NASTASI CONSULTING GROUP PTY LTD

RESIDENTIAL - COMMERCIAL - INDUSTRIAL - INFRASTRUCTURE
STRUCTURAL - CIVIL - STORMWATER - GEOTECHNICAL - SURVEYING - SITE SERVICES

INDEX OF DRAWINGS

PROPOSED NEW RESIDENCE FOR
MR. JAMES CONRAD & MRS. SAMANTHA MARTIN

ADDRESS
LOT B, NO. 94 FISHER ROAD
DEE WHY, NSW 2099

PROJECT No.
35682

REV	REVISION	DRAWN	ENG	CHECK	DATE
A	ISSUE FOR CONSTRUCTION	D.S.	A.E.	A.E.	30.06.25

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APPROVED BY:
S. NASTASI
B.E.,M.I.E. AUST, CPENG

CLIENT REFERENCE No:
-

ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH ARCHITECT AND BUILDER BEFORE COMMENCING SHOP DRAWINGS OR SITE WORKS.

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CLIENT:
MR. JAMES CONRAD & MRS. SAMANTHA MARTIN

SITE ADDRESS:
LOT B, NO. 94 FISHER ROAD
DEE WHY, NSW 2099

DRAWING TITLE:
COVER SHEET

STATUS:
ISSUED FOR CONSTRUCTION

SCALE:	DRAWN:	ENGINEER:	DATE:
N/A	D.S.	A.E.	30.06.25

PROJECT NO:	SHEET NO:	REVISION:
35682	S0.0	A

GENERAL

1. THESE DRAWINGS ARE FOR STRUCTURAL PURPOSES ONLY & SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATION AND WITH SUCH OTHER WRITTEN INSTRUCTION AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE BUILDER, ARCHITECT & ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION WORKS.
2. ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. THESE DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
3. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT AUSTRALIAN STANDARDS AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING STATE AUTHORITY EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.
4. THESE DRAWINGS DEPICT THE PROPOSED COMPLETE STRUCTURE. THEY DO NOT DESCRIBE A WORK METHOD. THE DETERMINATION OF A SAFE WORK METHOD REMAINS THE RESPONSIBILITY OF THE CONTRACTOR. ANY ELEMENT WHICH POSES AN UNACCEPTABLE LEVEL OF SAFETY RISK TO CONSTRUCT SHALL BE REFERRED TO THE STRUCTURAL ENGINEER. TEMPORARY BRACING AND SUPPORT OF STRUCTURE IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MAINTAINED DURING ALL STAGES OF CONSTRUCTION.
5. THESE DRAWINGS ARE BASED ON INFORMATION SUPPLIED BY THE CLIENT. IF ANY ASPECT OF THE SITE PREPARATION OR PROPOSED CONSTRUCTION CHANGES FROM THAT ORIGINALLY ADVISED, THE ENGINEER MUST BE NOTIFIED. NO CHANGES IN ANY STRUCTURAL ELEMENT SHALL BE MADE WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.
6. CONSTRUCTION USING THESE DRAWINGS SHALL NOT COMMENCE UNTIL A CONSTRUCTION CERTIFICATE HAS BEEN ISSUED AND ONLY IF THE DRAWINGS ARE DESIGNATED "ISSUED FOR CONSTRUCTION".
7. NASTASI & ASSOCIATES ACCEPT NO RESPONSIBILITY FOR ANY WORK NOT INSPECTED OR NOT APPROVED BY THE STRUCTURAL ENGINEER DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING AND PROPOSED SERVICES IN THE VICINITY OF THE WORKS. ANY SERVICES SHOWN ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL SERVICES PRIOR TO COMMENCING AND SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED TO SERVICES, AS WELL AS ANY LOSS INCURRED AS A RESULT OF THE DAMAGE TO ANY SERVICE.
9. THE APPROVAL OF THE RELEVANT STATUTORY AUTHORITY AND THE ENGINEER SHALL BE OBTAINED BEFORE BUILDING ADJACENT TO OR OVER ANY SERVICES OR EASEMENTS.
10. ALL PROPRIETARY ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS & DETAILS.
11. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURE NO PART BE OVERSTRESSED UNDER CONSTRUCTION ACTIVITIES.
12. THE BUILDER SHALL GIVE AT LEAST 24 HOURS NOTICE FOR ALL ENGINEERING INSPECTIONS.
13. WATERPROOFING REQUIREMENTS ARE THE RESPONSIBILITY OF THE ARCHITECT AND ARE NOT NECESSARILY INDICATED ON THESE DRAWINGS.

LEGEND / ABBREVIATIONS

ALT	- ALTERNATE	MJ	- MOVEMENT JOINT
B	- BOTTOM FACE	NOM	- NOMINAL
B/S	- BOTH SIDES	NTS	- NOT TO SCALE
CENT	- CENTRALLY PLACED	O	- OVER
CJ	- CONSTRUCTION / CONTRACTION JOINT	OPP	- OPPOSITE
		PL	- PLATE
CL	- CENTRE LINE	PT	- POST TENSION
CTS	- CENTRES	REINF	- REINFORCEMENT
D	- DEPTH / DEEP	REQ'D	- REQUIRED
DJ	- DOWEL JOINT	SIM	- SIMILAR
DWG	- DRAWING	SJ	- SAW JOINT
EF	- EACH FACE	T	- TOP FACE
EJ	- EXPANSION JOINT	T&B	- TOP & BOTTOM
EQ	- EQUAL	TJ	- TOOL JOINT
EW	- EACH WAY	TYP	- TYPICAL
H	- HEIGHT / HIGH	U	- UNDER
HORIZ	- HORIZONTAL	UNO	- UNLESS NOTED OTHERWISE
IJ	- ISOLATION JOINT		
KJ	- KEY JOINT	VERT	- VERTICAL
L	- LENGTH/LONG	W	- WIDTH/WIDE

SITE CLASSIFICATIONS

1. FOR SITE CLASSIFICATION, FOUNDATION MATERIAL & ALLOWABLE BEARING CAPACITY REFER TO GEOTECHNICAL INFORMATION TABLE ON S1.0.
2. THE SITE CLASS SHALL BE DETERMINED IN ACCORDANCE WITH AS2870 AND RELEVANT STATE REGULATIONS. CONFIRMATION OF SITE CLASSIFICATION IS REQUIRED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION COMMENCING ON SITE.
3. ALL THE REQUIREMENTS OF THE GEOTECHNICAL REPORT FOR THE SITE SHALL BE OBSERVED AND MET.
4. THE GEOTECHNICAL INVESTIGATION REPORT IS FOR INFORMATION ONLY, IT IS NOT A COMPLETE DESCRIPTION OF CONDITIONS AT OR BELOW GROUND LEVEL.
5. THE GEOTECHNICAL REPORT IS BASED ON THE CONDITIONS EXISTING ON THE LAND AT THE TIME OF THE SITE INVESTIGATION AND THE PROPOSED CUT / FILL INFORMATION PROVIDED BY THE CLIENT. ANY UNADVISED CUTTING OR FILLING WILL CHANGE THE CHARACTERISTICS OF THE SITE AND MAY RENDER THE GEOTECHNICAL REPORT IRRELEVANT.
6. SHOULD SOIL CONDITIONS ENCOUNTERED ON SITE DIFFER SIGNIFICANTLY FROM THOSE INDICATED IN THE GEOTECHNICAL REPORT, THE ENGINEER MUST BE NOTIFIED BEFORE PROCEEDING AS THE SITE CLASSIFICATION MAY NEED REVISING AND MODIFICATIONS TO THE DESIGN MAY BE REQUIRED.

DESIGN CRITERIA

1. THE STRUCTURAL COMPONENTS DETAILED ON THESE STRUCTURAL DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT STANDARDS AUSTRALIA CODE AND THE BUILDING CODE OF AUSTRALIA FOR THE FOLLOWING LOADINGS. REFER TO ARCHITECTURAL DRAWINGS FOR PROPOSED FLOOR USAGE.
2. ALL PERMANENT STRUCTURES TO HAVE A DESIGN WORKING LIFE OF 50 YEARS, UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS OR IN CONTRACT.
3. STRUCTURAL ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE BELOW CODES. ALL DESIGN IS IN ACCORDANCE WITH THE CURRENT DESIGN CODES, EXCEPT WHERE VARIED BY THE SPECIFICATION AND/OR DRAWINGS.

