



# MIXED USE DEVELOPMENT AT 44 - 48 OXFORD STREET EPPING FOR DUNNET PROPERTIES PTY LTD

DRAWING LIST	
DRAWING No.	TITLE
SWDA 1.1	NOTES AND DRAWING LEGEND
SWDA 2.1	SITE PLAN
SWDA 3.1	UPPER GROUND LAYOUT
SWDA 4.1	BASEMENT 1, 2 & 3 LAYOUT
SWDA 5.1	BASEMENT 4 LAYOUT & DETAILS
SWDA 6.1	DETAILS SHEET 1
SWDA 6.2	DETAILS SHEET 2
SWDA 7.1	DRAINS MODEL OUTPUTS
SWDA 8.1	SOIL & WATER MANAGEMENT PLAN

## GENERAL NOTES

- SW1. SELECTION AND INSTALLATION OF PITS, PIPES, TANKS AND TRENCHES SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS/NZS3500, THE HYDRAULIC SPECIFICATION AND THE LOCAL AND STATUTORY REQUIREMENTS U.N.O.
- SW2. UTILITY INFORMATION SHOWN ON THE PLANS IS NOT INTENDED TO DEPICT MORE THAN THE PRESENCE OF ANY SERVICES. ACTUAL LOCATIONS SHOULD BE VERIFIED BY HAND EXCAVATION PRIOR TO CONSTRUCTION.
- SW3. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED DURING THE CONSTRUCTION PERIOD. ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIRS SHALL BE REPORTED TO THE PROJECT MANAGER OR ARCHITECT.
- SW4. THE CONTRACTOR IS TO ORGANISE AND STAGE CONSTRUCTION WORK AND UNDERTAKE ANY DIVERSION WORKS, TO ENSURE THE EXISTING DRAINAGE SYSTEM IS ABLE TO CONVEY ALL STORMWATER FLOWS THAT MAY OCCUR DURING THE PERIOD OF CONSTRUCTION WORKS.
- SW5. THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS.
- SW6. ALL PIPEWORK IS TO BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF AS3500.3-2003. ALL IN-GROUND PIPE WORK IS TO BE VIEWED BY THE SUPERINTENDENT (OR PERSON MANAGING THE CONTRACT ON THE CLIENTS BEHALF) UNDER TEST CONDITIONS PRIOR TO BACKFILLING.
- SW7. PIPE CLASSES AND TRENCH CONSTRUCTION SHALL BE ASSESSED IN ACCORDANCE WITH AS3725-1989 "LOADS ON BURIED CONCRETE PIPES" OR AS2566-1 "BURIED FLEXIBLE PIPE - PART 1 - STRUCTURAL DESIGN" AND SHALL TAKE ACCOUNT OF ANTICIPATED LOADINGS FROM TRAFFIC AND SOIL.
- SW8. BED ALL PIPES FIRMLY AND EVENLY WITH IMPORTED FILL ONLY. THICKNESS OF BEDDING LAYER SHALL BE 75mm IN SOIL AND 200mm IN ROCK.
- SW9. BACKFILL PIPES WITH IMPORTED FILL PROVIDE 200mm SIDE SUPPORT AND 150mm OVERLAY ABOVE PIPE CROWN. TRENCH FILL ABOVE THE EMBEDMENT LINE TO THE UNDERSIDE OF THE ROAD PAVEMENT OR THE FOOTPATH SHALL BE AS FOLLOWS:  
  
UNDER ROADWAY: TRENCH FILL MATERIAL SHALL CONSIST OF IMPORTED FILL AS SPECIFIED HEREIN OF EITHER HIGH GRADE COMPACTION SAND OR APPROVED CRUSHED ROAD GRAVEL CONFORMING TO THE RMS SPECIFICATION 3051 OR SIMILAR.  
  
OTHER THAN ROADWAY: TRENCH MATERIAL EXCAVATED SHALL CONSIST OF SELECT FILL AS SPECIFIED HEREIN AND SHALL NOT CONTAIN MORE THAN 20% OF STONES OF SIZE BETWEEN 25mm AND 75mm AND NONE LARGER THAN 75mm. PRIOR TO USE OF THE EXCAVATED MATERIAL IT SHALL BE INSPECTED AND APPROVED BY THE ENGINEER.
- SW10. COMPACT BEDDING. EMBEDMENT AND TRENCH FILL MATERIALS SHALL BE AS FOLLOWS:-  
  
EMBEDMENT:-  
FOR GRANULAR FILL MATERIAL (NON- COHESIVE SOIL) e.g. COARSE AGGREGATE FILL, THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%.
- TRENCH FILL:-  
FOR GRANULAR MATERIAL (NON-COHESIVE SOILS) THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%. FOR NON- GRANULAR FILL MATERIAL (COHESIVE SOILS), THE DRY DENSITY RATIO (RD) SHALL BE NOT LESS THAN 95%.
- SW11. PIPES SHALL BE TRUE TO GRADES SHOWN AND ALIGNED SO THAT THE INVERT OF THE INLET PIPE INTERCEPTS WITH THE INVERT OF THE OUTLET PIPE AT THE DOWNSTREAM FACE OF THE PIT.
- SW12. STORMWATER DRAINAGE PIPES THAT EXCEED 1.5 GRADE, SHALL BE PROVIDED WITH REINFORCED CONCRETE ANCHOR BLOCKS. ANCHOR BLOCKS TO BE CONSTRUCTED TO SPECIFICATIONS SET OUT IN AS3500.3-2003.
- SW13. MINIMUM GRADE TO DRAINAGE PIPES TO BE 1% U.N.O, MIN. SIZE 100mm DIAMETER U.N.O.
- SW14. MINIMUM PIPE COVER TO BE 600mm UNDER TRAFFICABLE AREAS AND 300mm ELSEWHERE (U.N.O).
- SW15. PIPES UP TO AND INCLUDING 225mm SHALL BE UPVC (DWV) PIPE AND FITTINGS, MANUFACTURED TO AS1260 WITH SOLVENT WELDED JOINTS.

- SW16. PIPES LARGER THAN OR EQUAL TO 300mm TO BE REINFORCED CONCRETE RUBBER RING JOINTED TYPE (CLASS 2) MANUFACTURED TO AS4058 (U.N.O).
- SW17. EQUIVALENT STRENGTH FRC PIPES MAY BE USED WHERE APPROVED.
- SW18. PROVIDE CLEANING EYES LOCATED 500mm ABOVE FFL TO ALL DOWN PIPES NOT DIRECTLY CONNECTED TO PITS.
- SW19. STORMWATER DRAINAGE CONNECTIONS TO COUNCIL SYSTEM SHALL BE TO THE REQUIREMENTS AND SATISFACTION OF THE LOCAL COUNCIL.
- SW20. SUBSOIL PIPES SHALL BE LAID AT A MIN. GRADE OF 0.5% (U.N.O).
- SW21. ADDITIONAL SUBSOIL DRAINAGE SHALL BE LAID TO SUIT THE SITE CONDITIONS IF THE PRESENCE OF GROUNDWATER IS DETECTED.
- SW22. SUBSOIL DRAINAGE SHALL BE PROVIDED BEHIND RETAINING WALLS AND OTHER AREAS AS REQUIRED TO RELIEVE HYDROSTATIC PRESSURE AND DRAIN GROUND WATERS. CONNECT INTO THE DRAINAGE SYSTEM IN SUCH A WAY TO AVOID BACKFLOW OF STORMWATER INTO THE SUBSOIL DRAINAGE LINE.
- SW23. SUBSOIL DRAINAGE INCLUDING SUBSOIL PIPEWORK SERVING RETAINING WALLS, SHALL BE IN ACCORDANCE WITH AS2439 AND CONSIST OF A 100mm DIAMETER SMOOTH WALL SLOTTED PVC-U PLASTIC PIPE WITH 20mm BLUE GAUGE METAL SURROUND WRAPPED IN GEOTEXTILE. CLEAN OUTS SHALL BE EXTENDED TO THE SURFACE AND PROVIDED WITH A SCREWED COVER PLATE FLUSH WITH THE FINISHED SURFACE LEVEL.
- SW24. ALL DRAINAGE PITS SHALL BE PRECAST CONCRETE (U.N.O.).
- SW25. DRAINAGE PITS: PITS DEEPER THAN 1200mm TO BE FITTED WITH STEP IRONS AT 300mm CENTRES TO AS1657.-1992: FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS, - DESIGN, CONSTRUCTION AND INSTALLATION.
- SW26. BENCHING TO BE HALF OUTGOING PIPE DEPTH. TRENCHING TO BENCHING TO BE 20Mpa MASS CONCRETE.
- SW27. 100mm HOLE FOR SUBSOIL DRAINAGE OUTLET TO BE LOCATED 100mm ABOVE INVERT OF ALL INLET PIPES. SUBSOIL DRAINAGE TO EXTEND FOR A DISTANCE OF 3m UPSTREAM OF PIT (AT EACH INLET TRENCH) WITH THE UPSTREAM END SEALED.
- SW28. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN TRADESMAN LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
- SW29. PIT GRATE, FRAMES AND SOLID COVERS SHALL BE CLASS B IN NON TRAFFICABLE AREAS AND CLASS D IN TRAFFICABLE AREAS IN ACCORDANCE WITH AS3996.
- SW30. ALL GRATES SHALL BE PROVIDED WITH A LOCKING CLIP.
- SW31. TRASH SCREENS, SILT CONTROLS, OTHER POLLUTANT CONTROLS AND OVERLAND FLOW ROUTES SHALL BE REGULARLY MAINTAINED TO ENSURE THAT THE DRAINAGE SYSTEM REMAINS UNBLOCKED AND OPERATES AS ORIGINALLY INTENDED DURING THE CONSTRUCTION PROCESS.
- SW32. FOR CHARGED DRAINAGE SYSTEMS, THE UPVC PIPEWORK MUST BE SUITABLE FOR PRESSURE APPLICATIONS.
- SW33. FOR CHARGED DRAINAGE SYSTEMS, ALL UPVC PIPEWORK AND JOINTS, INCLUDING THE FULL HEIGHT OF THE DOWNPIPE, ARE TO HAVE SEALED AND SOLVENT WELDED JOINTS TO ENABLE WATER STORAGE IN PIPE NETWORK. ALL PIPES ARE TO BE FILLED WITH WATER AND PUT UNDER TEST CONDITIONS PRIOR TO HANDOVER.
- SW34. A CLEANING EYE IS TO BE FITTED AT THE LOWEST POINT OF THE CHARGED DRAINAGE SYSTEM AND EXTEND INTO A STORMWATER PIT, TO ALLOW FOR DRAINING AND CLEAR OUT OF SYSTEM.
- SW35. LEAF GUARDS ARE TO BE FITTED OVER ALL EAVES GUTTERS BEING SERVED BY A CHARGED ROOF DRAINAGE SYSTEM.
- SW36. ALL EAVES GUTTERS SHALL HAVE A LO-FRONT LIP U.N.O. HIGH-FRONT EAVES GUTTERS SHALL BE REJECTED.
- SW37. UPON COMPLETION OF WORKS, THE CONTRACTOR SHALL FLUSH OUT ALL STORMWATER PIPES AND PITS TO ENSURE THE REMOVAL OF ALL LOOSE CONCRETE AND SEDIMENT.

