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Project Number:	5660S	Drawing No:	1 of 5
Project Address:	71 Paulls Rd, South Maroota		
Project Title:	Proposed Dwelling		
Drawing Title:	General Notes & Standards Details		
Issue:	B	Date:	13.12.2022
Consent No:	DA12345	Body Corp Reg No:	N/A

Issue	Date	Description	DP Full Name	Reg No
A	01.11.2022	Original issue	Quoc Nguyen	PRE0000655
B	13.12.2022	Waffle Slab	Quoc Nguyen	PRE0000655

I. GENERAL NOTES

1. 1. STRUCTURAL ENGINEERING DRAWINGS ARE ISSUED ON THE UNDERSTANDING THAT THE BUILDER MAINTAINS IN FORCE, PROPER AND ADEQUATE CONTRACT WORKS INSURANCE AND PUBLIC LIABILITY INSURANCE DURING THE FULL COURSE OF THE CONSTRUCTION, AND/OR ANY MAINTENANCE PERIOD. CLAIMS OF DAMAGE TO ANY ADJACENT PROPERTY OF BUILDING IS NOT THE RESPONSIBILITY OF THE ENGINEER.

1.2. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS AND SPECIFICATION AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECT FOR DECISION BEFORE PROCEEDING.

1.3. DURING CONSTRUCTION, THE BUILDING SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED AT ANY TIME. TEMPORARY BRACING SHALL BE PROVIDED BY THE CONTRACTOR AS REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE WORKS DURING CONSTRUCTION.

1.4. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITIONS OF THE BCA AND THERE-BY LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITY.

1.5. DIMENSION SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR SET OUT PLAN MEASUREMENTS. ANY SET OUT DIMENSIONS SHOWN ON THIS DOCUMENT SHALL BE VERIFIED BY THE BUILDER.

1.6. ANY DISCREPANCIES/ SUBSTITUTION IN THESE DOCUMENTS SHALL BE REFERRED TO THE ENGINEER FOR DECISION BEFORE PROCEEDING.

1.7. THE SECTIONS/ DETAILS ON THESE DRAWINGS ARE INTENDED TO GIVE THE STRUCTURAL SPECIFICATIONS ONLY. ARCHITECTURAL SECTIONS/ DETAILS ON THESE DRAWINGS ARE ILLUSTRATIVE ONLY.

1.8. THESE DOCUMENT ARE SIGNED SUBJECT TO CERTIFICATE OF INSPECTION BEING ISSUED BY NITMA. ALL PIERS, SLAB AND FOOTING REINFORCEMENT SHALL BE INSPECTED BY THE ENGINEER PRIOR TO THE POURING OF CONCRETE. NOTICE SHALL BE GIVEN AT LEAST 24 HOURS BEFORE INSPECTION.

1.9. UNLESS NOTED OTHERWISE, QUALITY OF CONCRETE SHALL BE USED AS FOLLOW:

ELEMENT	SLUMP	MAX. AGG. SIZE (mm)	CEMENT TYPE	CONC. GRADE	SALINITY AFFECTED SITE
PIERS	80	20	A	N20	N32
FOOTING & SLAB ON GROUND	80	20	A	N25	N32
SUSPENDED SLAB WALL & COLUMN	80	20	A	N32	N32

1.10. UNLESS NOTED OTHERWISE, COVER FOR REINFORCEMENT SHALL BE PROVIDED AS FOLLOW:

ELEMENT	CAST AGAINST FORMS		CAST AGAINST GROUND	
	INTERIOR	EXTERIOR	PROTECTED	UNPROTECTED
PIERS	40	40	40	50
FOOTINGS	50	50	50	50
SLABS	20	40	30	40
WALLS	40	40	50	50
BEAMS	40	40	40	40
COLUMNS	25	40		

II. CONCRETE NOTES

2.1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600-2009, FORMWORK TO AS3610-1995

2.2. CONCRETE SHALL NOT BE POURED WHEN THE AIR TEMPERATURE IS GREATER THAN 38 DEGREES, NOR LESS THAN 5 DEGREES CELSIUS WITHOUT APPROVAL FROM THE ENGINEER.

2.3. NO ON SITE WATER IS TO BE ADDED TO THE CONCRETE WITHOUT PERMISSION FROM THE ENGINEER.

2.4. THE USE OF CALCIUM CHLORIDE SHALL NOT BE PERMITTED.

2.5. ALL CONCRETE IS TO BE COMPACTED USING A HIGH FREQUENCY VIBRATOR.

2.6. CONCRETE IS TO BE CURED A MIN OF 7 DAYS.

2.7. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.

2.8. SPECIFIED COVER IS THE CLEAR DISTANCE BETWEEN ANY REINFORCING (INCLUDING FITMENTS) AND THE FACE OF THE STRUCTURAL ELEMENT.

2.9. NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DESIGN DRAWINGS SHALL BE MADE IN ANY CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.

2.10. CONSTRUCTION JOINTS SHALL ONLY BE PROVIDED IN LOCATIONS SPECIFICALLY SHOWN IN THE STRUCTURAL DESIGN DRAWINGS.

2.11. FREE DROPPING OF CONCRETE FROM A HEIGHT GREATER THAN 1000mm IS NOT PERMITTED.

2.12. CONCRETE SHALL BE SEPARATED FROM SUPPORTING MASONRY BY TWO LAYERS OF DAMP-PROOF COMPRESSIBLE JOINT FILLER. VERTICAL FACES OF CONCRETE SHALL BE KEPT FREE OF ADJOINING SURFACES BY 10mm THICKNESS OF COMPRESSIBLE JOINT FILLER UNLESS NOTED OTHERWISE ON THE DRAWINGS. ALL NON-LOADBEARING WALLS SHALL BE KEPT CLEAR OF THE UNDERSIDE OF SLABS AND BEAMS BY 20mm UNLESS NOTED OTHERWISE ON THE DRAWINGS.

2.13. BRICKWORK MUST NOT BE BUILT ON CONCRETE SLABS OR BEAMS UNTIL FORMWORK SUPPORTING SAME, HAS BEEN REMOVED.

2.14. THE FOLLOWING REQUIREMENTS SHALL BE INCORPORATED INTO THE FORMWORK DESIGN AND/OR ALLOWED FOR BY THE FORMWORK SUB-CONTRACTOR AS APPROPRIATE:

A) MINIMUM FORMWORK STRIPPING TIMES ARE TO BE AS FOLLOWS:
(i) VERTICAL SURFACES MAY BE STRIPPED OF FORMWORK WHEN THE MINIMUM MEAN COMPRESSIVE STRENGTH OF THE CONCRETE HAS REACHED 5.0 MPa OR A MINIMUM OF 2 DAYS AFTER CONCRETE POUR PROVIDED THE AVERAGE AMBIENT TEMPERATURE OVER THAT PERIOD IS BETWEEN 12 AND 20 DEGREES CELSIUS.
(ii) SOFFITS OF BEAMS AND SLABS MAY BE STRIPPED OF FORMWORK WHEN THE MINIMUM MEAN COMPRESSIVE STRENGTH OF THE CONCRETE HAS REACHED 22 MPa OR A MINIMUM OF 6 DAYS AFTER CONCRETE POUR PROVIDED THE AVERAGE AMBIENT TEMPERATURE OVER THAT PERIOD IS BETWEEN 12 AND 20 DEGREES CELSIUS.
(ii) REMOVAL OF FORMWORK SUPPORT (PROPS) TO BEAM AND SLAB SOFFITS MAY BE UNDERTAKEN WHEN THE MINIMUM MEAN COMPRESSIVE STRENGTH OF THE CONCRETE HAS REACHED 28 MPa OR A MINIMUM OF 18 DAYS AFTER CONCRETE POUR PROVIDED THE AVERAGE AMBIENT TEMPERATURE OVER THAT PERIOD IS BETWEEN 12 AND 20 DEGREES CELSIUS.

B) ALL CONCRETE COMPRESSIVE STRENGTH SHALL BE DETERMINED FROM SAMPLE CYLINDER TESTING BY A NATA REGISTERED LABORATORY.

III. SITE CLEARANCE & PREPARATION

3.1. STRIP TOPSOIL AND VEGETATION TO A 100mm MINIMUM DEPTH AND STOCKPILE.

3.2. THE SITE IS TO BE BENCHED BY CUT AND FILL TO DESIRED LEVELS.

3.3. ANY FILL USED IN THE CONSTRUCTION OF A SLAB EXCEPT WHERE THE SLAB IS SUSPENDED SHALL CONSIST OF "ROLLED OR CONTROLLED FILL":
2.3.1. ROLLED FILL SHALL BE PLACED IN LAYERS OF 150mm MAXIMUM IN ACCORDANCE WITH AS2870 AND THOROUGHLY COMPACTED USING AN EXCAVATOR. UNLESS THIS FILL IS COMPACTED IN ACCORDANCE WITH AS2870, IT IS NOT ADEQUATE FOR THE LONG TERM STRUCTURAL SUPPORT TO THE SLAB/ FOOTING SYSTEM AND PIERS MUST BE CONSTRUCTED.
2.3.2. CONTROLLED FILL SHALL BE PLACED, TESTED AND CERTIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER AS DEFINED IN AS3798. THIS IS THEN DEEMED TO BE ADEQUATE TO SUPPORT THE SLAB/ FOOTIING SYSTEM.

3.4 THE FILL IS TO EXTEND PAST THE EDGE OF THE SLAB BY AT LEAST ONE METRE AND SHALL BE BATTERED OFF NOT STEEPER THAN TWO (HORIZONTAL) TO ONE (VERTICAL) OR BY A SUITABLE RETAINING STRUCTURE PROVIDED BY THE OWNER OF BUILDER.

3.5. THE FINISHED LEVELS SHALL ALLOW FOR THE MAIN SLAB TO BE AT LEAST 150mm ABOVE THE ADJACENT GROUND.

3.6. SURFACE DRAINAGE SHALL BE PROVIDED AS REQUIRED TO AVOID THE POSSIBLITY OF WATER PONDING NEAR THE SLAB. A FALL OF 50mm OVER A DISTANCE OF ONE METRE AWAY FROM THE SLAB IS CONSIDERED ADEQUATE. SUBSOIL DRAINS (AGRICULTURAL DRAINS) ARE CONSIDERED DESIRABLE BUT SHOULD BE AVOIDED BEING LOCATED DIRECTLY ADJACENT TO THE FOOTING.

