SECTION 104 & 38 NOTES

1. All adoptable drainage works have been designed and are to be constructed in accordance with "Sewers for Adoption, 7th Edition" and Welsh Water Supplemental Guidelines
2. All clay pipe work shall be Extra Strength Clayware to BS. EN 295:1991 Part 1.
3. All precast concrete pipework shall be to the class stated on the drawings in accordance with BE EN 1916:2002. All manholes and chambers shall be to BS EN 1917:2002
4. The Contractor may elect to use reinforced PVC pipes as alternatives to BS 4660:2000 & BS EN 1401-1 Structured wall upvc pipes to comply with wis 4-35-01 up to and including 300mm.(By prior agreement with adopting authority) MAX. PIPE LENGTH TO BE 3.0m
5. All levels recast from an Ordnance Datum.
6. This drawing is to be read in conjunction with all other relevant drawings.
7. House drainage connections to sewers must be 150mm ø unless otherwise stated and to the agreed invert level shown.
8. Levels given on drag out chambers are incoming pipe levels.
9. House drainage runs to be kept within the curtilage of the plot they serve wherever possible.
10. The Contractor shall be responsible for ensuring that any existing invert levels indicated on drawings are correct before work commences.
11. The Contractor should satisfy himself as to the position and depth of any existing Statutory Undertakers plant which could effect the works before this area commences.
12. Road gully connections are to be 150mm ø connecting either directly to manholes shown, or to sewer runs using pre-formed junctions.
13. All connections to adoptable sewers shall be by manufactured junction pipes. Saddle connections will not be permitted.
14. All sewers for adoption with greater than 1.20 metres cover in roads or 2.0m cover in fields shall have Class C granular bed and surround.
15. Any sewer for adoption with less than 1.2 metres cover in roads or 2.0m cover in fields shall have a bed and surround in plain concrete surround. Flexibility shall be maintained by the provision of Flexcell or similar approved joint filler breaks in the concrete surround at each pipe joints.

SITE TEAMS INSTALLING STRUCTURAL WALL PLASTIC PIPES ARE REQUIRED TO HAVE ATTENDED A COURSE AND TO HAVE A VALID CERTIFICATE FROM THE MANUFACTURER. GROUP STRUCTURED WALL UPVC PIPES ARE TO BE LAID IN 3m LENGTHS

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

ALL PIPES TO HAVE CLASS "N" BED AND SURROUND UNLESS SHOWN OTHERWISE
ALL CONCRETE PIPES TO BE CLASS 120
ALL CLAY PIPES TO BE EXTRA STRENGTH VITRIFIED CLAY BS EN 295 PART 1 AND 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 DRAINS AND SEWERS IN ACCORDANCE WITH SFA 7TH EDITION PART B

CONTRACTOR TO BE AWARE OF AND TAKE APPROPRIATE ACTION TO ENSURE RE-STABILISATION OF EXCAVATIONS, SLOPES, RETAINING WALLS, EMBANKMENTS OR OTHER FEATURES DOES NOT OCCUR AS A RESULT OF ANY EXCAVATIONS WORKS UNDERTAKEN IN ACCORDANCE WITH THESE DESIGNS. CONTRACTOR TO CONTACT REFA IF HE IS UNSURE ABOUT ANY ASPECT OF THE ABOVE HE SHOULD SEEK ADVICE BEFORE COMMENCING EXCAVATION WORK

ALL EXISTING SERVICES TO BE LOCATED AT COMMENCEMENT AND CONFIRMED WITH UNDERTAKERS BEFORE WORKS COMMENCE 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 THAT ENSURE THAT ANY DISCREPANCIES ARE AVOIDED AND THAT INTERPOLATED INVERT LEVELS ARE CORRECT. ANY DISCREPANCIES SHOULD BE REPORTED TO REFA PRIOR TO START TO ENABLE CHANGES TO BE MADE TO THE DESIGNS THAT PROVE NECESSARY

ALL DRAGOUT CONNECTIONS FROM NEW SEWER MANHOLES TO FIRST INSPECTION CHAMBER ARE TO BE 150mm ø UNLESS INDICATED OTHERWISE

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

ALL ROAD GULLY CONNECTIONS TO BE 150mmø

THE DEPTH OF NEW SEWERS HAVE BEEN DESIGNED TO INTERACT WITH THE EXISTING SEWERS AND WHILST IT IS ANTICIPATED NO CLASHES WITH EXISTING SERVICES WILL OCCUR DUE TO THE UNCERTAINTY IN DEPTHS OF EXISTING SERVICES CANNOT BE GUARANTEED.

