

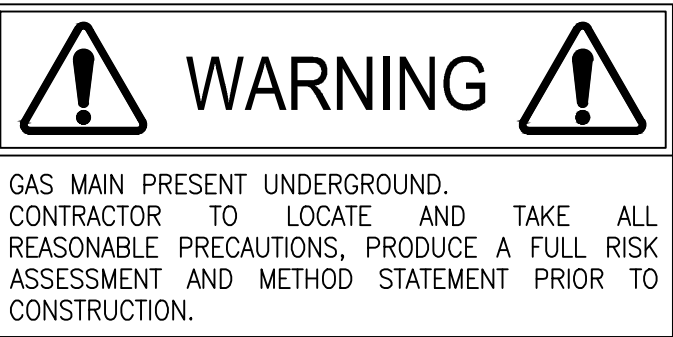
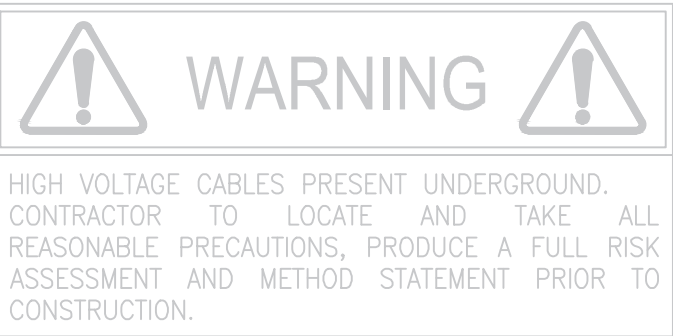
ALL PARTIES ARE RESPONSIBLE FOR READING ALL NOTES REMAINING IN BOLD. ANY NOTES THAT ARE SHOWN IN GREY ARE NOT APPLICABLE TO THIS PROJECT.
IF ANY INFORMATION IS UNCLEAR, PLEASE CONTACT DWS FOR CLARIFICATION

DISCLAIMERS AND ABBREVIATIONS
1. ALL DESIGN INFORMATION PROVIDED BY DWS IS TO BE READ IN CONJUNCTION WITH ALL OTHER DWS DRAWINGS, CALCULATIONS, REPORTS AND SPECIFICATIONS (WHERE APPLICABLE), AND ALL OTHER RELEVANT ENGINEERS, ARCHITECTS & SPECIALIST DESIGN DETAILS.
2. ABBREVIATIONS: AOD = Above Ordnance Datum BEGL = Below existing ground level BOC = Bottom of concrete BOS = Bottom of steel CL = Cover level DPC = Damp proof course DPM = Damp proof membrane EGL = Existing ground level (also see OSL) IL = Invert level FFL = Finished floor level OSL = Original survey level (original Topo) PGL = Proposed ground level SP = Survey or Station point SOP = Setting out point SSL = Structural slab level TBC = To be confirmed TOB = Top of beam TOC = Top of concrete TOS = Top of steel UNO = Unless noted otherwise
3. SOURCE INFORMATION: The following third party reports, drawings and information have been used and form the basis of our design. Site Layout – Site Block Plan Topo' Survey – Survey Site Plan GI Report – #### Arch' Drawings – Various Architects LE1 drawings Other Misc – 1681984_A3_Wastewater
4. DRAWING / DOCUMENT STATUS: All drawings, reports and calculations issued as either Draft, For Comment, Preliminary, Building Regulations or Tender should never be used for construction purposes or ordering materials. Should any contractor or client rely on this information for such purposes, DWS accept no responsibility. All drawings issued as Tender status can only be used for pricing purposes, not material order. All drawings, reports and calculations issued as Construction status can be used for construction and material order.
5. DOCUMENT REVIEW: DWS issue all information in good faith and assume that all parties will review and comment accordingly. If no comments are received, DWS will assume that no further design development is necessary and all parties are happy to proceed with construction based on the information provided. Should changes to design be required or requested after construction issue, additional fees will be charged accordingly.
6. DESIGN CHANGES & ADDITIONAL WORKS: DWS will make every reasonable effort to consume small design changes within the stated fee proposal. Time spent on numerous or major design changes will be recorded and discussed accordingly to recoup fees as appropriate. Should any work be requested outside the scope of the fee proposal, DWS will notify all necessary parties to advise or agree additional fees.
7. UNFORESEEN CIRCUMSTANCES: DWS will not be held responsible for any unforeseen circumstances such as underground obstructions or changes in ground conditions not identified in the Ground Investigation report or any other survey information. Every action will be taken to assist if such events occur, and any additional fees will be discussed accordingly.
8. UNDERMINING AND PARTY WALL AWARDS: Where excavations are situated close to land boundaries or adjacent to any property, due consideration is required by all parties to ensure undermining or collapse does not occur. Any risks should be negated by professional methods to avoid disputes and possible damage to property. Where any construction is within 3m of any off site structure owned by a third party, the client, developer and Architect must consider and obtain (where necessary) a Party Wall Award.
9. TEMPORARY WORKS AND DEMOLITION: DWS are not responsible for the design or providing advice on any form of temporary works (including propping) unless specifically requested at project inception and subsequently noted in our fee proposal. The contractor is responsible for all risks associated with demolition.
9. STANDARD NOTES & DETAILS: Refer to drawing number 0–150 for standard notes – STRUCTURAL Refer to drawing number 0–160 for standard details – STRUCTURAL Refer to drawing number 0–170 for standard notes – CIVIL Refer to drawing number 0–180 for standard details – CIVIL

