PROPOSED STEEL STAIRS & FOOTINGS FOR NORTHERN & EASTERN ACCESS
ALTITUDE LODGE
SMIGGINS HOLE NSW - STRUCTURAL DESIGN

PRACTICAL ENGINEERING SOLUTIONS P/L

PRACTICALENGINEERS.COM.AU

ACN 157 931 069

STRUCTURAL DRAWING LIST

SHEET NO	TITLE
S01	COVER
S02	SPECIFICATIONS
S03	NORTHERN STAIRS FOOTING PLAN & SPECIFICATIONS
S04	EASTERN STAIRS FOOTING PLAN & SPECIFICATIONS
APPENDIX 1 -	NORTHERN STAIRS STEEL WORK AS DRAWN BY BY ARDVARK STEEL DETAILING #24-1 - GA 01 & GA 02 - DATED - FOR FABRICATION
APPENDIX 2 -	EASTERN STAIRS STEEL WORK AS DRAWN BY BY ARDVARK STEEL DETAILING #24-3 - 01.04.2024

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Drawing Name:

PROPOSED DECK AND STAIRS AT ALTITUDE LODGE SMIGGINS HOLE NSW - STRUCTURAL DESIGN

Client:

Altitude Lodge
care of Lisa Schweitzer

Structural Sheet No. S01 of 4

Scale:	NTS
Date:	08.11.2024
Drawing No:	2021030A_STAIRS COVER PAGE
Sheet Size:	A3
Designed:	O Boaru
Drawn:	A Sferle
Checked:	O Boaru

Approved:

Ovi Boaru MIEAust CPEng

ISSUE	DATE	AMENDMENT
-	-	-

All workmanship and materials to conform with latest edition of the Building Code of Australia and relevant Australian Standards.

The contractor is to confirm all dimensions prior to commencing any works on site.

Refer to specification for other relevant information details.

NOTES:

1. All workmanship and materials to conform with the latest edition of the building code of Australia and relevant Australian standards.

2. It is not implied or guaranteed that all structural designs and details shown in these plans are complete. The scope of the work has been determined by the Engineer based on the information supplied by the client or the clients consultants. The Engineer will provide further designs if required, but is not responsible for any associated cost where design details have not been specifically requested.

3. All dimensions on these plans should be checked on site by the builder and verified using Architectural plans and other contract documents. Discrepancies to be referred to the Architect or Engineer.

4. DO NOT SCALE FROM THESE DRAWINGS

5. The structural details shown in these plans are applicable to the Architectural plans and building elements by BCM
   Plans No. - MATT MURTAGH
   Plan date. - 05.09.2019
   Roof Structure. - NA
   Wall Structure. - NA
   Floor Structure. - Steel Steel Posts and Bearers
6. Reference to UNO = Unless Noted Otherwise & NA = Not Applicable.

7. Handrail construction to BCA requirements.

8. Where disturbed existing building must have bracing and tie-down investigated by the builder and refered to the Engineer for compliance checking.

SITE CONDITIONS:

1. Stability/Vegetation - NA
2. Drainage - NA
3. Soil Type/profile - NA
4. AS2870.1 - 2011 site classification - 'P' -
   see Aitken Rowe Geotechnical dated 23 October 2024
   Engineering report No S24-315
5. AS4055 - 2012 wind classification N3 50m/s (Vh,u).
6. AS1170.3 - 2003 Ground Design Snow Load
   Smiggin Hole for $\frac{1}{150}$ return - Sg = 13.52 KPa

CONCRETE:

1. All concrete works to be in accordance with AS3600 2001

2. Concrete strength cover and durability details (refer AS3600)
   Footings - 32MPa
   External Slab - 40 MPa

3. All reinforcement to be adequately supported on bar chairs in correct positions.

4. Concrete to be formed as required by AS3610 and compacted in accordance with AS3600 and AS3610 to achieve specified or relevant density durability and strength.

5. All reinforced fabric to be lapped one mesh panel plus 25mm and reinforcement bars lapped 40 bar diameters, UNO.

FOOTINGS:

1. Footings and slabs on ground designs conform with AS 2870-2011.

MASONRY:

1. All masonry (clay, stone and concrete) to comply with AS3700 2001. masonry code.

2. Masonry control joints to AS3700.

3. Core fill grout mix for hollow block fill to be 20 MPa.

TIMBER:

1. All timber construction to comply with Australian Framing Code AS1684.2 - 2010.
2. Bracing and tie down detail to comply with AS 1684.2-2010.
3. For external use, use Class 1 or Class 2 HW or Treated Timbers.

STEEL:

1. All steel construction to comply with AS4100 steel structures code and AISC Connection Details.

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Drawing Name:

PROPOSED DECK AND STAIRS AT ALTITUDE LODGE SMIGGINS HOLE NSW - STRUCTURAL DESIGN

Client:

Altitude Lodge
care of Lisa Schweitzer

Structural Sheet No. S02 of 4

Scale:	NTS
Date:	08.11.2024
Drawing No:	2021030A_STAIRS SPECIFICATIONS
Sheet Size:	A3
Designed:	O Boaru
Drawn:	A Sferle
Checked:	O Boaru

Approved:

Ovi Boaru MIEAust CPEng

ISSUE	DATE	AMENDMENT
-	-	-

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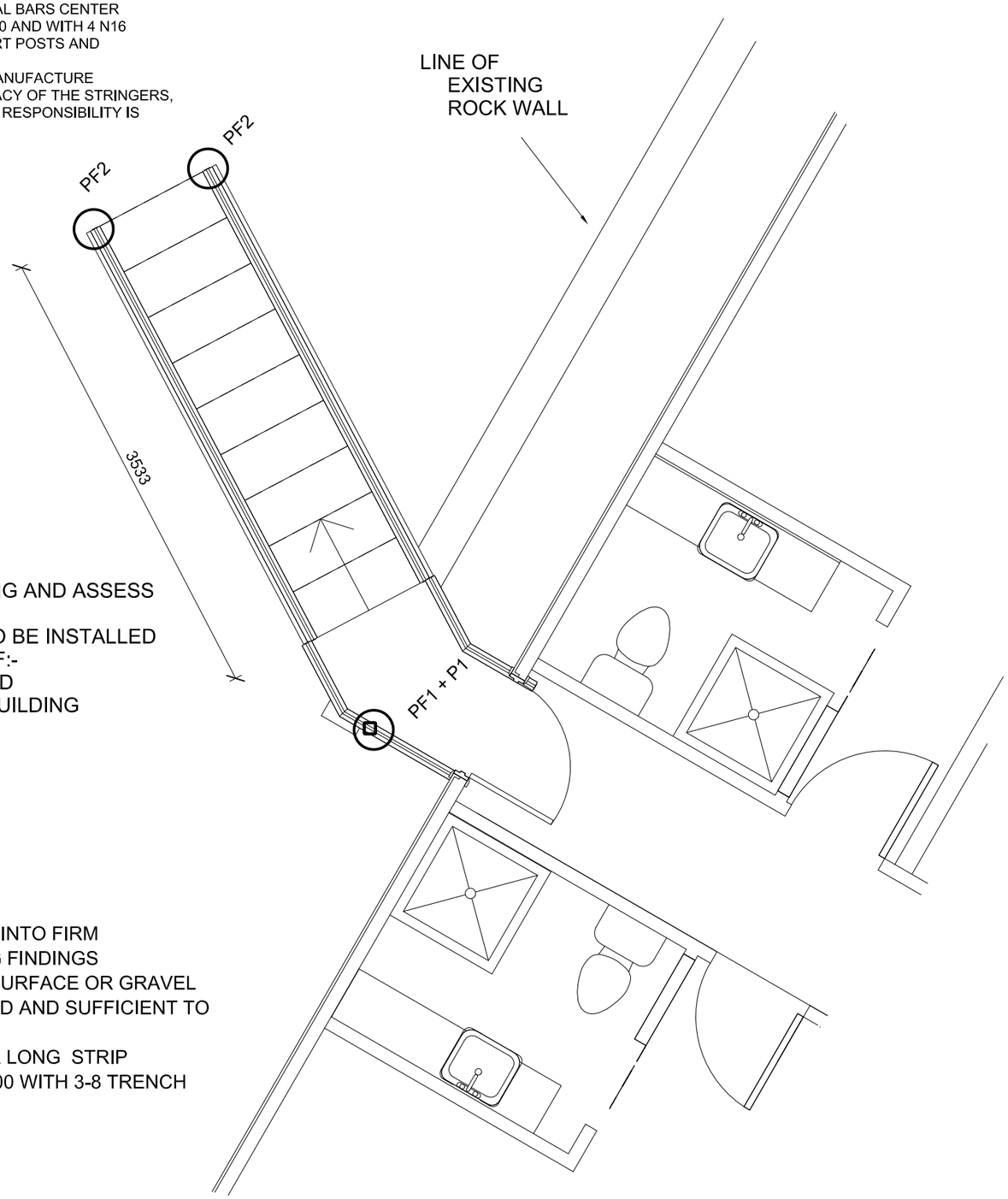
Refer to specification for other relevant information details.

KEY:

* PF1 - 300 Ø PAD FOOTING x MIN 500 DEEP SEE NOTES. BUILT POST P1 - 89 x 3.5 SHS or 76 x 5.9 CHS ON TOP OF PF1 AND BOLT TO STRINGER - 2 M12 MIN.
* PF2 - 300 Ø PAD FOOTING x 1,000 DEEP REINFORCED WITH 2 N12 VERTICAL BARS CENTER
* ON BOTH PAD FOOTINGS PLACE A CAST IN PLATE - 8 mm THICK - 150 X 150 AND WITH 4 N16 PRONGS x 200 LONG PLACED INTO ET CONCRETE. WELD STAIRS SUPPORT POSTS AND STRINGERS TO THESE CAST IN PLATES
* FRAME NORTH STAIRS IN ACCORDANCE WITH APPENDIX 1 AND STEEL MANUFACTURE SPECIFICATIONS. THIS OFFICE SIGNS OFF ON THE STRUCTURAL ADEQUACY OF THE STRINGERS, BALUSTRADE AND STEEL ELEMENTS DRAWN IN APPENDIX 1- EXCEPT NO RESPONSIBILITY IS TAKEN ON DIMENSIONS



* FRAME 1 - AS PER APPENDIX 1.
* BUILDER TO EXPOSE THE ELEMENTS OF THE BUILDING AND ASSESS WITH ENGINEER ADEQUACY OF SUPPORT.
* NEW STRUCTURAL ELEMENTS WILL BE REQUIRED TO BE INSTALLED SUBJECT TO SITE FINDINGS WITH MINIMUM FIXING OF:-
  - 3 M12 COACH BOLTS FOR THE END BALUSTRADE AND
  - 4 M16 BOLTS FOR THE LANDING SUPPORT TO THE BUILDING

NOTES:

1. ENSURE ALL FOOTINGS ARE FOUNDED MINIMUM 150mm INTO FIRM 200 KPa HORISON AS PER GEOTECHNICAL ENGINEERING FINDINGS
2. BUILD FOOTINGS MIN 250 mm ABOVE FINISHED GRASS SURFACE OR GRAVEL AND GRADE SURFACE AWAY FROM FOOTINGS ALL AROUND AND SUFFICIENT TO DRAIN AWAY FROM THE HOUSE SITE.
3. SUBJECT TO PRINCIPAL REQUIREMENTS - A ONE METER LONG STRIP FOOTING ON TOP OF THE TWO PF1 CAN BE BUILT - 300 x 300 WITH 3-8 TRENCH MESH TOP AND BOTTOM AND TIE INTO PF1

