STRUCTURAL DRAWINGS AND DETAILS FOR PROPOSED RESIDENCE

FOR STEVEN & KYLIE MAIN AT
PC 384072 - OMEO HIGHWAY - ESKDALE - VIC

TECHNOCRETE

Structural & Durability Consulting Engineers

DRAWINGS

DWG No.	TITLE	REVISION
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S04	WIND BRACING & LINTEL PLAN VIEW	REV 1
S05	WIND BRACING DETAILS	REV 1
S06	SP WIND BRACING DETAIL	REV 1

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GENERAL NOTES

1. THE STRUCTURAL DRAWINGS & DETAILS HAVE BEEN PREPARED BASED ON THE PROVIDED ARCHITECTURAL DRAWINGS & GEOTECHNICAL INVESTIGATION REPORT.
2. THE DRAWINGS SHALL BE READ BEFORE CONSTRUCTION. IF ANY DISCREPANCIES WERE NOTICED, IT MUST BE DISCUSSED WITH THE ENGINEER.
3. ALL DIMENSIONS MUST 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. ALL FORMWORK AND PROPPING MUST REMAIN FOR AT LEAST 7 DAYS AFTER PLACING CONCRETE SLAB.
6. THE BUILDING AND SITE DRAINAGE SYSTEM DESIGN ARE OUT OF STRUCTURAL DESIGN SCOPE OF WORK.

SITE & STRUCTURE CHARACTERISTICS

1. BASED ON THE GEOTECHNICAL TEST RESULTS, THE SOIL TYPE OF THE SITE IS CONSIDERED AS CLASS "M" AS PER TABLE 2.1 OF AS 2870:2011.
2. IF THE SITE CONTAINS UN-CONTROLLED OR CONTROLLED FILL, IT SHALL BE PRESENTED IN THE GEOTECHNICAL REPORT.
3. WIND CLASSIFICATION OF THE SITE IS CONSIDERED "N3" IN ACCORDANCE WITH AS 4055:2012 AND AS/NZS 1170.2:2011.
4. THE TYPE OF SLAB HAS BEEN SELECTED AS "INFILL SLAB" BY THE CLIENT.
5. AFTER SITE PREPARATION, IF THE CONDITION OF THE SITE IS CONSIDERABLY VARIED FROM THE SOIL TEST RESULTS, OR ABNORMAL MOISTURE CONDITION WAS OBSERVED , THE STRUCTURAL ENGINEER MUST BE NOTIFIED BEFORE COMMENCING ANY WORK ON SITE.
6. ALL FORMWOTK AND PROPPINGS MUST REMAIN FOR AT LEAST 7 DAYS AFTER PLACING CONCRETE SLAB.

STEEL REINFORCEMENT

1. REINFORCING BARS SHALL COMPLY WITH AS/NZS 4671 GRADE 500N. MINIMUM CONCRETE COVER FOR THE REINFORCEMENT SHALL BE:

- 40mm TO UN-PROTECTED GROUND
- 40mm TO EXTERNAL EXPOSURE
- 30mm TO MEMBRANE PROTECTED GROUND
- 20mm TO AN INTERNAL SURFACE

2. THE SLAB MESH SHALL BE PLACED TOWARDS THE TOP OF THE SLAB.
3. TRENCH MESH SHALL HAVE ALL CROSS WIRES CUT FLUSH WITH THE OUTER MAIN WIRES.
4. REINFORCING BARS SHALL HAVE A LAP LENGTH AT SLICES NOT LESS THAN:

- 500mm UP TO A BAR DIAMETER OF 12mm
- 700mm UP TO A BAR DIAMETER OF 16mm

5. ALL REINFORCING BARS SHALL BE FREE FROM DIRT, OIL, CORROSION OR DAMAGE.
6. SERVICE PENETRATIONS ARE PERMITTED THROUGH THE MIDDLE THIRD OF THE DEPTH OF EDGE AND STIFFENED BEAMS.

CONCRETE WORKS

1. THE STRUCTURAL DESIGN OF THE SLAB HAS BEEN CONDUCTED IN ACCORDANCE WITH AS 2870:2011.
2. CONCRETE MIX DESIGN AND PRACTICES SHALL BE IN ACCORDANCE WITH AS 2870:2011 & 3600:2018.
3. THE DESIGN OF CONCRETE MIX SHALL BE A FUNCTION OF THE ENVIRONMENTAL EXPOSURE CLASSIFICATION OF THE SITE IN ACCORDANCE WITH AS 3600:2018.
4. THE TYPE OF SLAB HAS BEEN SELECTED AS **"INFILL SLAB"**
5. A PIER-AND-BEAM, PIER-AND-SLAB OR PILED FOOTING SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH ENGINEERING PRINCIPLES.
6. THE REBATE DEPTH SHALL BE NOT LESS THAN 20mm.
7. THE DEPTH OF CONCRETE BELOW THE EDGE REBATE SHALL BE NOT LESS THAN 150mm.
8. THE GRADE OF CONCRETE SHALL BE N20 (20MPa) WITH MAXIMUM SLUMP OF 100mm IN ACCORDANCE WITH AS 1379. THE MAXIMUM NOMINAL SIZE OF AGGREGATE SHALL BE 20mm.
9. THE SLAB SHALL BE PROTECTED WITH A VAPOUR BARRIER, OR DAMP-PROOFING MEMBRANE WITH THE FOLLOWING PROPERTIES:
   - 200µm (0.2mm) THICK POLYETHYLENE IN ACCORDANCE WITH AS/NZS 4347.6
   - IMPACT RESISTANCE IN ACCORDANCE WITH AS/NZS 4347.6
   - PENETRATION RESISTANCE IN ACCORDANCE WITH CSIRO "METHOD FOR DETERMINATION OF THE PENETRATION RESISTANCE OF WATER VAPOUR BARRIERS TO FALLING AGGREGATE"
10. THE SHEET MEMBRANE SHALL BE PLACED BENEATH THE SLAB SO THAT THE BOTTOM SURFACE OF THE SLAB AND BEAMS, INCLUDING INTERNAL BEAMS, IS ENTIRELY UNDERLAID. LAPPING FOR CONTINUITY AT JOINTS SHALL BE NOT LESS THAN 200mm.
11. WHERE THE RAFT DESIGN INCLUDES INTERNAL BEAMS, THE STRUCTURAL CONTINUITY OF INTERNAL AND EXTERNAL BEAMS IN STIFFENED RAFTS, INCLUDING WAFFLE RAFTS, SHALL BE MAINTAINED.
12. ALL PLACING CONCRETE SHALL BE COMPACTED BY PROPER MECHANICAL VIBRATOR AND WET CURED FOR AT LEAST THREE (3) DAYS.

