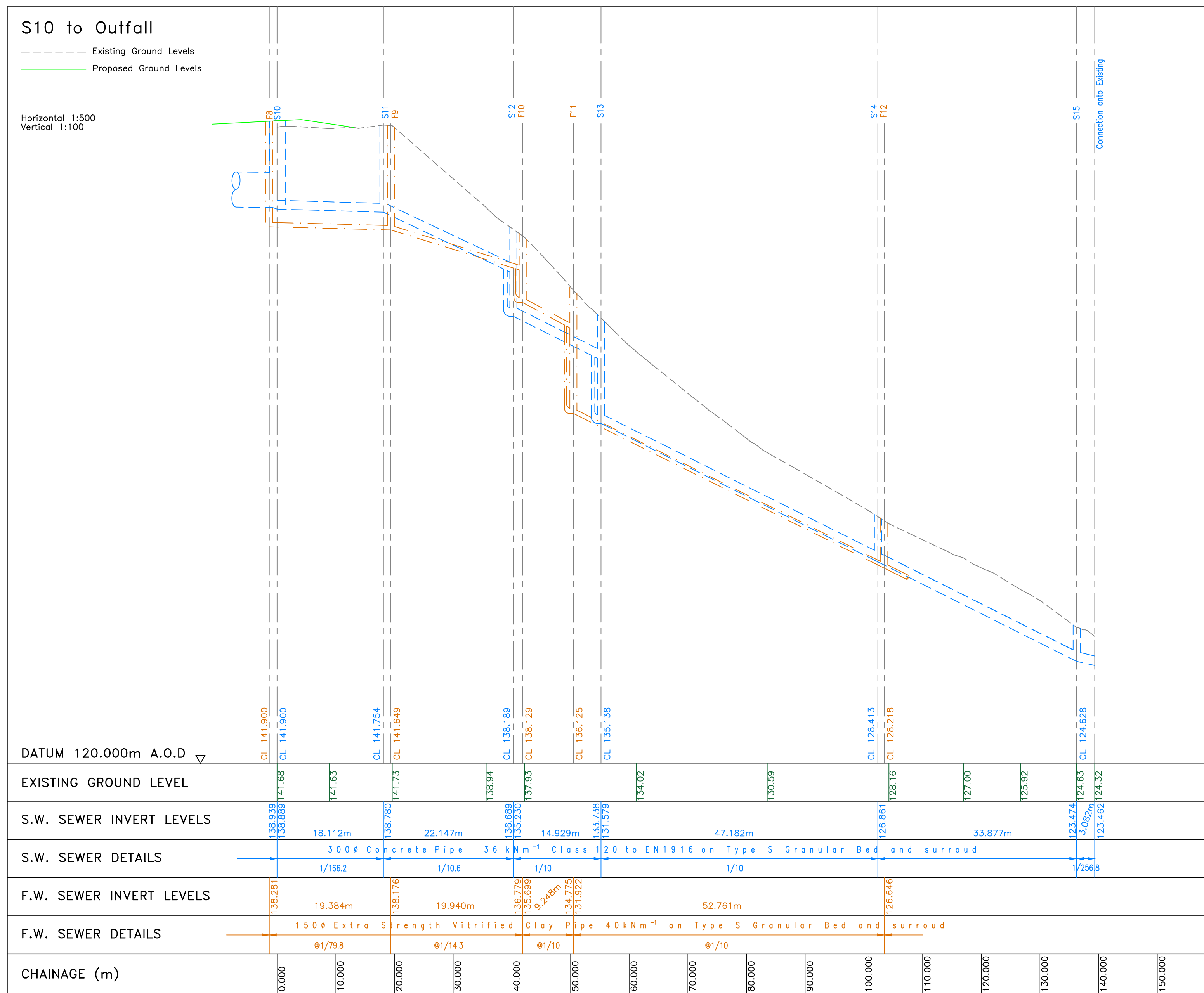
