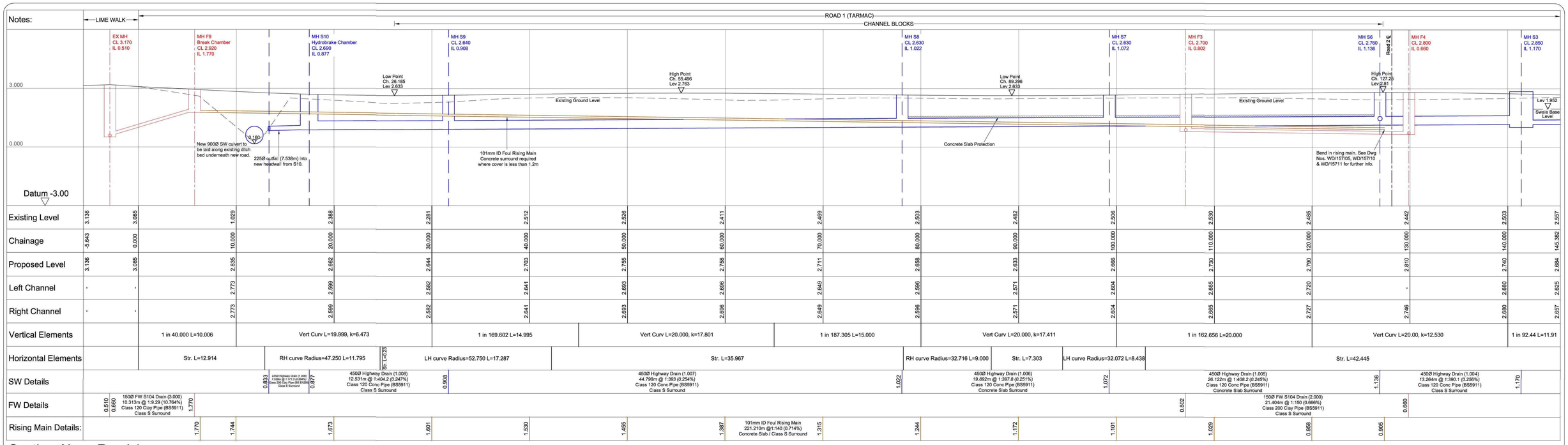
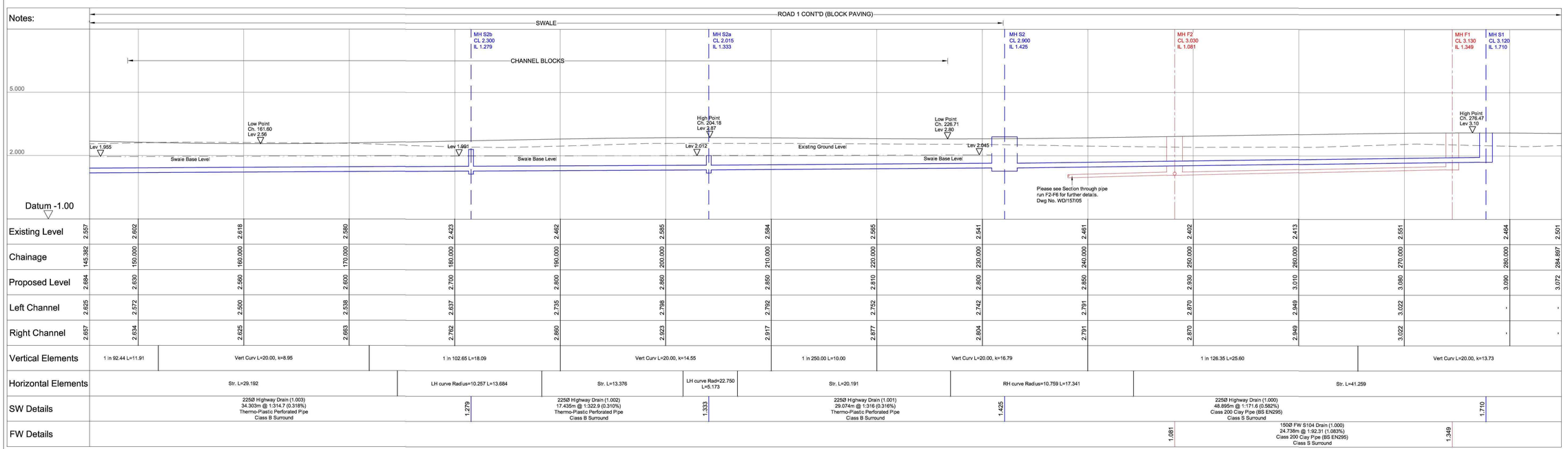


Section Along Road 1



Section Along Road 1 Cont'd

PIPE STRENGTH CALCULATIONS

PIPE REFERENCE	PIPE dia	DEPTH OF	COVER	BEDDING	DESIGN	We x 1.25	REQ PIPE STR.
	mm	MIN m	MAX m	FACTOR	LOAD	Bedding Factor	
					We Kn/m	Kn/m	
S1-S2	225	1.19	1.25	2.2	26.50	15.06	Class 200 Clay pipe to BS EN295
S2-S2a	225	0.46	1.25	1.9	42.01	27.64	Thermo-Plastic Perforated Pipe
S2a-S2b	225	0.46	0.80	1.9	39.16	25.76	Thermo-Plastic Perforated Pipe
S2b-S3	225	0.80	1.46	1.9	35.19	23.15	Thermo-Plastic Perforated Pipe
S3-S6	450	1.17	1.23	2.2	41.88	23.80	Class 120 Conc pipe to BS5911
S4-S5	225	0.98	1.24	4.5	29.56	8.21	Class 200 Clay pipe to BS EN295
S5-S6	225	1.17	1.24	2.2	25.98	14.76	Class 200 Clay pipe to BS EN295
S6-S7	450	1.11	1.17	4.5	44.37	12.33	Class 120 Conc pipe to BS5911
S7-S8	450	1.11	1.16	4.5	44.37	12.33	Class 120 Conc pipe to BS5911
S8-S9	450	1.16	1.28	2.2	42.40	24.09	Class 120 Conc pipe to BS5911
S9-S10	450	1.28	1.36	2.2	40.74	23.15	Class 120 Conc pipe to BS5911
S10-Headwall	225	1.59	1.63	2.2	24.04	13.66	Class 200 Clay pipe to BS EN295
F1-F2	150	1.78	1.95	2.2	20.39	11.59	Class 200 Clay pipe to BS EN295
F2-F6	150	2.33	2.53	2.2	20.37	11.57	Class 200 Clay pipe to BS EN295
F3-F4	150	1.76	2.00	2.2	20.39	11.59	Class 200 Clay pipe to BS EN295
F4-F5	150	2.00	2.44	2.2	20.97	11.91	Class 200 Clay pipe to BS EN295
F5-F6	150	2.44	2.52	2.2	20.11	11.43	Class 200 Clay pipe to BS EN295
F6-F7	150	2.52	2.60	2.2	20.12	11.43	Class 200 Clay pipe to BS EN295
F7-F8	150	2.61	2.65	2.2	20.13	11.44	Class 200 Clay pipe to BS EN295
F8-Wet Well	150	2.65	2.85	2.2	20.35	11.56	Class 200 Clay pipe to BS EN295
F9-Ex MH	150	1.00	2.36	2.2	27.29	15.51	Class 200 Clay pipe to BS EN295

BEDDING FACTORS Class B 1.9; Class S 2.2; Unreinforced Concrete 4.5.

ADOPTABLE MANHOLE SCHEDULE

MH REF	COVER LEVEL	INVERT LEVEL	PIPE DIA	DEPTH TO SOFFIT	MH TYPE	MH DIA	FRAME
S1	3.120	1.710	0.225	1.185	C	1240 x 675	150mm deep D400, 1220 x 685
S2	2.950	1.425	0.225	1.300	Special	2400 x 2400	150mm deep D400, 600 x 600
S2a	2.015	1.333	0.225	0.457	Special	900 x 675	150mm deep D400 Gully
S2b	2.300	1.279	0.225	0.796	Special	900 x 675	150mm deep D400 Gully
S3	2.850	1.170	0.450	1.230	Special	2400x2400	150mm deep D400, 600 x 600
S4	2.900	1.691	0.225	0.984	C	1240 x 675	150mm deep D400, 1220 x 685
S5	3.000	1.537	0.225	1.238	C	1240 x 675	150mm deep D400, 1220 x 685
S6	2.760	1.136	0.450	1.174	C	1240 x 675	150mm deep D400, 1220 x 685
S7	2.630	1.072	0.450	1.108	C	1240 x 675	150mm deep D400, 1220 x 685
S8	2.630	1.022	0.450	1.158	C	1240 x 675	150mm deep D400, 1220 x 685
S9	2.640	0.908	0.450	1.282	C	1240 x 675	150mm deep D400, 1220 x 685
S10	2.690	0.877	0.225	1.588	Special	1800	150mm deep D400, 600 x 600
F1	3.130	1.349	0.150	1.631	B	1200	150mm deep D400, 600 x 600
F2	3.030	1.081	0.150	1.799	B	1500	150mm deep D400, 600 x 600
F3	2.700	0.802	0.150	1.748	B	1200	150mm deep D400, 600 x 600
F4	2.800	0.660	0.150	1.990	B	1200	150mm deep D400, 600 x 600
F5	3.010	0.456	0.150	2.404	B	1200	150mm deep D400, 600 x 600
F6	2.930	0.255	0.150	2.525	B	1200	150mm deep D400, 600 x 600
F7	2.900	0.169	0.150	2.581	B	2100	150mm deep D400, 600 x 600
F8	2.930	0.149	0.150	2.631	B	2100	150mm deep D400, 600 x 600
F9	2.920	1.770	0.150	1.000	E	1200	150mm deep D400, 600 x 600

** Type E Manhole will require double step rungs if the depth is greater than 1.0m*

DRAWING TO BE READ IN CONJUNCTION WITH LONG-SECTIONS SHEET 2 OF 2 (WD/157/05)

VITRIFIED CLAY PIPES AND FITTINGS SHALL HAVE FLEXIBLE MECHANICAL JOINTS. PIPES TO COMPLY WITH BS EN295 AND BS65 AND CLAUSE 5.5.3 OF THE LCC HIGHWAY DESIGN GUIDE

UNREINFORCED AND REINFORCED CONCRETE PIPES AND FITTINGS WITH FLEXIBLE JOINTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN5911 AND CLAUSE 5.5.4 OF THE LCC HIGHWAY DESIGN GUIDE

THERMO-PLASTIC STRUCTURED WALLED PERFORATED PIPES TO BE FULLY PERFORATED AND COMPLY WITH THE NEW HAPAS SPECIFICATION ISSUED BY THE BBA (POLYPIPE RIGIDRAIN RD225X6P OR SIMILAR)

I) Drawing raised to 'construction' status. MH 02-11-11
H) Pipe specifications updated, manhole schedule amended and note changed. MH 27/10/11
G) Ex strength pipe specification removed & MH schedule amended. LC. 25/10/11.
F) Pipe specifications added and manhole schedule amended. LC. 20-10-11
E) Plan altered to suit LCC drainage engineers comments. MH 03-10-11
D) Plan revised to reflect LCC Highway comments. MJH 28-07-11
C) Plan revised to reflect Engineers comments. Schedules updated. DM. 01-07-11
B) Drawing amended to suit L.C.C highway comments. LC. 29/06/11.
A) F2 upgraded to a Ø1.5m PCC Ring as per Anglian Waters Comments. Pipe lengths/gradients amended to suit. Adoptable MH schedule revised. Rising main upgraded to Ø100mm ID as per Pims Pumps. Raised to Tender DM. 06-06-11
Revisions:

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Drawing status
Construction

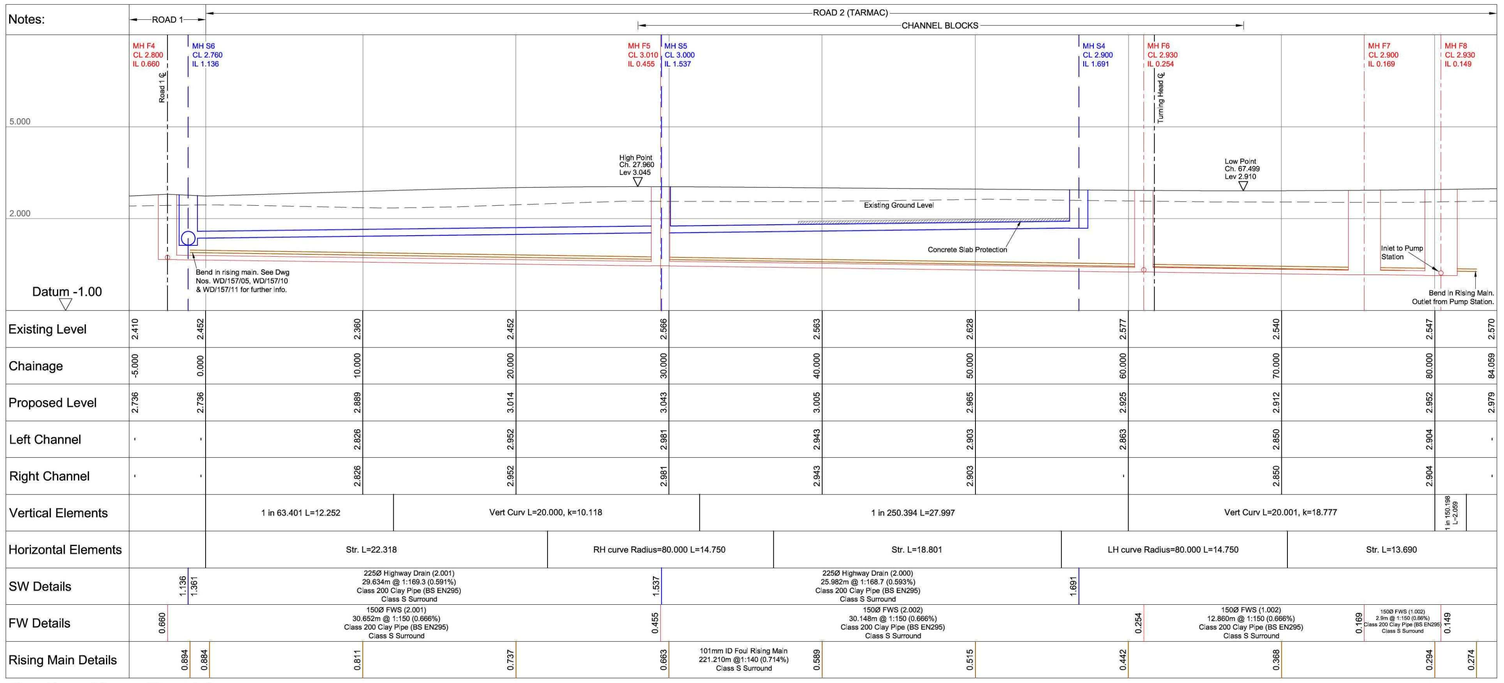
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Long Sutton

Drawn LC/DM
Approved

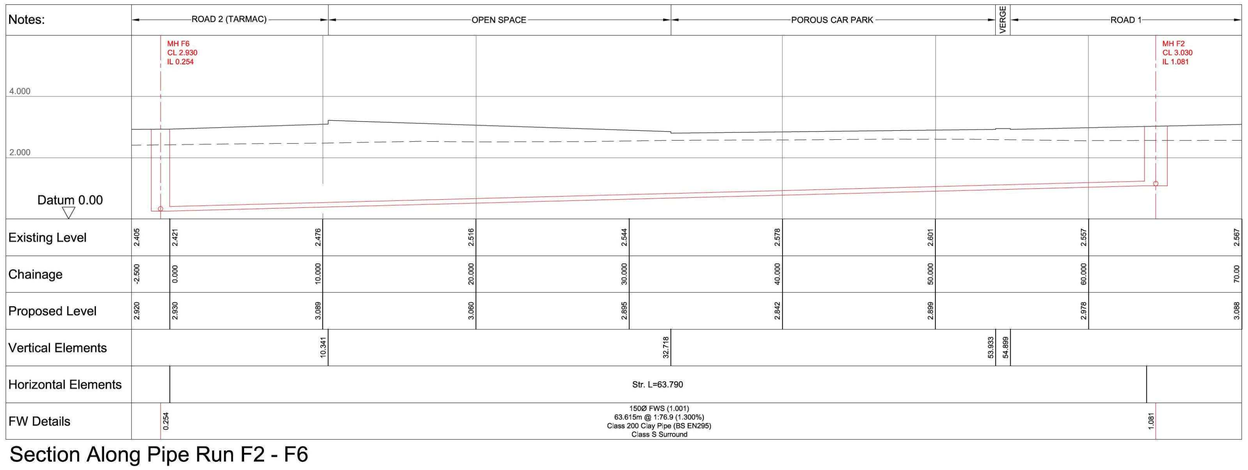
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Long-Sections (Sheet 1 of 2)

Date 18/03/11
Drawing No WD/157/04I

Scale Horz 1:200, Vert 1:100



Section Along Road 2



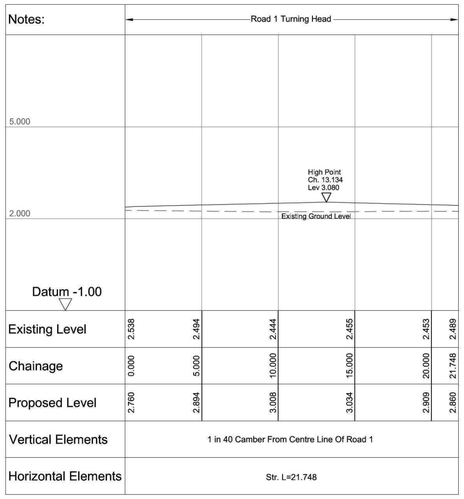
Section Along Pipe Run F2 - F6

PIPE STRENGTH CALCULATIONS							
PIPE REFERENCE	*PIPE dia*	*DEPTH OF*	*COVER*	*BEDDING*	*DESIGN*	*We x 1.25*	*REQ PIPE STR.*
	mm	*MIN m*	*MAX m*	*FACTOR*	*LOAD*	*Bedding Factor*	
					We Kn/m	*Kn/m*	
S1-S2	*225*	*1.19*	*1.25*	*2.2*	*26.50*	*15.06*	*Class 200 Clay pipe to BS EN295*
S2-S2a	*225*	*0.46*	*1.25*	*1.9*	*42.01*	*27.64*	*Thermo-Plastic Perforated Pipe*
S2a-S2b	*225*	*0.46*	*0.80*	*1.9*	*39.16*	*25.76*	*Thermo-Plastic Perforated Pipe*
S2b-S3	*225*	*0.80*	*1.46*	*1.9*	*35.19*	*23.15*	*Thermo-Plastic Perforated Pipe*
S3-S6	*450*	*1.17*	*1.23*	*2.2*	*41.88*	*23.80*	*Class 120 Conc pipe to BS5911*
S4-S5	*225*	*0.98*	*1.24*	*4.5*	*29.56*	*8.21*	*Class 200 Clay pipe to BS EN295*
S5-S6	*225*	*1.17*	*1.24*	*2.2*	*25.98*	*14.76*	*Class 200 Clay pipe to BS EN295*
S6-S7	*450*	*1.11*	*1.17*	*4.5*	*44.37*	*12.33*	*Class 120 Conc pipe to BS5911*
S7-S8	*450*	*1.11*	*1.16*	*4.5*	*44.37*	*12.33*	*Class 120 Conc pipe to BS5911*
S8-S9	*450*	*1.16*	*1.28*	*2.2*	*42.40*	*24.09*	*Class 120 Conc pipe to BS5911*
S9-S10	*450*	*1.28*	*1.36*	*2.2*	*40.74*	*23.15*	*Class 120 Conc pipe to BS5911*
S10-Headwall	*225*	*1.59*	*1.63*	*2.2*	*24.04*	*13.66*	*Class 200 Clay pipe to BS EN295*
F1-F2	*150*	*1.78*	*1.95*	*2.2*	*20.39*	*11.59*	*Class 200 Clay pipe to BS EN295*
F2-F6	*150*	*2.33*	*2.53*	*2.2*	*20.37*	*11.57*	*Class 200 Clay pipe to BS EN295*
F3-F4	*150*	*1.76*	*2.00*	*2.2*	*20.39*	*11.59*	*Class 200 Clay pipe to BS EN295*
F4-F5	*150*	*2.00*	*2.44*	*2.2*	*20.97*	*11.91*	*Class 200 Clay pipe to BS EN295*
F5-F6	*150*	*2.44*	*2.52*	*2.2*	*20.11*	*11.43*	*Class 200 Clay pipe to BS EN295*
F6-F7	*150*	*2.52*	*2.60*	*2.2*	*20.12*	*11.43*	*Class 200 Clay pipe to BS EN295*
F7-F8	*150*	*2.61*	*2.65*	*2.2*	*20.13*	*11.44*	*Class 200 Clay pipe to BS EN295*
F8-Wet Well	*150*	*2.65*	*2.85*	*2.2*	*20.35*	*11.56*	*Class 200 Clay pipe to BS EN295*
F9-Ex MH	*150*	*1.00*	*2.36*	*2.2*	*27.29*	*15.51*	*Class 200 Clay pipe to BS EN295*

BEDDING FACTORS Class B 1.9; Class S 2.2; Unreinforced Concrete 4.5.

ADOPTABLE MANHOLE SCHEDULE							
MH REF	*COVER LEVEL*	*INVERT LEVEL*	*PIPE DIA*	*DEPTH TO SOFFIT*	*MH TYPE*	*MH DIA*	*FRAME*
S1	*3.120*	*1.710*	*0.225*	*1.185*	*C*	*1240 x 675*	*150mm deep D400, 1220 x 685*
S2	*2.950*	*1.425*	*0.225*	*1.300*	*Special*	*2400 x 2400*	*150mm deep D400, 600 x 600*
S2a	*2.015*	*1.333*	*0.225*	*0.457*	*Special*	*900 x 675*	*150mm deep D400 Gully*
S2b	*2.300*	*1.279*	*0.225*	*0.796*	*Special*	*900 x 675*	*150mm deep D400 Gully*
S3	*2.850*	*1.170*	*0.450*	*1.230*	*Special*	*2400x2400*	*150mm deep D400, 600 x 600*
S4	*2.900*	*1.691*	*0.225*	*0.984*	*C*	*1240 x 675*	*150mm deep D400, 1220 x 685*
S5	*3.000*	*1.537*	*0.225*	*1.238*	*C*	*1240 x 675*	*150mm deep D400, 1220 x 685*
S6	*2.760*	*1.136*	*0.450*	*1.174*	*C*	*1240 x 675*	*150mm deep D400, 1220 x 685*
S7	*2.630*	*1.072*	*0.450*	*1.108*	*C*	*1240 x 675*	*150mm deep D400, 1220 x 685*
S8	*2.630*	*1.022*	*0.450*	*1.158*	*C*	*1240 x 675*	*150mm deep D400, 1220 x 685*
S9	*2.640*	*0.908*	*0.450*	*1.282*	*C*	*1240 x 675*	*150mm deep D400, 1220 x 685*
S10	*2.690*	*0.877*	*0.225*	*1.588*	*Special*	*1800*	*150mm deep D400, 600 x 600*
F1	*3.130*	*1.349*	*0.150*	*1.631*	*B*	*1200*	*150mm deep D400, 600 x 600*
F2	*3.030*	*1.081*	*0.150*	*1.799*	*B*	*1500*	*150mm deep D400, 600 x 600*
F3	*2.700*	*0.802*	*0.150*	*1.748*	*B*	*1200*	*150mm deep D400, 600 x 600*
F4	*2.800*	*0.660*	*0.150*	*1.990*	*B*	*1200*	*150mm deep D400, 600 x 600*
F5	*3.010*	*0.456*	*0.150*	*2.404*	*B*	*1200*	*150mm deep D400, 600 x 600*
F6	*2.930*	*0.255*	*0.150*	*2.525*	*B*	*1200*	*150mm deep D400, 600 x 600*
F7	*2.900*	*0.169*	*0.150*	*2.581*	*B*	*2100*	*150mm deep D400, 600 x 600*
F8	*2.930*	*0.149*	*0.150*	*2.631*	*B*	*2100*	*150mm deep D400, 600 x 600*
F9	*2.920*	*1.770*	*0.150*	*1.000*	*E*	*1200*	*150mm deep D400, 600 x 600*

**** Type E Manhole will require double step rungs if the depth is greater than 1.0m***



Road 1 Turning Head

DRAWING TO BE READ IN CONJUNCTION WITH LONG-SECTIONS SHEET 2 OF 2 (WD/157/04)

VITRIFIED CLAY PIPES AND FITTINGS SHALL HAVE FLEXIBLE MECHANICAL JOINTS. PIPES TO COMPLY WITH BS EN295 AND BS65 AND CLAUSE 5.5.3 OF THE LCC HIGHWAY DESIGN GUIDE

UNREINFORCED AND REINFORCED CONCRETE PIPES AND FITTINGS WITH FLEXIBLE JOINTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN5911 AND CLAUSE 5.5.4 OF THE LCC HIGHWAY DESIGN GUIDE

THERMO-PLASTIC STRUCTURED WALLED PERFORATED PIPES TO BE FULLY PERFORATED AND COMPLY WITH THE NEW HAPAS SPECIFICATION ISSUED BY THE BBA (POLYPIPE RIGIDRAIN RD225X6P OR SIMILAR)

I) Plan raised to 'construction' status. MH 02/11/11
H) Pipe specifications updated. Manhole schedule updated and note changed. MH 27/10/11
G) Ex strength pipe specification removed & MH schedule amended. LC. 25/10/11.
F) Pipe specifications added and manhole schedule amended. LC. 20-10-11.
E) Revised to reflect Highways comments. Road 1 Turning Head added. DL/MH 01-08-11
D) Plan revised to reflect LCC Highway comments. MJH 28-07-11
C) Plan revised to reflect Engineers comments. Schedules updated. DM. 01-07-11
B) Drawing altered to suit L.C.C highway comments. LC. 29/06/11.
A) F2 upgraded to a Ø1.5m PCC Ring as per Anglian Waters Comments. Pipe lengths/gradients amended to suit. Adoptable MH schedule revised. Rising main upgraded to Ø101mm ID as per Pims Pumps. Raised to Tender. DM. 06-06-11
Revisions:

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Drawing status **Construction**

Drawing title
Long-Sections (Sheet 2 of 2)

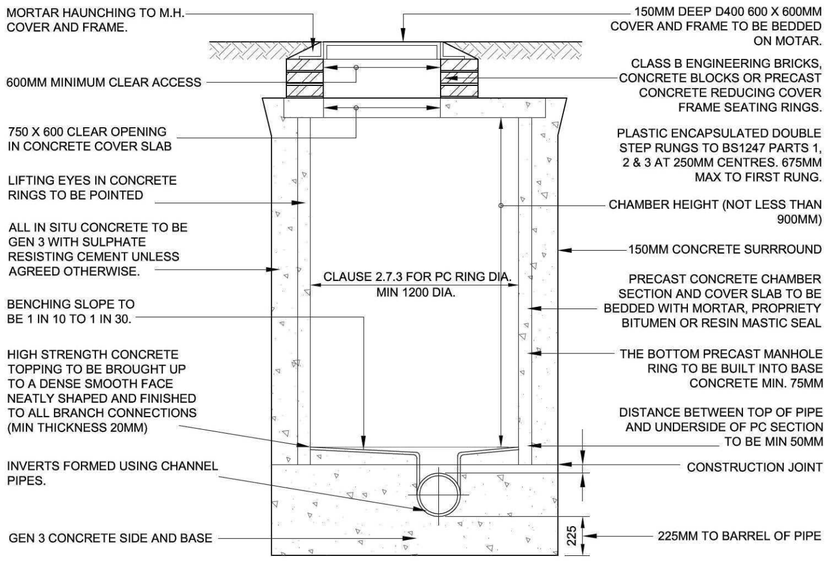
Project title
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Long Sutton

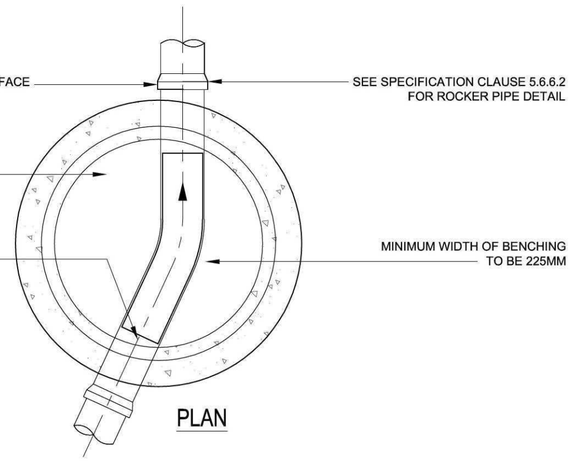
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LC/DM	
Date 18/03/11	*Drawing No* WD/157/05I
Scale Horz 1:200, Vert 1:100	

