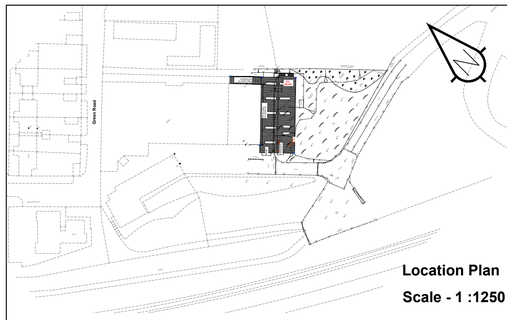


Location Plan

Scale - 1 :1250

RESIDUAL HAZARDS - DRAINAGE

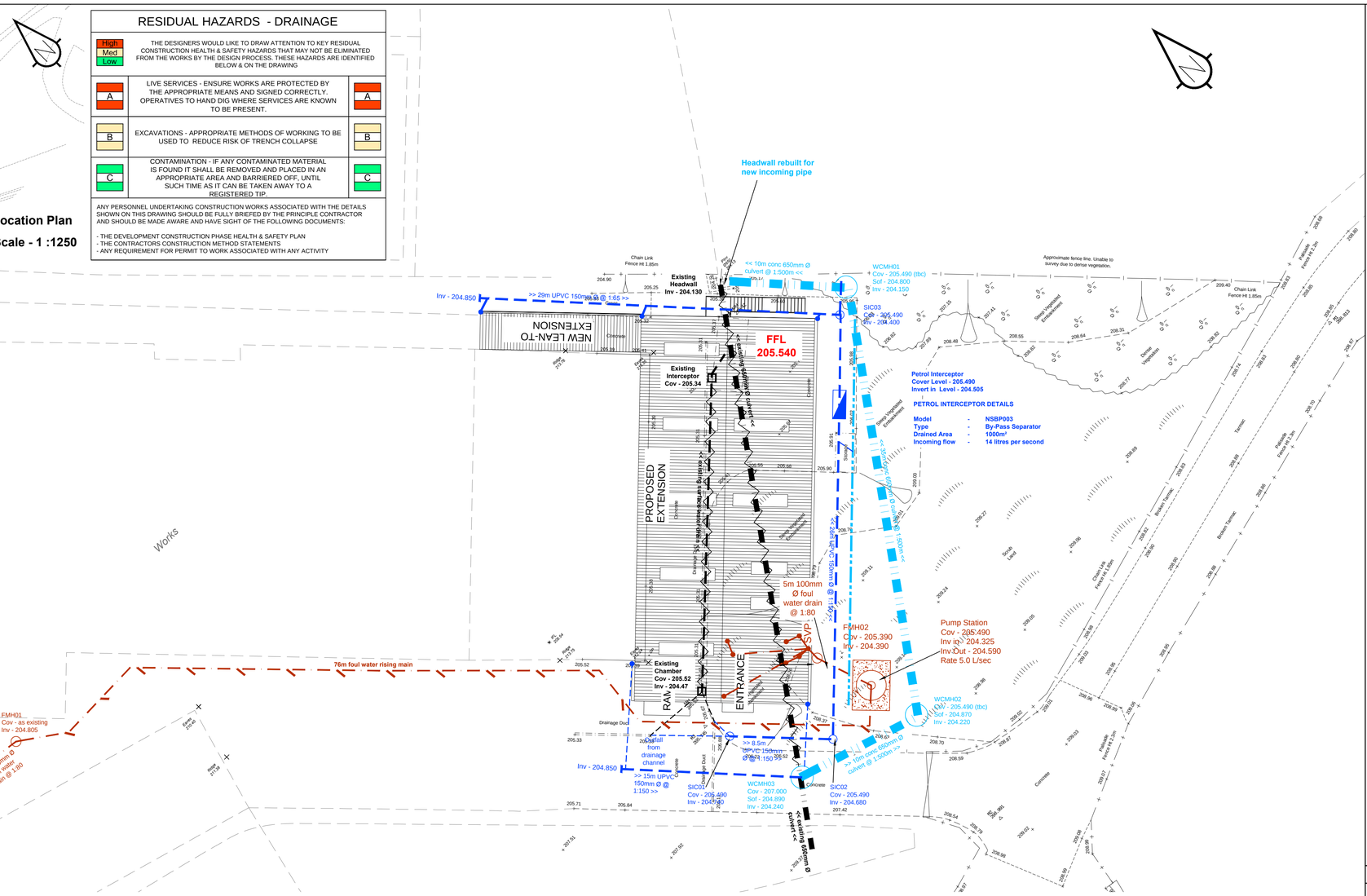
High / Med / Low

THE DESIGNERS WOULD LIKE TO DRAW ATTENTION TO KEY RESIDUAL CONSTRUCTION HEALTH & SAFETY HAZARDS THAT MAY NOT BE ELIMINATED FROM THE WORKS BY THE DESIGN PROCESS. THESE HAZARDS ARE IDENTIFIED BELOW & ON THE DRAWING

