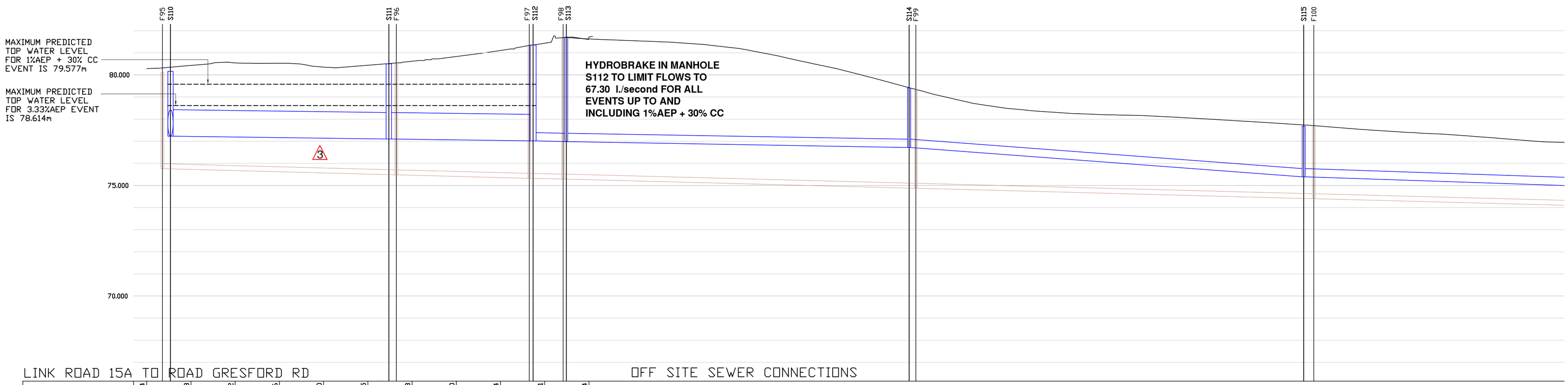
SEWERS LAID IN EASEMENT IN FAVOUR OF DCWW
REFER TO S104 LAYOUT FOR DETAILS

SEWERS LAID IN GRESFORD ROAD

HYDROBRAKE DETAILS	
MH. No.	S112
TYPE	MD-SHE-0308-6730-2900-6730
DESIGN HEAD (m)	2.9
MAX. FLOW (l0rm/sec)	67.3
ORIFICE DIA. (mm)	308
SURCHARGED OUTFALL PIPE	NO



LINK ROAD 15A TO ROAD GRESFORD RD

OFF SITE SEWER CONNECTIONS

GROUND LEVEL	80.284	80.428	80.542	80.526	80.350	80.435	80.618	80.830	81.104	81.431	81.714
	Pipe 1.030 Dia. 375 Circular CONC 1 in 252 7.825										
STORMWATER DETAILS	CL 80.163 IL 77.226	Pipe 1.028 Dia 1200 Circular CONC 1 in 389 49.366	CL 80.500 IL 77.099 IL 77.099	Pipe 1.029 Dia 1200 Circular CONC 1 in 389 33.081	CL 81.382 IL 77.014 IL 77.014	CL 81.712 IL 76.983	Pipe 1.031 Dia 375 Circular CONC 1 in 295 78.545	CL 79.409 IL 76.717 IL 76.717	Pipe 1.032 Dia 375 Circular CONC 1 in 67 89.179	CL 77.675 IL 75.389 IL 75.389	Pipe 1.033 Dia 375 Circular CONC 1 in 150 97.098
FOULWATER DETAILS	CL 80.116 IL 75.759	Pipe 1.027 Dia 225 Circular UPVC 1 in 190 53.084	CL 80.555 IL 75.479 IL 75.479	Pipe 1.028 Dia 225 Circular UPVC 1 in 190 30.050	CL 81.346 IL 75.321 IL 75.321	CL 81.665 IL 75.287	Pipe 1.030 Dia 225 Circular UPVC 1 in 190 78.526	CL 79.344 IL 74.874 IL 74.874	Pipe 1.031 Dia 225 Circular UPVC 1 in 190 90.099	CL 77.732 IL 74.480 IL 74.480	Pipe 1.032 Dia 225 Circular UPVC 1 in 191 93.574
					Pipe 1.029 Dia 225 Circular UPVC 1 in 191 6.480						

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.

