DRAINAGE NOTES:

1. PRIOR TO THE COMMENCEMENT OF WORK THE LOCATION, SIZE AND DEPTH OF ALL EXISTING DRAINS / SEWERS AND SERVICES SHALL BE ESTABLISHED BY THE CONTRACTOR. ANY DISCREPANCIES FROM THE INFORMATION INDICATED ON THESE DRAWINGS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR ENGINEER.
2. ALL DRAINAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH BS EN 752 DRAINS AND SEWERS OUTSIDE BUILDINGS, THE CURRENT BUILDING REGULATIONS AND TO THE SATISFACTION OF THE WATER AUTHORITY / BUILDING CONTROL OR SPECIFIC REQUIREMENTS OF THE CLIENT IF APPLICABLE.
3. ANY DRAINAGE TO BE PUT FORWARD FOR ADOPTION SHALL BE CONSTRUCTED TO "SEWERS FOR ADOPTION" AND ANY SPECIFIC REQUIREMENTS OF THE ADOPTING AUTHORITY.
4. ALL PIPES SHALL BE LAID SOFFITS LEVEL AND ALL MANHOLE / INSPECTION CHAMBER INVERT LEVELS SHOWN ARE FOR THE OUTLET PIPE (UNLESS SPECIFICALLY NOTED OTHERWISE). PIPE RUNS SHALL BE LAID TO THE LEVELS INDICATED AND ALL PIPE GRADIENTS ARE APPROXIMATE.
5. THE CONTRACTOR SHALL ALLOW FOR ALL RELEVANT APPROVALS FROM THE RELEVANT AUTHORITIES WHEN WORKING WITHIN THE PUBLIC HIGHWAY AND ON ADOPTED SEWER SYSTEMS.
6. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT AND DIVERSION WORKS AS NECESSARY, TO ALL EXISTING SERVICES TO THE SATISFACTION OF THE PUBLIC UTILITIES.
7. THE CONTRACTOR SHALL ALLOW FOR DEALING WITH SURFACE WATER RUNOFF INTO EXCAVATIONS AND FROM GROUNDWATER BY MEANS OF SUMPS, PUMPING AND DE-WATERING AS APPROPRIATE IN ORDER TO KEEP THE EXCAVATION AS DRY AS REASONABLY PRACTICABLE DURING THE CONSTRUCTION OF THE WORKS. DE-WATERING SHALL BE UNDERTAKEN IN STRICT ACCORDANCE WITH THE SPECIFICATION. THE CONTRACTOR SHALL AGREE THE POINT AND METHOD OF DISCHARGE WITH THE DRAINAGE AUTHORITY.
8. THE CONTRACTOR SHALL TAKE ALL NECESSARY SAFETY PRECAUTIONS IN LINE WITH CURRENT LEGISLATION WHEN WORKING IN / NEAR CONFINED SPACES, DEEP EXCAVATIONS AND UTILITIES.
9. UPON COMPLETION OF THE WORKS THE CONTRACTOR SHALL CLEAN ALL DRAINAGE BY JETTING, REMOVING ALL DEBRIS FROM SITE. NO DEBRIS SHALL BE PERMITTED TO ENTER THE PUBLIC DRAINAGE SYSTEM, WATERCOURSE OR OFFSITE DISCHARGE NETWORK. ALL DRAINS SHALL BE CCTV SURVEYED WITH THE RECORD INFORMATION (INCLUDING VIDEO FOOTAGE) BEING PASSED TO THE ENGINEER FOR REVIEW.
10. LOCATIONS OF GULLIES, RAINWATER PIPES, CHANNEL OUTLETS AND SOIL VENT PIPES, WHERE SHOWN, ARE SHOWN INDICATIVELY. REFER TO ARCHITECTS' DRAWINGS FOR CONFIRMATION OF EXACT LOCATIONS.
11. LEVELS SHOWN ARE APPROXIMATE AND ARE SUBJECT TO SITE ADJUSTMENT TO SUIT FINAL EXTERNAL WORKS LEVELS.
12. ALL PROPRIETARY PRODUCTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS' SPECIFIC REQUIREMENTS AND SPECIFICATIONS.
13. ALL EXISTING DRAINAGE INFRASTRUCTURE NOT REQUIRED AS PART OF THE FINAL DRAINAGE SYSTEM IS TO BE GRUBBED UP AND REMOVED FROM SITE OR GROUTED UP AS DIRECTED BY THE ENGINEER.
14. ALL EXTERNAL GULLY, FLOOR GULLY CONNECTIONS TO BE 150mmØ UNLESS OTHERWISE STATED.
15. ABOVE GROUND RODDING POINTS MUST BE PROVIDED TO FOUL STACKS AND RAINWATER DOWNPIPES WHICH DO NOT CONNECT DIRECTLY TO A MANHOLE. ALL RODDING POINTS MUST BE PROVIDED WITH ACCESS PANELS.
