

JORDAN MEALEY

E N G I N E E R S

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20240144 Van De Haar Boollwarroo
01/05/2025

Lot 3 DP 12479,
67 Boollwarroo Pd,
Shellharbour



LOCATION DIAGRAM

JORDAN MEALEY

E N G I N E E R S

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 be issued during the course of the contract. All discrepancies shall be referred to the Engineer 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.

DESIGN LOADS

- L1. The structural work on these drawings has been designed in accordance with the Loading Code AS1170, current edition with amendments; or the following Live Loads:

FOUNDATIONS

- F1. Footings have been designed for an allowable bearing intensity of Foundation material shall be approved for this pressure before placing concrete.

CONCRETE

- C1. All workmanship and materials shall be in accordance with AS 3600.
C2. Concrete quality shall be as per the following table, quality shall be verified by testing as described in AS 3600.

Element	Slump mm	Max. Aggreg. Size (mm)	Cement Type	Admixture	Concrete Grade MPa
ALL	80	20	GB	-	40

- C3. Construction joints where not shown on the drawing shall be referred to the Engineer for approval.
C4. No holes of chases other than those shown on the structural drawings shall be made in concrete members without prior approval of Engineer.
C5. Pipes of conduits shall not be placed within concrete members unless shown on the drawings.
C6. Unless noted otherwise beam depths are written first and include slab thickness if any. Concrete mix for steel encasement to be 1:2:4.
C7. Stripping of concrete formwork shall be strictly as per AS 3610. Any queries shall be referred to Engineer prior to commencement of stripping.
C8. Where secondary tie bar are not shown provide at
C9. Formwork to remain in position for a minimum of days.
C10. Concrete shall be moist cured for 7 days and protected at all times from excessive temperature.

REINFORCEMENT

- R1. Reinforcement is represented diagrammatically. It is not necessarily in true projection.
R2. Splices in reinforcement shall not be made other than where shown on drawings, unless approval is obtained from Engineer. Where the lap length is not shown it shall be sufficient to develop the full strength of the reinforcement.
R3. Welding of reinforcement shall not be permitted unless shown on the drawings.
R4. Cold worked reinforcement shall not be cut on site by oxy torch. Such reinforcement is to be cut by saw only.
R5. Clear concrete cover to reinforcement shall be as follows: All figured dimensions in mm.

ELEMENT	CONDITION 1	CONDITION 2	CONDITION 3
	Not exposed to weather, ground, water or freshwater	To be exposed to weather, ground, water or freshwater	Cast against other formwork or the ground
Pad footings or pile caps	-	65	75
Strip footing	-	50	65
Bored or cast Piers	-	50	75
Walls incl. retaining walls	20	30	65
Beams	25	40	65
Slab incl. joist & hollow block construction	20	30	65

NB. Slabs poured over a membrane on ground are Condition 2.

- R6. All reinforcing bars shall comply with AS/NZS 4671. All fabric shall comply with AS/NZS 4671, and shall be supplied in flat sheets.

R7. Reinforcement symbols:

- N - Normal ductility type bar to AS/NZS 4671.
L - Low ductility type bar to AS/NZS 4671.
S - Structural grade deformed bar to AS/NZS 4671.
R - Structural grade round bar to AS/NZS 4671.
SL - Hard drawn wire fabric to AS/NZS 4671.

- R8. Fabric reinforcement to be lapped 300 min. at ends and side. Laps in positions of maximum moments are not permitted.

- R9. All reinforcement shall be firmly supported on insulated steel or plastic chains at not greater than 900 centres both ways. Rods shall be tied at alternate intersections.

BRICKWORK AND BLOCKWORK

- B1. All workmanship and materials shall be in accordance with AS 3700.
B2. Strength of bricks, class of blocks, and type of mortar shall be and shall be verified by test according to relevant standards.
B3. Allowance is to be made for expansion in external brickwork and blockwork walls by providing joints at 8.0 m centres as shown on the drawing or as instructed by the Architect or Engineer. Articulated walling should be in accordance with CN9 from the Cement and Concrete Association.
B4. Loadbearing brickwork or blockwork supporting concrete or steel members shall be trowelled smooth and separated at the bearing surface by 2 layers of metal bond break or equivalent.
B5. Non-loadbearing brickwork or blockwork to have a layer of canite or equivalent on top course to separate from member over.
B6. Brickwork or blockwork shall not be built on suspended slabs or beams until all props and work under have been removed.
B7. Cleanout openings shall be provided in bottom course of all reinforced blockwork.

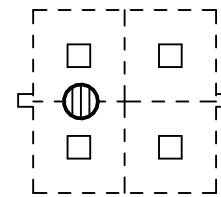
STRUCTURAL STEEL

- S1. Fabricate and erect all structural steelwork in accordance with AS 3990, AS 4100 and AS/NZS 1554. Except where varied by the contract documents.
S2. Connections shall be provided to carry the reactions shown unless otherwise detailed.
S3. The builder shall prepare workshop drawings and submit them for approval. Fabrication shall not commence until approval has been received.
S4. Unless otherwise noted use:
(a) 10 mm thick gusset, fin and end plates weld all round.
(b) M16 Commercial class bolt.
(c) 6 mm Continuous fillet welds.
Electrodes to conform to AS/NZS 4855.

- S5. Provide temporary bracing in accordance with specification. Do not grout under base plates until first level steelwork is plumb and fixed by welding or bolting.

- S6. Prepare and finish steelwork surfaces as specified, or as follows:.....

NOTE: ALL STANDARDS AUSTRALIA PUBLICATIONS TO BE CURRENT AND READ IN CONJUNCTION WITH THEIR VARIOUS PARTS AND/OR AMENDMENTS.



