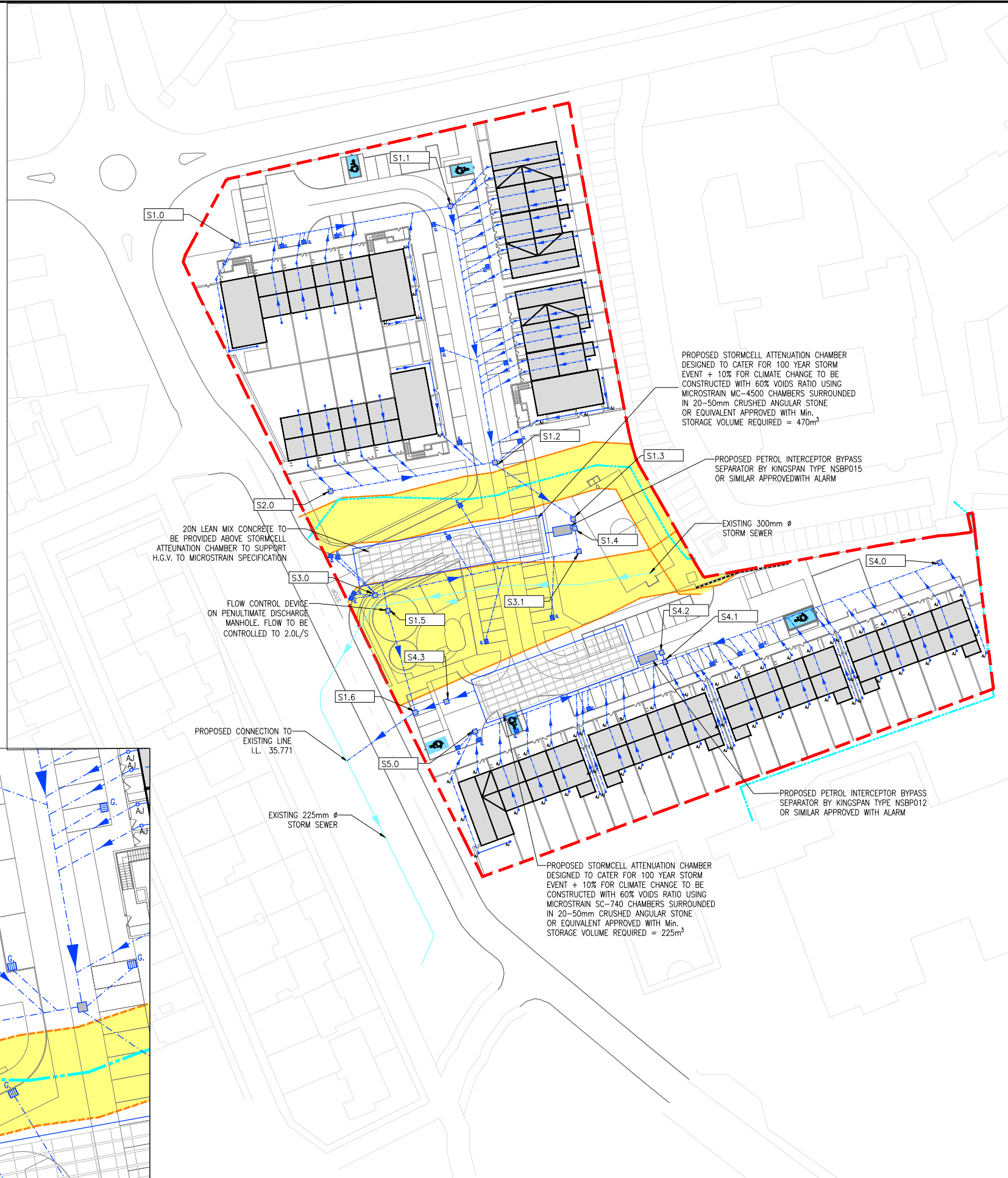
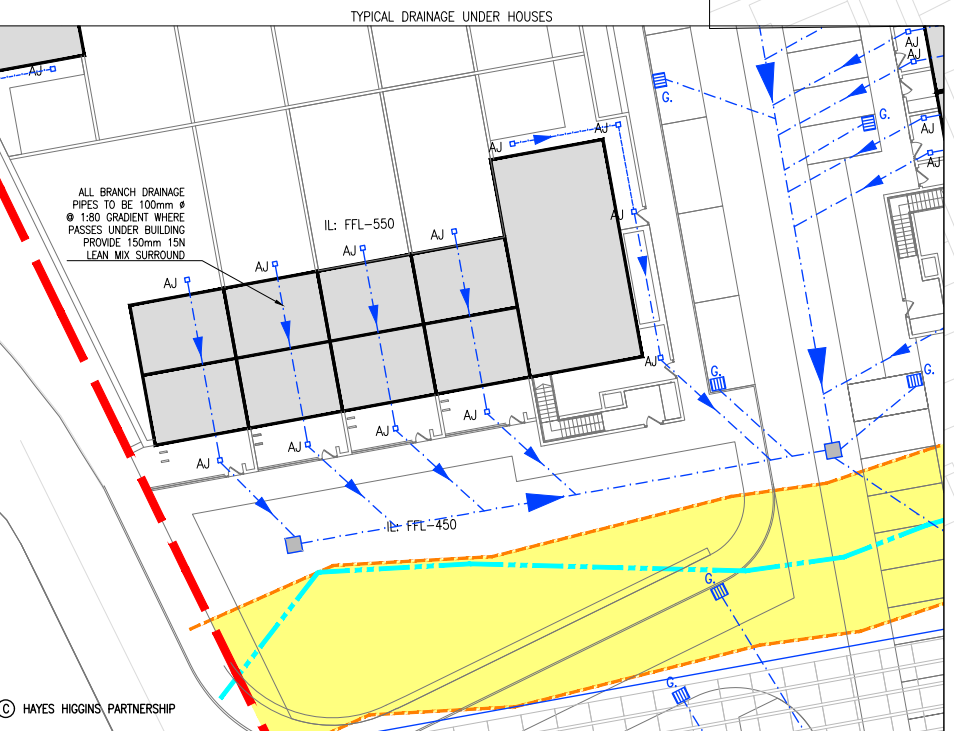
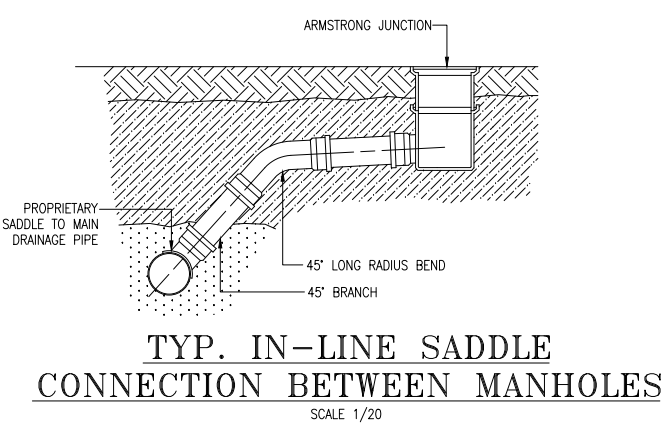


