

G. GENERAL NOTES

G1. These notes shall be read in conjunction with all engineering drawings, the contract specification and other written instruction as may be issued. In case of discrepancy, precedence is given to drawings, notes, then specification.

G2. These drawings shall not be used for committing to material orders, or construction until authorized and issued for construction.

G3. Definitions:

UNO = Unless noted otherwise
 Engineer = Nominated representative of Grounded Engineering
 Principal = Chris Mould

G4. Unless noted otherwise:

All dimensions are given in millimetres
 All co-ordinates are to map grid Australia (MGA)
 All levels are given to Australian Height datum (AHD)

G5. All dimensions relevant to setting out and off site work shall be verified by the contractor before construction and fabrication is commenced.

G6. Do not obtain dimensions by scaling from drawings.

G7. Refer all discrepancies to the principal for resolution before proceeding with work.

G8. Workmanship and materials shall be in accordance with the contract specifications, Australian standards (including all amendments), codes of practice and the requirements of any other relevant statutory authorities. All of the above documents are those current (as verified by the contract documents) at the commencement of the contract.

M. STRUCTURAL STEEL NOTES

M1. All workmanship and material shall be in accordance with the contract specification, AS 5100 and AS 1554 except where verified by the contract documents.

M2. Steel components shall conform to the following table UNO

Plate	AS 3678	GRADE 350
Hot rolled sections	AS 3679	GRADE 300 PLUS
CHS >80mm diameter	AS1163	GRADE C350
Iso metric nuts and bolts	AS1111 & AS1112	
High strength steel bolts	AS1252	

M3. Provide steel members made from whole lengths wherever possible. If necessary, make lengths up of sections joined by complete penetration full strength butt welds ground flush. Where proposed, show joints on shop drawings. Ensure members are concentric at connections (gravity or guage lines to intersect)UNO. Accurately pre form parts to avoid force and /or restraint during joining.

M4. Welds are to be full penetration butt welds where specified
 Fillet Welds are to be 6mm continuous using E48XX electrodes or equivalent.

M5. Structural Steel Members must be protected against corrosion in accordance with Table 3.4.4.2 of the BCA.

BOLTING NOTES

M6. UNO connections between two structural steel members shall have a minimum of 2/M16 8.8/S Galvanised bolts in 18mm diameter holes

M7. Bolt type and tightening procedure are designated:

Number - size - strength - grade / tightening procedures

eg. 4-M24 8.8/TB = 4 of 24mm diameter metric high strength structural bolts fully tensioned in bearing mode

M8. The bolting procedure is designated as follows:

4.6/S	Commercial bolts of strength grade 4.6 to AS 1111 tightened using a standard wrench to a snug tight condition.
8.8/S	High strength bolts of strength grade 8.8 to AS 1252 tightened using a standard wrench to a snug tight condition.
8.8/TF	High strength bolts of strength grade 8.8 to AS 1252 fully tensioned to AS 4100 designed as a friction type joint.
8.8/TB	High strength bolts of strength grade 8.8 to AS 1252 fully tensioned to AS 4100 designed as a bearing type joint.

M9. Holding down bolts to be grade 4.6. UNO supply holding down bolts with two class 5 hexagonal head nuts and two extra large flat washers. Hot dip galvanize holding down bolts, nuts and washers to AS 1214. Tie holding down bolt groups rigidly together prior to installation to ensure correct bolt location.

C. CONCRETE NOTES

C1. All workmanship and materials shall be in accordance with AS 3600, AS 3610 and the contract specification.

C2. Where the meaning of abbreviations used is uncertain, refer to engineer for clarification prior to proceeding.

C3. Unless noted otherwise all cement shall comply with AS 3972:

GP	General purpose cement
GB	General purpose blended cement
SR	Sulphate resistant cement

C5. Concrete shall be nominal class concrete in accordance with AS 3600 and AS 1379 and the following requirements:

Structural element	Concrete Grade	Exposure Class	Cement Type
New entry Pavement	N40	B1	GP
Insitu slab & footings	N32	B1	GP

C11. Footings and slabs-on-ground shall have the following minimum concrete cover to all reinforcement:

- 40mm to unprotected ground and externally exposed surface
- 30mm to a membrane in contact with the ground
- 25mm to an internal surface

C12. External elements are those exposed to weather, rain and water penetration and classified B1 UNO.

 Department of Planning and Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No 10683

Granted on the 15 August 2023

Signed M Brown

Sheet No 10 of 30



Director: PAUL LARKIN
 PO Box 220 Jindabyne NSW 2627
 Email: paul@groundedeng.com
 Mobile: 0429 071 387

Certification & Site Parameters

Design Loads in accordance with
 AS1170.1 - Live loads
 AS1170.2 - Wind loads
 AS1170.3 - Snow loads

Wind Class: Vu = 50m/s - N3 (W41N)
 Site Soil Class: S
 Altitude: 1408m AHD
 Ground Snow Load: 8.6 KPa

Designed: Paul Larkin
 Design Checked By:

ANSARY CONSULTING ENGINEERS

Tarek El-Ansary
 BE(Civil) MEngSc(Civil) MIEAust CPEng.

Signed: Date: 5 May 2020



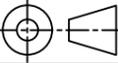
Project / Client:
 Munjarra lodge stair replacement
 lot 704 Bobuck lane Thredbo
 Munjarra lodge

Drawing Title:
 Cover Sheet

Drawn By:
 S.Wakeford
 0429 071 387

Checked : Sheet 1 of 5

DATE: 20-3-2020 SCALE: N/A

DWG # :S00  SIZE:

Revision:A AS 1100 A3

S01 STAIR AND DECK PLAN - Pad Footings
 Class S Site
 Scale 1:50

EXISTING LODGE

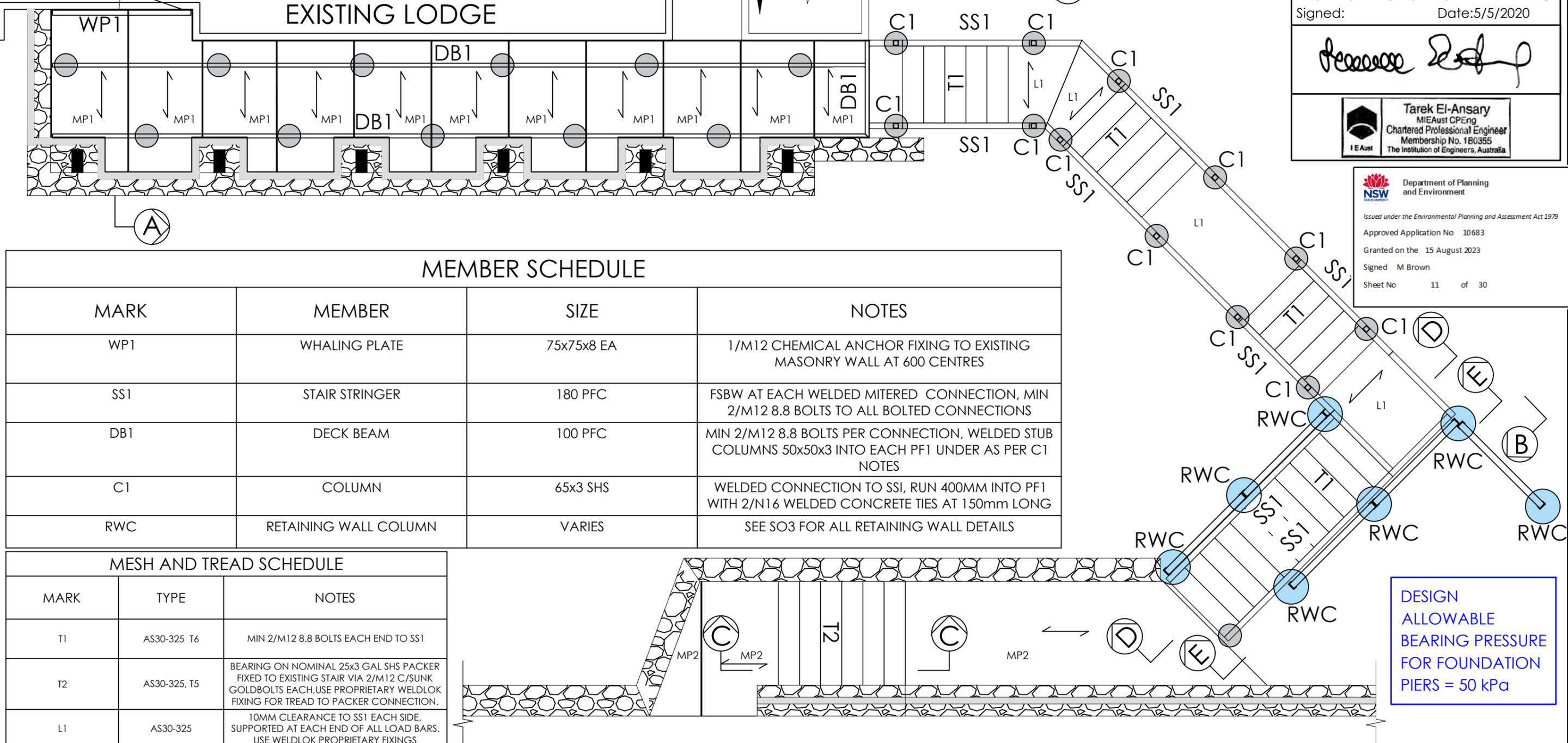
EXISTING RUBBISH STORE
 TO BE DEMOLISHED

DESIGN CHECKED AND CERTIFIED BY
ANSARY CONSULTING ENGINEERS
 Tarek El-Ansary
 BE(Civil) MEngSc(Civil) MIEAust CPEng.
 Signed: _____ Date: 5/5/2020

Tarek El-Ansary

Tarek El-Ansary
 MIEAust CPEng
 Chartered Professional Engineer
 Membership No. 180355
 The Institution of Engineers, Australia

NSW Department of Planning and Environment
Issued under the Environmental Planning and Assessment Act 1979
 Approved Application No 10683
 Granted on the 15 August 2023
 Signed M Brown
 Sheet No 11 of 30



MEMBER SCHEDULE

MARK	MEMBER	SIZE	NOTES
WP1	WHALING PLATE	75x75x8 EA	1/M12 CHEMICAL ANCHOR FIXING TO EXISTING MASONRY WALL AT 600 CENTRES
SS1	STAIR STRINGER	180 PFC	FSBW AT EACH WELDED MITERED CONNECTION, MIN 2/M12 8.8 BOLTS TO ALL BOLTED CONNECTIONS
DB1	DECK BEAM	100 PFC	MIN 2/M12 8.8 BOLTS PER CONNECTION, WELDED STUB COLUMNS 50x50x3 INTO EACH PF1 UNDER AS PER C1 NOTES
C1	COLUMN	65x3 SHS	WELDED CONNECTION TO SSI, RUN 400MM INTO PF1 WITH 2/N16 WELDED CONCRETE TIES AT 150mm LONG
RWC	RETAINING WALL COLUMN	VARIES	SEE SO3 FOR ALL RETAINING WALL DETAILS

