

TECHNICAL SUBMISSION

PROJECT

Hill Top, Leicester Road
Earl Shilton

CLIENT

Vistry South East Midlands

PROJECT REFERENCE

4271-28225

ISSUE

B

Change History

Issue	Revision Description	Date	Engineer	Approved
A	Initial submission to IWNL for approval / comment	15.01.2025	G. Theyamathy	I. Vrabie
B	Head generated & valve chamber dimension updated, air valve added to valve chamber. Washout chamber added following changes to the rising main long section.	14.07.2025	G. Theyamathy	I. Vrabie

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1: Specification

Our proposal is based on equipment providing compliance with the latest SSG Appendix C – Design and Construction Guidance v2.3 document and Independent Water Network Limited addendum dated 11 November 2023.

2: Hazardous Area Applications

Application - Pumping Station

The pump station is designed to serve the domestic gravity foul inflow from 140 domestic dwellings.

Sewage enters the pump station wet well via a foul water gravity network as designed by Mucklow & Harris. Details of the foul water drainage including location of the foul water pumping station can be found on drainage layouts supplied under separate cover by them.

Surface water run-off from impermeable areas is to be handled by a separate storm water drainage system.

The pumping station transfers the sewage/foul water offsite via a rising main to discharge manhole F62.

The pumping station compound will have an area designed for the parking of maintenance vehicles/tankers.

The pumping station hardstanding is designed to drain to the inlet manhole.

Flammable Atmospheres

Decomposition of raw sewage is not considered a source of explosive atmosphere. The worst-case flammable atmosphere that may exist in a sewage pumping station is hydrocarbon contamination from industrial discharges or tanker spillages. As the actual contaminant is not known the content of the flammable atmosphere cannot be specified but will typically be the lighter more volatile hydrocarbons such as pentane from petrol.

Hazardous Area Classification

The pumping station is designated as a hazardous area, due to the risk of contaminated sewage entering it. The inlet manhole and wet well have been classified as zone 2 internally as it is deemed “as a place in which an explosive atmosphere consisting of a mixture with air or flammable substances in the form of gas, vapours and mists are not likely to occur in normal operation but if it does occur it will only be present for a short period of time only”. As the wet well and valve chamber are linked via the drainpipe and can potentially share an atmosphere, we have also classified the valve chamber as a Zone 2 environment.

A Zoning Plan is shown on drawing 4271-28225-006.

Equipment Category and Certification

All new equipment intended to be located in an area classified as zone 1, has to be certified as equipment **group II category 2 G** equipment (or better). For zone 2 the new equipment shall be certified as equipment **group II category 3 G** equipment (or better). Please refer to Appendix D for the manufacturer’s certificates for the equipment within the Hazardous Area as defined.

3: Design Inflow and Proposed Discharge

The pumping station is designed to serve the domestic foul inflow from 140 residential dwellings.

Based on the 4000 litres per unit per day criteria detailed in the DCG v2.3 specification the design inflow is 6.48L/sec.

Clause D5.6 of the DCG v2.3 specification details that the pump discharge rate is to be at least half the design flow (3.24L/sec) or that to provide a self-cleansing velocity in the rising main. The design is based on the use of a 125mm OD PE100 SDR11 pressure pipe with a 101.3mm bore through which a minimum 6.1L/sec would be required in order to provide a minimum self-cleansing velocity of 0.75m/sec.

The highest of the requirements is the minimum self-cleansing flow rate and our duty calculations and pump selection are therefore based on a discharge rate of 6.10L/sec from Stop Level. We have detailed in Section 7 the actual theoretical discharge rate from key operating levels from the selected pumps.

4: Emergency Storage

The emergency storage has been based on the DCG v2.3 (clause D5.5.3) premise of 160 litres per dwelling.

For the 140 dwellings this equates to a requirement of 22.400m³.

The Design and Construction Guidance document allows storage within any upstream public sewers and public lateral drains and associated manholes and inspection chambers above high-level alarm and up to the upstream end of the lowest public lateral drain as detailed in clause D5.5.2a.

From the data available, we identified the lowest private lateral near plot 14, off main adoptable manhole F43, with an invert level of 97.200m, which we have utilised as maximum storage level.

We would refer you to our storage calculations in Appendix C which shows there is 8.708m³ of storage in the manholes and 0.288m³ of storage in the pipe runs.

The inlet manhole will be a 3.0m diameter by 3.2m deep chamber with its storage included in the above figure.

The proposed wet well will contribute a further 15.925m³ of emergency storage located above the high level alarm area and below the maximum storage level.

This gives an overall storage volume of 24.921m³ which is approximately 11.26% above what is required for the scheme.

5: Rising Main and Surge Analysis

For reliability our design is based on the use of a 125mm OD PE100 SDR11 pressure pipe with a 101.3mm nominal bore.

The rising main is 342.478m long and presents an undulating profile. It forms a high point at the pump station where to prevent against air locking and siphoning, we propose a double orifice sewage rated air release valve mounted on an isolating gate valve with a bevel gearbox and extension spindle all installed in the confines of the valve chamber.

Further, there is an intermediate low point at chainage 30.000m where a washout chamber would be installed. Please refer to appendix E for the arrangement and layout of this chamber.

As the rising main is less than 500m long, we do not intend to prepare a surge analysis report.

6: Retention Time

Our calculations indicate that with the residential development half occupied the retention time in the system is 1.95 hours and when fully occupied 0.97 hours. Both are less than the 6-hour period after which septicity is considered a problem, therefore, we do not propose any permanent septicity control equipment for the site.

If issues are encountered with septicity during the early stages of the development, they would be dealt with using temporary measures.

7: Pump Duty and Selection

From the information provided we calculate the pump duty to be a flow rate of 6.10L/sec against a total head of 23.24m at stop level for which we have selected submersible sewage pumps from the Xylem NP 3153.091 HT range which are fitted with a N-type / 453 impeller and 13.5kW explosion-proof motors designed to operate from a 400V, three phase and neutral power supply.

The pumps would provide the following theoretical discharge rates from key operating levels.

<i>Operating Level</i>	<i>Discharge Rate (L/sec)</i>
Pump Stop	8.15
Mid Water	8.26
Duty Pump Start	8.36
Standby Pump Start	8.45
High Level Alarm	8.51
Wet Well Inlet	9.23
Maximum Storage	9.91

The pumps motors are in excess of 7.5kW so, as per DCG, they will be fitted with a FLS seal leakage detection system which would be monitored via MiniCAS relays in the control panel.

As the wet well depth is under 6m, the pumps will be installed with nylon rope lifting location system.

We have attached our hydraulic calculations, system curves and pump performance details in Appendix B.

8: Pump Station Layout

The pumps, pipework and valves would be installed within concrete chambers constructed by the civil contractor to a layout as shown on drawings 4271-28225-001 to 007. Please refer to Appendix E for drawings.

The non-return valves would be fitted with levers, weights and guards and the gate valves would be fitted with extension spindles.

A flowmeter would be installed in the confines of the valve chamber to provide an indication of pump discharge only. It would not perform any control function.

A double orifice sewage rated air release valve installed in the confines of the valve chamber complete with an isolating gate valve with bevel gear box, extension spindle, and bracket.

The pump station pipework would terminate a short distance outside the valve chamber in a 100mm PN16 nominal bore ductile iron flanged pipe from where provision of the rising main and connecting it to the pump station pipework would be the responsibility of the civil contractor.

9: Pump and Level Control Cabling

Pumps and level controls would be wired back to the control panel via an above ground termination box as shown on our attached drawings.

We have allowed for sealing the two 150mm diameter pump cable ducts and one 100mm diameter level control cable duct from the wet well with a RISE cable transit system at the junction box kiosk end only. We have allowed for sealing the duct for the flowmeter to the kiosk plinth with a RISE cable transit system at the kiosk end.

10: Control Equipment

Automatic Level Control would be via a Pulsar Zenith ultrasonic level controller augmented by 2 separate float switches for high level and back up control, all wired back to a multi compartment control panel complying with the DCG V2.3 Specification.

The Control Panel would be installed within a roadside GRP kiosk of dimensions 2000mm wide x 750mm deep x 1750 high which would have a separate compartment to house the electricity board meters. Please refer to Appendix F for wiring diagrams and kiosk layout.

11: Telemetry Equipment

IWNL telemetry outstation would be installed prior to Adoption. IWNL telemetry is the Nortech Nexus 12 with GSM communication.

12: Access Covers

Steelway FACTA B access covers and frames would be provided for the wet well and valve chamber. The access covers have torsion spring assisted lift lids and internal safety grids for fall protection and demountable posts and barriers.

For the inlet manhole we are proposing a D400 ductile iron cover.

Sizes are as follows:

<i>Chamber</i>	<i>Cover Type</i>	<i>Clear Opening</i>
Inlet Manhole	D400 Ductile Iron	675 x 675mm
Wet Well	Steelway Prolift FACTA B	1500 x 900mm (Single Lid)
Valve Chamber	Steelway Prolift FACTA B	2700 x 1800mm (Multi Lid)

13: Lifting Equipment

A Reid Porta type Davit socket would be installed by the civil contractor adjacent to the pump access opening.

It is not intended to provide a dedicated Davit for this site as they would be carried on the service provider's maintenance vehicles.

14: Inlet Penstock & Baffle Plate

A 150mm square Penstock valve would be mounted in the inlet manhole over the outgoing sewer to the wet well. The penstock valves would be manufactured from cast iron, wall mounting complete with non-rising spindles, support brackets, a single tee key and a top box for the inlet manhole unit.

A stainless steel baffle plate will be installed over the inlet sewer in the wet well.

15: Valve Chamber Drain

An 80mm nominal bore valve chamber drain would be installed with a gate valve located over this within the valve chamber. It is intended in normal operation this gate valve would remain closed.

16: Chambers Access

In accordance with the DCG clause D7.7.5 stainless steel eyebolts would be provided in the wet well and inlet manhole as restraints for temporary ladder access to the chambers.

A galvanised mild steel access ladder with retractable handhold will be provided in the valve chamber as per IWNL requirements.

17: Floodlight

A low energy emergency floodlight mounted on 4m high lampposts would be installed in the location shown on our drawings. See Appendix G for the Floodlight Detail.

18: Services

It would be the responsibility of our client to provide a suitably rated 400 volt 3 Phase and neutral power supply to the control panel. IWNL telemetry is the Nortech Nexus 12 with GSM communication. The Developer should arrange installation of the telemetry equipment direct with IWNL.

Our drawings show a spare duct for the telecom line capped at the site boundary for future use if required should a GPRS signal not be available.

19: Appendices

Appendix A Summary

Technical Summary

Liquid Handled	Foul Water
Number of Pumps	2
Control Philosophy	Duty / Standby
Capacity per Pump (L/sec)	6.10
Head Generated (m)	23.24
Pump Manufacturer	Xylem
Pump Type	NP 3153.091 HT
Impeller Type / Reference	N-type / 453
Solids Handling (mm)	N/A
Hazardous Area Rating of Pump	EXP
Motor Rating (kW)	13.5
Speed (rpm)	1455
Electric Supply	230/400V 50Hz, 3 Phase and Neutral
Full Load Current (Amps)	27
Method of Starting	Star Delta
Length of Cables (m)	30
Level Controls	Pulsar Zenith Ultrasonic plus high level and back up float switches
Wet Well Diameter (mm)	3000
Wet Well Depth (m)	5.4
Station Pipes and Valves (mm)	100
Station Final Discharge Pipe (mm)	100 PN16 Flanged
Pump Station Pipe Material	Ductile Iron
Rising Main (By Civil Contractor)	125mm OD PE100 SDR11 (101.3mm Bore)
Access Covers	Inlet Manhole: 675 x 675mm D400 Cast Iron Wet Well: 1500 x 900mm Steelway Prolift FACTA B Valve Chamber: 2700 x 1800mm Steelway Prolift FACTA B
Inlet Diameter (mm)	150mm
Inlet Isolation	150mm Cast Iron Penstock
General Arrangement Drawings	4271-28225 – 001 to 007

Materials Specification

Pump Station Type	Submersible – Guiderrail Mounted Pumps
Base Specification	SSG Appendix C - Design Construction Guidance v2.3
Addendum	IWNL Adoptable Pumping Station Design Guide V2 – dated 21st November 2022

PUMP:

Single stage fully submersible pump with cast iron case and impeller, which is securely locked to the fully protected motor shaft extension. Impeller as data section.

SEAL CHAMBER:

Buffer chamber between pump and motor, charged with oil retained by opposing seals.

MOTOR:

Squirrel cage induction motor of watertight IP68 enclosure suitable for continuous service and having Klixon lock out circuit for over-temperature protection on Explosion Proof motors.

CABLE:

Suitable length(s) of multi-core VRI PCP sheathed flexible cable connected through watertight gland(s) to the motor windings.

DUCKFOOT:

Cast iron floor fixing duckfoot bend (or pedestal with elbow) incorporating guiderail socket(s) and self-locating boltless pump quick release coupling.

GUIDERAILS:

Stainless Steel rail(s) for attachment to cover slab or ground level steelwork and extending to duckfoot sockets. Complete with necessary location brackets.

LIFTING LOCATION SYSTEM:

Nylon rope lifting location system fitted to each pump since wet well depth does not exceed 6m.

REFLUX VALVE:

Fullway pattern delivery non-return valve.

SLUICE VALVE:

Fullway pattern isolating sluice valve with non-rising spindle and cap top.

PIPES:

From duckfoot through to defined point for rising main connection, incorporating the valves and, in case of multi-pump system, an appropriately sized manifold. All fitting connections appropriate to materials employed.

FLOWMETER:

Atex Rated ABB Watermaster flowmeter suitable for use with sewage.

LEVEL CONTROLS:

Pulsar Zenith ultrasonic level control unit as data sheet complete with submersible transducer, bracket and cable to control panel, with float switches for ultrasonic backup control and high level alarm functions.

ACCESS COVERS:

Steelway Access Covers and Frames complete with safety grids and demountable posts and barriers.

Wet Well	1500 x 900mm clear opening
Valve Chamber	2700 x 1800mm clear opening

D400 cast iron manhole cover and frame with a 675mm square opening supplied for the inlet manhole.

LIFTING EQUIPMENT:

1 – Cast in Type Davit Socket and cover plate to suit Reid Porta-Davit for in situ casting by the civil contractor.

JUNCTION BOX KIOSK:

GRP, floor fixing, single door weatherproof lockable enclosure in deep green textured finish, provisional dimensions 750W x 1250H x 400D containing a full sized backboard on which would be mounted / provided:- Individual junction boxes for Pump 1, Pump 2 and level controls.

KIOSK:

GRP, floor fixing, three roadside type weatherproof lockable enclosure in deep green textured finish, provisional dimensions 1750H x 2000W x 750D containing a full sized backboard on which would be mounted / provided:

- a) IWNL/DCG DOL Control panel as specified
- b) Anti-condensation heater and thermostat
- c) Interior light and switch
- d) Set of suitably rated double insulated cable tails for connection to Electricity Board meters
- e) Space for the mounting of Electricity Board meters
- f) Nortech Nexus 12 Telemetry

The whole of the above being suitably interconnected and earth bonded extended to all non-conductive steelwork within the pump station in 16mm² cable to provide a complete PME system.

GENERATOR EARTH:

Comprising a copper electrode to be driven into the ground adjacent to the control kiosk, a concrete inspection pit and interconnecting cable to the panel.

FLOODLIGHT AND COLUMN:

Energy efficient flood light mounted on a 4m high hinged lamp post complete with cabling back to the control panel a maximum 5m away

INLET PENSTOCK:

Cast iron wall fixing penstock in accordance with BS7775 with copper alloy faces, rebate invert and stainless steel non rising screw stem terminating in a cap direct on frame. Plated mild steel construction bolts/nuts with Galvanised Mild Steel extension spindle and support brackets and surface box. Clockwise closing. Bitumen coated.

BAFFLE PLATE:

Stainless steel baffle plate of size to suit incoming sewer.

VALVE CHAMBER ACCESS LADDER:

Galvanised Mild Steel access ladder with retractable hand hold and adjustable feet.

ANCILLARY EQUIPMENT:

1. Lever arm and weights on non-return valves complete with guards
2. Pressure tappings on pump discharge leg non-return valves
3. 100mm female Bauer coupling on over pumping tee
4. 80mm nominal bore valve chamber drain pipework with gate valve in the valve chamber
5. Weatherproof and lockable pump and level control cable termination box
6. Rubber matting in control panel kiosk
7. Sign indicating pump station data fitted within the control kiosk
8. Stainless Steel eyebolts on the wet well and inlet manhole access opening for temporary ladders
9. Three copies of Operating and Maintenance Manuals plus drawings or one electronic copy prepared in PDAS standard format
10. Double orifice sewage rated air release valve plus isolating gate valve with bevel gear box installed in the valve chamber
11. 1 off Rising main Washout pipework assembly for installation by the civil contractor at rising main low point

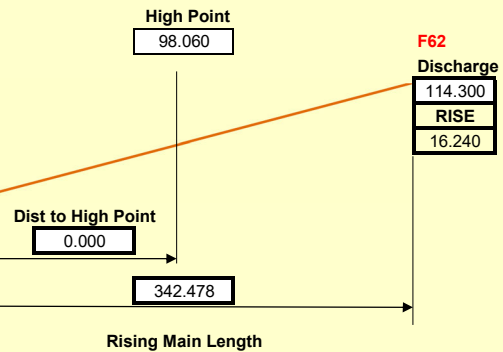
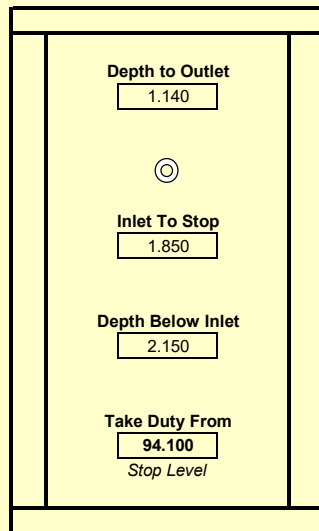
Appendix B
Hydraulic Calculations, System Curves and Performance Curves and Dimensional Data

Clients Name	Vistry South East Midlands
Site Address	Hill Top, Leicester Road, Earl Shilton

Adopting Authority	GTC (IWNL)
Pump Station Type	Foul
Number of Dwellings	140
Non Domestic Area (m ²)	
Non Domestic Rate (L/sec Ha)	
Number of Pumps	2
Number of Duty Pumps	1

Design Flow / Rising Main	
Peak Flow (DCG Discharge)	6.48 L/sec
Pump Discharge Rate DCG	3.24 L/sec
Pump Discharge Rate	6.1 L/sec
Rising Main I.D.	101.3 mm
Velocity in Main	0.76 m/sec
Surge Analysis	NOT REQUIRED

Cover Level	99.200
VC Outlet	98.060
Max Storage	97.200
Inlet	95.950
HLA	94.700
P2 Start	94.600
P1 Start	94.450
Mid Water	94.275
Stop Level	94.100
Dead Area	300
Base Level	93.800



Notes:

Wet Well	
Wet Well Diameter	3000 mm
Calc Chamber Depth	5.154 m
Volume Per M	7,068.58 litres
Depth Between Starts	150 mm
Actual Chamber Depth	5.400 m
Theoretical Op Volume	732.00 litres
Actual Op Volume	680.45 litres
Max Theoretical Starts	7.50
Actual Starts	10.78

Retention Calculations	
DWF Inflow Per Day	84,848.48 litres
Rising Main Volume	2,760.21 litres
Combined Main and Op Vol	3,440.66 litres
No. of Main Clears per Day	24.66
Retention Full Usage	0.97 Hours
Retention Half Usage	1.95 Hours

Retention calcs assume ascending rising main

Storage	
Domestic @ 160L / Dwelling	22.400 m ³
Industrial 1 Hr @ Design Flow	0.000 m ³
Total Required Storage	22.400 m ³
Capacity in Gravity System	8.997 m ³
Capacity between HLA & inlet	8,835.73 litres

	Rising Main	Common 3	Common 2	Common 1	Individual 3	Individual 2	Individual 1
Flow Rate (L/sec)	6.10	6.10	6.10	6.10	6.10	6.10	6.10
Static Head (m)	20.20						
Pipe Diameter (mm)	101.30	100	100	100	100	100	100
Velocity (m/sec)	0.76	0.78	0.78	0.78	0.78	0.78	0.78
Roughness Factor	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Pipe length (m)	342.478					9.260	
Duckfoot Bend							1
Short Radius Bends						1	
Long Radius Bends						1	
Tee Straight through		1				4	
Tee through branch							
Radial Tee thro Branch							
Sluice Valve						1	
Non Return Valve						1	
Bellmouth inlet							
Sharp Taper							
Standard Taper							
Equivalent Pipe Length (m)	342.478	1.1	0	0	0	24.06	3.4
Reynolds Number	6.7E+04	6.8E+04	6.8E+04	6.8E+04	6.8E+04	6.8E+04	6.8E+04
Darcy-Weisbach Friction Factor	0.0280	0.0281	0.0281	0.0281	0.0281	0.0281	0.0281
Velocity Head	0.029	0.031	0.031	0.031	0.031	0.031	0.031
Hydraulic (Piezometric) gradient	0.0081	0.0086	0.0086	0.0086	0.0086	0.0086	0.0086
Friction Head Loss	2.763	0.009	0.000	0.000	0.000	0.207	0.029

Calc Duty Point	
Flow	6.10 L/sec
Static Head	20.20 m
Total Head	23.24 m

Pump Selection	
Pump Type	NP 3153 HT
Impeller	N / 453
kW Rating	13.5

Actual Duty	
Flow	8.15 L/sec
Head	25.62 m



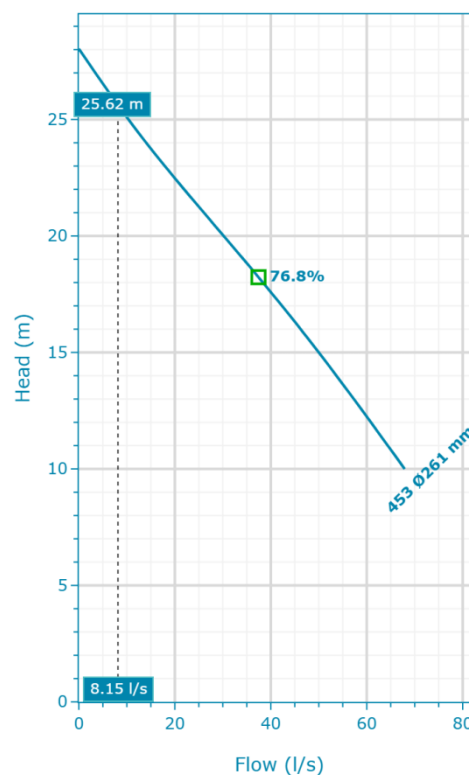
NP 3153 HT 3~ 453

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NP 3153 HT 3~ 453 | Configuration Summary



Flygt's self-cleaning non-clog N-pumps feature innovative designs and functions that deliver high sustained efficiency and the most reliable operation. This makes them the most reliable choice available for a broad range of wastewater applications for tough applications such as unscreened sewage, wastewater and sludge up to an 8 percent solids concentration. Impeller material available in Hardened cast Iron, Hard Iron and Stainless Steel to fit any wastewater application.



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances. Please consult your local Flygt representative for performance guarantees.

GENERAL

Explosion Proof	Max. Pumped Media Temp.
Yes	40 °C
Approval	Impeller Diameter
EN	261 mm

MATERIAL AND COATING

Impeller Material
Grey Cast Iron
Volute Material
Grey Cast Iron

MOTOR

Rated Voltage	Motor Efficiency Class
400 V	Standard
Coupling	Rated Power
Y	13.5 kW

INSTALLATION

Installation Type
P - Semi-Permanent, Wet

NP 3153 HT 3~ 453 | Product Details

Description

N 3153

The Flygt N-series are equipped with the Flygt invented N-technology with its innovative self-cleaning impeller. Solid objects entering the pump will pass through the impeller between the impeller vanes. If an object gets caught on the leading edge of one of the vanes, it will slide along the backswept shape towards the perimeter of the inlet where it will be guided by a relief groove through the pump housing. This ensures a high sustained total efficiency over time. Due to the mechanical self-cleaning design, a sludge concentration of solids up to 8% can easily be pumped. The pump can easily be installed in either permanently or temporary submerged, or horizontally or vertically dry installations.

Flexible and Modular Design

The modular hydraulic design enables customization of the hydraulics to meet the requirements of many applications.

