

STANDARD PUMP OUT DESIGN NOTES

- The pump out system shall be designed to be operated in the following manner:
- 1 - The pumps shall be programmed to work alternately to allow both pumps to have an equal operation load and pump life.
  - 2 - A float shall be provided to ensure that the minimum required water level is maintained within the sump area of the below ground tank. In this regard this float will function as an off switch for the pumps at the minimum water level. The same float shall be set to turn one of the pumps on upon the water level in the tank rising to approximately 300mm above the minimum water level. The pump shall operate until the tank is drained to the minimum water level.
  - 3 - A second float shall be provided at a high level, which is approximately the roof level of the below ground tank. This float shall start the other pump that is not operating and activate the alarm.
  - 4 - An alarm system shall be provided with a flashing strobe light and a pump failure warning sign which are to be located at the driveway entrance to the basement level. The alarm system shall be provided with a battery back-up in case of power failure.
  - 5 - A confined space danger sign shall be provided at all access points to the pump out storage tank in accordance with the Upper Parramatta River Catchment Trust OSD handbook.

DANGER

WHEN EXCAVATING WITHIN ANY SITE, FOOTPATH AND ROADWAY, ALL SERVICES SHALL BE LOCATED PRIOR TO COMMENCEMENT OF THE EXCAVATION WORKS.

CONTACT "DIAL BEFORE YOU DIG" ON PHONE No. 1100 OR GO TO THE WEB SITE

"www.1100.com.au"

WARNING

PUMP OUT SYSTEM  
FAILURE IN BASEMENT  
WHEN LIGHT IS FLASHING  
AND SIREN SOUNDING

BASEMENT PUMP OUT  
FAILURE WARNING SIGN

SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT

COLOURS:

"WARNING" = RED  
BORDER AND OTHER LETTERING = BLACK

DANGER

CONFINED SPACE  
NO ENTRY WITHOUT  
CONFINED SPACE  
TRAINING

CONFINED SPACE DANGER SIGN

A) A CONFINED SPACE DANGER SIGN SHALL BE POSITIONED IN A LOCATION AT ALL ACCESS POINTS, SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANK/S CONFINED SPACE.

B) MINIMUM DIMENSIONS OF THE SIGN - 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS) - 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES)

C) THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINUM OR POLYPROPYLENE

D) SIGN SHALL BE AFFIXED USING SCREWS AT EACH CORNER OF THE SIGN

COLOURS:

"DANGER" & BACKGROUND = WHITE  
ELLIPTICAL AREA = RED  
RECTANGLE CONTAINING ELLIPSE = BLACK  
BORDER AND OTHER LETTERING = BLACK

PLAN DETAIL OF PUMP-OUT SUMP

N.T.S

NOTE:  
1 - FOR ALL THE STRUCTURAL DETAILS REFER TO STRUCTURAL ENGINEER'S PLAN.  
2 - ALL THE AG LINES BEHIND THE BASEMENT WALLS TO BE CONNECTED TO PUMP-OUT SUMP.

AVERAGE DEPTH = 1.2 m  
WIDTH = 2.0 m  
LENGTH = 3.0 m  
VOLUME PROVIDED = 7.2 m³

STORMWATER PUMP-OUT SUMP

SECTION A  
SCALE NTS

COWPER

STREET

STREET

BOLD

LEGEND

- PROPOSED STORMWATER
- SURFACE FLOW ARROWS
- SUBSOIL DRAINAGE
- CLEANING EYE (OR INSPECTION EYE)
- PROPOSED STORAGE AREA
- FINISHED SURFACE LEVEL
- GRATED DRAIN

PUMP STORAGE VOLUME CALCULATION:  
 $I_{10/20} = 48.5 \text{ mm/hour} = 0.0485 \text{ m/hour}$   
AREA DISCHARGED TO PUMP STORAGE:  $A = 60 \text{ m}^2$   
 $Q = CIA$ , WHERE  $C = 1.0$  (REFER TO AS3500.3 5.4.6 (a))  
 $Q = 1.0 \times 0.0485 \times 60 = 2.8 \text{ m}^3/\text{hour}$   
PUMP HOLDING TANK VOLUME:  
REQUIRED VOLUME =  $2.8 \text{ (m}^3/\text{hour)} \times 2 \text{ (hour)} = 5.6 \text{ m}^3$   
VOLUME AVAILABLE =  $2 \text{ m} \times 3 \text{ m} \times 1.2 \text{ m} = 7.2 \text{ m}^3$

SCALE 1:100 @ A1

NOT FOR CONSTRUCTION

B	MINOR ARCHITECTURAL COMMENTS	28/08/2014	JAI	MBR
A	ISSUE FOR DEVELOPMENT APPLICATION	30/08/2014	PJC	JAB
Issue	Description	Date	Drawn	Design

Architect  
Idraft Group Pty Ltd  
PO Box 427  
Merrylands NSW 2160  
PHONE : (02) 8997 5888

Client  
Designer Home  
Constructions Pty Ltd  
Council  
Parramatta City Council

Certification By:  
John Koek  
(RPEQ #9607)