IV. PIERS

4.1. PIER DIAMETER AND LOCATIONS ARE SHOWN ON PLAN. ONLY WITH THE PRIOR APPROVAL OF THE ENGINEER MAY THE PIER DIAMETER BE VARIED AS PER THE "PIER DIAMETER TABLE" BELOW.

4.2. UNLESS NOTED OTHERWISE, MINIMUM PIER DEPTH IS 600mm BELOW FOOTING TRENCH AND WHEREVER NOMINATED SHOULD BE SOCKETED A MINIMUM 300mm INTO STIFF CLAY.

4.3. ALL PIER HOLES SHALL BE CLEANED AND DE-WATERED PRIOR TO THE POURING OF CONCRETE.

4.4. ALL PIERS SHALL BE POURED SEPARATELY TO RAFT SLAB.

4.5. IF ANY OF THE FOOTING BEAMS ENCOUNTER ROCK OR SHALE, THEN ALL BEAMS AND LOAD BEARING SPINE BEAMS SHALL BE PIERED TO ROCK OR SHALE. IF PARTIALLY PIERED TO ROCK THEN BRICK JOINTS ARE TO BE PROVIDED AT THE ROCK/ NON-ROCK INTERFACE.

V. LIGHT WEIGHT STEEL FRAME NOTES

5.1. ALL DESIGN, MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH AS4600 COLD FORMED STEEL STRUCTURES CODE.

5.2. UNLESS NOTED OTHERWISE ON THE DRAWINGS ALL WALL FRAMING SHALL BE DESIGNED AND INSTALLED BY THE MANUFACTURER IN ACCORDANCE WITH THE SPECIFICATION AND RELEVANT AUSTRALIAN STANDARDS

5.3. ALL FRAMING SHALL BE DESIGNED TO CARRY THE DEAD LOAD OF ALL FRAMING MEMBERS, CLADDING, LININGS, FOLDING DOORS, SERVICES ETC. AS SHOWN ON THE ARCHITECTS AND OTHER CONSULTANTS DRAWINGS.

5.4. ALL FRAMING DIMENSIONS SHALL BE OBTAINED FROM ARCHITECTURAL DRAWINGS

5.5 .ALL WALL FRAMING SHALL BE DESIGNED AS LOAD BEARING TO RESIST THE FULL WIND LOAD EFFECTS FROM BOTH THE WALLS AND ROOF OF THE BUILDING IN ALL DIRECTIONS

5.6. IN ADDITION TO THE DEFLECTION LIMITS SPECIFIED IN THE RELEVANT AUSTRALIAN STANDARDS, WALL FRAMING SHALL BE DESIGNED TO ACHIEVE THE FOLLOWING ADDITIONAL LIMITS:
- STUD WALLS UNDER LATERAL LOADING (SERVICEABILLITY WIND LOADING = SPAN/200
- ROOF MEMBERS UNDER DEAD LOAD = SPAN/500
- ROOF MEMBERS UNDER LIVE LOAD = SPAN/240
- ROOF MEMBERS UNDER WIND LOAD = SPAN/150

5.7. THE CONTRACTOR MUST SUBMIT A DESIGN CERTIFICATE TO CERTIFY THE WALL FRAMING & ROOF TRUSSES DESIGN ARE IN ACCORDANCE WITH AS4600 FOR THE RELEVANT LOADS SIGNED BY A NPER REGISTERED ENGINEER.

VI. FORMWORK NOTES

6.1. THE DESIGN CERTIFICATION CONSTRUCTION INSPECTION OF AND PERFORMANCE OF THE FORMWORK AND FALSEWORK IS THE RESPONSIBILITY OF THE BUILDER'S FORMWORK CONTRACTOR. THE FORMWORK SHALL NOT BE DESIGNED TO RELY ON RESTRAINT OR SUPPORT FROM THE PERMANENT STRUCTURE WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

6.2. CONSTRUCTION TOLERANCES OF FORMWORK AND STRIPPING TIMES SHALL COMPLY WITH AS3610 AND AS3600 (WHERE MORE STRINGENT) UNLESS OTHERWISE APPROVED IN WRITING BY THE ENGINEER.

6.3. DURING CONSTRUCTION, SUPPORT PROPPING WILL BE REQUIRED WHERE LOADS FROM STACKED MATERIALS, FORMWORK AND OTHER SUPPORTED SLABS INDUCE LOADS IN A SLAB OR BEAM WHICH EXCEED THE DESIGN LOAD FOR STRENGTH OR SERVICEABILITY AT THAT AGE. ONCE THE NOMINATED 28 DAY STRENGTH HAS BEEN ATTAINED, THESE LOADS SHALL NOT EXCEED THE DESIGN SUPERIMPOSED LOADS SET OUT ON THE STRUCTURAL DRAWINGS.

6.4. CONSTRUCTION SUPPORT BACK-PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING. REFER FORMWORK ENGINEER FOR NUMBER OF FLOORS REQUIRED TO BE BACKPROPPED TO SUPPORT CONSTRUCTION LOADINGS. NO BRICKWORK OR PARTITION WALLS ARE TO BE CONSTRUCTED ON SUSPENDED LEVELS UNTIL ALL PROPPING IS REMOVED AND THE SLAB HAS ABSORBED ITS DEAD LOAD DEFLECTION.

6.5. PROP REMOVAL SHALL BE PROGRAMMED TO AVOID DISTRESS TO PREVIOUSLY CAST FLOORS & SHALL BE CARRIED OUT PROGRESSIVELY. RE-SHORING OR BACK-PROPPING SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

6.6. DIMENSIONAL TOLERANCES SHALL COMPLY WITH AS3610 CLAUSE 3.4 OR AS3600 CLAUSE 17.5. FOR THE APPROPRIATE FINISH CLASS.

6.7. CONCRETE FORMED SURFACES SHALL HAVE THE FOLLOWING FINISHES IN ACCORDANCE WITH THE SURFACE FINISH CLASSES OF AS3610, UNLESS SPECIFIED DIFFERENTLY ON THE ARCHITECTURAL DRAWINGS OR CONCRETE FORMWORK SPECIFICATION. CONCRETE ELEMENT OR SURFACE SURFACE FINISH CLASS NORMAL ARCHITECTURAL & CIVIL WORKS 2 SURFACES NOT OTHERWISE SPECIFIED SURFACES TO BE RENDERED OR HIDDEN 4 BY OTHER FINISHES SURFACES PERMANENTLY CONCEALED 5

6.8. BEFORE PLACING REINFORCEMENT, APPLY A RELEASE AGENT COMPATIBLE WITH SURFACE FINISH TO FACE OF FORMWORK.

6.9. REFER ARCHITECTURAL SPECIFICATIONS & DRAWINGS FOR ANY TEST PANELS REQUIRED.

6.10. BEFORE PLACING CONCRETE, REMOVE WATER, DUST & DEBRIS FROM THE FORMWORK.

6.11. FILL ALL THE HOLES LEFT BY FORM TIE BOLTS WITH MORTAR MATCHING THE SURFACE COLOUR OF THE FINISHED SURFACE.

VII. FOOTINGS AND FLOOR SLAB

7.1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE PIER TOPS ARE CLEAN OF FOREIGN MATTER PRIOR TO THE PLACEMENT OF THE MEMBRANE AND CONCRETE SLAB. ENGINEER'S SPOT CHECK DOES NOT RELEASE THE CONTRACTOR FROM THIS RESPONSIBILITY.

7.2. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600.

7.3. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER.

7.4. PIPE PENETRATION IN THE EDGE AND SPINE BEAMS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE DETAILS. WHERE SLAB FABRIC IS CUT TO PERMIT PENETRATIONS OF PIPES, A 600 x 600mm PIECE OF FABRIC IS TO BE SPLICED OVER THE PENETRATION.

7.5. FOR 'H' AND 'E' CLASS SITES, ALL PENETRATIONS THROUGH FOOTINGS AND EDGE BEAMS SHALL BE SLEAVED TO ALLOW MINIMUM 20mm ('H' CLASS) AND 40mm ('E' CLASS) MOVEMENT AS PER AS2870. ALL PLUMBING AND DRAINAGE SERVICES ARE TO BE FITTED WITH FLEXIBLE CONNECTIONS AS PER AS2870.

7.6. SUBTERRANEAN TERMITE PROTECTION IS TO BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF AS3660.

7.7. A DAMP-PROOF MEMBRANE MUST BE PLACED BENEATH THE SLAB SO THAT THE BOTTOM OF THE SLAB IS ENTIRELY UNDERLAIN. THE DAMP-PROOF MEMBRANE MUST BE 0.2mm NOMINAL THICK POLYTHENE FILM AND OF HIGH IMPACT RESISTANCE. LAPS SHALL BE 200mm MINIMUM AT JOINTS. ALL PLUMBING PENETRATION AND JOINTS ARE TO BE TAPED AND WATERPROOFED. THE SITE IS TO BE PROPERLY DRAINED TO ELIMINATE SURFACE AND SUBSOIL WATER FLOW.

7.8. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON INSULATED STEEL, PLASTIC OR CONCRETE CHAIRS. BAR CHAIRS SHALL BE PLACED SUCH THAT REINFORCEMENT IS ALWAYS POSITIONED WITH SPECIFIED COVER.

7.9. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN. THE WRITTEN APPROVAL OF THE ENGINEER SHALL BE OBTAINED FOR ANY OTHER SPLICES, WHERE LAP LENGTHS ARE NOT SHOWN THEY SHALL SATISFY THE REQUIREMENTS OF AS3800.

7.10. IF SLAB FABRIC IS USED, IT IS TO BE SUPPLIED IN FLAT SHEETS AND IS TO BE LAPPED ONE FULL SQUARE PLUS 25mm AT SPLICES AND PLACED ON BAR CHAIRS AT ONE METRE CENTRES BOTH WAYS UNLESS REDUCED SPACING IS SPECIFIED.

7.11. WELDING OF REINFORCEMENT OTHER THAN TACK WELDING FOR PURPOSE OF MAINTAINING BARS IN CORRECT POSITION IS NOT PERMITTED UNLESS SPECIFICALLY NOMINATED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.

7.12. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED. VIBRATORS SHALL NOT BE USED TO SPREAD CONCRETE.

7.13. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY ONLY. IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.