MASONRY WORKS

1. DESIGN OF THE MASONRY SHALL BE IN ACCORDANCE WITH AS 3700 TO RESIST THE ACTION EFFECTS DERIVED IN THIS STANDARD.
2. THE JOINTS BETWEEN ADJACENT WALL PANELS SHALL BE DESIGNED TO ACCOMMODATE ANY MOVEMENT RESULTING FROM FOOTING MOVEMENT.
3. EXTENSIONS SHALL BE ISOLATED FROM THE ORIGINAL STRUCTURE BY MEANS OF CONTROL JOINTS TO ALLOW FOR DIFFERENTIAL MOVEMENT.
4. CONTROL JOINTS SHALL BE INTRODUCED AT ABRUPT CHANGES IN PROFILE SUCH AS AT LARGE OPENINGS OR NEAR CORNERS EXCEPT WHERE THE WALL IS DESIGNED TO BE REINFORCED MASONRY.

NOTE

1. THE OWNER, BUILDER, AND SUB-CONTRACTOR 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, CURREN AUSTRALIAN STANDARDS, BUILDING REGULATIONS, AND TOWN PLANNING REQUIREMENTS. REPORT ANY DISCREPANCIES TO THIS OFFICE.

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1	12.06.2022	FIRST ISSUE

APPROVAL		DATE
DESIGNED BY:	Dr. F.NABAVI	10.06.2022
DRAWN BY:	N. HEDAYATI	11.06.2022
CHECKED BY:	Dr. F.NABAVI	12.06.2022
APPROVED BY:	Dr. F.NABAVI	12.06.2022