## SPECIFICATION NOTES

- S1. ALLOW TO COMPLETE ALL WORKS AS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM AS GENERALLY INDICATED ON THE DRAWINGS.
- S2. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH AS3500 TO THE COMPLETE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION OVER THE WORKS. MAKE ALL APPLICATIONS AND PAY ALL FEES.
- S3. ALLOW TO CO-ORDINATE AND CONFIRM ALL DIMENSIONS, EXISTING LEVELS, EXISTING SERVICES AND STRUCTURE ON SITE PRIOR TO TENDER. ALL WORK IS TO BE CO-ORDINATED WITH PROJECT MANAGER OR ARCHITECT.
- S4. HYDRAULIC DRAWINGS ARE APPROXIMATE ONLY AND ARCHITECT'S DETAILS ARE TO BE REFERRED TO FOR ACCURATE SETOUTS.
- S5. THE HYDRAULIC CONTRACTOR SHALL BE DEEMED TO HAVE INSPECTED THE SITE PRIOR TO TENDER AND BE SATISFIED THAT THE WORKS, AS DOCUMENTED, ARE COMPLETE AND ALL EXISTING SERVICES AND LEVELS SHOWN FOR CONNECTION ARE SUITABLE.
- S6. ALLOW TO MAKE APPLICATION (DIAL BEFORE U DIG) TO ALL AUTHORITIES FOR THE LOCATION OF THEIR EXISTING SERVICES IN THE AREA. FAILURE TO DO SO WILL BE AT THE HYDRAULIC CONTRACTORS EXPENSE.
- S7. WHERE REQUIRED, STORMWATER EASEMENTS SHALL BE OBTAINED BY THE OWNER. ALL NEGOTIATION/COMPENSATION PAYMENTS AND THE INTEGRATION OF THE EASEMENTS INTO THE TITLE DOCUMENTS SHALL BE BY THE OWNER UNLESS AGREED OTHERWISE.
- S8. WHERE REQUIRED BY THE PRINCIPAL CERTIFIER OR THE PROJECT MANAGER, WORK AS EXECUTED DETAILS SHALL BE PREPARED BY A REGISTERED SURVEYOR/CHARTERED PROFESSIONAL ENGINEER VERIFYING THAT THE STORMWATER DRAINAGE SYSTEM HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT DRAWINGS. ANY DEVIATIONS FROM THE APPROVED PLANS SHALL BE NOTED AND BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER. ADEQUATE INSPECTIONS SHALL BE CARRIED OUT DURING THE COURSE OF THE CONSTRUCTION.

## EROSION AND SEDIMENT CONTROL

- E1. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PROVIDED WHERE SHOWN ON THE DRAWINGS, IN ACCORDANCE WITH THE SPECIFICATION AND THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (IF APPLICABLE)
- E2. MEASURES PROVIDED WILL BE TO THE SATISFACTION OF THE PRINCIPAL'S REPRESENTATIVE IN ACCORDANCE WITH THE LOCAL AND STATUTORY REQUIREMENTS UNLESS NOTED OTHERWISE. ALL WORKS SHALL BE ERECTED AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE 'BLUE BOOK'- MANAGING URBAN STORMWATER (MUS): SOILS AND CONSTRUCTION, LANDCOM (VOL 1) AND DECCW (VOL 2)
- E3. ALL SUB CONTRACTORS SHALL BE INFORMED OF THEIR RESPONSIBILITIES BY THE CONTRACTOR IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.
- E4. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENTS TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.

## LEGEND

PIPEWORK	
	RAINWATER DRAINAGE
	RAINWATER CHARGED
	STORMWATER DRAINAGE
	STORMWATER RISING MAIN
	SUBSOIL DRAINAGE
	BOUNDARY FENCE
	EXISTING PIPE
	EXISTING PIPE MADE REDUNDANT
	SEDIMENT FENCE LINE
	PROPERTY BOUNDARY
	SWALE
	DROPPER
	RISER
	TURBIDITY BARRIER
FALL	
	DIRECTION OF FALL OR FLOW DOWN PIPE
	PLANTER BOX OUTLET
	RAIN WATER OUTLET
	STORMWATER PIT (GRATE)
	STORMWATER PIT (RWO IN BASE)
	SEALED PIT COVER
	GULLY PIT
	REFLUX VALVE
	PIPE CONNECTION POINT
	PIPE PENETRATING
	PIPE NOT PENETRATING
	OVERLAND FLOW PATH
	CLEAR OUT
	TRENCH GRATE
	DOWNPIPE SPREADER
MISCELLANEOUS	
	SERVICE / SERVICE NUMBER
	PIPE SIZE
FOR CONTINUATION REFER DRG No	
	ACCESS PANEL
	BOX GUTTER
	DOWNPIPE
	EXISTING
	FINISHED FLOOR LEVEL
	GRATED INLET PIT
	HIGH LEVEL IN CEILING
	HIGH POINT
	INVERT LEVEL
	KERB INLET PIT
	OVERFLOW
	RECTANGULAR HOLLOW SECTION
	RELATIVE LEVEL
	RAINWATER HEAD
	RAINWATER TANK
	SLAB RELATIVE LEVEL
	STRUCTURAL ROOT ZONE
	TO BE ADVISED
	TOP KERB LEVEL
	TREE ROOT ZONE
	UNLESS NOTED OTHERWISE

P3	RE-ISSUED FOR DA AMENDED ARCH. LAYOUT	MB	GB	09.11.17
P2	ISSUED FOR DA	MB	GB	31.05.16
P1	PRELIMINARY ISSUE	MB	GB	13.05.16
Rev.	Issue / Amendment	By	App.	Date



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Project

MIXED USE DEVELOPMENT

44 - 48 OXFORD STREET

EPPING

Title

STORMWATER DRAINAGE SERVICES

NOTES AND DRAWING LEGEND

ELECTRONIC SIGNATURE: THIS DRAWING HAS BEEN ASSIGNED AN ELECTRONIC SIGNATURE CODE. THE PRESENCE OF THIS CODE SIGNIFIES THAT THIS IS THE CERTIFIED DRAWING ISSUED FOR CONSTRUCTION.

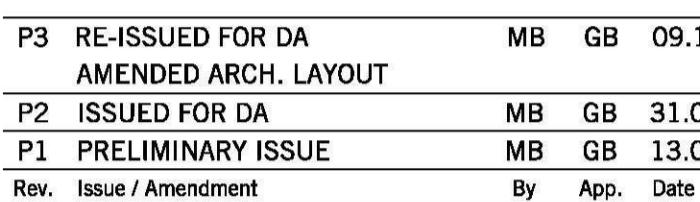
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Scale at A1	Date	Drawn
N/A	MAY 2016	S.P.S.D
Job No.	Drawing No.	Revision
2015H0038	SWDA 1.1	P3

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REFER TO DRAWING NO. SWDA 1.1  
FOR CONSTRUCTION NOTES



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Project  
**MIXED USE DEVELOPMENT  
44 - 48 OXFORD STREET  
EPPING**

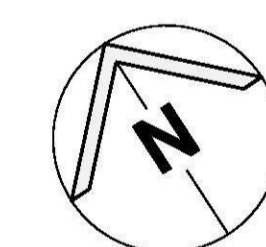
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NOTE  
ALL RAINWATER OUTLETS TO  
BE SPS TRUFFLO 150mm WITH  
CLASS C HEAVY-DUTY FLAT  
GRATE OR APPROVED  
EQUIVALENT

PIPEWORK TO BE STRAPPED  
TO UNDERSIDE OF BASEMENT  
LEVEL 1 WITH BASEMENT  
LEVEL 2 CEILING SPACE

DASHED LINE DENOTES  
BOUNDARY LINE

ACO SLABDRAIN 200 WITH  
CLASS D GRATE & FRAME OR  
APPROVED EQUIVALENT.

