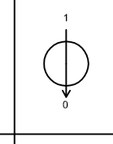
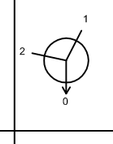
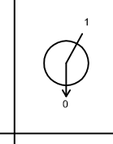
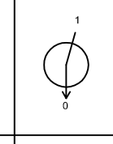
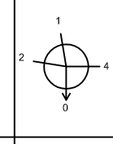
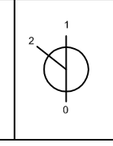
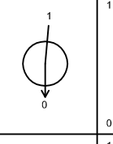
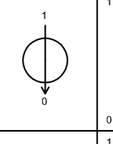
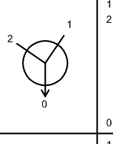
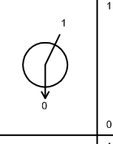
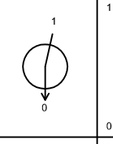
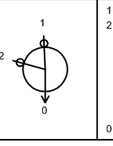
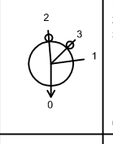
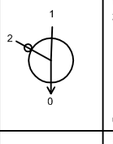
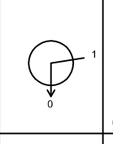
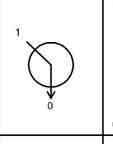
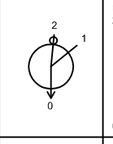
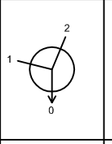
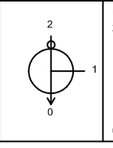
YW REF: H-3-263-399

Manhole Number / Coordinates	Cover Level / Depth To Soffit	Connections	Pipe: Code	Inverts	Diams Inv-soff	Manhole Size	Types: Manhole	Cover
F1 E. 423430.781 N. 414927.897	172.156 1.856		1 PF01 0 1.000	170.150 170.150	150 150	1200	B	D400
F2 E. 423441.573 N. 414901.926	171.032 1.732		1 1.000 2 PF03 0 1.001	169.150 169.150 169.150	150 150 150	1200	B	D400
F3 E. 423446.500 N. 414897.724	170.770 1.820		1 1.001 0 1.002	168.800 168.800	150 150	1200	B	D400
F4 E. 423452.117 N. 414896.555	170.533 1.983		1 1.002 0 1.003	168.400 168.400	150 150	1200	B	D400
F5 E. 423497.206 N. 414899.511	167.965 1.871		1 2.000 2 1.003 3 PF07 0 1.004	165.944 165.944 165.944 165.944	150 150 150 150	1500	B	D400
EXISTING FMH5802 E. 423503.105 N. 414874.091	166.848 1.088		1 1.004 2 PF08 0 Ex. 150∅ pipe	165.610 165.610 165.610	150 150 150	EXISTING MANHOLES MUST BE INSPECTED BY A YORKSHIRE WATER INSPECTOR TO ENSURE THAT THE MANHOLES CAN ACCOMMODATE THE NEW CONNECTIONS AND TO CHECK IF ANY REMEDIAL WORKS ARE REQUIRED PRIOR TO WORKS STARTING ON SITE (IT MAY BE NECESSARY TO RECONSTRUCT THE MANHOLE AT THE CLIENT'S EXPENSE) .		

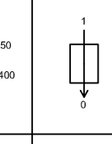
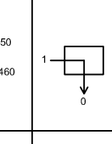
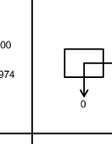
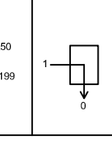
PROPOSED FOUL WATER SEWER TO CONNECT INTO EXISTING 150∅ PUBLIC SEWER LOCATED WITHIN SITE ENTRANCE.

Manhole Number / Coordinates	Cover Level / Depth To Soffit	Connections	Pipe: Code	Inverts	Diams Inv-soff	Manhole Size	Types: Manhole	Cover
F7 E. 423480.113 N. 414940.645	169.979 3.429		1 PF04 0 2.000	166.400 166.400	150 150	1200	A	D400
S1 E. 423431.728 N. 414929.729	172.136 1.411		1 PS01 0 1.000	170.575 170.500	150 225	1200	B1/E	D400
S2 E. 423443.340 N. 414901.785	170.949 1.224		1 1.000 2 PS03 0 1.001	169.500 169.575 169.500	225 150 225	1200	B1/E	D400
S3 E. 423448.185 N. 414898.605	170.682 1.307		1 1.001 0 1.002	169.150 169.150	225 225	1200	B1/E	D400
S4 E. 423453.978 N. 414897.831	170.424 1.402		1 1.002 0 1.003	168.797 168.797	225 225	1200	B1/E	D400
S5 E. 423498.008 N. 414901.505	168.009 2.547		1 2.001 2 1.003 0 1.004	166.450 166.525 165.162	300 225 300	1500	B	D400

