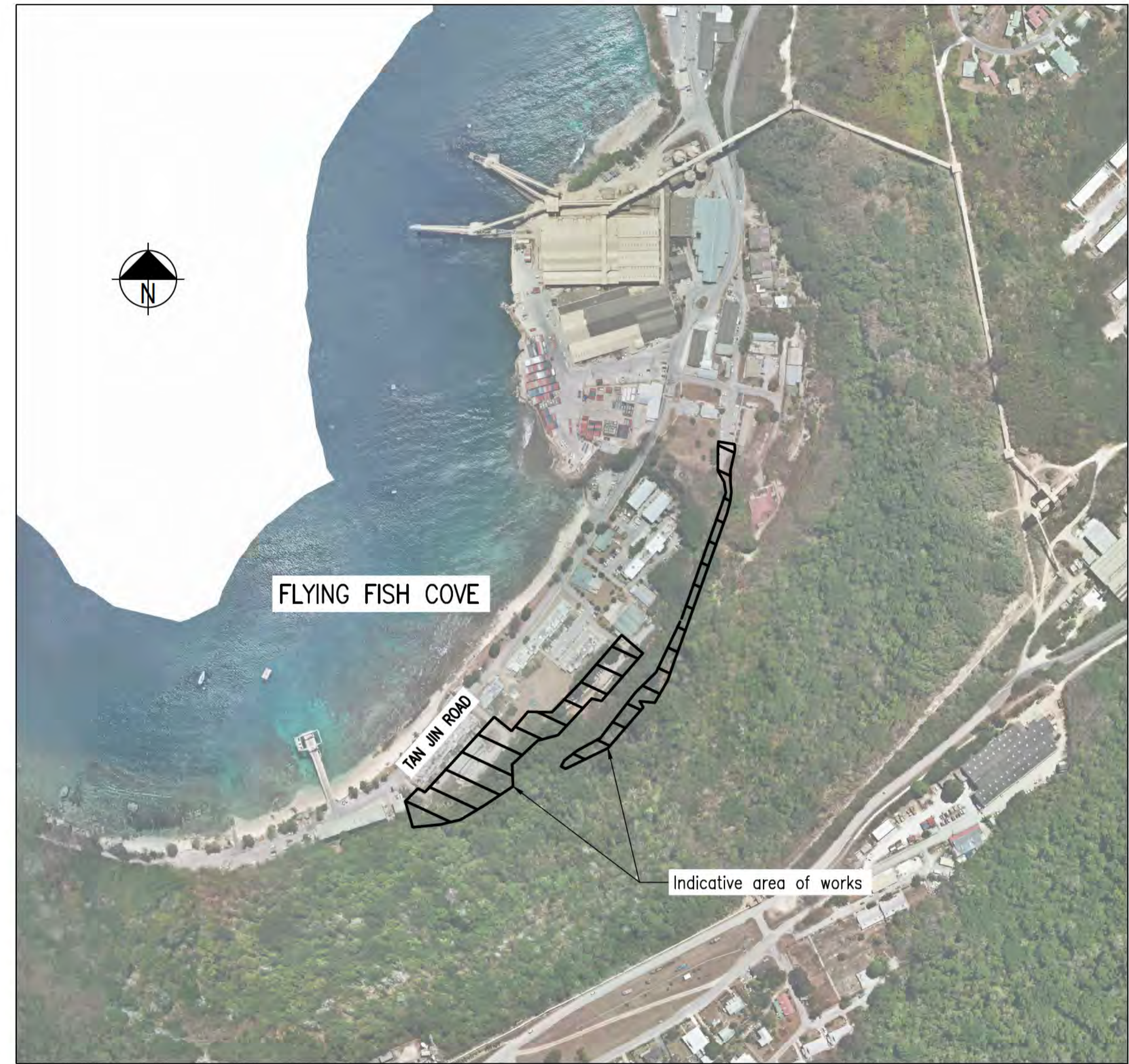


NOT FOR CONSTRUCTION
27 July 2022

FLYING FISH COVE STAGE 2 LANDSLIDE MITIGATION ISSUED FOR TENDER

DRAWING INDEX

DRAWING No	REVISION	DATE	DRAWING TITLE
GE-DI-01	C	27/07/22	COVER SHEET, INDEX AND LOCALITY PLAN
GE-DI-02	C	27/07/22	LEGEND
GE-DI-03	C	27/07/22	GENERAL NOTES - SHEET 1 OF 4
GE-DI-04	C	27/07/22	GENERAL NOTES - SHEET 2 OF 4
GE-DI-05	B	27/07/22	GENERAL NOTES - SHEET 3 OF 4
GE-DI-06	A	27/07/22	GENERAL NOTES - SHEET 4 OF 4
GE-EF-01	C	27/07/22	EXISTING FEATURES SITE PLAN
GE-EW-01	C	27/07/22	EARTH WORKS - SHEET 1 OF 3
GE-EW-02	C	27/07/22	EARTH WORKS - SHEET 2 OF 3
GE-EW-03	C	27/07/22	EARTH WORKS - SHEET 3 OF 3
GE-PU-01	C	27/07/22	SERVICES RELOCATION - SHEET 1 OF 3
GE-PU-02	C	27/07/22	SERVICES RELOCATION - SHEET 2 OF 3
GE-PU-03	C	27/07/22	SERVICES RELOCATION - SHEET 3 OF 3
GE-DP-01	C	27/07/22	DEMOLITION PLAN - SHEET 1 OF 3
GE-DP-02	C	27/07/22	DEMOLITION PLAN - SHEET 2 OF 3
GE-DP-03	C	27/07/22	DEMOLITION PLAN - SHEET 3 OF 3
GE-LP-01	B	27/07/22	REVEGETATION PLANS - SHEET 1 OF 3
GE-LP-02	B	27/07/22	REVEGETATION PLANS - SHEET 2 OF 3
GE-LP-03	A	27/07/22	REVEGETATION PLANS - SHEET 3 OF 3
GE-GA-01	C	27/07/22	GENERAL ARRANGEMENT - SHEET 1 OF 6
GE-GA-02	C	27/07/22	GENERAL ARRANGEMENT - SHEET 2 OF 6
GE-GA-03	C	27/07/22	GENERAL ARRANGEMENT - SHEET 3 OF 6
GE-GA-04	B	27/07/22	GENERAL ARRANGEMENT - SHEET 4 OF 6
GE-GA-05	B	27/07/22	GENERAL ARRANGEMENT - SHEET 5 OF 6
GE-GA-06	B	27/07/22	GENERAL ARRANGEMENT - SHEET 6 OF 6
GE-TD-01	C	27/07/22	TYPICAL DETAILS - SHEET 1 OF 4
GE-TD-02	C	27/07/22	TYPICAL DETAILS - SHEET 2 OF 4
GE-TD-03	C	27/07/22	TYPICAL DETAILS - SHEET 3 OF 4
GE-TD-04	B	27/07/22	TYPICAL DETAILS - SHEET 4 OF 4
GE-LD-01	B	27/07/22	REVEGETATION DETAILS
DR-LD-01	A	27/07/22	DRAINAGE - LAYOUT SHEET 1
DR-LD-02	A	27/07/22	DRAINAGE - LAYOUT SHEET 2
DR-LS-01	A	27/07/22	DRAINAGE - CULVERT LONGITUDINAL SECTIONS
DR-TD-01	A	27/07/22	DRAINAGE - TYPICAL DETAILS
DR-SC-01	A	27/07/22	DRAINAGE - PIT SCHEDULE
GE-XS-01	B	27/07/22	ANNOTATED CROSS SECTIONS BERM 1 - SHEET 1 OF 2
GE-XS-02	B	27/07/22	ANNOTATED CROSS SECTIONS BERM 1 - SHEET 2 OF 2
GE-XS-03	B	27/07/22	ANNOTATED CROSS SECTIONS BERM 2 - SHEET 1 OF 5
GE-XS-04	B	27/07/22	ANNOTATED CROSS SECTIONS BERM 2 - SHEET 2 OF 5
GE-XS-05	B	27/07/22	ANNOTATED CROSS SECTIONS BERM 2 - SHEET 3 OF 5
GE-XS-06	B	27/07/22	ANNOTATED CROSS SECTIONS BERM 2 - SHEET 4 OF 5
GE-XS-07	B	27/07/22	ANNOTATED CROSS SECTIONS BERM 2 - SHEET 5 OF 5
GE-XS-08	B	27/07/22	ANNOTATED CROSS SECTIONS BERM 3 - SHEET 1 OF 2
GE-XS-09	B	27/07/22	ANNOTATED CROSS SECTIONS BERM 3 - SHEET 2 OF 2
GE-XS-10	B	27/07/22	ANNOTATED CROSS SECTIONS PATH 1 - SHEET 1 OF 2
GE-XS-11	B	27/07/22	ANNOTATED CROSS SECTIONS PATH 1 - SHEET 2 OF 2
GE-XS-12	B	27/07/22	ANNOTATED CROSS SECTIONS FENCE 1 - SHEET 1 OF 4
GE-XS-13	B	27/07/22	ANNOTATED CROSS SECTIONS FENCE 1 - SHEET 2 OF 4
GE-XS-14	B	27/07/22	ANNOTATED CROSS SECTIONS FENCE 1 - SHEET 3 OF 4
GE-XS-15	B	27/07/22	ANNOTATED CROSS SECTIONS FENCE 1 - SHEET 4 OF 4



LOCALITY PLAN
N.T.S.

Scales
NOT TO SCALE

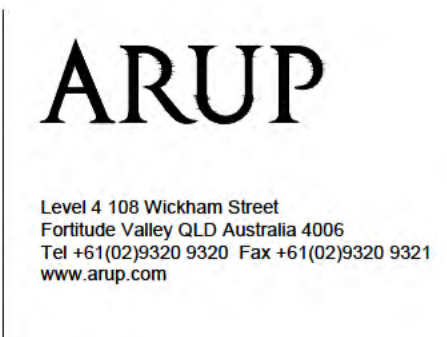
Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	ISSUED FOR TENDER
B	18/03/22	KC	JG	85% DESIGN SUBMISSION
A	29/01/21	JL		CONCEPT DESIGN ISSUE



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION COVER SHEET AND LOCALITY PLAN
Drawing Status
Issued for Tender
Job No: 280579-00
Drawing No: GE-DI-01
Issue: C

NOT FOR CONSTRUCTION
27 July 2022

PROPOSED LEGEND

- Limit of Works Boundary
- Temporary Works Fence to be Installed
- Temporary Bunting to be Installed
- New Concrete Kerb
- New Chainlink Fence
- Temporary Gate to be Installed
- Herbicide Only
- Clearing and Grubbing
- Herbicide and Removal of Mature Trees
- Proposed Design Level
- Proposed Stay Wire Anchors
- Proposed Cable
- Proposed Flexible Barrier & Post
- Proposed Berm
- Erosion Control Mattress
- Crushed Limestone
- Reinforced Concrete
- Proposed Relocated Electricity
- Proposed Relocated Telecomms
- Proposed Relocated Sewer Pipe
- Proposed Relocated Water Pipe
- Proposed Sewer Manhole

DEMOLITION LEGEND

- Service to be Abandoned or Removed
- Existing Cable to be Removed
- Existing Stay Wire Anchor to be Removed
- Existing Rockfall Barrier & Post to be Removed
- Existing Berm to be Removed

DRAINAGE LEGEND

- Proposed Drainage Pit Label
- Proposed Inlet Type 2
- Proposed Drainage Pipe

EXISTING LOCALITIES LEGEND

- Identifier for Key Site Features
- Protected Environmental, Cultural Heritage or Commonwealth Natural Heritage Area (Indicative) (Works Exclusion Zone)

EXISTING LEGEND

- Existing Stay Wire Anchor
- Existing Cable
- Existing Rockfall Barrier & Footing/Post (NTS)
- Existing Kerb
- Existing Edge of Road
- Existing Pavement
- Existing Building
- Existing Access Track
- Existing Restricted Vehicle Access Gate
- Existing Gabion Basket
- Existing Draped Mesh
- Existing Scaling Works

SURVEY LEGEND

- Existing Tree to be Retained
- Bottom of Bank
- Retaining Wall
- Existing Traffic Light
- Existing Signs
- Links Surveying Existing Contours
- Links Surveying Existing Surface Level
- Lidar - Major Contours
- Lidar - Minor Contours

REVEGETATION LEGEND

- Planting Mix 1 - Shrubs and Ground Covers
- Planting Mix 2 - Vegetated Swale
- Planting Mix 3 - Ground Covers, Shrubs and Trees
- Planting Mix 4 - Trees

EXISTING SERVICES LEGEND

- Existing Drainage - Quality D
- Existing Electrical Direct Buried - Quality D
- Existing Electrical High Voltage - Quality B
- Existing Electrical Low Voltage - Quality D
- Existing Telecomms - Quality B
- Existing Telecomms Optic Fibre - Quality B
- Existing Unknown Pipe - Quality B
- Existing Sewer Pipe - Quality D
- Existing Sewer Pipe Pressure Main - Quality B
- Existing Water Pipe - Quality D
- Existing Drainage Chamber
- Existing Drainage Structure
- Existing Light Pole
- Existing Electrical Structure
- Existing Electrical Pit
- Existing Electrical Dome
- Existing Sewer Inspection Opening
- Existing Unknown Chamber
- Existing Telecomms Chamber
- Existing Telecomms Pit
- Existing Telecomms Pole
- Existing Sewer Main Marker
- Existing Sewer Chamber
- Existing Sewer Inspection Opening
- Existing Sewer Flush Point
- Existing Water Tap
- Existing Water Valve
- Existing Water Fire Hose
- Existing Water Hydrant
- Existing Water Main Marker

EXPLANATION OF SUBSURFACE UTILITY INFORMATION (SUI AS5488)

- Denotes utilities verified to QL-A
- Denotes utilities verified to QL-B
- Denotes utilities verified to QL-C
- Denotes utilities verified to QL-D
- Verified utility
- Unverified utility

SUBSURFACE UTILITY INFORMATION (SUI) AS5488 CLASSIFICATION

Quality labeling utility information by a classification code allows the user of this information to understand clearly how the information was collected and then place an appropriate amount of reliance on it. Project risks related to underground utilities can then be properly managed.

QUALITY A:

Information is the highest possible level of accuracy and is obtained exposing the underground utility using a non destructive excavation (pot holing) technique. The vertical information for this locating method is to the top of the shallowest part of the located service. The 3d location is recorded as an x,y,z coordinate. expected horizontal and vertical accuracy is +/-50mm.

QUALITY B:

Information is collected by designating the horizontal and vertical location of underground utilities by using electromagnetic pipe and cable locators, Sondes or Flexi Trace, ground penetrating radar and acoustic pulse equipment. This is the most common form of utility locating and although an x,y, and z axis can be established it is not always entirely accurate due to differing electromagnetic fields, soil conditions and multiple banks of cables affecting the locating signal. expected horizontal accuracy is +/-300mm, vertical accuracy +/-500mm.

QUALITY C:

Information is collected by correlating the survey of visible utility surface features such as marker plates or water hydrants and acquired dial before you dig plans to draw a string which shows the approximate position of services. this method does not usually show multiple banks of cables and does not always show three dimensional information. Expected horizontal accuracy (surface features only) IS +/-300mm.

QUALITY D:

Information is the most basic level of utility locations using only information based on existing dial before you dig plans or other records and by measuring boundary offsets etc. This method of utility location should always be treated as an indication of the presence of a service only and should not be used for design. Tolerance does not apply to an indicative location that is attributed to quality level D.

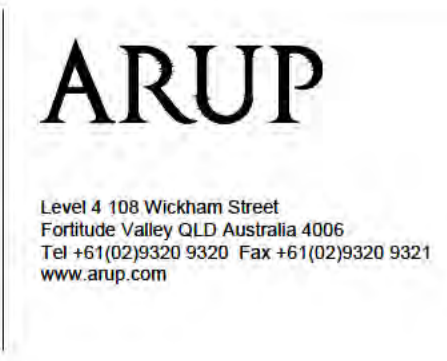
Scales: NOT TO SCALE

C	27/07/22	KC	JG
ISSUED FOR TENDER			
B	18/03/22	JL	JG
85% DETAILED DESIGN ISSUE			
A	29/01/21	GO	JG EF
CONCEPT DESIGN ISSUE			
Issue	Date	By	Chkd



Client: AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title: FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1: 1:100m
Discipline: _____



Drawing Title: LANDSLIDE MITIGATION LEGEND
Drawing Status: Issued for Tender
Job No: 280579-00
Drawing No: GE-DI-02
Issue: C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022

GENERAL NOTES

1. Survey information has been sourced using an overlay of LiDAR Digital Elevation Model (DEM) survey no 18AU043, dated 20/12/2018 by Diodrone, various GIS files supplied by the Office of the Indian Ocean Territories Administrator on 17/05/2019 and a traditional feature survey extending 10m wide centred along the alignment of the existing barrier fences prepared by Links Surveying PTY LTD, Feature Survey No 37137, dated 29/05/2019. There is not adequate detail to confirm the extents of underground services, or the existing drainage features and levels. Additional survey and potholing is required to further develop the proposed landslide mitigation measures.
2. Vertical datum to CHD, horizontal datum MGA 94 Z48. All levels shall be located from established benchmarks. Proposed design levels indicated on plans are finished surface levels (FSL).
3. All dimensions shown are in metres unless stated otherwise (U.S.O.).
4. All benchmarks are to be protected and preserved for the duration of the works.
5. All drawings to be read in conjunction with these notes, Specification, legend, Arup Basis of Design Report and other referenced drawings and reports.
6. All construction shall be in accordance with the Specification and requirements of the Department of Infrastructure, Transport, Regional Development and Communications (Cth), Indian Ocean Territories Branch, Territories Division.
7. Drawings must be read in colour print.
8. Dimensions shall not be scaled from drawings.
9. Contractor shall note that non-trafficable subterranean structures (pits, pipes, etc.) may exist on site. The Contractor must maintain and protect these structures for the duration of the works. Any damage caused to existing structures must be repaired or replaced as directed by the Project Manager at the Contractor's cost.
10. The Contractor shall provide temporary fencing to the extent of works boundary with an opaque material applied to the fence to screen the works in public areas. All construction works shall be contained within the site fence.
11. The Contractor shall obtain all necessary permits and pay required fees prior to commencing any works on site.
12. The Contractor shall direct all public enquiries to Project Manager's Representative.
13. As-constructed information shall be recorded as per the Specification as the works proceed and be tied into cadastral boundaries by a qualified surveyor. The Contractor shall provide CAD as-constructed plans to the Project Manager for approval upon completion of works and at least two weeks prior to the Practical Completion date.
14. The site is to be left clean and free of rubbish/debris upon completion of works.
15. Site lay down areas are to be as per the requirements of technical specification MRTS28 Contractor's site facilities and camp and annexures.
16. The Contractor shall submit a written request for use of proprietary products to the site representative. Requests shall be submitted for approval at least 2 weeks prior to procurement.

GROUND CONDITIONS

1. The anticipated ground conditions are based on visual slope inspections and construction records from the nearby landside barriers that were installed in 2020 and 2021. No geotechnical borehole data is available for the project.
2. The installation of the drilled anchors will require drilling through a mixture of granular and cohesive soils mixed with cobbles and boulders before encountering bedrock. Voids may also be encountered. Drilled holes shall be grouted within 12 hours of being drilled.
3. The Contractor shall record the soil and rock depths as per the Specification to confirm the anchor length that will achieve the design requirements. Records shall be prepared as drilling progresses and submitted to the Project Manager for approval within 3 days of drilling the anchor.
4. The Contractor shall record the details of the grout installation as per the Specification. Records shall be prepared as the grouting progresses and submitted to the Project Manager for acceptance within 3 days of grouting the anchor.
5. Pull out tests shall be performed on the drilled anchors to comply with technical specification MRTS03 drainage, retaining structures and protective treatments, as detailed in these drawings.
6. The locations of the production pull out tests will be as directed by the Project Manager after installation of the anchors.

STAGING

1. Existing flexible barrier 412B shall not be demolished until the proposed reinforced berms 2C and 2B are complete.
2. Existing flexible barrier 412A shall not be demolished until the proposed reinforced berm 2A immediately downslope of the flexible barrier is complete.
3. Existing flexible barrier 408 shall not be demolished until the proposed reinforced berms 2A and 1 immediately downslope of the flexible barrier are complete.
4. Existing flexible barrier Christmas Island Club North shall not be demolished:
 - between the wet season months of November to June(inclusive), and
 - not until the proposed upslope staywire anchors have been installed.
5. The proposed retaining wall treatments to support the existing heritage listed retaining below the Christmas Island Club bench shall be completed prior to installation of any drilled anchors (upslope or footing) for the proposed Christmas Island Club barrier.
6. Any damage to existing paved surfaces, furniture or features shall be reinstated prior to practical completion.

SERVICES

1. The services shown on the drawings are provided for information purposes only and no responsibility is taken for the accuracy or completeness of the information supplied.
2. The Contractor shall liaise with all relevant authorities to physically confirm the location, level and sufficient cover to all existing underground services indicated prior to commencement of works. All conflicts and areas with minimal cover must be reported to the Project Manager immediately including top of pipe level, diameter, material type and existing surface levels.
3. The Contractor shall make sure all existing utility services remain operational at all times. No work is to be carried out on existing services without prior notification and approval from the utility owner.
4. Should existing services be damaged as a result of the construction works, the Contractor shall reinstate to the requirements of the Project Manager at their own cost.
5. All exposed services must be made safe and protected at the close of each working day.
6. Where conflict between Public Utility Plant (PUP) and proposed earth berm works could not be removed, indicative treatment or relocation of PUP is proposed in these drawings, and shall be confirmed and managed by the Contractor in consultation with the relevant PUP authorities.

ENVIRONMENT AND CULTURAL HERITAGE

1. All site works shall be carried out in accordance with any EPBC permit / approval conditions, MRTS51 Environmental Management and associated annexure's and MRTS52 Erosion and Sediment Control and associated annexure requirements.
2. The Contractor shall develop and implement an Unexpected Finds Management Protocol. The Contractor shall notify the Project Manager immediately if an unexpected potential heritage feature is encountered.
3. If any areas of cultural significance are identified during the works, the location of any heritage sites / items shall be surveyed, provided to the Project Manager and Heritage Exclusion Zones identified with bunting for approval by the Project Manager.
4. Prior to works commencing on site, the Contractor shall engage a qualified and licensed ecologist to confirm the location of any protected ecological sites (fauna and vegetation). The location of the sites shall be surveyed, provided to the Project Manager, and Environmental Exclusion Zones identified with bunting for approval by the Project Manager.
5. Heritage and Environmental Exclusion Zones shall be maintained for the duration of site works. Weekly inspections during construction of all Exclusion Zone bunting shall be carried out by the Contractors Site Environmental Representative and damage repaired immediately.
6. A licenced fauna spotter / trapper must be onsite during clearing and scaling works to remove and relocate any fauna to an approved location.
7. Where an environmental or heritage incident occurs, the Contractor shall enforce a temporary stop works within the impact area and notify the Project Manager within two hours of the incident occurring. The Project Manager is responsible for notifying the Department. Works must not recommence until written approval is given by the Project Manager.
8. Disturbance of established vegetation must be avoided through sensitive anchor placement and minimising clearing footprints where possible. Where required, vegetation clearing must be carried out in accordance with any EPBC permit / EPBC approval conditions and MRTS51 and 52 requirements.
9. All cleared vegetation material shall be mulched and removed from site and disposed of at a licenced facility.

BARRIER DEMOLITION

1. The existing flexible barriers shall be demolished as detailed on CI-DD-02
2. Drilled anchors from the demolished flexible barriers shall be cut off 300mm below surface level and backfilled with natural soil to prevent the below ground anchors from becoming a hazard.
3. Any existing barrier footings or staywire anchors that clash with the proposed footings shall be completely removed.

CLEARING AND GENERAL EARTHWORKS

1. Site works must be carried out in accordance with the following specifications:
 - MRTS04 General Earthworks,
 - MRTS16 Landscape and Revegetation Works,
 - MRTS51 Environmental Management; and
 - MRTS52 Erosion and Sediment Control.
2. The Contractor shall not commence earthworks activities until approved Erosion and Sediment Control (ESC) measures have been installed in accordance with MRTS52.
3. The Contractor must maintain appropriate ESC measures until all erodible ground surfaces have been stabilised. The Contractor shall ensure that erosion and sediment controls are adequate to prevent sediment laden water from being discharged from site and that erosion and sediment controls are maintained and in good working order at all times.
4. Earthworks shall not extend beyond the defined limit of works boundary unless approved by the Project Manager.
5. Earthworks must not encroach on defined Environmental or Cultural Heritage Exclusion Zones.
6. The Contractor shall be responsible for maintaining excavations and cuttings / scaling in a safe and stable condition at all times.
7. Weed control measures (mechanical or chemical) are to be implemented within all works areas prior to the commencement of works.
8. The Contractor shall remove only trees indicated on the plans as to be removed unless otherwise directed by the Project Manager.
9. Any tree branches, limbs or minor trimming shall be coppiced neatly. There shall be no broken or snapped branches.
10. Banana trees identified for removal shall be cut cleanly and either roots grubbed to 600mm depth, or poison shall be applied to the trunk and all suckers for the duration of the Contract.
11. Minor trimming and levelling will be necessary to construct freely draining access tracks. All roots and deleterious material shall be removed from beneath the proposed access tracks, low spots filled and compacted and the gravel track being laid and compacted in one homogenous layer.
12. Prior to vehicles or machinery leaving the laydown areas or prior to moving between sites, the undercarriage and wheels are to be brushed to remove visible clumps of soil and weed material.

Scales		C 27/07/22		KC		JG							
NOT TO SCALE		ISSUED FOR TENDER		B 18/03/22		JL		JG					
		85% DETAILED DESIGN ISSUE		A 29/01/21		GO		JG		EF			
Design Model Version		CONCEPT DESIGN ISSUE		Issue		Date		By		Chkd		Appd	

C 27/07/22		KC		JG					
B 18/03/22		JL		JG					
A 29/01/21		GO		JG		EF			
Issue		Date		By		Chkd		Appd	

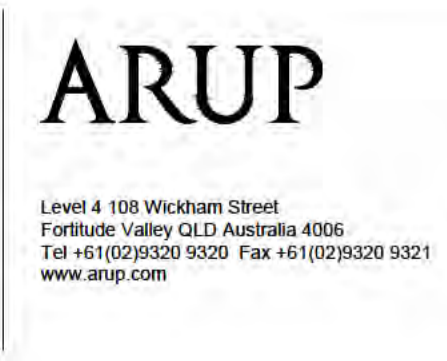


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION GENERAL NOTES SHEET 1 OF 3

Drawing Status
Issued for Tender

Job No
280579-00

Drawing No
GE-DI-03

Issue
C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

Released under the Freedom of Information Act 1982 by the Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts

NOT FOR CONSTRUCTION
27 July 2022

ROAD FURNITURE AND PAVEMENT MARKINGS

1. The Contractor shall pay for and arrange all necessary Shire of Christmas Island approvals for Temporary Traffic Management Plans to include road and parking closures. The Contractor shall submit draft Traffic Management Plans to the Project Manager for review prior to submitting to the Shire.
2. All existing kerbs, signage and line markings shall be reinstated to match neatly with existing at the completion of the works.
3. Post, signage (if required) and line marking to conform to the Main Roads WA Standard Drawings and Specifications (Series 600)
4. All temporary traffic management pavement markings and signage shall be installed in accordance with AS1742 and AS1743 and shall be removed and reinstated to match existing at completion of works

REINFORCED BERMS AND BARRIERS – METHOD STATEMENTS

1. The Contractor shall submit method statements including Safe Work Method Statement (SWMS) for the works at least two weeks prior to commencing on site. The method statements shall provide the step by step details of how the Contractor will safely construct the proposed works in accordance with the design documentation and the proprietary guidelines. The method statements shall also clearly present the Contractor approach to:
 - 1.1 Construction sequencing for the sites.
 - 1.2 Method of anchor installation and drilling through varied soil and rock material, including voids.
 - 1.3 Grouting procedure to ensure hole stability and full grout encapsulation of the anchors.
 - 1.4 Methods for dealing with hole collapse.
 - 1.5 Methods of anchor testing and anchor isolation.
 - 1.6 Methods of monitoring and inspecting the stability of slopes and access tracks during construction.
 - 1.7 Grout and concrete mix details to achieve the specified strength
 - 1.8 Method for fixing the berm reinforcement to the supporting steel mesh

REINFORCED BERMS AND BARRIERS – GENERAL

1. Alternative products to those detailed in these drawings may be used by the Contractor, provided they meet the same performance specification and are approved by the Project Manager prior to purchase / installation.
2. The Contractor shall make no substitution of materials or modifications to details without prior written approval from the Project Manager.
3. All products shall be stored and installed in accordance with the manufacturers' specifications and installation guidance.
4. The Contractor shall submit all necessary certificates of materials and all other information necessary prior to the start of the works in accordance with Contract requirements.
5. Drilled anchors shall be installed in accordance with technical specification MRTS03 drainage, retaining structures and protective treatments and these notes.
6. The length of the drilled anchors shall be as confirmed on site by the Project Manager.
7. Intended design life of the (above ground) flexible barrier system is 25 years.
8. Intended design life of the drilled anchors and concrete footings to support the flexible barrier and reinforced berms mesh is 50 years.
9. Intended design life of the above ground reinforced berms is 100 years.
10. Geometry to be confirmed by specialist Contractor, section shown is indicative only.
11. Minimum tensile strength of geogrid of 50 kN/m.
12. Any geogrid connections shall achieve an equivalent design life and strength to the geogrid.
13. The berms founding material should be free of any loose material, organic material, timber and deleterious material. A minimum allowable bearing capacity of 100kPa is required and should be confirmed at site using in-situ testing (e.g. DCP, PLT, etc.).

MATERIALS – EPOXY FOR CRACK TREATMENT OR REPAIR

1. The epoxy used for crack treatment or repairs of the existing mortared stone wall shall have the following properties:
 - 1.1 High flow, high density and low shrinkage epoxy grout.
 - 1.2 Solvent free epoxy resin containing fine fillers.
 - 1.3 Achieve compressive strength of minimum 50 MPa at 14 days.

MATERIALS – CONCRETE

1. The cement grout for the drilled anchors shall be 32MPa and comply with the performance requirements specified in technical specification MRTS89 post-tensioned concrete CL 7.3.4
2. The reinforced concrete for the flexible barrier posts shall be 32MPa and comply with the performance requirements specified in technical specification MRTS70 concrete. Supply of materials for concrete shall be in accordance with the relevant Australian Standards and the Contractor shall provide certification to confirm compliance:
 - 2.1 Cement – All cement used shall comply with ATIC-SPEC SP43 and AS3972.
 - 2.2 Fly ash – fly ash used shall comply with ATIC-SPEC SP43 and AS/NZS 3582.1.
 - 2.3 Slag – slag shall conform to ATIC-SPEC SP43 and AS3582.2.
 - 2.4 Sand – sand shall be amorphous silica, including silica flume, and shall comply with ATIC-SPEC SP43 and AS/NZS 3582.3.
 - 2.5 Water – all water used in concrete production shall meet the requirements of AS1379, being clean and free from impurities that may adversely affect concrete, reinforcement or other fixtures embedded within concrete
 - 2.6 Chemical admixtures – admixtures shall conform to requirements of AS1478 and shall be used in accordance with AS1379.
 - 2.7 Concrete aggregate – aggregate shall conform to AS2758.1.
 - 2.8 Curing compounds shall be registered products and comply with the requirements of AS3799.

MATERIALS – REINFORCED BERM

1. Berm backfill material to be free draining angular fill as per MRTS04.
 - 1.1 Minimum unit weight of 19kN/m³ and friction angle of 30 degree.
 - 1.2 Backfill to be placed and compacted to 97% MDD using mechanical interlock method as per MRTS04.
2. Gabion facing:
 - 2.1 Steel-wire gabions to be used as per MRTS03 Clause 42.
 - 2.2 Durable plastic coating is required.
 - 2.3 Gabion rock fill as per MRTS03 Clause 36.2.
3. Alternative materials could be considered if required for proprietor certification of berm.

MATERIALS – FLEXIBLE BARRIER SYSTEMS

1. The flexible barriers shall achieve the minimum dimensions, extents and capacities detailed in these drawings.
2. All steel elements to be hot-dip galvanised to AS4680 or approved equivalent proprietary protective coating to meet the intended design life.

MATERIALS – ACCESS TRACK

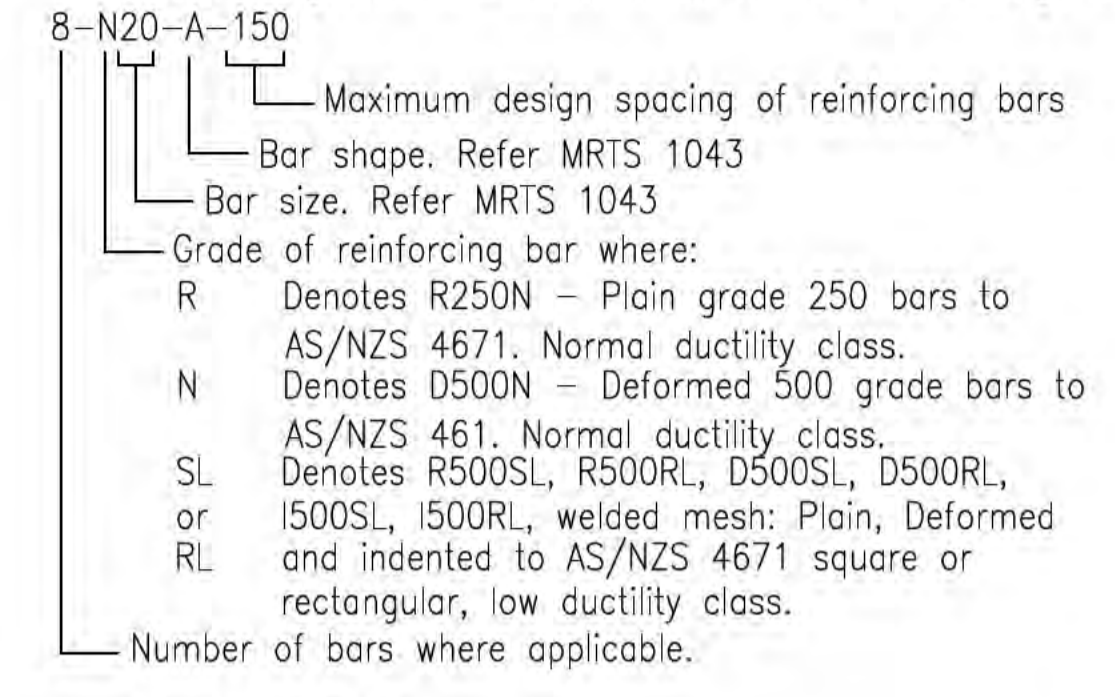
1. Fill material shall be Type 4.5 material as per MRTS05
2. Material shall be compacted to 95% NDD as per MRTS04.

MATERIALS – DRILLED ANCHORS

1. The flexible barriers footings, and lateral and upslope stay wires shall be supported with drilled anchors as detailed in the drawings, with the following additional details:
 - 1.1 Nail type: 40/16 self drilling anchor or 52/26 self drilling anchor, hot dip galvanised
 - 1.2 Minimum yield steel grade: 500MPa
 - 1.3 Proprietary double corrosion protection.
2. Where anchors are made up by multiple bar lengths, couplers are to be used and no welding of bars is allowed.
3. Contractor to prepare drilling logs in accordance with AS1726 describing the encountered drilling conditions. This shall be used to inform which anchors will be tested and confirm the design requirements are achieved.
4. All steel elements to be hot-dip galvanised to AS4680 or approved equivalent proprietary protective coating to meet the intended design life.
5. Upslope anchors and anchor heads shall be fully encapsulated in grout up to the anchor head depth marker. This may require small localised excavations depending on the type of proprietary anchor head connection.

MATERIALS – REINFORCEMENT

1. Reinforcing steel to be read in conjunction with MRSD 1043.
2. Reinforcing steel to be in accordance with AS/NZS 4671 and MRTS1 Reinforcing Steel.
3. Reinforcing steel nomenclature on this set of drawings is as follows:



4. Locations definitions:

BL Denotes Bottom face	ABR Denotes Alternate bar reversed
T&B Denotes Top and bottom	TF Denotes Top face
FF Denotes Far face	NF Denotes Near face
ES Denotes Equally spaced	EF Denotes Each face
LV Denotes Length varies	EW Denotes Each way
AP Denotes Alternatively placed	ALT Denotes Alternate Bar
AS Denotes Alternatively Spaced	
5. Manufacturers and processors of steel reinforcement must hold a valid certificate of approval, issued by the Australian Certification Authority for Reinforcing Steel (ACRS), and registered to MRTS71.
6. Spacing of ligatures in post foundation may be altered slightly, if necessary, to clear self drilling anchors.
7. Reinforcement to be hot dip galvanised to AS/NZS 4680 where shown.
8. All reinforcement shall be firmly supported with placement and material of all chairs and spaces in accordance with MRTS70. Laps and other splices in reinforcing steel shall only be made at the positions shown on the drawings unless alternative or extra locations are approved in writing by the Project Manager.
9. Side and end laps in welded mesh reinforcement shall be in accordance with AS5100.5 Clause 13.2.3.
10. Minimum splice lengths unless noted otherwise on the drawing are as follows:

Minimum Lap Length (mm)	Bar Size (mm)	N12	N16	N20	N24	N28	N32	N36	N40
Vertical bars and horizontal bars with <300mm concrete below the bar		500	650	800	1000	1250	1500	1800	2150
	Horizontal bars with >300mm concrete below the bar			950	1300	1650	1950	2350	2800

11. Reinforcing bars shown on the drawings are represented diagrammatically and not necessarily in true projection. Reinforcing bars to be laid coplanar to maintain specified clear concrete cover.

MATERIALS – ALUMINIUM HANDRAILS

1. All workmanship and materials shall be in accordance with AS1664 and MRTS79.
2. Aluminium extrusions shall be type 6060, 6061, 6082 or 6083, temper T5 or T6.
3. Aluminium plate shall be Type 5083, temper H321.
4. All welding shall be in accordance with AS1665.
5. All welding shall be carried out using argon gas shielding.
6. All welded joints shall be fully sealed with a 3mm fillet or incomplete penetration butt weld unless noted otherwise.
7. All work shall be neatly finished with all sharp edges ground smooth.
8. The ends of all hollow section shall be sealed with min. 6mm thick end plates and 4mm fillet welds UNO.

<p>Scales</p> <p style="text-align: center;">NOT TO SCALE</p>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 25%;">C</td> <td style="width: 25%;">27/07/22</td> <td style="width: 25%;">KC</td> <td style="width: 25%;">JG</td> </tr> <tr> <td colspan="4">ISSUED FOR TENDER</td> </tr> <tr> <td>B</td> <td>18/03/22</td> <td>JL</td> <td>JG</td> </tr> <tr> <td colspan="4">85% DETAILED DESIGN ISSUE</td> </tr> <tr> <td>A</td> <td>29/01/21</td> <td>GO</td> <td>JG EF</td> </tr> <tr> <td colspan="4">CONCEPT DESIGN ISSUE</td> </tr> <tr> <td>Issue</td> <td>Date</td> <td>By</td> <td>Chkd Appd</td> </tr> </table>	C	27/07/22	KC	JG	ISSUED FOR TENDER				B	18/03/22	JL	JG	85% DETAILED DESIGN ISSUE				A	29/01/21	GO	JG EF	CONCEPT DESIGN ISSUE				Issue	Date	By	Chkd Appd	<p>Australian Government Department of Infrastructure, Transport, Regional Development and Communications</p>	<p>Client AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS</p> <p>Engineering Certification (CEng) Name: _____ Date: _____ Signature: _____</p>	<p>Job Title FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION</p> <p>Scale at A1 Discipline</p>	<p>Level 4 108 Wickham Street Fortitude Valley QLD Australia 4006 Tel +61(0)9320 9320 Fax +61(0)9320 9321 www.arup.com</p> <p>Member Firm Anup Pty Ltd ABN 18 000 966 165</p>	<p>Drawing Title LANDSLIDE MITIGATION GENERAL NOTES SHEET 2 OF 3</p> <p>Drawing Status Issued for Tender</p> <table border="0" style="width: 100%;"> <tr> <td>Job No</td> <td>Drawing No</td> <td>Issue</td> </tr> <tr> <td>280579-00</td> <td>GE-DI-04</td> <td>C</td> </tr> </table>	Job No	Drawing No	Issue	280579-00	GE-DI-04	C
C	27/07/22	KC	JG																																					
ISSUED FOR TENDER																																								
B	18/03/22	JL	JG																																					
85% DETAILED DESIGN ISSUE																																								
A	29/01/21	GO	JG EF																																					
CONCEPT DESIGN ISSUE																																								
Issue	Date	By	Chkd Appd																																					
Job No	Drawing No	Issue																																						
280579-00	GE-DI-04	C																																						

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022

LANDSCAPING AND REVEGETATION

1. Contractor to develop and implement a Soil Management Plan in accordance with MRTS16 Cl 5.2.1
2. Surface treatment to removed berms; remove berm and footing, ripping & cultivating of subgrade to 300mm prior to adding topsoil and revegetating as per planting schedule.
3. All tube stock, ground cover, and shrubs (<25L) are to be installed in accordance with TMR SD 1653 (Planting container stock <25L) & SD 1647 (Planting – matting).
4. All vegetation matting is to be installed in accordance with TMR Std Dwg 1647 (Matting), Organics blanket to be installed on >1:2 slopes.
5. The Contractor shall allow for the complete removal and replacement of planting stock that is deemed to be defective or in poor health throughout the entire contract liability period. Where approved the Contractor shall provide details of any tree surgery and or remedial works. All works shall be undertaken by a suitably qualified and experienced arborist.
6. All disturbed areas are to be reinstated in accordance with this package. Any areas of disturbance where landscape works are not identified the treatment shall be in principle with these drawings. Contractor to confirm treatment to be approved with the Project Manager prior to works commencing.
7. All works are to comply with the conditions outlined in MRTS16.

REVEGETATION PLANTING LIST

(Refer to MRTS16 for installation)

* Contractor to confirm availability of proposed species. Should species not be available in local nurseries, Contractor to adopt species from the alternative species substitution revegetation planting list as outlined below. Species have been selected from the below references:
 –<https://www.environment.gov.au/topics/national-parks/christmas-island-national-park/natural-environment/plants>
 –<https://www.nespthreatenedspecies.edu.au/media/5yenx1yh/5-2-endemic-species-of-christmas-island-indian-ocean.pdf>
 –Flora of Australia Volume 50, Oceanic islands 2, Australian Government Publishing Service, Canberra (1993)

Mix 1 – Shrubs and Ground covers				
Code	Plant Species	Density Plant/m ²	Size	No.
Preferred Revegetation Planting Mix (307 m ²)				
ABU lis	Abutilon listeri	3	200mm	153
GRE ins	Grewia insularis	1	200mm	51
ISC nat	Ischaemum nativitis	3	200mm	153
CAR app	Carex appressa	3	200mm	153
LOM lon	Lomandra longifolia	2	200mm	102
PAN cli	Panicum clavale	1	200mm	51
				Total = 663
*Substitute Revegetation Planting (307 m ²)				
CAR app	Carex appressa	3	200mm	131
COM ref	Cymbopogon refractus	2	200mm	88
HIB tel	Hibiscus tiliaceus	1	200mm	44
DIA cer	Dianella cerulea	2	200mm	88
LOM lon	Lomandra longifolia	2	200mm	88
LOM hys	Lomandra hystrix	2	200mm	88
SYZ aus	Syzygium australe	1	200mm	44
				Substitute Total = 571

Mix 2 – Vegetated Swale				
Code	Plant Species	Density Plant/m ²	Size	No.
Preferred Revegetation Planting Mix (1236 m ²) Organic blanket (matting) (1236 m ²)				
CAR app	Carex appressa	3	200mm	740
THE tri	Themeda triandra	3	200mm	740
FIC nod	Ficinia nodosa	3	200mm	740
LOM lon	Lomandra longifolia	2	200mm	494
PAN cli	Panicum clavale	3	200mm	740
				Total = 3454

Mix 4 – Trees				
Code	Plant Species	Density Plant/m ²	Size	No.
Preferred Revegetation Planting Mix (2484 m ²)				
Trees				
ARE lis	Arenga listeri	1/6m ²	300mm	29
MAC tan	Macaranga tanarius	1/8m ²	300mm	22
ACR tri	Acronychia trifoliolata var. trifoliolata	1/5m ²	300mm	35
PAN chr	Pandanus christmatensis	1/6m ²	300mm	29
PAN ela	Pandanus elatus	1/8m ²	300mm	22
COM acm	Combretum acuminatum	1/6m ²	300mm	29
CYC ruh	Cycas rumphii	1/6m ²	300mm	29
GRE ins	Grewia insularis	1/9m ²	300mm	19
PLA nit	Planchonella nitida	1/9m ²	300mm	19
MEL aze	Melia azedarach	1/9m ²	300mm	19
GRE gla	Grewia glabra	1/9m ²	300mm	19
LIG glo	Ligustrum glomeratum	1/8m ²	300mm	22
IND alm	Terminalia catappa	1/6m ²	300mm	29
SYZ ner	Syzygium nervosum	1/6m ²	300mm	29
				Total = 351
*Substitute Revegetation Planting (2484 m ²)				
CAR app	Carex appressa	3	200mm	1065
COM ref	Cymbopogon refractus	2	200mm	710
HIB tel	Hibiscus tiliaceus	1	200mm	355
DIA cer	Dianella cerulea	2	200mm	710
LOM lon	Lomandra longifolia	2	200mm	710
LOM hys	Lomandra hystrix	2	200mm	710
SYZ aus	Syzygium australe	1	200mm	355
				Total = 4615

Mix 3 – Ground covers, Shrubs and Trees				
Code	Plant Species	Density Plant/m ²	Size	No.
Preferred Revegetation Planting Mix (1381 m ²) **Organic blanket (matting) (530 m ²)				
Ground covers				
ISC nat	Ischaemum nativitis	3	200mm	1036
CAR app	Carex appressa	3	200mm	1036
LOM lon	Lomandra longifolia	2	200mm	690
PAN cli	Panicum clavale	1	200mm	345
				Total = 3107
Shrubs				
AID rac	Aidia off. racemosa	1	200mm	153
CAR ret	Carmona retusa	0.5	200mm	77
GUE sps	Guettarda speciosa	0.5	200mm	77
MAC coc	Maclura cochinchinensis var. cochinchinensis	1	200mm	153
OCH ack	Ochrosia ackeringae	0.5	200mm	77
COL ped	Colubrina pedunculata	1	200mm	153
ABU lis	Abutilon listeri	0.5	200mm	77
ALL cob	Allophylus cobbe	1	200mm	153
CAL lon	Callicarpa longifolia	0.5	200mm	77
				Total = 997
Trees				
ARE lis	Arenga listeri	1/6m ²	300mm	16
MAC tan	Macaranga tanarius	1/8m ²	300mm	12
ACR tri	Acronychia trifoliolata var. trifoliolata	1/5m ²	300mm	19
PAN chr	Pandanus christmatensis	1/6m ²	300mm	16
PAN ela	Pandanus elatus	1/8m ²	300mm	12
COM acm	Combretum acuminatum	1/6m ²	300mm	16
CYC ruh	Cycas rumphii	1/6m ²	300mm	16
GRE ins	Grewia insularis	1/9m ²	300mm	11
PLA nit	Planchonella nitida	1/9m ²	300mm	11
MEL aze	Melia azedarach	1/9m ²	300mm	11
GRE gla	Grewia glabra	1/9m ²	300mm	11
LIG glo	Ligustrum glomeratum	1/8m ²	300mm	12
IND alm	Terminalia catappa	1/6m ²	300mm	16
SYZ ner	Syzygium nervosum	1/6m ²	300mm	16
				Total = 195
*Substitute Revegetation Planting (1381 m ²)				
CAR app	Carex appressa	3	200mm	592
COM ref	Cymbopogon refractus	2	200mm	394
HIB tel	Hibiscus tiliaceus	1	200mm	197
DIA cer	Dianella cerulea	2	200mm	394
LOM lon	Lomandra longifolia	2	200mm	394
LOM hys	Lomandra hystrix	2	200mm	394
SYZ aus	Syzygium australe	1	200mm	197
				Total = 2562

** Organic blanket (matting) mix 3 refer to Landscape plans PD-01 for locations

Container Size Amount	
Type	Total
200mm Container	7704
300mm Container	186
Does not include substitute revegetation amounts	

Scales: NOT TO SCALE

Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG
ISSUED FOR TENDER			
A	18/03/22	JL	
85% DETAILED DESIGN ISSUE			



Client: AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
 Engineering Certification (CEng)
 Name: _____ Date: _____
 Signature: _____

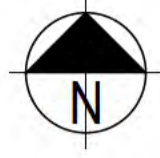
Job Title: FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
 Scale at A1
 Discipline:



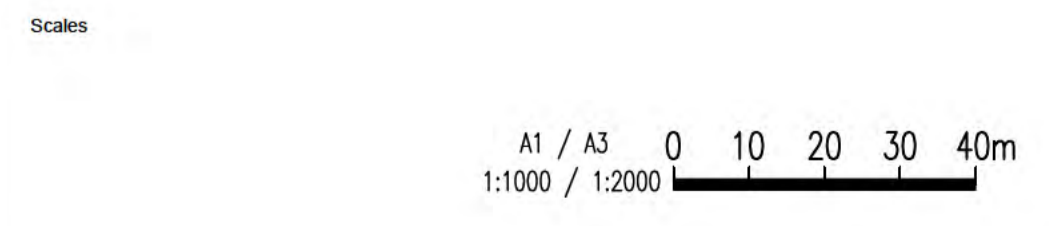
Drawing Title: LANDSLIDE MITIGATION GENERAL NOTES SHEET 3 OF 3
 Drawing Status: Issued for Tender
 Job No: 280579-00
 Drawing No: GE-DI-05
 Issue: B

A1 A B C D E F G H I J K L M N O P

NOT FOR CONSTRUCTION
27 July 2022



1
2
3
4
5
6
7
8
9
10



Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	
ISSUED FOR TENDER				
B	18/03/22	JL	JG	
85% DETAILED DESIGN ISSUE				
A	29/01/21	GO	JG	EF
CONCEPT DESIGN ISSUE				
Issue	Date	By	Chkd	Appd

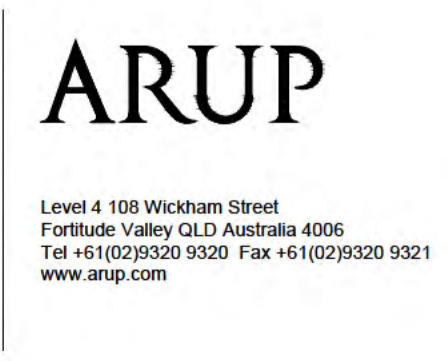


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



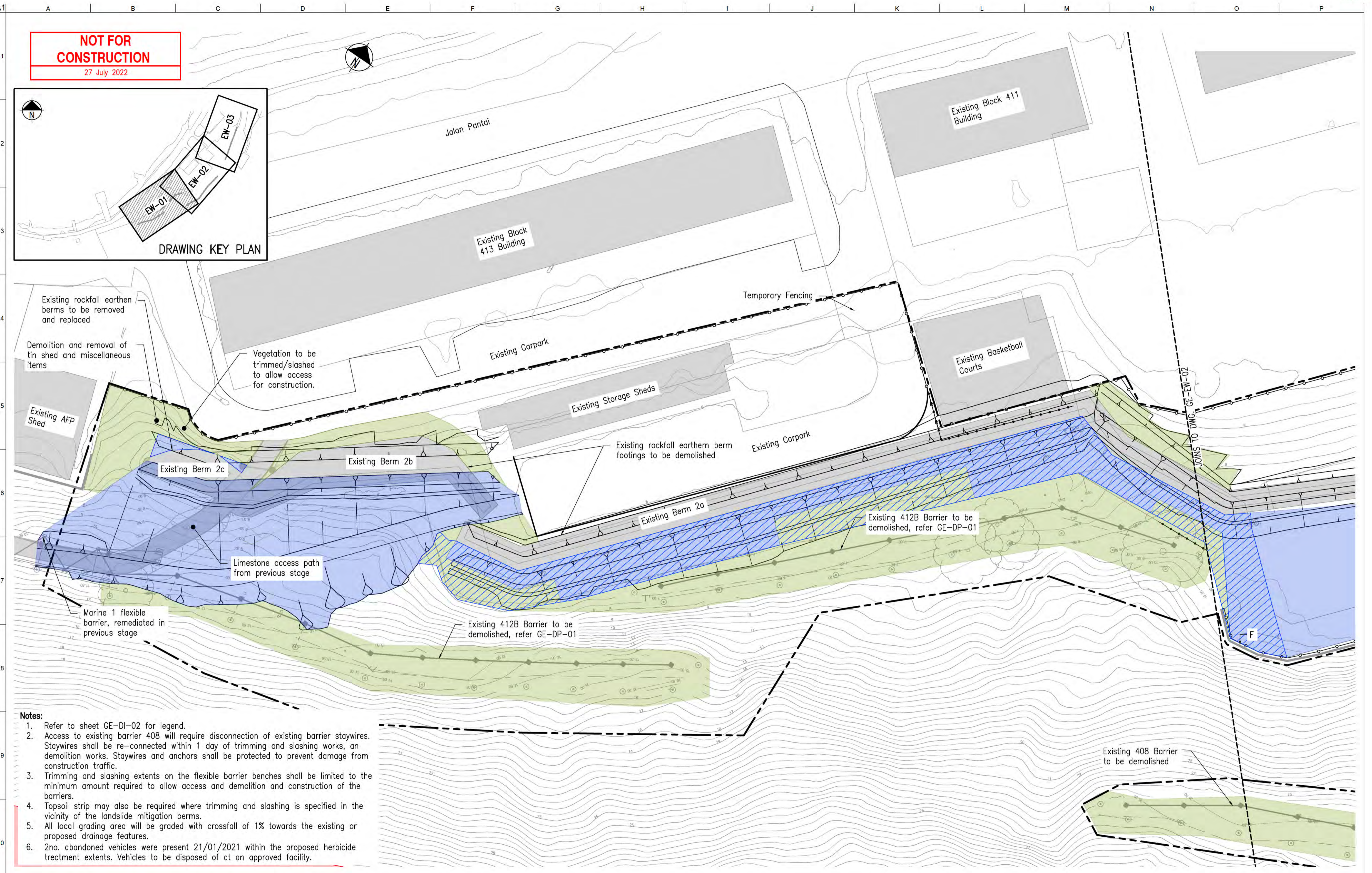
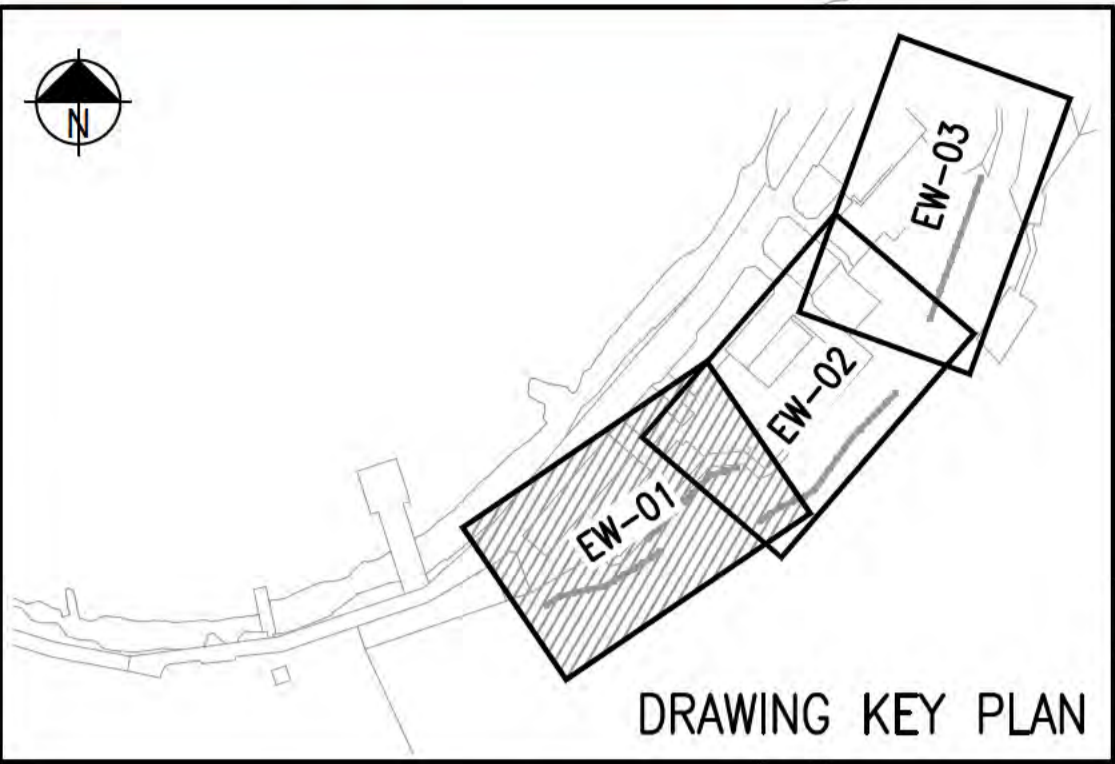
Drawing Title
LANDSLIDE MITIGATION EXISTING FEATURES SITE PLAN

Drawing Status
Issued for Tender

Job No: **280579-00** Drawing No: **GE-EF-01** Issue: **C**

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



- Notes:**
1. Refer to sheet GE-DI-02 for legend.
 2. Access to existing barrier 408 will require disconnection of existing barrier staywires. Staywires shall be re-connected within 1 day of trimming and slashing works, an demolition works. Staywires and anchors shall be protected to prevent damage from construction traffic.
 3. Trimming and slashing extents on the flexible barrier benches shall be limited to the minimum amount required to allow access and demolition and construction of the barriers.
 4. Topsoil strip may also be required where trimming and slashing is specified in the vicinity of the landslide mitigation berms.
 5. All local grading area will be graded with crossfall of 1% towards the existing or proposed drainage features.
 6. 2no. abandoned vehicles were present 21/01/2021 within the proposed herbicide treatment extents. Vehicles to be disposed of at an approved facility.



Design Model Version

Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	
ISSUED FOR TENDER				
B	18/03/22	JL	JG	
85% DETAILED DESIGN ISSUE				
A	29/01/21	GO	JG	EF
CONCEPT DESIGN ISSUE				
Issue	Date	By	Chkd	Appd

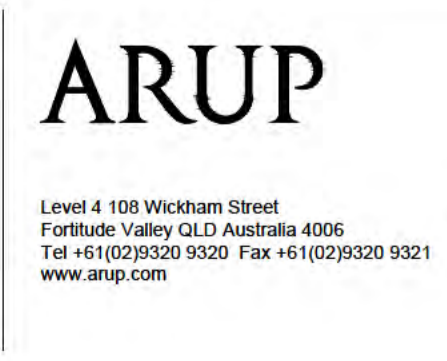


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION EARTHWORKS SHEET 1 OF 3

Drawing Status
Issued for Tender

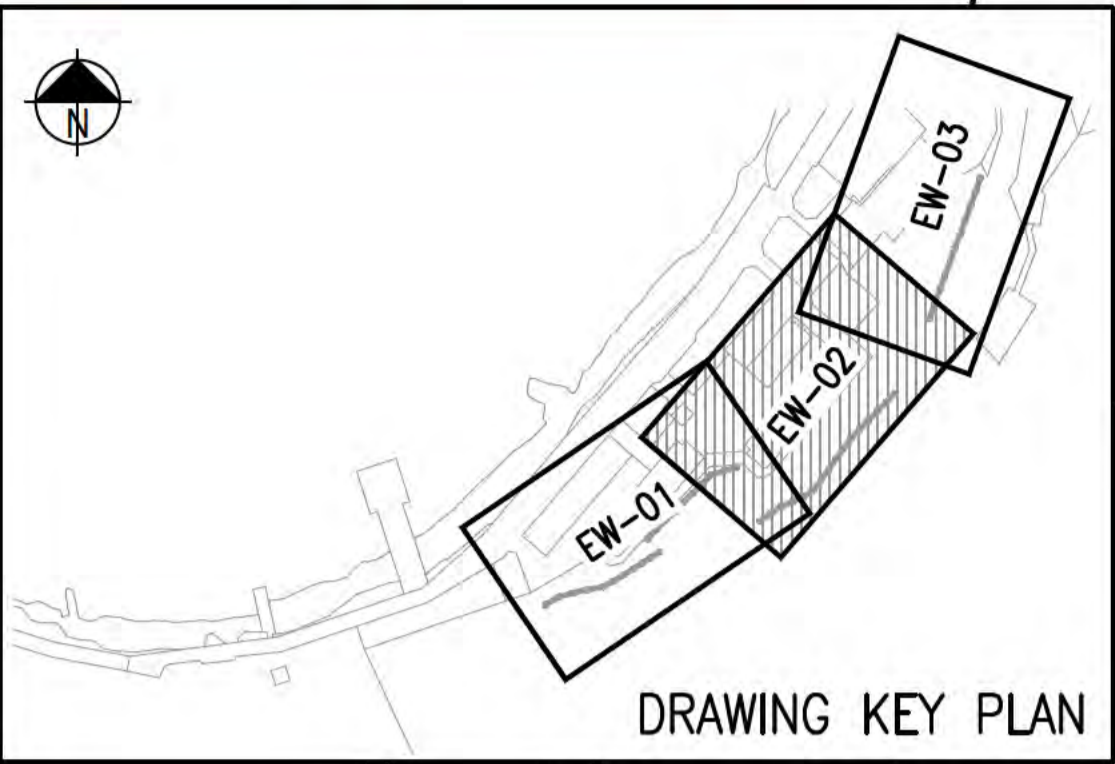
Job No
280579-00

Drawing No
GE-EW-01

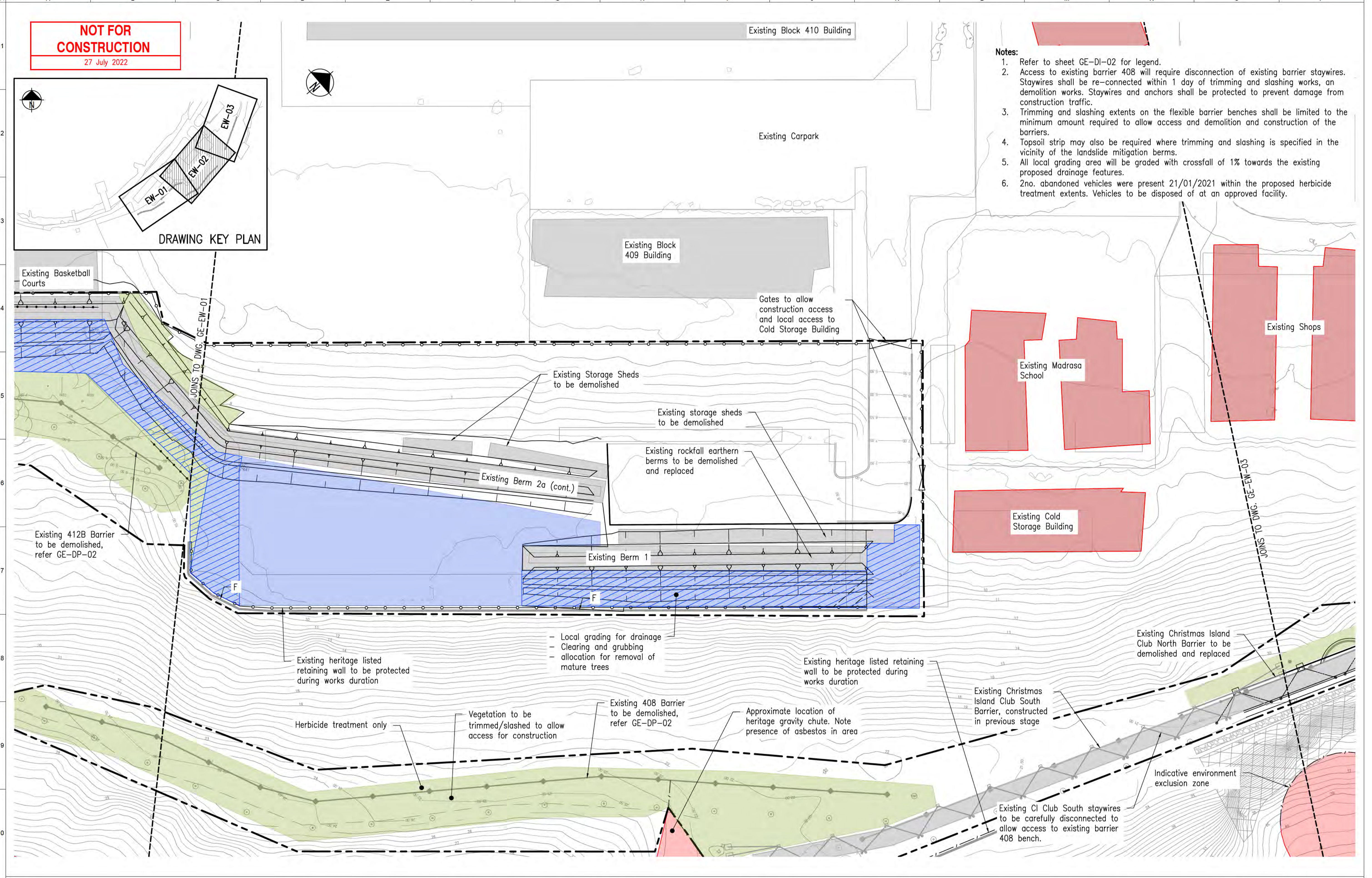
Issue
C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



- Notes:**
1. Refer to sheet GE-DI-02 for legend.
 2. Access to existing barrier 408 will require disconnection of existing barrier staywires. Staywires shall be re-connected within 1 day of trimming and slashing works, and demolition works. Staywires and anchors shall be protected to prevent damage from construction traffic.
 3. Trimming and slashing extents on the flexible barrier benches shall be limited to the minimum amount required to allow access and demolition and construction of the barriers.
 4. Topsoil strip may also be required where trimming and slashing is specified in the vicinity of the landslide mitigation berms.
 5. All local grading area will be graded with crossfall of 1% towards the existing proposed drainage features.
 6. 2no. abandoned vehicles were present 21/01/2021 within the proposed herbicide treatment extents. Vehicles to be disposed of at an approved facility.