SD Pipe Section	US MH CL	US MH IL	DS MH IL	Length [m]	Pipe Diameter [mm]	Pipe Grad. 1 in	Notes:
S1.0 to S1.1	44.000	41.735	41.145	47.200	225	80	
S1.1 to S1.2	43.600	41.145	40.435	56.500	225	80	
S1.2 to S1.3	41.860	39.350	39.090	20.950	300	81	BD
S1.3 to S1.4	41.150	38.580	38.555	2.000	300	80	BD
S1.4 to TANK	40.900	37.555	37.475	6.500	300	81	BD
TANK to S1.5	41.000	37.475	37.400	6.300	225	84	
S1.5 to S1.6	40.900	36.385	36.100	22.900	225	80	BD
S1.6 to Ex Line	39.100	36.100	35.771	18.300	225	56	
S2.0 to S1.2	41.900	40.475	40.025	36.200	225	80	
S3.0 to S3.1	40.500	38.065	37.500	45.300	225	80	
S4.0 to S4.1	39.550	38.125	37.240	63.500	225	72	
S4.1 to S4.2	39.000	37.240	37.215	2.150	300	86	
S4.2 to TANK	39.000	37.215	37.145	5.900	300	84	
TANK to S4.3	39.000	37.145	37.080	6.700	225	103	
S4.3 to S1.6	39.000	37.080	37.000	7.100	225	89	
S5.0 to S4.1	39.100	37.625	37.240	44.000	225	114	

