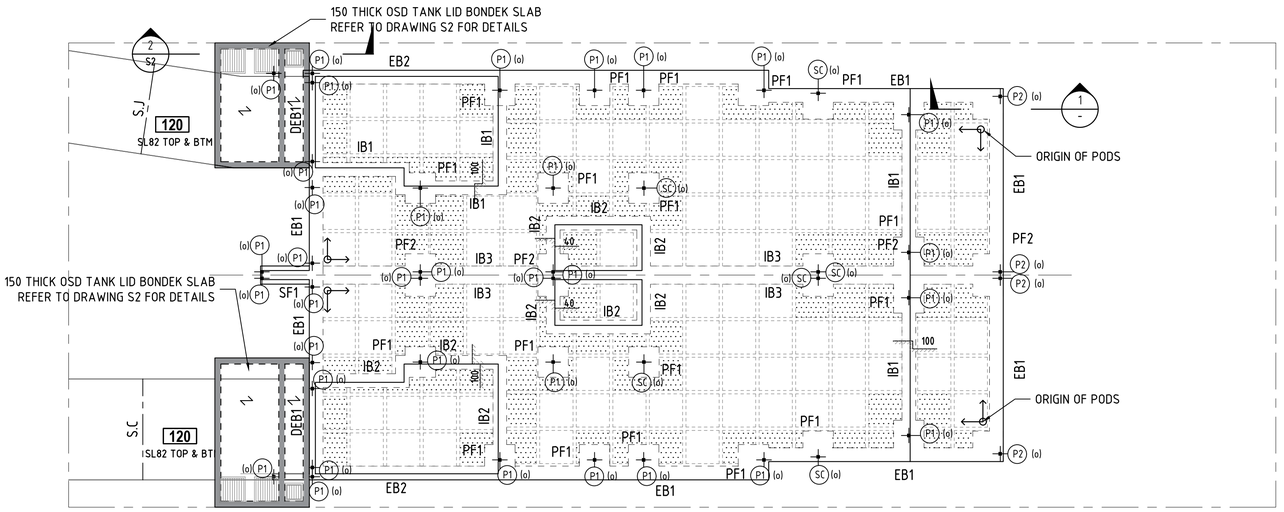


GROUND FLOOR WAFFLE SLAB PLAN - N32 MPa

SCALE 1:100

- 90mm THICK SLAB
  SL82 TOP, 20 COVER
- AREAS INDICATED THUS ARE VOID FORMERS CUT TO SUIT.
- POD OMITTED AND VOID FILLED WITH MASS CONCRETE

PAD FOOTING SCHEDULE

MARK	LENGTH 'L'	WIDTH 'W'	DEPTH 'D'	REINFORCEMENT				CONCRETE STRENGTH
				BOTTOM		TOP		
				'BL' BARS	'BW' BARS	'TL' BARS	'TW' BARS	
PF1	1000	1000	600	N12-200	N12-200	N12-200	N12-200	32 MPa
PF2	1400	1000	600	N12-200	N12-200	N12-200	N12-200	32 MPa

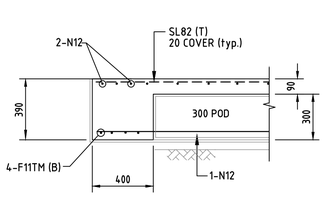
WAFFLE POD CONSTRUCTION NOTES

1. This plan shall be read in conjunction with architectural drawings and reports.
2. Use plastic based bar chairs to ensure 20mm minimum top cover to slab fabric.
3. If plumbing risers clash with ribs then maintain minimum rib width of 110mm by cutting ends off boxes and lapping reinforcement as required.
4. Concrete strength to be N = 32 MPa.
5. Waffle pods should not be left unprotected during prolonged wet periods.
6. If any footing is located such that a line drawn at 45˚ from it's base intersects a service trench then piers are required - contact this office prior to further construction.
7. If perimeter stem width exceeds 150mm then require additional reinforcement as per detail.
8. Ribs are to be poured as part of slab.
9. Dimensions are in mm U.N.O. (Unless Noted Otherwise)
10. Foundations to be founded in 150kPa A.B.P material.
11. If waffle pod is founded on uncontrolled fill, contact this office for pier location and alterations to rib reinforcement if necessary.

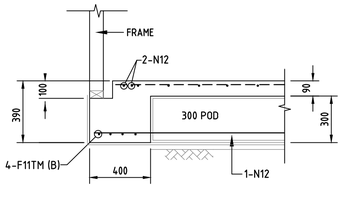
note:
r.c. waffle slab has been designed in accordance with A.S. 2870, 2011 for a class 'M' site.

the owners attention is directed to Appendix A. of Aust. Stand. AS.2870.

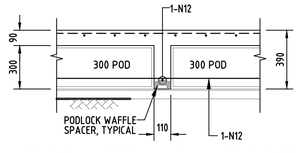
note:
all reinforcement to top of slabs are to have a minimum cover of:
- internal = 20mm U.N.O.
- external = 30mm U.N.O.



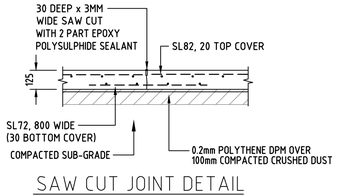
"EB1" DETAIL
SCALE 1:20



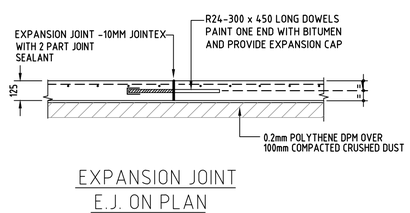
"EB2" DETAIL
SCALE 1:20



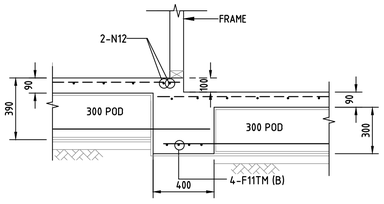
TYPICAL DETAIL AT WAFFLE POD
SCALE 1:20



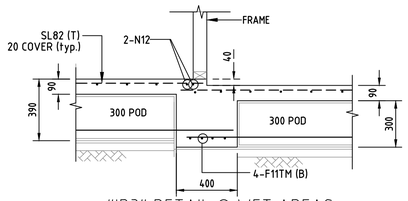
SAW CUT JOINT DETAIL
S.C. ON PLAN
SCALE: 1:20



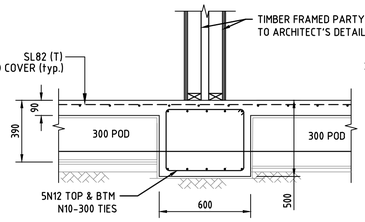
EXPANSION JOINT
E.J. ON PLAN



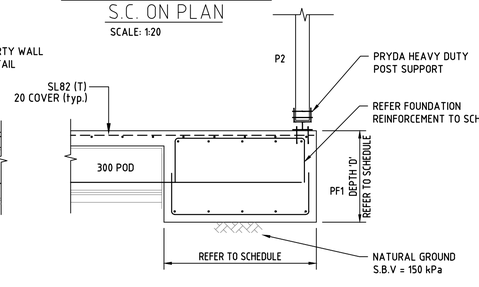
"IB1" DETAIL
SCALE 1:20



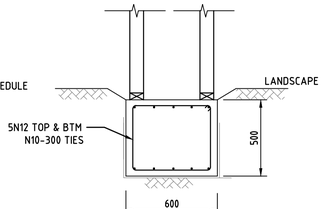
"IB3" DETAIL @ WET AREAS
SCALE 1:20



"IB3" DETAIL
SCALE 1:20



SECTION 1
SCALE 1:20



"SF1" DETAIL
SCALE 1:20

CONSTRUCTION NOTES.