OWNERS: **STEVEN & KYLIE MAIN**

PROJECT NO: **TC22-P298**

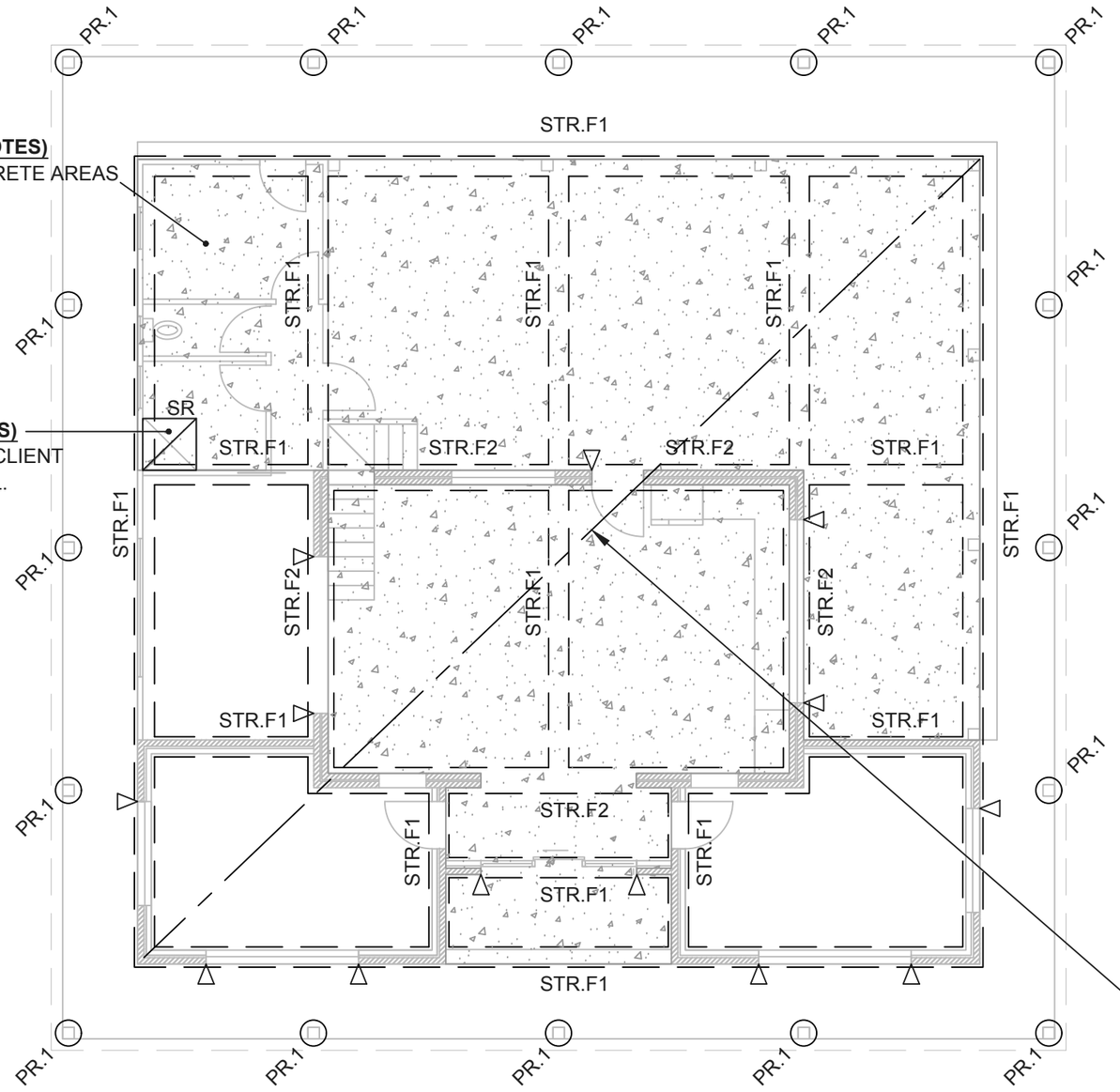
PROJECT TITLE: **PROPOSED RESIDENCE AT PC 384072 OMEO HIGHWAY - ESKDALE - VIC**

DRAWING TITLE: **GENERAL & TECHNICAL NOTES**

DRAWING NO: **S01**

Unit: mm

A3



(HATCHING DENOTES)
POLISHED CONCRETE AREAS

(SHOWER RECESS)
IF REQUIRED BY CLIENT
REFER TO DETAIL.

FOOTING CHARACTERISTICS

REFER TO THE DETAIL DRAWINGS S3

COMPONENT	DIMENSIONS (WIDTH x DEPTH)	CHARACTERISTICS	
STRIP FOOTING (STR.F1)	350mm x 450 mm	100mm INTO BROWN CLAY OR SAND	TO REACH SOIL LOAD BEARING CAPACITY OF 140kPa
STRIP FOOTING (STR.F2)	450mm x 600 mm	100mm INTO BROWN CLAY OR SAND	TO REACH SOIL LOAD BEARING CAPACITY OF 140kPa
MASS CONCRETE PILE . (PR.1)	450Ø x MIN 1000mm	500mm INTO BROWN SAND OR GRAVEL	TO REACH SOIL LOAD BEARING CAPACITY OF 200kPa

CONSTRUCTION & COMPACTED FILL NOTES:

1. ALL DRAWINGS AND DIMENSIONS SHALL BE CONTROLLED BY BUILDER BEFORE COMMENCING ANY CONSTRUCTION WORK.
2. THE LOCATION OF ARTICULATION JOINTS SHALL BE IDENTIFIED BY BUILDER IN ACCORDANCE WITH AS47.33.2 AND TECHNICAL NOTE (CCAA) TN61.
3. THE STABILIZING SAND SHALL CONTAIN 3% GP CEMENT.
4. ALL BOTTOM STEEL REINFORCEMENT SHALL HAVE 50mm FREE CONCRETE COVER.
5. IF FOOTINGS ARE DEEPENED MORE THAN NOTED ON PLAN, 1-N12 SHALL BE ADDED FOR EVERY 200mm INCREASE IN DEPTH.
6. IF WAFFLE FOOTINGS ARE WIDENED MORE THAN NOTED ON PLAN, 1-N12 SHALL BE ADDED BOTTOM AND TOP FOR EVERY 100mm INCREASE IN WIDTH.
7. AT A RE-ENTRANT CORNER WHERE AN EXTERNAL BEAM CONTINUES AS AN INTERNAL BEAM, THE EXTRENAL BEAM DETAILS SHALL BE CONTINUED FOR A LENGTH OF 1m INTO THE INTERNAL BEAM.
8. CONTROLLED FILLED CHARACTERISTICS:
   - ALL FILL LAYERS SHALL BE COMPACTED TO 95% MODIFIED DRY DENSITY.
   - SAND FILL UP TO 800mm DEEP SHALL BE COMPACTED BY VIBRATING PLATE OR VIBRATING ROLLER IN LAYERS NOT MORE THAN 300mm.
   - CLAY FILL UP TO 400mm DEEP SHALL BE COMPACTED BY A MECHANICAL ROLLER IN LAYERS NOT MORE THAN 150mm THICK (CLAY FILL SHALL BE MOIST DURING COMPACTION)

DENOTES ARTICULATION JOINTS
△ OR LOCATIONS BY BUILDER IN ACCORDANCE WITH AS/NZS 4733.2 AND TN61

INFILL SLAB
100mm THICKNESS
ONE SL82 MESH - 35mm TOP CONCRETE COVER.
(f'_c = 25 MPa)
50mm SAND LEVELING BED WITH 0.2mm POLYETHYLENE MEMBRANE.

