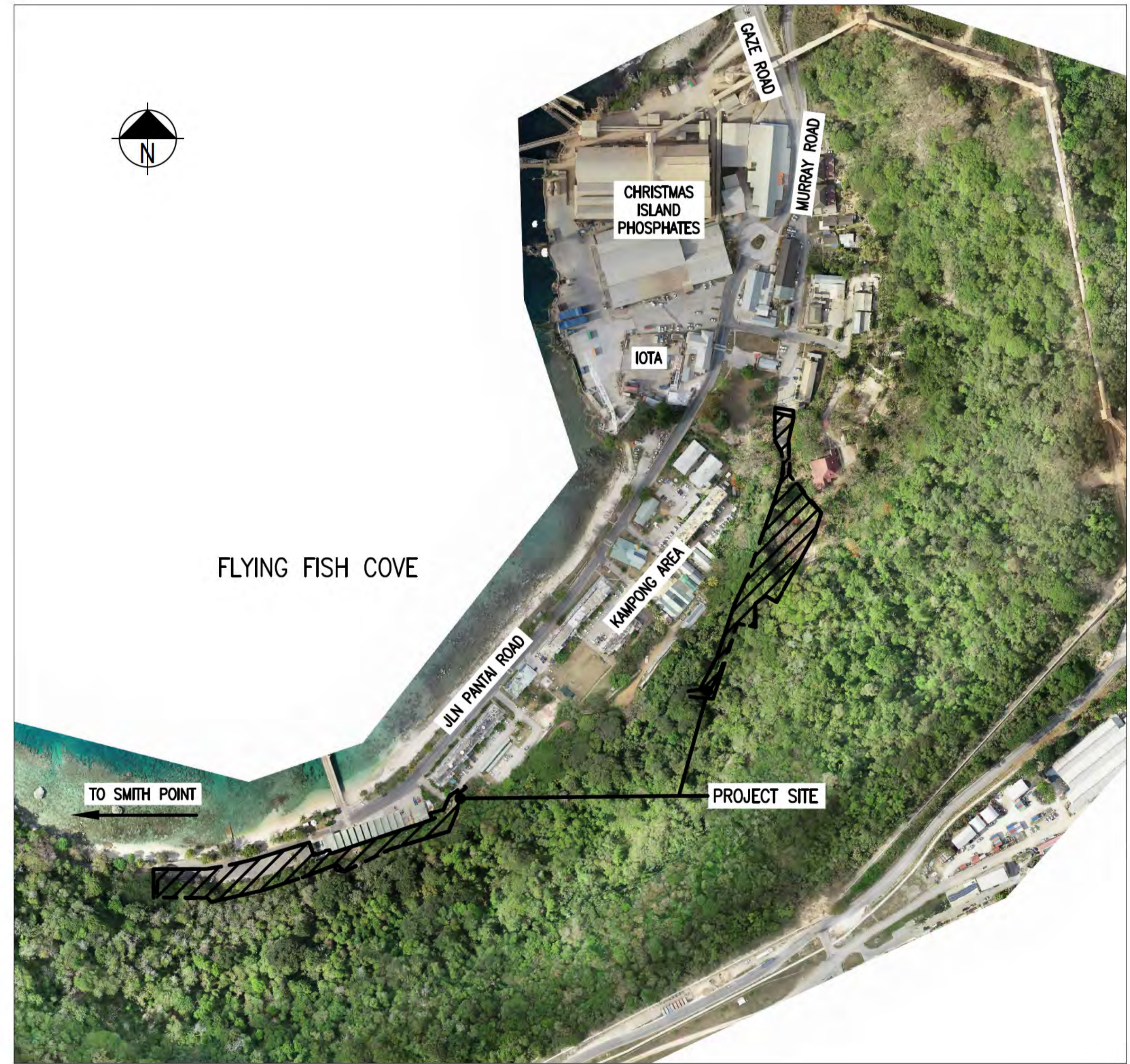


# FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION ISSUED FOR CONSTRUCTION



SITE PLAN  
N.T.S

**ISSUED FOR CONSTRUCTION**

Scales <b>N.T.S</b>	<table border="1"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																														<table border="1"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																														<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 LANDSLIDE MITIGATION DETAILED DESIGN</p> <p>Scale at A1 NTS</p> <p>Discipline</p>	<p>Level 4 108 Wickham Street Fortitude Valley QLD Australia 4006 Tel +61(0)75320 9320 Fax +61(0)75320 9321 www.arup.com</p>	<p>Member Firm Arup Pty Ltd ABN 18 000 966 165</p>	<p>Drawing Title LANDSLIDE MITIGATION COVER SHEET AND LOCALITY PLAN</p> <p>Drawing Status <b>ISSUED FOR CONSTRUCTION</b></p> <p>Job No <b>268575-00</b></p> <p>Drawing No <b>CI-DI-01</b></p> <p>Issue <b>A</b></p>
Design Model Version	Issue	Date	By	Chkd	Appd	Issue	Date	By	Chkd	Appd																																																								

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

**DRAWING INDEX**

SERIES No	DRAWING No	ISSUE DATE	REVISION	DRAWING TITLE
1	CI-DI-01	04/08/2020	A	COVER SHEET AND LOCALITY PLAN
2	CI-DI-02	19/10/2021	E	DRAWING INDEX
3	CI-NL-01	24/08/2020	B	GENERAL NOTES AND LEGEND - SHEET 1
4	CI-NL-02	24/08/2020	B	GENERAL NOTES AND LEGEND - SHEET 2
5	CI-EF-01	04/08/2020	A	EXISTING FEATURES - SITE PLAN
6	CI-EW-01	04/08/2020	A	ACCESS PATH DETAILS - SHEET 1
7	CI-EW-02	04/08/2020	A	ACCESS PATH DETAILS - TYPICAL SECTIONS
8	CI-EW-03	04/08/2020	A	ACCESS PATH DETAILS - SHEET 2
9	CI-EW-04	24/08/2020	B	ACCESS PATH DETAILS - SHEET 3
10	CI-SP-01	22/09/2021	D	COMBINED SERVICES PLAN
11	CI-SP-02	24/08/2020	B	COMBINED SERVICES PLAN
12	CI-DD-01	24/08/2020	B	BOAT CLUB, MARINE 2 & MARINE 1 - DEMOLITION PLAN
13	CI-DD-02	13/10/2020	C	CHRISTMAS ISLAND CLUB - DEMOLITION PLAN
14	CI-CL-01	19/10/2021	C	CONTROL LINE SETOUT
15	CI-GA-01	19/10/2021	B	BOAT CLUB - GENERAL ARRANGEMENT
16	CI-GA-02	19/10/2021	D	MARINE 2 - GENERAL ARRANGEMENT
17	CI-GA-03	22/09/2021	D	MARINE 1 - GENERAL ARRANGEMENT
18	CI-GA-04	19/10/2021	B	CHRISTMAS ISLAND CLUB - GENERAL ARRANGEMENT
19	CI-TS-01	04/08/2020	A	TYPICAL CROSS SECTIONS
20	CI-XS-01	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 1
21	CI-XS-02	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 2
22	CI-XS-03	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 3
23	CI-XS-04	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 4
24	CI-XS-05	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 5
25	CI-XS-06	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 6
26	CI-XS-07	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 7
27	CI-XS-08	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 8
28	CI-XS-09	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 9
29	CI-XS-10	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 10
30	CI-XS-11	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 11
31	CI-XS-12	24/08/2020	B	ANNOTATED CROSS SECTIONS - SHEET 12
32	CI-XS-13	04/08/2020	A	ANNOTATED CROSS SECTIONS - SHEET 13
33	CI-XS-14	04/08/2020	A	ANNOTATED CROSS SECTIONS - SHEET 14
34	CI-XS-15	04/08/2020	A	ANNOTATED CROSS SECTIONS - SHEET 15
35	CI-GD-01	24/08/2020	B	TYPICAL DETAILS - SHEET 1
36	CI-GD-02	04/08/2020	A	TYPICAL DETAILS - SHEET 2
37	CI-GD-03	19/10/2021	D	TYPICAL DETAILS - SHEET 3
38	CI-GD-04	04/08/2020	A	TYPICAL DETAILS - SHEET 4
39	CI-GD-05	04/08/2020	A	TYPICAL DETAILS - SHEET 5
40	CI-GD-06	19/10/2021	D	TYPICAL DETAILS - SHEET 6
41	CI-GD-07	19/10/2021	C	TYPICAL DETAILS - SHEET 7
42	CI-GD-08	19/10/2021	C	TYPICAL DETAILS - SHEET 8
43	CI-GD-09	13/10/2020	A	TYPICAL DETAILS - SHEET 9
44	CI-GD-10	19/10/2021	B	TYPICAL DETAILS - SHEET 10
45	CI-GD-11	19/10/2021	B	TYPICAL DETAILS - SHEET 11
46	CI-GD-12	19/10/2021	A	TYPICAL DETAILS - SHEET 12
47	CI-GD-13	19/10/2021	A	TYPICAL DETAILS - SHEET 13
48	CI-LR-01	04/08/2020	A	LANDSCAPE TREATMENT AREAS - SHEET 1
49	CI-LR-02	04/08/2020	A	LANDSCAPE TREATMENT AREAS - SHEET 2

**ISSUED FOR CONSTRUCTION**

<p>Scales: <b>N.T.S</b></p>	<table border="1"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td>E</td><td>19/10/21</td><td>MA</td><td>JG</td><td>EF</td></tr> <tr><td colspan="5">Revised As Clouded</td></tr> <tr><td>D</td><td>22/09/21</td><td>JL</td><td>JG</td><td>EF</td></tr> <tr><td colspan="5">Revised As Clouded</td></tr> <tr><td>Issue</td><td>Date</td><td>By</td><td>Chkd</td><td>Appd</td></tr> </table>						E	19/10/21	MA	JG	EF	Revised As Clouded					D	22/09/21	JL	JG	EF	Revised As Clouded					Issue	Date	By	Chkd	Appd	<table border="1"> <tr><td>C</td><td>13/10/20</td><td>RB</td><td>JG</td><td>EF</td></tr> <tr><td colspan="5">Marine 2 Compression Strut</td></tr> <tr><td>B</td><td>24/08/20</td><td>RB</td><td>JG</td><td>EF</td></tr> <tr><td colspan="5">Revised IFC</td></tr> <tr><td>A</td><td>04/08/20</td><td>RB</td><td>JG</td><td>EF</td></tr> <tr><td colspan="5">ISSUED FOR CONSTRUCTION</td></tr> <tr><td>Issue</td><td>Date</td><td>By</td><td>Chkd</td><td>Appd</td></tr> </table>	C	13/10/20	RB	JG	EF	Marine 2 Compression Strut					B	24/08/20	RB	JG	EF	Revised IFC					A	04/08/20	RB	JG	EF	ISSUED FOR CONSTRUCTION					Issue	Date	By	Chkd	Appd	 <p><b>Australian Government</b> 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 LANDSLIDE MITIGATION DETAILED DESIGN</p> <p>Scale at A1: NTS</p> <p>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 ANZ Pty Ltd ABN 18 000 966 165</p>	<p>Drawing Title: LANDSLIDE MITIGATION DRAWING INDEX</p> <p>Drawing Status: <b>ISSUED FOR CONSTRUCTION</b></p> <p>Job No: <b>268575-00</b> Drawing No: <b>CI-DI-02</b> Issue: <b>E</b></p>
E	19/10/21	MA	JG	EF																																																																					
Revised As Clouded																																																																									
D	22/09/21	JL	JG	EF																																																																					
Revised As Clouded																																																																									
Issue	Date	By	Chkd	Appd																																																																					
C	13/10/20	RB	JG	EF																																																																					
Marine 2 Compression Strut																																																																									
B	24/08/20	RB	JG	EF																																																																					
Revised IFC																																																																									
A	04/08/20	RB	JG	EF																																																																					
ISSUED FOR CONSTRUCTION																																																																									
Issue	Date	By	Chkd	Appd																																																																					

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



### DRAPED MESH AND BARRIERS – GENERAL

- 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 Superintendent prior to purchase / installation.
- The Contractor shall make no substitution of materials or modifications to details without prior written approval from the Superintendent.
- All products shall be stored and installed in accordance with the manufacturers' specifications and installation guidance.
- 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.
- Drilled anchors shall be installed in accordance with technical specification MRTS03 drainage, retaining structures and protective treatments and these notes.
- The length of the drilled anchors shall be as confirmed on site by the Superintendent.
- Intended design life of the (above ground) flexible barrier system and draped mesh is 25 years.
- Intended design life of the drilled anchors and concrete footings to support the flexible barrier and draped mesh is 50 years.

### MATERIALS – FLEXIBLE BARRIER SYSTEMS

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

### MATERIALS – DRAPED MESH

- The draped mesh shall achieve the minimum dimension and capacities detailed in these drawings, or an approved equivalent.
- All steel elements to be hot-dip galvanised to AS4680 or approved equivalent proprietary protective coating to meet the intended design life.

### MATERIALS – DRILLED ANCHORS

- 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:
  - Nail type: 40/16 self drilling anchor or 52/26 self drilling anchor, hot dip galvanised
  - Minimum yield steel grade: 500MPa
  - Proprietary double corrosion protection.
- The draped mesh system shall be supported with drilled anchors as detailed in the drawings, with the following additional details:
  - Nail type: 30/11 self drilling anchor
  - Minimum yield steel grade: 500MPa
  - Proprietary double corrosion protection.
- Where anchors are made up by multiple bar lengths, couplers are to be used and no welding of bars is allowed.
- 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 rock embedments are achieved.
- All steel elements to be hot-dip galvanised to AS4680 or approved equivalent proprietary protective coating to meet the intended design life.
- 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

- Reinforcing steel to be read in conjunction with MRSD 1043.
- Reinforcing steel to be in accordance with AS/NZS 4671 and MRTS1 Reinforcing Steel.
- Reinforcing steel nomenclature on this set of drawings is as follows:  
 8-N20-A-150  
 ——— Maximum design spacing of reinforcing bars  
 ——— Bar shape. Refer MRTS 1043  
 ——— Bar size. Refer MRTS 1043  
 ——— Grade of reinforcing bar where:  
 R Denotes R250N – Plain grade 250 bars to AS/NZS 4671. Normal ductility class.  
 N Denotes D500N – Deformed 500 grade bars to AS/NZS 4671. Normal ductility class.  
 SL Denotes R500SL, R500RL, D500SL, D500RL, or 1500SL, 1500RL, welded mesh: Plain, Deformed and indented to AS/NZS 4671 square or rectangular, low ductility class.  
 ——— Number of bars where applicable.
- 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 Alternatively Spaced
- 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.
- Spacing of ligatures in post foundation may be altered slightly, if necessary, to clear self drilling anchors.
- Reinforcement to be hot dip galvanised to AS/NZS 4680 where shown.
- 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 Administrator.
- Side and end laps in welded mesh reinforcement shall be in accordance with AS5100.5 Clause 13.2.3.
- 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
	Horizontal bars with >300mm concrete below the bar			950	1300	1650	1950	2350	2800

- 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 – CONCRETE

- 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
- 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:
  - Cement – All cement used shall comply with ATIC-SPEC SP43 and AS3972.
  - Fly ash – fly ash used shall comply with ATIC-SPEC SP43 and AS3582.1.
  - Slag – slag shall conform to ATIC-SPEC SP43 and AS3582.2.
  - Sand – sand shall be amorphous silica, including silica flume, and shall comply with ATIC-SPEC SP43 and AS/NZS 3582.3.
  - 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
  - Chemical admixtures – admixtures shall conform to requirements of AS1478 and shall be used in accordance with AS1379.
  - Concrete aggregate – aggregate shall conform to AS2758.1.
  - Curing compounds shall be registered products and comply with the requirements of AS3799.

### PROPOSED LEGEND

- LIMIT OF WORKS BOUNDARY
- TEMPORARY WORKS FENCE TO BE INSTALLED
- TEMPORARY BUNTING TO BE INSTALLED
- EXTENT OF VEGETATION TRIMMING/SLASHING
- EXTENT OF MINOR TRIMMING AND GRADING
- PROPOSED PAVEMENT
- PROPOSED DESIGN LEVEL
- PROPOSED RESTRICTED VEHICLE ACCESS GATE
- PROPOSED STAY WIRE ANCHORS
- PROPOSED CABLE
- PROPOSED FLEXIBLE BARRIER & POST
- PROPOSED GABION BASKET
- EXISTING CABLE TO BE REMOVED
- EXISTING STAY WIRE ANCHOR TO BE REMOVED
- EXISTING ROCKFALL BARRIER & POST TO BE REMOVED
- EXISTING TREE TO BE REMOVED
- BOAT CLUB BARRIER
- CAR PARK CLOSURE
- MARINE 2 BARRIER
- CAR PARK CLOSURE
- SITE LAYDOWN AREA
- CARPARK CLOSURE
- AFP RESTRICTED ACCESS. NO PARKING/LAYDOWN ALLOWED
- HARBOR OPERATIONS RESTRICTED ACCESS. NO PARKING/LAYDOWN ALLOWED
- TEMPORARY PUBLIC CAR PARKING
- PROPOSED TEMPORARY ACCESS PATH
- PROPOSED 100mm THICK PERMANENT ACCESS TRACK
- PROPOSED SCALING WORKS ONLY
- PROPOSED SCALING AND DRAPED MESH INSTALLATION

### 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 BERM (NTS)
- 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

### EXISTING SERVICES LEGEND

- EXISTING DRAINAGE
- EXISTING ELECTRICITY
- EXISTING TELECOMMS
- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- EXISTING TRANSFORMER
- EXISTING WATER PIT
- EXISTING SERVICES CORRIDOR
- EXISTING ELECTRICAL EARTH PIT COVER

### EXISTING LOCALITIES LEGEND

- IDENTIFIER FOR KEY SITE FEATURES
- PROTECTED ENVIRONMENTAL, CULTURAL HERITAGE OR COMMONWEALTH NATURAL HERITAGE AREA (INDICATIVE) (WORKS EXCLUSION ZONE)

N.T.S

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



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

Engineering Certification (CEng)  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Job Title  
**FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
 NTS

Discipline



Level 4 108 Wickham Street  
 Fortitude Valley QLD Australia 4006  
 Tel +61 (0)75520 9320 Fax +61 (0)75520 9321  
 www.arup.com



Drawing Title  
**LANDSLIDE MITIGATION GENERAL NOTES AND LEGEND SHEET 2**

Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

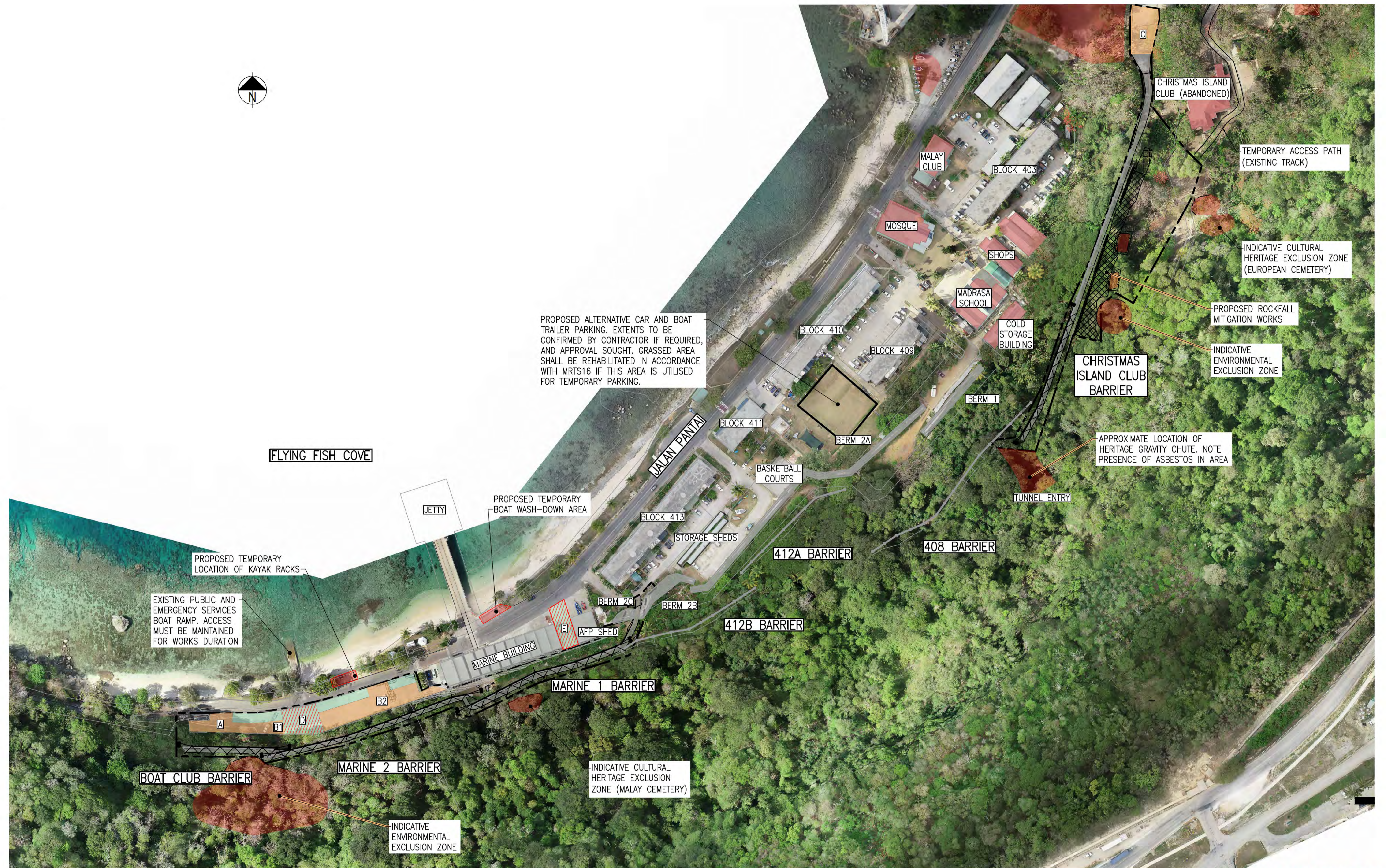
Drawing No  
**CI-NL-02**

Issue  
**B**

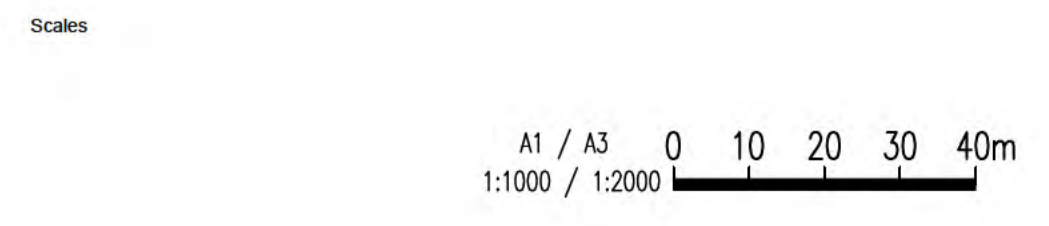
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

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

1  
2  
3  
4  
5  
6  
7  
8  
9  
10



**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



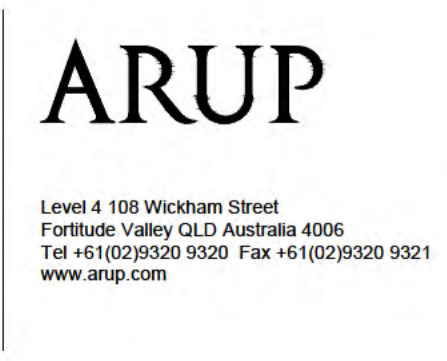
Client  
**AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS**

Engineering Certification (CEng)  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Job Title  
**FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
**1:1000**

Discipline



Drawing Title  
**LANDSLIDE MITIGATION EXISTING FEATURES SITE PLAN**

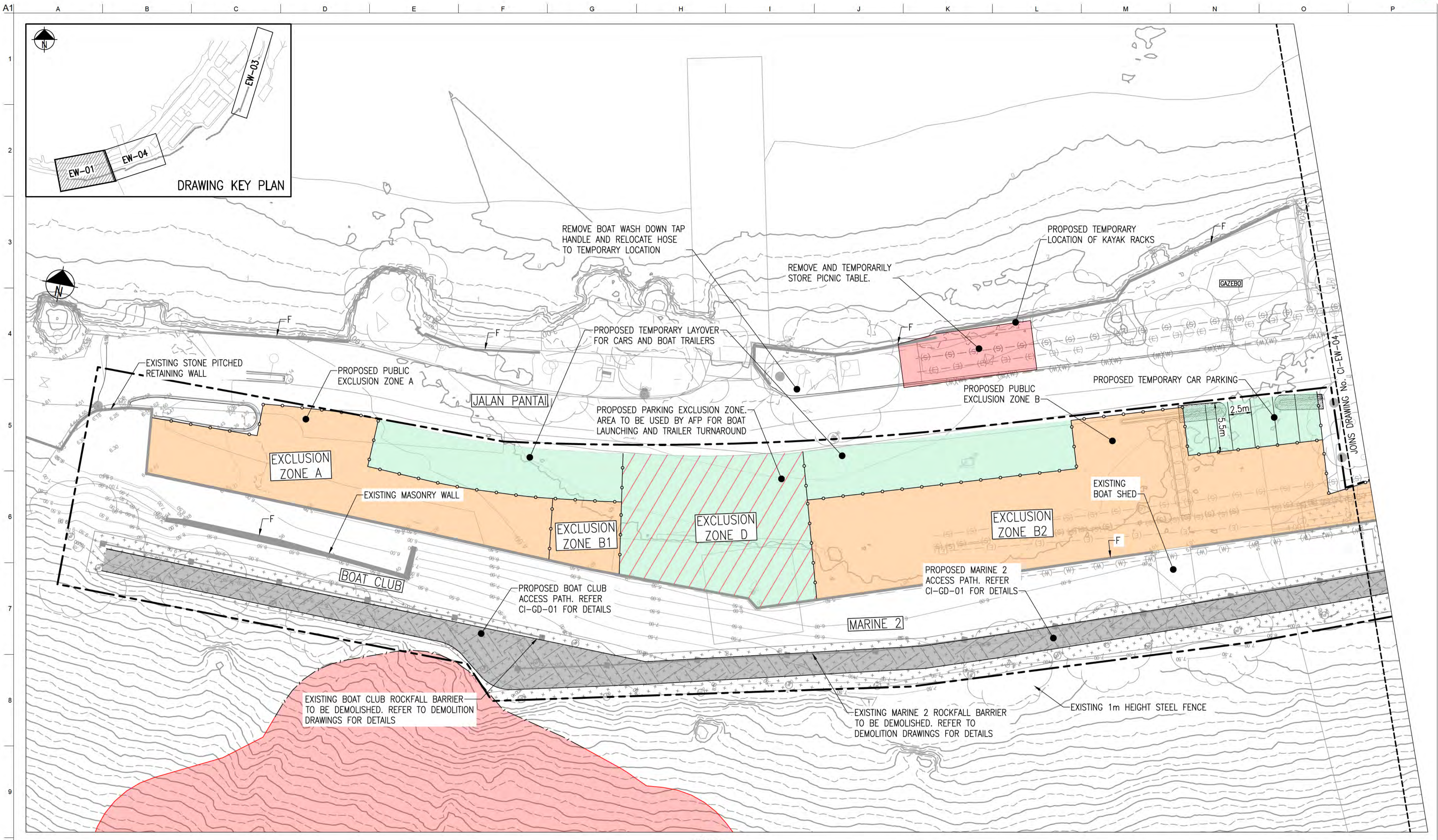
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

Drawing No  
**CI-EF-01**

Issue  
**A**

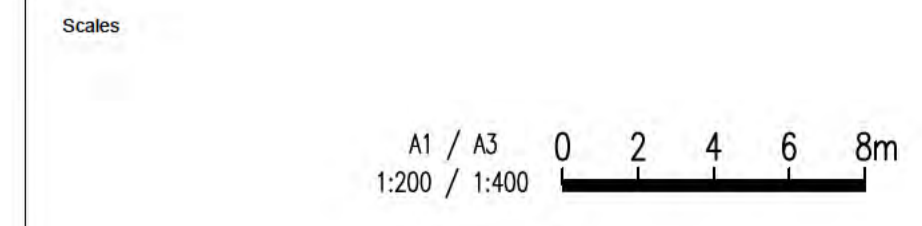
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



PLAN SCALE 1:200

**NOTES**  
 1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



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

Engineering Certification (CEng)  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Job Title  
 FLYING FISH COVE  
 CHRISTMAS ISLAND  
 LANDSLIDE MITIGATION  
 DETAILED DESIGN

Scale at A1 1:200  
 Discipline



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  
 ACCESS PATH DETAILS  
 SHEET 1

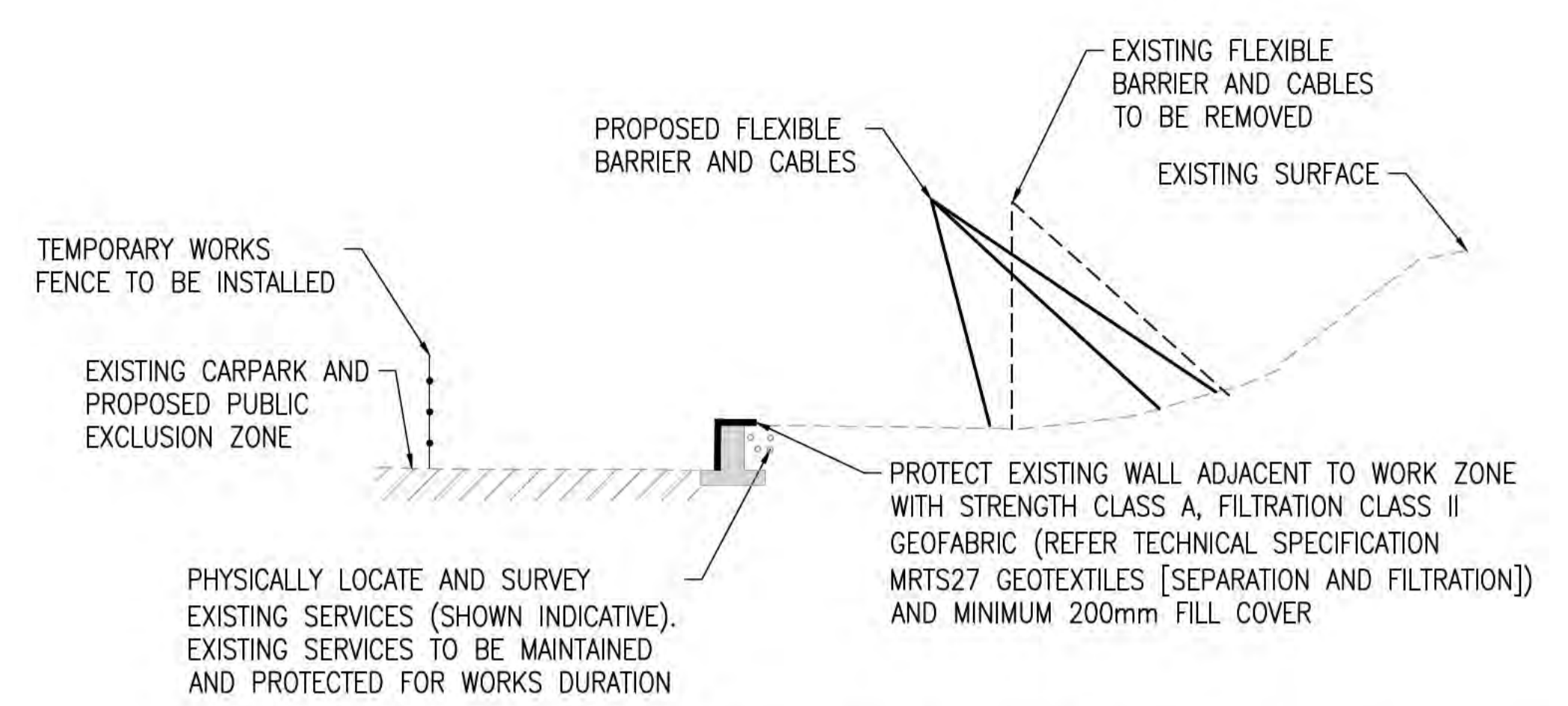
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No 268575-00 Drawing No CI-EW-01 Issue A

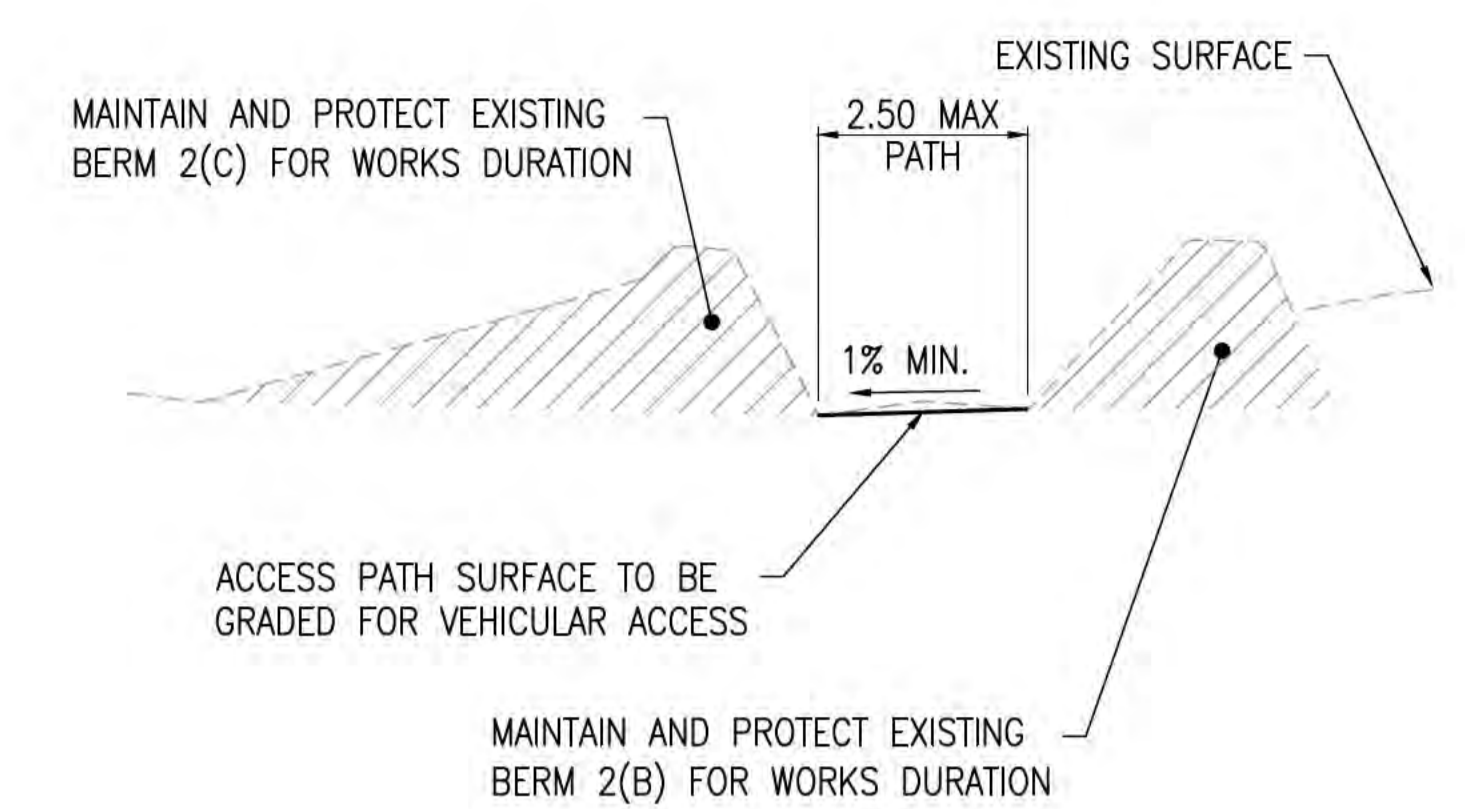
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

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

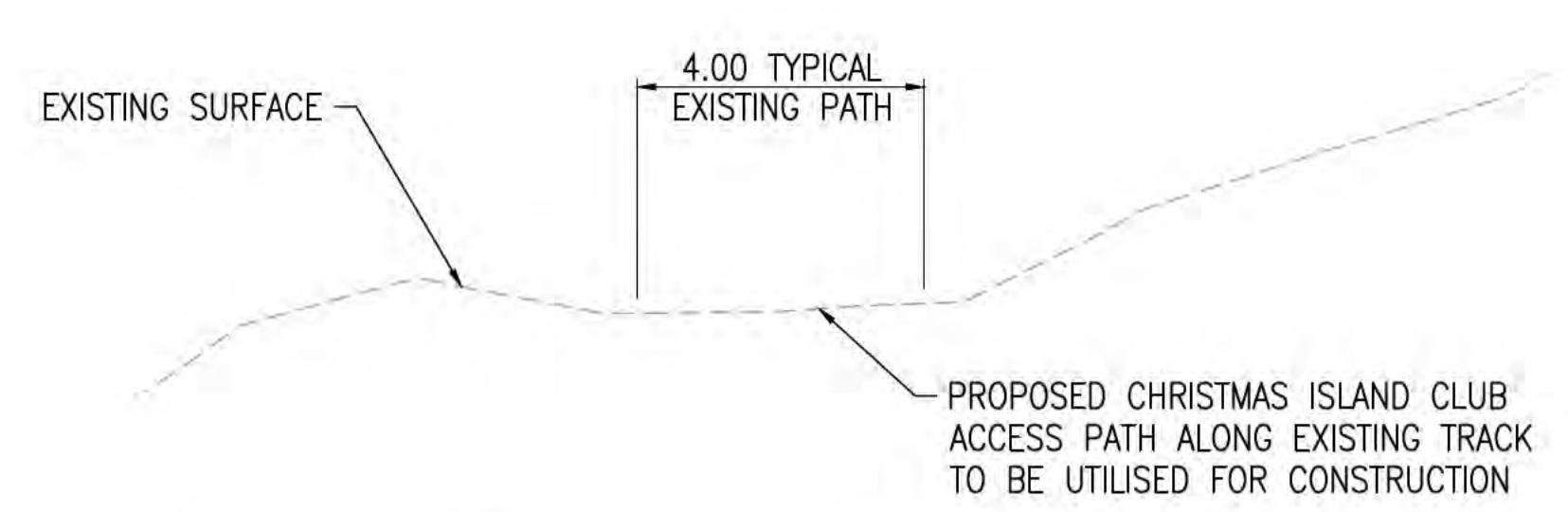
1  
2  
3  
4  
5  
6  
7  
8  
9  
10



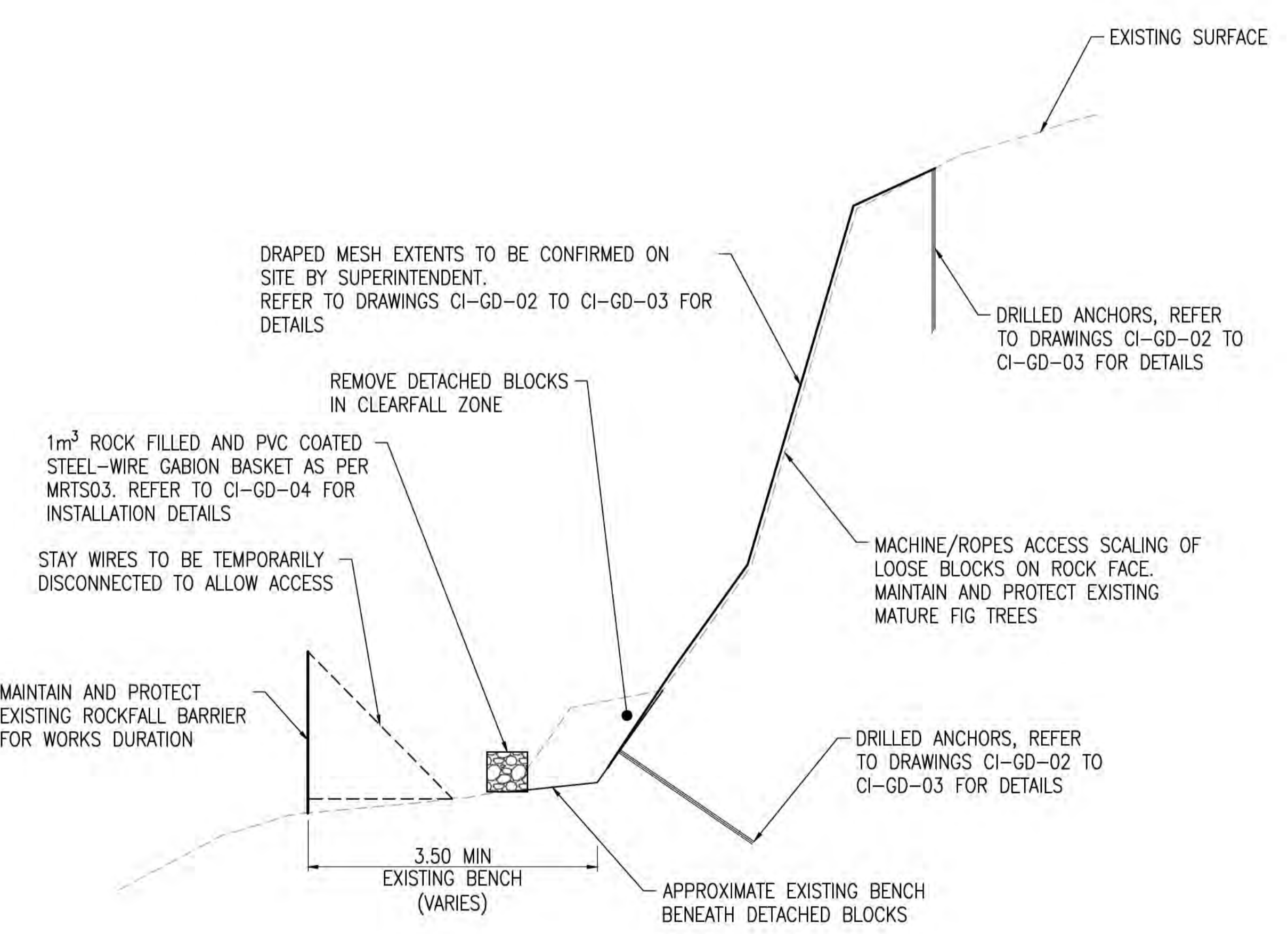
**SECTION E BOAT CLUB CAR PARK RETAINING WALL PROTECTION DETAIL**  
SCALE 1:100 EW-01



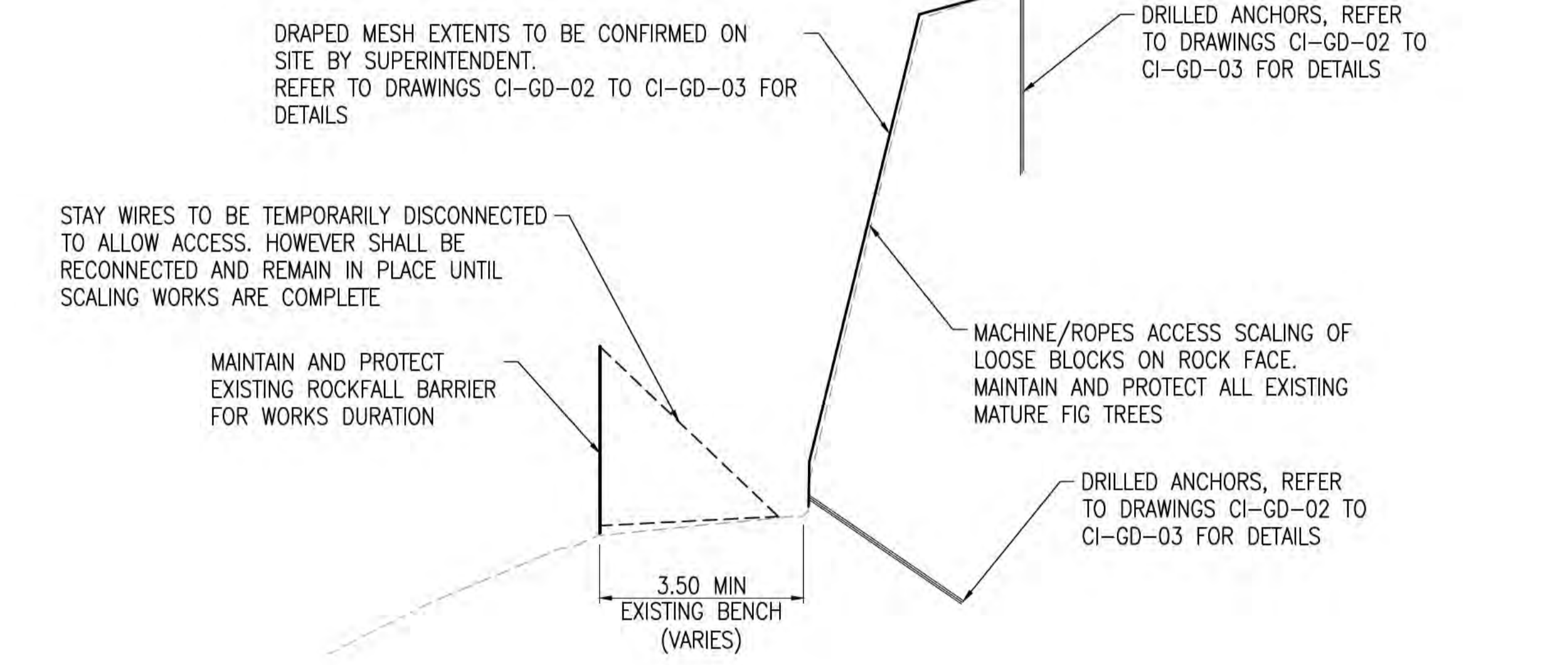
**SECTION F BERM ACCESS PATH**  
SCALE 1:100 EW-01



**SECTION I CHRISTMAS ISLAND CLUB ACCESS PATH**  
SCALE 1:100 EW-01



**SECTION G CHRISTMAS ISLAND CLUB ACCESS PATH DRAPED MESH AND ROCKFALL BARRIER CROSS-SECTION**  
SCALE 1:100 EW-01



**SECTION H CHRISTMAS ISLAND CLUB ACCESS PATH DRAPED MESH CROSS-SECTION**  
SCALE 1:100 EW-01

**CHRISTMAS ISLAND CLUB LAYDOWN AREA - SETOUT POINTS**

POINT ID	EASTING	NORTHING
CI-01	573685.98	8847304.58
CI-02	573674.89	8847304.42
CI-03	573690.23	8847324.17
CI-04	573674.90	8847327.46
CI-05	573689.97	8847329.45
CI-06	573675.25	8847331.83

**ISSUED FOR CONSTRUCTION**

Do not scale

Scales: A1 / A3 1:100 / 1:200

0 1 2 3 4m

Issue	Date	By	Chkd	Appd
A	04/08/20	RB	JG	EF

ISSUED FOR CONSTRUCTION

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

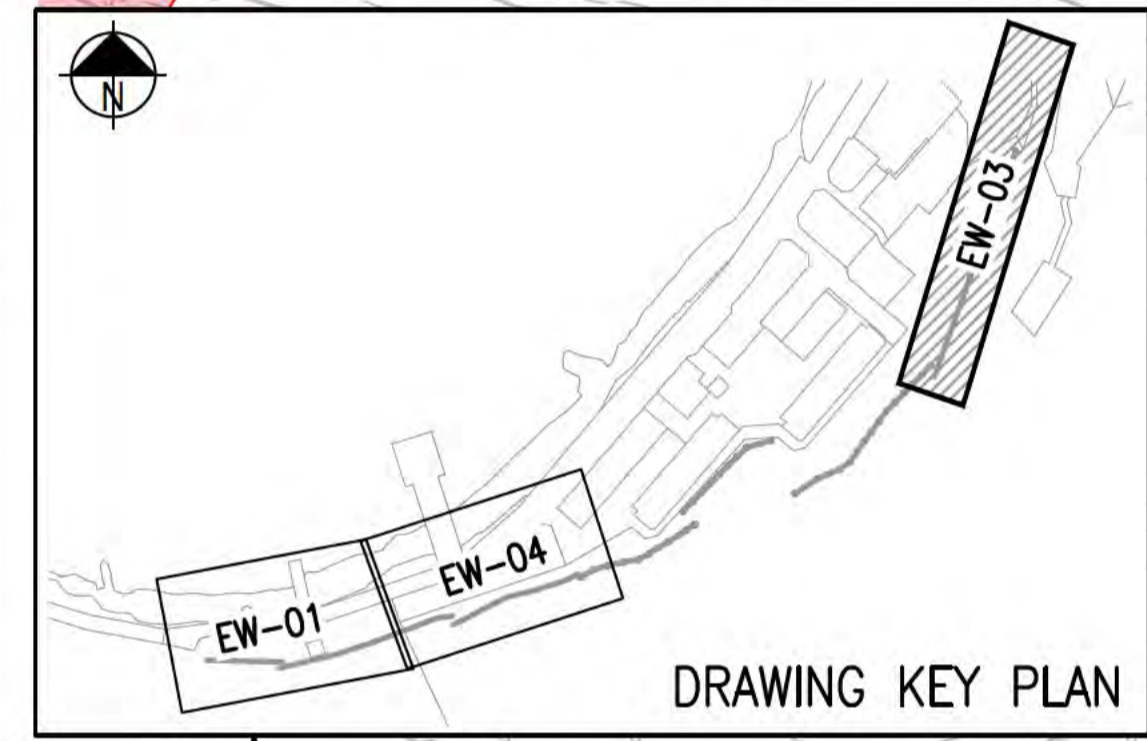
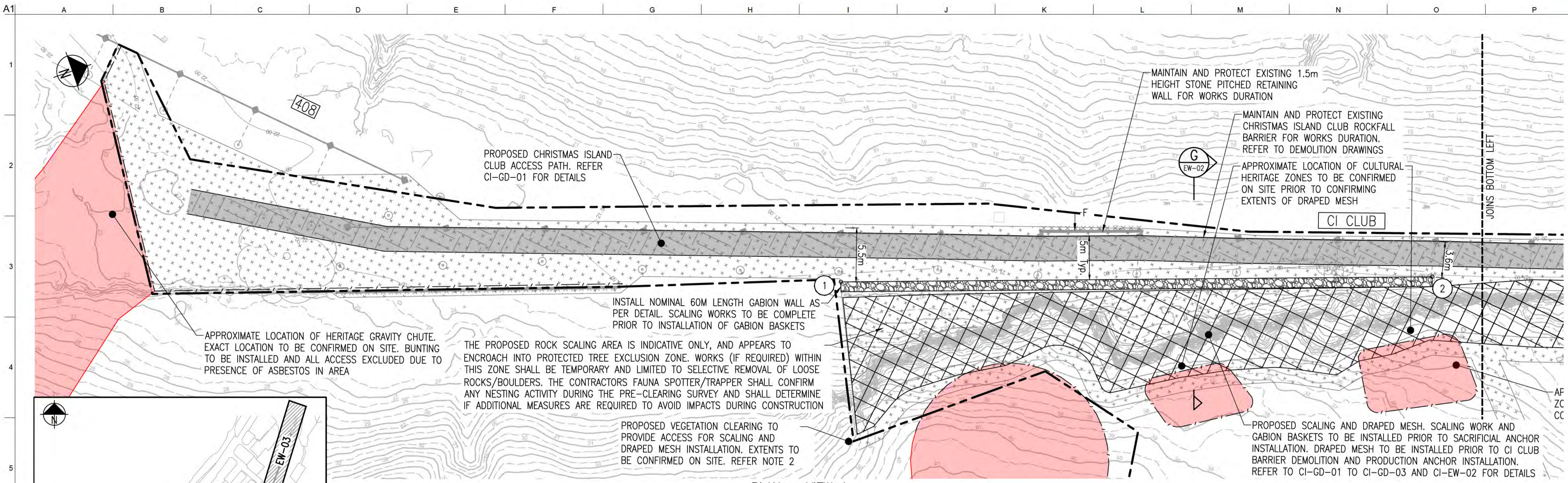
Client: AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS  
Job Title: FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN  
Scale at A1: 1:100  
Discipline:

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

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

Drawing Title: LANDSLIDE MITIGATION ACCESS PATH DETAILS TYPICAL SECTIONS  
Drawing Status: ISSUED FOR CONSTRUCTION  
Job No: 268575-00  
Drawing No: CI-EW-02  
Issue: A

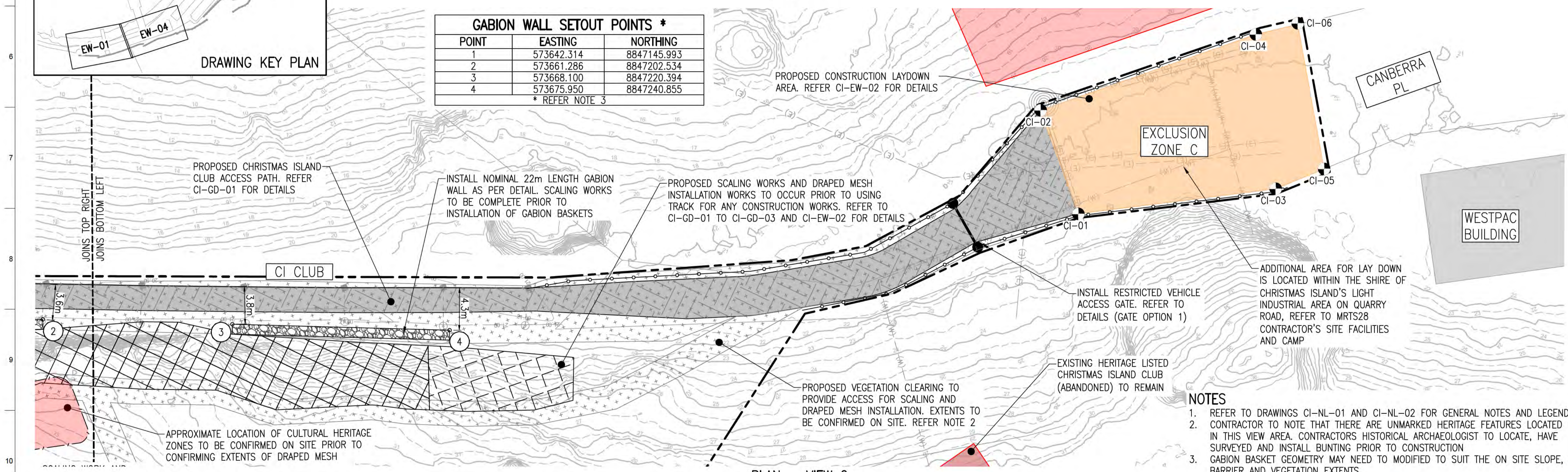
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



**GABION WALL SETOUT POINTS \***

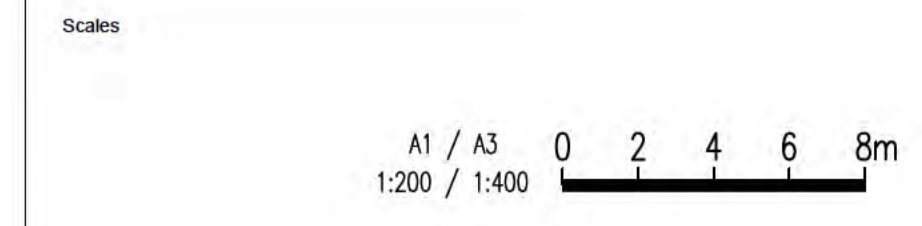
POINT	EASTING	NORTHING
1	573642.314	8847145.993
2	573661.286	8847202.534
3	573668.100	8847220.394
4	573675.950	8847240.855

\* REFER NOTE 3



- NOTES**
- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
  - CONTRACTOR TO NOTE THAT THERE ARE UNMARKED HERITAGE FEATURES LOCATED IN THIS VIEW AREA. CONTRACTORS HISTORICAL ARCHAEOLOGIST TO LOCATE, HAVE SURVEYED AND INSTALL BUNTING PRIOR TO CONSTRUCTION
  - GABION BASKET GEOMETRY MAY NEED TO MODIFIED TO SUIT THE ON SITE SLOPE, BARRIER AND VEGETATION EXTENTS.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd
A	04/08/20	RB	JG	EF

