

PROJECT TITLE: Klemtu Communication Tower and Supporting Infrastructure

SOLICITATION No.: F1705-211672/A

DATE: May 10, 2021

The following are effective immediately and form part of the contract documents.

DRAWINGS

The contract drawings have been revised and re-issued under Revision Number 01.

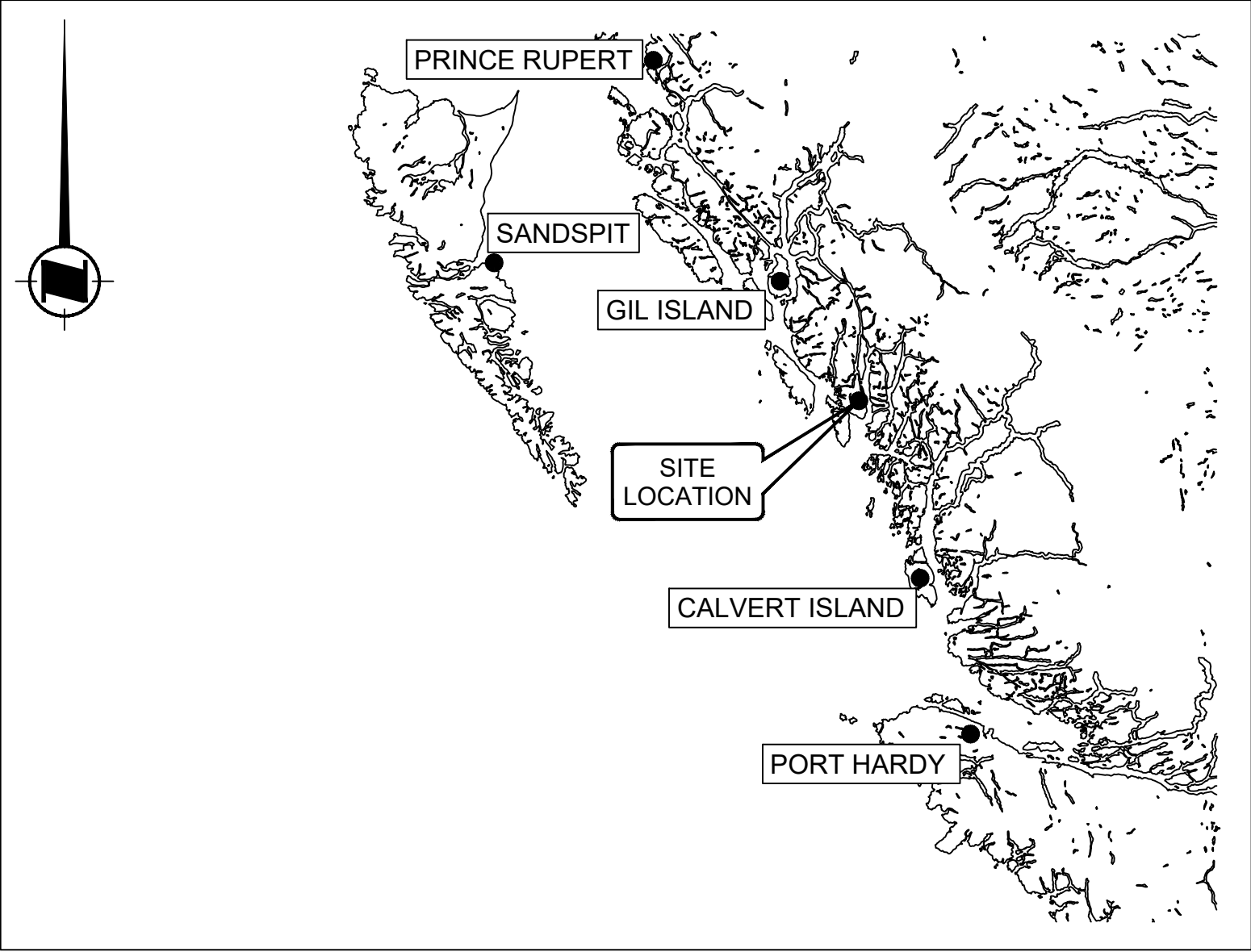
END OF ADDENDUM NO. 02

GENERAL NOTES

1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER APPLICABLE CONSTRUCTION DOCUMENTS. DEVIATION OF PROJECT CONSTRUCTION IS NOT ACCEPTABLE UNLESS INSTRUCTED BY THE ENGINEER.
2. ALL INFORMATION CONCERNING EXISTING SITE CONDITIONS HAVE BEEN TAKEN FROM ORIGINAL DRAWINGS AND SITE MEASUREMENTS. SHOULD INFORMATION OR SITE CONDITIONS DIFFER SIGNIFICANTLY FROM THAT SHOWN, ADVISE CCG ENGINEERING.
3. DO NOT COMMENCE CONSTRUCTION USING THESE DRAWINGS UNLESS NOTED "FOR CONSTRUCTION".
4. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NATIONAL BUILDING CODE 2015 AND REFERENCED STANDARDS THEREIN.
5. DRAWINGS SHOW COMPLETED STRUCTURES ONLY. CONTRACTOR IS RESPONSIBLE TO PROVIDE TEMPORARY STRUCTURES AND BRACING FOR CONSTRUCTION LOADING CONDITIONS AND STABILITY OF THE STRUCTURE DURING CONSTRUCTION. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN LOADS.
6. IT IS THE DISCRETION OF THE ENGINEER TO CONDUCT INSPECTIONS OR ACCEPT PHOTOS OF REINFORCING PRIOR TO THE PLACEMENT OF CONCRETE.

DRAWING LIST

SHEET NUMBER	DRAWING NAME
01	COVER SHEET
02	SITE PLAN
03	FOUNDATION PLAN
04	OPTIONAL FOUNDATION WORK
05	ANTENNA LAYOUT
06	GROUNDING PLAN
07	HELIPAD DETAILS
08	FUEL TANK AND TEMPORARY BUILDING DETAILS



SITE LOCATION MAP
NOT TO SCALE



KEY PLAN
SCALE: 1:250

ISSUED FOR TENDER RH 2022-05-06

0 ISSUED FOR TENDER BS 2022-02-28

rev	description	by	date
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Asset - Actif

MCTS TOWER SITE
KLEMTU

Drawing - Dessin

COVER SHEET

drawn - dessiné	date
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RH/BS	2022-02-28
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designed - conception	date
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SC	2022-02-28
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checked - vérifié	date
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SC	2022-02-28
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approved - approuvé	date
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AW	2022-02-28
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CCG ref. no. - no. réf. GCC	scale - échelle
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N6247-20010	AS NOTED
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drawing no. - no. dessin	sheet-feuille	rev-rév
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WM394-1006	01/08	1
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LEGEND

1195.00 MAJOR CONTOURS
1184.50 MINOR CONTOURS

TOPOGRAPHIC CONTOURS BASED ON SITE SURVEYS
COMPLETED 2019-08-17 & 2021-09-10 UAV SURVEY
COMPLETED 2019-08-17.

ORTHO-IMAGERY DERIVED FROM UAV SURVEY COMPLETED
2019-08-17.

CONTROL INFORMATION BASED ON BASELINES TO BUTDALE
AND BELLA COOLA ACTIVE CONTROL STATIONS

VERTICAL DATUM: ELEVATIONS ARE REFERRED TO CGVD 28

HORIZONTAL DATUM: COORDINATES ARE REFERRED TO
NAD 83 CSRS (2010 EPOCH)

PROJECTION INFORMATION: UTM ZONE 9N

ISSUED FOR TENDER	RH	2022-05-06
0 ISSUED FOR TENDER	BS	2022-02-28
rev	description	by par date

Asset - Actif

MCTS TOWER SITE
KLEMTU

Drawing - Dessin

SITE PLAN

drawn - dessiné	date
RH/BS	2022-02-28
designed - conception	date
SC	2022-02-28
checked - vérifié	date
SC	2022-02-28
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AW	2022-02-28
CCG ref. no. - no. réf. GCC	scale - échelle
N6247-20010	AS NOTED
drawing no. - no. dessin	sheet-feuille
WM394-1006	02/08 1

D

C

B

A

WM394-1006



PLAN
SCALE: 1:200
A 02 SITE PLAN



TEMPORARY BUILDING
PIER FOUNDATIONS TYP.

1
03

TOC
807.24m

TOC
808.83m

TEMPORARY BUILDING
PIER FOUNDATIONS TYP.

1
03

TOC
807.24m

TOC
808.83m

TEMPORARY BUILDING
PIER FOUNDATIONS TYP.

1
03

TOC
812.58m

TOC
813.58m

TEMPORARY BUILDING
PIER FOUNDATIONS TYP.

1
03

TOWER FOUNDATIONS TO BE
DESIGNED AND CONSTRUCTED
BY CONTRACTOR

WAVEGUIDE BRIDGE FOUNDATIONS
DESIGNED AND CONSTRUCTED BY
CONTRACTOR

OPTIONAL CONTRACT WORK
REFER TO SHEET 04

2
08 FUEL TANK
FOUNDATION PIERS (TYP.)

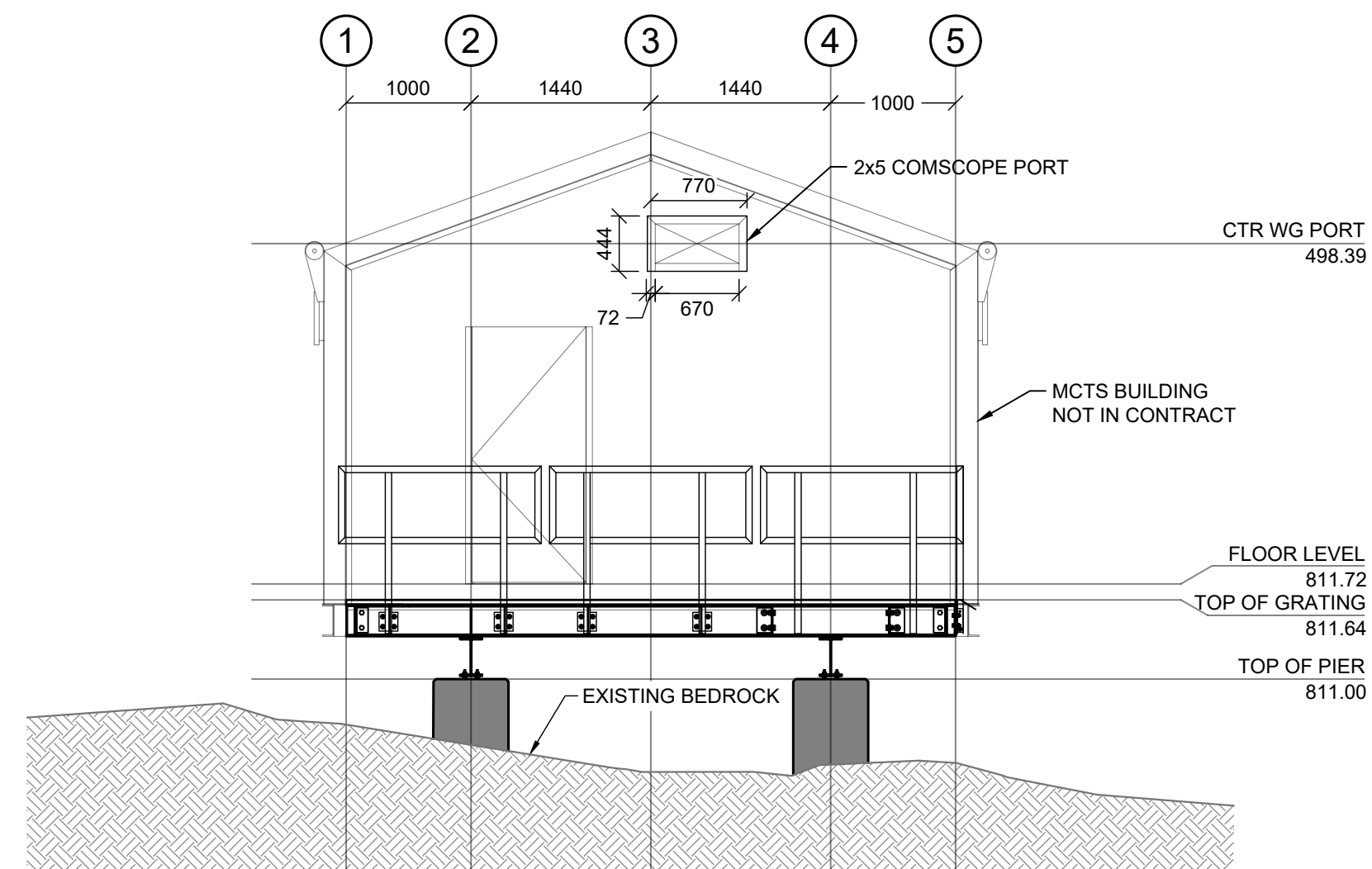
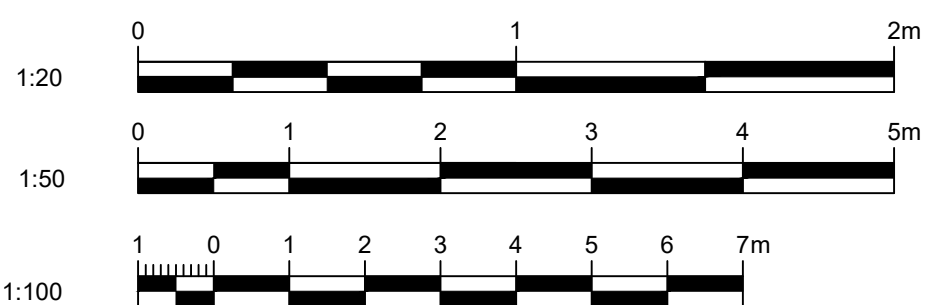
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04 STAIR LANDING TYP.

1
08 FUEL TANK FOUNDATIONS TYP.

2
08 FUEL TANK
FOUNDATION PIERS (TYP.)

