

**GENERAL DRAINAGE NOTES**

- ALL DRAINAGE WORKS SHALL BE IN ACCORDANCE WITH 'THE BUILDING REGULATIONS APPROVED DOCUMENT H' AND BRITISH STANDARD EN 752.
- PRIOR TO COMMENCEMENT OF THE WORKS THE CONTRACTOR SHALL LAISE WITH ALL RELEVANT AUTHORITIES TO OBTAIN THEIR REQUIREMENTS AND TO OBTAIN APPROVAL FOR HIS METHOD OF WORKING AND WHERE APPROPRIATE HIS INTENDED CHOICE OF MATERIALS.
- REFER TO SITE SURVEY FOR DETAILS OF EXISTING SITE CONDITIONS AND BENCH MARKS.
- PRIOR TO COMMENCEMENT OF THE WORKS THE CONTRACTOR SHALL LAISE WITH ALL RELEVANT AUTHORITIES TO LOCATE, PROTECT AND WHERE NECESSARY DIVERT ALL EXISTING SERVICES AFFECTED BY THE WORKS.
- ALL EXCAVATIONS SHALL BE KEPT FREE OF STANDING WATER.
- THE CONTRACTOR SHALL ENSURE THE STABILITY OF ALL EXCAVATIONS IS MAINTAINED AT ALL TIMES.
- ALL WORKS IN OR ADJACENT TO THE PUBLIC HIGHWAY SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE HIGHWAY AUTHORITY. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY LICENCES TO CARRY OUT WORKS WITHIN THE PUBLIC HIGHWAY.
- ALL WORKS TO NEW OR EXISTING PUBLIC SEWERS SHALL BE TO THE APPROVAL OF THE WATER AUTHORITY AND IN ACCORDANCE WITH 'SEWERS FOR ADOPTION 6TH EDITION' + INTERIM TECHNICAL ADDENDUM NO. 1.
- PRIOR TO COMMENCEMENT OF THE WORKS ALL DRAINAGE OUTFALL POINTS, WHETHER EXISTING SEWER, DRAIN OR WATERCOURSE, SHALL BE VERIFIED ON SITE BY THE CONTRACTOR. IF THE OUTFALL POINT IS FOUND TO BE HIGHER OR SIGNIFICANTLY LOWER THAN SHOWN ON THE DRAWINGS THEN THE CONTRACT ADMINISTRATOR SHALL BE NOTIFIED IMMEDIATELY. (SIGNIFICANT REDESIGN OF DRAINAGE AND LEVELS MAY BE NECESSARY). PRIOR TO COMMENCEMENT OF CONSTRUCTION ON-SITE THE CONTRACTOR SHALL INSTALL ALL OFF-SITE DRAINAGE CONNECTIONS, OR SATISFY HIMSELF THAT THERE ARE NO OBSTRUCTIONS OR OTHER REASONS WHY, THE DRAIN CONNECTIONS CAN NOT BE MADE.
- ALL COVER LEVELS SHOWN ON THIS DRAWING ARE APPROXIMATE. EXACT LEVELS OF NEW COVERS AND FRAMES TO BE DETERMINED ON SITE TO MATCH LEVEL AND PROFILE OF FINISHED SURFACE.
- THE CONSTRUCTION OF ALL EXISTING CHAMBERS, GULLIES ETC. AND THEIR COVERS, GRATINGS AND FRAMES TO BE IMPROVED, REPAIRED OR REPLACED AS NECESSARY TO SUIT THEIR LOCATION WITHIN THE FINISHED DEVELOPMENT.
- ALL COVERS, GRATINGS AND FRAMES TO CHAMBERS, GULLIES, CHANNELS ETC. SHALL BE OF THE CORRECT LOAD CLASS TO SUIT THEIR LOCATION.
  - LOAD CLASS B125 PEDESTRIAN AREAS / CAR PARKING (NOT ACCESSIBLE BY HEAVY GOODS VEHICLES)
  - LOAD CLASS D400 AREAS ACCESSIBLE TO HGVs.
  - GRATINGS IN PEDESTRIAN AREAS TO BE DESIGNED FOR PEDESTRIAN USE, AND VICE VERSA FOR GRATINGS IN ROADS.
