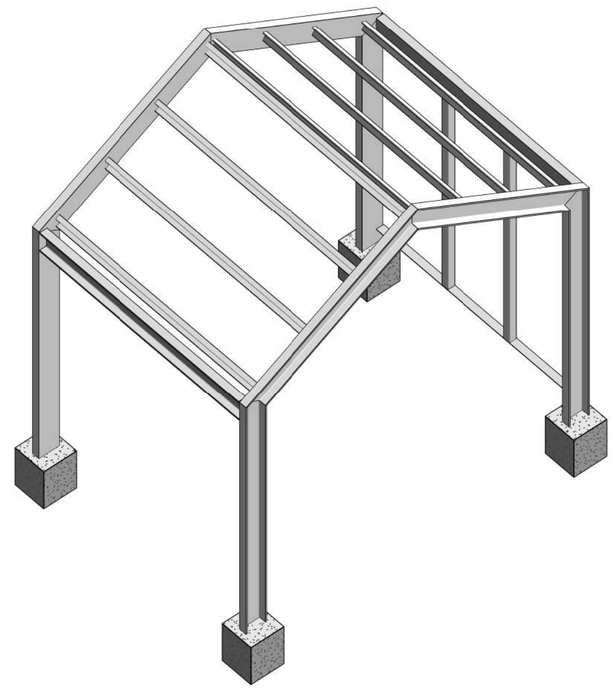
STRUCTURAL DETAILS & DRAWINGS OF STEEL PAVILION SHED

FOR INDIGO SHIRE COUNCIL

TECHNOCRETE

Structural & Durability Consulting Engineers



STRUCTURAL DRAWING LIST	
DWG. NO.	**TITLE**
S00	GENERAL & TECHNICAL NOTES
S01	GENERAL ARRANGEMENTS
S02	VIEWS & DETAILS
S03	CONNECTION DETAILS 1
S04	CONNECTION DETAILS 2

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GENERAL NOTES

1. THE STRUCTURAL DESIGN, DRAWINGS & DETAILS HAVE BEEN PREPARED BASED ON THE PROVIDED ARCHITECTURAL DRAWINGS & GEOTECHNICAL INVESTIGATION(SOIL TYPE) REPORT.

2. THE DRAWINGS SHALL BE CONTROLLED BEFORE CONSTRUCTION. IF ANY DISCREPANCIES WERE NOTICED, IT SHALL BE DISCUSSED WITH THE CONSULTANT ENGINEER.

3. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR/BUILDER.

4. DURING EXCAVATION AND CONSTRUCTION, REQUIRED PRACTICES MUST BE CONDUCTED TO PROVIDE SAFETY AND STABILITY OF THE STRUCTURE. EXCAVATIONS SHALL NOT EXTEND BELOW A LINE OF 30° TO THE HORIZONTAL FOR SAND, OR 45° TO THE HORIZONTAL FOR CLAY, FROM THE BOTTOM EDGE OF THE EDGE BEAM, STRIP FOOTINGS OR PIERS TO BENEATH THE EXPECTED EXCAVATION LEVEL.

5. THE BUILDING AND SITE DRAINAGE SYSTEM DESIGN ARE OUT OF STRUCTURAL DESIGN SCOPE OF WORK.

FOUNDATION CONSTRUCTION NOTES

1. ALL CONCRETE TO BE MINIMUM 25 MPA GRADE WITH SLUMP OF 100 mm AS PER AS 1379.

2. MAXIMUM SIZE OF AGGREGATES SHOULD BE 20 mm.

3. THE FOOTING HAS BEEN DESIGNED ACCORDING TO AS 2870.

4. SERVICE PENETRATIONS ARE PERMITTED THROUGH THE MIDDLE THIRD OF THE DEPTH OF THE FOOTING.

5. THE FOUNDATION SHALL HAVE MINIMUM BEARING CAPACITY OF 100 kPa.

6. TOPSOIL CONTAINING GRASS ROOTS SHALL BE REMOVED FROM THE AREA ON WHICH THE FOOTING IS TO REST.

7. DURING CONSTRUCTION, WATER RUN-OFF SHALL BE COLLECTED AND CHANNELLED AWAY FROM THE BUILDING.

8. EXCAVATIONS NEAR THE EDGE OF THE FOOTING SYSTEM SHALL BE BACKFILLED IN SUCH A WAY AS TO PREVENT ACCESS OF WATER TO THE FOUNDATION AS PER AS 2870 CLAUSE 5.6.3.

9. WATER SHALL NOT BE ALLOWED TO POND IN THE TRENCHES.

10. PENETRATIONS OF THE FOOTING BY DRAIN PIPES SHALL BE SLEEVED USING CLOSED-CELL POLYETHYLENE LAGGING OR SIMILAR.

11. ALL REINFORCING BARS SHALL BE GRADE D500N TO AS4671 UNLESS NOTED OTHERWISE.

STEEL REINFORCEMENT

1. REINFORCING STEEL SHALL COMPLY WITH AS/NZS 4671 GRADE 500N.

2. THE SLAB STEEL MESH SHALL BE PLACED CLOSED TO THE THE TOP OF THE SLAB CONSIDERING THE CONCRETE COVER.

3. STEEL REINFORCING SHALL HAVE AN OVERLAP LENGTH NOT LESS THAN:

· 500mm FOR REINFORCING STEEL UP TO 12mm OF DIAMETER.
· 700mm FOR REINFORCING STEEL FROM 12mm TO 16mm OF DIAMETER.

4. ALL REINFORCING STEEL SHALL BE FREE FROM DIRT, OIL, CORROSION OR DAMAGE.

5. SERVICE PENETRATIONS ARE PERMITTED THROUGH THE MIDDLE THIRD OF THE DEPTH OF EDGE AND STIFFENED BEAMS.

STRUCTURAL STEELWORK NOTES

1. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS4100:2020.

