

SECTION 104 & 30 NOTES

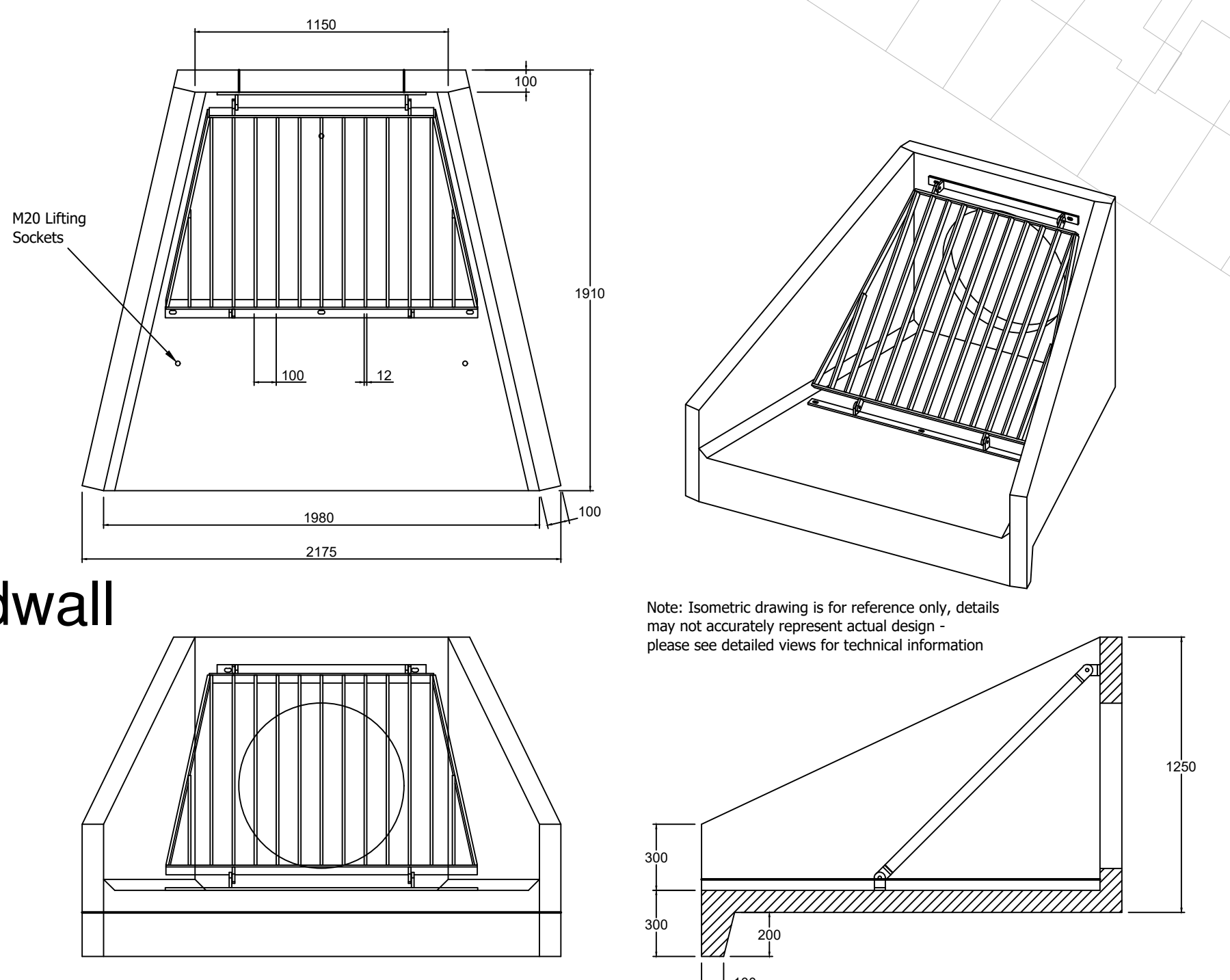
1. All adoptable drainage works have been designed and are to be constructed in accordance with "Design and Construction Guidance" & Local Practice
 2. All pipe work shall be Extra Strength Clayware to BS EN 295:1991 Part 1
 3. All precast concrete pipework shall be to the class stated on the drawings in accordance with BS EN 1916:2002. All manholes and chambers shall be to BS EN 1917:2002
 4. All plastic pipes being offered for adoption under S104 must be structural wall and must comply with BS EN 13476-1 and BS 4320:01
MAX. PIPE LENGTH TO BE 3.0m
 5. All levels relate to an Ordnance Datum
 6. This drawing is to be read in conjunction with all other relevant drawings.
 7. House drainage connections to sewers must be 150mm & unless otherwise stated led to the drop-out level shown.
 8. Levels given on drop out chambers are incoming pipe levels.
 9. House drainage runs to be kept within the curbside of the plot they serve wherever possible.
 10. The Contractor shall be responsible for ensuring that any existing level levels indicated on drawings are correct before work commences.
 11. The Contractor should satisfy himself as to the position and depth of existing Statutory Undertakers assets which could affect the works before the works are commenced.
 12. Road gully connections are to be 150mm & connecting either directly to manholes shown, or to sewer runs using pre-fabricated junctions.
 13. All connections to adoptable sewers shall be by manufactured section pipes. Saddle connections will not be permitted.
 14. All sewers for adoption with greater than 1.20 metres cover in roads or 0.9m metres cover in fields shall have Class 5 granular bed and surround.
 15. Any sewer for adoption with less than 1.2 metres cover in roads or 0.9 metres cover in fields shall have a minimum of 150mm S14 concrete surround. Flexibility shall be maintained by the provision of flexible or similar approved joint filter levels in the concrete surround at each pipe joint