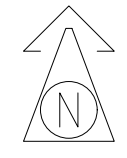
**NOTES:**  
 ENGINEER IF DIFFERENT  
 \* = CONCRETE PROTECTION WILL BE PROVIDED OVER PIPES  
 BD = Denotes Backdrop Manhole



**STORM DRAINAGE LEGEND:**

	Denotes Proposed Storm Drainage & Manhole
	Denotes Proposed Armstrong Junction
	Denotes Existing Line

- GENERAL DRAINAGE NOTES:**
- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED.
  - ALL LEVELS ARE IN METRES ABOVE DATUM UNLESS OTHERWISE NOTED.
  - ALL PIPE DIAMETERS ARE NORMAL.
  - THE CONTRACTOR MUST CONTACT THE RELEVANT AUTHORITIES PRIOR TO CONSTRUCTION WORK, & SATISFY HIMSELF IN RESPECT TO THE LOCATION OF ALL EXISTING SERVICES.
  - ALL SEWER & DRAIN PIPES ARE CLASS 'C' uPVC UNLESS OTHERWISE STATED.
  - ALL BEDDING TO SEWERS IS CLASS 'B' UNLESS OTHERWISE NOTED.
  - ALL MANHOLES CAN BE EITHER PRECAST CONCRETE RING MANHOLES OR BLOCKWORK UNLESS OTHERWISE STATED.
  - 600mm MAX. LENGTH ROCKER PIPES ARE TO BE PROVIDED ON SEWER WHERE:
    - (A) A PIPE ENTERS A MANHOLE OR PUMPING STATION.
    - (B) A PIPE LEAVES A MANHOLE.
    - (C) A PIPE ENTERS CONCRETE ENCASUREMENT.
    - (D) A PIPE LEAVES CONCRETE ENCASUREMENT.
    - (E) ANY OTHER LOCATION AS DIRECTED BY THE ENGINEER.
  - ALL SEWER ROCKER PIPES ARE TO BE FORMED BY CUTTING & TRIMMING A LENGTH OF SPIGOT & SOCKET PIPE TO FORM A SPIGOT AT THE CUT END, THEREBY FORMING SPIGOT & SOCKET JOINTS AT BOTH ENDS OF THE ROCKER PIPE.
  - WHERE SEWER PIPES OR RISING MAINS CONNECT TO EXISTING MANHOLES, THE CONTRACTOR IS REQUIRED TO:
    - (A) CONTACT THE RELEVANT AUTHORITIES PRIOR TO COMMENCING WORK.
    - (B) MAKE GOOD THE EXISTING CHAMBER WALL AT THE PROPOSED POINT OF PENETRATION & ADJUST THE EXISTING BENCHING TO THE SATISFACTION OF THE ENGINEER.
  - WHERE SEWER PIPES, RISING MAINS OR ROAD GULLY DRAINS CROSS EXISTING ROADS, THE CONTRACTOR IS REQUIRED TO:
    - (A) CONTACT THE RELEVANT AUTHORITIES PRIOR TO COMMENCING WORK.
    - (B) MAKE GOOD THE EXISTING ROAD TO ITS ORIGINAL SPECIFICATION AS APPROVED BY THE ENGINEER.
  - MINIMUM FALLS INDICATED ON DRAINAGE PIPES, LEVELS TO BE REVISED IF MANHOLE LOCATIONS ARE MODIFIED BY CONTRACTOR.
  - CONCRETE PROTECTION TO BE PROVIDED AROUND ALL PIPES UNO.
  - ALL BRANCH & PERIMETER DRAINAGE ARE TO BE DETAILED BY ARCHITECT.
  - PROPRIETARY ACCESS JUNCTIONS TO BE USED TO DEPTHS OF 600mm OR LESS.
  - 450x450mm INSPECTION CHAMBERS TO BE USED AT DEPTHS OF 600-1000mm.
  - MANHOLES TO DETAILS TO BE USED AT DEPTHS OVER 1000mm.
  - ROAD GULLIES TO BE PROVIDED SO THAT MAX AREA CONTRIBUTING TO A SINGLE GULLY IS 180m².
  - ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH 'RECOMMENDATIONS FOR SITE DEVELOPMENT WORKS FOR HOUSING AREAS', DEPARTMENT OF THE ENVIRONMENT.
  - ALL STORM MANHOLE BASES TO BE PRECAST CONCRETE PRE-BENCHED OFF SITE.
- TESTING OF SEWERS:**
- FOUL & SURFACE WATER SEWERS TO BE TESTED EITHER BY WATER OR AIR TEST. IF THE AIR TEST IS CARRIED OUT & THE RESULTS SHOW A FAILURE THEN A WATER TEST SHALL BE SUBSEQUENTLY CARRIED OUT TO DETERMINE ACCEPTANCE OR REJECTION.
  - WATER TESTS CARRIED OUT SHALL BE TESTED IN UNDER A HEAD OF WATER IN ACCORDANCE WITH BS 8301 1995, & CARRIED OUT FOR A MINIMUM OF 30 MINUTES.
  - THE CONTRACTOR IS TO ENGAGE AN ENGINEER WITH PROFESSIONAL INDEMNITY INSURANCE TO SUPERVISE ALL AIR/WATER TESTS ON MAINS BEFORE BACKFILLING.
  - ON COMPLETION OF ALL SEWERS DRAINS & GULLIES, ALL SEWERS SHALL BE FLUSHED OUT & LEFT FREE FROM DEFECT & OBSTRUCTION & SUBSEQUENTLY A CCTV SURVEY SHALL BE CARRIED OUT BY AN INDEPENDENT CONTRACTOR OF THE AS BUILT DRAINAGE. THE CCTV SURVEY SHALL INCLUDE A REPORT & DVD & SHALL BE SUBMITTED TO THE ENGINEER & ARCHITECT PRIOR TO PRACTICAL COMPLETION.
  - ON COMPLETION OF ALL SEWERS, DRAINS & GULLIES AN AS-BUILT SURVEY MUST BE SUBMITTED INCLUDING LOCATION OF MANHOLES RELATIVE TO THE BUILDING OUTLINE, COVER, INVERT LEVELS & PIPE DIAMETERS TO THE ENGINEER & ARCHITECT FOR THEIR REVIEW PRIOR TO PRACTICAL COMPLETION.



