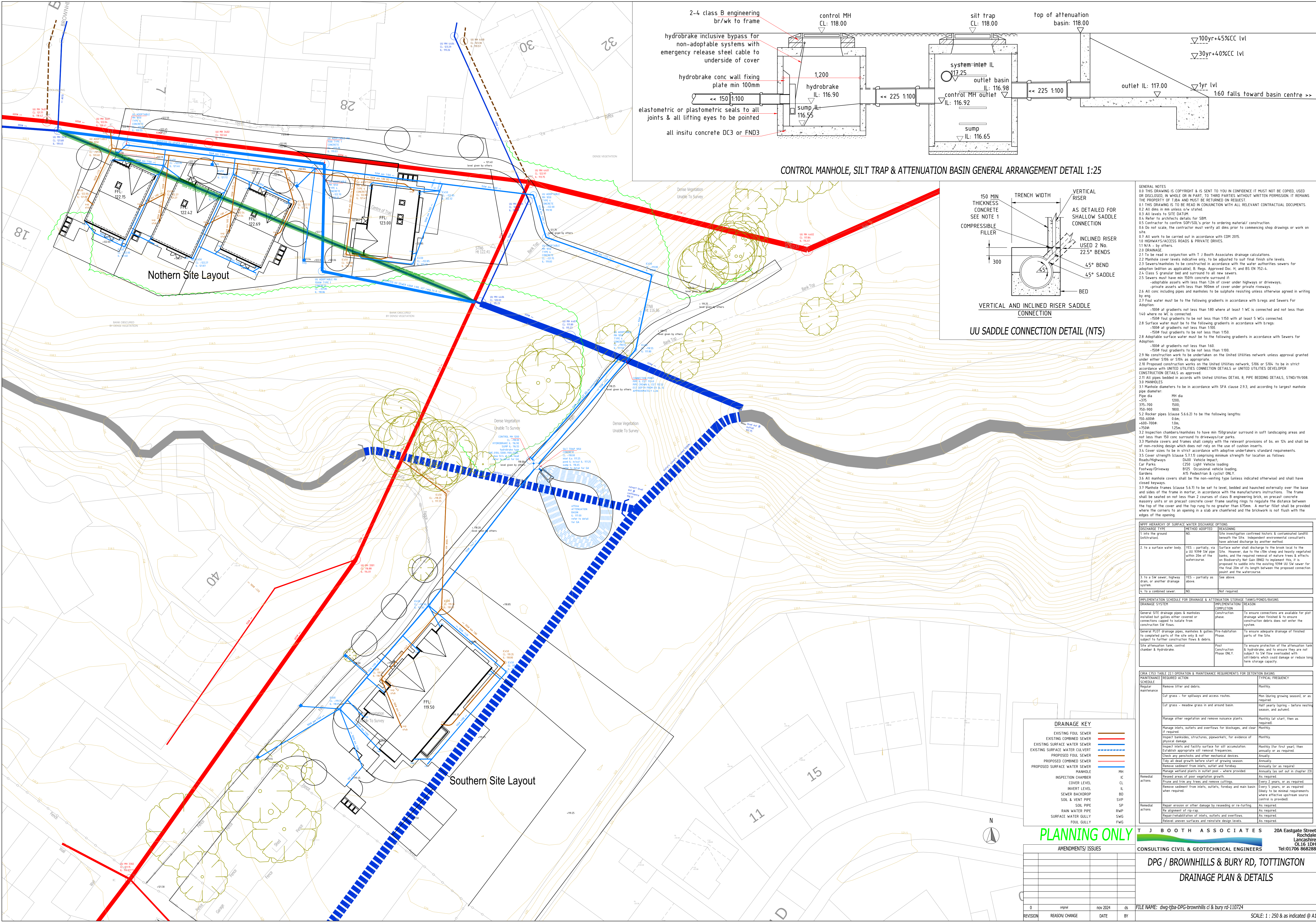




CONTROL MANHOLE, SILT TRAP & ATTENUATION BASIN GENERAL ARRANGEMENT DETAIL 1:25

UU SADDLE CONNECTION DETAIL (NTS)

**DRAINAGE KEY**

|                                |     |
|--------------------------------|-----|
| EXISTING FOUL SEWER            | —   |
| EXISTING COMBINED SEWER        | —   |
| EXISTING SURFACE WATER SEWER   | —   |
| EXISTING SURFACE WATER CULVERT | —   |
| PROPOSED FOUL SEWER            | —   |
| PROPOSED COMBINED SEWER        | —   |
| PROPOSED SURFACE WATER SEWER   | —   |
| INSPECTION CHAMBER             | MC  |
| COVER LEVEL                    | CL  |
| INVERT LEVEL                   | IL  |
| SEWER BACKSOP                  | BD  |
| SOIL & VENT PIPE               | SVP |
| SOIL PIPE                      | SP  |
| RAIN WATER PIPE                | RWP |
| SURFACE WATER GULLY            | SWG |
| FOUL GULLY                     | FWG |

