



DO NOT SCALE.

- HEALTH & SAFETY**
1. CONTRACTOR SHOULD BE AWARE OF GENERAL CONSTRUCTION RISKS TO PREVENT SLIPS, TRIPS AND FALLS AND TAKE NECESSARY PRECAUTIONS WITHOUT SPECIAL INSTRUCTION.
 2. CONTRACTOR TO PROVIDE TRENCH SUPPORTS AS APPROPRIATE AND ENSURE THAT PLANT REMAINS A SAFE DISTANCE FROM TRENCHES PRIOR TO INSTALLING DRAINAGE
 3. THE TIME THAT EXCAVATIONS ARE OPEN ON SITE SHOULD BE KEPT TO A MINIMUM AND ALL TRENCHES SHOULD BE SURROUNDED BY A BARRIER.
 4. CONNECTIONS TO EXISTING SEWERS TO ONLY BE MADE BY THE RELEVANT WATER AUTHORITY APPROVED CONTRACTOR.
 5. CONTRACTOR TO MAKE OPERATIVES AWARE OF ASSOCIATED DANGERS TO HEALTH SUCH AS LEPTOSPIROSIS (WELLS DISEASE) AND RECOMMENDED PRECAUTIONS. ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING TO BE PROVIDED AS REQUIRED.
 6. UNFINISHED MANHOLES MUST BE COVERED WITH LOAD BEARING MATERIALS AND SURROUNDED WITH BARRIER.
- PIPES & CABLES**
7. ALL EXISTING SERVICE RECORDS TO BE OBTAINED FROM THE M&E CONSULTANT
 8. THE CONTRACTOR SHOULD BE AWARE OF AND REFER TO ALL THE RELEVANT SERVICE RECORDS PRIOR TO ANY WORK COMMENCING. ALL NECESSARY PERMISSIONS AND PROTECTION MEASURES TO BE IN PLACE PRIOR TO ANY EXCAVATION WORKS. FOR THE AVOIDANCE OF DOUBT ANY DISCREPANCIES SHOULD BE REPORTED TO THE M&E AND CIVIL CONSULTANTS IMMEDIATELY. THE CONTRACTOR SHOULD PROCEED WITH CAUTION AND LOCATE ALL SERVICES BY HAND DIG ONLY.
- EXCAVATION/FILL**
9. CONTRACTOR TO ENSURE RELEVANT MEASURES ARE TAKEN TO KEEP PLANT AND PEOPLE A SAFE DISTANCE FROM STEEP SLOPES DURING THE WORKS.
 10. CONTRACTOR TO ENSURE THAT PROCEDURES ARE IN PLACE TO KEEP PEOPLE A SAFE DISTANCE FROM WORKING PLANT WHERE NECESSARY.
 11. CONTRACTOR TO REFER TO GROUND INVESTIGATION REPORT FOR CONTAMINATION TESTS AND TO PROVIDE ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING AS REQUIRED.
 12. ALL FILL MATERIAL, COMPACTION METHOD AND TESTING REGIME TO BE IN ACCORDANCE WITH THE CURRENT 3E CONSULTING ENGINEERS EARTHWORKS SPECIFICATION.

DRAINAGE CHANNELS TO HAVE TRAPPED OUTLETS, WITH 150Ø PIPES. ALLOW FOR TWO RODDING POINTS PER RUN.

NO DEEP ROOTING TREES / VEGETATION SHOULD BE PLANTED WITHIN 5m OF ANY DRAINAGE WORKS

INVERT LEVELS OF THE PUBLIC SEWERS TO BE CHECKED ON SITE PRIOR TO COMMENCING DRAINAGE WORKS AND REPORTED TO THE ENGINEER.

ALL INTERNAL STACKS TO HAVE RODABLE ACCESS OPENING ABOVE GROUND FLOOR SLAB.

IL OF PUBLIC SEWERS TO BE CHECKED ON SITE PRIOR TO COMMENCING DRAINAGE ON SITE AND REPORTED TO THE ENGINEER.

SURFACE WATER ATTENUATION HAS BEEN ALLOWED FOR IN THE DESIGN BY MEANS OF LARGE DIAMETER PIPES. DISCHARGE RATE HAS BEEN RESTRICTED TO 8.6L/S. IF A GRAVITY CONNECTION IS NOT POSSIBLE A PACKAGE PUMP MAY BE REQUIRED.

IT IS ASSUMED THAT THE DRAINAGE SYSTEM / STORAGE SYSTEM WILL NOT BE ADOPTED.

