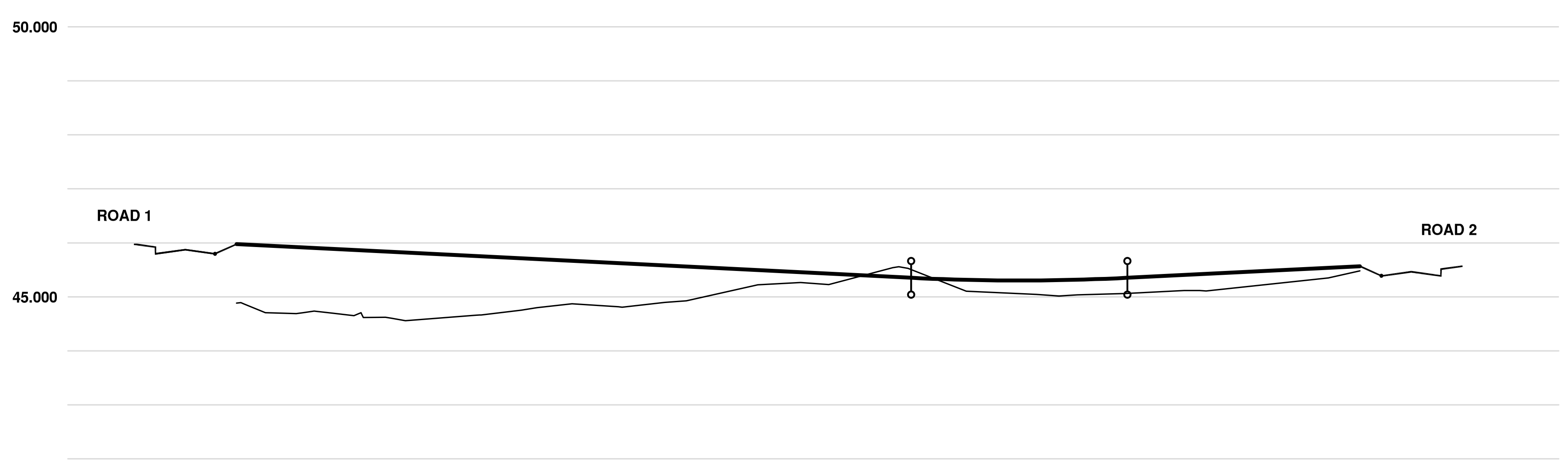
SCALE IN METRES
0 5 10 20 50

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.

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 !!!