- Replaceable wear ring in two materials, gray iron or Hard Iron, for different operation conditions
- Hardened gray iron impeller for typical wastewater applications
- Hard-iron impeller for heavy duty wastewater applications containing abrasive and corrosive content
- Chopper ring intended for tough wastewater applications where cutting is required due to long fibres and solid concentrations up to 10-12%
- Stainless steel impeller for special applications that require duplex stainless steel

Robust and Reliable

- Short shaft overhang reduces shaft deflection and increases seal and bearing life
- Class H Motor designed for submersible use. Heat is concentrated to the stator core for improved cooling properties.
- The Plug-in seal with Active Seal system eliminates the risk associated with incorrect installation and careless handling. All in one unit. Available in Tungsten carbide (WCCR) or Silicone carbide (SiC) depending on pumped media.
- Motor cable SUBCAB® specially developed for submersible use
- Offers flexible cooling systems, e.g. closed-loop cooling system, media cooled or external cooling that allows full motor potential in dry installations.
- Premium brand bearings, greased for life, ensures a minimum of 50 000 hours of duty
- Leakage sensor and motor temperature sensor as standard

The N 3153 is available with the following options:

- ATEX, FM, CSA-approvals
- Premium efficiency motors
- Hard Iron hydraulic design
- Stainless Steel hydraulic design
- Vibration-sensor, extended motor temperature sensors, additional leakage-sensor, current-sensor and pump memory
- Compatible with SmartRun® Wastewater pump controller
- Compatible with MAS 801 monitoring system

Product Features

- State-of-the-art wastewater pump with N-technology
- Sustained high efficiency pumping with energy savings up to 25%
- Flexible and modular design
- Robust and reliable

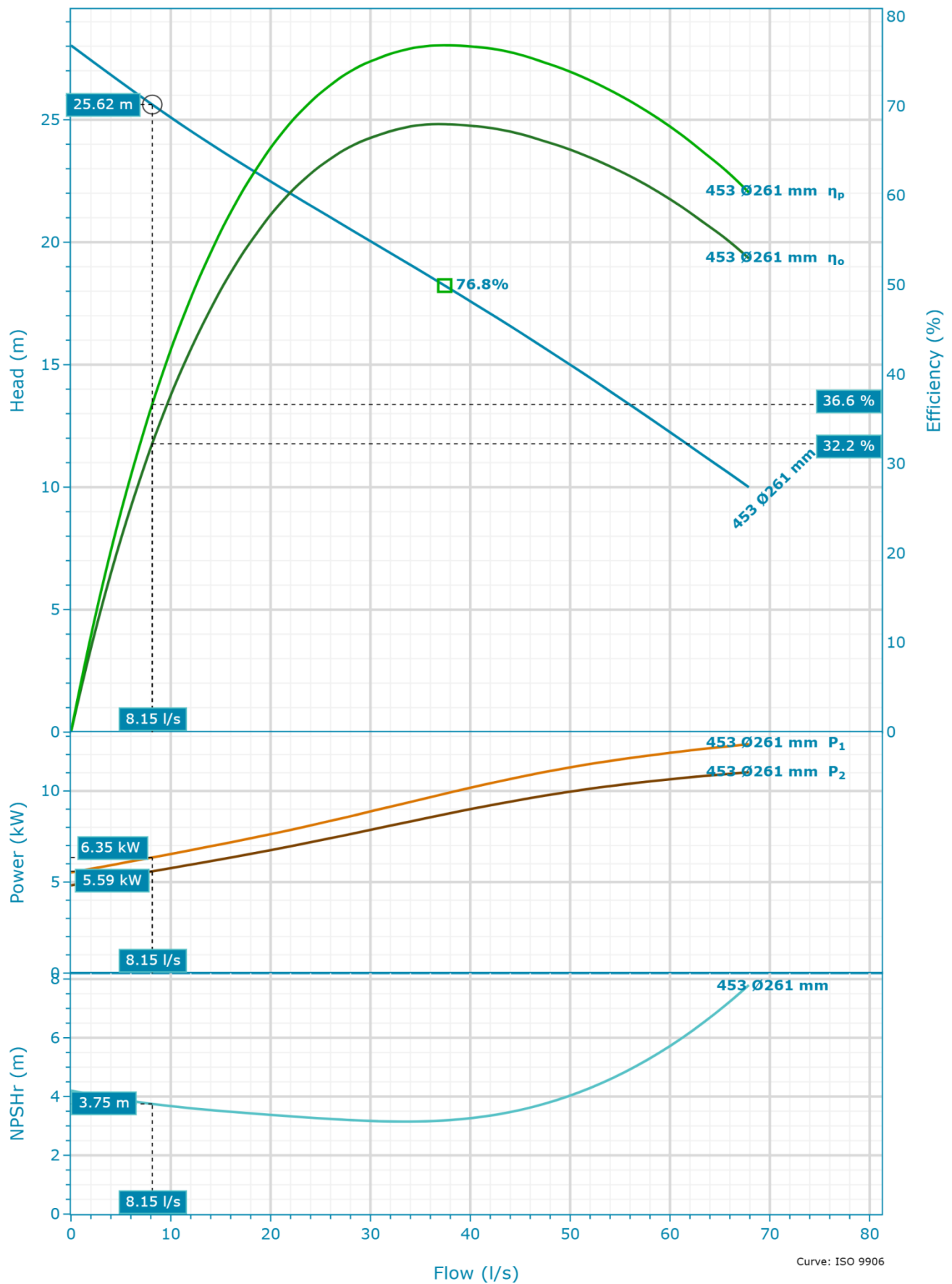
Construction Materials

Impeller Material	Volute Material	Stator Cover Material
Grey Cast Iron	Grey Cast Iron	-

Motor

Rated Power 13.5 kW	Number Of Phases 3	Start Current Ratio 5.39	Motor Issue 12
Motor Denomination 21-18-4AA	Rated Motor Speed 1,465 RPM	Insulation Class H	Locked Rotor Code F
Motor Efficiency Class Standard	Rated Voltage 400 V	Approval EN	Max starts per hour 30
Version Code 091	Rated Current 27 A	Total moment of inertia 0.0906 kgm ²	Power Factor 100% 0.84
Frequency 50 Hz	Start Current 145 A	Type of duty S1	Power Factor 75% 0.79
Max P2 (1x) 11.03 kW	Starting Current, Direct Starting 145 A	Stator Variant 2	Power Factor 50% 0.68
Number Of Poles 4	Starting Current, Star Delta 48.33 A	Motor Module 161	Efficiency 100% 86.6 %
			Efficiency 75% 88.3 %
			Efficiency 50% 88.6 %

NP 3153 HT 3~ 453 | Hydraulic Data & Performance Curve



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances. Please consult your local Flygt representative for performance guarantees.

Selection

Series	Curve Code
N 3000	453
Name	Impeller Diameter
NP 3153 HT 3~ 453	261 mm
Frequency	Inlet Diameter
50 Hz	150 mm
Total Flow	Outlet Diameter
6.10 l/s	100 mm
Total Head	Number Of Vanes
23.24 m	2
Pump Flow	
6.10 l/s	
Pump Head	
23.24 m	
System Type	
Single Pump	
Operating Pumps	
1	
Standby Pumps	
No Standby Pump	

Design Point

Flow	Shaft power (P2)
8.15 l/s	5.59 kW
Head	NPSHR
25.62 m	3.75 m
Overall Efficiency (η_o)	Static Head
32.25 %	20.20 m
Pump Efficiency (η_p)	Flow To BEP Ratio
36.63 %	21.8 %
Input Power (P1)	
6.35 kW	

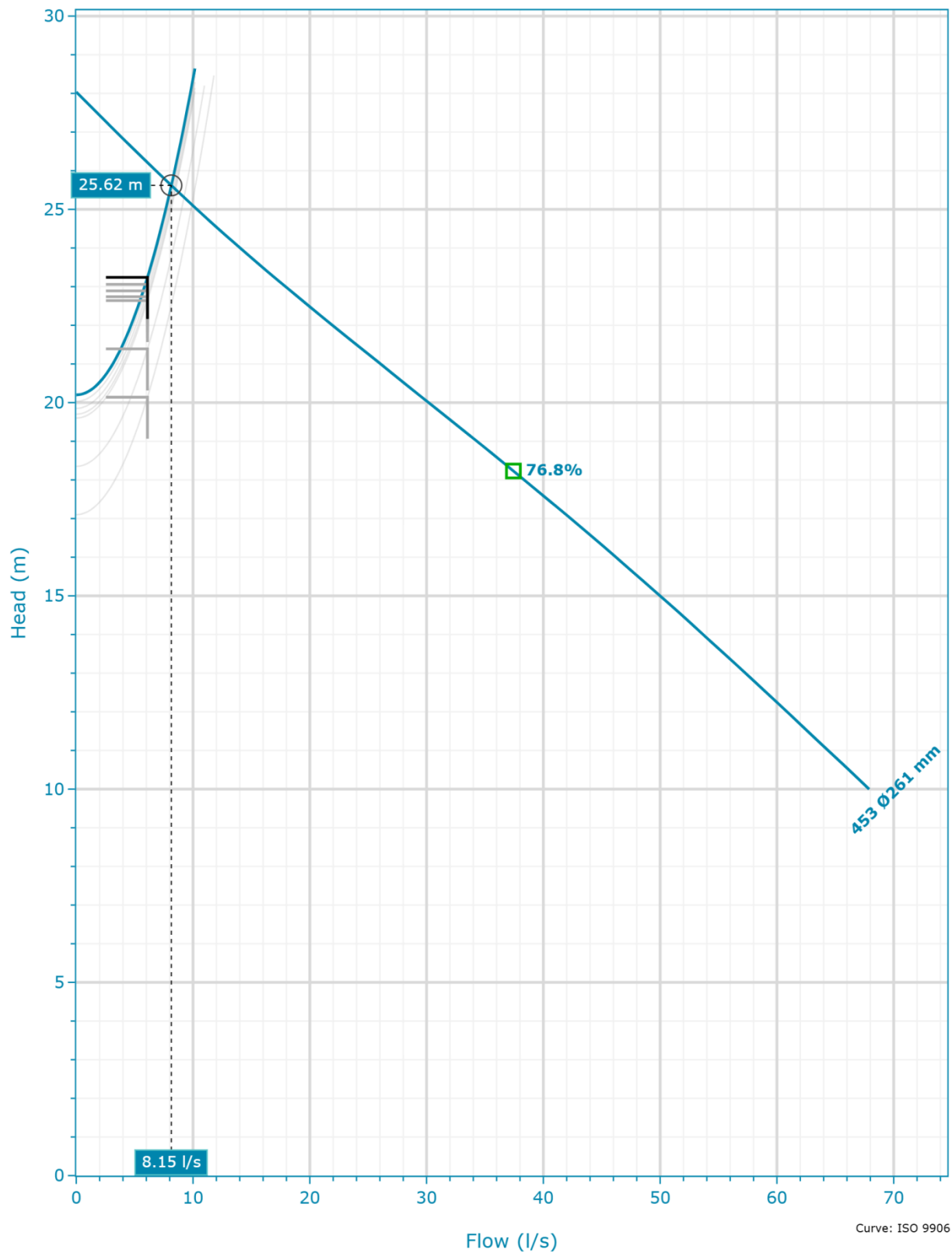
Fluid

Fluid Type	Density
Water	1,000 kg/m ³
Fluid Temperature	Dynamic Viscosity
4 °C	0.001567 Pa·s
Specific Gravity	Fluid Vapor Pressure
1	8.135 mbar

Design Curve

Rated Speed	BEP Flow
50 Hz	37.44 l/s
Max Flow	BEP Head
67.9 l/s	18.23 m
H@QMin	Max P2
28.04 m	11.03 kW
H@QMax	Specific Energy
10 m	0.217 kWh/m ³
BEP	
76.8 %	

NP 3153 HT 3~ 453 | Duty Analysis

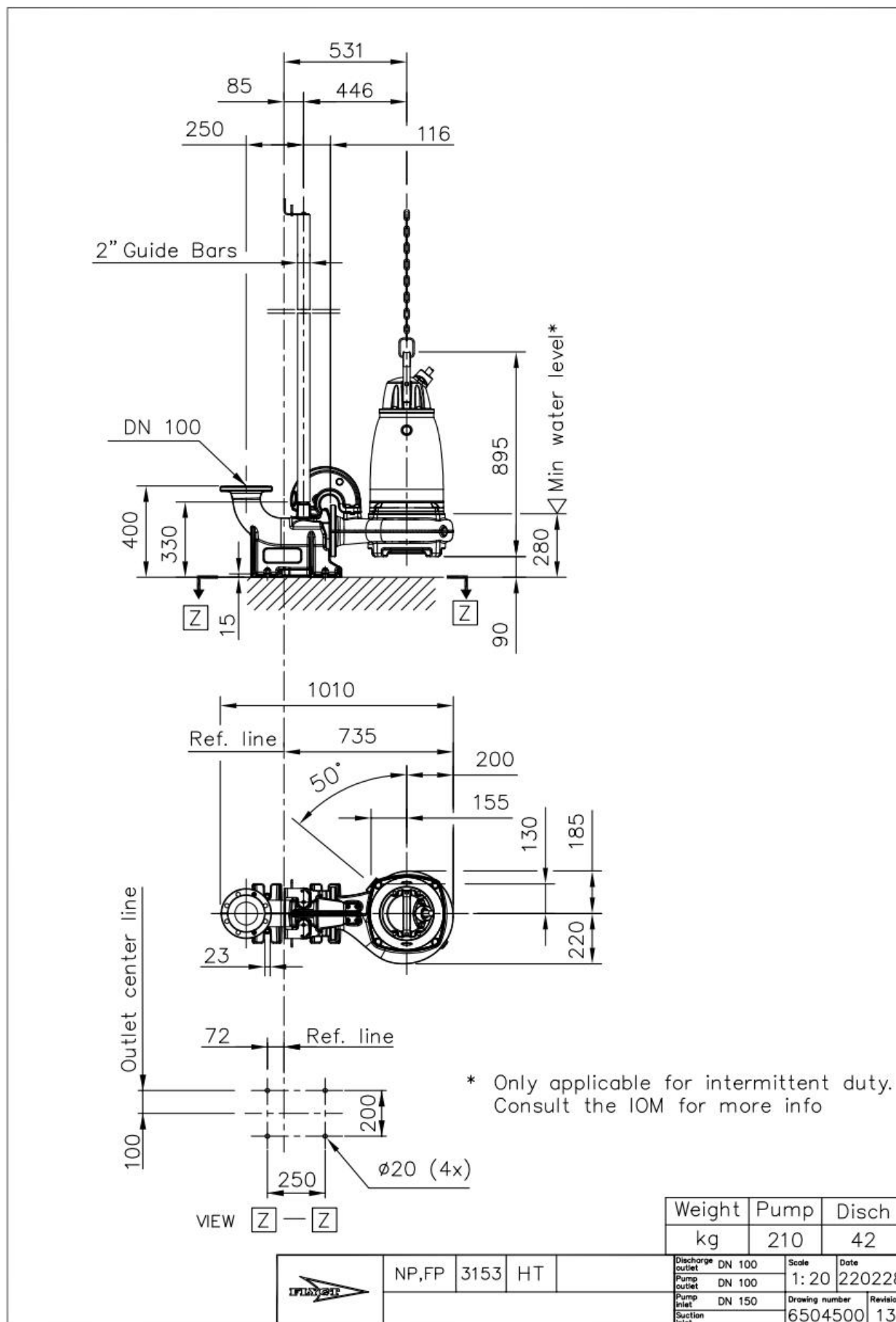


Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances. Please consult your local Flygt representative for performance guarantees.

Name	Q (1x) [l/s]	H (1x) [m]	P2 (1x) [kW]	Q [l/s]	H [m]	P2 [kW]	η_p [%]	SE [kWh/m³]	NPSHr [m]
Stop Level @ 1x	8.15	25.62	5.59	8.15	25.62	5.59	36.63	0.22	3.75
Mid Water @ 1x	8.26	25.59	5.6	8.26	25.59	5.6	37.04	0.21	3.74

Duty Start @ 1x	8.36	25.56	5.61	8.36	25.56	5.61	37.38	0.21	3.74
Standby Start @ 1x	8.45	25.53	5.62	8.45	25.53	5.62	37.69	0.21	3.74
HLA @ 1x	8.51	25.52	5.62	8.51	25.52	5.62	37.89	0.21	3.73
Inlet @ 1x	9.23	25.31	5.69	9.23	25.31	5.69	40.29	0.19	3.7
Max Storage @ 1x	9.91	25.12	5.75	9.91	25.12	5.75	42.44	0.18	3.68

NP 3153 HT 3~ 453 | Dimensional Data & Drawing



Company	PDAS
Contact	G T
Phone No.	01483930520
Email	gajesh.theyamathy@pdasgroup.co.uk

Appendix C

Storage Calculations

Pump Design and Services Ltd
Building 4.6 HiTECH
Frimley 4 Business Park
Frimley, Camberley
Surrey GU16 7SG



Tel: 01483 930 520
Email: info@pdasgroup.co.uk

Site ID #	4271
Project Reference	28225
Date	04/07/2025

Clients Name	Vistry South East Midlands
Site Address	Hill Top, Leicester Road, Earl Shilton

Storage Requirement	
Number of Dwellings	140
Non Residential Design Flow	0 L/sec
Domestic @ 160L / Dwelling	22.400 m ³
Non Residential 1 Hr @ Design Flow	0.000 m ³
Total Required Storage	22.400 m ³
Location of Lowest Private Manhole	Plot 13
Invert Level of Lowest Private Manhole	97.200 m

Notes:

F45(IM) marked as F43 on drainage layout

F45(IM) IL on manhole schedule doesn't match drainage layout or long sections

Storage in Gravity Manholes					
Manhole Reference	Manhole Diameter (mm)	Max Storage Level (m)	Cover Level (m)	Invert Level (m)	Storage Volume (m ³)
F45 (IM)	3000	97.200	99.200	96.000	8.482
F43	1200	97.200	99.334	97.000	0.226
Total storage in manholes below detailed maximum storage level					8.708

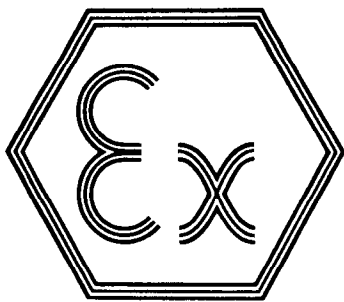
Private Manhole Invert (m)	
97.700	VC Base
97.200	Plot 13

Storage in Gravity Sewer Pipes					
Sewer Pipe Run	Sewer Diameter (mm)	Max Storage Level (m)	Length (m)	Upper Invert (m)	Storage Volume (m ³)
1.021	150	97.200	16.301	97.000	0.288
Total storage in sewers below detailed maximum storage level					0.288

Storage in Wet Well					
	Wet Well Diameter (mm)	Max Storage Level (m)		High Level Alarm (m)	Storage Volume (m ³)
Pump Station	3000	97.200		94.700	17.671
Storage loss to benching					-1.747
Total storage in wet well below detailed maximum storage level					15.925

Summary	
Manholes	8.708 m ³
Sewers	0.288 m ³
Pump Station	15.925 m ³
Total Provided	24.921 m ³
Total Required	22.400 m ³

Appendix D
Pump Hazardous Area Certification



(2) **Equipments and protection systems intended for use in potentially explosive atmospheres**
Directive 94/9/CE

(1) **EC-TYPE EXAMINATION CERTIFICATE**

(3) Number of the EC type examination certificate: **INERIS 00ATEX0012 X**

(4) Protection apparatus or system:

PUMP TYPE 3153

(5) Manufacturer: **ITT FLYGT AB**

(6) Address: Svetsarvägen 12,
Box 1309
17125 SOLNA
SWEDEN

(7) This protection system or equipment and any other acceptable alternative of this one are described in the annex of this certificate and the descriptive documents quoted in this annex.

(8) The INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/CE 23 the Mars 1994, certifies that this protection system or equipment fulfills the Essential of Health and Safety Requirements relating to the design and construction of equipments and protection systems intended for use in potentially explosive atmospheres, described in appendix II of the Directive.

The examinations and the tests are consigned in official report N°15498/00.

(9) The respect of the Essential Health and Safety Requirements is ensured by:

- conformity with:

EN 50 014 of June	1997
EN 50 018 of August	1994
EN 1127-1 of June	1997

- specific solutions adopted by the manufacturer to meet the Essential Health and Safety Requirements described in the descriptive documents.

(10) Sign X, when it is placed following the Number of the EC type examination certificate, indicates that this equipment and protection system is subjected to the special conditions for safe use, mentioned in the annex of this certificate.

- (11) This certificate of examination EC of the type refers only to the design and the construction of the apparatus or protection system specified. If necessary, other requirements of this Directive will be imposed on the manufacture and the supply of this apparatus or protection system.
- (12) The marking of the equipment or the protection system will have to contain:

 II 2 G

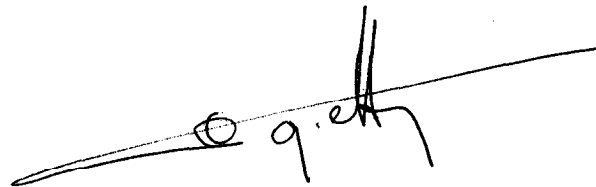
EEx d IIB T4 (Tamb = 25°C) or EEx d IIB T3

Verneuil-en-Halatte, 2000 09 11

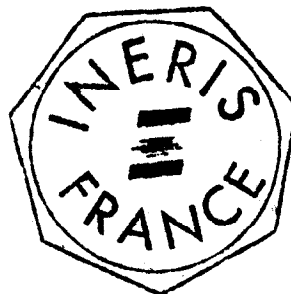


X. LEFEBVRE

Project Manager
Laboratory for Certification of ATEX equipment



The Director of the Organization Certifier,
By delegation
B. PIQUETTE
Deputy manager of Certification



(13)

ANNEX

(14)

EC TYPE EXAMINATION CERTIFICATE N INERIS 00ATEX0012 X

(15)

DESCRIPTION OF THE EQUIPMENT OR THE PROTECTION SYSTEM

Electric pump motor intended to equip an immersed mixer. The motor is fitted with thermal contacts in windings which ensure its temperature classification.

According to the type of the pump the length of the motor housing differs.

Connection with the external electric circuits is ensured by the intermediary of cable entries having a certificate of equipment or the certificate of component Ex following:

- Certificate INERIS 94.D 9034 U type 597 63 00X.

Parameters relating to the safety

- . Supply voltage : up to 1000 Volts.
- . Frequency : until 60 Hz.
- . Power according to version : from 9.3 kW to 15.9 kW

Characteristics of protections :

- Threshold of release of the probe : 140C °±6% for a Temperature class T3.
- Threshold of release of the probe : 125C °±6% for a Temperature class T4 (Tamb = 25°C).

MARKING

Marking must be readable and indelible; it must comprise the following indications:

- ITT FLYGT AB
Svetsarvägen 12,
Box 1309
17125 SOLNA
SWEDEN
- 3153
- INERIS 00ATEX0012X
- (serial number, if any)
- (year of construction)
- **Ex II 2 G** **EEx d IIB T4 (Tamb = 25°C) or EEx d IIB T3**
- DO NOT OPEN WHEN AN EXPLOSIVE GAS ATMOSPHERE MAY BE PRESENT
- DO NOT OPEN WHEN ENERGIZED
- CONNECT THERMAL CONTACTS

The whole of marking can be carried out in the language of the country of use.

The protection apparatus or system must also carry the marking normally envisaged by the standards of construction which relate to it.

ROUTINE EXAMINATIONS AND TESTS

The equipment is exempted of the routine test in accordance with 16.2 of the standard EN50018. The prototype having successfully undergone a static overpressure test of 28 bar, corresponding to 4 times the reference pressure.

(16) DESCRIPTIVE DOCUMENTS

The technical report is composed of the documents quoted hereafter, constituting the descriptive file of the apparatus, object of this certificate.

- Official report N°15498/00 of the 30.08.2000
- Descriptive notice (2 pages) signed on 21.06.2000
- Instructions contents signed on 21.06.2000
- Drawing N° 642 03 00 of the 16.09.1999 Rev.0 signed on 21.06.2000

(17) SPECIAL CONDITIONS FOR SAFE USE

In order to respect the classification in temperature, the thermal contacts equipping the engine must be connected to a device cutting of the voltage supply of the engine when the probes reach their threshold of operation, defined above.

The yield stress of the fastener elements of the envelope must be in conformity with the regulations of 11.3 of EN 50 018(1994).

The pump should be cut off from voltage supply by a cut off device following the section 17.1 of EN 50 018 (1994).

(18) ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH

The respect of the Essential Health and Safety Requirements is ensured by:

- conformity to the European standards EN 50 014, 50 018 and EN 1127-1.
- the whole of the provisions adopted by the manufacturer and described in the descriptive documents.

ADDITION

INERIS 00ATEX0012 X/01

PUMP TYPE 3153

Made by ITT FLYGT AB

(15) - PURPOSE OF THE ADDITION

Modifications of mechanical nature.

MARKING

Marking defined in the basic certificate is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine verifications and tests stipulated by the basic certificate are unchanged.

(16) - DESCRIPTIVE DOCUMENTS

The document referred to below, constitutes the file describing the modifications of the apparatus and forming the subject of the present addition.

- Drawing No 642 03 00 rev 02. of 2001.09.11 signed on 2001.09.11

(17) - SPECIAL CONDITIONS FOR SAFE USE

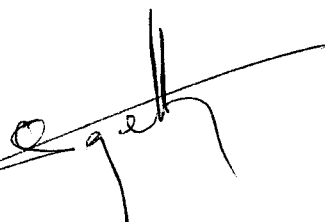
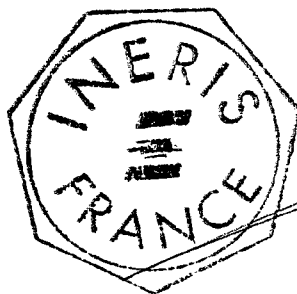
The special conditions for safe use defined in the basic certificate are unchanged.

Verneuil-en-Halatte, 2001 11 14



X. LEFEBVRE

Engineer at the Laboratory of Certification
of Materials ATEX



Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy manager of Certification

COMPLEMENT

INERIS 00ATEX0012 X/02

POMPE TYPE 3153

Construite par ITT FLYGT AB

(15) - OBJET DU COMPLEMENT

Mise à jour de document descriptif relative à une modification d'ordre mécanique.

En variante, le matériel peut être équipé de l'entrée de câble type 597 63 00 X certifiée INERIS 02ATEX9008 U.

MARQUAGE

Le marquage prévu dans l'attestation de base est inchangé.

EXAMENS ET ESSAIS INDIVIDUELS

Les examens et essais individuels prévus par l'attestation de base sont inchangés.

(16) - DOCUMENTS DESCRIPTIFS

Le document, cité ci-après, constitue le dossier descriptif des modifications apportées au matériel et faisant l'objet du présent complément.

- Plan N°597 63 00 X rév. 7 du 07.05.2002 signé le 07.05.2002.

(17) - CONDITIONS SPECIALES POUR UNE UTILISATION SURE

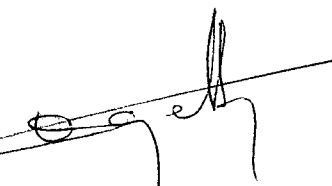
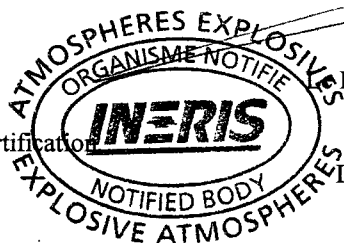
Les conditions imposées par l'attestation de base sont inchangées.

Verneuil en Halatte, 2002 12 20



X. LEFEBVRE

Ingénieur au Laboratoire de Certification
des Matériels ATEX



Directeur de l'Organisme Certificateur,
Par délégation
B. PIQUETTE
Directeur Adjoint de la Certification

ADDITION

INERIS 00ATEX0012 X/03

POMPE TYPE 3153

Made by ITT FLYGT AB

(15) - PURPOSE OF THE ADDITION

Update of descriptive documents in view to introduce a mechanical modification.

MARKING

Marking defined in the basic certificate is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine verifications and tests stipulated by the basic certificate are unchanged.

(16) - DESCRIPTIVE DOCUMENTS

The document referred to below, constitutes the file describing the modifications of the apparatus and forming the subject of the present addition.

- Drawing N° 608 26 00 rev.03 of 2002.10.07 signed on 2002.10.07.

(17) - SPECIAL CONDITIONS FOR SAFE USE

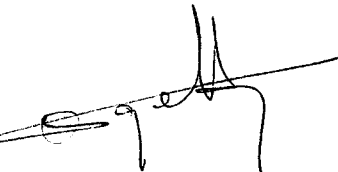
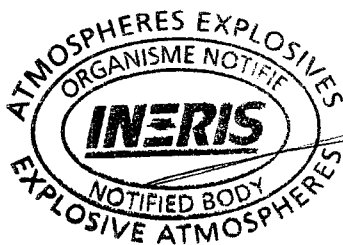
The special conditions for safe use defined in the basic certificate are unchanged.

Verneuil-en-Halatte, 2003 02 12



X. LEFEBVRE

Engineer at the Laboratory of Certification of ATEX
Equipment



Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy manager of Certification

ADDITION

INERIS 00ATEX0012 X/04

POMPE TYPE 3153

Made by ITT FLYGT AB

(15) - PURPOSE OF THE ADDITION

Update of descriptive documents in view to introduce a new pump and mechanical modification.

Parameters relating to the safety

- . Supply voltage : up to 690 Volts.
- . Frequency : until 60 Hz.
- . Power according to version : from 9.3 kW to 19.2 kW

MARKING

Marking defined in the basic certificate is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine verifications and tests stipulated by the basic certificate are unchanged.