Legend
Underground Rain Water tanks See Stormwater Plan

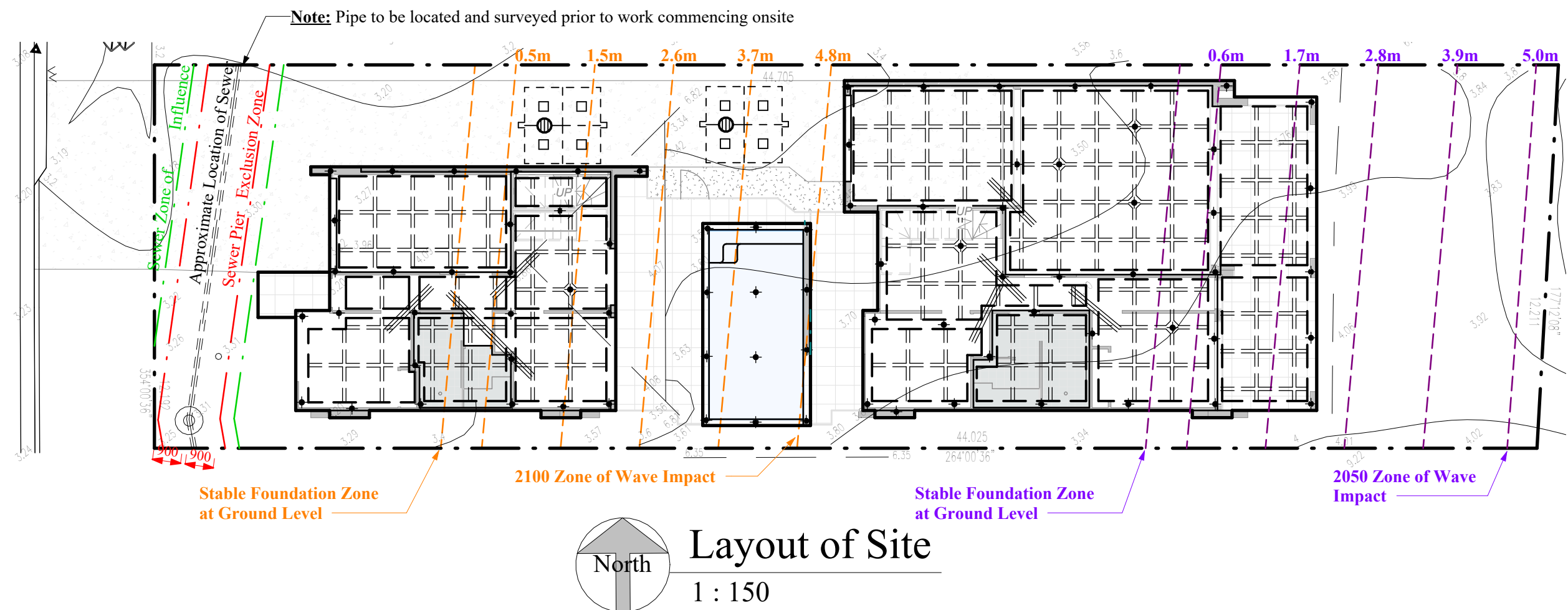
Screw Pile Note

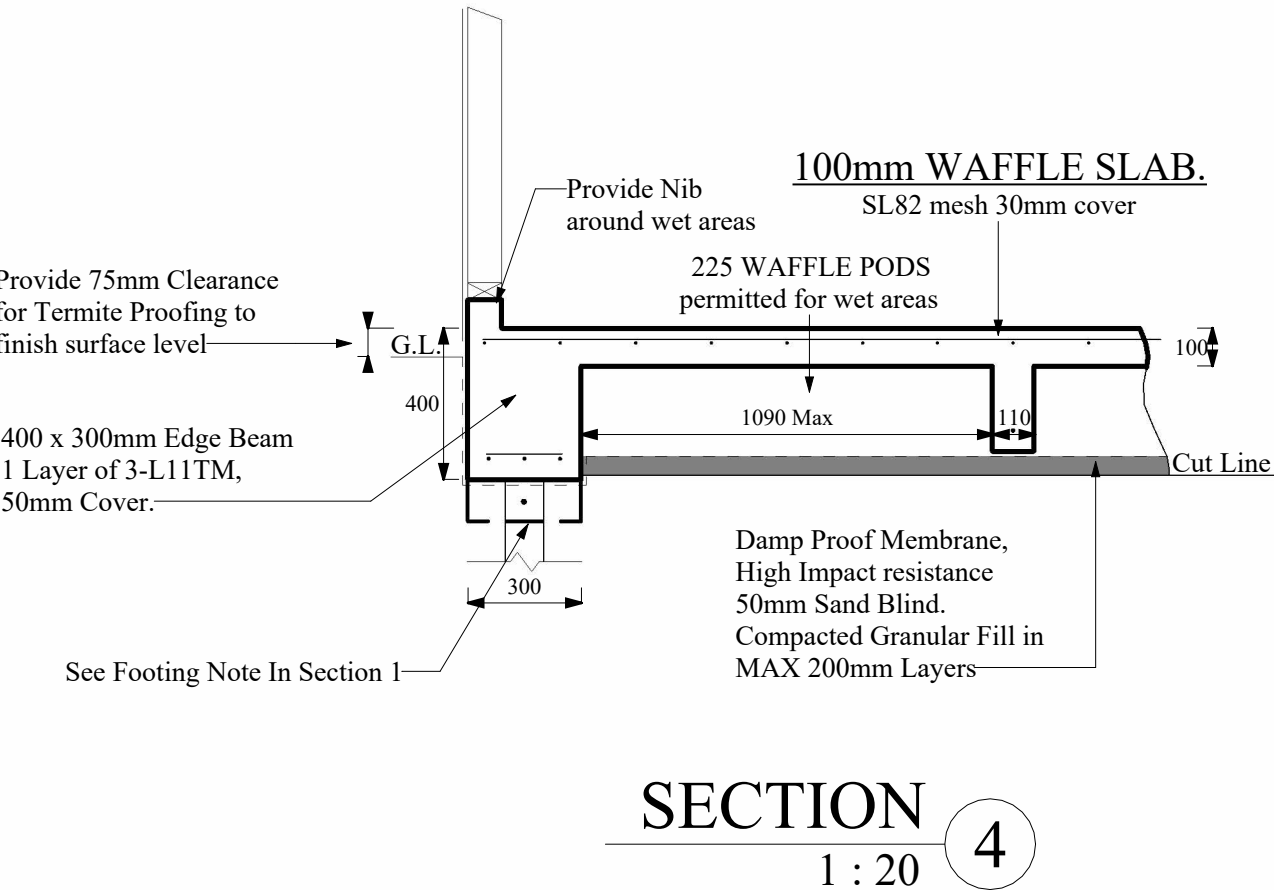
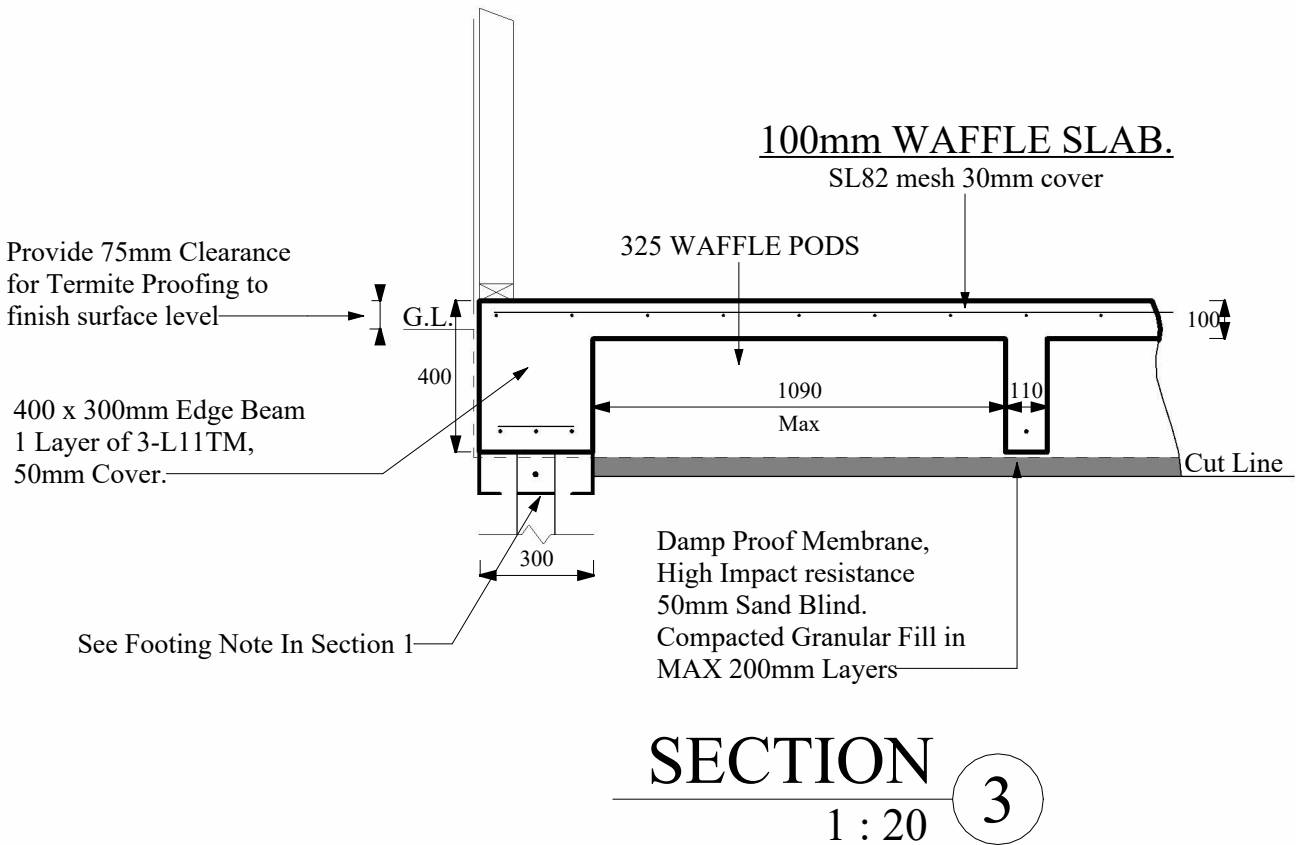
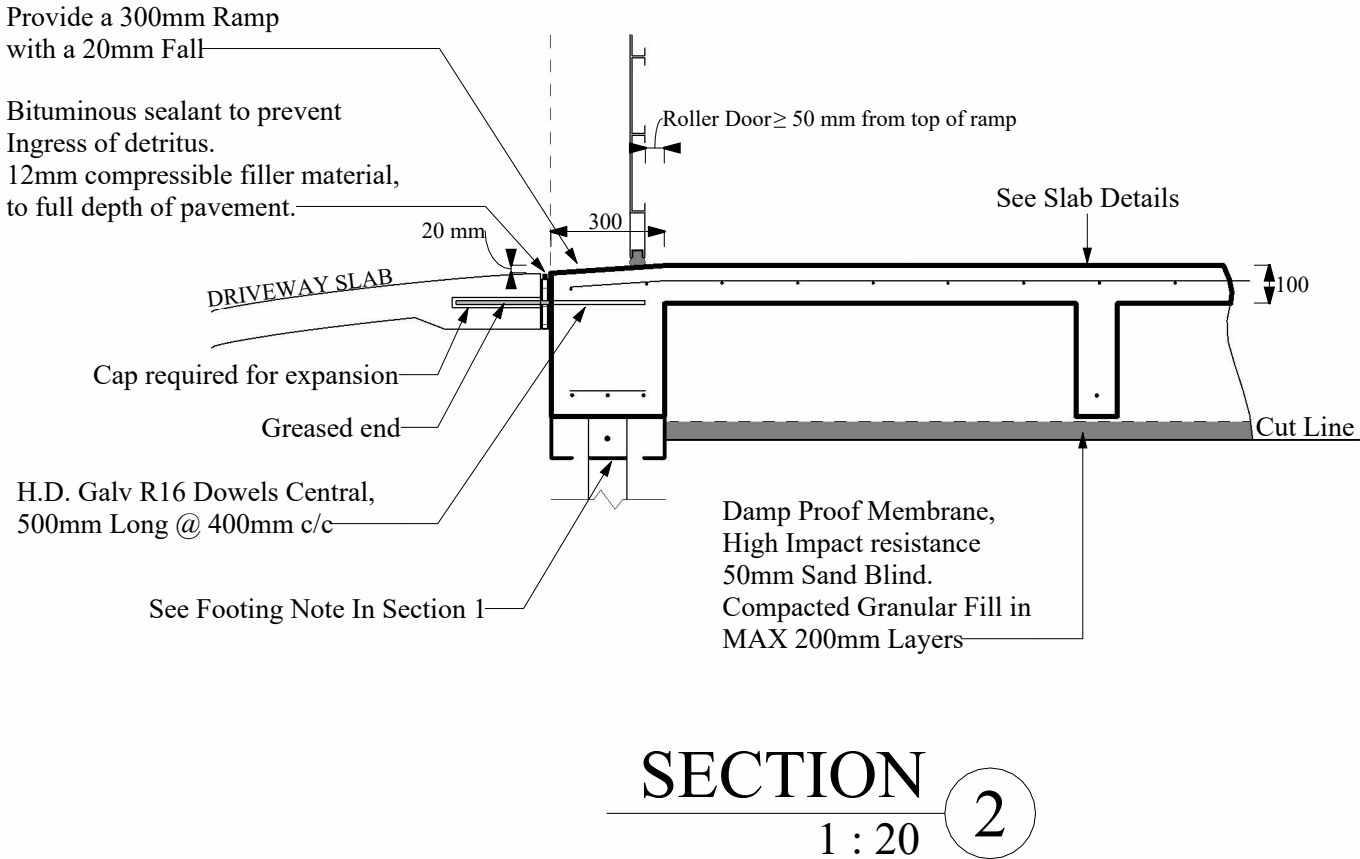
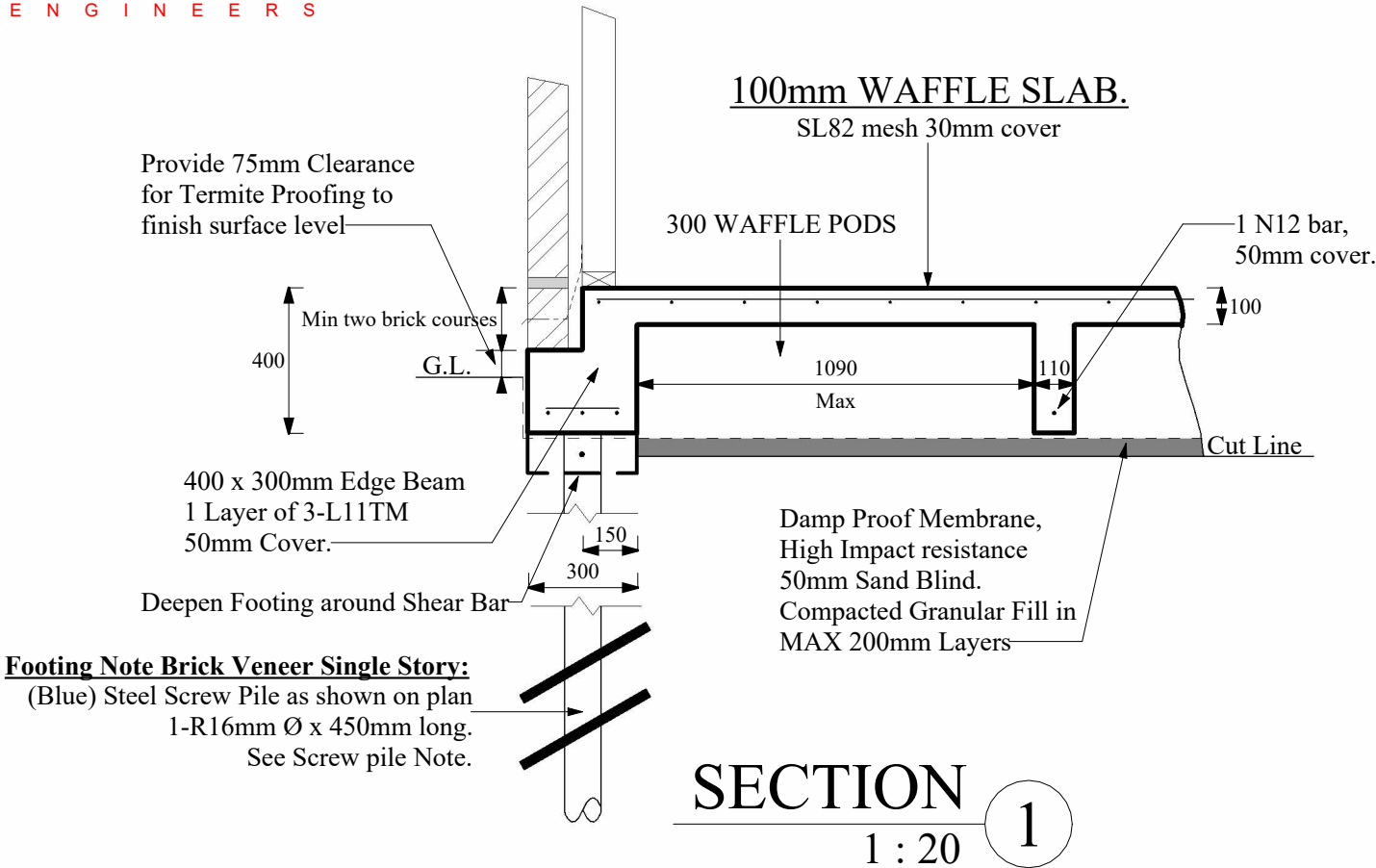
- 89Ø 5.5mm thick twin helix (350) Screw Piles Spaced at Max 2.4m centers each way.
Screw Piles to be Cored filled with 20MPa grout **Min 3.5m depth and 50 kN compression + 30kN tension** Capacity.
Screw Piles to be protected with HDG + Epoxy splash zone coat installed to manufacturers spec.
Refer to Geotechnical Report by Jordan Mealey Engineers Dated Sunday 27th April 2025 Ref# 20240144

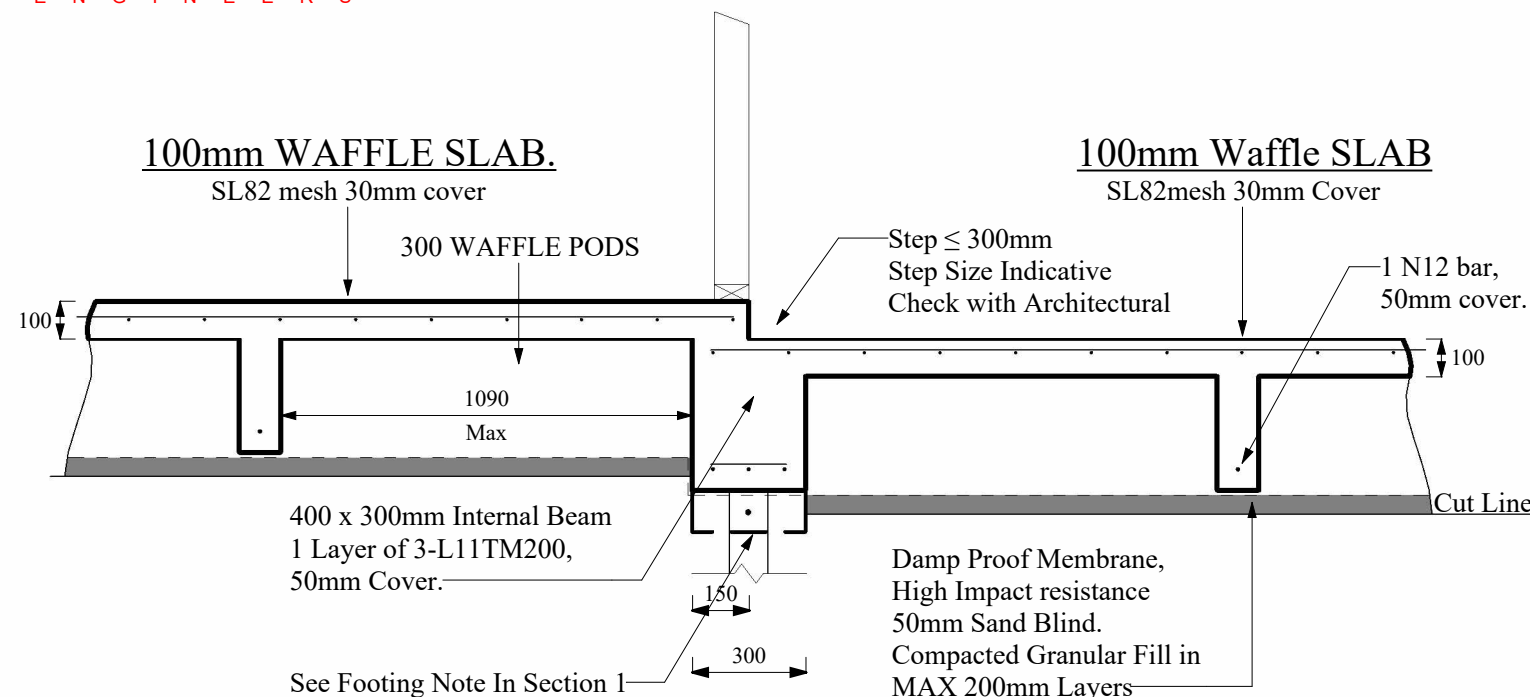
★ Recommended Waffle Pod Setout point

Re-entrant bars: 3/N12 Bars or 3L11TM
Minimum 2m Long as shown on plan
Lay on top of Mesh, Typical.