 16. Pumping Station to be designed and constructed in accordance with Design and Construction Guidance and United Utilities Pumping Station Addendum
- All pipes to have class "S" bed and surround unless shown otherwise
All concrete pipes to be class 120
All clay pipes to be extra strength vitrified clay
All u-pvc pipes to comply with BS 4660:2000 & BS EN 1411-1
Structural wall u-pvc pipes to comply with BS 4320-01
Max. pipe length to be 3.0m
Foundations to be designed / constructed to take into account the position and depth of adjacent sewers and drains in accordance with Design & Construction Guidance
- Contractor to ensure of and take appropriate action to ensure de-stabilisation of any existing structures, embankments or other features does not occur as a result of any excavation undertaken in accordance with the designs shown on this drawing
If contractor is unsure about any aspect of the above he should seek advice before commencing excavation work
Contractor/Client should note the existence of existing buried plant and overhead power cables
Before work commences contractor must undertake risk assessment and provide method statement for working in this area in accordance with HSE and power regulator guidelines to satisfaction of the principle designer
To cater for any deviations in the as constructed road / footpath levels in relation to the design levels, the proposed floor levels shown must be checked on site by the site agent or engineer in relation to as built road levels to ensure compliance with part III of the Building Regulations
All existing services to be located and marked in accordance with underground requirements and protected accordingly during the works
All existing manhole invert levels are to be located and marked prior to start on site to ensure that they are correct and also to ensure that their details are noted and that interpolated level levels are correct. Any discrepancy to be reported to REFA prior to start to enable any changes to be made to design that prove necessary

