

3 CENTRAL ROAD, AVALON BEACH

CONCEPT STORMWATER MANAGEMENT

SITE WORKS - GENERAL

- ALL WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH LOCAL COUNCIL, AUSTRALIAN AND AUTHORITY STANDARDS.
- ALL TRENCHING WORKS ARE TO BE RESTORED TO ORIGINAL CONDITION.
- THE INTEGRITY OF ALL EXISTING AND NEW SERVICES IS TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
- ALL PLANS ARE TO BE READ IN CONJUNCTION WITH APPROVED ARCHITECTS, STRUCTURAL ENGINEERS AND OTHER CONSULTANT'S PLANS. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER FOR CLARIFICATION.
- THE ENGINEER SHALL BE GIVEN A MIN. OF 48 HOURS NOTICE FOR ALL STORMWATER DRAINAGE AND PAVEMENT INSPECTIONS. CONCRETE SHALL NOT BE DELIVERED UNTIL ENGINEERS APPROVAL IS OBTAINED.

SITE WORKS - ACCESS AND SAFETY

- ALL WORKS ARE TO BE UNDERTAKEN IN A SAFE MANNER IN ACCORDANCE WITH ALL STATUTORY AND INDUSTRIAL RELATION REQUIREMENTS.
- ACCESS TO ADJACENT BUILDINGS AND PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.
- WHERE NECESSARY SAFE PASSAGE SHALL BE PROVIDED FOR VEHICLES AND PEDESTRIANS THROUGH OR ADJACENT TO THE SITE.

STORMWATER SUMMARY

ON-SITE DETENTION:

THE ON-SITE DETENTION TANK PROPOSED FOR THE DEVELOPMENT HAS BEEN SIZED AS PER THE TABLE LOCATED IN SECTION B5.7 OF PITTWATER COUNCIL'S DEVELOPMENT CONTROL PLAN (2015).

RAINWATER TANK:

THE RAINWATER TANK PROPOSED FOR THE DEVELOPMENT HAS BEEN SIZED AS PER THE BASIX CERTIFICATE PREPARED FOR THE DEVELOPMENT. THE SIZE OF THE RAINWATER IS COMPLIANT WITH SECTION B5.5 OF PITTWATER COUNCIL'S DEVELOPMENT CONTROL PLAN (2015) AND THE REQUIREMENTS OF NORTHERN BEACHES COUNCIL TABLE.

STORMWATER QUALITY:

STORMWATER QUALITY TREATMENT DEVICES HAVE BEEN PROPOSED FOR USE WITHIN THE DEVELOPMENT BASED ON PITTWATER COUNCIL'S DEVELOPMENT CONTROL PLAN (2015) AND ADVICE RECEIVED BY COUNCIL ON THE 14TH OF JULY 2020. REFER TO THE INTEGRATED WATER CYCLE MANAGEMENT REPORT (19279_C_RPT_IWCM REPORT (3)) ACCOMPANYING THESE PLANS FOR FURTHER INFORMATION.

SEDIMENT AND EROSION CONTROL

- THE CONTRACTOR SHALL INSTIGATE ALL SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL AND THE "BLUE BOOK" (MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION, PRODUCED BY THE DEPARTMENT OF HOUSING). THESE MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED.
- THE SEDIMENT & EROSION CONTROL PLAN PRESENTS CONCEPTS ONLY, THE CONTRACTOR SHALL AT ALL TIMES BE RESPONSIBLE FOR THE ESTABLISHMENT & MANAGEMENT OF A DETAILED SCHEME MEETING COUNCIL'S DESIGN, AND ALL OTHER REGULATORY AUTHORITY REQUIREMENTS.
- WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE SHALL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
 - INSTALL ALL TEMPORARY SEDIMENT FENCES AND BARRIER FENCES, WHERE FENCES ARE ADJACENT TO EACH OTHER THE SEDIMENT FENCE CAN BE INCORPORATED INTO THE BARRIER FENCE.
 - CONSTRUCT TEMPORARY STABILISED SITE ACCESS, INCLUDING SHAKE DOWN AND WASH PAD.
 - INSTALL SEDIMENT CONTROL MEASURES AS OUTLINED ON THESE SEDIMENT AND CONTROL PLANS (ONCE APPROVED)
- THE CONTRACTOR SHALL UNDERTAKE SITE DEVELOPMENT WORKS SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF MINIMUM WORKABLE SIZE.
- AT ALL TIMES AND IN PARTICULAR DURING WINDY AND DRY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. TACIFIERS MAY BE USED TO CONTROL DUST DURING EXTENDED PERIODS OF DRY WEATHER.
- ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) SHALL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
- WATER SHALL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN STABILISED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED OUT.
- TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED / REHABILITATED.
- THE CONTRACTOR SHALL ALLOW FOR THE ESTABLISHMENT OF ANY OTHER EROSION PROTECTION MEASURES. (IF APPLICABLE).
- THE CONTRACTOR SHALL REGULARLY INSPECT (MINIMUM TWICE PER WEEK) ALL EROSION AND SEDIMENT CONTROL MEASURES TO ENSURE THEY ARE OPERATING EFFECTIVELY. REPAIRS AND/OR MAINTENANCE SHALL BE UNDERTAKEN REGULARLY AND AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.
- ACCEPTABLE RECEPTORS SHALL BE USED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER. WASTE FROM THESE RECEPTORS SHALL BE DISPOSED OF IN ACCORDANCE WITH REGULATORY AUTHORITY REQUIREMENTS. PAY ALL FEES AND PROVIDE EVIDENCE OF SAFE DISPOSAL.

STORMWATER

- ALL WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THE FOLLOWING AUSTRALIAN STANDARDS AS2032, AS3500 AND AS3725 AS A MINIMUM.
- REFER TO INTEGRATED WATER CYCLE MANAGEMENT REPORT (1) (DATED: 29.07.20) FOR FURTHER DETAILS ON STORMWATER SYSTEM
- ALL PIPES LESS THAN OR EQUAL TO Ø300mm IN SIZE ARE TO BE SOLVENT WELD-JOINTED UPVC CLASS SNG U.N.O.
- ALL PIPES Ø375mm OR GREATER IN SIZE ARE TO BE MIN. CLASS 2 REINFORCED CONCRETE PIPE (RCP) WITH SPIGGOT AND SOCKETED JOINT OR VANTAGE PIPE PLUS (VPIPE+) FIBRE REINFORCED CONCRETE (FRC) WITH VANTAGE PIPE PLUS JOINT U.N.O.
- ALL PIPES ARE TO BE LAID AT MIN. 10% GRADE U.N.O.
- PIPE BEDDING IS TO BE HS2 UNDER ROADS AND TRAFFICKED AREAS AND SHALL BE H2 IN LANDSCAPED AND PEDESTRIAN TRAFFICKED AREAS U.N.O.
- ALL PIPE BENDS AND JUNCTIONS ARE TO BE MADE WITH EITHER PURPOSE MADE FITTINGS OR STORMWATER DRAINAGE PITS.
- MINIMUM COVER FROM THE OBVERT OF THE STORMWATER PIPE OF 300mm IS TO BE PROVIDED IN LANDSCAPED AREAS AND 600mm IN VEHICULAR TRAFFICKED AREAS U.N.O.
- WHERE MINIMUM COVER CANNOT BE ACHIEVED CONCRETE ENCASEMENT OF THE AFFECTED PIPE IS MAY BE UNDERTAKEN WITH 20MPa CONCRETE WITH A MIN. COVER OF 150mm TO ALL SIDES OF THE PIPE. THE CONTRACTOR SHALL CONFIRM THIS REQUIREMENT WITH THE ENGINEER OR SUPERINTENDENT.
- LAID PIPELINES ARE TO HAVE THE FOLLOWING CONSTRUCTED TOLERANCES:
 - HORIZONTAL-1:300 ANGULAR DEVIATION FROM REQUIRED ALIGNMENT;
 - VERTICAL-1:300 ANGULAR DEVIATION FROM REQUIRED ALIGNMENT.
- ALL DRAINAGE PITS ARE TO BE CAST IN-SITU, PRECAST DRAINAGE PITS MAY BE USED WITH APPROVAL FROM THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A PRECAST PIT INSTALLATION WORK METHOD STATEMENT FOR ASSESSMENT BY THE ENGINEER FOR APPROVAL.
- DRAINAGE PIT COVERS ARE TO BE EITHER GALVANISED STEEL OR CAST IRON CLASS 'B' IN LANDSCAPED AND PEDESTRIAN TRAFFICKED AREAS AND CLASS 'D' IN ALL VEHICULAR TRAFFICKED AREAS U.N.O.
- DRAINAGE PIT COVERS ARE TO BE 'HEELSAFE' TYPE IN ALL PEDESTRIAN TRAFFICKED AREAS U.N.O.
- EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED PRIOR TO COMMENCING WORKS ON SITE.
- PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
- DOWN PIPES CONNECTED DIRECT TO PIPES TO BE CONNECTED AT 45° TO THE FLOW DIRECTION WITH A CLEANING EYE PROVIDED AT GROUND LEVEL.

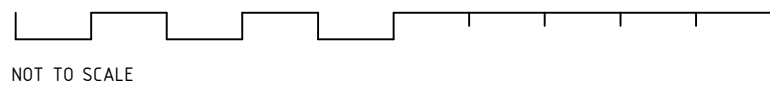
DRAWING SCHEDULE

- DA1.01 COVER SHEET, DRAWING SCHEDULE & LOCALITY PLAN
DA2.01 CONCEPT SEDIMENT & EROSION CONTROL PLAN & DETAILS
DA4.01 CONCEPT STORMWATER MANAGEMENT PLAN - LOWER GROUND
DA4.02 CONCEPT STORMWATER MANAGEMENT PLAN - GROUND
DA4.10 CONCEPT STORMWATER CATCHMENT PLAN
DA4.11 STORMWATER MANAGEMENT DETAILS SHEET 1
DA4.12 STORMWATER MANAGEMENT DETAILS SHEET 2



LOCALITY PLAN

NOT TO SCALE - COURTESY OF SIX MAPS



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		31.07.20	ISSUED FOR COORDINATION	DD	2				
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08.09.20	ISSUED FOR DA	DD	3				

STRUCTURAL	-
MECHANICAL	-
ELECTRICAL	-
CIVIL	-

CLIENT	AVALON BEACH CENTRAL PTY. LTD.
PROJECT	3 CENTRAL ROAD, AVALON BEACH
ARCHITECT	COTTEEPARKER Φ JPR A SYDNEY T: 61 2 9386 1133 COTTEEPARKER ARCHITECTS PTY LTD ABN: 77 010100 186 COTTEEPARKER.COM.AU

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DRAWING TITLE CIVIL DESIGN COVER SHEET, DRAWING SCHEDULE & LOCALITY PLAN			
DATE	DRAWN	DESIGNED	CHECKED
DEC 2019	DL	DL	
PROJECT No	SCALE	SIZE	REVISION
19279	N.T.S	A1	
DRAWING No	DA1.01	3	



- THE TEMPORARY ACCESS SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY.
- 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 ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.
- INSTALL BARRIER ON EITHER SIDE OF SHAKER PAD TO ENSURE VEHICLES ARE GUIDED ON TO THE PAD.
- INVERT OF SHAKER PAD TO BE DRAINED VIA AGRICULTURAL PIPE WRAPPED IN GEOTEXTILE FABRIC.



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 ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.



1. REFER TO DRAWING DA1.01 FOR GENERAL NOTES AND SPECIFICATIONS



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 50L/S IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 200mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 15mm LONG STAR PICKETS INTO GROUND AT 2.0m INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX THE SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE PICKETS 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 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

[illegible]

STRUCTURAL	-
MECHANICAL	-
ELECTRICAL	-
CIVIL	-

CLIENT	AVALON BEACH CENTRAL PTY. LTD.

PROJECT
3 CENTRAL ROAD, AVALON BEACH

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FPA
AUSTRALIA
Fire Protection Association of Australia
CORPORATE MEMBER


QUALITY SYSTEM CERTIFICATION
DNV-GL
ISO 9001

DRAWING TITLE			
CIVIL DESIGN CONCEPT SEDIMENT & EROSION CONTROL PLAN & DETAILS			
DATE	DRAWN	DESIGNED	CHECKED
DEC 2019	DL	DL	
PROJECT No	SCALE	SIZE	REVISION
19279	AS SHOWN	A1	
DRAWING No		DA2.01	3

DEVELOPMENT APPLICATION

DRAWING TITLE

CIVIL DESIGN
CONCEPT SEDIMENT & EROSION
CONTROL PLAN & DETAILS

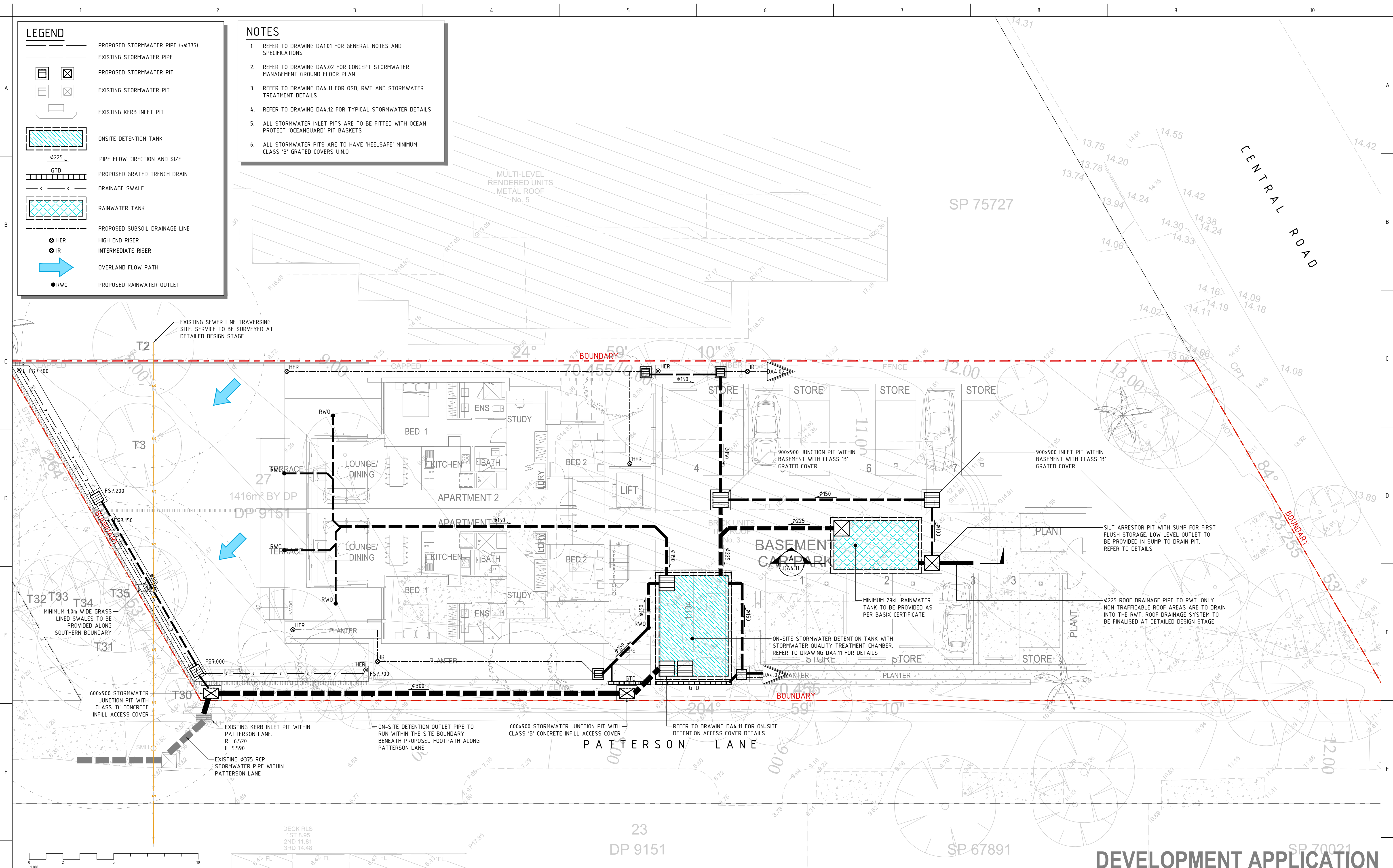
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19279	AS SHOWN	A1	
DRAWING No	DA2.01		3

LEGEND

- PROPOSED STORMWATER PIPE (<Ø375)
- EXISTING STORMWATER PIPE
- PROPOSED STORMWATER PIT
- EXISTING STORMWATER PIT
- EXISTING KERB INLET PIT
- ONSITE DETENTION TANK
- PIPE FLOW DIRECTION AND SIZE
- PROPOSED GRATED TRENCH DRAIN
- DRAINAGE SWALE
- RAINWATER TANK
- PROPOSED SUBSOIL DRAINAGE LINE
- HIGH END RISER
- INTERMEDIATE RISER
- OVERLAND FLOW PATH
- PROPOSED RAINWATER OUTLET

NOTES

1. REFER TO DRAWING DA101 FOR GENERAL NOTES AND SPECIFICATIONS
2. REFER TO DRAWING DA4.02 FOR CONCEPT STORMWATER MANAGEMENT GROUND FLOOR PLAN
3. REFER TO DRAWING DA4.11 FOR OSD, RWT AND STORMWATER TREATMENT DETAILS
4. REFER TO DRAWING DA4.12 FOR TYPICAL STORMWATER DETAILS
5. ALL STORMWATER INLET PITS ARE TO BE FITTED WITH OCEAN PROTECT 'OCEANGUARD' PIT BASKETS
6. ALL STORMWATER PITS ARE TO HAVE 'HEELSAFE' MINIMUM CLASS 'B' GRATED COVERS UNO

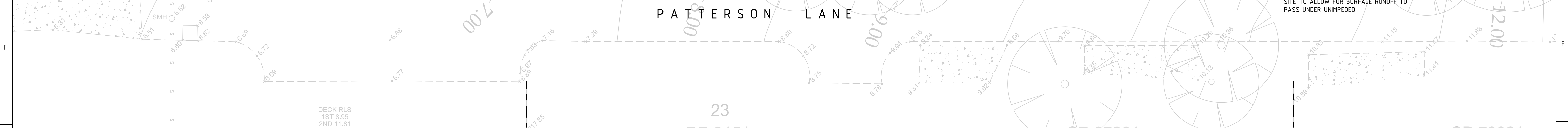


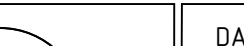
DEVELOPMENT APPLICATION

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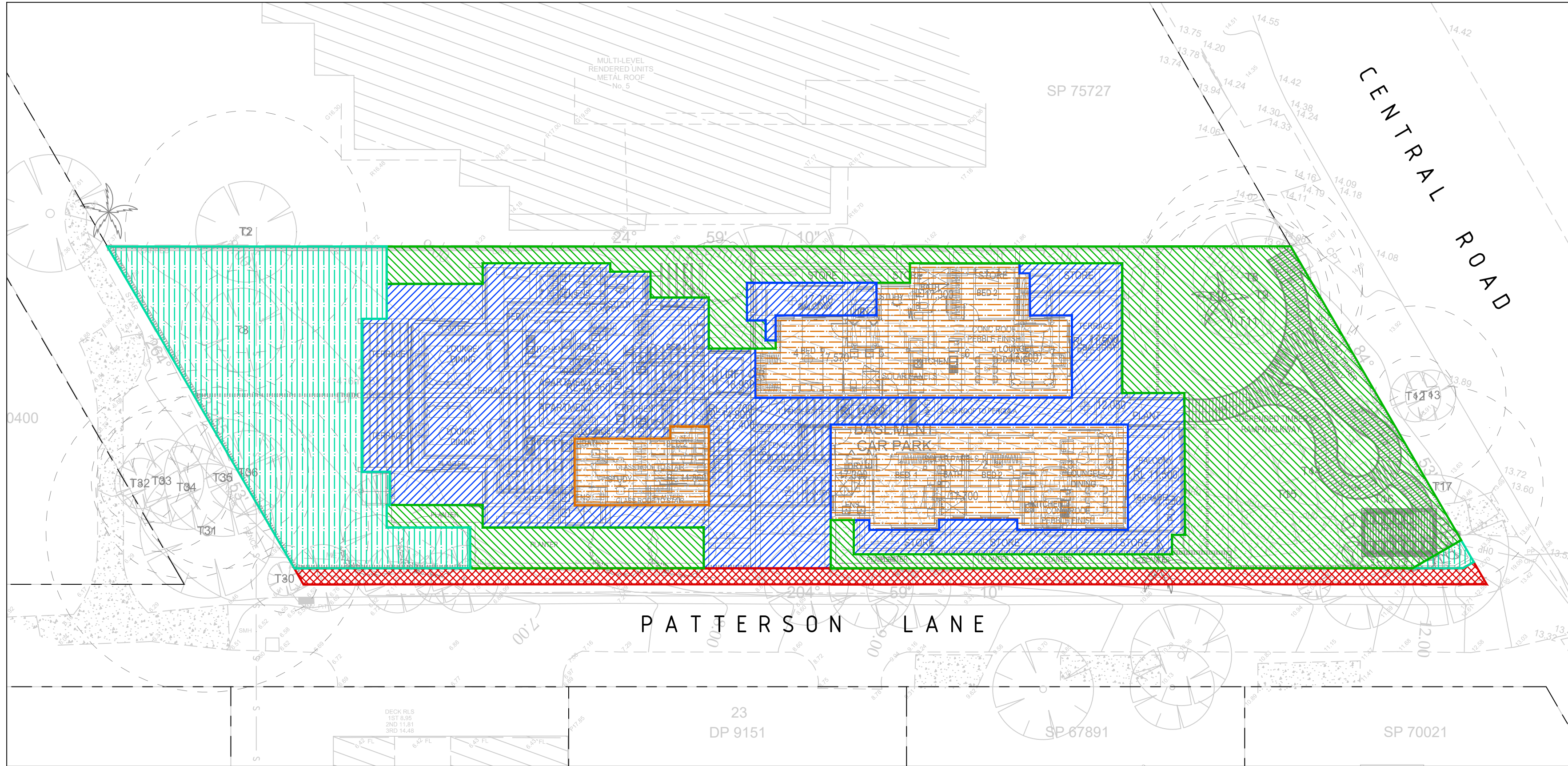
1. REFER TO DRAWING DA4.01 FOR NOTES AND LEGEND

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		<div>31.07.20</div>	<div>ISSUED FOR COORDINATION</div>	<div>DD</div>	<div>2</div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>				<div>MECHANICAL</div> <div>-</div>	<div>ARCHITECT</div> <div><div>COTTEEPARKER & JPR</div><div>SYDNEY</div><div>T: 61 2 9086 1133</div><div>COTTEE PANDOR ARCHITECTS PTY LTD</div><div>ABN 77 010 024 106</div><div>COTTEEPARKER.COM.AU</div></div>	<div>DATE</div> <div>DEC 2019</div>	<div>DRAWN</div> <div>DL</div>	<div>DESIGNED</div> <div>DL</div>	<div>CHECKED</div> <div></div>	<div>SCALE</div> <div>1:100 @A1</div>	<div>SIZE</div> <div>A1</div>	<div>REVISION</div> <div></div>
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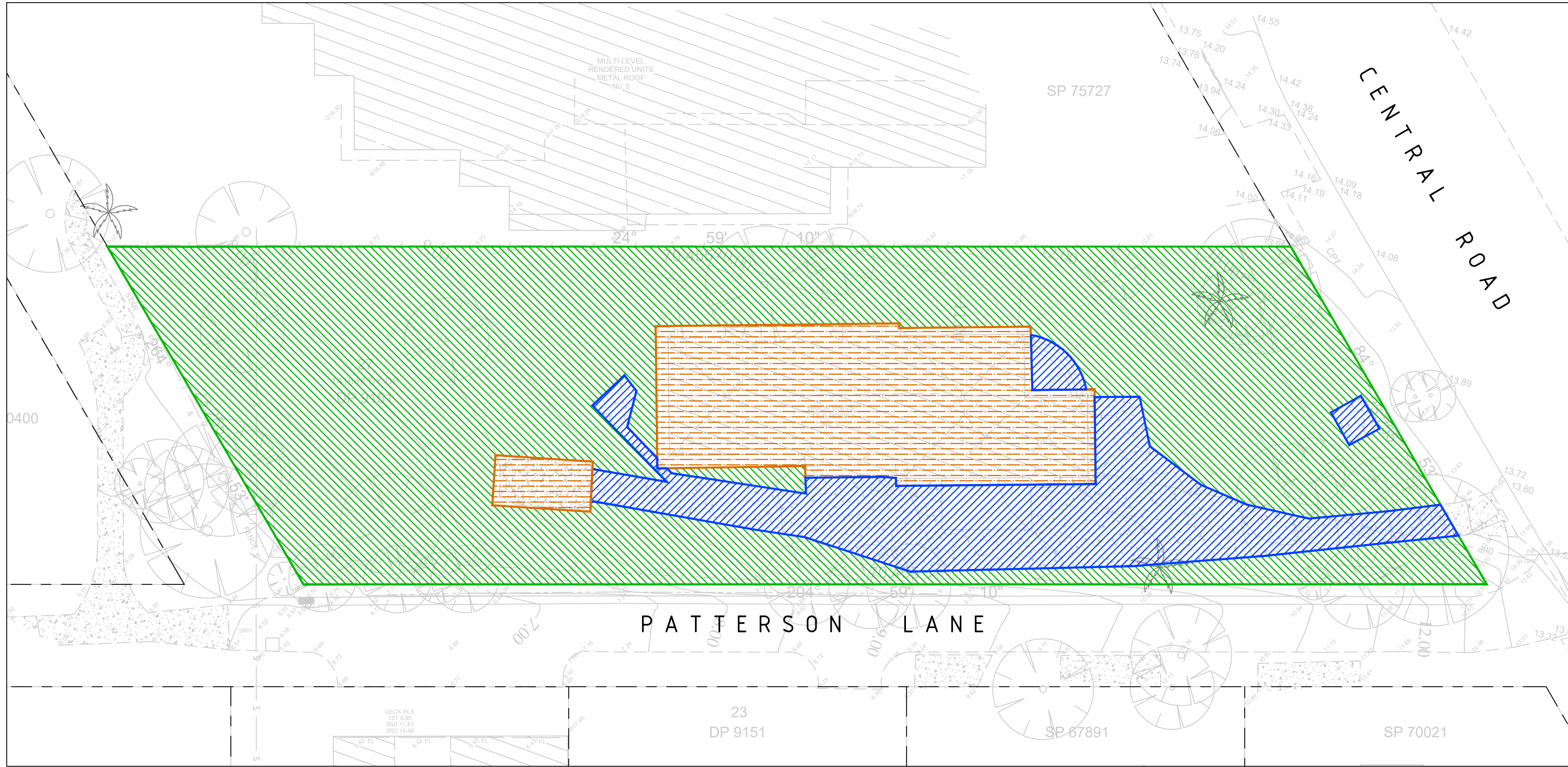
CONCEPT STORMWATER CATCHMENT PLAN
SCALE 1:200

LEGEND

- IMPERVIOUS CATCHMENT AREA TO OSD = 476m²
- PERVIOUS CATCHMENT AREA TO OSD = 404m²
- NON TRAFFICABLE ROOF CATCHMENT AREA TO RWT = 256m²
- IMPERVIOUS BYPASS CATCHMENT AREA = 67m²
- PERVIOUS BYPASS CATCHMENT AREA = 214m²
- TOTAL AREA = 1,417m²

NOTES

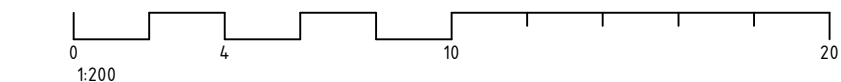
- REFER TO DRAWING DA1.01 FOR GENERAL NOTES AND SPECIFICATIONS



EXISTING STORMWATER CATCHMENT PLAN
SCALE 1:200

LEGEND

- EXISTING IMPERVIOUS CATCHMENT AREA = 218m²
- EXISTING PERVIOUS CATCHMENT AREA = 960m²
- EXISTING ROOF CATCHMENT AREA = 239m²
- TOTAL AREA = 1,417m²



IMPORTANT

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REFERENCES

DATE	AMENDMENT	INIT	REV	DATE	AMENDMENT	INIT	REV
12.12.19	ISSUED FOR DA	DL	1				
31.07.20	ISSUED FOR COORDINATION	DD	2				
08.09.20	ISSUED FOR DA	DD	3				

STRUCTURAL	-
MECHANICAL	-
ELECTRICAL	-
CIVIL	-

CLIENT
AVALON BEACH CENTRAL PTY. LTD.

PROJECT
3 CENTRAL ROAD, AVALON BEACH

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https://sparksandpartners.com.au/

Fire Protection Association Australia
CORPORATE MEMBER

QUALITY SYSTEM CERTIFICATION
ISO 9001

DRAWING TITLE			
CIVIL DESIGN CONCEPT STORMWATER CATCHMENT PLAN			
DATE	DRAWN	DESIGNED	CHECKED
DEC 2019	DL	DL	
PROJECT No	SCALE	SIZE	REVISION
19279	1:200 @A1	A1	
DRAWING No			
DA4.10			
			3

A

B

C

D

E

F

G

A

B

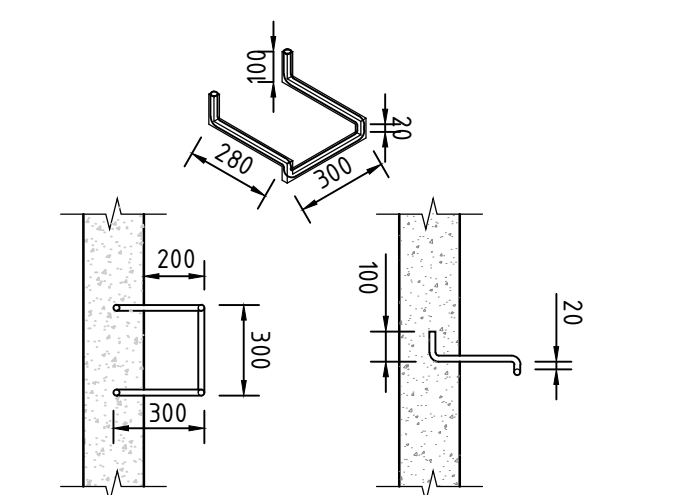
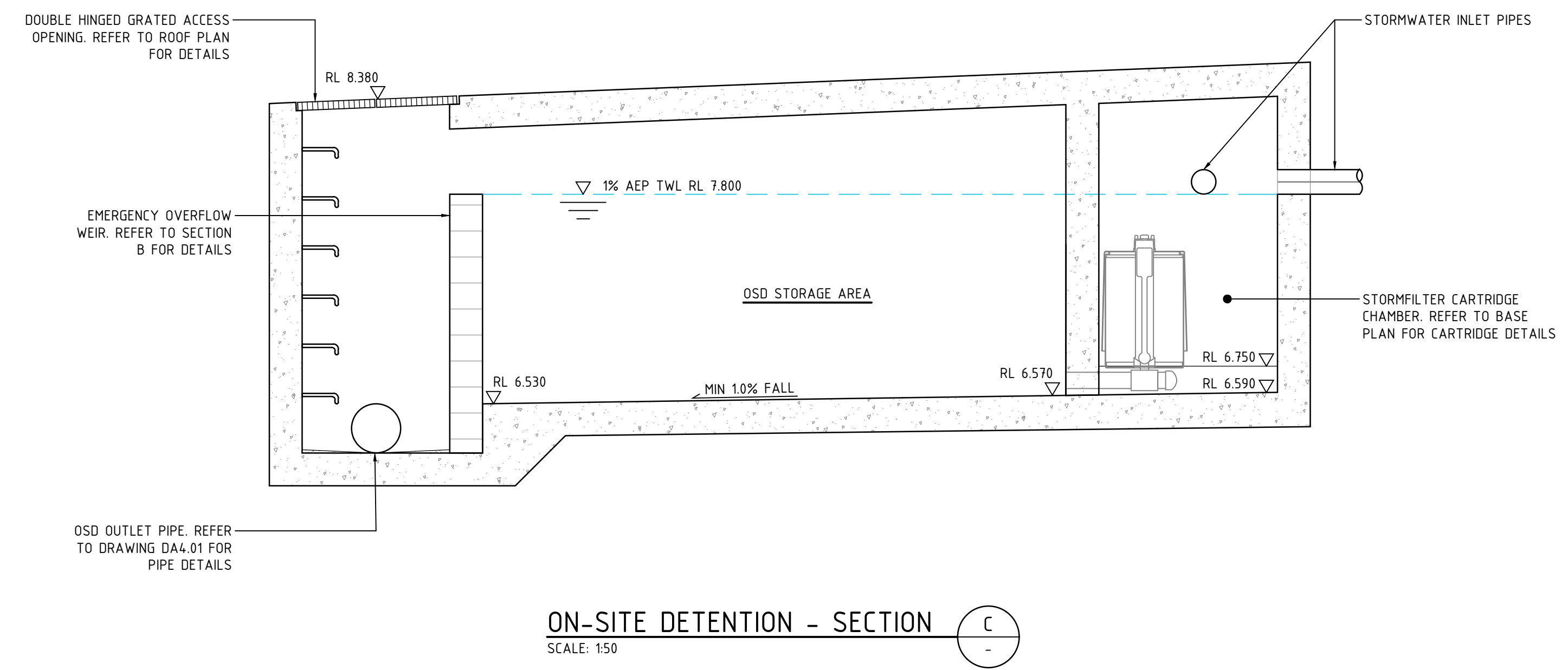
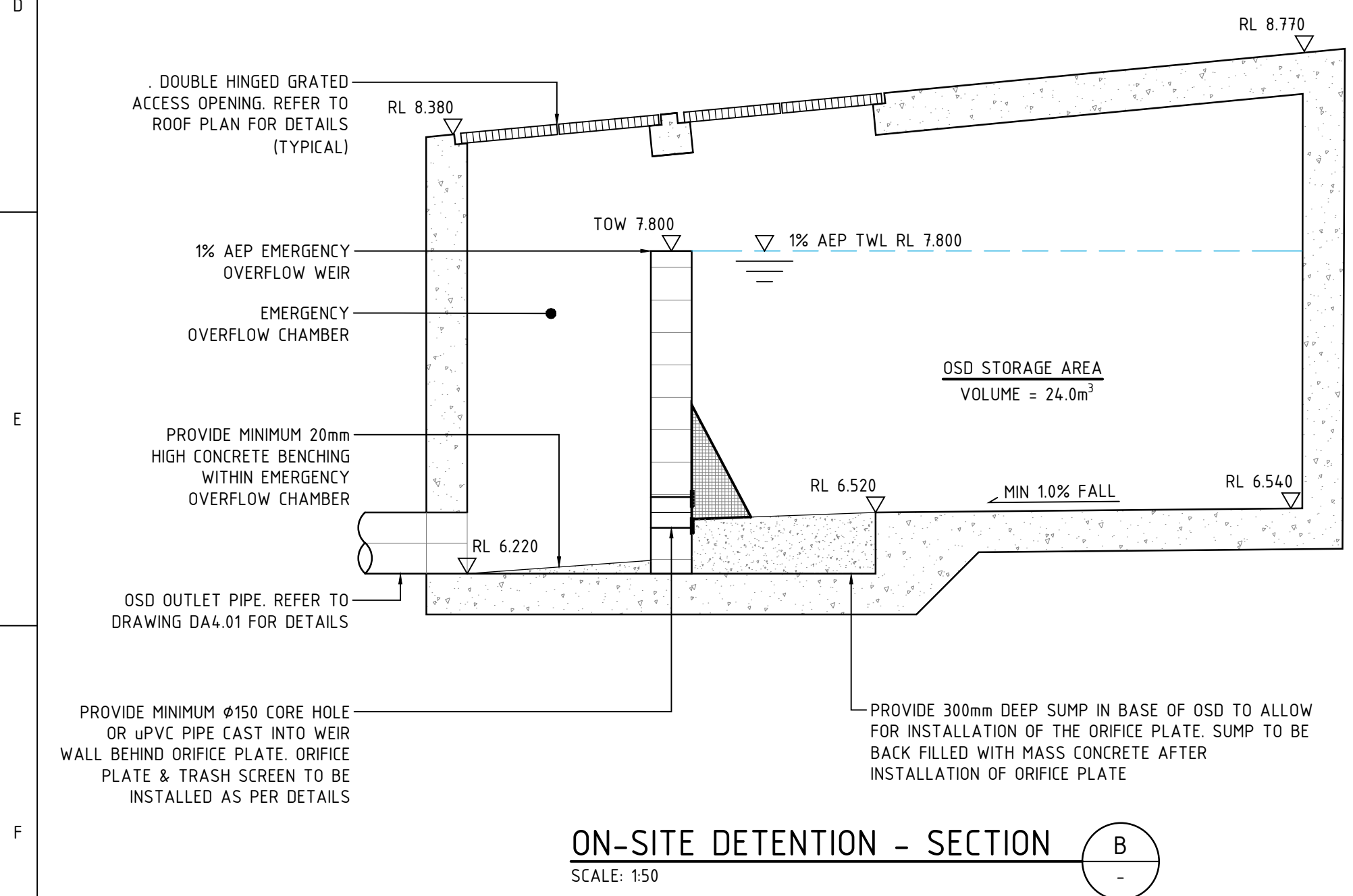
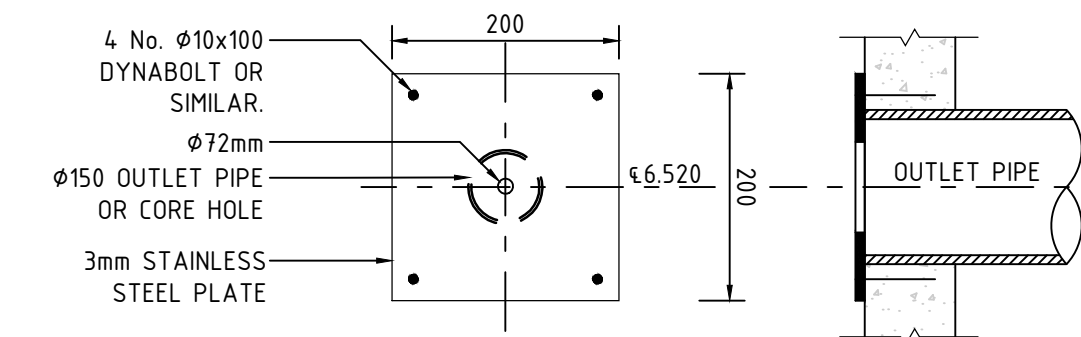
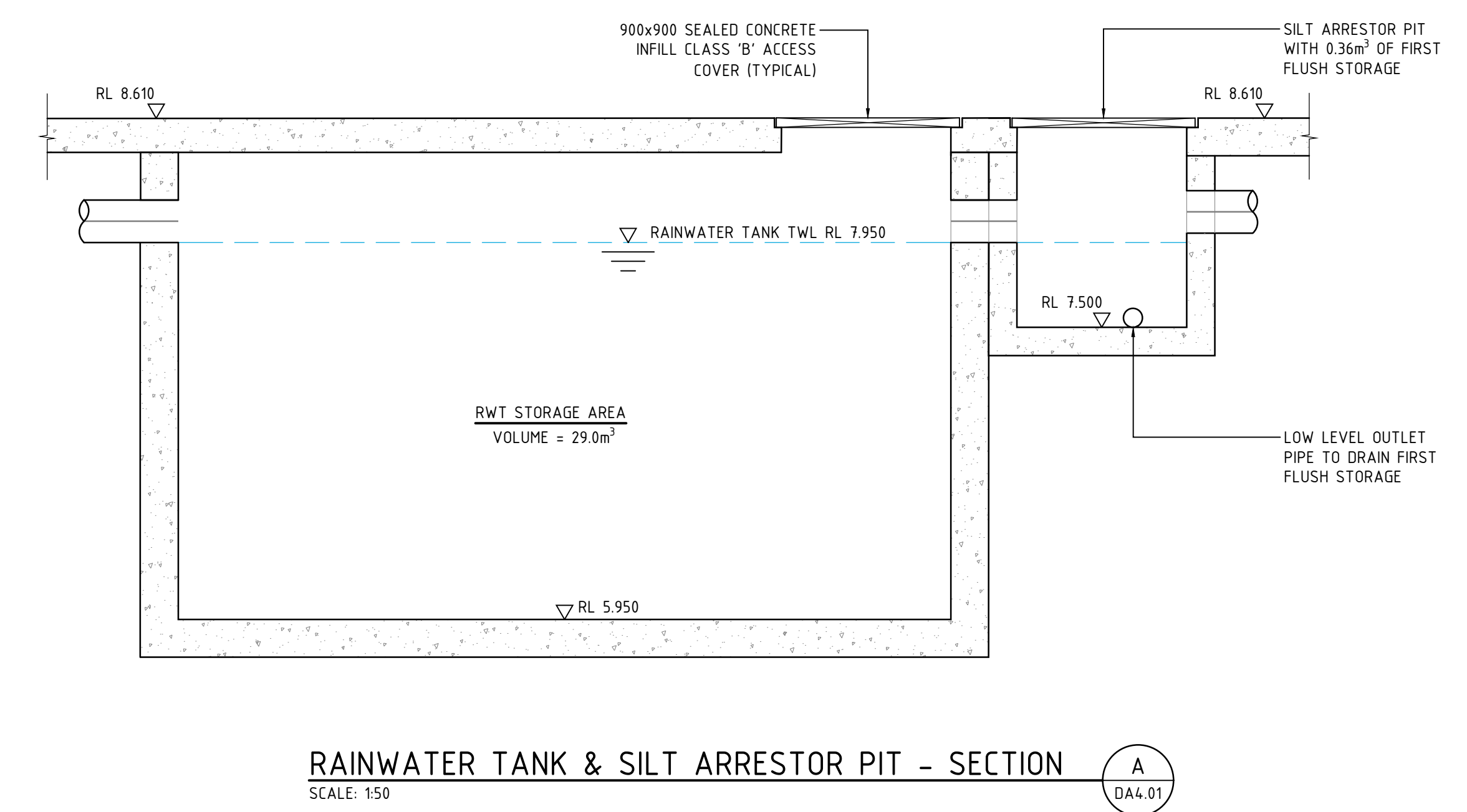
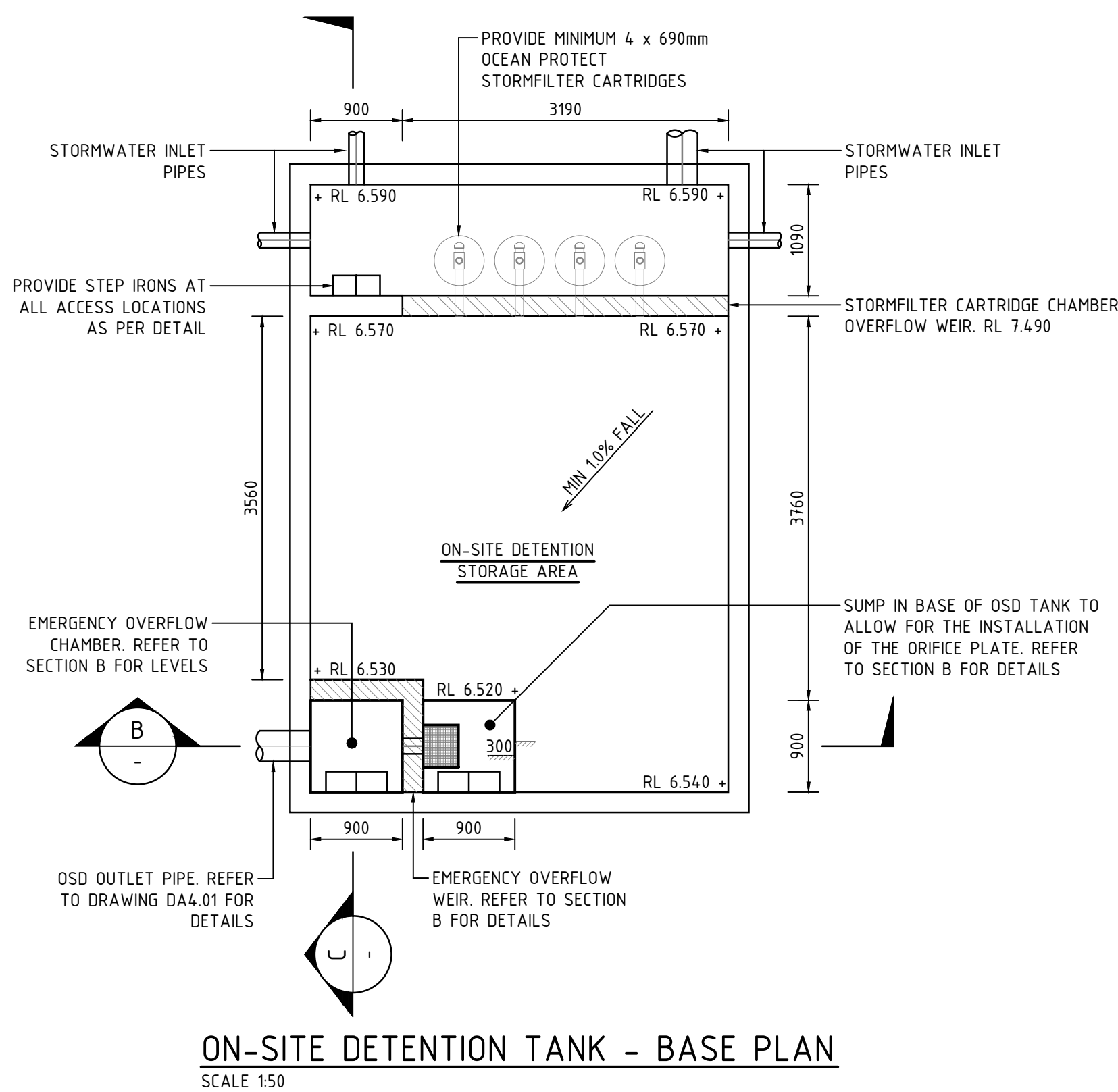
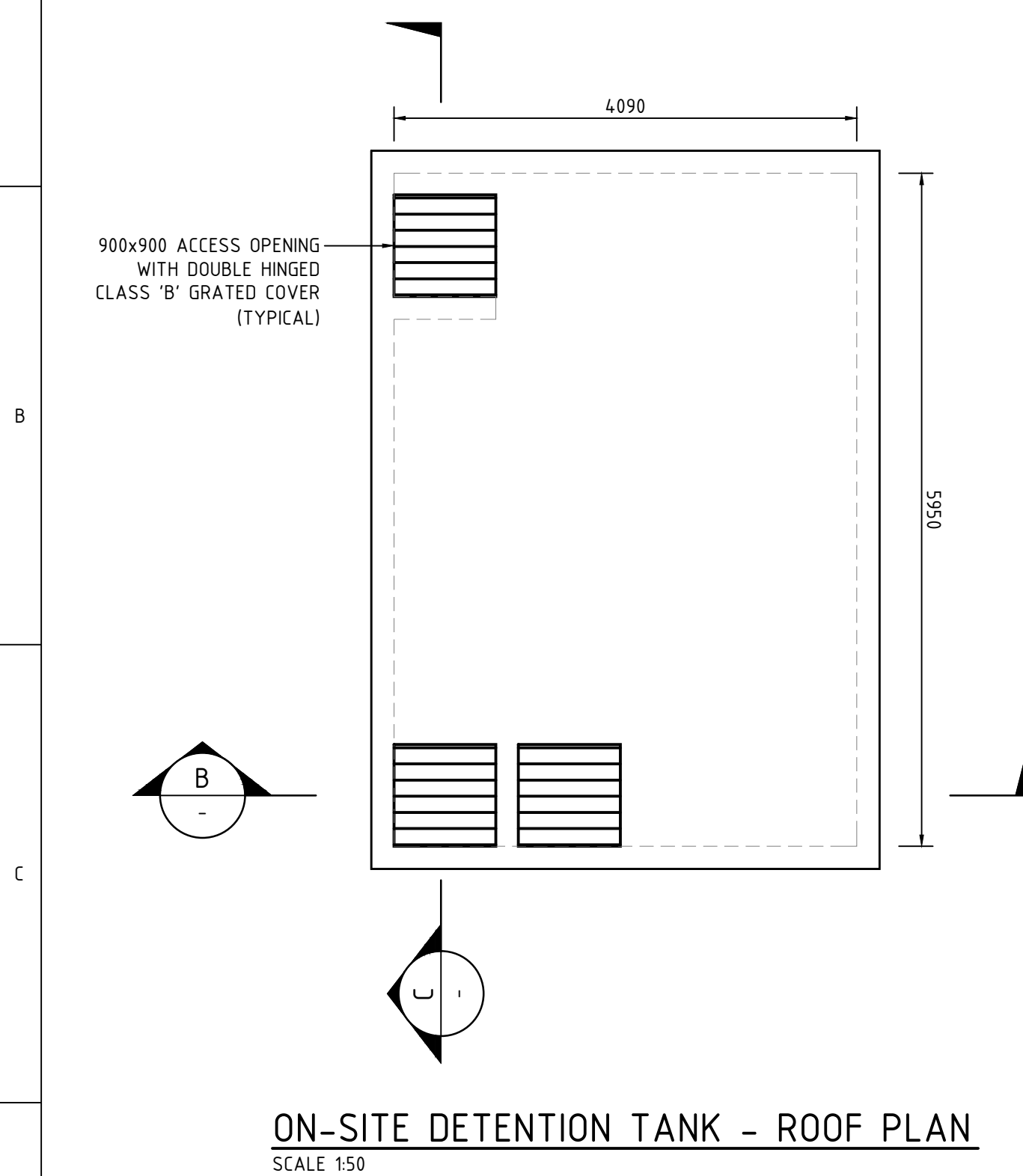
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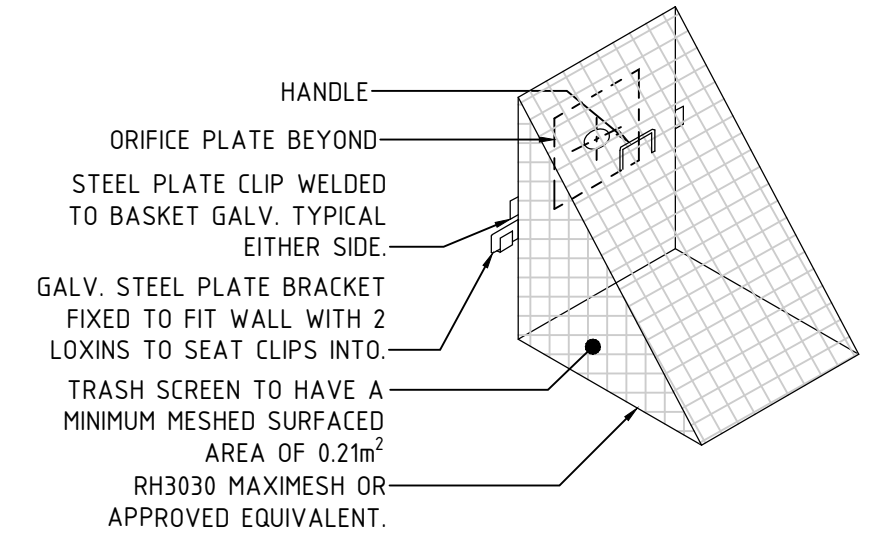
E

F

G



STEP IRON OF 20mm GALVANIZED STEEL MADE TO SHAPE AND DIMENSIONS SHOWN AND PLACED AT 300 CENTRES AND STAGGERED HORIZONTALLY FOR PITS DEEPER THAN 1.0m.



AS SHOWN

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STRUCTURAL	-
MECHANICAL	-
ELECTRICAL	-
CIVIL	-

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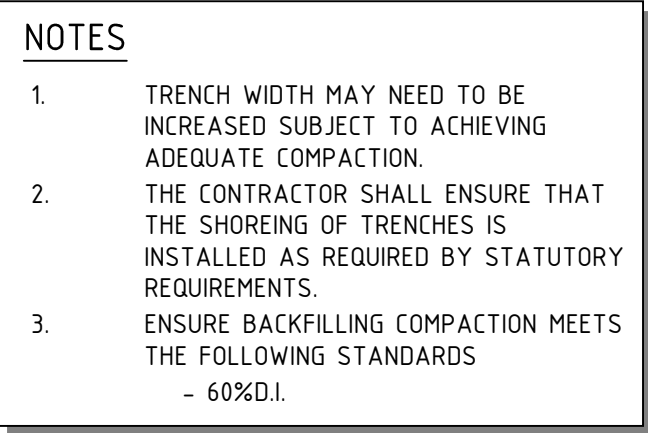
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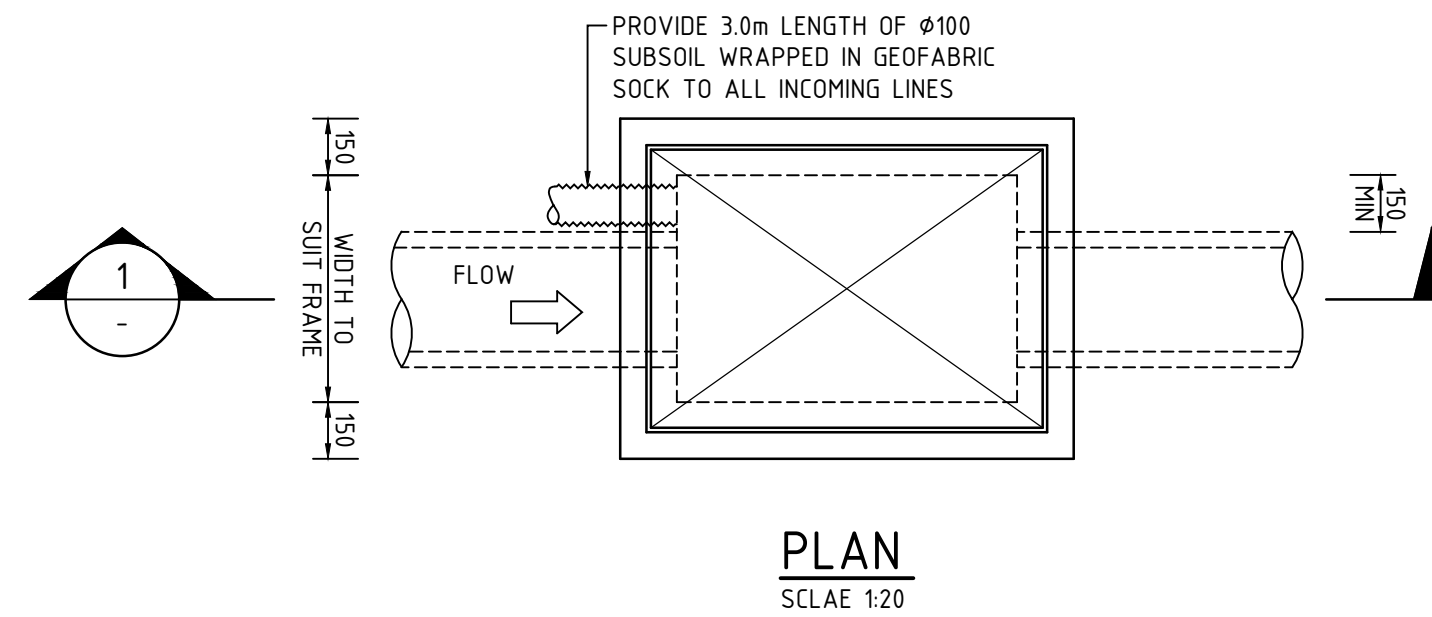
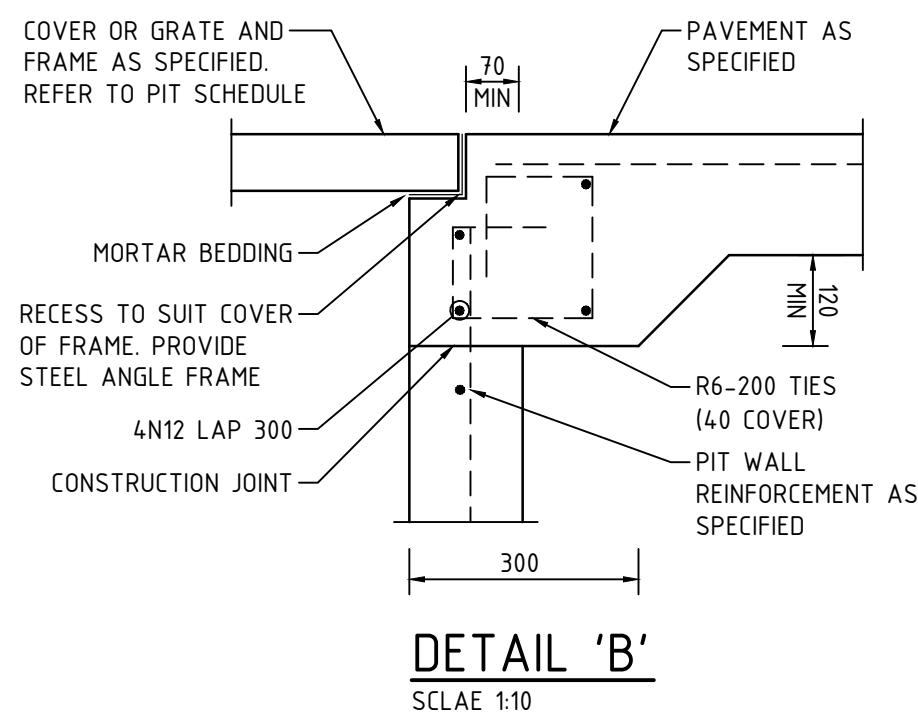
FPA
Fire Protection Association Australia
CORPORATE MEMBER

QUALITY SYSTEM CERTIFICATION
DNV-GL
ISO 9001

DRAWING TITLE CIVIL DESIGN STORMWATER MANAGEMENT DETAILS SHEET 1			
DATE DEC 2019	DRAWN DL	DESIGNED DL	CHECKED
PROJECT No 19279	SCALE AS SHOWN	SIZE A1	REVISION
DRAWING No DA4.11			3



SCALE 1:10



(PPIPE SIZES $\leq \phi 450$)

STRUCTURAL	
-	
MECHANICAL	
-	
ELECTRICAL	
-	
CIVIL	
-	

PROJECT

3 CENTRAL ROAD, AVALON BEACH

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DRAWING TITLE			
CIVIL DESIGN STORMWATER MANAGEMENT DETAILS SHEET 2			
DATE	DRAWN	DESIGNED	CHECKED
DEC 2019	DL	DL	
PROJECT No	SCALE	SIZE	REVISION
19279	AS SHOWN	A1	
DRAWING No		DA4.12	3