

- STORMWATER NOTES:**
1. ALL PIPES TO BE 100mm Ø UNLESS NOTED OTHERWISE.
 2. ALL PIPES TO BE UPVC UNLESS NOTED OTHERWISE.
 3. ALL PIPES TO BE LAID AT 1% MINIMUM GRADE UNLESS NOTED OTHERWISE.
 4. ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D. BELOW PAVEMENTS. NO COMPACTION REQUIRED BELOW LANDSCAPING COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM. BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
 5. ALL PIPES SHOWN ON PLAN ARE SHOWN INDICATIVELY ONLY & MINIMUM CLEARANCES FROM THE EXTERNAL WALLS OF BUILDINGS, FOR THE EXCAVATION OF TRENCHES, ARE TO BE PROVIDED IN ACCORDANCE WITH AS3500.
 6. ALL DOWN PIPES TO BE 90mm Ø UNLESS NOTED OTHERWISE.
 7. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
 8. PROVIDE CLEANING EYES AT ALL DOWNPIPES UNDO.
 9. ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
 10. ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
 11. ALL LEVELS SHOWN ARE TO AHD.
 12. ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
 13. EXCAVATION OF TRENCHES ADJACENT TO TREES TO BE CARRIED OUT USING HAND TOOLS ONLY.
 14. ALL EXISTING EARTHWARE PIPES TO BE UPGRADED TO UPVC.
 15. ALL WORKS TO BE IN ACCORDANCE WITH AS 3500.
 16. THE FOLLOWING ABBREVIATIONS DENOTE:
FSL - FINISHED SURFACE LEVEL
INV - INVERT
 17. PROVIDE FALLS IN SURFACES TO ALL PITS, GRATED DRAINS & FLOOR DRAINS IN ACCORDANCE WITH AS3500 & ARCHITECT'S DETAILS.

RL65.15 DENOTES EXISTING LEVELS
RL65.15 DENOTES PROPOSED LEVELS

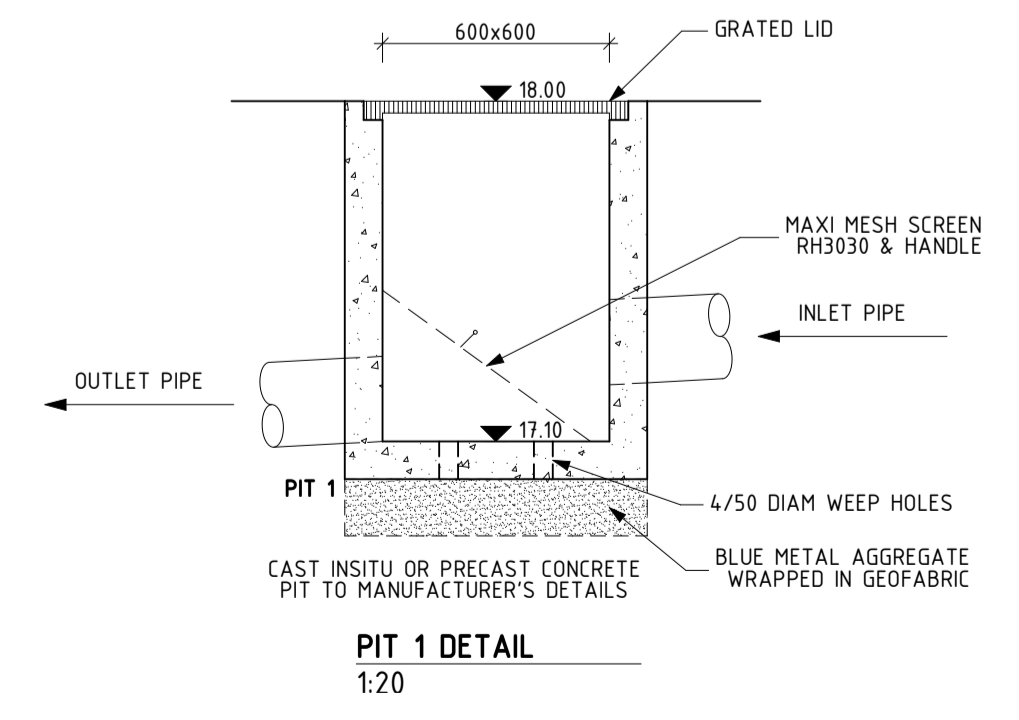
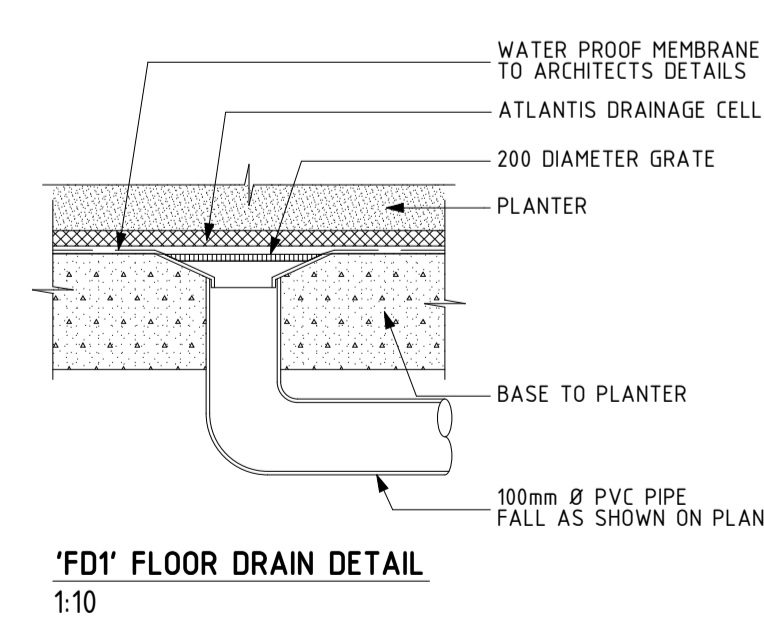
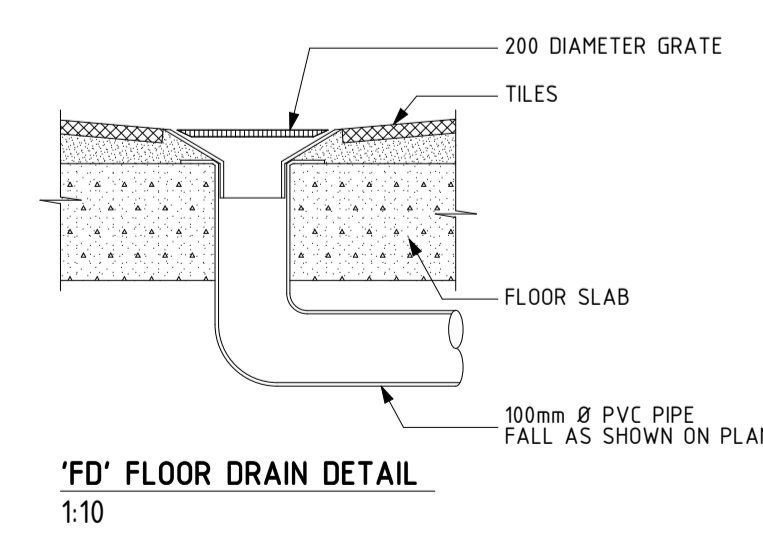
ON-SITE DETENTION (OSD) CALCULATION SHEET

DEVELOPMENT TYPE:	MIXED USE DEVELOPMENT
DESIGN METHOD USED:	FULL COMPUTATION METHOD
SITE AREA:	1220 m ²
PRE DEVELOPMENT IMPERVIOUS AREA:	1220 m ² (0m ² IN DRAINS)
POST DEVELOPMENT IMPERVIOUS AREA:	1220 m ²
INCREASE IN IMPERVIOUS AREA:	0 m ²
IMPERVIOUS AREA DRAINING TO OSD:	1184 m ²
IMPERVIOUS AREA DRAINING TO OSD:	0 m ²
IMPERVIOUS AREA BYPASSING OSD:	36 m ²
PRE DEVELOPMENT SITE DISCHARGE (5-YEAR):	26 l/s
POST DEVELOPMENT SITE DISCHARGE (5-YEAR):	26 l/s
PRE DEVELOPMENT SITE DISCHARGE (100-YEAR):	51 l/s
POST DEVELOPMENT SITE DISCHARGE (100-YEAR):	28 l/s
SITE STORAGE REQUIREMENT (ISSR):	35 m ³
TYPE OF CONTROL:	SUSPENDED CONCRETE TANK BELOW GROUND FLOOR
DIMENSIONS OF OSD:	31.6m x 0.91m (AVERAGE DEPTH) + 3.35m x 1.8m x 0.96m + 0.9m x 0.9m x 0.96m
OSD PROVIDED:	35.1 m ³
ORIFICE SIZE:	108 mm Ø

MARK	SIZE/TYPE	FSL	INV
AH1	600x600 GRATED ACCESS HATCH	COS	-
AH2	600x600 GRATED ACCESS HATCH	19.382	-
AH3	900x900 GRATED ACCESS HATCH	19.382	-
AH4	600x600 GRATED ACCESS HATCH	19.382	-
AH5	600x600 GRATED ACCESS HATCH	19.660	-
AH6	600x600 PRESSURE SEALED ACCESS HATCH	19.660	-
PIT 1	600x600 PIT WITH GRATED LID	18.00	19.10
GD1	200 WIDE x 100 DEEP GRATED DRAIN	19.73	19.63
GD2	200 WIDE x 100 DEEP GRATED DRAIN	19.64	19.54
FD	200 DIAMETER FLOOR DRAIN	-	-
FD1	200 DIAMETER FLOOR DRAIN (PLANTER)	-	-
DP	100 DIAMETER PVC DOWNPIPE	-	-
DP1	100 DIAMETER SEWER GRADE PVC PRESSURE SEALED DOWNPIPE	-	-
DP3	100 DIAMETER PVC DOWNPIPE TO COLLECT WATER FROM BALCONY & TERRACE ONLY	-	-
DP4	100 DIAMETER SEWER GRADE PVC PRESSURE SEALED DOWNPIPE TO COLLECT WATER FROM BALCONY & TERRACE ONLY	-	-
RWT	10000 LITRE RAINWATER RE-USE TANK SUSPENDED BELOW GROUND FLOOR (11.0m x 9.10m) TANK TO COLLECT RAINWATER RUNOFF FROM ALL ROOF AREAS AS SHOWN & BE RE-USED FOR GARDEN IRRIGATION. TANK TO BE FITTED WITH FIRST FLUSH DEVICES & WATER FILTRATION DEVICES & INSTALLED IN ACCORDANCE WITH AS3500, BASIX & SYDNEY WATER REQUIREMENTS. ALL CONNECTIONS INTO & OUT OF RWT TO BE FULLY SEALED.	-	-
OSD	MIN 35100 LITRE ON-SITE DETENTION TANK SUSPENDED BELOW GROUND FLOOR (31.6m x 9.10m (AVERAGE) + 3350L x 1800W x 960D + 900L x 900W x 960D)	-	-

NOTE:
- ALL PIPES UNDER SUSPENDED FLOOR TO BE STRAPPED TO UNDERSIDE OF FLOOR STRUCTURE AT MIN 1%

GROUND FLOOR DRAINAGE & SITE STORMWATER MANAGEMENT PLAN
1:100

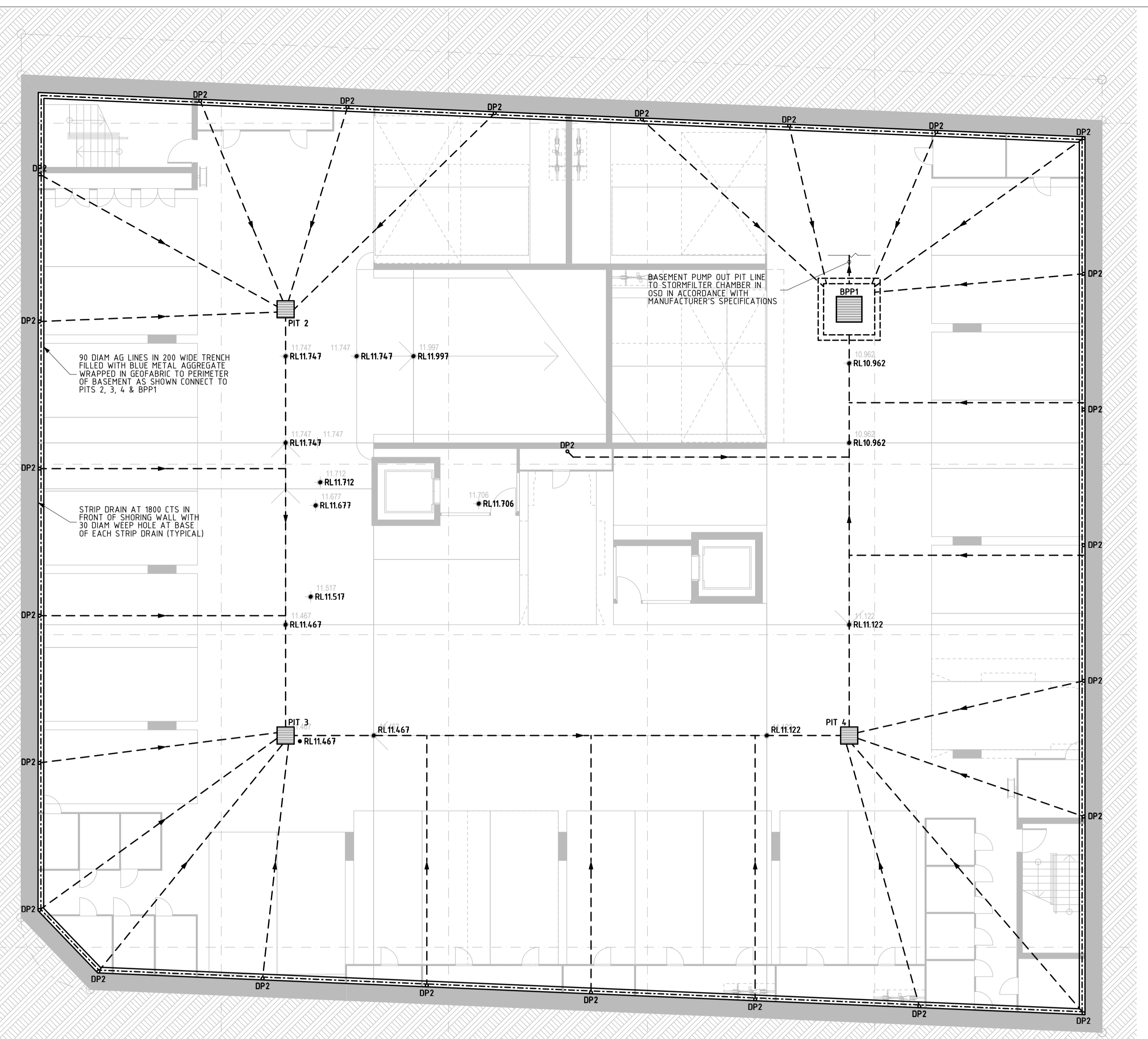
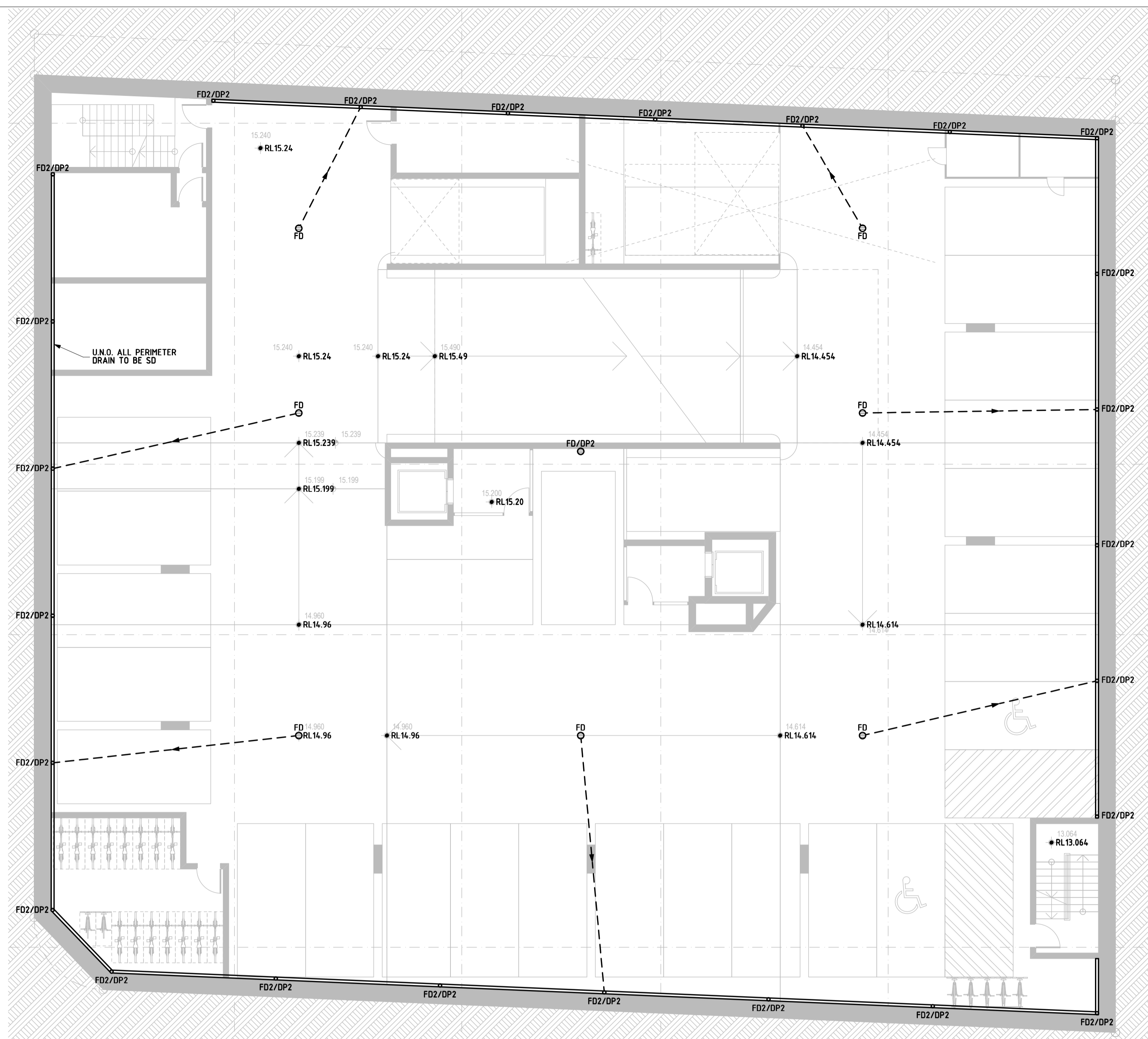


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REV.	DATE	REVISION DESCRIPTION	BY	REV.	DATE	REVISION DESCRIPTION
C	30.08.21	ISSUE FOR DA SUBMISSION	DI			
B	20.11.20	REVISED BASED ON AMENDED ARCH DRAWINGS	DI			
A	24.06.20	ISSUE FOR DA SUBMISSION	DI			
1	21.02.20	ISSUE FOR REVIEW ONLY	DI			

STATUS	ISSUE FOR DA SUBMISSION	DATE	FEB 2020
PROJECT	321 CONDOMINE STREET, MANLY VALE	PROJECT NUMBER	200203
ARCHITECT	GARTNER TROVATO ARCHITECTS	DRAWING	GROUND FLOOR DRAINAGE & SITE STORMWATER MANAGEMENT PLAN
CLIENT	MANLY VALE DEVELOPMENTS NO 2 PTY LTD ATF MANLY VALE DEVELOPMENTS NO 2 UNIT TRUST	CHECKED	DI
DESIGNED	DM	SCALE	REFER DWG
DRAWN	DM	PAGE SIZE	A1
CHECKED	DI	REVISION	C
		DRAWING NUMBER	D01

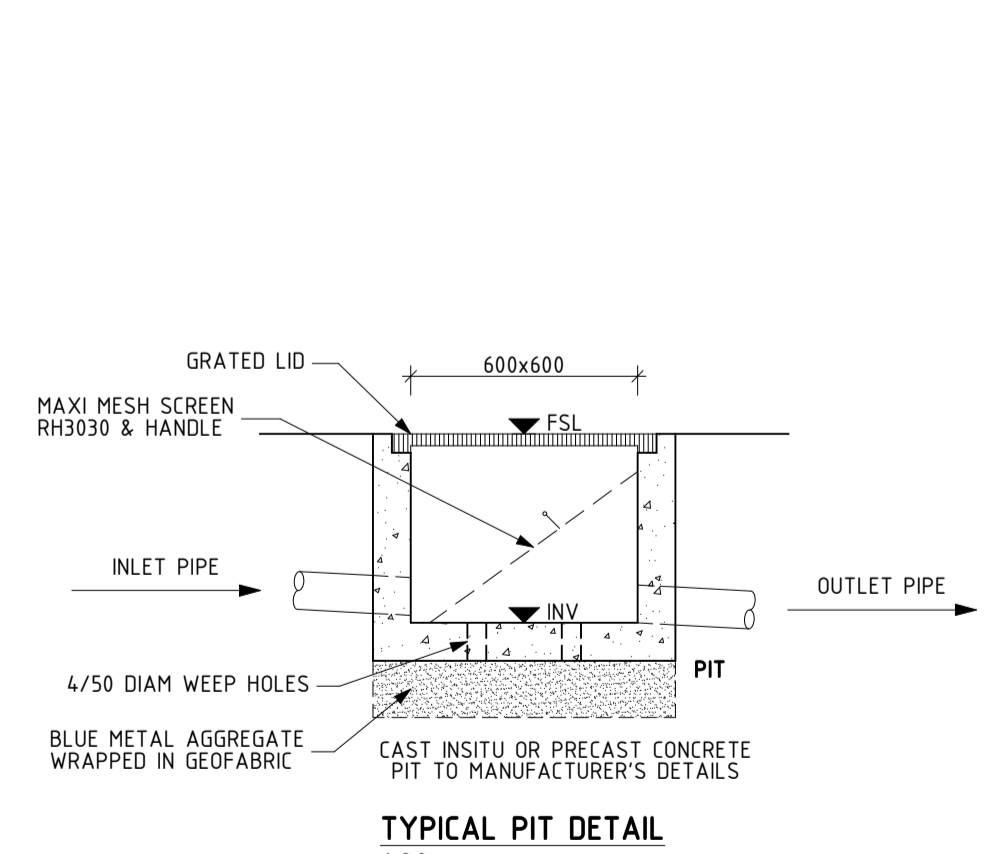


BASEMENT B1 DRAINAGE PLAN
1:100

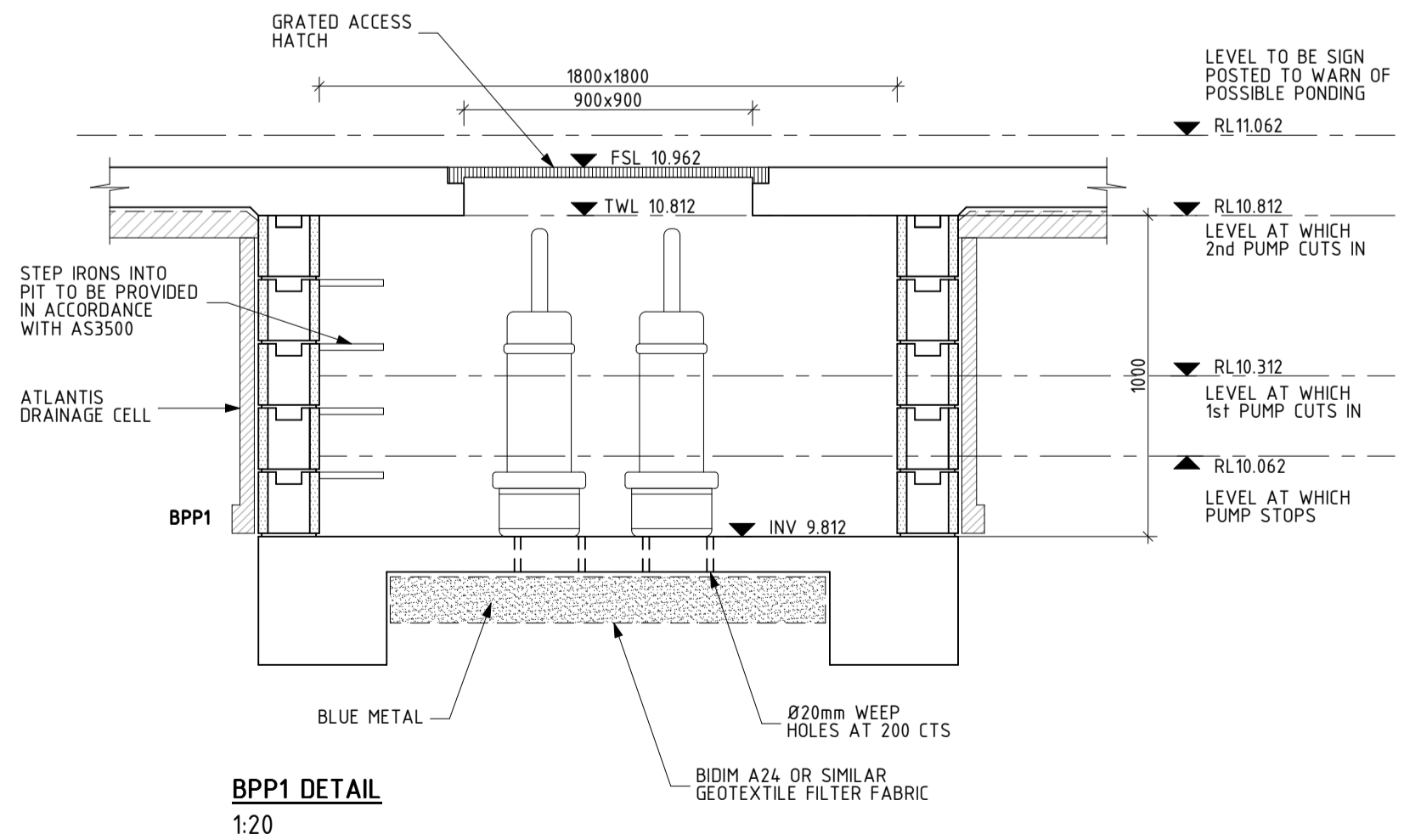
MARK	SIZE/TYPE	FSL	INV
PIT 2	600x600 PIT WITH GRATED LID	11.747	11.247
PIT 3	600x600 PIT WITH GRATED LID	11.467	10.967
PIT 4	600x600 PIT WITH GRATED LID	11.122	10.622
BPP1	3m ³ BASEMENT PUMP OUT PIT - REFER DETAIL	10.962	9.812
SD	MIN 100 WIDE SPOON DRAIN FORMED IN SLAB MIN 1% FALL TO OUTLETS	-	-
FD	200 DIAMETER FLOOR DRAIN	-	-
FD2	100 DIAMETER FLOOR DRAIN	-	-
DP2	100 DIAMETER PVC DOWNPIPE	-	-

NOTE:
- ALL PIPES UNDER SUSPENDED FLOOR TO BE STRAPPED TO UNDERSIDE OF FLOOR STRUCTURE AT MIN 1%

BASEMENT B2 DRAINAGE PLAN
1:100



TYPICAL PIT DETAIL
1:20



BPP1 DETAIL
1:20

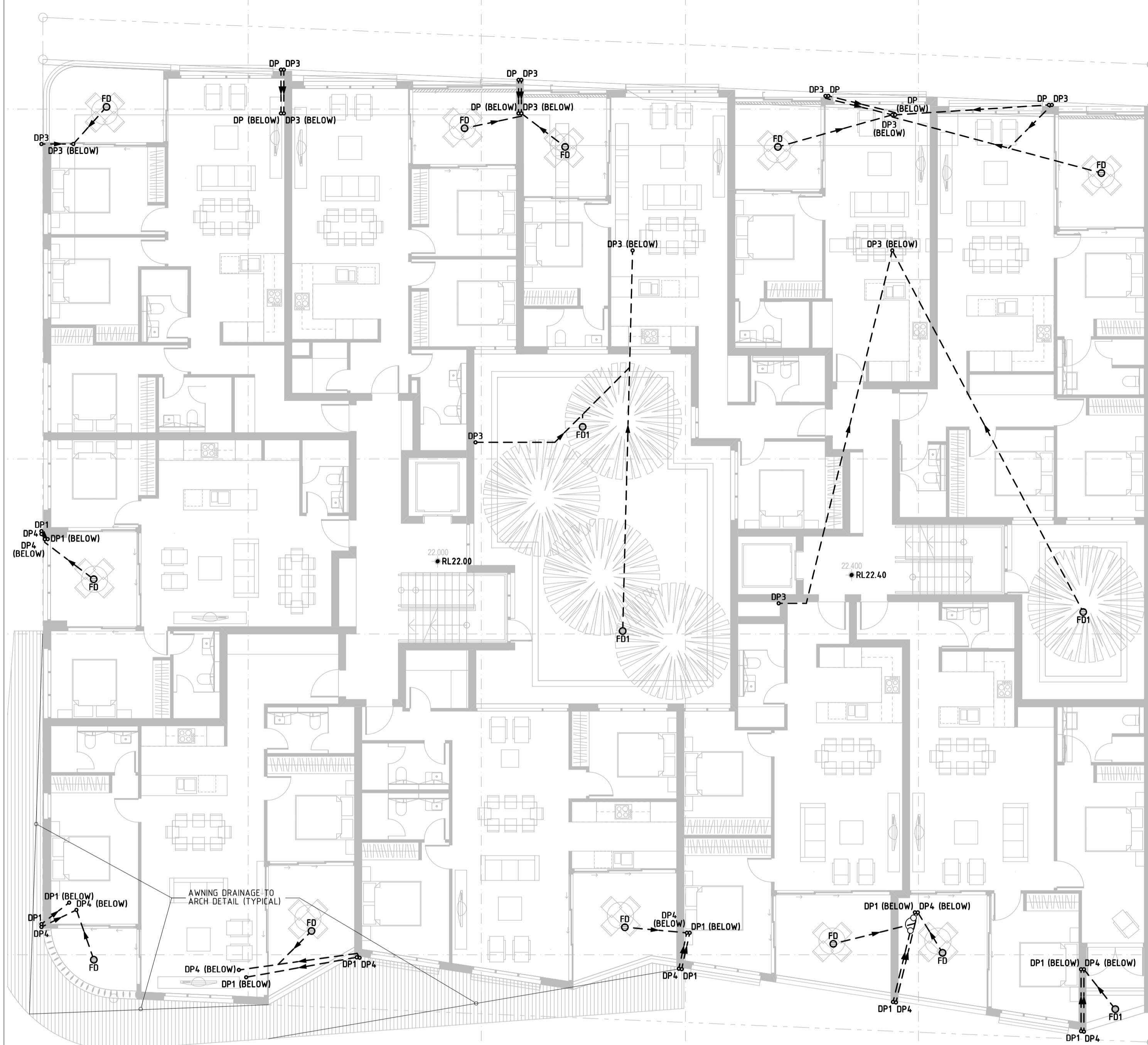
- PUMP NOTES:**
1. PROVIDE DUAL SUBMERSIBLE, SELF ACTIVATING PUMP SET WITH EACH PUMP RATED AT 10L/s DISCHARGE RATE OVER 10.0m HEAD.
 2. VALUE OF HEAD TO BE CONFIRMED ONCE EXCAVATION COMPLETE & PRIOR TO ORDERING PUMPS.
 3. PUMP SIZE AND PRESSURE PIPE DIAMETER TO BE DETERMINED BY PUMP MANUFACTURER.
 4. SET PUMPS TO ALTERNATE PUMP ACTIVATION.
 5. PROVIDE HIGH LEVEL DUAL PUMP ACTIVATION.
 6. PROVIDE VISIBLE ALARM IN CASE OF PUMP FAILURE. ALARM SYSTEM SHALL BE PROVIDED WITH BATTERY BACK-UP IN CASE OF POWER FAILURE.
 7. PUMPS TO BE FITTED SECURELY INSIDE PUMP OUT WELL.
 8. PROVIDE GATE AND NON-RETURN VALVES TO DELIVERY SIDE OF EACH PUMP.
 9. LOCATE HIGH AND LOW LEVEL ALARMS CLEAR OF INLETS TO PREVENT FALSE ALARMS.
 10. PROVIDE LITTER SCREEN ABOVE PUMP SET.

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ARCHITECT
GARTNER TROVATO ARCHITECTS

CLIENT
MANLY VALE DEVELOPMENTS NO 2 PTY LTD ATF MANLY VALE DEVELOPMENTS NO 2 UNIT TRUST

STATUS	ISSUE FOR DA SUBMISSION	DATE	FEB 2020
PROJECT	321 CONDAMINE STREET, MANLY VALE	PROJECT NUMBER	200203
DRAWING	BASEMENT B1 & B2 DRAINAGE PLANS	DRAWING NUMBER	D02

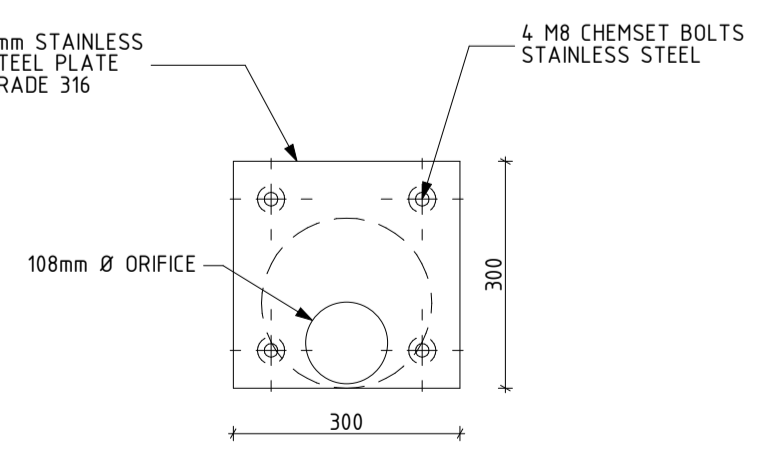


LEVEL 1 DRAINAGE PLAN

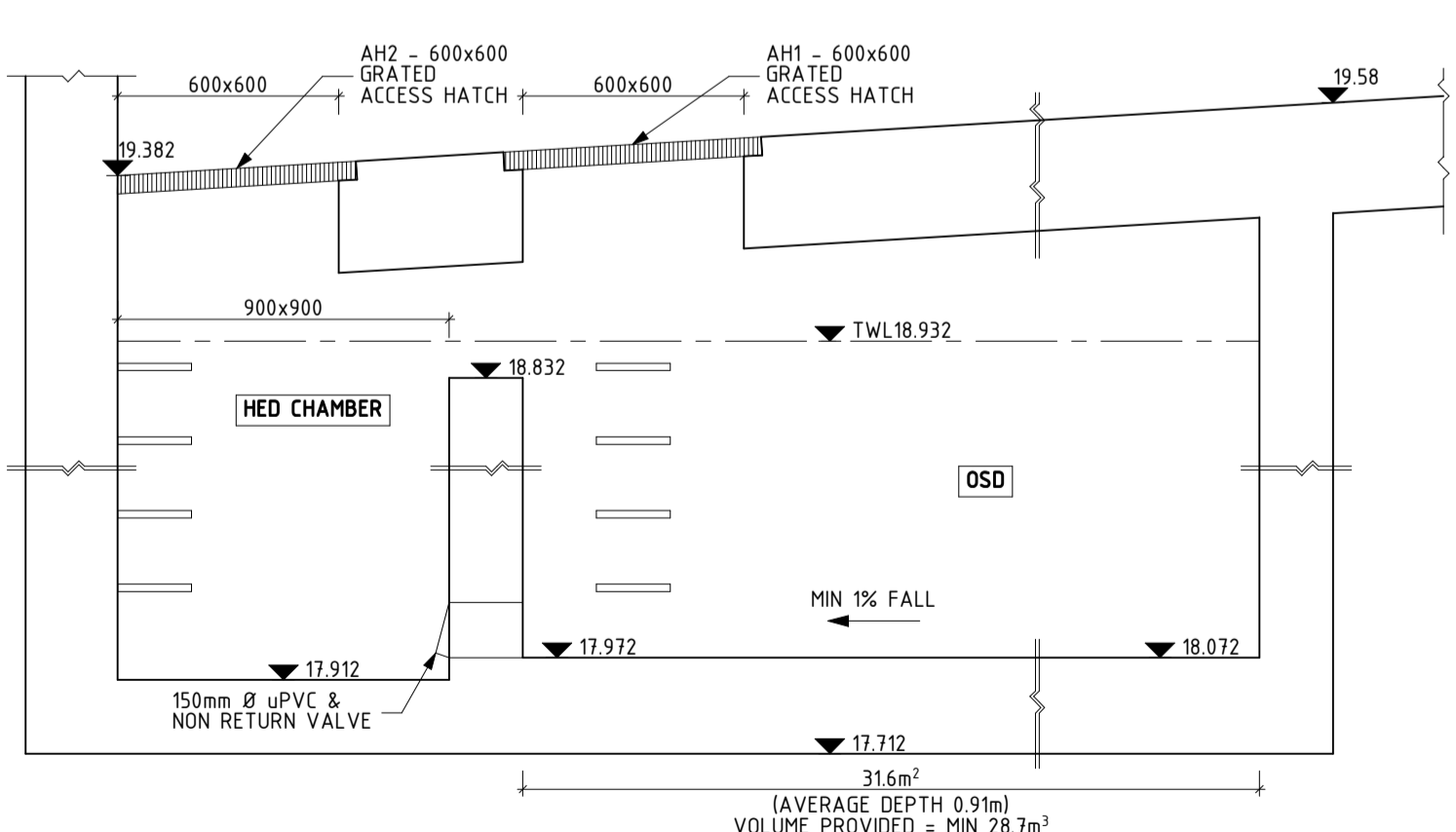
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MARK	SIZE/TYPE
FD	200 DIAMETER FLOOR DRAIN
FD1	200 DIAMETER FLOOR DRAIN (PLANTER)
DP	100 DIAMETER PVC DOWNPIPE
DP1	100 DIAMETER SEWER GRADE PVC PRESSURE SEALED CHARGED DOWNPIPE
DP3	100 DIAMETER PVC DOWNPIPE TO COLLECT WATER FROM BALCONY & TERRACE ONLY
DP4	100 DIAMETER SEWER GRADE PVC PRESSURE SEALED DOWNPIPE TO COLLECT WATER FROM BALCONY & TERRACE ONLY

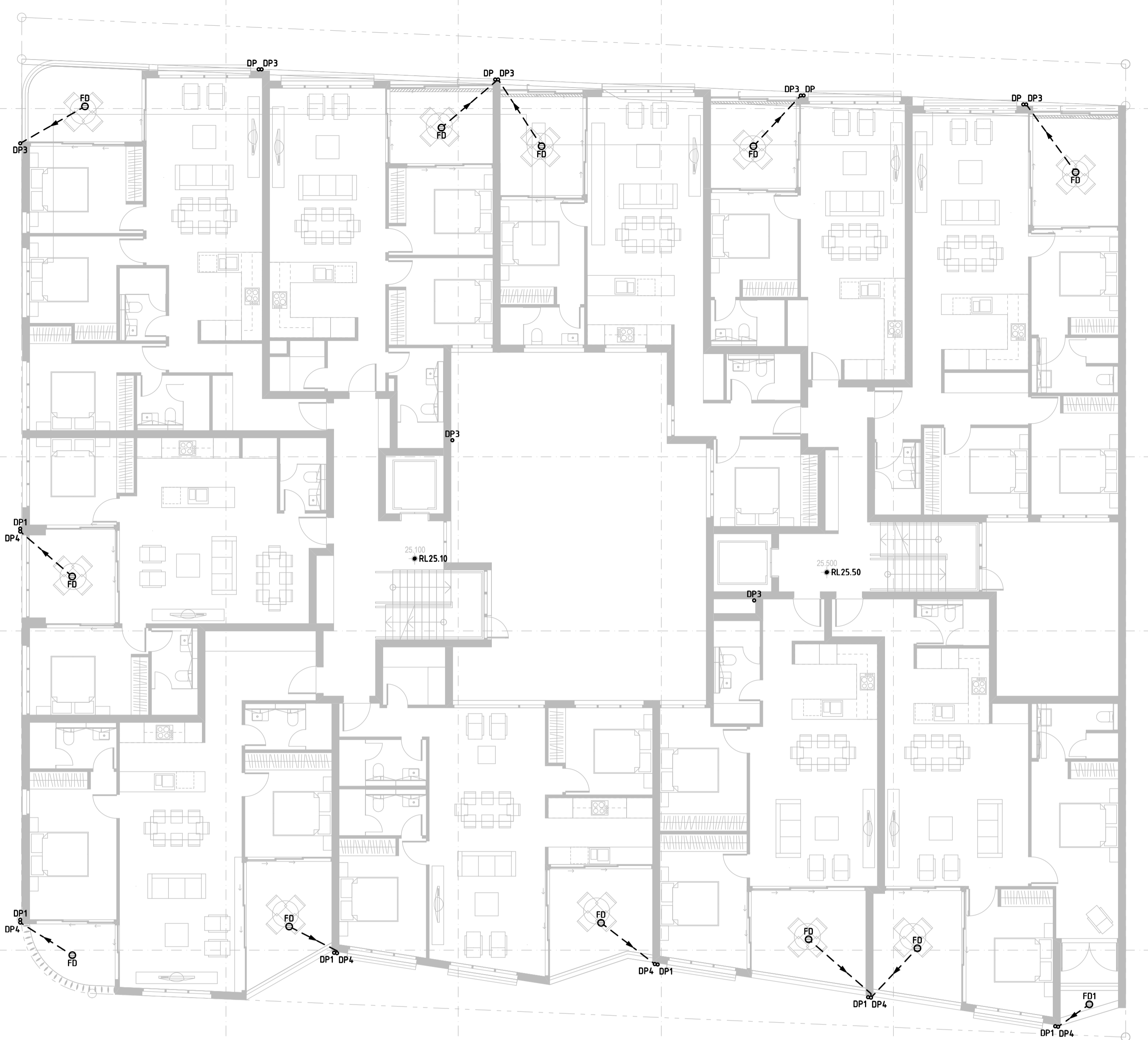
NOTE:
- ALL PIPES UNDER SUSPENDED FLOOR TO BE STRAPPED TO UNDERSIDE OF FLOOR STRUCTURE AT MIN 1%



ORIFICE PLATE DETAIL
1:10

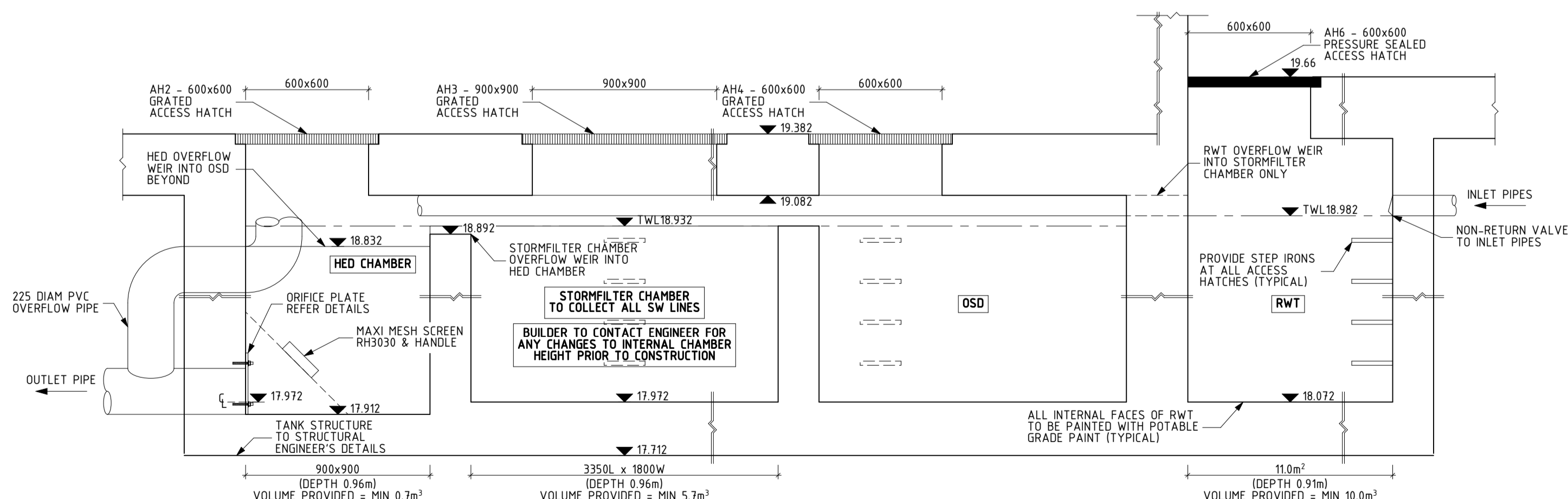


SECTION 1
1:20



LEVEL 2 DRAINAGE PLAN

1:100



SECTION 2
1:20

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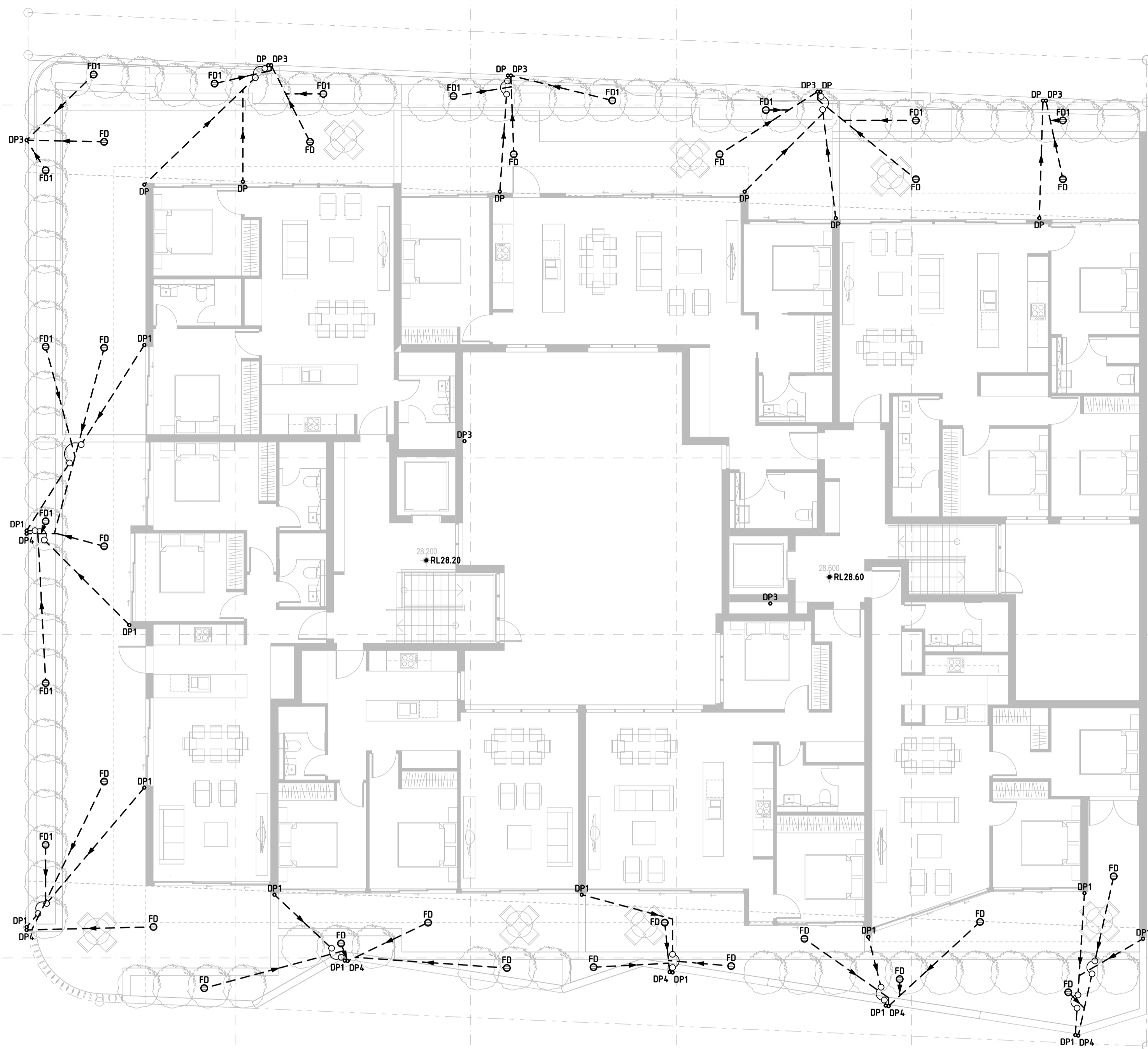
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NO 2 UNIT TRUST

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PROJECT	321 CONDAMINE STREET, MANLY VALE	PROJECT NUMBER	200203
DRAWING	LEVEL 1 & 2 DRAINAGE PLANS	DRAWING NUMBER	D03



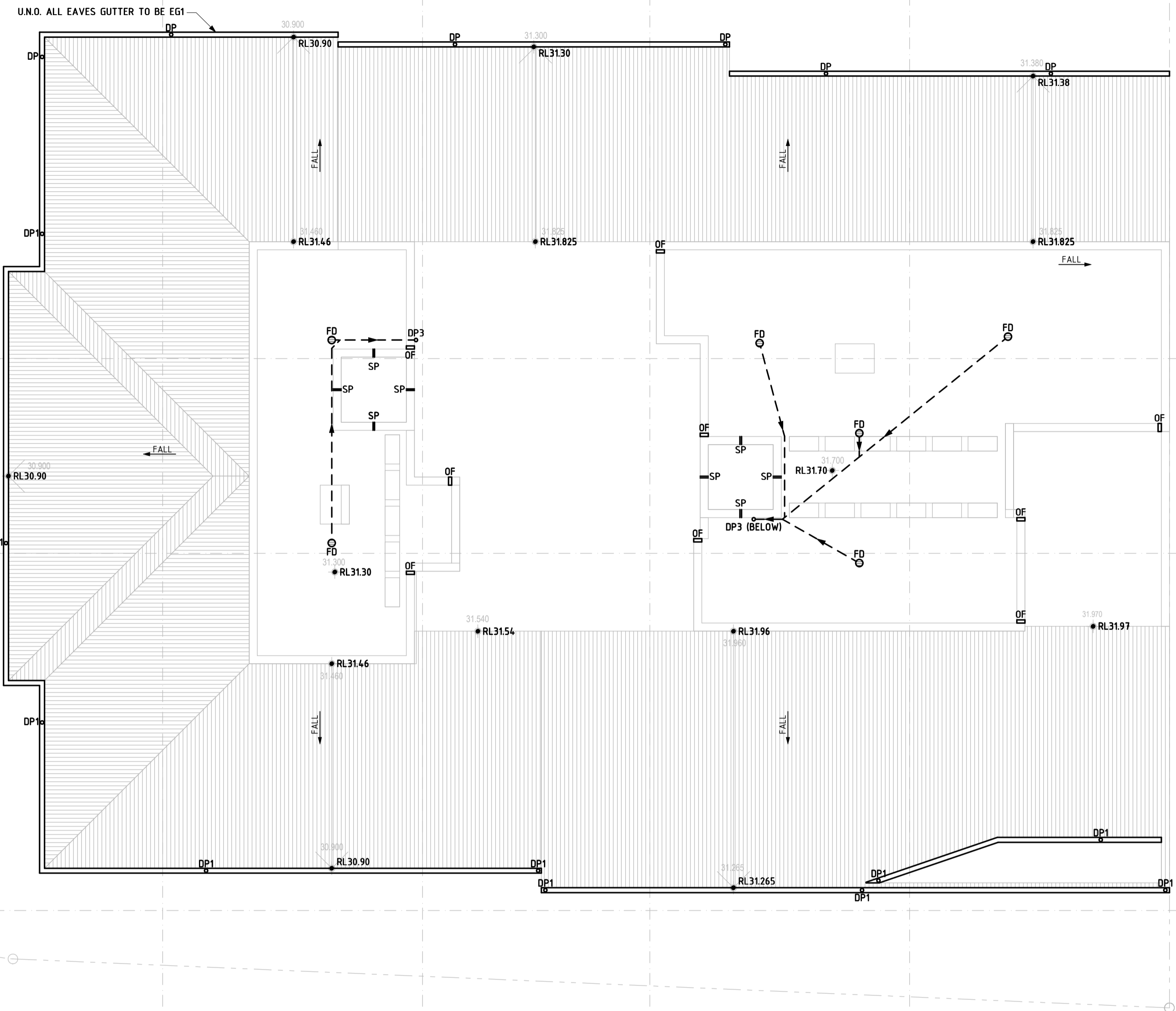
LEVEL 3 DRAINAGE PLAN

1:100

MARK	SIZE/TYPER
FD	200 DIAMETER FLOOR DRAIN
FD1	200 DIAMETER FLOOR DRAIN (PLANTER)
SP	50 WIDE SPITTER SLOT THROUGH BALUSTRADE
OF	100 WIDE X 50 HIGH OVERFLOW SLOT THROUGH HOB
DP	100 DIAMETER PVC DOWNPIPE
DP1	100 DIAMETER SEWER GRADE PVC PRESSURE SEALED CHARGED DOWNPIPE
DP3	100 DIAMETER PVC DOWNPIPE TO COLLECT WATER FROM BALCONY & TERRACE ONLY
DP4	100 DIAMETER SEWER GRADE PVC PRESSURE SEALED DOWNPIPE TO COLLECT WATER FROM BALCONY & TERRACE ONLY
EG1	HALF ROUND 150 EAVES GUTTER

NOTE:

- PROVIDE GUTTER GUARD TO ALL GUTTERS
- MOSQUITO PROOF MESH TO BE PROVIDED AT ALL END POINTS TO CHARGED LINES
- ALL PIPES UNDER SUSPENDED FLOOR TO BE STRAPPED TO UNDERSIDE OF FLOOR STRUCTURE AT MIN 1%



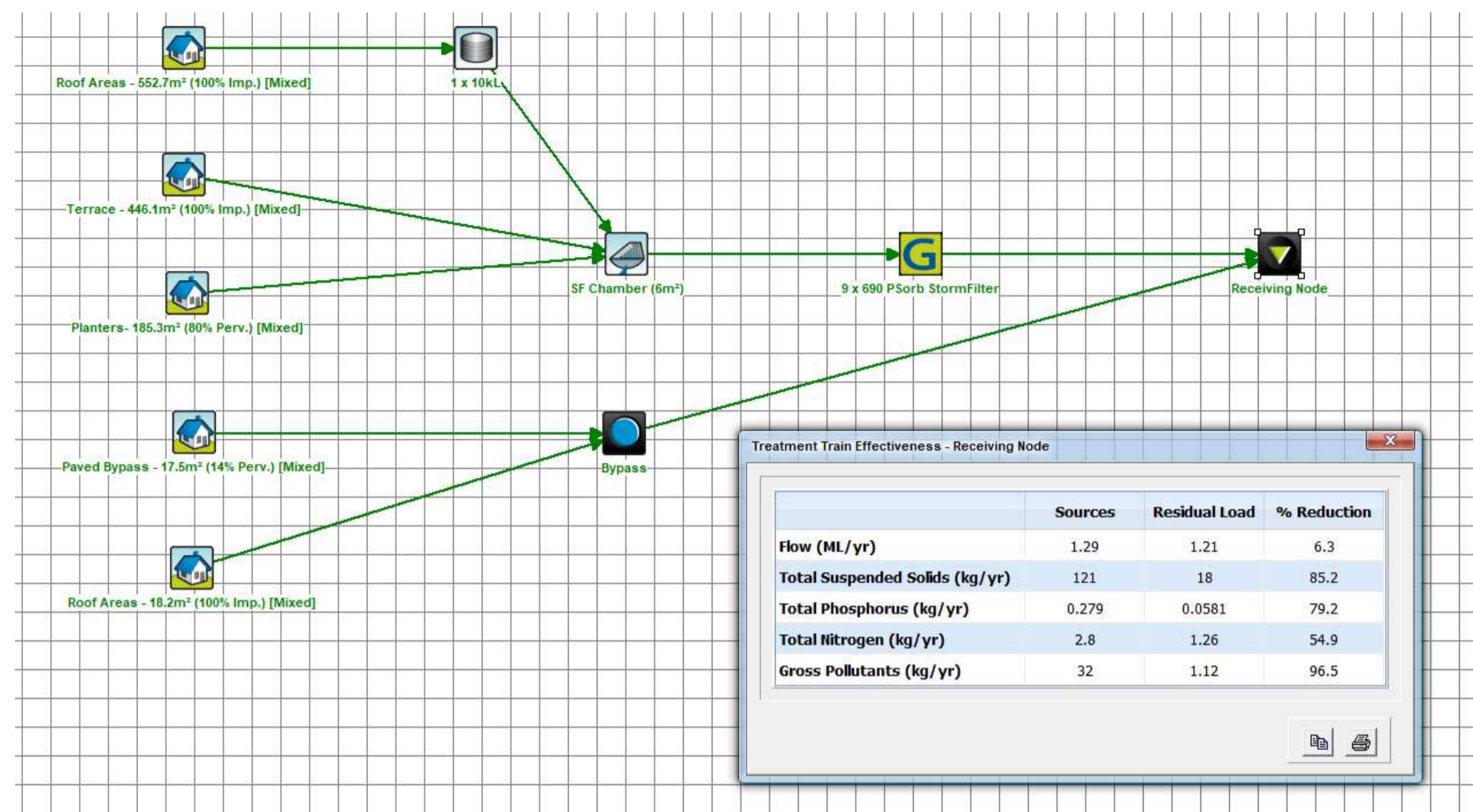
ROOF DRAINAGE PLAN

1:100

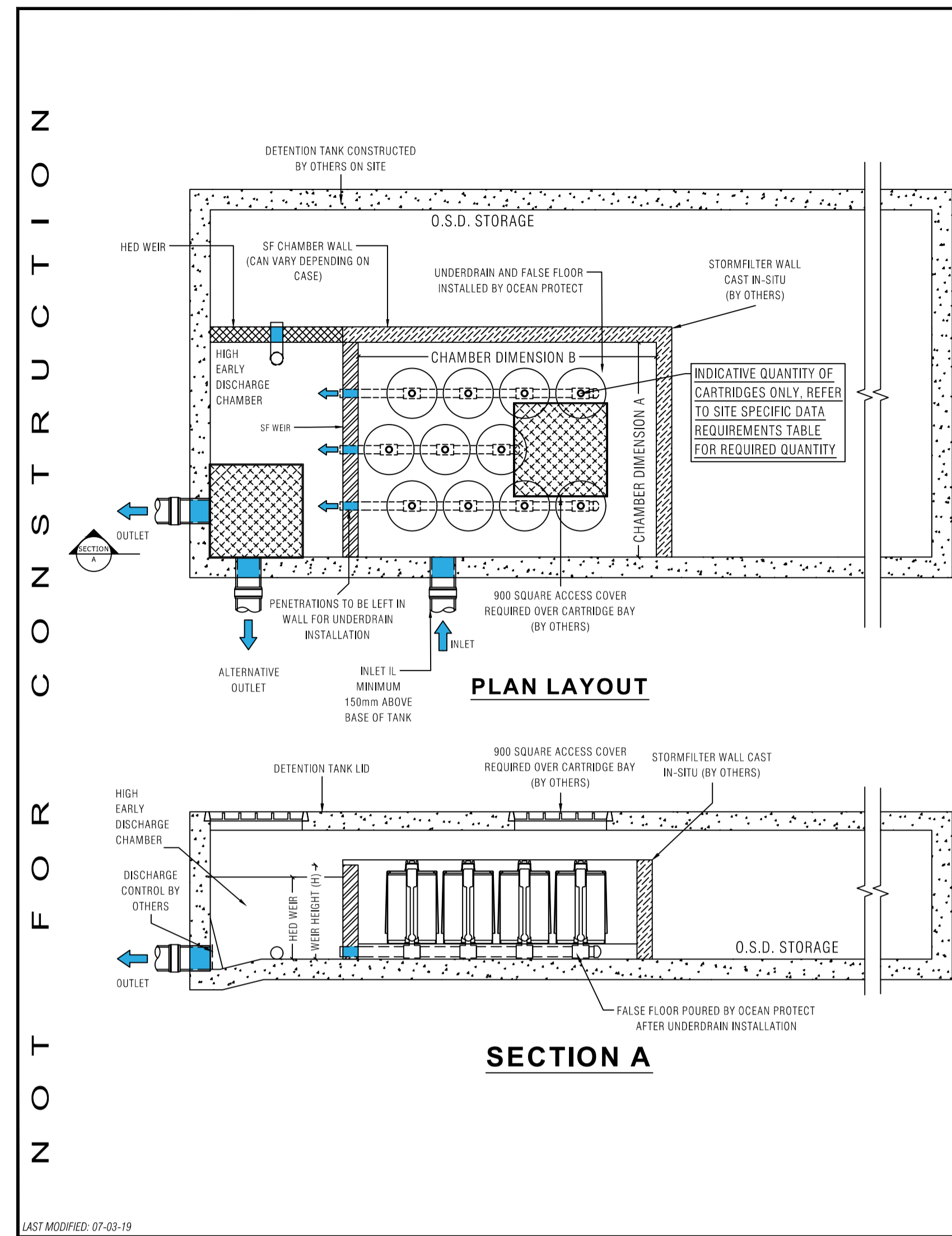
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STATUS	ISSUE FOR DA SUBMISSION	DATE	FEB 2020
PROJECT	321 CONDAMINE STREET, MANLY VALE	PROJECT NUMBER	200203
DRAWING	LEVEL 3 & ROOF DRAINAGE PLANS	DRAWING NUMBER	D04
DESIGNED	DM	SCALE	REFER
DRAWN	DM	PAGE SIZE	A1
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MUSIC MODEL
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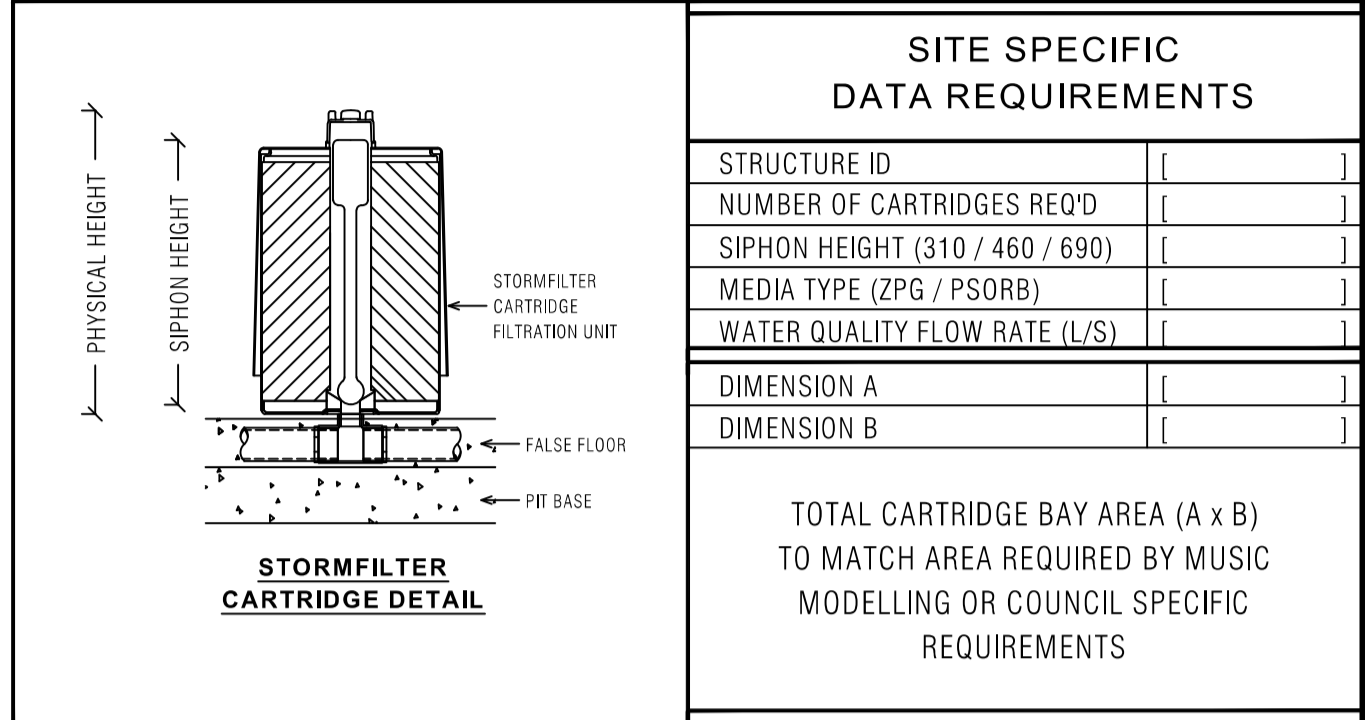


LAST MODIFIED: 07-03-19

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 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	460	310
CARTRIDGE PHYSICAL HEIGHT (mm)	840	600	600
TYPICAL WEIR HEIGHT [H] (mm)	920	690	540
CARTRIDGE FLOW RATE FOR ZPG MEDIA (L/s)	1.6	1.1	0.7
CARTRIDGE FLOW RATE FOR PSORB MEDIA (L/s)	0.9	0.46	0.39



- GENERAL NOTES
- INLET AND OUTLET PIPES TO BE IN ACCORDANCE WITH APPROVED PLANS.
 - A HIGH FLOW BYPASS ARRANGEMENT OR DISSIPATION STRUCTURE MAY BE REQUIRED TO MINIMISE RE-SUSPENSION OF SOLIDS OR ANY SIGNIFICANT INERTIAL FORCES ON THE CARTRIDGES.
 - ALL WATER QUALITY TREATMENT DEVICES REQUIRE PERIODIC MAINTENANCE. REFER TO OPERATION AND MAINTENANCE MANUAL FOR GUIDELINES AND ACCESS REQUIREMENTS.
 - SITE SPECIFIC PRODUCTION DRAWING WILL BE PROVIDED ON PLACEMENT OF ORDER.
 - THE INVERT LEVEL OF THE INLET PIPE MUST BE GREATER THAN THE RL OF THE FALSE FLOOR WITHIN THE CARTRIDGE CHAMBER.
 - CONCRETE STRUCTURE AND ACCESS COVERS DESIGNED AND PROVIDED BY OTHERS. ACCESS COVERS TO BE A MINIMUM 900 X 900 ABOVE CARTRIDGES. OHS REGARDING ACCESS COVERS AND TANK ACCESS TO BE ASSESSED BY OTHERS ON SITE.
 - THE STRUCTURE THICKNESSES SHOWN ARE FOR REPRESENTATIONAL PURPOSES.
 - DRAWINGS NOT TO SCALE.
- INSTALLATION NOTES
- UNDERDRAIN AND FALSE FLOOR INSTALLED BY OCEAN PROTECT.

OCEAN PROTECT
STORMFILTER SYSTEM
HED GENERAL ARRANGEMENT
SPECIFICATION DRAWING

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PROJECT	321 CONDOMINE STREET, MANLY VALE	PROJECT NUMBER	200203
DRAWING	OCEAN PROTECT'S DETAILS	DRAWING NUMBER	D05