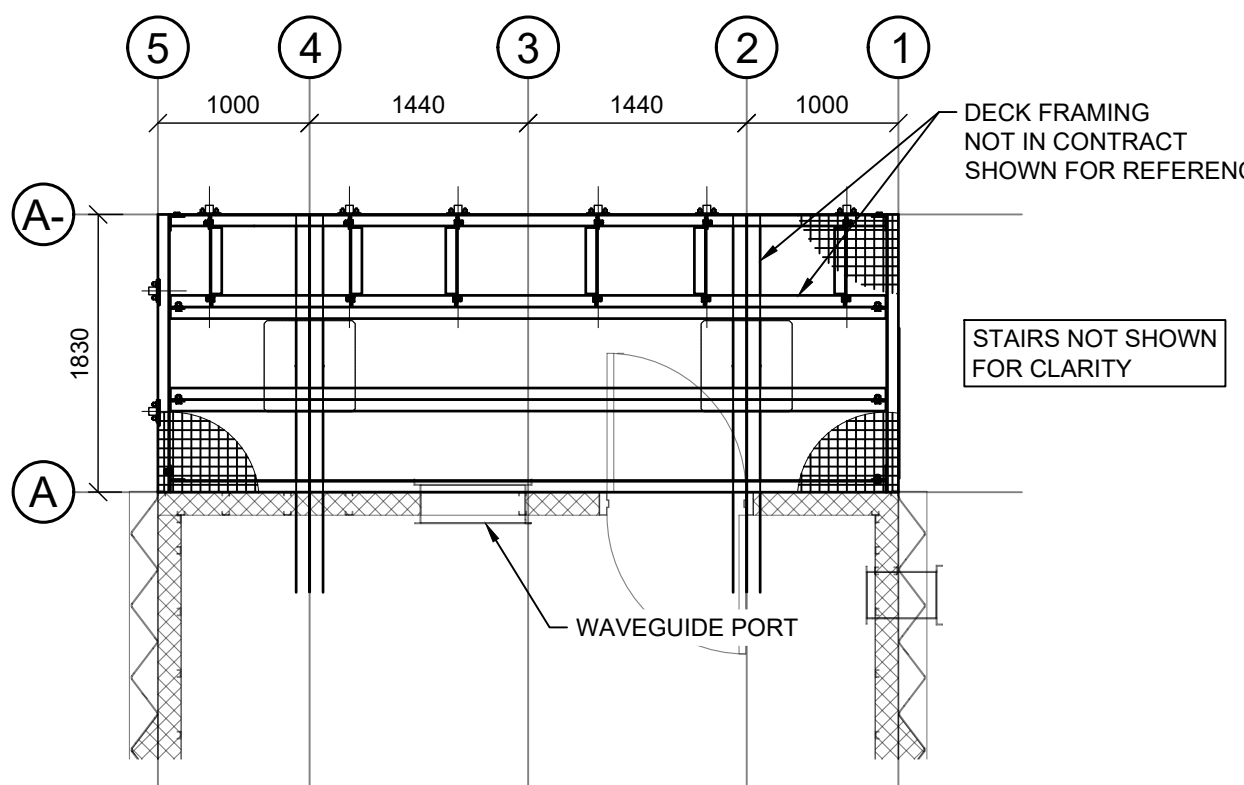
PLAN
SCALE: 1:200

A
03 FOUNDATION PLAN



ELEVATION A
03 WAVEGUIDE ENTRY PORT

SCALE: 1:50



PLAN B
03 DECK FRAMING

SCALE: 1:50

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rev	description	by par date

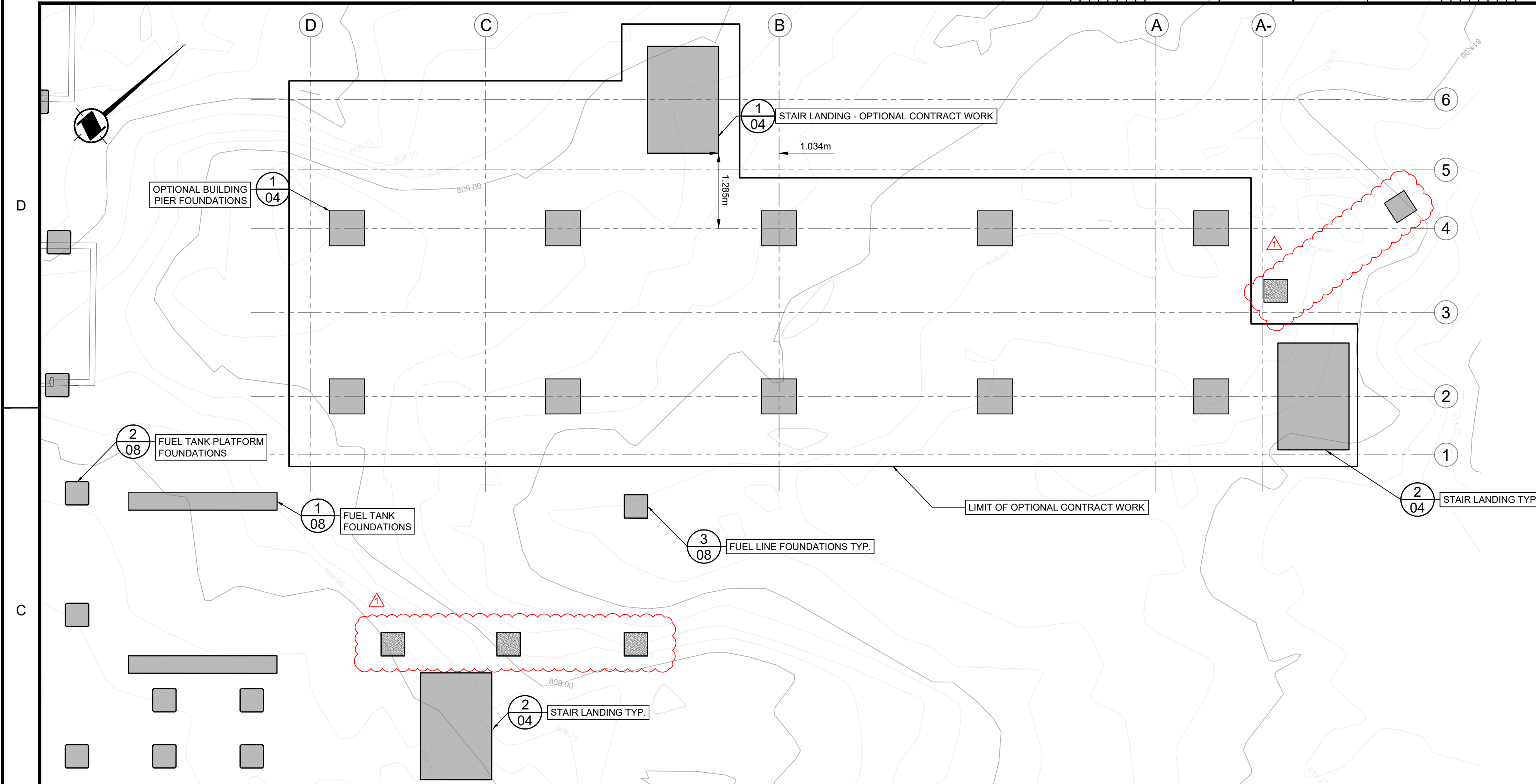
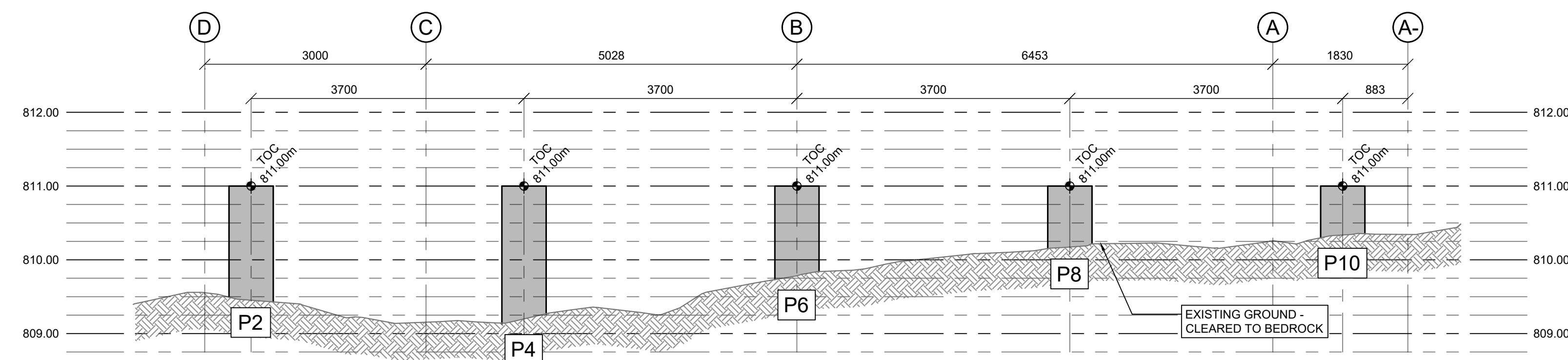
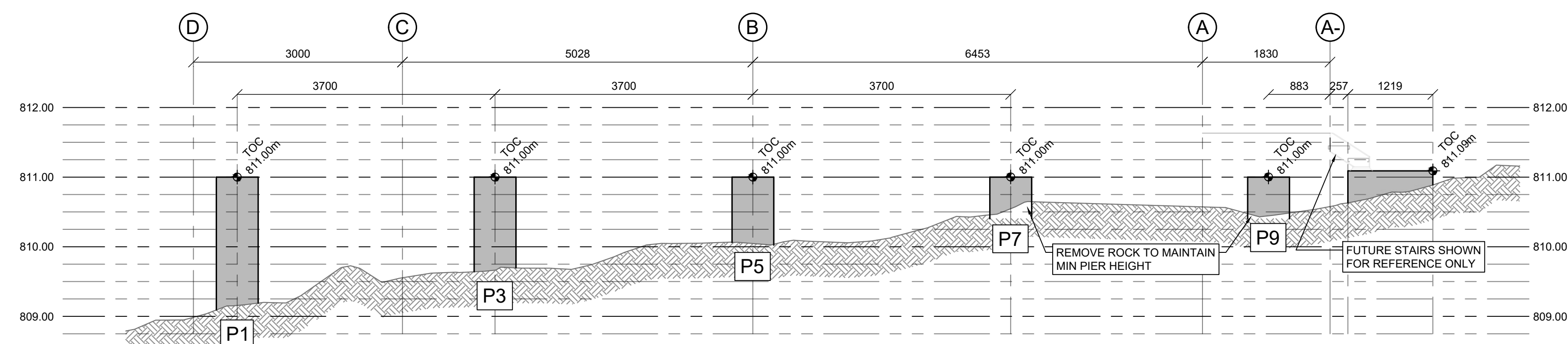
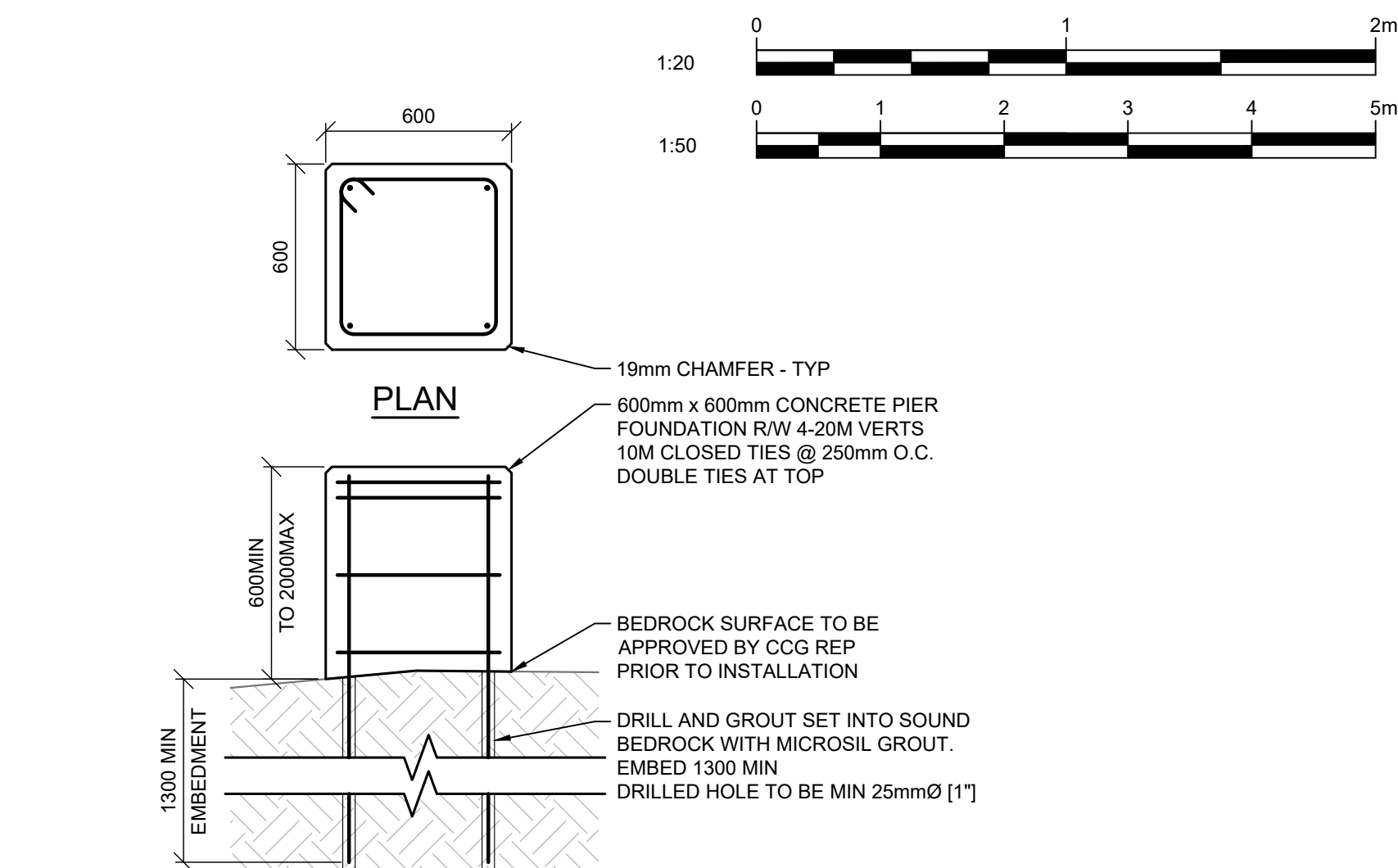
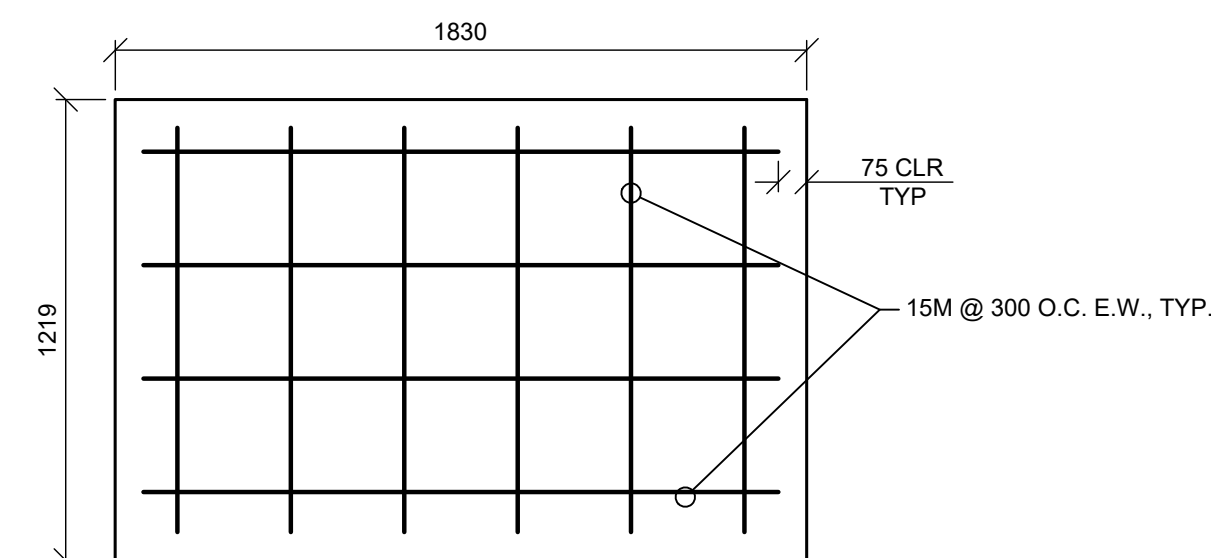
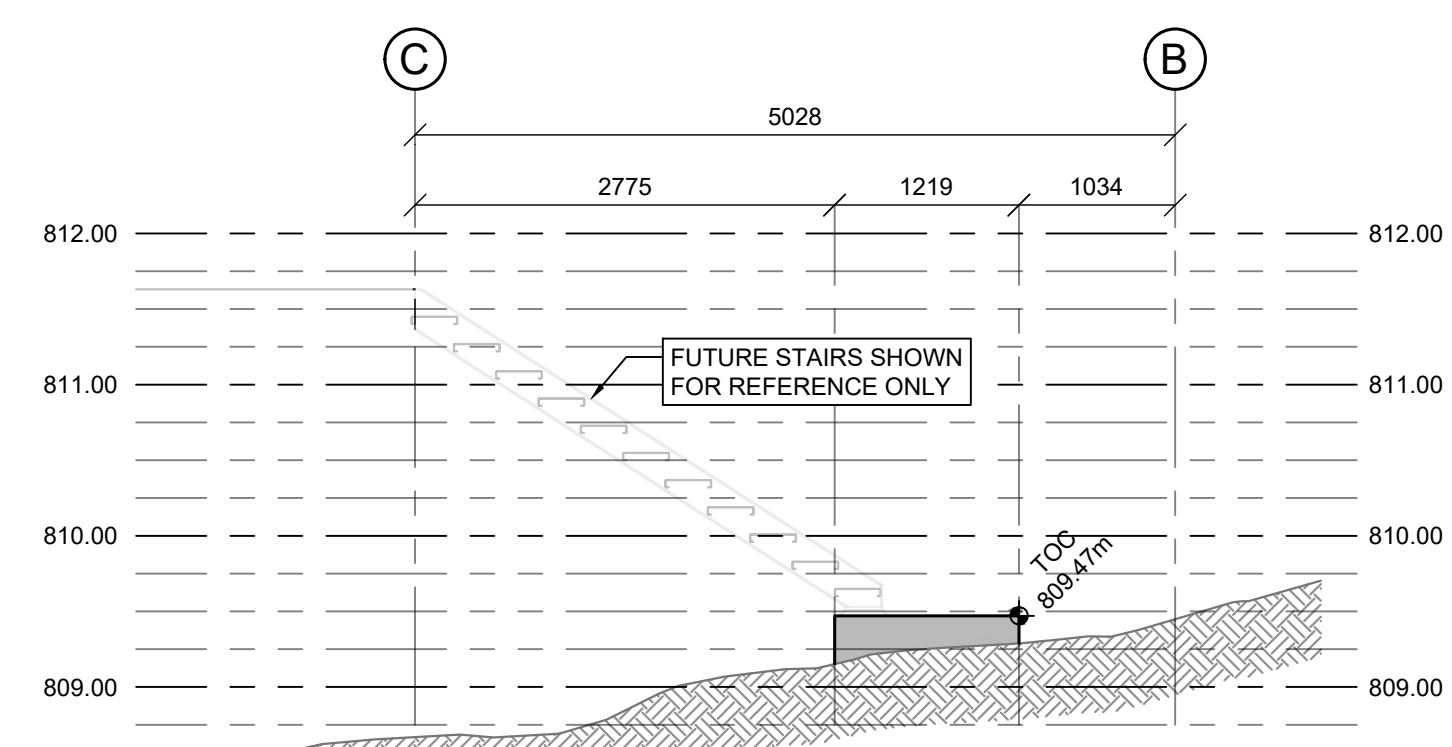
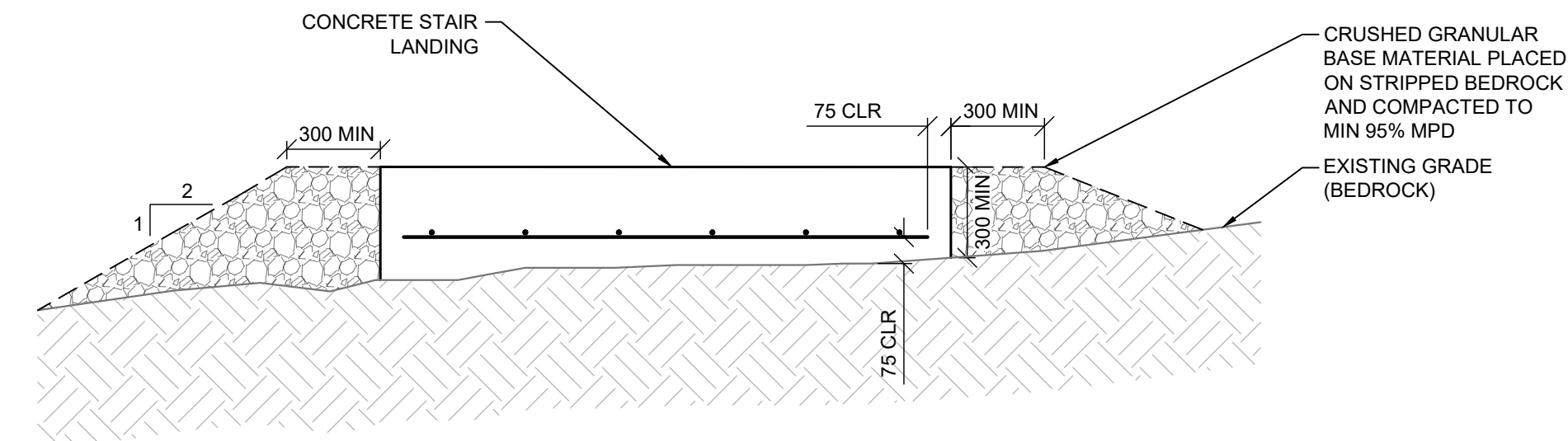
Asset - Actif