REFA WOULD ADVISE THE CLIENT TO EMPLOY A SUITABLY EXPERIENCED COMPANY TO UNDERTAKE A SURVEY ALONG THE ROUTE OF THE NEW CONNECTIONS TO ASCERTAIN THE EXISTENCE AND DEPTH 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 ENSURE THAT NO CHANGES ON SITE ARE MADE IN THE EVENT THAT THE OFF SITE DESIGNS REQUIRE REVISION.
REFA WILL NOT BE HELD RESPONSIBLE FOR ANY REMEDIAL WORKS IF THIS PROCEDURE IS NOT FOLLOWED

CONTRACTOR/CLIENT SHOULD NOTE THE PROXIMITY OF OVERHEAD POWER LINES AND OR OVERHEAD POWER CABLES(S) BEFORE WORK COMMENCES CONTRACTOR MUST UNDERTAKE RISK ASSESSMENT AND PROVIDE MITIGATION MEASURES WHERE WORKS IN THIS AREA IN ACCORDANCE WITH HSE AND POWER SUPPLIERS GUIDELINES TO SATISFACTION OF THE PRINCIPLE DESIGNER

CONTRACTOR TO ALLOW FOR REBUILDING EXISTING MANHOLE TO CURRENT STANDARDS IF CONNECTION CANNOT BE MADE IN ACCORDANCE WITH UNDERTAKERS GUIDELINES

TO CATER FOR ANY DEVIATIONS IN THE AS CONSTRUCTED DRAINAGE LEVELS IN RELATION TO THE DESIGN LEVELS
THE PROPOSED FLOOR LEVELS SHOWN MUST BE CHECKED ON SITE BY THE SITE AGENT TO ENSURE COMPLIANCE WITH PART M OF THE BUILDING REGULATIONS

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, The Welsh Ministers Standards and the requirements of DCWW as the Statutory Sewerage Undertoker.

Note 2 - Connection

Subject to a Section 104 Adoption Agreement being complete, 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 an SSIP 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.

Note - 4 Landscaping

All landscaping proposals are to comply fully with the requirements of Sewers for Adoption 7th Edition ref. B13.1.13, of which the landscape designer and contractor must fully acquaint himself with to ensure compliance.

ALL PROPOSED SW DRAINAGE IS
APPROVAL OF WREXHAM CC / SAB
DY
FW DRAINAGE PROPOSALS AND
ARE SUBJECT TO CONFIRMATION &
WELSH WATER

CLIENT OR CONTRACTOR
ES. ANY DISCREPANCIES
E THE DRAWINGS PROVIDED
A FOR THIS PROJECT THEN
HOULD CONTACT REFA
TELY AND BEFORE ANY
COMMENCE OR PROCEED
OURS' ASK

OPTABLE RISING MAIN WILL
PRESSURE TESTING IN
NCE WITH E7.10 TESTING
THYLENE PRESSURE
S (PAGE 114) OF "SEWERS
OPTION" 7th EDITION

CELLULAR STORAGE SPH4 CELL
CELLULAR STORAGE TO CATER FOR
GREATER THAN 1 IN 30 YEAR RP, UP
INCLUDING THE 1 IN 100 YEAR + 35%

PLAN AREA = 285 m²
OVERALL CELL HEIGHT = 1.600mm
INVERT LEVEL = 93.492m AOD
TO BE LAID AT A GRADIENT OF 1 IN 4
TOWARDS INLET/OUTLET MANHOLE
WITH REMOTE VENT FROM TOP OF S
TO PREVENT AIR LOCKING

CELLULAR STORAGE SPH3 CELL
CELLULAR STORAGE TO CATER FOR EVENTS
GREATER THAN 1 IN 30 YEAR RP, UP TO AND
INCLUDING THE 1 IN 100 YEAR + 35% CC EVENT

PLAN AREA = 421 m²
OVERALL CELL HEIGHT = 1.600mm
INVERT LEVEL = 93.386m AOD
TO BE LAID AT A GRADIENT OF 1 IN 400 FALLING
TOWARDS INLET/OUTLET MANHOLE
WITH REMOTE VENT FROM TOP OF STORAGE
TO PREVENT AIR LOCKING

FOUL WATER PUMPING STATION AND COMPOUND TO COMPLY FULLY WITH SFA7 & DESIGN & CONSTRUCTION GUIDANCE MAY 2022.

