



CHAINAGE	EXISTING GROUND LEVEL	ALIGNMENT LEVEL	VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT	STORMWATER COVER LEVEL	STORMWATER INVERT	STORMWATER DETAILS	STORMWATER LENGTHS
0.000	181.970	181.970						
10.000	181.552	182.113	G= 1.429% 1: 7.0					
18.111	181.745	182.295	G= 1.00% 1: 10.0					
20.000	181.560	182.383	G= 1.429% 1: 7.0					
21.960	181.560	182.394						
27.626	181.448	182.468						
24.973	181.448	182.468						
30.000	181.448	182.468						
30.733	181.448	182.468						
38.810	181.877	182.528						

CHAINAGE	EXISTING GROUND LEVEL	ALIGNMENT LEVEL	VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT
-2.750	179.248	179.477	G= 1.250% 1: 80.0	
0.004	179.108	179.087		
10.000	179.087	179.087		
12.001	179.054	179.027		

CHAINAGE	EXISTING GROUND LEVEL	ALIGNMENT LEVEL	VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT	STORMWATER COVER LEVEL	STORMWATER INVERT	STORMWATER DETAILS	STORMWATER LENGTHS	FOULWATER COVER LEVEL	FOULWATER INVERT	FOULWATER DETAILS	FOULWATER LENGTHS
0.000	185.285	185.285										
10.000	185.353	186.158	G= -2.500% 1: -40.0									
12.182	185.101	186.022										
14.302	185.200	185.942										
15.700	185.200	185.510										
17.657	185.200	185.200										
20.000	185.200	185.200										
20.312	185.200	185.185										
32.182	185.200	185.200										
40.000	184.664	184.427										
50.000	183.895	183.298										
55.311	183.000	183.332	G= -6.660% 1: -15.0									
60.000	183.000	183.332										
64.248	182.240	182.240										
70.000	182.240	182.240										
72.917	182.240	182.240										
73.712	181.503	182.000										
78.864	181.503	182.000										
80.000	181.503	182.000										
84.862	181.000	181.000	G= -10.00% 1: -10.0									
86.710	180.982	180.982										
88.000	180.982	180.982										
93.098	180.982	180.982										
100.000	180.339	180.339										
102.497	179.733	179.932	G= -6.660% 1: -15.0									
110.000	179.733	179.932										
117.716	179.115	179.286										
120.000	178.889	178.889										
122.841	178.889	178.889										
130.000	178.889	178.889										
137.660	178.140	178.590										
140.000	178.140	177.940										
143.977	177.657	177.657										
145.000	177.657	177.657										
148.991	177.657	177.657										
151.732	177.427	177.427										
155.000	177.427	177.427										
157.660	177.174	177.248										
160.000	177.174	177.174										
164.168	177.118	177.118										
169.848	176.524	176.524										
170.000	176.524	176.524										
177.024	176.524	176.524										

CHAINAGE	EXISTING GROUND LEVEL	ALIGNMENT LEVEL	VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT
-2.750	188.101	185.895	G= 4.000% 1: 25.0	
0.942	188.281	185.895		
3.889	188.281	185.895		
8.271	188.508	188.514		

Rev	Description	Date	Initials
-	-	-	-

- ALL ADOPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH "CODES FOR ADOPTION", THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATERS STANDARDS/REQUIREMENTS/ADDENDUM TO THE MECHANICAL AND ELECTRICAL SPECIFICATION AND KITEMARKED.
- MANHOLE COVERS SHALL HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAYS.
- FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF YORKSHIRE WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.
- YORKSHIRE WATER IS NOT OBLIGED TO ACCEPT FILTER DRAINLAND 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 DRAINLAND DRAINAGE RUNOFF.
- 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.
- SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
- THE ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1m AND MANHOLES 0.5m FROM KERB FACES AND MARGINS.
- SEWERS MUST HAVE 5m CLEARANCE FROM TREES AND HEDGES (PLEASE ALSO REFER TO FIGURE 2.3 ON PAGE 33 IN "CODES FOR ADOPTION" FOR RESTRICTION ON TREE PLANTING ADJACENT TO SEWERS).
- 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 CONCRETE SLAB OVER SEWER SHALL BE PROVIDED ABOVE GRANULAR BED AND SURROUND.
- BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-08-02 (TABLE A2).
- THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED TO ACCOMMODATE THE CONNECTIONS AND BENDS.
- 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.
- ADOPTABLE PLASTIC SEWER PIPES TO BE BSI KITEMARKED (CERTIFIED TO WIS 4-35-01 AND BS EN 13476). ADOPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND YORKSHIRE WATER WOULD PREFER CLAYWARE CHANNELS IN MANHOLES. WE HAVE FOUND THAT PLASTIC CHANNELS ARE DIFFICULT TO SET IN CONCRETE BECAUSE THEY FLOAT AND A SATISFACTORY FINISHED CANNOT BE OBTAINED ON THE BENCHING.
- THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS: 100mm DIA. 40KN/m, 150mm DIA. 40KN/m AND 225mm DIA. 45KN/m AND 300mm DIA. 72KN/m. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE - CLASS 120 (54KN/m) TO EN 1916/BS5911-1:2002. PLASTIC PIPES SHOULD CONFORM TO WIS 4-35-01 AND BS EN 13476.
- WHERE A B125 COVER AND FRAME HAS BEEN APPROVED, THIS MUST NOT BE COATED IN PLASTIC AND MUST HAVE LIFTING EYES SUABLY SIZED TO ACCOMMODATE STANDARD LIFTING KEYS. SCREW DOWN COVERS ARE NOT ACCEPTABLE.
- ALL HIGHWAY WORKS AND MATERIAL TO CONFORM WITH KIRKLEES MDC SPECIFICATION.
- 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.

RISK	LEVEL OF RISK (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
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. AIR MONITORED BY OPERATIVES TO USE CORRECT BREATHING EQUIPMENT/CORRECT PPE TO CONFINED SPACES
WORKING IN HIGHWAYS / RISKS FROM VEHICLE AND PLANT	HIGH	ALL WORKERS TO BE SIGNED AND FENCED FROM NORMAL VEHICULAR TRAFFIC. ALL WORKERS TO WEAR HIGH VISIBILITY CLOTHING. ALL PLANT TO HAVE VISUAL AND AURAL 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 LOWER REGS

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Client
YORKSHIRE COUNTRY PROPERTIES

Project
ABBEY ROAD, SHERLEY

Detail
**ROAD AND SEWER LONG-SECTIONS
ROADS 2 - 3A**

Dwg No. E17/7465/505_01

Scale 1/500 @A1