MCTS TOWER SITE
KLEMTU

Drawing - Dessin

FOUNDATION PLAN

drawn - dessiné	date
RH/BS	2022-02-28
designed - conception	date
SC	2022-02-28
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AW	2022-02-28
CCG ref. no. - no. réf. GCC	scale - échelle
N6247-20010	AS NOTED
drawing no. - no. dessin	sheet-feuille rev-rév
WM394-1006	03/08 1

PLAN
SCALE: 1:50
A
04 FOUNDATION PLANSECTION
SCALE: 1:50
A
04 BUILDING PIER FOUNDATIONS - GRIDLINE 4SECTION
SCALE: 1:50
B
04 BUILDING PIER FOUNDATIONS AND STAIR LANDING - GRIDLINE 2DETAIL
SCALE: 1:20
1
04 BUILDING PIER FOUNDATIONDETAIL
SCALE: 1:20
2
04 STAIR LANDINGSECTION
SCALE: 1:50
C
04 BUILDING STAIR LANDING - GRIDLINE 6

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rev	description	by par date

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MCTS TOWER SITE
KLEMTU

Drawing - Dessin

OPTIONAL
FOUNDATION WORK

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AW	2022-02-28
CCG ref. no. - no. ref. GCC	scale - échelle
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drawing no. - no. dessin	sheet-feuille
WM394-1006	04/08
rev	rev
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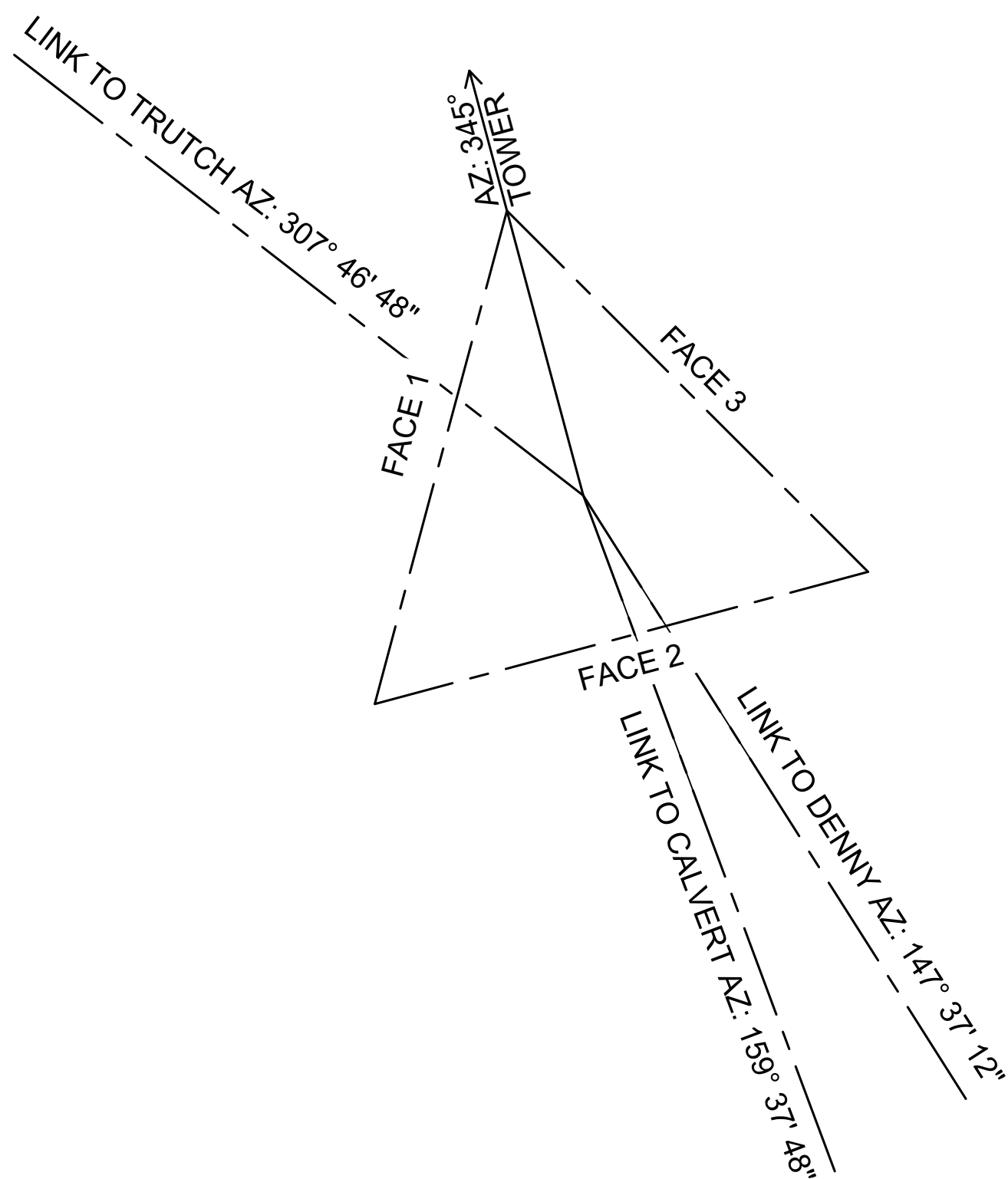
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WM394-1006