AS/NZS 1170.0	STRUCTURAL DESIGN ACTIONS - GENERAL PRINCIPLES.
AS/NZS 1170.1	STRUCTURAL DESIGN ACTIONS -PERMANENT,IMPOSED AND OTHER ACTIONS.
AS/NZS 1170.2	STRUCTURAL DESIGN ACTIONS - WIND ACTIONS.
AS 1170.4	STRUCTURAL DESIGN ACTIONS - EARTHQUAKE ACTIONS IN AUSTRALIA.
AS 1379	SPECIFICATION AND SUPPLY OF CONCRETE.
AS 1554.1	STRUCTURAL STEEL WELDING.
AS 1684.2	RESIDENTIAL TIMBER FRAMED CONSTRUCTION.
AS 1720.1	TIMBER STRUCTURES.
AS 2159	PILING – DESIGN AND INSTALLATION.
AS 2870	RESIDENTIAL SLABS AND FOOTINGS.
AS 3600	CONCRETE STRUCTURES CODE.
AS 3610	FORMWORK FOR CONCRETE.
AS 3700	MASONRY STRUCTURES.
AS 4100	STEEL STRUCTURES.
AS/NZS 4600	COLD FORMED STEEL STRUCTURES.
AS/NZS 4671	STEEL REINFORCING MATERIALS.
AS 4678	EARTH RETAINING STRUCTURES.

4. LOADING TO AS/NZS 1170.1 - STRUCTURAL DESIGN ACTIONS -PERMANENT, IMPOSED AND OTHER ACTIONS -LOADING BELOW SUBJECT TO CHANGE UPON DISCRETION OF THE STRUCTURAL ENGINEER TO SUIT THE INTENTIONS OF A PARTICULAR PROJECT.

TERMITE PROTECTION

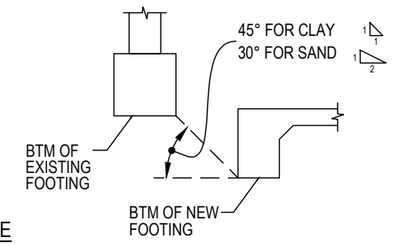
1. THE PRIMARY MEANS OF TERMITE PROTECTION IS TO BE ACHIEVED THROUGH THE PHYSICAL OR CHEMICAL BARRIER OF THE CONCRETE BASE STRUCTURE IN ACCORDANCE WITH AS3660.
2. SLAB PERIMETER TO ALLOW MINIMUM 75mm EXPOSED TERMITE INSPECTION AREA ABOVE THE FINISHED GROUND LEVEL. REFER TO DETAIL ON S2.0.
3. TERMITE INSPECTION AREA IS TO BE FREE FROM FINISHES, PLANTING, DEBRIS etc. AT ALL TIMES. PENETRATIONS AND CONCRETE JOINTS TO BE PROTECTED USING TERMIMESH OR SIMILAR.
4. BUILDING OWNER TO ENSURE REGULAR INSPECTIONS ARE INCLUDED WITHIN THEIR TERMITE MANAGEMENT SYSTEM. CONSIDERATION SHOULD BE GIVEN TO POTENTIAL CHANGES TO CONDITIONS ON THE BOUNDARY OF THE SITE AND HOW THIS MAY AFFECT ONGOING MONITORING AND MANAGEMENT.

FOUNDATIONS & FOOTINGS

1. THE FOOTING AND FOUNDATION DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH AS2870. CONFIRMATION OF THE SITE CLASSIFICATION IN ACCORDANCE WITH AS2870 IS REQUIRED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION COMMENCING ONSITE AND SHALL INCLUDE CONFIRMATION OF BEARING CAPACITY.
2. THE ACCEPTABLE LEVELS OF FOUNDATION PERFORMANCE AS OUTLINED BY AS2870. ACCORDINGLY CATEGORY 1 OR 2 DAMAGE (AS SPECIFIED IN APPENDIX C) MAY BE EXPECTED UNDER SOME CONDITIONS. SHOULD A HIGHER LEVEL OF CRACK CONTROL BE REQUIRED THEN THE ENGINEER SHOULD BE NOTIFIED SO THAT THIS CAN BE INCORPORATED INTO THE DESIGN.
3. NASTASI & ASSOCIATES RECOMMEND THAT THE FOUNDATIONS ARE TO BE MAINTAINED BY THE HOUSE TENANT/OWNER IN ACCORDANCE WITH THE 'FOUNDATION MAINTENANCE AND FOOTING PERFORMANCE: A HOME OWNERS GUIDE' REPORT PREPARED BY CSIRO.
4. SITES SHALL BE PREPARED IN ACCORDANCE WITH AS2870. AS A MINIMUM THIS MUST INCLUDE: TOP SOIL CONTAINING GRASS, ROOTS OR ANY OTHER ORGANIC MATERIAL SHALL BE REMOVED FROM THE AREA ON WHICH THE SLAB IS TO REST. A VAPOUR BARRIER/DAMP PROOF MEMBRANE SHALL BE PROVIDED. THE MEMBRANE SHALL BE POLYTHENE SHEETING OF MINIMUM THICKNESS 0.2mm UNO. THE SHEET SHALL BE LAID BENEATH THE SLAB SUCH THAT THE SLAB AND ALL BEAMS ARE ENTIRELY UNDERLAID. THE SHEET SHALL EXTEND UNDER EDGE BEAMS TO GROUND LEVEL. SHEET JOINTS SHALL BE FULLY TAPED LAPS WITH A MINIMUM OF 200mm OVERLAP. PENETRATIONS AT PIPES OR FITTINGS, etc SHALL BE TAPED OR SEALED WITH A CLOSE FITTING SLEEVE OR TURN UP OF THE MEMBRANE.
5. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH AS 2870 EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.
6. FOOTINGS & BORED PILES SHALL BE CONCRETED ON THE DAY OF APPROVAL (UNLESS PERMISSION IS GIVEN OTHERWISE) TO AVOID SOFTENING OR DRYING OUT. THIS IS ALSO IMPERATIVE TO AVOID ACCIDENTS AND INJURIES ON SITE.
7. FOOTING AND SLAB PIERS ARE REQUIRED WHERE UNCONTROLLED FILL UNDER THE EDGE BEAM OR SLAB IS PRESENT.
8. BORED PIERS SHALL BE IN ACCORDANCE WITH AS2159 SAA PILING CODE.
9. THE CONTRACTOR SHALL ARRANGE FOR A REPRESENTATIVE FROM THE ENGINEERING CONSULTANT TO BE PRESENT AT THE TIME OF DRILLING ALL OF THE BORED PIERS TO DETERMINE THE FOUNDING LEVELS.
10. THE BASE OF ALL PIER HOLES SHALL BE FREE OF WATER AND CLEANED OF LOOSE MATERIAL OR DEBRIS PRIOR TO PLACEMENT OF CONCRETE.
11. WHERE PIERS ARE USED TO SUPPORT A SLAB ON UNCONTROLLED FILL, IT IS RECOMMENDED THAT PLUMBING AND DRAINAGE PIPES FOUNDED WITHIN SUCH FILL SHALL BE HUNG FROM THE SLAB MESH WITH NON-CORROSIVE STRAPS.
12. ALLOTMENTS CONTAINING REACTIVE SITES CLASSIFIED AS M, H1, H2 OR E SHALL BE PROVIDED WITH AN ADEQUATE SYSTEM OF DRAINAGE IN ACCORDANCE WITH AS2870 TO ENSURE BEST POSSIBLE FOUNDATION PERFORMANCE. AT A MINIMUM THE FOLLOWING SHOULD BE MAINTAINED: THE SITE SHOULD BE GRADED OR DRAINED SO THAT WATER CANNOT POND AGAINST OR NEAR THE BUILDING. SUBFLOOR AREAS SHOULD BE GRADED TO PREVENT WATER PONDING.
13. BACKFILL TO RETAINING WALLS SHALL BE FREE DRAINING GRANULAR MATERIAL. PROVIDE SUBSOIL DRAIN AT BASE OF WALL. DO NOT BACKFILL UNTIL 14 DAYS AFTER CORE FILLING, OR IF APPLICABLE, AFTER RESTRAINING SLAB OVER HAS BEEN CURED FOR 7 DAYS. BACKFILL SHALL BE COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY WITHIN 2% OF OPTIMUM MOISTURE CONTENT.
14. FOOTINGS SHALL BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE.
15. SCREW PIER DESIGN, SUPPLY AND INSTALLATION IS THE RESPONSIBILITY OF THE CONTRACTOR.
16. IF TREES ARE LOCATED WITHIN THE ZONE OF INFLUENCE OR IN CLOSE PROXIMITY TO A PROPOSED DWELLING, IT IS RECOMMENDED THAT ANY TREES & ROOT SYSTEMS BE REMOVED. IF THE TREES AND ROOTS CANNOT BE REMOVED, PIERING AND/OR AN APPROPRIATELY DESIGNED AND RECOGNISED ROOT BARRIER SYSTEM MAY BE REQUIRED. CONTACT ENGINEER PRIOR TO COMMENCEMENT OF ANY WORK.

FOUNDATIONS & FOOTINGS CONTINUED...

