

# Standard Details for Adoptable Pump Station Design

April 2021



YorkshireWater

# Standard Details for Adoptable Pump Station Design

The drawings included in this document are typical details for an adoptable pump station designed in accordance with the Design and Construction Guidance, Local Practices and Technical Standards contained within Code for Adoption (2020).

Please refer to our Local Practice for Pump Stations (Design Criteria for the Adoption of Small Submersible Foul and Surface Water Pumping Stations) which can be found on our website <https://www.yorkshirewater.com/developers/sewerage/>

These drawings are to be used as a guide for our design criteria. All drawings submitted for assessment must be site specific and detailed as such accordingly.

This document contains the following Standard Details for Adoptable Pump Station Design:

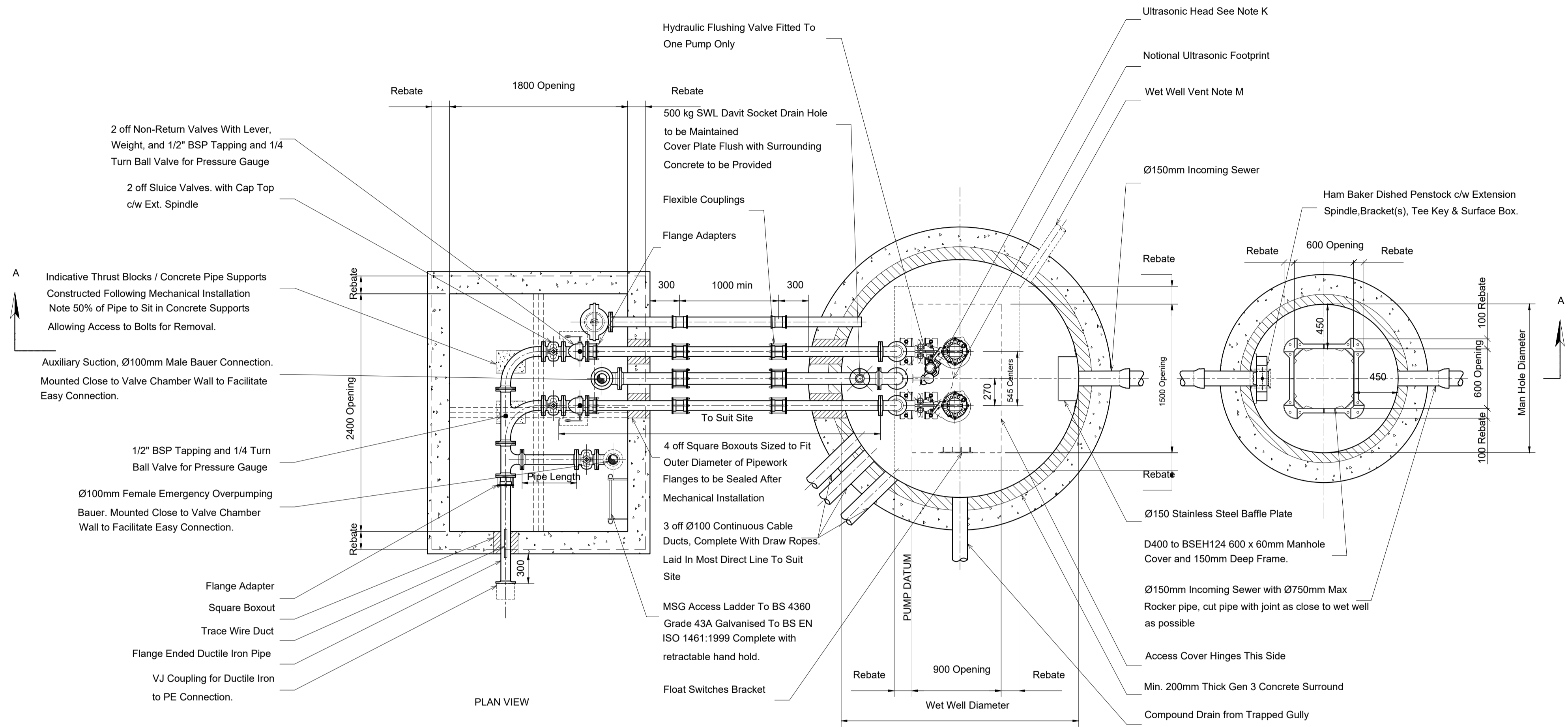
- Pumping Station Plan View
- Pumping Station Elevation View
- Pumping Station Site View (Single Pump)
- Pumping Station Kiosk and Plinth Details
- Pumping Station Plan View of Kiosk and Plinth
- Pumping Station Hazardous Zoning Detail
- Pumping Station Site View (Dual Pump)
- Pumping Station Boundary Treatment Options

## **For further information please contact us:**

Telephone 0345 120 84 82

Email [technical.sewerage@yorkshirewater.co.uk](mailto:technical.sewerage@yorkshirewater.co.uk)

Web <https://www.yorkshirewater.com/developers/sewerage/>



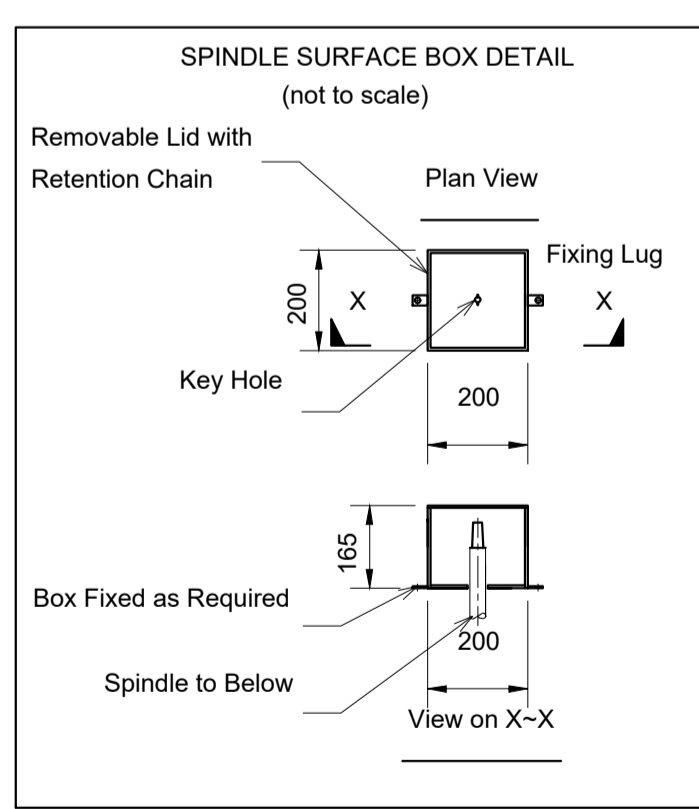
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  - D REINFORCING BARS TO BE 75mm MIN. BELOW SURFACE. STRUCTURAL DETAIL ILLUSTRATIVE ONLY, MAY BE WORKED TO FOR DIMENSIONS
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  - P ALL FITTINGS TO BE STAINLESS STEEL

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  - 2 SPACERS TO BE 1200mm CENTRE TO CENTRE.
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  - 7 PROVIDE 50MM BLINDING CONCRETE.
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  - 15 RISING MAIN TO BE (SPECIFICATION AND LENGTH TO BE CONFIRMED) LONG, MARKED WITH NON DEGRADABLE MARKER TAPE ABOVE RISING MAIN CONTAINING A TRACE WIRE TERMINATING WITH 1M OF WIRE COILED INSIDE THE VALVE CHAMBER. COLOUR OF RISING MAIN TO BE BLACK/GREY
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All Adoptable Sewer works & materials to be in accordance with the Sewers For Adoption 7th Edition, the relevant British, European & Yorkshire Water standards, requirements & Addendum to the Mechanical & Electrical Specification and Kite Marked.

IF BOXOUT HOLES TO BE CORE DRILLED, Civil's To Ensure All Core Drillings Are Parallel To Centre Line / Perpendicular To Valve Chamber

All Cut Pipe Joints As Close To Structures As Possible Consistent With Making The Joint. The Rocker Pipes To Be 1m Or Equal To One Nominal Pipe Diameter Whichever Is The Larger



**PUMP INFORMATION**

PUMP TYPE	: ***
IMPELLER	: ***
MOTOR RATING	: ***k.W. Ex.P. ***A FLC
DUTY FLOW	: ***l/s
HEAD GENERATED	: ***m
PIPE / VALVE SIZE	: Ø***mm
TYPE OF LEVEL CONTROL	HYDRORANGER
	ULTRASONIC C/W HIGH
	LEVEL ALARM AND
	BACK UP FLOAT
	SWITCHES
FINAL CONNECTION	: DUCTILE IRON
TERMINATION	: FLANGE ENDED
PIPE O.D.	: Ø***mm
FLANGE DATA	: PN16
RM COUPLER	: Ø***OD Ductile Ø*** PE Converter

REVISION	DATE	INITIALS	DESCRIPTION

AMENDMENTS ABOVE

LEGEND



**SCHEME TITLE:** PUMP STATION (PLAN)  
GENERAL ARRANGEMENT

**SCHEME DETAILS:**

**DEVELOPER:**

DESIGNER:	WENDY MULLANEY	X1DEV No:	----
DATE:	14/01/2021	ORDER No:	----
SCALE:	N.T.S	ORDER No:	----
GRID REF:	----	FIRE REF:	----
ICE REF:	----	DRAWING No:	YWS-DS-SW-WW-001

