ROAD 1

CHAINAGE	0.000	4.263	6.900	7.800	10.000	20.000	25.107	30.684	32.300	32.907	35.057			
EXISTING GROUND LEVEL	139.848			140.041		140.216		140.311			140.342			
ALIGNMENT LEVEL	139.848		139.933	140.016	140.048	140.173	140.237	140.358			140.485			
VERTICAL ALIGNMENT	G= 1.250% 1: 80.0			G= 1.250% 1: 80.0				G= 2.500% 1: 40.0						
HORIZONTAL ALIGNMENT														
STORMWATER COVER LEVEL	139.826		139.931								140.434			
STORMWATER INVERT	136.498		136.537	136.587							136.666			
STORMWATER DETAILS	Pipe 1.005 Dia 150 Circular CLAY 1 in 150			Pipe 1.004 Dia 600 Circular CONC 1 in 350										
STORMWATER LENGTHS	5.899		27.567											
FOULWATER COVER LEVEL	139.826										140.342			
FOULWATER INVERT	136.498													
FOULWATER DETAILS	Pipe 1.002 Dia 150 Circular CLAY 1 in 35													
FOULWATER LENGTHS	31.802													

ROAD 2

CHAINAGE	-2.793	-1.793	0.000	1.142	5.000	10.000	13.810	15.510	17.723	19.433	21.142	30.000	35.395	35.838
EXISTING GROUND LEVEL	140.337	140.338				140.091			139.803			139.811		
ALIGNMENT LEVEL	140.347	140.301	140.157			140.001	139.879		139.792		139.776	139.666		
VERTICAL ALIGNMENT	G= -4.000% 1: -25.0			KF= 7.27273 L= 20.000						G= -1.250% 1: -80.0				
HORIZONTAL ALIGNMENT														
STORMWATER COVER LEVEL	140.434								139.724					139.551
STORMWATER INVERT	136.686								136.733	136.733				136.993
STORMWATER DETAILS		Pipe 1.003 Dia 600 Circular CONC 1 in 350								Pipe 1.002 Dia 600 Circular CONC 1 in 81				
STORMWATER LENGTHS		23.304								21.042				
FOULWATER COVER LEVEL	140.342								139.776					
FOULWATER INVERT		137.401						137.638	137.638					
FOULWATER DETAILS		Pipe 1.001 Dia 150 Circular CLAY 1 in 80								Pipe 1.000 Dia 150 Circular CLAY 1 in 80				
FOULWATER LENGTHS		18.931								24.989				

CHAINAGE	38.649	38.838	40.550	48.181	50.000	54.411								
EXISTING GROUND LEVEL				139.574	139.441									
ALIGNMENT LEVEL				139.416	139.361									
VERTICAL ALIGNMENT														
HORIZONTAL ALIGNMENT														
STORMWATER COVER LEVEL				139.429										
STORMWATER INVERT	137.443			138.079										
STORMWATER DETAILS		Pipe 2.000 Dia 150 Circular CLAY 1 in 20												
STORMWATER LENGTHS		12.408												
FOULWATER COVER LEVEL			139.553											
FOULWATER INVERT			137.990											
FOULWATER DETAILS														
FOULWATER LENGTHS														

ROAD 3

CHAINAGE	-2.793	-1.793	0.116	10.000	15.500	20.000	22.632							
EXISTING GROUND LEVEL	139.832	139.606		138.729		137.909	137.769							
ALIGNMENT LEVEL	139.527			139.280		139.030	138.964							
VERTICAL ALIGNMENT	G= -2.500% 1: -40.0													
HORIZONTAL ALIGNMENT														
STORMWATER COVER LEVEL	139.551			139.129				139.150						
STORMWATER INVERT		136.993			137.040	137.040			137.100					
STORMWATER DETAILS		Pipe 1.001 0.80 x 0.80m Box Culvert CONC 1 in 350			Pipe 1.000 0.80 x 0.80m Box Culvert CONC 1 in 350									
STORMWATER LENGTHS		16.589			20.850									

Development to discharge into existing combined public sewer at restricted discharge rate of 3.5ltr/sec. On-site attenuation to be provided to cater for storm events up to 1 in 100 years +30% climate change.

NOTE:
All existing sewer information and service locations within Whitechapel Road should be checked and confirmed prior to work commencing.

WHITECHAPEL RD

GROUND LEVEL	139.826		139.344		138.782									
STORMWATER COVER LEVEL	139.826													
STORMWATER INVERT	136.498													
STORMWATER DETAILS														
STORMWATER LENGTHS														
FOULWATER COVER LEVEL	139.826					138.787		138.665						
FOULWATER INVERT	136.498					136.177		135.910	135.760					
FOULWATER DETAILS		Pipe 1.003 Dia 150 Circular CLAY 1 in 60				Pipe 1.005 Dia 150 Circular CLAY 1 in 13								
FOULWATER LENGTHS		19.267				3.554								

1. All adoptable sewer works and material to be in accordance with "Code for Adoption 2.0 published 10th March 2020". 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 run-off into the public sewer network or adoptable drainage system (**directly or in-directly**). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section regarding the disposal of the filter drain/land drainage run-off.

5. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.

6. Sewers must have 5 metres clearance from trees and hedges or the width of the canopy at mature height.

7. 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 nonvehicular access areas**) then a concrete slab should be provided above granular bed and surround.

8. Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (**Table A2**).

9. Yorkshire Water policy is that Type "C" brick manholes and 1050mm diameter manhole rings are not preferred. Instead, it is preferred that you use a type "B" manhole with 1200mm diameter or 1500mm diameter rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m.

10. Adoptable plastic sewer pipes to be BSI Kitemarked (**certified to WIS 4-35-01** and BS/EN13476). 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 require clay ware channel in manholes.

11. The minimum crushing strength for clay pipes should be as follows: 100mm dia. 40KN/m, 150mm dia. 40KN/m, 225mm dia. 45KN/m and 300mm dia. 72KN/m. The minimum crushing strength for concrete pipes should be - (Class 120 to EN 1916/BS5911-1 2002). Plastic pipes should conform to WIS 4-35-01 and BS EN13476.

12. 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.

13. There must be enough clearance at crossovers to accommodate bedding to both pipes, approx. 300mm : if crossover is near the rocker then the clearance needed may need to be increased.

14. Cover slabs must carry the BSI kitemark and British Standard number 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.

15. All highway works and material to conform with Kirklees MDC 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. Precast concrete manhole units and their components shall comply with the relevant provisions of BS EN 1917 and BS 5911-3 and shall be manufactured from concrete with a Design Chemical Class DC-4 unless satisfactory evidence through soil analysis can be provided that a lower class will resist attack from soils and ground water.

18. Precast concrete manhole components shall comply with the relevant provisions of BS EN 1917 and BS 5911-3.

19. Corbel slabs shall comply with the requirements of BS 5911-3:2010+A1:2014 Table 5 and Figure 8.

20. Cover slabs should be installed with a minimum 300mm cover to finished levels to comply with National Specifications.

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
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	Description	Date	Initials
-	-	-	-

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Client
MICHAEL GRAVES

Project
294 - 298 WHITECHAPEL ROAD, CLECKHEATON

Detail
ROAD & SEWER LONG-SECTIONS

Dwn	Chkd	Date	Scale	Dwg No.
JM	MH	APR'2025	1/250 @A1	E21/7893/005

PRELIMINARY