ISSUED FOR CONSTRUCTION



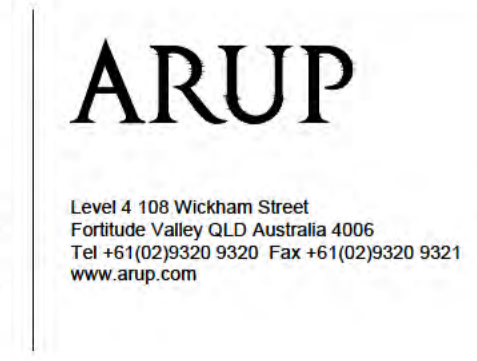
Client  
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Job Title  
FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN

Scale at A1  
1:200

Discipline



Drawing Title  
LANDSLIDE MITIGATION ACCESS PATH DETAILS SHEET 2

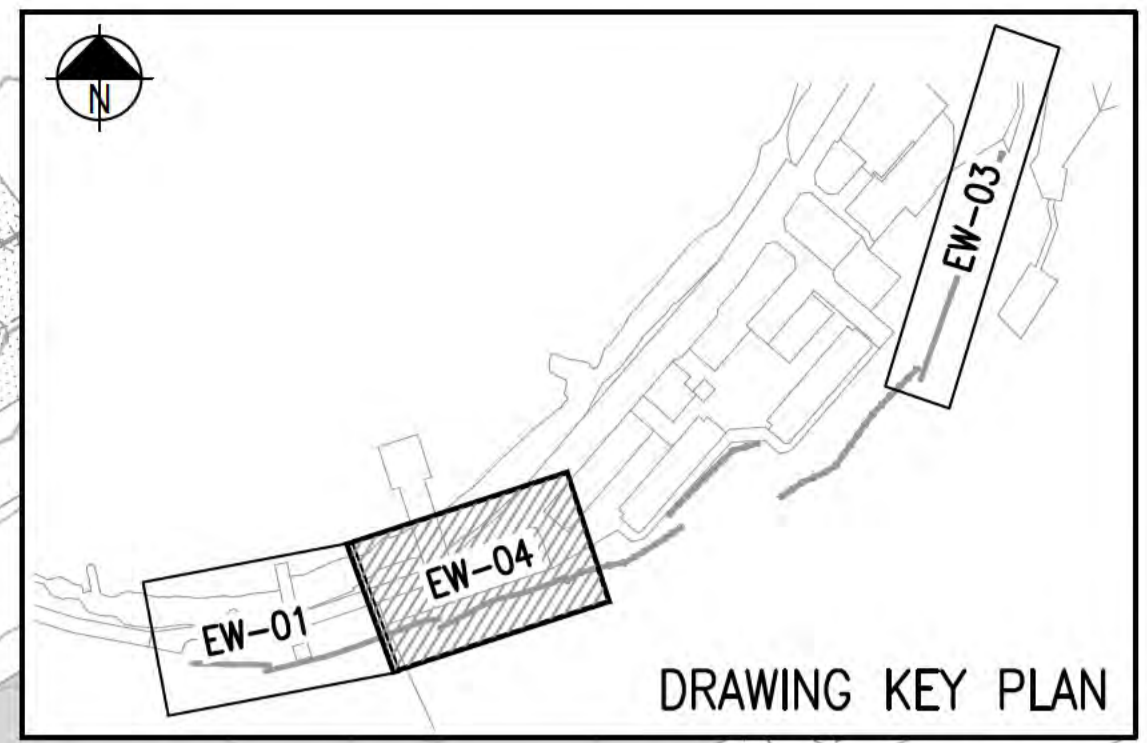
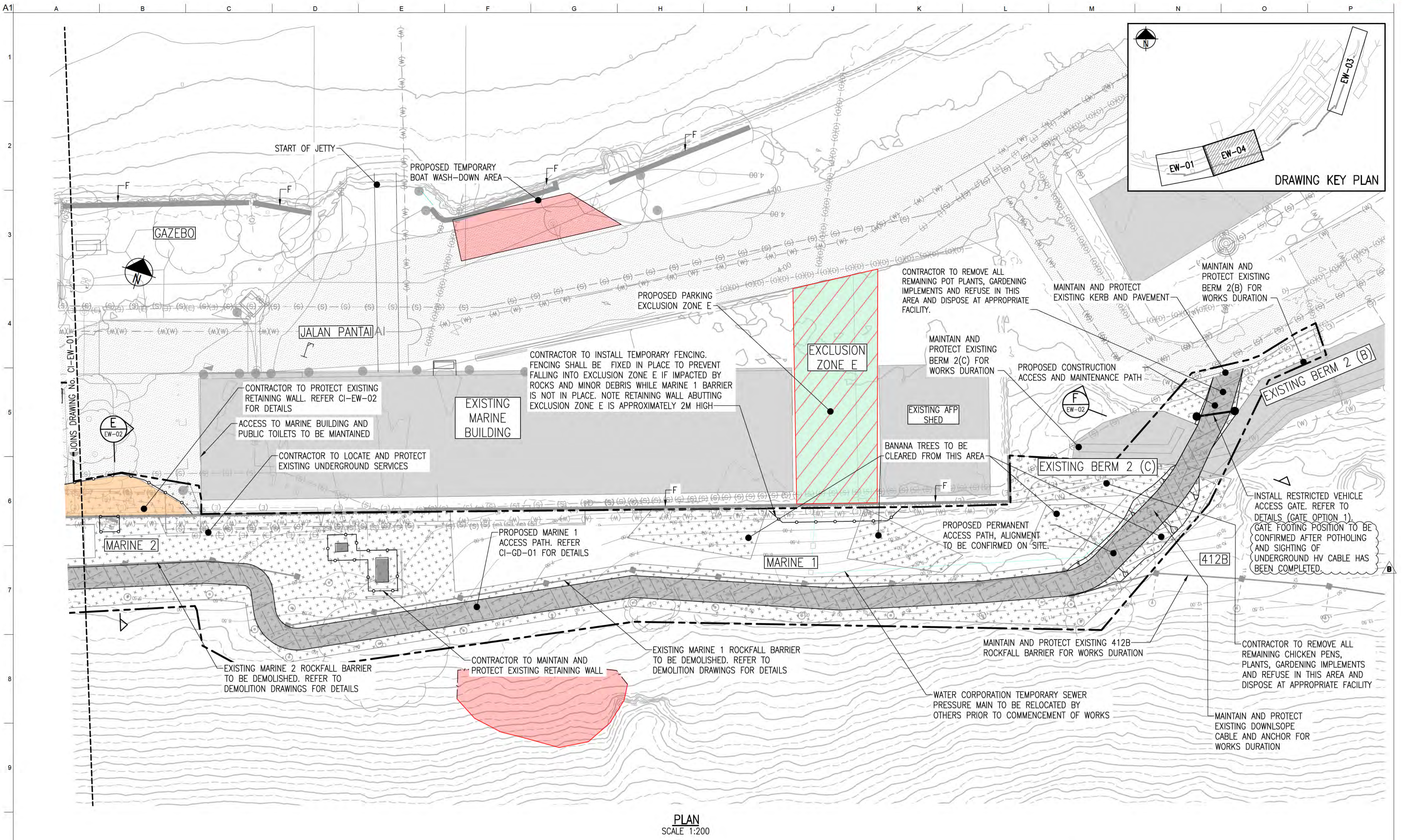
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
268575-00

Drawing No  
CI-EW-03

Issue  
A

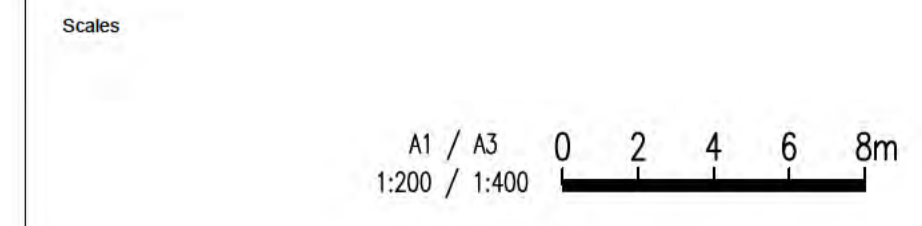
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



PLAN  
SCALE 1:200

**NOTES**  
 1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd

B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				
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  
 LANDSLIDE MITIGATION  
 DETAILED DESIGN

Scale at A1 1:200  
 Discipline



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

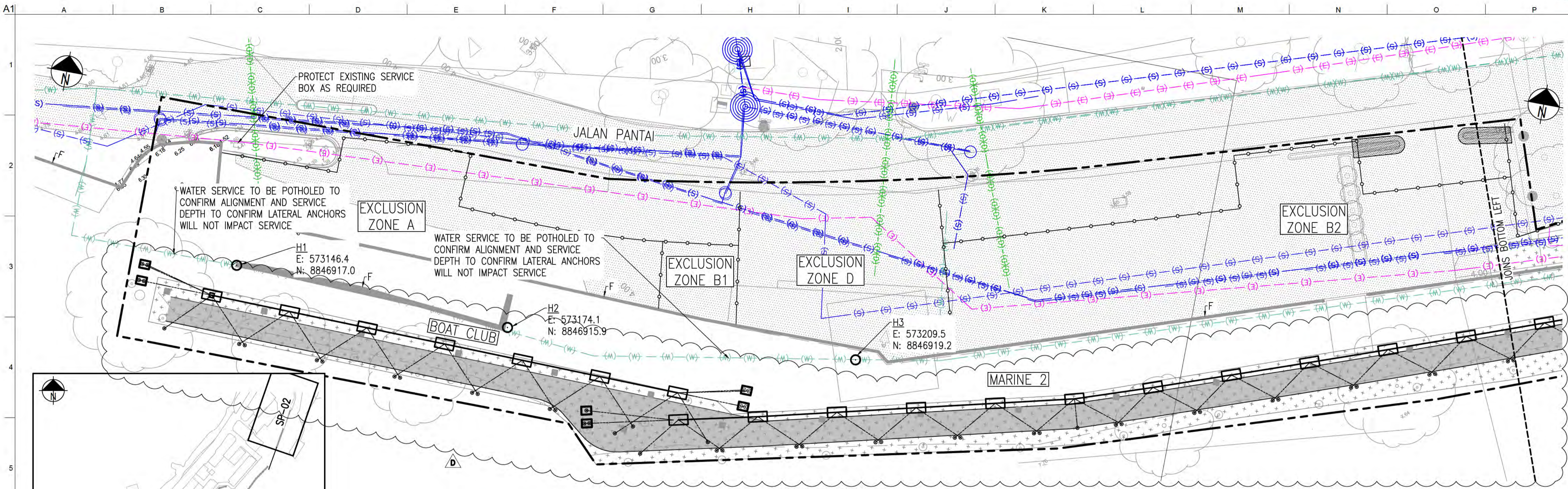


Drawing Title  
 LANDSLIDE MITIGATION  
 ACCESS PATH DETAILS  
 SHEET 3

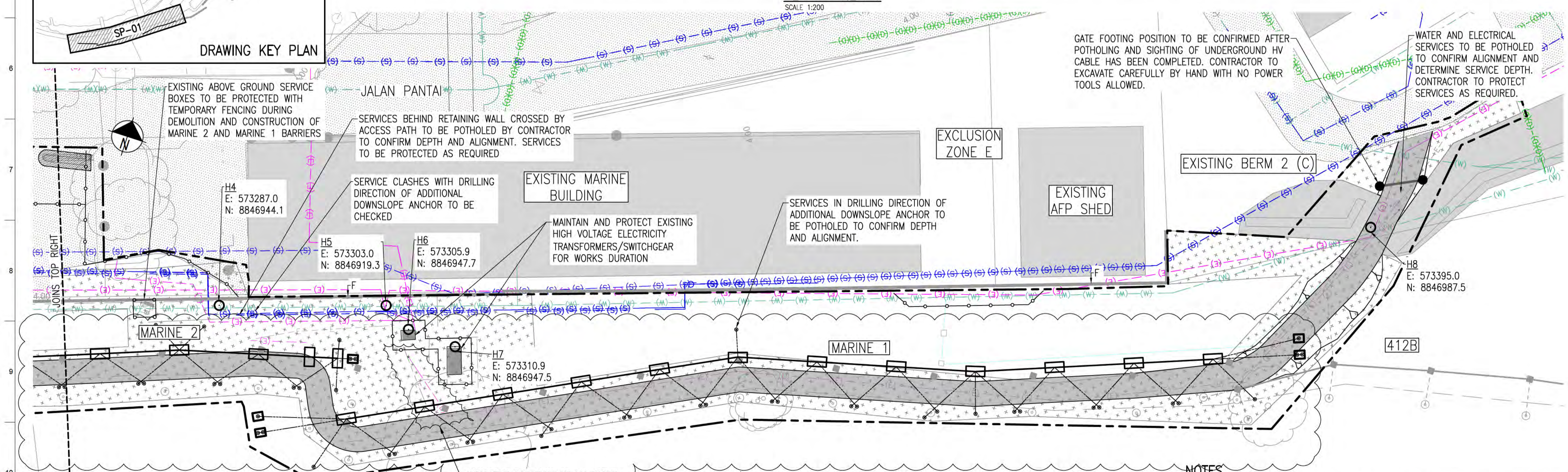
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No 268575-00 Drawing No CI-EW-04 Issue B

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



PLAN - VIEW 1  
SCALE 1:200



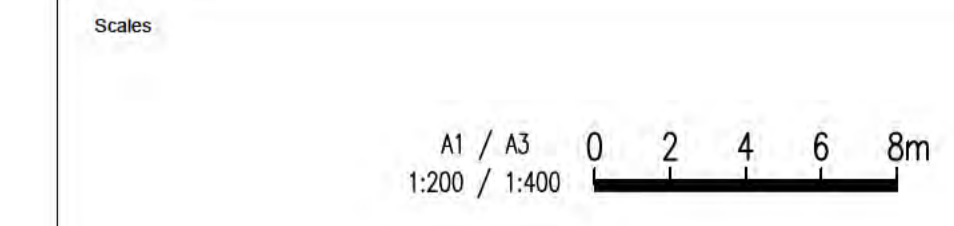
PLAN - VIEW 2  
SCALE 1:200

GATE FOOTING POSITION TO BE CONFIRMED AFTER POTHOLING AND SIGHTING OF UNDERGROUND HV CABLE HAS BEEN COMPLETED. CONTRACTOR TO EXCAVATE CAREFULLY BY HAND WITH NO POWER TOOLS ALLOWED.

WATER AND ELECTRICAL SERVICES TO BE POTHOLED TO CONFIRM ALIGNMENT AND DETERMINE SERVICE DEPTH. CONTRACTOR TO PROTECT SERVICES AS REQUIRED.

NOTES  
1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.

**NOT FOR CONSTRUCTION**



C	13/10/20	RB	JG	EF
Marine 2 Compression Strut				
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				
D	22/09/21	JL	JG	EF
Revised As Clouded				
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  
LANDSLIDE MITIGATION  
DETAILED DESIGN

Scale at A1 1:200  
Discipline



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

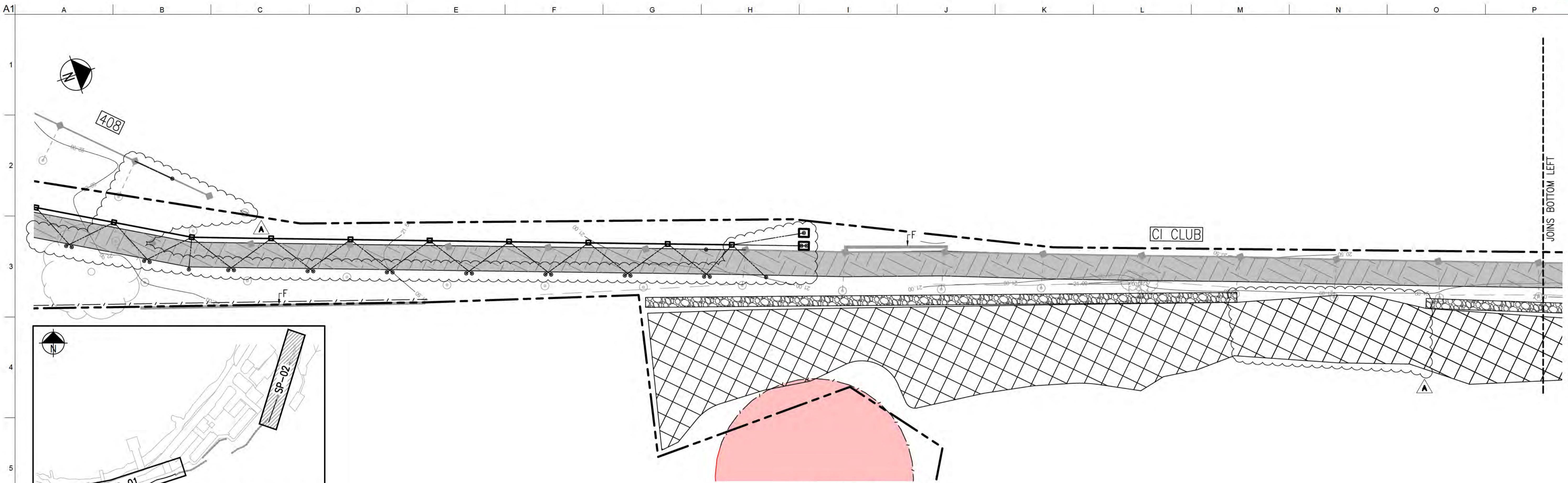


Drawing Title  
LANDSLIDE MITIGATION  
CHRISTMAS ISLAND CLUB  
COMBINED SERVICES PLAN

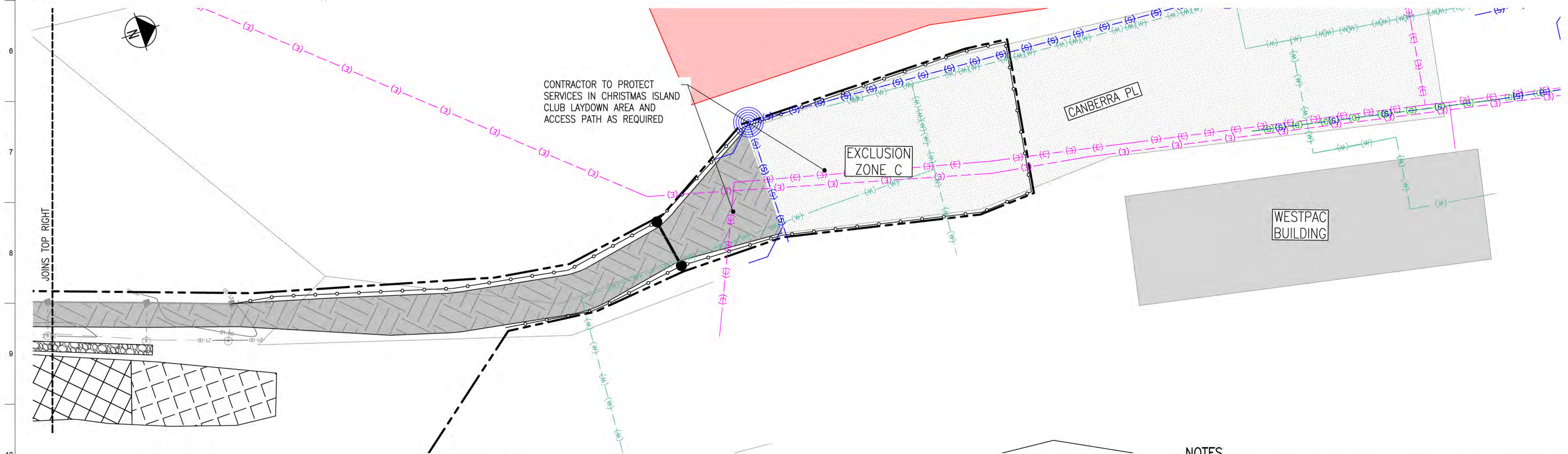
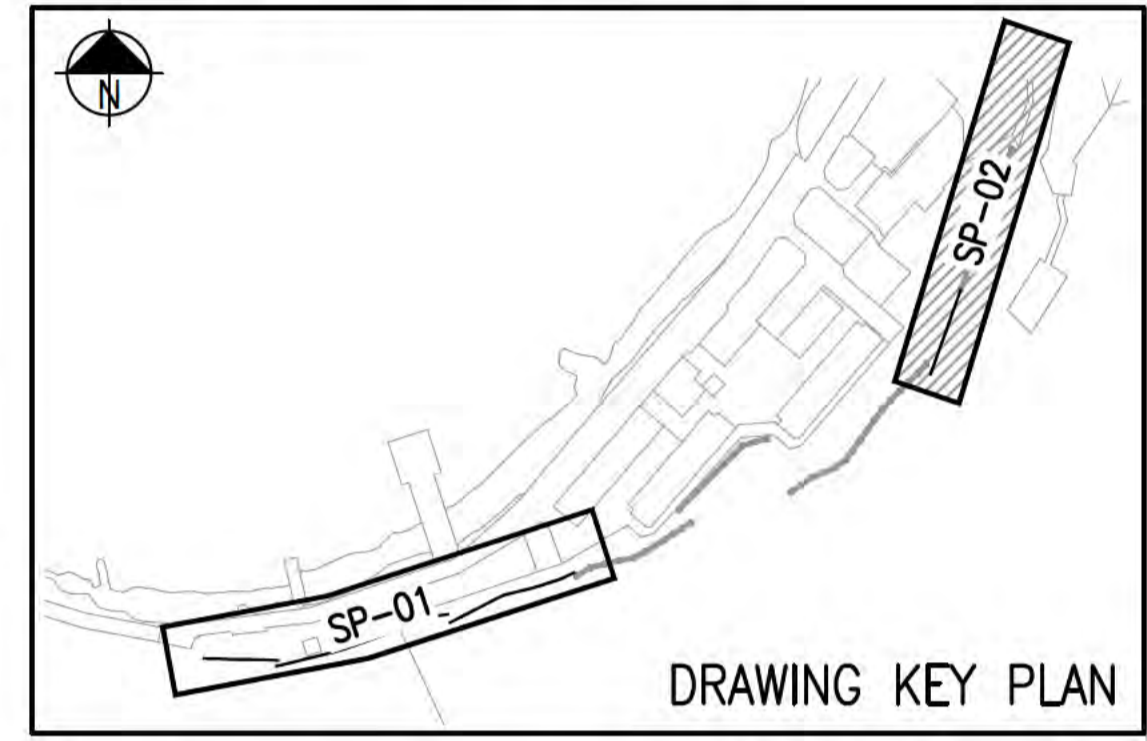
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No 268575-00 Drawing No CI-SP-01 Issue D

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



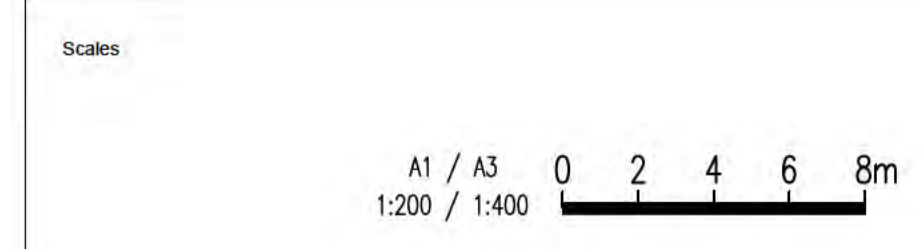
PLAN - VIEW 1  
SCALE 1:200



PLAN - VIEW 2  
SCALE 1:200

NOTES  
1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



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

Engineering Certification (CEng)  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Job Title  
FLYING FISH COVE  
CHRISTMAS ISLAND  
LANDSLIDE MITIGATION  
DETAILED DESIGN

Scale at A1  
1:200

Discipline



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  
CHRISTMAS ISLAND CLUB  
COMBINED SERVICES PLAN

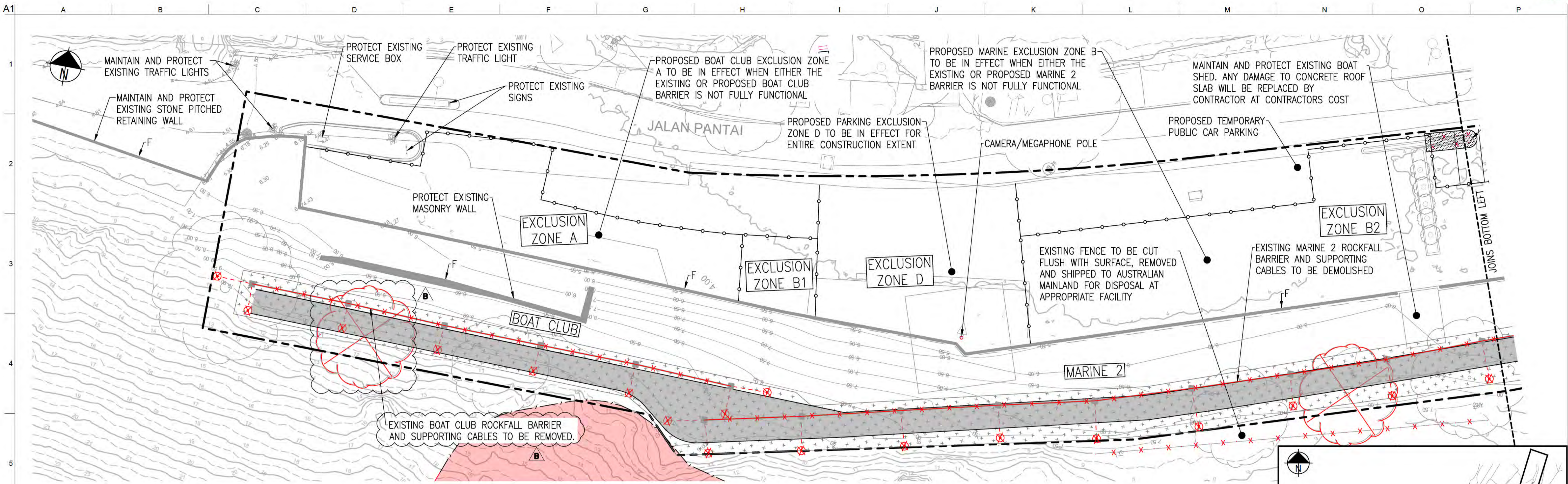
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

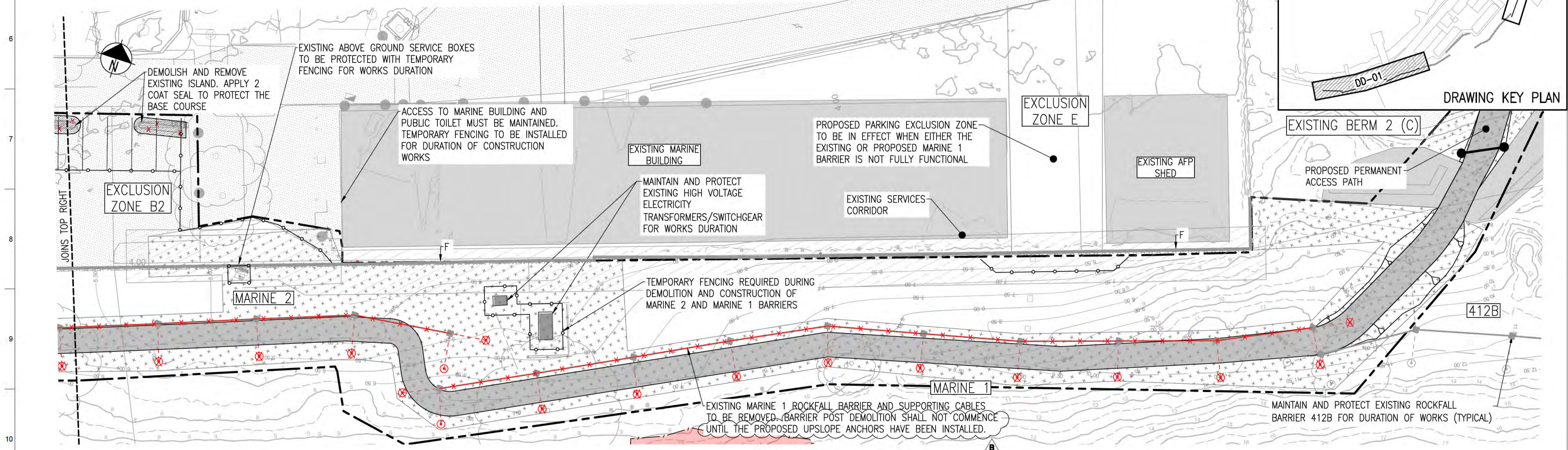
Drawing No  
**CI-SP-02**

Issue  
**B**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



PLAN VIEW-1  
SCALE 1:200

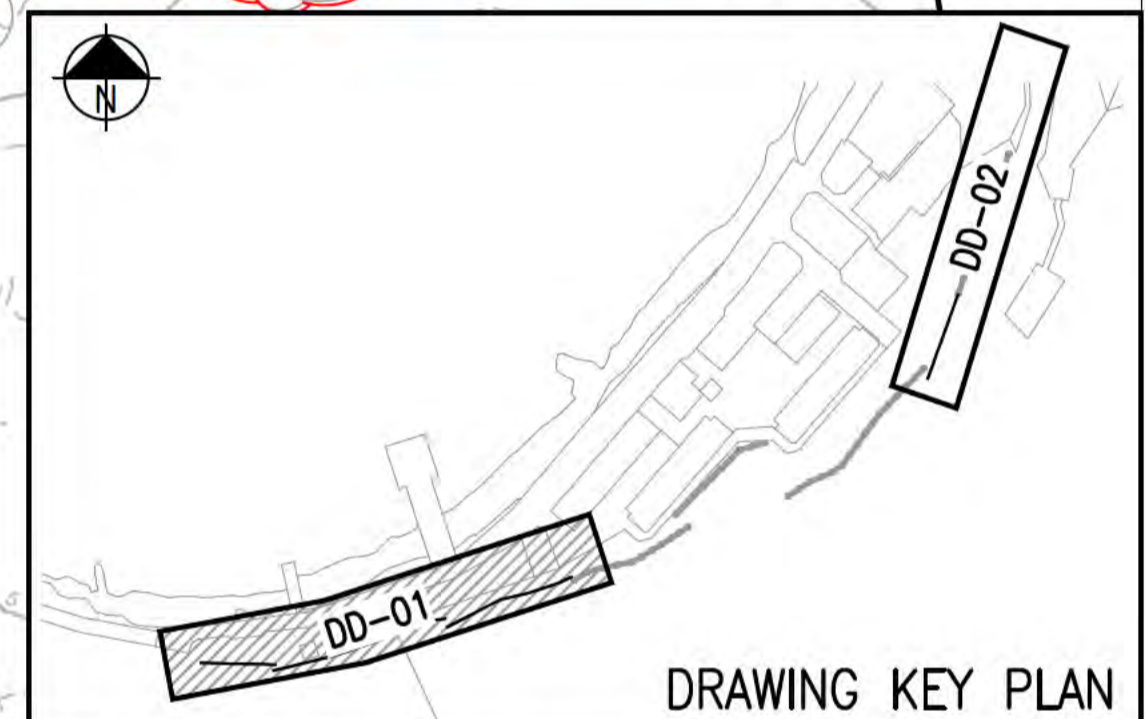


PLAN - VIEW 2  
SCALE 1:200

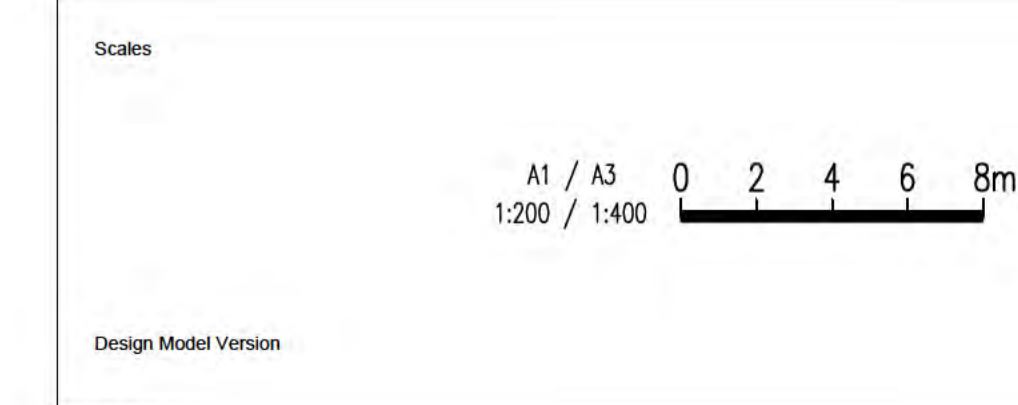
NOTES

- 1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.

**ISSUED FOR CONSTRUCTION**



DRAWING KEY PLAN



Do not scale

Issue	Date	By	Chkd	Appd
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



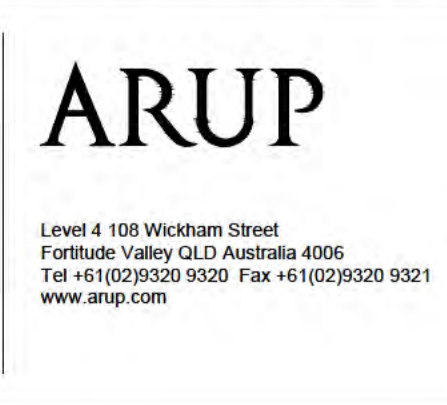
Client  
**AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS**

Engineering Certification (CEng)  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Job Title  
**FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
 1:200

Discipline



Drawing Title  
**LANDSLIDE MITIGATION BOATCLUB, MARINE 1 & MARINE 2 DEMOLITION PLAN**

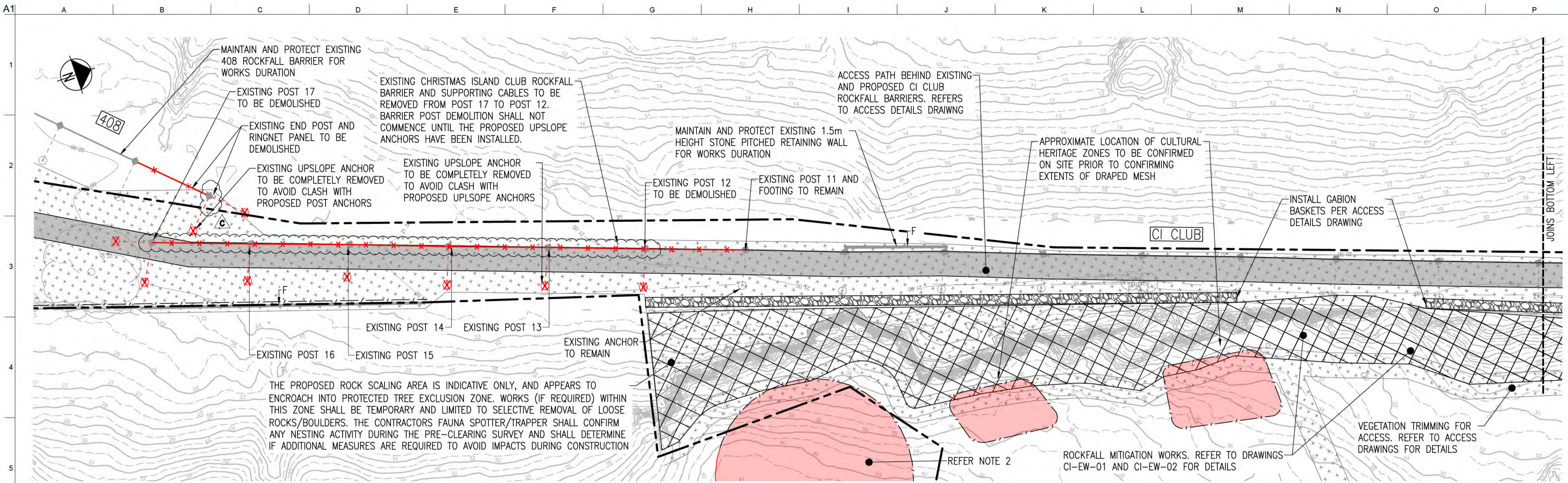
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

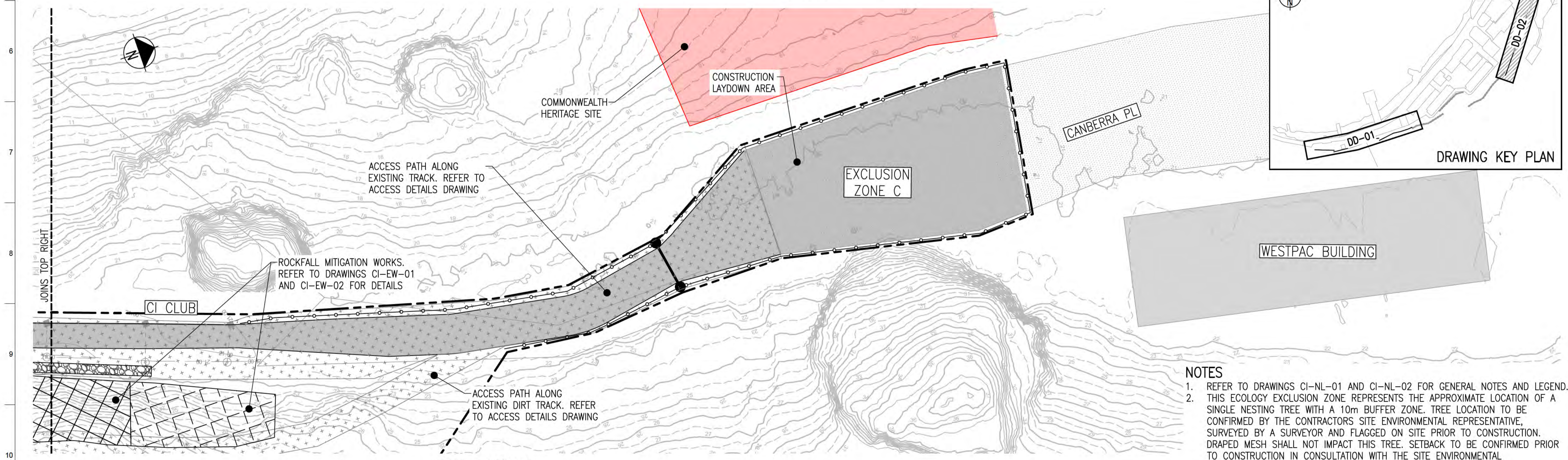
Drawing No  
**CI-DD-01**

Issue  
**B**

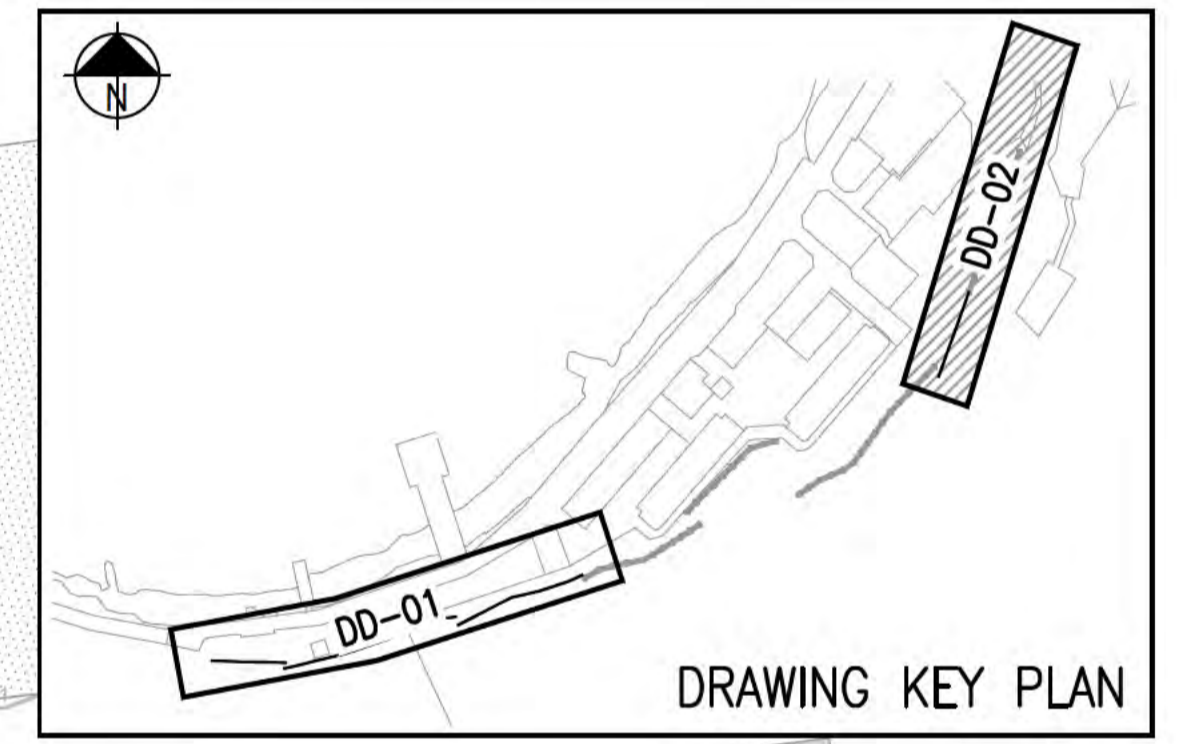
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



PLAN - VIEW 1  
SCALE 1:200



PLAN - VIEW 2  
SCALE 1:200



- NOTES**
- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
  - THIS ECOLOGY EXCLUSION ZONE REPRESENTS THE APPROXIMATE LOCATION OF A SINGLE NESTING TREE WITH A 10m BUFFER ZONE. TREE LOCATION TO BE CONFIRMED BY THE CONTRACTORS SITE ENVIRONMENTAL REPRESENTATIVE, SURVEYED BY A SURVEYOR AND FLAGGED ON SITE PRIOR TO CONSTRUCTION. DRAPED MESH SHALL NOT IMPACT THIS TREE. SETBACK TO BE CONFIRMED PRIOR TO CONSTRUCTION IN CONSULTATION WITH THE SITE ENVIRONMENTAL REPRESENTATIVE AND SUPERINTENDENT.



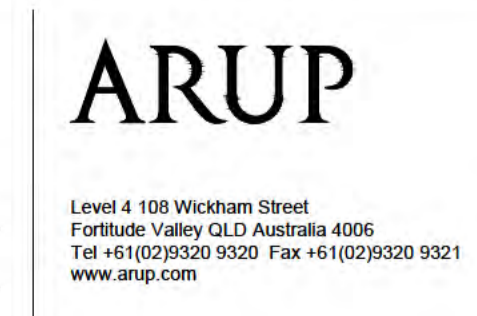
Issue	Date	By	Chkd	Appd

C	13/10/20	RB	JG	EF
Revised Post Demolition				
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				
Issue	Date	By	Chkd	Appd



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

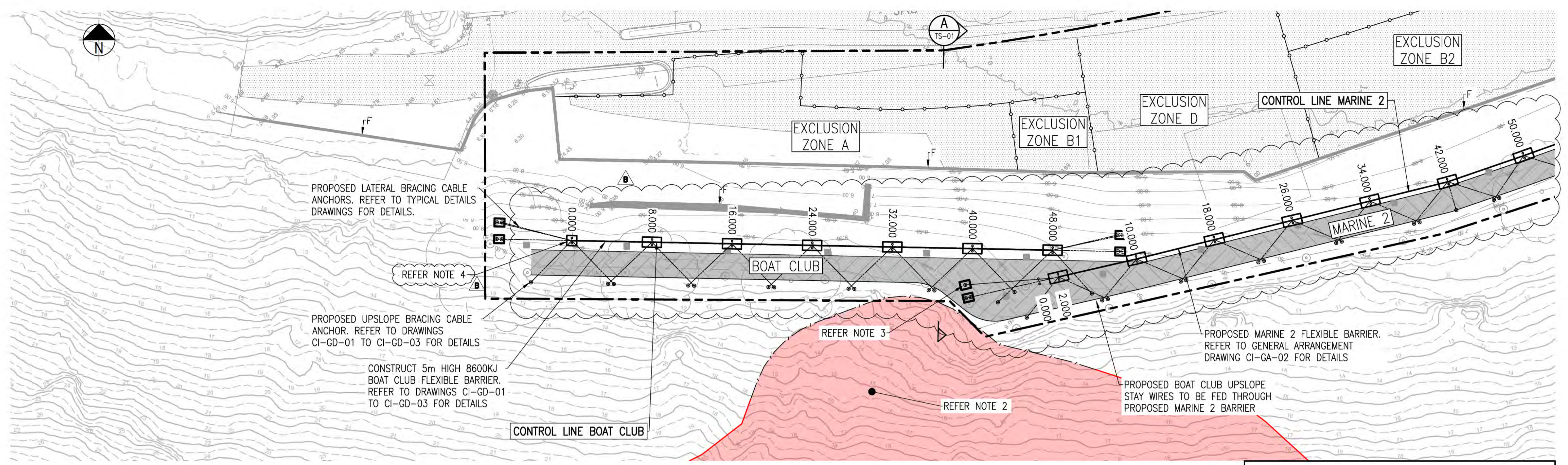
Job Title  
**FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN**  
 Scale at A1 1:200  
 Discipline



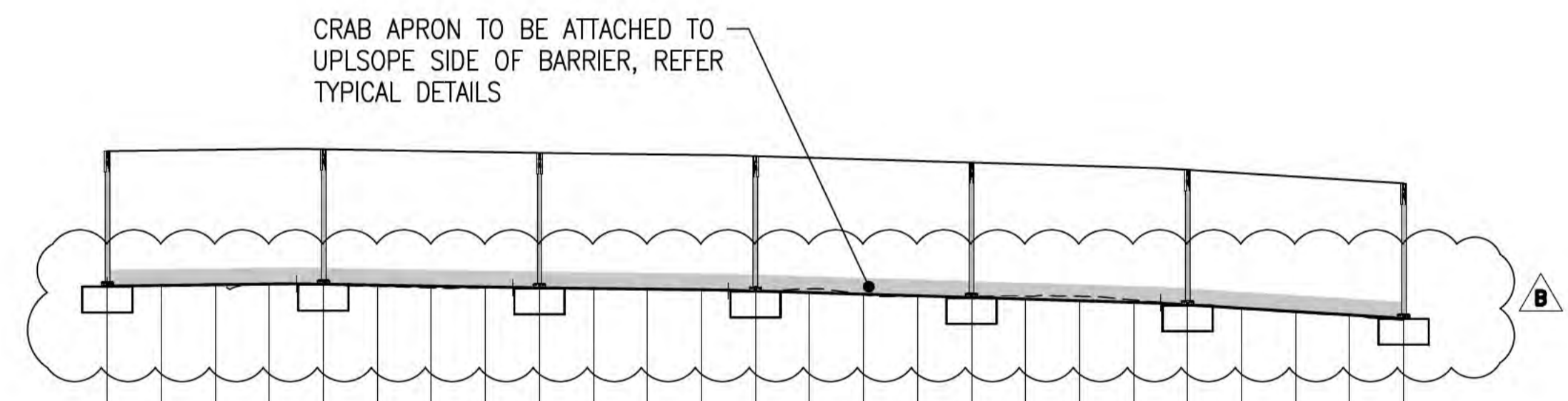
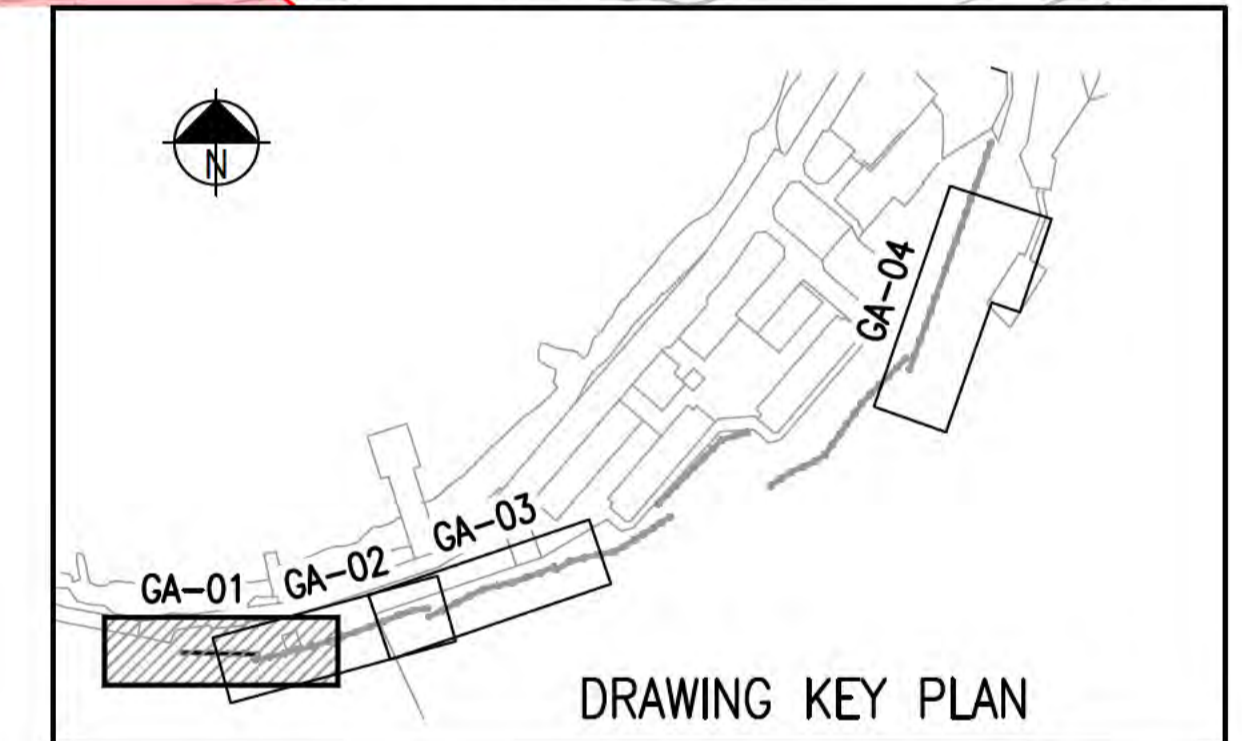
Drawing Title  
**LANDSLIDE MITIGATION CHRISTMAS ISLAND CLUB DEMOLITION PLAN**  
 Drawing Status  
**ISSUED FOR CONSTRUCTION**  
 Job No: **268575-00** Drawing No: **CI-DD-02** Issue: **C**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**





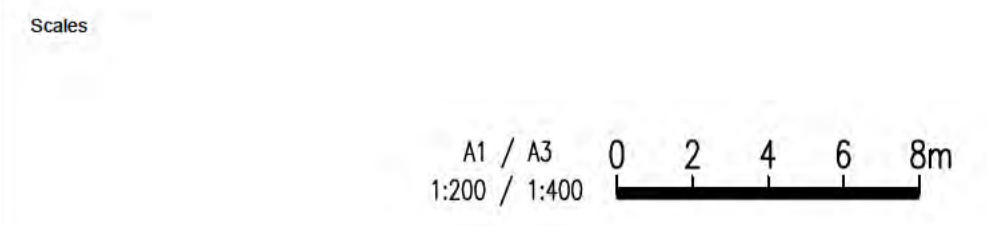
PLAN  
SCALE 1:200



Datum 2.50	
Fence Height	5
Design Height*	9.354
Natural Surface	9.354
Chainage	0
	2
	4
	6
	8
	10
	12
	14
	16
	18
	20
	22
	24
	26
	28
	30
	32
	34
	36
	38
	40
	42
	44
	46
	48

\*CORRESPONDS TO TOP OF CONCRETE FOOTING HEIGHT  
VERTICAL SCALE 1:200  
HORIZONTAL SCALE 1:200  
**LONGITUDINAL SECTION - BOAT CLUB**

- NOTES**
- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
  - THIS ECOLOGY EXCLUSION ZONE REPRESENTS THE APPROXIMATE LOCATION OF SINGLE NESTING TREE WITH A 10m BUFFER ZONE. TREE LOCATION TO BE CONFIRMED BY THE CONTRACTORS SITE ENVIRONMENTAL REPRESENTATIVE, SURVEYED BY A SURVEYOR AND FLAGGED ON SITE PRIOR TO CONSTRUCTION. DRAPED MESH SHALL NOT IMPACT THIS TREE. SETBACK TO BE CONFIRMED PRIOR TO CONSTRUCTION IN CONSULTATION WITH THE SITE ENVIRONMENTAL REPRESENTATIVE AND SUPERINTENDENT.
  - PROPOSED ANCHOR POSITION TO BE CONFIRMED ON SITE AFTER EXTENT OF DEMOLISHED ANCHORS ARE KNOWN.
  - CHAINAGE 0 POST FOOTINGS AS PER CI-GD-10 AND CI-GD-12.



