Timeline: 15 Years	
Projection:	
Plan View	
Location:	
Drury Quarry, Drury	
DRAWING REFERENCE	
Issue Date:	September 2024
Drawing No:	SSQ_24_402
Revision No:	03
Requested By:	JY/KH
Drawn By:	GWf
SURVEY/TOPOGRAPHIC INFORMATION	
Survey/Photogrammetry:	LINZ
Survey Date:	2017 Aerials
Survey Reference:	92-M7 Series Aerials
Coord Circuit:	Mount Eden Circuit
Datum:	Geodetic 2000 Auckland 2016
GENERAL	
Pit Floor Elevation: 90m RL	
Pit Stage Area: 29ha	
STEVENSON	
 Terra Mining Consultants Ltd	
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Project:	
Sutton Block Project	
Title:	
Stage 3 Operating Quarry Timeline: 30 Years	
Projection:	
Plan View	
Location:	
Drury Quarry, Drury	
DRAWING REFERENCE	
Issue Date:	September 2024
Drawing No:	SSQ_24_403
Revision No:	03
Requested By:	JY/KH
Drawn By:	GWf
SURVEY/TOPOGRAPHIC INFORMATION	
Survey/Photogrammetry:	LINZ
Survey Date:	2017 Aerials
Survey Reference:	92-M7 Series Aerials
Coord Circuit:	Mount Eden Circuit
Datum:	Geodetic 2000 Auckland 2016
GENERAL	
Pit Floor Elevation: 60m RL	
Pit Stage Area: 54ha	
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 Terra Mining Consultants Ltd	
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Project:	
Sutton Block Project	
Title:	
Stage 4 Operating Quarry Timeline: 40 Years	
Projection:	
Plan View	
Location:	
Drury Quarry, Drury	
DRAWING REFERENCE	
Issue Date:	September 2024
Drawing No:	SSQ_24_404
Revision No:	03
Requested By:	JY/KH
Drawn By:	GWF
SURVEY/TOPOGRAPHIC INFORMATION	
Survey/Photogrammetry:	LINZ
Survey Date:	2017 Aerials
Survey Reference:	92-M7 Series Aerials
Coord Circuit:	Mount Eden Circuit
Datum:	Geodetic 2000 Auckland 2016
GENERAL	
Pit Floor Elevation: -60m RL	
Pit Stage Area: 88ha	
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Project:	
Sutton Block Project	
Title:	
Stage 5 Life of Quarry Timeline: 50 Years	
Projection:	
Plan View	
Location:	
Drury Quarry, Drury	
DRAWING REFERENCE	
Issue Date:	September 2024
Drawing No:	SSQ_24_405
Revision No:	03
Requested By:	JY/KH
Drawn By:	GWF
SURVEY/TOPOGRAPHIC INFORMATION	
Survey/Photogrammetry:	LINZ
Survey Date:	2017 Aerials
Survey Reference:	92-M7 Series Aerials
Coord Circuit:	Mount Eden Circuit
Datum:	Geodetic 2000 Auckland 2016
GENERAL	
Pit Floor Elevation: -60m RL	
Pit Stage Area: 108ha	
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APPENDIX C: EROSION AND SEDIMENT CONTROL PLAN

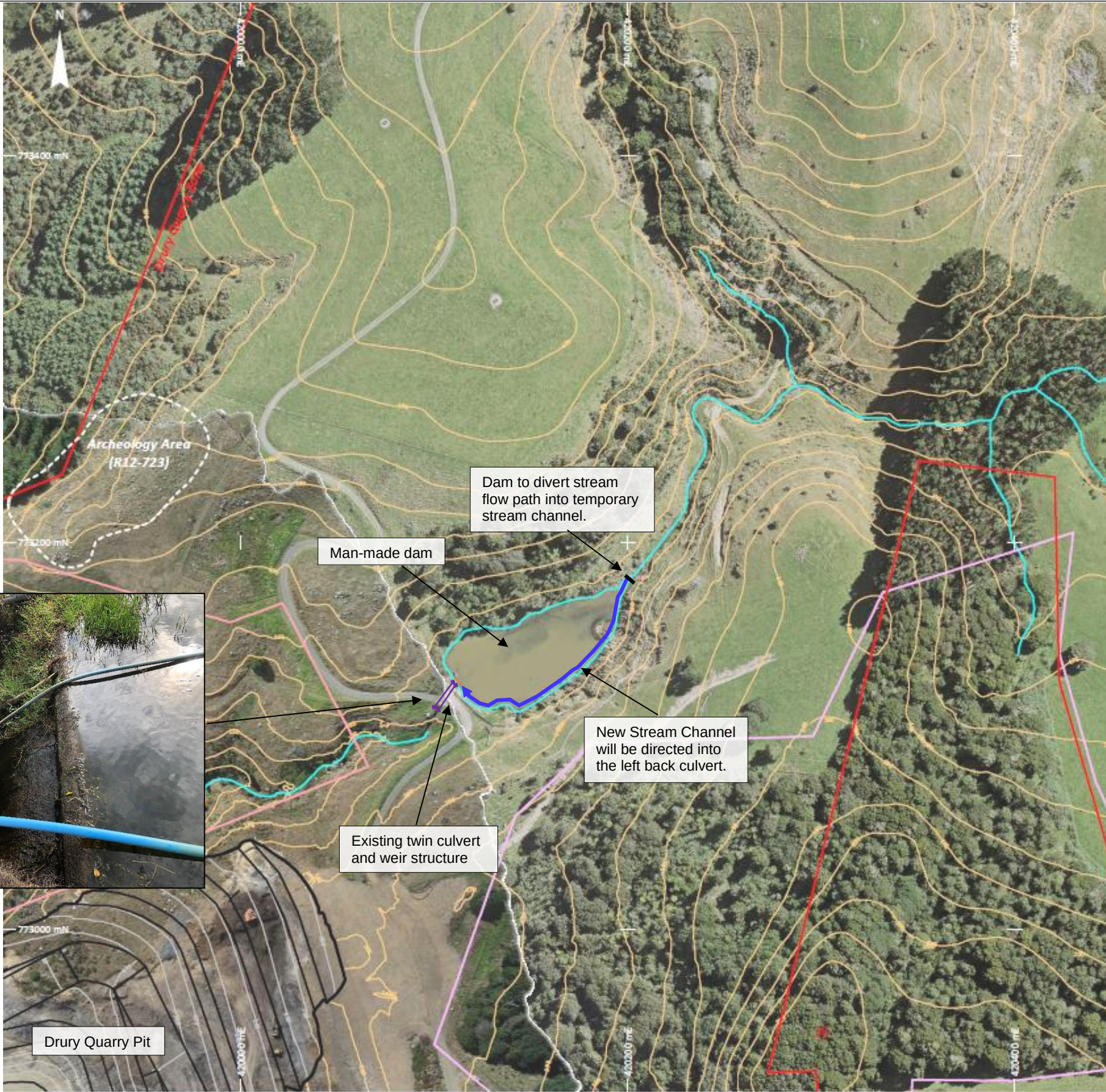
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Erosion and Sediment Control Drawing Schedule

Title	Drawing No.	Sheet No.	Revision	Date
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Enabling Works	ESCP-DQSB-01	1	D	14.12.23
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 1: Phase 1	ESCP-DQSB-02	2	D	14.12.23
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 1: Phase 2	ESCP-DQSB-03	3	D	14.12.23
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 1: Phase 3	ESCP-DQSB-04	4	D	14.12.23
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 1: Phase 4	ESCP-DQSB-05	5	D	14.12.23
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 1: Phase 5	ESCP-DQSB-06	6	D	14.12.23
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 1: Phase 6	ESCP-DQSB-07	7	D	14.12.23
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 1: Phase 7	ESCP-DQSB-08	8	E	12.02.24
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 1: Phase 8	ESCP-DQSB-09	9	E	12.02.24
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 1: Phase 9	ESCP-DQSB-10	10	E	12.02.24
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Northern Bund	ESCP-DQSB-NB-01	11	C	26.09.23
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – NW Haul Road	ESCP-DQSB-HR-01	12	B	26.09.23
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Overburden Stockpile Area	ESCP-DQSB-OB-01	13	B	14.12.23
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 1: Pit Plan 3-Year (Indicative)	ESCP-DQSB-P-01	14	C	12.02.24
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 2: Pit Plan 15-Year (Indicative)	ESCP-DQSB-P-02	15	C	12.02.24
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 3: Pit Plan 30-Year (Indicative)	ESCP-DQSB-P-03	16	C	12.02.24
Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 4: Pit Plan 40-Year (Indicative)	ESCP-DQSB-P-04	17	E	17.10.24

Erosion and Sediment Control Drawing Schedule

Drury Quarry – Sutton Block Erosion and Sediment Control Plan – Stage 5: Pit Plan Final	ESCP-DQSB-P-05	18	A	17.10.24
Drury Quarry – Sutton Block - Pit Plan 3-Year (Indicative) – Sutton Pit Water Management	ESCP-Sutton Blk-H20	19	C	17.10.24

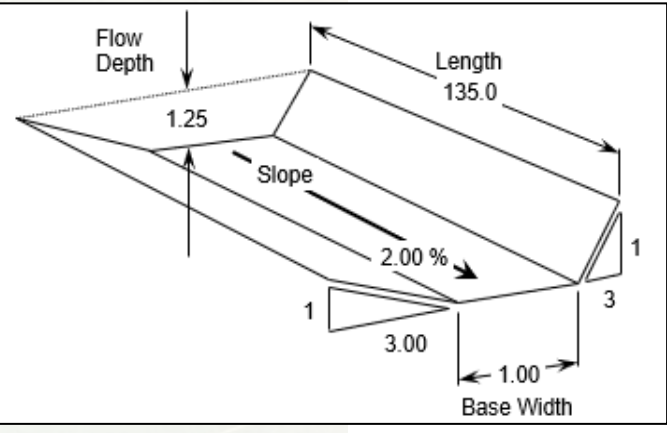


Construction Methodology:

Enabling works to allow for the establishment of SRP-1.

1. Removal of the weir to allow the stream to flow to re-establish its flow path along its original alignment. This will allow the dam to begin to dry up for approximately 2 months before earthworks commence.
2. To be constructed offline, a new temporary stream channel will be established around the outside (left bank) of the dam footprint and will discharge into the left back culvert at the road crossing.
3. Once the new temporary stream channel has been constructed and stabilised, the construction of the dam upstream of the current lake footprint will allow water to flow into the new stream channel. Stabilised temporary dams and over-pumping will be set up to construct this dam.
4. Mucking out of the old lake/dam will occur once the stream has been diverted to the new stream channel.
5. An SRP (refer to ESCP-DQSB-02) will be built within the dam footprint and will discharge into the right back culvert. The SRP will be constructed to service the largest catchment area across all stages in this area.

New Stream Channel cross-section



**KEY
Erosion and Sediment Control**

- Dirty Water Diversion
- Clean Water Diversion
- Silt Fence
- Sediment Retention Pond
- Decanting Earth Bund (DEB)
- Constructed Stream Channel
- Culvert

NOTES

1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).
2. Earthworks are to be programmed to ensure rapid stabilisation.
3. All erosion and sediment control measures will be inspected on a daily basis by the site foreman.
4. Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.