General.

G1. These drawings shall be read in conjunction with all architectural and other consultants drawings and specifications and with such other written instructions as may the Architect for decision before proceeding with the work.
G2. Dimensions shall not be obtained by scaling the structural drawings.
G3. Setting out dimensions shown on the drawings shall be verified by the builder.
G4. During construction the structure shall be maintained in a stable condition and no part shall be overstressed.
G5. All excavation , sharing of excavation and stability of adjacent structures shall be the responsibility of the builder.
G6. The structural work shown on the drawings have been designed for the following live loads: Slabs .....c. k.P.a. Balconies .....c..... k.P.A.
Stairs and landings ...c..... k.P.A.

Foundations.

F1. The footings have been designed for the allowable intensity of ..... 150 ..... K.P.A. NATURAL GND
F2. All slabs on the ground subgrades shall be compacted to 95% M.O.D.D.

Concrete.

C1. All workmanship and materials shall be in accordance with AS3600 current edition with ammendments, except where verified by the contract documents.
C2. Concrete quality is to be AS3600. Normal concrete is to have a maximum water cement ratio of .6 and a minimum portland cement content of 280 kg per m.

Element	Slump	Max. Size agg.	Cement type	AS3600 F'c	Admixture
FOOTINGS	80	20	G.P.	32	
GRD. FL. SLAB	80	20	G.P.	32	
DRIVEWAY/PAVING	80	20	G.P.	32	

C3. Clear concrete cover to reinforcement shall be as follows:

Element	Cast against forms complying with AS 1509		Cast against form work or The ground
	In sheltered Locations	Exposed to ground weather or water	
Columns & Pedestals	40	40	65
Beams	25	40	50
Footings	50	65	75
Slabs & Walls	20	40	50

C4. Sizes of concrete elements do not include thickness of applied finishes.
C5. Construction joints where not shown shall be located to the approval of the Engineer. All construction joints shall be scabbled over the whole face and any unsound material removed.
C6. Beam depths are written first and include slab thickness.
C7. No holes or chases other than those shown on the structural drawings shall be made in concrete members without the prior approval of the Engineer.
C8. All concrete shall be thoroughly compacted by a vibrator and the vibrator shall not be used to spread the concrete.
C9. Formwork to suspended slabs and beams shall remain in place for a full ..... days. cantilevers being backpropped for a full 28 days. If there is less than 21 days between placing of concrete for successive slabs, props shall be placed directly under props over so that two slabs are carrying the load.
C10. Conduits, pipes, etc., must not be placed in concrete cover and shall be spaced minimum distance as for reinforcing steel.
C11. Reinforcement is represented diagrammatically; it is not necessarily shown in true projection.
C12. Welding of reinforcement will not be permitted unless shown on the structural drawings.
C13. Reinforcement symbols:
Y -410 deformed bar in accordance with AS 1302.
S -Structural grade defomed bar in accordance with AS 1302.
R -structural grade round bar in accordance with AS 1302.
F -Hard drawn steel wire fabric in accordance with AS 1304.
C14. All reinforcement shall be firmly supported on plastic or M.S. (plastic tipped or galvanised) chairs generally at not greater than 1000mm. centres both ways. Bars to to be tied at alternative intersections.
C15. Unless noted otherwise, all cross rods and distributors shall be ..... Y12 @ 300 cts.
C16. Splices in reinforcement shall be made only in the positions shown and shall be sufficient to develop the full strength of the reinforcement.
(1) Square fabric - minimum lap side ..... end .....
(2) Rectangular fabric - minimum lap side ..... end .....
C17. Splice lengths generally to be in accordance with table 13.1.2.2A of AS 3600.

Structural Steel.

S1. All workmanship and materials shall be in accordance with AS 4100, AS 1554 and for tubular members BS 449 and BS 1775, except where varied by contract documents.
S2. Connections shall be provided to carry the reactions shown unless otherwise detailed.
S3. The Contractor shall prepare workshop drawings and shall submit 3 copies of each drawing for examination of connections. Fabrication shall not commence until approval has been received.
S4. Welds shall be continuous fillet, all bolts 20mm dia., all gusset plates 10mm thick unless otherwise noted.
S5. Concrete encased steelwork shall be wrapped with 3.15 mm. wire at 100 mm. cts. and shall have a minimum 50 mm. cover of concrete unless noted otherwise.
S6. Unless otherwise noted, all steel shall be in accordance with AS 1204 mild steel and AS 1136 steel tubes Grade 1.5.
S7. Unless otherwise noted, all steelwork not encased shall be given one coat of red oxide zinc chromate primer prior to dispatch.

Brickwork (or Blockwork).

B1. All load-bearing brickwork shall be constructed in accordance with AS 3700.
B2. Minimum brick compressive strength to be as follows: C = ... M.Pa.
B3. Mortar to brickwork to be as follows:
(a) Retaining walls and all brickwork below ground - 1 part cement, 1/10 part lime, 3 parts clean sharp sand.
(b) All other load - bearing brickwork - 1 part cement, 1 part lime, 6 parts clean sharp sand.
B4. Where brickwork supports concrete slabs, top course shall be laid frogs down and covered with Two layers of galvanised iron strips with graphite between.
B5. Brickwork shall be separated from concrete at all vertical faces by 10mm thick compressible jointing material.
B6. Where walls are non load-bearing, they shall be separated from the concrete over by 10mm thick compressible jointing material.
B7. Lintels over openings to be of hot dipped galvanised with 150 mm. minimum bearing at each end unless otherwise noted.
B8. Grout where required shall comprise 1 part cement, 3 parts clean sharp sand, 1/10 part lime and two parts 10 mm. aggregate.
B9. Cleanout openings shall be provided at base of all reinforced cells to enable cleaning of cells including removal of mortar protruding into cell, prior to placing of reinforcement.
B10. Lintels shall be in accordance with B7. above or alternatively approved masonry lintel beams may be used.
B11. Approved joint reinforcement shall be laid horizontally at a minimum of 600 mm. cts. with additional layers directly above and below window and door openings.

Timber.

T1. Timber constructions to be in accordance with AS 1720 and light timber framing code AS 1684.
T2. Timber stress grade to be F7 unless noted otherwise.

