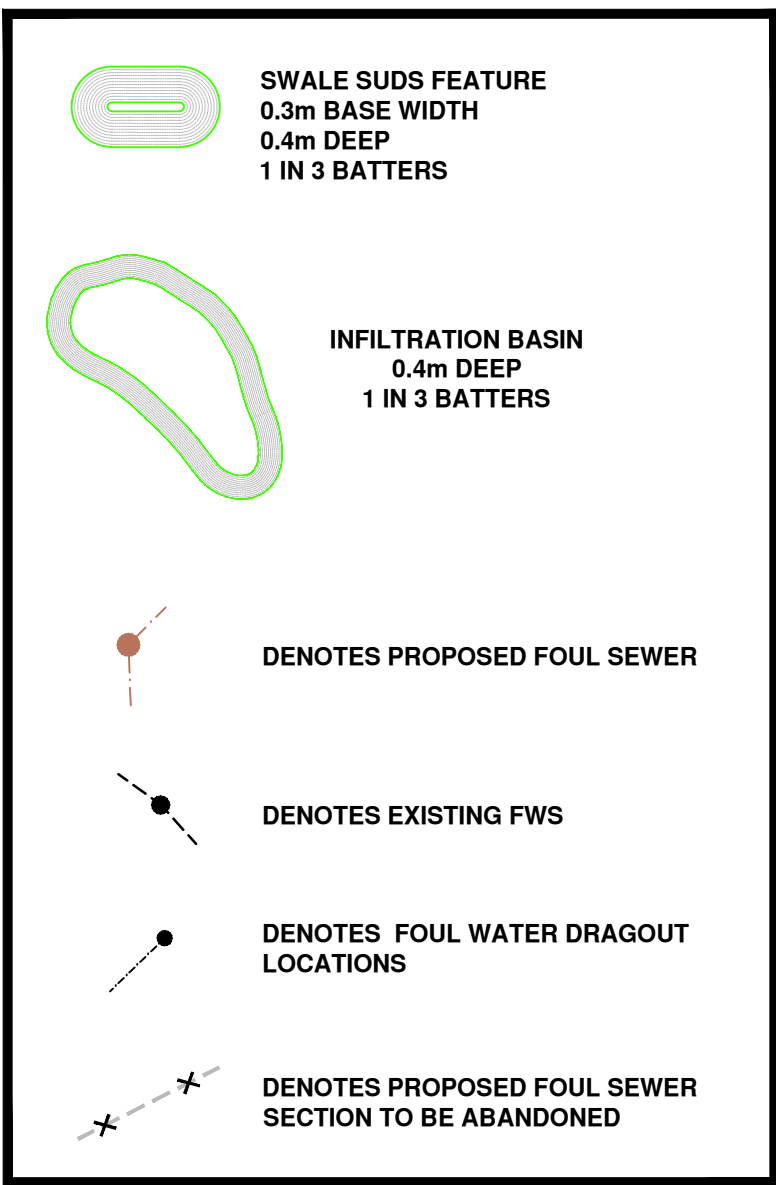




ALL DESIGNS SHOWN ARE FOR APPRAISAL PURPOSES ONLY AND ARE SUBJECT TO DETAILED DESIGN AND APPROVAL BY THE RELEVANT REGULATORY AUTHORITIES AT THE APPROPRIATE TIME.  
DRAWING IS THUS NOT ISSUED FOR CONSTRUCTION PURPOSES

REFA WOULD ADVISE THE CLIENT THAT A DETAILED OFF SITE SURVEY SHOULD BE UNDERTAKEN AT THE EARLIEST OPPORTUNITY TO ENABLE THE FEASIBILITY DRAWINGS TO BE UPDATED WITH ACCURATE INFORMATION  
OF PARTICULAR IMPORTANCE ARE :-

1. EXISTING MAINS SERVICES AND OTHER APPARATUS

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

THE PROPOSED CONNECTION INTO THE OFF SITE FOUL SEWER (LLAY NEW ROAD) TO BE SURVEYED ACCORDINGLY TO ESTABLISH EXACT INVERT LEVELS & INFORMATION.

