INFILTRATION TESTING:

For Proposed Infiltration Trench at **12 Pacific Parade, Manly**

1. Site Description

The site was inspected on the 28th October, 2024.

This residential property is on the N side of the road and is located on the near-level low-lying land to the W of Manly Beach. The area surrounding the footprint of the house is lawn covered with some paving. The weather had been dry in the days prior to the inspection and the soil was dry at the time of the inspection.

2. Geology

The Sydney 1:100 000 Geological Sheet indicates the site is underlain by Hawkesbury Sandstone. Ground testing indicates Alluvial Stream and Estuarine Sediment underlies the proposed works to at least a depth of ~3.6m. These are described as silty to peaty quartz sand, silt and clay with ferruginous and humic cementation in places and common shell layers.

The NSW Environment and Heritage mapping program (eSpade) maps the soil landscape of the property as Lambert. The soils encountered in the ground tests were noted on the map as Siliceous Sands.

3. Subsurface Investigation

One hand Auger Hole (SP1) was put down for the stand pipe used in the infiltration testing. Five Dynamic Cone Penetrometer (DCP) tests were put down to determine the relative density of the overlying soil and underlying sands. The locations of the tests are shown on the site plan and the logs and results are as follows:

SUBSURFACE INVESTIGATION RESULTS ON NEXT PAGE

STAND PIPE 1 (~RL4.4) **–** SP1 (Photo 1)

Depth (m)	**Material Encountered**
0.0 to 0.2	**SAND**, dark brown, medium to coarse grained with fine trace organic matter.
0.2 to 0.9	**SAND**, grey and light brown, medium dense, damp, medium grained.

End of Hole @ 0.9m in Medium Dense Sand.

TEST RESULTS – Dynamic Cone Penetrometer (DCP)					
DCP Equipment: 9kg hammer, 510mm drop, conical tip.				Standard: AS1289.6.3.2 - 1997	
Depth(m) Blows/0.3m	**DCP 1** (~RL4.4)	**DCP 2** (~RL4.4)	**DCP 3** (~RL4.3)	**DCP 4** (~RL4.4)	**DCP 5** (~RL4.4)
0.0 to 0.3	3	3	2	2	2
0.3 to 0.6	5	5	7	5	4
0.6 to 0.9	8	8	7	6	6
0.9 to 1.2	6	8	6	8	6
1.2 to 1.5	6	7	6	7	7
1.5 to 1.8	7	8	8	8	8
1.8 to 2.1	9	#	#	#	8
2.1 to 2.4	8				7
2.4 to 2.7	12				8
2.7 to 3.0	11				9
3.0 to 3.3	12				11
3.3 to 3.6	12				12
3.6 to 3.9	#				#
	End of Test @ 3.6m	End of Test @ 1.8m	End of Test @ 1.8m	End of Test @ 1.8m	End of Test @ 3.6m

refusal/end of test. F=DCP/SP fell after being struck showing little resistance through all or part of the interval.

DCP Notes:

DCP 1 – End of test @ 3.6m, DCP still very slowly going down, white sand on wet tip.
DCP 2 – End of test @ 1.8m, DCP still very slowly going down, white sand on dry tip.
DCP 3 – End of test @ 1.8m, DCP still very slowly going down, white sand on dry tip.
DCP 4 – End of test @ 1.8m, DCP still very slowly going down, white sand on dry tip.
DCP 5 – End of test @ 3.6m, DCP still very slowly going down, white sand on wet tip.

4. Geological Interpretation

The site is underlain by sands that were encountered to the extent of the testing. Medium Dense Sands extend to at least the extent of testing at ~3.6m. The water table was encountered at a depth of ~3.0m (~RL1.4).

5. Water Table

The water table was encountered at a depth of ~3.0m (~RL1.4) below the surface. As the proposed works require an excavation for the proposed trench to a maximum depth of ~0.7m, the water table is expected to be well below the base of the proposed excavation.

6. Infiltration Rate

A constant head infiltration test was carried out within a slotted PVC stand pipe. The stand pipe was filled with water and a constant head maintained until the flow rate of water into the borehole equalled the flow rate out of the borehole into the ground.

To create a saturated bulb in the testing zone, the hole was repeatedly filled with water and the drop in water level measured relative to time. This process was repeated until successive tests gave different readings by <5%. It was this run that was used to determine the infiltration rate.

The results of the testing are as follows:

Auger Location	Depth of Test (m)	Measured Infiltration Rate L/m²/s	Design Infiltration Rate (long term) L/m²/s
STANDPIPE1	0.8	0.055	0.046
Note: The Design Infiltration Rate is based on bore hole geometry.			

7. Recommendations

Minimum Distance from Boundaries

Trenches should follow the natural slope contours (i.e., run perpendicular to the slope direction) and be at least 3.0m from downhill structures and downslope common boundaries.

Impact on Surrounding Structures

The existing stormwater is piped underground and discharged to a location that could not be visually determined on-site, but probably goes to an existing pit. We are not aware of any seepage issues impacting on the surrounding properties. Given the nature of the sandy soil and the relatively high infiltration rate we are of the opinion that the installation of the proposed trench will not detrimentally impact the neighbouring properties, provided good engineering and building practises are carried out in its design and construction.