16. ALL INTERNAL FOUL WATER MANHOLES SHALL BE PROVIDED WITH DOUBLE SEALED MECHANICALLY FIXED MANHOLE COVERS IN ACCORDANCE WITH BUILDING REG'S PART H.
17. BELOW GROUND DRAINAGE NETWORKS DO NOT PROVIDE AN ALLOWANCE FOR FAT AND GREASE INTERCEPTION. GREASE TRAPS ARE TO BE INSTALLED IN THE ABOVE GROUND DRAINAGE NETWORK.
18. FOR UTILITY LOCATIONS REFER TO WDA DRAWING 157-WDA-SS-EX-DR-UC-MU100-001 UTILITIES SURVEY.
19. FOR LOCATIONS OF PROPOSED UTILITIES AND SERVICE TRENCHES REFER TO MEP DRAWINGS AND SPECIFICATIONS.
20. WHERE INFILL/RECESSED MANHOLE COVERS ARE SPECIFIED THE LOCATION OF MANHOLES AND ORIENTATION OF THE COVERS SHALL BE COORDINATED ON SITE TO SUIT THE SURFACING MATERIAL AND PAVING ARRANGEMENT WHEREVER POSSIBLE.
21. DUCTILE IRON SHALL BE USED FOR PIPE WORK WHICH IS TO BE CAST THROUGH PILE CAPS / PAD FOUNDATIONS.
22. DRAINAGE CAST THROUGH FOUNDATIONS SHALL BE PROVIDED WITH ROCKER PIPES BOTH UPSTREAM AND DOWNSTREAM OF THE FOUNDATION.
23. IF MANHOLES OVER 6M DEEP TO THE SOFFIT OF THE PIPE ARE REQUIRED THEN PROVIDE A LADDER AND LANDINGS, WITH THE LADDER ARRANGED SO THAT A STRAIGHT, VERTICAL DROP CAN BE ACHIEVED TO THE BOTTOM OF THE MANHOLE. GRID TYPE FLOORING IS TO BE UTILISED FOR THE PLATFORMS, TO FACILITATE COMMUNICATION, AND THE LADDER OPENING IN EACH LANDING IS TO BE PROVIDED WITH A REMOVABLE COVER. WINCH ACCESS WILL THEN BE POSSIBLE TO THE BOTTOM OF THE SHAFT IN ONE STRAIGHT DROP, AND AS EMPLOYEES DESCEND THE MANHOLE THEY CAN REMOVE THE COVER AT EACH LANDING TO GAIN ACCESS TO THE ONE BELOW" THE SHAFT WILL NEED TO BE A MINIMUM WIDTH OF 1200MM TO ALLOW 900MM FROM LADDER TO BACK WALL OF SHAFT.
24. FORMATION LEVEL FOR MANHOLE BASES AND PIPE TRENCHES TO BE FREE FROM SOFT SPOTS. MADE GROUND TO BE REMOVED DOWN TO VIRGIN GROUND, OR AS DIRECTED BY THE ENGINEER.
25. CONTAMINATED MATERIAL TO BE REMOVED TO A LICENSED TIP. WHERE SIGNIFICANT EXCAVATION IS REQUIRED, DUE TO POOR GROUND CONDITIONS SUITABLE EXCAVATED MATERIAL MAY BE RE-USED AS FILL BACK UP TO FORMATION LEVEL.
26. IT IS RECOMMENDED THAT RE-USED EXCAVATED MATERIAL TO BE COMPACTED IN LAYERS WITH A VIBRATORY ROLLER COMPLYING WITH METHOD 2 OF TABLE 6/4 OF DfT SPECIFICATION FOR HIGHWAY WORKS 1991. COMPACTION WORKS TO BE CARRIED OUT IN DRY WEATHER CONDITIONS.
27. CONCRETE FOR MANHOLE BASES, SURROUNDS AND FOR PIPE BEDDING SHALL BE CLASS 2 UNDER THE GUIDELINES IN TABLE 1 OF BRE DIGEST 363 'SULPHATE AND ACID RESISTANCE IN THE GROUND'.
28. GEOTEXTILE FABRIC TO BE WRAPPED AROUND PIPE GRANULAR BEDDING WHERE SEWER TRENCHES ARE FORMED IN RUNNING SAND/SILTY MATERIALS WHERE THERE IS A RISK OF FINE MATERIALS ENTERING THE VOIDED GRANULAR BEDDING. IN THESE CONDITIONS THE GEOTEXTILE IS TO EXTEND UNDER THE MANHOLE BASES.
29. 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.C. "SPECIFICATION FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS" JUNE 1992, BOTH UNDER SECTION 71 OF THE NEW ROADS AND STREET WORKS ACT 1991.

