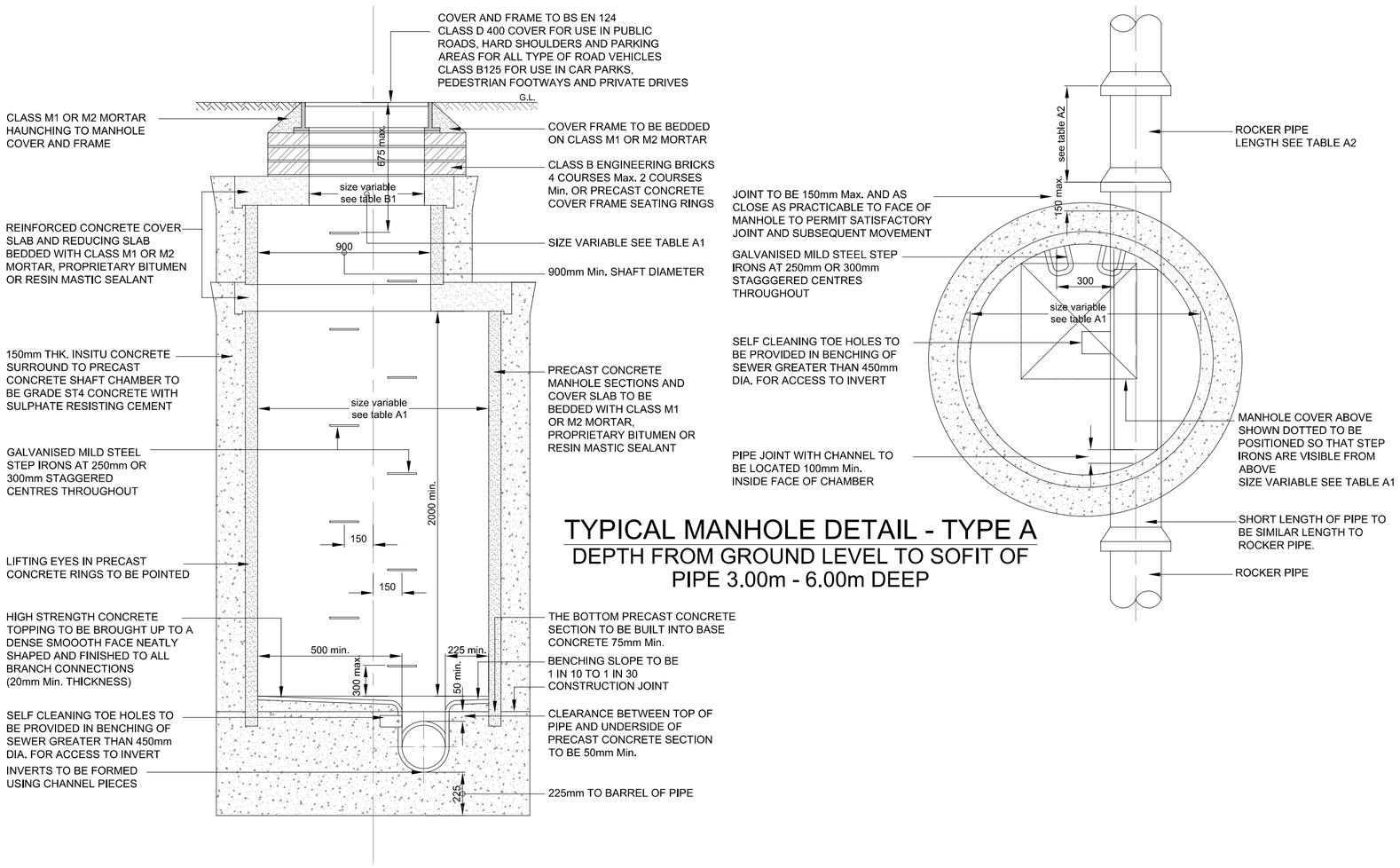



# TYPICAL MANHOLE DETAIL - TYPE A
## DEPTH FROM GROUND LEVEL TO SOFIT OF PIPE 3.00m - 6.00m DEEP




| TABLE A1 - MANHOLE TYPE A - PRECAST CONCRETE 3.0m-6.0m DEEP (BS EN 752 2008) | | | | | | |
|---|---|---|---|---|---|---|
| type of access | depth to soffit from cover level | diameter of largest pipe in chamber (DN) (mm) / means of descent into shaft | min. internal dimensions a | | min. clear opening size a | |
| | | | rectangular length & width (mm) | circular diameter (mm) | rectangular length & width (mm) | circular diameter (mm) |
| manhole b | less than 1500 | equal to or less than 150 | 750x675 c | 1000 c | 750x675 d e | na f |
| | | 225 | 1200x675 | 1200 | 1200x675 e | |
| | | 300 | 1200x750 | 1200 | 1200x675 | |
| | | 375-450 | 1350x900 | 1350 | 1200x675 | |
| | | 500-700 | 1500x1150 | 1500 | 1200x675 | |
| | | 750-900 | 1800x1350 | 1800 | 1200x675 | |
| | | greater than 900 | 1800x(DN+775) | the larger of 1800 or (DN+900) | | |
| manhole b | equal or greater than 1500 | equal to or less than 225 | 1200x1000 | 1200 | 600x600 | 600 |
| | | 300 | 1200x1075 | 1200 | 600x600 | 600 |
| | | 375-450 | 1350x1225 | 1350 | 600x600 | 600 |
| | | 500-700 | 1500x1475 | 1500 | 600x600 | 600 |
| | | 750-900 | 1800x1675 | 1800 | 600x600 | 600 |
| | | greater than 900 | 1800x(DN+775) | the larger of 1800 or (DN+900) | 600x600 | 600 |
| manhole shaft g | | steps h | 1050x800 | 1050 | 600x600 | 600 |
| | | ladder h | 1200x800 | 1200 | | |
| | | winch j | 900x800 | 900 | 600x600 | 600 |

Table A1 - Notes

a. these sizes opply to straight through pipes; for turning chambers or chambers with several side branches or wher specific maintenance requirements are neccessary, e.g. disconnecting traps, the minimum sizes should br increased