(16) - DESCRIPTIVE DOCUMENTS

The documents referred to below, constitutes the file describing the modifications of the apparatus and forming the subject of the present addition.

- Drawing No 642 03 00 rev 03. of 2003.03.13 signed on 2003.03.13

(17) - SPECIAL CONDITIONS FOR SAFE USE

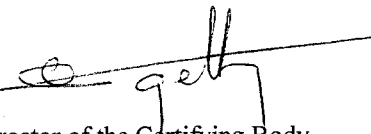
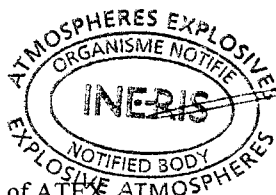
The special conditions for safe use defined in the basic certificate are unchanged.

Verneuil-en-Halatte, 2003 08 12



X. LEFEBVRE

Engineer at the Laboratory of Certification of ATEX
Equipment



Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy manager of Certification

ADDITION

INERIS 00ATEX0012 X/05

PUMP TYPE 3153

Made by ITT FLYGT AB

(15) - PURPOSE OF THE ADDITION

Update of descriptive documents in view to introduce mechanical modifications.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are modified as follow :

- . Supply voltage : until 1000 Volts,
- . Frequency : until 60 Hz,
- . Power according to version : until 19.2 kW.

MARKING

Marking defined in the basic certificate and its additions is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine verifications and tests stipulated by the basic certificate and its additions are unchanged.

(16) - DESCRIPTIVE DOCUMENTS

The documents referred to below, constitute the file describing the modifications of the apparatus and forming the subject of the present addition.

- Drawing N° 597 63 00 X rev. 8 of 2003.06.30. signed on 2003.06.30
- Drawing N° 597 63 35 X rev. 0 of 2003.06.03. signed on 2003.06.03
- Drawing N° 597 63 70 X rev. 0 of 2003.06.05. signed on 2003.06.05

(17) - SPECIAL CONDITIONS FOR SAFE USE

The special conditions for safe use defined in the basic certificate and its additions are unchanged.

(18) - ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH

The respect of the Essential Health and Safety Requirements is ensured by:

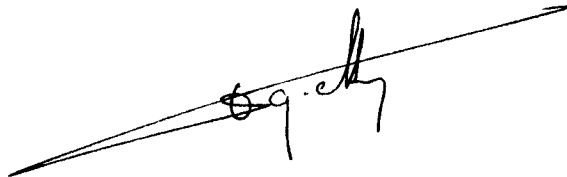
- Conformity to the European standards EN 50 014, EN 50 018, EN 1127-1 and EN 13463-1.
- The whole of the provisions adopted by the manufacturer and described in the descriptive documents.

Verneuil-en-Halatte, 2003 11 07

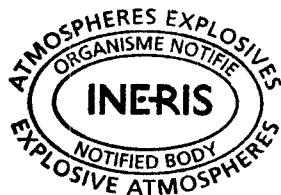


X. LEFEBVRE

Engineer at the Laboratory of Certification
of Materials ATEX



Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy manager of Certification



ADDITION

INERIS 00ATEX0012 X/06

PUMP TYPE 3153

Made by ITT FLYGT AB

(15) - PURPOSE OF THE ADDITION

Update of descriptive documents in view to introduce mechanical modifications.

The maximum input power of the motor type 21-15-2 has been changed to 17.4 kW (50 Hz) and to 21 kW (60 Hz).

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are modified as follow :

- . Supply voltage : until 1000 Vols,
- . Frequency : until 60 Hz,
- . Power according to version : until 21 kW.

MARKING

Marking defined in the basic certificate and its additions is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine verifications and tests stipulated by the basic certificate and its additions are unchanged.

(16) - DESCRIPTIVE DOCUMENTS

The document referred to below, constitutes the file describing the modifications of the apparatus and forming the subject of the present addition.

- Drawing N° 642 03 00 rev. 4 of 01.21.2004 signed on 01.21.2004

(17) - SPECIAL CONDITIONS FOR SAFE USE

The special conditions for safe use defined in the basic certificate and its additions are unchanged.

(18) - ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH

The respect of the Essential Health and Safety Requirements is ensured by:

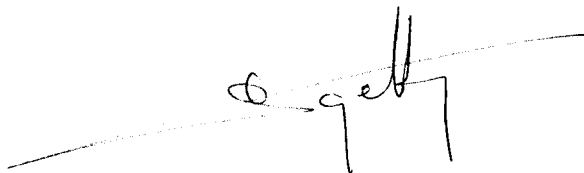
- Conformity to the European standards EN 50 014, EN 50 018, EN 1127-1 and EN 13463-1.
- The whole of the provisions adopted by the manufacturer and described in the descriptive documents.

Verneuil-en-Halatte, 2004 03 03



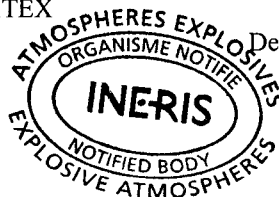
X. LEFEBVRE

Engineer at the Laboratory of Certification of ATEX
Equipment



Director of the Certifying Body,
By delegation
B. PIQUETTE

Deputy manager of Certification



ADDITION

INERIS 00ATEX0012 X/07

PUMP TYPE 3153

Made by ITT FLYGT AB

(15) - PURPOSE OF THE ADDITION

Update in group I application.
New adress : SE-174 87 SUNDBYBERG.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are modified as follow :

. Supply voltage	:	until 1000 Volts,
. Frequency	:	until 60 Hz,
. Power according to version	:	until 19.2 kW.

Characteristics of protections :

- Limit of release of the probe : 140°C $\pm$ 6% for a Temperature class T3 and/or group I.

- Limit of release of the probe : 125°C $\pm$ 6% for a Temperature class T4 with Tamb = 25°C.

MARKING

Marking defined in the basic certificate and its additions is completed by:

-  I M2
- EEx d I

ROUTINE EXAMINATIONS AND TESTS

The routine verifications and tests stipulated by the basic certificate and its additions are unchanged.

(16) - DESCRIPTIVE DOCUMENTS

None.

(17) - SPECIAL CONDITIONS FOR SAFE USE

The special conditions for safe use defined in the basic certificate and its additions are unchanged.

(18) - ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH

The respect of the Essential Health and Safety Requirements is ensured by:

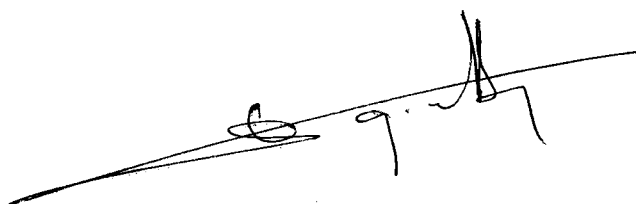
- Conformity to the European standards EN 50 014, EN 50 018, EN 1127-1, EN 1127-2 and EN 13463-1.
- The whole of the provisions adopted by the manufacturer and described in the descriptive documents.

Verneuil-en-Halatte, 2004 08 08

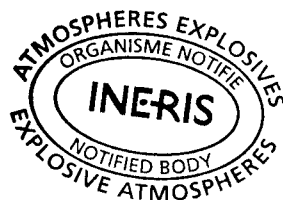


X. LEFEBVRE

Engineer at the Laboratory of Certification
of ATEX equipment



Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy manager of Certification



ADDITION

INERIS 00ATEX0012 X/08

PUMP TYPE 3153

Made by ITT FLYGT AB

(15) - PURPOSE OF THE ADDITION

Update of descriptive documents in view to introduce mechanical modifications.

The maximum input power of the motor type 21-18-4 has been changed to 15.8 kW (50 Hz) and to 17.1 kW (60 Hz).

New address : SE-174 87 SUNDBYBERG.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety defined in the basic certificate and its additions are unchanged.

MARKING

Marking defined in the basic certificate and its additions is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine verifications and tests stipulated by the basic certificate and its additions are unchanged.

(16) - DESCRIPTIVE DOCUMENTS

The documents referred to below, constitute the file describing the modifications of the apparatus and forming the subject of the present addition.

- Drawing No 597 63 35 X rev. 1 of 2004.06.17 signed on 2004.06.17
- Drawing No 642 03 00 rev. 5 of 2004.09.03 signed on 2004.09.03
- Drawing No 642 09 01 X rev. 3 of 2004.08.12 signed on 2004.08.12

(17) - SPECIAL CONDITIONS FOR SAFE USE

The special conditions for safe use defined in the basic certificate and its additions are unchanged.

(18) - ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH

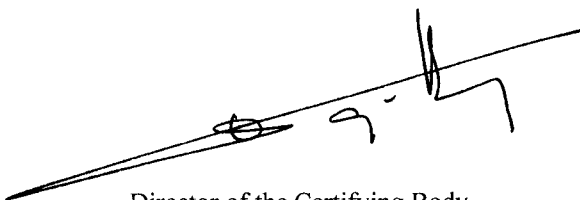
The respect of the Essential Health and Safety Requirements defined in the basic certificate and its additions is unchanged.

Verneuil-en-Halatte, 2004 11 19



X. LEFEBVRE

Engineer at the Laboratory of Certification of ATEX
Equipment



Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy manager of Certification



ADDITION

INERIS 00ATEX0012 X/09

PUMP TYPE 3153

Made by ITT FLYGT AB

(15) - PURPOSE OF THE ADDITION

Introduction of 2 new versions : 3153-091 and 5100-221

For those new versions, the maximum input power of the motor type 21-18-4 has been changed to 17.3 kW (50 Hz) and to 18.9 kW (60 Hz).

Update of a descriptive document in view to introduce a mechanical modification.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety defined in the basic certificate and its additions are unchanged.

MARKING

Marking defined in the basic certificate and its additions is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine verifications and tests stipulated by the basic certificate and its additions are unchanged.

(16) - DESCRIPTIVE DOCUMENTS

The document referred to below, constitutes the file describing the modifications of the apparatus and forming the subject of the present addition.

- Drawing N° 642 03 00 rev. 6 of 2004.12.17 signed on 2004.12.17

(17) - **SPECIAL CONDITIONS FOR SAFE USE**

The special conditions for safe use defined in the basic certificate and its additions are unchanged.

(18) - **ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH**

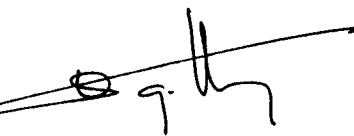
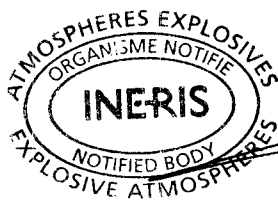
The respect of the Essential Health and Safety Requirements defined in the basic certificate and its additions is unchanged.

Verneuil-en-Halatte, 2005 05 02



X. LEFEBVRE

Engineer at the Laboratory of Certification of ATEX
Equipment



Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy manager of Certification

ADDITION

(3) **INERIS 00ATEX0012 X/10**

(4) **PUMP TYPE 3153**

(5) **Made by ITT FLYGT AB**

(15) - **PURPOSE OF THE ADDITION**

Update of descriptive documents.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety defined in the basic certificate and its additions are unchanged.

MARKING

Marking defined in the basic certificate and its additions is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine verifications and tests stipulated by the basic certificate and its additions are unchanged.

(16) - **DESCRIPTIVE DOCUMENTS**

The document referred to below, constitute the file describing the modifications of the apparatus and forming the subject of the present addition.

- Drawing n° 630 68 00 rev. 5 of 2005.01.14. signed on 2005.01.14

(17) - SPECIAL CONDITIONS FOR SAFE USE

The special conditions for safe use defined in the basic certificate and its additions are unchanged.

(18) - ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH

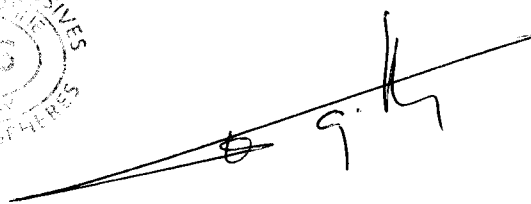
The respect of the Essential Health and Safety Requirements defined in the basic certificate and its additions is unchanged.

Verneuil-en-Halatte, 2005 11 29



X. LEFEBVRE

Engineer at the Laboratory of Certification of ATEX
Equipment



Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy manager of Certification

ADDITION

(3) **INERIS 00ATEX0012X/11**

(4) **Pump TYPE 3153**

(5) **Made by ITT FLYGT AB**

(15) **PURPOSE OF THE ADDITION**

Mechanical modifications.
Addition of two new versions.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety mentioned in the basic certificate are unchanged.

MARKING

The marking defined in the basic certificate is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine examinations and tests stipulated by the basic certificate are unchanged.

(16) **DESCRIPTIVE DOCUMENTS**

The descriptive document quoted hereafter constitutes the technical documentation describing the modification of the equipment, subject of this present addition.

- Drawing n° 642 03 00 rev.7

dated and signed on 2006.06.15

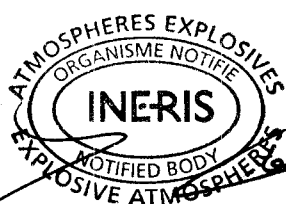
(17) **SPECIAL CONDITIONS FOR SAFE USE**

The special conditions defined in the basic certificate are unchanged.

(18) **ESSENTIAL SAFETY AND HEALTH REQUIREMENTS**

The respect of the Essential Health and Safety Requirements defined in the basic certificate is unchanged.

Verneuil-en-Halatte, 2006.09.21



X. LEFEBVRE

Project Manager at the ATEX
Equipment Certification Laboratory

Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy Manager of Certification

ADDITION

(3) **INERIS 00ATEX0012X/12**

(4) **PUMP TYPE 3153**

(5) **Made by ITT FLYGT AB**

(15) **PURPOSE OF THE ADDITION**

Mechanical modifications.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are unchanged.

MARKING

The marking is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine examinations and tests are unchanged.

(16) **DESCRIPTIVE DOCUMENTS**

The descriptive document quoted hereafter constitutes the technical documentation describing the modification of the equipment, subject of this present addition.

- Drawing n° 642 03 00 rev.8

dated and signed on 2007.06.14

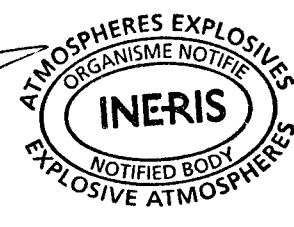
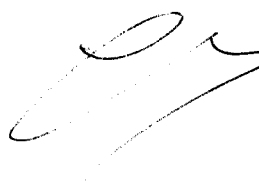
(17) **SPECIAL CONDITIONS FOR SAFE USE**

The special conditions are unchanged.

(18) **ESSENTIAL SAFETY AND HEALTH REQUIREMENTS**

The respect of the Essential Health and Safety Requirements is unchanged.

Verneuil-en-Halatte, 2007 10 24



X. LEFEBVRE

Project Manager at the ATEX
Equipment Evaluation Laboratory



Director of the Certifying Body,
By delegation
T. HOUeix
Certification Officer
Certification Division

ADDITION

(3) INERIS 00ATEX0012X/13

(4) PUMP TYPE 3153

(5) Made by ITT FLYGT AB

(15) PURPOSE OF THE ADDITION

- Application of the standards EN 60079-0 : 2006 and EN 60079-1 : 2004.
- Change of the manufacturer name from ITT FLYGT AB to ITT Water & Wastewater AB.
- Change of the manufacturer adress : S-17487 Sundbyberg.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are unchanged.

MARKING

The marking is modified as follow :

ITT Water & Wastewater AB

S-17487 Sundbyberg

3153

INERIS 00ATEX0012 X

(Serial number)

(Year of construction)

 II 2 G Ex d IIB T4 (Tamb.=25°C) or T3

 I M2 Ex d I

WARNINGS:

DO NOT OPEN WHEN AN EXPLOSIVE GAZ ATMOSPHERE MAY BE PRESENT.

DO NOT OPEN WHEN ENERGIZED.

CONNECT THERMAL CONTACTS.

The whole of marking can be carried out in the language of the country of use.

The protection apparatus or system must also carry the marking normally envisaged by the standards of construction which relate to it.

ROUTINE EXAMINATIONS AND TESTS

The routine examinations and tests are unchanged.

(16) DESCRIPTIVE DOCUMENTS

The descriptive documents quoted hereafter constitute the technical documentation describing the modifications of the equipment, subject of this present addition.

- Descriptive note VPSA09002EDH dated and signed on 2009.03.03
- Drawing n°642 03 00 rev.08 dated and signed on 2007.06.14

(17) SPECIAL CONDITIONS FOR SAFE USE

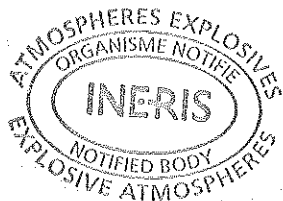
The special conditions for safe use are unchanged.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is assured by :

- ☒ Conformity to the European standards indicated in the paragraph 15 and the standard EN 1127-1 : 1997.
- the whole of the provisions adopted by the manufacturer and described in the descriptive documents.

Verneuil-en-Halatte, 2009 03 27



Director of the Certifying Body,
By delegation
D. CHARPENTIER
Deputy Manager of Certification

ADDITION

(3) INERIS 00ATEX0012X/14

(4) PUMP TYPE 3153

(5) Made by ITT WATER & WASTEWATER AB

(15) PURPOSE OF THE ADDITION

- Mechanical modifications.
- Application of the standard EN 1127-1 : 2007.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are unchanged.

MARKING

The marking is unchanged.

ROUTINE EXAMINATIONS AND TESTS

None.

(16) DESCRIPTIVE DOCUMENTS

The descriptive documents quoted hereafter constitute the technical documentation describing the modifications of the equipment, subject of this present addition.

- | | |
|---------------------------------|--------------------------------|
| - Descriptive note VPSA10008EDH | dated and signed on 2010.03.15 |
| - Drawing n° 642 03 09 rev.9 | dated and signed on 2009.04.07 |

(17) SPECIAL CONDITIONS FOR SAFE USE

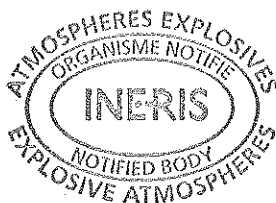
The special conditions for safe use are unchanged.

(18) **ESSENTIAL SAFETY AND HEALTH REQUIREMENTS**

The respect of the Essential Health and Safety Requirements is assured by :

- Conformity to the standards EN 60079-0 : 2006, EN 60079-1 : 2004 and EN 1127-1 : 2007.
- The whole of the provisions adopted by the manufacturer and described in the descriptive documents.

Verneuil-en-Halatte, 2010 05 10




Director of the Certifying Body,
By delegation
T. HOUeix
Certification Officer
Certification Division

ADDITION

- (3) INERIS 00ATEX0012X/15
- (4) PUMP TYPE 3153 and 5100
- (5) Made by ITT WATER & WASTEWATER AB

(15) PURPOSE OF THE ADDITION

- Updating of manufacturer documents.
- Addition of new pump 8148.190.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are unchanged.

MARKING

The marking is unchanged.

ROUTINE EXAMINATIONS AND TESTS

None.

(16) DESCRIPTIVE DOCUMENTS

The descriptive documents quoted hereafter constitute the technical documentation describing the modifications of the equipment, subject of this present addition.

- Change description of EN-approved products 3153.090, 3153.091, 3153.095, 3153.390,
5100.220, 5100.221, 5100.261, 5100.310 dated on 2010.03.15
- Drawing n°642 03 00 rev.10 dated and signed on 2009.04.07

(17) SPECIAL CONDITIONS FOR SAFE USE

The special conditions for safe use are unchanged.

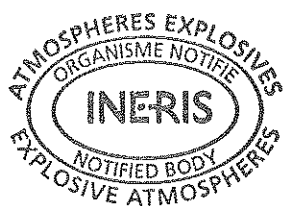
(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is unchanged.

Verneuil-en-Halatte, 2011.02.08



Director of the Certifying Body,
By delegation
T. HOUEIX
Certification Officer
Certification Division



ADDITION

(3) INERIS 00ATEX0012X/16

(4) PUMP TYPE 3153 and 5100

(5) Made by Xylem Water Solutions AB

(15) PURPOSE OF THE ADDITION

- Updating of the manufacturer's documents.
- Mechanical modifications.
- New adapters 608 22 11 X and 608 22 13 X added.
- New pumps 3153.830, 3153.810 and 3153.850 added.
- New motor, 2 poles 21-18-2BS and 4 poles 21-18-4XS introduced.
- Application of the standards EN 60079-0 : 2009, EN 60079-1 : 2007, EN 13463-1 : 2009 and 13463-5 : 2011.
- Change of the manufacturer name from "ITT Water & Wastewater AB" to "Xylem Water solutions AB".
- Possibility to install FLS, Level Sensor inside the flame proof enclosure.
- The range of ambient temperature becomes -20°C to +60°C.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are unchanged.

MARKING

The marking is modified as follows:

Xylem Water solutions AB

S-17487 Sundbyberg

3153 and 5100

INERIS 00ATEX0012X

(Serial number)

(Year of construction)

 II 2 G c Ex d IIB T3 Gb

 I M 2 c Ex d I Mb

Tamb. : -20°C to +60°C

WARNINGS:

DO NOT OPEN WHEN AN EXPLOSIVE GAZ ATMOSPHERE MAY BE PRESENT.

DO NOT OPEN WHEN ENERGIZED.

CONNECT THERMAL CONTACTS.

The whole of marking can be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

None.

(16) DESCRIPTIVE DOCUMENTS

The descriptive document quoted hereafter constitutes the technical documentation describing the modifications of the equipment, subject of this present addition.

- | | |
|---|---------------------|
| - Change description for EN-approved products | dated on 2012.01.03 |
| - CRITICAL PARTS | dated on 2012.01.03 |
| - REVISION REPORT | dated on 2012.01.03 |
| - FLS Float switch n°RSA12009EDH | dated on 2012.01.30 |
| - DESCRIPTIVE NOTE n°RSA12057EDH | dated on 2012.12.18 |
| - Text in the manual n°RSA12058EDH | dated on 2012.12.18 |
| - RSA11072EDH | dated on 2012.01.03 |
| - Drawing n°642 03 00 / 11 | dated on 2011.12.13 |

(17) SPECIAL CONDITIONS FOR SAFE USE

The special conditions for safe use are modified as follows:

- The width of flameproof joints is more than the values specified in the tables of the standard EN 60079-1.

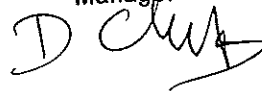
(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is completed as follows:

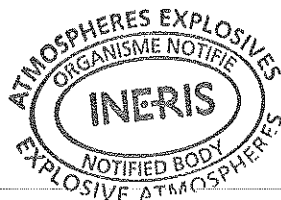
- Conformity to the European standards quoted on clause (15).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

Verneuil-en-Halatte, 2013.02.25

Dominique CHARPENTIER
Certification Division
Manager



The Chief Executive Officer of INERIS
By delegation
T. HOUEIX
Ex Certification Officer



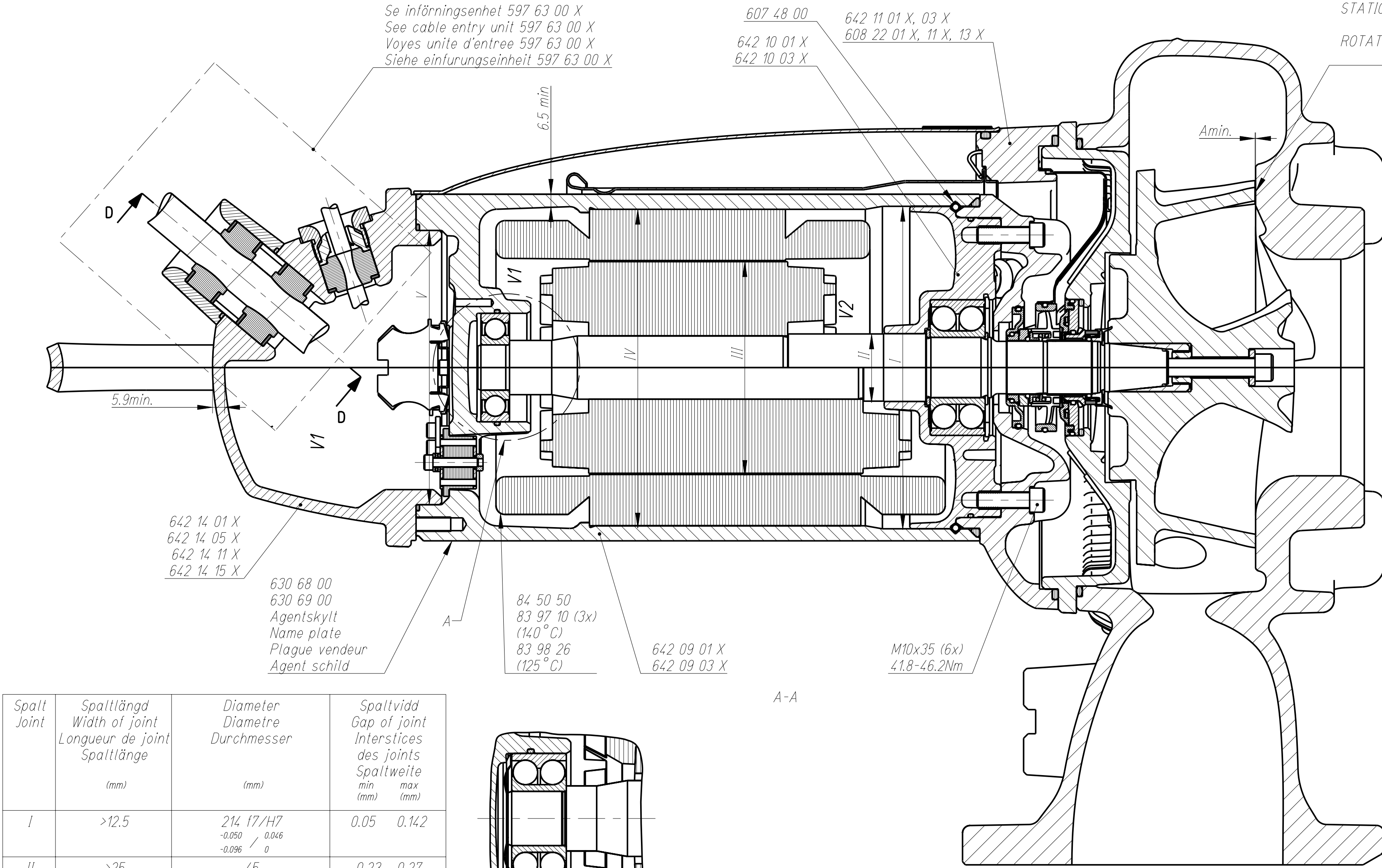
Proprietary Notice:
This drawing is the property of Xylem Water Solutions AB and is not to be disseminated or used in any way without our express written permission.

xylem

Ro/1mm
1:2

REVIEWER Drawing Format: A1 Sheet 1 of 1 Issued: rev 001004
All dimensions are given in millimeters unless otherwise stated.