For soil conditions see Aitken Rowe Geotechnical
dated 23 October 2024
Engineering report No S24-315

NORTHERN STAIRS - PLAN

SCALE 1:40

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Drawing Name:

PROPOSED DECK AND STAIRS AT ALTITUDE LODGE SMIGGINS HOLE NSW - STRUCTURAL DESIGN

Client:

Altitude Lodge
care of Lisa Schweitzer

Structural Sheet No. S03 of 4

Scale:	AS SHOWN
Date:	08.11.2024
Drawing No:	2021030A_STAIRS NORTH STAIRS FOOTINGS & SPECS
Sheet Size:	A3
Designed:	O Boaru
Drawn:	A Sferle
Checked:	O Boaru

Approved:

Ovi Boaru MIEAust CPEng

ISSUE	DATE	AMENDMENT
-	-	-

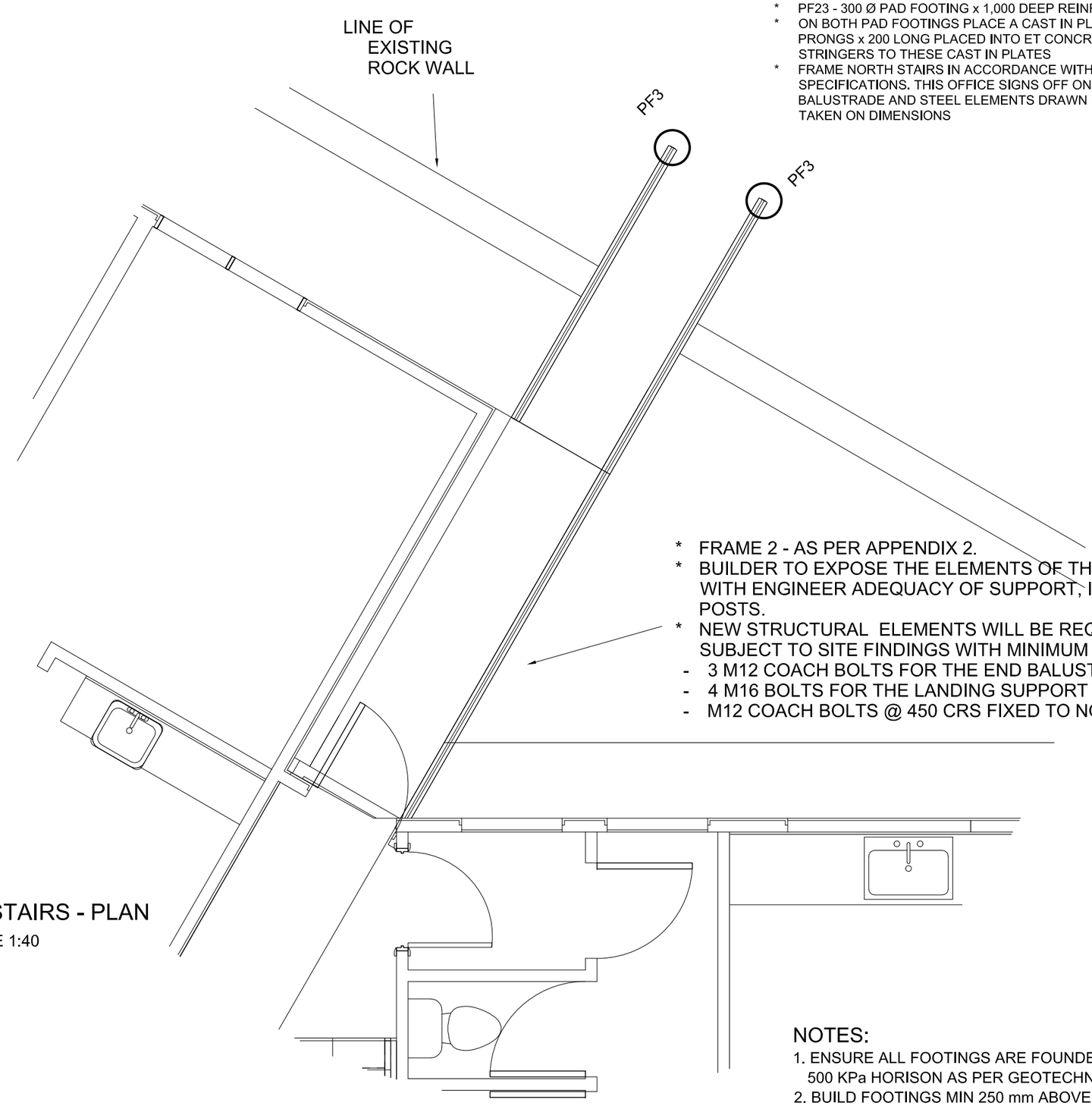
All workmanship and materials to conform with latest edition of the Building Code of Australia and relevant Australian Standards.

The contractor is to confirm all dimensions prior to commencing any works on site.

Refer to specification for other relevant information details.