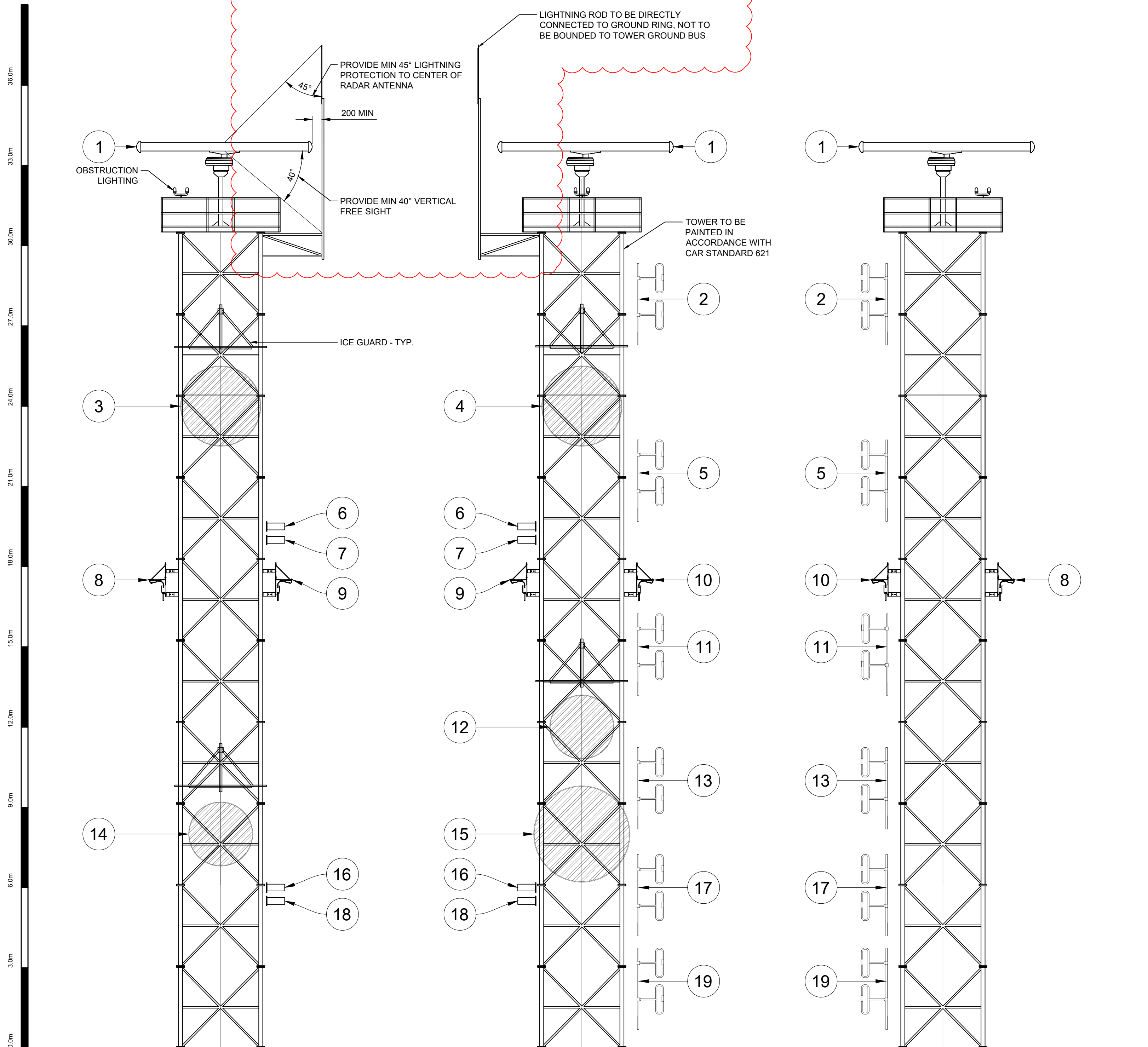
PLAN
SCALE: 1:50

A
05

TOWER ORIENTATION

ANTENNA SCHEDULE - KLEMTU

ANTENNA (#)	USER	ELEV	SYSTEM	ANTENNA MODEL	MAKE	INITIAL OR FUTURE	AZIMUTH	Tx-LINE	ANTENNA MOUNT TYPE
1	CCG	30.0m	RADAR 21° SAIL	HG-HP-F-38	TERMA	FUTURE	OMNI	EWB85	PLATFORM
2	CCG	28.0m	VHF CH16	872F-70HDB	COMPROD	INITIAL	80.00	LDF4	LEG MOUNT
3	CCG	24.0m	MICROWAVE MAIN F. TRUTCH	HSX10-59	ANDREWS/COMMSCOPE	INITIAL	307.78	EWB63	FACE MOUNT
4	CCG	24.0m	MICROWAVE MAIN F. CALVERT	HSX12-59	ANDREWS/COMMSCOPE	INITIAL	159.63	EWB63	FACE MOUNT
5	CCG	21.5m	VHF RX	872F-70HDB	COMPROD	INITIAL	80.00	LDF4	LEG MOUNT
6	DFO	19.5m	DFO UHF	307R	SINCLAIR	FUTURE	TBD	LDF4	LEG MOUNT
7	DFO	19.0m	DFO UHF	307R	SINCLAIR	FUTURE	TBD	LDF4	LEG MOUNT
8	CCG	17.5m	CAMERA 1	IN HOUSE	IN HOUSE	INITIAL	345	CAT6	LEG MOUNT
9	CCG	17.5m	CAMERA 2	IN HOUSE	IN HOUSE	INITIAL	225	CAT6	LEG MOUNT
10	CCG	17.5m	CAMERA 3	IN HOUSE	IN HOUSE	INITIAL	105	CAT6	LEG MOUNT
11	CCG	15.0m	VHF TX	872F-70HDB	COMPROD	INITIAL	80.00	LDF4	LEG MOUNT
12	CCG	12.0m	MICROWAVE F. DENNY	HX8-6W	ANDREWS/COMMSCOPE	INITIAL	147.62	EWB63	FACE MOUNT
13	CCG	10.0m	VHF MULTI	872F-70HDB	COMPROD	INITIAL	80.00	LDF4	LEG MOUNT
14	CCG	8.0m	MICROWAVE DIV. F. TRUTCH	HX8-6W	ANDREWS/COMMSCOPE	INITIAL	307.78	EWB63	FACE MOUNT
15	CCG	8.0m	MICROWAVE DIV. F. CALVERT	HSX10-59	ANDREWS/COMMSCOPE	INITIAL	159.63	EWB63	FACE MOUNT
16	RCMP	6.0m	RCMP UHF F. CALVERT	307R	SINCLAIR	INITIAL	160.00	LDF4	LEG MOUNT
17	CCG	6.0m	ALN VHF	872F-70HDB	COMPROD	INITIAL	80.00	LDF4	LEG MOUNT
18	RCMP	5.5m	RCMP UHF F. BELLA BELLA	307R	SINCLAIR	INITIAL	150.00	LDF4	LEG MOUNT
19	DFO	2.5m	DFO / RCMP VHF	872F-70HDB	COMPROD	INITIAL	80.00	LDF4	LEG MOUNT



ELEVATION
FACE 1

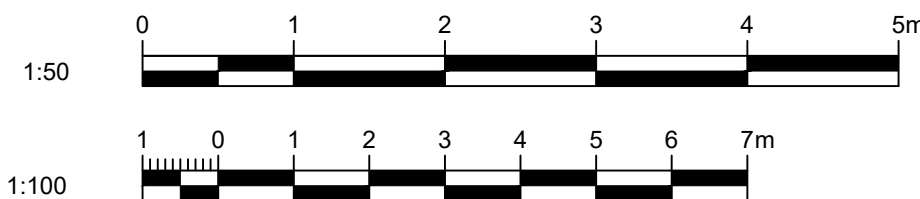
ELEVATION
FACE 2

ELEVATION
FACE 3

ELEVATION
SCALE: 1:100

A
05

TOWER ANTENNA LAYOUT



6

5

4

1

2

3

4

5

6

7

8

9

10

11

12

3

millimeters

millimètres

2

1

- Vendor Information / Sous-traitant
1. ALL BURIED GROUNDING CONDUCTORS SHALL BE #2/0 AWG, BARE, STRANDED TINNED OR UN-TINNED.
 2. ALL SPLICES SHALL BE MADE THROUGH IRREVERSIBLE COMPRESSION TYPE CONNECTORS, DESIGNED FOR USE WITH GROUNDING.
 3. ABOVE-GROUND BONDING CONDUCTORS SHOULD BE JACKETED, WHENEVER PRACTICAL.
 4. SHARP BENDS SHALL BE AVOIDED, WITH A MINIMUM RADIUS OF 203mm.
 5. BUILDING SHALL BE BONDED TO THE GROUND RING IN AT LEAST TWO POINTS, WITH AS MUCH PHYSICAL SEPARATION AS PRACTICAL.
 6. GROUND RINGS SHALL BE BURIED TO A DEPTH OF 762mm WHERE PRACTICAL WHEN NOT PRACTICAL TO BURY BELOW 305mm, 38mm OF CONDUCECRETE SHALL BE UTILIZED ON ALL SIDES OF THE GROUND COMPONENT. ANY VARIATIONS ARE TO BE DOCUMENTED AS PART OF RED-LINE MARKUPS.
 7. WHEN ADJUSTING GROUND LOOP FROM DIFFERENT DEPTHS, MINIMUM BEND RADIUS OF NOTE 4 SHALL BE ADHERED TO.
 8. GROUND RINGS SHALL BE A MINIMUM OF 610mm FROM FOUNDATIONS OF BUILDING AND TOWERS, OR GREATER WHERE SPECIFIED IN THE DRAWINGS.
 9. GROUND RODS SHALL BE COPPER OR COPPER CLAD, 3m LENGTH AND 19.05mm DIAMETER.
 10. GROUND RODS SHALL BE SPACED 3m TO 4.5m APART AROUND THE GROUND RING.
 11. THE UPPER END OF THE GROUND ROD SHALL BE BURIED TO THE DEPTH OF THE GROUND RING TO ALLOW FOR EASY BONDING.
 12. GROUND RODS SHALL BE INSTALLED VERTICALLY WHERE PRACTICAL. RODS MAY BE INSTALLED HORIZONTALLY OR AT AN ANGLE OF 45° FROM VERTICAL, AND PERPENDICULAR TO THE BUILDING. ORIENTATION VARIATION AND DEPTHS MUST BE DOCUMENTED AS PART OF RED-LINE MARKUPS.
 13. RODS ARE PREFERRED TO BE INSTALLED AS CLOSE TO VERTICAL AS POSSIBLE THROUGH HAMMER DRILLING. IF RODS CANNOT BE INSTALLED WITHOUT DEFORMING, THEY SHALL BE INSTALLED HORIZONTALLY AS DEEP AS PRACTICAL.
 14. HORIZONTAL GROUND RODS ON RADIALS WILL BE INSTALLED PERPENDICULAR TO RADIAL.
 15. RODS ARE NOT TO BE INSTALLED IN PRE DRILLED HOLES.
 16. IF GROUND RODS ARE INSTALLED LESS THAN 305mm DEEP, THEY SHALL BE ENCASED IN 38mm OF CONDUCECRETE ON ALL SIDES.
 17. GROUND RODS CAN BE SUBSTITUTED WITH GROUND PLATES, WHERE SITUATIONS DO NOT ALLOW FOR INSTALLATION OF GROUND RODS.
 18. COPPER GROUND PLATES SHALL BE 1.5mm THICK AND COPPER-CLAD STEEL SHALL BE 6.4mm MINIMUMS.
 19. GROUND PLATES SHALL HAVE 0.186m² MINIMUM SURFACE EXPOSED TO BACKFILL MATERIAL.
 20. IF GROUND PLATES ARE INSTALLED LESS THAN 305mm DEEP, THEY SHALL BE ENCASED IN 76mm OF CONDUCECRETE ON ALL SIDES.
 21. ANY SURFACE INSTALLED GROUNDING EQUIPMENT SHALL HAVE CONDUCECRETE SHAPED TO PREVENT TRIPPING HAZARDS.

- LEGEND
- JUNCTION
 - ⊗ GROUND ROD
 - ⊗ GROUND PLATE
 - GROUND CONDUCTOR

Δ	ISSUED FOR TENDER	RH	2022-05-06
0	ISSUED FOR TENDER	BS	2022-02-28
rev	description	by	date

Asset - Actif

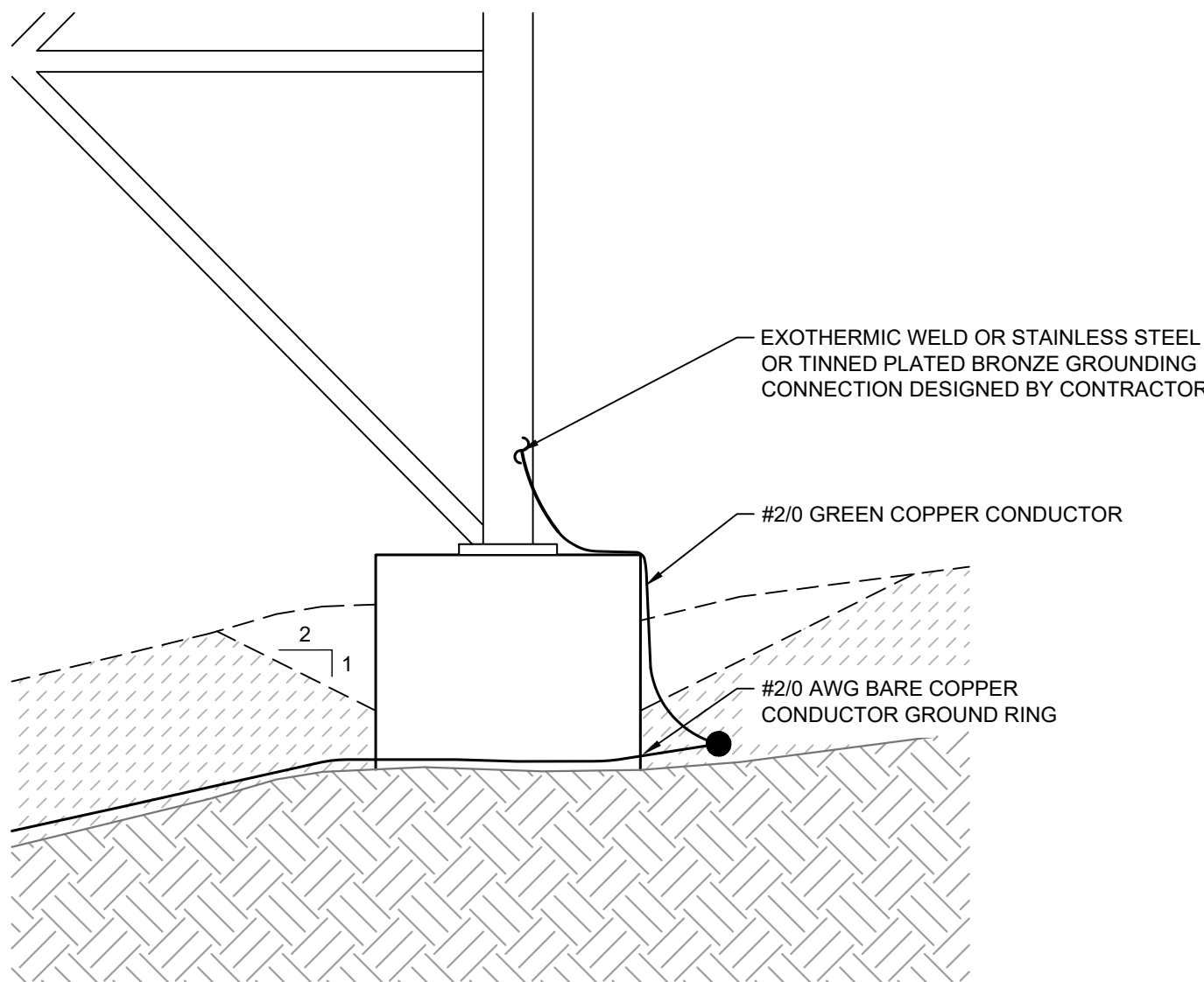
MCTS TOWER SITE
KLEMTU

Drawing - Dessin

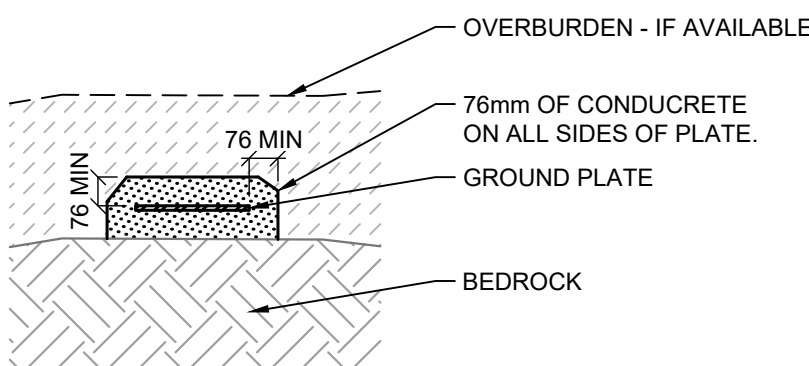
GROUNDING PLAN

drawn - dessiné	date
RH/BS	2022-02-28
designed - conception	date
TE	2022-02-28
checked - vérifié	date
SC	2022-02-28
approved - approuvé	date
AW	2022-02-28

