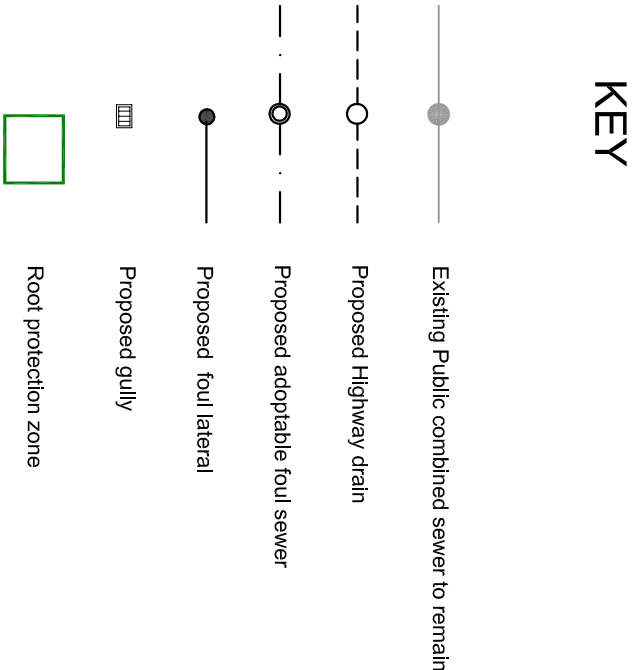


RISK ASSESSMENT: SIGNIFICANT RISKS THAT CANNOT BE DESIGNED OUT		SUGGESTED ACTION	
RISK	LEVEL OF RISK (FHM)		
DEEP EXCAVATIONS ASSOCIATED WITH DEEP DRAINAGE WORKS	HIGH	ENSURE ALL EXCAVATIONS HAVE ADEQUATE TRENCH SUPPORTS AND ARE FENCED OFF TO PROTECT FROM FALLS.	
HANDLING LARGE DIAMETER MANHOLE AND SOAKAWAY RINGS	HIGH	USE CORRECT LIFTING EQUIPMENT AND ENSURE OPERATIVES WEAR THE CORRECT PERSONAL PROTECTIVE EQUIPMENT.	
CONTACT WITH SEWAGE/WORKING IN CONFINED SPACES	MEDIUM	USE GAS DETECTOR/BREATHING EQUIPMENT AND ENSURE OPERATIVES WEAR THE CORRECT PERSONAL PROTECTIVE EQUIPMENT.	
NOISE FROM MACHINERY	MEDIUM	OPERATIVES TO WEAR THE CORRECT EAR PROTECTION.	
EXCAVATIONS NEAR TO UTILITIES	HIGH	UTILITY MAPS TO BE INSPECTED AND APPARATUS LOCATED USING APPROPRIATE EQUIPMENT PRIOR TO EXCAVATION.	
EXCAVATIONS IN PUBLIC HIGHWAY	HIGH	ENSURE ALL EXCAVATIONS HAVE ADEQUATE TRENCH SUPPORTS AND ARE FENCED OFF TO PROTECT FROM FALLS. ENSURE THE CORRECT SIGNAGE/TRAFFIC CONTROL IS USED.	
IT IS ASSUMED THAT WORKS ASSOCIATED WITH THIS DESIGN WILL BE CONDUCTED BY A COMPETENT CONTRACTOR WHO WILL HAVE THE REQUIRED LEVEL OF EXPERIENCE AND EXPERTISE.			



NOTES

All drainage connection points to be located and checked for position and level prior to the commencement of any works.

STN GCM1
Countryside Survey Grid & Datum
(Trimble GPS System OSTN02)

- Sewers For Adoption Under a Section 104 Agreement**
1. All adoptable sewer works and material to be in accordance with the requirements of the Water Industry Specification for Sewers and Yorkshire Water's Standard Requirements/Adoption to the mechanical and electrical specification and Manufactured.
 2. Manhole covers must have a clear opening of 600mm and shall be Class B400 to BS EN 124 with 150mm deep frames in highways.
 3. All gullies must be fitted and consolidated under the supervision of a competent person or Yorkshire Water before any sewer works are carried out.
 4. Yorkshire Water is not obliged to accept filter drain/drainage runoff into the public sewer network or adoptable drainage system (directly or indirectly). An alternative method of disposal of land drainage runoff will need to be agreed.
 5. Cover slabs must carry the BS1 kitemark or will be rejected by Yorkshire Water. Where the clear opening of the kitemarked product is different to that of the cover slab, a loading bearing slab should be fitted above the cover slab to cover size. Please refer to CRSA Technical Bulletin issued Autumn 2004 for kitemarked cover slab opening sizes.
 6. Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report proving that such precautions are not required.
 7. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
 8. Sewers must have 5 metres clearance from trees and hedges. (Please also refer to Figure 2.3, page 33 in Sewers for Adoption 6th Edition for further details).
 9. Sewers to be laid in Class 'ST' bedding (150mm granular bed & surround) and verges (or less than 900mm in non-vehicular areas) then a concrete 10. Bedding and backfill material to conform to the requirements of Water Industry Specification 428-02 (Table A2).
 11. The chamber size of manholes with more than one connection may need to be increased an increment to accommodate the connections and bedding.
 12. Yorkshire Water policy is not to accept 'Type C' brick manholes and 1500mm dia manhole rings. Instead it is preferred that you use a 'Type B' manhole with 1200mm dia or 900mm dia rings. The 900mm dia manhole is preferred for all other cases.
 13. Stone backfill is required to all sewer trenches under vehicular areas. As dug material may be used on other areas subject to the written approval of the drainage authority.
- All pipes 300mm dia and above to be concrete pipes to comply with the requirements of BS EN 285-1:1981.
- Minimum pipe casting strength to be 150mm dia, 40kN/m, 225 dia, 45kN/m
- All pipes 300mm dia and above to be concrete pipes to comply with the relevant provisions of BS 5911, Strength class 70 to EN 1916DS 5911-1:2002.

Preliminary

J	Foul Invert levels amended	11-12-19	AST
I	Further Section 276 notes added	22-1-19	AST
H	Section 276 notes added	22-1-19	AST
G	Further detail added to frontage	23-8-19	AST
F	Root protection zones added	21-6-19	AST
E	Datums amended following input change	24-4-19	AST
D	Layout updated	22-3-19	AST
C	Highway drain amended	22-3-19	AST
B	Amended following comments from PC	14-3-19	AST
A	Details		
Rev	Details	Date	Drawn/Chk

Partner Construction
Foulstone School Phase 2
Darfield, Barnsley

Engineering Layout

Dwg No. : STE/19/03/01 J
Date : 25-1-19
Scale : 1:500

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