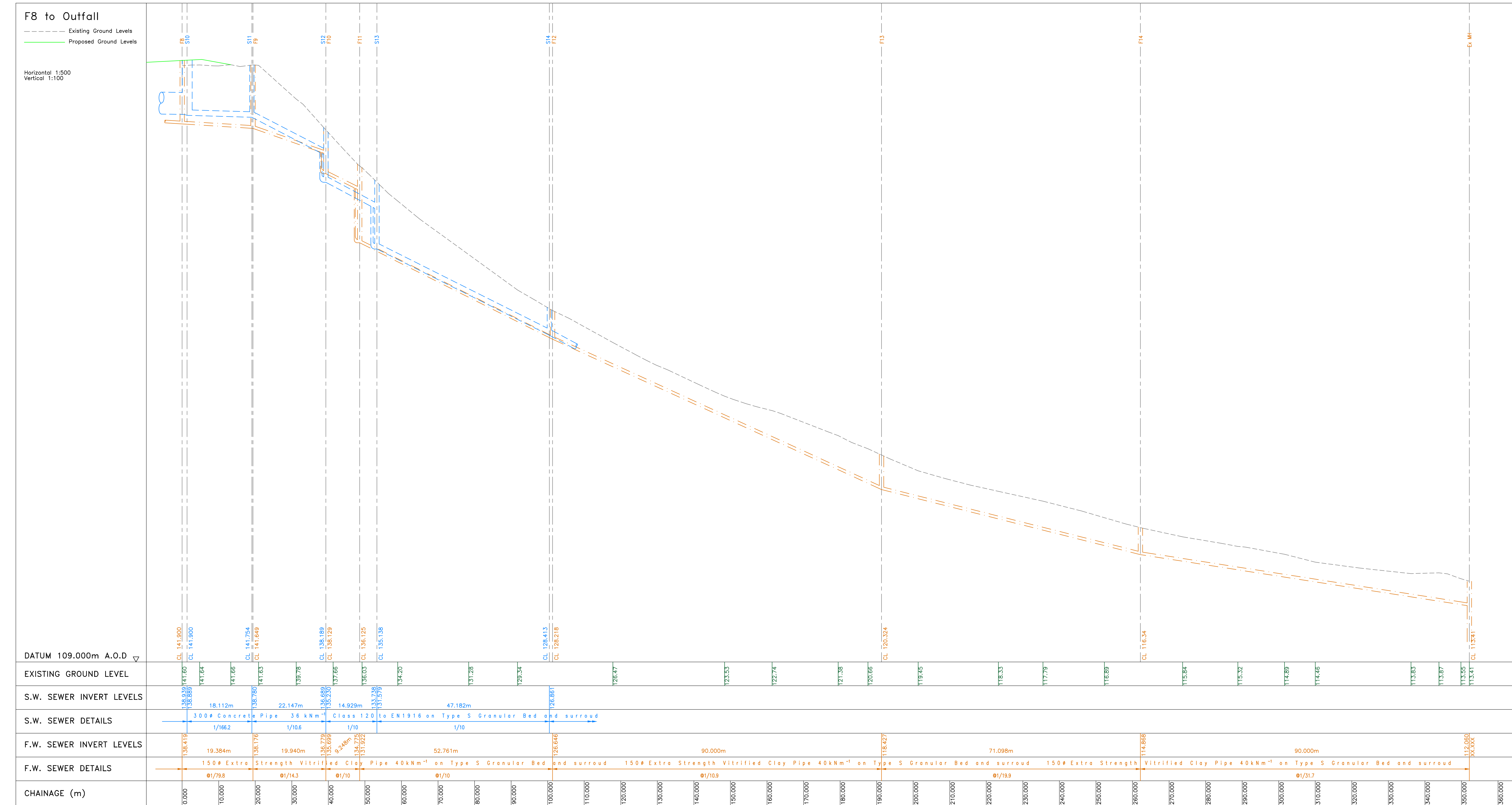