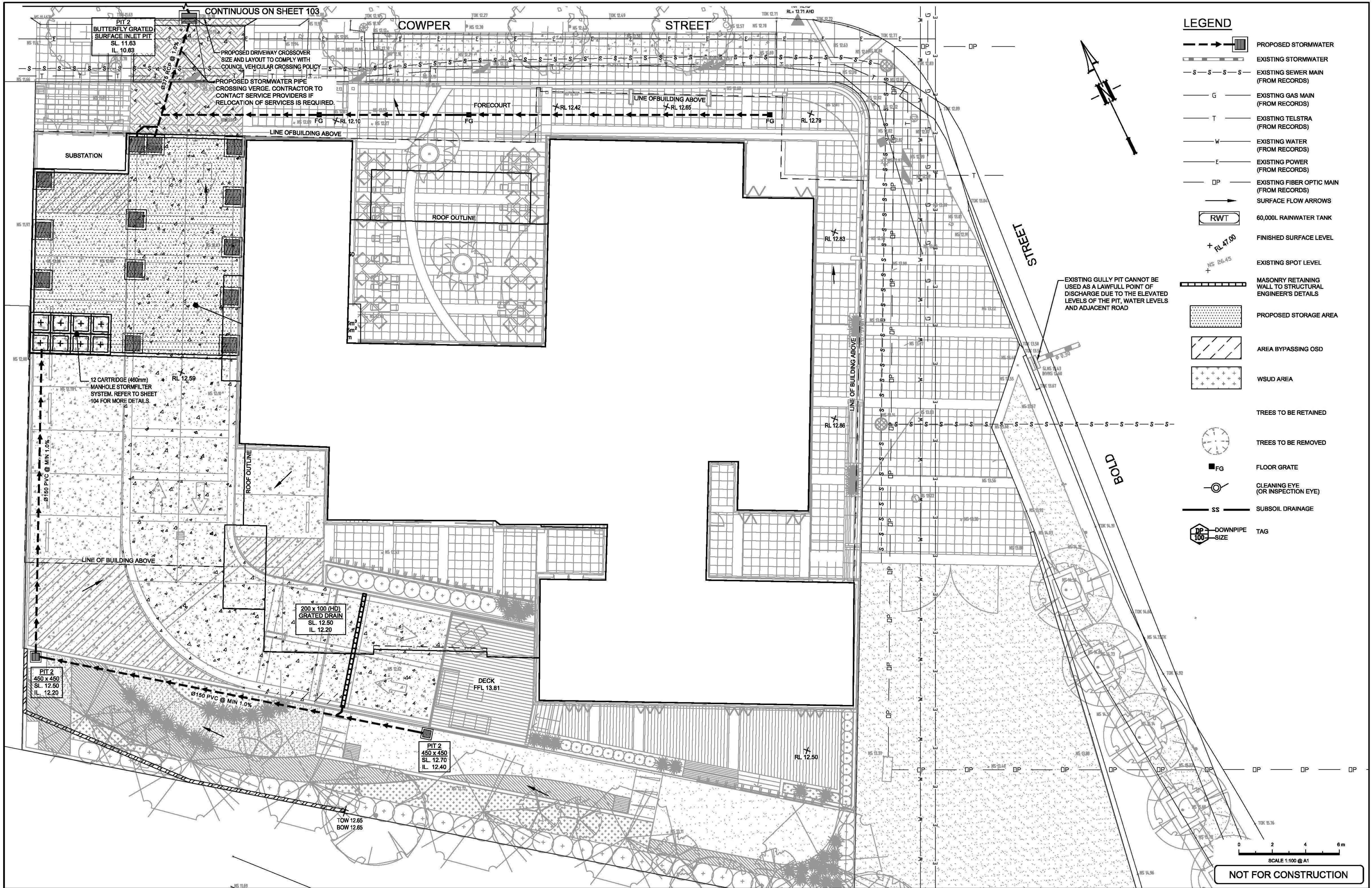
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Sydney + Brisbane  
www.umbrellaconsulting.com.au  
4 / 10 Columbia Way  
Baulkham Hills, NSW 2143  
PO Box 3579, Parramatta NSW 2124  
Tel: +61 2 8607 5051

Project  
2-6 BOLD STREET &  
80-82 COWPER STREET, GRANVILLE  
PROPOSED MIXED-USE DEVELOPMENT  
STORMWATER CONCEPT PLAN  
DEVELOPMENT APPLICATION

Drawing Title  
STORMWATER CONCEPT PLAN  
BASEMENT SECOND LEVEL  
Scale  
1:100  
Project No.  
UMB13035.SW.DA  
Dwg. No.  
101  
Issue