- ALL EXISTING CHAMBERS, GULLIES CHANNELS, PIPES AND OTHER DRAINAGE APPARATUS SHALL BE PROTECTED FROM DAMAGE DURING THE WORKS. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO ENSURE THAT NO MATERIAL ENTERS THE DRAINS (OTHER THAN THAT WHICH THEY ARE DESIGNED TO CARRY).
- REFER TO SITE INVESTIGATION REPORT FOR EXISTING GROUND CONDITIONS AND ANY SPECIAL REQUIREMENTS FOR BURIED CONCRETE (SPECIAL REQUIREMENTS FOR BURIED CONCRETE SHALL INCLUDE ALL PRE-CAST AND IN-SITU CONCRETE AND MORTARS), WHERE APPROPRIATE REFER TO CONTAMINATION REPORTS FOR DETAILS OF CHEMICALS AFFECTING CHOICE OF MATERIALS AND OTHER ADDITIONAL REQUIREMENTS.
- ALL PRE-CAST AND IN-SITU CONCRETE AND MORTARS USED IN THE CONSTRUCTION OF FOUL DRAINS AND SEWERS SHALL BE MADE FROM SULPHATE RESISTING CEMENT.
- UNLESS NOTED OTHERWISE ALL SURFACE WATER DRAINAGE PIPEWORK SHALL BE 150MM DIAMETER LAID TO A FALL OF 1 IN 150 OR STEEPER.
- UNLESS NOTED OTHERWISE FOUL WATER DRAINS SHALL BE 100MM DIAMETER LAID TO A FALL OF 1 IN 40 OR GREATER. FOUL DRAINS WITH ONE OR MORE W.C. CONNECTED MAY BE LAID AT 1 IN 80 OR STEEPER.
- UNLESS NOTED OTHERWISE PIPE WORK CAN BE CONSTRUCTED FROM ANY OF THE FOLLOWING:
  - UPVC TO BS EN 1401
  - POLYPROPYLENE TO BS EN 1852
  - 'SUPER STRENGTH' VITRIFIED CLAY TO BS 65, BS EN 295
  - DUCTILE IRON TO BS 598
  - CLASS H CONCRETE TO BS 5911
- THE CONTRACTORS ATTENTION IS DRAWN TO DIAGRAMS 7 AND 8 OF 'THE BUILDING REGULATIONS APPROVED DOCUMENT H' SHOWING DETAILS OF DRAINS LAID BELOW AND NEAR TO BUILDINGS. WHERE GROUND BEAMS ARE USED, THEIR LEVEL SHALL BE SET TO AVOID CLASHING WITH DRAIN CONNECTIONS.
- EXACT LOCATION OF GULLIES TO BE DETERMINED ON SITE TO SUIT LOW POINTS. THE CONTRACTOR SHALL ENSURE THAT ALL FINISHED SURFACE ARE LAID TO FALLS THAT ARE SUFFICIENT FOR ALL SURFACE WATER TO DRAIN WITHOUT SURFACE PONDING.
- FOR THE EXACT LOCATION OF SOIL PIPES, STUBSTACKS, W.C.'S AND OTHER DRAINAGE CONNECTIONS REFER TO THE LARGE SCALE ARCHITECTURAL BUILDING PLANS.
- RAINWATER DOWNPIPES THAT DO NOT CONNECT DIRECTLY TO AN ACCESS POINT, SHALL BE FITTED WITH A RODDING ACCESS.
- ALL DRAINAGE CHANNELS TO BE ACO OR SIMILAR APPROVED AND TO BE OF A TYPE SIZE AND CAPACITY SUITABLE FOR THEIR LOCATION.
- THE HEAD OF EACH PROPOSED FOUL SEWER IS TO BE VENTED.
- ALL CATCHPITS AND SILT TRAPS TO BE REGULARLY CLEANED AND MAINTAINED FOLLOWING INSTALLATION TO ALLOW THE SW SYSTEM TO OPERATE AT ITS FULL CAPACITY. UN-MAINTAINED SILT BUILD UP CAN LEAD TO INSUFFICIENT PIPE FLOWS DUE TO RESTRICTED ACCESS AND CAN RESULT IN SURFACE PONDING.

