Water Sensitive Urban Design Report

Thompson Health Mona Vale, Basset Street

Prepared for: Thompson Health Care Pty Ltd

Issue no: A

Revision	Date	Purpose	Prepared By	Reviewed By
A	26/04/24	Issue for Development Application	N.Pearce	

Table of Contents

1 Introduction

This stormwater management report has been written to support the Development Application for the redevelopment of the Thompson Health Aged Care Facility located at which is proposed to be located at 23-25 Bassett Street, Mona Vale.

The aged care facility has previously been DA approved (DA2020/0816) by Northern Beaches Council and included a stormwater management plan completed by ACOR Consultants

The development is to be re-submitted for DA and is proposed to include following changes as indicated on the amended site architectural drawings completed by Gartner Trovato;

- Room numbers to remain the same but increase in size with a larger building gross floor area.
- Revised floor layouts which include the removal of the atrium and larger internal courtyard garden areas
- Basement floor level to be lowered 500mm with a minor increase in area
- Revised façade treatments including new balconies and bay window
- The building footprint has increased by approximately 300m^2 from the approved DA

These modifications do not significantly change the stormwater management of the site that has been previously outlined in the approved DA plan and as such the design intent remains the same. This report is aimed to inform the proposed changes between the approved scheme and demonstrate that the development still complies with the Council's stormwater requirements.

In the preparation of this report, the following reference information has been used:

- Architectural plans prepared by Gartner Trovato
- DA Approved Stormwater Management Plans completed by ACOR Consultants
- Northern Beaches Council DCP
- Northern Beaches Council Water Management Referral Response (DA2020/0816) dated 24/11/2020
- Notice of Determination – DA2020/0816

2 Site Description

The site is located at 23-33 Bassett Street, Mona Vale near the intersection of Barrenjoey Road.

It is 6503m2 in area falls towards the south and east with levels that range 3.20 m AHD on the southern boundary and 4.70 m AHD along the northern road frontage. The existing aged care development on the site consists of a two-storey aged care facility, tennis court, carparking at the rear and two single-storey dwellings.

The proposed re-development works involve the demolition of the existing aged care facility and single-storey dwellings and the construction of a new two-storey, 118 bed aged care facility.

Figure 1 - Existing Thompson Health Care Facility, Mona Vale

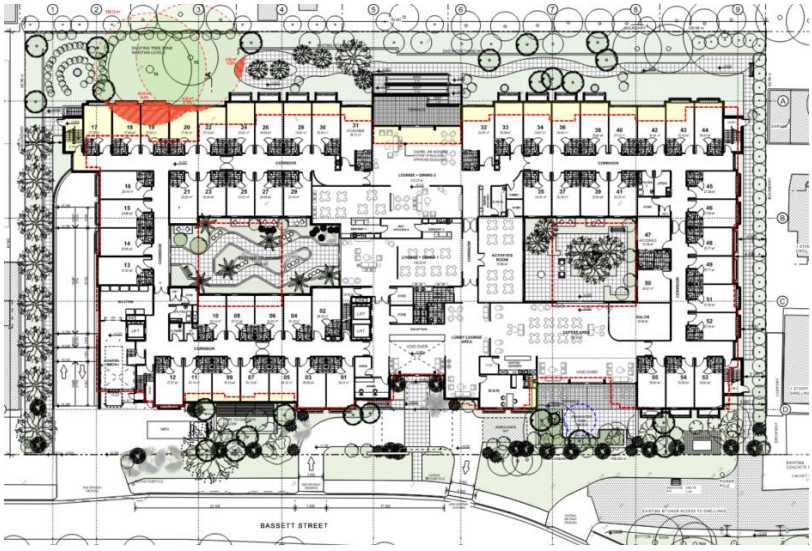


Figure 2 – Proposed Redevelopment architectural site plan

3 Council Requirements

The redevelopment is to be designed in accordance with Northern Beaches Council DCP and is proposed to match the design intent of the approved DA stormwater management scheme completed by ACOR Consultants.

The site is flood-affected in the 1% AEP and PMF and is considered to be a flood-controlled lot by Council. Council has stated that the the site acts as a flood storage area and that the development is to provide the equivalent storage area post-development. This requirement is achieved by the proposed development and is further discussed in the flood response letter which has been submitted as part of the Development Application.

Council DCP states that Onsite Detention is generally required for similar site redevelopments, however, the site is flood-affected as stated above and therefore Council has advised that OSD is not required for the development. As such, OSD was not provided as part of the previously approved scheme and is therefore not proposed for this resubmission.

Stormwater quality improvement systems are required to remove pollutants from the stormwater prior to discharging to the Council drainage network. The minimum pollutant reduction targets are listed below.

Table 1 – Council Pollutant Removal Performance Targets

Pollutant	Performance Requirements
Total Phosphorous	65% reduction in the post development mean annual load[1]
Total Nitrogen	45% reduction in the post development mean annual load[1]
Total Suspended Solids	85% reduction in the post development mean annual load[1]
Gross Pollutants	90% reduction in the post development mean annual load[1] (for pollutants greater than 5mm in diameter)
pH	6.5 - 8.5
Hydrology	The post-development peak discharge must not exceed the pre-development peak discharge for flows up to the 50% AEP

4 Site Stormwater Layout

The proposed building is to be located at the cnetre of the centre with landscaping and site drainage surrounding the building. The site generally drains towards the northeast and discharges to the Council network via a new new connection in Bassett Street. A new kerb inlet and junction pit over the existing Council driamge will be constructed in Bassett Street to allow for the site stormwater discharge.

There are two (2) existing inter-allottment drainage lines within easements located on the site. One line is located along the western boundary which will be retained and the other along the southern and eastern boundaries. The eastern easement is required to be diverted as part of the works to remove it from the building footprint.

The site drainage will include a 20kl rainwater tank, as required by Council DCP, and will collect 60% of the roof area for reuse for irrigation and toilet flushing. The rainwater tank overflow and the remainder of the roof catchment will be connected to inground stormwater which will directed to filter chambers. Stormwater filter cartridges, by Oceanprotect, will be within the chamber to treat the stormwater and ensure that Councils WSUD requirements are achieved. Grassed lined swales are provided around the building to collect overland flow from surrounding landscaping to provide some treatment and infiltration prior to being collected to inground drainage. Refer Appendix A for the proposed site stormwater management plans for further detail.

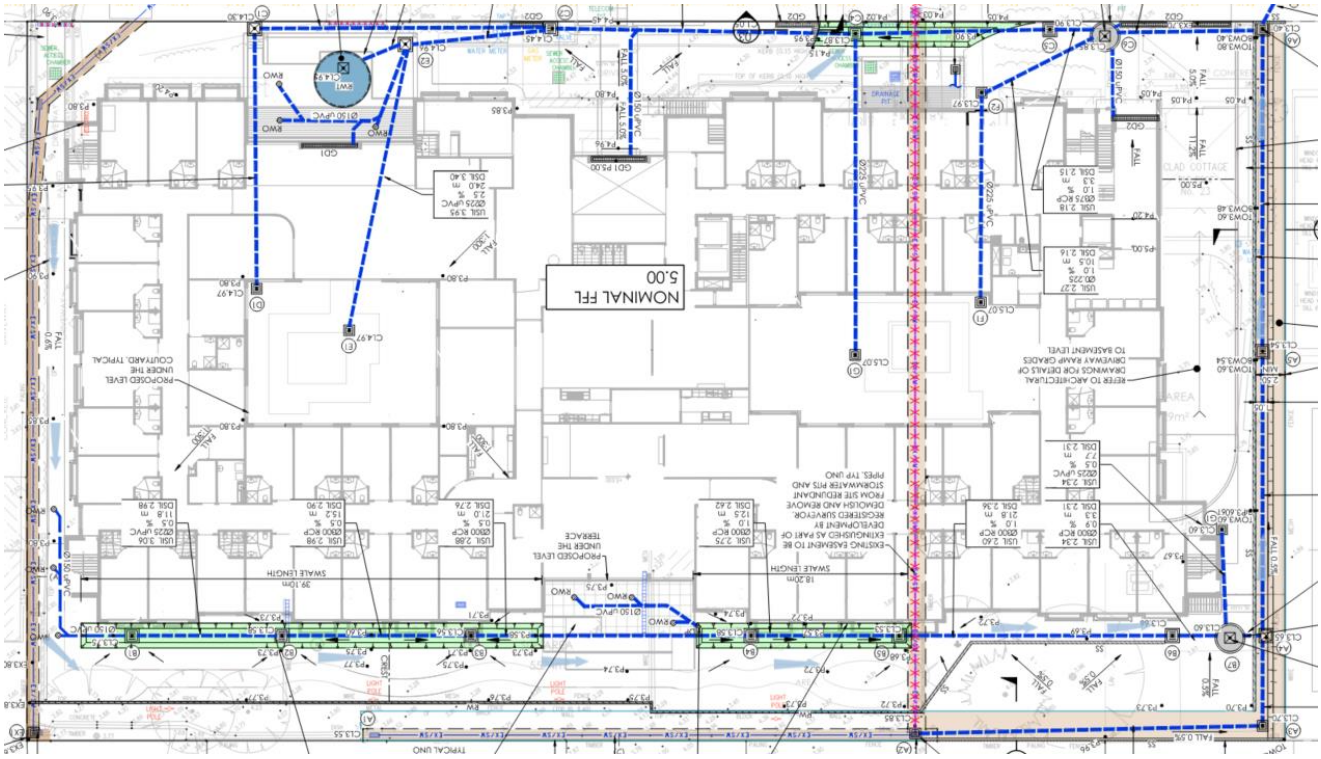


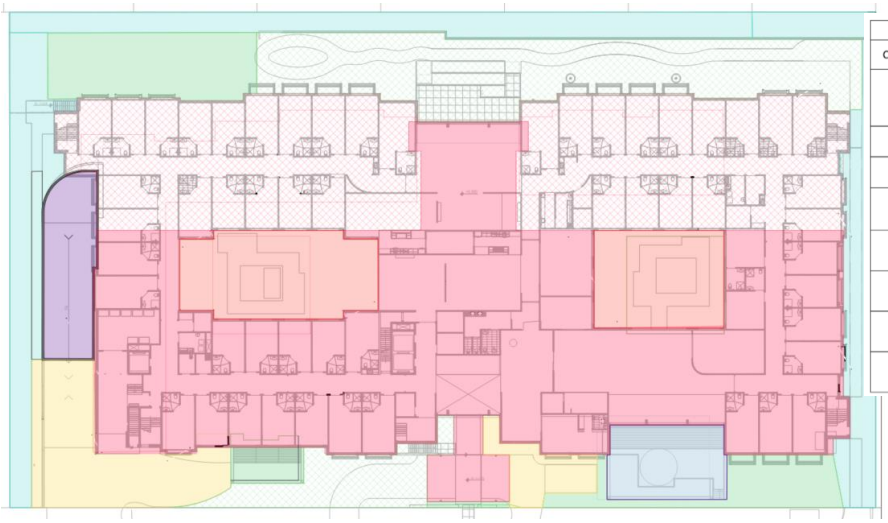
Figure 3 – Proposed Redevelopment architectural site plan

5 Water Sensitive Urban Design

A MUSIC model has been undertaken to represent the water quality measures required to meet the Council reduction targets . The MUSIC model, shown below, has been provided as part of the DA submission for Councils review.