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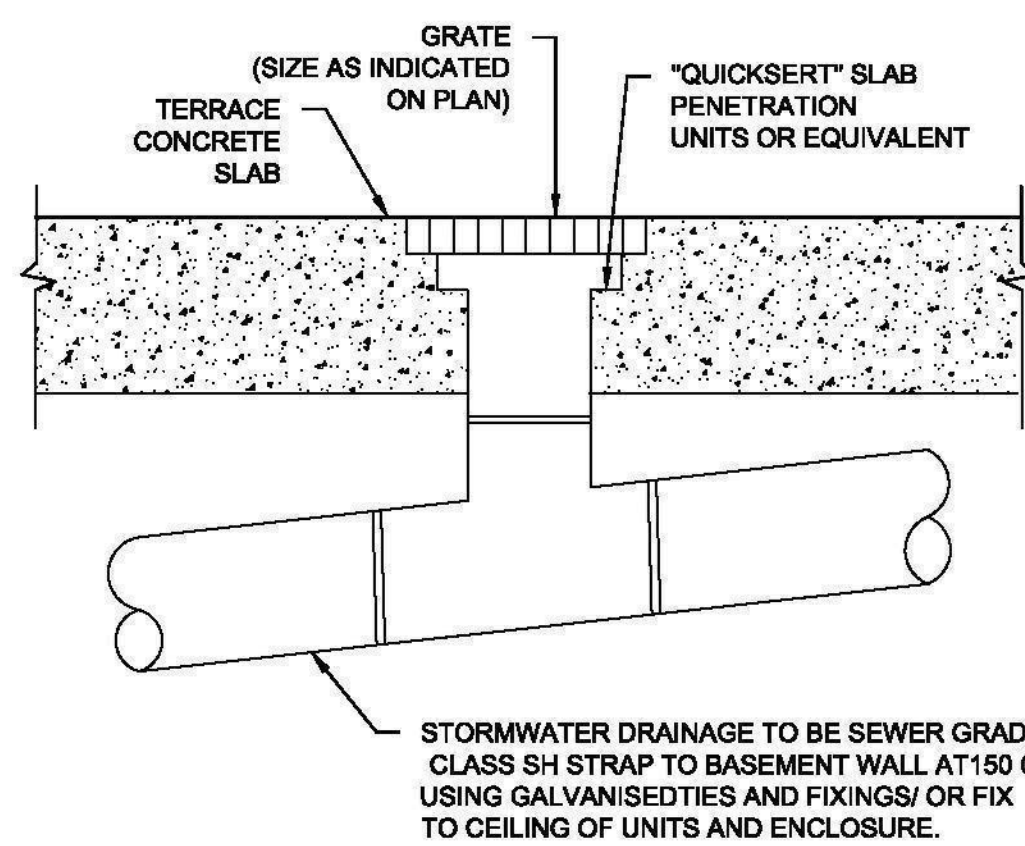
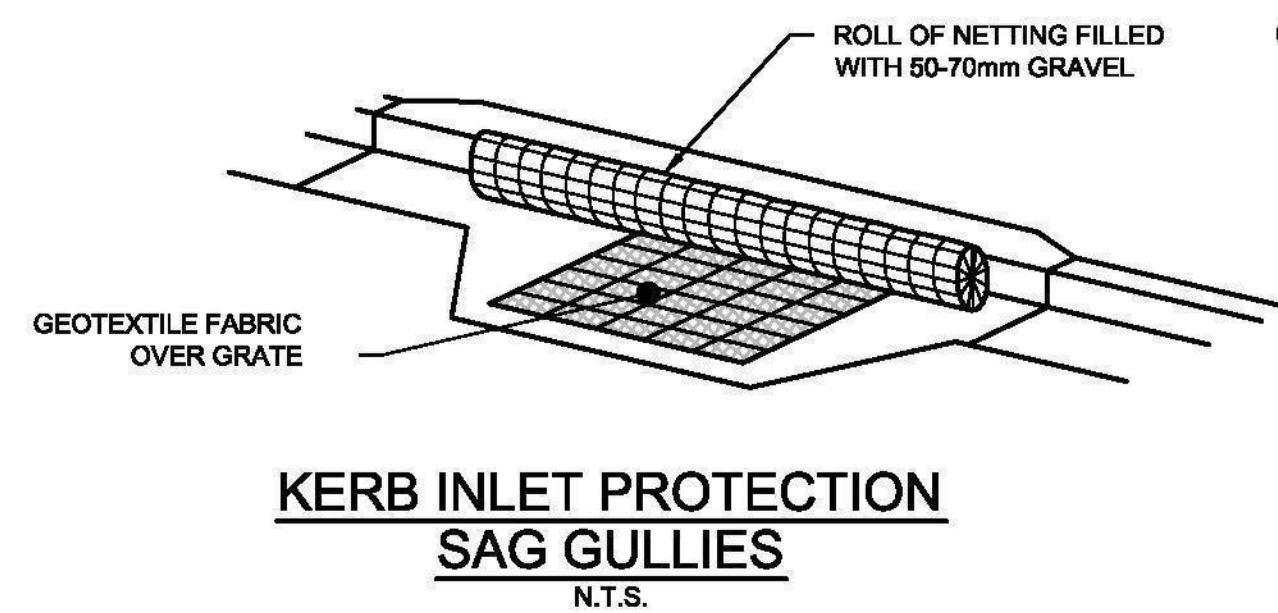
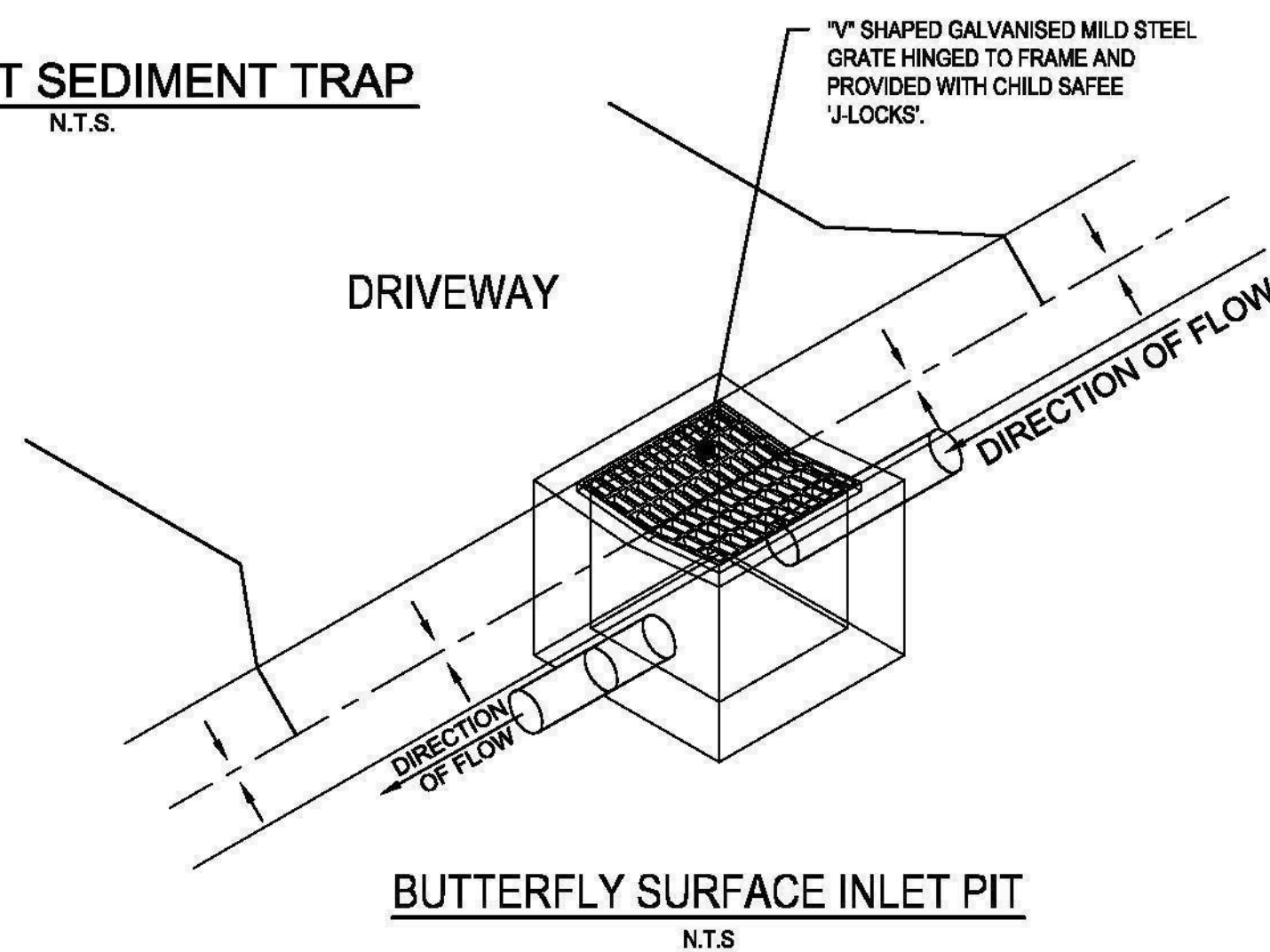
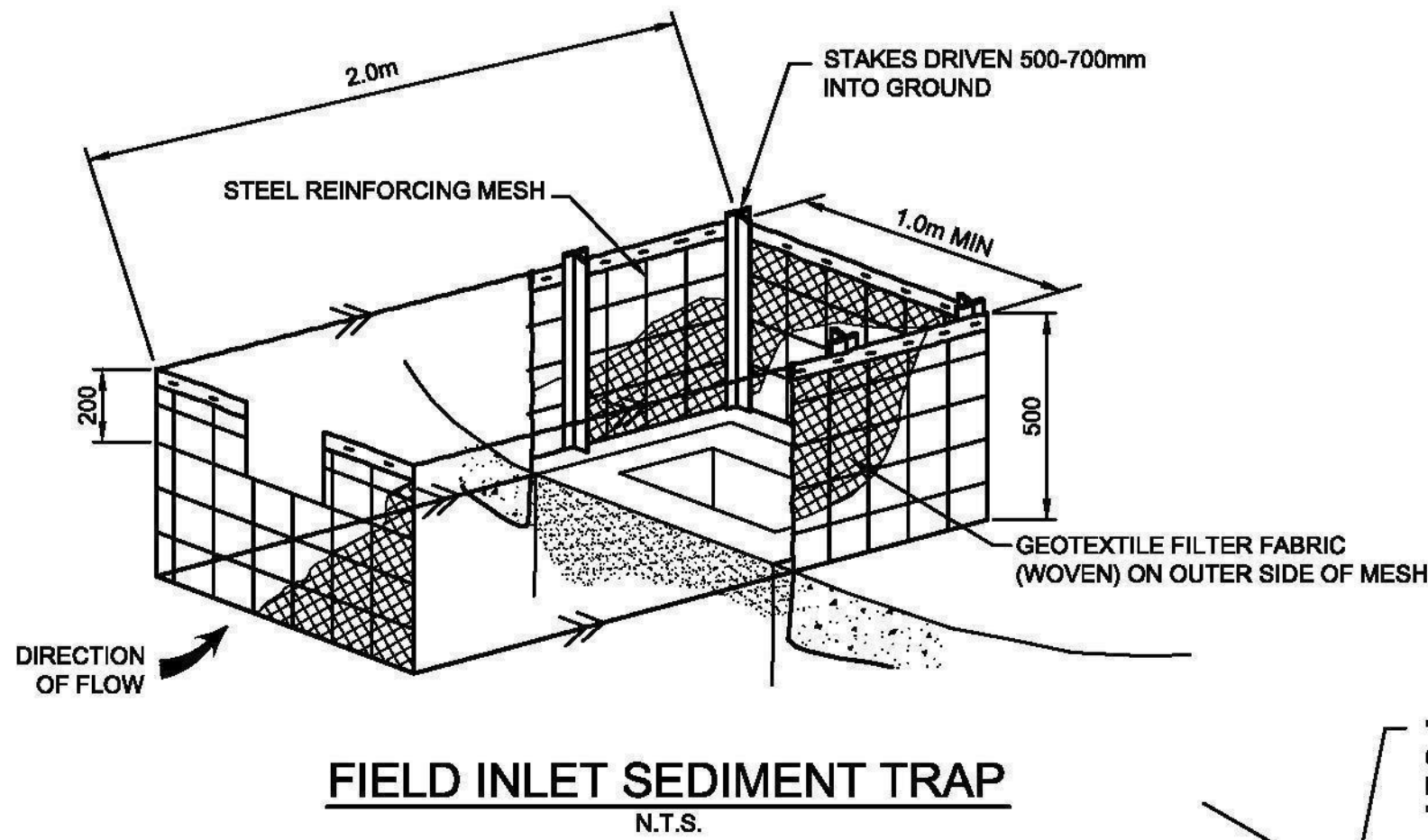
