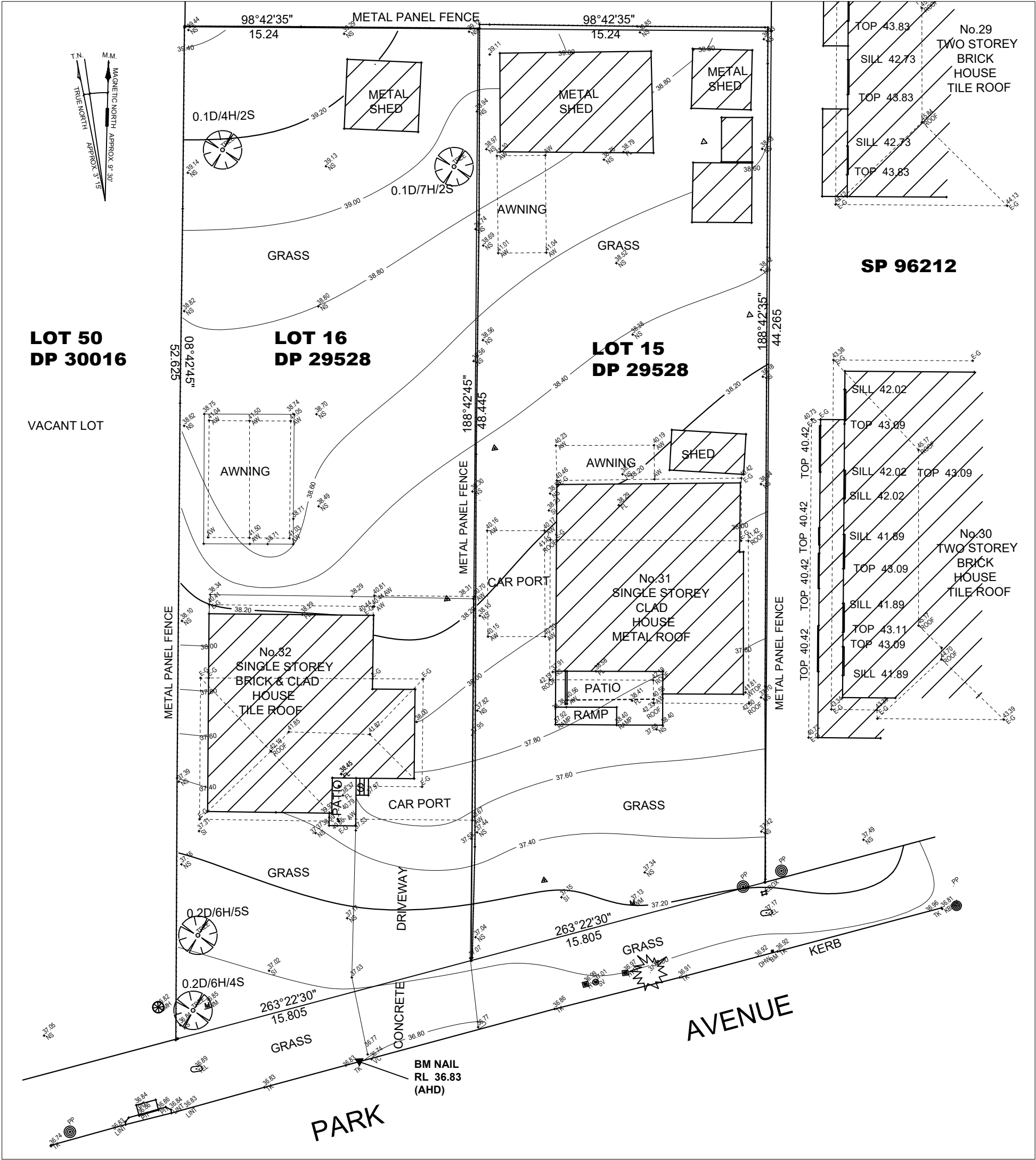


STORMWATER MANAGEMENT PLAN

SITE - LOTS 15-16 DP 29528 - 31-32 PARK AVENUE, KINGSWOOD

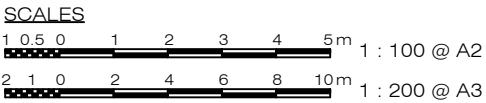


SURVEY PLAN

SCALE 1:150 [SURVEY BY OTHERS]

SURVEY & UTILITY SERVICES NOTES:

1. SURVEY DATA PROVIDED BY OTHERS. MPC TAKES NO RESPONSIBILITY ON THE ACCURACY OF THE LEVELS & DETAILS SHOWN.
2. ALL SERVICES AS SHOWN ON THIS PLAN ARE APPROXIMATE ONLY BY SURVEY. EXACT LOCATION SHALL BE ACCURATELY LOCATED BY CONTACTING DIAL BEFORE YOU DIG OR THE RELEVANT UTILITY PROVIDER BEFORE COMMENCING ANY EXCAVATION OR BUILDING WORKS.
3. ALL WORKS UNDERTAKEN WITHIN THE ROAD RESERVE / CARRIAGEWAY SHALL HAVE PRIOR APPROVAL FROM THE RELEVANT ROAD AUTHORITY, PRIOR TO COMMENCING WORKS.
4. ALL SURVEY LEVELS TO AUSTRALIAN HEIGHT DATUM - mAHD



STORMWATER DRAWING SCHEDULE

SHEET No.	DRAWING NUMBER	TITLE
01	SW-2011B-DA-01	SURVEY, LOCALITY PLAN & DRAWING SCHEDULE
02	SW-2011B-DA-02	CONCEPT STORMWATER DRAINAGE PLAN
03	SW-2011B-DA-03	STORMWATER CATCHMENT PLAN
04	SW-2011B-DA-04	OSD DETAILS & CALCULATIONS
05	SW-2011B-DA-05	WATER SENSITIVE URBAN DESIGN DETAILS
06	SW-2011B-DA-06	BASEMENT LEVEL DRAINAGE PLAN
07	SW-2011B-DA-07	PUMPOUT DRAINAGE DETAILS & CALCULATIONS
08	SW-2011B-DA-08	EROSION AND SEDIMENT CONTROL PLAN

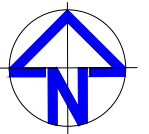
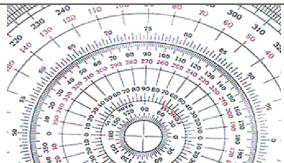
LOCALITY PLAN

GOOGLE MAP - NOT TO SCALE

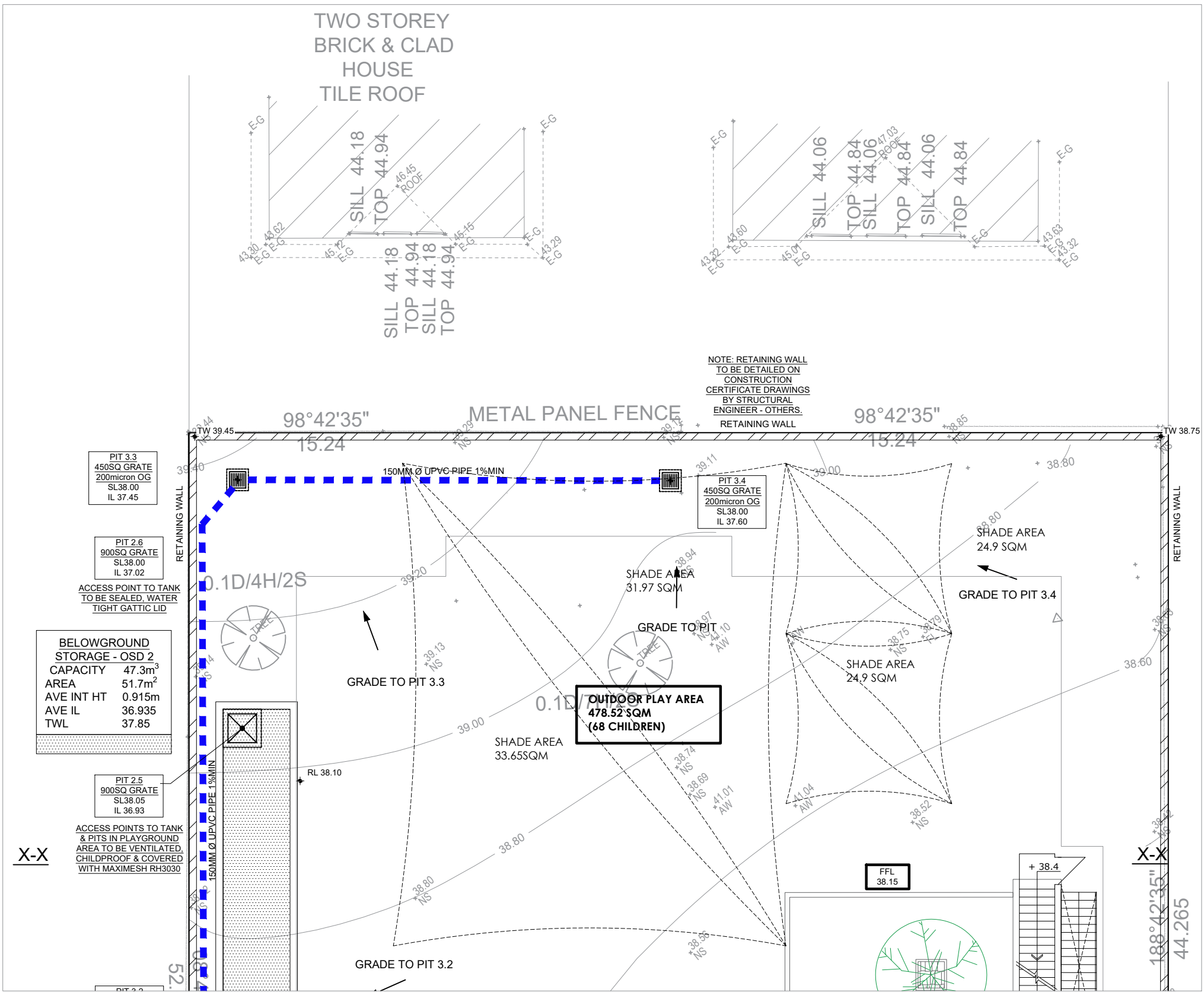
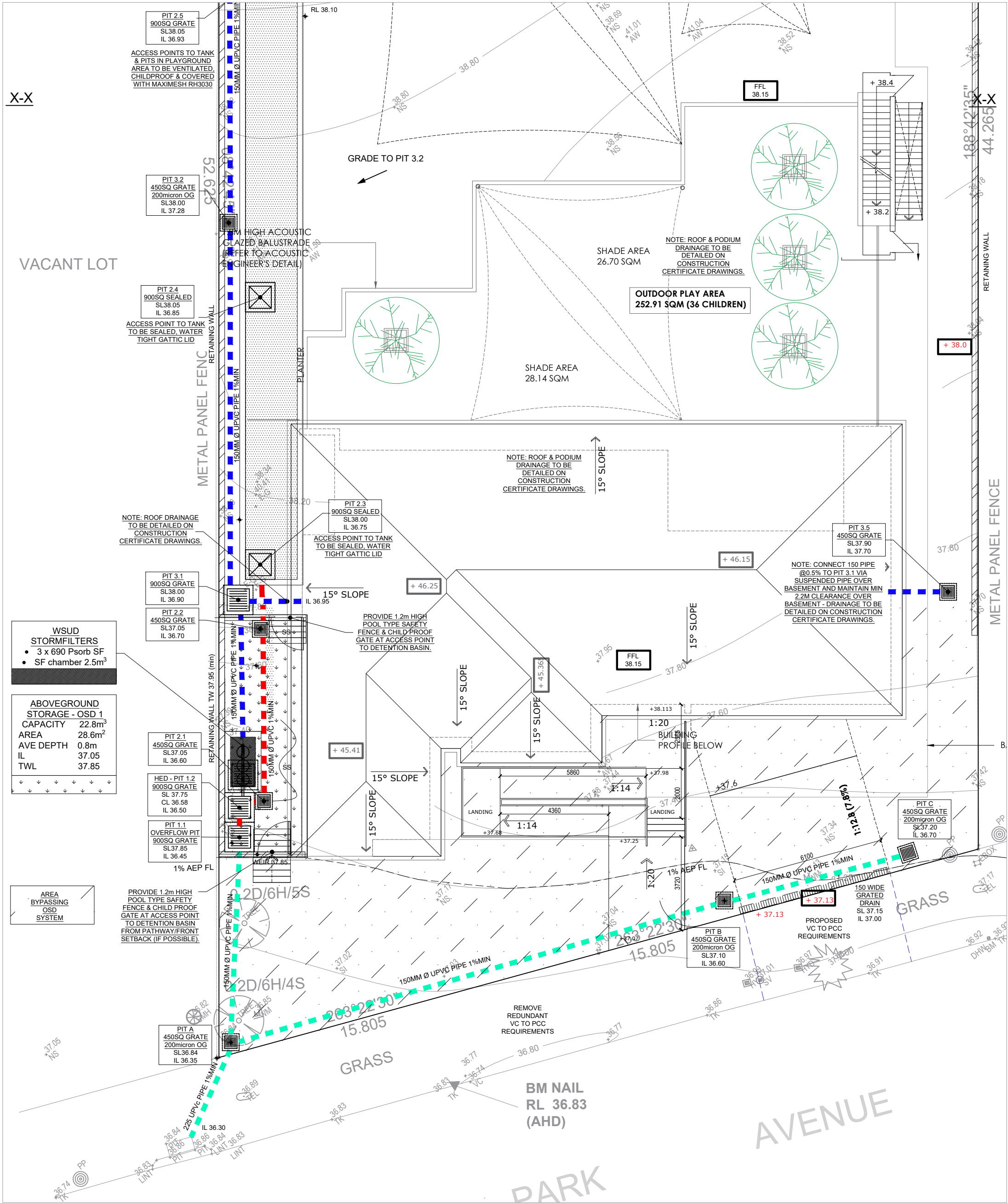
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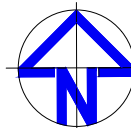
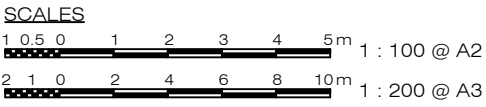
PENRITH CITY COUNCIL

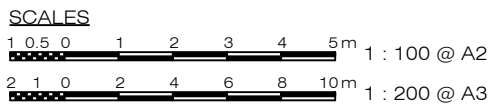
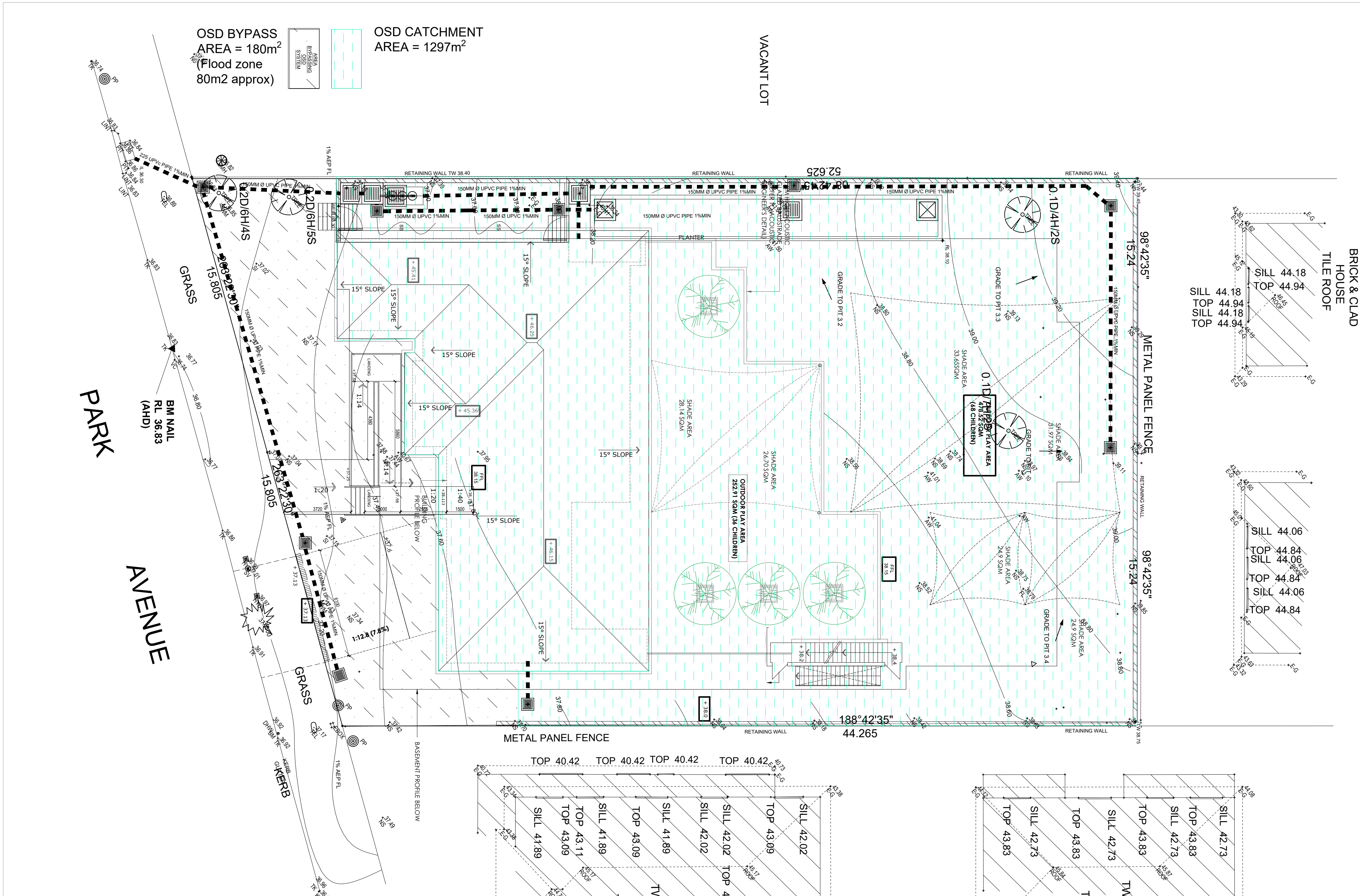


SITE PLAN CONTINUATION AT X-X



SITE PLAN CONTINUATION AT X-X





**PO BOX 5468
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ABN: 57615352540**

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CONSULTANTS PTY LTD.



APPROVED BY:
ZULFIQAR KHAN
MIEAust, NER (# 2500471)
Accredited Certifier
(Civil & Structural) (BPB2925)

SIGNED:

PROJECT : 30-32 PARK AVENUE, KINGSWOOD
TITLE : STORMWATER CATCHMENT PLAN

DESIGN BY:	MPC
CHECKED BY:	Z KHAN

SCALE: 1:100 or As Shown

SHEET: 3 OF 8

<u>FILE:</u>	JOB 21-165
<u>DATE:</u>	08 OCTOBER 2021

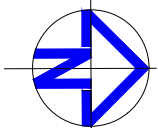
APPLICANT/CLIENT:
ARCHIDROME

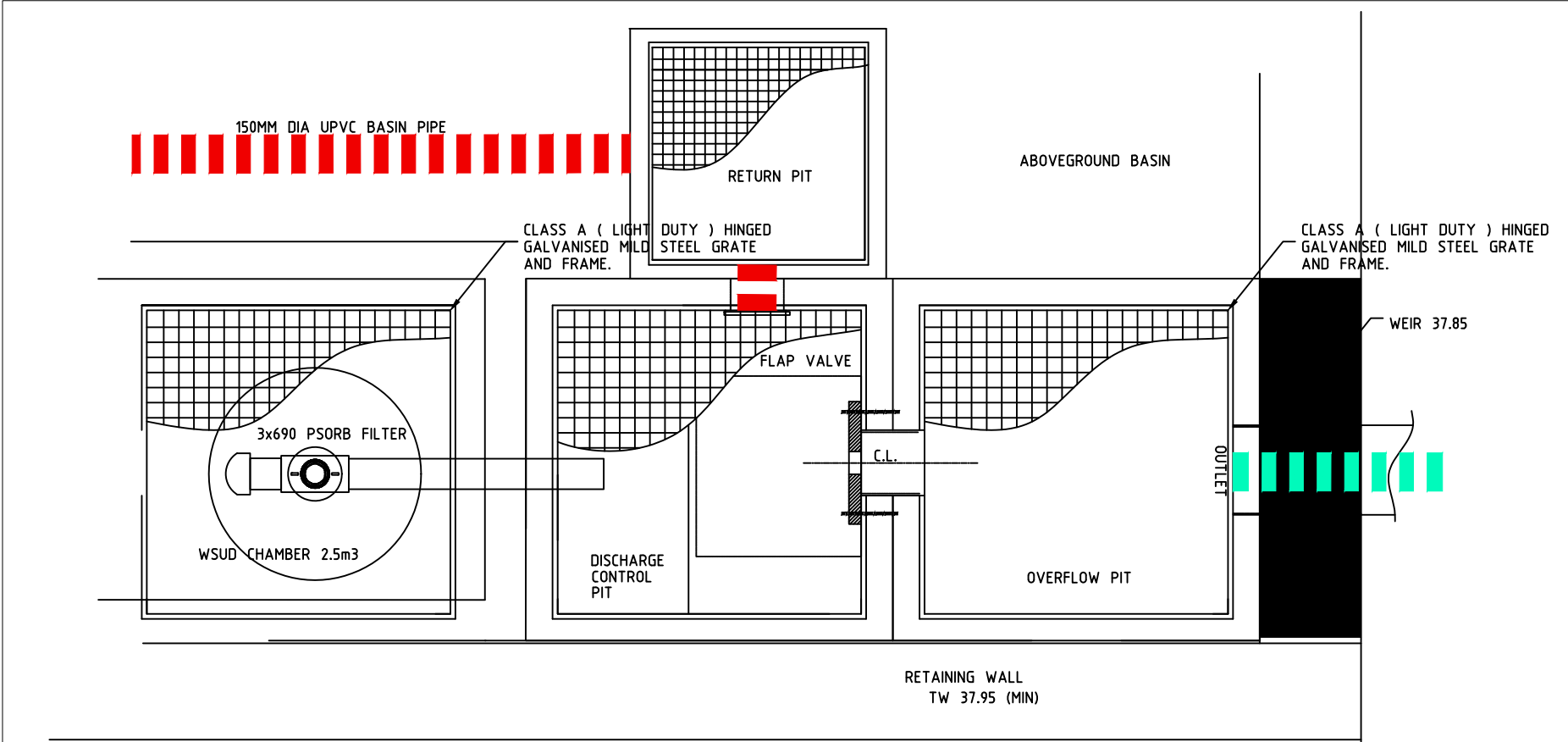
ARCHITECT:
ARCHIDROME

08/10/21	B	FOR COUNCIL DA APPROVAL - ARCHITECTURAL AMENDMENTS	MP001	<u>DRAWING NUMBER:</u> SW-2011B-DA-03	
20/08/21	A	FOR COUNCIL DA APPROVAL - PROPOSED CHILDCARE CENTRE	MP001		
<u>DATE</u>	<u>ISSUE</u>	<u>AMENDMENTS</u>	<u>DESIGNER</u>	<u>SHEET SIZE:</u> A2	

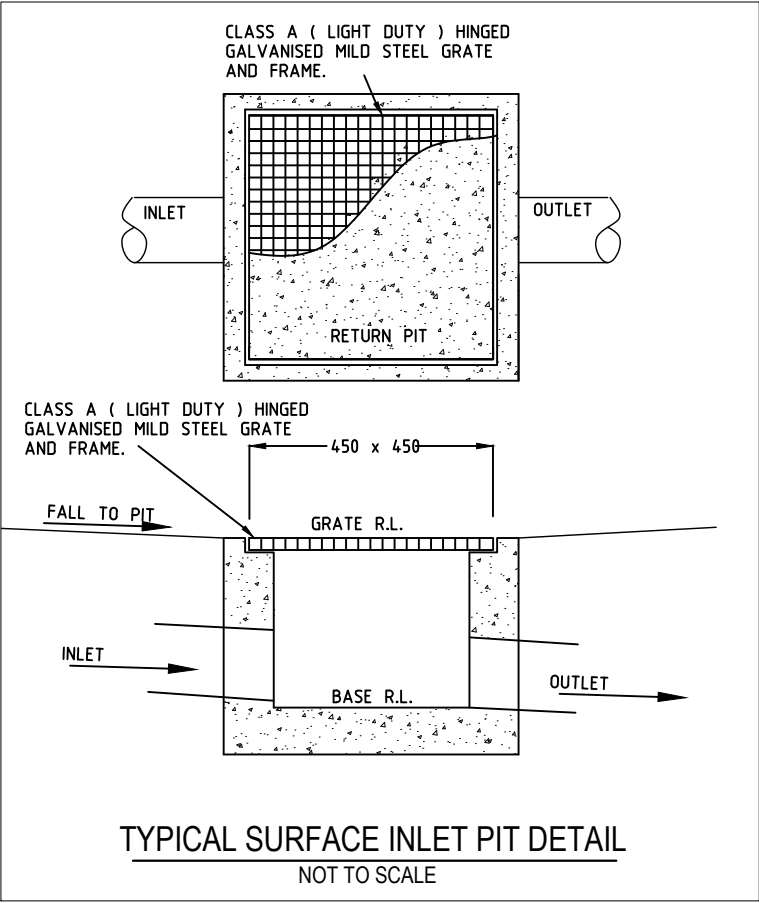
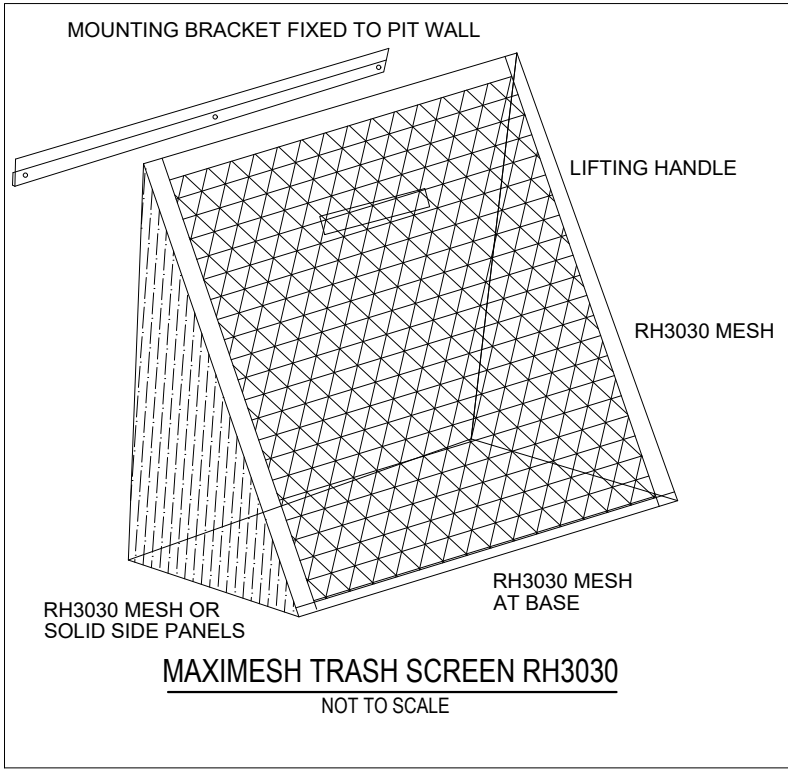
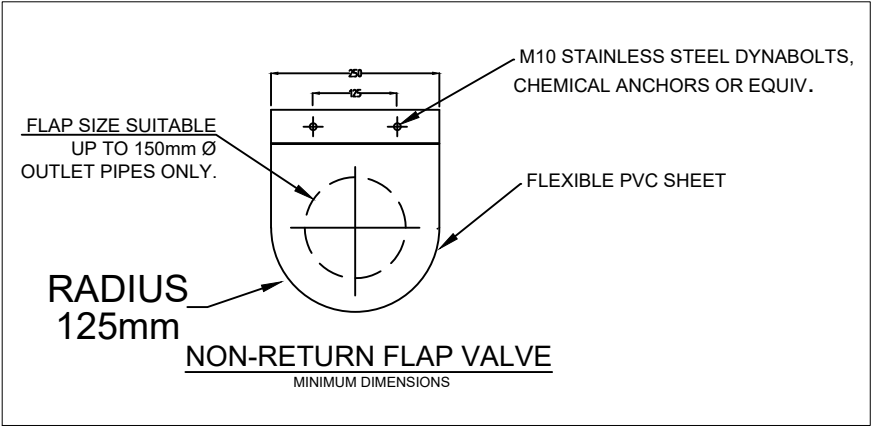
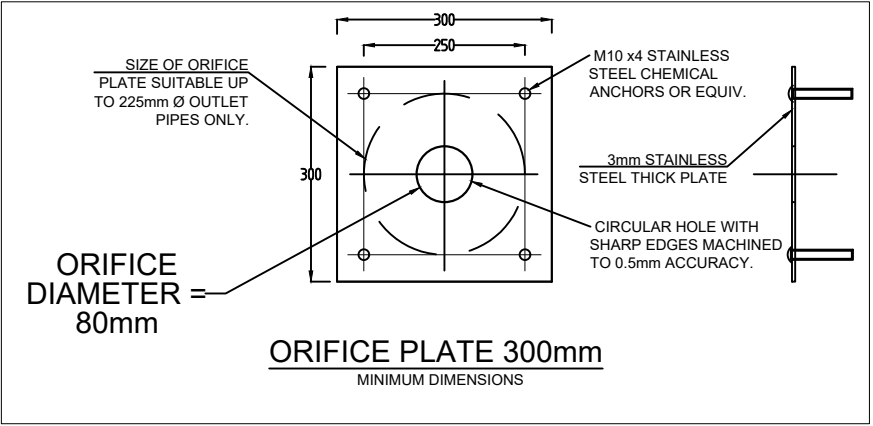
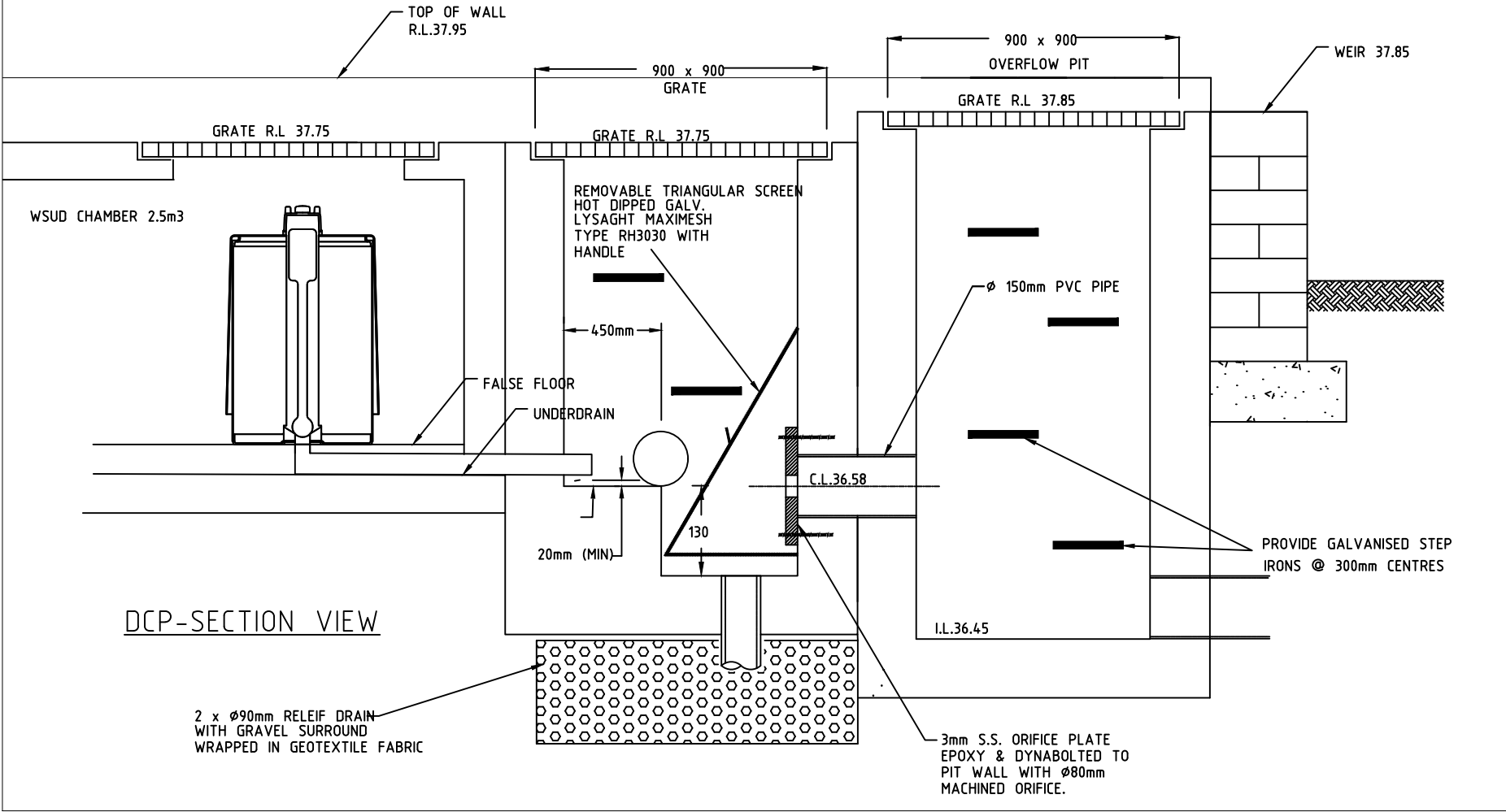


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PLAN VIEW (Typical)



On-Site Detention Calculation Sheet					
Project:	Proposed Childcare Centre	Lot No.	15-16		
Location:	31-32 Park Avenue, Kingswood	DP No.	29528		
Designer:	MultiPro Consultants	OSD No	1		
OSD Area:					
Site Area		0.138		Drowned	0.138
Basic Storage Volume		45.63			45.63
Basic Discharge		12.34			12.34
Area of Site to Storage		0.130	95%	0.130	95%
Percentage of Site		94.56			94.56
Storage per ha of contributing area		350.04			350.04
Volume/PSD Adjustment		120.05			120.05
PSD for site		15.64			15.64
Maximum Head to Orifice Centre		1.290		0.650	
Calculated Orifice Diameter		0.080		0.080	
Maximum discharge		15.643		11.111	
Head for high early discharge		1.190		0.550	
High Early Discharge		15.024	96%	10.221	65%
Mean Discharge		15.334		10.666	
Average Discharge per Hectare		117.617		81.811	
Final Site Storage Ratio		357		465	
Site Storage Volume		46.53		60.67	
Volume Provided		70.10	151%	70.100	116%
Revision 08.10.2021					

GENERAL NOTES

- ALL WORKS SHALL GENERALLY BE UNDERTAKEN IN ACCORDANCE WITH AS/NZ 3500.3.2:1998 AND COUNCIL'S SPECIFICATIONS &OR ENGINEERING GUIDELINES;
- THIS STORMWATER PLAN SHALL BE READ IN CONJUNCTION WITH THE APPROVED ARCHITECTURAL, LANDSCAPE, SURVEY, AND SITE PLANS;
- ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO MULTIPRO CONSULTANTS TO RESOLVE.
- ALL DRAINAGE LINES SHALL BE AS FOLLOWS -
 - 90mm DIAMETER WHERE THE LINE ONLY RECEIVES ROOF WATER;
 - 100mm DIAMETER WHERE THE LINE RECEIVES SURFACE RUNOFF OR IF THE LINE IS PART OF AN OSD SYSTEM;
 - A MINIMUM PIPELINE GRADE OF 1% FOR PIPES WITH A DIAMETER LESS THAN 150mm AND 0.5% FOR PIPES OF GREATER DIAMETER;
- ALL DRAINAGE LINES SHALL HAVE A MINIMUM COVER OF 100mm FOR PRIVATE PIPELINES AND 300mm FOR PUBLIC PIPELINES;
- ALL PITS WITHIN TRAFFICABLE AREAS (I.E DRIVEWAYS) SHALL BE HEAVY DUTY. ALL SURFACE AREAS SHALL BE GRADED TO THE SURFACE INLET PITS/DRAINS.
- LOCATION OF DOWN PIPES & FLOOR WASTES ARE INDICATIVE ONLY. DOWNPIPE & FLOOR WASTE SIZE, LOCATION & QUANTITY IS TO BE DETERMINED AT CC STAGE AND PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE RELEVANT STANDARDS.

UTILITY SERVICES

- ALL SERVICES AS SHOWN ON THIS PLAN ARE APPROXIMATE ONLY. EXACT LOCATION SHALL BE ACCURATELY LOCATED BY CONTACTING DIAL BEFORE YOU DIG OR THE RELEVANT UTILITY PROVIDER BEFORE COMMENCING ANY EXCAVATION OR BUILDING WORKS.
- ALL WORKS UNDERTAKEN WITHIN THE ROAD RESERVE / CARRIAGEWAY SHALL HAVE PRIOR APPROVAL FROM THE RELEVANT AUTHORITY, PRIOR TO COMMENCING WORKS.

ONSITE DETENTION NOTES

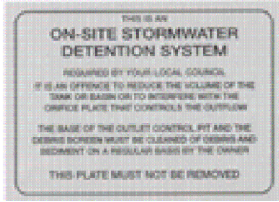
- ALL WALLS FORMING PART OF THE DETENTION BASIN SHALL BE OF MASONRY CONSTRUCTION AN WHOLLY WITHIN THE PROPERTY BOUNDARY;
- ALL MULCH WITHIN THE ABOVE GROUND DETENTION BASIN (IF PROPOSED) SHALL BE NON-FLOATABLE;
- ALL GRATES TO BE FITTED WITH CHILD PROOF J-LOCKS;
- THE CERTIFYING ENGINEER OR COUNCIL'S ENGINEER SHALL INSPECT THE OSD WORKS AT THE CRITICAL STAGES -
 - PRIOR TO COMMENCING WORK TO DISCUSS SITE CONSTRAINTS;
 - PRIOR TO LANDSCAPING THE DETENTION BASIN & POURING THE ROOF OF THE DETENTION TANK;
 - PRIOR TO INSTALLING THE FITTINGS TO THE DISCHARGE CONTROL UNIT;
 - PRELIMINARY INSPECTION - PRIOR TO CERTIFICATION
 - FINAL INSPECTION - FOR CERTIFICATION. WORK-AS-EXECUTED [WAE] SHALL BE PREPARED BY A REGISTERED SURVEYOR PRIOR TO FINAL INSPECTION.
- ALL MAINTENANCE WORK SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE MAINTENANCE SCHEDULE APPROVED BY COUNCIL;
- DRAINAGE PIPE LINES ARE TO AVOID EXISTING TREES WHEREVER POSSIBLE - GENERALLY OUTSIDE THE DRIP LINE / CANOPY OF THE EXISTING TREE;



INSTALL SIGN NEAR OSD TANK



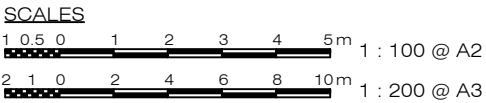
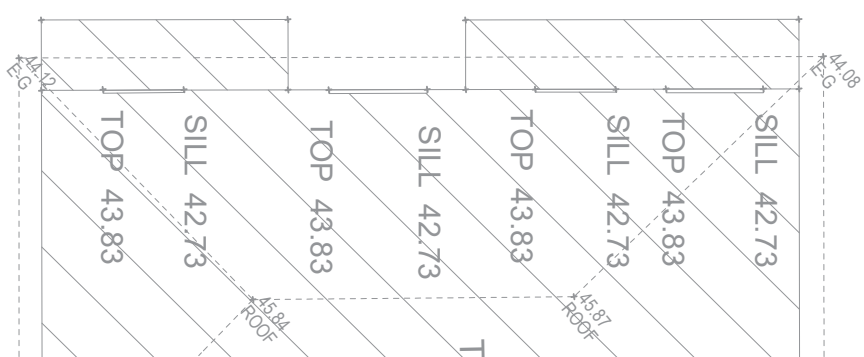
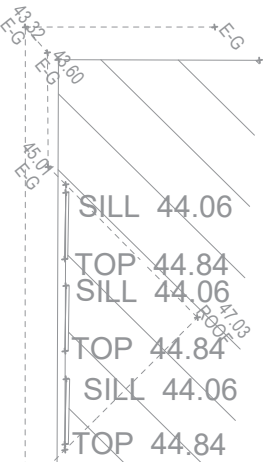
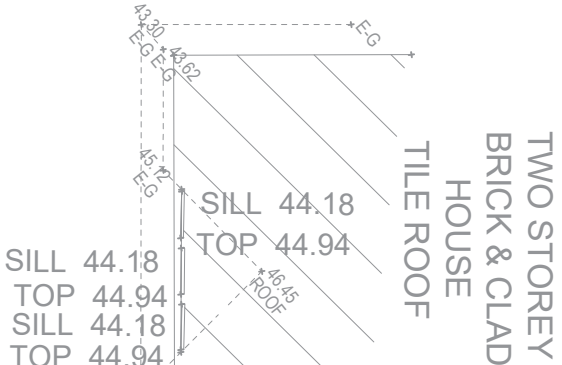
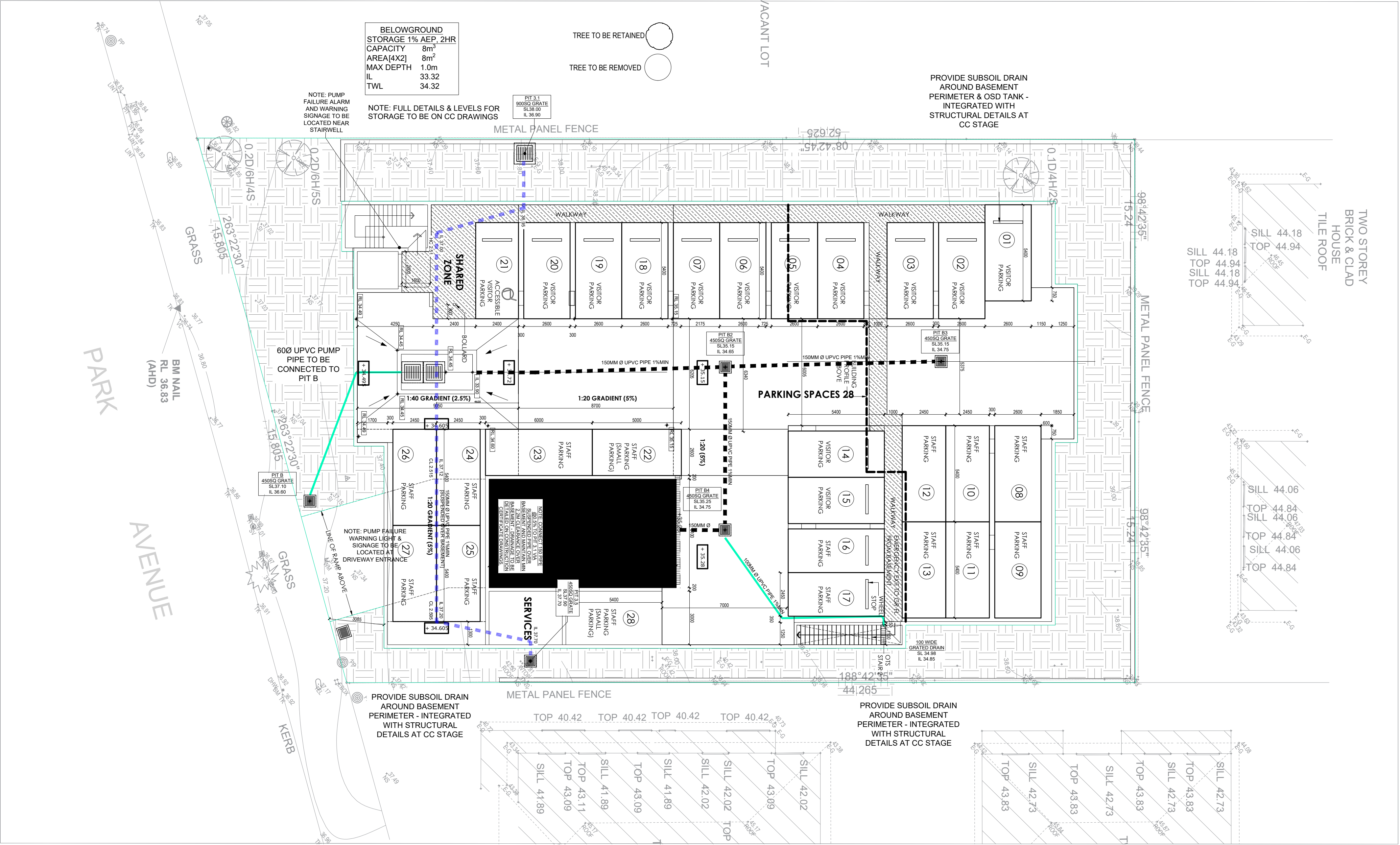
INSTALL WITHIN OSD BASIN



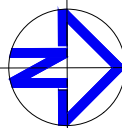
OSD PLATE

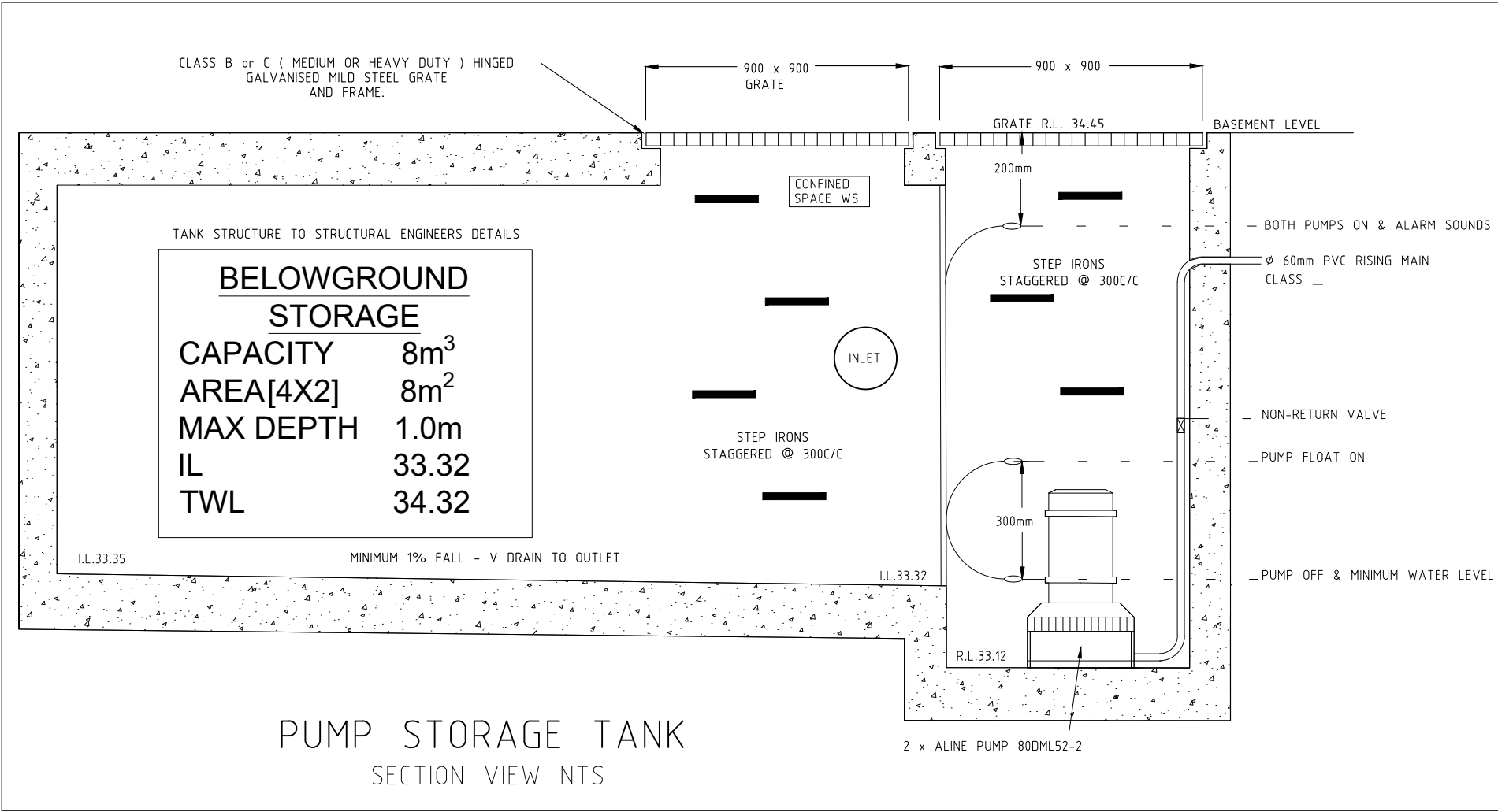


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MPC - PUMP STORAGE REQUIREMENT																		
Property : 31-32 Park Avenue, Kingswood																		
Area = 89.6 sq.m																		
Duration	1 Yr	Q1	V1	2 Yr	Q2	V2	5 Yr	Q5	V5	10 Yr	Q10	V10	20 Yr	Q20	V20	50 Yr	Q50	V50
6 min	78	1.9	0.7	100	2.5	0.9	127	3.2	1.1	142	3.5	1.3	163	4.0	1.5	189	4.7	1.7
7 min	74	1.8	0.8	94	2.4	1.0	120	3.0	1.3	134	3.3	1.4	154	3.8	1.6	179	4.4	1.9
8 min	70	1.7	0.8	90	2.2	1.1	114	2.8	1.4	127	3.2	1.5	146	3.6	1.7	170	4.2	2.0
9 min	67	1.7	0.9	86	2.1	1.1	108	2.7	1.5	122	3.0	1.6	139	3.5	1.9	162	4.0	2.2
10 min	64	1.6	1.0	82	2.0	1.2	104	2.6	1.6	116	2.9	1.7	133	3.3	2.0	155	3.9	2.3
11 min	61	1.5	1.0	79	2.0	1.3	100	2.5	1.6	112	2.8	1.8	128	3.2	2.1	149	3.7	2.4
12 min	59	1.5	1.1	76	1.9	1.4	96	2.4	1.7	108	2.7	1.9	123	3.1	2.2	143	3.6	2.6
13 min	57	1.4	1.1	73	1.8	1.4	93	2.3	1.8	104	2.6	2.0	119	3.0	2.3	138	3.4	2.7
14 min	55	1.4	1.2	71	1.8	1.5	90	2.2	1.9	100	2.5	2.1	115	2.9	2.4	134	3.3	2.8
15 min	53	1.3	1.2	68	1.7	1.5	87	2.2	1.9	97	2.4	2.2	111	2.8	2.5	129	3.2	2.9
16 min	52	1.3	1.2	66	1.7	1.6	84	2.1	2.0	94	2.3	2.3	108	2.7	2.6	126	3.1	3.0
17 min	50	1.3	1.3	65	1.6	1.6	82	2.0	2.1	92	2.3	2.3	105	2.6	2.7	120	3.0	3.1
18 min	49	1.2	1.3	63	1.6	1.7	80	2.0	2.1	89	2.2	2.4	102	2.5	2.7	119	3.0	3.2
20 min	47	1.2	1.4	60	1.5	1.8	76	1.9	2.3	85	2.1	2.5	97	2.4	2.9	113	2.8	3.4
25 min	42	1.0	1.6	53	1.3	2.0	68	1.7	2.5	76	1.9	2.8	87	2.2	3.2	101	2.5	3.8
30 min	38	0.9	1.7	49	1.2	2.2	62	1.5	2.8	69	1.7	3.1	79	2.0	3.5	92	2.3	4.1
35 min	35	0.9	1.8	45	1.1	2.3	57	1.4	3.0	64	1.6	3.3	73	1.8	3.8	84	2.1	4.4
40 min	32	0.8	1.9	42	1.0	2.5	53	1.3	3.1	59	1.5	3.5	68	1.7	4.0	79	2.0	4.7
45 min	30	0.8	2.0	39	1.0	2.6	49	1.2	3.3	55	1.4	3.7	63	1.6	4.3	74	1.8	4.9
50 min	29	0.7	2.1	37	0.9	2.7	47	1.2	3.5	52	1.3	3.9	60	1.5	4.5	69	1.7	5.2
55 min	27	0.7	2.2	35	0.9	2.9	44	1.1	3.6	49	1.2	4.1	56	1.4	4.6	66	1.6	5.4
60 min	26	0.6	2.3	33	0.8	3.0	42	1.0	3.8	47	1.2	4.2	54	1.3	4.8	63	1.6	5.6
75 min	22	0.6	2.5	29	0.7	3.2	37	0.9	4.1	41	1.0	4.6	47	1.2	5.3	55	1.4	6.2
90 min	20	0.5	2.7	26	0.6	3.5	33	0.8	4.4	37	0.9	5.0	42	1.1	5.7	49	1.2	6.6
2 hr	17	0.4	3.0	21	0.5	3.8	27	0.7	4.9	31	0.8	5.5	36	0.9	6.4	42	1.0	7.5
3 hr	13	0.3	3.4	16	0.4	4.4	21	0.5	5.7	24	0.6	6.5	28	0.7	7.5	33	0.8	8.8
4 hr	11	0.3	3.8	14	0.3	4.9	18	0.4	6.4	20	0.5	7.2	23	0.6	8.4	27	0.7	9.8
5 hr	9	0.2	4.1	12	0.3	5.3	15	0.4	6.9	18	0.4	7.9	20	0.5	9.1	24	0.6	10.7
6 hr	8	0.2	4.3	10	0.3	5.6	14	0.3	7.4	16	0.4	8.4	18	0.5	9.8	21	0.5	11.6
8 hr	7	0.2	4.8	9	0.2	6.2	11	0.3	8.2	13	0.3	9.4	15	0.4	10.9	18	0.4	13.0
10 hr	6	0.1	5.2	8	0.2	6.8	10	0.2	8.9	11	0.3	10.2	13	0.3	11.9	16	0.4	14.2
12 hr	5	0.1	5.5	7	0.2	7.2	9	0.2	9.6	10	0.3	11.0	12	0.3	12.8	14	0.4	15.2
14 hr	5	0.1	5.9	6	0.2	7.6	8	0.2	10.2	9	0.2	11.7	11	0.3	13.7	13	0.3	16.3
16 hr	4	0.1	6.2	6	0.1	8.0	7	0.2	10.7	9	0.2	12.3	10	0.3	14.4	12	0.3	17.2
18 hr	4	0.1	6.5	5	0.1	8.4	7	0.2	11.2	8	0.2	12.9	9	0.2	15.1	11	0.3	18.0
20 hr	4	0.1	6.7	5	0.1	8.8	7	0.2	11.7	8	0.2	13.5	9	0.2	15.8	11	0.3	18.8
22 hr	4	0.1	7.0	5	0.1	9.1	6	0.2	12.2	7	0.2	14.0	8	0.2	16.4	10	0.2	19.6
24 hr	3	0.1	7.2	4	0.1	9.4	6	0.1	12.6	7	0.2	14.5	8	0.2	17.0	9	0.2	20.3
36 hr	3	0.1	8.3	3	0.1	10.8	5	0.1	14.6	5	0.1	16.9	6	0.2	19.8	7	0.2	23.8
48 hr	2	0.1	9.1	3	0.1	11.9	4	0.1	16.1	4	0.1	18.7	5	0.1	22.0	6	0.2	26.4
60 hr	2	0.0	9.7	2	0.1	12.7	3	0.1	17.3	4	0.1	20.1	4	0.1	23.7	5	0.1	28.4
72 hr	2	0.0	10.1	2	0.1	13.4	3	0.1	18.2	3	0.1	21.2	4	0.1	24.9	5	0.1	30.0
Required Pump Discharge			5.2															
Volume of Storage in Tank			7.4															
Volume of proposed storage			8.0															

Single Channel Impeller - 76mm passage

Model **DML**

Submersible Sewage Pumps

Submersible sewage pumps with single channel non-clog impellers and double row lower bearings for reliability. Suitable for raw sewage, waste water, storm water, etc.

Impeller Type & Solids Handling

Enclosed Single Channel

Specifications

- Submersible pump with non dog single channel impeller
- Maximum solids handling: 76 mm
- Maximum liquid temperature: 40 °C
- Maximum submergence: 8 m

Materials

- Pump casing: Cast Iron
- Impeller: Cast Iron
- Wear ring: Bronze
- Shaft: 403 Stainless Steel
- Motor frame: Cast Iron
- Fasteners: 304 Stainless Steel
- Mechanical seal: Double mechanical seal in oil chamber, Silicon Carbide lower faces, Carbon/Ceramic upper faces.

Motor Data

- Air filled, dry submersible, 4 pole, 50 Hz
- 1.6 Star-Delta (DOL for 2.2 kW)
- Insulation class F
- IP68 protection
- 3 Phase - 400 Volt

Range

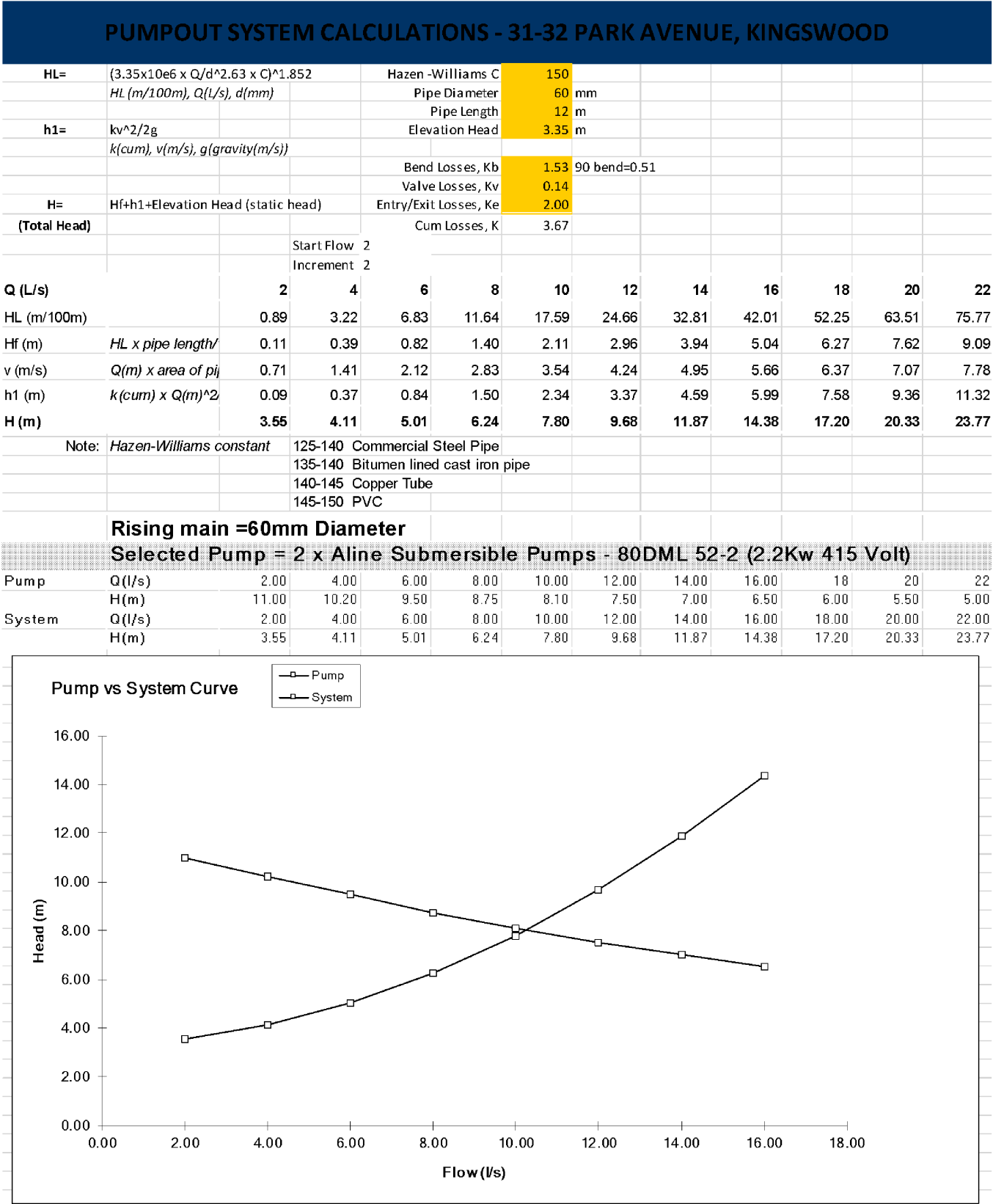
- 80 to 150 mm Ø discharge
- 2.2 to 22 kW - 3 Phase (Manual only)

Supply

- Cable(s): 10 m
- Discharge elbow with companion flange (80 & 100 mm screwed, 150 mm weld on)

Accessories

- Quick Discharge Connectors (QDC) available



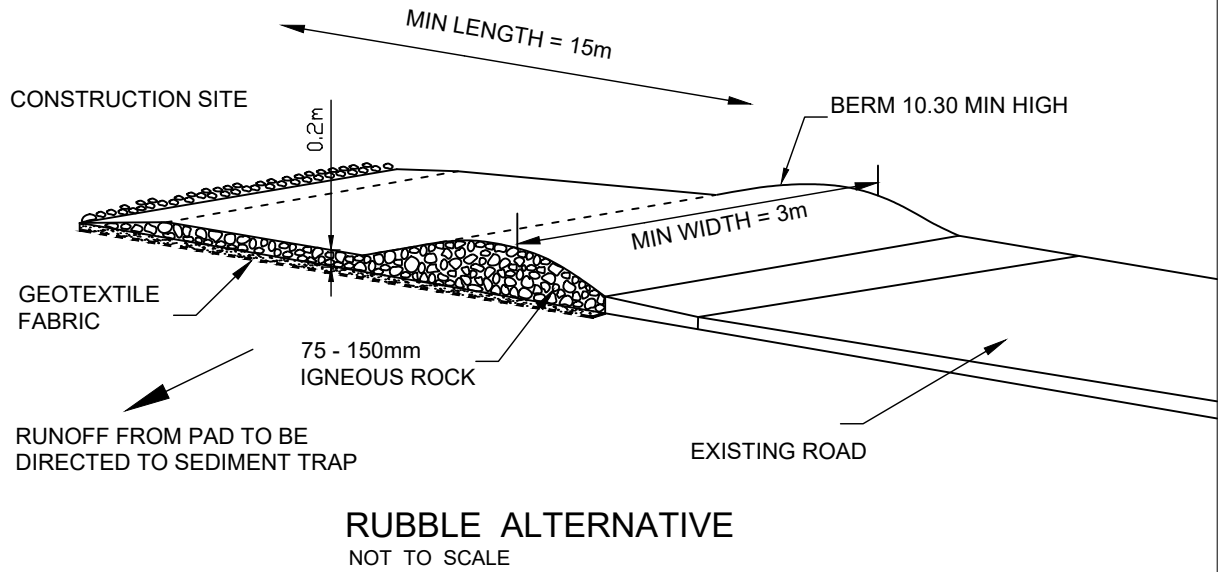
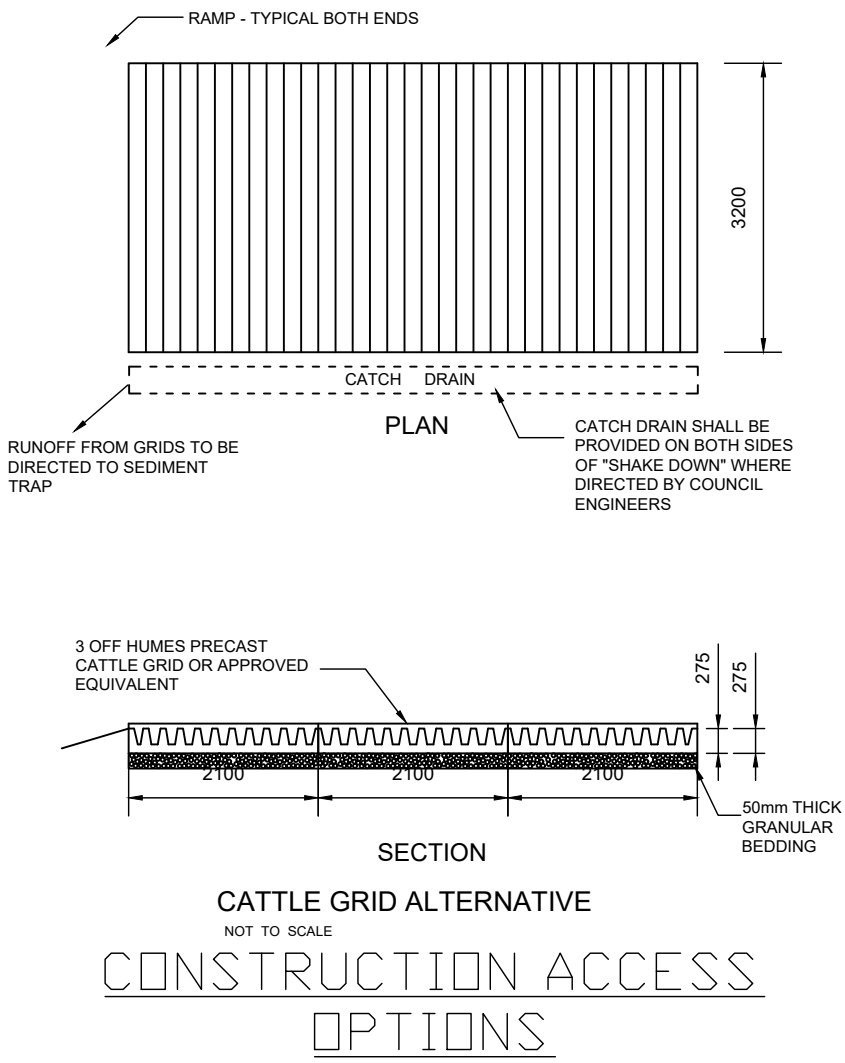
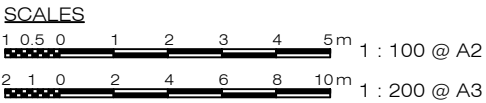
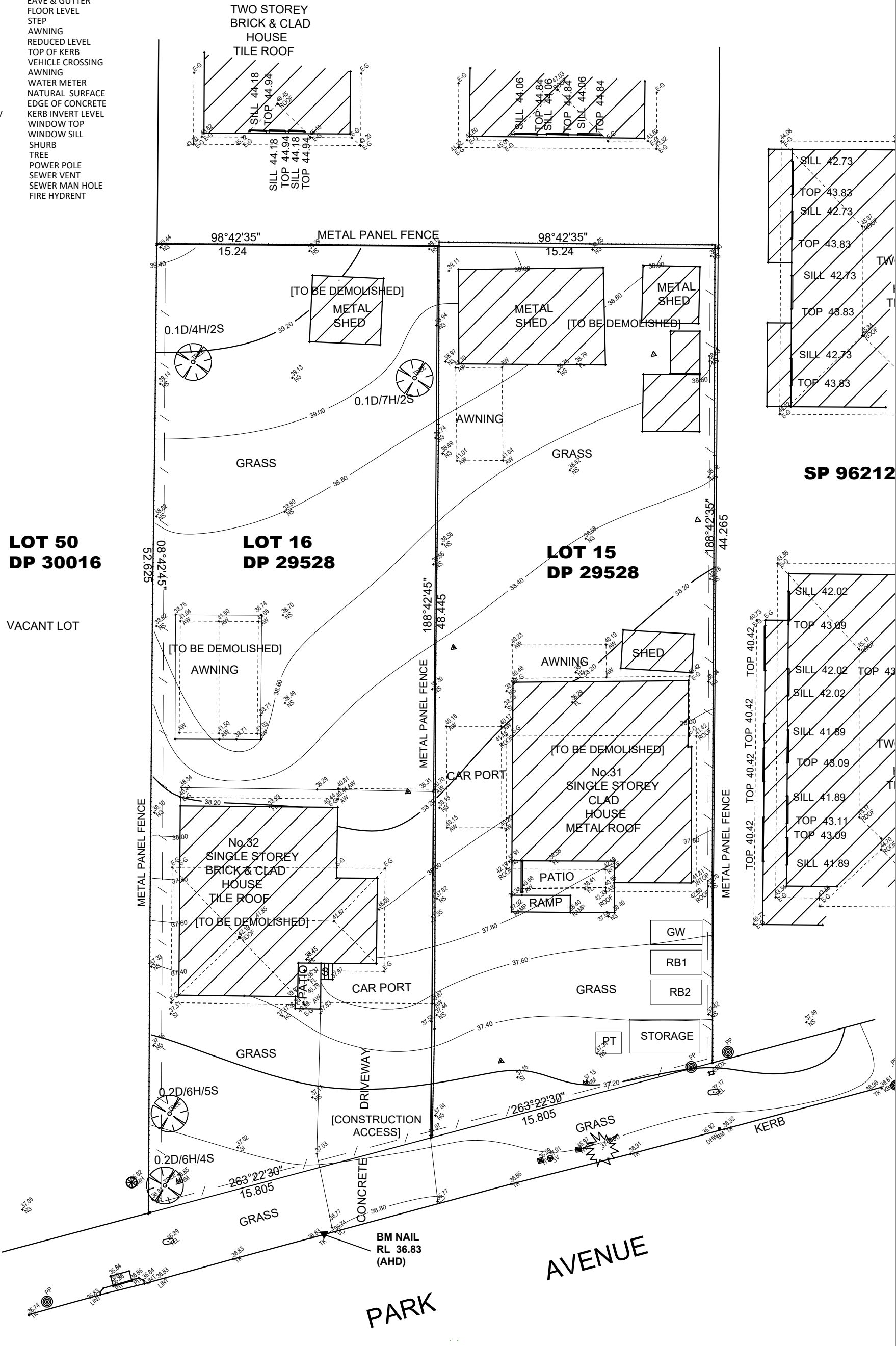
GENERAL NOTES

- ALL WORKS SHALL GENERALLY BE UNDERTAKEN IN ACCORDANCE WITH AS/NZ 3500.3.2:1998 AND COUNCIL'S SPECIFICATIONS &OR ENGINEERING GUIDELINES;
- THIS STORMWATER PLAN SHALL BE READ IN CONJUNCTION WITH THE APPROVED ARCHITECTURAL, LANDSCAPE, SURVEY, AND SITE PLANS;
- ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO MULTIPRO CONSULTANTS TO RESOLVE.
- ALL DRAINAGE LINES SHALL BE AS FOLLOWS -
 - 90mm DIAMETER WHERE THE LINE ONLY RECEIVES ROOF WATER;
 - 100mm DIAMETER WHERE THE LINE RECEIVES SURFACE RUNOFF OR IF THE LINE IS PART OF AN OSD SYSTEM;
 - A MINIMUM PIPELINE GRADE OF 1% FOR PIPES WITH A DIAMETER LESS THAN 150mm AND 0.5% FOR PIPES OF GREATER DIAMETER;
- ALL DRAINAGE LINES SHALL HAVE A MINIMUM COVER OF 100mm FOR PRIVATE PIPELINES AND 300mm FOR PUBLIC PIPELINES;
- ALL PITS WITHIN TRAFFICABLE AREAS (I.E DRIVEWAYS) SHALL BE HEAVY DUTY. ALL SURFACE AREAS SHALL BE GRADED TO THE SURFACE INLET PITS/DRAINS.
- LOCATION OF DOWN PIPES & FLOOR WASTES ARE INDICATIVE ONLY. DOWNPIPE & FLOOR WASTE SIZE, LOCATION & QUANTITY IS TO BE DETERMINED AT CC STAGE AND PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE RELEVANT STANDARDS.

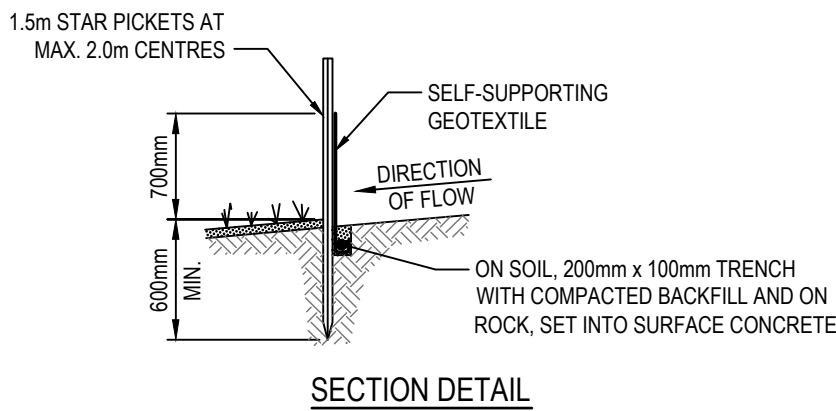
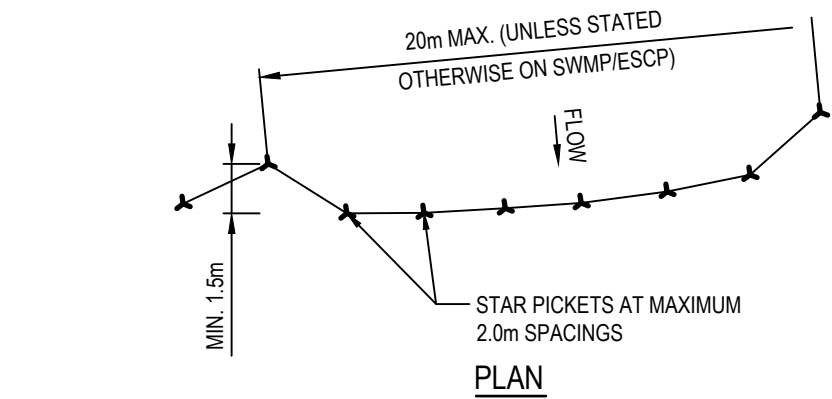
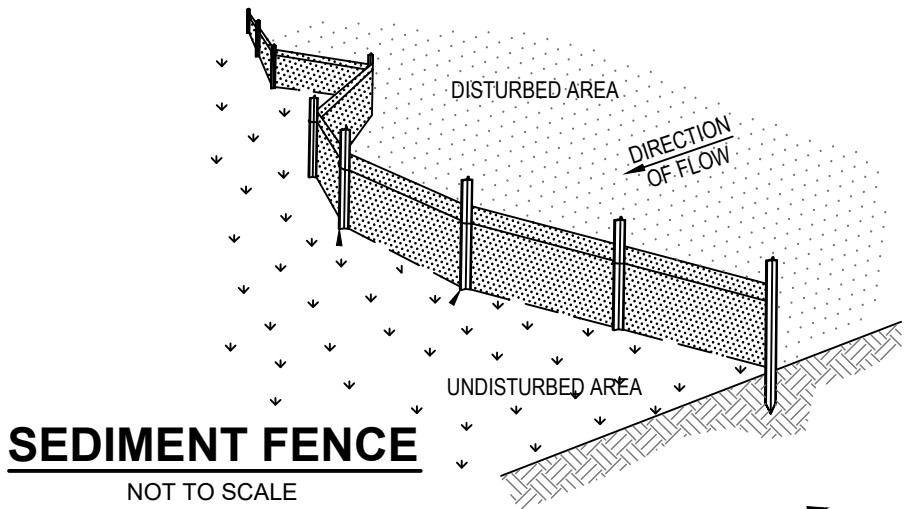
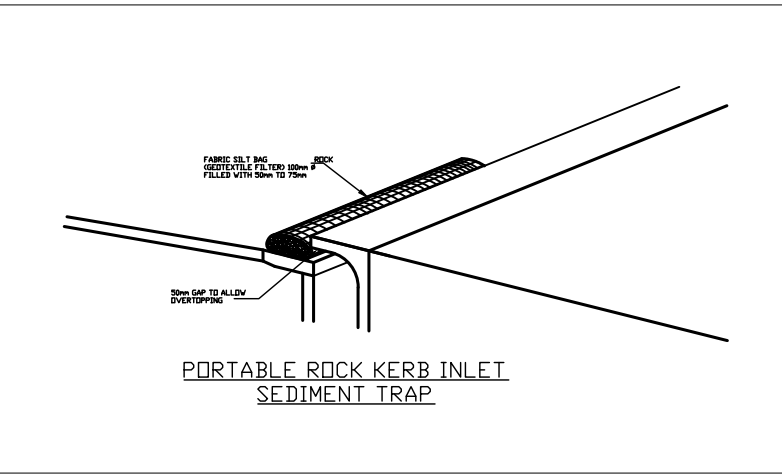
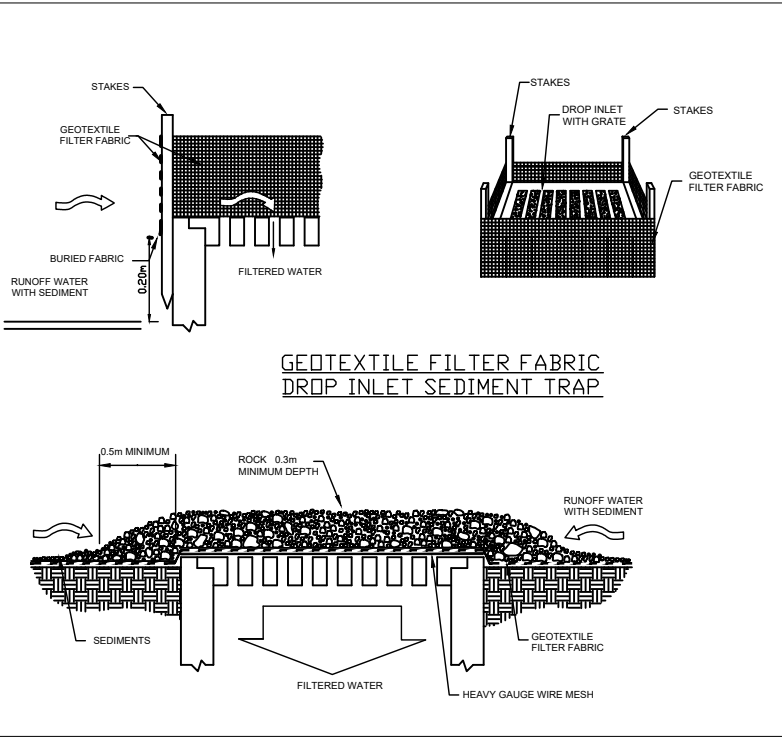
UTILITY SERVICES

LEGEND:

AHD AUSTRALIAN HEIGHT DATUM
BM BENCH MARK
TEL COMMUNICATION PIT
E-G EAVE & GUTTER
FL FLOOR LEVEL
S STEP
AW AWNING
RL REDUCED LEVEL
TK TOP OF KERB
VC VEHICLE CROSSING
AW AWNING
WM WATER METER
NS NATURAL SURFACE
EC EDGE OF CONCRETE
KBINV KERB INVERT LEVEL
TOP WINDOW TOP
SILL WINDOW SILL
SHURB SHURB
TREE TREE
POWER POLE POWER POLE
SEWER VENT SEWER VENT
SEWER MAN HOLE SEWER MAN HOLE
FIRE HYDRANT FIRE HYDRANT



- NOTES
- EXCAVATE AREA APPROX. 3.3m WIDE BY 2.2m LENGTH. THE FLOOR OF THE EXCAVATION MUST BE FLAT, WITHOUT HIGH POINTS. AN EXCAVATED DEPTH OF 100mm ACCOMMODATES A BEDDING LAYER 50mm THICK AND GRID SET DOWN OF 50mm PER UNIT.
 - BEDDING MATERIAL SHALL BE SAND OR OTHER SUITABLE APPROVED MATERIAL. BEDDING MATERIAL SHALL BE EVENLY RAKED OVER FLOOR OF EXCAVATION TO A DEPTH SLIGHTLY MORE THAN 50mm. ENSURE BEDDING IS LEVEL IN BOTH DIRECTIONS.
 - LOWER CATTLE GRID ONTO THE PREPARED BASE. ENSURE THAT NO PART OF THE UNIT IS SITTING ON ANY HIGH POINT.
 - BACKFILL AND COMPACT AROUND GRID. GRADE EXCAVATED MATERIAL UP TO GRID ON EACH SIDE TO FORM A RAMP. IF DEPRESSIONS OCCUR ON THESE RAMPS WITH USE, ADD ADDITIONAL MATERIAL.
 - MAINTAIN SHAKER GRIDS IN CLEAN AND SERVICEABLE CONDITION DURING TOTAL TIME OF USAGE.
 - MINIMUM LENGTH OF SHAKER PAD = 5 UNITS.



NOT FOR CONSTRUCTION