Revision	Details	Date
B	ISSUE FOR CDC APPROVAL	28.10.2025
A	ISSUE FOR CDC APPROVAL	22.10.2025

Project
PROPOSED ALTERATION AND ADDITION
30 HUME BOULEVARD KILLARNEY VALE

BURGESS, ARNOTT & GRAVA PTY. LTD.
CONSULTING STRUCTURAL, CIVIL & HYDRAULIC ENGINEERS
10/38A BROOKHOLLOW AVE BAULKHAM HILLS
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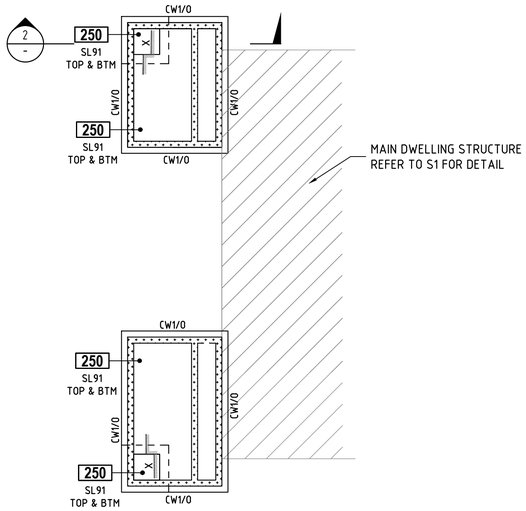
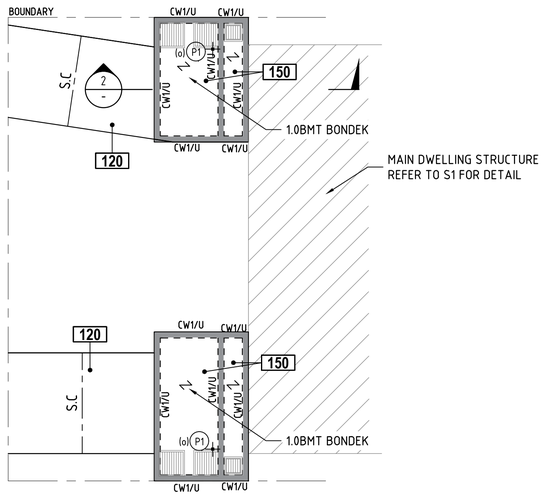
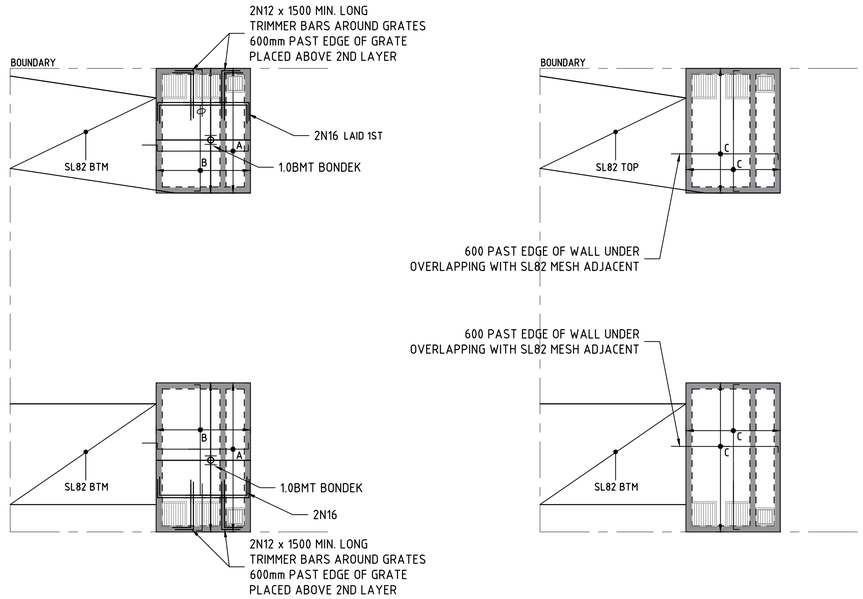
Title
GROUND FLOOR SLAB PLAN AND DETAILS

Checked	Scale	Date	Drawing No.	Rev.
J. XU	As shown	OCT.2025	2025-320-S1	B
Approved by			DRAWING 1 IN SET OF 4	
Chartered Engineer			Drawing size A1	







DETENTION TANK BASE SLAB AND FOUNDATION PLAN – N32MPa CONCRETE

Scale 1:100

WALL SCHEDULE

MARK	THICKNESS	REINFORCEMENT VERTICAL	REINFORCEMENT HORIZONTAL	CONCRETE STRENGTH	COMMENTS
CONCRETE WALL					
CW1	200 DINCEL	N12-167 CENTRAL	N12-167 CENTRAL	32 MPa	

DETENTION TANK LID SLAB PLAN – N32MPa CONCRETE

Scale 1:100

NOTE:
- PITS SHOWN AS INDICATIVELY ONLY - REFER TO STORMWATER DRAWING FOR PIT SIZES. PENETRATIONS IN BONDEK SLAB TO BE CUT OUT AFTER SLAB HAS BEEN POURED AND CONCRETE HAS ACHIEVED F'C MIN = 15MPa.
- INSTALLATION AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH AS2327.1-2003 AND CURRENT LYSAGHT BONDEK STRUCTURAL STEEL DECKING USER INSTALLATION GUIDE AND STANDARD DETAILS.

DETENTION TANK BOTTOM REINFORCEMENT PLAN

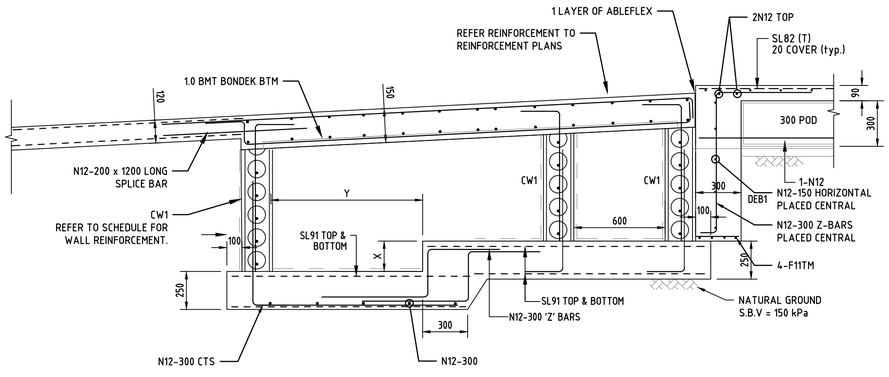
Scale 1:100

NOTE:
- 40mm BOTTOM COVER.
- 'A' - N12-200 CTS BTM LAID 1ST IN BONDEK RIBS.
- 'B' - N12-200 CTS BTM.

DETENTION TANK TOP REINFORCEMENT PLAN

Scale 1:100

NOTE:
- 30mm TOP COVER.
- 'C' - N12 - 200 CTS



SECTION 2
SCALE 1:20

REFER DIMENSION X AND Y TO STORMWATER ENGINEER'S DRAWINGS

Revision	Details	Date
B	ISSUE FOR CDC APPROVAL	28.10.2025
A	ISSUE FOR CDC APPROVAL	22.10.2025

Project
PROPOSED ALTERATION AND ADDITION
30 HUME BOULEVARD KILLARNEY VALE

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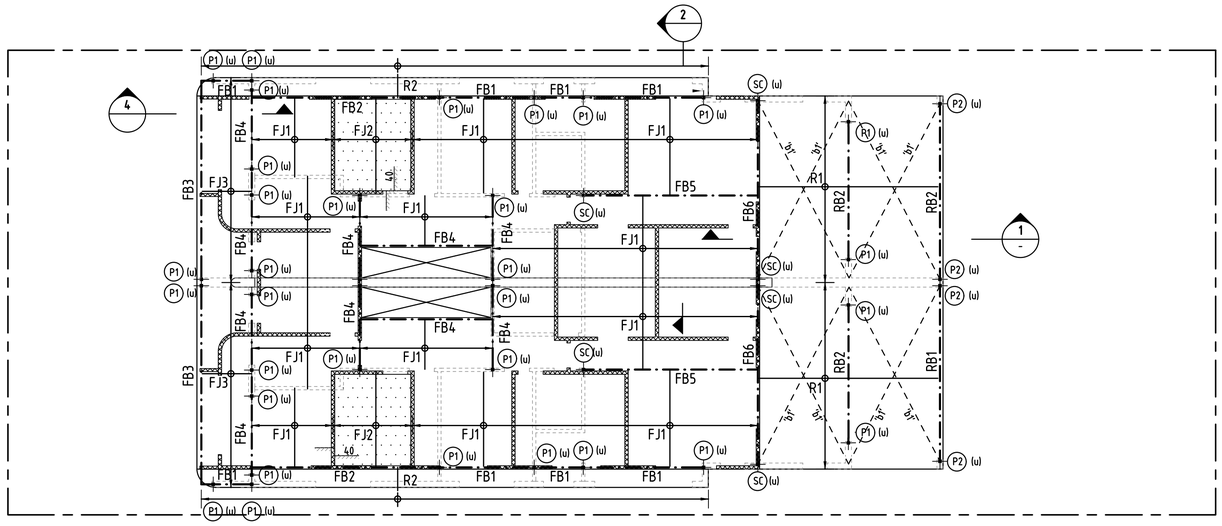
Title
DETENTION TANK
STRUCTURAL PLANS AND DETAILS

