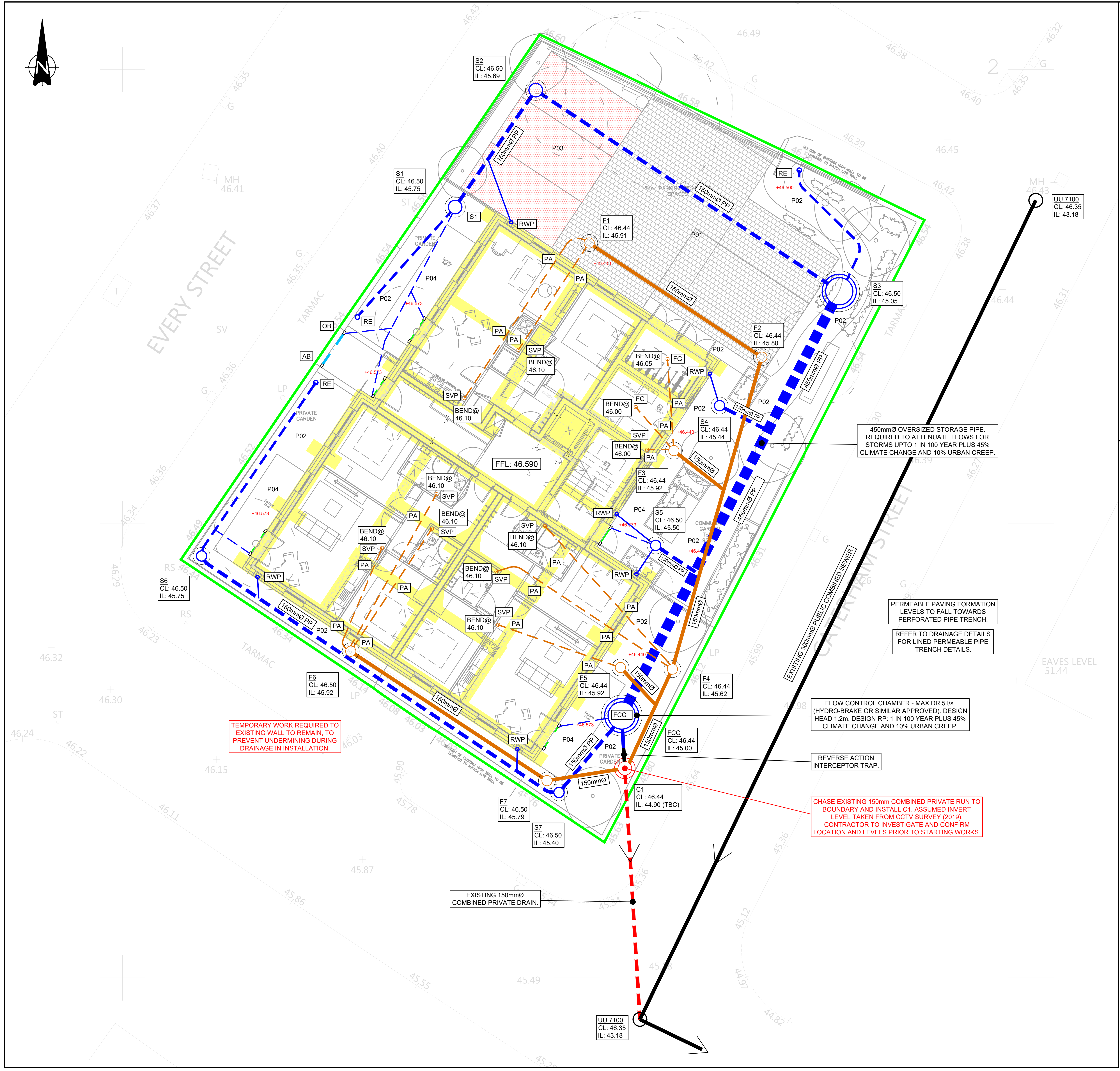


450mmØ OVERSIZED STORAGE PIPE. REQUIRED TO ATTENUATE FLOWS FOR STORMS UPTO 1 IN 100 YEAR PLUS 45% CLIMATE CHANGE AND 10% URBAN CREEP.

PERMEABLE PAVING FORMATION LEVELS TO FALL TOWARDS PERFORATED PIPE TRENCH.

REFER TO DRAINAGE DETAILS FOR LINED PERMEABLE PIPE TRENCH DETAILS.

FLOW CONTROL CHAMBER - MAX DR 5 l/s. (HYDRO-BRAKE OR SIMILAR APPROVED). DESIGN HEAD 1.2m. DESIGN RP: 1 IN 100 YEAR PLUS 45% CLIMATE CHANGE AND 10% URBAN CREEP.

REVERSE ACTION INTERCEPTOR TRAP.

CHASE EXISTING 150mm COMBINED PRIVATE RUN TO BOUNDARY AND INSTALL C1. ASSUMED INVERT LEVEL TAKEN FROM CCTV SURVEY (2019). CONTRACTOR TO INVESTIGATE AND CONFIRM LOCATION AND LEVELS PRIOR TO STARTING WORKS.

TEMPORARY WORK REQUIRED TO EXISTING WALL TO REMAIN, TO PREVENT UNDERMINING DURING DRAINAGE IN INSTALLATION.

EXISTING 150mmØ COMBINED PRIVATE DRAIN.