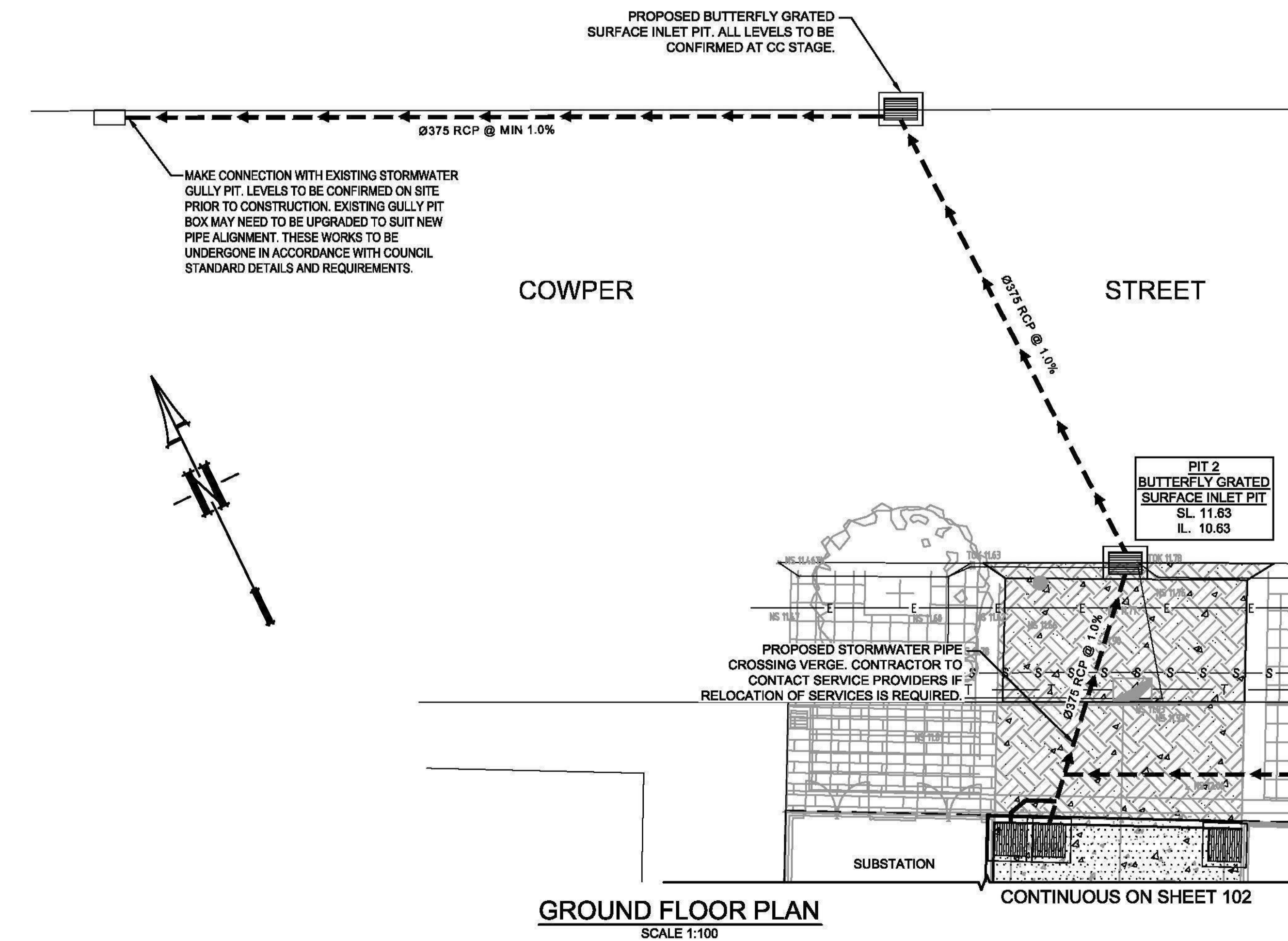
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Project  
**2-6 BOLD STREET &  
80-82 COWPER STREET, GRANVILLE  
PROPOSED MIXED-USE DEVELOPMENT  
STORMWATER CONCEPT PLAN  
DEVELOPMENT APPLICATION**

