INFILTRATION TESTING:

For Proposed Infiltration Trench at **23 Hay Street, Collaroy**

1. Site Description

The site was inspected on the 19th May, 2021.

This residential property is on the low side of the road and has a NE aspect. The land surface surrounding the house and driveway is mostly lawn-covered with some paved areas. The proposed infiltration trench will be in the lawn area on the downhill side of the property. In the weeks prior, the weather had been mostly dry 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 the Newport Formation of the Narrabeen Group. This is described as interbedded laminite, shale, and quartz to lithic quartz sandstone.

3. Subsurface Investigation

One Hand Auger Hole (AH) was put down for the stand pipe used in the infiltration testing. Seven Dynamic Cone Penetrometer (DCP) tests were put down to determine the relative density of the overlying soil and the depth to weathered rock. The locations of the tests are shown on the site plan attached. It should be noted that a level of caution should be applied when interpreting DCP test results. The test will not pass through hard buried objects so in some instances it can be difficult to determine whether refusal has occurred on an obstruction in the profile or on the natural rock surface. This is expected to have occurred in DCP5. Excavation and foundation budgets should always allow for the possibility that the interpreted ground conditions in this report vary from those encountered during excavations. See the appended “Important information about your report” for a more comprehensive explanation. The results are as follows:

AUGER HOLE 1 (~RL27.4) **–** AH1 (Photo 1)

Depth (m)	**Material Encountered**
0.0 to 0.8	**FILL**, disturbed clayey soil, dark brown, medium dense to dense, dry, fine to coarse grained with fine trace organic matter and rock fragments.

End of test @ 0.8m in fill. No water table encountered.

DCP TEST RESULTS – Dynamic Cone Penetrometer

Equipment: 9kg hammer, 510mm drop, conical tip. Standard: AS1289.6.3.2 - 1997

Depth(m) Blows/0.3m	**DCP 1** (~RL26.6)	**DCP 2** (~RL27.5)	**DCP 3** (~RL28.6)	**DCP 4** (~RL28.2)	**DCP 5** (~RL29.9)	**DCP 6** (~RL29.7)	**DCP 7** (~RL32.1)
0.0 to 0.3	4	4	5	9	Refusal on Obstruction Immediately Below Surface	6	4
0.3 to 0.6	13	10	7	17		8F	3
0.6 to 0.9	20	13	18	30		5	7
0.9 to 1.2	11	18	23	#		11	30
1.2 to 1.5	19	12	40			11	#
1.5 to 1.8	35	30	#			17	
1.8 to 2.1	#	#				20	
2.1 to 2.4						37	
2.4 to 2.7						#	
	End of Test @ 1.8m	End of Test @ 1.8m	End of Test @ 1.5m	End of Test @ 0.9m		End of Test @ 2.4m	End of Test @ 1.2m

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

DCP Notes:

DCP1 – End of test @ 1.8m, DCP still very slowly going down, orange shale on dry tip.
DCP2 – End of test @ 1.8m, DCP still very slowly going down, brown and maroon shale on damp tip.

DCP3 – End of test @ 1.5m, DCP still very slowly going down, grey and maroon shale on dry tip.
DCP4 – End of test @ 0.9m, DCP still very slowly going down, grey shale fragments on dry tip.
DCP5 – Refusal on obstruction immediately below surface.
DCP6 – End of test @ 2.4m, DCP still very slowly going down, maroon shale on dry tip.
DCP7 – End of test @ 1.2m, DCP still very slowly going down, brown shale fragments on dry tip.

4. Geological Interpretation

The slope materials are colluvial at the near surface and residual at depth. In the location of the proposed trench, they consist of a topsoil over silty clays. Filling has been placed across the downhill side of the property for landscaping. In the location of the proposed trench, the clays merge into the weathered zone of the underlying shale at an average depth of ~1.5m below the current surface. The weathered zone is interpreted as Extremely Low Strength Shale. It is to be noted that this material can appear as a mottled stiff clay when it is cut up by excavation equipment.

5. Water Table

No water table was encountered in the testing that extended to a depth of 2.4m below the surface. Given the site's elevation and slope the water table is expected to be metres below the extent of the testing.

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
AH1	0.6	0.012	0.010
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) and be at least 3.0m from the common boundaries and at least 3.0m upslope of any structures.