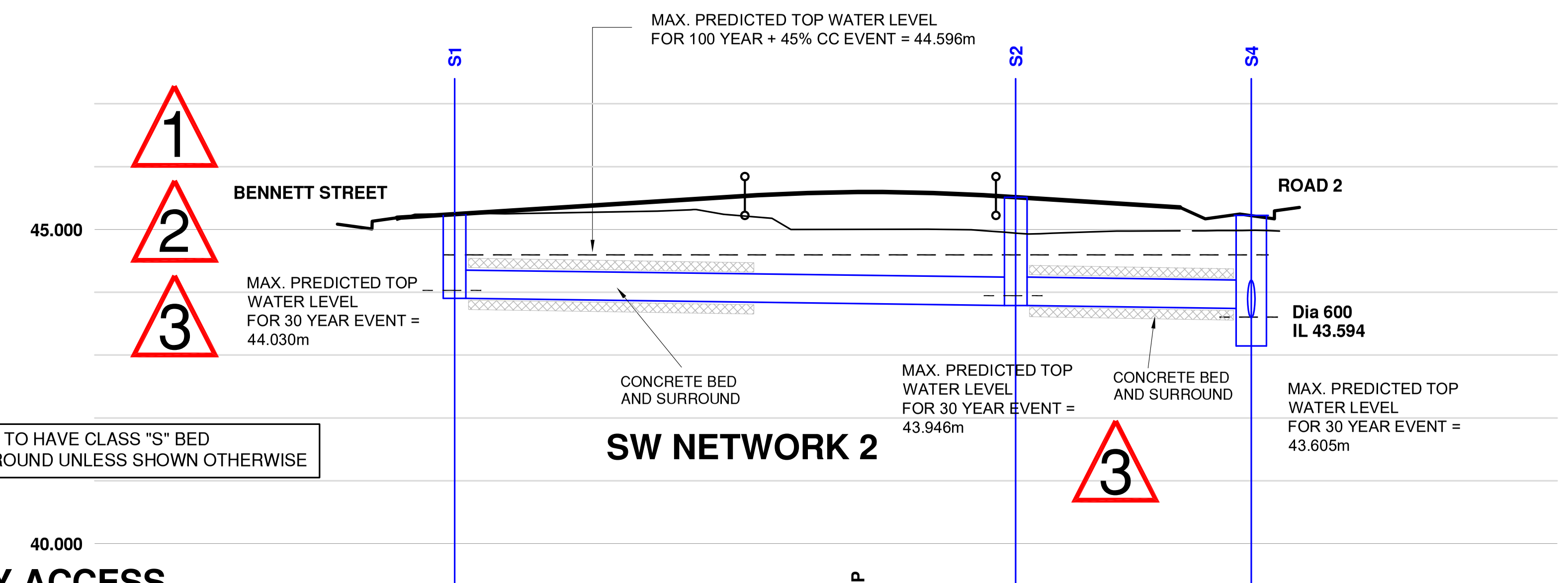


PRIVATE DRIVE PLOTS 139 - 156

CHAINAGE	EXISTING GROUND LEVEL	ALIGNMENT LEVEL
0.000	44.885	45.977
0.699		
10.000	44.671	45.877
14.309		
20.000	44.626	45.777
30.000	44.849	45.677
40.000	44.902	45.577
50.000	45.243	45.477
60.000	45.505	45.377
62.389		45.353
65.000		45.330
70.000	45.082	45.306
72.389		45.303
75.000		45.306
80.000	45.049	45.332
82.389		45.353
90.000	45.116	45.429
100.000	45.329	45.529
	45.483	45.568

VERTICAL ALIGNMENT: G= -1.000% 1: -100.0 | KF= 10.0 L= 20.000 | G= 1.000% 1: 100.0

HORIZONTAL ALIGNMENT: R= 22.250


MAX. PREDICTED TOP WATER LEVEL FOR 100 YEAR + 45% CC EVENT = 44.596m
S1
S2
S4
1
2
3
BENNETT STREET
ROAD 2
45.000
MAX. PREDICTED TOP WATER LEVEL FOR 30 YEAR EVENT = 44.030m
Dia 600
IL 43.594
CONCRETE BED AND SURROUND
MAX. PREDICTED TOP WATER LEVEL FOR 30 YEAR EVENT = 43.946m
CONCRETE BED AND SURROUND
MAX. PREDICTED TOP WATER LEVEL FOR 30 YEAR EVENT = 43.605m
3
40.000
HP

SW NETWORK 2

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

EMERGENCY ACCESS

CHAINAGE	EXISTING GROUND LEVEL	ALIGNMENT LEVEL
0.000	45.147	45.187
10.000	45.255	45.312
20.000	45.291	45.437
27.669		45.533
30.000	45.158	45.559
35.000		45.591
37.669		45.596
40.000	45.003	45.592
45.000		45.562
47.370		45.533
47.669	44.931	45.504
50.000		
52.111		
60.000	44.976	45.379
62.313	44.979	45.350

VERTICAL ALIGNMENT: G= 1.250% 1: 80.0 | L= 20.000 KF= -8.0 | G= -1.250% 1: -80.0

HORIZONTAL ALIGNMENT: R= 7.750

STORMWATER DETAILS:
CL 45.245 IL 43.904
Pipe 1.000 Dia 450 Circular CONC 1 in 395 44.606
CL 45.510 IL 43.791
IL 43.791
Pipe 1.001 Dia 450 Circular CONC 1 in 397 18.682
CL 45.226 IL 43.744

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

CIVILS DESIGN RISK MANAGEMENT

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

1	EXISTING SERVICES EXISTING ELECTRIC MAIN
2	WORKING ON EXISTING HIGHWAY AND IN AREAS WHERE MEMBERS OF PUBLIC MAY HAVE ACCESS
3	DANGER OF COLLAPSE TO ALL EXCAVATIONS - RISK TO BE ASSSESED AND MANAGED BY CONTRACTOR IN ACCORDANCE WITH HSE GUIDANCE
4	WORKING ADJACENT TO EXISTING CULVERTED WATERCOURSE OR LIVE FOUL SEWER (WEIL'S DISEASE)
5	WORKING CLOSE TO EXISTING CULVERT
6	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

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.

GENERAL

1. All adoptable sewers and associated works are to comply fully with "Design and Construction Guidance" & Local Practices
2. All highway works to be to adoptable standards and to 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 REFA.
   All levels 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.
   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)
6. 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:–

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.

rev	Revision details	Rev.By	Date

smas worksafe designer www.smasltd.com
as recognised by SSIP SAFETY SCHEMES IN PROCUREMENT

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 5

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CIVIL • STRUCTURAL
GEOTECHNICAL • ENVIRONMENTAL

Date	Scale	Drawn
06.04.23	1:500 H ; 1:100 V	RF

DRAWING No 22122/100/7
Rev

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A1 SHEET