b. chamber with a removable cover constructed over a drain or sewer to permit entry by personnel
c. the minimum size of any manhole serving more than one property should be rectangular 1200 x 675 or 1200 diameter
d. may be reduced to 600x600 or 600 diameter where the configuration of the manhole chamber permits a safe system of work
e. may be reduced to 600x600 where required by highway loading considerations, subject to a safe system of work being specified
f. not applicable due to working space needed
g. min. height of chamber in shafted manhole 2,0m from benching to underside of of reducing slab
h. min. clear space between ladder or steps and the opposite face of the shaft should be approx. 900mm
j. winch only - no steps or ladders, permanent or removable

| TABLE A2 - ROCKER PIPES | |
|---|---|
| nominal pipe diameter (mm) | max.rocker pipe length (mm) |
| less than 300 | 600 |
| 301-450 | 750 |
| 451-750 | 1000 |
| greater than 750 | 1250 |

MANHOLE TYPE A - GENERAL NOTES
1. TOE HOLES TO BE PROVIDED IN BENCHING OF SEWER GREATER THAN 450mm DIA. TO INVERT.
2. CHAMBERS WITH OUTGOING PIPES GREATER THAN 600mm DIA. SHAFT TO BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER SAFETY DEVICES.
3. THE SAFETY POLICY OF INDIVIDUAL SEWERAGE UNDERTAKERS MAY REQUIRE A LARGER MINIMUM CLEAR OPENING INTO MANHOLES AND THE FITTING OF GUARD BARS, SAFETY CHAINS OR OTHER SAFETY DEVICES IN MANHOLES WITH OUTGOINGS PIPES OF LESS THAN 600mm DIA.
4. THESE CHAMBER SIZES SHOULD BE INCREASED TO ACCOMMODATE EXTRA CONNECTIONS AND SHARP ANGLES IN THE LINE OF THE MAIN SEWER.
5. PIPES TO BE LAID SOFFIT TO SOFFIT (U.N.O)
6. THESE MANHOLE DETAILS COMPLY WITH THE REQUIREMENTS OF NATIONAL WATER COUNCIL EXCEPT THAT 1050mm DIA. CHAMBERS SHALL ONLY BE USED FOR DEPTH TO INVERT LESS THAN 1500mm

