

LEGEND

- TP - TOP OF PIT
- TWL - TOP WATER LEVEL
- TW - TOP OF RETAINING WALL
- GL - GUTTER LEVEL
- RL - REDUCED LEVEL
- TK - TOP OF KERB
- IL - INVERT LEVEL

INDEX

- NATURAL GROUND LEVEL
- DESIGN LEVEL
- ROOF LINE
- BOUNDARY LINE
- SEDMENT FENCE
- EXISTING STORMWATER LINE
- STORMWATER PIPE
- PIPE CONNECTED TO RT*
- AGG PIPE 75 DIA
- EXISTING SEWER MAIN
- TELSTRA
- WATER
- ELECTRICITY
- GAS
- DOWN PIPE
- SPREADER
- RAIN WATER HEAD
- CLEANING EYE
- TRENCH GRATE
- CONTROL PIT
- ACCESS PIT
- SURFACE INLET PIT
- PIT WITH ENVIRO POD
- 200 MICRON
- AREA BYPASS OSP
- TREE TO BE RETAINED
- TREE TO BE REMOVED

CALCULATIONS (WSUD)

SITE AREA (SQ.M) = 9,020
 AREA BYPASS FILTRATION TANK (SQ.M) = 91.0
 STORM FILTER DISCHARGE WITH 700 MM HEAD (L/S) = 16.0
 STORM FILTER DISCHARGE WITH 1200 MM HEAD (L/S) = 20.1
 AREA REQUIRED FOR STORM CHAMBER (SQ.M) = 20

MUSIC RESULTS

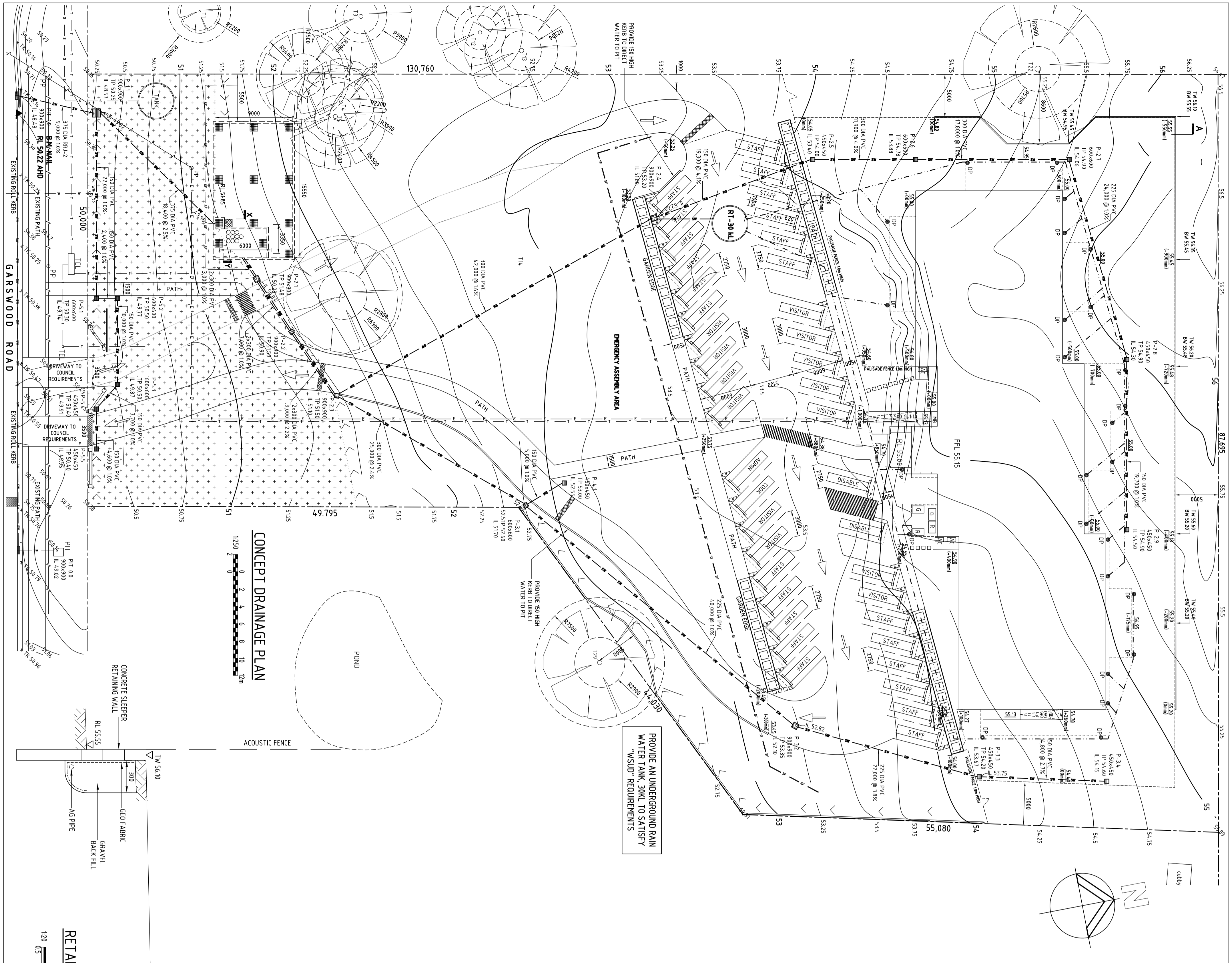
SOURCE	RESIDUAL LOAD	REDUCTION (%)	TARGET (%)
TSS (kg/Y)	577	85.2	85
TP (kg/Y)	105	0.271	74.3
TN (kg/Y)	17.0	3.36	52.7
GP (kg/Y)	77.7	2.49	96.8
			90

CALCULATIONS (OSD TANK)

SITE AREA (SQ.M) = 9,020
 AREA BYPASS OSD (SQ.M) = 118.0
 PERMISSIBLE SITE DISCHARGE (SEE DRAINS MODEL, MINOR FLOW) (L/S) = 4.6 - OR - 4.8
 ORPHIC DIAMETER (MM) = 240
 PERMISSIBLE SITE DISCHARGE (SEE DRAINS MODEL, MAJOR FLOW) (L/S) = 242 - OR - 277
 SITE STORAGE REQUIREMENT (SEE DRAINS MODEL) (CU.M) = 135
 SITE STORAGE PROVIDED (112.0 x 9.0 x 1.35 x 2.8) = 11.1 x 11.1 x 12.6 = 23.35 x 24 (CU.M) = 136
 TOP OF WATER LEVEL IN BELOW GROUND TANK (RL) = 50.379
 MAX DEPTH OF WATER IN BELOW GROUND TANK (51.379 - 50.171) (M) = 1.209

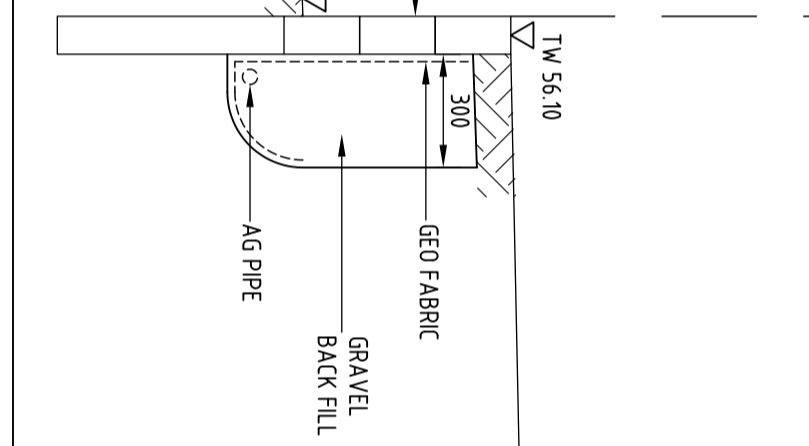
CONSTRUCTION NOTES

1. DO NOT MEASURE FROM THE DRAWINGS AND ALL DISCREPANCIES SHALL BE NOTIFIED TO THE HYDRAULIC ENGINEER IMMEDIATELY AND SEEK ADVICE.
2. CONTRACTOR SHALL LOCATE ALL SERVICES WITHIN THE SITE AND IN COUNCIL FOOT PATH AND REPORT INVERT LEVELS TO THE UNDER SIGNED PRIOR TO COMMENCEMENT OF ANY WORK.
3. THE FINISHED GROUND LEVELS ARE CHOSEN IN SUCH A MANNER THAT ALL SURFACES ARE EVENLY GRADED AT MINIMUM 1% TO PREVENT PONING AND DIRECTED TO PITS.
4. ALL LEVELS SHALL BE TAKEN FROM ESTABLISHED BENCHMARKS.
5. ALL PITS SHALL BE BENCHED AND STREAM LINED TO HALF PIPE HEIGHT.
6. PROVIDE STEP IRONS "MASCOT S104" OR SIMILAR STAGGERED TO GIVE SPACING 300 VERTICAL AND 220 HORIZONTAL TO ALL PIT DEEPER THAN 1.0 METRE.
7. CONNECTION OF DISCHARGE PIPE TO EXISTING COUNCIL KERB & GUTTER PIPE OR KERB INLET PIT SHALL BE CARRIED OUT IN ACCORDANCE WITH THE COUNCIL REQUIREMENT.
8. SUITABLE AGPIPES SHALL BE PROVIDED AND CONNECTED TO STORMWATER SYSTEM AS INSTRUCTED BY THE ENGINEER AT SITE BEFORE ANY FILLING.
9. HIGH CARBON DISCHARGE PIT TO BE CONCRETE CAST / IN SITU, NOT PRECAST. PIT AT THE ROAD BOUNDARY WHERE DRAINAGE LINES ENTER PUBLIC ROAD AND FOOTWAY SHALL BE CONSTRUCTED WITH CAST IN SITU CONCRETE. PRECAST PITS ARE NOT ACCEPTABLE.
10. THE CHANGES TO ANY DEVELOPMENT AS PROPOSED IN THE ARCHITECTURAL DRAWING SHALL BE NOTIFIED IMMEDIATELY TO THE HYDRAULIC ENGINEER AND SEEK ADVICE.
11. ALL EXCAVATIONS WITHIN THE INFLUENCE OF BUILDINGS AND SERVICES SHALL BE UNDERTAKEN WITH THE KNOWLEDGE OF THE HYDRAULIC AND STRUCTURAL ENGINEER.
12. AREAS SPREAD WITH BARK SHALL BE BARRICADED TO PREVENT BARK GETTING INTO THE PITS AND STORMWATER SYSTEMS.
13. MINIMUM SLOPE FOR PAVED AREAS SHALL BE 1%, FOR LANDSCAPED AREAS MINIMUM SLOPE SHALL BE 2% AND GRADED DOWN TOWARDS THE GRADED PITS.
14. ALL GUTTERS TO BE 100x75 MM AND DOWN PIPES TO BE 100x75 (75 DIA.) MM. REFER TO ARCHITECT FOR MATERIAL SPECIFICATIONS.
15. MINIMUM OF 100mm DIA PIPE SHALL BE USED FOR STORMWATER PIPES IN THE GROUND UNLESS NOTED OTHERWISE AND ALL STORMWATER PIPES SHALL BE LAD AT MINIMUM 1%.
16. ANY DISCREPANCY SHALL BE REPORTED TO THE DESIGNER AND VERIFIED BY THE CONTRACTOR. THE DETENTION AND DRAINAGE SYSTEM SHALL BE MAINTAINED AT REGULAR INTERVALS AND THE CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS.
17. ALL FENCES SHALL BE KEPT AT LEAST 100mm ABOVE THE GROUND LEVEL TO FACILITATE THE FREE PASSAGE FOR STORMWATER OVERLAND FLOW.

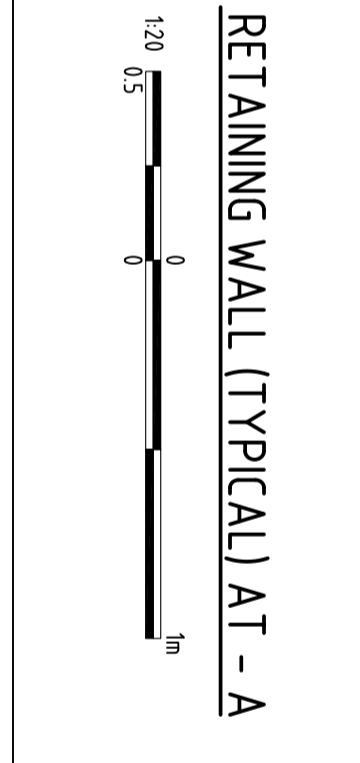


CONCEPT DRAINAGE PLAN

1:250
 0 2 4 6 8 10 12m



RETAINING WALL (TYPICAL) AT - A



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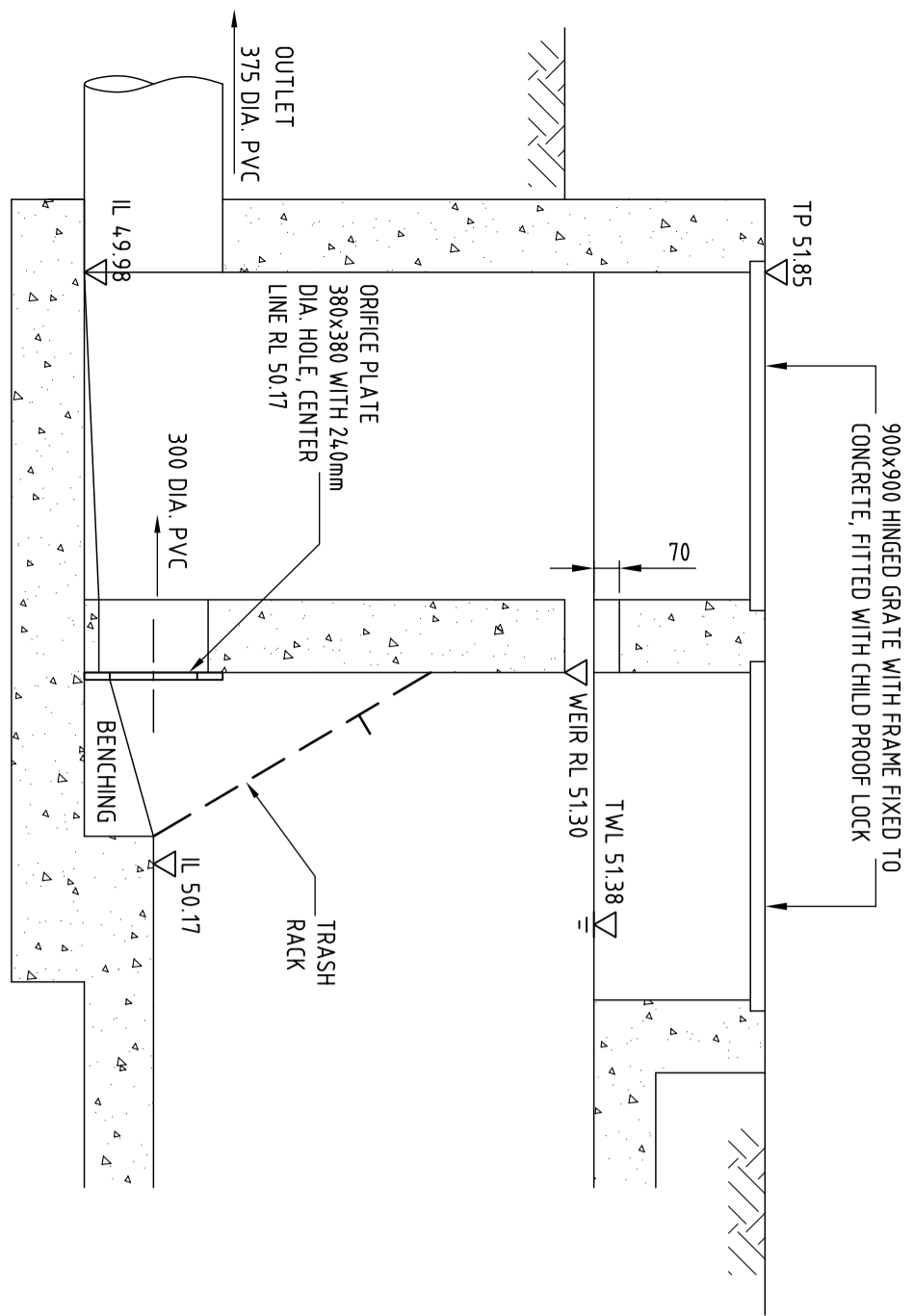
ISSUE	DESCRIPTION	DATE
A	FOR DA SUBMISSION	28 SEP 20
B	AMENDED TO CORRELATE ARCHITECTURAL CHANGES	19 APR 21

MR Ram Bakhtan
 MBEAM (OPENING) (CA) N PER - 3
 Registered on the NSW Civil Engineering Register
 National Professional Engineers Register Section Three

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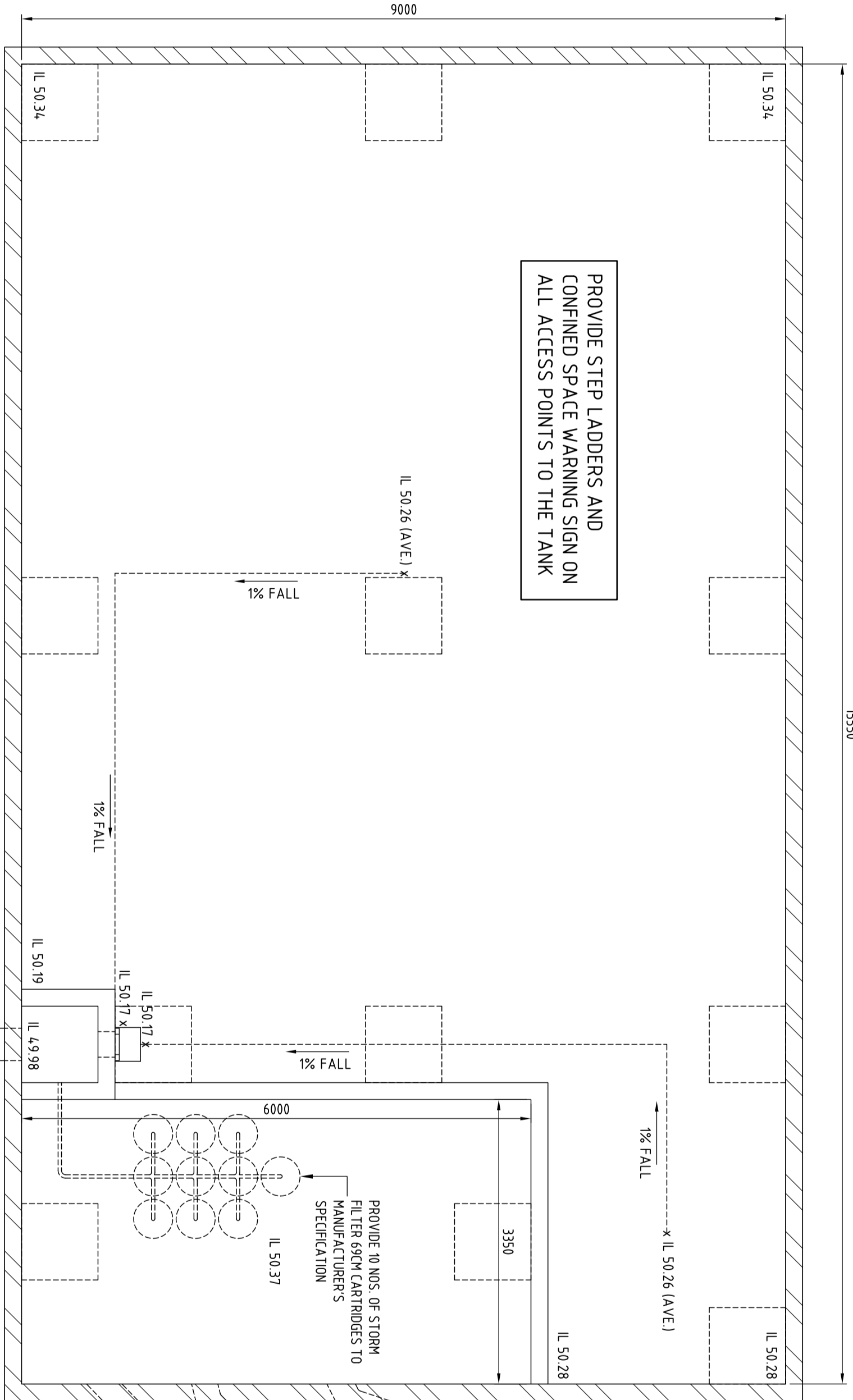
TITLE	PROJECT	LOCATION	LOT/D.P.	OWNER	ARCHITECT	DESIGNED	DRAWN
CONCEPT DRAINAGE PLAN	PROPOSED CHILD CARE CENTER	15-17 GARSWOOD RD GLENNOHE PK	4211 / 1150762	WIGGLES & GIGGLES PTY LTD	DESIGN M STUDIO	RB	RB

OUR REF. No. **19.08.28.1** DRAWING No. **D-01**
 1 OF 2

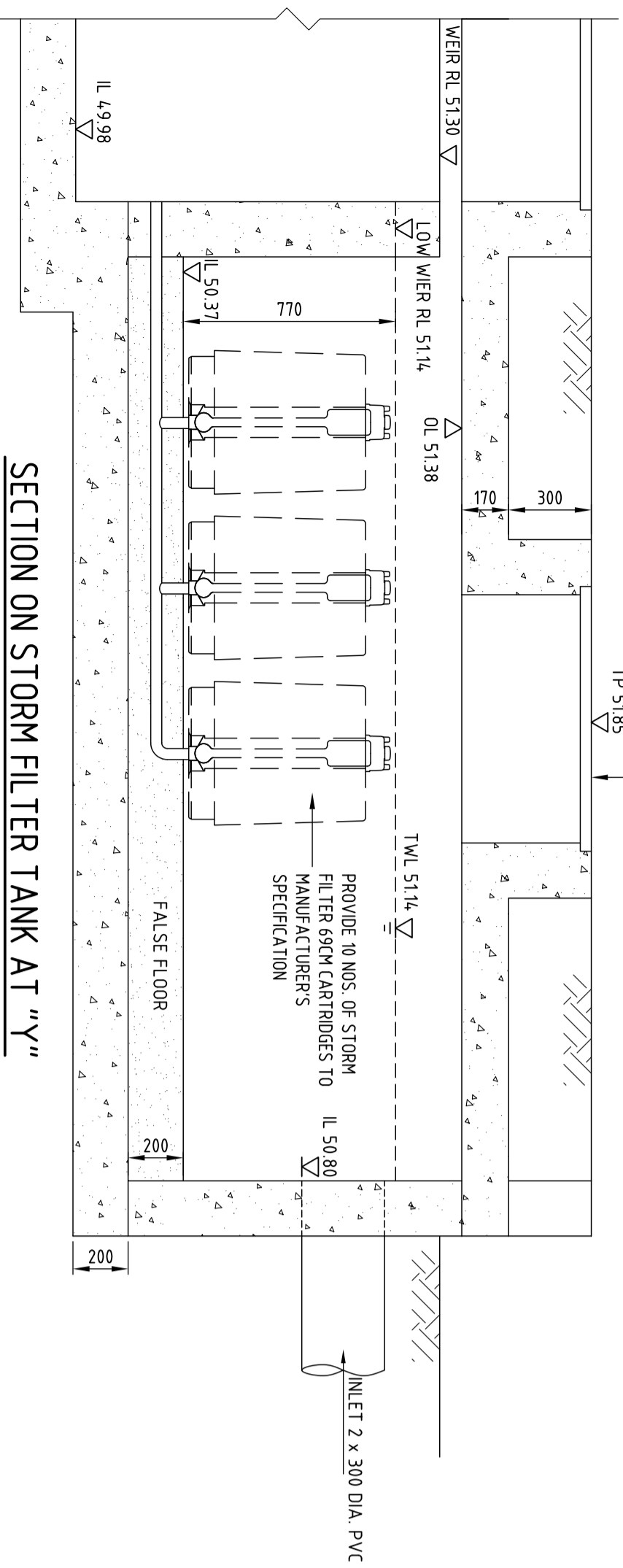


SECTION OF 'HEAD' PIT AT "X"
SCALE = 1:20

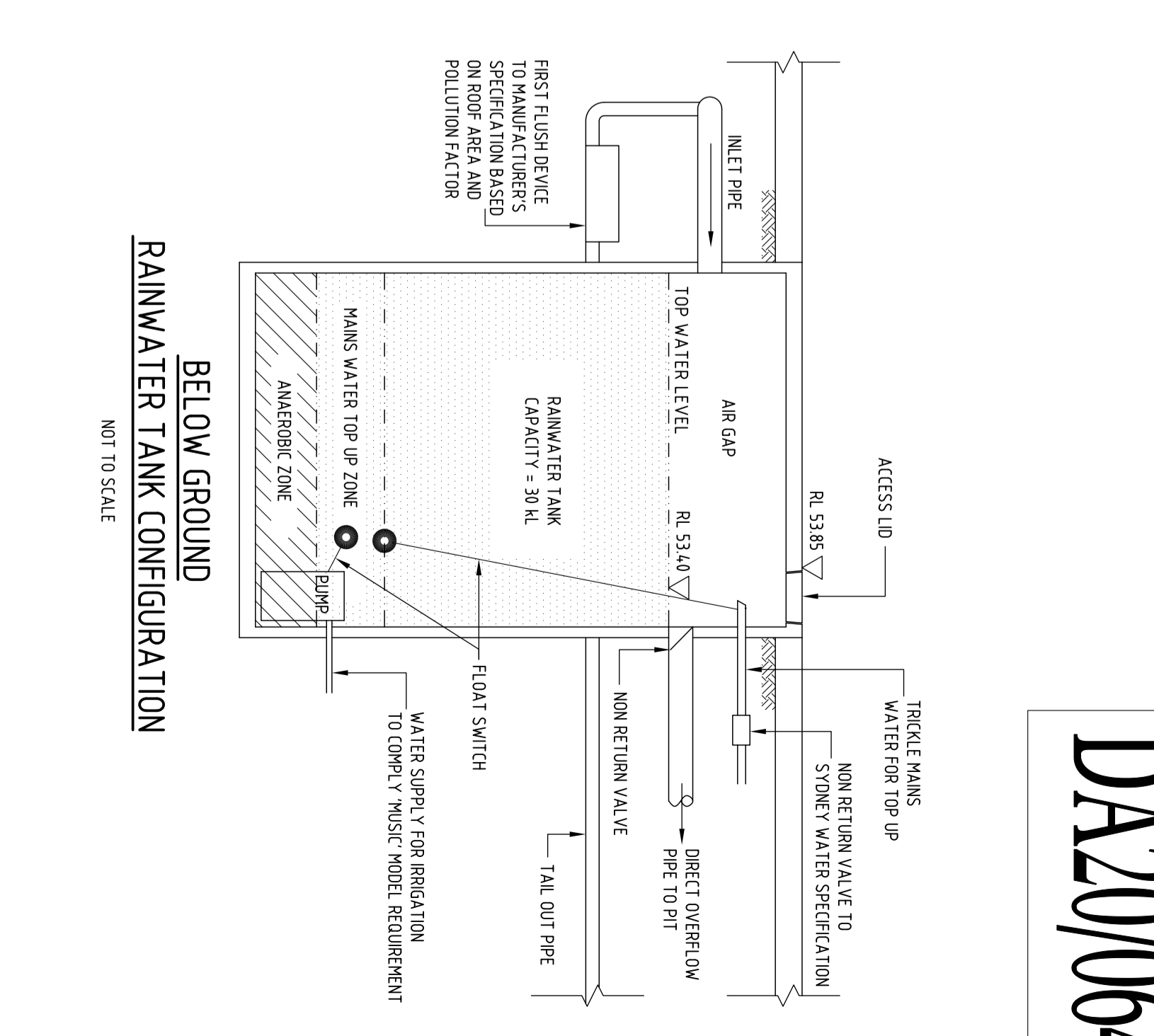
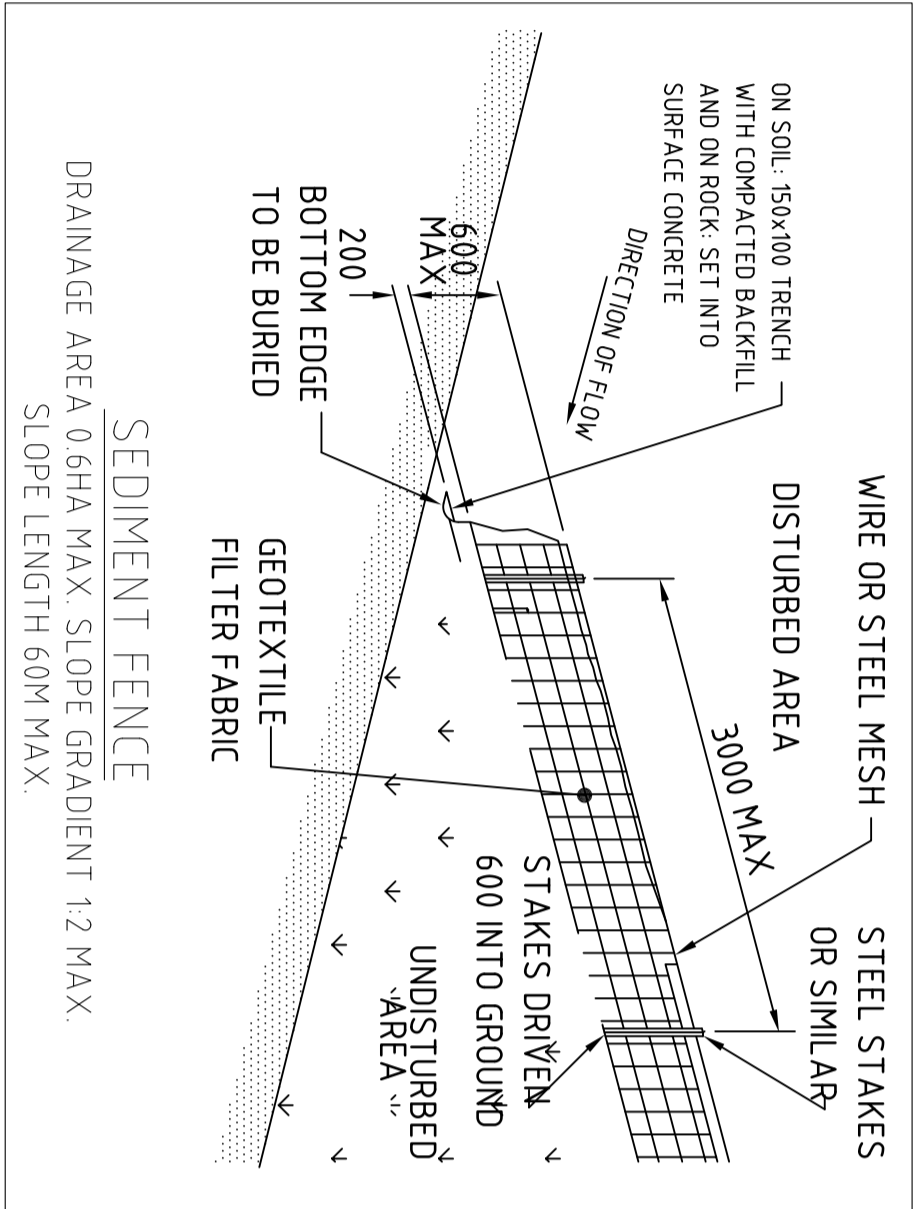
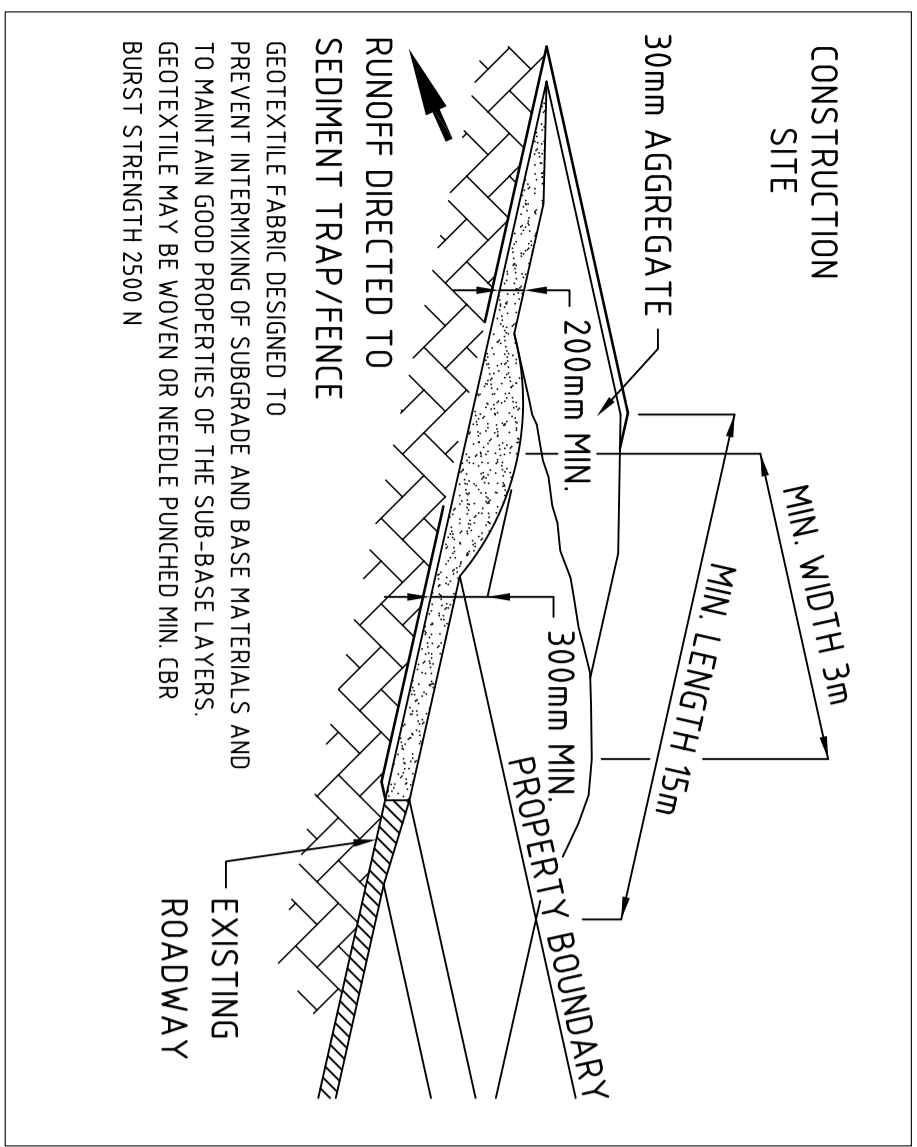
REFER DRAWINGS FROM STRUCTURAL ENGINEER'S FOR DETAIL OF STEEL AND CONCRETE IN THE TANK WALLS AND SLABS



PLAN OF STORM FILTER & OSD TANK
SCALE = 1:50

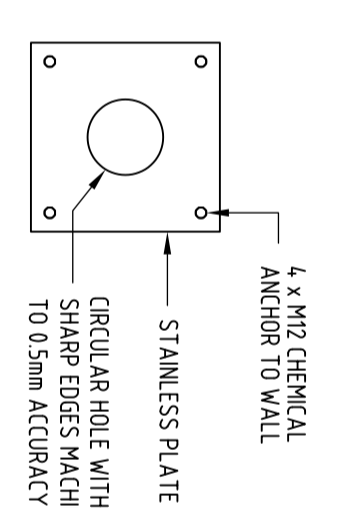


SECTION ON STORM FILTER TANK AT "Y"
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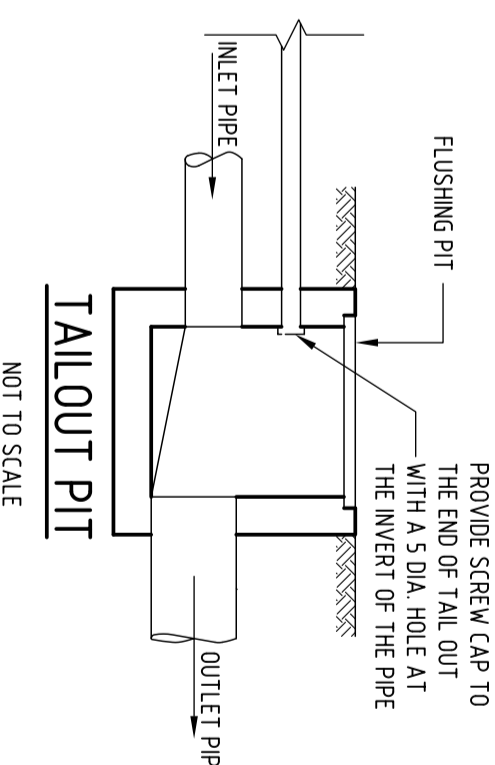


BELOW GROUND RAINWATER TANK CONFIGURATION
NOT TO SCALE

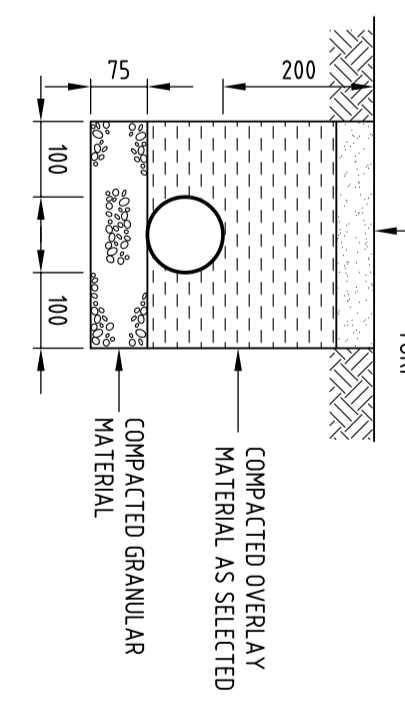
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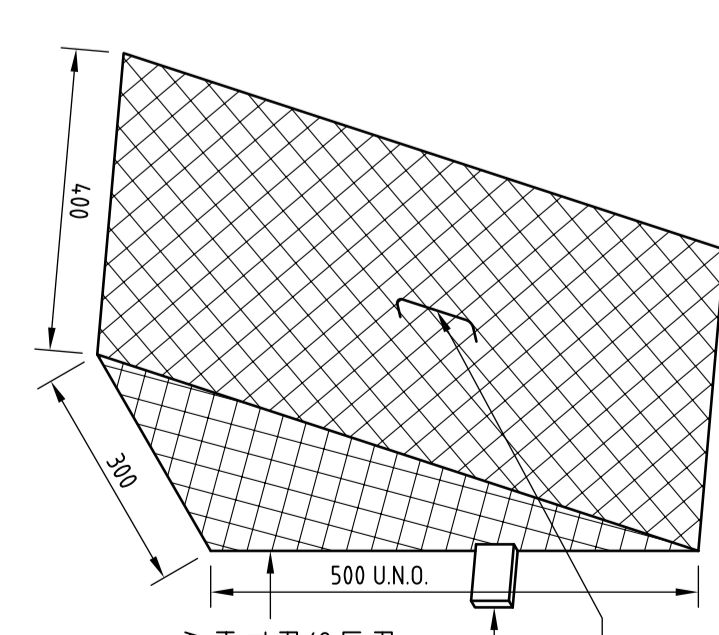
ORIFICE PLATE
NOT TO SCALE



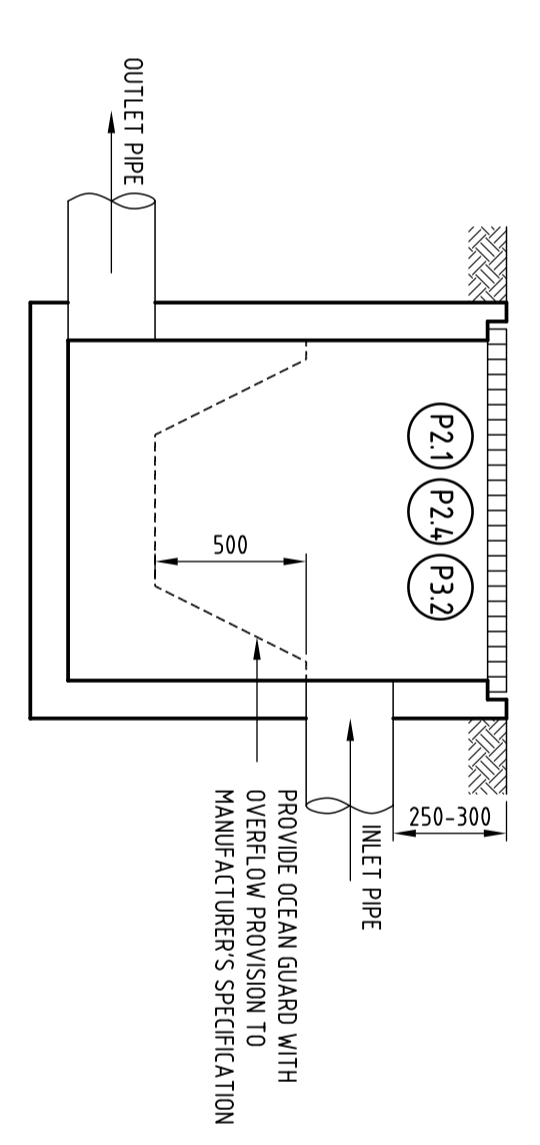
TAIL OUT PIT
NOT TO SCALE



PIPE TRENCH
NOT TO SCALE



STANDARD NICHOLAS TRI SCREEN
NOT TO SCALE



SECTION OF PITS WITH OCEAN GUARD
NOT TO SCALE

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B	AMENDED TO CORRELATE ARCHITECTURAL CHANGES	19 APR 21	
<p>CONSULTING CIVIL ENGINEERS Rammy Associates Pty Ltd P.O.Box 280, Pandie Hill, N.S.W. 2145. Phone: 0419 989 185 Email: rammy@rambgn.com.au</p>			
PROJECT	PROPOSED CHILD CARE CENTER		
LOCATION	15-17 GARSWOOD RD GLENNIDE PK		
LOT/D.P.	4211 / 1150762		
OWNER	WIGGLES & GIGGLES PTY LTD		
ARCHITECT	DESIGN M STUDIO		
DESIGNED	RB	OUR REF. No.	19.08.28.1
DRAWN	RB	DRAWING No.	D-02
DATE	19.08.28.1	SCALE	2 OF 2