17. FILL USED IN THE CONSTRUCTION OF A SLAB CONSISTS OF CONTROLLED FILL OR ROLLED FILL IN STRICT ACCORDANCE WITH AS2870:
    - ROLLED FILL CONSISTS OF MATERIAL COMPACTED IN LAYERS BY REPEATED ROLLING WITH AN EXCAVATOR. ROLLED FILL SHALL NOT EXCEED 600mm COMPACTED IN LAYERS NOT MORE THAN 300mm FOR SAND MATERIAL OR 300mm COMPACTED IN LAYERS NOT MORE THAN 150mm FOR OTHER MATERIAL.
    - CONTROLLED FILL CONSISTS OF WELL GRADED SAND FILL UP TO 800mm DEEP, WELL COMPACTED IN NOT MORE THAN 300mm LAYERS BY VIBRATING PLATE OR VIBRATING ROLLER. NO SAND FILL UP TO 400mm DEEP, WELL COMPACTED IN NOT MORE THAN 150mm LAYERS BY A MECHANICAL ROLLER IS DEEMED TO BE CONTROLLED FILL. CLAY FILL SHOULD BE MOIST DURING COMPACTION. THE DEPTHS OF FILL GIVEN ABOVE ARE DEPTHS MEASURED AFTER COMPACTION.
18. WHERE NOTED ON DRAWINGS AS "FILL AS FORMWORK", FILLING SHALL BE COMPACTED SUFFICIENTLY TO PROVIDE A STABLE PLATFORM DURING CONSTRUCTION. CONTRACTOR TO ENSURE ALL ADJACENT WALLS REMAIN STABLE DURING COMPACTION.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL ADJACENT STRUCTURES IN THE VICINITY OF THE WORKS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED TO NEIGHBOURING STRUCTURES DURING CONSTRUCTION.
20. WHERE A NEW EXCAVATION IS REQUIRED IN CLOSE PROXIMITY TO EXISTING STRUCTURES, THE FOUNDATIONS OF EXISTING ADJACENT STRUCTURES ARE LIKELY TO BE AFFECTED DUE TO UNDERMINING BY EXCAVATIONS & VIBRATION. THE LIMITATIONS OF EXCAVATION SHALL COMPLY WITH THE BELOW DIAGRAM.



DRAINAGE

1. DRAINAGE SHALL BE CONSTRUCTED TO AVOID WATER PONDING AGAINST OR NEAR THE FOOTING. THE GROUND IN THE IMMEDIATE VICINITY OF THE PERIMETER FOOTING, INCLUDING THE GROUND UPHILL FROM THE SLAB ON CUT-AND-FILL SITES, SHALL BE GRADED TO FALL 50mm MINIMUM AWAY FROM THE FOOTING OVER A DISTANCE OF 1.0m. SURFACE OR SUBSURFACE DRAINS SHALL BE USED TO CHANNEL WATER AWAY AND CONNECT TO STORMWATER SYSTEM. ANY PAVING SHALL ALSO BE SUITABLY SLOPED.
2. PLUMBING TRENCHES SHALL BE SLOPED AWAY FROM THE HOUSE AND SHALL BE BACKFILLED WITH CLAY IN THE TOP 300mm WITHIN 1.5m OF THE HOUSE. THE CLAY USED FOR BACKFILLING SHALL BE COMPACTED. WHERE PIPES PASS UNDER THE FOOTING SYSTEM, THE TRENCH SHALL BE BACKFILLED WITH CLAY OR CONCRETE TO RESTRICT THE INGRESS OF WATER BENEATH THE FOOTING SYSTEM.
3. EXCAVATIONS NEAR THE EDGE OF THE FOOTING SYSTEM SHALL BE BACKFILLED IN SUCH A WAY AS TO PREVENT ACCESS OF WATER TO THE FOUNDATION. FOR EXAMPLE, EXCAVATIONS SHOULD BE BACKFILLED ABOVE OR ADJACENT THE FOOTING WITH MOIST CLAY, COMPACTED BY HAND-RODDING/TAMPING. POROUS MATERIAL SUCH AS SAND, GRAVEL OR BUILDING RUBBLE SHOULD NOT BE USED..
4. PENETRATIONS OF THE EDGE BEAMS AND FOOTING BEAMS ARE TO BE AVOIDED, BUT WHERE NECESSARY SHALL BE SLEEVED TO ALLOW FOR MOVEMENT.D MANAGEMENT.
5. WATER RUN-OFF SHALL BE COLLECTED AND CHANNELED AWAY FROM THE HOUSE DURING CONSTRUCTION.
6. PROVISIONS SHOULD BE MADE FOR THE CONNECTION OF OVERFLOW OR WATER DISCHARGE FROM FIXTURES SUCH AS HOT WATER SYSTEMS & AIR CONDITIONERS TO A DRAIN AS REQUIRED BY THE RELEVANT LOCAL AUTHORITY.
7. CONNECTION OF STORMWATER DRAINS AND WASTE DRAINS SHALL INCLUDE FLEXIBLE CONNECTIONS.
8. ALL PIPEWORK INCLUDING STORMWATER FITTINGS & ADAPTERS SHOULD BE PROTECTED FROM MECHANICAL DAMAGE.
9. PLUMBING & DRAINAGE UNDER THE SLAB SHOULD BE AVOIDED WHERE PRACTICAL (REFER AS/NZS 3500 CLAUSE 4.10)
10. ADDITIONAL PLUMBING REQUIREMENTS ARE NEEDED FOR MODERATELY, HEAVILY & EXTREMELY REACTIVE SITES IN ACCORDANCE WITH CLAUSE 6.6 (F) FROM AS 2870.
11. ALL PLUMBING JOINTS SHALL BE IN ACCORDANCE WITH NCC, AS2870 & AS3500

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CLIENT: MR. JAMES CONRAD & MRS. SAMANTHA MARTIN

SITE ADDRESS: LOT B, NO. 94 FISHER ROAD DEE WHY, NSW 2099

DRAWING TITLE: STRUCTURAL NOTES

STATUS: ISSUED FOR CONSTRUCTION

SCALE:	DRAWN:	ENGINEER:	DATE:
N/A	D.S.	A.E.	30.06.25

PROJECT NO:	SHEET NO:	REVISION:
35682	S0.1	A

CONCRETE

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS2870, AS3600 AND AS3610 CURRENT EDITIONS WITH AMENDMENTS UNO.

2. UNLESS SPECIFIED OTHERWISE ON SLAB PLAN, CONCRETE PROPERTIES SHALL BE AS TABULATED BELOW AND SHALL BE VERIFIED BY TESTS. REFER TO PLAN FOR CONCRETE STRENGTH (f'c)

ELEMENT	SLUMP (mm)	MAX. SIZE AGGREGATE (mm)	CEMENT TYPE	CONCRETE GRADE
STRIP / PAD FOOTINGS	80	20	GP	N20
BORED PIERS	80	20	GP	N20
SLAB ON GROUND	80	20	GP	N20
SUSPENDED SLAB	80	20	GP	N32
STAIRS	80	20	GP	N32
WALLS	80	20	GP	N32
COLUMNS	80	20	GP	N40

3. UNLESS SPECIFIED OTHERWISE ON SLAB PLAN OR DETAILS, CONCRETE CLEAR COVER SHALL BE AS TABULATED BELOW.

ELEMENT	CLEAR COVER UNO (mm)
STRIP / PAD FOOTINGS	50
BORED PIERS	50
SLAB ON GROUND	20 TOP - INTERNAL 40 TOP - EXTERNAL 30 BTM & SIDES
SUSPENDED SLAB	30 TOP & SIDES 20 - BTM
BEAMS	45 TYPICAL
STAIRS	45 TOP 35 BTM
WALLS	30 SIDES - INTERNAL 40 SIDES - EXTERNAL
COLUMNS	40 TYPICAL

4. CONDUITS, PIPES AND THE LIKE SHALL BE PLACED WITHIN THE MIDDLE THIRD OF THE SLAB DEPTH AND AT A MINIMUM SPACING OF NOT LESS THAN 3 DIAMETERS. CONDUITS AND PIPES SHALL NOT BE PLACED WITHIN THE CONCRETE COVER OUTLINED ABOVE.

5. PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS3600.

6. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.

7. THE DESIGN CONSTRUCTION AND PERFORMANCE OF THE FORMWORK AND FALSEWORK IS THE RESPONSIBILITY OF THE BUILDER.

8. BEFORE PLACING CONCRETE, REMOVE ALL WATER, DUST, AND DEBRIS FROM THE FORMWORK.

9. WHERE ANY METAL FORMWORK (eg BONDEK, CONDEK, etc..) IS SHOWN ON STRUCTURAL DRAWINGS, THE CONTRACTOR SHALL PROP & INSTALL THE WORKS ACCORDING TO THE MANUFACTURERS SPECIFICATIONS UNO.

10. CONCRETE SIZES SHOWN DO NOT INCLUDE THICKNESS OF APPLIED FINISHES. APPLIED FINISHES SHALL NOT DECREASE CONCRETE COVER.

11. NO HOLES, CHASES, BLOCKOUTS, DUCTS OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

12. CONCRETE SHALL BE MECHANICALLY VIBRATED TO ACHIEVE A DENSE HOMOGENOUS MASS COMPLETELY FILLING THE FORMWORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND BE FREE OF STONE POCKETS OR VOIDS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED WITH MECHANICAL VIBRATORS.