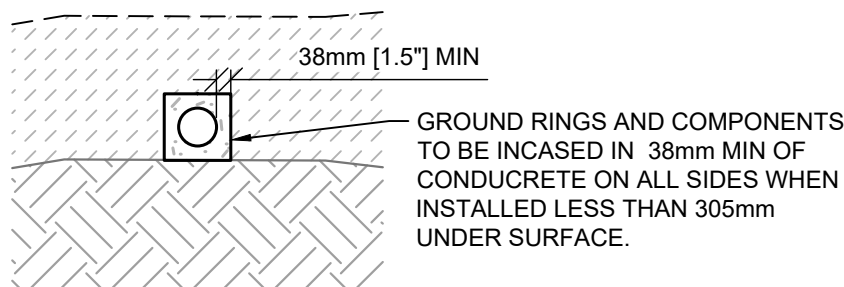
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N6247-20010	AS NOTED
drawing no. - no. dessin	sheet/feuille
WM394-1006	06/08
	rev-rév
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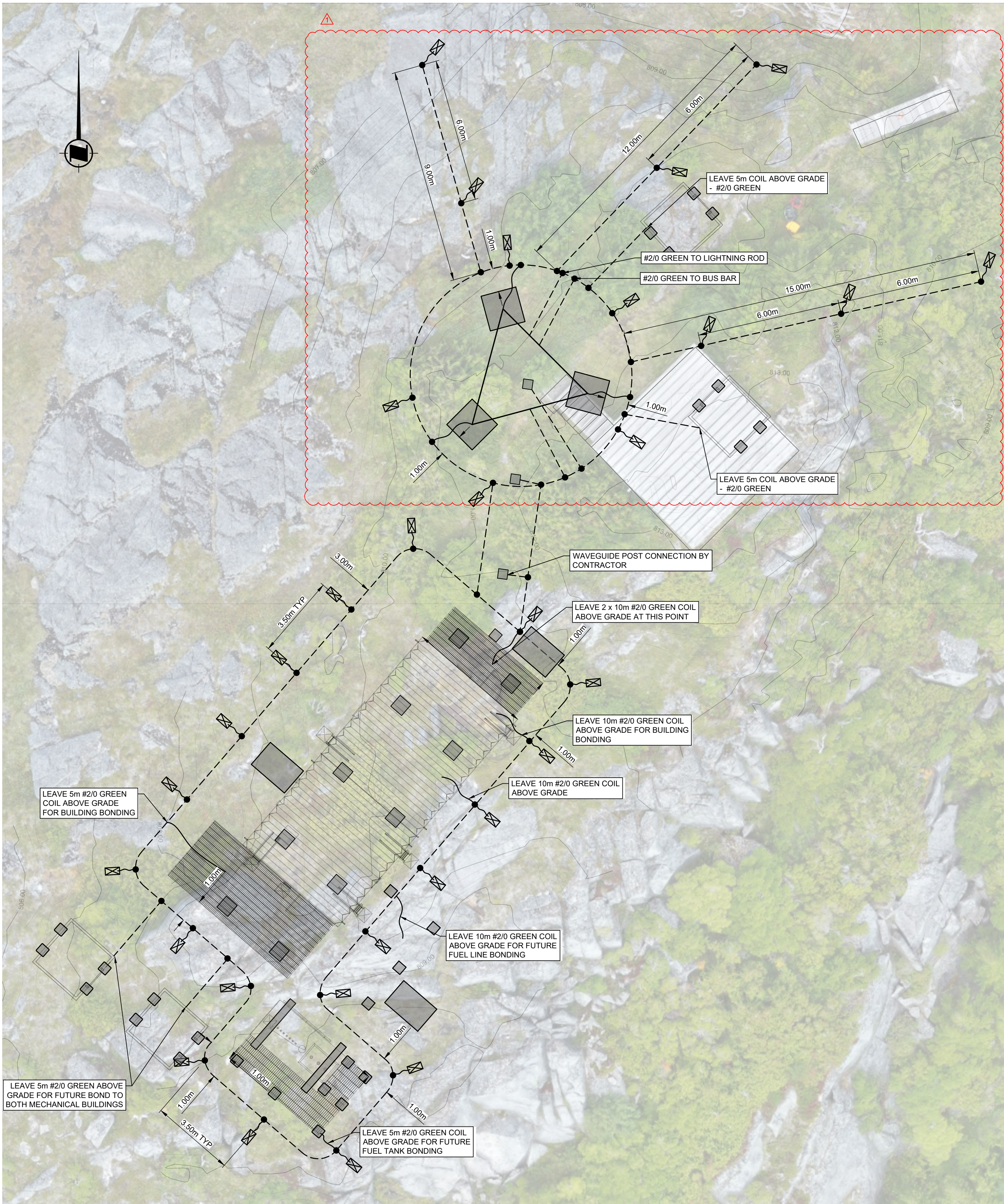
DETAIL 1
SCALE: 1:20 06 TRANSITION TO ABOVE GRADE



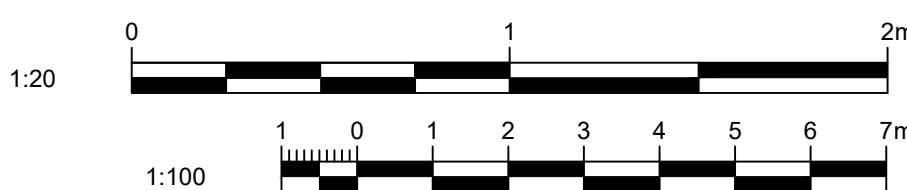
DETAIL 2
SCALE: 1:20 06 GROUND PLATE DETAIL