**NOTES**

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT REGULATIONS, ARCHITECTS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION.
- DO NOT SCALE FROM THIS DRAWING MANUALLY OR ELECTRONICALLY. WRITTEN PERMISSION MUST BE OBTAINED FROM MLM PRIOR TO SCALING ELECTRONICALLY OR USING THIS ELECTRONIC FILE.

**CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015**  
**DESIGNERS HAZARD INFORMATION FOR CONSTRUCTION**

1. IF YOU DO NOT FULLY UNDERSTAND THE RISKS INVOLVED DURING THE CONSTRUCTION OF THE ITEMS INDICATED ON THIS DRAWING ASK YOUR MANAGER, HEALTH & SAFETY ADVISOR OR A MEMBER OF THE DESIGN TEAM BEFORE PROCEEDING.

THE ABOVE NOTES REFER SPECIFICALLY TO THE INFORMATION SHOWN ON THIS DRAWING.  
REFER TO THE HEALTH AND SAFETY PLAN FOR FURTHER INFORMATION.

Pipe Number	US/MH No.	Manhole Type & Min. Internal Dimension	Pipe Length (m)	US/CL (m)	US/IL (m)	DS/IL (m)	Gradient (1:x)	Pipe Ø (mm)	Min. Cover Size (mm)	Cover Type & Load Class	Notes	Change in Level (m)	Cover to Soffit (m)	Cover to IL (m)
<b>FOUL WATER</b>														
1.000	F1.0	INTERNAL 600mm PPIC	4.788	19.100	17.897	17.802	50	150	430	CLASS AAA, DOUBLED SEALED, RECESSED & LOCKABLE		0.096	1.053	1.203
1.001	F1.1	INTERNAL 600mm PPIC	12.111	19.100	17.802	17.629	70	150	430	DOUBLED SEALED, RECESSED & LOCKABLE		0.173	1.148	1.298
1.002	F1.2	INTERNAL 1200mm PCC	6.690	19.420	17.629	17.545	80	150	600 x 600	DOUBLED SEALED, RECESSED & LOCKABLE		0.084	1.641	1.791
1.003	F1.3	1200mm PCC	26.478	19.400	17.545	17.215	80	150	600 x 600	CLASS AAA, DOUBLED SEALED, RECESSED & LOCKABLE		0.330	1.705	1.855
1.004	F1.4	1200mm PCC	3.795	20.730	17.215	17.168	80	150	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE		0.047	3.365	3.515
1.005	F1.5	1200mm PCC	6.410	20.730	17.168	17.085	78	150	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE	Outfalls into C1.0 via backdrop at half height of sewer (half height IL assumed 15.495m - TBC on site)	0.082	3.412	3.562
2.000	F2.0	INTERNAL 600mm PPIC	6.348	20.000	18.346	18.231	55	100	350	CLASS AAA, DOUBLED SEALED, RECESSED & LOCKABLE		0.115	1.554	1.654
2.001	F2.1	INTERNAL 600mm PPIC	8.480	20.000	18.181	18.068	75	150	350	CLASS AAA, DOUBLED SEALED, RECESSED & LOCKABLE		0.113	1.669	1.819
2.002	F2.2	INTERNAL 1050mm PCC	19.988	19.535	18.068	17.818	80	150	750 x 675	CLASS AAA, DOUBLED SEALED, RECESSED & LOCKABLE		0.250	1.317	1.467
3.000	F3.0	INTERNAL 600mm PPIC	9.054	20.000	18.817	18.688	70	100	430	CLASS AAA, DOUBLED SEALED, RECESSED & LOCKABLE		0.129	1.083	1.183
3.001	F3.1	INTERNAL 600mm PPIC	8.290	20.000	18.638	18.150	17	150	430	D400, DOUBLED SEALED, RECESSED & LOCKABLE		0.488	1.212	1.362
4.000	F4.0	600mm PPIC	8.911	20.150	18.373	18.150	40	100	430	D400, DOUBLED SEALED, RECESSED & LOCKABLE	Outfalls into F3.1	0.223	1.677	1.777
3.002	F3.2	1200mm PCC	5.733	20.150	18.150	17.818	17	150	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE	Outfalls into F2.3 via backdrop	0.332	1.850	2.000
2.003	F2.3	1200mm PCC	5.143	20.440	17.818	17.750	76	150	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE		0.068	2.472	2.622
2.004	F2.4	1200mm PCC	6.922	20.600	17.750	17.664	80	150	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE		0.087	2.700	2.850
2.005	F2.5	1200mm PCC	1.039	20.600	17.664	17.650	78	150	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE	Outfalls into C1.0 via backdrop at half height of sewer (half height IL assumed 15.495m - TBC on site)	0.013	2.786	2.936
1.006	C1.0	1800mm PCC	-	20.600	14.920	-	-	1300	600 x 600	D400, AS PER T/W SPECIFICATION	1300mm deep x 900mm wide brick egg existing sewer, IL approx. 14.920m (TBC on site) to be built to adoptable standards	Ex.	4.380	5.680

