

**EXISTING INVERT LEVEL 42.715m
CONFIRMED BY CLIENT, TO BE
CHECKED BY CONTRACTOR BEFORE
ANY ON SITE SEWERS ARE LAID TO
ENABLE DESIGN CHANGES TO BE
MADE AS REQUIRED.
TRIAL HOLE EXCAVATIONS / DRAINAGE
SURVEY WILL BE REQUIRED TO
LOCATE THIS EXISTING SEWER TO
ASCERTAIN DEPTH**

EXISTING SERVICES
CROSSING THE SITE - REFER
TO UTILITIES SURVEY FOR
TYPE AND POSITIONS

PLEASE NOTE: EXTRA CARE TO BE TAKEN AROUND EXISTING BRICK CULVERT WHEN CONSTRUCTING NEW MANHOLE S107. SEGMENTED RING TO BE CUT TO FACILITATE EXISTING BRICK CULVERT

INTERPOLATED INVERT LEVEL 40.540m
 CONFIRMED BY CLIENT, TO BE
 CHECKED BY CONTRACTOR BEFORE
 ANY ON SITE SEWERS ARE LAID TO
 ENABLE DESIGN CHANGES TO BE
 MADE AS REQUIRED.
 TRIAL HOLE EXCAVATIONS / DRAINAGE
 SURVEY WILL BE REQUIRED TO
 LOCATE THIS EXISTING SEWER TO
 ASCERTAIN DEPTH _____

GENERAL

1. All adoptable sewers and associated works are to comply fully with "Design and Construction Guidance" & Local Bylaws.
2. All highway works to be to adoptable standards and to comply fully with the Local Authority specification.
3. All private drainage works are to comply fully with part H of the Building Regulations
4. All existing invert levels to be checked by the Contractor at the start of works and any discrepancies notified to the RW. All works are based on topographical survey information provided by others.
5. All materials to bear the relevant B.S.Kitemark and comply fully with the specifications.
6. All concrete & concrete products must use Sulphate resistant cement (unless the site investigation report proves that sulphate attack from soils and groundwater will not occur)
7. All opening notices etc. as required under highways acts etc. are to be obtained prior to commencement of works.
8. All works are to be inspected by LA, NHBC or Relevant Water Authority as applicable.

C.D.M. REGULATIONS 2015

In line with the above regulations we are obliged to inform the Client of their responsibilities under section CDM 15/1, and residual risks that may be encountered in the construction of these works.

All design work has been carried out with Health and Safety aspects in full consideration.

Wherever possible risks have been eliminated from the design, however due to the very nature of this type of work it is not possible to remove all the risks from the design.

We would also respectfully remind the Client of his obligations to take all reasonable steps in ensuring that only competent Contractors who have a valid safety policy are employed.

They should also provide satisfactory responses at tender stage so to the manner in which they will deal with the elements of risk involved in this type of work and in particular those highlighted by REFA below:-

1. Support / participate for ALL excavation work.
2. Guarding to edges of excavations to prevent people, materials and vehicles falling into excavation.
3. Guarding of excavations outside working hours to prevent unauthorised access.
4. Underpinning to adjacent roads or structures.
5. Confined space operations.
6. Dealing with existing services.
7. Traffic management on existing highways.
8. Procedure to be followed in event of accident or emergency.
9. Method of working where contaminated ground is present on site.
10. Confirmation will be required that all operatives are adequately trained, copies of relevant training certificates to be supplied.

The above list is by no means exhaustive but it does highlight operations that present a risk to contractors and the general public.

For clarification on any item please contact REFA.

CULVERTED WATERCOURSE
EXISTING INVERT LEVEL BY
INTERPOLATION = 40.540m (2400mm#)
TO BE CHECKED BY CONTRACTOR
BEFORE ANY ON SITE SEWERS ARE
LAID TO ENABLE DESIGN CHANGES
TO BE MADE AS REQUIRED

EX MH SW1
CL 44.869m
IL 40.540m 2400#
4.329m DEEP
CONFIRMED BY
CLIENT

ALL PIPES TO HAVE CLASS "S" BED
AND SURROUND UNLESS SHOWN OTHERWISE

Abnormal or unusual residual risks associated with the design outcomes shown on this drawing are:-

- | | |
|---|--|
|  | EXISTING SERVICES
EXISTING ELECTRIC MAIN |
|  | WORKING ON EXISTING HIGHWAY
AND IN AREAS WHERE MEMBERS OF
PUBLIC MAY HAVE ACCESS |
|  | DANGER OF COLLAPSE TO
ALL EXCAVATIONS - RISK TO BE
ASSESSED AND MANAGED BY CONTRACTOR
IN ACCORDANCE WITH HSE GUIDANCE |
|  | WORKING ADJACENT TO EXISTING
CULTURED WATERCOURSE OR LIVE
FOUL SEWER (WEIL'S DISEASE) |
|  | WORKING CLOSE TO EXISTING CULVERT |
|  | WORKING CLOSE TO EXISTING RAILWAY
LINE |