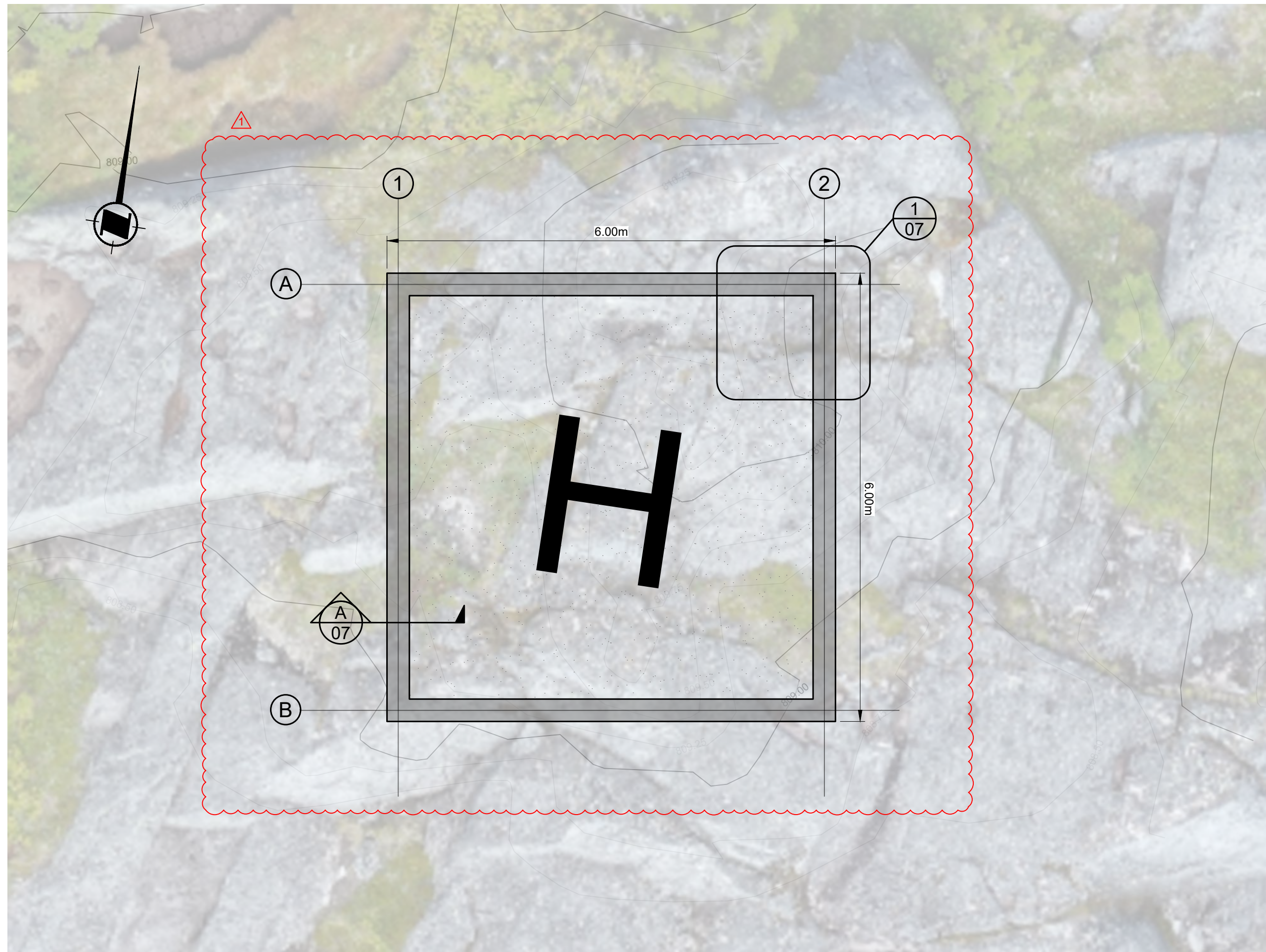


DETAIL 3
SCALE: 1:20 06 TRENCH WITH GEM DETAIL

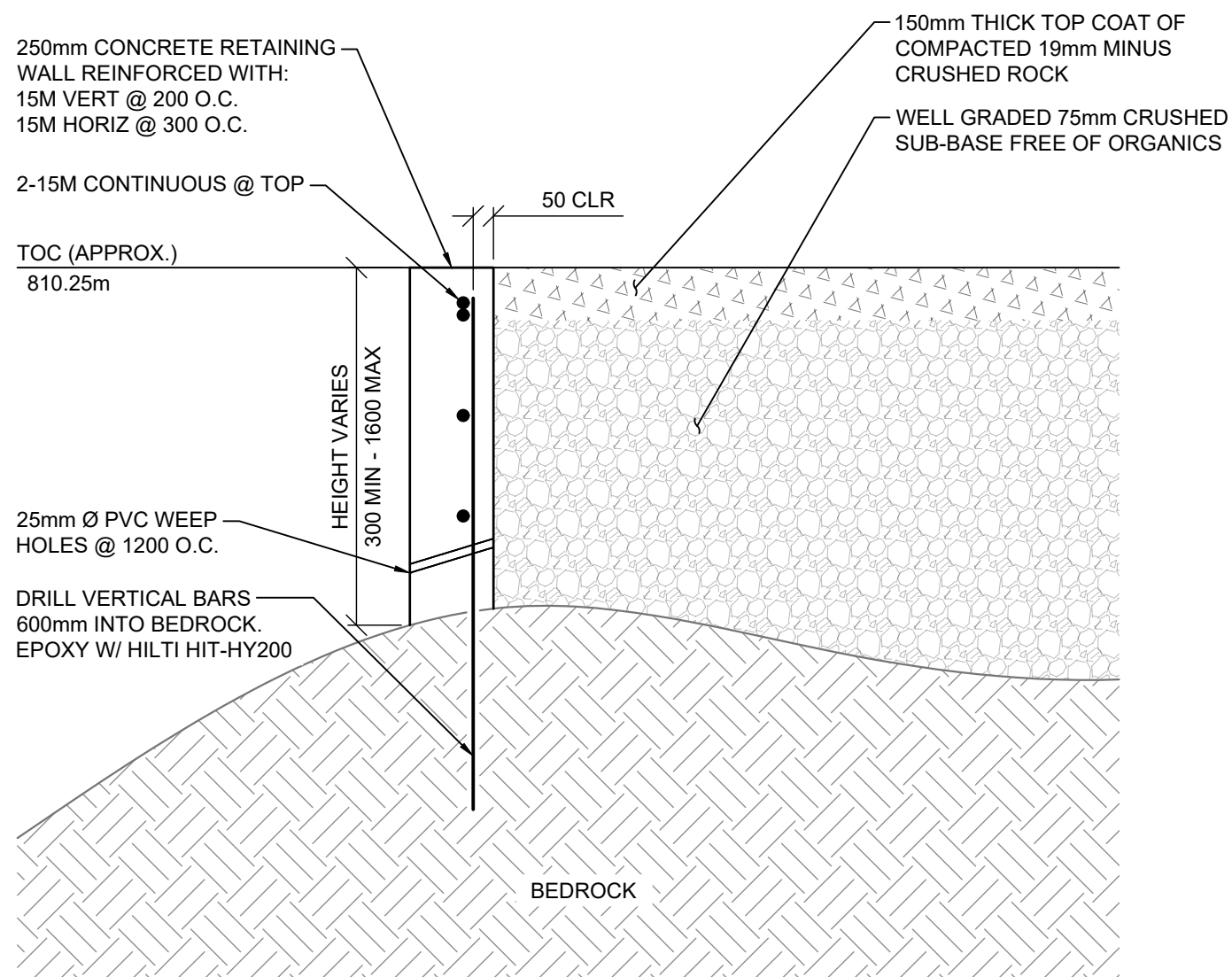


PLAN A
SCALE: 1:100 06 GROUNDING PLAN

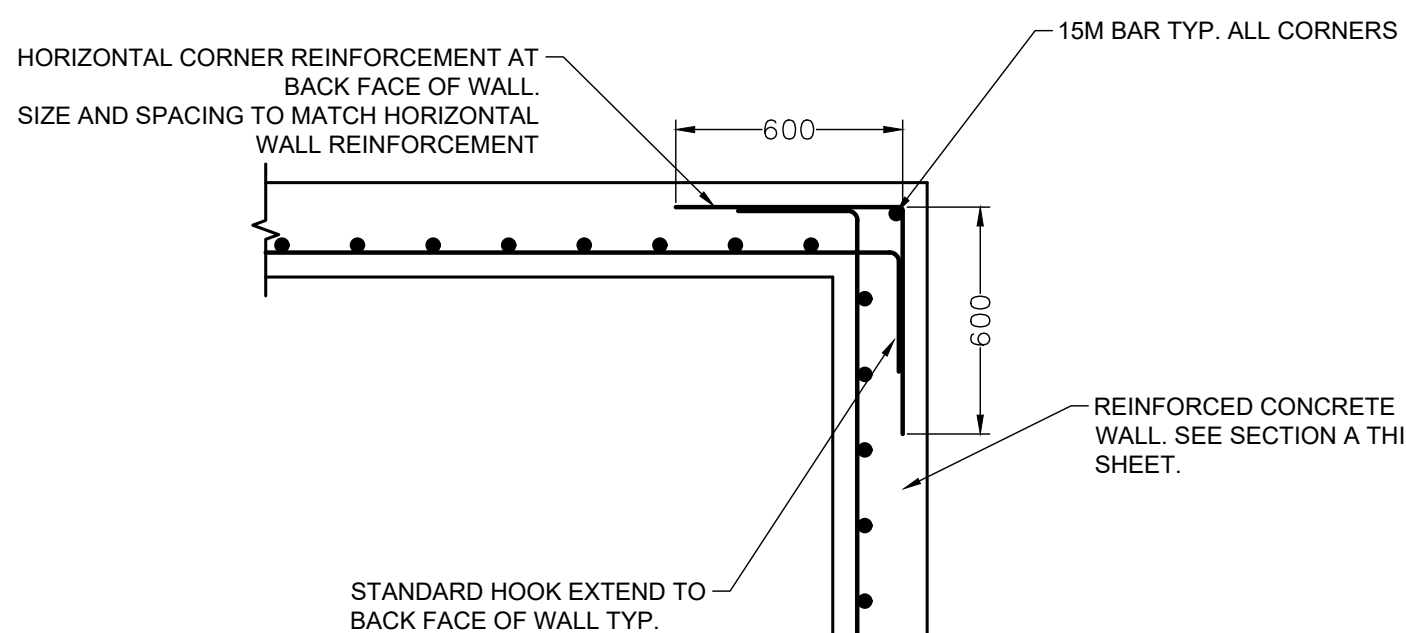




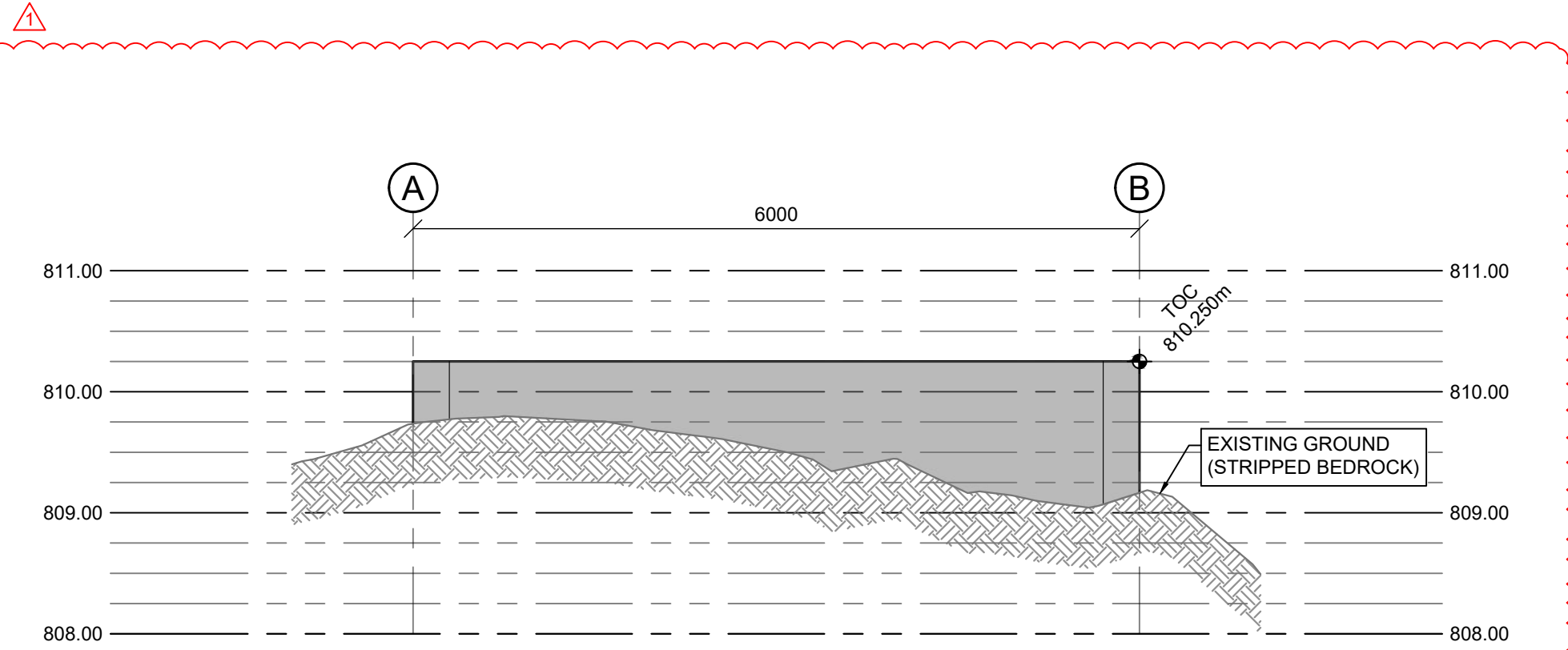
PLAN
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A
07
HELIPAD FOUNDATION