Electric hoist equipment must be provided when the pumping traverse distance is in excess of 6m and a 110 volt plug must be installed within the kiosk for the hoist

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**Operating Levels**

Storage TWL	=	***
Invert Of Inlet	=	***
Invert Of H.L.A.	=	***
Invert Of P2 Start	=	***
Invert Of P1 Start	=	***
Invert Of B.W.L.	=	***
Invert Of WW Floor	=	***
Dead Area	=	***mm
Operating Depth	=	***mm
Operating Volume	=	*** Litres
Pump Flow	=	*** Litres/second

From the above: (\*\*\* x 2)/(\*\*\*/2) = \*\*\* secs  
\*\*\* seconds divided into 3600 = \*\*\* starts / hour

**Telemetry**

The developer will supply, install and commission the telemetry at their expense. Yorkshire Water telemetry system is the Metashere MMIM Outstation

**Guide Rails**

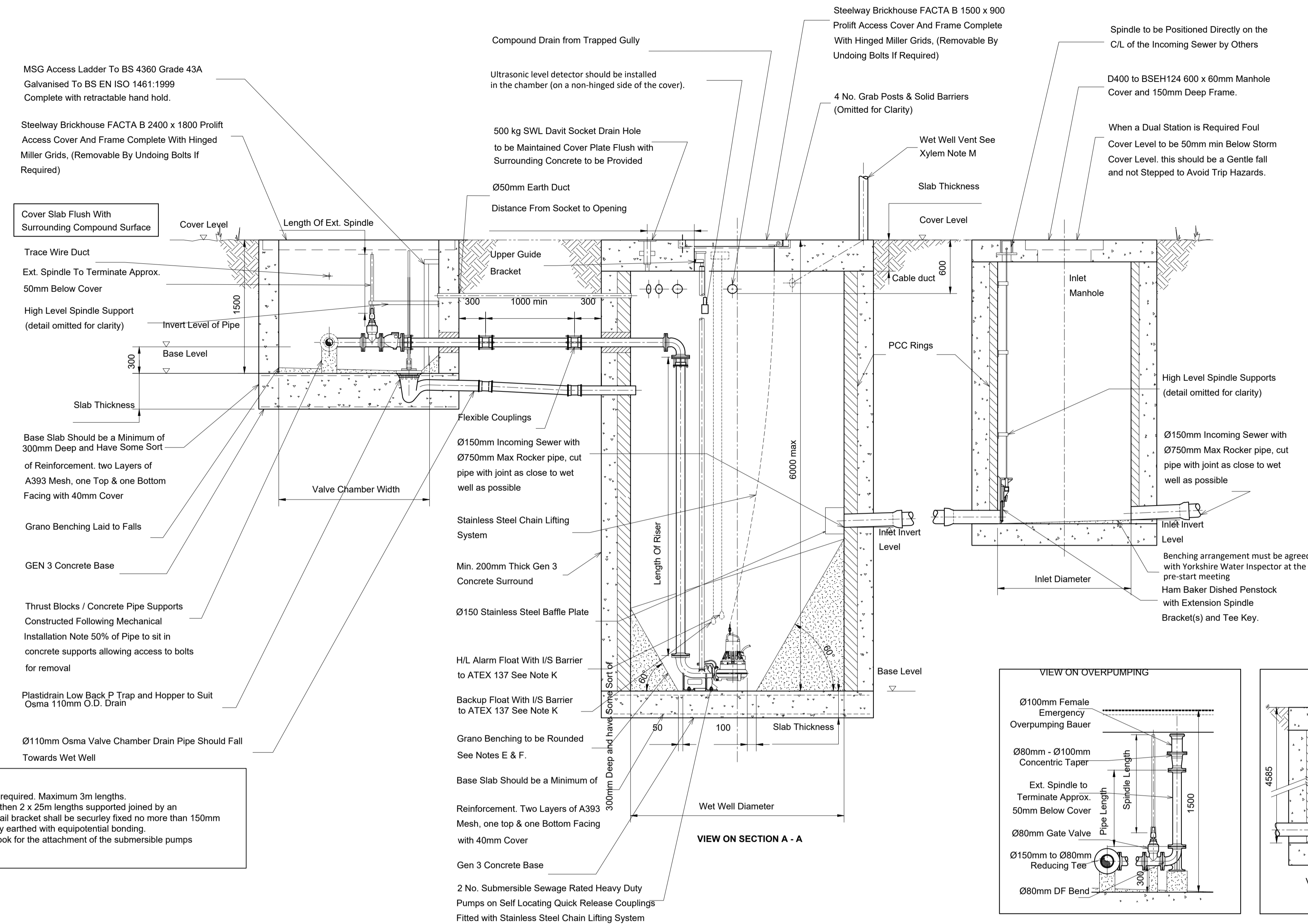
Galvanised steel twin circular cross section guard rails are required. Maximum 3m lengths. Where the depth of the wet well is greater than 3m, ie. 5m then 2 x 25m lengths supported joined by an intermediate bracket at the midpoint. The top of the guide rail bracket shall be securely fixed no more than 150mm below the level of the access cover, and shall be electrically earthed with equipotential bonding. The top guide rail support bracket shall have a suitable hopok for the attachment of the submersible pumps stainless steel lifting chain when it is not in use.