2. WELDING SHALL BE PERFORMED BY EXPERIENCED TRADESMEN IN ACCORDANCE WITH AS1554 AND THE SPECIFICATION.

3. BOLTS NOT DESIGNATED SHALL BE M20 GRADE 8.8/S BOLTS TO AS1252 TIGHTENED TO A SNUG TIGHT FIT. BOLTS DESIGNATED 8.8/TF AND 8.8/TB SHALL BE HIGH STRENGTH STEEL BOLTS TO AS1252 FULLY TENSIONED IN ACCORDANCE WITH AS4100 ALL BOLTS TO BE HOT DIPPED GALVANISED. 8.8 GRADE BOLTS MUST NOT BE WELDED.

4. HOLD DOWN BOLTS TO BE 4.6/S GRADE UNLESS NOTED OTHERWISE. HOLD DOWN BOLTS TO BE GALVANISED.

5. IF SPECIFIED HIGH STRENGTH (8.8 GRADE) HOLDING DOWN BOLTS SHALL NOT BE WELDED BUT TIED WITH WIRE IN CAGES OR OTHER APPROVED TYING METHODS.

6. THE CONTRACTOR SHALL PROVIDE AND LEAVE IN PLACE UNTIL PERMANENT BRACING ELEMENTS ARE CONSTRUCTED SUCH TEMPORARY BRACING AS IS NECESSARY TO STABILISE THE STRUCTURE DURING ERECTION.

7. CONCRETE ENCASED STEELWORK SHALL BE WRAPPED WITH RF41 FABRIC UNLESS NOTED OTHERWISE .

8. THE ENDS OF ALL TUBULAR MEMBERS ARE TO BE SEALEDWITH NOMINAL THICKNESS PLATES AND CONTINUOUS FILLET WELDS UNLESS NOTED OTHERWISE.

9. CAMBER TO BE AS NOTED ON DRAWINGS.

10. ALL CONNECTIONS TO BE 10mm THICK FIN PLATE WITH 2-M20 BOLTS UNLESS NOTED OTHERWISE.

11. BEFORE FABRICATION HAS COMMENCED, THE SHOP DRAWINGS MUST BE REVIEWED BY THE ARCHITECT AND STRUCTURAL ENGINEER, REVIEW DOES NOT INCLUDE THE CHECKING OF DIMENSIONS AND DOES NOT REMOVE THE RESPONSABILITY OF THE FABRICATOR TO CHECK THE ACCURACY OF THE SHOP DRAWINGS.

12. MEMBERS ENCASED IN CONCRETE, FIRE SPRAYED OR 8.8/TF/HB BOLTED CONNECTIONS MUST BE PAINTED. TOP FLANGE OF BEAMS WITH SHEAR STUDS MUST NOT BE PAINTED.

ALL EXPOSED STEEL - CLASS 2½ BLAST 75 MICRONS INORGANIC ZINC SILICATE AND PAINT TO ARCHITECTS SPECIFICATIONS.
ALL HIDDEN STEEL TO BE POWER WIRE BRUSHED AND PRIMED etc. PLANT PLATFORMS TO BE HOT DIPPED GALVANISED.

13. EXCEPT WHERE OTHERWISE SHOWN WELDS TO BE 6mm CONTINUOUS FILLET.

14. ALL STEELWORK BELOW GROUND LEVEL TO BE ENCASED IN CONCRETE.

15. TIE ALL STEELWORK TO MASONRY AT 600 MAXIMUM CENTRES AS DETAILED ON DRAWINGS OR WITH APPROVED FRAMING TIES.

16. REFER TO SPECIFICATIONS FOR ALL WELD MACRO TEST REQUIREMENTS FOR ALL WELDING PERSONNEL.

NOTE

THE OWNER, BUILDER, AND SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, SETBACKS AND SPECIFICATIONS PRIOR TO COMMENCING WORKS OR ORDERING MATERIALS AND SHALL BE RESPONSIBLE FOR ENSURING THAT ALL BUILDING WORKS CONFORM TO THE BUILDING CODE OF AUSTRALIA, CURRENT AUSTRALIAN STANDARDS, BUILDING REGULATIONS, AND TOWN PLANNING REQUIREMENTS. REPORT ANY DISCREPANCIES TO THE DESIGNER.

CONCRETE NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH AS 3600-2018

2. ALL CONCRETE TO BE MINIMUM **25 MPa** Grade.

3. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED DURING PLACEMENT.

4. NO WATER IS TO BE ADDED DURING PLACEMENT.

5. PROTECT ALL SURFACES FROM WIND AND CURE FOR 7 DAYS WITH MOISTURE RETAINING MEMBRANE OR WATER SATURATION. NOTE CODE REQUIREMENTS WHEN AIR TEMPERATURE IS OUTSIDE THE RANGE OF 5° TO 32°C.

6. WELDING OF REINFORCEMENT IS NOT ALLOWED.

7. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON PLASTIC TIPPED STEEL OR PLASTIC BAR CHAIRS GENERALLY AT NOT GREATER THAN 900mm CENTRES EACH WAY.

8. THE METHOD OF CONSTRUCTION AND THE MAINTENANCE OF SAFETY DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR. IF ANY STRUCTURAL ELEMENT PRESENTS DIFFICULTY IN RESPECT OF CONSTRUCTABILITY OR SAFETY, THE MATTER SHALL BE REFERRED TO THE STRUCTURAL ENGINEER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.

9. DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERLOADED. TEMPORARY BRACING SHALL BE PROVIDED BY THE CONTRACTOR IN ORDER TO KEEP THE BUILDING WORKS AND EXCAVATIONS STABLE AT ALL TIMES.

10. UNLESS NOTED OTHERWISE ALL DIMENSIONS ARE IN MILLIMETRES.

11. CONCRETE SIZES SHOWN DO NOT INCLUDE THICKNESSES OF APPLIED FINISHES.

12. THE CONTRACTOR SHALL ARRANGE FOR THE ENGINEER TO INSPECT THE REINFORCEMENT AND OBTAIN HIS APPROVAL PRIOR TO POURING CONCRETE. MINIMUM 72 HOURS NOTICE REQUIRED.