Notes

- Manhole Covers And Frames:
- Manhole covers and frames shall be to BS EN 124 with 150mm deep frames in highways. Openings in the cover slab shall be 600x600 (Double cover and frames to be 1220x675 with double 600x600 covers).
 - Class D 400 covers shall be used in carriageways (including pedestrian streets), hard shoulders and parking areas used by all types of road vehicles. Class B 125 shall be used in footways, pedestrian areas and comparable locations.
 - All manhole covers shall have closed keys.
 - All manhole covers or adaptable sewers to be lettermarked and be of a non rocking design which does not rely on the use of cushion inserts.
- Pipes And Joints Adjacent To Structures:
- A flexible joint shall be provided as close as is feasible to the outside face of any structure into which it is built, compatible with the satisfactory completion and subsequent movement of the joint.
 - The length of the rubber pipe away from the structure shall not exceed 0.750m for pipes up to 450mm nominal bore and 1000mm for pipes up to 750mm nominal bore.
 - The pipeline may be laid through the manhole and the crown broken out to half dia, provided flexible joints are situated on each side no further than 600mm from the inner face of the manhole wall, adjacent pipes complying to note 5.
- Manholes:
- | Dia. Of Largest Pipe In M.H. | Chamber Section Diameter |
|------------------------------|--------------------------|
| Less Than 375mm | 1200mm |
| 375 - 750mm | 1500mm |
| 750 - 900mm | 800mm |
| 900mm | Comms Underlain |
- Precast Concrete Manholes:
- Precast concrete manhole units shall comply with the relevant provisions of B.S. 5911, Part 2. Units which bear onto bases, or onto which cover slabs or reducing slabs, shall be manufactured so that imposed vertical loads are transmitted directly to the full wall thickness of the unit. For pipes between units and the underside of slab, angled-reduce sections shall only be used where the soffit of the slab can receive them.

Shift/Number	Manhole, less than 1.2m depth	Manhole, greater than 1.2m depth
900	400/400 central	400/400 central
1050	400/600 central	400/400 central
1200	400/600 central	400/400 central
1500	1220/675 central	400/400 central
1800	1220/675 central	400/400 central

NOTE:
All Drainage work and materials to conform to 'Sewers for Adoption' - 6th Edition
ALL CUSTOM BUILT IRONWORK TO BE HOT-DIPPED GALVANIZED PRIOR TO FINAL FIXING.

NOTE:
Cover and frame to be installed in accordance with HA 104/09

General information regarding lateral drains

- and sewerage systems for adoption
- A lateral drain is the length of pipe serving one property only and having its own demarcation chamber. If the length has two or more properties connecting then this is classed as a sewer which should, as at present, be in accordance with Sewers for Adoption and the Protocol on Design, Construction & Adoption to Sewers in England and Wales.
 - The depth of a lateral drain in front drives should be a minimum of 0.9m with the last chamber on a sewer being a minimum of 0.9m deep, in accordance with Sewers for Adoption.
 - The type of protection should be in accordance with Sewers for Adoption.
 - Demarcation chambers should be located 4m away from the highway boundary, preferably within the drive on the footpath of the property.
 - The head of the system to be adopted should have a demarcation chamber. Not all connections along a sewer will require a chamber. A chamber will be required at a change in gradient, pipe size or a change in direction. A junction could be used when means of access is provided upstream on the private length.
 - If the private drainage is taken under the building and through to the front of the property this may reduce the need for many of the lengths to remain private.
 - A 100mm sewer pipe laid at a minimum gradient of 1:80 serving 10 or less properties is acceptable. Although for the surface water system serving 2 or more properties the diameter should be a minimum of 150mm.
 - Plastic pipes are acceptable as long as the proposals are detailed on the full submission.
 - The maximum gradient for a sewer should be 1:10.
 - A protected stile at the front of the property is not required as long as the proposed system is far enough away from the proposed building(s).
 - The fees incurred for consideration of adoption are 2.5% of the cost of the works as per Sewers for Adoption.
 - Only shallow rooted plants should be positioned within the protected stile.
 - The demarcation chamber for a lateral drain can be 450mm in diameter where the chamber is up to 1.2m in depth - this is however, under review. All other chambers put forward for adoption should be in accordance with Sewers for Adoption.

Adoptable Connections (Laterals) - size and gradients

Foul: 100mm with less than 10 properties - minimum gradient 1:80, 150mm with 10 or more properties - minimum gradient 1:80.

Surface: Minimum diameter is 150mm at minimum gradient of 1:100.

Adoptable Connections (Laterals) - Demarcation Chambers

Precast Concrete to BS 5911 part 2 and BS 8001 lettermarked minimum 450mm diameter up to 2.2m deep. Access to PPIC chambers must be via a reducing pipe.