VIII. TERMITE PROTECTION

8.1. ALL WORKS TO BE IN ACCORDANCE WITH AS3660.1.

8.2 ANY FUTURE CRACKING IN THE SLAB IS TO BE ASSESSED BY A QUALIFIED PEST EXPERT AND WERE DIRECTED, BE SEALED BY EPOXY INJECTION.

IX. REINFORCEMENT NOTES

9.1. ALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH AS/NZS 4671-2001.

9.2. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY, AND IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.

1. REINFORCEMENT DESIGNATIONS AS FOLLOWS:
A) N - GRADE 500N HS DEFORMED BAR
B) R - GRADE 500R HOT ROLLED BAR
C) SL AND RL - GRADE 500L SQUARE MESH
D) TM - GRADE 500L TRENCH MESH

9.3. TRENCH MESH SHALL BE SPLICED WHERE NECESSARY BY A LAP OF 500mm.

9.4. LAPPING OF MESH SHALL BE PROVIDED ACCORDING TO THE FOLLOWING:

A) A LAPPED SPLICE FOR PROPRIETARY WELDED MESH SHALL BE MADE SO THAT THE TWO OUTERMOST CROSS-BARS OF THE LAPPING SHEET OVERLAP THE TWO OUTERMOST CROSS-BARS OF THE SHEET BEING LAPPED. THE BARS OF THE PROPRIETARY WELDED MESH SHOULD BE SPACED NOT LESS THAN 100mm APART. ALL "ONESTEEL" AUSTRALIAN MESH PRODUCTS MEET THIS REQUIREMENT. THE MINIMUM LENGTH OF THE OVER LAP SHALL EQUAL 100mm.

B) A LAPPED SPLICE FOR WELDED MESH FABRICATED FROM PLAIN OR DEFORMED BAR, SHALL BE MADE SO THAT THE TWO OUTERMOST CROSS-BARS OF THE LAPPING SHEET OVERLAP THE TWO OUTERMOST CROSS-BARS OF THE SHEET BEING LAPPED. THE BARS OF THE MESH FABRICATED FROM PLAIN OR DEFORMED BAR SHOULD BE SPACED NOT LESS THAN 50mm APART. THE MINIMUM LENGTH OF THE OVERLAP SHALL EQUAL 100mm.

9.5. REINFORCEMENT STRSS DEVELOPMENT AND LAP SPLICING LENGTHS SHALL BE IN ACCORDANCE WITH AS3600-2009. QUICK REFERENCE GUIDES AS TO DEVELOPMENT, LAP AND COG LENGTH REQUIRED FOR EACH BAR DESIGNATION ARE AVAILABLE FROM "ONESTEEL" AT www.reinforcing.com

9.6. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

9.7. ALL REINFORCEMENT IS TO BE ADEQUATELY SUPPORTED IN ITS REQUIRED POSITION. MESH AND BAR SUPPORT CHAIRS ARE TO BE AT 800mm MAX CENTERS, BOTH DIRECTIONS. BAR SUPPORT CHAIRS SHALL BE PROVIDED ALONG THE EDGES OF ALL CONSTRUCTION JOINTS.

9.8. BARS SHALL BE EVENLY DISTRIBUTED OVER THE WIDTH OF THE STRIP UNLESS NOTED OTHERWISE.

9.9 REINFORCEMENT SHALL NOT BE CUT OR WELDED ON SITE UNLESS APPROVED BY THE ENGINEER. BARS CONFLICTING WITH SMALL HOLES AND OTHER MINOR PENETRATIONS LESS THAN 300mm LONG MAY BE DISPLACED LATERALLY.

X. SHRINKAGE CONTROL & MAINTENANCE

10.1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 AND AS2870.

10.2. WATER IS NOT TO BE ADDED TO THE CONCRETE ON SITE SO AS TO INCREASE THE SLUMP ABOVE THAT SPECIFIED.

10.3. NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE ELEMENTS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

10.4. CURING THE CONCRETE SHALL START IMMEDIATELY AFTER FINISHING BY CONTINUALLY WETTING FOR 7 DAYS MINIMUM. PLASTIC OR WAX LIQUID SPRAYS MAY BE USED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. EXTRA PRECAUTION SUCH AS THE METHOD OF EVAPORATIVE RETARDATION IS RECOMMENDED DURING HOT WEATHER POURS TO HELP AVOID THERMAL RELATED SLAB CRACKING.

10.5. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.

10.6. CAUTION SHOULD BE EXERCISED WHEN APPLYING BRITTLE FINISHES SUCH AS CERAMIC TILES TO THE FLOOR SLAB. BRITTLE FLOOR COVERINGS ARE TO BE LAID ON A SUITABLE, FLEXIBLE TYPE BEDDING SYSTEM AND SUPPLIED WITH CONTROL JOINTS AT 400mm CENTRES MAXIMUM. ALTERNATIVELY SL92 FABRIC CAN BE USED, OR DELAY APPLYING FINISHES FOR 3 MONTHS (REFER TO AS2870 OR AS3958).

XI. MASONRY

11.1. LOAD BEARING MASONRY SHALL COMPLY WITH AS3700 AND THE PROJECT SPECIFICATIONS.

11.2. THE MINIMUM CHARACTERISTIC COMPRESSIVE STRENGTH OF THE MASONRY UNITS AS DESCRIBED IN AS3700 SHALL BE 20MPa UNLESS NOTED OTHERWISE.

11.3. MORTAR 1:1:6 PROPORTION BY VOLUME OF CEMENT, LIME AND SAND RESPECTIVELY.

11.4. MASONRY SHALL BE ARTICULATED BY THE CONTRACTOR IN ACCORDANCE WITH THE BCA CLASS 1 AND 10 BUILDINGS, VOLUME 2.

11.5. INTERNAL BRICKWORK BUILT OFF THE SLAB SHALL BE LAID ON TWO LAYERS OF 'ALCOR' OR SIMILAR SLIP JOINT MATERIAL.

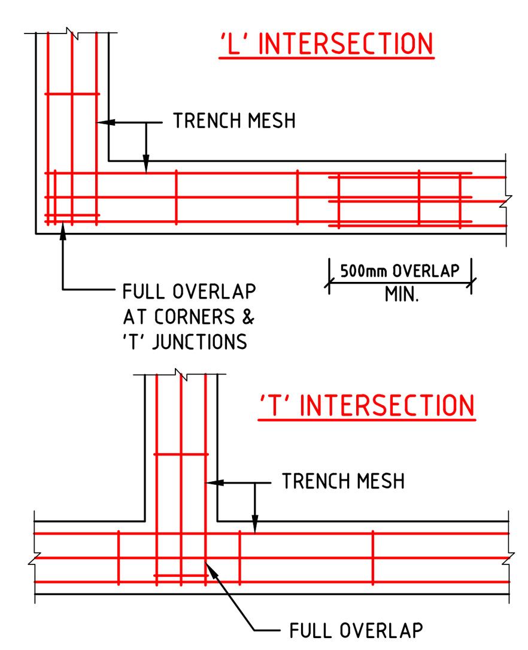
11.6. MASONRY WALLS MUST NOT BE BUILT ON CONCRETE SLABS OR BEAMS UNTIL ALL FORMWORK/ PROPS SUPPORTING THESE SLABS AND BEAMS HAVE BEEN REMOVED.

11.7. ALL WALL TIES TO BE BUILT IN AND FIXED TO FRAME PROGRESSIVELY AS CONSTRUCTION PROCEEDS SPACED AT EACH SIDE OF EXPANSION JOINTS AND AT EACH THIRD COURSE. THE SPACING OF ALL OTHER TIES SHALL BE AS DESCRIBED IN THE BCA CLASS 1 AND 10 BUILDINGS, VOLUME 2.

BRICK LINTEL SCHEDULE

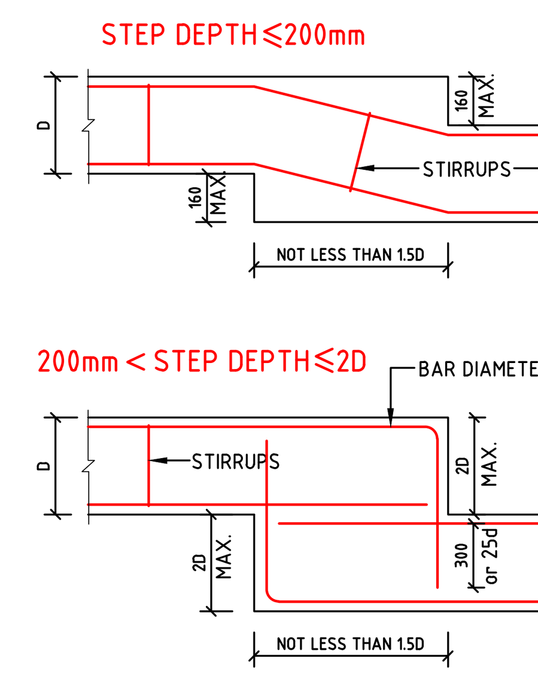
OPENING SIZE (mm)	INTERNAL SKIN	EXTERNAL SKIN	END BEARING
UP TO 900mm	100x6mm FLAT BAR	100x6mm FLAT BAR	100mm
1200	100x10mm FLAT BAR	100x8mm FLAT BAR	100mm
1500	100x100x8mm ANGLE	100x100x6mm ANGLE	150mm
2100	150x100x8mm ANGLE	150x100x6mm ANGLE	150mm
2400	150x100x8mm ANGLE	150x100x8mm ANGLE	150mm
2700	150x100x10mm ANGLE	150x100x10mm ANGLE	150mm
3000	150x100x12mm ANGLE	150x100x12mm ANGLE	150mm

× ALL STEEL LINTELS TO BE HOT DIPPED GALVANISED



FOOTING CONNECTION

NOT TO SCALE



FOOTING STEPS

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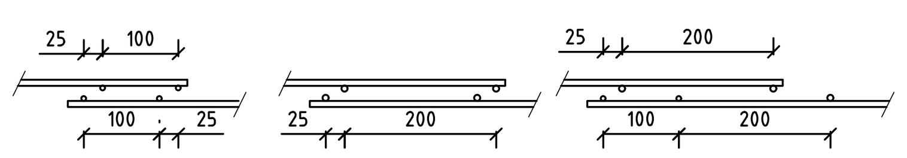
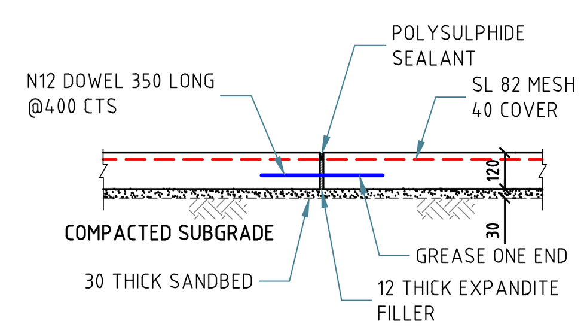