Note 1- SFA 7th Footnote

The Developer must self-vet and certify that the design criteria, material standards and workmanship specifications for the proposed adoptable sewers are in accordance with those set out in "Sewers for Adoption" 7th Edition and the requirements of DCWW as the Statutory Sewerage Undertaker, and the Welsh Ministers Build Standards.

Note 2 - Connection

"A Section 106 application to connect to adopted sewers must be made to DCWW, the developer shall give 21 days notice prior to connection, the works may only be undertaken by a DCWW Health & Safety approved contractor."

Note - 3 Materials

All materials are to comply fully with the requirements of clause "E" in Sewers for Adoption 7th Edition, of which the contractor must fully acquaint himself with to ensure compliance.

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.

SCALE IN METRES
0 5 10 20 50

CIVILS DESIGN RISK MANAGEMENT

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

1. EXISTING SERVICES
2. WORKING ON EXISTING HIGHWAY WORKING IN AREAS WHERE MEMBERS OF THE PUBLIC HAVE ACCESS
3. DANGER OF COLLAPSE TO EXCAVATIONS REQUIRED TO BE ENTERED AND MANAGED BY CONTRACTOR IN ACCORDANCE WITH HSE GUIDANCE

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

THE OFF SITE SEWER CONNECTIONS HAVE BEEN DESIGNED TO TIE IN WITH THE EXISTING SEWERS AND WHILST IT IS ANTICIPATED NO CLASHES WITH EXISTING SERVICES WILL OCCUR DUE TO THE INHERENT INACCURACIES IN DEPTHS OF EXISTING SERVICES THIS CANNOT BE GUARANTEED.

REFA WOULD ADVISE THE CLIENT TO EMPLOY A SUITABLY EXPERIENCED COMPANY TO UNDERTAKE A SURVEY ALONG THE ROUTE OF THE CONNECTIONS TO ASCERTAIN THE EXISTENCE AND PROXIMITY OF ANY SERVICES AND ADVISE REFA OF ANY POTENTIAL CLASHES TO ASCERTAIN IF DESIGN CHANGES CAN BE MADE.

DUE TO THE NEED FOR OFF SITE SEWER WORKS IT IS STRONGLY ADVISED THAT THESE ARE CONSTRUCTED PRIOR TO ANY WORKS ON SITE TO ALLOW DESIGN CHANGES ON SITE TO BE MADE IN THE EVENT THAT THE OFF SITE DESIGNS REQUIRE REVISION.
REFA WILL NOT BE HELD RESPONSIBLE FOR ANY ABORTIVE WORKS IF THIS PROCEDURE IS NOT FOLLOWED

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

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.

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

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

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

BENCH MARK INFORMATION

HORIZONTAL AND VERTICAL CONTROL ESTABLISHED USING SMARTNET GPS NETWORK AND OSGB36(02) COORDINATE SYSTEM

GENERAL

1. All adoptable sewers and associated works are to comply fully with "Sewers for Adoption" 7th.Edition dated August 2012.
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
A	TD PLANNING REV P	GWH	28.8.18

smas worksafe consultant www.smasltd.com — SSIP SAFETY SCHEMES IN PROCUREMENT

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

Client
ANWYL HOMES
BELLWAY HOMES

Job title
GRESFORD ROAD
LLAY, WREXHAM

Drawing title
ROAD AND MAIN
LONG SECTIONS DRG 12

REFA
45 Bridgeman Terrace
Wigan, Lancs
WN1 1TT
Tel:-(01942) 826020
Fax:-(01942) 230816
CONSULTING ENGINEERS
CIVIL• STRUCTURAL
GEOTECHNICAL• ENVIRONMENTAL

Date	Scale	Drawn
12.2.18	1/500H &1/100V	GWH

DRAWING No 17040/08/19 Rev A

© This drawing is the property of REFA and should not be copied, used or its contents divulged without prior written consent.

A1 SHEET