GENERAL NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DETAILS.
2. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT BRITISH STANDARDS, CODES OF PRACTICE AND BUILDING REGULATIONS.
3. THE EXACT POSITION, LEVEL, SIZE AND USE OF EXISTING SEWERS TO BE CONFIRMED ON SITE. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO COMMENCEMENT OF WORKS.
4. ALL UNCOVERED AND SHALLOW PIPEWORK TO BE PROTECTED AGAINST CONSTRUCTION TRAFFIC AS PART OF THE CONTRACTORS TEMPORARY WORKS REQUIREMENTS.
5. PROPOSED DRAINAGE PASSING THROUGH NEW FOUNDATIONS TO BE SLEEVED WITH CAST-IN OVERSIZED PIPEWORK.
6. EXACT LOCATION LINE AND LEVEL OF EXISTING STUBS TO EXISTING MANHOLES IN THE ROAD TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.
7. COVER LEVELS SHOWN ARE APPROXIMATE ONLY, SUBJECT TO THE ARCHITECT'S EXTERNAL WORKS AND LANDSCAPING SCHEME.
8. SEE ARCHITECT'S DETAILS FOR ALL SETTING OUT DIMENSIONS TO BUILDINGS AND BOUNDARIES ETC
9. ALL CONNECTIONS TO ROAD GULLIES AND CHANNELS SHALL BE 150MM NOMINAL BORE PIPEWORK. CONNECTIONS TO RWP'S TO BE 100MM NOMINAL BORE PIPEWORK SUBJECT TO CONFIRMATION OF RWP SIZES AND/OR DESIGN FLOW. NO PIPE WORK TO BE DOWNSIZED IN THE DIRECTION OF FLOW.
10. CONNECTIONS TO FOUL TERMINAL FITTINGS TO BE 100MM NOMINAL BORE PIPEWORK SUBJECT TO CONFIRMATION OF ABOVE GROUND PIPE DIAMETERS AND/OR DESIGN FLOW. NO PIPE WORK TO BE DOWNSIZED IN THE DIRECTION OF FLOW.
11. ALL UN-NOTED PIPEWORK TO BE 100MM DIA. UNLESS SUBJECT TO THE NOTES ABOVE.
12. ALL PIPEWORK TO BE U-PVC TYPE IN ACCORDANCE WITH WIS 4-35-01 UNLESS OTHERWISE NOTED.
13. PIPES UPTO AND INCLUDING 150MM DIA. TO BE 28KN/M STRENGTH CLAYWARE TO BS EN 295; 1991.
14. AS AN ALTERNATIVE TO U-PVC, PIPES UP TO AND INCLUDING 150MM DIA. MAY BE 28KN/M STRENGTH CLAYWARE TO BS EN 295; 1991.
15. PIPES ABOVE 150MM DIA. AND UPTO AND INCLUDING 300MM DIA. TO BE 36KN/M STRENGTH CLAYWARE TO BS EN 295; 1991.
16. AS AN ALTERNATIVE TO U-PVC, PIPES ABOVE 150MM DIA. UP TO AND INCLUDING 300MM DIA. MAY BE 36KN/M STRENGTH CLAYWARE TO BS EN 295; 1991.
17. PIPES ABOVE 300MM DIA. TO BE CLASS M (SRPC) CONCRETE PIPES TO BS 5911 WITH SPIGOT AND SOCKET FLEXIBLE JOINTS.
18. AS AN ALTERNATIVE TO U-PVC, PIPES ABOVE 300MM DIA. MAY BE CLASS M (SRPC) CONCRETE PIPES TO BS 5911 WITH SPIGOT AND SOCKET FLEXIBLE JOINTS.
19. ALL NON-ARCHITECTURAL PIPEWORK AND FITTINGS NOTED AS CAST IRON, TO BE FROM THE 'ENSIGN' RANGE BY SAINT GOBAIN PIPELINES SUITABLE FOR ABOVE OR BELOW GROUND USE AS APPROPRIATE, OR SIMILAR APPROVED. ALL TO COMPLY WITH THE REQUIREMENTS OF BS EN 877.
20. ALL PIPEWORK ENTERING AND EXITING MANHOLES TO BE CONNECTED WITH PIPE SOFFITS LEVEL.
21. PRE-FORMED CHANNELS TO BE USED AT ALL MANHOLES.
22. HIGH STRENGTH CONCRETE BENCHING TO BE STEEL TROWELLED TO A DENSE SMOOTH FACE NEATLY SHAPED AND FINISHED TO ALL BRANCH CONNECTIONS AND LAID IN ACCORDANCE WITH THE SPECIFICATION.
23. PIPE BENDS TO BE PROVIDED TO SUIT DIRECTION OF FLOW.
24. ALL MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON HEAVY DUTY GRADE D400 DOUBLE TRIANGULAR TO BS EN 124 UNLESS OTHERWISE NOTED.
25. GULLY TOPS AND MANHOLE COVERS TO BE PROVIDED IN ACCORDANCE WITH BS EN124...
26. ALL MANHOLE COVERS LOCATED INTERNALLY, TO BE RECESSED, DOUBLE SEAL, AIRTIGHT TYPE, ALUMINIUM OR STEEL. RECESS DEPTH TO ARCHT'S REQUIREMENTS TO SUIT FINISHES ETC.
27. ALL NEW DRAINAGE TO BE CONSTRUCTED ADJACENT NEW AND PROPOSED TREE PLANTING TO BE PROTECTED AGAINST ROOT ACTIVITY USING 'ROOTCONTROL' ROOT BARRIER MATERIAL BY GREEN-TECH. ALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
28. FIRST FLEXIBLE JOINT IN PIPES ADJACENT TO A MANHOLE SHALL BE 600MM MAX. FROM INSIDE FACE OF MANHOLE, CONNECTING TO ROCKER PIPE. FOR PIPE DIAMETERS 150MM - 450MM THE ROCKER PIPE LENGTH SHALL BE 500MM - 750MM AND FOR PIPE DIAMETERS 451MM - 675MM THE ROCKER PIPE LENGTH SHALL BE 750MM - 1000MM.
29. MANHOLES WITH OUTGOING PIPES GREATER THAN 600MM DIA. SHALL BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER APPROVED SAFETY DEVICES.
30. ALL SOFT SPOTS ENCOUNTERED IN THE TRENCH FORMATION TO BE REMOVED AND REPLACED WITH GRADED GRANULAR MATERIAL UNLESS INSTRUCTED OTHERWISE.
31. ALL PIPEWORK BELOW ROAD AND CAR PARKING WITH LESS THAN 1200MM COVER SHALL BE PROTECTED WITH A 150MM MIN FND2 CONCRETE SURROUND WITH FLEXELL ISOLATION JOINTS @ 2.0M MAX. CENTRES TO COINCIDE WITH PIPE JOINTS.
32. ALL BURIED CONCRETE MUST CATER FOR CLASS 2 SULPHATES CONDITIONS IN ACCORDANCE WITH TABLE 1 OF BRE DIGEST 363.
33. THE DESIGN OF ANY TEMPORARY WORKS REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

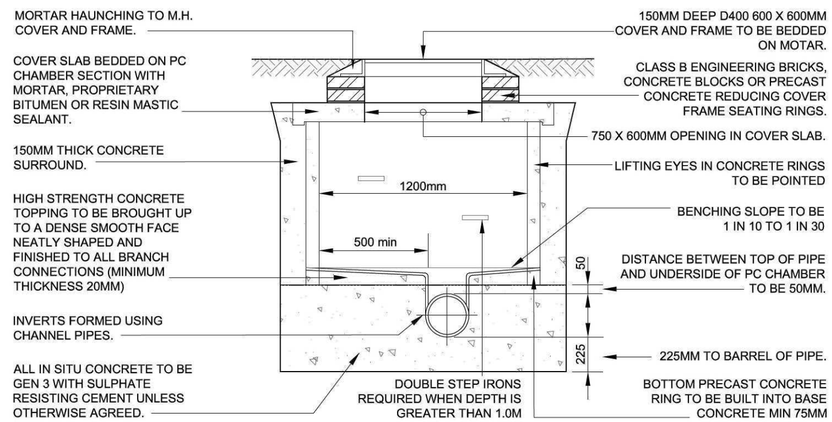
TYPICAL TYPE B MANHOLE DETAIL (1:20)





PLAN

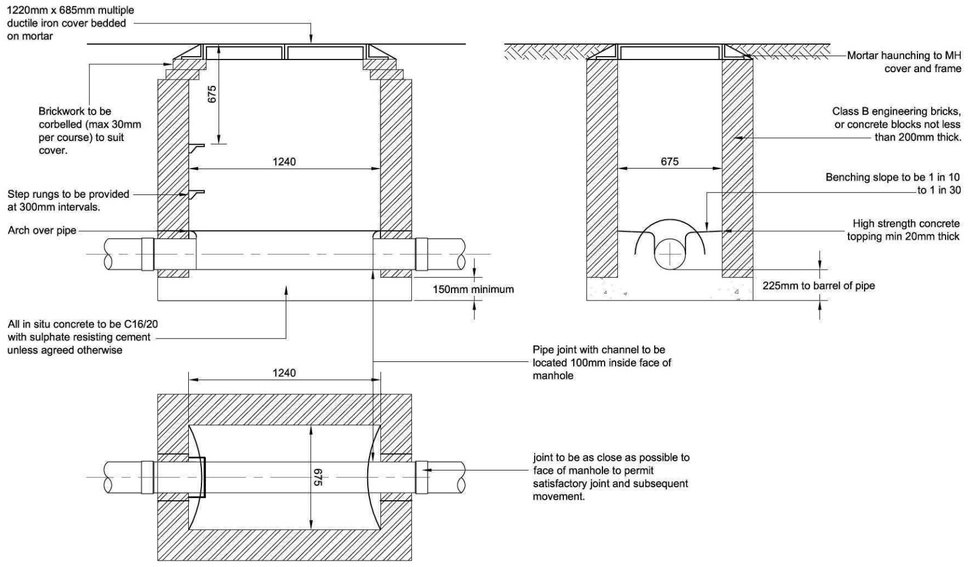
TYPICAL TYPE E MANHOLE DETAIL (1:20)



Type E manhole will require double step rungs if the depth is greater than 1.0m

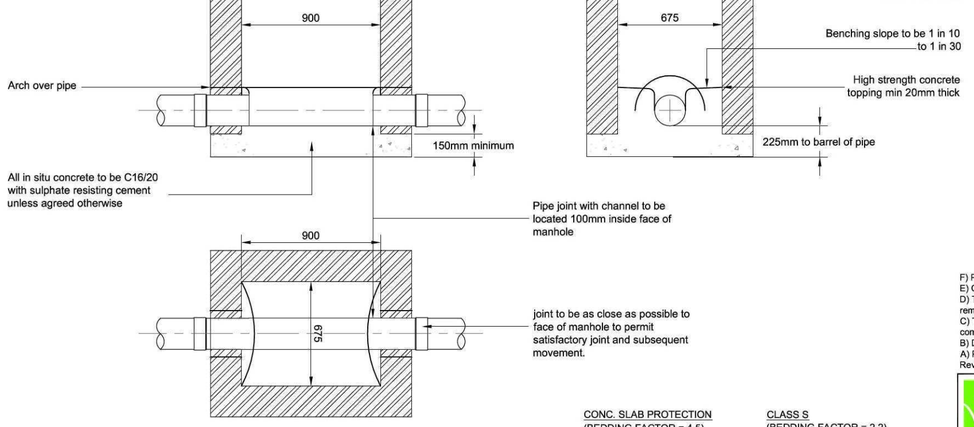
TYPICAL MANHOLE DETAIL TYPE C

DEPTH FROM C.L. TO SOFFIT OF PIPE BETWEEN 1.0M - 1.5M (NTS)

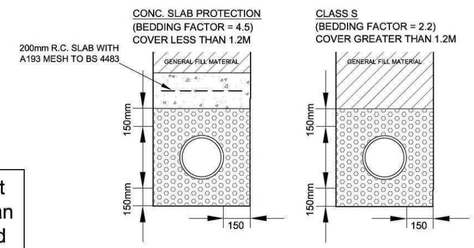


MANHOLE S2A & S2B DETAIL - BASED ON TYPE D

DEPTH FROM C.L. TO SOFFIT OF PIPE LESS THAN 1.0M (NTS)



Note: All work will comply with the current Sewers for Adoption guide and any Anglian Water amendments to that document and to comply with L.C.C. development spec & specification for highway works.



TYPICAL PIPE BEDDING DETAILS (NTS)

NOTES:

1) ANY SUITABLE EXCAVATED MATERIAL USED AS BACKFILL TO BE APPROVED ON SITE BY ENGINEER.
2) GRANULAR SURROUND TO BE SINGLE SIZED AGGREGATE, 10 OR 14MM IN SIZE.
3) TRENCH IN PUBLIC HIGHWAY: WHERE DEPTH FROM GL TO CROWN OF PIPE IS LESS THAN 1.2M USE CONCRETE SLAB PROTECTION.
4) TRENCH IN PRIVATE LAND: WHERE DEPTH FROM GL TO CROWN IS LESS THAN 0.9M USE CONCRETE SLAB PROTECTION.
5) REINFORCED CONCRETE SLAB TO COMPLY WITH CLAUSE 5.13.6

F) Plan raised to 'construction' status. MH 02-11-11
E) Concrete bed and surround note deleted. LC. 24/10/11.
D) Type 'D' manhole detail added and control chamber (S10) detail removed. LC. 20/10/11.
C) Type 'C' manhole added as per LCC drainage engineers comments. MH 03-10-11
B) Drawing altered to suit L.C.C highway comments. LC. 29/06/11
A) Plan amended to suit Anglian Waters comments. DM. 06/06/11

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Drawing status
Construction

Drawing title
Adoptable Drainage Construction Details

Project title
Lime Walk
Long Sutton
Lincolnshire

Drawn	Approved
DM	
Date	Drawing No
18/03/11	WD/157/21F
Scale	
As Shown @ A2	

TYPICAL CARRIAGEWAY CONSTRUCTION SPEC

N.T.S

1.8m Footway

TARMAC FOOTWAY CONSTRUCTION:

SURFACE COURSE - 25MM THK. 0/6MM NOM SIZE DENSE SURFACE COURSE TO CLAUSE 9.4

BINDER COURSE - 50MM THK. 0/20MM NOM SIZE DENSE BINDER COURSE TO CLAUSE 9.1 (100MM THK AT VEHICULAR CROSSING POINTS)

SUB BASE - 100MM THK. TYPE 1 GRANULAR MATERIAL TO CLAUSE 1.2 (150MM THK AT VEHICULAR CROSSING POINTS).

5.0m Adoptable Carriageway

CARRIAGEWAY TARMAC CONSTRUCTION SPECIFICATION:

SURFACE COURSE - 40MM THICK. 0/10MM NOM SIZE CLOSE GRADED SURFACE COURSE TO CLAUSE 7.3. COMPACTED IN ACCORDANCE WITH CLAUSE 7.2

TWO STAGE CONSTRUCTION PROCESS USED TO LAY BINDER COURSE

BINDER COURSE 1 - 70MM THICK. 0/20MM NOM SIZE DENSE BINDER COURSE TO CLAUSE 9.1. COMPACTION IN ACCORDANCE WITH CLAUSE 7.2

BINDER COURSE 2 - 60MM THICK. 0/20MM NOM SIZE DENSE BINDER COURSE TO CLAUSE 9.1. COMPACTION IN ACCORDANCE WITH CLAUSE 7.2

SUB BASE FOR 3% CBR RESULTS (ROAD 1 CHAINAGE 0.0M - 110.0M & 170.0M - 260.0M, ROAD 2 CHAINAGE 35.0M - END) - 300MM TYPE 1 GRANULAR MATERIAL TO CLAUSE 8.1.

SUB BASE FOR <1.5% CBR RESULTS (ROAD 1 CHAINAGE 110.0M - 170.0M & 260.0M - END, ROAD 2 CHAINAGE 0.0M - 35.0M) - 410MM OF 6F5 GRANULAR MATERIAL AND 300MM TYPE 1 GRANULAR MATERIAL TO CLAUSE 8.1. SUB BASE TO BE UNDERLAID WITH TENSAR SS40.

TOTAL CARRIAGEWAY CONSTRUCTION THICKNESS FOR 3% CBR TO BE 470MM AND <1.5% CBR TO BE 880MM.

BLOCK PAVED CARRIAGEWAY CONSTRUCTION:

SURFACE COURSE - 60MM THICK CONCRETE BLOCK PAVERS LAID IN HERRINGBONE PATTERN IN ACCORDANCE WITH BS7533-3.

LAYING COURSE - 30MM THICK BEDDING SAND IN ACCORDANCE WITH CLAUSE 10.4.

BINDER COURSE - 90MM THICK. 0/20MM NOM SIZE DENSE BINDER COURSE TO CLAUSE 9.1. COMPACTION IN ACCORDANCE WITH CLAUSE 7.2

SUB BASE FOR 3% CBR RESULTS (ROAD 1 CHAINAGE 0.0M - 110.0M & 170.0M - 260.0M, ROAD 2 CHAINAGE 35.0M - END) - 300MM TYPE 1 GRANULAR MATERIAL TO CLAUSE 8.1.

SUB BASE FOR <1.5% CBR RESULTS (ROAD 1 CHAINAGE 110.0M - 170.0M & 260.0M - END, ROAD 2 CHAINAGE 0.0M - 35.0M) - 410MM OF 6F5 GRANULAR MATERIAL AND 300MM TYPE 1 GRANULAR MATERIAL TO CLAUSE 8.1. SUB BASE TO BE UNDERLAID WITH TENSAR SS40.

TOTAL CARRIAGEWAY CONSTRUCTION THICKNESS FOR 3% CBR TO BE 480MM AND FOR <1.5% CBR TO BE 890MM.

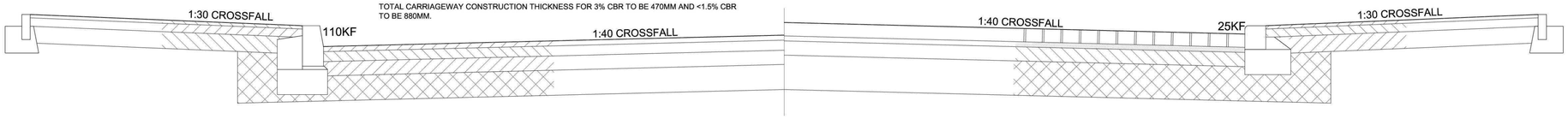
1.8m Footway

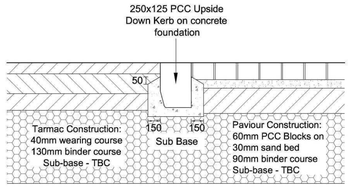
TARMAC FOOTWAY CONSTRUCTION:

SURFACE COURSE - 25MM THK. 0/6MM NOM SIZE DENSE SURFACE COURSE TO CLAUSE 9.4

BINDER COURSE - 50MM THK. 0/20MM NOM SIZE DENSE BINDER COURSE TO CLAUSE 9.1 (100MM THK AT VEHICULAR CROSSING POINTS)

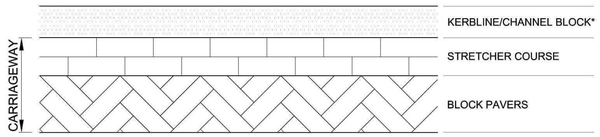
SUB BASE - 100MM THK. TYPE 1 GRANULAR MATERIAL TO CLAUSE 1.2 (150MM THK AT VEHICULAR CROSSING POINTS).



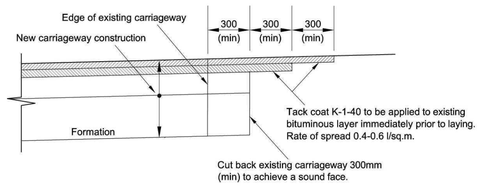


TRANSITION DETAIL: NTS

ADOPTABLE BLOCK PAVING DETAIL (NTS)



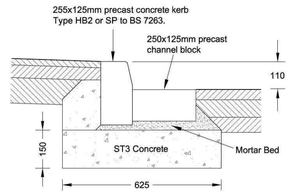
* CHANNEL BLOCKS USED ALONG LEFT CHANNEL BETWEEN APPROXIMATE CHAINAGE 147.000 TO 236.000.



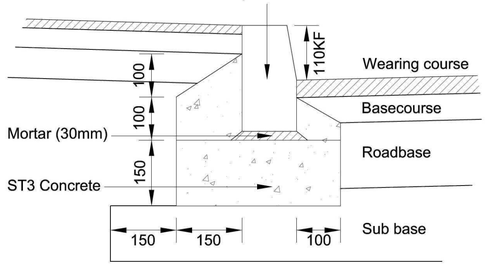
CARRIAGEWAY TIE-IN DETAIL

SCALE 1:20

CHANNEL BLOCK AND KERB DETAIL



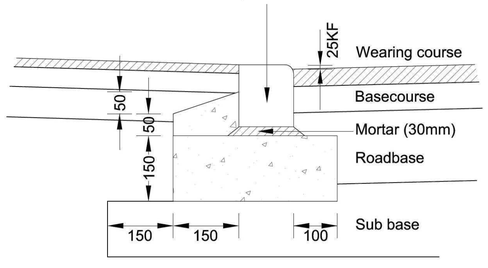
250x125mm precast concrete kerb



KERB 1 (110KF)

N.T.S

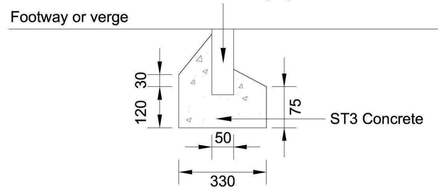
125x150mm precast bullnose kerb



KERB 2 (25KF)

N.T.S

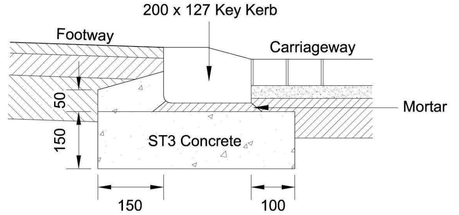
150 x 50 EF edging



FOOTWAY/VERGE EDGING DETAIL

N.T.S

200 x 127 Key Kerb



SMALL UNIT CONCRETE KERB

N.T.S

NOTES:

1. Tactile paving shall be used at pedestrian crossing points to identify the existence of a flush dropped kerb and an appropriate place to cross.

2. The use of tactile paving shall be in accordance with clause 5.16 and the recommendations given in "Disability Unit Circular 1/91" & "Guidance on the use of Tactile Paving Surfaces" 1998 published by the Department of the Environment, Transport & the Regions.

3. Crossing points should be laid out directly opposite each other with domes aligned to the direction of the crossing.

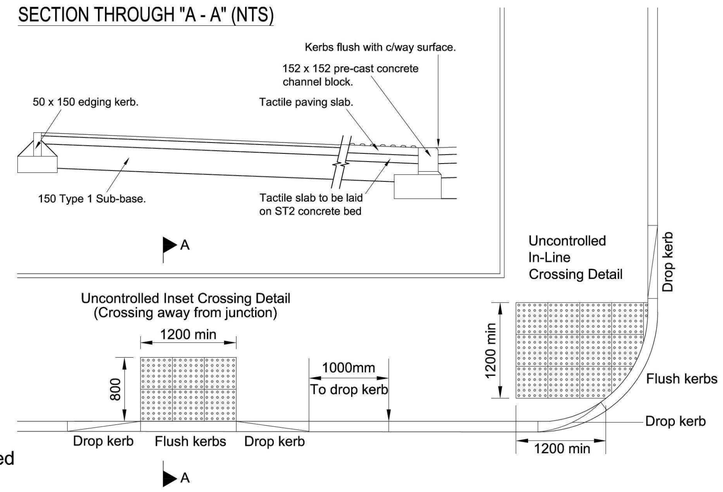
4. At busy locations the developer may be required to take the tactile slabs to the back of the footway.

5. The paving slabs to be bedded on 150mm sand with a foundation of 150mm Type 1 Sub-base.

6. Tactile paving arrangment should be atleast 4 slabs wide, laid on an ST2 concrete foundation and surrounded with EF edgings

Tactile paving layout to be agreed on site with highways inspector

SECTION THROUGH "A - A" (NTS)

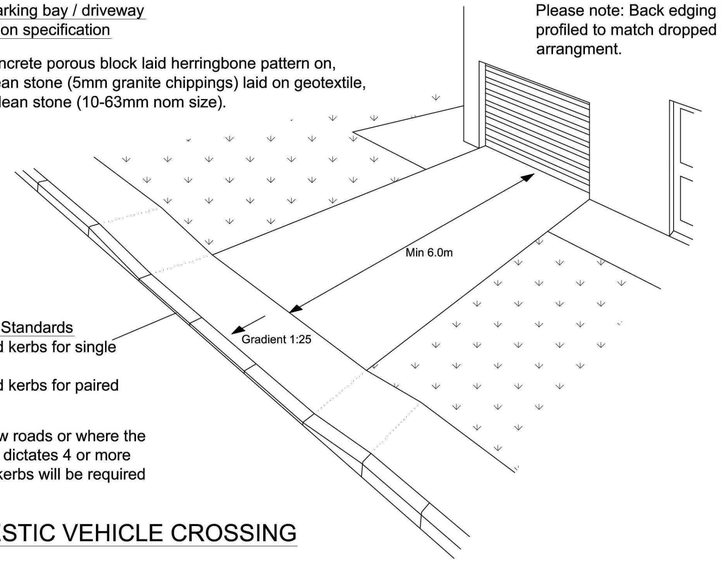


TYPICAL TACTILE CROSSING LAYOUT (NTS)

Private parking bay / driveway construction specification

60mm concrete porous block laid herringbone pattern on, 35mm clean stone (5mm granite chippings) laid on geotextile, 225mm clean stone (10-63mm nom size).

Please note: Back edging to be profiled to match dropped kerb arrangment.



Minimum Standards
3 dropped kerbs for single crossing
7 dropped kerbs for paired crossing

For narrow roads or where the geometry dictates 4 or more dropped kerbs will be required

DOMESTIC VEHICLE CROSSING

GENERAL ROAD NOTES

1. This drawing is to be read in conjunction with the local highway authority design guide and the general specification for roadworks current at the time of construction.
2. All works shall be in accordance with the local highway authoritys approved documents and satisfaction. any reference to the specification shall mean the general specification for roadworks.
3. Prior to any works being carried out within or immediately adjacent to the public highway, a scheme for the safe control of traffic and pedestrians is to be agreed with the highway authority and implemented.
4. Working areas within the vicinity of existing trees are to be agreed with the engineer and chestnut fencing erected as directed.
5. Special care is to be taken when excavating in the vicinity of existing trees, it is not intended that any tree roots should be severed or damaged and specialist advice should be sought when major roots present a problem. Care is to be taken to avoid damage to branches and foliage.
6. It is the contractor's responsibilty to trace and indicate the precise location and nature of all services.
7. The contractor is to provide a cctv survey of any highway sewers on completion of the 12-month maintenance period. this is to be provided in accordance with the requirements of the local water and highways authorities.
8. Safe passage for pedestrians across the site is to be ensured at all times by means of approved fencing to both sides of any footpath route.

NOTES

The specification in all respects shall be in accordance with the current 'Lincolnshire Design Guide for Residential Area's' and 'Development Road Specification and Construction' publications in force in the country at the time of construction.

The minimum longitudinal fall for highways, without channel blocks should be 1 in 150, and with channel blocks 1 in 250 (see clause 10.1 Development Road Specification)

In addition, ensure that the first section of any side roads falls away from the road to which it is connecting. If general topography requires it to rise, this change of direction should take place after the first set of gullies. This is to ensure a 'false channel' with associated drainage problems is not created in the bellmouth of junctions.

'Reconstruction of existing carriageway and footways that are affected by these development works, are to be specified and agreed by the senior Highways Officer prior to construction'.

'All signs and line markings are to be agreed with the Senior Highways Officer prior to construction.'

BT Chambers and Anglian Water Meters are not to be located within Pedestrian Crossing Points or Vehicle Accesses.

NOTES: CDM (Construction Design and Management Regulations 2007)

1. If you do not fully understand the risks involved during the construction of the items indicated on this drawing ask your manager, health and safety advisor or a member of the design team before proceeding.
2. Existing services may exist on-site. The contractor shall liaise with all the relevant service companies and arrange for all services to be located, marked and protected.
3. Drainage works may involve deep excavations and/or heavy plant/materials.
4. The contractor shall read and understand the Ground Investigation Report and be aware of and potential variations in soil conditions over the site.
5. The potential for danger to the general public and site personnel exists from works in the public highway. The contractor shall liaise with the highway authority (Lincolnshire Count Council) and ensure safe method of working is maintained at all times.
6. Existing drainage pipes may be asbestos cement or fibre reinforced pipes, or concrete pipes containing asbestos fibre. Contractor to ensure competent staff adequately trained are engaged in the works, and disposal of any affected material is undertaken in line with current legislation and good practice guidelines.
7. The contractor is to be aware that overhead cables may cross the site.
8. The contractor is to be aware that works any involve working adjacent to or in existing watercourses.
9. Works may involve working in close proximity to an existing water main. The contractor is to ensure that this is fully located and protected during the works.

D) Plan raised to 'construction' status. MH 02-11-11
C) Drawing amended to suit highway comments. MH. 10/08/11.
B) Drawing amended to suit highways comments. DL/MH 02/08/11
A) Drawing altered to suit L.C.C highway comments. LC. 29/06/11.
Revisions:

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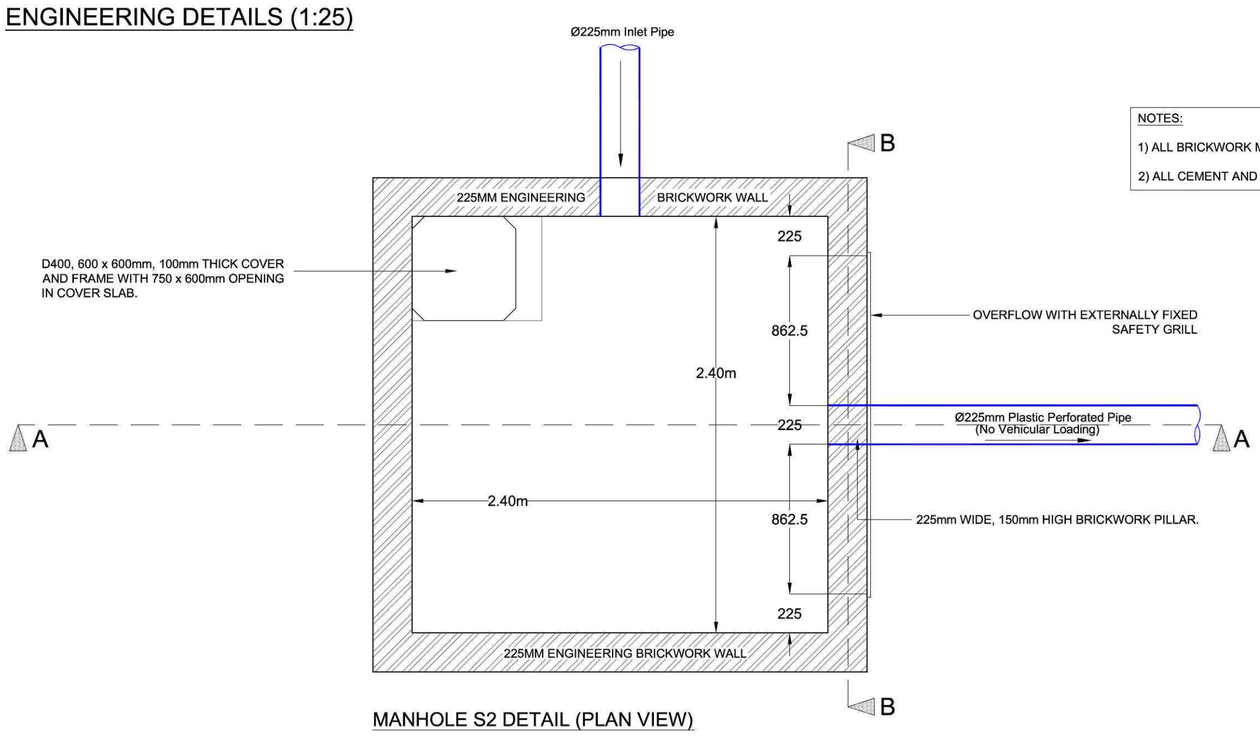
Drawing status
Construction

Drawing title
Adoptable Highway Construction Details (Sh 1)

Project title
Lime Walk
Long Sutton
Lincolnshire

Drawn	*Approved*
DM	
Date	*Drawing No*
18/03/11	WD/157/22D
Scale	
NTS	

ENGINEERING DETAILS (1:25)



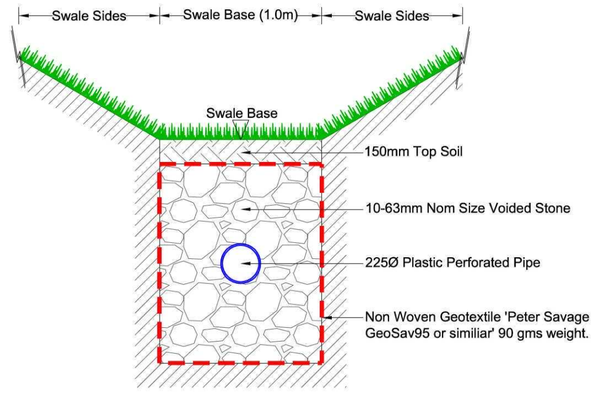
MANHOLE S2 DETAIL (PLAN VIEW)

NOTES:

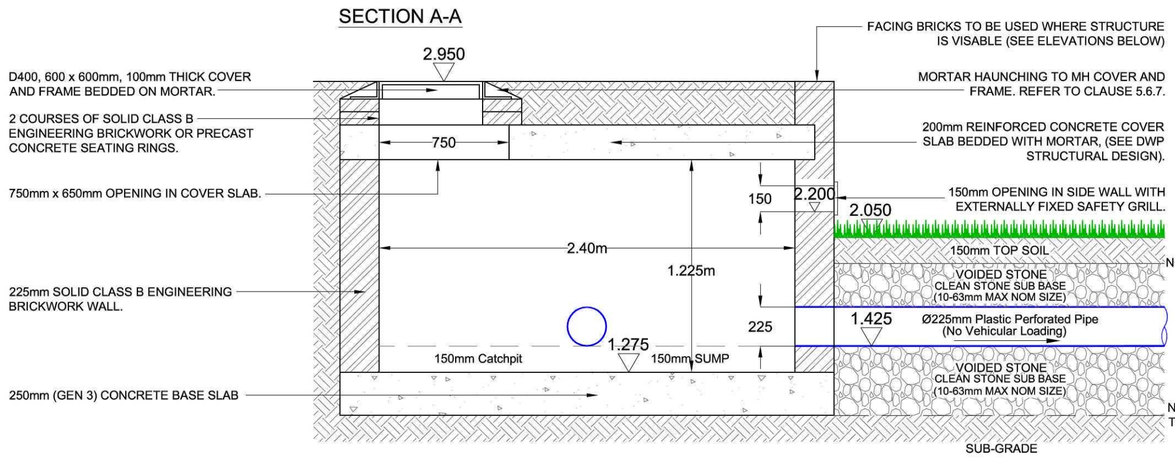
1) ALL BRICKWORK MUST BE CONSTRUCTED WITH CLASS B SOLID ENGINEERING BRICKS LAID IN ENGLISH BOND.