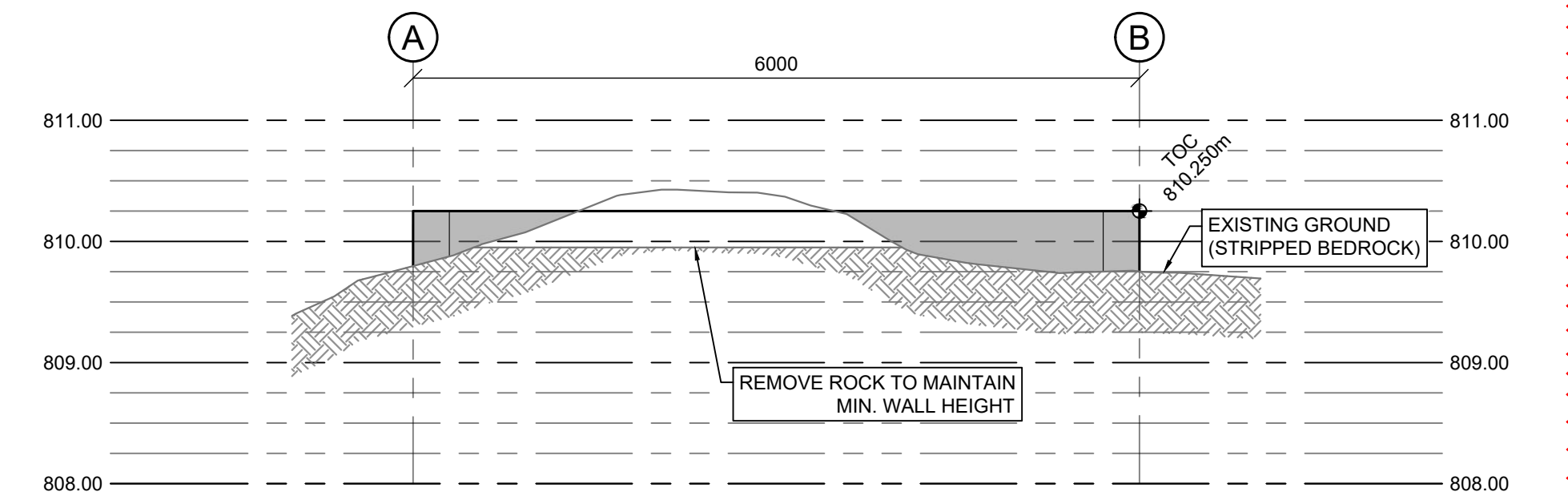
SECTION
SCALE: 1:20
A
07
HELIPAD WALL



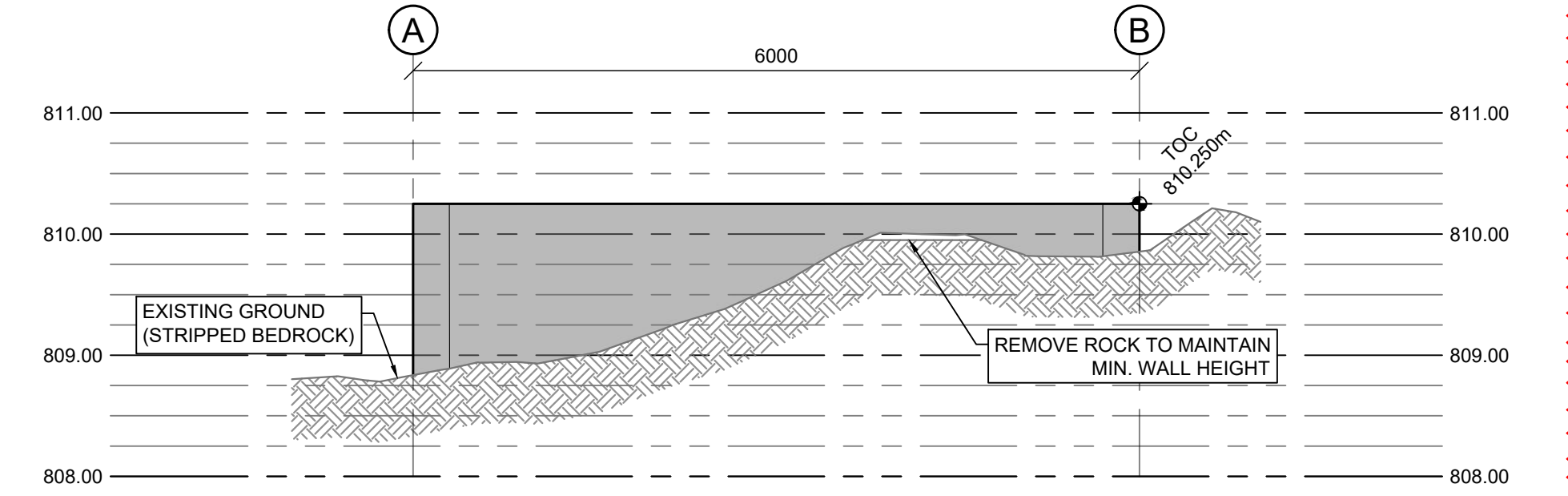
DETAIL
SCALE: 1:20
1
07
HELIPAD CORNER



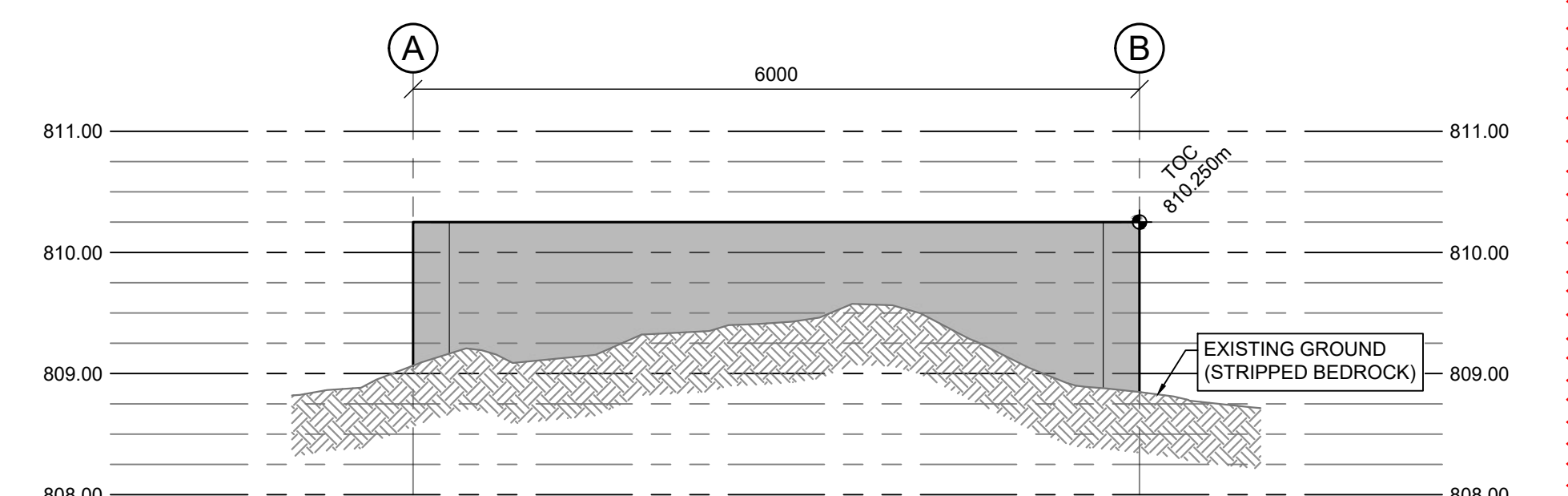
ELEVATION
SCALE: 1:50
A
07
GROUND PROFILE AT GRIDLINE 1



ELEVATION
SCALE: 1:50
B
07
GROUND PROFILE AT GRIDLINE A



ELEVATION
SCALE: 1:50
C
07
GROUND PROFILE AT GRIDLINE 2



ELEVATION
SCALE: 1:50
D
07
GROUND PROFILE AT GRIDLINE B

ISSUED FOR TENDER	RH	2022-05-06
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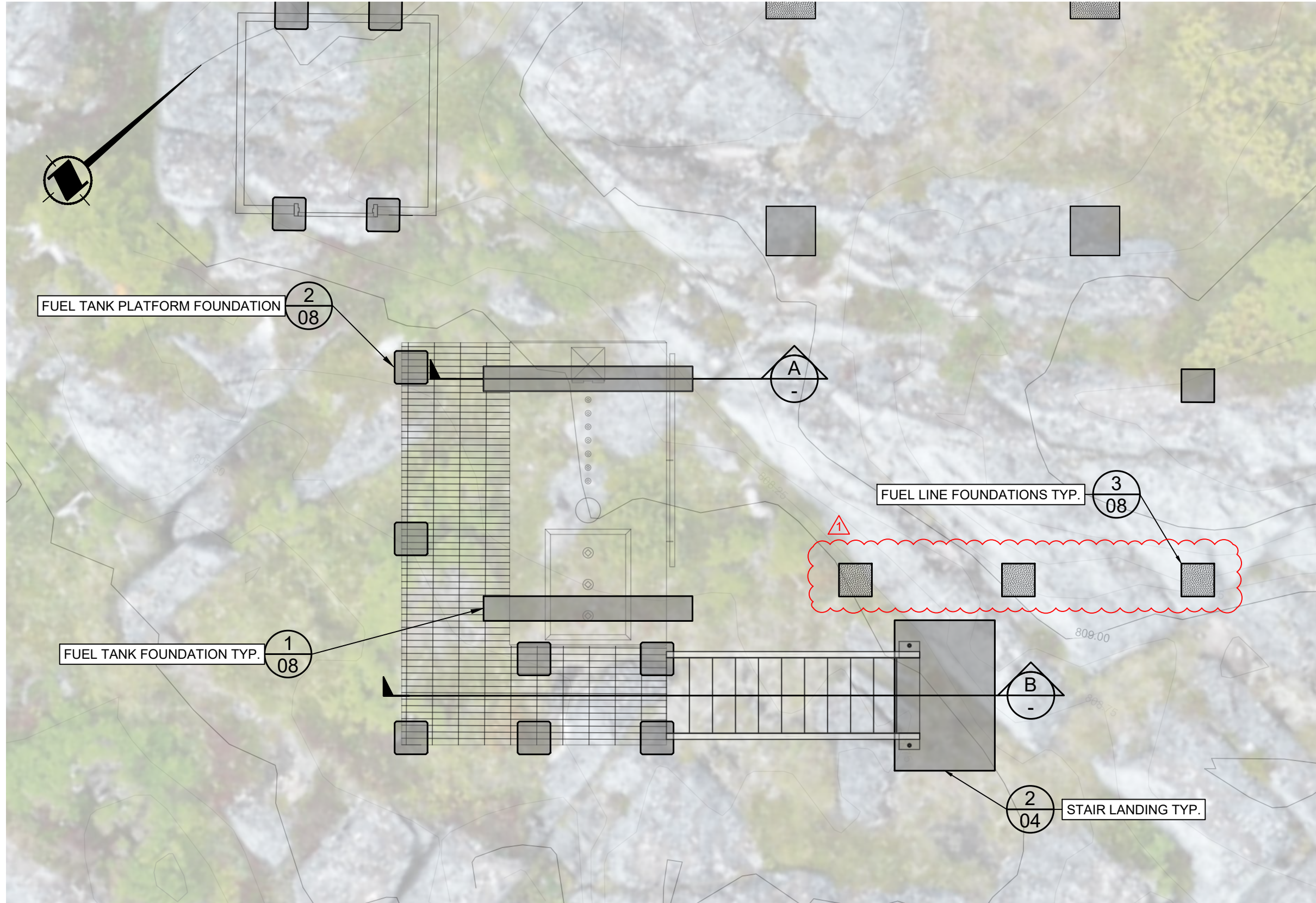
Asset - Actif

MCTS TOWER SITE
KLEMTU

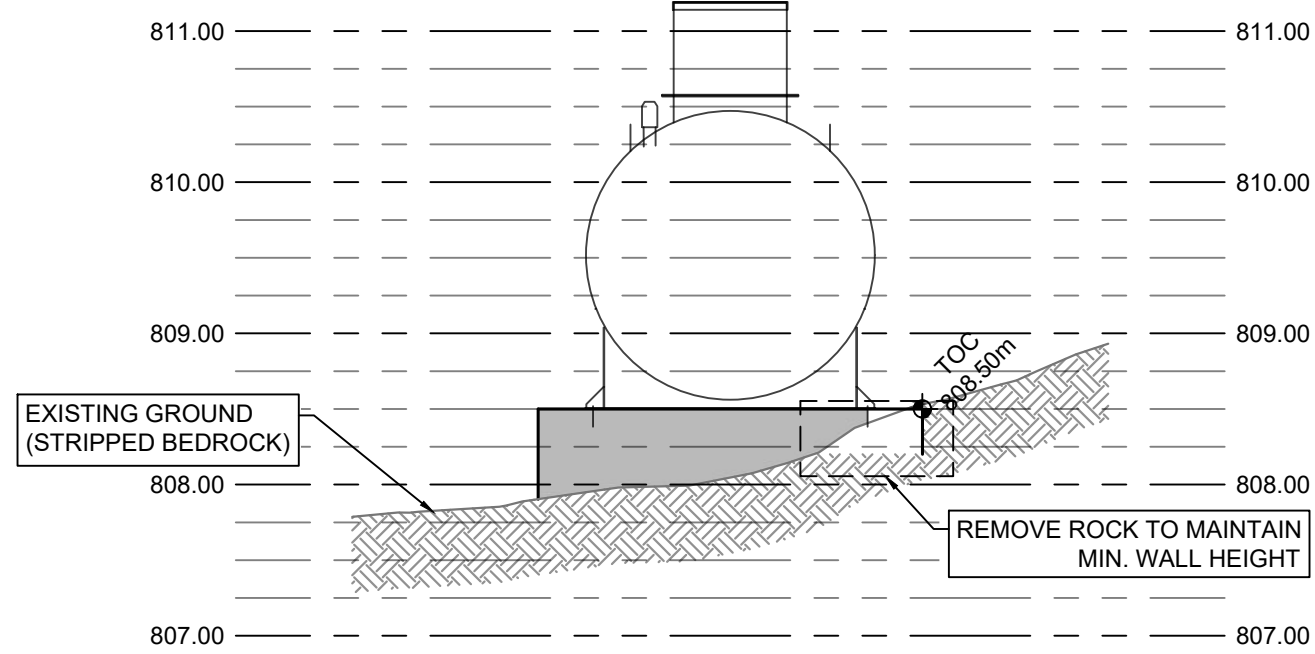
Drawing - Dessin

HELIPAD DETAILS

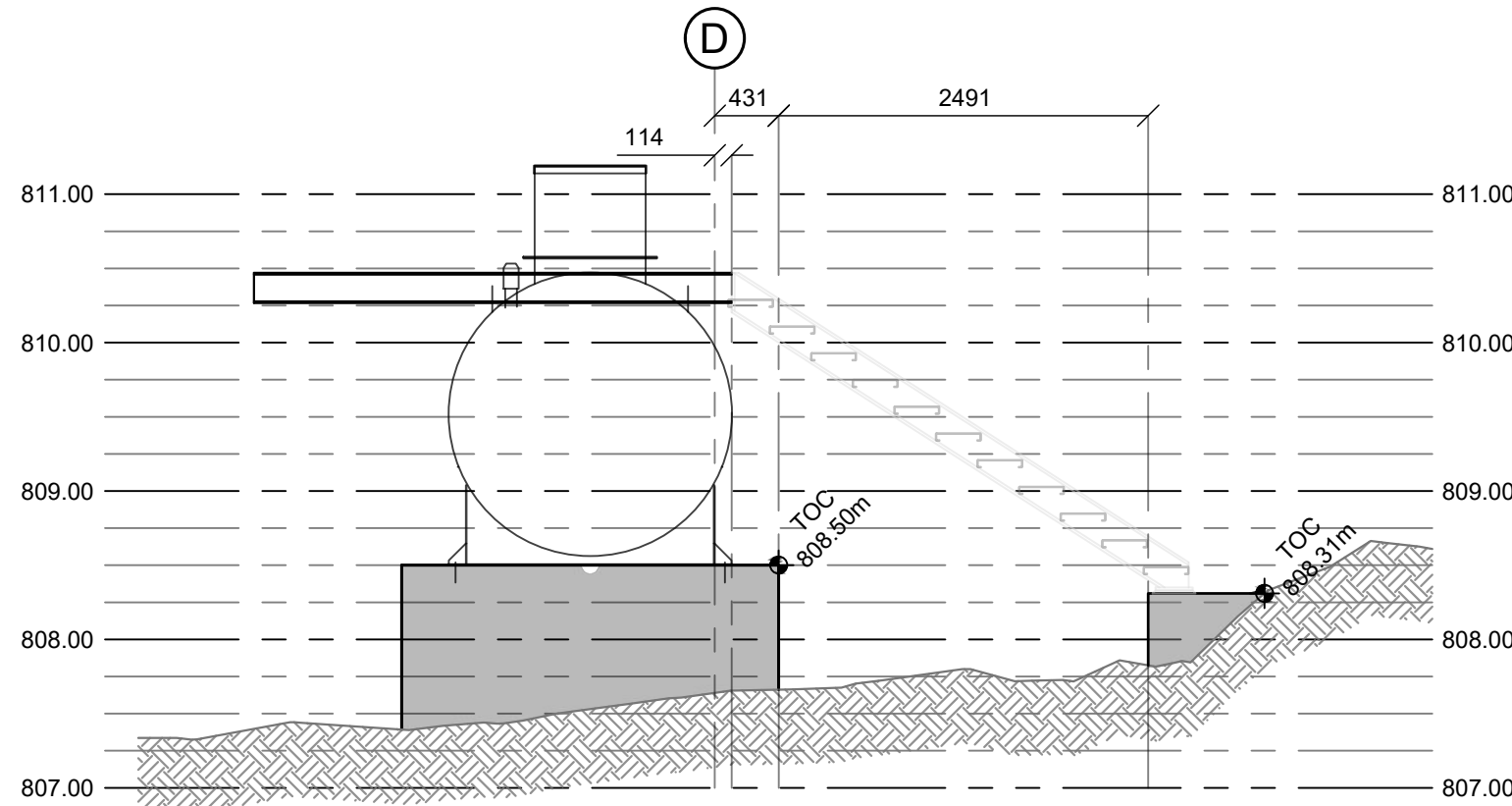
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N6247-20010	AS NOTED
drawing no. - no. dessin	sheet-feuille
WM394-1006	07/08 1



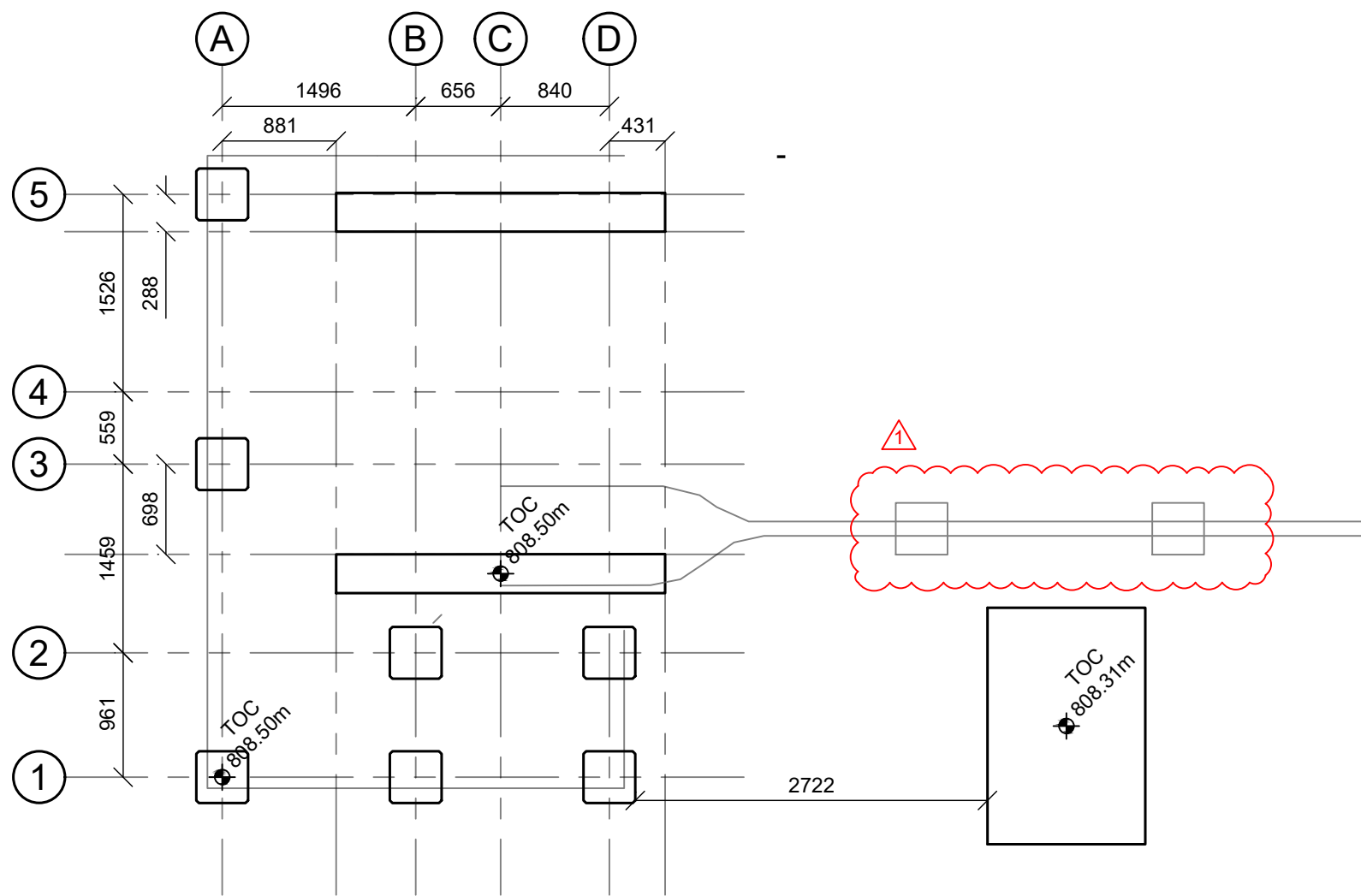
PLAN
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A
08
FUEL TANK LAYOUT