Issue	Date	By	Chkd	Appd

B	19/10/21	JL	JG	EF
Revised As Clouded				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				
Issue	Date	By	Chkd	Appd

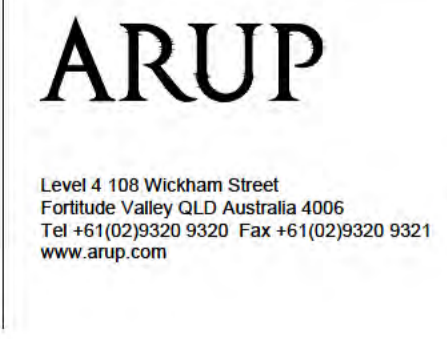


Client  
**AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS**

Engineering Certification (CEng)  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Job Title  
**FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1 1:200  
Discipline



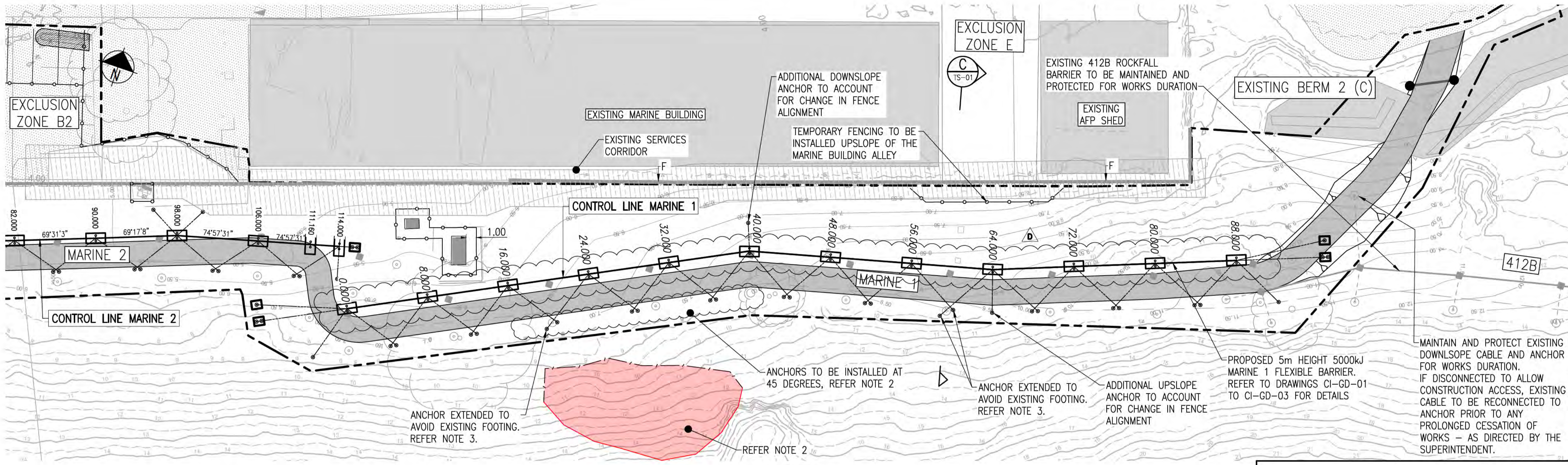
Drawing Title  
**LANDSLIDE MITIGATION BOATCLUB GENERAL ARRANGEMENT**

Drawing Status  
**ISSUED FOR CONSTRUCTION**

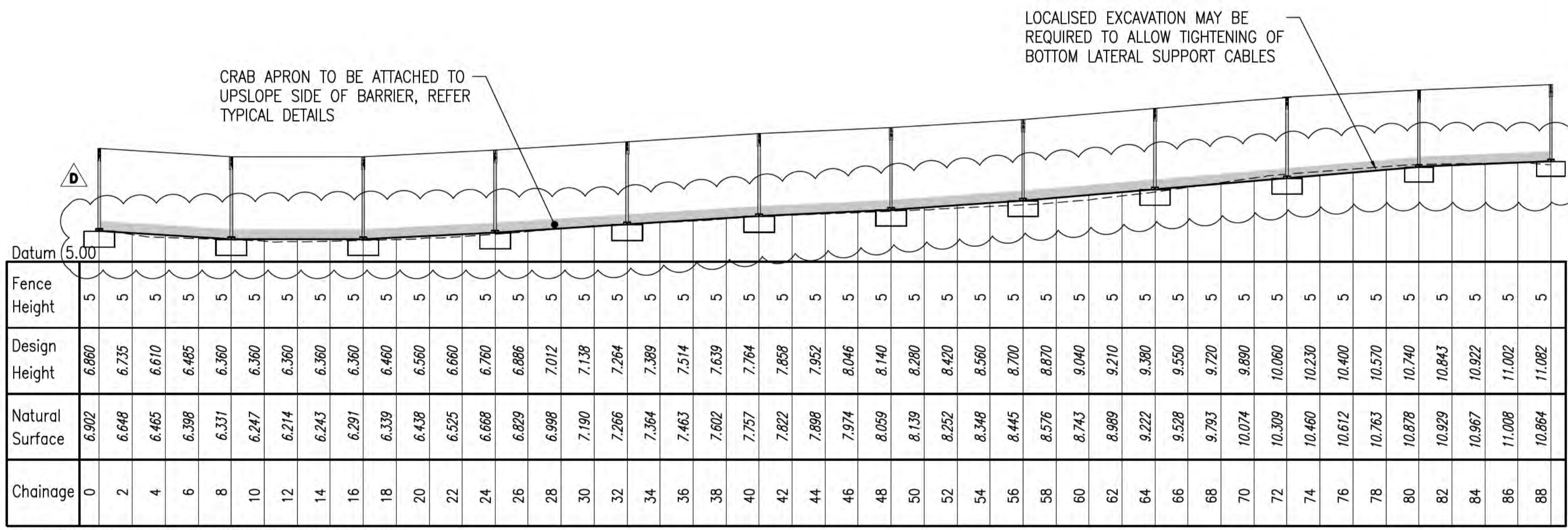
Job No 268575-00  
Drawing No CI-GA-01  
Issue B

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



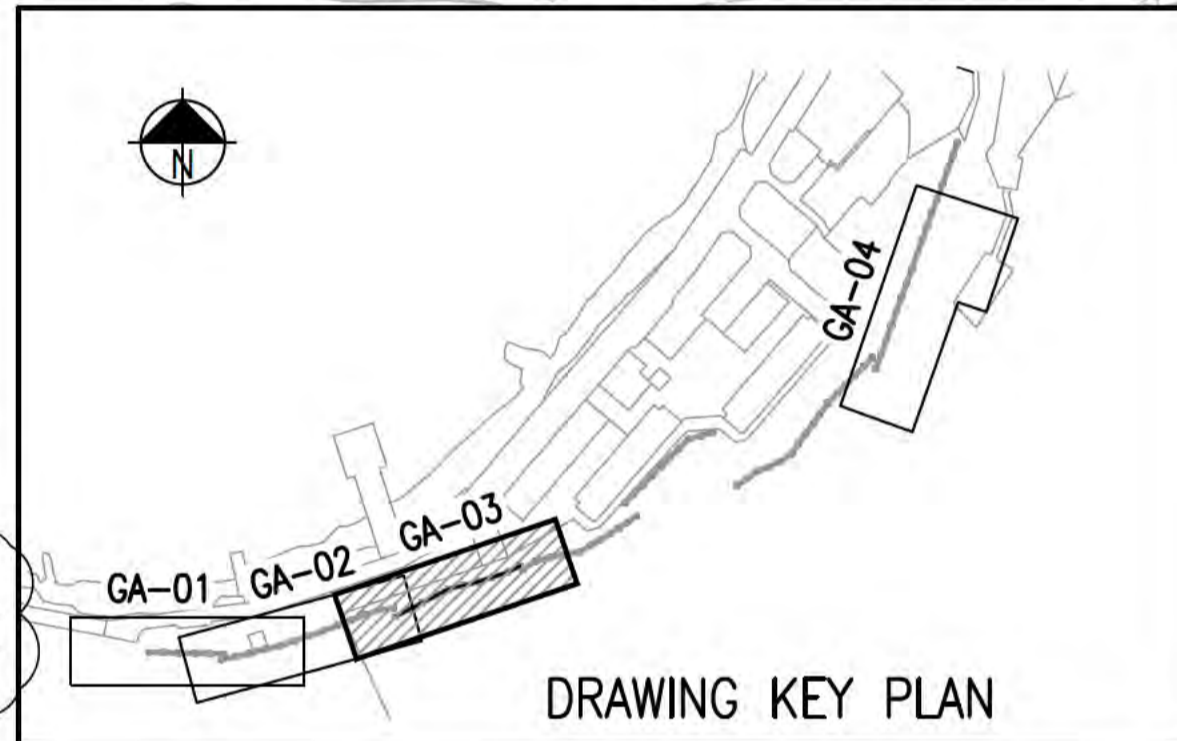


**PLAN**  
SCALE 1:200



**LONGITUDINAL SECTION - MARINE 1**

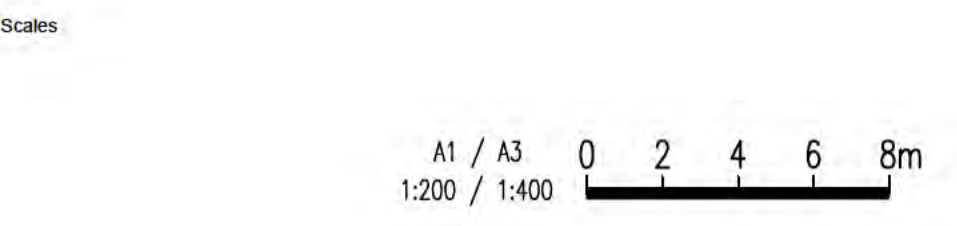
\*CORRESPONDS TO TOP OF CONCRETE FOOTING HEIGHT  
VERTICAL SCALE 1:200  
HORIZONTAL SCALE 1:200



**DRAWING KEY PLAN**

- NOTES**
- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
  - INDICATIVE CULTURAL HERITAGE EXCLUSION ZONE EXTENTS TO BE CONFIRMED, SURVEYED AND BUNTING INSTALLED AROUND FOR VISUAL IDENTIFICATION AND PROTECTION PRIOR TO CONSTRUCTION. ANCHORS DOWNSLOPE FROM HERITAGE ZONE (ESTIMATED MARINE 1 CH16m TO CH40m) TO BE INSTALLED 45DEGREES FROM HORIZONTAL TO AVOID DISTURBANCE.
  - PROPOSED ANCHOR POSITION TO BE CONFIRMED ON SITE AFTER EXTENT OF DEMOLISHED ANCHORS ARE KNOWN

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd
D	22/09/21	JL	JG	EF

Issue	Date	By	Chkd	Appd
C	13/10/20	RB	JG	EF
B	24/08/20	RB	JG	EF
A	04/08/20	RB	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 LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
1:200

Discipline



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 MARINE 1 GENERAL ARRANGEMENT**

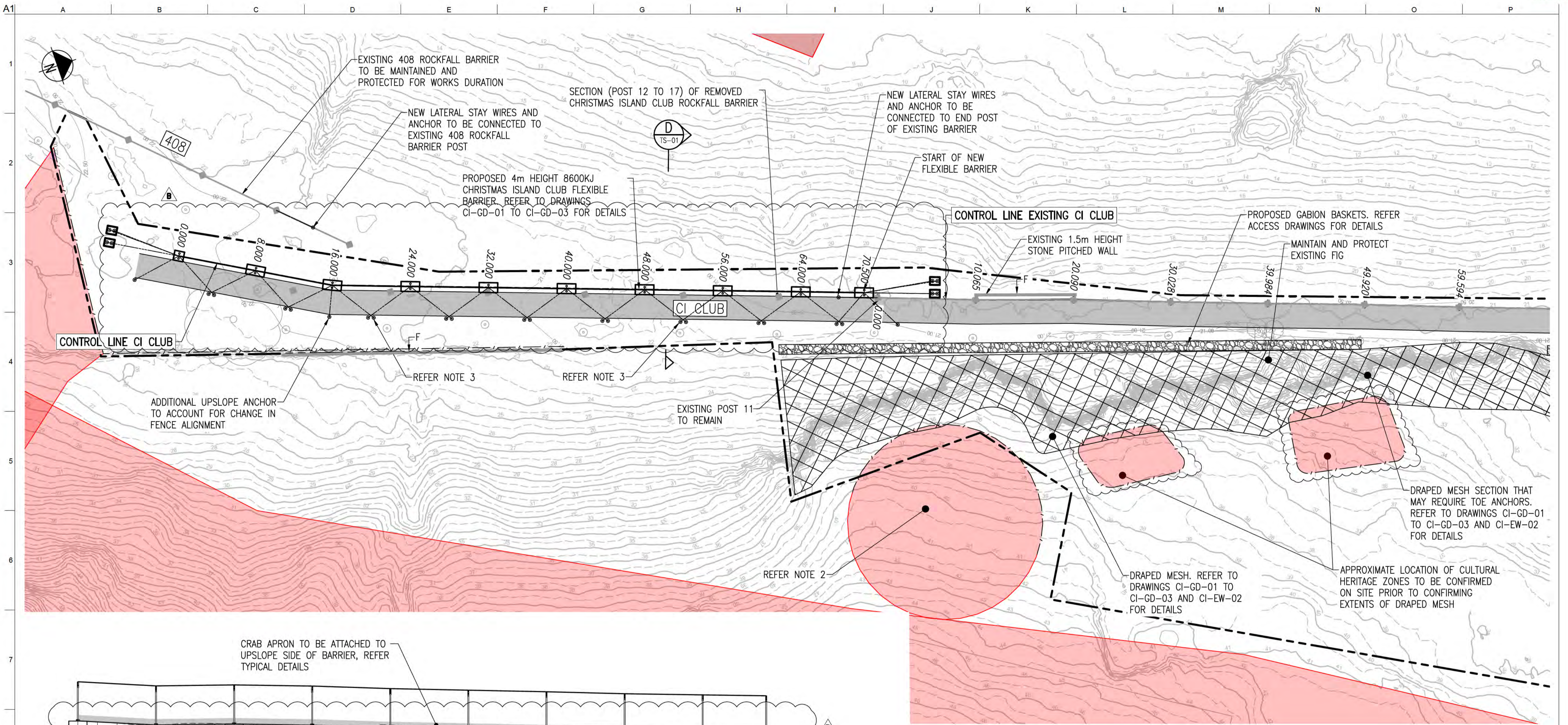
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

Drawing No  
**CI-GA-03**

Issue  
**D**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

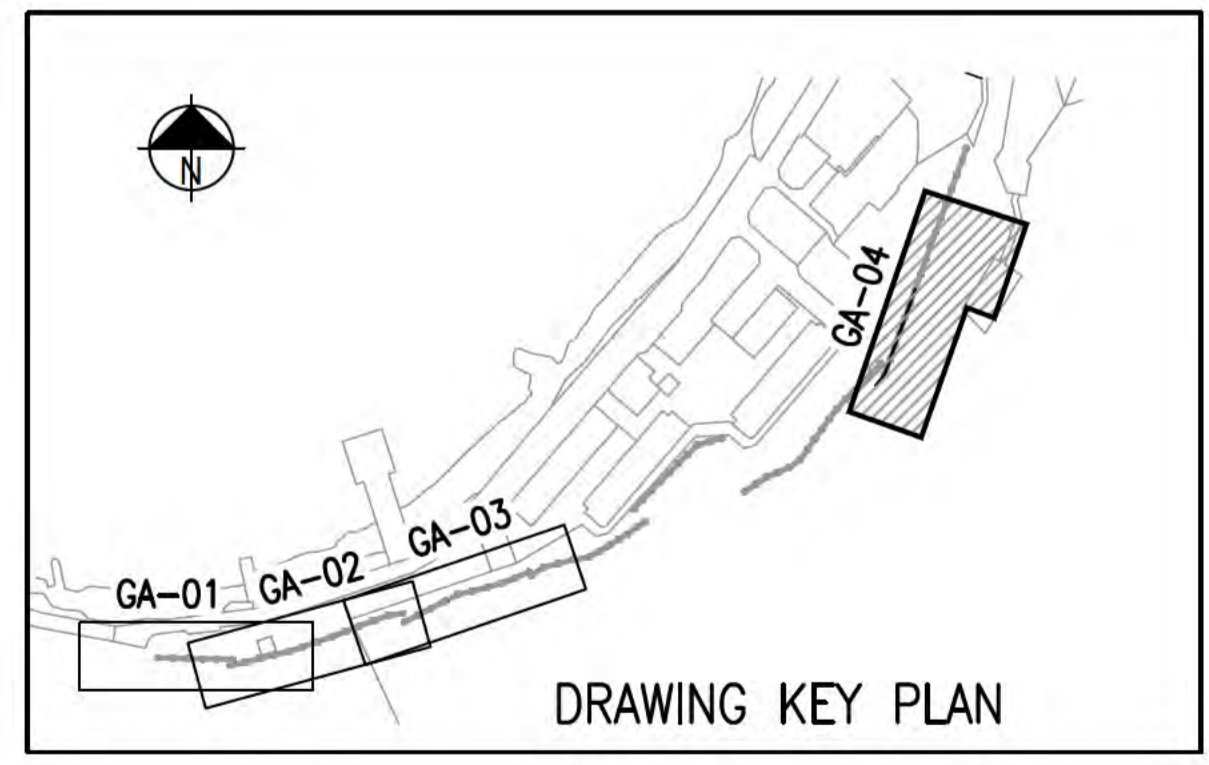


CRAB APRON TO BE ATTACHED TO UPSLOPE SIDE OF BARRIER, REFER TYPICAL DETAILS

Datum	19.00																			
Fence Height	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Design Height*	22.258	22.153	22.048	21.943	21.838	21.733	21.628	21.523	21.418	21.313	21.208	21.103	21.000	20.895	20.790	20.685	20.580	20.475	20.370	20.265
Natural Surface	22.259	22.149	22.033	21.913	21.788	21.663	21.538	21.413	21.288	21.163	21.038	20.913	20.788	20.663	20.538	20.413	20.288	20.163	20.038	19.913
Chainage	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38

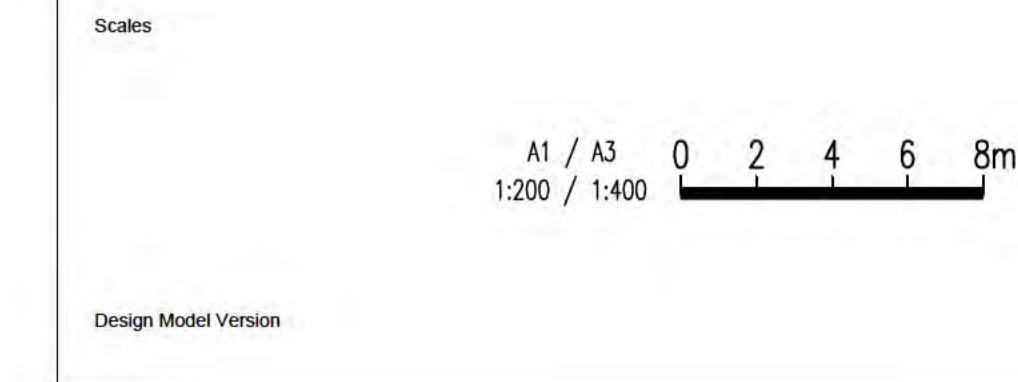
**LONGITUDINAL SECTION - CI CLUB**

\*CORRESPONDS TO TOP OF CONCRETE FOOTING HEIGHT  
 VERTICAL SCALE 1:200  
 HORIZONTAL SCALE 1:200



- NOTES**
- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
  - THIS ECOLOGY EXCLUSION ZONE REPRESENTS THE APPROXIMATE LOCATION OF SINGLE NESTING TREE WITH A 10m BUFFER ZONE. TREE LOCATION TO BE CONFIRMED BY THE CONTRACTORS SITE ENVIRONMENTAL REPRESENTATIVE, SURVEYED BY A SURVEYOR AND FLAGGED ON SITE PRIOR TO CONSTRUCTION. DRAPED MESH SHALL NOT IMPACT THIS TREE. SETBACK TO BE CONFIRMED PRIOR TO CONSTRUCTION IN CONSULTATION WITH THE SITE ENVIRONMENTAL REPRESENTATIVE AND SUPERINTENDENT.
  - PROPOSED ANCHOR POSITION TO BE CONFIRMED ON SITE AFTER EXTENT OF DEMOLISHED ANCHORS ARE KNOWN.
  - CHAINAGE 0 POST FOOTINGS AS PER CI-GD-10 AND CI-GD-12.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd
B	19/10/21	JL	JG	EF
Revised As Clouded				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				

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

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

Job Title  
**FLYING FISH COVE  
 CHRISTMAS ISLAND CLUB  
 REGIONAL DEVELOPMENT  
 DETAILED DESIGN**

**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  
 Aus Pty Ltd  
 ABN 18 000 966 165

Drawing Title  
**LANDSLIDE MITIGATION  
 CHRISTMAS ISLAND CLUB  
 GENERAL ARRANGEMENT**

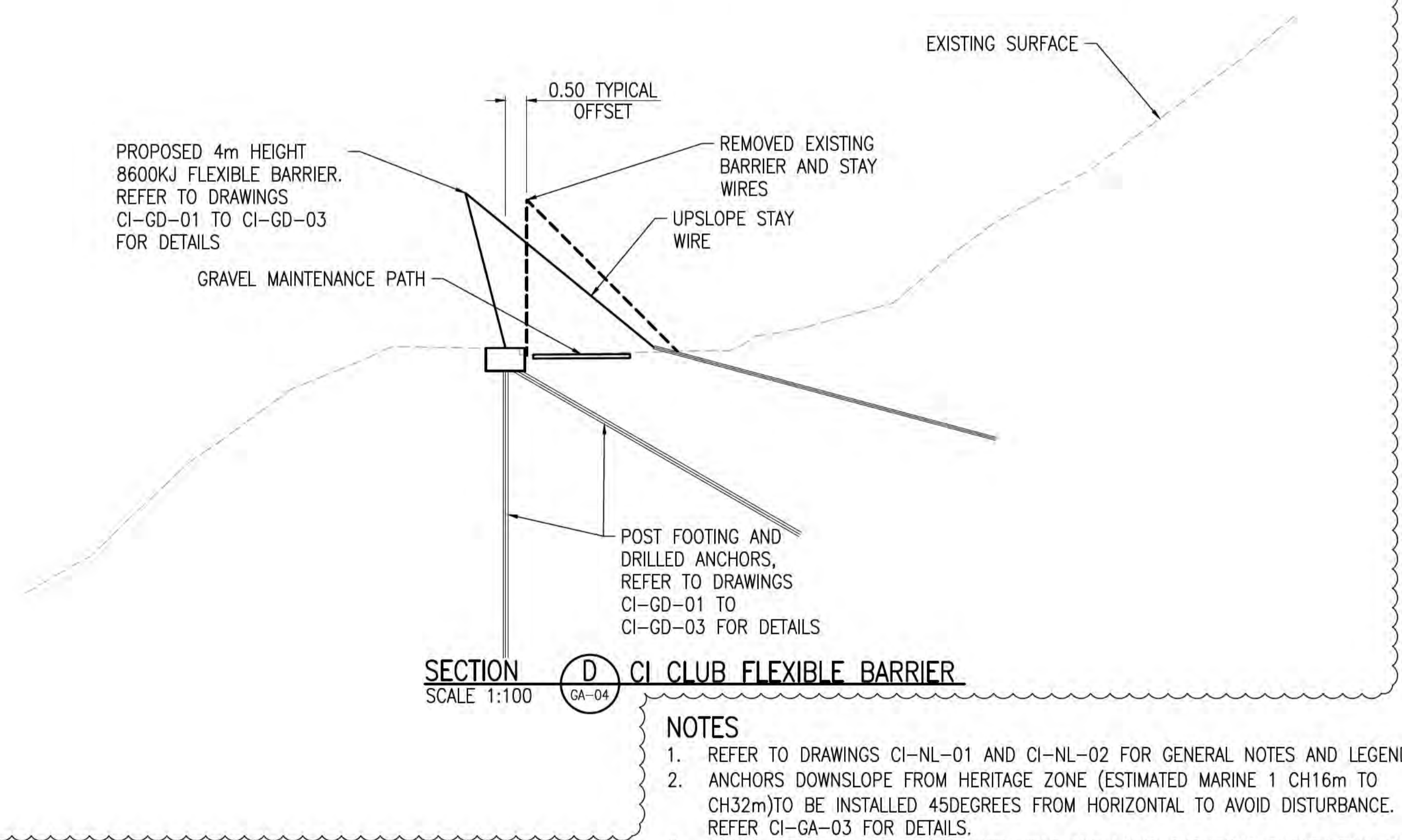
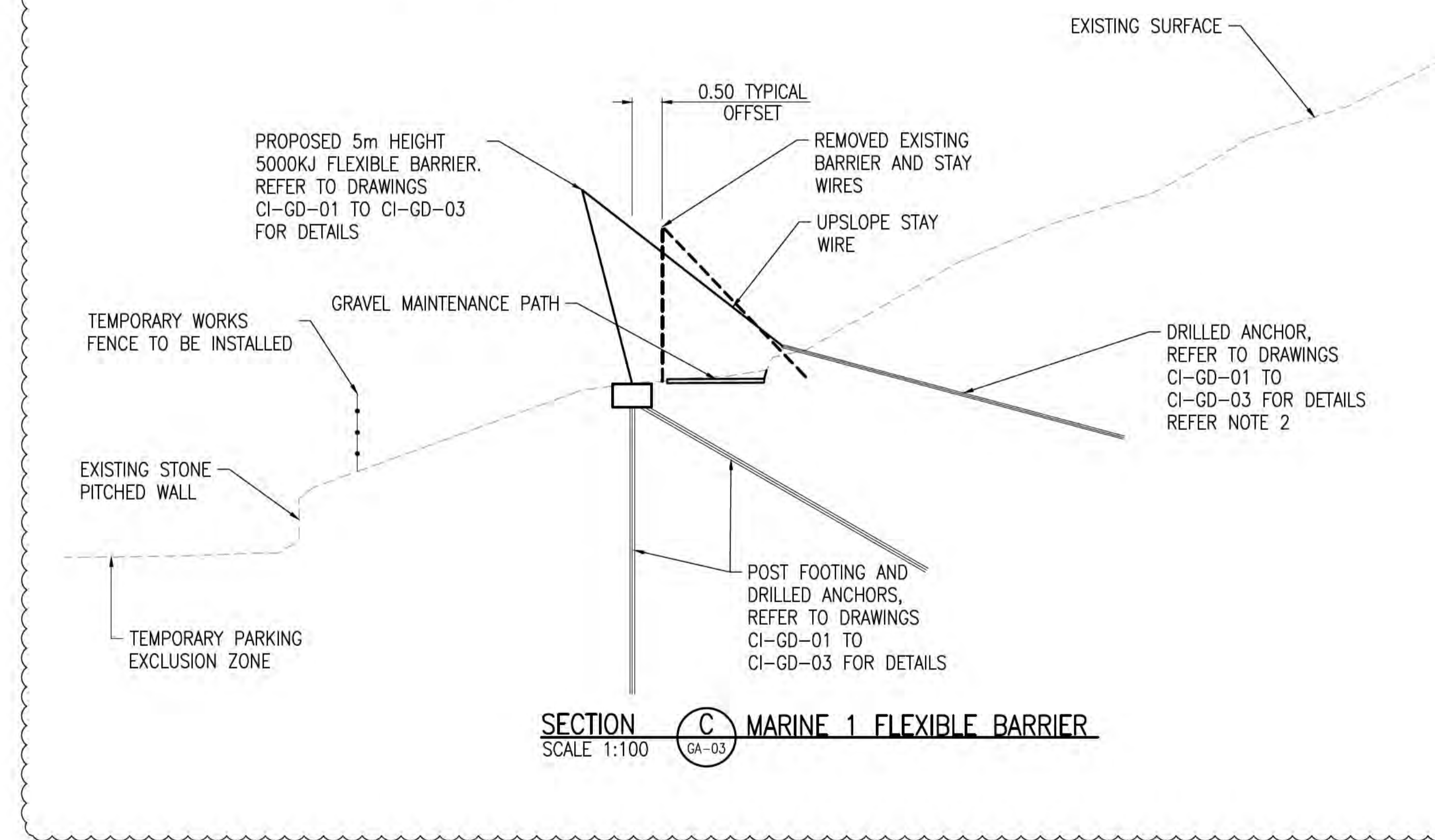
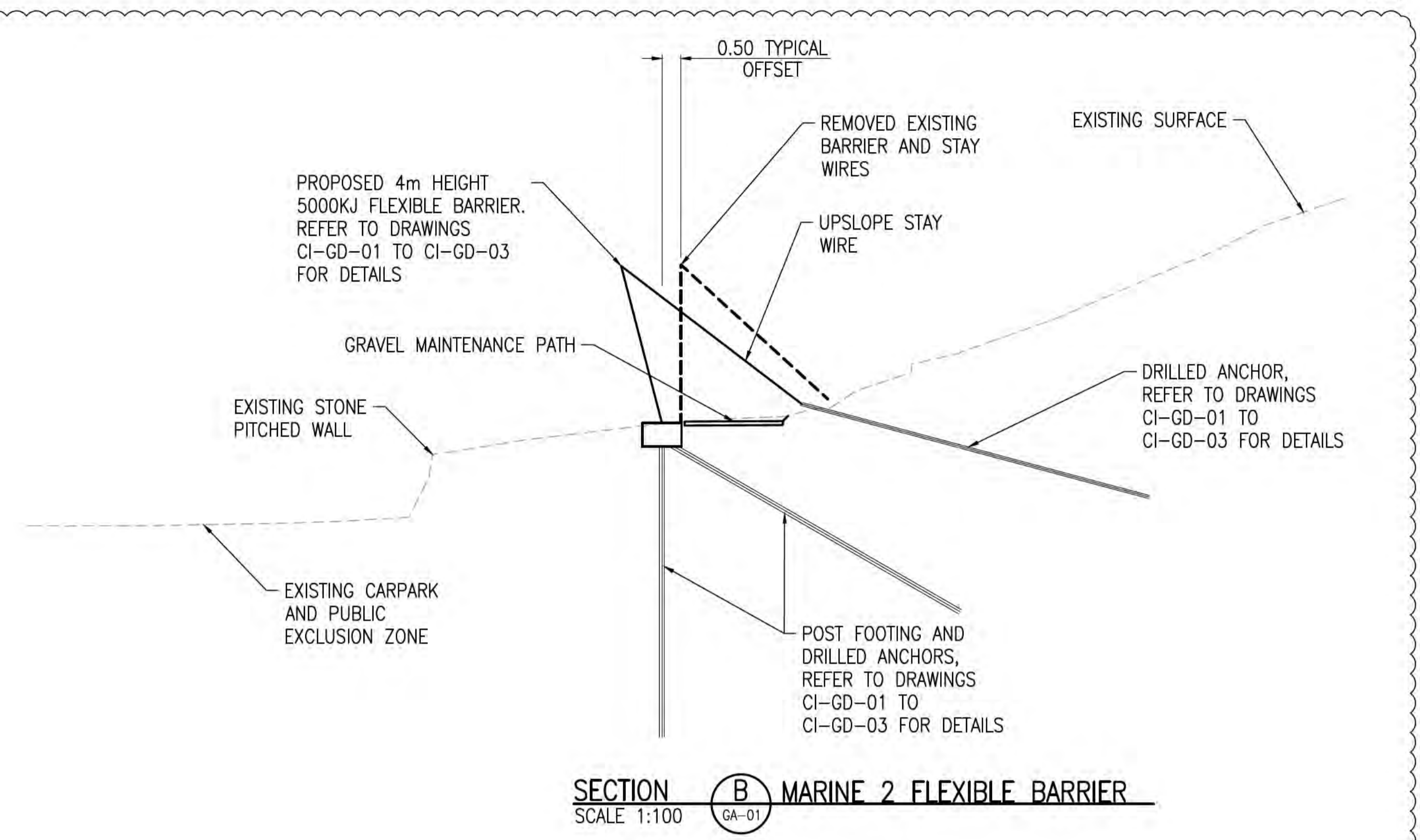
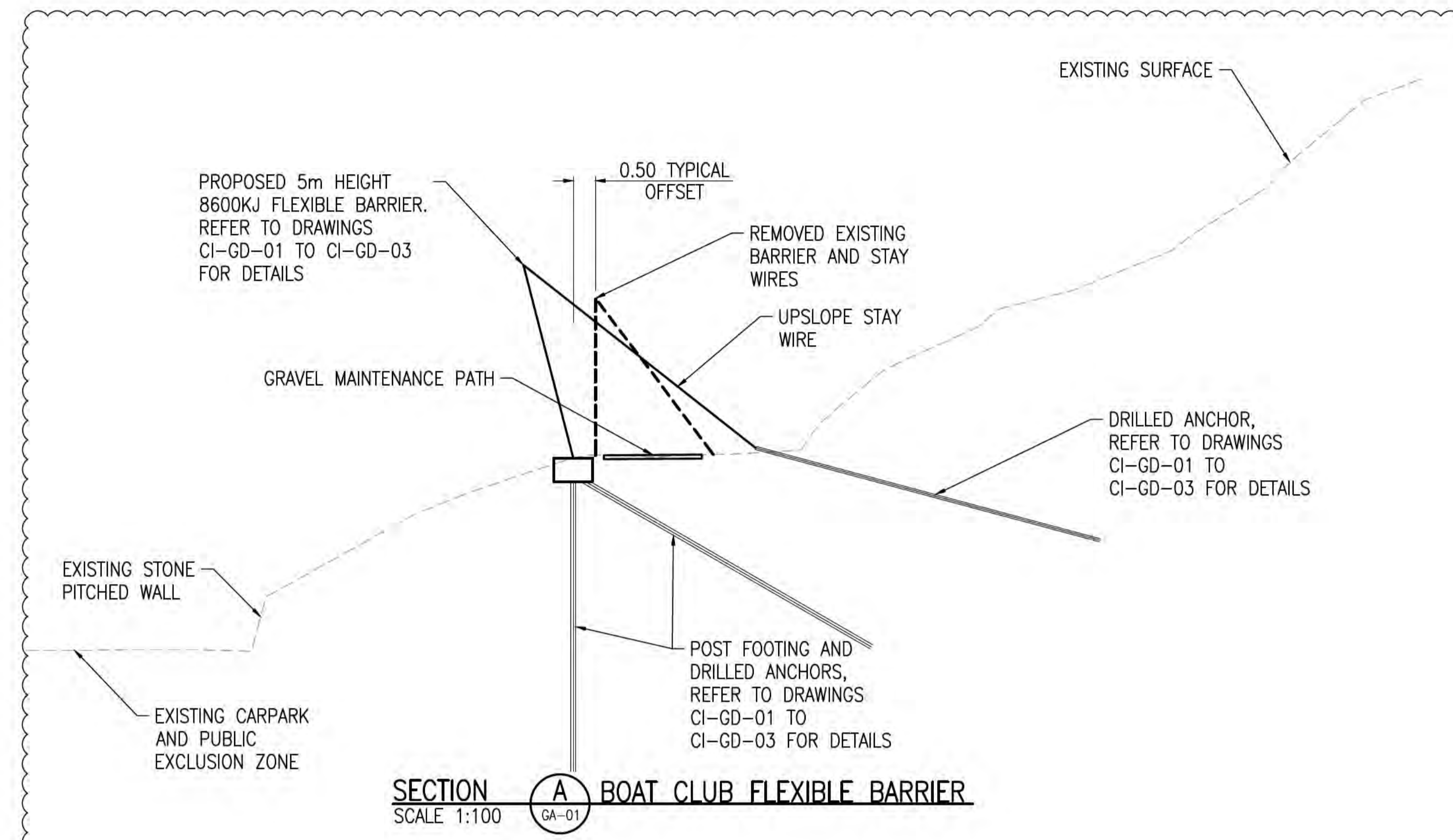
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

Drawing No  
**CI-GA-04**

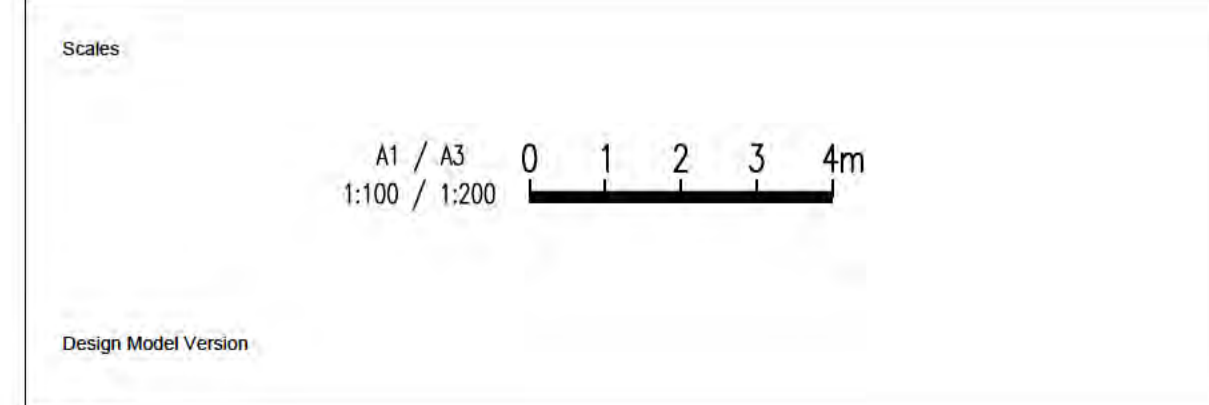
Issue  
**B**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



- NOTES**
- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
  - ANCHORS DOWNSLOPE FROM HERITAGE ZONE (ESTIMATED MARINE 1 CH16m TO CH32m) TO BE INSTALLED 45DEGREES FROM HORIZONTAL TO AVOID DISTURBANCE. REFER CI-GA-03 FOR DETAILS.
  - CROSS-SECTIONS AREA BASED OFF LIDAR AND LINKS SURVEYING SURVEY TINS AND ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				
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 LANDSLIDE MITIGATION DETAILED DESIGN

Scale at A1  
1:100

Discipline

ARUP

Level 4 108 Wickham Street  
Fortitude Valley QLD Australia 4006  
Tel +61(0)75520 9320 Fax +61(0)75520 9321  
www.arup.com

Drawing Title  
LANDSLIDE MITIGATION TYPICAL CROSS SECTIONS

Drawing Status  
**ISSUED FOR CONSTRUCTION**

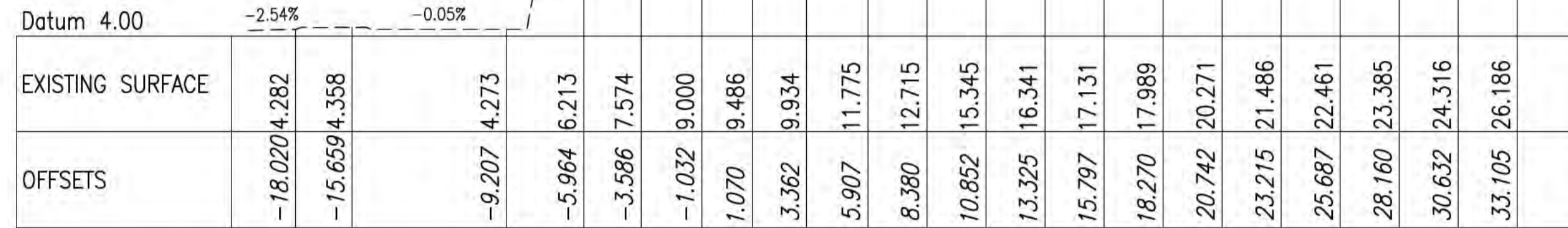
Job No  
268575-00

Drawing No  
CI-TS-01

Issue  
A

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

CONTROL LINE BOAT CLUB  
 X = 573152.491  
 Y = 8846913.405  
 Z = 9.406



HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 8.000

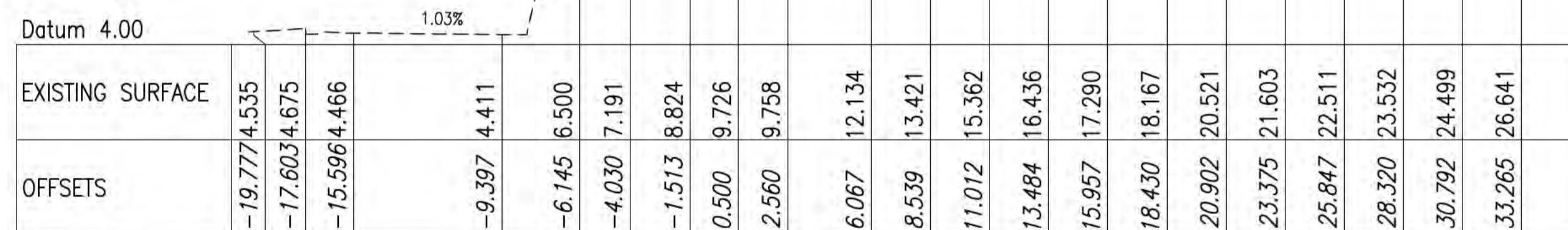
CONTROL LINE BOAT CLUB  
 X = 573168.488  
 Y = 8846913.086  
 Z = 9.168



HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 24.000

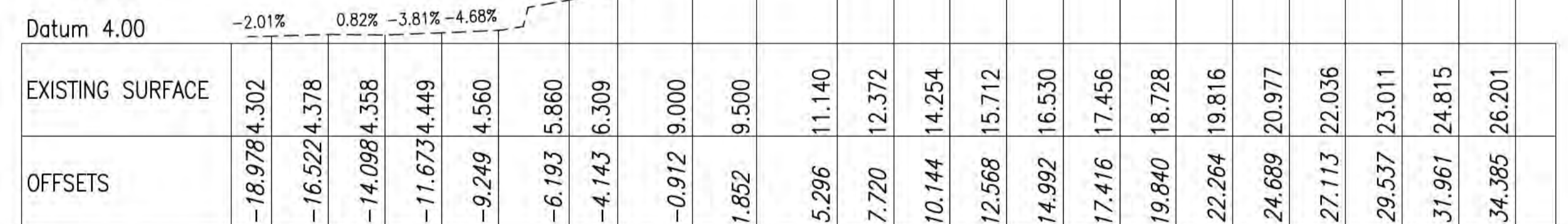
CONTROL LINE BOAT CLUB  
 X = 573144.493  
 Y = 8846913.565  
 Z = 9.354



HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 0.000

CONTROL LINE BOAT CLUB  
 X = 573160.490  
 Y = 8846913.245  
 Z = 9.268



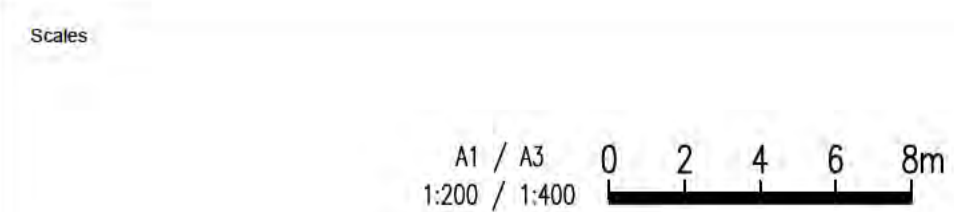
HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 16.000

NOTES

1. THE EXISTING SURFACE LEVELS SHOWN IN ALL CROSS SECTIONS ARE A COMBINATION OF LIDAR SURVEY AND SURVEY UNDERTAKEN BY LINKS SURVEYING PTY LTD AND THUS ARE INDICATIVE ONLY
2. CROSS-SECTIONS AREA BASED OFF LIDAR AND LINKS SURVEYING SURVEY TINS AND ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY.

ISSUED FOR CONSTRUCTION



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



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

Engineering Certification (CEng)  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Job Title  
 FLYING FISH COVE  
 CHRISTMAS ISLAND  
 LANDSLIDE MITIGATION  
 DETAILED DESIGN

Scale at A1  
 1:200

Discipline



Drawing Title  
 LANDSLIDE MITIGATION  
 ANNOTATED CROSS SECTIONS  
 SHEET 1

Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

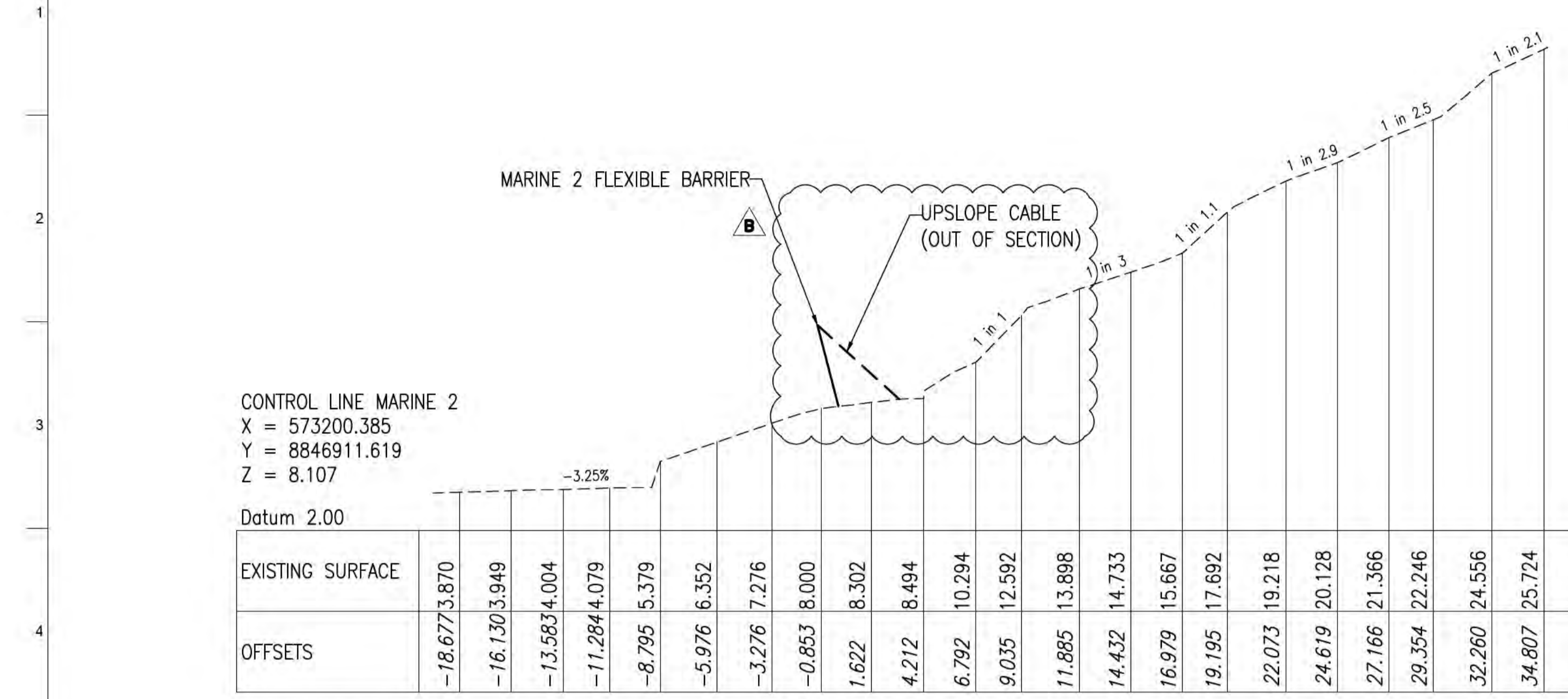
Drawing No  
**CI-XS-01**

Issue  
**B**

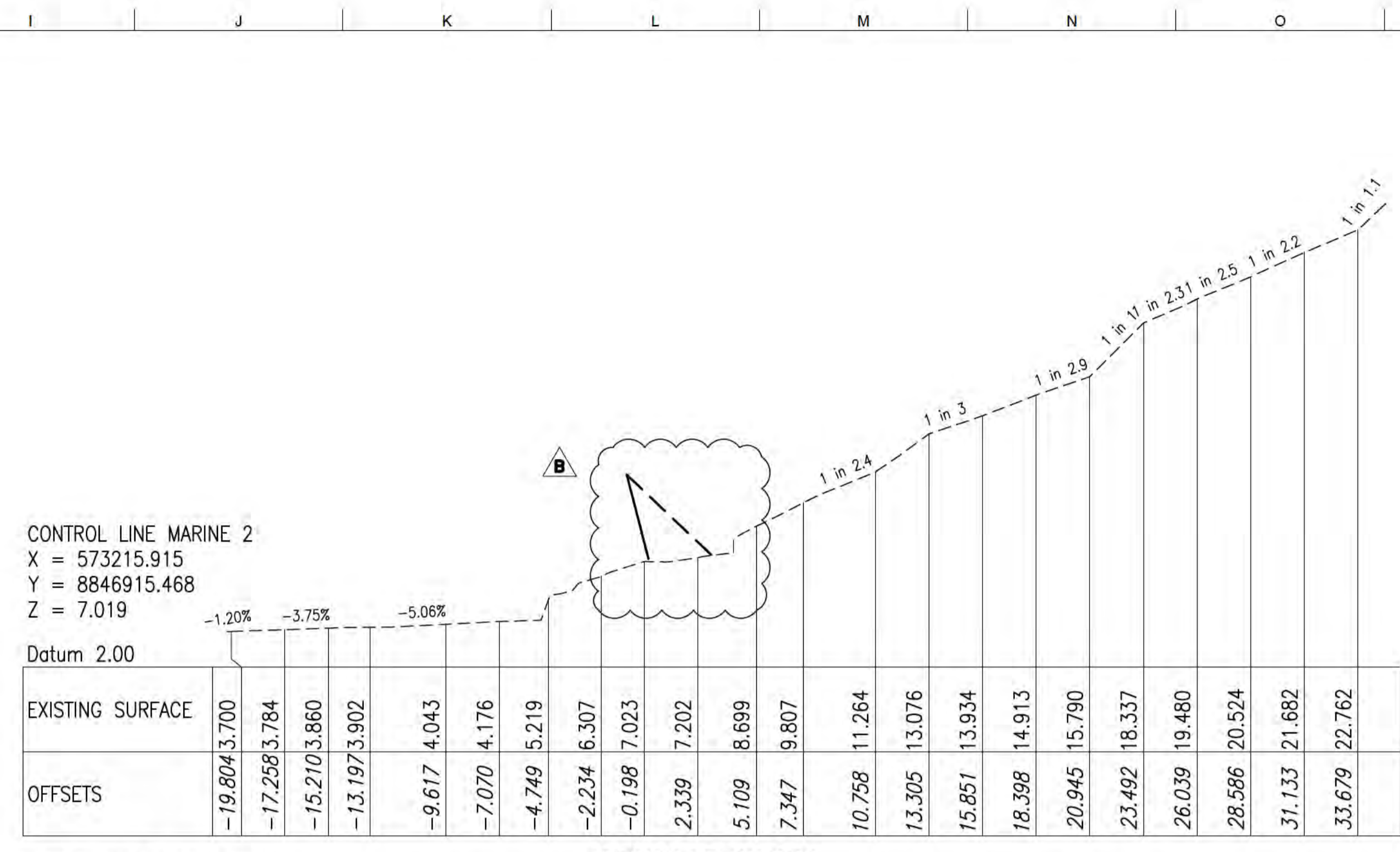
DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR



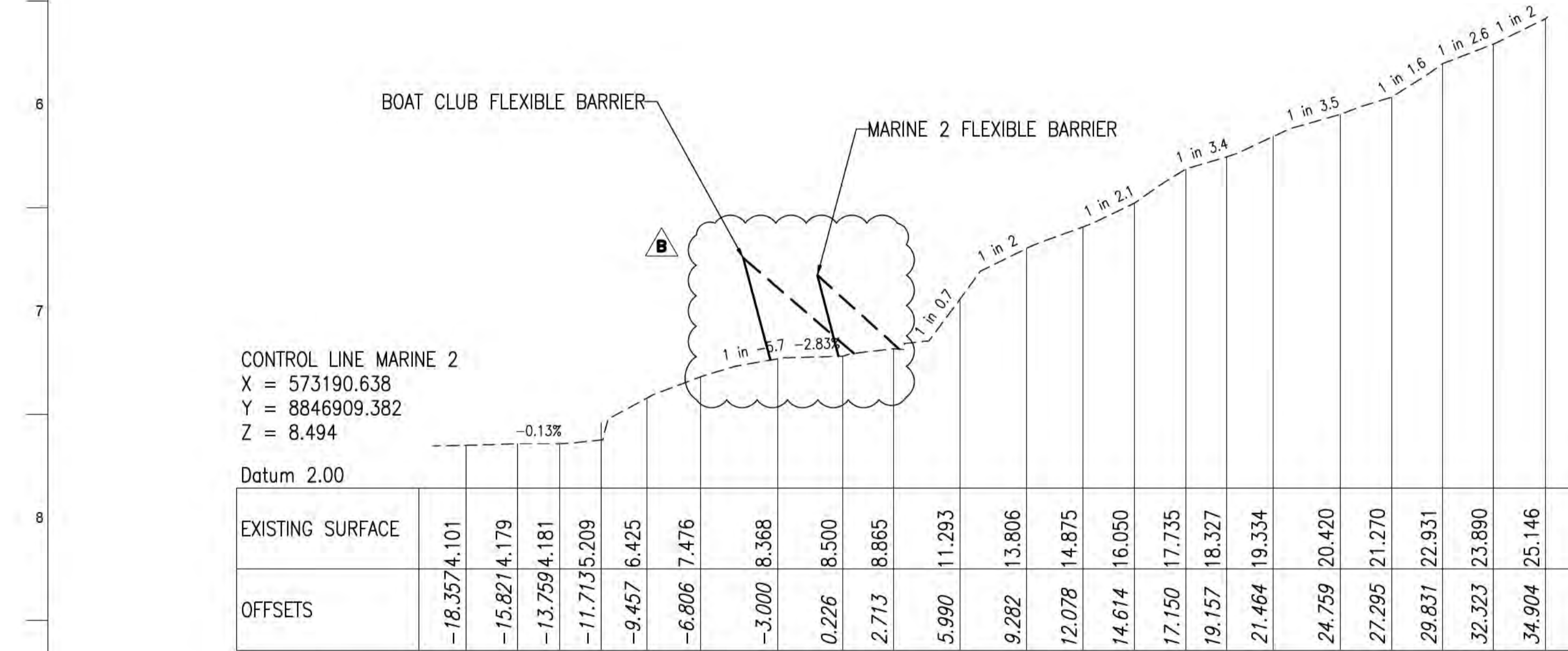
A1 A B C D E F G H I J K L M N O P



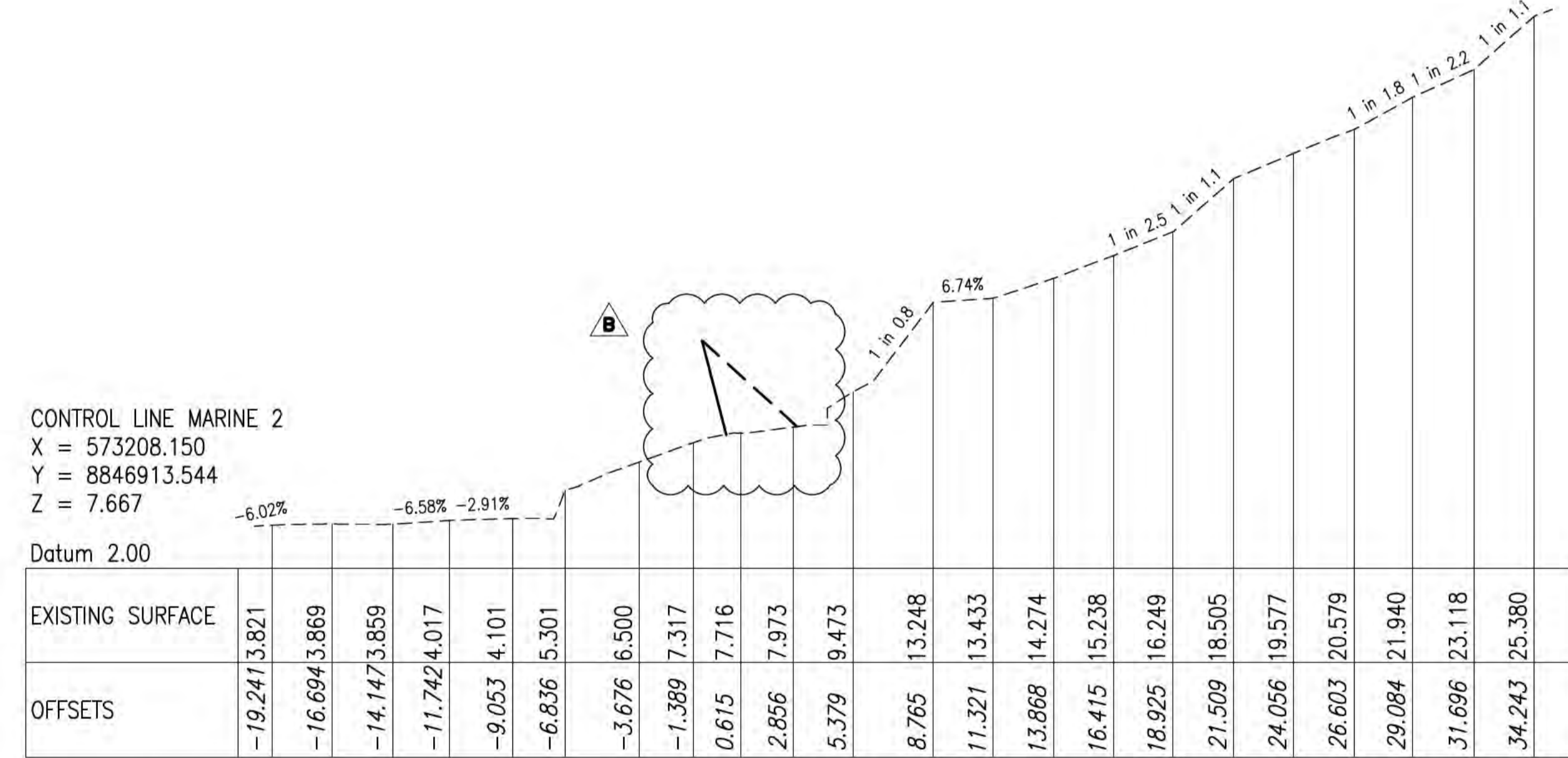
HORIZONTAL SCALE: 1:200  
 VERICAL SCALE: 1:200  
**CHAINAGE 10.000**



