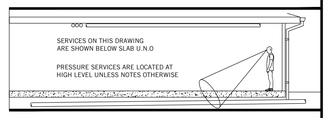


NEW RESIDENCE
AT
41 & 43 BEACH ROAD
COLLAROY
FOR
RUSSELL STALEY
JENNIFER STALEY

LEGEND

PIPEWORK

RW	RAINWATER DRAINAGE
RW	RAINWATER CHARGED
STW	STORMWATER DRAINAGE
STWRM	STORMWATER RISING MAIN
SS	SUBSOIL DRAINAGE
B B	BARRIER FENCE
e e e	EXISTING PIPE
e x e x	EXISTING PIPE MADE REDUNDANT
	SEDIMENT FENCE LINE
	PROPERTY BOUNDARY
	SWALE
	DROPPER
	RISER
TB TB	TURBIDITY BARRIER
FALL	DIRECTION OF FALL OR FLOW
	DOWN PIPE
PBO	PLANTER BOX OUTLET
RWO/BO	RAIN WATER OUTLET / BALCONY OUTLET
SWP	STORMWATER PIT (GRATE)
SWP	STORMWATER PIT (RWO IN BASE)
	SEALED PIT COVER
	GULLY PIT
	REFLUX VALVE
	PIPE CONNECTION POINT
	PIPE PENETRATING
	PIPE NOT PENETRATING
	PUMP
	OVERLAND FLOW PATH
CO	CLEAR OUT
TD	TUNDISH
TG	TRENCH GRATE
	DOWNPIPE SPREADER

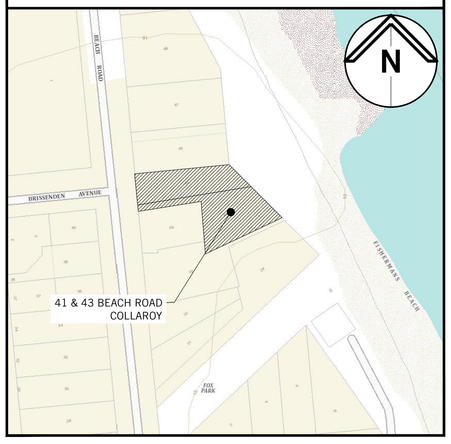
MISCELLANEOUS

-- / --	SERVICE / SERVICE NUMBER PIPE SIZE
DWG	FOR CONTINUATION REFER DRG No
1 / DWG	FOR SECTION VIEW REFER TO DRAWING

AHD	AUSTRALIAN HEIGHT DATUM
AP	ACCESS PANEL
BG	BOX GUTTER
DP	DOWNPIPE
e	EXISTING
FFL	FINISHED FLOOR LEVEL
GIP	GRATED INLET PIT
HED	HIGH EARLY DISCHARGE
HFB	HIGH FLOW BYPASS
HL	HIGH LEVEL IN CEILING
HP	HIGH POINT
IL	INVERT LEVEL
INT	INTERNAL
KIP	KERB INLET PIT
O/F	OVERFLOW
OSD	ON SITE DETENTION
RHS	RECTANGULAR HOLLOW SECTION
RL	RELATIVE LEVEL
RWH	RAINWATER HEAD
RWT	RAINWATER TANK
SRL	SLAB RELATIVE LEVEL
SRZ	STRUCTURAL ROOT ZONE
TBA	TO BE ADVISED
TKL	TOP KERB LEVEL
TRZ	TREE ROOT ZONE
TWL	TOP WATER LEVEL
UNO	UNLESS NOTED OTHERWISE

DRAWING LIST

LOCALITY PLAN



NOTES

1) ALL DRAINAGE WORKS ARE TO BE IN ACCORDANCE WITH AS/NZS 3500 - STORMWATER DRAINAGE, WARRINGAH COUNCIL DEVELOPMENT CONTROL PLAN FOR ON-SITE STORMWATER MANAGEMENT AND THE LATEST BASIX CERTIFICATE.