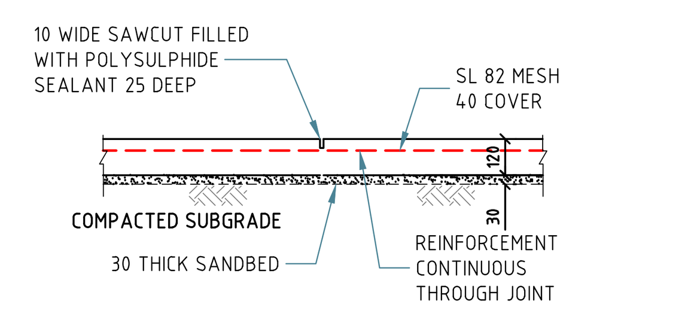
FABRIC LAP DETAILS

SCALE 1:10



CONCRETE PAVEMENT EXPANSION JOINT (EJ) DETAILS

SCALE 1:25



CONCRETE PAVEMENT SAWCUT CONTROL JOINT (CJ) DETAILS

SCALE 1:25

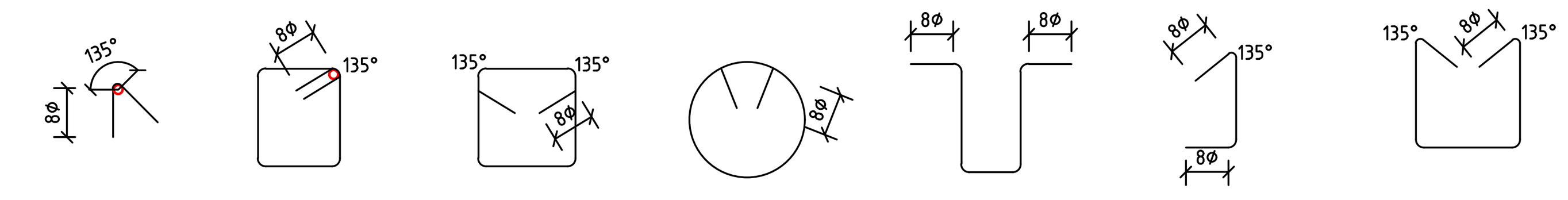
REO BAR LAP & COG LENGTH

(RESPONDING TO 32MPa CONCRETE/ 25MPa CONCRETE OR LOWER RESPECTIVELY)

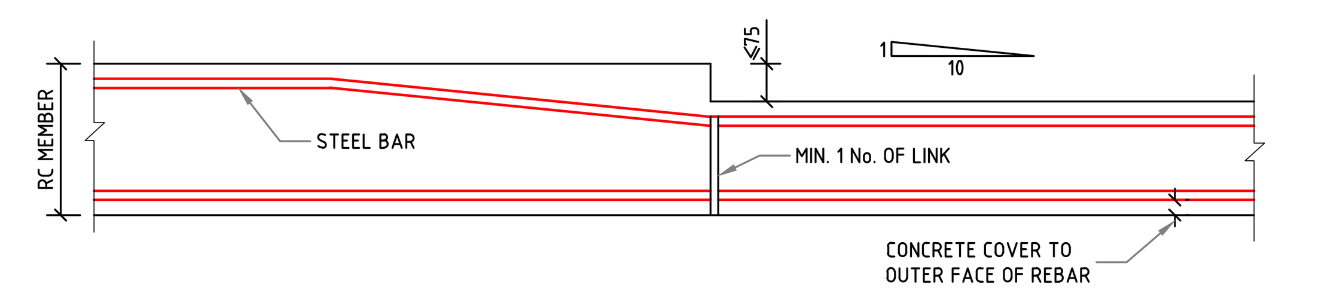
BAR DIA (mm)	SLAB&WALL	BEAM&COLUMN	OTHERS
12	350/ 410	420/ 530	460/ 580
16	540/ 680	700/ 880	760/ 960
20	790/ 1000	1020/ 1290	1110/ 1400
24	920/ 1040	1190/ 1340	1300/1470
28	1050/ 1190	1360/ 1540	1480/ 1680

STANDARD DETAILS

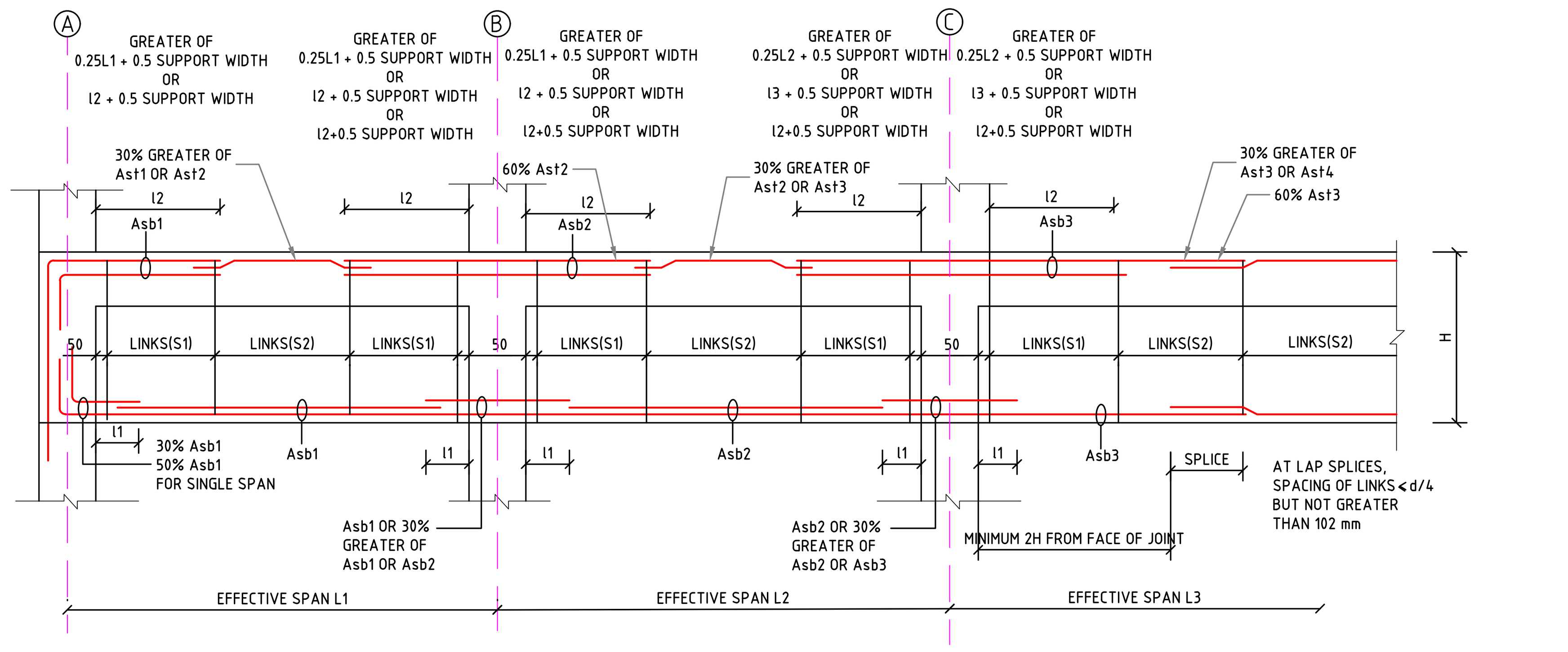
1. THE ANCHORAGE LENGTH OF LINKS SHALL BE AT LEAST 8 TIMES THE BAR DIAMETER OF LINKS



2. STEEL BARS SHALL BE CRANKED TO A 1:10 GRADIENT, IF NECESSARY, TO ACHIEVE REQUIRED CONCRETE COVER AS SHOWN BELOW:

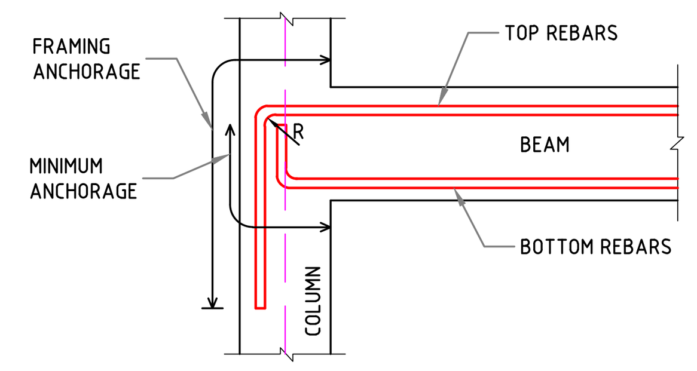


3. UNLESS OTHERWISE SHOWN IN DRAWINGS,BEAM REINFORCEMENT DETAILS SHALL BE AS SHOWN BELOW:



NOTE: - IN LENGTH S1 - SPACING FOR LINKS < d/4 OR 8x DIA. OF SMALLEST MAIN BAR OR 24x DIA. OF LINK OR 305mm
- IN LENGTH S2 - SPACING FOR LINKS d/2
- l1 = 0.1 L1
- l2 = 0.35 L2
- d = EFFECTIVE DESIGN DEPTH

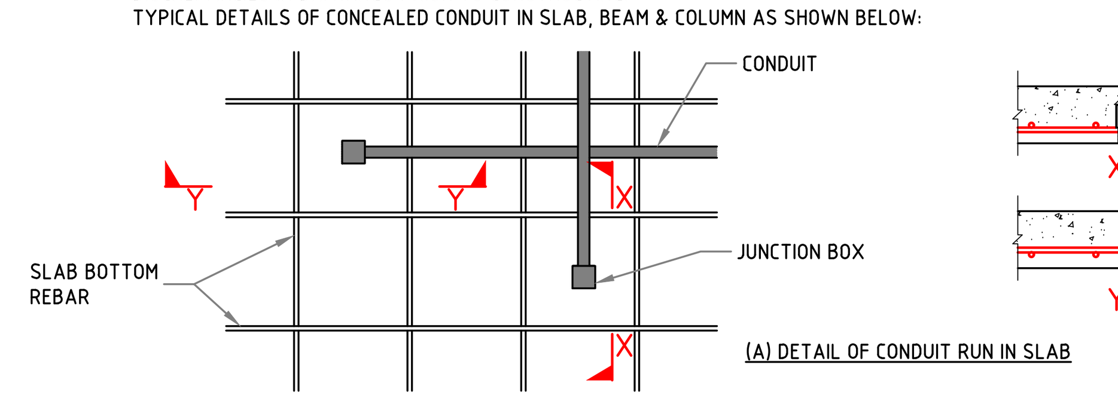
4. BEAM CONNECT WITH COLUMN
UNLESS OTHERWISE SHOWN IN DRAWINGS, REINFORCING REBARS DETAILS AT CORNER FORMED BY BEAM & COLUMN SHALL BE AS SHOWN BELOW



