



BENCH MARK INFORMATION

All levels relate to O.S (Newlyn) Datum. Established using network RTK. Survey plotted on a plane local grid, orientated to National Grid.

ALL PIPES TO HAVE CLASS "S" BED EXCEPT PIPES WITH CONCRETE PROTECTION. MINIMUM 150mm THICK GRANULAR BEDDING AND SURROUND MATERIAL TO PIPES WITH CONCRETE PROTECTION.

IF THE CLIENT OR CONTRACTOR IDENTIFIES ANY DISCREPANCIES BETWEEN THE DRAWINGS PRODUCED BY REFA FOR THIS PROJECT THEN THEY SHOULD CONTACT REFA IMMEDIATELY AND BEFORE ANY WORKS COMMENCE OR PROCEED IF IN DOUBT ASK !!!

PROPOSED SURFACE WATER SYSTEM DESIGNED TO CATER FOR EVENTS UP TO AND INCLUDING THE 1% AEP + 45% CC WITH NO PREDICTED SURFACE FLOODING. TOTAL AGREED SURFACE WATER DISCHARGE RATE FOR FULL ARE AS FOLLOWS:
1 YEAR RP = 26.8 L/SEC
30 YEAR RP = 57.3 L/SEC
100 YEAR + 45% CC = 75.2 L/SEC
THIS IS TO BE SPLIT OVER FOUR SEPARATE OUTFALL LOCATIONS BY WAY OF HYDROBRAKE FLOW CONTROL DEVICES.

MAX. PREDICTED TOP WATER LEVEL FOR 30 YEAR EVENT = 43.893m
MAX. PREDICTED TOP WATER LEVEL FOR 100 YEAR + 45% CC EVENT = 45.866m

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

THE S38/S278 AGREEMENT FOR THIS SCHEME IS ALSO ASSOCIATED WITH THE LATEST APPROVED REVISION OF THE FOLLOWING PLANS:-
ROAD AND DRAINAGE LAYOUT - DRGS: 22122/100/1, 22122/100/2
LONGITUDINAL SECTIONS - DRGS: 22122/100/3, 22122/100/4, 22122/100/5, 22122/100/6, 22122/100/7
ROAD LEVELS & CONTOURS - DRGS: 22122/101/1
TYPICAL ROAD CONSTRUCTION DETAILS - DRGS: 22122/113/1, 22122/113/2
KERBING & SURFACING - DRGS: 22122/116/1, 22122/116/2

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CIVILS DESIGN RISK MANAGEMENT

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 CULVERTED
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

GENERAL

- All adaptable sewers and associated works are to comply fully with "Design and Construction Guidance" & Local Practices
- All highway works to be to adaptable standards and to comply fully with the Local Authority specification.
- All private drainage works are to comply fully with part H of the Building Regulations
- All existing invert levels to be checked by the Contractor at the start of works and any discrepancies notified to REFA. All levels are based on topographical survey information provided by others.
- All materials to bear the relevant B.S. Kitemark and comply fully with the specifications. 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)
- All opening notices etc. as required under highways acts etc. are to be obtained prior to commencement of works. All works are to be inspected by L.A., 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 given 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 as 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:-

- Support / treatment for ALL excavation work.
- Guarding to edges of excavations to prevent people, materials and vehicles falling into excavation.
- Guarding of excavations outside working hours to prevent unauthorised access.
- Undermining to adjacent roads or structures.
- Confined space operations.
- Dealing with existing services.
- Traffic management on existing highways.
- Procedure to be followed in event of accident or emergency.
- Method of working where contaminated ground is present on site.
- 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.

rev	Revision details	RevBy	Date
H	ROAD 6 LEVELS REVISED	RF	15.05.24
G	REVISED FOLLOWING S38 COMMENTS	RW	22.09.23
F	TWL'S & HB'S REVISED FOLLOWING SW RECALCULATIONS	RW	13.07.23
E	FW REFERENCE NUMBERS CORRECTED	RF	04.04.23
D	SEWER REDESIGN FOLLOWING UPDATED EXISTING SEWER INFORMATION	RF	04.04.23
C	REVISED FOLLOWING LLFA COMMENTS	AS	23.02.23
B	CULVERT DIVERSION & NETWORK 4 REVISED ROADS 4, 5 & RAMPS REVISED	RF	20.01.23
A	MINOR SEWER REVISIONS TO SW & FW SEWERS IN ROADS 3 & 4. F10, F18, S53 REMOVED	RF	30.11.22



Drawing Stage	Drawing Status
☐ Draft	☐ Comments
☒ Issued	☐ Information
	☒ Approval
	☐ Tender
	☐ Construction
	☐ As Built

Client
KELLEN HOMES LIMITED

Job title
BENNETT STREET MANCHESTER

Drawing title
LONGITUDINAL SECTIONS 3



GEOTECHNICAL ENVIRONMENTAL

Date: 17.11.22 Scale: 1:500 H ; 1:100 V Drawn: RF

DRAWING No: 22122/100/5 Rev: H

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