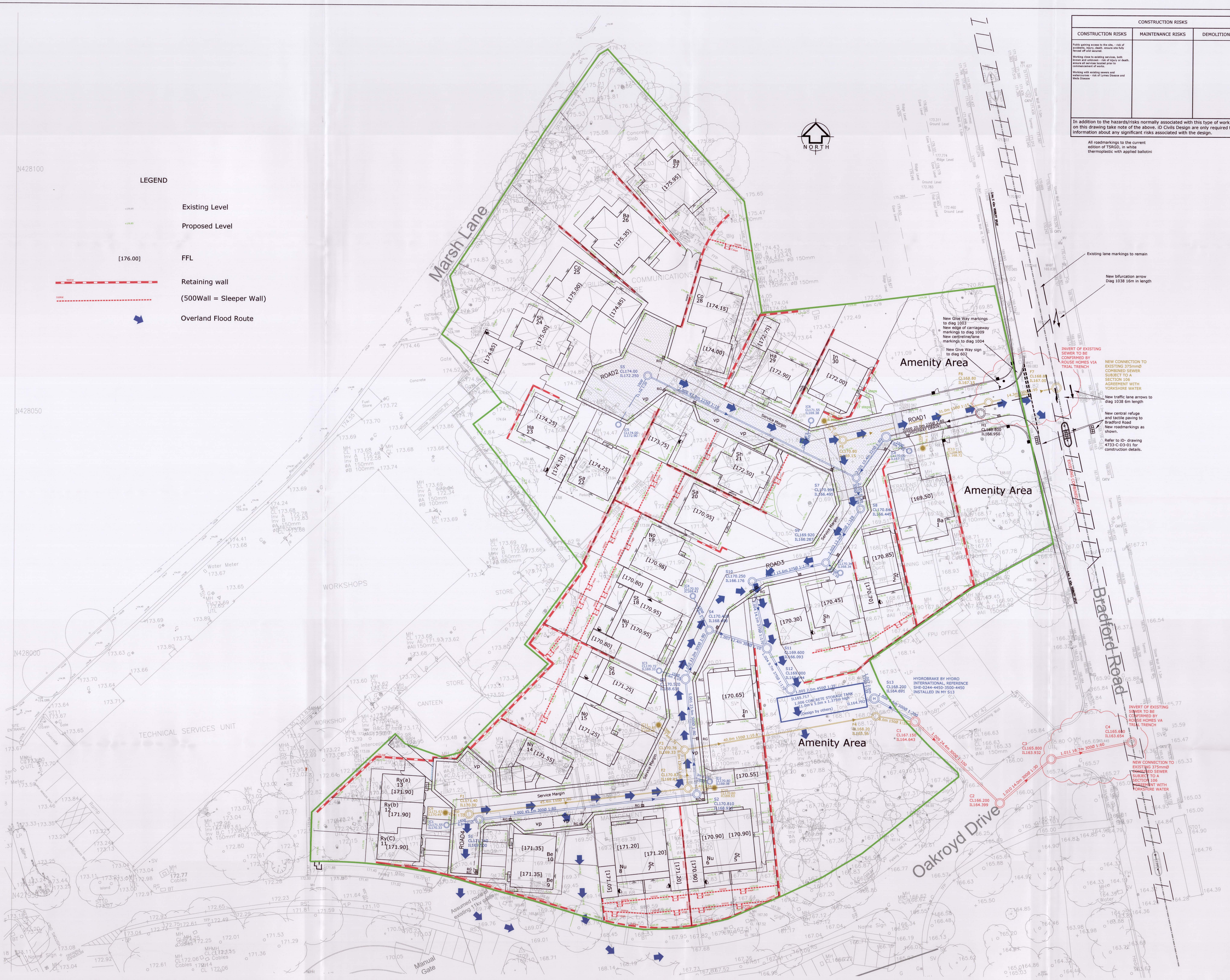

CONSTRUCTION RISKS		
CONSTRUCTION RISKS	MAINTENANCE RISKS	DEMOLITION RISKS
Public gaining access to the site, - risk of accidents, injury, death. ensure site fully fenced off and secured. Working close to existing services, both known and unknown - risk of injury or death. ensure all services located prior to commencement of works. Working with existing sewers and watercourses - risk of Lymes Disease and Weils Disease		

In addition to the hazards/risks normally associated with this type of work detailed on this drawing take note of the above. iD Civils Design are only required to provide information about any significant risks associated with the design.

Health and Safety Notes/CDM Regulations 2007

In line with the above regulations we are obliged to inform the Contractor of the abnormal risks that may be encountered in the construction of these works. As part of the design process all the salient health & safety aspects are given full consideration and these are observed within the designs viewed on this document. Although considerable effort is undertaken to eliminate risks, the very nature of the project gives rise to some hazards and risks.

Significant risks that cannot be eliminated by design and could not be foreseen by a competent contractor are noted in the risk assessment boxes on the drawings.

ADOPTABLE DRAINAGE (YORKSHIRE WATER) NOTES

1. No work should commence on site until written approval is received from Yorkshire Water/Adopting Highway Authority or any relevant Authority. Works undertaken prior to approval are at the Developers risk and iD Civils Design will not be held responsible for subsequent delays in approvals, remedial costs or construction programme delays.
2. All adoptable sewer works and materials to be in accordance with "Sewers for Adoption" (6th Edition), the relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and "Kitemarked".
3. Manhole covers shall/must have a clear opening of 600 x 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
4. Bedding and Backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
5. The adoptable sewers should be a minimum of 1.0m and manholes 0.5m from kerbs and service margins.
6. Sewers must have 5 metres clearance from trees and hedges. (refer to Figure 2.3 page 33 "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to sewers).
7. Sewers to be laid in Class S Bedding (150mm granular bed and surround). Where depth of cover to top of sewer is less than 1.2m in highways and verges (or 900mm in non-vehicular access areas) then a reinforced concrete slab is to be provided as protection - see drawing no 4733-C-D4-01 for details.
8. Prior to the commencement of on site works the contractor is to check the location, invert levels, sizes and conditions of manholes, pipes, and any ditches or watercourses in which it is intended to outfall. Any discrepancy is to be reported immediately to iD Civils Design.
9. Prior to construction the actual position and depth of services likely to be affected by the work should be established by means of a hand dig in close liaison with the statutory service authorities. The contractor shall immediately inform iD Civils Design of any services exposed that may affect the design.
10. The Local Authority and statutory service providers are to be notified prior to the commencement of work on site.
11. Filled ground must be filled and consolidated under the supervision and satisfaction of Yorkshire Water before any sewer works are carried out.
12. Land drainage and filter drains **cannot** be connected into the adoptable sewers, either directly or indirectly. An alternative method of disposal ofthe land drainage will therefore be required. You will have to liaise wit the Local Authority Land Drainage Sectionwith regard to the disposal of filter drai/land drainage run-off.
13. Manhole cover slabs must carry the BSI Kitemark or will be rejected by the Yorkshire Water Inspector. Where the clear opening of the kitemarked product is different to that of the cover and frame, a load bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the Yorkshire Water specified cover size. Please refer to CPSA Technical Bulletin issued Autumn 2004 for kitemarked cover slab opening sizes.
14. Sulphate resistant cement (C20-DC2) and precast concrete products must be used unless a laboratory report is provided proving these precautions are not necessary.
15. The minimum crushing strength for clay pipes should be as follows: 100mmØ - 40KN/m, 150mmØ - 40KN/m, 225mmØ - 45KN/m, 300mmØ - 72Kn/m.
16. The minimum crushing strength for concrete pipes should be (Class 120 to EN1916/BS5911-1 2002). Plastic pipes to conform to WIS 4-35-01 and BS EN 13476.
17. Adoptable plastic sewer pipes to be BSI Kitemarked (certified to WIS 4-35-01 and BS/EN13476). Adoptable plastic sewer pipes to be laid in maximum 3.0m lengths unless there is a specific operational need to lay longer lengths. plastic channel sections in manholes are not acceptable and Yorkshire Water would prefer clayware channels in manholes. They have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be achieved on the benching.
18. All new connections to adopted sewers to be covered by a Section 106 Agreement with Yorkshire Water. The application form to be completed by the Main Contractor and accompanied by the relevant fee.
19. Prior to commencement, the Main Contractor is to provide Yorkshire Water with documentary evidence from the manufacturer that any plastic pipes used are suitable for the ground conditions.
20. The chamber size of manholes with more than one connection in may need to be increased an increment to accommodate the connections and bends.
21. Yorkshire Water policy is not to accept Type "C" brick manholes and 1050mmØ manhole rings. Instead it is preferred that you use a Type "B" manhole with 1200mmØ or 1500mmØ rings, with the opening sited over the channel where depth of cover to pipe soffit is 1.0m - 1.5m.
22. Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.
23. Refer to Forterra drawings and details for all information relating to the box culverts

PRIVATE DRAINAGE NOTES

1. Manholes, sewers etc. and any other part of the works intended for adoption under a Section 104 Agreement or gullies etc. intended for adoption as Highway Drainage are to be constructed in accordance with the W.A.A specification "Sewers for Adoption" 6th Edition, and to any requirements of the Adopting Authority and the Local Council.
2. Unadopted FW and SW drainage is to be constructed in accordance with the Building Regulations, BS. 8301 and relevant Agreement Certificates.
3. All private drainage to be 100mmØ unless indicated otherwise. All connections from private to adoptable manholes/sewers to be 150mmØ(min).
4. Private drainage with less than 0.9m of cover in drives and car parking areas to have minimum 150mm concrete bed and surround.
5. Private Drains are to be constructed using flexibly-jointed vitrified clay pipes to BS. 65 "Super Strength" specification and BS EN 295 (e.g. Hepworth SuperSleeve or similar) or uPVC Building Drainage system pipe work to EN 1401-1, bedded and back filled in accordance with the manufacturers instructions and the specifications listed in Note 2.
6. Backfilling of drain trenches adjacent to dwellings or other structures to be in accordance with BS. 8301-Fig.9.
7. Access fittings and inspection chambers less than 1m deep are to be clayware or pre-formed polypropylene as appropriate to the depth and number of connections. Chambers greater than 1.2m deep are to be of pre-cast concrete construction with 150mm in-situ concrete surround, or polpropolene reduced access system. Inspection chamber sizes are to be in accordance with Table 8 of BS.8301.
8. Cover levels indicated on the drawing are nominal and may be adjusted to suit finished ground levels as necessary. Private inspection chamber covers should be Grade C in areas accessible to wheeled vehicles and Grade B elsewhere.
9. Rainwater down pipes to be connected direct to drain using an appropriate adapter and removable section of down pipe to permit rodding access.
10. Where drains pass through foundations or other rigid structures, a lintel or sleeve is to be used and provision for flexibility is to be made with "rocker pipes".
11. The positions of SVPs, stub-stacks, W.C. outlets etc. and rainwater down pipes are to be accurately located from the house-type working drawings.
12. Gullies situated in areas accessible to wheeled vehicles are to be of suitable construction. Typically Hepworth square gully ref. SG2/1 with driveway grating ref. 1H2C for a single private drive. For communal parking areas refer to the detail shown on iD Civils Design drawing number 4733-C-D3-01.
13. Drains within areas of "made ground" to be constructed by first making up the area to approx. finished level and then excavating through the fill material into undisturbed ground. The drain trench is then to be back filled to formation level using suitable granular fill material well-compacted in layers not exceeding 225mm.
14. Drains to be constructed under dwellings with suspended floor slabs should either be installed using a proprietary hanger system where "beam and pot" or similar construction is used, or should be cast into local slab thickening where reinforced concrete ground slabs are to be poured in-situ.
15. Finished ground levels have been prepared assuming that the level threshold to the building, is in accordance with part M of the building regulations, is at the front of the property unless otherwise stated.
16. For all details of fences/walls and enclosures refer to architect for details.
17. Channel drainage, labelled ACO should be a minimum of B125 in front of garages and C250 in other areas where vehicular traffic is present. All channels to have a preformed channel with falls to the drainage point where the grating itself is level. Gratings to be "heelguard" or similar approved.
18. All inspection chamber covers in private gardens to be square or rectangular as appropriate and inset where in paving and aligned with the paving material.

Rev	Description	By	Date
B	Foul sewer re routed F3 - C1	AH	23:05:18
A	Foul & Surface water sewers added Road 3 & 4 vertical alignment revised Proposed levels & retaining walls r'vd	AH	15:05:18

Client: Rouse Homes

Project Title: Birkenshaw

Drawing Title: Overland Flood Route

Scale	Date
1:250 @ A0	May 2018

Drawing No	Revision	Status
4733-C-D10-01	B	Approval

Geo Structures Civils
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