REFA WOULD ADVISE THE CLIENT TO EMPLOY A SUITABLY EXPERIENCED COMPANY TO UNDERTAKE TRIAL HOLES TO ASCERTAIN THE EXACT LOCATION OF EXISTING SERVICES AND THE PROXIMITY OF THE SAME TO THE PROPOSED SEWERS AND THEN TO ADVISE REFA OF ANY POTENTIAL CLASHES TO ENABLE DESIGN CHANGES TO BE MADE WHERE FEASIBLE

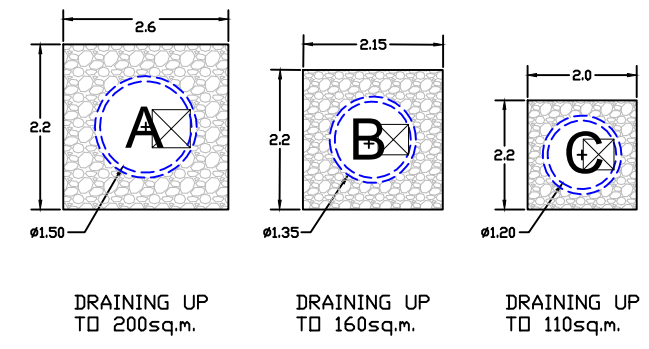
DUE TO THE NEED FOR OFF SITE SEWER WORKS IT IS STRONGLY ADVISED THAT THESE INVESTIGATIONS ARE UNDERTAKEN PRIOR TO ANY CONSTRUCTION ON SITE TO ALLOW DESIGN CHANGES TO BE MADE.

REFA WILL NOT BE HELD RESPONSIBLE FOR ANY ABORTIVE WORKS IF THIS PROCEDURE IS NOT FOLLOWED

#### PLOT SOAKAWAYS

SOAKAWAYS ARE SIZED BASED ON AREA DRAINED AND A DEPTH OF 2.0m FROM COVER LEVEL TO INVERT LEVEL. PLEASE NOTE THAT THE CALCULATIONS USE A NOMINAL COVER LEVEL OF 10.00m AND INVERT OF 7.80m.  
SOAKAWAYS ARE DESIGNED TO CATER FOR 1 IN 100 YEAR + 30% CC.

CONTRACTOR / DEVELOPER TO ENSURE THAT SOAKAWAY CONSTRUCTION IS IN FREE DRAINING SAND MATERIAL WITH BASE OF SOAKAWAY A MINIMUM 1.0m ABOVE THE WATER TABLE LEVEL IF IN DOUBT REVERT BACK TO CLIENT / REFA FOR FURTHER GUIDANCE.  
SOAKAWAYS TO BE SITED NO CLOSER THAN 5m AWAY FROM ANY EXISTING OR PROPOSED BUILDING FOUNDATION

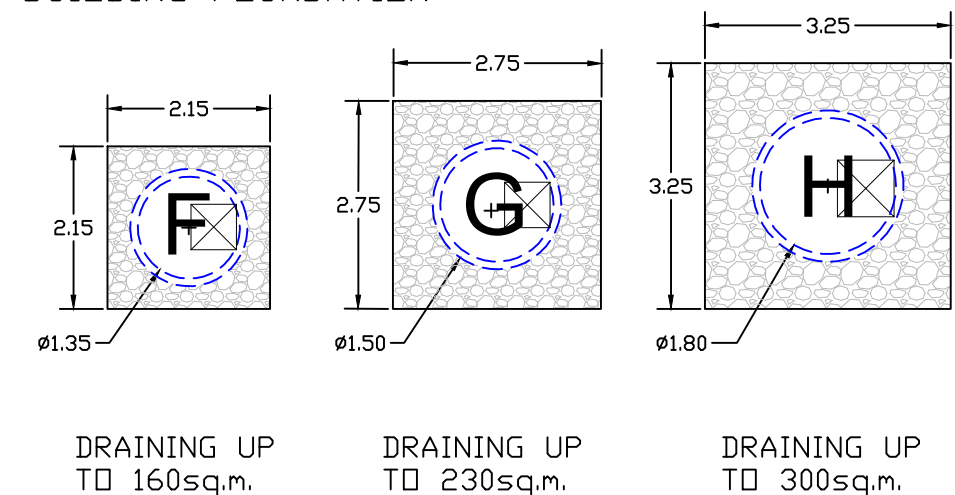


SOAKAWAY SIZING BASED ON THE FOLLOWING INFILTRATION RATES DERIVED FROM BRE 365 SOAKAWAY ASSESSMENT REPORT DECEMBER 2020 BY E3P AS FOLLOWS :-  
SIDES OF SOAKAWAYS - 0.322m/HOUR  
BASE OF SOAKAWAYS - 0.009m/HOUR