Ver	Rev	0	1	2
File	Released	2012-02-02 12:54	2012-02-02 12:54	2012-02-02 12:54



Spalt Joint	Spaltlängd Width of joint Longueur de joint Spaltlänge (mm)	Diameter Diameter Durchmesser (mm)	Spaltvidd Gap of joint Interstices des joints Spaltweite min max (mm)
I	>12.5	214 17/H7 -0.050 -0.096 0.046 0	0.05 0.142
II	>25	45 d6 -0.080 -0.096 0.174 0.150	0.23 0.27 k=0.05 m=0.2
III	150 alt 180 2-pol	108.4±0.05 110 0.100 0	1.55 1.75
	180 2-pol (21-18-2BS)	108.2 ^{+0.45} _{-0.05} **) 110 0.100 0	1.35 1.95
	130 alt 150 alt 180 4-pol	140.5 ⁰ _{-0.100} 142 0.100 0	1.50 1.70
	180 4-pol (21-18-4XS)	140.4 ^{+0.45} _{-0.05} **) 142 0.100 0	1.15 1.75
	180 6-pol	140.8 ⁰ _{-0.100} 142 0.100 0	1.20 1.40
IV	130 alt 150 alt 180	210 js9 0.059 -0.058 -0.070 -0.116	Greppassning Shrinkfit Ajustement frette Eingeschrumpft
V	>12.5	182 -0.04 -0.10 0.05 0	0.04 0.15

** Including resin thickness, t=0.2 max

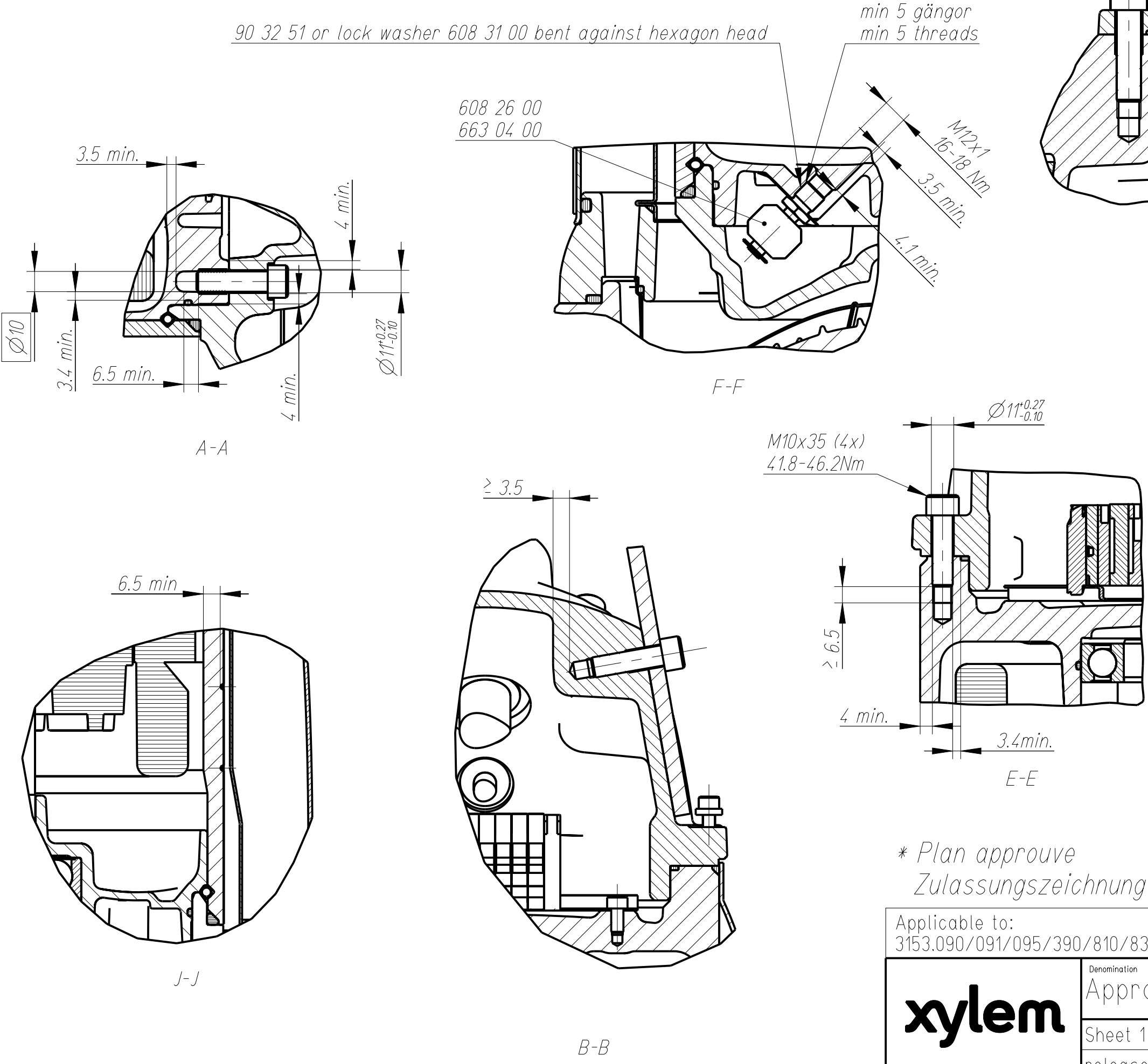
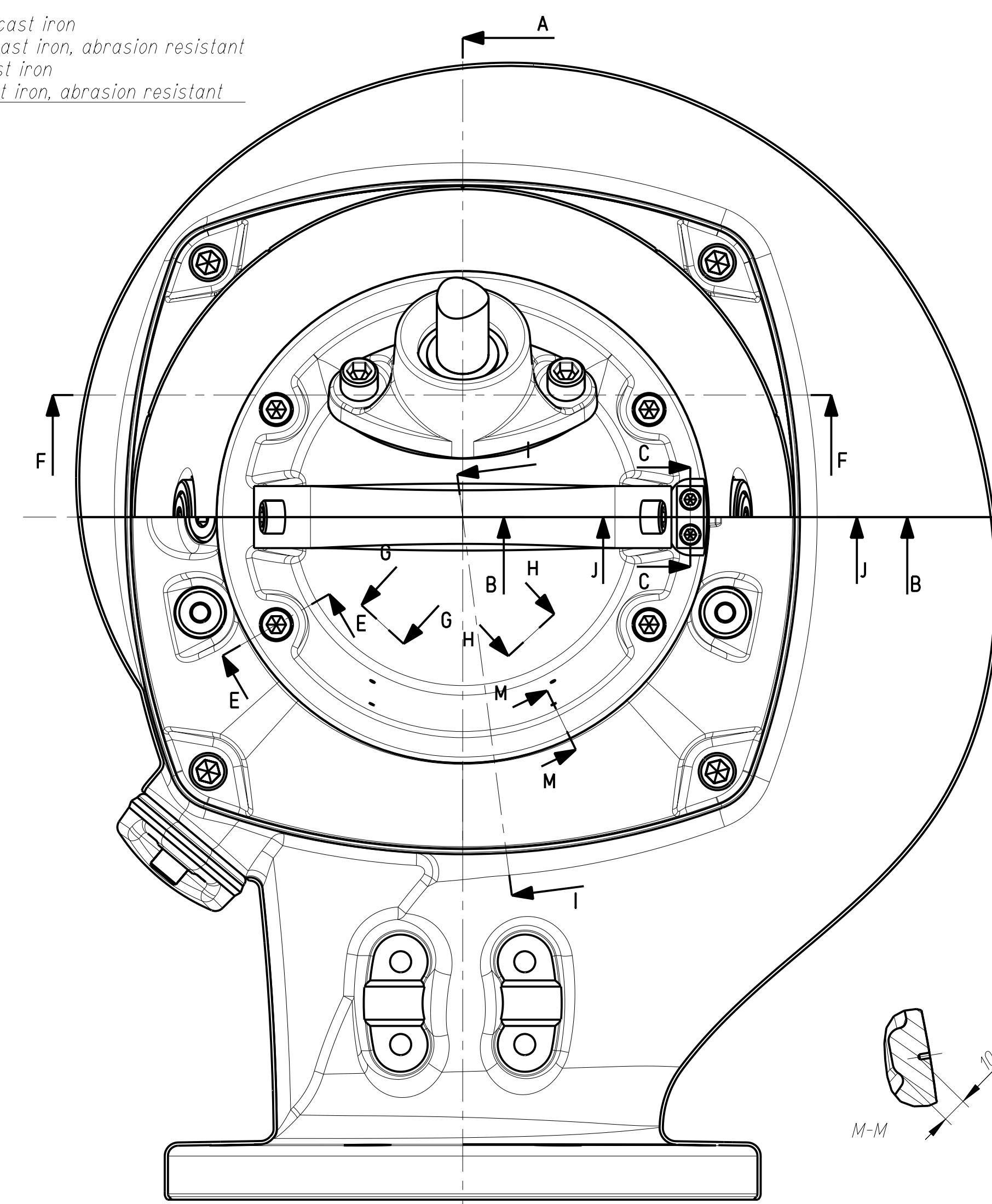
PUMP	Typical impeller no.	Typical inlet no.	Min. gap A (mm)
3153	642 32 XX	643 62 XX	0.1
	642 34 XX	643 63 XX	0.1
	642 36 XX	643 64 XX	0.1
	654 77 XX	654 78 XX	0.1
	685 15 XX	681 27 XX	0.1
5100	679 60 XX	647 04 XX	0.1
8148	679 60 XX	647 04 XX	0.1

Material för fästelement Material of fasteners Materiaux elements de fixation Werkstoff für Verbindungselemente	Austenitisk rostfritt stål Austenitic stainless steel Acier d'austenite inoxydable Austenitisch korrosionsfester Stahl	ISO 3506 Stålsort Grade Sorte d'acier Stahlsorte A4
Mekaniska egenskaper Mechanical properties Propriétés mécaniques Mechanisch Eigenschaften	Skruv Screw Vis Schraube Bricka Washer Rondelle Scheibe	Klass Class Classe Klasse 80 A 140 Class Classe Klasse

Artikel/ Denomination	Material/Matiere/Werkstoff
Axel Shaft Arbre Welle	M0344.2321.03 Martensitic Stainless Steel.
642 09 01 642 09 03 642 11 01 642 14 01 642 14 05 642 14 11 642 14 15 608 22 01	M0314.0125 Founding - Grey Cast Iron.
642 10 01 642 10 03 607 48 00	M0404.4250.10 Aluminium Alloy M0344.2331.06 Austenitic Stainless Steel.
608 26 00	M0344.2346.02 Austenitic Stainless Steel. alt. M0456.5170.04 Copper alloy
663 04 00	M0456.5170.04 Copper Alloy

Stator	L (mm)	50 Hz max 690 V	60 Hz max 690 V	Vol (dm3)
21-15-2	150	2-pol 17.4 kW 2890rpm	2-pol 21.0 kW 3495rpm	V1 = 3.89 V2 = 1.96 V1+V2=5.85
21-18-2	180	2-pol 21.0 kW 2890rpm	2-pol 23.1 kW 3505rpm	V1 = 3.89 V2 = 0.96 V1+V2=4.85
21-18-2BS	180	2-pol 19.9 kW 3000rpm	2-pol 22.1 kW 3600rpm	V1 = 3.98 V2 = 1.05 V1+V2=5.03
21-13-4	130	4-pol 9.3 kW 1465 rpm	4-pol 11.0 kW 1755 rpm	V1 = 3.89 V2 = 2.62 V1+V2=6.51
21-15-4	150	4-pol 11.0 kW 1460 rpm	4-pol 13.5 kW 1755 rpm	V1 = 3.89 V2 = 1.96 V1+V2=5.85
21-18-4	180	4-pol 17.3 kW 1460 rpm	4-pol 18.9 kW 1755 rpm	V1 = 3.89 V2 = 0.96 V1+V2=4.85
21-18-4XS	180	4-pol 16.0 kW 1500 rpm	4-pol 17.6 kW 1800 rpm	V1 = 4.09 V2 = 1.16 V1+V2=5.25
21-18-6	180	6-pol 11.6 kW 954 rpm	6-pol 14.2 kW 1154 rpm	V1 = 3.89 V2 = 0.96 V1+V2=4.85

STATIONARY: cast iron
cast iron, abrasion resistant
ROTATING: cast iron
cast iron, abrasion resistant



* Plan approve
Zulassungszeichnung

This drawing may not be altered without permission of authorities listed below.
EN IECEx

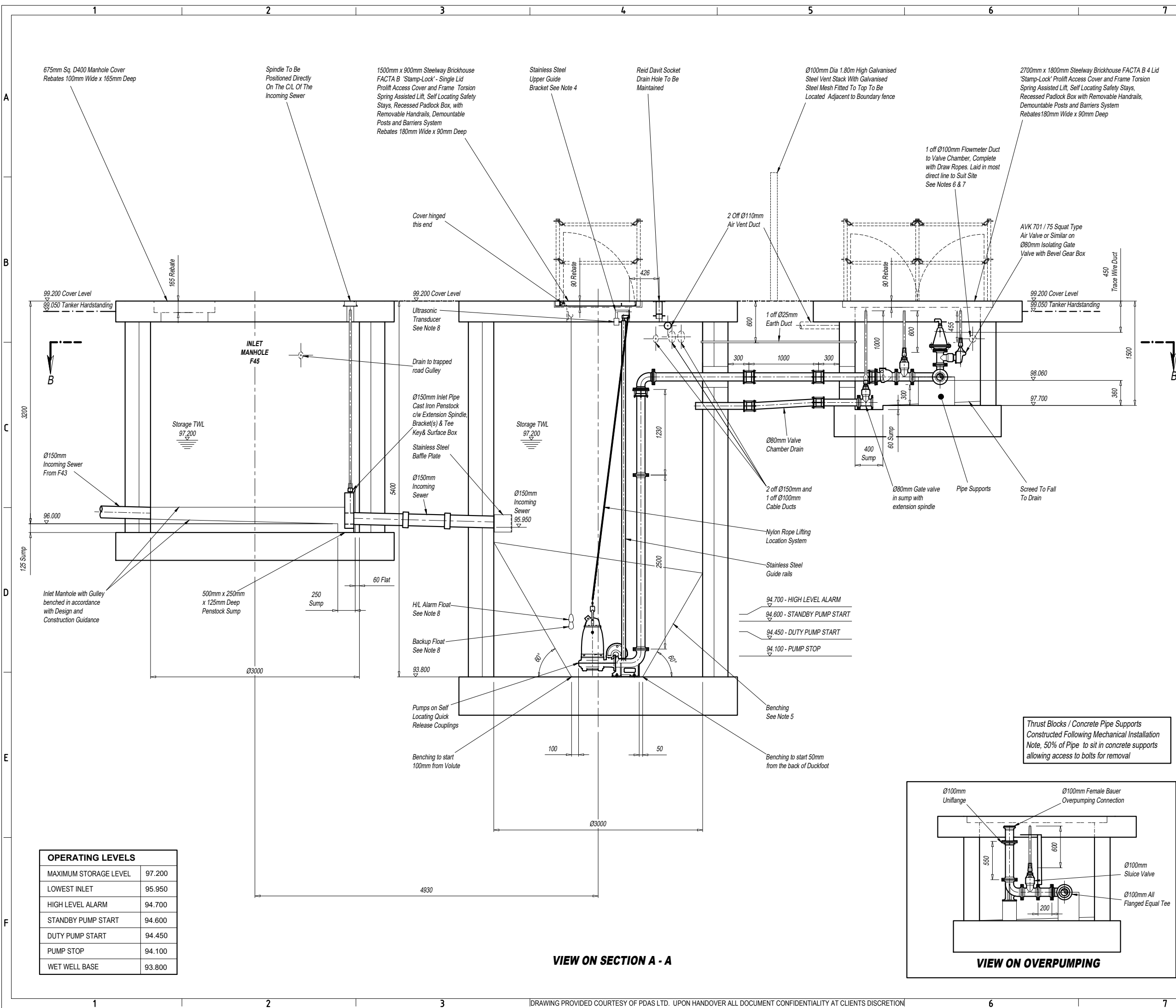
Applicable to:
3153.090/091/095/390/810/830/850, 5100.220/221, 8148.190

xylem	Approval drawing *	
	Sheet 1 of 1	Drawing No
	released	642 03 00
Rev	11	

Material	-
M class	5399
Weight (kg)	-
Treatment	-
Blank	-

Appendix E

Pump Station Drawings



OPERATING LEVELS	
MAXIMUM STORAGE LEVEL	97.200
LOWEST INLET	95.950
HIGH LEVEL ALARM	94.700
STANDBY PUMP START	94.600
DUTY PUMP START	94.450
PUMP STOP	94.100
WET WELL BASE	93.800

- NOTES**
- DO NOT SCALE.
 - UNLESS OTHERWISE STATED ALL DIMENSIONS ARE IN MILLIMETRES AND ALL INVERTS IN METRES AOD.
 - ALL CIVIL WORKS IS THE RESPONSIBILITY OF THE DEVELOPER OR CONTRACTOR INCLUDING FIXING OF STEELWORK SUCH AS ACCESS COVERS AND PENSTOCKS ETC. INSTALLATION OF CABLE DUCTS, BENCHING AND MAKING GOOD AROUND PIPES AFTER INSTALLATION.
 - REINFORCING BARS ARE TO BE A MINIMUM OF 75MM BELOW THE SURFACE. ANY STRUCTURAL DETAILING / CIVIL WORKS SHOWN ON THIS DRAWING ARE ILLUSTRATIVE ONLY UNLESS OTHERWISE STATED AND SHOULD NOT BE USED FOR CONSTRUCTION.
 - BENCHING IS TO BE FORMED AFTER PUMP INSTALLATION AND TO BE IN ACCORDANCE WITH THE APPLICABLE DESIGN AND CONSTRUCTION GUIDANCE AND ADOPTING AUTHORITY SPECIFICATION.
 - UNLESS OTHERWISE STATED, ALL DUCTS ARE TO BE Ø100MM AND BE COMPLETE WITH DRAW ROPES. SERVICE DUCTS TO BE TO THE UTILITY SUPPLIERS SPECIFICATION.
 - DUCT ROUTES ARE SHOWN DIAGRAMMATICALLY ONLY. ALL DUCTS LAID IN THE MOST DIRECT ROUTE TO SUIT THE SERVICE BEING CARRIED AVOIDING ANY ACUTE CHANGES OF DIRECTION.
 - LEVEL CONTROL POSITIONS ARE SHOWN DIAGRAMMATICALLY ONLY. THEY WILL BE POSITIONED AWAY FROM OBSTRUCTIONS AND BE READILY ADJUSTABLE AFTER INSTALLATION.

STATION INFORMATION			
PUMP TYPE	XYLEM	NP 3153.091 HT	
IMPELLER		N-type / 453	
MOTOR RATING		13.5 kW	
FULL LOAD CURRENT		27 A FLC	
ZONE RATING		EXP	
DUTY FLOW		6.1 L/Sec	
HEAD GENERATED		23.24m	
LEVEL CONTROLS		PULSAR ZENITH ULTRASONIC LEVEL C/W HIGH LEVEL ALARM AND BACK UP FLOAT SWITCHES	
PIPE / VALVE SIZE		Ø100mm	

FINAL DISCHARGE	
INTERNAL DIAMETER	Ø100mm
MATERIAL	DUCTILE IRON
TERMINATION	FLANGED
PIPE OD	N/A
FLANGE DATA	Ø100mm PN16
RISING MAIN	125mm OD PE100 SDR11 (101.3mm BORE)
RISING MAIN COUPLER	BY DEVELOPER / CONTRACTOR

A	04/07/25	VC dimension adjusted and air valve added. Head generated updated.	K.T.	G.T.	I.V.
REV	DATE	DESCRIPTION	DR'n	CHK'd	APR'l

FOR APPROVAL



BUILDING 4.6, HITECH, FRIMLEY 4 BUSINESS PARK, FRIMLEY, CAMBERLEY, SURREY, GU16 7SG OFFICE TEL No. (01483) 930520 WEBSITE WWW.PDASLTD.CO.UK

PROJECT HILL TOP, LEICESTER ROAD
EARL SHILTON

TITLE FOUL WATER PUMP STATION
ELEVATION VIEW

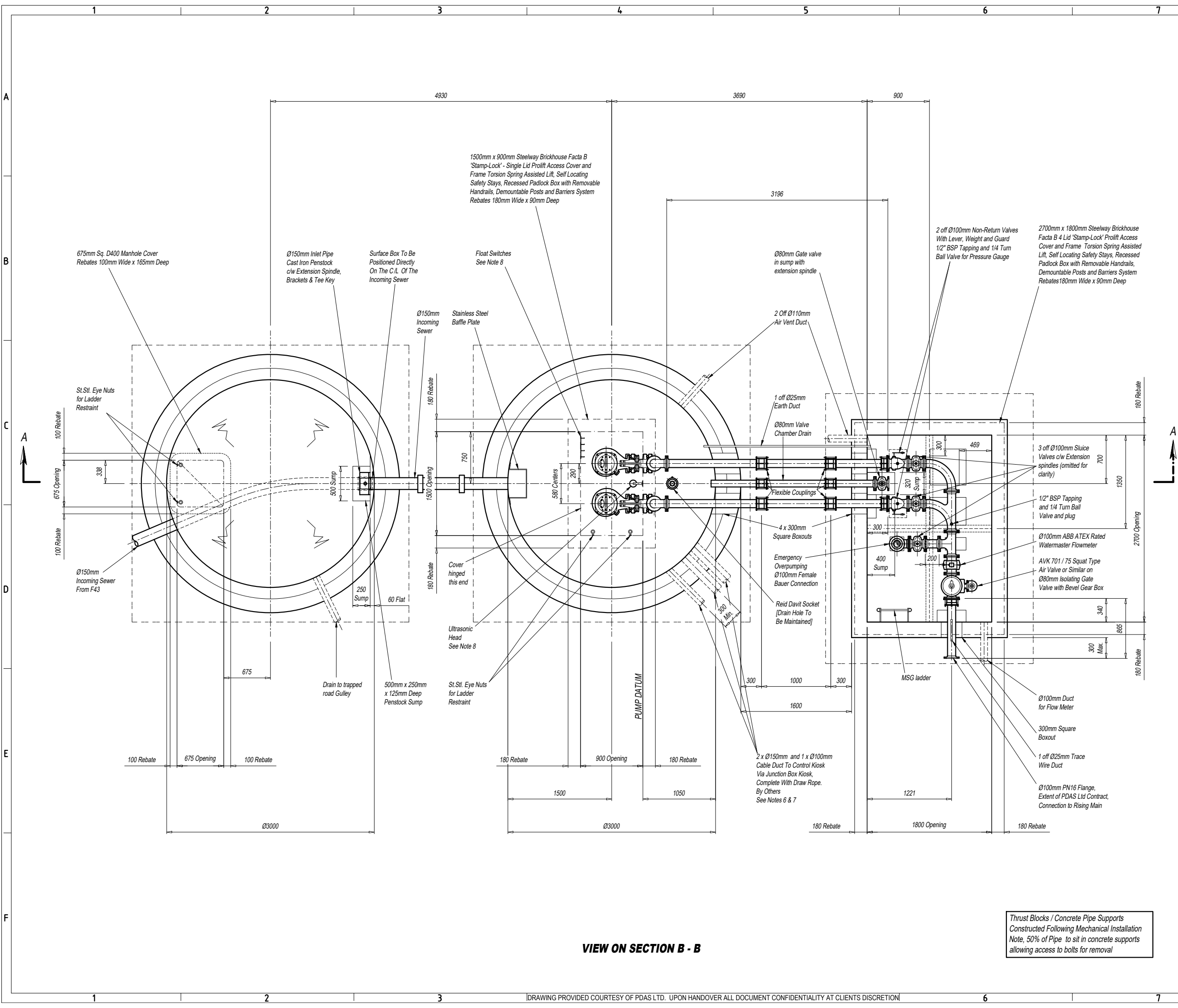
CLIENT VISTRY SOUTH EAST MIDLANDS

SCALE AT A1 1:25 SCALE AT A3 1:50

QUOTE NUMBER 4271 APR'l G.T. DATE 08-01-2025

JOB NO. 28225 CHK'd I.V. DATE 08-01-2025

DRAWING NUMBER 4271-28225-001 DR'n K.T. DATE 08-01-2025



- NOTES**
- DO NOT SCALE.
 - UNLESS OTHERWISE STATED ALL DIMENSIONS ARE IN MILLIMETRES AND ALL INVERTS IN METRES AOD.
 - ALL CIVIL WORKS IS THE RESPONSIBILITY OF THE DEVELOPER OR CONTRACTOR INCLUDING FIXING OF STEELWORK SUCH AS ACCESS COVERS AND PENSTOCKS ETC. INSTALLATION OF CABLE DUCTS, BENCHING AND MAKING GOOD AROUND PIPES AFTER INSTALLATION.
 - REINFORCING BARS ARE TO BE A MINIMUM OF 75MM BELOW THE SURFACE. ANY STRUCTURAL DETAILING / CIVIL WORKS SHOWN ON THIS DRAWING ARE ILLUSTRATIVE ONLY UNLESS OTHERWISE STATED AND SHOULD NOT BE USED FOR CONSTRUCTION.
 - BENCHING IS TO BE FORMED AFTER PUMP INSTALLATION AND TO BE IN ACCORDANCE WITH THE APPLICABLE DESIGN AND CONSTRUCTION GUIDANCE AND ADOPTING AUTHORITY SPECIFICATION.
 - UNLESS OTHERWISE STATED, ALL DUCTS ARE TO BE Ø100MM AND BE COMPLETE WITH DRAW ROPES. SERVICE DUCTS TO BE TO THE UTILITY SUPPLIERS SPECIFICATION.
 - DUCT ROUTES ARE SHOWN DIAGRAMMATICALLY ONLY. ALL DUCTS LAID IN THE MOST DIRECT ROUTE TO SUIT THE SERVICE BEING CARRIED AVOIDING ANY ACUTE CHANGES OF DIRECTION.
 - LEVEL CONTROL POSITIONS ARE SHOWN DIAGRAMMATICALLY ONLY. THEY WILL BE POSITIONED AWAY FROM OBSTRUCTIONS AND BE READILY ADJUSTABLE AFTER INSTALLATION.