HORIZONTAL SCALE: 1:200  
 VERICAL SCALE: 1:200  
**CHAINAGE 26.000**



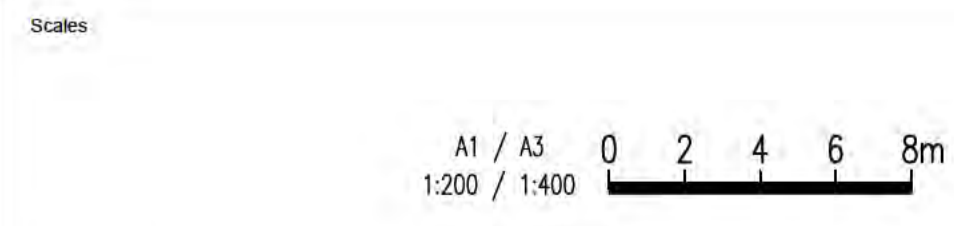
HORIZONTAL SCALE: 1:200  
 VERICAL SCALE: 1:200  
**CHAINAGE 0.000**



HORIZONTAL SCALE: 1:200  
 VERICAL SCALE: 1:200  
**CHAINAGE 18.000**

- NOTES**
1. THE EXISTING SURFACE LEVELS SHOWN IN ALL CROSS SECTIONS ARE A COMBINATION OF LIDAR SURVEY AND SURVEY UNDERTAKEN BY LINKS SURVEYING PTY LTD AND THUS ARE INDICATIVE ONLY
  2. CROSS-SECTIONS AREA BASED OFF LIDAR AND LINKS SURVEYING SURVEY TINS AND ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



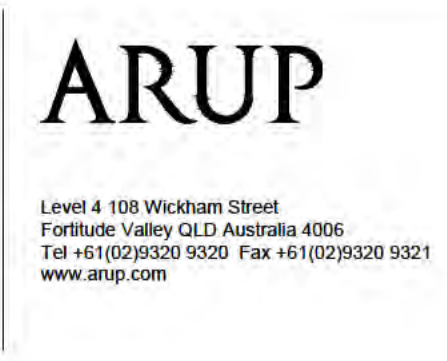
Client  
**AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS**

Engineering Certification (CEng)  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Job Title  
**FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
 1:200

Discipline



Drawing Title  
**LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS SHEET 3**

Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

Drawing No  
**CI-XS-03**

Issue  
**B**

**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

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

CONTROL LINE MARINE 2  
X = 573261.587  
Y = 8846930.061  
Z = 5.932

Datum 2.00

EXISTING SURFACE	3.915	4.033	4.021	4.091	4.060	5.777	5.936	6.251	6.767	7.500	9.080	9.743	11.157	12.941	14.172	15.558	16.929	18.905	20.116	21.396
OFFSETS	-19.924	-17.030	-12.886	-10.192	-7.560	-5.437	0.133	2.408	4.542	6.609	8.915	11.978	16.122	18.755	21.386	24.018	26.649	29.281	31.912	34.544

HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 74.000**

CONTROL LINE MARINE 2  
X = 573276.587  
Y = 8846935.628  
Z = 5.097

Datum 4.00

EXISTING SURFACE	4.116	4.128	4.173	4.214	4.250	4.280	5.148	5.102	5.095	5.204	6.573	7.435	8.108	9.777	11.413	12.609	13.765	16.175	17.441	18.534	19.976	22.077
OFFSETS	-19.792	-17.498	-14.855	-12.805	-9.569	-6.927	-4.598	-2.177	0.234	2.428	5.150	8.158	11.574	13.651	16.859	19.502	22.134	24.788	27.431	30.074	32.717	34.903

HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 90.000**

CONTROL LINE MARINE 2  
X = 573254.072  
Y = 8846927.319  
Z = 6.429

Datum 2.00

EXISTING SURFACE	3.884	3.923	3.961	3.986	3.997	4.212	6.201	6.432	6.500	6.723	7.538	9.443	9.803	11.390	13.124	14.483	15.696	17.923	18.997	20.203	21.929
OFFSETS	-19.631	-15.742	-13.507	-10.480	-7.848	-5.843	-3.278	0.045	2.260	4.273	6.342	9.208	11.356	15.500	18.467	21.098	23.628	26.361	28.993	31.624	34.256

HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 66.000**

CONTROL LINE MARINE 2  
X = 573269.093  
Y = 8846932.829  
Z = 5.519

Datum 4.00

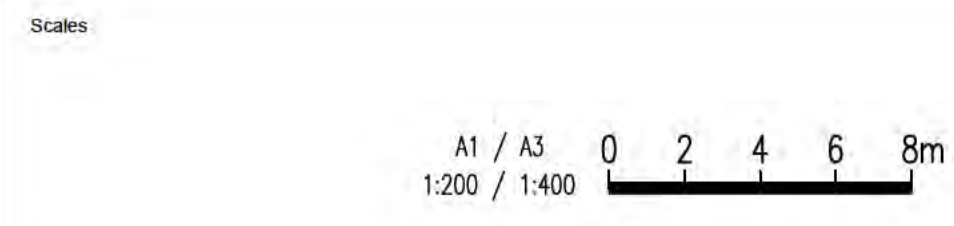
EXISTING SURFACE	4.013	4.051	4.076	4.103	4.234	5.469	5.441	5.529	5.739	6.000	7.572	8.905	10.204	11.172	12.122	13.723	15.341	16.938	18.503	20.866	22.102
OFFSETS	-19.780	-16.653	-12.716	-9.904	-7.265	-5.244	-3.029	0.218	2.510	4.639	8.474	11.207	13.845	16.484	19.123	21.262	24.401	27.040	29.664	32.317	34.956

HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 82.000**

**NOTES**

1. THE EXISTING SURFACE LEVELS SHOWN IN ALL CROSS SECTIONS ARE A COMBINATION OF LIDAR SURVEY AND SURVEY UNDERTAKEN BY LINKS SURVEYING PTY LTD AND THUS ARE INDICATIVE ONLY
2. CROSS-SECTIONS AREA BASED OFF LIDAR AND LINKS SURVEYING SURVEY TINS AND ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



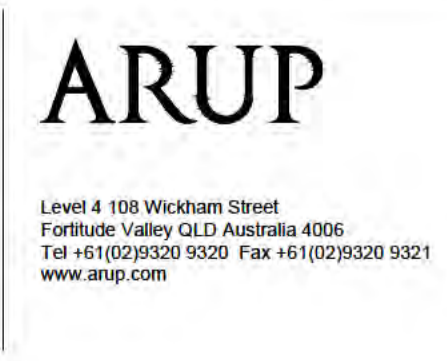
Client  
**AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS**

Engineering Certification (CEng)  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Job Title  
**FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
1:200

Discipline



Drawing Title  
**LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS SHEET 5**

Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

Drawing No  
**CI-XS-05**

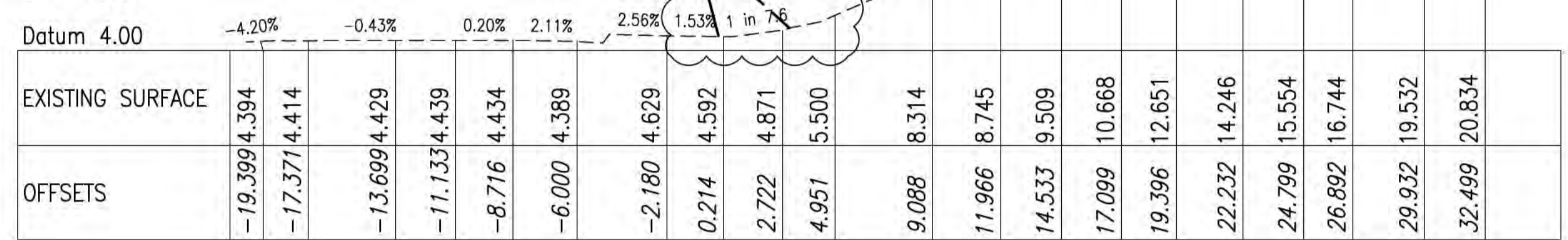
Issue  
**B**

**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

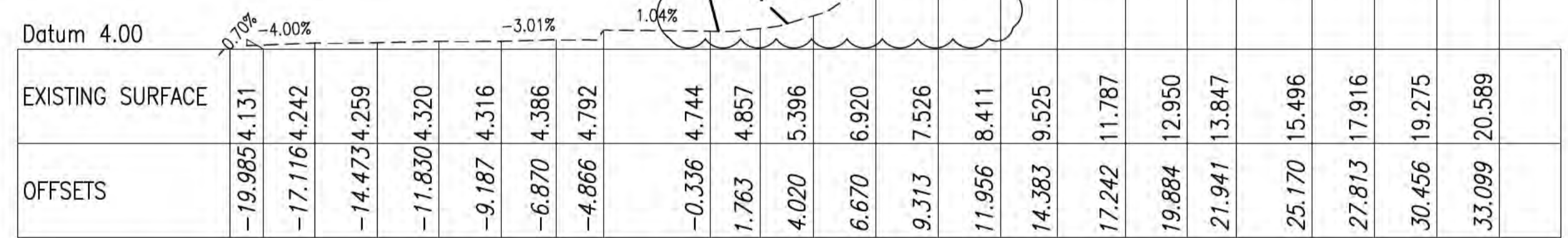
1  
2  
3  
4  
5  
6  
7  
8  
9  
10

CONTROL LINE MARINE 2  
X = 573291.559  
Y = 8846941.273  
Z = 4.595



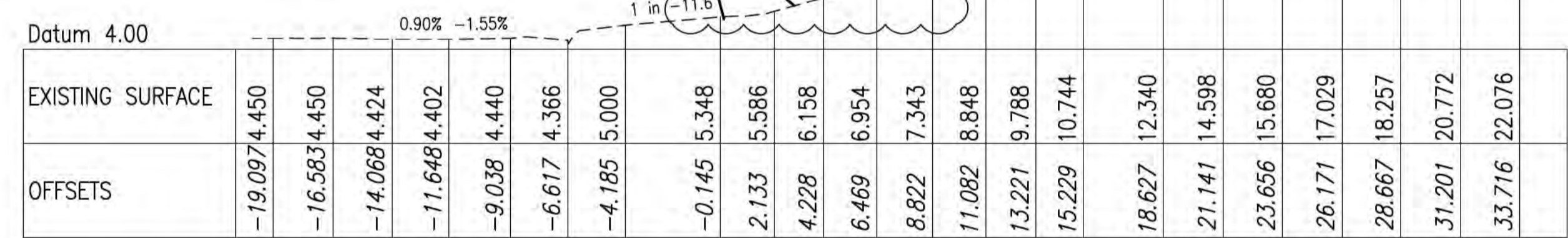
HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
CHAINAGE 106.000

CONTROL LINE MARINE 2  
X = 573284.070  
Y = 8846938.458  
Z = 4.739



HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
CHAINAGE 98.000

CONTROL LINE MARINE 2  
X = 573301.388  
Y = 8846943.112  
Z = 5.357

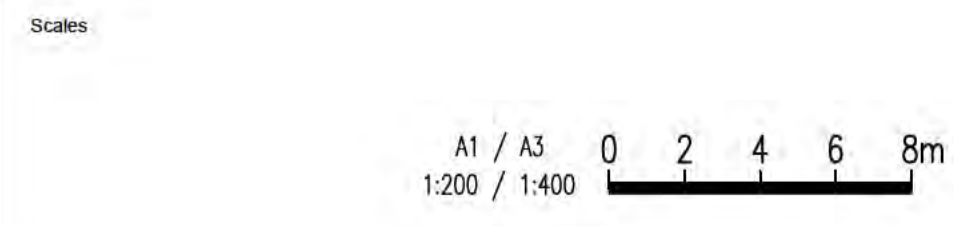


HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
CHAINAGE 116.000

**NOTES**

1. THE EXISTING SURFACE LEVELS SHOWN IN ALL CROSS SECTIONS ARE A COMBINATION OF LIDAR SURVEY AND SURVEY UNDERTAKEN BY LINKS SURVEYING PTY LTD AND THUS ARE INDICATIVE ONLY
2. CROSS-SECTIONS AREA BASED OFF LIDAR AND LINKS SURVEYING SURVEY TINS AND ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



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

Engineering Certification (CEng)  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Job Title  
**FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
1:200

Discipline



Drawing Title  
**LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS SHEET 6**

Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

Drawing No  
**CI-XS-06**

Issue  
**B**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



CONTROL LINE MARINE 1  
 X = 573338.351  
 Y = 8846955.336  
 Z = 7.757

Datum 4.00		0.24%	-0.13%	2.57% in 1.9	1 in 2.8	1 in 2.1 in 2.8	1 in 0.7	1 in 5.1 in 2.6	1 in 2.3 in 1																										
EXISTING SURFACE	-19.679	4.460	-17.577	4.455	-14.933	4.422	-12.706	4.425	-9.646	4.360	-7.021	5.490	6.500	7.500	7.788	7.864	9.516	10.387	11.662	12.386	16.396	19.434	17.490	22.026	18.007	24.721	19.041	27.365	19.721	30.009	20.849	32.652	22.051	34.799	24.119
OFFSETS	-19.679	4.460	-17.577	4.455	-14.933	4.422	-12.706	4.425	-9.646	4.360	-7.021	5.490	6.500	7.500	7.788	7.864	9.516	10.387	11.662	12.386	16.396	19.434	17.490	22.026	18.007	24.721	19.041	27.365	19.721	30.009	20.849	32.652	22.051	34.799	24.119

HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 40.000

CONTROL LINE MARINE 1  
 X = 573353.841  
 Y = 8846959.344  
 Z = 8.462

Datum 4.00		-1.05%	-4.44%	1 in 2.1	1 in 2.8	1 in 3.1	1 in 2.5	1 in 1	1 in 1.8 in 1.8																																	
EXISTING SURFACE	-17.944	4.260	-15.390	4.305	-12.837	4.333	-10.745	4.426	-8.290	5.017	-5.948	6.684	-3.722	7.500	-1.132	8.450	0.965	8.446	3.204	9.182	7.103	10.786	10.144	12.401	12.698	13.291	15.251	14.893	17.438	15.588	20.358	16.753	22.911	17.787	25.465	18.846	27.773	21.228	30.572	22.832	33.125	24.304
OFFSETS	-17.944	4.260	-15.390	4.305	-12.837	4.333	-10.745	4.426	-8.290	5.017	-5.948	6.684	-3.722	7.500	-1.132	8.450	0.965	8.446	3.204	9.182	7.103	10.786	10.144	12.401	12.698	13.291	15.251	14.893	17.438	15.588	20.358	16.753	22.911	17.787	25.465	18.846	27.773	21.228	30.572	22.832	33.125	24.304

HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 56.000

CONTROL LINE MARINE 1  
 X = 573331.224  
 Y = 8846951.703  
 Z = 7.266

Datum 4.00		1 in 1.9 in 3.6	1 in 2.7 in 2.3	1 in 1.7	1 in 1	1 in 2.6 in 1.9	1 in 1.8	1 in 1.2	1 in 2.6																								
EXISTING SURFACE	-19.751	4.369	-16.976	4.368	-14.201	4.355	-11.427	4.346	-8.652	4.368	-6.508	6.000	6.500	7.000	7.290	7.320	8.270	9.884	10.301	10.518	11.682	12.735	14.469	16.982	18.317	24.643	18.317	27.281	19.695	30.193	21.322	32.941	23.589
OFFSETS	-19.751	4.369	-16.976	4.368	-14.201	4.355	-11.427	4.346	-8.652	4.368	-6.508	6.000	6.500	7.000	7.290	7.320	8.270	9.884	10.301	10.518	11.682	12.735	14.469	16.982	18.317	24.643	18.317	27.281	19.695	30.193	21.322	32.941	23.589

HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 32.000

CONTROL LINE MARINE 1  
 X = 573346.096  
 Y = 8846957.340  
 Z = 8.036

Datum 4.00		-1.05%	1 in 5.1	1 in 1.9	1 in 4.2 in 1.8	1 in 2.6	1 in 2	1 in 2.3	1 in 2.6 in 0.8																																
EXISTING SURFACE	-19.293	4.279	-16.820	4.328	-13.375	4.381	-9.930	4.426	-7.665	6.050	-5.039	6.745	-2.980	7.500	-0.856	8.016	3.044	8.482	5.521	9.947	8.074	11.108	10.305	11.643	13.157	15.734	14.279	18.288	15.667	20.841	16.640	23.395	17.883	25.948	19.737	27.965	20.601	30.037	21.433	33.609	23.103
OFFSETS	-19.293	4.279	-16.820	4.328	-13.375	4.381	-9.930	4.426	-7.665	6.050	-5.039	6.745	-2.980	7.500	-0.856	8.016	3.044	8.482	5.521	9.947	8.074	11.108	10.305	11.643	13.157	15.734	14.279	18.288	15.667	20.841	16.640	23.395	17.883	25.948	19.737	27.965	20.601	30.037	21.433	33.609	23.103

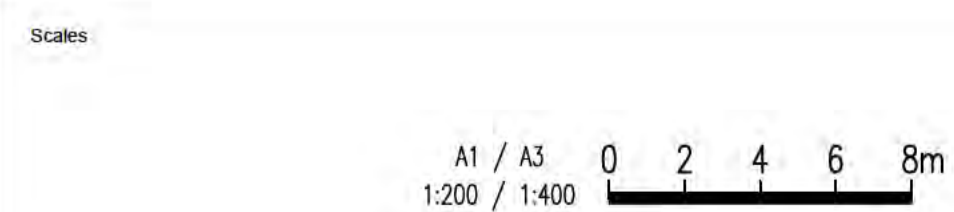
HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 48.000

**NOTES**

1. THE EXISTING SURFACE LEVELS SHOWN IN ALL CROSS SECTIONS ARE A COMBINATION OF LIDAR SURVEY AND SURVEY UNDERTAKEN BY LINKS SURVEYING PTY LTD AND THUS ARE INDICATIVE ONLY
2. CROSS-SECTIONS AREA BASED OFF LIDAR AND LINKS SURVEYING SURVEY TINS ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



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

Engineering Certification (CEng)  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Job Title  
 FLYING FISH COVE  
 CHRISTMAS ISLAND  
 LANDSLIDE MITIGATION  
 DETAILED DESIGN

Scale at A1  
 1:200

Discipline



Drawing Title  
 LANDSLIDE MITIGATION  
 ANNOTATED CROSS SECTIONS  
 SHEET 8

Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

Drawing No  
**CI-XS-08**

Issue  
**B**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



CONTROL LINE CI CLUB  
 X = 573617.659  
 Y = 8847097.782  
 Z = 21.827

Datum 18.00

EXISTING SURFACE	-19.454	19.279	-16.605	20.817	-13.756	21.526	-10.907	21.977	-8.059	22.182	-5.886	22.000	-2.557	21.907	1.316	21.786	4.072	22.076	6.094	22.213	9.035	23.157	11.884	25.703	14.663	26.092	17.582	26.658	19.756	28.258	23.280	30.034	26.128	31.441	28.977	33.125	31.826	36.595	34.667	38.901
OFFSETS	-19.454	19.279	-16.605	20.817	-13.756	21.526	-10.907	21.977	-8.059	22.182	-5.886	22.000	-2.557	21.907	1.316	21.786	4.072	22.076	6.094	22.213	9.035	23.157	11.884	25.703	14.663	26.092	17.582	26.658	19.756	28.258	23.280	30.034	26.128	31.441	28.977	33.125	31.826	36.595	34.667	38.901

HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 8.000

CONTROL LINE CI CLUB  
 X = 573624.350  
 Y = 8847112.248  
 Z = 21.801

Datum 16.00

EXISTING SURFACE	-19.799	16.536	-17.172	17.740	-14.545	19.106	-11.918	21.177	-9.705	21.832	-6.663	22.160	-4.036	22.187	-1.876	22.220	0.414	21.780	4.310	21.744	6.675	21.878	9.101	23.774	11.728	25.301	14.355	25.563	16.983	26.688	19.050	27.151	22.237	29.859	24.865	30.696	27.266	32.282	30.119	34.536	32.746	37.434
OFFSETS	-19.799	16.536	-17.172	17.740	-14.545	19.106	-11.918	21.177	-9.705	21.832	-6.663	22.160	-4.036	22.187	-1.876	22.220	0.414	21.780	4.310	21.744	6.675	21.878	9.101	23.774	11.728	25.301	14.355	25.563	16.983	26.688	19.050	27.151	22.237	29.859	24.865	30.696	27.266	32.282	30.119	34.536	32.746	37.434

HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 24.000

CONTROL LINE CI CLUB  
 X = 573613.680  
 Y = 8847090.842  
 Z = 22.259

Datum 20.00

EXISTING SURFACE	-19.052	20.992	-15.924	21.313	-12.019	21.546	-9.249	21.913	-7.044	22.000	-4.844	22.180	-2.561	22.105	1.002	22.319	4.099	22.645	7.923	22.664	10.771	22.598	13.621	25.810	15.741	26.101	19.319	26.873	22.168	28.099	25.017	33.186	27.866	35.129	30.653	36.689	33.563	39.427
OFFSETS	-19.052	20.992	-15.924	21.313	-12.019	21.546	-9.249	21.913	-7.044	22.000	-4.844	22.180	-2.561	22.105	1.002	22.319	4.099	22.645	7.923	22.664	10.771	22.598	13.621	25.810	15.741	26.101	19.319	26.873	22.168	28.099	25.017	33.186	27.866	35.129	30.653	36.689	33.563	39.427

HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 0.000

CONTROL LINE CI CLUB  
 X = 573621.637  
 Y = 8847104.722  
 Z = 21.937

Datum 16.00

EXISTING SURFACE	-18.342	18.146	-15.995	19.287	-12.645	21.208	-9.796	22.368	-6.947	22.442	-4.878	22.288	-0.523	21.925	4.875	21.981	7.075	22.100	10.147	24.990	12.996	25.370	15.845	26.252	18.551	27.014	21.542	28.379	23.770	29.615	27.240	33.911	30.089	35.713	32.938	37.607
OFFSETS	-18.342	18.146	-15.995	19.287	-12.645	21.208	-9.796	22.368	-6.947	22.442	-4.878	22.288	-0.523	21.925	4.875	21.981	7.075	22.100	10.147	24.990	12.996	25.370	15.845	26.252	18.551	27.014	21.542	28.379	23.770	29.615	27.240	33.911	30.089	35.713	32.938	37.607

HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

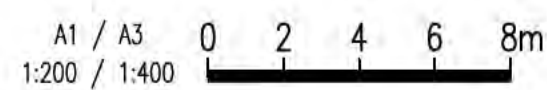
CHAINAGE 16.000

**NOTES**

- THE EXISTING SURFACE LEVELS SHOWN IN ALL CROSS SECTIONS ARE A COMBINATION OF LIDAR SURVEY AND SURVEY UNDERTAKEN BY LINKS SURVEYING PTY LTD AND THUS ARE INDICATIVE ONLY
- CROSS-SECTIONS AREA BASED OFF LIDAR AND LINKS SURVEYING SURVEY TINS ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY.

**ISSUED FOR CONSTRUCTION**

Scales



Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



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  
 LANDSLIDE MITIGATION  
 DETAILED DESIGN  
 Scale at A1  
 1:200  
 Discipline



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  
 ANNOTATED CROSS SECTIONS  
 SHEET 10  
 Drawing Status  
**ISSUED FOR CONSTRUCTION**  
 Job No  
**268575-00** Drawing No  
**CI-XS-10** Issue  
**B**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

CONTROL LINE CI CLUB  
 X = 573629.776  
 Y = 8847127.300  
 Z = 21.639

Datum 12.00

EXISTING SURFACE	OFFSETS
-19.089	13.480
-15.195	15.035
-12.431	16.655
-9.804	18.011
-7.176	19.599
-4.549	21.542
-1.922	21.646
0.101	21.383
2.559	21.399
4.594	21.417
6.617	21.949
9.666	22.873
13.774	24.089
16.469	26.747
19.097	28.326
21.252	29.971
24.351	32.116
26.979	35.272
29.606	36.730
32.233	38.114
34.314	39.112

HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 40.000

CONTROL LINE CI CLUB  
 X = 573635.202  
 Y = 8847142.352  
 Z = 21.046

Datum 10.00

EXISTING SURFACE	OFFSETS
-18.199	11.696
-16.148	12.649
-12.944	14.146
-10.317	16.453
-7.933	17.417
-5.062	19.448
-2.435	20.554
-0.298	21.000
2.482	21.116
4.608	21.211
7.321	21.794
10.702	24.034
13.329	25.599
15.956	27.016
18.583	28.522
20.823	32.536
23.838	34.420
26.465	35.648
29.038	37.059
31.720	38.335
34.347	42.360

HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 56.000

CONTROL LINE CI CLUB  
 X = 573627.063  
 Y = 8847119.774  
 Z = 21.835

Datum 14.00

EXISTING SURFACE	OFFSETS
-18.505	15.028
-15.519	16.842
-12.174	18.778
-9.547	19.936
-6.920	21.082
-4.292	21.778
-2.073	21.849
0.327	21.821
3.473	21.517
6.179	21.674
8.844	23.409
11.471	24.015
13.638	24.714
16.726	25.946
19.353	28.850
21.981	30.652
24.608	32.647
26.682	34.089
29.862	37.435
32.490	38.873
34.898	40.200

HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 32.000

CONTROL LINE CI CLUB  
 X = 573632.489  
 Y = 8847134.826  
 Z = 21.518

Datum 12.00

EXISTING SURFACE	OFFSETS
-19.673	12.428
-15.565	13.843
-12.687	15.030
-10.060	16.492
-7.582	18.850
-4.806	20.660
-2.178	21.587
0.367	21.499
3.665	21.331
5.868	21.373
8.331	22.362
10.958	22.813
13.191	24.924
16.213	27.090
18.840	28.996
21.406	30.537
24.095	33.427
26.722	35.042
28.865	36.176
31.977	37.947
34.604	39.303

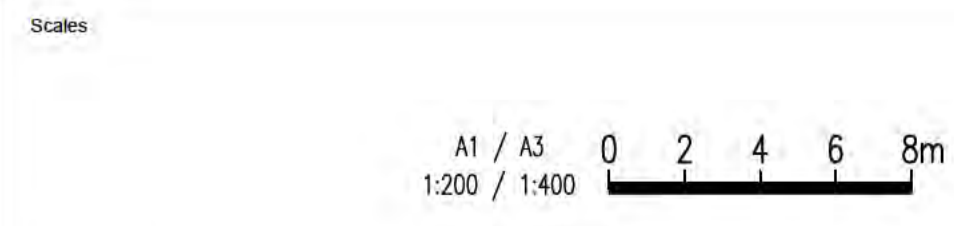
HORIZONTAL SCALE: 1:200  
 VERTICAL SCALE: 1:200

CHAINAGE 48.000

NOTES

1. THE EXISTING SURFACE LEVELS SHOWN IN ALL CROSS SECTIONS ARE A COMBINATION OF LIDAR SURVEY AND SURVEY UNDERTAKEN BY LINKS SURVEYING PTY LTD AND THUS ARE INDICATIVE ONLY
2. CROSS-SECTIONS AREA BASED OFF LIDAR AND LINKS SURVEYING SURVEY TINS ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
B	24/08/20	RB	JG	EF
Revised IFC				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



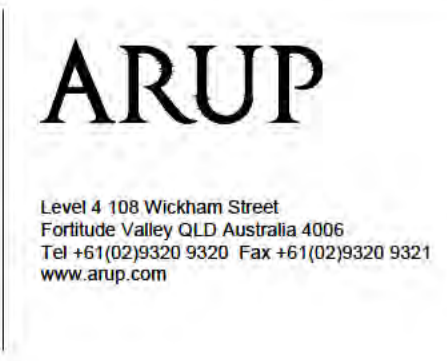
Client  
 AUSTRALIAN GOVERNMENT DPT  
 OF INFRASTRUCTURE, TRANSPORT,  
 REGIONAL DEVELOPMENT  
 AND COMMUNICATIONS

Engineering Certification (CEng)  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Job Title  
 FLYING FISH COVE  
 CHRISTMAS ISLAND  
 LANDSLIDE MITIGATION  
 DETAILED DESIGN

Scale at A1  
 1:200

Discipline



Drawing Title  
 LANDSLIDE MITIGATION  
 ANNOTATED CROSS SECTIONS  
 SHEET 11

Drawing Status  
**ISSUED FOR CONSTRUCTION**

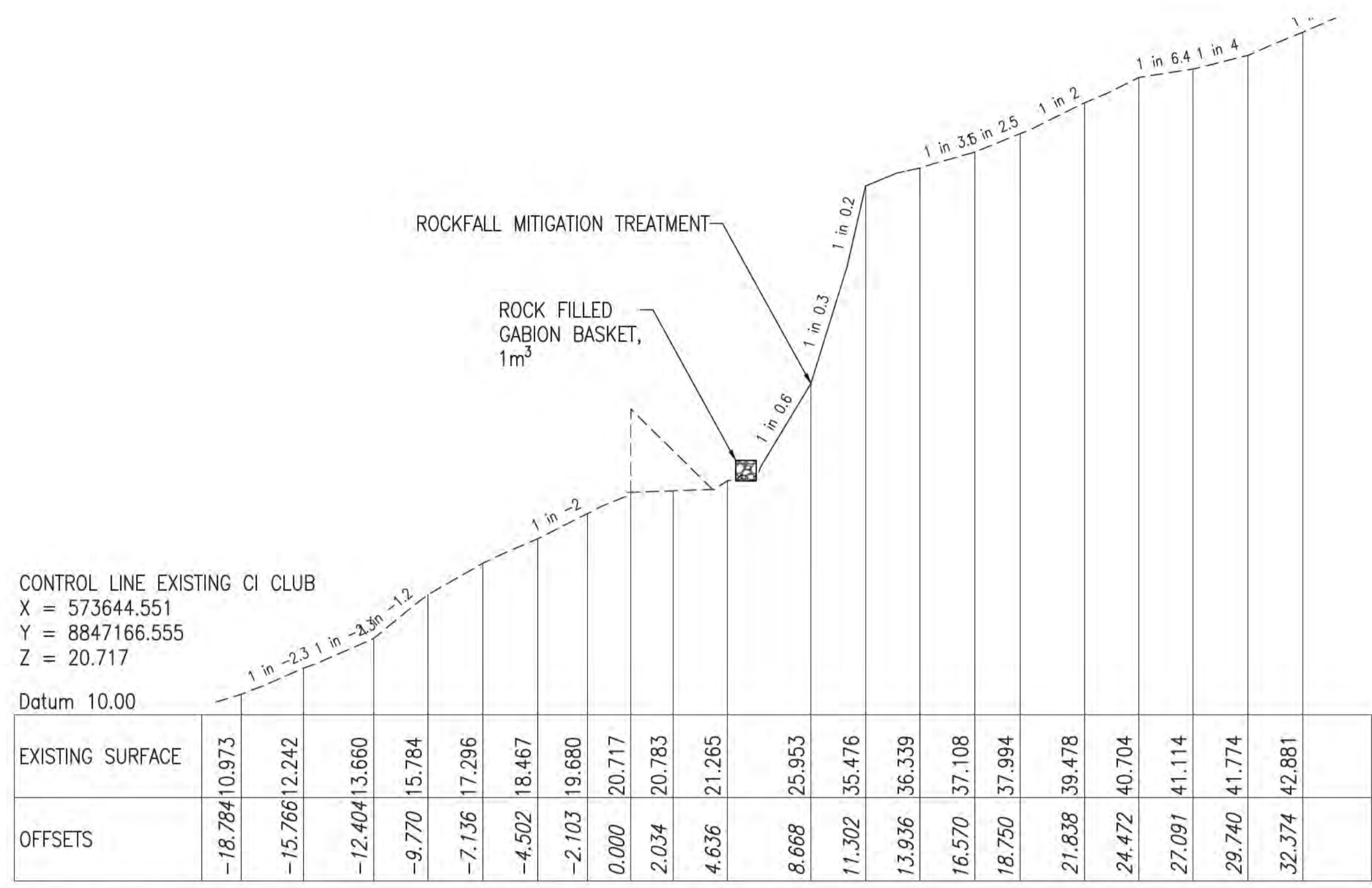
Job No  
**268575-00**

Drawing No  
**CI-XS-11**

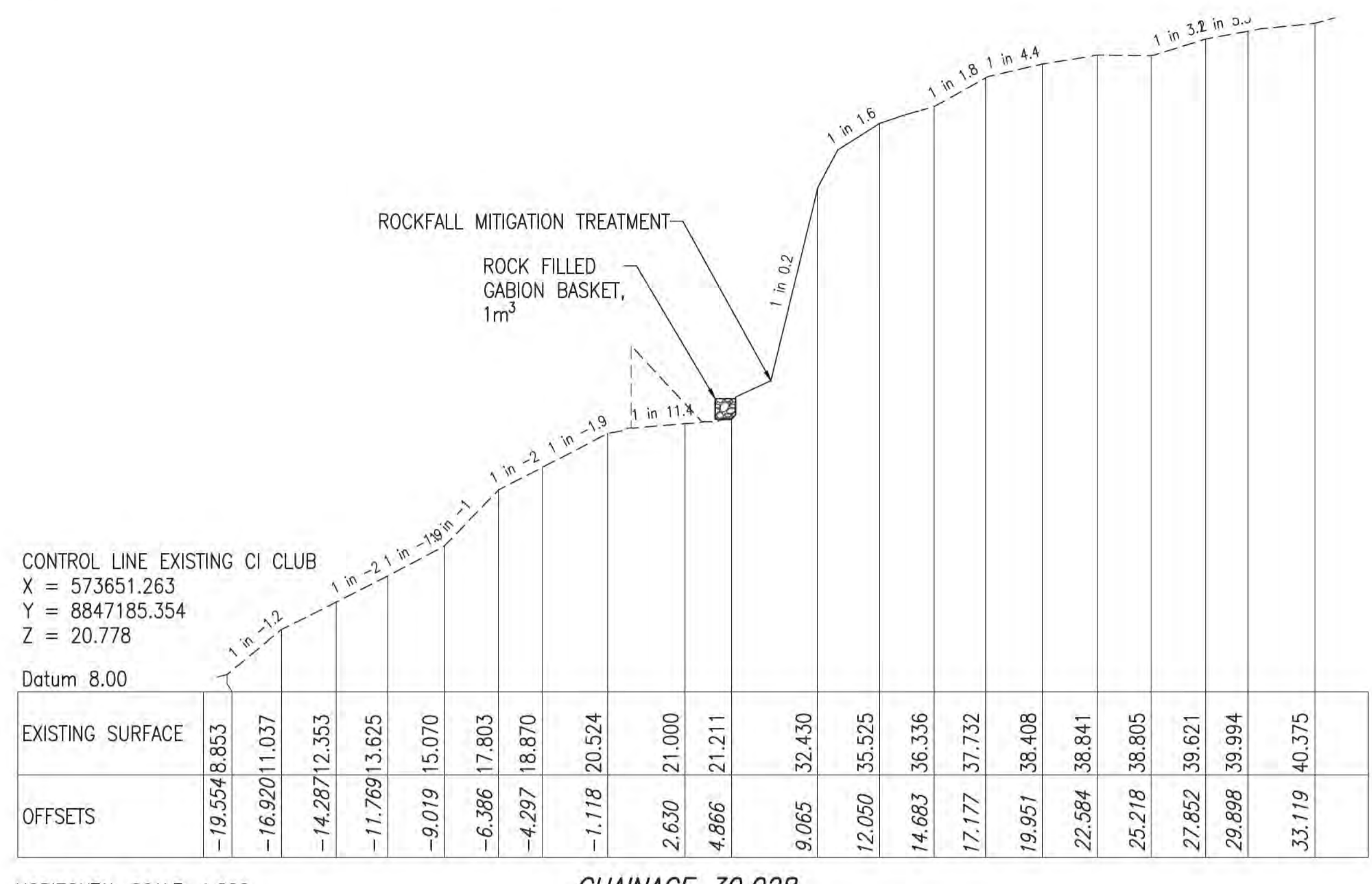
Issue  
**B**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

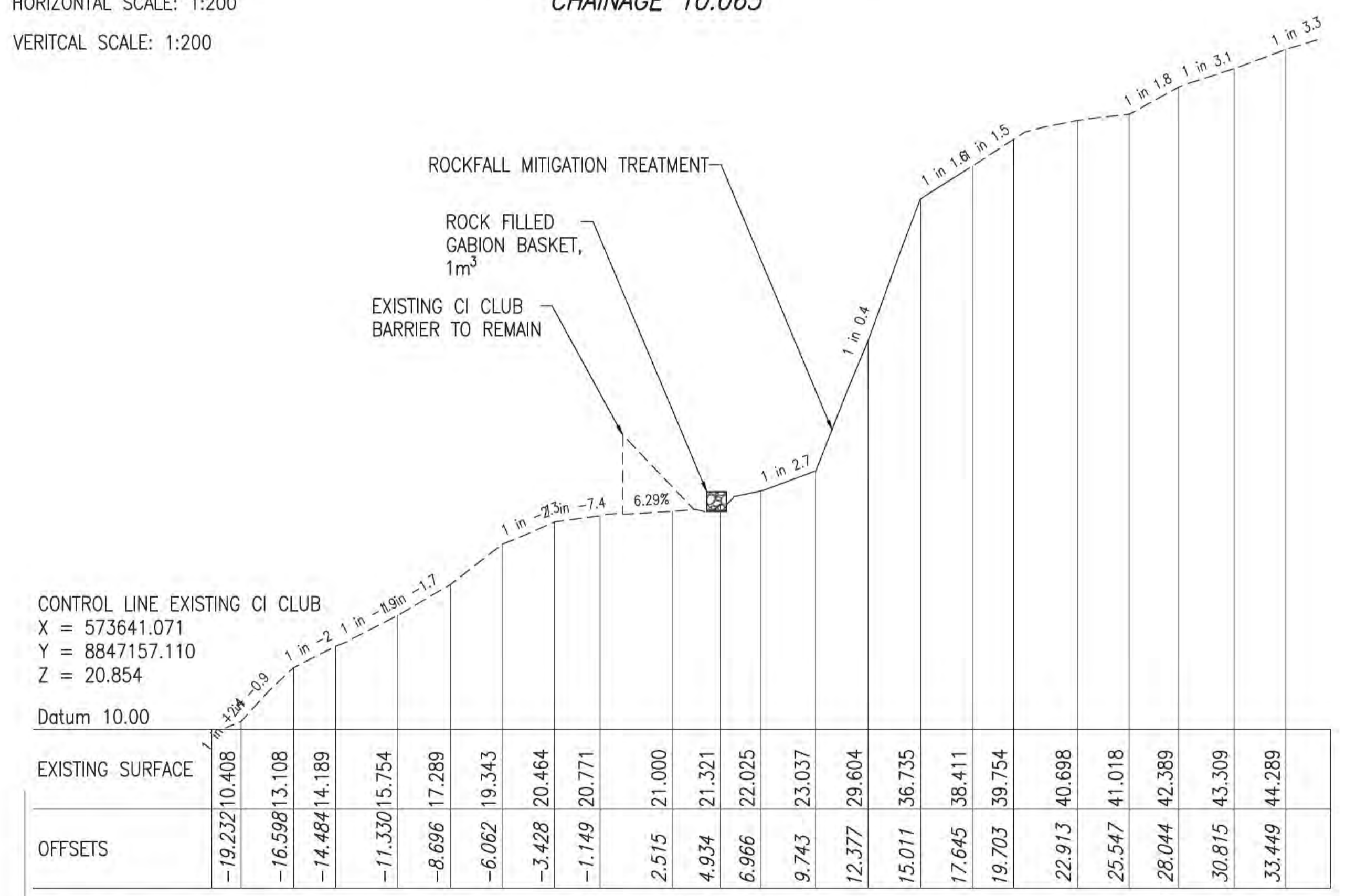




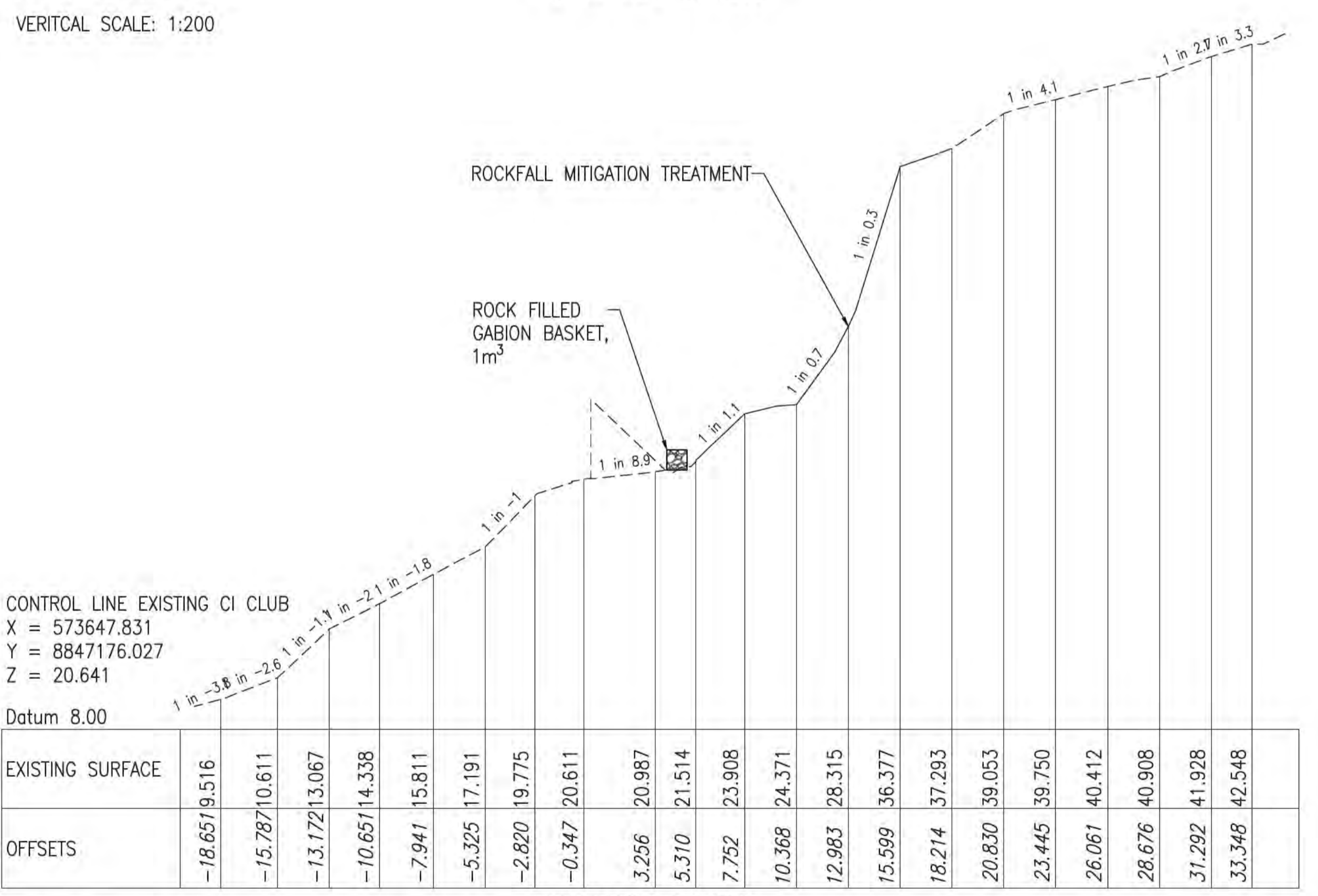
HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 10.065**



HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 30.028**



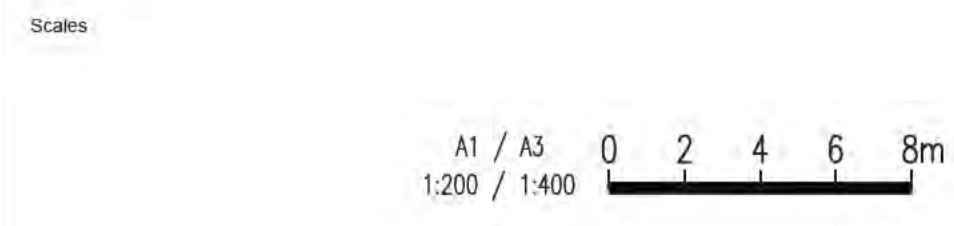
HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 0.000**



HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 20.090**

- NOTES**
1. THE EXISTING SURFACE LEVELS SHOWN IN ALL CROSS SECTIONS ARE A COMBINATION OF LIDAR SURVEY AND SURVEY UNDERTAKEN BY LINKS SURVEYING PTY LTD AND THUS ARE INDICATIVE ONLY
  2. CROSS-SECTIONS AREA BASED OFF LIDAR AND LINKS SURVEYING SURVEY TINS AND ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
A	04/08/20	RB	JG	EF

ISSUED FOR CONSTRUCTION



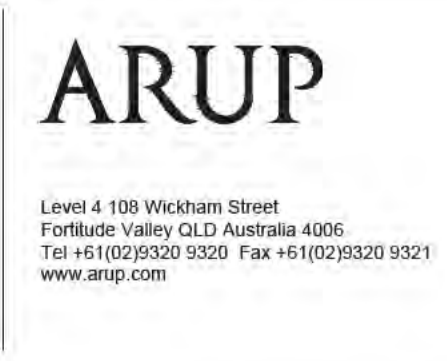
Client  
AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Job Title  
FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN

Scale at A1  
1:200

Discipline

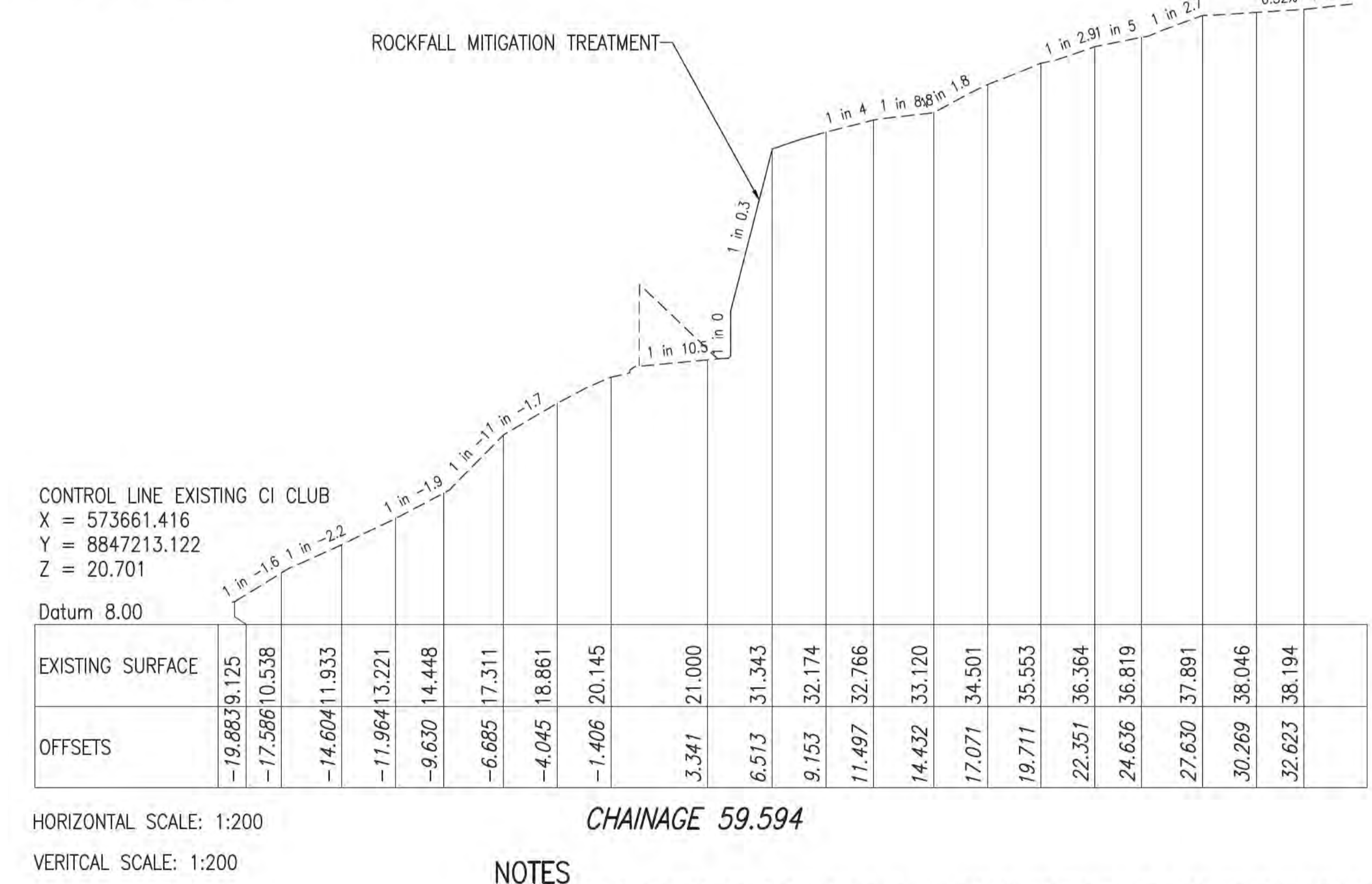
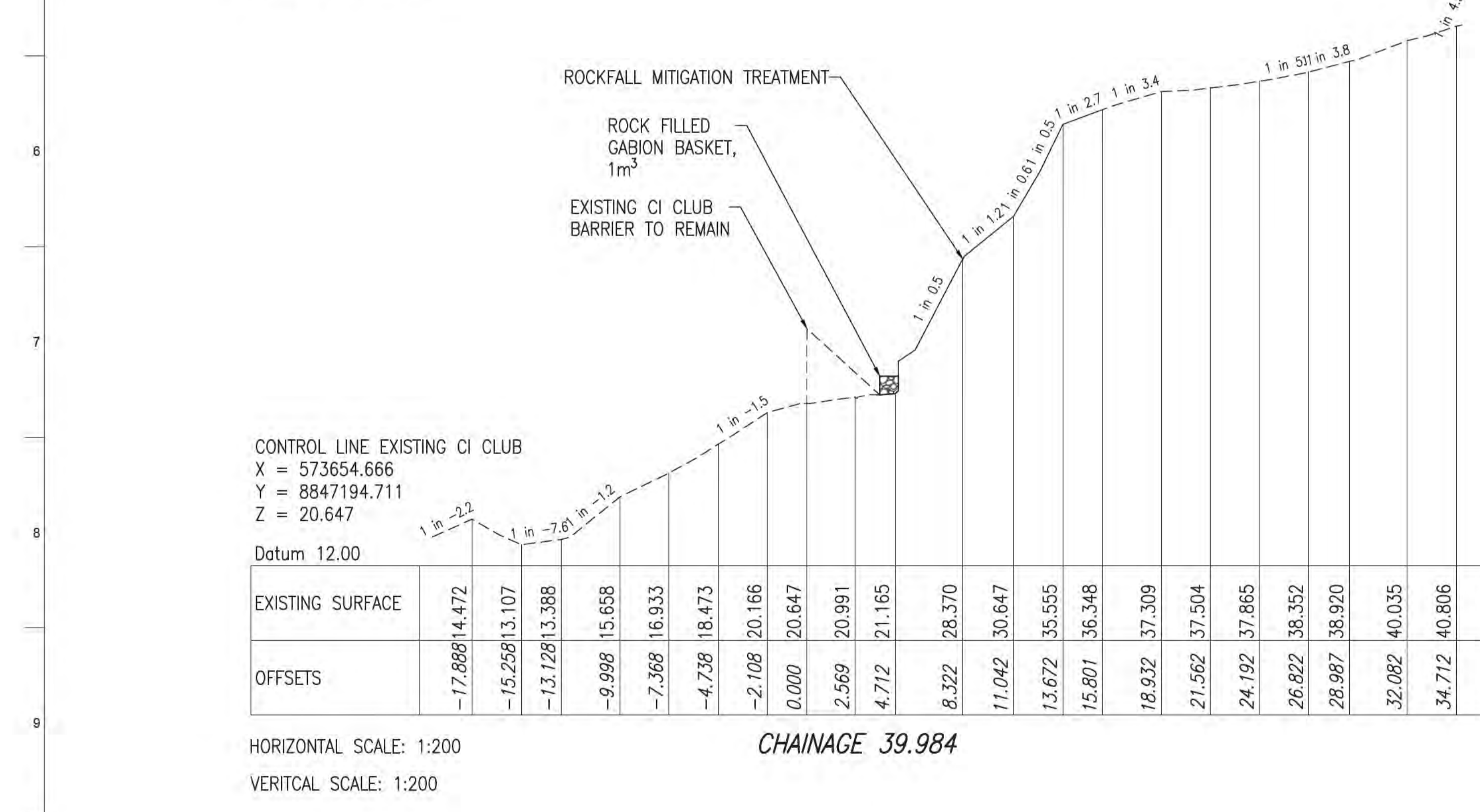
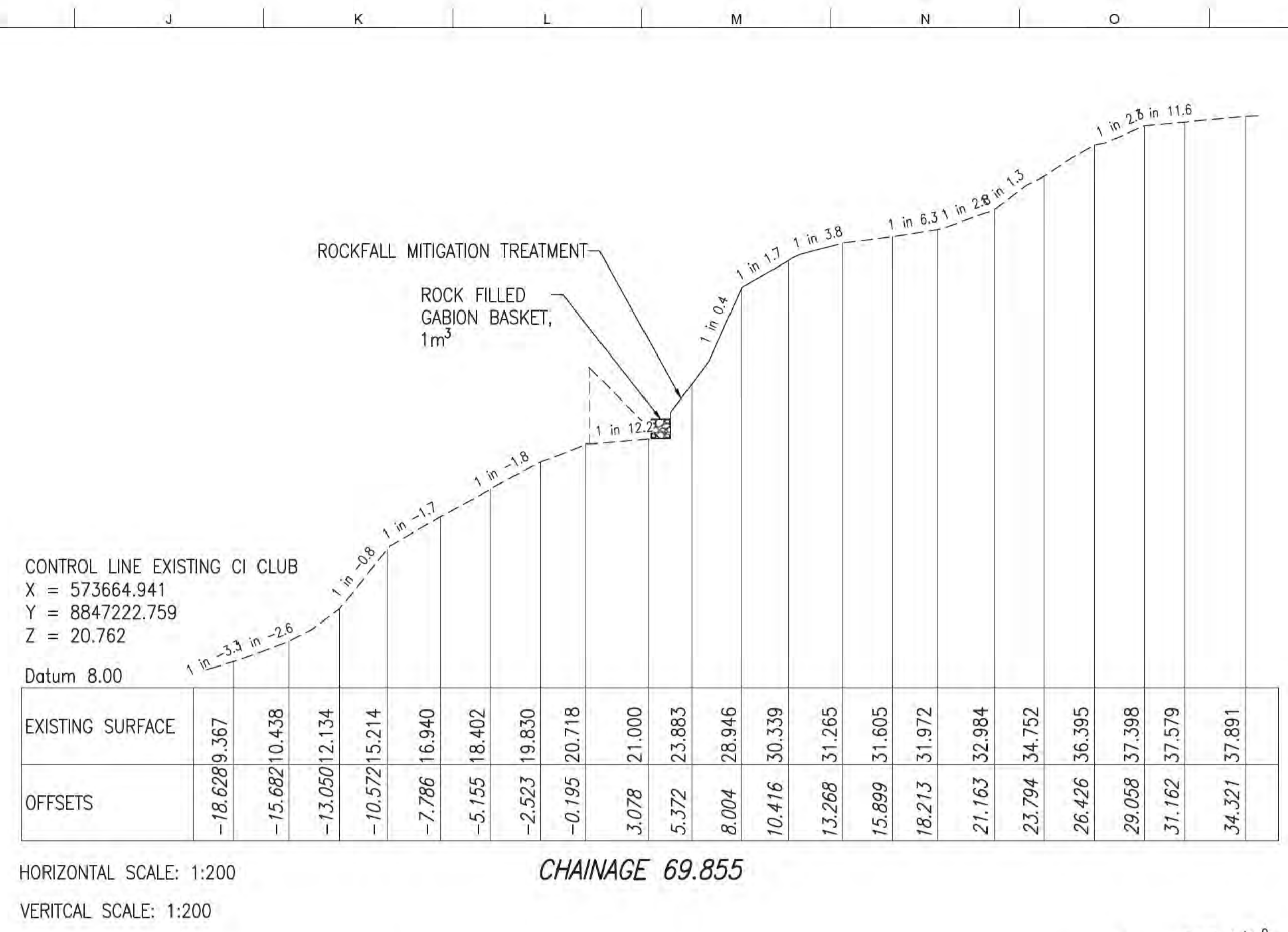
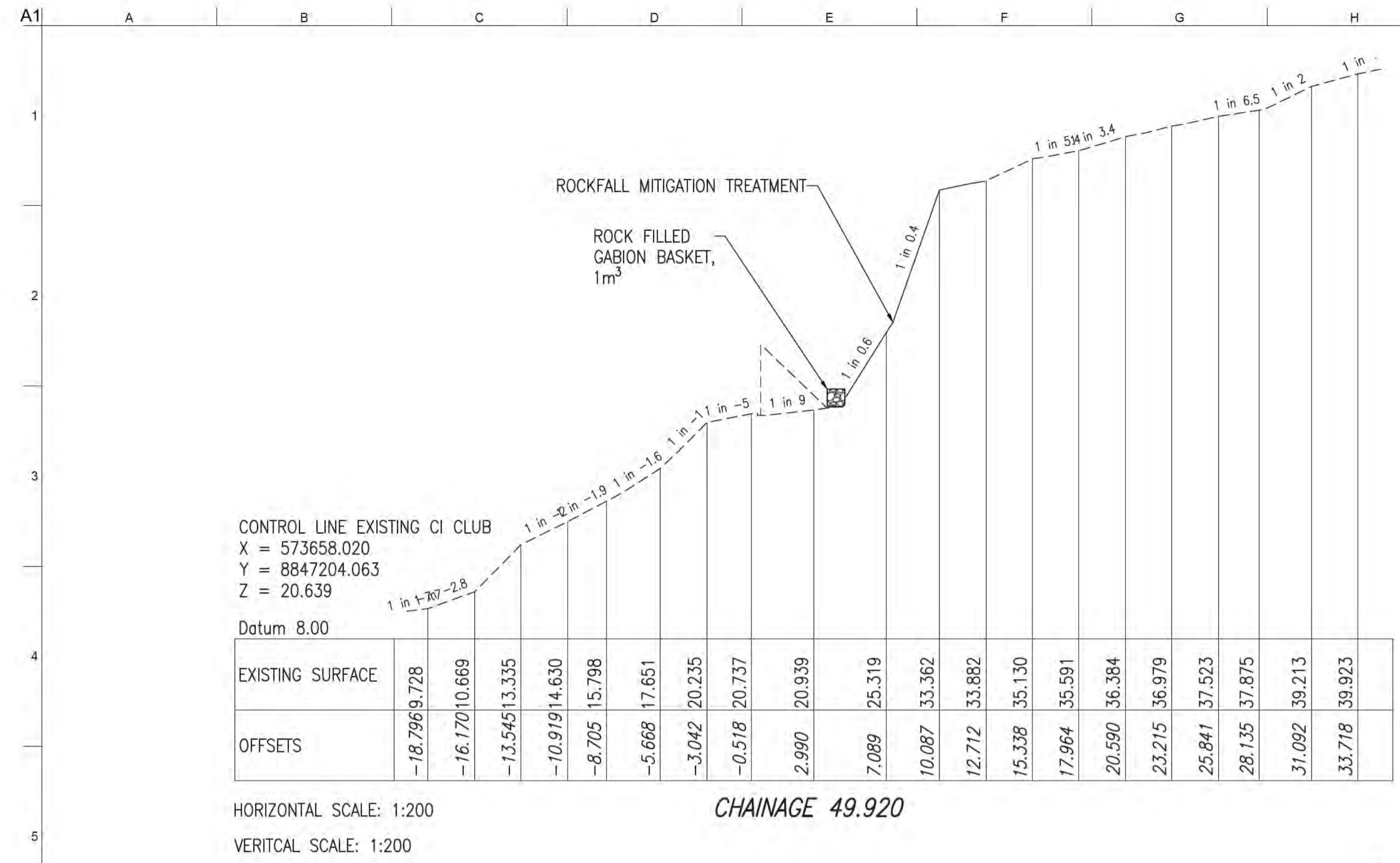


Drawing Title  
LANDSLIDE MITIGATION ANNOTATED CROSS SECTIONS SHEET 13

Drawing Status  
**ISSUED FOR CONSTRUCTION**

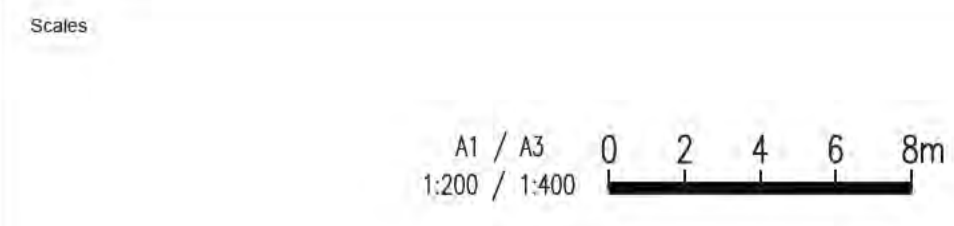
Job No: 268575-00  
Drawing No: CI-XS-13  
Issue: A

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



- NOTES
1. THE EXISTING SURFACE LEVELS SHOWN IN ALL CROSS SECTIONS ARE A COMBINATION OF LIDAR SURVEY AND SURVEY UNDERTAKEN BY LINKS SURVEYING PTY LTD AND THUS ARE INDICATIVE ONLY
  2. CROSS-SECTIONS AREA BASED OFF LIDAR AND LINKS SURVEYING SURVEY TINS AND ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY.