BASEMENT LEVEL 1 LAYOUT

P3	RE-ISSUED FOR DA	MB	GB	09.11.17
	AMENDED ARCH. LAYOUT			
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Project  
**MIXED USE DEVELOPMENT  
44 - 48 OXFORD STREET  
EPPING**

Title  
**STORMWATER DRAINAGE SERVICES  
BASEMENT 1 & 2 LAYOUT**

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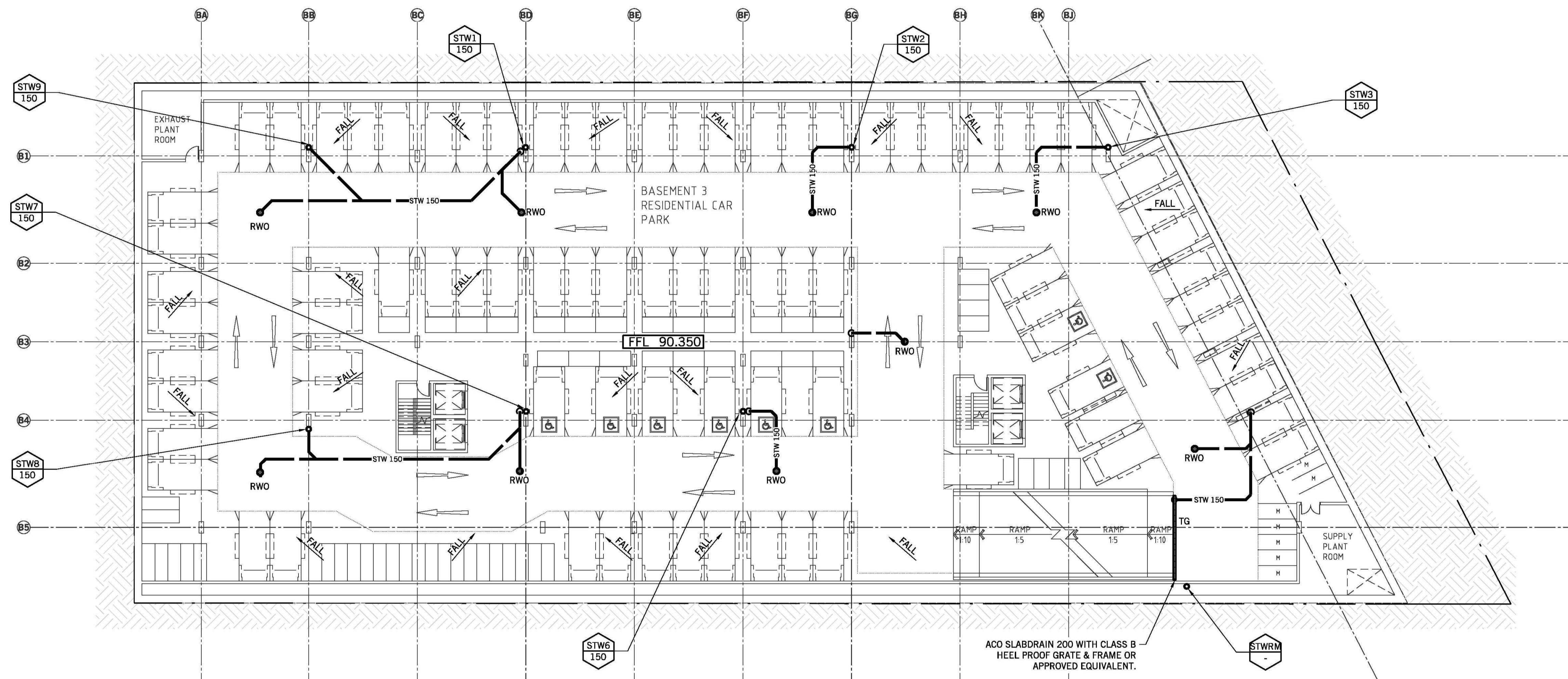
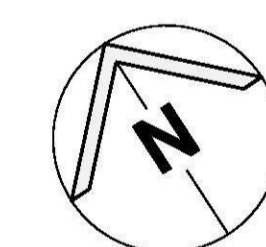
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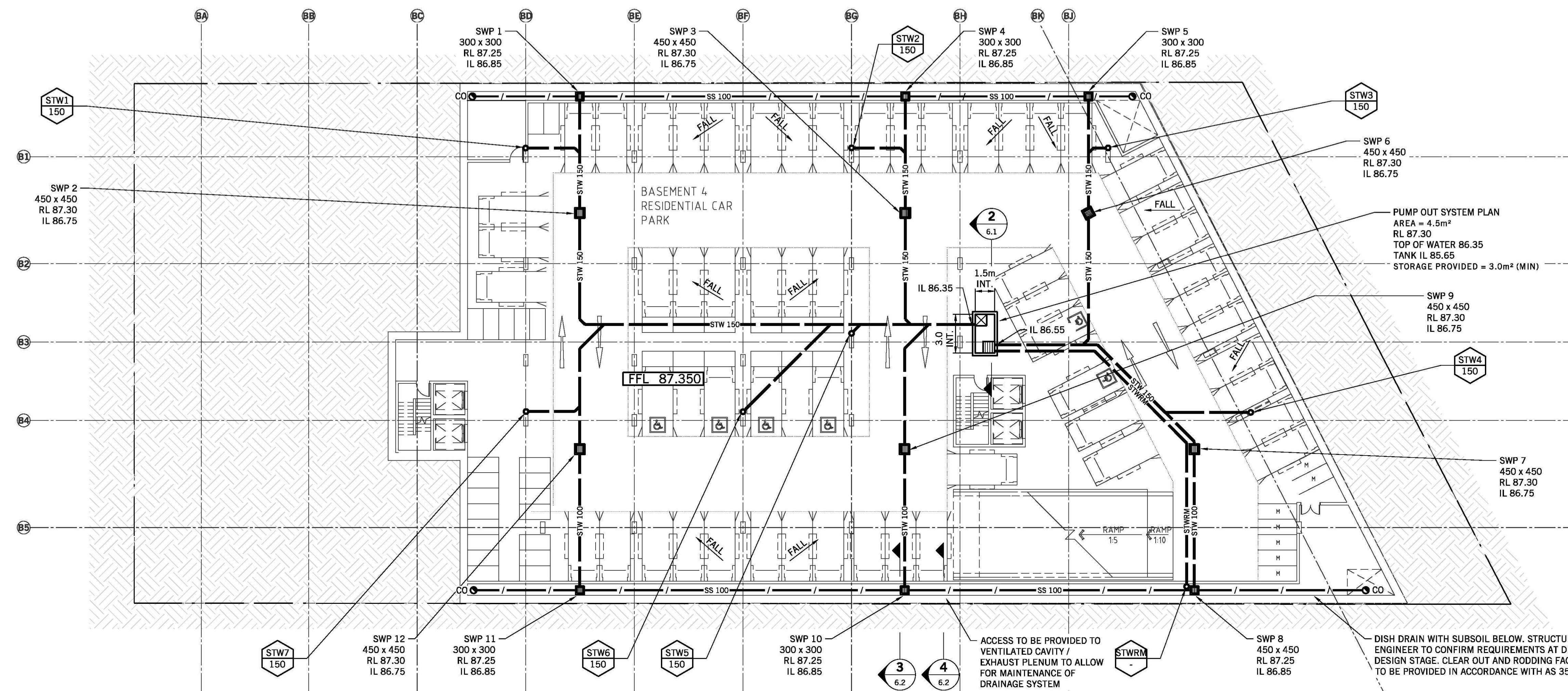
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BASEMENT LEVEL 3 LAYOUT



BASEMENT LEVEL 4 LAYOUT

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Project  
**MIXED USE DEVELOPMENT  
44 - 48 OXFORD STREET  
EPPING**

Title  
**STORMWATER DRAINAGE SERVICES  
BASEMENT 3 & 4 LAYOUT**

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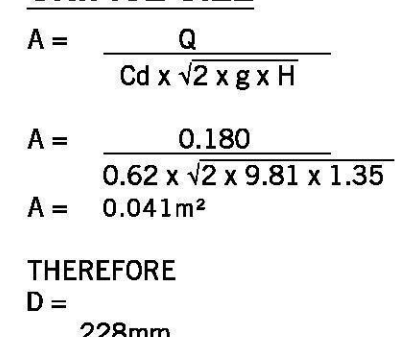
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2015H0038 SWDA 5.1 P3