Rev.	Date	Description	Des.	Chkd.	Appvd.
P1	22.05.17	PERLUMINARY ISSUE	SK	NP	NP
P2	11.07.17	PERLUMINARY ISSUE	SK	KK	NP
P3	XX.XX.17	PERLUMINARY ISSUE	SK	NP	NP
PL1	20.04.18	PLANNING ISSUE	EH	EH	NP

**NOTES:**

- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SERVICE ENGINEERS DRAWINGS & SPECIFICATIONS.
- ALL LEVELS ARE STRUCTURAL UNLESS NOTED OTHERWISE.
- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT BUILDING REGULATIONS.
- DO NOT SCALE - WORK TO FIGURE DIMENSIONS ONLY.

**QUALITY**  
ISO 9001:2000  
NSA Certified

**ENGINEERS IRELAND**  
cpd ACCREDITED COMPANY

**PROPOSED STORM LAYOUT**

Date: 22.05.2017 Scale: A1 - 1/500, A3 - 1/1000

Drawn By: S. KEARNEY Checked By: N. PATERSON Approved By: N.PATERSON

Client: WATERFORD CITY AND COUNTY COUNCIL

Job Description: SOCIAL HOUSING PPP BUNDLE 2 SLIEVEKEALE, WATERFORD CITY

Project No: 17KK007/SHB2 Drawing Ref: SLI-C-020 Rev: PL1

**PLANNING**

**Hayes Higgins Partnership**  
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