**ISSUED FOR CONSTRUCTION**



Design Model Version

Issue	Date	By	Chkd	Appd
A	04/08/20	RB	JG	EF

ISSUED FOR CONSTRUCTION



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

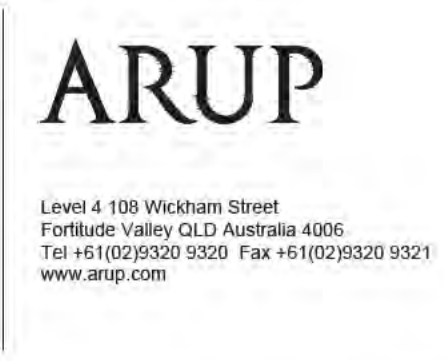
Client  
AUSTRALIAN GOVERNMENT DPT  
OF INFRASTRUCTURE, TRANSPORT,  
REGIONAL DEVELOPMENT  
AND COMMUNICATIONS

Engineering Certification (CEng)  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Job Title  
FLYING FISH COVE  
CHRISTMAS ISLAND  
LANDSLIDE MITIGATION  
DETAILED DESIGN

Scale at A1  
1:200

Discipline



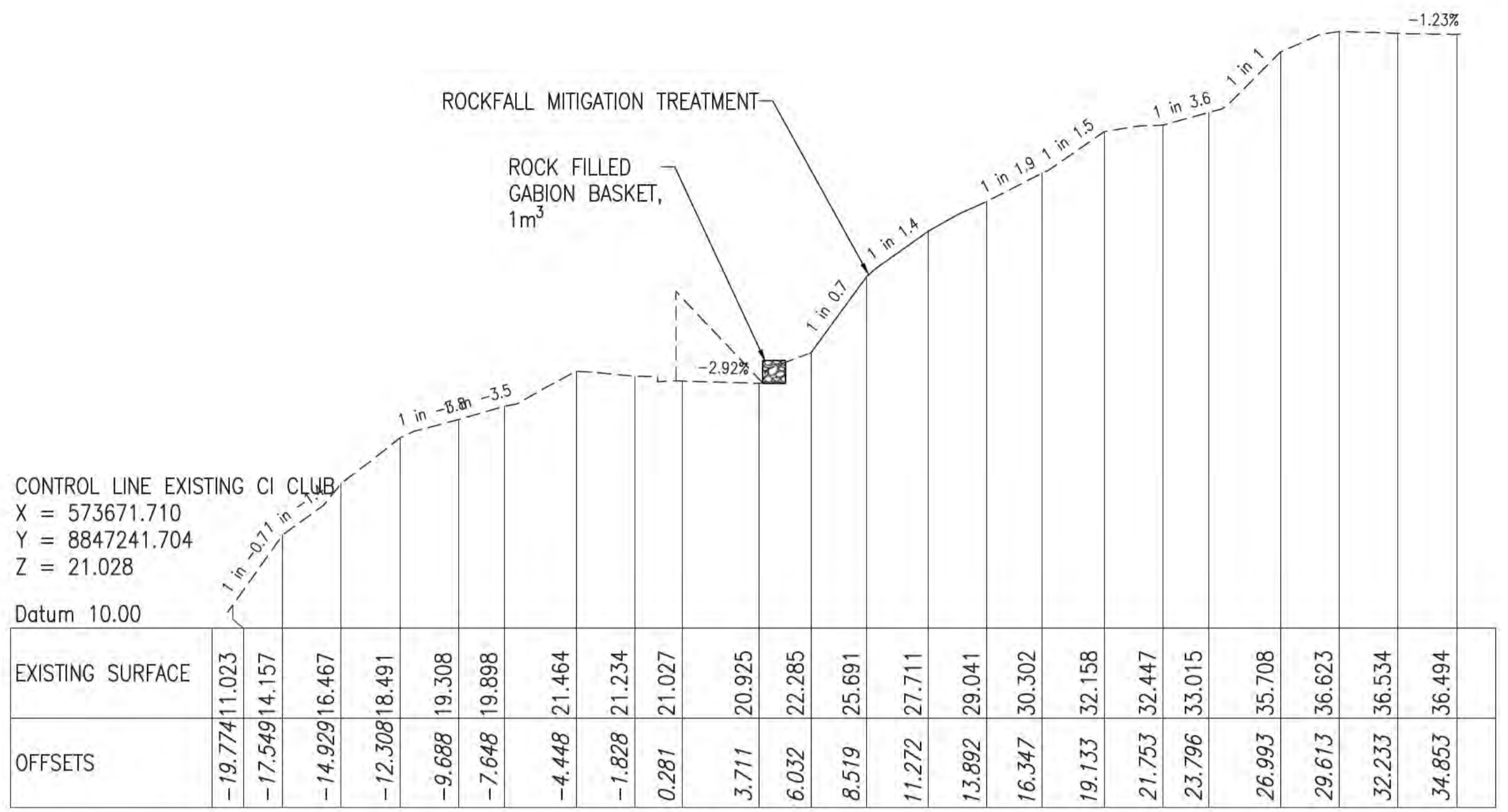
Level 4 108 Wickham Street  
Fortitude Valley QLD Australia 4006  
Tel +61(0)7320 9320 Fax +61(0)7320 9321  
www.arup.com

Drawing Title  
LANDSLIDE MITIGATION  
ANNOTATED CROSS SECTIONS  
SHEET 14

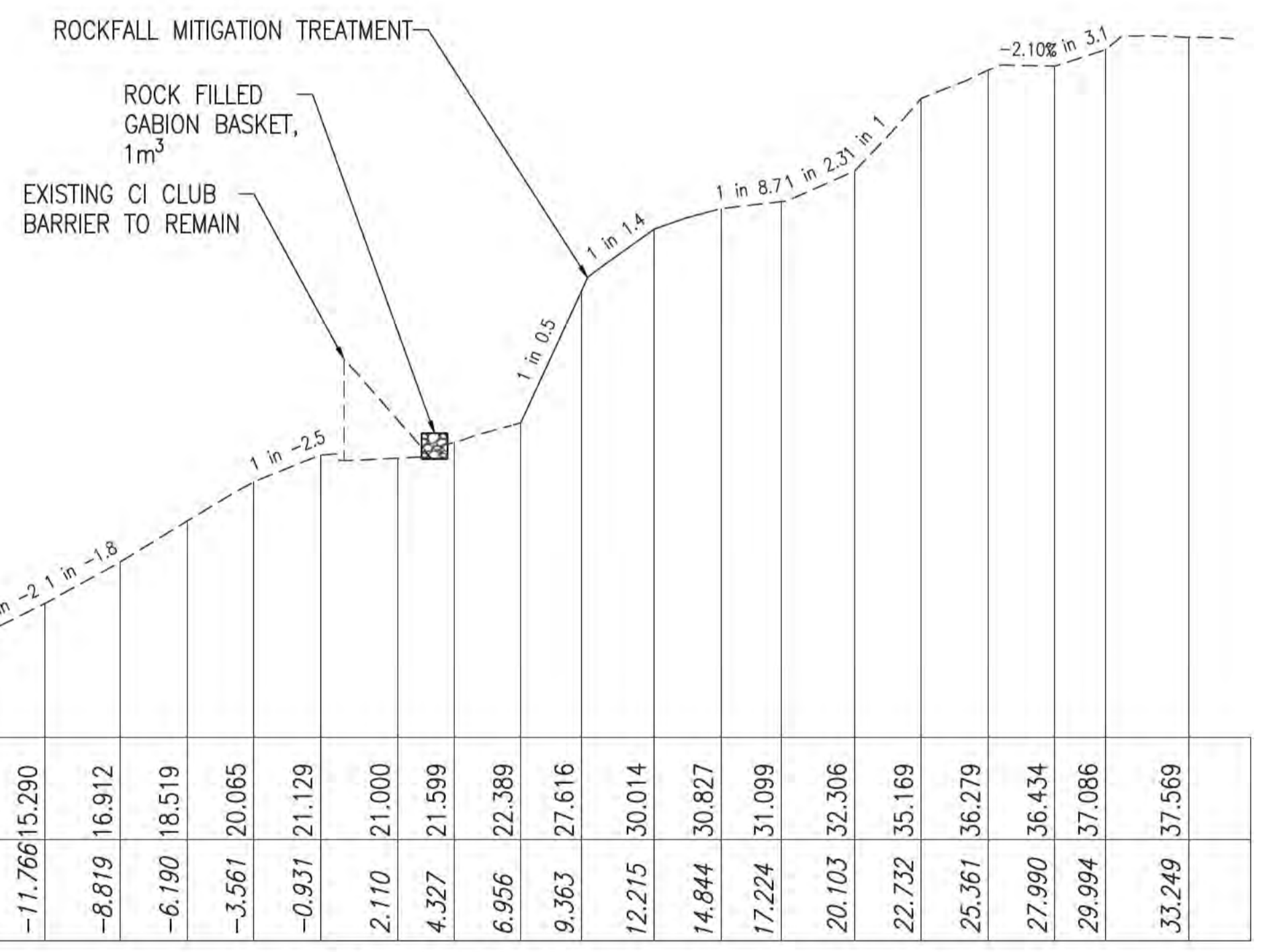
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No: 268575-00  
Drawing No: CI-XS-14  
Issue: A

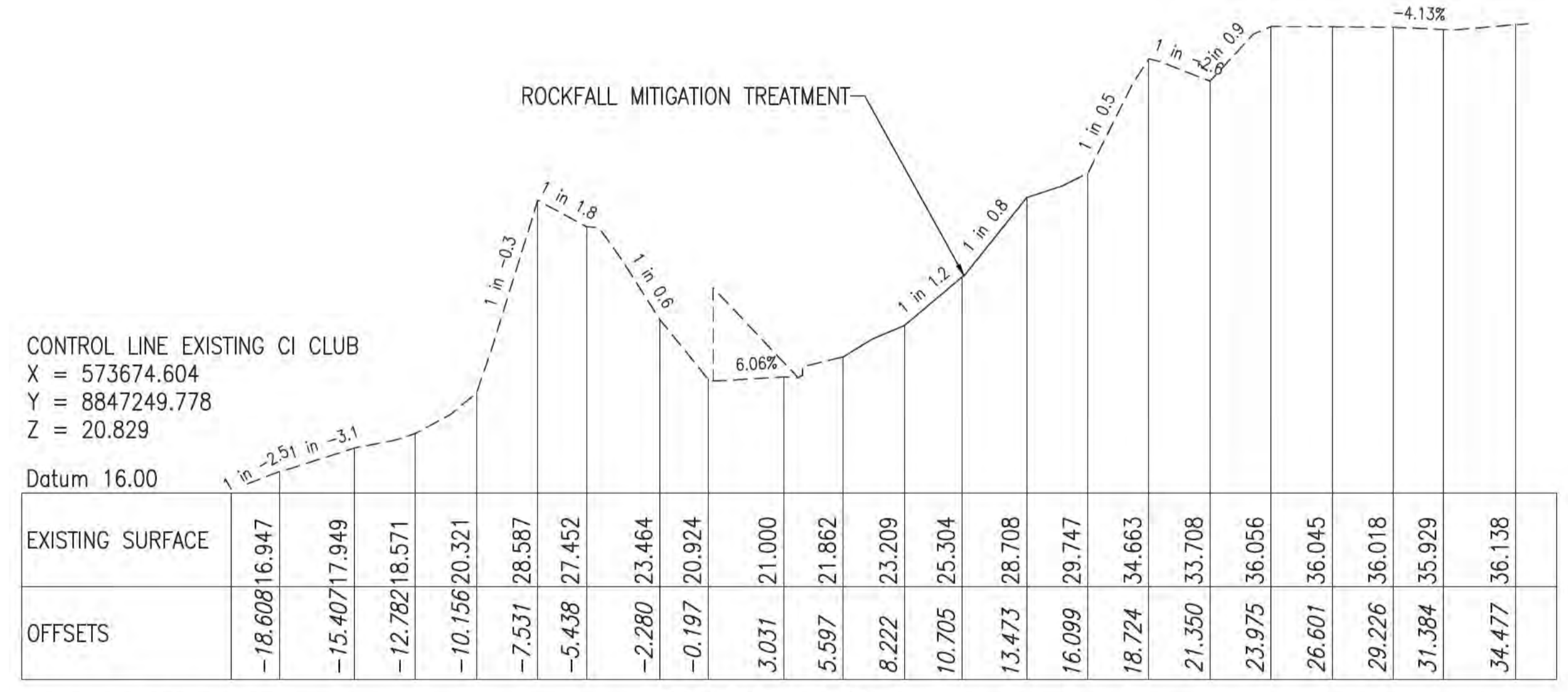
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 89.974**



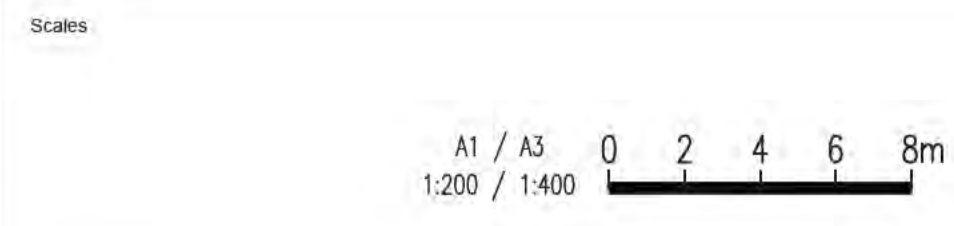
HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 79.968**



HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:200  
**CHAINAGE 98.551**

- NOTES**
1. THE EXISTING SURFACE LEVELS SHOWN IN ALL CROSS SECTIONS ARE A COMBINATION OF LIDAR SURVEY AND SURVEY UNDERTAKEN BY LINKS SURVEYING PTY LTD AND THUS ARE INDICATIVE ONLY
  2. CROSS-SECTIONS AREA BASED ON LIDAR AND LINKS SURVEYING SURVEY TINS AND ARE INDICATIVE ONLY. THERE IS AN APPROXIMATELY 0.5M MISMATCH BETWEEN LIDAR AND TRADITIONAL FEATURE SURVEY

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd
A	04/08/20	RB	JG	EF

ISSUED FOR CONSTRUCTION



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

Engineering Certification (CEng)  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Job Title  
FLYING FISH COVE  
CHRISTMAS ISLAND  
LANDSLIDE MITIGATION  
DETAILED DESIGN

Scale at A1  
1:200

Discipline



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  
ANNOTATED CROSS SECTIONS  
SHEET 15

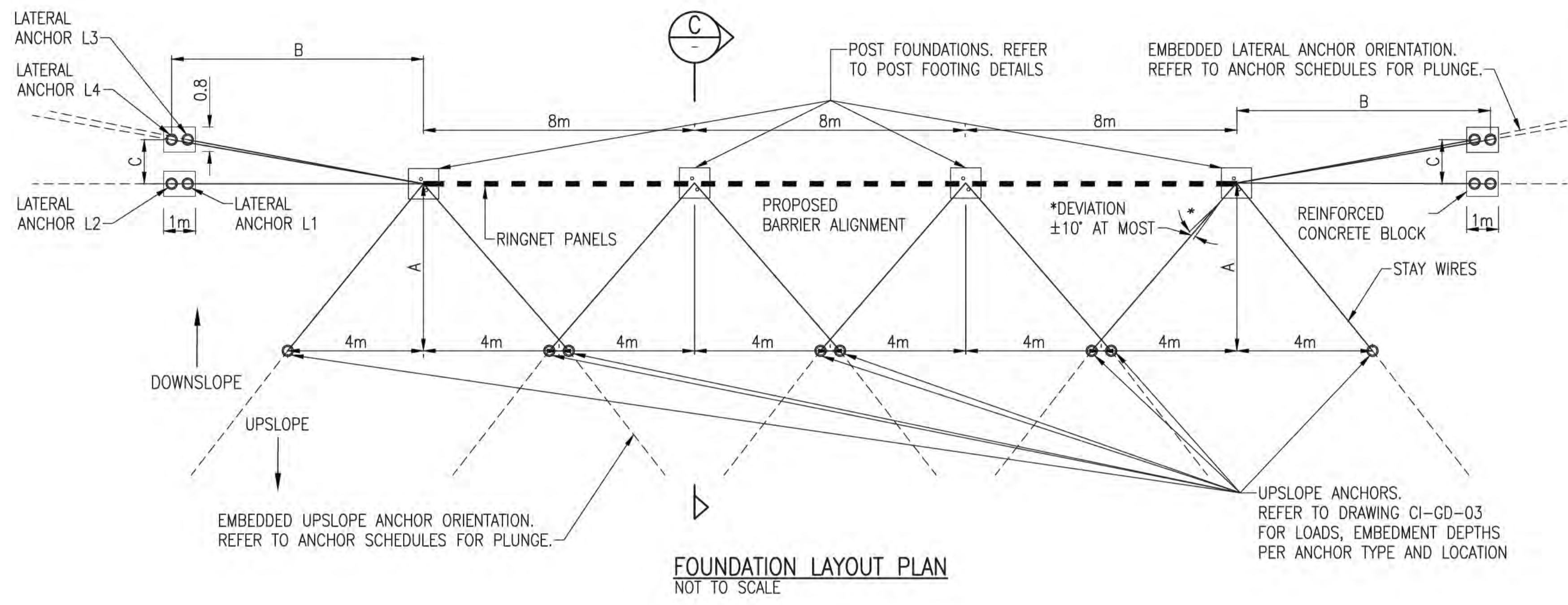
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

Drawing No  
**CI-XS-15**

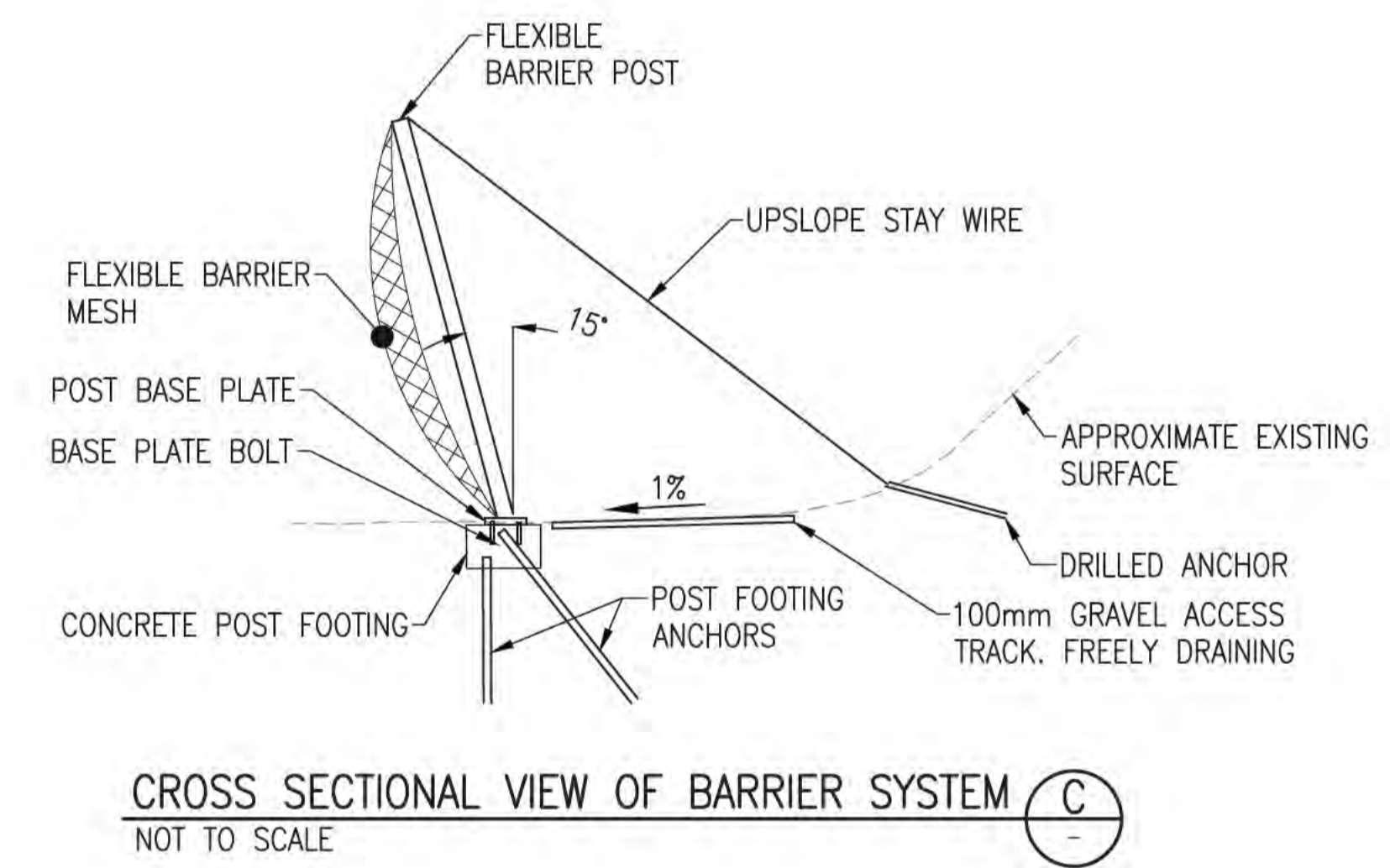
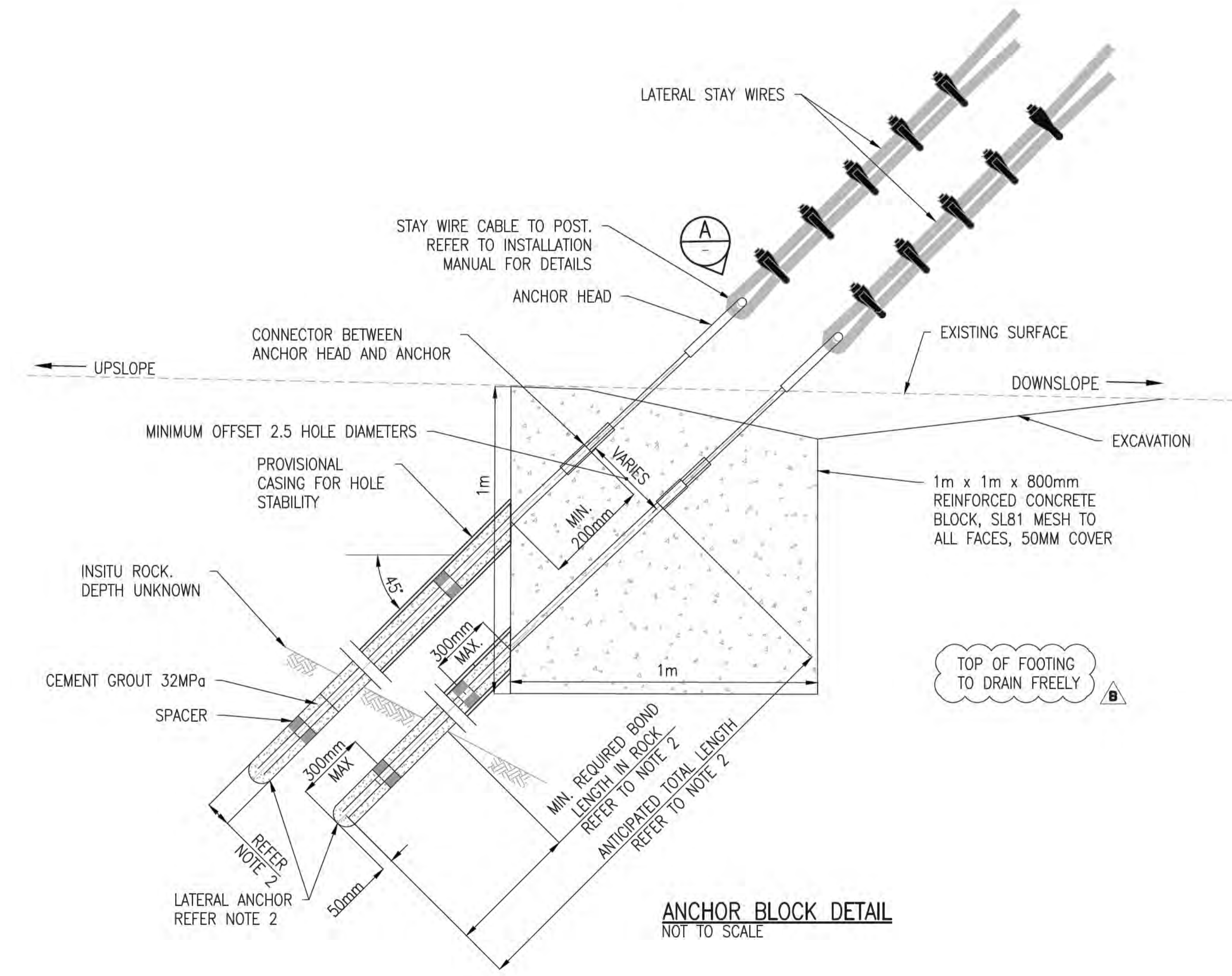
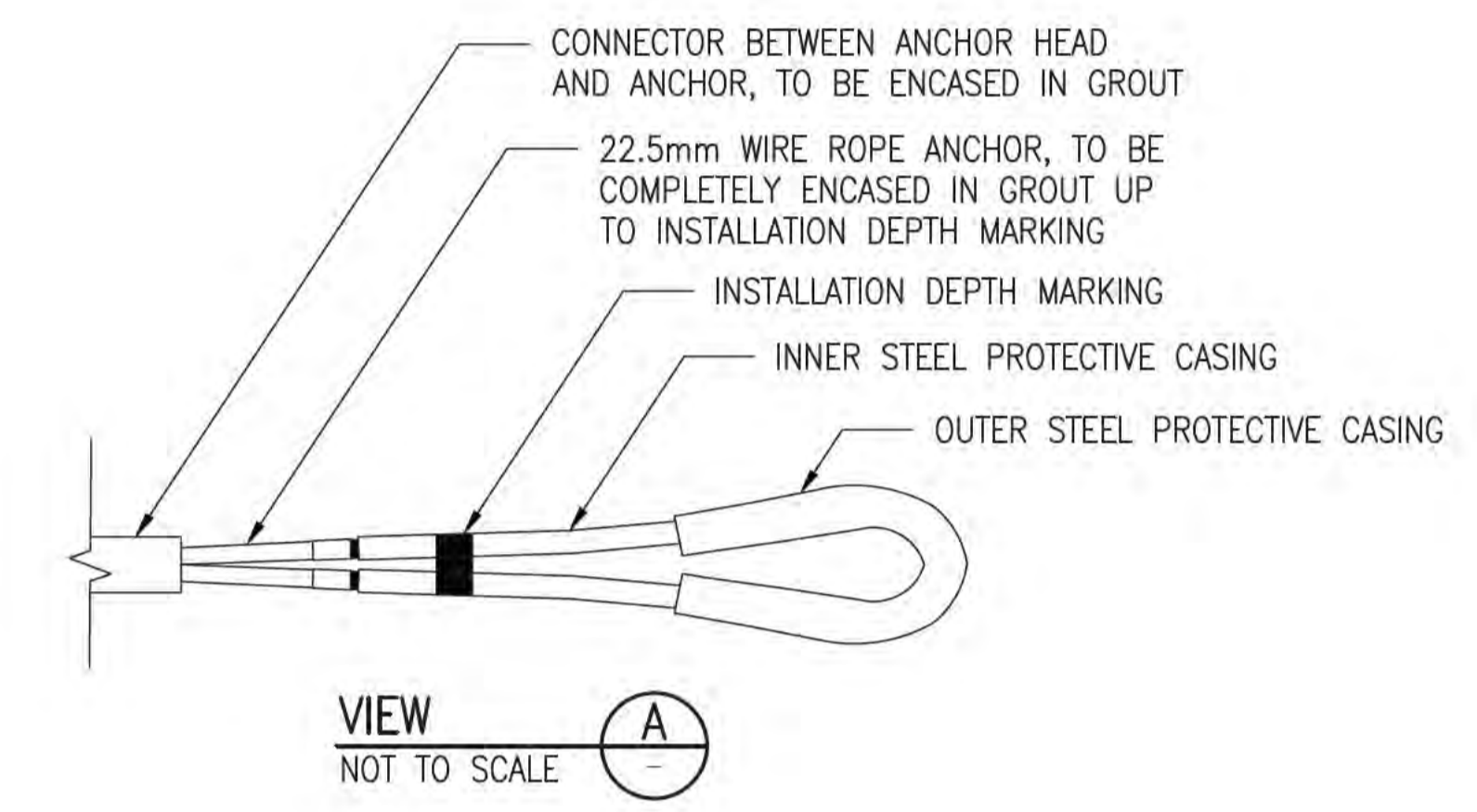
Issue  
**A**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



**FLEXIBLE BARRIER GEOMETRY**

FLEXIBLE BARRIER	BARRIER HEIGHT (m)	TOTAL BARRIER LENGTH (m)	POSTS (No.)	BARRIER ENERGY CAPACITY (kJ)	A (m) MINIMUM	B (m)	C (m)
BOAT CLUB BARRIER	5	48	7	8600	4	7.5	1.65
MARINE 2	4	112	15	5000	3	9	1.3
MARINE 1	5	88	12	5000	4	9	1.65
CHRISTMAS ISLAND CLUB	4	70.5	10	8600	3	7.5	1.3



- NOTES**
- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
  - INSTALL GROUND ANCHORS IN ACCORDANCE WITH GROUND ANCHOR SCHEDULES SHOWN ON DRAWING CI-GD-03.

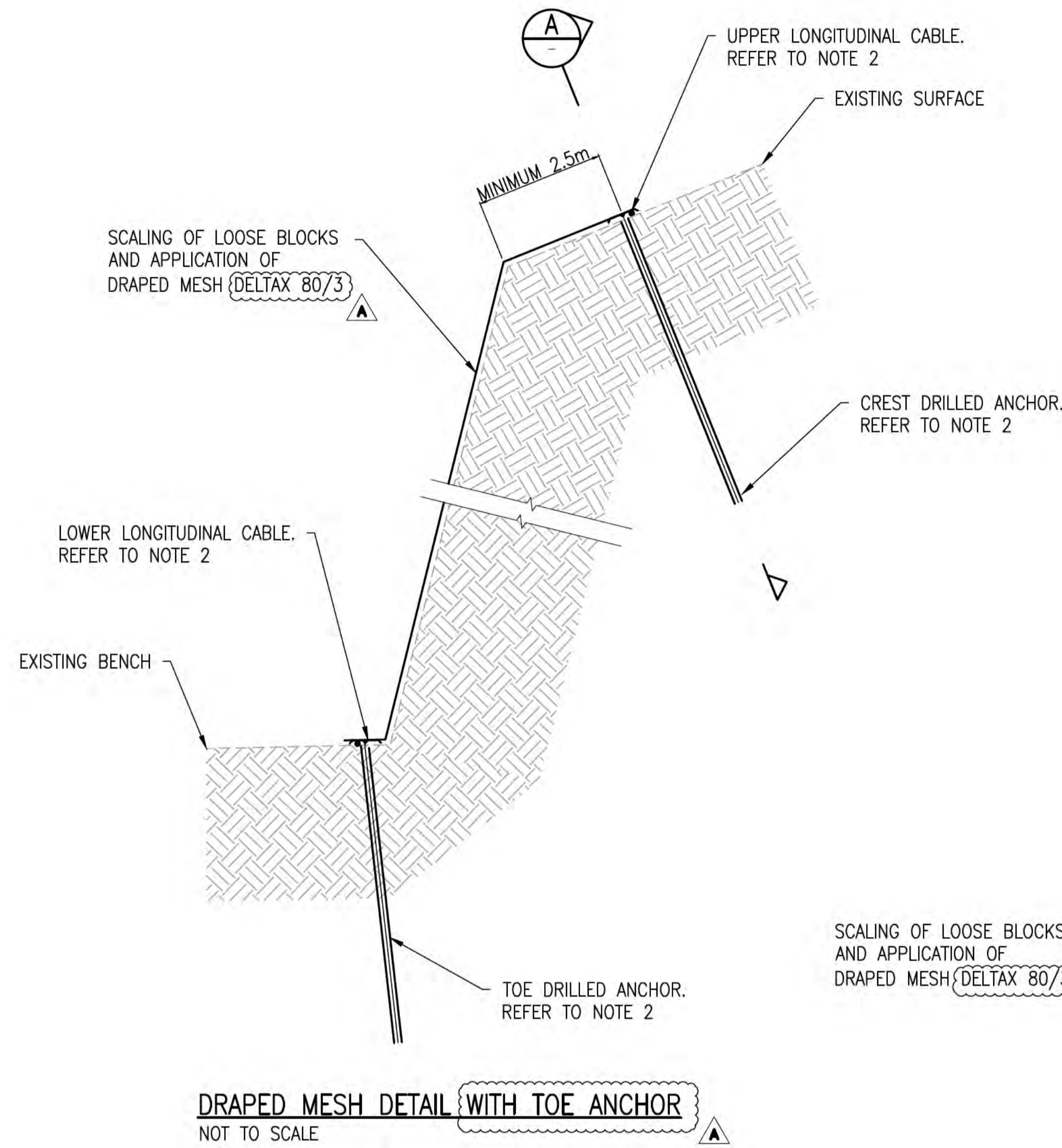
**ISSUED FOR CONSTRUCTION**

<p>Scales: N.T.S.</p> <p>Design Model Version:</p>	<table border="1"> <tr> <th>Issue</th> <th>Date</th> <th>By</th> <th>Chkd</th> <th>Appd</th> </tr> <tr> <td>B</td> <td>24/08/20</td> <td>RB</td> <td>JG</td> <td>EF</td> </tr> <tr> <td colspan="5">Revised IFC</td> </tr> <tr> <td>A</td> <td>04/08/20</td> <td>RB</td> <td>JG</td> <td>EF</td> </tr> <tr> <td colspan="5">ISSUED FOR CONSTRUCTION</td> </tr> </table>	Issue	Date	By	Chkd	Appd	B	24/08/20	RB	JG	EF	Revised IFC					A	04/08/20	RB	JG	EF	ISSUED FOR CONSTRUCTION					<p><b>Australian Government</b> 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)</p> <p>Name: _____ Date: _____</p> <p>Signature: _____</p>	<p>Job Title: FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN</p> <p>Scale at A1: NTS</p> <p>Discipline: _____</p>	<p><b>ARUP</b></p> <p>Level 4 108 Wickham Street Fortitude Valley QLD Australia 4006 Tel +61(0)75320 9320 Fax +61(0)75320 9321 www.arup.com</p> <p>Member Firm ANP Pty Ltd ABN 18 000 966 165</p>	<p>Drawing Title: LANDSLIDE MITIGATION TYPICAL DETAILS SHEET 1</p> <p>Drawing Status: <b>ISSUED FOR CONSTRUCTION</b></p> <p>Job No: 268575-00 Drawing No: CI-GD-01 Issue: <b>B</b></p>
Issue	Date	By	Chkd	Appd																											
B	24/08/20	RB	JG	EF																											
Revised IFC																															
A	04/08/20	RB	JG	EF																											
ISSUED FOR CONSTRUCTION																															

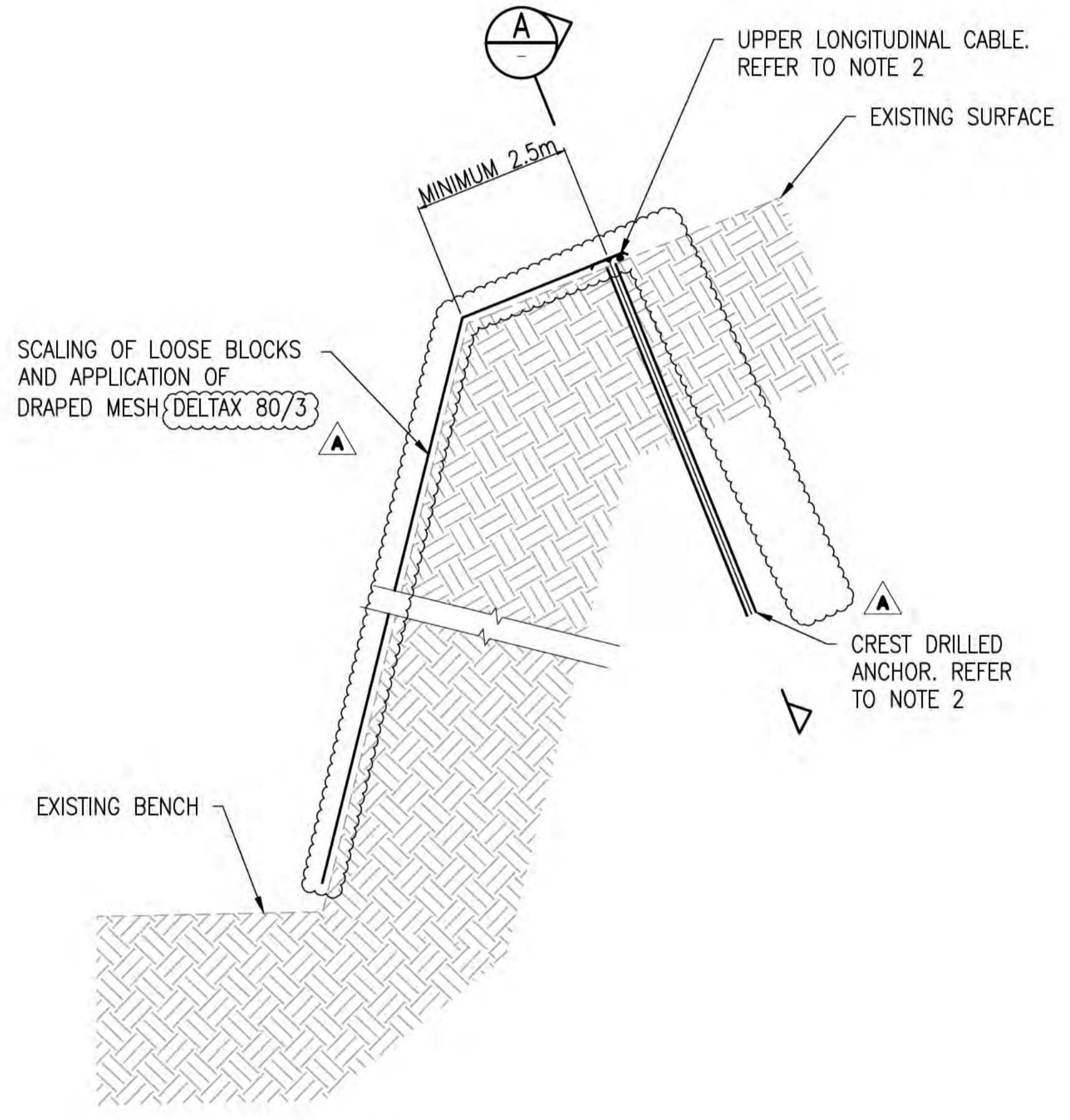
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

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

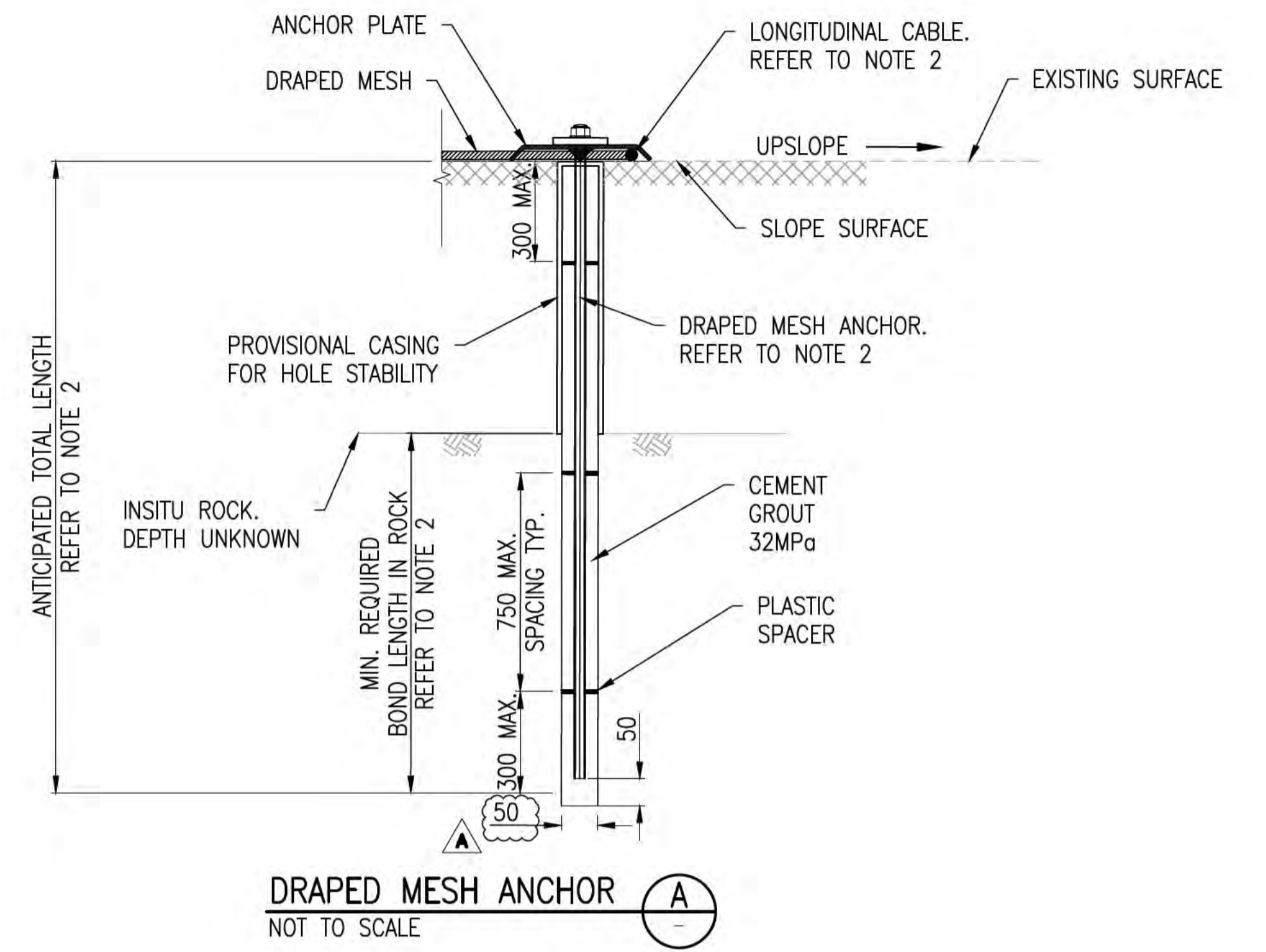
1  
2  
3  
4  
5  
6  
7  
8  
9  
10



**DRAPED MESH DETAIL WITH TOE ANCHOR**  
NOT TO SCALE



**DRAPED MESH DETAIL**  
NOT TO SCALE



**DRAPED MESH ANCHOR**  
NOT TO SCALE

- NOTES**
- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
  - REFER TO DRAWING CI-GD-03 FOR GROUND ANCHOR SCHEDULES AND MESH DETAILS.

**ISSUED FOR CONSTRUCTION**

<p>Scales</p> <p>N.T.S</p>	<table border="1"> <tr> <td>Issue</td> <td>Date</td> <td>By</td> <td>Chkd</td> <td>Appd</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	Issue	Date	By	Chkd	Appd						<table border="1"> <tr> <td>Issue</td> <td>Date</td> <td>By</td> <td>Chkd</td> <td>Appd</td> </tr> <tr> <td>A</td> <td>04/08/20</td> <td>RB</td> <td>JG</td> <td>EF</td> </tr> </table> <p>ISSUED FOR CONSTRUCTION</p>	Issue	Date	By	Chkd	Appd	A	04/08/20	RB	JG	EF	<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 LANDSLIDE MITIGATION DETAILED DESIGN</p> <p>Scale at A1 NTS</p> <p>Discipline</p>	<p>Level 4 108 Wickham Street Fortitude Valley QLD Australia 4006 Tel +61(0)7320 9320 Fax +61(0)7320 9321 www.arup.com</p>	<p>Member Firm Anup Pty Ltd ABN 18 000 966 165</p>	<p>Drawing Title LANDSLIDE MITIGATION TYPICAL DETAILS SHEET 2</p> <p>Drawing Status <b>ISSUED FOR CONSTRUCTION</b></p> <p>Job No <b>268575-00</b></p> <p>Drawing No <b>CI-GD-02</b></p> <p>Issue <b>A</b></p>
Issue	Date	By	Chkd	Appd																								
Issue	Date	By	Chkd	Appd																								
A	04/08/20	RB	JG	EF																								

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

GROUND ANCHOR SCHEDULE - BOAT CLUB BARRIER

Table with columns: ANCHOR LOCATION, ANCHOR TYPE, NUMBER OF ANCHORS, ANCHOR INCLINATION FROM HORIZONTAL, ULTIMATE LOAD PER ANCHOR, DRILLHOLE DIAMETER, ESTIMATED SOIL DEPTH, MINIMUM BOND LENGTH IN SLIGHTLY WEATHERED ROCK, ESTIMATED TOTAL ANCHOR LENGTH, COLLUVIUM EMBEDMENT, ESTIMATED ANCHOR LENGTH.

PULL-OUT TEST SCHEDULE - PRODUCTION ANCHORS

Table with columns: FLEXIBLE BARRIER, ANCHOR TYPE, NUMBER OF PULL-OUT TESTS, TEST LOAD.

GROUND ANCHOR SCHEDULE - MARINE 2

Table with columns: ANCHOR LOCATION, ANCHOR TYPE, NUMBER OF ANCHORS, ANCHOR INCLINATION FROM HORIZONTAL, ULTIMATE LOAD PER ANCHOR, DRILLHOLE DIAMETER, ESTIMATED SOIL DEPTH, MINIMUM BOND LENGTH IN SLIGHTLY WEATHERED ROCK, ESTIMATED TOTAL ANCHOR LENGTH, COLLUVIUM EMBEDMENT, ESTIMATED ANCHOR LENGTH.

PULL-OUT TEST SCHEDULE - SACRIFICIAL ANCHORS

Table with columns: FLEXIBLE BARRIER, ANCHOR TYPE, NUMBER OF PULL-OUT TESTS, ESTIMATED ANCHOR LENGTH, BONDED ANCHOR LENGTH, TEST LOAD, ANCHOR LENGTH, BONDED ANCHOR LENGTH, TEST LOAD.

\*Not applicable to CH114 end post and compressions strut post. Refer to CI-GD-08 for relevant ground anchor schedule information.

GROUND ANCHOR SCHEDULE - MARINE 1

Table with columns: ANCHOR LOCATION, ANCHOR TYPE, NUMBER OF ANCHORS, ANCHOR INCLINATION FROM HORIZONTAL, ULTIMATE LOAD PER ANCHOR, DRILLHOLE DIAMETER, ESTIMATED SOIL DEPTH, MINIMUM BOND LENGTH IN SLIGHTLY WEATHERED ROCK, ESTIMATED TOTAL ANCHOR LENGTH, COLLUVIUM EMBEDMENT, ESTIMATED ANCHOR LENGTH.

PULL-OUT TEST SCHEDULE - CHRISTMAS ISLAND CLUB DRAPED MESH

Table with columns: ANCHOR LOCATION, ANCHOR TYPE, NUMBER OF PULL-OUT TESTS, BONDED ANCHOR LENGTH, TEST LOAD.

GROUND ANCHOR SCHEDULE - CHRISTMAS ISLAND CLUB BARRIER

Table with columns: ANCHOR LOCATION, ANCHOR TYPE, NUMBER OF ANCHORS, ANCHOR INCLINATION FROM HORIZONTAL, ULTIMATE LOAD PER ANCHOR, DRILLHOLE DIAMETER, ESTIMATED SOIL DEPTH, MINIMUM BOND LENGTH IN SLIGHTLY WEATHERED ROCK, ESTIMATED TOTAL ANCHOR LENGTH, COLLUVIUM EMBEDMENT, ESTIMATED ANCHOR LENGTH.

GROUND ANCHOR SCHEDULE - CHRISTMAS ISLAND CLUB DRAPED MESH

Table with columns: ANCHOR LOCATION, NUMBER OF ANCHORS, ANCHOR TYPE, DESIGN LOAD PER ANCHOR, DRILLHOLE DIAMETER, ANCHOR SPACING, MINIMUM BOND LENGTH IN SLIGHTLY WEATHERED ROCK, ANTICIPATED TOTAL ANCHOR LENGTH.

FLEXIBLE BARRIER ANCHOR SCHEDULE - CONTINGENCY LENGTH

Table with columns: BARRIER, ANCHOR TYPE, CONTINGENCY LENGTH.

LONGITUDINAL CABLE SCHEDULE - CHRISTMAS ISLAND CLUB DRAPED MESH

Table with columns: CABLE LOCATION, CABLE TYPE, DRILLHOLE DIAMETER, STEEL GRADE.

NOTES

- 1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
2. REFER TO DRAWINGS CI-CL-01, CI-GD-01, CI-GD-02 FOR ANCHOR SETOUT AND DETAILS.
3. DRAPED MESH MAY REQUIRE HAND-DRILLED TOE ANCHORS AT CERTAIN LOCATIONS TO ENSURE DETACHED BLOCKS DON'T ENCR OACH ON CONSTRUCTION ACCESS PATH. THE NUMBER, POSITION, BONDED LENGTH AND TYPE OF ANCHORS SHALL BE DETERMINED ON SITE BY THE SUPERVISING GEOTECHNICAL ENGINEER.
4. ADOPTED ANCHOR EMBEDMENT MUST BE CONSISTENT WITH THE ADOPTED SACRIFICIAL ANCHOR TESTING FOR A GIVEN BARRIER. IF THE CONTRACTOR IS ONLY TARGETTING EMBEDMENT IN COLLUVIUM, THE ROCK EMBEDMENT SACRIFICIAL ANCHORS AND TESTING ARE NOT REQUIRED.
5. ANCHOR LENGTHS TO BE CONFIRMED BASED ON THE RESULTS OF THE SACRIFICIAL ANCHOR TESTS.
6. COMPRESSION ANCHOR NUMBERS AND LOADING ARE BASED ON THE COLLUVIUM EMBEDMENT ANCHORS.

Scales: N.T.S

Table with columns: Issue, Date, By, Chkd, Appd. Includes revision history for Marine 2 Compression Strut and Revised IFC.