DRILLED AND EPOXY NOTES

1. BE INSTALLED IN ACCORDANCE WITH RAMSET TECHNICAL DATA SHEET APPROVED BY CONSULTING ENGINEERS.

2. USE CHEMSET REO502 OR SIMILAR EPOXY ANCHORING ADHESIVE APPROVED BY CONSULTING ENGINEERS.

3. INSTALLATION
· DRILL RECOMMENDED DIAMETER AND DEPTH HOLE
· IMPORTANT: USE RAMSET DRILLING SYSTEM TO ENSURE HOLE ARE CLEAN. ALTERNATIVELY, CLEAN DUST AND DEBRIS FROM HOLE WITH STIFF SIRE OR NYLON BRUSH AND BLOWER.
· INSERT MIXING NOZZLE TO BOTTOM OF HOLE. FILL HOLE TO 3/4 THE HOLE DEPTH SLOWLY, ENSURING NO AIR POCKETS FORM.
· INSERT REBAR TO BOTTOM OF HOLE WHILE TURNING.
· ALLOW CHEMSET REO502 TO CURE AS PER SETTING TIMES.

4. ANCHORING SPECIFICATIONS ARE AS FOLLOWS:

d_b(mm)	d_h(mm)	h(mm)
M8	10	80
M10	12	90
M12	14	110
M16	18	125
M20	24	150
M24	26	160

d_b DENOTES BAR DIA.
d_h DENOTES HOLE DIA.
h DENOTES EMBEDMENT LENGTH.

NO.	DATE	DESCRIPTION
3	18/11/22	EDGE BEAMS AND WALL POST CONNECTIONS
2	08/11/22	RAFTERS, PURLINS, EDGE BEAMS AND WALL POST CONNECTIONS
1	14/10/22	CONNECTIONS

AMENDMENTS AND REVISIONS

DRAWN: N. HEDAYATI	SIGNED: N. Hedayati	DATE: 05/10/22
DESIGNED: Dr. FARHAD NABAVI	SIGNED	DATE: 03/10/22
CHECKED & APPROVED: Dr. FARHAD NABAVI	SIGNED	DATE: 18/11/22

MANAGER / CO-ORDINATOR:

ASSET OWNER: INDIGO SHIRE COUNCIL, VIC

CERTIFIED: Dr. FARHAD NABAVI PE0003447 (VIC)

INDIGO SHIRE COUNCIL

PROJECT TITLE: STRUCTURAL DETAILS & DRAWINGS OF STEEL PAVILION SHED

DRAWING TITLE: GENERAL & TECHNICAL NOTES

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PROJECT NO.: TC22-P307

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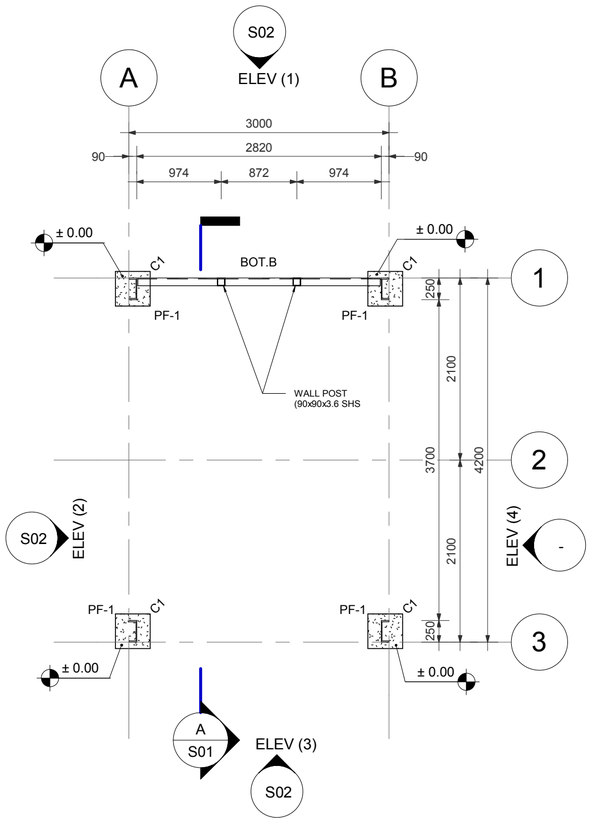