The previous stormwater management plans completed by ACOR Consultants and approved as part of the notice of determination (DA2020/0816) was subject to Council referral and refusal on the basis of the WSUD measures implemented as part of the development were not supported. The development proposed to utilise filter cartridge systems to remove pollutants which the Council stated was against their policy of using natural bio-filtration infiltration swales to capture flows. Vegetated swale drains were subsequently included in the design however it was noted that these provided minimal treatment benefits due to the limited catchment area contributing to the swales. This was subsequently accepted by Council on the condition that the proposed rainwater tank was connected to at least 50% of toilets within the building, refer to the referral letter dated 26/11/2020 in Appendix B.

The proposed redevelopment and current ENTEC stormwater management plan intends to implement the same design intent as the approved scheme and include the 50% rainwater reuse provision for toilet flushing.



WSUD CATCHMENT DETAILS

CATCHMENT	TYPE	AREA (m2)	IMPERVIOUS (%)	REMARKS
	ROOF (60%)	2350	100	DRAINING TO RAINWATER TANK & FILTER CARTRIDGES
	ROOF (40%)	1390	100	DRAINING TO FILTER CARTRIDGES
	TERRACE	125	75	DRAINING TO FILTER CARTRIDGES
	COURTYARD	410	42	DRAINING TO FILTER CARTRIDGES
	LANDSCAPE	400	0	DRAINING TO FILTER CARTRIDGES
	EASEMENT	735	18	BYPASS TREATMENT TRAIN
	ROAD	255	100	DRAINING TO FILTER BASKETS AND FILTER CARTRIDGES
	DRIVEWAY TO BASEMENT	130	100	PUMP OUT TO FILTER CARTRIDGES
	LANDSCAPE, ROAD, TERRACES	715	39	DRAINING TO SWALES AND TO FILTER CARTRIDGES

Figure 4 – WSUD Catchment Plan

The results of the MUSIC model and the comparison to Council targets are shown in the table below. Reduction targets are satisfied for all pollutants and as such are compliant with Council requirements.

Table 2 – Site MUSIC Model Results

Stormwater Pollutant	Council Target %	Site Reduction %
Gross Pollutants	90	98.6
Total Suspended Solids (TSS)	85	85.1
Total Phosphorus (TP)	65	71.6
Total Nitrogen (TN)	45	50.5

Appendix A – Stormwater Management Plans

THOMPSON HEALTH BASSETT PROPOSED AGED CARE FACILITY
23 & 25 BASSETT STREET, MONA VALE NSW
CIVIL SERVICES

SITEWORKS NOTES

1. ORIGIN OF LEVELS :- AUSTRALIAN HEIGHT DATUM (A.H.D.)
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
3. ALL WORK IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS, THE SPECIFICATIONS AND THE DIRECTIONS OF THE PRINCIPAL'S REPRESENTATIVE.
4. EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE PRINCIPAL'S REPRESENTATIVE. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
5. WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
6. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
7. CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER COMMUNICATIONS OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
8. ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH AN APPROVED NON-NATURAL GRANULAR MATERIAL AND COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS.1289.5.1.1.
9. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
10. ON COMPLETION OF PIPE INSTALLATION ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS.
11. PROVIDE 10mm WIDE ABELFLEX JOINTS BETWEEN CONCRETE PAVEMENTS AND ALL BUILDINGS , WALLS, FOOTINGS, COLUMNS, KERBS, DISH DRAINS, GRATED DRAINS, BOLLARD FOOTINGS ETC.
12. CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS.
13. ALL BATTERS TO BE GRASSED LINED WITH MINIMUM 100 TOPSOIL AND APPROVED COUCH LAID AS TURF.
14. MAKE SMOOTH TRANSITION TO EXISTING SERVICES AND MAKE GOOD.
15. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY DIVERSION DRAINS AND MOUNDS TO ENSURE THAT AT ALL TIMES EXPOSED SURFACES ARE FREE DRAINING AND WHERE NECESSARY EXCAVATE SUMPS AND PROVIDE PUMPING EQUIPMENT TO DRAIN EXPOSED AREAS.
16. ON COMPLETION OF WORKS ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL INCLUDING, BUT NOT LIMITED TO, KERBS, FOOTPATHS, CONCRETE AREAS, GRASS AND LANDSCAPED AREAS.

EXISTING SERVICES AND FEATURES

1. THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION, REMOVAL AND DISPOSAL IF REQUIRED OF ALL EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA, AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT.
2. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
3. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN WRITTEN APPROVAL OF HIS PROGRAMME FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
4. EXISTING BUILDINGS, EXTERNAL STRUCTURES, AND TREES SHOWN ON THESE DRAWINGS ARE FEATURES EXISTING PRIOR TO ANY DEMOLITION WORKS.
5. CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
6. INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. CONTRACTOR TO GAIN APPROVAL OF SUPERINTENDENT FOR TIME OF INTERRUPTION.

GENERAL NOTES

1. 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.
2. ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION
3. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE DRAWINGS.
4. ALL DIMENSIONS ON DETAILS ARE IN MILLIMETRES UNLESS STATED OTHERWISE. ALL PLANS AND LEVELS ARE EXPRESSED IN METRES.
5. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURAL STABILITY OF THE WORKS AND ENSURE NO PARTS BE OVER STRESSED UNDER CONSTRUCTION ACTIVITIES.
6. WORKMANSHIP AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RELEVANT CURRENT AUSTRALIAN STANDARDS INCLUDING ALL AMENDMENTS, AND THE LOCAL STATUTORY AUTHORITIES, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
7. THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE ENGINEER BUT IS NOT AN AUTHORISATION FOR A VARIATION, ANY VARIATIONS INVOLVED MUST BE TAKEN UP WITH THE ARCHITECT OR PROJECT MANAGER BEFORE THE WORK COMMENCES.
8. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE ENGINEER FOR A DECISION BEFORE PROCEEDING WITH THE WORK.
9. THE BUILDER SHALL GIVE 48 HOURS NOTICE FOR ALL ENGINEERING INSPECTIONS.
10. BUILDING FROM THESE DRAWINGS IS NOT TO COMMENCE UNTIL APPROVED BY THE LOCAL AUTHORITIES
11. THE WORD 'ENGINEER' USED IN THESE NOTES REFER TO AN EMPLOYEE OR NOMINATED REPRESENTATIVE OF **ENTEC CONSULTANTS PTY.LTD.**

STORMWATER NOTES

1. ALL 300 DIA. DRAINAGE PIPES AND LARGER SHALL BE CLASS "2" APPROVED SPIGOT AND SOCKET FRC OR RCP PIPES WITH RUBBER RING JOINTS. (U.N.O.) ALL DOWNPIPE DRAINAGE LINES SHALL BE SEWER GRADE uPVC WITH SOLVENT WELD JOINTS. (U.N.O.)
2. EQUIVALENT STRENGTH REINFORCED CONCRETE PIPES MAY BE USED.
3. ALL PIPE JUNCTIONS UP TO AND INCLUDING 450 DIA. AND TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.
4. MINIMUM GRADE TO STORMWATER LINES TO BE IN ACCORDANCE WITH AS/NZS 3500.3-2018 TABLE 6.3.4. (U.N.O.)
5. CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
6. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
7. PRECAST PITS SHALL NOT BE USED UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE SUPERINTENDENT.
8. WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN. 50MM CONCRETE BED (OR 75MM THICK BED OF 12MM BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK. IN OTHER THAN ROCK, PIPES SHALL BE LAID ON A 75MM THICK SAND BED. IN ALL CASES BACKFILL THE TRENCH WITH SAND TO 200MM ABOVE THE PIPE. WHERE THE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH WITH SAND OR APPROVED GRANULAR BACKFILL COMPACTED IN 150MM LAYERS TO 98% STANDARD MAX. DRY DENSITY.
9. BEDDING SHALL BE TYPE HS1, IN ACCORDANCE WITH CURRENT RELEVANT AUSTRALIAN STANDARDS.
10. WHERE uPVC STORMWATER LINES PASS UNDER FLOOR SLABS, SEWER GRADE RUBBER RING JOINTS ARE TO BE USED.
11. 100 DIA SLOTTED uPVC SUBSOIL DRAINAGE LINES SHALL BE INSTALLED BEHIND ALL RETAINING WALLS, KERBS AND WITHIN PLANTERS.
12. WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS UNSLOTTED UPVC SEWER GRADE PIPE SHALL BE USED.
13. PROVIDE 3.0M LENGTH OF 100 DIA. SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK, AT UPSTREAM END OF EACH PIT.

RAINWATER REUSE SYSTEM

MARKING & LABELLING

1. THE WATER SUPPLY SYSTEM FROM A RAINWATER TANK SHALL BE CLEARLY MARKED `RAINWATER' AT INTERVALS NOT EXCEEDING 1m WITH CONTRASTING COLOURED WORDING. WATER OUTLETS SHALL BE IDENTIFIED AS `RAINWATER' WITH A LABEL OR A RAINWATER TAP IDENTIFIED BY A GREEN COLOURED INDICATOR WITH THE LETTERS `RW'.

NON-DRINKING WATER SERVIES - HOSE TAP OUTLETS

2. HOSE TAP OUTLETS SHALL: -
   a. BE CLEARLY MARKED `WARNING: NOT FOR DRINKING' IN ACCORDANCE WITH THE REQUIREMENTS OF AS 1319.
   b. BE OF A TYPE THAT HAS A REMOVABLE HANDLE.

PROXIMITY TO OTHER SERVICES

3. THE FOLLOWING APPLIES:
   a. ABOVEGROUND INSTALLATION OF NON-DRINKING WATER SERVICES SHALL NOT BE INSTALLED WITHIN 100mm OF ANY PARALLEL DRINKING WATER SERVICE, EXCEPT WHEN INSTALLED IN PIPE DUCT OR STRUCTURALLY SEPARATED
   b. BELOW-GROUND INSTALLATIONS OF NON-DRINKING WATER SERVICES SHALL NOT BE INSTALLED WITHIN 300mm OF ANY PARALLEL DRINKING WATER SUPPLY.