A	LIVE SERVICES - ENSURE WORKS ARE PROTECTED BY THE APPROPRIATE MEANS AND SIGNED CORRECTLY. OPERATIVES TO HAND DIG WHERE SERVICES ARE KNOWN TO BE PRESENT.	A
B	EXCAVATIONS - APPROPRIATE METHODS OF WORKING TO BE USED TO REDUCE RISK OF TRENCH COLLAPSE	B
C	CONTAMINATION - IF ANY CONTAMINATED MATERIAL IS FOUND IT SHALL BE REMOVED AND PLACED IN AN APPROPRIATE AREA AND BARRIERED OFF, UNTIL SUCH TIME AS IT CAN BE TAKEN AWAY TO A REGISTERED TIP.	C

ANY PERSONNEL UNDERTAKING CONSTRUCTION WORKS ASSOCIATED WITH THE DETAILS SHOWN ON THIS DRAWING SHOULD BE FULLY BRIEFED BY THE PRINCIPLE CONTRACTOR AND SHOULD BE MADE AWARE AND HAVE SIGHT OF THE FOLLOWING DOCUMENTS:

- THE DEVELOPMENT CONSTRUCTION PHASE HEALTH & SAFETY PLAN
- THE CONTRACTORS CONSTRUCTION METHOD STATEMENTS
- ANY REQUIREMENT FOR PERMIT TO WORK ASSOCIATED WITH ANY ACTIVITY



Extract from Table A2 WIS 4-08-02

Processed granular bedding and sidefill materials for flexible pipes.

Pipe nominal bore (mm) see note (d)	Nominal maximum particle size (mm)	Materials specified in British Standards see note (a)
100	10	10mm nominal sigle-size
Over 100 to 150	15	10 or 14mm nominal sigle-size or 14mm to 5mm graded
Over 150 to 300	20	10-14 or 20mm nominal sigle-size or 14mm to 5mm graded or 20mm to 5mm graded.
Over 300 to 500	20	14 or 20mm nominal sigle-size or 14mm to 5mm graded or 20mm to 5mm graded.
Over 550	40	14-20 or 40mm nominal sigle-size or 14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded

Notes:

(a) Processed granular materials to include aggregates to BS 882, air-cooled blast furnace slag to BS1047 and lightweight aggregates to BS 3797.

(c) For the purpose of this table, PE pipe of 630mm O.D. can be regard as having nominal bores of over 550mm, irrespective of wall thickness.

(d) Nominal bore is used in preference to DN because of the different nominal size classifications forflexible pipes

Minimum recommended trench widths for structured wall pipes in poor ground conditions.

Native Soil Modulus between 3 and 4 Mpa
Typical Soil Classifications : Very loose gravel, loose sand, medium dense clayey silty sand, firm clay

Nominal Pipe Diameter (mm)	150	225	300	375	450	525	600	750	900
Minimum Trench Width (mm)*	450	525	600	750	900	1050	1200	1500	1800

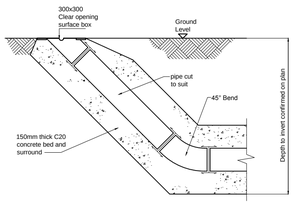
* A vertical trench face has been assumed to allow a modulus of 7 Mpa to be achieved for the pipe bedding and sidefill material.

Other assumed values: Depth of Cover = 6.00 metres (maximum)
Traffic Loading = Main Road
Pipe stiffness = SN8

Note. Where the native soil modulus is below 3Mpa or the depth of cover exceeds 6 metres guidance should be sought from the pipe manufacturer regarding structural design and installation details.

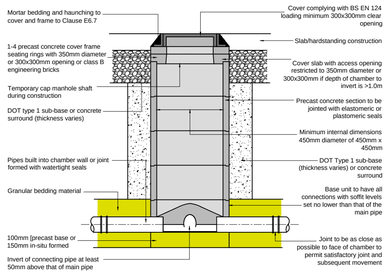
PIPE BEDDING MATERIALS.

Nominal bore of pipe (mm)	Size mm Single sized	Graded
100-125	10	--
150-200	10 or 14	14-5
225-300	10, 14 or 20	14-5 or 20-5
375 500	14 or 20	14-5 or 20-5
Exceeding 500	14, 20 or 40	14-5 20-5 40-5

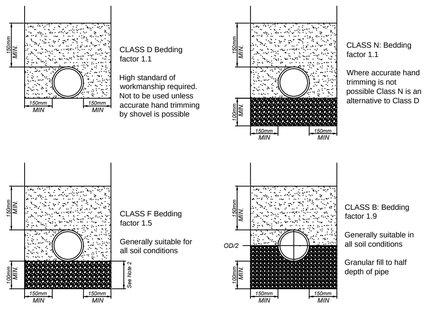


Typical Rodding Eye Detail

Typical Inspection Chamber Detail - Type 3 (Rigid material detail)
Max depth from cover level to soffit of pipe in areas subject to vehicle loading 3.0m non entry



a) Rigid Pipes



KEY

1 - Selected fill: free stones larger than 40mm, lumps of clay over 100mm, timber, frozen material, vegetable matter.