KEY:

* PF23 - 300 Ø PAD FOOTING x 1,000 DEEP REINFORCED WITH 2 N12 VERTICAL BARS CENTER
* ON BOTH PAD FOOTINGS PLACE A CAST IN PLATE - 8 mm THICK - 150 X 150 AND WITH 4 N16 PRONGS x 200 LONG PLACED INTO ET CONCRETE. WELD STAIRS SUPPORT POSTS AND STRINGERS TO THESE CAST IN PLATES
* FRAME NORTH STAIRS IN ACCORDANCE WITH APPENDIX 2 AND STEEL MANUFACTURER SPECIFICATIONS. THIS OFFICE SIGNS OFF ON THE STRUCTURAL ADEQUACY OF THE STRINGERS, BALUSTRADE AND STEEL ELEMENTS DRAWN IN APPENDIX 1- EXCEPT NO RESPONSIBILITY IS TAKEN ON DIMENSIONS



EASTERN STAIRS - PLAN

SCALE 1:40

* FRAME 2 - AS PER APPENDIX 2.
* BUILDER TO EXPOSE THE ELEMENTS OF THE BUILDING AND ASSESS WITH ENGINEER ADEQUACY OF SUPPORT, INCLUDING EXISTING POSTS.
* NEW STRUCTURAL ELEMENTS WILL BE REQUIRED TO BE INSTALLED SUBJECT TO SITE FINDINGS WITH MINIMUM FIXING OF:-
  - 3 M12 COACH BOLTS FOR THE END BALUSTRADE AND
  - 4 M16 BOLTS FOR THE LANDING SUPPORT TO THE BUILDING
  - M12 COACH BOLTS @ 450 CRS FIXED TO NORTHERN WALL ELEMENTS

For soil conditions see Aitken Rowe Geotechnical
dated 23 October 2024
Engineering report No S24-315

NOTES:

1. ENSURE ALL FOOTINGS ARE FOUNDED MINIMUM 50mm INTO FIRM 500 KPa HORISON AS PER GEOTECHNICAL ENGINEERING FINDINGS
2. BUILD FOOTINGS MIN 250 mm ABOVE FINISHED GRASS SURFACE OR GRAVEL AND GRADE SURFACE AWAY FROM FOOTINGS ALL AROUND AND SUFFICIENT TO DRAIN AWAY FROM THE HOUSE SITE.
3. SUBJECT TO PRINCIPAL REQUIREMENTS - A ONE METER LONG STRIP FOOTING ON TOP OF THE TWO PF1 CAN BE BUILT - 300 x 300 WITH 3-8 TRENCH MESH TOP AND BOTTOM AND TIE INTO PF1

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Drawing Name:

PROPOSED DECK AND STAIRS AT ALTITUDE LODGE
SMIGGINS HOLE NSW - STRUCTURAL DESIGN

Client:

Altitude Lodge
care of Lisa Schweitzer

Structural Sheet No. S04 of 4

Scale:	AS SHOWN
Date:	08.11.2024
Drawing No:	2021030A_STAIRS
	EASTERN STAIRS FOOTINGS & SPECS
Sheet Size:	A3
Designed:	O Boaru
Drawn:	A Sferle
Checked:	O Boaru

Approved:

Ovi Boaru MIEAust CPEng

ISSUE	DATE	AMENDMENT
-	-	-

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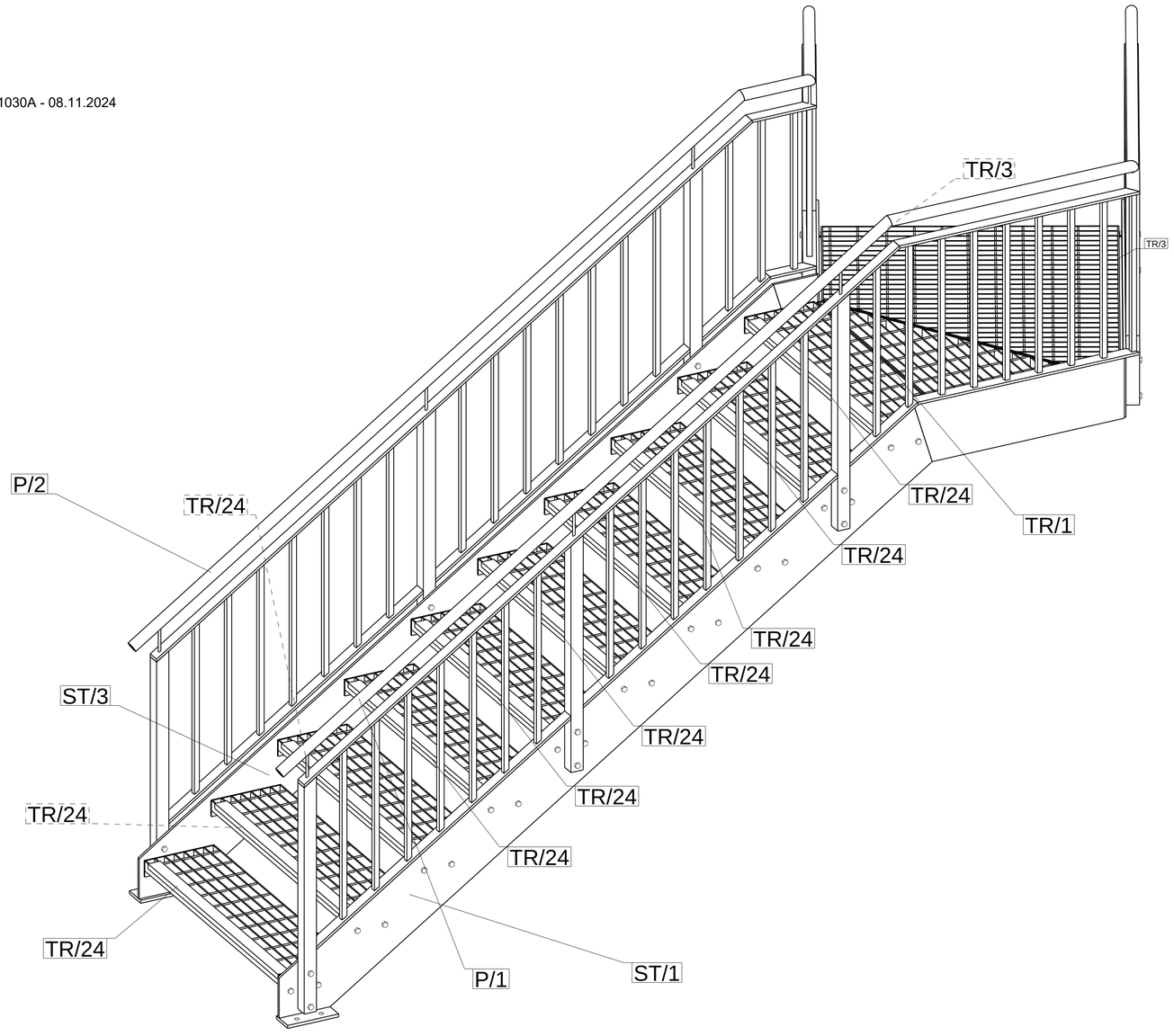
The contractor is to confirm all dimensions prior to commencing any works on site.