2) ALL CEMENT AND CONCRETE PRODUCTS TO BE SULPHATE RESISTANT.

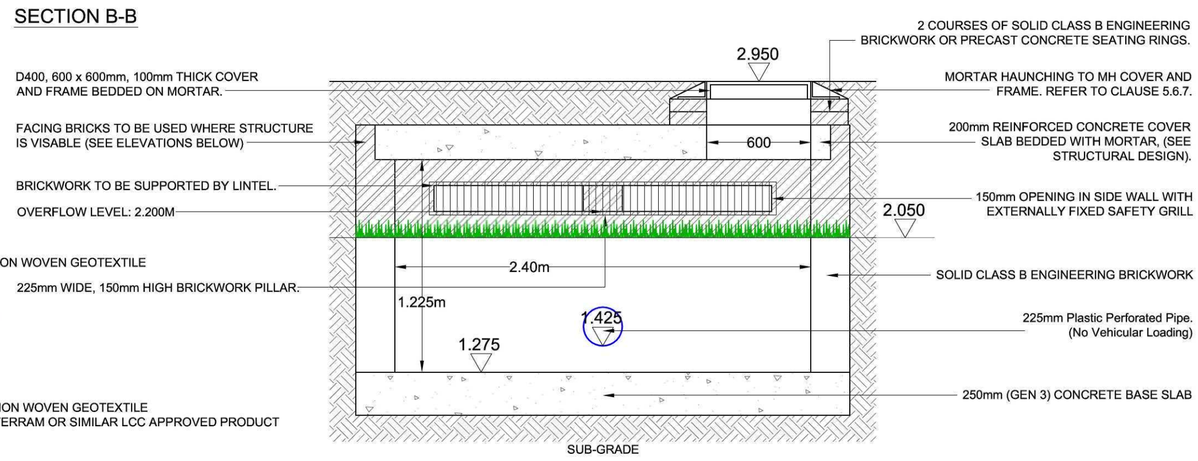
TYPICAL SECTION THROUGH SWALE FILTER DRAIN (NTS)



SECTION A-A

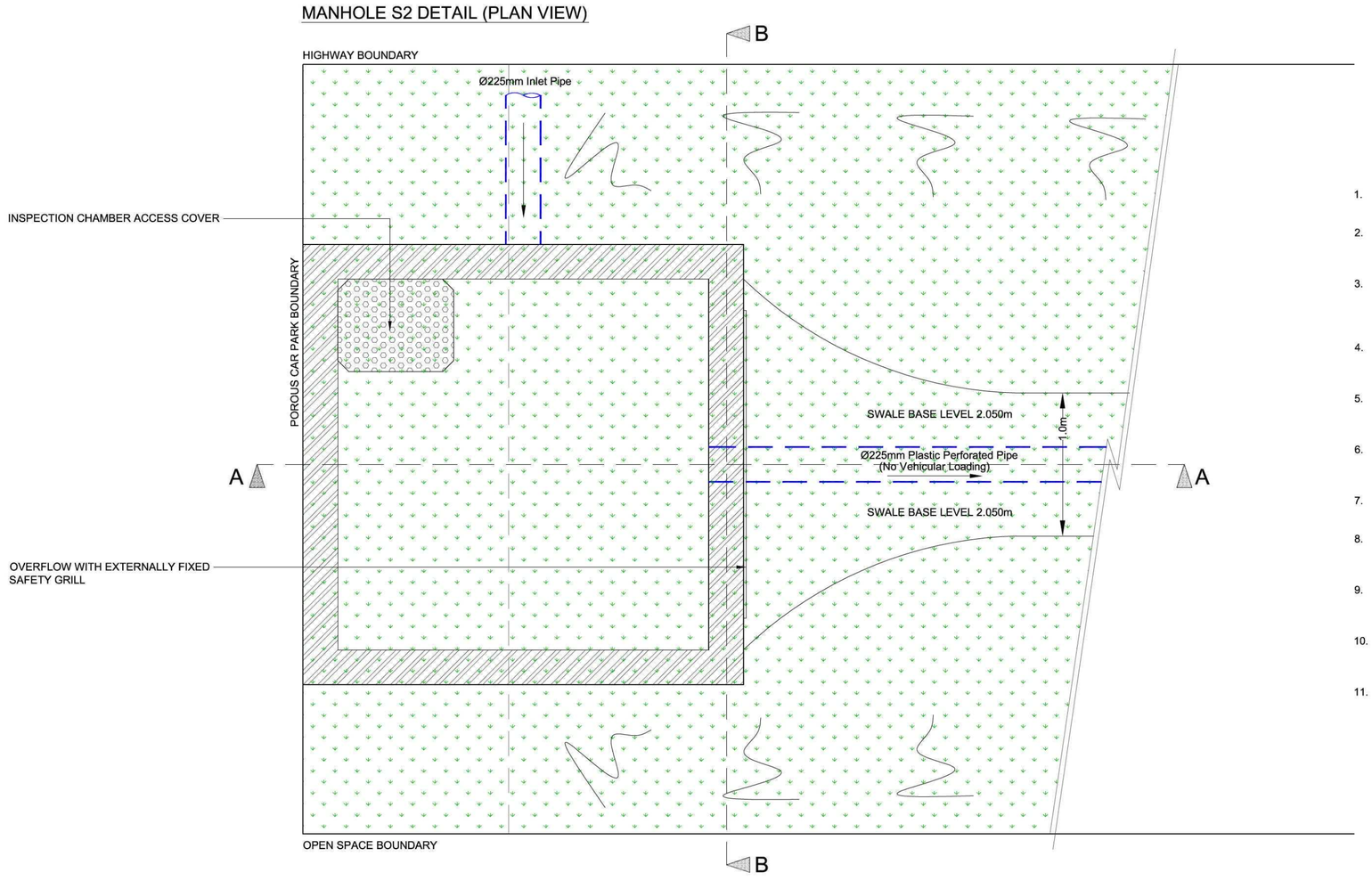


SECTION B-B



ELEVATION DETAILS (1:25)

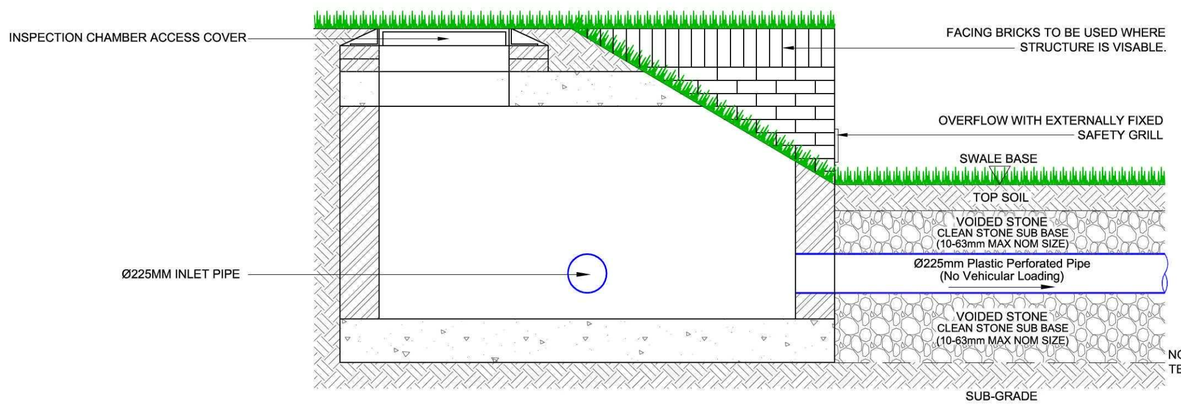
MANHOLE S2 DETAIL (PLAN VIEW)



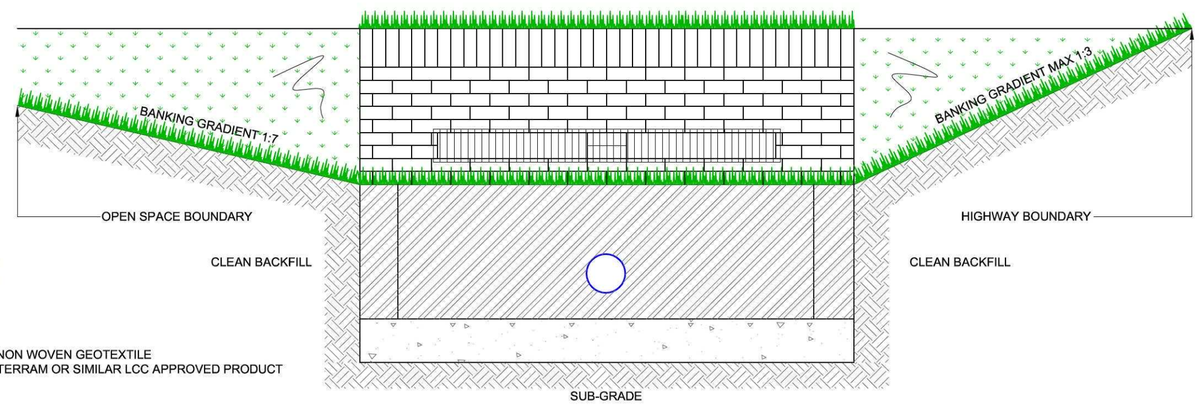
CONSTRUCTION NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DETAILS .
2. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT BRITISH STANDARDS, CODES OF PRACTICE AND BUILDING REGULATIONS.
3. THE EXACT POSITION, LEVEL, SIZE AND USE OF EXISTING SEWERS TO BE CONFIRMED ON SITE. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO COMMENCEMENT OF WORKS.
4. ALL UNCOVERED AND SHALLOW PIPEWORK TO BE PROTECTED AGAINST CONSTRUCTION TRAFFIC AS PART OF THE CONTRACTORS TEMPORARY WORKS REQUIREMENTS.
5. EXACT LOCATION LINE AND LEVEL OF EXISTING STUBS TO EXISTING MANHOLES IN THE ROAD TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.
6. COVER LEVELS SHOWN ARE APPROXIMATE ONLY, SUBJECT TO THE ARCHITECT'S EXTERNAL WORKS AND LANDSCAPING SCHEME.
7. SEE ARCHITECT'S DETAILS FOR ALL SETTING OUT DIMENSIONS TO BUILDINGS AND BOUNDARIES ETC
8. PIPES ABOVE 150MM DIA. AND UPTO AND INCLUDING 300MM DIA. TO BE 36KN/M STRENGTH CLAYWARE TO BS EN 295; 1991.
9. AS AN ALTERNATIVE TO U-PVC, PIPES ABOVE 150MM DIA. UP TO AND INCLUDING 300MM DIA. MAY BE 36KN/M STRENGTH CLAYWARE TO BS EN 295; 1991.
10. PIPES ABOVE 300MM DIA. TO BE CLASS M (SRPC) CONCRETE PIPES TO BS 5911 WITH SPIGOT AND SOCKET FLEXIBLE JOINTS.
11. HIGH STRENGTH CONCRETE BENCHING TO BE STEEL TROWELLED TO A DENSE SMOOTH FACE NEATLY SHAPED AND FINISHED TO ALL BRANCH CONNECTIONS AND LAID IN ACCORDANCE WITH THE SPECIFICATION.
12. PIPE BENDS TO BE PROVIDED TO SUIT DIRECTION OF FLOW.
13. ALL MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON HEAVY DUTY GRADE D400 DOUBLE TRIANGULAR TO BS EN 124 UNLESS OTHERWISE NOTED.
14. ALL NEW DRAINAGE TO BE CONSTRUCTED ADJACENT NEW AND PROPOSED TREE PLANTING TO BE PROTECTED AGAINST ROOT ACTIVITY USING 'ROOTCONTROL' ROOT BARRIER MATERIAL BY GREEN-TECH. ALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. FIRST FLEXIBLE JOINT IN PIPES ADJACENT TO A MANHOLE SHALL BE 600MM MAX. FROM INSIDE FACE OF MANHOLE, CONNECTING TO ROCKER PIPE. FOR PIPE DIAMETERS 150MM - 450MM THE ROCKER PIPE LENGTH SHALL BE 500MM - 750MM AND FOR PIPE DIAMETERS 451MM - 675MM THE ROCKER PIPE LENGTH SHALL BE 750MM - 1000MM.
16. MANHOLES WITH OUTGOING PIPES GREATER THAN 600MM DIA. SHALL BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER APPROVED SAFETY DEVICES.
17. ALL SOFT SPOTS ENCOUNTERED IN THE TRENCH FORMATION TO BE REMOVED AND REPLACED WITH GRADED GRANULAR MATERIAL UNLESS INSTRUCTED OTHERWISE.
18. ALL PIPEWORK BELOW ROAD AND CAR PARKING WITH LESS THAN 1200MM COVER SHALL BE PROTECTED WITH A 150MM MIN FND2 CONCRETE SURROUND WITH FLEXELL ISOLATION JOINTS @ 2.0M MAX. CENTRES TO COINCIDE WITH PIPE JOINTS.
19. ALL BURIED CONCRETE MUST CATER FOR CLASS 2 SULPHATES CONDITIONS IN ACCORDANCE WITH TABLE 1 OF BRE DIGEST 363.
20. THE DESIGN OF ANY TEMPORARY WORKS REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SECTION A-A



SECTION B-B



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Drawing status
Construction

Drawing title
MH S2 Swale Detail

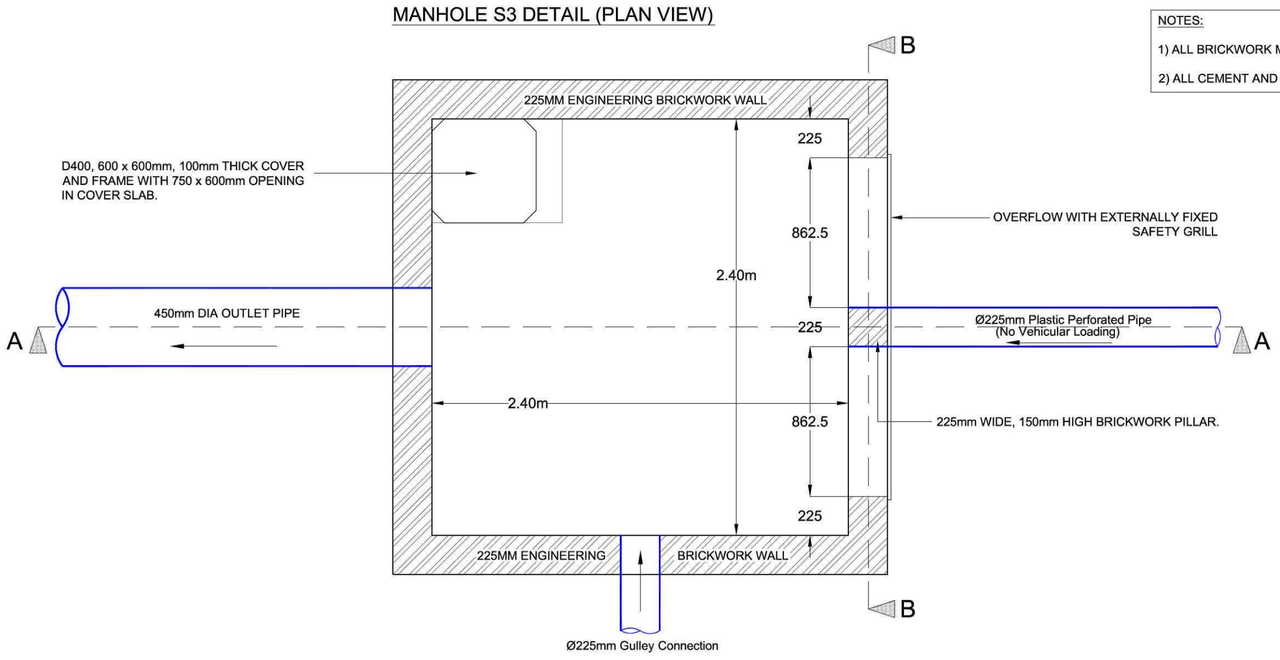
Project title
Lime Walk
Long Sutton
Lincolnshire

Drawn	DM	*Approved*	
Date	03/03/11	*Drawing No*	WD/157/23D
Scale	1:25		

Revisions:
A) Drawing altered to suit L.C.C highway comments. LC. 29/06/11.
B) Drawing altered to suit LCC drainage engineers comments. MH 03-10-11
C) Typical section through swale filter drain added. LC. 21/10/11.
D) Plan raised to 'construction' status. MH 02-11-11

ENGINEERING DETAILS (1:25)

MANHOLE S3 DETAIL (PLAN VIEW)

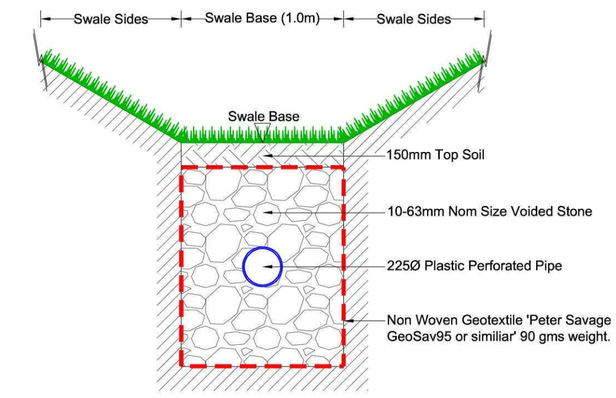


NOTES:

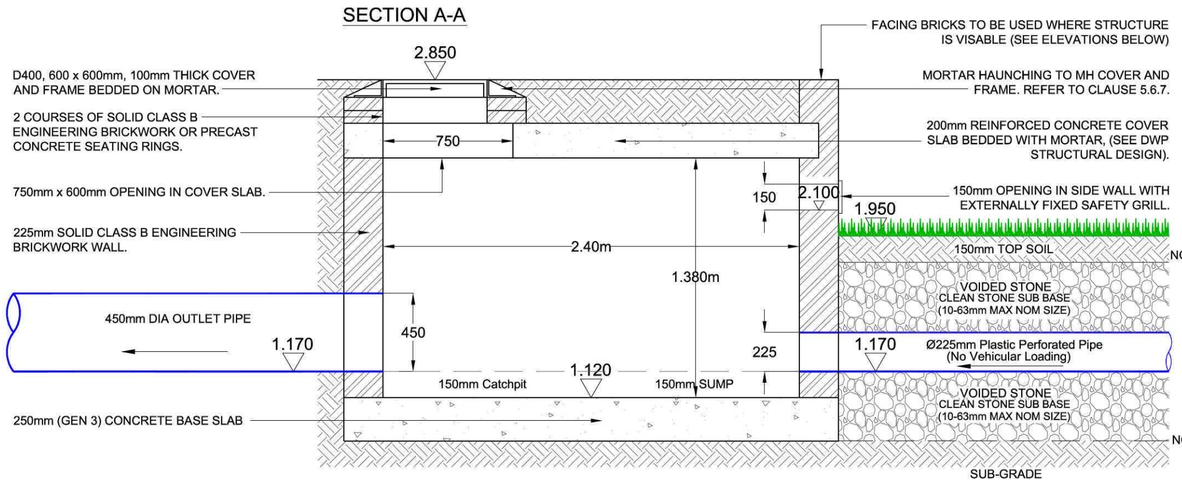
1) ALL BRICKWORK MUST BE CONSTRUCTED WITH CLASS B SOLID ENGINEERING BRICKS LAID IN ENGLISH BOND.

2) ALL CEMENT AND CONCRETE PRODUCTS TO BE SULPHATE RESISTANT.

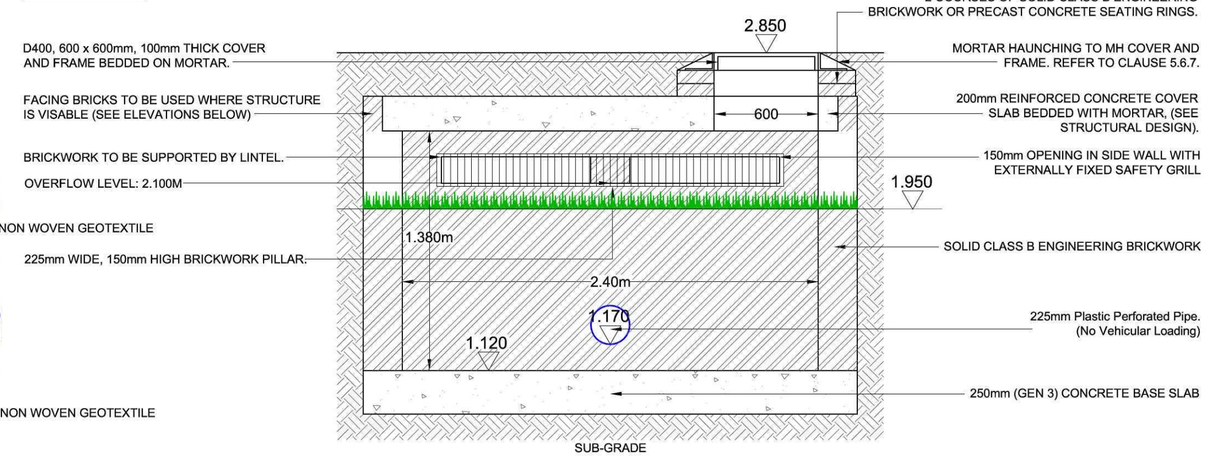
TYPICAL SECTION THROUGH SWALE FILTER DRAIN (NTS)



SECTION A-A

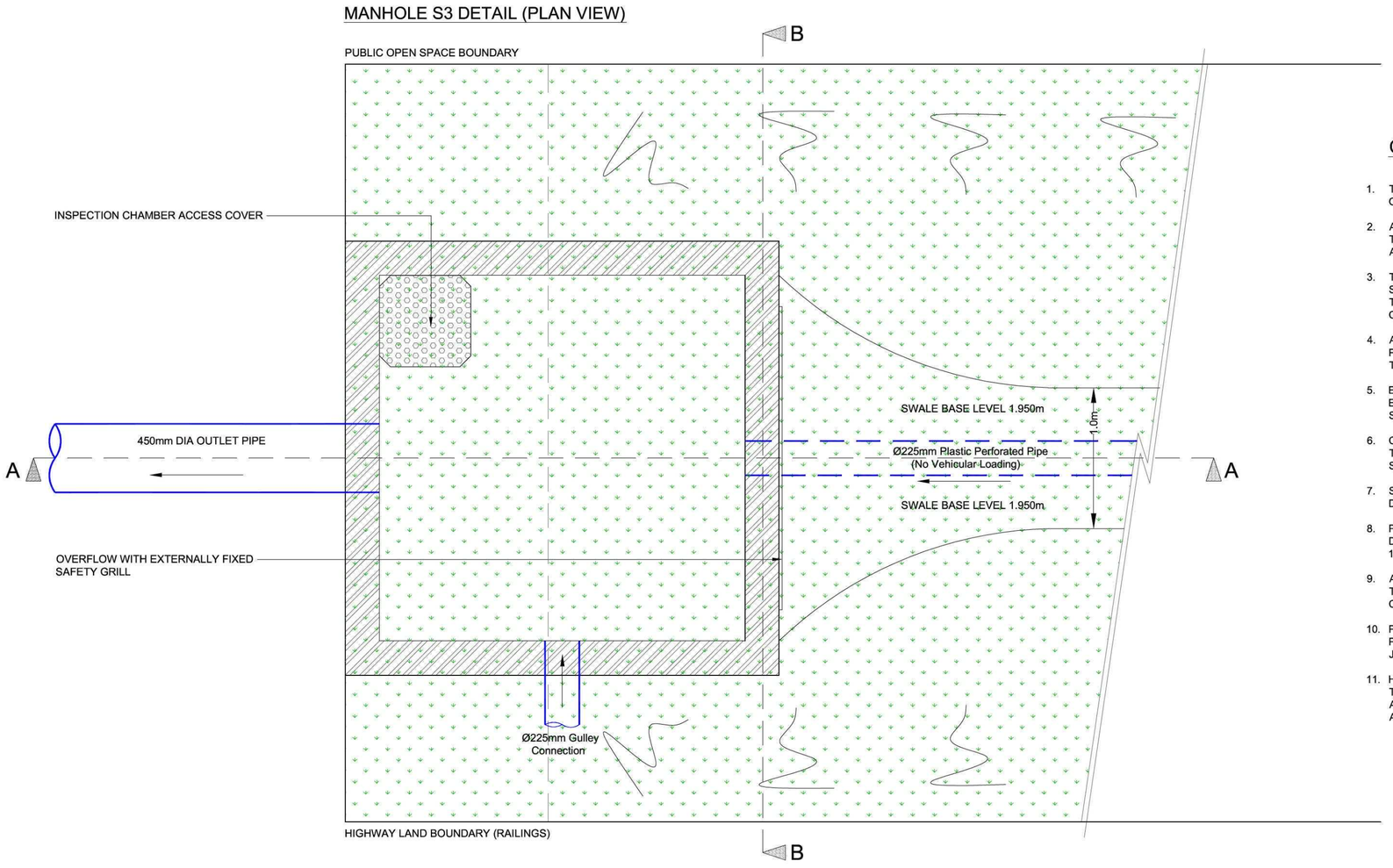


SECTION B-B



ELEVATION DETAILS (1:25)

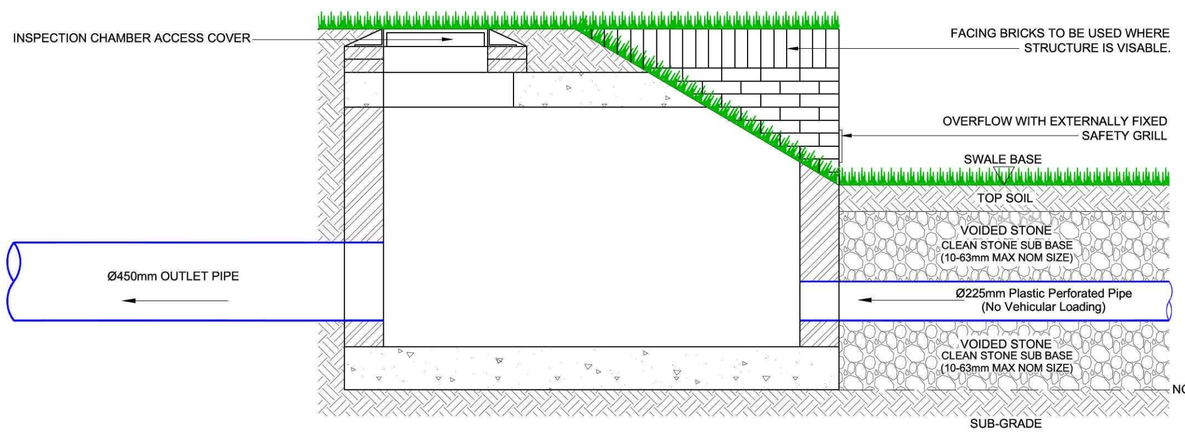
MANHOLE S3 DETAIL (PLAN VIEW)



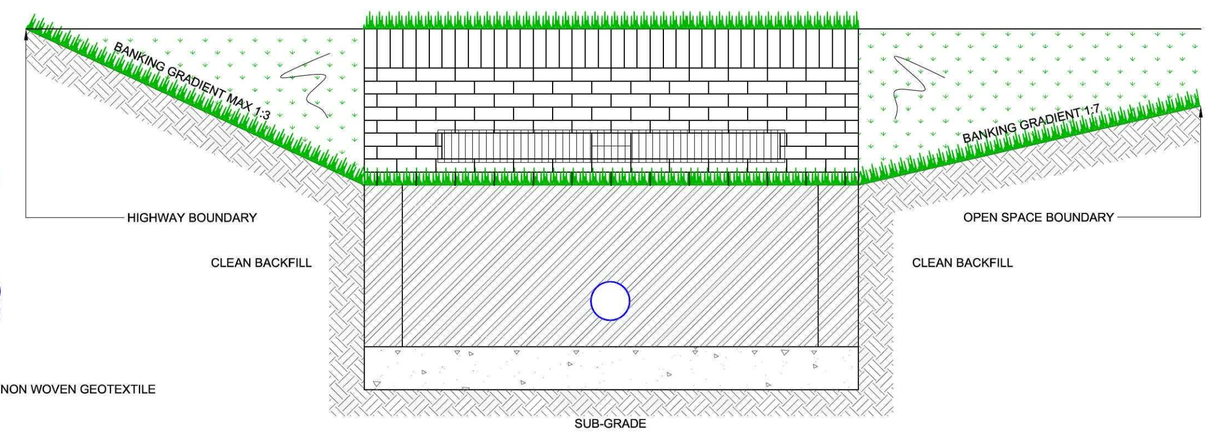
CONSTRUCTION NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DETAILS .
2. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT BRITISH STANDARDS, CODES OF PRACTICE AND BUILDING REGULATIONS.
3. THE EXACT POSITION, LEVEL, SIZE AND USE OF EXISTING SEWERS TO BE CONFIRMED ON SITE. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO COMMENCEMENT OF WORKS.
4. ALL UNCOVERED AND SHALLOW PIPEWORK TO BE PROTECTED AGAINST CONSTRUCTION TRAFFIC AS PART OF THE CONTRACTORS TEMPORARY WORKS REQUIREMENTS.
5. EXACT LOCATION LINE AND LEVEL OF EXISTING STUBS TO EXISTING MANHOLES IN THE ROAD TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.
6. COVER LEVELS SHOWN ARE APPROXIMATE ONLY, SUBJECT TO THE ARCHITECT'S EXTERNAL WORKS AND LANDSCAPING SCHEME.
7. SEE ARCHITECT'S DETAILS FOR ALL SETTING OUT DIMENSIONS TO BUILDINGS AND BOUNDARIES ETC
8. PIPES ABOVE 150MM DIA. AND UPTO AND INCLUDING 300MM DIA. TO BE 36KN/M STRENGTH CLAYWARE TO BS EN 295; 1991.
9. AS AN ALTERNATIVE TO U-PVC, PIPES ABOVE 150MM DIA. UP TO AND INCLUDING 300MM DIA. MAY BE 36KN/M STRENGTH CLAYWARE TO BS EN 295; 1991.
10. PIPES ABOVE 300MM DIA. TO BE CLASS M (SRPC) CONCRETE PIPES TO BS 5911 WITH SPIGOT AND SOCKET FLEXIBLE JOINTS.
11. HIGH STRENGTH CONCRETE BENCHING TO BE STEEL TROWELLED TO A DENSE SMOOTH FACE NEATLY SHAPED AND FINISHED TO ALL BRANCH CONNECTIONS AND LAID IN ACCORDANCE WITH THE SPECIFICATION.
12. PIPE BENDS TO BE PROVIDED TO SUIT DIRECTION OF FLOW.
13. ALL MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON HEAVY DUTY GRADE D400 DOUBLE TRIANGULAR TO BS EN 124 UNLESS OTHERWISE NOTED.
14. ALL NEW DRAINAGE TO BE CONSTRUCTED ADJACENT NEW AND PROPOSED TREE PLANTING TO BE PROTECTED AGAINST ROOT ACTIVITY USING 'ROOTCONTROL' ROOT BARRIER MATERIAL BY GREEN-TECH. ALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. FIRST FLEXIBLE JOINT IN PIPES ADJACENT TO A MANHOLE SHALL BE 600MM MAX. FROM INSIDE FACE OF MANHOLE, CONNECTING TO ROCKER PIPE. FOR PIPE DIAMETERS 150MM - 450MM THE ROCKER PIPE LENGTH SHALL BE 500MM - 750MM AND FOR PIPE DIAMETERS 451MM - 675MM THE ROCKER PIPE LENGTH SHALL BE 750MM - 1000MM.
16. MANHOLES WITH OUTGOING PIPES GREATER THAN 600MM DIA. SHALL BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER APPROVED SAFETY DEVICES.
17. ALL SOFT SPOTS ENCOUNTERED IN THE TRENCH FORMATION TO BE REMOVED AND REPLACED WITH GRADED GRANULAR MATERIAL UNLESS INSTRUCTED OTHERWISE.
18. ALL PIPEWORK BELOW ROAD AND CAR PARKING WITH LESS THAN 1200MM COVER SHALL BE PROTECTED WITH A 150MM MIN FND2 CONCRETE SURROUND WITH FLEXELL ISOLATION JOINTS @ 2.0M MAX. CENTRES TO COINCIDE WITH PIPE JOINTS.
19. ALL BURIED CONCRETE MUST CATER FOR CLASS 2 SULPHATES CONDITIONS IN ACCORDANCE WITH TABLE 1 OF BRE DIGEST 363.
20. THE DESIGN OF ANY TEMPORARY WORKS REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SECTION A-A