**YW NOTES**

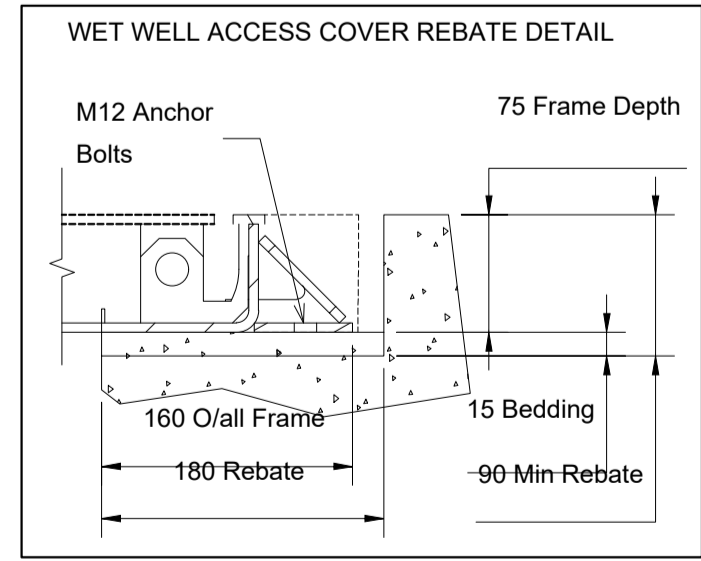
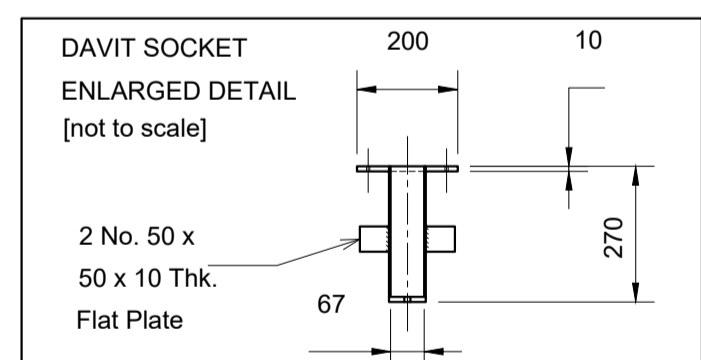
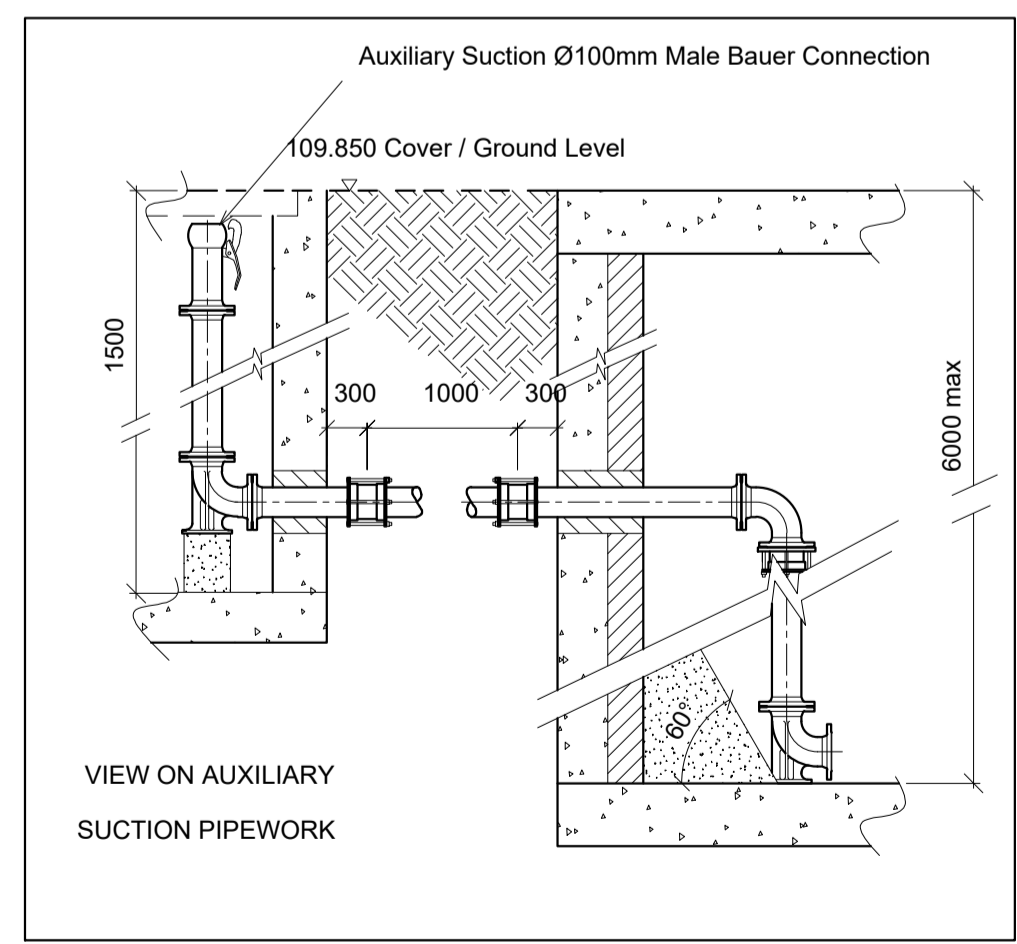
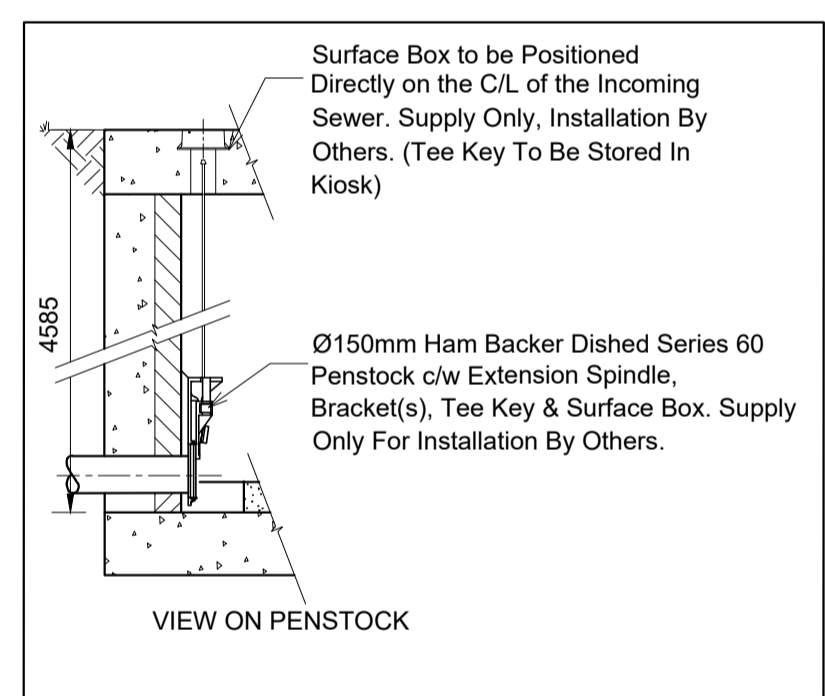
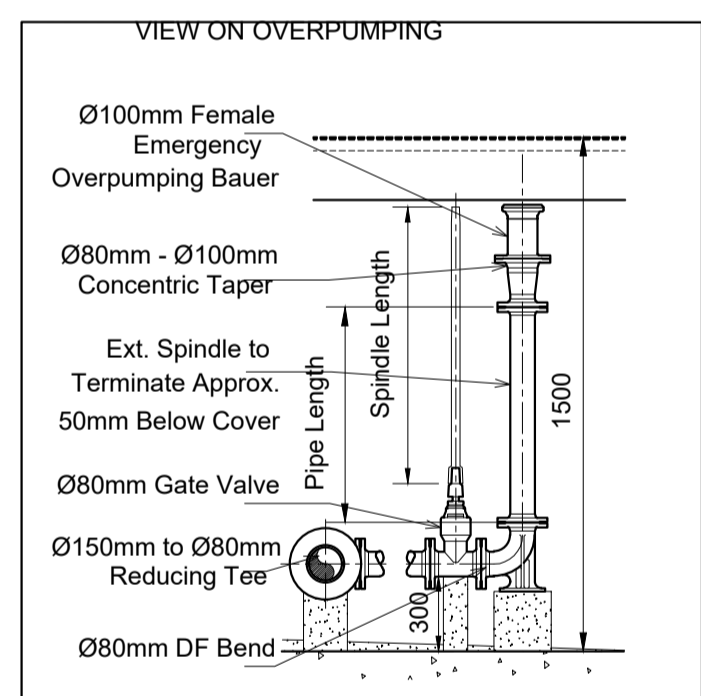
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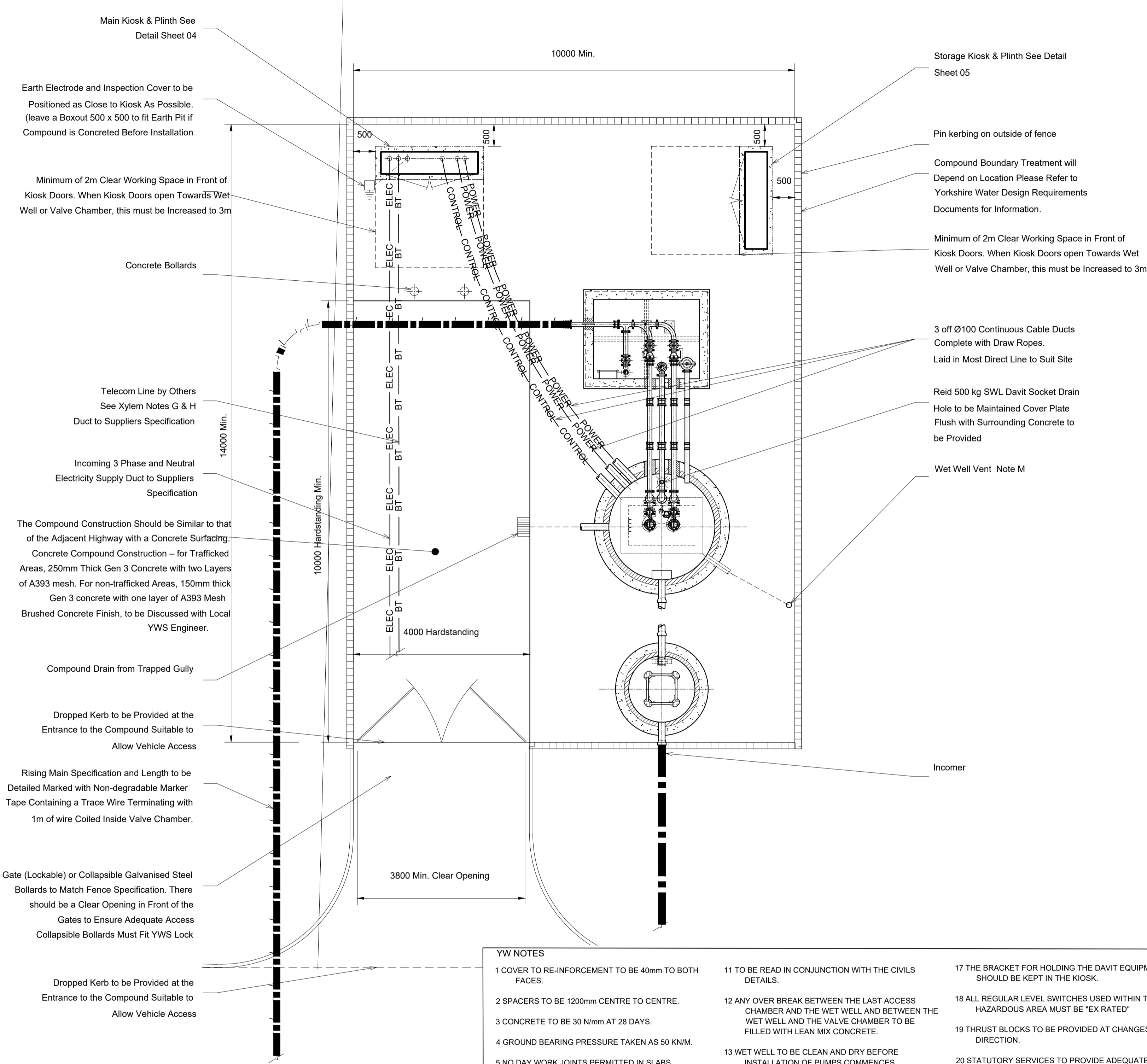
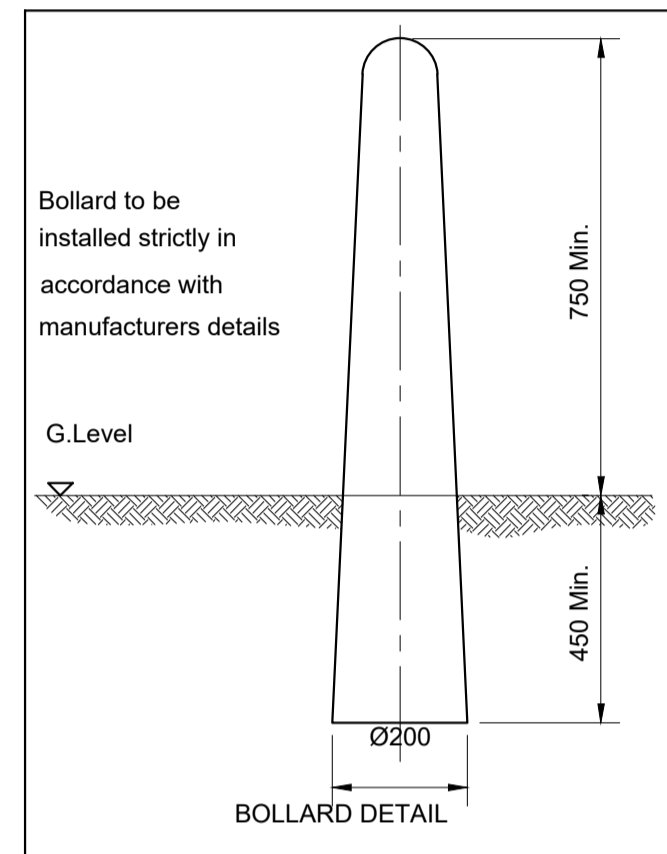