- KEY**
- SITE BOUNDARY
 - PROPOSED FOUL WATER SEWER
 - PROPOSED SURFACE WATER SEWER
 - EXISTING COMBINED SEWER
 - EXISTING SURFACE WATER SEWER
 - PROPOSED LINEAR DRAINAGE CHANNEL WITH OUTLET LOCATION. ALL UNDERGROUND CONNECTIONS TO BE 150Ø UNLESS SHOWN OTHERWISE.
 - RWP PROPOSED RAIN WATER PIPE POSITION TAKEN FROM CURRENT ARCHITECT DRAWING. ALL UNDERGROUND RWP CONNECTIONS TO BE 150Ø UNLESS SHOWN OTHERWISE.

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Note for Contractors

This 3E drawing should be considered along with the risk information contained in the CDM Pre Construction Information. This information will include details of the SIGNIFICANT risks which 3E have identified which may arise from constructing the designs shown on this drawing. A competent Contractor should be aware of the typical risks associated with doing this work.

Note for Workers

DO NOT START YOUR WORK unless you know the Risks and Controls relating to the work on this drawing (including SAFE SEQUENCES OF WORK AND EQUIPMENT).

STOP

Do not issue copies of parts of this drawing without the above Note for Workers (unless you are sure that the Workers can undertake the work safely).

