

STATION CO-ORDINATES			
Reference	East	North	Elevation
ST1	433892.1160	4007453.581	137.87
ST2	433916.301	4007542.0803	135.82
ST3	433882.2341	4007430.5977	137.39
ST4	433888.3375	4005880.8139	139.13
ST5	433922.4880	4005886.4481	137.74
ST6	433935.4890	4005881.8004	137.31
ST7	433933.7298	4005725.1861	135.43

1. ALL ADOPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH "SEWERS FOR ADOPTION" 6th EDITION, THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATER'S STANDARD/REQUIREMENTS/ADDENDUM TO THE MECHANICAL AND ELECTRICAL SPECIFICATION AND KITEMARKED. ALL ADOPTABLE SEWERS TO BE BSI KITEMARK (CERTIFIED TO WIS 4-35-01 and BS EN 13476)
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 OR CLASS B 125 IN FOOTWAYS, PEDESTRIAN AREAS AND COMPARABLE LOCATIONS.
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 AND SERVICE MARGINS.
8. SEWERS MUST HAVE 5m CLEARANCE FROM TREES AND HEDGES (PLEASE ALSO REFER TO FIGURE 2.3 ON PAGE 33 IN "SEWERS FOR ADOPTION" 6th EDITION FOR RESTRICTIONS ON TREE PLANTING ADJACENT TO SEWERS).
9. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-08-02 (TABLE A2.) ADOPTABLE 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 1.0m IN HIGHWAYS AND VERGES (OR LESS THAN 900mm IN NONE VEHICULAR ACCESS AREAS) THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVEGRANULAR BED AND SURROUND.
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 and 300mm DIA 72kN/m.
11. ALL PIPEWORK 375mm DIAM. OR GREATER TO BE CONCRETE CLASS 120, 54kN/m MINIMUM CRUSHING STRENGTH.
12. ALL "uPVC" PLASTIC PIPES CERTIFIED TO WIS 4-35-01 AND BS/EN13476.
13. 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.
14. 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.
15. ALL HIGHWAY WORKS AND MATERIAL TO CONFORM WITH BARNSLEY COUNCIL SPECIFICATION.
16. 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.
17. SULPHATE RESISTANT CEMENT(C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
18. ADOPTABLE SEWERS TO BE LAID IN MAXIMUM 3m LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY IN LONGER LENGTHS.
19. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTED BY YORKSHIRE WATER AND CLAYWARE CHANNELS ARE TO BE USED.

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 SCREEN 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
DRAINAGE EXCAVATIONS BENEATH EXISTING OVERHEAD POWER LINES	HIGH	ENSURE ALL PLANT IS SELECTED OR MODIFIED SO THAT IT CANNOT REACH THE LINES. CONTRACTORS TO COMPLY WITH GUIDANCE NOTE GS6 'AVOIDANCE OF DANGER FROM OVERHEAD POWER LINES'.
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		

IF THE PIPE MATERIAL IS NOT SHOWN ON THE INDIVIDUAL PIPE LENGTH THEN,
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 and 300mm DIA 72kN/m.
ALL PIPEWORK 375mm DIAM OR GREATER TO BE CLASS 120 TO EN 1916 / BS 5911-1 : 2002.
ALL "uPVC" PLASTIC PIPES TO BE CERTIFIED TO WIS 4-35-01 AND BS/EN13476.

ADOPTABLE SEWERS TO BE LAID IN CLASS 'S' BEDDING (150mm GRANULAR BED & 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 CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED & SURROUND.

Rev A. Exact box culvert dimensions shown. 24.11.17 LM

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Client
SAUL CONSTRUCTION

Project
LONGCAR LANE, BARNSLEY

Detail
MAIN ROAD & SEWER PLAN

PRELIMINARY ISSUE

Dwn	Chkd	Date	Scale	Dwg No.
LM		Oct'17	1:500 @A1	E17/7018/004A