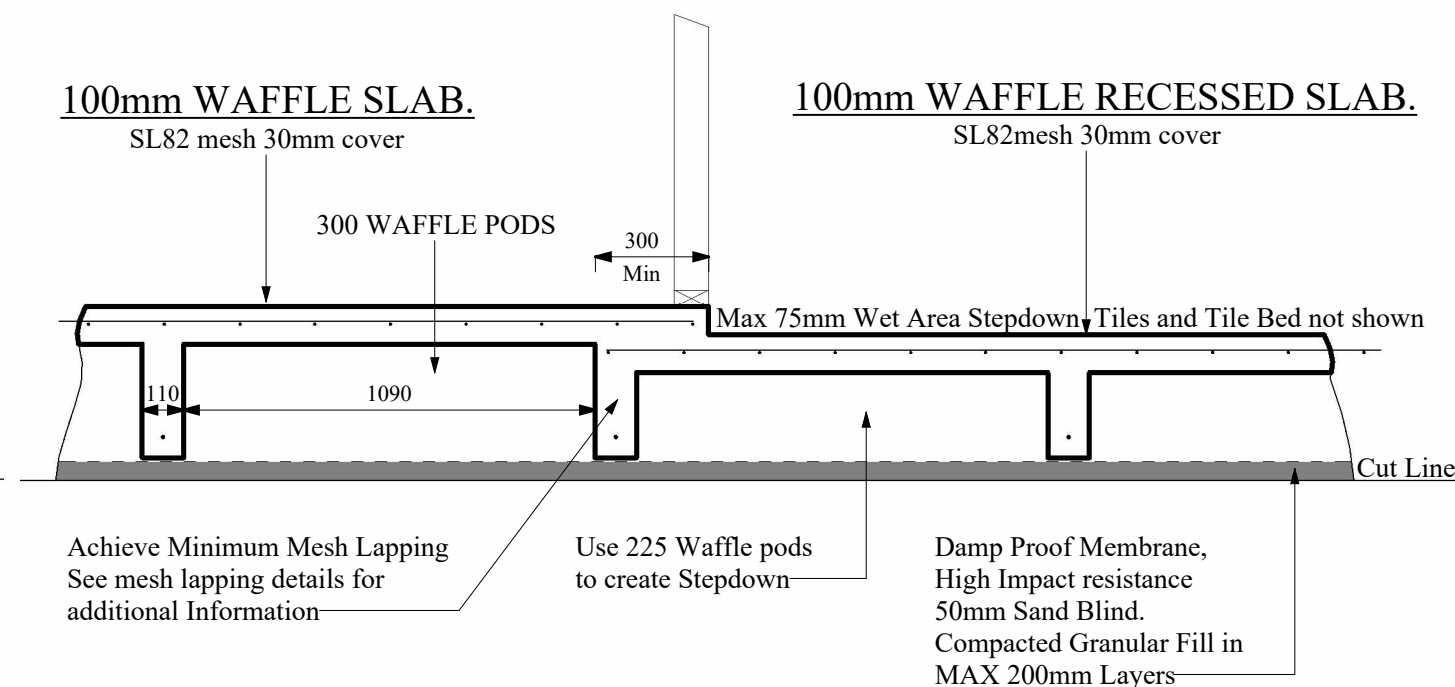
Zones of Reduced Foundation Capacity taken from Shellharbour City Council:
Shellharbour Coastal Management Program Scoping Study- Full Report
Dated 27th June 2023