A	04/07/25	VC dimension adjusted and air valve added.	K.T.	G.T.	I.V.
REV	DATE	DESCRIPTION	DR'n	CHK'd	APR'l

FOR APPROVAL



DESIGN
INSTALL
PROACTIVE

TOTAL WATER EXPERTISE

BUILDING 4.6, HITECH, FRIMLEY 4 BUSINESS PARK, FRIMLEY, CAMBERLEY, SURREY, GU16 7SG
OFFICE TEL No. (01483) 930520
WEBSITE WWW.PDASLTD.CO.UK

PROJECT **HILL TOP, LEICESTER ROAD EARL SHILTON**

TITLE **FOUL WATER PUMP STATION PLAN VIEW**

CLIENT **VISTRY SOUTH EAST MIDLANDS**

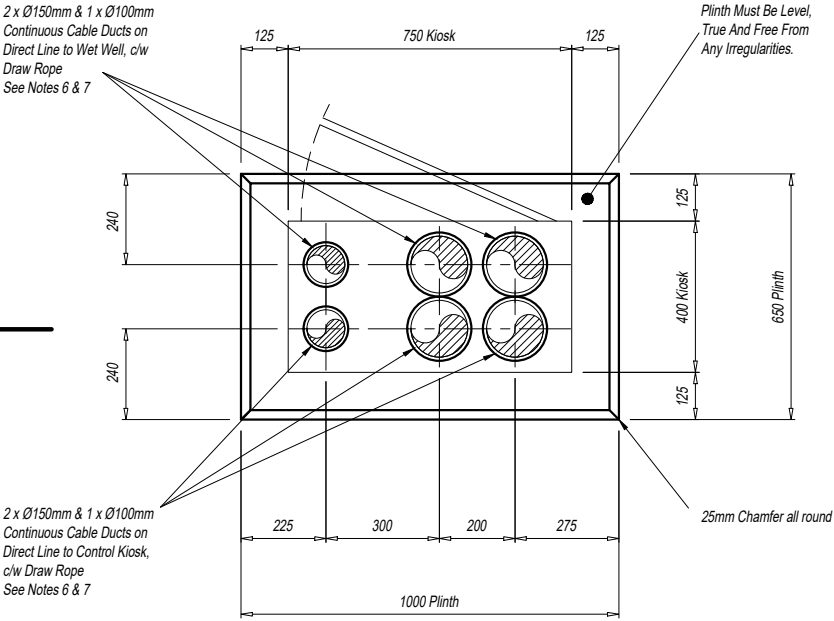
SCALE AT A1	1:25	SCALE AT A3	1:50
QUOTE NUMBER	4271	APR'l	G.T.
JOB NO.	28225	CHK'd	I.V.
DRAWING NUMBER	4271-28225-002	DR'n	K.T.
		DATE	08-01-2025
		DATE	08-01-2025
		DATE	08-01-2025

Thrust Blocks / Concrete Pipe Supports
Constructed Following Mechanical Installation
Note, 50% of Pipe to sit in concrete supports
allowing access to bolts for removal

JUNCTION BOX KIOSK PLINTH DETAIL

Kiosk Dimensions
1250mm High x 750mm Wide x 400mm Deep

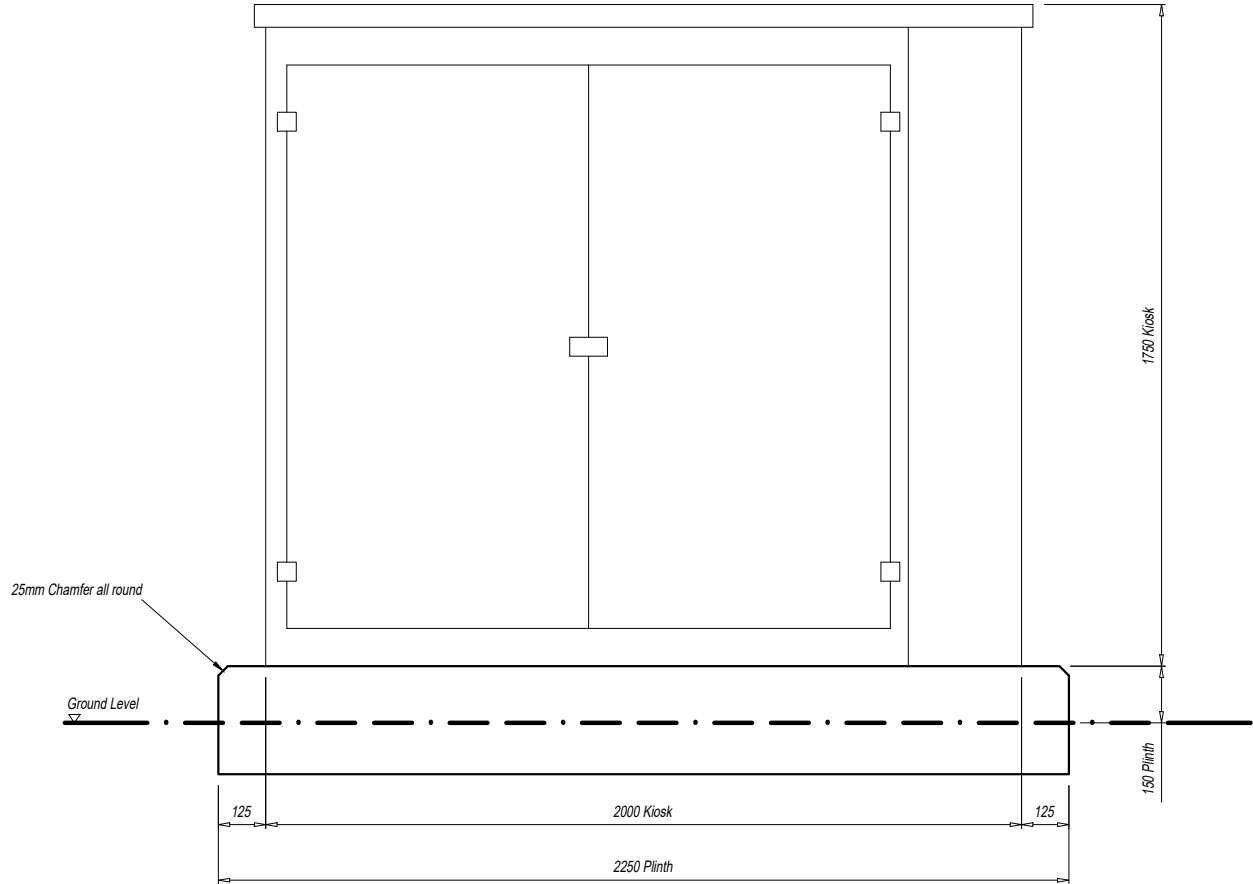
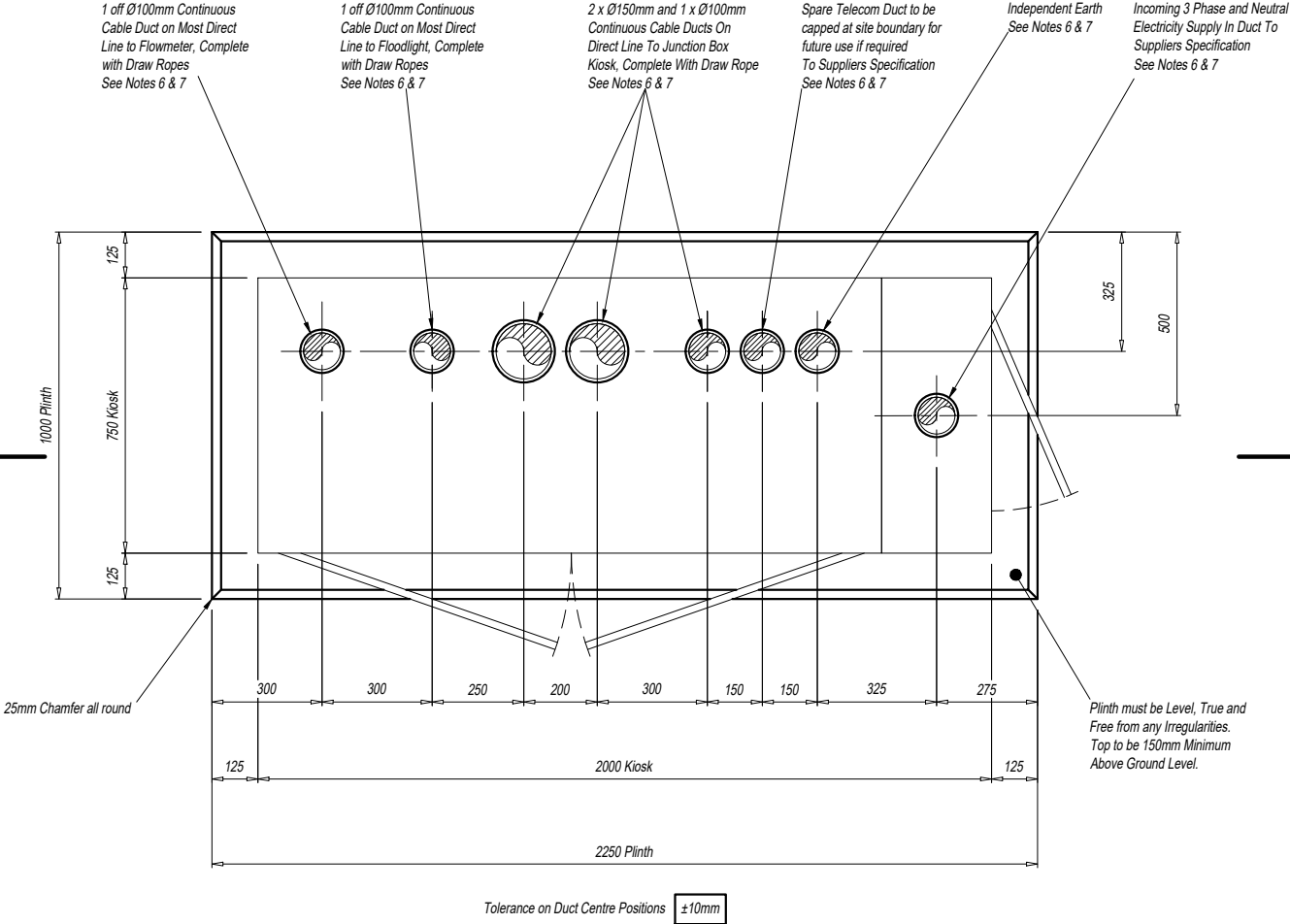
Tolerance on Duct Centre Positions ±10mm



VIEW ON SECTION C - C

MCC KIOSK PLINTH DETAIL

(KIOSK 1750 High)

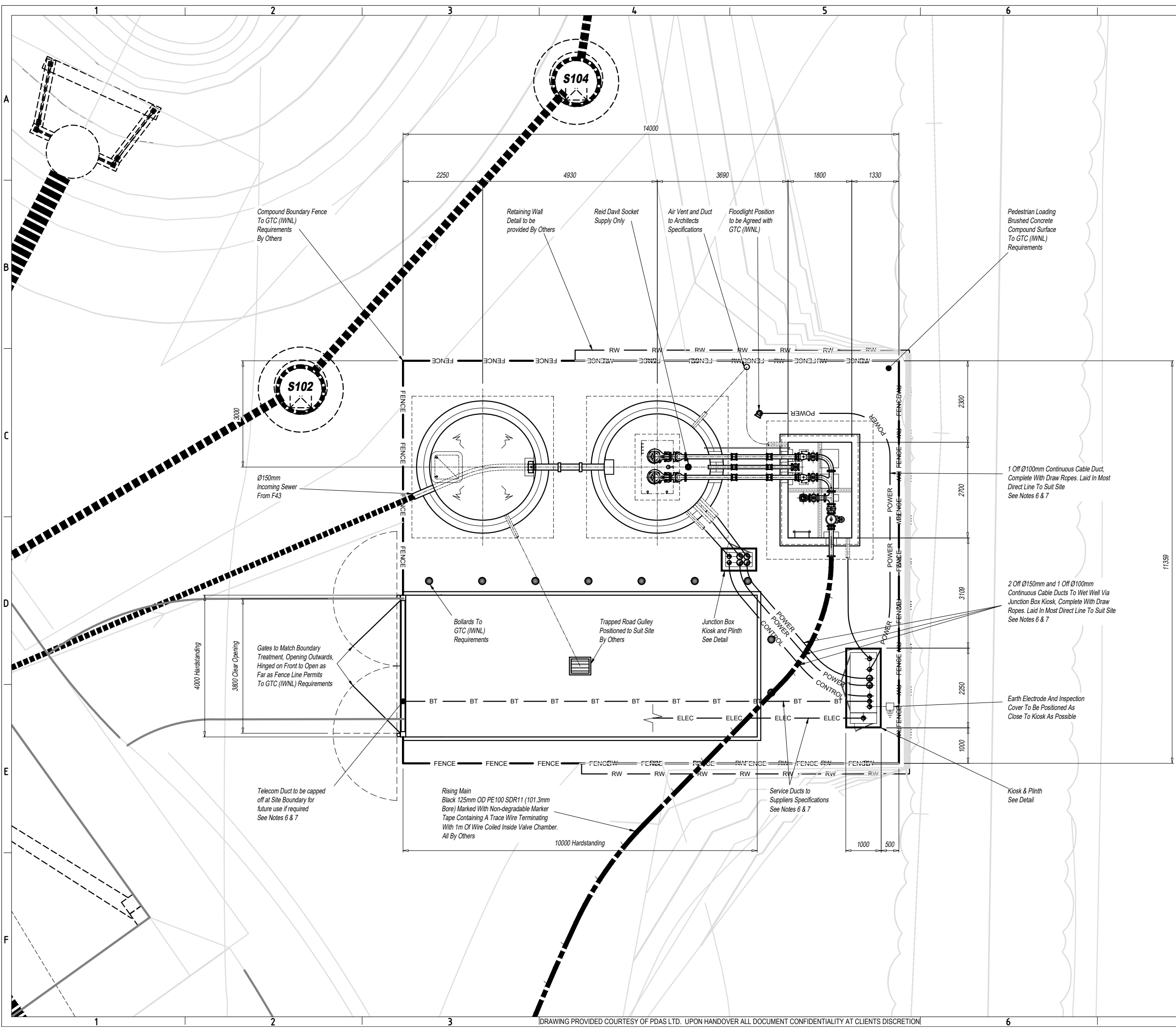


VIEW ON SECTION D - D

NOTES

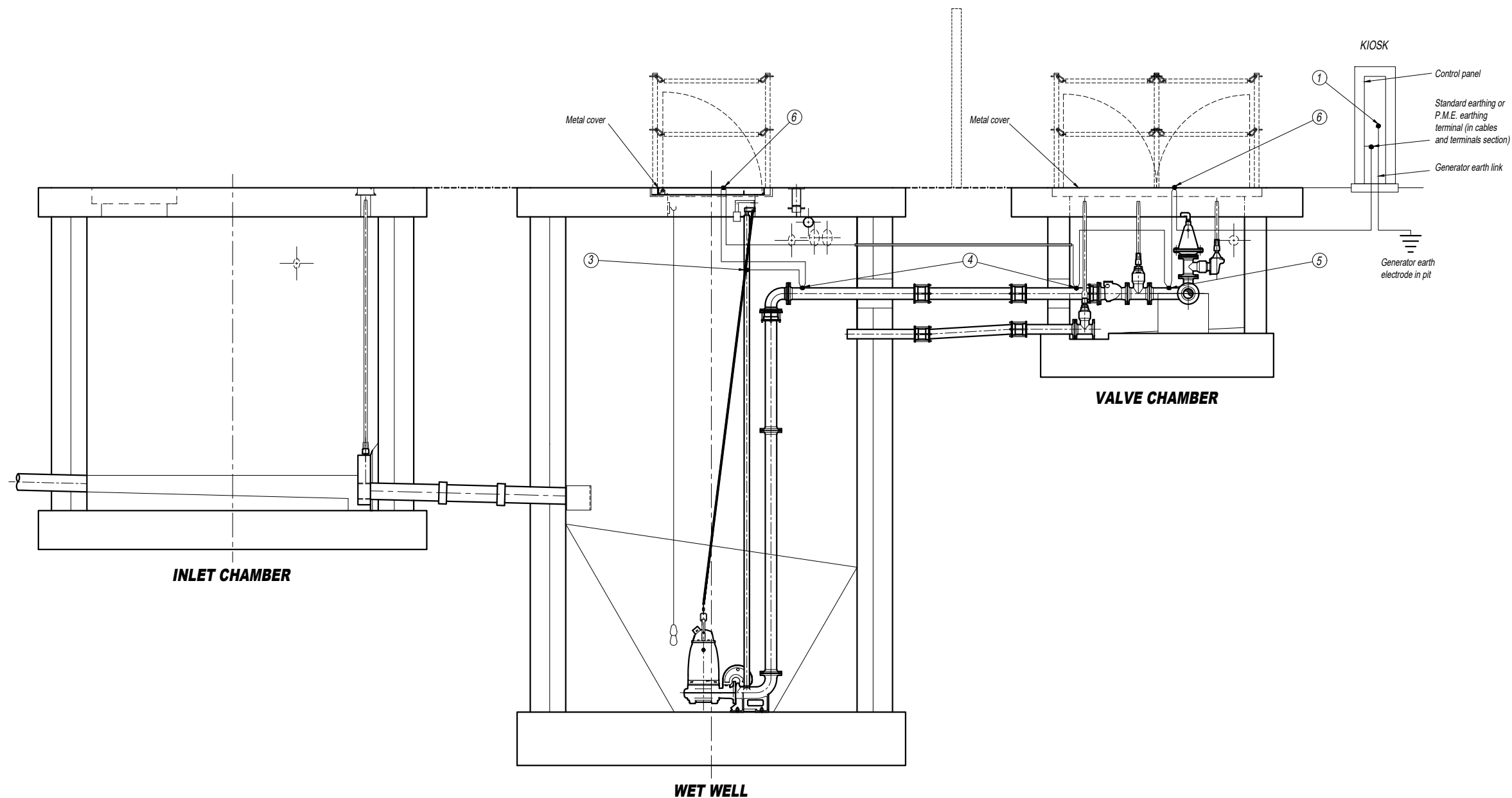
- DO NOT SCALE.
- UNLESS OTHERWISE STATED ALL DIMENSIONS ARE IN MILLIMETRES AND ALL INVERTS IN METRES AOD.
- ALL CIVIL WORKS IS THE RESPONSIBILITY OF THE DEVELOPER OR CONTRACTOR INCLUDING FIXING OF STEELWORK SUCH AS ACCESS COVERS AND PENSTOCKS ETC. INSTALLATION OF CABLE DUCTS, BENCHING AND MAKING GOOD AROUND PIPES AFTER INSTALLATION.
- REINFORCING BARS ARE TO BE A MINIMUM OF 75MM BELOW THE SURFACE. ANY STRUCTURAL DETAILING / CIVIL WORKS SHOWN ON THIS DRAWING ARE ILLUSTRATIVE ONLY UNLESS OTHERWISE STATED AND SHOULD NOT BE USED FOR CONSTRUCTION.
- BENCHING IS TO BE FORMED AFTER PUMP INSTALLATION AND TO BE IN ACCORDANCE WITH THE APPLICABLE DESIGN AND CONSTRUCTION GUIDANCE AND ADOPTING AUTHORITY SPECIFICATION.
- UNLESS OTHERWISE STATED, ALL DUCTS ARE TO BE Ø100MM AND BE COMPLETE WITH DRAW ROPES. SERVICE DUCTS TO BE TO THE UTILITY SUPPLIERS SPECIFICATION.
- DUCT ROUTES ARE SHOWN DIAGRAMMATICALLY ONLY. ALL DUCTS LAID IN THE MOST DIRECT ROUTE TO SUIT THE SERVICE BEING CARRIED AVOIDING ANY ACUTE CHANGES OF DIRECTION.
- LEVEL CONTROL POSITIONS ARE SHOWN DIAGRAMMATICALLY ONLY. THEY WILL BE POSITIONED AWAY FROM OBSTRUCTIONS AND BE READILY ADJUSTABLE AFTER INSTALLATION.

REV	DATE	DESCRIPTION	DR'n	CHK'd	APR'l
FOR APPROVAL					
 DESIGN INSTALL PROACTIVE					
TOTAL WATER EXPERTISE					
BUILDING 4.6, IITECH, FRIMLEY 4 BUSINESS PARK, FRIMLEY, CAMBERLEY, SURREY, GU16 7SG OFFICE TEL No. (01483) 930520 WEBSITE WWW.PDASLTD.CO.UK					
PROJECT HILL TOP, LEICESTER ROAD EARL SHILTON					
TITLE FOUL WATER PUMP STATION KIOSK AND PLINTH DETAIL					
CLIENT VISTRY SOUTH EAST MIDLANDS					
SCALE AT A1 1:10		SCALE AT A3 1:20			
QUOTE NUMBER 4271		APR'l G.T.	DATE 08-01-2025		
JOB NO. 28225		CHK'd I.V.	DATE 08-01-2025		
DRAWING NUMBER 4271-28225-003		DR'n K.T.	DATE 08-01-2025		



- NOTES**
- DO NOT SCALE.
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A	04/07/25	VC dimension adjusted and air valve added. Site plan updated.	K.T.	G.T.	I.V.
REV	DATE	DESCRIPTION	DR'n	CHK'd	APR'l
FOR APPROVAL					
 TOTAL WATER EXPERTISE DESIGN INSTALL PROACTIVE BUILDING 4 & 5, HITECH, FRIMLEY 4 BUSINESS PARK, FRIMLEY, CAMBERLEY, SURREY, GU16 7SG OFFICE TEL No. (01483) 930520 WEBSITE WWW.PDASLTD.CO.UK					
PROJECT HILL TOP, LEICESTER ROAD EARL SHILTON					
TITLE FOUL WATER PUMP STATION SITE PLAN					
CLIENT VISTRY SOUTH EAST MIDLANDS					
SCALE AT A1 1:50			SCALE AT A3 1:100		
QUOTE NUMBER 4271		APR'l G.T.		DATE 08-01-2025	
JOB NO. 28225		CHK'd I.V.		DATE 08-01-2025	
DRAWING NUMBER 4271-28225-004		DR'n K.T.		DATE 08-01-2025	



- NOTES**
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Note:
Earth bonding connections indicated thus:



The following actual equipment must be bonded to the earthing terminal:

- All case earth connections, ect, in the kiosk/building;
- Metal ladder (Not applicable)
- Pump Guiderails
- Pump delivery pipes
- Metal rising main
- Metal cover support frames.

The pump casing is connected to the protective multiple earth (P.M.E.) earthing terminal via the flexible cable between the pump and the kiosk/building.

A	04/07/25	VC dimension adjusted and air valve added.	K.T.	G.T.	I.V.
REV	DATE	DESCRIPTION	DR'n	CHK'd	APR'l

FOR APPROVAL



BUILDING 4 & 5, HITECH, FRIMLEY 4 BUSINESS PARK, FRIMLEY, CAMBERLEY, SURREY, GU16 7SG OFFICE TEL No. (01483) 930520 WEBSITE WWW.PDASLTD.CO.UK

PROJECT **HILL TOP, LEICESTER ROAD EARL SHILTON**

TITLE **FOUL WATER PUMP STATION EARTHING ARRANGEMENT**

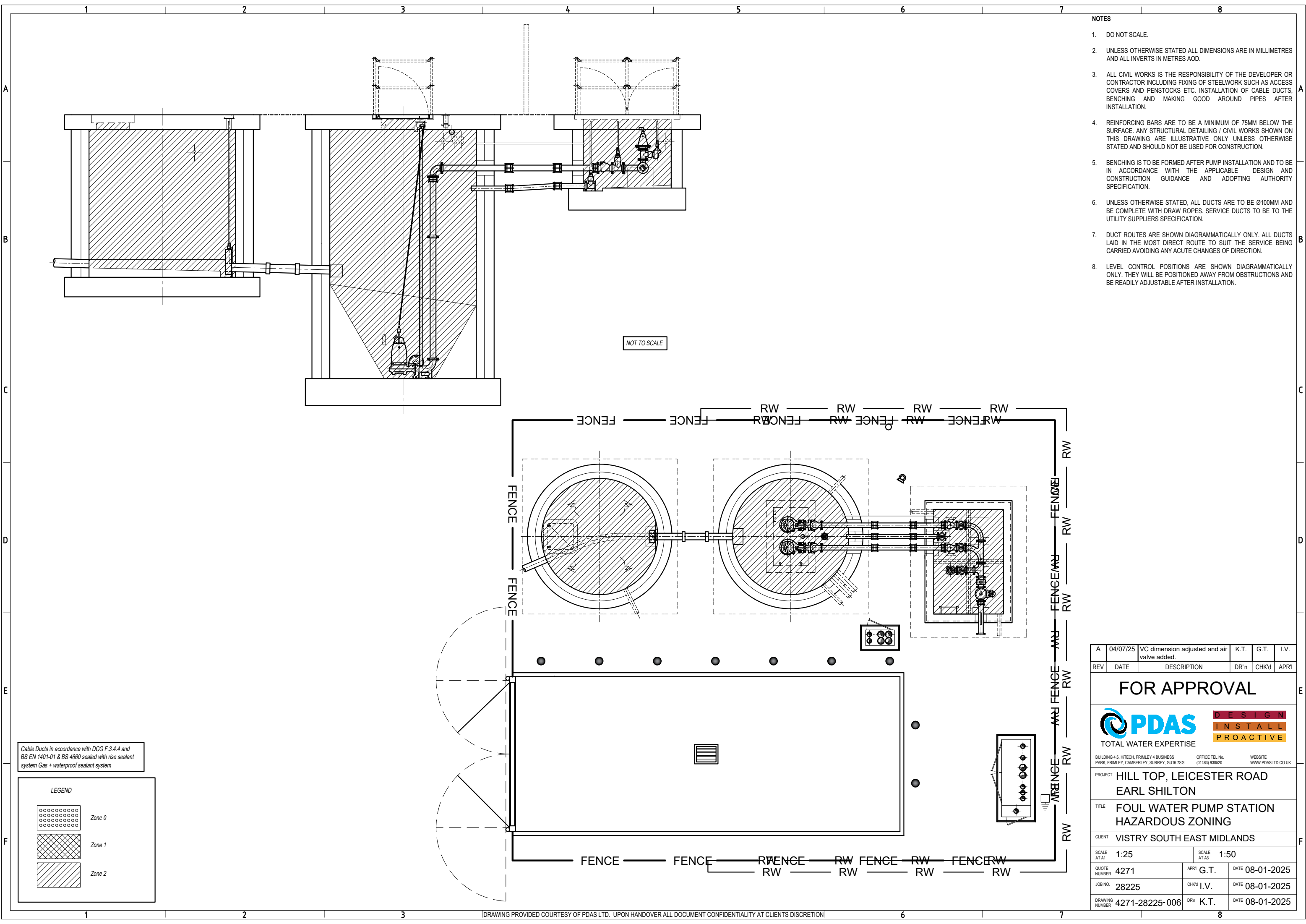
CLIENT **VISTRY SOUTH EAST MIDLANDS**

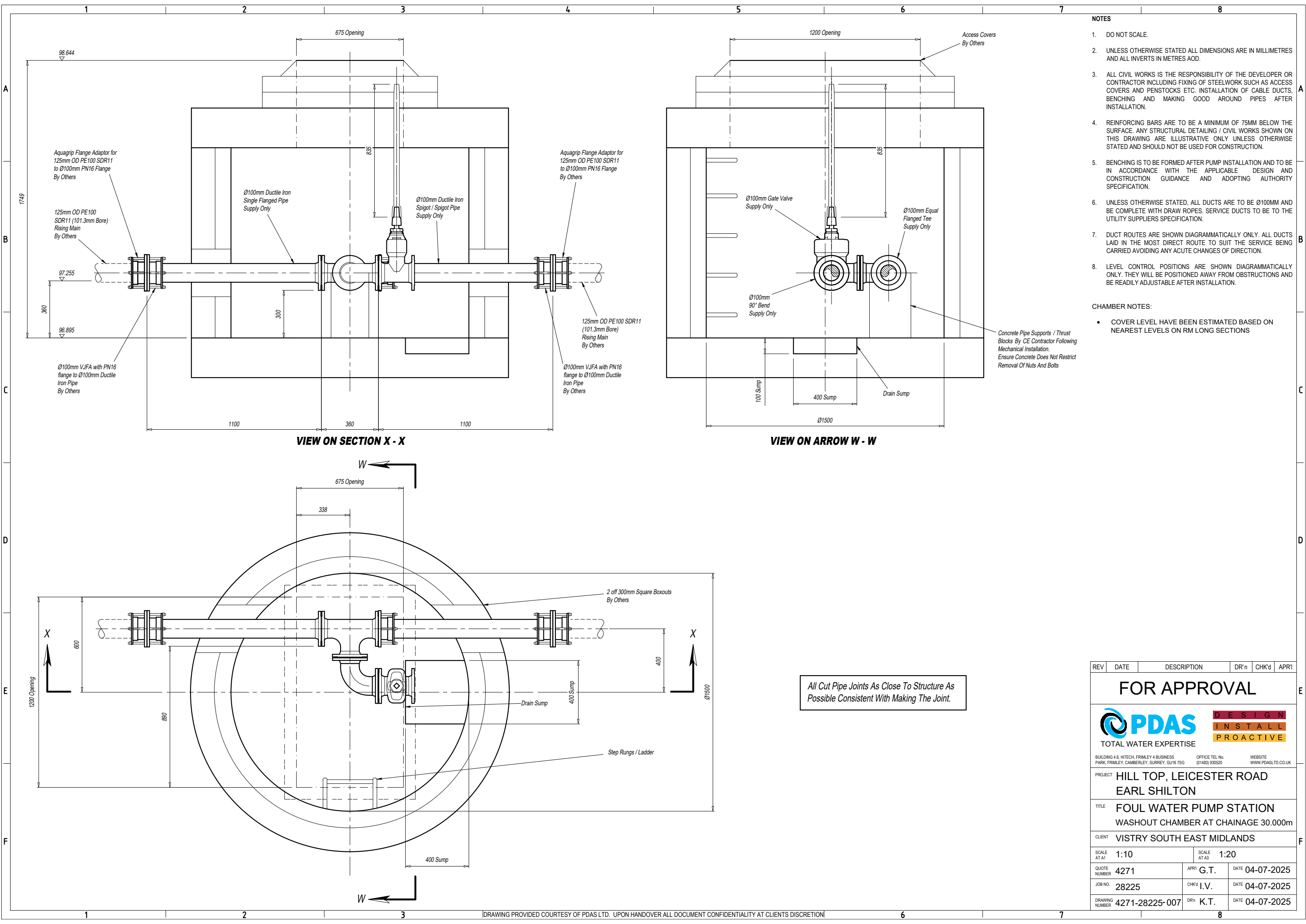
SCALE AT A1 **1:25** SCALE AT A3 **1:50**