REVISION	DATE	INITIALS	DESCRIPTION
AMENDMENTS ABOVE			
LEGEND			

The number of the Company's approval sheet on this plan has been taken from existing records and is given without obligation or warranty. The accuracy of this information cannot be guaranteed and no liability of any kind whatsoever is accepted by Yorkshire Water Services Ltd for any error or omission. Any damage to the Company's reputation as a result of any errors may have serious consequences and they will be held responsible for all such incidents. Any unauthorised reproduction of this plan is prohibited and will be dealt with accordingly. Water supply apparatus should always be tested by hand excavation prior to use of mechanical plant.



SCHEME TITLE: PUMP STATION (ELEVATION) GENERAL ARRANGEMENT	
DESIGNER: WENDY MULLANEY	X1DEV No: -----
DATE: 14/01/2021	ORDER No: -----
SCALE: N.T.S	ORDER No: -----
GRID REF: -----	FIRE REF: -----
ICE REF: -----	DRAWING No: YWS-DS-SW-002



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Main Kiosk & Plinth See Detail Sheet 04

Storage Kiosk & Plinth See Detail Sheet 05

Earth Electrode and Inspection Cover to be Positioned as Close to Kiosk As Possible. (leave a Boxout 500 x 500 to fit Earth Pit if Compound is Concreted Before Installation)

Pin kerbing on outside of fence  
Compound Boundary Treatment will Depend on Location Please Refer to Yorkshire Water Design Requirements Documents for Information.

Minimum of 2m Clear Working Space in Front of Kiosk Doors. When Kiosk Doors open Towards Wet Well or Valve Chamber, this must be Increased to 3m

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Concrete Bollards

3 off Ø100 Continuous Cable Ducts Complete with Draw Ropes. Laid in Most Direct Line to Suit Site

Telecom Line by Others See Xylem Notes G & H Duct to Suppliers Specification

Reid 500 kg SWL Davit Socket Drain Hole to be Maintained Cover Plate Flush with Surrounding Concrete to be Provided

Incoming 3 Phase and Neutral Electricity Supply Duct to Suppliers Specification

Wet Well Vent. Note M

The Compound Construction Should be Similar to that of the Adjacent Highway with a Concrete Surfacing. Concrete Compound Construction - for Trafficked Areas, 250mm Thick Gen 3 Concrete with two Layers of A393 mesh. For non-trafficked Areas, 150mm thick Gen 3 concrete with one layer of A393 Mesh Brushed Concrete Finish, to be Discussed with Local YWS Engineer.

Compound Drain from Trapped Gully

Dropped Kerb to be Provided at the Entrance to the Compound Suitable to Allow Vehicle Access

Rising Main Specification and Length to be Detailed Marked with Non-degradable Marker Tape Containing a Trace Wire Terminating with 1m of wire Coiled Inside Valve Chamber.

Gate (Lockable) or Collapsible Galvanised Steel Bollards to Match Fence Specification. There should be a Clear Opening in Front of the Gates to Ensure Adequate Access Collapsible Bollards Must Fit YWS Lock

Dropped Kerb to be Provided at the Entrance to the Compound Suitable to Allow Vehicle Access

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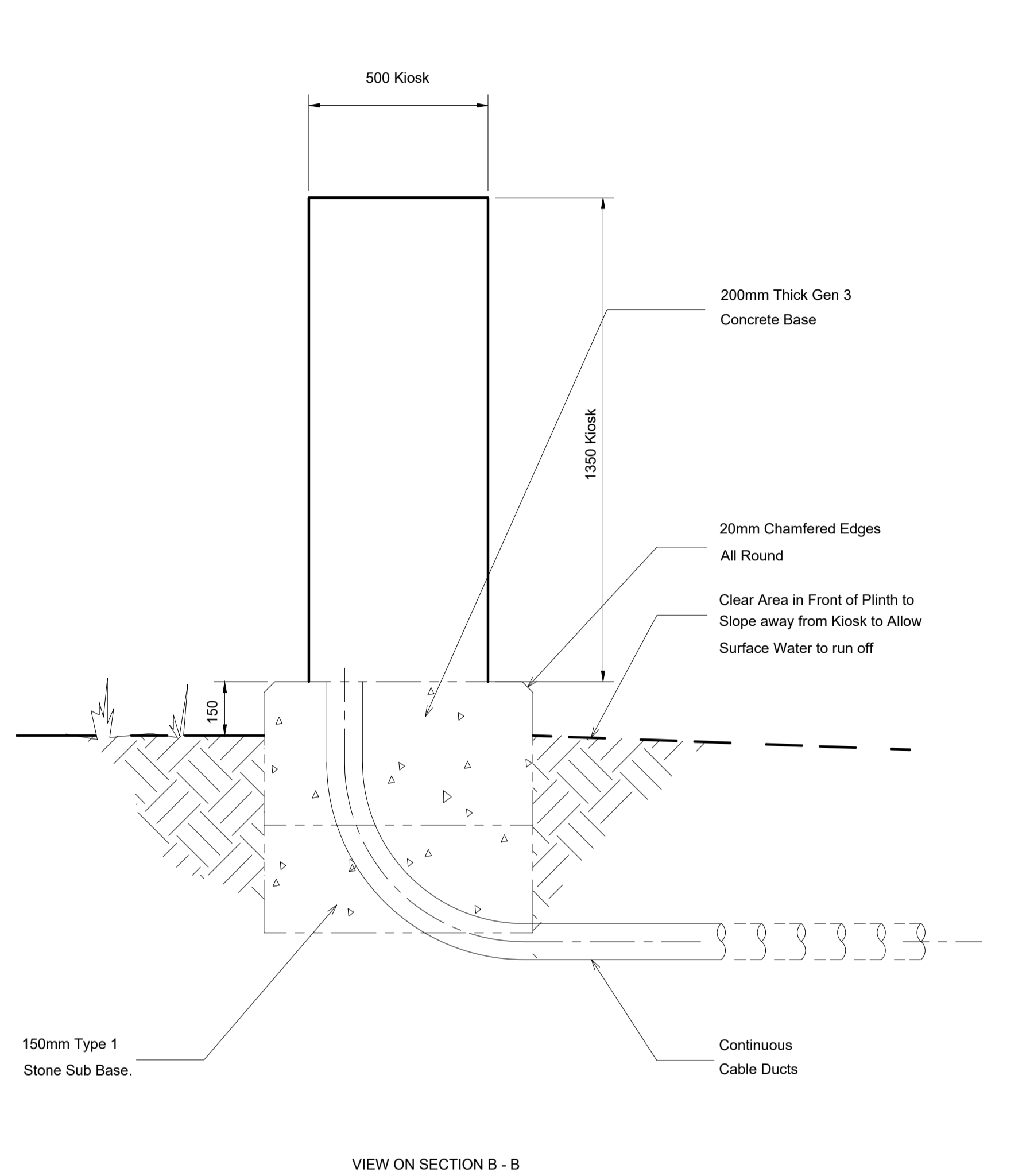