REV	DATE	REVISION DETAILS	APPROVED
A	19.05.22	Draft for review.	
B	29.06.22	Consent issue.	
C	20.09.23	Review for consent issue	
D	14.12.23	Update of Naming and Phasing Protocols	



Drawn
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Checked
CS

Project

DRURY QUARRY – SUTTON BLOCK

Title

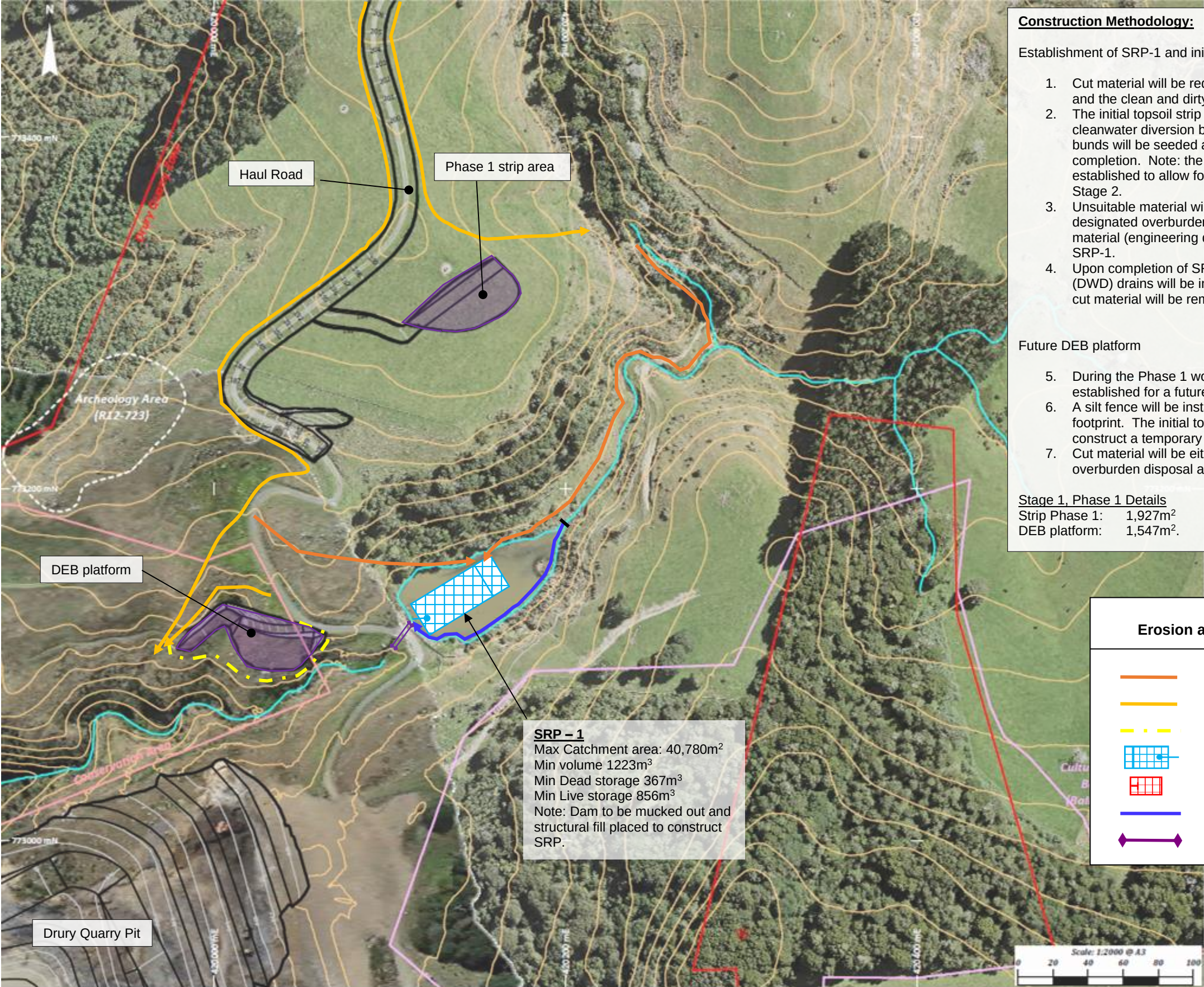
Erosion and Sediment Control Plan –
Stage 1: Enabling Works

Drawing No.

ESCP-DQSB-01

Sheet No.

1



Construction Methodology:

Establishment of SRP-1 and initial strip.

1. Cut material will be required to establish the SRP-1 and the clean and dirty water diversions.
2. The initial topsoil strip will be used to establish the cleanwater diversion bunds (CWB). The diversion bunds will be seeded and mulched immediately upon completion. Note: the CWB alignment is to be established to allow for the future phases through to Stage 2.
3. Unsuitable material will be cut and taken to the designated overburden disposal site. Suitable material (engineering quality) will be used to establish SRP-1.
4. Upon completion of SRP-1, the dirty water diversion (DWD) drains will be installed. Any remaining cut material will be removed from Phase 1.

Future DEB platform

5. During the Phase 1 works, a platform will also be established for a future DEB.
6. A silt fence will be installed below the platform footprint. The initial topsoil strip will be used to construct a temporary CWB.
7. Cut material will be either taken to the designated overburden disposal area or used to construct SRP-1.

Stage 1, Phase 1 Details

Strip Phase 1: 1,927m²
DEB platform: 1,547m².

**KEY
Erosion and Sediment Control**

- Dirty Water Diversion
- Clean Water Diversion
- Silt Fence
- Sediment Retention Pond
- Decanting Earth Bund (DEB)
- Constructed Stream Channel
- Culvert

SRP - 1
Max Catchment area: 40,780m²
Min volume 1223m³
Min Dead storage 367m³
Min Live storage 856m³
Note: Dam to be mucked out and structural fill placed to construct SRP.

NOTES

1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).
2. Earthworks are to be programmed to ensure rapid stabilisation.
3. All erosion and sediment control measures will be inspected on a daily basis by the site foreman.
4. Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.

REV	DATE	REVISION DETAILS	APPROVED
A	05.05.22	Draft for review.	
B	28.06.22	Haul Road added	
C	20.09.23	Review for consent issue	
D	14.12.23	Update of Naming and Phasing Protocols	



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ZW

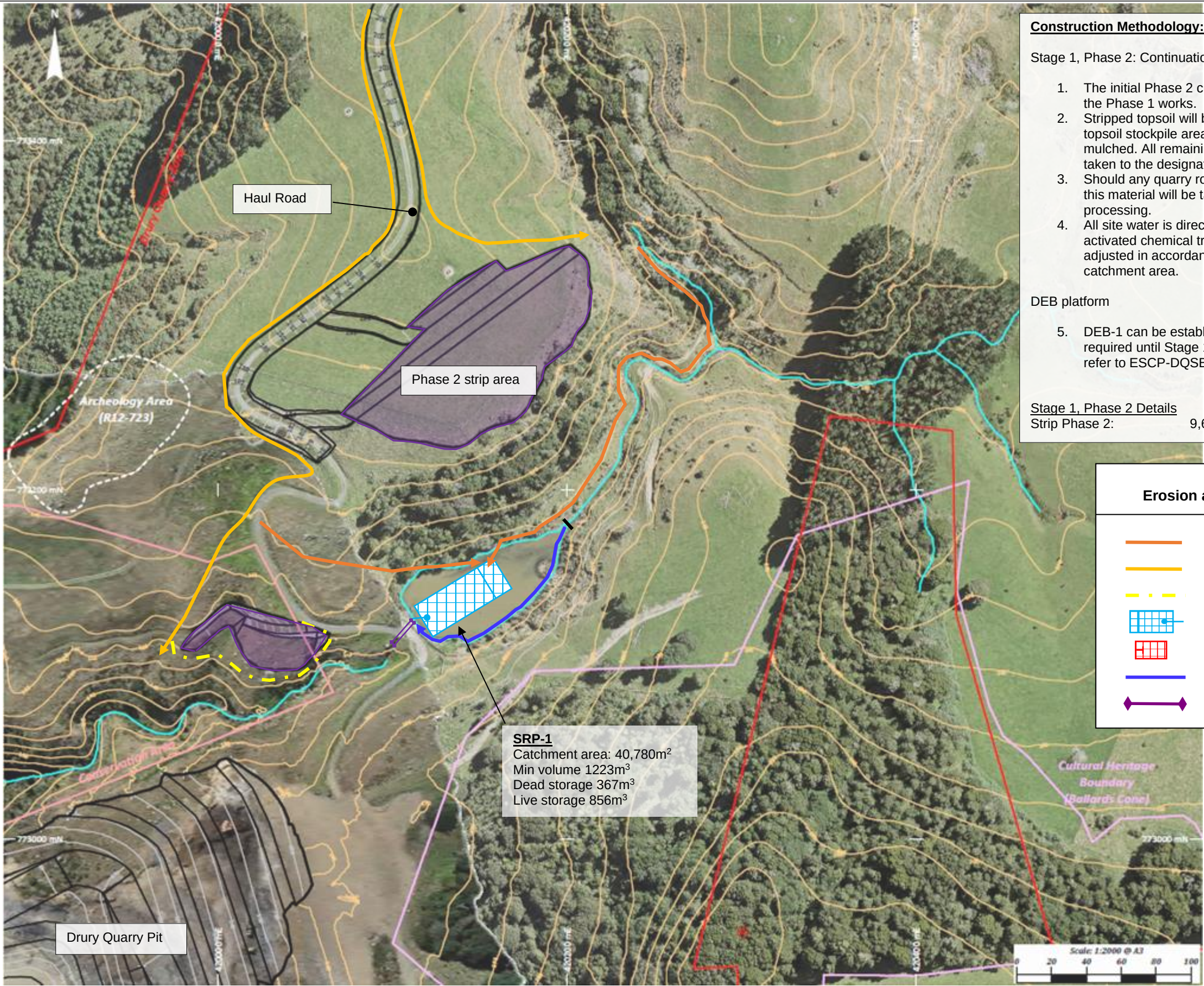
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Project
DRURY QUARRY – SUTTON BLOCK

Title
**Erosion and Sediment Control Plan
Stage 1: Phase 1**

Drawing No.
ESCP-DQSB-02

Sheet No.
2



Construction Methodology:

Stage 1, Phase 2: Continuation of staged cut.

1. The initial Phase 2 cut will be extended as part of the Phase 1 works.
2. Stripped topsoil will be taken to the designated topsoil stockpile area and will be seeded and mulched. All remaining overburden material will be taken to the designated overburden disposal site.
3. Should any quarry rock material be encountered, this material will be taken to the Drury Quarry for processing.
4. All site water is directed to SRP-1. Note: rainfall activated chemical treatment shed tray size to be adjusted in accordance with CTMP and contributing catchment area.

DEB platform

5. DEB-1 can be established at any time. It will not be required until Stage 1 Phase 5. For sizing details refer to ESCP-DQSB-06.

Stage 1, Phase 2 Details

Strip Phase 2: 9,623m²

**KEY
Erosion and Sediment Control**

- Dirty Water Diversion
- Clean Water Diversion
- Silt Fence
- Sediment Retention Pond
- Decanting Earth Bund (DEB)
- Constructed Stream Channel
- Culvert

SRP-1
Catchment area: 40,780m²
Min volume 1223m³
Dead storage 367m³
Live storage 856m³

NOTES

1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).
2. Earthworks are to be programmed to ensure rapid stabilisation.
3. All erosion and sediment control measures will be inspected on a daily basis by the site foreman.
4. Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.