Drawing Title  
**STORMWATER CONCEPT PLAN  
GROUND LEVEL  
SHEET 1 OF 2**  
Scale: A1 Project No. UMB13035.SW.DA Dwg. No. 102 Issue B



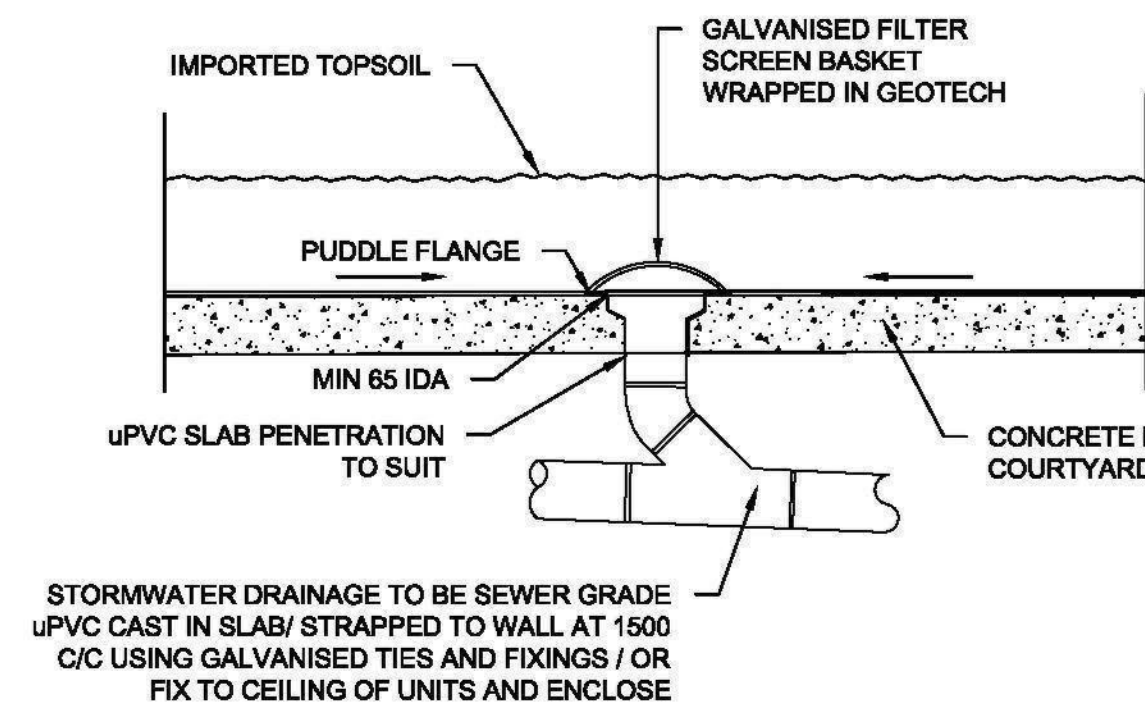


## SEDIMENT & EROSION NOTES

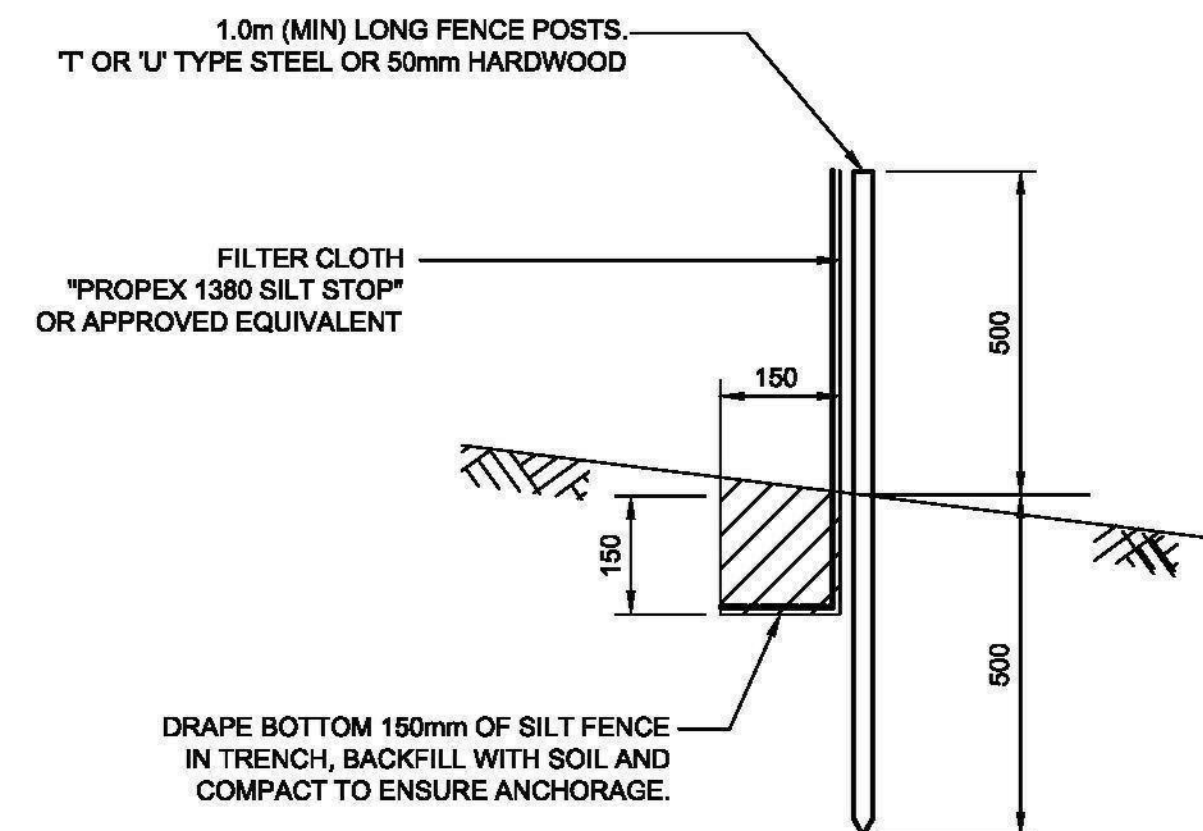
1. IMMEDIATELY FOLLOWING SETTING OUT OF THE WORKS, BUT PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL WALK THE SITE TO NOMINATE THE LOCATIONS AND TYPES OF SEDIMENT AND EROSION CONTROL MEASURES TO BE ADOPTED. THESE MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CLEARING OR EARTHWORKS AND MAINTAINED UNTIL THE WORKS ARE COMPLETED AND NO LONGER POSE AN EROSION HAZARD, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
2. IMMEDIATELY FOLLOWING SETTING OUT OF THE WORKS, BUT PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL WALK THE SITE TO IDENTIFY AND MARK TREES WHICH ARE TO BE PRESERVED. NOTWITHSTANDING THE ABOVE, THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO MINIMISE DISTURBANCE TO EXISTING VEGETATION AND GROUND COVER OUTSIDE THE MINIMUM AREAS REQUIRED TO COMPLETE THE WORKS AND SHALL BE RESPONSIBLE FOR RECTIFICATION, AT ITS OWN COST, OF ANY DISTURBANCE BEYOND THOSE AREAS.
3. PROVIDE GULLY GRATE INLET SEDIMENT TRAPS AT ALL GULLY PITS.
4. PROVIDE SILT FENCING ALONG PROPERTY LINE AS DIRECTED BY SUPERINTENDENT.
5. ADDITIONAL CONTROL DEVICES TO BE PLACED WHERE DIRECTED BY THE PRINCIPLE.
6. ALTERNATIVE DESIGNS TO BE APPROVED BY SUPERINTENDENT PRIOR TO CONSTRUCTION.
7. WASH DOWN/RUMBLE AREA TO BE CONSTRUCTED WITH PROVISIONS RESTRICTING ALL SILT AND TRAFFICKED DEBRIS FROM ENTERING THE STORMWATER SYSTEM.
8. NO WORK OR STOCKPILING OF MATERIALS TO BE PLACED OUTSIDE OF SITE WORK BOUNDARY.
9. APPROPRIATE EROSION AND SEDIMENT CONTROLS TO BE USED TO PROTECT STOCKPILES AND MAINTAINED THROUGH OUT CONSTRUCTION.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO TAKE DUE CARE OF NATURAL VEGETATION. NO CLEARING IS TO BE UNDERTAKEN WITHOUT PRIOR APPROVAL FROM THE SUPERINTENDENT.
11. TO AVOID DISTURBANCE TO EXISTING TREES, EARTHWORKS WILL BE MODIFIED AS DIRECTED ON-SITE BY THE SUPERINTENDENT.
12. THE LOCATION OF EROSION AND SEDIMENTATION CONTROLS WILL BE DETERMINED ON SITE BY THE SUPERINTENDENT.
13. ACCESS TRACKS THROUGH THE SITE WILL BE LIMITED TO THOSE DETERMINED BY THE SUPERINTENDENT AND THE CONTRACTOR PRIOR TO ANY WORK COMMENCING.
14. ALL SETTING OUT IS THE RESPONSIBILITY OF THE CONTRACTOR PRIOR TO WORKS COMMENCING ON SITE. THE SUPERINTENDENT'S SURVEYOR SHALL PEG ALL ALLOTMENT BOUNDARIES, PROVIDE COORDINATE INFORMATION TO THESE PEGS AND PLACE BENCH MARKS. THE CONTRACTOR SHALL SET OUT THE WORKS FROM AND MAINTAIN THESE PEGS.
15. PLANS ARE MINIMUM REQUIREMENTS AND ARE TO BE USED AS A GUIDE ONLY. EXACT MEASURES USED SHALL BE DETERMINED ON SITE IN CONJUNCTION WITH PROGRAM OF CONTRACTORS WORKS etc.