Scales

A1 / A3
1:250 / 1:500

0 2 4 6 8 10m

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
C	27/07/22	KC	JG	JG
ISSUED FOR TENDER				
B	18/03/22	JL	JG	JG
85% DETAILED DESIGN ISSUE				
A	29/01/21	GO	JG	EF
CONCEPT DESIGN ISSUE				

Australian Government
Department of Infrastructure, Transport,
Regional Development and Communications

Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline

ARUP

Level 4 108 Wickham Street
Fortitude Valley QLD Australia 4006
Tel +61(0)7320 9320 Fax +61(0)7320 9321
www.arup.com

Drawing Title
LANDSLIDE MITIGATION EARTHWORKS SHEET 2 OF 3

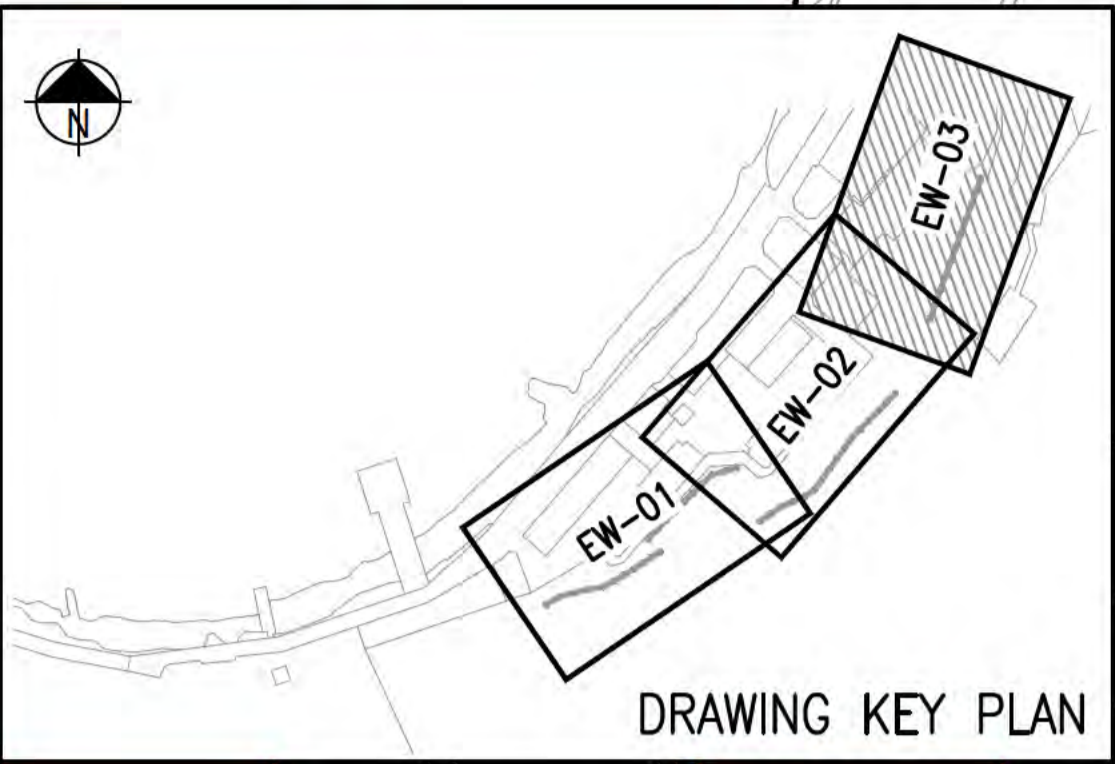
Issued for Tender
Job No: **280579-00**
Drawing No: **GE-EW-02**

Issue **C**

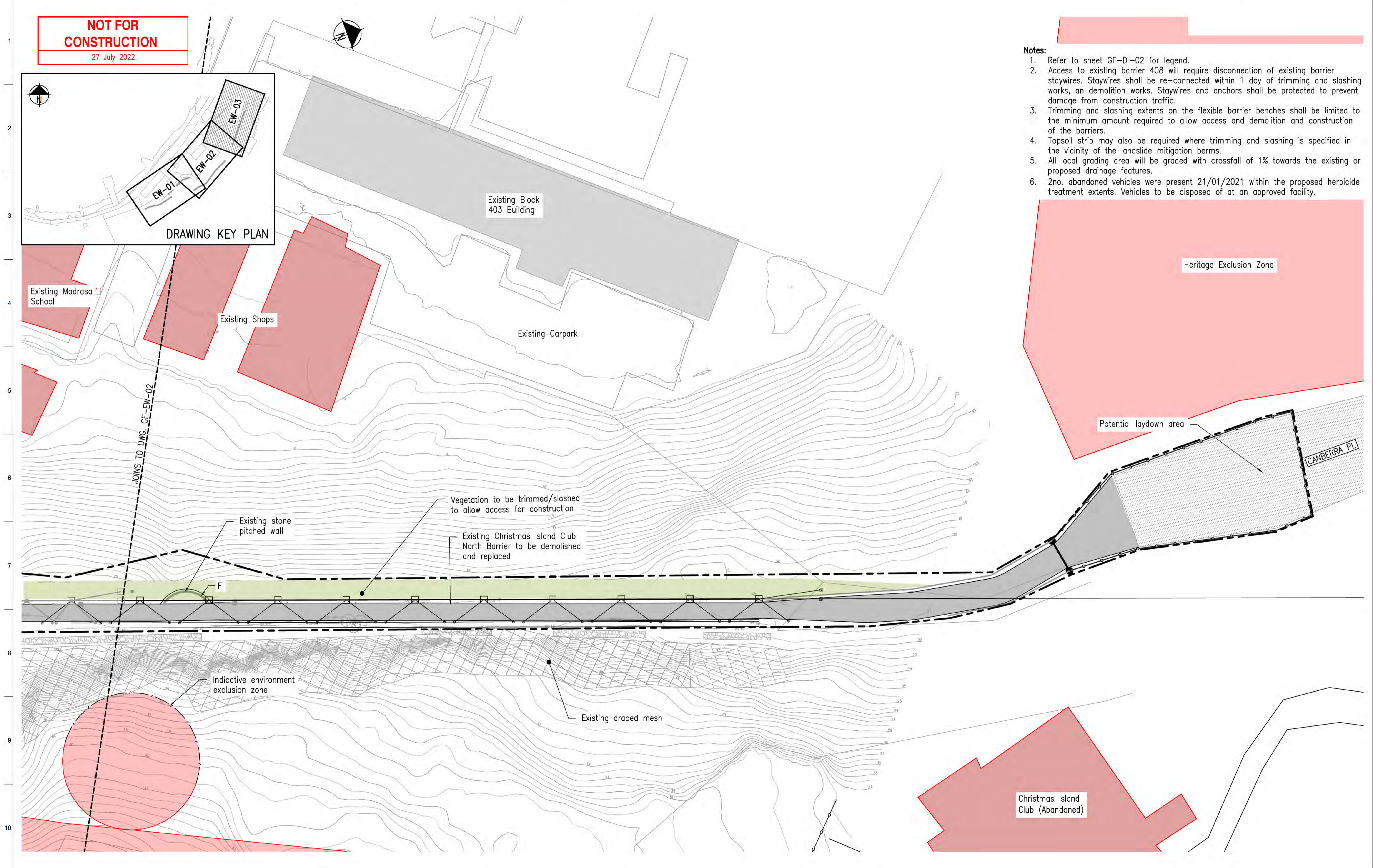
DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

A1 A B C D E F G H I J K L M N O P

NOT FOR CONSTRUCTION
27 July 2022



- Notes:**
1. Refer to sheet GE-DI-02 for legend.
 2. Access to existing barrier 408 will require disconnection of existing barrier staywires. Staywires shall be re-connected within 1 day of trimming and slashing works, an demolition works. Staywires and anchors shall be protected to prevent damage from construction traffic.
 3. Trimming and slashing extents on the flexible barrier benches shall be limited to the minimum amount required to allow access and demolition and construction of the barriers.
 4. Topsoil strip may also be required where trimming and slashing is specified in the vicinity of the landslide mitigation berms.
 5. All local grading area will be graded with crossfall of 1% towards the existing or proposed drainage features.
 6. 2no. abandoned vehicles were present 21/01/2021 within the proposed herbicide treatment extents. Vehicles to be disposed of at an approved facility.



Scales

A1 / A3
1:250 / 1:500

Design Model Version

Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	ISSUED FOR TENDER
B	18/03/22	JL	JG	85% DETAILED DESIGN ISSUE
A	29/01/21	GO	JG EF	CONCEPT DESIGN ISSUE
Issue	Date	By	Chkd	Appd

Australian Government
Department of Infrastructure, Transport, Regional Development and Communications

Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline

ARUP

Level 4 108 Wickham Street
Fortitude Valley QLD Australia 4006
Tel +61(0)7320 9320 Fax +61(0)7320 9321
www.arup.com

CONSULT AUSTRALIA
Member Firm
Anp Pty Ltd
ABN 18 000 966 165

Drawing Title
LANDSLIDE MITIGATION EARTHWORKS SHEET 3 OF 3

Drawing Status
Issued for Tender

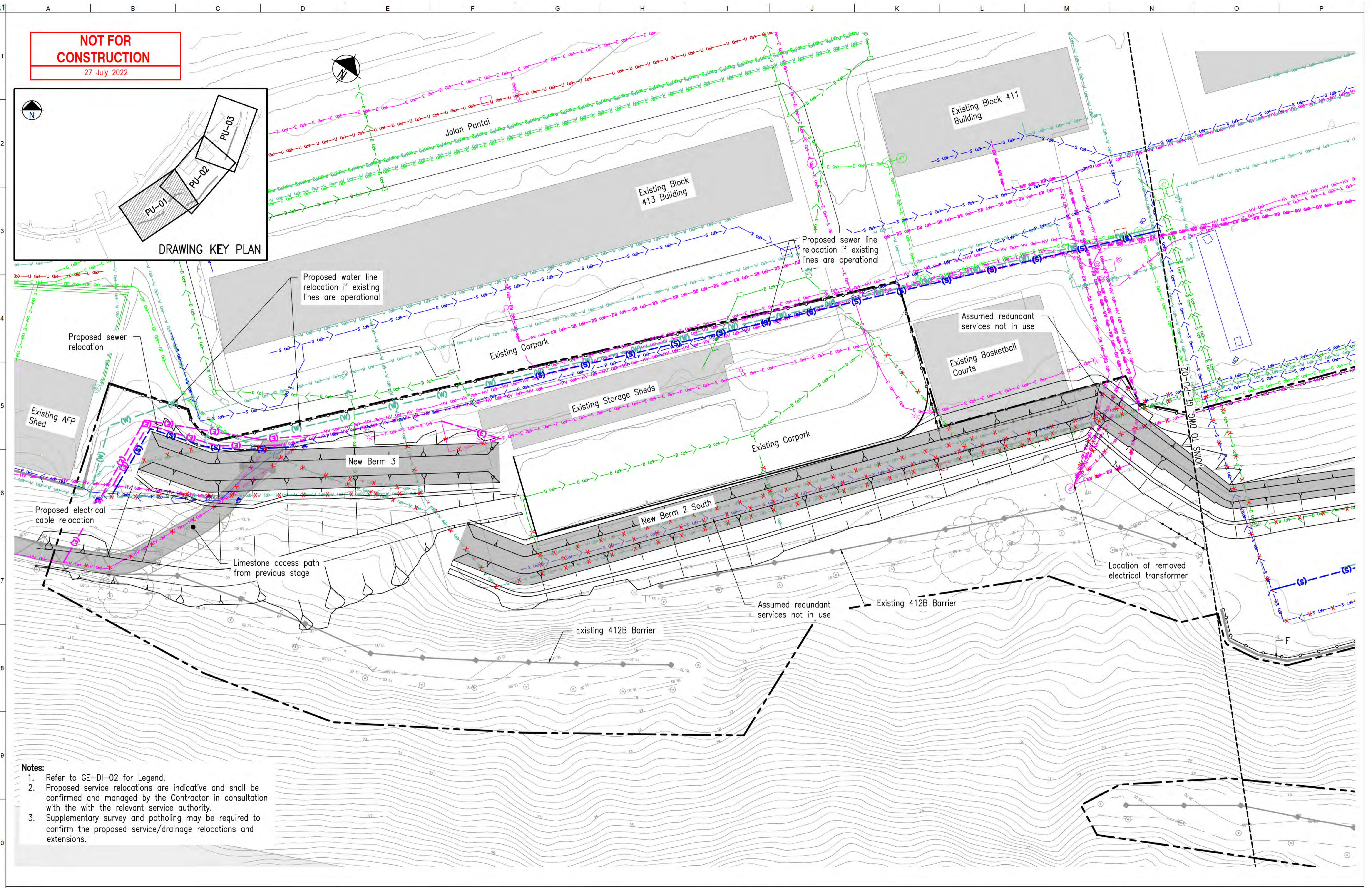
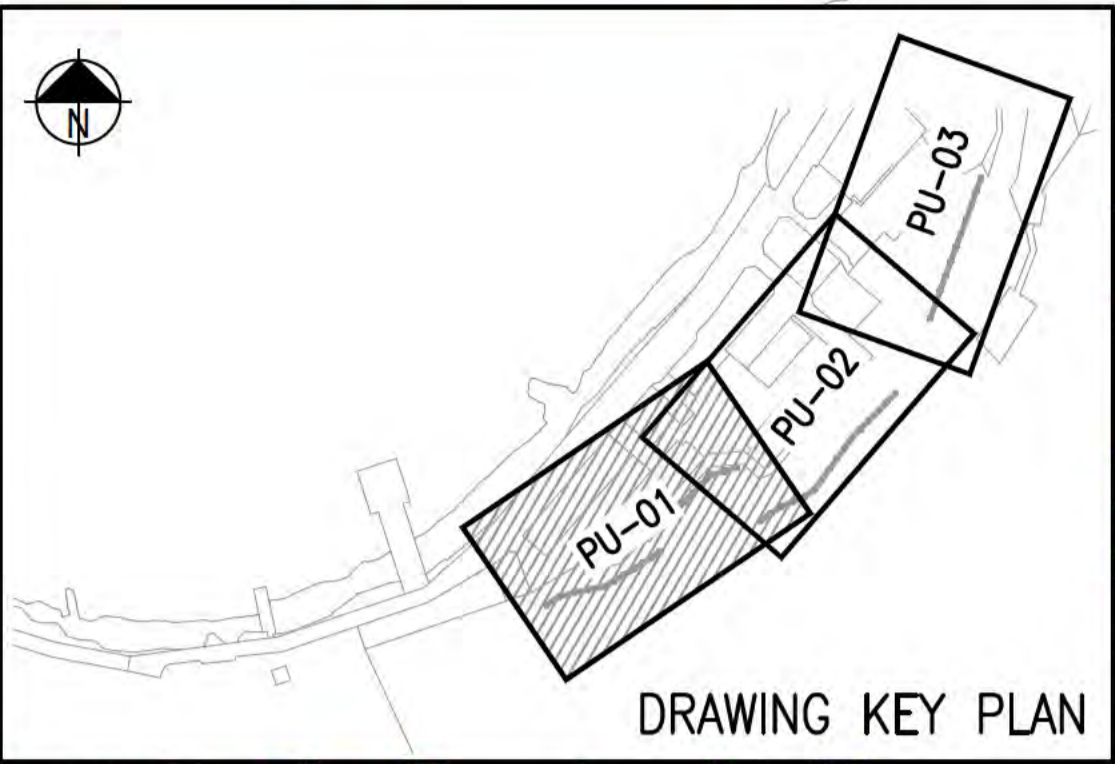
Job No
280579-00

Drawing No
GE-EW-03

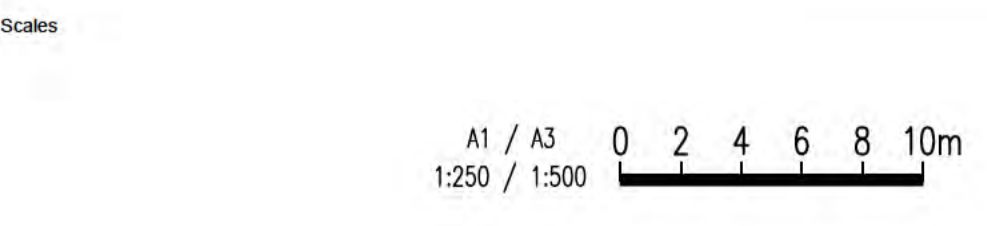
Issue
C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



- Notes:**
1. Refer to GE-DI-02 for Legend.
 2. Proposed service relocations are indicative and shall be confirmed and managed by the Contractor in consultation with the relevant service authority.
 3. Supplementary survey and potholing may be required to confirm the proposed service/drainage relocations and extensions.



Design Model Version

Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	ISSUED FOR TENDER
B	18/03/22	JL	JG	85% DETAILED DESIGN ISSUE
A	29/01/21	GO	JG EF	CONCEPT DESIGN ISSUE
Issue	Date	By	Chkd	Appd

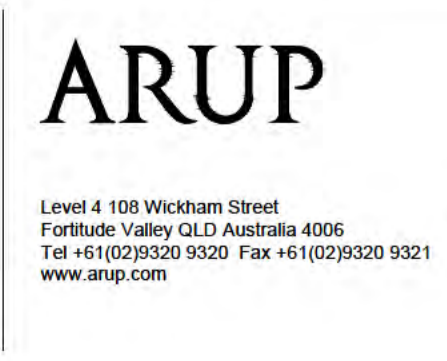


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION SERVICES RE-LOCATION SHEET 1 OF 3

Drawing Status
Issued for Tender

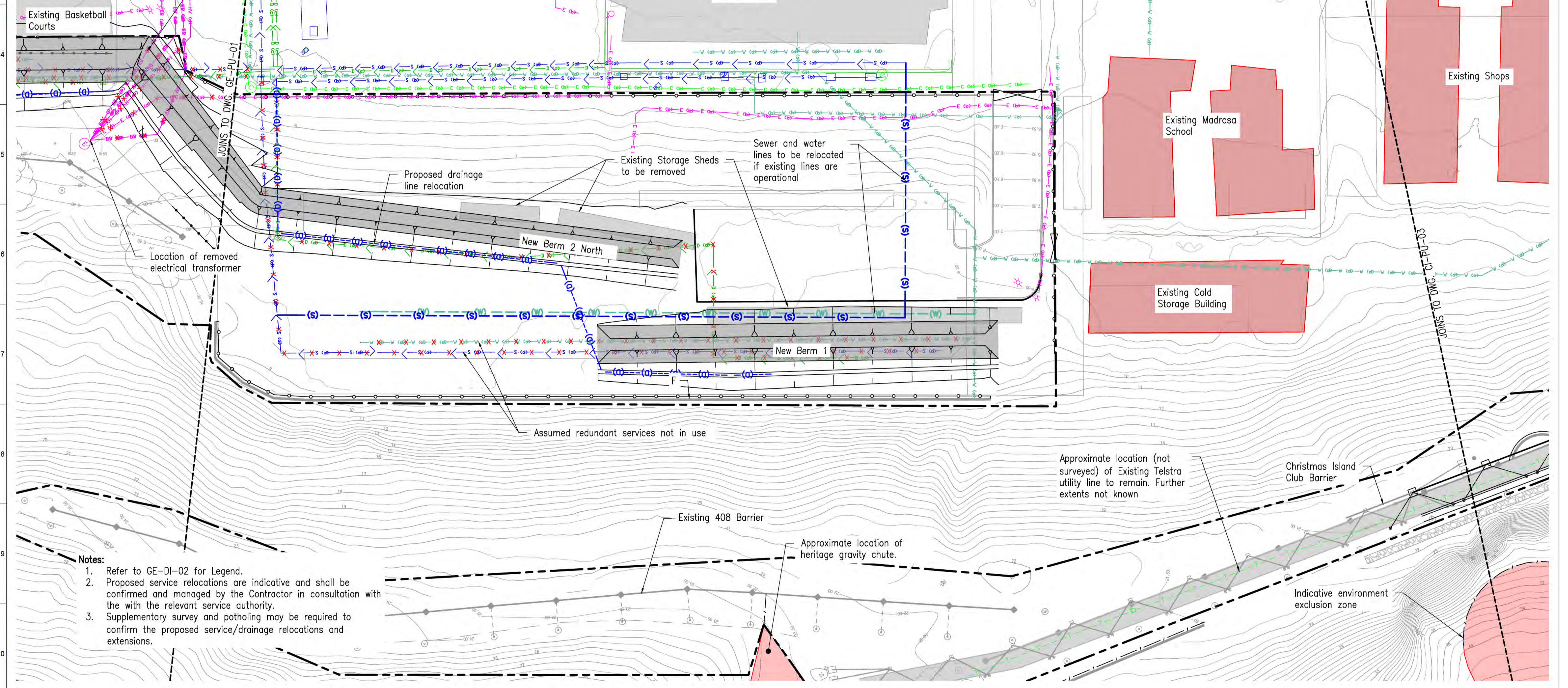
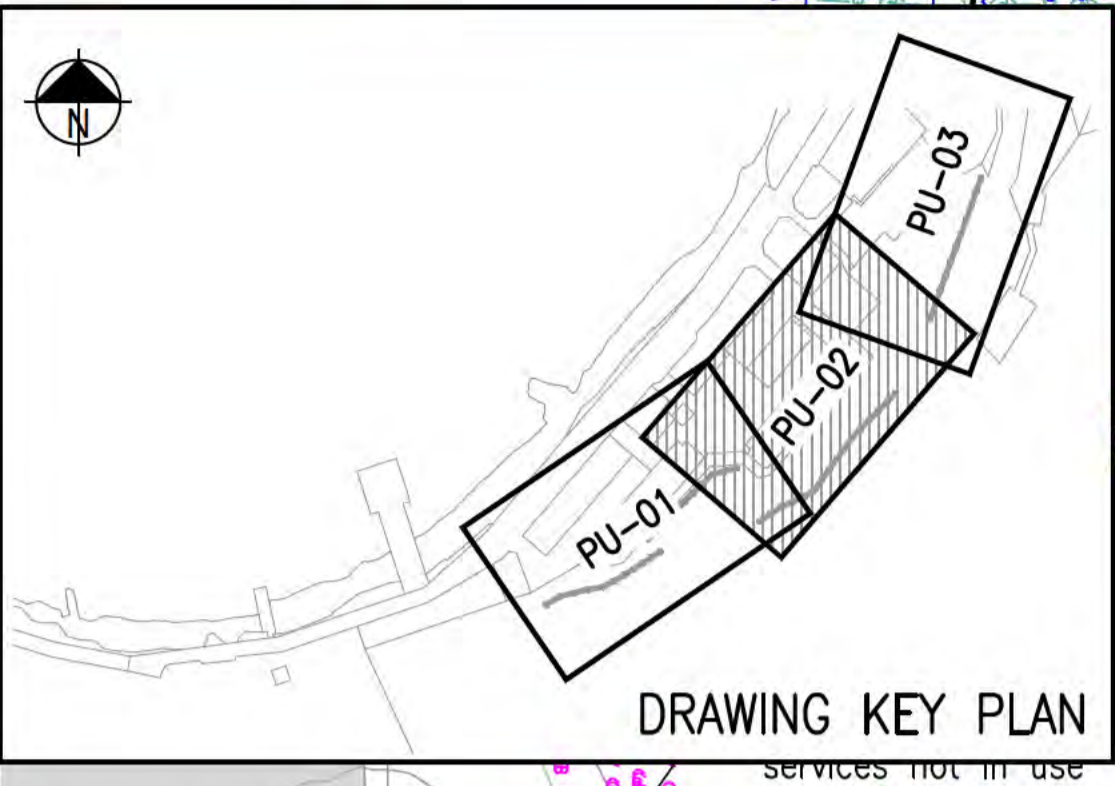
Job No
280579-00

Drawing No
GE-PU-01

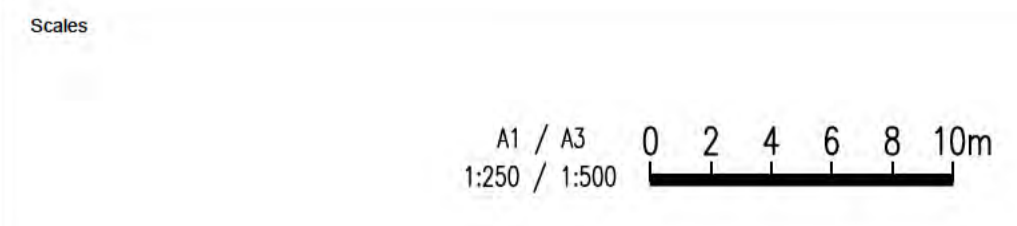
Issue
C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



- Notes:**
1. Refer to GE-DI-02 for Legend.
 2. Proposed service relocations are indicative and shall be confirmed and managed by the Contractor in consultation with the relevant service authority.
 3. Supplementary survey and potholing may be required to confirm the proposed service/drainage relocations and extensions.



Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
C	27/07/22	KC	JG	JG
B	18/03/22	JL	JG	JG
A	29/01/21	GO	JG	EF

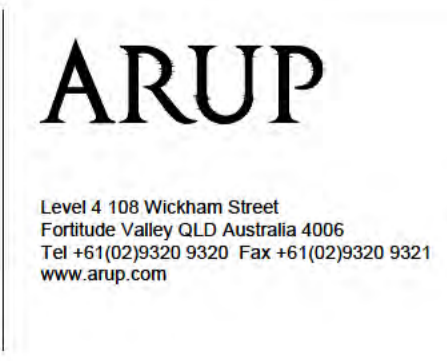


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION SERVICES RE-LOCATION SHEET 2 OF 3

Drawing Status
Issued for Tender

Job No
280579-00

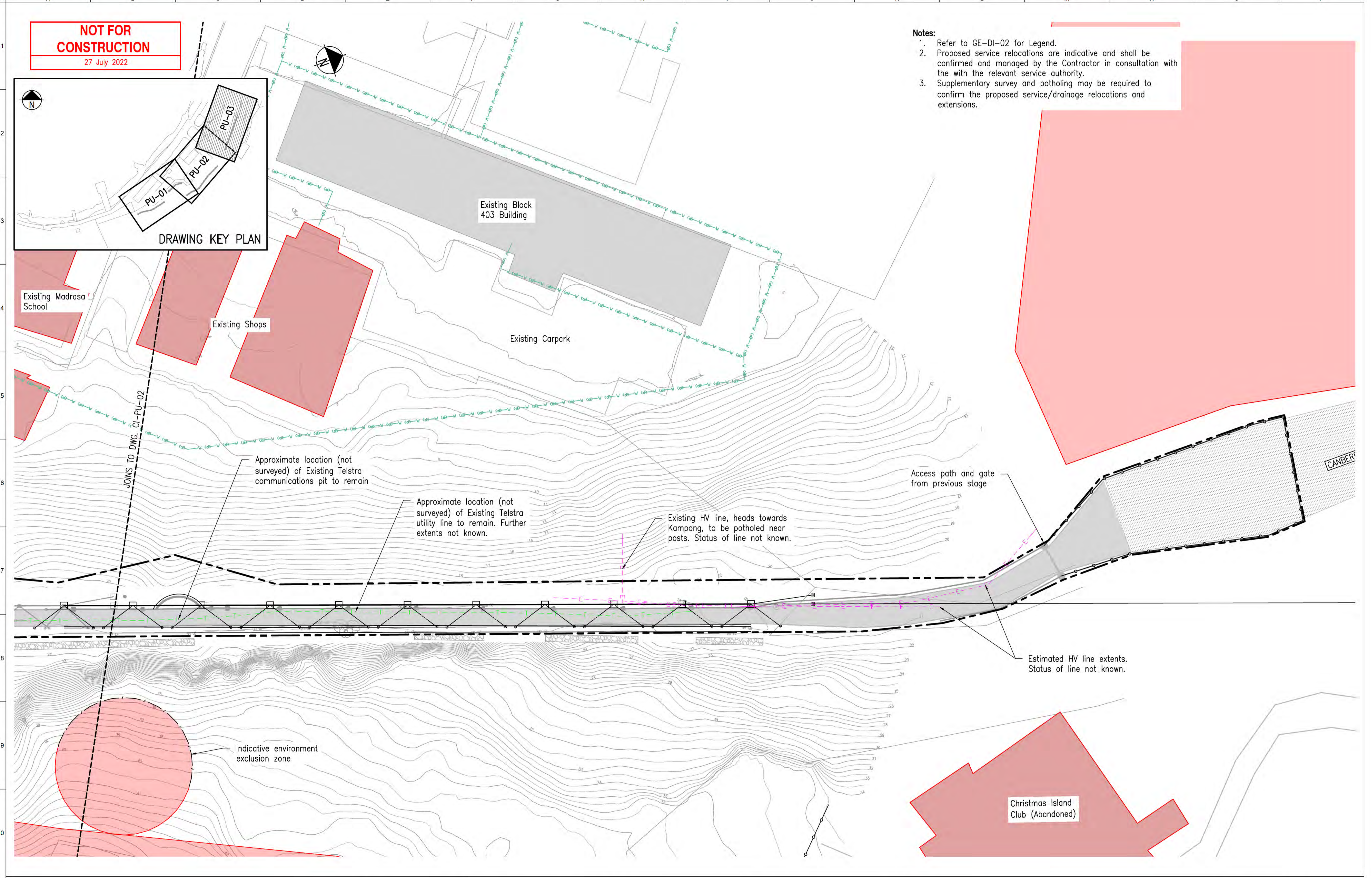
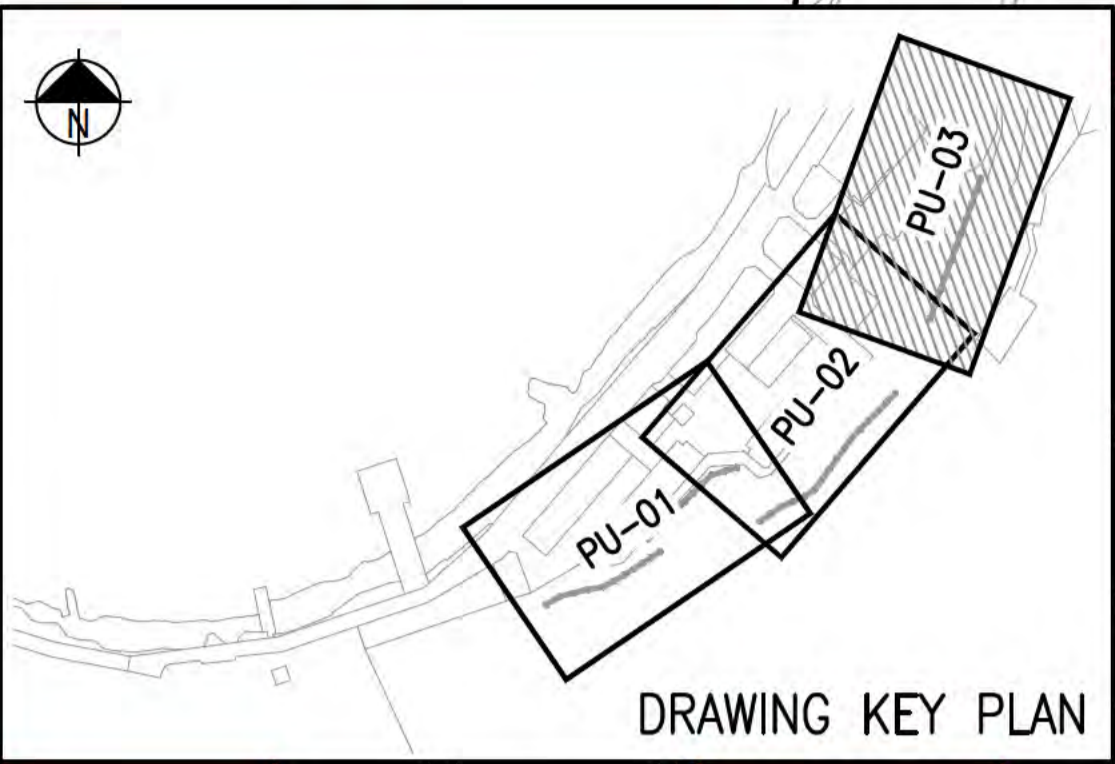
Drawing No
GE-PU-02

Issue
C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022

- Notes:**
1. Refer to GE-DI-02 for Legend.
 2. Proposed service relocations are indicative and shall be confirmed and managed by the Contractor in consultation with the with the relevant service authority.
 3. Supplementary survey and potholing may be required to confirm the proposed service/drainage relocations and extensions.



JOINS TO DWG. CI-PU-02

Approximate location (not surveyed) of Existing Telstra communications pit to remain

Approximate location (not surveyed) of Existing Telstra utility line to remain. Further extents not known.

Existing HV line, heads towards Kampong, to be potholed near posts. Status of line not known.

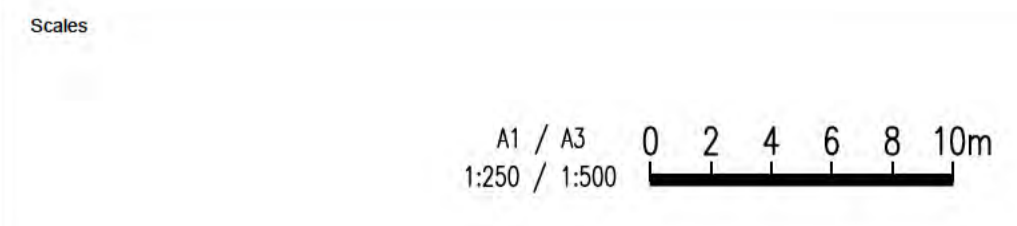
Access path and gate from previous stage

Estimated HV line extents. Status of line not known.

Indicative environment exclusion zone

Christmas Island Club (Abandoned)

CANBER



Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	ISSUED FOR TENDER
B	18/03/22	JL	JG	85% DETAILED DESIGN ISSUE
A	29/01/21	GO	JG EF	CONCEPT DESIGN ISSUE
Issue	Date	By	Chkd	Appd

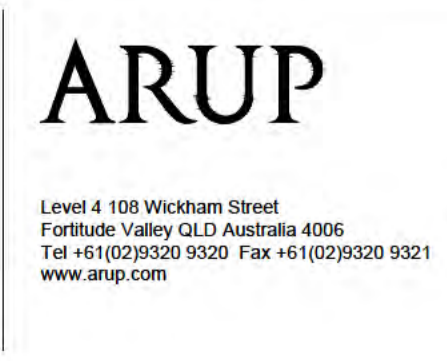


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION SERVICES RE-LOCATION SHEET 3 OF 3

Drawing Status
Issued for Tender

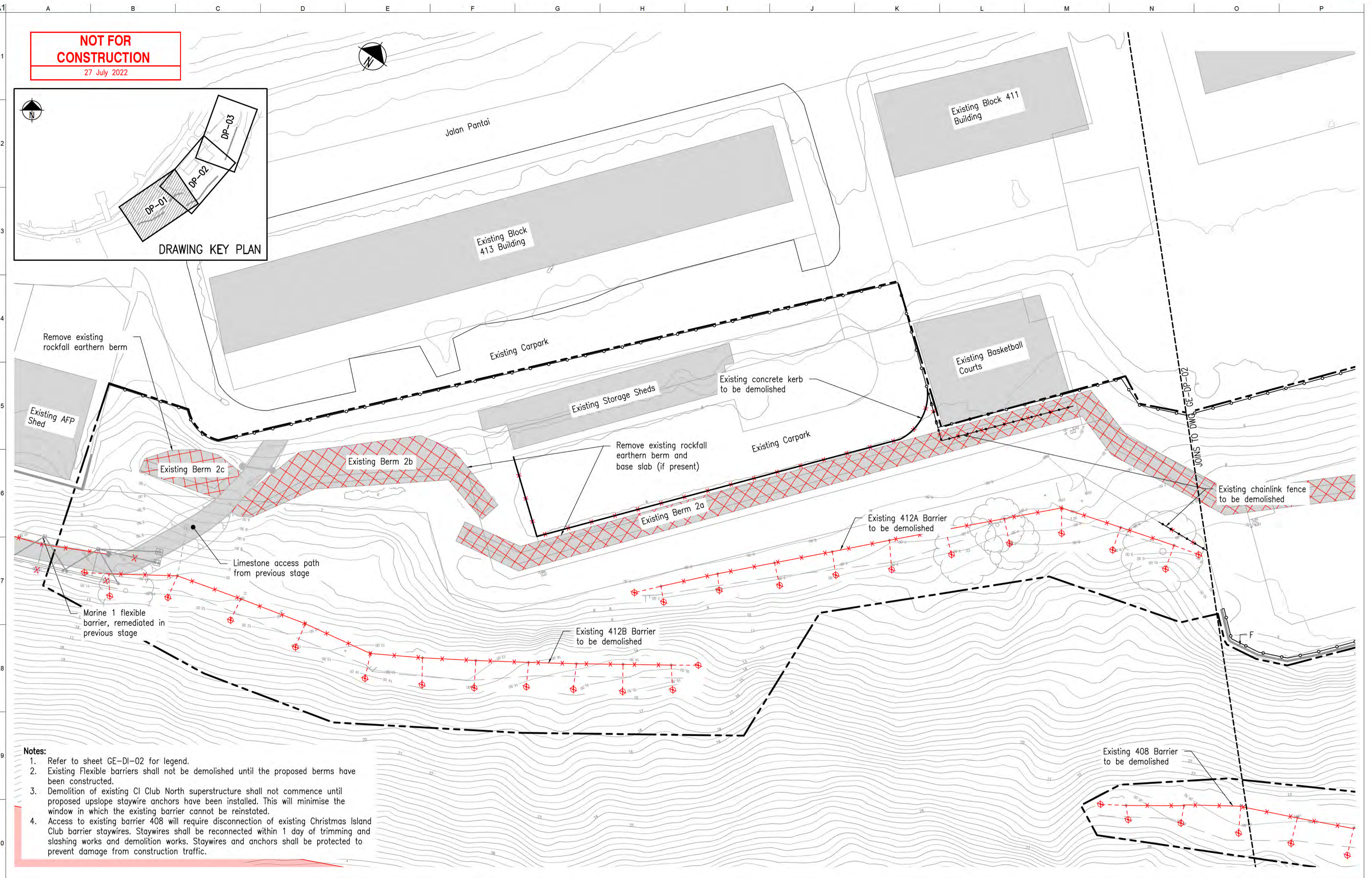
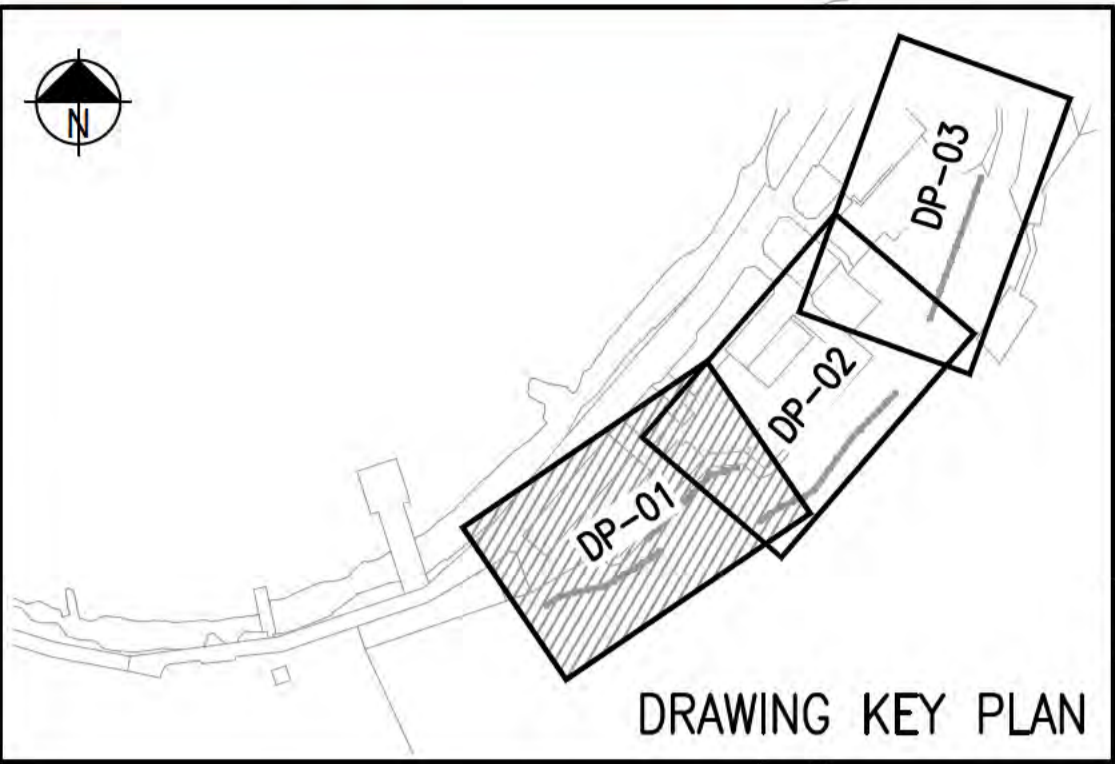
Job No
280579-00

Drawing No
GE-PU-03

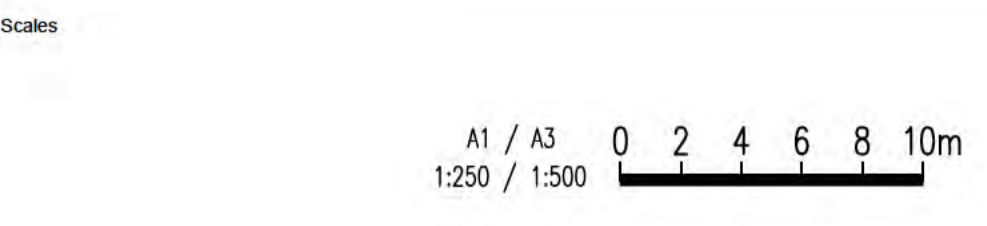
Issue
C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



- Notes:**
1. Refer to sheet GE-DI-02 for legend.
 2. Existing Flexible barriers shall not be demolished until the proposed berms have been constructed.
 3. Demolition of existing CI Club North superstructure shall not commence until proposed upslope staywire anchors have been installed. This will minimise the window in which the existing barrier cannot be reinstated.
 4. Access to existing barrier 408 will require disconnection of existing Christmas Island Club barrier staywires. Staywires shall be reconnected within 1 day of trimming and slashing works and demolition works. Staywires and anchors shall be protected to prevent damage from construction traffic.



Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG
ISSUED FOR TENDER			
B	18/03/22	JL	JG
85% DETAILED DESIGN ISSUE			
A	29/01/21	GO	JG EF
CONCEPT DESIGN ISSUE			
Issue	Date	By	Chkd Appd

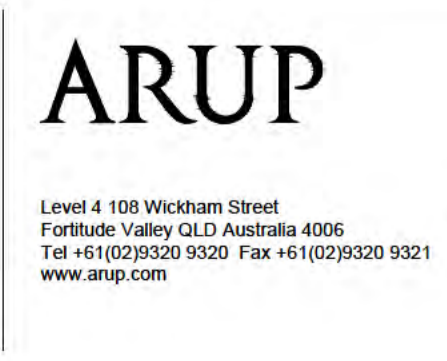


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION DEMOLITION PLAN SHEET 1 OF 3

Drawing Status
Issued for Tender

Job No
280579-00

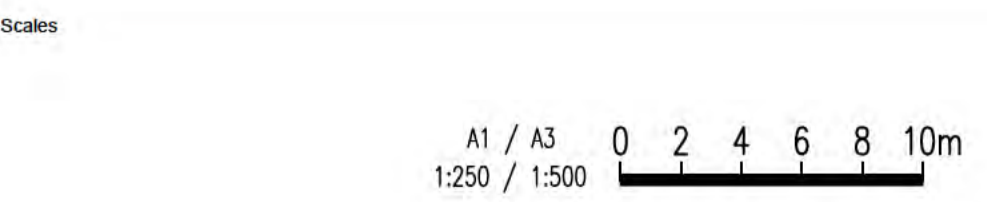
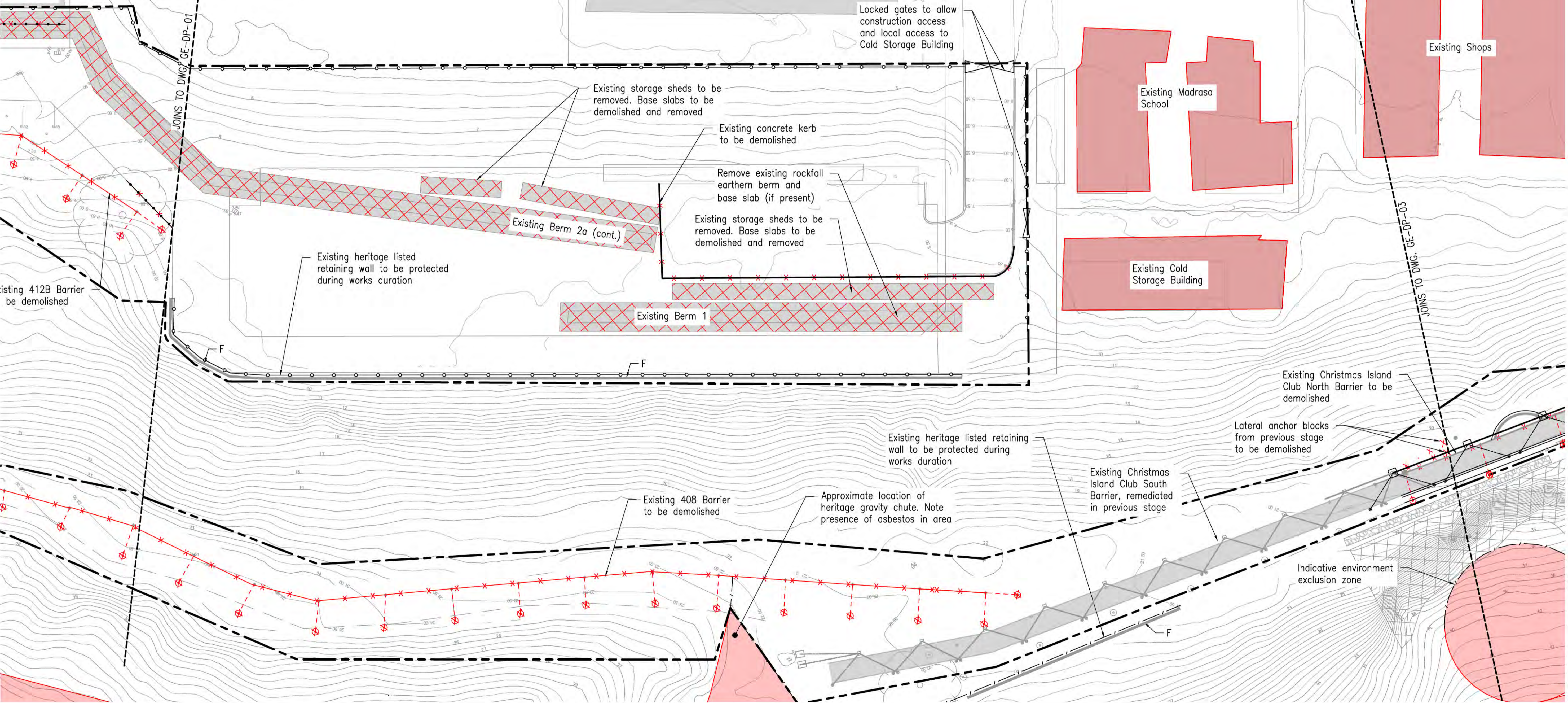
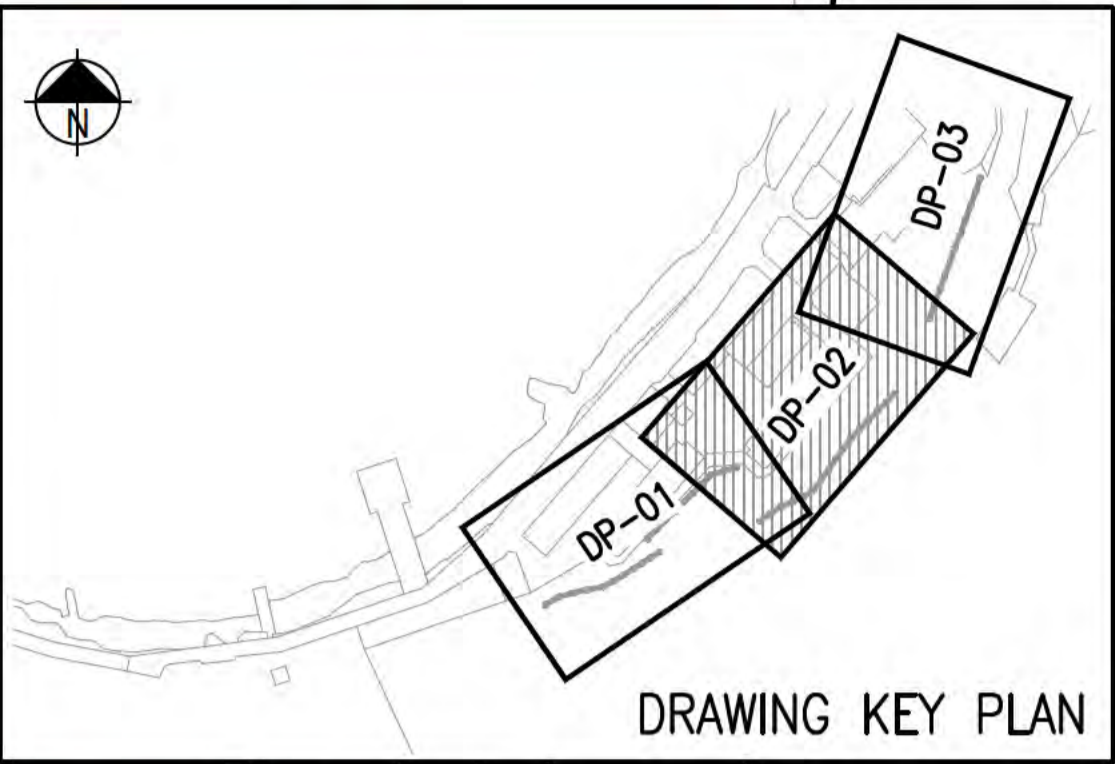
Drawing No
GE-DP-01

Issue
C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022

- Notes:**
1. Refer to sheet GE-DI-02 for legend.
 2. Existing Flexible barriers shall not be demolished until the proposed berms have been constructed.
 3. Demolition of existing CI Club North superstructure shall not commence until proposed upslope staywire anchors have been installed. This will minimise the window in which the existing barrier cannot be reinstated.
 4. Access to existing barrier 408 will require disconnection of existing Christmas Island Club barrier staywires. Staywires shall be reconnected within 1 day of trimming and slashing works and demolition works. Staywires and anchors shall be protected to prevent damage from construction traffic.



Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	
ISSUED FOR TENDER				
B	18/03/22	JL	JG	
85% DETAILED DESIGN ISSUE				
A	29/01/21	GO	JG	EF
CONCEPT DESIGN ISSUE				
Issue	Date	By	Chkd	Appd



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION DEMOLITION PLAN SHEET 2 OF 3

Drawing Status
Issued for Tender

Job No
280579-00

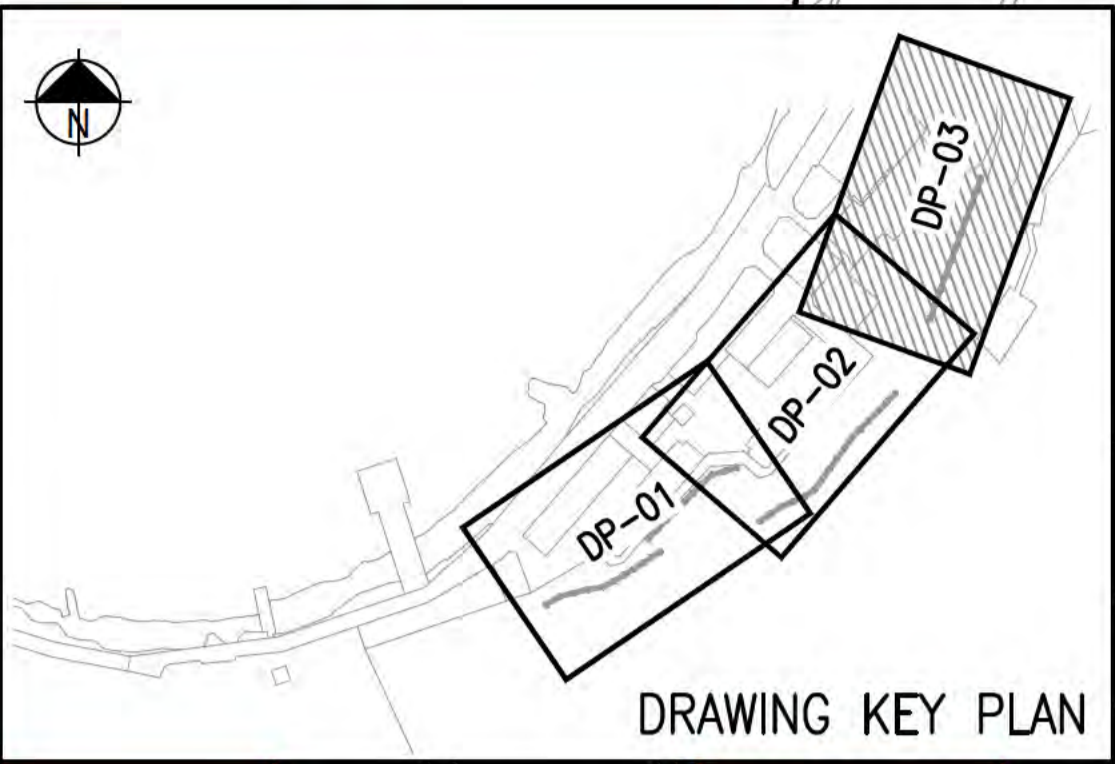
Drawing No
GE-DP-02

Issue
C

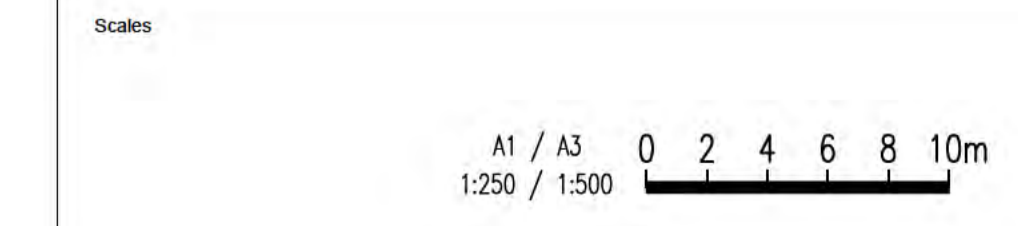
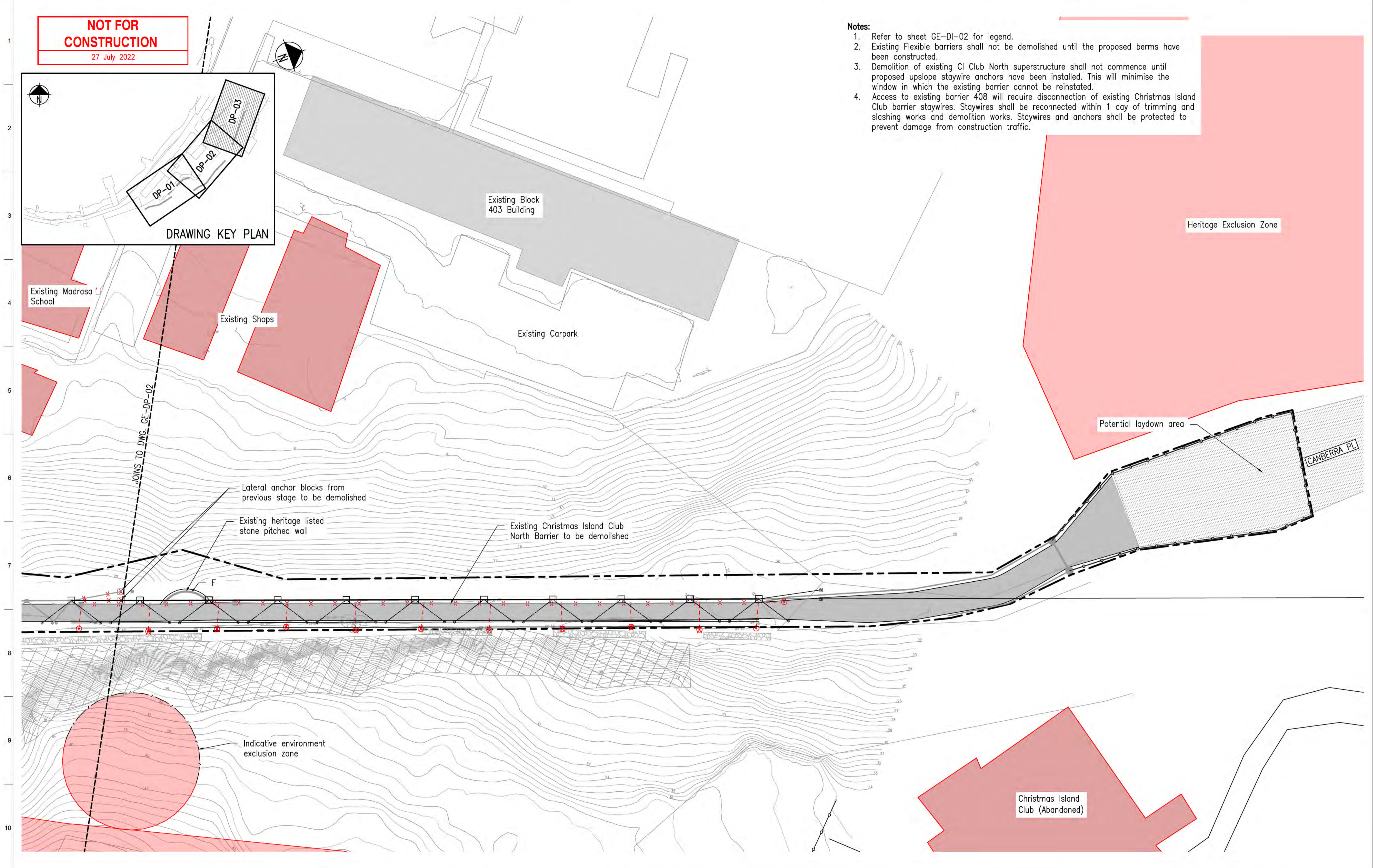
DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

A1 A B C D E F G H I J K L M N O P

NOT FOR CONSTRUCTION
27 July 2022



- Notes:**
1. Refer to sheet GE-DI-02 for legend.
 2. Existing Flexible barriers shall not be demolished until the proposed berms have been constructed.
 3. Demolition of existing CI Club North superstructure shall not commence until proposed upslope staywire anchors have been installed. This will minimise the window in which the existing barrier cannot be reinstated.
 4. Access to existing barrier 408 will require disconnection of existing Christmas Island Club barrier staywires. Staywires shall be reconnected within 1 day of trimming and slashing works and demolition works. Staywires and anchors shall be protected to prevent damage from construction traffic.



Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	
ISSUED FOR TENDER				
B	18/03/22	JL	JG	
85% DETAILED DESIGN ISSUE				
A	29/01/21	GO	JG	EF
CONCEPT DESIGN ISSUE				
Issue	Date	By	Chkd	Appd

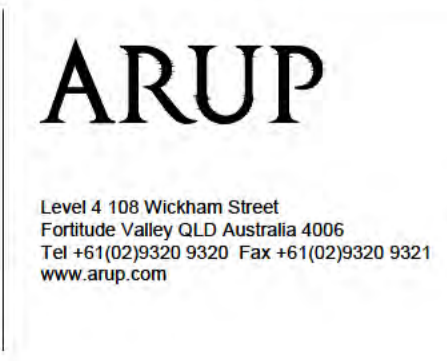


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION DEMOLITION PLAN SHEET 3 OF 3

Drawing Status
Issued for Tender

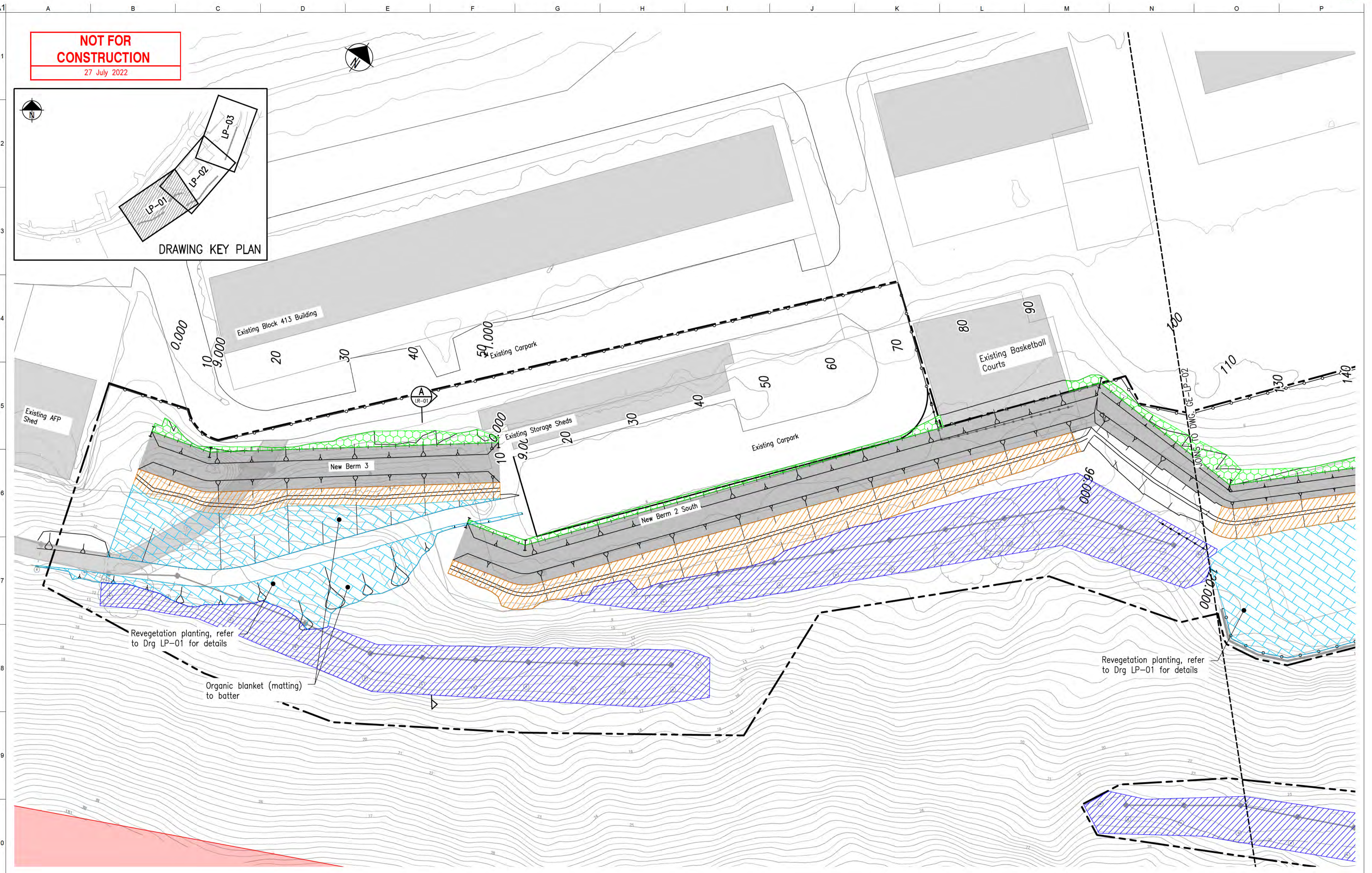
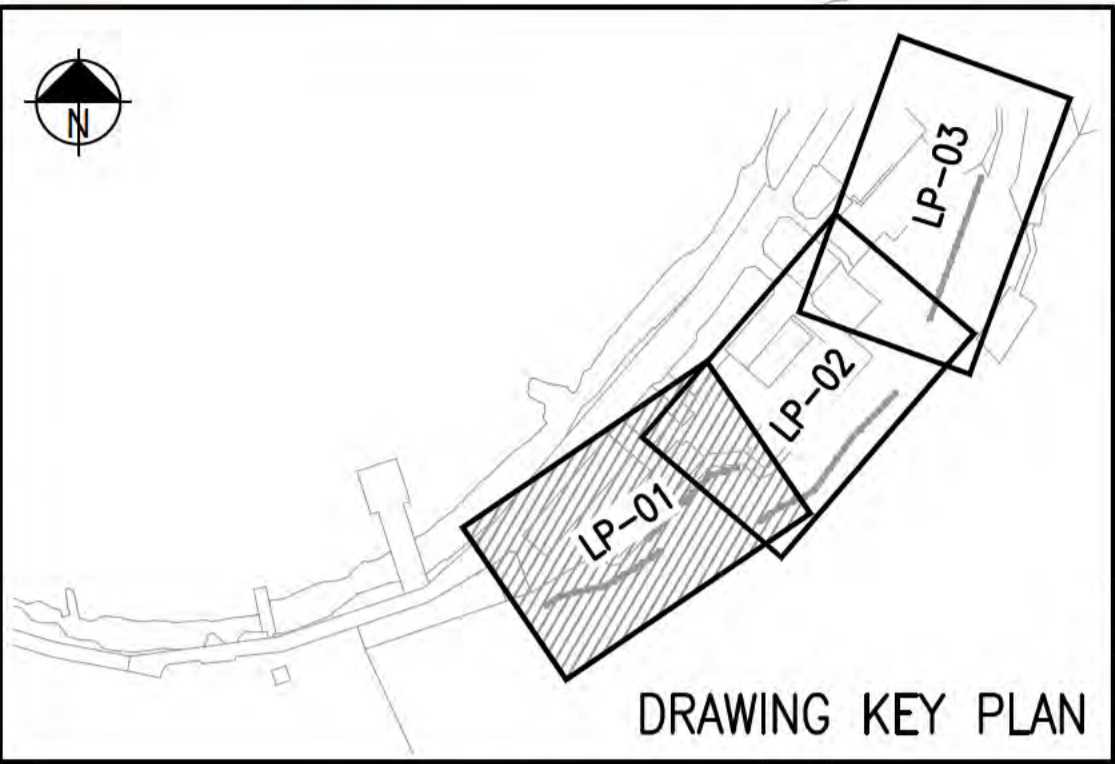
Job No
280579-00

Drawing No
GE-DP-03

Issue
C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

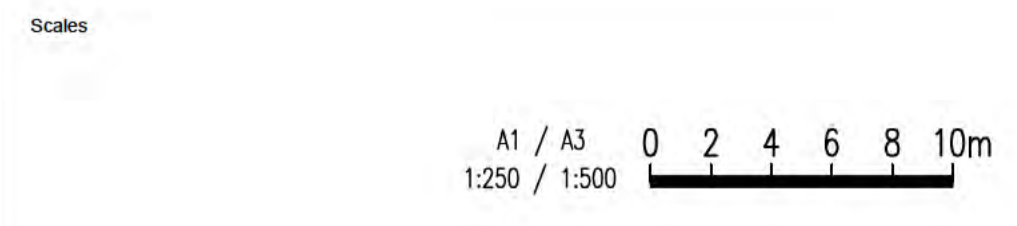
NOT FOR CONSTRUCTION
27 July 2022



Revegetation planting, refer to Drg LP-01 for details

Organic blanket (matting) to batter

Revegetation planting, refer to Drg LP-01 for details



Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG	
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				
Issue	Date	By	Chkd	Appd

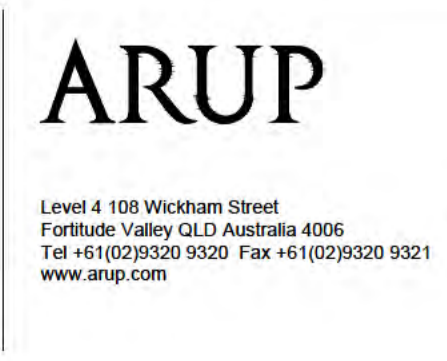


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline

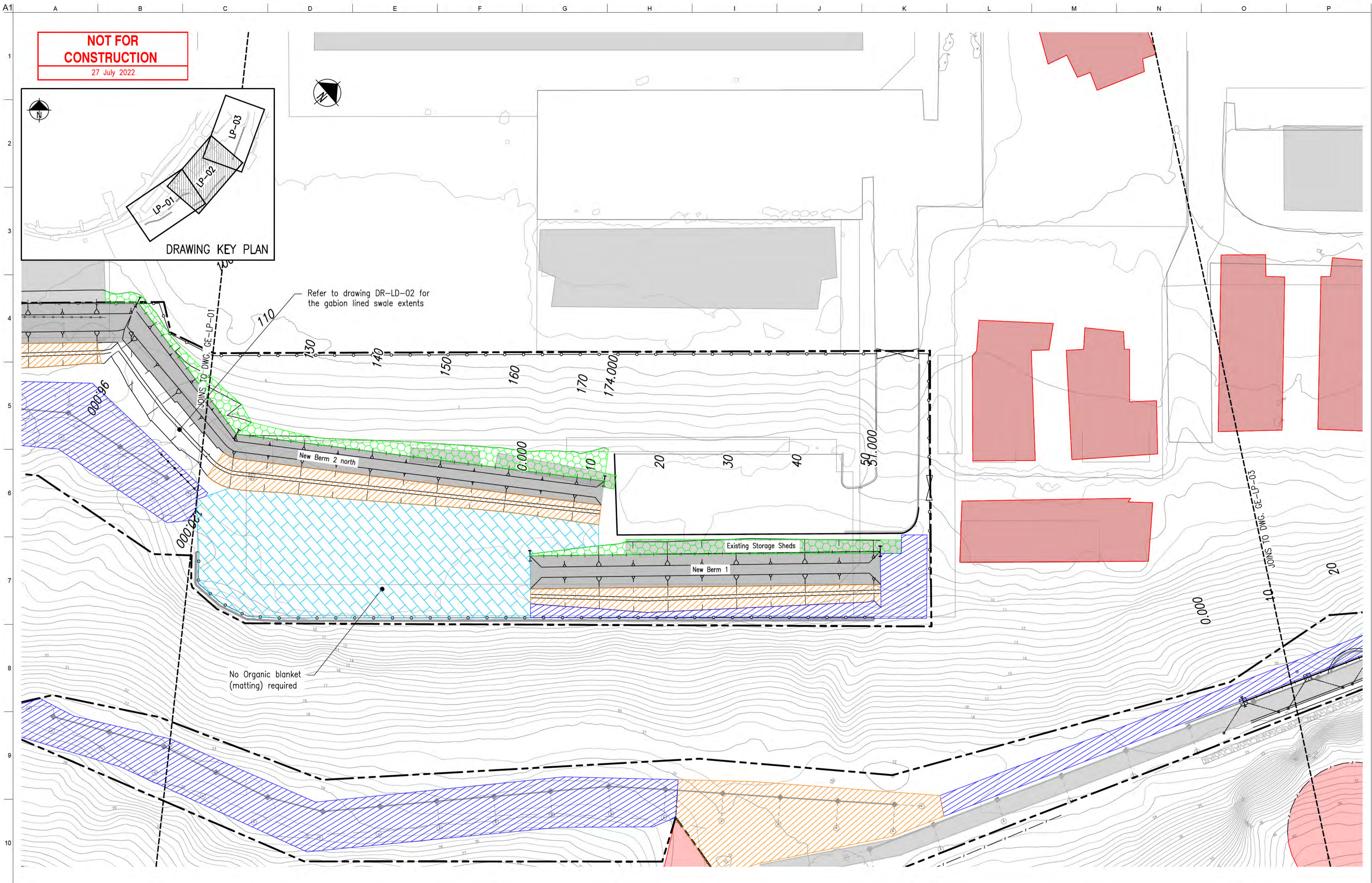


Drawing Title
LANDSLIDE MITIGATION REVEGETATION PLAN SHEET 1 OF 2

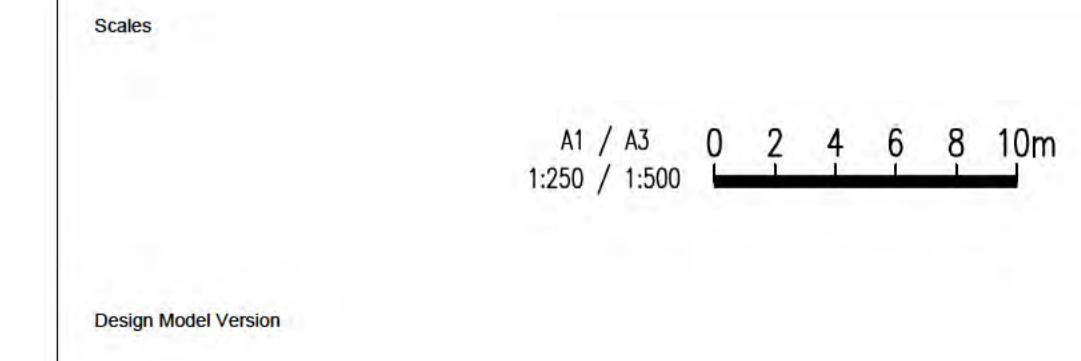
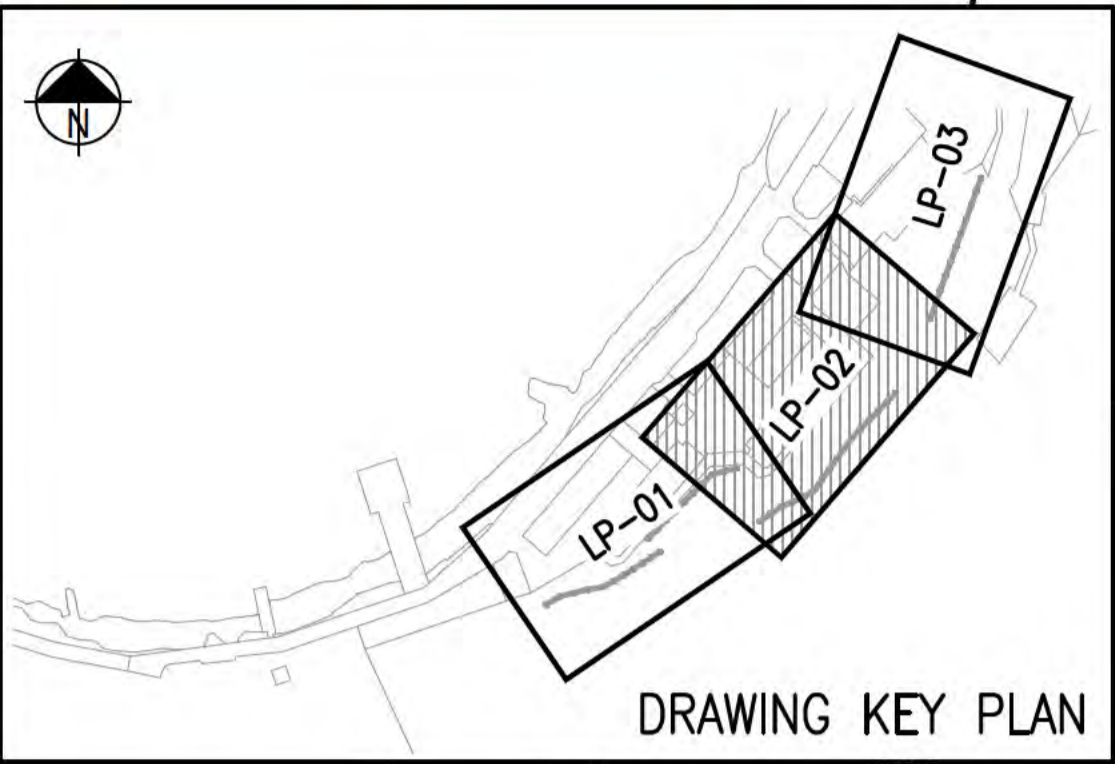
Drawing Status
Issued for Tender

Job No: **280579-00**
Drawing No: **GE-LP-01**
Issue: **B**

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR



NOT FOR CONSTRUCTION
27 July 2022



Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG	
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				
Issue	Date	By	Chkd	Appd

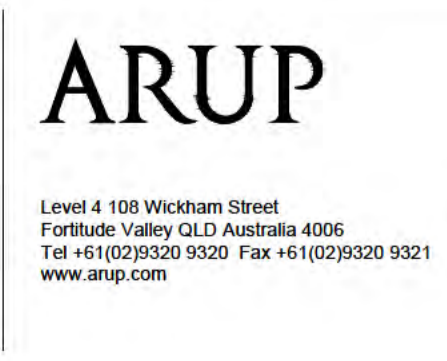


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION REVEGETATION PLAN SHEET 2 OF 2

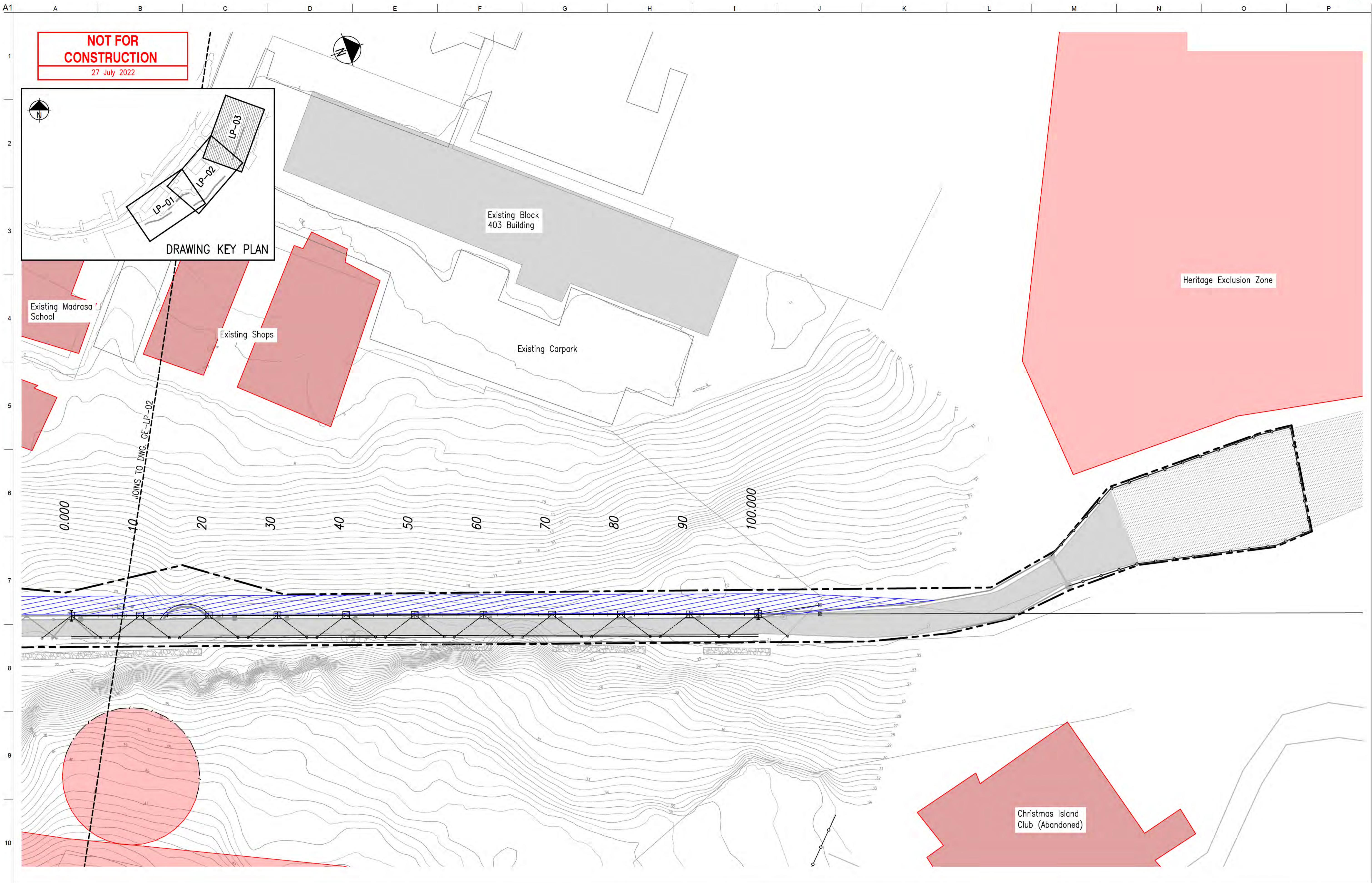
Drawing Status
Issued for Tender

Job No
280579-00

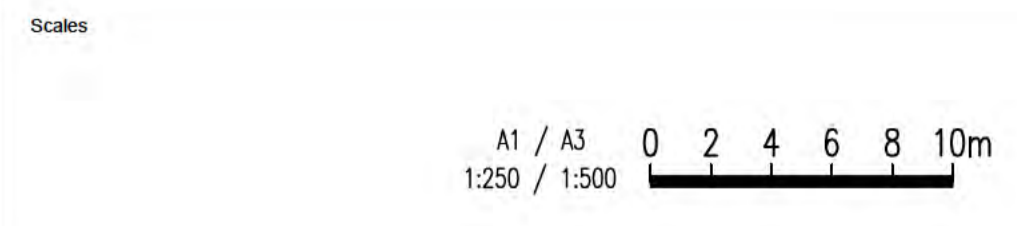
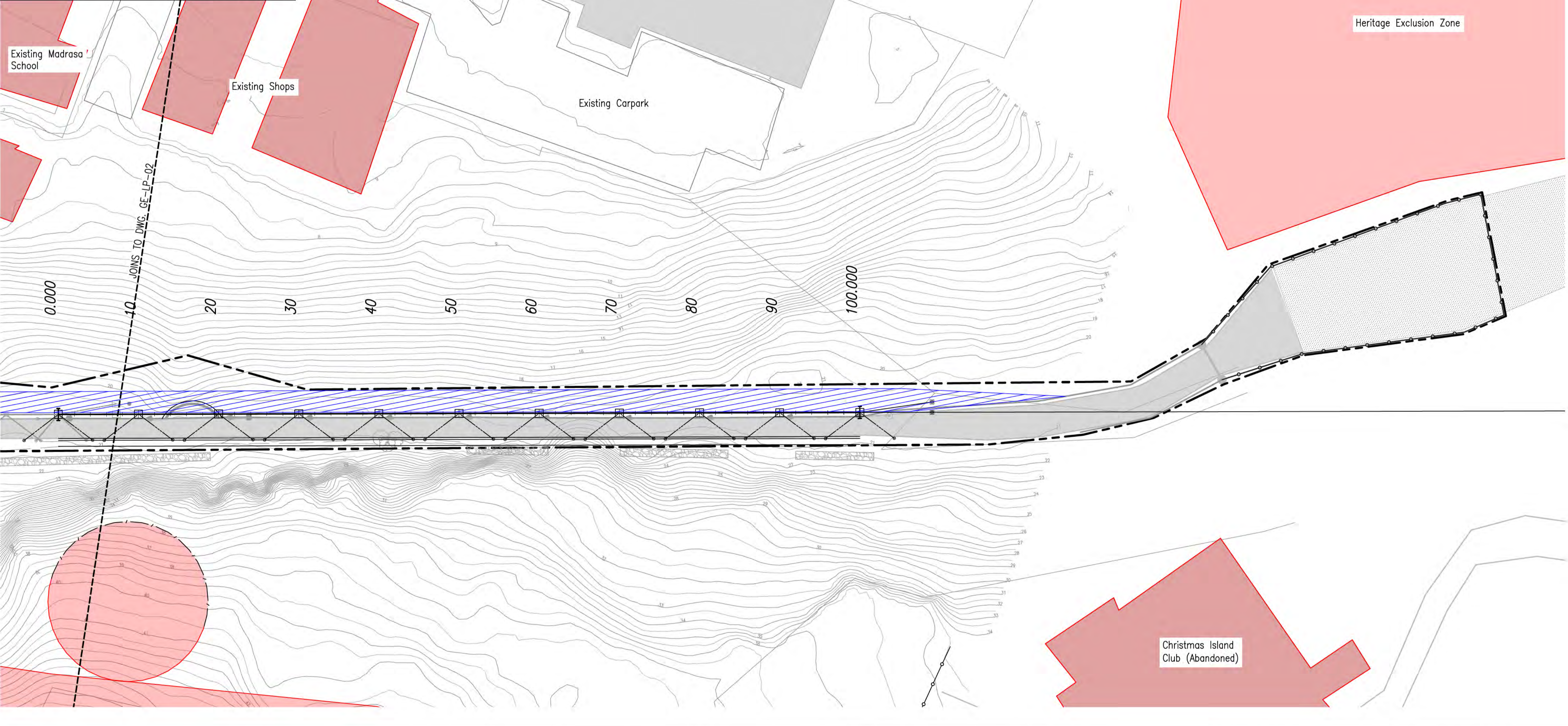
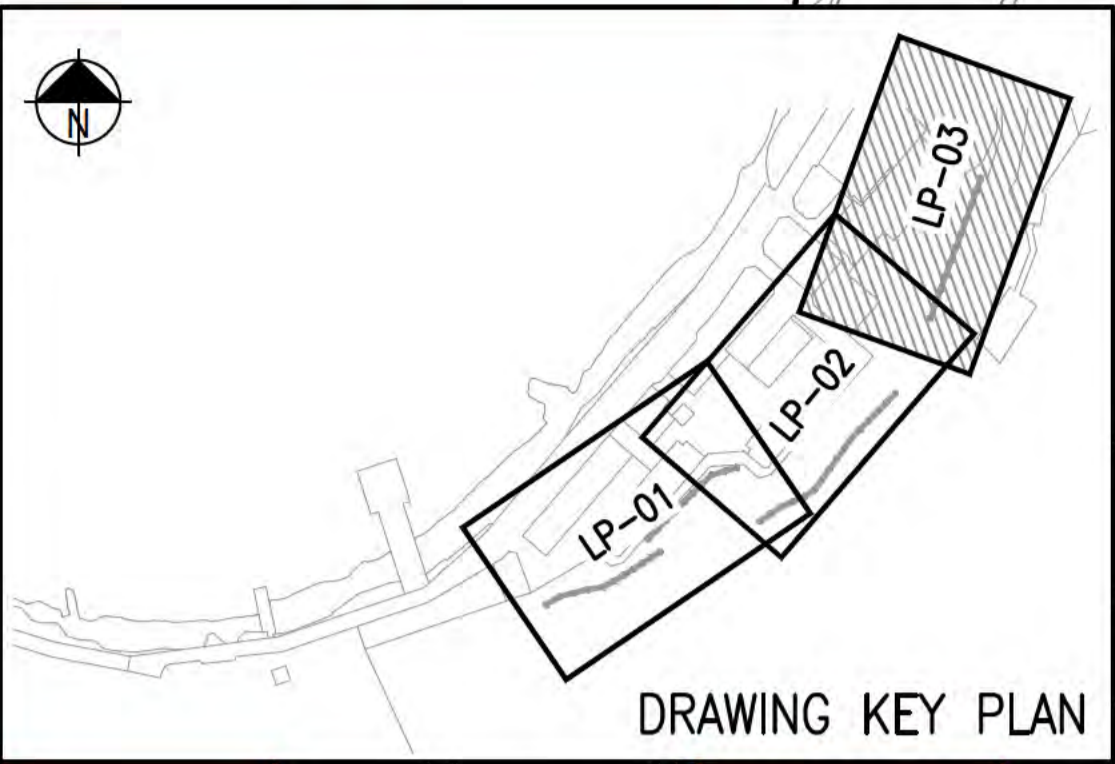
Drawing No
GE-LP-02

Issue
B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR



NOT FOR CONSTRUCTION
27 July 2022



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
A	27/07/22	KC	JG	

ISSUED FOR TENDER

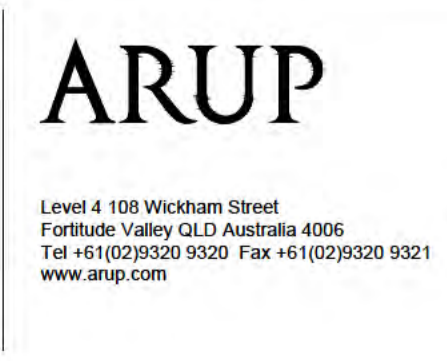


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



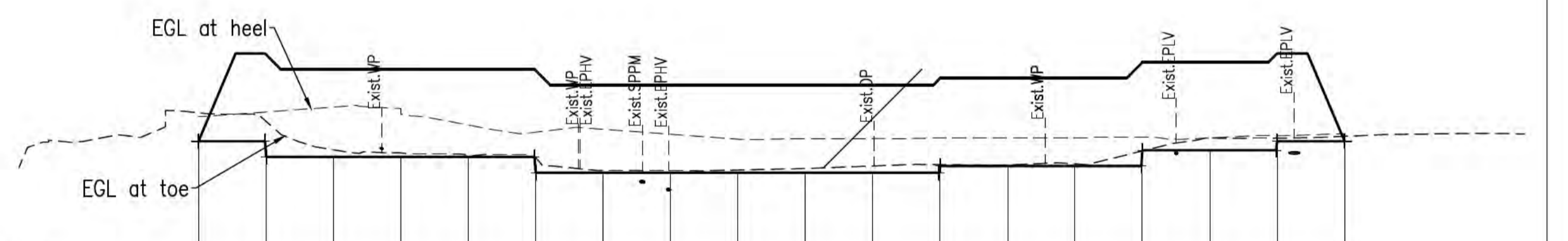
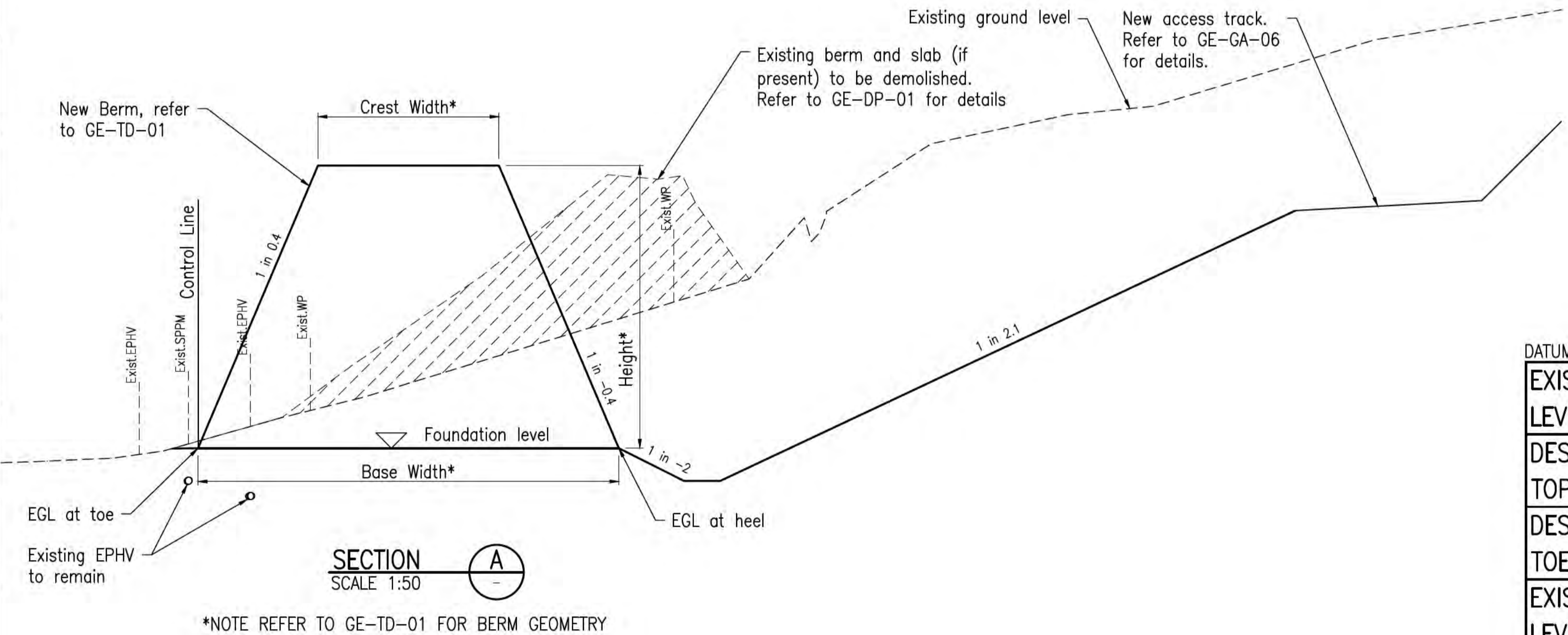
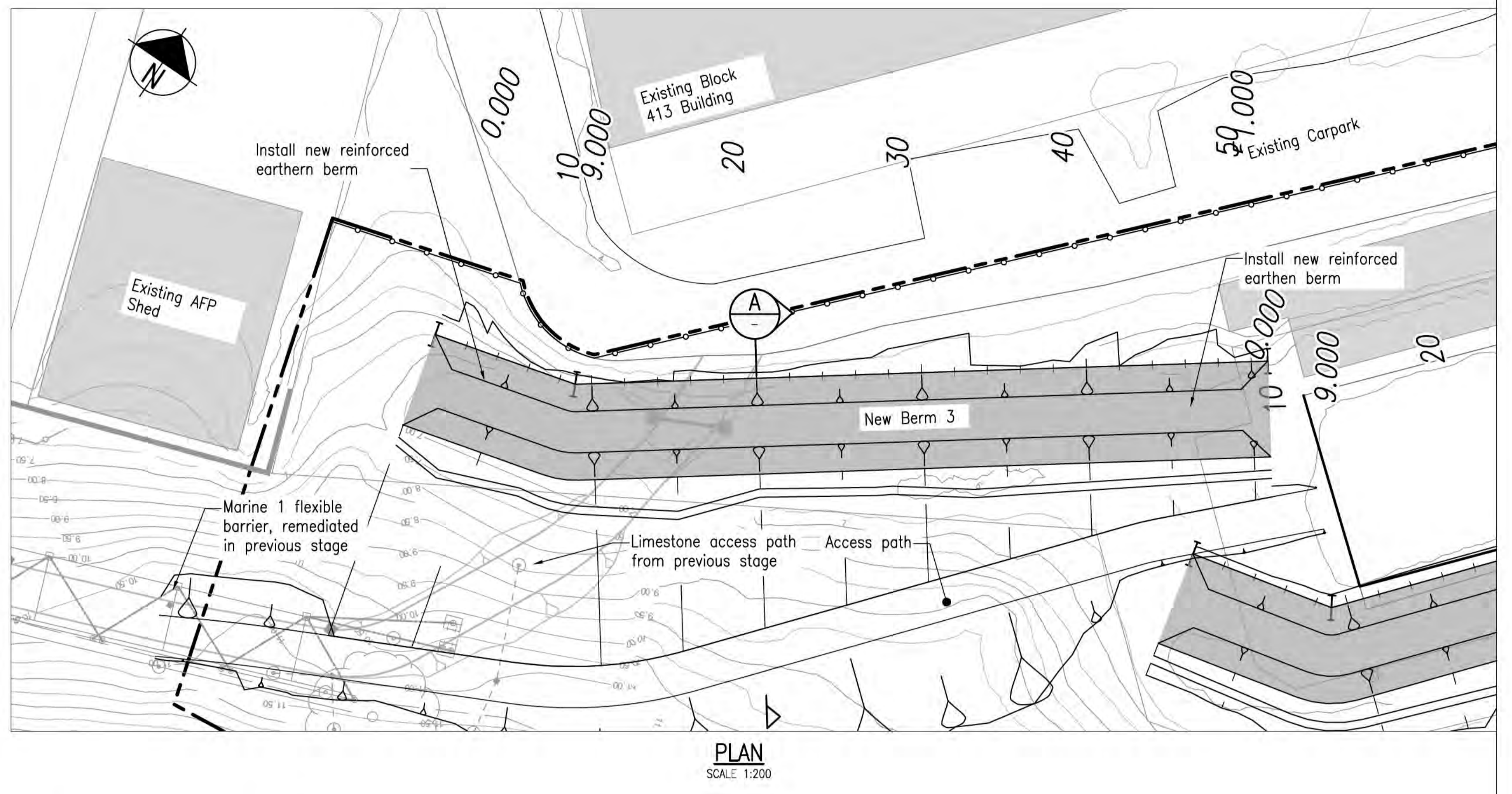
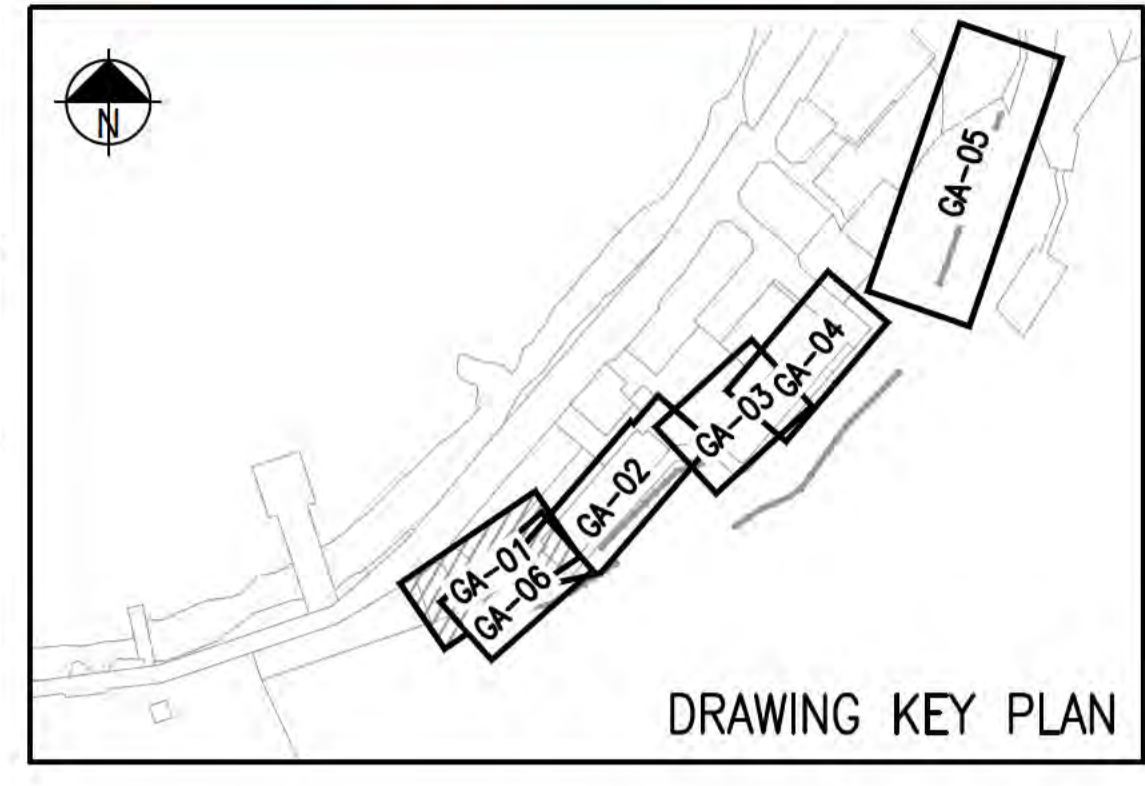
Drawing Title
LANDSLIDE MITIGATION REVEGETATION PLAN SHEET 3 OF 3

Drawing Status
Detailed Design

Job No: **280579-00** Drawing No: **GE-LP-03** Issue: **A**

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

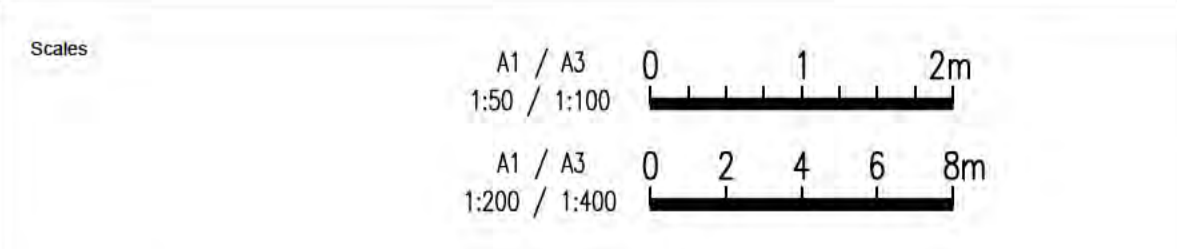
NOT FOR CONSTRUCTION
27 July 2022



DATUM R.L. 0.00

EXISTING GROUND LEVEL AT HEEL	7.101	7.300	7.520	7.201	6.721	6.405	6.531	6.311	6.091	6.103	6.119	6.133	6.146	6.160	6.174	6.148	6.242
DESIGN LEVEL TOP OF BERM	6.024	9.200	9.200	9.200	9.200	8.500	8.500	8.500	8.500	8.500	8.500	8.800	8.800	8.800	9.500	9.500	9.900
DESIGN LEVEL TOE OF BERM	6.000	5.300	5.300	5.300	5.300	4.600	4.600	4.600	4.600	4.600	4.600	4.900	4.900	4.900	5.600	5.600	6.000
EXISTING GROUND LEVEL AT TOE	7.262	6.885	5.619	5.484	5.340	5.258	4.703	4.694	4.722	4.788	4.899	4.962	4.946	4.993	5.569	6.152	6.138
CHAINAGE	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48

LONGITUDINAL SECTION - BERM 3
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



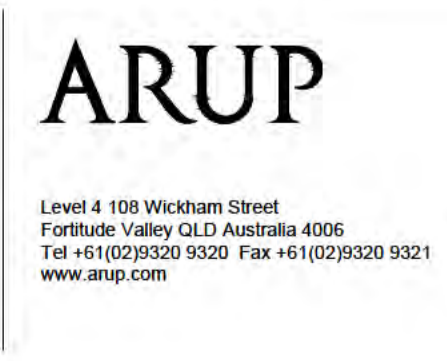
Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
C	27/07/22	KC	JG	
B	18/03/22	JL	JG	
A	29/01/21	GO	JG	EF



Client: AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

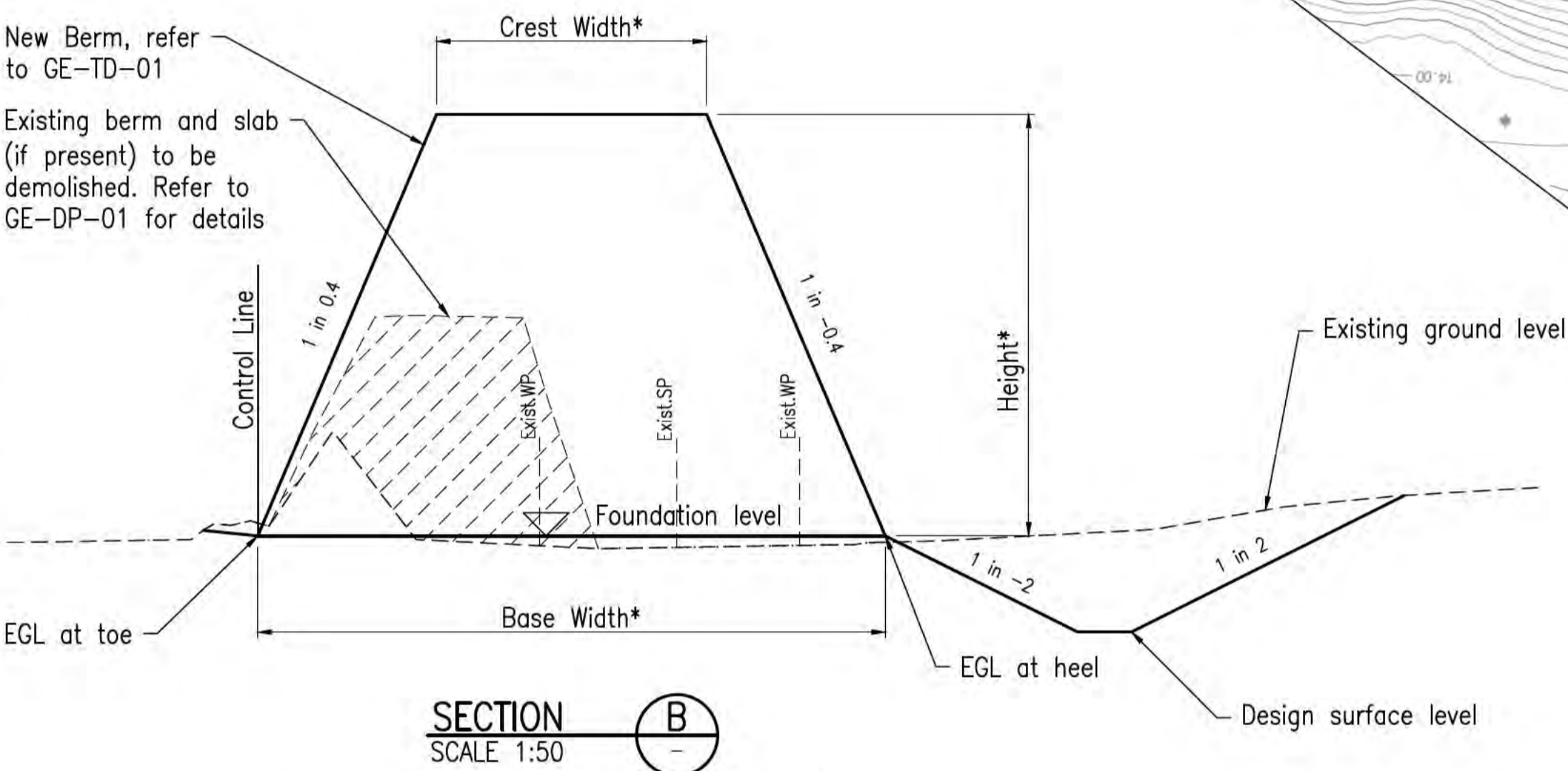
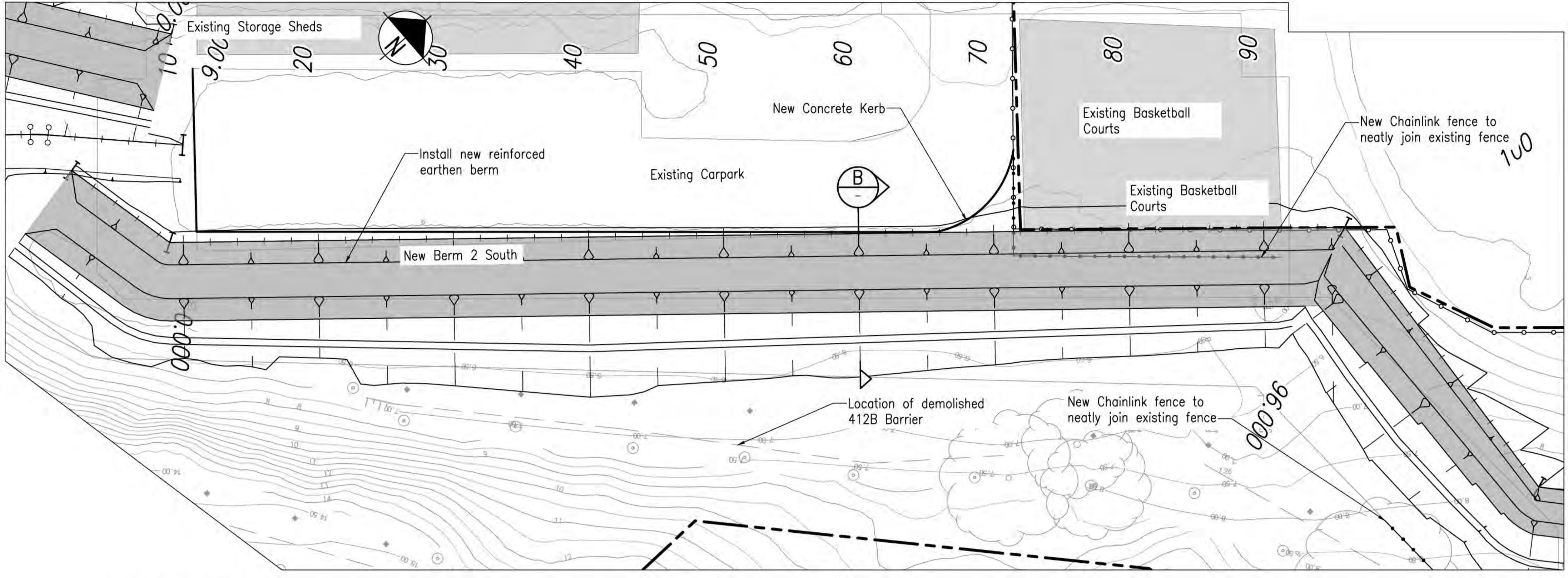
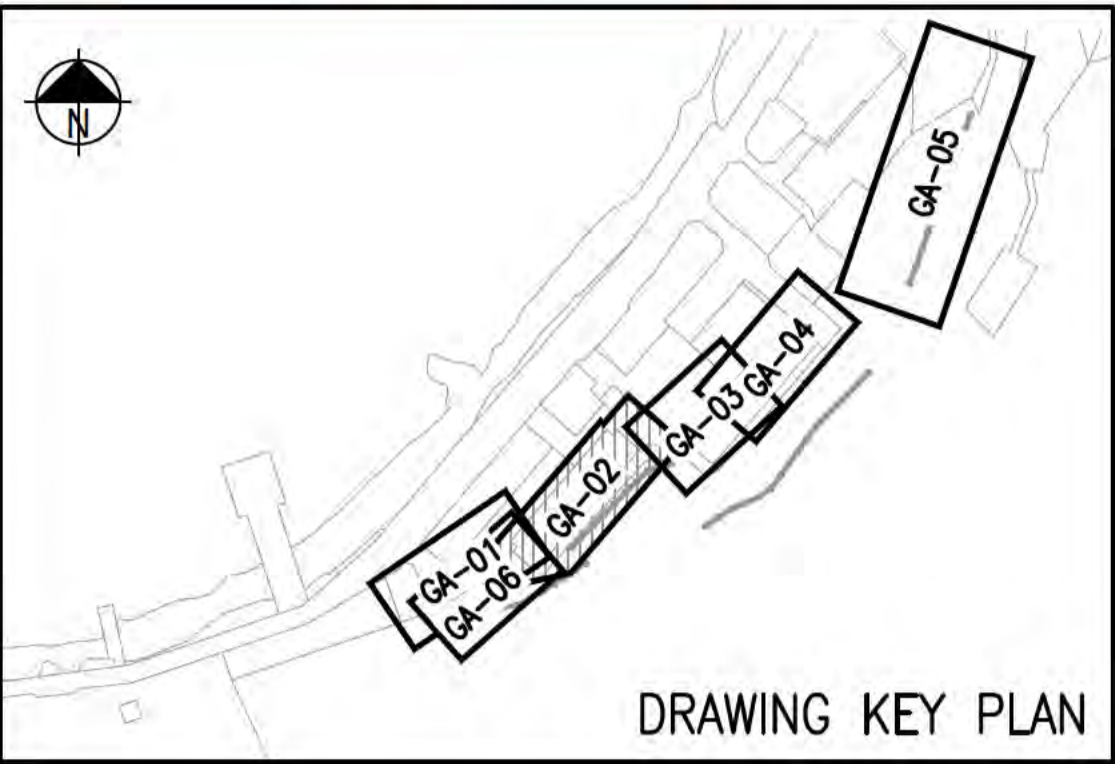
Job Title: FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1: 1:50
Discipline: _____



Drawing Title: LANDSLIDE MITIGATION GENERAL ARRANGEMENT SHEET 1 OF 6
Drawing Status: Issued for Tender
Job No: 280579-00
Drawing No: GE-GA-01
Issue: C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

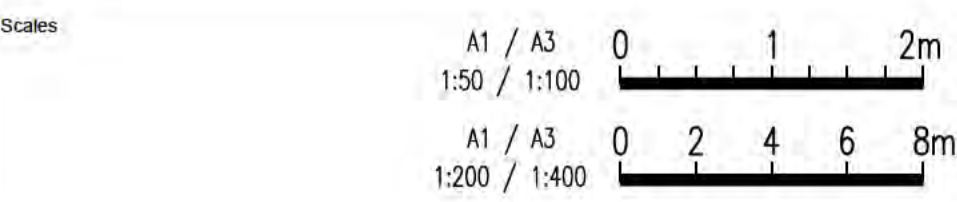
NOT FOR CONSTRUCTION
27 July 2022



*NOTE REFER TO GE-TD-01 FOR BERM GEOMETRY

DATUM R.L. 0.00		0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117	120		
EXISTING GROUND LEVEL AT HEEL		6.366	6.258	6.136	6.092	6.084	6.076	6.067	6.059	6.046	6.080	6.120	6.148	6.171	6.097	6.046	6.063	6.081	6.074	6.063	6.048	6.049	6.048	6.062	6.069	6.026	6.033	6.040	6.029	6.019	6.009	5.970	6.311	6.714	6.170	6.369	6.641	6.946	7.253	7.560	7.887	8.446		
DESIGN LEVEL TOP OF BERM		6.124	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	
DESIGN LEVEL TOE OF BERM		6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100	6.100
EXISTING GROUND LEVEL AT TOE		6.301	6.294	6.288	6.230	6.239	6.254	6.268	6.268	6.259	6.250	6.241	6.233	6.226	6.220	6.213	6.207	6.200	6.196	6.203	6.211	6.219	6.227	6.234	6.242	6.283	6.280	6.281	6.282	6.283	6.286	6.297	6.355	6.299	6.331	6.362	6.529	6.753	7.219	7.602	7.985	8.368		
CHAINAGE		0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117	120		

LONGITUDINAL SECTION - BERM 2
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



C	27/07/22	KC	JG
ISSUED FOR TENDER			
B	18/03/22	JL	JG
85% DETAILED DESIGN ISSUE			
A	29/01/21	GO	JG EF
CONCEPT DESIGN ISSUE			
Issue	Date	By	Chkd



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

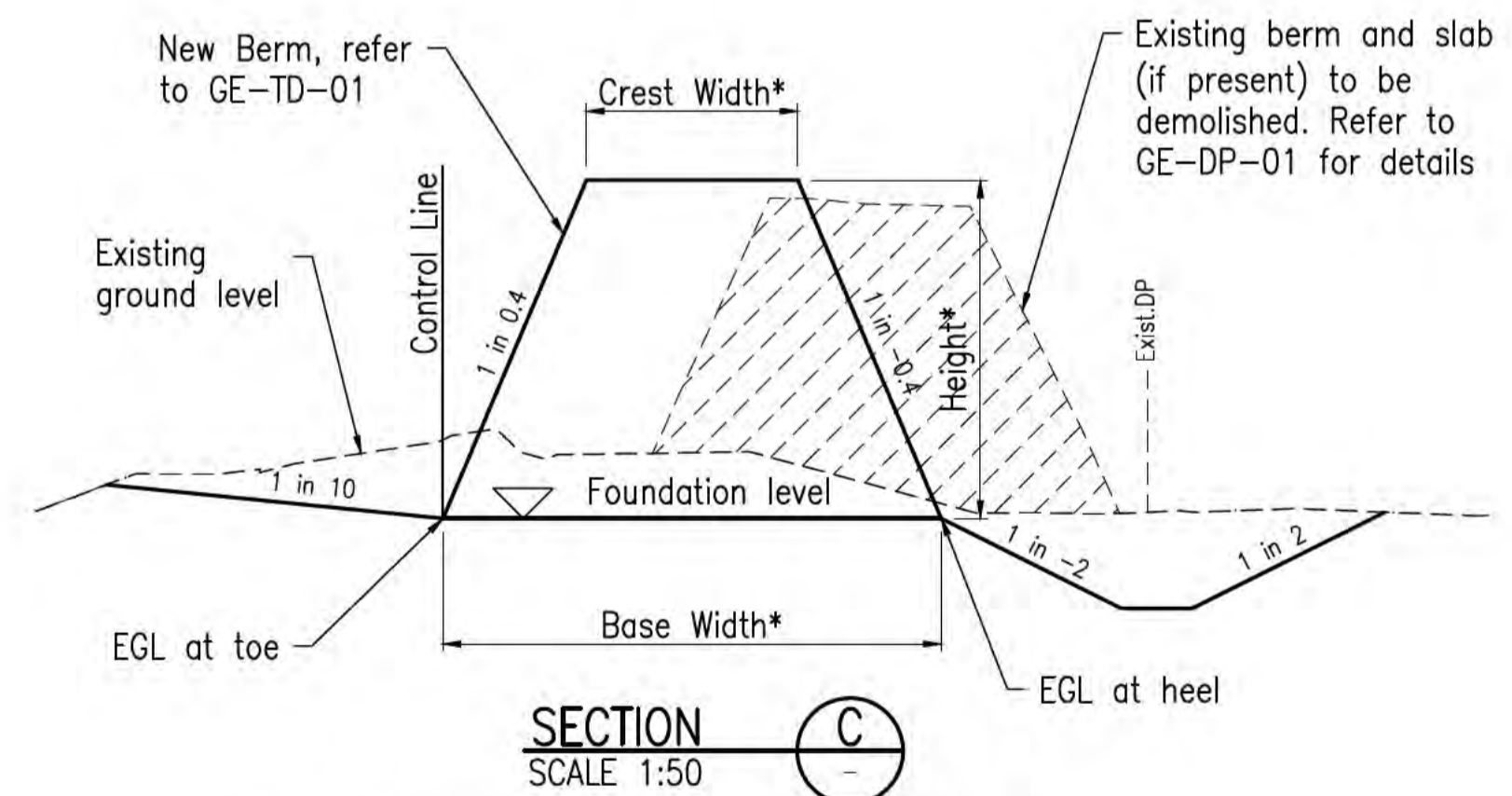
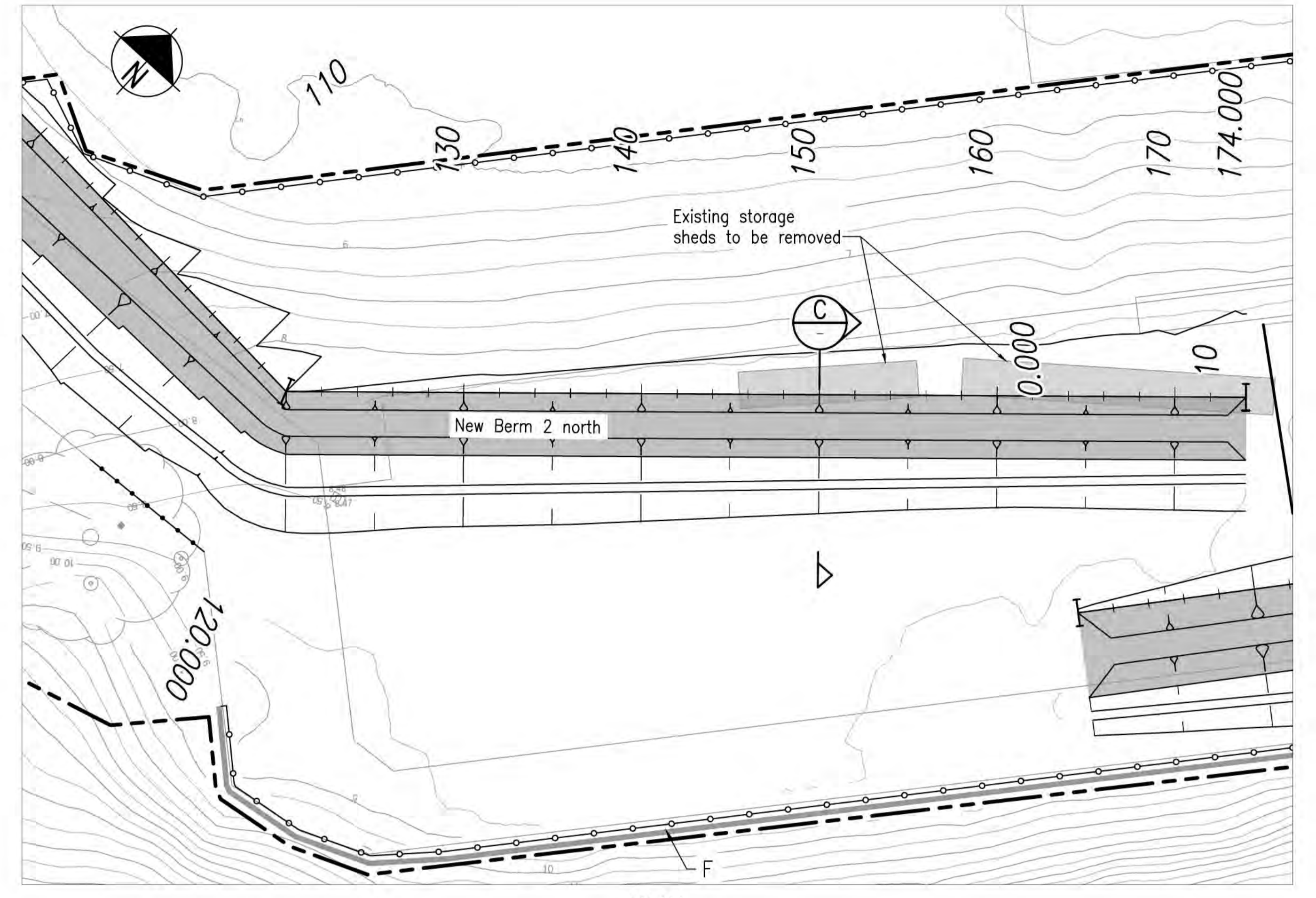
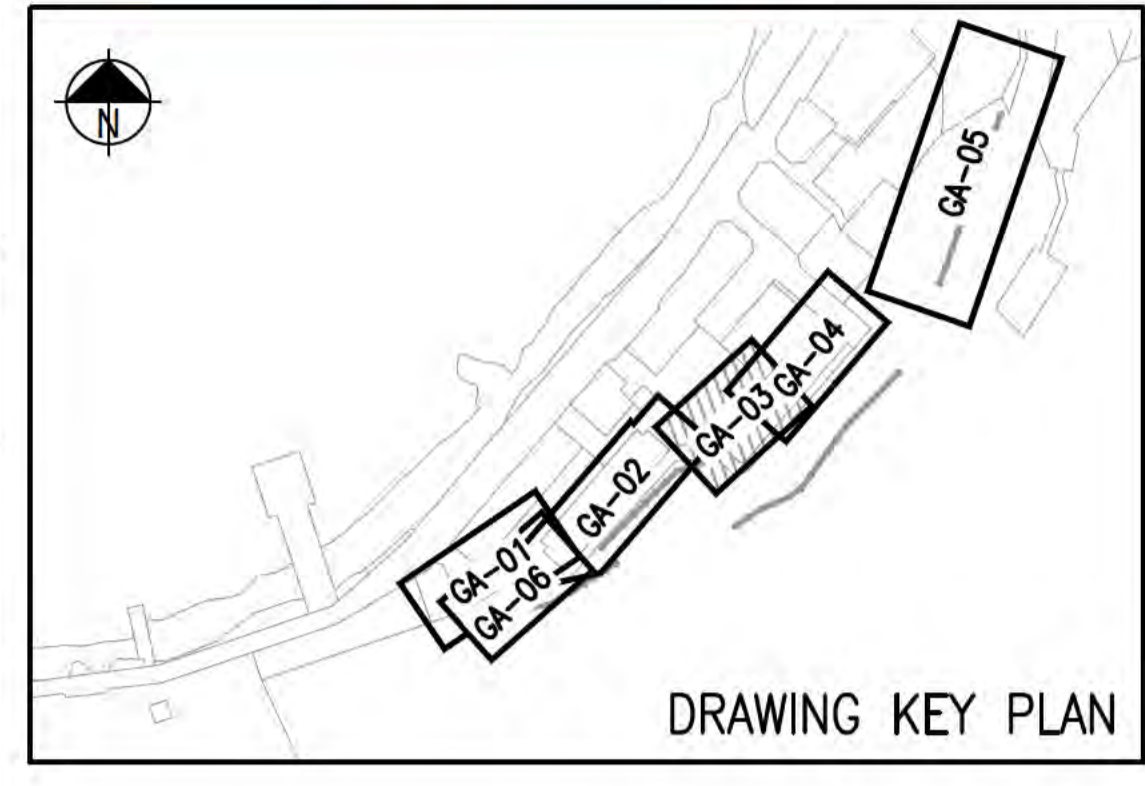
Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1 1:50
Discipline



Drawing Title
LANDSLIDE MITIGATION GENERAL ARRANGEMENT SHEET 2 OF 6
Drawing Status
Issued for Tender
Job No
280579-00
Drawing No
GE-GA-02
Issue
C

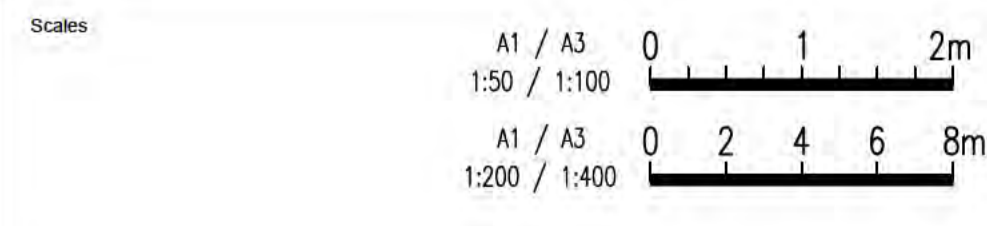
DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



*NOTE REFER TO GE-TD-01 FOR BERM GEOMETRY

DATUM R.L. 0.00	
EXISTING GROUND LEVEL AT HEEL	8.446 8.445 8.444 8.443 8.442 8.441 8.440 8.439 8.438 8.437 8.436 8.434 8.433 8.432 8.492 8.560 8.628 8.696 8.763
DESIGN LEVEL TOP OF BERM	10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800 10.800
DESIGN LEVEL TOE OF BERM	8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400 8.400
EXISTING GROUND LEVEL AT TOE	8.368 8.440 8.513 8.570 8.622 8.674 8.714 8.747 8.770 8.962 8.957 9.283 8.813 8.940 9.019 8.955 9.167 8.984 8.983
CHAINAGE	120 123 126 129 132 135 138 141 144 147 150 153 156 159 162 165 168 171 174



Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	
ISSUED FOR TENDER				
B	18/03/22	JL	JG	
85% DETAILED DESIGN ISSUE				
A	29/01/21	GO	JG	EF
CONCEPT DESIGN ISSUE				
Issue	Date	By	Chkd	Appd

