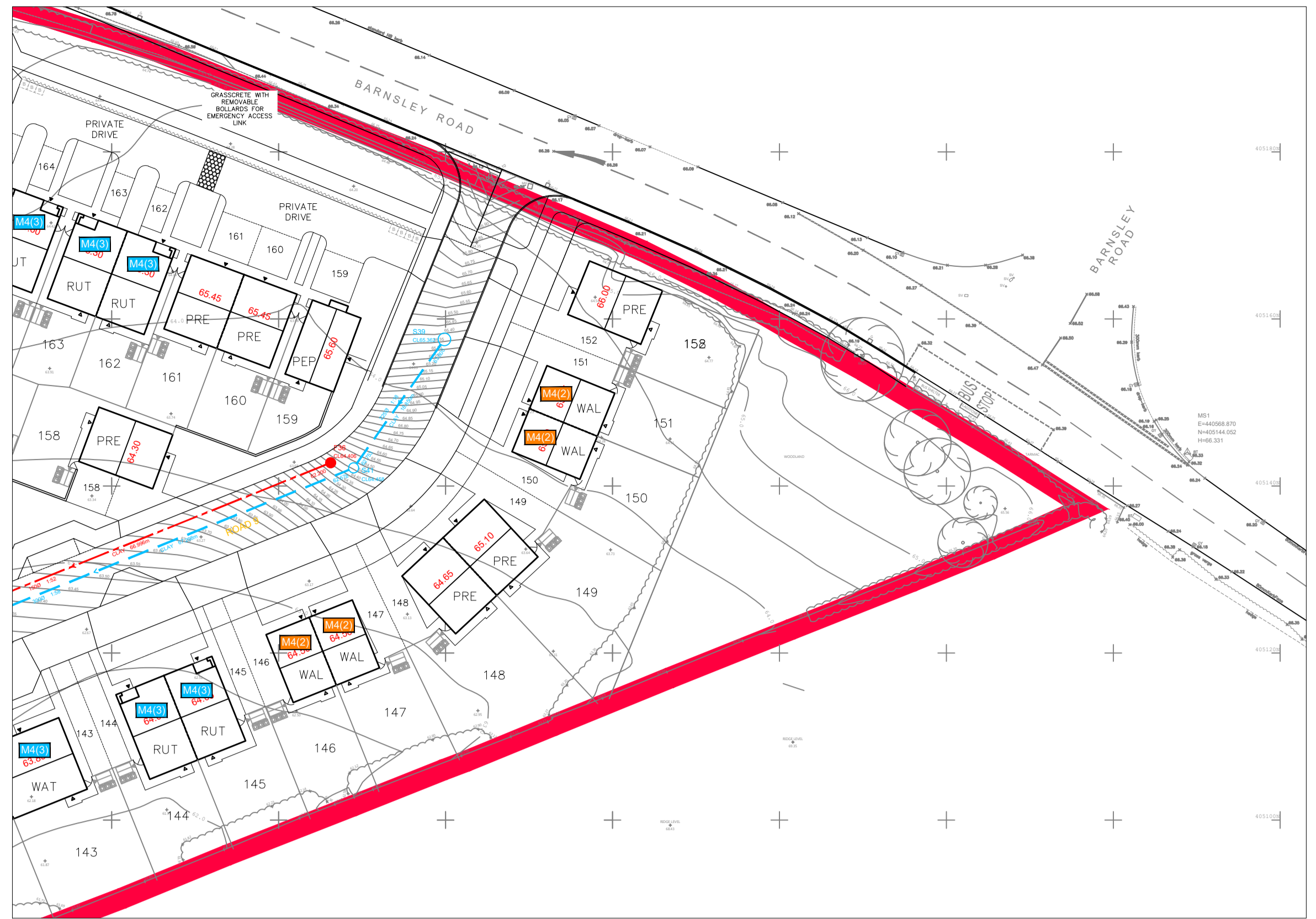


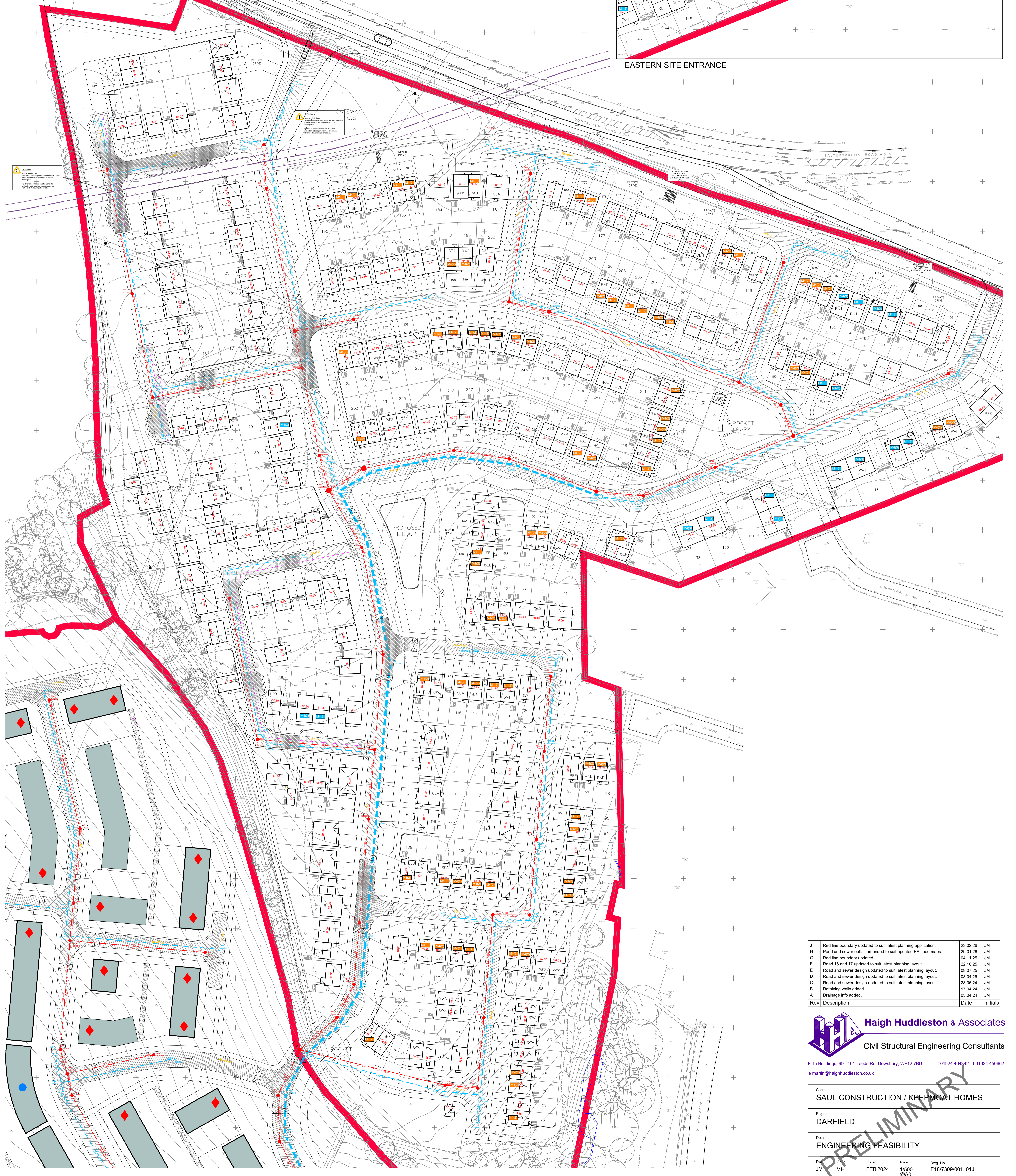
| RISK ASSESSMENT | LEVEL OF RISK | SUGGESTED ACTION |
|--|---------------|--|
| SEWER EXCAVATIONS ASSOCIATED WITH NEW DRAINAGE WORKS | HIGH | SHIELD ALL EXCAVATIONS WITH ADEQUATE TRENCH SHIELDING |
| MANHOLE LARGES DRAINED MANHOLE FRINGS AND CIRCULAR PIPES | HIGH | USE CORRECT TYPE OF COVER AND INSURE CONNECTIONS FROM OPERATIONAL TO NEW WORK |
| CONTACT WITH SERVICES | MOD | OPERATIONAL TO USE CORRECT MARKING TO IDENTIFY EXISTING SERVICES |
| NOISE | MOD | OPERATIONAL TO USE CORRECT EAR PROTECTION CORRECT PPE |
| DRAINAGE EXCAVATIONS ADJACENT EXISTING BOUNDARY STRUCTURES | HIGH | TRENCH CORRECTLY TO PREVENT COLLAPSE AND TO PROTECT EXISTING FOUNDATIONS |
| DRAINAGE EXCAVATIONS ADJACENT TO HIGHWAYS | HIGH | SHIELD EXCAVATIONS WITH TRENCH SHIELDING AND TO PROTECT HIGHWAYS FROM COLLAPSE |