## GENERAL NOTES

1. ALL THE CLEANING EYES (OR INSPECTION EYES) FOR THE UNDERGROUND PIPES HAVE TO BE TAKEN UP TO THE FINISHED GROUND LEVEL FOR EASY IDENTIFICATION AND MAINTENANCE PURPOSES
2. ALL LEVELS SHALL RELATE TO THE ESTABLISHED BENCH MARK.
3. THE BUILDER SHALL ENSURE THAT THE STORMWATER ENGINEERS DRAWINGS CORRESPOND TO THE ARCHITECTURAL, STRUCTURAL AND LANDSCAPING DRAWINGS. IF THERE EXISTS AND DISCREPANCIES BETWEEN THE DRAWINGS, THE BUILDER SHALL REPORT THE DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORKS
4. ALL MULCHING TO BE USED WITHIN THE AREA DESIGNATED AS ON-SITE DETENTION STORAGE SHALL BE OF A NON-FLOATABLE MATERIAL SUCH AS DECORATIVE RIVER GRAVEL, PINE BARK MULCHING SHALL NOT BE USED WITHIN THE DETENTION STORAGE AREA.
5. ALL RETAINING WALLS SHALL BE CONSTRUCTED COMPLETELY WITHIN THE PROPERTY BOUNDARY LIMITS TO DETAILS PREPARED BY THE STRUCTURAL ENGINEER. WALLS FORMING THE ON-SITE DETENTION SYSTEM SHALL BE OF MASONARY/BRICK CONSTRUCTION AND WATER TIGHT.
6. ALL SUB-SOIL DRAINAGE SHALL BE A MINIMUM OF 65MM DIA AND SHALL BE PROVIDED WITH A FILTER SOCK. THE SUBSOIL DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH DETAILS TO BE PROVIDED BY THE LANDSCAPE ARCHITECT.
7. PRIOR TO COMMENCING ANY WORKS, THE BUILDER SHALL ENSURE THAT THE INVERT LEVELS OF WHERE THE SITE STORMWATER SYSTEM CONNECTS INTO THE COUNCILS KERB/DRAINAGE SYSTEM MATCHED THE DESIGN LEVELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.
8. ALL LINES ARE TO BE Ø90 uPVC 1.0% GRADE UNLESS NOTED OTHERWISE. CHARGED LINES TO BE SEWERGRADE & SEALED.
9. EXISTING SERVICES LOCATIONS SHOWN INDICATIVE ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS.
10. ALL PIPES TO HAVE MIN 150mm COVER IF LOCATED WITHIN PROPERTY.
11. ALL PITS IN DRIVEWAYS TO BE 450x450 CONCRETE AND ALL PITS IN LANDSCAPED AREAS TO BE 450x450 PLASTIC.
12. PITS LESS THAN 450 DEEP MAY BE BRICK, PRECAST OR CONCRETE.
13. ALL BALCONIES AND ROOFS TO BE DRAINED AND TO HAVE SAFETY OVERFLOWS IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
14. ALL EXTERNAL SLABS TO BE WATERPROOFED.
15. ALL GRATES TO HAVE CHILD PROOF LOCKS.
16. ALL DRAINAGE WORKS TO AVOID TREE ROOTS.
17. ALL DP'S TO HAVE LEAF GUARDS.
18. ALL EXISTING LEVELS TO BE CONFIRMED BY BUILDER PRIOR TO CONSTRUCTION.
19. ALL WORK WITHIN COUNCIL RESERVE TO BE INSPECTED BY COUNCIL PRIOR TO CONSTRUCTION.
20. COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL.
21. ALL WORK SHALL BE IN ACCORDANCE WITH B.C.A. AND A.S.3500.3.
22. REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR LANDSCAPING.
23. DEMOLISH ALL REDUNDANT DRIVEWAY CROSSEOVERS AND INSTANT NEW KERB & GUTTER.