SCALE IN METRES
0 5 10 20 50

CIVILS DESIGN RISK MANAGEMENT
Abnormal or unusual residual risks associated with the design outcomes shown on this drawing are:

- 1 EXISTING SERVICES
- 2 WORKING ON EXISTING ROAD
- 3 DANGER OF COLLAPSE TO ALL EXCAVATIONS - RISK TO BE ASSESSED AND MANAGED BY CONTRACTOR IN ACCORDANCE WITH HSE GUIDANCE
- 4 WORKING IN AREAS WHERE MEMBERS OF THE PUBLIC HAVE ACCESS E.G. MAIN ROAD
- 5 WORKING ADJACENT ON LIVE FODL / COVERED SEWERS (W/S'S DOWN)

REFA Ltd has followed its Design Risk Management process for Hazard Elimination and Risk reduction in developing the designs shown on this drawing. Abnormal or unusual residual risks may be shown above where it is considered that such risk may not normally be expected by competent persons engaged on work of this nature or type

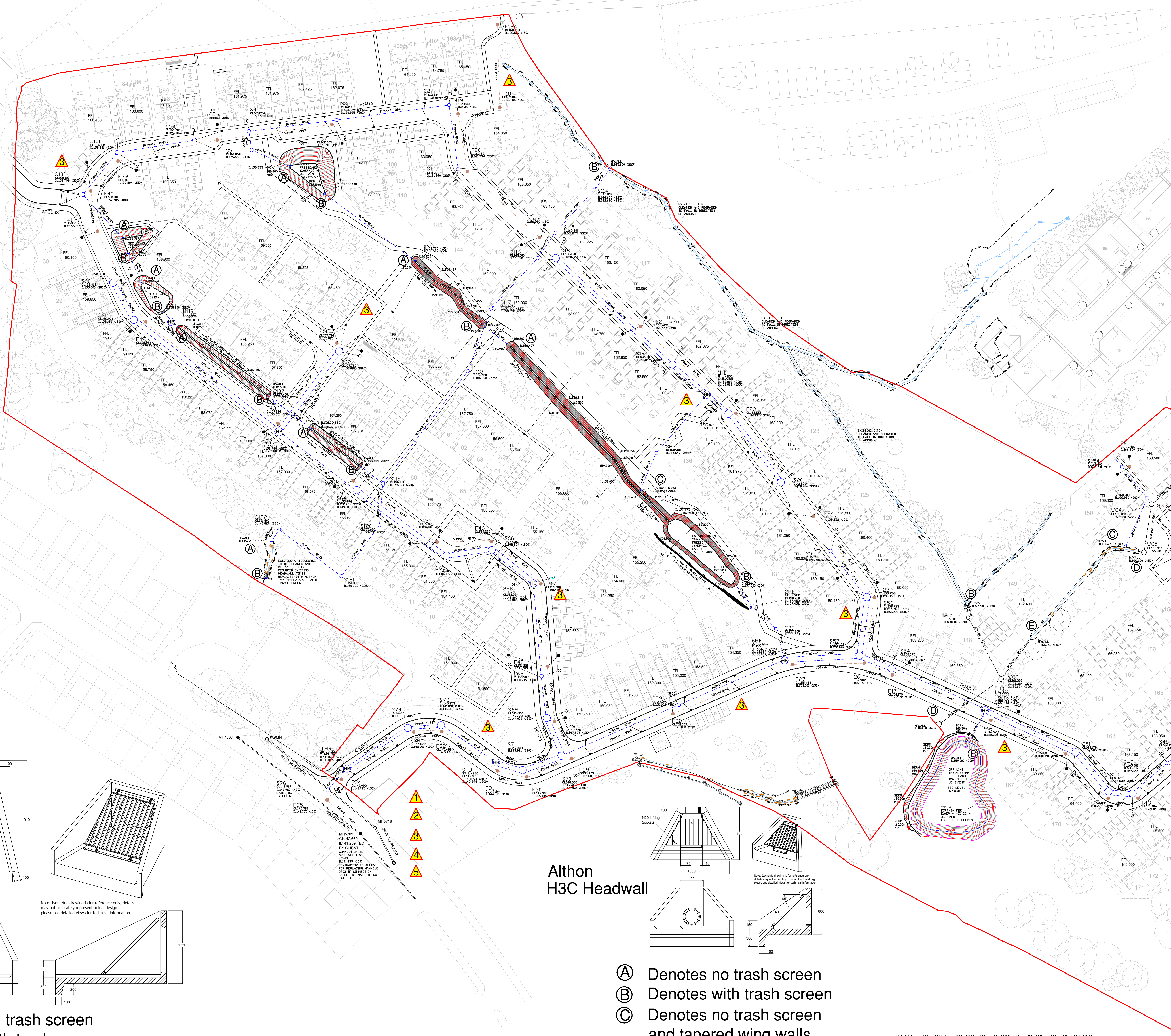


Althon H10C A Headwall

Althon H3C Headwall

- Ⓓ Denotes no trash screen
- Ⓔ Denotes with trash screen

- Ⓐ Denotes no trash screen
- Ⓑ Denotes with trash screen
- Ⓒ Denotes no trash screen and tapered wing walls