Pipe Number	US/MH No.	Manhole Type & Min. Internal Dimension	Pipe Length (m)	US/CL (m)	US/IL (m)	DS/IL (m)	Gradient (1:x)	Pipe Ø (mm)	Min. Cover Size (mm)	Cover Type & Load Class	Notes	Change in Level (m)	Cover to Soffit (m)	Cover to IL (m)
<b>SURFACE WATER</b>														
1.000	S1.0	600mm PPIC	3.700	19.800	18.052	18.018	109	150	350	CLASS AAA, DOUBLED SEALED, RECESSED & LOCKABLE		0.034	1.598	1.748
1.001	S1.1	1200mm PCC	20.300	19.800	18.018	17.749	75	150	600 x 600	CLASS AAA, DOUBLED SEALED, RECESSED & LOCKABLE		0.269	1.632	1.782
1.002	S1.2	1200mm PCC	21.400	19.400	17.674	17.460	100	225	600 x 600	CLASS AAA, DOUBLED SEALED, RECESSED & LOCKABLE		0.214	1.501	1.726
2.000	S2.0	600mm PPIC	13.800	20.850	19.850	17.535	6	150	430	C250, DOUBLED SEALED, RECESSED & LOCKABLE		2.315	0.850	1.000
1.003	S1.3 CP	1200mm PCC	0.800	20.850	17.460	17.200	3	225	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE	Outfalls into Attenuation Tank	0.260	3.165	3.390
3.000	S3.0	600 PPIC	16.200	20.450	19.450	19.287	99	150	430	C250, DOUBLED SEALED, RECESSED & LOCKABLE		0.163	0.850	1.000
3.001	S3.1	1050mm PCC	11.327	20.240	19.287	19.174	100	150	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE		0.113	0.803	0.953
3.002	S3.2	1050mm PCC	9.591	20.150	19.174	18.481	14	150	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE	Connects into S4.1 at high level within chamber	0.692	0.826	0.976
3.003	S3.3	1050mm PCC	24.467	20.000	18.406	18.243	150	225	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE		0.163	1.369	1.594
4.000	S4.0	225mm PPIC	4.800	19.250	18.650	17.325	4	150	250	CLASS AAA, DOUBLED SEALED, RECESSED & LOCKABLE		1.325	0.450	0.600
3.004	S3.4 CP	1200mm PCC	1.000	20.850	18.243	17.200	1	225	600 x 600	C250, DOUBLED SEALED, RECESSED & LOCKABLE	Outfalls into Attenuation Tank	1.043	2.382	2.607
1.004	TANK	-	3.058	20.800	17.200	16.900	10	150	-	-	Attenuation tank - see GA for dimensions	0.300	3.450	3.600
5.000	S5.0	600mm PPIC	9.000	20.730	20.030	19.940	100	100	430	C250, DOUBLED SEALED, RECESSED & LOCKABLE		0.090	0.600	0.700
5.001	S5.1	600mm PPIC	9.000	20.730	19.940	19.850	100	100	430	C250, DOUBLED SEALED, RECESSED & LOCKABLE		0.090	0.690	0.790
5.002	S5.2	600mm PPIC	1.797	20.730	19.850	19.505	5	100	430	C250, DOUBLED SEALED, RECESSED & LOCKABLE	Outfalls into S5.3 FC	0.345	0.780	0.880
6.000	S6.0	600mm PPIC	9.175	20.370	19.670	19.580	102	100	430	C250, DOUBLED SEALED, RECESSED & LOCKABLE		0.090	0.600	0.700
6.001	S6.1	600mm PPIC	7.203	20.600	19.580	19.505	96	100	430	C250, DOUBLED SEALED, RECESSED & LOCKABLE	Outfalls into S5.3 FC	0.075	0.920	1.020
5.003	S5.3 FC	1200mm PCC	2.500	20.730	19.505	19.488	150	100	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE	Outfalls into S1.4 FC - inverts level backdrop connection	0.017	1.125	1.225
1.005	S1.4 FC	1200mm PCC	8.100	20.800	16.900	16.800	81	150	600 x 600	D400, DOUBLED SEALED, RECESSED & LOCKABLE	Outfalls into C1.0 via backdrop at half height of sewer (half height IL assumed 15.495m - TBC on site)	0.100	3.750	3.900



REV	DATE	FOR CONSTRUCTION	REVISION	MADE BY	APP
C08	04.12.2018	AMENDED COVER SPEC S3.0 FOR FIRE TENDER ROUTE; ADDED S4.0 & S7.0 RUNS	CC	JL	JL
C07	15.11.2018	UPDATED TO SUIT AMENDED C1.0 POSITION AS PER NEILCOTT REQUEST; VARIOUS MHs MOVED; SUBSEQUENT LENGTH CHANGES; ADDED S1.5 & S7.5; REMOVED S5.0; UPDATED MANHOLE CO-ORDINATES	CC	JL	JL
C06	23.07.2018	MANHOLE COORDINATES ADDED.	RAC	CC	CB
C05	19.07.2018	FURTHER UPDATES BASED ON EMP TEAM COMMENTS.	RAC	CC	CB
C04	12.04.2018	UPDATED IN LINE WITH EMP TEAM COMMENTS - COVER TYPES AMENDED TO BE RECESSED TO ACCEPT LANDSCAPING FINISHES EXTERNALLY; CHAMBERS MOVED U/S & D/S; MINOR LEVEL AMENDMENTS	CC	CB	CB
C03	06.04.2018	UPDATED IN LINE WITH CHANGES TO GA	CC	AP	AP
C02	13.03.2018	UPDATED WITH SPRINKLER TANK PIPE SIZE REQUIREMENTS AND C1.0 COVER TYPES ADDED FOR BOTH NETWORKS	CC	BF	BF
C01	28.02.2018	FOR CONSTRUCTION	CC	CB	CB

**CONSTRUCTION**

SUITABILITY DESCRIPTION

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CLIENT  
**NEILCOTT CONSTRUCTION LTD**

PROJECT  
**CENTRAL SOMERS TOWN - PLOT 4**

DRAWING TITLE  
**DRAINAGE SCHEDULES**

DRAWN/DESIGN	CC	MLM REF	STATUS	REVISION	
NTS @A0	668831	-	C08		
PROJECT	ORIGINATOR	VOLUME/ LEVELS & SYSTEM LOCATIONS	TYPE	ROLE	NUMBER
668831 - MLM - 04 - XX - DR - C	-	-	-	-	-0100