REV	DATE	REVISION DETAILS	APPROVED
A	05.05.22	Draft for review.	
B	28.06.22	Haul Road added	
C	20.09.23	Review for consent issue	
D	14.12.23	Update of Naming and Phasing Protocols	



Drawn
ZW

Checked
CS

Project

DRURY QUARRY – SUTTON BLOCK

Title

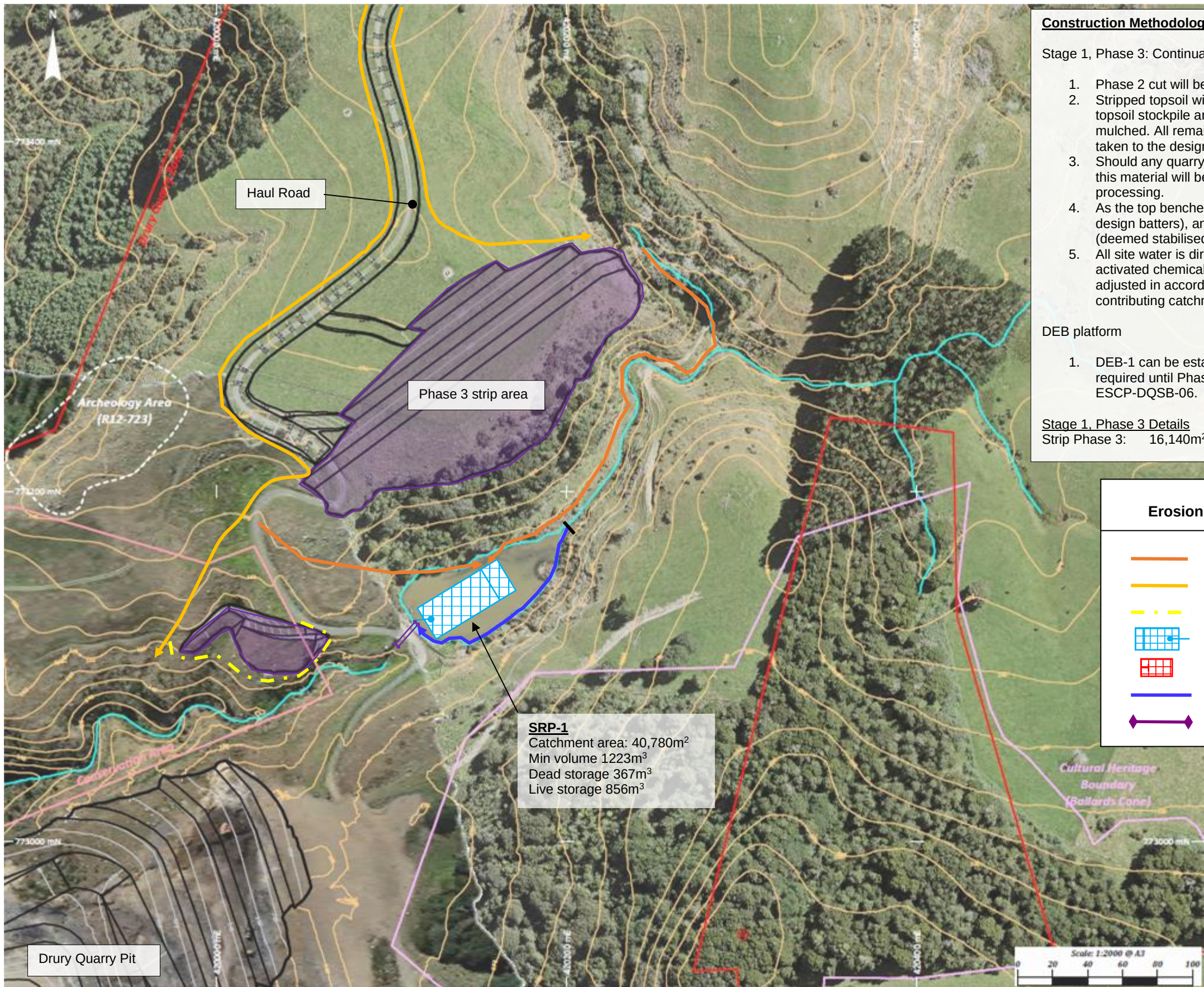
**Erosion and Sediment Control Plan –
Stage 1: Phase 2**

Drawing No.

ESCP-DQSB-03

Sheet No.

3



Construction Methodology:

Stage 1, Phase 3: Continuation of staged cut.

1. Phase 2 cut will be extended.
2. Stripped topsoil will be taken to the designated topsoil stockpile area and will be seeded and mulched. All remaining overburden material will be taken to the designated overburden disposal site.
3. Should any quarry rock material be encountered, this material will be taken to the Drury Quarry for processing.
4. As the top benches are completed (trimmed to design batters), any batters that are not rock (deemed stabilised) will be hydroseeded.
5. All site water is directed to SRP-1. Note: rainfall activated chemical treatment shed roof tray to be adjusted in accordance with CTMP and the contributing catchment area.

DEB platform

1. DEB-1 can be established at any time. It will not be required until Phase 5. For sizing details refer to ESCP-DQSB-06.

Stage 1, Phase 3 Details
Strip Phase 3: 16,140m²

**KEY
Erosion and Sediment Control**

- Dirty Water Diversion
- Clean Water Diversion
- Silt Fence
- Sediment Retention Pond
- Decanting Earth Bund (DEB)
- Constructed Stream Channel
- Culvert

SRP-1
Catchment area: 40,780m²
Min volume 1223m³
Dead storage 367m³
Live storage 856m³

NOTES

1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).
2. Earthworks are to be programmed to ensure rapid stabilisation.
3. All erosion and sediment control measures will be inspected on a daily basis by the site foreman.
4. Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.

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B	28.06.22	Haul Road added.	
C	20.09.23	Review for consent issue	
D	14.12.23	Update of Naming and Phasing Protocols	



Drawn
ZW

Checked
CS

Project

DRURY QUARRY – SUTTON BLOCK

Title

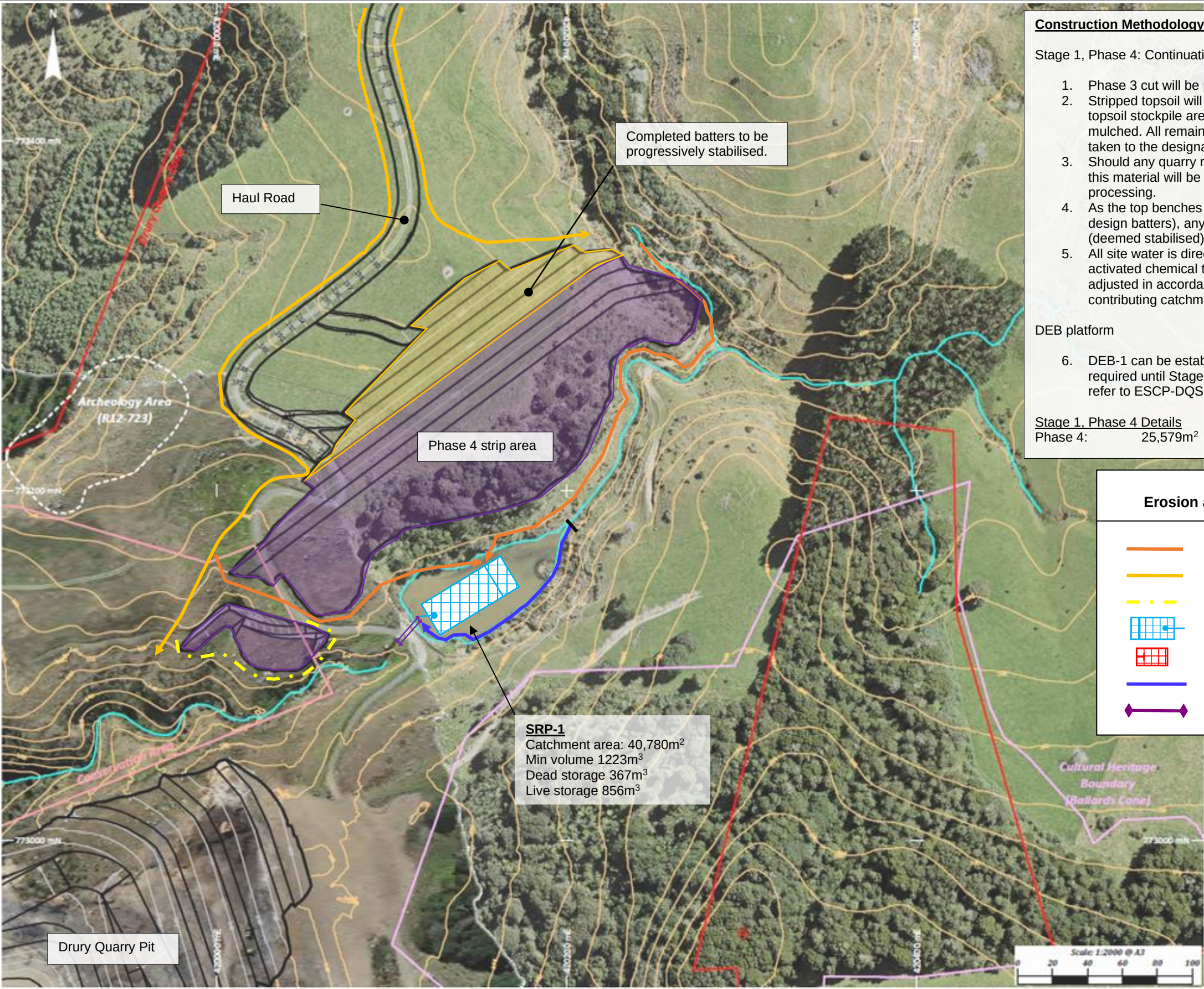
**Erosion and Sediment Control Plan –
Stage 1: Phase 3**

Drawing No.

ESCP-DQSB-04

Sheet No.

4



Construction Methodology:

Stage 1, Phase 4: Continuation of staged cut.

1. Phase 3 cut will be progressively extended.
2. Stripped topsoil will be taken to the designated topsoil stockpile area and will be seeded and mulched. All remaining overburden material will be taken to the designated overburden disposal site.
3. Should any quarry rock material be encountered, this material will be taken to the Drury Quarry for processing.
4. As the top benches are completed (trimmed to design batters), any batters that are not rock (deemed stabilised) will be hydroseeded.
5. All site water is directed to SRP-1. Note: rainfall activated chemical treatment shed roof tray to be adjusted in accordance with CTMP and the contributing catchment area.

DEB platform

6. DEB-1 can be established at any time. It will not be required until Stage 1, Phase 5. For sizing details refer to ESCP-DQSB-06.

Stage 1, Phase 4 Details
Phase 4: 25,579m²

KEY
Erosion and Sediment Control

- Dirty Water Diversion
- Clean Water Diversion
- Silt Fence
- Sediment Retention Pond
- Decanting Earth Bund (DEB)
- Constructed Stream Channel
- Culvert

NOTES

1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).
2. Earthworks are to be programmed to ensure rapid stabilisation.
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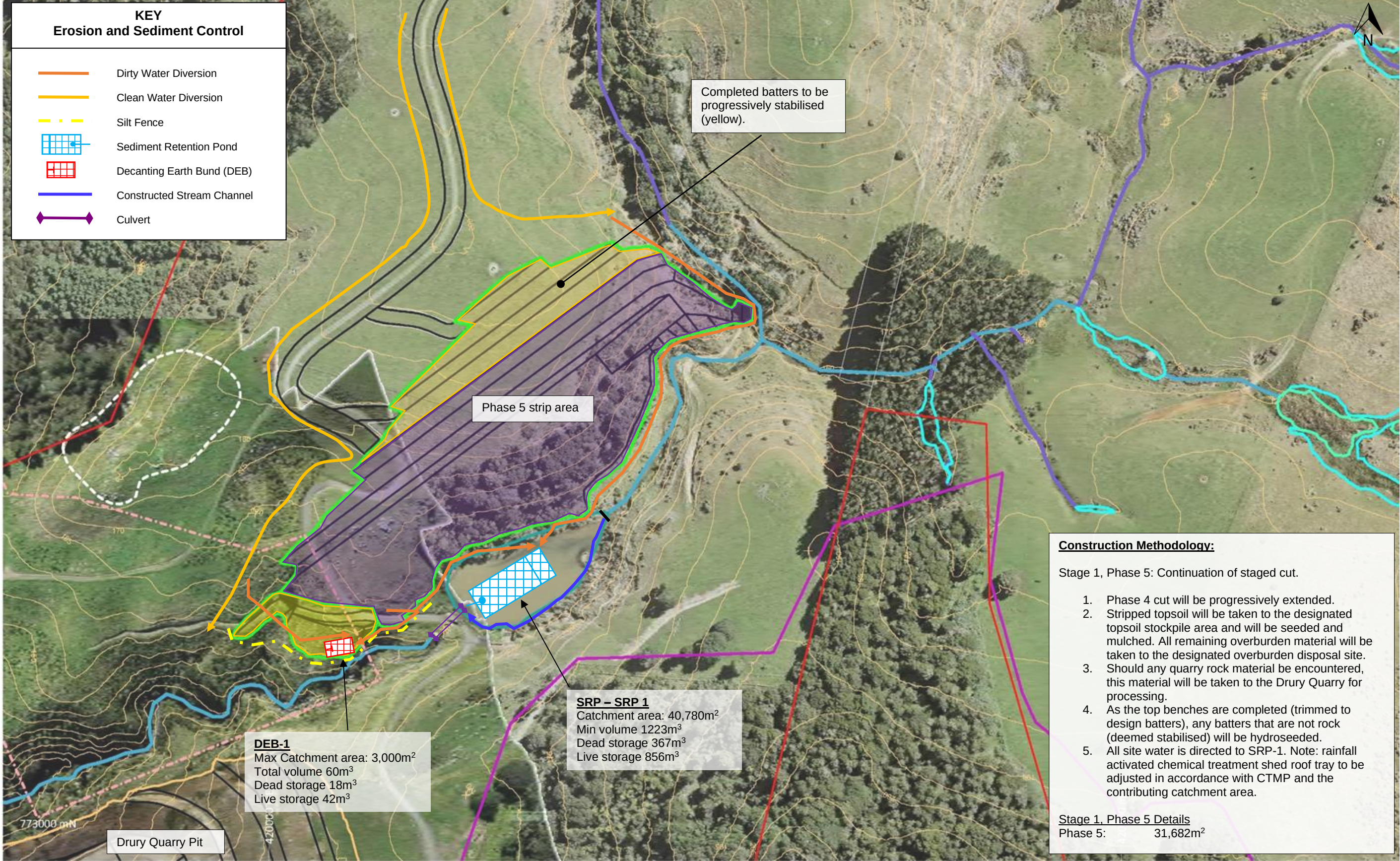
REV	DATE	REVISION DETAILS	APPROVED
A	05.05.22	Draft for review.	
B	28.06.22	Haul Road added	
C	20.09.23	Review for consent issue	
D	14.12.23	Update of Naming and Phasing Protocols	