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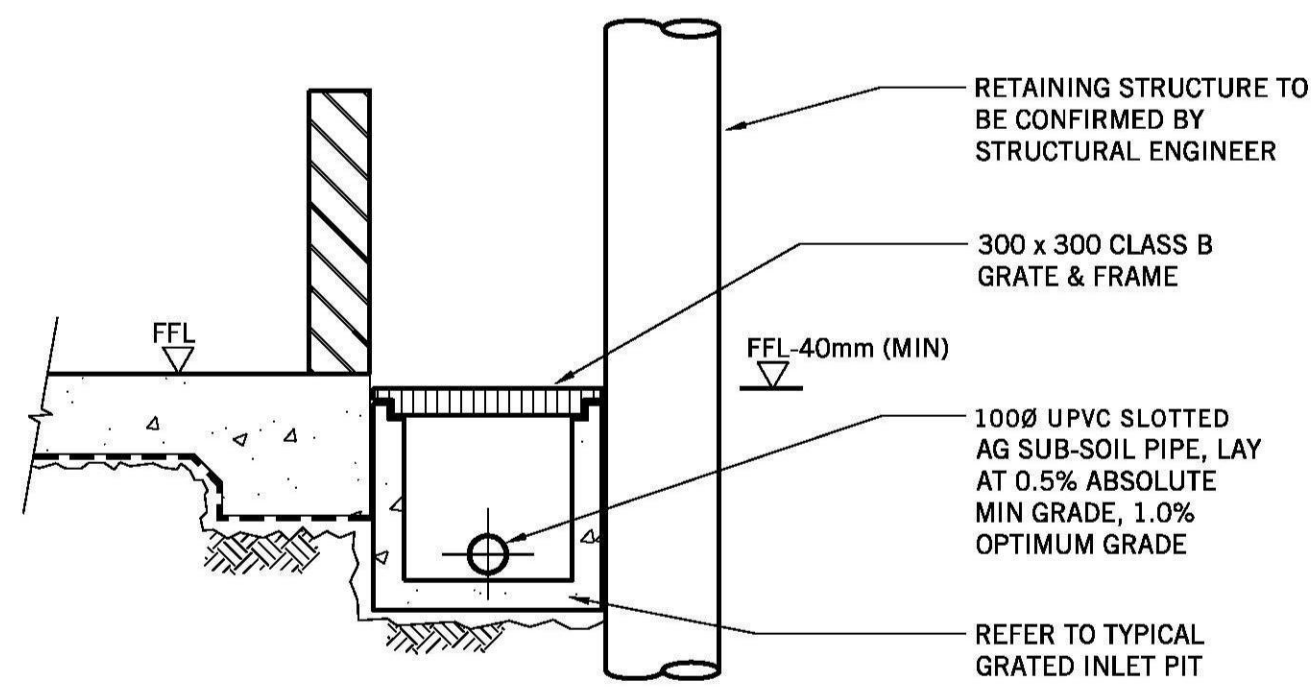




- INSTALL DUAL SUBMERSIBLE STORMWATER PUMP SET WITH A DUTY OF 2.0/US AT 23 METERS HEAD OR EQUIVALENT COMPLETE WITH CONTROL PANEL WITH:**
- MAIN ISOLATING SWITCH.
  - AUTOMATIC ALTERNATION.
  - MAN / OFF / AUTO SWITCH FOR EACH PUMP.
  - CIRCUIT BREAKERS FOR CONTROL CIRCUIT.
  - MANUAL RESET THERMAL OVERLOAD FOR EACH PUMP MOTOR.
  - LIGHTS FOR POWER ON / PUMP RUN / PUMP FAIL / HIGH LEVEL.
  - COMMON FAULT STROBE LIGHT.
  - VOLT FREE CONTACTS FOR BMS CONNECTION.
  - AUDIBLE ALARM WITH MUTE BUTTON.
  - ALL MOUNTED IN A WEATHERPROOF SHEET METAL ENCLOSURE