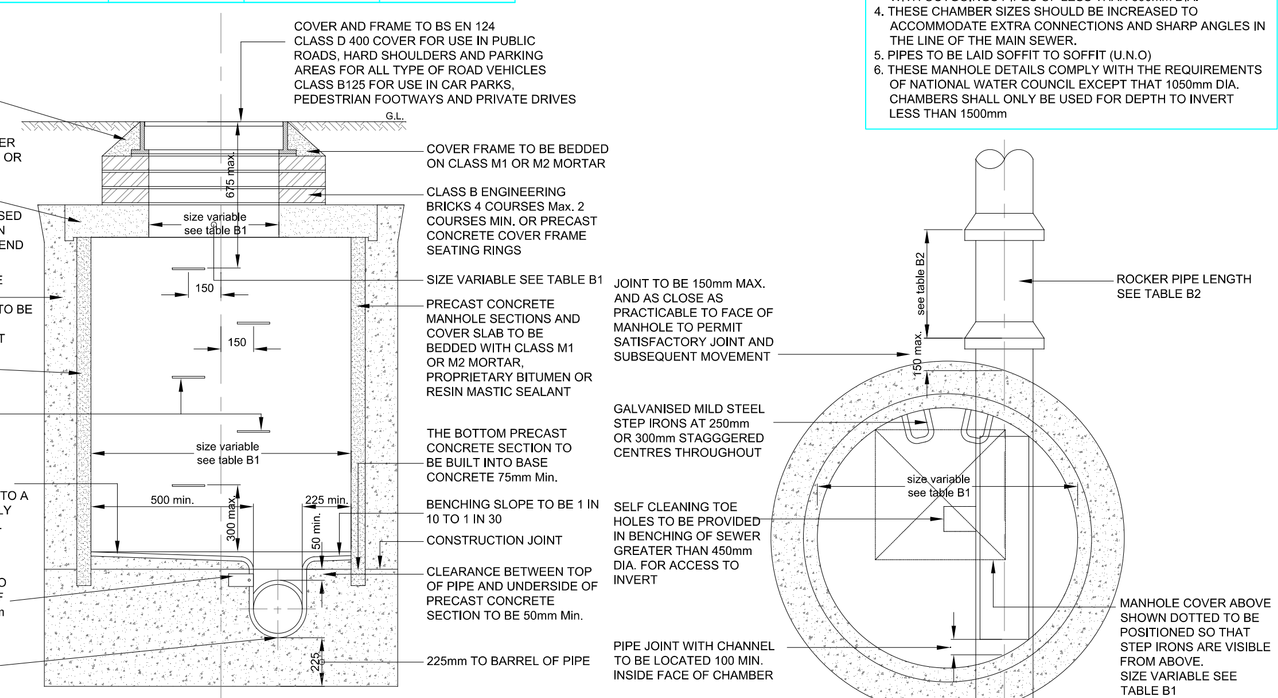
| TABLE B1 - MANHOLE TYPE B - PRECAST CONCRETE 1.45m-3.0m DEEP | | | | |
|---|---|---|---|---|
| diameter of largest pipe in chamber (DN) (mm) | min. internal dimensions a | | min. clear opening size a | |
| | rectangular length & width (mm) | circular diameter (mm) | rectangular length & width (mm) | circular diameter (mm) |
| manhole | | | | |
| equal to or less than 225 | 1200x1000 | 1200 | 600x600 | 600 |
| 300 | 1200x1075 | 1200 | 1200x675 | |
| 375-450 | 1350x1225 | 1200 | | |
| greater than 450 | 1800x(DN+775) | the larger of 1800 or (DN+775) | | |
| manhole shaft d | | | | |
| steps e | 1050x800 | 1050 | 600x600 | 600 |
| ladder e | 1200x800 | 1200 | | |
| winch f | 900x800 | 900 | 600x600 | 600 |

TABLE B1 - NOTES

a. larger sizes may be required for manholes on bends or where there are junctions
b. may be reduced to 600x600 where required by highway loading considerations, subject to a safe system of work being specified
c. not applicable due to working space needed
d. min. height of chamber in shafted manhole 2.0m from benching to underside of of reducing slab
e. min. clear space between ladder or steps and the opposite face of the shaft should be approx. 900mm
f. winch only - no steps or ladders, permanent or removable
g. the min. size of any manhole serving a sewer (i.e. any drain serving more than one property) should be 1200x675 rectangular or 1200 dia. circular

| Table B2 - Rocker pipes | |
|---|---|
| pipe diameter (mm) | rocker pipe length (mm) |
| 150-450 | 500-700 |
| 451-750 | 750-1000 |
| greater than 750 | full pipe length |