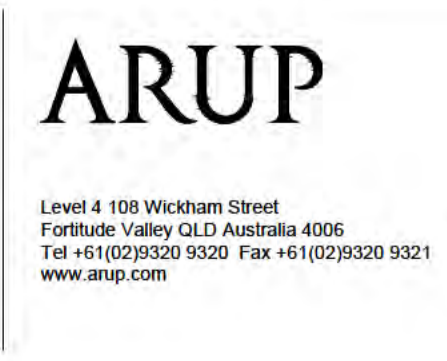


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1 1:50
Discipline _____



Drawing Title
LANDSLIDE MITIGATION GENERAL ARRANGEMENT SHEET 3 OF 6

Drawing Status
Issued for Tender

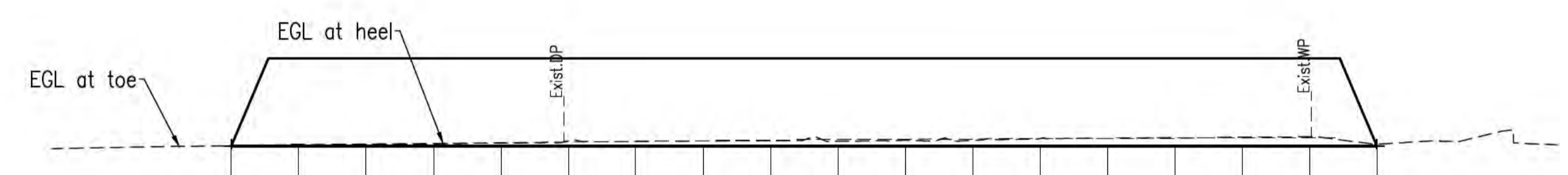
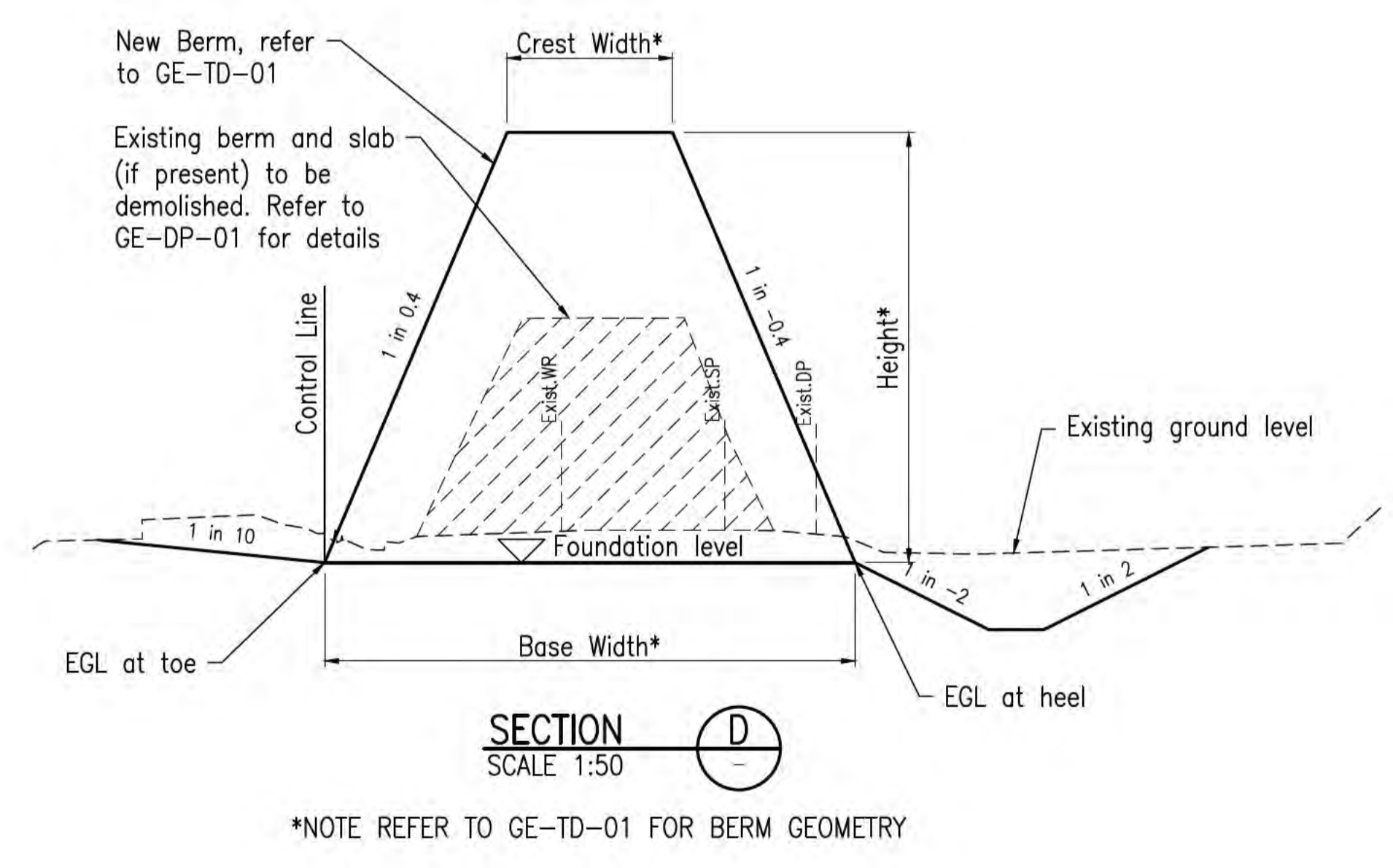
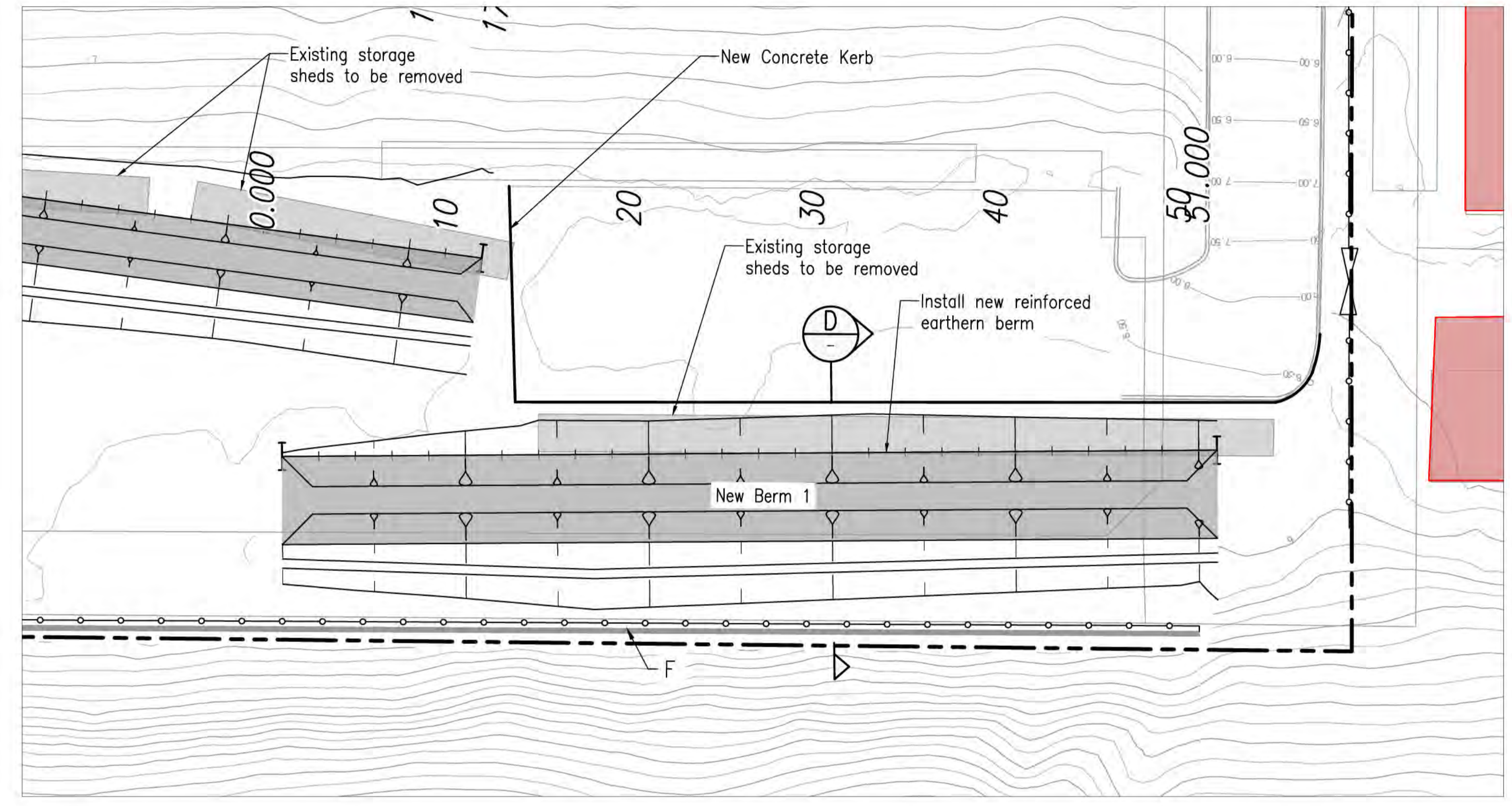
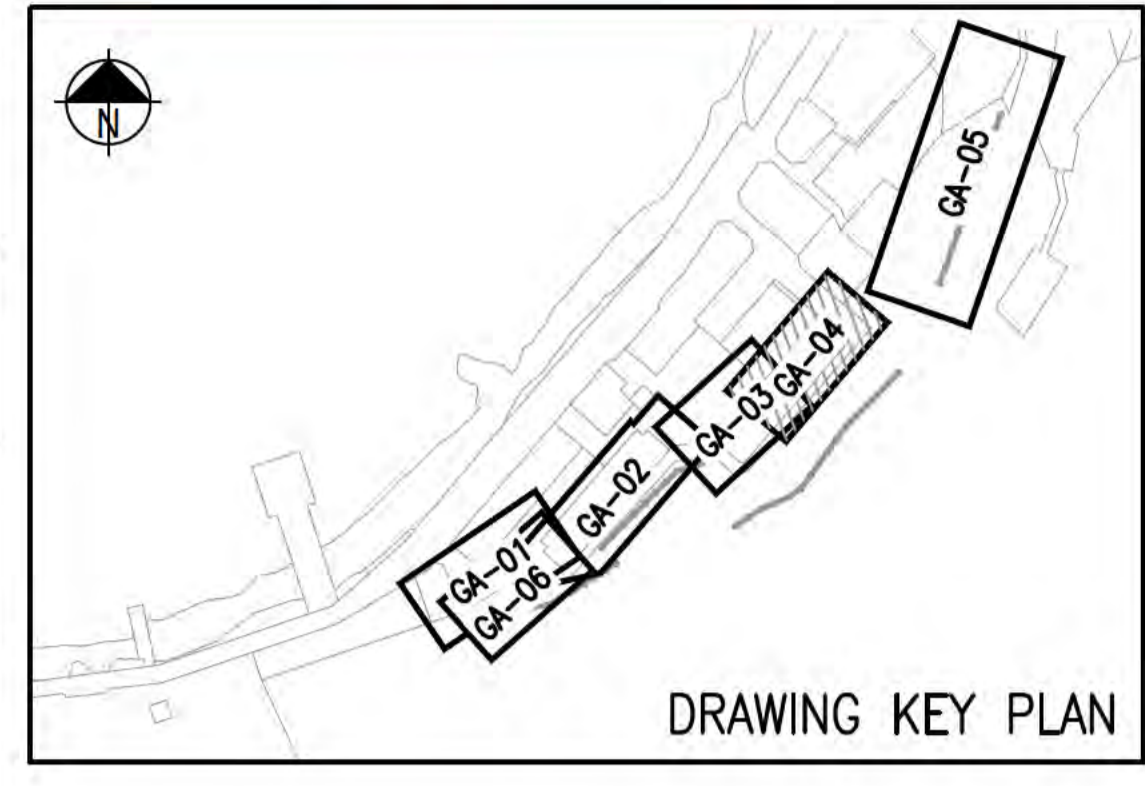
Job No
280579-00

Drawing No
GE-GA-03

Issue
C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



DATUM R.L. 0.00

EXISTING GROUND LEVEL AT HEEL	8.755	8.776	8.799	8.828	8.857	8.886	8.916	8.945	8.974	9.003	9.014	9.024	9.035	9.046	9.056	9.067	9.078
DESIGN LEVEL TOP OF BERM	8.724	12.600	12.600	12.600	12.600	12.600	12.600	12.600	12.600	12.600	12.600	12.600	12.600	12.600	12.600	12.600	12.600
DESIGN LEVEL TOE OF BERM	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700	8.700
EXISTING GROUND LEVEL AT TOE	8.728	8.761	8.783	8.804	8.826	8.837	8.913	8.929	8.944	8.925	8.968	8.956	9.038	9.057	9.079	9.100	9.122
CHAINAGE	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48

LONGITUDINAL SECTION - BERM 1
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

Scales

A1 / A3
1:50 / 1:100

A1 / A3
1:200 / 1:400

Issue	Date	By	Chkd	Appd
B	27/07/22	KC		JG
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				

Australian Government
Department of Infrastructure, Transport, Regional Development and Communications

Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
1:50

Discipline

ARUP

Level 4 108 Wickham Street
Fortitude Valley QLD Australia 4006
Tel +61(0)7320 9320 Fax +61(0)7320 9321
www.arup.com

CONSULT AUSTRALIA
Member Firm
ANP Pty Ltd
ABN 18 000 966 165

Drawing Title
LANDSLIDE MITIGATION GENERAL ARRANGEMENT SHEET 4 OF 6

Drawing Status
Issued for Tender

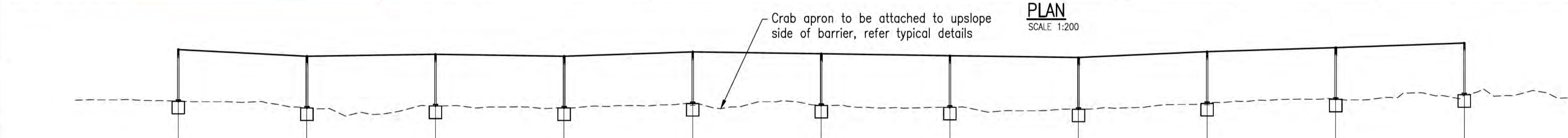
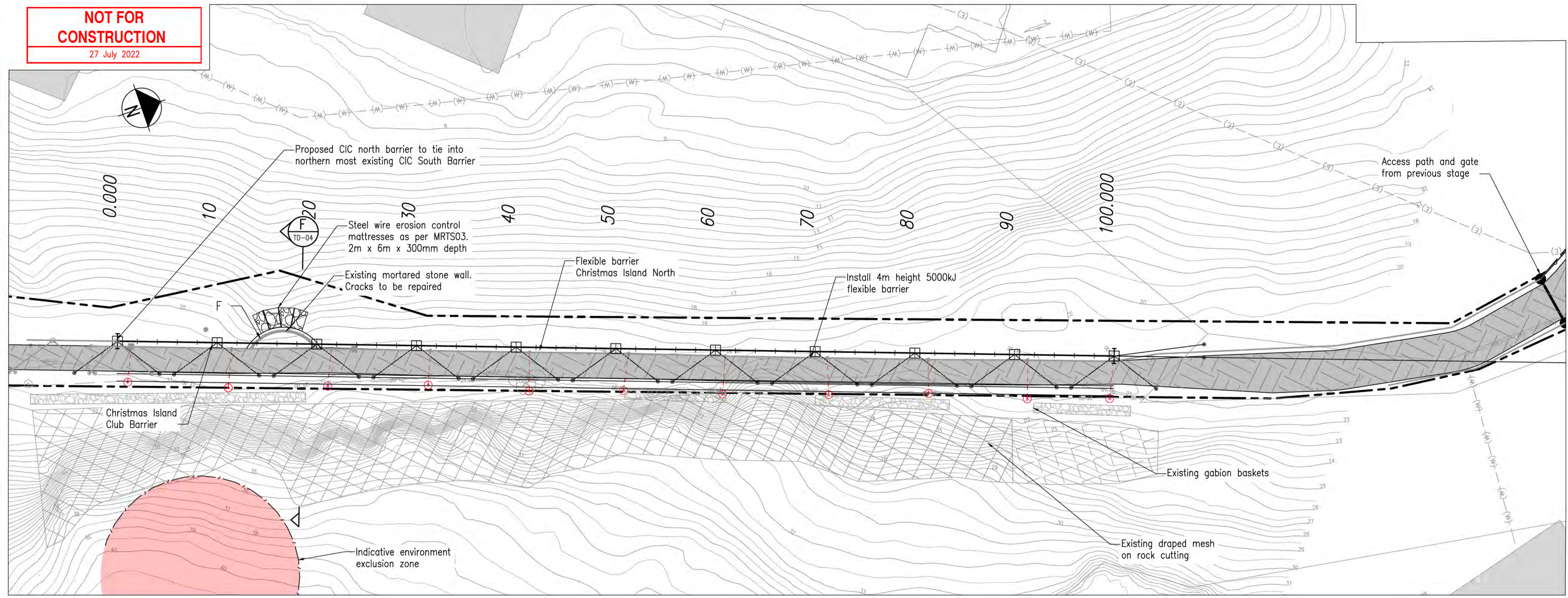
Job No
280579-00

Drawing No
GE-GA-04

Issue
B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

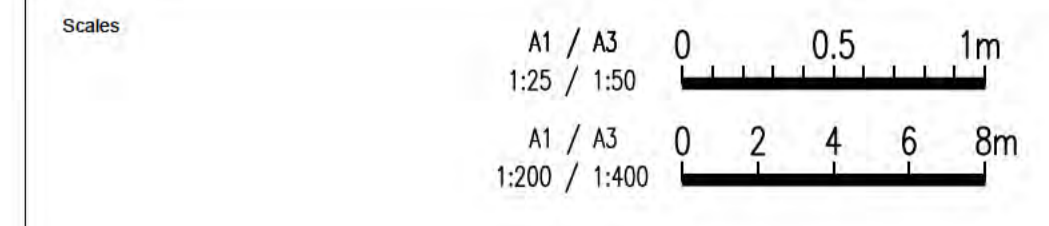
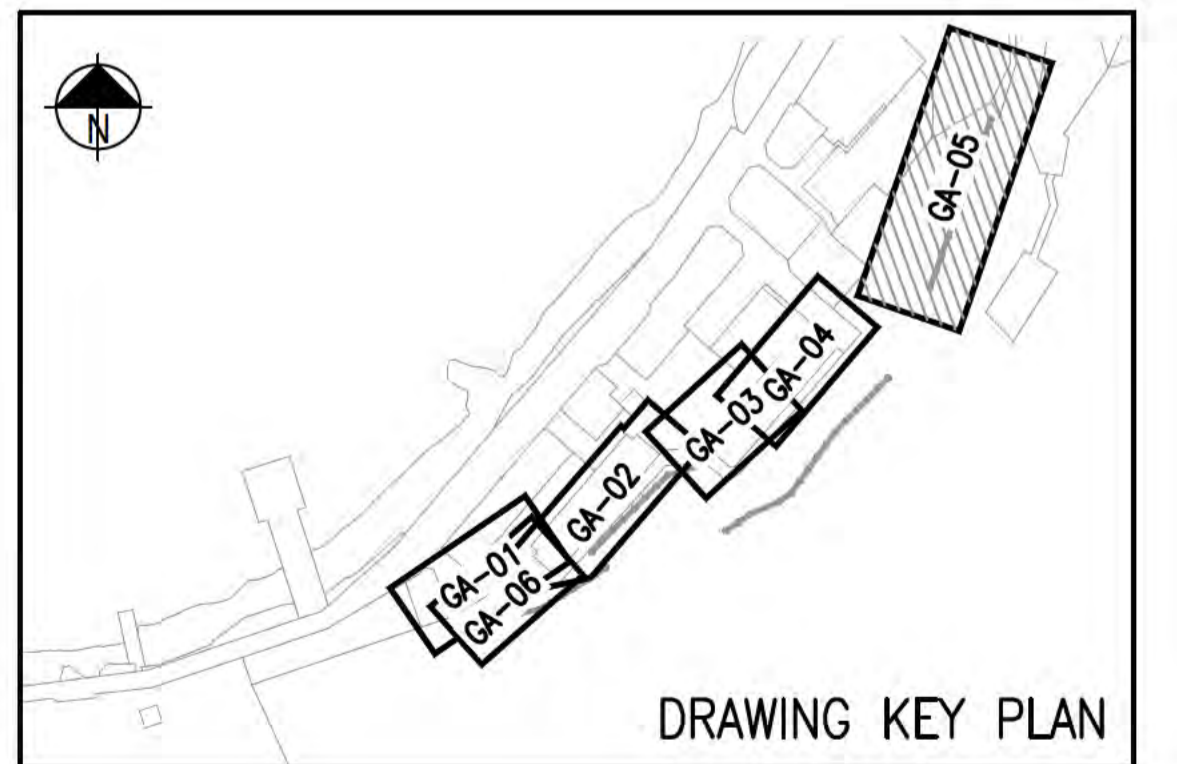
NOT FOR CONSTRUCTION
27 July 2022



DATUM R.L. 10.00

HEIGHT OF FLEXIBLE FENCE	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
DESIGN LEVEL (TOP OF FOOTING)	20.913	20.398	20.551	20.400	20.741	20.594	20.444	20.301	20.751	21.070	21.423	21.423	21.423	21.423	21.423
NATURAL SURFACE	20.913	20.398	20.551	20.400	20.741	20.594	20.444	20.301	20.751	21.070	21.423	21.423	21.423	21.423	21.423
CHAINAGE	0	10	20	30	40	50	60	70	80	90	100	100	100	100	100

LONGITUDINAL SECTION – CHRISTMAS ISLAND CLUB NORTH BARRIER
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG	
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				
Issue	Date	By	Chkd	Appd



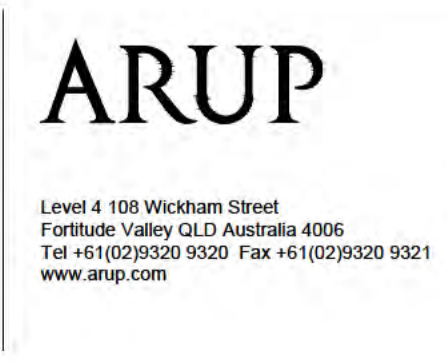
Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
1:200

Discipline



Drawing Title
LANDSLIDE MITIGATION GENERAL ARRANGEMENT SHEET 5 OF 6

Drawing Status
Issued for Tender

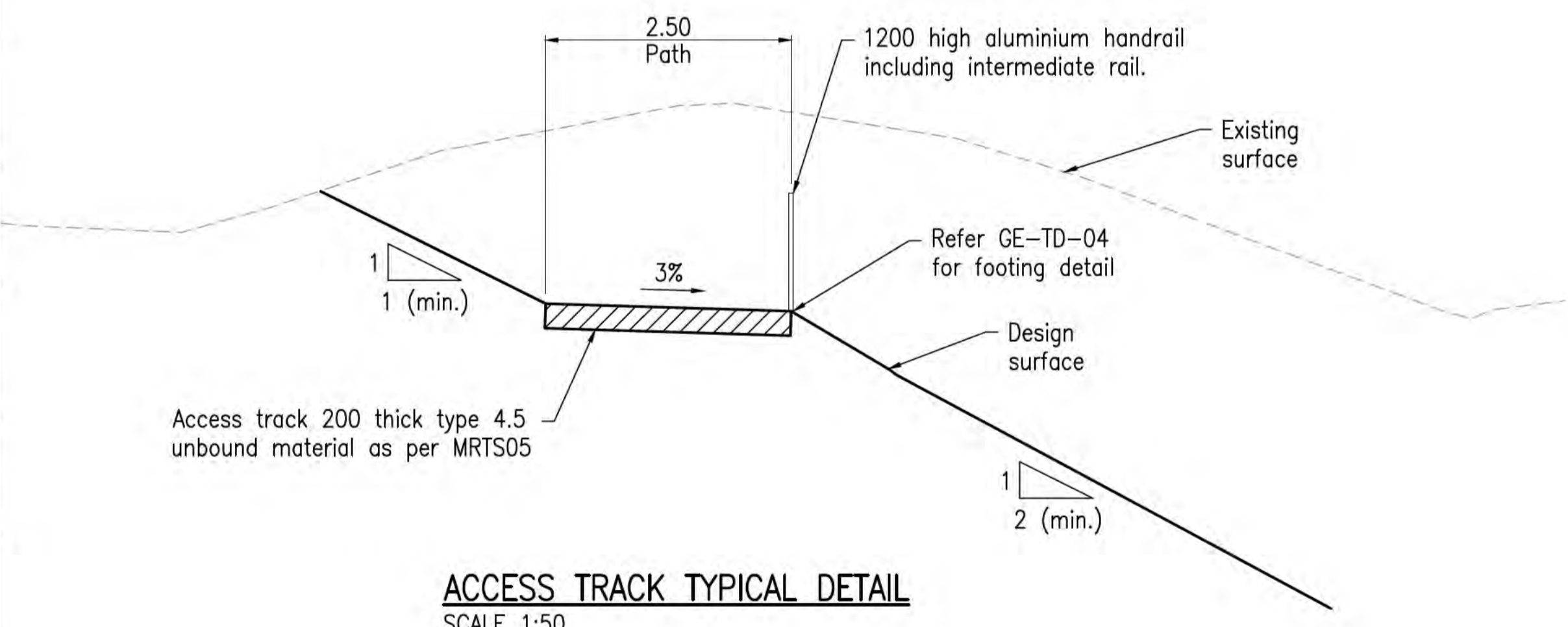
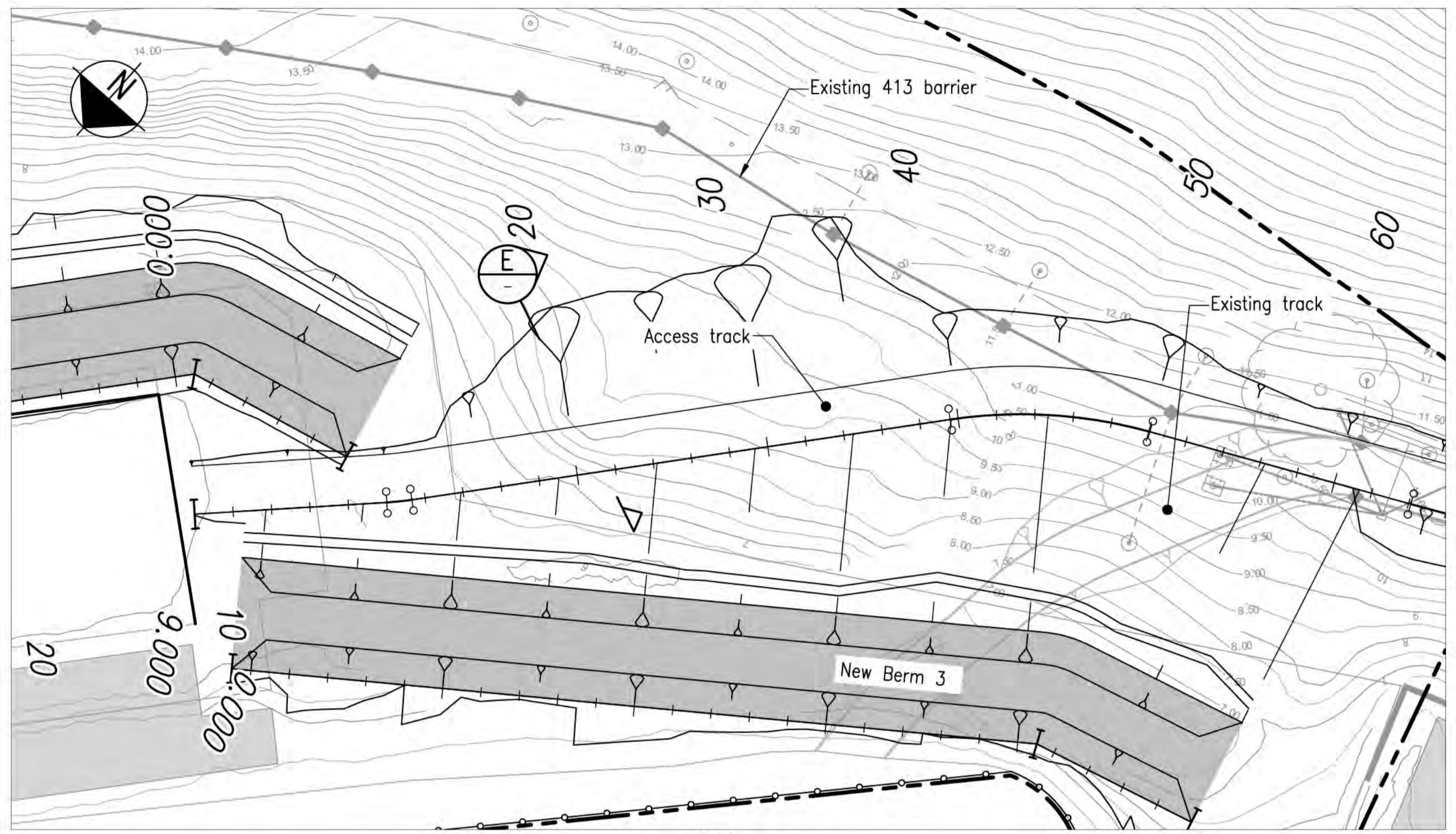
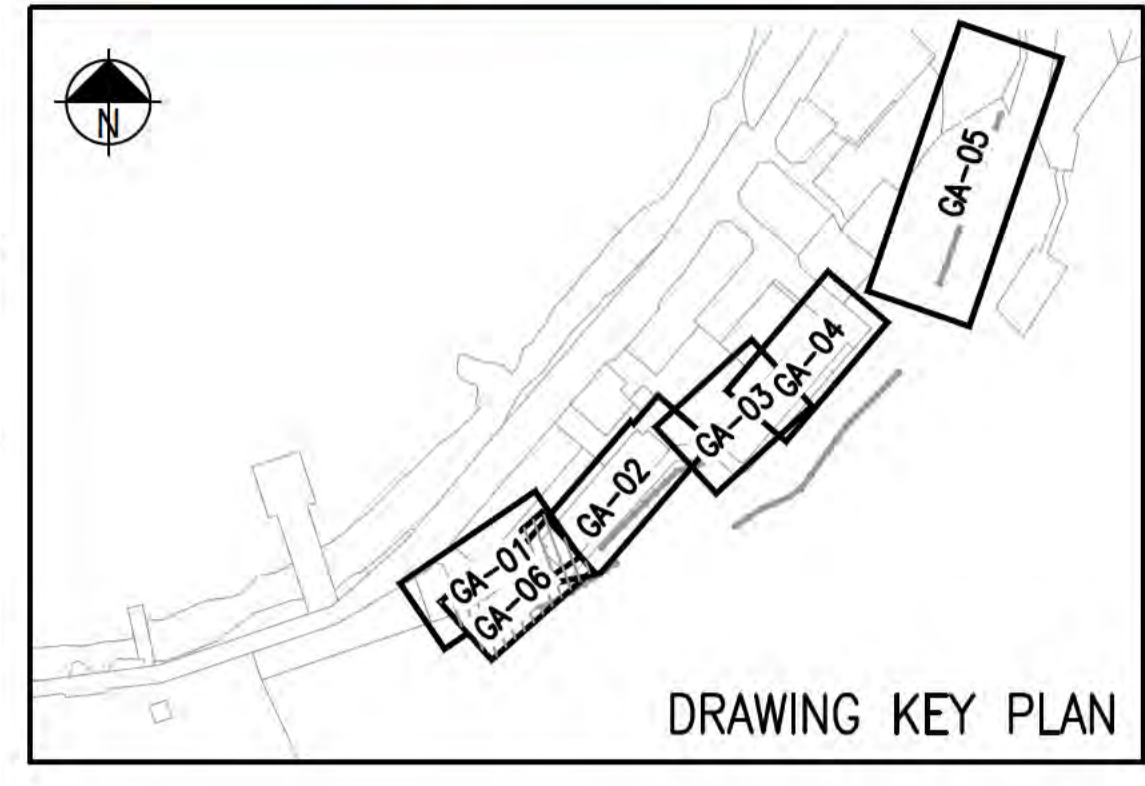
Job No
280579-00

Drawing No
GE-GA-05

Issue
B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022

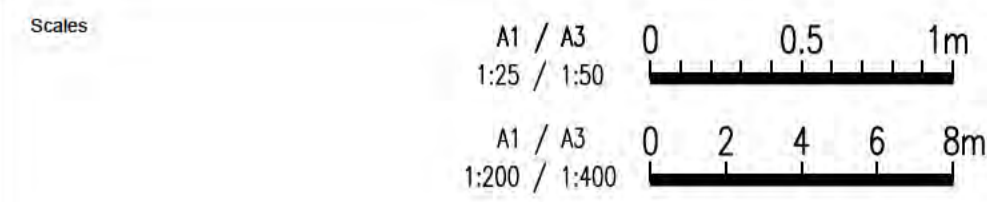


IP CH 17.415 HT 6.172
22.415 HT 6.672
53.736 HT 9.805
IP CH 62.710 HT 10.702

Horiz Curve Data
Vertical Geometry Grade (%)
Vertical Grade Length
Vertical Curve Length (m)
Vertical Curve K Value
DATUM R.L. -5.00

DEPTH TO NATURAL SURFACE	DESIGN LEVEL	NATURAL SURFACE	CHAINAGE
-0.037	5.998	6.035	0
-0.260	6.018	6.279	2
-0.283	6.038	6.332	4
-0.285	6.058	6.343	6
-0.184	6.078	6.262	8
-0.303	6.098	6.401	10
-0.285	6.118	6.403	12
-0.591	6.150	6.740	14
-0.751	6.216	6.967	16
-1.226	6.319	7.545	18
-1.797	6.457	8.255	20
-2.386	6.632	9.018	22
-2.494	6.831	9.325	24
-1.579	7.031	8.610	26
-1.649	7.231	8.880	28
-1.673	7.431	9.104	30
-1.710	7.631	9.341	32
-1.910	7.831	9.741	34
-3.182	8.031	11.223	36
-3.865	8.231	12.096	38
-2.988	8.431	11.419	40
-2.556	8.631	11.187	42
-1.676	8.831	10.507	44
-2.090	9.031	11.121	46
-1.901	9.231	11.132	48
-1.582	9.431	11.013	50
-1.249	9.631	10.880	52
-0.918	9.831	10.748	54
-0.604	10.021	10.624	56
-0.363	10.195	10.558	58
-0.445	10.363	10.798	60
-0.419	10.496	10.914	62
-0.321	10.622	10.944	64
0.242	10.777	10.976	66

LONGITUDINAL SECTION ACCESS TRACK
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG
ISSUED FOR TENDER			
A	18/03/22	JL	
85% DETAILED DESIGN ISSUE			
Issue	Date	By	Chkd



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION GENERAL ARRANGEMENT SHEET 6 OF 6

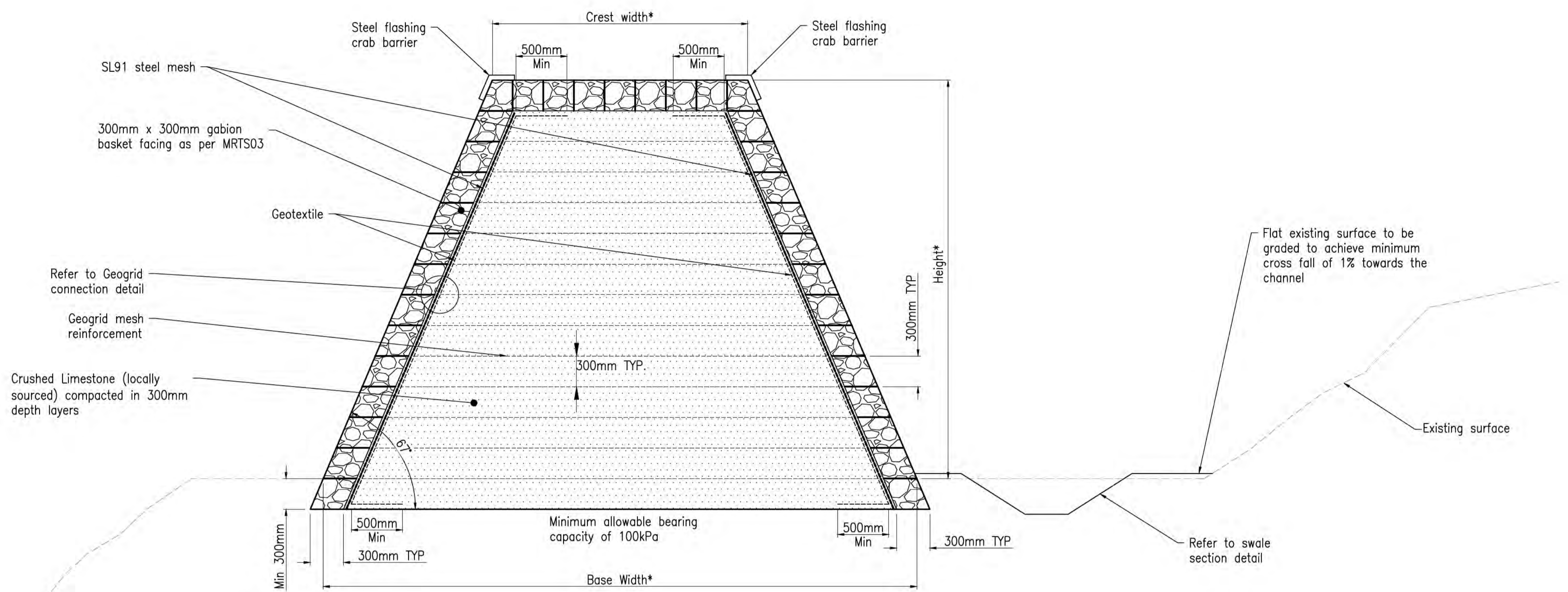
Drawing Status
Issued for Tender

Job No
280579-00

Drawing No
GE-GA-06

Issue
B

NOT FOR CONSTRUCTION
27 July 2022

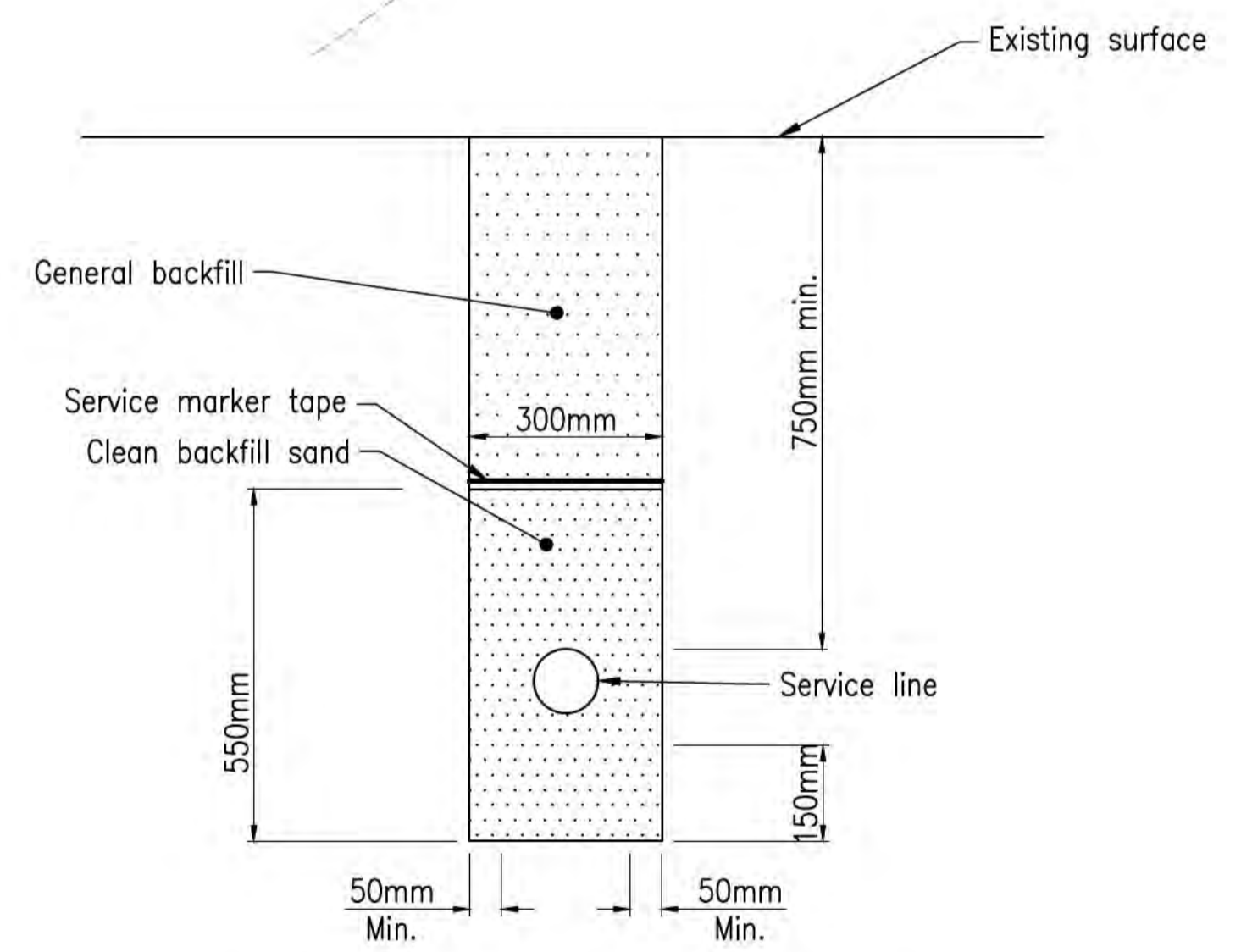


BERM TYPICAL DETAIL

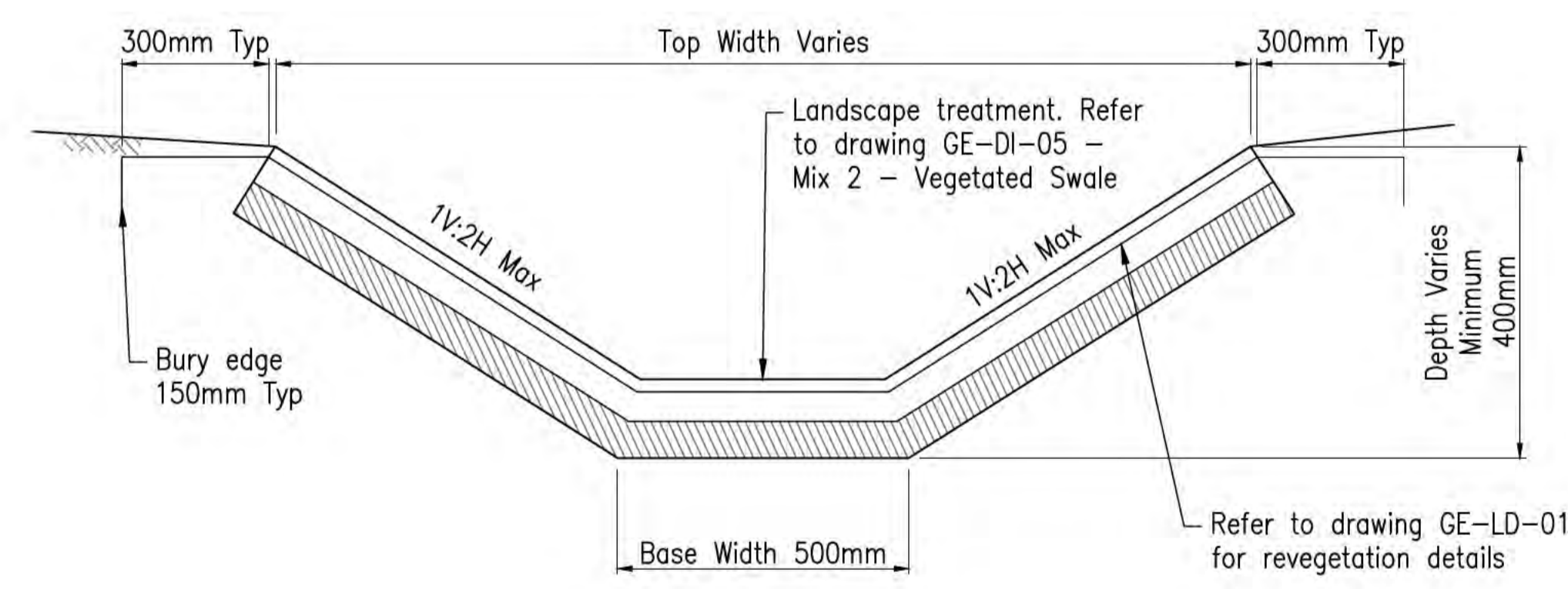
Refer to BERM Geometry Table

BERM GEOMETRY TABLE

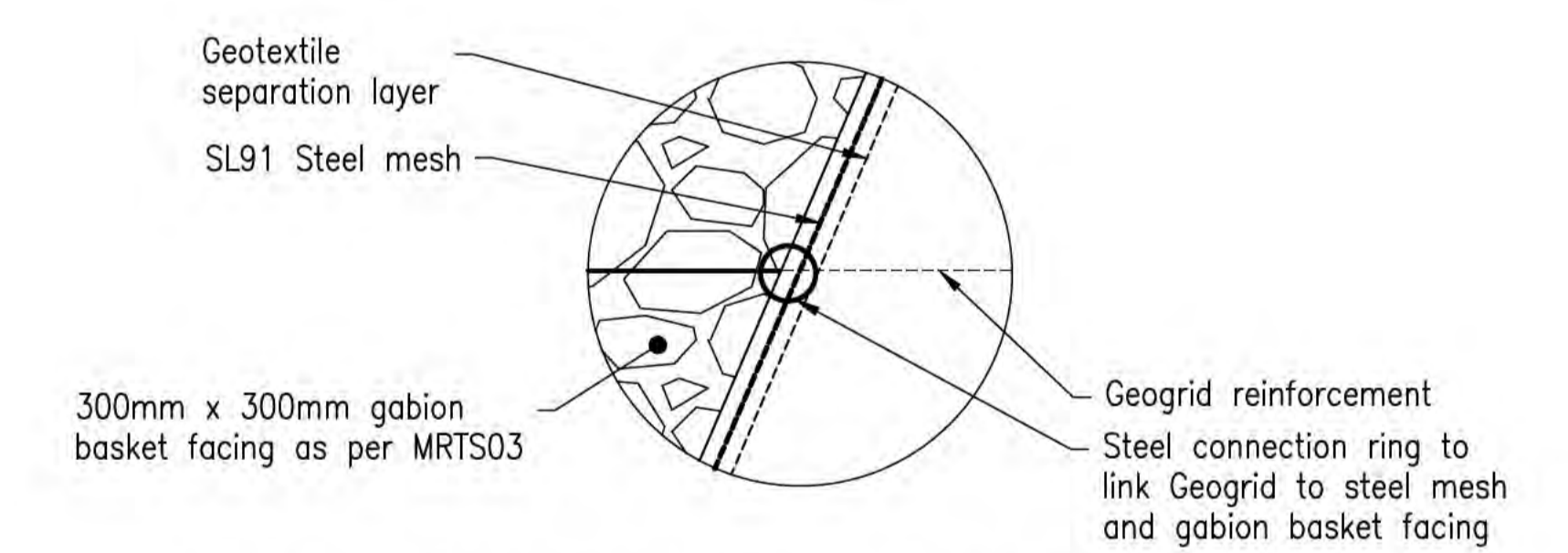
Berm	Height (m)	Crest Width (m)	Base Width (m)	Length (m)
Berm 1	3.9	1.5	4.81	51
Berm 2 North	2.4	1.5	3.54	54
Berm 2 South	3.9	2.5	5.81	120
Berm 3	3.9	2.5	5.81	51



SERVICE TRENCH TYPICAL DETAIL
SCALE 1:10



TYPICAL SWALE SECTION DETAIL - VEGETATED SWALE
SCALE 1:10



TYPICAL PROPRIETARY GEOGRID CONNECTION DETAIL
SCALE 1:10

NOTES

1. Installation of trench in accordance with the utility providers code of practice WA.
2. Service trench typical detail shall be adopted for relocated services unless an alternative is preferred by the relevant authority.

Scales

Design Model Version

Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	
ISSUED FOR TENDER				
B	18/03/22	JL	JG	
85% DETAILED DESIGN ISSUE				
A	29/01/21	GO	JG	EF
CONCEPT DESIGN ISSUE				
Issue	Date	By	Chkd	Appd

Australian Government
Department of Infrastructure, Transport, Regional Development and Communications

Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline

ARUP

Level 4 108 Wickham Street
Fortitude Valley QLD Australia 4006
Tel +61(0)75320 9320 Fax +61(0)75320 9321
www.arup.com

Drawing Title
LANDSLIDE MITIGATION TYPICAL DETAILS SHEET 1 OF 4

Drawing Status
Issued for Tender

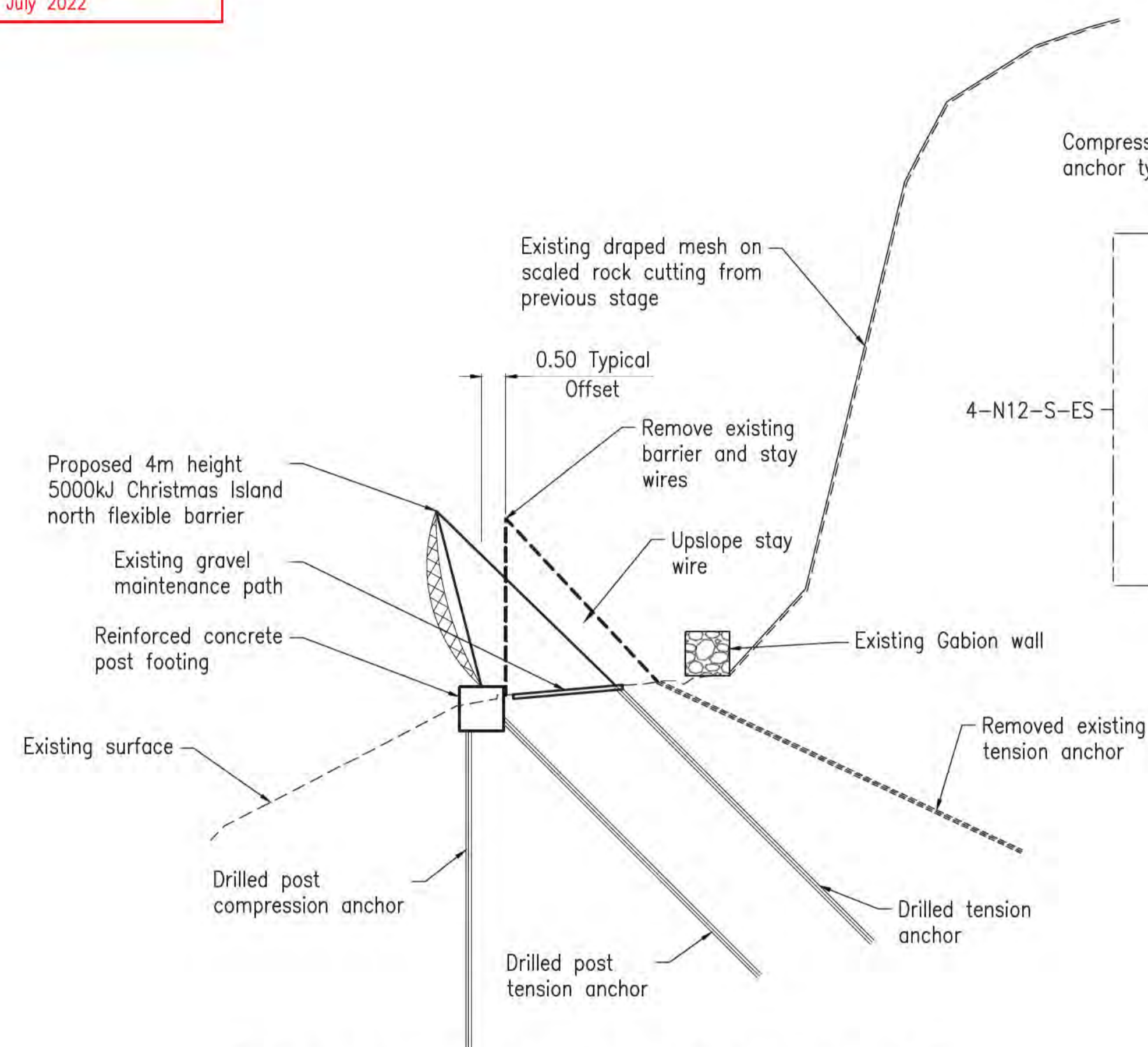
Job No
280579-00

Drawing No
GE-TD-01

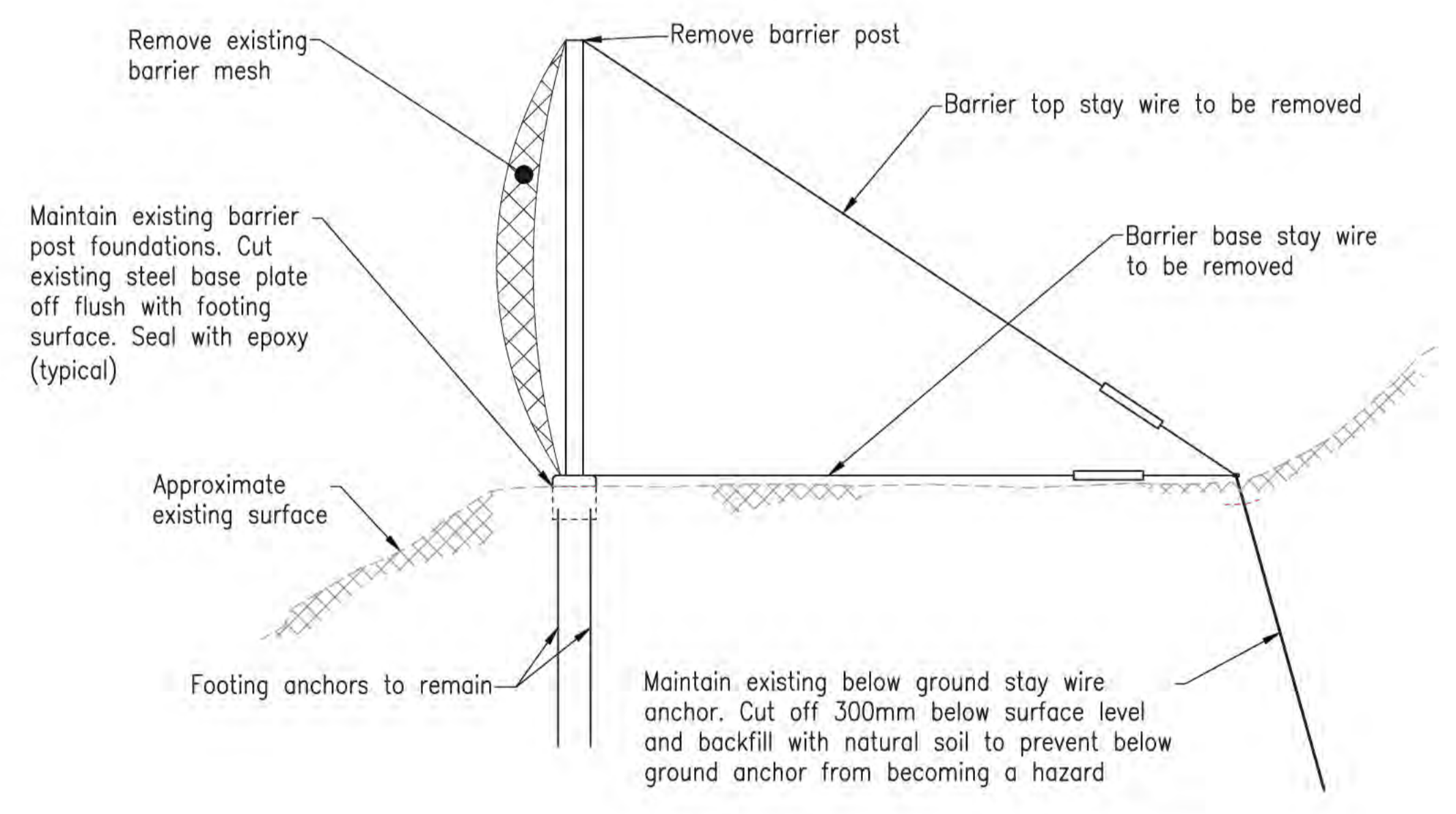
Issue
C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

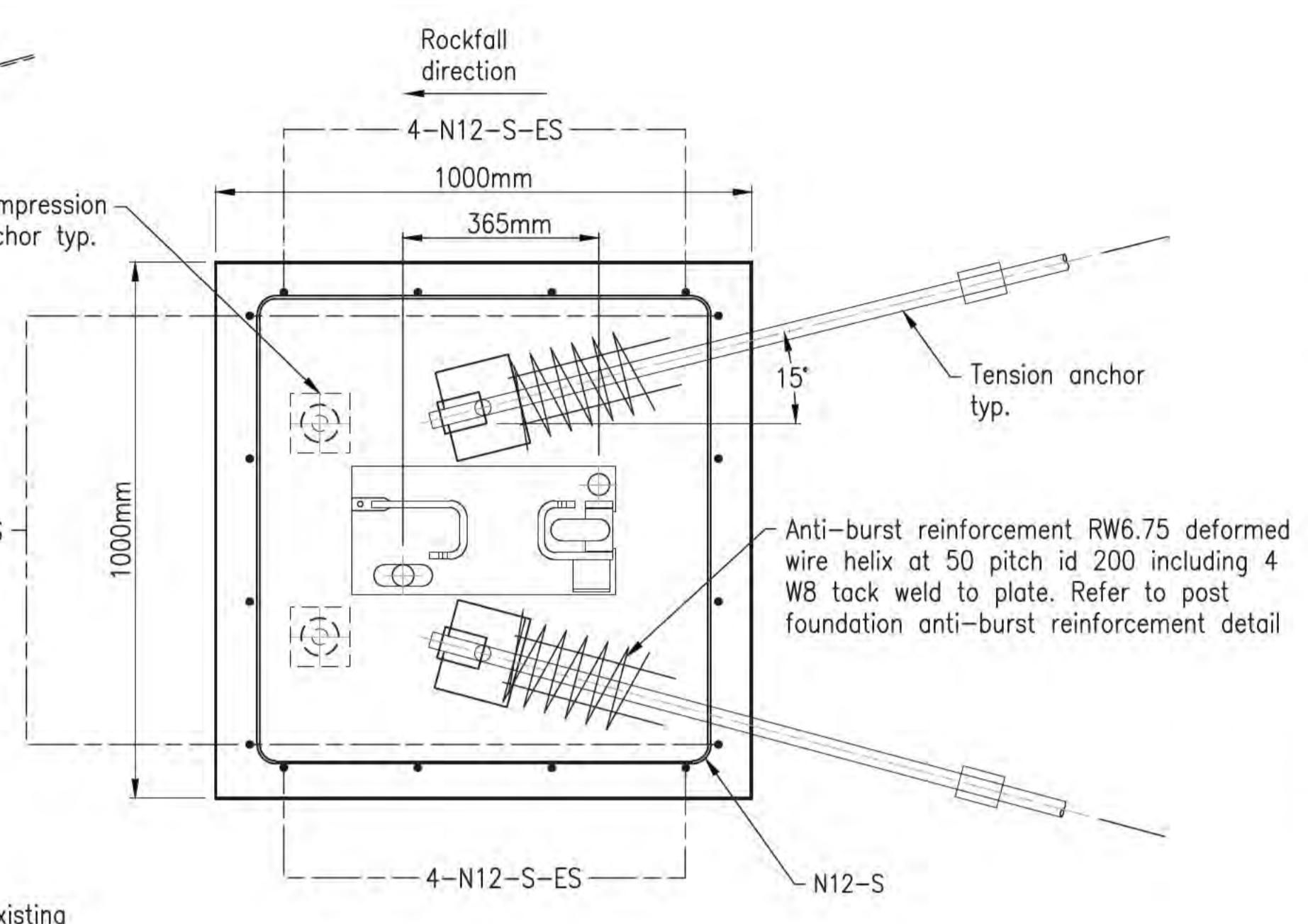
NOT FOR CONSTRUCTION
27 July 2022



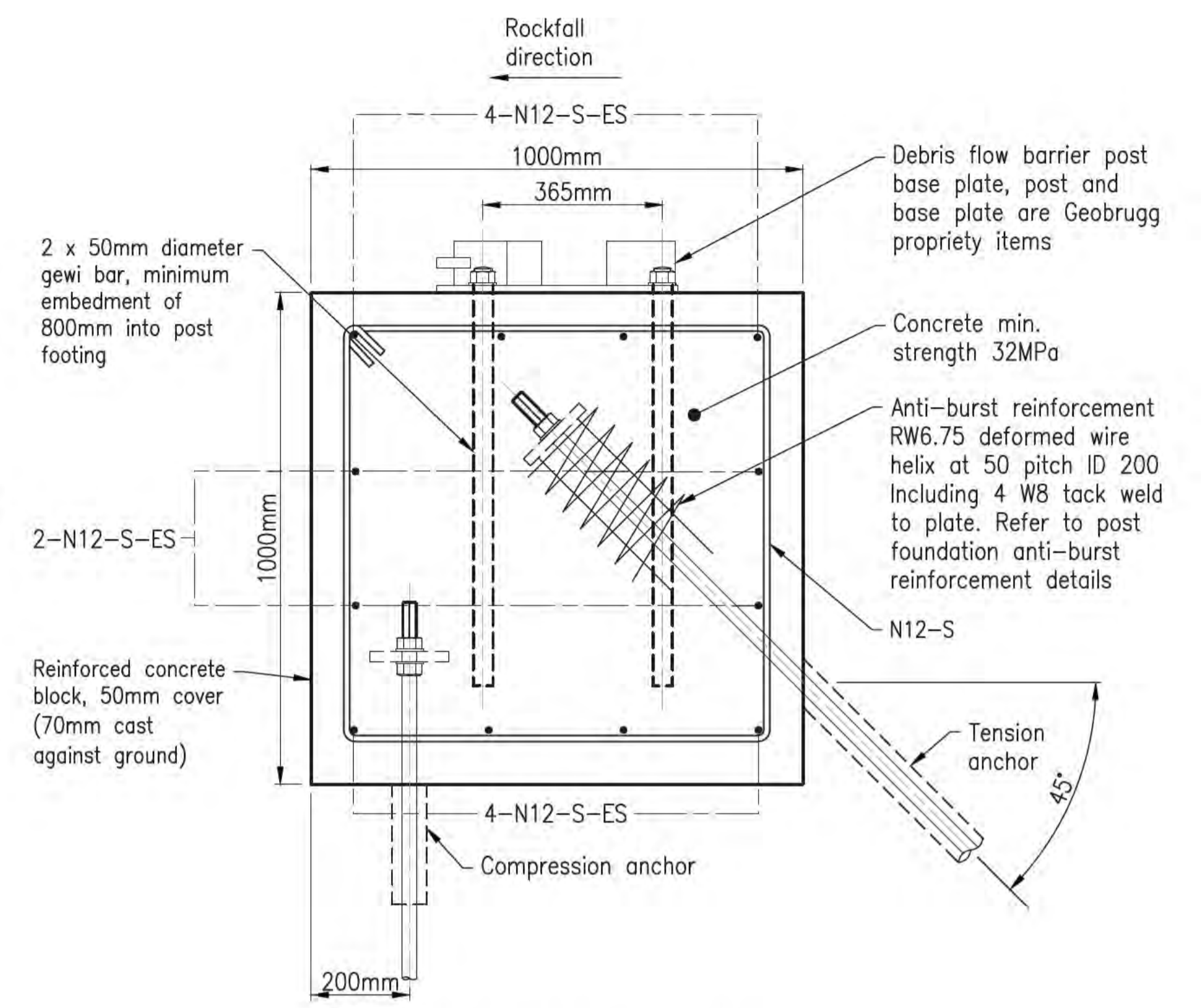
CI CLUB FLEXIBLE BARRIER TYPICAL SECTION
SCALE: 1:100



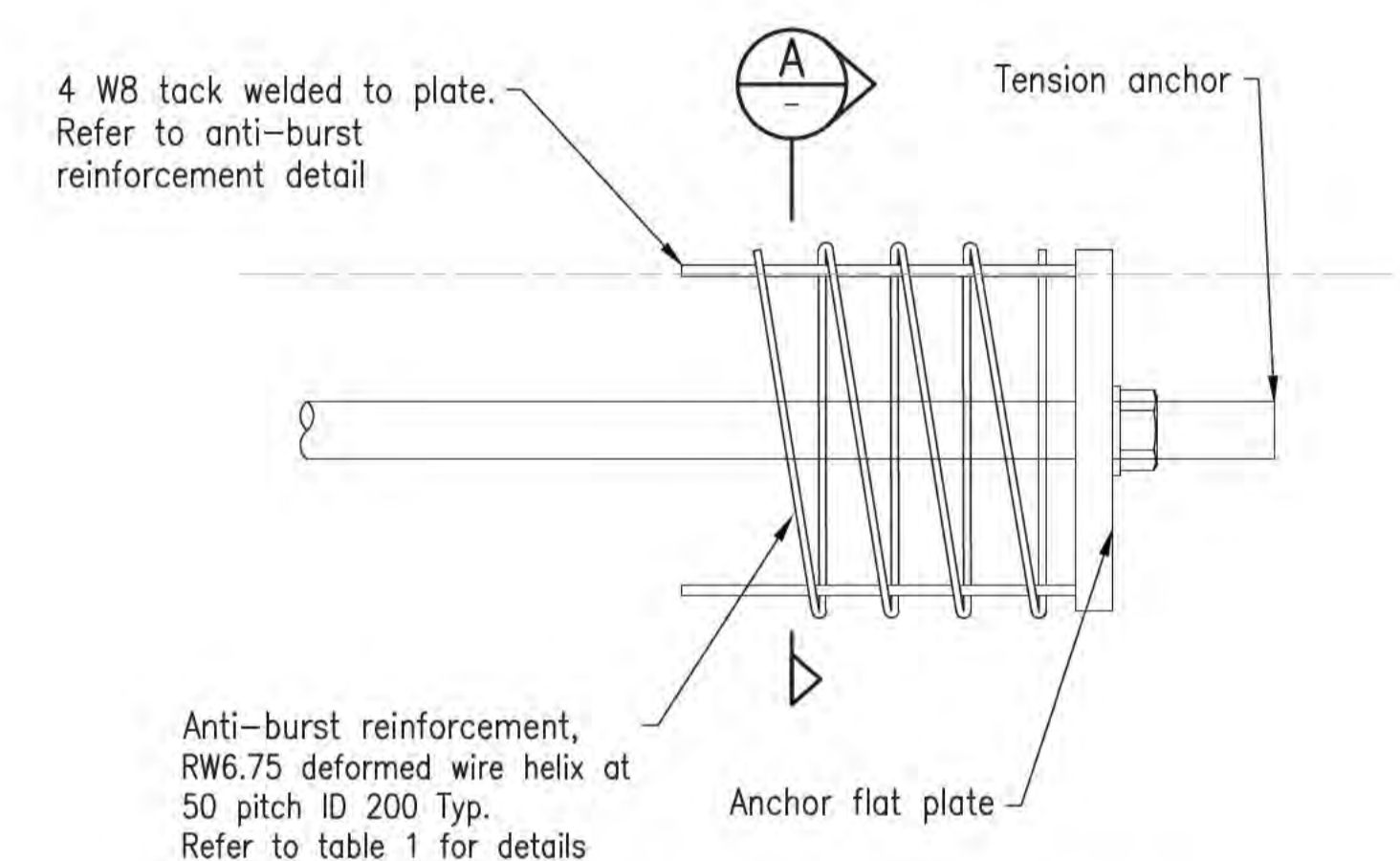
EXISTING ROCKFALL BARRIER DEMOLITION DETAIL
NOT TO SCALE



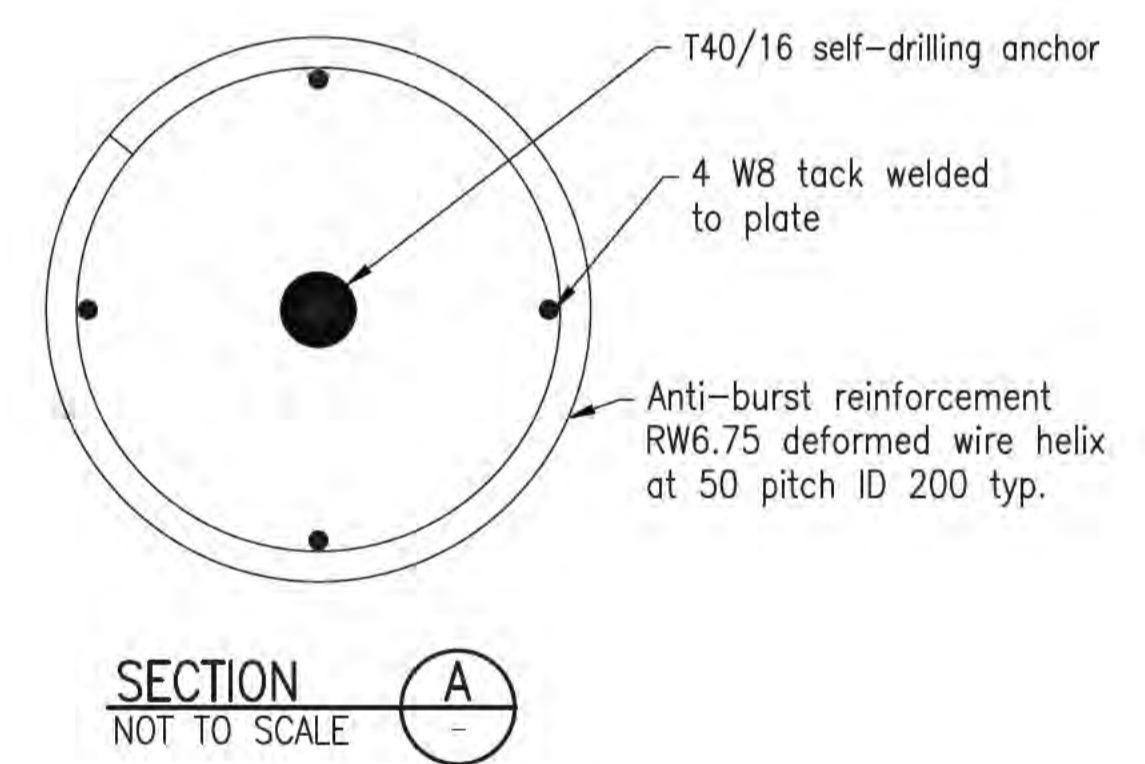
POST FOUNDATION PLAN
NOT TO SCALE



POST FOUNDATION ELEVATION
NOT TO SCALE



POST FOUNDATION ANTI-BURST REINFORCEMENT DETAILS
NOT TO SCALE



SECTION A
NOT TO SCALE

TABLE 1: ANTI-BURST REINFORCEMENT - HELIX DETAILS

Location	Helix	Pitch (mm)	Inner Diameter ID (mm)	No. of turns
Christmas Island North	RW6.75 Deformed Wire Helix	50	200	4

NOTES

- For General Notes, refer to drawings GE-DI-03 and GE-DI-04.
- Maintain minimum 30mm clearance between hold down bolts and anchors in post footing.