**PRELIMINARY - NOT FOR CONSTRUCTION**





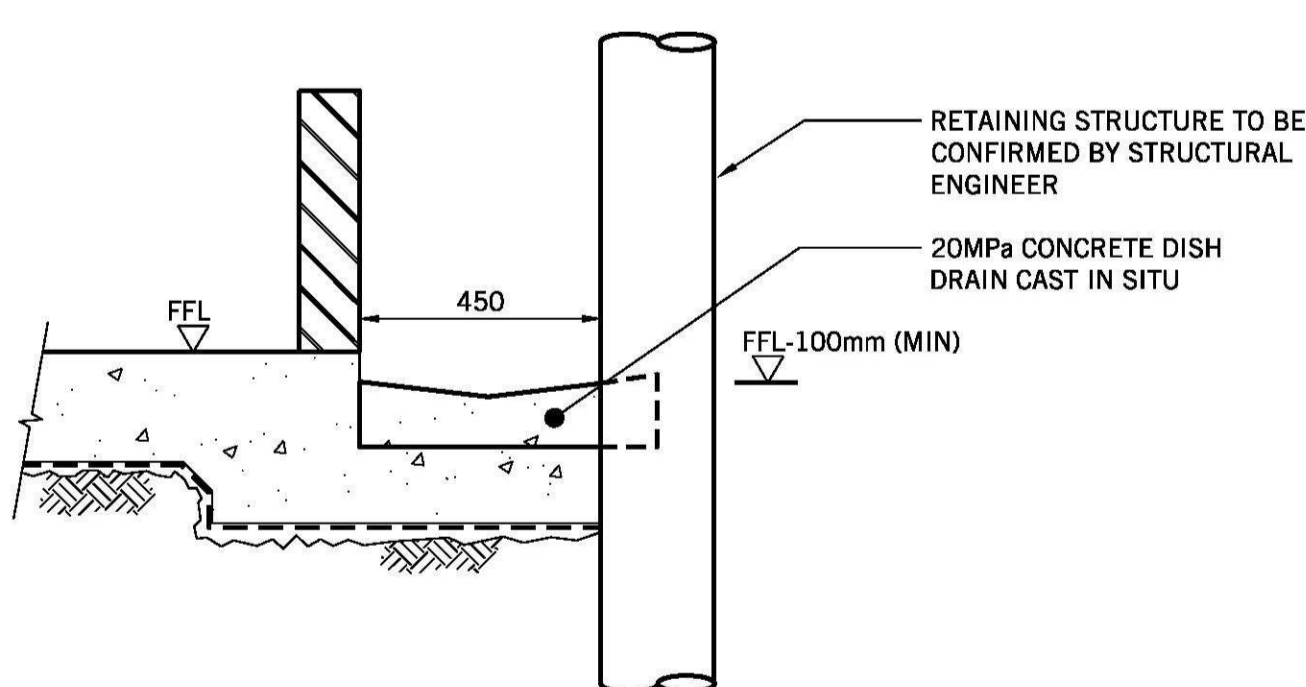
SECTION VIEW

**TYPICAL BASEMENT PERIMETER DRAINAGE PIT DETAIL**

N.T.S

3

5.1



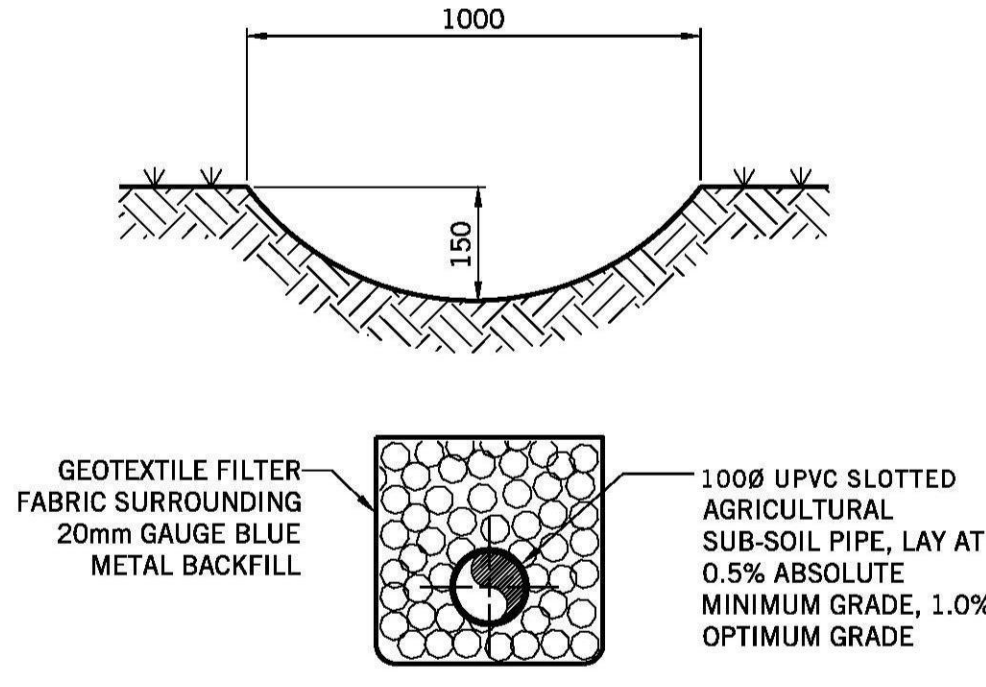
SECTION VIEW

**TYPICAL BASEMENT PERIMETER DRAINAGE DISH DRAIN / SUB-SOIL DETAIL**

N.T.S

4

5.1



SECTION VIEW

**GRASSED DRAINAGE SWALE WITH SUBSOIL**

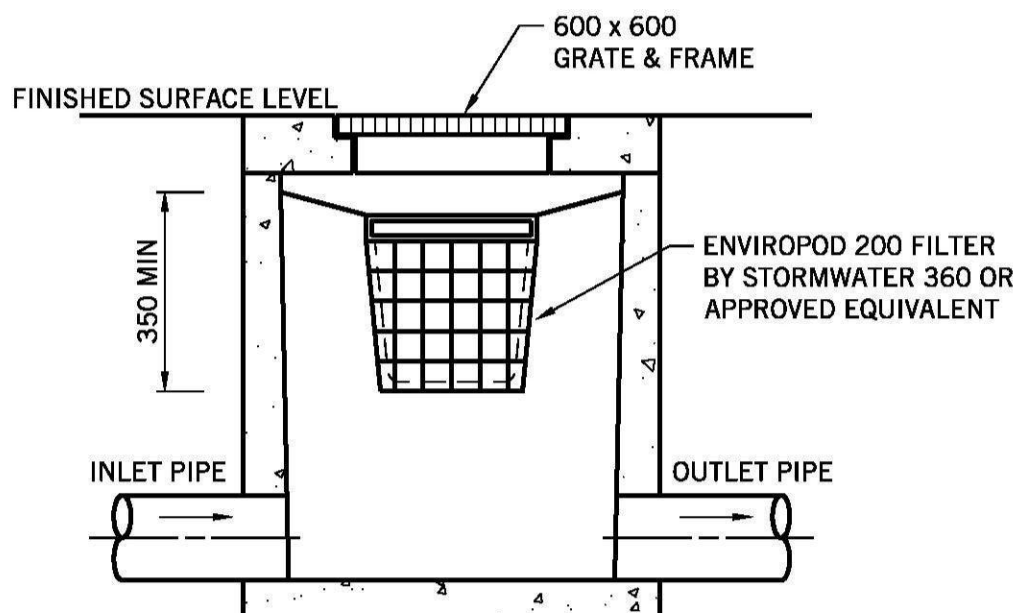
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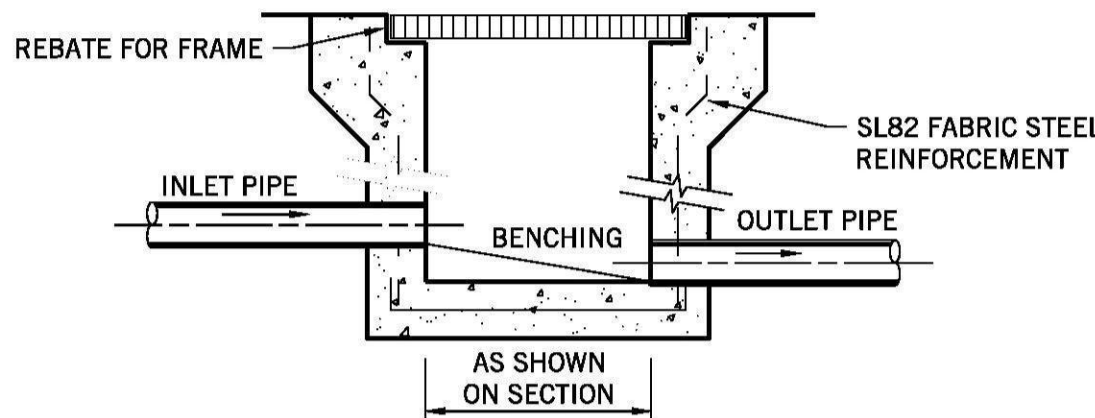
STORMFILTER DESIGN TABLE						
<ul style="list-style-type: none"><li>STORMFILTER TREATMENT CAPACITY VARIES BY NUMBER OF FILTER CARTRIDGES INSTALLED AND BY REGION SPECIFIC INTERNAL FLOW CONTROLS. CONVEYANCE CAPACITY IS RATED AT 80L/S.</li><li>THE STANDARD CONFIGURATION IS SHOWN. ACTUAL CONFIGURATION OF THE SPECIFIED STRUCTURE(S) PER CIVIL ENGINEER WILL BE SHOWN ON SUBMITTAL DRAWING(S).</li><li>ALL PARTS PROVIDED AND INTERNAL ASSEMBLY BY STORMWATER360 AUSTRALIA UNLESS OTHERWISE NOTED.</li></ul>						
CARTRIDGE HEIGHT	690		460		310	
SYSTEM HYDRAULIC DROP (H - REQ'D, MIN.)	930		700		550	
TREATMENT BY MEDIA SURFACE AREA L/s/m <sup>2</sup>	1.4	0.7	1.4	0.7	1.4	0.7
CARTRIDGE FLOW RATE (L/s)	1.42	0.71	0.95	0.47	0.63	0.32

GENERAL NOTES	
1.	INLET AND OUTLET PIPING SHALL BE SPECIFIED BY SITE CIVIL ENGINEER (SEE PLANS) AND PROVIDED BY CONTRACTOR. STORMFILTER IS PROVIDED WITH OPENINGS AT INLET AND OUTLET LOCATIONS.
2.	IF THE PEAK FLOW RATE, AS DETERMINED BY THE SITE CIVIL ENGINEER, EXCEEDS THE PEAK HYDRAULIC CAPACITY OF THE PRODUCT, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED. PLEASE CONTACT STORMWATER360 AUSTRALIA FOR OPTIONS.
3.	THE FILTER CARTRIDGE(S) ARE SIPHON-ACTUATED AND SELF-CLEANING. THE ACTUAL NUMBER SHALL BE SPECIFIED BY THE SITE CIVIL ENGINEER ON SITE PLANS OR IN DATA TABLE BELOW. PRECAST STRUCTURE TO BE CONSTRUCTED BY STORMWATER360 AUSTRALIA IN ACCORDANCE WITH AS3600.
4.	SEE STORMFILTER DESIGN TABLE FOR REQUIRED HYDRAULIC DROP. FOR SHALLOW, LOW DROP OR SPECIAL DESIGN CONSTRAINTS, CONTACT STORMWATER360 AUSTRALIA FOR DESIGN OPTIONS.
5.	ALL WATER QUALITY PRODUCTS REQUIRE PERIODIC MAINTENANCE AS OUTLINED IN THE O&M GUIDELINES. PROVIDE MINIMUM CLEARANCE FOR MAINTENANCE ACCESS.
6.	STRUCTURE AND ACCESS COVERS DESIGNED TO MEET AUSTROADS T44 LOAD RATING WITH 0.0m TO 2.0m FILL MAXIMUM (CLASS D).
7.	THE STRUCTURE THICKNESSES SHOWN ARE FOR REPRESENTATIONAL PURPOSES AND VARY REGIONALLY.
8.	ANY BACKFILL DEPTH, SUB-BASE, AND OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY SITE CIVIL ENGINEER.
9.	CARTRIDGE HEIGHT IS 690mm (SHOWN). CARTRIDGE HEIGHT AND ASSOCIATED DESIGN PARAMETERS PER STORMFILTER DESIGN TABLE.
10.	STORMFILTER BY STORMWATER360 AUSTRALIA: PHONE: 1300 354 722 OR <a href="http://www.stormwater360.com.au">www.stormwater360.com.au</a>