SCHEME TITLE: PUMP STATION (SITE VIEW - SINGLE PUMP) GENERAL ARRANGEMENT

SCHEME DETAILS: -----

DEVELOPER: -----

DESIGNER:	WENDY MULLANEY	X1DEV No:	-----
DATE:	14/01/2021	ORDER No:	-----
SCALE:	N.T.S	ORDER No:	-----
GRID REF:	-----	FIRE REF:	-----
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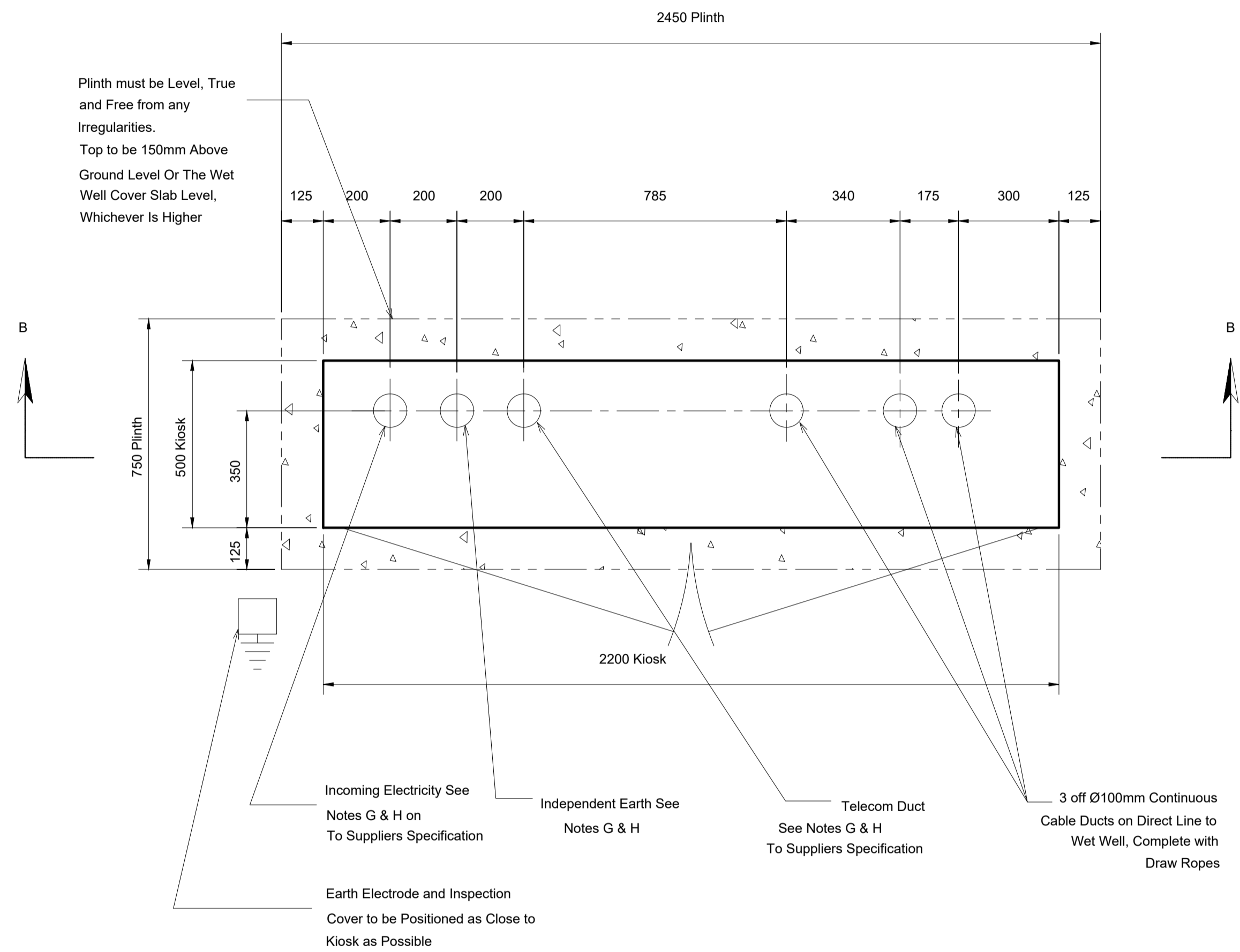


VIEW ON SECTION B - B

KIOSK DOORS FITTED WITH TRIANGULAR KEYED CAMLOCKS AT THE TOP AND BOTTOM OF EACH DOOR AND A SECURE HARDENED HASP AND STAPLE SIZED TO TAKE A YORKSHIRE WATER SIZED SERVICES PADLOCK.

ALL CABLE DUCTS TO BE SEALED IN THE KIOSK AND CAPPED WITH A WITH A GAS TIGHT SEALING PUTTY 10ATEX 137 DIRECTIVE.

Kiosk 1350 high  
Kiosk Complies With Yorkshire Water's Code For Adoption



Tolerance on Duct Centre Positions  $\pm 10\text{mm}$

All Ducts To Be Cut Level With Top Of Plinth

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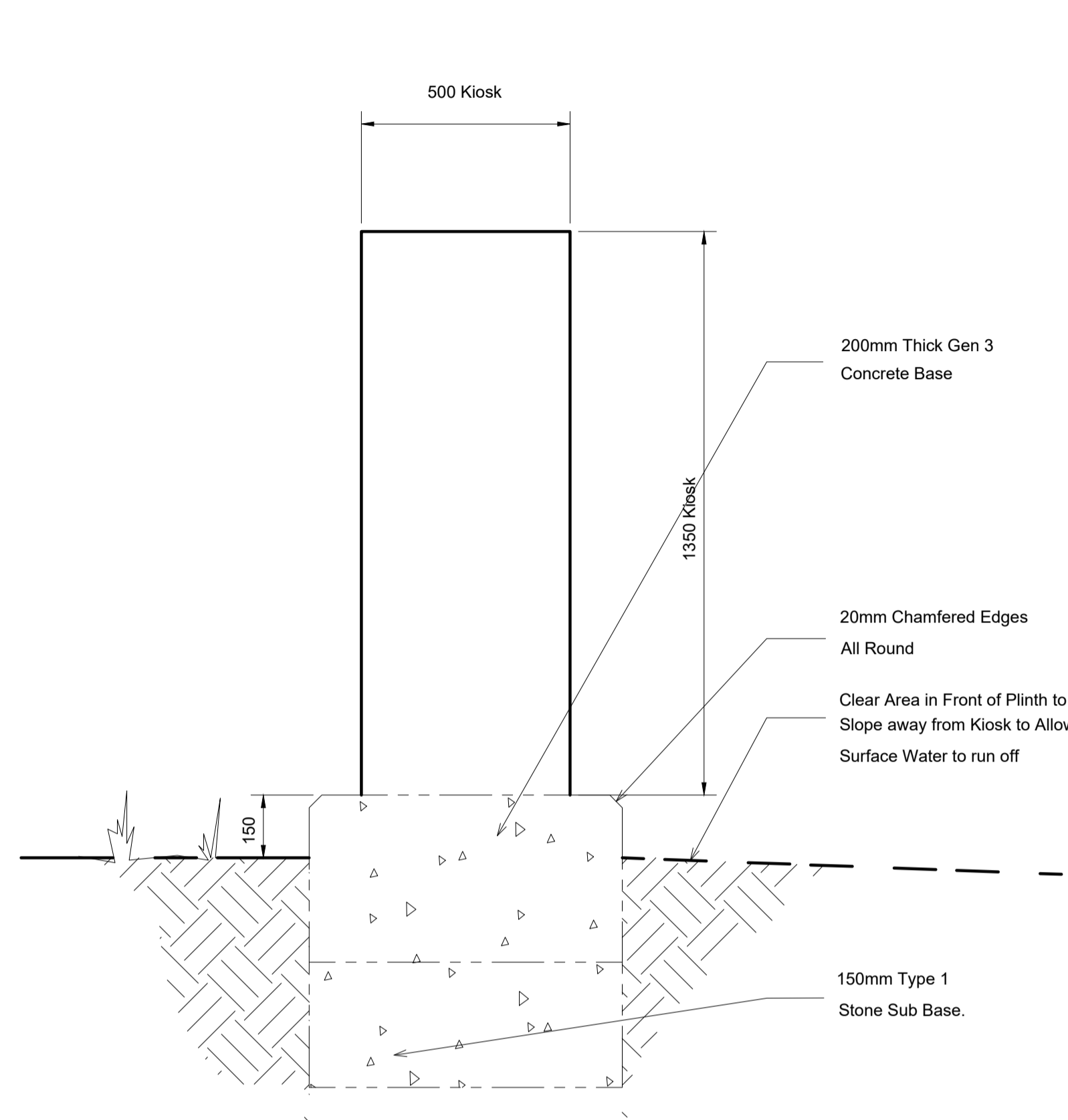
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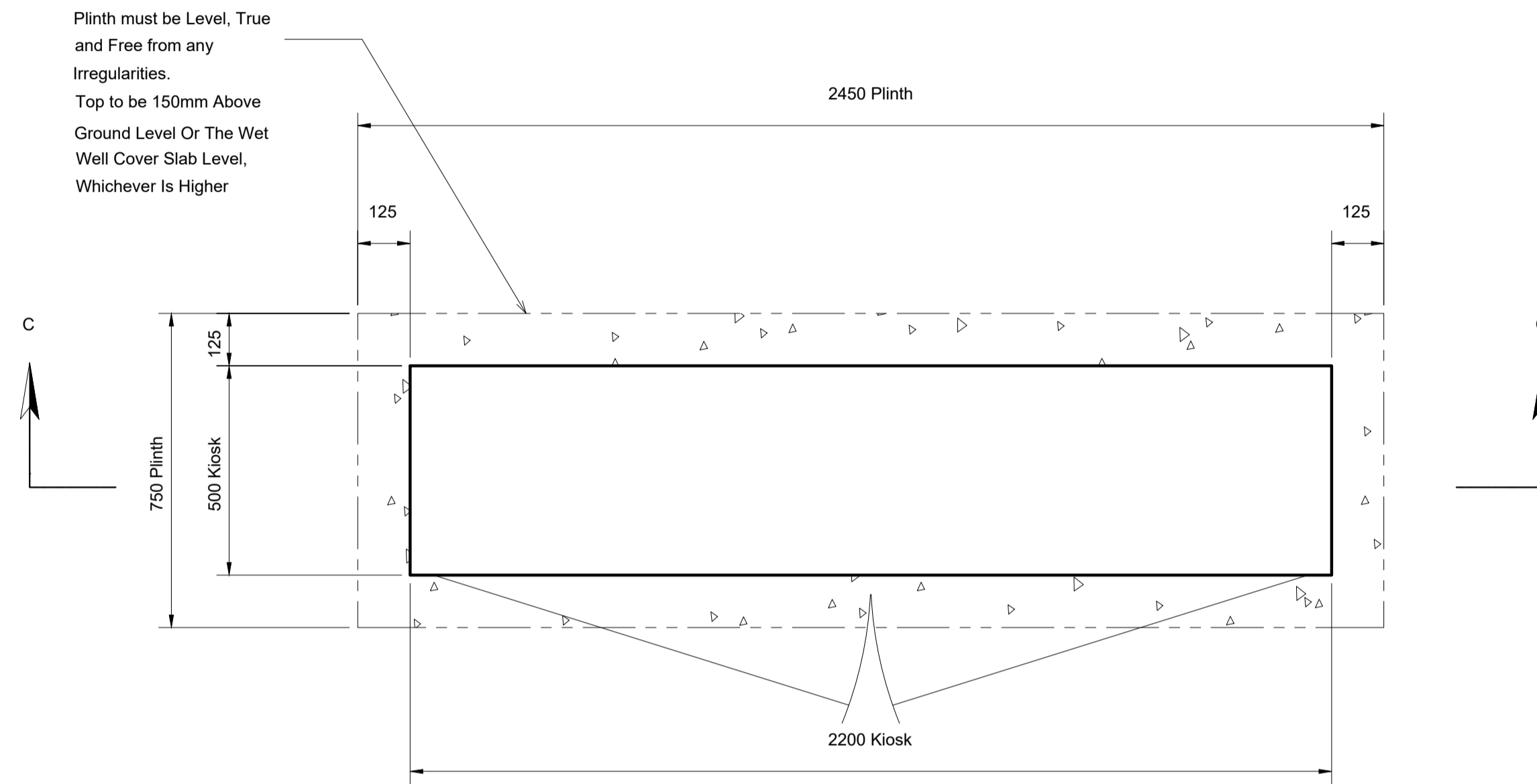
SCHEME TITLE:	PUMP STATION - KIOSK AND PLINTH DETAILS GENERAL ARRANGEMENT		
SCHEME DETAILS:	----- ----- ----- ----- -----		
DEVELOPER:	-----		
DESIGNER:	WENDY MULLANEY	X1DEV No:	-----
DATE:	14/01/2021	ORDER No:	-----
SCALE:	N.T.S	ORDER No:	-----
GRID REF:	-----	FIRE REF:	-----
ICE REF:	-----	DRAWING No:	YWS-DS-WW-004