13. REPAIRS TO CONCRETE SHALL NOT BE ATTEMPTED WITHOUT THE PERMISSION OF THE ENGINEER.

14. THE CONCRETE SHALL BE PLACED IN SUCH A MANNER AS TO AVOID SEGREGATION OR LOSS OF MATERIALS. MAXIMUM FALL OF CONCRETE = 1500mm OR USE ENCLOSED CHUTES OR SIMILAR.

15. FOR ALL FALLS IN SLAB, DRIP GROOVES, REGLETS, CHAMFERS etc. REFER TO ARCHITECTS DRAWINGS AND SPECIFICATIONS. MAINTAIN COVER TO REINFORCEMENT AT THESE LOCATIONS.

16. SINGLE CONDUITS/PIPES MAY BE INSTALLED WITHIN THE SLAB. IF MULTIPLE CONDUITS/PIPES PROPOSED CONTACT ENGINEER FOR ASSESSMENT AND ADVICE.

CONCRETE CONTINUED...

17. UNLESS SHOWN ON THE DRAWINGS, THE LOCATION OF ALL CONSTRUCTION JOINTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

18. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED WHERE VERTICAL. THE FIRST POUR SHALL BE THOROUGHLY SCABBLED AND CLEANED OF ALL POORLY COMPACTED MATERIAL AND SURFACE THOROUGHLY SOAKED AND PAINTED WITH A 2:1 SAND CEMENT SLURRY IMMEDIATELY BEFORE PLACING THE SECOND POUR. THOROUGHLY COMPACT THE SECOND POUR AGAINST THE FIRST POUR.

19. WHERE CONCRETE SLABS BEAR ON MASONRY, INCLUDING CORED BRICKS, THE BEARING SURFACE OF THE MASONRY SHALL BE RENDERED WITH 1:3 CEMENT SAND MORTAR TO GIVE A LEVEL SURFACE AND A METAL SLIP JOINT LAID PROTECTED BY 0.2mm POLYTHENE SHEET TAPED TO FORMWORK BEFORE PLACING CONCRETE.

20. THE BUILDER SHALL PROVIDE CONSTANT SUPERVISION OF CONCRETE POURS EXECUTED BY SUB-CONTRACTORS TO ENSURE:
    - REINFORCEMENT DISPLACED OFF CHAIRS ARE REPLACED PRIOR TO CONCRETE PLACEMENT.
    - NO SITE WATER IS ADDED TO CONCRETE OR CONCRETE IN WAITING TRUCKS. (REQUIRED SLUMP FOR PLACEMENT SHALL BE ACHIEVED USING SUPER PLASTICISER).
    - ALL CONCRETE IS FULLY COMPACTED USING A POKER VIBRATOR.
    - NO POURS ARE EXECUTED WHEN THE AMBIENT TEMPERATURE EQUALS OR EXCEEDS 35°C.
    - NO POURS ARE EXECUTED WHEN THE AMBIENT TEMPERATURE EQUALS OR IS LESS THAN 5°C.
    - NO POURS ARE EXECUTED DURING EXCESSIVE RAIN.
    - POURS ARE PROTECTED FROM ANY HOT DRYING WINDS.

21. THE FINISHED CONCRETE SHALL BE CURED FOR A MINIMUM OF SEVEN DAYS USING AT LEAST ONE OF THE FOLLOWING METHODS:
    - PONDING OR CONTINUOUS SPRINKLING WITH WATER.
    - THE USE OF AN ABSORBENT COVER KEPT CONSTANTLY WET. (WHEN THE AMBIENT TEMPERATURE EXCEEDS 32°C CURING MAY ONLY BE ACHIEVED USING ABOVE METHOD).
    - THE USE OF AN IMPERMEABLE SHEET MEMBRANE OVER A MOISTENED SURFACE. (THE MEMBRANE SHALL BE FIXED AND LAPPED SO THAT NO AIR CIRCULATION CAN OCCUR AT THE CONCRETE SURFACE.
    - THE USE OF CURING COMPOUND COMPLYING WITH AS3799, APPLIED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

REINFORCEMENT

1. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.

2. ALL REINFORCING BARS SHALL COMPLY WITH AS 4671. ALL FABRIC SHALL COMPLY WITH AS 4671 AND SHALL BE SUPPLIED IN FLAT SHEETS.

3. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER.

4. FABRIC SHALL BE LAPPED 2 TRANSVERSE WIRES PLUS 30mm. WHERE FABRIC LAPS, SHEETS TO HAVE A MAXIMUM OF 2 LAYERS AT ANY POINT. TRIM FABRIC AT CORNERS AS REQUIRED. REFER TO REINFORCING MESH LAP DETAIL ON SHEET S2.0.

5. REFER TO THE CONCRETE NOTES FOR THE SPECIFIED COVERS TO REINFORCEMENT. COVER MUST BE MAINTAINED AT ALL LOCATIONS INCLUDING CHAMFERS, DRIP GROOVES AND REGLETS.

6. SITE BENDING OF REINFORCEMENT SHALL BE AVOIDED IF POSSIBLE. WHERE SITE BENDING IS SPECIFIED, OR UNAVOIDABLE, IT SHALL BE CARRIED OUT COLD, WITHOUT THE APPLICATION OF HEAT, AND IN ACCORDANCE WITH THE PRACTICES SET OUT BY THE STEEL REINFORCEMENT INSTITUTE OF AUSTRALIA.

7. ALL REINFORCEMENT SHALL BE CHAIRED AT MAXIMUM CENTERS AS FOLLOWS:
    - BARS - 800 CENTERS EACH WAY.
    - FABRIC - 800 CENTERS EACH WAY, EXTRA CHAIRS MAY BE REQUIRED ADJACENT TO SLAB EDGES AND JOINTS TO PREVENT THE DEFLECTION OF THE FABRIC WHEN STOOD ON.

8. 4 BAR CHAIRS OR 2 RAILS PER FULL WAFFLE POD SHOULD BE USED.

9. AT THE END SUPPORT OF A SLAB ON A MASONRY WALL, ALL BOTTOM REINFORCEMENT SHALL EXTEND OVER THE MASONRY WALL BY MIN. 75mm FOR N12 BARS OR 95mm FOR N16 BARS. IF COVER REQUIREMENTS PROHIBIT THIS, THE BARS SHALL BE COGGED.

REINFORCEMENT CONTINUED...

10. REINFORCEMENT SYMBOLS:
    R - GRADE 250 R HOT ROLLED PLAIN BARS TO AS4671
    S - GRADE 230 S HOT ROLLED DEFORMED BARS TO AS4671
    N - GRADE D500N DEFORMED BAR NORMAL DUCTILITY TO AS/NZS 4671
    L - GRADE D500L DEFORMED BAR LOW DUCTILITY TO AS/NZS 4671
    RN - RECTANGULAR WIRE MESH NORMAL DUCTILITY TO AS/NZS 4671
    RL - RECTANGULAR WIRE MESH LOW DUCTILITY TO AS/NZS 4671
    SN - SQUARE WIRE MESH NORMAL DUCTILITY TO AS/NZS 4671
    SL - SQUARE WIRE MESH LOW DUCTILITY TO AS/NZS 4671

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

12. ALL TENSILE REINFORCEMENT TO BE LAPPED AS SHOWN IN TABLE BELOW UNO. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN OR OTHERWISE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.

LAP TABLE				
REINFORCEMENT BAR	N12	N16	N20	N24
LAP LENGTH (mm)	600	800	1000	1200

MASONRY

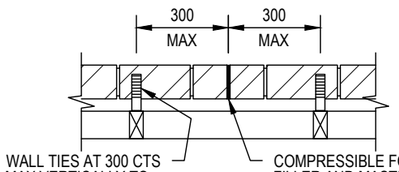
1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS2733, AS4773 & AS3700 CURRENT EDITION WITH AMENDMENTS AND OTHER RELEVANT CODES.

2. MASONRY UNITS SHALL COMPLY WITH AS4455 AND HAVE A MINIMUM CHARACTERISTIC UNCONFINED STRENGTH OF:
    - LOAD BEARING BRICK = 20MPa.
    - NON LOAD BEARING (FACADE) BRICK = 10MPa.

3. CONCRETE MASONRY BLOCKS SHALL BE OF A MINIMUM COMPRESSIVE STRENGTH GRADE 15 IN ACCORDANCE WITH AS4455.

4. ALL CAVITY CONSTRUCTION TO HAVE GALVANISED WALL TIES INSTALLED AS PER AS3700 CLAUSE 3.4 AND 4.1.

5. UNO PROVIDE TYPE A MEDIUM DUTY WALL TIES SPACED & FIXED IN ACCORDANCE WITH BCA VOLUME 2 TABLE. 5.6.5a, 5.6.5b & 5.6.5c.