SECTION B-B



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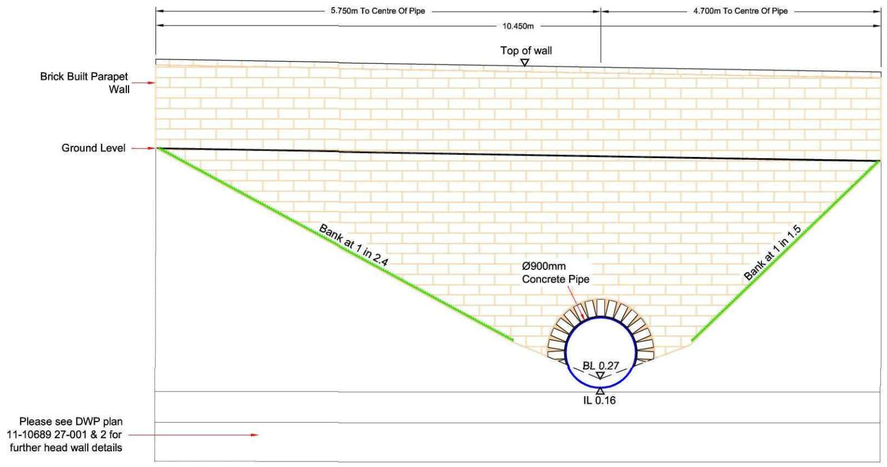
Drawing status
Construction

Drawing title
MH S3 Swale Detail

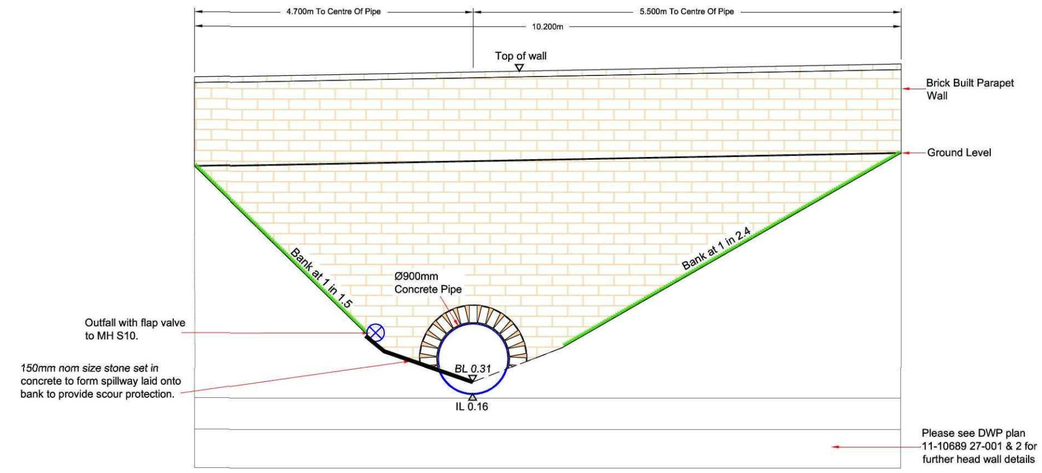
Project title
Lime Walk
Long Sutton
Lincolnshire

Drawn	DM	*Approved*	
Date	03/03/11	*Drawing No*	WD/157/24D
Scale	1:25		

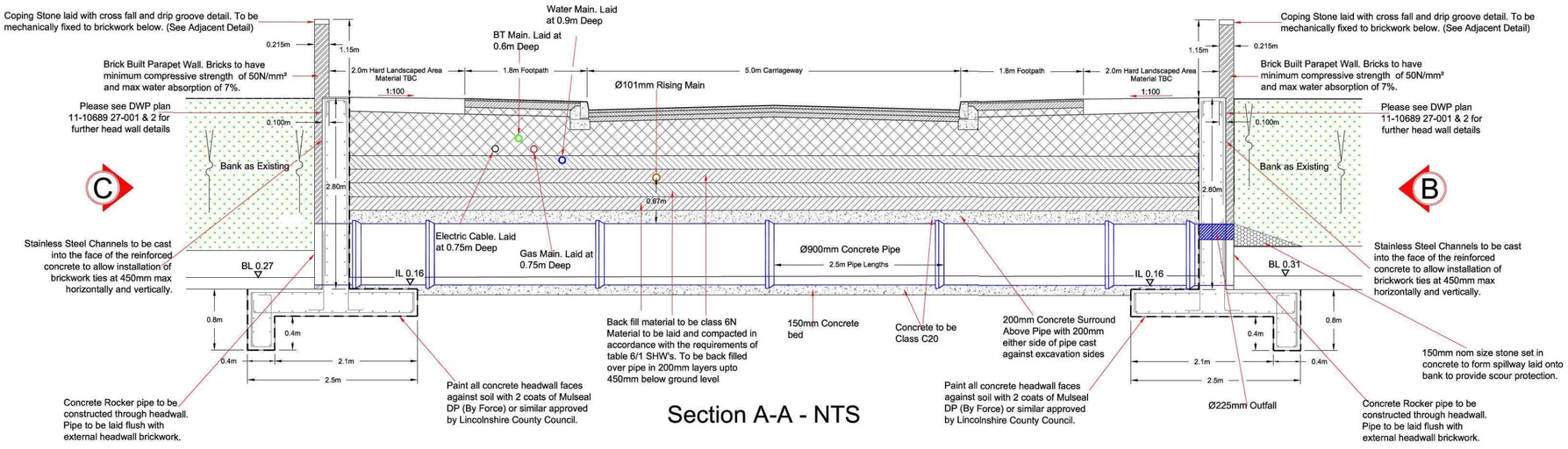
Revisions:
A) Drawing altered to suit L.C.C highway comments. LC. 29/06/11.
B) Drawing altered to suit LCC drainage engineers comments. MH 03-10-11
C) Typical section through swale filter drain added. LC. 21/10/11.
D) Plan raised to 'construction' status. MH 02-11-11



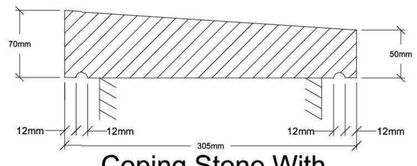
Elevation C - NTS



Elevation B - NTS



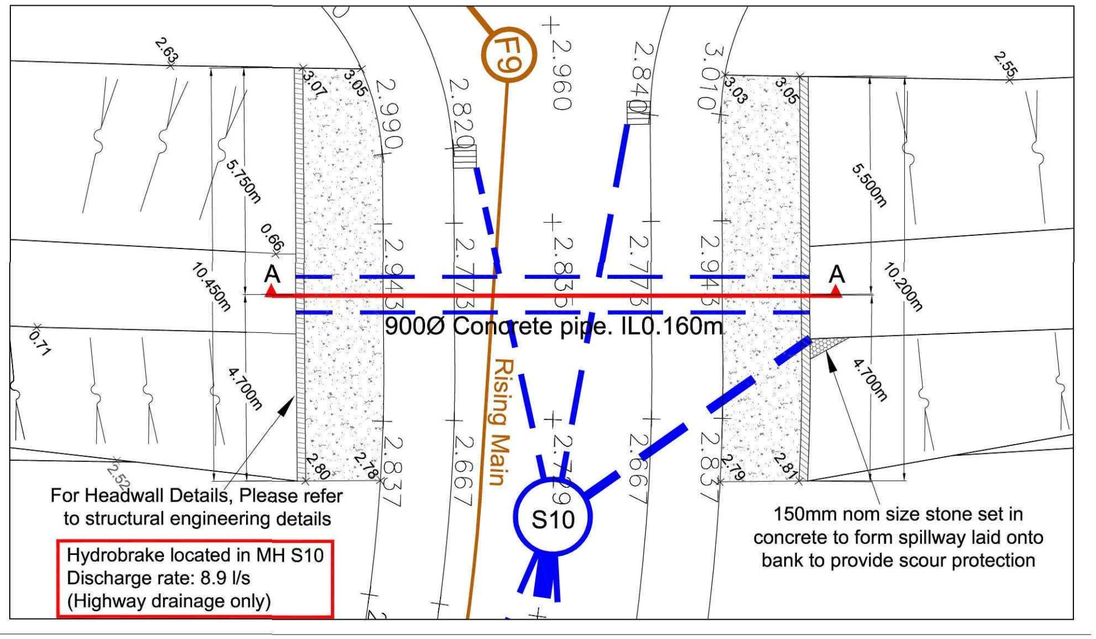
Section A-A - NTS



Coping Stone With Drip Groove Detail - NTS -

PIPE STRENGTH CALCULATIONS							
PIPE REFERENCE	PIPE dia	DEPTH OF	COVER	BEDDING	DESIGN	We x 1.25	REQ PIPE STR.
	mm	MIN m	MAX m	FACTOR	LOAD	Bedding Factor	
					We Kn/m	Kn/m	
Headwall Culvert	900	1.70	1.80	4.5	61.33	17.04	Ex strength concrete pipe
BEDDING FACTORS Class B 1.9; Class S 2.2; Unreinforced Concrete 4.5.							

Please refer to Stanton Bonna concrete pipe data sheet for full details.
Proof Load = 72 Kn/m
Crushing Load = 108 Kn/m



L) Plan raised to 'construction' status. MH 02-11-11
K) Concrete headwall height reduced to 2.8m. LC. 12/10/11.
J) Banking details amended to suit L.C.C comments. LC. 11/10/11.
H) Plan revised to suit L.C.C structural engineers comments. LC 07/10/11
G) Headwall Dimensions Amended. MH 23-09-11
F) Plan revised to suit structural engineers comments. MH 13-09-11
E) Plan revised to suit highways structural engineers comments. MH 08-09-11
D) Plan revised to suit highways structural engineers comments. MH 31-08-11
C) Plan amended to suit. DM. 17-08-11
B) Plan revised to reflect Engineers comments. DM 16-08-11
A) Plan revised to reflect Engineers comments. MH 08-08-11
Revisions:

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Drawing status: Construction

Drawing title: Culvert Details

Project title: Residential Development
Lime Walk
Long Sutton

Drawn	DM	Approved	
Date	02/03/11	Drawing No	WD/157/25L
Scale	NTS		

NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DETAILS .
2. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT BRITISH STANDARDS, CODES OF PRACTICE AND BUILDING REGULATIONS.
3. THE DESIGN OF ANY TEMPORARY WORKS REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ANY DISCREPANCIES ARE TO BE RECORDED AND REPORTED TO THE ENGINEERS IMMEDIATELY .
5. ALL WORK IS TO BE TO THE SATISFACTION OF THE ENGINEER AND THE LOCAL WATER AUTHORITY .
6. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE STABILITY OF THE WORKS AT ALL TIMES DURING CONSTRUCTION.
7. ALL WORKMANSHIP AND MATERIALS ARE TO BE TO CURRENT BRITISH STANDARDS.
8. ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
9. ANY EXISTING DETAILS WHICH ARE SHOWN ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY VARIATIONS ARE TO BE RECORDED AND REPORTED TO THE ENGINEER IMMEDIATELY.

GENERAL ROAD NOTES:

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE LOCAL HIGHWAY AUTHORITY DESIGN GUIDE AND THE GENERAL SPECIFICATION FOR ROADWORKS CURRENT AT THE TIME OF CONSTRUCTION.

ALL WORKS SHALL BE IN ACCORDANCE WITH THE LOCAL HIGHWAY AUTHORITYS APPROVED DOCUMENTS AND SATISFACTION. ANY REFERENCE TO THE SPECIFICATION HALL MEAN THE GENERAL SPECIFICATION FOR ROADWORKS.

1. PRIOR TO ANY WORKS BEING CARRIED OUT WITHIN OR IMMEDIATELY ADJACENT TO THE PUBLIC HIGHWAY, A SCHEME FOR THE SAFE CONTROL OF TRAFFIC AND PEDESTRIANS IS TO BE AGREED WITH THE HIGHWAY AUTHORITY AND IMPLEMENTED.
2. WORKING AREAS WITHIN THE VICINITY OF EXISTING TREES ARE TO BE AGREED WITH THE ENGINEER AND CHESTNUT FENCING ERECTED AS DIRECTED.
3. SPECIAL CARE IS TO BE TAKEN WHEN EXCAVATING IN THE VICINITY OF EXISTING TREES, IT IS NOT INTENDED THAT ANY TREE ROOTS SHOULD BE SEVERED OR DAMAGED AND SPECIALIST ADVICE SHOULD BE SOUGHT WHEN MAJOR ROOTS PRESENT A PROBLEM. CARE IS TO BE TAKEN TO AVOID DAMAGE TO BRANCHES AND FOLIAGE.
4. IT IS THE CONTRACTOR'S RESPONSIBILTY TO TRACE AND INDICATE THE PRECISE LOCATION AND NATURE OF ALL SERVICES.
5. THE CONTRACTOR IS TO PROVIDE A CCTV SURVEY OF ANY HIGHWAY SEWERS ON COMPLETION OF THE 12-MONTH MAINTENANCE PERIOD. THIS IS TO BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL WATER AND HIGHWAYS AUTHORITIES.
6. SAFE PASSAGE FOR PEDESTRIANS ACROSS THE SITE IS TO BE ENSURED AT ALL TIMES BY MEANS OF APPROVED FENCING TO BOTH SIDES OF ANY FOOTPATH ROUTE.
7. THE HEALTH AND SAFETY AT WORK ACT 1981 IS TO BE COMPLIED WITH AT ALL TIMES. ATTENTION IS DRAWN TO THE WEARING OF HARD HATS, REFLECTORISED CLOTHING, AND THE USE OF ANY OTHER REQUIRED SAFETY EQUIPMENT.
8. THE CONTRACTOR IS TO TAKE ACCOUNT OF THE SOILS REPORT.
9. NO COMPLETION WORKS WILL BE AUTHORISED UNTIL A FORMAL CERTIFICATE OF CONFORMANCE TO RELEVANT SPECIFICATION IS RECEIVED FROM THE RELEVANT WATER AUTHORITY.
10. COMPACTION CONTROL SHALL BE ACHIEVED BY AIR VOID TESTING FOR BOTH ROADBASE AND BASECOURSE (MAXIMUM AIR VOID RATIO 6%)
11. ANY RECYCLED MATERIAL TO BE USED FOR HIGHWAY CONSTRUCTION PURPOSES WILL BE ALLOWED SUBJECT TO IT SATISFYING RELEVANT TESTS AS INSTRUCTED BY THIS AUTHORITY.
12. THE CONTRACTOR IS TO TAKE CBR TESTS AT ROAD FORMATION LEVEL, CAPPING LAYER LEVEL, AND SUB BASE LEVEL AND THE HIGHWAY ENGINEER INFORMED BEFORE ANY CONSTRUCTION WORKS CARRIED OUT ON THAT LEVEL.
13. ALL LEVELS AND DIMENSIONS ARE TO BE CHECKED ON SITE BEFORE ANY WORK COMMENCES.
14. ALL PRIVATE DRIVES WHICH FALL TOWARDS A PUBLIC HIGHWAY AND EXCEED TWO PARKING BAYS IN AREA ARE TO BE PROVIDED WITH A SUTIABLE GULLY OR DRAINAGE CHANNEL TO PREVENT WATER DISCHARGING ONTO THE HIGHWAY.
15. WHERE A DRIVEWAY FALLS TOWARDS A DWELLING IT SHALL BE PROVIDED WITH A SUITABLE GULLY OR DRAINAGE CHANNEL TO PREVENT WATER DAMAGING THE BUILDING.

ROAD MARKINGS & TRAFFIC SIGNS

THE DEVELOPER SHALL CONSULT WITH THE HIGHWAY AUTHORITY OR ITS AGENT AND ARRANGE TO PROVIDE, AT HIS COST, ALL WHITE LINE CARRIAGEWAY MARKINGS AND TRAFFIC SIGNS AS MAY BE REQUIRED.

STREET NAME PLATES

STREET NAME PLATES SHALL BE PROVIDED AND ERECTED BY THE DISTRICT COUNCIL ON A RECHARGABLE BASIS OR AS OTHERWISE DIRECTED BY THE LOCAL AUTHORITY.

STREET LIGHTING

HIGHWAY LIGHTING WILL NORMALLY BE DESIGNED BY THE HIGHWAY AUTHORITY OR ITS AGENT AND SHALL BE IN ACCORDANCE WITH THE AUTHORITIES CODE OF PRACTICE FOR LIGHTING OF PUBLIC HIGHWAYS AND INSTALLED BY AN APPROVED CONTRACTOR.

STATUTORY UNDERTAKERS

THE DEVELOPER SHALL BE RESPONSIBLE FOR LIAISON WITH THE STATUTORY UNDERTAKERS AND OTHER CABLE SERVICE COMPANIES FOR THE PROVISION OF ALL REQUIRED SERVICES.

NOTES

The specification in all respects shall be in accordance with the current 'Lincolnshire Design Guide for Residential Area's' and 'Development Road Specification and Construction' publications in force in the country at the time of construction.

The minimum longitudinal fall for highways, without channel blocks should be 1 in 150, and with channel blocks 1 in 250 (see clause 10.1 Development Road Specification)

In addition, ensure that the first section of any side roads falls away from the road to which it is connecting. If general topography requires it to rise, this change of direction should take place after the first set of gullies. This is to ensure a 'false channel' with associated drainage problems is not created in the bellmouth of junctions.

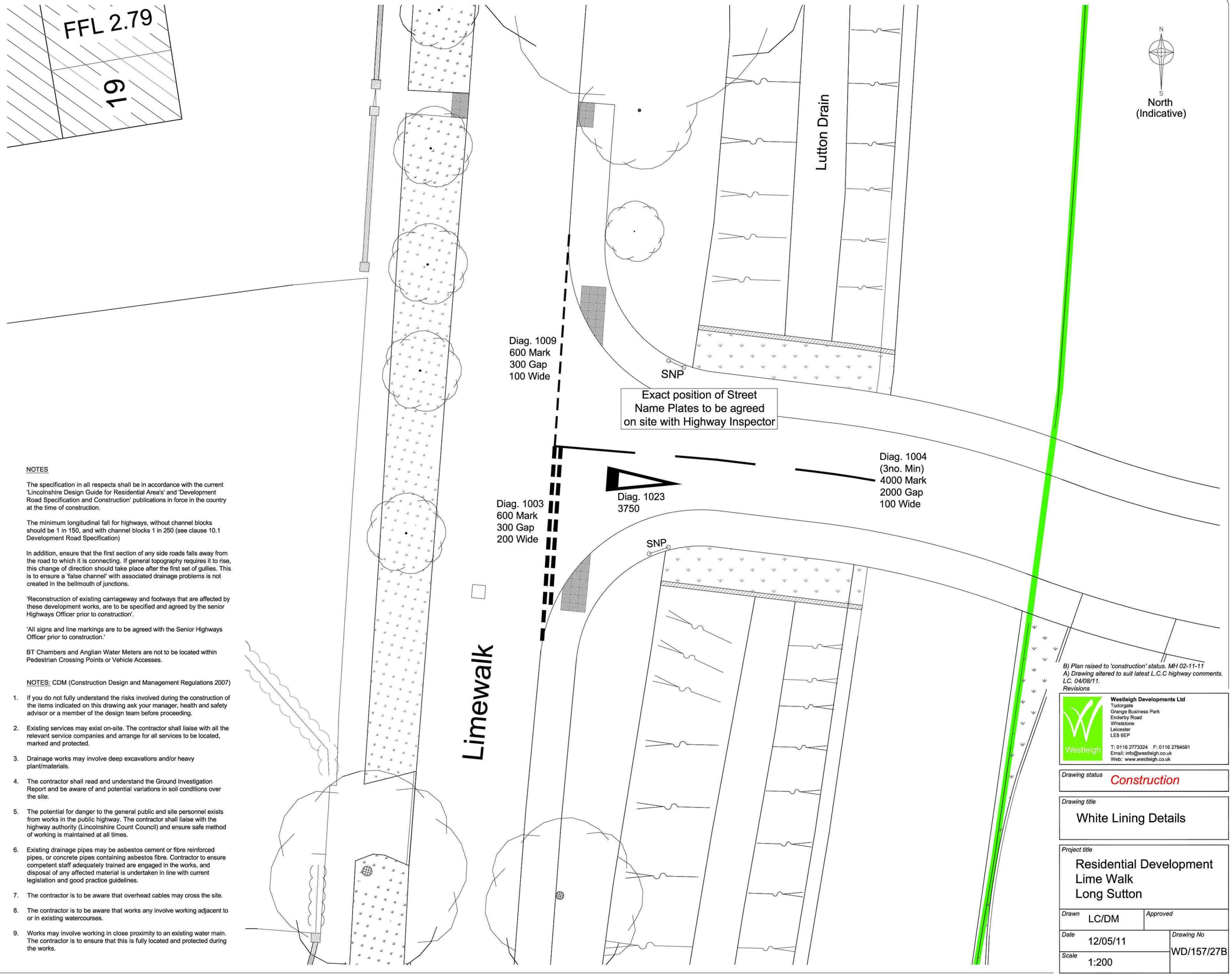
'Reconstruction of existing carriageway and footways that are affected by these development works, are to be specified and agreed by the senior Highways Officer prior to construction'.

'All signs and line markings are to be agreed with the Senior Highways Officer prior to construction.'

BT Chambers and Anglian Water Meters are not to be located within Pedestrian Crossing Points or Vehicle Accesses.

NOTES: CDM (Construction Design and Management Regulations 2007)

1. If you do not fully understand the risks involved during the construction of the items indicated on this drawing ask your manager, health and safety advisor or a member of the design team before proceeding.
2. Existing services may exist on-site. The contractor shall liaise with all the relevant service companies and arrange for all services to be located, marked and protected.
3. Drainage works may involve deep excavations and/or heavy plant/materials.
4. The contractor shall read and understand the Ground Investigation Report and be aware of and potential variations in soil conditions over the site.
5. The potential for danger to the general public and site personnel exists from works in the public highway. The contractor shall liaise with the highway authority (Lincolnshire Count Council) and ensure safe method of working is maintained at all times.
6. Existing drainage pipes may be asbestos cement or fibre reinforced pipes, or concrete pipes containing asbestos fibre. Contractor to ensure competent staff adequately trained are engaged in the works, and disposal of any affected material is undertaken in line with current legislation and good practice guidelines.
7. The contractor is to be aware that overhead cables may cross the site.
8. The contractor is to be aware that works any involve working adjacent to or in existing watercourses.
9. Works may involve working in close proximity to an existing water main. The contractor is to ensure that this is fully located and protected during the works.



B) Plan raised to 'construction' status. MH 02-11-11
A) Drawing altered to suit latest L.C.C highway comments. LC. 04/08/11.
Revisions

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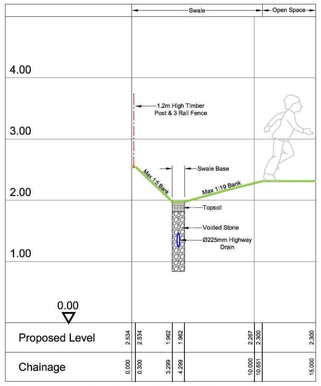
Drawing status **Construction**

Drawing title
White Lining Details

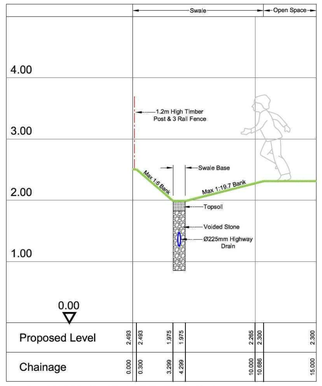
Project title
Residential Development
Lime Walk
Long Sutton

Drawn	LC/DM	*Approved*	
Date	12/05/11	*Drawing No*	WD/157/27B
Scale	1:200		

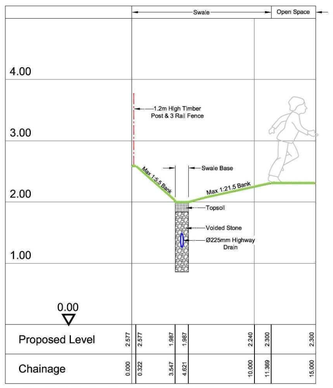
Note: This drawing to be read in conjunction with Westleigh Developments Drawing(s): WD/157/23 & WD/157/24 - Swale Details



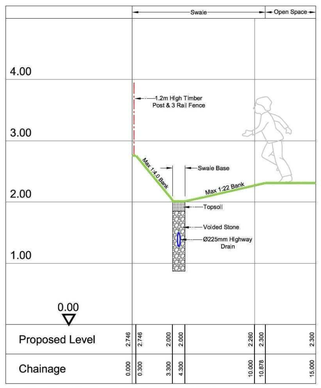
Section A-A: Scale - Horiz 1:50 Vert 1:250



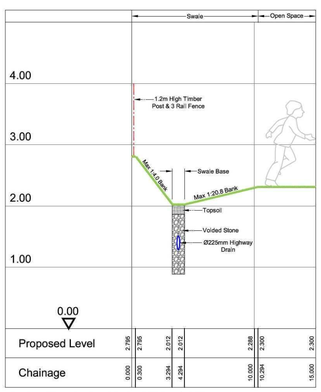
Section B-B: Scale - Horiz 1:50 Vert 1:250



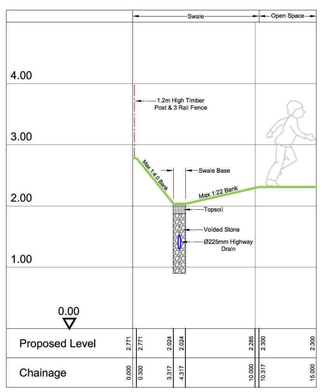
Section C-C: Scale - Horiz 1:50 Vert 1:250



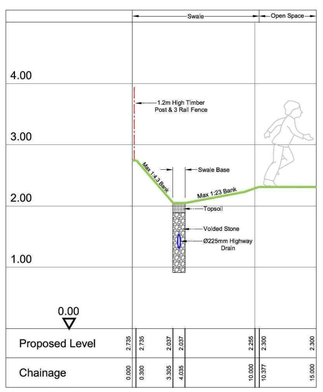
Section D-D: Scale - Horiz 1:50 Vert 1:250



Section E-E: Scale - Horiz 1:50 Vert 1:250



Section F-F: Scale - Horiz 1:50 Vert 1:250



Section G-G: Scale - Horiz 1:50 Vert 1:250

B) Plan raised to 'construction' status. MH 02-11-11
A) Drawing altered to suit latest L.C.C highway comments. LC. 04/08/11.
Revisions:

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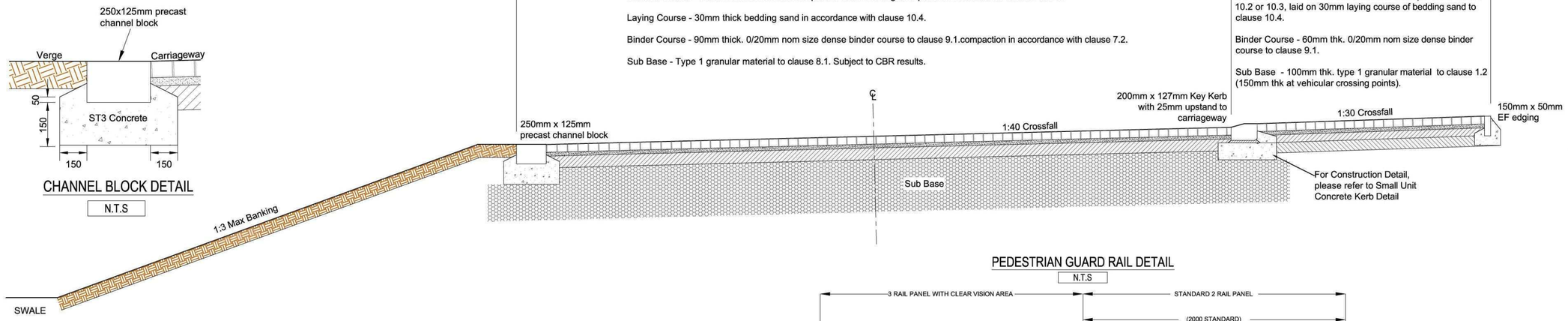
Drawing status
Construction

Drawing title
Swale Cross Sections

Project title
Lime Walk
Long Sutton
Lincolnshire

Drawn	DM	*Approved*	
Date	17/05/11	*Drawing No*	WD/157/28B
Scale	As Shown		

SECTION THROUGH SWALE / ROAD 1 (CHAINAGE 149.0m - 235.8m)



Block Paved Carriageway Construction:

Surface Course - 60mm thick concrete block pavers laid in herringbone pattern in accordance with bs7533-3.

Laying Course - 30mm thick bedding sand in accordance with clause 10.4.

Binder Course - 90mm thick. 0/20mm nom size dense binder course to clause 9.1.compaction in accordance with clause 7.2.

Sub Base - Type 1 granular material to clause 8.1. Subject to CBR results.

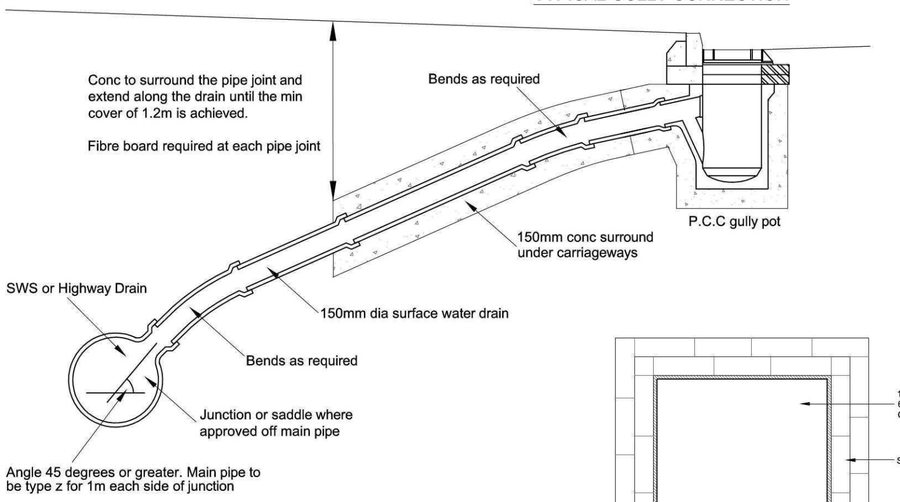
Block Paved Footway Construction:

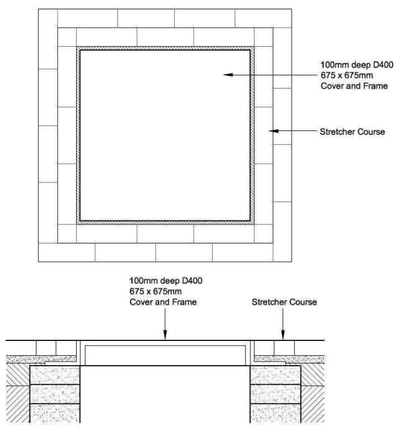
Surface Course - 60mm thk. small unit block pavers to clause 10.2 or 10.3, laid on 30mm laying course of bedding sand to clause 10.4.

Binder Course - 60mm thk. 0/20mm nom size dense binder course to clause 9.1.

Sub Base - 100mm thk. type 1 granular material to clause 1.2 (150mm thk at vehicular crossing points).