QUOTE NUMBER **4271** APR'l **G.T.** DATE **08-01-2025**

JOB NO. **28225** CHK'd **I.V.** DATE **08-01-2025**

DRAWING NUMBER **4271-28225-005** DR'n **K.T.** DATE **08-01-2025**





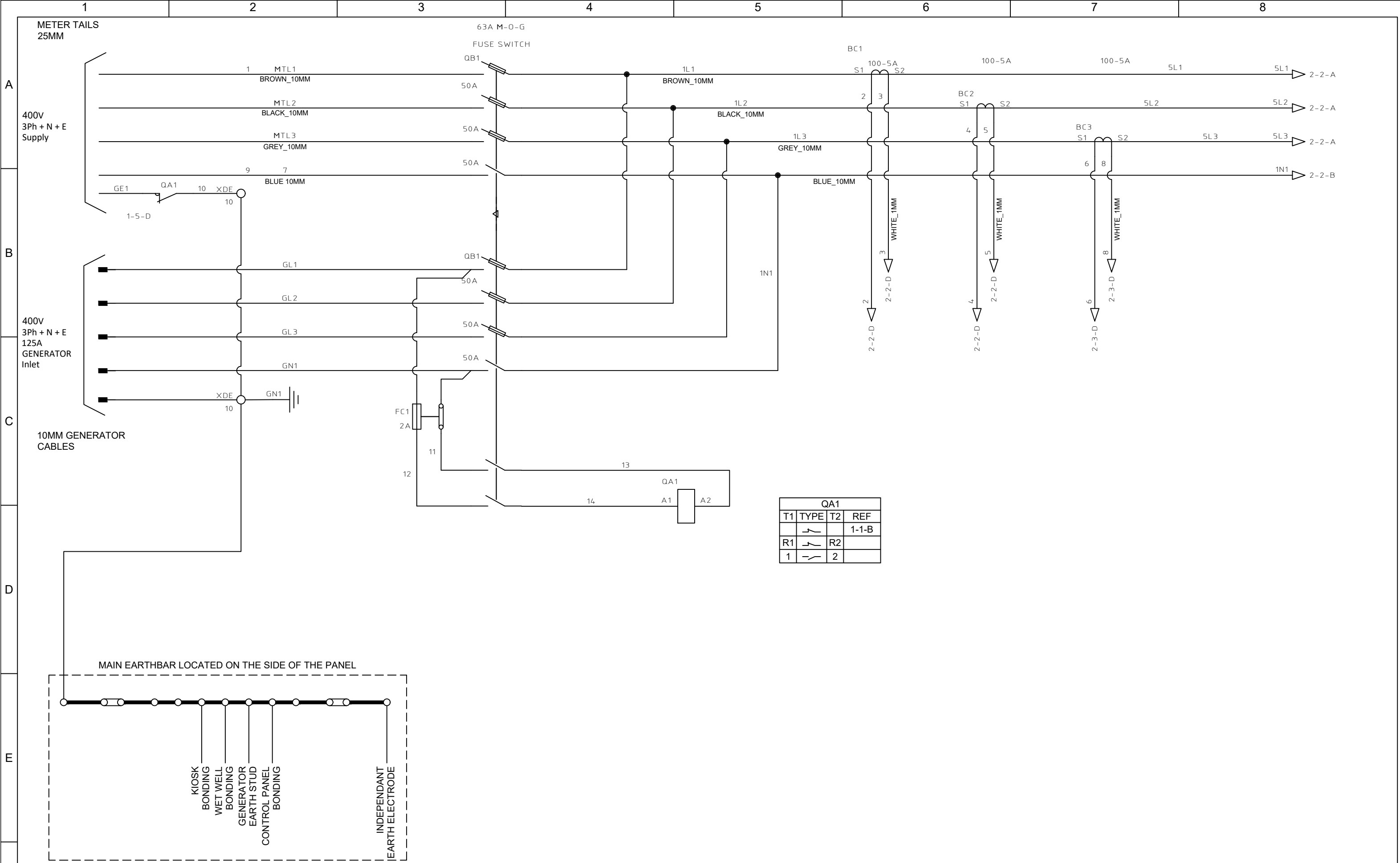
- NOTES**
- DO NOT SCALE.
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 - LEVEL CONTROL POSITIONS ARE SHOWN DIAGRAMMATICALLY ONLY. THEY WILL BE POSITIONED AWAY FROM OBSTRUCTIONS AND BE READILY ADJUSTABLE AFTER INSTALLATION.

- CHAMBER NOTES:**
- COVER LEVEL HAVE BEEN ESTIMATED BASED ON NEAREST LEVELS ON RM LONG SECTIONS

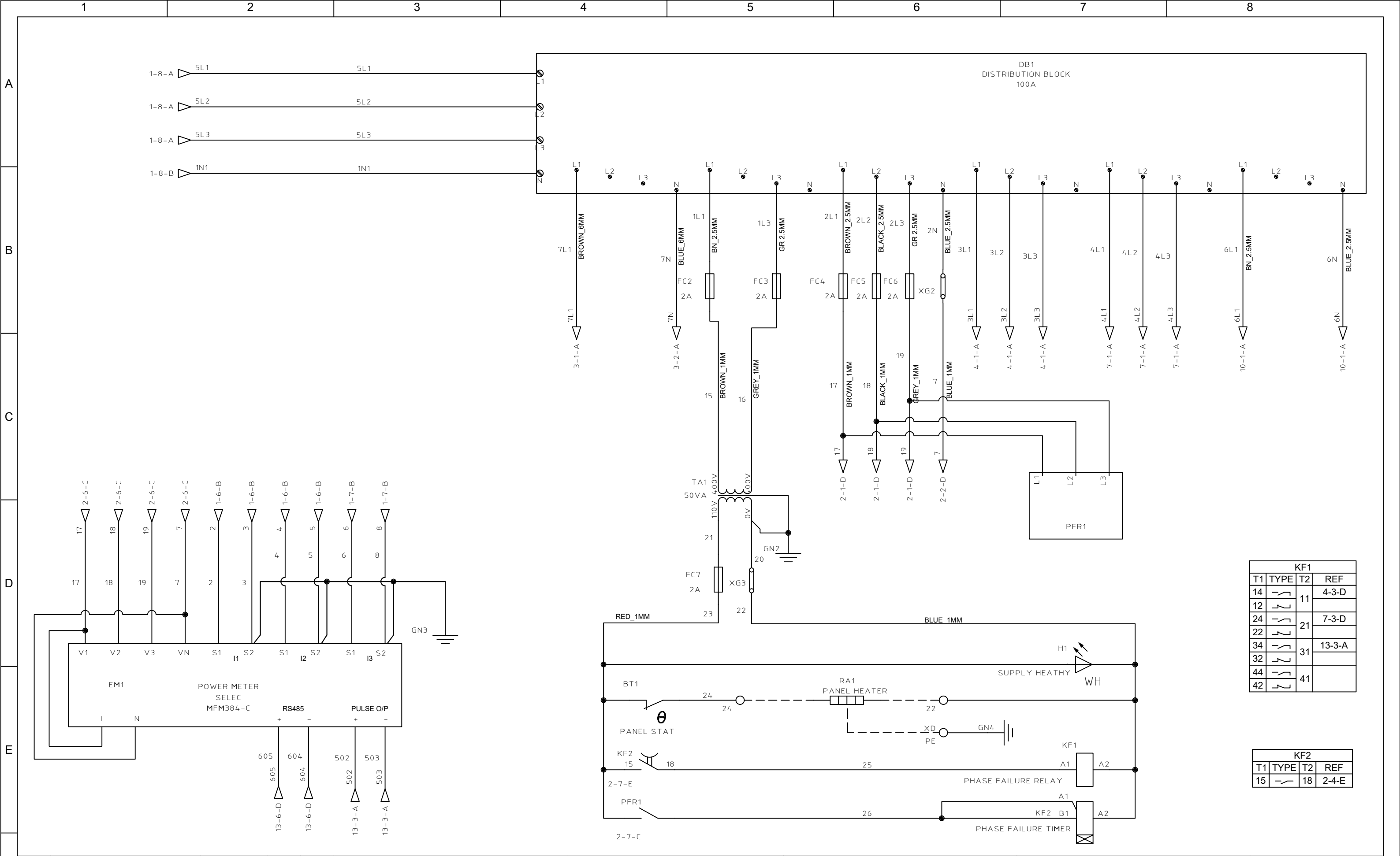
REV	DATE	DESCRIPTION	DR'n	CHK'd	APR'l
FOR APPROVAL					
			DESIGN INSTALL PROACTIVE		
TOTAL WATER EXPERTISE					
BUILDING 4 & 5, HITECH, FRIMLEY 4 BUSINESS PARK, FRIMLEY, CAMBERLEY, SURREY, GU16 7SG			OFFICE TEL No. (01483) 930520		WEBSITE WWW.PDASLTD.CO.UK
PROJECT	HILL TOP, LEICESTER ROAD EARL SHILTON				
TITLE	FOUL WATER PUMP STATION WASHOUT CHAMBER AT CHAINAGE 30.000m				
CLIENT	VISTRY SOUTH EAST MIDLANDS				
SCALE AT A1	1:10		SCALE AT A3	1:20	
QUOTE NUMBER	4271		APR'l	G.T.	DATE 04-07-2025
JOB NO.	28225		CHK'd	I.V.	DATE 04-07-2025
DRAWING NUMBER	4271-28225-007		DR'n	K.T.	DATE 04-07-2025

Appendix F

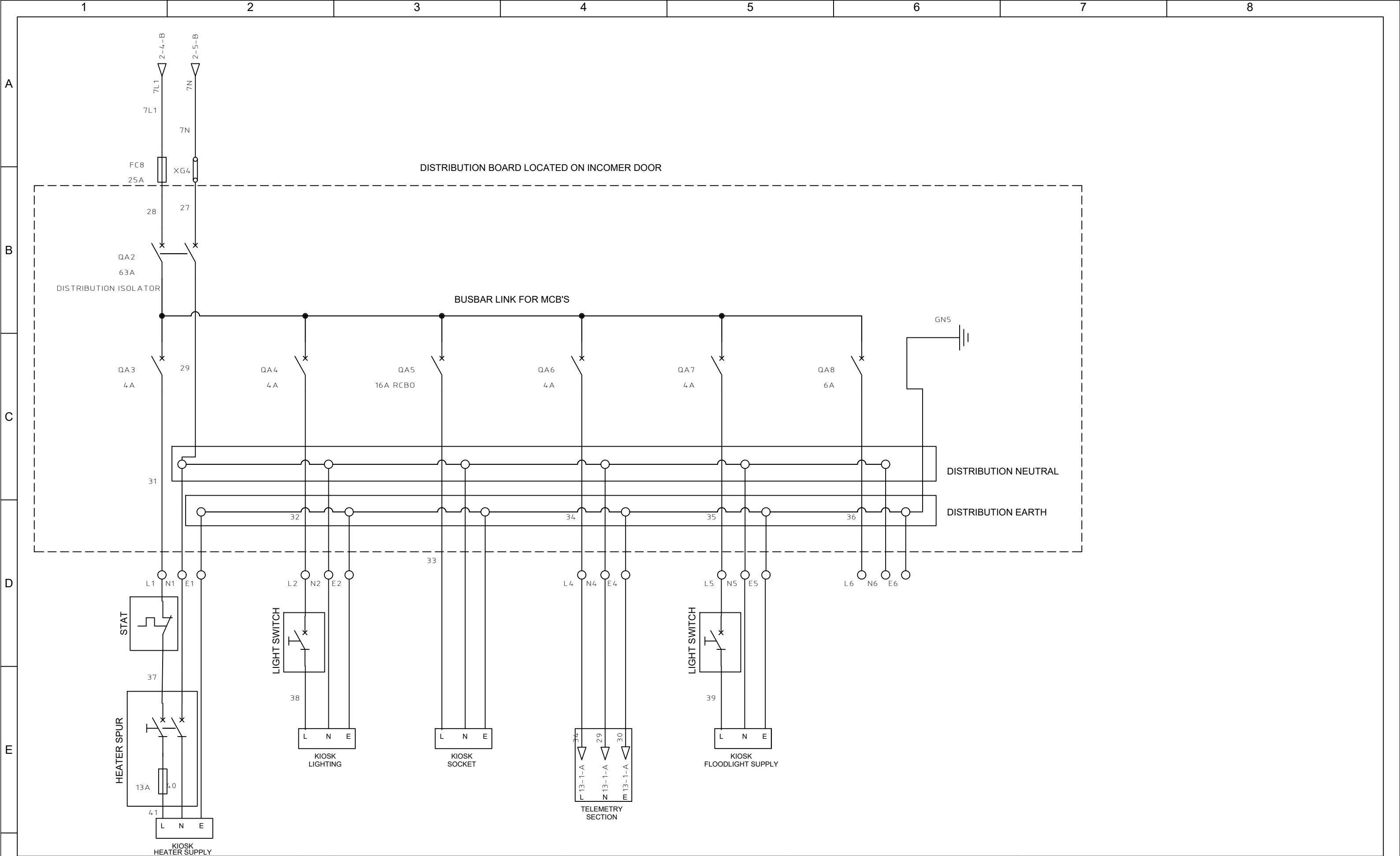
Wiring Diagrams



F						Client Name Vistry Partnerships Ltd t/a Vistry		 gemini control systems ltd designers and manufacturers	 APPROVED CONTRACTOR GEMINI CONTROL SYSTEMS LTD TEL: 0808 196 8770 FAX: 01782 659 465 WWW.GEMINI-CONTROLS.COM	 	 TOTAL WATER EXPERTISE This document may not, without our permission, be copied, shown or handed out to competitors or any other unauthorised persons Copyright Protected	 Sheet No 1 of 19
						Title IWNL DUAL ASD CONTROL PANEL INCOMER SECTION						
						Drawn By JH	Project Code 4271-28225					
	A	First Issue	09/01/25	JH	JH							
	Rev	Description	Date	Drn	Apprv	Drawing No 4271-28225						



					Client Name Vistry Partnerships Ltd t/a Vistry		 gemini control systems ltd designers and manufacturers	 APPROVED CONTRACTOR  interface ISO 9001 CERTIFICATION  UKAS GEMINI CONTROL SYSTEMS LTD TEL: 0808 196 8770 FAX: 01782 659 465 WWW.GEMINI-CONTROLS.COM	 PDAS TOTAL WATER EXPERTISE This document may not, without our permission, be copied, shown or handed out to competitors or any other unauthorised persons Copyright Protected	 Sheet No
					Title IWNL DUAL ASD CONTROL PANEL INCOMER SECTION					
					Drawn By JH	Project Code 4271-28225				
A	First Issue	09/01/25	JH	JH	Drawing No 4271-28225					
Rev	Description	Date	Drn	Apprv			Site Hill Top, Leicester Road, Earl Shilton - Vistry		2 of 19	



F					Client Name	Vistry Partnerships Ltd t/a Vistry	
					Title	IWNL DUAL ASD CONTROL PANEL DISTRIBUTION SECTION	
					Drawn By	JH	Project Code 4271-28225
	Rev	Description	Date	Drn	Apprv	Drawing No 4271-28225	
A					First Issue	09/01/25	JH JH

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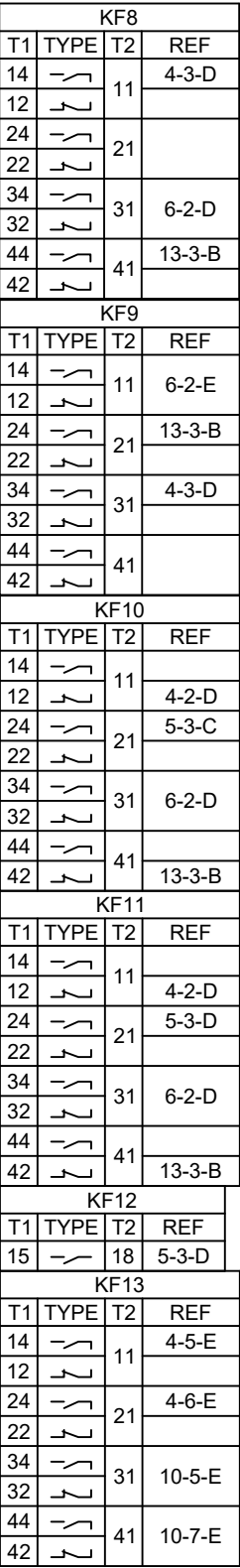
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Site
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Sheet No
3 of 19

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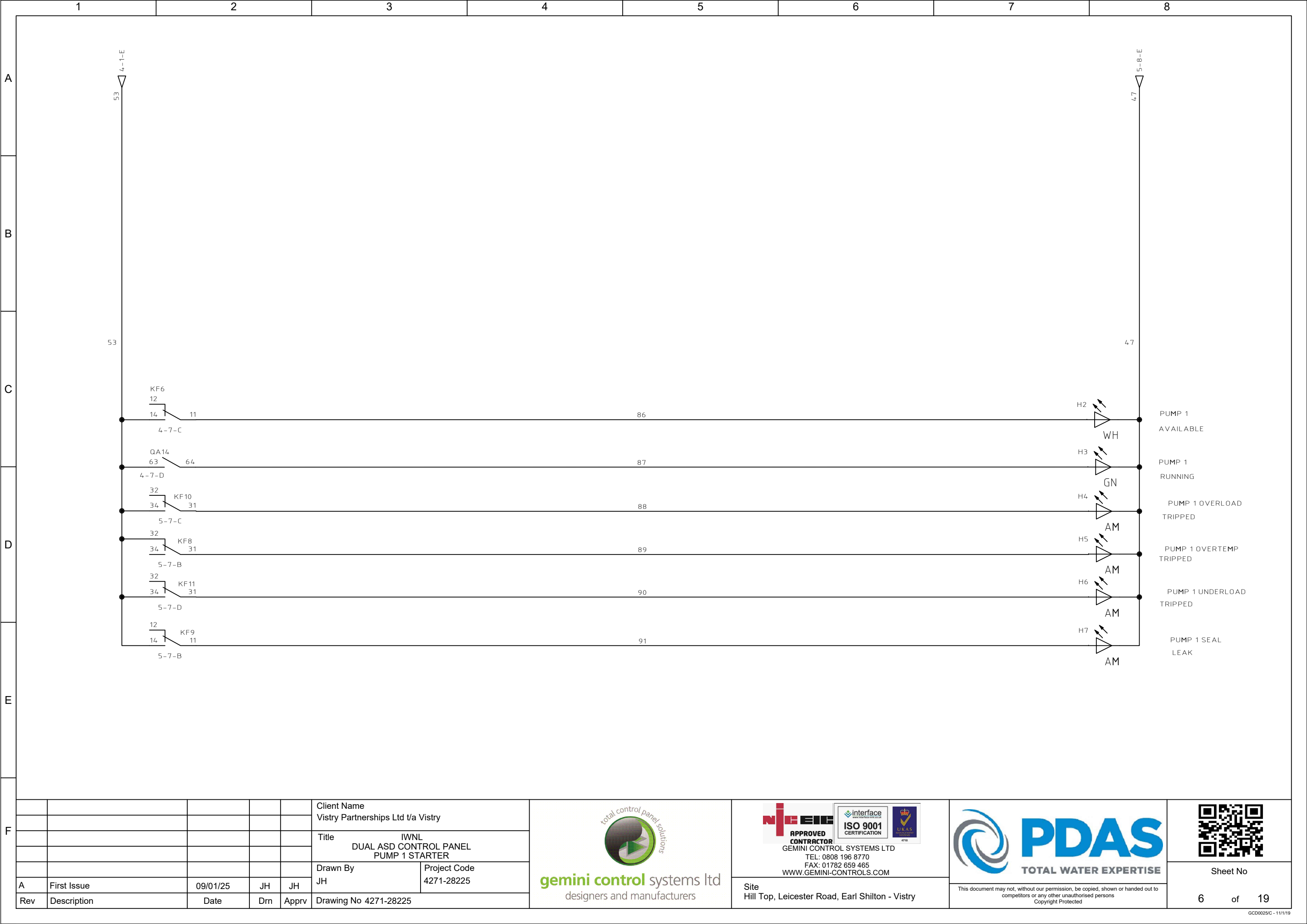
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designers and manufacturers



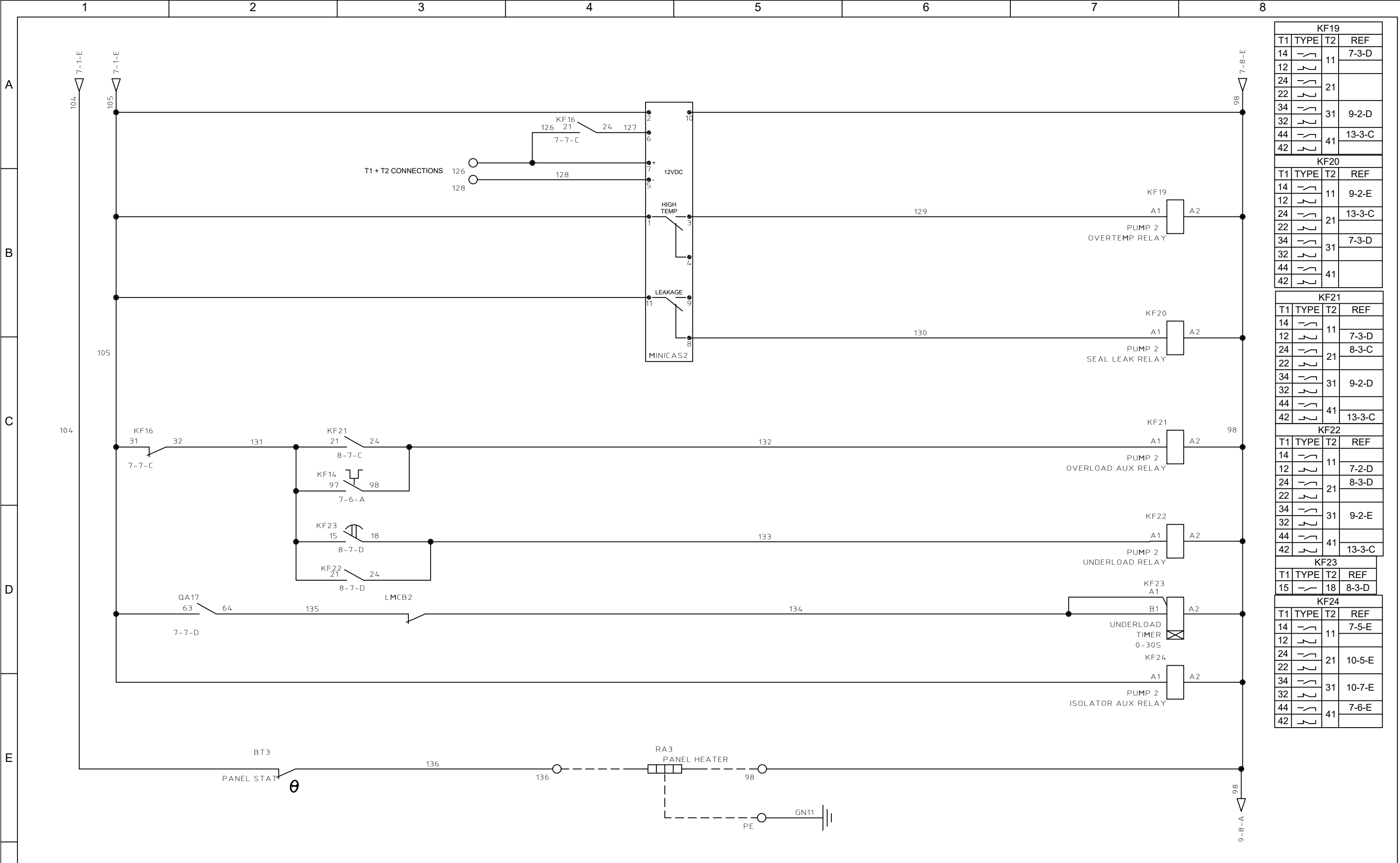
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					Client Name Vistry Partnerships Ltd t/a Vistry		 gemini control systems ltd designers and manufacturers	   GEMINI CONTROL SYSTEMS LTD TEL: 0808 196 8770 FAX: 01782 659 465 WWW.GEMINI-CONTROLS.COM	 This document may not, without our permission, be copied, shown or handed out to competitors or any other unauthorised persons Copyright Protected	 Sheet No 6 of 19
					Title IWNL DUAL ASD CONTROL PANEL PUMP 1 STARTER					
					Drawn By JH	Project Code 4271-28225				
A	First Issue	09/01/25	JH	JH						
Rev	Description	Date	Drn	Apprv	Drawing No 4271-28225					
Site Hill Top, Leicester Road, Earl Shilton - Vistry										