Subsurface Waterproofing

No subsurface water proofing will be required.

Design Requirements for walls or Footings

There are no special design requirements for footings.

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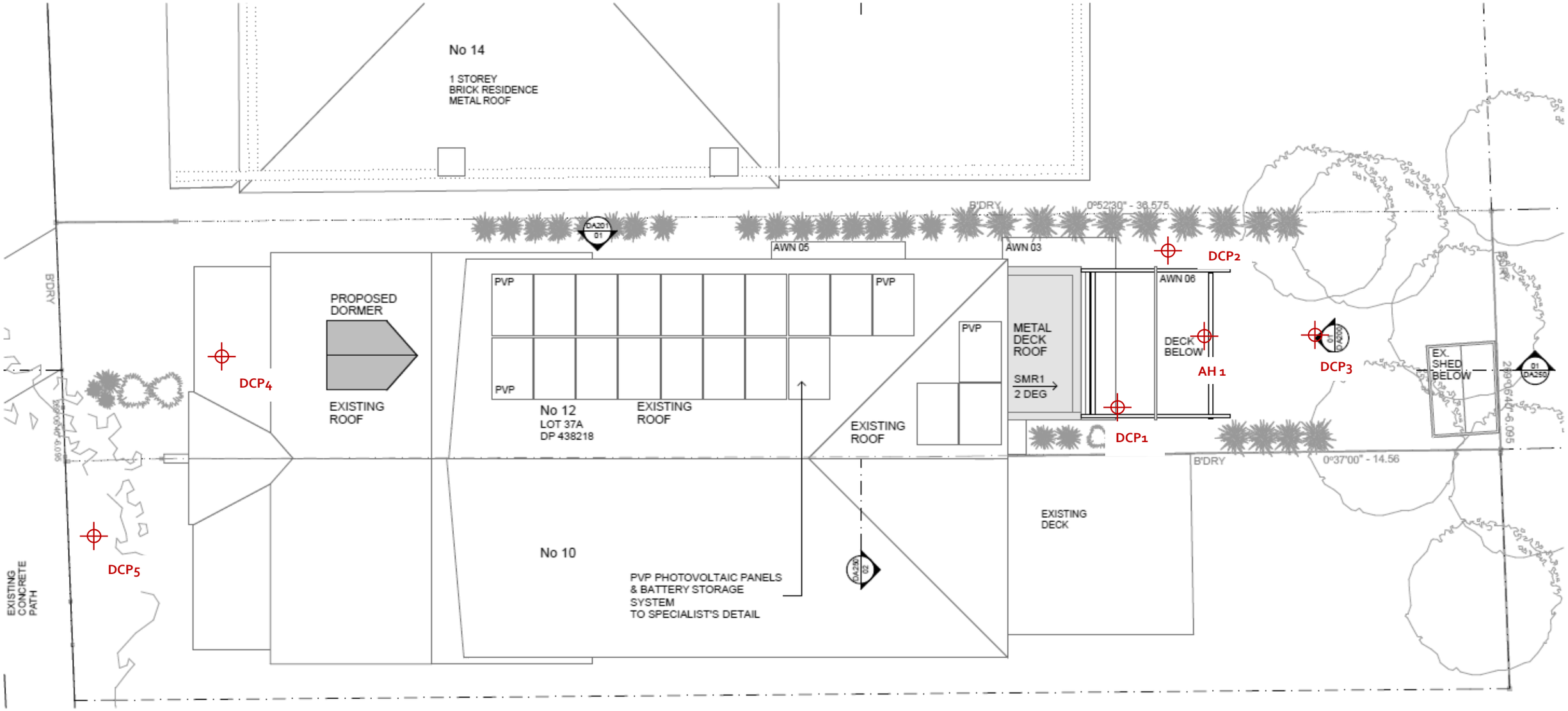
Photo 1: SP1 – Downhole is from top to bottom.

SITE PLAN – showing test locations

EXISTING WALL
REMOVE EXISTING
NEW WALL

DESIGN DEVELOPMENT ISSUE FOR COORDINATION

ADDITIONAL BUILDING AREA



01 ROOF PLAN
1:100

DEVELOPMENT APPLICATION
PRELIMINARY

Issue	Amendment	Date
P2	ISSUE FOR COORDINATION	011024
P1	ISSUE FOR COORDINATION	240924

FOR EXISTING AND NEW BUILDING WORKS
CONFIRM ALL DIMENSIONS LEVELS SQUARE
PLUMB AND BOUNDARIES ON SITE.
DIMENSIONS SHOW FINISHED WALL THICKNESS
USE FIGURED DIMENSIONS ONLY DO NOT SCALE

PROPOSED ALTERATIONS & ADDITIONS
TO EXISTING SEMI DETACHED DWELLING
@ 12 PACIFIC PARADE MANLY 2095
LOT 37A DP 438218
FOR JOHN BURRIDGE & KAREN CALCAGNO

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ARCHITECTS

Title	ROOF PLAN
Scale @ A3	1:100
Project Ref No	PPMBC 23110
Drawing No	DA102
Revision	P2