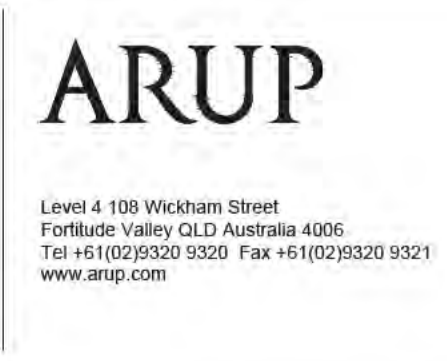
Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
C	27/07/22	KC	JG	
B	18/03/22	JL	JG	
A	29/01/21	GO	JG	EF



Client: AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

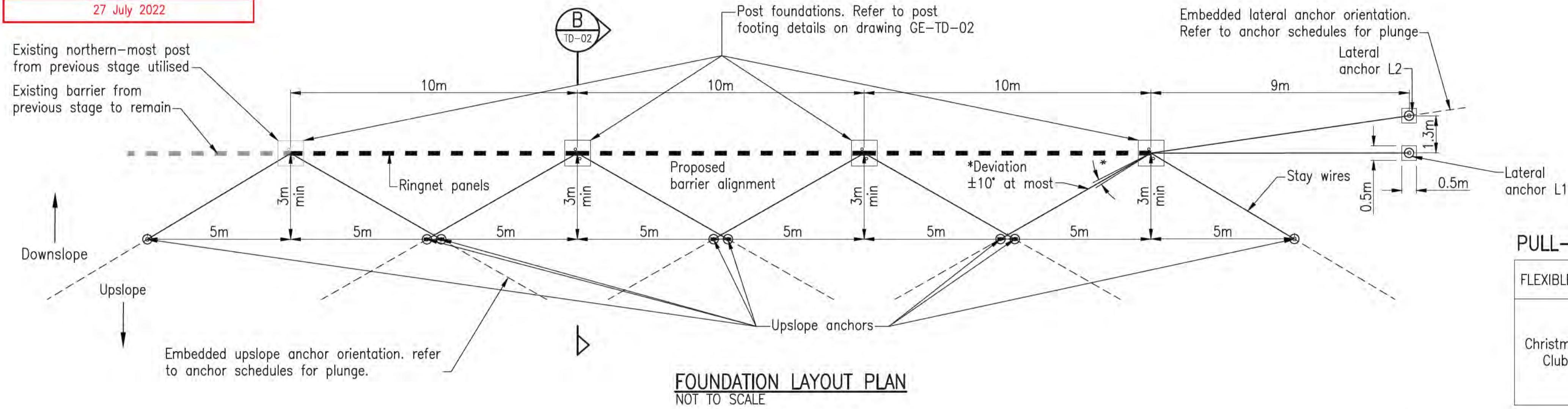
Job Title: FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1
Discipline: _____



Drawing Title: LANDSLIDE MITIGATION TYPICAL DETAILS SHEET 2 OF 4
Drawing Status: Issued for Tender
Job No: 280579-00
Drawing No: GE-TD-02
Issue: C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



FLEXIBLE BARRIER GEOMETRY

FLEXIBLE BARRIER	BARRIER HEIGHT (m)	TOTAL BARRIER LENGTH (m)	POSTS (No.)	BARRIER ENERGY CAPACITY (kJ)
Christmas Island North	4	100	10*	1000

* Does not include reuse of existing end post.

PULL-OUT TEST SCHEDULE - PRODUCTION ANCHORS

FLEXIBLE BARRIER	ANCHOR TYPE	NUMBER OF PULL-OUT TESTS	TEST LOAD
Christmas Island Club North	Upslope Production Anchor	3	1.5 x Working load
	Lateral Production Anchor	1	1.5 x Working load
	Post Tension Production Anchor	2	1.5 x Working load

PULL-OUT TEST SCHEDULE - SACRIFICIAL ANCHORS

FLEXIBLE BARRIER	ANCHOR TYPE	NUMBER OF PULL-OUT TESTS	ESTIMATED ANCHOR LENGTH, TYPE	TEST LOAD (kN)
Christmas Island Club North	Upslope Sacrificial Anchor	1	Refer Anchor Schedule	1.5 x working load
	Lateral Sacrificial Anchor	1	Refer Anchor Schedule	1.5 x working load
	Post Tension Sacrificial Anchor	1	Refer Anchor Schedule	1.5 x working load

GROUND ANCHOR SCHEDULE - CHRISTMAS ISLAND CLUB NORTH BARRIER

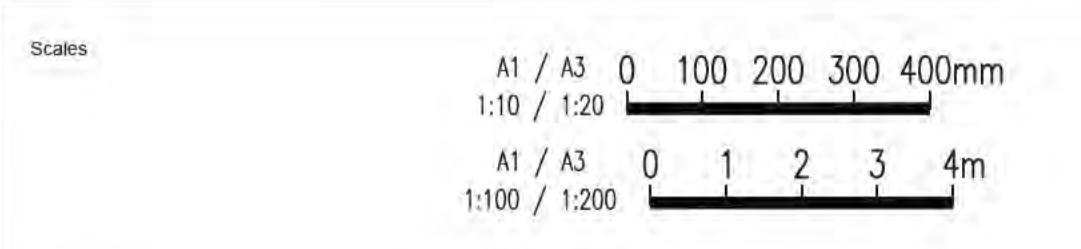
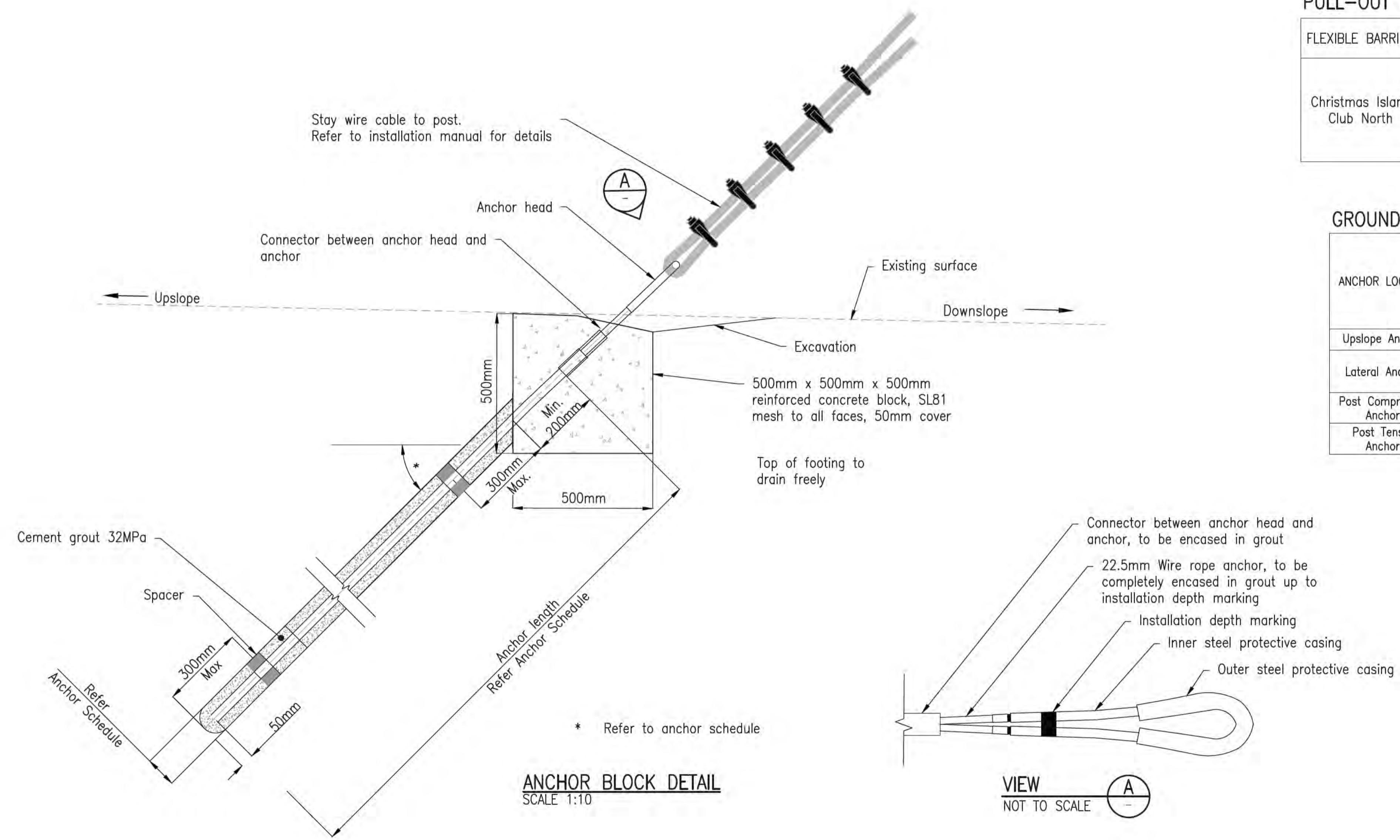
ANCHOR LOCATION	ANCHOR TYPE	NUMBER OF ANCHORS	ANCHOR INCLINATION FROM HORIZONTAL	WORKING LOAD PER ANCHOR	DRILLHOLE DIAMETER	ANCHOR LENGTH (per anchor)
			deg	kN	mm	m
Upslope Anchors	40/16 self drilling anchor	18	15	100	100	3
Lateral Anchors	L1: 40/16 self drilling anchor	1	45	230	100	6
	L2: 40/16 self drilling anchor	1	45	360	100	6
Post Compression Anchors	40/16 self drilling anchor	20	90	50	100	3
Post Tension Anchors	40/16 self drilling anchor	20	45	85	100	3

FLEXIBLE BARRIER ANCHOR SCHEDULE - CONTINGENCY LENGTH

ANCHOR TYPE	CONTINGENCY LENGTH (m)
40/16 SDA	90

NOTE

- Refer to drawings GE-DI-02 to GE-DI-05 for general notes and legend.
- If casing is required for hole stability, Anchor Length as shown in the Ground Anchor Schedule shall be achieved beyond the casing termination.



Issue	Date	By	Chkd	Appd

C	27/07/22	KC	JG	ISSUED FOR TENDER
B	18/03/22	JL	JG	85% DETAILED DESIGN ISSUE
A	29/01/21	GO	JG EF	CONCEPT DESIGN ISSUE

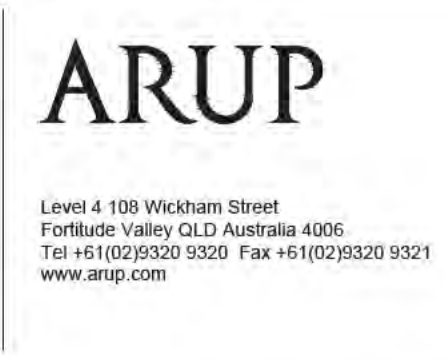


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



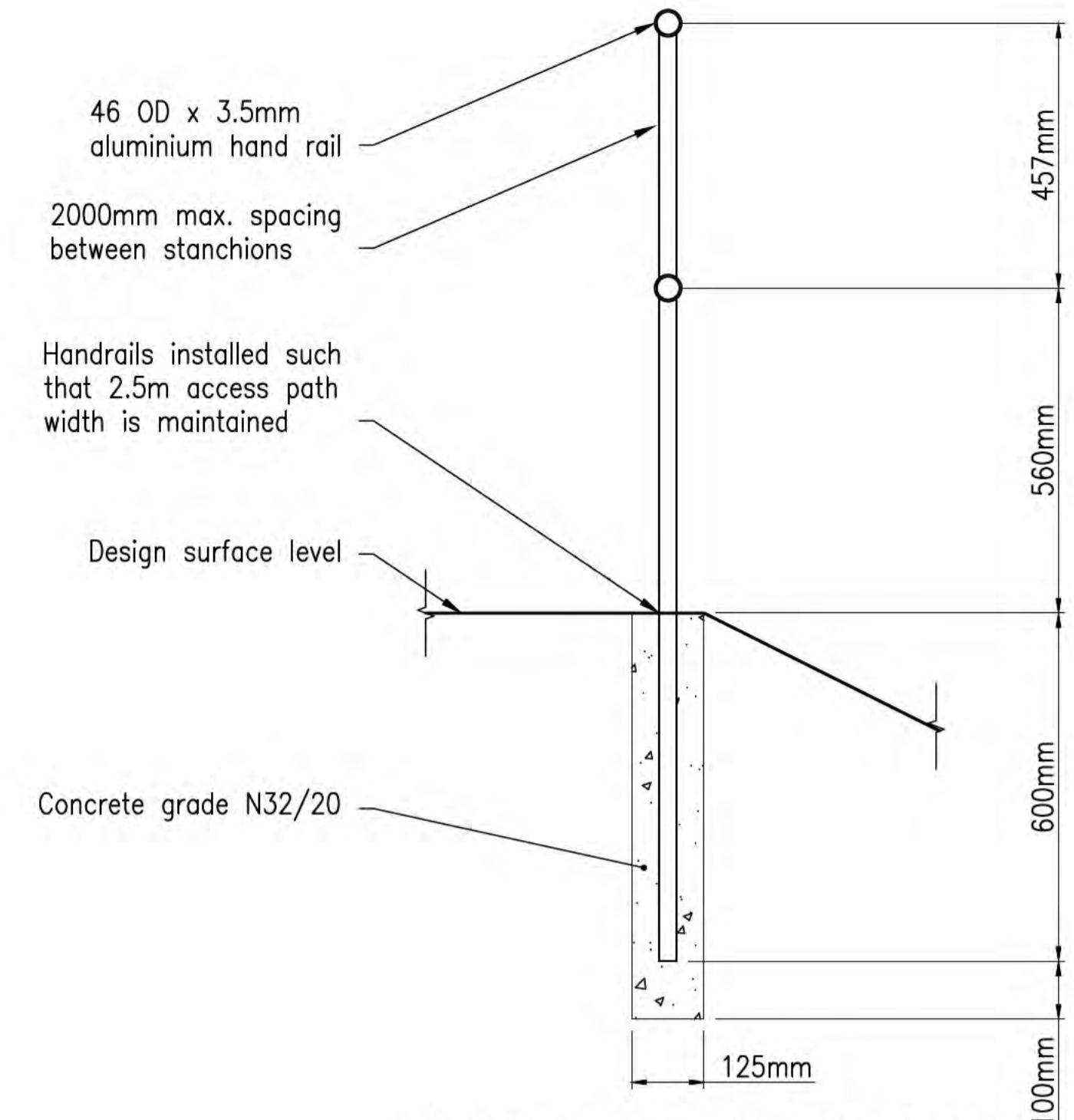
Drawing Title
LANDSLIDE MITIGATION TYPICAL DETAILS SHEET 3 OF 4

Drawing Status
Issued for Tender

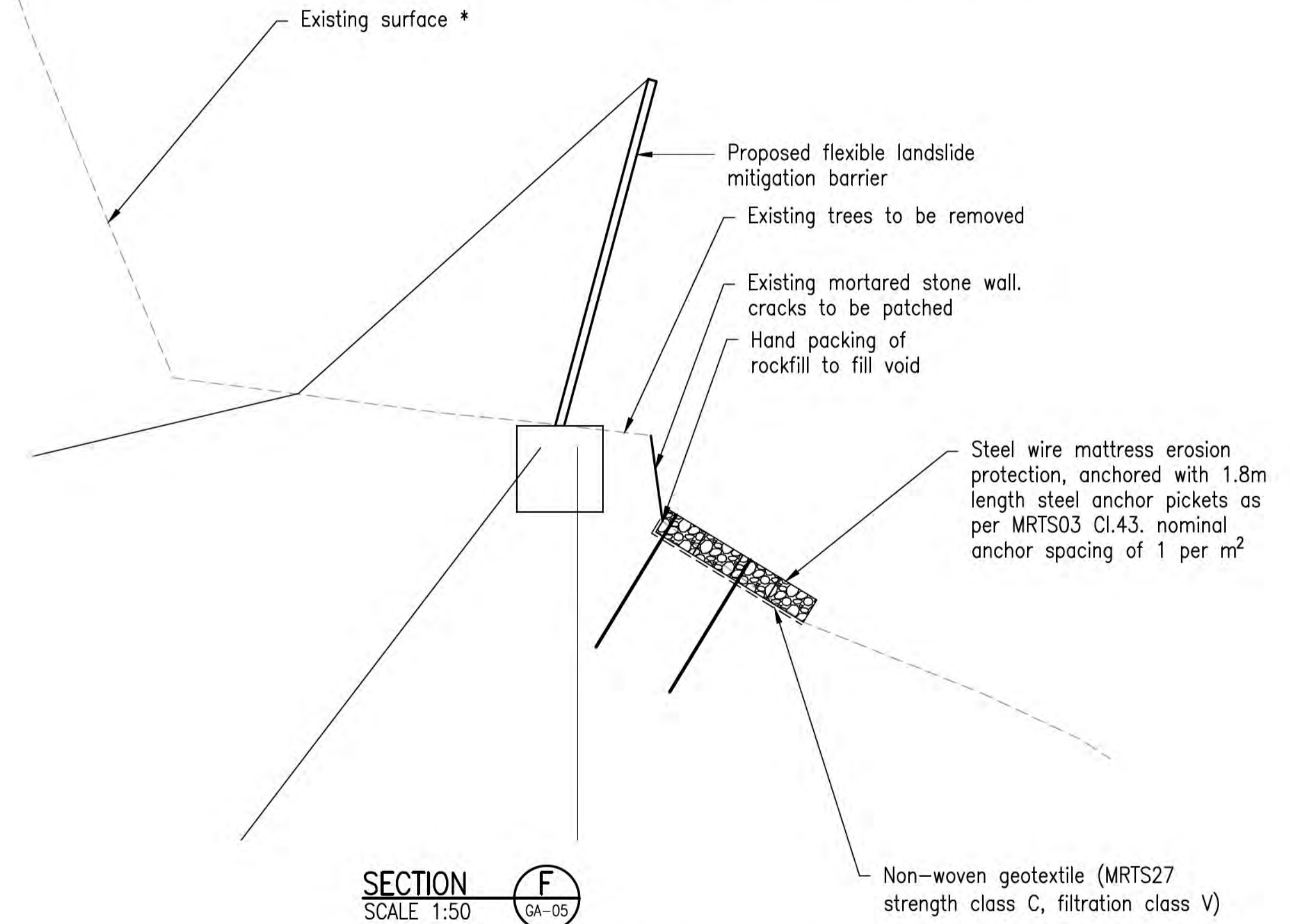
Job No: 280579-00
Drawing No: GE-TD-03
Issue: C

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



ACCESS TRACK HANDRAIL DETAIL
SCALE 1:25



* Existing surface level has been modified to reflect more accurate site measurement of existing wall geometry.

Treatment of cracks using low shrinkage proprietary epoxy for crack repair. For performance requirements refer to GE-DI-04

All existing trees immediately above wall to be removed

Existing mortared stone wall, 8m length with variable height up to 1.7m. Approximate height of 1m at proposed footing locations.

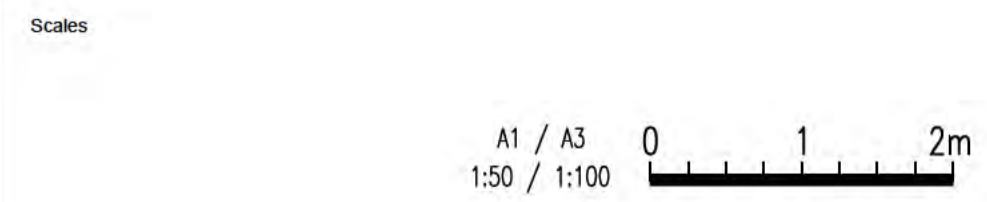


Steel wire mattress erosion protection, anchored with 1.8m length steel anchor pickets as per MRTS03 Cl.43, nominal anchor spacing of 1 per m²

Mortar patching of cracks

NOTE
Crack Treatment for Existing Mortared Stone Wall

- Substrate surface must be clean, dry and free from contaminants. All loose particles must be removed from substrate.
- Vegetation that compromises the integrity of the existing wall will need to be removed and cleared, particularly roots of trees or plants.
- Undertake crack treatment or repair using low shrinkage proprietary epoxy.



Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG	
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				
Issue	Date	By	Chkd	Appd



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: **B. A. Baracas** CIVIL
Signature: _____ Date: 12/12/12
1234

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline

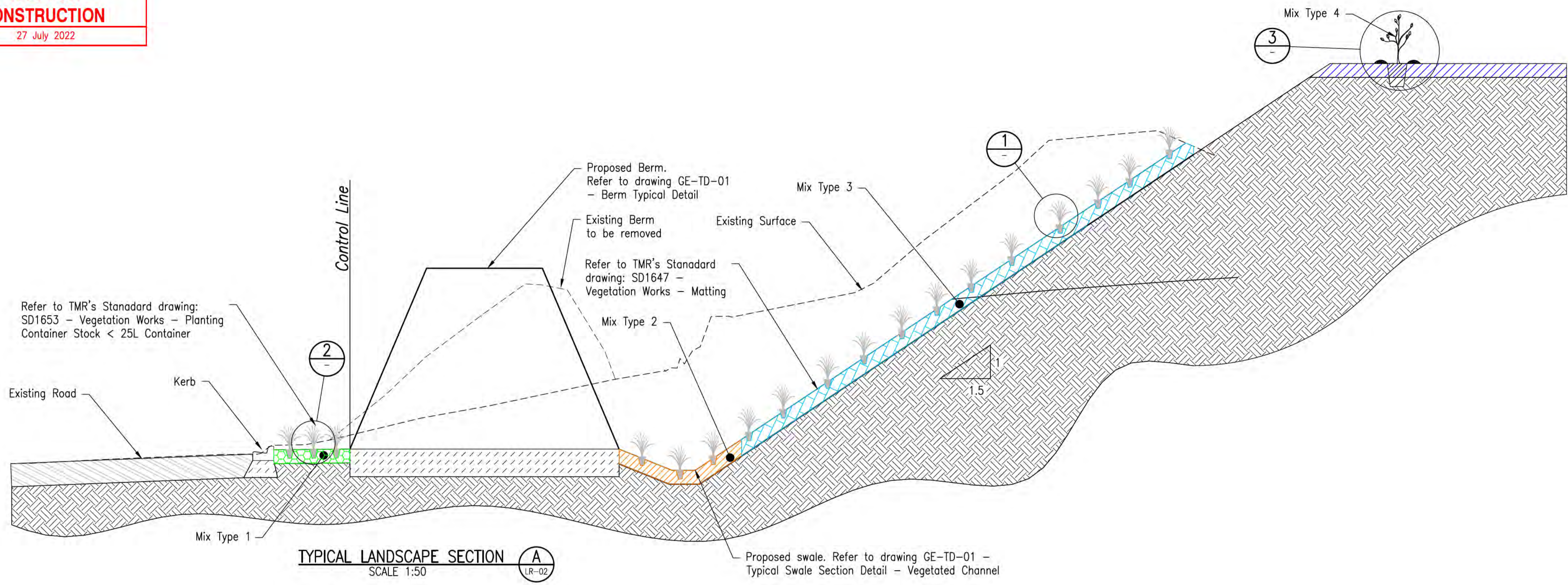


Drawing Title
LANDSLIDE MITIGATION TYPICAL DETAILS SHEET 4 OF 4

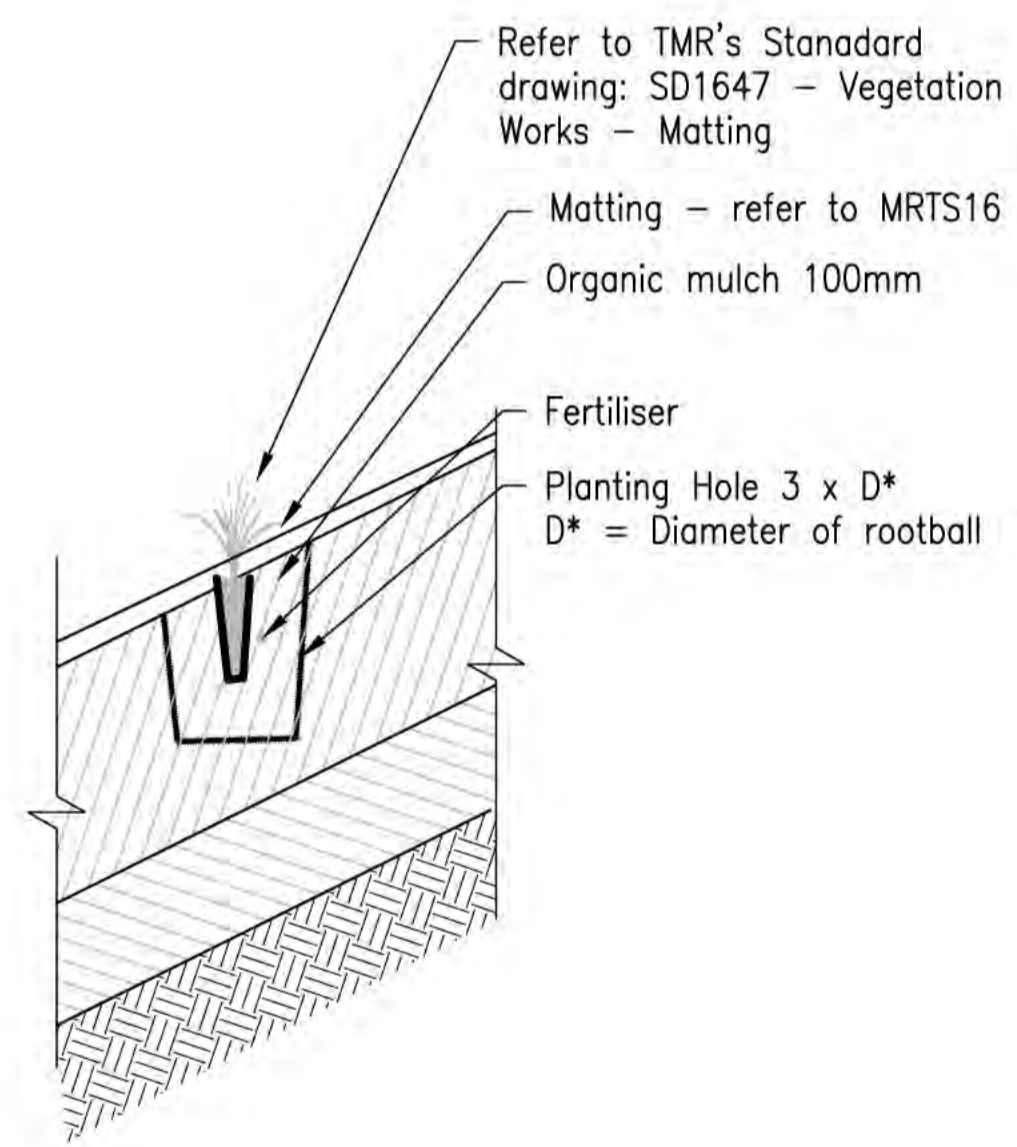
Drawing Status
Issued for Tender

Job No: **280579-00**
Drawing No: **GE-TD-04**
Issue: **B**

NOT FOR CONSTRUCTION
27 July 2022

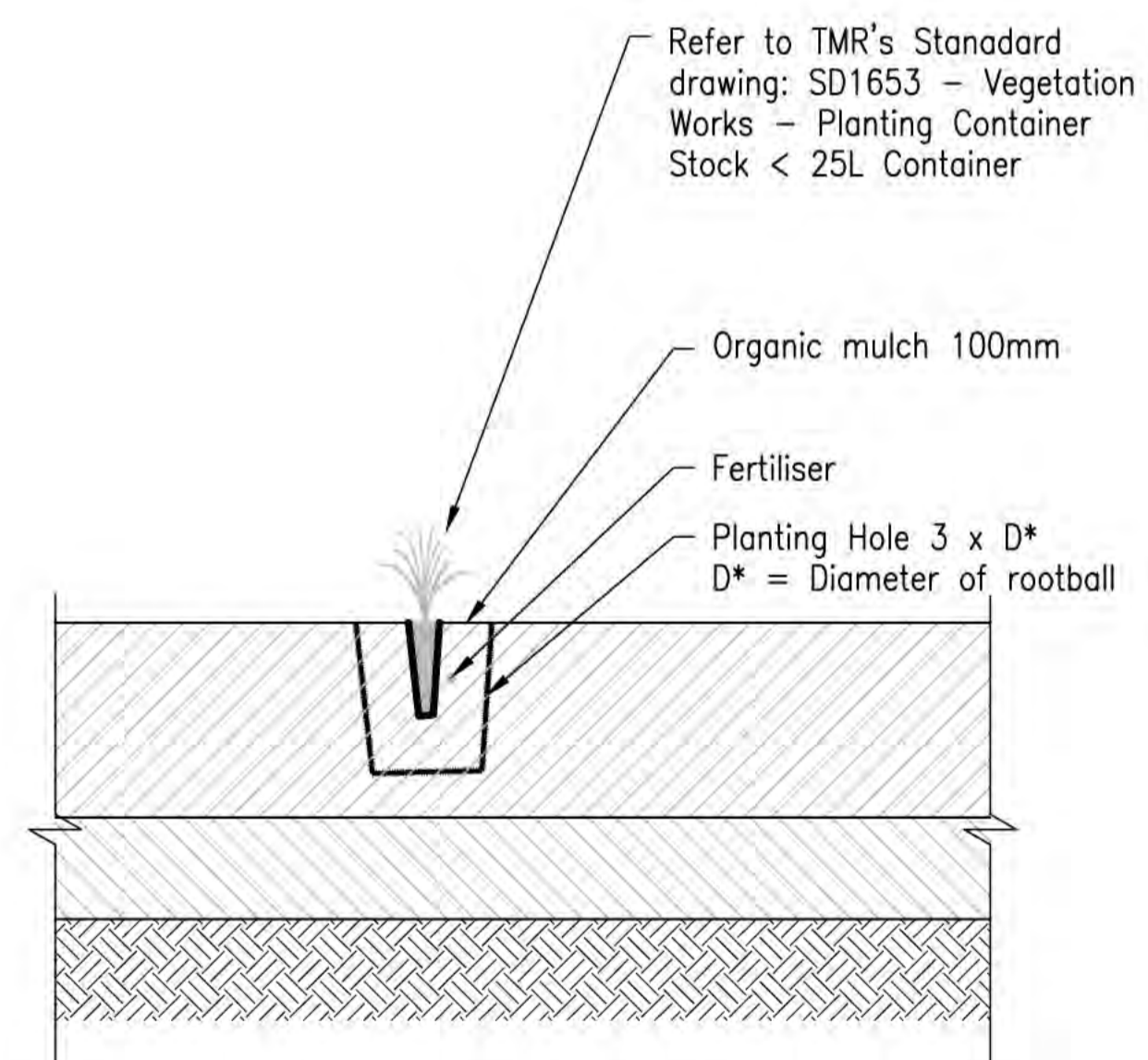


TYPICAL LANDSCAPE SECTION A
SCALE 1:50
LR-02



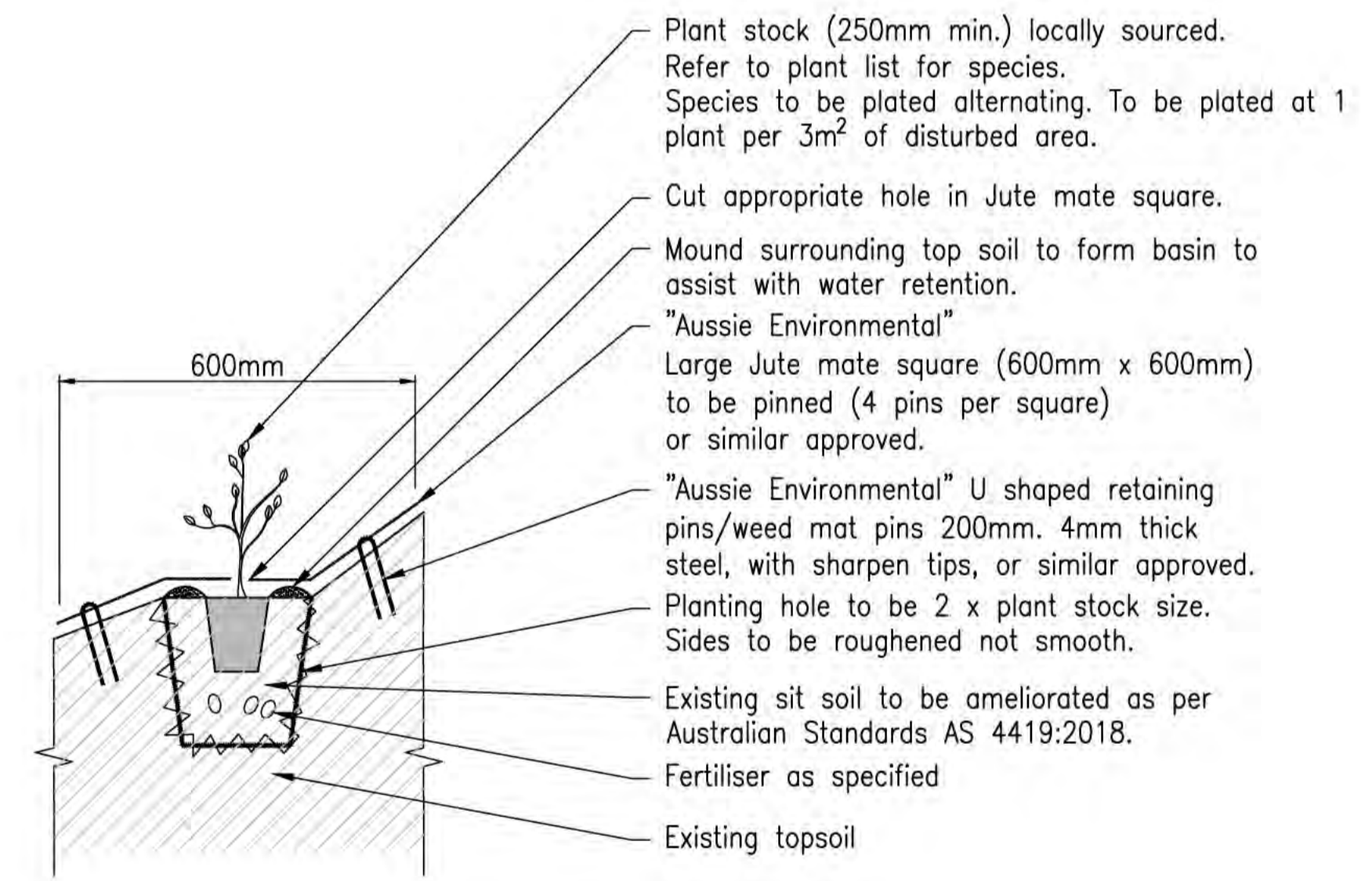
DETAIL 1
NTS

**TYPICAL CONTAINER PLANTING TO BATTERS > 1:2 (MIX 3)
MASS PLANTING TO STEEP GRADE AREAS**



DETAIL 2
NTS

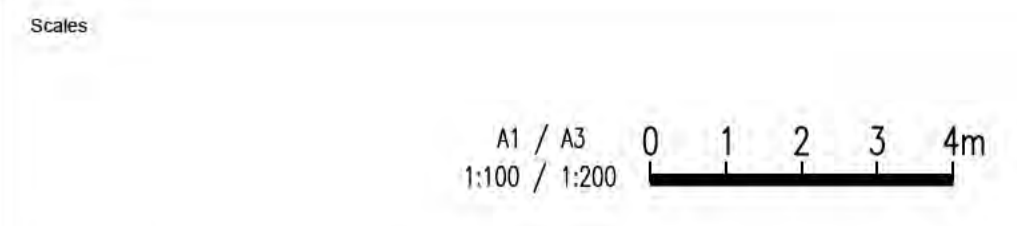
**TYPICAL CONTAINER PLANTING (MIX 1, 2 & 3)
MASS PLANTING TO SHALLOW GRADE AREAS**



DETAIL 3
NTS

**TYPICAL CONTAINER PLANTING (MIX 4)
POCKET PLANTING FOR TREES**

NOTES
1. Refer to drawings DI-02 TO DI-03 for general notes and legend.



Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG	
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				
Issue	Date	By	Chkd	Appd

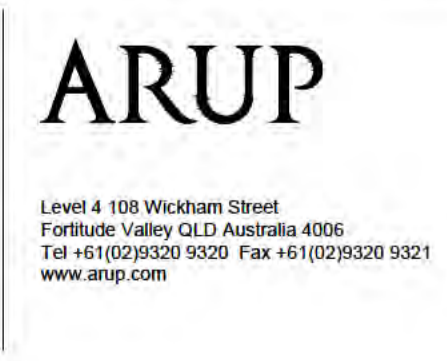


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



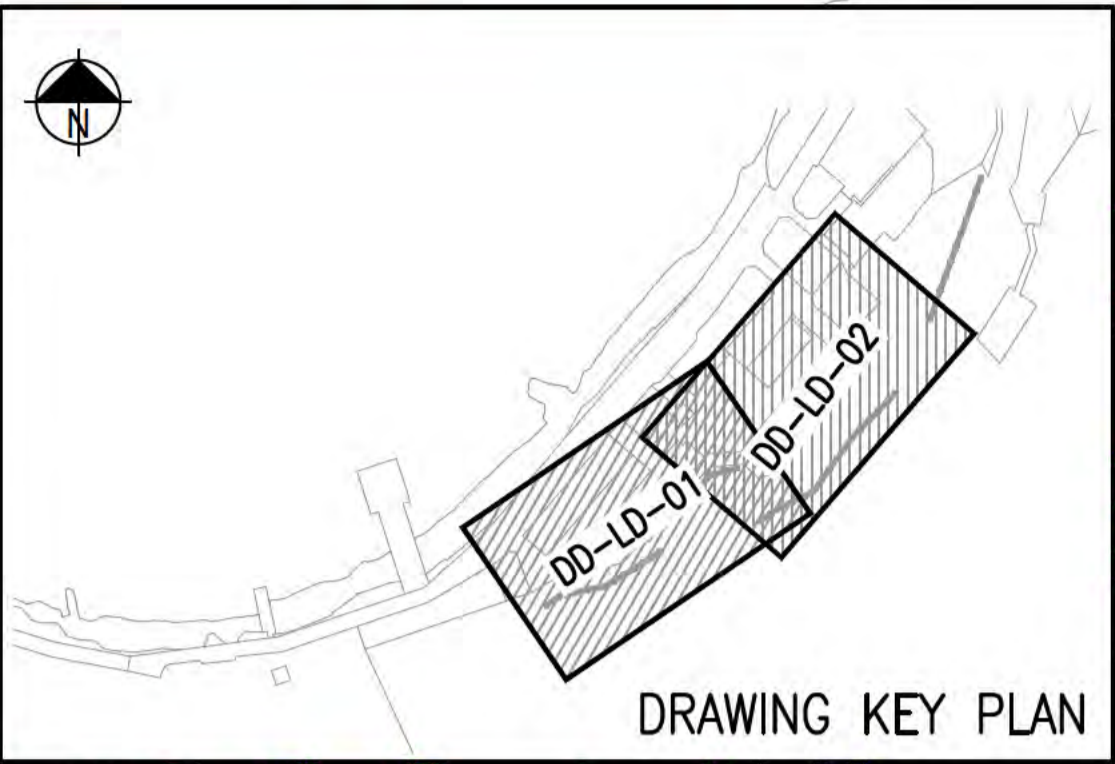
Drawing Title
LANDSLIDE MITIGATION REVEGETATION DETAILS

Drawing Status
Issued for Tender

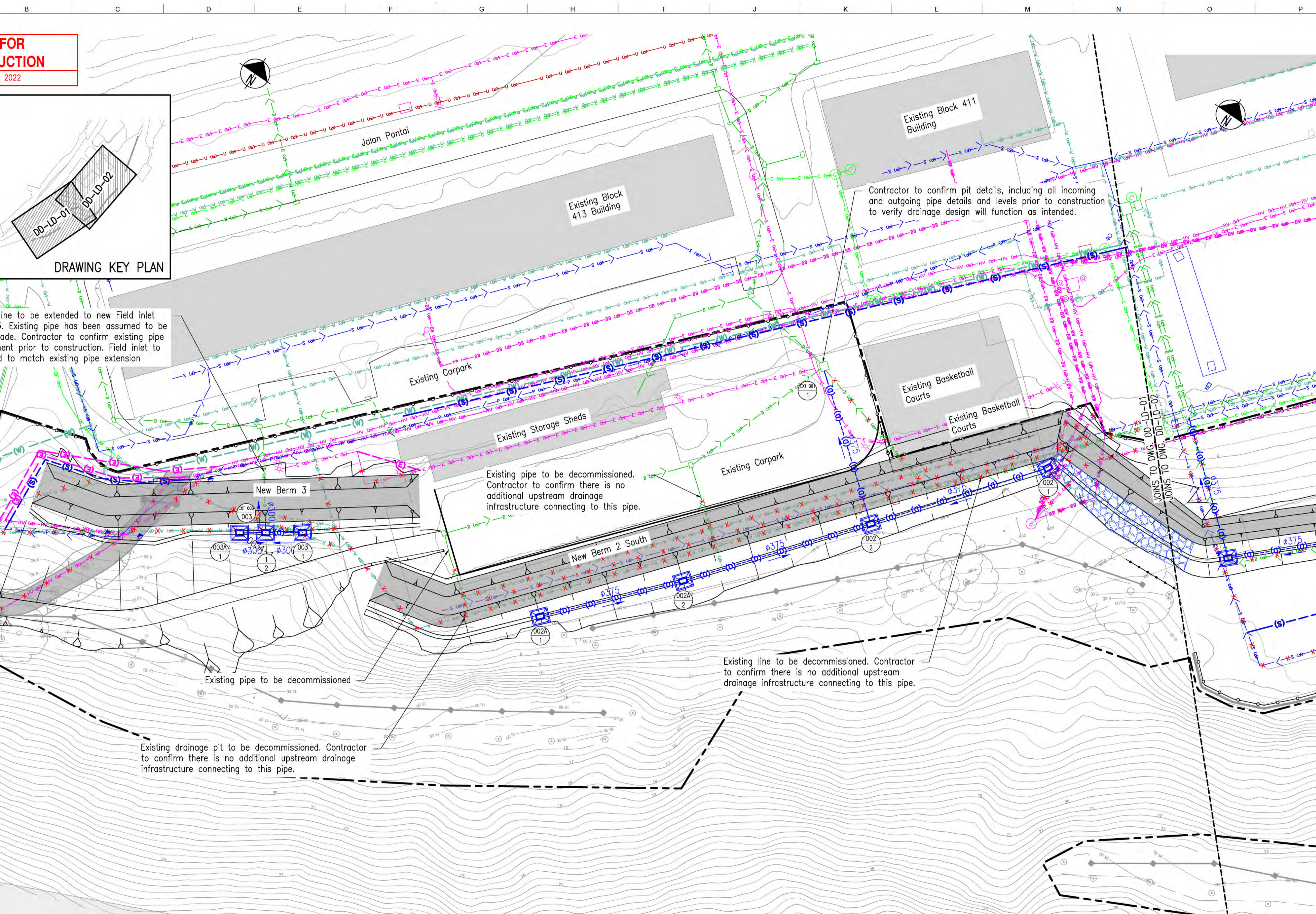
Job No: **280579-00**
Drawing No: **GE-LD-01**
Issue: **B**

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



A1
1
2
3
4
5
6
7
8
9
10



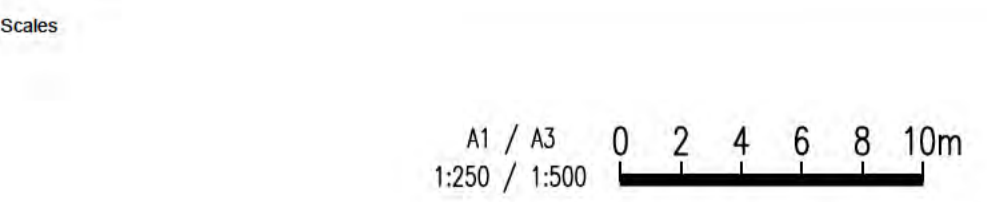
Existing drainage line to be extended to new Field inlet pit behind berm 3. Existing pipe has been assumed to be DN300 @ 0.5% grade. Contractor to confirm existing pipe details and alignment prior to construction. Field inlet to be locally adjusted to match existing pipe extension

Contractor to confirm pit details, including all incoming and outgoing pipe details and levels prior to construction to verify drainage design will function as intended.

Existing pipe to be decommissioned. Contractor to confirm there is no additional upstream drainage infrastructure connecting to this pipe.

Existing line to be decommissioned. Contractor to confirm there is no additional upstream drainage infrastructure connecting to this pipe.

Existing drainage pit to be decommissioned. Contractor to confirm there is no additional upstream drainage infrastructure connecting to this pipe.



Issue	Date	By	Chkd	Appd

A	27/07/22	KC	JG
ISSUED FOR TENDER			
Issue	Date	By	Chkd

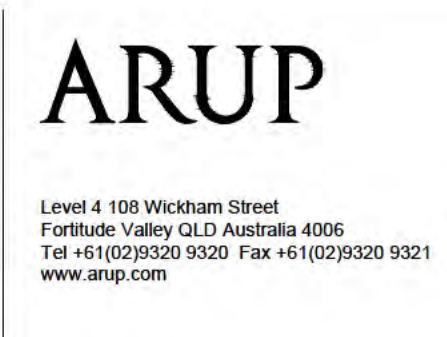


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline
Drainage



Drawing Title
LANDSLIDE MITIGATION DRAINAGE LAYOUT - SHEET 1

Drawing Status
Issued for Tender

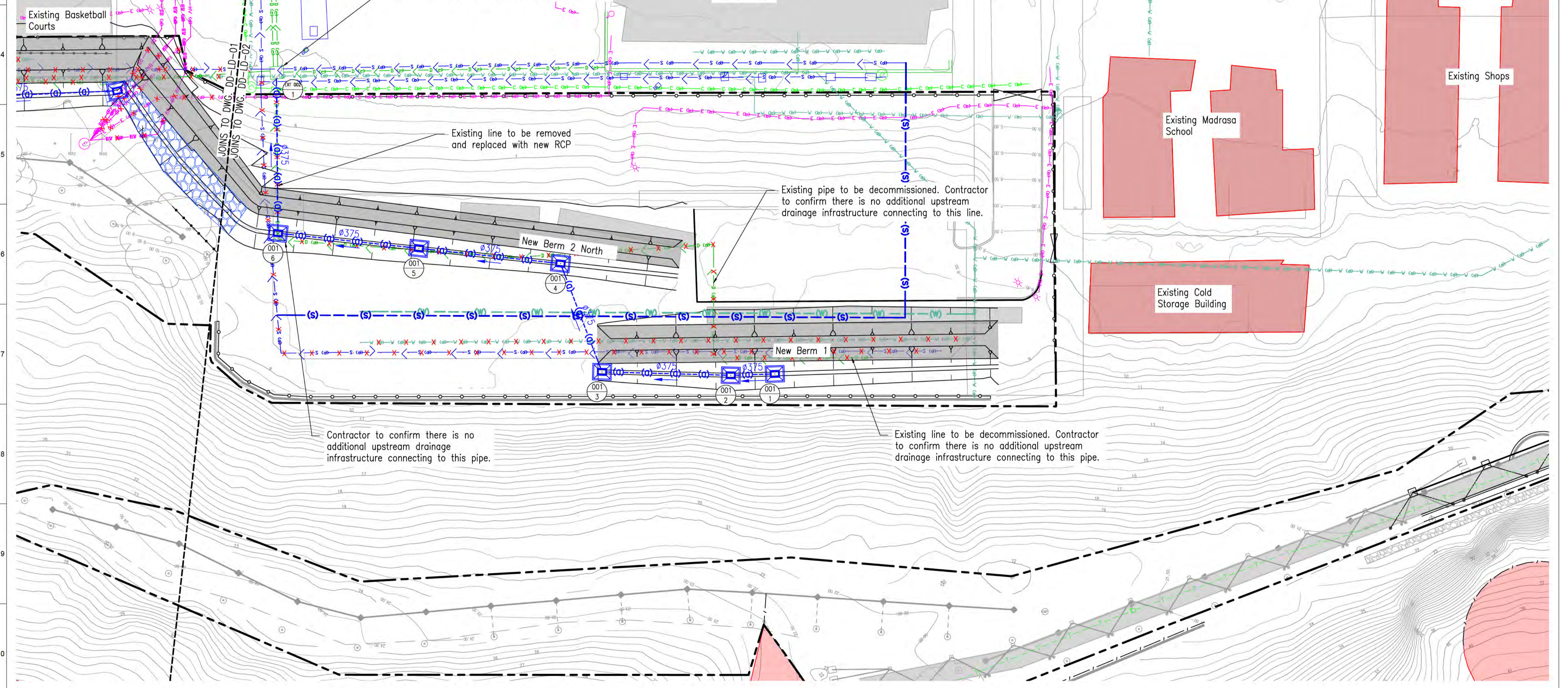
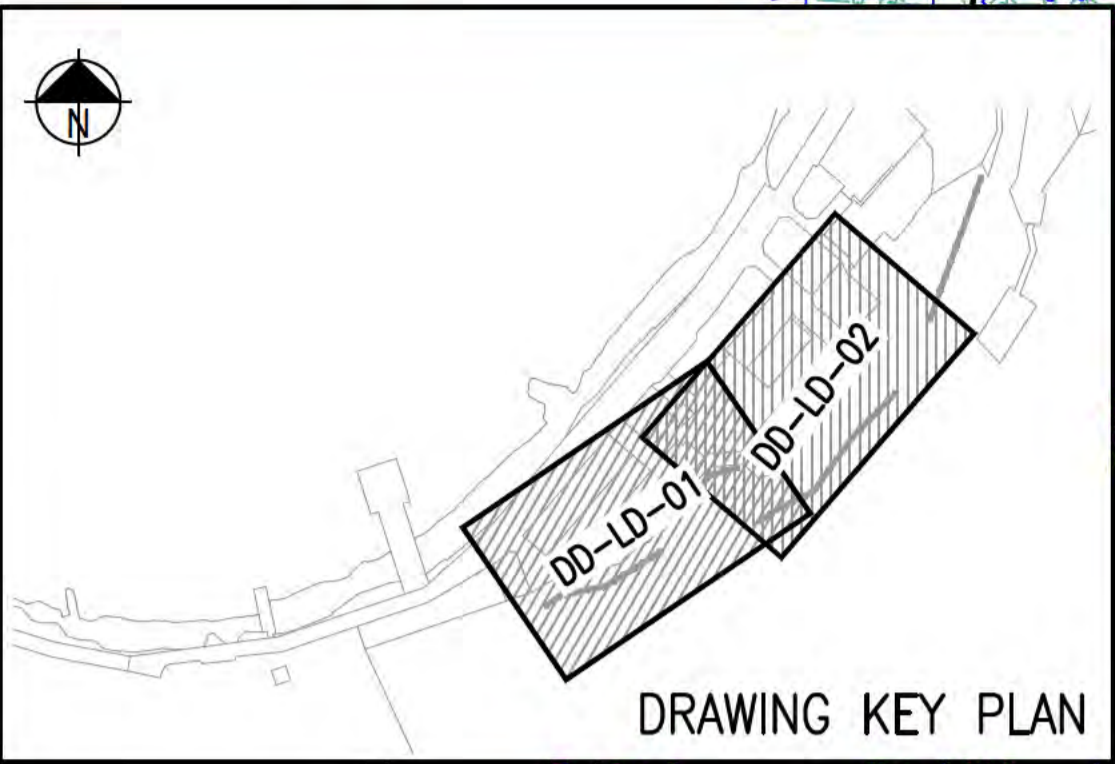
Job No
280579-00

Drawing No
DR-LD-01

Issue
A

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



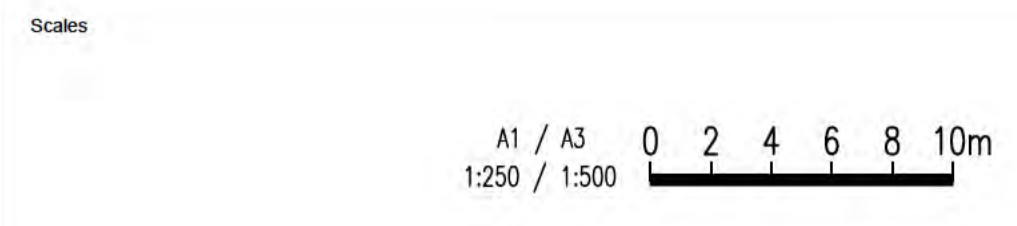
Contractor to confirm all incoming and outgoing pipe details and levels prior to construction to verify drainage design will function as intended.

Existing line to be removed and replaced with new RCP

Existing pipe to be decommissioned. Contractor to confirm there is no additional upstream drainage infrastructure connecting to this line.

Contractor to confirm there is no additional upstream drainage infrastructure connecting to this pipe.

Existing line to be decommissioned. Contractor to confirm there is no additional upstream drainage infrastructure connecting to this pipe.



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
A	27/07/22	KC	JG	

ISSUED FOR TENDER

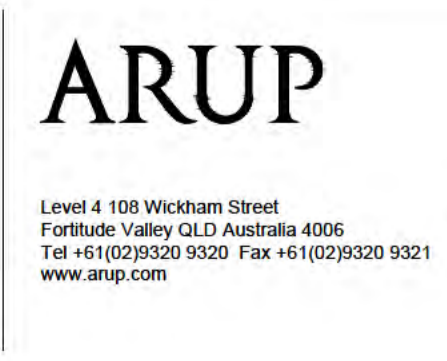


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline
Drainage



Drawing Title
LANDSLIDE MITIGATION DRAINAGE LAYOUT - SHEET 2

Drawing Status
Issued for Tender

Job No
280579-00

Drawing No
DR-LD-02

Issue
A

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022

STRUCTURE NAME	001-1	001-2	001-3	001-4	001-5	001-6	EXT 002-1
STRUCTURE DESCRIPTION	TMR SINGLE FIELD INLET TYPE 2 - SAG	TMR SINGLE FIELD INLET TYPE 2 - SAG	TMR SINGLE FIELD INLET TYPE 2 - SAG	TMR SINGLE FIELD INLET TYPE 2 - SAG	TMR SINGLE FIELD INLET TYPE 2 - SAG	TMR SINGLE FIELD INLET TYPE 2 - SAG	EX. STRUCTURE
PIPE SIZE (mm)	375	375	375	375	375	375	375
PIPE CLASS / EXPOSURE	RCP(3)	RCP(3)	RCP(3)	RCP(3)	RCP(3)	RCP(3)	RCP(3)
PIPE GRADE (%)	1.00%	1.00%	1.00%	1.00%	1.00%	8.55%	
PIPE SLOPE (1 in X)	100.00	100.00	100.00	100.00	100.00	11.69	
FULL PIPE VELOCITY (m/s)							
PART FULL VELOCITY (m/s)							
DATUM R.L.	-3.0						
H.G.L. IN PIPE							
PIPE FLOW (m3/s 10% AEP UNO)							
PIPE CAP. AT GRADE (m3/s)							
DEPTH TO INVERT	1.014	1.018	1.038	1.531	1.551	1.251	1.271
INVERT LEVEL	7.006	6.950	6.930	6.766	6.746	6.598	6.578
DESIGN F.S. / PIT SETOUT R.L.	8.021	7.969		8.297		7.850	
SETOUT COORDINATES	0.000 E 573575.636 N 8847104.282	5.61 5.612 E 573572.109 N 8847099.917	16.41 22.022 E 573561.067 N 8847087.777	14.78 36.803 E 573547.158 N 8847092.778	18.15 54.951 E 573533.912 N 8847080.373	18.05 73.000 E 573520.738 N 8847068.036	20.27 93.266 E 573505.258 N 8847081.116
CHAINAGE							
LINE	001						

Existing surface level
Finished surface level

STRUCTURE NAME	002-1	002-2	EXT 001-1
STRUCTURE DESCRIPTION	TMR SINGLE FIELD INLET TYPE 2 - SAG	TMR SINGLE FIELD INLET TYPE 2 - SAG	EX. STRUCTURE
PIPE SIZE (mm)	375	375	
PIPE CLASS / EXPOSURE	RCP(3)	RCP(3)	
PIPE GRADE (%)	1.10%	1.00%	
PIPE SLOPE (1 in X)	90.78	100.00	
DATUM R.L.	-4.0		
DEPTH TO INVERT	1.085	1.037	1.576
INVERT LEVEL	4.518	4.240	3.701
DESIGN F.S. / PIT SETOUT R.L.	5.602	5.277	5.330
SETOUT COORDINATES	0.000 E 573493.625 N 8847064.381	25.24 25.238 E 573478.002 N 8847044.560	22.20 47.441 E 573460.711 N 8847058.490
CHAINAGE			
LINE	002		

STRUCTURE NAME	002A-1	002A-2	002-2
STRUCTURE DESCRIPTION	TMR SINGLE FIELD INLET TYPE 2 - SAG	TMR SINGLE FIELD INLET TYPE 2 - SAG	TMR SINGLE FIELD INLET TYPE 2 - SAG
PIPE SIZE (mm)	375	375	375
PIPE CLASS / EXPOSURE	RCP(3)	RCP(3)	RCP(3)
PIPE GRADE (%)	1.48%	1.00%	
PIPE SLOPE (1 in X)	67.41	100.00	
DATUM R.L.	-6.0		
DEPTH TO INVERT	1.017	1.003	1.556
INVERT LEVEL	4.304	4.007	3.721
DESIGN F.S. / PIT SETOUT R.L.	5.321	5.010	5.277
SETOUT COORDINATES	0.000 E 573447.970 N 8847008.893	20.01 20.010 E 573461.302 N 8847023.815	26.63 46.641 E 573478.002 N 8847044.560
CHAINAGE			
LINE	002A		

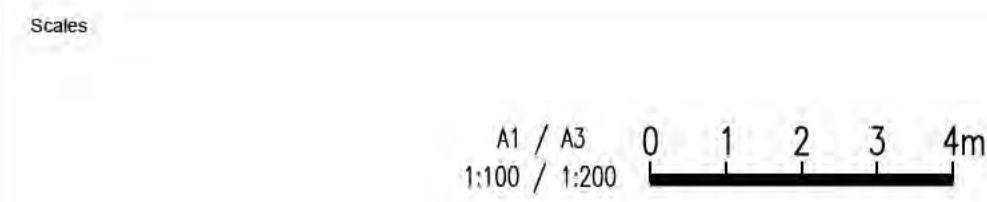
STRUCTURE NAME	003-1	003-2	EXT 003-1
STRUCTURE DESCRIPTION	TMR SINGLE FIELD INLET TYPE 2 - SAG	TMR SINGLE FIELD INLET TYPE 2 - SAG	CONNECTION TO EXISTING PIPE
PIPE SIZE (mm)	300	300	
PIPE CLASS / EXPOSURE	RCP(4)	RCP(3)	
PIPE GRADE (%)	0.50%	0.50%	
PIPE SLOPE (1 in X)	199.98	199.93	
DATUM R.L.	-5.0		
DEPTH TO INVERT	0.842	0.726	0.300
INVERT LEVEL	3.439	3.414	3.388
DESIGN F.S. / PIT SETOUT R.L.	4.281	4.141	3.688
SETOUT COORDINATES	0.000 E 573414.886 N 8847000.156	5.00 5.002 E 573410.757 N 8846997.331	6.160 6.160 E 573410.053 N 8846998.249
CHAINAGE			
LINE	003		

Existing pipe connection level has been assumed. Contractor to confirm existing pipe details and alignment prior to construction.

STRUCTURE NAME	003A-1	003-2
STRUCTURE DESCRIPTION	TMR SINGLE FIELD INLET TYPE 2 - SAG	TMR SINGLE FIELD INLET TYPE 2 - SAG
PIPE SIZE (mm)	300	300
PIPE CLASS / EXPOSURE	RCP(4)	RCP(3)
PIPE GRADE (%)	0.50%	
PIPE SLOPE (1 in X)	200.02	
DATUM R.L.	-5.0	
DEPTH TO INVERT	0.654	0.726
INVERT LEVEL	3.432	3.414
DESIGN F.S. / PIT SETOUT R.L.	4.085	4.141
SETOUT COORDINATES	0.000 E 573407.849 N 8846995.313	3.54 3.540 E 573410.757 N 8846997.331
CHAINAGE		
LINE	003A	

NOTES

1. Refer to General Note 3 AND 16 on DRG. NO GE-DI-06 for requirements of the pipe exposure classification and jointing type.
2. Refer to General Note 6 on DRG. NO GE-DI-06 for requirements of pipe installation, bedding and backfill.
3. There is limited information available for the existing drainage network which the proposed drainage will tie into, requiring design assumptions on condition and capacity. As such, the proposed pipe diameters have been determined based on the available information and engineering best practice, and the Contractor shall confirm the condition and existing drainage network details at the tie-in points at construction commencement.
4. Drainage longitudinal sections provided for pipe details and levels only.