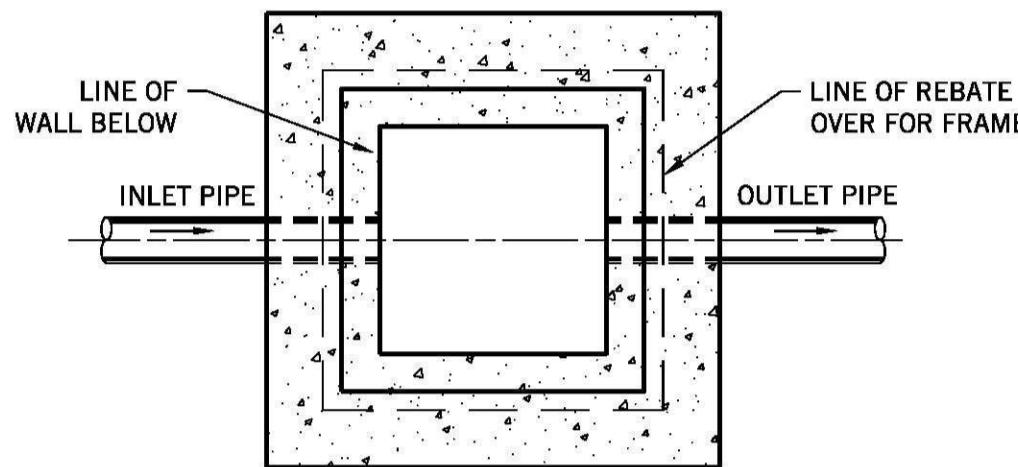


**DROP PIPE ENVIROPOD CONFIGURATION SECTION**

N.T.S



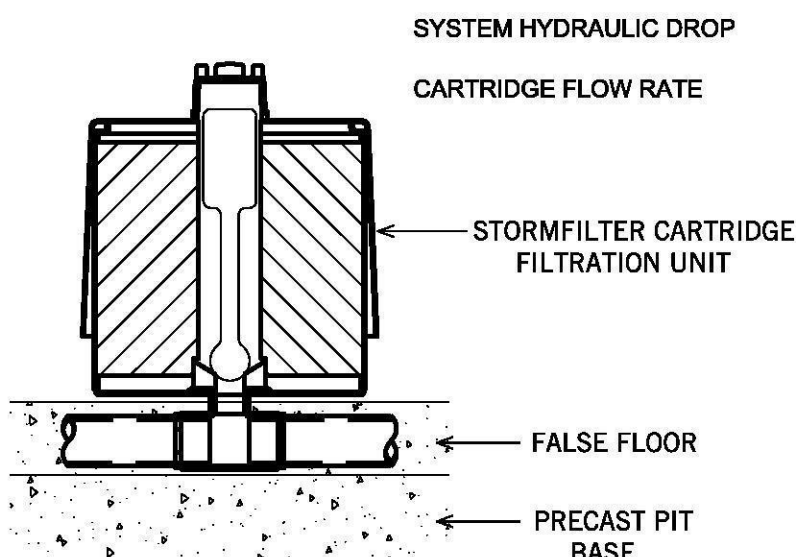
SECTION



PLAN WITHOUT GRATE

**TYPICAL GRATED INLET PIT**

N.T.S

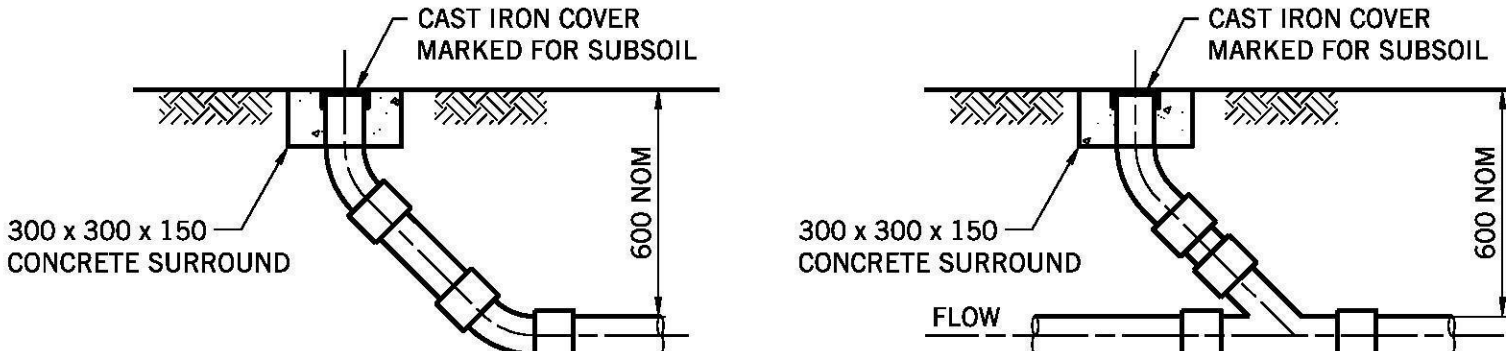


**STORMFILTER CARTRIDGE DETAIL**

N.T.S

F

6.1



HIGH END RISER

N.T.S

INTERMEDIATE RISER

N.T.S

PROVIDE CLEAN OUTS TO ENDS AND AT INTERMEDIATE LOCATIONS OF SUBSOIL PIPES WHERE NOTED C.O. ON PLAN

**TYPICAL SUBSOIL DRAIN CLEANOUT**

N.T.S

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REFER TO DRAWING NO. SWDA 1.1  
FOR CONSTRUCTION NOTES

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P3	RE-ISSUED FOR DA	MB	GB	08.06.16
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Project  
**MIXED USE DEVELOPMENT  
44 - 48 OXFORD STREET  
EPPING**

Title  
**STORMWATER DRAINAGE SERVICES  
DETAILS SHEET 2**

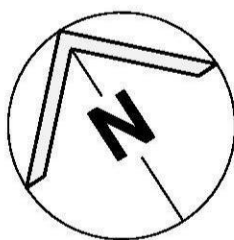
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Electronic Code	Signature Date	Designed
*		<b>M.B.</b>
Scale at A1	Date	Drawn
<b>AS SHOWN</b>	<b>MAY 2016</b>	<b>S.P.S.D</b>
Job No.	Drawing No.	Revision
<b>2015H0038</b>	<b>SWDA 6.2</b>	<b>P4</b>

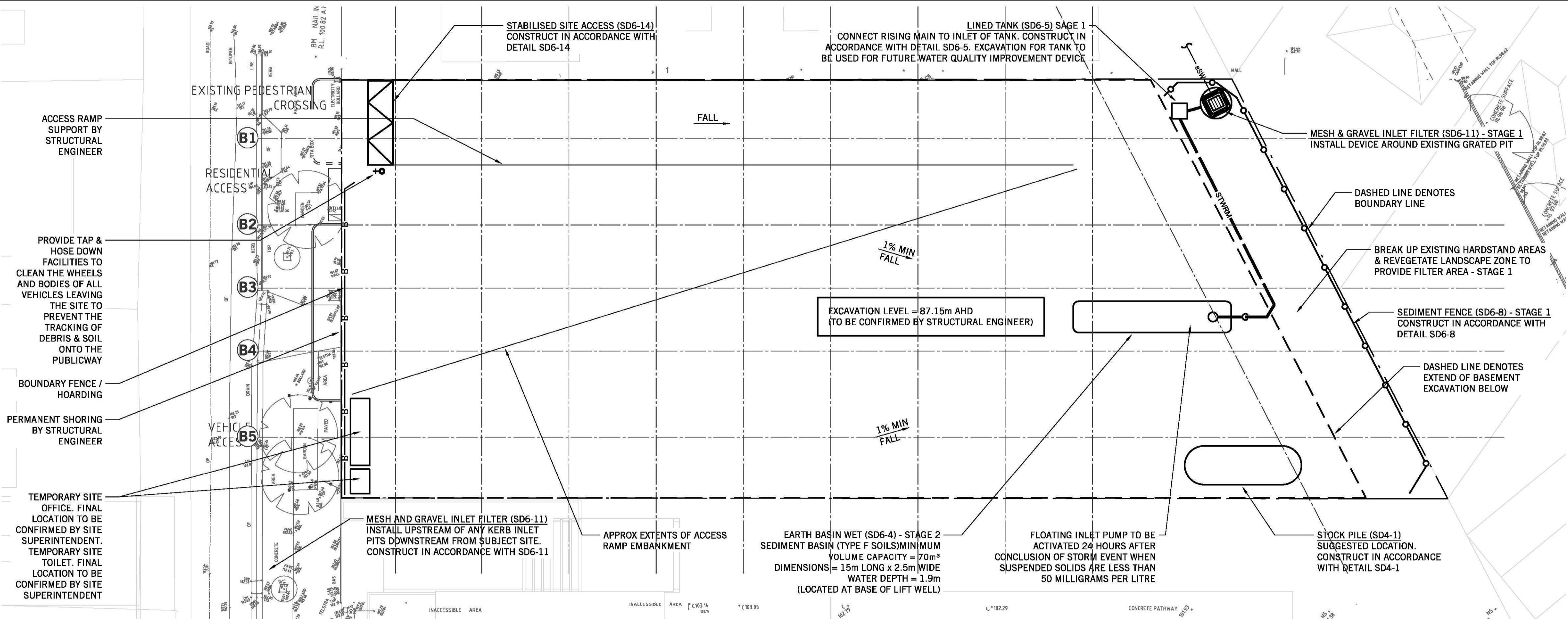
PRELIMINARY - NOT FOR CONSTRUCTION





#### GENERAL NOTES

15. ALL EXCAVATION WORKS ARE TO BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT, IF AVAILABLE, AND THE STRUCTURAL ENGINEER'S DRAWINGS.
16. INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.
17. MESH AND GRAVEL INLET FILTERS (SD 6-11) TO BE INSTALLED UPSTREAM OF PROPOSED STORMWATER PITS AS WELL AS EXISTING STORMWATER PITS DOWNSTREAM OF DISTURBED AREAS.
18. TOP SOIL WILL BE STRIPPED AND STOCKPILED (SD 4-1) FOR LATER USE IN LANDSCAPING IF REQUIRED.
19. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS.
20. TOP SOIL WILL BE RE SPREAD AND ALL DISTURBED AREAS WILL BE REHABILITATED WITHIN 20 WORKING DAYS OF THE COMPLETION OF WORKS.
21. ALL SEDIMENT TO BE STORED AND COLLECTED BY A LIQUID WASTE COMPANY FOR DISPOSAL AT A LICENSED TREATMENT FACILITY.
22. ROADS AND FOOTWAYS TO BE SWEEPED AT THE END OF THE DAY.
23. ALL EROSION AND SEDIMENT CONTROLS WILL BE CHECKED AT LEAST WEEKLY AND AFTER RAINFALL EVENTS TO MAKE SURE THEY ARE MAINTAINED TO A FULLY FUNCTIONAL CONDITION.



#### SOIL AND WATER MANAGEMENT

1. THIS IS A CONCEPTUAL SOIL AND WATER MANAGEMENT ONLY. IT PROVIDES SUFFICIENT DETAIL TO SHOW CLEARLY WORKS CAN PROCEED WITHOUT UNDUE POLLUTION TO RECEIVING WATERS. A DETAILED PLAN WILL BE PREPARED ONCE CONSENT IS GIVEN AND BEFORE WORKS START.

#### TOPSOIL PRIOR TO BULK EARTHWORKS:

2. CONSTRUCT STABILISED SITE ACCESS (SD6-14).
3. PLACE SEDIMENT FENCES (SD6-8) ON THE DOWNSLOPE OF LANDS TO BE DISTURBED INCLUDING THOSE AREAS DISTURBED FOR CONSTRUCTION OF THE SEDIMENT BASINS.
4. STRIP AND STOCKPILE TOPSOIL (SD4-1) FROM THOSE LANDS TO BE EXPOSED TO CONSTRUCTION ACTIVITIES.
5. STABILISE AND REVEGETATE LAND SURFACES DISTURBED DURING DEMOLITION ALONG EASTERN BOUNDARY.

#### DRAINAGE WORKS

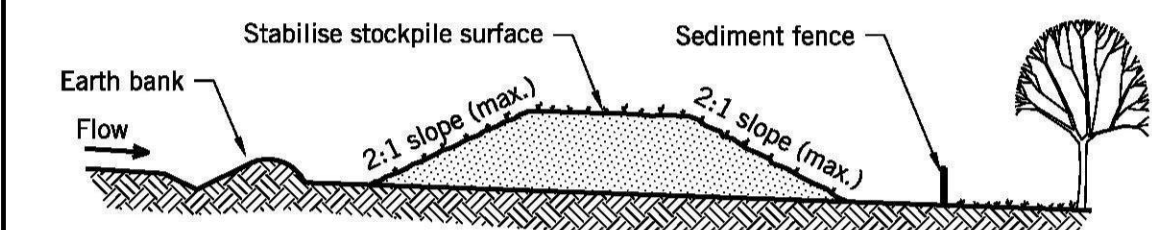
6. ONCE THE EXCAVATION FOR THE BASEMENT HAS BEEN BROUGHT DOWN TO BULK EXCAVATION LEVEL THE LOWEST LIFT PIT IS TO BE USED AS A SUMP AND PUMP AREA. FALL ALL LEVELS AT A MINIMUM 1% GRADE TO THIS LOCATION.
7. CONSTRUCT SEDIMENT BASIN. THIS BASIN DOES NOT NEED TO BE CONSTRUCTED IN EARTH AS SHOWN IN SD 6-4 BUT THEY MUST BE CONSTRUCTED IN IMPERVIOUS MATERIALS. THE SETTLING VOLUME OF THE SEDIMENT BASIN HAS BEEN CALCULATED USING THE CONTAINMENT OF THE 5-DAY, 75TH PERCENTILE RAINFALL EVENT A VOLUMETRIC

RUNOFF COEFFICIENT OF 0.5 HAS BEEN ADOPTED, IN THIS INSTANCE A CONSERVATIVE VALUE.