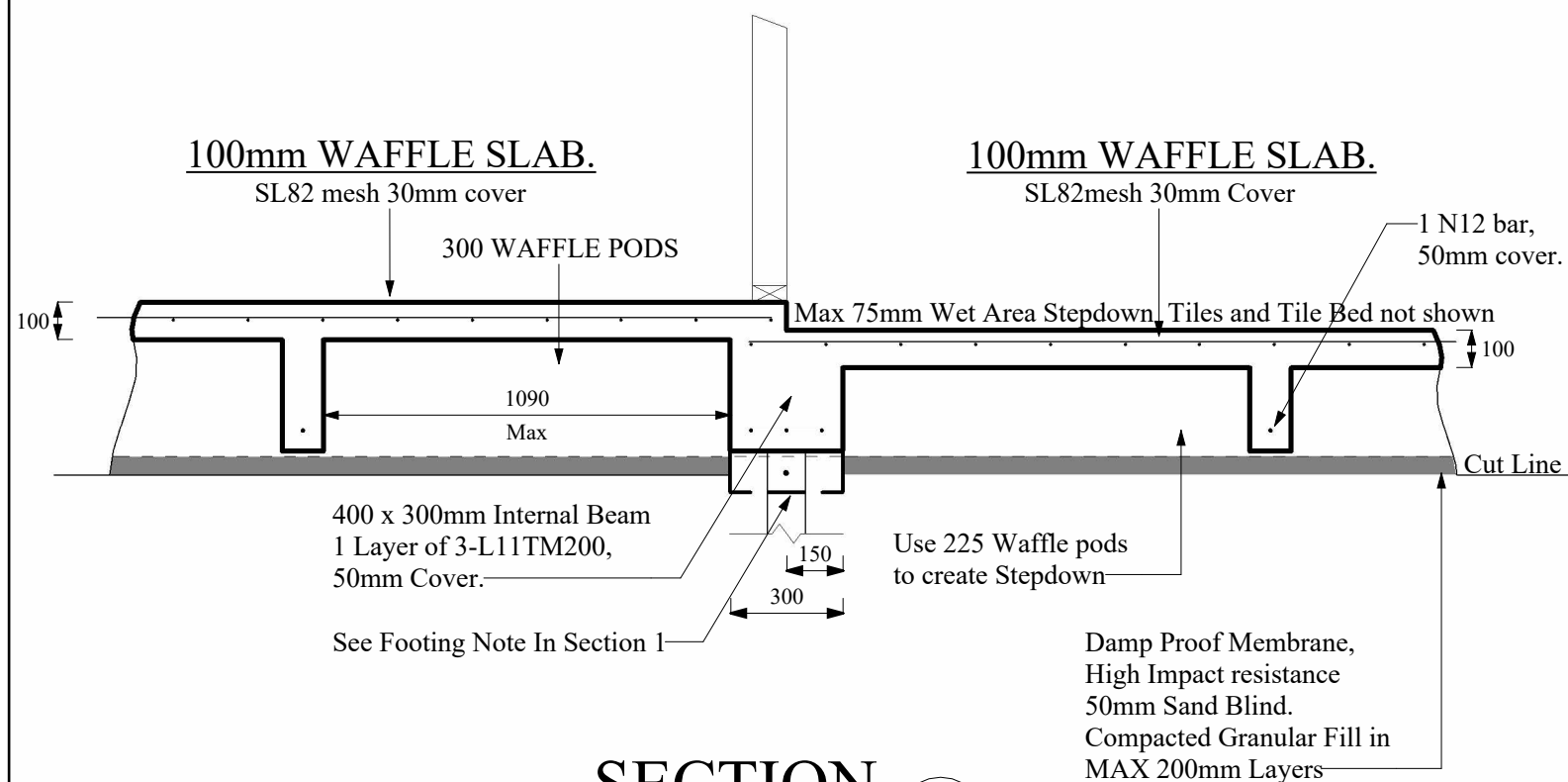




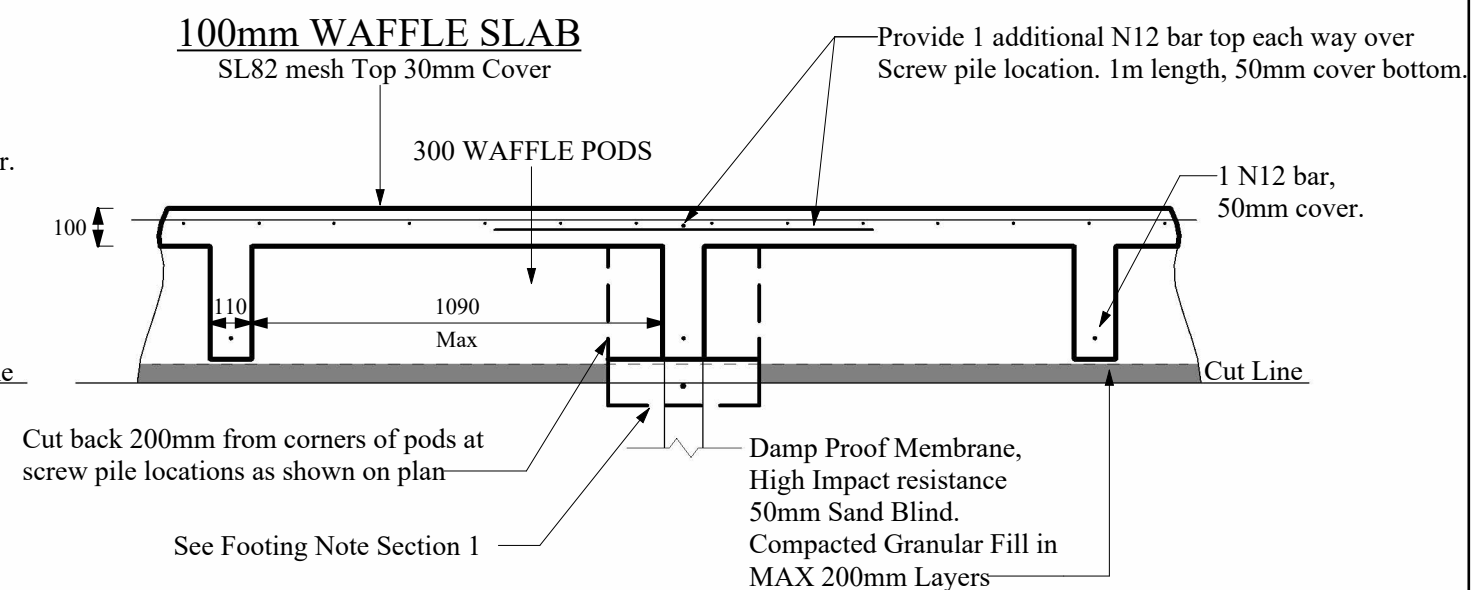
SECTION 5
1 : 20



SECTION 6
1 : 20

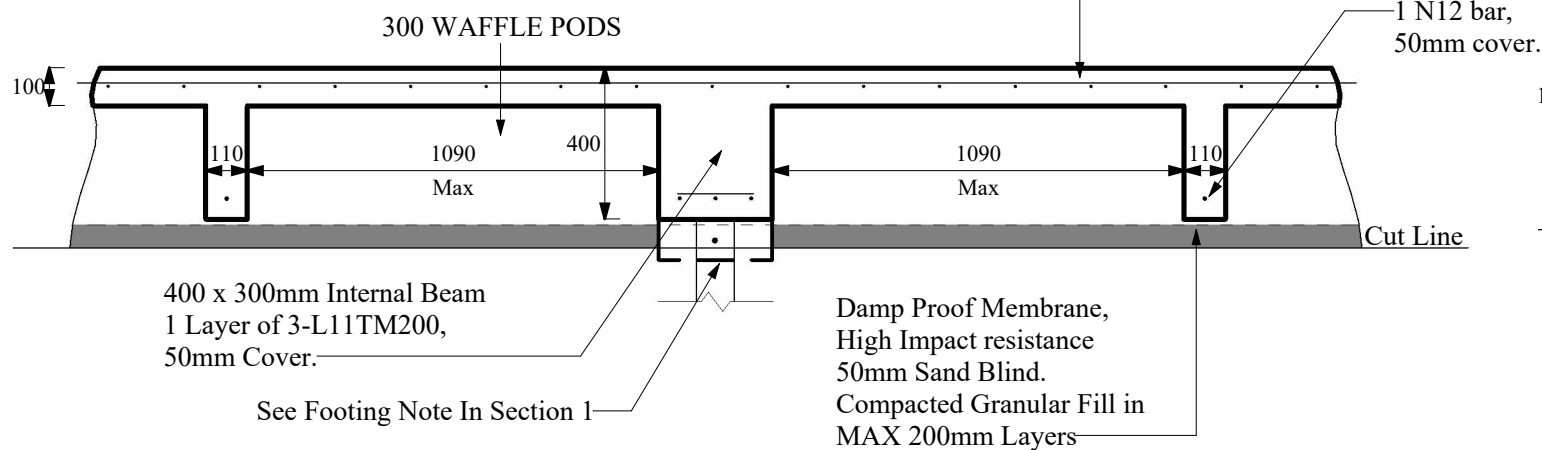


SECTION 7
1 : 20



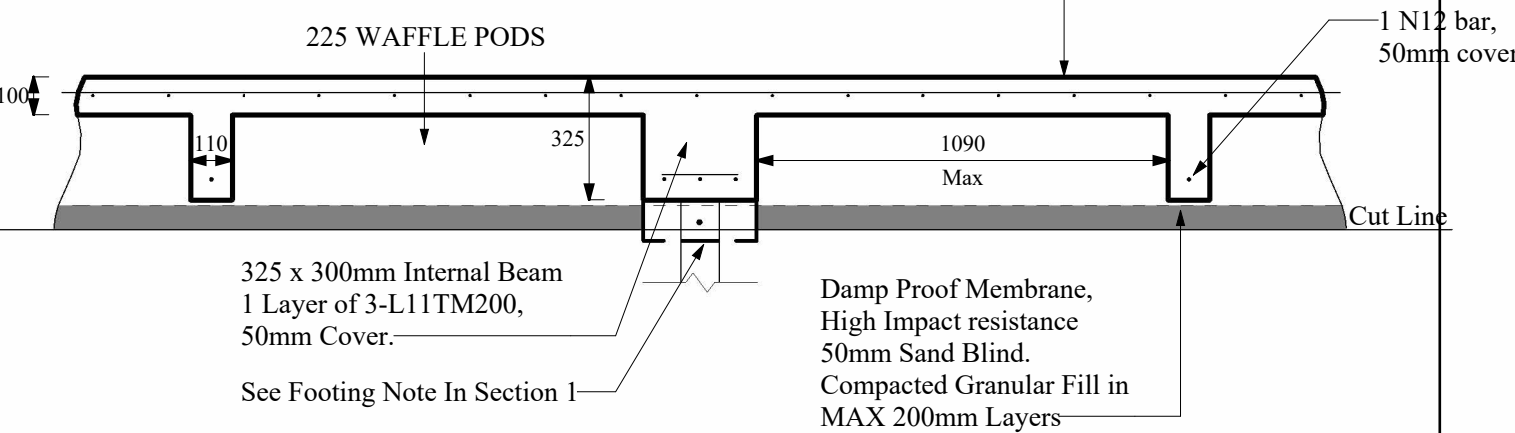
8 Typical Waffle Pod Cut Back
1 : 20

100mm WAFFLE SLAB.
SL82 mesh 30mm cover



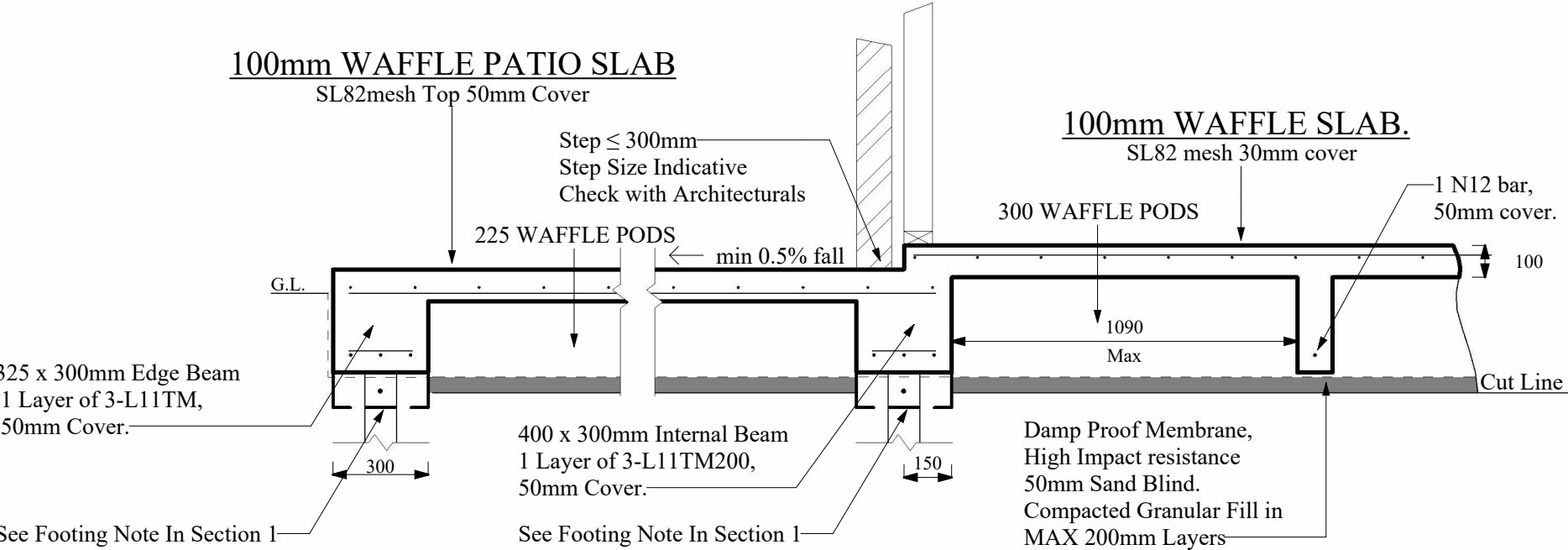
SECTION 9
1 : 20

100mm WAFFLE SLAB.
SL82 mesh Top 50mm cover

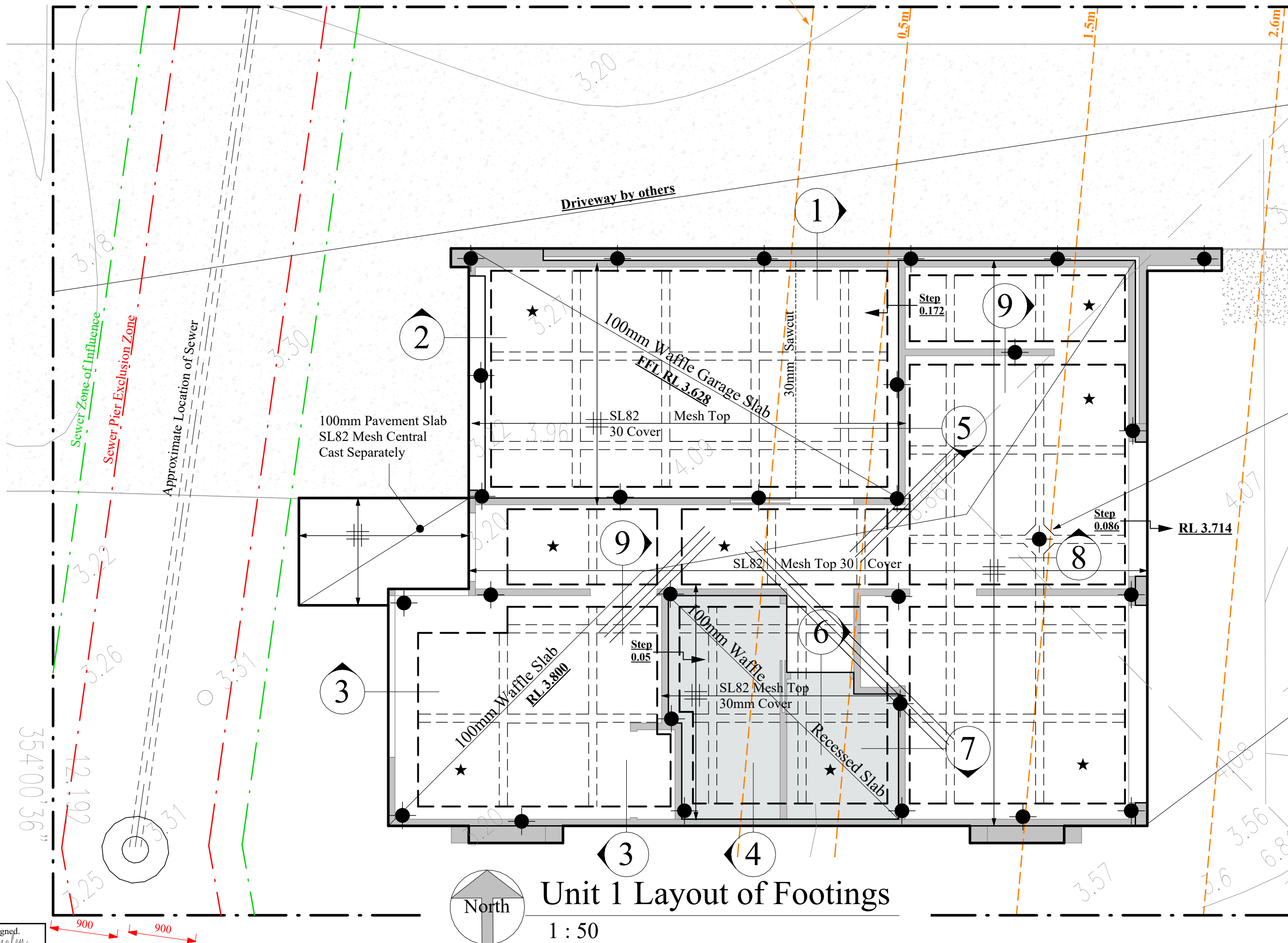


SECTION 10
1 : 20

100mm WAFFLE PATIO SLAB
SL82mesh Top 50mm Cover



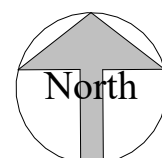
SECTION 11
1 : 20



Note:
Cut waffle pod
corners around
Screw Piles as
shown

Baseplate with 4 Bolts indicates a baseplate mounted on top of a steel beam supporting a post above, e.g. 