SLAB & FOOTING PLAN VIEW

SCALE 1:100

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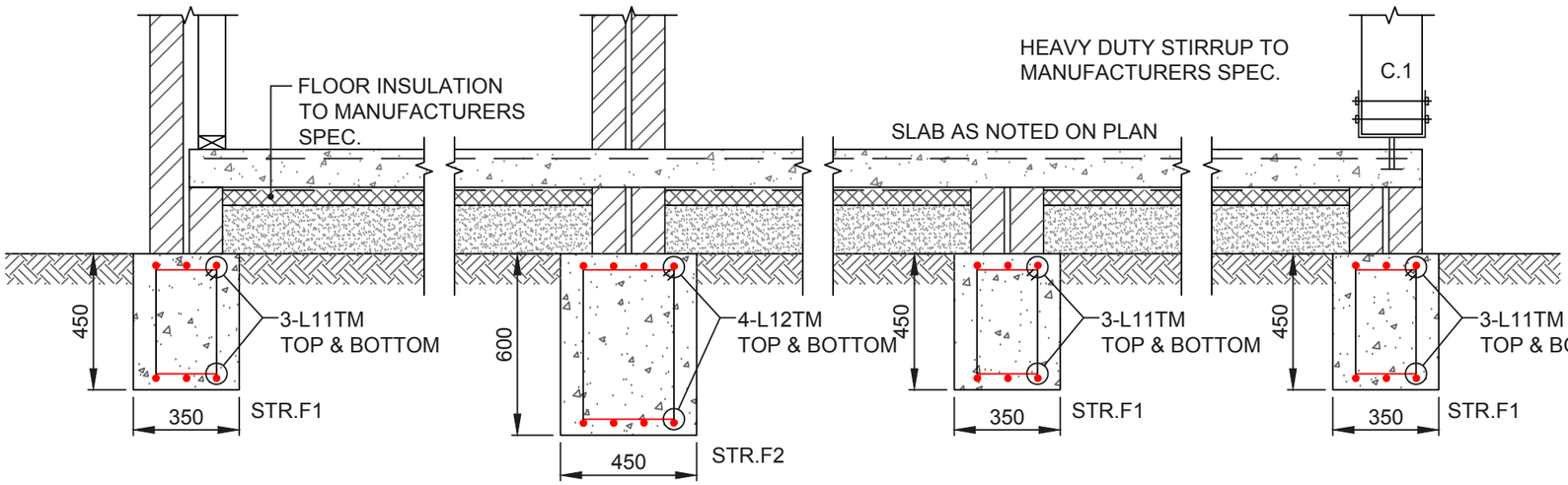
PROJECT TITLE: **PROPOSED RESIDENCE AT PC 384072 OMEO HIGHWAY - ESKDALE - VIC**

DRAWING TITLE: **SLAB & FOOTING PLAN VIEW**

DRAWING NO: **S02**

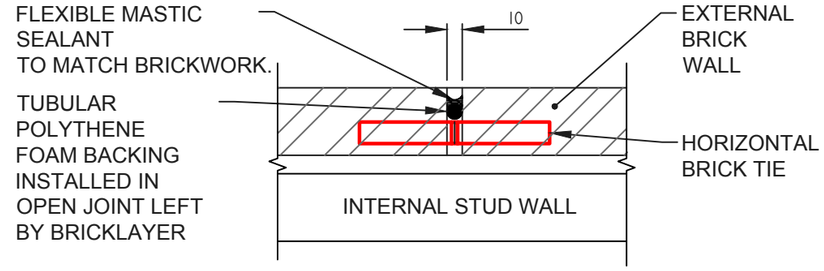
Unit: mm

A3



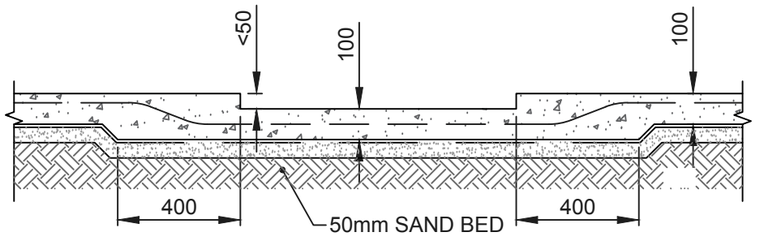
TYPICAL SLAB SECTION

SCALE 1:20



ARTICULATION JOINT DETAIL

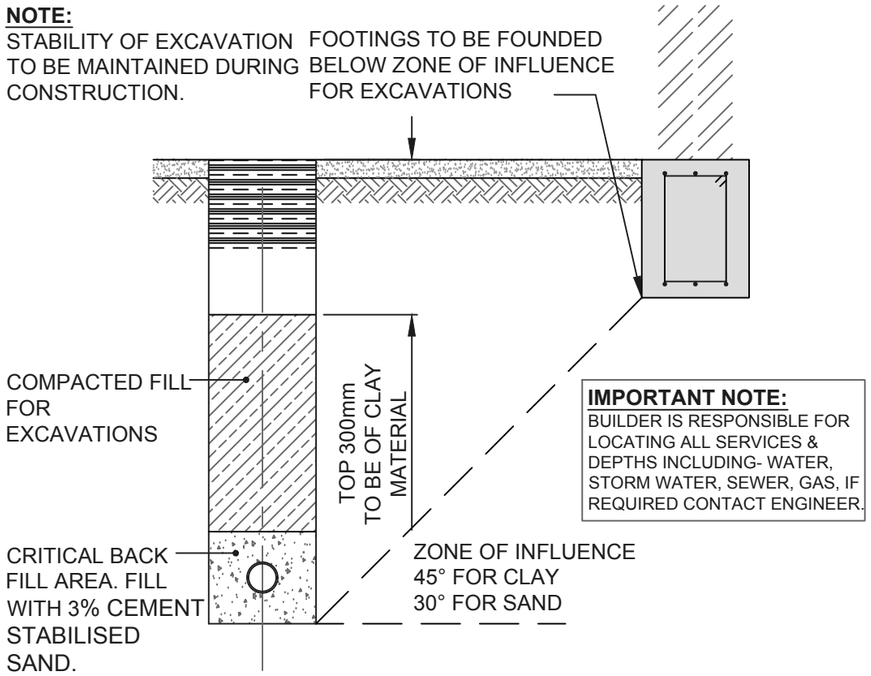
SCALE 1:10



SHOWER RECESS DETAIL

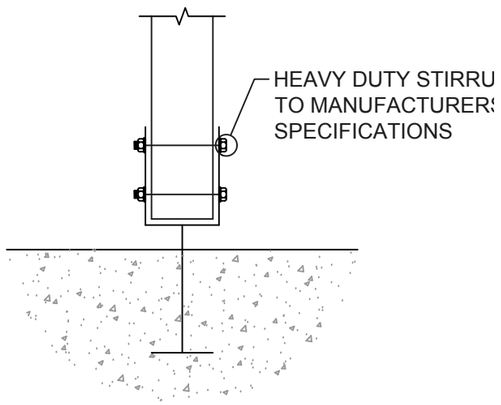
SCALE 1:20

NOTE:
STABILITY OF EXCAVATION TO BE MAINTAINED DURING CONSTRUCTION.