Checked	Scale	Date	Drawing No.	Rev.
J. XU	As shown	OCT.2025	2025-320-S2	B

Approved by
Chartered Engineer

DRAWING 2 IN SET OF 4
Drawing size A1



FIRST FLOOR FRAMING PLAN

Scale 1:100

NOTE:
- REFER TO ARCHITECTURAL DRAWINGS FOR SETOUT, LEVELS, FALLS ETC.
- NOTIFY ARCHITECT & BURGESS ARNOTT & GRAVA P/L OF ANY DISCREPANCIES BEFORE PROCEEDING.

LEGEND:

- DENOTES LOAD BEARING TIMBER FRAMED STUD WALL OVER
- DENOTES LOAD BEARING TIMBER FRAMED STUD WALL UNDER
- Px (o) DENOTES COLUMN UNDER/OVER
- FBx DENOTES FIRST FLOOR BEAM

MEMBER SCHEDULE

FLOOR BEAMS

FB1.....2/300 x 63 LVL
FB2.....2/360 x 63 LVL
FB3.....2/300 x 63 LVL
FB4.....300 x 63 LVL
FB5.....310UB46
FB6.....310UB46

ROOF BEAMS

RB1.....240 x 45 LVL
RB2.....300 x 75 LVL

COLUMNS

P1.....2 / 90 x 45 F7 TIMBER STUDS
P2.....90 x 90 F17 HARDWOOD POST

FLOOR JOIST

FJ1.....240 x 45 LVL @ 450 CTRS
FJ2.....200 x 45 LVL @ 450 CTRS
FJ3.....150 x 45 LVL @ 450 CTRS

RAFTER

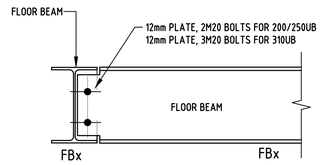
R1.....150 x 45 LVL @ 600 CTRS
R2.....95 x 45 LVL @ 600 CTRS

ROOF

'b'.....32 x 1mm HOOP IRON BRACING

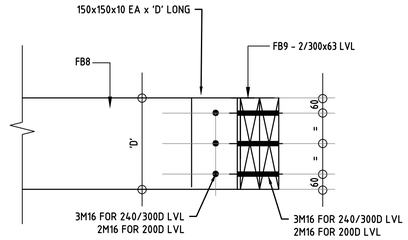
NOTES:

1) ALL EXPOSED TIMBER MEMBERS TO BE PRESERVATIVE TREATED OR HARDWOOD, DURABILITY GRADE 2 OR BETTER.
2) ALL EXPOSED STEEL MEMBERS, FITTINGS & FASTENERS TO BE HOT DIP GALVANISED.
3) STEEL MEMBERS SUPPORTED ON MASONRY WALLS TO BE SEPARATED FROM MASONRY WITH ALCOR OR MEMBERS TO BE HOT DIP GALVANISED.
4) PROVIDE WALL BRACING, ROOF BRACING & TIE-DOWN IN ACCORDANCE WITH AS1684.2-1999 RESIDENTIAL TIMBER FRAMED CONSTRUCTION.



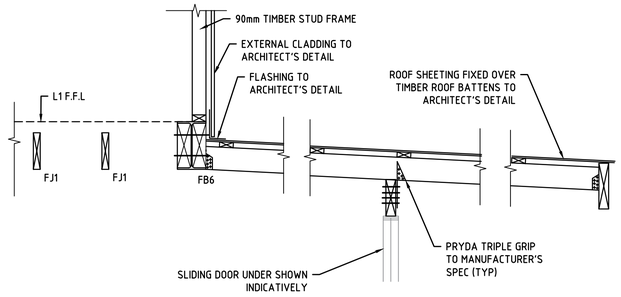
TYPICAL STEEL BEAM CONNECTION DETAIL

SCALE 1:10



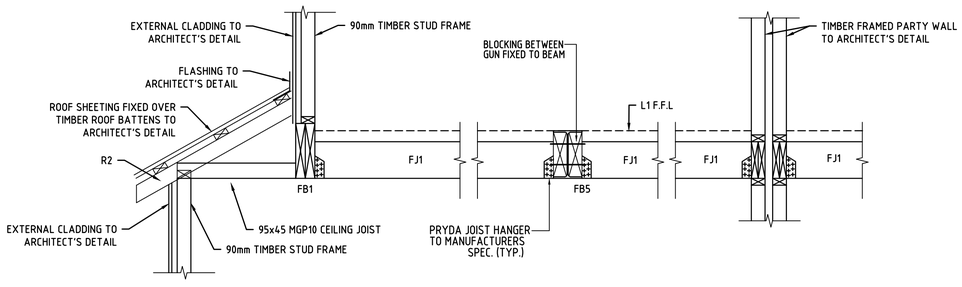
TYPICAL TIMBER LVL BEAM CONNECTION DETAIL

SCALE 1:10



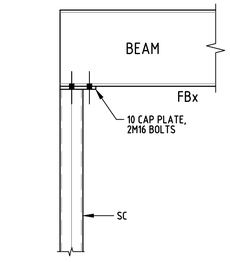
SECTION 1

SCALE 1:20



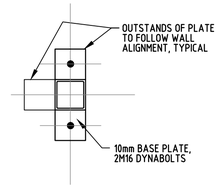
SECTION 2

SCALE 1:20



TYPICAL CAP PLATE DETAIL @ SC

SCALE 1:10



TYPICAL PLAN AT BASE PLATE - SC

SCALE 1:10

Revision	Details	Date
B	ISSUE FOR CDC APPROVAL	28.10.2025
A	ISSUE FOR CDC APPROVAL	22.10.2025

Project

PROPOSED NEW RESIDENCE
30 HUME BOULEVARD KILLARNEY VALE

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Title

FIRST FLOOR FRAMING PLAN & DETAILS

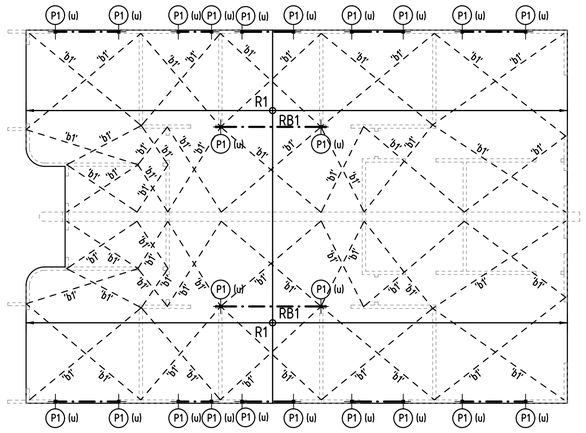
Checked	Scale	Date	Drawing No.	Rev.
J. XU	As shown	OCT.2025	2025-320-S3	B

Approved by

Chartered Engineer

DRAWING 3 IN SET OF 4

Drawing size A1



ROOF FRAMING PLAN

Scale 1:100

MEMBER SCHEDULE

ROOF BEAMS

RB1.....240x63 LVL

LINTEL BEAMS

LB1.....2 / 150x45 LVL

COLUMNS

P1.....2 / 90 x 45 F7 TIMBER STUDS

RAFTER

R1.....200 x 45 LVL @ 600 CTRS

ROOF

'b'.....32 x 1mm HOOP IRON BRACING

NOTES:

1) ALL EXPOSED TIMBER MEMBERS TO BE PRESERVATIVE TREATED OR HARDWOOD, DURABILITY GRADE 2 OR BETTER.
2) ALL EXPOSED STEEL MEMBERS, FITTINGS & FASTENERS TO BE HOT DIP GALVANISED.
3) STEEL MEMBERS SUPPORTED ON MASONRY WALLS TO BE SEPARATED FROM MASONRY WITH ALCOR OR MEMBERS TO BE HOT DIP GALVANISED.
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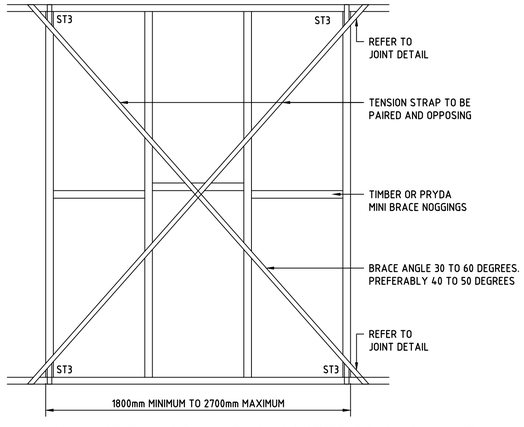
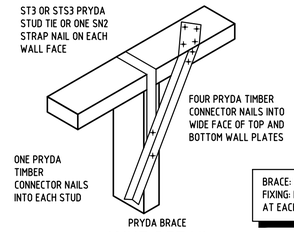


WB1-TYPE B DIAGONAL STRAP CROSS BRACING UNITS

SCALE 1:20

NOTE:
- IF 'PUNCHED' BRACING STRAP IS TO BE USED, CONSULT BURGESS ARNOTT & GRAVA PTY LTD FOR REVISED BRACE SPECIFICATION.

TYPE OF DIAGONAL BRACE	MATERIAL AND SIZE	NAILING REQUIREMENTS		SPECIAL REQUIREMENTS
		TO EACH STUD	TO EACH PLATE	
TENSION STRAP	GALVANISED FLAT METAL TENSION STRAP NOMINAL SIZE 30x0.8mm (UNPUNCHED) AND MIN SECTION 24mm²	2/Φ30x3.15mm EACH END GALVANISED	4/Φ30x3.15mm EACH END GALVANISED	STRAPS MUST BE PROPERLY TENSIONED AND STRAP MUST RETURN OVER TOP PLATE AND UNDER BOTTOM PLATE. THE STUD NEAREST TO EACH END OF EACH DIAGONAL STRAP SHALL BE FIXED TO THE PLATES WITH STRAPS OR FRAMING ANCHORS 4/Φ30x2.8mm NAILS EACH END.



BRACE: PRYDA STRAP BRACE SB103 OR SPEEDBRACE.
FIXING: PRYDA TIMBER CONNECTOR NAILS WITH 4 NAILS AT EACH END AND 1 NAIL AT EACH END.

JOINT DETAIL

SCALE 1:20

Revision	Details	Date
B	ISSUE FOR CDC APPROVAL	28.10.2025
A	ISSUE FOR CDC APPROVAL	22.10.2025

Project

PROPOSED NEW RESIDENCE
30 HUME BOULEVARD KILLARNEY VALE

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Title

ROOF FRAMING PLAN
AND DETAILS

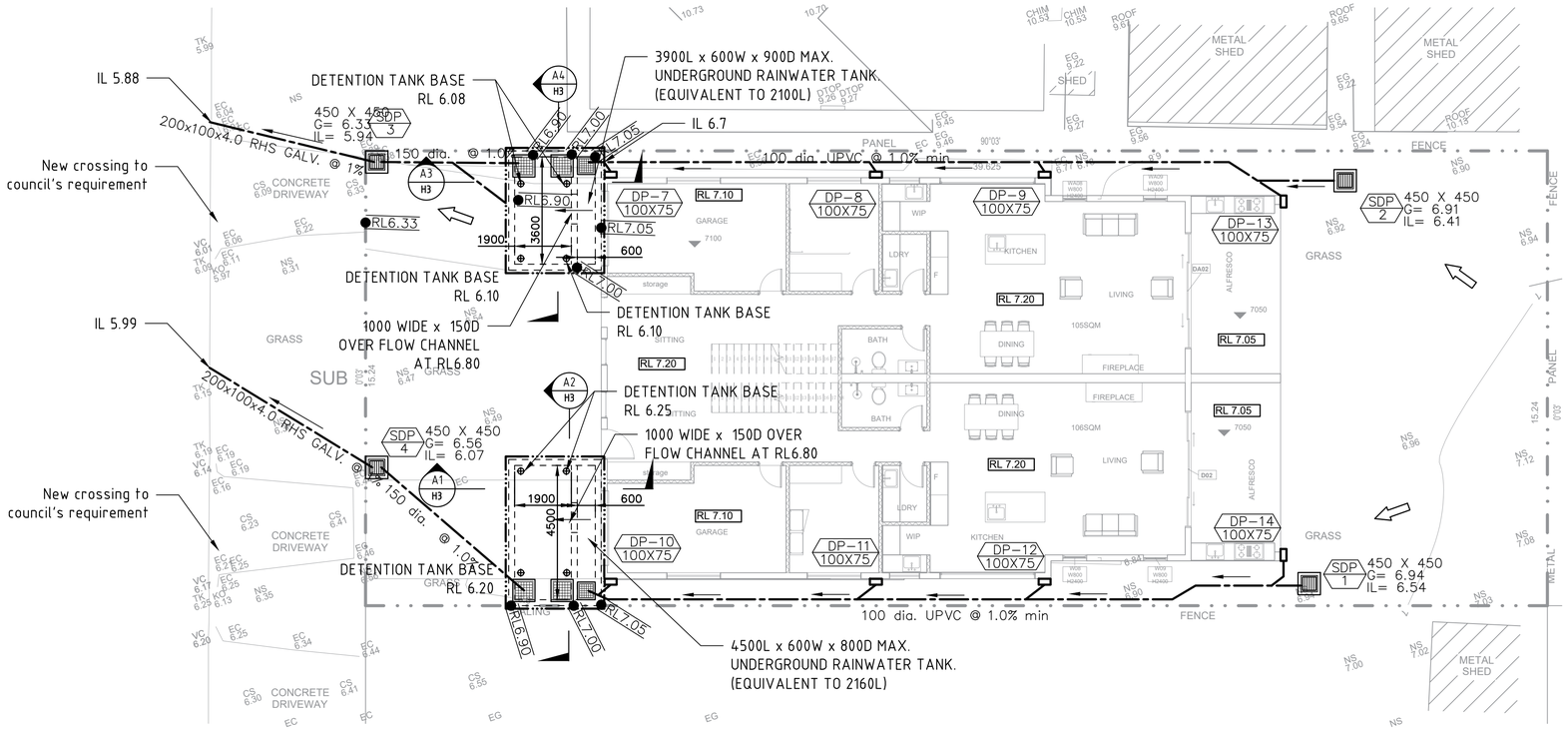
Checked	Scale	Date	Drawing No.	Rev.
J. XU	As shown	OCT.2025	2025-320-S4	B

Approved by

Chartered Engineer

DRAWING 4 IN SET OF 4

Drawing size A1



ON SITE DETENTION TANK NOTES

Provide On-Site Detention (OSD) to meet the retention shortfall volume for dual occupancy in accordance with Central Coast DCP 2022 Section 3.1.11.4.3.
Required Detention Volume = 9.33 m3

Total Storage Provided: 11.24m3 ≥ 9.33 m^3
OSD Tank 1 – 4.5m x 1.9m x 0.40m = 3.42m3
Rainwater Tank 1 – 4.5m x 1.9m x 0.80m = 2.10m3
OSD Tank 2 – 3.9m x 1.9m x 0.53m = 3.62m3
Rainwater Tank 2 – 3.9m x 1.9m x 0.90m = 2.10m3

Permissible Site Discharge (PSD): 8 L/s. (4L/s per tank)

Primary Outlet:
Ø50mm stainless steel orifice plate at RL 6.08, discharging to kerb IL 5.88.
Ø55mm stainless steel orifice plate at RL 6.13, discharging to kerb IL 5.88.

Emergency Overflow: 750 X 750 mm grate crest RL 6.90 to legal point of discharge.

As-Constructed Verification: All final levels to match design RLs; any deviation to be referred to the Engineer for review and approval.

LEGEND

- DP-1 100ø — Downpipe with min. size
- 450 X 450 G=13.60 IL=13.05 / SDP 1 — Stormwater Drainage Pit with Size, Grate Level & Invert Level
- TG-A 1 — Terrace Inlet Grate 150 X 150 sq. Inlat x 65 dia. Outlet
- Overland Flowpath
- 15.39 — Existing Level
- 20.25 — Proposed Level
- B/O — Balcony Overflow
- 100 dia. @ 1% — P.V.C. Gravity Stormwater Drainage With Pipe Size & Flow Direction
- Sub-Soil Drain

GROUND FLOOR / SITE PLAN

Scale 1 in 100
Scale 1 in 100 when printed on A1 sheet

ALL STORMWATER DRAINAGE TO BE SEWER GRADE P.V.C.
ALL STORMWATER DRAINAGE TO 100 Dia. @ 1% MIN. GRADE UNLESS OTHERWISE NOTED ON PLAN

0m 2m 4m 6m 8m 10m 12m 14m 16m 18 20m
dwg scale : 1 : 100

GENERAL STORMWATER NOTES

1. All pipes and stormwater structures shall be in strict accordance with relevant S.A.A. Codes for materials, workmanship and to rules and regulations of the local Council.
2. The drawings are diagramatic and setouts shall be checked with the Architectural drawings.
3. All levels and dimensions shall be checked on site prior to start of construction.
4. Pipe materials indicated may be altered provided they comply with the requirements of the relevant authorities.
5. Gutters and downpipes shall be in strict accordance with AS 2179 & AS 2180. Eave gutters shall have a minimum effective cross sectional area of 9800mm sq with 1 in 500 min. grade with 100 dia. min. downpipes unless otherwise noted on plan. Box gutters shall have a minimum effective cross sectional area of 600x200mm with 1 in 100 min. grade with 100 dia. min. downpipes unless otherwise noted on plan.
6. Stormwater pipes up to and including 300 dia. shall be PVC pipes, sewer grade, conforming to AS 1260 and installed in accordance with AS 3500.3 and related reference documents.
7. All existing services to be located prior to the commencement of construction. Any costs incurred for adjustments and/or relocation of services to be borne by the applicant.
8. Provide unrestricted overland flowpaths from all pits and drain to detention tank inlet grates.
9. On-site stormwater detention reduces flooding by providing temporary storage of stormwater during storms. After the storm, the stored water is slowly released, normally through a control orifice. Systems incorporating a High Early Discharge first fill the HED section, then overflow into the storage and later flow-back into HED through a one-way line. During light rain, no storage occurs. During extreme raintall, the detention system will fill and could overflow. A typical storage system will quickly fill but take several hours to empty. Submersion during this period will not affect most grass, plants or trees.
10. Councils require that on-site detention systems be inspected during construction to enable a final Hydraulic Certificate and Work as Executed details to be supplied upon completion. Councils require that concrete works (tank bases, lids, retaining walls etc;) are inspected before pouring and a Structural Engineers Certificate is issued on completion.
11. These details are subject to approval by Council and possibly other authorities. Do not continue or commit to any works until these details are approved. Advise Design Engineer of any special conditions imposed or design variations made to the details. Any alterations (however minor) must be authorised by the Design Engineer.
12. Conditions found during construction that conflict with these details shall be reported to the Design Engineer. If in doubt, ask. Design sizes, levels, heights and depths must not be varied without approval.
13. All works are to be completed before the Final Certificate will be issued. Tanks are to be clear of all formwork, builder's rubbish and silt. The outline and sump drain is to be clear. All pits and grates are to be completed and shall be free of building material and spoil. All downpipes are to be connected. Landscape works including driveways, kerbs and drive trench grates shall be installed. Orifices, screens, step irons and tank grate locks are to be correctly fitted. Surface detention areas are to be turfed.
14. Maintenance of the on-site stormwater detention system is the responsibility of the Owner. A complete set of these details shall be provided to the present owner. The details should be passed on to subsequent owners. It is important that these systems are not modified without approval. Do not enter any pit or tank where there is risk of inadequate ventilation or buildup of noxious odours, gases, or leakage of any volatile or toxic contaminations into the chamber. Obtain professional assistance if any of these conditions occur.
15. Maintenance and cleaning is required as follows. Remove and flush clean the trash screen. Hose out the tank base and remove accumulated debris. Flush the discharge-line clear. This must be done to Council's time requirements and as all Council's vary it is the responsibility of the Owner to find out Council's requirements.
16. Orifice plates shall be fabricated from 3mm thick stainless steel, with a circular hole machined to 1/2mm. Plates shall be fixed flush using four stainless steel expansion or chemical anchors. If required by Council, the orifice plate shall also be epoxy fixed. Unless otherwise detailed, plates shall be fixed on the centreline of the outlet.
17. Screen mesh shall be Lysaght's expanded metal, type RH3030, and shall not be hot dipped galvanised after fabrication. The screen shall have elongated mesh openings set horizontal, and the projecting mesh lines pointing down and facing upstream. Screens shall be provided with a suitable handle located on the top upstream face of the screen (for removal and, for flat screens, to define the screen orientation). All screens shall be removable by hand without the use of tools. Fixing brackets shall be stainless or galvanised mild-steel type. Bracket anchors shall be stainless steel. When installed, the maximum edge gap shall be 3mm+3mm.
18. One-way flaps shall be Rocla Floodgate type. Flaps shall be located clear of inlets, screens and step irons and must not prevent the screen from being removed.
19. Concrete shall be 20 MPa for footings and tank bases, and 25 MPa for suspended tank lid slabs. Mesh reinforcement shall be lapped one square plus 25mm and bar reinforcement shall be lapped 500mm.
20. Permanent (non-structural) formwork shall be Lysaght's Bondek, any grade, or equal.
21. Tanks may be in-situ or precast. Note that falls, sumps and the position and depth to orifice plates or discharge control pipe is critical: both for hydraulic and health reasons. Overflow and access grates also provide light and ventilation requirements of various Authorities. Provide step irons to all tanks over 1200 depth.
22. Tank risers should be in-situ concrete. Risers shall have the same clear internal size as the tank access opening. Provide step irons to risers as specified.
23. Individual-rung step irons to tank, tank risers and deep pits shall be an approved type (galvanised steel or high impact plastic)complying with AS 1657. Fix rungs permanently and securely by drilling and epoxy grouting. Provide the specified number of step-irons, equally spaced vertically between 250mm and 350mm, with alternate rungs offset 200mm.
24. Grates and frame units shall be hinged and childproof, using either a spring loaded bolt or a bolt and lug locking system (padlocks are not permitted). The frames shall be securely attached to the tank or riser, or built into an in-situ slab.
25. Grates shall be class A (light duty) in paths and lawns: class B (medium duty) in residential vehicular areas: and class C (heavy duty) in public roadways.

Revision	Details	Date
B	FOR CDC APPROVAL	28/10/2025
A	FOR CDC APPROVAL	20/10/2025

Project
PROPOSED NEW RESIDENCE
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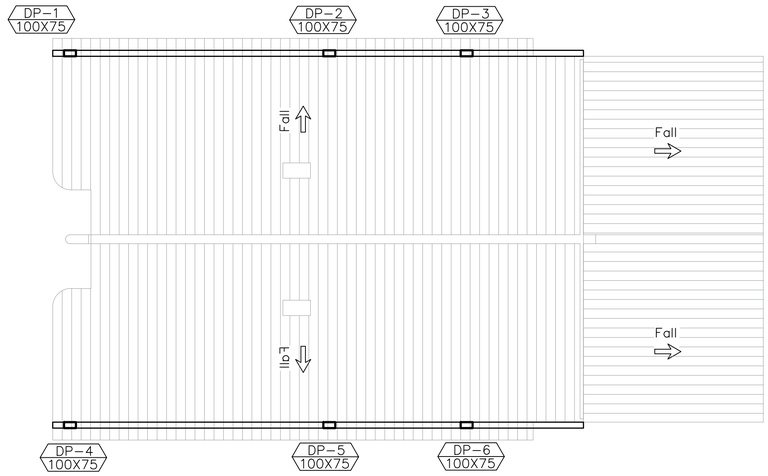
Title
STORMWATER DRAINAGE
LOWER GROUND FLOOR/SITE PLAN

Checked	Scale	Date	Drawing No.	Rev.
J.XU	As shown	Oct 2025	2025-320-H1	B

Approved by
Chartered Engineer

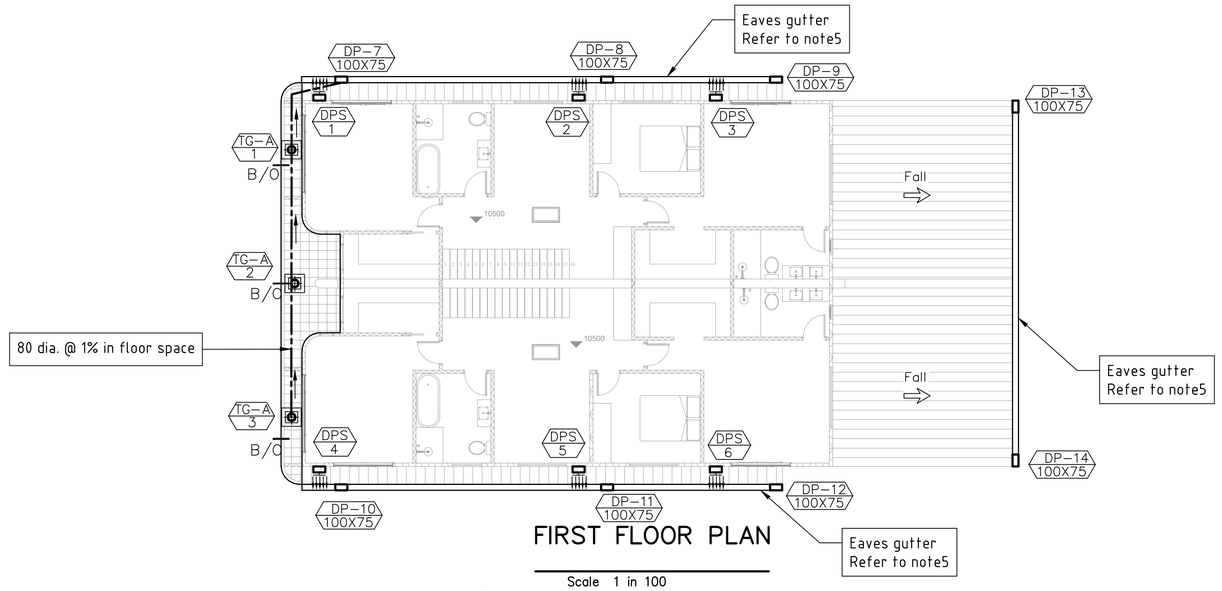
Drawing 1 in set of 3
Drawing size A1



ROOF PLAN

Scale 1 in 100

Scale 1 in 100 when printed on A1 sheet



FIRST FLOOR PLAN

Scale 1 in 100

Scale 1 in 100 when printed on A1 sheet

Revision	Details	Date
B	FOR CDC APPROVAL	28/10/2025
A	FOR CDC APPROVAL	20/10/2025

Project

PROPOSED NEW RESIDENCE
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Title

STORMWATER DRAINAGE
ROOF PLAN AND FIRST FLOOR PLAN

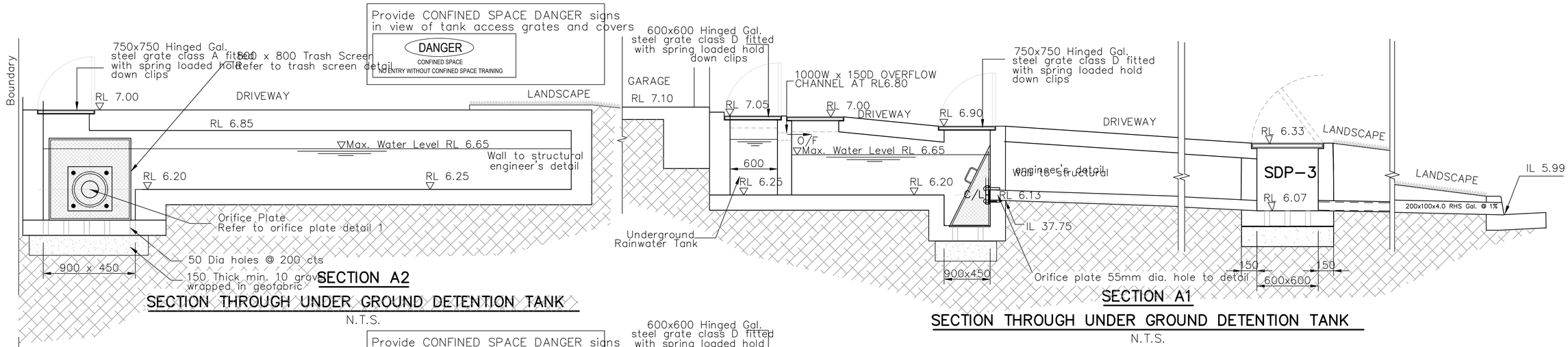
Checked	Scale	Date	Drawing No.	Rev.
J.XU	As shown	Oct 2025	2025-320-H2	B