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Project	DRURY QUARRY – SUTTON BLOCK
Title	Erosion and Sediment Control Plan – Stage 1: Phase 4
Drawing No.	ESCP-DQSB-05
Sheet No.	5



NOTES

- All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).
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- All erosion and sediment control measures will be inspected on a daily basis by the site foreman.
- Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.

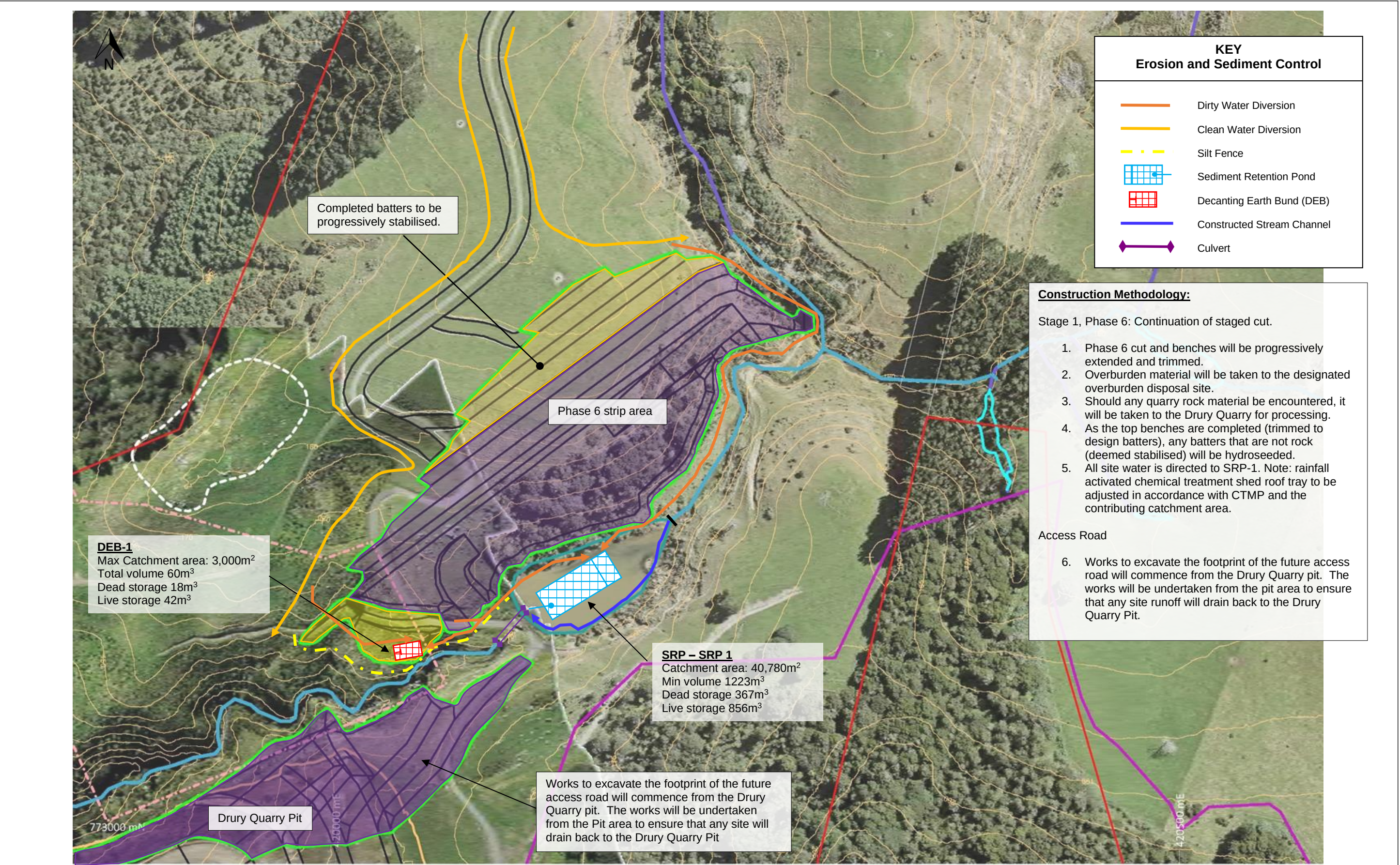
REV	DATE	REVISION DETAILS	APPROVED
A	05.05.22	Draft for review.	
B	28.06.22	Consent issue	
C	20.09.23	Review for consent issue	
D	14.12.23	Update of Naming and Phasing Protocols	



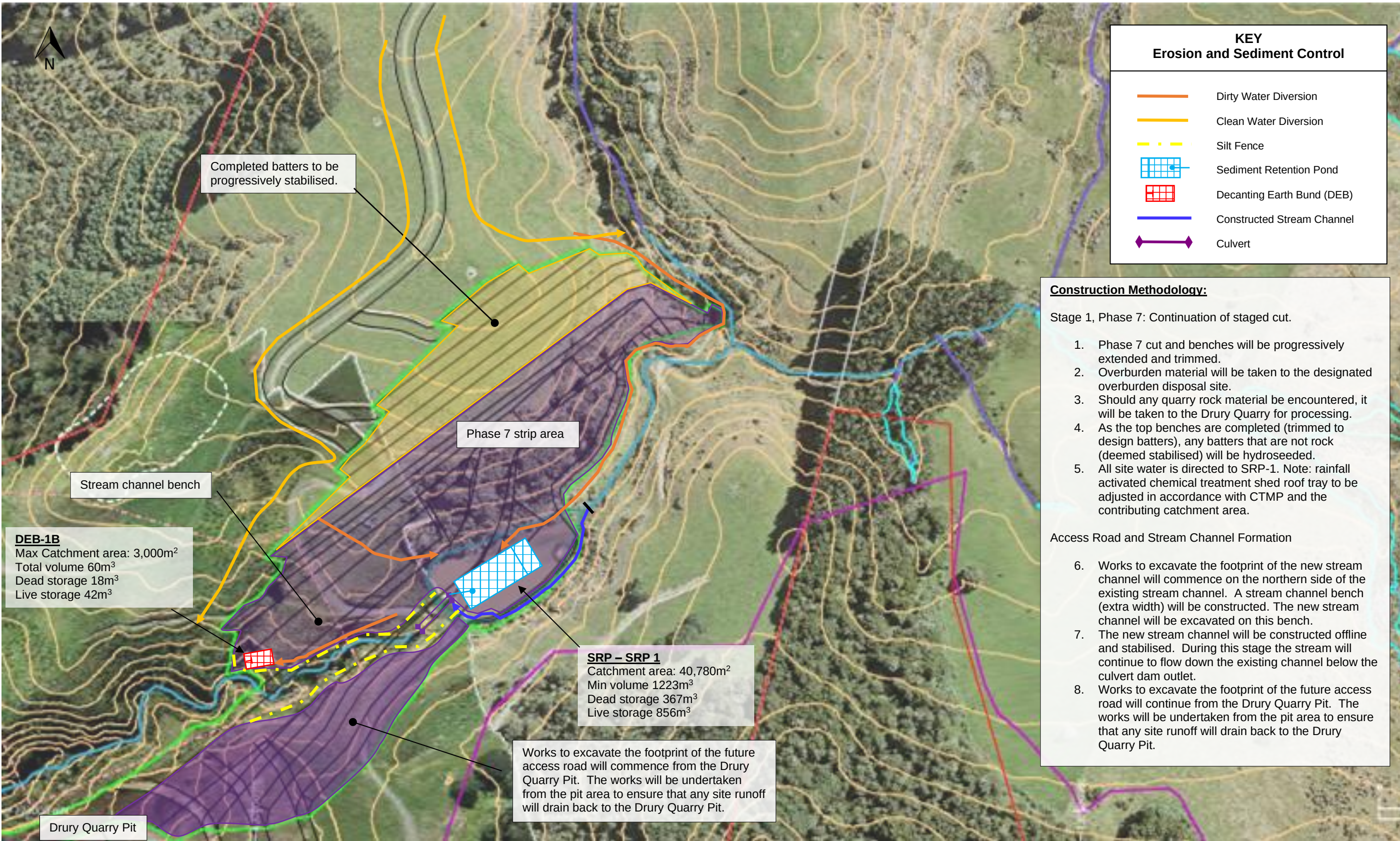
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Project	DRURY QUARRY – SUTTON BLOCK		
Title	Erosion and Sediment Control Plan – Stage 1: Phase 5		
Drawing No.	ESCP-DQSB-06	Sheet No.	6



NOTES 1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 ‘Erosion and Sediment Control Guide for Land Disturbing Activities’ (GD05). 2. Earthworks are to be programmed to ensure rapid stabilisation. 3. All erosion and sediment control measures will be inspected on a daily basis by the site foreman. 4. Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.	<table><tr><th>REV</th><th>DATE</th><th>REVISION DETAILS</th><th>APPROVED</th></tr><tr><td>A</td><td>05.05.22</td><td>Draft for review.</td><td></td></tr><tr><td>B</td><td>28.06.22</td><td>Consent issue</td><td></td></tr><tr><td>C</td><td>20.09.23</td><td>Review for consent issue</td><td></td></tr><tr><td>D</td><td>14.12.23</td><td>Update of Naming and Phasing Protocols</td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	REV	DATE	REVISION DETAILS	APPROVED	A	05.05.22	Draft for review.		B	28.06.22	Consent issue		C	20.09.23	Review for consent issue		D	14.12.23	Update of Naming and Phasing Protocols																										Fulton Hogan STEVENSON		Project	DRURY QUARRY – SUTTON BLOCK	
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			Title	Erosion and Sediment Control Plan – Stage 1: Phase 6																																														
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	ZW	CS	ESCP-DQSB-07		7																																													



KEY
Erosion and Sediment Control

- Dirty Water Diversion
- Clean Water Diversion
- Silt Fence
- Sediment Retention Pond
- Decanting Earth Bund (DEB)
- Constructed Stream Channel
- Culvert

Construction Methodology:

Stage 1, Phase 7: Continuation of staged cut.

1. Phase 7 cut and benches will be progressively extended and trimmed.
2. Overburden material will be taken to the designated overburden disposal site.
3. Should any quarry rock material be encountered, it will be taken to the Drury Quarry for processing.
4. As the top benches are completed (trimmed to design batters), any batters that are not rock (deemed stabilised) will be hydroseeded.
5. All site water is directed to SRP-1. Note: rainfall activated chemical treatment shed roof tray to be adjusted in accordance with CTMP and the contributing catchment area.

