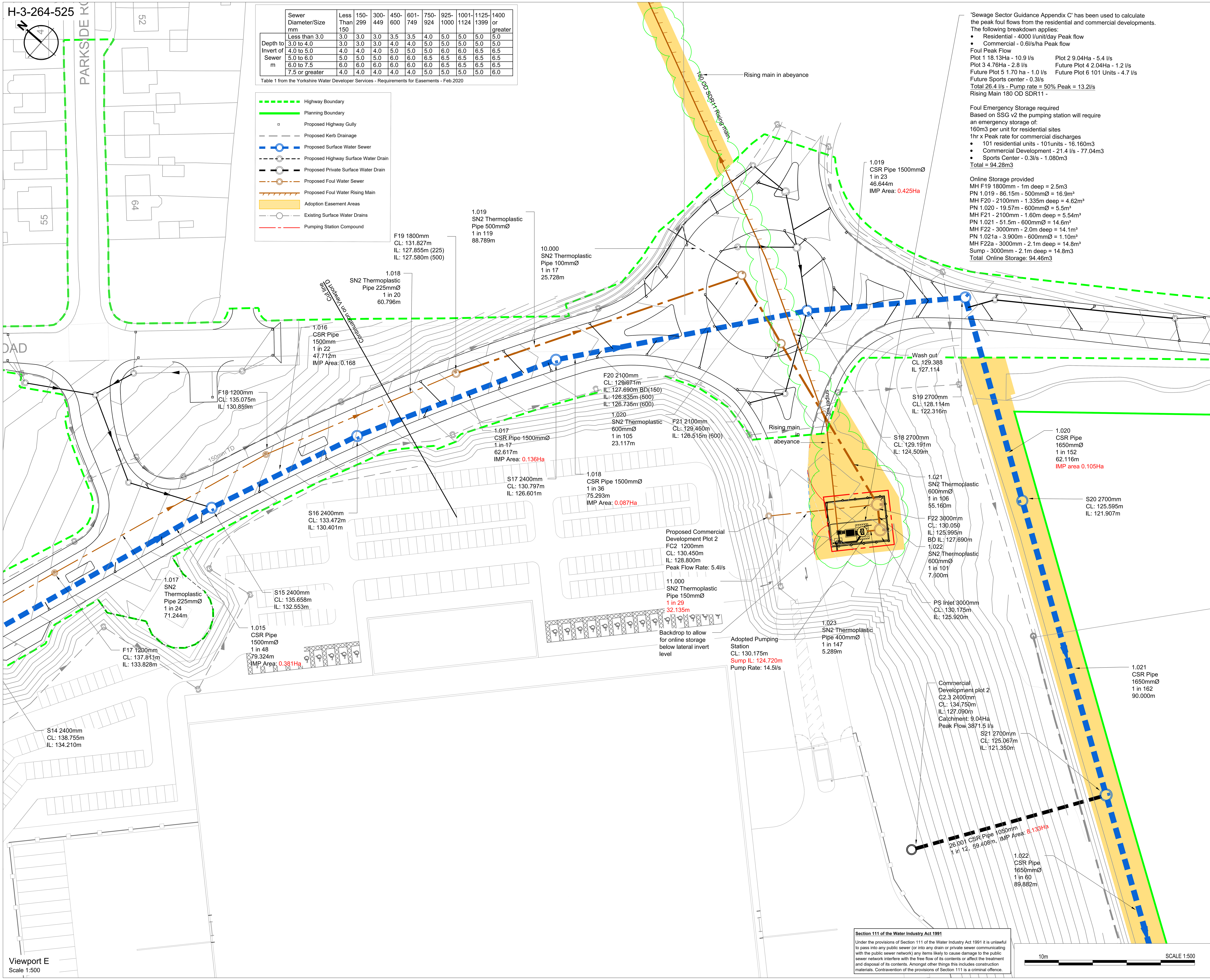
H-3-264-525

	Sewer Diameter/Size mm	Less Than 150	150-299	300-449	450-600	601-749	750-924	925-1000	1001-1124	1125-1399	1400 or greater
Depth to Invert of Sewer m	Less than 3.0	3.0	3.0	3.0	3.5	3.5	4.0	5.0	5.0	5.0	5.0
	3.0 to 4.0	3.0	3.0	3.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0
	4.0 to 5.0	4.0	4.0	4.0	5.0	5.0	5.0	6.0	6.0	6.5	6.5
	5.0 to 6.0	5.0	5.0	5.0	6.0	6.0	6.5	6.5	6.5	6.5	6.5
	6.0 to 7.5	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.5	6.5
	7.5 or greater	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	6.0

Table 1 from the Yorkshire Water Developer Services - Requirements for Easements - Feb.2020



'Sewage Sector Guidance Appendix C' has been used to calculate the peak foul flows from the residential and commercial developments. The following breakdown applies:
- Residential - 4000 l/unit/day Peak flow
- Commercial - 0.6l/s/ha Peak flow

Foul Peak Flow
Plot 1 18.13Ha - 10.9 l/s
Plot 2 9.04Ha - 5.4 l/s
Plot 3 4.76Ha - 2.8 l/s
Future Plot 4 2.04Ha - 1.2 l/s
Future Plot 5 1.70 ha - 1.0 l/s
Future Plot 6 101 Units - 4.7 l/s
Future Sports center - 0.3l/s
Total 26.4 l/s - Pump rate = 50% Peak = 13.2l/s
Rising Main 180 OD SDR11 -