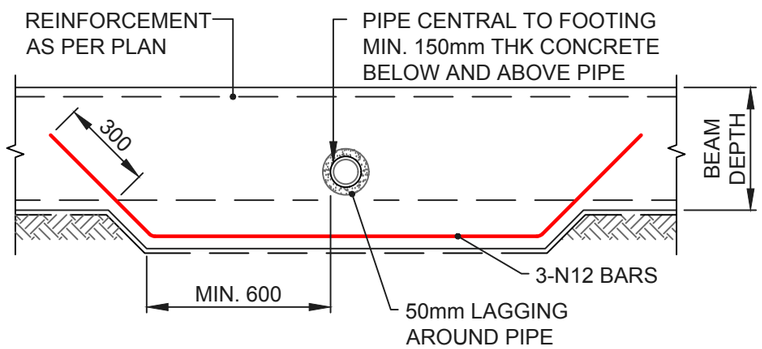
TYPICAL SERVICE TRENCH DETAIL

SCALE 1:20



TYPICAL STIRRUP DETAIL

SCALE 1:10



SERVICE PIPE PENETRATION DETAIL

SCALE 1:20

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DRAWING TITLE: **SLAB DETAILS**

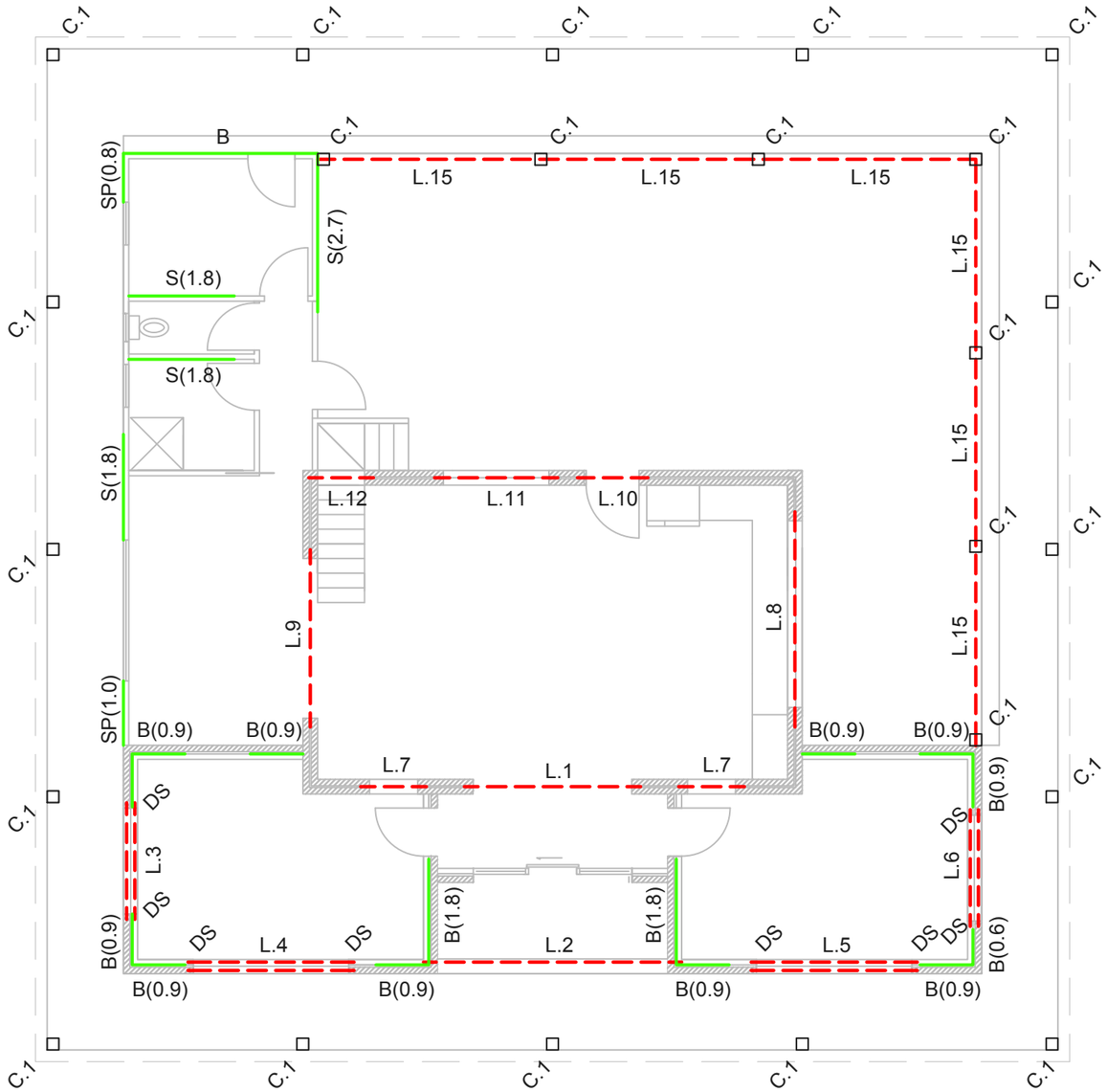
DRAWING NO: **S03**

Unit: mm

A3

BRACING REQUIRED 70.57kN.
BRACING SUPPLIED 43.78 kN.
+ DOUBLE BRICK & ROOF BRACING 26.79 kN.