Access Road and Stream Channel Formation

6. Works to excavate the footprint of the new stream channel will commence on the northern side of the existing stream channel. A stream channel bench (extra width) will be constructed. The new stream channel will be excavated on this bench.
7. The new stream channel will be constructed offline and stabilised. During this stage the stream will continue to flow down the existing channel below the culvert dam outlet.
8. Works to excavate the footprint of the future access road will continue from the Drury Quarry Pit. The works will be undertaken from the pit area to ensure that any site runoff will drain back to the Drury Quarry Pit.

NOTES

1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).
2. Earthworks are to be programmed to ensure rapid stabilisation.
3. All erosion and sediment control measures will be inspected on a daily basis by the site foreman.
4. Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.

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A	05.05.22	Draft for review.	
B	28.06.22	Consent issue	
C	20.09.23	Review for consent issue	
D	14.12.23	Update of Naming and Phasing Protocols	
E	12.02.24	Removal of constructed pond.	



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ZW

Checked
CS

Project

DRURY QUARRY – SUTTON BLOCK

Title

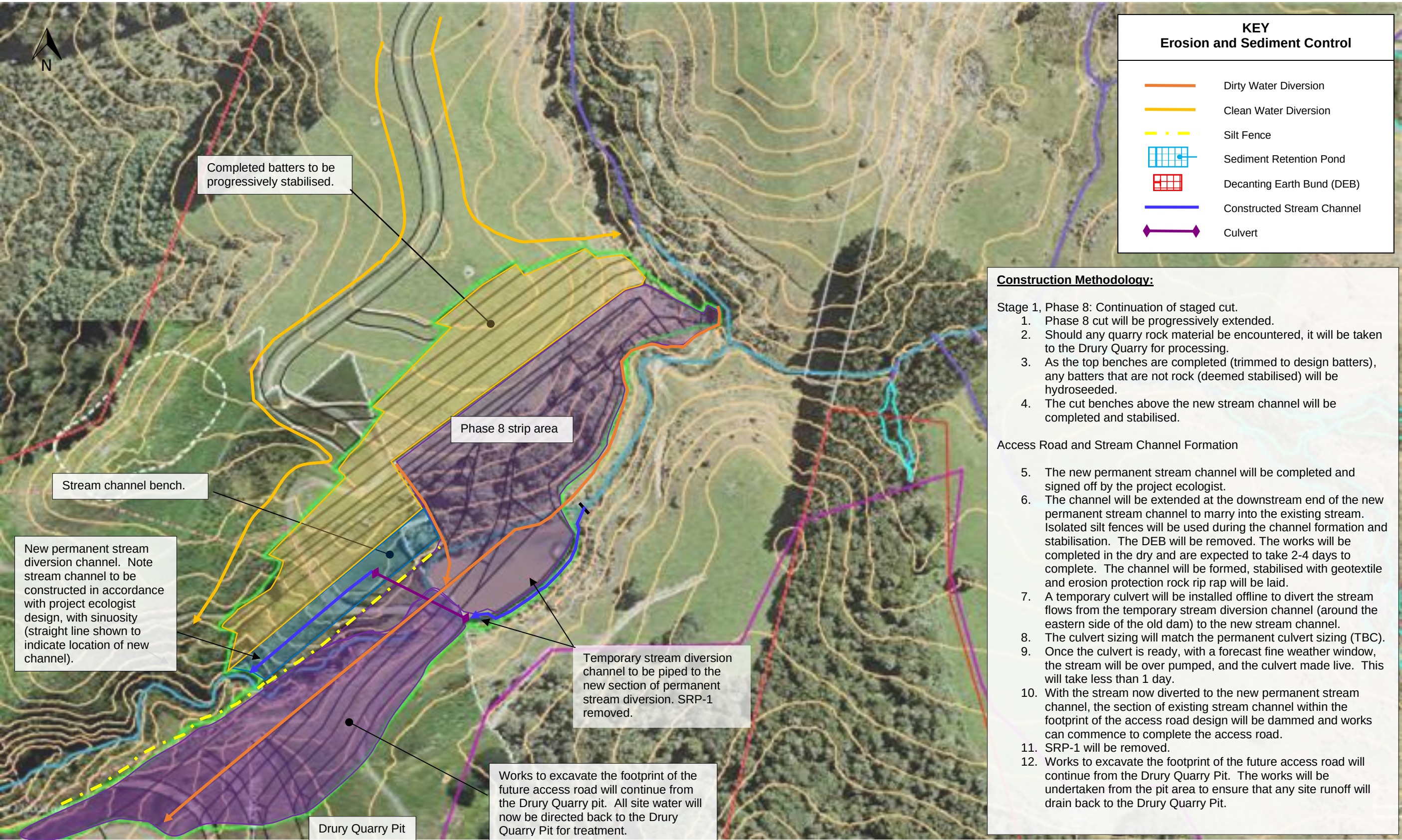
**Erosion and Sediment Control Plan –
Stage 1: Phase 7**

Drawing No.

ESCP-DQSB-08

Sheet No.

8



NOTES

- All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).
- Earthworks are to be programmed to ensure rapid stabilisation.
- All erosion and sediment control measures will be inspected on a daily basis by the site foreman.
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E	12.02.24	Removal of constructed pond.	



Drawn
ZW

Checked
CS

Project

DRURY QUARRY – SUTTON BLOCK

Title

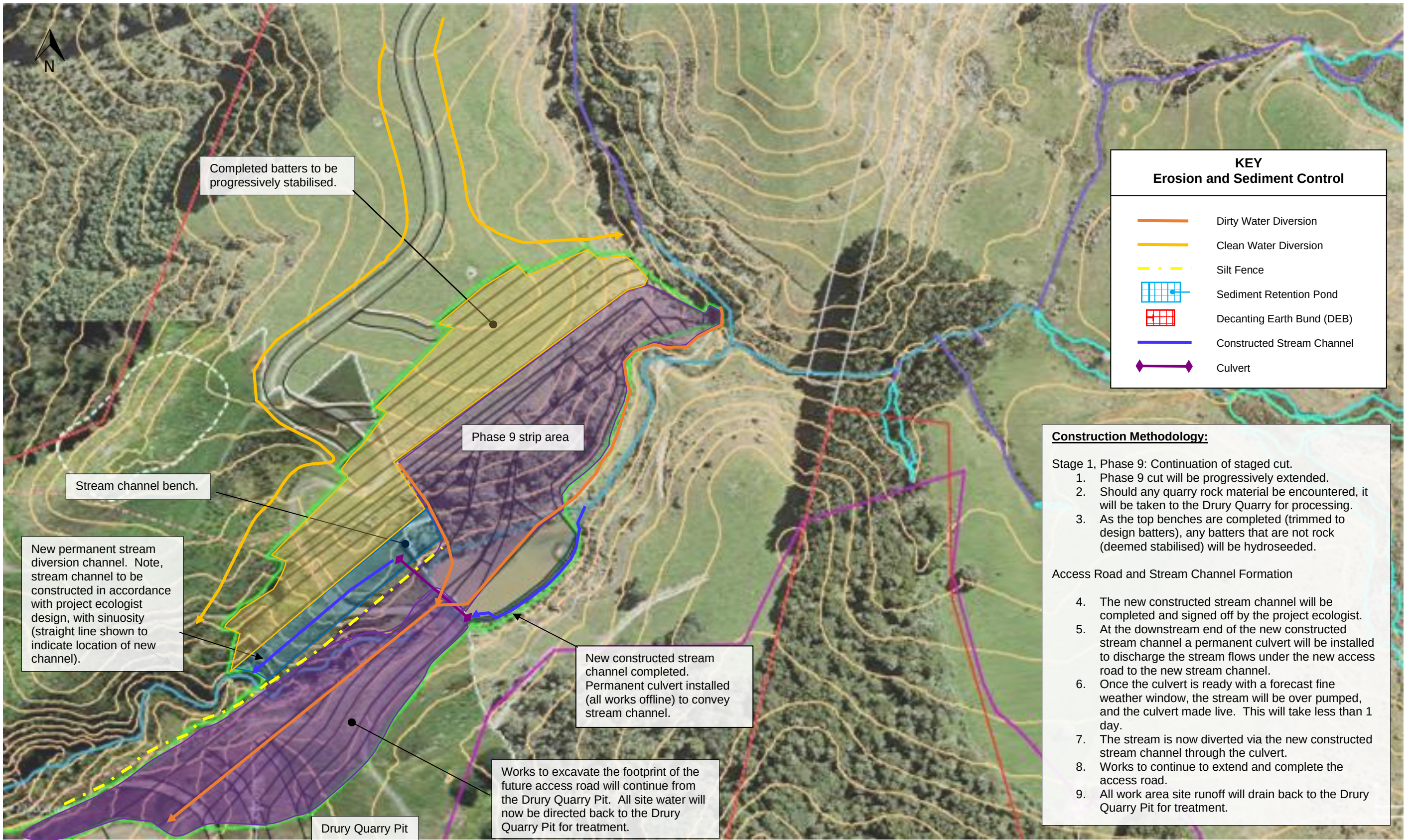
**Erosion and Sediment Control Plan –
Stage 1: Phase 8**

Drawing No.

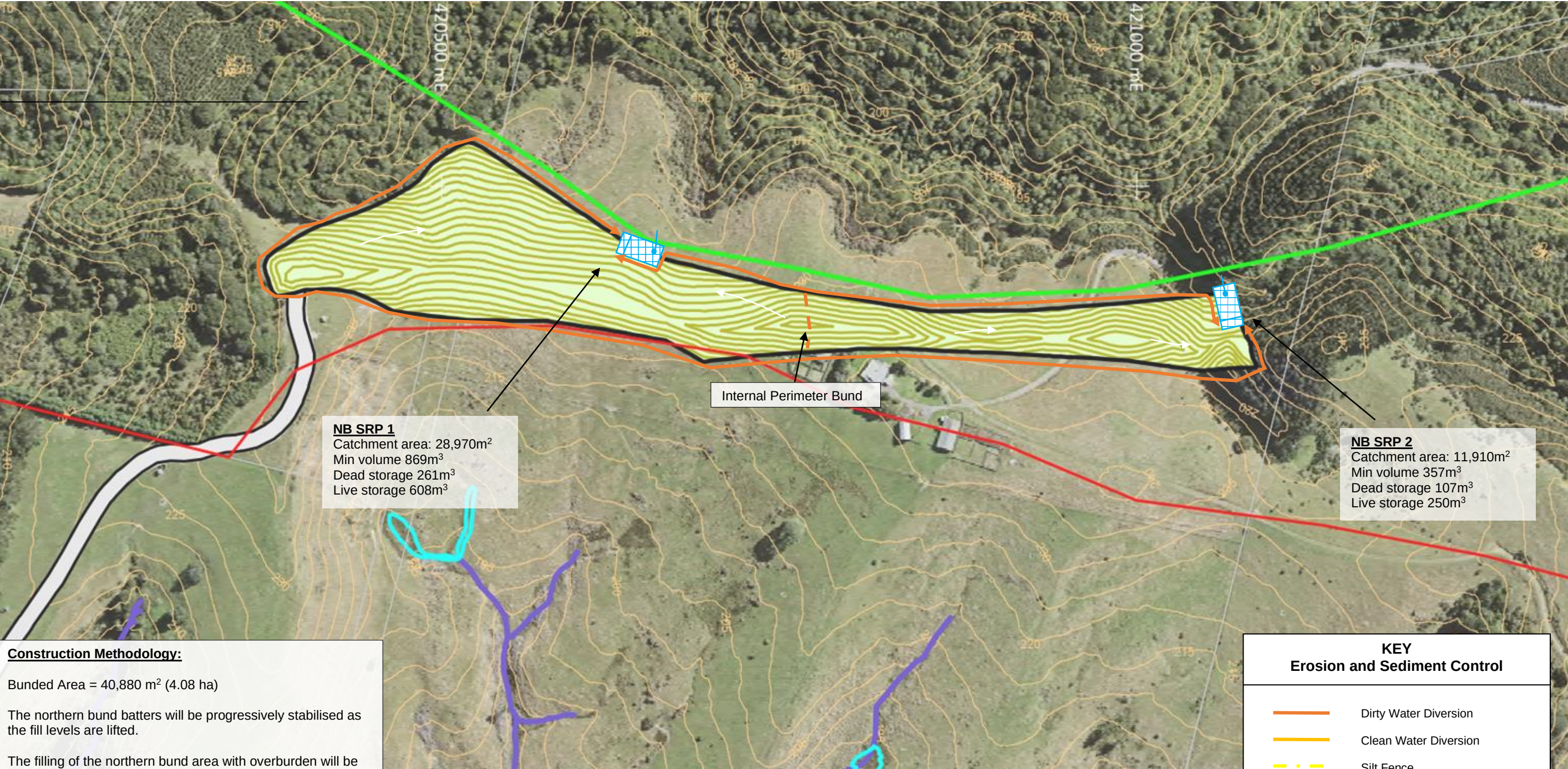
ESCP-DQSB-09

Sheet No.