PLANTER GRATE DETAIL  
N.T.S.



SILT FENCE DETAIL  
N.T.S.

## SILT FENCE NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS WITH GALVANISED WIRE TIES, STAPLES OR ATTACHMENT BELTS.
2. POSTS SHOULD NOT BE SPACED MORE THAN 3.0m APART.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 150mm AND FOLDED.
4. FOR EXTRA STRENGTH TO SILT FENCE, WOVEN WIRE (14mm GAUGE, 150mm MESH SPACING) TO BE FASTENED SECURELY BETWEEN FILTER CLOTH AND POSTS BY WIRE TIES OR STAPLES
5. INSPECTIONS SHALL BE PROVIDED ON A REGULAR BASIS, ESPECIALLY AFTER RAINFALL AND EXCESSIVE SILT DEPOSITS REMOVED WHEN "BULGES" DEVELOP IN SILT FENCE
6. SEDIMENT FENCES SHALL BE CONSTRUCTED WITH SEDIMENT TRAPS AND EMERGENCY SPILLWAYS AT SPACINGS NO GREATER THAN 40m ON FLAT TERRAIN DECREASING TO 20m SPACINGS ON STEEP TERRAIN.

0 2 4 6 m  
SCALE 1:100 @ A1

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B	MINOR ARCHITECTURAL COMMENTS	28/08/2014	JAI	MBR
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Architect  
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PO Box 427  
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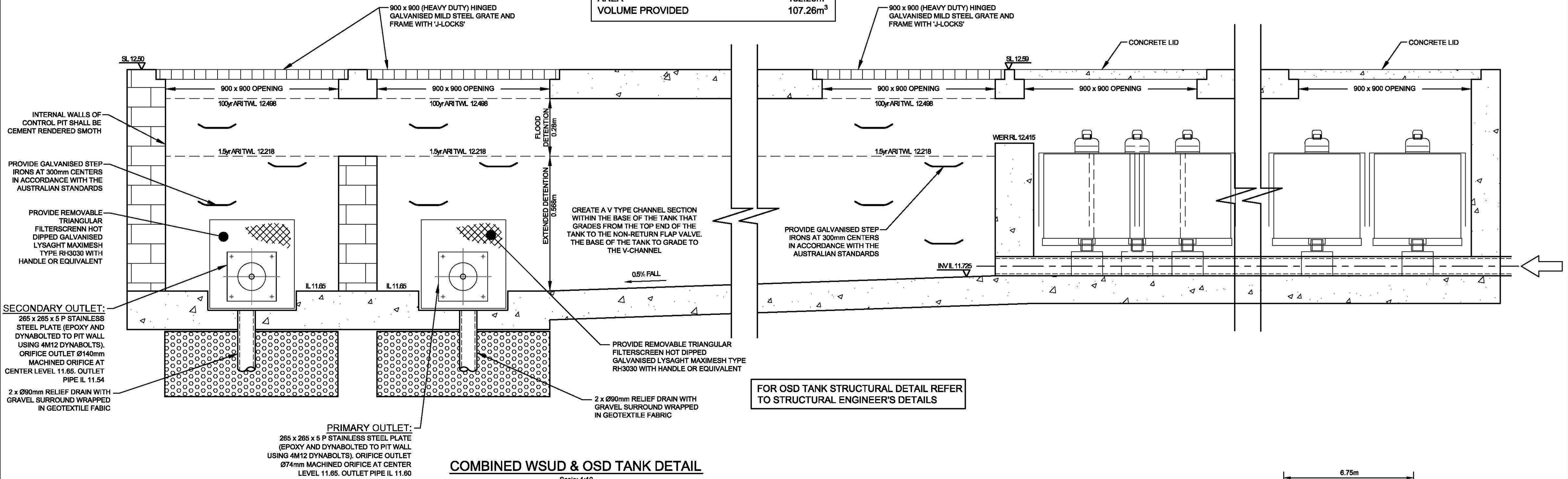
Sydney + Brisbane  
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Project  
**2-6 BOLD STREET & 80-82 COWPER STREET, GRANVILLE PROPOSED MIXED-USE DEVELOPMENT STORMWATER CONCEPT PLAN DEVELOPMENT APPLICATION**

Drawing Title  
**STORMWATER CONCEPT PLAN SHEET 2 OF 2 & MISCELLANEOUS DETAILS**  
Scale  
As Shown  
Project No.  
UMB13035.SW.DA  
Dwg. No.  
102  
Issue  
B

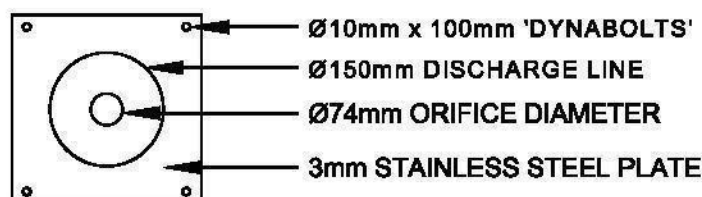


DETENTION TANK 2:	
MAX WATER DEPTH (UPSTREAM)	0.778m
MAX WATER DEPTH (DOWNSTREAM)	0.848m
MAX TANK DEPTH	0.87m
MIN TANK DEPTH	0.85m
AREA	132.25m <sup>2</sup>
VOLUME PROVIDED	107.26m <sup>3</sup>