MARKING & LABELLING OF NON-DRINKING WATER PIPES & OUTLETS

GENERAL
   a. ALL PIPES, PIPE SLEEVES, IDENTIFICATION TAPES, & OUTLETS SHALL BE COLOURED LILAC (P23) IN ACCORDANCE WITH AS 2700
   b. ALL PIPES, PIPE SLEEVES & IDENTIFICATION TAPES, IN ACCORDANCE WITH AS 1345, SHALL BE MARKED WITH THE FOLLOWING, WARNING: RECYCLED OR RECLAIMED - WATER - DO NOT DRINK

BELOW GROUND PIPES
   a. ALL BELOW GROUND PIPES SHALL HAVE AN IDENTIFICATION TAPE IN ACCORDANCE WITH CLAUSE GENERAL INSTALLED ON TOP OF THE WATER PIPELINE, RUNNING LONGITUDINALLY, & FASTENED TO THE PIPE AT NOT MORE THAN 3m INTERVALS.

OUTLET POINTS
   a. ALL OUTLET POINTS SHALL BE CLEARLY & PERMANENTLY MARKED `WARNING: NOT FOR DRINKING' WITH SAFETY SIGNS TO COMPLY WITH AS 1319 & AS 1345.

PRE-TREATMENT
   a. ALL GUTTERS SHALL BE FITTED WITH PROPRIETARY GUTTER SCREENS IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS
   b. BELOW-GROUND FIRST FLUSH DIVERTER SHALL BE INSTALLED TO ALL INLET PIPELINE(S) PRIOR TO ENTERING THE RAINWATER TANK. FIRST FLUSH DIVERTER TO BE SIZED BY THE HYDRAULIC CONSULTANT.
   c. REFER THE THE HYDRAULIC CONSULTANTS DRAWINGS FOR FURTHER DETAILS OF RAINWATER RE-USE PRE-TREATMENT MEASURES.

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

E1. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED AND RELATING TO DEVELOPMENT AT THE SUBJECT SITE.

E2. THE SITE SUPERINTENDENT WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS INSTRUCTED IN THIS SPECIFICATION.

E3. ALL BUILDERS AND SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.

CONSTRUCTION SEQUENCE

E4. THE SOIL EROSION POTENTIAL ON THIS SITE SHALL BE MINIMISED. HENCE WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE :
   a. INSTALL SEDIMENT FENCES, TEMPORARY CONSTRUCTION EXIT AND SANDBAG KERB INLET SEDIMENT TRAP.
   b. UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION CONTROL

E5. DURING WINDY CONDITIONS, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.

E6. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

FENCING

E7. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.

E8. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.

E9. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.

E10. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

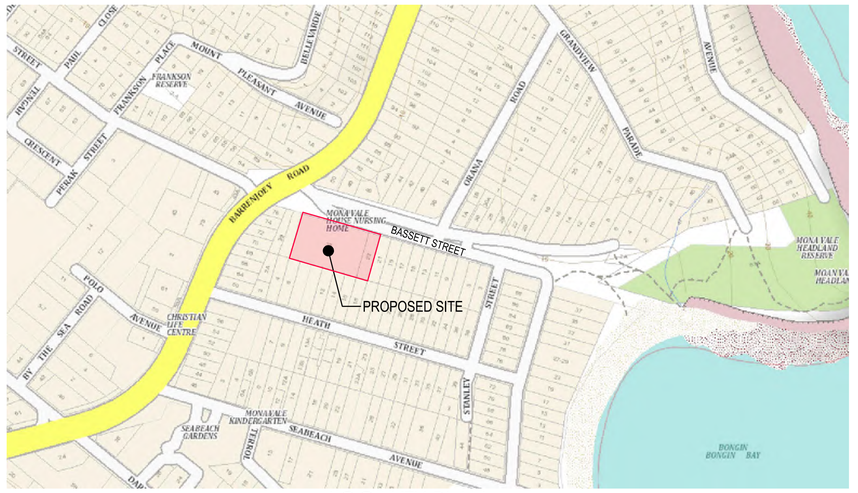
OTHER MATTERS

E11. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.

E12. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.

SITE INSPECTION & MAINTENANCE

E13. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AFTER RAINFALL EVENTS TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIR AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED.



LOCALITY PLAN

CIVIL LEGEND

SS	NOMINAL 200 x 100 SANDSTONE BLOCK
	INDICATIVE DIRECTION OF FALL TO RWO OR PIT
• CL56.20	PROPOSED COVER LEVEL
• P56.20	PROPOSED SURFACE LEVEL
• EX56.20	EXISTING SURFACE LEVEL
⊘ RWO	RAINWATER OUTLET, Ø150 ROUND PUSH-IN FLOOR DRAIN, SPS R150SR4 OR APPROVED EQUIVALENT
A5 EX1	STORMWATER DRAINAGE STRUCTURE WITH NUMBER (REFER TO PLANS AND STORMWATER DRAINAGE STRUCTURES SCHEDULE)
USIL 10.00 Ø375 RCP '2' 1.0% 10m DSIL 9.90	STORMWATER DRAINAGE LINE WITH: INVERT LEVEL UPSTREAM PIPE SIZE AND MATERIAL CLASS PIPE GRADE PIPE LENGTH INVERT LEVEL DOWNSTREAM
GD	PROPOSED GRATED DRAIN GD1 = ACO KS100 WITH CLASS 'B' HEELSAFE GRATE GD2 = ACO K200 WITH CLASS 'D' GRATE
	REDUNDANT SERVICE TO BE REMOVED OR DECOMMISSIONED
	OVERLAND FLOW PATH
	DRAINAGE EASEMENT WIDTH AS SHOWN ON PLAN
	EXISTING 1m WIDE DRAINAGE EASEMENT
	CREST LINE

EXISTING SERVICES LEGEND

EX/S	EXISTING SEWER
EX/G	EXISTING GAS
EX/T	EXISTING COMMUNICATIONS
EX/SW	EXISTING STORMWATER
EX/E	EXISTING IN-GROUND ELECTRICAL
OHE	EXISTNG OVERHEAD ELECTRICAL

DRAWING LIST

DWG No.	DESCRIPTION	REVISION
C1.01	COVER SHEET, LEGENDS AND NOTES	A
C1.05	DETAILS - SHEET 1	A
C1.06	DETAILS - SHEET 2	A
C3.00	EXISTING SERVICES AND SURVEY PLAN	A
C3.01	CIVIL WORKS PLAN	A
C3.15	CATCHMENT PLAN	A
C5.01	SOIL EROSION AND SEDIMENT CONTROL PLAN	A
C5.02	SOIL EROSION AND SEDIMENT CONTROL DETAILS	A

SOIL EROSION AND SEDIMENT CONTROL LEGEND

	MOBILE SEDIMENT TANK
	FILTER FABRIC DROP INLET PIT. PROVIDE AT ALL EXISTING SURFACE STORMWATER PITS
	SEDIMENT FENCE
	SAND BAG SEDIMENT TRAP
	STABILISED CONSTRUCTION EXIT
	CUT OFF DRAIN
	ROCK CHECK DAM

DIAL BEFORE YOU DIG

DIAL BEFORE YOU DIG www.1100.com.au

IMPORTANT: THE CONTRACTOR IS TO MAINTAIN A CURRENT SET OF "DIAL BEFORE YOU DIG" DRAWINGS ON SITE AT ALL TIMES.

ISSUE	AMENDMENT	DATE	DRAWN	APP
A	ISSUE FOR DEVELOPMENT APPLICATION	17.04.24	JL	NP

CLIENT
THOMPSON HEALTH CARE
PO BOX 658
GORDON NSW 2072
PHONE : (02) 8467 9333
THOMPSON HEALTH CARE

ARCHITECT
GARTNERTROVATO ARCHITECTS
90/47 MONA VALE RD
MONA VALE NSW 2103
PHONE : (02) 9979 4411

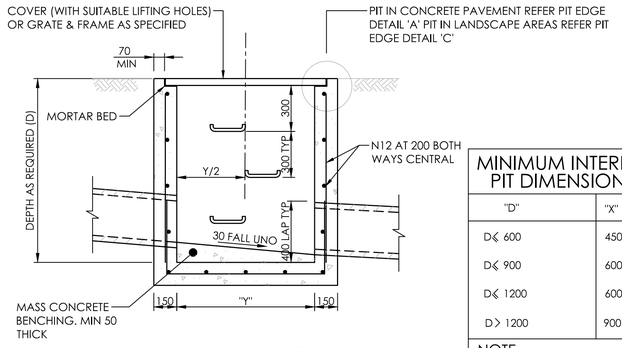
CIVIL CONSULTANT
ENTEC CONSULTANTS

PROJECT
THOMPSON HEALTH BASSETT
PROPOSED AGED CARE FACILITY
23 & 25 BASSETT STREET,
MONA VALE, N.S.W. 2103

NORTH POINT

DRAWING TITLE
COVER SHEET, LEGENDS AND NOTES

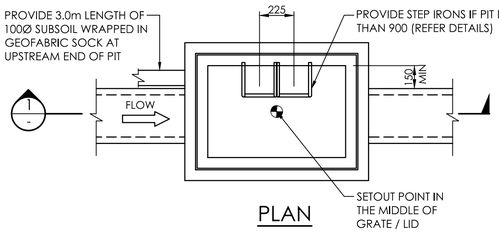
DRAWN	DATE	SCALE AT	QA CHECK	DATE
JL	APRIL 24	N/A		
DESIGNED	PROJECT NO.	DRAWING NO.	ISSUE	
NP	230127	C1.01	A	



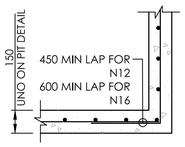
SECTION 1/-
SCALE 1:20

MINIMUM INTERNAL PIT DIMENSIONS		
"D"	"X"	"Y"
D≤ 600	450	450*
D≤ 900	600	600*
D≤ 1200	600	900
D> 1200	900	900

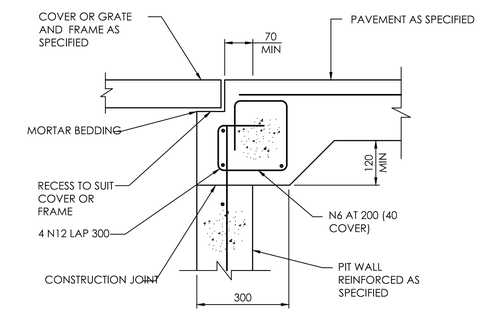
NOTE
PITS DENOTED * SHALL BE USED ONLY WHERE SPECIFIED IN DRAINAGE SCHEDULE OR ON PLAN.



