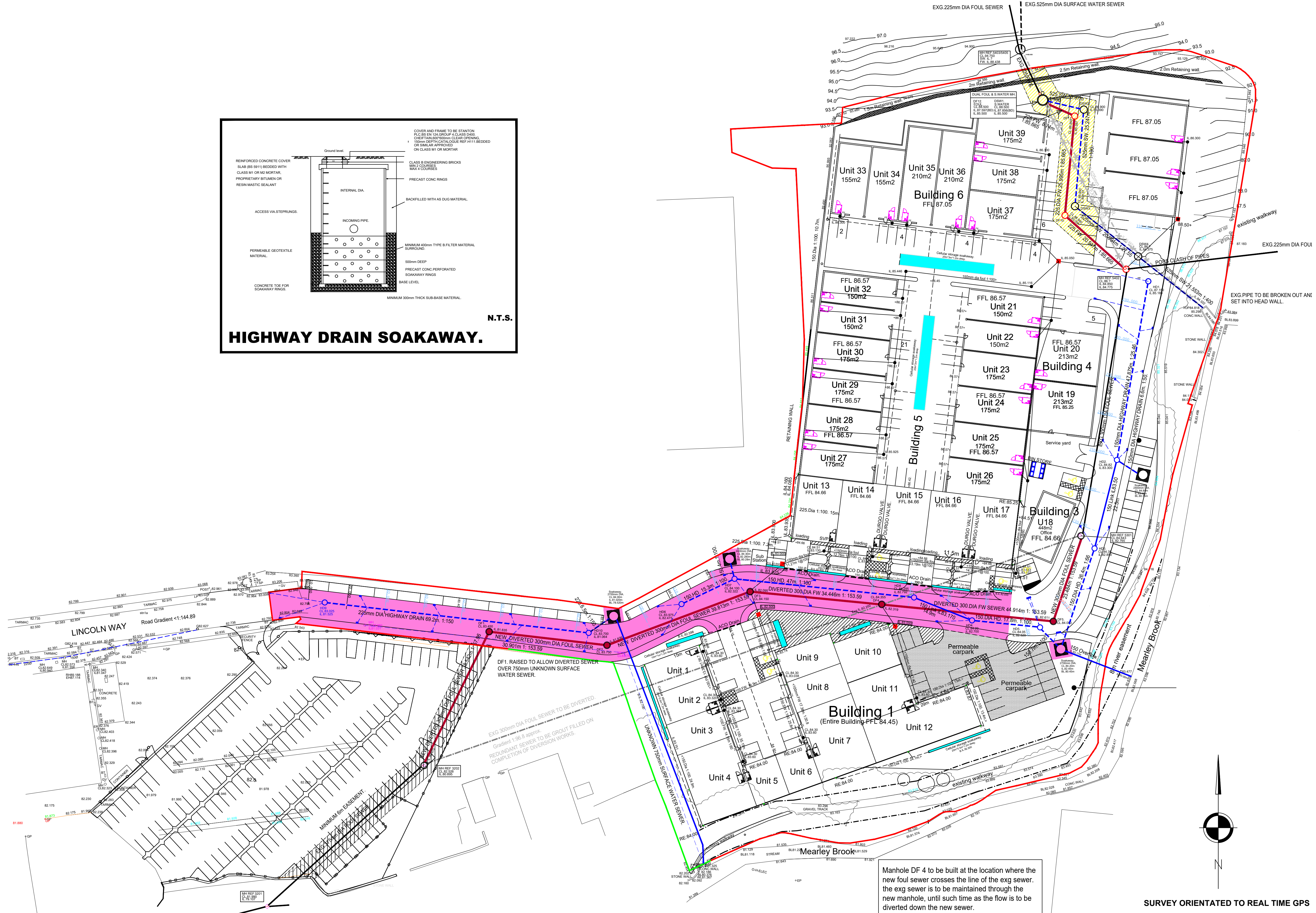
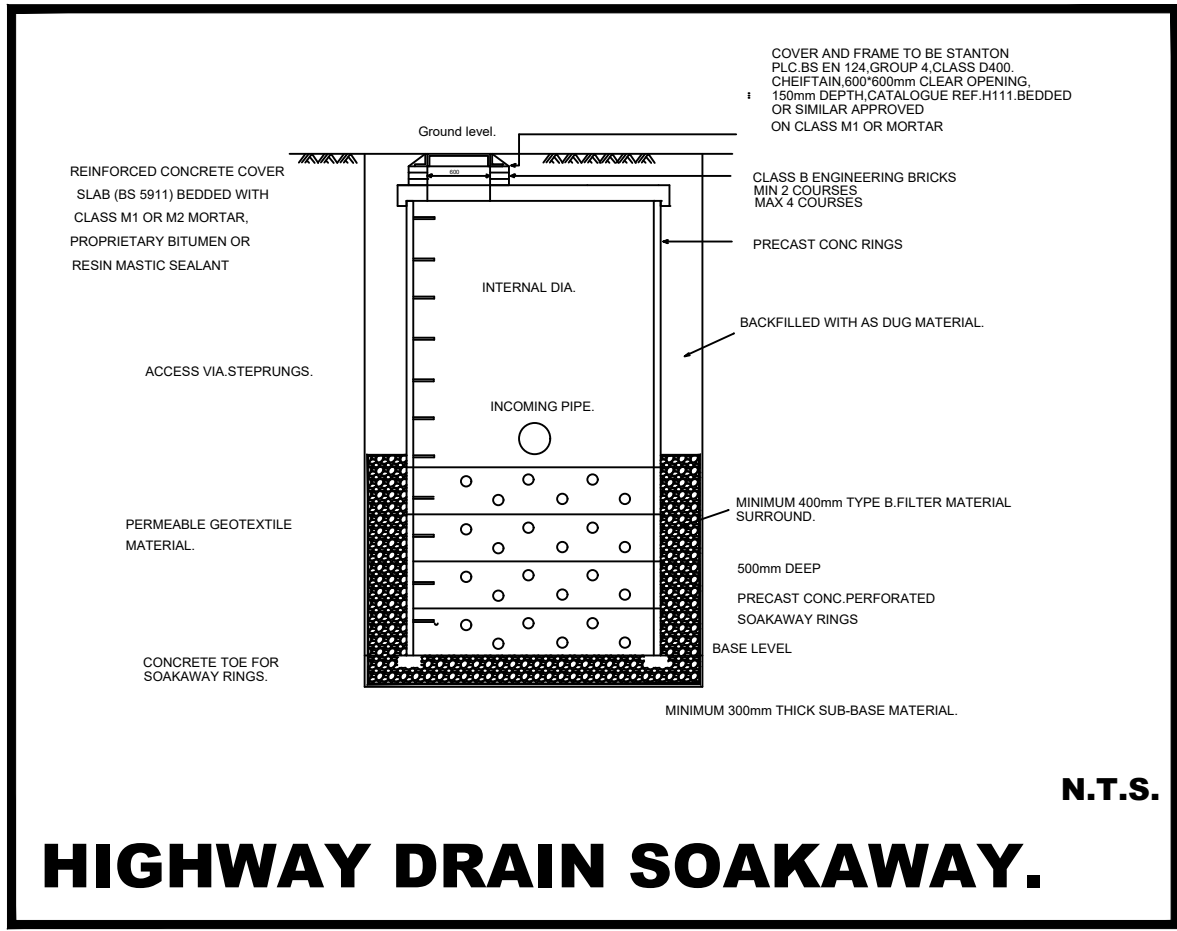




