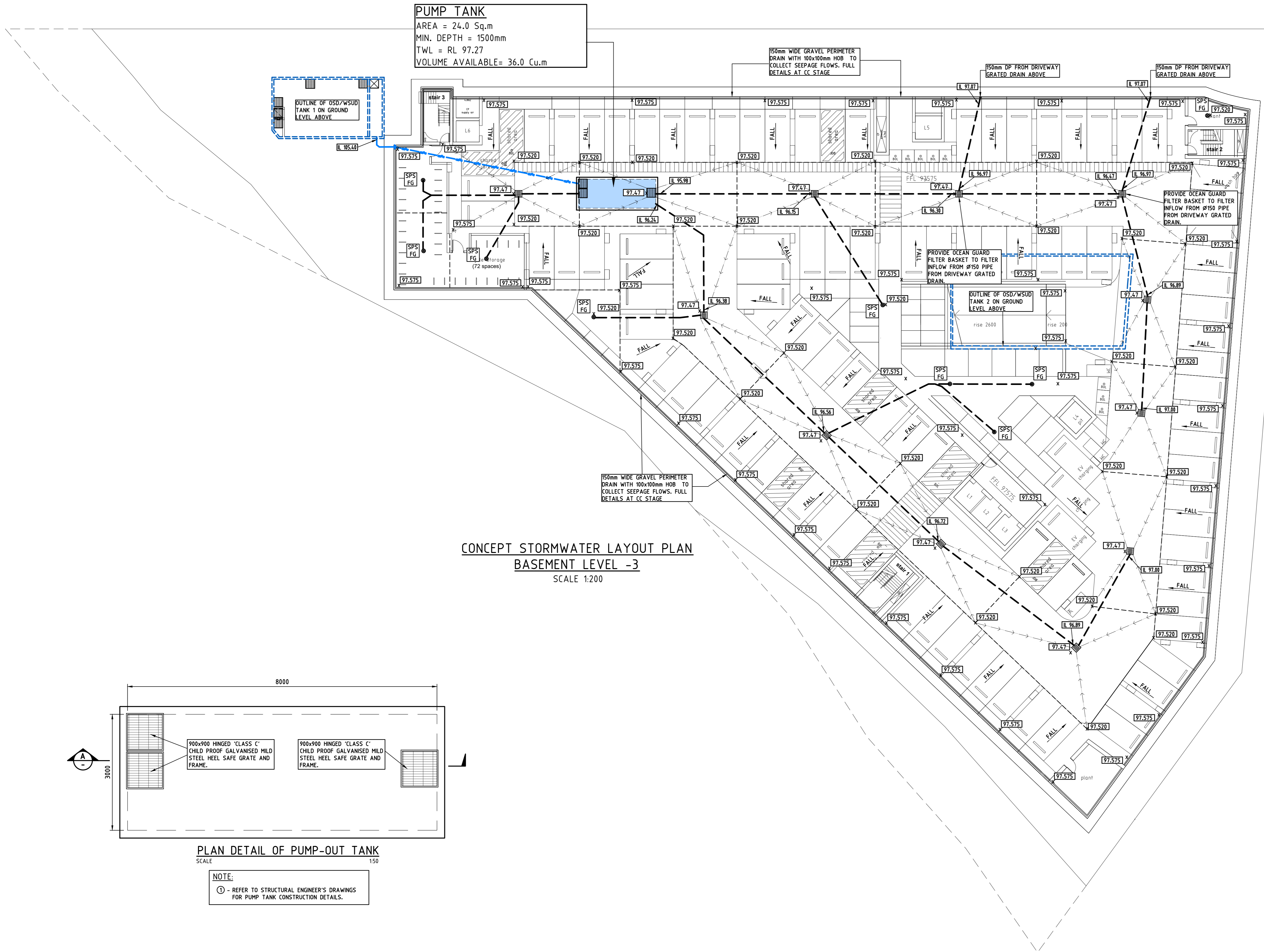
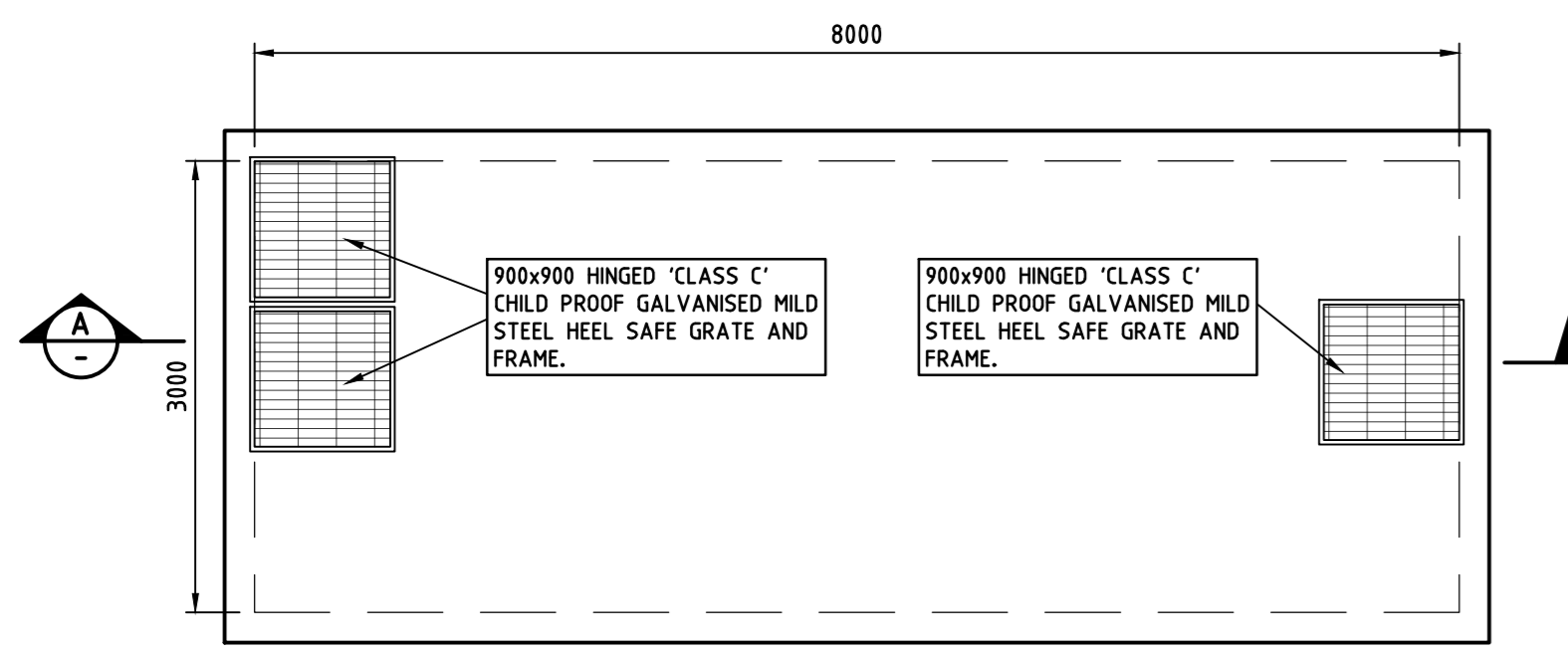


PUMP TANK
 AREA = 24.0 Sq.m
 MIN. DEPTH = 1500mm
 TWL = RL 97.27
 VOLUME AVAILABLE = 36.0 Cu.m

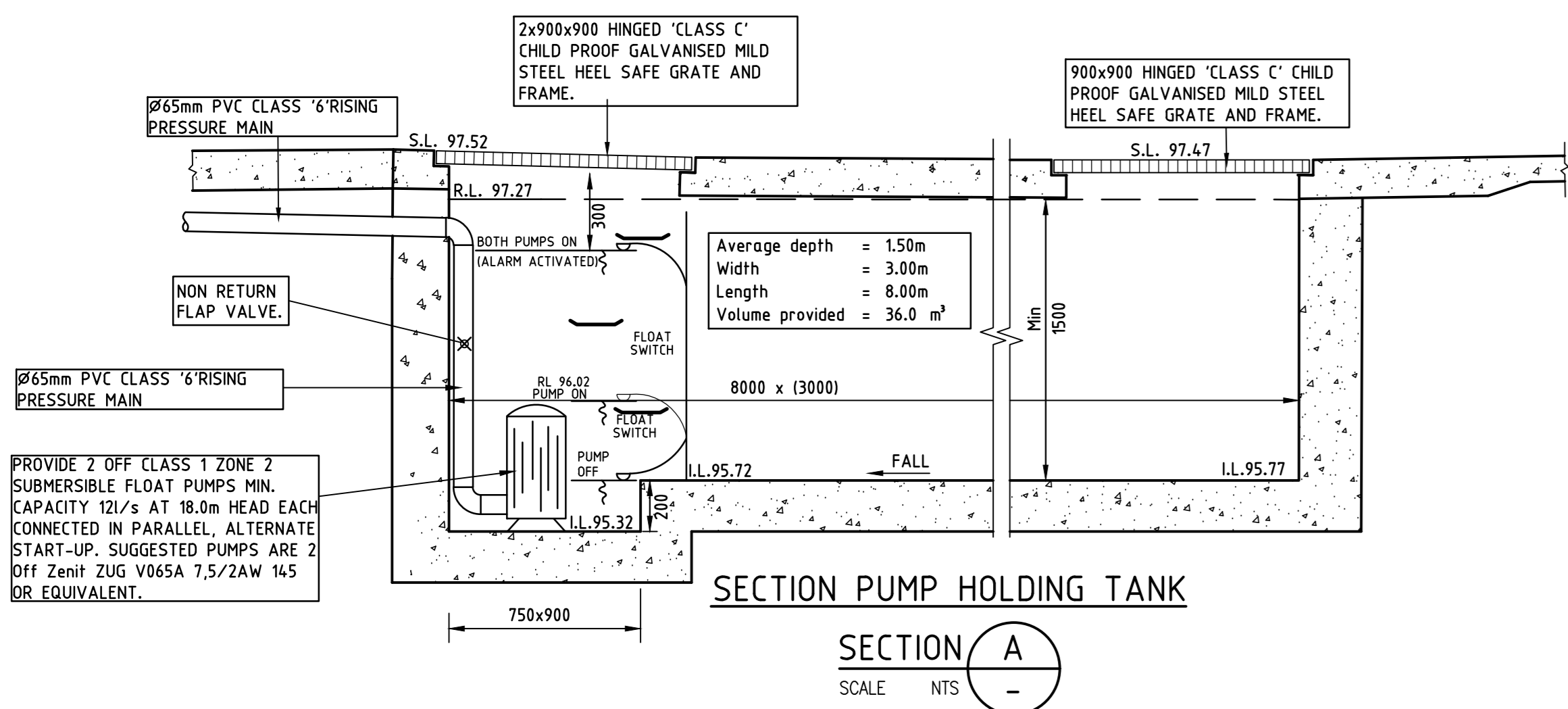


CONCEPT STORMWATER LAYOUT PLAN
 BASEMENT LEVEL -3
 SCALE 1:200



PLAN DETAIL OF PUMP-OUT TANK
 SCALE 1:50

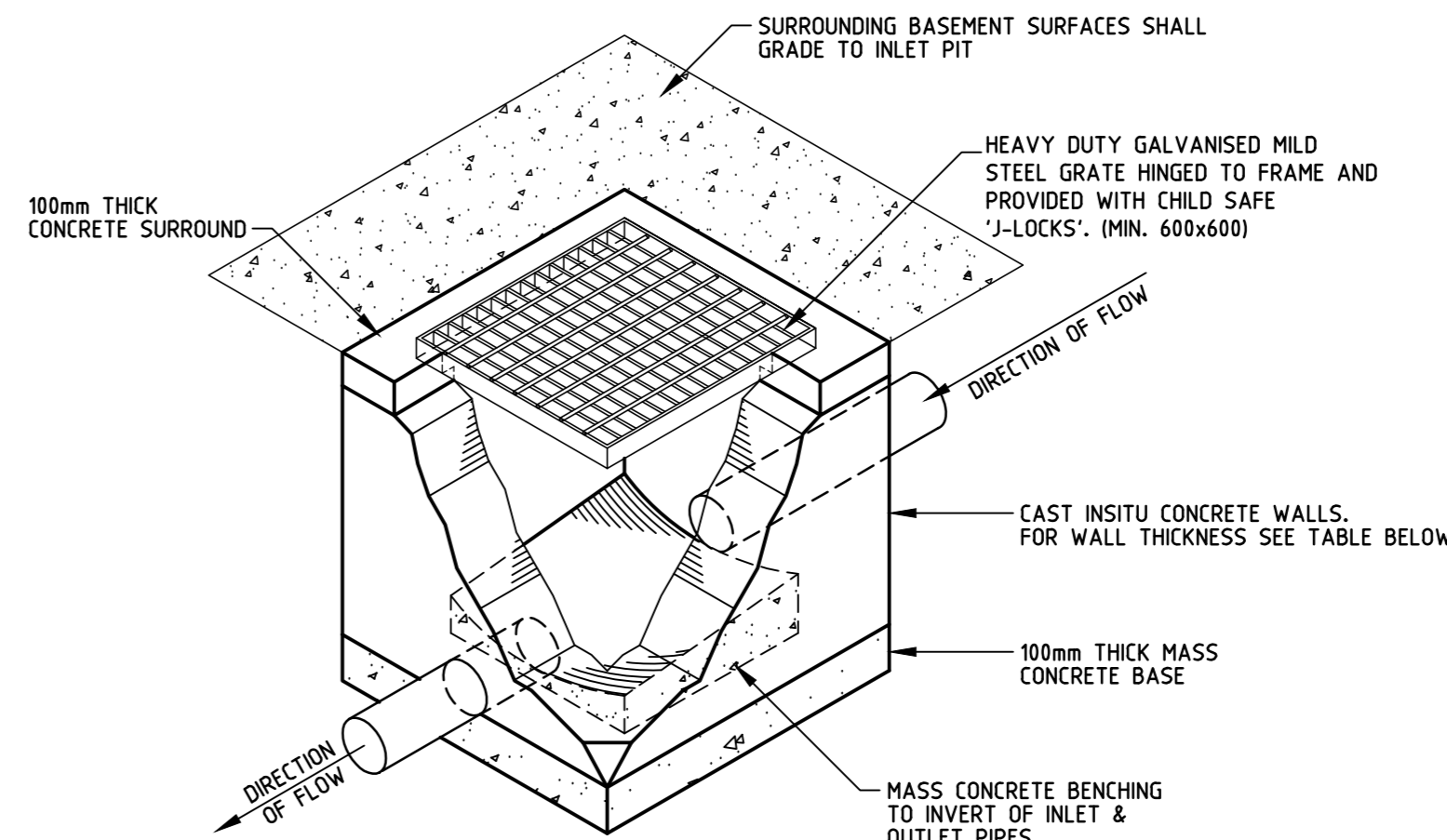
NOTE:
 REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR PUMP TANK CONSTRUCTION DETAILS.



SECTION A
 SECTION PUMP HOLDING TANK
 SCALE NTS

STANDARD PUMP OUT DESIGN NOTES

- The pump out system shall be designed to be operated in the following manner:-
- The pumps shall be programmed to work alternately so as to allow both pumps to have an equal operation load and pump life.
 - A low level float shall be provided to ensure that the minimum required water level is maintained within the sump area of the below ground. In this regard this float will function as an off switch for the pumps.
 - A second float shall be provided at a higher level, approximately 300mm above the minimum water level, whereby one of the pumps will operate and drain the tank to the level of the low-level float.
 - A third float shall be provided at a high level, which is approximately the roof level of the below ground tank. This float should start the other pump that is not operating and activate the alarm.
 - An alarm system shall be provided with a flashing strobe light 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.



TYPICAL GRATED INLET PIT DETAIL FOR BASEMENTS
 NOT TO SCALE

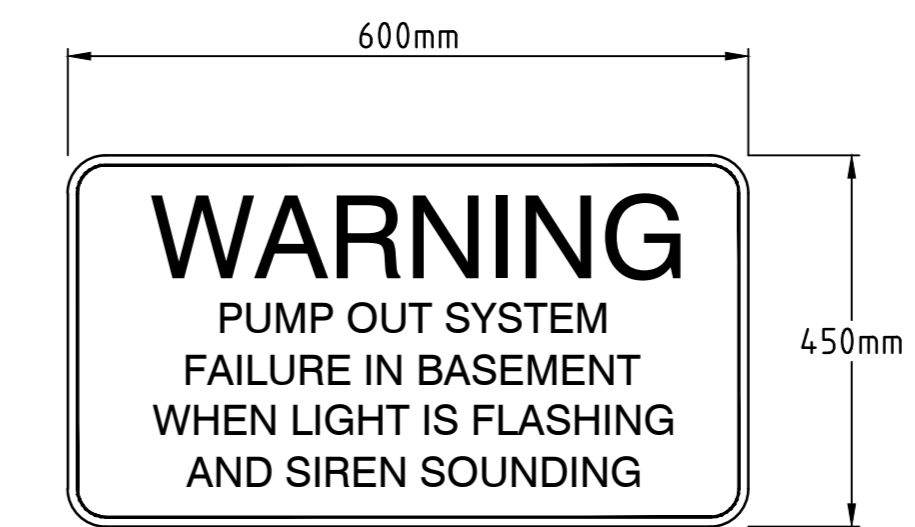
TABLE FOR PIT WALL THICKNESS

PIT DEPTH (mm)	WALL THICKNESS (mm)	REINFORCEMENT
0-1500	150	N12.200 V-H CENTRAL
1501-3000	200	N12.200 V-H CENTRAL

NOTE: PROVIDE ADDITIONAL CORNER BARS N12 @ 200mm CENTERS WHERE WALLS ARE REINFORCED

TABLE FOR GRATE SPECIFICATION

PIT DEPTH (mm)	GRATE (mmxmm)	GRATE GRADE
0-899	600x600	HEAVY DUTY
900-1999	900x900	HEAVY DUTY
> 2000	1200x1200	HEAVY DUTY



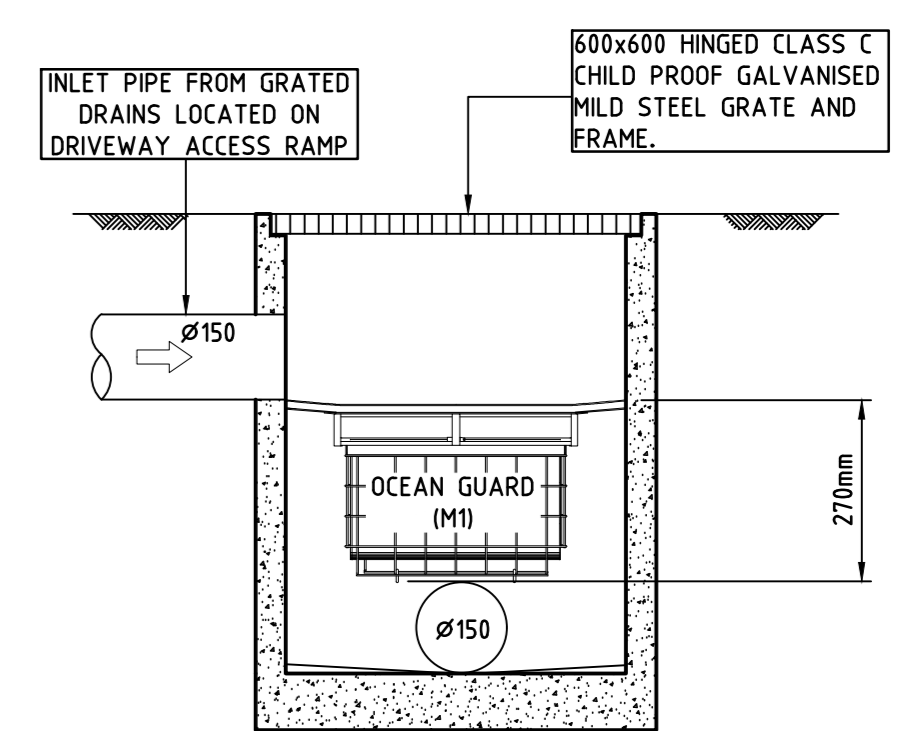
BASEMENT PUMP OUT FAILURE WARNING SIGN

NOTE:-
 1 - SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT
 COLOURS:-
 "WARNING" - RED
 BORDER AND OTHER LETTERING - BLACK



CONFINED SPACE DANGER SIGN
 COLOURS - DANGER AND BACKGROUND - WHITE
 ELLIPTICAL AREA - RED
 RECTANGLE CONTAINING ELLIPSE - BLACK
 OTHER LETTERING AND BORDER - BLACK

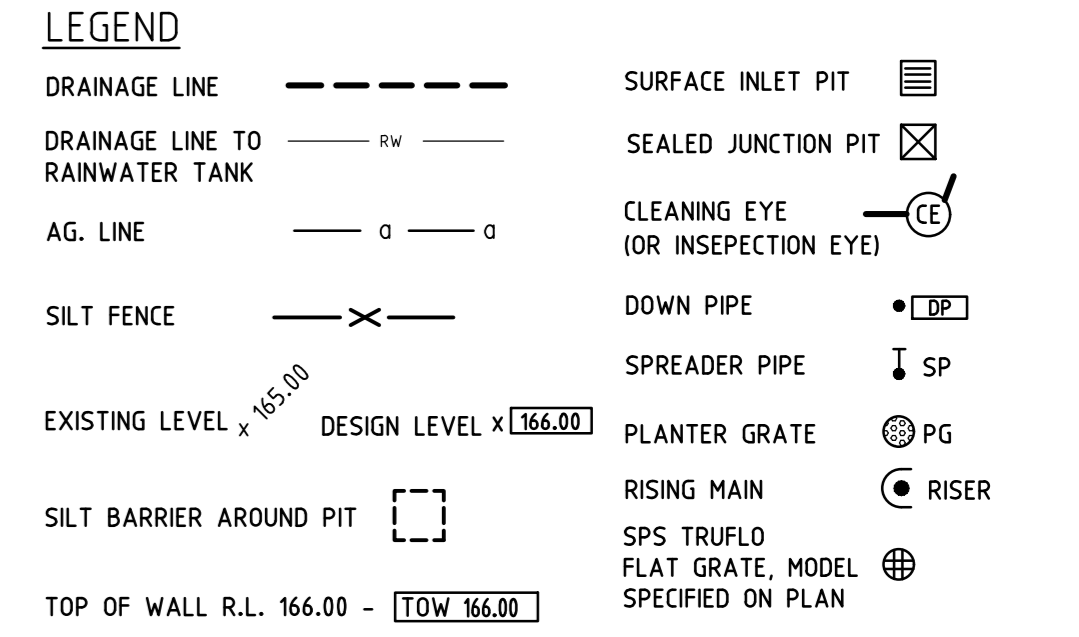
- A) A CONFINED SPACE DANGER SIGN SHALL BE POSITIONED IN A LOCATION AT ALL ACCESS POINTS, SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANK'S CONFINED SPACE.
- B) MINIMUM DIMENSIONS OF THE SIGN - 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS) - 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES)
- C) THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINIUM OR POLYPROPYLENE.
- D) SIGN SHALL BE AFFIXED USING SCREWS AT EACH CORNER OF THE SIGN.



TYPICAL PIT DETAIL WITH OCEAN GUARD INSERT BASEMENT LEVEL 3
 SCALE NTS

NOTES

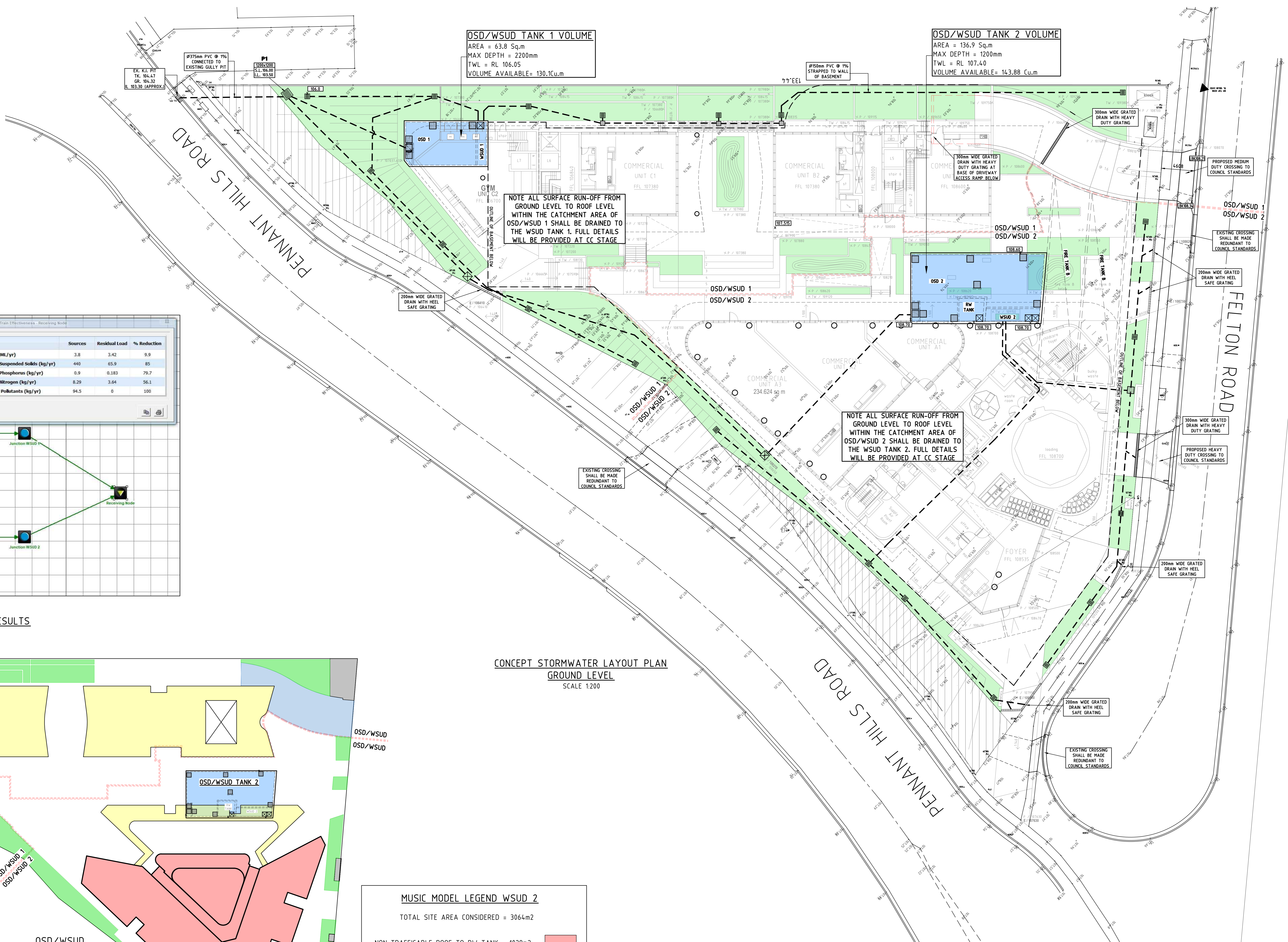
- THE BUILDER/CONTRACTOR SHALL LOCATE ALL EXISTING PUBLIC UTILITY SERVICES WITHIN THE SITE, FOOTPATH AREA AND ROAD RESERVE PRIOR TO THE COMMENCEMENT OF ANY WORKS. ALL LOCATIONS AND LEVELS OF SERVICES SHALL BE REPORTED TO THE STORMWATER ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORKS TO ENSURE THERE ARE NO OBSTRUCTIONS IN THE LINE OF THE DRAINAGE DISCHARGE PIPES.
- ALL LEVELS SHALL RELATE TO THE ESTABLISHED BENCH MARK.
- THE BASE OF ALL DRAINAGE PITS SHALL BE BENDED TO THE INVERT OF THE OULET PIPE.
- ALL GUTTERS SHALL BE MINIMUM 100 x 75mm AND DOWNPIPES SHALL BE MINIMUM 100 x 75mm UNLESS NOTED OTHERWISE.
- ALL STORMWATER DRAINAGE PIPES SHALL BE A MINIMUM 100mm PVC LAD AT 1% MINIMUM GRADE UNLESS NOTED OTHERWISE ON THE DRAWING. WHERE GROUND COVER OVER THE PIPES IS LESS THAN 300mm THE STORMWATER PIPES SHALL BE SEWER GRADE PVC.
- THE BUILDER SHALL ENSURE THAT THE STORMWATER ENGINEERING DRAWINGS CORRESPOND TO THE ARCHITECTURAL, STRUCTURAL AND LANDSCAPE DRAWINGS IF THERE EXISTS ANY DISCREPANCIES BETWEEN THE DRAWINGS THE BUILDER SHALL REPORT THE DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORKS.
- ALL MULCHING TO BE USED WITHIN THE AREA DESIGNATED AS ON SITE DETENTION STORAGE SHALL BE OF A NON-FLOATABLE MATERIAL SUCH AS DECORATIVE RIVER GRAVEL, PINE BARK MULCHING SHALL NOT BE USED WITHIN THE DETENTION STORAGE AREA.
- ALL WORKS WITHIN THE FOOTPATH AREA SHALL BE SUITABLY BARRICADED AND SUPERVISED IN ACCORDANCE WITH A TRAFFIC MANAGEMENT PLAN THAT HAS BEEN PREPARED BY A QUALIFIED AND RTA ACCREDITED TRAFFIC ENGINEER AND APPROVED BY COUNCIL. IT IS THE RESPONSIBILITY OF THE BUILDER OR CONTRACTOR CARRYING OUT THE WORKS WITHIN THE FOOTPATH AREA AND ROAD RESERVE TO OBTAIN THE NECESSARY APPROVED DOCUMENTS AS OUTLINED ABOVE.
- ALL RETAINING WALLS SHALL BE CONSTRUCTED COMPLETELY WITHIN THE PROPERTY BOUNDARY LIMITS TO DETAILS PREPARED BY THE STRUCTURAL ENGINEER. WALLS FORMING THE ON SITE DETENTION SYSTEM SHALL BE OF MASONRY/BRICK CONSTRUCTION AND SHALL BE WATER TIGHT.
- ALL SUB-SOIL DRAINAGE SHALL BE A MINIMUM OF 100mm AND SHALL BE PROVIDED WITH A FILTER SOCK. THE SUBSOIL DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH DETAILS TO BE PROVIDED BY THE LANDSCAPE ARCHITECT.
- PRIOR TO COMMENCING ANY WORKS ON THE SITE, THE BUILDER SHALL ENSURE THAT THE INVERT LEVELS OF WHERE THE SITE'S STORMWATER SYSTEM CONNECTS INTO THE COUNCIL'S KERB/DRAINAGE SYSTEM MATCHES THE DESIGN LEVELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.



ISSUED FOR CO-ORDINATION



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REV.	AMENDMENT	BY	DATE	REV.	AMENDMENT	BY	DATE	REV.	AMENDMENT	BY	DATE	REV.	AMENDMENT	BY	DATE		
				P1	ISSUED FOR CO-ORDINATION	GB	29/08/25										

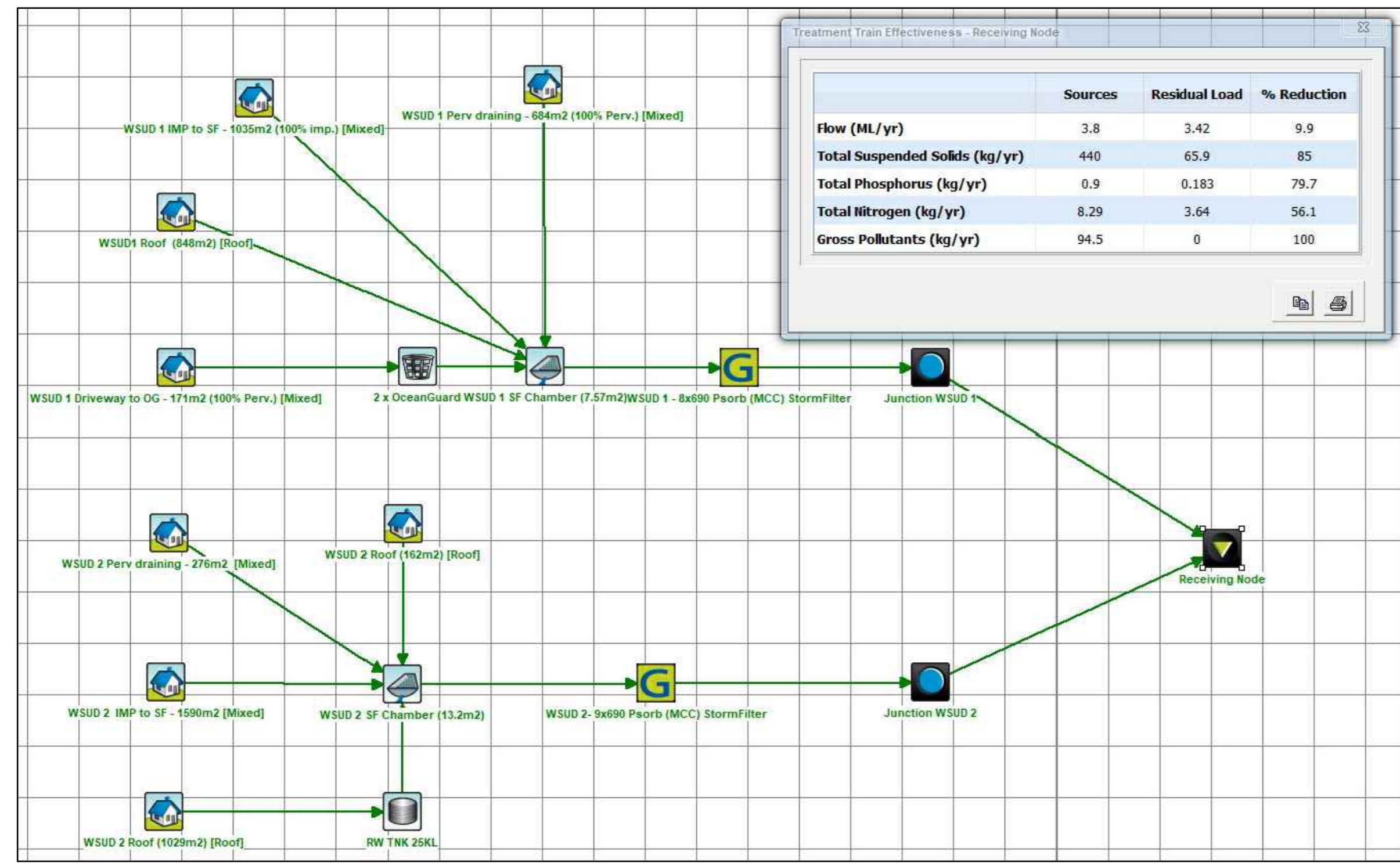


OSD/WSUD TANK 1 VOLUME
 AREA = 63.8 Sq.m
 MAX DEPTH = 2200mm
 TWL = RL 106.05
 VOLUME AVAILABLE = 130.1Cu.m

OSD/WSUD TANK 2 VOLUME
 AREA = 136.9 Sq.m
 MAX DEPTH = 1200mm
 TWL = RL 107.40
 VOLUME AVAILABLE = 143.88 Cu.m

NOTE ALL SURFACE RUN-OFF FROM GROUND LEVEL TO ROOF LEVEL WITHIN THE CATCHMENT AREA OF OSD/WSUD 1 SHALL BE DRAINED TO THE WSUD TANK 1. FULL DETAILS WILL BE PROVIDED AT CC STAGE

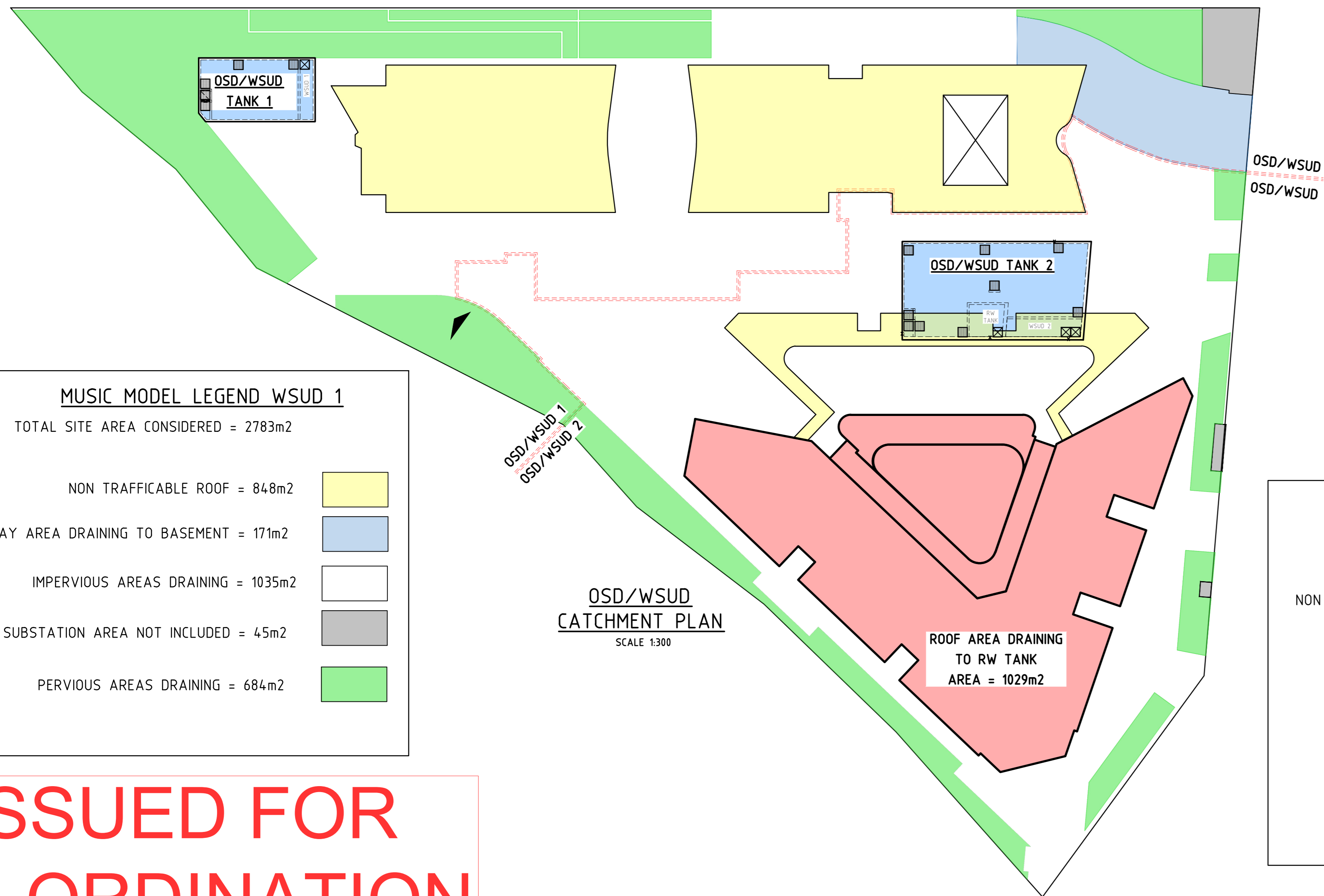
NOTE ALL SURFACE RUN-OFF FROM GROUND LEVEL TO ROOF LEVEL WITHIN THE CATCHMENT AREA OF OSD/WSUD 2 SHALL BE DRAINED TO THE WSUD TANK 2. FULL DETAILS WILL BE PROVIDED AT CC STAGE



Flow (ML/yr)	Sources	Residual Load	% Reduction
3.8	3.42	5.9	
440	65.9	85	
0.9	0.183	79.7	
8.29	3.64	56.1	
94.5	0	100	

MUSIC MODEL AND RESULTS

CONCEPT STORMWATER LAYOUT PLAN
 GROUND LEVEL
 SCALE 1:200



MUSIC MODEL LEGEND WSUD 1

TOTAL SITE AREA CONSIDERED = 2783m²

- NON TRAFFICABLE ROOF = 84.8m²
- DRIVEWAY AREA DRAINING TO BASEMENT = 171m²
- IMPERVIOUS AREAS DRAINING = 1035m²
- SUBSTATION AREA NOT INCLUDED = 4.5m²
- PERVIOUS AREAS DRAINING = 684m²

MUSIC MODEL LEGEND WSUD 2

TOTAL SITE AREA CONSIDERED = 3064m²

- NON TRAFFICABLE ROOF TO RW TANK = 1029m²
- NON TRAFFICABLE ROOF = 162m²
- PERVIOUS AREAS DRAINING = 276m²
- IMPERVIOUS AREAS DRAINING = 1590m²
- BOOSTER/GAS AREA NOT INCLUDED = 6.9m²

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