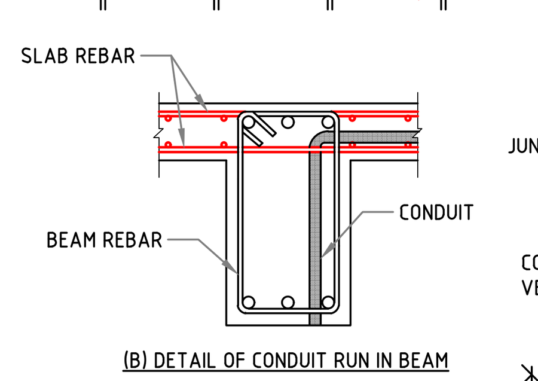
NOTE: VALUES FOR MINIMUM ANCHORAGE, FRAMING ANCHORAGE AND CRITICAL RADIUS

BAR DIA. (mm)	MINIMUM ANCHORAGE (mm)	FRAMING ANCHORAGE (mm)	CRITICAL RADIUS R (mm)
	12ø OR 300	45ø	8ø
40	500	1800	320
32	400	1440	260
28	350	1260	225
24	350	1150	200
20	300	900	160
16	300	750	130
12	300	540	100

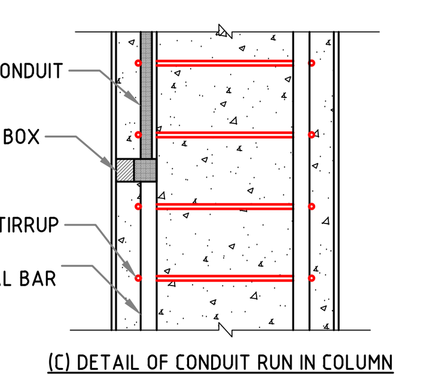
5. OPENINGS, CONCEALED CABLES AND CAST-IN CONDUITS
- NO HOLES OR CHASES ARE PERMITTED IN CONCRETE MEMBERS OTHER THAN THOSE AS DETAILED IN THE STRUCTURAL DRAWINGS OR AUTHORISED BY THE ENGINEER PRIOR TO CONCRETING.
- NO HACKING OR CORING OF STRUCTURES IS PERMITTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER.
- PIOR TO CONSTRUCTION, THE CONTRACTOR IS DEEMED TO HAVE CHECKED ALL STRUCTURAL, ARCHITECTURAL AND MECHANICAL & ELECTRICAL (M&E) DRAWINGS FOR OPENINGS, CONCEALED CABLES AND CAST-IN CONDUITS. THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES IN DRAWINGS PRIOR TO CONSTRUCTING.
TYPICAL DETAILS OF CONCEALED CONDUIT IN SLAB, BEAM & COLUMN AS SHOWN BELOW:



(A) DETAIL OF CONDUIT RUN IN SLAB

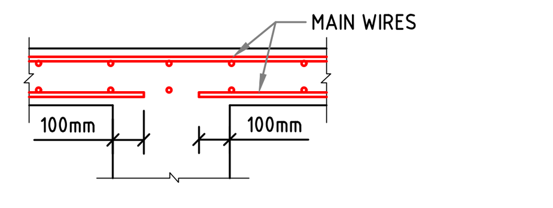


(B) DETAIL OF CONDUIT RUN IN BEAM

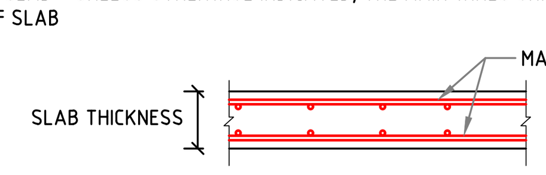


(C) DETAIL OF CONDUIT RUN IN COLUMN

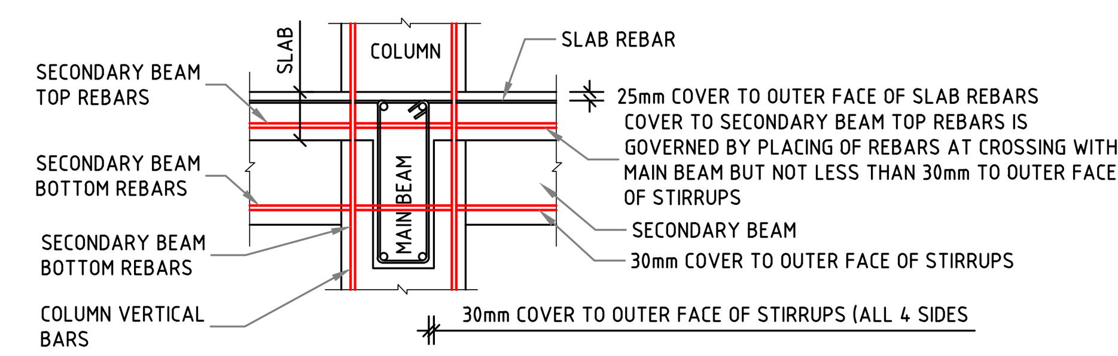
6. SLAB - AT BEAM SUPPORTS FOR SLABS, THE MAIN WIRES OF THE WELDED FABRIC REINFORCEMENT (WSFR) SHALL SPAN PERPENDICULAR TO BEAM DIRECTION. THE WIRES OF THE BOTTOM WSFR SHALL ANCHOR INTO THE BEAM BY AT LEAST 100mm AS SHOWN BELOW:

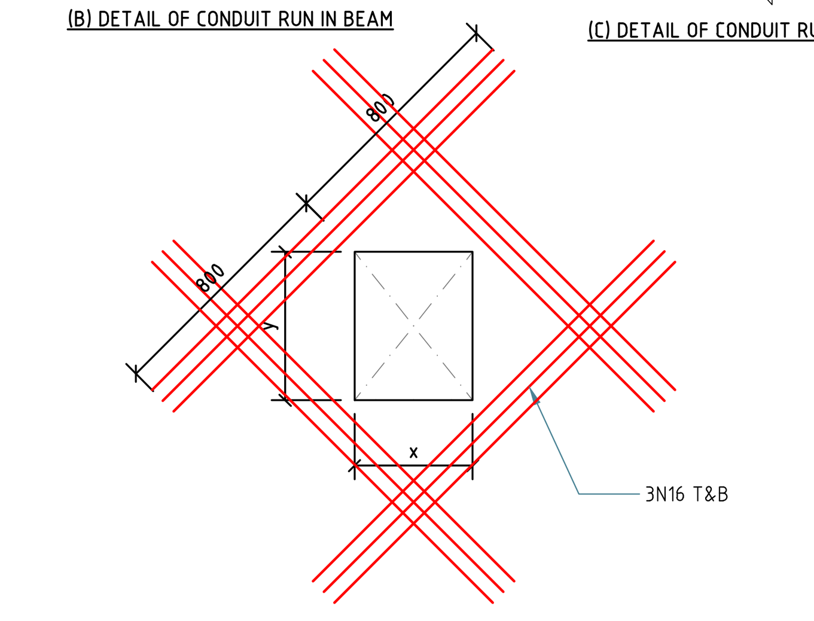


7. SLAB - UNLESS OTHERWISE INDICATED, THE MAIN WIRES SHALL SPAN ACROSS THE SHORTER SPAN OF SLAB



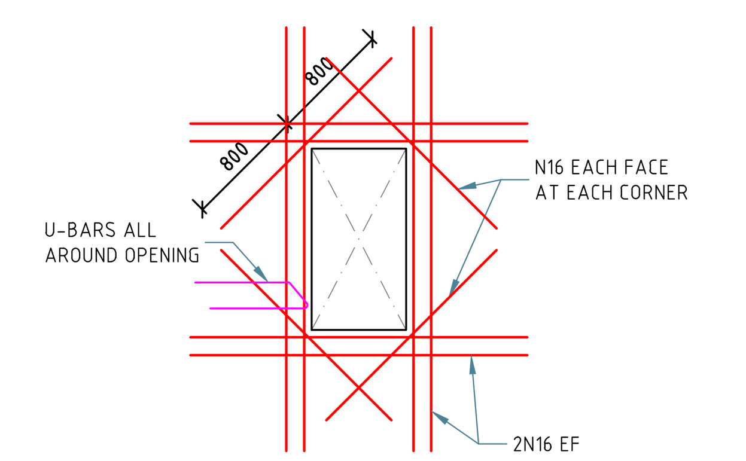
8. BEAMS/COLUMN JUNCTION NOT IN CONTACT WITH GROUND





SLAB OPENING REINFORCING DETAIL (TYP)

NOT TO SCALE



WALL OPENING REO DETAIL (TYP)

NOT TO SCALE

Designed:	Checked:	Approved:
VA	Kevin Nguyen MPM, BE (Civil), MIEAust, CPEng, NER Reg. No. 546 0073	Quoc Huy Nguyen PhD (Eng), MIEAust, CPEng, NER Reg. No. 208 2513

Paper size: A1

All dimensions are in millimetres. Do not scale the drawing. Use written dimensions. Dimensions must be confirmed prior to commencement. Location of services are approximate only. Dial 1100 before any excavation or demolition.