VIEW ON SECTION C - C

KIOSK DOORS FITTED WITH TRIANGULAR KEYED CAMLOCKS AT THE TOP AND BOTTOM OF EACH DOOR AND A SECURE HARDENED HASP AND STAPLE SIZED TO TAKE A YORKSHIRE WATER SIZED SERVICES PADLOCK.

Kiosk 1350 high  
Kiosk Complies With Yorkshire Water's CODES FOR ADOPTION



Plinth must be Level, True and Free from any Irregularities. Top to be 150mm Above Ground Level Or The Wet Well Cover Slab Level, Whichever is Higher

Tolerance on Duct Centre Positions  $\pm 10\text{mm}$

All Ducts To Be Cut Level With Top Of Plinth

NOTES:

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- N COVERS TO BE CAPABLE OF BEING LIFTED WITH AN EFFORT NOT EXCEEDING 25Kg
- P ALL FITTINGS TO BE STAINLESS STEEL

REVISION	DATE	INITIALS	DESCRIPTION

AMENDMENTS ABOVE

LEGEND

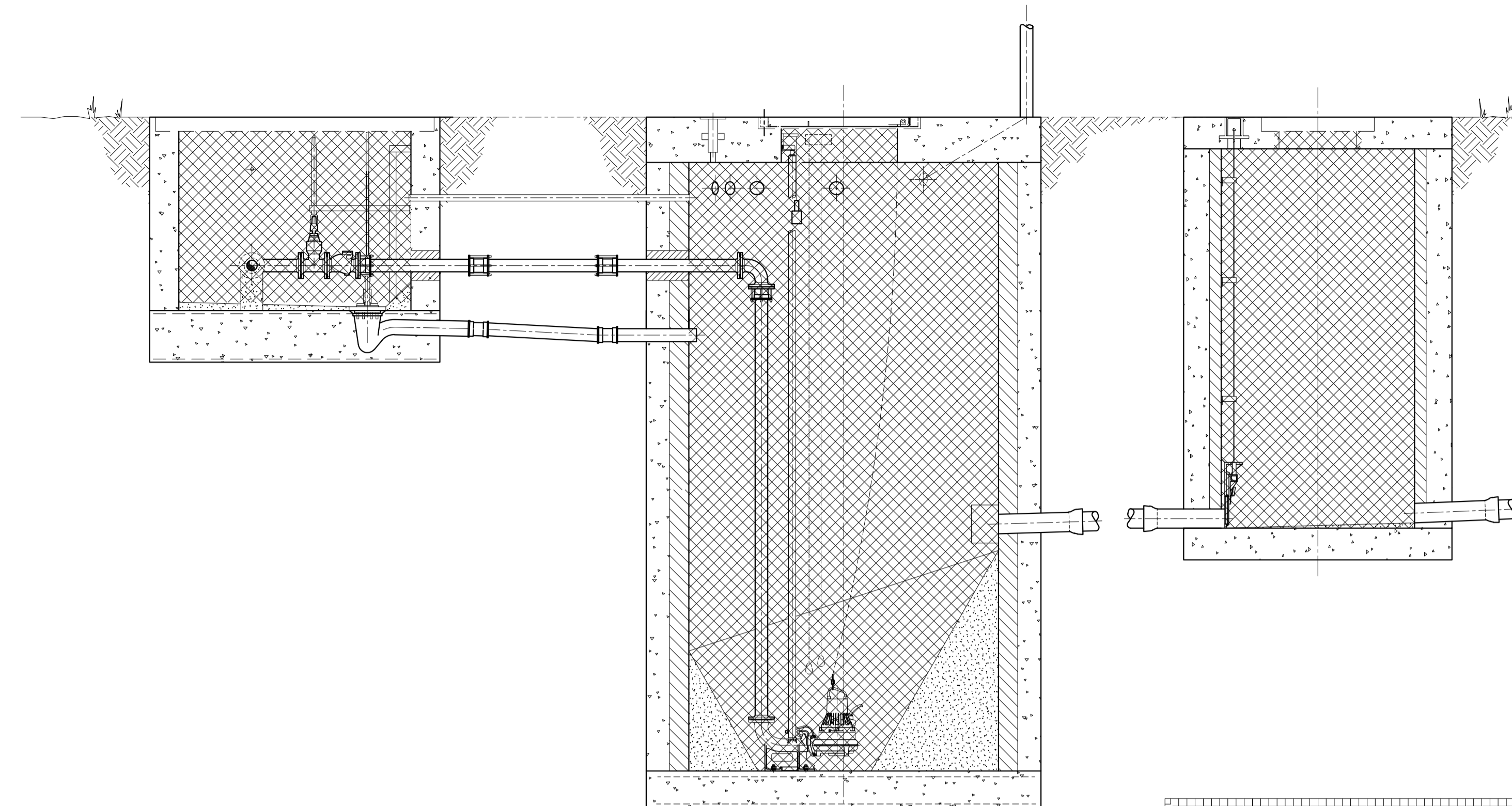
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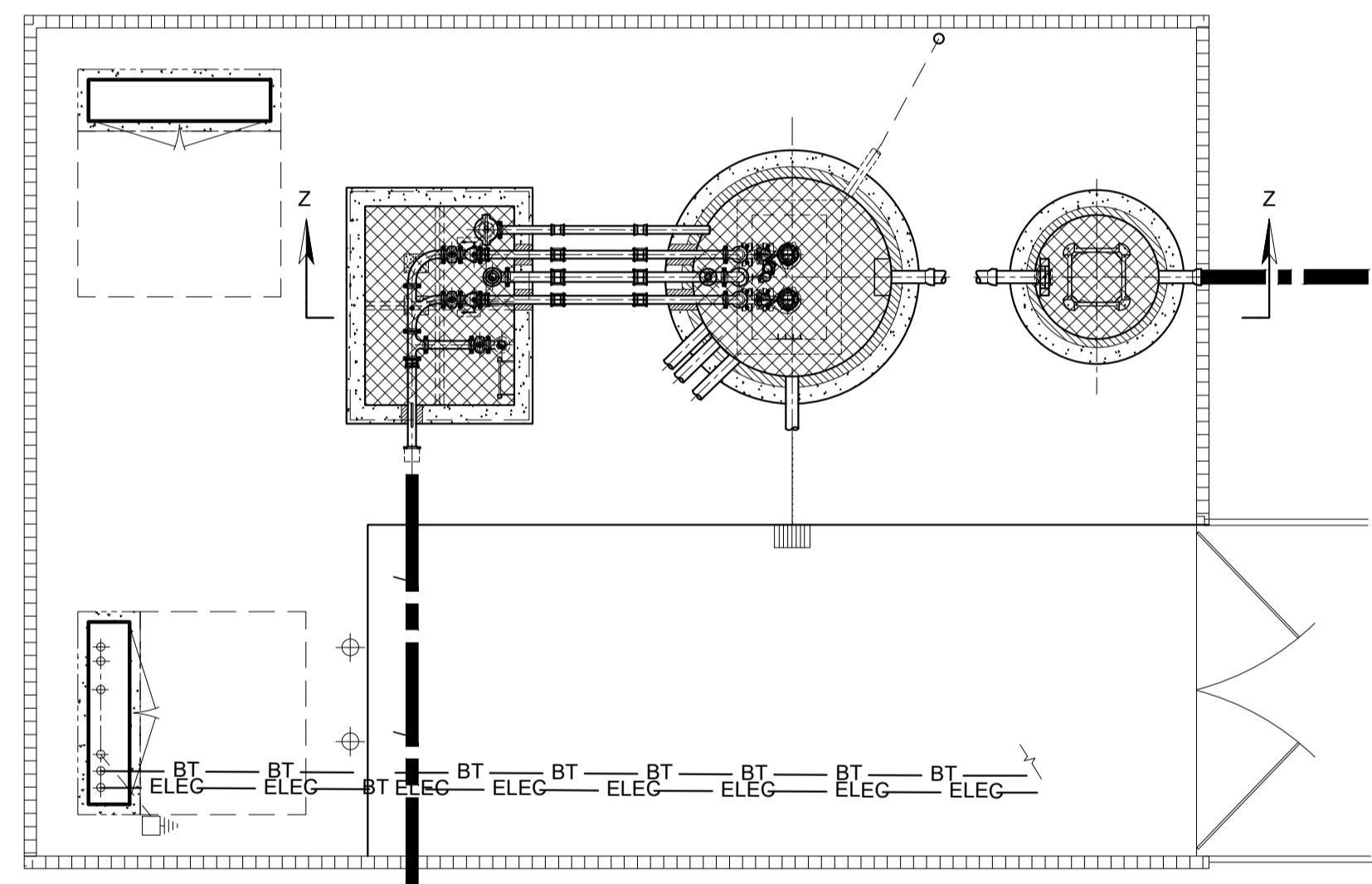
SCHEME TITLE: PUMP STATION - PLAN VIEW OF KIOSK AND PLINTH  
GENERAL ARRANGEMENT