MESH AND TREAD SCHEDULE

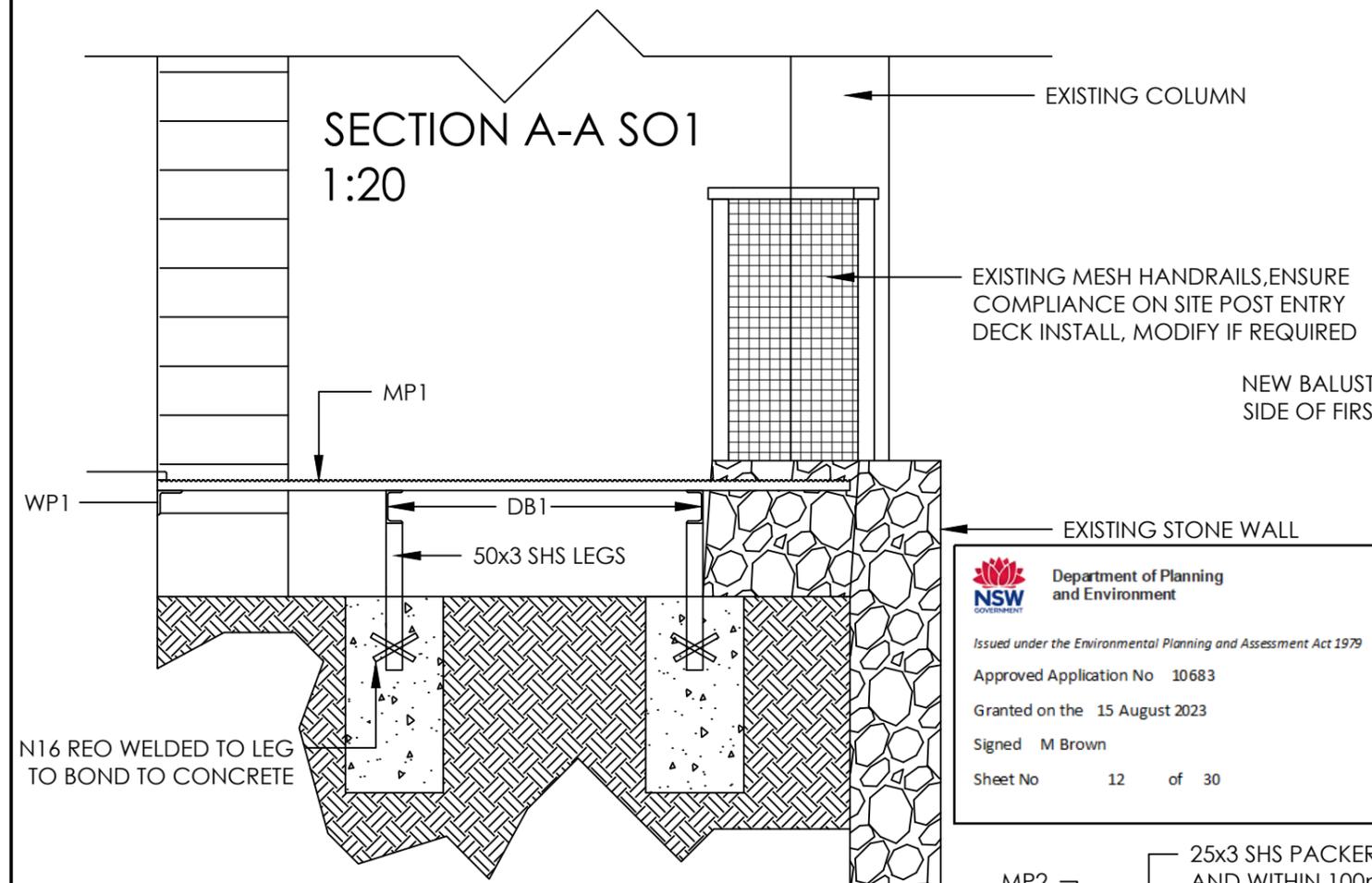
MARK	TYPE	NOTES
T1	AS30-325 T6	MIN 2/M12 8.8 BOLTS EACH END TO SS1
T2	AS30-325, T5	BEARING ON NOMINAL 25x3 GAL SHS PACKER FIXED TO EXISTING STAIR VIA 2/M12 C/SUNK GOLDBOLTS EACH, USE PROPRIETARY WELDLOK FIXING FOR TREAD TO PACKER CONNECTION.
L1	AS30-325	10MM CLEARANCE TO SS1 EACH SIDE, SUPPORTED AT EACH END OF ALL LOAD BARS. USE WELDLOK PROPRIETARY FIXINGS
MP1	AS30-325	FIX TO DB1 WITH PROPRIETARY WELDLOK FIXINGS, MAX CANTILEVER FROM BEARER 350mm IN SPAN DIRECTION
MP2	BS30-325	BEARING ON NOMINAL 25x3 SHS PACKERS RUNNING FULL LENGTH PERPENDICULAR TO MESH SPAN DIRECTION, FIX PACKERS TO CONCRETE WITH M12 C/SUNK GOLDBOLTS AT 900 CENTRES.
←	SPAN DIRECTION	DENOTED THE SPAN DIRECTION OF LOAD BARS IN MESH PANEL

FOUNDATION SCHEDULE

MARK	SIZE	NOTES
●	300 DIAMETER	UNREINFORCED CONCRETE MINIMUM 25 MPa, PIERS MUST SOCKET MINIMUM 200MM INTO UNDISTURBED DECOMPOSED GRANITE
●	450 DIAMETER	UNREINFORCED CONCRETE MINIMUM 25 MPa, PIER DEPTH WILL VARY ACORDING TO HEIGHT OF WALL, SEE SO3 FOR FULL DETAIL