#### ROAD SOAKAWAYS

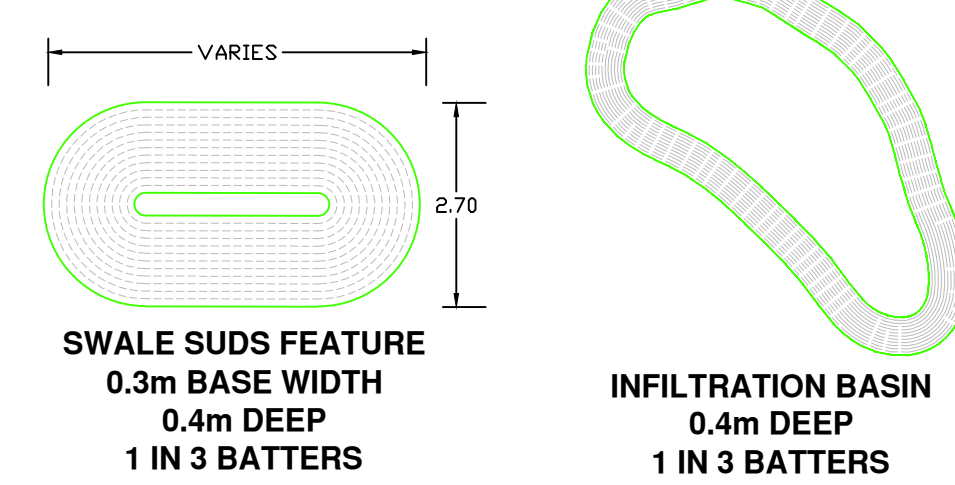
SOAKAWAYS ARE SIZED BASED ON AREA DRAINED AND A DEPTH OF 2.0m FROM COVER LEVEL TO INVERT LEVEL. PLEASE NOTE THAT THE CALCULATIONS USE A NOMINAL COVER LEVEL OF 10.00m AND INVERT OF 7.80m.  
SOAKAWAYS ARE DESIGNED TO CATER FOR 1 IN 100 YEAR + 30% CC.

CONTRACTOR / DEVELOPER TO ENSURE THAT SOAKAWAY CONSTRUCTION IS IN FREE DRAINING SAND MATERIAL WITH BASE OF SOAKAWAY A MINIMUM 1.0m ABOVE THE WATER TABLE LEVEL IF IN DOUBT REVERT BACK TO CLIENT / REFA FOR FURTHER GUIDANCE.  
SOAKAWAYS TO BE SITED NO CLOSER THAN 5m AWAY FROM ANY EXISTING OR PROPOSED BUILDING FOUNDATION