MANHOLE TYPE B - GENERAL NOTES
1. TOE HOLES TO BE PROVIDED IN BENCHING OF SEWER GREATER THAN 450mm DIA. TO INVERT.
2. CHAMBERS WITH OUTGOING PIPES GREATER THAN 600mm DIA. SHAFT TO BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER SAFETY DEVICES.
3. THE SAFETY POLICY OF INDIVIDUAL SEWERAGE UNDERTAKERS MAY REQUIRE A LARGER MINIMUM CLEAR OPENING INTO MANHOLES AND THE FITTING OF GUARD BARS, SAFETY CHAINS OR OTHER SAFETY DEVICES IN MANHOLES WITH OUTGOINGS PIPES OF LESS THAN 600mm DIA.
4. THESE CHAMBER SIZES SHOULD BE INCREASED TO ACCOMMODATE EXTRA CONNECTIONS AND SHARP ANGLES IN THE LINE OF THE MAIN SEWER.
5. PIPES TO BE LAID SOFFIT TO SOFFIT (U.N.O)
6. THESE MANHOLE DETAILS COMPLY WITH THE REQUIREMENTS OF NATIONAL WATER COUNCIL EXCEPT THAT 1050mm DIA. CHAMBERS SHALL ONLY BE USED FOR DEPTH TO INVERT LESS THAN 1500mm




# TYPICAL Manhole DETAIL - Type B
## DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE 1.45 - 3.00m DEEP

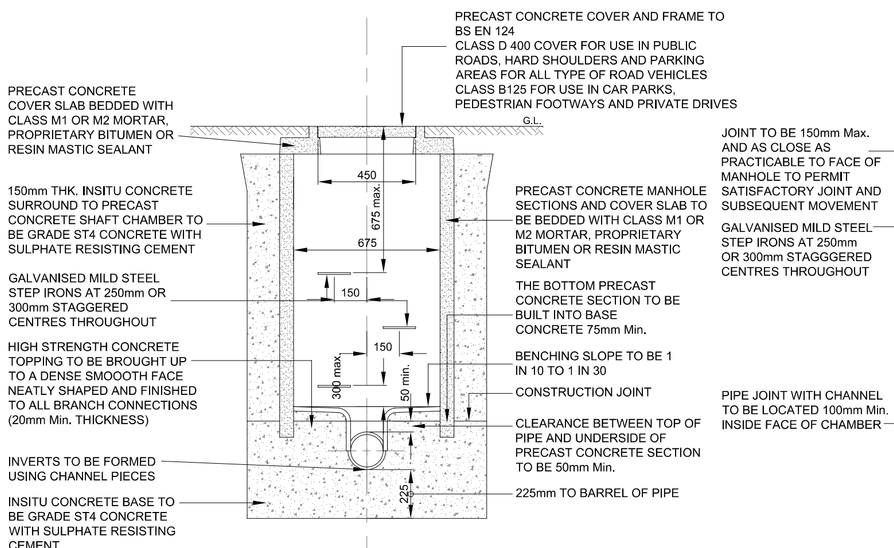



FUTURE MAINTENANCE:

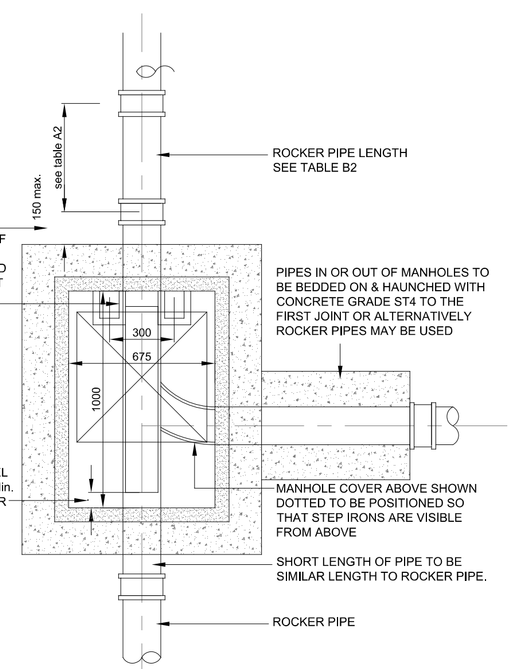
ALL SEWER SYSTEM MANAGEMENT FOR DRAINAGE AND SEWER SYSTEMS TO BS EN 752:2017.

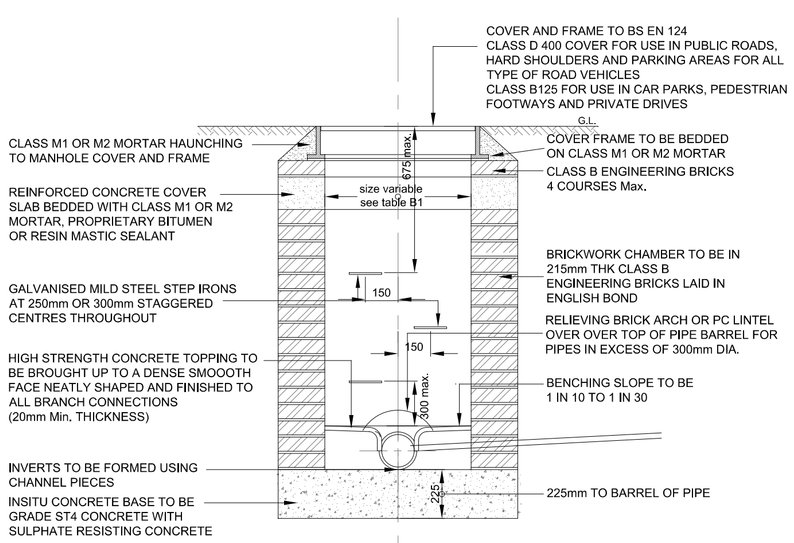
THE SD FOUL WATER DRAINAGE PIPE SIZES AND GRADIENTS ARE DESIGNED TO BE SELF-CLEANSING ALBIET REGULAR MAINTENANCE AND INSPECTIONS ARE REQUIRED FORLONG-TERM EFFICIENCY. ALL PRIVATE DEVELOPMENTS WILL REQUIRE REGULAR SWEEPING OF HARD SURFACES TO HELP REDUCE SILTS BEING WASHED INTO DRAINAGE SYSTEM. AS WELL AS ENSURING THAT THE DRAINAGE SYSTEM IS CLEAR OF DEBRIS, REGULAR INSPECTIONS WILL HELP DETERMINE WHETHER THERE ARE PERFORMANCE ISSUES WITHIN THE DRAINAGE SYSTEM GENERALLY.

DURING CONSTRUCTION THE CONTRACTOR MUST ENSURE THAT CONSTRUCTION MATERIALS AND GENERAL DETRITUS DO NOT ENTER THE DRAINAGE SYSTEM. SILT TRAPS TO BE CHECKED WEEKLY DURING CONSTRUCTION AND / OR AFTER HEAVY RAINFALL. ALL DRAINAGE PIPELINES ARE TO BE SUBJECT TO A CCTV SURVEY BEFORE HANDOVER TO ENSURE THAT THERE ARE NO DEFECTS IN THE SYSTEM.