Refer to specification for other relevant information details.

Appendix 1 - PES Design 2021030A - 08.11.2024



ARDVARK STEEL DETAILING
ABN : 35118171190
393 Abington Park Rd,Moonbah
Tel : 0412 212 124

REV	DATE	DESCRIPTION
A		FOR FABRICATION

GENERAL NOTES UON

1. MATERIAL TO AS 4100 GR. 300
2. FABRICATION TO AS 4100
3. 6mm CFW, SP CATEGORY
4. RAD 11mm AT COPE CORNERS
5. ALL HOLES Ø22mm
6. ALL BOLTS M20 8.8/S
7. HOLES ARE LOCATED ON OR ABOUT C/L
8. THIRD ANGLE PROJECTION USED

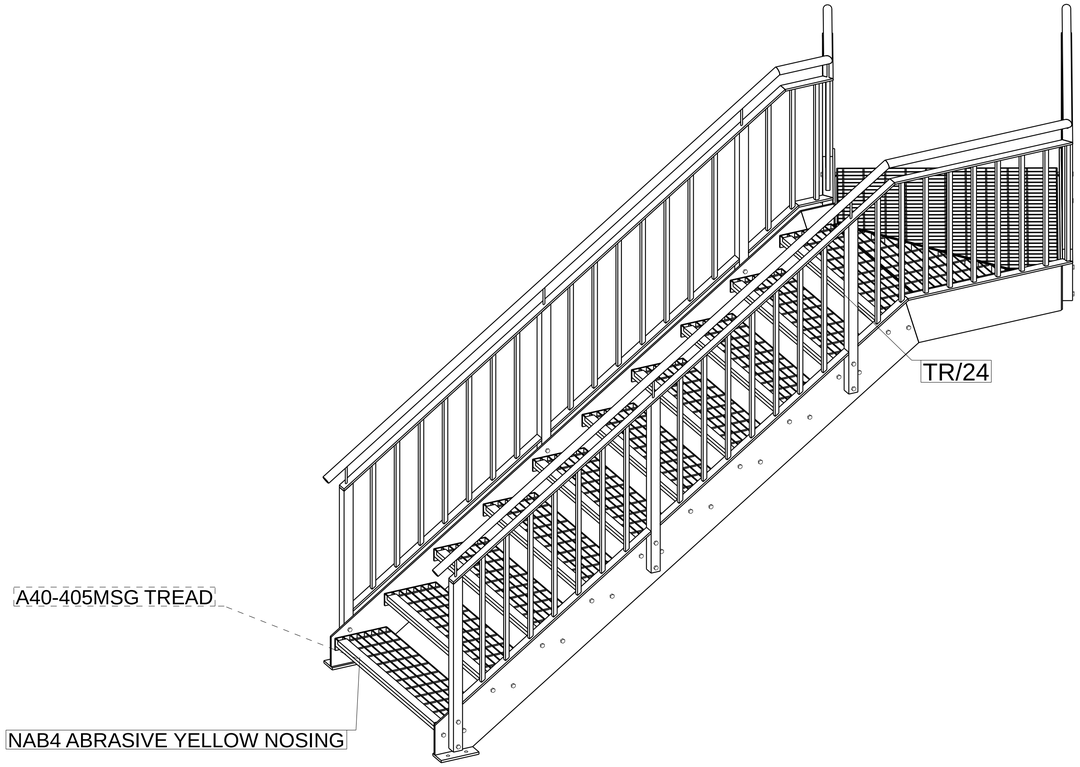
PROJECT
ALTITUDE STAIR
JSW

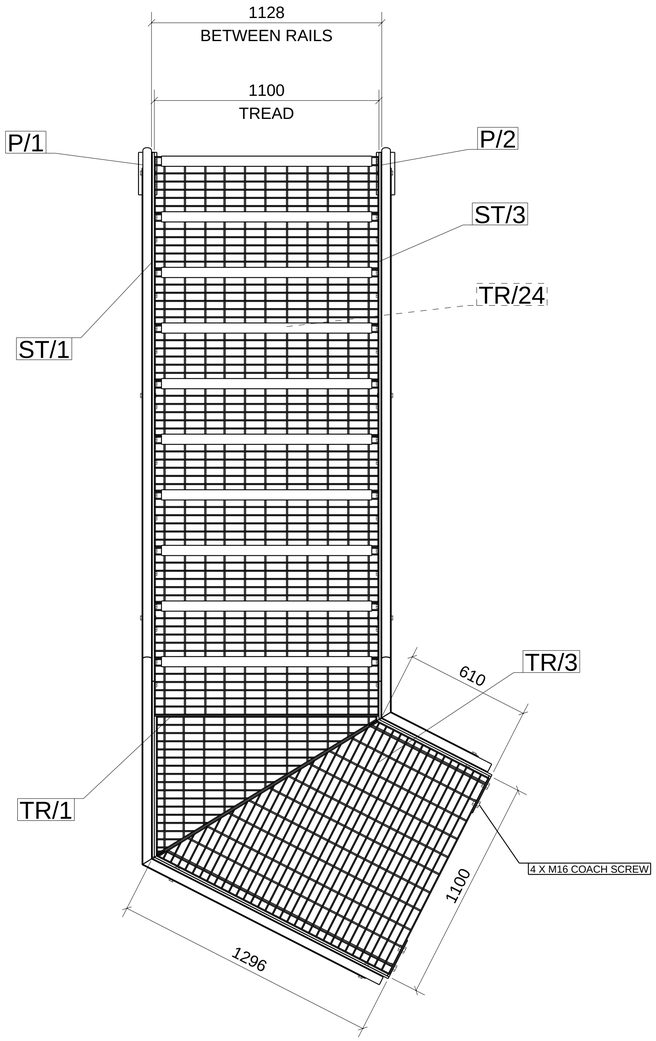
CLIENT
JINDY STEELWORX
26-28 LEE AVE, LEESVILLE