8. INSTALL EARTH BANKS TO DIRECT OVERLAND FLOWS TO THE SEDIMENT BASIN.
9. INSTALL FLOATING INLET PUMP IN BASIN.
10. THE PUMP SYSTEM IS TO BE ACTIVATED 24 HOURS AFTER CONCLUSION OF STORM EVENT OR WHEN SUSPENDED SOLIDS ARE LESS THAN 50 MILLIGRAMS PER LITRE.
11. THE PUMP SYSTEM IS TO DISCHARGE INTO LINED

#### TANK.

12. UNDERTAKE ROAD AND DRAINAGE WORKS ACCORDINGLY TO THE ENGINEERING PLANS.
13. ALL STORMWATER PITS ARE TO BE SURROUNDED BY A MESH AND GRAVEL INLET FILTER (SD6-11).
14. PROVIDE A SEDIMENT FENCE ALONG WESTERN BOUNDARY ON COMPLETION OF BASEMENT WORKS AND GROUND LEVELS ARE BROUGHT UP TO MEET ADJACENT EXISTING LEVELS.

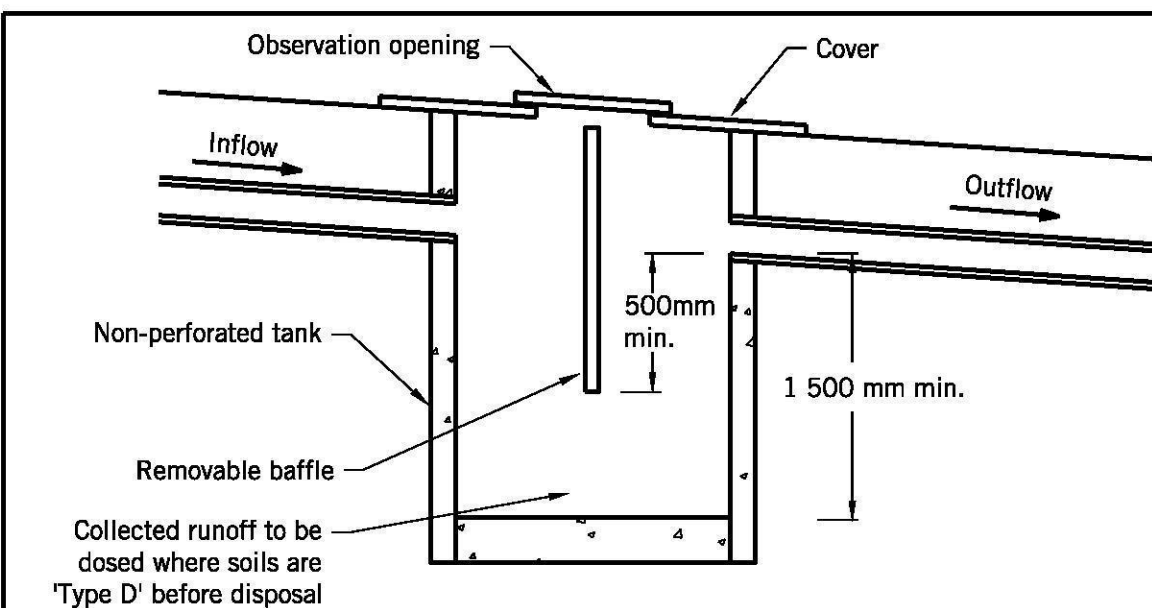


#### Construction Notes

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
5. Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

#### STOCKPILES

#### SD 4-1

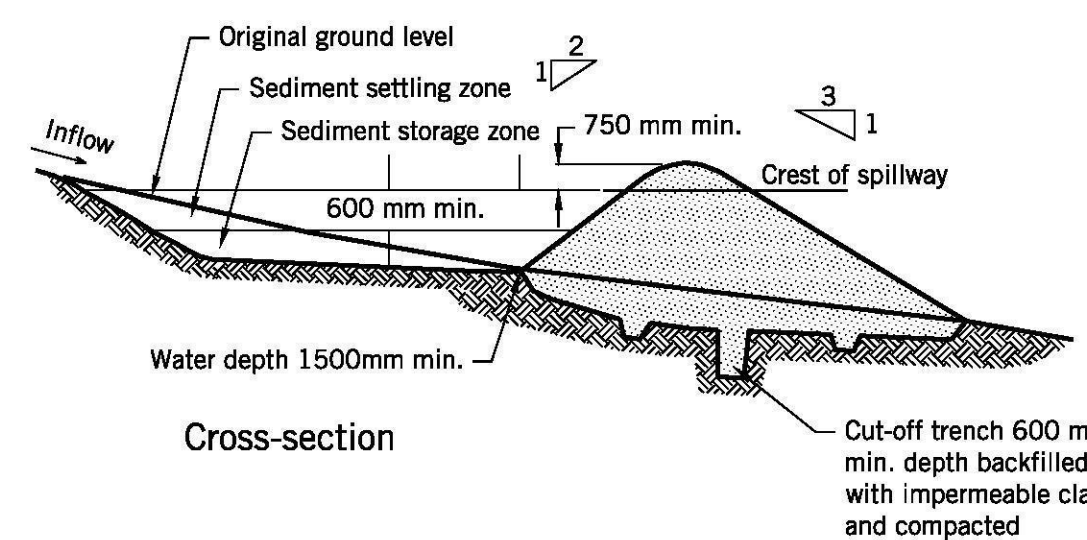
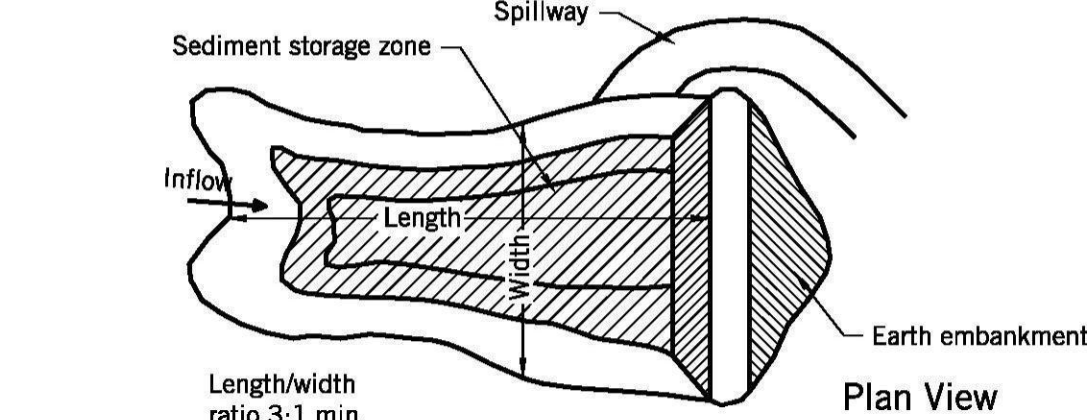


#### Construction Notes

1. Join the inlet to the stormwater, taking any suitable steps to remove bulky or coarse material before it can enter the tank.
2. Connect the outlet to a safe disposal area following the SWMP.
3. Install a removable baffle, central to the inflow/outflow and normal to the direction of flow, ensuring that it reaches 500 mm below the invert of the outlet pipe.
4. Install a cover over the pit with an observation port and access cover.