SCHEME DETAILS: -----  
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-----  
-----  
-----  
-----

DESIGNER:	WENDY MULLANEY	X1DEV No:	-----
DATE:	14/01/2021	ORDER No:	-----
SCALE:	N.T.S	ORDER No:	-----
GRID REF:	-----	FIRE REF:	-----
ICE REF:	-----	DRAWING No:	YWS-DS-SD-WW-005

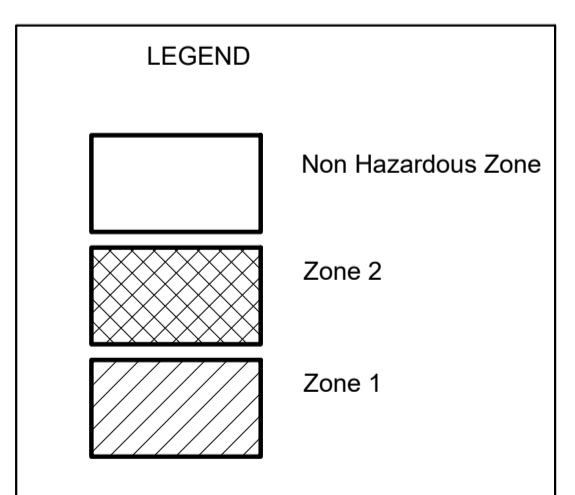


VIEW ON SECTION Z-Z  
HAZARDOUS AREA DETAIL  
IN ACCORDANCE WITH SFA7.D6.2



SECTIONAL PLAN VIEW COMPOUND LAYOUT  
(not to scale)

Cable Ducts in accordance with Code for Adoption and BS EN 1401-01 & BS 4660 sealed with rise sealant system Gas + waterproof sealant system



- YW NOTES**
- |   |  |   |
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| 9 MINIMUM BAR LAP LENGTH 800mm.   |  |   |
| 10 WET WELL AND VALVE CHAMBER COVERS TO BE AS SUPPLIED BY PUMP SUPPLIER.                            |  |   |

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REVISION	DATE	INITIALS	DESCRIPTION

AMENDMENTS ABOVE  
LEGEND

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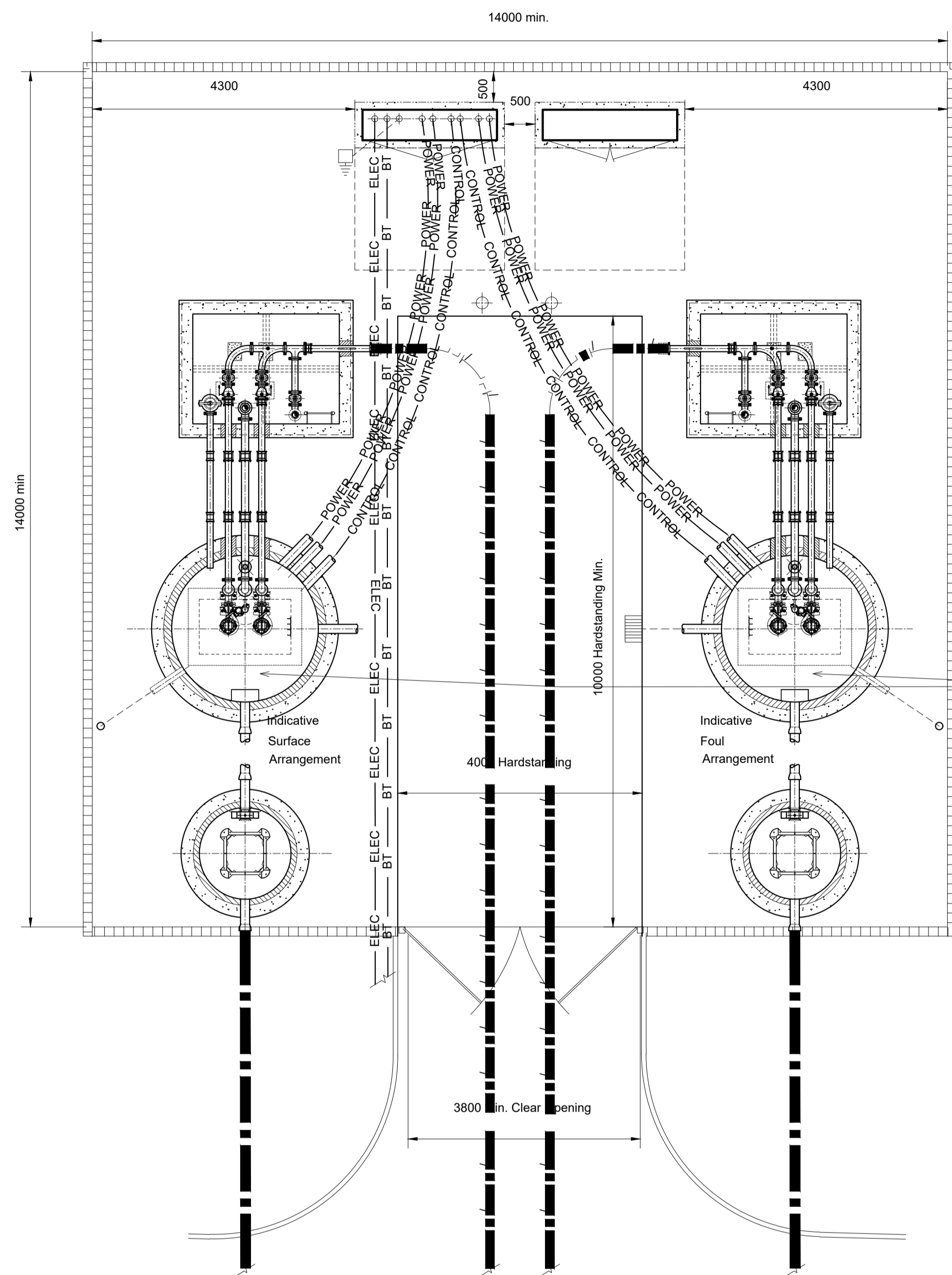
SCHEME TITLE: PUMP STATION - HAZARDOUS ZONING DETAIL  
GENERAL ARRANGEMENT

SCHEME DETAILS: -----

DEVELOPER: -----

DESIGNER:	WENDY MULLANEY	X1DEV No:	-----
DATE:	14/01/2021	ORDER No:	-----
SCALE:	N.T.S	ORDER No:	-----
GRID REF:	-----	FIRE REF:	-----
ICE REF:	-----	DRAWING No:	YWS-DS-SD-WW-006





Note  
Wet Well Cover Slab to have Engraved Plate Indicating Type:-  
FOUL WATER WET WELL  
SURFACE WATER WELL