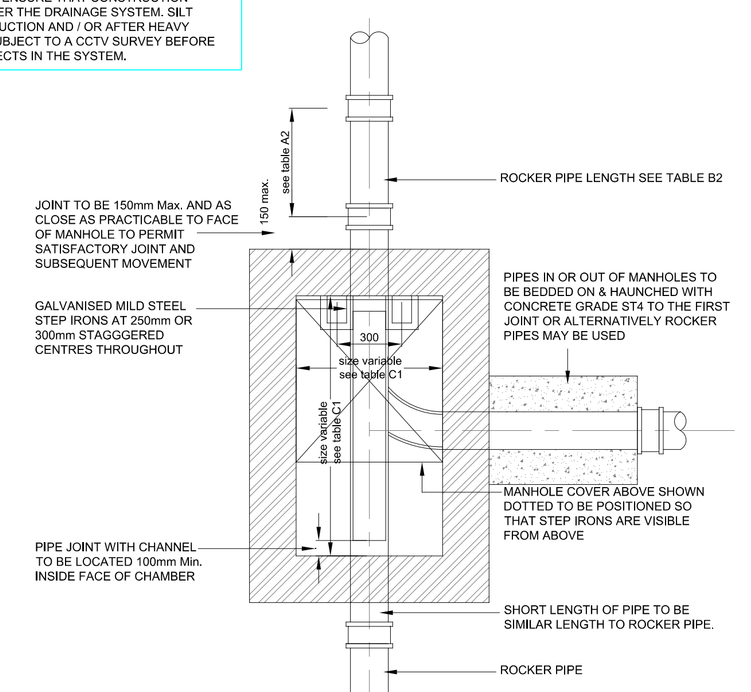



PRECAST CONCRETE 1000x675




BRICK




# TYPICAL MANHOLE DETAIL- TYPE C
## DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE 1.0 - 1.45m DEEP

MANHOLE TYPE C - GENERAL NOTES
1. TOE HOLES TO BE PROVIDED IN BENCHING OF SEWER GREATER THAN 450mm DIA. TO INVERT.
2. CHAMBERS WITH OUTGOING PIPES GREATER THAN 600mm DIA. SHAFT TO BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER SAFETY DEVICES.
3. THE SAFETY POLICY OF INDIVIDUAL SEWERAGE UNDERTAKERS MAY REQUIRE A LARGER MINIMUM CLEAR OPENING INTO MANHOLES AND THE FITTING OF GUARD BARS, SAFETY CHAINS OR OTHER SAFETY DEVICES IN MANHOLES WITH OUTGOINGS PIPES OF LESS THAN 600mm DIA.
4. THESE CHAMBER SIZES SHOULD BE INCREASED TO ACCOMMODATE EXTRA CONNECTIONS AND SHARP ANGLES IN THE LINE OF THE MAIN SEWER.
5. PIPES TO BE LAID SOFFIT TO SOFFIT (U.N.O)
6. THESE MANHOLE DETAILS COMPLY WITH THE REQUIREMENTS OF NATIONAL WATER COUNCIL EXCEPT THAT 1050mm DIA. CHAMBERS SHALL ONLY BE USED FOR DEPTH TO INVERT LESS THAN 1500mm

General Construction Notes:

All calculations / drawings are to be read in conjunction with all other engineering and architectural drawings.

Do not scale from drawings, any discrepancies between drawings of different scales and between drawings and specifications where appropriate to be brought to the attention of the engineer for clarification or rectification.

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1. DO NOT SCALE FROM THIS DRAWING.
2. ANY DISREPNANCIES WITH ANY OF THE DRAWINGS SHALL BE REPORTED TO THE ENGINEER.
3. THE LEVELS AND LOCATIONS OF ALL EXISTING SURFACES SHALL BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING ANY CONSTRUCTION WORK.
4. ALL ABANDONED, BURIED OBSTRUCTIONS ENCOUNTERED DURING THE CONSTRUCTION OF HIGHWAY OR DRAINAGE WORKS ARE TO BE BROKEN OUT TO BED LEVEL OF DRAINS AND SEWERS, AND TO THE FORMATION OF CARPARKS AND DRIVES ETC. AND TO SUFFIENT DEPTH TO ALLOW FOR LAYING SERVICE COMPANY'S MAINS AND SERVICES.
5. CONTRACTO MUST COMPLY WITH ALL CURRENT LEGISLATION RELATING TO CDM, HEALTH & SAFETY AND COSHH.
6. ALL MATERIAL IN EXCESS OF 20kg (IE. KERBS, MANHOLE UNITS COVE, ETC.) SHALL BE MECHANICALLY LIFTED AND LAID WHERE POSSIBLE AT ALL TIMES.
7. ALL COVERS, GRATINGS AND ACCESS PLATES ETC, SHOULD BE APPROPIATE TO INSTALLED ENVIROMENT. GENERALLY A15, WITH B125 USED IN ALL DRIVEWAYS, ROADS AND POSSIBLE OVERUN AREAS.
8. GULLIES, GULLEY CONNECTIONS, DRAINS, MANHOLES, CATCHPITS, SOAKAWAYS, HEADWALLS AND OTHER DRAINAGE STRUCTURES INTENDED TO CONVEY HIGHWAY WATER ARE TO BE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATION ISSUED BY THE LOCAL AUTHORITY.
9. ALL FOUL AND SOTRM WATER DRAINS WHICH ARE NOT TO BE ADOPTED AS PUBLIC SEWERS UNDER SECTION 104 AGREEMENT SHALL BE CONSTRUCTED USING UPVC PIPES OR SIMILAR APPROVED, BEDDED AND BACKFILLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND TO BUILDING REGULATION PART H, BS EN 752 & BRE SD1.
10. ALL BUILDING DRAINAGE TO BE 100mm DIAMETER LAID AT A MINIMUM GRADIENT OF 1 IN 80 (FW) AND 1 IN 100 (SW) UNLESS OTHERWISE SPECIFIED.
11. SEWERS AND DRAINS OF DIFFERENT DIAMETERS SHOULD BE LAID SOFFIT TO SOFFIT.
12. INSPECTION CHAMBERS ON PRIVATE DRAINS SHALL BE NON-ACCESS PREFORMED POLYPOPYLENE.