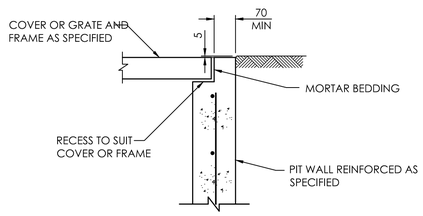
PLAN



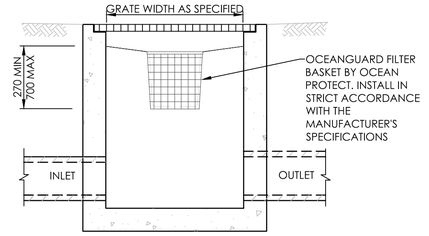
TYPICAL PIT CORNER DETAIL
SCALE 1:20



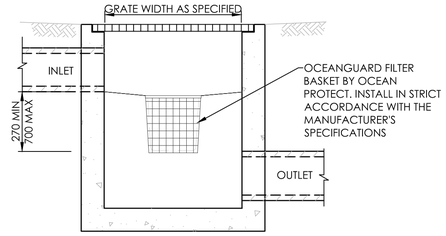
PIT EDGE DETAIL "A"
SCALE 1:10



PIT EDGE DETAIL "C"
SCALE 1:10

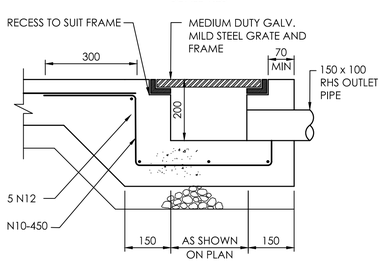


TYPICAL OCEANGUARD ARRANGEMENT DETAIL - SURFACE INLET TREATMENT
NOT TO SCALE
NOTE:REFER TO MANUFACTURER'S DRAWINGS FOR OCEANGUARD FILTER ARRANGEMENT AND COMPONENTS DETAILS

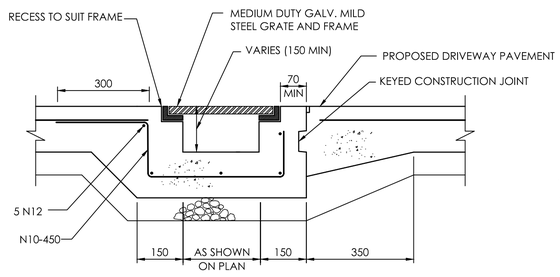


TYPICAL OCEANGUARD ARRANGEMENT DETAIL - DOWNPIPE CONNECTION / DROP PIT
NOT TO SCALE
NOTE: REFER TO MANUFACTURER'S DRAWINGS FOR OCEANGUARD FILTER ARRANGEMENT AND COMPONENTS DETAILS

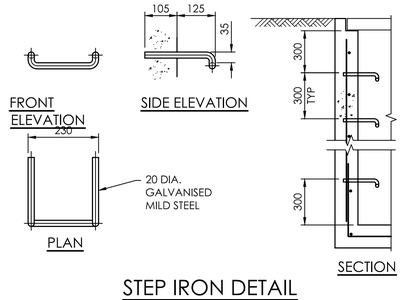
SURFACE INLET/JUNCTION PIT 'TYPE A'
SCALE 1:20



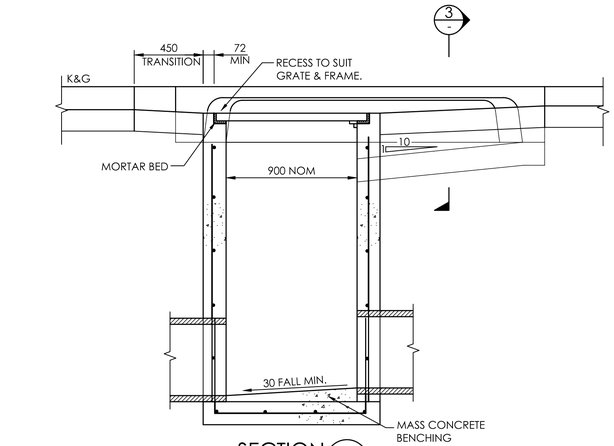
GRATED DRAIN SECTION 03/C3.01
SCALE 1:10



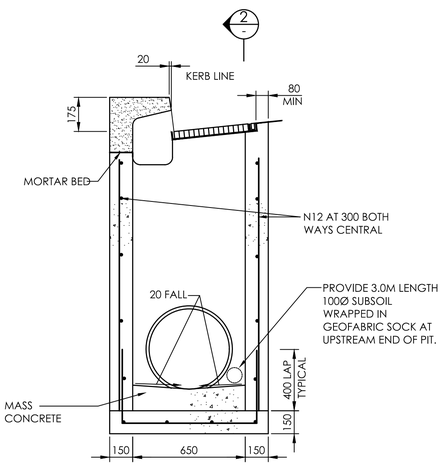
GRATED DRAIN TYPE 'A'
SCALE 1:10



STEP IRON DETAIL
N.T.S.

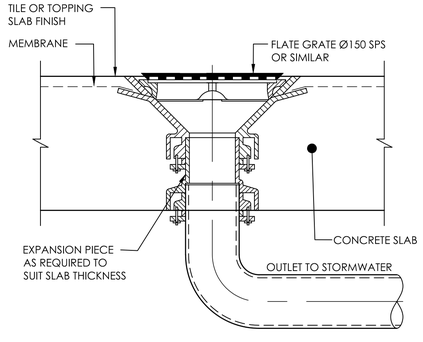


SECTION 2/-
SCALE 1:20

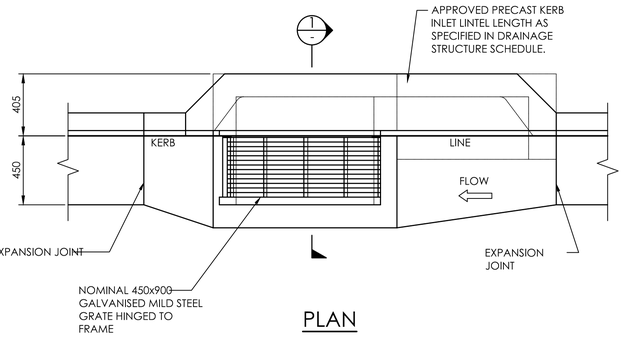


SECTION 1/-
SCALE 1:20

SCHEDULE OF STORMWATER DRAINAGE STRUCTURES		
PIT CLEAR INTERNAL DIMENSION SIZE AND TYPE	STRUCTURE NUMBER	NOTES
1.8m LINTEL KERB INLET PIT TYPE 'C' WITH CLASS 'D' GRATE AND FRAME	A7	
900 x 900 SURFACE INLET PIT TYPE 'A' WITH CLASS B GRATE AND FRAME	A5, A6, B1, B2, B3, B4, B5, B6, C4, A8, E1	PIT B2, B4 AND C4 TO BE CONSTRUCTED WITH OCEAN GUARD FILTER BASKET, SURFACE INLET TREATMENT AS PER DETAILS
900 x 900 SURFACE INLET PIT TYPE 'A' WITH CLASS D GRATE AND FRAME	C2, C5	PITS C2, C5 TO BE CONSTRUCTED WITH OCEAN GUARD FILTER BASKET. PROVIDE DROP PIT ARRANGEMENT FOR C2 AND SURFACE INLET TREATMENT FOR PIT C5. REFER TO DETAILS
900 x 900 JUNCTION PIT TYPE 'A' WITH CLASS B GRATE AND FRAME	A4, C1, E2	
600 x 600 SURFACE INLET PIT TYPE 'A' WITH CLASS B GRATE AND FRAME	A1, A2, A3, D1, G1	
600 x 600 SURFACE INLET PIT TYPE 'A' WITH CLASS D GRATE AND FRAME	F1	
2250Ø STORMWATER MANHOLE	B7, C6	REFER TO OCEAN PROTECT DRAWINGS AND SPECIFICATION FOR CONFIGURATION AND DETAILS
EXISTING COUNCIL PIT TO BE INVESTIGATED FURTHER AT DETAIL DESIGN STAGE	A9	COUNCIL PIT NO. SPP50073 (INFORMATION FROM NORTHERN BEACHES COUNCIL E-SERVICES)

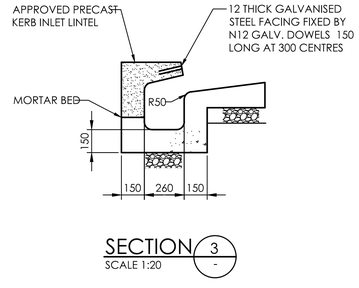


RAINWATER OUTLET DETAIL
SCALE 1:10



PLAN

KERB INLET PIT TYPE "C"
SCALE 1:20



SECTION 3/-
SCALE 1:20

ISSUE	AMENDMENT	DATE	DRAWN	APP
A	ISSUE FOR DEVELOPMENT APPLICATION	17.04.24	JL	NP

CLIENT
THOMPSON HEALTH CARE
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ARCHITECT
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CIVIL CONSULTANT
ENTEC CONSULTANTS

PROJECT
THOMPSON HEALTH BASSETT
PROPOSED AGED CARE FACILITY
23 & 25 BASSETT STREET,
MONA VALE, N.S.W. 2103

NORTH POINT

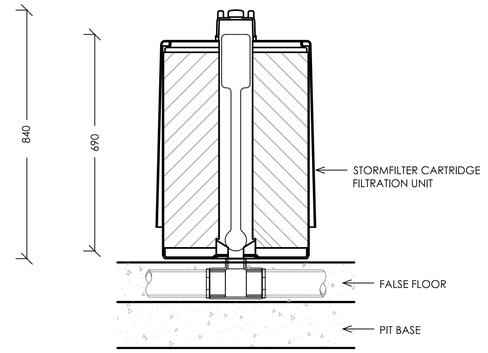
DRAWING TITLE
DETAILS - SHEET 1

DRAWN	DATE	SCALE	A1	QA CHECK	DATE
JL	APRIL 24	1:20			
DESIGNED	PROJECT NO.			DRAWING NO.	ISSUE
NP	230127			C1.05	A

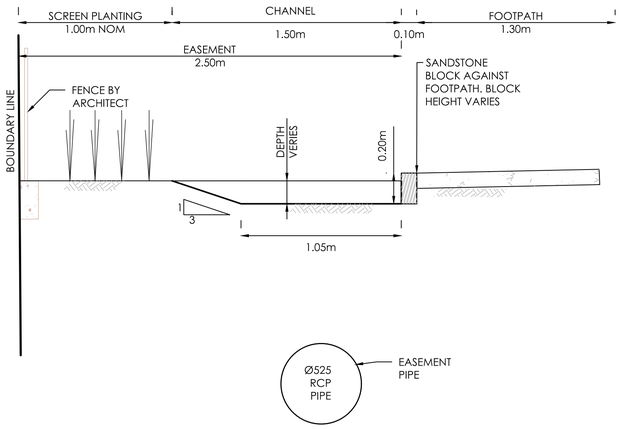
STORMFILTER DESIGN TABLE

- STORMFILTER TREATMENT CAPACITY VARIES BY NUMBER OF FILTER CARTRIDGES INSTALLED.
- THE STANDARD CONFIGURATION IS SHOWN. ACTUAL CONFIGURATION OF THE SPECIFIED STRUCTURE(S) PER THE MANUFACTURER'S CERTIFYING ENGINEER WILL BE SHOWN ON SUBMITTAL DRAWING(S).
- FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 178mm.