Secure LVL to Timber
Frame within External
Feature Wall
Bugle screw to each stud

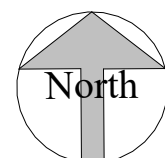


1 : 50

Engineer to be consulted

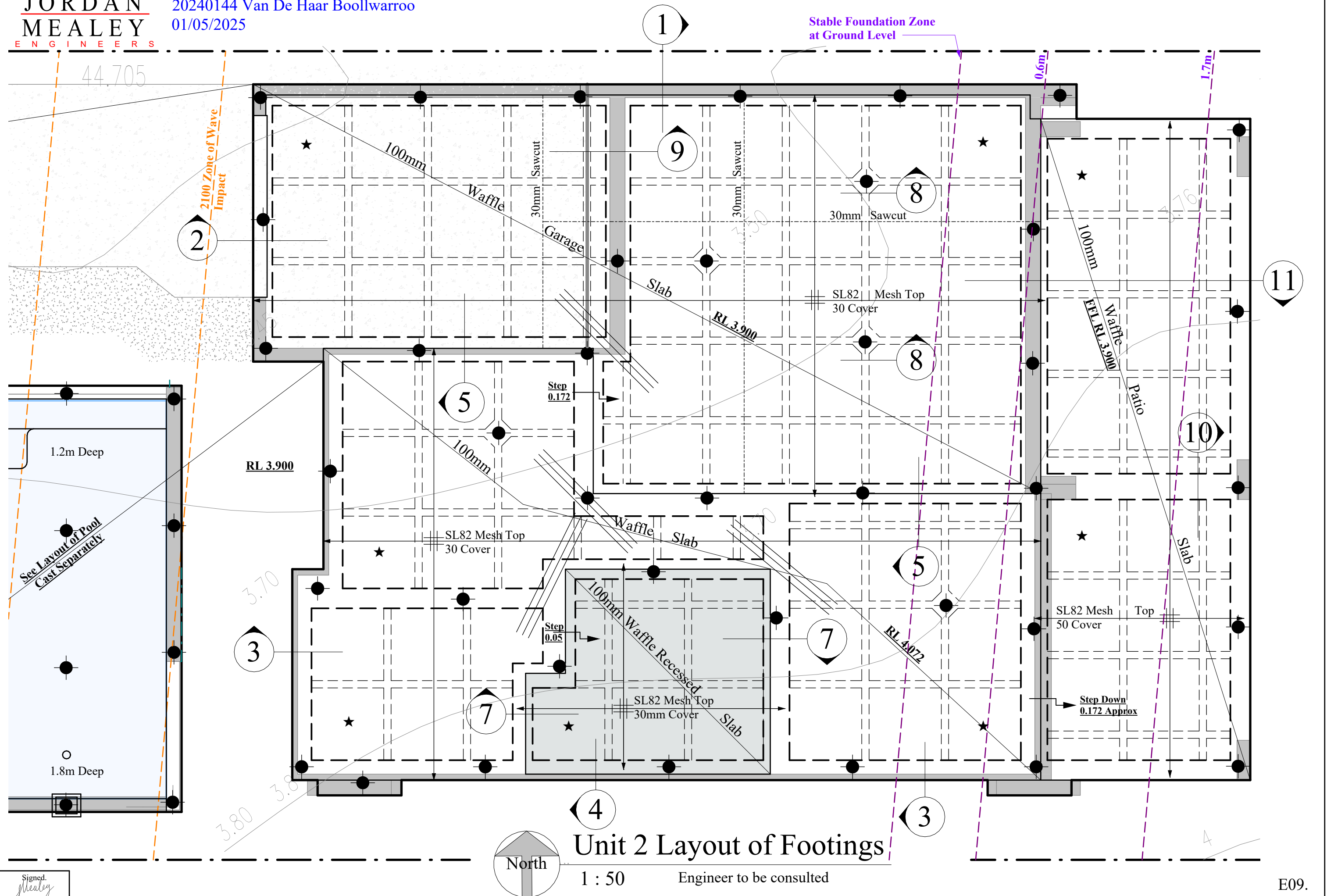
Red is Level Above (Solar Pannels)
Grey is Level Below (Upper Floor)
Dashed light Grey is Under (Lower Floor)

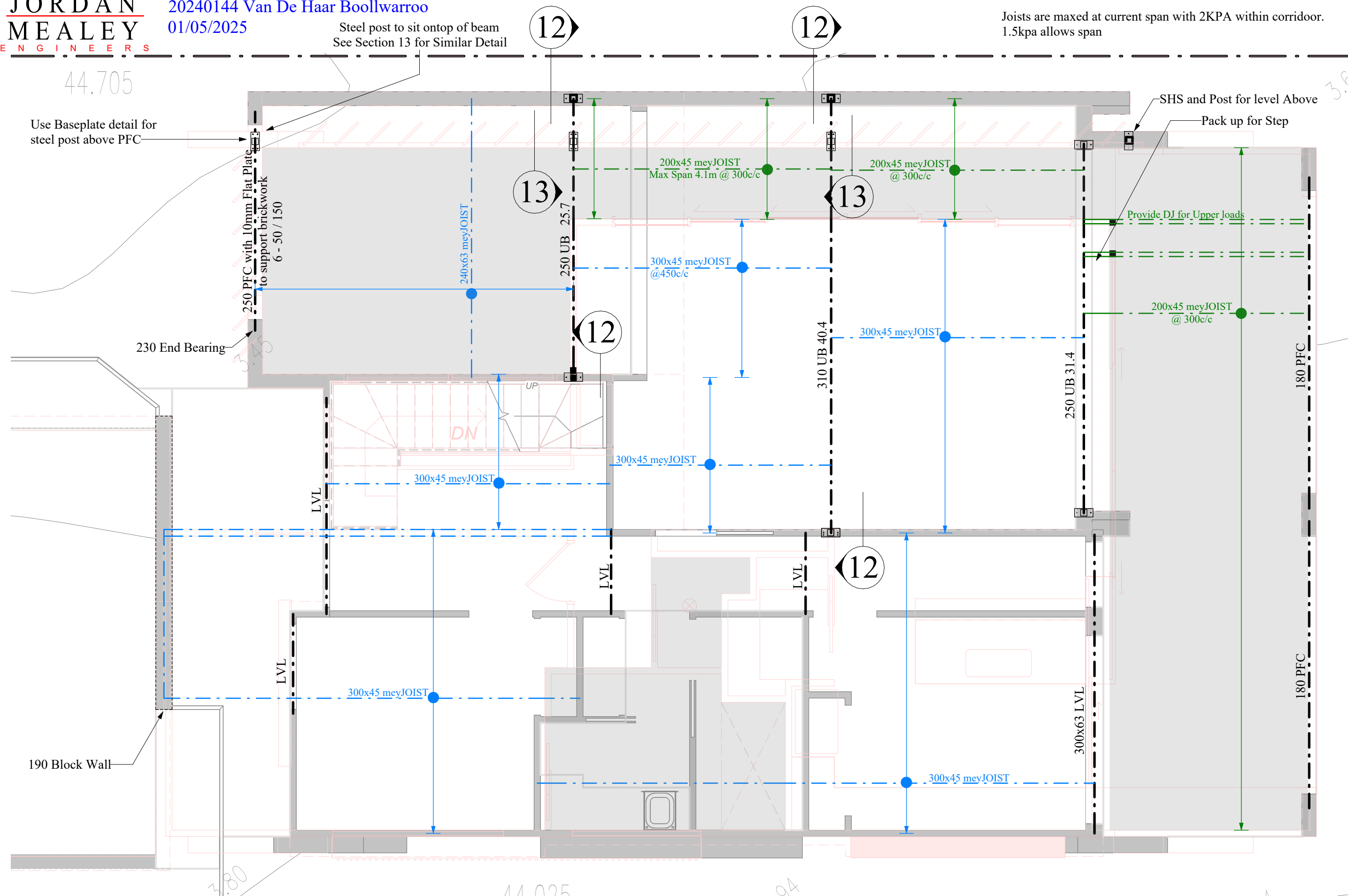
Note: Information to be provided regarding model and method of fixture for Screen Blades



1 : 50

Engineer to be consulted





U2 Proposed Layout of Beams and Joists

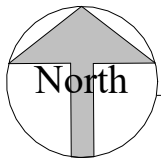
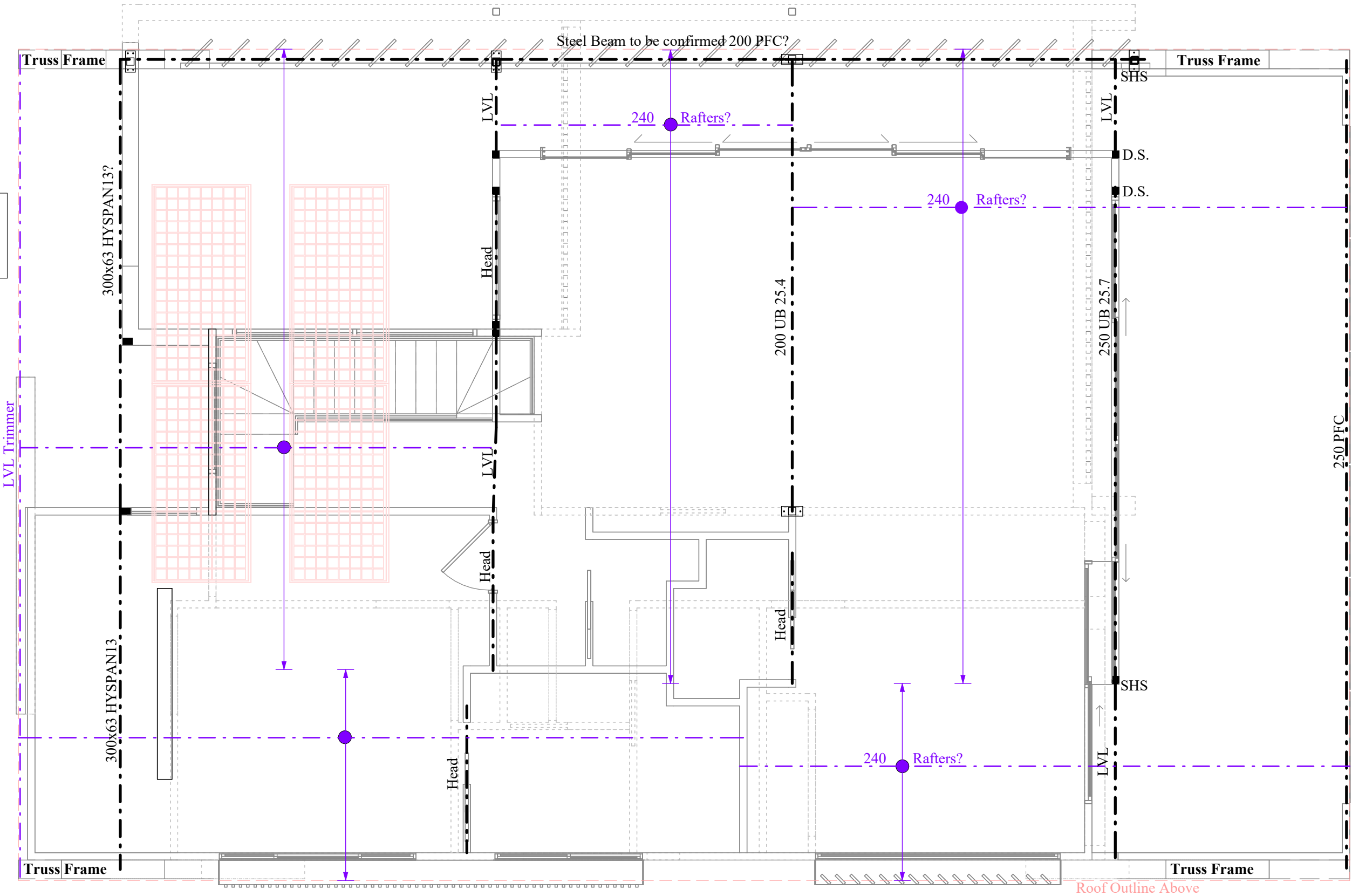
1 : 50

Engineer to be consulted

Signed.
mealey

E10.

Note:
Red is Level Above (Solar Pannels)
Grey is Level Below (Upper Floor)
Dashed light Grey is Under (Lower Floor)