Do not scale

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
A	27/07/22	KC		JG

ISSUED FOR TENDER



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline
Drainage



Level 4 108 Wickham Street
Fortitude Valley QLD Australia 4006
Tel +61(0)7320 9320 Fax +61(0)7320 9321
www.arup.com



Drawing Title
LANDSLIDE MITIGATION DRAINAGE CULVERT LONGITUDINAL SECTIONS

Drawing Status
Issued for Tender

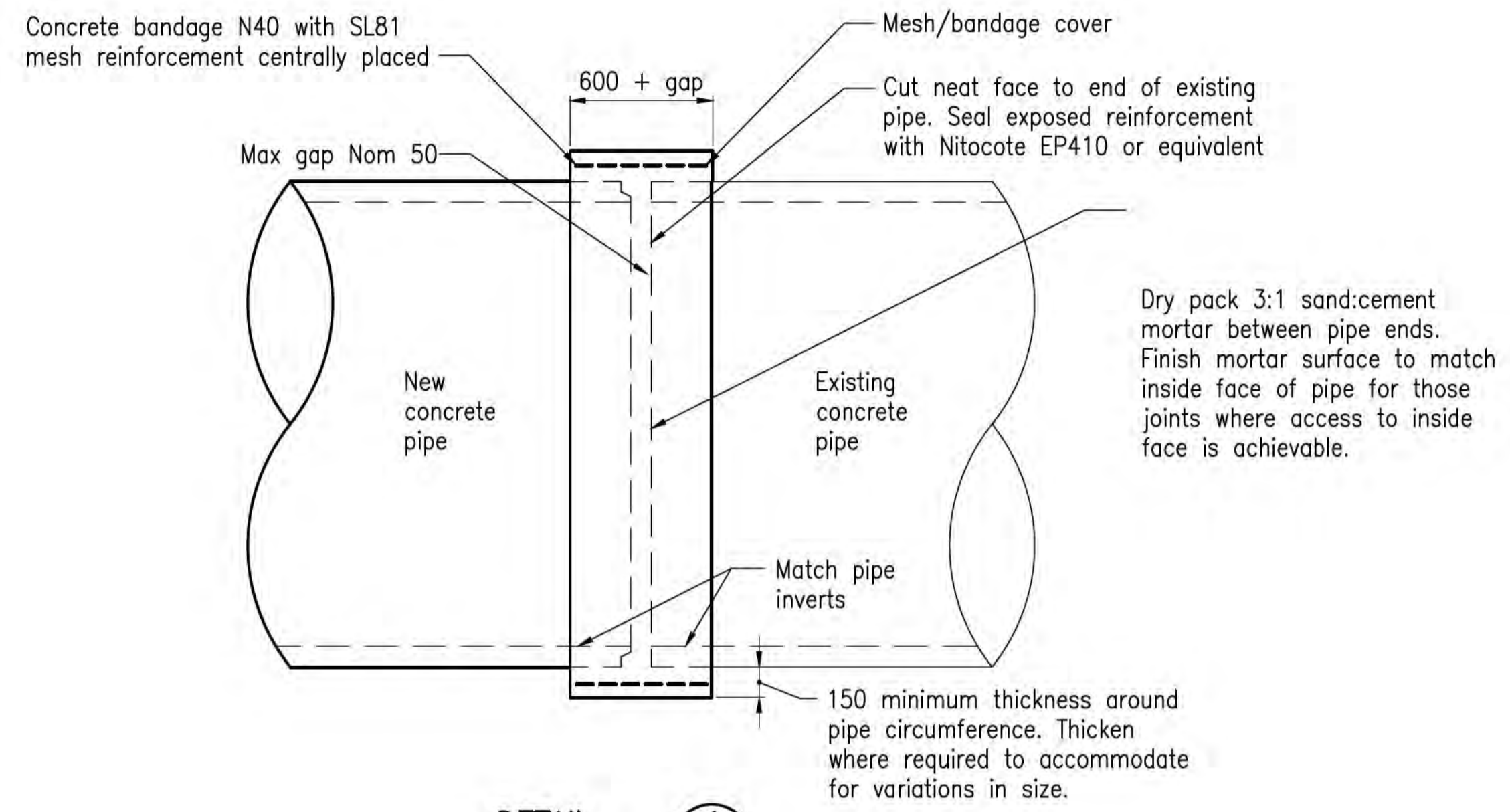
Job No
280579-00

Drawing No
DR-LS-01

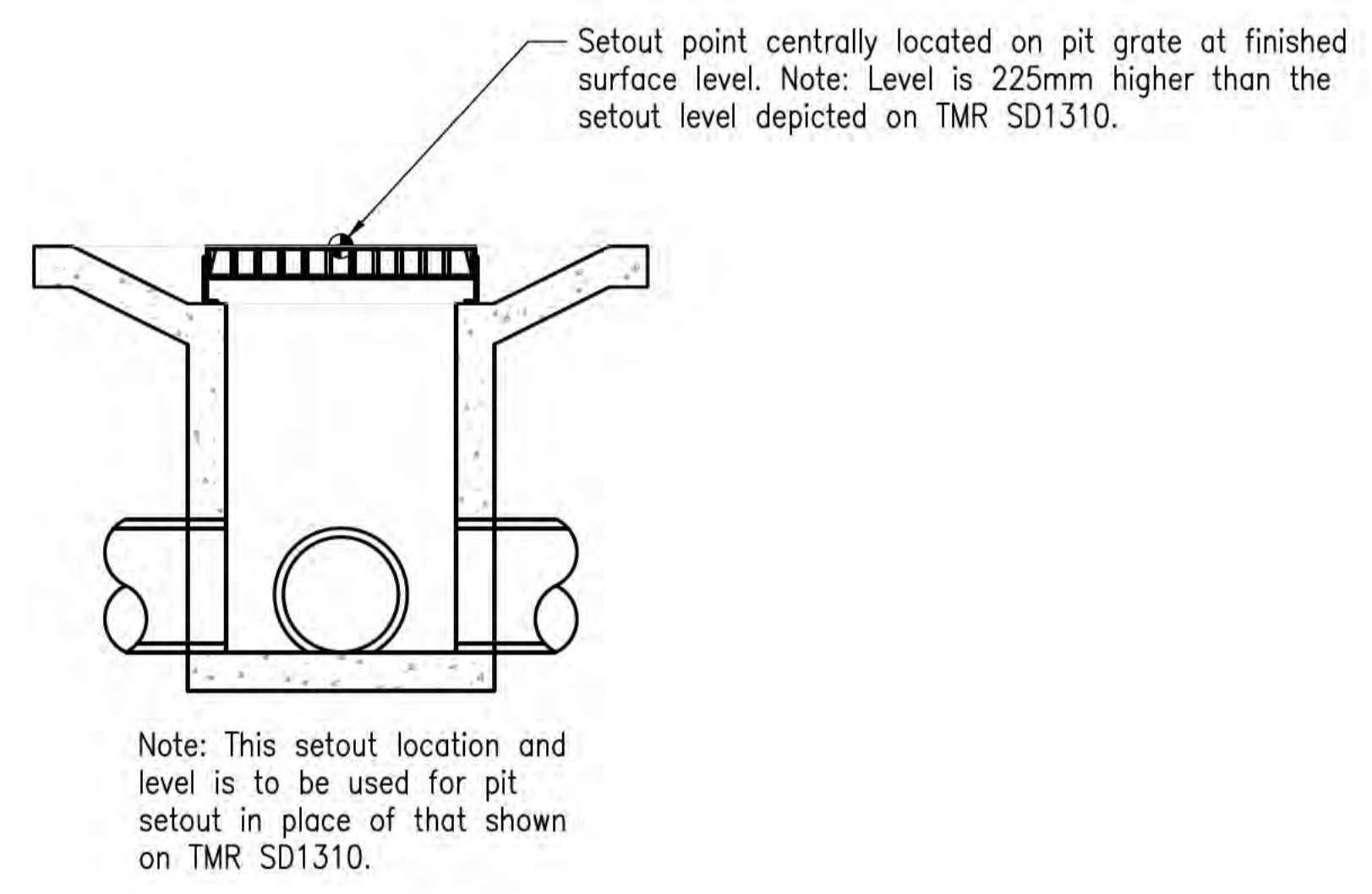
Issue
A

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

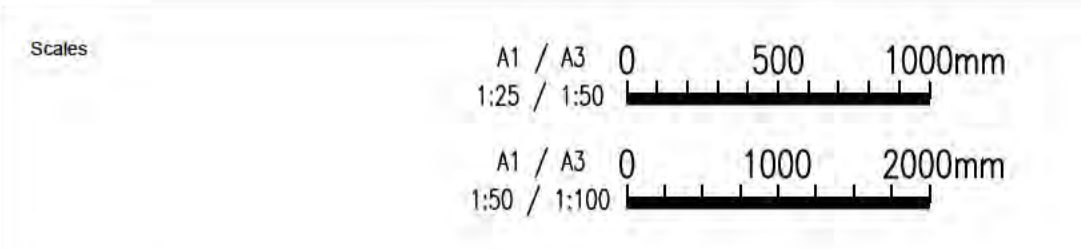
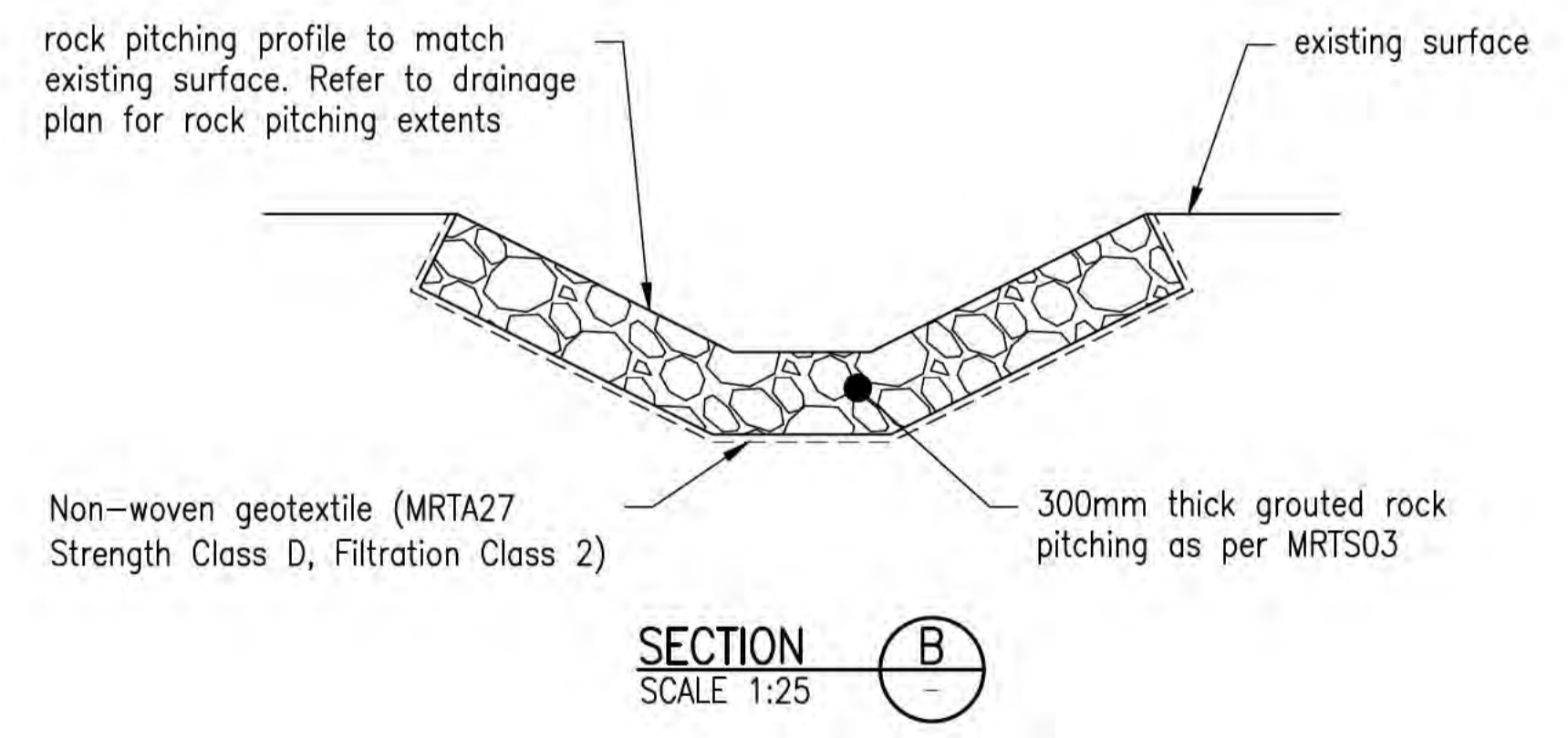
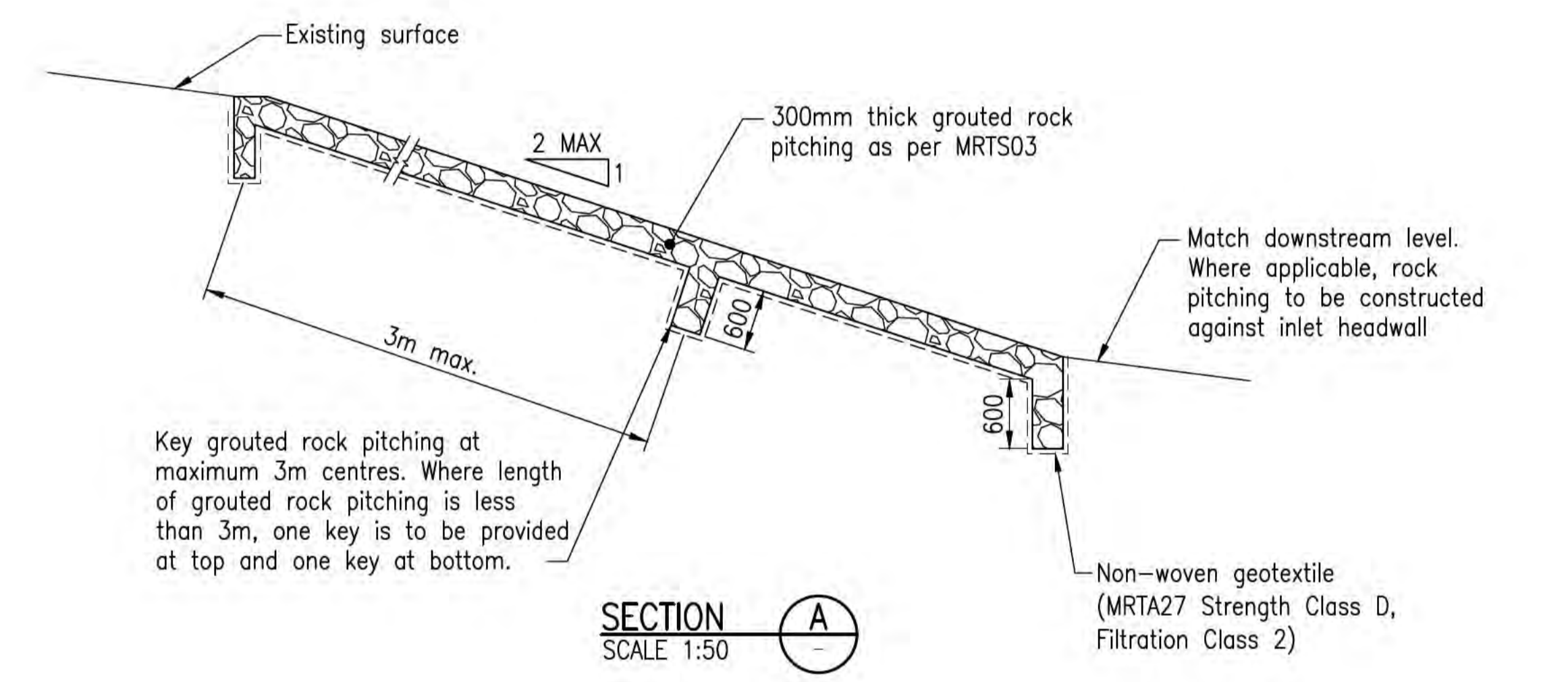
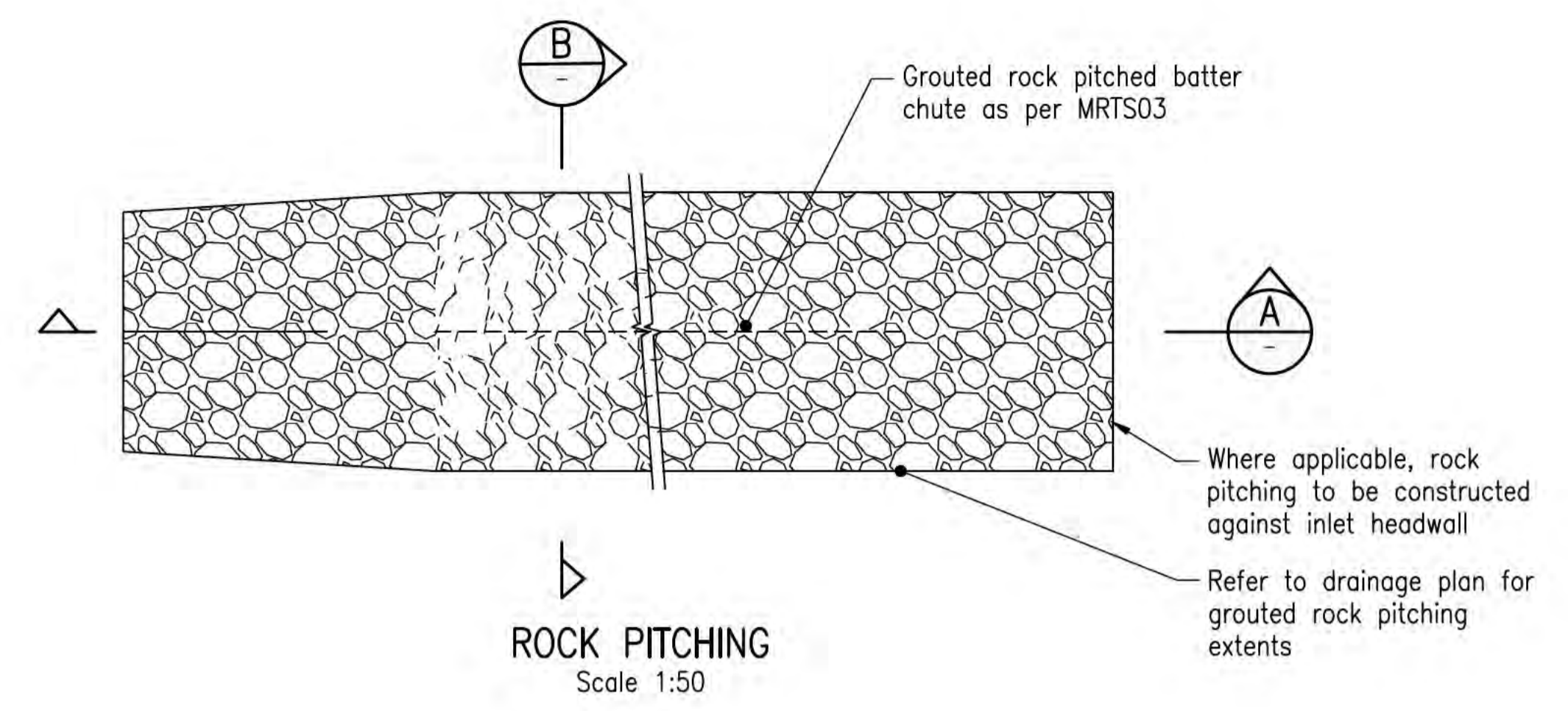
NOT FOR CONSTRUCTION
27 July 2022



DETAIL 1
SCALE 1:25
CONCRETE PIPE BANDAGE JOINT
(Item No. 90527)



DETAIL 2
SCALE 1:25
SINGLE FIELD INLET TYPE 2 SET OUT POINT



Issue	Date	By	Chkd	Appd

A	27/07/22	KC	JG
ISSUED FOR TENDER			

Australian Government
Department of Infrastructure, Transport,
Regional Development and Communications

Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline
Drainage

ARUP

Level 4 108 Wickham Street
Fortitude Valley QLD Australia 4006
Tel +61 (0)75320 9320 Fax +61 (0)75320 9321
www.arup.com

Drawing Title
LANDSLIDE MITIGATION DRAINAGE TYPICAL DETAILS

Drawing Status
Issued for Tender

Job No
280579-00

Drawing No
DR-TD-01

Issue
A

NOT FOR CONSTRUCTION
27 July 2022

PIT SCHEDULE

STRUCTURE NAME	STRUCTURE TYPE	EASTING	NORTHING	PIT SETOUT LEVEL (m AHD)	PIT DEPTH (m)	PIT SUMP LEVEL (m AHD)	D/S PIPE DIA (m)	D/S PIPE LENGTH (m)	D/S PIT PIPE INVERT (m)	D/S PIPE CLASS AND TYPE	PIT/HEADWALL EXPOSURE CLASSIFICATION	STRUCTURE DETAILS AND DRAWING REFERENCE	COMMENT
001-1	TMR SAG SF2	573575.636	8847104.282	8.021	1.014	7.006	375	5.612	6.950	RCP CLASS 3		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
001-2	TMR SAG SF2	573572.109	8847099.917	7.969	1.038	6.930	375	16.411	6.766	RCP CLASS 3		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
001-3	TMR SAG SF2	573561.067	8847087.777	8.297	1.551	6.746	375	14.781	6.598	RCP CLASS 3		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
001-4	TMR SAG SF2	573547.158	8847092.778	7.850	1.271	6.578	375	18.148	6.397	RCP CLASS 3		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
001-5	TMR SAG SF2	573533.912	8847080.373	7.668	1.291	6.377	375	18.049	6.196	RCP CLASS 3		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
001-6	TMR SAG SF2	573520.738	8847068.036	7.488	1.791	5.696	375	20.266	3.963	RCP CLASS 3		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
002-1	TMR SAG SF2	573493.625	8847064.381	5.602	1.085	4.518	375	25.238	4.240	RCP CLASS 3		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
002-2	TMR SAG SF2	573478.002	8847044.560	5.277	1.576	3.701	375	22.203	3.479	RCP CLASS 3		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
002A-1	TMR SAG SF2	573447.970	8847008.893	5.321	1.017	4.304	375	20.010	4.007	RCP CLASS 3		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
002A-2	TMR SAG SF2	573461.302	8847023.815	5.010	1.023	3.987	375	26.632	3.721	RCP CLASS 3		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
003-1	TMR SAG SF2	573414.886	8847000.156	4.281	0.842	3.439	300	5.002	3.414	RCP CLASS 4		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
003-2	TMR SAG SF2	573410.757	8846997.331	4.141	0.746	3.394	300	1.157	3.388	RCP CLASS 4		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
003A-1	TMR SAG SF2	573407.849	8846995.313	4.085	0.654	3.432	300	3.540	3.414	RCP CLASS 4		TMR SINGLE FIELD INLET TYPE 2 (SAG); REFER TMR STD DRG 1310	LOCALLY STEEPEN FIELD INLET APRON TO INTERFACE WITH DRAIN
EXT 001-1	Existing STRUCTURE	573460.7	8847058	5.330	1.998	3.332	300	13.78192	3.051	RCP		EXISTING STRUCTURE	EXISTING PIT DETAILS TO BE CONFIRMED PRIOR TO CONSTRUCTION TO VERIFY DESIGN WILL FUNCTION AS INTENDED
EXT 002-1	Existing STRUCTURE	573505.3	8847081	5.148	1.126	4.022	(2x)300	28.99274	3.585289	RCP		EXISTING STRUCTURE	EXISTING PIT DETAILS TO BE CONFIRMED PRIOR TO CONSTRUCTION TO VERIFY DESIGN WILL FUNCTION AS INTENDED
EXT 003-1	PIPE TO PIPE CONNECTION	573410.1	8846998	3.388	0.3	3.388	300	11.58456	3.330355	RCP		CONNECTION TO EXISTING PIPE	EXISTING PIPE DETAILS TO BE CONFIRMED PRIOR TO CONSTRUCTION

Scales: NOT TO SCALE

Issue	Date	By	Chkd	Appd

A	27/07/22	KC	JG	
ISSUED FOR TENDER				
Issue	Date	By	Chkd	Appd



Client: AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

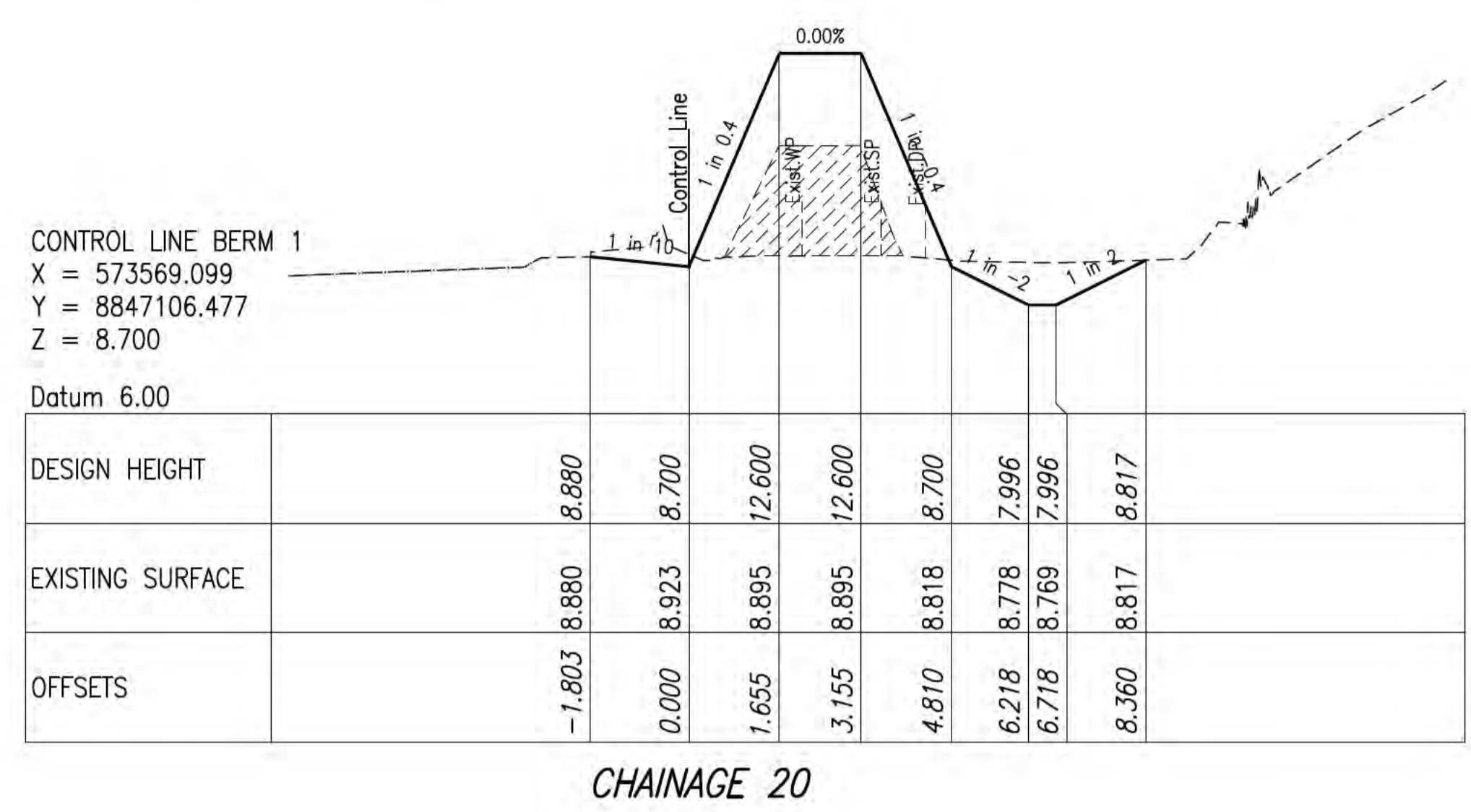
Job Title: FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1
Discipline: Drainage



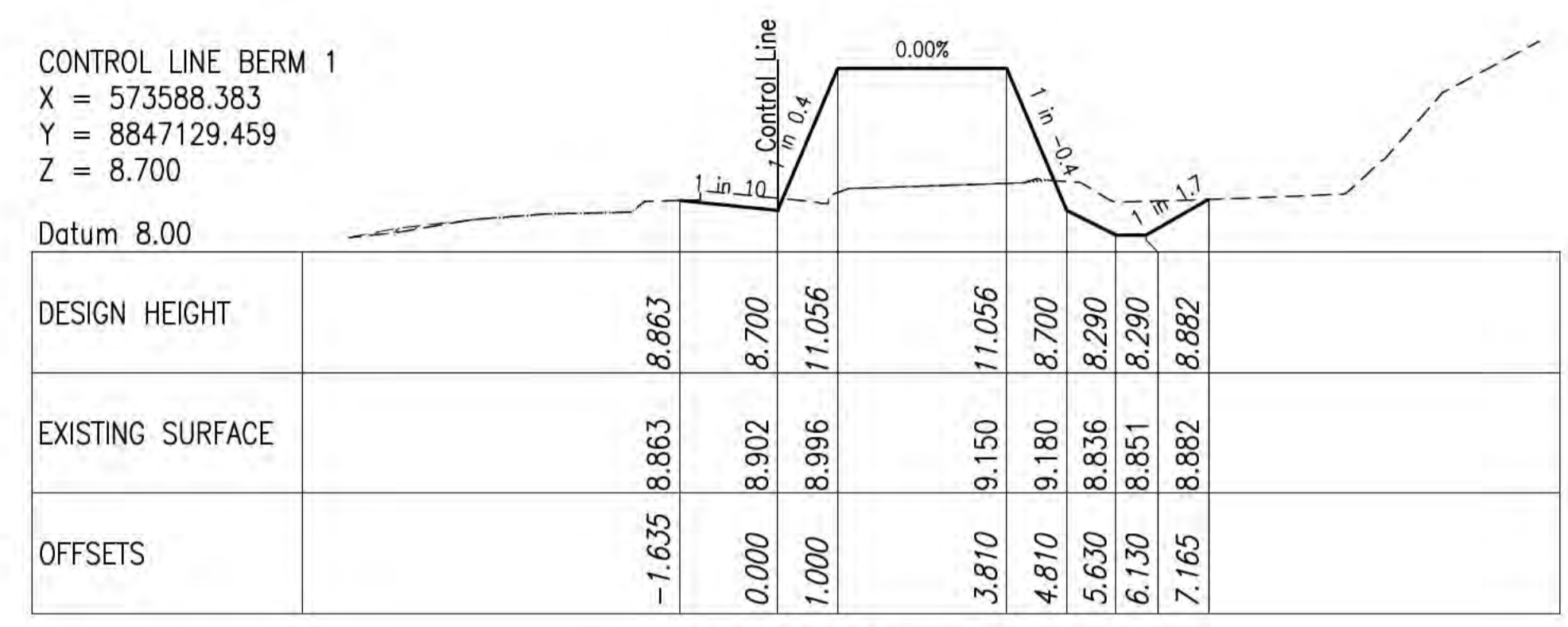
Drawing Title: LANDSLIDE MITIGATION DRAINAGE PIT SCHEDULE
Drawing Status: Issued for Tender
Job No: 280579-00
Drawing No: DR-SC-01
Issue: A

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

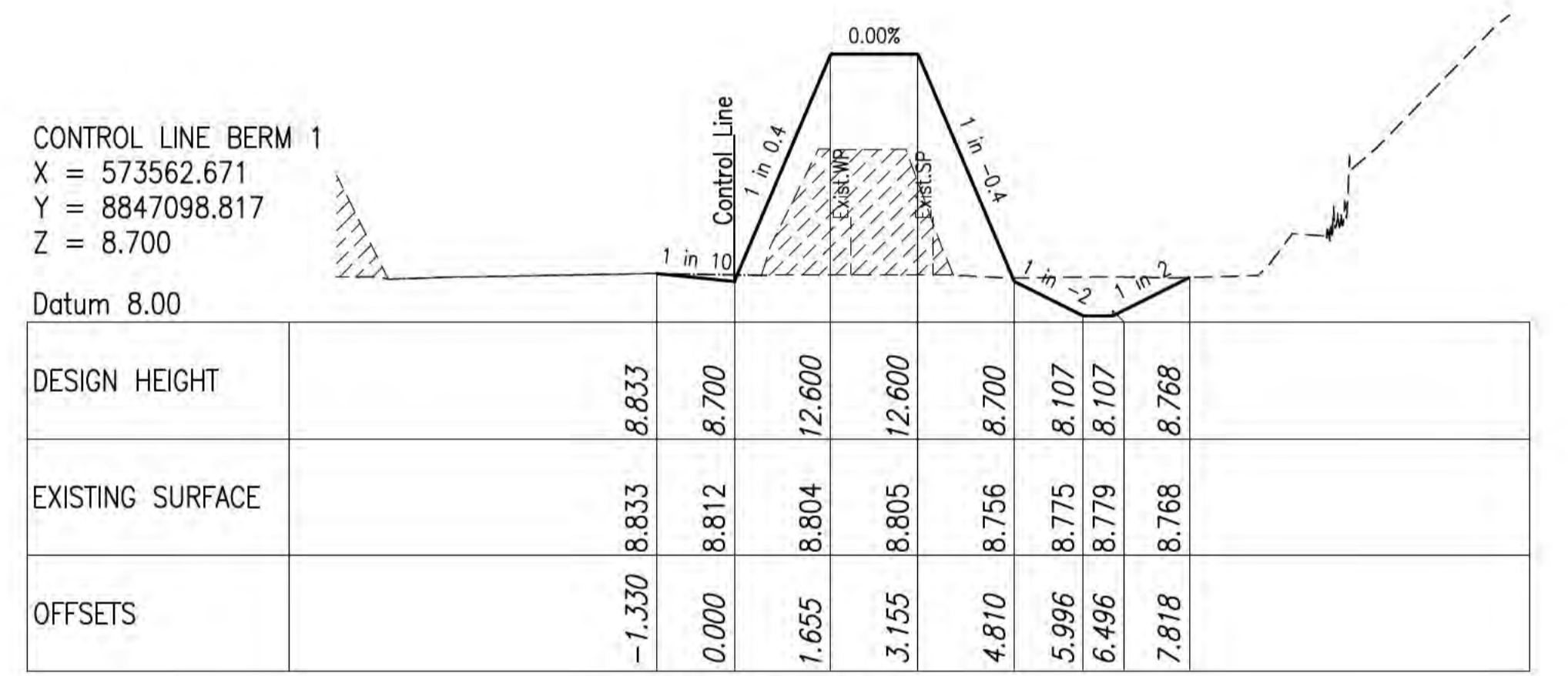
NOT FOR CONSTRUCTION
27 July 2022



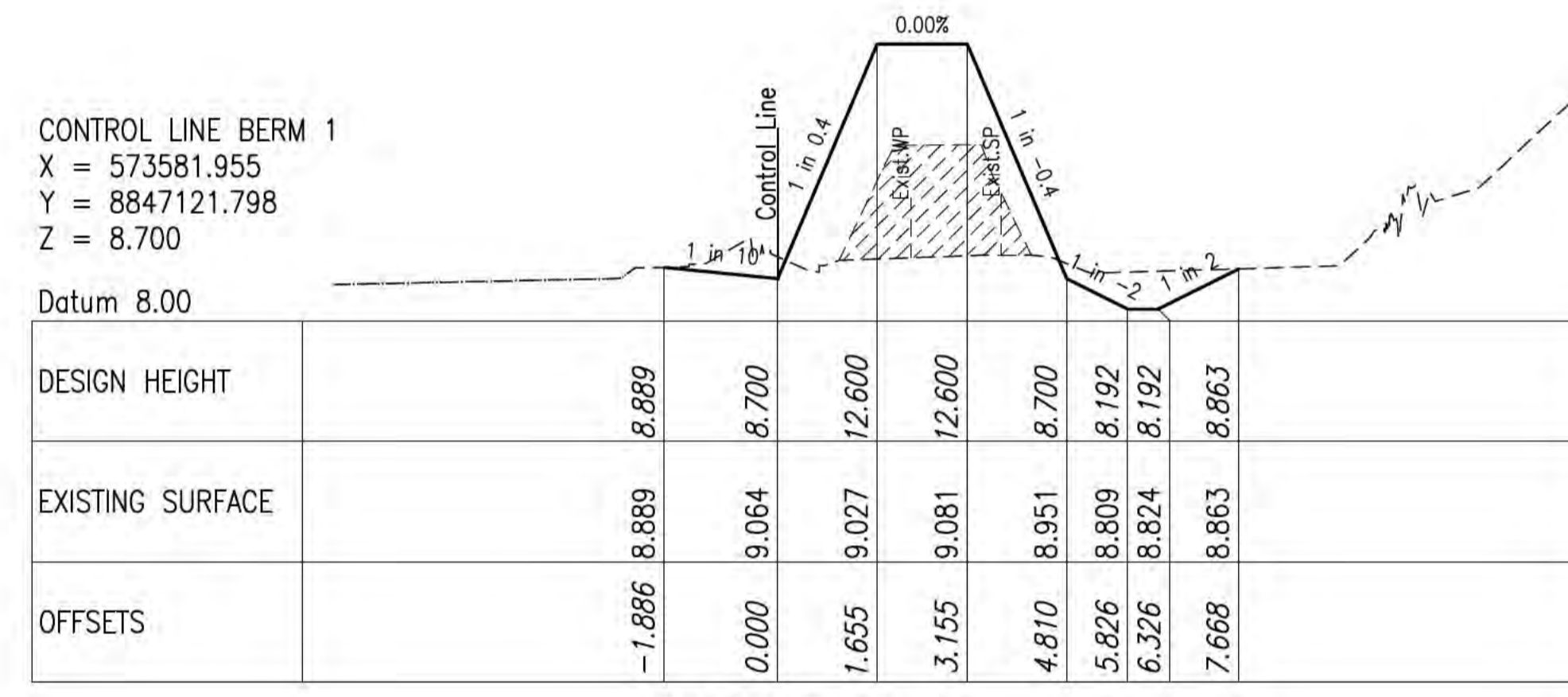
CHAINAGE 20



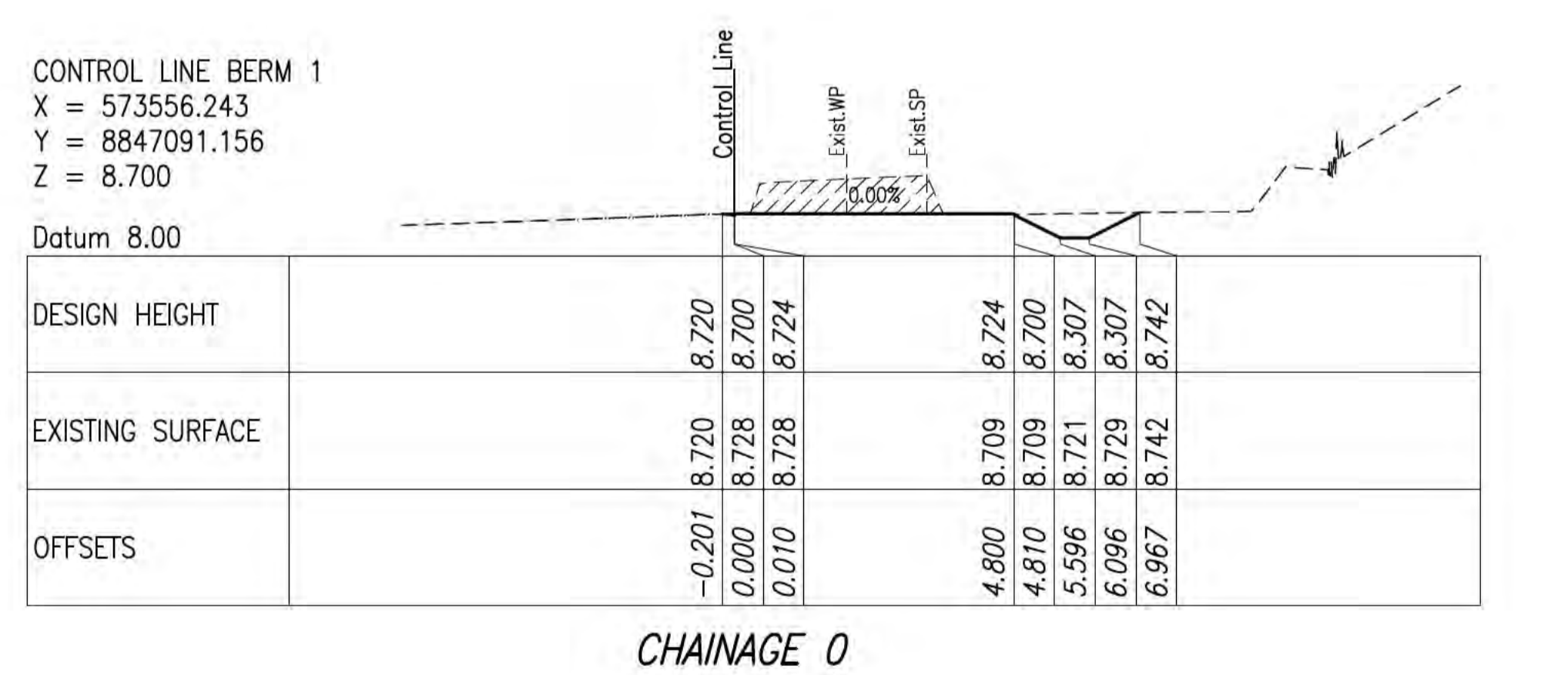
CHAINAGE 50



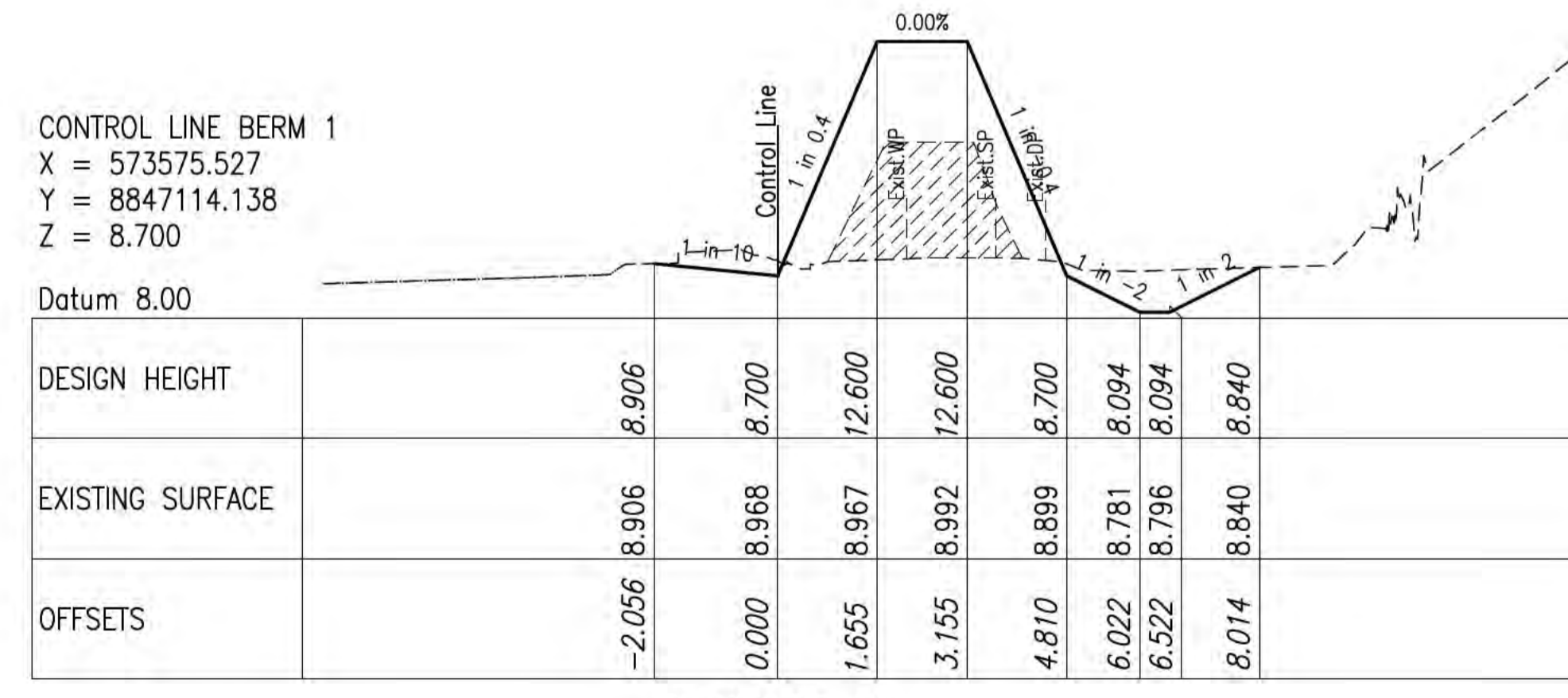
CHAINAGE 10



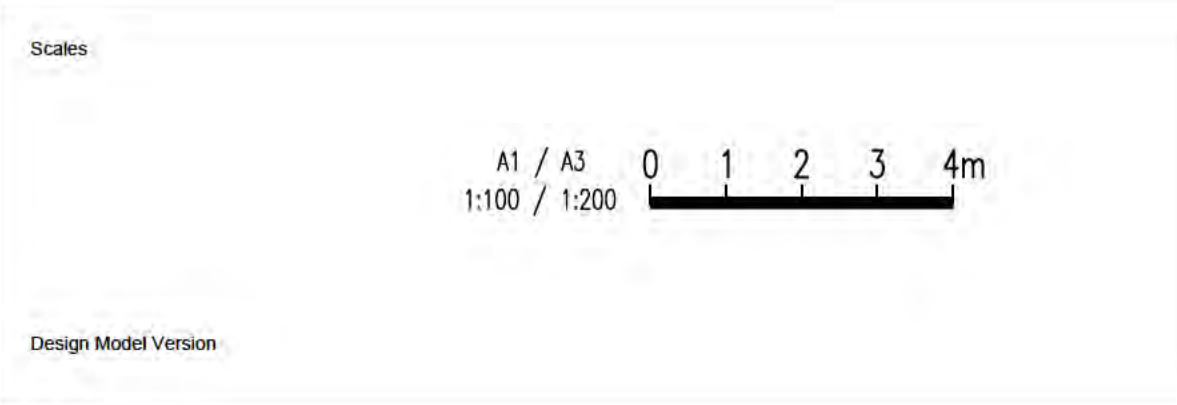
CHAINAGE 40



CHAINAGE 0



CHAINAGE 30



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	27/07/22	KC		JG
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				

Australian Government
Department of Infrastructure, Transport,
Regional Development and Communications

Client
AUSTRALIAN GOVERNMENT DPT
OF INFRASTRUCTURE, TRANSPORT,
REGIONAL DEVELOPMENT
AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE
CHRISTMAS ISLAND
STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline

Level 4 108 Wickham Street
Fortitude Valley QLD Australia 4006
Tel +61(0)7320 9320 Fax +61(0)7320 9321
www.arup.com

Member Firm
Anp Pty Ltd
ABN 18 000 966 165

Drawing Title
LANDSLIDE MITIGATION
ANNOTATED CROSS SECTIONS
BERM 1 - SHEET 1 OF 2

Drawing Status
Issued for Tender

Job No
280579-00

Drawing No
GE-XS-01

Issue
B

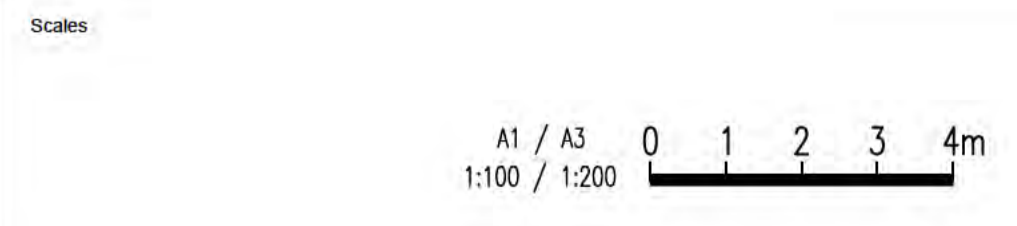
DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022

CONTROL LINE BERM 1
X = 573589.025
Y = 8847130.225
Z = 8.700

	Chainage 1	Chainage 2	Chainage 3	Chainage 4	Chainage 5	Chainage 6
DESIGN HEIGHT	8.661	8.700	8.700	8.700	8.300	9.670
EXISTING SURFACE	8.861	8.785	8.785	9.258	9.196	9.670
OFFSETS	-1.610	0.000	0.000	4.810	5.610	8.165

CHAINAGE 51



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	27/07/22	KC		JG
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



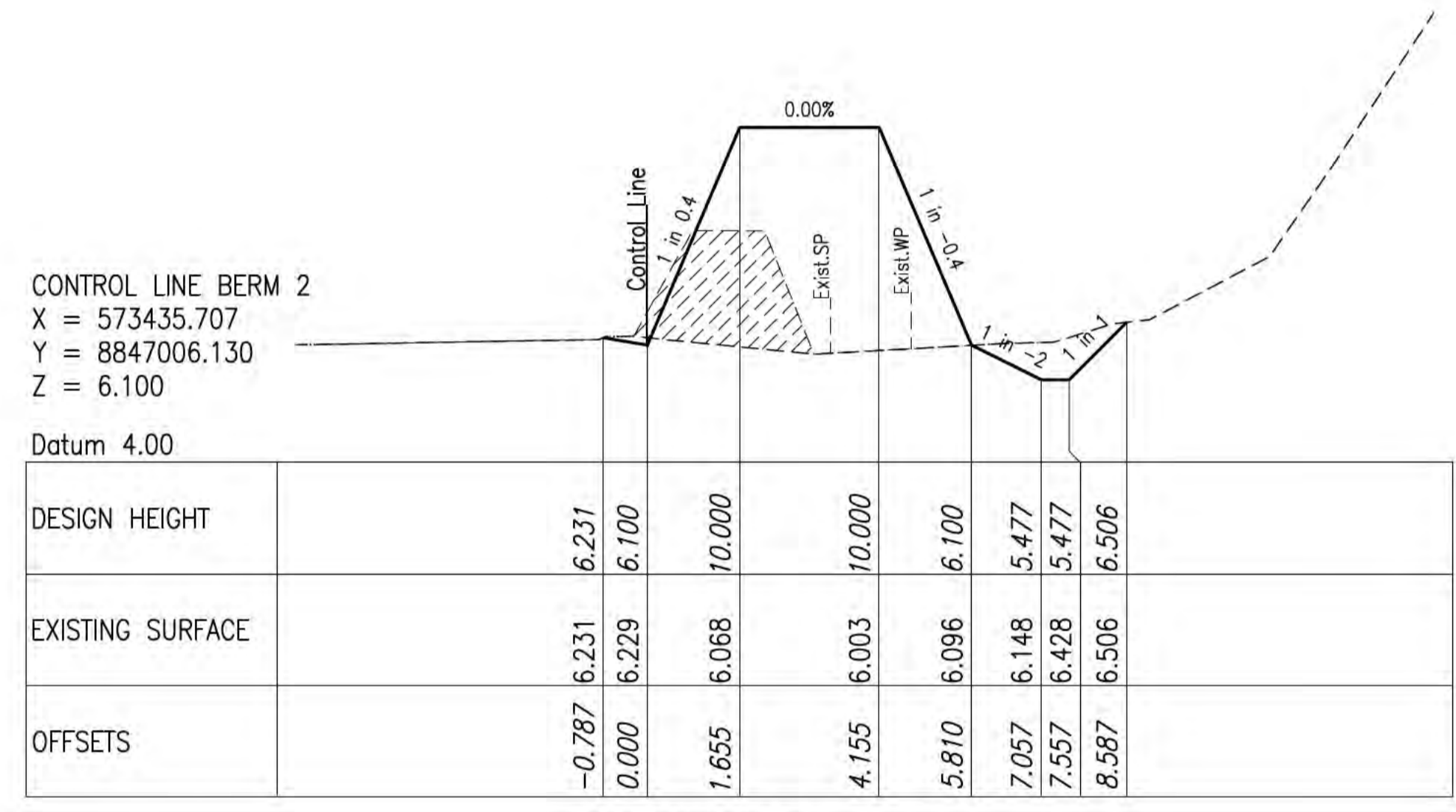
Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS BERM 1 - SHEET 2 OF 2

Drawing Status
Issued for Tender

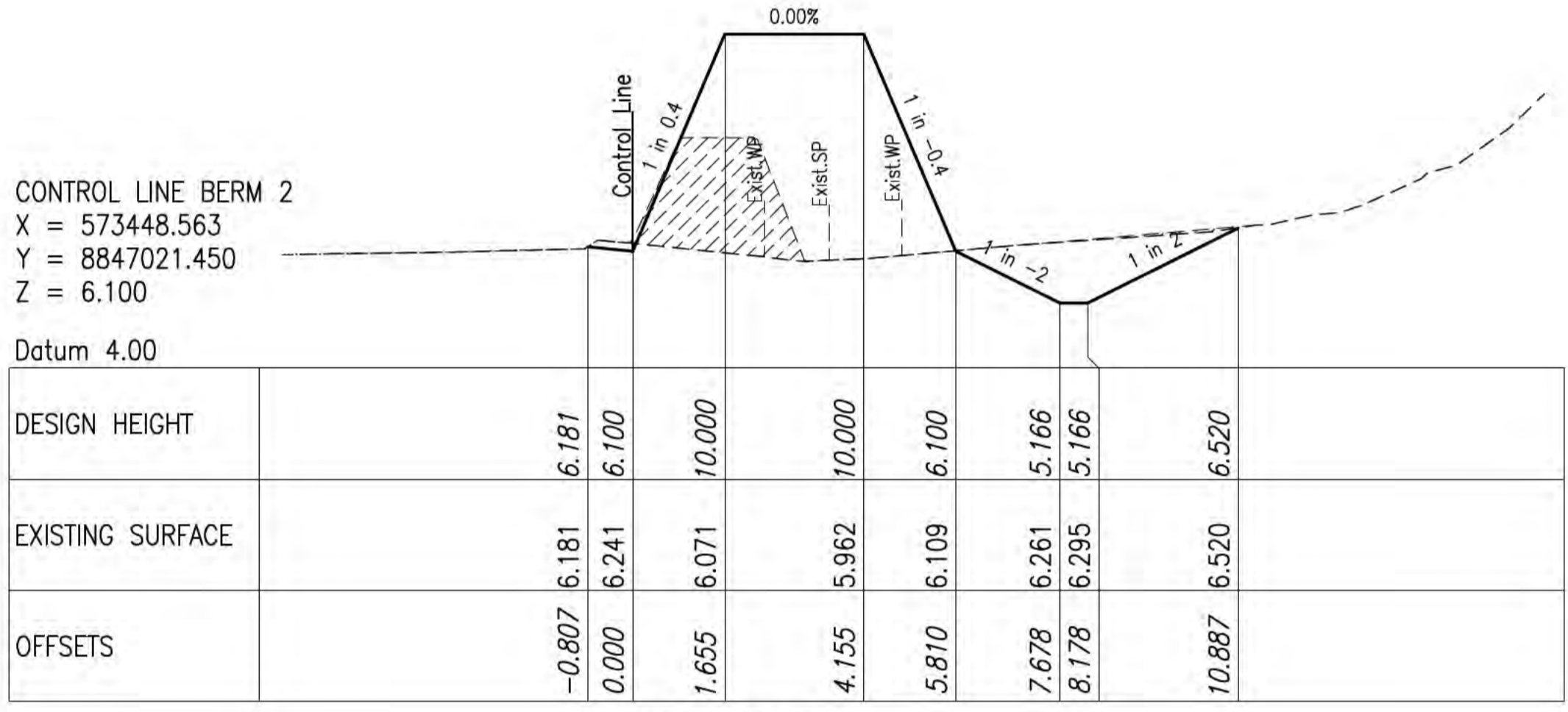
Job No: **280579-00**
Drawing No: **GE-XS-02**
Issue: **B**

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

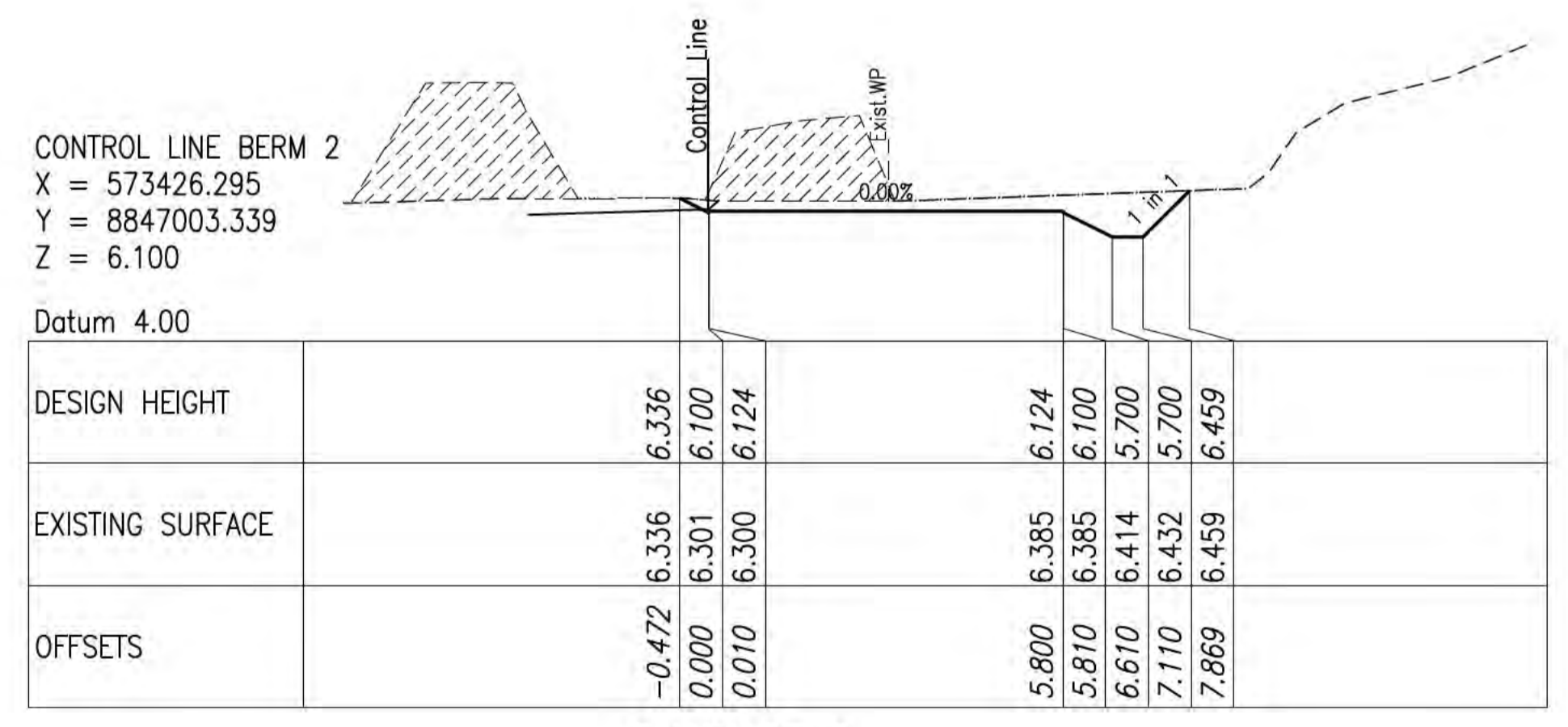
NOT FOR CONSTRUCTION
27 July 2022



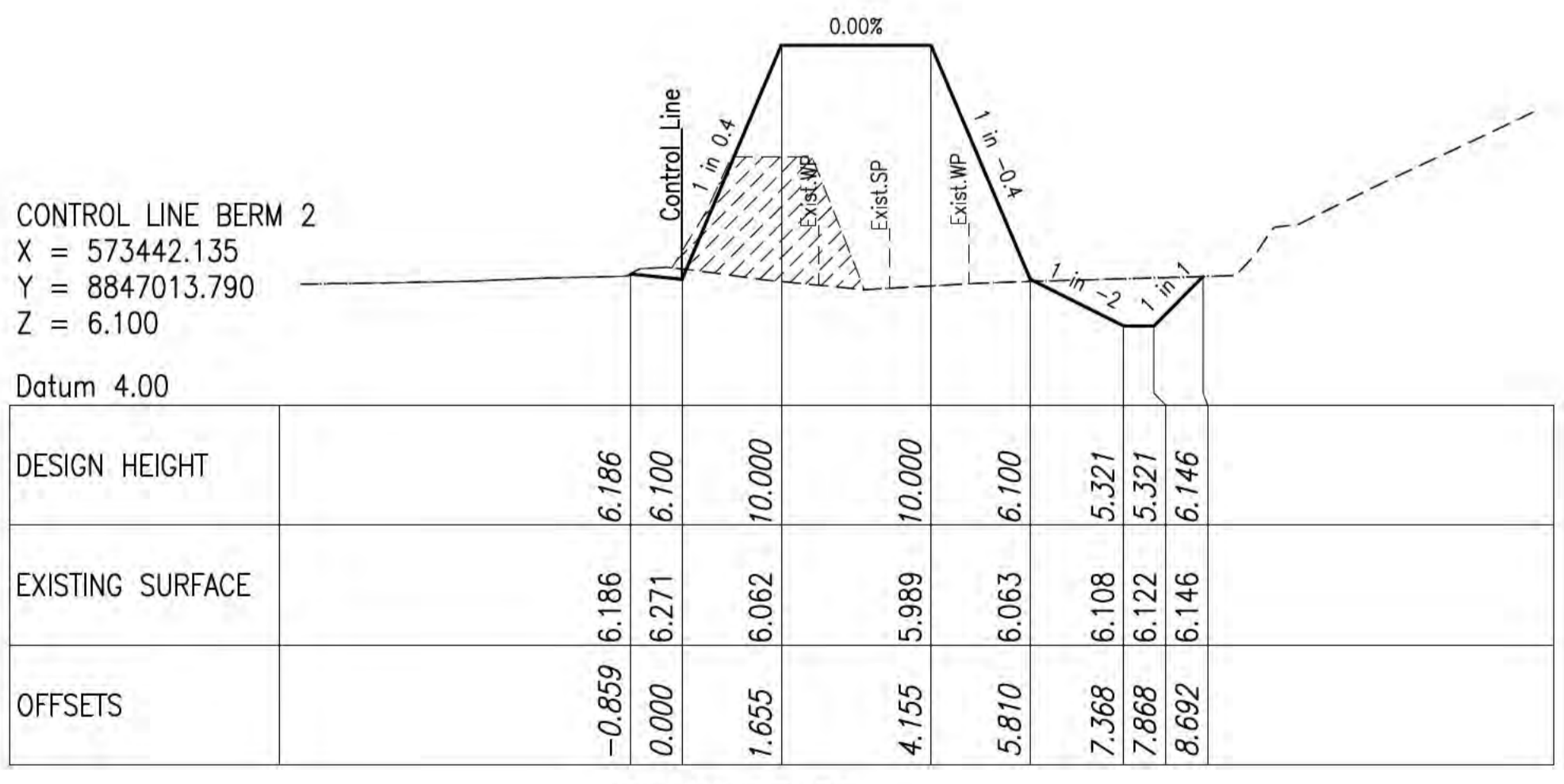
CHAINAGE 10



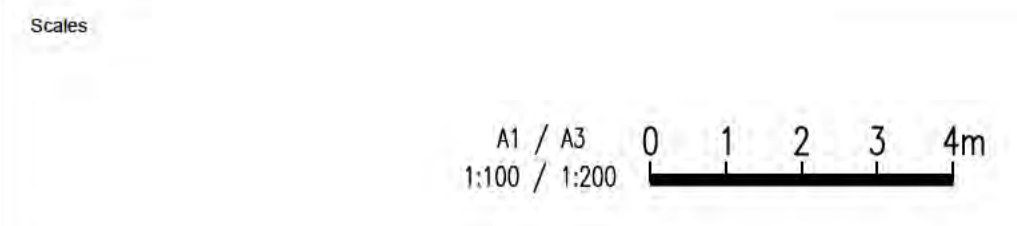
CHAINAGE 30



CHAINAGE 0



CHAINAGE 20



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	27/07/22	KC	JG	
A	18/03/22	JL		

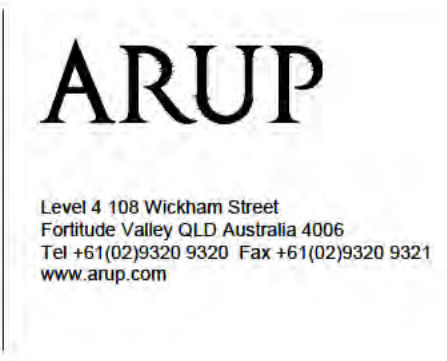


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS BERM 2 - SHEET 1 OF 5

Drawing Status
Issued for Tender

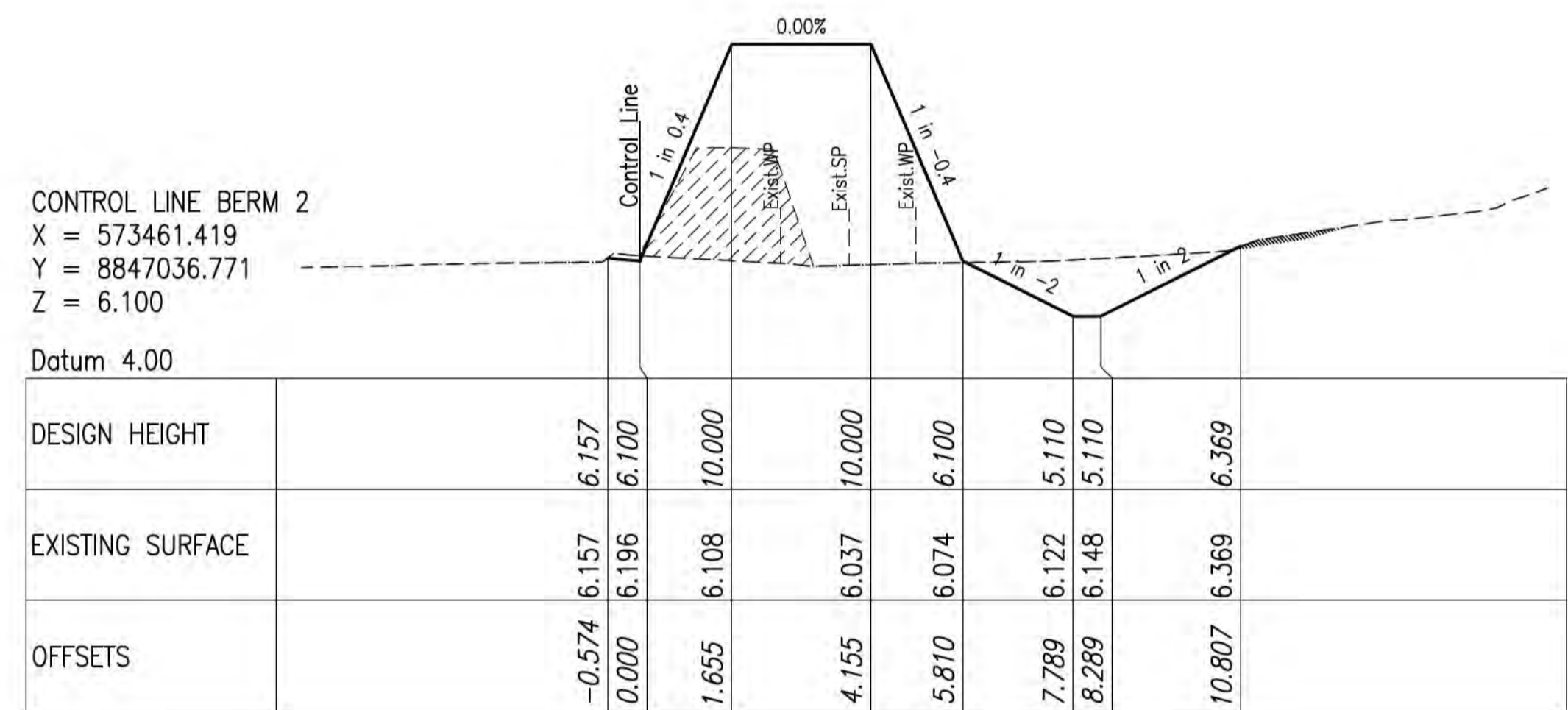
Job No
280579-00

Drawing No
GE-XS-03

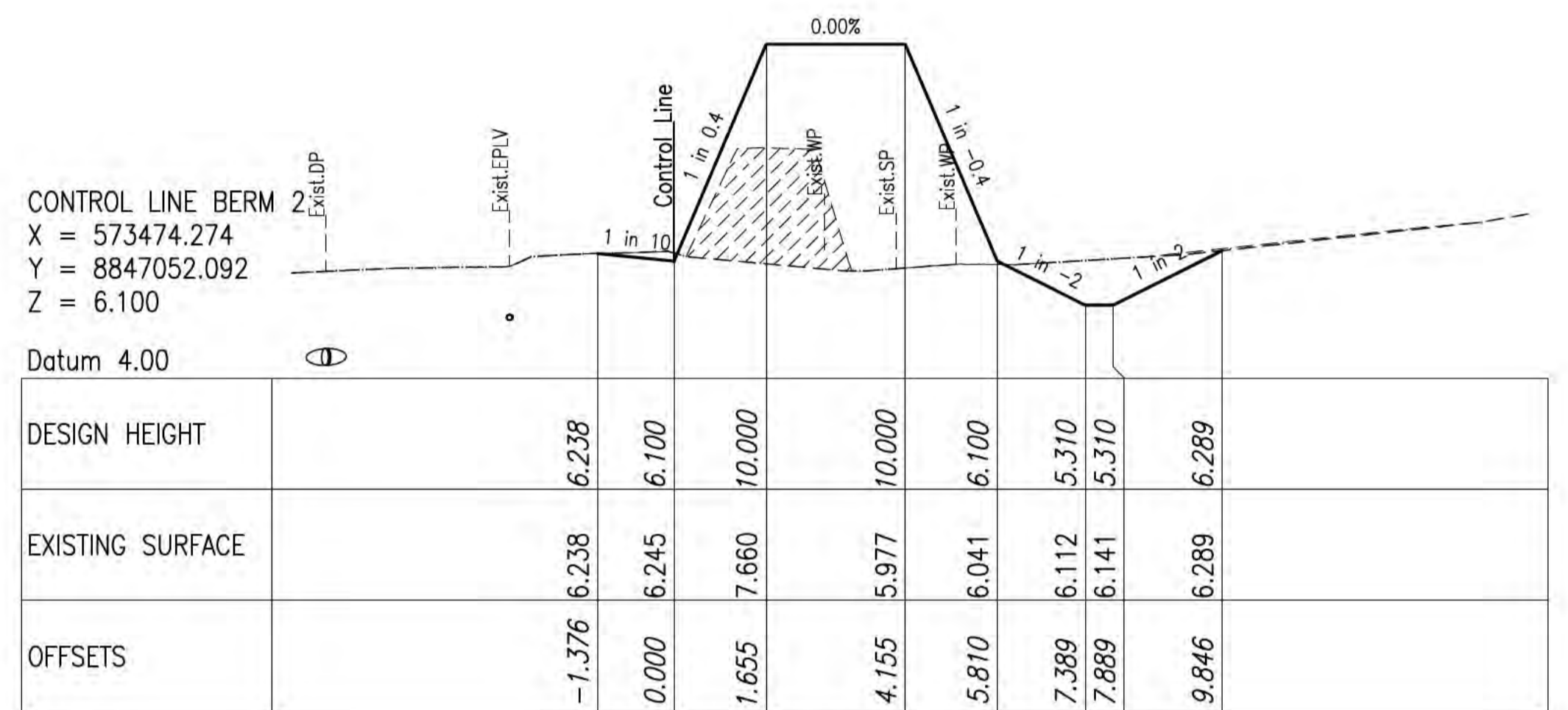
Issue
B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