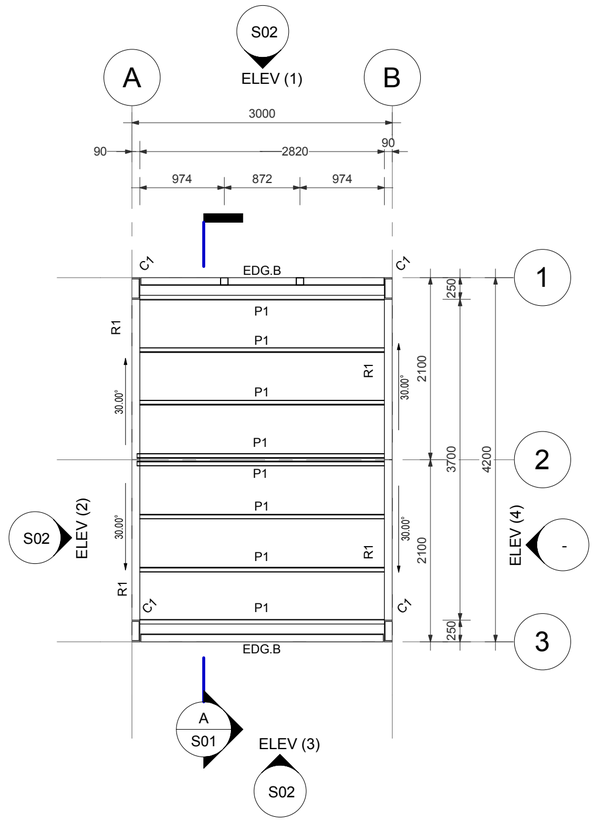

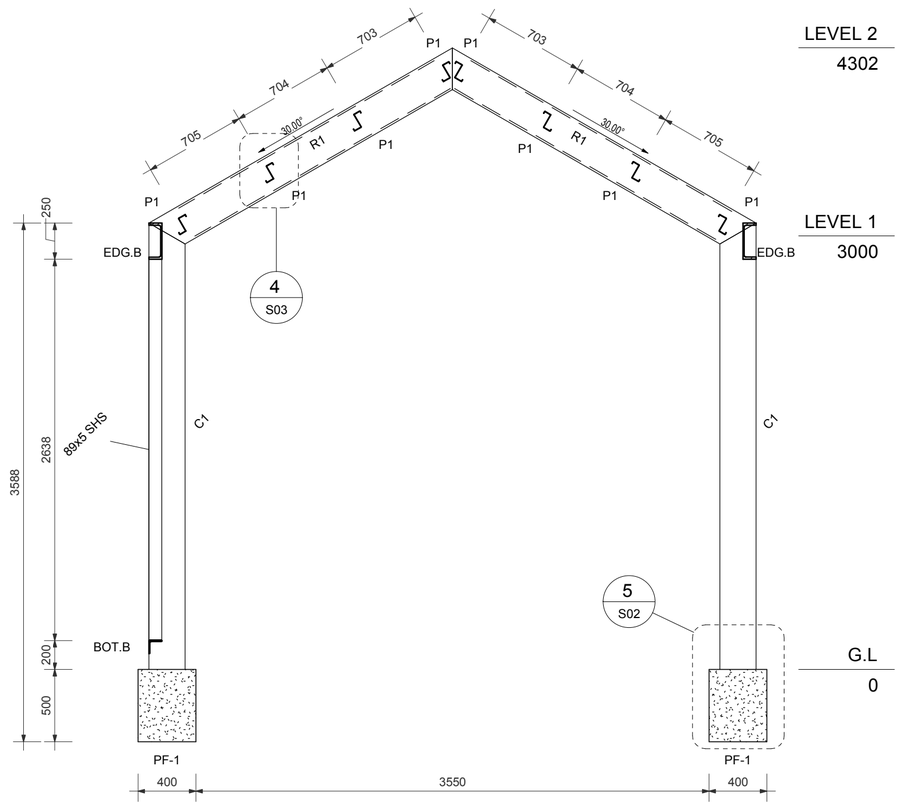

GROUND FLOOR STRUCTURAL PLAN

SCALE 1 : 50

ROOF STRUCTURAL PLAN

SCALE 1 : 50

SECTION A / S01

SCALE: 1 : 30

FOOTING SCHEDULE		
TYPE	SECTION / DIMENSION	DESCRIPTION
PF-1	400x400x500mm	PAD FOOTING. REFER TO DWG. NO. S02

COLUMN SCHEDULE		
TYPE	SECTION	DESCRIPTION
C1	250PFC	REFER TO DWG. NO. S02

STRUCTURAL FRAMING SCHEDULE		
TYPE	**COMPONENT**	**SECTION**
BOT.B	BOTTOM BEAM	90x6 EA
EDG.B	EDGE BEAM	250 PFC
P1	PURLIN	Z 10015
R1	RAFTER	250 PFC

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1	14/10/22	CONNECTIONS

DRAWN	N. HEDAYATI	DATE 05/10/22
DESIGNED	Dr. FARHAD NABAVI	DATE 03/10/22
CHECKED & APPROVED	Dr. FARHAD NABAVI	DATE 18/11/22

MANAGER / CO-ORDINATOR:

ASSET OWNER: INDIGO SHIRE COUNCIL, VIC

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PROJECT TITLE: STRUCTURAL DETAILS & DRAWINGS OF STEEL PAVILION SHED

DRAWING TITLE: GENERAL ARRANGEMENTS

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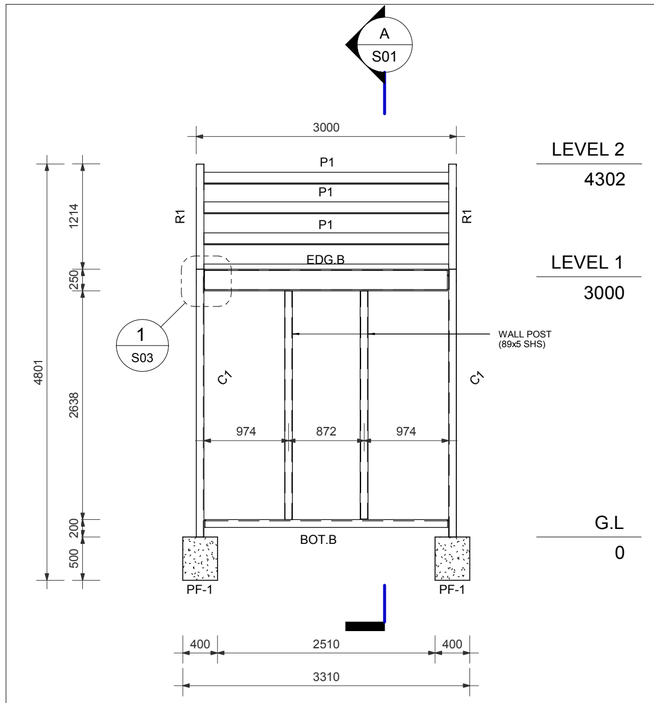
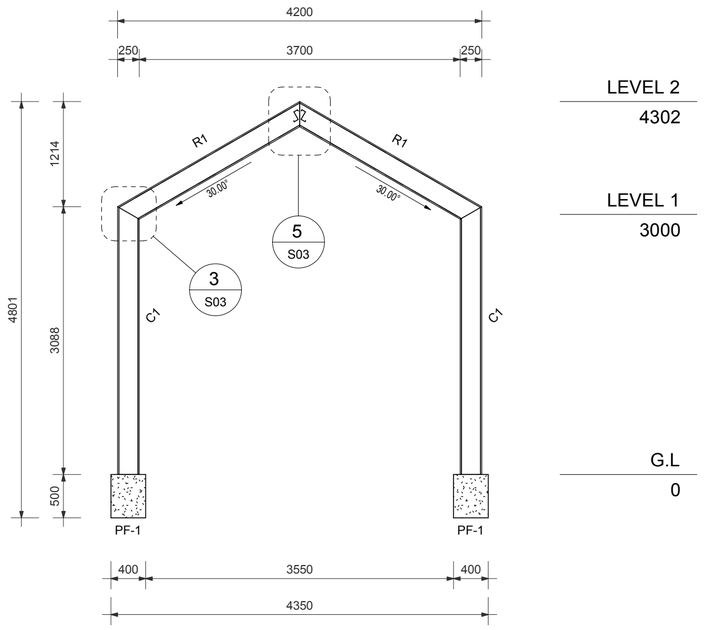