KF19			
T1	TYPE	T2	REF
14	— —	11	7-3-D
12	— —		
24	— —	21	
22	— —		
34	— —	31	9-2-D
32	— —		
44	— —	41	13-3-C
42	— —		

KF20			
T1	TYPE	T2	REF
14	— —	11	9-2-E
12	— —		
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42	— —		

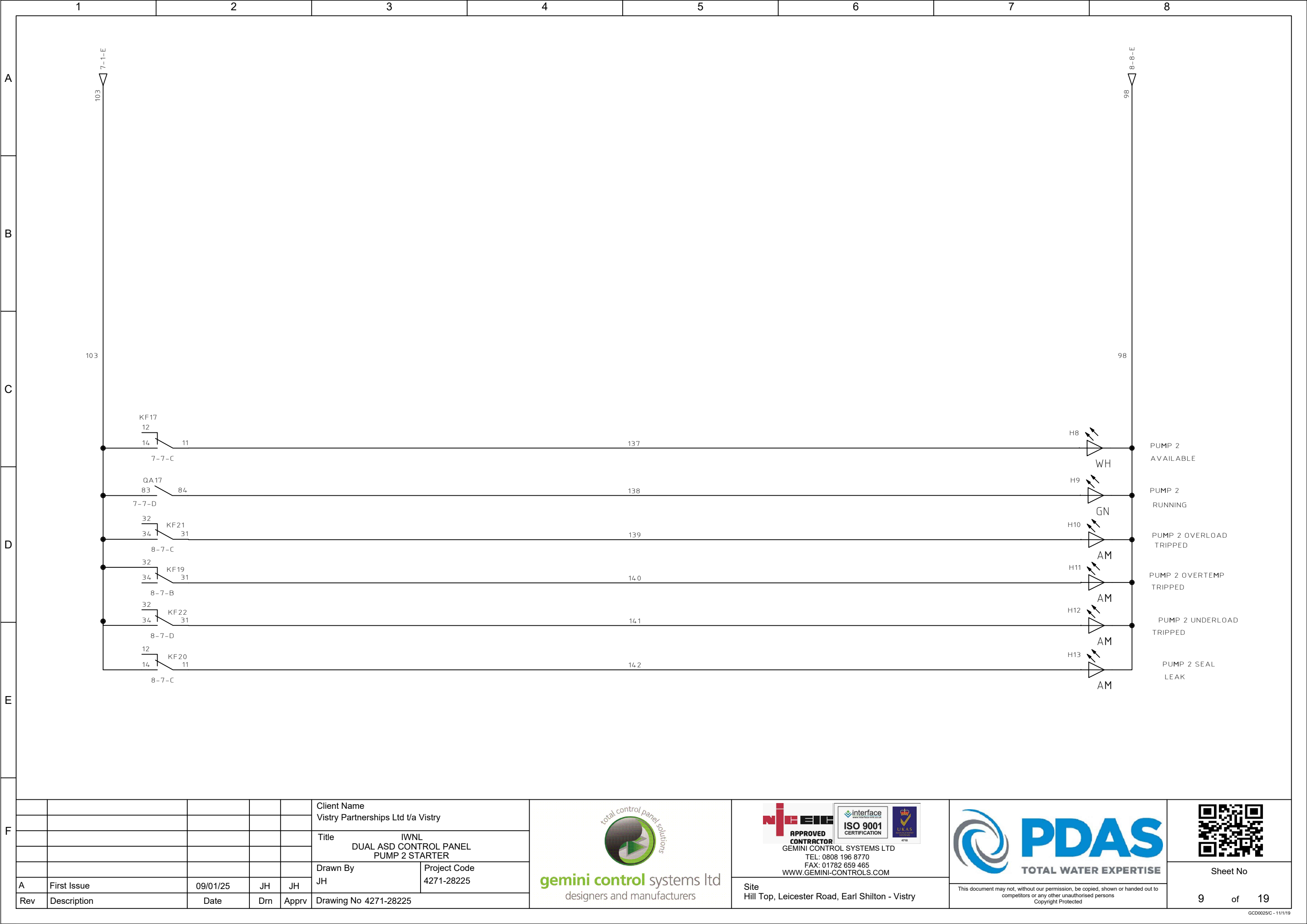
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32	— —		
44	— —	41	
42	— —		13-3-C

KF22			
T1	TYPE	T2	REF
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42	— —		13-3-C

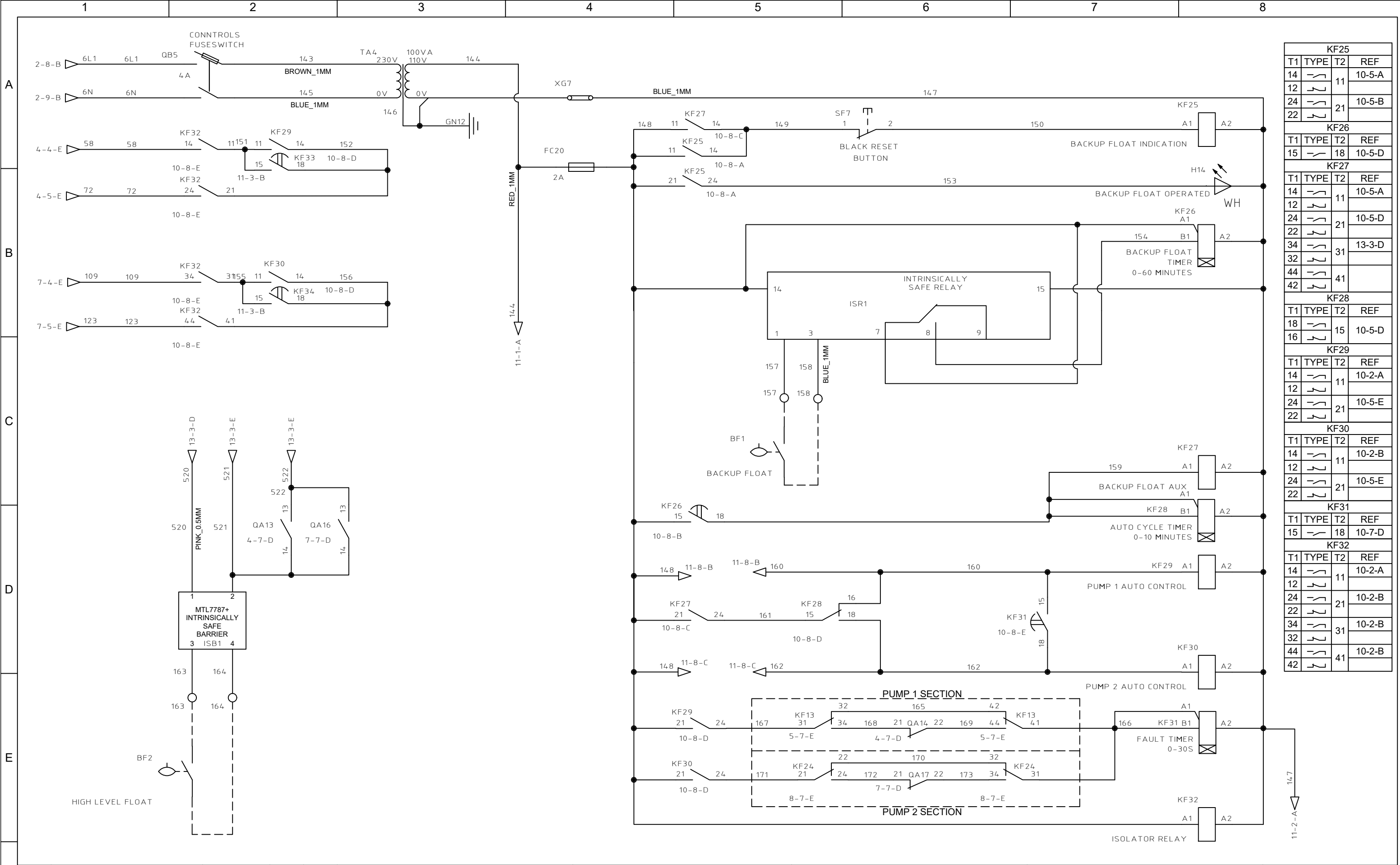
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12	— —		
24	— —	21	10-5-E
22	— —		
34	— —	31	10-7-E
32	— —		
44	— —	41	7-6-E
42	— —		

F					Client Name Vistry Partnerships Ltd t/a Vistry		 gemini control systems ltd designers and manufacturers	 APPROVED CONTRACTOR GEMINI CONTROL SYSTEMS LTD TEL: 0808 196 8770 FAX: 01782 659 465 WWW.GEMINI-CONTROLS.COM	 	 TOTAL WATER EXPERTISE	 Sheet No 8 of 19	
					Title IWNL DUAL ASD CONTROL PANEL PUMP 2 STARTER							
					Drawn By JH	Project Code 4271-28225						
	A	First Issue	09/01/25	JH	JH							
	Rev	Description	Date	Drn	Apprv	Drawing No 4271-28225						
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					Title IWNL DUAL ASD CONTROL PANEL PUMP 2 STARTER					
					Drawn By JH	Project Code 4271-28225				
A	First Issue	09/01/25	JH	JH						
Rev	Description	Date	Drn	Apprv	Drawing No 4271-28225					



KF25			
T1	TYPE	T2	REF
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12	11	11	10-5-B
24	21	21	10-5-D
22	21	21	10-5-E
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T1	TYPE	T2	REF
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12	11	11	10-5-D
24	21	21	10-5-D
34	31	31	13-3-D
32	31	31	13-3-D
44	41	41	13-3-D
42	41	41	13-3-D
KF28			
T1	TYPE	T2	REF
18	15	15	10-5-D
16	15	15	10-5-D
KF29			
T1	TYPE	T2	REF
14	11	11	10-2-A
12	11	11	10-2-A
24	21	21	10-5-E
22	21	21	10-5-E
KF30			
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12	11	11	10-2-B
24	21	21	10-5-E
22	21	21	10-5-E
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T1	TYPE	T2	REF
15	18	18	10-7-D
KF32			
T1	TYPE	T2	REF
14	11	11	10-2-A
12	11	11	10-2-B
24	21	21	10-2-B
34	31	31	10-2-B
32	31	31	10-2-B
44	41	41	10-2-B
42	41	41	10-2-B

F

					Client Name Vistry Partnerships Ltd t/a Vistry	
					Title IWNL DUAL ASD CONTROL PANEL COMMON CONTROLS	
					Drawn By JH	Project Code 4271-28225
A	First Issue	09/01/25	JH	JH		
Rev	Description	Date	Drn	Apprv	Drawing No 4271-28225	



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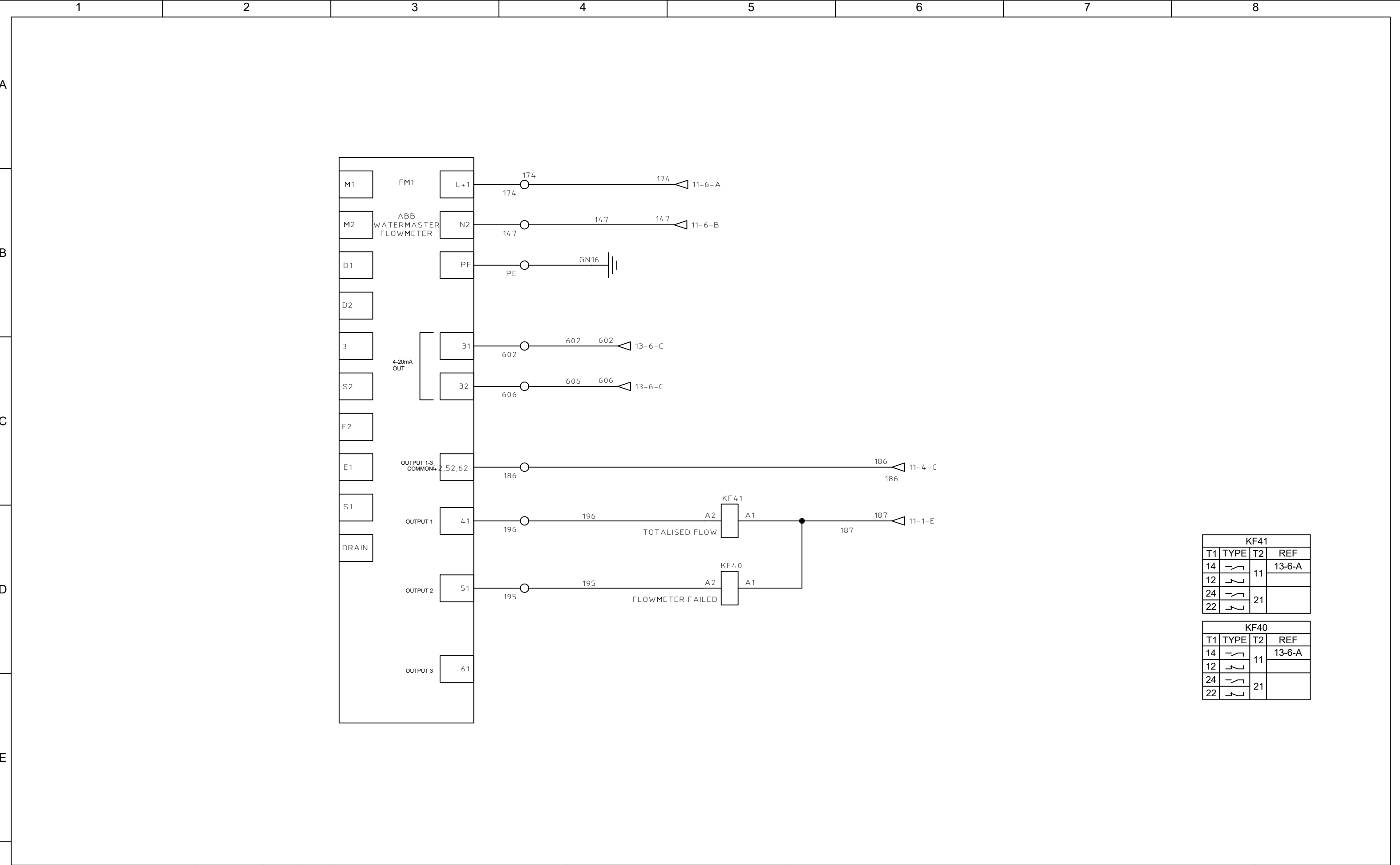
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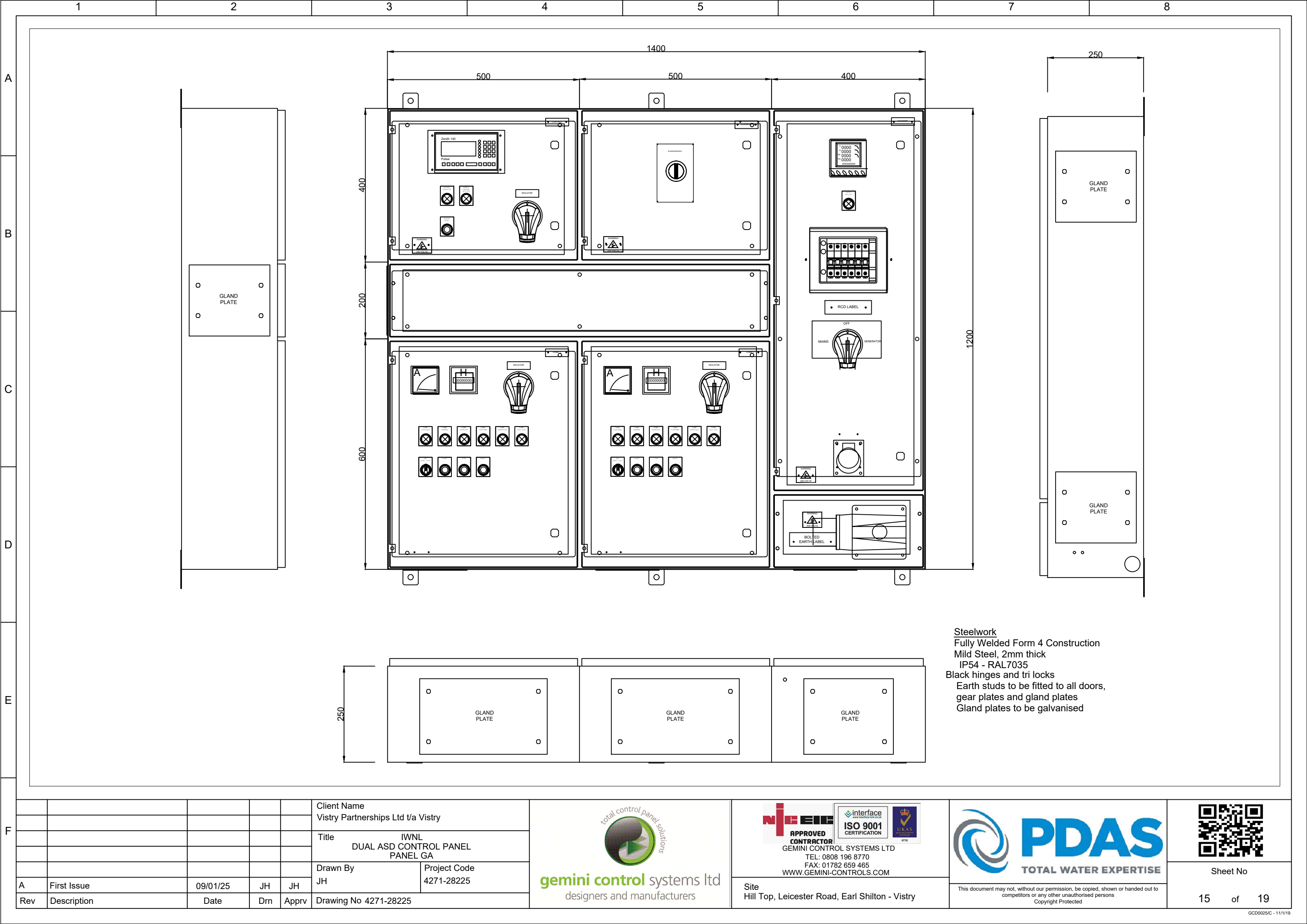
10 of 19





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22	—/—		

KF40			
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12	—/—		
24	—/—	21	
22	—/—		



Steelwork
Fully Welded Form 4 Construction
Mild Steel, 2mm thick
IP54 - RAL7035
Black hinges and tri locks
Earth studs to be fitted to all doors,
gear plates and gland plates
Gland plates to be galvanised

					Client Name
					Vistry Partnerships Ltd t/a Vistry
					Title
					IWNL DUAL ASD CONTROL PANEL PANEL GA
					Drawn By
					JH
					Project Code
					4271-28225
A	First Issue	09/01/25	JH	JH	
Rev	Description	Date	Drn	Apprv	Drawing No 4271-28225

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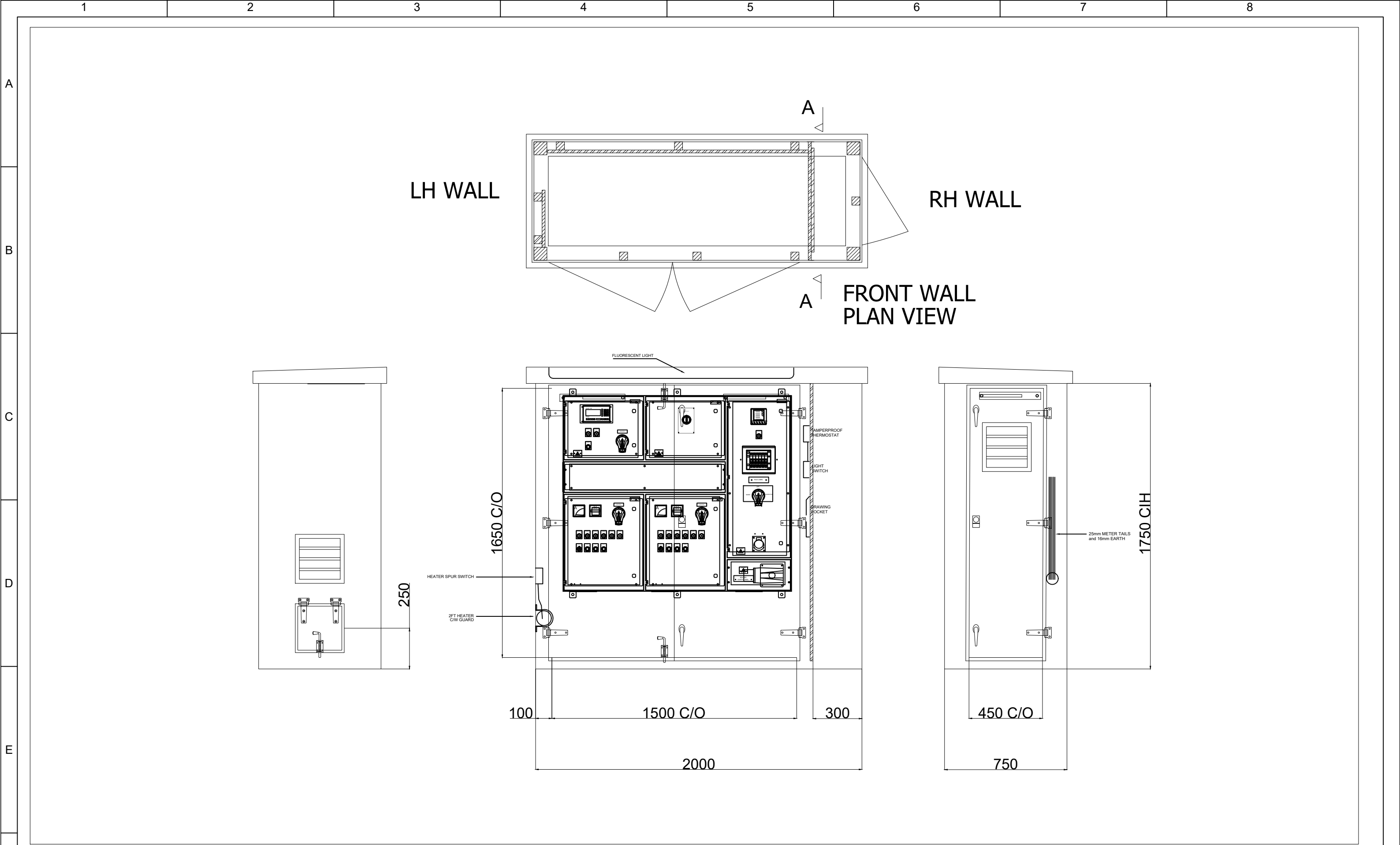
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					Title
					IWNL DUAL ASD CONTROL PANEL KIOSK GA
					Drawn By
					JH
					Project Code
					4271-28225
A	First Issue	09/01/25	JH	JH	
Rev	Description	Date	Drn	Apprv	Drawing No 4271-28225


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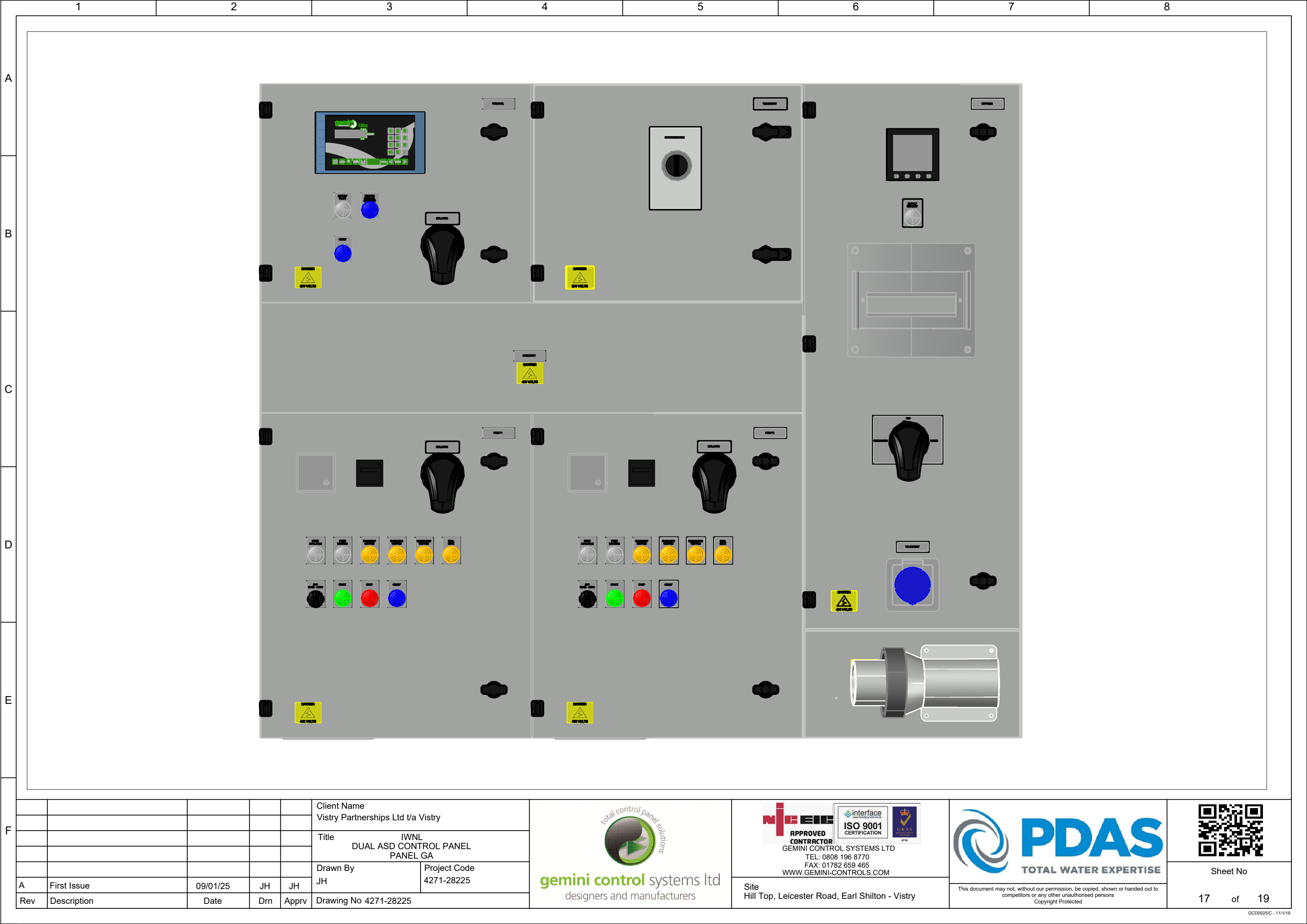
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GCD0025/C - 11/1/19



					Client Name	Vistry Partnerships Ltd t/a Vistry
					Title	IWNL DUAL ASD CONTROL PANEL PANEL GA
					Drawn By	JH
					Project Code	4271-28225
A	First Issue	09/01/25	JH	JH		
Rev	Description	Date	Drn	Apprv	Drawing No	4271-28225