Manufacturer	Product Name	Material	Max Depth	Cover Type
Naylor	Plastic Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Hepworth	PPIC	Polypropylene	Up to 1200mm	Class B125
Uppon	Inspector Chamber (450mm B)	Polypropylene	Up to 1200mm	Class B125
Manitex	Inspector Chamber to BS5911 pt 2	Precast concrete	Up to 1200mm	Class B125
Winn	Cement Ultraflex Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Winn	Demarcation Universal Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Winn	Non Entry Inspector Chamber	Polypropylene	Up to 2000mm	Class B125
Manley	Inspector Chamber (450mm B)	Polypropylene	Up to 1200mm	Class B125
Polypipe	115mm Inspector Chamber (450mm B)	Polypropylene	Up to 1200mm	Class B125
Polypipe	Non Man Entry Deep Inspection Chamber System	Polypropylene	Up to 1200mm	Class B125

Concrete surround shall be provided to demarcation chambers where subject to vehicle loading (eg. driveways). For depths in excess of 1.2m a restricted access opening 450 diameter (or 450mm x 450mm) shall be used.

Alternatively, pre-cast concrete ring manhole to 'Sewers for Adoption' 6th edition Specification may be used as a demarcation chamber. Chamber Covers shall be ductile iron and appropriate strength for area situated (minimum classification B125).

Inspection by United Utilities Inspector

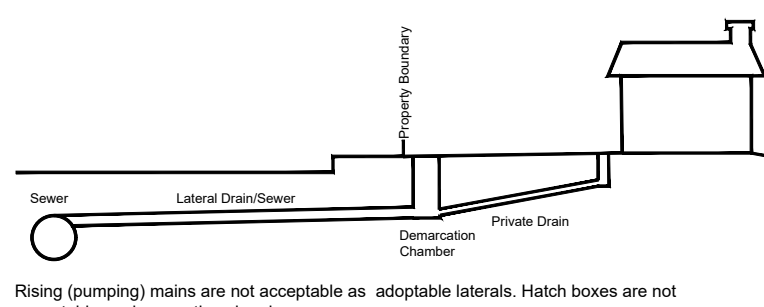
All completed connections must be inspected by a United Utilities Inspector so that a Certificate of Satisfactory Inspection may be issued. To arrange this telephone 0845 1242424 quoting the 'unique connection reference number' at least 5 working days before completion. The completed connection should be laid open for inspection. If the completed connection is backfilled without inspection by a United Utilities Inspector the developer may later be involved for United Utilities' CCTV costs and any costs for corrective works.

The inspection is to check workmanship only. The location and size of all pipes and services should be established by the developer on site prior to commencing the works. United Utilities' statutory sewer record map is indicative and may be used as a guide only. No warranty is given with regard to EIC correctness.

The developer may have to correct any work that has been carried out before receipt of United Utilities' comments if the 21 day notice period has not elapsed. Additional fees will be payable for return visits to inspect corrective work.

Adoptable Connections (Laterals)

An adoptable 'Lateral' is an accessible single length of drain (serves 1 property) or sewer (serves more than 1 property) not greater than 150mm diameter from a property to a public sewer or adjacent land or highway. A 'demarcation' chamber should be positioned at the head of the lateral at a position inside the property boundary.



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- Do not scale dimensions from this drawing in either paper or electronic format.
- To be read in conjunction with all relevant Engineers', Architects and Other drawings and specifications.
- All building products to be used in strict accordance with the manufacturer's recommendations.
- Any discrepancies are to be reported to the Engineer immediately.
- Main Contractor to provide a detailed method statement for all works prior to commencement on site.

#	Hazard/Risk	Mitigation / Residual Risk
1	XXX (Risk-High)	XXX (Risk-Low)
2	XXX (Risk-High)	XXX (Risk-Low)
3	XXX (Risk-High)	XXX (Risk-Low)
4	XXX (Risk-High)	XXX (Risk-Low)
5	XXX (Risk-High)	XXX (Risk-Low)

01	29.10.20	SS	Initial Issue	NA
Issue	Date	Drawn	Description	Chkd



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Client: Holroyd Homes (Yorkshire) Limited

Project: Netherton Fold
Netherton, Huddersfield

Title: Drainage Long Sections

Drawn	SS	Checked	NA	Scale
Date	Oct 2020	Date	Oct 2020	1:500
Status	Planning			Original Size

Drawing No: P19-00650-MET-M2-C-028
Rev: 01