9



NOTES 1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05). 2. Earthworks are to be programmed to ensure rapid stabilisation. 3. All erosion and sediment control measures will be inspected on a daily basis by the site foreman. 4. Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.	<table><tr><th>REV</th><th>DATE</th><th>REVISION DETAILS</th><th>APPROVED</th></tr><tr><td>A</td><td>05.05.22</td><td>Draft for review.</td><td></td></tr><tr><td>B</td><td>28.06.22</td><td>Consent issue</td><td></td></tr><tr><td>C</td><td>20.09.23</td><td>Review for consent issue</td><td></td></tr><tr><td>D</td><td>14.12.23</td><td>Update of Naming and Phasing Protocols</td><td></td></tr><tr><td>E</td><td>12.02.24</td><td>Removal of constructed pond.</td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	REV	DATE	REVISION DETAILS	APPROVED	A	05.05.22	Draft for review.		B	28.06.22	Consent issue		C	20.09.23	Review for consent issue		D	14.12.23	Update of Naming and Phasing Protocols		E	12.02.24	Removal of constructed pond.																		Fulton Hogan STEVENSON		Project	DRURY QUARRY – SUTTON BLOCK	
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		Title	Erosion and Sediment Control Plan – Stage 1: Phase 9																																											
Drawn ZW		Checked CS	Drawing No. ESCP-DQSB-10		Sheet No. 10																																									



NB SRP 1
Catchment area: 28,970m²
Min volume 869m³
Dead storage 261m³
Live storage 608m³

NB SRP 2
Catchment area: 11,910m²
Min volume 357m³
Dead storage 107m³
Live storage 250m³

Construction Methodology:

Bunded Area = 40,880 m² (4.08 ha)

The northern bund batters will be progressively stabilised as the fill levels are lifted.

The filling of the northern bund area with overburden will be staged (specific staging TBC). As areas of the bund are completed, they will be progressively stabilised.

The construction of the SRP's will be staged in accordance with the filling operation. All controls will be installed in advance of the bund extending beyond the catchment of the previous control device.

**KEY
Erosion and Sediment Control**

- Dirty Water Diversion
- Clean Water Diversion
- Silt Fence
- Sediment Retention Pond
- Decanting Earth Bund (DEB)
- Constructed Stream Channel
- Culvert

NOTES

- All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).
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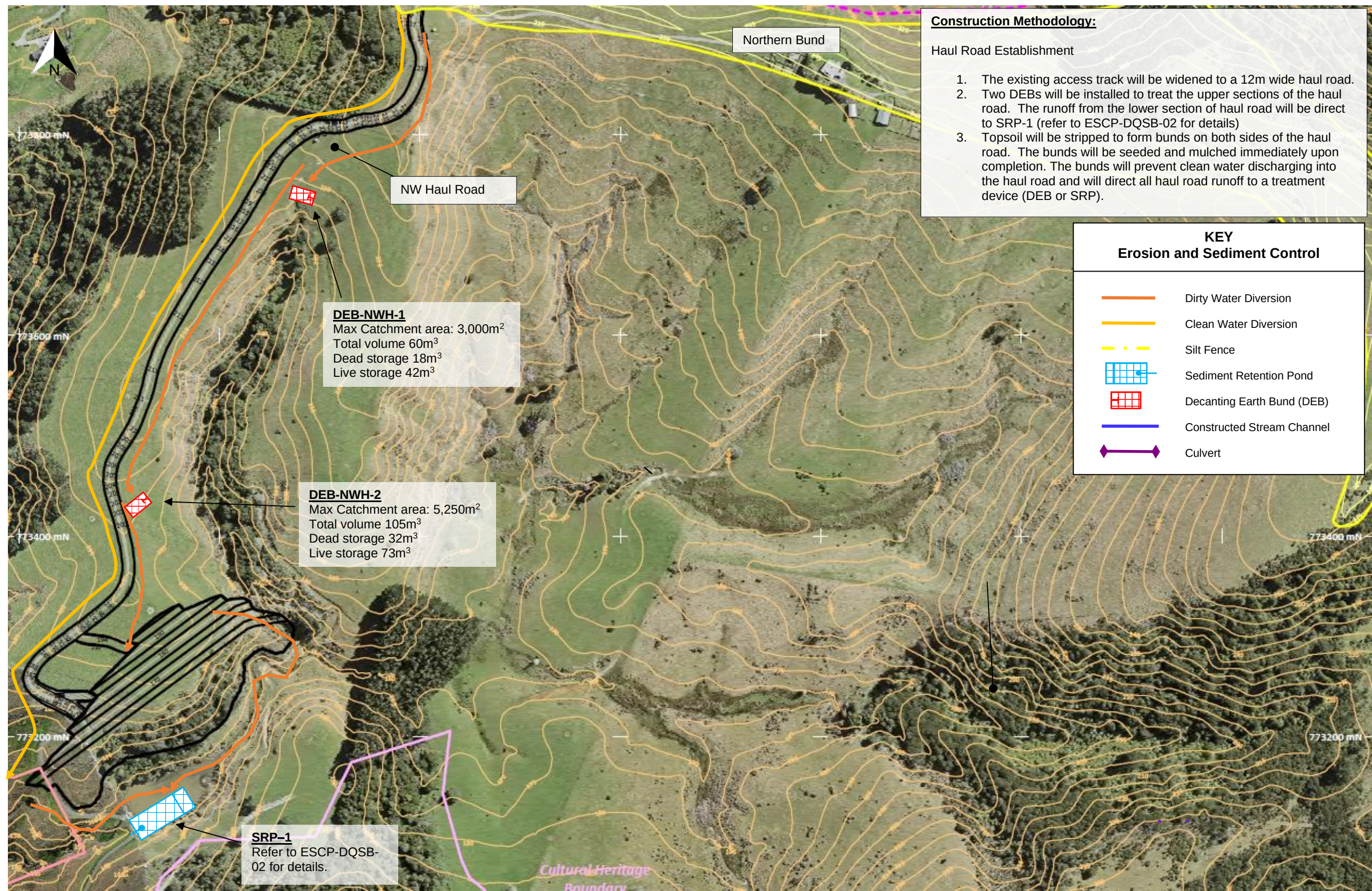
REV	DATE	REVISION DETAILS	APPROVED
A	02.06.22	Draft for review.	
B	29.06.22	Consent Issue.	
C	26.09.23	Updated Design Drawings	



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ZW

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CS

Project	DRURY QUARRY – SUTTON BLOCK
Title	Erosion and Sediment Control Plan – Northern Bund
Drawing No.	ESCP-DQSB-NB-01
Sheet No.	11



NOTES

1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).
2. Earthworks are to be programmed to ensure rapid stabilisation.
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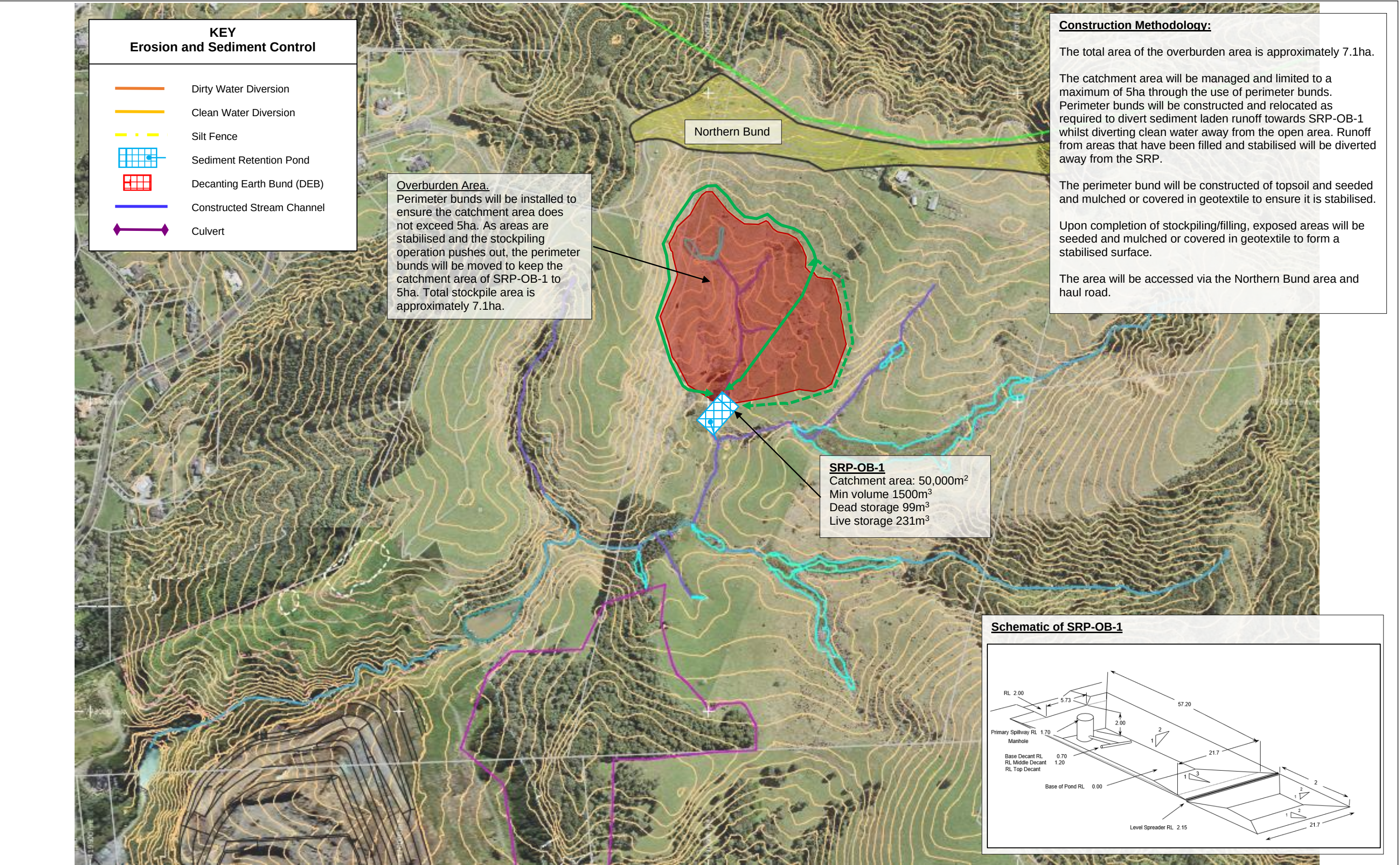
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A	29.06.22	Draft for review.	
B	26.09.23	2023 update	



