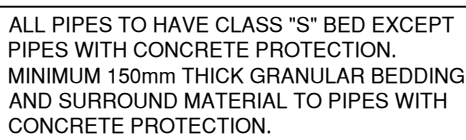
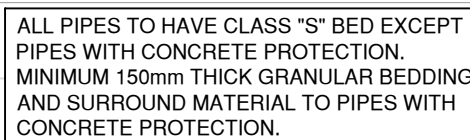


PROPOSED SURFACE WATER SYSTEM
DESIGNED TO CATER FOR EVENTS UP TO AND
INCLUDING THE 1% AEP + 45% CC
WITH NO PREDICTED SURFACE FLOODING.
TOTAL AGREED SURFACE WATER DISCHARGE
RATE FOR FULL ARE AS FOLLOWS:
1 YEAR RP = 25.8L/SEC.
30 YEAR RP = 57.3 L/SEC.
100 YEAR + 45% CC = 75.2 L/SEC.
THIS IS TO BE SPLIT OVER FOUR SEPARATE
OUTFALL LOCATIONS BY WAY OF HYDROBRAKE
FLOW CONTROL DEVICES.



THE S38/S278 AGREEMENT FOR THIS SCHEME IS ALSO ASSOCIATED WITH THE LATEST APPROVED REVISION OF THE FOLLOWING PLANS:-
ROAD AND DRAINAGE LAYOUT - DRGS: 21222/100/1, 21222/100/2
LONGITUDINAL SECTIONS - DRGS: 21222/100/3, 21222/100/4,
21222/100/5, 21222/100/6, 21222/100/7
ROAD LEVELS & CONTOURS - DRGS: 21222/101/1
TYPICAL ROAD CONSTRUCTION DETAILS - DRGS: 21222/113/1, 21222/113/2
KERBING & SURFACING - DRGS: 21222/116/1, 21222/116/2



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.

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

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 !!!

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

GENERAL

1. All adoptable sewers and associated works are to comply fully with "Design and Construction Guidance for Sewerage Assets".
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 investigations to be checked by the Contractor at the start of works and any discrepancies notified to REFA.
5. All levels are based on topographical survey information provided by the Contractor.
6. All materials to bear the relevant B.S. Kitemark and comply fully with the specifications.
7. All concrete & concrete products must use Sulphate resistant cement. If the site investigation report proves that sulphate attack from soils and groundwater will not occur)
8. All opening notices etc. as required under highways act etc. are to be obtained prior to commencement of works.
9. All works are to be supervised 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 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:-

1. Support / treatment 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. Undermining 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.

[illegible]

E	REVISED FOLLOWING S38 COMMENTS	RW	22.09.23
D	TWL'S & HB'S REVISED FOLLOWING SW RECALCULATIONS	RW	13.07.23
C	SEWER REDESIGN FOLLOWING UPDATED EXISTING SEWER INFORMATION	RF	06.04.23
B	REVISED FOLLOWING LLFA COMMENTS	AS	23.02.23
A	CULVERT DIVERSION & NETWORK 4 REVISED ROADS 4, 5 & RAMPS REVISED	RF	20.01.23

rev	Revision details	Rev.By	Date
 <div> worksafe designer www.smasltd.com </div> <div> <small>as recognised by</small>  <div> SSIP <small>SAFETY SCHEMES IN PROCUREMENT</small> </div> </div>			

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

Client

**KELLEN HOMES
LIMITED**

Job title

**BENNETT STREET
MANCHESTER**

Drawing title

**LONGITUDINAL
SECTIONS 4**

REFA

CONSULTING ENGINEERS
CIVIL, STRUCTURAL

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Date 17.11.22	Scale 1:500 H ; 1:100 V	Drawn RF
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DRAWING No	22122/100/6	Rev E
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