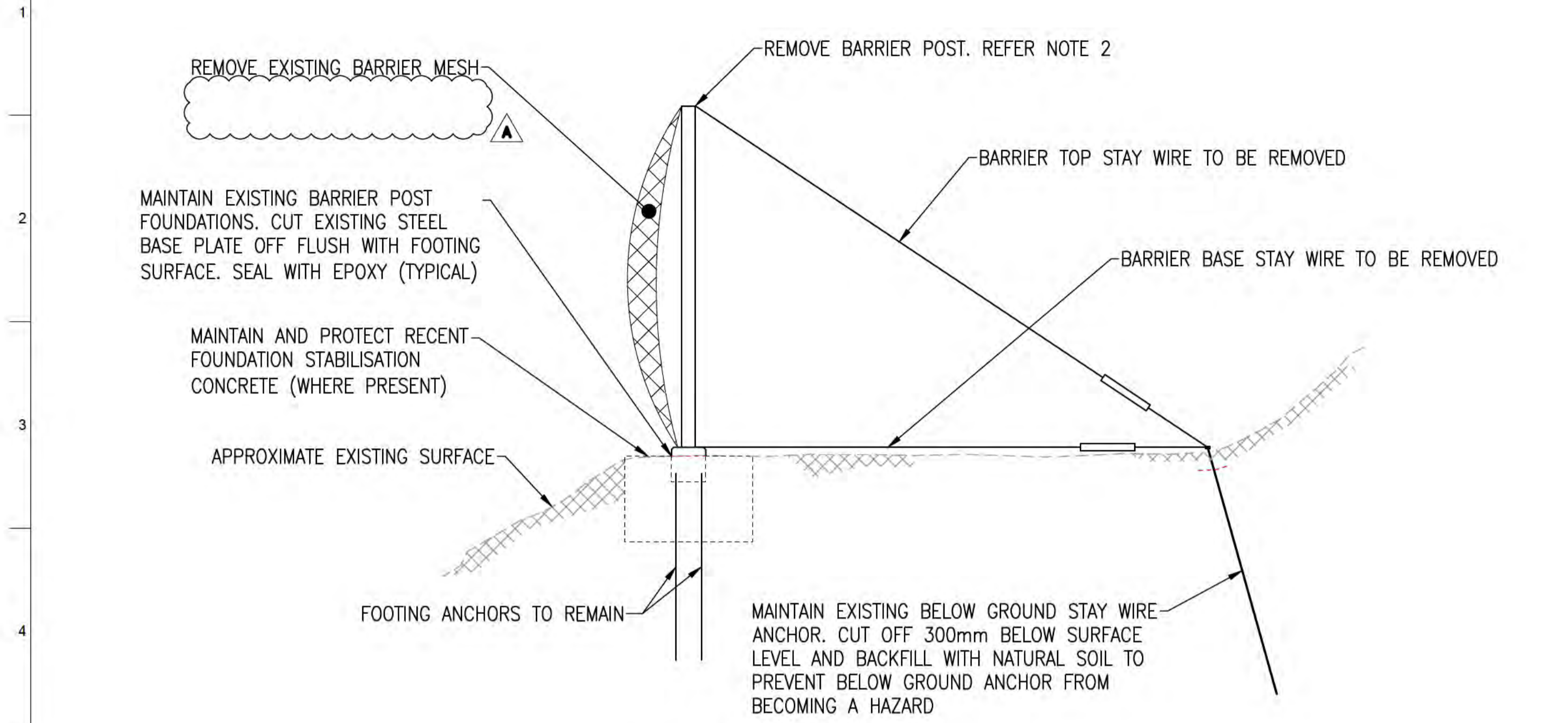
Client: AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Job Title: FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN

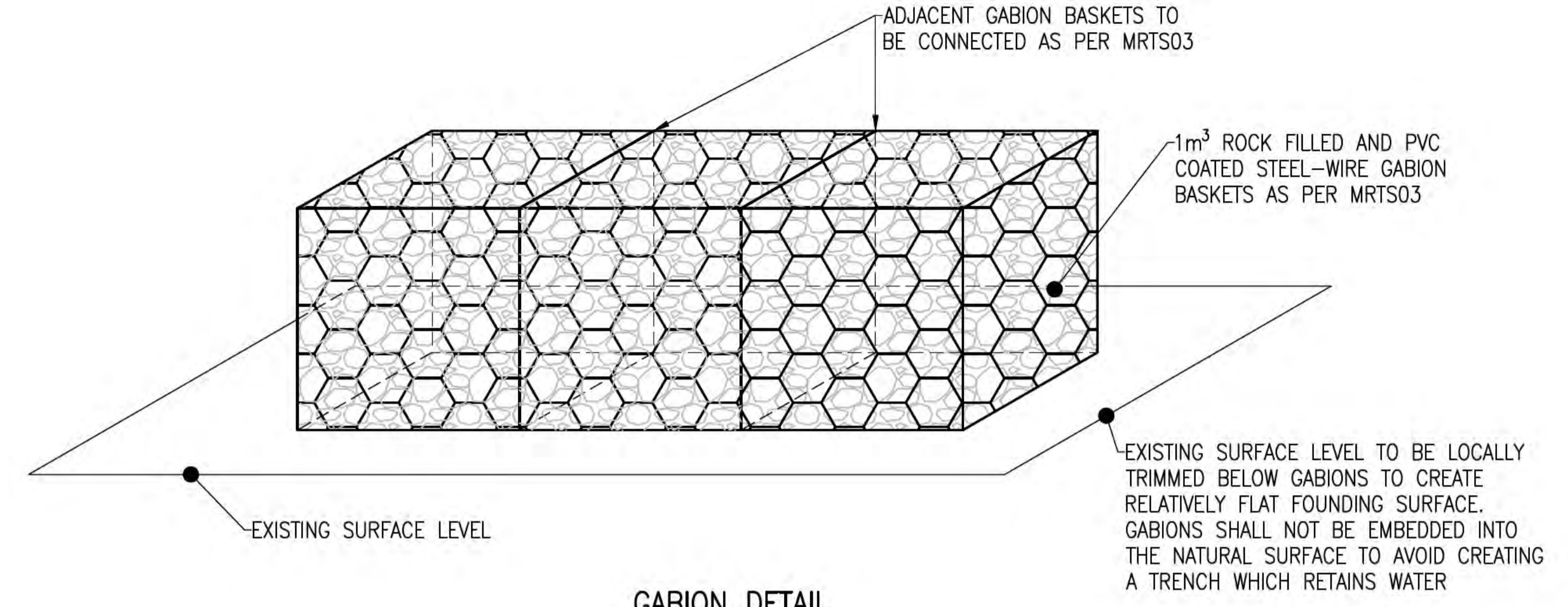


Drawing Title: LANDSLIDE MITIGATION TYPICAL DETAILS SHEET 3. Drawing Status: ISSUED FOR CONSTRUCTION. Job No: 268575-00. Drawing No: CI-GD-03.

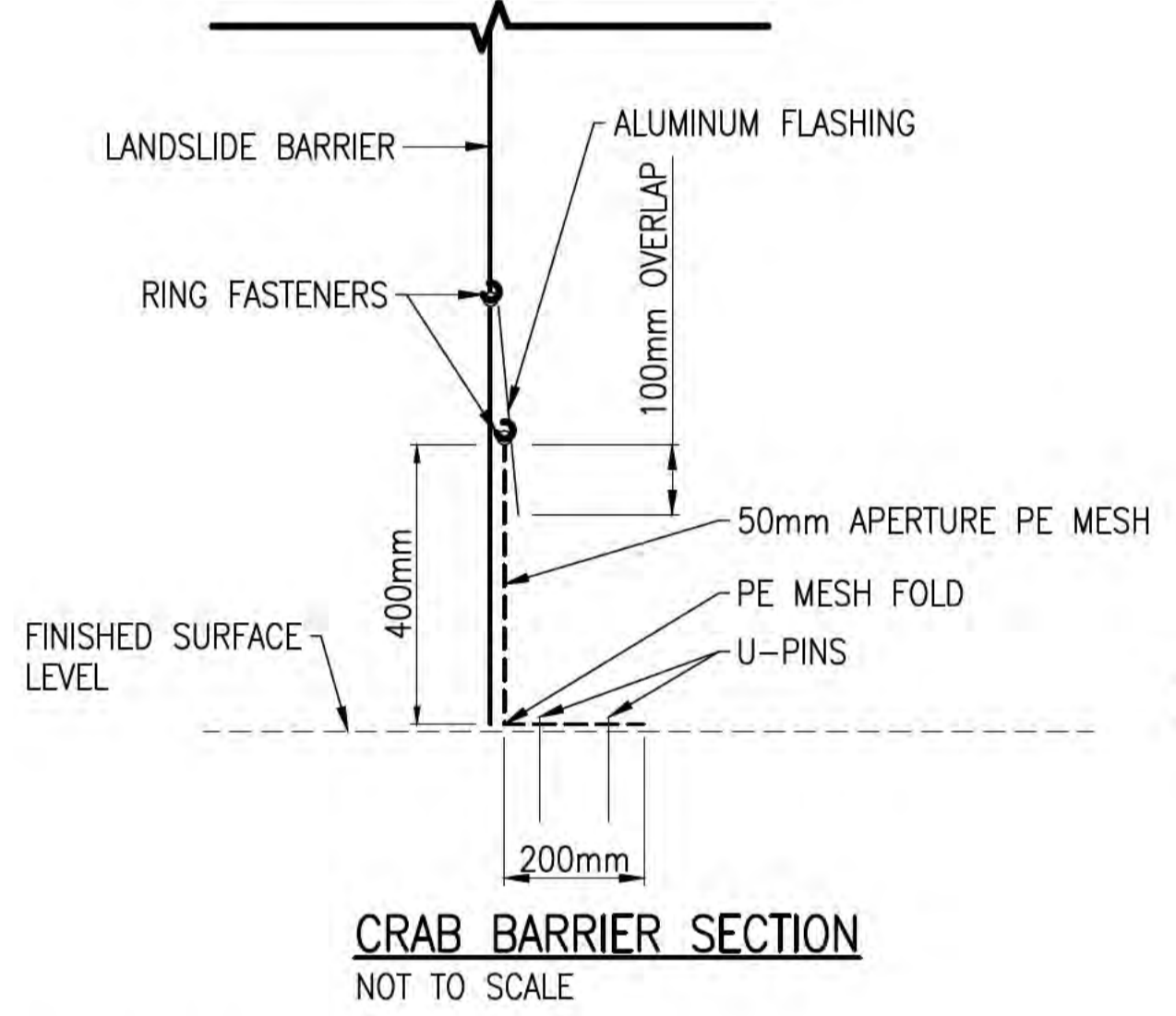
A1 A B C D E F G H I J K L M N O P



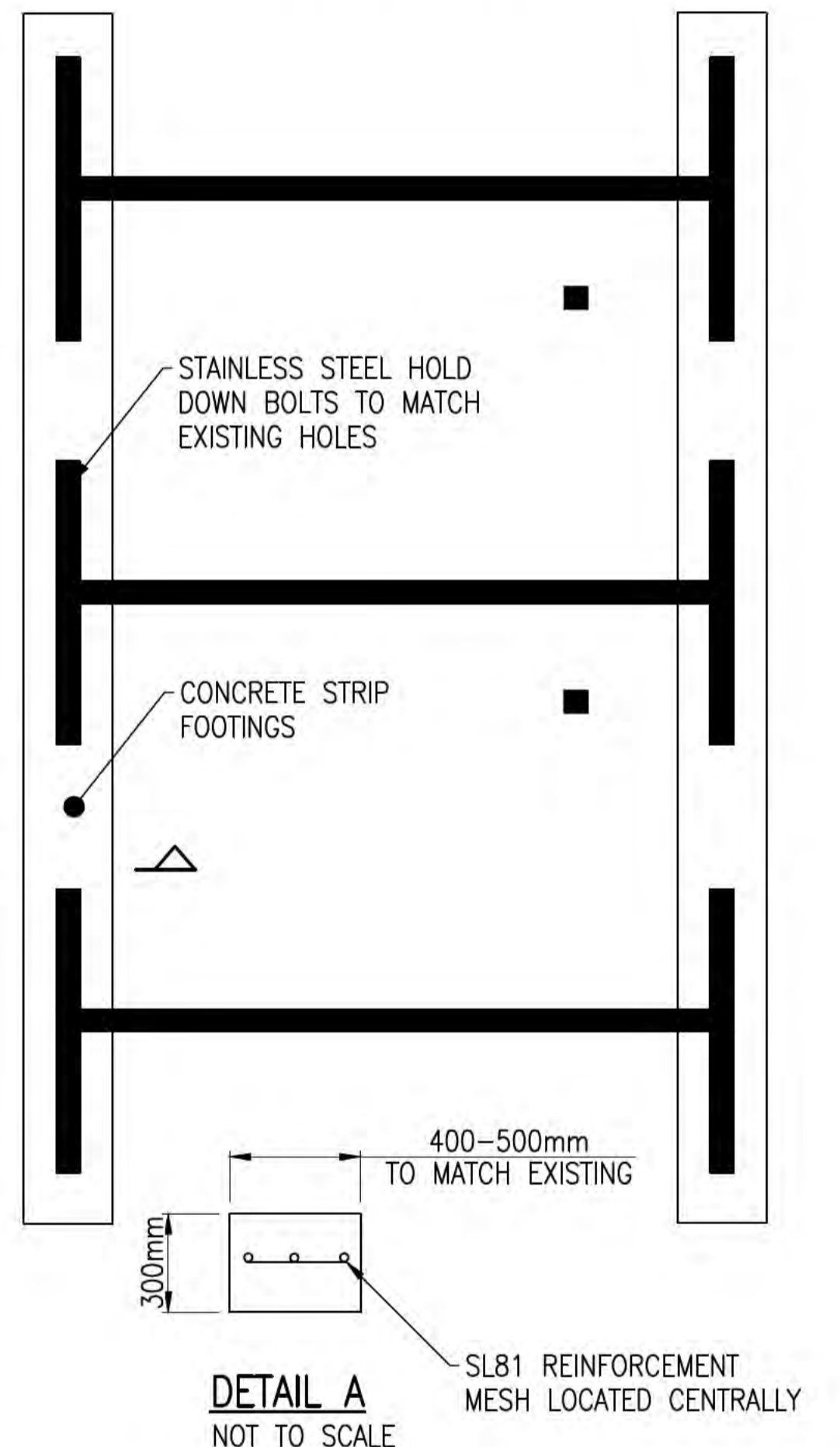
**EXISTING ROCKFALL BARRIER DEMOLITION DETAIL**  
NOT TO SCALE



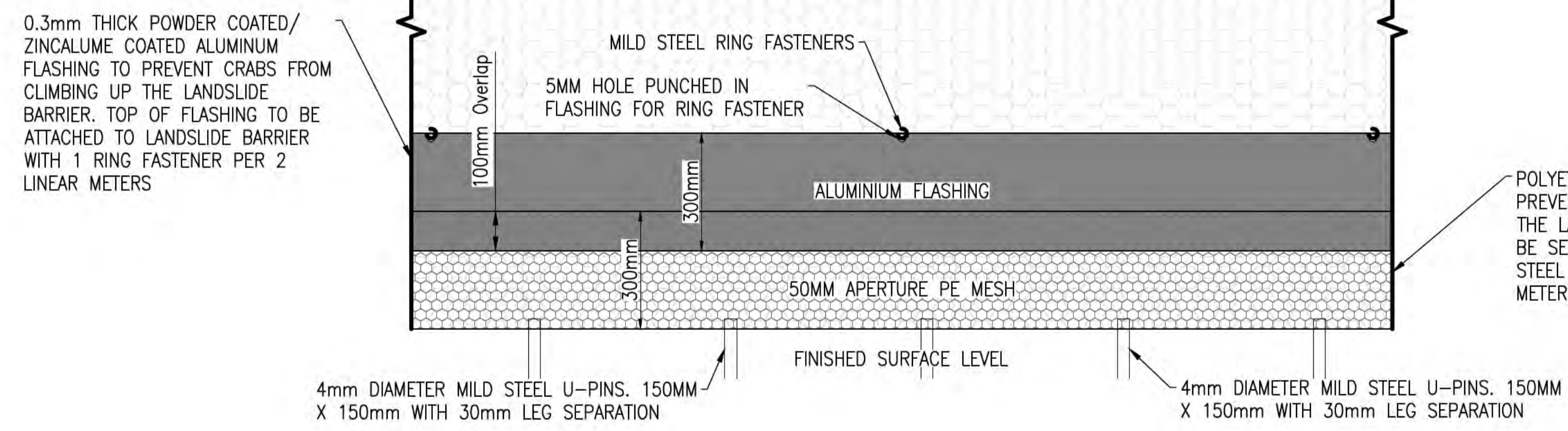
**GABION DETAIL**  
NOT TO SCALE



**CRAB BARRIER SECTION**  
NOT TO SCALE



**DETAIL A**  
NOT TO SCALE  
**TEMPORARY KAYAK FOOTINGS**  
NOT TO SCALE



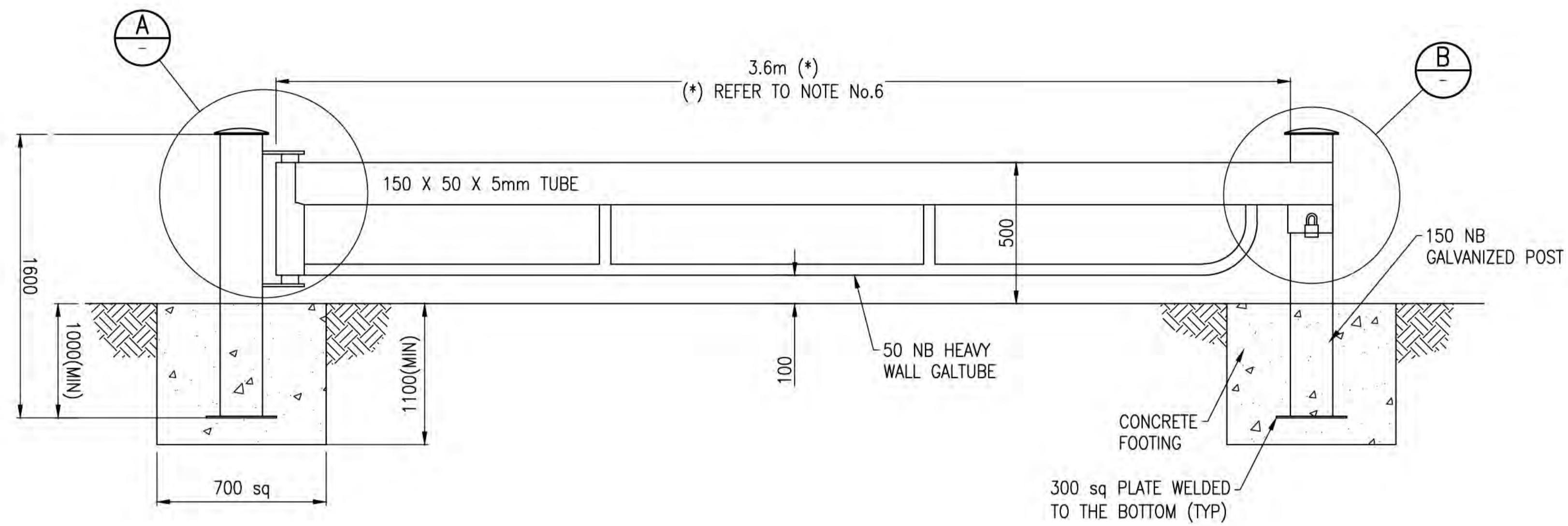
**CRAB BARRIER ELEVATION**  
NOT TO SCALE

- NOTES**
- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
  - CONTRACTOR SHALL REMOVE ALL ABOVE GROUND INFRASTRUCTURE UNLESS OTHERWISE NOTED. CONTRACTOR SHALL SHIP ALL REMOVED BARRIER MATERIAL BACK TO WESTERN AUSTRALIA (UNLESS OTHERWISE NOTED) FOR DISPOSAL AT APPROPRIATE FACILITY. CONTRACTOR TO PROVIDE EVIDENCE OF SHIPMENT AND CONFIRMATION OF APPROPRIATE DISPOSAL

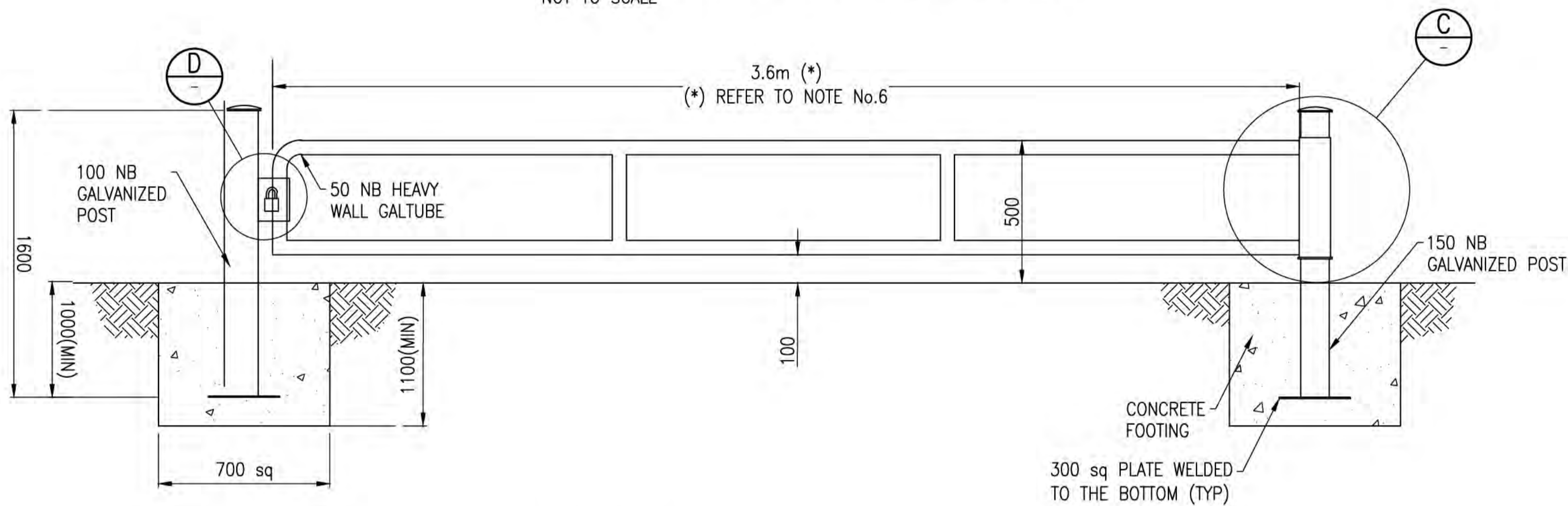
**ISSUED FOR CONSTRUCTION**

<p>Scales: N.T.S.</p>	<table border="1"> <tr> <td>Issue</td> <td>Date</td> <td>By</td> <td>Chkd</td> <td>Appd</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Issue	Date	By	Chkd	Appd						<table border="1"> <tr> <td>Issue</td> <td>Date</td> <td>By</td> <td>Chkd</td> <td>Appd</td> </tr> <tr> <td>A</td> <td>04/08/20</td> <td>RB</td> <td>JG</td> <td>EF</td> </tr> </table> <p>ISSUED FOR CONSTRUCTION</p>	Issue	Date	By	Chkd	Appd	A	04/08/20	RB	JG	EF	<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 LANDSLIDE MITIGATION DETAILED DESIGN</p> <p>Scale at A1: NTS</p> <p>Discipline: _____</p>	<p><b>ARUP</b></p> <p>Level 4 108 Wickham Street Fortitude Valley QLD Australia 4006 Tel +61(0)7320 9320 Fax +61(0)7320 9321 www.arup.com</p>	<p>Member Firm ANP Pty Ltd ABN 18 000 966 165</p>	<p>Drawing Title: LANDSLIDE MITIGATION TYPICAL DETAILS SHEET 4</p> <p>Drawing Status: <b>ISSUED FOR CONSTRUCTION</b></p> <p>Job No: 268575-00 Drawing No: CI-GD-04 Issue: A</p>
Issue	Date	By	Chkd	Appd																								
Issue	Date	By	Chkd	Appd																								
A	04/08/20	RB	JG	EF																								

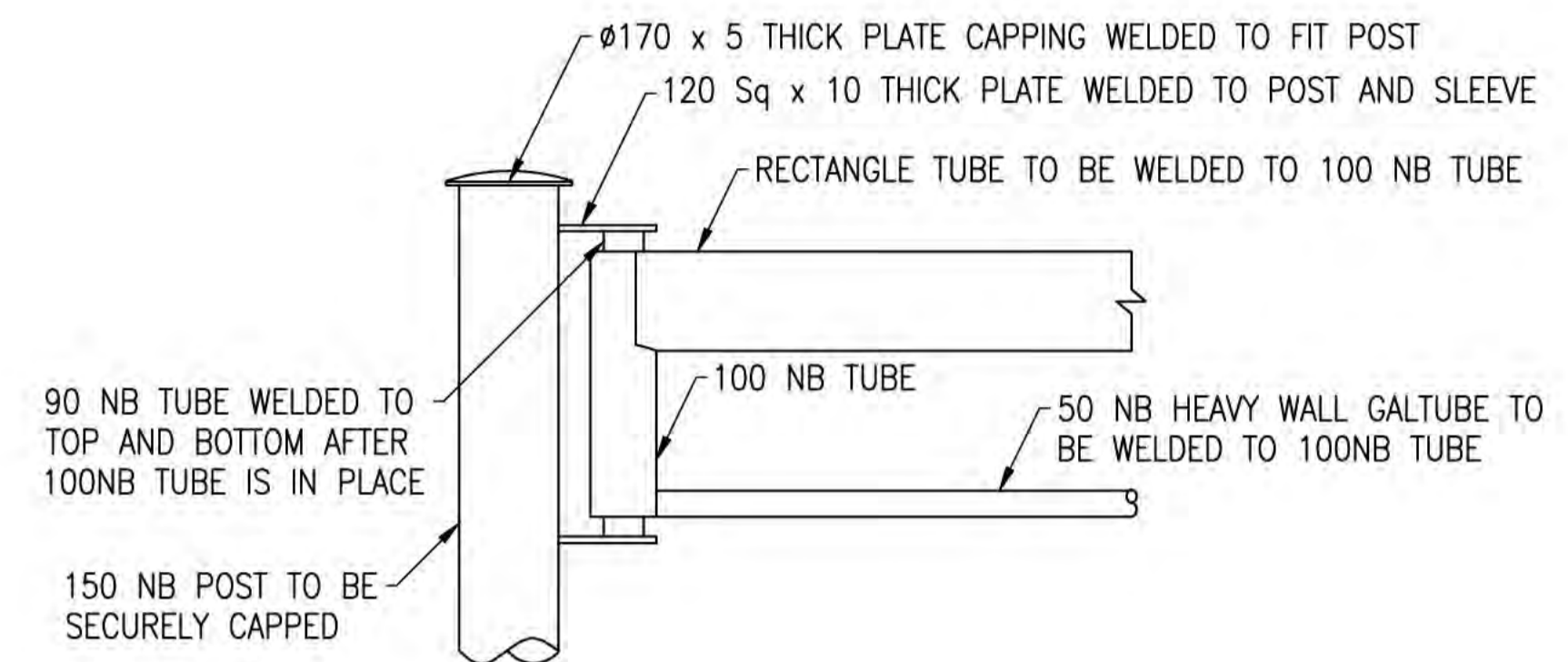
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



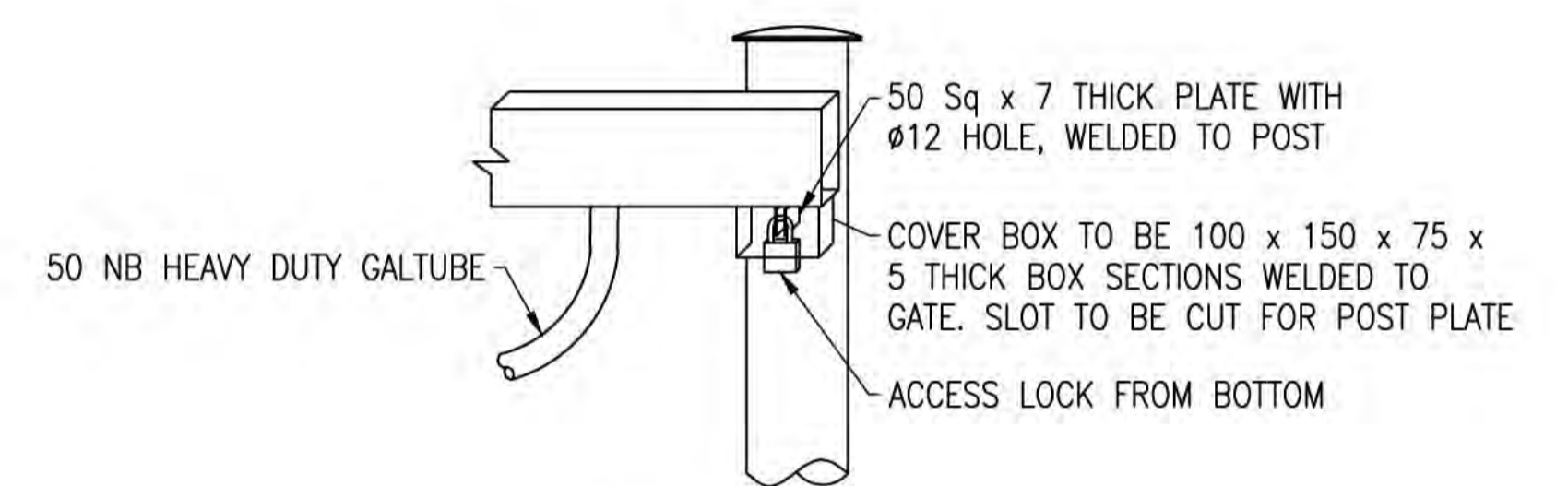
**RESTRICTED VEHICLE ACCESS GATE OPTION 1**  
NOT TO SCALE



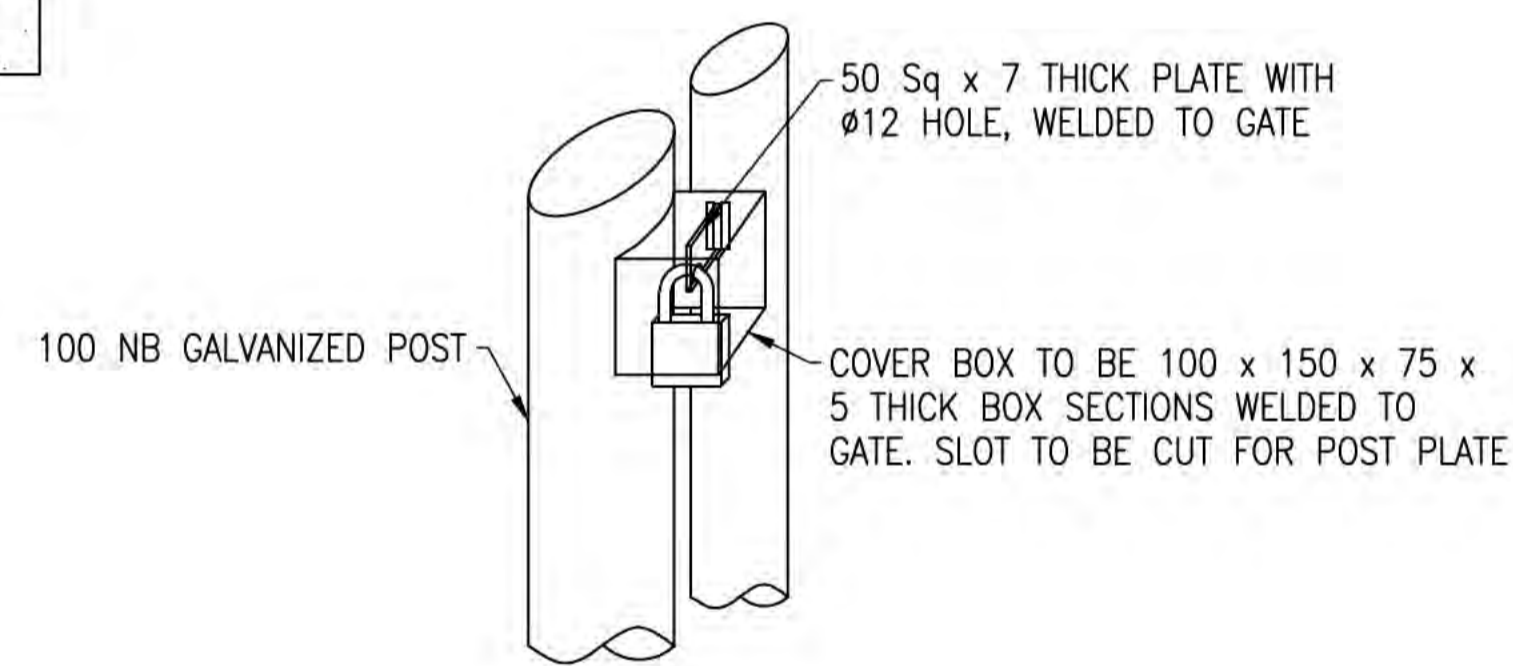
**RESTRICTED VEHICLE ACCESS GATE OPTION 2**  
NOT TO SCALE



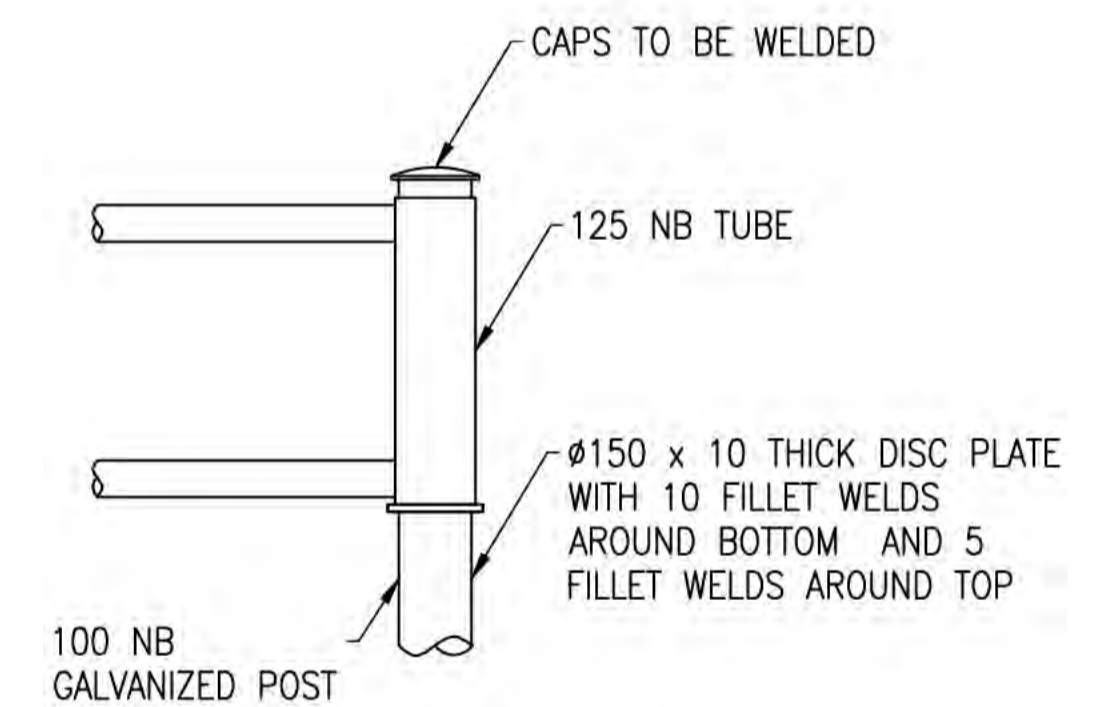
**DETAIL A**  
NOT TO SCALE



**DETAIL B**  
NOT TO SCALE



**DETAIL D**  
NOT TO SCALE



**DETAIL C**  
NOT TO SCALE

**NOTES**

1. ALL TUBING TO BE GALVANIZED STEEL
2. ALL STEEL POSTS TO BE SECURELY CAPPED
3. ALL WELDS TO BE POWER WIRE BRUSHED AND COLD GALVANIZED
4. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN
5. MESH TO BE METRIC MESH 46G5 AND GALVANIZED FINISHED COMPLETE WITH FITTINGS
6. A 3.9m GATE SHALL ONLY BE INSTALLED WHEN THE INTERNAL VEHICLE TRACK DOES NOT RUN PERPENDICULAR TO THE GATE LOCATION, ALL GATES WITH WIDTHS LARGER THAN 3.9m SHALL ONLY BE CONSIDERED IN EXCEPTIONAL CIRCUMSTANCES AND TECHNICAL SPECIFICATIONS WILL REQUIRE APPROVAL PRIOR TO INSTALLATION
7. CONCRETE FOOTINGS TO BE GRADE N32 TO AS 1397
8. ALL GALVANIZED STEEL TO MEET AS/NZS 4792 FOR HOT-DIP GALVANIZED (ZINC) COATING ON FABRICATED FERROUS ARTICLES
9. ALL POSTS WITH FOOTINGS SHALL HAVE A WALL THICKNESS OF 5mm
10. COVERED LOCKBOX OF OPTION 1 & 2 ONLY OPEN AT BASE
11. THESE DETAILS HAVE BEEN TAKEN FROM THE CITY OF WANNEROO INFRASTRUCTURE, STANDARD DRAWING NUMBER TS01-14-0, APPROVED 16/2/2015.

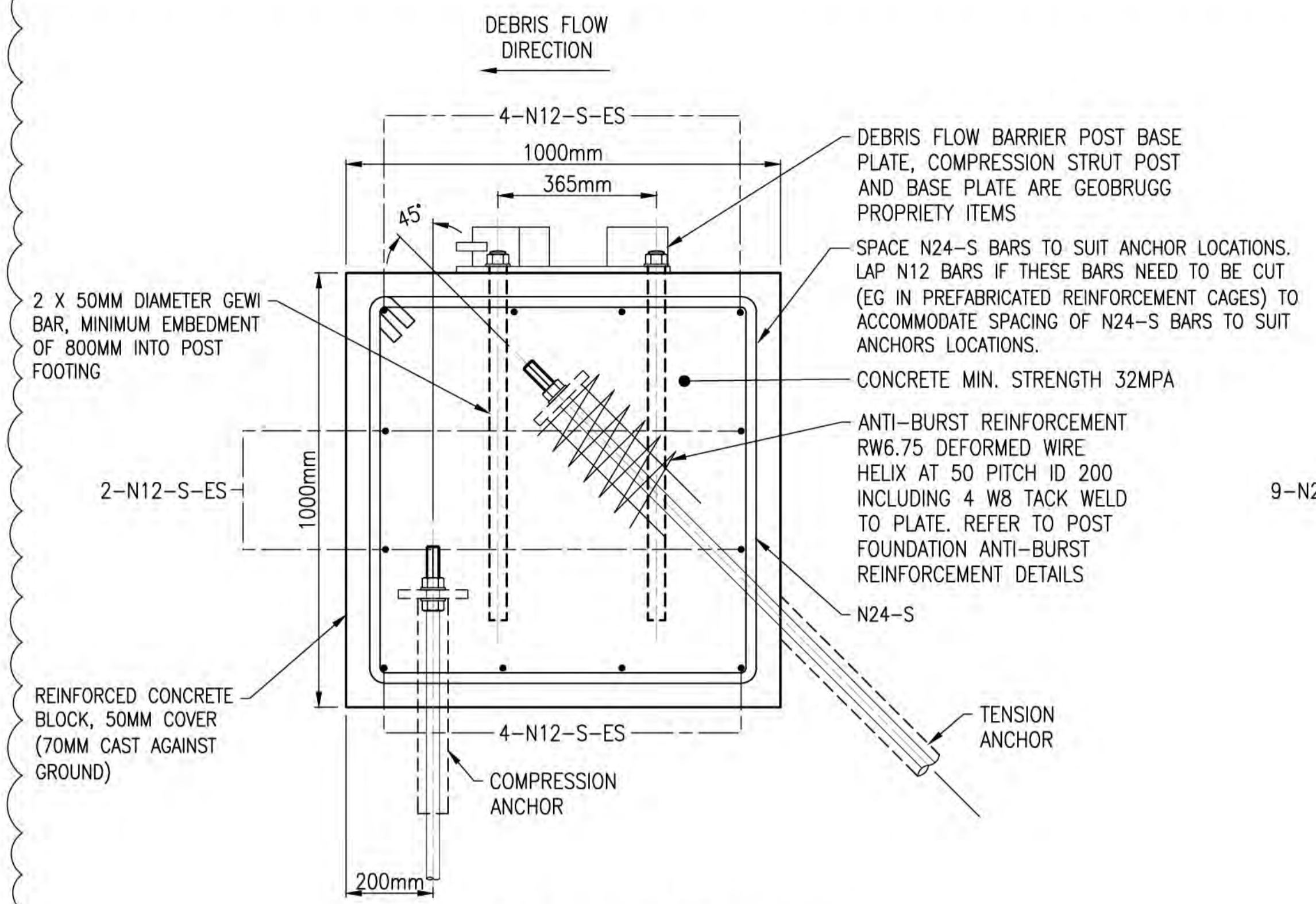
**NOTES**

1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.

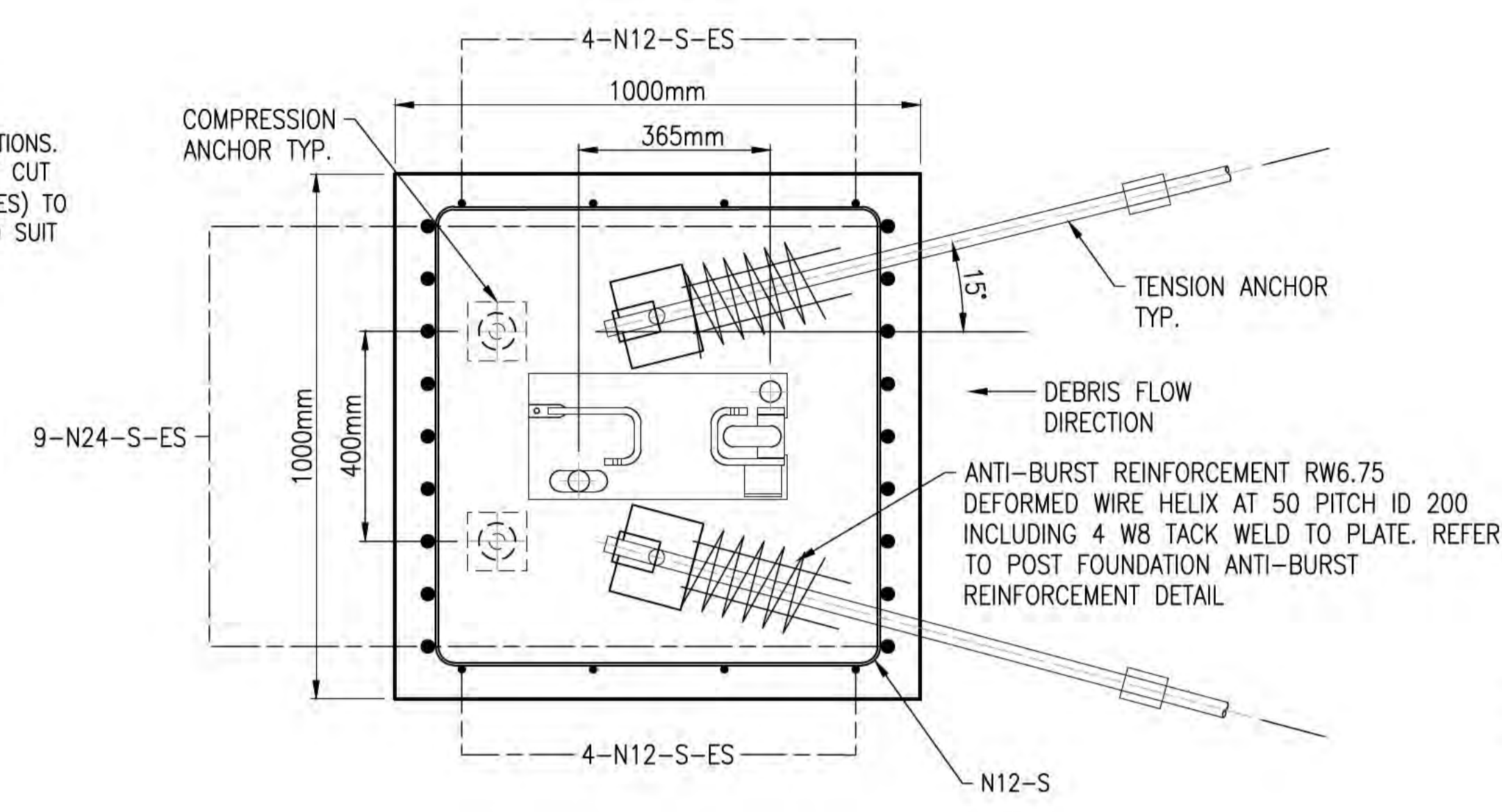
**ISSUED FOR CONSTRUCTION**

<p>Scales: N.T.S</p>	<table border="1"> <tr> <td>Issue</td> <td>Date</td> <td>By</td> <td>Chkd</td> <td>Appd</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Issue	Date	By	Chkd	Appd						<table border="1"> <tr> <td>Issue</td> <td>Date</td> <td>By</td> <td>Chkd</td> <td>Appd</td> </tr> <tr> <td>A</td> <td>04/08/20</td> <td>RB</td> <td>JG</td> <td>EF</td> </tr> </table> <p>ISSUED FOR CONSTRUCTION</p>	Issue	Date	By	Chkd	Appd	A	04/08/20	RB	JG	EF	<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 LANDSLIDE MITIGATION DETAILED DESIGN</p> <p>Scale at A1: NTS Discipline:</p>	<p><b>ARUP</b></p> <p>Level 4 108 Wickham Street Fortitude Valley QLD Australia 4006 Tel +61(0)7320 9320 Fax +61(0)7320 9321 www.arup.com</p>	<p>Drawing Title: LANDSLIDE MITIGATION TYPICAL DETAILS SHEET 5</p> <p>Drawing Status: <b>ISSUED FOR CONSTRUCTION</b></p> <p>Job No: 268575-00 Drawing No: CI-GD-05 Issue: A</p>
Issue	Date	By	Chkd	Appd																							
Issue	Date	By	Chkd	Appd																							
A	04/08/20	RB	JG	EF																							

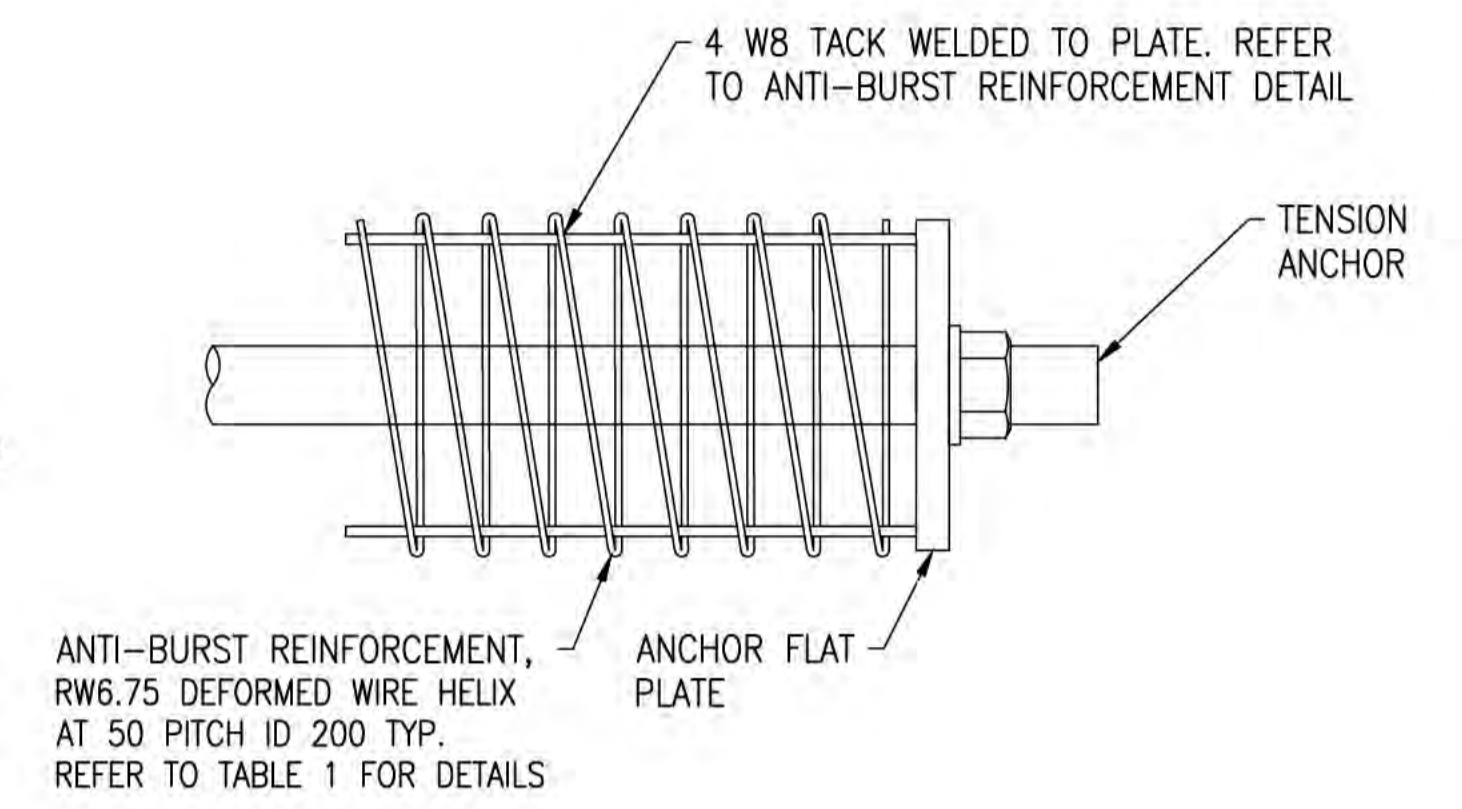
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



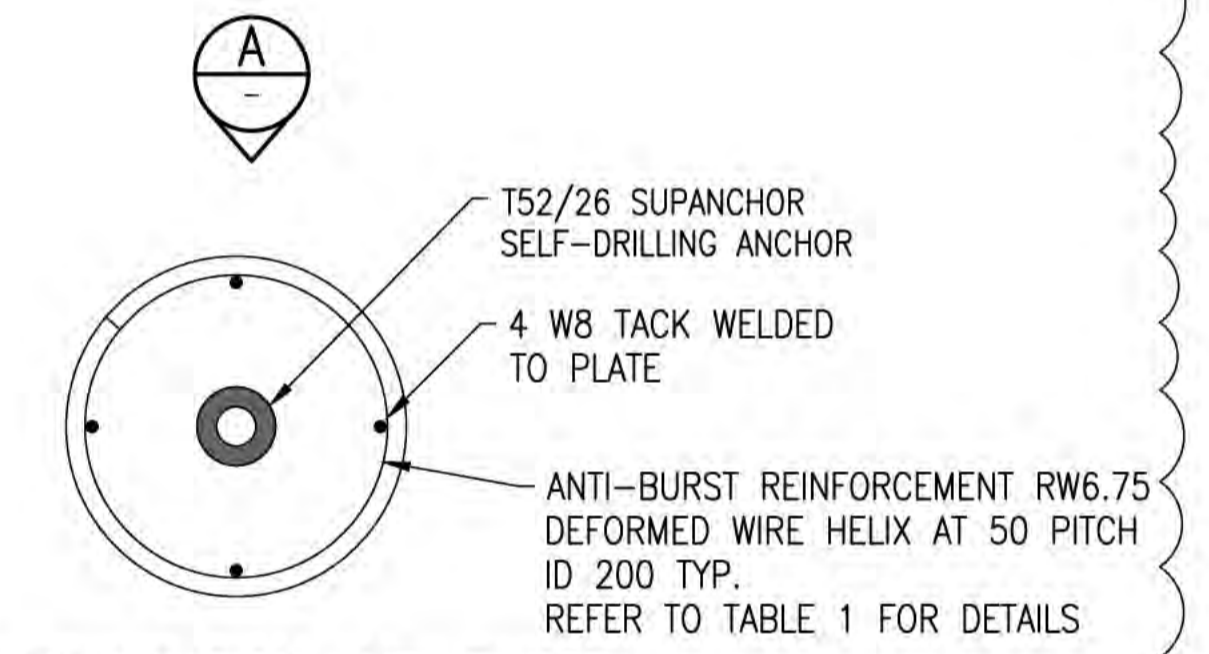
**POST FOUNDATION ELEVATION**  
SCALE 1:10



**POST FOUNDATION PLAN**  
SCALE 1:10  
FOR LOCATION MARINE 2.  
REINFORCEMENT AT TOP AND BOTTOM OF FOUNDATION OMITTED FOR CLARITY.



**VIEW A**  
SCALE 1:5



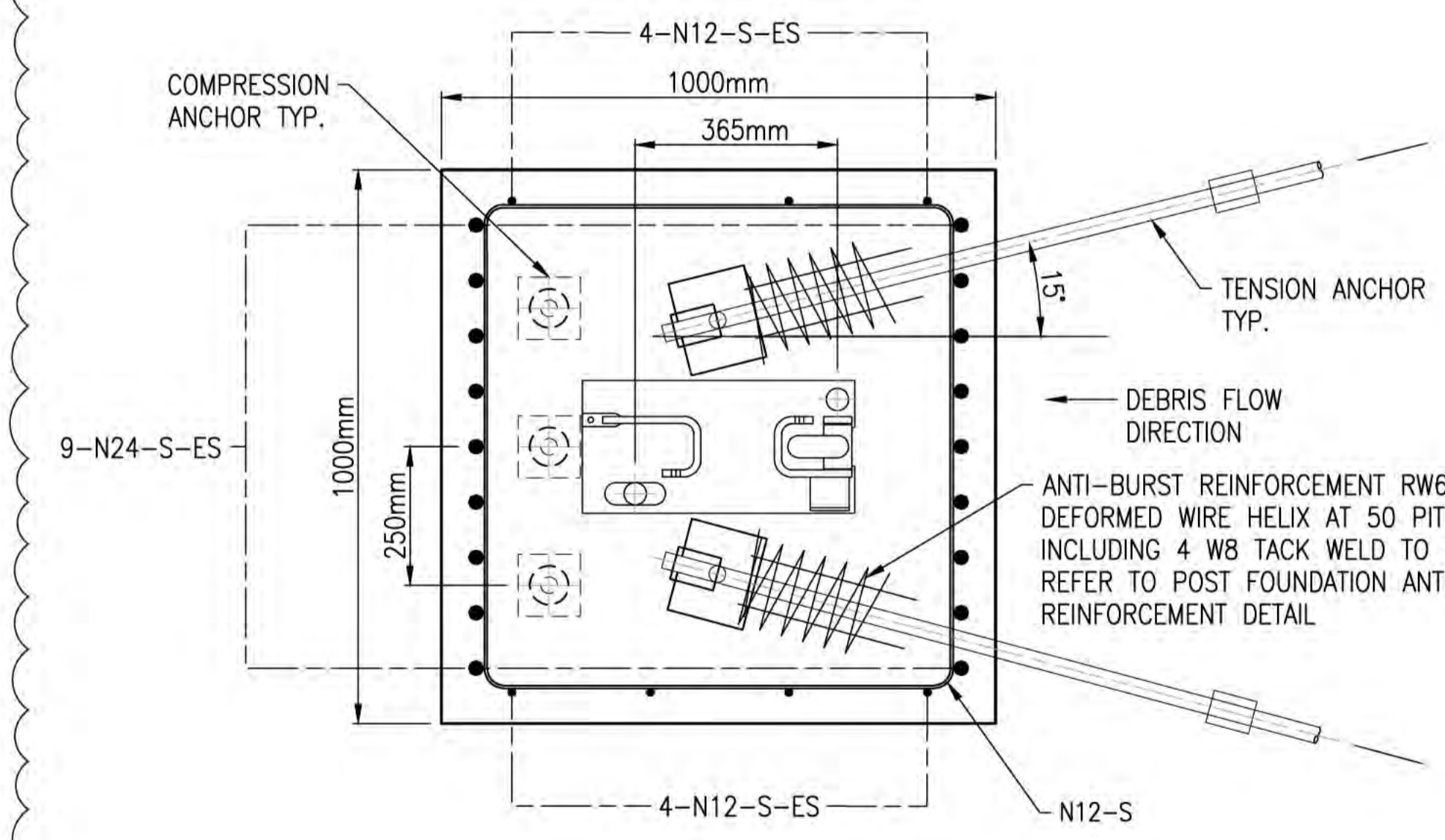
**POST FOUNDATION ANTI-BURST REINFORCEMENT DETAILS**  
SCALE 1:5

**TABLE 1: ANTI-BURST REINFORCEMENT - HELIX DETAILS**

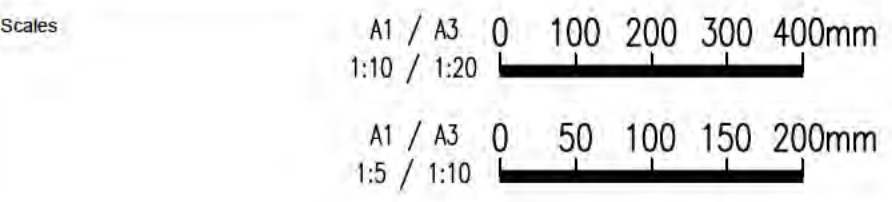
LOCATION	HELIX	PITCH (mm)	INNER DIAMETER ID (mm)	No. OF TURNS
BOAT CLUB BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	10
MARINE 2 BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	8
MARINE 1 BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	10
CHRISTMAS ISLAND CLUB BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	8
COMPRESSION STRUT POST MARINE 2 BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	8
END POST MARINE 2 BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	10

**NOTES**

- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
- REFER TO DRAWINGS CI-GD-01 AND CI-GD-02 FOR ANCHOR DETAILS.
- REFER TO DRAWING CL-CI-01 FOR PROPOSED BARRIER FOUNDATION SETOUTS.
- ES DENOTES EVENLY SPACED.
- WHERE ALL GROUND ANCHORS WITHIN A FOUNDATION PLAN ARE INSTALLED WITH ROCK EMBEDMENT AS PER DRAWING CI-GD-03 (OR CI-GD-08 FOR MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 AND CH 114), DETAILS ON DRAWING CI-GD-06 AND CI-GD-07 APPLY FOR THE FOUNDATION.
- WHERE GROUND ANCHORS ARE INSTALLED WITH ONLY COLLUVIUM EMBEDMENT AS PER DRAWING CI-GD-03 (OR CI-GD-08 FOR MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 AND CH 114), REFER TO THE FOUNDATION DETAILS SHOWN ON CI-GD-12 AND CI-GD-13.