True North

NITMA CONSULTING PTY LTD
PO Box 43, West Ryde NSW 1685
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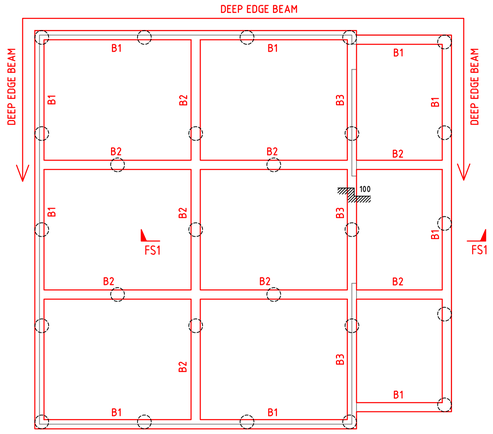
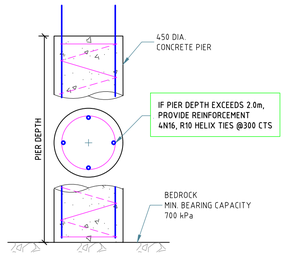
Project Number: 5660S	Drawing No: 2 of 5		
Project Address: 71 Paulls Rd, South Maroota			
Project Title: Proposed Dwelling			
Drawing Title: Footing Plans			
Issue: B	Date: 13.12.2022		
Consent No: DA12345	Body Corp Reg No: N/A		

Issue	Date	Description	DP Full Name	Reg No
A	01.11.2022	Original issue	Quoc Nguyen	PRE0000655
B	13.12.2022	Waffle Slab	Quoc Nguyen	PRE0000655



FOOTING PLAN-SHED
SCALE 1:100



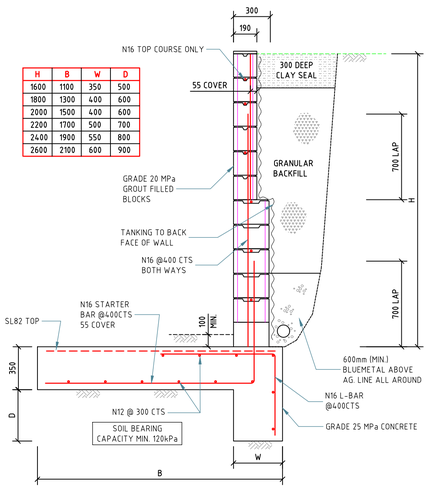
TYP. PIER DETAILS
SCALE 1:20

- SOIL CLASSIFICATION: A
- SLAB THICKNESS: 100mm MIN. U.N.O.
- SLAB REINFORCEMENT: SL82, 20 COVER U.N.O.

IMPORTANT NOTES:
REFER TO GEOTECHNICAL REPORT BY GREG D. KEIGHRAN PTY LTD, REF. No. 13003/GK/6 DATED 12th NOVEMBER 2015 FOR FURTHER INFORMATION

IF FOUNDATION OF ADEQUATE BEARING (REFER TO SHEET 1) IS ENCOUNTERED DURING EXCAVATION, PIERS CAN BE DELETED.

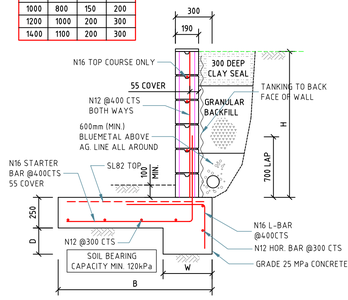
KEY:
- PIER/PAD TO FIRM STIFF CLAY OR ROCK U.N.O.
- RC. CONCRETE PIER FOR SWIMMING POOL



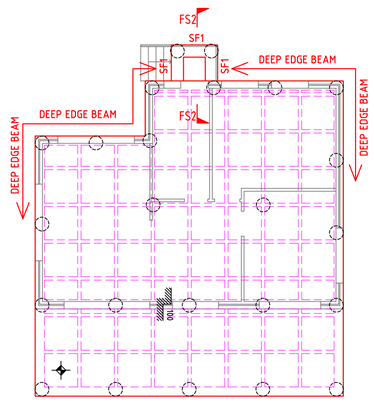
H	B	W	D
1600	1100	350	500
1800	1300	400	600
2000	1500	400	600
2200	1700	500	700
2400	1900	550	800
2600	2100	600	900

RETAINING WALL (1.4m < H < 2.6m)
SCALE 1:25

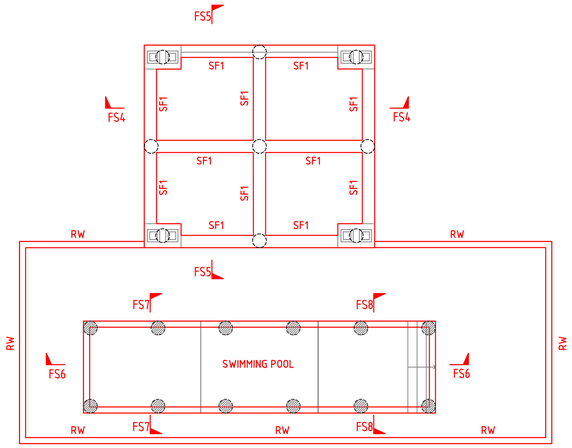
H	B	W	D
600	500	-	-
800	700	-	-
1000	800	150	200
1200	1000	200	300
1400	1100	200	300

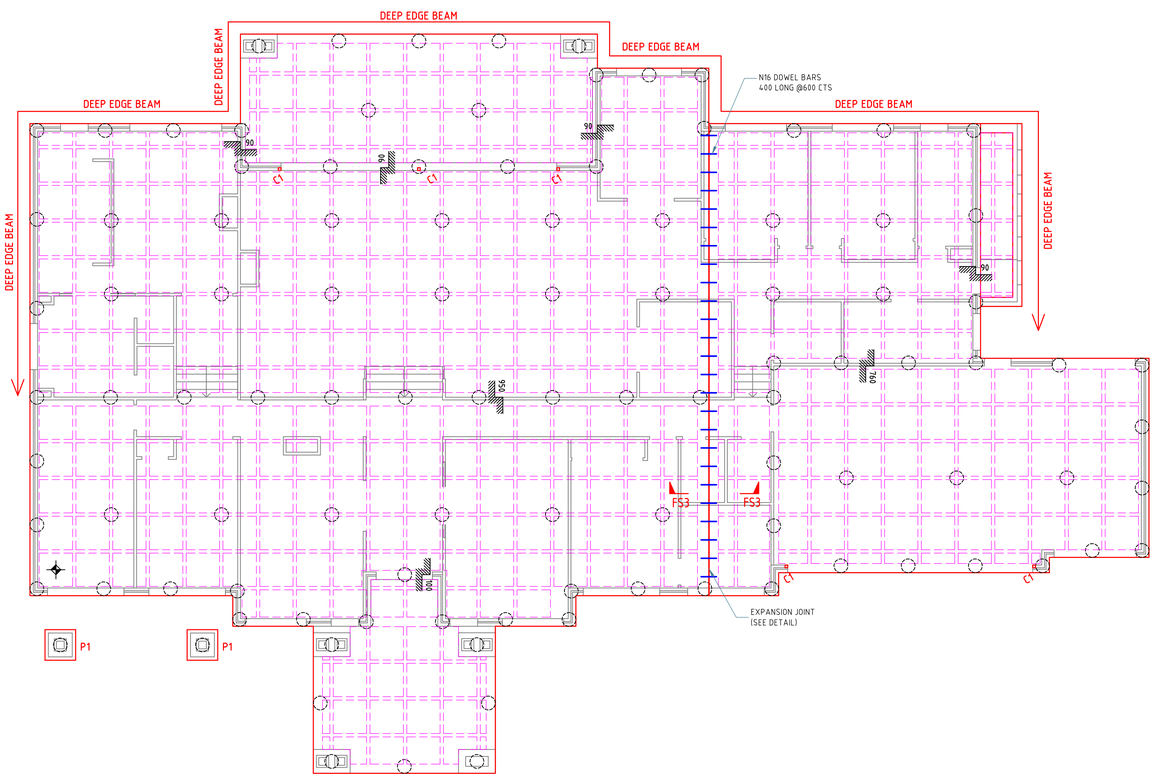


RETAINING WALL (H < 1.4m)
SCALE 1:25



FOOTING PLAN-GRANNY FLAT
SCALE 1:100





FOOTING PLAN-MAIN DWELLING
SCALE 1:100

Designed:	Checked:	Approved:
VA	Kevin Nguyen MPM, BE (Civil), MIEAust, CPEng, NER Reg. No. 546 0073	Quoc Huy Nguyen PhD (Eng), MIEAust, CPEng, NER Reg. No. 208 2513

Paper size: A1

All dimensions are in millimetres. Do not scale the drawing. Use written dimensions. Dimensions must be confirmed prior to commencement. Location of services are approximate only. Dial 1100 before any excavation or demolition.

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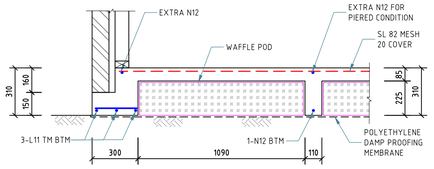
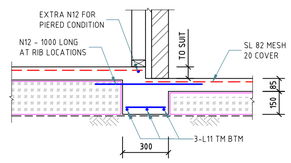
Project Number:	5660S	Drawing No:	3 of 5
Project Address:	71 Paulls Rd, South Maroota		
Project Title:	Proposed Dwelling		
Drawing Title:	Footing Details		
Issue:	B	Date:	13.12.2022
Consent No:	DA12345	Body Corp Reg No:	N/A

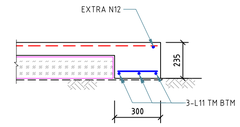
Issue	Date	Description	DP Full Name	Reg No
A	01.11.2022	Original issue	Quoc Nguyen	PRE0000655
B	13.12.2022	Waffle Slab	Quoc Nguyen	PRE0000655



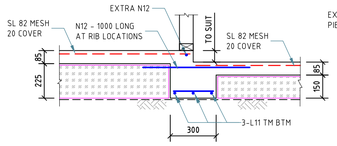
TYPICAL EDGE & RIB BEAM DETAILS
SCALE 1:20