TYPICAL GULLY CONNECTION

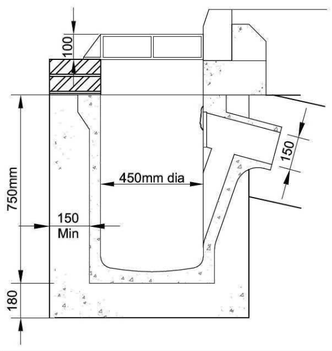




MH S1 STRETCHER COURSE DETAIL

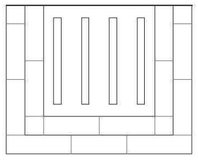
TYPICAL GULLY DETAIL

N.T.S



NOTES

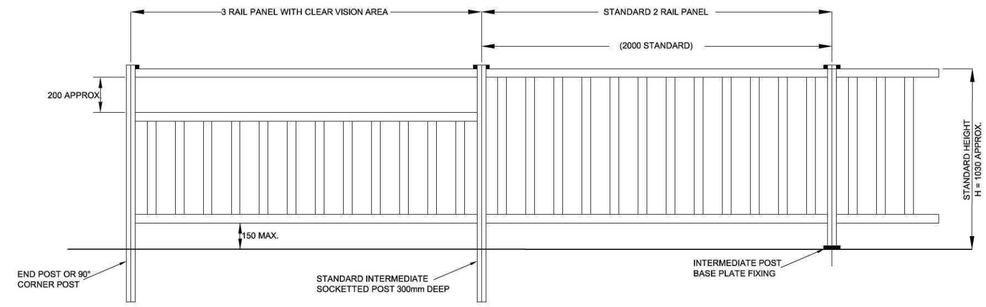
1. Precast concrete gullies to BS 556. Clayware gullies to BS 539.
2. Gully cover and frame to BS EN 124:1994 Grade D400.
3. Gully chamber to BS 5911 to be min. 750mm internal depth and min. 450mm internal diameter fitted with 150mm diameter trapped outlet and stoppered rodding eye.
4. Gully chamber to be surrounded with 150mm minimum thickness of grade 20 concrete.
5. Frames to be set on 1-3 courses of brickwork.



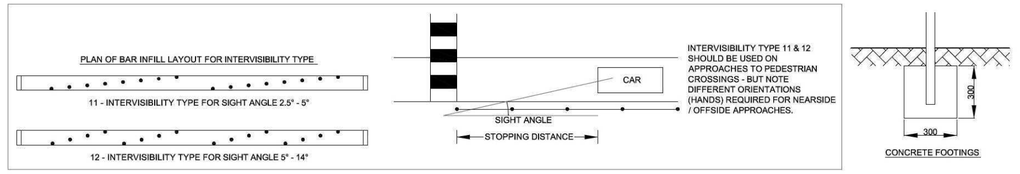
GULLY STRETCHER COURSE DETAIL (NTS)

PEDESTRIAN GUARD RAIL DETAIL

N.T.S



TYPICAL ELEVATION



PANEL TYPES:

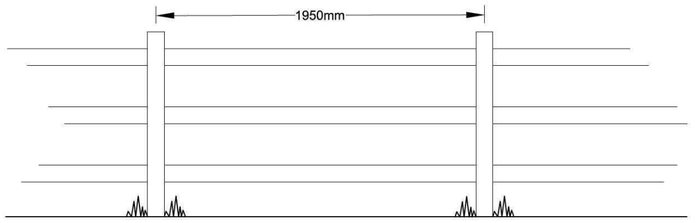
A1	STANDARD 2-RAIL PANEL, ALUMINIUM
S1	STANDARD 2 RAIL PANEL, STEEL
A1R	RAMPED STANDARD 2-RAIL PANEL, ALUMINIUM
S1R	RAMPED STANDARD 2-RAIL PANEL, STEEL
A2	3-RAIL PANEL WITH CLEAR VISION AREA, ALUMINIUM
S2	3-RAIL PANEL WITH CLEAR VISION AREA, STEEL
A2R	RAMPED 3-RAIL PANEL WITH CLEAR VISION AREA, ALUMINIUM
S2R	RAMPED 3-RAIL PANEL WITH CLEAR VISION AREA, STEEL
A3	BRIDGE EXPANSION JOINT PANEL, ALUMINIUM
S3	BRIDGE EXPANSION JOINT PANEL, STEEL
A4	SPECIAL PANEL, ALUMINIUM
S4	SPECIAL PANEL, STEEL
11	INTERVISIBILITY TYPE FOR 2.5° - 5° APPROACH ANGLE
12	INTERVISIBILITY TYPE FOR 5° - 14° APPROACH ANGLE

NOTES:

1. FENCING TO BE CLASS B COMPLYING WITH BS 7818
2. ALL FIXINGS TO BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS
3. CONCRETE FOOTINGS 300X300X300 TO BE GRADE ST2 BS 5228
4. ALL STEEL PARTS TO BE HOT DIPPED GALVANISED TO BS 729 PART 1
5. REINSTATEMENT ABOVE FOOTINGS TO BE WITH SIMILAR MATERIALS AND CONSTRUCTION AS EXISTING

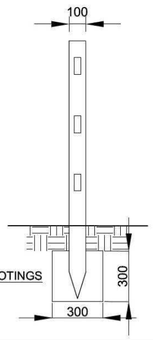
NOTES FOR GUIDANCE ON PEDESTRIAN GUARD RAILS

1. MAXIMUM GRADIENT FOR RAMP PANELS IS 1 IN 1.2
2. GRADIENT TO BE SPECIFIED IN CONTRACT DOCUMENTS
3. PANELS (WITH UPPER CLEAR VISION AREA) TO BE USED AT ROAD JUNCTIONS (OR WHERE INCREASED VISIBILITY IS REQUIRED)
4. INTERVISIBILITY TYPE TO BE USED AT SPECIAL LOCATIONS, SUCH AS APPROACHES TO PEDESTRIAN CROSSINGS, OR OUTSIDE SCHOOLS (GIVES GOOD VISIBILITY TO CHILDREN)
5. SPECIAL PANELS OF VARYING LENGTH AND SHAPE ARE AVAILABLE, SEE MANUFACTURERS LITERATURE



POST AND RAIL FENCE DETAIL

N.T.S



GENERAL ROAD NOTES

1. This drawing is to be read in conjunction with the local highway authority design guide and the general specification for roadworks current at the time of construction.
2. All works shall be in accordance with the local highway authoritys approved documents and satisfaction. any reference to the specification shall mean the general specification for roadworks.
3. Prior to any works being carried out within or immediately adjacent to the public highway, a scheme for the safe control of traffic and pedestrians is to be agreed with the highway authority and implemented.
4. Working areas within the vicinity of existing trees are to be agreed with the engineer and chestnut fencing erected as directed.
5. Special care is to be taken when excavating in the vicinity of existing trees, it is not intended that any tree roots should be severed or damaged and specialist advice should be sought when major roots present a problem. Care is to be taken to avoid damage to branches and foliage.
6. It is the contractor's responsibilty to trace and indicate the precise location and nature of all services.
7. The contractor is to provide a cctv survey of any highway sewers on completion of the 12-month maintenance period. this is to be provided in accordance with the requirements of the local water and highways authorities.
8. Safe passage for pedestrians across the site is to be ensured at all times by means of approved fencing to both sides of any footpath route.

NOTES

The specification in all respects shall be in accordance with the current 'Lincolnshire Design Guide for Residential Area's' and 'Development Road Specification and Construction' publications in force in the country at the time of construction.

The minimum longitudinal fall for highways, without channel blocks should be 1 in 150, and with channel blocks 1 in 250 (see clause 10.1 Development Road Specification)

In addition, ensure that the first section of any side roads falls away from the road to which it is connecting. If general topography requires it to rise, this change of direction should take place after the first set of gullies. This is to ensure a 'false channel' with associated drainage problems is not created in the bellmouth of junctions.

'Reconstruction of existing carriageway and footways that are affected by these development works, are to be specified and agreed by the senior Highways Officer prior to construction'.

'All signs and line markings are to be agreed with the Senior Highways Officer prior to construction.'

BT Chambers and Anglian Water Meters are not to be located within Pedestrian Crossing Points or Vehicle Accesses.

NOTES: CDM (Construction Design and Management Regs 2007)

1. If you do not fully understand the risks involved during the construction of the items indicated on this drawing ask your manager, health and safety advisor or a member of the design team before proceeding.
2. Existing services may exist on-site. The contractor shall liaise with all the relevant service companies and arrange for all services to be located, marked and protected.
3. Drainage works may involve deep excavations and/or heavy plant/materials.
4. The contractor shall read and understand the Ground Investigation Report and be aware of and potential variations in soil conditions over the site.
5. The potential for danger to the general public and site personnel exists from works in the public highway. The contractor shall liaise with the highway authority (Lincolnshire Count Council) and ensure safe method of working is maintained at all times.
6. Existing drainage pipes may be asbestos cement or fibre reinforced pipes, or concrete pipes containing asbestos fibre. Contractor to ensure competent staff adequately trained are engaged in the works, and disposal of any affected material is undertaken in line with current legislation and good practice guidelines.
7. The contractor is to be aware that overhead cables may cross the site.
8. The contractor is to be aware that works any involve working adjacent to or in existing watercourses.
9. Works may involve working in close proximity to an existing water main. The contractor is to ensure that this is fully located and protected during the works.

E) Plan raised to 'construction' status. MH 02-11-11
D) Drawing altered to suit L.C.C highway comments. LC. 10/08/11.
C) Post and Rail fence detail added to suit highways comments. DL/MH 02/08/11
B) Pedestrian Guard Rail Detail added to suit L.C.C highway comments. MJH 27/07/2011
A) Drawing altered to suit L.C.C highway comments. LC. 29/06/11.
Revisions:

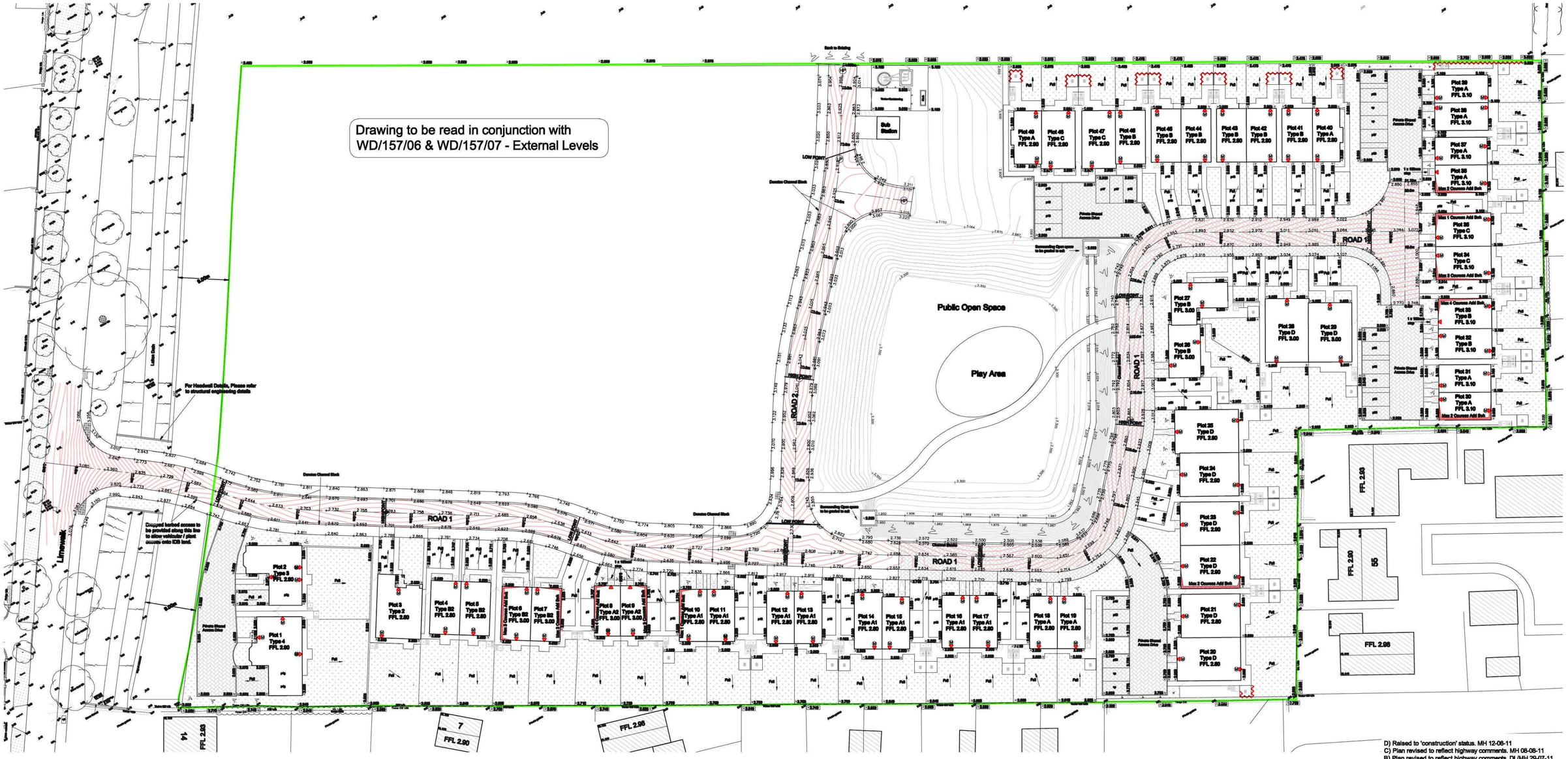
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Drawing status
Construction

Drawing title
Adoptable Highway Construction Details (Sh 2)

Project title
Lime Walk
Long Sutton
Lincolnshire

Drawn DM	*Approved*
Date 18/03/11	*Drawing No* WD/157/29E
Scale NTS	



GENERAL ROAD NOTES:

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE LOCAL HIGHWAY AUTHORITY DESIGN GUIDE AND THE GENERAL SPECIFICATION FOR ROADWORKS CURRENT AT THE TIME OF CONSTRUCTION.

ALL WORKS SHALL BE IN ACCORDANCE WITH THE LOCAL HIGHWAY AUTHORITYS APPROVED DOCUMENTS AND SATISFACTION. ANY REFERENCE TO THE SPECIFICATION HALL MEAN THE GENERAL SPECIFICATION FOR ROADWORKS.

1. PRIOR TO ANY WORKS BEING CARRIED OUT WITHIN OR IMMEDIATELY ADJACENT TO THE PUBLIC HIGHWAY, A SCHEME FOR THE SAFE CONTROL OF TRAFFIC AND PEDESTRIANS IS TO BE AGREED WITH THE HIGHWAY AUTHORITY AND IMPLEMENTED.
2. WORKING AREAS WITHIN THE VICINITY OF EXISTING TREES ARE TO BE AGREED WITH THE ENGINEER AND CHESTNUT FENCING ERECTED AS DIRECTED.
3. SPECIAL CARE IS TO BE TAKEN WHEN EXCAVATING IN THE VICINITY OF EXISTING TREES, IT IS NOT INTENDED THAT ANY TREE ROOTS SHOULD BE SEVERED OR DAMAGED AND SPECIALIST ADVICE SHOULD BE SOUGHT WHEN MAJOR ROOTS PRESENT A PROBLEM. CARE IS TO BE TAKEN TO AVOID DAMAGE TO BRANCHES AND FOLIAGE.
4. IT IS THE CONTRACTOR'S RESPONSIBILTY TO TRACE AND INDICATE THE PRECISE LOCATION AND NATURE OF ALL SERVICES.
5. THE CONTRACTOR IS TO PROVIDE A CCTV SURVEY OF ANY HIGHWAY SEWERS ON COMPLETION OF THE 12-MONTH MAINTENANCE PERIOD. THIS IS TO BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL WATER AND HIGHWAYS AUTHORITIES.
6. SAFE PASSAGE FOR PEDESTRIANS ACROSS THE SITE IS TO BE ENSURED AT ALL TIMES BY MEANS OF APPROVED FENCING TO BOTH SIDES OF ANY FOOTPATH ROUTE.
6. THE HEALTH AND SAFETY AT WORK ACT 1981 IS TO BE COMPLIED WITH AT ALL TIMES. ATTENTION IS DRAWN TO THE WEARING OF HARD HATS, RELFECTORISED CLOTHING, AND THE USE OF ANY OTHER REQUIRED SAFETY EQUIPMENT.
7. THE CONTRACTOR IS TO TAKE ACCOUNT OF THE SOILS REPORT.
8. NO COMPLETION WORKS WILL BE AUTHORISED UNTIL A FORMAL CERTIFICATE OF CONFORMANCE TO RELEVANT SPECIFICATION IS RECEIVED FROM THE RELEVANT WATER AUTHORITY.
9. COMPACTION CONTROL SHALL BE ACHIEVED BY AIR VOID TESTING FOR BOTH ROADBASE AND BASECOURSE (MAXIMUM AIR VOID RATIO 6%)
10. ANY RECYCLED MATERIAL TO BE USED FOR HIGHWAY CONSTRUCTION PURPOSES WILL BE ALLOWED SUBJECT TO IT SATISFYING RELEVANT TESTS AS INSTRUCTED BY THIS AUTHORITY.
11. THE CONTRACTOR IS TO TAKE CBR TESTS AT ROAD FORMATION LEVEL, CAPPING LAYER LEVEL, AND SUB BASE LEVEL AND THE HIGHWAY ENGINEER INFORMED BEFORE ANY CONSTRUCTION WORKS CARRIED OUT ON THAT LEVEL.
12. ALL PRIVATE DRIVES WHICH FALL TOWARDS A PUBLIC HIGHWAY AND EXCEED TWO PARKING BAYS IN AREA ARE TO BE PROVIDED WITH A SUITABLE GULLY OR DRAINAGE CHANNEL TO PREVENT WATER DISCHARGING ONTO THE HIGHWAY.
13. WHERE A DRIVEWAY FALLS TOWARDS A DWELLING IT SHALL BE PROVIDED WITH A SUITABLE GULLY OR DRAINAGE CHANNEL TO PREVENT WATER DAMAGING THE BUILDING.

ROAD MARKINGS & TRAFFIC SIGNS

THE DEVELOPER SHALL CONSULT WITH THE HIGHWAY AUTHORITY OR ITS AGENT AND ARRANGE TO PROVIDE, AT HIS COST, ALL WHITE LINE CARRIAGEWAY MARKINGS AND TRAFFIC SIGNS AS MAY BE REQUIRED.

STREET NAME PLATES

STREET NAME PLATES SHALL BE PROVIDED AND ERECTED BY THE DISTRICT COUNCIL ON A RECHARGABLE BASIS OR AS OTHERWISE DIRECTED BY THE LOCAL AUTHORITY.

STREET LIGHTING

HIGHWAY LIGHTING WILL NORMALLY BE DESIGNED BY THE HIGHWAY AUTHORITY OR ITS AGENT AND SHALL BE IN ACCORDANCE WITH THE AUTHORITIES CODE OF PRACTICE FOR LIGHTING OF PUBLIC HIGHWAYS AND INSTALLED BY AN APPROVED CONTRACTOR.

STATUTORY UNDERTAKERS

THE DEVELOPER SHALL BE RESPONSIBLE FOR LIAISON WITH THE STATUTORY UNDERTAKERS AND OTHER CABLE SERVICE COMPANIES FOR THE PROVISION OF ALL REQUIRED SERVICES.

NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DETAILS .
2. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT BRITISH STANDARDS, CODES OF PRACTICE AND BUILDING REGULATIONS.
3. THE DESIGN OF ANY TEMPORARY WORKS REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ANY DISCREPANCIES ARE TO BE RECORDED AND REPORTED TO THE ENGINEERS IMMEDIATELY .
5. ALL WORK IS TO BE TO THE SATISFACTION OF THE ENGINEER AND THE LOCAL WATER AUTHORITY .
6. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE STABILITY OF THE WORKS AT ALL TIMES DURING CONSTRUCTION.
7. ALL WORKMANSHIP AND MATERIALS ARE TO BE TO CURRENT BRITISH STANDARDS.
8. ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
9. ANY EXISTING DETAILS WHICH ARE SHOWN ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY VARIATIONS ARE TO BE RECORDED AND REPORTED TO THE ENGINEER IMMEDIATELY.

NOTES

1. THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT 'LINCOLNSHIRE DESIGN GUIDE FOR RESIDENTIAL AREAS' AND 'DEVELOPMENT ROAD SPECIFICATION AND CONSTRUCTION' PUBLICATIONS IN FORCE IN THE COUNTRY AT THE TIME OF CONSTRUCTION.
2. THE MINIMUM LONGITUDINAL FALL FOR HIGHWAYS, WITHOUT CHANNEL BLOCKS SHOULD BE 1 IN 150, AND WITH CHANNEL BLOCKS 1 IN 250 (SEE CLAUSE 10.1 DEVELOPMENT ROAD SPECIFICATION)
3. IN ADDITION, ENSURE THAT THE FIRST SECTION OF ANY SIDE ROADS FALLS AWAY FROM THE ROAD TO WHICH IT IS CONNECTING. IF GENERAL TOPOGRAPHY REQUIRES IT TO RISE, THIS CHANGE OF DIRECTION SHOULD TAKE PLACE AFTER THE FIRST SET OF GULLIES. THIS IS TO ENSURE A 'FALSE CHANNEL' WITH ASSOCIATED DRAINAGE PROBLEMS IS NOT CREATED IN THE BELLMOUTH OF JUNCTIONS.
4. 'RECONSTRUCTION OF EXISTING CARRIAGEWAY AND FOOTWAYS THAT ARE AFFECTED BY THESE DEVELOPMENT WORKS, ARE TO BE SPECIFIED AND AGREED BY THE SENIOR HIGHWAYS OFFICER PRIOR TO CONSTRUCTION'.
5. 'ALL SIGNS AND LINE MARKINGS ARE TO BE AGREED WITH THE SENIOR HIGHWAYS OFFICER PRIOR TO CONSTRUCTION.'
6. BT CHAMBERS AND ANGLIAN WATER METERS ARE NOT TO BE LOCATED WITHIN PEDESTRIAN CROSSING POINTS OR VEHICLE ACCESSES.

NOTES: CDM (CONSTRUCTION DESIGN AND MANAGEMENT REGULATIONS 2007)

1. IF YOU DO NOT FULLY UNDERSTAND THE RISKS INVOLVED DURING THE CONSTRUCTION OF THE ITEMS INDICATED ON THIS DRAWING ASK YOUR MANAGER, HEALTH AND SAFETY ADVISOR OR A MEMBER OF THE DESIGN TEAM BEFORE PROCEEDING.
2. EXISTING SERVICES MAY EXIST ON-SITE. THE CONTRACTOR SHALL LIAISE WITH ALL THE RELEVANT SERVICE COMPANIES AND ARRANGE FOR ALL SERVICES TO BE LOCATED, MARKED AND PROTECTED.
3. DRAINAGE WORKS MAY INVOLVE DEEP EXCAVATIONS AND/OR HEAVY PLANT/MATERIALS.
4. THE CONTRACTOR SHALL READ AND UNDERSTAND THE GROUND INVESTIGATION REPORT AND BE AWARE OF AND POTENTIAL VARIATIONS IN SOIL CONDITIONS OVER THE SITE.
5. THE POTENTIAL FOR DANGER TO THE GENERAL PUBLIC AND SITE PERSONNEL EXISTS FROM WORKS IN THE PUBLIC HIGHWAY. THE CONTRACTOR SHALL LIAISE WITH THE HIGHWAY AUTHORITY (LINCOLNSHIRE COUNT COUNCIL) AND ENSURE SAFE METHOD OF WORKING IS MAINTAINED AT ALL TIMES.
6. EXISTING DRAINAGE PIPES MAY BE ASBESTOS CEMENT OR FIBRE REINFORCED PIPES, OR CONCRETE PIPES CONTAINING ASBESTOS FIBRE. CONTRACTOR TO ENSURE COMPETENT STAFF ADEQUATELY TRAINED ARE ENGAGED IN THE WORKS, AND DISPOSAL OF ANY AFFECTED MATERIAL IS UNDERTAKEN IN LINE WITH CURRENT LEGISLATION AND GOOD PRACTICE GUIDELINES.
7. THE CONTRACTOR IS TO BE AWARE THAT OVERHEAD CABLES MAY CROSS THE SITE.
8. THE CONTRACTOR IS TO BE AWARE THAT WORKS ANY INVOLVE WORKING ADJACENT TO OR IN EXISTING WATERCOURSES.
9. WORKS MAY INVOLVE WORKING IN CLOSE PROXIMITY TO AN EXISTING WATER MAIN. THE CONTRACTOR IS TO ENSURE THAT THIS IS FULLY LOCATED AND PROTECTED DURING THE WORKS.

EXTERNAL LEVELS LEGEND:

- Entrance Point
- Fall — Fall Arrow
- +100.00 — Proposed Level
- +100.00 — Existing Level
- (M) — Part M Level Access
- Additional Brickwork
- Slab on edge (0.40m Max Retaining)
- Ramp - Max Gradient - 1:12 for 5.00m
  1:15 for 10.0m and 1:20 for 10.0m +
- 1.0m Flat Zone to all Plots
- Westleigh Developments Boundary
- Banking - Max 1:3 where shown

N — North (Indicative) — S

Note: Max 50mm fall over patio areas

D) Raised to 'construction' status. MH 12-08-11
C) Plan revised to reflect highway comments. MH 08-08-11
B) Plan revised to reflect highway comments. DL/MH 29-07-11
A) Plan revised to reflect Engineers comments. DM. 01-07-11

Revisions:

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Drawing status: **Construction**

Drawing title: **External Levels (For TA purpose only)**

Project title: **Residential Development Lime Walk Long Sutton**

Drawn	Approved
LC/DM	
Date: 18/03/11	Drawing No: WD/157/30D
Scale: 1:500 @ A2	

Surface Water Schedule

MH Ref:	Cover Level	Invert Level	MH Depth	MH Material	MH Cover
s1	2.900	2.550	0.350	Plastic	A15
s2	2.900	2.372	0.528	Plastic	A15
s3	2.850	2.190	0.660	Plastic	A15
s4	2.850	1.957	0.893	Concrete	B125
s5	2.900	2.550	0.350	Plastic	A15
s6	2.900	2.550	0.350	Plastic	A15
s7	2.900	2.269	0.631	Plastic	A15
s8	2.900	2.550	0.350	Plastic	A15
s9	2.900	2.550	0.350	Plastic	A15
s10	2.900	2.148	0.752	Concrete	B125
s11	3.100	2.750	0.350	Plastic	A15
s12	3.100	2.750	0.350	Plastic	A15
s13	3.100	2.546	0.554	Plastic	A15
s14	3.075	2.725	0.350	Plastic	A15
s15	3.040	2.690	0.350	Plastic	B125
s16	3.025	2.431	0.594	Concrete	B125
s17	3.100	2.750	0.350	Plastic	A15
s18	3.000	2.650	0.350	Plastic	A15
s19	3.100	2.509	0.591	Plastic	A15
s20	2.950	2.600	0.350	Plastic	B125
s21	3.000	2.650	0.350	Plastic	A15
s22	3.050	2.396	0.654	Concrete	B125
s23	3.025	2.675	0.350	Plastic	A15
s25	3.000	2.487	0.513	Plastic	A15
s26	2.950	2.600	0.350	Plastic	A15
s27	3.000	2.405	0.595	Plastic	B125
s28	2.975	2.229	0.746	Plastic	A15
s29	2.975	2.094	0.881	Concrete	B125
s30	2.900	2.550	0.350	Plastic	A15
s31	2.900	2.550	0.350	Plastic	A15
s32	2.900	2.444	0.456	Plastic	A15
s33	2.900	2.550	0.350	Plastic	A15
s34	2.900	2.550	0.350	Plastic	A15
s35	2.900	2.320	0.580	Concrete	B125
s37	2.800	2.450	0.350	Plastic	A15
s38	2.900	2.338	0.562	Plastic	B125
s39	2.800	2.261	0.539	Concrete	B125
s40	2.800	2.450	0.350	Plastic	A15
s41	2.800	2.292	0.508	Plastic	A15
s42	2.800	2.450	0.350	Plastic	A15
s43	2.800	2.156	0.644	Concrete	B125
s44	2.825	2.475	0.350	Plastic	A15
s45	2.875	2.325	0.550	Plastic	A15
s46	2.800	2.450	0.350	Plastic	A15
s47	2.800	2.158	0.642	Concrete	B125
s48	2.800	2.450	0.350	Plastic	B125
s49	2.800	2.299	0.501	Plastic	A15
s50	2.800	2.450	0.350	Plastic	B125
s51	2.800	2.137	0.663	Concrete	B125
s52	2.800	2.450	0.350	Plastic	B125
s53	2.800	2.295	0.505	Plastic	A15
s54	2.800	2.450	0.350	Plastic	B125
s55	2.800	2.133	0.667	Concrete	B125
s56	2.800	2.450	0.350	Plastic	A15
s57	2.825	2.344	0.481	Plastic	B125
s58	2.800	2.183	0.617	Plastic	A15
s59	2.800	2.450	0.350	Plastic	B125
s60	2.800	2.292	0.508	Plastic	A15
s61	2.800	2.061	0.739	Concrete	B125
s62	2.800	2.450	0.350	Plastic	B125
s63	2.800	2.293	0.507	Plastic	A15
s64	2.800	2.450	0.350	Plastic	B125
s65	2.800	2.293	0.507	Plastic	A15
s66	2.800	2.171	0.629	Concrete	B125
s67	2.825	2.375	0.450	Plastic	B125

Pipe Ref:	Upstream IL	Downstream IL	Pipe Dia	Distance	Pipe Gradient 1:X	Pipe Material
s1-s2	2.550	2.422	100	12.8	100.0	Plastic
s2-s3	2.372	2.240	100	13.2	100.0	Plastic
s3-s4	2.190	2.007	100	18.3	100.0	Plastic
s4-SK1	1.957	1.575	100	3.2	8.3	Plastic
s5-s7	2.550	2.319	100	11.0	47.7	Plastic
s6-s7	2.550	2.319	100	23.1	100.0	Plastic
s7-s10	2.269	2.148	100	12.1	100.0	Plastic
s8-s10	2.550	2.198	100	10.8	30.8	Plastic
s9-s10	2.550	2.198	100	19.7	56.0	Plastic
s10-SK1	2.148	1.575	100	3.0	5.3	Plastic
s11-s13	2.750	2.596	100	7.4	48.4	Plastic
s12-s13	2.750	2.596	100	15.4	100.0	Plastic
s13-s16	2.546	2.431	100	11.5	100.0	Plastic
s14-s16	2.725	2.481	100	10.1	41.5	Plastic
s15-s16	2.690	2.481	100	13.0	62.4	Plastic
s16-PCP	2.431	2.380	100	5.1	100.0	Plastic
s17-s19	2.750	2.559	100	15.6	81.9	Plastic
s18-s19	2.650	2.559	100	9.1	100.0	Plastic
s19-s22	2.509	2.396	100	11.3	100.0	Plastic
s20-s22	2.600	2.446	100	12.6	81.9	Plastic
s21-s22	2.650	2.446	100	7.7	37.9	Plastic
s22-PCP	2.396	2.370	100	2.7	100.0	Plastic
s23-s25	2.675	2.537	100	13.8	100.0	Plastic
s25-s28	2.487	2.279	100	16.1	77.5	Plastic
s26-s27	2.600	2.455	100	14.5	100.0	Plastic
s27-s28	2.405	2.229	100	17.5	100.0	Plastic
s28-s29	2.229	2.144	100	8.5	100.0	Plastic
s29-SK2	2.094	2.025	100	2.1	30.5	Plastic
s30-s32	2.550	2.494	100	5.5	98.5	Plastic
s31-s32	2.550	2.494	100	5.6	100.0	Plastic
s32-s35	2.444	2.320	100	12.3	100.0	Plastic
s33-s35	2.550	2.370	100	5.0	27.6	Plastic
s34-s35	2.550	2.370	100	5.0	27.6	Plastic
s35-SK3	2.320	1.960	100	4.0	11.1	Plastic
s37-s38	2.450	2.338	100	11.2	100.0	Plastic
s38-s39	2.338	2.261	100	7.7	100.0	Plastic
s39-PCP	2.261	2.177	100	6.2	73.7	Plastic
s40-s41	2.450	2.342	100	10.8	100.0	Plastic
s41-s43	2.292	2.156	100	13.6	100.0	Plastic
s42-s43	2.450	2.206	100	13.5	55.5	Plastic
s43-PCP	2.156	2.109	100	2.8	59.5	Plastic
s44-s45	2.475	2.375	100	10.0	100.0	Plastic
s45-s47	2.325	2.208	100	11.7	100.0	Plastic
s46-s47	2.450	2.158	100	9.2	31.6	Plastic
s47-PCP	2.158	2.109	100	4.9	100.0	Plastic
s48-s49	2.450	2.349	100	10.1	100.0	Plastic
s49-s51	2.299	2.187	100	11.3	100.0	Plastic
s50-s51	2.450	2.137	100	10.1	32.1	Plastic
s51-SK4	2.137	1.900	100	4.2	17.9	Plastic
s52-s53	2.450	2.345	100	10.5	100.0	Plastic
s53-s55	2.295	2.183	100	11.3	100.0	Plastic
s54-s55	2.450	2.133	100	9.9	31.1	Plastic
s55-SK5	2.133	1.900	100	4.5	19.2	Plastic
s56-s57	2.450	2.394	100	5.6	100.0	Plastic
s57-s58	2.344	2.233	100	11.1	100.0	Plastic
s58-s61	2.183	2.111	100	7.2	100.0	Plastic
s59-s60	2.450	2.342	100	10.8	100.0	Plastic
s60-s61	2.292	2.111	100	4.1	22.6	Plastic
s61-SK6	2.061	1.850	100	3.1	14.6	Plastic
s62-s63	2.450	2.343	100	10.7	100.0	Plastic
s63-s66	2.293	2.221	100	7.2	100.0	Plastic
s64-s65	2.450	2.343	100	10.7	100.0	Plastic
s65-s66	2.293	2.221	100	4.1	57.0	Plastic
s66-SK7	2.171	1.800	100	3.6	9.6	Plastic
s67-s68	2.375	2.278	100	9.7	100.0	Plastic