NOTE: OTHER CONNECTION DETAILS FOR THIS FRAME SHOWN ON SHEET S04

ELEV (1)

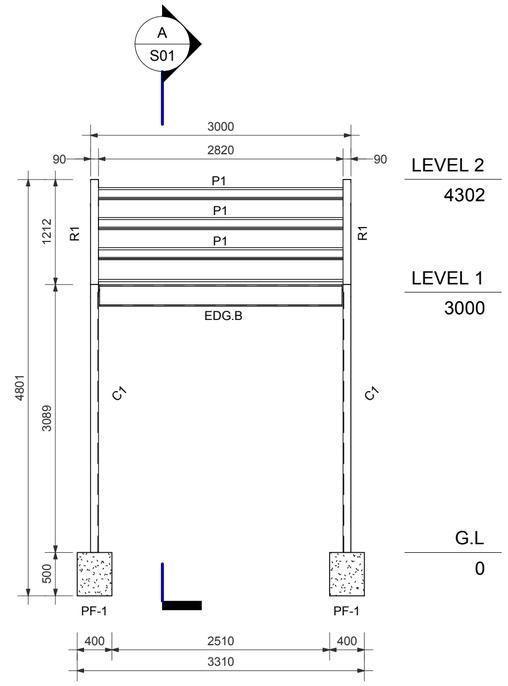
SCALE 1 : 50



NOTE: ELEV (4) IS SAME AS ELEV (2)

ELEV (2)

SCALE 1 : 50



ELEV (3)

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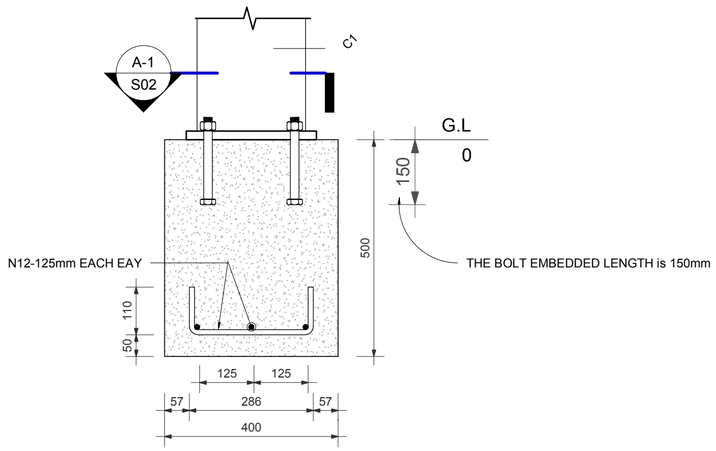
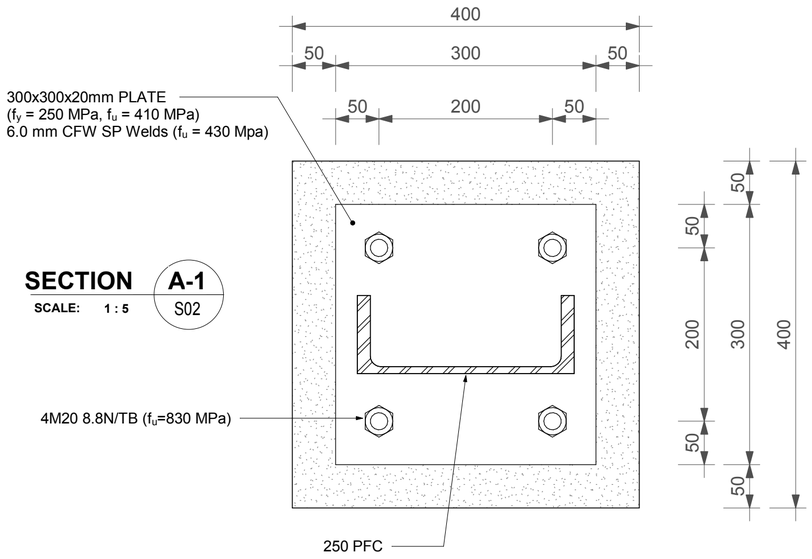


PAD FOOTING STRUCTURAL DETAILS

DETAIL 5 / S01

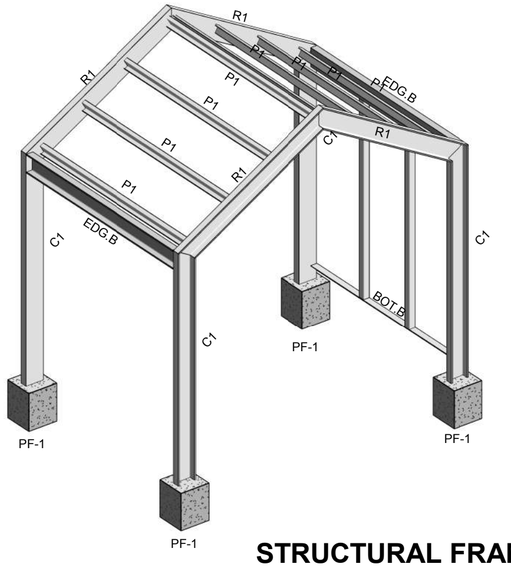
SCALE: 1 : 10



SECTION A-1 / S02

SCALE: 1 : 5

BASE PLATE DETAIL



STRUCTURAL FRAMING 3D VIEW

SCALE

NO.	DATE	DESCRIPTION
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PROJECT TITLE: STRUCTURAL DETAILS & DRAWINGS OF STEEL PAVILION SHED