- NOTES**
- All sewer works to comply with WSA "Sewers for Adoption" 6th Edition.
- All pipes to have class S granular bed and surround.
- All sewer trenches and branch connections to be backfilled with suitable material in 225mm layers and well compacted. Type of backfill material to be agreed with adopting Authority.
- All manholes to be constructed in accordance with United Utilities standard details.
- Connections from main sewers to first inspection chamber to be 150 dia Foul and 150 dia Surface Water. Ditto gully connections.
- All connections to sewers to be junctions and not saddles.
- Manhole covers and frames to be ductile iron 675 x 675 clear square opening BS497 Grade "A" with ISI kilnmark on cover.
- Manhole covers in garden areas to be as above but grade "B".
- First pipe out of manhole to be max. 600mm long connected to a short rocker pipe all as per Sewers for Adoption.
- All pipe diameters given are internal including rising mains.
- All invert levels of existing Foul and Surface Water systems are to be confirmed prior to the commencement of any on site drainage works. Any discrepancy in levels is to be reported immediately to Priestley Johnson Ltd.

- Wavin drainage materials specification**
- Adoptable sewers**
- All foul and storm Water sewers up to and including 300 mm dia to be either SuperSieve clay pipes to BSEN 295-1 1991 or UltraRib pipes to WIS 4-35-01 2000 supplied by Wavin.
- All flow restricting devices to be Fluidic Amp or Fluidic Cone Vortex Flow Control Valves (where flow and operating head are suitable) supplied by Wavin.
- Private drainage**
- All 100 and 150 mm dia foul and storm water drains, including all inspection chambers and terminal fittings to be OsmaDrain or PlastiDrain to BSEN 13476 2007 supplied by Wavin.
- PRIVATE DRAINAGE KEY**
- SINK AND VENT PIPE
  - WASTE GULLY (BACK INLET TYPE)
  - INSPECTION CHAMBER
  - (N/A) COMBINED INVERT LEVEL (METRES)
  - RAINWATER PIPE
  - ROOFING DYE
- All invert levels of existing Foul and Surface Water systems are to be confirmed prior to the commencement of any on site drainage works. Any discrepancy in levels is to be reported immediately to Priestley Johnson (Structural Engineers) Ltd.

|  |         |                       |
|--|---------|-----------------------|
|  | GRADING | NOMINAL BORE OF PIPE  |
|  | A40     | EXCEEDING 1350        |
|  | A20     | 600-1350              |
|  | A14     | 375-525               |
|  | A10     | 300 & BELOW (PLASTIC) |

- G.D.M. REGULATIONS 2015**
- 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.
- ONLY COMPETENT CONTRACTORS WHO HAVE A VALID SAFETY POLICY ARE TO BE 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 BELOW:-
1. TRENCH EXCAVATIONS IN EXCESS OF 1.2M DEEP.
  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.

| Rev | Description                      | Date         |
|-----|----------------------------------|--------------|
| .F. | Draft.                           |              |
| .E. | SW sewers amended. Links added.  | 1 March 2017 |
| .D. | DF1 raised due to unknown Exg SW | 3 Dec 2016   |
| .C. | MH added MH's renumbered.        | 24 Nov 2016  |
| .B. | Soakaway rear 1-4 amended.       | 5 April 2016 |
| .A. | Units 1-12 completed.            | 2 April 2016 |

**Priestley, Johnson Ltd**  
**CIVIL & STRUCTURAL ENGINEERS**

BANK HOUSE  
105 - 109 NEW STREET,  
BLACKROD,  
BOLTON  
BL6 5AG

TEL:- 01204 667711  
FAX:- 01204 667722

**INDUSTRIAL UNITS,  
LINCOLN WAY, CLITHEROE.**

**JAMES ALPE.**

**HIGHWAY DRAINAGE LAYOUT.**

|             |        |       |          |
|-------------|--------|-------|----------|
| Dwg No      | REV.F. | Drawn | SMJ      |
| 16004/D100. |        | Date  | FEB 2016 |
|             |        | Scale | 1:500    |

| SURVEY STATIONS |            |            |        |
|-----------------|------------|------------|--------|
| stn1            | 375314.638 | 442320.889 | 83.179 |
| stn1a           | 375279.752 | 442315.348 | 82.848 |
| stn2            | 375411.338 | 442307.881 | 83.688 |
| stn3            | 375420.137 | 442302.916 | 83.562 |
| stn3a           | 375429.354 | 442254.989 | 82.835 |
| stn4            | 375452.490 | 442270.305 | 83.584 |
| stn5            | 375468.847 | 442269.013 | 83.578 |
| stn6            | 375522.345 | 442280.630 | 83.604 |
| stn7            | 375526.365 | 442318.976 | 83.959 |
| stn8            | 375548.051 | 442358.364 | 84.815 |
| stn9            | 375558.133 | 442396.637 | 85.650 |