Impact on Surrounding Structures

We are not aware of any existing seepage issues from the subject property that are impacting on the surrounding neighbouring properties.

In our opinion the site is suitable for infiltration provided the rate of infiltration determined in this report is used in the design. The trench is unlikely to detrimentally impact on the neighbouring properties/structures 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.

White Geotechnical Group Pty Ltd.

Ben White M.Sc. Geol.,
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No. 222757
Engineering Geologist.

Photo 1: AH1 – Downhole is from top to bottom

SITE PLAN – showing test locations

NOTES

1. Do not scale off drawings. (If in doubt ask)
2. All measurements to be checked on site prior to commencement of construction.
3. Check all levels, roof pitch, location of windows and boundary lines, site-and building conditions before commencing work or ordering materials.
4. Supply & install selected smoke alarm system to comply with AS3786.
5. All storm water to be connected to existing system.
6. The work shown on this and associated drawings shall be carried in a trademanlike manner and shall be in accordance with the standards, codes, ordinances,regulations, of the Standards Association of Australia, the Building Code of Australia and any statutory authority having jurisdiction over the works.
7. Setting out dimensions shown on the drawings shall be verified by the builder
8. During construction the structure shall be maintained in a stable condition, and no part shall be overstressed.
9. Plantings and dampcoff course to be placed in accordance with good building principles whether shown on the details or not.
10. Supply and install lift off hinges to all wet area doors.

LEGEND

UNDISTURBED VEGETATION

SILT FENCE

STOCK PILE

BARRIER FENCE

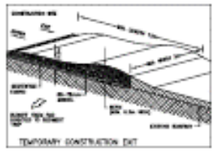
FABRIC FILLED WITH GRAVEL

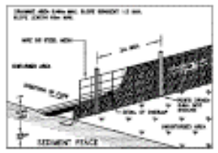
SAND AND SOIL STOCKPILE

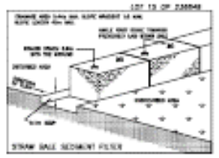
MINIMISE YOUR RISK AND DIAL BEFORE YOU DIG.

SOIL AND WATER MANAGEMENT NOTES

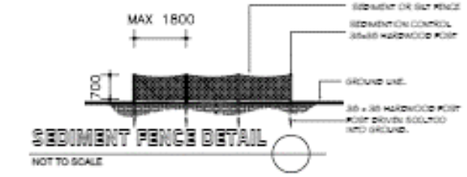
1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER.
2. PHASE DISTURBED AREAS.
3. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS.
4. DRAINAGE TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE.
5. ROADS AND FOOTPATHS TO BE SWEPT DAILY AND KEPT CLEAN AT ALL TIMES.
6. INSTALL TEMPORARY SEDIMENT BARRIERS TO ALL INLET PITS LIKELY TO COLLECT SILT LADEN WATER, TO COUNCIL'S REQUIREMENTS.
7. NOT WITHSTANDING DETAILS SHOWN, IT IS THE SITE MANAGERS SOLE RESPONSIBILITY TO ENSURE THAT ALL SITE ACTIVITIES COMPLY WITH THE REQUIREMENTS OF THE CLEAN WATERS ACT.