KERBING NOTES:

1. REFER TO LANDSCAPE ARCHITECT PLANS FOR ADDITIONAL PAVING / KERBING REQUIREMENTS.
2. FOR BOUNDARY TREATMENTS (PLANTING AND FENCING) REFER TO LANDSCAPE ARCHITECT DETAILS.
3. FOR GUIDANCE, ALL CLAUSE NUMBERS RELATE TO THE SPECIFICATION FOR HIGHWAY WORKS.
4. PREPARATION AND TREATMENT OF FORMATION TO CLAUSE 616. MADE GROUND TO BE REMOVED DOWN TO VIRGIN GROUND, OR AS DIRECTED BY THE ENGINEER. SUBJECT TO HIGHWAY INSPECTORS APPROVAL, EXCAVATED MATERIAL MAY BE RE-USED AS FILL BACK UP TO FORMATION LEVEL PROVIDED IT MEETS THE SPECIFICATION FOR 6F2. RE-USED EXCAVATED MATERIAL TO BE COMPACTED IN LAYERS WITH A VIBRATORY ROLLER COMPLYING WITH METHOD 2 OF TABLE 6/4 OF SPECIFICATION FOR HIGHWAY WORKS. COMPACTION WORKS TO BE CARRIED OUT IN DRY WEATHER CONDITIONS. SIMILAR TREATMENT REQUIRED IN DRAINAGE TRENCHES. CONTAMINATED MATERIAL TO BE REMOVED TO A LICENSED TIP.
5. ALL CONCRETE BACKING TO KERBS, CHANNELS AND EDGINGS SHALL BE GRADE ST4 UNLESS NOTED OTHERWISE.
6. IN-SITU AND PRECAST CONCRETE UNITS SHALL HAVE SULPHATE RESISTING PORTLAND CEMENT TO BS 4027, UNLESS AGREED OTHERWISE WITH THE ADOPTING AUTHORITY.
7. PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911:2010, BS EN 1916:2009, AND BS EN 1917:2008 AND BE KITEMARKED.
8. THE CONTRACTOR SHALL ALLOW FOR ALL TRAFFIC MANAGEMENT IN CONNECTION WITH ROAD AND SEWER WORKS.
9. GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124 AND BE OF A NON-ROCKING DESIGN WITH LEFT HANDED CAPTIVE HINGE ACCESS AND BE KITEMARKED. LOAD CLASS D400 WHERE LOCATED IN HIGHWAY.
10. SHOULD THERE BE ANY CONFLICT BETWEEN INFORMATION ON THIS DRAWING AND THE HIGHWAY AUTHORITY'S RECOMMENDATION AND SPECIFICATION, THE AUTHORITY'S REQUIREMENTS TAKE PRECEDENCE. THE CONTRACTOR MUST LIAISE CLOSELY WITH THE AUTHORITY WITH RESPECT TO ANY TESTING, APPROVALS, INSPECTIONS, PERMISSIONS OR LICENCES REQUIRED AS WORK PROGRESSES.
11. UNSEALED AND LOOSE MATERIAL, SUCH AS CRUSHED STONE, GRAVEL AND PEBBLES, SHALL NOT BE USED ADJACENT TO THE HIGHWAY.
12. PRE-CAST CONCRETE KERBS, CHANNELS AND EDGINGS SHALL BE TO BS EN 1340:2003 AND SHALL BE LAID TRUE TO LINE AND LEVEL.
13. INTERNAL AND EXTERNAL ANGLE KERBS SHOULD BE USED AT RIGHT ANGLES CHANGES IN DIRECTION TO PRECLUDE THE NEED TO FORM MITRED KERB JOINTS.
14. CBR VALUES ARE TO BE VERIFIED BY IN SITU TESTING AT A MAXIMUM INTERVAL OF 50m AND AT ANY VISIBLE CHANGE OF SUBGRADE.