DRAWING TITLE: VIEWS & DETAILS

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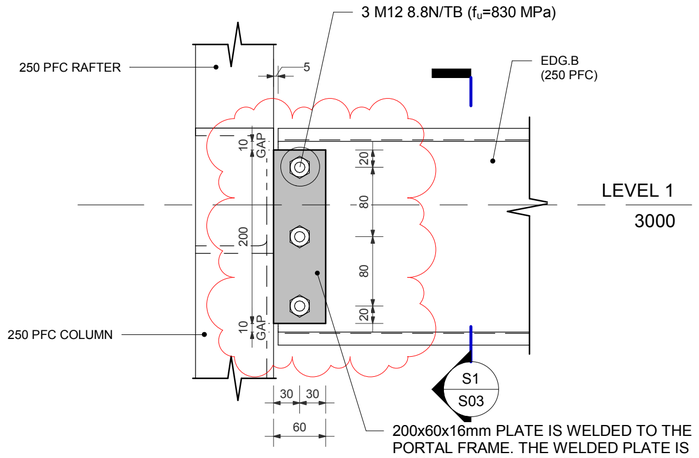
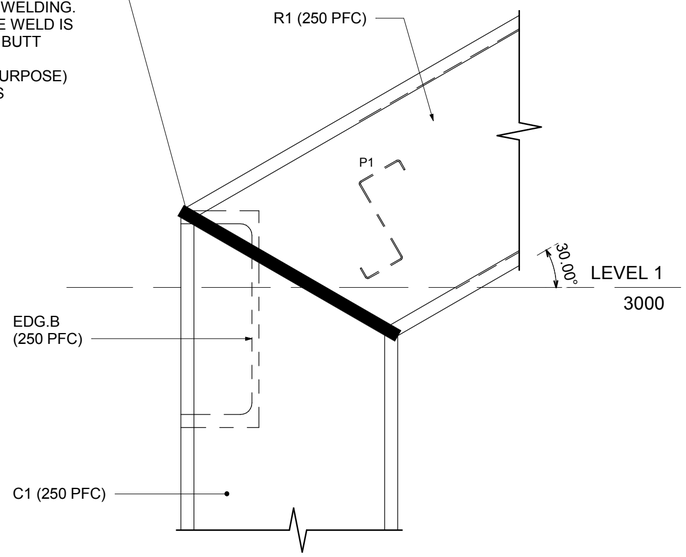
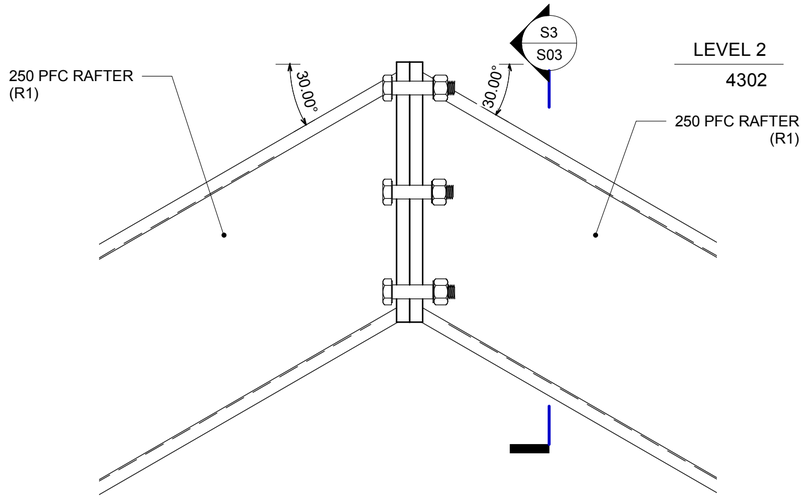


DETAIL 1 — SCALE: 1 : 5 — S02

THE RAFTER AND COLUMN IS CONNECTED USING WELDING. THE DETAILS OF THE WELD IS FULL PENETRATION BUTT WELD (FPBW) SP (STRUCTURAL PURPOSE) (f_u = 410 MPa) WELDS.