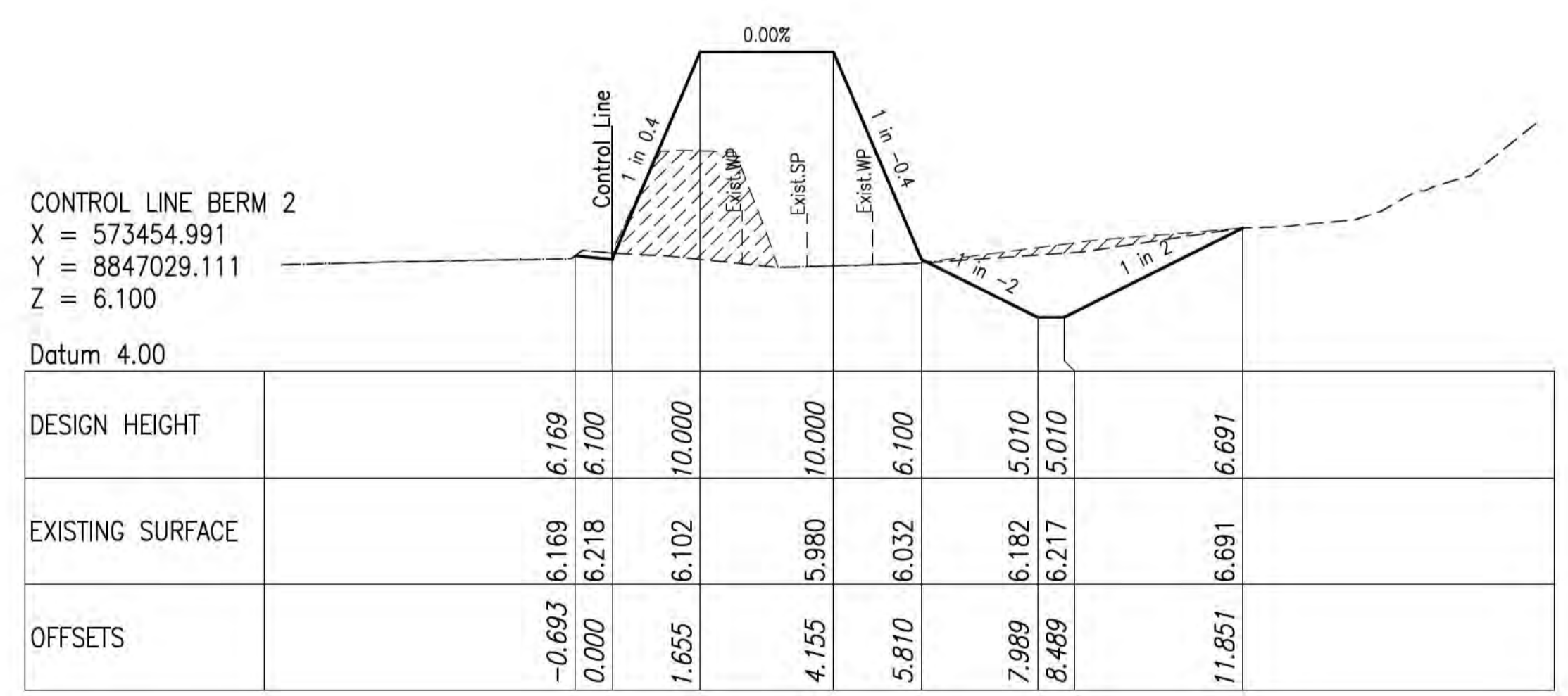
NOT FOR CONSTRUCTION
27 July 2022



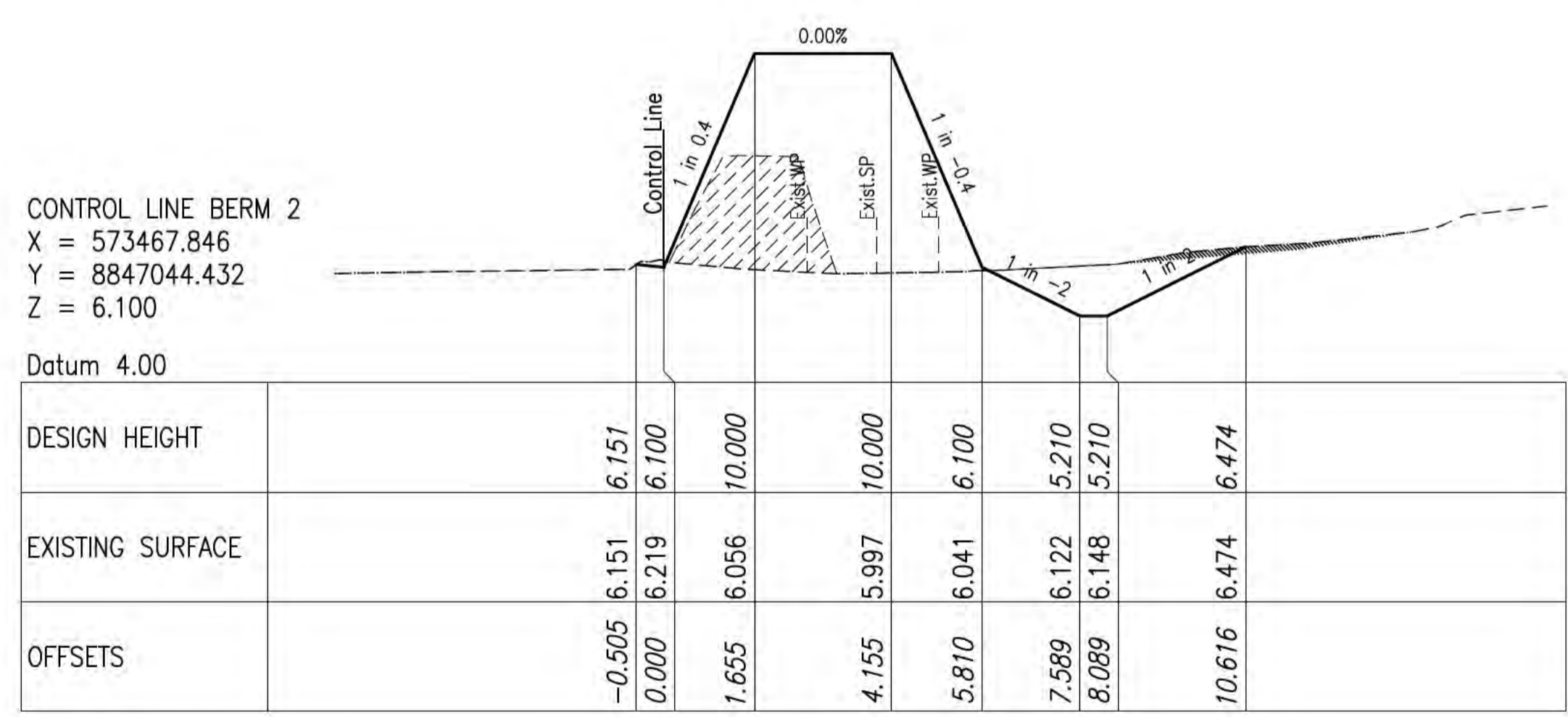
CHAINAGE 50



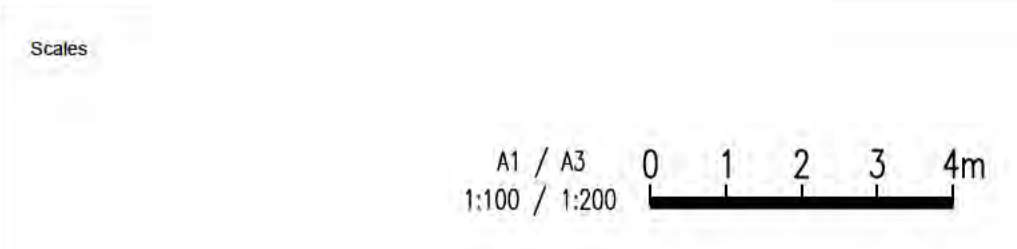
CHAINAGE 70



CHAINAGE 40



CHAINAGE 60



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	27/07/22	KC		JG
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

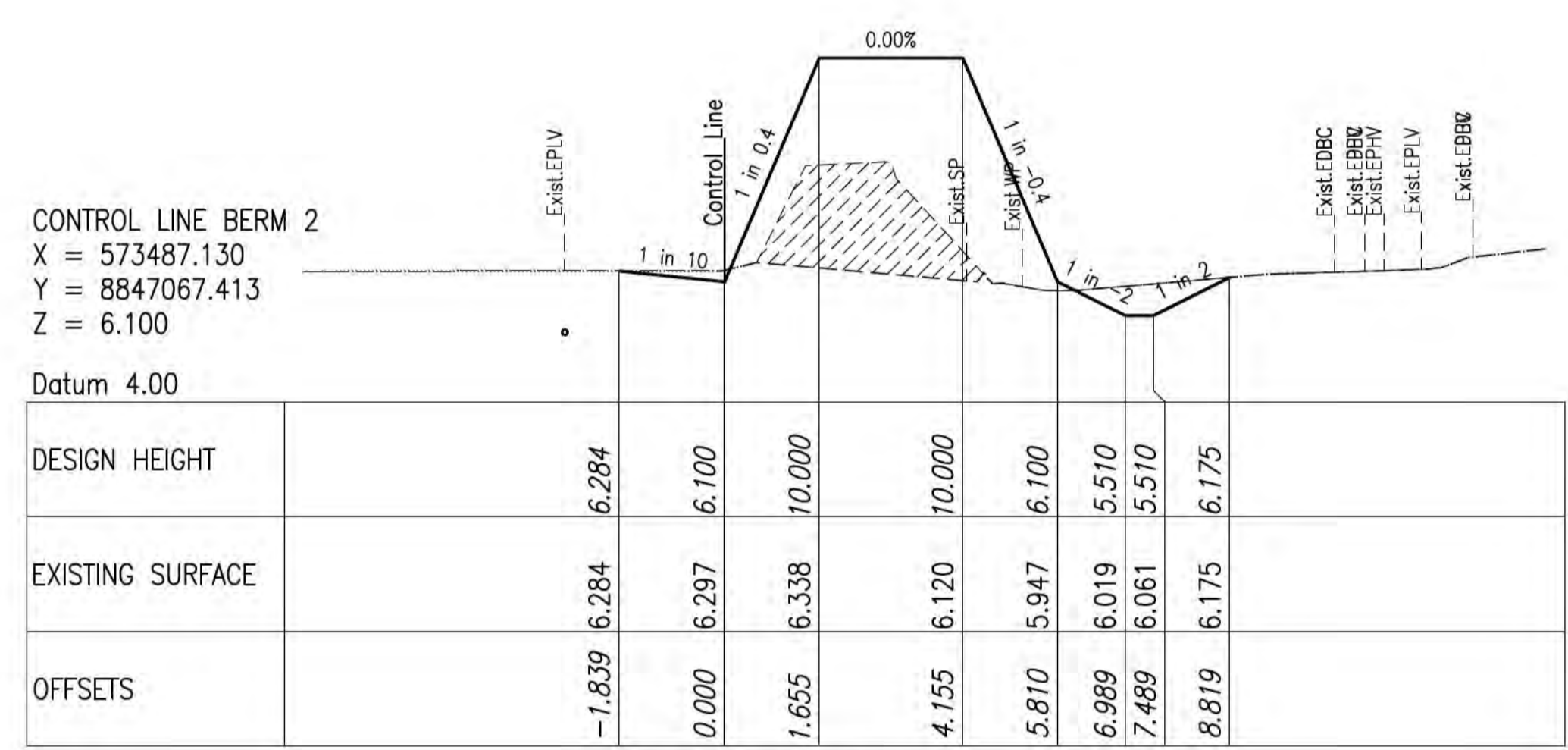
Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1
Discipline



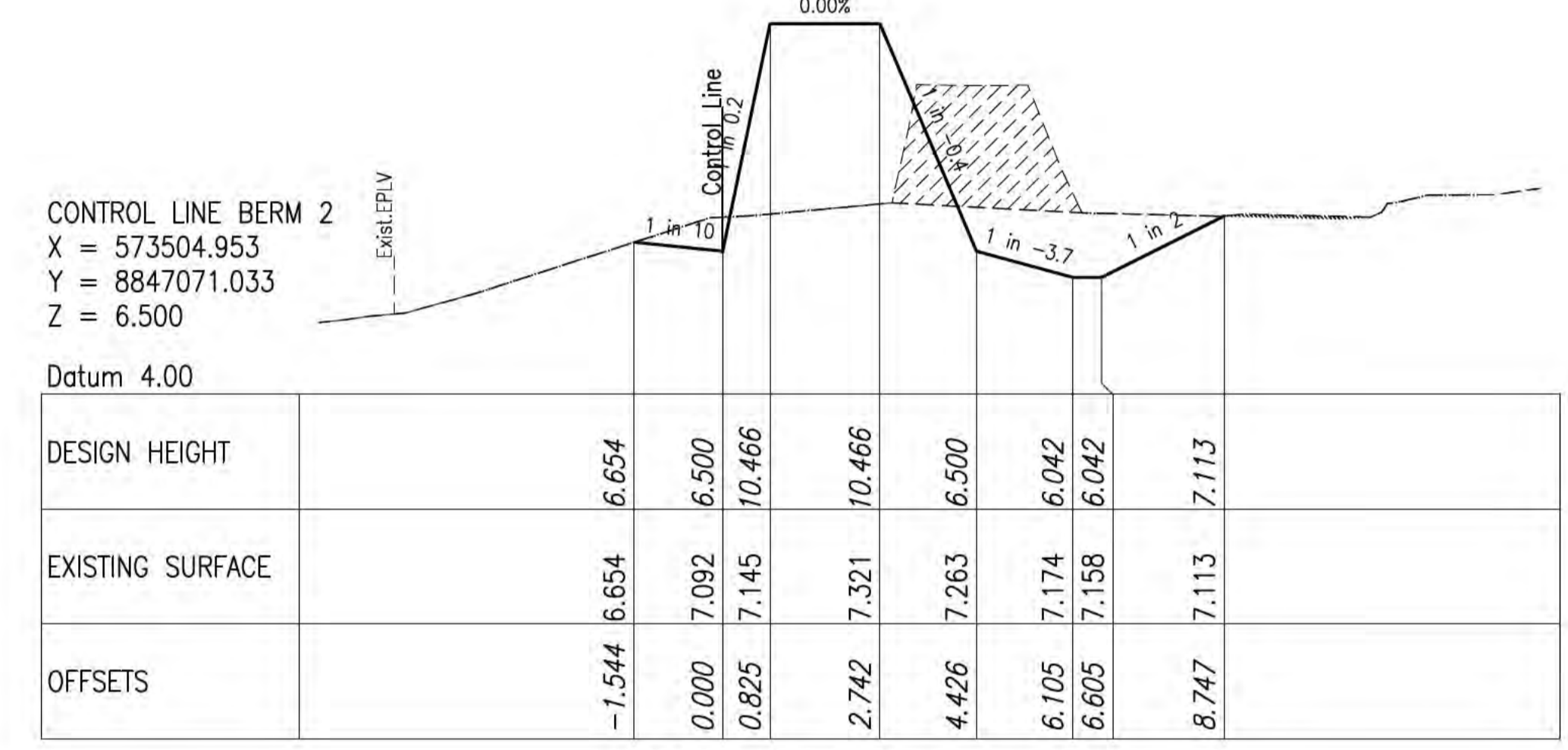
Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS BERM 2 - SHEET 2 OF 5
Drawing Status
Issued for Tender
Job No: 280579-00
Drawing No: GE-XS-04
Issue: B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

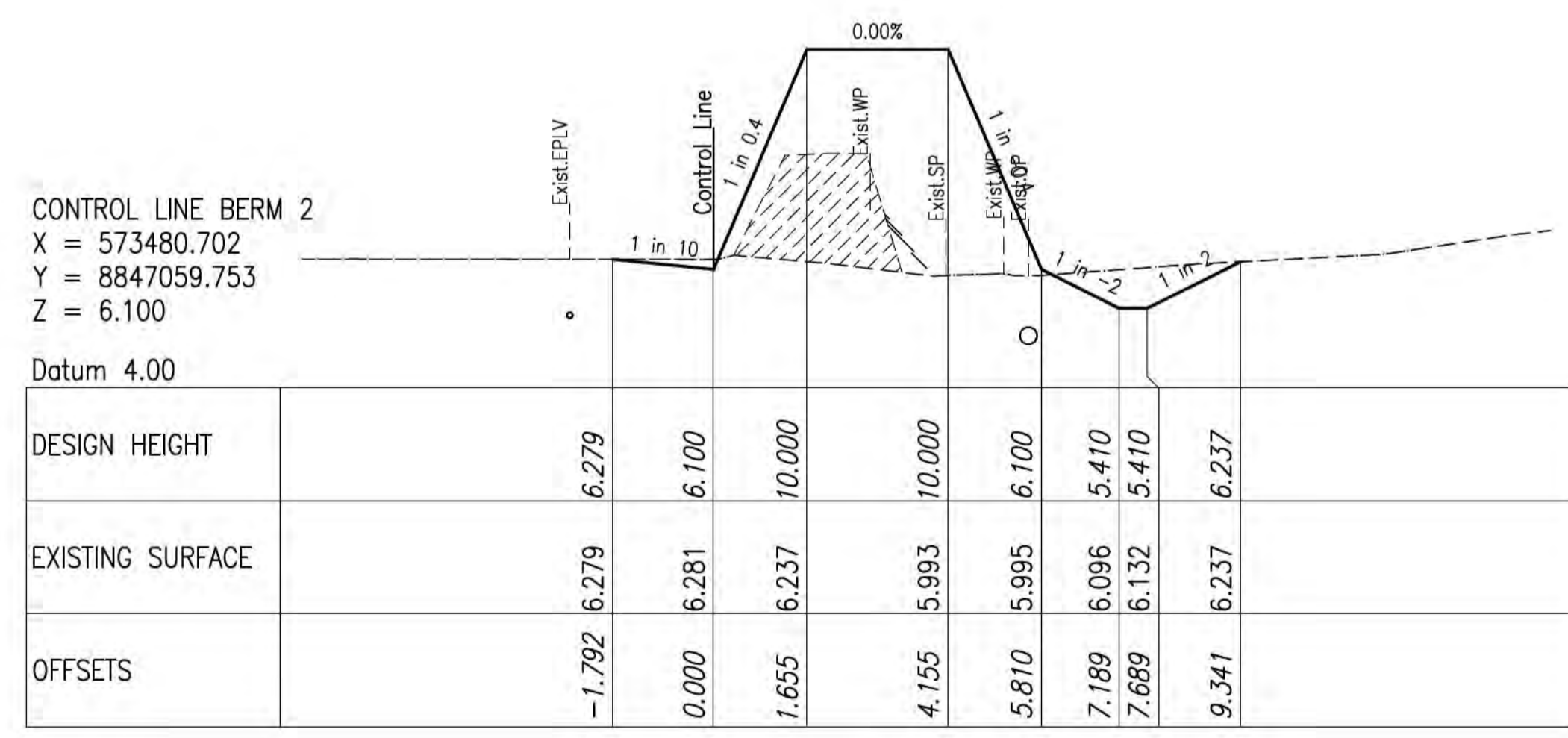
NOT FOR CONSTRUCTION
27 July 2022



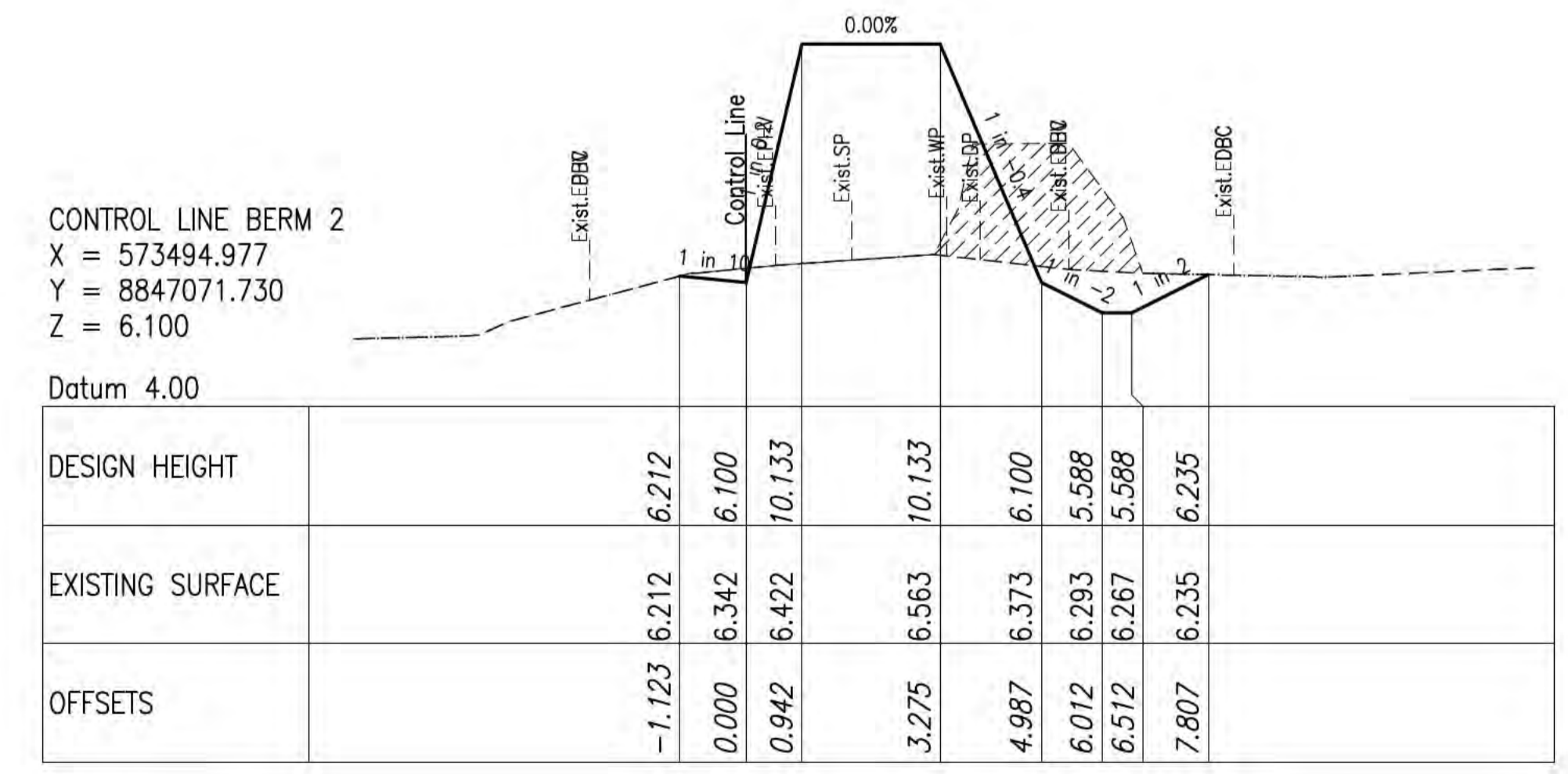
CHAINAGE 90



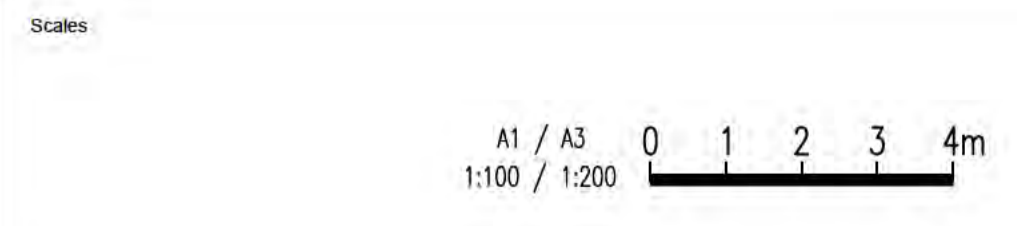
CHAINAGE 110



CHAINAGE 80



CHAINAGE 100



Design Model Version

Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG	
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				
Issue	Date	By	Chkd	Appd

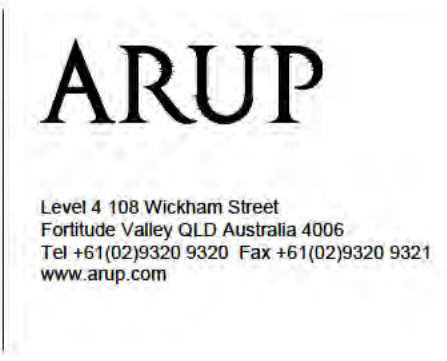


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS BERM 2 - SHEET 3 OF 5

Drawing Status
Issued for Tender

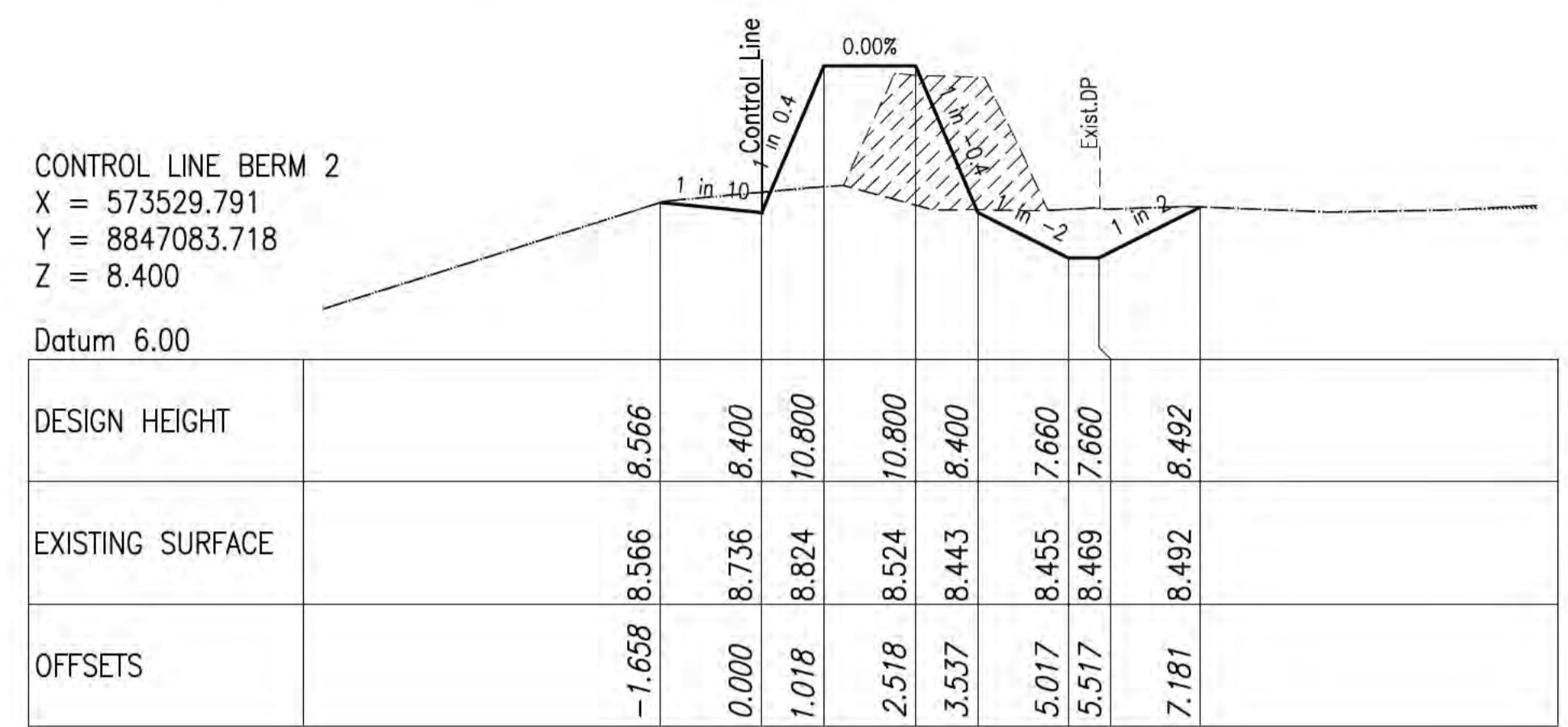
Job No
280579-00

Drawing No
GE-XS-05

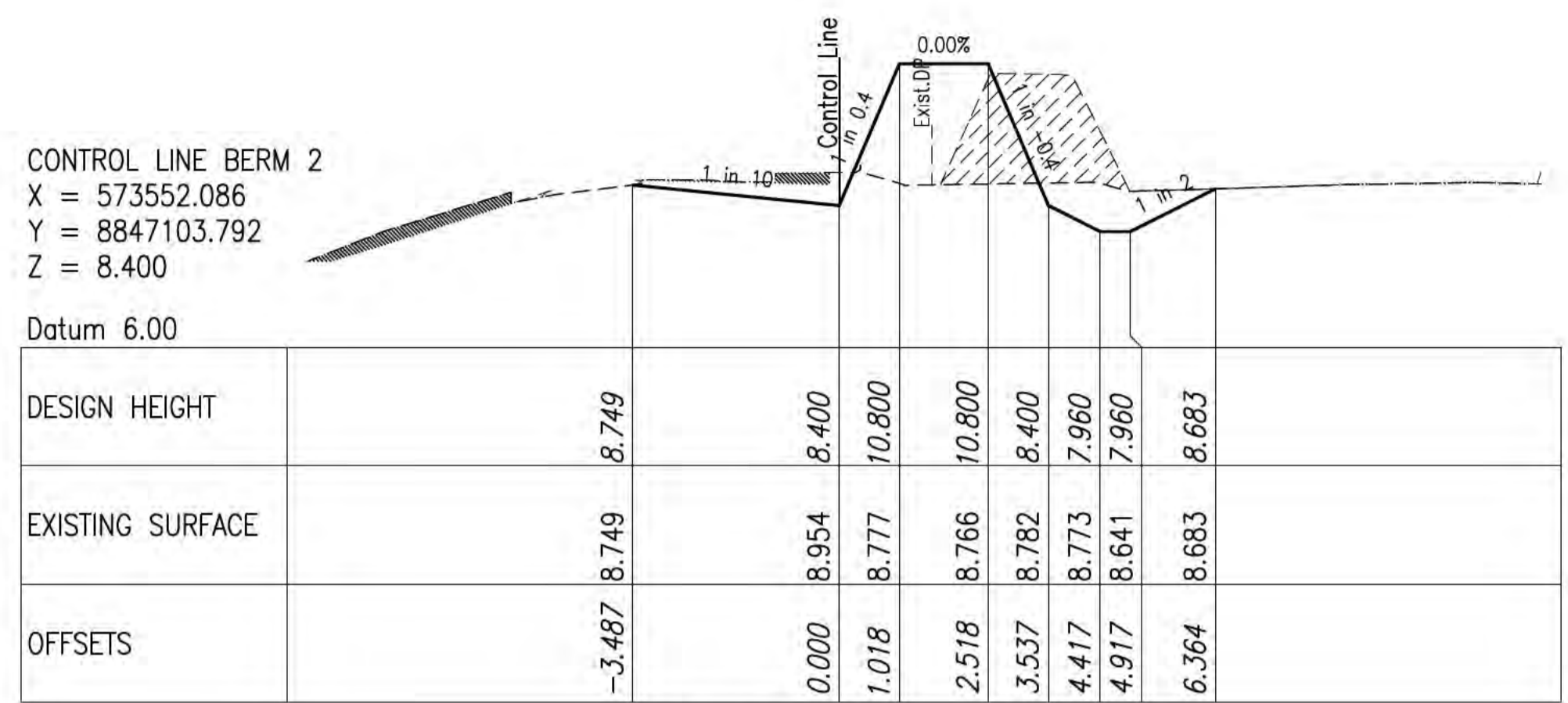
Issue
B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

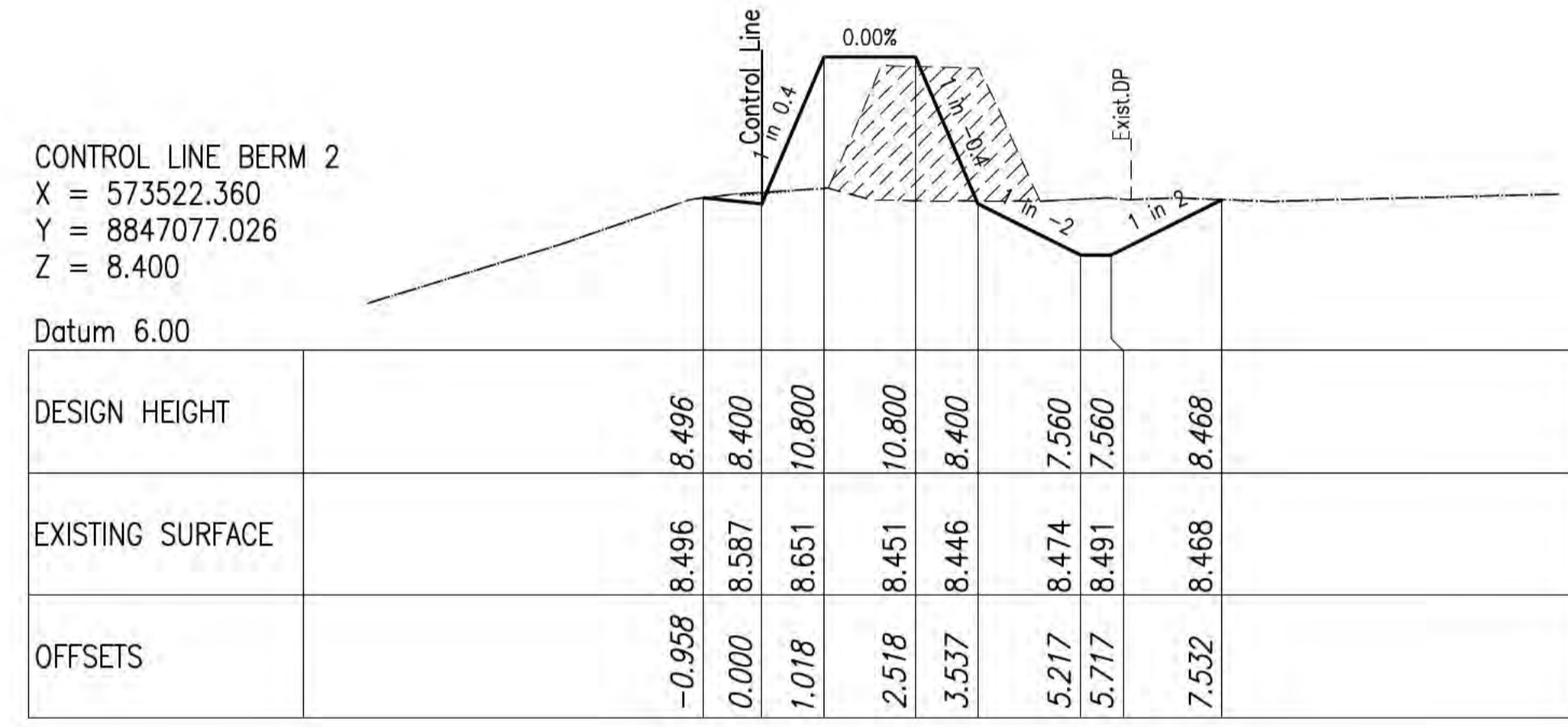
NOT FOR CONSTRUCTION
27 July 2022



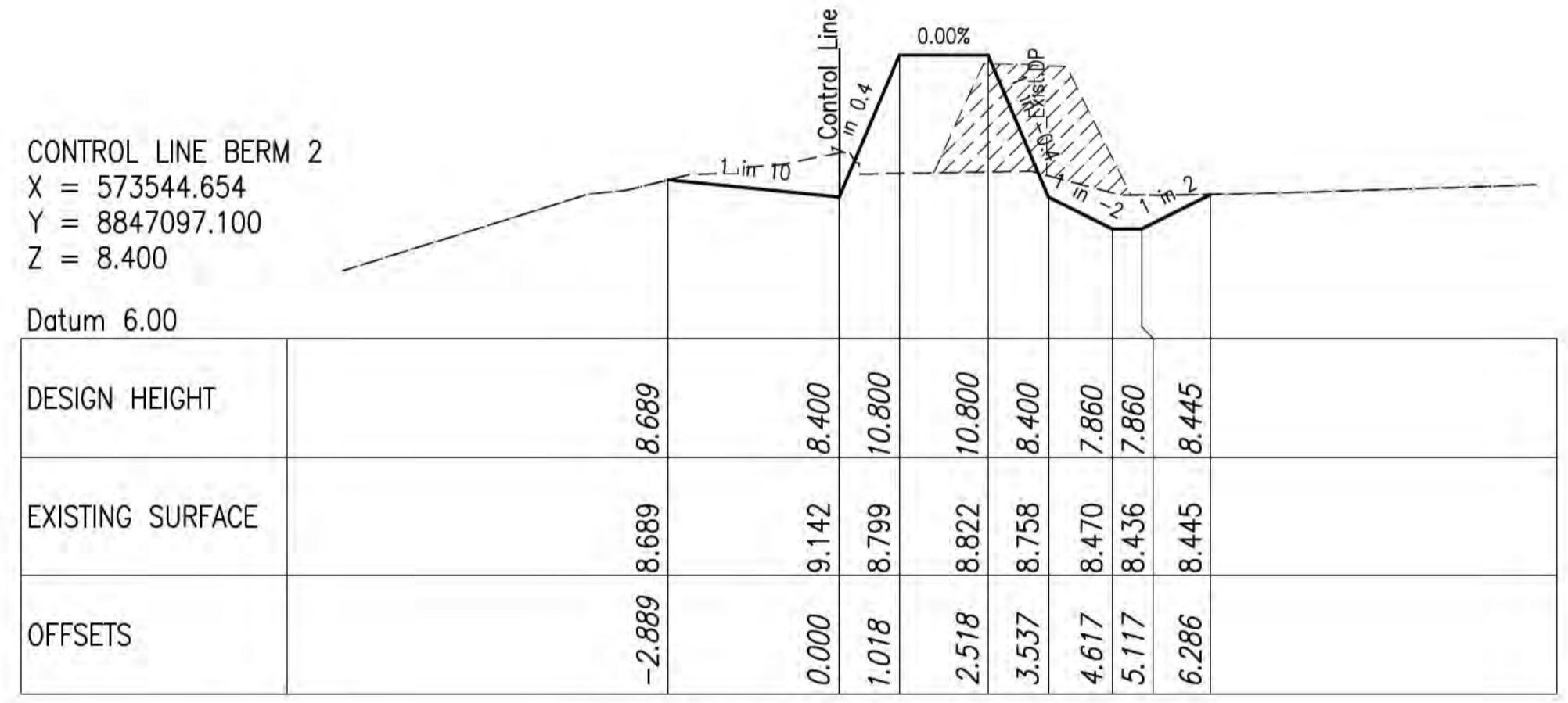
CHAINAGE 140



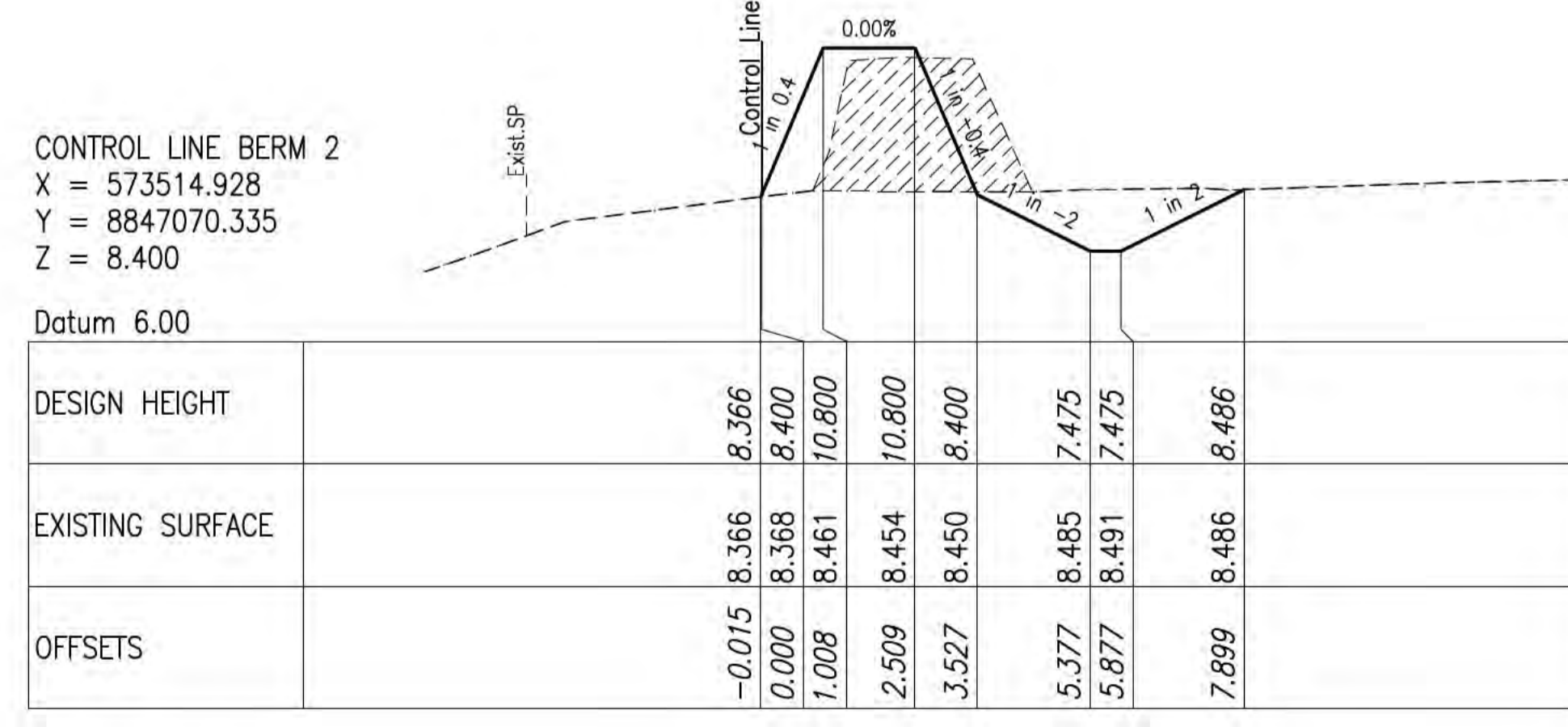
CHAINAGE 170



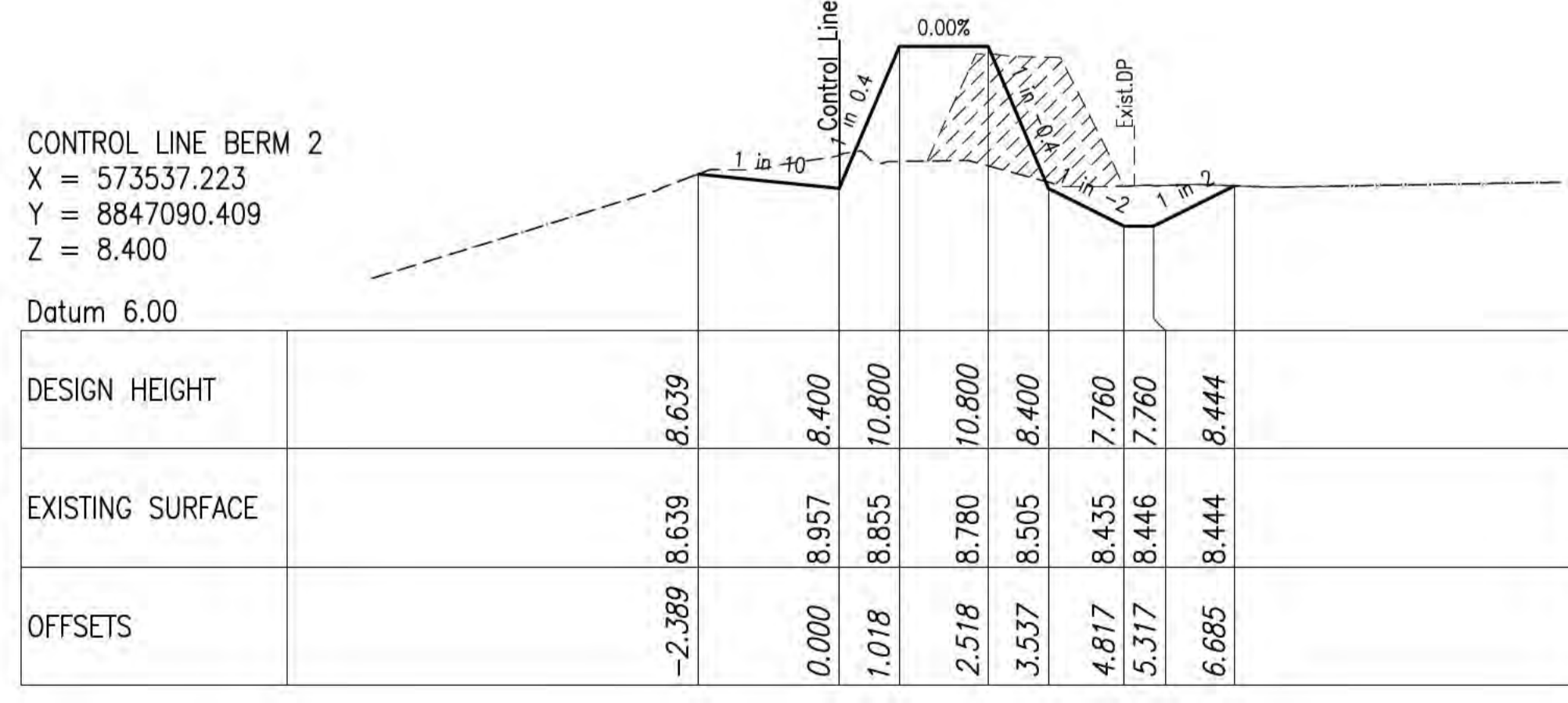
CHAINAGE 130



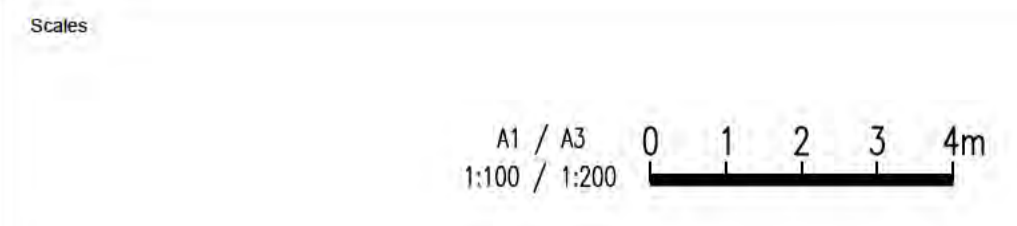
CHAINAGE 160



CHAINAGE 120



CHAINAGE 150



Design Model Version

Issue	Date	By	Chkd	Appd

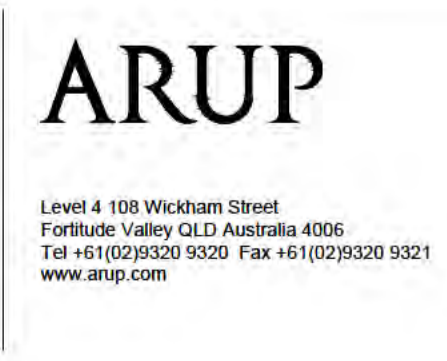
Issue	Date	By	Chkd	Appd
B	27/07/22	KC	JG	
A	18/03/22	JL		

85% DETAILED DESIGN ISSUE



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

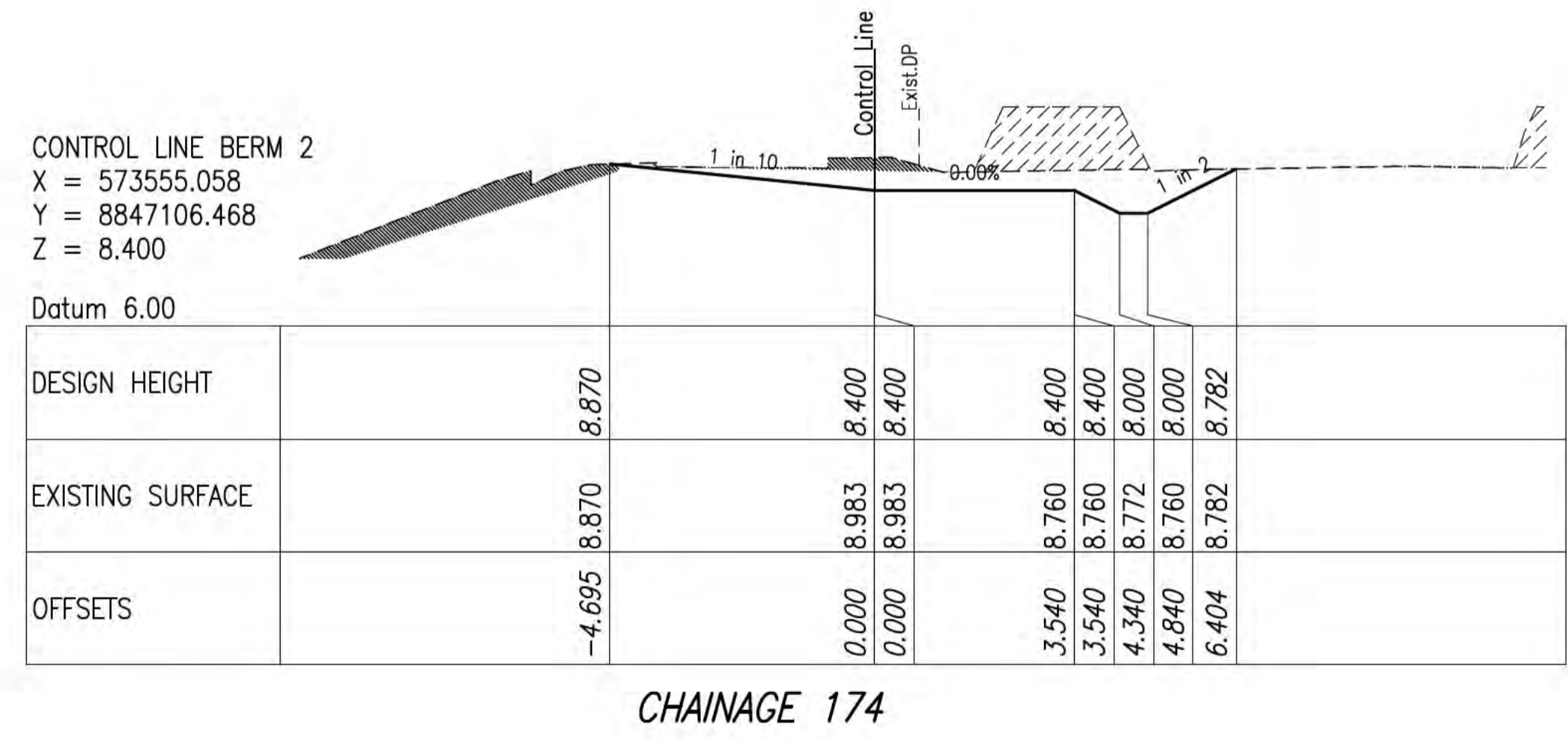
Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS BERM 2 - SHEET 4 OF 5
Drawing Status
Issued for Tender
Job No
280579-00
Drawing No
GE-XS-06
Issue
B

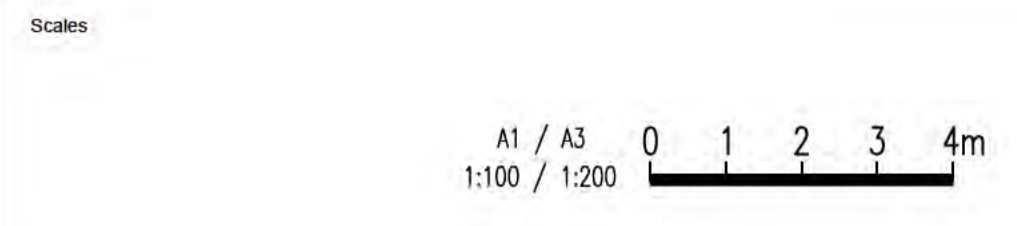
DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



DESIGN HEIGHT		8.870	8.400	8.400	8.400	8.400	8.400	8.400	8.782
EXISTING SURFACE		8.870	8.983	8.983	8.760	8.760	8.772	8.760	8.782
OFFSETS		-4.695	0.000	0.000	3.540	3.540	4.340	4.840	6.404

CHAINAGE 174



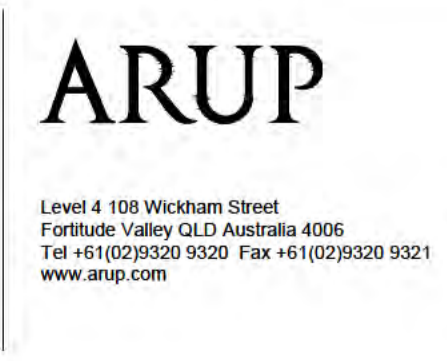
Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	27/07/22	KC		JG
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

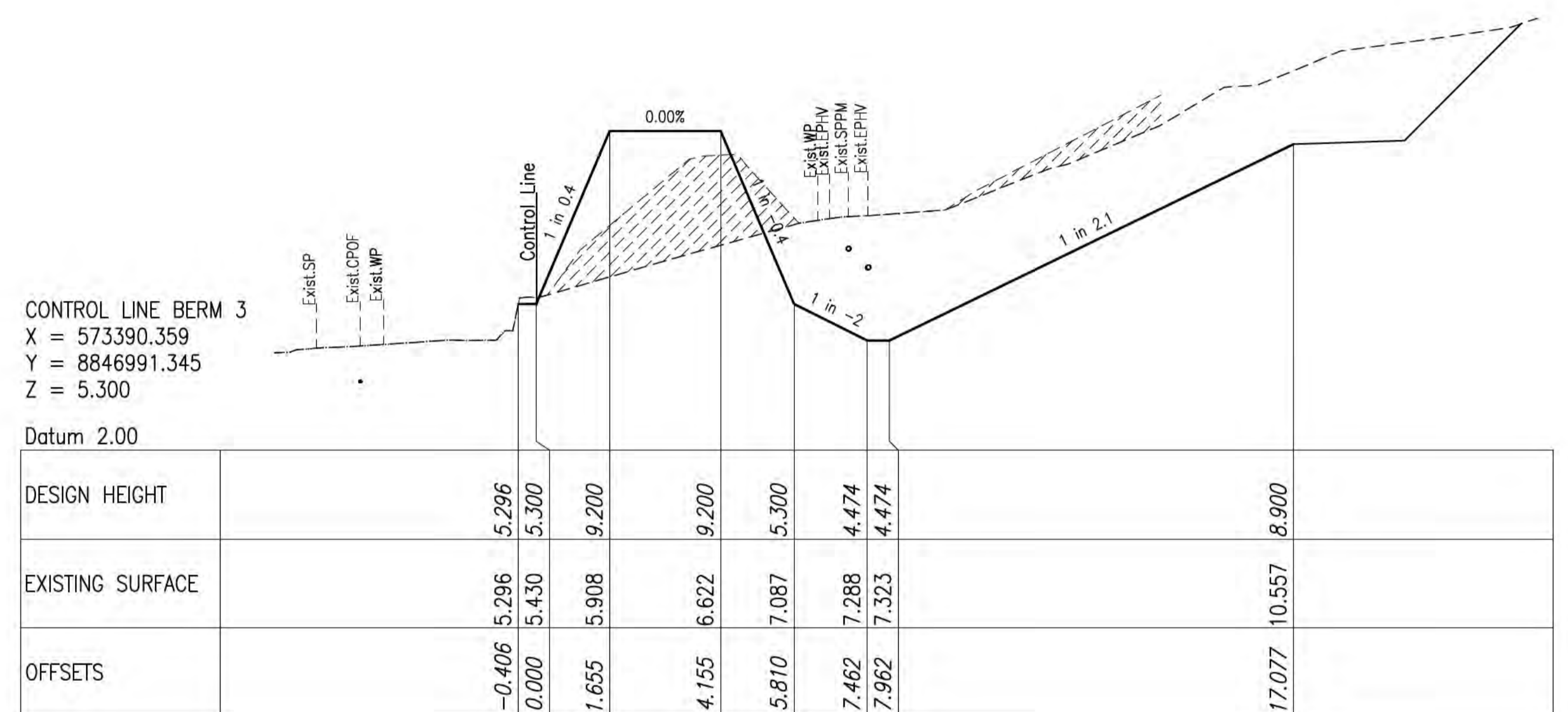
Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1
Discipline



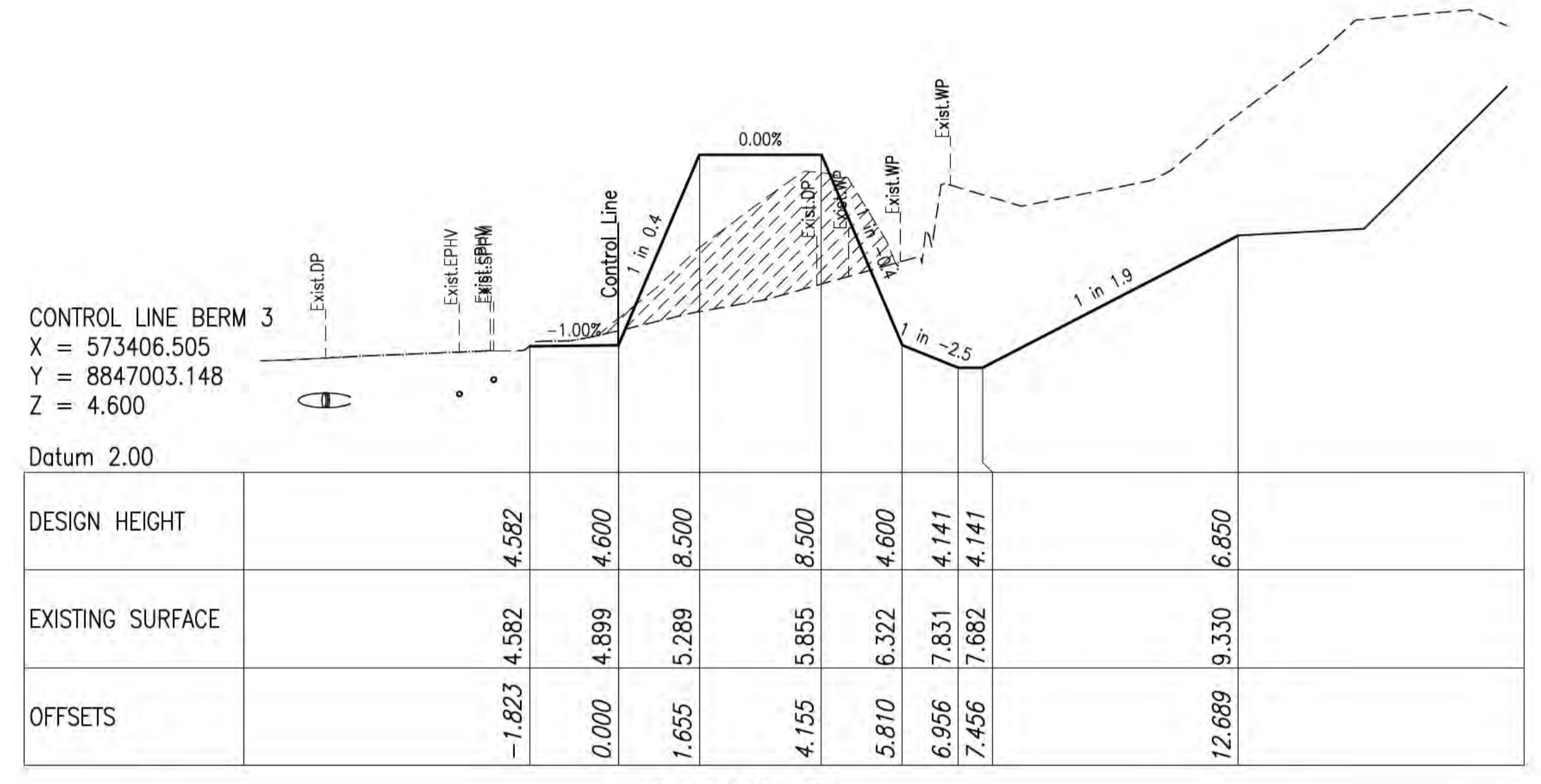
Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS BERM 2 - SHEET 5 OF 5
Drawing Status
Issued for Tender
Job No: **280579-00** Drawing No: **GE-XS-07** Issue: **B**

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

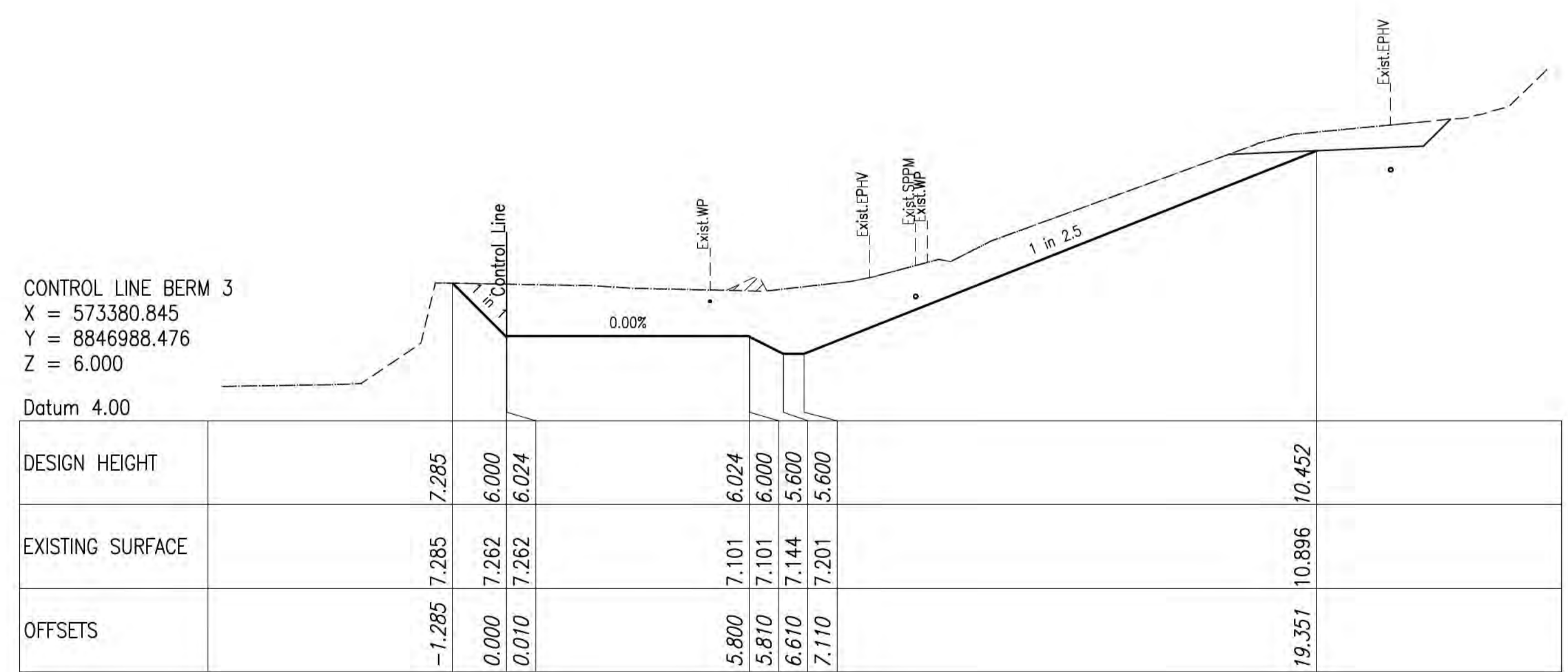
NOT FOR CONSTRUCTION
27 July 2022



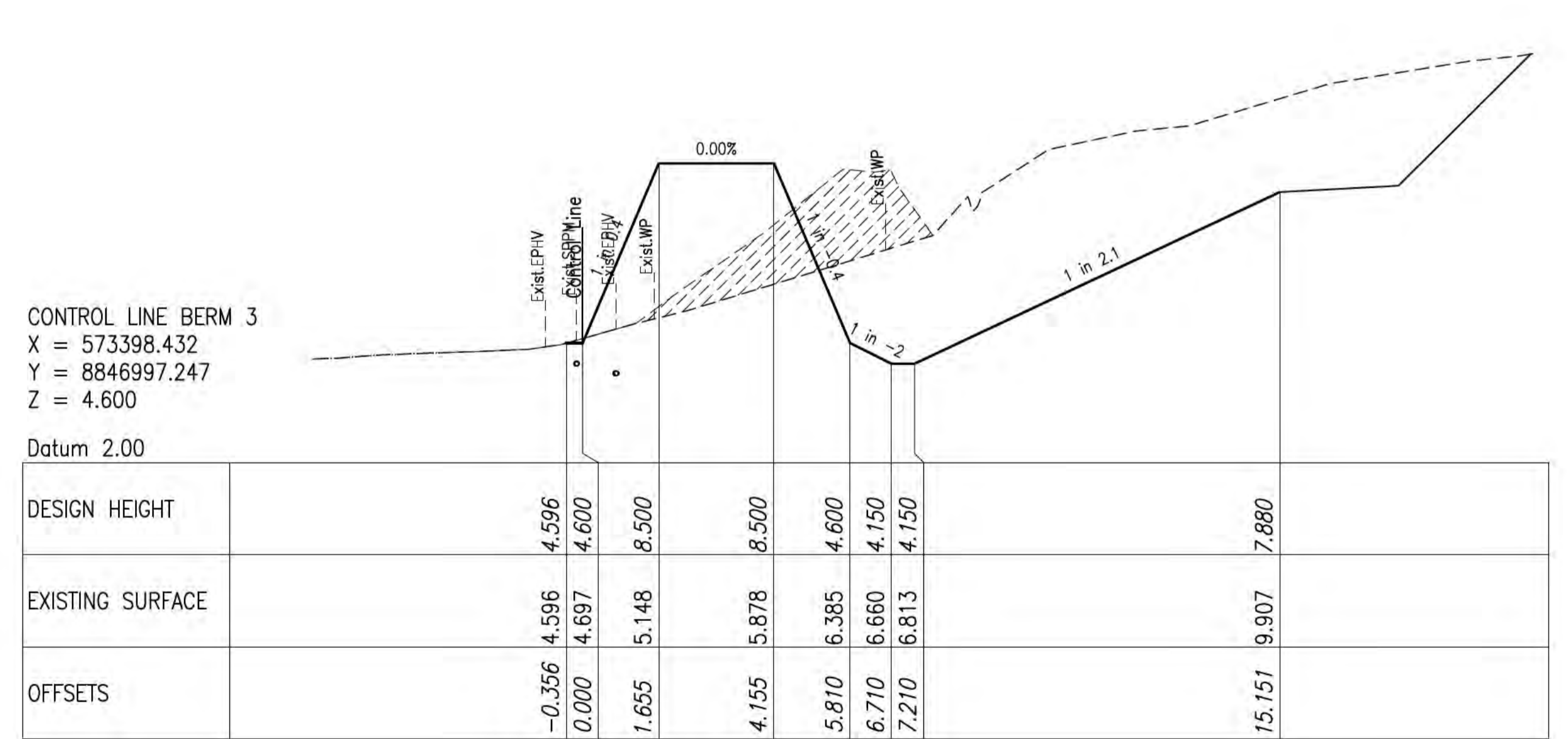
CHAINAGE 10



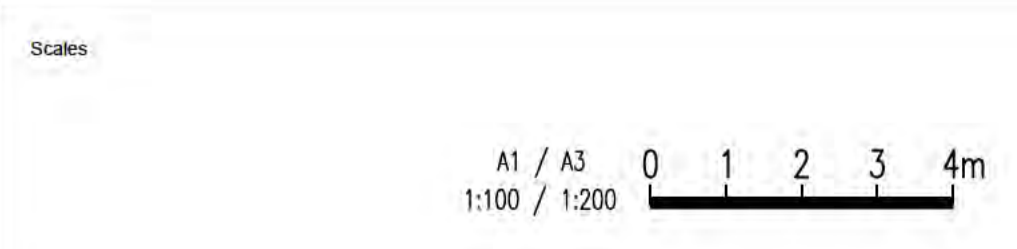
CHAINAGE 30



CHAINAGE 0



CHAINAGE 20



Issue	Date	By	Chkd	Appd
B	27/07/22	KC		JG
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				

