YW REF: H-3-264-698

1. ALL ADOPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH "CODES FOR ADOPTION",THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATER'S STANDARDS/REQUIREMENTS/ADDENDUM TO THE MECHANICAL AND ELECTRICAL SPECIFICATION AND KITEMARKED.
2. MANHOLE COVERS SHALL/MUST HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAYS.
3. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF YORKSHIRE WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.
4. YORKSHIRE WATER IS **NOT** OBLIGED TO ACCEPT FILTER DRAIN/LAND DRAINAGE RUNOFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY). AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUNOFF WILL THEREFORE BE REQUIRED AND YOU WILL HAVE TO LIAISE WITH THE LOCAL AUTHORITY, LAND DRAINAGE SECTION WITH REGARD TO THE DISPOSAL OF THE FILTER DRAIN/LAND DRAINAGE RUNOFF.
5. COVER SLABS MUST CARRY THE BSI KITEMARK OR WILL BE REJECTED BY YORKSHIRE WATER INSPECTOR. WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOADING BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN TO 600x600mm FOR THE YORKSHIRE WATER SPECIFIED COVER SIZE. PLEASE REFER TO CONCRETE PIPE SYSTEMS ASSOCIATION (CPSA), '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 PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
7. THE ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1m AND MANHOLES 0.5m FROM KERB FACES.
8. SEWERS MUST HAVE 5m CLEARANCE FROM TREES AND HEDGES
9. SEWERS TO BE LAID IN CLASS "S" BEDDING (150mm GRANULAR BED AND SURROUND), WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN 1.2m IN HIGHWAYS AND VERGES (OR LESS THAN 900mm IN NONE VEHICULAR ACCESS AREAS) THEN A 175mm CONCRETE SLAB OVER SEWER SHALL BE PROVIDED.
10. ALL PIPEWORK 300mm DIAM. OR LESS TO BE VITRIFIED CLAY CONFORMING WITH BS 65. MINIMUM CRUSHING STRENGTHS TO BE AS FOLLOWS: 100mm DIA. 40kN/m, 150mm DIA 40kN/m, 225mm DIA 45kN/m, 300mm DIA 72kN/m.
11. ALL PIPEWORK 375mm DIAM. OR GREATER TO BE CONCRETE CLASS 120 TO EN 1916/ BS 5911-1: 2002.
12. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.
13.YORKSHIRE WATER POLICY IS NOT TO ACCEPT TYPE "C" BRICK MANHOLES AND 1050mm DIAM. MANHOLE RINGS. INSTEAD IT IS PREFERRED THAT YOU USE A TYPE "B" MANHOLE WITH 1200mm DIAM. OR 1500mm DIAM. RINGS, WITH THE OPENING SIGHTED OVER THE CHANNEL WHERE DEPTH OF COVER TO PIPE SOFFIT IS 1-1.5m.
14. ALL HIGHWAY WORKS AND MATERIAL TO CONFORM WITH KIRKLEES COUNCIL SPECIFICATION.
15. GULLY COVER AND FRAMES SHALL BE D400 DUCTILE IRON AND COMPLY WITH EUROPEAN STANDARD BS EN 124. THOSE SIGHTED IN ACCESSWAYS AND MEWS COURTS MUST BE SUITABLE FOR USE IN PEDESTRIAN AREAS.
16. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-08–2 (TABLE A2).
17. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND YORKSHIRE WATER WOULD PREFER CLAYWARE CHANNELS IN MANHOLES. YORKSHIRE WATER HAVE FOUND THAT PLASTIC CHANNELS ARE DIFFICULT TO SET IN CONCRETE AS THEY FLOAT AND A SATISFACTORY FINISH CANNOT BE OBTAINED ON BENCHING.
18. WHERE A B125 COVER AND FRAME HAS BEEN APPROVED, THIS **MUST NOT** BE COATED IN PLASTIC AND MUST HAVE LIFTING EYES SUITABLY SIZED TO ACCOMMODATE STANDARD LIFTING KEYS. SCREW DOWN COVERS ARE **NOT** ACCEPTABLE.
19. THERE SHOULD BE ENOUGH CLEARANCE TO ACCOMMODATE THE BEDDING FOR BOTH PIPES. APPROX 300mm : IF CROSSOVER IS NEAR THE ROCKER THEN THE CLEARANCE NEEDED MAY BE INCREASED.