| MANHOLE ACCESS TO ADJACENT PROPERTIES AND OCCUPANTS | HIGH | SHIELD EXCAVATIONS WITH TRENCH SHIELDING AND TO PROTECT ADJACENT PROPERTIES AND OCCUPANTS |
| DRAINAGE EXCAVATIONS NEAR TO EXISTING SERVICES | HIGH | SHIELD EXCAVATIONS WITH TRENCH SHIELDING AND TO PROTECT EXISTING SERVICES |
| WORKING IN CONFINED SPACES, WORKING IN DRENDS AND MANHOLES | HIGH | SHIELD EXCAVATIONS WITH TRENCH SHIELDING AND TO PROTECT WORKERS FROM COLLAPSE |
| WORKING IN HIGHWAYS / AREAS FROM VEHICLES AND PLANT | HIGH | SHIELD EXCAVATIONS WITH TRENCH SHIELDING AND TO PROTECT HIGHWAYS AND AREAS FROM VEHICLES AND PLANT |
| ROAD AND DRAINAGE CONSTRUCTION | HIGH | SHIELD EXCAVATIONS WITH TRENCH SHIELDING AND TO PROTECT ROAD AND DRAINAGE CONSTRUCTION |

IT IS ASSUMED THAT WORKS ASSOCIATED WITH THIS DESIGN WILL BE UNDERTAKEN BY PERSONS WHO ARE COMPETENT AND HAVE THE REQUIRED LEVELS OF EXPERIENCE AND KNOWLEDGE.

