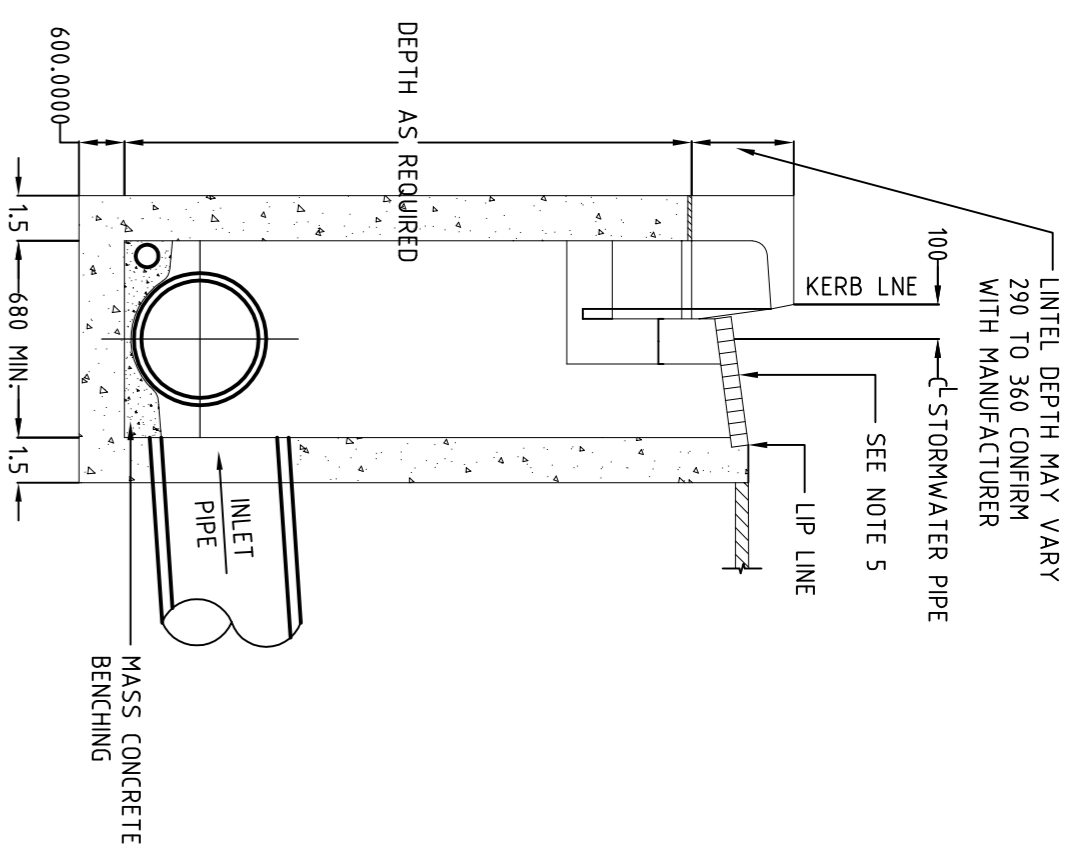


SECTION A - A

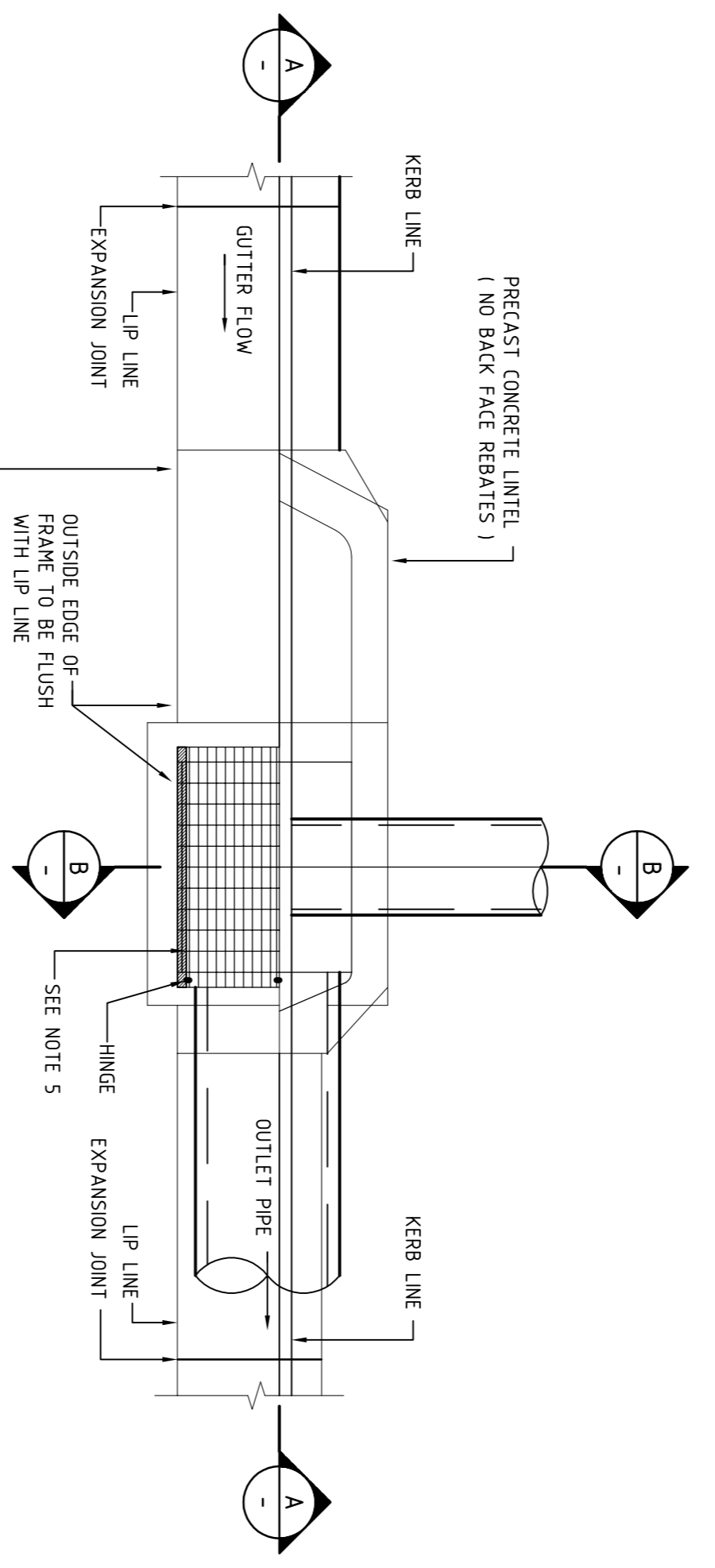


SECTION B - B

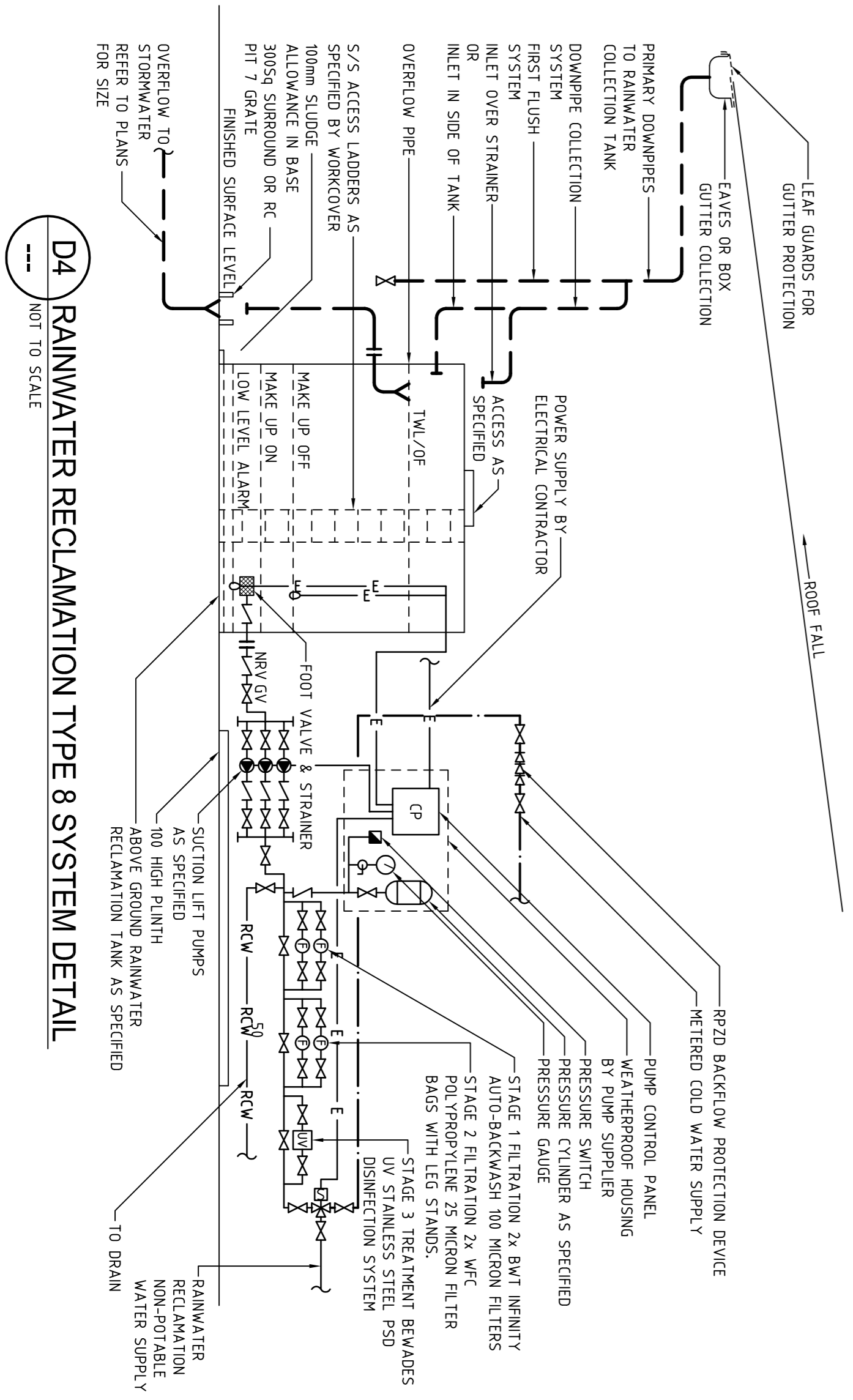
NOTES:

1. CONCRETE TO HAVE A MIN. COMPRESSIVE STRENGTH (F/C) OF 20 MPa AT 28 DAYS.
2. TOP OF BENCHING TO BE 1/2 OF OUTLET PIPE DIAMETER.
3. PROVIDE 3m LENGTH OF 100mm \varnothing SUBSOIL DRAINAGE PIPE UNWRAPPED IN FABRIC SOCK ADJACENT TO INLET PIPE INVERTS AND DRAINING TO THE PIT.
4. LOCATE LINTELS CENTRALLY IN SAG PIT'S.
5. PROVIDE WELDUK HOT DIPPED GALVANISED GULLY GRATE GGR8-50 (OR APPROVED EQUIVALENT) SET PARALLEL TO ADJACENT GUTTER AND 10 LOWER FOR RESIDENTIAL ROADS. FOR INDUSTRIAL ROADS USE WELDUK HEAVY DUTY HOT DIPPED GALVANISED GULLY GRATE GGR8-42A (OR APPROVED EQUIVALENT) INSTALLED AS ABOVE. NOTE IN THIS INSTANCE THE OUTSIDE EDGE OF THE FRAME NEED NOT TO BE FLUSH WITH THE LIP LINE.
6. ALL GRATES TO BE PROVIDED WITH A LOCKING CLIP.
7. ALL GRATES TO BE HOT DIP GALVANISED.
8. ALL GRATES GREATER THAN 12m DEPTH FROM GRATE TO INVERT ARE TO PROVIDE STEP IRONS.
9. FOR PIT DEPTHS BETWEEN 1.8m AND 3.0m DEPTH, PROVIDE N12 @ 250/C/C EACHWAY AT 40 COVER TO INSURE FACE WALLS AND BASE. PROVIDE 400 LAP AT CORNERS. FOR PIT DEPTHS GREATER THAN 3.0m, SEPARATE DESIGN IS REQUIRED.
10. DURING INSTALLATION OF THE GRATE & FRAME, THE CONTRACTOR IS TO ENSURE A MINIMUM CLEARANCE OF 40mm BETWEEN THE LINTEL AND OPENED GRATE.
11. WHERE EXTENDED CHAMBER WIDTH EXCEEDS 12m, ROOF REINFORCEMENT TO BE DESIGNED BY A PROFESSIONAL STRUCTURAL ENGINEER.
12. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

GRATED GULLY PIT
NOTE TO SCALE



PLAN

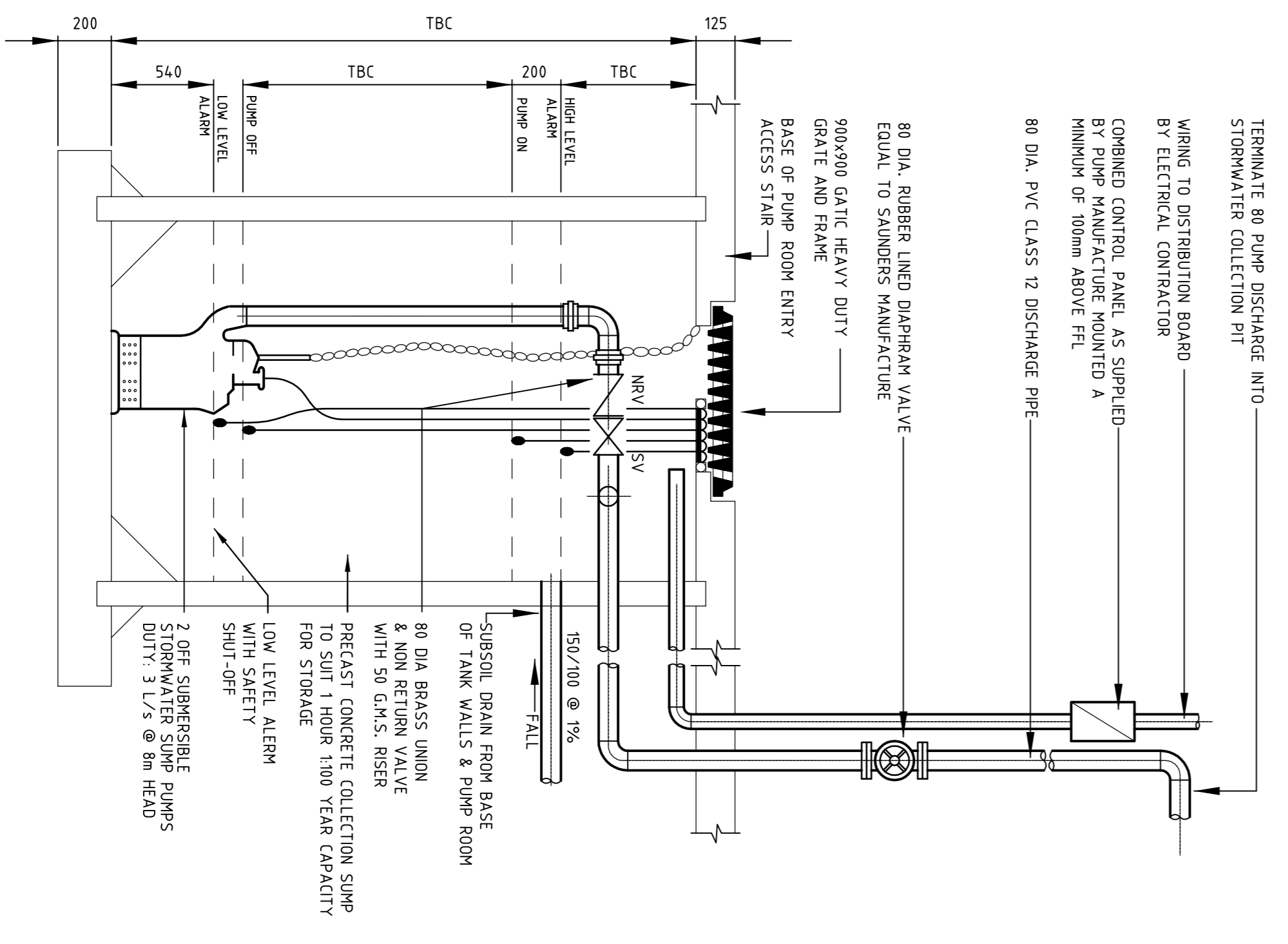


D4 RAINWATER RECLAMATION TYPE 8 SYSTEM DETAIL
NOT TO SCALE

OSD AND PERMISSIBLE SITE DISCHARGE CALCULATIONS			
REQUIREMENTS BASED ON WILLOUGHBY CITY COUNCIL ATTACHMENT 25			
OSD CALCULATION			
ZONE	VOLUME OF STORAGE	SITE AREA	OSD REQUIRED
2	REQUIRED m ³ / HA	4323	m ³
	360	0.432	155.52
PSD CALCULATION			
ZONE	PERMISSIBLE SITE DIS REQUIRED L/sec / HA	SITE AREA	OSD REQUIRED
2	170	4323	L/sec
		0.432	73.44
ORIFICE CALCULATION			
	HEIGHT ABOVE ORIFICE IN m	PSD L/Sec	ORIFICE DIA mm
	1.48	73.44	97

NOTES:

CLIENT	Welles Thomas Pty Ltd
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ARCHITECT	PTW Architects Level 17, 9 Castlereagh St Sydney NSW Australia 2000 T 612 9232 5877 F 612 9221 4199 www.ptw.com.au
ENGINEER	GEORGE FLOTH PTY. LIMITED CONSULTING ENGINEERS LEVEL 1, TOWER ONE CHATSWOOD NSW 2067 AUSTRALIA T 61-29419 4100 E george@geflth.com.au W www.geflth.com.au
DRAWING TITLE	HYDRAULIC SERVICES
DRAWING NO.	DETAIL SHEET 3
DATE	OCT 2009
DESIGNED BY	AS SHOWN @ A1
CHECKED BY	JA
DATE STARTED	OCT 2009
SCALE	AS SHOWN @ A1
PROJECT NO.	S09083
DRAWING NO.	H10
REVISION	P1



DETAIL OF SUBSOIL / STORMWATER
COLLECTION PUMP WELL
SCALE N15

0 10 20 30 40 50 60 70 80 90 100mm

WELLES THOMAS PLAZA
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HYDRAULIC SERVICES

DETAIL SHEET 3

ENGINEER: JA
DATE STARTED: OCT 2009
SCALE: AS SHOWN @ A1
PROJECT NO: S09083
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REVISION: P1