CARTRIDGE NAME / SIPHON HEIGHT (mm)	690
CARTRIDGE PHYSICAL HEIGHT (mm)	840
TYPICAL WEIR HEIGHT [H] (mm)	920
CARTRIDGE FLOW RATE FOR PSORB MEDIA (L/s)	0.9



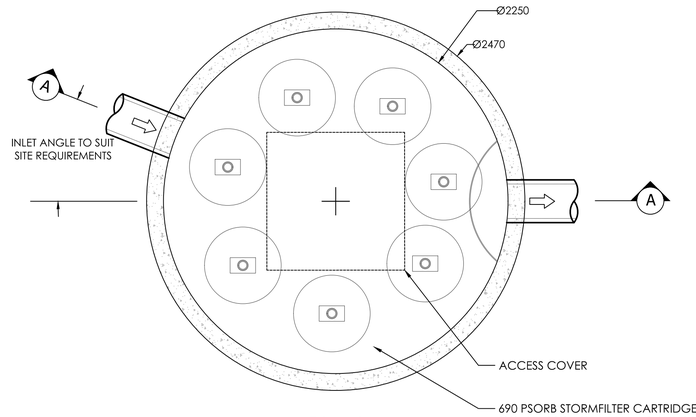
STORMFILTER CARTRIDGE DETAIL



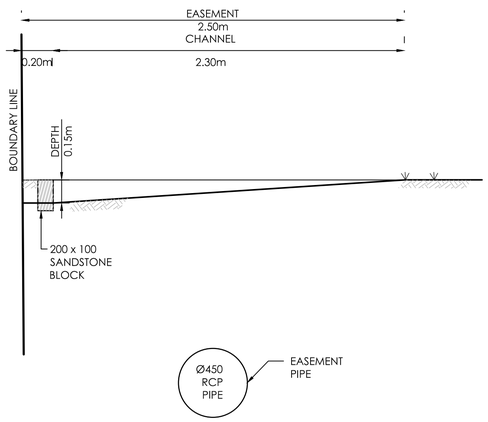
TYPICAL EASEMENT CHANNEL ALONG EASTERN BOUNDARY SECTION

01 C3.01

SCALE 1:20



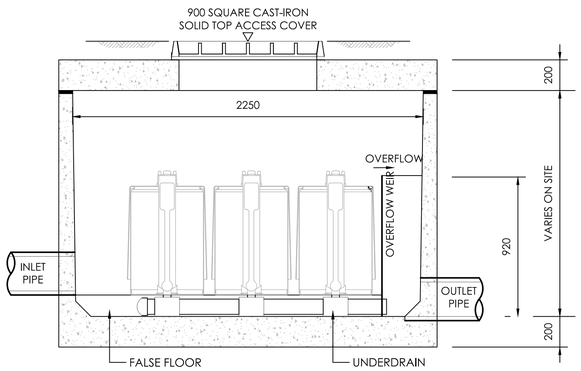
PLAN



TYPICAL EASEMENT CHANNEL ALONG SOUTH BOUNDARY SECTION

02 C3.01

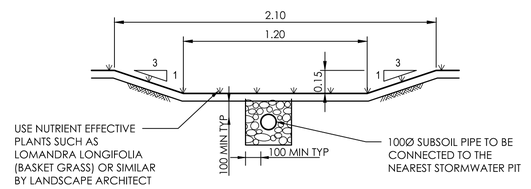
SCALE 1:20



SECTION A-A

TYPICAL CARTRIDGE STORMFILTER SYSTEM MANHOLE DETAIL

NOT TO SCALE



TYPICAL SECTION THROUGH SWALE

N.T.S.

ISSUE	AMENDMENT	DATE	DRAWN	APP

CLIENT
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CIVIL CONSULTANT
ENTEC CONSULTANTS

PROJECT
THOMPSON HEALTH BASSETT
PROPOSED AGED CARE FACILITY
23 & 25 BASSETT STREET,
MONA VALE, N.S.W. 2103

NORTH POINT

DRAWING TITLE
DETAIL - SHEET 2

DRAWN	DATE	SCALE	A1	QA CHECK	DATE
JL	APRIL 24	N/A			
DESIGNED	PROJECT NO.			DRAWING NO.	ISSUE
NP	230127			C1.06	A

NOTE:

EXISTING SITE SERVICES HAVE BEEN SHOWN INDICATIVELY ONLY AND BASED THE SITE SURVEY PREPARED BY BY BEE & LETHBRIDGE PTY LTD ON 14.11.2019

EXISTING 1m WIDE EASEMENT TO BE MADE REDUNDANT

EXISTING 1m DRAINAGE EASEMENT TO BE REATAINED

EXISTING STORMWATER DRAINAGE SHOWN BASED ON SURVEY UNDERTAKEN BY BEE & LETHBRIDGE PTY. LTD ON 04.03.2005 AND 14.11.2019 SHALL BE DECOMMISSIONED AND REMOVED FROM SITE DURING DEMOLITION WORKS. TYPICAL

EXISTING SUBSTATION TO BE RELOCATED. DETAILS BY ASP3 DESIGNER

EXISTING SERVICES SHOWN BASED ON SURVEY UNDERTAKEN BY BEE & LETHBRIDGE PTY. LTD ON 04.03.2005 AND 14.11.2019 CONTRACTOR TO OBTAIN RELEVANT PERMISSIONS AND RELOCATE EXISTING SERVICES PRIOR TO DEMOLITION OR EXCAVATION WORKS. TYPICAL

EXISTING REDUNDANT STORMWATER PIT AND ASSOCIATED PIPEWORK WITHIN ROAD RESERVE TO BE DEMOLISHED AND REMOVED FROM SITE. MAKE GOOD EXISTING FINISHES. CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS FROM COUNCIL PRIOR TO WORKS

BENCH MARK
CUT ON KERB
RL. 4.43 A.H.D

BASSET STREET

BASSET STREET

BARRENJOEY ROAD

DIAL BEFORE YOU DIG

DIAL BEFORE YOU DIG www.1100.com.au

IMPORTANT: THE CONTRACTOR IS TO MAINTAIN A CURRENT SET OF "DIAL BEFORE YOU DIG" DRAWINGS ON SITE AT ALL TIMES.

ISSUE	AMENDMENT	DATE	DRAWN	APP
A	ISSUE FOR DEVELOPMENT APPLICATION	17.04.24	JL	NP

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ENTEC CONSULTANTS

PROJECT
THOMPSON HEALTH BASSETT
PROPOSED AGED CARE FACILITY
23 & 25 BASSETT STREET,
MONA VALE, N.S.W. 2103

NORTH POINT

DRAWING TITLE
EXISTING SERVICES AND SURVEY PLAN

DRAWN	DATE	SCALE A1	QA CHECK	DATE
JL	APRIL 24	N/A		
DESIGNED	PROJECT NO.	DRAWING NO.	ISSUE	
NP	230127	C3.00	A	

200mm WIDE SANDSTONE BLOCK TO BE INSTALLED ALONG THE BOUNDARY TO CREATE BUND FOR THE OVERLAND FLOW PATH

USIL 2.28 Ø450 RCP 0.33 % 29.0 m DSIL 2.19

RETAINING WALL ENDS HERE. REMOVE RETAINING WALL PAST THIS POINT

EXISTING PIT TO BE RE-CONSTRUCTED. CL3.85 IL 2.28

TOTAL AREA TO PROPOSED SWALE: 570m² % IMPERVIOUS = 39%

DROPPER FROM TERRACE TO DRAIN TO SWALE

EXISTING EASEMENT PIPELINE TO REMAIN

REFER TO SWALE DETAILS ON DRAWING C1.06

RAINWATER OUTLETS TO BE Ø150 ROUND PUSH-IN FLOOR DRAINS. SPS 150SR4 OR APPROVED EQUIVALENT. TYPICAL UNO

EXISTING STORMWATER PIT CL 3.95 IL3.04

INDICATIVE LOCATION OF EXISTING STORMWATER EASEMENT
NOTE:
CONTRACTOR TO LOCATE AND VERIFY ON SITE ALL THE EXISTING CONNECTIONS TO THE EASEMENT FROM PROPERTIES ON HEATH STREET

USIL 2.19 Ø450 RCP 0.33 % 8.5 m DSIL 2.16

DN2250 MANHOLE OR EQUIVALENT WITH 4 x 690 STORMFILTER CARTRIDGES. REFER TO DETAIL ON DRAWING C1.06

40% ROOF AREA TO STORMFILTERS

USIL 2.28 Ø300 RCP 1.0 % 1.5 m DSIL 2.26

USIL 2.16 Ø525 RCP 0.33 % 23.2 m DSIL 2.09

USIL 2.34 Ø300 RCP 0.9 % 3.3 m DSIL 2.31

USIL 2.60 Ø300 RCP 1.0 % 21.8 m DSIL 2.36

USIL 2.34 Ø225 uPVC 0.5 % 7.7 m DSIL 2.31

18.20m SWALE LENGTH

EXISTING EASEMENT TO BE EXTINGUISHED AS PART OF DEVELOPMENT BY REGISTERED SURVEYOR. DEMOLISH AND REMOVE FROM SITE REDUNDANT STORMWATER PITS AND PIPES. TYP UNO

USIL 2.75 Ø300 RCP 1.0 % 12.5 m DSIL 2.62

PROPOSED LEVEL UNDER THE TERRACE

39.10m SWALE LENGTH

USIL 2.88 Ø300 RCP 0.5 % 21.0 m DSIL 2.76

USIL 2.98 Ø300 RCP 0.5 % 15.2 m DSIL 2.90

USIL 3.06 Ø225 uPVC 0.5 % 11.8 m DSIL 2.98

PROPOSED 1050mm WIDE EASEMENT CHANNEL FOR OVERLAND AND FLOOD FLOW

2.5m WIDE EASEMENT AS PER COUNCIL DCP REQUIREMENTS

REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS OF DRIVEWAY RAMP GRADES TO BASEMENT LEVEL

PROPOSED LEVEL UNDER THE COUTYARD. TYPICAL

SCREEN PLANTING ALONG BOUNDARY TO CONSIST OF SHRUBS, HEDGING AND OTHER MINOR PLANTING TO ALLOW FUTURE MAINTENANCE OF EASEMENT. REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR DETAILS