2) SITE AREA = 1536m²

3) DUE TO THE PRESENCE OF A SILTY CLAY LAYER INVESTIGATED BY TAYLOR GEOTECHNICAL ENGINEERING REPORT DATED ON 15/06/2019, IT IS CONCLUDED THAT A STORMWATER ABSORPTION TRENCH IS NOT SUITABLE FOR THE DEVELOPMENT. A STORMWATER DISPERSAL TRENCH AND LEVEL SPREADER IS PROPOSED DOWNSTREAM OF THE DEVELOPMENT IN LIEU OF A STORMWATER ABSORPTION TRENCH IN ACCORDANCE WITH COUNCIL PRE-DA MEETING MINUTES ADVICE NUMBER PLM2019/0024 - DATED ON 26/02/2019.

4) A SILT TRAP PIT IS TO BE INCORPORATED WITHIN THE DOWNSTREAM END OF THE EXISTING STORMWATER SYSTEM SERVING THE SITE IN ACCORDANCE WITH WARRINGAH COUNCIL REQUIREMENTS. THIS IS TO BE REGULARLY MAINTAINED AND CLEARED OF ALL DEBRIS.

5) IN ACCORDANCE WITH THE BASIX CERTIFICATE A RAINWATER TANK WITH A MIN CAPACITY OF 6000L IS PROPOSED. THIS IS TO COLLECT A MINIMUM ROOF AREA OF 370m².

Rev.	Issue / Amendment	By	App.	Date
P2	ISSUED FOR DA	DH	GB	17.12.19
P1	95% PRELIMINARY ISSUE	DH	GB	16.12.19

PARTRIDGE HYDRAULIC SERVICES ABN 11 608 027 578
Level 5, 1 Chandos Street, St Leonards NSW 2065 Australia
t 612 9460 9000 **f** 612 9460 9090
email: partridge@partridge.com.au **web:** www.partridge.com.au

HYDRAULIC SERVICES

Client
RUSSELL STALEY
JENNIFER STALEY

Architect
VIRGINIA KERRIDGE ARCHITECT
03/59 GREAT BUCKINGHAM STREET, REDFERN
TEL: 02 3699 8527 EMAIL: info@vk.com.au

Project
NEW RESIDENCE
41 & 43 BEACH ROAD
COLLAROY

Title
STORMWATER DRAINAGE SERVICES
COVERSHEET AND DRAWING LEGEND

ELECTRONIC SIGNATURE:
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DO NOT SCALE DRAWINGS
USE FIGURED DIMENSIONS

Electronic Code	Signature Date	Designed
-		D.H
Scale at A1	Date	Drawn
N/A	DECEMBER 2019	S.P
Job No.	Drawing No.	Revision
2019H0087	SWDA 1.1	P2

PRELIMINARY - NOT FOR CONSTRUCTION

SERVICES ON THIS DRAWING
ARE SHOWN BELOW SLAB U.N.O

PRESSURE SERVICES ARE LOCATED AT
HIGH LEVEL UNLESS NOTES OTHERWISE

N

DASHED LINE DENOTES BOUNDARY LINE

SWP 450 x 450 RL 11.80 IL 11.20

SWP 600 x 600 RL 11.60 IL 10.90

ARROW DENOTES OVERLAND FLOW PATH

HOB TERMINATED 150mm ABOVE FINISHED LANDSCAPED LEVEL TO PREVENT OVERLAND FLOW ENTERING BASEMENT LEVEL VIA DRIVEWAY RAMP

APPROXIMATE LOCATION EXISTING SYDNEY WATER SEWER

DOWNPIPES CONCEALED WITHIN WALL CAVITY

SWP 450 x 450 RL 11.80 IL 11.49

SWP 450 x 450 RL 11.80 IL 11.30

2 x VERTICAL WALL MOUNTED FIRST FLUSH DIVERTER TO HAVE MINIMUM CHAMBER VOLUME OF 175 L. MODEL: RAINWATER HARVESTING WDAC09 CHAMBER: 300mm DIAMETER AT 1.5m LENGTH EACH

DASHED LINE DENOTES EXTENT OF RAINWATER TANK LOCATED WITHIN BASEMENT LEVEL

DP CONCEALED WITHIN WALL CAVITY

DP CONCEALED WITHIN WALL CAVITY

SWP 600 x 600 RL 10.80 IL 10.20

SWP 900 x 900 SILT TRAP PIT TO NORTHERN BEACHES COUNCIL SPECIFICATION RL 7.60 PIPE IL 6.70 PIT IL 6.40 REFER TO DETAILS

STORMWATER DISPERSAL TRENCH AND LEVEL SPREADER TO COUNCIL SPECIFICATIONS RL 4.24 REFER TO DETAILS

APPROXIMATE LOCATION OF EXISTING SYDNEY WATER SEWER

LEVEL SPREADER

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TEL: 02 3699 8527 EMAIL: info@vk.com.au

