



- PUMPING PLANT -**
SPECIFIC MINIMUM REQUIREMENTS FOR PUMPING PLANT ARE AS FOLLOWS:
- PUMPING PLANT SHOULD BE OF FAISAFE DESIGN.
 - ALL PLANT AND EQUIPMENT TO BE SUITABLY EXTERIORATED IN ACCORDANCE WITH THE HAZARDOUS AREA CLASSIFICATION FOR THE PUMPING STATION SITE.
 - PUMPING PLANT TO BE DUTY AND STANDBY ARRANGEMENT OR DUTY/ASSIST AND STANDBY ARRANGEMENT.
 - PUMPS TO BE SUBMERSIBLE PUMPS WITH AUTOMATIC DECOUPLING ARRANGEMENTS COMPLETE WITH TWIN GUIDE RAILS, EASY LIFT, ETC.
 - PUMPING PLANT TO BE OF PROVEN TRACK RECORD, INCLUDING COOLING JACKETS.
 - AUTOMATIC SELECTION/ROTATION OF THE DUTY/STANDBY OR DUTY/ASSIST/STANDBY PUMPS TO BE PROVIDED ON AN HOURES RUN BASIS WITH MANUAL OVER-RIDE.
 - PUMPS TO BE SIZED FOR A MINIMUM OF 3 TIMES DWF, IF STORAGE PROVIDED, AND 6 TIMES DWF OTHERWISE.
 - PUMPS TO BE SUITABLE FOR PUMPING UNSCREENED WASTEWATER CONTAINING FIBROUS MATERIAL WITH A MINIMUM SOLES 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.
 - PUMPS TO HAVE A MINIMUM DISCHARGE SIZE OF 80MM.
 - PUMP CONTROL TO BE VIA ULTRASONIC LEVEL TRANSDUCERS, LOCATED ABOVE LIQUID LEVEL, IN AN EASILY ACCESSIBLE LOCATION.
 - 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.
 - 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.
 - ANCHOR BOLTS SHALL BE STAINLESS STEEL, STAINLESS STEEL AND GALVANISED STEEL SURFACES SHALL NOT COME INTO CONTACT WITH EACH OTHER.
 - PUMPS TO BE MOUNTED ON A CAST IRON COUPLING/DUCK-FOOT PEDESTAL, WITH AUTOMATIC DECOUPLING ARRANGEMENTS.
 - PUMP ARRANGEMENT TO ALLOW EASY INSTALLATION AND SPEEDY REMOVAL FROM THE SUMP WITHOUT NEED FOR OPERATOR ENTRY TO THE SUMP.
 - PUMPS GUIDE RAILS TO BE OF GALVANISED MILD STEEL OR STAINLESS STEEL (GRADE 316).
 - 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.
 - 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.
 - ANCHOR BOLTS TO BE OF STAINLESS STEEL OR GALVANISED STEEL SUITABLE FOR THE MATERIAL BEING RETAINED (NO CONTACT BETWEEN STAINLESS STEEL AND GALVANISED STEEL).
 - 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.
 - PIPEWORK WITHIN THE VALVE CHAMBER TO INCORPORATE ISOLATION VALVES (ONE PER PUMP INSTALLED), NON-RETURN VALVES (ONE PER PUMP INSTALLED), BENDS, TEE-PIECES, ETC.
 - 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.
 - BENDS TO BE SWEP/SLW BENDS TO MINIMISE BLOCKAGES AND PIPE FRICTION LOSSES. SLUICE VALVES TO BE PROVIDED WITH REMOVABLE HAND-WHEELS.
 - FLANGE ADAPTORS TO BE PROVIDED TO PERMIT EASE OF REMOVAL OF VALVES FROM THE PIPEWORK.
 - ALL PIPEWORK AND VALVES TO BE OF DUCTILE IRON, PN-16, TO BS 4772 AND EN 588, SUITABLE FOR USE WITH SEWAGE.
 - 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.
 - MOTOR AND MOTOR HOUSING TO BE BOLTED TO THE PUMP HOUSING, SHRINK OR PRESS FIT ASSEMBLIES WILL NOT BE ACCEPTED.
 - MOTORS MUST INCLUDE STATOR OVERTEMPERATURE 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.
 - 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.
 - 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.
 - WHERE VALVES ARE LOCATED IN DRYWELL SUMP, VALVE EXTENSIONS HANDLES TO BE SUPPLIED (INCLUDING THE CORING OF THE CONCRETE COVER ABOVE) WITH 80MM HOLE.
 - PUMP CHAIN TO BE STAINLESS GRADE STAMPED AND CERTIFIED WITH OVAL SHAPED MASTER RINGS EVERY ONE METER IN LENGTH.
 - ALL EMERGENCY STOPS TO BE LOCATED OVER GROUND ON STAINLESS STEEL PILLARS IN THE LOCATION AREA OF PUMP SUMPS.
 - ALL PANELS TO BE LABELLED ACCORDINGLY.
 - ALL PIPE WORK TO BE LABELLED WITH DIRECTIONAL ARROWS AND LABELS STATING WHAT IS IN PIPE WORK, E.G. FERRIC/FOUL, ETC.
 - ALL CHAMBERS TO HAVE SIGNAGE STAMPED ON THEM STATING WHAT THEY ARE, E.G. FOUL SUMP/STORM SUMP.
 - NON RETURN VALVES TO BE GOOD QUALITY FLAP TYPE FOR SEWAGE NOT WATER.

- 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
 - PUMPSPEC REQ'D
- NOTE:**
- ALL PUMPING STATION PIPE WORK, FITTINGS AND VALVES ETC. TO BE ALL FLANGED DUCTILE IRON IS EN 588 WITH PN-16 FLANGES TO BE EN 1092-1.
 - ALL PUMP, VALVE AND TANK COVERS TO BE DOME LOCKABLE SEALED COVERS FLUSH WITH ROOF SLAB.
 - REFER TO STRUCTURAL DRAWINGS FOR EXACT POSITION OF WALLS, RC, THICKNESSES ETC.
 - PUMPS SET TO 2.5L/SEC. 5m HEAD

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NOTES

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Rev. No.	Date	REVISION NOTE

Rev. No.	Date	REVISION NOTE	Dim. By	Chkd. By

Architect	Scott Tallon Walker			
Project	Proposed Development at Clonkeen Road			
Title	Proposed Pump Station Details			
Dwg. No.	W012-CSC-ZZ-XX-DR-C-0024			
Date	02.06.2020	Dim by	DF	Chkd by
			RFM	OS
			AS SHOWN @A1	Revision

PAC/SHD/162/20 **W012**

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Environment I.S. EN ISO 14001:2004
Energy I.S. EN ISO 50001:2011
Health & Safety OHSAS 18001:2007