NOMINAL FFL 5.00

200mm WIDE SANDSTONE BLOCK TO BE INSTALLED ALONG FOOTPATH. TYPICAL

USIL 2.27 Ø0.225 1.0 % 10.5 m DSIL 2.16

USIL 2.18 Ø375 RCP 1.0 % 3.3 m DSIL 2.15

USIL 2.09 Ø525 RCP 0.33 % 26.5 m DSIL 2.00

PROVIDE 1:40 FOOTPATH CROSSFALL TO DRAIN INTO CHANNEL. TYPICAL

TOP OF BASEMENT SHORING WALL TO BE SET IN MINIMUM RL5.00 FOR FLOOD PROTECTION OF BASEMENT. TYPICAL

USIL 3.95 Ø225 uPVC 2.5 % 24.0 m DSIL 3.40

USIL 3.50 Ø225 uPVC 1.5 % 21.0 m DSIL 3.18

EXISTING SUBSTATION TO BE RELOCATED

CONSTRUCT NEW 900x900 BOUNDARY STORMWATER INLET PIT CL3.40

USIL 2.00 Ø600 RCP 1.0 % 6.6 m DSIL 1.93

USIL 2.13 Ø375 RCP 1.2 % 12.0 m DSIL 1.98

14.50m SWALE LENGTH

Ø150 OVERFLOW PIPE DSIL 4.62

INDICATIVE LOCATION OF PROPOSED SUBSTATION. EXACT LOCATION OF PROPOSED SUBSTATION TO BE DETERMINED TO ENSURE IT DOESN'T CLASH WITH EXISTING EASEMENT AND SERVICES

CONTRACTOR TO DETERMINE LOCATION AND DEPTH OF ALL EXISTING SERVICES PRIOR TO CONSTRUCTION WORKS

EX TOK 4.05

DN2250 MANHOLE OR EQUIVALENT WITH 7 x 690 STORMFILTER CARTRIDGES. REFER TO DETAIL ON DRAWING C1.06

USIL 2.35 Ø375 RCP 1.0 % 15.5 m DSIL 2.19

150x100 RHS OUTLET

USIL 2.58 Ø375 RCP 0.7 % 25.0 m DSIL 2.38

USIL 2.97 Ø300 RCP 3.7 % 11.4 m DSIL 2.65

USIL 3.10 Ø300 RCP 2.1 % 24.6 m DSIL 2.62

30,000L PANTHER ROUND CONCRETE 4.6M DIA.TANK WITH MIN 20,000L EFFECTIVE STORAGE. CONNECT RAINWATER TANK OVERFLOW TO STORMWATER PIT

USIL 1.93 Ø600 RCP 0.9 % 6.5 m DSIL 1.87

EXISTING COUNCIL STORMWATER PIPELINE 450 RCP

EXISTING COUNCIL STORMWATER PIT SPP50073 I.L 1.695

CONSTRUCT NEW 900x900 STORMWATER PIT OVER EXISTING COUNCIL STORMWATER PIPELINE EXISTING COUNCIL STORMWATER PIPELINE INVERT LEVEL I.L 1.77 FROM INTERPOLATION. CONTRACTOR TO CONFIRM INVERT LEVEL PRIOR TO ANY WORKS

CONSTRUCT 450 x 450 STORMWATER PIT WITHIN BASEMENT COURTYARD AND CONNECT TO BASEMENT STORMWATER SYSTEM

AREA TO SWALE: 100m² % IMPERVIOUS = 0%

60% ROOF TO RWT. RWT OVERFLOW TO STORMFILTERS

200 WIDE x 200 DEEP GRATED DRAIN TO FLOW INTO THE SWALE VIA 1 x 150x100 RHS REF TO DETAILS ON SHEET C1.06

OVERLAND FLOW DIRECTED TO REAR OF PROPERTY TO ENABLE FLOOD STORAGE DURING LARGE STORM EVENTS. REFER TO FLOOD RISK MANAGEMENT PLAN FOR FURTHER DETAILS

BASSET STREET

BASSET STREET

BARRENJOEY ROAD

NOTES

1. REFER TO ENTEC FLOOD RISK MANAGEMENT PLAN FOR DETAILS OF FLOOD LEVELS AND FLOOD MANAGEMENT STRATEGY.
2. ALL RETAINING WALLS, PLANTERS AND LANDSCAPED AREAS TO CONTAIN SUBSOIL DRAINAGE AND BE CONNECTED TO THE PROPOSED SITE STORMWATER DRAINAGE NETWORK. DESIGN OF SUBSOIL DRAINAGE TO BE UNDERTAKEN DURING THE CONSTRUCTION CERTIFICATE DESIGN STAGE.
3. MIN. BASEMENT PUMP-OUT TANK STORAGE VOLUME TO BE 31.2m³ BASED ON THE FOLLOWING CALCULATIONS:

   SURFACE AREA RUNOFF DRAINING TO BASEMENT = 189 m²
   1% AEP 3-HOUR RAINFALL INTENSITY = 37.4 mm/hr
   Q100 FLOW RATE = 1.96 L/s
   REQUIRED 3-HOUR STORAGE VOLUME =21.2 m³

   A NOMINAL 10m³ STORAGE VOLUME FOR GROUNDWATER SEEPAGE INTO BASEMENT HAS BEEN ALLOWED FOR IN THE DESIGN. TBC BY GEOTECHNICAL ENGINEER.

   TOTAL PUMP-OUT TANK VOLUME REQUIRED = 31.2 m³
4. NO ON-SITE DETENTION HAS BEEN PROVIDED FOR THIS DEVELOPMENT AS IT IS A FLOOD CONTROL LOT, AS PER COUNCIL'S DIRECTION.

ISSUE	AMENDMENT	DATE	DRAWN	APP
A	ISSUE FOR DEVELOPMENT APPLICATION	17.04.24	JL	NP

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CIVIL CONSULTANT
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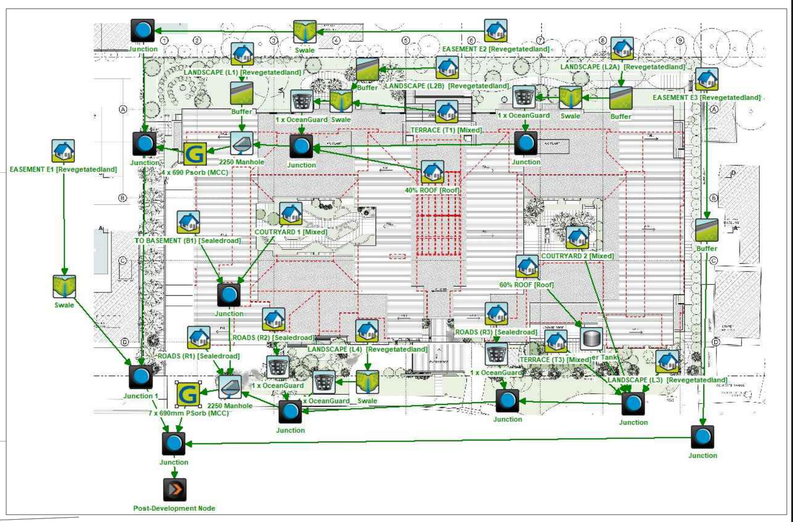
PROJECT
THOMPSON HEALTH BASSETT
PROPOSED AGED CARE FACILITY
23 & 25 BASSETT STREET,
MONA VALE, N.S.W. 2103

NORTH POINT

DRAWING TITLE
CIVIL WORKS PLAN

DRAWN	DATE	SCALE A1	QA CHECK	DATE
JL	APRIL 24	N/A		
DESIGNED	PROJECT NO.		DRAWING NO.	ISSUE
NP	230127		C3.01	A

WSUD CATCHMENT DETAILS				
CATCHMENT	TYPE	AREA (m2)	IMPERVIOUS (%)	REMARKS
	ROOF (60%)	2350	100	DRAINING TO RAINWATER TANK & FILTER CARTRIDGES
	ROOF (40%)	1390	100	DRAINING TO FILTER CARTRIDGES
	TERRACE	125	75	DRAINING TO FILTER CARTRIDGES
	COURTYARD	410	42	DRAINING TO FILTER CARTRIDGES
	LANDSCAPE	400	0	DRAINING TO FILTER CARTRIDGES
	EASEMENT	735	18	BYPASS TREATMENT TRAIN
	ROAD	255	100	DRAINING TO FILTER BASKETS AND FILTER CARTRIDGES
	DRIVEWAY TO BASEMENT	130	100	PUMP OUT TO FILTER CARTRIDGES
	LANDSCAPE, ROAD, TERRACES	715	39	DRAINING TO SWALES AND TO FILTER CARTRIDGES



MUSIC MODEL

ACHIEVED WATER QUALITY TARGETS AS PER NORTHERN BEACHES COUNCIL DCP REQUIREMENTS;

GROSS POLLUTANT LOADS 90%
TOTAL SUSPENDED SOLIDS 85%
TOTAL PHOSPHORUS 65%
TOTAL NITROGEN 45%

Treatment Train Effectiveness - Post-Development Node

	Sources	Residual Load	% Reduction
Flow (ML/yr)	6.8	6.31	7.3
Total Suspended Solids (kg/yr)	676	100	85.1
Total Phosphorus (kg/yr)	1.69	0.479	71.6
Total Nitrogen (kg/yr)	15	7.42	50.5
Gross Pollutants (kg/yr)	162	2.34	98.6

ISSUE	AMENDMENT	DATE	DRAWN	APP
A	ISSUE FOR DEVELOPMENT APPLICATION	17.04.24	JL	NP

CLIENT
THOMPSON HEALTH CARE
PO BOX 658
GORDON NSW 2072
PHONE : (02) 8467 9333

ARCHITECT
BARTNERTROVATO ARCHITECTS
90/47 MONA VALE RD
MONA VALE NSW 2103
PHONE : (02) 9979 4411

CIVIL CONSULTANT
ENTEC CONSULTANTS

PROJECT
THOMPSON HEALTH BASSETT
PROPOSED AGED CARE FACILITY
23 & 25 BASSETT STREET,
MONA VALE, N.S.W. 2103

NORTH POINT

DRAWING TITLE
CATCHMENT PLAN

DRAWN	DATE	SCALE	QA CHECK	DATE
JL	APRIL 24	A1 N/A		
DESIGNED	PROJECT NO.		DRAWING NO.	ISSUE
NP	230127		C3.15	A

INSTALL TEMPORARY ROCK CHECK DAMS TO CUT OFF SWALE AT APPROX. 20m CENTRES

CUTOFF SWALE DRAIN

BASEMENT WALL OUTLINE

PROVIDE MOBILE SEDIMENT CONTROL TANK SYSTEM IN ACCORDANCE WITH LANDCOM BLUE BOOK REQUIREMENTS

INSTALL TEMPORARY SEDIMENT FENCE TO BOUNDARY PERIMETER. REFER TO DETAIL ON DRAWING C5.02

STOCKPILE

INDICATIVE LOCATION OF STOCKPILE WITH WIND EROSION FENCE. EXACT LOCATION TBC ON SITE BY THE CONTRACTOR

CONSTRUCT TEMPORARY STABILISED CONSTRUCTION EXIT. EXACT LOCATION TO BE DETERMINED ONSITE BY THE CONTRACTOR. REFER TO DETAIL ON DRAWING C5.02