FOUL WATER PUMP STATION TO HAVE MINIMUM OF 24.4m³ OF EMERGENCY STORAGE TO CATER FOR 111 PLOTS, TO BE AGREED WITH ADOPTING AUTHORITY BY PUMP STATION DESIGNERS.

15m STANDOFF ZONES FROM CENTRE OF WET WELL - NO HABITABLE DWELLING WITHIN THIS ZONE.

NOTE MANHOLE FPS TO INCORPORATE PENSTOCK VALVES ON OUT LET PIPES TO ALLOW FOR WET WELL ISOLATION FROM INCOMING FLOWS.

PUMP STATION DESIGN AND LEVELS SUBJECT TO CONFIRMATION BY PUMP STATION DESIGNER

STORAGE REQUIRED = 24m³
BASED ON 111 PLOTS AT 0.6L/L/PLOT

WET WELL 4.00mØ PCC RING
DSI = 12.56m²/m
THUS 12.56m² OF STORAGE PROVIDED FOR 1.00m DEPTH

WET WELL DEPTH TO BE CIRCA 7.5m DEEP SUBJECT TO PUMP STATION DESIGNER CONFIRMATION

NON-DEGRADABLE MARKER TAPE WITH A TRACE-WIRE THAT IS SUITABLY TERMINATED AT BOTH ENDS MUST BE LAID WITH THE RISING MAIN

PUMP STATION HARDSTANDING
SURFACING TO BE:
25mm WEARING COURSE
75mm BASE COURSE
300mm SUB-BASE (TYPE 1 MOT)

ANY INSPECTION CHAMBER WITH A DEPTH GREATER THAN 1m MUST HAVE AN INTERNAL REDUCER FITTED

CIVILS DESIGN RISK MANAGEMENT

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

1. EXISTING SERVICES IN WREXHAM ROAD
EXISTING LIVE SEWERS CROSSING SITE
2. WORKING ON EXISTING HIGHWAY
WORKING IN AREAS WHERE MEMBERS OF THE PUBLIC 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
WATERCOURSE OR LIVE FOUL SEWER (WEIL'S DISEASE)

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

DRAINAGE KEY

- Main sewer manhole
- Demarcation chamber within 1m of boundary
- Adoptable foul water (brown) Pipes to be UPVC
- SAB surface water (black)
- Private foul water (black) Pipes to be UPVC
- Private surface water (black)
- Site Boundary (Phase 3)
- Easement with proposed width
- Private cellular storage (black)
- Adoptable foul water rising main
- Proposed adoptable pump station compound
- Proposed pump station access road right of way

THIS DRAWING IS BASED ON PLANNING LAYOUT PROVIDED BY CLIENT
DRAWING NUMBER:- WR2-SAL-A1-ZZ-DR-A-0607
REVISION:- P11
CLIENT TO ENSURE THE ABOVE LAYOUT IS CURRENT BEFORE USING THIS DRAWING FOR CONSTRUCTION PURPOSES

GENERAL
1. All adoptable sewers and associated works are to comply fully with "Sewers for Adoption" 7th Edition unless noted otherwise.
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 reported to REFA.
5. All levels based on topographical survey information provided by others.
6. All manholes to bear the relevant B.S.Kitemark and to comply with BS EN 1917:2002.
7. All concrete is to be ST4 unless noted otherwise. All concrete & concrete products must use Sulphate resistant cement (unless the site investigation report proves that sulphate attack is not present) in accordance with BRE Special Digest 1 (2005).
8. All openings notices are to be required under highways acts etc. are to be obtained prior to commencement of works.
9. All sewers are to be inspected by L.A., SWBC 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 the new CDM 15. Unusual or unforeseen risks may be encountered in the construction of these works. A design work has been carried out with Health and Safety aspects given full consideration. Wherever possible risks have been eliminated from the design. However there are a few residual risks of this type of work as 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 a suitably competent Contractors who have a valid health and safety policy document.
We shall also require satisfactory responses at tender stage as to the manner in which they will deal with the elements at 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 persons,materials and vehicles falling into excavation.
3. Prevent unauthorised persons 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. Procedures 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.

This 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	EXTENT OF ADOPTABLE S104 DRAINAGE CORRECTED	PO'B	07.05.26

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

Issue Status: Draft, Issued, Comments, Information, Approval, Tender, Construction, As Built

Client
S G ESTATES
23.02.26

Job Title
WREXHAM ROAD, RHOSTYLLEN - PH 4

Drawing Title
PROPOSED SECTION 104 AGREEMENT DRAWING 10

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

Date 14.04.26 | Scale 1:500 | Drawn PO'B
DRAWING No. 25116/103/10 | 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