Surface Water Schedule (Continued)

MH Ref:	Cover Level	Invert Level	MH Depth	MH Material	MH Cover
s68	2.950	2.278	0.672	Concrete	B125
s69	2.820	2.470	0.350	Plastic	B125
s70	3.000	2.373	0.627	Concrete	B125
s71	2.840	2.390	0.450	Plastic	B125
s72	3.000	2.294	0.706	Concrete	B125
s73	2.800	2.200	0.600	Plastic	A15
s74	2.800	2.095	0.705	Concrete	B125
s75	2.800	2.350	0.450	Plastic	A15
s76	2.800	2.239	0.561	Concrete	B125
s77	2.800	2.350	0.450	Plastic	A15
s78	2.800	2.230	0.570	Concrete	B125
s79	2.800	2.450	0.350	Plastic	A15
s80	2.800	2.336	0.464	Plastic	A15
s81	2.800	2.151	0.649	Plastic	A15
s82	2.800	2.056	0.744	Concrete	B125
s83	2.900	2.550	0.350	Plastic	A15
s84	2.875	2.387	0.488	Plastic	A15
s85	2.900	2.550	0.350	Plastic	A15
s86	2.900	2.480	0.420	Plastic	A15
s87	2.925	2.374	0.551	Plastic	A15
s88	2.900	2.129	0.771	Plastic	A15
s89	2.900	2.049	0.851	Concrete	B125
s90	2.900	2.550	0.350	Plastic	A15
s91	2.850	2.377	0.473	Plastic	A15
s92	2.875	2.211	0.664	Plastic	A15
s93	2.900	2.550	0.350	Plastic	A15
s94	2.900	2.110	0.790	Concrete	B125

Pipe Ref:	Upstream IL	Downstream IL	Pipe Dia	Distance	Pipe Gradient 1:X	Pipe Material
s68-SK8	2.278	1.800	100	4.6	9.5	Plastic
s69-s70	2.470	2.373	100	9.7	100.0	Plastic
s70-SK9	2.373	1.800	100	4.6	8.0	Plastic
s71-s72	2.390	2.294	100	9.6	100.0	Plastic
s72-SK10	2.294	1.775	100	5.3	10.2	Plastic
s73-s74	2.200	2.095	100	10.5	100.0	Plastic
s74-SK11	2.095	1.775	100	4.8	15.1	Plastic
s75-s76	2.350	2.239	100	11.1	100.0	Plastic
s76-SK12	2.239	1.740	100	4.3	8.7	Plastic
s77-s78	2.350	2.230	100	12.0	100.0	Plastic
s78-SK13	2.230	1.735	100	3.5	7.0	Plastic
s79-s80	2.450	2.386	100	6.4	100.0	Plastic
s80-s81	2.336	2.201	100	13.4	100.0	Plastic
s81-s82	2.151	2.106	100	4.6	100.0	Plastic
s82-SK14	2.056	1.735	100	3.6	11.1	Plastic
s83-s84	2.550	2.437	100	11.3	100.0	Plastic
s84-s89	2.387	2.099	100	8.4	29.3	Plastic
s85-s86	2.550	2.530	100	2.0	100.0	Plastic
s86-s87	2.480	2.424	100	5.6	100.0	Plastic
s87-s88	2.374	2.179	100	9.7	50.0	Plastic
s88-s89	2.129	2.099	100	3.1	100.0	Plastic
s89-SK15	2.049	1.900	100	3.3	21.9	Plastic
s90-s91	2.550	2.427	100	12.3	100.0	Plastic
s91-s92	2.377	2.261	100	11.6	100.0	Plastic
s92-s94	2.211	2.160	100	5.1	100.0	Plastic
s93-s94	2.550	2.160	100	5.1	13.0	Plastic
s94-SK16	2.110	1.900	100	3.5	16.7	Plastic

Foul Water Schedule

MH Ref:	Cover Level	Invert Level	MH Depth	MH Type	MH Material	MH Cover
f1	2.900	2.450	0.450	ø450	Plastic	A15
f2	2.900	2.450	0.450	ø450	Plastic	A15
f3	2.900	1.974	0.926	1200x750	Concrete	B125
f4	2.975	1.862	1.113	1200x750	Concrete	B125
f5	3.000	2.400	0.600	ø450	Plastic	A15
f6	3.100	2.650	0.450	ø250	Plastic	A15
f7	3.100	2.496	0.604	ø450	Plastic	A15
f8	3.050	2.368	0.682	ø450	Plastic	B125
f9	2.925	2.096	0.829	ø450	Plastic	B125
f10	3.100	2.650	0.450	ø450	Plastic	A15
f11	3.100	2.360	0.740	ø450	Plastic	A15
f12	3.100	2.234	0.866	ø450	Plastic	B125
f13	*3.100*	*1.901*	*1.199*	*ø450*	*Plastic*	*B125*
f14	3.050	2.600	0.450	ø450	Plastic	A15
f15	3.025	1.755	1.270	1200x750	Concrete	B125
f16	2.925	1.606	1.319	1200x750	Concrete	B125
f18	2.800	2.350	0.450	ø450	Plastic	A15
f19	3.000	2.600	0.400	ø450	Plastic	A15
f20	3.000	2.543	0.457	ø450	Plastic	A15
f21	2.950	1.778	1.172	1200x750	Concrete	B125
f22	2.950	1.543	1.407	1200x750	Concrete	B125
f23	3.000	2.550	0.450	ø250	Plastic	A15
f24	3.000	2.543	0.457	ø450	Plastic	A15
f25	2.950	1.202	1.748	1200x750	Concrete	B125
f26	2.950	2.500	0.450	ø450	Plastic	A15
f27	2.950	1.122	1.828	1200x750	Concrete	B125
f28	2.900	2.450	0.450	ø450	Plastic	A15
f29	2.850	2.400	0.450	ø450	Plastic	A15
f30	2.850	2.281	0.569	ø450	Plastic	A15
f31	2.900	2.195	0.705	ø450	Plastic	A15
f32	2.800	2.350	0.450	ø250	Plastic	A15
f32a	2.800	2.300	0.500	ø450	Plastic	A15

Pipe Ref:	Upstream IL	Downstream IL	Pipe Dia	Distance	Pipe Gradient 1:X	Pipe Material
f1-f3	2.450	2.049	100	32.0	80.0	Plastic
f2-f3	2.450	2.049	100	20.7	51.7	Plastic
f3-f4	1.974	1.862	150	16.9	150.0	Plastic
f4-F2	1.862	1.081	150	4.3	5.5	Clay
f5-f9	2.400	2.096	100	23.3	76.8	Plastic
f6-f7	2.650	2.546	100	8.3	80.0	Plastic
f7-f8	2.496	2.418	100	6.2	80.0	Plastic
f8-f9	2.368	2.146	100	5.8	25.9	Plastic
f9-f13	2.096	1.901	100	15.7	80.0	Plastic
f10-f11	2.650	2.410	100	19.2	80.0	Plastic
f11-f12	2.360	2.284	100	6.1	80.0	Plastic
f12-f13	2.234	1.951	100	5.6	19.7	Plastic
f13-f15	*1.901*	*1.830*	*100*	*5.6*	*80.0*	*Plastic*
f14-f15	2.600	1.830	100	4.5	5.8	Plastic
f15-f16	1.755	1.681	150	11.1	150.0	Plastic
f16-F1	1.606	1.349	150	9.0	34.9	Clay
f18-f21	2.350	1.778	100	45.8	80.0	Plastic
f19-f20	2.600	2.543	100	4.6	80.0	Plastic
f20-f21	2.543	2.515 (+bd)	100	2.2	80.0	Plastic
f21-f22	1.778	1.593	100	14.8	80.0	Plastic
f22-f25	1.543	1.277	100	18.8	70.7	Plastic
f23-f24	2.550	2.543	100	0.6	80.0	Plastic
f24-f25	2.543	1.327	100	12.9	10.6	Plastic
f25-f27	1.202	1.172	150	4.5	150.0	Plastic
f26-f27	2.500	1.222	100	7.3	5.7	Plastic
f27-F2	1.122	1.081	150	6.2	150.0	Clay
f28-f31	2.450	2.245	100	15.4	75.3	Plastic
f29-f30	2.400	2.331	100	5.5	80.0	Plastic
f30-f31	2.281	2.245	100	2.9	80.0	Plastic
f31-f34	2.195	1.929	100	21.3	80.0	Plastic
f32-f32a	2.350	2.300	100	4.0	80.0	Plastic
f32a-f33	2.300	2.276	100	1.9	80.0	Plastic

Foul Water Schedule (Continued)

MH Ref:	Cover Level	Invert Level	MH Depth	MH Type	MH Material	MH Cover
f33	2.800	2.276	0.524	ø450	Plastic	A15
f34	2.800	1.929	0.871	ø450	Plastic	A15
f35	2.800	1.713	1.087	ø450	Plastic	A15
f36	2.800	1.640	1.160	ø450	Plastic	A15
f37	2.815	2.015	0.800	ø450	Plastic	A15
f38	2.815	1.183	1.632	1200x750	Concrete	B125
f39	2.800	2.350	0.450	ø450	Plastic	A15
f40	2.800	2.045	0.755	ø450	Plastic	A15
f41	2.800	1.903	0.897	ø450	Plastic	A15
f42	2.825	2.375	0.450	ø450	Plastic	A15
f43	2.850	1.653	1.197	1200x750	Concrete	B125
f44	2.900	2.450	0.450	ø250	Plastic	A15
f45	2.900	2.400	0.500	ø250	Plastic	A15
f46	2.900	2.300	0.600	ø250	Plastic	A15
f47	2.900	2.300	0.600	ø250	Plastic	A15
f48	2.900	2.300	0.600	ø250	Plastic	A15
f49	2.900	2.300	0.600	ø250	Plastic	A15
f50	2.900	2.450	0.450	ø250	Plastic	A15
f51	2.900	2.350	0.550	ø250	Plastic	A15
f52	2.900	2.300	0.600	ø250	Plastic	A15
f53	2.900	2.300	0.600	ø250	Plastic	A15
f54	3.100	2.650	0.450	ø250	Plastic	A15
f55	3.100	2.650	0.450	ø250	Plastic	A15
f56	3.100	2.550	0.550	ø450	Plastic	A15
f57	3.100	2.650	0.450	ø250	Plastic	A15
f58	3.100	2.650	0.450	ø250	Plastic	A15
f59	3.100	2.650	0.450	ø250	Plastic	A15
f60	3.100	2.650	0.450	ø250	Plastic	A15
f62	2.900	2.350	0.550	ø250	Plastic	A15
f63	2.900	2.350	0.550	ø250	Plastic	A15
f64	2.900	2.300	0.600	ø250	Plastic	A15
f65	2.900	2.350	0.550	ø250	Plastic	A15
f65a	2.900	2.350	0.550	ø250	Plastic	A15
f66	2.900	2.400	0.500	ø250	Plastic	A15
f67	2.900	2.350	0.550	ø250	Plastic	A15
f67a	2.900	2.350	0.550	ø250	Plastic	A15
f68	2.800	2.350	0.450	ø450	Plastic	A15
f69	2.800	2.200	0.600	ø250	Plastic	A15
f70	2.800	2.200	0.600	ø250	Plastic	A15
f71	2.800	2.200	0.600	ø450	Plastic	A15
f72	2.800	2.150	0.650	ø450	Plastic	A15
f73	2.800	2.150	0.650	ø250	Plastic	A15
f74	2.800	2.150	0.650	ø250	Plastic	A15
f75	2.840	2.190	0.650	ø450	Plastic	A15
f76	2.820	2.120	0.700	ø250	Plastic	A15
f76a	3.000	2.200	0.800	ø250	Plastic	A15
f76b	3.000	2.200	0.800	ø250	Plastic	A15
f77	2.850	2.050	0.800	ø250	Plastic	A15
f78	2.800	2.250	0.550	ø250	Plastic	A15
f79	2.800	2.200	0.600	ø250	Plastic	A15
f80	2.800	2.200	0.600	ø250	Plastic	A15
f81	2.850	2.050	0.800	ø250	Plastic	A15
f82	2.850	2.200	0.650	ø250	Plastic	A15

Pipe Ref:	Upstream IL	Downstream IL	Pipe Dia	Distance	Pipe Gradient 1:X	Pipe Material
f33-f34	2.276	1.979	100	8.2	27.4	Plastic
f34-f35	1.929	1.763	100	13.3	80.0	Plastic
f35-f36	1.713	1.690	100	1.8	80.0	Plastic
f36-f38	1.640	1.258	100	30.5	80.0	Plastic
f37-f38	2.015	1.8528 (+ bd)	100	1.6	10.0	Plastic
f38-F3	1.183	1.152	150	4.7	150.0	Clay
f39-f40	2.350	2.045	100	24.4	80.0	Plastic
f40-f41	2.045	1.903	100	11.3	80.0	Plastic
f41-f43	1.903	1.728	100	14.0	80.0	Plastic
f42-f43	2.375	1.728	100	12.2	18.9	Plastic
f43-F4	1.653	1.010	150	4.5	7.0	Clay
f44 (f1-f3)	2.450	2.433	100	0.6	35.8	Plastic
f45 (f1-f3)	2.400	2.361	100	0.6	15.9	Plastic
f46 (f1-f3)	2.300	2.271	100	0.6	20.9	Plastic
f47 (f1-f3)	2.300	2.247	100	0.6	11.6	Plastic
f48 (f1-f3)	2.300	2.165	100	0.5	3.6	Plastic
f49 (f1-f3)	2.300	2.078	100	0.5	2.1	Plastic
f50 (f2-f3)	2.450	2.417	100	0.5	14.6	Plastic
f51 (f2-f3)	2.350	2.317	100	0.5	14.6	Plastic
f52 (f2-f3)	2.300	2.228	100	0.5	7.2	Plastic
f53 (f2-f3)	2.300	2.094	100	0.5	2.5	Plastic
f54 (f5-f9)	2.650	2.434	100	1.6	7.4	Plastic
f55 (f5-f9)	2.650	2.410	100	1.6	6.6	Plastic
f56 (f5-f9)	2.550	2.346	100	1.6	8.0	Plastic
f57 (f10-f11)	2.650	2.638	100	0.3	20.6	Plastic
f58 (f10-f11)	2.650	2.621	100	0.3	8.5	Plastic
f59 (f10-f11)	2.650	2.615	100	0.3	7.2	Plastic
f60 (f10-f11)	2.650	2.598	100	0.3	4.8	Plastic
f62 (f18-f21)	2.350	2.322	100	1.0	35.7	Plastic
f63 (f18-f21)	2.350	2.153	100	1.0	5.1	Plastic
f64 (f18-f21)	2.300	2.119	100	1.0	5.5	Plastic
f65 (f18-f21)	2.350	1.945	100	1.0	2.5	Plastic
f65a (f18 - f21)	2.350	1.918	100	1.0	2.3	Plastic
f66 (f28-f31)	2.400	2.393	100	0.2	32.9	Plastic
f67 (f28-f31)	2.350	2.312	100	0.2	5.9	Plastic
f67a (f28-f31)	2.350	2.284	100	0.2	3.4	Plastic
f68 (f34-f35)	2.350	1.908	100	2.9	6.5	Plastic
f69 (f34-f35)	2.200	1.851	100	1.8	5.0	Plastic
f70 (f34-f35)	2.200	1.850	100	1.8	5.0	Plastic
f71 (f34-f35)	2.200	1.787	100	2.8	6.9	Plastic
f72 (f36-f38)	2.150	1.628	100	1.2	2.2	Plastic
f73 (f36-f38)	2.150	1.571	100	1.2	2.0	Plastic
f74 (f36-f38)	2.150	1.565	100	1.2	2.0	Plastic
f75 (f36-f38)	2.190	1.507	100	1.9	2.7	Plastic
f76 (f36-f38)	2.120	1.426	100	1.1	saddle	Plastic
f76a (f36-f38)	2.200	1.380	100	1.3	saddle	Plastic
f76b (f36-f38)	2.200	1.366	100	1.3	saddle	Plastic
f77 (f36-f38)	2.050	1.320	100	0.9	saddle	Plastic
f78 (f39-f40)	2.250	2.238	100	0.4	36.7	Plastic
f79 (f39-f40)	2.200	2.157	100	0.4	8.6	Plastic
f80 (f40-f41)	2.200	1.918	100	1.1	3.9	Plastic
f81 (f41-f43)	2.050	1.769	100	0.9	3.1	Plastic
f82 (f42-f43)	2.200	2.029	100	1.3	7.6	Plastic

Soakaway Schedule

Soakaway No:	Product Information	Crate Surround	Number Of Crates	Ground Level	Base Level	Tank Height	Inlet Level	Capacity	Dimensions
SK1	Wavin Aquacell	Geotextile	71	2.475	1.575	0.400m	1.575	14.2m³	35.5 x 1.0 x 0.4
SK2	Wavin Aquacell	Geotextile	54	2.925	2.025	0.400m	2.025	10.8m³	9.0 x 3.0 x 0.4
SK3	Wavin Aquacell	Geotextile	25	2.860	1.960	0.400m	1.960	5.0m³	5.0 x 2.5 x 0.4
SK4	Wavin Aquacell	Geotextile	10	2.800	1.900	0.400m	1.900	2.0m³	2.5 x 2.0 x 0.4
SK5	Wavin Aquacell	Geotextile	12	2.800	1.900	0.400m	1.900	2.4m³	3.0 x 2.0 x 0.4
SK6	Wavin Aquacell	Geotextile	10	2.750	1.850	0.400m	1.850	2.0m³	2.5 x 2.0 x 0.4
SK7	Wavin Aquacell	Geotextile	10	2.700	1.800	0.400m	1.800	2.0m³	2.5 x 2.0 x 0.4
SK8	Wavin Aquacell	Geotextile	5	2.700	1.800	0.400m	1.800	1.0m³	2.5 x 1.0 x 0.4
SK9	Wavin Aquacell	Geotextile	5	2.712	1.812	0.400m	1.812	1.0m³	2.5 x 1.0 x 0.4
SK10	Wavin Aquacell	Geotextile	5	2.675	1.775	0.400m	1.775	1.0m³	2.5 x 1.0 x 0.4
SK11	Wavin Aquacell	Geotextile	5	2.675	1.775	0.400m	1.775	1.0m³	2.5 x 1.0 x 0.4
SK12	*Wavin Aquacell*	*Geotextile*	*5*	*2.675*	*1.775*	*0.400m*	*1.775*	*1.0m³*	*2.5 x 1.0 x 0.4*
SK13	Wavin Aquacell	Geotextile	5	2.635	1.735	0.400m	1.735	1.0m³	2.5 x 1.0 x 0.4
SK14	Wavin Aquacell	Geotextile	8	2.635	1.735	0.400m	1.735	1.6m³	4.0 x 1.0 x 0.4
SK15	Wavin Aquacell	Geotextile	8	2.800	1.900	0.400m	1.900	1.6m³	4.0 x 1.0 x 0.4
SK16	Wavin Aquacell	Geotextile	11	2.800	1.900	0.400m	1.900	2.2m³	5.5 x 1.0 x 0.4

GENERAL ROAD NOTES:

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE LOCAL HIGHWAY AUTHORITY DESIGN GUIDE AND THE GENERAL SPECIFICATION FOR ROADWORKS CURRENT AT THE TIME OF CONSTRUCTION.

ALL WORKS SHALL BE IN ACCORDANCE WITH THE LOCAL HIGHWAY AUTHORITYS APPROVED DOCUMENTS AND SATISFACTION. ANY REFERENCE TO THE SPECIFICATION HALL MEAN THE GENERAL SPECIFICATION FOR ROADWORKS.

1. PRIOR TO ANY WORKS BEING CARRIED OUT WITHIN OR IMMEDIATELY ADJACENT TO THE PUBLIC HIGHWAY, A SCHEME FOR THE SAFE CONTROL OF TRAFFIC AND PEDESTRIANS IS TO BE AGREED WITH THE HIGHWAY AUTHORITY AND IMPLEMENTED.
2. WORKING AREAS WITHIN THE VICINITY OF EXISTING TREES ARE TO BE AGREED WITH THE ENGINEER AND CHESTNUT FENCING ERECTED AS DIRECTED.
3. SPECIAL CARE IS TO BE TAKEN WHEN EXCAVATING IN THE VICINITY OF EXISTING TREES, IT IS NOT INTENDED THAT ANY TREE ROOTS SHOULD BE SEVERED OR DAMAGED AND SPECIALIST ADVICE SHOULD BE SOUGHT WHEN MAJOR ROOTS PRESENT A PROBLEM. CARE IS TO BE TAKEN TO AVOID DAMAGE TO BRANCHES AND FOLIAGE.
4. IT IS THE CONTRACTOR'S RESPONSIBILTY TO TRACE AND INDICATE THE PRECISE LOCATION AND NATURE OF ALL SERVICES.
5. THE CONTRACTOR IS TO PROVIDE A CCTV SURVEY OF ANY HIGHWAY SEWERS ON COMPLETION OF THE 12-MONTH MAINTENANCE PERIOD. THIS IS TO BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL WATER AND HIGHWAYS AUTHORITIES.
6. *SAFE PASSAGE FOR PEDESTRIANS ACROSS THE SITE IS TO* BE ENSURED AT ALL TIMES BY MEANS OF APPROVED FENCING TO BOTH SIDES OF ANY FOOTPATH ROUTE.
6. THE HEALTH AND SAFETY AT WORK ACT 1981 IS TO BE COMPLIED WITH AT ALL TIMES. ATTENTION IS DRAWN TO THE WEARING OF HARD HATS, REFLECTORISED CLOTHING, AND THE USE OF ANY OTHER REQUIRED SAFETY EQUIPMENT.
7. THE CONTRACTOR IS TO TAKE ACCOUNT OF THE SOILS REPORT.
8. NO COMPLETION WORKS WILL BE AUTHORISED UNTIL A FORMAL CERTIFICATE OF CONFORMANCE TO RELEVANT SPECIFICATION IS RECEIVED FROM THE RELEVANT WATER AUTHORITY.
9. COMPACTION CONTROL SHALL BE ACHIEVED BY AIR VOID TESTING FOR BOTH ROADBASE AND BASECOURSE (MAXIMUM AIR VOID RATIO 6%)
10. ANY RECYCLED MATERIAL TO BE USED FOR HIGHWAY CONSTRUCTION PURPOSES WILL BE ALLOWED SUBJECT TO IT SATISFYING RELEVANT TESTS AS INSTRUCTED BY THIS AUTHORITY.
11. THE CONTRACTOR IS TO TAKE CBR TESTS AT ROAD FORMATION LEVEL, CAPPING LAYER LEVEL, AND SUB BASE LEVEL AND THE HIGHWAY ENGINEER INFORMED BEFORE ANY CONSTRUCTION WORKS CARRIED OUT ON THAT LEVEL.
12. ALL PRIVATE DRIVES WHICH FALL TOWARDS A PUBLIC *HIGHWAY AND EXCEED TWO PARKING BAYS IN AREA ARE* TO BE PROVIDED WITH A SUTIABLE GULLY OR DRAINAGE CHANNEL TO PREVENT WATER DISCHARGING ONTO THE HIGHWAY.
13. WHERE A DRIVEWAY FALLS TOWARDS A DWELLING IT SHALL BE PROVIDED WITH A SUITABLE GULLY OR DRAINAGE CHANNEL TO PREVENT WATER DAMAGING THE BUILDING.

ROAD MARKINGS & TRAFFIC SIGNS

THE DEVELOPER SHALL CONSULT WITH THE HIGHWAY AUTHORITY OR ITS AGENT AND ARRANGE TO PROVIDE, AT HIS COST, ALL WHITE LINE CARRIAGEWAY MARKINGS AND TRAFFIC SIGNS AS MAY BE REQUIRED.

STREET NAME PLATES

STREET NAME PLATES SHALL BE PROVIDED AND ERECTED BY THE DISTRICT COUNCIL ON A RECHARGABLE BASIS OR AS OTHERWISE DIRECTED BY THE LOCAL AUTHORITY.

STREET LIGHTING

HIGHWAY LIGHTING WILL NORMALLY BE DESIGNED BY THE HIGHWAY AUTHORITY OR ITS AGENT AND SHALL BE IN ACCORDANCE WITH THE AUTHORITIES CODE OF PRACTICE FOR LIGHTING OF PUBLIC HIGHWAYS AND INSTALLED BY AN APPROVED CONTRACTOR.

STATUTORY UNDERTAKERS

THE DEVELOPER SHALL BE RESPONSIBLE FOR LIAISON WITH THE STATUTORY UNDERTAKERS AND OTHER CABLE *SERVICE COMPANIES FOR THE PROVISION OF ALL* REQUIRED SERVICES.

NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DETAILS .
2. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT BRITISH STANDARDS, CODES OF PRACTICE AND BUILDING REGULATIONS.
3. THE DESIGN OF ANY TEMPORARY WORKS REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ANY DISCREPANCIES ARE TO BE RECORDED AND REPORTED TO THE ENGINEERS IMMEDIATELY .
5. ALL WORK IS TO BE TO THE SATISFACTION OF THE ENGINEER AND THE LOCAL WATER AUTHORITY .
6. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE STABILITY OF THE WORKS AT ALL TIMES DURING CONSTRUCTION.
7. ALL WORKMANSHIP AND MATERIALS ARE TO BE TO CURRENT BRITISH STANDARDS.
8. ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
9. ANY EXISTING DETAILS WHICH ARE SHOWN ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY VARIATIONS ARE TO BE RECORDED AND REPORTED TO THE ENGINEER IMMEDIATELY.

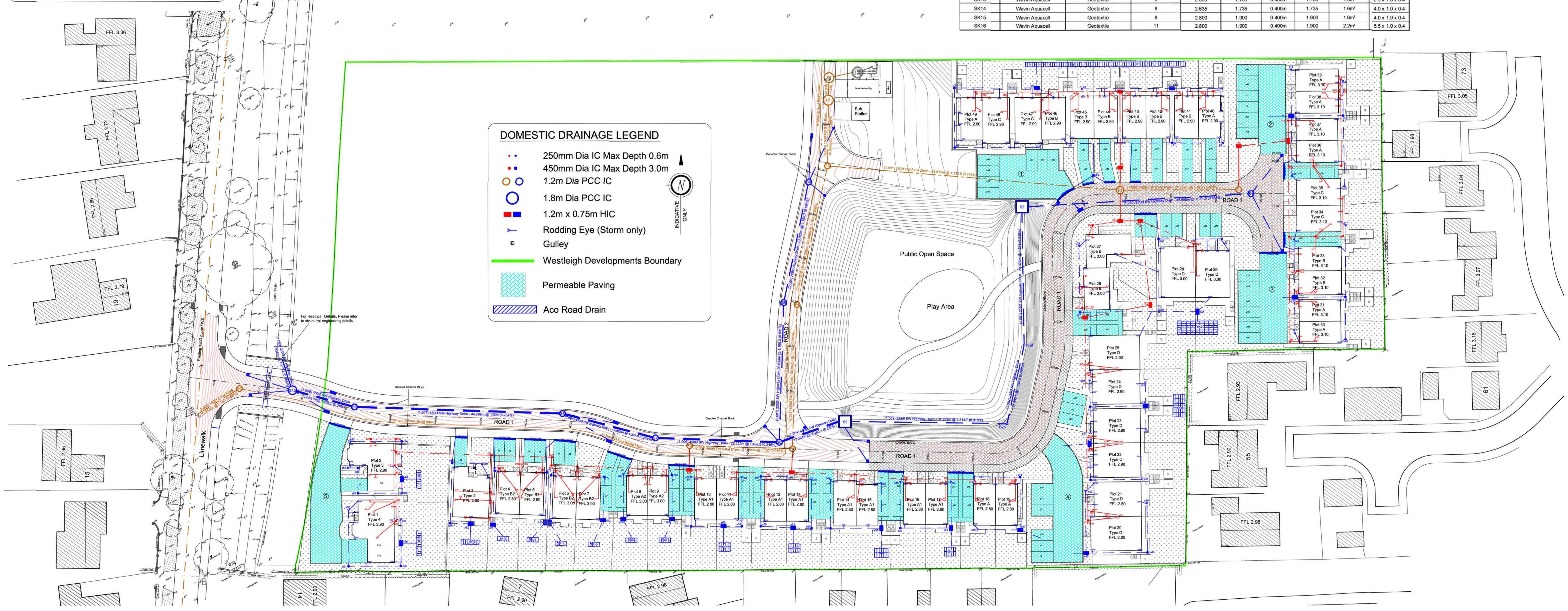
NOTES

1. THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT 'LINCOLNSHIRE DESIGN GUIDE FOR RESIDENTIAL AREA'S' AND 'DEVELOPMENT ROAD SPECIFICATION AND CONSTRUCTION' PUBLICATIONS IN FORCE IN THE COUNTRY AT THE TIME OF CONSTRUCTION.
2. THE MINIMUM LONGITUDINAL FALL FOR HIGHWAYS, WITHOUT CHANNEL BLOCKS SHOULD BE 1 IN 150, AND WITH CHANNEL BLOCKS 1 IN 250 (SEE CLAUSE 10.1 DEVELOPMENT ROAD SPECIFICATION)
3. IN ADDITION, ENSURE THAT THE FIRST SECTION OF ANY SIDE ROADS FALLS AWAY FROM THE ROAD TO WHICH IT IS CONNECTING. IF GENERAL TOPOGRAPHY REQUIRES IT TO RISE, THIS CHANGE OF DIRECTION SHOULD TAKE PLACE AFTER THE FIRST SET OF GULLIES. THIS IS TO ENSURE A 'FALSE CHANNEL' WITH ASSOCIATED DRAINAGE PROBLEMS IS NOT CREATED IN THE BELLMOUTH OF JUNCTIONS.
4. 'RECONSTRUCTION OF EXISTING CARRIAGEWAY AND FOOTWAYS THAT ARE AFFECTED BY THESE DEVELOPMENT WORKS, ARE TO BE SPECIFIED AND AGREED BY THE SENIOR HIGHWAYS OFFICER PRIOR TO CONSTRUCTION'.
5. 'ALL SIGNS AND LINE MARKINGS ARE TO BE AGREED WITH THE SENIOR HIGHWAYS OFFICER PRIOR TO CONSTRUCTION.'
6. BT CHAMBERS AND ANGLIAN WATER METERS ARE NOT TO BE LOCATED WITHIN PEDESTRIAN CROSSING POINTS OR VEHICLE ACCESSES.