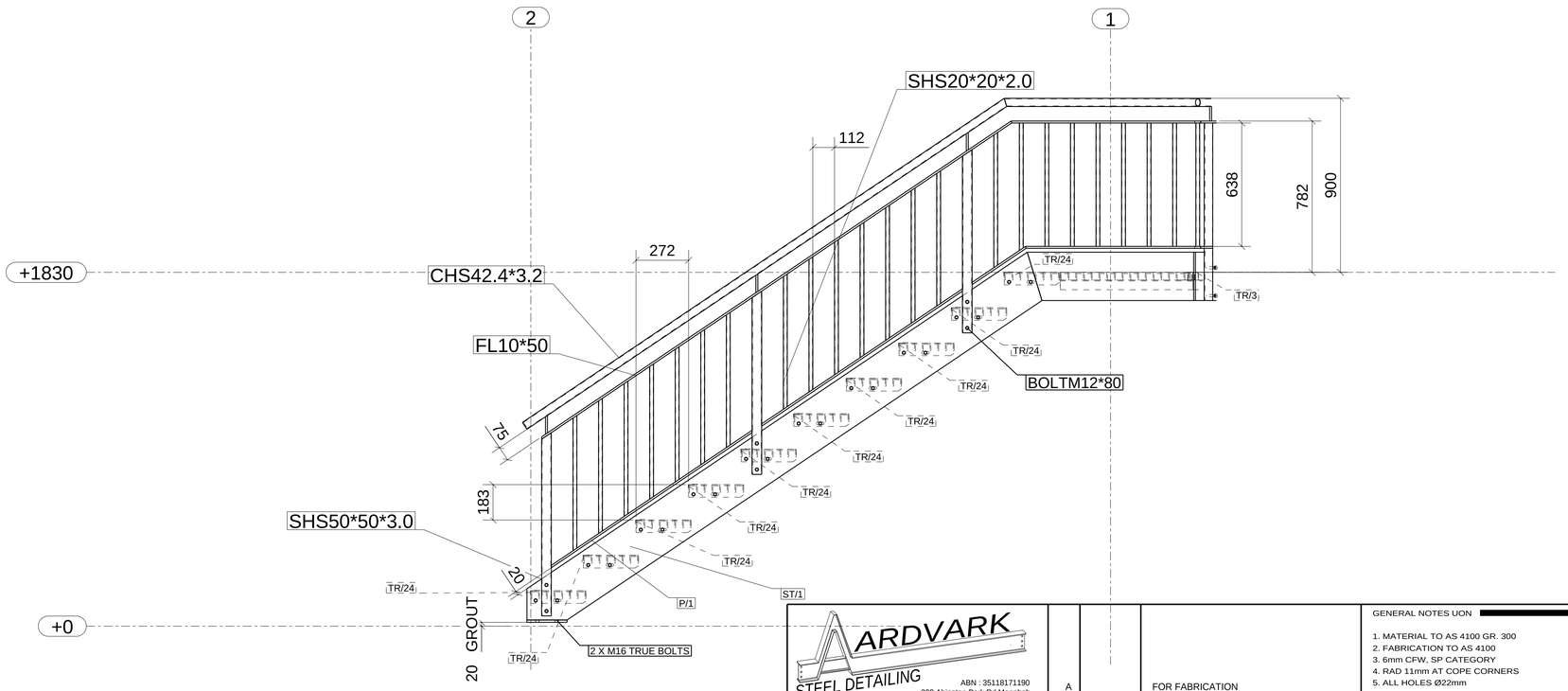
DRAWING TITLE
3D STAIR

CHECKED	APPR.	DESIGN	DRAWN	DATE
			JM	06.03.24

SCALE	DRAWING No.	REV.
1:10	24-1 -GA01	A







ARDVARK STEEL DETAILING
ABN : 35118171190
393 Abington Park Rd,Moonbah
Tel : 0412 212 124

REV	DATE	DESCRIPTION
A	28.02.2024	FOR FABRICATION
1		DRAFT SETOUT

GENERAL NOTES UON

1. MATERIAL TO AS 4100 GR. 300
2. FABRICATION TO AS 4100
3. 6mm CFW, SP CATEGORY
4. RAD 11mm AT COPE CORNERS
5. ALL HOLES Ø22mm
6. ALL BOLTS M20 8.8/S
7. HOLES ARE LOCATED ON OR ABOUT C/L
8. THIRD ANGLE PROJECTION USED