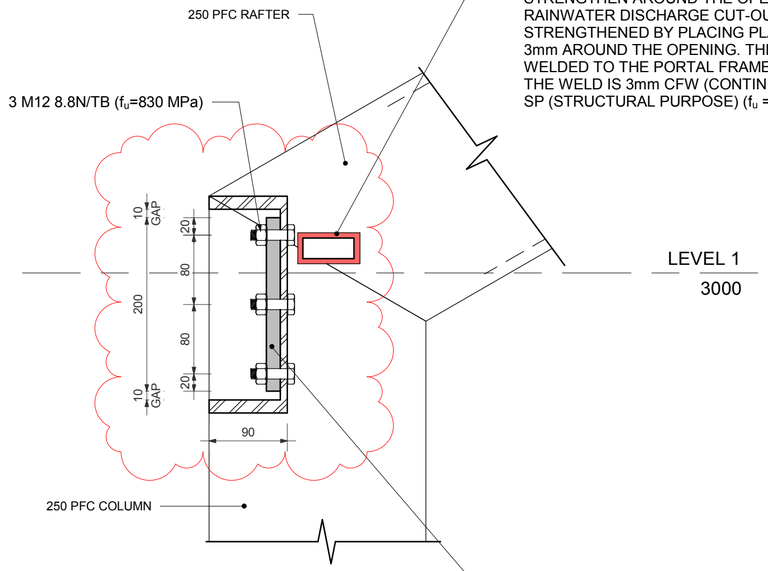


DETAIL 3 — SCALE: 1 : 5 — S02

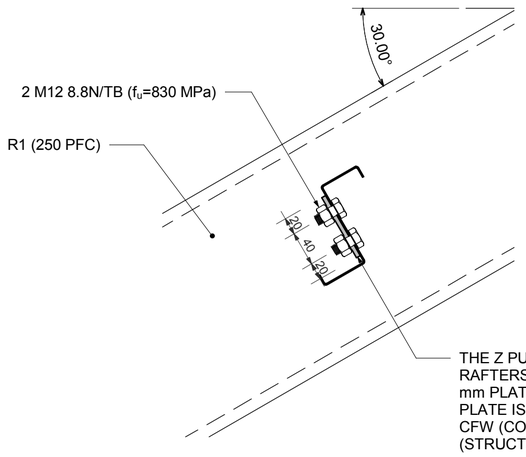


DETAIL 5 — SCALE: 1 : 5 — S02

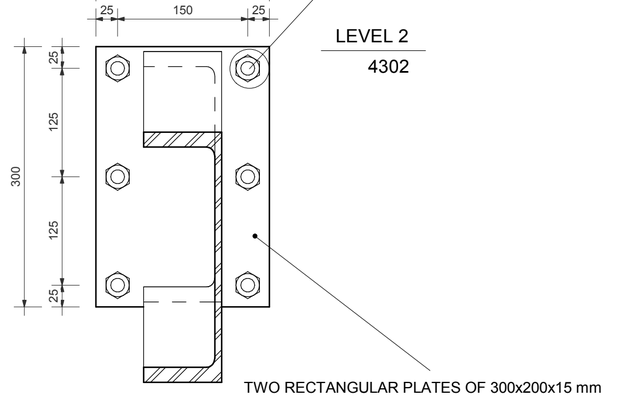
SINCE, THE RAINWATER DISCHARGE OUTLET COINCIDES WITH THE FULL PENETRATION BUTT WELD OF THE RAFTER AND COLUMN, IT IS NECESSARY TO STRENGTHEN AROUND THE OPENING. THE RAINWATER DISCHARGE CUT-OUT SHOULD BE STRENGTHENED BY PLACING PLATES OF THICKNESS 3mm AROUND THE OPENING. THE PLATES SHOULD BE WELDED TO THE PORTAL FRAME. THE DETAILS OF THE WELD IS 3mm CFW (CONTINUOUS FILLET WELD) SP (STRUCTURAL PURPOSE) (f_u = 410 MPa) WELDS.



SECTION S1 — SCALE: 1 : 5 — S03



DETAIL 4 — SCALE: 1 : 5 — S01



SECTION S3 — SCALE: 1 : 5 — S03

NO.	DATE	DESCRIPTION
3	18/11/22	EDGE BEAMS AND WALL POST CONNECTIONS
2	08/11/22	RAFTERS, PURLINS, EDGE BEAMS AND WALL POST CONNECTIONS
1	14/10/22	CONNECTIONS

AMENDMENTS AND REVISIONS

DRAWN: N. HEDAYATI	SIGNED	DATE: 05/10/22
DESIGNED: Dr. FARHAD NABAVI	SIGNED	DATE: 03/10/22
CHECKED & APPROVED: Dr. FARHAD NABAVI	SIGNED	DATE: 18/11/22
MANAGER / CO-ORDINATOR:		

ASSET OWNER: INDIGO SHIRE COUNCIL, VIC

CERTIFIED: Dr. FARHAD NABAVI PE0003447 (VIC)

PROJECT TITLE: STRUCTURAL DETAILS & DRAWINGS OF STEEL PAVILION SHED

DRAWING TITLE: CONNECTION DETAILS 1

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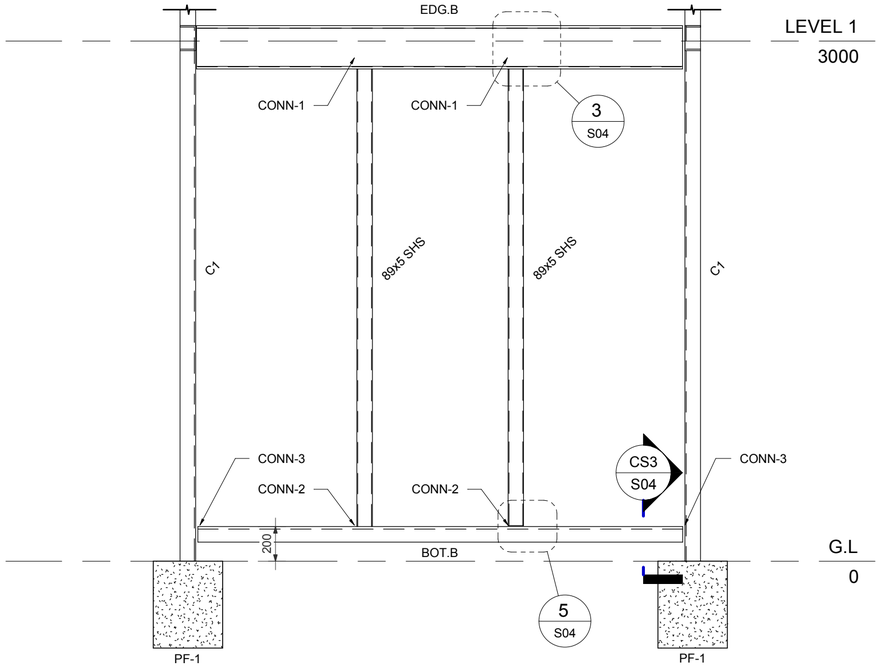
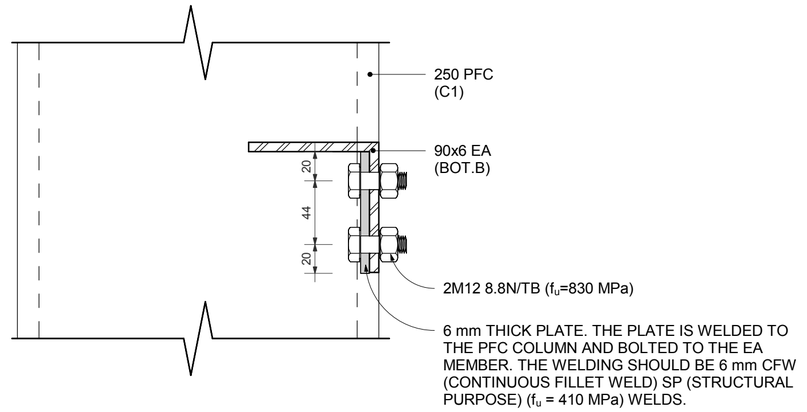