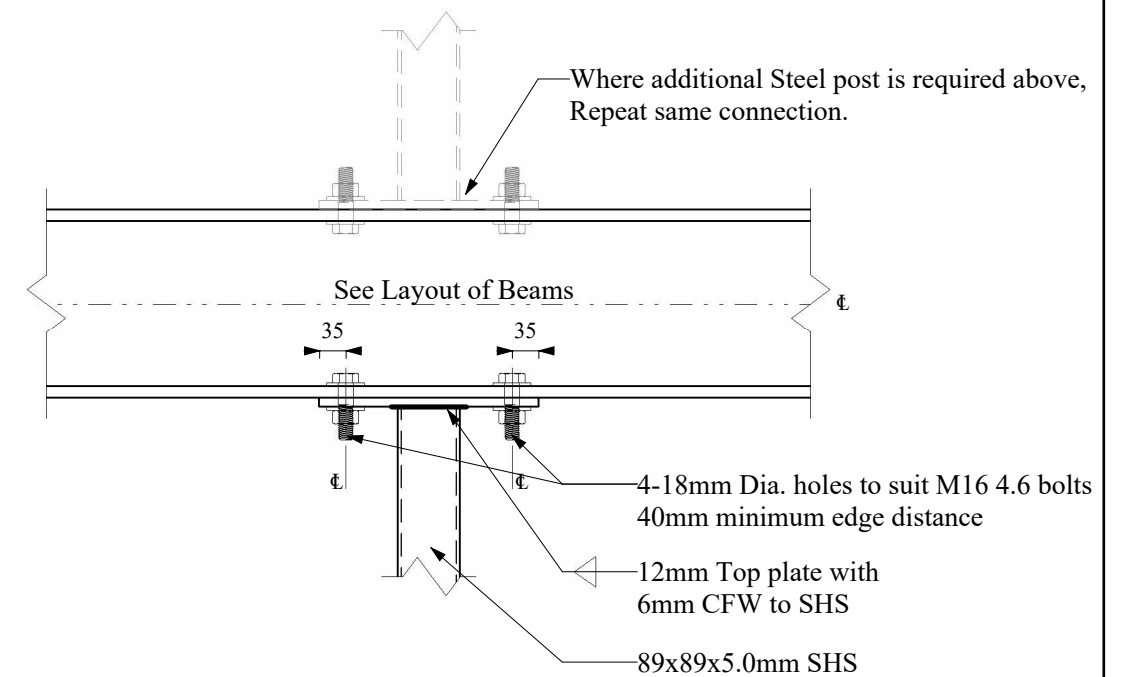
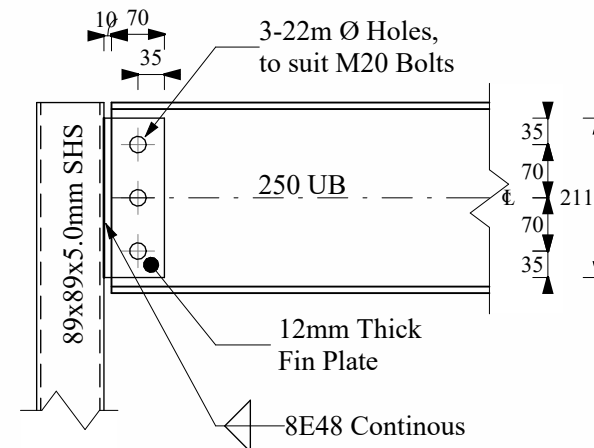
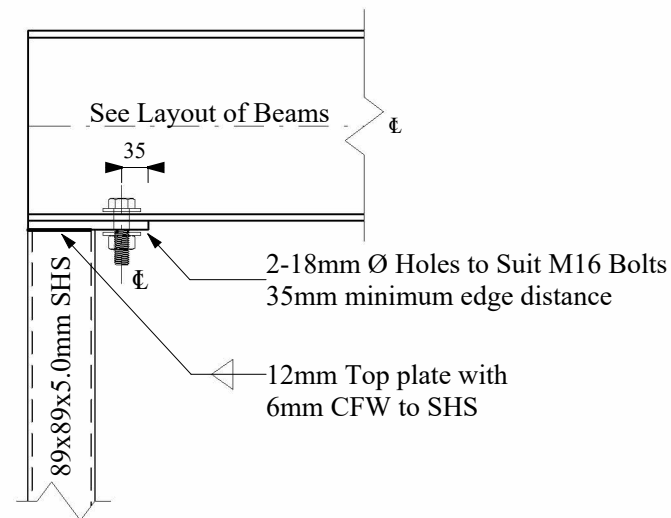


U2 Proposed Layout of Roof Beams

1 : 50

Engineer to be consulted

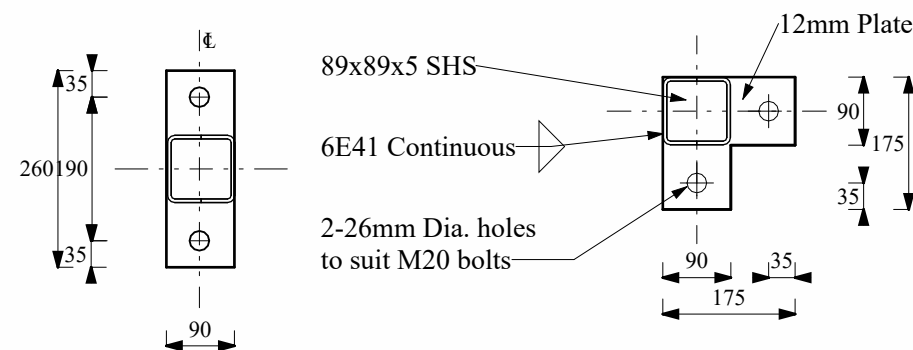
Signed.
mealey



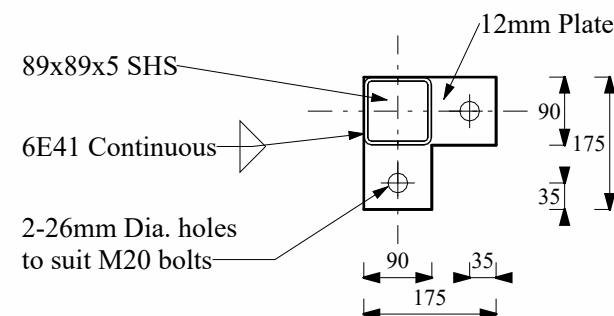
12 Typical Top plate Detail
1 : 10

Alternate Top Plate Detail
1 : 10

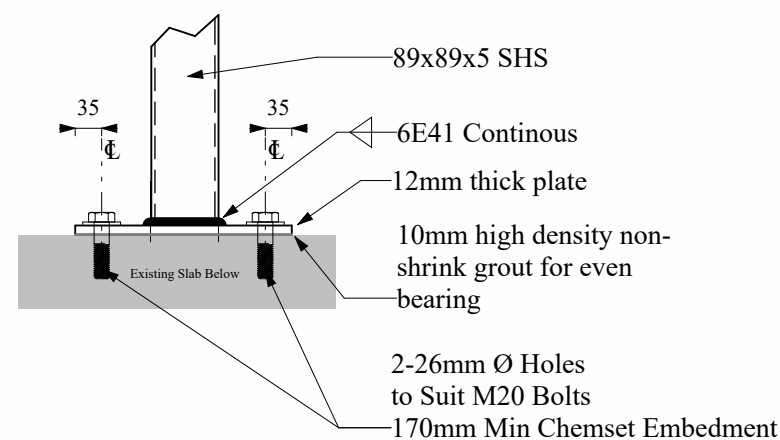
13 Typical Steel Post Support
1 : 10



Baseplate Detail



Alternate Baseplate Detail



Baseplate Detail

Baseplate Connection Details
1 : 10

Steel Treatment Note:

All Timber Construction is to be to AS1684.

All Internal Steel to have treatments of either the following:

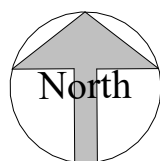
- H.D Galv.
- Prepare Surface by power or wire brushing or abrasive grit blasting. Apply one coat of a rust inhibitive alkyd primer, followed by one finish coat of all-weather gloss acrylic paint.

All External / Exposed Steel to have treatments of the following:

- H.D Galv Steel of 120 µm thickness or greater (HDG900). Plus A coating of 50 µm min. of non-inhibitive epoxy primer (two-pack) to AS/NZS 3750.13. Plus 200 µm min. of high-build epoxy micaceous iron oxide (two-pack) to AS 3750.14 to achieve R4 Durability.
- The treatment should be applied before installation.