NOTES: CDM (CONSTRUCTION DESIGN AND MANAGEMENT REGULATIONS 2007)

1. IF YOU DO NOT FULLY UNDERSTAND THE RISKS INVOLVED DURING THE CONSTRUCTION OF THE ITEMS INDICATED ON THIS DRAWING ASK YOUR MANAGER, HEALTH AND SAFETY ADVISOR OR A MEMBER OF THE DESIGN TEAM BEFORE PROCEEDING.
2. EXISTING SERVICES MAY EXIST ON-SITE. THE CONTRACTOR SHALL LIAISE WITH ALL THE RELEVANT SERVICE COMPANIES AND ARRANGE FOR ALL SERVICES TO BE LOCATED, MARKED AND PROTECTED.
3. DRAINAGE WORKS MAY INVOLVE DEEP EXCAVATIONS AND/OR HEAVY PLANT/MATERIALS.
4. THE CONTRACTOR SHALL READ AND UNDERSTAND THE GROUND INVESTIGATION REPORT AND BE AWARE OF AND POTENTIAL VARIATIONS IN SOIL CONDITIONS OVER THE SITE.
5. THE POTENTIAL FOR DANGER TO THE GENERAL PUBLIC AND SITE PERSONNEL EXISTS FROM WORKS IN THE PUBLIC HIGHWAY. THE CONTRACTOR SHALL LIAISE WITH THE HIGHWAY AUTHORITY (LINCOLNSHIRE COUNT COUNCIL) AND ENSURE SAFE METHOD OF WORKING IS MAINTAINED AT ALL TIMES.
6. EXISTING DRAINAGE PIPES MAY BE ASBESTOS CEMENT OR FIBRE REINFORCED PIPES, OR CONCRETE PIPES CONTAINING ASBESTOS FIBRE. CONTRACTOR TO ENSURE COMPETENT STAFF ADEQUATELY TRAINED ARE ENGAGED IN THE WORKS, AND DISPOSAL OF ANY AFFECTED MATERIAL IS UNDERTAKEN IN LINE WITH CURRENT LEGISLATION AND GOOD PRACTICE GUIDELINES.
7. THE CONTRACTOR IS TO BE AWARE THAT OVERHEAD CABLES MAY CROSS THE SITE.
8. THE CONTRACTOR IS TO BE AWARE THAT WORKS ANY INVOLVE WORKING ADJACENT TO OR IN EXISTING WATERCOURSES.
9. WORKS MAY INVOLVE WORKING IN CLOSE PROXIMITY TO AN EXISTING WATER MAIN. THE CONTRACTOR IS TO ENSURE THAT THIS IS FULLY LOCATED AND PROTECTED DURING THE WORKS.

Drawing to be read in conjunction with WD/157/08 & WD/157/09 - Domestic Drainage



Porous Car Park Details

Porous Car Park no:	Voided Stone Base Level	Max Stone Depth
1	2.550	225mm *
2	2.380	620mm
3	2.370	580mm
4	2.100	640mm *
5	2.432	225mm *

* Voided stone depth to be consistant with finished car park levels

Car Park 1 - 5 to be tanked using Geomembrane

E) Plan revised to suit new domestic drainage layout. MH 08-11-11
D) Raised to 'construction' status. MH 12-08-11
C) Plan revised to reflect highway comments. MH 08-08-11
B) Plan revised to reflect highways comments. DL/MH 29-07-11.
A) Plan revised to reflect Engineers comments. DM. 01-07-11.
Revisions:

Westleigh

Westleigh Developments Ltd
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Grange Business Park
Enderby Road
Whetstone
Leicester
LE8 6EP

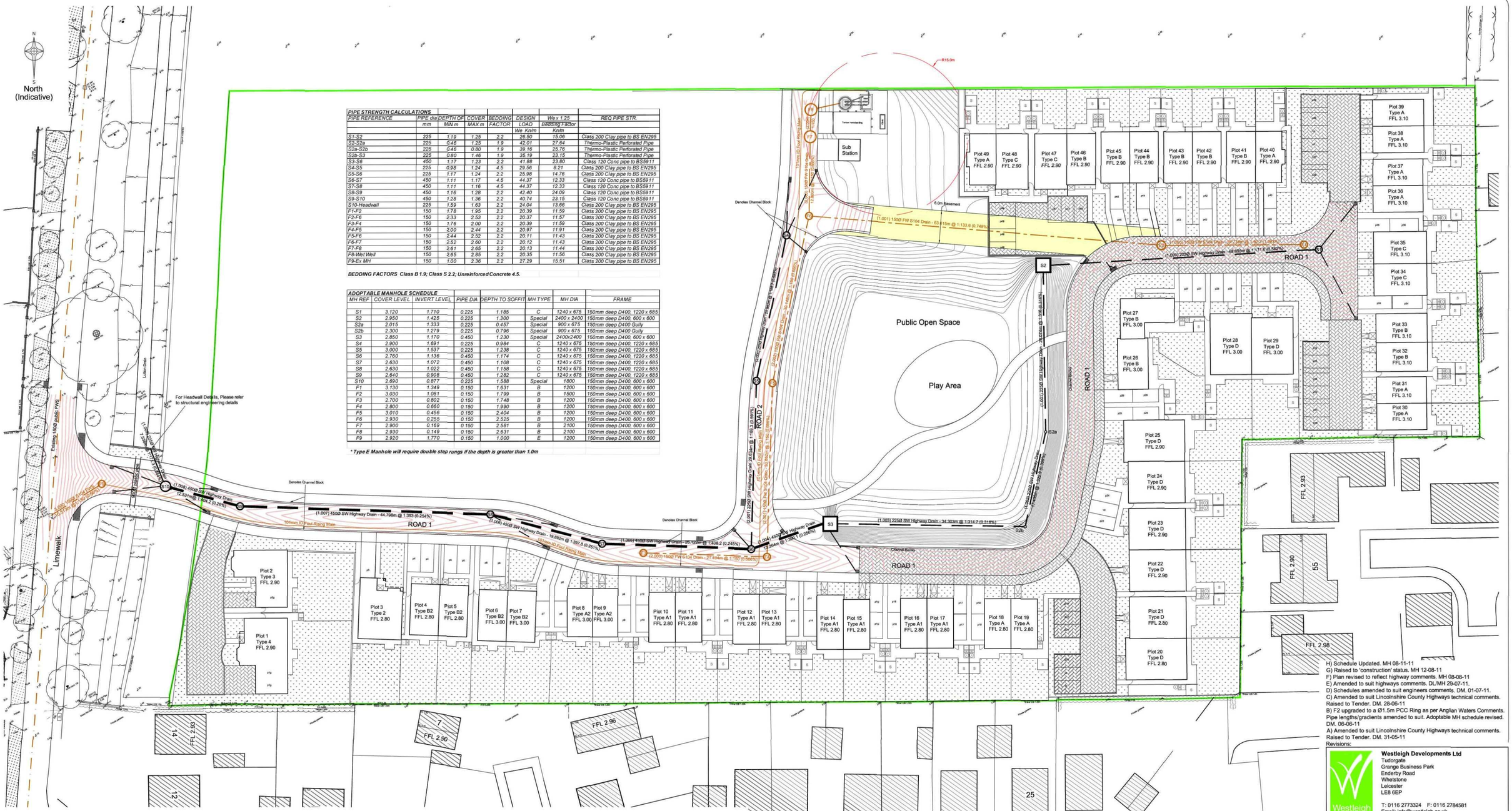
T: 0116 2773324 F: 0116 2784581
Email: info@westleigh.co.uk
Web: www.westleigh.co.uk

Drawing status Construction

Drawing title Domestic Drainage (For TA purpose only)

Project title Residential Development Lime Walk Long Sutton

Drawn LC/DM	*Approved*
Date 18/03/11	*Drawing No* WD/157/31E
Scale 1:500 @ A1	



PIPE STRENGTH CALCULATIONS

PIPE REFERENCE	PIPE dia	DEPTH OF	COVER	BEDDING	DESIGN	Wex x 1.25		REQ PIPE STR.
	mm	MIN m	MAX m	FACTOR	LOAD	BEDDING FACTOR		
					We Kn/m	Kn/m		
S1-S2	225	1.19	1.25	2.2	26.50	15.06		Class 200 Clay pipe to BS EN295
S2-S2a	225	0.46	1.25	1.9	42.01	27.64		Thermo-Plastic Perforated Pipe
S2a-S2b	225	0.46	0.80	1.9	39.16	25.76		Thermo-Plastic Perforated Pipe
S2b-S3	225	0.80	1.46	1.9	35.19	23.15		Thermo-Plastic Perforated Pipe
S3-S6	450	1.17	1.23	2.2	41.88	23.80		Class 120 Conc pipe to BS5911
S4-S5	225	0.98	1.24	4.5	29.56	8.21		Class 200 Clay pipe to BS EN295
S5-S6	225	1.17	1.24	2.2	25.98	14.76		Class 200 Clay pipe to BS EN295
S6-S7	450	1.11	1.17	4.5	44.37	12.33		Class 120 Conc pipe to BS5911
S7-S8	450	1.11	1.16	4.5	44.37	12.33		Class 120 Conc pipe to BS5911
S8-S9	450	1.16	1.28	2.2	42.40	24.09		Class 120 Conc pipe to BS5911
S9-S10	450	1.28	1.36	2.2	40.74	23.15		Class 120 Conc pipe to BS5911
S10-Headwall	225	1.59	1.63	2.2	24.04	13.66		Class 200 Clay pipe to BS EN295
F1-F2	150	1.78	1.95	2.2	20.39	11.59		Class 200 Clay pipe to BS EN295
F2-F6	150	2.33	2.53	2.2	20.37	11.57		Class 200 Clay pipe to BS EN295
F3-F4	150	1.76	2.00	2.2	20.39	11.59		Class 200 Clay pipe to BS EN295
F4-F5	150	2.00	2.44	2.2	20.97	11.91		Class 200 Clay pipe to BS EN295
F5-F6	150	2.44	2.52	2.2	20.11	11.43		Class 200 Clay pipe to BS EN295
F6-F7	150	2.52	2.60	2.2	20.12	11.43		Class 200 Clay pipe to BS EN295
F7-F8	150	2.61	2.65	2.2	20.13	11.44		Class 200 Clay pipe to BS EN295
F8-Wet Well	150	2.65	2.85	2.2	20.35	11.56		Class 200 Clay pipe to BS EN295
F9-Ex MH	150	1.00	2.36	2.2	27.29	15.51		Class 200 Clay pipe to BS EN295

BEDDING FACTORS Class B 1.9; Class S 2.2; Unreinforced Concrete 4.5.

ADOPTABLE MANHOLE SCHEDULE

MH REF	COVER LEVEL	INVERT LEVEL	PIPE DIA	DEPTH TO SOFFIT	MH TYPE	MH DIA	FRAME
S1	3.120	1.710	0.225	1.185	C	1240 x 675	150mm deep D400, 1220 x 685
S2	2.950	1.425	0.225	1.300	Special	2400 x 2400	150mm deep D400, 600 x 600
S2a	2.015	1.333	0.225	0.457	Special	900 x 675	150mm deep D400 Gully
S2b	2.300	1.279	0.225	0.796	Special	900 x 675	150mm deep D400 Gully
S3	2.850	1.170	0.450	1.230	Special	2400x2400	150mm deep D400, 600 x 600
S4	2.900	1.691	0.225	0.984	C	1240 x 675	150mm deep D400, 1220 x 685
S5	3.000	1.537	0.225	1.238	C	1240 x 675	150mm deep D400, 1220 x 685
S6	2.760	1.136	0.450	1.174	C	1240 x 675	150mm deep D400, 1220 x 685
S7	2.630	1.072	0.450	1.108	C	1240 x 675	150mm deep D400, 1220 x 685
S8	2.630	1.022	0.450	1.158	C	1240 x 675	150mm deep D400, 1220 x 685
S9	2.640	0.908	0.450	1.282	C	1240 x 675	150mm deep D400, 1220 x 685
S10	2.690	0.877	0.225	1.588	Special	1800	150mm deep D400, 600 x 600
F1	3.130	1.349	0.150	1.631	B	1200	150mm deep D400, 600 x 600
F2	3.030	1.081	0.150	1.799	B	1500	150mm deep D400, 600 x 600
F3	2.700	0.802	0.150	1.748	B	1200	150mm deep D400, 600 x 600
F4	2.800	0.660	0.150	1.990	B	1200	150mm deep D400, 600 x 600
F5	3.010	0.456	0.150	2.404	B	1200	150mm deep D400, 600 x 600
F6	2.930	0.255	0.150	2.525	B	1200	150mm deep D400, 600 x 600
F7	2.900	0.169	0.150	2.581	B	2100	150mm deep D400, 600 x 600
F8	2.930	0.149	0.150	2.631	B	2100	150mm deep D400, 600 x 600
F9	2.920	1.770	0.150	1.000	E	1200	150mm deep D400, 600 x 600

** Type E Manhole will require double step rungs if the depth is greater than 1.0m*

NOTES

The specification in all respects shall be in accordance with the current 'Lincolnshire Design Guide for Residential Area's' and 'Development Road Specification and Construction' publications in force in the country at the time of construction.

The minimum longitudinal fall for highways, without channel blocks should be 1 in 150, and with channel blocks 1 in 250 (see clause 10.1 Development Road Specification)

In addition, ensure that the first section of any side roads falls away from the road to which it is connecting. If general topography requires it to rise, this change of direction should take place after the first set of gullies. This is to ensure a 'false channel' with associated drainage problems is not created in the bellmouth of junctions.

'Reconstruction of existing carriageway and footways that are affected by these development works, are to be specified and agreed by the senior Highways Officer prior to construction'.

'All signs and line markings are to be agreed with the Senior Highways Officer prior to construction.'

BT Chambers and Anglian Water Meters are not to be located within Pedestrian Crossing Points or Vehicle Accesses.

NOTES: CDM (Construction Design and Management Regulations 2007)

1. If you do not fully understand the risks involved during the construction of the items indicated on this drawing ask your manager, health and safety advisor or a member of the design team before proceeding.
2. Existing services may exist on-site. The contractor shall liaise with all the relevant service companies and arrange for all services to be located, marked and protected.
3. Drainage works may involve deep excavations and/or heavy plant/materials.
4. The contractor shall read and understand the Ground Investigation Report and be aware of and potential variations in soil conditions over the site.
5. The potential for danger to the general public and site personnel exists from works in the public highway. The contractor shall liaise with the highway authority (Lincolnshire Count Council) and ensure safe method of working is maintained at all times.
6. Existing drainage pipes may be asbestos cement or fibre reinforced pipes, or concrete pipes containing asbestos fibre. Contractor to ensure competent staff adequately trained are engaged in the works, and disposal of any affected material is undertaken in line with current legislation and good practice guidelines.
7. The contractor is to be aware that overhead cables may cross the site.
8. The contractor is to be aware that works any involve working adjacent to or in existing watercourses.
9. Works may involve working in close proximity to an existing water main. The contractor is to ensure that this is fully located and protected during the works.

Drawing to be read in conjunction with WD/157/10 & WD/157/11 - S104

H) Schedule Updated. MH 08-11-11
G) Raised to 'construction' status. MH 12-08-11
F) Plan revised to reflect highway comments. MH 08-08-11
E) Amended to suit highways comments. DL/MH 29-07-11.
D) Schedules amended to suit engineers comments. DM. 01-07-11.
C) Amended to suit Lincolnshire County Highways technical comments. Raised to Tender. DM. 28-06-11
B) F2 upgraded to a Ø1.5m PCC Ring as per Anglian Waters Comments. Pipe lengths/gradients amended to suit. Adoptable MH schedule revised. DM. 06-06-11
A) Amended to suit Lincolnshire County Highways technical comments. Raised to Tender. DM. 31-05-11
Revisions:

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Web: www.westleigh.co.uk

Drawing status **Construction**

Drawing title
Section 104
(For TA purpose only)

Project title
Residential Development
Lime Walk
Long Sutton

Drawn	Approved
LC/DM	
Date: 18/03/11	Drawing No: WD/157/32H
Scale: 1:500 @ A2	

SECTION 38 LEGEND:

- Section 38
- Highway Boundary.
- Boundary of Site Ownership.
- Highway Easement.
- New footway works to be constructed in accordance with current specification. Reconstruction of existing carriageway, verges and footways that are affected by these development works are to be specified and agreed by the Senior Highway Officer prior to construction.

(HP) High Point (LP) Low Point

S38 STREET LIGHTING KEY

6 metre type G1A(LCC) column with post top 36W FGS224 PLL lantern (T or PN denotes part night switching 2400 - 0600 hours). Photocell set @ 35 lux. Type A termination to TD7/14/4A

N / S
North (Indicative)

PIPE STRENGTH CALCULATIONS

PIPE REFERENCE	PIPE dia mm	DEPTH OF MIN m	COVER MAX m	BEDDING FACTOR	DESIGN LOAD We kN/m	We x 1.25 Bedding Factor kN/m	REQ PIPE STR
S1-S2	225	1.19	1.25	2.2	26.50	15.06	Class 200 Clay pipe to BS EN295
S2-S2a	225	0.46	1.25	1.9	42.01	27.64	Thermo-Plastic Perforated Pipe
S2a-S2b	225	0.46	0.80	1.9	39.16	25.76	Thermo-Plastic Perforated Pipe
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F2-F6	150	2.33	2.53	2.2	20.37	11.57	Class 200 Clay pipe to BS EN295
F3-F4	150	1.76	2.00	2.2	20.39	11.59	Class 200 Clay pipe to BS EN295
F4-F5	150	2.00	2.44	2.2	20.97	11.91	Class 200 Clay pipe to BS EN295
F5-F6	150	2.44	2.52	2.2	20.11	11.43	Class 200 Clay pipe to BS EN295
F6-F7	150	2.52	2.60	2.2	20.12	11.43	Class 200 Clay pipe to BS EN295
F7-F8	150	2.61	2.65	2.2	20.13	11.44	Class 200 Clay pipe to BS EN295
F8-Wet Well	150	2.65	2.85	2.2	20.35	11.56	Class 200 Clay pipe to BS EN295
F9-Ex MH	150	1.00	2.36	2.2	27.29	15.51	Class 200 Clay pipe to BS EN295

BEDDING FACTORS Class B 1.9; Class S 2.2; Unreinforced Concrete 4.5.

ADOPTABLE MANHOLE SCHEDULE

MH REF	COVER LEVEL	INVERT LEVEL	PIPE DIA	DEPTH TO SOFFIT	MH TYPE	MH DIA	FRAME
S1	3.120	1.710	0.225	1.185	C	1240 x 675	150mm deep D400, 1220x 685
S2	2.950	1.425	0.225	1.300	Special	2400 x 2400	150mm deep D400, 600 x 600
S2a	2.015	1.333	0.225	0.457	Special	900 x 675	150mm deep D400 Gully
S2b	2.300	1.279	0.225	0.796	Special	900 x 675	150mm deep D400 Gully
S3	2.850	1.170	0.450	1.230	Special	2400x2400	150mm deep D400, 600 x 600
S4	2.900	1.691	0.225	0.984	C	1240 x 675	150mm deep D400, 1220 x 685
S5	3.000	1.537	0.225	1.238	C	1240 x 675	150mm deep D400, 1220 x 685
S6	2.760	1.136	0.450	1.174	C	1240 x 675	150mm deep D400, 1220 x 685
S7	2.630	1.072	0.450	1.108	C	1240 x 675	150mm deep D400, 1220 x 685
S8	2.630	1.022	0.450	1.158	C	1240 x 675	150mm deep D400, 1220 x 685
S9	2.640	0.908	0.450	1.282	C	1240 x 675	150mm deep D400, 1220 x 685
S10	2.690	0.877	0.225	1.588	Special	1800	150mm deep D400, 600 x 600
F1	3.130	1.349	0.150	1.631	B	1200	150mm deep D400, 600 x 600
F2	3.030	1.081	0.150	1.799	B	1500	150mm deep D400, 600 x 600
F3	2.700	0.802	0.150	1.748	B	1200	150mm deep D400, 600 x 600
F4	2.800	0.660	0.150	1.990	B	1200	150mm deep D400, 600 x 600
F5	3.010	0.456	0.150	2.404	B	1200	150mm deep D400, 600 x 600
F6	2.930	0.255	0.150	2.525	B	1200	150mm deep D400, 600 x 600
F7	2.900	0.169	0.150	2.581	B	2100	150mm deep D400, 600 x 600
F8	2.930	0.149	0.150	2.631	B	2100	150mm deep D400, 600 x 600
F9	2.920	1.770	0.150	1.000	E	1200	150mm deep D400, 600 x 600

** Type E Manhole will require double step rungs if the depth is greater than 1.0m*

Existing Weeping Willow to be removed as per Lincolnshire County Councils comments

For Headwall Details, Please refer to structural engineering details

Existing Silver Birch should be pruned to remove the low branches that are affecting visibility

Dropped kerbed access to be provided along this line to allow vehicular / plant access onto IDB land.

Limewalk

Luttor Drain

Public Open Space

Play Area

New Drainage Easement

ROAD 1

ROAD 2

Sub Station

Denotes Channel Block

Plot 1 Type 4 FFL 2.90
Plot 2 Type 3 FFL 2.90
Plot 3 Type 2 FFL 2.80
Plot 4 Type B2 FFL 2.80
Plot 5 Type B2 FFL 2.80
Plot 6 Type B2 FFL 3.00
Plot 7 Type B2 FFL 3.00
Plot 8 Type A2 FFL 3.00
Plot 9 Type A2 FFL 3.00
Plot 10 Type A1 FFL 2.80
Plot 11 Type A1 FFL 2.80
Plot 12 Type A1 FFL 2.80
Plot 13 Type A1 FFL 2.80
Plot 14 Type A1 FFL 2.80
Plot 15 Type A1 FFL 2.80
Plot 16 Type A1 FFL 2.80
Plot 17 Type A1 FFL 2.80
Plot 18 Type A FFL 2.80
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Plot 46 Type B FFL 2.90
Plot 47 Type C FFL 2.90
Plot 48 Type C FFL 2.90
Plot 49 Type A FFL 2.90
Plot 30 Type A FFL 3.10

FFL 2.83 (14)
FFL 2.97 (1)
FFL 2.94
FFL 2.95
FFL 2.96
FFL 2.90 (7)
FFL 2.93
FFL 2.90 (55)
FFL 2.98

NOTES

The specification in all respects shall be in accordance with the current 'Lincolnshire Design Guide for Residential Area's' and 'Development Road Specification and Construction' publications in force in the country at the time of construction.

The minimum longitudinal fall for highways, without channel blocks should be 1 in 150, and with channel blocks 1 in 250 (see clause 10.1 Development Road Specification)

In addition, ensure that the first section of any side roads falls away from the road to which it is connecting. If general topography requires it to rise, this change of direction should take place after the first set of gullies. This is to ensure a 'false channel' with associated drainage problems is not created in the bellmouth of junctions.

'Reconstruction of existing carriageway and footways that are affected by these development works, are to be specified and agreed by the senior Highways Officer prior to construction'.

'All signs and line markings are to be agreed with the Senior Highways Officer prior to construction.'

BT Chambers and Anglian Water Meters are not to be located within Pedestrian Crossing Points or Vehicle Accesses.

NOTES: CDM (Construction Design and Management Regulations 2007)

1. If you do not fully understand the risks involved during the construction of the items indicated on this drawing ask your manager, health and safety advisor or a member of the design team before proceeding.
2. Existing services may exist on-site. The contractor shall liaise with all the relevant service companies and arrange for all services to be located, marked and protected.
3. Drainage works may involve deep excavations and/or heavy plant/materials.
4. The contractor shall read and understand the Ground Investigation Report and be aware of and potential variations in soil conditions over the site.
5. The potential for danger to the general public and site personnel exists from works in the public highway. The contractor shall liaise with the highway authority (Lincolnshire Count Council) and ensure safe method of working is maintained at all times.
6. Existing drainage pipes may be asbestos cement or fibre reinforced pipes, or concrete pipes containing asbestos fibre. Contractor to ensure competent staff adequately trained are engaged in the works, and disposal of any affected material is undertaken in line with current legislation and good practice guidelines.
7. The contractor is to be aware that overhead cables may cross the site.
8. The contractor is to be aware that works any involve working adjacent to or in existing watercourses.
9. Works may involve working in close proximity to an existing water main. The contractor is to ensure that this is fully located and protected during the works.

J) Adoptable manhole schedule amended. MH 27-10-11
H) Adoptable manhole schedule amended. LC. 25/10/11.
G) Plan amended to suit L.C.C comments. LC. 20-10-11.
F) Street Lighting amended. MH 09-09-11
E) Street Lighting Design added to plan. MH 09-09-11
D) Raised to 'construction' status. MH 12-08-11
C) Plan revised to reflect highway comments. MH 08-08-11
B) Plan revised to reflect highways comments. DL / MH 29-07-11.
A) Plan revised to reflect Engineers comments. Schedules updated. DM. 01-07-11
Revisions:

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Grange Business Park
Enderby Road
Whetstone
Leicester
LE8 6EP

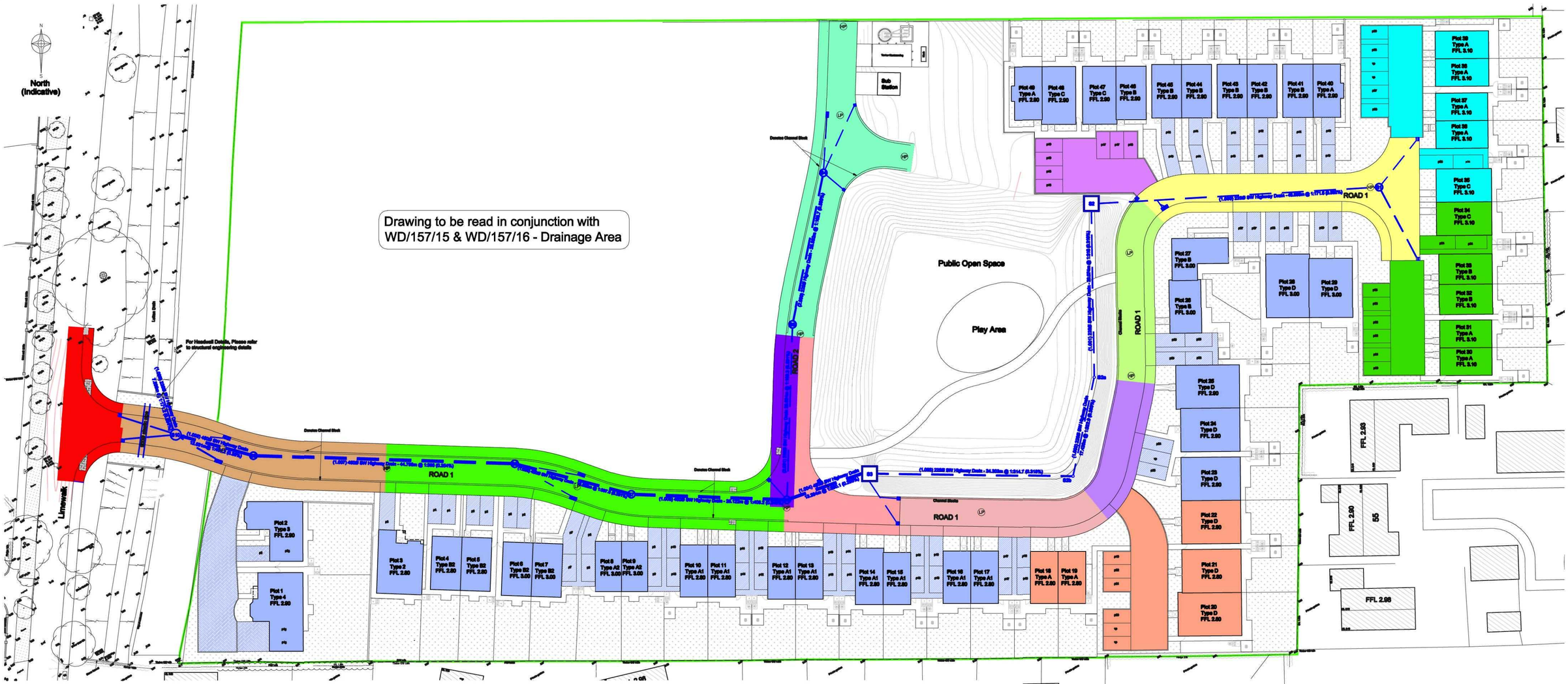
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Web: www.westleigh.co.uk

Drawing status **Construction**

Drawing title
Section 38 Layout
(For TA purpose only)

Project title
Residential Development
Lime Walk
Long Sutton

Drawn	Approved
LC/DM	
Date: 18/03/11	Drawing No: WD/157/33J
Scale: 1:500 @ A2	



Drainage Area Key:

- 1950m² or 0.195ha - Soakaway (Plots 1-17, 23-29 & 40-49)
- 477m² or 0.047ha Permeable Paving (Voided Stone)
- 487m² or 0.049ha Permeable Paving (Voided Stone)
- 194m² or 0.019ha Permeable Paving (Voided Stone)
- 575m² or 0.057ha Permeable Paving (Voided Stone)
- 485m² or 0.048ha Draining into pipe run 1.000 (S1-S2)
- 230m² or 0.023ha Draining into pipe run 1.001 (S2-S2a)
- 175m² or 0.017ha Draining into pipe run 1.002 (S2a-S2b)
- 260m² or 0.026ha Draining into pipe run 1.003 (S2b-S3)
- 235m² or 0.023ha Draining into pipe run 1.004 (S3-S6)
- 122m² or 0.012ha Draining into pipe run 1.005 (S6-S7)
- 630m² or 0.063ha Draining into pipe run 1.007 (S8-S9)
- 432m² or 0.043ha Draining into pipe run 1.009 (S9-S10)
- 470m² or 0.047ha Draining into pipe run 2.000 (S4-S5)
- 170m² or 0.017ha Draining into Existing Ditch
- 990m² or 0.099ha (Permeable Paving)

NOTES: CDM (Construction Design and Management Regulations 2007)

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NOTES

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The minimum longitudinal fall for highways, without channel blocks should be 1 in 150, and with channel blocks 1 in 250 (see clause 10.1 Development Road Specification)

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'All signs and line markings are to be agreed with the Senior Highways Officer prior to construction.'

BT Chambers and Anglian Water Meters are not to be located within Pedestrian Crossing Points or Vehicle Accesses.

D) Raised to 'construction' status. MH 12-08-11
C) Plan revised to reflect highway comments. MH 08-08-11
B) Plan revised to suit highways comments. DL/MH. 29-07-2011.
A) Areas revised to reflect WD/157/15 & WD/157/16. DM. 11-07-11.
Revisions:

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Drawing status: **Construction**

Drawing title: **Drainage Area (For TA purpose only)**

Project title: **Residential Development Lime Walk Long Sutton**

Drawn	Approved
LC/DM	
Date: 18/03/11	Drawing No: WD/157/34D
Scale: 1:500 @ A2	

Drawing to be read in conjunction with
WD/157/17 & WD/157/18 - External Works

EXTERNAL WORKS LEGEND:

- KB1 - 255x125mm PCC half battered kerb to BS7263, laid with 110mm upstand to carriageway.
- 50KB - 255x125mm PCC half battered kerb to BS7263, laid with 50mm upstand to carriageway.
- 25KF - 150x125mm PCC bull nosed kerb to BS7263, laid with 25mm upstand to carriageway.
- 25KF - 150x125mm PCC bull nosed kerb to BS7263, laid with 25mm upstand to carriageway.
- KBF - 150x50mm EF Edging, laid flush.
- DK - 150/225x125mm dropper kerb.
- PCC channel block on concrete foundation

Adoptable tarmac footpath spec:
SC - 25mm dense bitmac (0-6mm nom size).
BC - 50mm dense bitmac (0-20mm nom size). (100mm at VC points)
SB - 100mm Type 1 granular material. (150mm at VC points)

Adoptable Tarmac Carriageway Specification:
WC - 40mm close graded macadam (0-10mm nom size).
BC - 70mm dense bitmac (0-20mm nom size).
BC - 60mm dense bitmac (0-20mm nom size).
SB - TBC. Subject to CBR results.