CORROSION PROTECTION FOR WALL TIES BCA VOL 2 TABLE 5.6.5d:		
ZONE	EXPOSURE CONDITION	TIE SPECIFICATION
1	<1Km FROM BREAKING SURF <100m FROM SALT WATER WITHIN HEAVY INDUSTRIAL AREAS	• GRADE 316L STAINLESS STEEL OR • ENGINEERED POLYMER COMPLYING WITH THE REQUIREMENTS OF AS/NZS 2699.1
2	1 TO 10Km FROM BREAKING SURF 100 TO 1000m FROM SALT WATER	• GALVANIZED SHEET STEEL TIES - 470g/m² COATING MASS • GALVANIZED WIRE TIES - 470g/m² COATING MASS • GRADE 304L STAINLESS STEEL
3	ALL OTHER AREAS	• GALVANIZED SHEET STEEL - 300g/m² COATING MASS • GALVANIZED SHEET STEEL TIES 300g/m² COATING MASS, GALVANIZED AFTER MANUFACTURE

MASONRY CONTINUED...

6. MORTAR ADMIXTURES SHALL NOT BE USED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

7. BED MASONRY IN FRESHLY PREPARED MORTAR. MORTAR MIX TO BE UNIFORMLY MIXED IN THE RATIO OF ONE PART CEMENT, THREE PARTS SAND AND ONE FOURTH PART LIME CONFORMING TO AS2701. 'BRICKIES LOAM' SHALL NOT BE USED.

8. BEDDING OF MASONRY SHALL BE FULL FACE. JOINT THICKNESS SHALL NOT EXCEED 12mm.

9. THE CAVITY SHALL NOT EXCEED 100mm AND SHALL NOT BE SMALLER THAN 40mm UNLESS NOTED OTHERWISE. KEEP CAVITY CLEAN AND CLEAR OF OBSTRUCTIONS.

10. NON LOAD-BEARING WALLS SHALL BE SEPARATED FROM THE CONCRETE STRUCTURE ABOVE THEM WITH A MINIMUM 20mm THICK APPROVED COMPRESSIBLE ISOLATION MATERIAL.

11. NO CHASES OR RECESSES ARE PERMITTED IN LOAD BEARING MASONRY WITHOUT THE APPROVAL OF THE ENGINEER.

12. MASONRY WALLS SHALL COMPLY WITH THE FOLLOWING UNO:
    - FILL ALL BED JOINTS AND PERPENDS WITH MORTAR EXCEPT AT WEEP HOLES.
    - PROVIDE CLEAN-OUTS AT BASE OF REINFORCED CORES. REMOVE MORTAR PROTRUSIONS BEFORE CORE OR CAVITY FILLING.
    - COMPACT GROUT FILLING BY RODDING OR MECHANICAL VIBRATION.
    - MAXIMUM HEIGHT OF POUR FOR CORE FILLED WALLS TO BE 1200mm.

13. WATERPROOF RETAINING FACE OF RETAINING WALLS AS SPECIFIED BY THE BUILDER / WATERPROOFING SPECIALIST.

14. BACKFILL TO RETAINING WALLS SHALL BE A HIGHLY PERMEABLE GRANULAR MATERIAL. PROVIDE A SUBSOIL DRAIN AT THE BASE OF THE WALL CONNECTED TO THE STORMWATER DRAINAGE SYSTEM UNO.

15. REINFORCED BLOCKWORK RETAINING WALLS SHALL NOT BE BACKFILLED UNTIL 14 DAYS AFTER THE WALL HAS BEEN GROUTED, OR IF APPLICABLE, UNTIL AFTER THE RETAINING SLAB OVER HAS BEEN POURED AND CURED FOR 7 DAYS, OTHERWISE INSTALL TEMPORARY PROPS.

16. ARTICULATION JOINTS MUST HAVE A MINIMUM WIDTH OF 10mm.

17. EXPANSION TIES MUST BE BUILT INTO THE VERTICAL CONTROL JOINT AT EVERY FOURTH BRICK COURSE.

18. PROVIDE BRICKWORK VERTICAL CONTROL JOINTS AT 4.5m MAXIMUM CENTRES OR AS SPECIFIED.

19. PROVIDE BRICKWORK VERTICAL CONTROL JOINTS AT A DISTANCE FROM ALL CORNERS NOT GREATER THAN 4.5m AND NOT LESS THAN 470mm FOR CAVITY WALLS OR 230mm FOR VENEER WALLS.

20. PROVIDE BLOCKWORK VERTICAL CONTROL JOINTS AT 12.0m MAXIMUM CENTRES, AND 6.0m MAXIMUM FROM CORNERS IN ALL MASONRY WALLS UNO.

21. FOR SINGLE LEAF MASONRY WALLS STABILISED WITH RETURN WALLS, OR ENGAGED PIERS, ANY ARTICULATION JOINTS MUST BE WITHIN 300mm OF THE VERTICAL SUPPORT ELEMENT. THESE JOINTS MUST BE SEALED WITH A FLEXIBLE, COMPRESSIBLE MATERIAL.

22. PROVIDE VERTICAL CONTROL JOINTS AT FOOTING CONSTRUCTION JOINTS.

23. PROVIDE VERTICAL CONTROL JOINTS AT JUNCTIONS OF WALLS CONSTRUCTED OF DIFFERENT MATERIALS.

24. PROVIDE VERTICAL CONTROL JOINTS AT THE POSITION WHERE THE WALL HEIGHT CHANGES BY MORE THAN 20% UNO.

25. PROVIDE VERTICAL CONTROL JOINTS WHERE MASONRY WALLS CHANGE IN THICKNESS. ENGAGED PIERS ARE NOT CONSIDERED TO BE CHANGES OF THICKNESS. CHASES THAT HAVE LESS THAN 75% OF THE LEAF THICKNESS REMAINING ARE CONSIDERED TO BE CHANGES OF THICKNESS.

26. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM MASONRY JOINT LOCATIONS WITH THE BRICKLAYER AND THE ARCHITECT. REFER TO THESE DRAWINGS FOR THE LOCATION OF ALL MASONRY JOINTS. IF JOINT LOCATIONS ARE NOT PROVIDED, REFER TO THESE MASONRY NOTES FOR GUIDANCE.

27. WHERE BRITTLE FLOOR COVERING IS TO BE USED IN AN AREA GREATER THAN 16m², THE PLACEMENT OF THE FLOOR COVERING SHALL BE DELAYED BY A MINIMUM PERIOD OF 3 MONTHS AFTER CONCRETE POUR OR ALTERNATIVELY SELECT THE BEDDING SYSTEM FOR BRITTLE COVERINGS ON THE BASIS OF THE EXPECTED SLAB MOVEMENT AND THE CHARACTERISTICS OF THE FLOOR COVERING OR USE FLEXIBLE ADHESIVE.

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CLIENT REFERENCE No: -

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CLIENT: MR. JAMES CONRAD & MRS. SAMANTHA MARTIN

SITE ADDRESS: LOT B, NO. 94 FISHER ROAD DEE WHY, NSW 2099

STATUS: ISSUED FOR CONSTRUCTION

SCALE:	DRAWN:	ENGINEER:	DATE:
N/A	D.S.	A.E.	30.06.25

DRAWING TITLE: STRUCTURAL NOTES

PROJECT NO:	SHEET NO:	REVISION:
35682	S0.2	A

STEELWORK

1. ALL STEELWORK WORKMANSHIP, MATERIALS, FABRICATION & INSTALLATION SHALL BE IN ACCORDANCE WITH AS4100 STEEL STRUCTURES CODE, AS1554, AS1163, AS3679 AND AS4600 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. STEEL QUALITY SHALL CONFORM WITH THE FOLLOWING AUSTRALIAN STANDARDS UNO:
   - STEEL PLATES & SECTIONS AS3679 GRADE 300
   - RECTANGULAR HOLLOW SECTIONS AS1163 GRADE C350 LO
   - CIRCULAR HOLLOW SECTIONS AS1163 GRADE C350
   - SQUARE HOLLOW SECTIONS AS1163 GRADE C350
   - PURLINS/GIRTS AS1397 GRADE G450 Z350
3. ALL WELDING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF AS1554.
4. ALL WELDS SHALL BE 6mm CONTINUOUS FILLET TYPE SP CATEGORY MADE WITH E48XX ELECTRODE OR W50X OR EQUIVALENT UNO.
5. FOR STEEL LESS THAN 6mm THICK, FILLET WELD THICKNESS TO MATCH THE BASE METAL THICKNESS UNO.
6. ALL BUTT WELDS SHALL BE FULL PENETRATION TYPE SP CATEGORY UNO.
7. WELD INSPECTION IS REQUIRED IN ACCORDANCE WITH AS/NZS 1554.1.
   - ALL GP / SP WELDS SHALL BE 100% VISUALLY SCANNED UNO.
   - SP FILLET WELDS SHALL HAVE 10% VISUAL EXAMINATION UNO.
   - SP BUTT WELDS SHALL HAVE 50% VISUAL EXAMINATION UNO.
   - ALL GP WELDS SHALL HAVE 10% VISUAL EXAMINATION UNO.
8. ALL CLEAT, GUSSET, FIN, END PLATES etc. SHALL BE 10mm THICK UNO.
9. BUTT WELD ALL FLANGES AT END PLATES AND AT ALL MITRE JOINTS.
10. ALL MEMBERS SHALL BE SUPPLIED IN SINGLE LENGTHS. SPLICES SHALL ONLY BE PERMITTED IN LOCATIONS SHOWN ON THESE STRUCTURAL DRAWINGS.
11. PROVIDE SEAL PLATES TO ALL HOLLOW SECTIONS.
12. NO PENETRATIONS OR NOTCHES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN ANY STEEL MEMBERS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.
13. BOLT DESIGNATION:
    - 4.6/S: COMMERCIAL BOLTS OF GRADE 4.6 TO AS 1110, SNUG TIGHTENED.
    - 8.8/S: HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252, SNUG TIGHTENED.
    - 8.8/TB: HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252, FULLY TENSIONED TO AS 4100 AS A BEARING JOINT.
    - 8.8/TF: HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252, FULLY TENSIONED AS A FRICTION JOINT WITH BEARING SURFACES LEFT UNCOATED.
14. ALL BOLTS SHALL BE M20 GRADE 8.8/S UNO.
15. NO CONNECTION SHALL HAVE LESS THAN 2 BOLTS UNO.
16. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT DIP GALVANISED.
17. BOLTS GRADED 4.6 OR 8.8 ARE NOT SUPPLIED AS WELDABLE ITEMS IN THEIR RESPECTIVE PRODUCT STANDARDS AND SHOULD NOT BE WELDED.
18. ENSURE ALL BOLTS HAVE SUFFICIENT LENGTH SO THAT AT LEAST ONE FULL THREAD IS EXPOSED BEYOND THE NUT AFTER TIGHTENING.
19. INTERNAL STEELWORK SHALL BE BLAST CLEANED TO CLASS 1 AND COATED WITH MINIMUM 100µm HIGH BUILD ALKYD PRIMER BEFORE ERECTION.
20. EXTERNAL STEELWORK SHALL BE BLAST CLEANED TO CLASS 2.5 AND HOT DIPPED GALVANISED TO AS4680 WITH A COATING MASS OF 600g/m² (AVERAGE).
21. AS AN ALTERNATIVE TO GALVANISING, STRUCTURAL STEELWORK MAY BE GRIT BLASTED TO CLASS 2.5 AND PAINTED WITH PROTECTIVE COATING (WITH A DURABILITY OF MIN. 25+ YEARS TO FIRST MAINTENANCE) TO MANUFACTURER'S SPECIFICATIONS TO SUIT APPROPRIATE ATMOSPHERIC CORROSIVITY CATEGORIES BASED ON AS/NZS 2312.1:2014
22. ALL STRUCTURAL STEEL MEMBERS SPECIFIED ON THE DRAWINGS OR OTHER RELATED CONTRACTS AS BEING GALVANISED SHALL CONFORM TO THE STANDARDS OF AS4680 & NCC VOLUME 2 HOUSING PROVISIONS STANDARD 2022 Cl. 6.3.9

STEELWORK CONTINUED...

23. PROVIDE PROTECTIVE COATING ON ALL STEELWORK PARTIALLY EMBEDDED IN CONCRETE UNO. THE COATING SHOULD BE NON-CONDUCTIVE AND EXTEND A MINIMUM OF 200mm INTO THE CONCRETE AND A MINIMUM OF 100mm ABOVE THE CONCRETE IN ACCORDANCE WITH AS2312.
24. UNLESS NOTED OTHERWISE, PROTECTIVE COATINGS FOR BUILT-IN COMPONENTS FOR MASONRY CONSTRUCTION, INCLUDING (BUT NOT LIMITED TO) WALL TIES, MASONRY ANCHORS, CONNECTORS, SHELF ANGLES, LINTEL BARS, BED JOINT MESH, BOLTS & FIXINGS SHALL BE ACCORDING TO AS3700, AS2312,AS2699, & NCC VOLUME 2 HOUSING PROVISIONS STANDARD 2022 Cl. 5.6.7b.
25. THE BUILDER SHALL PROVIDE ALL CLEATS AND DRILL HOLES NECESSARY FOR FIXING STEEL TO STEEL AND TIMBER TO STEEL WHETHER OR NOT DETAILED ON THE DRAWINGS.
26. PROVIDE TEMPORARY BRACING TO MAINTAIN STABILITY OF STEELWORK DURING CONSTRUCTION.
27. CHIP ALL WELDS FREE OF SLAG.
28. DO NOT GROUT UNDER BASE PLATES UNTIL FIRST LEVEL STEELWORK IS PLUMB AND FIXED BY WELDING OR BOLTING.

TIMBER

1. ALL TIMBER ROOF, WALL AND FLOOR STRUCTURAL MEMBERS THAT ARE DESIGNED BY THE CONTRACTOR SHALL BE IN ACCORDANCE WITH ENGINEERING PRINCIPLES, AS1684, AS1720, AS2082 AND AS2858 AND SHALL BE HANDLED, ERECTED, INSTALLED AND BRACED IN ACCORDANCE WITH AS1860 AND AS4440.
2. ALL SOFTWOOD SHALL BE GRADE MGP10 UNO. ALL HARDWOOD SHALL BE MINIMUM GRADE F17 UNO.
3. ALL TIMBER MEMBERS USED IN CONSTRUCTION SHALL HAVE A MINIMUM LEVEL OF DURABILITY AS SPECIFIED IN AS1604.2 APPENDIX C.
4. EXCEPT WHERE OTHERWISE SHOWN ON THESE ENGINEERING DRAWINGS, ALL TIMBER CONNECTION, TIE DOWN AND BRACING DETAILS SHALL COMPLY WITH AS1684 AND AS1720.
5. ALL BOLTS IN TIMBER CONSTRUCTION SHALL BE MINIMUM M16 UNO. ALL BOLTED CONNECTIONS SHALL USE WASHERS UNDER HEADS AND NUTS WHICH ARE TO BE AT LEAST 3 TIMES THE BOLT DIAMETER. ALL BOLTS AND WASHERS SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH AS1720.
6. ALL TRUSSES AND RAFTERS SHALL BE FIXED TO TOP PLATE WITH METAL MULTIGRIP TIE DOWNS.
7. TIMBER MEMBERS NOT INDICATED ON PLANS SHALL BE SELECTED IN ACCORDANCE WITH THE AS1684/AS1720.
8. DURING CONSTRUCTION IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE TIMBER IS PROTECTED FROM THE WEATHER AND ITS STRENGTH IS NOT IMPAIRED IN ANY WAY.
9. DURABILITY GRADE OF ALL TIMBERS.

LOCATION	HAZARD CLASS (SOFTWOODS)	DURABILITY CLASS (HARDWOODS)
INTERNAL ABOVE GROUND	H2	CLASS 1 OR 2
EXTERNAL ABOVE GROUND	H3	CLASS 1 OR 2
BELOW GROUND	H4	CLASS 1

STRUCTURAL STEEL MEMBERS THAT ARE BUILT INTO MASONRY WALL (AS2699.3 - 2020)

LOCATION	DURABILITY CLASS	TYPICAL DISTANCE	
		SURF COAST	SHELTERED COAST
EXTERNAL & INTERNAL	R1 & R2	>10Km	>1Km
	R3	1Km T0 10Km	100m TO 1Km
	R4	<1Km	<100m

STRUCTURAL STEEL MEMBERS THAT ARE BUILT INTO MASONRY WALL (AS2699.3 - 2020)

DURABILITY CLASS OF LINTEL IN ACCORDANCE WITH AS 2699.3	MATERIAL OR PROTECTIVE REQUIREMENTS IN ACCORDANCE WITH AS 2699.3
R1,R2	HOT DIP GALVANISED WITH A MINIMUM AVERAGE COATING THICKNESS OF 300 g/m²; OR STAINLESS STEEL 316L
R3	HOT DIP GALVANISED WITH A MINIMUM AVERAGE COATING THICKNESS OF 600 g/m²; OR STAINLESS STEEL 316L
R4	STANLESS STEEL 316L OR DUPLEX COATING (HOT DIP GALVANIZED PLUS PAINT COATING) CONSISTING OF AS/NZS 4680 HDG 600 (MINIMUM AVERAGE COATING THICKNESS = 85 µm) FOLLOWED BY SWEEP BLAST CLEANING & A PAINT COATING CONSISTING OF EITHER: a) 350 µm OF HIGH BUILD EPOXY PAINT TO AS/NZS 3750.14; OR b) 250 µm OF HIGH BUILD EPOXY PAINT TO AS/NZS 3750.14 FOLLOWED BY 100 µm OF POLYURETHANE TO AS/NZS 3750.6 OR 100 µm OF ACRYLIC GLOSS TO AS/NZS 3750.5

TABLE NOTES:
1) ADDITION DECORATIVE COATINGS CAN BE APPLIED, BUT MUST NOT BE CONSIDERED FOR THE PURPOSE OF SATISFYING THE REQUIREMENTS OF THIS TABLE.
2) ANY LINTEL WITH A COATING THAT IS MODIFIED, I.E. BY CUTTING, WELDING, OR WHERE DAMAGED, MUST HAVE THE COATING RESTORED TO PROVIDE AN EQUIVALENT LEVEL OF PROTECTION PROVIDED BY THE ORIGINAL COATING.

STRUCTURAL STEEL MEMBERS THAT ARE NOT BUILT INTO MASONRY WALL (AS4312-2008)

LOCATION	ENVIRONMENTAL EXPOSURE CLASS	TYPICAL DISTANCE	
		SURF COAST	SHELTERED COAST
EXTERNAL	C2	>50Km	>1Km
	C3	1Km - 50Km	50m - 1Km
	C4	200m TO 1Km	<50m
	C5	<200m	N/A
INTERNAL	C1	ALL CLASS 1 BUILDING INTERNAL BEAM SHALL BE CLASSIFIED AS C1 U.N.O. AS PER AS 4100-2020 (REFER TO AS4212 TABLE 2.1 FOR OTHER BUILDING CLASSES).	

STRUCTURAL STEEL MEMBERS THAT ARE NOT BUILT INTO MASONRY WALL (AS4312-2008)

ENVIRONMENT	MINIMUM PROTECTIVE COATING		
	OPTION 1 (HOT DIP GALVANISING)	OPTION 2 (DUPLEX SYSTEM). SEE ABCB HOUSING PROVISION STANDARD-2022 TABLE 6.3.9c	OPTION 3 (PAINT). SEE TABLE ABCB HOUSING PROVISION STANDARD-2022 6.3.9b
VERY LOW (MILD STEEL CORROSION RATE<1.3g µm/ YEAR - C1	HDG75	-	SURFACE PREPARATIONS & PAINTING AS PER AS2312.1, TABLE 6.1., DURABILITY: MIN. 25+YEARS TO FIRST MAINTENANCE
LOW (MILD STEEL CORROSION RATE 1.3 TO 25 µm/ YEAR - C2	HDG75	-	ACL2, ACC2, IZS1, PUR2A
MEDIUM (MILD STEEL CORROSION RATE 25 TO 50 µm/ YEAR) - C3	HDG225	-	ACL3, ACC4, ACC5, IZS1, PUR3, PUR4
HIGH (MILD STEET CORROSION RATE 50 TO 80 µm/YEAR) - C4	HDG450	HDG150 (5 YEARS) 4D (10-15 YEARS) OR HDG300 (10 YEARS) 2D (5-10 YEARS)	ACC6, IZS3, PUR5
VERY HIGH (MILD STEEL CORROSION RATE 80 TO 200 µm/ YEAR) - C5	HDG900	HDG300 (5 YEARS) 5D (10-15 YEARS) OR HDG600 (10 YEARS) 4D (5-10 YEARS)	ACC6 (C5-M ONLY), PUR5

TABLE NOTES: HOT DIP GALVANISING & DUPLEX SYSTEMS MUST BE IN ACCORDANCE WITH AS 2312.2. PAINT SYSTEMS MUST BE IN ACCORDANCE WITH AS 2312.1.

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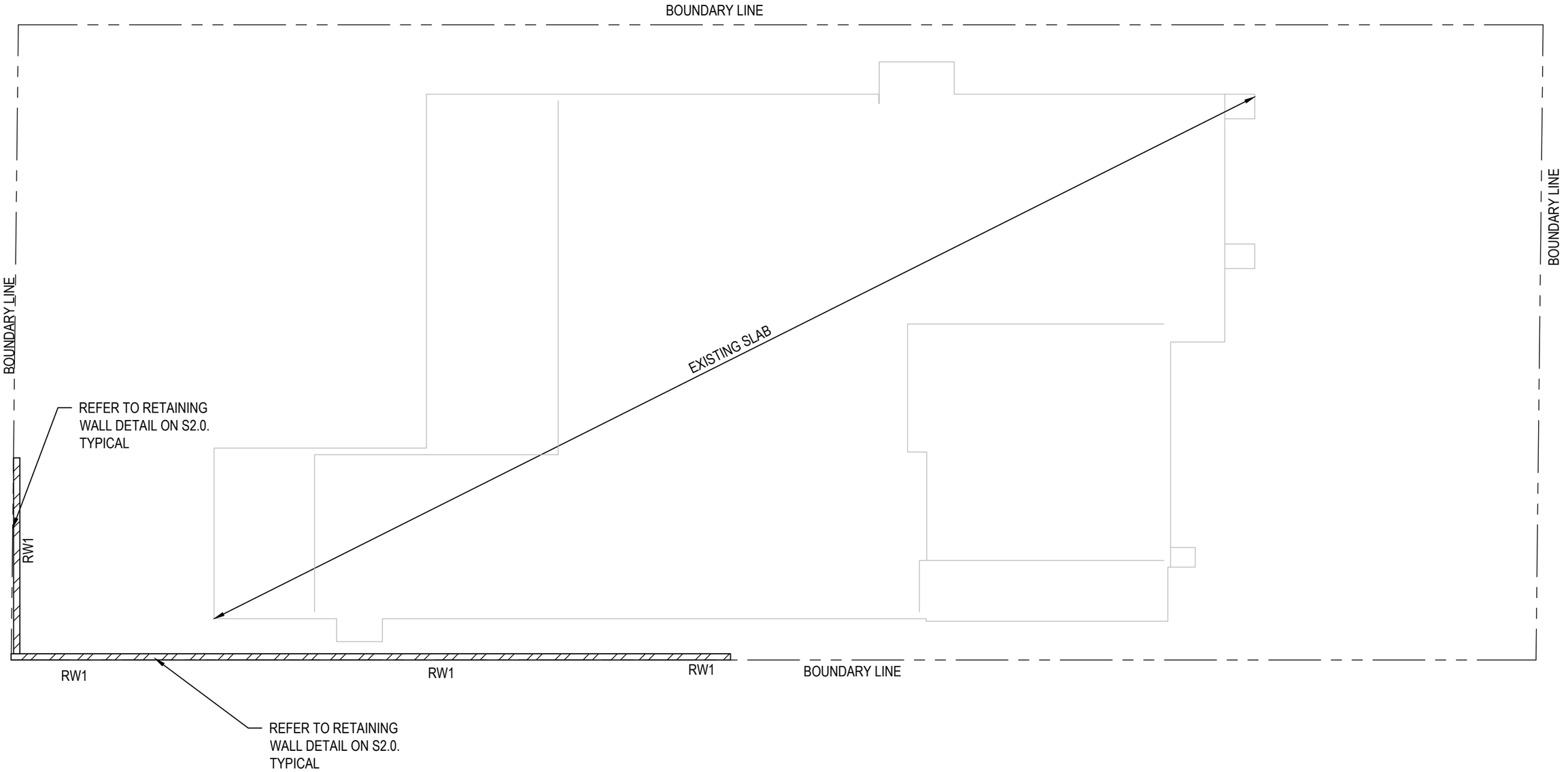

RETAINING WALL LAYOUT

SCALE 1:100

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CLIENT: MR. JAMES CONRAD & MRS. SAMANTHA MARTIN

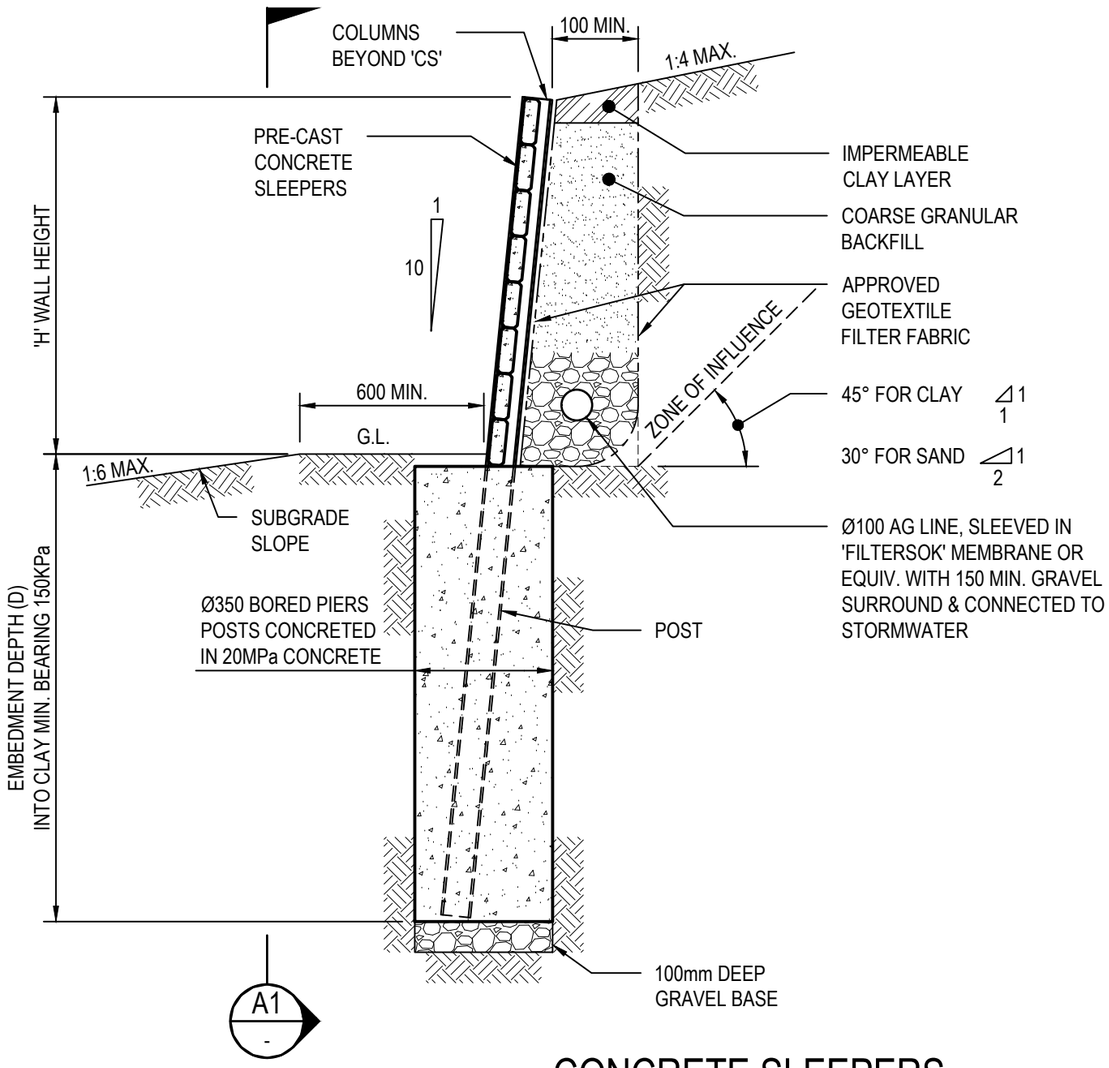
SITE ADDRESS: LOT B, NO. 94 FISHER ROAD DEE WHY, NSW 2099

STATUS: ISSUED FOR CONSTRUCTION

SCALE:	DRAWN:	ENGINEER:	DATE:
1:100	D.S.	A.E.	30.06.25

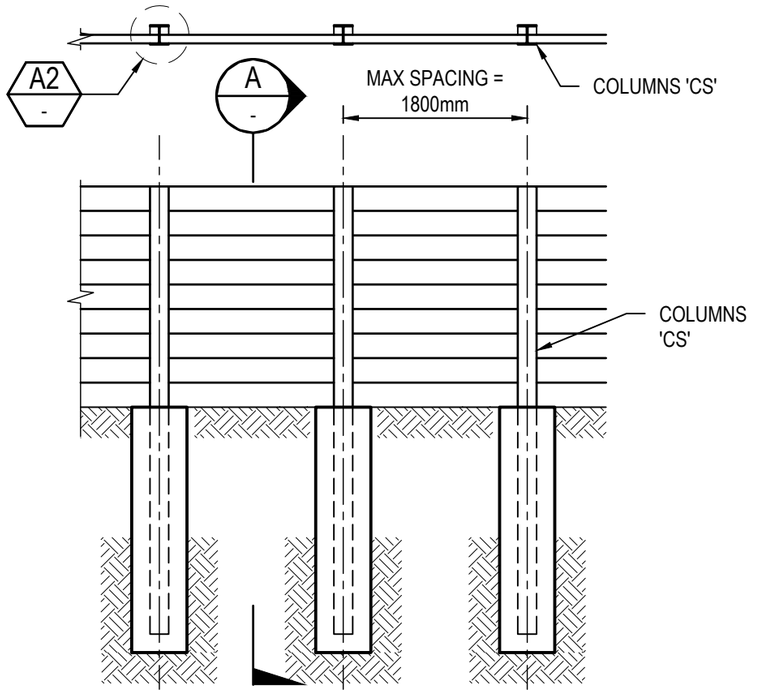
DRAWING TITLE: RETAINING WALL LAYOUT

PROJECT NO:	SHEET NO:	REVISION:
35682	S1.0	A

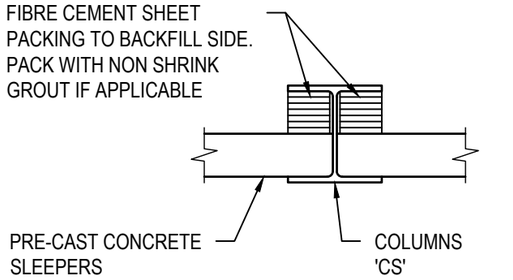


CONCRETE SLEEPERS RETAINING WALL - RW1

SECTION A
SCALE 1:50



SECTION A1
SCALE 1:50



DETAIL A2
SCALE 1:10

STEEL PROTECTION NOTE:

STEEL MEMBERS TO BE HOT-DIP GALVANISED TO COMPLY WITH AS/NZS 4680, WITH A MINIMUM COATING MASS OF 600g/m^2

SECTION A
SCALE 1:20

RETAINING WALL SCHEDULE		
HEIGHT 'H'	DEPTH 'D'	COLUMN SIZE 'CS'
600	1900	100 UC 15
800	2100	100 UC 15
1000	2300	100 UC 15

NOTE

- RETAINING WALL DESIGN DOES NOT ALLOW FOR STRUCTURES TO BE LOADING WITHIN THE ZONE OF INFLUENCE OF THE RETAINING WALL. CONTACT ENGINEER FOR REVISED DESIGN PRIOR TO EXCAVATION & CONSTRUCTION.
- LIGHTWEIGHT FENCE (TIMBER, METAL, ETC.) PERMITTED WITHIN ZONE OF INFLUENCE OF RETAINING WALL. FENCE POSTS TO BE AT RETAINING WALL POST LOCATION.
- CONCRETE SLEEPERS TO MANUFACTURERS SPECIFICATIONS.
- CONCRETE SLEEPER NOT TO BE CUT OR ALTERED UNLESS SPECIFIED BY MANUFACTURER.

REV	REVISION	DRAWN	ENG	CHECK	DATE
A	ISSUE FOR CONSTRUCTION	D.S.	A.E.	A.E.	30.06.25

NASTASI CONSULTING GROUP PTY LTD
RESIDENTIAL - COMMERCIAL - INDUSTRIAL - INFRASTRUCTURE
STRUCTURAL - CIVIL - STORMWATER - GEOTECHNICAL - SURVEYING - SITE SERVICES
OPERATING IN - NSW - QLD - VIC - TAS
Head Office: Unit 5, 1-3 Whyalla Place, Prestons, NSW 2170
www.nastasiassociates.com.au
ABN : 45 533 226 008
Ph (02) 96072864

APPROVED BY:
S. NASTASI
B.E.,M.I.E. AUST, CPENG

CLIENT REFERENCE No: -

ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH ARCHITECT AND BUILDER BEFORE COMMENCING SHOP DRAWINGS OR SITE WORKS.

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CLIENT: MR. JAMES CONRAD & MRS. SAMANTHA MARTIN

SITE ADDRESS: LOT B, NO. 94 FISHER ROAD DEE WHY, NSW 2099

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SCALE:	DRAWN:	ENGINEER:	DATE:
1:20	D.S.	A.E.	30.06.25

DRAWING TITLE: RETAINING WALL DETAILS

PROJECT NO:	SHEET NO:	REVISION:
35682	S2.0	A

STRUCTURAL DESIGN CERTIFICATE

REVISION: A
DATE:30.06.25

RE; LOT B, NO. 94 FISHER ROAD DEE WHY, NSW 2099

We confirm that Nastasi Consulting Group Pty Ltd are the consulting structural engineers for the subject development.

This is to certify that the structural design for the above project has been carried out to NCC Vol.2 2022, housing provision standard 2022 & conform to the current version of the relevant Australian standards, in particular the following:

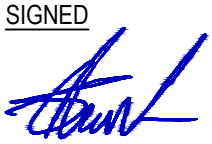
AS 1170 Structural Design Actions
- Part 0:2002 - General Principles
- Part 1:2002 - Permanent, Imposed and other Actions
- Part 2:2021 - Wind Actions

AS 2159:2009 Piling Code
AS 4678:2002 Earth-Retaining Structures

Nastasi Consulting Group are qualified consulting engineers that are registered in the National Professional Engineers Register (NPER) and can certify the design and performance of the design.
Nastasi Consulting Group have Indemnity Insurance to the satisfaction of the building owner.

Name of Employer	Nastasi Consulting Group Pty Ltd
Name of Designer	Salvatore Nastasi
Qualifications	B.E.M.I.E AUST CpEng Nper - 3 Accredited Certifier (Structural & Civil) No. BPB0289 Board of Professional Engineers (QLD) RPEQ - 14906 Registered Building Practitioner (VIC) RBP No. EC40769 Building Services Provider (TAS) License No. 269976874
Address of Designer	Unit 5, 1-3 Whyalla Place, Prestons NSW.
Business Telephone No.	(02) 9607 2864

SIGNED



SALVATORE NASTASI – B.E M.I.E AUST CpEng Nper-3
Accredited Certifier (Structural & Civil) No BPB0289