SEWERS FOR ADOPTION - 6th EDITION
1. The position, line, level and diameter of all existing drainage apparatus should be confirmed on site prior to the commencement of works. Any discrepancies should be reported to the engineer immediately.
2. All dimensions are in millimetres unless noted otherwise.
3. The connection of foul and surface water drainage to the existing public sewer system shall be subject to the approval of the Water Authority
4. All work is to be carried out in accordance with the relevant, current British Standard and Codes of Practice and Building Regulations.
5. All drainage works shall be carried out in accordance with WSA "Sewers for Adoption (6th Edition)" and "Civil Engineering Specification for the Water Industry (6th Edition)".
6. UPVC pipes and fittings to comply with BS EN 1401–1 1998.
7. Clayware pipes and fittings to comply with BS EN 295:1991 Part 1.
8. Rubber joint rings shall be Type D to BS 2494 and shall be obtained from the same manufacturer as the chosen pipe.
9. Drainage to BS 8301 with pipes of approved type on granular bed and surround are to be laid strictly in accordance with the manufacturers instructions.
10. Pipes under buildings and with cover less than:– • 600mm under gardens & non trafficked areas • 900mm under car parking areas • 1200mm under roads to have concrete protection applied.
11. All pipes entering & exiting manholes are to be connected using preformed branch channel bends 3/4 section at half the main channel height.
12. The first flexible joint in pipes, adjacent to a manhole, shall be a maximum 600mm from the inside face of the manhole, connected to a rocker pipe.
13. Precast concrete manholes, cover slabs and seating rings shall comply with BS 5911 Part 200.
14. Brick manholes to be constructed in flush pointed, English Bond brickwork using Class B solid engineering bricks to BS 3921 in a suitable sand / cement mortar.
15. Manhole step irons to comply with BS 1247.
16. Manhole covers and frames to be ductile iron heavy duty grade D400 double triangular to BS EN 124 in carriageways and heavy vehicular trafficked areas (150mm thick). Manhole covers and frames to be ductile iron medium duty grade B125 circular or rectangular to BS EN 124 in non trafficked areas, unless noted otherwise.
17. All cement used in the construction of manholes shall be Ordinary Portland Cement (OPC) to the relevant provisions of BS 4027 CESWI specification clause 2.15.
18. Refer to CESWI specification clause 2.20 for sand / cement mortar grades.
19. High strength granolithic concrete topping to benching to be steel trowelled to a dense smooth face neatly shaped and finished to all branch connections in accordance with CESWI specification clause 4.30.
20. Pipes shall be laid to their true line and level by laser or by boning each end and middle.
21. All soft spots within pipe trenches shall be removed and filled with Type 1 material.
22. No water shall be allowed to accumulate in pipe trenches during construction.
23. All fill material shall be compacted in layers not exceeding 225mm.
24. All in-situ concrete used in below ground pipe protection to be of minimum grade C20P.
25. Compressible filler for interruption of concrete pipe protection shall consist of bitumen impregnated insulating board to BS 1142 Part 3 at each pipe joint; thickness in accordance with CESWI Clause 2.52.
26. Any redundant drains shall be removed or concrete sealed.
27. Where pipes are crossing, plastic membrane is to be used for protection to eliminate the chance of cross contamination if leakage occurs.
28. Pipes of different diameters are to enter the manhole at soffit to soffit level unless noted otherwise.
29. Precast concrete manholes are not to be cut or core drilled under any circumstances.
30. All manhole covers and frames are to be a minimum of 675 x 675mm to maintain a clear opening. Covers and frames to be Kite Marked.
31. Where the depth of a manhole is greater than 3000mm to soffit, a vertical galvanised mild steel access ladder with 230mm clearance to the wall is required. Double encapsulated step rungs are to be used in manholes less than 3000mm deep.