- GENERAL NOTES**
- 0.0 THIS DRAWING IS COPYRIGHT & IS SENT TO YOU IN CONFIDENCE IT MUST NOT BE COPIED, USED OR DISCLOSED, IN WHOLE OR IN PART, TO THIRD PARTIES WITHOUT WRITTEN PERMISSION. IT REMAINS THE PROPERTY OF TJB & MUST BE RETURNED ON REQUEST.
  - 0.1 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT CONTRACTUAL DOCUMENTS.
  - 0.2 All dims in mm unless o/s/stated.
  - 0.3 All levels to SITE DATUM.
  - 0.4 Refer to architects details for SBM.
  - 0.5 Contractor to confirm SDR/SDR+ prior to ordering material/ construction.
  - 0.6 Do not scale, the contractor must verify all dims prior to commencing shop drawings or work on site.
  - 0.7 All work to be carried out in accordance with CDM 2015.
  - 1.0 HIGHWAYS/ACCESS ROADS & PRIVATE DRIVES.
  - 1.1 N/A - by others.
  - 2.0 DRAINAGE.
  - 2.1 To be read in conjunction with T. J. Booth Associates drainage calculations.
  - 2.2 Manhole cover levels indicative only, to be adjusted to suit final finish site levels.
  - 2.3 Sewers/manholes to be constructed in accordance with the water authorities sewers for adoption (edition as applicable), B. Regs. Approved Doc. H, and BS EN 752-4.
  - 2.4 Class 5 granular bed and surround to all new sewers.
  - 2.5 Sewers must have min 150th concrete surround if:
    - adoptable assets with less than 12m of cover under highways or driveways;
    - private assets with less than 900mm of cover under private driveways.
  - 2.6 All conc including pipes and manholes to be sulphate resisting unless otherwise agreed in writing by eng.
  - 2.7 Foul water must be to the following gradients in accordance with bregs and Sewers for Adoption:
    - 1000 at gradients not less than 180 where at least 1 WC is connected and not less than 140 where no WC is connected.
    - 1500 foul gradients to be not less than 1150 with at least 5 WCs connected.
  - 2.8 Surface water must be to the following gradients in accordance with bregs:
    - 1000 at gradients not less than 1100.
    - 1500 foul gradients to be not less than 1150.
  - 2.8 Adoptable surface water must be to the following gradients in accordance with Sewers for Adoption:
    - 1000 at gradients not less than 160.
    - 1500 foul gradients to be not less than 1100.
  - 2.9 No construction work to be undertaken on the United Utilities network unless approval granted under either S106 or S106, as appropriate.
  - 2.10 Proposed construction works on the United Utilities network, S106 or S106, to be in strict accordance with UNITED UTILITIES CONNECTION DETAILS or UNITED UTILITIES DEVELOPER CONSTRUCTION DETAILS as approved.
  - 2.11 All pipes bedded in accords with United Utilities DETAIL 8, PIPE BEDDING DETAILS, STD/19/008.
  - 3.0 MANHOLES.
  - 3.1 Manhole diameters to be in accordance with SFA clause 2.9.3, and according to largest manhole pipe diameter:

|          |        |
|----------|--------|
| Pipe dia | MH dia |
| <375     | 1200   |
| 375-750  | 1500   |
| 750-900  | 1800   |
  - 3.2 Rocker pipes (clause 5.6.6.2) to be the following lengths:

|           |      |
|-----------|------|
| 150-400mm | 10m; |
| 400-600mm | 10m; |
| 600-700mm | 10m; |
| 750-900   | 25m  |
  - 3.2 Inspection chambers/manholes to have min 150granular surround in soft landscaping areas and not less than 150 conc surround to driveways/car parks.
  - 3.3 Manhole covers and frames shall comply with the relevant provisions of bs. en 124 and shall be of non-rotting design which does not rely on the use of cushion inserts.
  - 3.4 Cover sizes to be in strict accordance with adoptive underlakers standard requirements.
  - 3.5 Cover strength (clause 5.7.1.1) comprising minimum strength for location as follows:

|                  |                                |
|------------------|--------------------------------|
| Roads/Highways   | 1200 Vehicle Impact            |
| Car Parks        | 250 Light Vehicle loading      |
| Footway/Driveway | 815 Occasional vehicle loading |
| Gardens          | A15 Pedestrian & cyclist ONLY. |
  - 3.6 All manhole covers shall be the non-venting type (unless indicated otherwise) and shall have closed keyways.
  - 3.7 Manhole frames (clause 5.6.7) to be set to level, bedded and haunched externally over the base and sides of the frame in mortar, in accordance with the manufacturers instructions. The frame shall be seated on not less than 2 courses of class B engineering bricks, on precast concrete masonry units or on precast concrete cover frame sealing rings to regulate the distance between the top of the cover and the top ring to no greater than 675mm. A mortar fillet shall be provided where the corners to an opening in a slab are chamfered and the brickwork is not flush with the edges of the opening.