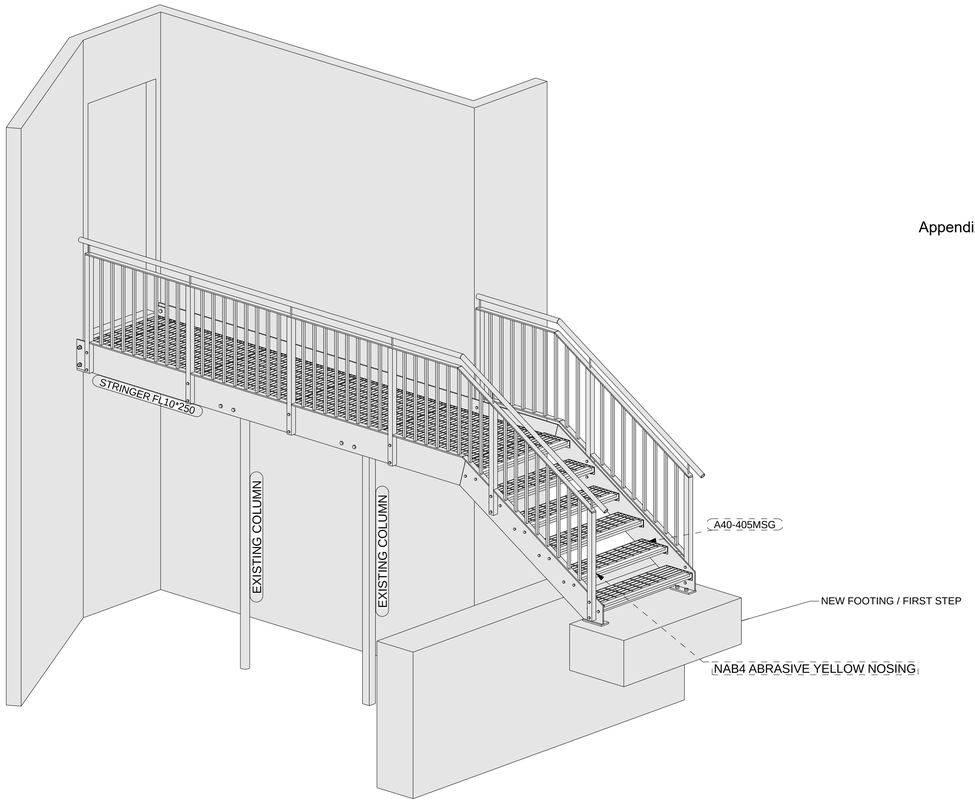
PROJECT
ALTITUDE STAIR
JSW

CLIENT
JINDY STEELWORX
26-28 LEE AVE, LEESVILLE

DRAWING TITLE
ALTITUDE STEEL STAIR

CHECKED	APPR.	DESIGN	DRAWN	DATE
			JM	06.03.24

SCALE	DRAWING No.	REV.
1:15	24-1 -GA02	A



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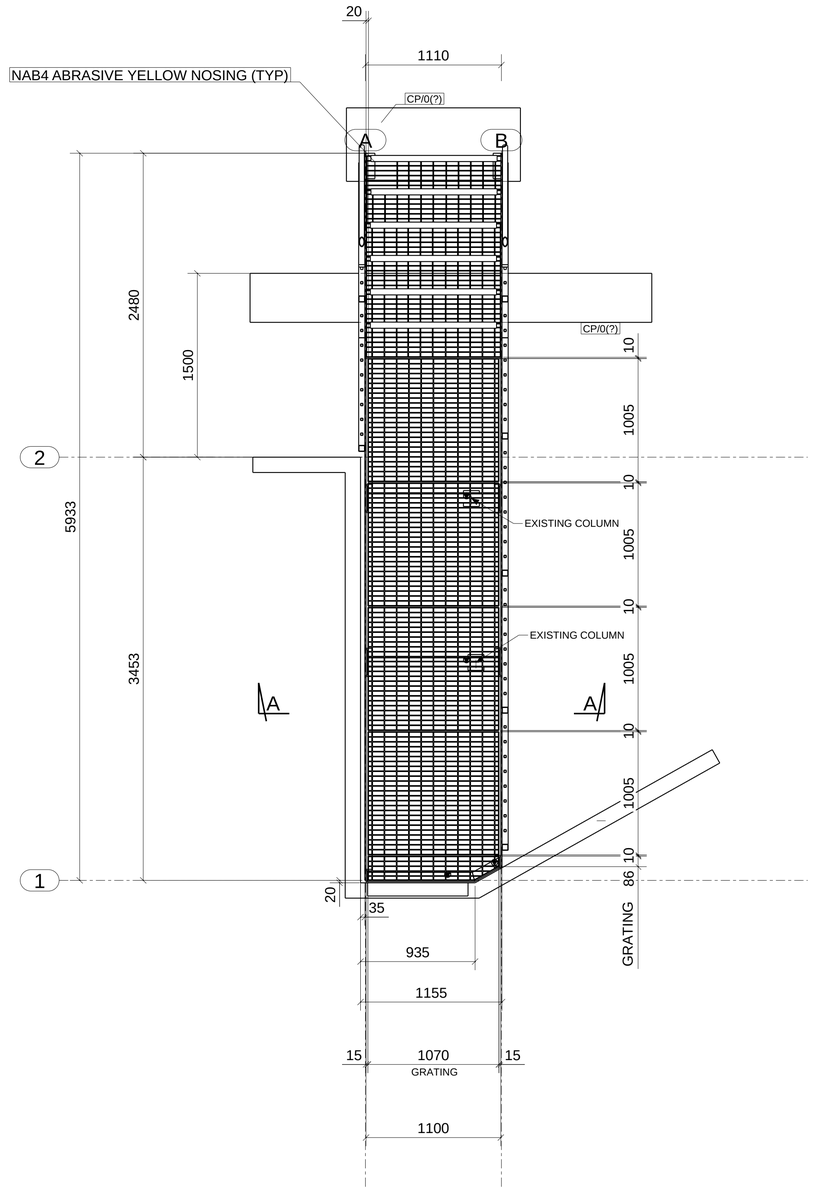