SEWERS FOR ADOPTION - DCG
1. The position, line, level and diameter of all existing drainage apparatus should be confirmed on site prior to the commencement of works. Any discrepancies should be reported to the engineer immediately.
2. All dimensions are in millimetres unless noted otherwise.
3. The connection of foul and surface water drainage to the existing public sewer system shall be subject to the approval of the Water Authority
4. All work is to be carried out in accordance with the relevant, current British Standard and Codes of Practice and Building Regulations.
5. All drainage works shall be carried out in accordance with Water UK "Sewage Sector Guidance Appendix C" Version 2 (The Code, DGS) and "Civil Engineering Specification for the Water Industry (7th Edition)".
6. UPVC pipes and fittings to comply with BS EN 1401–1 1998.
7. Clayware pipes and fittings to comply with BS EN 295:1991 Part 1.
8. Rubber joint rings shall be Type D to BS 2494 and shall be obtained from the same manufacturer as the chosen pipe.
9. Drainage to BS 8301 with pipes of approved type on granular bed and surround are to be laid strictly in accordance with the manufacturers instructions.
10. Pipes under buildings and with cover less than:– • 600mm under gardens & non-trafficked areas • 900mm under car parking areas • 1200mm under roads to have concrete protection applied.
11. All pipes entering & exiting manholes are to be connected using preformed branch channel bends 3/4 section at half the main channel height.
12. The first flexible joint in pipes, adjacent to a manhole, shall be a maximum 600mm from the inside face of the manhole, connected to a rocker pipe.
13. Precast concrete manholes, cover slabs and seating rings shall comply with BS 5911 Part 200.
14. Brick manholes to be constructed in flush pointed, English Bond brickwork using Class B solid engineering bricks to BS 3921 in a suitable sand / cement mortar.
15. Manhole step irons to comply with BS 1247.
16. Manhole covers and frames to be ductile iron heavy duty grade D400 double triangular to BS EN 124 in carriageways and heavy vehicular trafficked areas (150mm thick). Manhole covers and frames to be ductile iron medium duty grade B125 circular or rectangular to BS EN 124 in non trafficked areas, unless noted otherwise.
17. All cement used in the construction of manholes shall be Ordinary Portland Cement (OPC) to the relevant provisions of BS 4027 CESWI specification clause 2.15.
18. Refer to CESWI specification clause 2.20 for sand / cement mortar grades.
19. High strength granolithic concrete topping to benching to be steel trowelled to a dense smooth face neatly shaped and finished to all branch connections in accordance with CESWI specification clause 4.30.
20. Pipes shall be laid to their true line and level by laser or by boning each end and middle.
21. All soft spots within pipe trenches shall be removed and filled with Type 1 material.
22. No water shall be allowed to accumulate in pipe trenches during construction.
23. All fill material shall be compacted in layers not exceeding 225mm.
24. All in-situ concrete used in below ground pipe protection to be of minimum grade C20P.
25. Compressible filler for interruption of concrete pipe protection shall consist of bitumen impregnated insulating board to BS 1142 Part 3 at each pipe joint; thickness in accordance with CESWI Clause 2.52.
26. Any redundant drains shall be removed or concrete sealed.
27. Where pipes are crossing, plastic membrane is to be used for protection to eliminate the chance of cross contamination if leakage occurs.
28. Pipes of different diameters are to enter the manhole at soffit to soffit level unless noted otherwise.
29. Precast concrete manholes are not to be cut or core drilled under any circumstances.
30. All manhole covers and frames are to be a minimum of 600 x 600mm to maintain a clear opening. Covers and frames to be Kite Marked.
31. Where the depth of a manhole is greater than 3000mm to soffit, a vertical galvanised mild steel access ladder with 230mm clearance to the wall is required. Double encapsulated step rungs are to be used in manholes less than 3000mm deep.