© Buro Happold Limited or its group companies.
All Rights reserved. Buro Happold and its group companies assert (unless otherwise agreed in writing) their rights under s.77 to 89 of the Copyright, Designs and Patents Act 1988.

DO NOT SCALE THIS DRAWING.

HEALTH AND SAFETY INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION.

- WORKS WITHIN POTENTIAL CONFINED SPACE CONDITIONS
- WORKS IN PROXIMITY TO LIVE SERVICES
- WORKS INTERFACE WITH THE PUBLIC ON MILLER STREET

MAINTENANCE/CLEANING/OPERATION.

- WORKS WITHIN POTENTIAL CONFINED SPACE CONDITIONS
- WORKS IN PROXIMITY TO LIVE SERVICES
- WORKS INTERFACE WITH THE PUBLIC ON MILLER STREET

DECOMMISSIONING/DEMOLITION.

- WORKS WITHIN POTENTIAL CONFINED SPACE CONDITIONS
- WORKS IN PROXIMITY TO LIVE SERVICES
- WORKS INTERFACE WITH THE PUBLIC ON MILLER STREET

Rev	Description	Date	Iss'd	Rev'd	App'd
P02	ISSUED FOR STAGE 3+	25.08.2023	DC	PT	PT
P01	ISSUED FOR STAGE 3 COSTING	27.06.2023	DC	PT	PT

STAGE 3

Project Stage

INFORMATION

Status of Drawing

BURO HAPPOLD

3 Wellington Place
Leeds
LS1 4AP
UK

Tel: +44 (0)113 204 2200
Fax: +44 (0)870 787 4144
Email: 0052681@burohappold.com
Web: www.burohappold.com

Client *MEPC*

Architect *PLANIT-IE*

Project **ANGEL SQUARE PUBLIC REALM**

Drg Title GENERAL CIVIL ENGINEERING NOTES

Job No.	Scale@A1
0052681	N.T.S

Drawn/Designed By.	Checked By.	Approved By.
DC	PT	PT

Drawing No.	Revision
0052681-BHE-XX-XX-DR-C-0100	P02

Dated Created P:\0052681\NOMA Angel Square Public Realm\00 Cross - Info\01_Sheet\0052681-BHE-XX-XX-DR-C-0100_General Notes.dwg