| DEPTH TO INVERT | MINIMUM SIZE |
|---|---|
| < 1.2m | DN450 |
| > 1.2m | DN600 |

IN ACCORDANCE WITH BUILDING REGULATIONS PART H & BS EN 752

13. POSITION OF SOIL PIPES, STUBSTACKS, WC OUTLETS, RAINWATER DOWNPIPES, ETC. POSITIONS SHALL BE CHECKED AGAINST ARCHITECTS DRAWINGS TO ENSURE COMPATABILITY.
14. WHERE BACK INLET GULLIES ARE USED THEY SHOULD BE RODDABLE.
15. ALL STUB STACK TO BE FITTED WITH AIR ADMITTANCE VALVE WHERE BRANCH DRAIN EXCEEDS 12m EXCEPT AT HEAD OF RUN.
16. RAINWATER DOWNPIPES TO BE CONNECTED DIRECTLY TO DRAINS VIA REMOVABLE ADAPTER TO PERMIT ACCESS FOR RODDING.
17. POSITIONS OF YARD AND HOUSE GULLIES ARE NOMINAL AND MAY BE ADJUSTED ON SITE. ACO DRAINS TO BE INSTALLED AT THE END OF DRIVES AS INDICATED. ALL GULLY GRATINGS IN DRIVES AND PARKING AREAS WHOULD BE OF SUFFICIENT STRENGTH TO WITHSTAND VEHICULAR LOADING.
18. LINTELS OR SLEEVES ARE TO BE PROVIDED FOR DRAINS PASSING THOUGH FOUNDATION PRICKWORK.
19. ALL GULLY CONNECTIONS TO BE 150mm DIAMETER.
20. ALL GULLY CONNECTIONS OTHER THAN MANHOLES TO BE 'Y' JUNCTIONS.
21. ALL DRAIN RUNS ARE TO BE FLUSHED THROUGH AND BUILDING MATERIALS REMOVED WHERE NECESSARY AT THE TIME OF FINAL TEST BY BUILDING INSPECTOR AND PRIOR TO OCCUPATION.
22. ALL SOAKAWAYS TO BE POSITIONED A MINIMUM 5.0m FROM BUILDINGS WHERE UTILISED.
23. ALL FINISHED FLOOR LEVELS ARE SHOWN ON THE DRAWING FOR GUIDANCE ONLY AND MAY NEED TO BE ADJUSTED ON SITE, HOWEVER, THERE IS TO BE NO DEVIATION WITHOUT PRIOR APPROVAL.
24. BOREHOLES WHERE INDICATED ARE SUBJECT TO THE APPROVAL OF THE ENVIROMENT AGENCY.
25. DUE TO THE SHALLOW FALLS TO THE FOUL DRAINAGE SYSTEM, A HIGH DEGREE OF WORKMANSHIP IS REQUIRED THROUGHOUT. ALL JUNCTION CONNECTIONS TO MAIN DRAIN RUNS ARE TO BE MADE WITH 45 DEGREE 'Y' OBLIQUE JUNCTIONS. ANY BENDS INTRODUCED IN RUNS SHALL BE AT INSPECTION CHAMBER AND SHALL BE LIMITED TO 30 DEGREES WHERE POSSIBLE AND NEVER MORE THAN 45 DEGREES.

| Rev | Date | Description |
|---|---|---|
| A | 09.02.24 | INITIAL STRUCTURAL ARRANGEMENT ADDED |

Client

MR A SALIBA

Job Title

FOUR ACRES,
DUNT LANE,
HURST

Drawing Title

TYPICAL DRAINAGE DETAILS

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|---|---|---|
| NTS | FEB '24 | DW |

| Dwg No. | Checked | Rev |
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