CONCRETE
1. UNDERGROUND PIPE PROTECTION CONCRETE MIX: A prescribed mix in accordance with the current requirements of BS 8500–1 & 8500–2. Grade = C20 P, consistency class S2.
2. MANHOLE SURROUND CONCRETE MIX: A designated mix in accordance with the current requirements of BS 8500–1 & 8500–2. Grade = PAV 2, consistency class S2.
3. EXTERNAL SLAB CONCRETE MIX: A designated mix in accordance with the current requirements of BS 8500–1 & 8500–2. Grade = PAV 2, consistency class S3.
4. COVER SLAB (IN HIGHWAY) CONCRETE MIX: A designed mix in accordance with the current requirements of BS 8500–1 & BS 8500–2. Grade = C32/40. Also refer to calculations. Consistency class S3.
5. CONCRETE ADDITIVES AND COMPACTION: NO additives to any concrete will be allowed unless agreed with by the engineer. Where necessary, concrete to be compacted by means of a mechanical poker vibrator & with a workability such that dense concrete free from voids will be produced.
6. REINFORCEMENT: All reinforcement to be in accordance with the current requirements of BS 8666. Minimum reinforcement laps to be: Mesh & B10 = 400mm Cover to be 50mm all round UNO. Where cast directly against soil cover to be increased to 75mm. Reinforcement cover to be maintained by the use of proprietary type spacers or chairs as required.
7. CONCRETE CUBE TESTING: Four concrete cubes are to be made, stored and tested in accordance with BS.1881 from a representative sample of each batch. Two cubes shall be tested at 7 days and two shall be tested at 28 days.



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NOTES	
1.	THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DWS DRAWINGS, CALCULATIONS, REPORTS AND SPECIFICATIONS (WHERE APPLICABLE) AND, ALL OTHER RELEVANT ENGINEERS, ARCHITECTS & SPECIALIST DESIGN DETAILS.

NOT FOR CONSTRUCTION

P1	First issue	08.04.25	DW
Ref	Revision	Date	By
Issue			
PRELIMINARY DWS Consulting Engineers Diamond Wood & Shaw Limited The Old School • Babay Road • Enderby • Leicester • LE19 4AR Tel 0115 284 8869 • Email mail@dwsedd.co.uk			
Project Title			
19-21 RATBY ROAD GROBY			
Drawn DW	Engineer DW	Checked BP	
Scale at 1:1 @ A1	Date APR 2025		
Drawing Title			
STANDARD NOTES - CIVIL SHEET 1 OF 1			
Project No. 24-21616	Drawing No. 0-170	Revision P1	
BIM Code			