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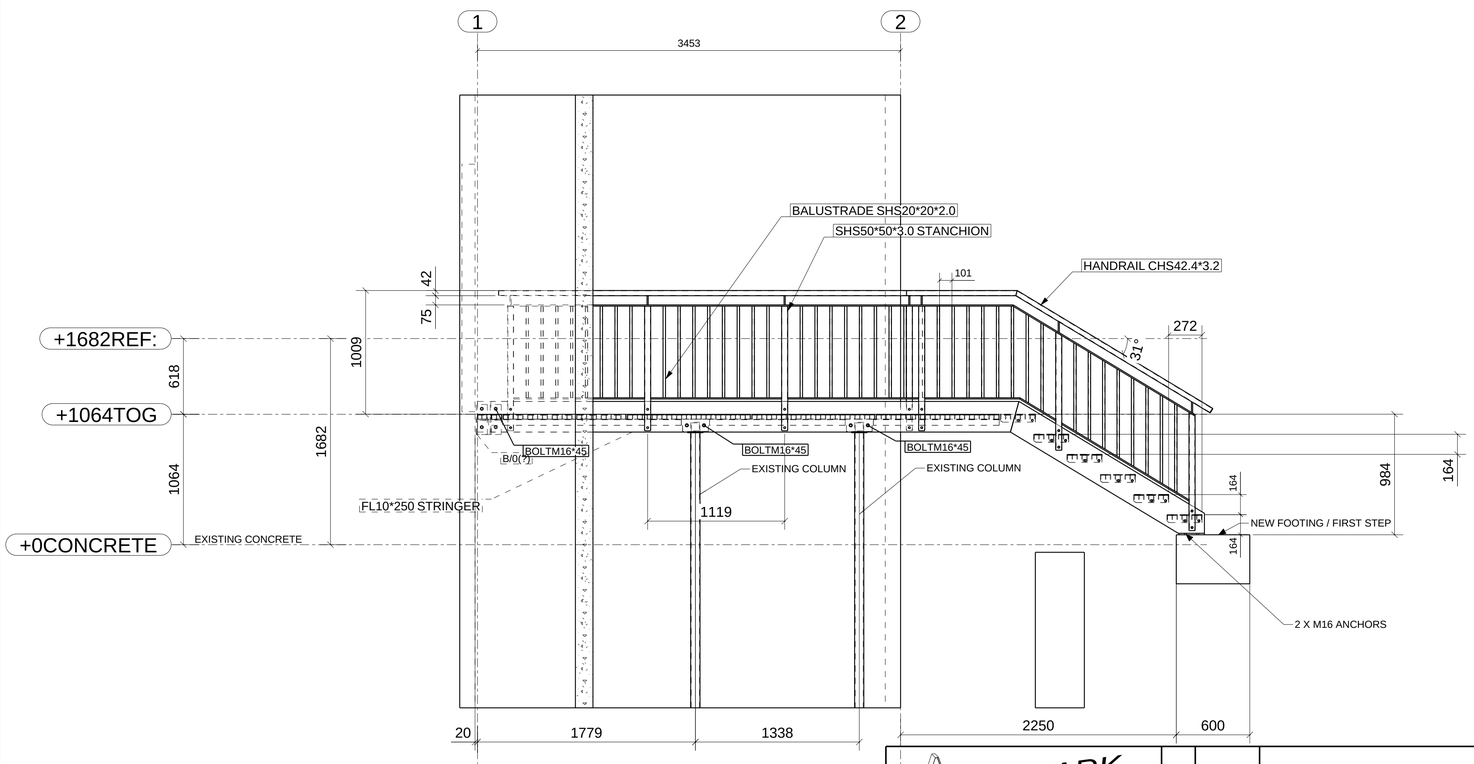

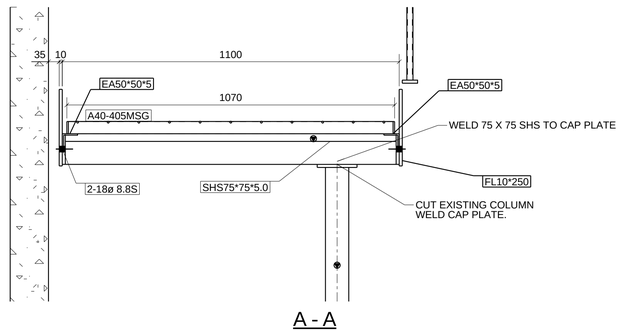

A - A

ARDVARK STEEL DETAILING
ABN : 35118171190
393 Abington Park Rd,Moonbah
Tel : 0412 212 124

REV	DATE	DESCRIPTION
1	01.04.2024	ISSUE FOR APPROVAL

GENERAL NOTES UON

1. MATERIAL TO AS 4100 GR. 300
2. FABRICATION TO AS 4100
3. 6mm CFW, SP CATEGORY
4. RAD 11mm AT COPE CORNERS
5. ALL HOLES Ø22mm
6. ALL BOLTS M20 8.8/S
7. HOLES ARE LOCATED ON OR ABOUT C/L
8. THIRD ANGLE PROJECTION USED

PROJECT
ALTITUDE LANDING STAIR
JSW

CLIENT
JINDY STEELWORX
26-28 LEE AVE, LEESVILLE

DRAWING TITLE
PLAN + 3D

CHECKED	APPR.	DESIGN	DRAWN	DATE
			JM	27.03.24

SCALE	DRAWING No.	REV.
1:10	24-3 -GA01	1