Project
NEW RESIDENCE
41 & 43 BEACH ROAD
COLLAROY

Title
STORMWATER DRAINAGE SERVICES
GROUND FLOOR LAYOUT

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Job No.	Drawing No.	Revision
2019H0087	SWDA 1.2	P3

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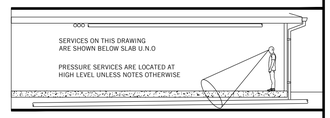
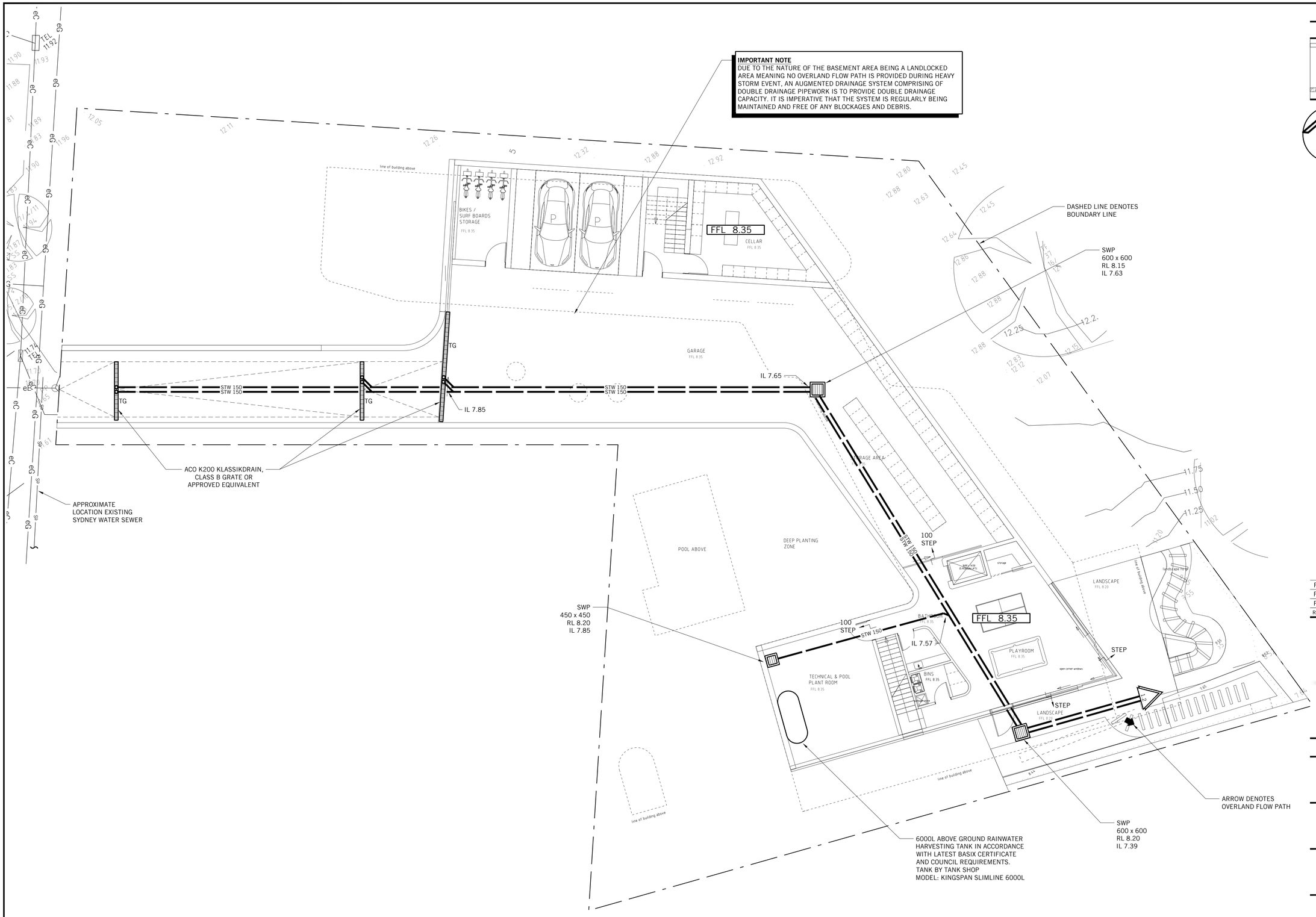


IMPORTANT NOTE
DUE TO THE NATURE OF THE BASEMENT AREA BEING A LANDLOCKED AREA MEANING NO OVERLAND FLOW PATH IS PROVIDED DURING HEAVY STORM EVENT, AN AUGMENTED DRAINAGE SYSTEM COMPRISING OF DOUBLE DRAINAGE PIPEWORK IS TO PROVIDE DOUBLE DRAINAGE CAPACITY. IT IS IMPERATIVE THAT THE SYSTEM IS REGULARLY BEING MAINTAINED AND FREE OF ANY BLOCKAGES AND DEBRIS.



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Project
NEW RESIDENCE
41 & 43 BEACH ROAD
COLLAROY

Title
STORMWATER DRAINAGE SERVICES
BASEMENT LAYOUT

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2019H0087	SWDA 1.3	P3

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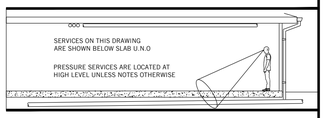
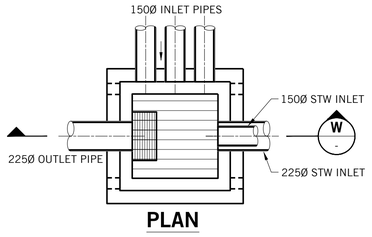
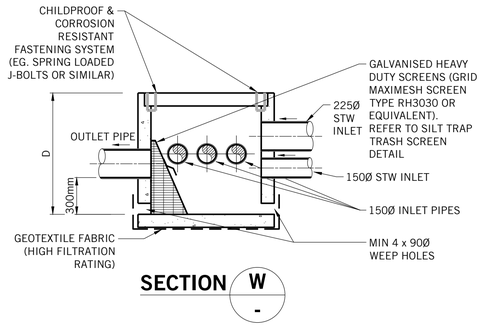


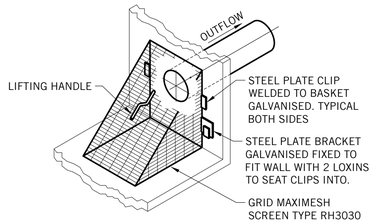


PLAN

MAINTENANCE ACTION	FREQUENCY	RESPONSIBILITY	PROCEDURE
SILT TRAP PIT	MONTHLY AND AFTER HEAVY RAINFALL EVENTS	PROPERTY OWNER	OPEN GRATE AND REMOVE TRASH OR LEAF LITTER THAT HAS BEEN CAPTURED BY THE TRASH SCREEN. REMOVE ALL SILT IN SUMP AND DISPOSE IN GARDEN WASTE BIN. REMOVE ANY BLOCKAGES OVER WEEP HOLES IN BASE. ENSURE TRASH SCREEN IS SECURELY FIXED AND REPLACE GRATE CORRECTLY.



SECTION W -



SILT TRAP TRASH SCREEN DETAIL

N.T.S.

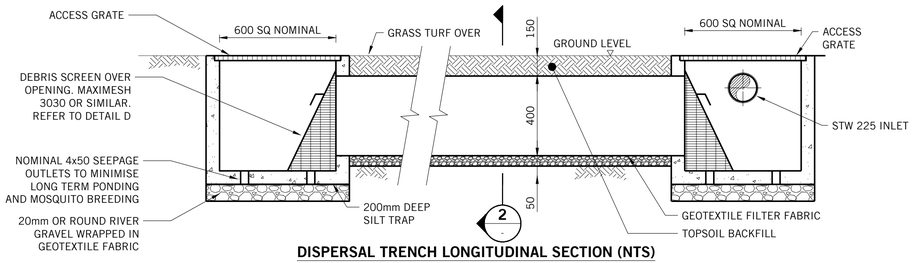
NOTES
1) PIT DIMENSIONS:
600 x 600 FOR < D ≤ 0.9
600 x 900 FOR 0.9 < D ≤ 1.2
900 x 900 FOR 1.2 < D (AS SHOWN ON PLAN)

2) PITS TO BE CONSTRUCTED FROM - CAST IN-SITU CONCRETE, PRECAST CONCRETE OF DOUBLE BRICK.

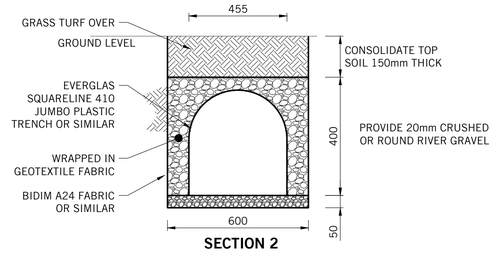
3) A SIGN SHALL BE CONSTRUCTED ADJACENT TO THE PIT STATING: "THIS SEDIMENT / SILT ARRESTOR PIT SHALL BE REGULARLY INSPECTED AND CLEANED".

SILT TRAP PIT

N.T.S



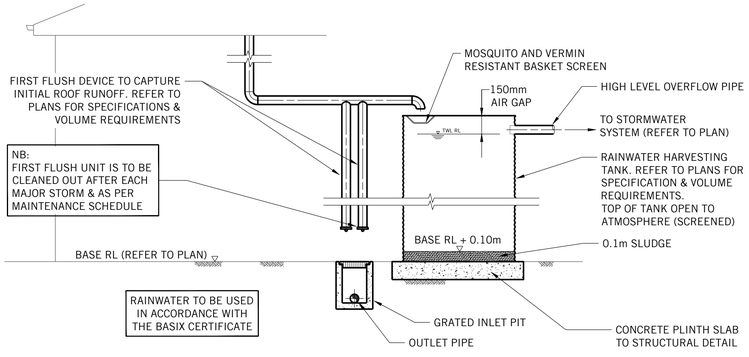
DISPERSAL TRENCH LONGITUDINAL SECTION (NTS)



SECTION 2

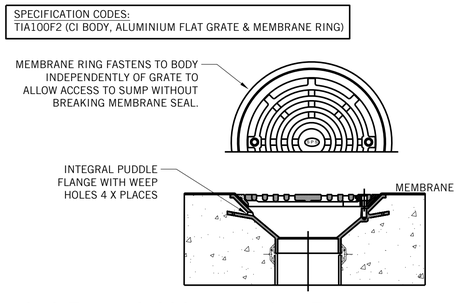
TYPICAL STORMWATER DISPERSAL TRENCH

N.T.S



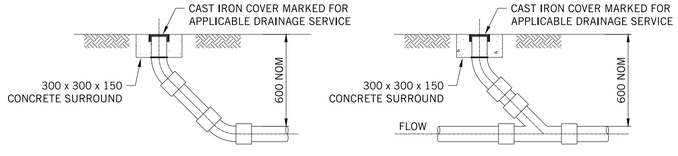
TYPICAL ABOVE GROUND RAINWATER STORAGE TANK

N.T.S



SPS TRUFLO 100mm RWO WITH FLAT GRATE & MEMBRANE CLAMP

N.T.S
(SPS REF 1.03)



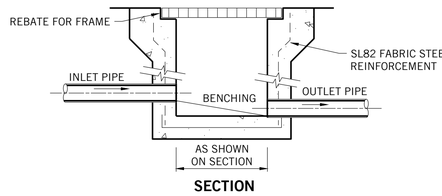
HIGH END RISER
N.T.S

INTERMEDIATE RISER
N.T.S

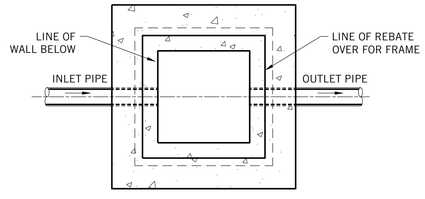
PROVIDE CLEAR OUTS INSTALLED IN ACCORDANCE WITH A.S. 3500 AT LOCATIONS WHERE NOTED C.O. ON PLAN

TYPICAL DRAINAGE CLEAR OUT (INSPECTION OPENING)

N.T.S



SECTION



PLAN WITHOUT GRATE

TYPICAL GRATED INLET PIT

N.T.S

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Project
NEW RESIDENCE
41 & 43 BEACH ROAD
COLLAROY

Title
STORMWATER DRAINAGE SERVICES DETAILS SHEET

ELECTRONIC SIGNATURE:
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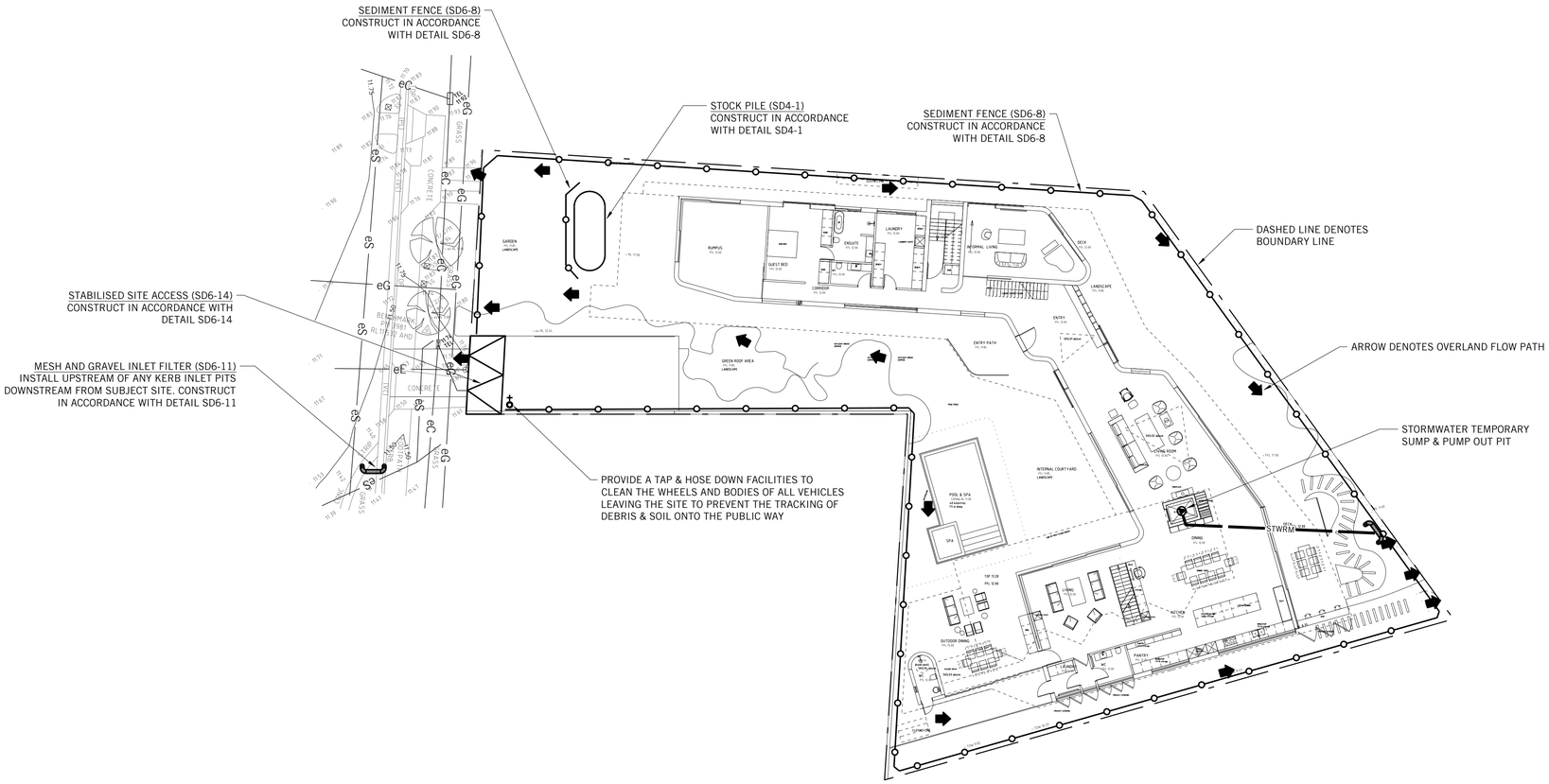
AS SHOWN	DECEMBER 2019	S.P
Job No.	Drawing No.	Revision
2019H0087	SWDA 1.4	P2

PRELIMINARY - NOT FOR CONSTRUCTION



SERVICES ON THIS DRAWING
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PRESSURE SERVICES ARE LOCATED AT
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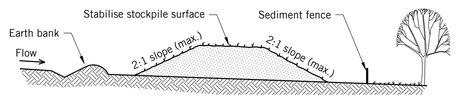
N

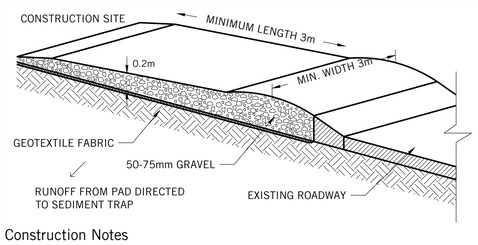
STOCKPILES — SD 4-1



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.

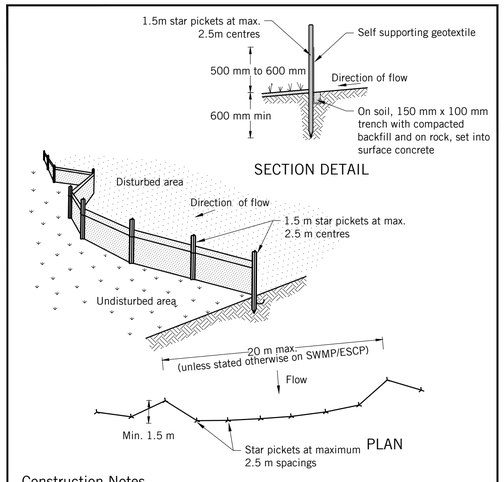
STABILISED SITE ACCESS — SD 6-14



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.

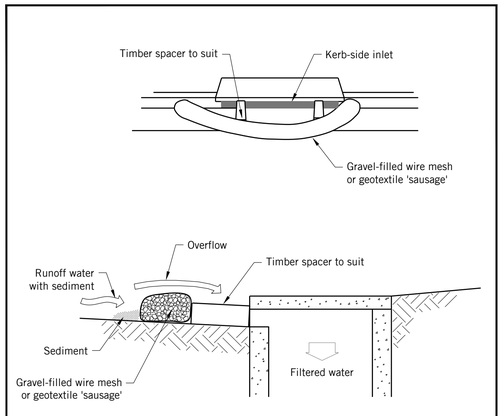
SEDIMENT FENCE — SD 6-8



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.

MESH AND GRAVEL INLET FILTER — SD 6-11



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.

EROSION AND SEDIMENT CONTROL PLAN

1. 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) AND NORTHERN BEACHES COUNCIL'S DEVELOPMENT CONTROL PLAN (DCP).
2. ALL EXCAVATION WORKS ARE TO BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT, IF AVAILABLE, AND THE STRUCTURAL ENGINEER'S DRAWINGS.
3. INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.
4. 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.
5. TOP SOIL WILL BE STRIPPED AND STOCKPILED (SD 4-1) FOR LATER USE IN LANDSCAPING.
6. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS.
7. TOP SOIL WILL BE RE SPREAD AND ALL DISTURBED AREAS WILL BE REHABILITATED WITHIN 20 WORKING DAYS OF THE COMPLETION OF WORKS.
8. ALL SEDIMENT TO BE STORED AND COLLECTED BY A LIQUID WASTE COMPANY FOR DISPOSAL AT A LICENSED TREATMENT FACILITY.
9. ROADS AND FOOTWAYS TO BE SWEPT AT THE END OF THE DAY.
10. 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.

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JENNIFER STALEY

Architect
VIRGINIA KERRIDGE ARCHITECT
03/59 GREAT BUCKINGHAM STREET, REDFERN
TEL: 02 3699 8527 EMAIL: info@vk.com.au

Project
NEW RESIDENCE
41 & 43 BEACH ROAD
COLLAROY

Title
STORMWATER DRAINAGE SERVICES
EROSION & SEDIMENT CONTROL
PLAN AND DETAILS

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.

DO NOT SCALE DRAWINGS
USE FIGURED DIMENSIONS

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-		D.H
Scale at A1	Date	Drawn
1:200	DECEMBER 2019	S.P
Job No.	Drawing No.	Revision
2019H0087	SWDA 1.5	P3

PRELIMINARY - NOT FOR CONSTRUCTION