Manhole Number / Coordinates	Cover Level / Depth To Soffit	Connections	Pipe: Code	Inverts	Diams Inv-soff	Manhole Size	Types: Manhole	Cover
S6 E. 423501.403 N. 414892.145	167.470 3.004		1 3.000 2 1.004 3 PS08 0 1.005	162.966 164.166 165.216 162.966	1500 300 150 1500	2400	A	D400
S7 FLOW CONTROL E. 423505.922 N. 414875.441	166.802 3.719		1 1.005 2 PS09 0 1.006	162.908 164.258 162.858	1500 150 225	SEE E14/6164/011 FOR CONSTRUCTION DETAILS		
S8 E. 423507.631 N. 414869.894	166.578 3.538		1 1.006 0 1.007	162.815 162.815	225 225	1200	A	D400
S9 E. 423539.979 N. 414874.443	164.920 2.122		1 1.007 0 1.008	162.573 162.573	225 225	1200	B	D400
S10 EXISTING HW DRAIN E. 423543.729 N. 414871.451	164.823 2.061		1 1.008 2 Ex. 300∅ pipe 0 Ex. 300∅ pipe to be re-laid	162.537 163.740 162.462	**225** 300 300	SURFACE WATER TO DISCHARGE INTO EXISTING 300∅ HIGHWAY DRAIN ON BARNSLEY ROAD VIA MH S10 AT A RESTRICTED RATE OF 3.00lit/sec. EXISTING 300∅ HIGHWAY DRAIN TO BE BROKEN OUT AND RE-LAID TO TIE IN WITH MH S10 INVERT LEVEL SOFFIT TO SOFFIT.		
S11 E. 423532.184 N. 414968.088	168.696 1.146		1 PS04 1 GULLY 0 2.000	167.400 167.400 167.250	150 150 300	1200	B1/E	D400
S12 E. 423479.446 N. 414946.173	170.123 2.954		1 2.000 2 PS05 0 2.001	166.869 168.369 166.869	300 150 300	1200	B	D400

FLOW CONTROL DEVICE FITTED TO MANHOLE S7. SURFACE WATER TO DISCHARGE INTO EXISTING 300∅ HIGHWAY DRAIN ON BARNSLEY ROAD VIA MH S10 AT A RESTRICTED RATE OF 3.00lit/sec.
SURFACE WATER STORAGE PROVIDED TO CATER FOR 1in100 yr STORM EVENT +30% CLIMATE CHANGE.

S10 IS AN EXISTING HIGHWAY DRAIN - NOT TO BE INCLUDED IN S104 AGREEMENT

Manhole Number / Coordinates	Cover Level / Depth To Soffit	Connections	Pipe: Code	Inverts	Diams Inv-soff	Manhole Size	Types: Manhole	Cover
S13 ACCESS MH E. 423529.369 N. 414902.236	167.250 2.400		1 Carlow Tank 0 3.000	163.050 163.050	1800 1500	18.15m x 16.45m x 1.8m UNDERGROUND ATTENUATION TANK BY CARLOW, SEE MANUFACTURERS DRWGS FOR SPEC.		
S13a ACCESS MH E. 423533.130 N. 414893.187	166.450 1.460		1 Carlow Tank 0 Carlow Tank	163.190 163.190	1800 1800	18.15m x 16.45m x 1.8m UNDERGROUND ATTENUATION TANK BY CARLOW, SEE MANUFACTURERS DRWGS FOR SPEC.		
S13b ACCESS MH E. 423542.387 N. 414913.386	167.000 1.974		1 Carlow Tank 0 Carlow Tank	163.226 163.226	1800 1800	18.15m x 16.45m x 1.8m UNDERGROUND ATTENUATION TANK BY CARLOW, SEE MANUFACTURERS DRWGS FOR SPEC.		
S13c ACCESS MH E. 423548.182 N. 414899.442	166.250 1.199		1 Carlow Tank 0 Carlow Tank	163.251 163.251	1800 1800	18.15m x 16.45m x 1.8m UNDERGROUND ATTENUATION TANK BY CARLOW, SEE MANUFACTURERS DRWGS FOR SPEC.		

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 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) .
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 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 C250 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. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
17. ADOPTABLE SEWERS TO BE LAID IN MAXIMUM 3m LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY IN LONGER LENGTHS.
18. 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 CLOTHINGHARD 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 CONCRETE CLASS 120, 54kN/m MINIMUM CRUSHING STRENGTH.
ADOPTABLE SEWERS TO BE LAID IN CLASS 'S' GRANULAR BED & SURROUND.

NOTE:
ALL SERVICE RECORDS TO BE OBTAINED FOR BARNSLEY ROAD TO CHECK FOR CLASHES.

Rev D. Amended to suit YW comments (07.02.17) & private drainage. 04.10.17 LM
Rev C. Amended to suit latest planning layout (Rev S) 30.01.17 LM
& YW comments (23.09.15) .
Rev B. Gully and private connections added. 19.08.15 LM
Rev A. Amended to suit revised sewer design. 15.07.15 LM

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Client
PERSIMMON HOMES

Project
BARNSLEY ROAD, FLOCKTON

Detail
MANHOLE SCHEDULE

PRELIMINARY ISSUE

Dwn	Chkd	Date	Scale	Dwg No.
LM	MH	JUN '15	NTS @A2	E14/6164/007D