DESIGN ALLOWABLE BEARING PRESSURE FOR FOUNDATION PIERS = 50 kPa

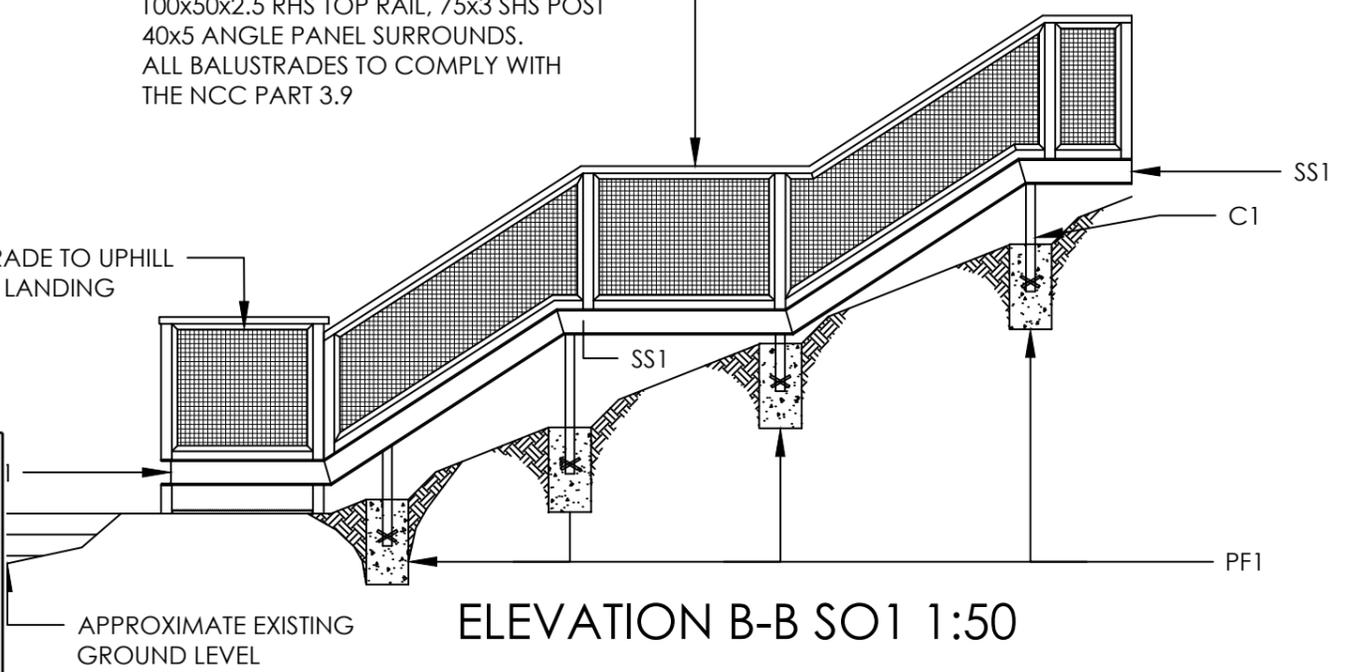
SECTION A-A SO1
 1:20



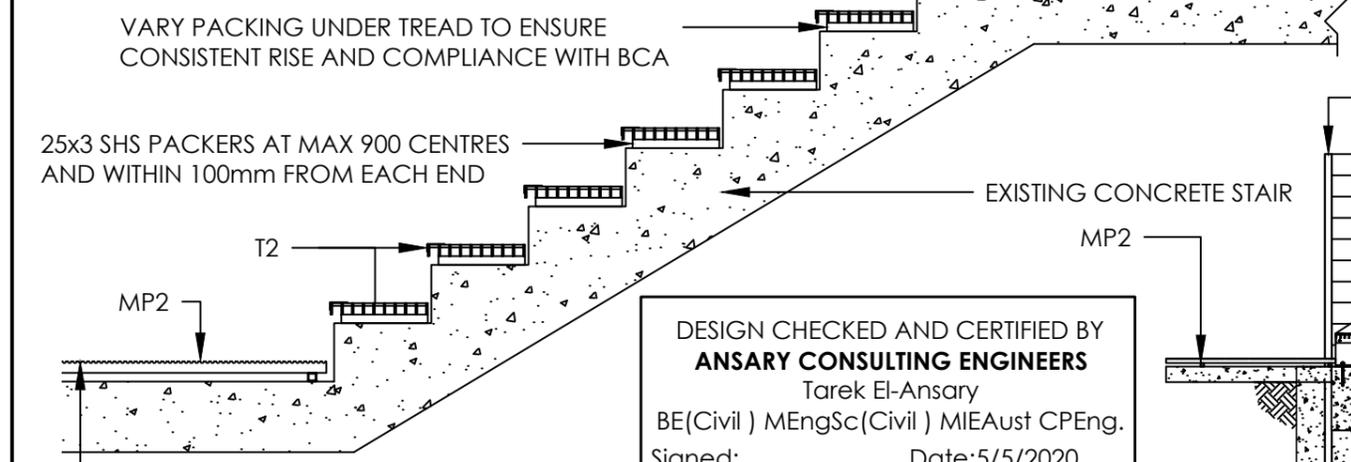
NEW BALUSTRADE TO DOWNHILL SIDE OF STAIR, 25X3 MESH TO MATCH EXISTING 100X50X2.5 RHS TOP RAIL, 75X3 SHS POST 40X5 ANGLE PANEL SURROUNDS. ALL BALUSTRADES TO COMPLY WITH THE NCC PART 3.9

Department of Planning and Environment
 Issued under the Environmental Planning and Assessment Act 1979
 Approved Application No 10683
 Granted on the 15 August 2023
 Signed M Brown
 Sheet No 12 of 30

ELEVATION B-B SO1
 1:50



SECTION C-C SO1
 1:20



VARY PACKING UNDER TREAD TO ENSURE CONSISTENT RISE AND COMPLIANCE WITH BCA

25x3 SHS PACKERS AT MAX 900 CENTRES AND WITHIN 100mm FROM EACH END

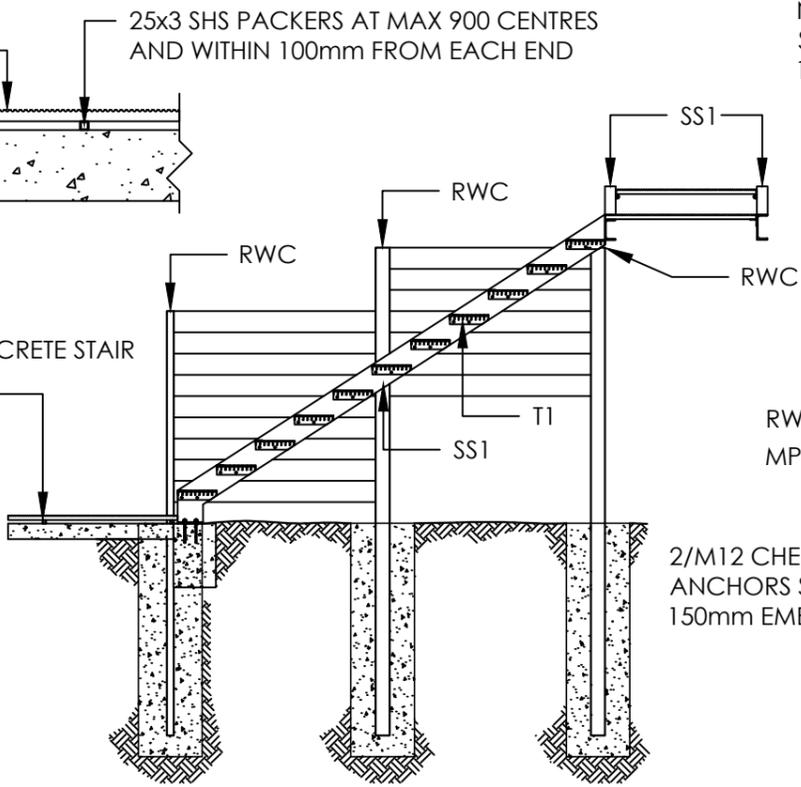
ENSURE COMPLIANCE OF RISER FROM STREET TO MESH LEVEL

DESIGN CHECKED AND CERTIFIED BY
ANSARY CONSULTING ENGINEERS
 Tarek El-Ansary
 BE(Civil) MEngSc(Civil) MIEAust CPEng.
 Signed: *[Signature]* Date: 5/5/2020