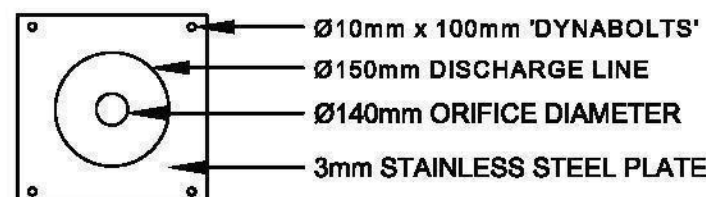


### UNDERGROUND STORAGE STAGED STORAGE CALCULATIONS

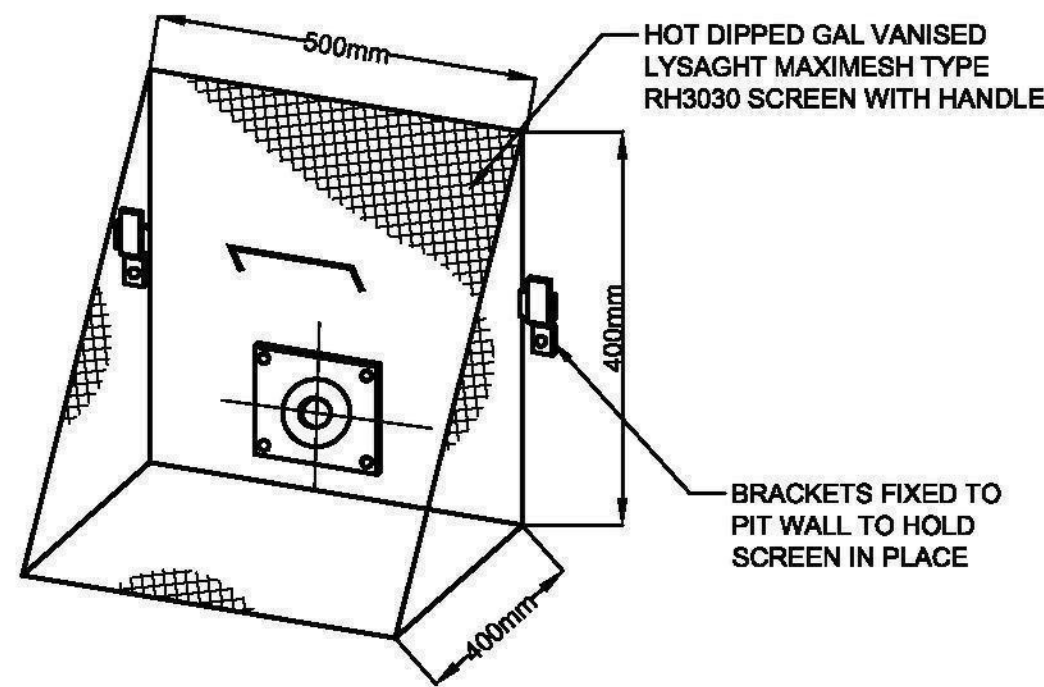
DEPTH (mm)	AREA (m <sup>2</sup> )	CUMULATIVE VOLUME (m <sup>3</sup> )
0	130.49	0
100	130.49	8.156
200	130.49	21.205
300	130.49	34.254
400	130.49	47.303
500	130.49	60.352
568	130.49	69.225
600	132.25	74.457
700	132.25	87.682
800	132.25	100.907
848	132.25	107.255



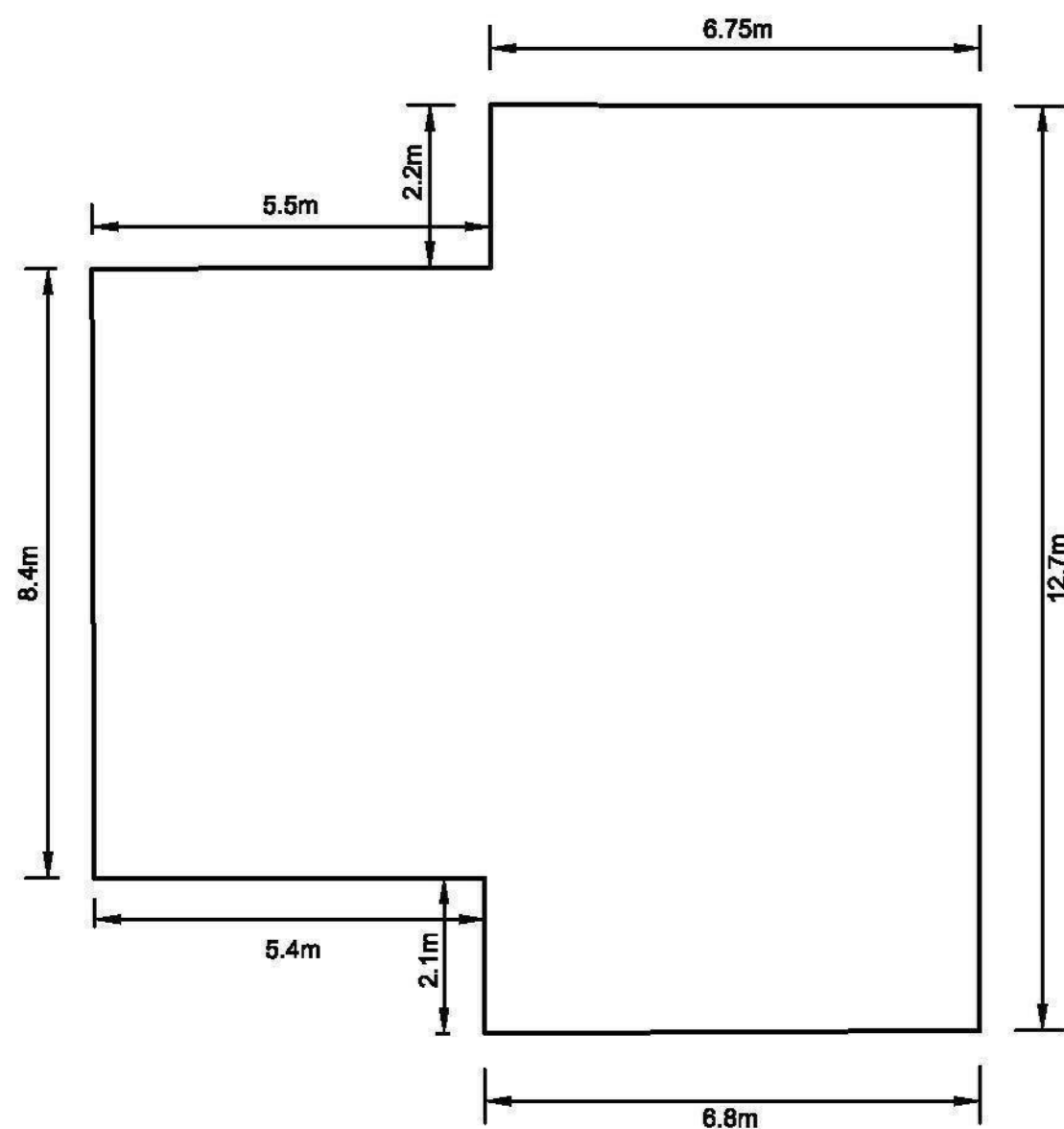
**PRIMARY ORIFICE  
PLATE DETAIL**  
N.T.S.



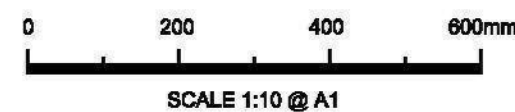
**SECONDARY ORIFICE  
PLATE DETAIL**  
N.T.S.



**TRASH SCREEN DETAIL**  
N.T.S.



**ON-SITE DETENTION TANK  
DIMENSIONS INTERNAL WALLS**  
N.T.S.



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Drawing Title  
**WSUD & OSD DETAILS  
SHEET 1 OF 2**

Scale	A1	Project No.	Dwg. No.	Issue
N.T.S.		UMB13035.SW.DA	104	B