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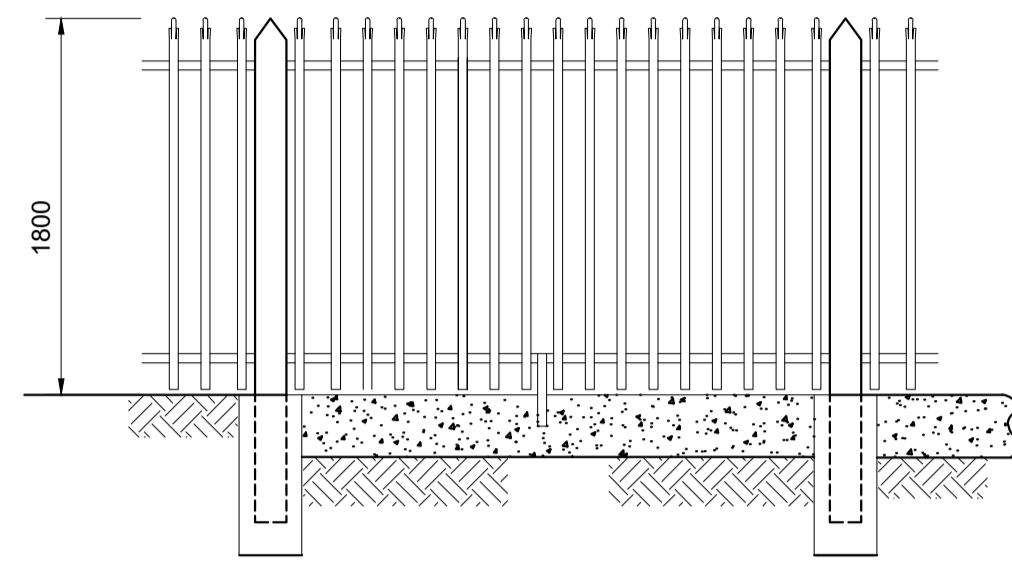
REVISION	DATE	INITIALS	DESCRIPTION

AMENDMENTS ABOVE  
LEGEND

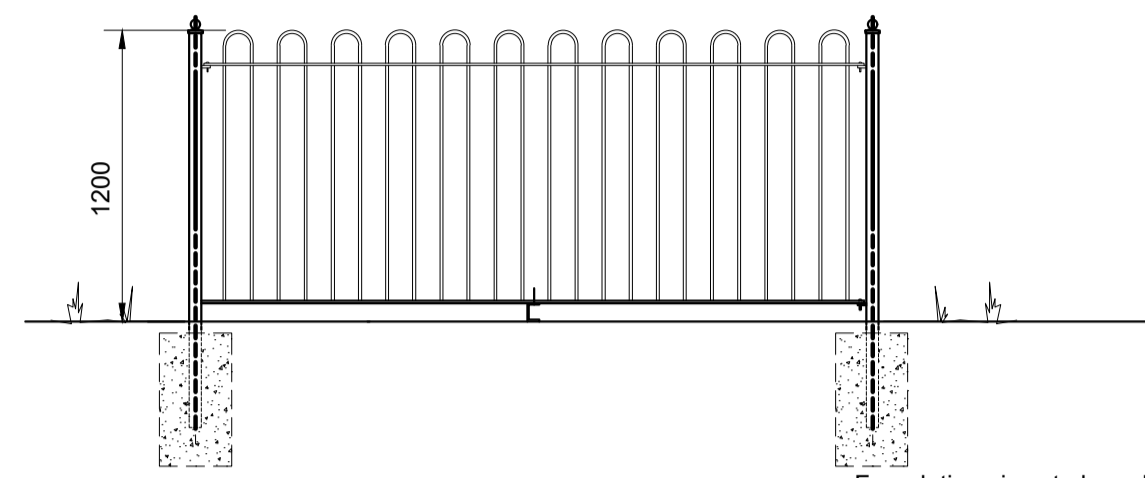
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SCHEME TITLE:	PUMP STATION - SITE VIEW (DUAL PUMP) GENERAL ARRANGEMENT
SCHEME DETAILS:	-----
DEVELOPER:	-----
DESIGNER:	WENDY MULLANEY
DATE:	14/01/2021
SCALE:	N.T.S
GRID REF:	-----
ICE REF:	-----
X1DEV No:	-----
ORDER No:	-----
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FIRE REF:	-----
DRAWING No:	YWS-DS-WW-007

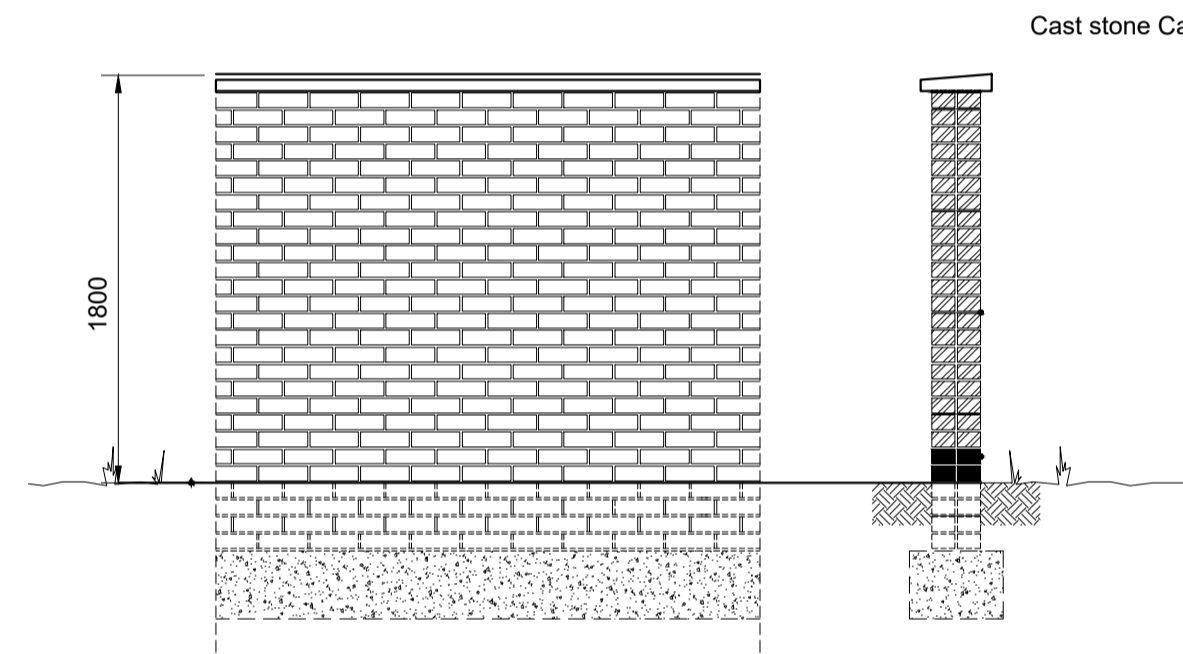


1800mm Palisade Fencing - Elevation



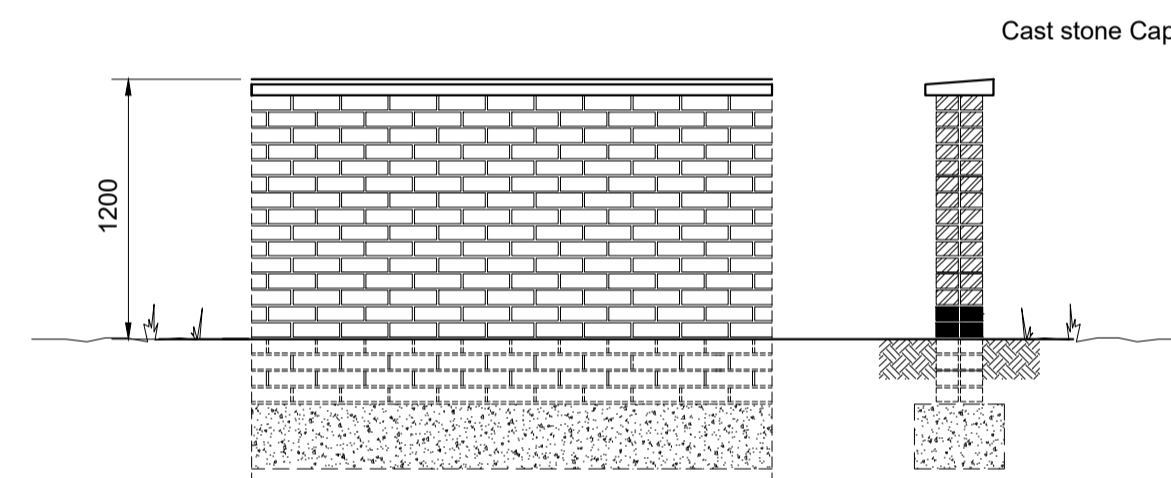
1200mm Bow Top Fencing - Elevation

Foundation sizes to be calculated to suit weight of gates and ground conditions



1800mm Brick Wall - Elevation

1800mm Brick Wall - Section



1200mm Brick Wall - Elevation

1800mm Brick Wall - Section

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SCHEME TITLE: PUMP STATION - BOUNDARY TREATMENT OPERATIONS GENERAL ARRANGEMENT

SCHEME DETAILS: -----

DEVELOPER: -----

DESIGNER:	WENDY MULLANEY	X1DEV No:	-----
DATE:	14/01/2021	ORDER No:	-----
SCALE:	N.T.S	ORDER No:	-----
GRID REF:	-----	FIRE REF:	-----
ICE REF:	-----	DRAWING No:	YWS-DS-SD-WW-008

For more information contact:

Sewer Adoption, Diversion and Requisition Team  
Developer Services

0345 120 84 82

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