REFA Ltd has followed its Design Risk Management process for Hazard Elimination and Risk reduction in developing the designs shown on this drawing. Abnormal or unusual residual risks may be shown above where it is considered that such risk may not normally be expected by competent persons engaged on work of this nature or type

ALL PIPES TO HAVE CLASS "S" BED
AND SURROUND UNLESS SHOWN OTHERWISE
ALL CONCRETE PIPES TO BE CLASS 120
ALL CLAY PIPES TO BE EXTRA STRENGTH VITRIFIED CLAY
ALL UPVC PIPES TO COMPLY WITH BS 4660:2000 & BS EN 1401-1
STRUCTURED WALL UPVC PIPES TO COMPLY WITH WIS 4-35-01
MAX. PIPE LENGTH TO BE 3.0m

FOUNDATIONS TO BE DESIGNED / CONSTRUCTED
TO TAKE INTO ACCOUNT THE PROXIMITY AND
DEPTH OF ADJACENT SEWERS AND DRAINS IN
ACCORDANCE WITH SFA 7TH EDITION PART B

CONTRACTOR TO BE AWARE OF AND TAKE APPROPRIATE ACTION TO ENSURE DE-STABILISATION OF ANY EXISTING STRUCTURES, TREES, EMBANKMENTS OR OTHER FEATURES DOES NOT OCCUR AS A RESULT OF ANY EXCAVATIONS WORKS UNDERTAKEN IN ACCORDANCE WITH THE DESIGNS SHOWN ON THIS DRAWING
IF CONTRACTOR IS UNSURE ABOUT ANY ASPECT OF THE ABOVE HE SHOULD SEEK ADVICE BEFORE COMMENCING EXCAVATION WORK.

CONTRACTOR/CLIENT SHOULD NOTE THE EXISTENCE OF EXISTING BURIED PLANT AND OR OVERHEAD POWER CABLE(S) BEFORE WORK COMMENCES CONTRACTOR MUST UNDERTAKE RISK ASSESSMENT AND PROVIDE METHOD STATEMENT FOR WORKING IN THIS AREA IN ACCORDANCE WITH HSE AND POWER SUPPLIERS GUIDELINES TO SATISFACTION OF THE PRINCIPLE DESIGNER

TO CATER FOR ANY DEVIATIONS IN THE
AS CONSTRUCTED ROAD / FOOTPATH LEVELS
IN RELATION TO THE DESIGN LEVELS,
THE PROPOSED FLOOR LEVELS SHOWN
MUST BE CHECKED ON SITE BY THE SITE AGENT
OR ENGINEER IN RELATION TO AS BUILT ROAD
LEVELS TO ENSURE COMPLIANCE WITH PART M
OF THE BUILDING REGULATIONS

ALL EXISTING SERVICES TO BE LOCATED AT COMMENCEMENT IN ACCORDANCE WITH UNDERTAKERS REQUIREMENTS AND PROTECTED ACCORDINGLY DURING THE WORKS

ALL EXISTING MANHOLE INVERT LEVELS ARE TO
LOCATED AND SURVEYED PRIOR TO START ON SITE
TO ENSURE THAT THEY ARE CORRECT AND ALSO
TO ENSURE THAT LEVEL CLASHES ARE AVOIDED AND
THAT INTERPOLATED INVERT LEVELS ARE CORRECT.
ANY DISCREPANCY TO BE REPORTED TO
REFA PRIOR TO START TO ENABLE ANY CHANGES
TO BE MADE TO DESIGN THAT PROVE NECESSARY

ALL DRAGOUT CONNECTIONS FROM MAIN
SEWER MANHOLES TO FIRST INSPECTION
CHAMBER TO BE 150mm Ø UNLESS
INDICATED OTHERWISE

ALL ROAD GULLY CONNECTIONS TO
BE 150mm Ø

ALL STORAGE MANHOLES ON THE TANK SEWER
WILL NEED TO BE CONCRETE SURROUNDED AS
THEY ARE WATER RETAINING.

OUTSIDE OF NEW SEWERS TO BE
LOCATED 1.0m MINIMUM FROM
KERBLINES OUTSIDE OF MANHOLE
CHAMBERS TO BE LOCATED 0.5m
MINIMUM FROM KERBLINES

PLEASE NOTE THAT THIS DRAWING IS ISSUED FOR INFORMATION/TENDER PURPOSES ONLY UNTIL TECHNICAL APPROVAL HAS BEEN GRANTED. ANY WORK UNDERTAKEN PRIOR TO TECHNICAL APPROVAL BEING GRANTED IS AT THE CLIENTS RISK.