NOTE: FOR EDGE BEAM - COLUMN CONNECTION REFER TO SHEET S03



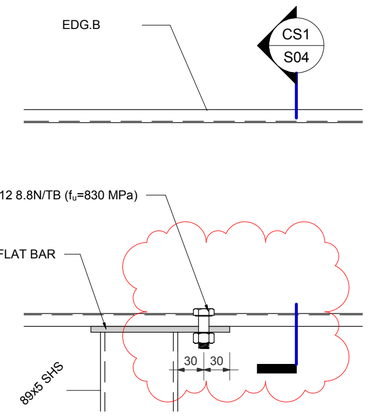
BOTTOM BEAM - COLUMN CONNECTION

SECTION CS3 / S04

SCALE: 1 : 3

WALL POST CONNECTIONS

SCALE 1 : 25



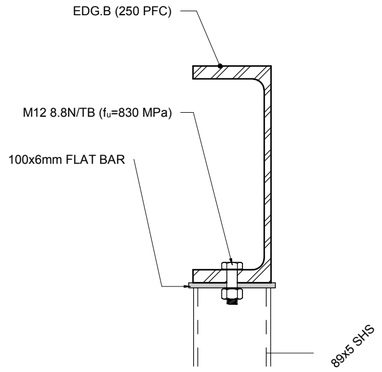
NOTE :

THE 89 SHS IS WELDED TO THE FLAT BAR AND THE FLAT BAR IS BOLTED TO THE EDGE PFC BEAM. WELD IS 6mm CFW (CONTINUOUS FILLET WELD) SP (STRUCTURAL PURPOSE) (f_u = 410 MPa) WELDS. M12 8.8N/TB (f_u=830 MPa). THE FLAT BAR AND THE BOLT SHOULD BE CLEAR OF THE ADJACENT TIMBER POSTS.

CONN-1 DETAIL

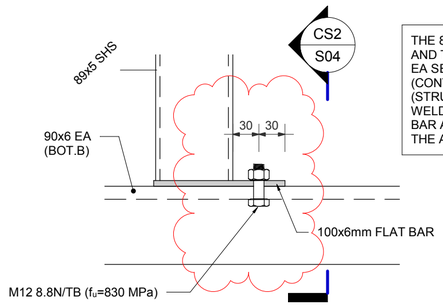
DETAIL 3 / S04

SCALE: 1 : 5



SECTION CS1 / S04

SCALE: 1 : 5

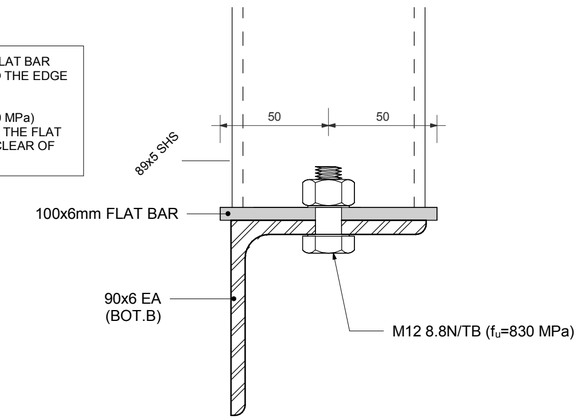


THE 89 SHS IS WELDED TO THE FLAT BAR AND THE FLAT BAR IS BOLTED TO THE EDGE EA SECTION. WELD IS 6mm CFW (CONTINUOUS FILLET WELD) SP (STRUCTURAL PURPOSE) (f_u = 410 MPa) WELDS. M12 8.8N/TB (f_u=830 MPa). THE FLAT BAR AND THE BOLT SHOULD BE CLEAR OF THE ADJACENT TIMBER POSTS.

CONN-2 DETAIL

DETAIL 5 / S04

SCALE: 1 : 5



SECTION CS2 / S04

SCALE: 1 : 2

NO.	DATE	DESCRIPTION
3	18/11/22	EDGE BEAMS AND WALL POST CONNECTIONS
2	08/11/22	RAFTERS, PURLINS, EDGE BEAMS AND WALL POST CONNECTIONS
1	14/10/22	CONNECTIONS

AMENDMENTS AND REVISIONS

DRAWN	N. HEDAYATI	DATE 05/10/22
DESIGNED	Dr. FARHAD NABAVI	DATE 03/10/22
CHECKED & APPROVED	Dr. FARHAD NABAVI	DATE 18/11/22

MANAGER / CO-ORDINATOR:

ASSET OWNER: INDIGO SHIRE COUNCIL, VIC

CERTIFIED: Dr. FARHAD NABAVI PE0003447 (VIC)

PROJECT TITLE: STRUCTURAL DETAILS & DRAWINGS OF STEEL PAVILION SHED

DRAWING TITLE: CONNECTION DETAILS 2

DRAWING NO. : S04

PROJECT NO.: TC22-P307

PAPER SIZE: A2

AMEND: 3

DRAWING UNIT: MILIMETER

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