1. ALL ADAPTABLE 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.
2. MANHOLE COVERS SHALL HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 50mm DEEP FRAMES AS 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 DRAINAGE RUNOFF INTO THE PUBLIC SEWER NETWORK OR ADAPTABLE 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 DRAINAGE DRAINAGE RUNOFF.
5. COVER SLABS MUST CARRY THE BS 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 600mm 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 (CSR) AND PRECAST CONCRETE PRODUCTS MUST BE USED ON A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
7. THE ADAPTABLE SEWERS SHOULD BE A MINIMUM OF 1m AND MANHOLES 0.6m FROM KERB FACES AND MARGINS.
8. SEWERS MUST HAVE 50mm CLEARANCE FROM TREES AND HEDGES (PLEASE ALSO REFER TO FIGURE 2.3 ON PAGE 33 IN 'CODES FOR ADOPTION' FOR RESTRICTIONS ON TREE PLANTING ADJACENT TO SEWERS).
9. SEWERS TO BE LAID IN CLASS '2' BEDDING (150mm GRANULAR BED AND SURROUND), WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN 1.5m IN HIGHWAYS AND VEHICLES OR LESS THAN 300mm IN HOME WHEELCHAIR ACCESS AREAS; THEN A CONCRETE SLAB OVER SEWER SHALL BE PROVIDED ABOVE GRANULAR BED AND SURROUND.
10. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4:08-02 (TABLE A2).
11. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND SEWERS.
12. YORKSHIRE WATER POLICY IS NOT TO ACCEPT TYPE 'C' BRICK MANHOLES AND 100mm DIAM. MANHOLE RINGS. INSTEAD IT IS PREFERRED THAT YOU USE A TYPE 'F' MANHOLE WITH 100mm DIAM. OR 100mm DIAM. RINGS, WITH THE OPENING SIGHTED OVER THE CHANNEL WHERE DEPTH OF COVER TO PIPE SOFIT IS 1.5m.
13. ADAPTABLE PLASTIC SEWER PIPES TO BE BS KITEMARKED (TO WIS 4-20:04 AND BS EN 13478). ADAPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO USE LONGER LENGTHS. PLASTIC CHANNELS 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 FLAT AND A SATISFACTORY FINISH CANNOT BE OBTAINED ON THE BENCHING.
14. THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS: 100mm DIA. 40kN/m², 150mm DIA. 40kN/m², 225mm DIA. 45kN/m² AND 300mm DIA. 70kN/m². THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE: CLASS 120 TO EN 12690/11-2002. PLASTIC PIPES SHOULD CONFORM TO WIS 4-20:04 AND BS EN 13478.
15. WHERE A 450mm 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.
16. ALL HIGHWAY WORKS AND MATERIAL TO CONFORM WITH BARNSLEY MBC SPECIFICATION.
17. GULLY COVERS AND FRAMES SHALL BE DUCTILE IRON AND COMPLY WITH EUROPEAN STANDARD BS EN 124. THOSE SIGHTED IN ACCESSWAYS AND MOWS COURTS MUST BE SUITABLE FOR USE IN PEDESTRIAN AREAS.



EASTERN SITE ENTRANCE



| | | | |
|-----|--|----------|----------|
| J | Red line boundary updated to suit latest planning application. | 23.02.26 | JM |
| H | Pond and sewer outfall amended to suit updated EA flood maps. | 29.01.26 | JM |
| G | Red line boundary updated. | 04.11.25 | JM |
| F | Road 16 and 17 updated to suit latest planning layout. | 22.10.25 | JM |
| E | Road and sewer design updated to suit latest planning layout. | 09.07.25 | JM |
| D | Road and sewer design updated to suit latest planning layout. | 08.04.25 | JM |
| C | Road and sewer design updated to suit latest planning layout. | 28.06.24 | JM |
| B | Retaining walls added. | 17.04.24 | JM |
| A | Drainage info added. | 03.04.24 | JM |
| Rev | Description | Date | Initials |

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Client: SAUL CONSTRUCTION / KEEP MOAT HOMES
Project: DARFIELD
Detail: ENGINEERING FEASIBILITY

D: JM | C: MH | Date: FEB/2024 | Scale: 1/500 @A0 | Dwg No: E18/7309/001_01J

PRELIMINARY