See Unit 1 Layout of Footings

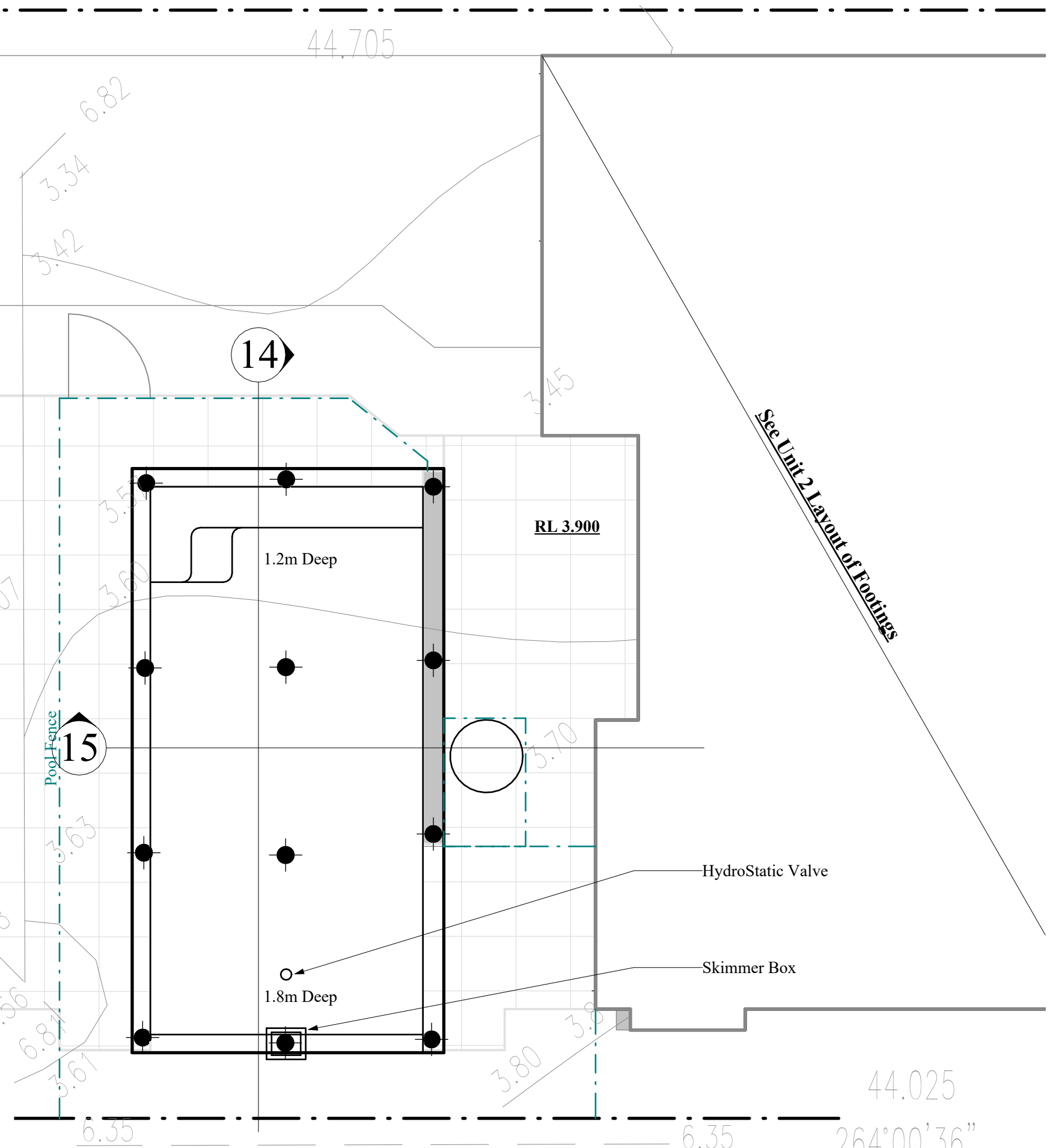
See Unit 2 Layout of Footings

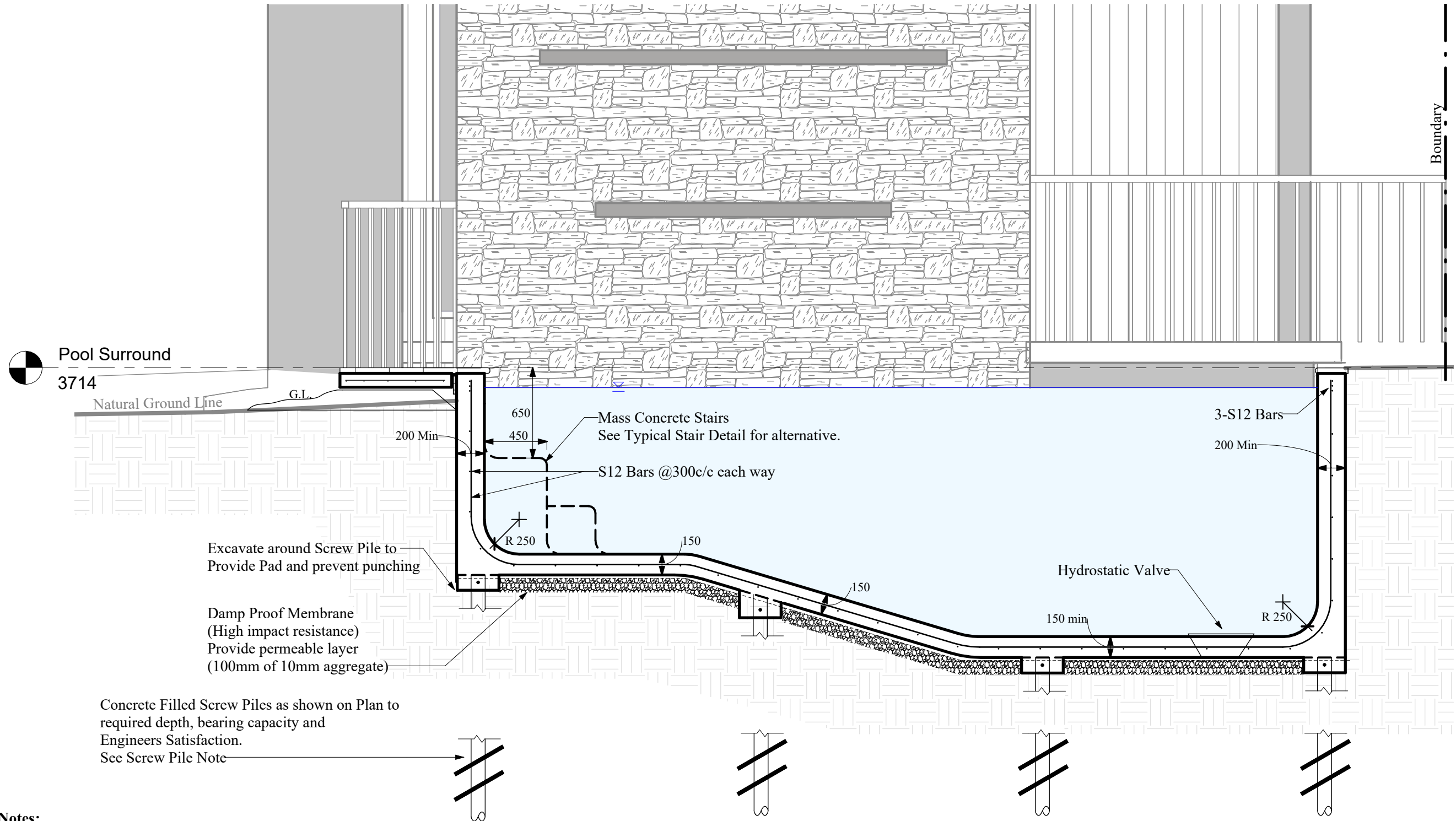


Layout of Pool

1 : 50

Signed.
J. Mealey

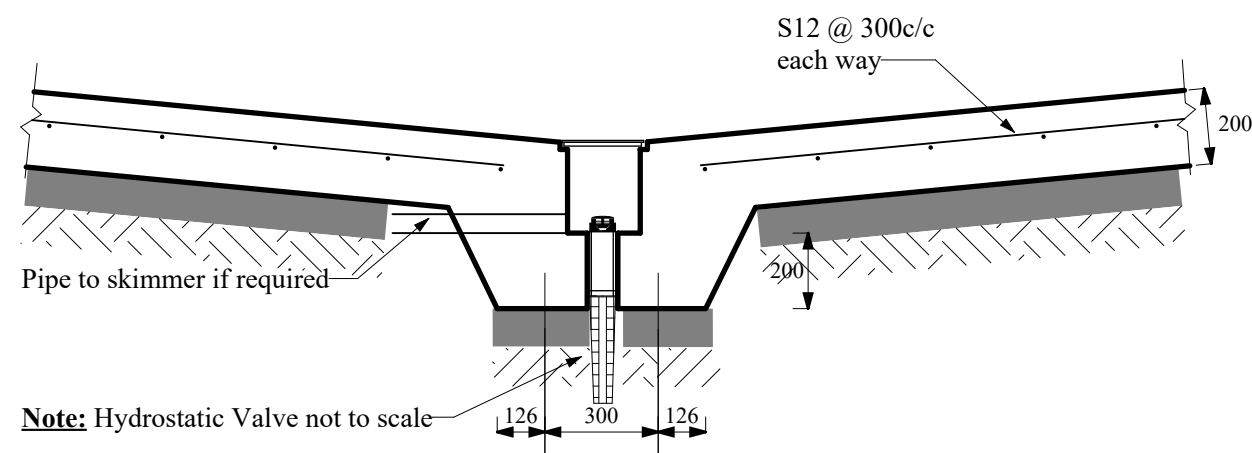




General Pool Notes:

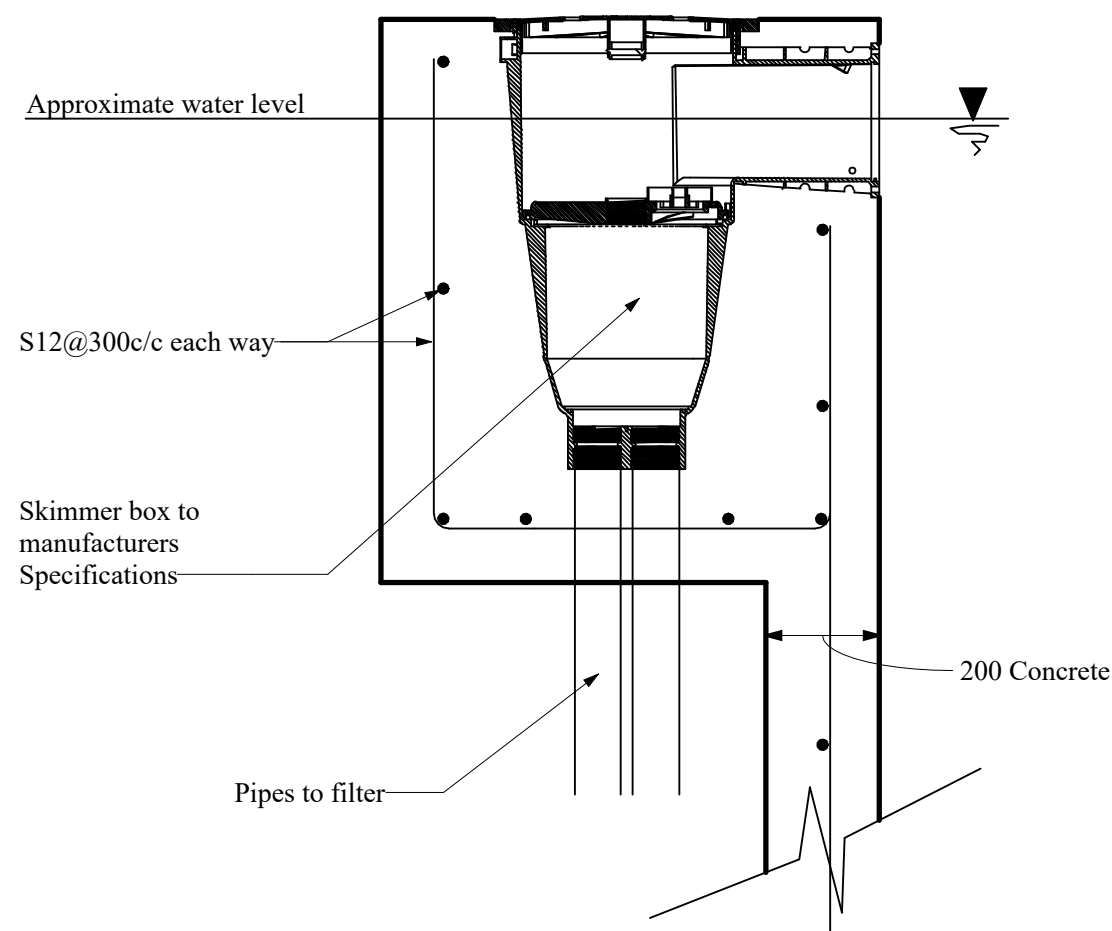
1. Check all dimensions on site prior to work commencing, refer to Architectural Plans.
2. Consult engineer where ground is filled or not natural.
3. All fences & gates to comply with AS1926.1-2012.
4. Sewer location to be confirmed before construction.
5. If pool cantilevers out of ground the following extra reinforcement should be used:
 - 0-300mm = No extra reinforcement
 - 300-600mm = Extra S12 Bars @ 300 c/c
 - 600-900mm = Extra N12 Bars @ 300 c/c
6. All excavations near boundaries are to be shored to Australian Standards to provide support for structures on adjoining properties.
7. Subsoil drainage with a gravity outlet is to be provided.