Tarek El-Ansary
 MIEAust CPEng
 Chartered Professional Engineer
 Membership No. 180355
 The Institution of Engineers, Australia

NOTE: EXTERNAL STAIRS ALL HAVE SLIP RESISTANT TREADS IN ACCORDANCE WITH AS4586 AND THE NCC. BALUSTRADES SHALL COMPLY WITH THE NCC PART 3.9.

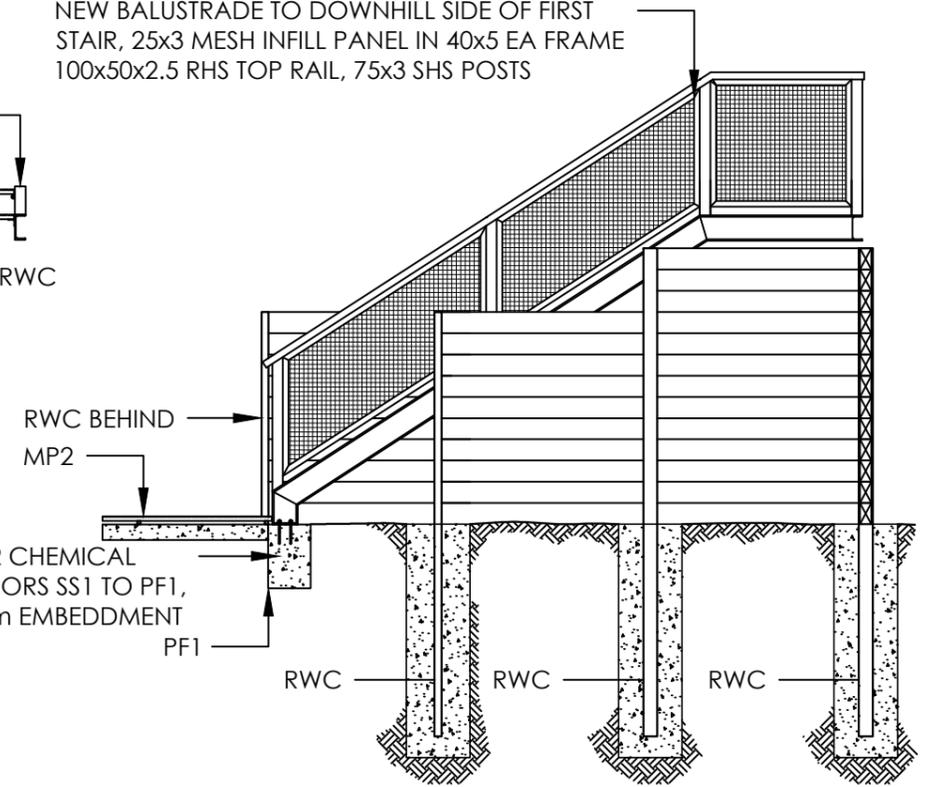
SECTION D-D SO1
 1:50

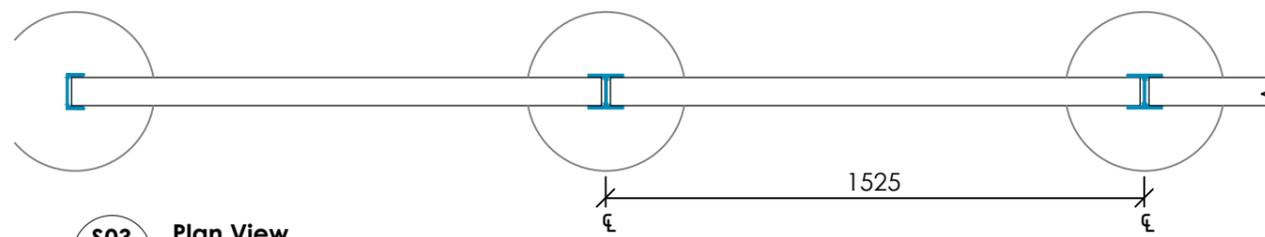


NEW BALUSTRADE TO DOWNHILL SIDE OF FIRST STAIR, 25x3 MESH INFILL PANEL IN 40x5 EA FRAME 100x50x2.5 RHS TOP RAIL, 75x3 SHS POSTS

2/M12 CHEMICAL ANCHORS SS1 TO PF1, 150mm EMBEDDMENT

ELEVATION E-E SO1
 1:50





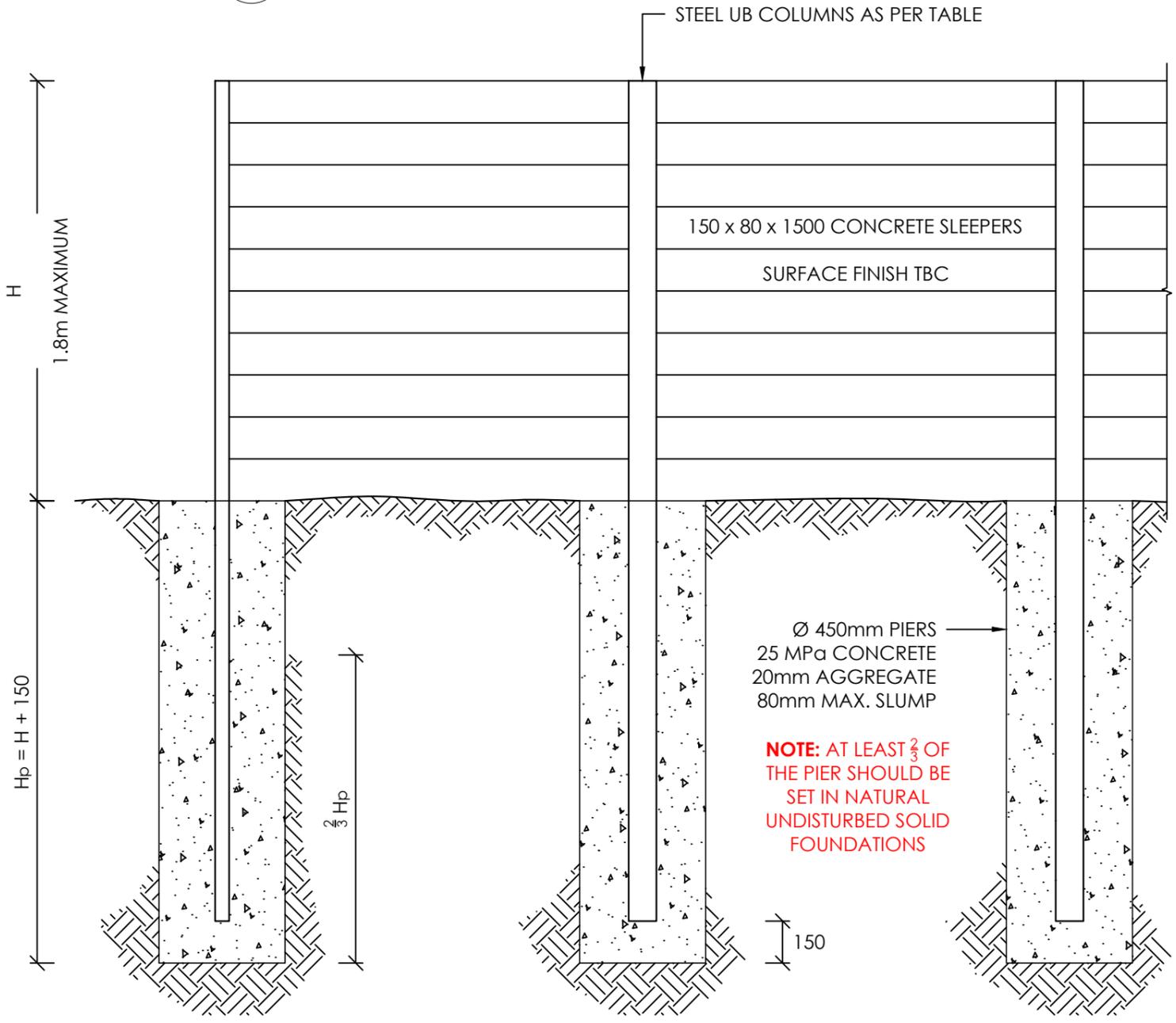
S03 Plan View
Scale 1:20

WALL SCHEDULE		
HEIGHT (mm)	CENTRE COLUMN	END COLUMN
1500 - 1800	150 UC 23.4	150 PFC

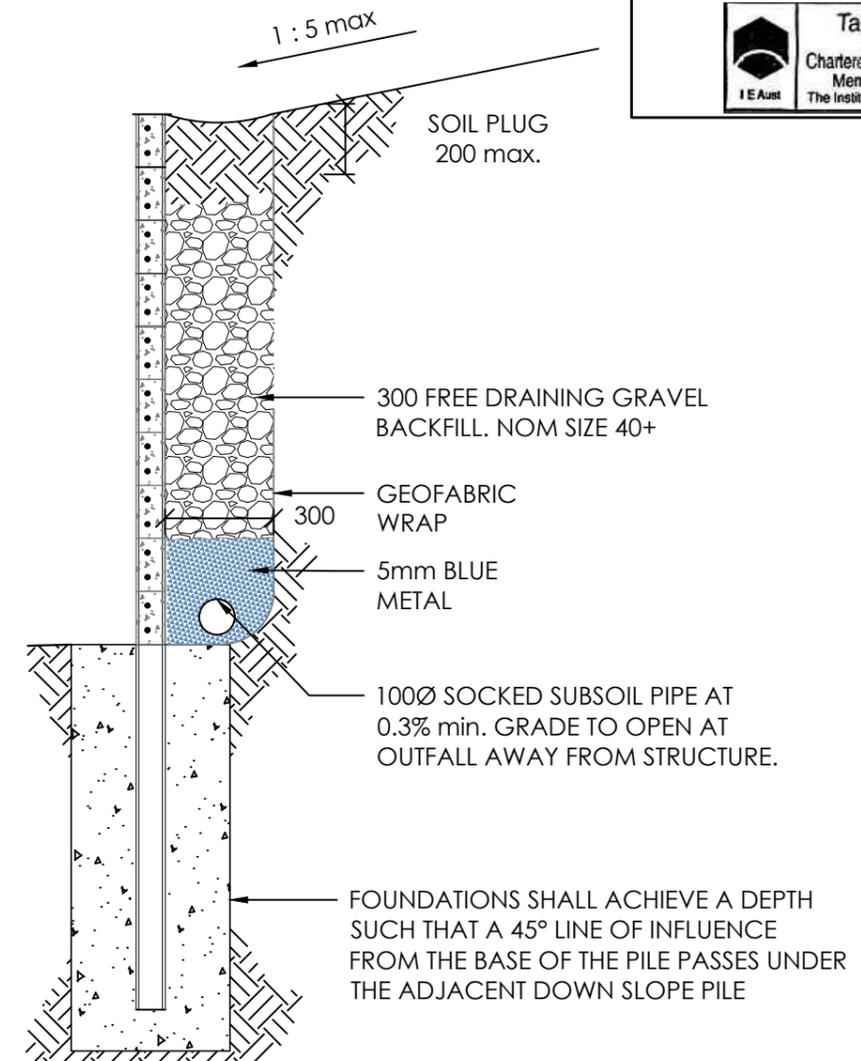
DESIGN CHECKED AND CERTIFIED BY
ANSARY CONSULTING ENGINEERS
 Tarek El-Ansary
 BE(Civil) MEngSc(Civil) MIEAust CEng.
 Signed: _____ Date: 5/5/2020



Tarek El-Ansary
 MIEAust CEng
 Chartered Professional Engineer
 Membership No. 180355
 The Institution of Engineers, Australia



S03 Front Section
Scale 1:20



NSW GOVERNMENT Department of Planning and Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No 10683

Granted on the 15 August 2023

Signed M Brown

Sheet No 13 of 30

S03 Side Section
Scale 1:20



Director: PAUL LARKIN
 Email: paul@groundedeng.com
 Mobile: 0429 071 387
 PO Box 220 Jindabyne NSW 2627

Project: MUNJARRA STAIR REFURB
 LOT 704 BOBUCK LANE
 THREDBO NSW 2625

Client: MUNJARRA LODGE ROB FRASER

Draftsman: S.WAKEFORD
 Contact: 0429 071 387

Checked: TEA DATE: 20-3-20

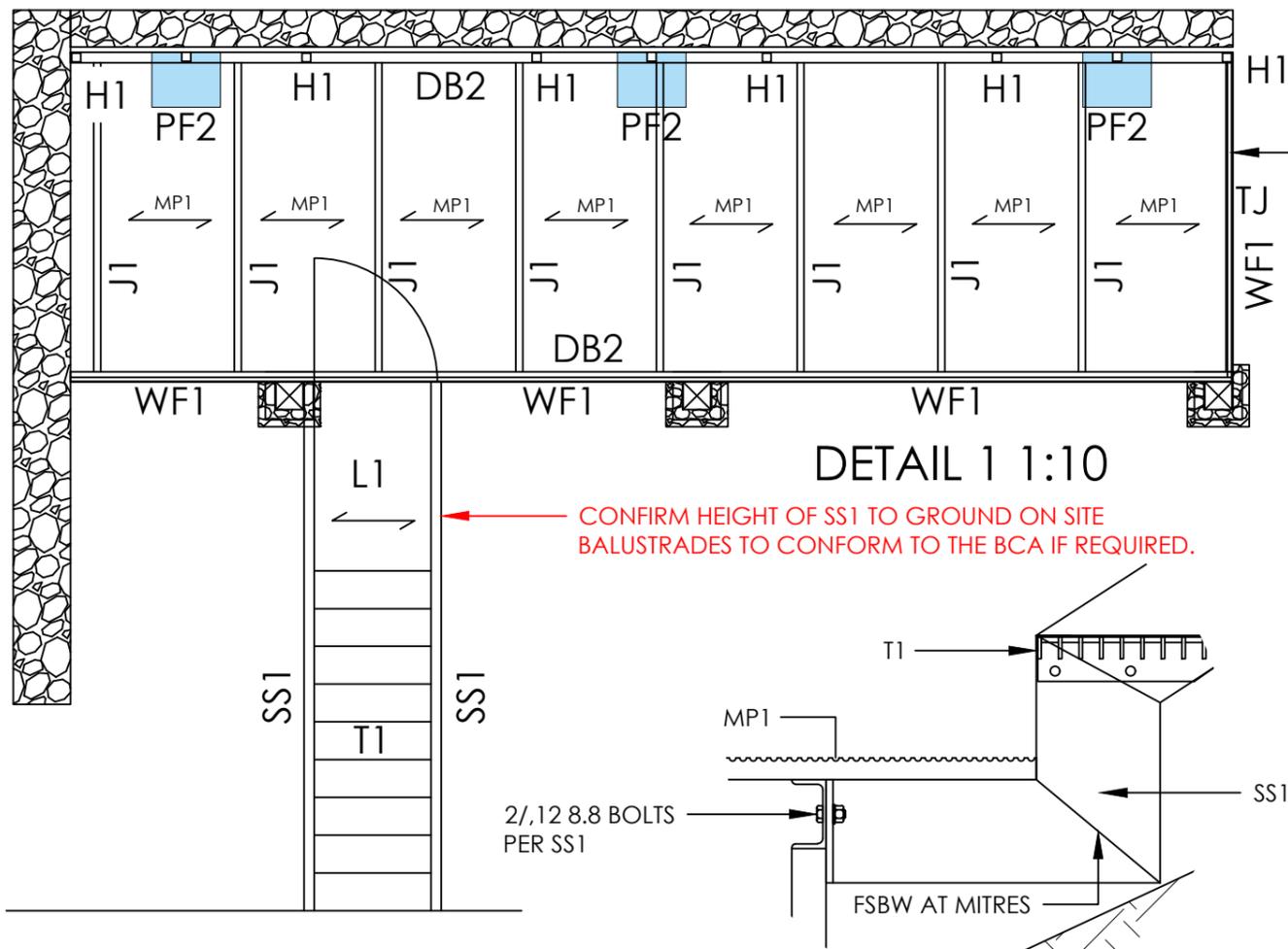
Drawing Title:
 RETAINING WALL DETAILS

Drawing Number: S03 Revision: A Sheet 4 of 5

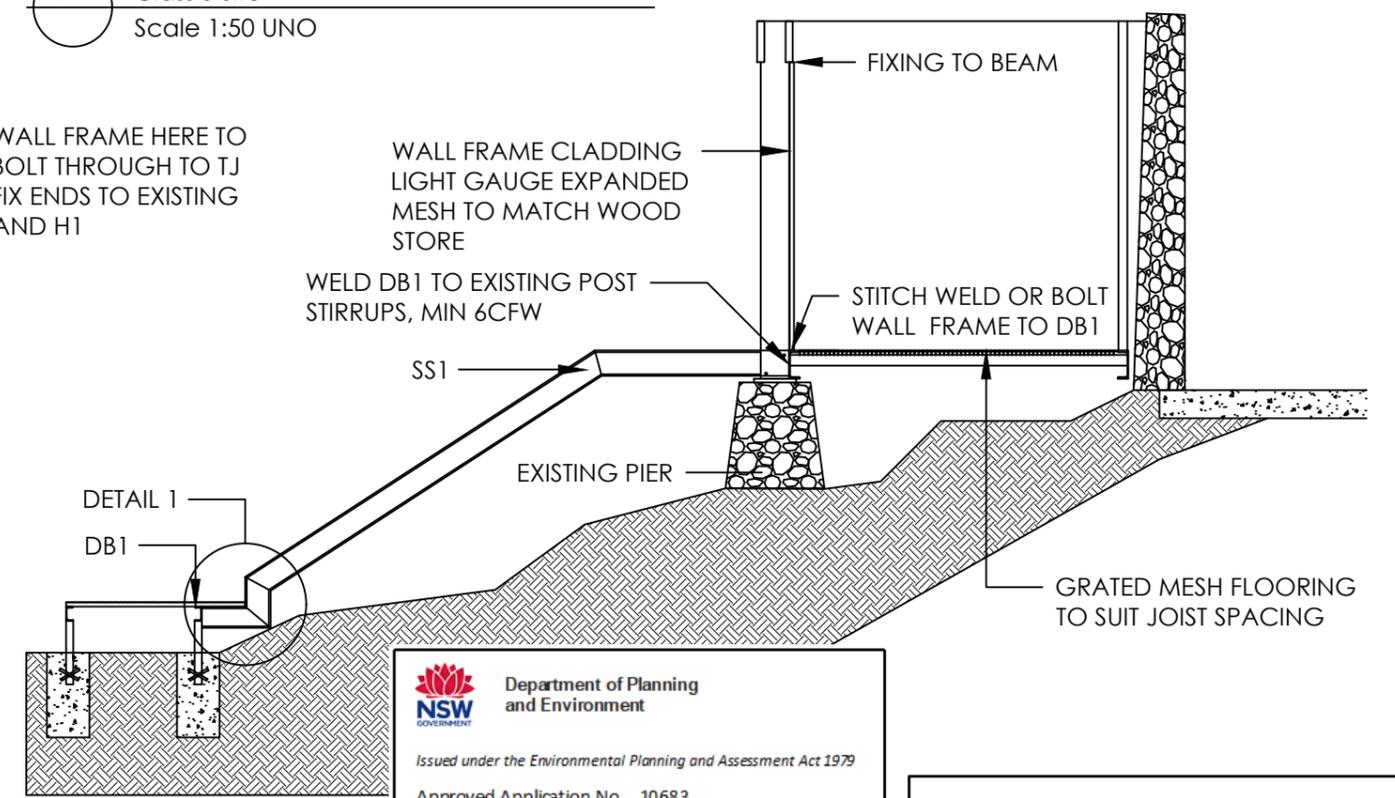
SIZE: A3
 AS 1100
 SCALE: VARIES

BIKE STORAGE CAGE, PLAN AND ELEVATION

S04
Class S Site
Scale 1:50 UNO



DETAIL 1 1:10



NSW Department of Planning and Environment
 Issued under the Environmental Planning and Assessment Act 1979
 Approved Application No 10683
 Granted on the 15 August 2023
 Signed M Brown
 Sheet No 14 of 30

DESIGN CHECKED AND CERTIFIED BY
ANSARY CONSULTING ENGINEERS
 Tarek El-Ansary
 BE(Civil) MEngSc(Civil) MIEAust CPEng.
 Signed: _____ Date: 5/5/2020

Tarek El-Ansary
Tarek El-Ansary
 MIEAust CPEng
 Chartered Professional Engineer
 Membership No. 180355
 The Institution of Engineers, Australia

DESIGN ALLOWABLE BEARING PRESSURE FOR FOUNDATION PIERS = 50 kPa

MEMBER SCHEDULE

MARK	MEMBER	SIZE	NOTES
PF2	PAD FOOTING	500 x 400 x 500 DEEP (NOM)	SOCKET INTO UNDISTURBED DECOMPOSED GRANITE. 75 x 3 SHS COLUMN WITH 8mm BASE PLATE & 2 M12 CHEMSTUDS TO PF2.
SS1	STAIR STRINGER	180 PFC	FSBW AT EACH WELDED MITERED CONNECTION, MIN 2/M12 8.8 BOLTS TO ALL BOLTED CONNECTIONS
DB2	DECK BEAM	200 PFC	MIN 2/M12 8.8 BOLTS PER CONNECTION, 6CFW TO EXISTING PIERS WHERE SPECIFIED
H1	HANGER	65x2 SHS	MIN 2/M12 8.8 BOLTS PER CONNECTION, JOIST HANGERS TO HAVE MIN 6mm PLATE TO EITHER SIDE OF JOIST WITH 2/M12 BOLTS THROUGH
J1	JOIST	75x50x6 UA	MIN 2/M12 BOLTS PER CONNECTION
TJ	TRIMER JOIST	75x50x8 UA	WELDED TO DB2 MEMBERS
WF1	WALL FRAME	30X2 SHS	600mm MAXIMUM STUD CENTERS, BOTTOM PLATE TO BE FIXED TO DB2 1/M12 BOLT AT 600 CENTERS OR STITCH WELDED, TOP PLATE ATTACHED TO EXISTING TIMBER BEAM, 2/T17 BATTEN SCREWS THROUGH 6MM PLATES AT 600 CENTRES

MESH AND TREAD SCHEDULE

MARK	TYPE	NOTES
T1	AS30-325 T6	MIN 2/M12 8.8 BOLTS EACH END TO SS1
L1	AS30-325	10MM CLEARANCE TO SS1 EACH SIDE, SUPPORTED AT EACH END OF ALL LOAD BARS. USE WELDLOK PROPRIETARY FIXINGS
MP1	AS30-325	FIX TO DB1 WITH PROPRIETARY WELDLOK FIXINGS, MAX CANTILEVER FROM BEARER 350mm IN SPAN DIRECTION
←	SPAN DIRECTION	DENOTES THE SPAN DIRECTION OF LOAD BARS IN MESH PANEL



Director: PAUL LARKIN
 Email: paul@groundedeng.com
 Mobile: 0429 071 387
 PO Box 220 Jindabyne NSW 2627

Project: MUNJARRA STAIR REFURB
 LOT 704 BOBUCK LANE
 THREDBO NSW 2625
 Client: MUNJARRA LODGE ROB FRASER

Draftsman: S.WAKEFORD
 Contact: 0429 071 387
 Checked: TEA DATE: 20-3-20

Drawing Title:
BIKE STORAGE CAGE
 Drawing Number: S04 Revision: A Sheet 5 of 5

SIZE: A3
 AS 1100
 SCALE: VARIES