**POST FOUNDATION PLAN**  
SCALE 1:10  
FOR LOCATIONS BOAT CLUB, MARINE 1 AND CHRISTMAS ISLAND CLUB.  
REINFORCEMENT AT TOP AND BOTTOM OF FOUNDATION OMITTED FOR CLARITY.



Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
C	10/09/21	ML	JG	EF
Revised As Clouded				
B	13/10/20	RB	JG	EF
Marine 2 Compression Strut				
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



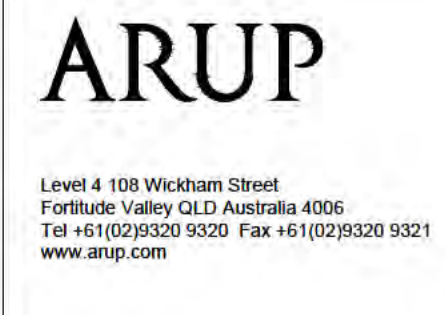
Client  
**AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS**

Engineering Certification (CEng)  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Job Title  
**FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
**AS SHOWN**

Discipline



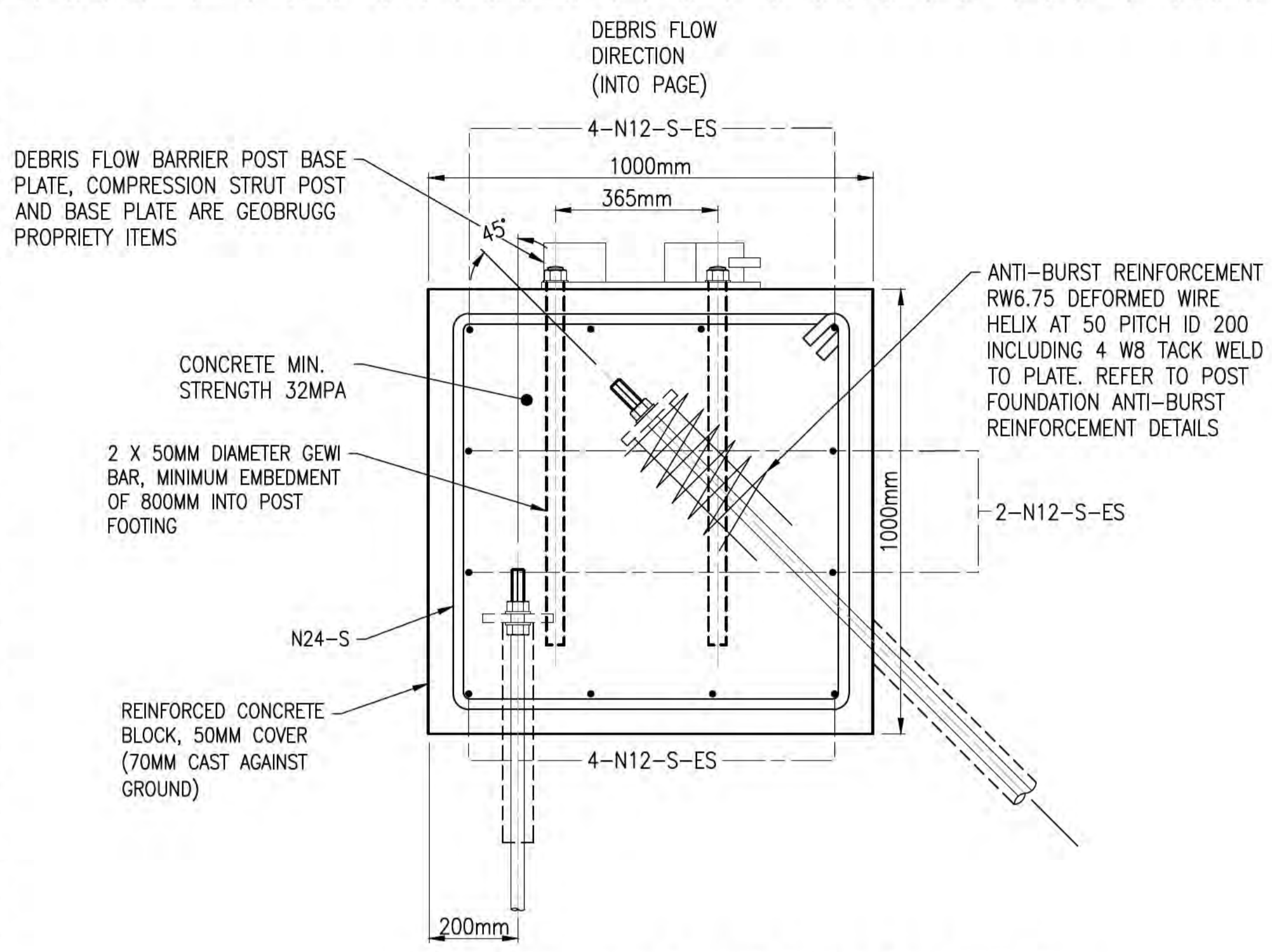
Drawing Title  
**LANDSLIDE MITIGATION POST FOOTING CONCRETE DETS SHEET 6**

Drawing Status  
**ISSUED FOR CONSTRUCTION**

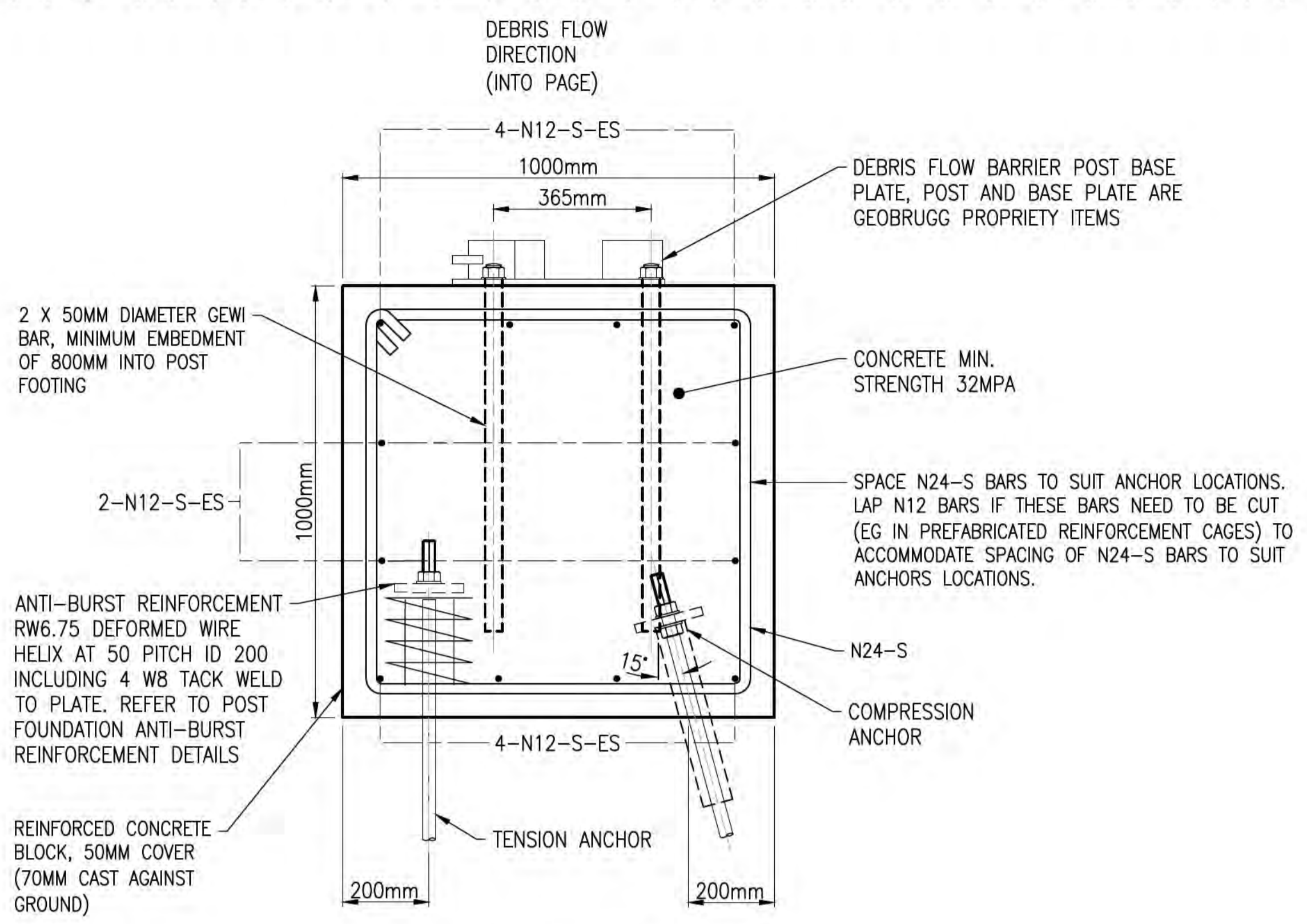
Job No  
**268575-00**

Drawing No  
**CI-GD-06**

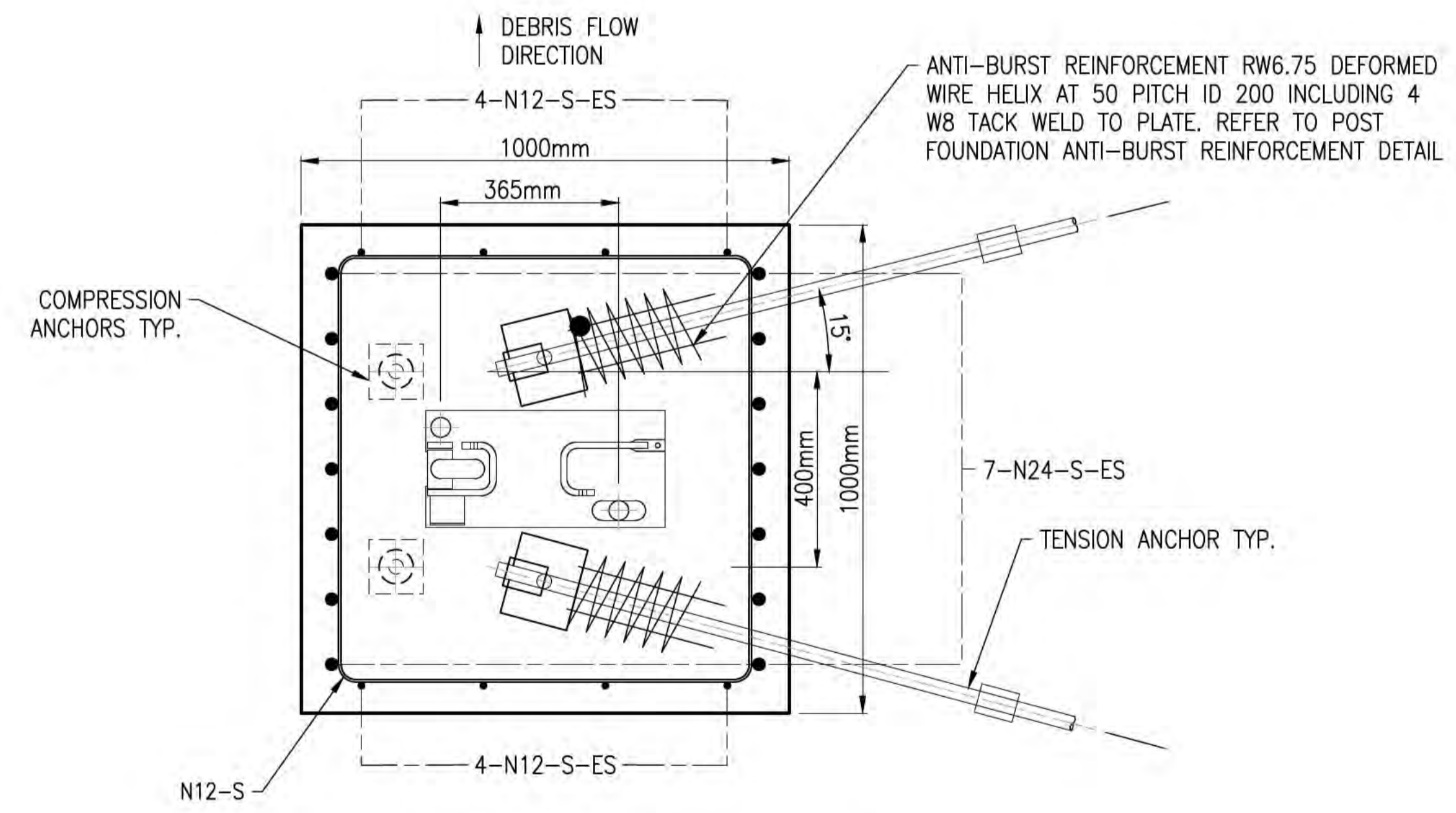
Issue  
**D**



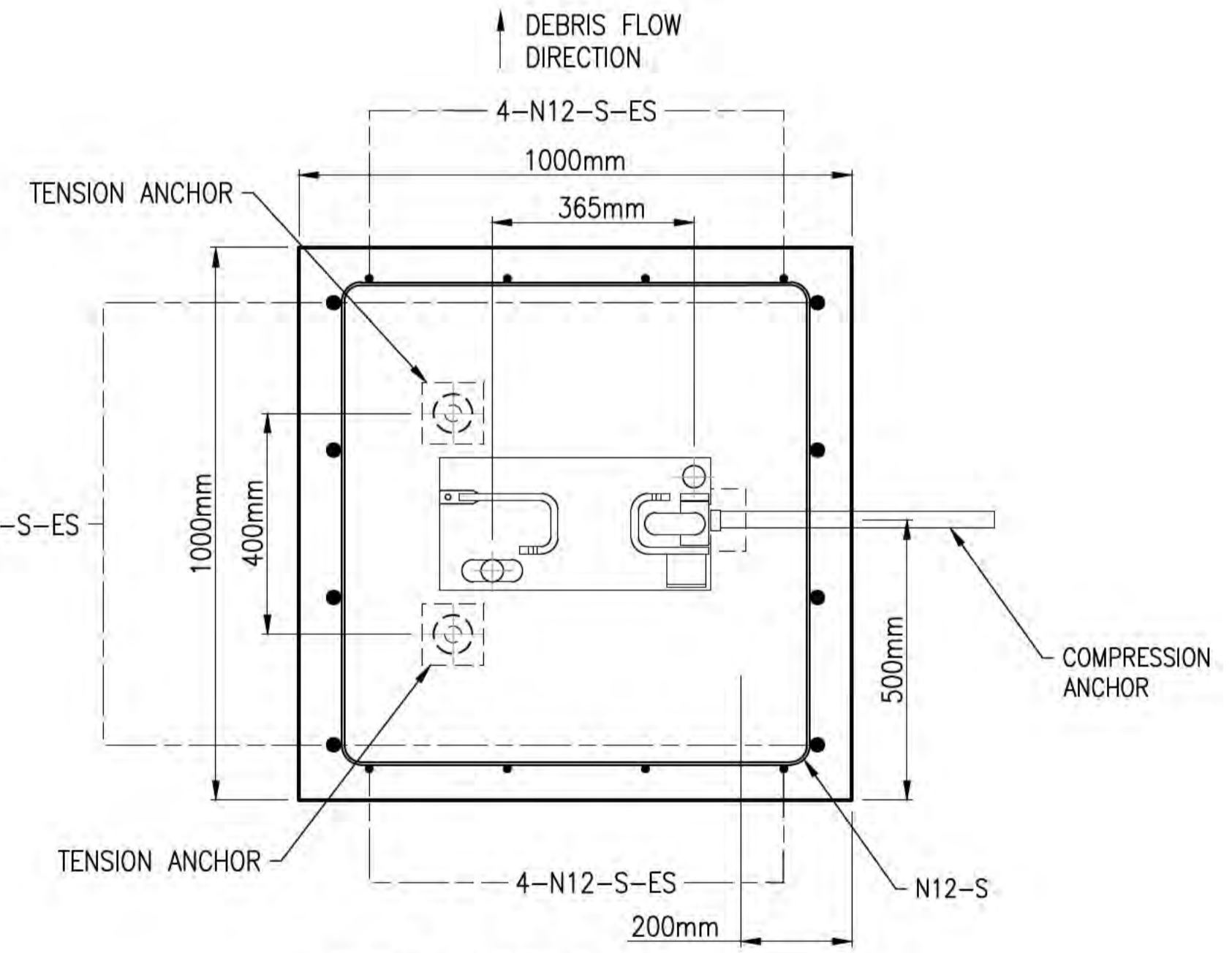
**COMPRESSION STRUT POST FOUNDATION ELEVATION  
MARINE 2 BARRIER AT CH.111.16**  
SCALE 1:10



**POST FOUNDATION ELEVATION  
MARINE 2 BARRIER AT CH.114**  
SCALE 1:10



**COMPRESSION STRUT POST FOUNDATION PLAN  
MARINE 2 BARRIER AT CH.111.16**  
SCALE 1:10



**POST FOUNDATION PLAN  
MARINE 2 BARRIER AT CH. 114**  
SCALE 1:10

**NOTES**

1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
2. REFER TO DRAWINGS CI-GD-01 AND CI-GD-02 FOR ANCHOR DETAILS.
3. REFER TO DRAWING CL-CI-01 FOR PROPOSED BARRIER FOUNDATION SETOUTS.
4. ES DENOTES EVENLY SPACED.
5. WHERE ALL GROUND ANCHORS WITHIN A FOUNDATION PLAN ARE INSTALLED WITH ROCK EMBEDMENT AS PER DRAWING CI-GD-03 (OR CI-GD-08 FOR MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 AND CH 114), DETAILS ON DRAWING CI-GD-06 AND CI-GD-07 APPLY FOR THE FOUNDATION.
6. WHERE GROUND ANCHORS ARE INSTALLED WITH ONLY COLLUVIUM EMBEDMENT AS PER DRAWING CI-GD-03 (OR CI-GD-08 FOR MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 AND CH 114), REFER TO THE FOUNDATION DETAILS SHOWN ON CI-GD-12 AND CI-GD-13.
7. REFER TO DRAWING CI-GD-08 FOR LAYOUT PLAN OF FOOTING AND ANCHORS AND GROUND ANCHOR SCHEDULE AT MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 AND CH 114.

**ISSUED FOR CONSTRUCTION**

Scales: A1 / A3 0 100 200 300 400mm  
1:10 / 1:20

Issue	Date	By	Chkd	Appd

C	19/10/21	MA	JG	EF
Revised As Clouded				
B	10/09/21	ML	JG	EF
Revised As Clouded				
A	13/10/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				
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 LANDSLIDE MITIGATION DETAILED DESIGN  
Scale at A1: AS SHOWN  
Discipline: \_\_\_\_\_

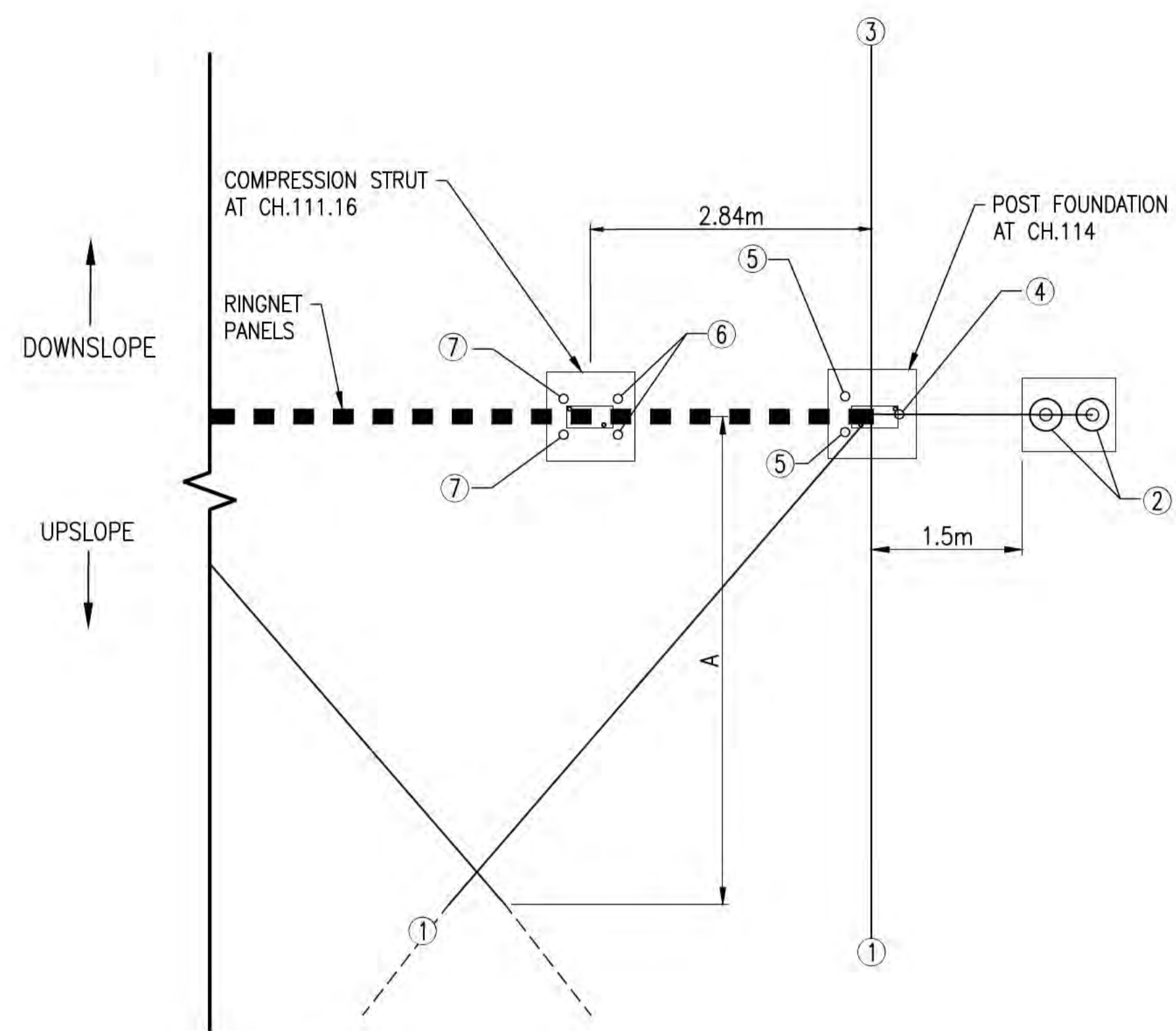


Level 4 108 Wickham Street  
Fortitude Valley QLD Australia 4006  
Tel +61(0)7320 9320 Fax +61(0)7320 9321  
www.arup.com

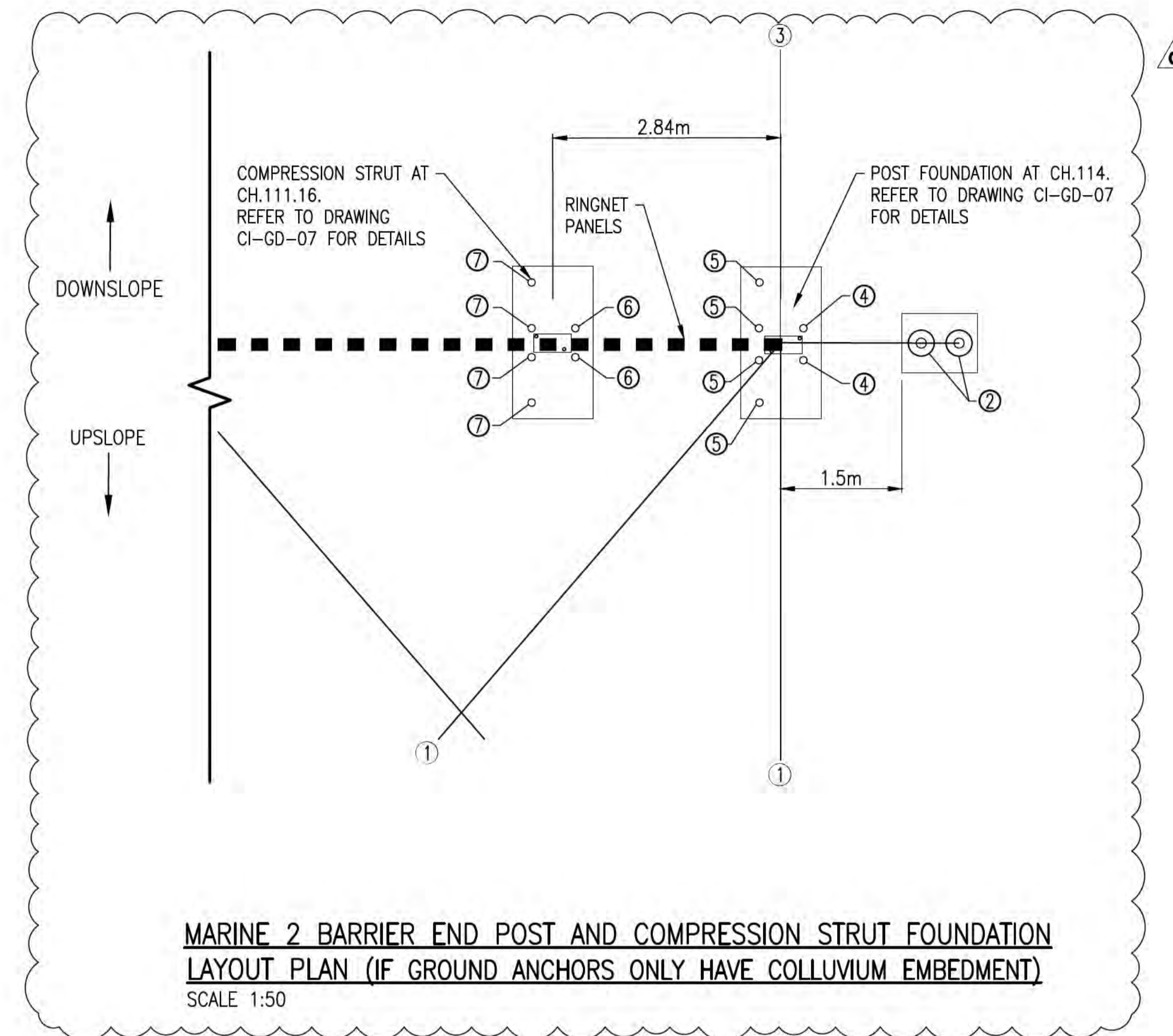


Drawing Title: LANDSLIDE MITIGATION POST FOOTING CONCRETE DETAILS - SHEET 7  
Drawing Status: **ISSUED FOR CONSTRUCTION**  
Job No: 268575-00  
Drawing No: CI-GD-07  
Issue: C

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



**MARINE 2 BARRIER END POST AND COMPRESSION STRUT FOUNDATION LAYOUT PLAN (IF ALL GROUND ANCHORS HAVE ROCK EMBEDMENT)**  
SCALE 1:50



**MARINE 2 BARRIER END POST AND COMPRESSION STRUT FOUNDATION LAYOUT PLAN (IF GROUND ANCHORS ONLY HAVE COLLUVIUM EMBEDMENT)**  
SCALE 1:50

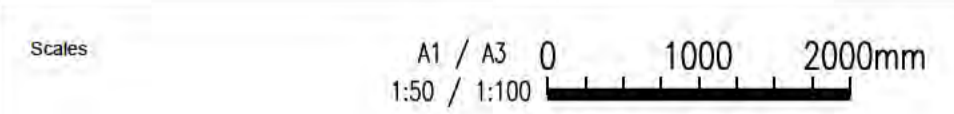
**ANCHOR SETOUT DETAILS FOR MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 and CH 114**

Anchor Location	Schematic Position	Anchor Type	Number of anchors	Anchor inclination from horizontal	Indicative Ultimate load per anchor	Drillhole diameter	Rock Embedment			Colluvium Embedment
							Estimated soil depth	Minimum bond length in slightly weathered rock	Estimated total anchor length	Estimated anchor length
				deg	kN	mm	(m)	(m)	m	m
End post Upslope Anchors	1	52/26 self drilling anchor	2	15	350	125	8	2.5	10.5	6
End Post Lateral Anchors	2	40/16 self drilling anchor	2	45	300	85	14	3	17	6
End Post Downslope Anchor	3	40/16 self drilling anchor	1	45	300	85	14	3	17	6
End Post Compression Anchor*	4	40/16 self drilling anchor	2	15	125	85	8	2.5	10.5	6
End Post Tension Anchors*	5	52/26 self drilling anchor	4	90	285	125	8	4	12	6
Compression Strut Tension Anchors	6	52/26 self drilling anchor	2	45	445	125	14	3	17	7
Compression Strut Compression Anchors*	7	52/26 self drilling anchor	4	90	385	125	8	5	13	6

\* ANCHOR NUMBER AND LOADING BASED ON THE COLLUVIUM EMBEDMENT ANCHOR ARRANGEMENT

**NOTES**  
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWINGS CI-GD-07 AND CI-GD-13.  
2. REFER TO DRAWING CL-CI-01 FOR PROPOSED BARRIER FOUNDATION SETOUTS.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd

C	19/10/21	MA	JG	EF
REVISED AS CLOUDED				
B	10/09/21	RB	JG	EF
REVISED AS CLOUDED				
A	13/10/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				
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 LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
**AS SHOWN**

Discipline



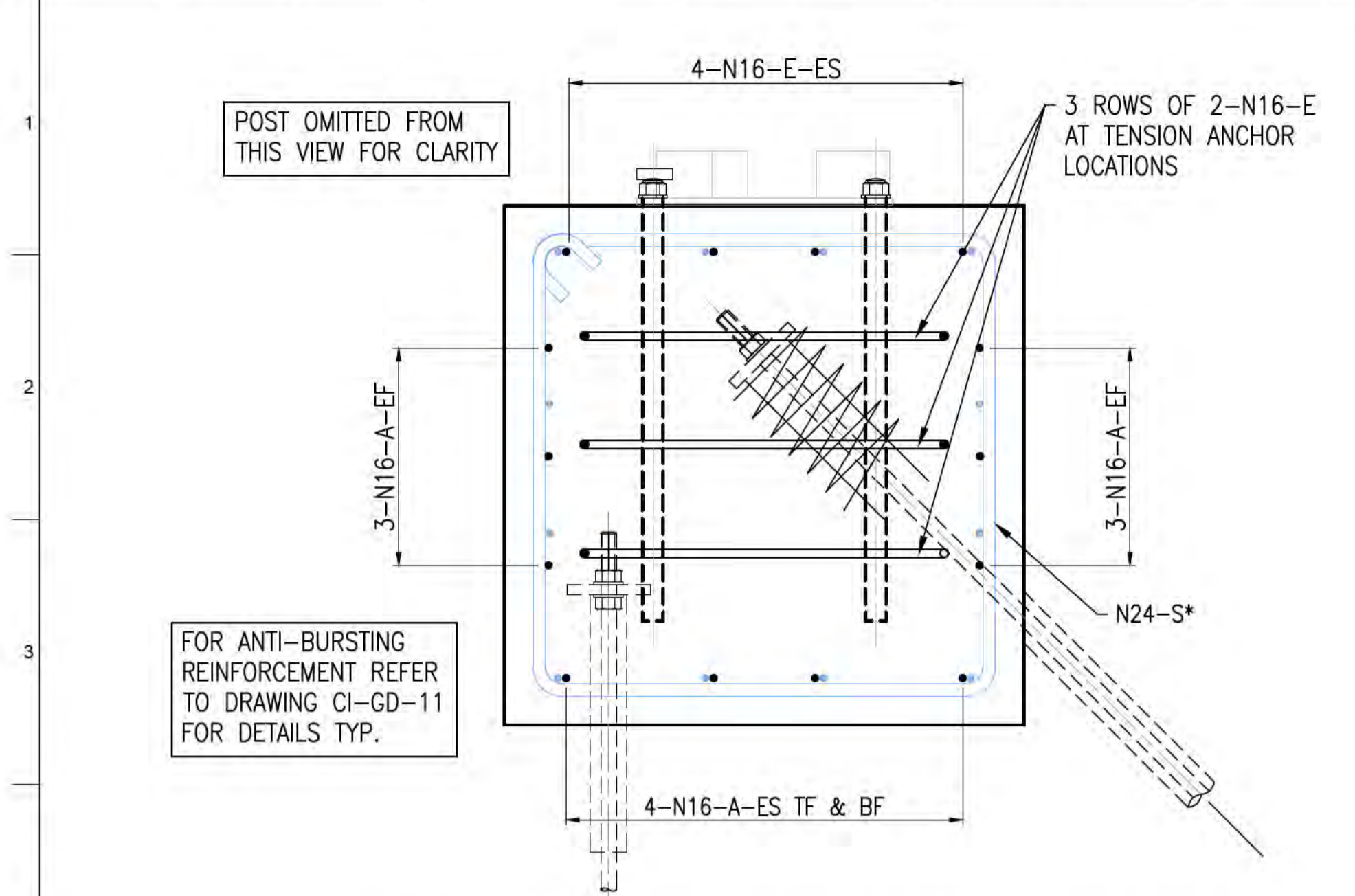
Drawing Title  
**LANDSLIDE MITIGATION TYPICAL DETAILS SHEET 8**

Drawing Status  
**ISSUED FOR CONSTRUCTION**

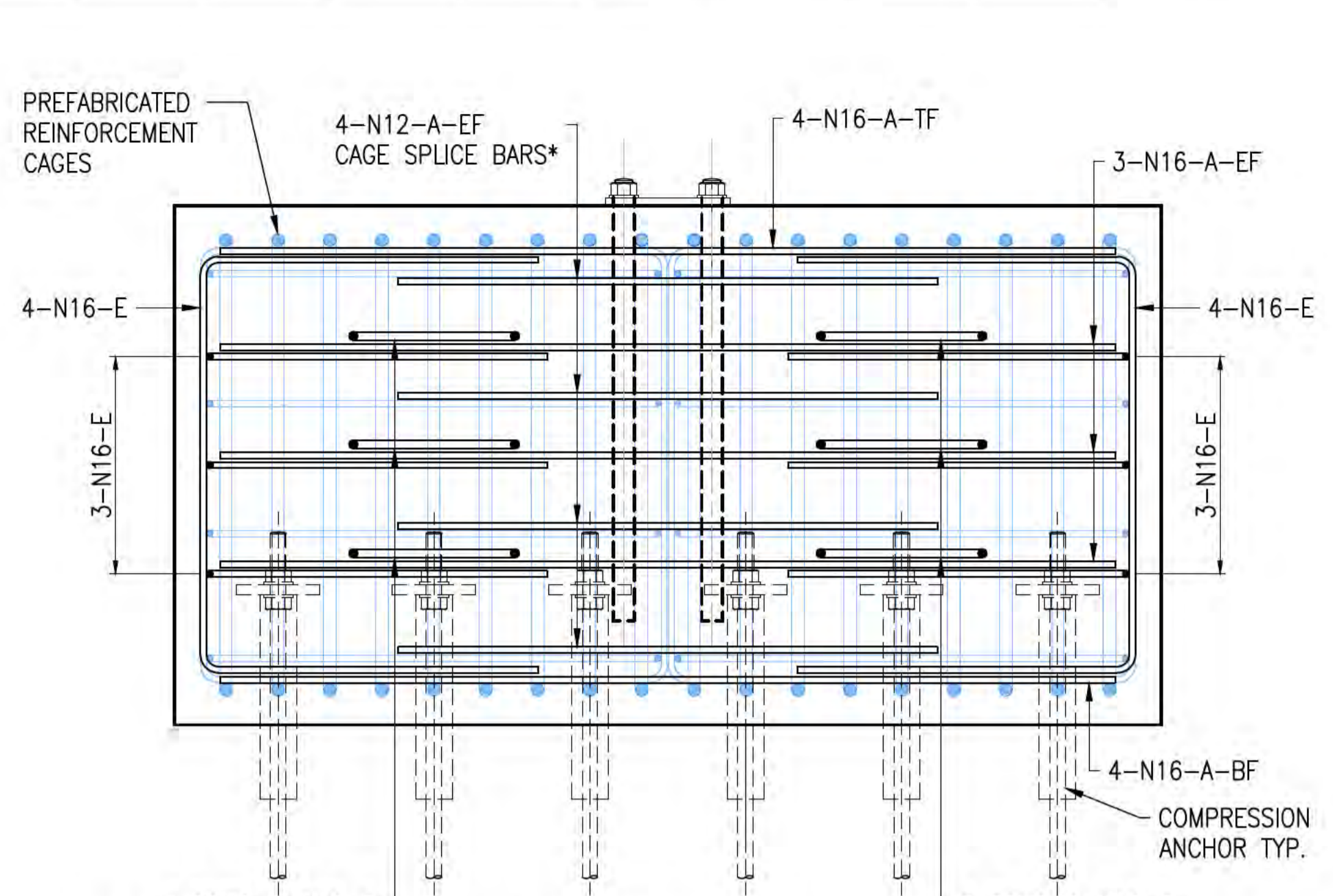
Job No: **268575-00** Drawing No: **CI-GD-08** Issue: **C**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

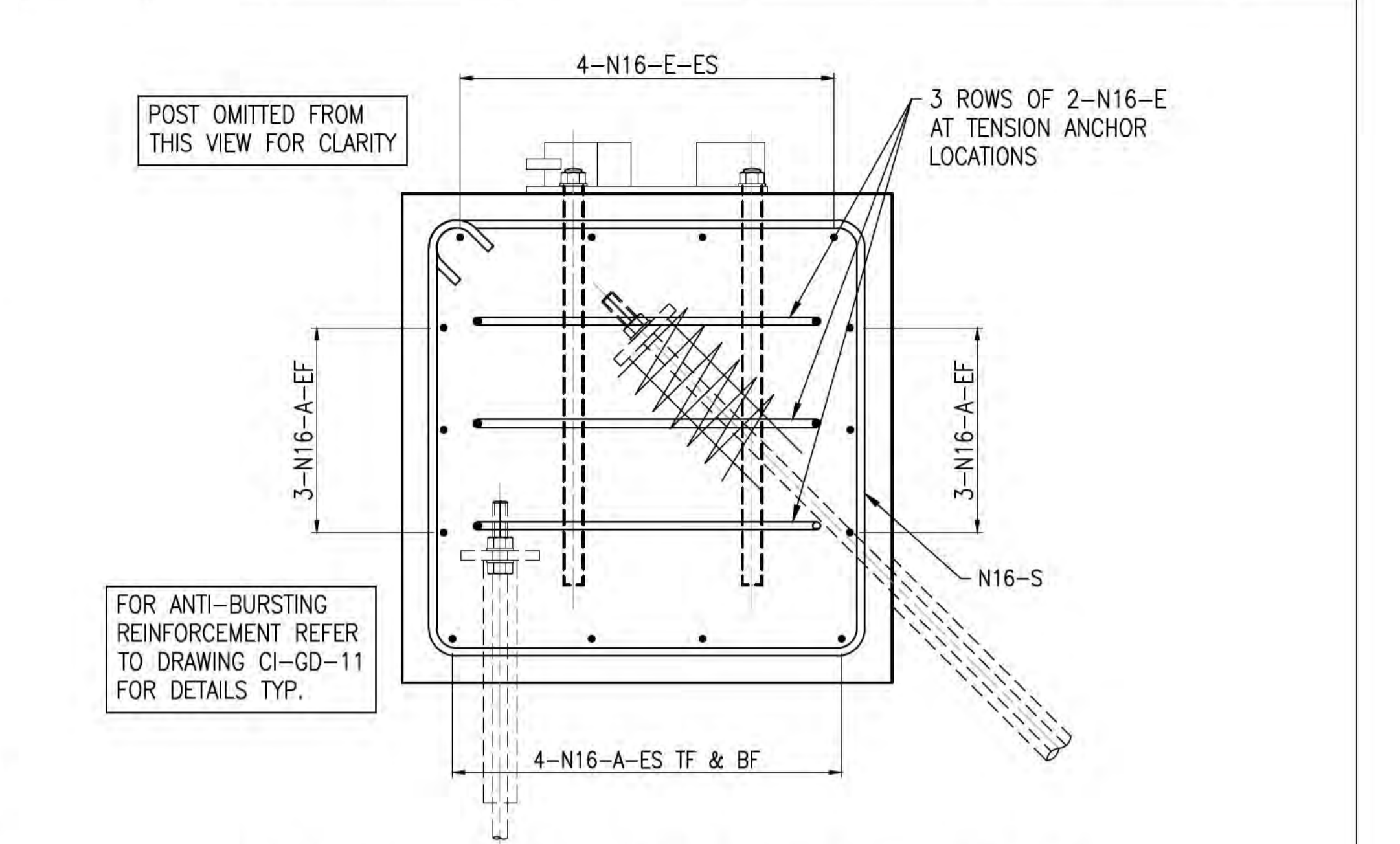




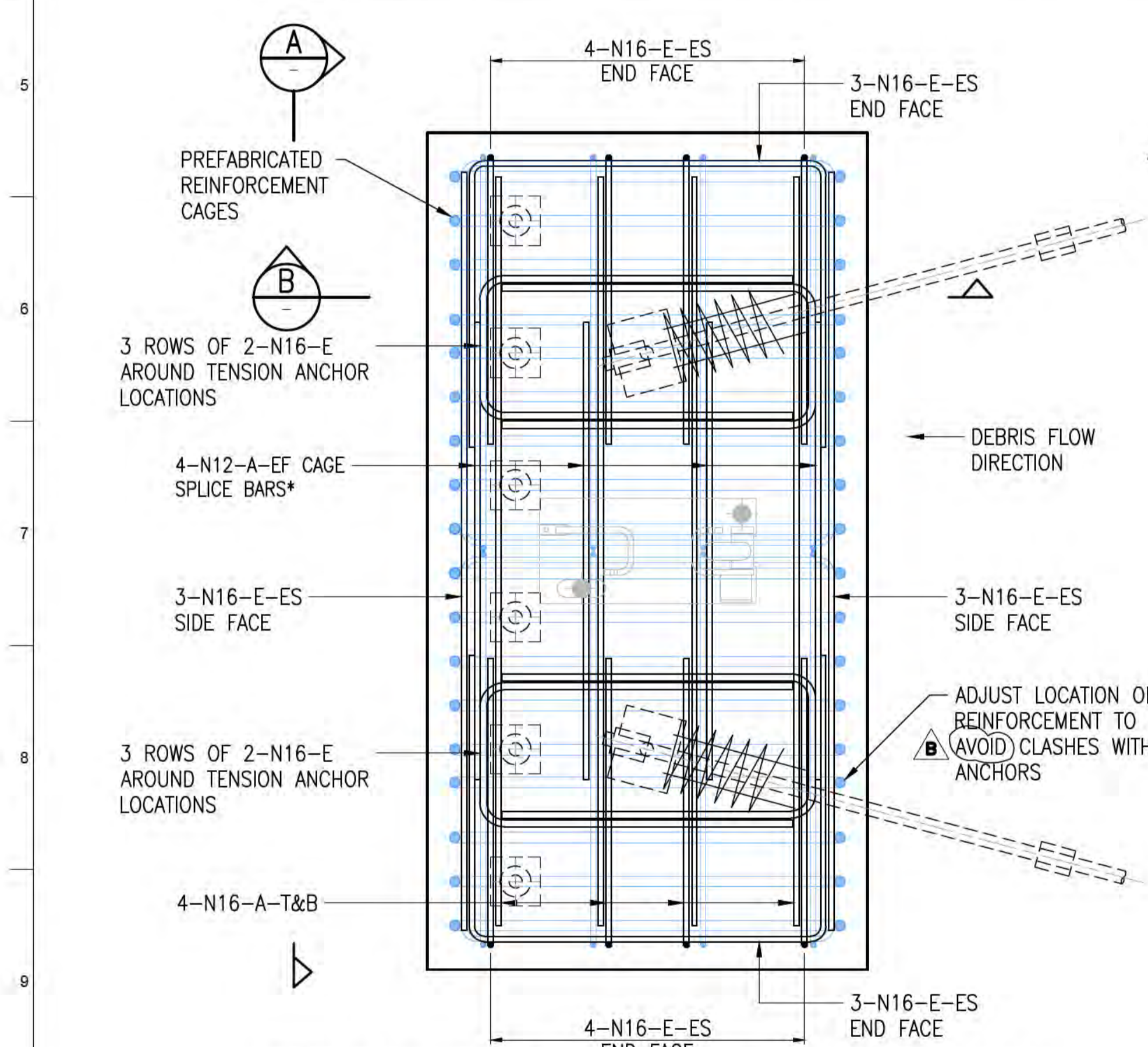
**SECTION B - USING EXISTING PREFABRICATED SQUARE CAGES WITH N12 AND N24 LIGATURES\* - OPTION 1**  
SCALE 1:10



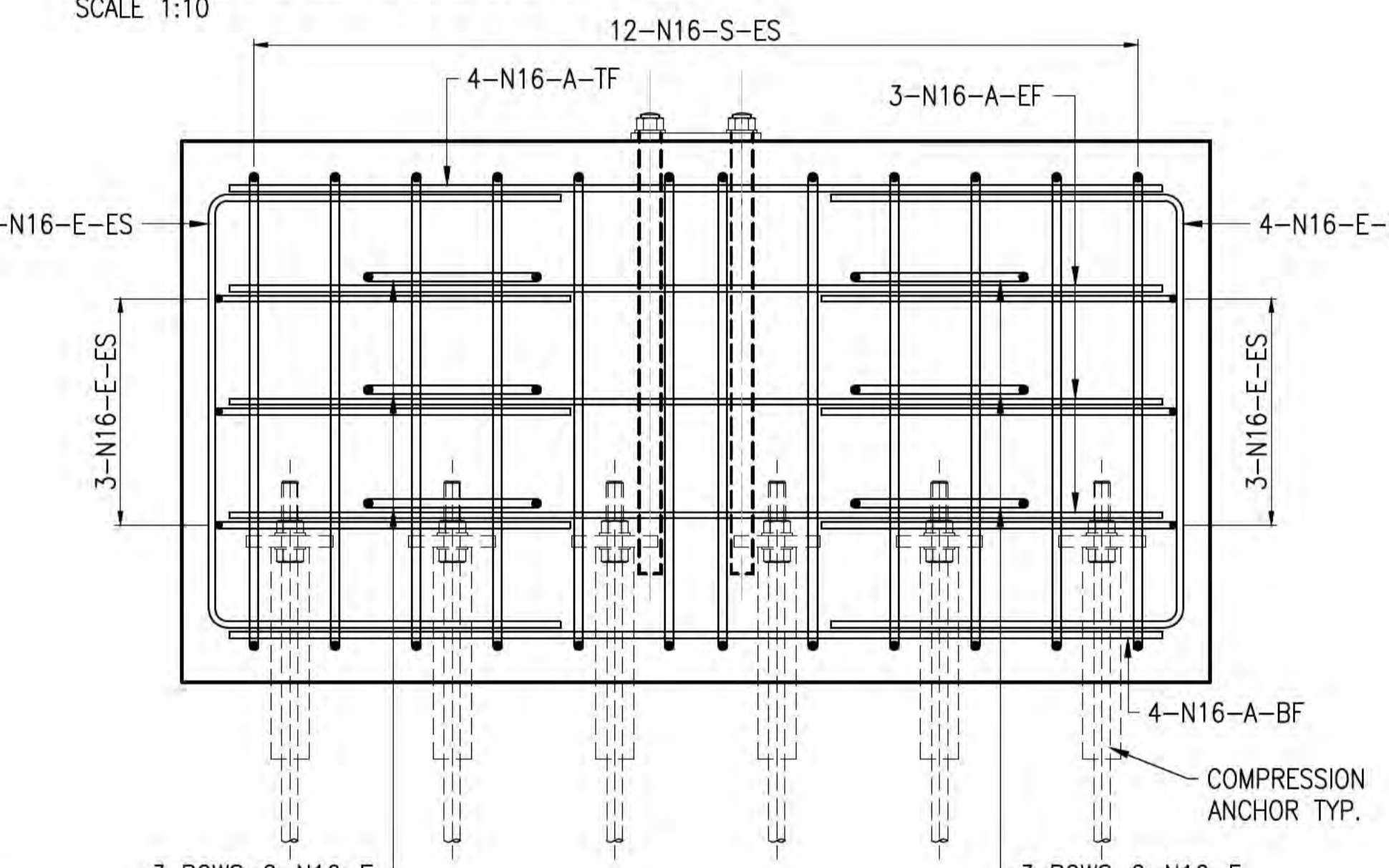
**ELEVATION A - USING EXISTING PREFABRICATED SQUARE CAGES WITH N12 AND N24 LIGATURES\* - OPTION 1**  
TENSION ANCHORS OMITTED FORM VIEW FOR CLARITY  
SCALE 1:10



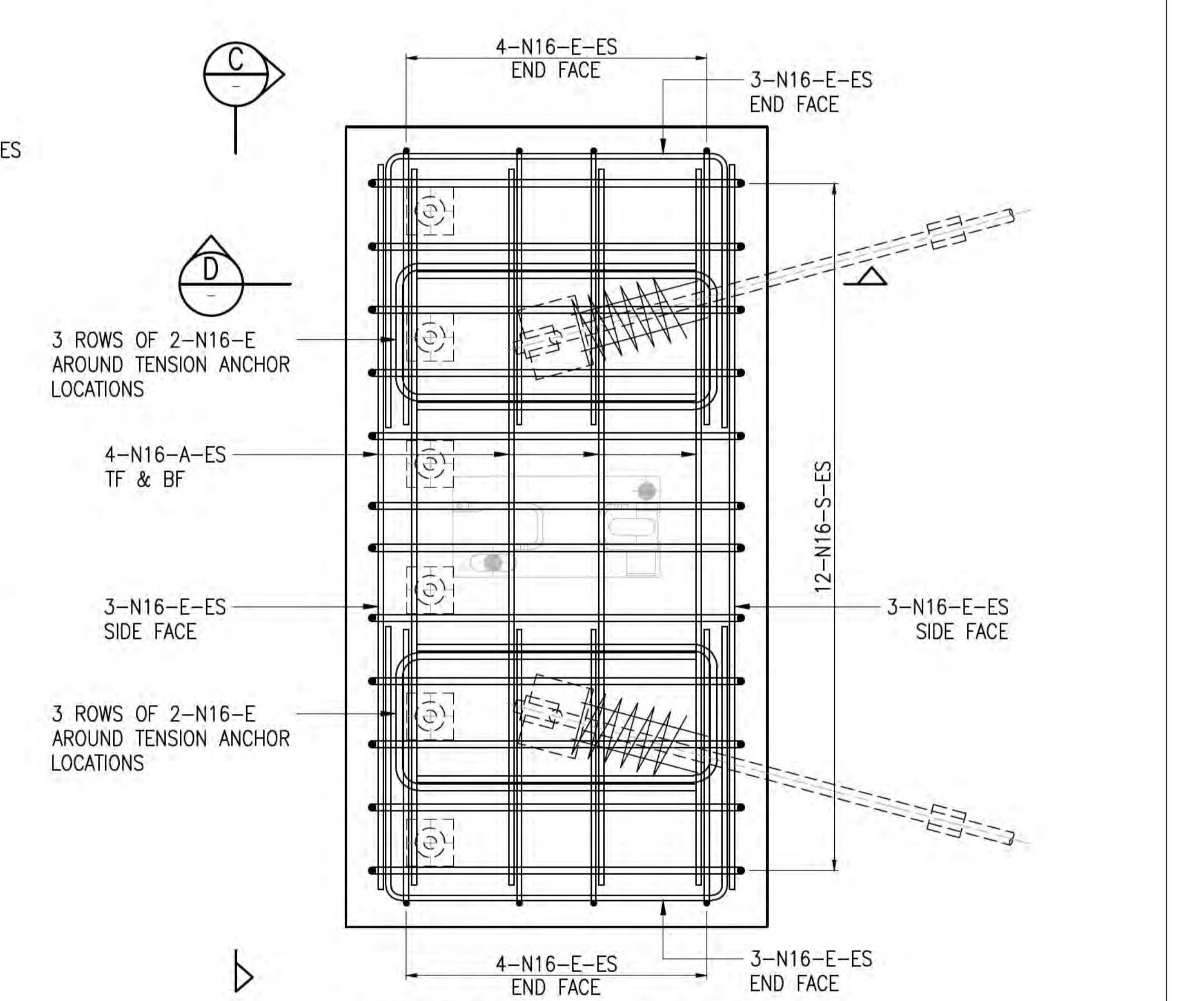
**SECTION D - NEW REINFORCEMENT CAGE\* - OPTION 3**  
SCALE 1:10



**POST FOUNDATION PLAN - USING EXISTING PREFABRICATED SQUARE CAGES WITH N12 AND N24 LIGATURES\* - OPTION 1**  
SCALE 1:10

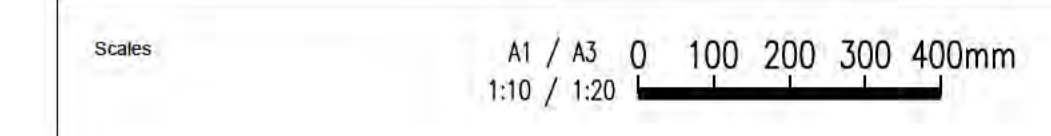


**ELEVATION C - NEW REINFORCEMENT CAGE\* - OPTION 3**  
TENSION ANCHORS OMITTED FROM VIEW FOR CLARITY  
SCALE 1:10



**POST FOUNDATION PLAN - NEW REINFORCEMENT CAGE\* - OPTION 3**  
SCALE 1:10

- \* ALTERNATIVE REINFORCEMENT OPTIONS:**  
 OPTION 1: USE PREFABRICATED SQUARE CAGES AVAILABLE ON SITE: N24 LIGATURES AT 100 CRS - AS SHOWN IN DETAILS FOR OPTION 1  
 OPTION 2: MODIFY PREFABRICATED SQUARE CAGES AVAILABLE ON SITE: SPACE N24 LIGATURES AT 200 CRS OVER 1.9M LONG FOOTING, AND INSTALL N16 BARS IN ALL OTHER DIRECTIONS AS SHOWN IN DETAILS FOR OPTION 1.  
 OPTION 3: INSTALL N16 LIGATURES AT 150 CRS IN LIEU OF N24 LIGATURES AND INSTALL N16 BARS IN ALL OTHER DIRECTIONS - AS SHOWN IN DETAILS FOR OPTION 3
- NOTES**  
 1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.  
 2. REFER TO DRAWINGS CI-GD-01 AND CI-GD-02 FOR ANCHOR DETAILS.  
 3. REFER TO DRAWING CL-CI-01 FOR PROPOSED BARRIER FOUNDATION SETOUTS.  
 4. DRAWING TO BE READ IN CONJUNCTION WITH DRAWING CI-GD-11, CI-GD-12 AND CI-GD-13.  
 5. ES DENOTES EVENLY SPACED.  
 6. REINFORCEMENT DETAILS FOR POST FOOTINGS FOR MARINE 2 BARRIER AT CH. 111.16 AND CH. 114 ARE AS PER DETAILS SHOWN ON THIS DRAWING BUT WITH ANCHOR ARRANGEMENT AS PER CI-GD-13.  
 7. FOR GROUND ANCHOR SCHEDULES REFER TO DRAWING CI-GD-03.