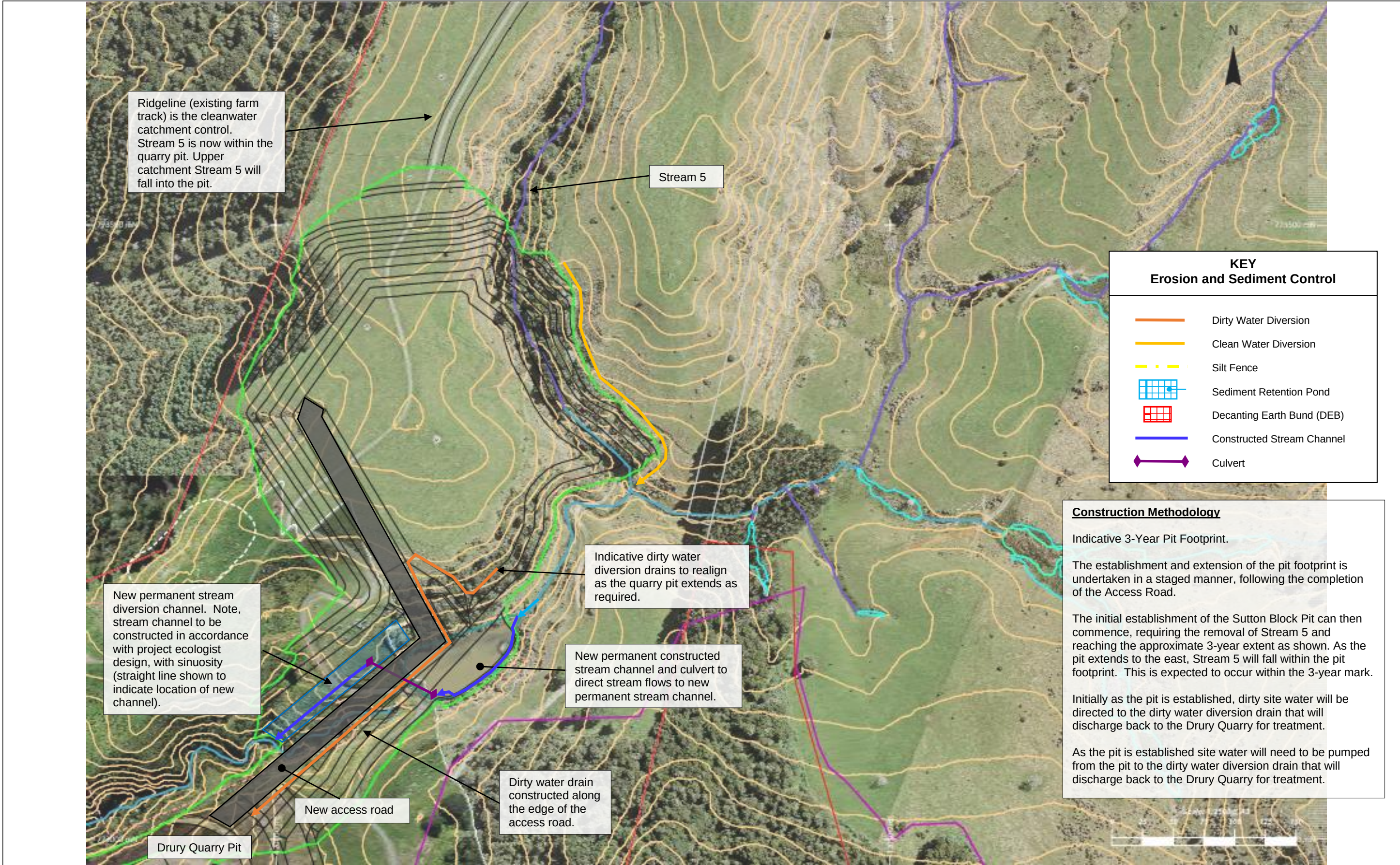
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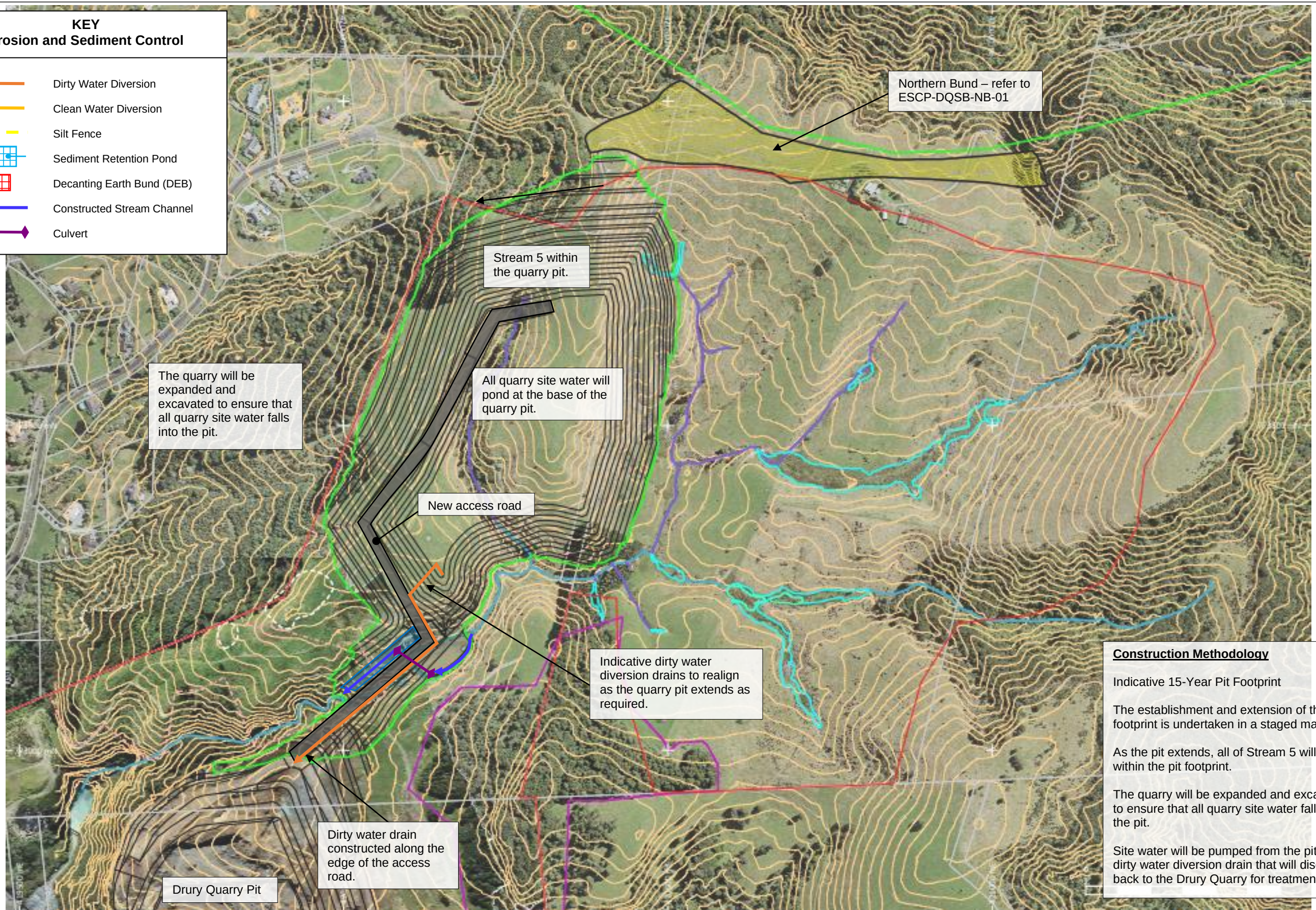
Project	DRURY QUARRY – SUTTON BLOCK
Title	Erosion and Sediment Control Plan NW Haul Road
Drawing No.	ESCP-DQSB-HR-01
Sheet No.	12



NOTES 1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 ‘Erosion and Sediment Control Guide for Land Disturbing Activities’ (GD05). 2. Earthworks are to be programmed to ensure rapid stabilisation. 3. All erosion and sediment control measures will be inspected on a daily basis by the site foreman. 4. Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.	<table><tr><th>REV</th><th>DATE</th><th>REVISION DETAILS</th><th>APPROVED</th></tr><tr><td>A</td><td>15.11.23</td><td>Draft for review.</td><td></td></tr><tr><td>B</td><td>14.12.23</td><td>Update of Naming and Phasing Protocols</td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	REV	DATE	REVISION DETAILS	APPROVED	A	15.11.23	Draft for review.		B	14.12.23	Update of Naming and Phasing Protocols																														Fulton Hogan STEVENSON		Project	DRURY QUARRY – SUTTON BLOCK	
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			Title	Erosion and Sediment Control Plan – Overburden Stockpile Area																																										
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Site water will be pumped from the pit to the dirty water diversion drain that will discharge back to the Drury Quarry for treatment.

15

KEY

Erosion and Sediment Control

Dirty Water Diversion

Clean Water Diversion

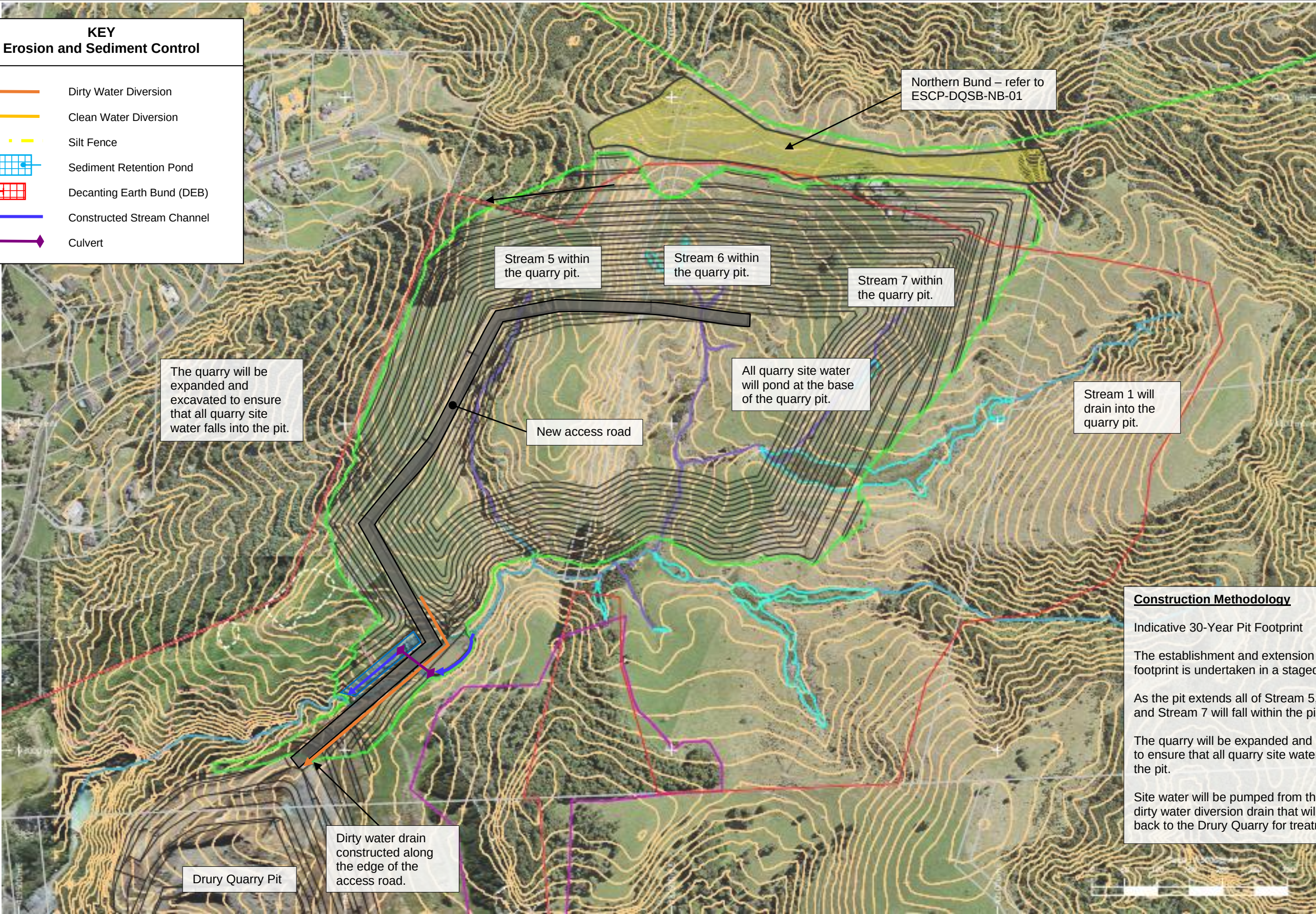
Silt Fence

Sediment Retention Pond

Decanting Earth Bund (DEB)

Constructed Stream Channel

Culvert



Construction Methodology

Indicative 30-Year Pit Footprint

The establishment and extension of the pit footprint is undertaken in a staged manner.