| NAPP HIERARCHY OF SURFACE WATER DISCHARGE OPTIONS            |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DISCHARGE TYPE                                               | METHOD ADOPTED                                                                                                                                                                                                                                                                                        | REASONING                                                                                                                                                                                                                                                                                                                                                                           |
| 1. into the ground (infiltration)                            | NO                                                                                                                                                                                                                                                                                                    | Site investigation confirmed historic & contaminated landfill beneath the Site. Independent environmental consultants have advised discharge by another method.                                                                                                                                                                                                                     |
| 2. to a surface water body.                                  | YES - partially via a UU 9396 SW pipe banks, and the required removal of mature trees & effects on Biodiversity Net Gain (BNG) to implement this, it is proposed to saddle into the existing 9396 SW sewer for the final 20m of its length between the proposed connection point and the watercourse. | Surface water shall discharge to the brook local to the Site. However, due to the close steep and heavily vegetated banks, and the required removal of mature trees & effects on Biodiversity Net Gain (BNG) to implement this, it is proposed to saddle into the existing 9396 SW sewer for the final 20m of its length between the proposed connection point and the watercourse. |
| 3. to a SW sewer, highway drain, or another drainage system. | YES - partially as above.                                                                                                                                                                                                                                                                             | See above.                                                                                                                                                                                                                                                                                                                                                                          |
| 4. to a combined sewer.                                      | NO                                                                                                                                                                                                                                                                                                    | Not required.                                                                                                                                                                                                                                                                                                                                                                       |

| IMPLEMENTATION SCHEDULE FOR DRAINAGE & ATTENUATION STORAGE TANKS/PONDS/BASINS                                                             |                              |                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DRAINAGE SYSTEM                                                                                                                           | IMPLEMENTATION               | REASON                                                                                                                                                                                       |
| General SITE drainage pipes & manholes installed but gullies either covered or connections capped to isolate from construction SW flows.  | Construction phase           | To ensure connections are available for plot drainage when finished & to ensure construction debris does not enter the system.                                                               |
| General PLUD drainage pipes, manholes & gullies to completed parts of the site only & not subject to further construction flows & debris. | Pre-habitation Phase         | To ensure adequate drainage of finished parts of the Site.                                                                                                                                   |
| Site attenuation tank, control chamber & hydrobrake.                                                                                      | Post construction Phase ONLY | To ensure protection of the attenuation tank & hydrobrake and to ensure they are not subject to SW flow overloaded with silt/debris which could damage or reduce long term storage capacity. |

| CIBA C53 TABLE 22.1 OPERATION & MAINTENANCE REQUIREMENTS FOR DETENTION BASINS |                                                         |                                                                             |
|-------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------|
| SCHEDULE                                                                      | TYPICAL FREQUENCY                                       |                                                                             |
| Regular maintenance                                                           | Monthly                                                 | Remove litter and debris.                                                   |
|                                                                               | Monthly                                                 | Cut grass - for spillways and access routes.                                |
|                                                                               | Monthly                                                 | Cut grass - meadow grass in and around basin.                               |
|                                                                               | Monthly (at start, then as required)                    | Manage other vegetation and remove nuisance plants.                         |
|                                                                               | Monthly                                                 | Manage inlets, outlets and overflows for blockages, and clear if required.  |
|                                                                               | Monthly                                                 | Inspect bankside, structures, pipework, for evidence of physical damage.    |
|                                                                               | Monthly (for first year), then annually or as required. | Inspect inlets and facility surface for silt accumulation.                  |
|                                                                               | Annually                                                | Establish appropriate silt removal frequency.                               |
|                                                                               | Annually                                                | Check any penstocks and other mechanical devices.                           |
|                                                                               | Annually                                                | Tidy all dead growth before start of growing season.                        |
|                                                                               | Annually for as required                                | Remove sediment from inlets, outlet and forday.                             |
|                                                                               | Annually (as set out in chapter 23)                     | Manage wetland plants in outlet pool - where provided.                      |
| Renewal actions                                                               | As required                                             | Re-seed areas of poor vegetation growth.                                    |
|                                                                               | Every 2 years, or as required                           | Prune and trim any trees and remove cuttings.                               |
|                                                                               | As required                                             | Remove sediment from inlets, outlets, forebay and main basin when required. |
| Renewal actions                                                               | As required                                             | Repair erosion or other damage by re-seeding or re-turfing.                 |
|                                                                               | As required                                             | Re alignment of rip-rap.                                                    |
|                                                                               | As required                                             | Repair/rehabilitation of slats, silters and overflows.                      |
|                                                                               | As required                                             | Relieve uneven surfaces and restate design levels.                          |

**PLANNING ONLY**

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CONSULTING CIVIL & GEOTECHNICAL ENGINEERS

DPG / BROWNHILLS & BURY RD, TOTTINGTON

DRAINAGE PLAN & DETAILS

| REVISION | REASON/ CHANGE | DATE     | BY | FILE NAME: dwg-tjba-dpg-brownhills d & bury rd-110724 | SCALE: 1 : 250 & as indicated @ A1 |
|----------|----------------|----------|----|-------------------------------------------------------|------------------------------------|
| 0        | original       | nov 2024 | ds |                                                       |                                    |