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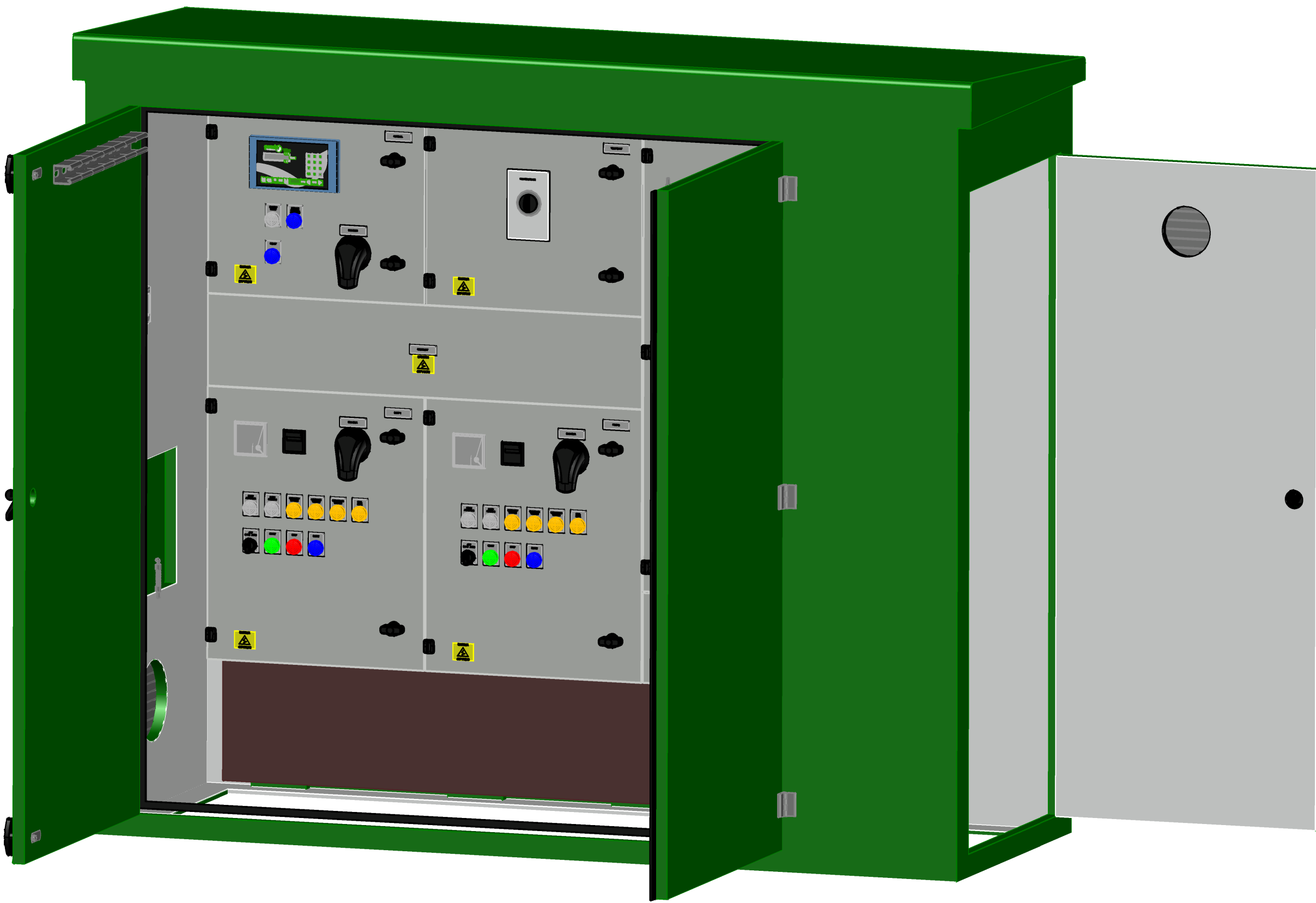
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A	First Issue	09/01/25	JH	JH
Rev	Description	Date	Drn	Apprv

Client Name	Vistry Partnerships Ltd t/a Vistry
Title	IWNL DUAL ASD CONTROL PANEL KIOSK GA
Drawn By	JH
Project Code	4271-28225
Drawing No 4271-28225	



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A

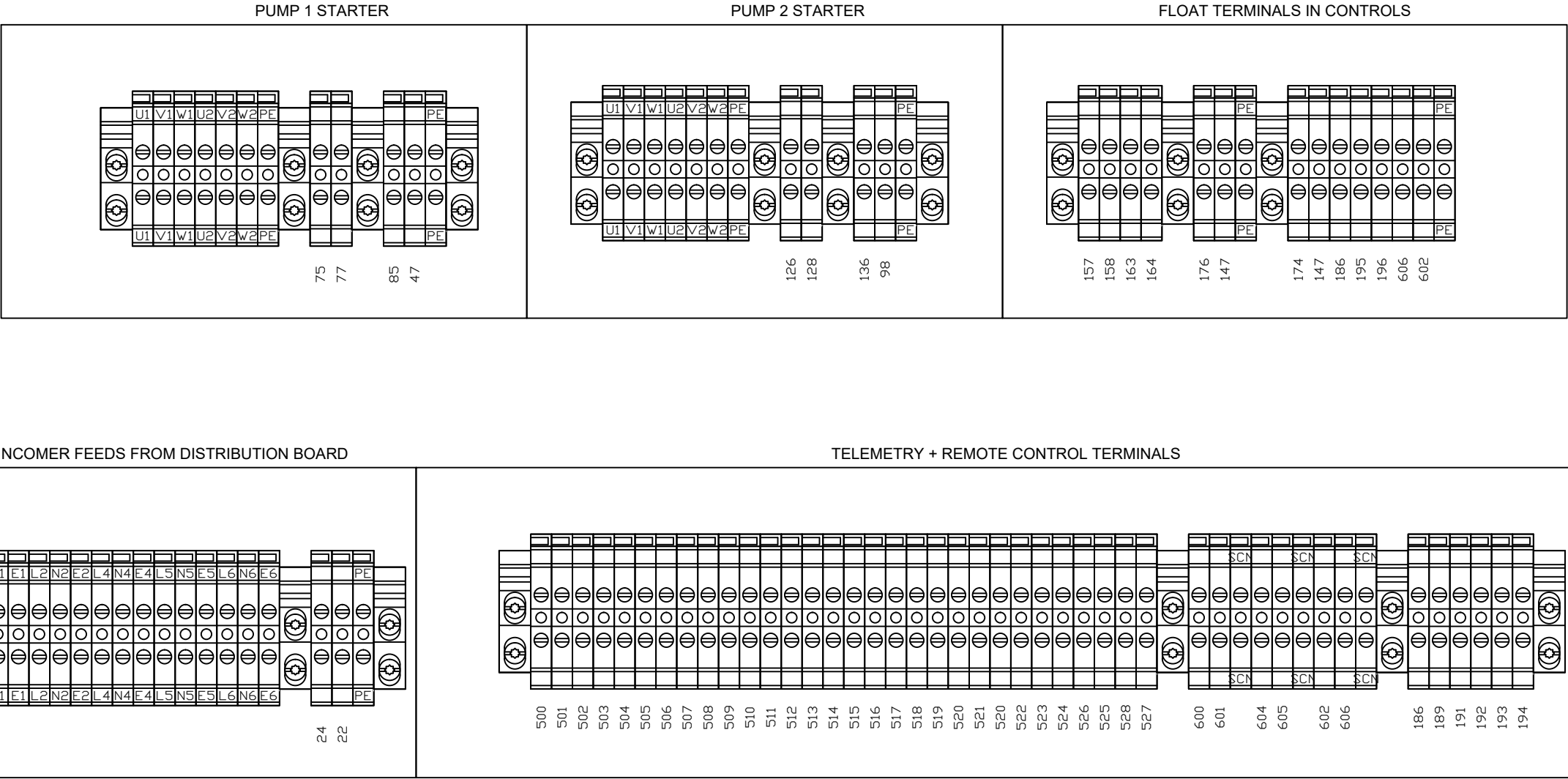
B

C

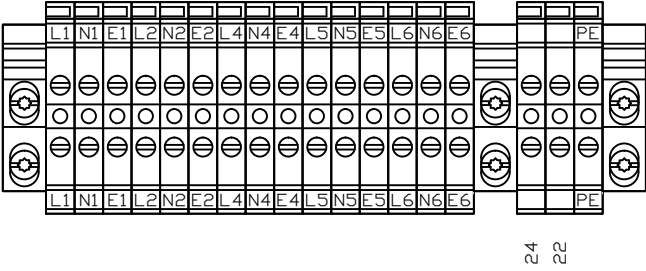
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E

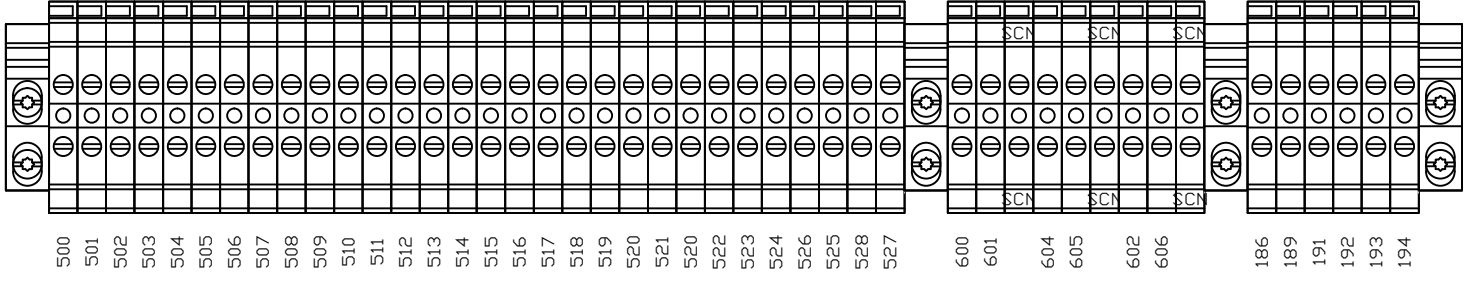
F



INCOMER FEEDS FROM DISTRIBUTION BOARD



TELEMETRY + REMOTE CONTROL TERMINALS



					Client Name
					Vistry Partnerships Ltd t/a Vistry
					Title
					IWNL DUAL ASD CONTROL PANEL TERMINAL FOOTPRINTS
					Drawn By
					JH
					Project Code
					4271-28225
A	First Issue	09/01/25	JH	JH	
Rev	Description	Date	Drn	Apprv	Drawing No 4271-28225



gemini control systems ltd
designers and manufacturers



APPROVED
CONTRACTOR



ISO 9001
CERTIFICATION



4718

GEMINI CONTROL SYSTEMS LTD
TEL: 0808 196 8770
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WWW.GEMINI-CONTROLS.COM

Site
Hill Top, Leicester Road, Earl Shilton - Vistry



P DAS
TOTAL WATER EXPERTISE

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Sheet No

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Appendix G

Floodlight Detail



Kingfisher Lighting Datasheet

Columns

A comprehensive range of tubular, conical and hinged columns, for road & transport, car parks, residential and urban landscapes.



Experts in columns

- Over 25 years' experience
- Lighting design facility to help you specify
- Support to match the columns with luminaires & brackets

Maintained stock levels

- Extensive stock of most columns held at our warehouse
- In-house fabrication and finishing options

Nation-wide delivery

- Hi-ab equipment to enable fast and safe off-loading
- Fleet fitted with trackers to monitor deliveries
- Helpful drivers who handle the on-site deliveries
- Free delivery on orders over £300 within mainland GB

High quality standards

- Designed in accordance with BS EN40
- Manufactured from steel tube to either EN10210 or EN10219

What to consider when designing with columns

BS EN40 provides a detailed framework for the design of a lighting column and provides key considerations when designing an exterior lighting scheme to ensure the structural integrity of the column.

A lighting column design must take into account (in relationship to mounting height):

- Weight and windage of the luminaire and bracket
- Wind speed
- Site altitude
- Site terrain and topography

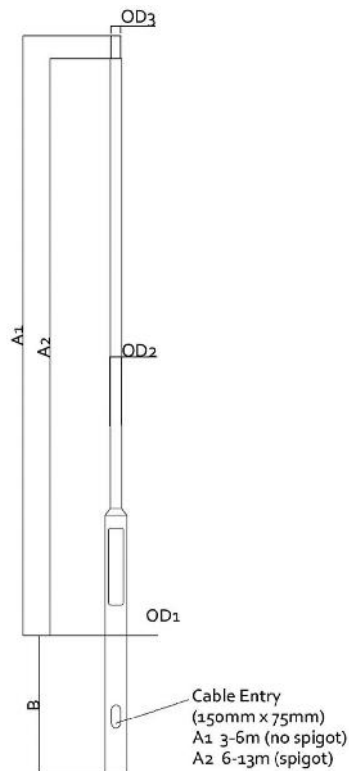
When this information is not readily available, PD 5647:2004 may be used for guidance.

This document contains informative data relating to the administrative areas of the UK, providing a rationalised wind loading factor (RWF) for each location. Please contact us for more information.

Tubular columns (3m - 12m)

A range of tubular lighting columns suitable for road, residential and general amenity areas. Available root mounted or flange plated.

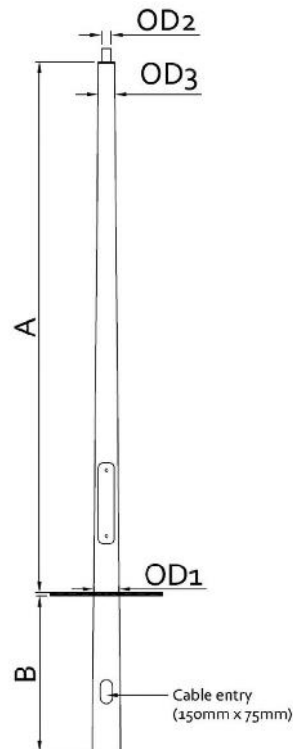
Tubular



Conical lighting columns (4m - 8m)

An aesthetic range of conical lighting columns suitable for residential and amenity areas. Available root mounted or flange plated.

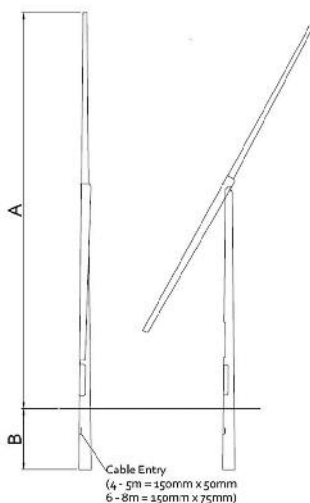
Conical



Mid-hinged columns (4m - 15m)

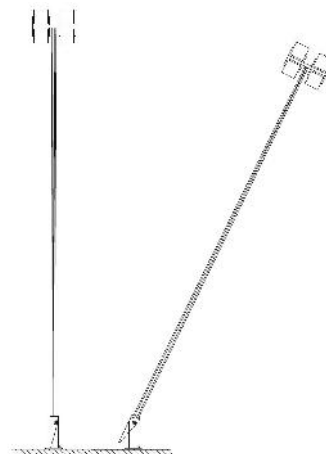
An easy-access range of mid-hinged columns suitable for residential, amenity, rail and industrial areas where conventional access platforms are unsafe or unsuitable. Available root mounted or flange plated. When installing mid-hinged columns, minimum head load is required for the column to hinge.

Mid-Hinged



Base-hinged columns

Base-hinged columns are an option for cost effective, safe and easy maintenance. The lowering of the column is done quickly and safely using a raising and lowering tool specific to the column. This lowers the column to ground level for easy access to the luminaire. Base-hinged columns are best suited to sites with tight access and where mobile platforms cannot be used such as sports facilities, car parks and footpaths.



Tubular columns (3–12m)

A range of tubular lighting columns suitable for road, residential and general amenity areas. Available root mounted or flange plated.

Tubular columns (root mounted)

Code	A	OD1	OD2	OD3	Door Openings	B	Terrain Category	Max Head Load
3CT76	3m	Ø140	Ø76	N/A	500 x 100	800	3	50kg/0.90m²
4CT76	4m	Ø140	Ø76	N/A	500 x 100	800	3	50kg/0.50m²
5CT76	5m	Ø140	Ø76	N/A	500 x 100	800	3	50kg/0.50m²
6CT76	6m	Ø140	Ø76	N/A	500 x 100	1000	3	50kg/0.50m²
6CTH89	6m	Ø168	Ø89	Ø76	600 x 115	1000	3	50kg/0.75m²
8CT89	8m	Ø168	Ø89	Ø76	600 x 115	1200	2	50kg/0.36m²
8CTM114	8m	Ø168	Ø114	Ø101	600 x 115	1200	2	60kg/0.55m²
10CT114	10m	Ø168	Ø114	Ø101	600 x 115	1500	2	50kg/0.50m²
10CTH140	10m	Ø192	Ø140	Ø127	600 x 115	1500	2	80kg/1.00m²
12CTHB140	12m	Ø192	Ø140	Ø127	600 x 115	1700	2	70kg/0.85m²

Tubular columns (flange plated)

Code	A	OD1	OD2	OD3	Door Openings	Terrain Category	Max Head Load	Hole Centres C	Slot Size H	Bolt Code
3CT76FP	3m	Ø140	Ø76	N/A	500 x 100	3	50kg/0.90m²	200	20 x 50	FB001
4CT76FP	4m	Ø140	Ø76	N/A	500 x 100	3	50kg/0.50m²	200	20 x 50	FB001
5CT76FP	5m	Ø140	Ø76	N/A	500 x 100	3	50kg/0.50m²	200	20 x 50	FB001
6CT76FP	6m	Ø140	Ø76	N/A	500 x 100	3	50kg/0.50m²	200	20 x 50	FB001
6CTH89FP	6m	Ø168	Ø89	Ø76	600 x 115	3	50kg/0.75m²	200	24 x 50	FB007
8CT89FP	8m	Ø168	Ø89	Ø76	600 x 115	2	50kg/0.36m²	300	29 x 64	FB004
8CTM114FP	8m	Ø168	Ø114	Ø101	600 x 115	2	60kg/0.55m²	300	29 x 64	FB004
10CT114FP	10m	Ø168	Ø114	Ø101	600 x 115	2	50kg/0.50m²	300	29 x 64	FB004
10CTH140FP	10m	Ø192	Ø140	Ø127	600 x 115	2	80kg/1.00m²	300	29 x 64	FB004
12CTHB140FP	12m	Ø192	Ø140	Ø127	600 x 115	2	70kg/0.85m²	300	29 x 64	FB004

Conical lighting columns (4–6m)

An aesthetic range of conical lighting columns suitable for residential and amenity areas. Available root mounted.

Code	A	B	OD1	OD2	OD3	Door Size	Terrain Category	Max Head Load	Max Windage
4CCS60L	4m	800mm	133mm	60mm	60 x 85	500 x 100	3	30kg	0.5m²
5CCS60L	5m	800mm	145mm	60mm	60 x 85	500 x 100	3	35kg	0.5m²
6CCS60L	6m	800mm	157mm	60mm	60 x 85	500 x 100	3	40kg	0.5m²
8CCS60L	8m	1200mm	168mm	60mm	76mm	500 x 100	2	40kg	0.45m²

Mid-hinged columns (4–8m)

An easy-access range of mid-hinged columns suitable for residential, amenity, rail and industrial areas where conventional access platforms are unsafe or unsuitable for use. Available root mounted or flange plated.

Code	A	Description - Mid hinged octagonal	B	Max Head Load *	Max Windage	Hole Size L	Flange Size/ Code	Bolt Code	Bolt	Winch
Rope Operated										
4MHRL	4m	Root mounted	800	20kg	0.5m²					Rope
4MHFPL	4m	Flange plated		20kg	0.5m²	200	300mm/18mm	M16 x 500	FB001	Rope
5MHRL	5m	Root mounted	800	20kg	0.5m²					Rope
5MHFPL	5m	Flange plated		20kg	0.5m²	200	300mm/18mm	M16 x 500	FB001	Rope
6MHRL	6m	Root mounted	1000	20kg	0.5m²					Rope
6MHFPL	6m	Flange plated		20kg	0.5m²	200	300mm/18mm	M16 x 500	FB001	Rope
Winch Operated										
4MHRL	4m	Root mounted	800	35kg	0.5m²					KLWINCHL
4MHFPL	4m	Flange plated		35kg	0.5m²	200	300mm/18mm	M16 x 500	FB001	KLWINCHL
5MHRL	5m	Root mounted	800	35kg	0.5m²					KLWINCHL
5MHFPL	5m	Flange plated		35kg	0.5m²	200	300mm/18mm	M16 x 500	FB001	KLWINCHL
6MHRL	6m	Root mounted	1000	35kg	0.5m²					KLWINCHL
6MHFPL	6m	Flange plated		35kg	0.5m²	200	300mm/18mm	M16 x 500	FB001	KLWINCHL
8MHF1	8m	Flange plated		70kg	0.98m²	300	420mm/25mm	M24 x 820	FB004	KLWINCHSHD
8MHRL1	8m	Rooted mounted	1200	135kg	0.70m²					KLWINCHSHD <100kg KLWINCHSHD >100kg

Above weight and windage area figures are based on a medium terrain category. Other sizes & variations available on request.

*Please note maximum carrying weight of a 4m - 6m mid - hinged column is 20kg with a rope or 35kg with a winch



**Kingfisher
Lighting**

Datasheet

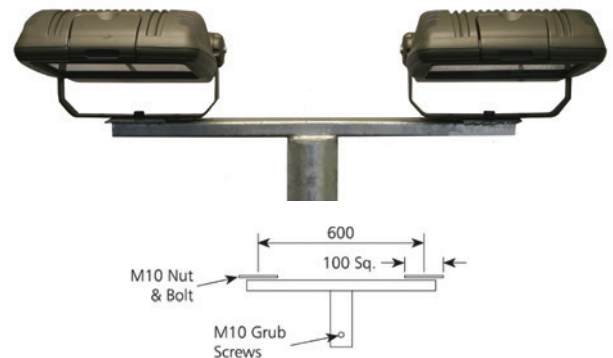
Floodlight Brackets

Our floodlight brackets ensure your floodlight is securely mounted onto the column. Each bracket has a top plate of 100mm square with a M10 zinc plated bolt, allowing full orientation of the floodlight. All brackets are supplied in a hot dip galvanised finish and are complete with the necessary bolts for mounting to the column.

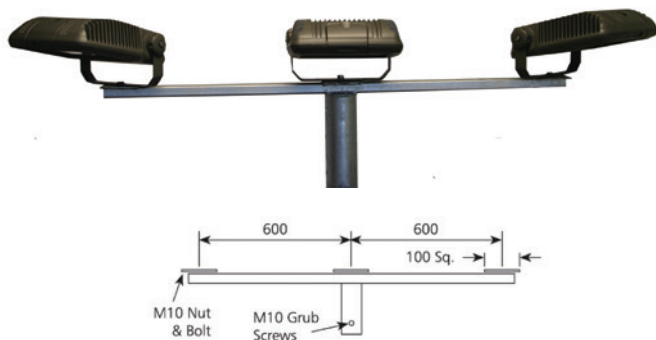
STM1 Single floodlight mounting bracket



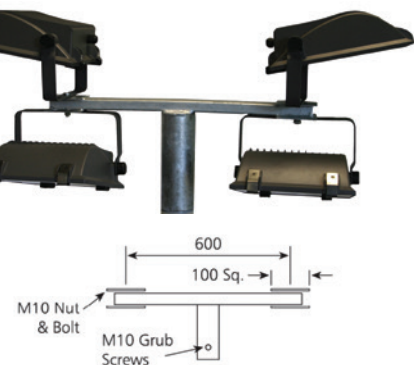
STM2 Twin floodlight mounting bracket



STM3 Triple floodlight mounting bracket



STM4 Four floodlight mounting bracket

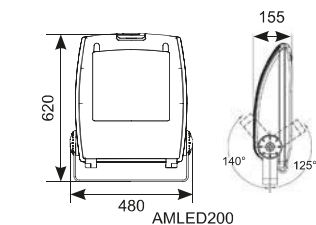
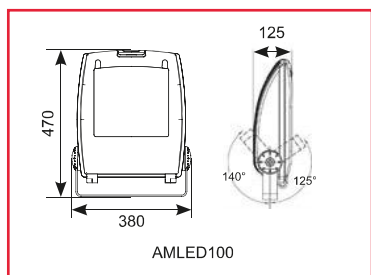


Code	Luminaire Type
Single floodlight mounting bracket	
STM176	To over fit a column with a 60mm dia spigot/shaft
STM189	To over fit a column with a 76mm dia spigot/shaft
STM1114	To over fit a column with a 89 or 101mm dia spigot/shaft
STM1140	To over fit a column with a 127mm dia spigot/shaft
Twin floodlight mounting bracket	
STM276	To over fit a column with a 60mm dia spigot/shaft
STM289	To over fit a column with a 76mm dia spigot/shaft
STM2114	To over fit a column with a 89 or 101mm dia spigot/shaft
STM2140	To over fit a column with a 127mm dia spigot/shaft

Code	Luminaire Type
Triple floodlight mounting bracket	
STM376	To over fit a column with a 60mm dia spigot/shaft
STM389	To over fit a column with a 76mm dia spigot/shaft
STM3114	To over fit a column with a 89 or 101mm dia spigot/shaft
STM3140	To over fit a column with a 127mm dia spigot/shaft
Four floodlight mounting bracket	
STM476	To over fit a column with a 60mm dia spigot/shaft
STM489	To over fit a column with a 76mm dia spigot/shaft
STM4114	To over fit a column with a 89 or 101mm dia spigot/shaft
STM4140	To over fit a column with a 127mm dia spigot/shaft

Most columns of 8 metres and above have a column spigot; we will ensure that the brackets ordered will fit your columns. Where brackets are purchased alone for existing columns please indicate the diameter of the column spigot. The four-way brackets are to mount two floodlights on top of the cross arm and two underneath using the same bolts. Fittings to fix at the same level above the cross arm facing North, South, East, West are also available, add suffix NSEW to STM4 reference. These brackets are only suitable for mounting flood lights up to 400W. For 1000W and above suffix with 'H' for heavy duty e.g STM2H89.

- Architectural slim die-cast LED floodlight
 - 100W LED exceeds performance of 150W HQI
 - 200W LED comparable performance to 400W HQI
 - Optically textured glass for enhanced light output
 - Heat sink design provides optimum LED life
 - Graphite textured paint finish
 - Pre-wired with 1 metre of rubber insulated cable for ease of installation
 - PIR versions complete with manual override facility
 - LED lifespan L70 50,000 hours
 - Non-dimmable
- Note: 100W and 200W versions are not suitable for interior use



LED Information

Total (Watts)	100W
	200W
Lumens Delivered	
100W	7850lm
200W	17380lm
Lm/W 100W	78lm
Lm/W 200W	87lm
CRI	Ra 70
CCT	4750K
Input	230V



Code	Lamp	Description	Windage
AMLED100	LED	100W - Cool White	0.18
AMLED200	LED	200W - Cool White	0.30

Options	/PC	Electronic Photocell
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