Foul Emergency Storage required
Based on SSG v2 the pumping station will require an emergency storage of:
160m3 per unit for residential sites
1hr x Peak rate for commercial discharges
- 101 residential units - 101units - 16.160m3
- Commercial Development - 21.4 l/s - 77.04m3
- Sports Center - 0.3l/s - 1.080m3

Total = 94.28m3

Online Storage provided
MH F19 1800mm - 1m deep = 2.5m3
PN 1.019 - 86.15m - 500mmØ = 16.9m³
MH F20 - 2100mm - 1.335m deep = 4.62m³
PN 1.020 - 19.57m - 600mmØ = 5.5m³
MH F21 - 2100mm - 1.60m deep = 5.54m³
PN 1.021 - 51.5m - 600mmØ = 14.6m³
MH F22 - 3000mm - 2.0m deep = 14.1m³
PN 1.021a - 3.900m - 600mmØ = 1.10m³
MH F22a - 3000mm - 2.1m deep = 14.8m³
Sump - 3000mm - 2.1m deep = 14.8m3
Total Online Storage: 94.46m3

Section 111 of the Water Industry Act 1991

Under the provisions of Section 111 of the Water Industry Act 1991 it is unlawful to pass into any public sewer (or into any drain or private sewer communicating with the public sewer network) any items likely to cause damage to the public sewer network interfere with the free flow of its contents or affect the treatment and disposal of its contents. Amongst other things this includes construction materials. Contravention of the provisions of Section 111 is a criminal offence.

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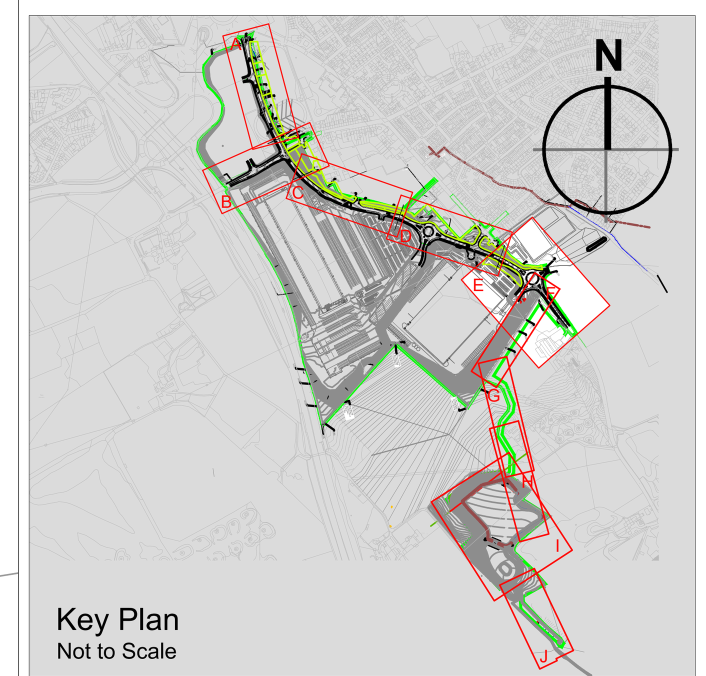
B. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.

C. This drawing should be read in conjunction with all other relevant drawings and specifications.

1. All adoptable sewer works and material to be in accordance with "Code for Adoption". The Relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and Kitemarked.
2. Manhole covers shall/must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
3. Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
4. Yorkshire water Is not obliged to accept filter drain/land drainage run-off into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land drainage Section with regard to the disposal of the filter/land drainage run-off.
5. Cover slabs must carry the BSI Kitemark or will be rejected by Yorkshire Water Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading 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 Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued 2004 for Kitemarked cover slab opening sizes
6. Sulphate resistant cement (C20-DC2) and precast concrete products must be used, or a laboratory report provided proving tat such precautions are not necessary.
7. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
8. Sewers must have 5 metres clearance from trees and hedges.
9. Sewers to be laid in class 'S' bedding (150mm Granular bed and surround). Where depth of cover to top of sewer is less then 1.2m in highways and verges (or less than 900mm in none vehicular access areas) then a concrete slab should be provide above granular bed and surround.
10. Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
11. The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connections and bends.
12. Yorkshire Water policy is that Type "C" brick manholes and 1050mm dia manhole rings are not preferred. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m
13. 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 metre 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 channel in manholes. We have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.
14. The minimum crushing strength for clay pipes should be as follows : 100mm dia. 40KN/m, 150mm dia. 40KN/m, 225mm dia. 45KN/m and 300mm dia. 72KN/m. The minimum crushing strength for concrete pipes should be - (Class 120 to EN 1916/BS5911-1 2002). Plastic pipes should conform to WIS 4-35-01 and BS EN13476
15. 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.



Rev	Description	By	Ckd	Date
P12	Updated to suit YWS Comments - IMP Area updated	SMC	SH	26.04.21

MAKING COMPLEX EASY

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Client: newlands developments

Project: Hoyland Common

Title: Proposed Drainage GA
S104 Approval
(Sheet 3 of 6)

RPS Project Number	Scale @ A1	Date Created
NK020040	1:500	18.08.2020
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SG	JNB	SMC

Status
S4 (Suitable for Stage Approval)

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Project Code - Originator - Zone - Level - Type - Role - Drawing Number

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