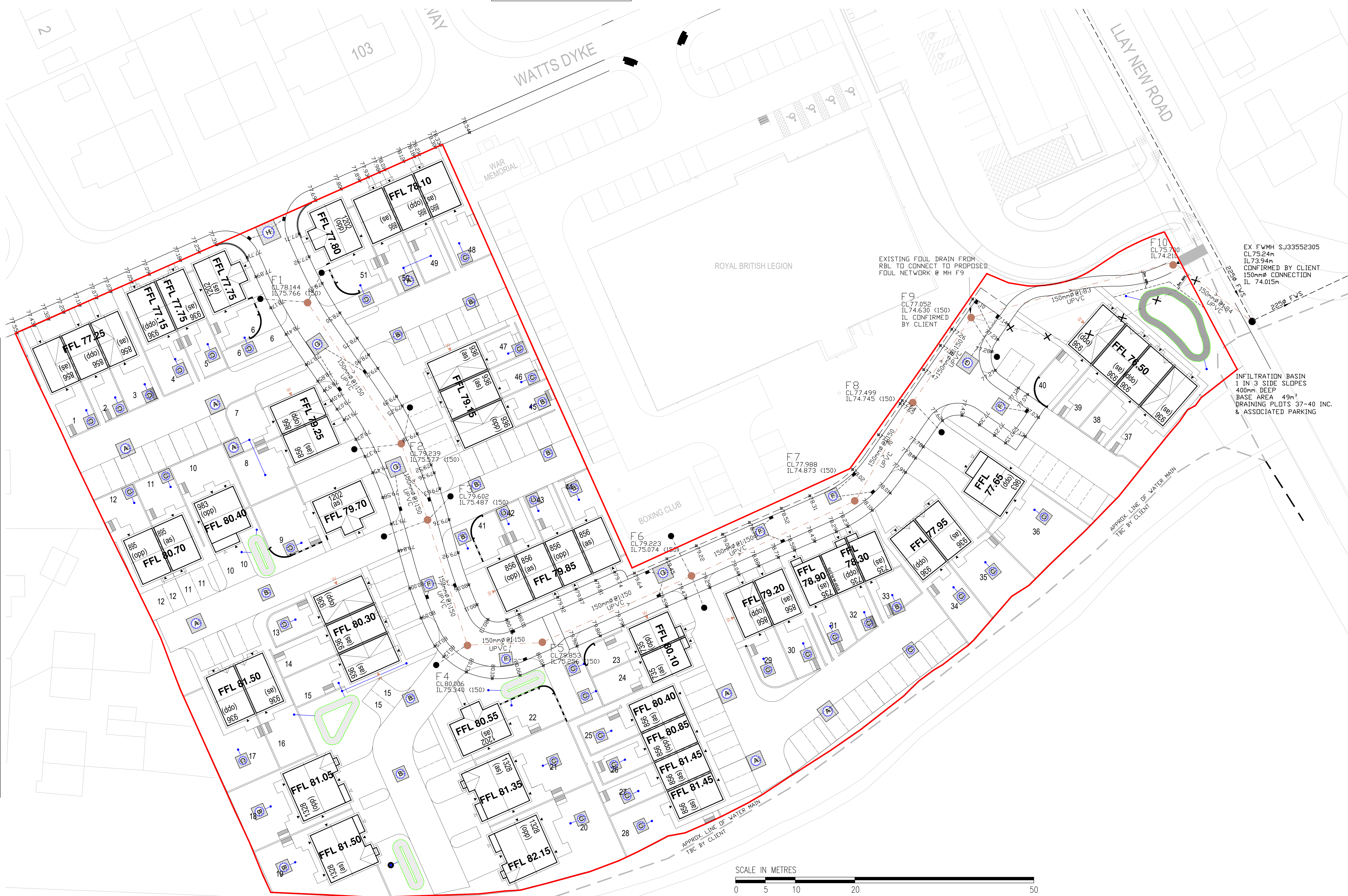
SOAKAWAY SIZING BASED ON THE FOLLOWING INFILTRATION RATES DERIVED FROM BRE 365 SOAKAWAY ASSESSMENT REPORT DECEMBER 2020 BY E3P AS FOLLOWS :-  
SIDES OF SOAKAWAYS - 0.322m/HOUR  
BASE OF SOAKAWAYS - 0.009m/HOUR

#### BASIN / SWALES



THIS DRAWING IS BASED ON PLANNING LAYOUT PROVIDED BY CLIENT  
DRAWING NUMBER:- WJ/RBL/PSL01  
REVISION:- P11  
CLIENT TO ENSURE THE ABOVE LAYOUT IS CURRENT BEFORE USING THIS DRAWING FOR CONSTRUCTION PURPOSES

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 available 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 comply fully with the Local Authority specification.
  3. All private drainage works are to comply fully with part II 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 BS/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., H&S 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 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. Underpinning 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'd by | Date     |
|-----|--------------------------------------------------------------|----------|----------|
| G   | TO LATEST LAYOUT REV P11/TO LATEST S&S DESIGN                | AS       | 15/07/20 |
| F   | TO PLANNING REV 9                                            | EWJH     | 08/04/20 |
| E   | REVISED FOLLOWING EXTERNAL WORKS/PRIVATE DRAINAGE COMPLETION | AS       | 07/04/20 |
| D   | REVISED FOLLOWING DETAILED DESIGN                            | AS       | 17/03/20 |
| C   | REVISED TO LATEST LAYOUT REV P9                              | AS       | 07/03/20 |
| B   | REVISED TO LATEST LAYOUT REV J                               | AS       | 13/04/20 |
| A   | SOAKAWAYS UPDATED                                            | FT       | 17/02/20 |
| rev | Revision details                                             | Rev'd by | Date     |

|                   |      |
|-------------------|------|
| worksafe designer | SSTP |
| www.smastrd.com   |      |

| Drawing Stage | Drawing Status |
|---------------|----------------|
| Issued        | Comments       |
| Information   | Approval       |
| Approval      | As Built       |

Client  
**WATKIN JONES GROUP**

Job title  
**WATTS DYKE RD LLAY**

Drawing title  
**DRAINAGE SAB AGREEMENT**

**REFA**  
CONSULTING ENGINEERS  
CIVIL • STRUCTURAL  
GEOTECHNICAL • ENVIRONMENTAL

| Date       | Scale      | Drawn | Rev |
|------------|------------|-------|-----|
| 17/02/21   | 1/250      | FT    | G   |
| DRAWING No | 20072/12/1 |       |     |

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