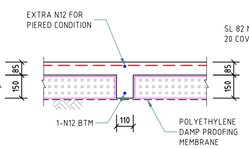
PATIO STEP DETAILS
SCALE 1:20



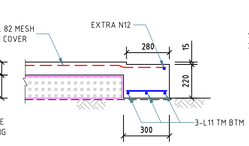
PATIO EDGE BEAM DETAILS
SCALE 1:20



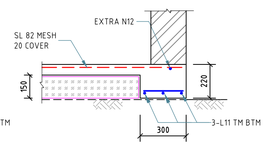
GARAGE STEP DETAILS
SCALE 1:20



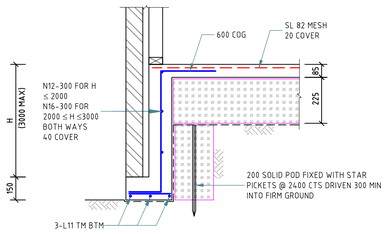
GARAGE RIB BEAM DETAILS
SCALE 1:20



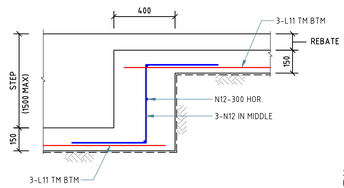
GARAGE DOOR REBATE DETAILS
SCALE 1:20



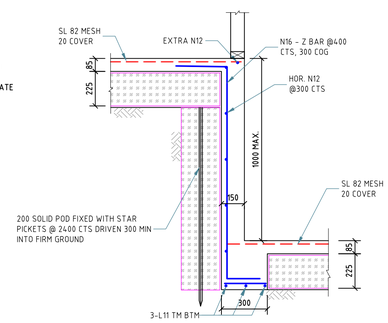
GARAGE FRONT EDGE BEAM DETAILS
SCALE 1:20



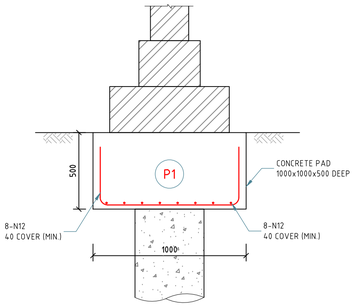
TYP. DEEP EDGE BEAM DETAILS
SCALE 1:20



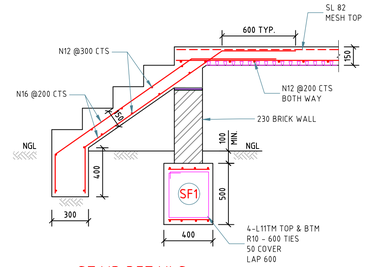
DEEP EDGE BEAM TRANSITION DETAILS
SCALE 1:20



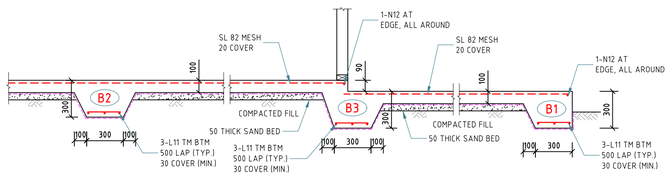
TYP. 400-1000 STEP DETAILS
SCALE 1:20



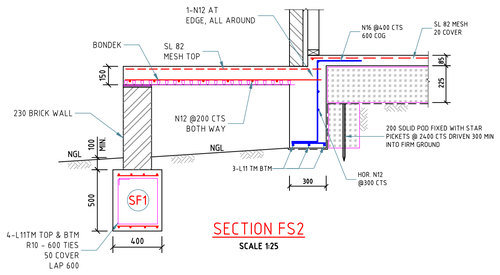
TYP. P1 DETAILS
SCALE 1:20



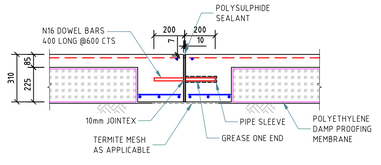
STAIR DETAILS
SCALE 1:25



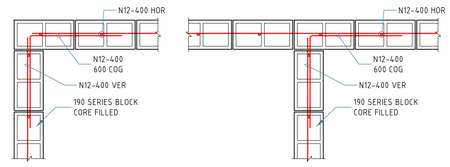
SECTION FS1
SCALE 1:25



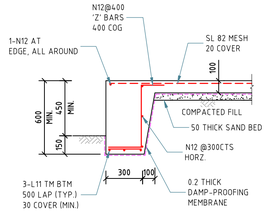
SECTION FS2
SCALE 1:25



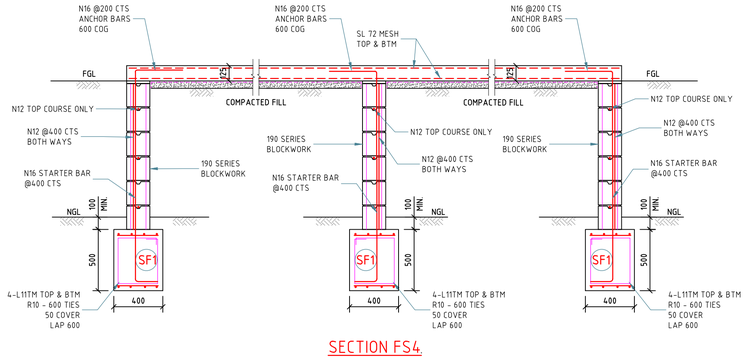
SECTION FS3 - EXPANSION JOINT
SCALE 1:20



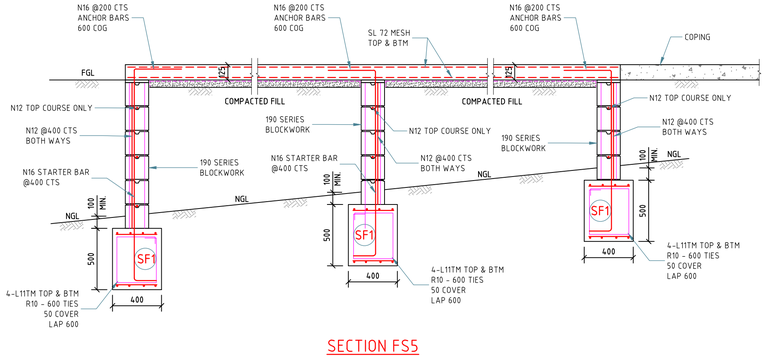
BLOCKWORK CONNECTION DETAILS
SCALE 1:20



DEEP EDGE BEAM DETAILS
SCALE 1:25



SECTION FS4
SCALE 1:25



SECTION FS5
SCALE 1:25

Designed: VA	Checked: Kevin Nguyen, MPM, BE (Civil), MIEAust, CPEng, NER Reg. No. 546 0073	Approved: Quoc Huy Nguyen, PhD (Eng), MIEAust, CPEng, NER Reg. No. 208 2513

Paper size: A1

All dimensions are in millimetres. Do not scale the drawing. Use written dimensions. Dimensions must be confirmed prior to commencement. Location of services are approximate only. Dial 1100 before any excavation or demolition.

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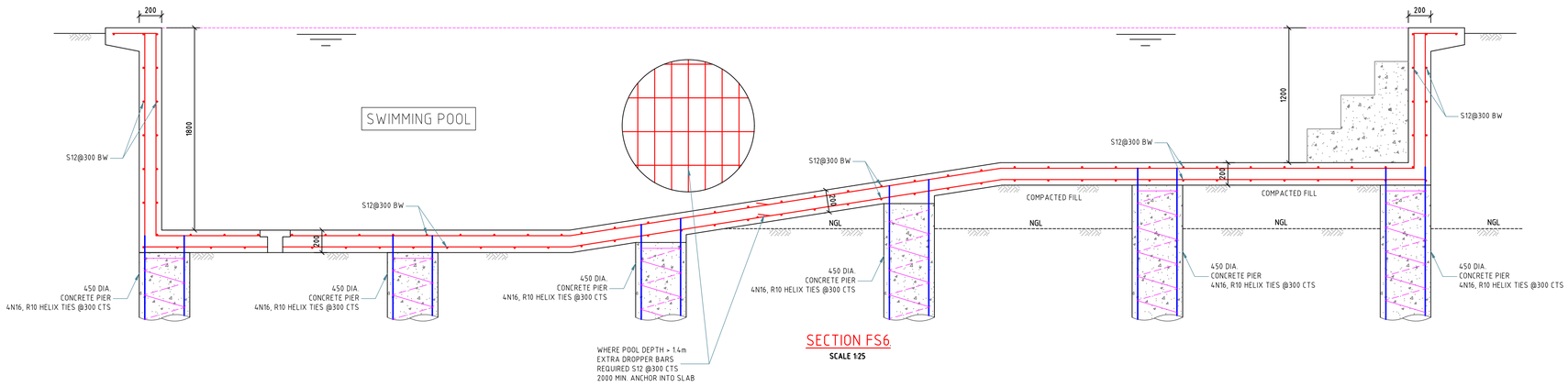
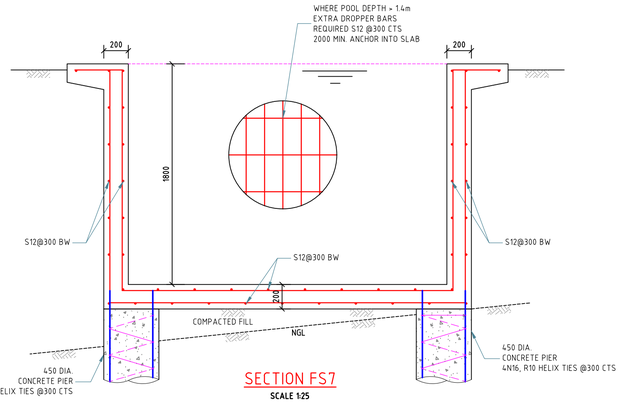
Project Number: 5660S		Drawing No: 4 of 5	
Project Address: 71 Paulls Rd, South Maroota			
Project Title: Proposed Dwelling			
Drawing Title: Swimming Pool Details			
Issue: B		Date: 13.12.2022	
Consent No: DA12345		Body Corp Reg No: N/A	

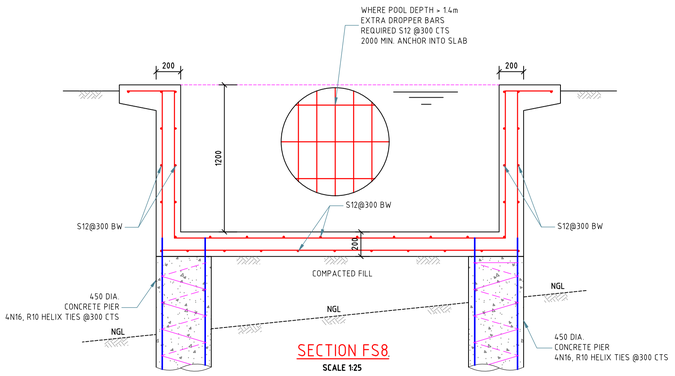
Issue	Date	Description	DP Full Name	Reg No
A	01.11.2022	Original issue	Quoc Nguyen	PRE0000655
B	13.12.2022	Waffle Slab	Quoc Nguyen	PRE0000655