Adoptable Block Paviour carriageway spec:
WC - 60mm precast concrete block paviours laid herringbone pattern on 30mm sand
BC - 90mm dense bitmac (0-20mm nom size)
SB - TBC. Subject to CBR results.

Adoptable Block Paviour Footway spec:
WC - 60mm precast concrete block paviours laid herringbone pattern on 30mm sand
BC - 60mm dense bitmac (0-20mm nom size)
SB - 100mm Type 1 granular material (150mm at VC points)

Private Porous Paving Accessway Construction Specification
WC - 60mm Concrete Porous Block laid herringbone pattern on 35mm Clean Stone, (5mm Granite Chippings) on Geotextile.
BC - 60mm Open Grain Tarmac.
SB - Clean stone. Depth TBC (10mm - 63mm nom agg size).

Private Porous Paving Parking Bay Construction Specification:
WC - 60mm precast concrete block paviours laid herringbone pattern on 35mm clean stone (5mm granite chippings) on geotextile.
SB - 225mm Clean Stone. (10-63nom size)

Vehicular Crossing Points

Public Open Space

Play Area

ROAD 1

ROAD 2

Limewalk

Sub Station

For Headwall Details, Please refer to structural engineering details

Plot 1 Type 4 FFL 2.60
Plot 2 Type 3 FFL 2.60
Plot 3 Type 2 FFL 2.60
Plot 4 Type B2 FFL 2.60
Plot 5 Type B2 FFL 2.60
Plot 6 Type B2 FFL 3.00
Plot 7 Type B2 FFL 3.00
Plot 8 Type A2 FFL 3.00
Plot 9 Type A2 FFL 3.00
Plot 10 Type A1 FFL 2.60
Plot 11 Type A1 FFL 2.60
Plot 12 Type A1 FFL 2.60
Plot 13 Type A1 FFL 2.60
Plot 14 Type A1 FFL 2.60
Plot 15 Type A1 FFL 2.60
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Plot 47 Type C FFL 2.60
Plot 48 Type C FFL 2.60
Plot 49 Type A FFL 2.60

FFL 2.93
FFL 2.90
FFL 2.98
FFL 2.95
FFL 2.90

14
7
55
25

GENERAL ROAD NOTES:

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE LOCAL HIGHWAY AUTHORITY DESIGN GUIDE AND THE GENERAL SPECIFICATION FOR ROADWORKS CURRENT AT THE TIME OF CONSTRUCTION.

ALL WORKS SHALL BE IN ACCORDANCE WITH THE LOCAL HIGHWAY AUTHORITYS APPROVED DOCUMENTS AND SATISFACTION. ANY REFERENCE TO THE SPECIFICATION HALL MEAN THE GENERAL SPECIFICATION FOR ROADWORKS.

1. PRIOR TO ANY WORKS BEING CARRIED OUT WITHIN OR IMMEDIATELY ADJACENT TO THE PUBLIC HIGHWAY, A SCHEME FOR THE SAFE CONTROL OF TRAFFIC AND PEDESTRIANS IS TO BE AGREED WITH THE HIGHWAY AUTHORITY AND IMPLEMENTED.
2. WORKING AREAS WITHIN THE VICINITY OF EXISTING TREES ARE TO BE AGREED WITH THE ENGINEER AND CHESTNUT FENCING ERECTED AS DIRECTED.
3. SPECIAL CARE IS TO BE TAKEN WHEN EXCAVATING IN THE VICINITY OF EXISTING TREES, IT IS NOT INTENDED THAT ANY TREE ROOTS SHOULD BE SEVERED OR DAMAGED AND SPECIALIST ADVICE SHOULD BE SOUGHT WHEN MAJOR ROOTS PRESSENT A PROBLEM. CARE IS TO BE TAKEN TO AVOID DAMAGE TO BRANCHES AND FOLIAGE.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO TRACE AND INDICATE THE PRECISE LOCATION AND NATURE OF ALL SERVICES.
5. THE CONTRACTOR IS TO PROVIDE A CCTV SURVEY OF ANY HIGHWAY SEWERS ON COMPLETION OF THE 12-MONTH MAINTENANCE PERIOD. THIS IS TO BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL WATER AND HIGHWAYS AUTHORITIES.
6. SAFE PASSAGE FOR PEDESTRIANS ACROSS THE SITE IS TO BE ENSURED AT ALL TIMES BY MEANS OF APPROVED FENCING TO BOTH SIDES OF ANY FOOTPATH ROUTE.
6. THE HEALTH AND SAFETY AT WORK ACT 1981 IS TO BE COMPLIED WITH AT ALL TIMES. ATTENTION IS DRAWN TO THE WEARING OF HARD HATS, REFLECTORISED CLOTHING, AND THE USE OF ANY OTHER REQUIRED SAFETY EQUIPMENT.
7. THE CONTRACTOR IS TO TAKE ACCOUNT OF THE SOILS REPORT.
8. NO COMPLETION WORKS WILL BE AUTHORISED UNTIL A FORMAL CERTIFICATE OF CONFORMANCE TO RELEVANT SPECIFICATION IS RECEIVED FROM THE RELEVANT WATER AUTHORITY.
9. COMPACTION CONTROL SHALL BE ACHIEVED BY AIR VOID TESTING FOR BOTH ROADBASE AND BASECOURSE (MAXIMUM AIR VOID RATIO 6%)
10. ANY RECYCLED MATERIAL TO BE USED FOR HIGHWAY CONSTRUCTION PURPOSES WILL BE ALLOWED SUBJECT TO IT SATISFYING RELEVANT TESTS AS INSTRUCTED BY THIS AUTHORITY.
11. THE CONTRACTOR IS TO TAKE CBR TESTS AT ROAD FORMATION LEVEL, CAPPING LAYER LEVEL, AND SUB BASE LEVEL AND THE HIGHWAY ENGINEER INFORMED BEFORE ANY CONSTRUCTION WORKS CARRIED OUT ON THAT LEVEL.
12. ALL PRIVATE DRIVES WHICH FALL TOWARDS A PUBLIC HIGHWAY AND EXCEED TWO PARKING BAYS IN AREA ARE TO BE PROVIDED WITH A SUTIABLE GULLY OR DRAINAGE CHANNEL TO PREVENT WATER DISCHARGING ONTO THE HIGHWAY.
13. WHERE A DRIVEWAY FALLS TOWARDS A DWELLING IT SHALL BE PROVIDED WITH A SUITABLE GULLY OR DRAINAGE CHANNEL TO PREVENT WATER DAMAGING THE BUILDING.

ROAD MARKINGS & TRAFFIC SIGNS

THE DEVELOPER SHALL CONSULT WITH THE HIGHWAY AUTHORITY OR ITS AGENT AND ARRANGE TO PROVIDE, AT HIS COST, ALL WHITE LINE CARRIAGEWAY MARKINGS AND TRAFFIC SIGNS AS MAY BE REQUIRED.

STREET NAME PLATES

STREET NAME PLATES SHALL BE PROVIDED AND ERECTED BY THE DISTRICT COUNCIL ON A RECHARGABLE BASIS OR AS OTHERWISE DIRECTED BY THE LOCAL AUTHORITY.

STREET LIGHTING

HIGHWAY LIGHTING WILL NORMALLY BE DESIGNED BY THE HIGHWAY AUTHORITY OR ITS AGENT AND SHALL BE IN ACCORDANCE WITH THE AUTHORITIES CODE OF PRACTICE FOR LIGHTING OF PUBLIC HIGHWAYS AND INSTALLED BY AN APPROVED CONTRACTOR.

STATUTORY UNDERTAKERS

THE DEVELOPER SHALL BE RESPONSIBLE FOR LIAISON WITH THE STATUTORY UNDERTAKERS AND OTHER CABLE SERVICE COMPANIES FOR THE PROVISION OF ALL REQUIRED SERVICES.

NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DETAILS .
2. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT BRITISH STANDARDS, CODES OF PRACTICE AND BUILDING REGULATIONS.
3. THE DESIGN OF ANY TEMPORARY WORKS REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ANY DISCREPANCIES ARE TO BE RECORDED AND REPORTED TO THE ENGINEERS IMMEDIATELY .
5. ALL WORK IS TO BE TO THE SATISFACTION OF THE ENGINEER AND THE LOCAL WATER AUTHORITY .
6. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE STABILITY OF THE WORKS AT ALL TIMES DURING CONSTRUCTION.
7. ALL WORKMANSHIP AND MATERIALS ARE TO BE TO CURRENT BRITISH STANDARDS.
8. ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
9. ANY EXISTING DETAILS WHICH ARE SHOWN ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY VARIATIONS ARE TO BE RECORDED AND REPORTED TO THE ENGINEER IMMEDIATELY.

NOTES

1. THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT 'LINCOLNSHIRE DESIGN GUIDE FOR RESIDENTIAL AREAS' AND 'DEVELOPMENT ROAD SPECIFICATION AND CONSTRUCTION' PUBLICATIONS IN FORCE IN THE COUNTRY AT THE TIME OF CONSTRUCTION.
2. THE MINIMUM LONGITUDINAL FALL FOR HIGHWAYS, WITHOUT CHANNEL BLOCKS SHOULD BE 1 IN 150, AND WITH CHANNEL BLOCKS 1 IN 250 (SEE CLAUSE 10.1 DEVELOPMENT ROAD SPECIFICATION)
3. IN ADDITION, ENSURE THAT THE FIRST SECTION OF ANY SIDE ROADS FALLS AWAY FROM THE ROAD TO WHICH IT IS CONNECTING. IF GENERAL TOPOGRAPHY REQUIRES IT TO RISE, THIS CHANGE OF DIRECTION SHOULD TAKE PLACE AFTER THE FIRST SET OF GULLIES. THIS IS TO ENSURE A 'FALSE CHANNEL' WITH ASSOCIATED DRAINAGE PROBLEMS IS NOT CREATED IN THE BELLMOUTH OF JUNCTIONS.
4. 'RECONSTRUCTION OF EXISTING CARRIAGEWAY AND FOOTWAYS THAT ARE AFFECTED BY THESE DEVELOPMENT WORKS, ARE TO BE SPECIFIED AND AGREED BY THE SENIOR HIGHWAYS OFFICER PRIOR TO CONSTRUCTION'.
5. 'ALL SIGNS AND LINE MARKINGS ARE TO BE AGREED WITH THE SENIOR HIGHWAYS OFFICER PRIOR TO CONSTRUCTION.'
6. BT CHAMBERS AND ANGLIAN WATER METERS ARE NOT TO BE LOCATED WITHIN PEDESTRIAN CROSSING POINTS OR VEHICLE ACCESSES.

NOTES: CDM (CONSTRUCTION DESIGN AND MANAGEMENT REGULATIONS 2007)

1. IF YOU DO NOT FULLY UNDERSTAND THE RISKS INVOLVED DURING THE CONSTRUCTION OF THE ITEMS INDICATED ON THIS DRAWING ASK YOUR MANAGER, HEALTH AND SAFETY ADVISOR OR A MEMBER OF THE DESIGN TEAM BEFORE PROCEEDING.
2. EXISTING SERVICES MAY EXIST ON-SITE. THE CONTRACTOR SHALL LIAISE WITH ALL THE RELEVANT SERVICE COMPANIES AND ARRANGE FOR ALL SERVICES TO BE LOCATED, MARKED AND PROTECTED.
3. DRAINAGE WORKS MAY INVOLVE DEEP EXCAVATIONS AND/OR HEAVY PLANT/MATERIALS.
4. THE CONTRACTOR SHALL READ AND UNDERSTAND THE GROUND INVESTIGATION REPORT AND BE AWARE OF AND POTENTIAL VARIATIONS IN SOIL CONDITIONS OVER THE SITE.
5. THE POTENTIAL FOR DANGER TO THE GENERAL PUBLIC AND SITE PERSONNEL EXISTS FROM WORKS IN THE PUBLIC HIGHWAY. THE CONTRACTOR SHALL LIAISE WITH THE HIGHWAY AUTHORITY (LINCOLNSHIRE COUNT COUNCIL) AND ENSURE SAFE METHOD OF WORKING IS MAINTAINED AT ALL TIMES.
6. EXISTING DRAINAGE PIPES MAY BE ASBESTOS CEMENT OR FIBRE REINFORCED PIPES, OR CONCRETE PIPES CONTAINING ASBESTOS FIBRE. CONTRACTOR TO ENSURE COMPETENT STAFF ADEQUATELY TRAINED ARE ENGAGED IN THE WORKS, AND DISPOSAL OF ANY AFFECTED MATERIAL IS UNDERTAKEN IN LINE WITH CURRENT LEGISLATION AND GOOD PRACTICE GUIDELINES.
7. THE CONTRACTOR IS TO BE AWARE THAT OVERHEAD CABLES MAY CROSS THE SITE.
8. THE CONTRACTOR IS TO BE AWARE THAT WORKS ANY INVOLVE WORKING ADJACENT TO OR IN EXISTING WATERCOURSES.
9. WORKS MAY INVOLVE WORKING IN CLOSE PROXIMITY TO AN EXISTING WATER MAIN. THE CONTRACTOR IS TO ENSURE THAT THIS IS FULLY LOCATED AND PROTECTED DURING THE WORKS.

D) Raised to 'construction' status. MH 12-08-11
C) Plan revised to reflect highway comments. MH 08-08-11
B) Plan revised to suit highways comments. DL/MH 29-07-11
A) Plan revised to reflect Engineers comments. DM. 01-07-11
Revisions:

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Drawing status: Construction

Drawing title: External Works (For TA purpose only)

Project title: Residential Development, Lime Walk, Long Sutton

Drawn	LC/DM	Approved	
Date	18/03/11	Drawing No	WD/157/35D
Scale	1:500 @ A2		

North (Indicative)

Flood Route Arrows

Drawing to be read in conjunction with WD/157/19 & WD/157/20 - Flood Route

For Headwall Details, Please refer to structural engineering details

Public Open Space

Play Area

ROAD 1

ROAD 2

Limewalk

Ludlon Drain

Denotes Channel Block

Sub Station

Plot 1 Type 4 FFL 2.90
Plot 2 Type 3 FFL 2.90
Plot 3 Type 2 FFL 2.80
Plot 4 Type B2 FFL 2.80
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Plot 47 Type C FFL 2.90
Plot 48 Type C FFL 2.90
Plot 49 Type A FFL 2.90

FFL 2.93
FFL 2.90
FFL 2.98
FFL 2.96
FFL 2.97
FFL 2.90
FFL 2.83

ST THOMAS COURT

NOTES

The specification in all respects shall be in accordance with the current 'Lincolnshire Design Guide for Residential Area's' and 'Development Road Specification and Construction' publications in force in the country at the time of construction.

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'Reconstruction of existing carriageway and footways that are affected by these development works, are to be specified and agreed by the senior Highways Officer prior to construction'.

'All signs and line markings are to be agreed with the Senior Highways Officer prior to construction.'

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NOTES: CDM (Construction Design and Management Regulations 2007)

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9. Works may involve working in close proximity to an existing water main. The contractor is to ensure that this is fully located and protected during the works.

Revisions:

D) Plan revised to suit new flood route arrows. MH 08-11-11
C) Raised to 'construction' status. MH 12-08-11
B) Plan revised to reflect highway comments. MH 08-08-11
A) Plan revised to suit highways comments. DL/MH 29-07-11

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Email: info@westleigh.co.uk
Web: www.westleigh.co.uk

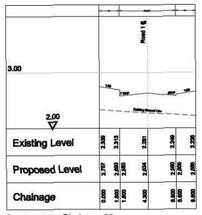
Drawing status **Construction**

Drawing title
Flood Route
(For TA purpose only)

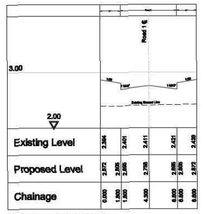
Project title
Residential Development
Lime Walk
Long Sutton

Drawn LC/DM	*Approved*
Date 18/03/11	*Drawing No* WD/157/36D
Scale 1:250 @ A2	

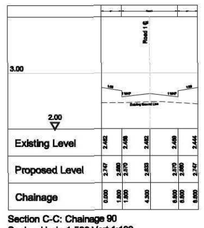
ROAD 1



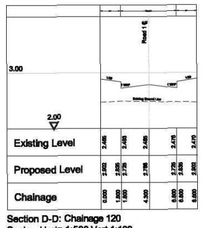
Section A-A: Chainage 30
Scale - Horiz 1:500 Vert 1:100



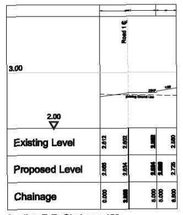
Section B-B: Chainage 60
Scale - Horiz 1:500 Vert 1:100



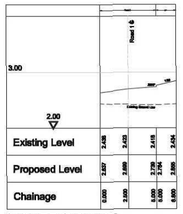
Section C-C: Chainage 90
Scale - Horiz 1:500 Vert 1:100



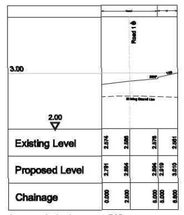
Section D-D: Chainage 120
Scale - Horiz 1:500 Vert 1:100



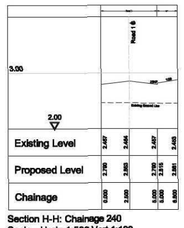
Section E-E: Chainage 150
Scale - Horiz 1:500 Vert 1:100



Section F-F: Chainage 180
Scale - Horiz 1:500 Vert 1:100



Section G-G: Chainage 210
Scale - Horiz 1:500 Vert 1:100

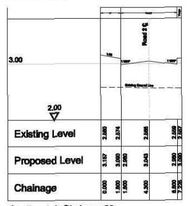


Section H-H: Chainage 240
Scale - Horiz 1:500 Vert 1:100

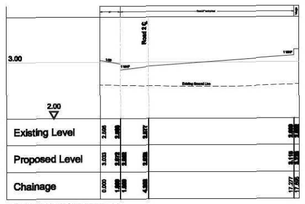


Section I-I: Chainage 270
Scale - Horiz 1:500 Vert 1:100

ROAD 2



Section J-J: Chainage 30
Scale - Horiz 1:500 Vert 1:100



Section K-K: Chainage 60
Scale - Horiz 1:500 Vert 1:100

Drawing to be read in conjunction with
WD/157/06 & WD/157/07 - External Levels



E) Raised to 'construction' status. MH 12-08-11
D) Plan revised to suit highway comments. MH. 10/08/11.
C) Plan revised to reflect highway comments. MH 08-08-11
B) Plan revised to reflect highway comments. DL/MH 29-07-11
A) Plan revised to reflect Engineers comments. DM. 01-07-11
Revisions:

Westleigh Developments Ltd
Tudorgate
Grange Business Park
Enderby Road
Whetstone
Leicester
LE8 6EP

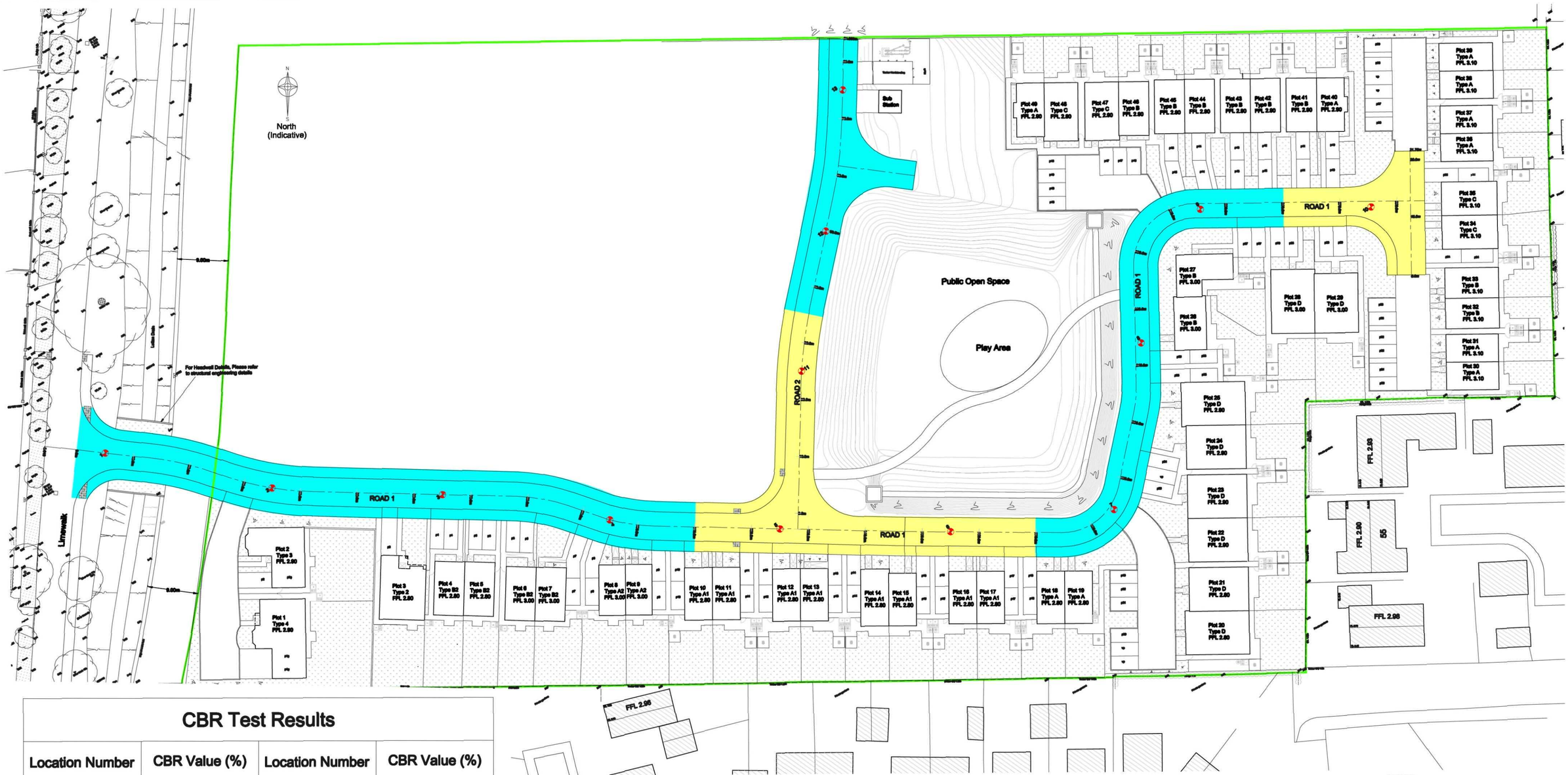
T: 0116 2773334 F: 0116 2784581
Email: info@westleigh.co.uk
Web: www.westleigh.co.uk

Drawing status: **Construction**

Drawing title: Road Cross Sections (For TA purpose only)

Project title: **Residential Development, Lime Walk, Long Sutton**

Drawn	Approved
LC/DM	
Date: 18/03/11	Drawing No: WD/157/37E
Scale: 1:500 @ A2	



CBR Test Results

Location Number	CBR Value (%)	Location Number	CBR Value (%)
1	8.6	8	15.0
2	14.0	9	2.9
3	6.9	10	0.9
4	3.9	11	0.7
5	1.0	12	7.9
6	1.2	13	2.7
7	10.0		

3% CBR RESULTS: SUB BASE - 300mm TYPE 1 GRANULAR MATERIAL TO BE UNDERLAID WITH TENSAR SS40.

<1.5% CBR RESULTS: SUB BASE - 410mm OF 6F5 GRANULAR MATERIAL AND 300MM TYPE 1 GRANULAR MATERIAL TO BE UNDERLAID WITH TENSAR SS40.

CBR TEST LOCATIONS WITH LOCATION NUMBER

Revisions:

Westleigh Developments Ltd
Tudorgate
George Business Park
Enderby Road
Whetstone
Leicester
LE8 6EP
T: 0116 2773324 F: 0116 2784581
Email: info@westleigh.co.uk
Web: www.westleigh.co.uk

Drawing status: Construction

Drawing title: CBR Location Plan

Project title: Lime Walk, Long Sutton, Lincolnshire

Drawn	Approved
MJH	
Date: 22/08/11	Drawing No: WD/157/38
Scale: 1:500	

POS Boundary - To be adopted by South Holland District Council

Section 38 Boundary - To be adopted by Lincolnshire County Council

Site Boundary

N
S
North (Indicative)

Public Open Space

ROAD 1

ROAD 2

1.8m Footpath

1.5m Footpath

Denotes Channel Block

Channel Blocks

Timber Handwinding

For Headwall Details, Please refer to structural engineering details

Dropped kerbed access to be provided along this line to allow vehicular / plant access onto IDB land.

Ludon Drain

9.00m

Plot 1 Type 4 FFL 2.90
Plot 2 Type 3 FFL 2.90
Plot 3 Type 2 FFL 2.80
Plot 4 Type B2 FFL 2.80
Plot 5 Type B2 FFL 2.80
Plot 6 Type B2 FFL 3.00
Plot 7 Type B2 FFL 3.00
Plot 8 Type A2 FFL 3.00
Plot 9 Type A2 FFL 3.00
Plot 10 Type A1 FFL 2.80
Plot 11 Type A1 FFL 2.80
Plot 12 Type A1 FFL 2.80
Plot 13 Type A1 FFL 2.80
Plot 14 Type A1 FFL 2.80
Plot 15 Type A1 FFL 2.80
Plot 16 Type A1 FFL 2.80
Plot 17 Type A1 FFL 2.80
Plot 18 Type A FFL 2.80
Plot 19 Type A FFL 2.80
Plot 20 Type D FFL 2.80
Plot 21 Type D FFL 2.80
Plot 22 Type D FFL 2.90
Plot 23 Type D FFL 2.90
Plot 24 Type D FFL 2.90
Plot 25 Type D FFL 2.90
Plot 26 Type B FFL 3.00
Plot 27 Type B FFL 3.00
Plot 28 Type D FFL 3.00
Plot 29 Type D FFL 3.00
Plot 30 Type A FFL 3.10
Plot 31 Type A FFL 3.10
Plot 32 Type B FFL 3.10
Plot 33 Type B FFL 3.10
Plot 34 Type C FFL 3.10
Plot 35 Type C FFL 3.10
Plot 36 Type A FFL 3.10
Plot 37 Type A FFL 3.10
Plot 38 Type A FFL 3.10
Plot 39 Type A FFL 3.10
Plot 40 Type A FFL 2.90
Plot 41 Type B FFL 2.90
Plot 42 Type B FFL 2.90
Plot 43 Type B FFL 2.90
Plot 44 Type B FFL 2.90
Plot 45 Type B FFL 2.90
Plot 46 Type B FFL 2.90
Plot 47 Type C FFL 2.90
Plot 48 Type C FFL 2.90
Plot 49 Type A FFL 2.90

FFL 2.98
FFL 2.93
FFL 2.90
55
FFL 2.98
FFL 2.96
7
FFL 2.90
14
FFL 2.93
12
FFL 2.97
1
FFL 2.94
FFL 2.95
13
25

ST THOMAS COURT

A) Sub Station removed, POS boundary and fence moved to suit. MH 23/08/11

Revisions:

Westleigh Developments Ltd
Tudorgate
Grange Business Park
Enderby Road
Whetstone
Leicester
LE8 6EP

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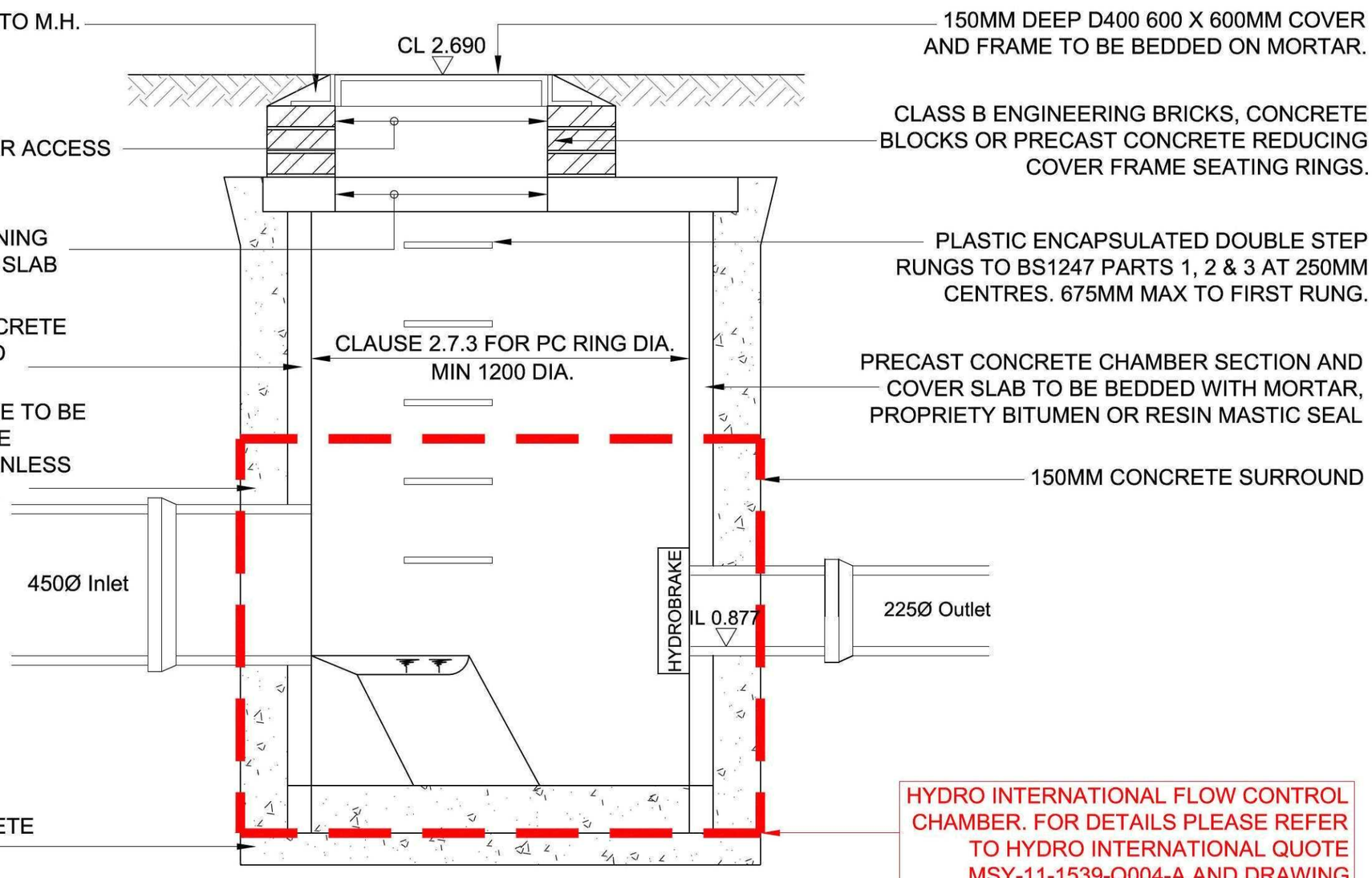
Drawing status Construction

Drawing title
POS Boundary Plan

Project title
Lime Walk
Long Sutton
Lincolnshire

Drawn	MJH	Approved	
Date	23/08/11	Drawing No	WD/157/39A
Scale	1:500		

CONTROL CHAMBER S10 DETAIL



Westleigh Developments Ltd
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Web: www.westleigh.co.uk

Drawing status	Construction
Drawing title	Control Chamber Details (MH S10)
Project title	Residential Development Lime Walk Long Sutton
Drawn	MH
Approved	
Date	10/11/11
Drawing No	WD/157/41
Scale	NTS