PROVIDE SANDBAG SEDIMENT TRAP. TYPICAL REFER TO DETAIL ON DRAWING C5.02

BASSET STREET

BASSET STREET

BENCH MARK CUT ON KERB RL. 4.43 A.H.D

BARRENJOEY ROAD

ISSUE	AMENDMENT	DATE	DRAWN	APP
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THOMPSON HEALTH BASSETT
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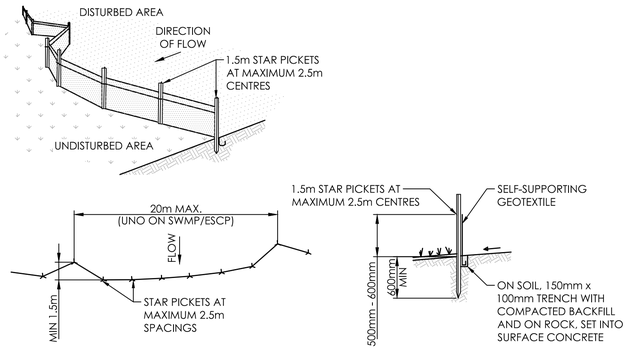
MONA VALE, N.S.W. 2103

NORTH POINT

DRAWING TITLE
SOIL EROSION AND SEDIMENT CONTROL PLAN

DRAWN	DATE	SCALE	A1	QA CHECK	DATE
JL	APRIL 24	N/A			
DESIGNED	PROJECT NO.	DRAWING NO.	ISSUE
NP	230127	C5.01	A

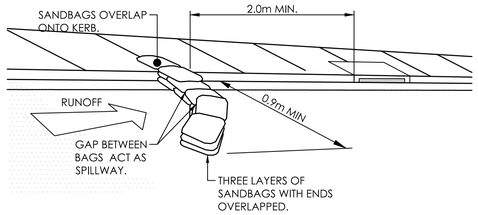


CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND, 2.5 METRES APART (MAX). ENSURE STAR PICKETS ARE FITTED WITH SAFETY CAPS.
3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.

SEDIMENT CONTROL FENCE

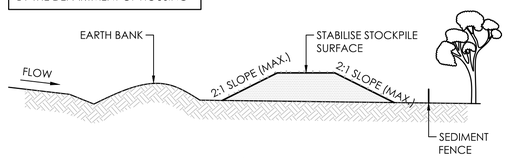
N.T.S.



SANDBAG KERB INLET SEDIMENT TRAP

N.T.S.

SOURCE:
MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION, THIRD EDITION, AUGUST 1998 PRODUCED BY THE DEPARTMENT OF HOUSING



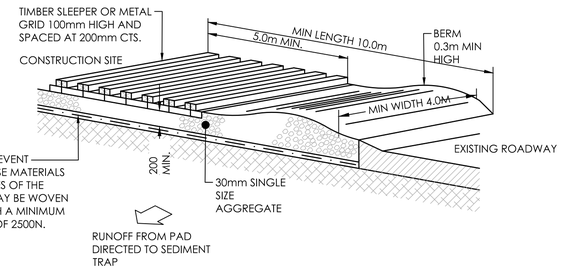
CONSTRUCTION NOTES

1. LOCATE STOCKPILE AT LEAST 5 METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS A LOW, FLAT, ELONGATED MOUND.
3. WHERE THERE IS SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METERS IN HEIGHT.
4. REHABILITATE IN ACCORDANCE WITH THE SWMP/ESCP.
5. CONSTRUCT EARTH BANK (STANDARD DRAWING 5-2) ON THE UPSLOPE SIDE TO DIVERT RUN OFF AROUND THE STOCKPILE AND A SEDIMENT FENCE (STANDARD DRAWING 6-7) 1 TO 2 METRES DOWNSLOPE OF STOCKPILE.

STOCKPILES

N.T.S.

NOTE
ENSURE THAT ALL UTILITY ASSETS ARE MAINTAINED AND PROTECTED AT ALL TIMES IN THE VICINITY OF THE TEMPORARY CONSTRUCTION EXIT



CONSTRUCTION NOTES

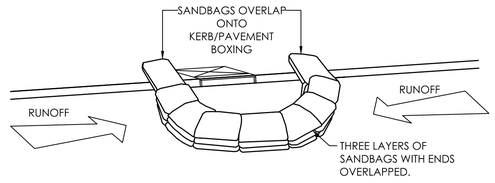
1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING 30mm SINGLE SIZE AGGREGATE.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP WHERE THE SEDIMENT IS COLLECTED AND REMOVED.

MAINTENANCE NOTES

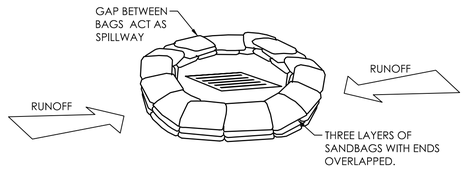
THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT OFF THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED OFF THE CONSTRUCTION SITE MUST BE REMOVED IMMEDIATELY.

TEMPORARY STABILISED CONSTRUCTION EXIT

N.T.S.



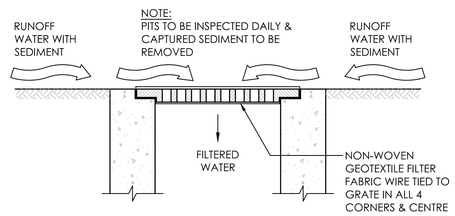
SANDBAG SEDIMENT TRAP - AT KERB SAG PIT



SANDBAG SEDIMENT TRAP - AT OTHER THAN KERB SAG PIT

SANDBAG SEDIMENT TRAP DETAILS

NTS



INLET TRAP

N.T.S.

NOTE
TO BE USED IN PAVED AREAS WHERE TRAFFIC ACCESS IS REQUIRED

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A	ISSUE FOR DEVELOPMENT APPLICATION	17.04.24	JL	NP

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PROJECT
THOMPSON HEALTH BASSETT
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23 & 25 BASSETT STREET,
MONA VALE, N.S.W. 2103

NORTH POINT

DRAWING TITLE
SOIL EROSION AND SEDIMENT CONTROL DETAILS

DRAWN	DATE	SCALE	QA CHECK	DATE
JL	APRIL 24	A1 N/A		
DESIGNED	PROJECT NO.	DRAWING NO.	ISSUE	
NP	230127	C5.02	A	

Appendix B – Council Water Management Referral Response (26/11/2020)

Water Management Referral Response

Application Number:	DA2020/0816

Date:	26/11/2020
To:	Adam Croft
Land to be developed (Address):	Lot 38 DP 7236 , 23 Bassett Street MONA VALE NSW 2103 Lot 2 DP 748426 , 33 Bassett Street MONA VALE NSW 2103

Reasons for referral

Council's Water Management Officers are required to consider the likely impacts.

Officer comments

Referral comments 18/11/20 - recommended for approval
The applicant has provided revised stormwater plans and a written response. The only change is to include two small swales.
Due to the highly impervious nature of the site and the water use expected from the large number of residents, the concern remains that this development does not meet Council's objectives for water sensitive urban design.
The applicant has claimed that biofiltration is not possible in flood-affected areas. Bio-filtration is designed to capture and treat flows during normal, small rainfall events and therefore they are suitable for use in flood-affected areas. The swales that have been added to the design do not make a significant difference to water quality due to their small area and the lack of roof catchment draining to them, but they will contribute to increased infiltration.
The applicant has claimed that rainwater/stormwater reuse is not possible in aged care due to infection risk. The Seniors SEPP specifies in Clause 36 that re-use should be incorporated where practical for second quality water uses (this includes toilets and laundry). The NSW Health guidelines for stormwater re-use state that rainwater/stormwater in aged care developments only needs to be treated to a very high level if being used for drinking. It is not accepted that re-use will create an unacceptable maintenance load.

While this proposal meets Council's requirements for water quality, it does not meet the requirements for water sensitive urban design. The addition of the swales is welcomed and must be retained, as infiltration is necessary to supplement flows to the coastal sands aquifer under the site.

The applicant is conditioned to include water re-use for toilets as a minimum (laundries should be included as well), which will reduce their consumption of potable water and the quantity of runoff from the site.

This referral supports the increase of deep soil landscaped area of the site wherever or however possible, as this will contribute to further infiltration of stormwater.

Referral comments 15/8/20
The applicant was provided with additional advice on what Council's expectations were for water management (email to Shebak Khan, ACOR Consultants):

"You will note that Pittwater 21 DCP B5.9 requires that you demonstrate application of water sensitive

urban design principles in your approach.

In the Northern Beaches, we consider the WSUD principles to be represented in development through:

1. Protecting and enhancing receiving environments
2. Appropriate treatment for reuse or discharge to receiving environments
3. Reducing potable water demand
4. Minimising wastewater generation and treating for reuse
5. Integrated vegetated stormwater treatment and harvesting systems into the landscape
6. Increased biodiversity, amenity and micro-climate benefits
7. Providing green infrastructure and green links.

While you have met the ‘targets’ for water quality, filters are not the best solution and may not remove as many pollutants (especially dissolved nutrients) as a vegetated device given equal maintenance conditions.

The design includes a 30kL rainwater tank. 1500sqm of landscaping typically requires 30kL water a year, perhaps less when a percentage of your landscaped area is paving, shaded, and the site is on the coast and receives a fair amount of rainfall. There is likely to be insufficient demand for the water in the external areas.

Filters are below ground and therefore owners cannot easily determine when they require maintenance.

The landscaping is all narrow strips around the perimeter of the lot, and is unlikely to provide any significant biodiversity or micro-climate benefits.

There is limited capacity to reduce potable water demand, and there is no recycling proposed.

There is no green infrastructure, although rainwater is being captured for use on landscaping.