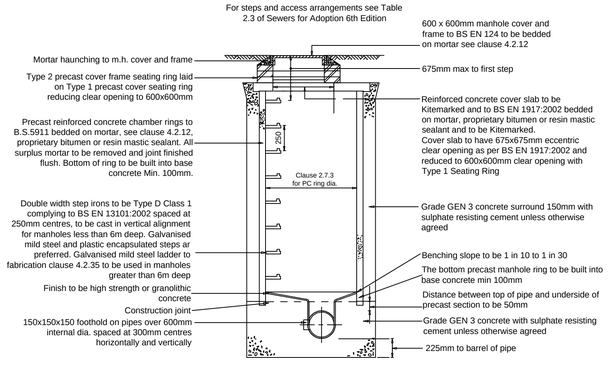
2 - Granular material - for rigid pipes the granular material should conform to BS EN 1610 Annex B Table B.15 and should be single size material or graded material up to the size of 5mmup to a maximum size of 10mm for 100mm pipe, 14mm for 150mm pipes, 20mm for 150mm up to 600mm dia. and 40mm for pipes more than 600mm dia. Compaction fraction maximum 0.3 for class N or B and 0.15 for class F.

Notes:

1 - Provision may be required to prevent groundwater flow in trenches with class N, F or B type bedding.
2 - Where the pipe has sockets and Class D bedding is used, holes wich should be as short as in practicable should be prepared in the trench bottom to give a clearance of 50mm beneath the socket.
3 - Where the pipe has sockets and Class F or N bedding is used, the sockets should not be less than 50mm above the floor of the trench.
4. All dimensions are in mm.

Typical Manhole Detail - Type B

Maximum Depth from Ground Level to Soffit of Pipe 3.0m



FOUL WATER PUMP STATION DETAILS

Pump Station

Liquid Handled	-	*Foul*
Design Flow	-	*5.0 l/sec*
Cover Level of Chamber	-	*205.490*
Invert Level of inlet	-	*204.325*
Pump Chamber Base	-	*203.340*
Invert Level at pump Outlet	-	*204.590*
Discharge Invert at Receiving Manhole	-	*204.805*

Rising Main Pipe

Length	-	*76m*
Inside diameter	-	*80.0*

Pump Data

Number of Pumps	-	*TWO*
Type of Pump	-	*DP3068 MT(80mm)*
Pump impeller and size	-	*473*
Solids Handling	-	*80 (mm)*
Capacity per pump	-	*5.3 (l/sec)*
Motor Rating	-	*1.5 (kW)*
Full Load Current	-	*4.3 (Amps)*
Power Supply	-	*400 (Volts)*
Method of Starting	-	*DOL*
Zone Classification	-	*NON EXPLOSION PROOF*
Cable duct length	-	*4 (m)*

Tank (Pump Chamber)

Tank Construction	-	*GRP*
Tank Diameter	-	*1500 (mm)*
Tank Depth	-	*2000 (mm)*
Storage	-	*N/A*
Neck Depth	-	*150 (mm)*
Station Pipe size	-	*80 (mm)*
Station discharge pipe size	-	*80 (mm)*
Access Cover size	-	*1100 x 900 (mm)*
Access Cover Loading	-	*15 Tonnes*
Number of Inlet connections	-	*3 160mm Osma type socket*

Key:

- Proposed surface water drain and inspection chamber
- Proposed Rodding Eye
- Rainwater Downpipe. Location to be confirmed by Architect
- Proposed surface water drain and inspection chamber
- Proposed culvert
- Proposed ACO drain or similar approved
- Proposed Petrol Interceptor
- Proposed Foul water drain and inspection chamber
- Proposed Foul water rising main
- Soil vent pipe. Location to be confirmed by Architect
- Pakcaged Foul Water pump Station
- Existing surface water drain to be abandoned
- Existing culverted watercourse to be abandoned

NOTES:

1. Granular bedding for pipes shall consist of aggregates from natural sources complying with the relevant provisions of BS 882 sized in accordance with the table across.

2. All private work to be in accordance with current building regulations.

3. All adoptable sewer works and material to be in accordance with the appropriate 'Sewers for Adoption' publication, the relevant British/European and Yorkshire Water's Standards/Requirements/Addendum and Kitemarked.

4. Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).

NOTES:

1. **The proposed layout shown on this plan is taken from the Guy Taylor Architetcs Highway Plan drawing reference 16-0008-08-62**
2. **The topographical survey shown on this plan is taken from MAPMATIC land Surveying and Site Engineering topographical Survey referenced 1471 date 3 September 2014**

Rev	Amendment	Drawn	Date	Checked
D	Additional foul water connection from ground floor WC added	IE	30.09.16	
C	RWP's added to lean to extension	IE	18.07.16	
B	Pump and Bypass Separator Specification added	IE	18.07.16	
A	RWP removed and Internal SVP shown	IE	11.07.16	

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Client: Whitby and Chandler Ltd

Project Title: New Felt Factory, Green Road, Penistone

Drawing Title: Proposed Drainage Layout

Scale	Drawn By
1:200	IE
Drawing Size	**Checked By**
A1	
Date	**Approved By**
04.07.16	

ISO 9001 REGISTERED FIRM

Drawing Number: 8380/001

Rev: D

FILE REF:

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