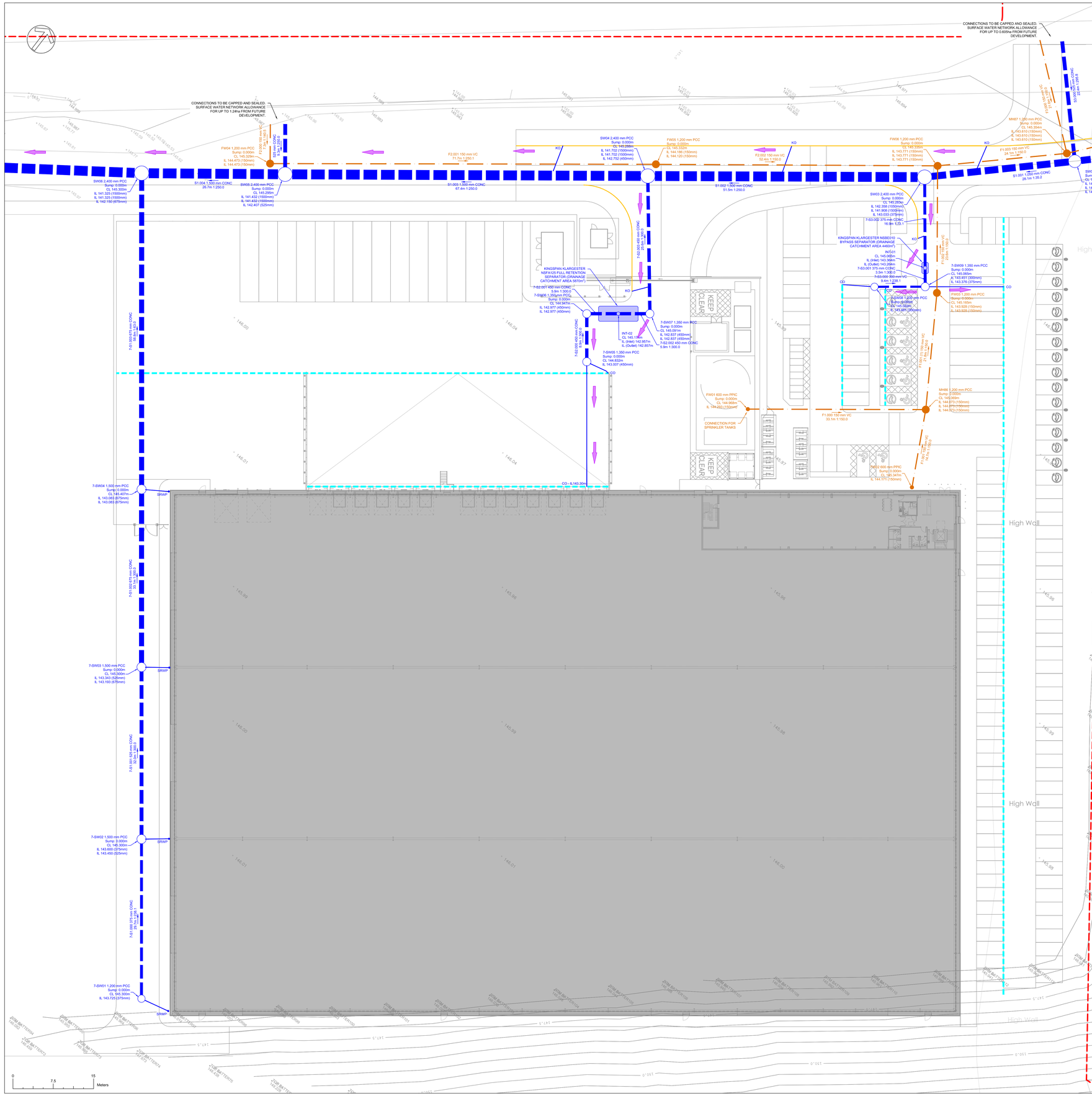

THIS DRAWING SHOULD NOT BE SCALED, DIMENSIONS TO BE VERIFIED ON SITE. ANY DISCREPANCIES SHOULD BE REFERRED TO THE ENGINEER PRIOR TO WORK COMMENCING.

NOTES

GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT HJCE, ARCHITECTS AND M&E ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DRAWING NOT TO BE SCALED. ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.
3. EXISTING GROUND LEVELS BASED ON A TOPOGRAPHICAL SURVEY BY ELLAM SURVEYS SURVEYS LTD REF 8848_20/1.
4. PLOT BOUNDARIES, BUILDING AND EXTERNAL WORKS FOOTPRINTS SHOWN ON THIS DRAWING ARE INDICATIVE ONLY, BASED ON THE LATEST MASTERPLAN DRAWING.
5. ALL DRAINAGE CHANNELS SHALL BE PROVIDED WITH A RODDABLE ACCESS COVER AT THE UPSTREAM END AND A OUTFALL UNIT WITH SILT COLLECTION. LOAD CLASS TO BE F900 TO SERVICE YARD AND C250 TO CAR PARK. CHANNELS INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. CHANNELS TO CAR PARK TO BE BIRCO LINEAR DRAINAGE SYSTEM BY MARSHALLS OR GATIC LINEAR DRAINAGE SYSTEM. DRAINAGE TO SERVICE YARD TO BE GATIC HEAVY DUTY LINEAR DRAINAGE SYSTEM.
6. FULL RETENTION/BYPASS SEPERATORS TO BE PROVIDED WITH OIL LEVELS MONITORS AND VISUAL ALARMS.
7. SIPHONIC ROOF DRAINAGE DESIGNED TO ON A 50 YEAR DESIGN LIFE (CAT 3 RISK FACTOR), WITH A PRIMARY/SECONDARY ARRANGEMENT AND WEIR OVERFLOWS. SECONDARY OVERFLOW NOT ALLOWED ADJACENT CAR PARK/OFFICE AREAS.
8. ALL INTERNAL MANHOLES TO HAVE DOUBLE SEALED/RECESSED & LOCKABLE TYPE COVERS.
9. ON COMPLETION OF THE WORKS INCLUDING ANY DEFECTS RECTIFICATION, ALL DRAINS ARE TO BE SURVEYED USING A CCTV SYSTEM.

DRAINAGE NOTES -

1. ALL BUILDING DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT PARTS OF BS EN 752 'DRAINS AND SEWER SYSTEMS OUTSIDE BUILDINGS', THE CURRENT BUILDING REGULATIONS AND THE LOCAL AUTHORITY BUILDING CONTROL SPECIFICATIONS AND REQUIREMENTS.
2. THE LOCATION, SIZE AND DEPTH OF ALL EXISTING DRAINS/SEWERS AND SERVICES SHALL BE ESTABLISHED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORKS ON SITE. ANY DISCREPANCIES FROM THE INFORMATION INDICATED ON THESE DRAWINGS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. ALL EXISTING DRAINAGE/STRUCTURES TO BE ABANDONED SHALL BE BROKEN OUT AND REMOVED FROM SITE. THE EXCAVATION SHALL BE BACKFILLED WITH A SUITABLE GRANULAR MATERIAL TO THE REQUIRED LEVEL. ALTERNATIVELY, DEEP DRAINS MAY BE CLEANED AND GROUTED WITH A 1:10 CEMENTITIOUS GROUT, WITH STRUCTURES BROKEN DOWN 1m BELOW FINISHED GROUND LEVEL AND BACKFILLED WITH A SUITABLE GRANULAR MATERIAL.
4. ALL PIPES UP TO AND INCLUDING 300Ø TO BE VITRIFIED CLAY OR U-PVC. PIPES 375Ø AND GREATER TO BE CONCRETE CLASS 120.
5. ALL EXTERNAL RIGID PIPEWORK SHALL BE LAID WITH A CLASS S PIPE BEDDING DETAIL WITH 1.2m MINIMUM COVER TO THE PIPE BARREL UNDER VEHICULAR TRAFFICKED AREAS, 0.9m COVER UNDER FIELDS AND 0.6m COVER UNDER FOOTWAYS/GARDENS. WHERE COVER IS LESS THAN THAT STATED, A CLASS A PIPE BEDDING DETAIL SHALL BE USED ON PIPES 225Ø AND LARGER, FOR PIPES LESS THAN 225Ø USE A CLASS Z PIPE BEDDING DETAIL. UNDER BUILDINGS A CLASS S PIPE BEDDING DETAIL SHALL BE USED. WHERE THERE IS LESS THAN 300mm BETWEEN THE BARREL OF THE PIPE AND THE UNDERSIDE OF THE STRUCTURAL FLOOR SLAB, THE PIPE SHALL BE CAST INTEGRAL WITH THE FLOOR SLAB WITH 150mm MINIMUM CONCRETE SURROUND WITH VERTICAL REINFORCEMENT TIED INTO THE SLAB.
6. ALL U-PVC PIPEWORK SHALL BE LAID WITH A CLASS T PIPE BEDDING DETAIL WITH 1.2m MINIMUM COVER TO THE PIPE BARREL UNDER VEHICULAR TRAFFICKED AREAS, 0.9m COVER UNDER FIELDS AND 0.6m COVER UNDER FOOTWAYS/GARDENS. WHERE COVER IS LESS THAN THAT STATED A CLASS Q PIPE BEDDING DETAIL SHALL BE USED.
7. 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.
8. THE CONTRACTOR SHALL ALLOW FOR DEALING WITH SURFACE WATER RUN-OFF INTO EXCAVATIONS AND FROM GROUNDWATER BY MEANS OF SUMPS, PUMPING AND DE-WATERING AS APPROPRIATE, IN ORDER TO KEEP THE EXCAVATION AS REASONABLY DRY AS POSSIBLE DURING THE CONSTRUCTION OF THE WORKS.
9. THE NEED FOR ANY TEMPORARY LAND DRAINAGE SHALL BE ASSESSED BY THE CONTRACTOR PRIOR TO ANY WORKS COMMENCING. THESE TEMPORARY WORKS SHALL TAKE INTO ACCOUNT THE PHASING OF THE WORKS AND THE CONTRACTORS METHOD OF WORKING. NO LAND DRAINAGE, TEMPORARY OR OTHERWISE, SHALL BE PERMITTED TO DISCHARGE INTO THE PERMANENT DRAINAGE SYSTEM OR DIRECTLY ONTO THE PUBLIC HIGHWAY.
10. ALL LEVELS AND DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORKS. ANY DISCREPANCIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
11. THE CONTRACTOR SHALL TAKE ALL NECESSARY SAFETY PRECAUTIONS IN LINE WITH CURRENT LEGISLATION WHEN WORKING IN/NEAR CONFINED SPACES, DEEP EXCAVATIONS, LIVE SEWERS AND MACHINERY.
12. THE CONTRACTOR SHALL SUITABLY PROTECT PEDESTRIANS AND VEHICLES FROM THE WORKING AREAS.
13. ALL PIPES SHALL BE LAID WITH SOFFITS LEVEL AND ALL MANHOLE/INSPECTION CHAMBER INVERT LEVELS SHOWN ARE FOR THE OUTLET PIPE (UNLESS OTHERWISE SHOWN). ALL PIPE RUNS SHALL BE LAID TO THE LEVELS INDICATED, ALL PIPE GRADIENTS INDICATED ARE APPROXIMATE.
14. ALL RAINWATER PIPES/INTERNAL FOUL DRAIN CONNECTIONS ARE SHOWN INDICATIVELY OR TO THE LATEST ARCHITECTS DRAWINGS, ADAPTORS AT FINISHED FLOOR LEVEL TO SUIT CONNECTION DETAILS BY OTHERS. POSITION OF RAIN WATER PIPES AND WASTE OUTLETS MUST BE CONFIRMED FROM ARCHITECT'S DRAWING BEFORE LAYING UNDERGROUND PIPEWORK.
15. ALL INTERNAL BELOW GROUND FOUL DRAINAGE IS TO BE LAID IN ACCORDANCE WITH THE BUILDING REGULATIONS H1 SECTION 2 'CLAUSE 2.34/TABLE 6.
16. ALL BELOW GROUND PLASTIC/GRP TANKS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. THEY SHALL BE PROVIDED WITH SUFFICIENT CONCRETE SURROUND TO COUNTER FLOATATION AND SHALL HAVE A WALL THICKNESS ADEQUATE TO RESIST THE HIGHEST GROUND WATER LEVEL WHICH COULD BE ENCOUNTERED AT THEIR LOCATION.
17. ALL INSITU AND PRECAST CONCRETE PRODUCTS SHALL BE DESIGNED TO SUIT THE GROUND CONDITIONS IDENTIFIED IN THE SITE INVESTIGATION REPORT AND IN ACCORDANCE WITH BRE SPECIAL DIGEST 1, CONCRETE IN AGGRESSIVE GROUND (2001) PART 1: TABLE 2.
18. ALL PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911 AND BE KITEMARKED. ALL PRECAST CONCRETE PIPES SHALL BE CLASS 120 AND COMPLY WITH THE REQUIREMENTS OF NOTE 17 ABOVE.
19. ALL VITRIFIED CLAY PIPES AND FITTINGS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 295 AND BS 65 RESPECTIVELY AND BE KITEMARKED. ALL PIPES SHALL BE EXTRA STRENGTH TO BS 65 OR EQUIVALENT BS EN 295 PIPE CRUSHING STRENGTH AND BE OF A SLEEVED SYSTEM.
20. ALL U-PVC PIPES AND FITTINGS SHALL COMPLY WITH WIS 4-35-01 AND SHALL BE KITEMARKED.
21. WHERE CONCRETE PROTECTION IS REQUIRED TO PIPEWORK, THE CONCRETE SHALL BE DISCONTINUED AT EACH PIPE JOINT OVER THE FULL CROSS SECTION OF THE CONCRETE BY MEANS OF A SHAPED COMPRESSIBLE FILLER.
22. WHERE TWO PIPELINES CROSS WITH LESS THAN 300mm COVER, SURROUND EACH PIPE WITH A FULL CONCRETE BED AND SURROUND (CLASS Z DETAIL) FOR NOT LESS THAN 1m CENTRED ON THE CROSSING AND EXTENDED AS REQUIRED TO WITHIN 150mm OF THE NEAREST FLEXIBLE JOINT.
23. NO MECHANICAL COMPACTION OF FILL MATERIAL SHALL BE PERMITTED WITHIN 300mm ABOVE THE BARREL/CROWN OF THE PIPE.
24. SELECTED BACKFILL MATERIAL SHALL CONSIST OF UNIFORM SOIL, FREE FROM STONES LARGER THAN 40mm, CLAY LUMPS LARGER THAN 75mm, TREE ROOTS & CONTAMINATED MATERIAL. SELECTED BACKFILL MATERIAL IS TO BE PLACED IN LAYERS NOT EXCEEDING 150mm THICKNESS. SHOULD THE EXCAVATED MATERIAL BE UNSUITABLE OR WEATHER CONDITIONS AFFECT THE MATERIALS STABILITY, THEN A SUITABLE HARD GRANULAR MATERIAL SHALL BE USED UP TO FORMATION LEVEL.
25. GENERAL BACKFILL TO DRAINAGE TRENCHES IN VEHICULAR TRAFFICKED AREAS ABOVE THE PIPE BEDDING DETAIL, SHALL BE SUITABLY SELECTED MATERIAL (IN ACCORDANCE WITH BS EN 752) AND BE PLACED IN LAYERS NOT EXCEEDING 225mm, EACH LAYER COMPACTED TO FORM A STABLE TRENCH BACKFILL. SHOULD THE MATERIAL BE UNSUITABLE OR WEATHER CONDITIONS AFFECT THE MATERIALS STABILITY, THEN A HARD GRANULAR MATERIAL SHALL BE USED UP TO FORMATION LEVEL.
26. ALL TRENCH BACKFILL TO BE COMPACTED IN ACCORDANCE CLAUSE 612 OF THE SPECIFICATION FOR HIGHWAY WORKS (SHW) SERIES 600. METHOD OF COMPACTION SHALL BE BASED ON THE MATERIAL BEING PLACED AND SHALL BE CLASSIFIED IN ACCORDANCE WITH THE REQUIREMENTS OF TABLE 6/1. MATERIAL TO BE PLACED AND COMPACTED USING 'METHOD COMPACTION' WITH LAYER THICKNESS AND NUMBER OF PASSES SELECTED USING TABLE 6/4.
27. ALL EXCAVATIONS IN AREAS OF HIGH WATER TABLES AND GRANULAR MATERIALS WITH HIGH SAND/SILT CONTENTS SHALL BE WRAPPED WITH A SUITABLE GEOTECHNICAL FILTER MEMBRANE TO PREVENT MIGRATION OF SANDS/SILTS. FULL HEIGHT CLAY STANKS ACROSS TRENCHES AND/OR AT MANHOLE LOCATIONS AT 25m INTERVALS TO RESTRICT WATER MOVEMENT ALONG THE EXCAVATION.
28. 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 EXISTING DRAINAGE SYSTEM. THE CONTRACTOR SHALL CARRY OUT A COLOUR CCTV SURVEY OF ALL THE DRAINAGE SYSTEMS WITHIN THE AREA OF THE WORKS AND PROVIDE THE ENGINEER WITH TWO COPIES OF THE CCTV ON CD (MPEG-1 FORMAT) AND REPORT TO WRC STANDARD.
29. GEOTEXTILE FABRIC TO BE WRAPPED AROUND GRANULAR PIPE BEDDING WHERE SEWER TRENCHES ARE FORMED IN RUNNING SAND/SILT MATERIAL WHERE THERE IS A RISK OF FINE MATERIAL ENTERING THE VOIDED GRANULAR BEDDING. IN THESE CONDITIONS THE GEOTEXTILE IS TO BE EXTENDED UNDER THE MANHOLE BASES.
30. WHERE UTILITY/LAND DRAINAGE TRENCHES ETC CROSS OVER DRAINAGE TRENCHES, THE CONTRACTOR SHALL CONSTRUCT AN IMPERMEABLE BARRIER TO PREVENT GROUNDWATER INFILTRATING INTO THE DRAINAGE TRENCH.
30. DESIGN ASSUMES A GRAVITY CONNECTION FOR FOUL AND SURFACE WATER SYSTEMS IS POSSIBLE. IF THE EXISTING SEWERS ARE NOT DEEP ENOUGH THEN PUMP STATIONS WILL BE REQUIRED.
31. DESIGN ASSUMES THAT ALL WORKS ARE NOT TO BE ADOPTED AND THAT NO OFF SITE IMPROVEMENT WORKS ARE REQUIRED.
32. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 214, HAVE 600x600 CLEAR OPENINGS UNLESS OTHERWISE SPECIFIED AND BE OF NON-ROCKING DESIGN WITHOUT CUSHION INSERTS AND BE KITEMARKED. LOAD CLASS D400 IN TRAFFICKED AREAS AND LOAD CLASS B125 IN FOOTWAYS. LANDSCAPED AND PEDESTRIAN AREAS. WHERE REQUIRED, COVERS SHALL BE RECESSED TO RECEIVE THE ARCHITECTS SPECIFIED FINISH.
33. GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 124 AND BE OF NON-ROCKING DESIGN WITH CAPTIVE HINGE ACCESS AND BE KITEMARKED. LOAD CLASS D400 IN INDUSTRIAL ESTATE ROADS AND AREAS CARRYING REGULAR HEAVY TRAFFIC AND LOAD CLASS C250 IN ESTATE ROADS AND CAR PARKING AREAS. IN ALL ROAD LOCATIONS, THE GRATE SHALL BE HINGED ON THE SIDE OF THE TRAFFIC DIRECTION (LEFT HAND OPENING).
34. ALL PRIVATE GULLY'S TO BE TRAPPED PCC POTS, 375Ø X 915 DEEP WITH 150Ø OUTLETS UNLESS NOTED OTHERWISE.
35. ALL LINEAR DRAINAGE CHANNELS TO HAVE TRAPPED OUTLETS, WITH 150Ø OUTLETS UNLESS NOTED OTHERWISE. ALLOWANCE SHOULD BE MADE FOR ACCESS/RODDING POINTS AT EACH END OF THE DRAINAGE CHANNEL RUN.
36. ALL WORKS ARE ASSUMED TO BE WITHIN PUBLIC HIGHWAY OR WITHIN LAND OWNERS LANDS & NO WORKS ARE REQUIRED ON THIRD PARTY LAND OWNERS PROPERTY.
37. ALL BELOW GROUND FOUL WATER DRAINAGE AND RWP'S TO BE 100Ø UNLESS NOTED OTHERWISE. ALL DRAINAGE CHANNEL & GULLY CONNECTIONS TO BE 150Ø (UNLESS NOTED OTHERWISE). ALL ITEMS TO BE RODDABLE AT LOCATIONS ABOVE GROUND LEVEL.
38. ALL SWRP's, RWP's AND DRAINAGE POP-UPS ARE SHOWN INDICATIVELY AND BASED ON THE LATEST ARCHITECTS LAYOUT DRAWING. ALL LOCATIONS SHALL BE CONFIRMED BY THE ARCHITECT AND/OR M&E ENGINEER.
39. PROPOSED COVER LEVELS ON THIS DRAWING ARE INDICATIVE ONLY. THE CONTRACTOR SHALL CONFIRM ALL LEVELS INDICATED ARE CORRECT AND REPORT ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.
40. ALL POLYPROPYLENE INSPECTION CHAMBERS (PPIC'S) TO BE 450Ø & ALL PRECAST CONCRETE CHAMBERS ARE 1200Ø. (UNLESS NOTED OTHERWISE).
41. ALL WORKS WITHIN THE PUBLIC HIGHWAY TO BE REINSTATED TO HIGHWAY AUTHORITY REQUIREMENTS.
42. THE CONTRACTOR MUST MAKE PUBLIC SEWER CONNECTION APPLICATION TO RELEVANT WATER AUTHORITY PRIOR TO MAKING CONNECTION, WHEN/IF REQUIRED. THE CONTRACTOR SHALL ALSO ALLOW FOR ANY FEES REQUIRED IN CONNECTION WITH ROAD AND SEWER OPENING PERMITS.
43. ALL KERB DRAINAGE & DRAINAGE CHANNELS TO BE DESIGNED BY SPECIALIST SUB-CONTRACTOR.
44. ALL MANHOLES LESS THAN 1.5m DEEP ARE CONSIDERED AS NONE MAN ENTRY & SHALL BE MAINTAINED FROM GROUND LEVEL.
45. NO DEEP ROOTING TREES / VEGETATION SHOULD BE PLANTED WITHIN 5m OF ANY DRAINAGE WORKS.

DRAINAGE KEY:

- PROPOSED SURFACE WATER DRAIN
- SW — PROPOSED S.W. MANHOLE/PPIC
- RE — PROPOSED RODDING EYE
- PROPOSED DRAINAGE CHANNEL
- G — PROPOSED ROAD GULLY
- RWP — PROPOSED RAINWATER PIPE
- SRWP — PROPOSED SIPHONIC RAINWATER PIPE
- KO — PROPOSED KERB DRAIN OUTLET
- CO — PROPOSED CHANNEL OUTLET CHAMBER
- PROPOSED FOUL WATER DRAIN
- FW — PROPOSED FOUL WATER MANHOLE/PPIC
- BD — PROPOSED BACKDROP CONNECTION
- EXISTING SURFACE WATER SEWER
- EXISTING FOUL WATER SEWER
- PROPOSED ACO KERB DRAIN
- SITE BOUNDARY
- FLOOD ROUTING IN AN EXCEEDANCE EVENT (**GREATER THAN** 1:100 + 40% CC)

REV	DATE	DESCRIPTION	DRN	CHK
P01	03.09.25	INITIAL ISSUE		DM

REVISIONS

PROJECT

UNIT 7 - GATEWAY 36, ROCKINGHAM, BARNSLEY

TITLE

DRAINAGE LAYOUT SHEET 2

CLIENT

EOS INC LIMITED

CONSULTING CIVIL & STRUCTURAL ENGINEERS
www.HJCE.co.uk
T 01924 824 433
E admin@HJCE.co.uk
HJCE

STATUS: **PRELIMINARY**

DRAWN BY	DM	CHECKED BY	AF	APPROVED BY	AF
HJCE REF.	9466	DATE	04.09.25	SCALES @ A2	1:250

PROJECT - ORIGINATOR - VOLUME - LEVEL - TYPE - ROLE - NUMBER: 9466-HJCE-00-XX-DR-C-3101

REVISION: P01

P:\Work Current\9466 - HAR - Unit 7 - Gateway 36 - Rockingham\01-WIP\DRAWINGS\CIVIL\9466-HJCE-00-XX-DR-C-3100-DRAINAGE LAYOUT.dwg