Design Model Version

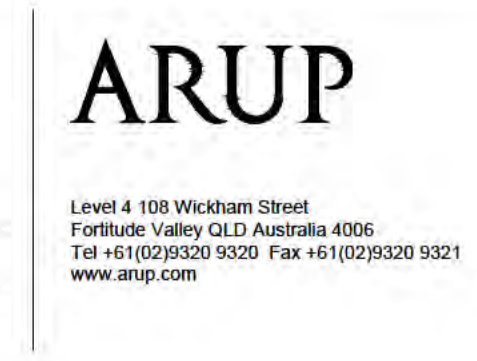
Issue	Date	By	Chkd	Appd
B	19/10/21	MA	JG	EF
REVISED AS CLOUDED				
A	10/09/21	ML	JG	EF
ISSUED FOR CONSTRUCTION				

Issue	Date	By	Chkd	Appd
B	19/10/21	MA	JG	EF
REVISED AS CLOUDED				
A	10/09/21	ML	JG	EF
ISSUED FOR CONSTRUCTION				



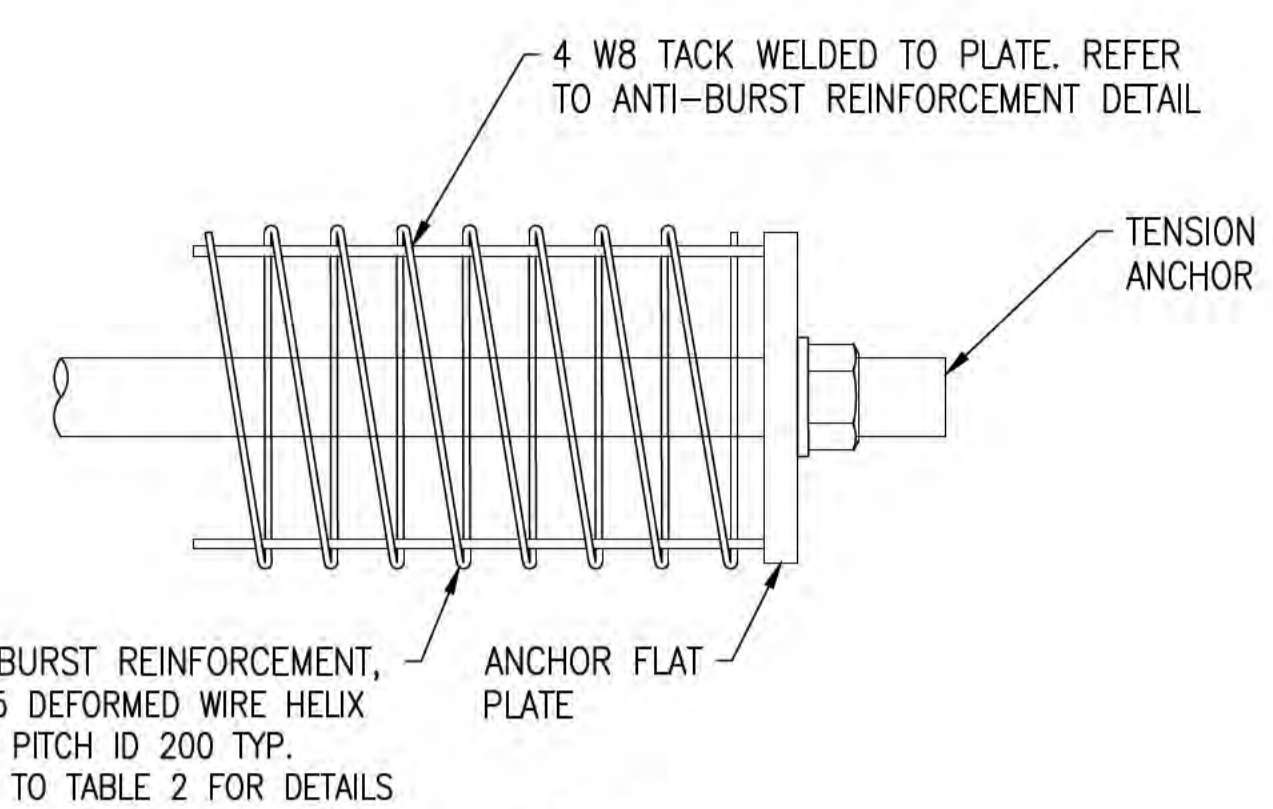
Client: AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS  
 Engineering Certification (CEng)  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Job Title: FLYING FISH COVE CHRISTMAS ISLAND REGIONAL DEVELOPMENT AND COMMUNICATIONS DETAILED DESIGN  
 Scale at A1: AS SHOWN  
 Discipline: \_\_\_\_\_

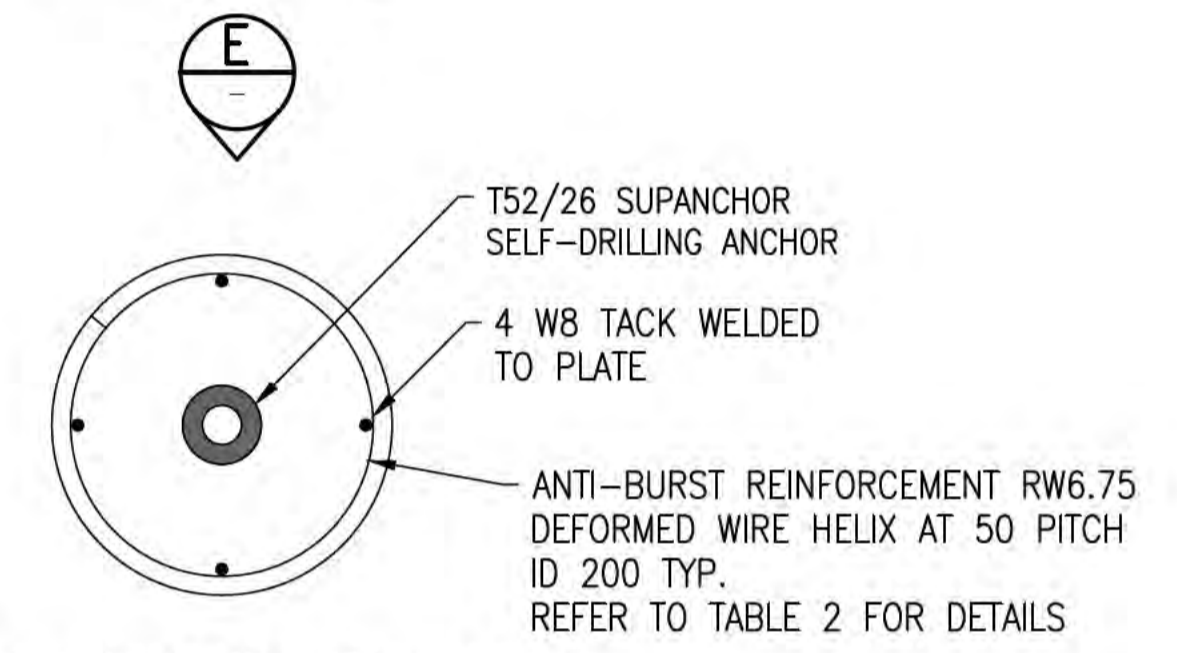


Drawing Title: LANDSLIDE MITIGATION POST FOOTING REINFORCEMENT DETAILS - SHEET 10  
 Drawing Status: ISSUED FOR CONSTRUCTION  
 Job No: 268575-00 Drawing No: CI-GD-10 Issue: B

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



VIEW  
SCALE 1:5



**POST FOUNDATION ANTI-BURST REINFORCEMENT DETAILS**  
SCALE 1:5

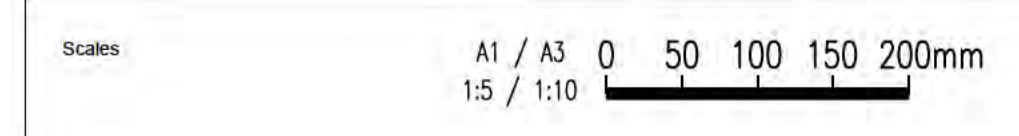
**TABLE 2: ANTI-BURST REINFORCEMENT – HELIX DETAILS**

LOCATION	HELIX	PITCH (mm)	INNER DIAMETER ID (mm)	No. OF TURNS
BOAT CLUB BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	10
MARINE 2 BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	8
MARINE 1 BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	10
CHRISTMAS ISLAND CLUB BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	8
COMPRESSION STRUT POST MARINE 2 BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	8
END POST MARINE 2 BARRIER	RW6.75 DEFORMED WIRE HELIX	50	200	10

**NOTES**

1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
2. REFER TO DRAWINGS CI-GD-01 AND CI-GD-02 FOR ANCHOR DETAILS.
3. REFER TO DRAWING CI-CI-01 FOR PROPOSED BARRIER FOUNDATION SETOUTS.
4. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING CI-GD-10, CI-GD-12 AND CI-GD-13.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd

B	19/10/21	MA	JG	EF
REVISED AS CLOUDED				
A	10/09/21	ML	JG	EF
ISSUED FOR CONSTRUCTION				
Issue	Date	By	Chkd	Appd



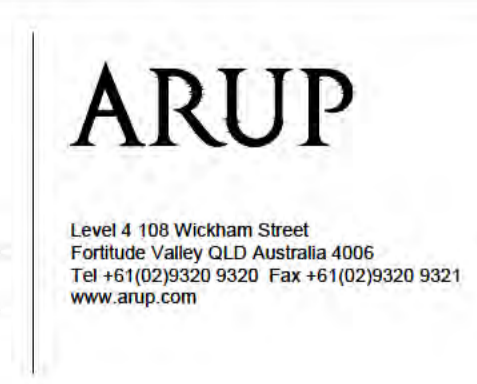
Client  
**AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS**

Engineering Certification (CEng)  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Job Title  
**FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
**AS SHOWN**

Discipline



Drawing Title  
**LANDSLIDE MITIGATION POST FOOTING REINFORCEMENT DETAILS - SHEET 11**

Drawing Status  
**ISSUED FOR CONSTRUCTION**

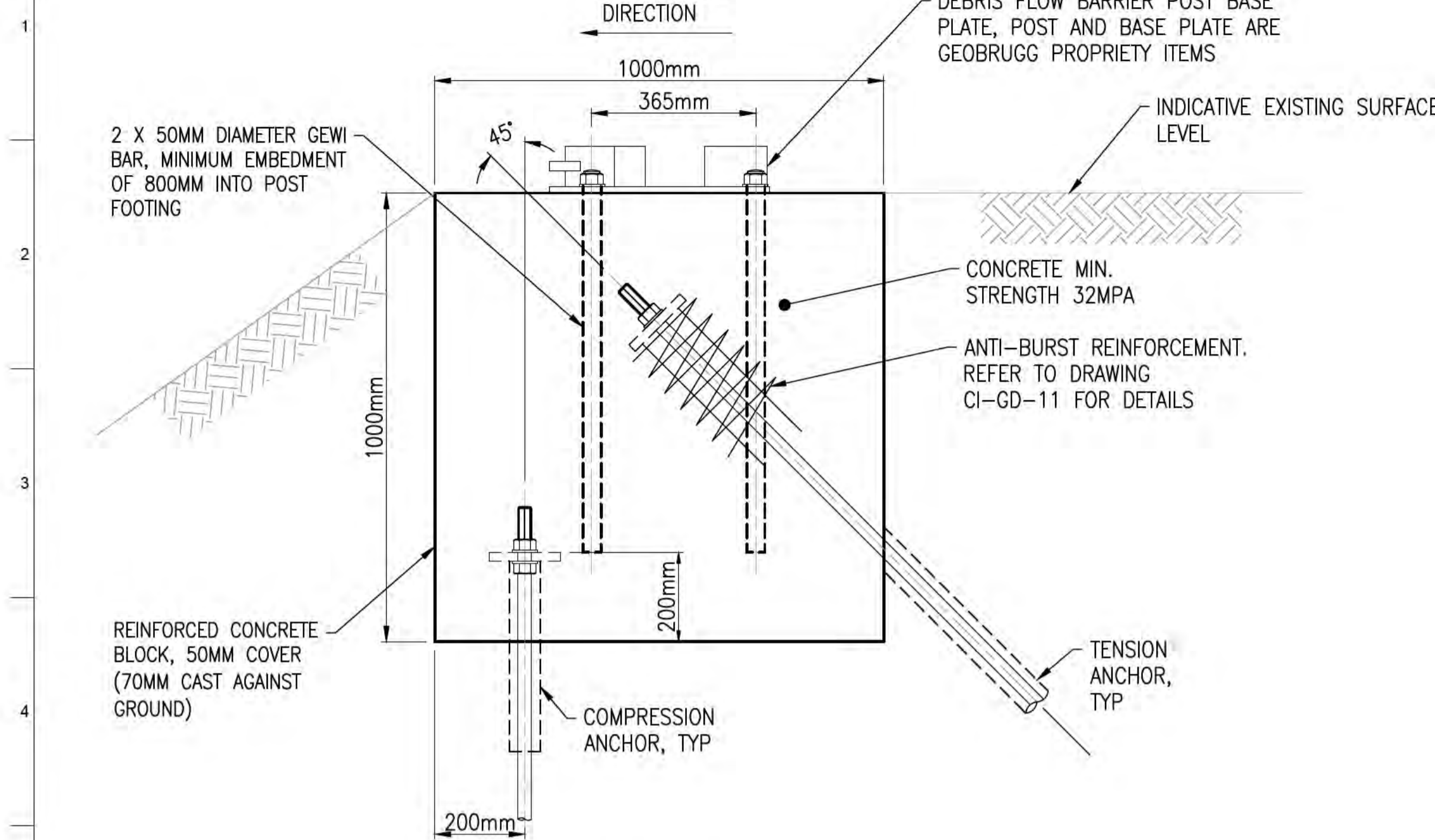
Job No  
**268575-00**

Drawing No  
**CI-GD-11**

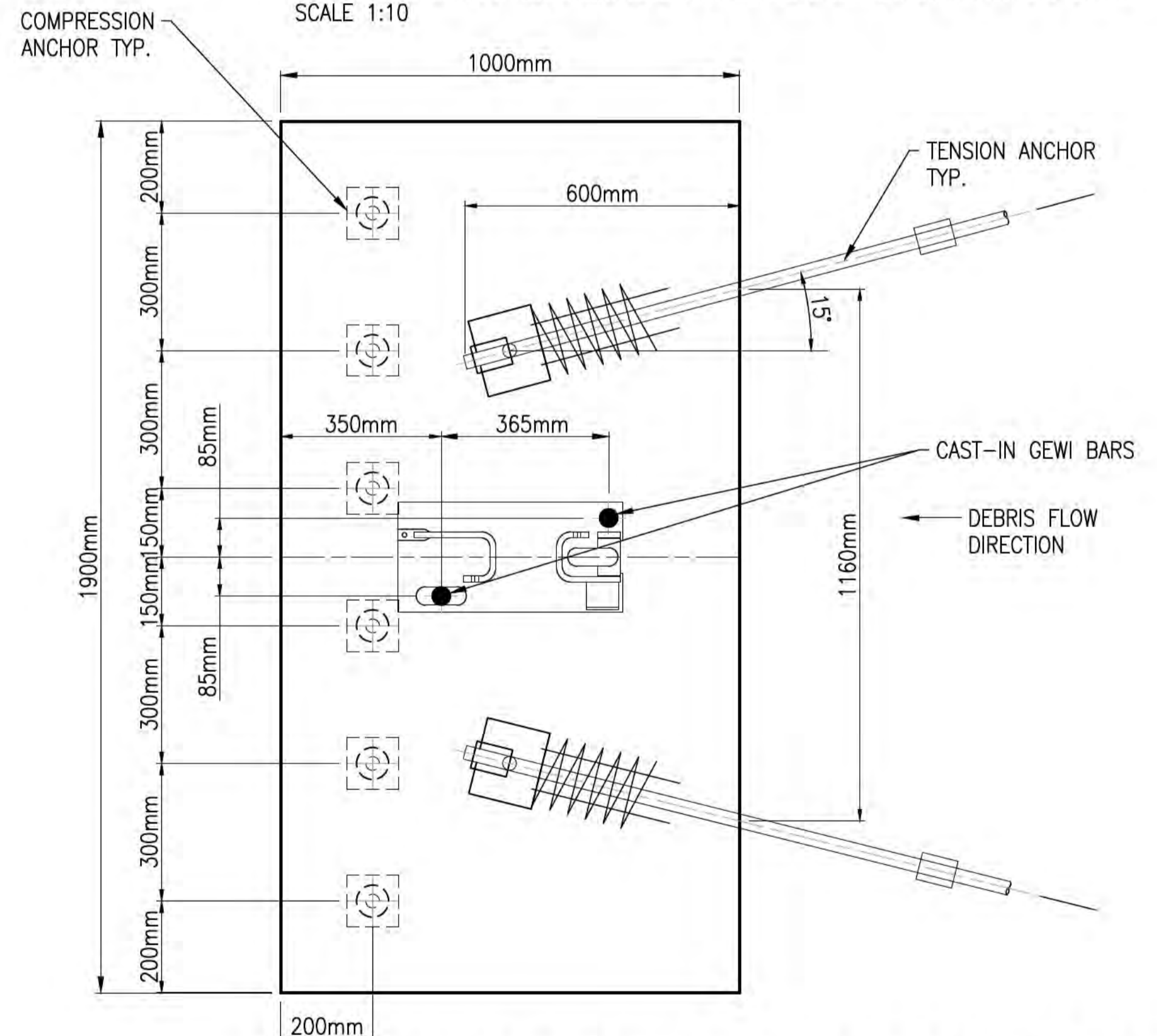
Issue  
**B**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

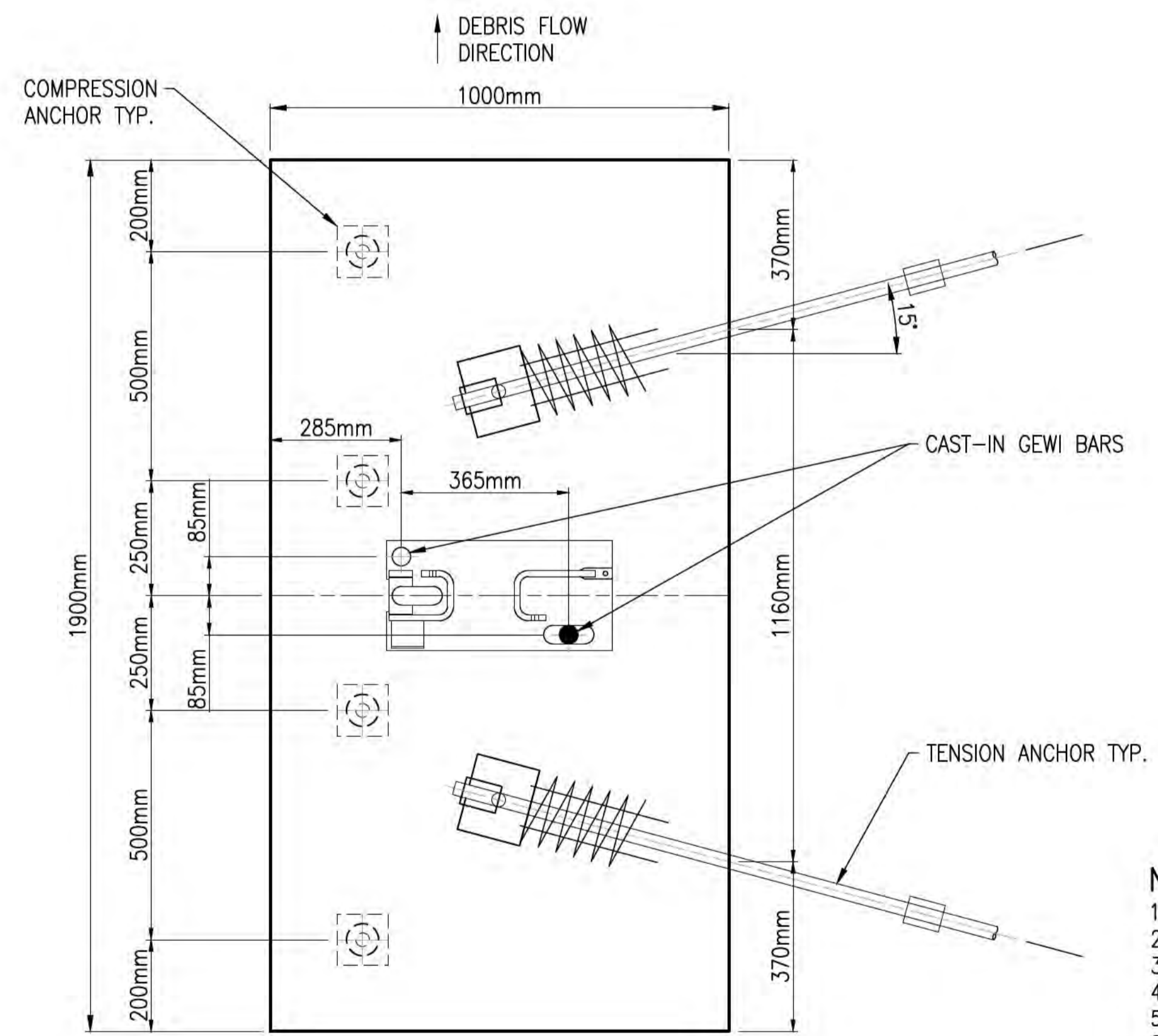
A1 A B C D E F G H I J K L M N O P



**POST FOUNDATION ELEVATION- IF GROUND ANCHORS ONLY HAVE COLLUVIUM EMBEDMENT**  
 FOR ALL BARRIER POST LOCATIONS EXCEPT AT MARINE 2 BARRIER CH 111.16 and CH 114  
 SCALE 1:10



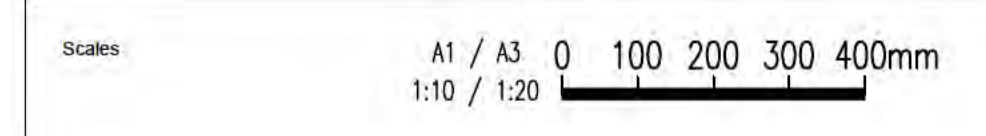
**POST FOUNDATION PLAN - IF GROUND ANCHORS ONLY HAVE COLLUVIUM EMBEDMENT**  
 FOR ALL BARRIER POST LOCATIONS AT BOAT CLUB, MARINE 1 AND CHRISTMAS ISLAND CLUB  
 SCALE 1:10



**POST FOUNDATION PLAN - IF GROUND ANCHORS ONLY HAVE COLLUVIUM EMBEDMENT**  
 FOR BARRIER POST LOCATIONS AT MARINE 2 BARRIER EXCEPT AT CH 111.16 AND CH 114  
 SCALE 1:10

- NOTES**
- REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
  - REFER TO DRAWINGS CI-GD-01 AND CI-GD-02 FOR ANCHOR DETAILS.
  - REFER TO DRAWING CL-CI-01 FOR PROPOSED BARRIER FOUNDATION SETOUTS.
  - FOR REINFORCEMENT DETAILS REFER TO DRAWING CI-GD-10 AND CI-GD-11.
  - FOR GROUND ANCHOR SCHEDULES REFER TO DRAWING CI-GD-03.
  - WHERE ALL GROUND ANCHORS WITHIN A FOUNDATION PLAN ARE INSTALLED WITH ROCK EMBEDMENT AS PER DRAWING CI-GD-03 (OR CI-GD-08 FOR MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 AND CH 114), DETAILS ON DRAWING CI-GD-06 AND CI-GD-07 APPLY FOR THE FOUNDATION.
  - WHERE GROUND ANCHORS ARE INSTALLED WITH ONLY COLLUVIUM EMBEDMENT AS PER DRAWING CI-GD-03 (OR CI-GD-08 FOR MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 AND CH 114), REFER TO THE FOUNDATION DETAILS SHOWN ON CI-GD-12 AND CI-GD-13.

**ISSUED FOR CONSTRUCTION**



Issue	Date	By	Chkd	Appd
A	19/10/21	MA	JG	EF
ISSUED FOR CONSTRUCTION				
Issue	Date	By	Chkd	Appd



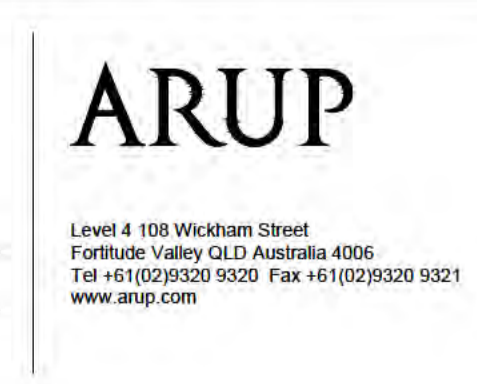
Client  
 AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS

Engineering Certification (CEng)  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Job Title  
 FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN

Scale at A1  
 AS SHOWN

Discipline



Drawing Title  
 LANDSLIDE MITIGATION POST FOOTING CONCRETE DETS SHEET 12

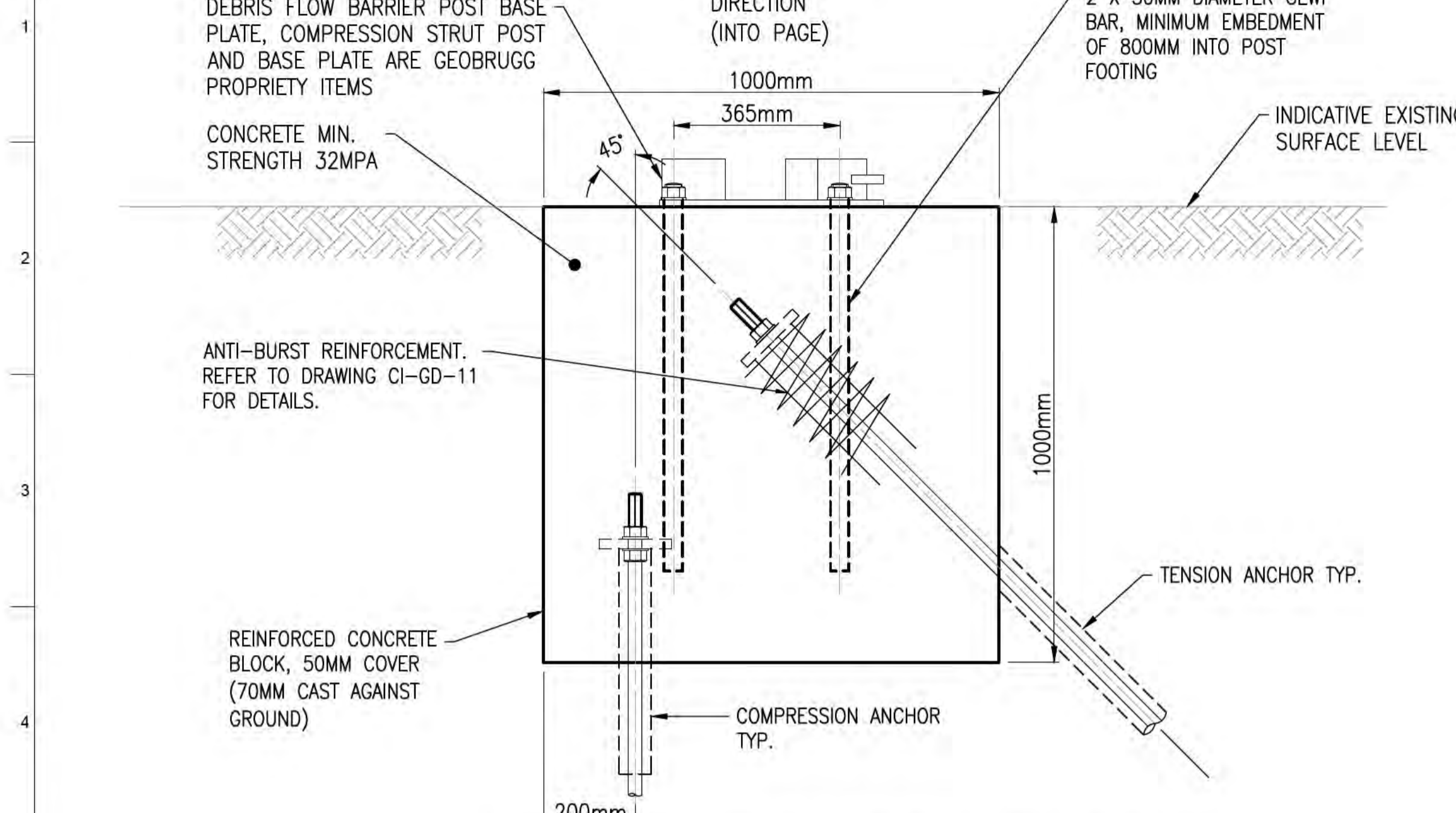
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
 268575-00

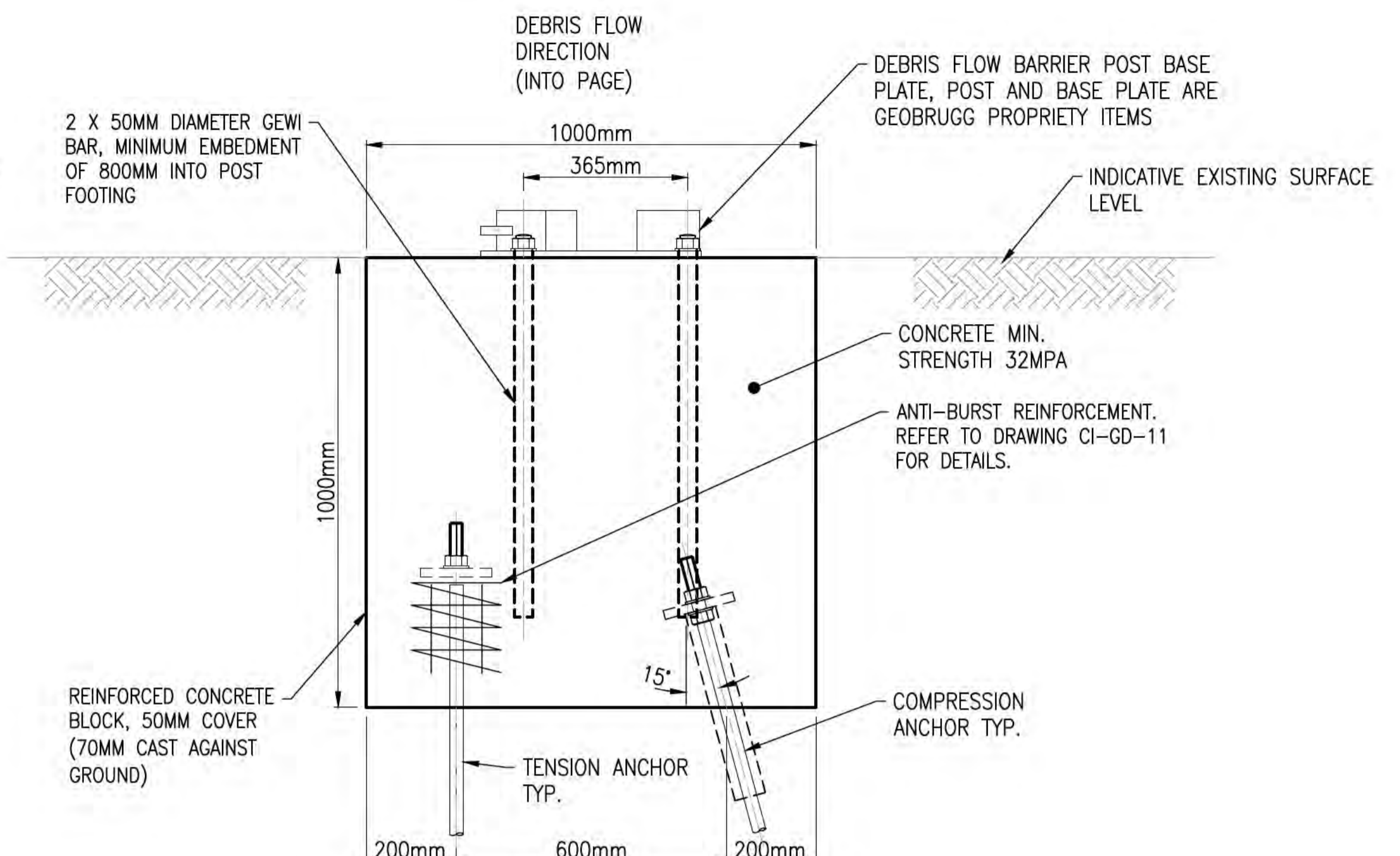
Drawing No  
 CI-GD-12

Issue  
 A

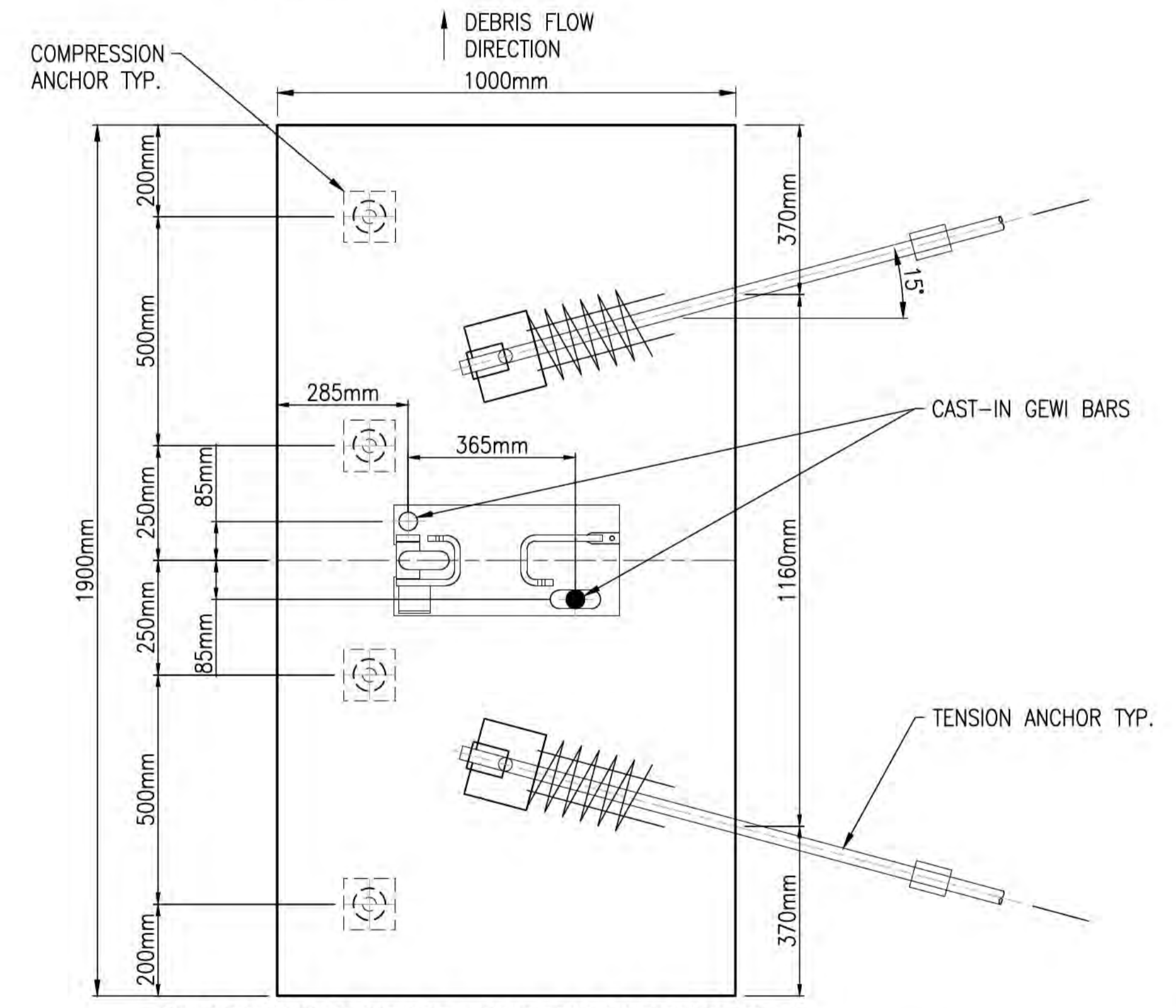
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



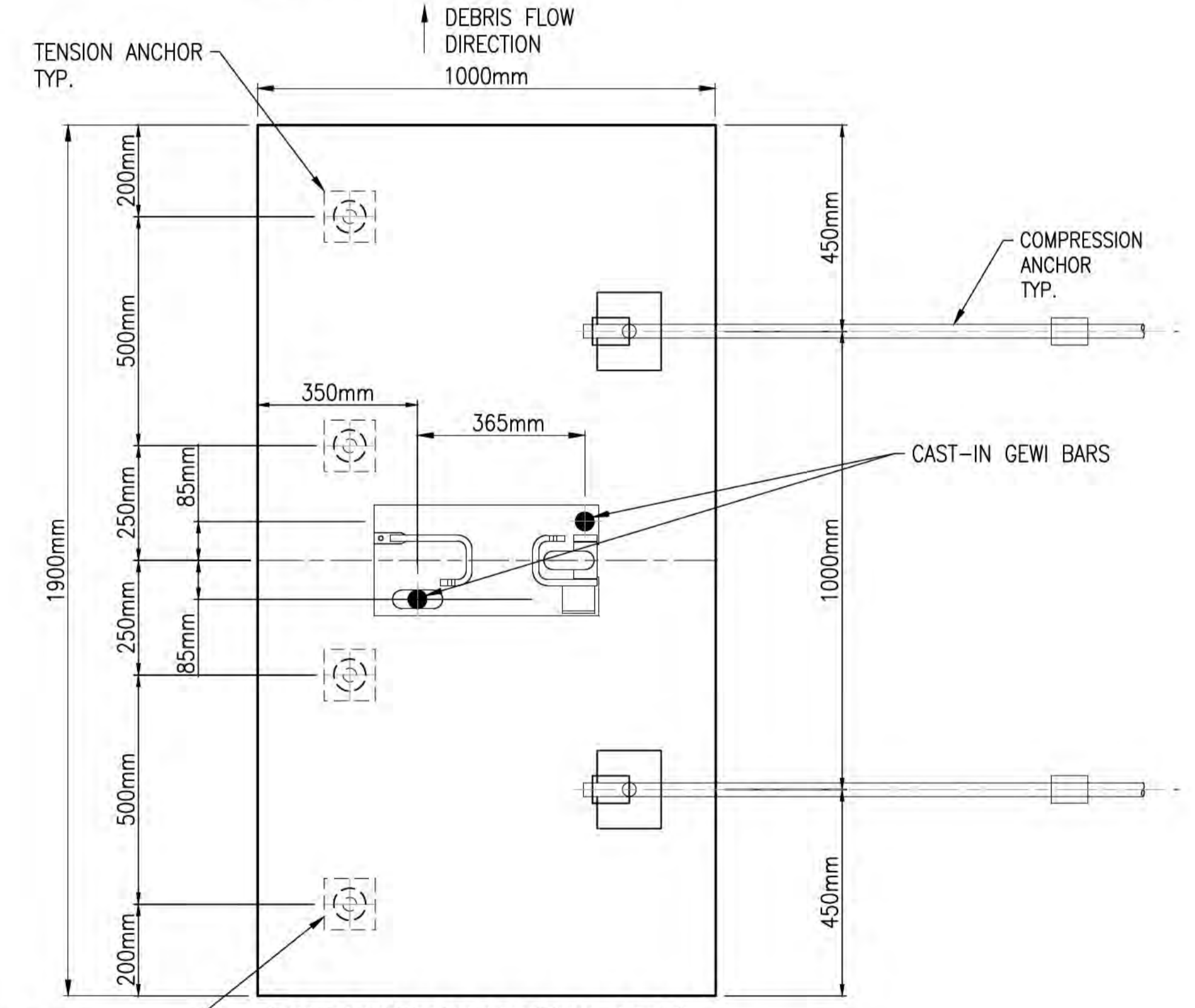
**COMPRESSION STRUT POST FOUNDATION ELEVATION**  
**MARINE 2 BARRIER AT CH 111.16 - IF GROUND**  
**ANCHORS ONLY HAVE COLLUVIUM EMBEDMENT**  
 SCALE 1:10



**END POST FOUNDATION ELEVATION**  
**MARINE 2 BARRIER AT CH 114 - IF GROUND**  
**ANCHORS ONLY HAVE COLLUVIUM EMBEDMENT**  
 SCALE 1:10



**COMPRESSION STRUT POST FOUNDATION PLAN**  
**MARINE 2 BARRIER AT CH 111.16 - IF GROUND**  
**ANCHORS ONLY HAVE COLLUVIUM EMBEDMENT**  
 SCALE 1:10



**END POST FOUNDATION PLAN**  
**MARINE 2 BARRIER AT CH 114 - IF GROUND**  
**ANCHORS ONLY HAVE COLLUVIUM EMBEDMENT**  
 SCALE 1:10

**NOTES**

1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.
2. REFER TO DRAWINGS CI-GD-01 AND CI-GD-02 FOR ANCHOR DETAILS.
3. REFER TO DRAWING CL-CI-01 FOR PROPOSED BARRIER FOUNDATION SETOUTS.
4. REFER TO DRAWING CL-CI-01 FOR THE PROPOSED BARRIER FOUNDATION SETOUT.
5. FOR REINFORCEMENT DETAILS REFER TO DRAWING CI-GD-10 AND CI-GD-11.
6. WHERE ALL GROUND ANCHORS WITHIN A FOUNDATION PLAN ARE INSTALLED WITH ROCK EMBEDMENT AS PER DRAWING CI-GD-03 (OR CI-GD-08 FOR MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 AND CH 114), DETAILS ON DRAWING CI-GD-06 AND CI-GD-07 APPLY FOR THE FOUNDATION.
7. WHERE GROUND ANCHORS ARE INSTALLED WITH ONLY COLLUVIUM EMBEDMENT AS PER DRAWING CI-GD-03 (OR CI-GD-08 FOR MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 AND CH 114), REFER TO THE FOUNDATION DETAILS SHOWN ON CI-GD-12 AND CI-GD-13.
8. REFER TO DRAWING CI-GD-08 FOR LAYOUT PLAN OF FOOTING AND ANCHORS AND GROUND ANCHOR SCHEDULE AT MARINE 2 BARRIER END POST AND COMPRESSION STRUT AT CH 111.16 AND CH 114.

**ISSUED FOR CONSTRUCTION**

Scales: A1 / A3 0 100 200 300 400mm  
 1:10 / 1:20

Design Model Version

Issue	Date	By	Chkd	Appd
A	19/10/21	MA	JG	EF
ISSUED FOR CONSTRUCTION				

**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 LANDSLIDE MITIGATION DETAILED DESIGN**

Scale at A1  
**AS SHOWN**

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 POST FOOTING CONCRETE DETS SHEET 13**

Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

Drawing No  
**CI-GD-13**

Issue  
**A**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

# LEGEND:

Fences to be constructed 2020 

## Treatments

- Treatment A 
- Treatment B 



NOTES  
 1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.

**ISSUED FOR CONSTRUCTION**

Scales  
N.T.S

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd
A	04/08/20	RB	JG	EF
ISSUED FOR CONSTRUCTION				



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  
 LANDSLIDE MITIGATION  
 DETAILED DESIGN

Scale at A1  
 NTS

Discipline



Level 4, 108 Wickham Street  
 Fortitude Valley QLD Australia 4006  
 Tel +61 (0)7 320 9320 Fax +61 (0)7 320 9321  
 www.arup.com



Drawing Title  
 LANDSLIDE MITIGATION  
 LANDSCAPE TREATMENT AREAS

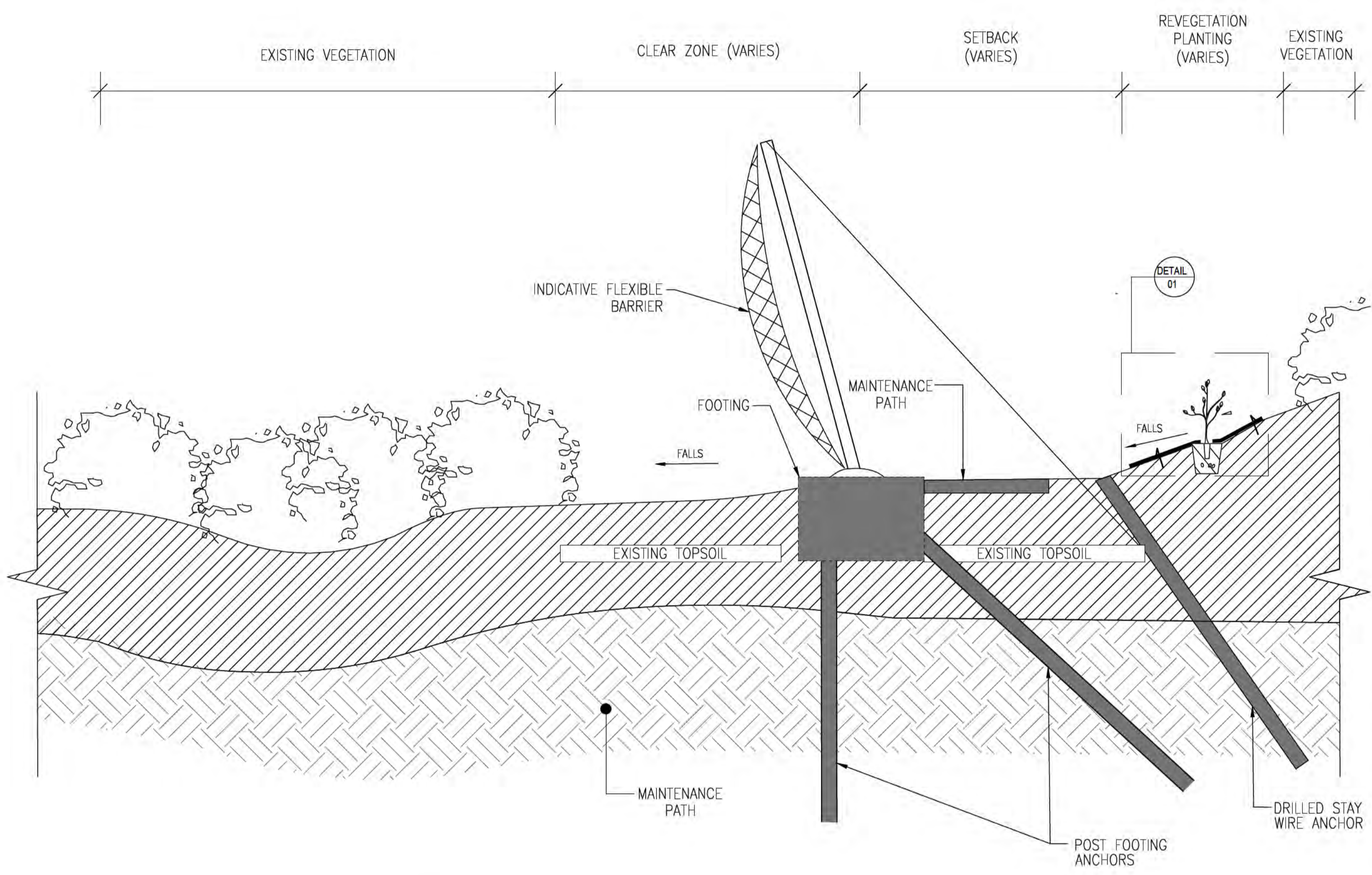
Drawing Status  
**ISSUED FOR CONSTRUCTION**

Job No  
**268575-00**

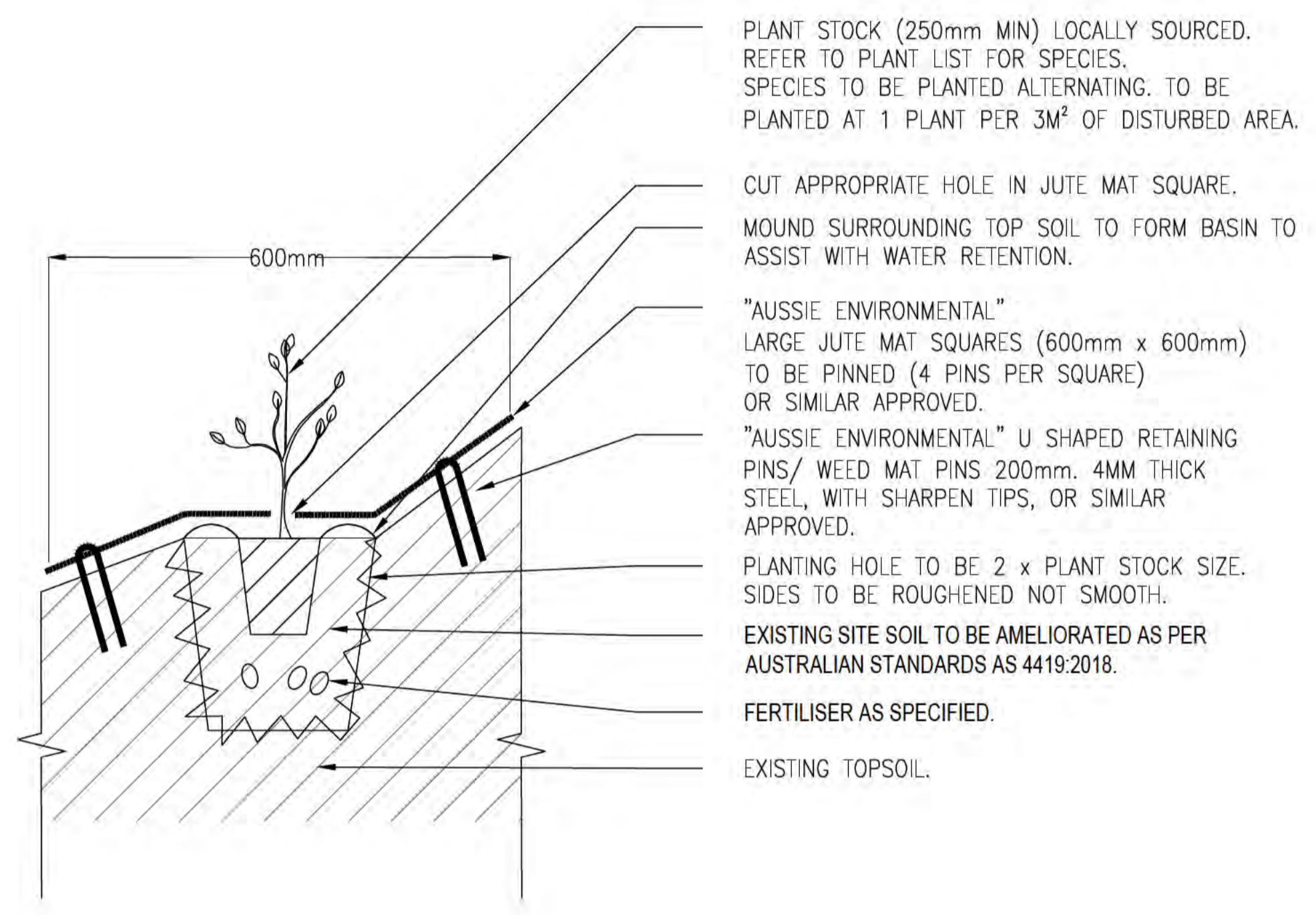
Drawing No  
**CI-LR-01**

Issue  
**A**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**



TYPICAL SECTION – REVEGETATION PLANTING  
NOT TO SCALE



01 250mm PLANTING WITH JUTE SQUARE  
- NOT TO SCALE

- PLANT STOCK (250mm MIN) LOCALLY SOURCED. REFER TO PLANT LIST FOR SPECIES. SPECIES TO BE PLANTED ALTERNATING. TO BE PLANTED AT 1 PLANT PER 3M<sup>2</sup> OF DISTURBED AREA.
- CUT APPROPRIATE HOLE IN JUTE MAT SQUARE. MOUND SURROUNDING TOP SOIL TO FORM BASIN TO ASSIST WITH WATER RETENTION.
- "AUSSIE ENVIRONMENTAL" LARGE JUTE MAT SQUARES (600mm x 600mm) TO BE PINNED (4 PINS PER SQUARE) OR SIMILAR APPROVED.
- "AUSSIE ENVIRONMENTAL" U SHAPED RETAINING PINS/ WEED MAT PINS 200mm. 4MM THICK STEEL, WITH SHARPEN TIPS, OR SIMILAR APPROVED.
- PLANTING HOLE TO BE 2 x PLANT STOCK SIZE. SIDES TO BE ROUGHENED NOT SMOOTH.
- EXISTING SITE SOIL TO BE AMELIORATED AS PER AUSTRALIAN STANDARDS AS 4419:2018.
- FERTILISER AS SPECIFIED.
- EXISTING TOPSOIL.

NOTES  
1. REFER TO DRAWINGS CI-NL-01 AND CI-NL-02 FOR GENERAL NOTES AND LEGEND.

**ISSUED FOR CONSTRUCTION**

<p>Scales</p> <p style="font-size: 24pt; font-weight: bold;">N.T.S</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																															<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																															<p><b>Australian Government</b> Department of Infrastructure, Transport, Regional Development and Communications</p>	<p>Client <b>AUSTRALIAN GOVERNMENT DPT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND COMMUNICATIONS</b></p> <p>Engineering Certification (CEng) Name: _____ Date: _____ Signature: _____</p>	<p>Job Title <b>FLYING FISH COVE CHRISTMAS ISLAND LANDSLIDE MITIGATION DETAILED DESIGN</b></p> <p>Scale at A1 <b>NTS</b></p> <p>Discipline</p>	<p style="font-size: 8pt;">Level 4 108 Wickham Street Fortitude Valley QLD Australia 4006 Tel +61(0)75320 9320 Fax +61(0)75320 9321 www.arup.com</p>	<p style="font-size: 8pt;">Member Firm ANP Pty Ltd ABN 18 000 966 165</p>	<p>Drawing Title <b>LANDSLIDE MITIGATION REVEGETATION DETAILS</b></p> <p>Drawing Status <b>ISSUED FOR CONSTRUCTION</b></p> <p>Job No <b>268575-00</b></p> <p>Drawing No <b>CI-LR-02</b></p> <p>Issue <b>A</b></p>

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**