As the pit extends all of Stream 5, Stream 6 and Stream 7 will fall within the pit footprint.

The quarry will be expanded and excavated to ensure that all quarry site water falls into the pit.

Site water will be pumped from the pit to the dirty water diversion drain that will discharge back to the Drury Quarry for treatment.

NOTES 1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05). 2. Earthworks are to be programmed to ensure rapid stabilisation. 3. All erosion and sediment control measures will be inspected on a daily basis by the site foreman. 4. Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.	<table><tr><th>REV</th><th>DATE</th><th>REVISION DETAILS</th><th>APPROVED</th></tr><tr><td>A</td><td>21.09.23</td><td>Draft for review.</td><td></td></tr><tr><td>B</td><td>14.12.23</td><td>Update of Naming and Phasing Protocols</td><td></td></tr><tr><td>C</td><td>12.02.24</td><td>Removal of constructed pond.</td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	REV	DATE	REVISION DETAILS	APPROVED	A	21.09.23	Draft for review.		B	14.12.23	Update of Naming and Phasing Protocols		C	12.02.24	Removal of constructed pond.																										Fulton Hogan STEVENSON		Project	DRURY QUARRY – SUTTON BLOCK	
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KEY

Erosion and Sediment Control

Dirty Water Diversion

Clean Water Diversion

Silt Fence

Sediment Retention Pond

Decanting Earth Bund (DEB)

Constructed Stream Channel

Culvert

Construction Methodology

Final Pit Footprint

The establishment and extension of the pit footprint is undertaken in a staged manner.

As the pit extends more of Stream 1 will fall within the pit footprint. Stream 5, Stream 6, and Stream 7 are all within the pit footprint.

The quarry will be expanded and excavated to ensure that all quarry site water falls into the pit.

Site water will be pumped from the pit to the dirty water diversion drain that will discharge back to the Drury Quarry treatment system.

NOTES

1.

All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05).

2.

Earthworks are to be programmed to ensure rapid stabilisation.

3.

All erosion and sediment control measures will be inspected on a daily basis by the site foreman.

4.

Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.

REV	DATE	REVISION DETAILS	APPROVED
A	21.09.23	Draft for review.	
B	25.10.23	Stream Diversion Added.	
C	14.12.23	Update of Naming and Phasing Protocols	
D	12.02.24	Removal of constructed pond.	
E	17.10.24	Stage 5 updates (staging refinements)	

Drawn

ZW

Checked

CS

Project

DRURY QUARRY – SUTTON BLOCK

Title

Erosion and Sediment Control Plan

Stage 4: Pit Plan 40-Year (indicative)

Drawing No.

ESCP-DQSB-P-04

Sheet No.

17

KEY

Erosion and Sediment Control

Dirty Water Diversion

Clean Water Diversion

Silt Fence

Sediment Retention Pond

Decanting Earth Bund (DEB)

Constructed Stream Channel

Culvert

Northern Bund – removed in advance of Stage 5 expansion.

The quarry will be expanded and excavated to ensure that all quarry site water falls into the pit.

Construction Methodology

Final Pit Footprint

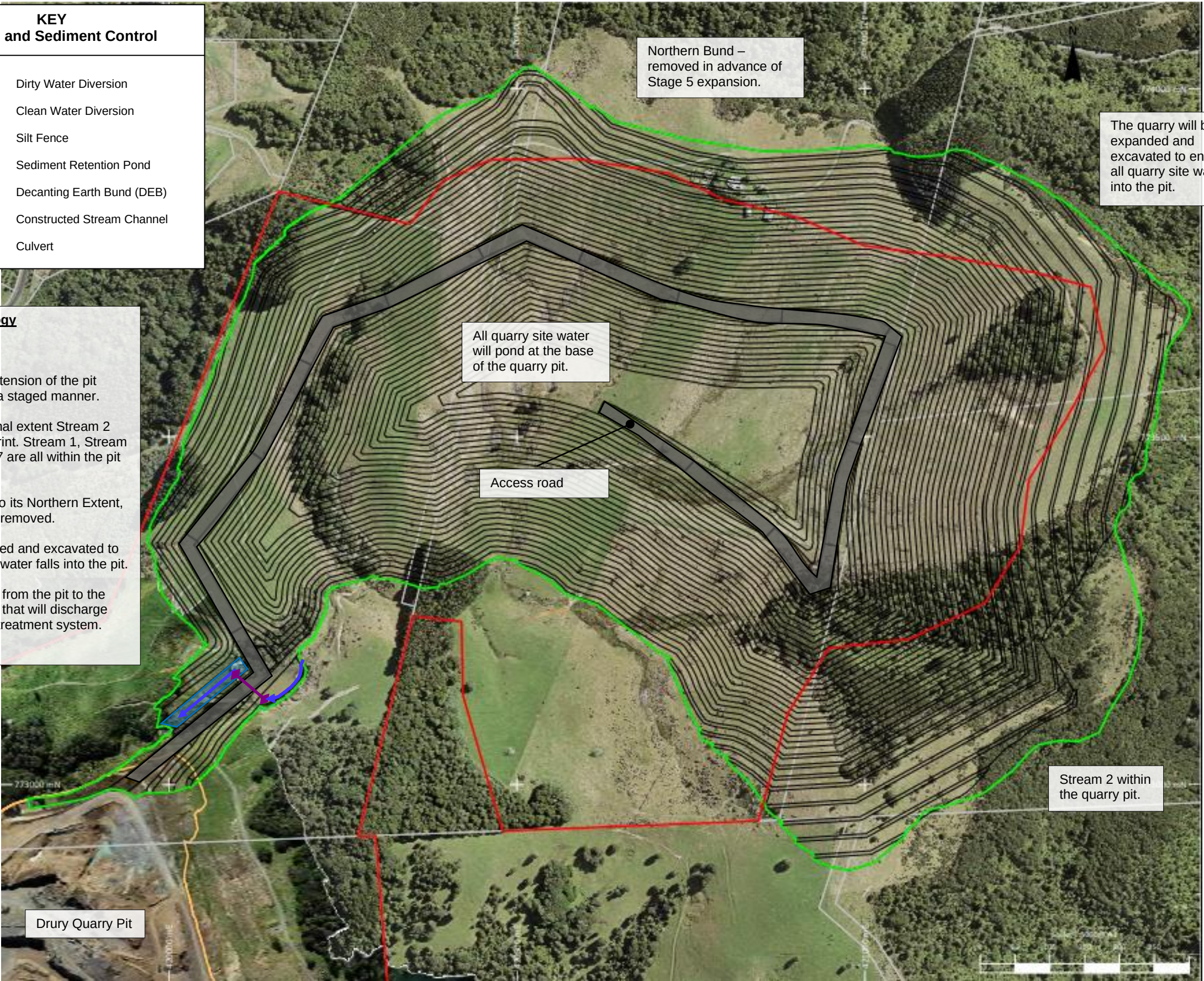
The establishment and extension of the pit footprint is undertaken in a staged manner.

As the pit extends to its final extent Stream 2 will fall within the pit footprint. Stream 1, Stream 5, Stream 6, and Stream 7 are all within the pit footprint.

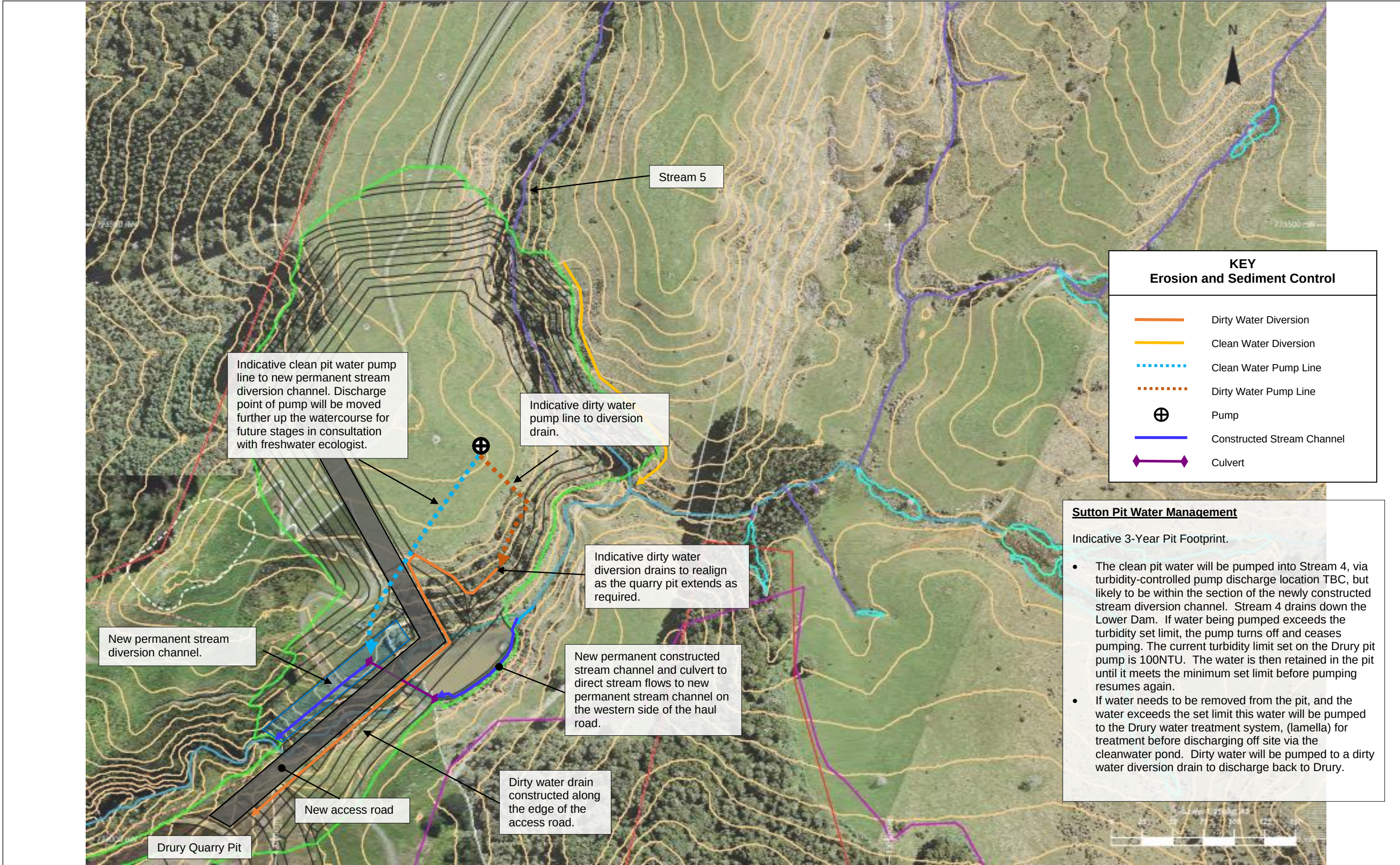
Prior to the pit extending to its Northern Extent, the Northern Bund will be removed.

The quarry will be expanded and excavated to ensure that all quarry site water falls into the pit.

Site water will be pumped from the pit to the dirty water diversion drain that will discharge back to the Drury Quarry treatment system.



NOTES 1. All erosion and sediment controls will be installed and maintained in accordance with Auckland Council Guideline Document 2016/005 'Erosion and Sediment Control Guide for Land Disturbing Activities' (GD05). 2. Earthworks are to be programmed to ensure rapid stabilisation. 3. All erosion and sediment control measures will be inspected on a daily basis by the site foreman. 4. Site monitoring will be undertaken before and immediately after rain as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.	<table><tr><th>REV</th><th>DATE</th><th>REVISION DETAILS</th><th>APPROVED</th></tr><tr><td>A</td><td>17.10.24</td><td>Draft for review.</td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	REV	DATE	REVISION DETAILS	APPROVED	A	17.10.24	Draft for review.																																		Fulton Hogan STEVENSON		Project	DRURY QUARRY – SUTTON BLOCK	
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