BRACING REQUIRED 56.29 kN.
BRACING SUPPLIED 43.56 kN.
+ DOUBLE BRICK & ROOF BRACING 12.73 kN.



MEMBER SCHEDULE

COMPONENT	SIZE	DESCRIPTION	MAX SPAN	STRESS GRADE
C.1	200sq HARDWOOD	POSTS	-	-
DS	2/90x45 MGP10	DOUBLE STUD	-	-
L.1	200x10 (H) + 250x10 (V)	T - LINTEL	2.7m	F22
L.2	250x100 F17 H3	LINTEL	4.3m	F17 H3
L.3	120 x 42 LVL15 + 100x8 EA	LINTEL, 6 SINGLE COURSE BRICK	1.9m	LVL 15 - STRENGTH PROPERTIES TO BE PROVIDED BY THE MANUFACTURER
L.4-L.5	150 x 42 LVL15 + 100x10 EA	LINTEL, 6 SINGLE COURSE BRICK	2.7m	
L.6	120 x 42 LVL15 + 100x8 EA	LINTEL, 6 SINGLE COURSE BRICK	1.9m	
L.7	200x10 (H) + 200x10(V)	T - LINTEL	1.0m	F7 H3
L.8	200x10 (H) + 300x10(V)	T - LINTEL	3.2m	F34 H3
L.9	200x10 (H) + 250x10 (V)	T - LINTEL	2.8m	F27 H3
L.10	200x10 (H) + 200x10(V)	T - LINTEL	1.0m	F7 H3
L.11	200x10 (H) + 250x10(V)	T - LINTEL	1.8m	F11 H3
L.12	200x10 (H) + 200x10(V)	T - LINTEL	0.9m	F7 H3
L.13-L.14	200x10 (H) + 200x10(V)	T - LINTEL	1.1m	F7 H3
L.15	250 x 100 F7 H3	VERANDAH LINTEL	3.3m	F7 H3

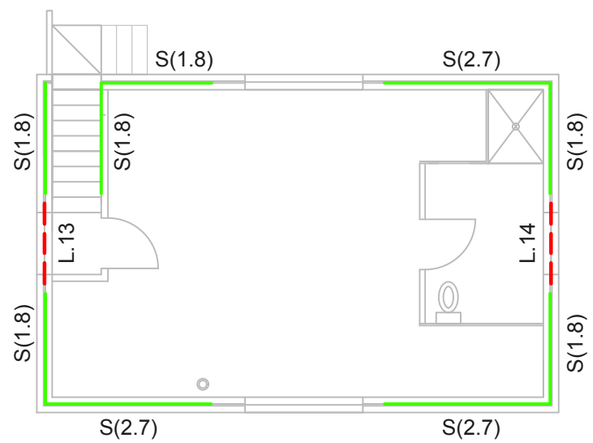
WIND BRACING

1. BRACING HAS BEEN DESIGNED IN ACCORDANCE WITH AS1684 FOR WIND CLASSIFICATION N3 AS SPECIFIED IN AS4055 AND AS1170.2 FOR REGION (A) AND AN ULTIMATE DESIGN GUST WIND SPEED OF 50m/sec.

2. BLOCKING OF TRUSS TO INTERNAL WALLS IS ONLY REQUIRED IF THE WALL IS PART OF THE BRACING DESIGN THAT IS NOT CONNECTED TO AN EXTERNAL WALL.

BRACING REQUIRED 21.30kN.
BRACING SUPPLIED 29.7 kN.

BRACING REQUIRED 23.0 kN.
BRACING SUPPLIED 27.00 kN.



GROUND FLOOR - WIND BRACING & LINTEL PLAN

SCALE 1:100

FIRST FLOOR - WIND BRACING & LINTEL PLAN

SCALE 1:100

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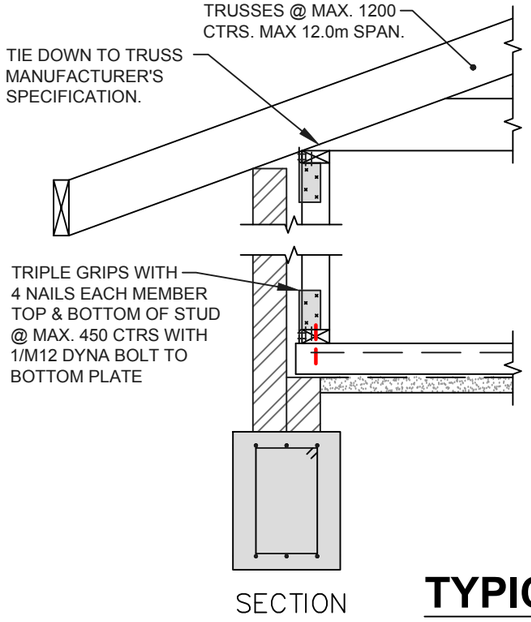
PROJECT TITLE: **PROPOSED RESIDENCE AT PC 384072 OMEO HIGHWAY - ESKDALE - VIC**