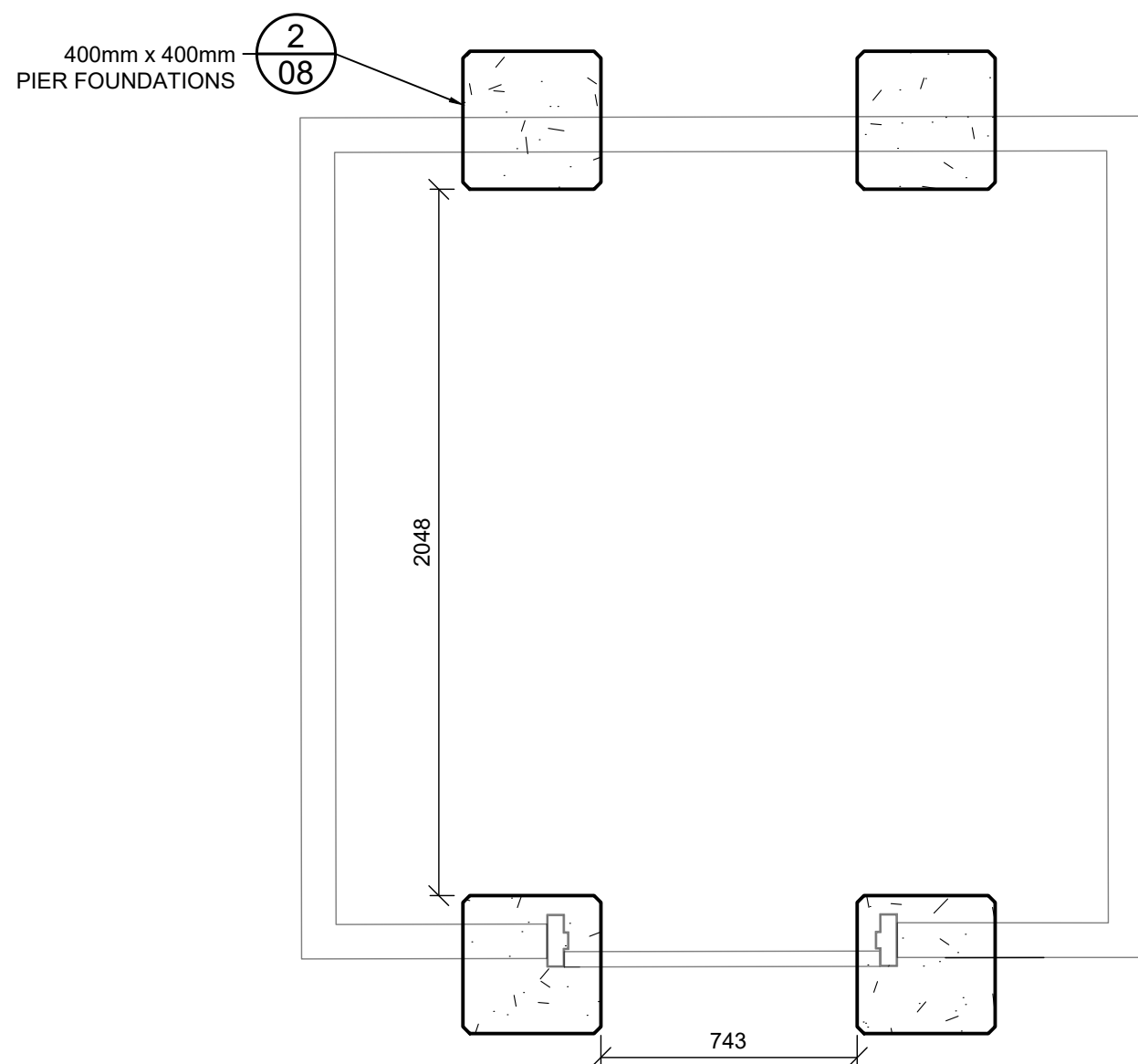
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A
08
NORTHEAST FUEL TANK FOUNDATION



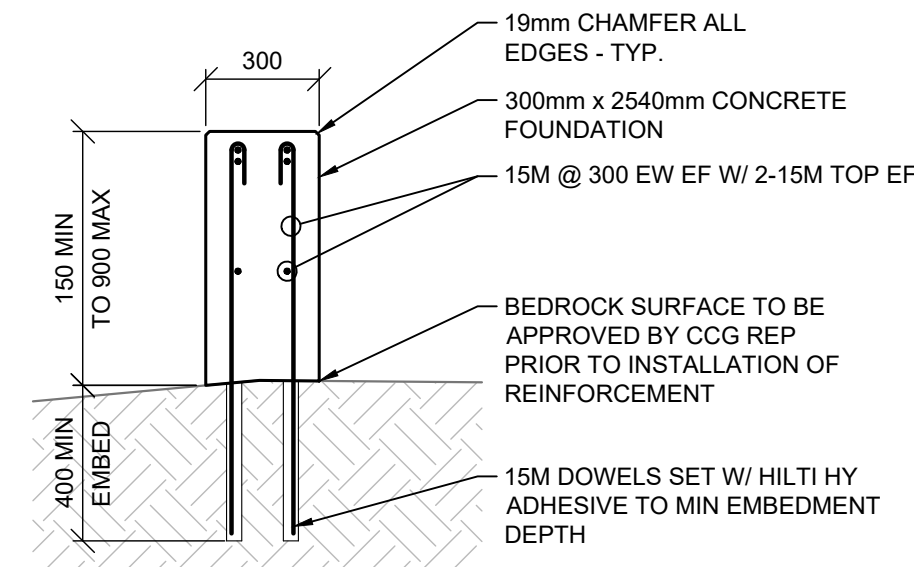
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B
08
PLATFORM STAIRS AND LANDING



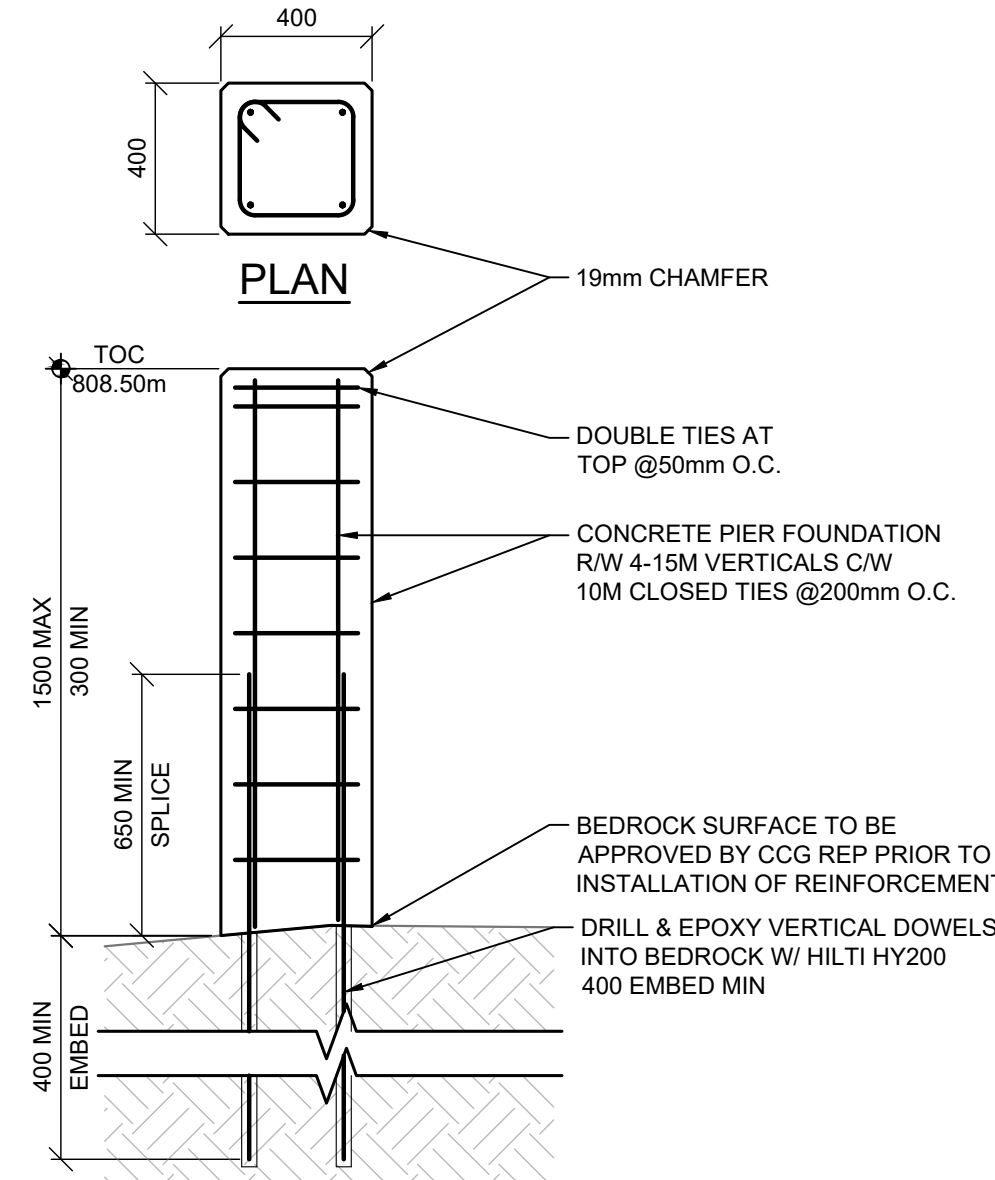
PLAN
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B
08
FUEL TANK AND PLATFORM FOUNDATIONS



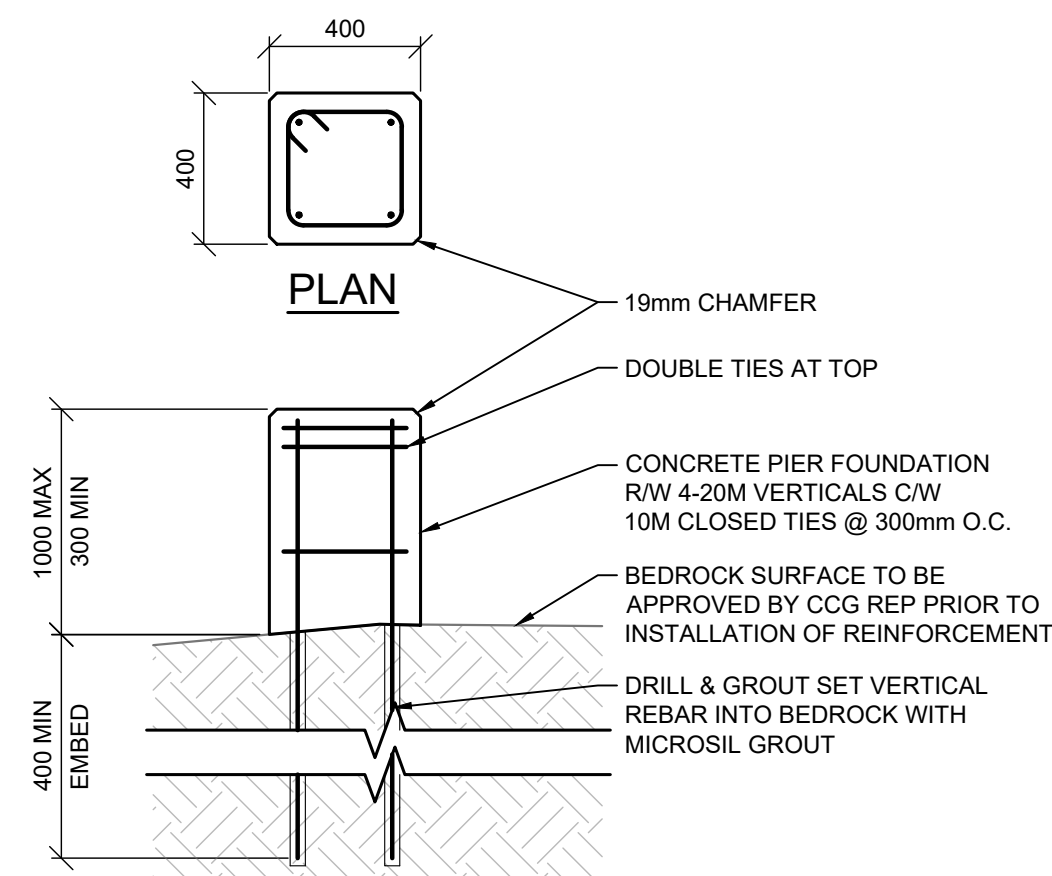
DETAIL
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4
08
TEMPORARY BUILDING FOUNDATION LAYOUT



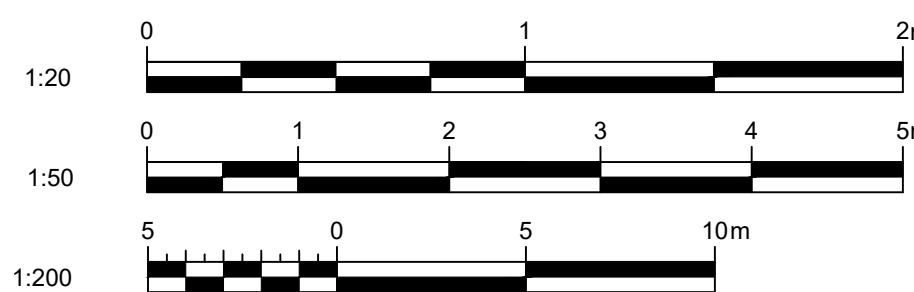
DETAIL
SCALE: 1:20
1
08
FUEL TANK FOUNDATION



DETAIL
SCALE: 1:20
2
08
400mm x 400mm PIER FOUNDATION



DETAIL
SCALE: 1:20
3
08
FUEL LINE PIER FOUNDATION



ISSUED FOR TENDER	RH	2022-05-06
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rev	description	by par date

Asset - Actif

MCTS TOWER SITE
KLEMTU

Drawing - Dessin

FUEL TANK AND TEMPORARY
BUILDING DETAILS

drawn - dessiné	date
RH	2022-02-28
designed - conception	date
BT	2022-02-28
checked - vérifié	date
SC	2022-02-28
approved - approuvé	date
AW	2022-02-28
CCG ref. no. - no. ref. GCC	scale - échelle
N6247-20010	AS NOTED
drawing no. - no. dessin	sheet-feuille rev-rév
WM394-1006	08/08 1