- GENERAL**
1. All adoptable sewers and associated works are to comply fully with "Design and Construction Guidance" & Local Practice
 2. All Highway works to be adoptable standards and to comply fully with the Local Authority specification.
 3. All private drainage works are to comply fully with part III of the Building Regulations
 4. All existing level levels to be checked by the Contractor at the start of work and any deviations are to be reported to REFA. All levels are based on topographical survey information provided by others.
 5. All materials to be used shall be selected B.S. standard and comply fully with the specifications. All concrete & concrete products must use sulphate resistant cement (unless the site investigation report proves that sulphate attack from soils and groundwater will not occur)
 6. All opening notices etc. as required under highway acts etc. are to be obtained prior to commencement of works. All works are to be inspected by L.A., MESC or relevant Water Authority as applicable. C.D.M. REGULATIONS 2015
- In line with the above regulations we are obliged to inform the Client of their responsibilities under section CDM 15(1), and residual risks that may be encountered in the construction of these works. All design work has been carried out with Health and Safety aspects given full consideration. Wherever possible risks have been eliminated from the design, however due to the very nature of this type of work it is not possible to remove all the risks from the design.
- We would also respectfully remind the Client of his obligations to take all reasonable steps in ensuring that only competent Contractors who have a valid safety policy are employed. They should also provide satisfactory responses of tender stage as far as the manner in which they will deal with the elements of risk involved in this type of work and in particular those highlighted by REFA below:
1. Support / treatment for all excavation work.
 2. Guarding to edges of excavations to prevent pedestrians and vehicles falling into excavation.
 3. Guarding of excavations outside working hours to prevent unauthorised access.
 4. Limiting to adjacent roads or structures.
 5. Confined space operations.
 6. Working with existing services.
 7. Traffic management on existing highways.
 8. Procedure to be followed in event of accident or emergency.
 9. Method of working where contaminated ground is present on site.
- Confirmation will be required that all operations are adequately trained, copies of relevant training certificates to be supplied.
- The above list is by no means exhaustive but it does highlight operations that present a risk to contractors and the general public. For clarification on any item please contact REFA.

Rev	Description	Author	Check
F	TO PLANNING REV F	GVH	BAJ
E	REVISED FOLLOWING S104 COMMENTS	RW	BAJ
D	DRAUGHT POSITIONS REVISED	RW	BAJ
C	FORWARDED TO S104/S105 COMMENTS AND FFL'S	RW	BAJ
B	FORWARDED TO S104/S105 COMMENTS AND FFL'S	RW	BAJ
A	FINAL DRAWING	GVH	BAJ
	Revision details	GVH	BAJ

worksafe designer **SSIP** **SAFETY SCHEDULED IN PROGRESS**

Drawing Stage: Issued Commented Tender Information Construction Approval As Built

Client
NORTHSTONE LIMITED

Job title
HORWICH GOLF CLUB HORWICH

Drawing title
ROAD AND MAIN DRAINAGE 1 OF 2

REFA
CONSULTING ENGINEERS
CIVIL STRUCTURAL
GEOTECHNICAL ENVIRONMENTAL

Date: 2.11.22 Scale: 1/500 Drawn: DMH
DRAWING No: 22108/104/1 Rev: F

PLEASE NOTE THAT THIS DRAWING IS ISSUED FOR INFORMATION/TENDER PURPOSES ONLY UNTIL TECHNICAL APPROVAL HAS BEEN GRANTED. ANY WORK UNDERTAKEN PRIOR TO TECHNICAL APPROVAL BEING GRANTED IS AT THE CLIENT'S RISK.

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