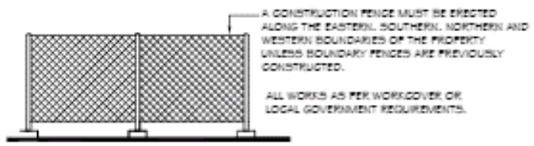

TEMPORARY CONSTRUCTION EXIT


SEDIMENT FENCE


STRAW BALE SEDIMENT FILTER

STANDARD DETAILS



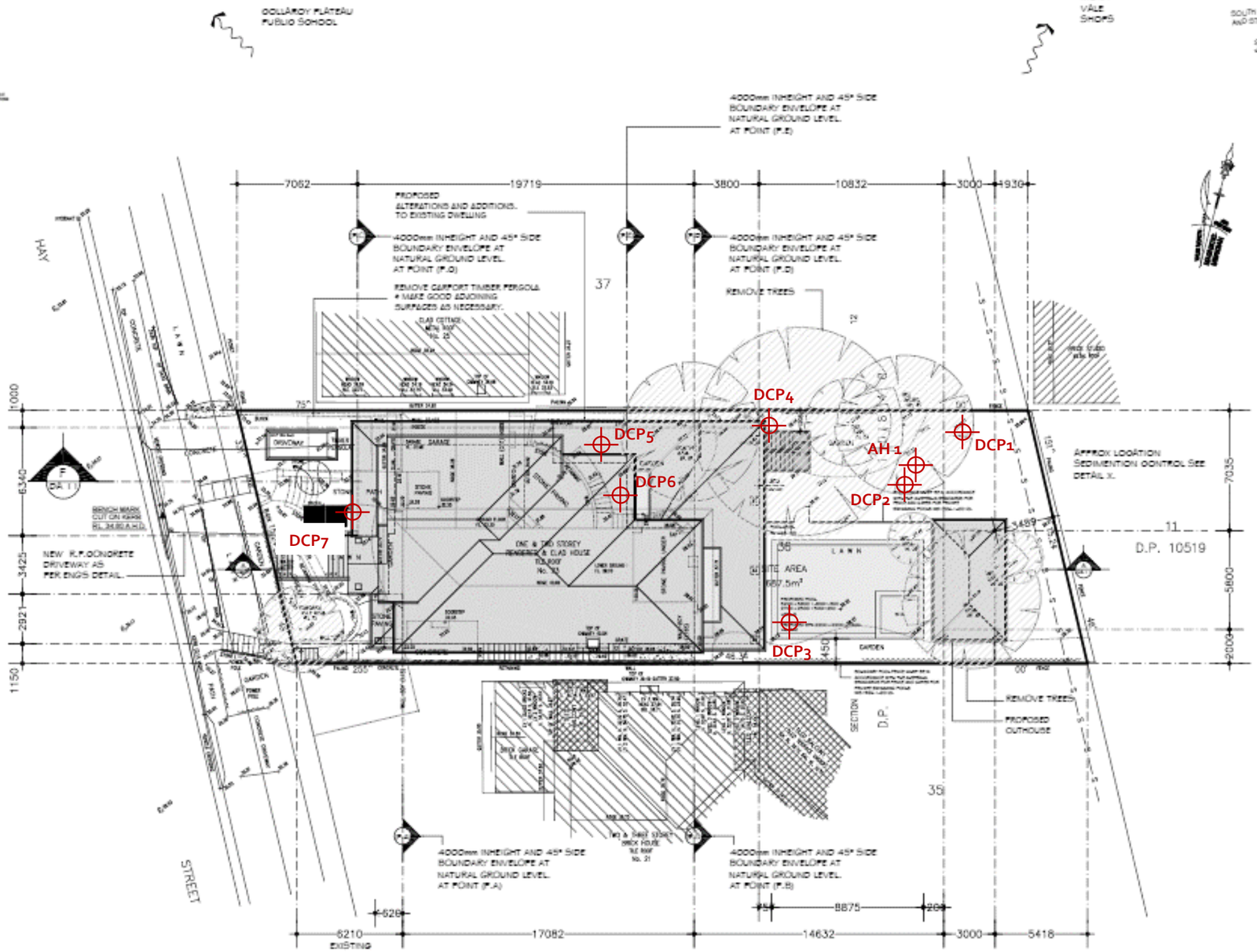

A CONSTRUCTION FENCE MUST BE ERECTED ALONG THE EASTERN, SOUTHERN, NORTHERN AND WESTERN BOUNDARIES OF THE PROPERTY UNLESS BOUNDARY FENCES ARE PREVIOUSLY CONSTRUCTED.

ALL WORKS AS PER WORKCOVER OR LOCAL GOVERNMENT REQUIREMENTS.

ARCHITECTURAL PLANS ARE TO BE READ IN CONJUCTION WITH.

WHITE GEOTECHNICAL GROUP.

BASIX REPORT
PERPARED BY SAMMY FEDELE



PROPOSED
SEDIMENT CONTROL PLAN / SOIL AND WASTE MANAGEMENT / AND SITE PLAN

SCALE 1:200

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C AND A PARISI

PROPOSED : ALTERATIONS AND ADDITIONS AND POOL TO EXISTING RESIDENCE

ADDRESS : 23 HAY STREET GOLLARDY NSW 2097 DP 10646 LOT 36 SEC 12

PLAN

SCALE: 1:100

DATE: 10.06.2021

REV: - JOB: 41/20

SHEET No : DA01

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