Approved by

Chartered Engineer

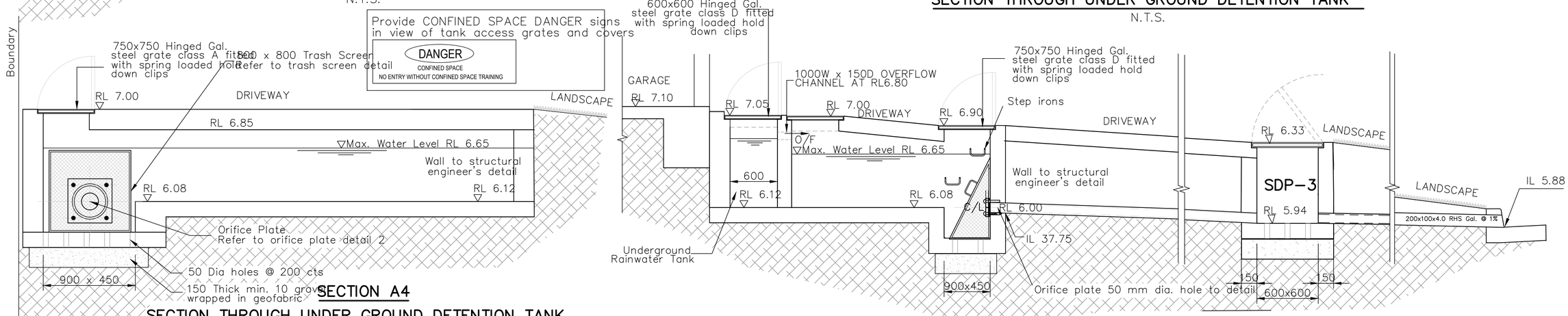
Drawing 2 in set of 3

Drawing size A1



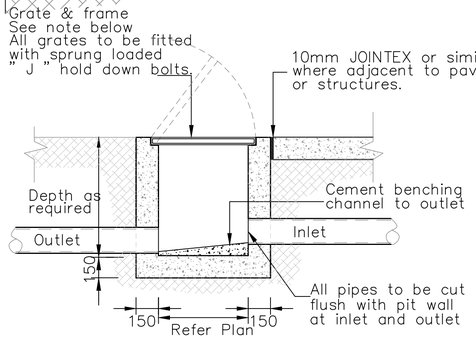
SECTION THROUGH UNDER GROUND DETENTION TANK
N.T.S.

SECTION THROUGH UNDER GROUND DETENTION TANK
N.T.S.

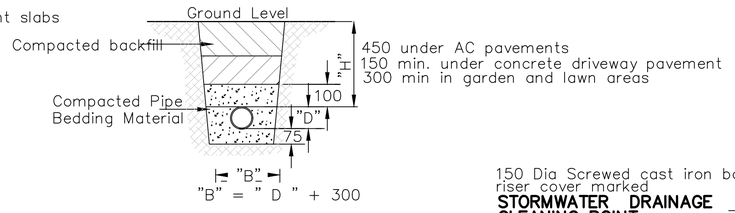


SECTION THROUGH UNDER GROUND DETENTION TANK
N.T.S.

SECTION THROUGH UNDER GROUND DETENTION TANK
N.T.S.

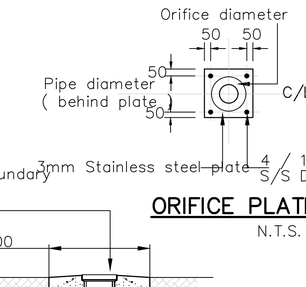


TYPICAL PIT DETAIL U.O.N.
N.T.S.

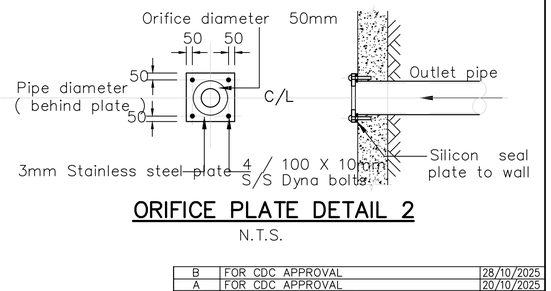


For Material Refer AS 2566

TYPICAL SECTION OF U.P.V.C. UNDER GROUND STORMWATER DRAINAGE
N.T.S.



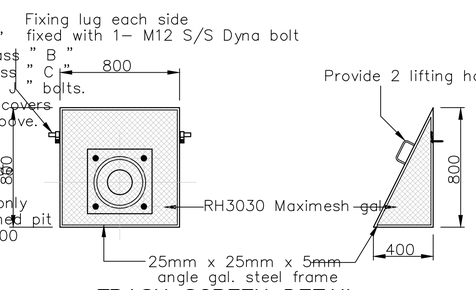
ORIFICE PLATE DETAIL 1
N.T.S.



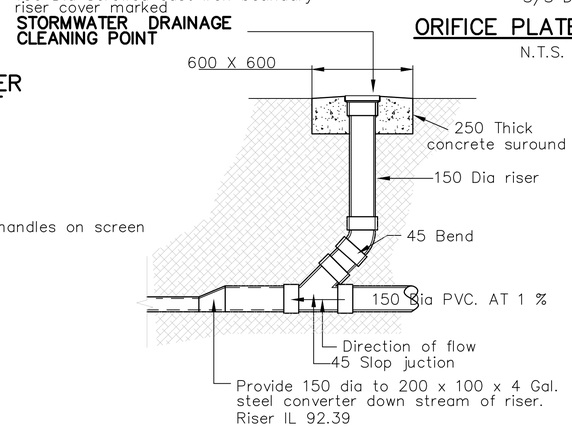
ORIFICE PLATE DETAIL 2
N.T.S.

NOTE :

All grates to be hinged galvanized steel with galvanized steel frames unless nominated on plan.
Grates in gardens and landscape to be class " A "
Grates in footpaths and light traffic areas to be class " B "
Grates in roads, pavements and driveways to be class " C "
All grates are to be held down with spring loaded " J " bolts.
Sealed pits to be provided with gas tight cast iron covers and cast iron frames for the class loading shown above.
An alternative approved Pre-cast F.R.C. or Pre-cast Concrete pit may be used.
Pits smaller 450 x 450sq. may be of U.P.V.C. provided they are not located in traffic areas.
Pits 450 x 450 sq. and larger the plastic pit may only be used as a form for concrete and not as a finished pit
Pits deeper than 1200 reinforce walls with N12 at 300 centers eachway all round.
Provide step irons to pits deeper than 1200



TRASH SCREEN DETAIL
N.T.S.



STORMWATER DRAINAGE CLEANING POINT
Shown on plan CP
N.T.S.

Revision	Details	Date
B	FOR CDC APPROVAL	28/10/2025
A	FOR CDC APPROVAL	20/10/2025

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Title
STORMWATER DRAINAGE
STORMWATER DRAINAGE DETAILS

Checked	Scale	Date	Drawing No.	Rev.
J.XU	As shown	Oct 2025	2025-320-H3	B

Approved by
Chartered Engineer

Drawing 3 in set of 3
Drawing size A1