#### LINED TANK

#### SD 6-5



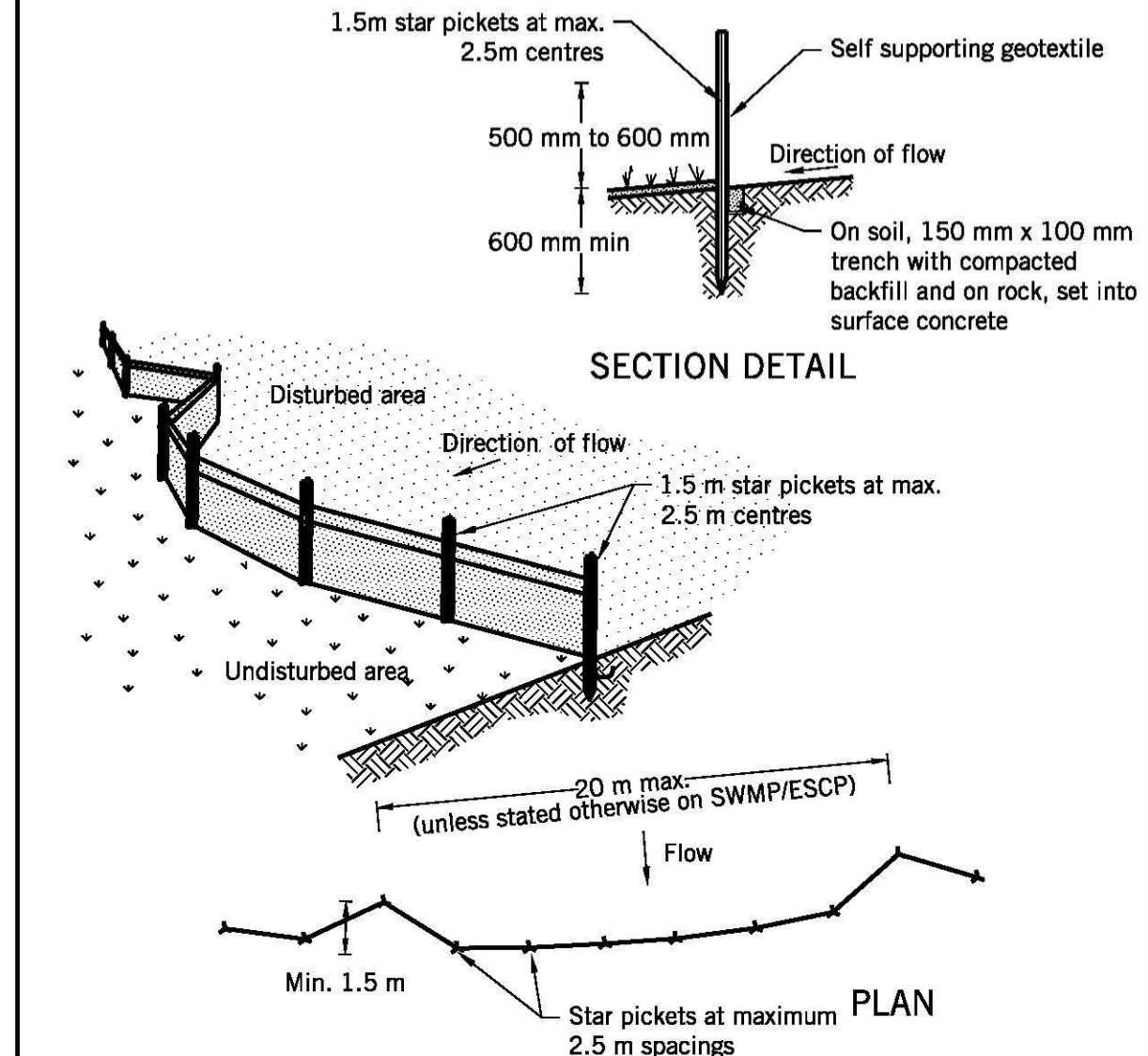
#### Construction Notes

1. Remove all vegetation and topsoil from under the dam wall and from within the storage area.
2. Construct a cut-off trench 500 mm deep and 1,200 mm wide along the centerline of the embankment extending to a point on the gully wall level with the riser crest.
3. Maintain the trench free of water and recompact the materials with equipment as specified in the SWMP to 95 per cent Standard Proctor Density.
4. Select fill following the SWMP that is free of roots, wood, rock, large stone or foreign material.
5. Prepare the site under the embankment by ripping to at least 100 mm to help bond compacted fill to the existing substrate.
6. Spread the fill in 100 mm to 150 mm layers and compact it at optimum moisture content following the SWMP.
7. Construct the emergency spillway.
8. Rehabilitate the structure following the SWMP.

#### EARTH BASIN - WET

(APPLIES TO TYPE 'D' AND 'TYPE F' SOILS ONLY)

#### SD 6-4

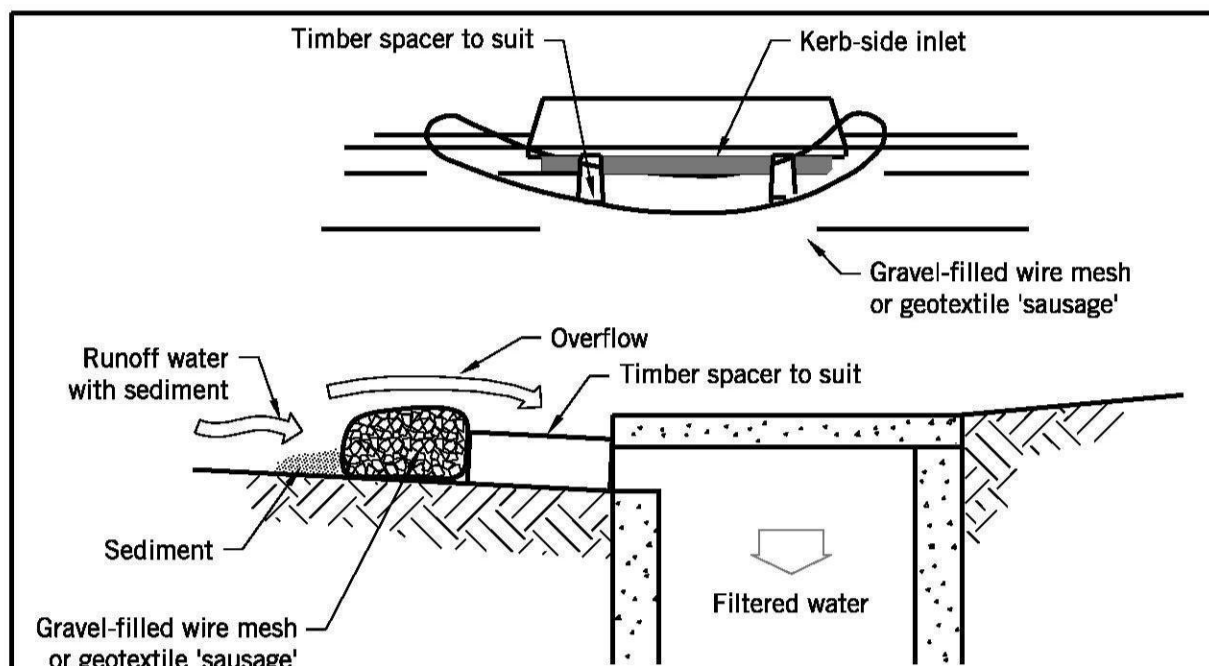


#### Construction Notes

1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
2. Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
4. Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

#### SEDIMENT FENCE

#### SD 6-8



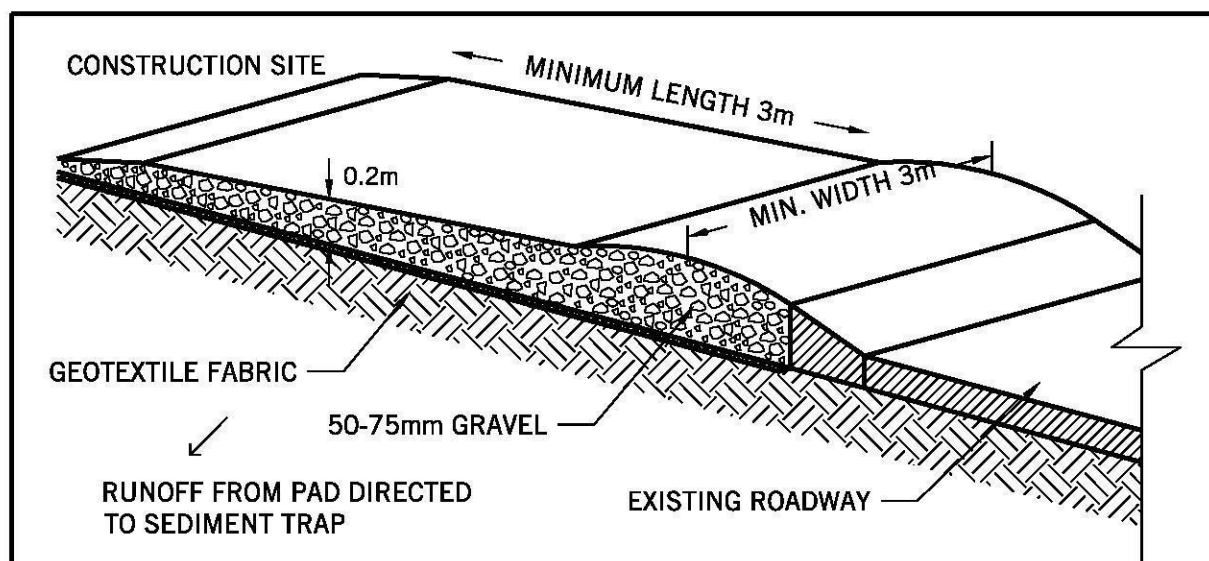
NOTE: This practice only to be used where specified in an approved SWMP/ESCP.

#### Construction Notes

1. Install filters to kerb inlets only at sag points.
2. Fabricate a sleeve made from geotextile or wire mesh longer than the length of the inlet pit and fill it with 25 mm to 50 mm gravel.
3. Form an elliptical cross-section about 150 mm high x 400 mm wide.
4. Place the filter at the opening leaving at least a 100-mm space between it and the kerb inlet. Maintain the opening with spacer blocks.
5. Form a seal with the kerb to prevent sediment bypassing the filter.
6. Sandbags filled with gravel can substitute for the mesh or geotextile providing they are placed so that they firmly abut each other and sediment-laden waters cannot pass between.

#### MESH AND GRAVEL INLET FILTER

#### SD 6-11



#### Construction Notes

1. Strip the topsoil, level the site and compact the subgrade.
2. Cover the area with needle-punched geotextile.
3. Construct a 200 mm thick pad over the geotextile using road base or 30 mm aggregate.
4. Ensure the structure is at least 15 metres long or to building alignment and at least 3 metres wide.
5. Where a sediment fence joins onto the stabilised access, construct a hump in the stabilised access to divert water to the sediment fence.

#### STABILISED SITE ACCESS

#### SD 6-14

P3	RE-ISSUED FOR DA AMENDED ARCH. LAYOUT	MB	GB	09.11.17
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Project  
**MIXED USE DEVELOPMENT  
44 - 48 OXFORD STREET  
EPPING**

Title  
**STORMWATER DRAINAGE SERVICES  
SOIL & WATER MANAGEMENT PLAN**

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Scale at A1	Date	Drawn	
<b>1:250</b>	<b>MAY 2016</b>	<b>S.P.S.D</b>	
Job No.	Drawing No.	Revision	

**2015H0038 SWDA 8.1 P3**

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