To apply water sensitive design to a greater degree the development must consider one or more of the following:

- reduce their footprint to allow the incorporation of a vegetated stormwater device. This would need to be approximately 85sqm and could include swales, bio-retention strips alongside roads/paths. There are many ways to include treatment without having one large basin.
- Reuse rainwater internally for toilets and laundry and cooling towers (if used). Treatment is not required for any of these uses, and with the number of residents expected, will significantly increase reuse and reduce potable water demand.
- Incorporation of a roof garden, or green roof given the significant roof space available.

"

Referral comments 30/7/20
The use of filter cartridges for the removal of stormwater pollutants is not accepted for this development. The lot is located over a coastal sands groundwater aquifer and infiltration is important to maintain a balance against sea water ingress. Filters also fail to remove dissolved nutrients, and do not meet other objectives of water sensitive urban design.

The applicant must incorporate a vegetated infiltration device that removes pollutants according to the targets GPT 90, TSS 85, TP 65, TN 45 and a MUSIC model file to allow Council to check the parameters used.

The proposal is therefore supported.

Note: Should you have any concerns with the referral comments above, please discuss these with the Responsible Officer.

Recommended Water Management Conditions:

CONDITIONS TO BE SATISFIED PRIOR TO THE ISSUE OF THE CONSTRUCTION CERTIFICATE

Detailed Design of Stormwater Treatment Measures
A certificate from a Civil Engineer, stating that the stormwater treatment measures have been designed in accordance with the plans by ACOR Consultants, the conditions of the development consent and Council's Water Management for Development Policy.

The certificate shall be submitted to the Certifying Authority prior to the release of the Construction Certificate.

Reason: Protection of the receiving environment.

Roofwater re-use
The applicant must capture roof water for use for toilet flushing, connecting to at least 50 percent of toilets within the building. Roof water may also be used to irrigate landscaping and internally for washing machines. All stormwater treatment measures must make provision for convenient and safe regular inspection, periodic cleaning, and maintenance.

Details demonstrating compliance are to be submitted to the Certifying Authority for approval prior to the issue of the Construction Certificate.

Reason: To reduce potable water consumption and decrease stormwater runoff to protect receiving catchments.

Dewatering permit

A dewatering permit is required from Council's Catchment Team
at catchment@northernbeaches.nsw.gov.au to dewater tailwater from the sediment settling tank to be used as part of the sediment and erosion controls. The dewatering permit will also cover any dewatering required due to tailwater collecting in excavations.

To obtain a permit, the following information must be contained in a dewatering management plan and provided to Council's Catchment Team. The dewatering management plan must be certified by a suitably qualified civil engineer who has membership of Engineers Australia and appears on the National Engineering Register (NER).

1. Preliminary testing of groundwater/tailwater must be conducted by a NATA accredited laboratory to establish a correlation between NTU and TSS. This will allow the use of grab sampling at short notice prior to planned discharges.

2. Grab samples must be collected **within 1 hour before planned discharge** that comply with the parameters in the table below.

3. The groundwater/tailwater to be discharged must be compliant with the water quality requirements below, the General Terms of Approval/Controlled Activity permit issued by WaterNSW (if applicable), Landcom's 'Managing Urban Stormwater: Soils and Construction' (2004) (Blue Book), Council's Compliance and Enforcement Policy and legislation including Protection of the Environment Operations Act 1997 and Contaminated Lands Act 1997.

Water Quality (<one hour of planned discharge)

Oil and grease, not visible

pH, 6.5-8.5

Total Suspended Solids (TSS), <50mg/L NTU from a meter/grab sample

4. All approvals, water discharges and monitoring results are to be documented and kept on site. Copies of all records shall be provided to the appropriate regulatory authority, including Council, upon request.

5. Tailwater must be discharged to the nearest stormwater pit in accordance with Council's Auspec1 Design Manual and must not spread over any road, footpath and the like. Discharge to the kerb and gutter will not be accepted. Where there is no stormwater pit within 100 metres of the site, Council's Catchment Team must be contacted to discuss alternative arrangements.

On receipt of a satisfactory dewatering management plan, Council's Catchment Team will issue a permit that will allow dewatering for up to one year.

A dewatering permit must be obtained from Council prior to the issue of the Construction Certificate.

Reason: Protection of the receiving environment

CONDITIONS TO BE COMPLIED WITH DURING DEMOLITION AND BUILDING WORK

Substitution of Stormwater Treatment Measure
The substitution of an "equivalent" device for the stormwater treatment measure approved under the Development Consent must submitted to the Principal Certifying Authority for approval prior to installation.

Reason: To ensure stormwater is appropriately managed and in accordance with the Water Management for Development Policy.

Installation and Maintenance of Sediment and Erosion Control
Sediment and erosion controls must be installed in accordance with Landcom's 'Managing Urban Stormwater: Soils and Construction' (2004) and the Erosion and Sediment Control Plan prepared by ACOR Consultants.

Erosion and sediment controls are to be adequately maintained and monitored at all times, particularly after periods of rain, and shall remain in proper operation until all development activities have been completed and the site is sufficiently stabilised with vegetation.

Reason: To protect the surrounding environment from the effects of sedimentation and erosion from the site.

CONDITIONS WHICH MUST BE COMPLIED WITH PRIOR TO THE ISSUE OF THE OCCUPATION CERTIFICATE

Certification for the Installation of Stormwater Treatment Measures
A certificate from a Civil Engineer, who has membership to Engineers Australia and the National Engineers Register must be provided, stating that the stormwater treatment measures and rainwater reuse system have been installed in accordance with the plans prepared by ACOR Consultants. The certificate must confirm that stormwater treatment measures are completed, online, in good condition and are not impacted by sediment. Vegetated measures must exhibit an 80 percent survival rate of plantings.

The certificate shall be submitted to the Principal Certifying Authority prior to the release of the Occupation Certificate.

Reason: Protection of the receiving environment.

Positive Covenant, Restriction as to User and Registration of Encumbrances for Stormwater Treatment Measures
A positive covenant shall be created on the title of the land requiring the proprietor of the land to maintain the stormwater treatment measures in accordance with the standard requirements of Council, the manufacturer and as required by the Stormwater Treatment Measures Operation and Maintenance Plan.

A restriction as to user shall be created on the title over the stormwater treatment measures, restricting any alteration to the measures.

The terms of the positive covenant and restriction as to user are to be prepared to Council's standard requirements (available from Council) at the applicant's expense and endorsed by the Northern Beaches Council's delegate prior to lodgement with the Department of Lands. Northern Beaches Council shall be nominated as the party to release, vary or modify such covenant.

A copy of the certificate of title demonstrating the creation of the positive covenant and restriction as to user is to be submitted to the Principal Certifying Authority prior to the issue of the final Occupation Certificate.

Reason: To identify encumbrances on land, ensure ongoing maintenance, and ensure modification to the stormwater treatment measures is not carried out without Council's approval.

Stormwater Treatment Measures Operation and Maintenance Plan
An Operation and Maintenance Plan is to be prepared to ensure the proposed stormwater treatment measures remain effective.

The Plan must be attached to the Positive Covenant (and the community or strata management statement if applicable) and contain the following:

1. Detail on the stormwater treatment measures:
a) Work as executed drawings
b) Intent of the stormwater treatment measures including modelled pollutant removal rates
c) Site detail showing catchment for each device
d) Vegetation species list associated with each type of vegetated stormwater treatment measure
e) Impervious area restrictions to maintain the water balance for the site
f) Funding arrangements for the maintenance of all stormwater treatment measures
g) Identification of maintenance and management responsibilities
h) Maintenance and emergency contact information

2. Maintenance schedule and procedure - establishment period of one year following commissioning of the stormwater treatment measure:
a) Activity description, and duration and frequency of visits
Additionally for vegetated devices:
b) Monitoring and assessment to achieve an 80 percent survival rate for plantings
c) Management of weeds, pests and erosion, with weed and sediment cover limited to a maximum of 5 percent of the total area of the stormwater treatment measure

3. Maintenance schedule and procedure - ongoing
a) Activity description, and duration and frequency of visits
b) Routine maintenance requirements
c) Work Health and Safety requirements
d) Waste management and disposal
e) Traffic control (if required)
f) Renewal, decommissioning and replacement timelines and activities of all stormwater treatment measures (please note that a DA may be required if an alternative stormwater treatment measure is proposed)
g) Requirements for inspection and maintenance records, noting that these records are required to be maintained and made available to Council upon request.

Details demonstrating compliance shall be submitted to the Principal Certifying Authority prior to the release of the Occupation Certificate.

Reason: Protection of the receiving environment.

Works as Executed Drawings - Stormwater Treatment Measures
Works as Executed Drawings for the stormwater treatment measures must be prepared in accordance with Council's Guideline for Preparing Works as Executed Data for Council Stormwater Assets.

The drawings shall be submitted to the Principal Certifying Authority prior to the release of the Occupation Certificate.

Reason: Protection of the receiving environment.

Strata Management Statement
The Strata Management Statement must specifically list the stormwater treatment measures that will be maintained under strata title. The statement must also reference the approved Stormwater Treatment Measure Operation and Maintenance Plan.

Details demonstrating compliance shall be submitted to the Principal Certifying Authority prior to the release of the Occupation Certificate.

Reason: To ensure maintenance of all stormwater management assets and protection of the receiving environment.

Installation of Water Efficient Fittings
The following Water Efficiency Labelling and Standards (WELS) Scheme rated fittings must be installed:

a) 4 star dual-flush toilets
b) 3 star showerheads
c) 4 star taps (for all taps other than bath outlets and garden taps)
d) 3 star urinals
e) 3.5 star washing machines
f) 4 star dishwashers

A certificate from a licenced plumber shall be submitted to the Principal Certifying Authority prior to the release of the Occupation Certificate demonstrating compliance with this condition.

Reason: To conserve potable water.

Maintenance contract for stormwater filtration cartridges
A minimum of a five-year contract with a suitably qualified provider is required for the maintenance of the stormwater filtration cartridges.

A copy of the maintenance contract must be submitted to the Principal Certifying Authority prior to the issue of the final Occupation Certificate.

Reason: To ensure maintenance of the stormwater treatment measures.

ON-GOING CONDITIONS THAT MUST BE COMPLIED WITH AT ALL TIMES

Maintenance of Stormwater Treatment Measures
Stormwater treatment measures and rainwater reuse systems must be maintained at all times in accordance with the Stormwater Treatment Measure Operation and Maintenance Plan, manufacturer's specifications to achieve the required stormwater quality targets for the development.

Vegetated stormwater treatment measures must maintain an 80 percent survival rate of plantings and limit weed cover to no more than 10 percent of the total area of the stormwater treatment measure.

Reason: Protection of the receiving environment.