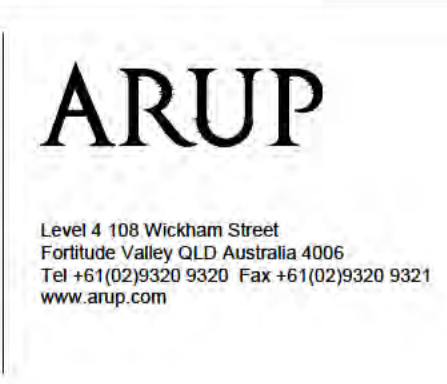


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS BERM 3 - SHEET 1 OF 2

Drawing Status
Issued for Tender

Job No
280579-00

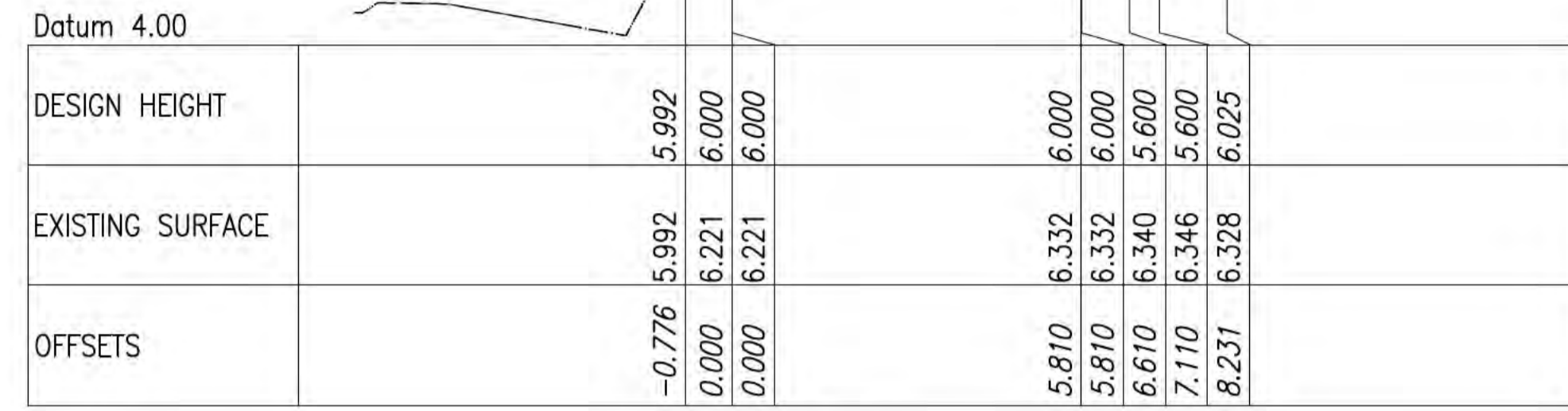
Drawing No
GE-XS-08

Issue
B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

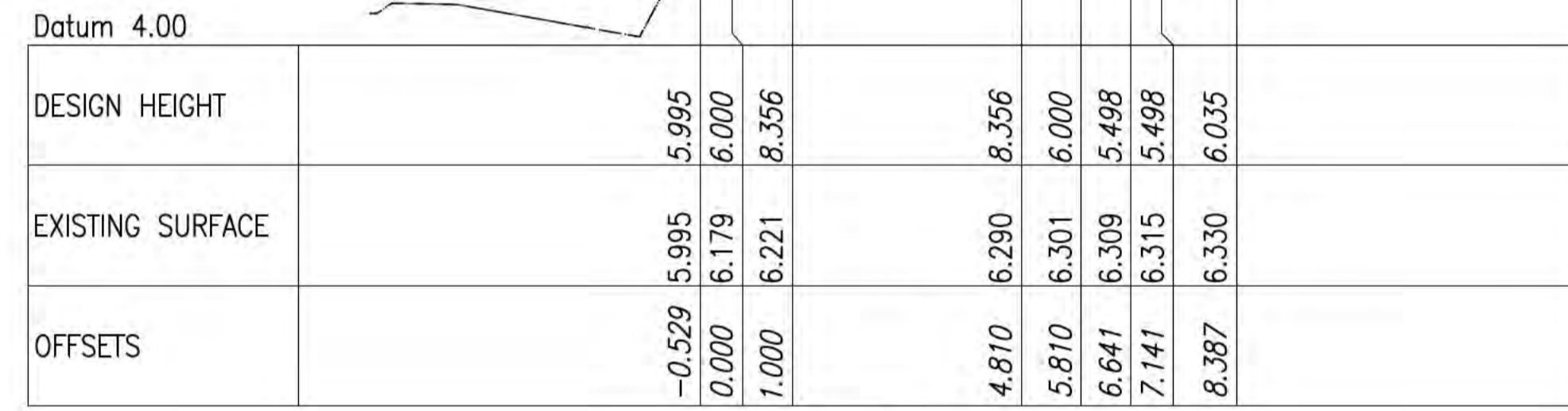
NOT FOR CONSTRUCTION
27 July 2022

CONTROL LINE BERM 3
X = 573423.458
Y = 8847015.541
Z = 6.000



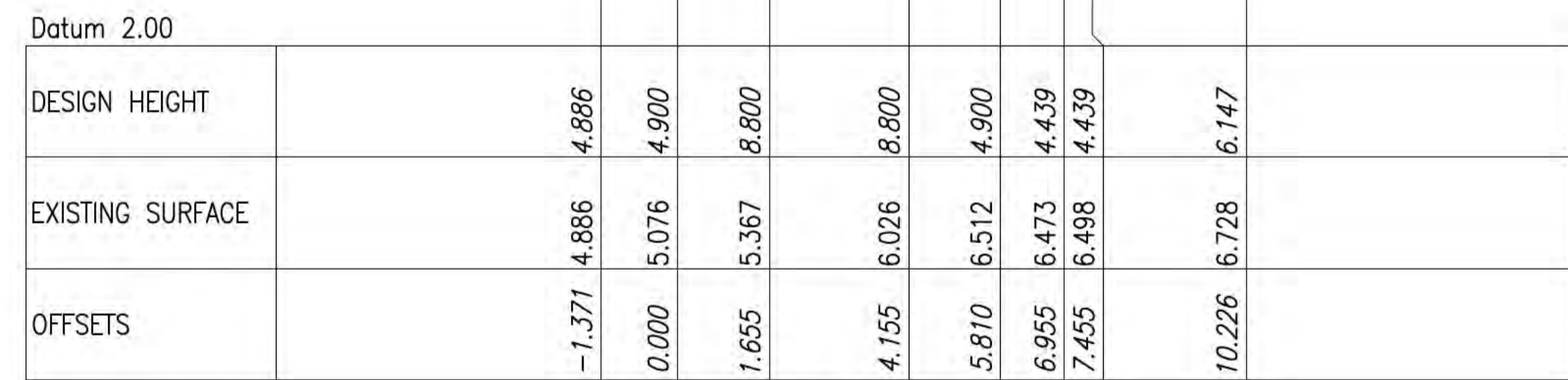
CHAINAGE 51

CONTROL LINE BERM 3
X = 573422.651
Y = 8847014.951
Z = 6.000

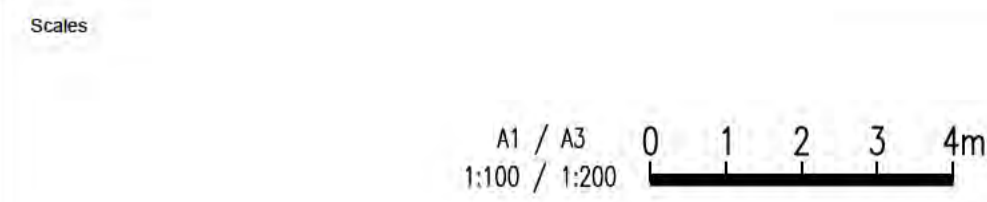


CHAINAGE 50

CONTROL LINE BERM 3
X = 573414.578
Y = 8847009.049
Z = 4.900



CHAINAGE 40



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	27/07/22	KC		JG
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS BERM 3 - SHEET 2 OF 2
Drawing Status
Issued for Tender
Job No: 280579-00
Drawing No: GE-XS-09
Issue: B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022

CONTROL LINE PATH 1
X = 573416.685
Y = 8846996.113
Z = 6.457

Datum 4.00

DESIGN HEIGHT		9.694		6.532		6.457
EXISTING SURFACE		9.694		9.401		8.255
OFFSETS		-8.824		-2.500		0.000

CHAINAGE 20

CONTROL LINE PATH 1
X = 573423.156
Y = 8847003.735
Z = 6.098

Datum 4.00

DESIGN HEIGHT			6.349	6.173		6.098
EXISTING SURFACE			6.349	6.354		6.401
OFFSETS			-2.852	-2.500		0.000

CHAINAGE 10

CONTROL LINE PATH 1
X = 573430.227
Y = 8847010.806
Z = 5.998

Datum 4.00

DESIGN HEIGHT			6.203	6.073		5.998
EXISTING SURFACE			6.203	6.200		6.035
OFFSETS			-2.760	-2.500		0.062

CHAINAGE 0

CONTROL LINE PATH 1
X = 573403.827
Y = 8846980.794
Z = 8.431

Datum 4.00

DESIGN HEIGHT			11.532	8.506		8.431
EXISTING SURFACE			11.532	11.474		11.419
OFFSETS			-5.526	-2.500		0.000

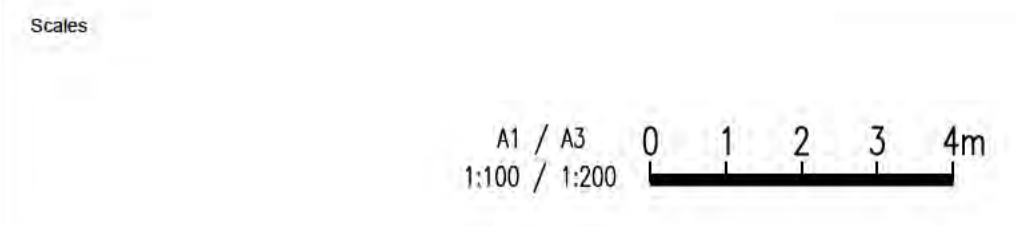
CHAINAGE 40

CONTROL LINE PATH 1
X = 573410.257
Y = 8846988.452
Z = 7.431

Datum 4.00

DESIGN HEIGHT			11.022	7.506		7.431
EXISTING SURFACE			11.022	9.702		9.104
OFFSETS			-9.531	-2.500		0.000

CHAINAGE 30



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	27/07/22	KC		JG
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				

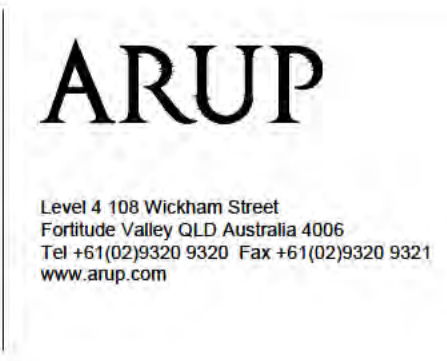


Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS PATH 1 - SHEET 1 OF 2

Drawing Status
Issued for Tender

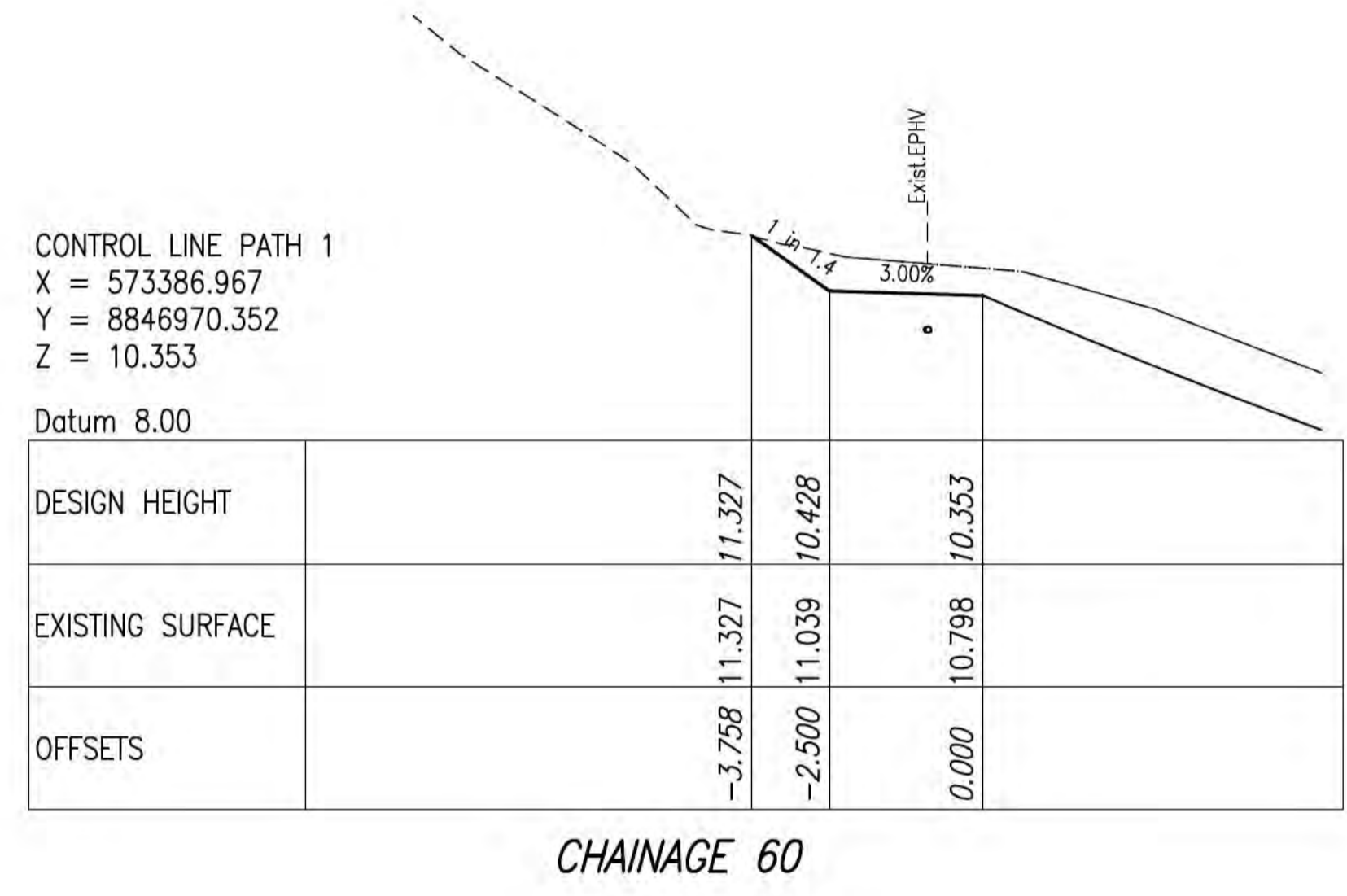
Job No
280579-00

Drawing No
GE-XS-10

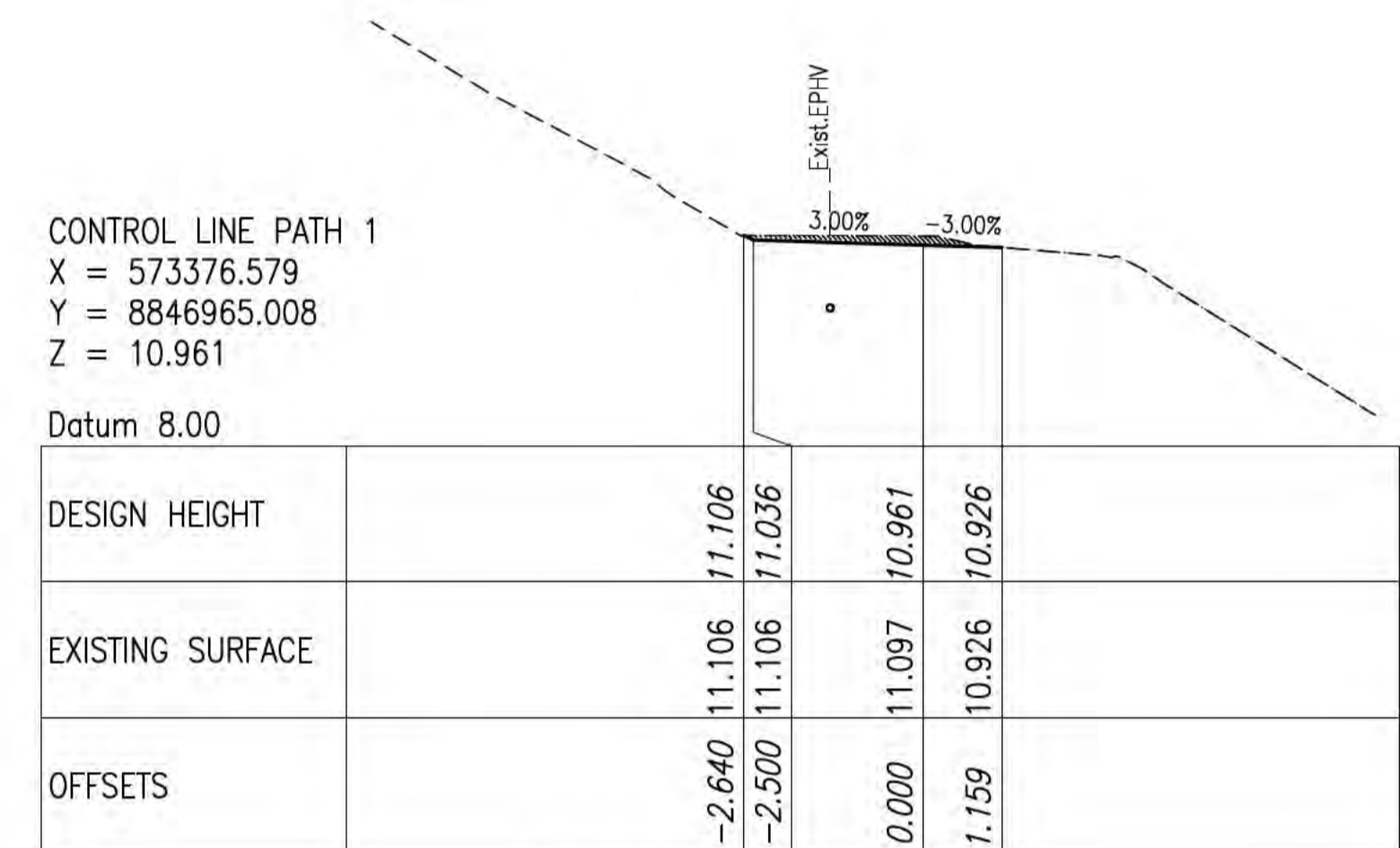
Issue
B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

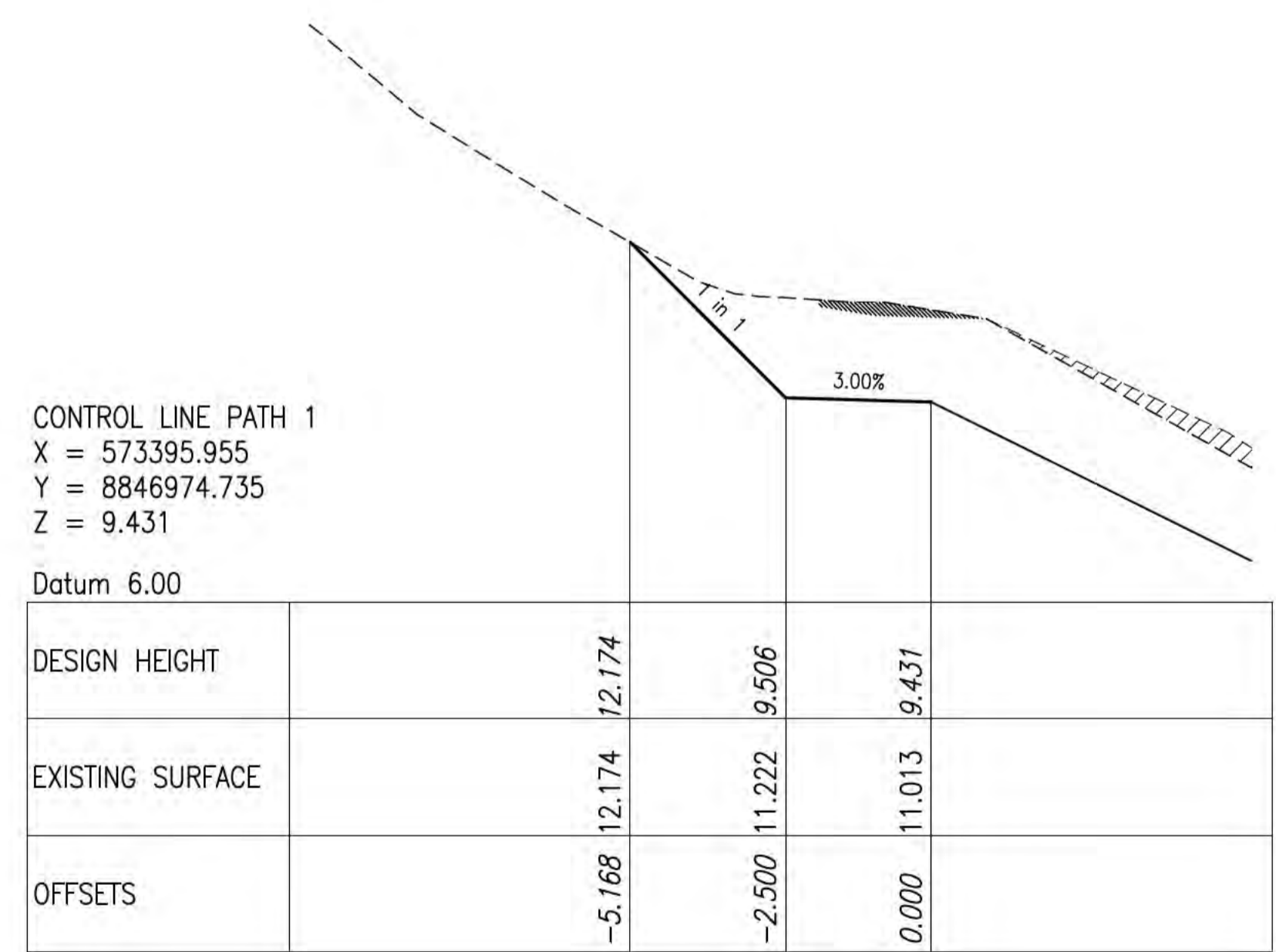
NOT FOR CONSTRUCTION
27 July 2022



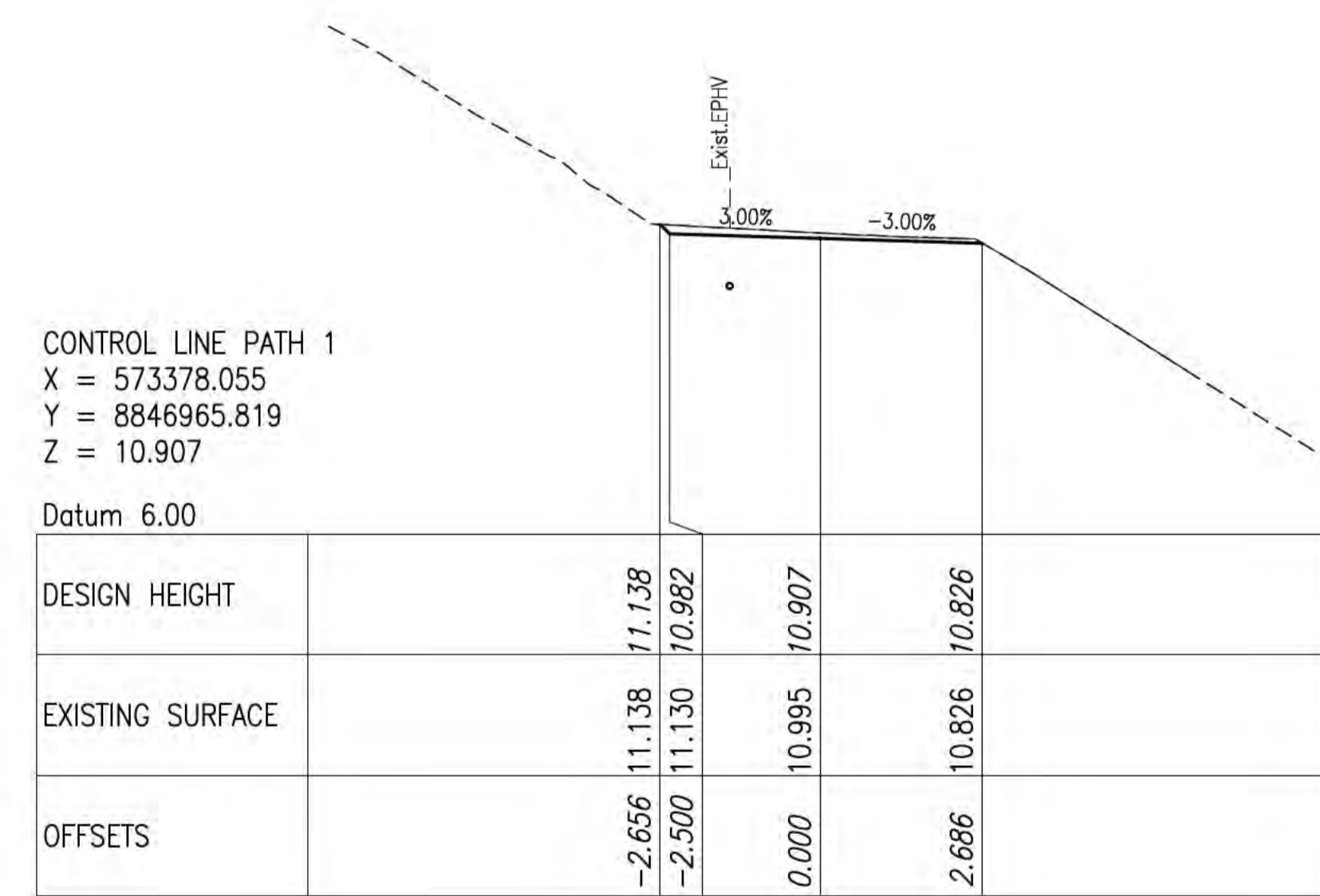
CHAINAGE 60



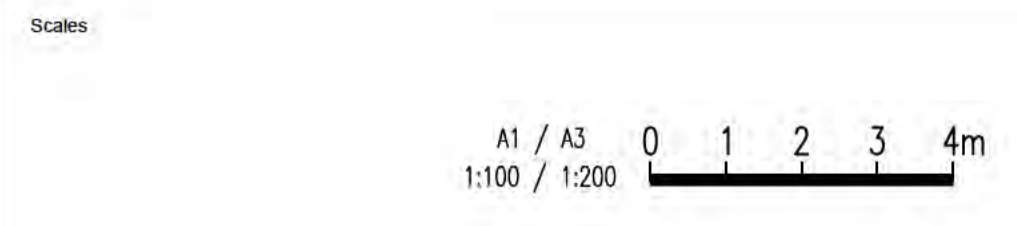
CHAINAGE 71.7



CHAINAGE 50



CHAINAGE 70



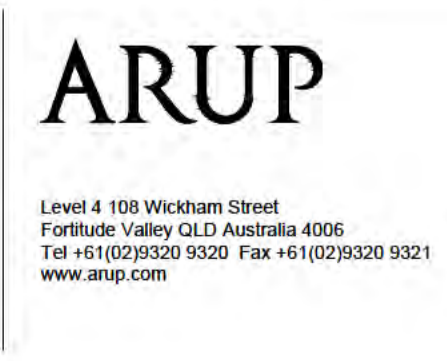
Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG
ISSUED FOR TENDER			
A	18/03/22	JL	
85% DETAILED DESIGN ISSUE			
Issue	Date	By	Chkd



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

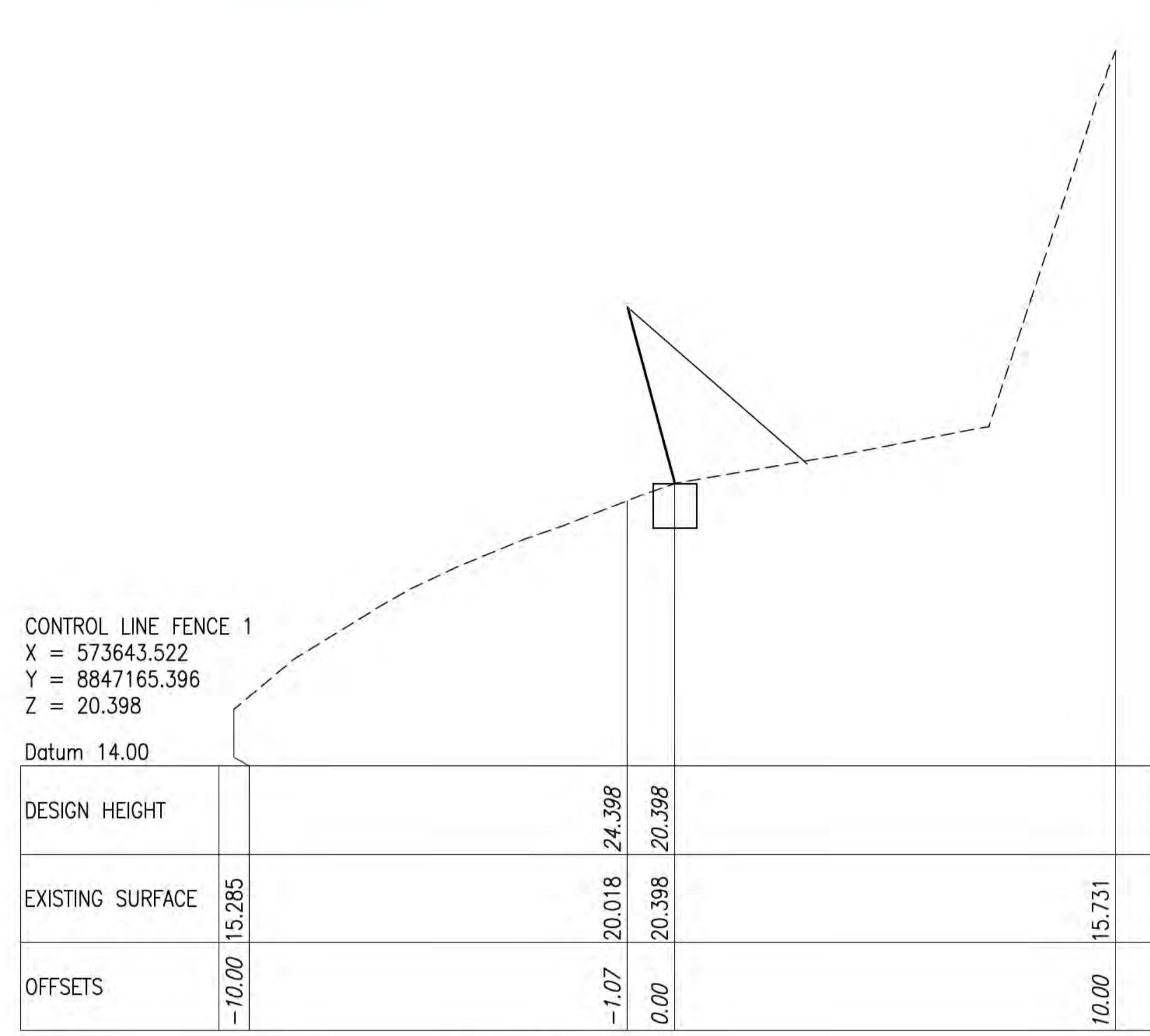
Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION
Scale at A1
Discipline



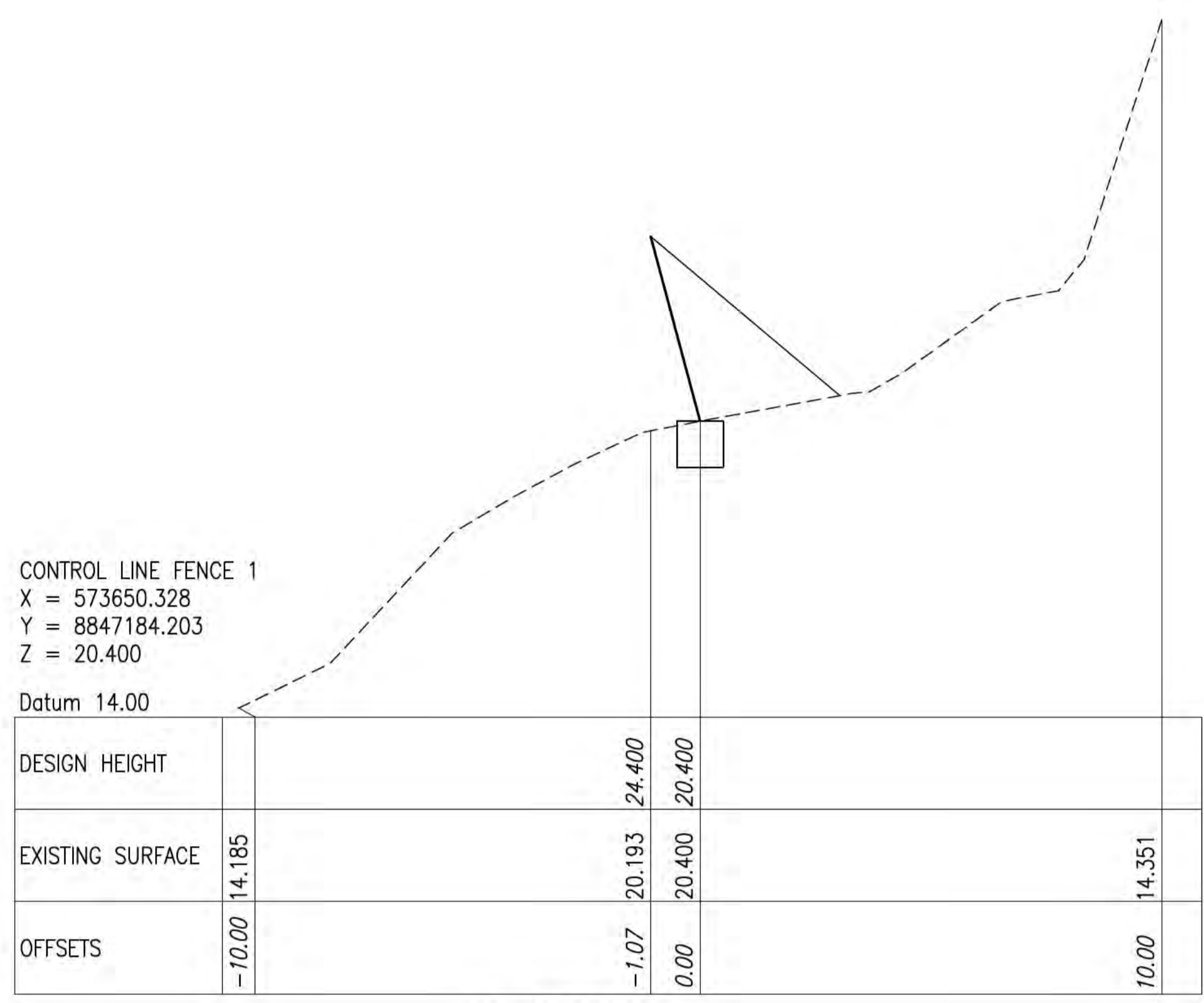
Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS PATH 1 - SHEET 2 OF 2
Drawing Status
Issued for Tender
Job No: **280579-00**
Drawing No: **GE-XS-11**
Issue: **B**

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

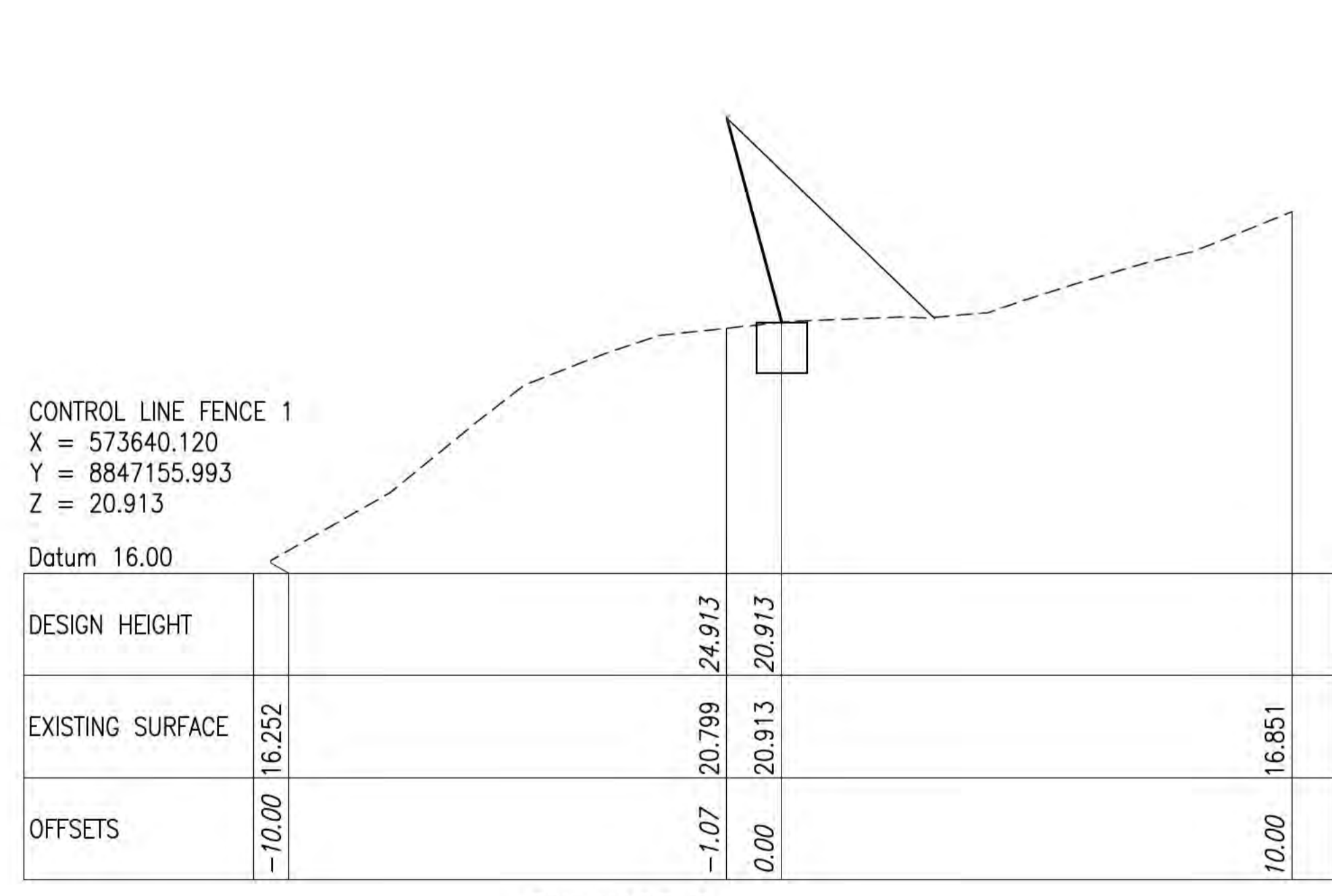
NOT FOR CONSTRUCTION
27 July 2022



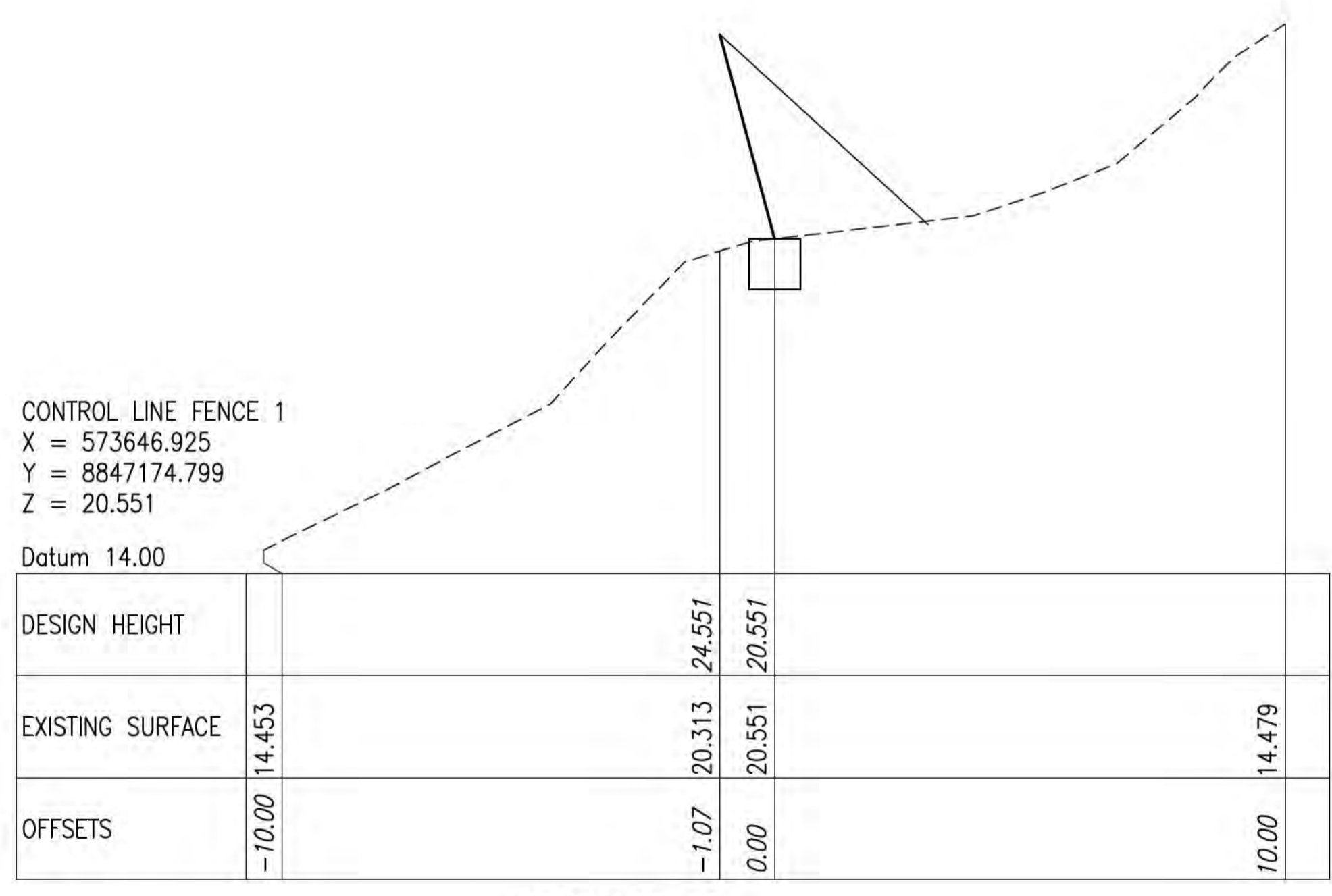
CHAINAGE 10



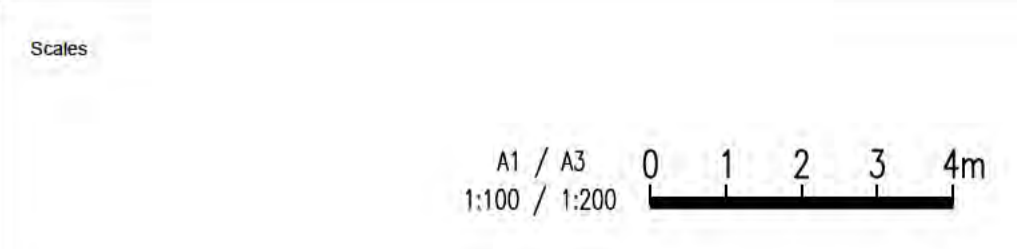
CHAINAGE 30



CHAINAGE 0



CHAINAGE 20



Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG
ISSUED FOR TENDER			
A	18/03/22	JL	
85% DETAILED DESIGN ISSUE			
Issue	Date	By	Chkd



Client
AUSTRALIAN GOVERNMENT DPT
OF INFRASTRUCTURE, TRANSPORT,
REGIONAL DEVELOPMENT
AND COMMUNICATIONS
Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE
CHRISTMAS ISLAND
STAGE 2 LANDSLIDE MITIGATION
Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION
ANNOTATED CROSS SECTIONS
FENCE 1 - SHEET 1 OF 4
Drawing Status
Issued for Tender
Job No
280579-00
Drawing No
GE-XS-12
Issue
B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022

CONTROL LINE FENCE 1
X = 573653.730
Y = 8847193.606
Z = 20.741

Datum 14.00

DESIGN HEIGHT		24.741	20.741	
EXISTING SURFACE	15.029	20.619	20.741	15.249
OFFSETS	-10.00	-1.07	0.00	10.00

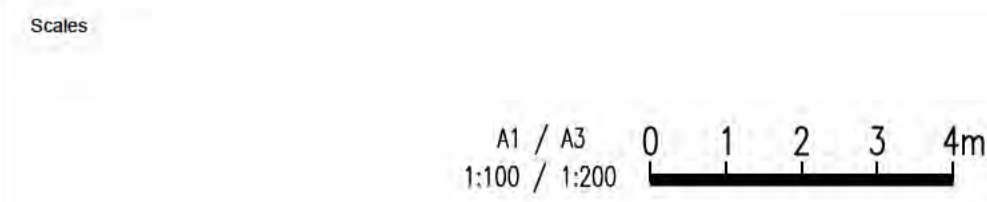
CHAINAGE 40

CONTROL LINE FENCE 1
X = 573657.133
Y = 8847203.009
Z = 20.594

Datum 14.00

DESIGN HEIGHT		24.594	20.594	
EXISTING SURFACE	14.927	20.703	20.594	15.666
OFFSETS	-10.00	-1.07	0.00	10.00

CHAINAGE 50



Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG	
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				
Issue	Date	By	Chkd	Appd



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



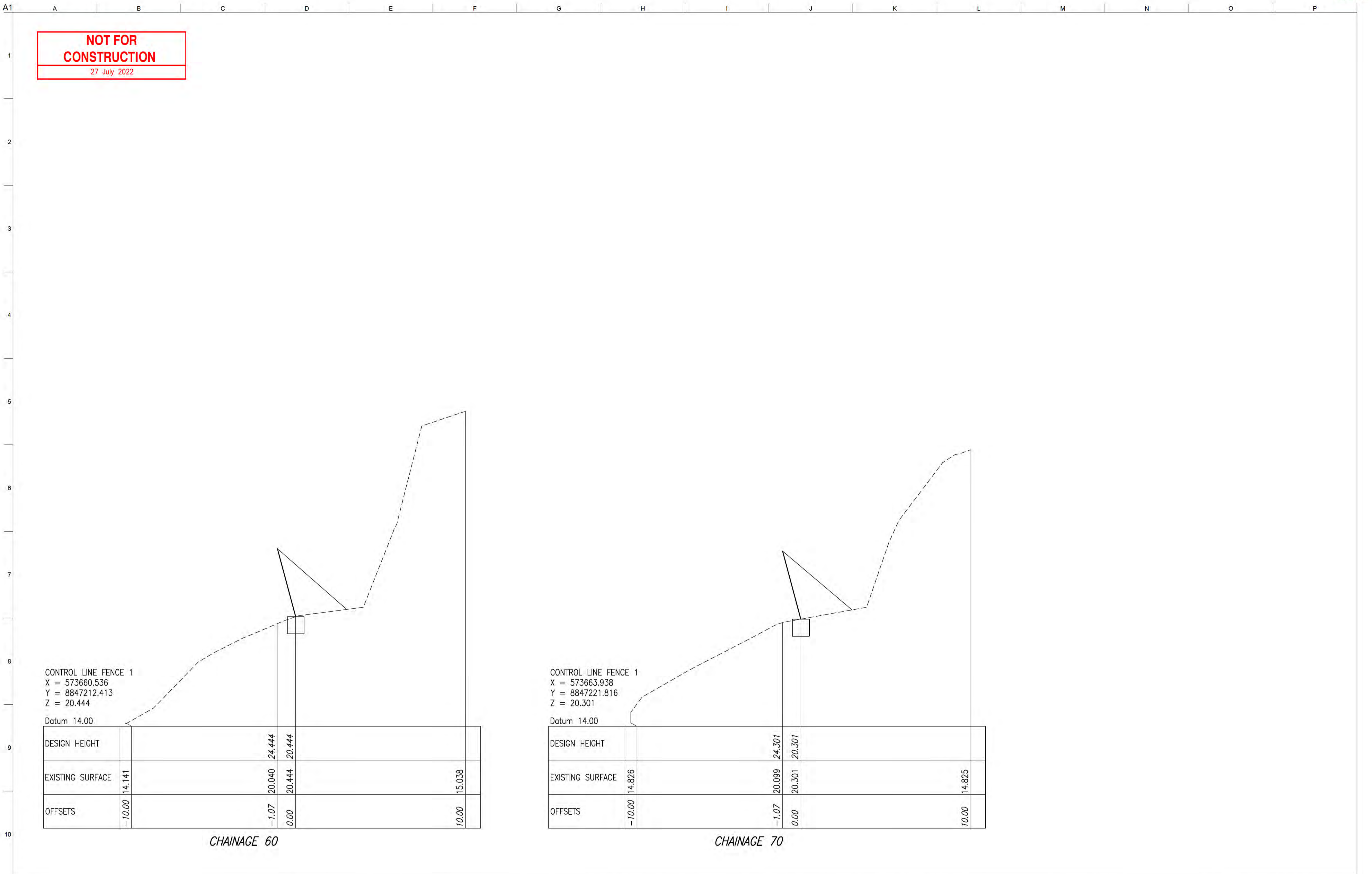
Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS FENCE 1 - SHEET 2 OF 4

Drawing Status
Issued for Tender

Job No: **280579-00**
Drawing No: **GE-XS-13**
Issue: **B**

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



CONTROL LINE FENCE 1
X = 573660.536
Y = 8847212.413
Z = 20.444

Datum 14.00

DESIGN HEIGHT		24.444	20.444	
EXISTING SURFACE	14.141	20.040	20.444	15.038
OFFSETS	-10.00	-1.07	0.00	10.00

CHAINAGE 60

CONTROL LINE FENCE 1
X = 573663.938
Y = 8847221.816
Z = 20.301

Datum 14.00

DESIGN HEIGHT		24.301	20.301	
EXISTING SURFACE	14.826	20.099	20.301	14.825
OFFSETS	-10.00	-1.07	0.00	10.00

CHAINAGE 70

Scales

Design Model Version

Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG	
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				
Issue	Date	By	Chkd	Appd

Australian Government
Department of Infrastructure, Transport,
Regional Development and Communications

Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline

Level 4 108 Wickham Street
Fortitude Valley QLD Australia 4006
Tel +61(0)75320 9320 Fax +61(0)75320 9321
www.arup.com

Member Firm
ANP Pty Ltd
ABN 18 000 966 165

Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS FENCE 1 - SHEET 3 OF 4

Drawing Status
Issued for Tender

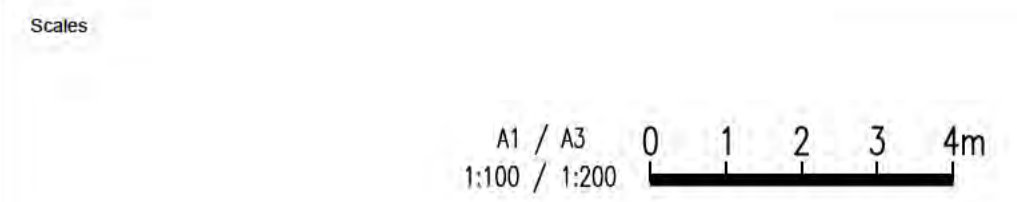
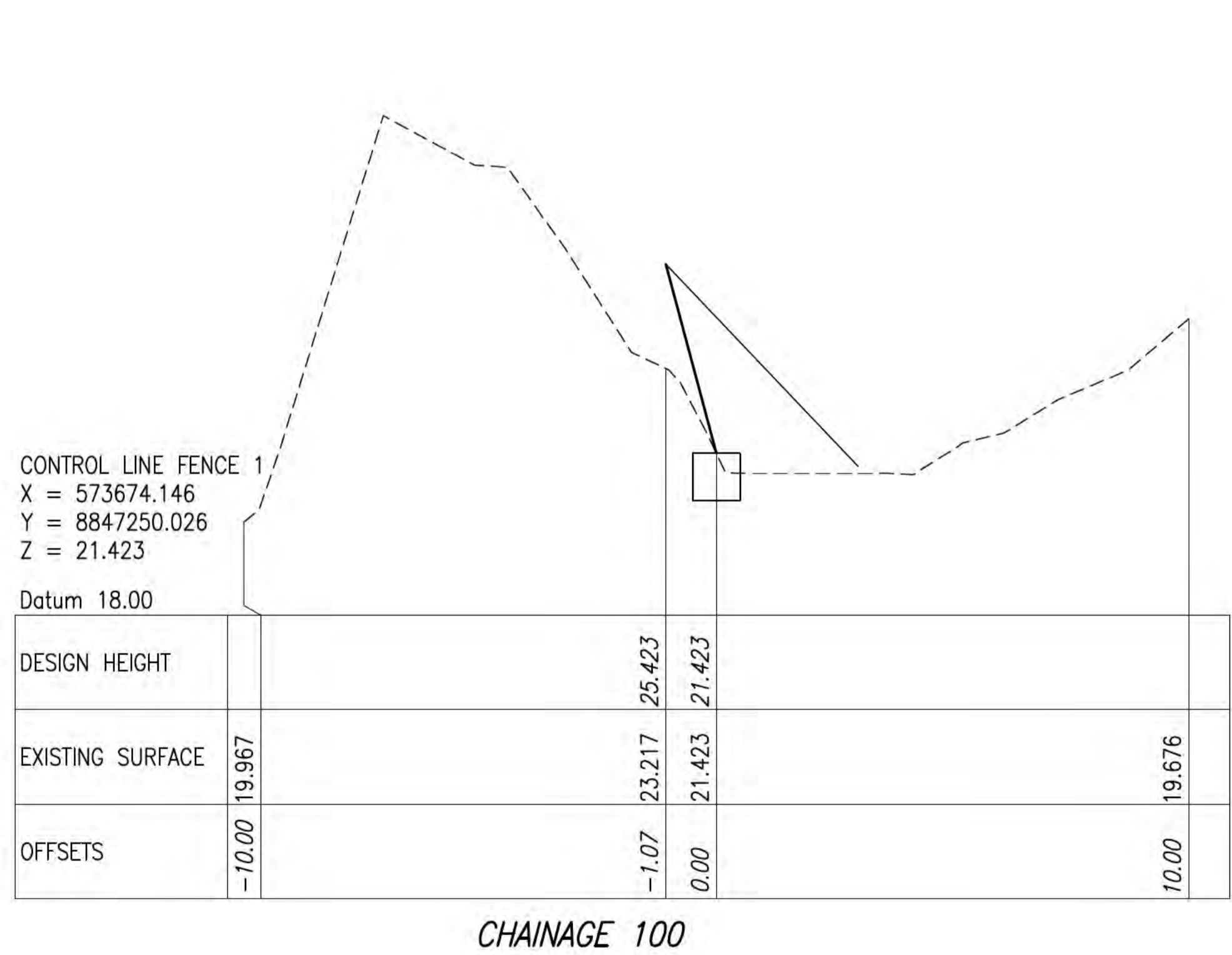
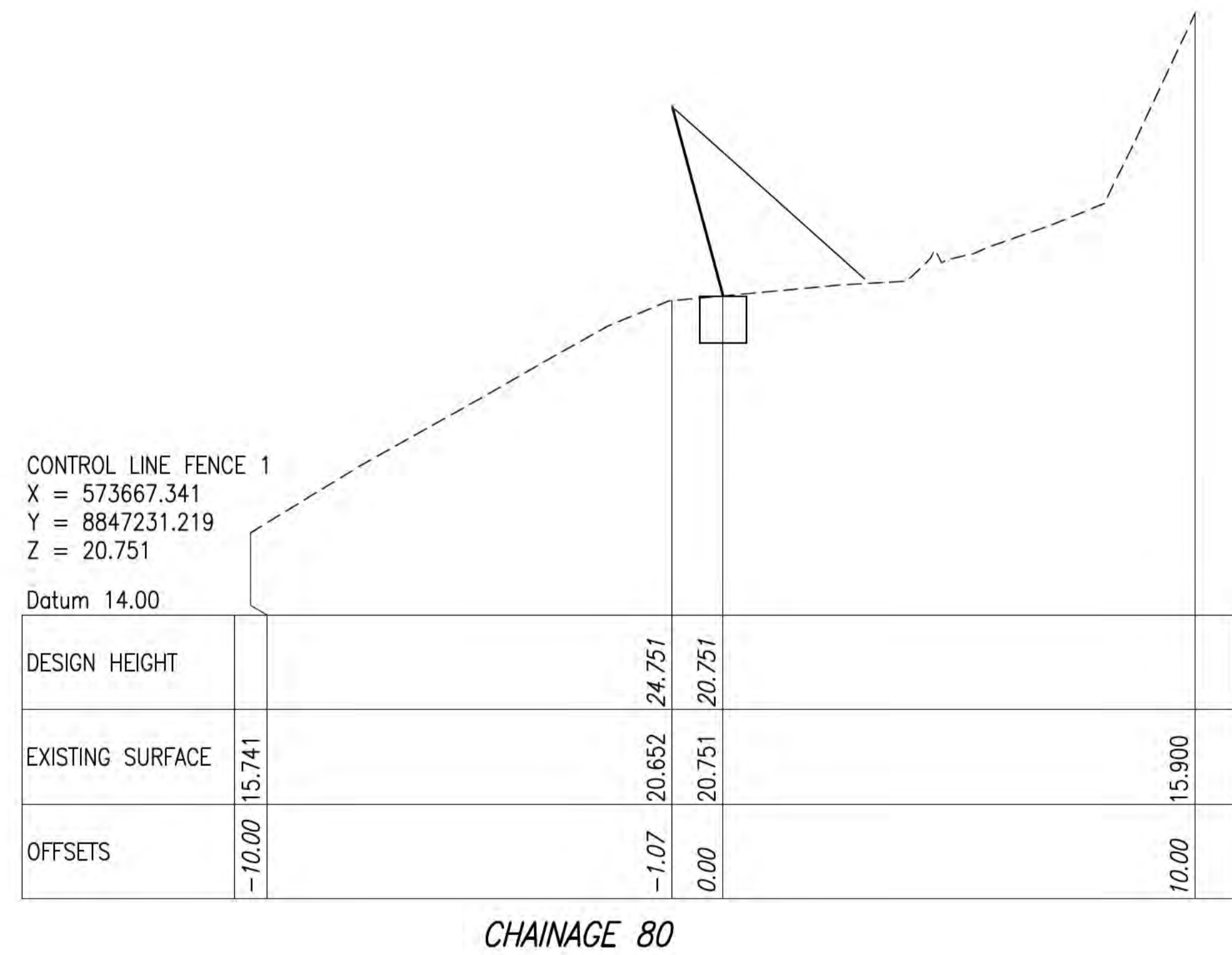
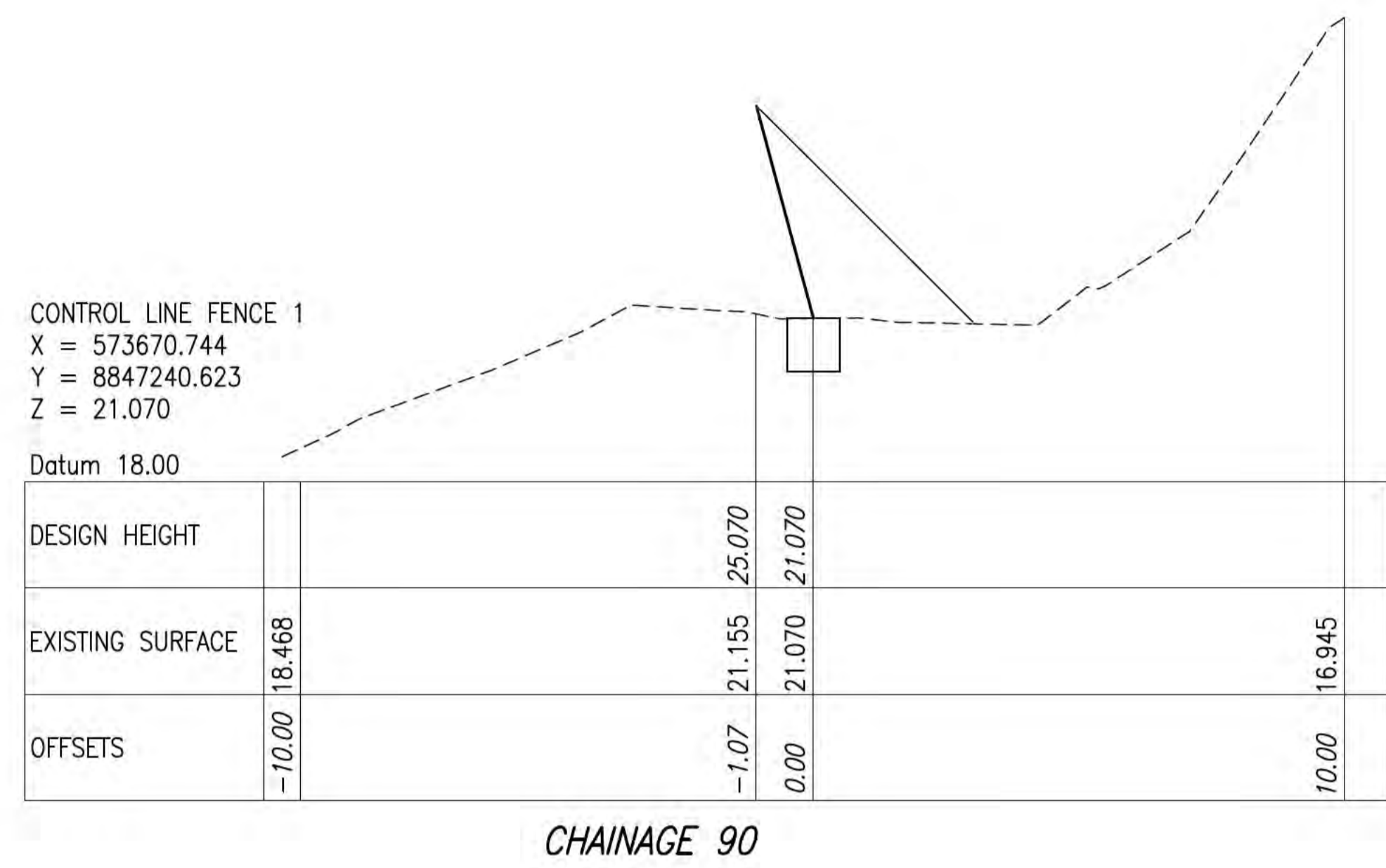
Job No
280579-00

Drawing No
GE-XS-14

Issue
B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION
27 July 2022



Issue	Date	By	Chkd	Appd

B	27/07/22	KC	JG	
ISSUED FOR TENDER				
A	18/03/22	JL		
85% DETAILED DESIGN ISSUE				
Issue	Date	By	Chkd	Appd



Client
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)
Name: _____ Date: _____
Signature: _____

Job Title
FLYING FISH COVE CHRISTMAS ISLAND STAGE 2 LANDSLIDE MITIGATION

Scale at A1
Discipline



Drawing Title
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS FENCE 1 - SHEET 4 OF 4

Drawing Status
Issued for Tender

Job No
280579-00

Drawing No
GE-XS-15

Issue
B

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR