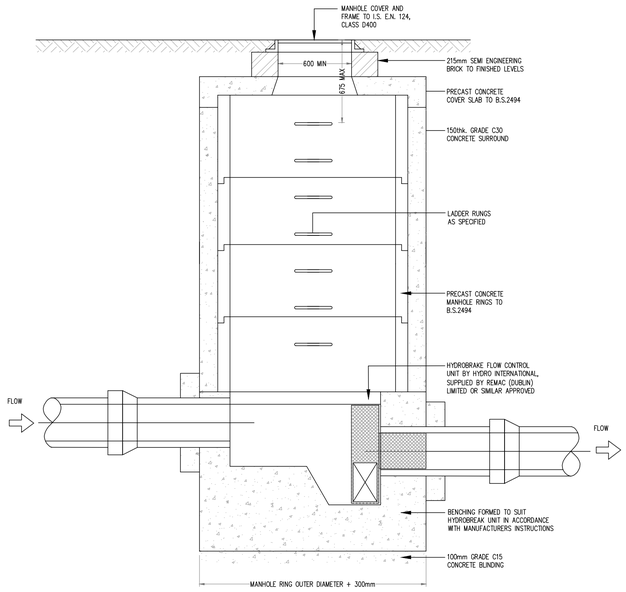
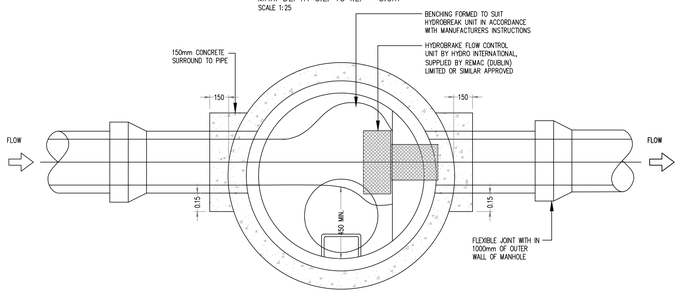


HYDROBRAKE CHAMBER
MAX. DEPTH G.L. TO I.L. – 3.0m
SCALE 1:25



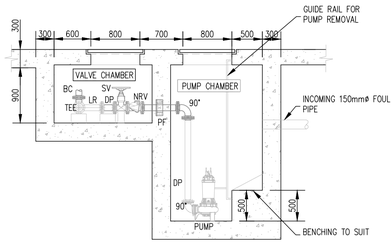
PLAN ON HYDROBRAKE CHAMBER
MAX. DEPTH G.L. TO I.L. –3.0m
SCALE 1:25

NOTES :

1. DO NOT SCALE FROM THIS DRAWING USE STATED DIMENSIONS ONLY. IF IN DOUBT CONSULT THE ENGINEER.
2. LEVELS REFER TO O.S. DATUM MALIN HEAD.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE ALL OF THE CONTRACT DOCUMENTS IN PARTICULAR THE ARCHITECT'S, LANDSCAPE ARCHITECT'S AND SERVICE ENGINEER'S SITE LAYOUT DRAWINGS.
4. ALL CIVIL WORKS SHALL BE COMPLETED IN ACCORDANCE WITH SPECIFICATIONS.
5. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING, PROTECTING AND MAINTAINING ALL EXISTING SERVICES WITHIN THE SITE BOUNDARY. THE ENGINEER HAS SHOWN KNOW SERVICES ON THE DRAWINGS BUT GIVES NO GUARANTEE THAT THESE ARE THE ONLY SERVICES WITHIN THE SITE BOUNDARY. THE CONTRACTOR SHALL CONTACT THE RELEVENT STATUTORY AND PRIVATE UTILITY COMPNIES AND CONFIRM THE LOCATION OF THEIR PLANT FOR HIMSELF.
6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF THE NAME AND LOCATION OF ALL TIPS USED FOR THE DISPOSAL OF MATERIAL OFF SITE.
7. THE CONTRACTOR SHALL ENSURE THAT ADEQUATE PROVISIONS ARE IN PLACE TO PREVENT THE SPREAD OF DIRT, MUD AND SITE MATERIAL ON THE PUBLIC ROAD. THE CONTRACTOR SHALL ENSURE THAT THE PUBLIC ROADS AROUND THE SITE ARE CLEANED ON A REGULAR BASIS, OR AS DIRECTED BY THE ENGINEER, WITH A MECHANICAL SUCTION SWEEPER.
8. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THAT NOISE AND DUST ARE MINIMISED.
9. BLINDING CONCRETE SHALL BE GRADE 15N20. BLINDING SHALL BE A MINIMUM OF 100MM THICK. ALL STRUCTURAL CONCRETE SHALL BE GRADE 30N20 UNLESS SPECIFIED OTHERWISE ELSEWHERE.
10. ALL EXPOSED CONCRETE FINISHES SHOULD BE FAIR FACED FINISHES UNLESS SPECIFIED OTHERWISE ELSEWHERE.
11. HANDRAILS SHALL BE GRADE 316 STAINLESS STEEL. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURE.

ABBREVIATIONS

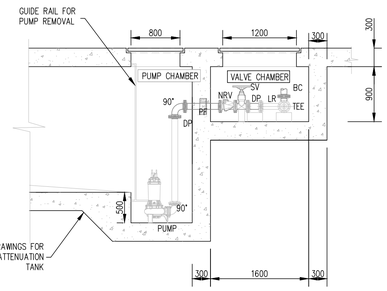
SV	SLUICE VALVE
NRV	NON RETURN VALVE
BC	BAUER CONNECTION
DP	DISTANCE PIECE
RT	RADIAL TEE
LR	LONG RADIUS BEND
TEE	TEE
90°	90° BEND
PF	PUDDLE FLANGE
PUMP	SPEC REQ'D



SECTION C–C
SCALE 1:50

ABBREVIATIONS

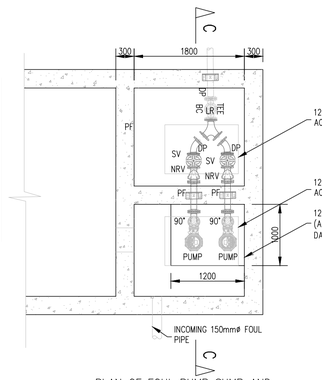
SV	SLUICE VALVE
NRV	NON RETURN VALVE
BC	BAUER CONNECTION
DP	DISTANCE PIECE
RT	RADIAL TEE
LR	LONG RADIUS BEND
TEE	TEE
90°	90° BEND
PF	PUDDLE FLANGE
PUMP	SPEC REQ'D



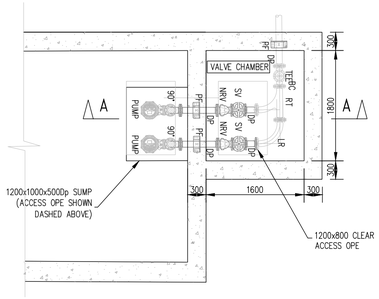
SURFACE WATER ATTENUATION SECTION A–A
SCALE 1:50

NOTE:

1. ALL PUMPING STATION PIPE WORK, FITTINGS AND VALVES ETC. TO BE ALL FLANGED DUCTILE IRON IS EN 598 WITH PN–16 FLANGES TO BE EN 1092–1.
2. ALL PUMP, VALVE AND TANK COVERS TO BE D400 LOCKABLE SEALED COVERS FLUSH WITH ROOF SLAB.
3. REFER TO STRUCTURAL DRAWINGS FOR EXACT POSITION OF WALLS, RC, THICKNESSES ETC.



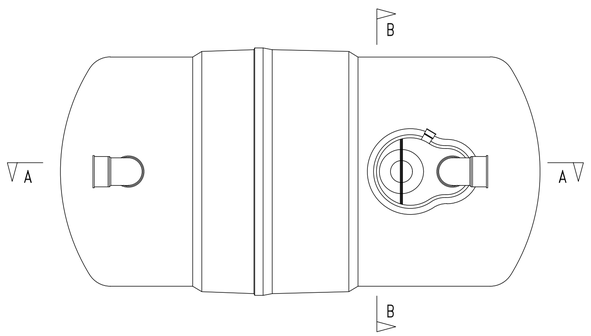
PLAN OF FOUL PUMP SUMP AND VALVE CHAMBER
SCALE 1:50



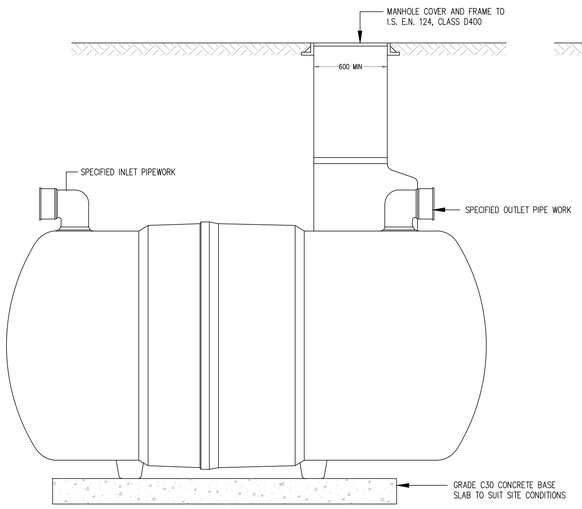
PLAN OF ATTENUATION TANK, PUMP SUMP AND VALVE CHAMBER
SCALE 1:50

PUMPING PLANT:–
SPECIFIC MINIMUM REQUIREMENTS FOR PUMPING PLANT ARE AS FOLLOWS:

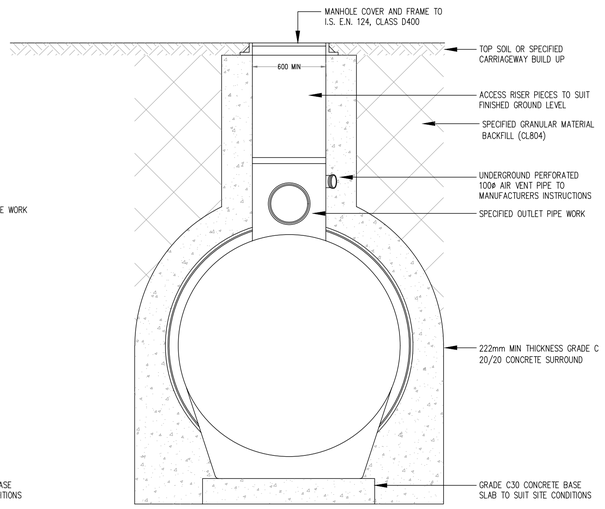
1. PUMPING PLANT SHOULD BE OF FAILSAFE DESIGN.
2. ALL PLANT AND EQUIPMENT TO BE SUITABLY EX–RATED IN ACCORDANCE WITH THE HAZARDOUS AREA CLASSIFICATION FOR THE PUMPING STATION SITE.
3. PUMPING PLANT TO BE DUTY AND STANDBY ARRANGEMENT OR DUTY/ASSIST AND STANDBY ARRANGEMENT;
4. PUMPS TO BE SUBMERSIBLE PUMPS WITH AUTOMATIC DECOUPLING ARRANGEMENTS COMPLETE WITH TWIN GUIDE RAILS, EASY LIFT, ETC.;
5. PUMPING PLANT TO BE OF PROVEN TRACK RECORD; INCLUDING COOLING JACKETS.
6. AUTOMATIC SELECTION ROTATION OF THE DUTY/STANDBY OR DUTY/ASSIST/STAND–BY PUMPS TO BE PROVIDED ON AN HOURS RUN BASIS WITH MANUAL OVER–RIDE;
7. PUMPS TO BE SIZED FOR A MINIMUM OF 3 TIMES DWF, IF STORAGE PROVIDED, AND 6 TIMES DWF OTHERWISE;
8. PUMPS TO BE SUITABLE FOR PUMPING UNSCREENED WASTEWATER CONTAINING FIBROUS MATERIAL WITH A MINIMUM SOLIDS PASSAGE SIZE OF 100MM. PUMPS CONNECTED TO SMALL DIAMETER RISING MAINS TO BE FITTED WITH AN ANTI–BLOCKAGE/ANTI–RAGGING SYSTEM LINKED TO THE POWER AMP RECORDING SYSTEM;
9. PUMPS TO HAVE A MINIMUM DISCHARGE SIZE OF 80MM;
10. PUMP CONTROL TO BE VIA ULTRASONIC LEVEL TRANSDUCERS, LOCATED ABOVE LIQUID LEVEL, IN AN EASILY ACCESSIBLE LOCATION;
11. THE PUMP GUIDE SYSTEM TO ALLOW THE PUMP UNITS TO BE AUTOMATICALLY COUPLED TO THE OUTLET PIPEWORK AND HELD IN PLACE BY ITS OWN WEIGHT;
12. THE GUIDE SYSTEM TO ALLOW THE PUMP UNITS TO BE LIFTED TO THE TOP OF THE WET WELL WITHOUT THE NEED TO UNDO ANY FIXING ARRANGEMENTS OR TO ENTER THE WET WELL;
13. ANCHOR BOLTS SHALL BE STAINLESS STEEL, STAINLESS STEEL AND GALVANISED STEEL SURFACES SHALL NOT COME INTO CONTACT WITH EACH OTHER;
14. PUMPS TO BE MOUNTED ON A CAST IRON COUPLING/DUCK–FOOT PEDESTAL, WITH AUTOMATIC DECOUPLING ARRANGEMENTS;
15. PUMP ARRANGEMENT TO ALLOW EASY INSTALLATION AND SPEEDY REMOVAL FROM THE SUMP WITHOUT NEED FOR OPERATOR ENTRY TO THE SUMP;
16. PUMPS GUIDE RAILS TO BE OF GALVANISED MILD STEEL OR STAINLESS STEEL (GRADE 316);
17. PUMPS TO BE PROVIDED WITH CERTIFIED, STAINLESS STEEL LIFTING CHAIN (DESIGNED TO BS4942), SUITABLY SIZED AND FIT FOR PURPOSE, WITH 8MM THICK LINKS, AT LEAST, AND LARGE LINKS A NOT MORE THAN 1M INTERVALS;
18. SPARE CERTIFIED STAINLESS STEEL CHAINS, OF SIMILAR CAPACITY TO THE INSTALLED CHAIN UNIT, SHALL BE PROVIDED TO FACILITATE REGULAR INSPECTION/REPLACEMENT OF THE LIFTING CHAIN;
19. ANCHOR BOLTS TO BE OF STAINLESS STEEL OR GALVANISED STEEL SUITABLE FOR THE MATERIAL BEING RETAINED (NO CONTACT BETWEEN STAINLESS STEEL AND GALVANISED STEEL);
20. DISCHARGE PIPEWORK WITHIN THE WET WELL TO BE COMPLETE WITH BENDS, TEE–PIECES, FITTINGS, ETC. TO LINK THE WET WELL PIPEWORK TO THE VALVE CHAMBER PIPEWORK;
21. PIPEWORK WITHIN THE VALVE CHAMBER TO INCORPORATE ISOLATION VALVES (ONE PER PUMP INSTALLED), NON–RETURN VALVES (ONE PER PUMP INSTALLED), BENDS, TEE–PIECES, ETC.;
22. NON–RETURN VALVES TO HAVE REMOVABLE COVERS, DUCTILE IRON BODY WITH RESILIENT SEATED DISC AND STAINLESS STEEL HINGE PIN, COMPLETE WITH EITHER A BALL WEIGHT OR LEVER ARM AND WEIGHT;
23. BENDS TO BE SWEPT/SLOW BENDS TO MINIMISE BLOCKAGES AND PIPE FRICTION LOSSES; SLUICE VALVES TO BE PROVIDED WITH REMOVABLE HAND–WHEELS;
24. FLANGE ADAPTORS TO BE PROVIDED TO PERMIT EASE OF REMOVAL OF VALVES FROM THE PIPEWORK;
25. ALL PIPEWORK AND VALVES TO BE OF DUCTILE IRON, PN–16, TO BS 4772 AND EN 598, SUITABLE FOR USE WITH SEWAGE;
26. PUMP MOTORS TO BE HIGH EFFICIENCY WITH CLASS F INSULATION AND IP68 RATING; PUMP EFFICIENCY SHALL BE MAINTAINED WITHIN 15% OF ITS MAXIMUM EFFICIENCY OVER THE WHOLE OF THE SPECIFIED DUTY RANGE.
27. MOTOR AND MOTOR HOUSING TO BE BOLTED TO THE PUMP HOUSING, SHRINK OR PRESS FIT ASSEMBLIES WILL NOT BE ACCEPTED;
28. MOTORS MUST INCLUDE STATOR OVER–TEMPERATURE PROTECTION IN THE FORM OF THERMISTORS EMBEDDED IN EACH PHASE OF THE WINDINGS, OVER–TEMPERATURE PROTECTION SHOULD AUTOMATICALLY RE–SET WHEN THE TEMPERATURE RETURNS TO NORMAL;
29. PUMPS SHALL HAVE A MAXIMUM SPEED OF 1500RPM. PUMP CHARACTERISTICS SHALL BE STABLE, NON–OVERLOADING AND SHALL BE SUCH THAT THE PUMPS SHALL OPERATE AS CLOSE TO MAXIMUM EFFICIENCY AT THE DESIGN POINT;
30. PUMPS TO BE PROVIDED WITH INDICATOR PLATES PROVIDING INFORMATION FOR THE PUMP, MOTOR, ETC. A DUPLICATE STAINLESS STEEL PLATE TO BE PROVIDED AND MOUNTED IN THE CONTROL PANEL.
31. WHERE VALVES ARE LOCATED IN DRYWELL SUMP, VALVE EXTENSIONS HANDLES TO BE SUPPLIED (INCLUDING THE CORING OF THE CONCRETE COVER ABOVE) WITH 80MM HOLE.
32. PUMP CHAIN TO BE STAINLESS GRADE STAMPED AND CERTIFIED WITH OVAL SHAPED MASTER RINGS EVERY ONE METER IN LENGTH.
33. ALL EMERGENCY STOPS TO BE LOCATED OVER GROUND ON STAINLESS STEEL PILLARS IN THE LOCATION /AREA OF PUMP SUMPS.
34. ALL PANELS TO BE LABELLED ACCORDINGLY.
35. ALL PIPE WORK TO BE LABELLED WITH DIRECTIONAL ARROWS AND LABELS STATING WHAT IS IN PIPE WORK .E.G. FERRIC/FOUL ETC.
36. ALL CHAMBERS TO HAVE SIGNAGE STAMPED ON THEM STATING WHAT THEY ARE E.G. FOUL SUMP/STORM SUMP.
37. NON RETURN VALVES TO BE GOOD QUALITY FLAP TYPE FOR SEWAGE NOT WATER.



KLARGESTER CLASS 1 INTERCEPTOR (O.S.A.) PLAN VIEW
SCALE 1:25



KLARGESTER CLASS 1 INTERCEPTOR (O.S.A.) SECTION A–A
SCALE 1:25



KLARGESTER CLASS 1 INTERCEPTOR (O.S.A.) SECTION B–B
SCALE 1:25

Q003

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NOTES
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Rev. No.	Date	REVISION NOTE	Drn. By	Chkd. By
P1	03.06.2022	ISSUED FOR PLANNING	IK	FDB

Architect	Henry J. Lyons
Project	Proposed Development On The Belgard Square East.
Title	Drainage Details Sheet 1 of 3
Dwg. No.	Q003-CSC-ZZ-XX-DR-C-0012

Date	Drn by	Chkd by	Aprvd by	Scale	Revision
Sept 2021	IK	FDB	NB	AS SHOWN @ A1	P1

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