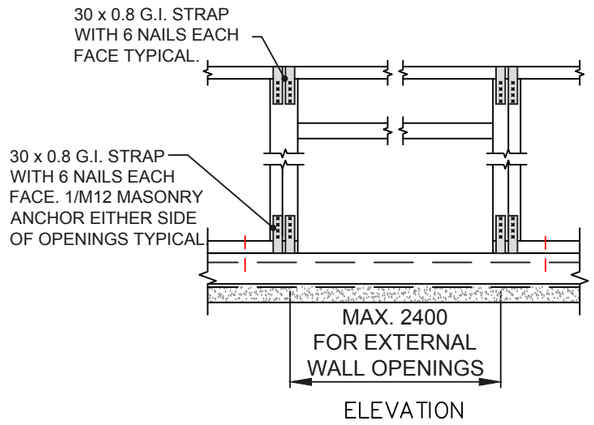
DRAWING TITLE: **WIND BRACING & LINTEL PLAN**

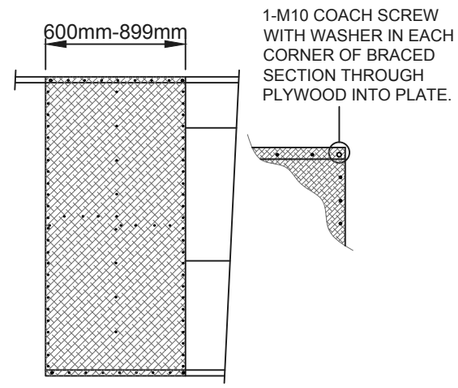
DRAWING NO: **S04**

Unit: mm

A3



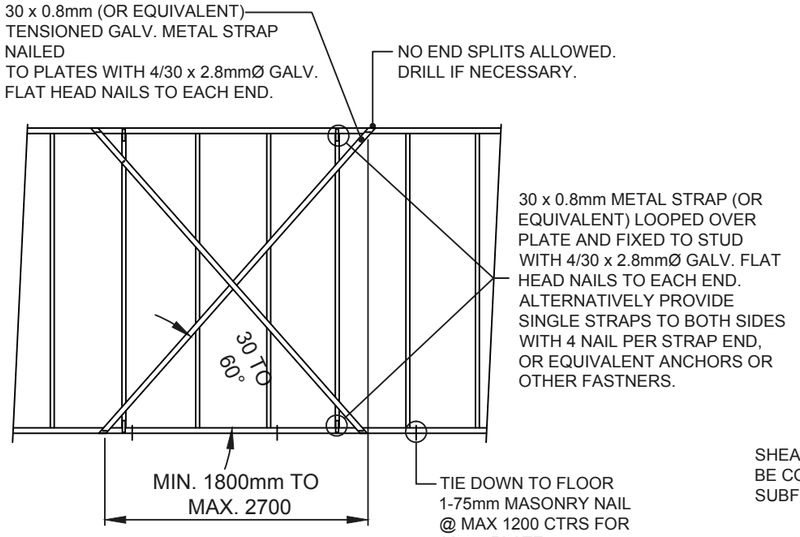




TYPE B
WIDTH LESS THAN 900mm
BRACING CAPACITY 3.4KN/m

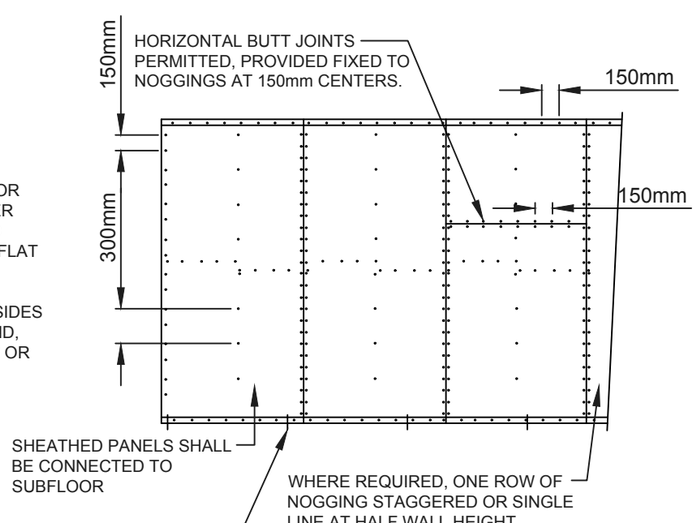
TYPICAL HOLD DOWN DETAIL (N3)
SCALE 1:20

*DOUBLE DIAGONAL TENSION OR METAL STRAP BRACE



TYPE S
BRACING CAPACITY 3KN/m

*PLYWOOD - PLYWOOD SHALL BE NAILED TO FRAME
USING 30 x 2.8mmØ FLAT HEAD NAILS OR EQUIVALENT.



TYPE B
BRACING CAPACITY 3.4KN/m

THICKNESS (mm)		
STRESS GRADE	STUD SPACING (mm)	
	450	600
NO NOGGING (EXCEPT HORIZONTAL BUTT JOINTS)		
F8	7	9
F11	4.5	7
F14	4	6
F27	3	4.5
ONE ROW OF NOGGING		
F8	7	9
F11	4.5	4.5
F14	4	4
F27	3	3

FASTENER SPACING:
150mm TOP & BOTTOM PLATES
150mm VERTICAL EDGES, NOGGING
300mm INTERMEDIATE STUDS

WIND BRACING DETAIL
SCALE 1:20

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PROJECT TITLE: **PROPOSED RESIDENCE AT PC 384072 OMEO HIGHWAY - ESKDALE - VIC**