- FLOOD DIRECTION ARROW
- DRAINAGE CHANNEL
- RETAINING WALL

ANY POTENTIAL FLOOD WATER FROM PROPOSED PRIVATE DRAINAGE SYSTEM WILL DISCHARGE FROM THE LOWEST GROUND LEVEL OF THE PLOT AND IS DESIGNED TO FLOW AWAY FROM THE PLOT ENTRANCES AND DISSIPATE NATURALLY ACROSS THE GARDEN / SOFT LANDSCAPING AREAS AS INDICATED BY THE DIRECTION ARROWS

RISK ASSESSMENT: SIGNIFICANT RISKS THAT CANNOT BE DESIGNED OUT		
RISK	LEVEL OF RISK (H/M)	SUGGESTED ACTION
DEEP EXCAVATIONS ASSOCIATED WITH NEW DRAINAGE WORKS	HIGH	ENSURE ALL EXCAVATIONS HAVE ADEQUATE TRENCH SUPPORTS
HANDLING LARGE DIAMETER MANHOLE RINGS AND CIRCULAR PIPES	HIGH	USE CORRECT LIFTING EQUIPMENT AND ENSURE OPERATIVES WEAR APPROPRIATE PROTECTIVE CLOTHING/HARD HATS/CORRECT PPE
CONTACT WITH SEWAGE	MED	OPERATIVES TO USE CORRECT BREATHING EQUIPMENT/CORRECT PPE
NOISE	MED	OPERATIVES TO USE CORRECT EAR PROTECTION/CORRECT PPE
DRAINAGE EXCAVATIONS ADJACENT EXISTING BOUNDARY STRUCTURES	HIGH	ENSURE CORRECT SUPPORTS ARE PROVIDED TO TRENCHES AND BUILDINGS WHERE REQUIRED
DRAINAGE EXCAVATION IN PUBLIC HIGHWAY	HIGH	ENSURE CORRECT USE OF TRENCH SUPPORTS IN EXCAVATION AND SCREENS/BARRIERS TO PROTECT MEMBERS OF THE PUBLIC
MAINTAIN ACCESS TO ADJACENT PROPERTIES AND OCCUPIERS	HIGH	ENSURE WORKS ARE PROTECTED WITH BARRIERS AND SIGNS TO GUIDE THE PUBLIC AWAY FROM THE WORKS
DRAINAGE EXCAVATIONS NEAR TO EXISTING SERVICES	HIGH	ENSURE WORKS ARE PROTECTED WITH BARRIERS AND SIGNS TO GUIDE MEMBERS OF THE PUBLIC AWAY FROM THE AREA
WORKING IN CONFINED SPACES. WORKING IN DRAINS AND MANHOLES	HIGH	CONFINED SPACES WORKING TRAINED PERSONNEL ONLY TO CARRY OUT WORKS UNDER A PERMIT TO WORK SCHEME IMPLEMENTED BY CONTRACTOR. GAS TESTING TO TAKE PLACE BEFORE ALL ENTRIES TO CONFINED SPACES
WORKING IN HIGHWAYS / RISKS FROM VEHICLE AND PLANT	HIGH	ALL WORKS TO BE SIGNED AND FENCED FROM NORMAL VEHICULAR TRAFFIC. ALL WORKERS TO WEAR HIGH VISIBILITY CLOTHING. ALL PLANT TO HAVE VISUAL AND AUDIBLE WARNING SYSTEMS.
ROAD AND DRAINAGE CONSTRUCTION	HIGH	ALL EXCAVATIONS TO BE ADEQUATELY FENCED OFF AND SUPPORTED DURING CONSTRUCTION. ALL OPERATIVES TO BE TRAINED IN CORRECT METHODS OF LIFTING AND WORK IN ACCORDANCE WITH LOLER REGS
IT IS ASSUMED THAT WORKS ASSOCIATED WITH THIS DESIGN WILL BE UNDERTAKEN BY A PERSON OR PERSONS WHO ARE COMPETANT AND HAVE THE REQUIRED LEVEL OF EXPERIENCE AND EXPERTISE		

Rev E Proposed levels updated to suit latest design.	11.01.23 HH
Rev D Additional flood arrows added to suit YW comments.	31.05.22 HH
Rev C Yorkshire Water reference added.	14.12.21 CM
Rev B Road contours added	25.11.21 HH
Rev A Proposed spot levels and drive gradients added	25.11.21 HH

Haigh Huddleston & Associates

Civil Structural Engineering Consultants

Firth Buildings, 99 - 101 Leeds Rd, Dewsbury, WF12 7BU t 01924 464342 f 01924 450662

e trevor.haigh@haighhuddleston.co.uk

Client
YORKSHIRE COUNTRY PROPERTIES

Project
STATION ROAD, SKELMANTHORPE

Detail
FLOOD ROUTING PLAN

Dwn	Chkd	Date	Scale	Dwg No.
CM	HH	JUL'21	1:250@A1	E18/7366/019E