14 Pool Long Section
1 : 30



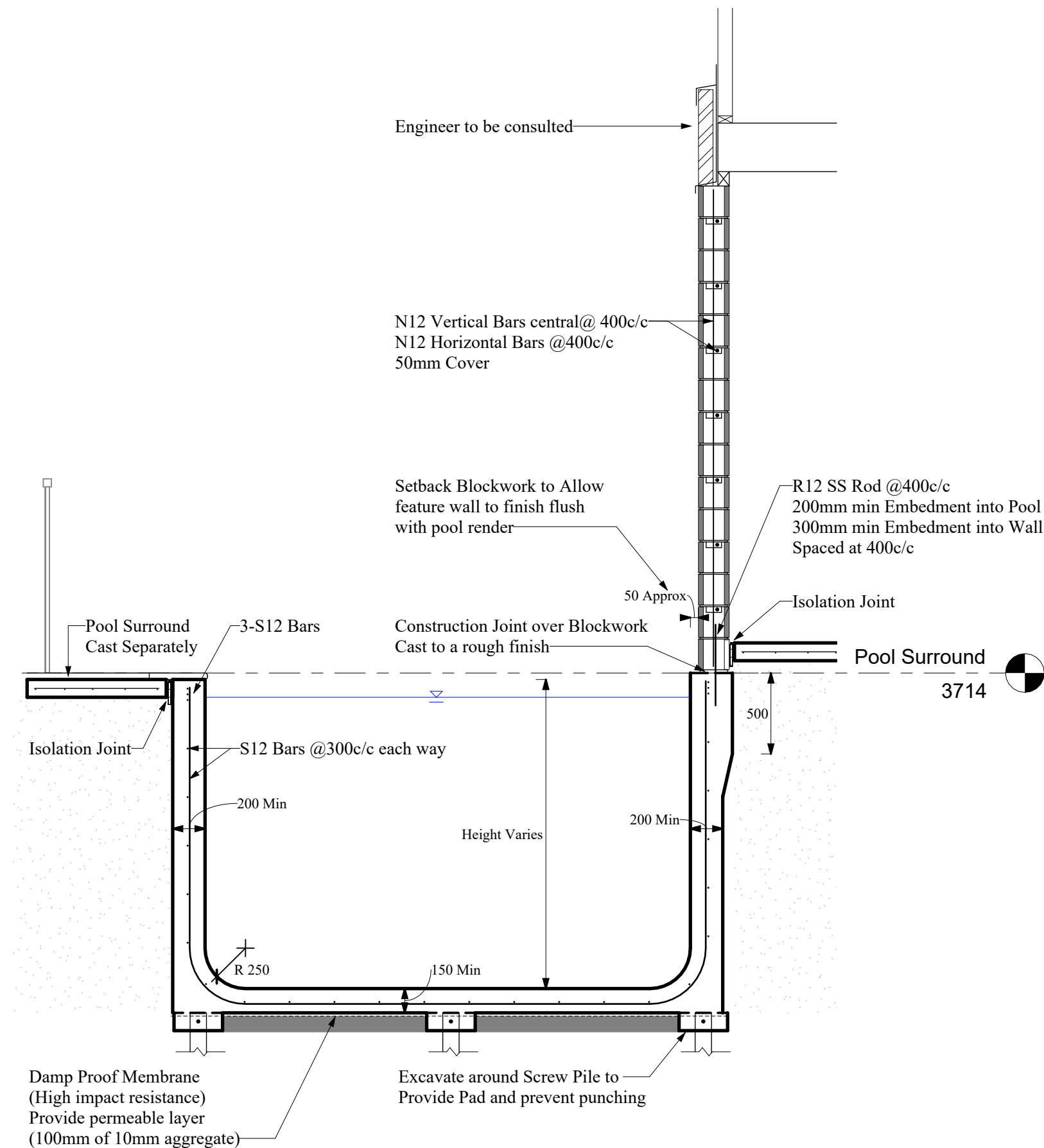
Hydrostatic Valve Detail

1 : 20



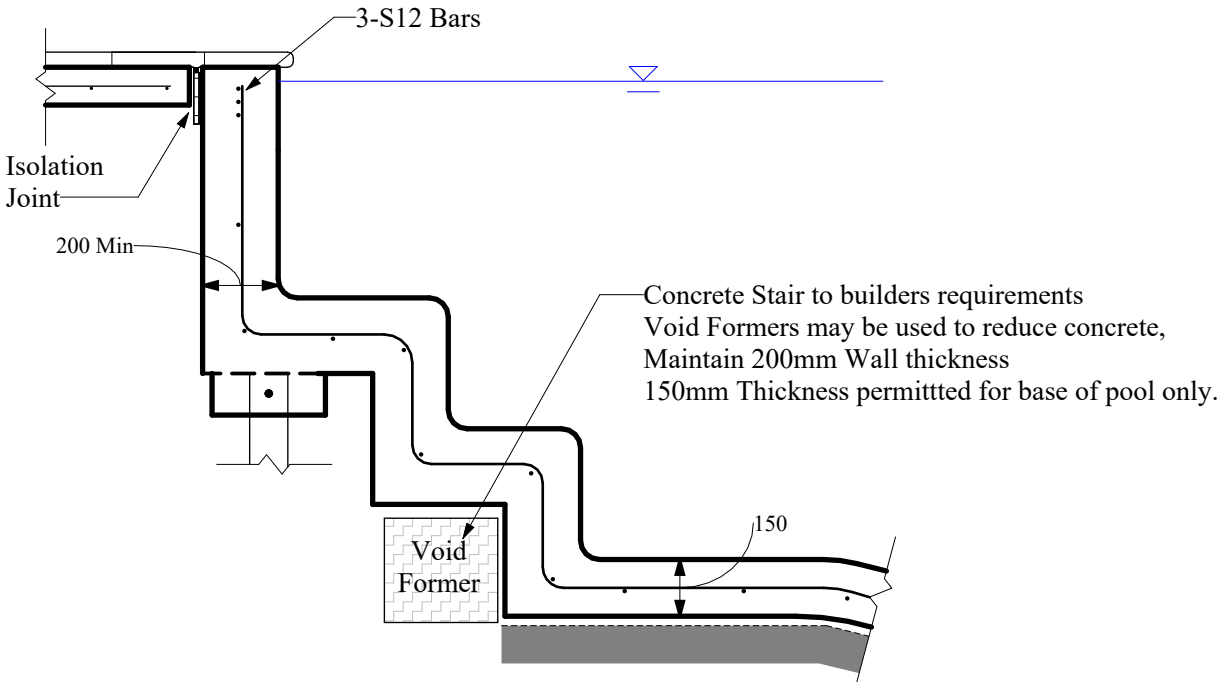
TYPICAL SKIMMER BOX DETAIL

Not To Scale



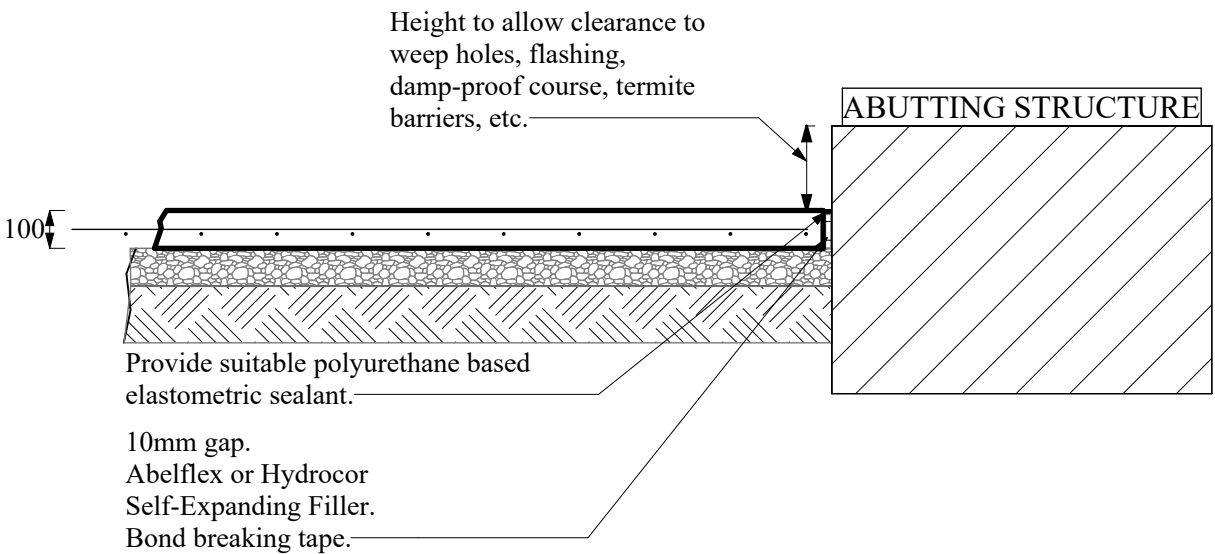
15 Pool Short Section

1 : 30



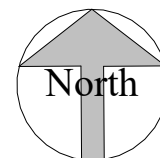
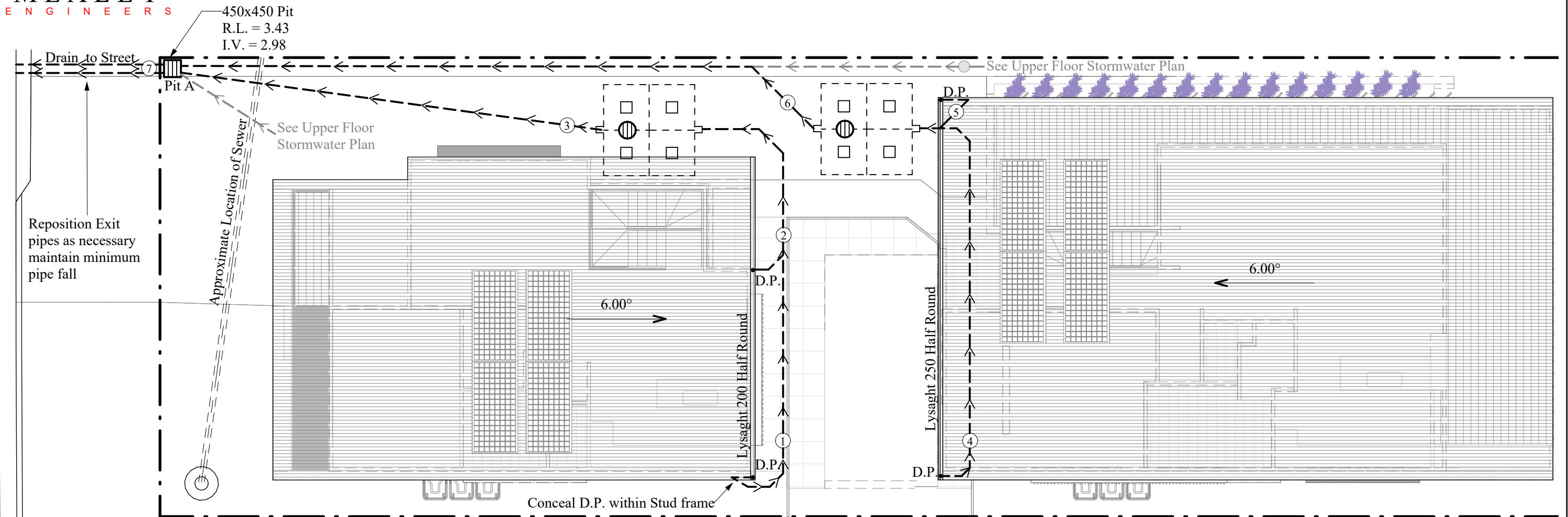
Typical Pool Stair Detail

1 : 20



Typical Isolation Joint

1 : 20



Proposed Stormwater Roof Layout

1 : 105

DRAWINGS NOTES:

1. Set out all buildings and driveways from Architectural drawings
2. Do not scale from this drawing
3. Stormwater Drainage to comply with AS 3500.3, NCC 2022 & ABCB Housing Provisions Standard
4. Any pipe not specified shall be sewer grade UPVC 100mm Ø pipe at a Min. grade of 1.00%
5. Vertical downpipes to be min 150mm Ø
6. Gutters to have a min grade of 1:500
7. Unit 1 Drainage design based on gutter cross sectional area = 11000mm² Lysaght Half Round 200 Recommended
8. Unit 2 Drainage design based on gutter cross sectional area = 16000mm² Lysaght Half Round 250 Recommended
9. This plan has been designed to cater for 1 in 20 year Annual Exceedance Probability (AEP) storm event, and 1 in 100 year ARI for the overflow drainage paths.
10. This plan has been designed to comply with **Chapter 25 - Stormwater Management** of the **Shellharbour Council Development Control Plan**.

Shellharbour City Council - Drainage Design Handbook 1.9 Building And Property Drainage Design.

Stormwater Discharge Limits and Onsite Detention:

- A Development may be exempt from onsite Stormwater detention when the property is wholly within a flood-affected area. For properties which are partly flood affected by the 100 year design flood, the flood effected area would be exempted from the provision of OSD.

Figure 5.1 the Shell Cover Boat Harbour Flooding Assessment for Updated Design by Cardno Dated July 2011 W4733 Prepared for Australand illustrates that this property lies within the PFM, therefore this Development does NOT require an OSD.

FLOW DATA

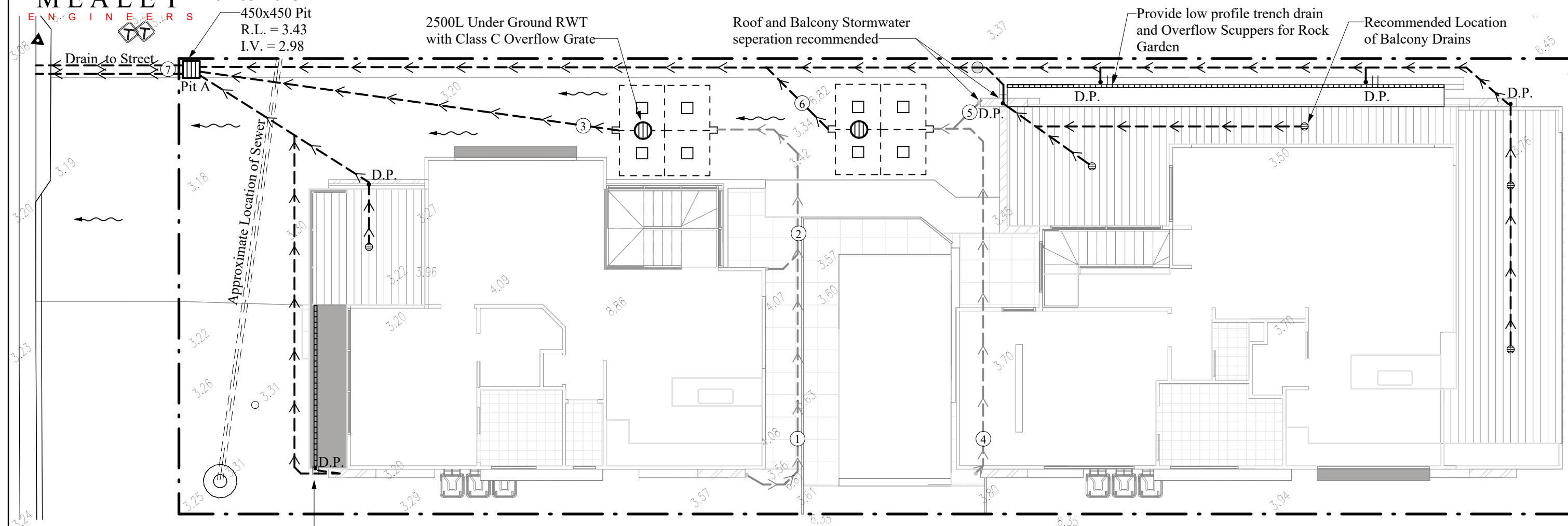
5%I₅ = 222mm/hr; 1%I₅ = 314mm/hr.

LEGEND:

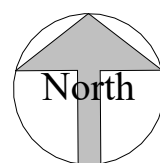
	Boundary Line
	Stormwater Pipe
	Low Profile Trench Drain or Equivalent
	Overflow Path
	Inspection Opening
	450 x 450 Grated Pit
	Patio Drain
	D.P. Down Pipe
	Under Driveway Rain Water Tank 2500L or greater

Signed.

mealey



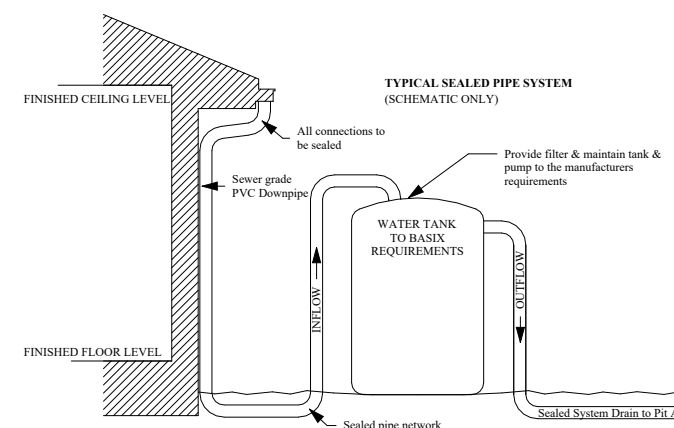
Provide low profile trench drain
and Overflow Scuppers for Rock
Garden



Proposed Stormwater Upper Floor Layout

1 : 105

PIPE #	MIN. Pipe Size, Ø	MIN. Grade	20yr Flow	100yr Flow	Notes
	(mm)	(%)	(L/s)	(L/s)	
1	100	1.0	3.3	4.7	Sealed to R.W.T.
2	100	1.2	6.6	9.4	Sealed to R.W.T.
3	150	1.0	6.6	9.4	R.W.T. overflow to Pit A
4	100	1.0	5.1	7.2	Sealed to R.W.T.
5	100	1.0	5.1	7.2	Sealed to R.W.T.
6	150	1.0	10.8	15.3	R.W.T. overflow to Pit A
7	2/100x150 Galv RHS	1.2	17.5	24.7	Pit A Drain to Street



Rainwater Tank Detail

(Not to Scale)

LEGEND:

