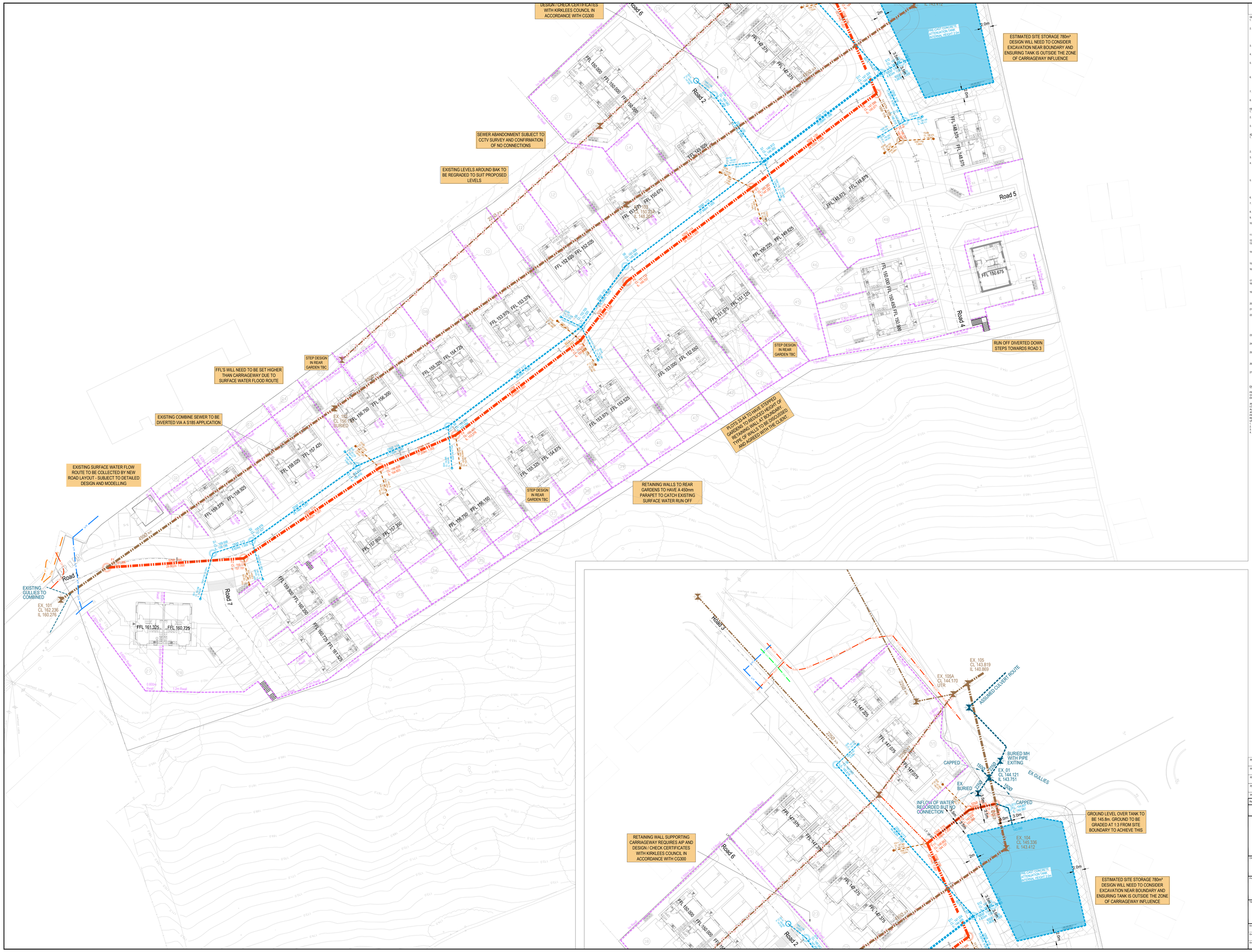

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GENERAL NOTES:

1. DO NOT USE THIS DRAWING IN ISOLATION. THIS DRAWING HAS BEEN PREPARED AS PART OF A SET, AND MUST THEREFORE BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER IMMEDIATELY. THIS DRAWING USES THIRD PARTY INFORMATION IS USED TO PREPARE THE ENGINEERING DESIGN (INCLUDING, ARCHITECTURAL LAYOUT, GROUND INVESTIGATION, EXISTING UTILITIES RECORDS, AND SPECIALIST DESIGN ITEMS). THE ENGINEERING DESIGN MUST THEREFORE BE READ IN CONJUNCTION WITH ALL THIRD PARTY INFORMATION PRIOR TO COMMENCING WORK. QUEENSBERRY DESIGN LTD ARE NOT RESPONSIBLE FOR ANY THIRD PARTY INFORMATION OR DETAILS
2. DRAWING STATUS WILL REMAIN PRELIMINARY UNTIL FULL TECHNICAL APPROVAL IS RECEIVED. ANY WORK CARRIED OUT PRIOR TO THE ISSUE OF DRAWINGS BEING ISSUED FOR FULL TECHNICAL APPROVAL ARE DONE SO AT RISK AND MAY BE SUBJECT TO CHANGE
3. THE CONTRACTOR IS EXPECTED TO PREPARE APPROPRIATE CONSTRUCTION METHOD STATEMENTS FOR ALL ASPECTS OF APPOINTED WORK. THIS SHOULD INCLUDE ANY TEMPORARY PROTECTION / WORKS
4. THE CONTRACTOR MUST MAKE GOOD TO DISCHARGE INTO THE PUBLIC SEWER NETWORK. ANY NEED FOR LAND DRAINAGE SHOULD BE ADDRESSED BY THE GROUND WORKER AND LANDSCAPER DURING CONSTRUCTION AND PLACEMENT OF GARDENS ON AN INDIVIDUAL PLOT BASIS. IF LAND DRAINAGE DESIGNS ARE REQUIRED, THEY SHOULD BE APPOINTED PRIOR TO PLOT COMPLETION.
5. THE CONTRACTOR MUST ALWAYS TO CROSS CHECK ALL DRAINAGE INVERTS PRIOR TO COMMENCING WORK. THIS MAY INCLUDE COMPLETION OF TRIAL HOLES IF INVERT LEVELS HAVE BEEN INTERPOLATED. THE POSITION, LINE AND GRADIENT OF ALL EXISTING DRAINAGE MUST BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORKS. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER IMMEDIATELY.
6. THE CONTRACTOR MUST MONITOR THE "AS BUILT" PROGRESS OF EACH CONSTRUCTION STAGE (ROADS/SEWERS/UTILITY WORKS ETC), TO ENABLE THE NEXT STAGES OF CONSTRUCTION TO BE CHECKED BEFORE INSTALLATION.
7. ALL WORKS TO BE UNDERTAKEN IN COMPLIANCE WITH BS 8601 WORKMANSHIP ON BUILDING SITES

HIGHWAYS

1. ALL HIGHWAY WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT LOCAL HIGHWAY AUTHORITY'S STANDARD SPECIFICATION
2. ALL EXCAVATIONS BELOW PROPOSED AND EXISTING HIGHWAYS TO BE BACK FILLED WITH GRANULAR TYPE 1 SUB BASE AND WELL COMPACTED IN LAYERS NOT EXCEEDING 150MM, UNLESS OTHERWISE AGREED
3. HIGHWAY AUTHORITY TO BE NOTIFIED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORKS.

ADOPTABLE DRAINAGE

1. ALL ADOPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH SEWERAGE SECTOR GUIDANCE DESIGN AND CONSTRUCTION GUIDANCE (CODE FOR ADOPTION) THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATER'S STANDARDS/REQUIREMENTS/LOCAL PRACTICE FOR THE ADOPTION OF SMALL SUBMERSIBLE FOUL AND SURFACE WATER PUMPING STATIONS AND KITEMARKED.
2. ALL PIPELINES TO BE PRESSURE TESTED TO 10 BARS AND 1.5 BARS MIN AND SHALL BE CLASS D/40 TO BS EN 124 WITH 100MM DEEP FRAMES IN HIGHWAYS.
3. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF A CHARTERED CIVIL ENGINEER PRIOR TO THE COMMENCEMENT OF WORKS.
4. YORKSHIRE WATER'S POLICY DEMANDS TO ACCEPT FILTER DRAIN / LAND DRAINAGE RUNOFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM (DIRECTLY OR IN DIRECTLY) AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUNOFF WILL THEREFORE BE REQUIRED AND YOU WILL HAVE TO LIASE WITH THE LOCAL AUTHORITY, LAND DRAINAGE DIVISION AS REGARDS TO THE DISPOSAL OF THE FILTER DRAIN / LAND DRAINAGE RUNOFF
5. COVER SLABS MUST CARRY THE BSI KITEMARK OR WILL BE REJECTED BY YORKSHIRE WATER INSPECTOR. WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOADING BEARING SLAB SHOULD BE FITTED ABOVE THE CHAMBER TO ACCEPT THE COVER AND FRAME WITHOUT ADAPTATION OR MODIFICATION. SPECIFIED COVER SIZE. PLEASE REFER TO CONCRETE PIPE SYSTEMS ASSOCIATION (CPSA) TECHNICAL BULLETIN ISSUED AUTUMN 2004 FOR KITEMARKED COVER SLAB OPENING SIZES. THE SPECIFICATION OF COVERS WHICH ARE NOW AVAILABLE WHICH MUST BE KITEMARKED FOR USE IN HIGHWAYS AGREED AUTHORITY.
6. POLYMER RESISTANT CEMENT (CDG-DC) AND PRECAST CONCRETE PRODUCTS MUST BE USED ON A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
7. SEWERS MUST HAVE 5 METRES CLEARANCE FROM TREES AND HEDGES OR THE WIDTH OF THE CANOPY AT MATURE HEIGHT.
8. SEWERS MUST HAVE 5 METRES CLEARANCE FROM TREES AND HEDGES. REFER TO SFA FIGURE 21 FOR FURTHER RESTRICTIONS ON TREE PLANTING ADJACENT TO SEWERS.
9. SEWERS LAID IN CLASS 'B' BEDDING (150MM GRANULAR BED AND SURROUND. WHERE DEPTH EXCEEDS 4.0M THE PIPE MATERIAL MUST BE UPGRADED TO ACCEPT CLASS 'C' BEDDING (100MM IN NONE VEHICULAR ACCESS AREAS) THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED AND SURROUND
10. ALL MATERIALS USED IN THE WORKS TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION SCHEDULE AND TO
11. ALL ADOPTABLE SEWERS TO BE BSI KITEMARK (CERTIFIED TO WIS 4-35/01).
12. ADOPTABLE SEWER PIPES TO BE LAID IN MAXIMUM 3M LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS. 12 BEDDING AND BACKFILL MATERIAL TO SURROUND PIPE TO BE PROVIDED AS SPECIFIED IN THE WRC SEWERS FOR ADOPTION (6 ED).
13. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND YORKSHIRE WATER WOULD PREFER CLAYWARE CHANNEL IN MANHOLES. WE HAVE FOUND THAT PLASTIC CHANNELS ARE DIFFICULT TO SET IN CONCRETE BECAUSE THEY FLOAT AND A SATISFACTORY FINISH CANNOT BE OBTAINED ON THE BENCHING.
14. ALL MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MUST NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.
15. YORKSHIRE WATER POLICY IS NOT TO ACCEPT TYPE "C" BRICK MANHOLES AND 1500MM Ø MANHOLE RINGS. INSTEAD IT IS PREFERRED THAT YOU USE A TYPE 'B' MANHOLE WITH 1200MM Ø OR 1500MM Ø RINGS. WITH THE OPENING SITED OVER THE CHANNEL WHERE DEPTH EXCEEDS 4.0M TO INVERT.
16. CONCRETE PIPES SHOULD BE CLASS OR TO BS 1916 (BS 5911-1: 2002
17. THE POSITION, LINE AND DIAMETER OF ALL EXISTING DRAINAGE APPURTAUS SHOULD BE CONFIRMED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORKS. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER IMMEDIATELY.
18. THE CONNECTION OF FOUL AND SURFACE WATER DRAINAGE TO THE EXISTING PUBLIC SEWER SYSTEM SHALL BE SUBJECT TO THE APPROVAL OF THE LOCAL SEWERAGE UNDERTAKER. THE CONTRACTOR IS EXPECTED TO APPLY FOR RELEVANT PERMITS PRIOR TO COMMENCEMENT
19. 1200Ø CHAMBER RINGS ARE ALLOWED ON THE ADOPTABLE NETWORK AND ARE TO BE KITEMARKED.
20. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MUST NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.
21. ADOPTABLE SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND YORKSHIRE WATER WOULD PREFER CLAYWARE CHANNEL IN MANHOLES. WE HAVE FOUND THAT PLASTIC CHANNELS ARE DIFFICULT TO SET IN CONCRETE BECAUSE THEY FLOAT AND A SATISFACTORY FINISH CANNOT BE OBTAINED ON THE BENCHING.
22. WHERE A B125 COVER AND FRAME HAS BEEN APPROVED, THIS MUST NOT BE COATED IN BITUMEN AND MUST HAVE A 50MM DEEP SKIRT TO ACCOMMODATE STANDARD LIFTING KEYS. SCREW DOWN COVERS ARE NOT ACCEPTABLE.
23. THE POSITION, LINE AND DIAMETER OF ALL EXISTING DRAINAGE APPURTAUS SHOULD BE CONFIRMED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORKS. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER IMMEDIATELY.
24. THE CONNECTION OF FOUL AND SURFACE WATER DRAINAGE TO THE EXISTING PUBLIC SEWER SYSTEM SHALL BE SUBJECT TO THE APPROVAL OF THE LOCAL SEWERAGE UNDERTAKER. THE CONTRACTOR IS EXPECTED TO APPLY FOR RELEVANT PERMITS PRIOR TO COMMENCEMENT
25. THERE MUST BE ENOUGH CLEARANCE AT CROSSOVERS TO ACCOMMODATE BEDDING TO BOTH PIPES, APPROX. 300MM. IF CROSSOVER IS NEAR THE ROCKER THEN THE CLEARANCE NEEDED MAY BE INCREASED.
26. THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS : 100MM DIA. CLASS 120 TO EN 295-1 AND 150MM DIA. AND LARGER CLASS 120 TO EN 295-1. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE : CLASS 120 TO EN 1916/BS5911-1 2002. PLASTIC PIPES SHOULD CONFORM TO WIS 4-35-01 AND EN 13476.

EXISTING SERVICES

PRIOR TO THE COMMENCEMENT OF ANY WORKS UNDER GROUND MAPPING SURVEYS AND CONSTRAINTS PLAN IS TO BE REFERRED TO ANY DISCREPANCIES ARE TO BE REPORTED TO ENGINEER.

ANY EXISTING SERVICES WHICH MAY BE AFFECTED BY THE PROPOSED WORKS SHOULD BE LOCATED BY MEANS OF A HAND DIG IN CLOSE LIAISON WITH THE STATUTORY SERVICE AUTHORITIES. THE CONTRACTOR SHALL INFORM THE DEVELOPER OF ANY SERVICES THAT MAY BE AFFECTED BY THE PROPOSED WORKS. THE CONTRACTOR SHALL ENSURE THAT PRIOR TO COMMENCEMENT OF WORK, AS CONSTRUCTED INFORMATION IS IN THE CONTRACTORS RESPONSIBILITY TO PROVIDE THE FOLLOWING AS CONSTRUCTED DRAWINGS TO THE DEVELOPER UPON THE COMPLETION OF THE WORKS COVERED BY THE CONTRACT :

1. POSITIONED/ORDINATES OF ALL ADOPTABLE MANHOLES.
2. INVERT LEVELS OF ALL ADOPTABLE MANHOLES.
3. NEW GULLY POSITIONS AND CONNECTIONS.
4. POSITION AND DEPTH OF SERVICE DUCTS FOR WATER, GAS, ELECTRIC, BT, CABLE AND STREET LIGHTING, STATING SIZE AND NUMBER OF DUCTS.

HEALTH & SAFETY RISKS

IN ADDITION TO THE STANDARD HAZARDS AND RISKS NORMALLY ASSOCIATED WITH THE TYPE OF WORK DETAILED ON THIS DRAWING PLEASE NOTE THE FOLLOWING RESIDUAL HEALTH AND SAFETY RISKS THESE RISKS ARE APPLICABLE TO THE SET OF DRAWINGS FORMING THE DESIGN

CONSTRUCTION RISKS

C1	BURIED SERVICES - OBTAIN ACCURATE LOCATIONS OF UNDERGROUND SERVICES PRIOR TO EXCAVATION.
C2	CONFINED SPACE WORKS - ENSURE STAFF ARE SUITABLY TRAINED.
C3	CONSTRUCTION ADJACENT LIVE TRAFFIC - ENSURE SAFE METHOD OF WORKING
C4	DEEP EXCAVATIONS - RISK OF LAND SLIPS AND LARGE FALLS CONNECTION TO EXISTING LIVE SEWERS - RISK OF DROWNING
C5	CONSTRUCTION ADJACENT LIVE TRAFFIC - ENSURE SAFE METHOD OF WORKING
C6	CONTAMINATED GROUND - SITE ASSESSMENT MUST BE CARRIED OUT TO ASCERTAINE RISK IF CONTAMINATED GROUND IS UNCOVERED
C7	UNFORESEEN GROUND CONDITIONS - CONTRACTOR SHOULD CARRY OUT INVESTIGATORY WORKS TO MINIMISE RISK OF ENCOUNTERING UNKNOWN STRUCTURES
C8	STEEP SIDED STRUCTURES/RETAINING WALLS - COULD RESULT IN FALLS FROM HEIGHT ENSURE FALL PROTECTION PRIOR TO PERMANENT FENCING BEING ERECTED
C9	SOFT GROUND, MADE GROUND AND PEAT POSSIBLE WITHIN ALL EXCAVATIONS
C10	SHALLOW GROUND WATER WILL BE ENCOUNTERED <1m BGL

OPERATION & MAINTENANCE RISKS

OM 1	UNTREATED/POLLUTED WATER CAN CAUSE ILL HEALTH FOR OPERATIVES
OM 2	WORKING ON OR NEAR SEWERS STEEP SIDED STRUCTURES/RETAINING WALLS COULD RESULT IN FALLS FROM HEIGHT
OM 3	ENSURE BARRIERS ARE PLACED AROUND TOPS OF RETAINING WALLS AND EXCAVATIONS PRIOR TO PERMANENT FENCING BEING ERECTED CONFINED SPACE WORKS - ENSURE STAFF ARE SUITABLY TRAINED.

ALL WORKS MUST BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING IN ACCORDANCE WITH THE REQUIREMENTS DEFINED IN THE CDM REGULATIONS AND BS 8560
THE RISK LISTED ARE NOT EXHAUSTIVE REFER TO DESIGNERS RISK ASSESSMENT FOR FULL DETAILS

LEGEND

ADOPTABLE DRAINAGE

PROPOSED ADOPTABLE COMBINED MANHOLE	P1
PROPOSED ADOPTABLE STORM MANHOLE	S1
EXISTING ADOPTED STORM MANHOLE	EX.01
EXISTING ADOPTED COMBINED MANHOLE	EX.01

Rev.	Date	Revision Details	Drawn	Checked
P05	11.12.24	LAYOUT REVISION P6 ADDED	ND	ND
P04	14.11.24	APARTMENTS AMENDED AS LAYOUT REVISION P4	JR	ND
P03	15.10.24	APARTMENTS AMENDED AS LAYOUT REVISION P2	ND	ND
P02	08.10.24	APARTMENTS AMENDED - ISSUED FOR PLANNING	JR	ND
P01	24.09.24	FIRST ISSUE	JR	ND

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Client: STRATA/THIRTEEN

Project: MAIN AVENUE COWERSLEY

Title: DRAINAGE STRATEGY

Drawn	Checked	Date
JR	ND	24.09.2024

Drawing Number: 2153-QD-XX-HD-DR-C-00-01

Drawing Status	Scale	Rev.
FEASIBILITY	1:250 - A0	P05