



Regulated Design Record				
Project Address: 1 TRACEY AVENUE, CARLINGFORD, NSW				
Project Title: PROPOSED CHILDCARE CENTRE				
Consent No:		Body Corporate Reg No:		
Drawing Title: STORMWATER PLAN		Drawing No: SW23120-SW010		
Rev	Date	Description	DP Full Name	Reg No

HATCHED AREA DRAINS TO BASEMENT PUMP-OUT SUMP AREA = 21.34 Sq.m

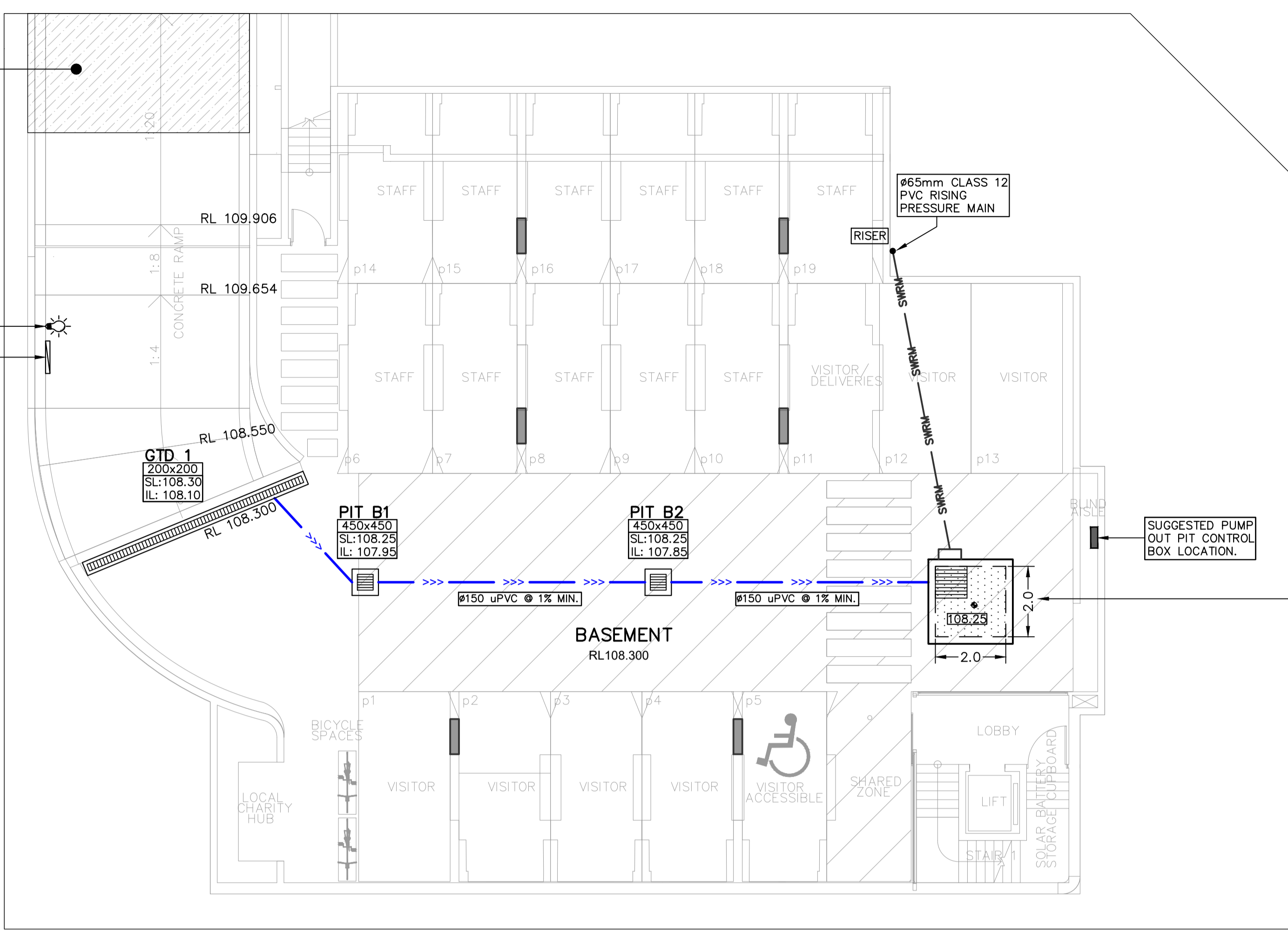
INSTALL FLASHING WARNING LIGHT AND WARNING SIGN FOR INDICATION OF PUMP FAILURE IN A CLEAR AND VISIBLE LOCATION FOR ALL VEHICLES ENTERING THE BASEMENT LEVEL.

**WARNING**  
PUMP OUT SYSTEM FAILURE IN BASEMENT WHEN LIGHT IS FLASHING AND SIREN SOUNDING

PUMP FAILURE WARNING SIGN NOT TO SCALE



CONFINED SPACE SIGN NOT TO SCALE



STORMWATER LAYOUT PLAN BASEMENT FLOOR SCALE 1:100

**PUMP-OUT TANK 1**

AREA	=	4.00 Sq.m
MAX DEPTH	=	1050 mm
TOP WATER LEVEL	=	108.05
VOLUME	=	4.20 Cu.m

**KEY NOTES:**

INSTALL STEP IRONS FOR EASE OF ACCESS DURING MAINTENANCE OF PUMP OUT CONTROL PIT TO COUNCIL SATISFACTION.

INSTALL CONFINED SPACE SIGN ABOVE PUMP OUT PIT FOR PUBLIC AWARENESS AND WARNING.

ALL STORMWATER PIPES ARE Ø100mm uPVC AND SLOPING @ 1.0% U.N.O (TYP).

ALL BUILDING AND HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES AND ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP).

STORMWATER PIPE ARRANGEMENT TO BE CO-ORDINATED WITH STRUCTURAL SLAB AND BEAMS WHERE REQUIRED (TYP).

**STANDARD PUMP OUT DESIGN NOTES:**

THE PUMP OUT SYSTEM SHALL BE DESIGNED TO BE OPERATED IN THE FOLLOWING MANNER: -

I). THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.

II). A FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS UPON THE WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300MM ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.

III). A SECOND FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHALL START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.

IV). AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBELIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.

V). A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINTS TO THE PUMP OUT STORAGE TANK IN ACCORDANCE WITH THE UPPER PARRAMATTA RIVER CATCHMENT TRUST OSD HANDBOOK.

**PUMP STORAGE CALCS:**

BELOW GROUND STORAGE:

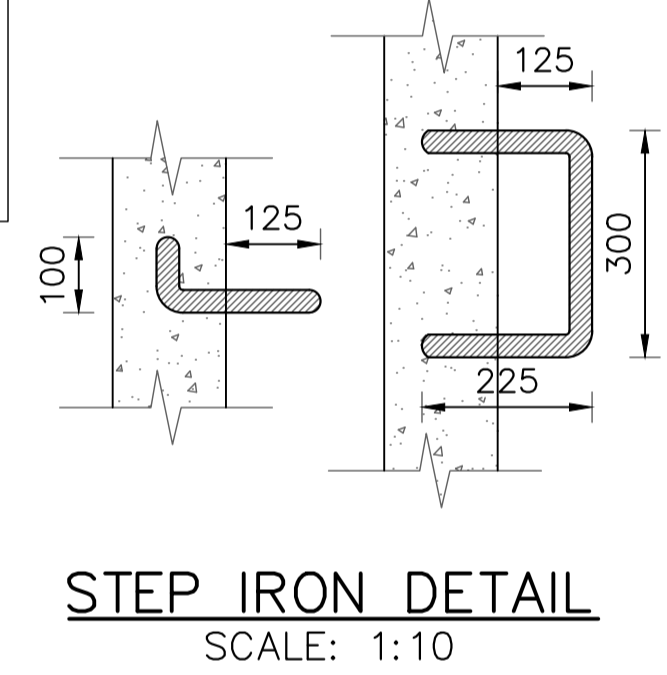
100yr 2 HOUR ARI STORM= 88.50mm  
CATCHMENT AREA= 21.34m<sup>2</sup>

V=Axd  
=21.34x(88.50/1000)  
=1.89m<sup>3</sup> REQUIRED (MIN 3m<sup>3</sup> AS PER AS 3500)  
=4.20m<sup>3</sup> PROVIDED

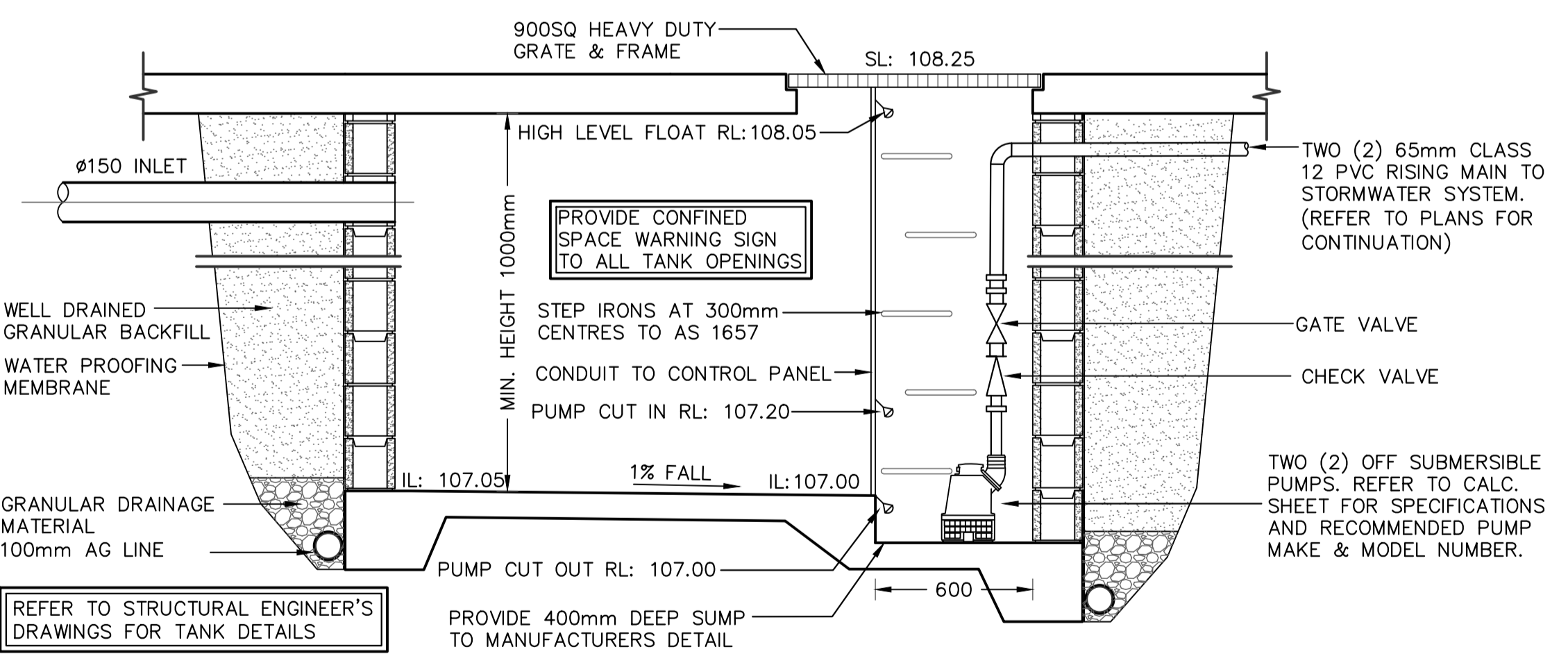
PUMP DISCHARGE RATE WAS DESIGNED FOR THE 100yr 5 MIN STORM:

Q=CiA/3600  
=1.0x240x21.34/3600  
=1.42 L/s REQUIRED @ 3.70 m OF HEAD

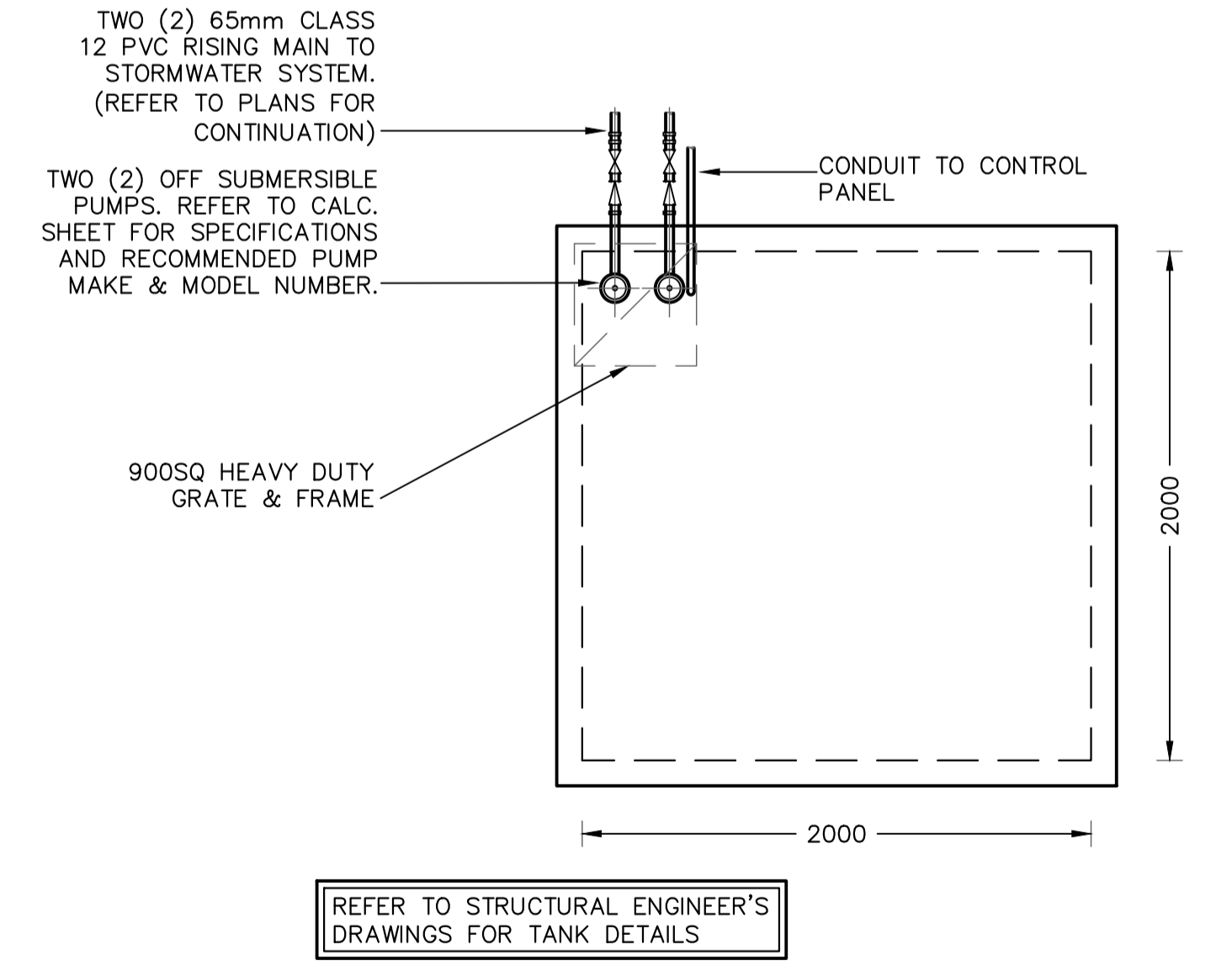
RECOMMENDED PUMP: DUAL SABRE MODEL NO. KS-03 PUMPS WITH 65mm PVC CLASS 12 OUTLETS.



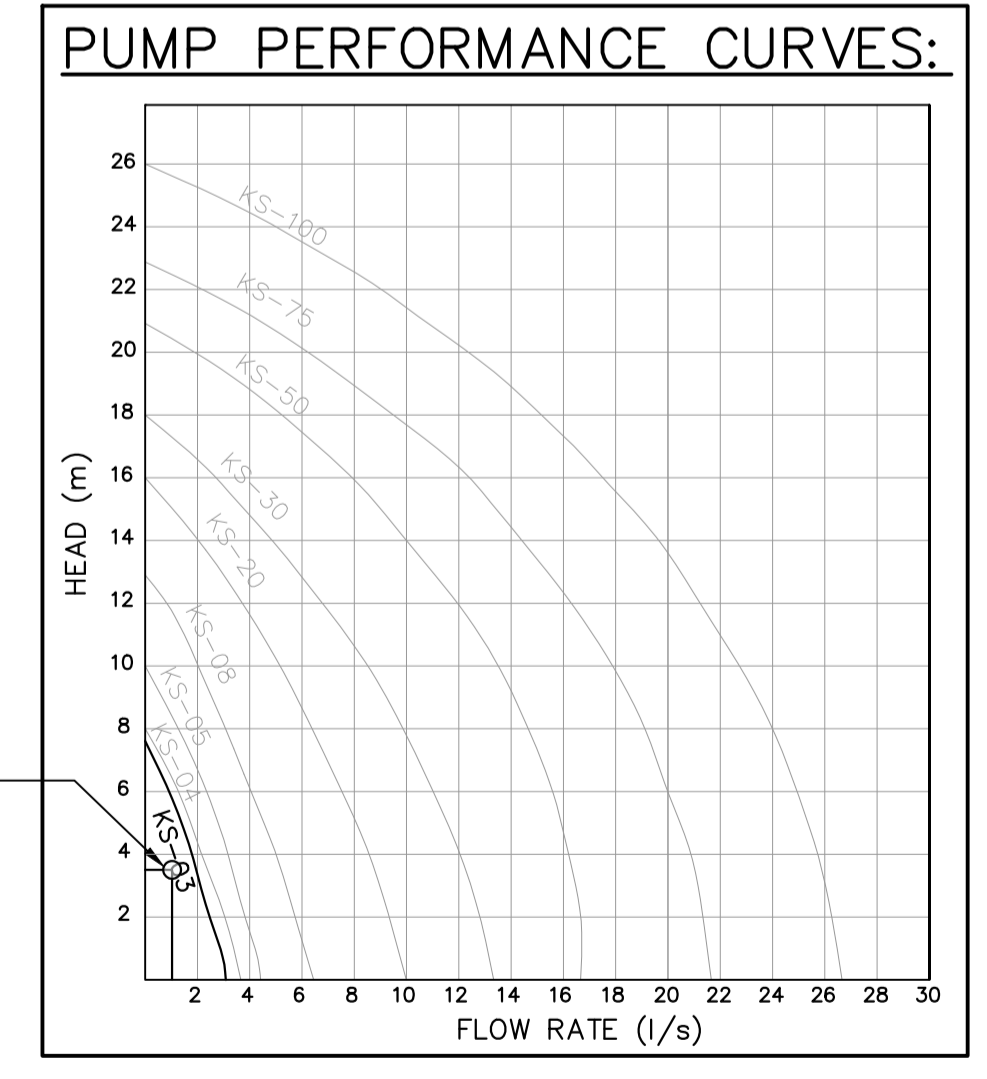
STEP IRON DETAIL SCALE: 1:10



PUMP-OUT TANK SECTION DETAIL SCALE N.T.S.



PUMP-OUT TANK PLAN DETAIL SCALE 1:50



PUMP MAKE & MODEL DETAILS SCALE N.T.S.

**PUMP COMPLIANCE:**

SELECTED PUMPS IN ALL BASEMENT CARPARK AREAS **MUST** BE CLASS 1 ZONE 2 HAZARDOUS LOCATION RATED. DETAILS OF COMPLIANCE MUST BE PROVIDED BY PUMP MANUFACTURER/INSTALLER TO CEC P/L. ALTERNATIVE PRODUCTS WILL NOT BE CERTIFIED BY CEC P/L.

**SEEPAGE NOTE:**

SITE FOREMAN TO REPORT SITE SEEPAGE CONDITIONS IN BASEMENT EXCAVATION PRIOR TO FORMING AND POURING OF BASEMENT PUMP-OUT TANK. EXCESSIVE GROUNDWATER SEEPAGE AT BULK EXCAVATION LEVEL MUST BE REPORTED TO DESIGN ENGINEER IMMEDIATELY.

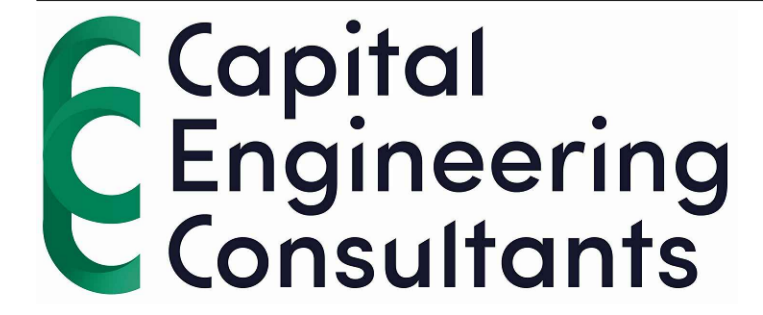
**NOTE: -**

ALL SUBSOIL DRAINAGE LAID BEHIND BASEMENT WALLS SHALL BE CONNECTED TO DRAINAGE SYSTEM AND BASEMENT PUMP-OUT TANK

GRADE/FALL FINISHED CONCRETE SURFACE MIN. 0.5% TO ALL GRATED SURFACE INLET PITS

PROPOSED CHILDCARE CENTRE  
1 TRACEY AVENUE, CARLINGFORD, NSW

Scale: 1:100 @ A1 Date: 13/07/2023 Drawn: P.C. Design: P.C. Approved: P.E.



9630 0121  
8 Buller Street, North Parramatta, NSW 2151  
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C	FOR APPROVAL	C.S.	M.W.	13/07/2023
B	FOR APPROVAL	C.S.	M.W.	05/07/2023
A	FOR APPROVAL	P.C.	M.W.	28/04/2023



FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE

APPROVED BY: *P. El-Bayeh* DATE: 13/07/2023

PAUL EL-BAYEH  
B.E. (Civil, M.E. (Structural & Foundation)  
REGEN. CPENG No. 3132140; NER, RPED.

FOR COUNCIL APPROVAL ONLY (CONCEPT)

BASEMENT PLAN, NOTES & DETAILS

DO NOT SCALE DRAWING, USE FIGURED DIMENSIONS ONLY

North	Project Number	Revision
	SW23120	
	Drawing Number	C
	SW010	

Regulated Design Record				
Project Address: 1 TRACEY AVENUE, CARLINGFORD, NSW				
Project Title: PROPOSED CHILDCARE CENTRE				
Consent No:		Body Corporate Reg No:		
Drawing Title: STORMWATER PLAN		Drawing No: SW23120-SW020		
Rev	Date	Description	DP Full Name	Reg No
	dd.mm.yy			

**DESIGN NOTES:**

SITE IS LOCATED IN PARRAMATTA CITY COUNCIL.

RAINWATER TANK TO BE EQUIPPED WITH FIRST FLUSH AND MOSQUITO PROTECTION DEVICES (REFER DETAIL).

ALL STORMWATER PIPES TO HAVE A MINIMUM OF 100mm CONCRETE OR 300mm TOPSOIL COVER U.N.O.

INSTALL CLEAR OUT FOR INSPECTION AND MAINTENANCE PURPOSES WHERE REQUIRED (TYP).

ALL DOWNPIPES AND STORMWATER PIPES SHOWN ON PLAN ARE Ø100mm uPVC AND SLOPE AT 1% U.N.O (TYP).

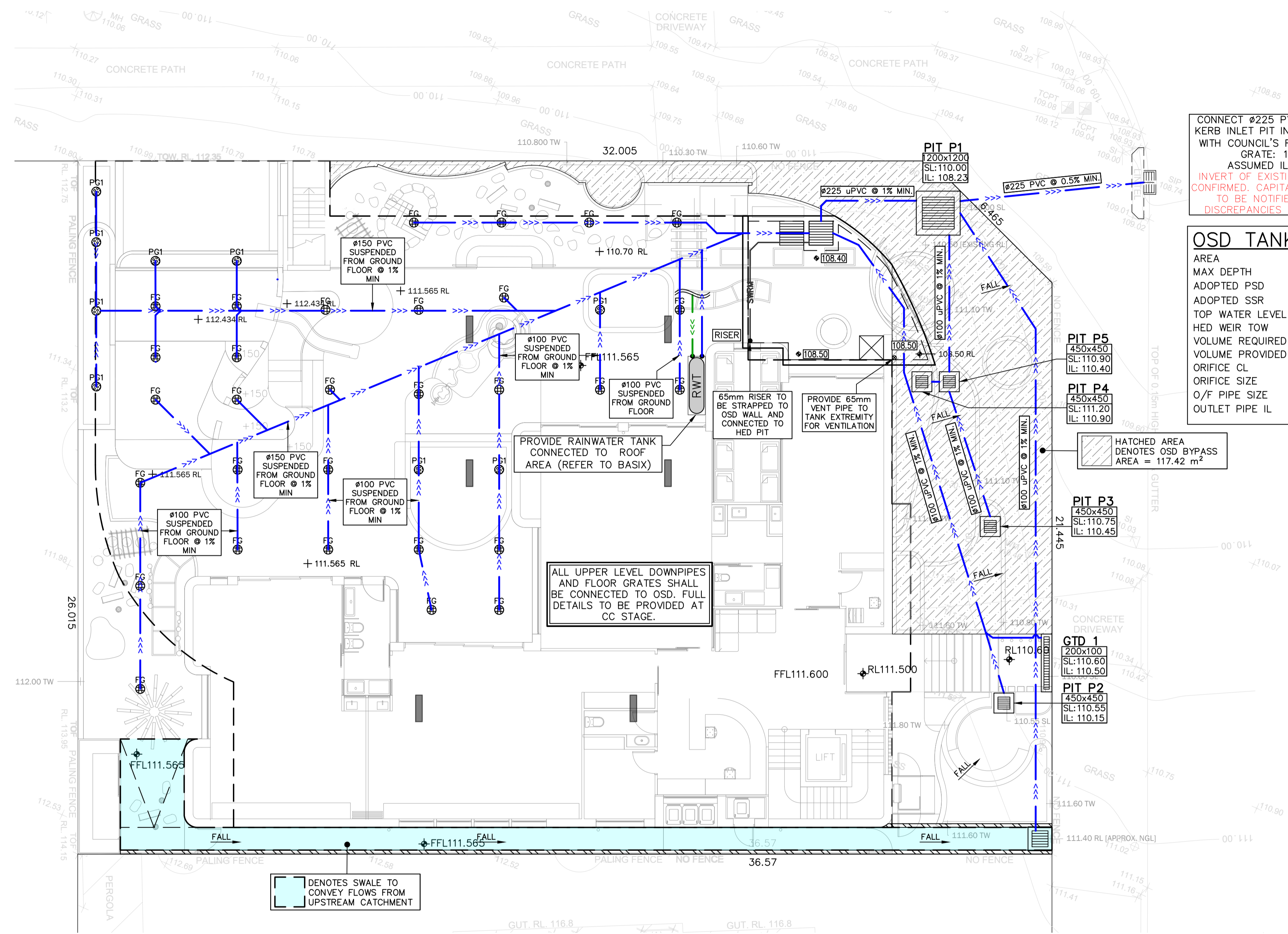
PROPOSED DOWNPIPE LOCATIONS ARE NOMINAL AND TO BE CONFIRMED DURING CONSTRUCTION (TYP).

ALL STORMWATER PITS AND PIPES TO BE A MINIMUM OF 0.6m CLEAR FROM EXISTING SEWER LINE (TYP).

ALLOW FOR FILL & MINOR REGRADING OF FINISHED SURFACE TO ARCHIVE NOMINATED REDUCED LEVEL OF GRATED SURFACE INLET PITS, WHERE REQUIRED (TYP).

PROVIDE SUBSOIL DRAINAGE WITHIN LANDSCAPED AREAS & BEHIND RETAINING WALLS TO PREVENT LONG TERM SATURATION DURING PROLONGED WET WEATHER.

ALL GRATES LOCATED IN TRAFFICABLE AREAS SHALL BE OF A HEEL AND WHEEL CHAIR SAFE TYPE AND FITTED WITH CHILD-PROOF LOCKING MECHANISMS



CONNECT Ø225 PVC @ 0.5% TO KERB INLET PIT IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS  
GRATE: 108.74  
ASSUMED IL: 108.19  
INVERT OF EXISTING PIT TO BE CONFIRMED. CAPITAL ENGINEERING TO BE NOTIFIED OF ANY DISCREPANCIES IMMEDIATELY.

**OSD TANK**

AREA = 26.05m<sup>2</sup>  
MAX DEPTH = 1.80m  
ADOPTED PSD = 104 L/s/Ha  
ADOPTED SSR = 362 Cu.m/Ha  
TOP WATER LEVEL = 110.20  
HED WEIR TOW = 110.10  
VOLUME REQUIRED = 40.59  
VOLUME PROVIDED = 44.66  
ORIFICE CL = 108.40  
ORIFICE SIZE = 52mm  
O/F PIPE SIZE = Ø225mm  
OUTLET PIPE IL = 108.28

HATCHED AREA DENOTES OSD BYPASS AREA = 117.42 m<sup>2</sup>

TRACEY AVENUE

STORMWATER LAYOUT PLAN  
GROUND FLOOR  
SCALE 1:100

PROPOSED CHILDCARE CENTRE  
1 TRACEY AVENUE, CARLINGFORD, NSW

Scale: 1:100 @ A1 Date: 13/07/2023 Drawn: P.C. Design: P.C. Approved: P.E.



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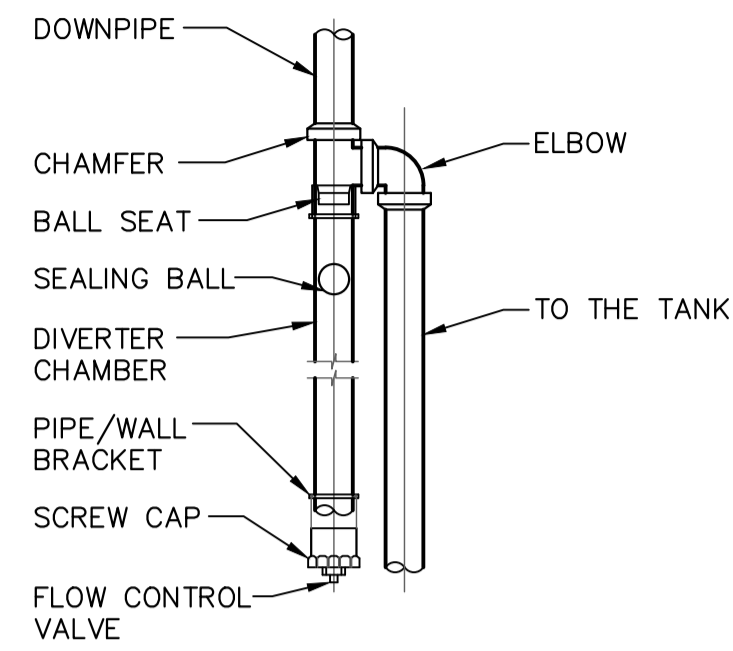
PAUL EL-BAYEH  
B.E. (Civil, M.E. (Structural & Foundation)  
REGEN. CPENG No. 3132148; NER, RPCC.

Title: GROUND FLOOR PLAN, NOTES & DETAILS (1/2)

DO NOT SCALE DRAWING, USE FIGURED DIMENSIONS ONLY

North	Project Number	Revision
	SW23120	C
	Drawing Number	
	SW020	

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Project Title: PROPOSED CHILDCARE CENTRE				
Consent No:		Body Corporate Reg No:		
Drawing Title: STORMWATER PLAN		Drawing No: SW23120-SW021		
Rev	Date	Description	DP Full Name	Reg No
	dd.mm.yy			



**FIRST FLUSH DIVERTER**  
SCALE: 1:20

**WSUD MEASURES**

THE FOLLOWING WSUD MEASURES ARE IMPLEMENTED IN THIS DESIGN:

**M2 LOW-IMPACT LANDSCAPE DESIGN:**

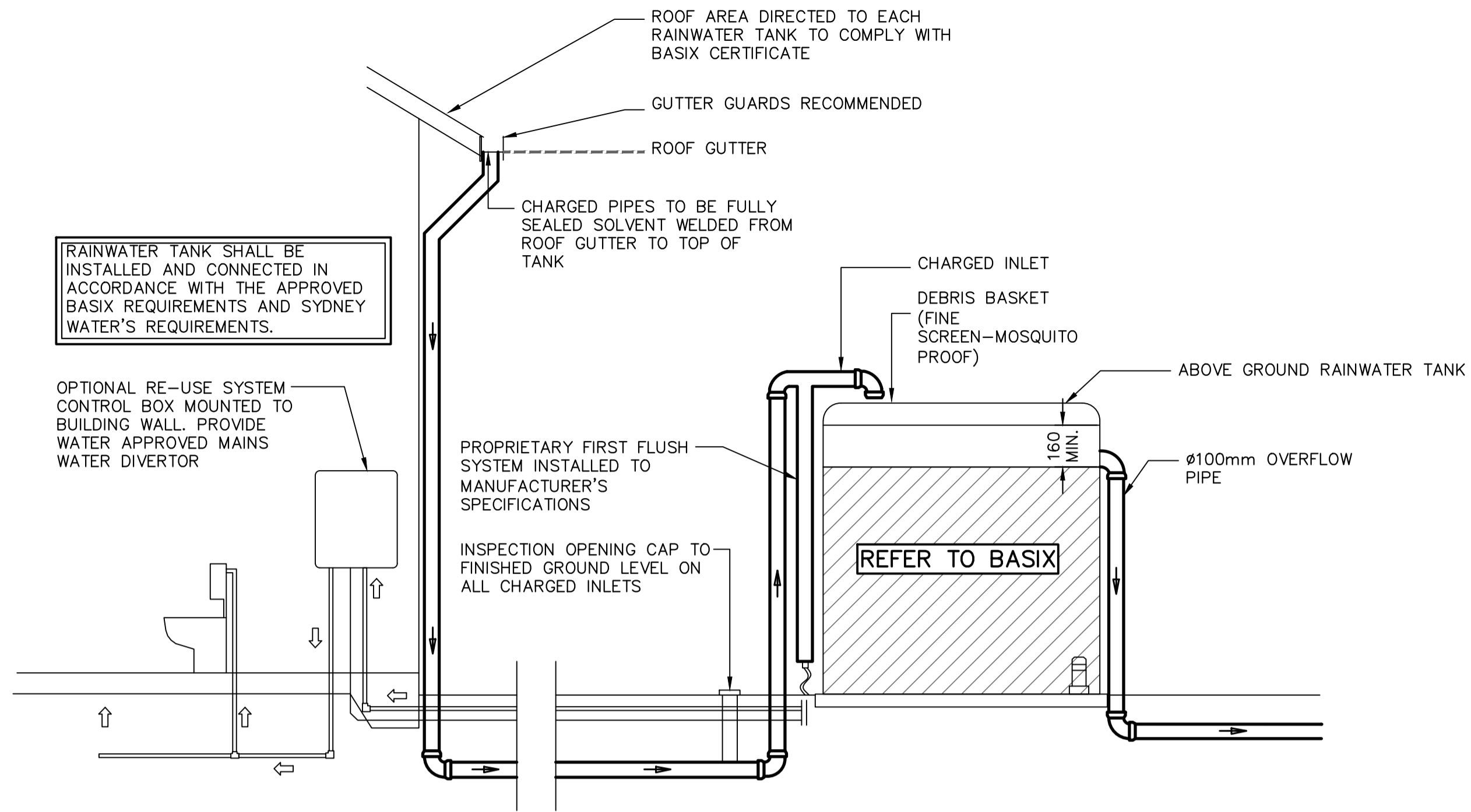
- THE DESIGN AND CONSTRUCTION OF LANDSCAPING SATISFIES EACH OF THE FOLLOWING CRITERIA:
- LANDSCAPING IS DESIGNED TO RETAIN OR RESTORE THE NATURAL LANDSCAPE, PROVIDE HABITAT FOR INDIGENOUS SPECIES AND MINIMISE INPUTS OF WATER, ENERGY, FERTILISERS AND HERBICIDES
- NATURAL LANDFORMS, WATERCOURSES AND OTHER WATER FEATURES ARE RETAINED, RESTORED OR EMPHASISED
- EXISTING NATIVE VEGETATION (INCLUDING UNDERSTOREY) IS RETAINED OR RESTORED, BEYOND THREE METRES OF THE CONSTRUCTED HARDSTAND SURFACE AREAS.
- VEGETATED LINKS ARE PROVIDED WITH NATIVE VEGETATION ON ADJOINING OR NEARBY LAND
- PLANTING IS SUBSTANTIALLY COMPOSED OF LOCALLY INDIGENOUS SPECIES
- PROVISION IS MADE FOR FAUNA HABITAT MEASURES SUCH AS PONDS, WETLANDS, NATIVE SHRUBS, NEST BOXES OR ROOST BOXES
- CONTROL STRUCTURES ARE INSTALLED TO DIVERT STORMWATER RUNOFF FROM NATIVE VEGETATION SO AS TO MAINTAIN SUITABLE SOIL MOISTURE AND NUTRIENT CONDITIONS
- GRASSED AREAS ARE PLANTED WITH NATIVE GRASSES TO ELIMINATE FERTILISING, MOWING AND WATERING
- LANDSCAPING IS DESIGNED TO PROMOTE THE CAPTURE AND INFILTRATION OF RUNOFF THROUGH THE USE OF DEPRESSIONS, GRASSED CHANNELS, INFILTRATION SWALES, ROCK CHANNELS, SEDGES, REED BEDS OR SIMILAR
- WHERE PRACTICAL, LOW-LYING AREAS ARE UTILISED FOR TREATMENT PONDS OR WETLANDS
- AREAS LIKELY TO BE SUBJECT TO HIGH WATER DEMAND ARE FITTED WITH A WATER-EFFICIENT IRRIGATION SYSTEM THAT INCORPORATES AN ELECTRONIC CONTROLLER AND RAIN SWITCH.

**M4 RAINWATER UTILISATION-TOILET:**

- A RAINWATER UTILISATION SYSTEM IS INSTALLED FOR TOILETS, AND SATISFIES EACH OF THE FOLLOWING CRITERIA:
- RAINWATER IS SOURCED ONLY FROM ROOF SURFACES VIA A TANK STORAGE SYSTEM
- THE SYSTEM IS FITTED WITH AN EFFECTIVE FIRST FLUSH DEVICE FOR REMOVING ROOF SURFACE CONTAMINATION.
- THE SYSTEM MUST BE CONNECTED TO THE TOILET FIXTURES AND MAY ALSO BE CONNECTED IRRIGATION FIXTURES, BUT TO NO OTHER FIXTURES.
- ANY CONSENT REQUIRED FROM THE WATER SUPPLY AUTHORITY MUST BE OBTAINED PRIOR TO INSTALLATION OF ANY RAINWATER TANK (SYDNEY WATER HAVE ADVISED THAT THEY WISH TO BE ADVISED OF ALL RAINWATER TANK INSTALLATIONS).
- SYSTEMS THAT USE MAINS WATER AS A BACKUP SUPPLY ARE FITTED WITH A BACKFLOW PREVENTION DEVICE THAT IS SATISFACTORY TO THE LOCAL WATER SUPPLY AUTHORITY
- TANKS AND PUMPS ARE LOCATED SO THAT THEY DO NOT IMPACT UPON THE SAFETY OF PEDESTRIANS OR VEHICLES AND DO NOT IMPACT UPON THE AMENITY OF ADJOINING RESIDENTIAL PROPERTIES BY REASON OF NOISE OR VISUAL APPEARANCE.
- OVERFLOW FROM TANKS IS DIRECTED TO AN INFILTRATION TRENCH OR A PUBLIC DRAINAGE SYSTEM.

**M8 STORMWATER UTILISATION - IRRIGATION:**

- A STORM WATER UTILISATION SYSTEM IS INSTALLED FOR IRRIGATION USE, AND SATISFIES EACH OF THE FOLLOWING CRITERIA:
- THE IRRIGATION SYSTEM SERVES AN ACTIVELY MANAGED AREA OF AT LEAST 1000 M2
- RAINWATER IS SOURCED FROM ROOF, DRIVEWAY OR PAVED SURFACES VIA A TANK STORAGE SYSTEM
- THE SYSTEM IS FITTED WITH SUITABLE TREATMENT DEVICES, SUCH AS A FIRST FLUSH PIT, OIL/ SEDIMENT SEPARATOR, ARTIFICIAL WETLAND ETC.
- FIXTURES ARE MARKED 'NOT SUITABLE FOR DRINKING'
- TANKS AND PUMPS ARE LOCATED IN ACCORDANCE WITH APPLICABLE REQUIREMENTS CONTAINED IN OTHER COUNCIL DOCUMENTS
- ANY CONSENT REQUIRED FROM THE WATER SUPPLY AUTHORITY MUST BE OBTAINED PRIOR TO INSTALLATION OF ANY RAINWATER TANK (SYDNEY WATER HAVE ADVISED THAT THEY WISH TO BE ADVISED OF ALL RAINWATER TANK INSTALLATIONS).
- OVERFLOW FROM TANKS IS DIRECTED TO AN INFILTRATION TRENCH OR A PUBLIC DRAINAGE SYSTEM.

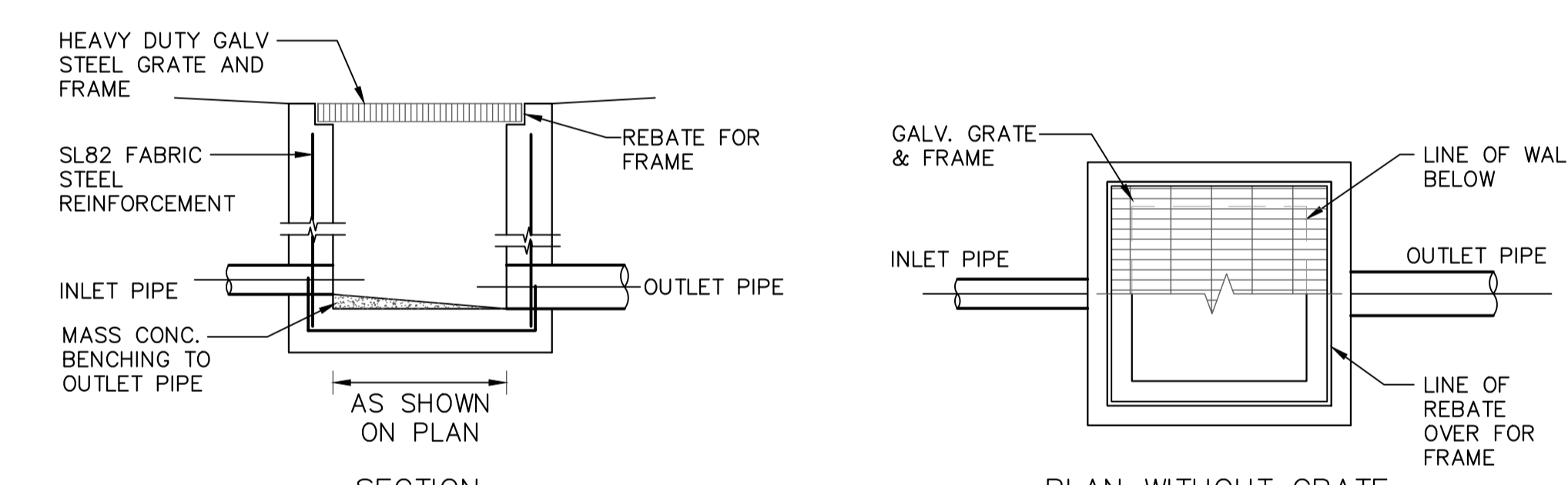


**TYPICAL RAINWATER RE-USE TANK CONFIGURATION**  
NOT TO SCALE

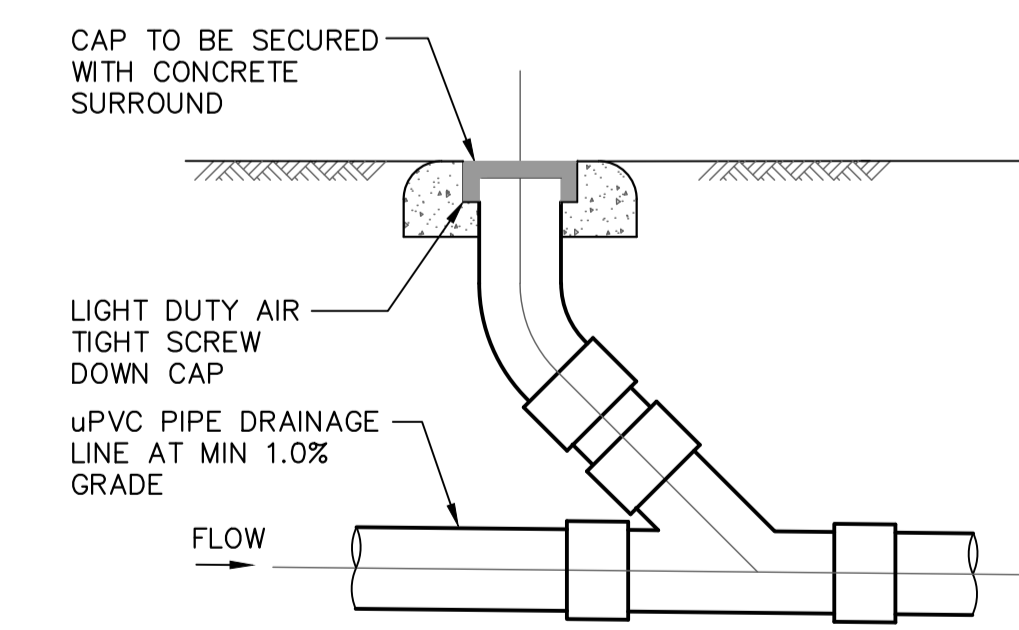


**RAINWATER SIGN DETAIL**  
SCALE: 1:10

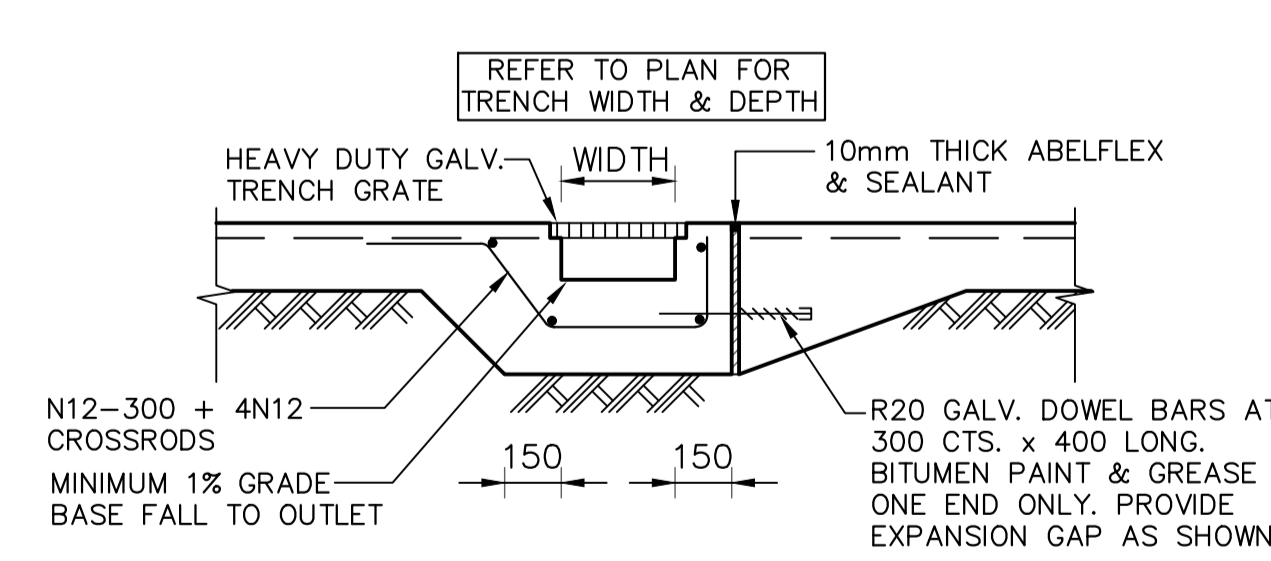
- NOTES: -
- PROVIDE WARNING SIGN IN ACCORDANCE WITH AS 1319 IN A CLEAR AND VISIBLE LOCATION AT ALL RAINWATER SUPPLY POINTS
  - BACKGROUND IS YELLOW TEXT IS WHITE ON BLACK BACKGROUND



**TYPICAL GRATED INLET PIT DETAIL**  
SCALE: 1:20



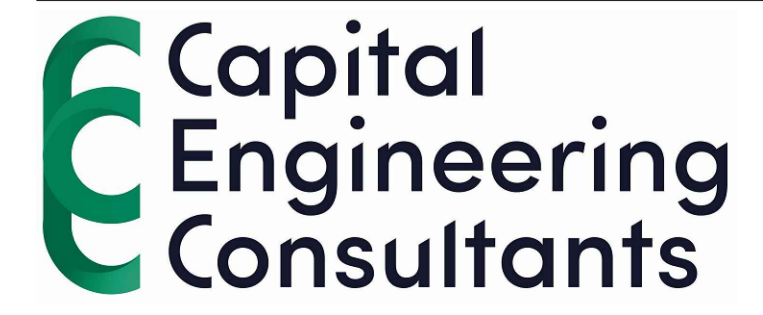
**CLEANING EYE DETAIL**  
SCALE: 1:20



**GRATED DRAIN DETAIL**  
SCALE: 1:20

**PROPOSED CHILDCARE CENTRE**  
1 TRACEY AVENUE, CARLINGFORD, NSW

Scale: 1:100 @ A1 Date: 13/07/2023 Drawn: P.C. Design: P.C. Approved: P.E.



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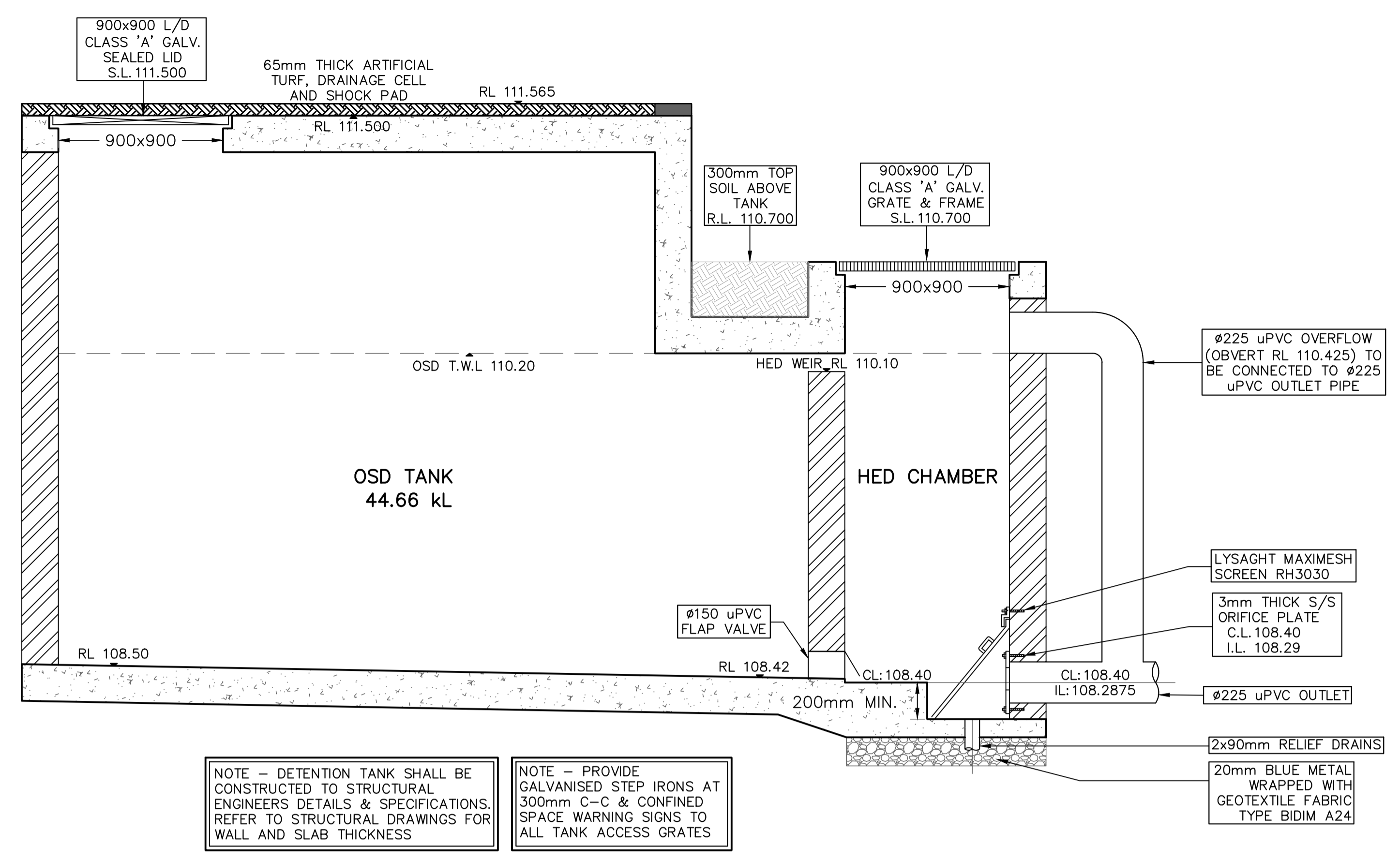
FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE  
APPROVED BY: PAUL EL-BAYEH  
DATE: 13/07/2023  
REGISTERED NER ENGINEERS AUSTRALIA

GROUND FLOOR PLAN, NOTES & DETAILS (2/2)

FOR COUNCIL APPROVAL ONLY (CONCEPT)  
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North	Project Number	Revision
	SW23120	C
	Drawing Number	
	SW021	

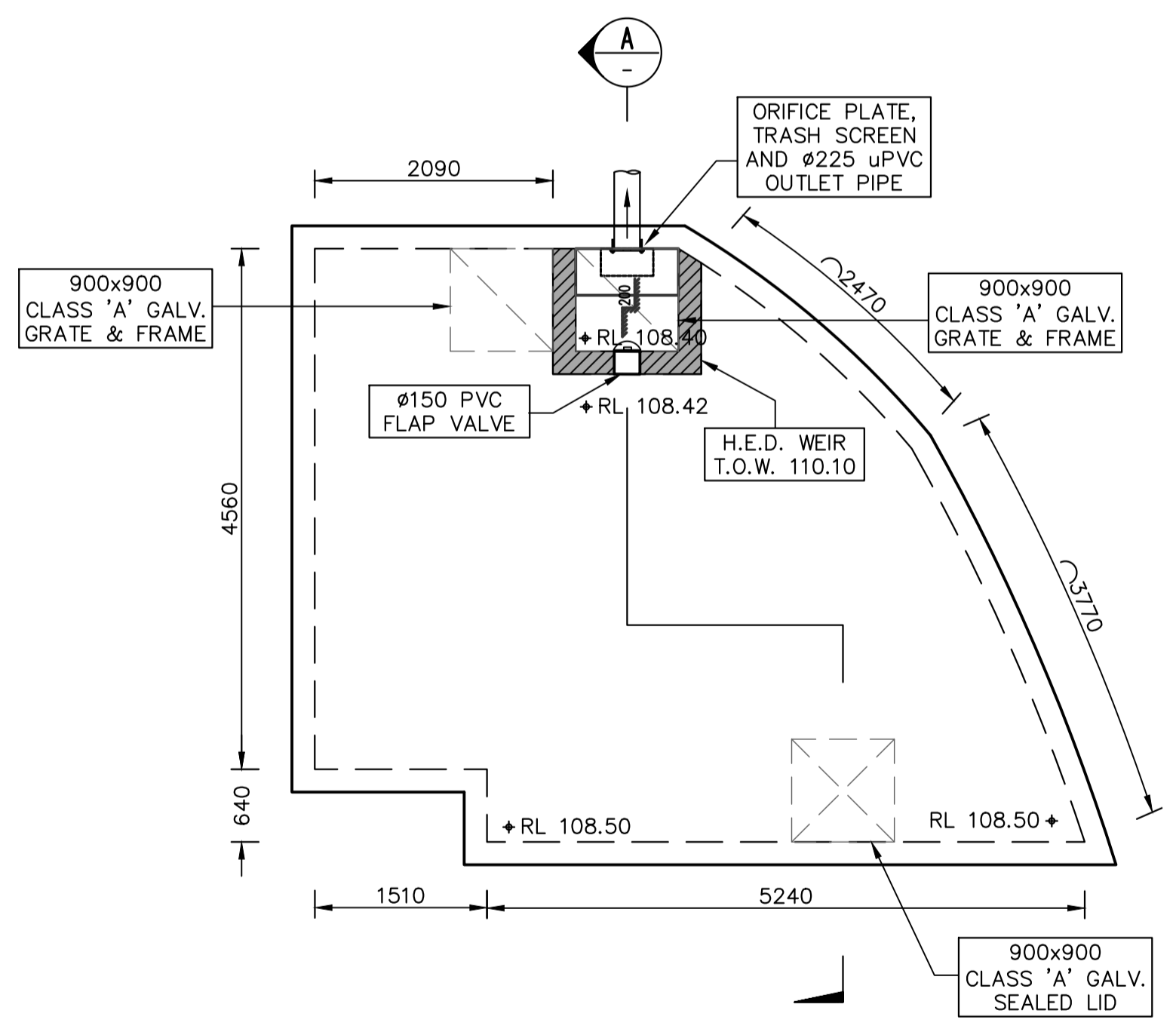
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Consent No:		Body Corporate Reg No:		
Drawing Title: STORMWATER PLAN		Drawing No: SW23120-SW022		
Rev	Date	Description	DP Full Name	Reg No



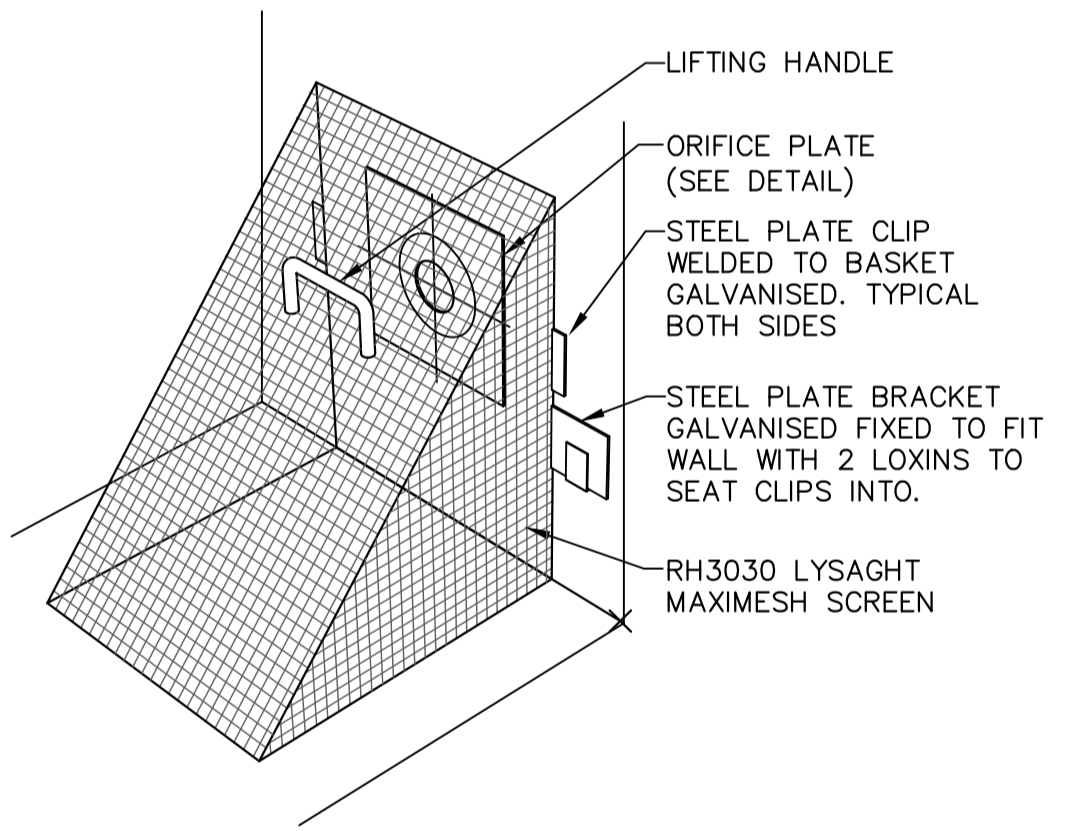
NOTE - DETENTION TANK SHALL BE CONSTRUCTED TO STRUCTURAL ENGINEERS DETAILS & SPECIFICATIONS. REFER TO STRUCTURAL DRAWINGS FOR WALL AND SLAB THICKNESS

NOTE - PROVIDE GALVANISED STEP IRONS AT 300mm C-C & CONFINED SPACE WARNING SIGNS TO ALL TANK ACCESS GRATES

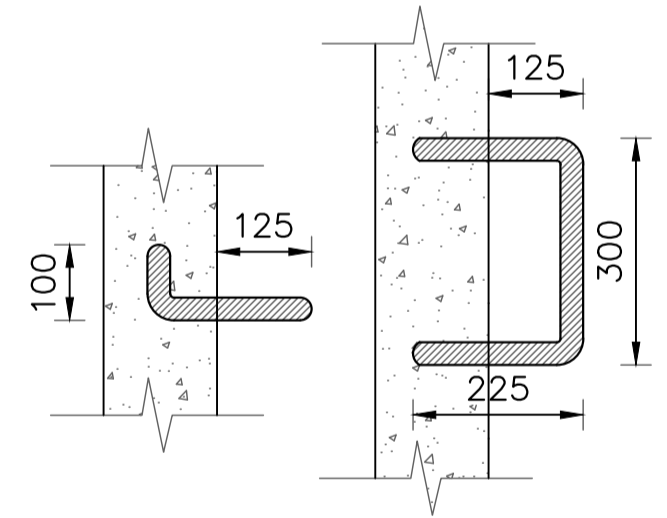
SECTION A  
SCALE 1:20



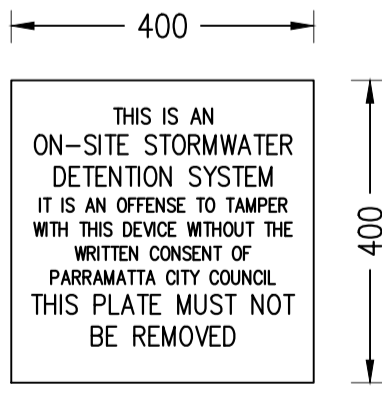
OSD TANK PLAN DETAIL  
SCALE 1:50



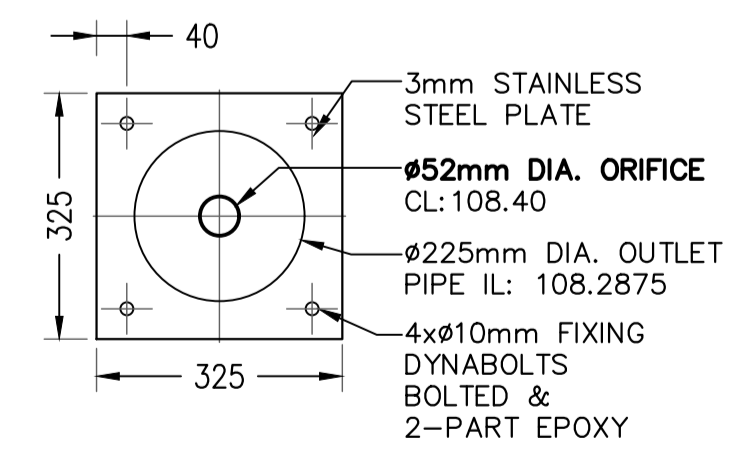
TRASH SCREEN DETAIL  
NOT TO SCALE



STEP IRON DETAIL  
SCALE: 1:10



OSD MARKER PLATE  
SCALE: 1:10



ORIFICE PLATE DETAIL  
SCALE: 1:10

On-Site Detention Calculation Sheet				
Project:	Proposed Child Care Center			
Location:	1 TRACEY AVENUE, CARLINGFORD			
Designer:	Patrick Chahine			
Phone:	9630 0121			
OSD Area:		BHSC		BHSC
				Drowned
Site Area		0.094		0.094
Basic Storage Volume		34.06		34.06
Basic Discharge		9.79		9.79
Area of Site to Storage		0.083	88%	0.083
Percentage of Site		87.96		87.96
Storage per ha of contributing area		411.57		411.57
Volume/PSD Adjustment		96.15		96.15
PSD for site		7.95		7.95
Maximum Head to Orifice Centre		1.800		1.180
Calculated Orifice Diameter		0.052		0.052
Maximum discharge		7.952		6.443
Head for high early discharge		1.700		1.080
High Early Discharge		7.728	97%	6.164
Mean Discharge		7.840		6.303
Average Discharge per Hectare		94.727		76.155
Final Site Storage Ratio		418		490
Site Storage Volume		34.60		40.59
Rainwater Offset		0.00		0.00
Final Volume Required		34.60		40.59
Volume Provided		44.66	129%	44.660
Date Checked:	28-Apr-23			

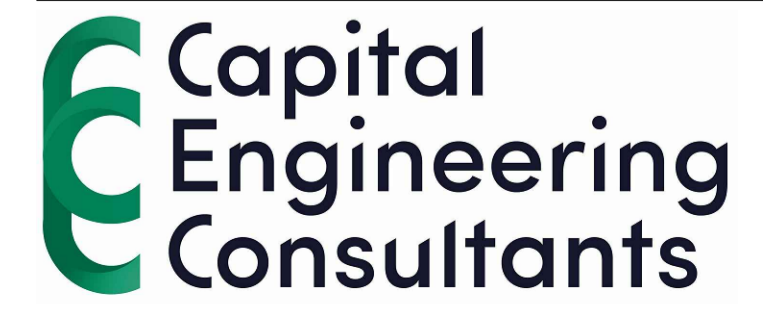
OSD CALCULATION SHEET



CONFINED SPACE SIGN  
NOT TO SCALE

PROPOSED CHILDCARE CENTRE  
1 TRACEY AVENUE, CARLINGFORD, NSW

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ON SITE DETENTION PLAN, NOTES & DETAILS

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SW022	