

#### BASEMENT 2 DRAINAGE PLAN

SCALE - 1:150

ALL GUTTERS TO BE MINI-LINE MINIMUM SIZE TO ARCHITECTURAL SPECIFICATION OR AS NOTED ON PLAN.

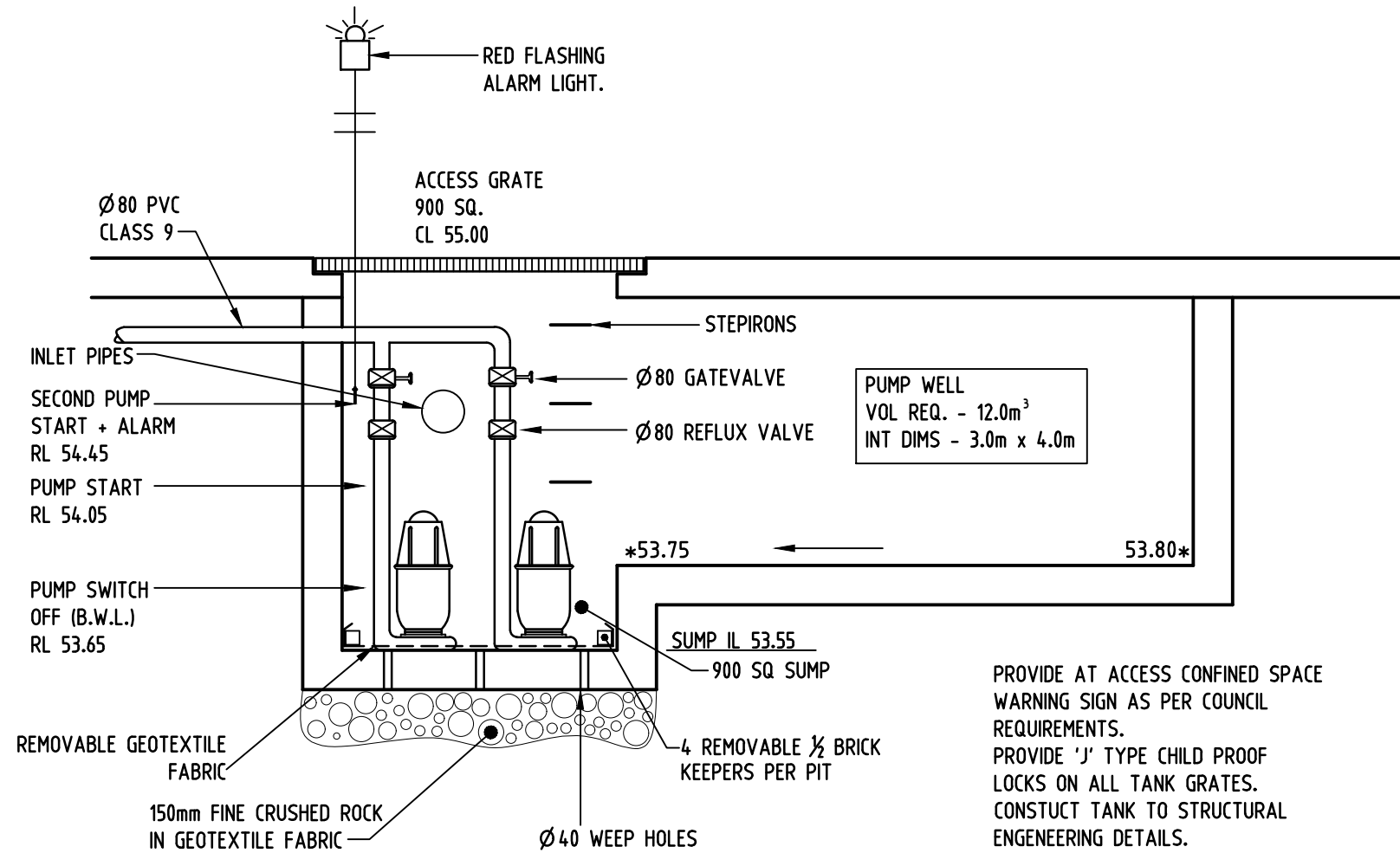
ALL GUTTERS TO BE PROVIDED WITH LEAF GUARD.

ALL BALCONES ARE TO HAVE A 45mm DIAMETER OVERFLOW PIPE OR AND 80mm SQUARE OPENING ACTING AS AN OVERFLOW.

ALL DOWNPIPES TO BE 100mm DIAMETER OR 100 x 75mm MIN. TO ARCHITECTURAL SPECIFICATIONS OR AS NOTED ON PLAN.

PROVIDE AG. LINES BEHIND ALL RETAINING WALLS AND SUBSOIL DRAINAGE AS PER STRUCTURAL ENGINEERING DETAILS. ALL LINES TO DRAIN TO PITS.

- \* DENOTES PROPOSED LEVEL
- x DENOTES EXISTING LEVEL
- DENOTES DOWNPIPE
- PROPOSED RAINWATER PIPE
- PROPOSED STORMWATER PIPE



#### BASEMENT PUMPING SYSTEM

N.T.S.

PROVIDE AT ACCESS CONFINED SPACE WARNING SIGN AS PER COUNCIL REQUIREMENTS.  
PROVIDE 'J' TYPE CHLD PROOF LOCKS ON ALL TANK GRATES.  
CONSTRUCT TANK TO STRUCTURAL ENGINEERING DETAILS.

#### BASEMENT PUMPING WELL

Provide two centrifugal drainage SUMP pumps with single phase electric motor capable of discharging 5.75L/s each against a total head of ( 12.0m ) with 10 starts per hour maximum.  
Class 1 Zone 2 certified pumps for hazardous areas is required.  
Switching shall provide for alternative operation of the pumps, high level switch ON/OFF, 2nd pump, and a red light alarm placed prominently in the basement area activated by high level switch ON.

Basement Holding Tank

Area draining to the garage pumping well is the driveway to the basement ( 100m<sup>2</sup> )

Storage must be provided for a blackout of at least 2hrs, the 100yrs ARI 2hr storm runoff is:

$$Q = F \times C \times I \times A$$
$$= 1/3600 \times 1 \times 60 \times 100$$
$$= 1.67 \text{ L/s}$$

Volume accumulated:

$$V = (1.67 \text{ L/s} \times 2\text{hrs} \times 3600\text{s})/1000$$
$$= 12.0 \text{ m}^3$$

Let the maximum discharge be for the 10 min 100yrs ARI storm. In the event of a stranger storm such as a 5min 100yrs ARI. The standby pump will operate with the duty pump to discharge the extra runoff. In case of a break down, storage is provided in the basement for the excess runoff.

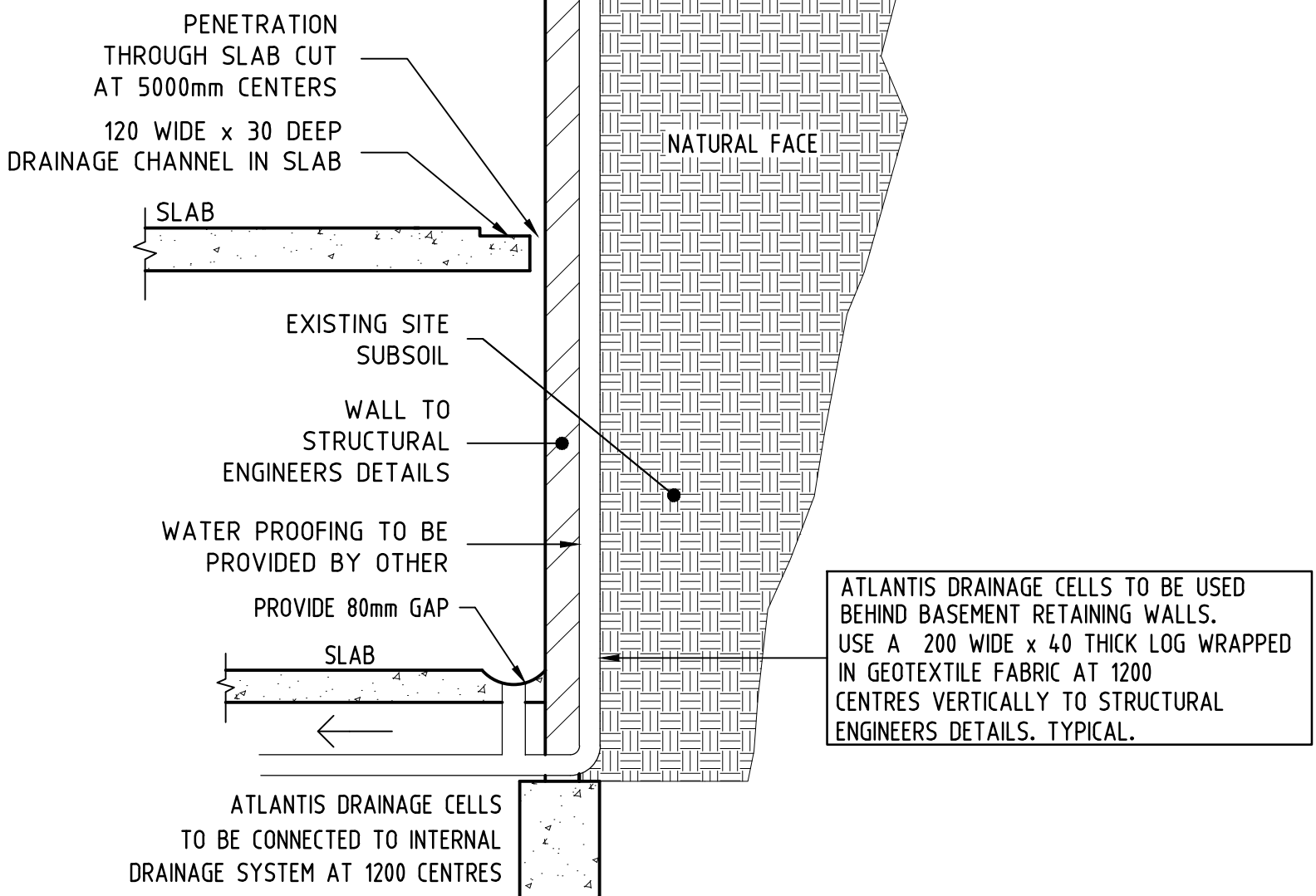
$$Q = F \times C \times I \times A$$
$$= 1/3600 \times 1 \times 207 \times 100$$
$$= 5.75 \text{ L/s}$$

A Control volume is required to prevent the pump from starting too often (< 10/hr)

$$CV = 900 \times Qp/n$$
$$= (900 \times 5.75) / (10 \times 1000)$$
$$= 0.52 \text{ m}^3$$

Basement Pumping Duty Calculation.(Q = 5.75 L/s)

ITEM	HEAD
Static Adjustment	10.1m
80mm Pump Fittings EL 25m (3.2m/100)	0.8m
80mm PVC Class 9 EL 20m (3.2m/100)	0.7m
Sundries(about 10%)	0.4m
Total	12.0m



#### ATLANTIS WALL DRAIN DETAIL

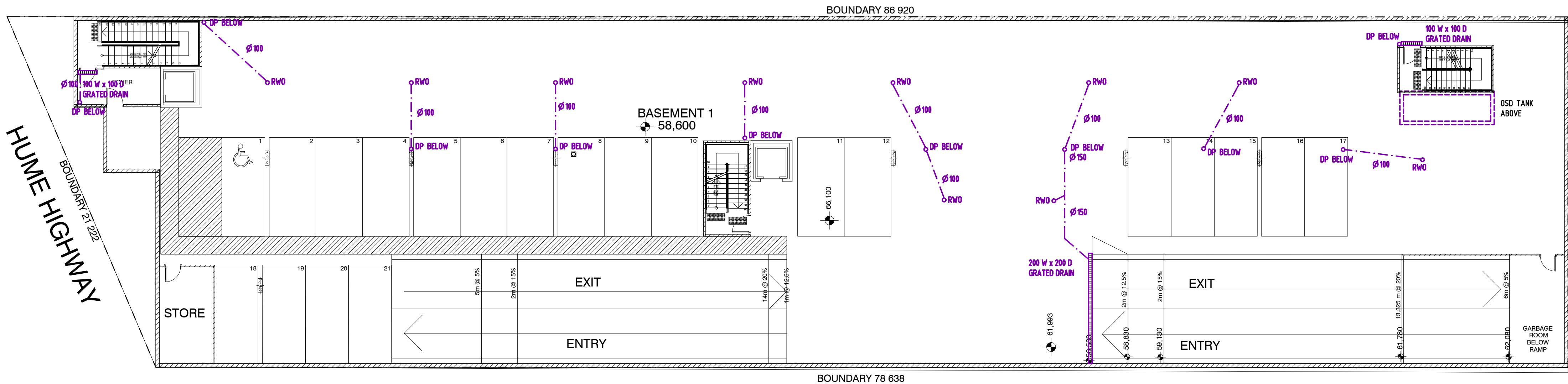
N.T.S.

#### LEGEND

- RL REDUCED LEVEL
- CL COVER LEVEL
- IL INVERT LEVEL
- GSP GRATED SURFACE INLET PIT
- OSD ON-SITE DETENTION
- TWL TOP WATER LEVEL
- BWL BOTTOM WATER LEVEL
- TW TOP OF WALL
- IO INSPECTION OPENING
- ARI AVERAGE RECURRENCE INTERVAL
- FW FLOOR WASTE
- AHD AUSTRALIAN HEIGHT DATUM
- PSD PERMISSIBLE SITE DISCHARGE
- HEH HIGH EARLY DISCHARGE
- RHS RECTANGULAR HOLLOW SECTION
- SS STAINLESS STEEL
- FRF FIBER REINFORCED CONCRETE
- RCF REINFORCED CONCRETE PIPE
- RRJ RUBBER RING JOINT
- U/S UNDERSIDE OF SLAB
- O/S OVER THE SLAB
- O/F OVERFLOW
- DP DOWN PIPE
- DR DROPPER
- RWO RAIN WATER OUTLET
- RWH RAIN WATER HEAD
- FFL FINISHED FLOOR LEVEL

NOT FOR CONSTRUCTION

B	13-12-2022	ISSUED FOR DA APPRVOAL			MG
A	06-09-2022	ISSUED TO THE ARCHITECT			HE
REV.	DATE	AMENDMENT DESCRIPTION			DRAWN
<div><div><div></div><div>JOHN ROMANOUS &amp; ASSOCIATES</div><div>PTY. LTD.</div><div>CONSULTING CIVIL &amp; STRUCTURAL ENGINEERS</div><div>ACN 054 595 005</div></div><div>SUITE 2D / 322 KINGSROVE RD. KINGSROVE NSW 2208 Ph (02) 83 87 68 26</div></div>					
PROPOSED DEVELOPMENT AT: 324 HUME HIGHWAY, BANKSTOWN.					
STORMWATER DRAINAGE/SEDIMENT CONTROL DETAILS					
DRAWN	CHECKED	SCALE	DATUM	DRAWING No.	REV.
HE	D.M.ROMANOUS (B.E., M.I.E.AUST.)	AS SHOWN @A1	A.H.D	2337 - S1/4	B



**BASEMENT 1 DRAINAGE PLAN** SCALE - 1:150

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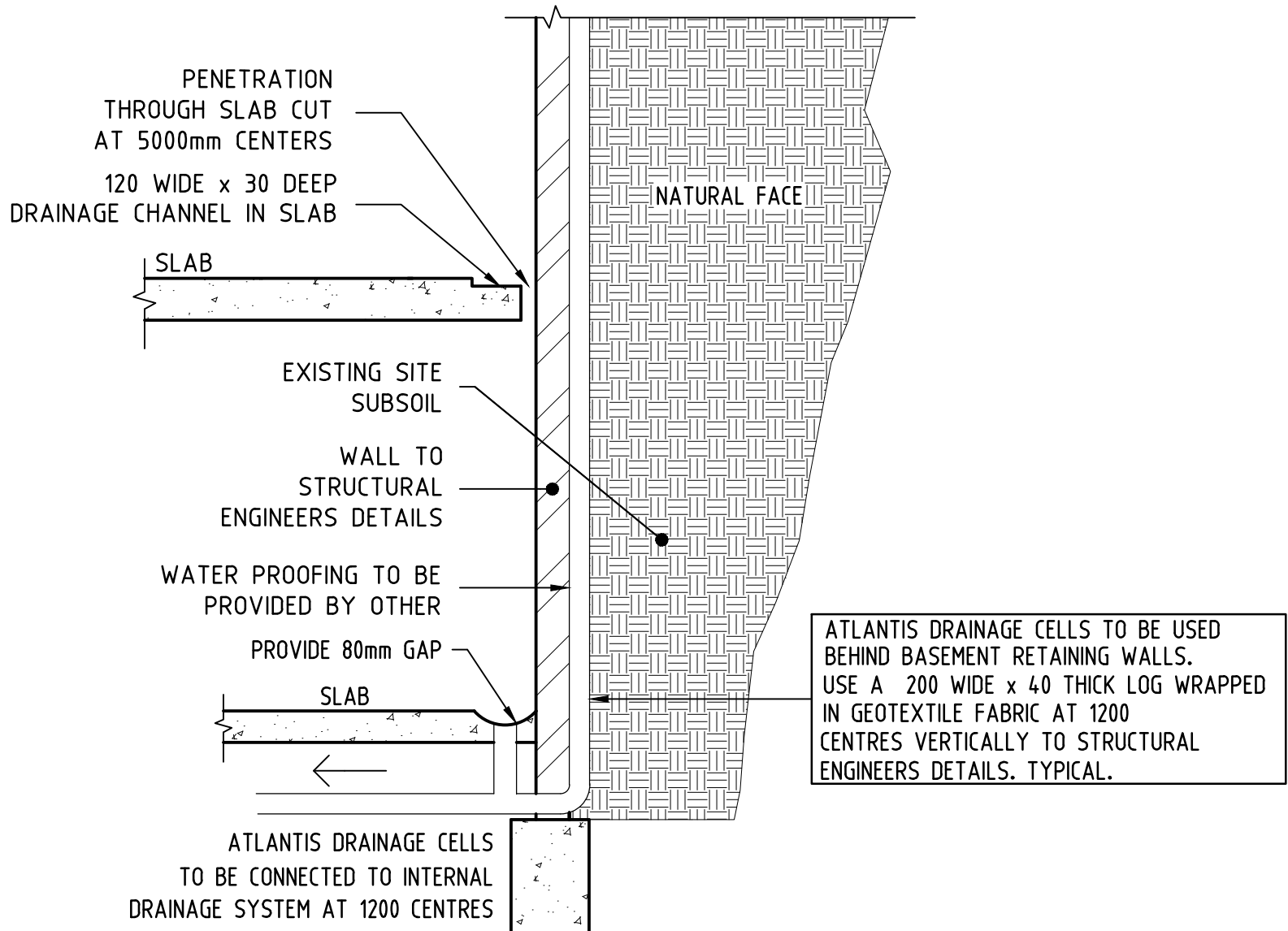
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ALL BALCONIES ARE TO HAVE A 65mm DIAMETER OVERFLOW PIPE OR AND 80mm SQUARE OPENING ACTING AS AN OVERFLOW.

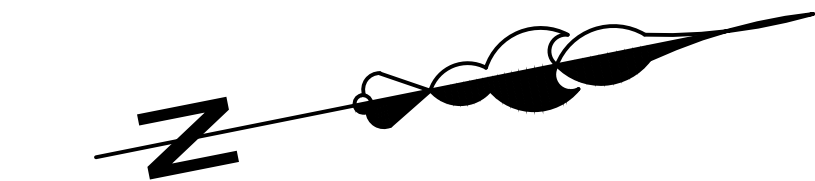
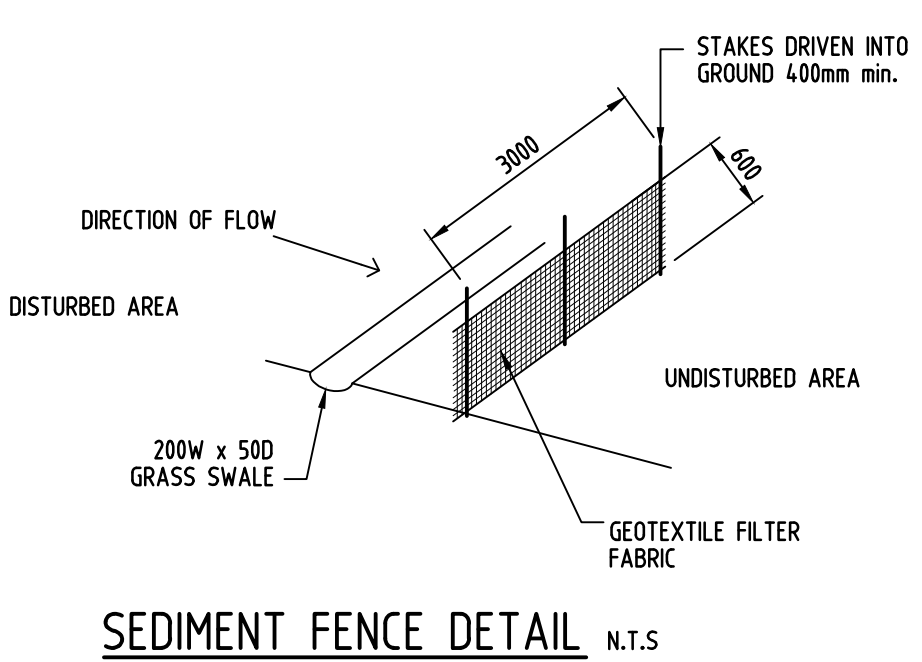
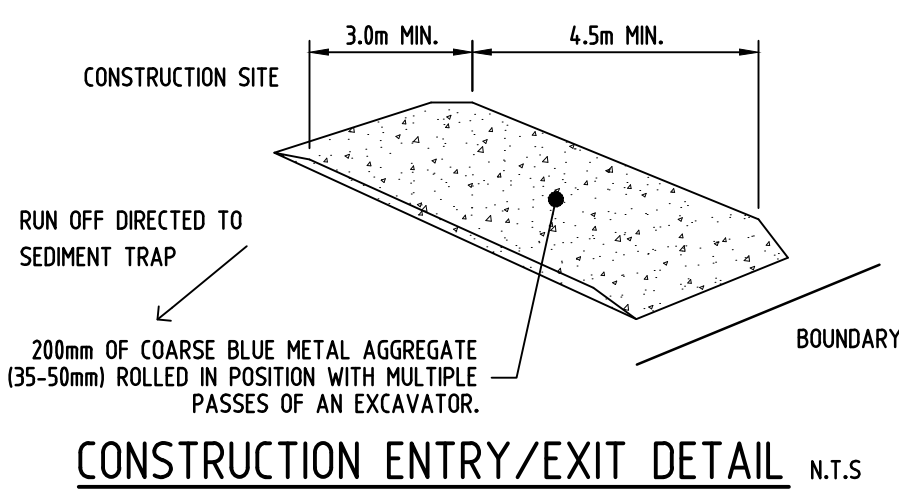
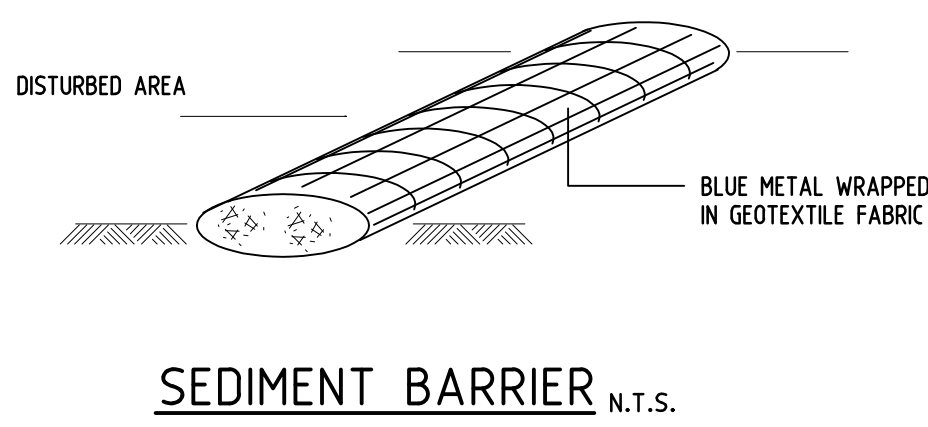
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**ATLANTIS WALL DRAIN DETAIL**  
N.T.S.



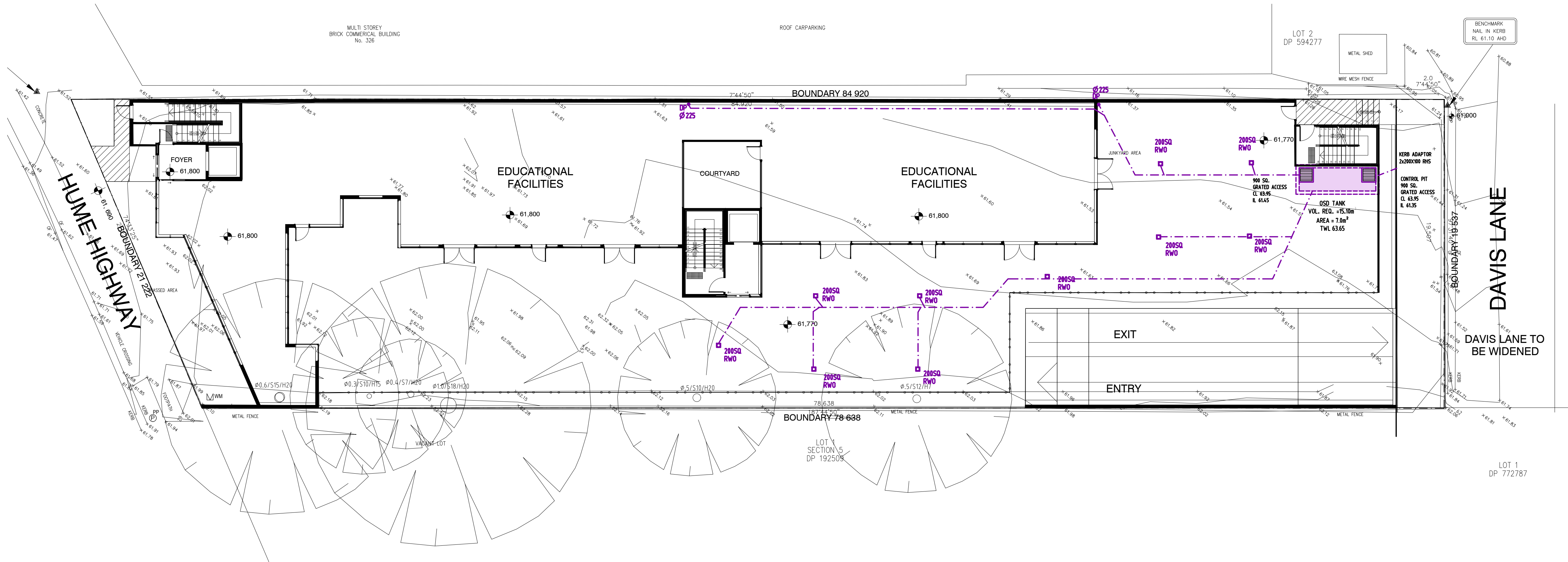
**GENERAL NOTES:**

- ALL SERVICES ARE TO BE LOCATED IN THE FIELD IN CONJUNCTION WITH A RESPONSIBLE OFFICER OF EACH RELEVANT AUTHORITY PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- DRAINAGE PITS ARE TO BE A 450mm SQUARE OR LARGER AS SHOWN, AND FITTED WITH A GALVANIZED GRATE.
- ALL PITS ARE TO HAVE A GALVANISED GRATE AND FRAME. FRAME TO BE CAST INTEGRALLY WITH THE PIT.
- ALL PITS ARE TO BE BENCH TO HALF PIPE LEVEL.
- PROVIDE STEP IRONS WHERE PIT IS DEEPER THAN 1m. AT 450mm CENTRES.
- DRAINAGE PIPES SHALL BE SEWER GRADE UPVC UNLESS OTHERWISE NOTED.
- DRAINAGE PIPE SIZES ARE 100mm DIAMETER UNLESS OTHERWISE NOTED.
- ALL BARE SOIL AREAS ARE TO BE PROTECTED FROM EROSION BY TEMPORARY MEASURES AND REVEGETATED AT THE CESSATION OF CONSTRUCTION.
- THE DOWNHILL BOUNDARY OF THE SITE IS TO BE PROTECTED BY HAY BALES OR A FILTER FABRIC FENCE DURING CONSTRUCTION AS SHOWN IN THE ATTACHED DETAILS.
- THE STREET DRAINAGE PIT LOCATED DOWNHILL OF THE SITE SHALL BE PROTECTED FROM SEDIMENT WITH HAY BALES.
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- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL AND STRUCTURAL ENGINEERING DOCUMENTS. ANY DISCREPANCIES SHALL BE REPORTED BY THE BUILDER TO THE ARCHITECT PRIOR TO COMMENCEMENT OF THE ITEM.
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				REV.
				B





GROUND FLOOR DRAINAGE PLAN SCALE - 1:150

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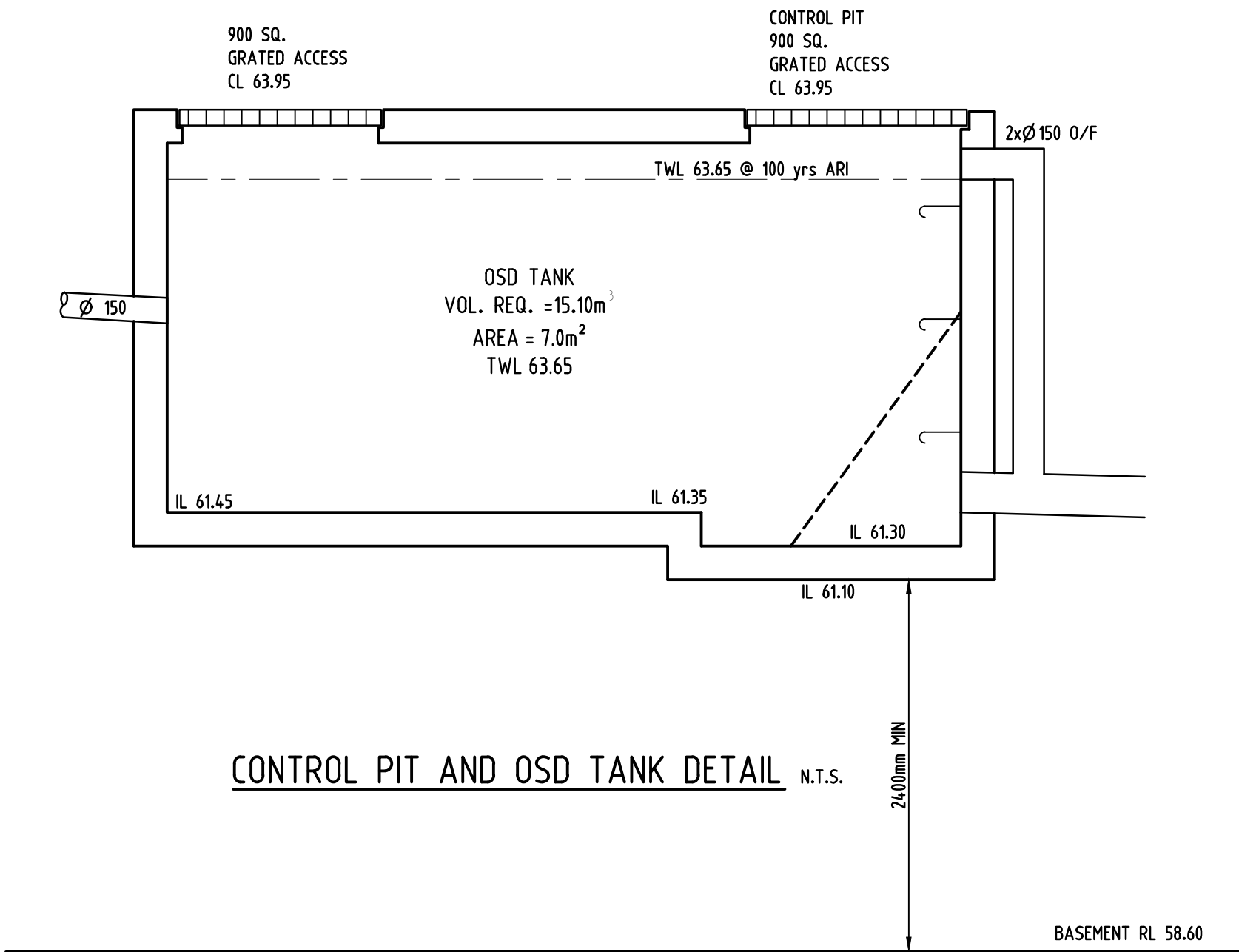
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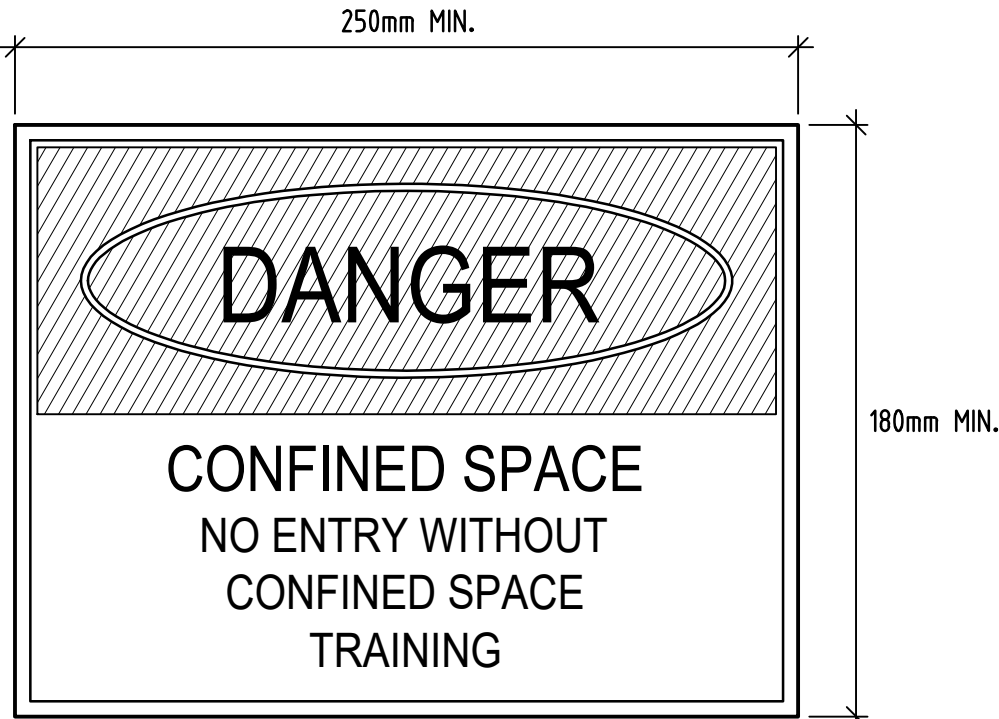
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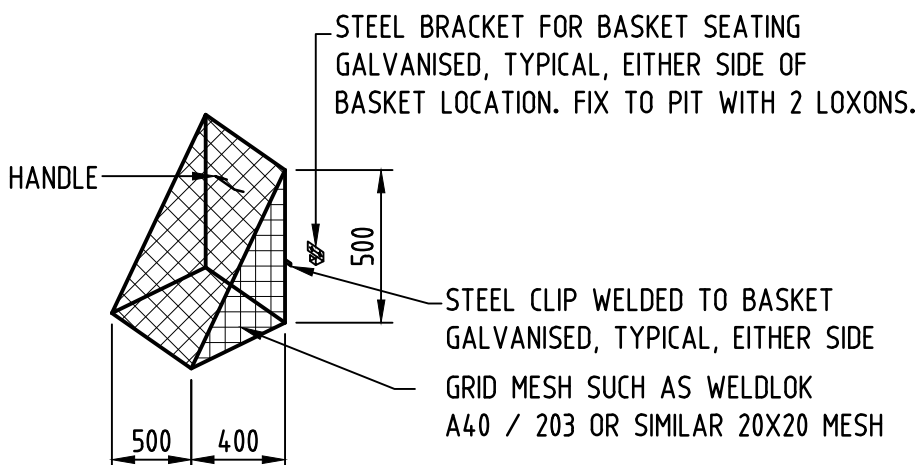
CONTROL PIT AND OSD TANK DETAIL N.T.S.



- COLOURS:
- 'DANGER' AND BACKGROUND - WHITE
  - ELLIPTICLE AREA - RED
  - RECTANGLE CONTAINING ELLIPSE - BLACK
  - OTHER LETTERING AND BORDER - BLACK

CONFINED SPACE DANGER SIGN N.T.S

- 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.
- MINIMUM DIMENSIONS OF THE SIGN
  - ~ 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS)
  - ~ 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES)
- THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINUM OR POLYPROPELINE.
- SIGN SHALL BE AFIXED USING SCREWS AT EACH CORNER OF THE SIGN.



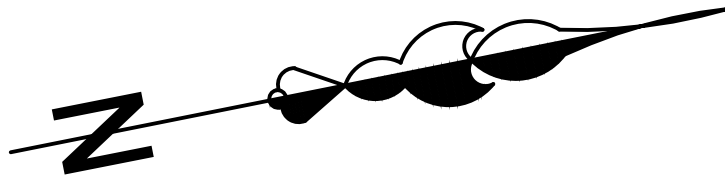
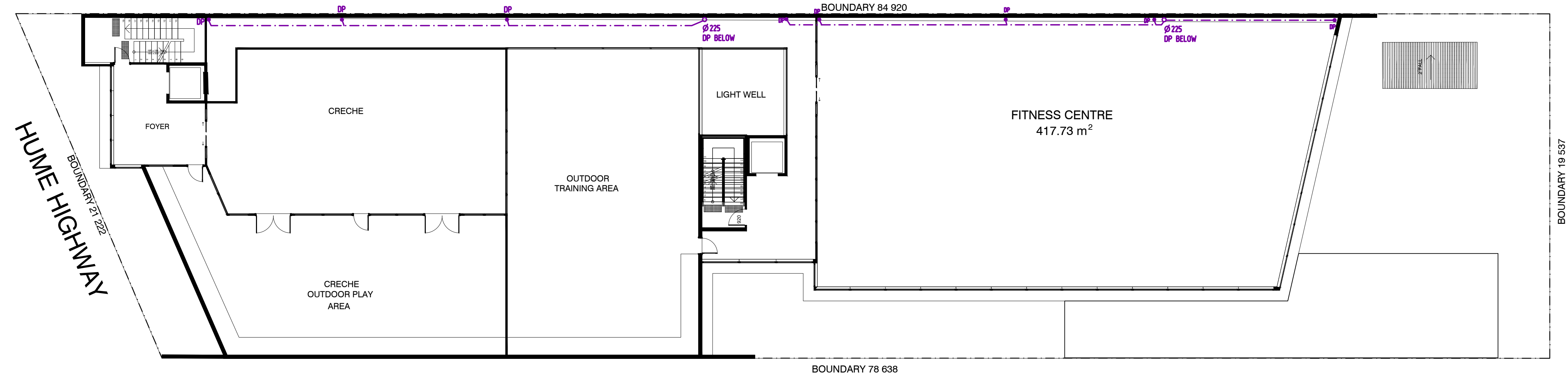
DESIGN SUMMARY

QUANTITY	VALUE
SITE AREA	1617.8m <sup>2</sup>
IMPERVIOUS PRE-DEVELOPMENT	30%
IMPERVIOUS POST-DEVELOPMENT	100%
AREA DRAINED TO THE CONTROL PIT (%)	100%
PERMISSIBLE SITE DISCHARGE @ 5yr. ARI.	4.1.0L/s
REQUIRED STORAGE @ 5yr. ARI.	7.9m <sup>3</sup>
PERMISSIBLE SITE DISCHARGE @ 10yr. ARI.	4.8.6L/s
REQUIRED STORAGE @ 10yr. ARI.	10.4m <sup>3</sup>
PERMISSIBLE SITE DISCHARGE @ 20yr. ARI.	5.6.5L/s
REQUIRED STORAGE @ 20yr. ARI.	11.25m <sup>3</sup>
PERMISSIBLE SITE DISCHARGE @ 50yr. ARI.	6.4.1L/s
REQUIRED STORAGE @ 50yr. ARI.	12.4m <sup>3</sup>
PERMISSIBLE SITE DISCHARGE @ 100yr. ARI.	7.2.0 L/s
REQUIRED STORAGE @ 100yr. ARI.	15.10m <sup>3</sup>

THE POST & PRE-DEVELOPMENT PEAK DISCHARGE FROM THE SUBJECT SITE WERE DETERMINED FOR THE 5,10,20, 50 & 100 yrs ARI, FOR STORM DURATION FROM 10 MINUTES TO 45 MINUTES USING ILSAX COMPUTER PROGRAM & CANTERBURY-BANKSTOWN COUNCIL RAINFALL FILES.

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FIRST FLOOR DRAINAGE PLAN SCALE - 1:150

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