DRAWING TITLE: **WIND BRACING DETAILS**

DRAWING NO: **S05**

Unit: mm

A3

CONSTRUCTION

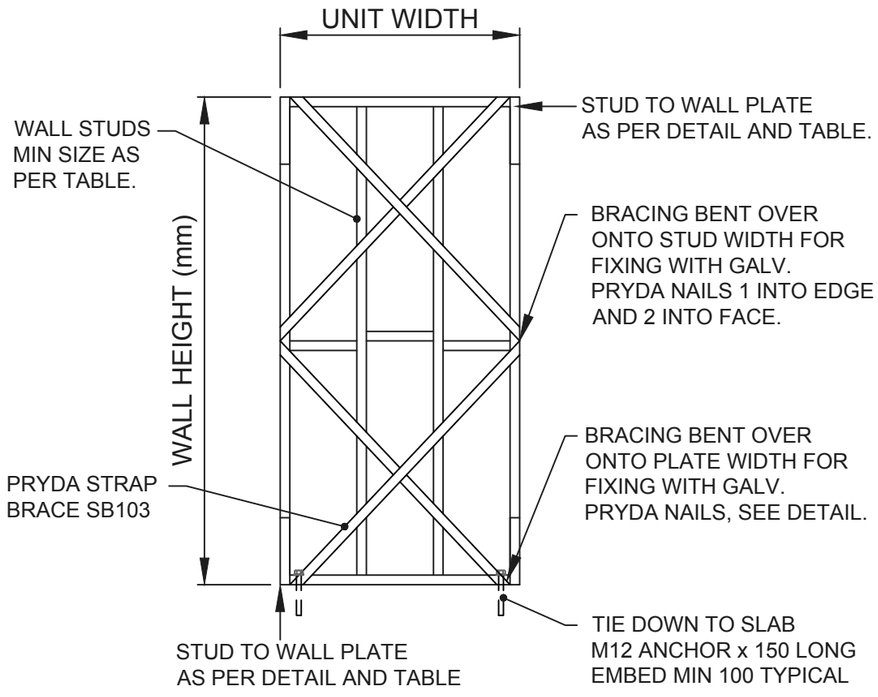
BRACE	WALL HEIGHT	WALL STUD min	TIE DOWN ANCHOR	STUD TIE
PRYDA STRAP BRACE SB103	2400	70x35 F5 / 90x35 F5	RAMSET ANKA SCREWS AS12100H or AS12150H	STS3 or ST3 at all four corners of unit
	2700	70x45 F5 / 90x35 F5		
	3000	70x35 F8 / 90x35 F5		

UNIT BRACING CAPACITIES FOR SW1/1014

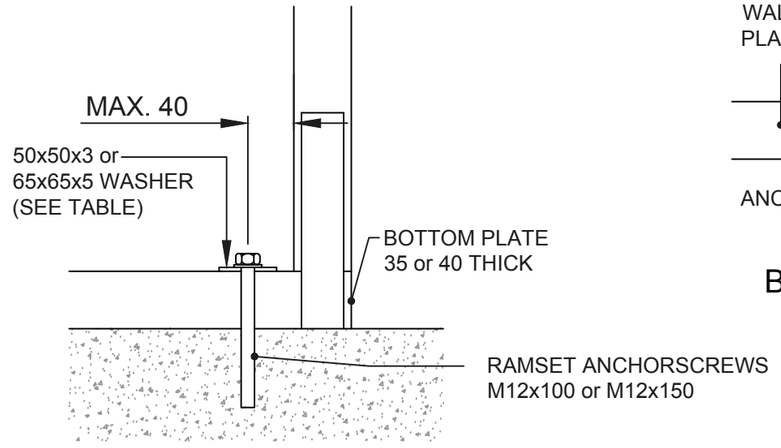
WALL HEIGHT (mm)	2400					2700					3000				
UNIT WIDTH (mm)	1000	1100	1200	1300	1400	1000	1100	1200	1300	1400	1000	1100	1200	1300	1400
EXTERNAL WALLS (kN)	3.3	3.7	4.0	4.1	4.3	3.0	3.3	3.6	3.9	4.1	2.6	3.0	3.2	3.5	3.7
INTERNAL WALLS (kN)	3.7	4.0	4.3	4.5	4.7	3.3	3.7	4.0	4.2	4.5	2.9	3.3	3.6	4.0	4.2

TIE-DOWN ANCHOR DETAIL

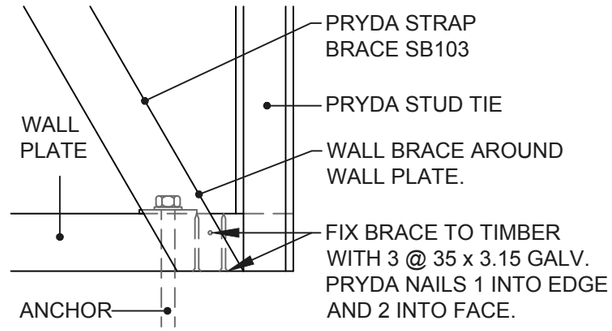
BOTTOM PLATE	ANCHOR CODE	LENGTH	ANCHOR dia	EMBEDMENT min	WASHER min
70x35 or 90x35	AS12100H	100	M12	60	JD5-65x65x5 (OW12/65S)
70x45 or 90x45	AS12150H	150	M12	100	JD4-50x50x3 (OW12/56S)



UNIT DETAIL



TIE DOWN DETAIL



BRACE END FIXING DETAIL

BRACING DETAIL TYPE (SP) - 1000 TO 1400 WALLS

SCALE: NTS

TECHNOCRETE
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OWNERS: **STEVEN & KYLIE MAIN**		

PROJECT NO:	**TC22-P298**
PROJECT TITLE:	**PROPOSED RESIDENCE AT PC 384072 OMEO HIGHWAY - ESKDALE - VIC**
DRAWING TITLE:	**SP WIND BRACING DETAIL**
DRAWING NO:	**S06**
Unit:	mm
	A3