- NOTES**
1. ALL DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH "SEWERS FOR ADOPTION" - 6TH EDITION AND ADOPTING WATER AUTHORITY/SEWERAGE AGENCY REQUIREMENTS AND SPECIFICATIONS.
 2. ALL PRIVATE DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH BUILDING REGULATIONS 2002 EDITION.
 3. CONTRACTOR TO ESTABLISH POSITION SIZE AND DEPTH OF ALL EXISTING SEWERS AND SERVICES PRIOR TO COMMENCEMENT ON SITE.
 4. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT EGRESS WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
 5. THE CONTRACTOR SHALL ALLOW FOR ALL TRAFFIC MANAGEMENT IN CONNECTION WITH ROAD AND SEWER WORKS.
 6. THE CONTRACTOR SHALL ALLOW FOR KEEPING SEWER TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DRAINING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY.
 7. PIPES UP TO AND INCLUDING 300mmØ TO BE UNPLASTICISED PVC. PIPES 375mmØ AND GREATER TO BE CONCRETE CLASS H.
 8. ALL PERIMETER TO BE 100mm DIAMETER UNLESS NOTED OTHERWISE.
 9. IN SITU AND PRECAST CONCRETE UNITS SHALL HAVE SULPHATE RESISTING PORTLAND CEMENT TO BS 4027, UNLESS AGREED OTHERWISE WITH THE ADOPTING AUTHORITY.
 10. PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911 AND BE KITEMARKED. CONCRETE PIPES TO BE CLASS H UNLESS NOTED OTHERWISE.
 11. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124. EN124 HAVE MINIMUM 675 x 675 CLEAR OPENINGS WITH 150 DEEP FRAMES UNLESS OTHERWISE SPECIFIED. MANHOLE COVERS AND FRAMES TO BE OF A NON-ROCKING DESIGN WITHOUT CUSHION INSERTS AND BE KITEMARKED. LOAD CLASS D400 IN VEHICULAR TRAFFICKED AREAS AND LOW CLASS B125 IN FOOTWAYS AND PEDESTRIAN AREAS.
 12. GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124 AND BE OF A NON-ROCKING DESIGN WITH CAPTIVE HINGE ACCESS AND BE KITEMARKED. LOAD CLASS D400 FOR ROADS REGULARLY CARRYING FAST MOVING HEAVY VEHICLES. CLASS C250 TO BE USED IN LESSER TRAFFICKED AREAS eg. ESTATE ROADS, CUL-DE-SACS, RESIDENTIAL CAR PARKING AREAS ETC.
 13. CLASS 2 BEDDING DETAIL SHALL BE PROVIDED WHERE COVER TO THE PIPE BARREL IS LESS THAN 1.2M IN VEHICULAR TRAFFICKED AREAS AND 0.5M ELSEWHERE. TO ALL ROAD GULLY CONNECTIONS AND WITHIN AREAS OF DEEP ROOTING VEGETATION.
 14. WHERE CLASS 2 TRENCH BEDDING DETAIL IS USED, THE CONCRETE BED AND SURROUND SHALL BE DISCONTINUED AT EACH PIPE JOINT OVER THE FULL CROSS SECTION BY MEANS OF A SHARP COMPRESSIBLE FILLER.
 15. SELECTED BACKFILL MATERIAL SHALL CONSIST OF UNIFORM MATERIAL FREE FROM STONES LARGER THAN 40mm, CLAY LUMPS LARGER THAN 75mm, TREE ROOTS, ORGANIC MATTER AND FROZEN SOIL. SELECTED BACKFILL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 225mm. EACH LAYER COMPACTED TO FORM A STABLE TRENCH BACKFILL.
 16. GENERAL BACKFILL MATERIAL TO BE FREE FROM STONES LARGER THAN 40mm. GENERAL BACKFILL MATERIAL IS TO BE PLACED IN LAYERS NOT EXCEEDING 150mm THICKNESS AND EACH LAYER COMPACTED BY HAND. NO MECHANICAL COMPACTION OF FILL MATERIAL SHALL BE PERMITTED WITHIN 300mm ABOVE THE CROWN/BARREL OF THE PIPE.
 17. BACKFILLING AND REINSTATEMENT TO TRENCHES IN PUBLIC HIGHWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE ADOPTING AUTHORITY, OR IN THE ABSENCE OF SUCH, IN ACCORDANCE WITH THE REQUIREMENTS OF THE STREET WORKS REGULATIONS 1992 AND RELEVANT PROVISIONS OF H.A.U.I. SPECIFICATION FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS" JUNE 1992, BOTH UNDER SECTION 71 OF THE NEW ROADS AND STREET WORKS ACT 1991.
 18. BACKFILL TO DRAINAGE TRENCHES IN HARD PAVED AREAS SHALL BE G.S.B. TYPE 1.
 19. ALL ROAD GULLIES ARE TO BE TRAPPED GULLIES.
 20. ALL GULLY LEADS TO BE 150mm DIAMETER.
 21. ALL REDUNDANT EXISTING DRAINAGE TO BE GRUBBED UP OR GROUDED, ANY EXISTING LIVE DRAINAGE SHOULD BE REFERRED TO THE ENGINEER AND RECONNECTED.
 22. ALL ROAD GULLIES & LEADS TO BE CLEARED OF DEBRIS UPON COMPLETION OF WORKS
 23. ANY EXISTING DRAINAGE WHICH BECOMES UNDER TRAFFICKED AREAS IN THE NEW SCHEME SHOULD BE SUBJECT TO THE FOLLOWING REMEDIATION/REVISIONS. WHERE DEPTH OF COVER IS LESS THAN 1200MM, THE EXISTING PIPEWORK SHALL BE EXPOSED & SURROUNDED WITH 150MM CONCRETE AS CLASS "Z" BEDDING, WHERE THE EXISTING MANHOLE COVER & FRAME IS NOT AS MANHOLE DETAIL A, OR B, OR TO BS497 GRADE A, OR EN124 CLASS D, THEN IT SHOULD BE CHANGED FOR SUCH.
 24. THE CONTRACTOR MUST ENSURE THAT ANY OF THE EXISTING DRAINAGE WHICH IS LIVE IS KEPT CLEAR OF DEBRIS AND SHOULD ALLOW FOR JETTING THROUGH THE NEW & EXISTING DRAINAGE UPON COMPLETION.
 25. CONTRACTOR TO TAKE MEASURES TO PROTECT HIS OPERATIVES WITH RESPECT TO THE PRESENCE OF GAS IN SEWER TRENCHES AND MANHOLES THROUGH THE USE OF GAS MONITORING EQUIPMENT AND BREATHING APPARATUS AS REQUIRED.
 26. CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE APPROPRIATE AUTHORITIES, PRIOR TO COMMENCING WORKS.

SUBJECT TO THE APPROVAL OF ALL RELEVANT AUTHORITIES

06.06.18	PRELIMINARY ISSUE	BLS	P1
Date	Revisions	Drawn	Rev.

4 Calder Close
Calder Park
Wakefield
WF4 3BA



Client
NPS GROUP

Project
PROPOSED RESIDENTIAL DEVELOPMENT BEEVER STREET GOLDTHORPE

Title
PROPOSED DRAINAGE LAYOUT

Scale	Author	Checked	Date
1:200	BLS	JM	JUNE 18

Drawing Status
PRELIMINARY

Job Number Originator Zone Level Type Role Drawing No. Rev
P18-209 - 3E - 00 - XX - DR - C - 1000 - P1