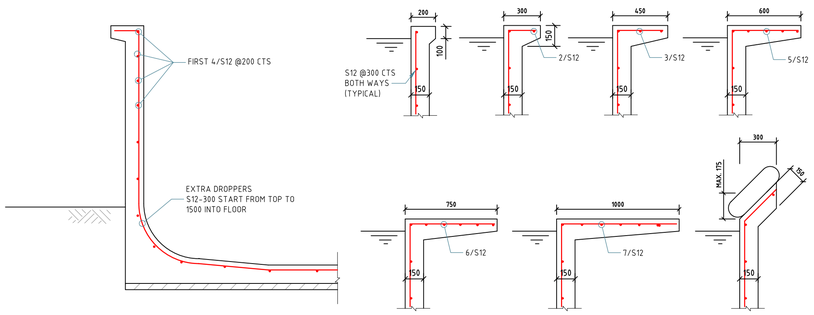
SECTION FS6
SCALE 1:25



SECTION FS7
SCALE 1:25

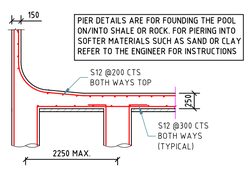


SECTION FS8
SCALE 1:25

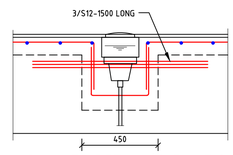


WALL DETAIL 750mm (OR MORE) OUT OF GROUND
SCALE 1:25

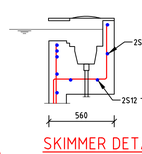
COPING AND WALKWAY DETAILS
SCALE 1:25



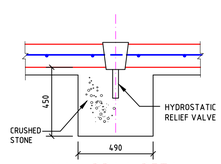
SUSPENDED STRUCTURE
SCALE 1:50



SKIMMER DETAIL (ELEVATION)
NOT TO SCALE



SKIMMER DETAIL (SECTION)
NOT TO SCALE



MAIN DRAIN DETAIL
NOT TO SCALE

Designed:	Checked:	Approved:
VA	Kevin Nguyen MPM, BE (Civil), MIEAust, CPEng, NER Reg. No. 546 0073	Quoc Huy Nguyen PhD (Eng), MIEAust, CPEng, NER Reg. No. 208 2513

Paper size: A1

All dimensions are in millimetres. Do not scale the drawing. Use written dimensions. Dimensions must be confirmed prior to commencement. Location of services are approximate only. Dial 1100 before any excavation or demolition.

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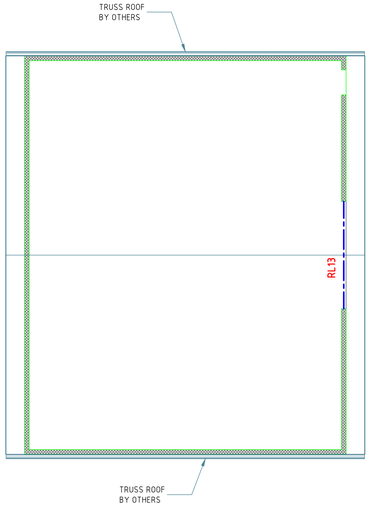
Project Number:	5660S	Drawing No:	5 of 5
Project Address:	71 Paulls Rd, South Maroota		
Project Title:	Proposed Dwelling		
Drawing Title:	Roof Frame Plan & Details		
Issue:	B	Date:	13.12.2022
Consent No:	DA12345	Body Corp Reg No:	N/A

Issue	Date	Description	DP Full Name	Reg No
A	01.11.2022	Original issue	Quoc Nguyen	PRE0000655
B	13.12.2022	Waffle Slab	Quoc Nguyen	PRE0000655



ROOF FRAME PLAN-SHED
SCALE 1:100

SCHEDULE

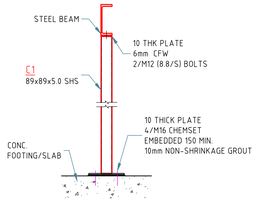
MEMBER	SIZE	MAX. CLEAR SPAN
RL1 to RL4	2/200x45 hySPAN + 150x100x10 UA	2500
RL5	380 PFC + 10 THK PLATE	8000
RL6, RL7	2/200x45 hySPAN + 150x100x10 UA	2700
RL8	2/200x45 hySPAN + 150x100x12 UA	3000
RL9	250 PFC + 10 THK PLATE	4500
RL10	2/200x45 hySPAN + 150x100x12 UA	2800
RL11, RL12	2/200x45 hySPAN + 150x100x10 UA	2500
RL13	2/240x45 hySPAN	3500
RB1, RB2	200x63 hySPAN	1700
RB3	2/240x45 hySPAN	4400
RB4	2/200x45 hySPAN	3500
RB5	2/200x45 hySPAN	3300
RB6	2/240x45 hySPAN	3700
RB7	2/240x45 hySPAN	3800
RB8	310UC-118 + 10 THK PLATE	9600
RB9, RB10	2/300x45 hySPAN	5500
RB11, RB12	2/300x45 hySPAN	5600
C1	89x89x5.0 SHS	

NOTES:

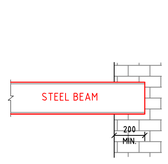
MEMBER SIZES ARE MINIMUM ONLY AND CAN BE UPGRADED TO SUIT CONSTRUCTION CONDITIONS. SPANS TO BE CONFIRMED ON SITE BY THE BUILDER. CONSULT ENGINEER IF IN DOUBT.

KEY:

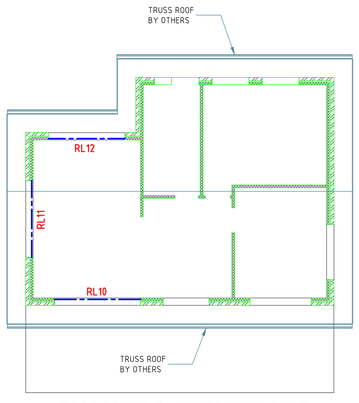
- LOAD BEARING WALLS UNDERNEATH
- ROOF FRAME
- TIMBER BEAM
- STEEL BEAM



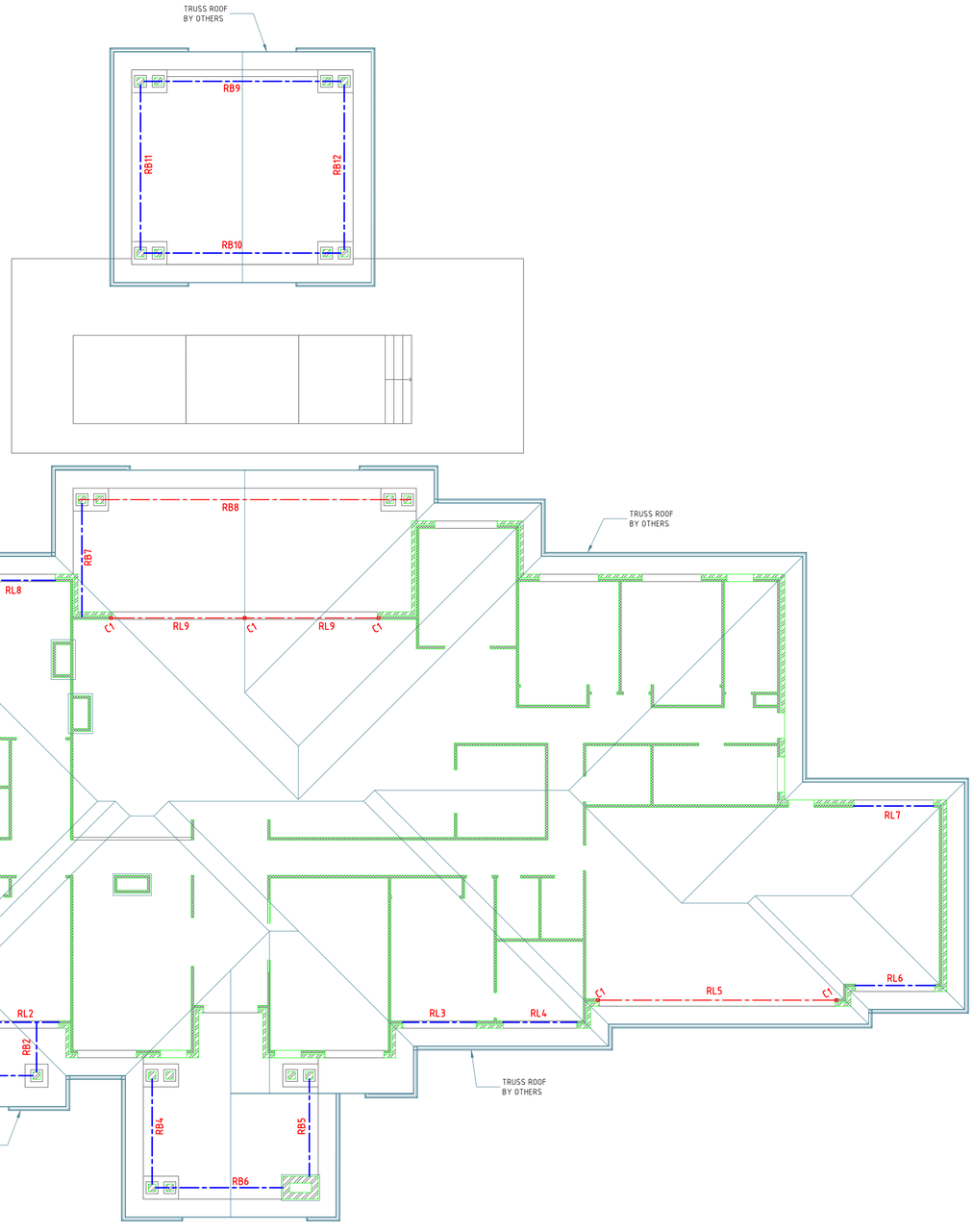
COLUMN C1
SCALE 1:25



STEEL BEAM
STRAIGHT END-BEARING (TYP.)
SCALE 1:20



ROOF FRAME PLAN-GRANNY FLAT
SCALE 1:100



ROOF FRAME PLAN-MAIN DWELIING
SCALE 1:100

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