MANHOLE SCHEDULE

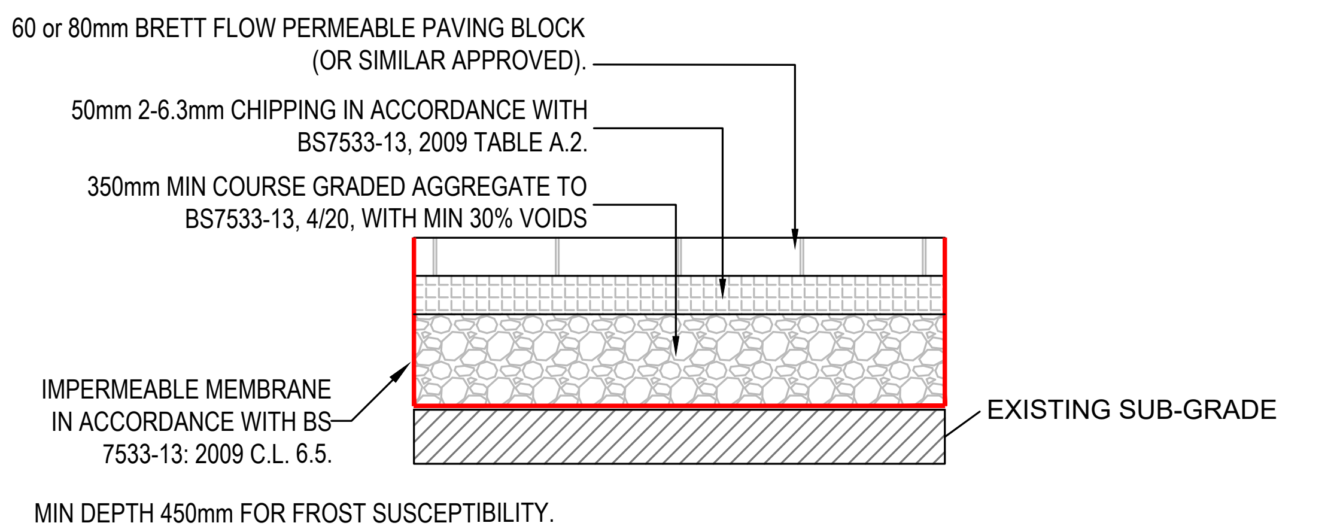
MH REF	CL (mAOD)	IL (mAOD)	DEPTH TO SOFFIT (m)	DS PIPE DIA (m)	MH DIA (mm)	MH TYPE	COVER SIZE (mm)	COVER CLASS	RECESSED	RESTRICTED ACCESS	BACK DROP	COMMENTS	EASTING	NORTHING
SURFACE WATER														
S1	46.500	45.750	0.60	0.150	600	PPIC	600X600	B125	ARCH TO CONFIRM	N	N	NON ENTRY	385754.641	398173.942
S2	46.500	45.687	0.66	0.150	600	PPIC	600X600	D400	ARCH TO CONFIRM	N	N	NON ENTRY	385758.188	398179.089
S3	46.500	45.053	1.00	0.450	1200	PCC	600X600	B125	ARCH TO CONFIRM	N	N		385771.551	398170.236
S4	46.440	45.440	0.85	0.150	450	PPIC	450X450	B125	ARCH TO CONFIRM	N	N	NON ENTRY	385766.282	398165.196
S5	46.440	45.500	0.79	0.150	450	PPIC	450X450	B125	ARCH TO CONFIRM	N	N	NON ENTRY	385763.466	398159.04
S6	46.500	45.750	0.60	0.150	450	PPIC	450X450	B125	ARCH TO CONFIRM	N	N	NON ENTRY	385743.481	398158.578
S7	46.500	45.400	0.95	0.150	450	PPIC	450X450	B125	ARCH TO CONFIRM	N	N	NON ENTRY	385759.213	398148.161
FCC	46.500	45.000	1.35	0.150	1200	PCC	600X600	B125	ARCH TO CONFIRM	N	N	FLOW CONTROL CHAMBER	385761.973	398151.547
FOUL WATER														
F1	46.440	45.910	0.38	0.15	450	PPIC	450X450	D400	ARCH TO CONFIRM	N	N	NON ENTRY	385761.428	398171.754
F2	46.440	45.800	0.49	0.15	450	PPIC	450X450	D400	ARCH TO CONFIRM	N	N	NON ENTRY	385768.146	398167.331
F3	46.440	45.920	0.37	0.15	450	PPIC	450X450	B125	ARCH TO CONFIRM	N	N	NON ENTRY	385764.273	398163.214
F4	46.440	45.620	0.67	0.15	450	PPIC	450X450	B125	ARCH TO CONFIRM	N	N	NON ENTRY	385764.208	398153.594
F5	46.440	45.920	0.37	0.15	450	PPIC	450X450	B125	ARCH TO CONFIRM	N	N	NON ENTRY	385761.921	398153.664
F6	46.500	45.920	0.43	0.15	450	PPIC	450X450	B125	ARCH TO CONFIRM	N	N	NON ENTRY	385750.043	398154.38
F7	46.500	45.790	0.56	0.15	450	PPIC	450X450	B125	ARCH TO CONFIRM	N	N	NON ENTRY	385758.686	398148.682
C1	46.440	44.900	1.39	0.15	600	PPIC	600X600	B125	ARCH TO CONFIRM	N	N	TBC ON SITE	385762.113	398149.224

NON ENTRY - REDUCER CAP REQUIRED AND FITTED TO SHAFT, PPIC - POLYPROPYLENE INSPECTION CHAMBER, CP - CATCH PIT TYPE, PCC - PRECAST CONCRETE.

KEY:

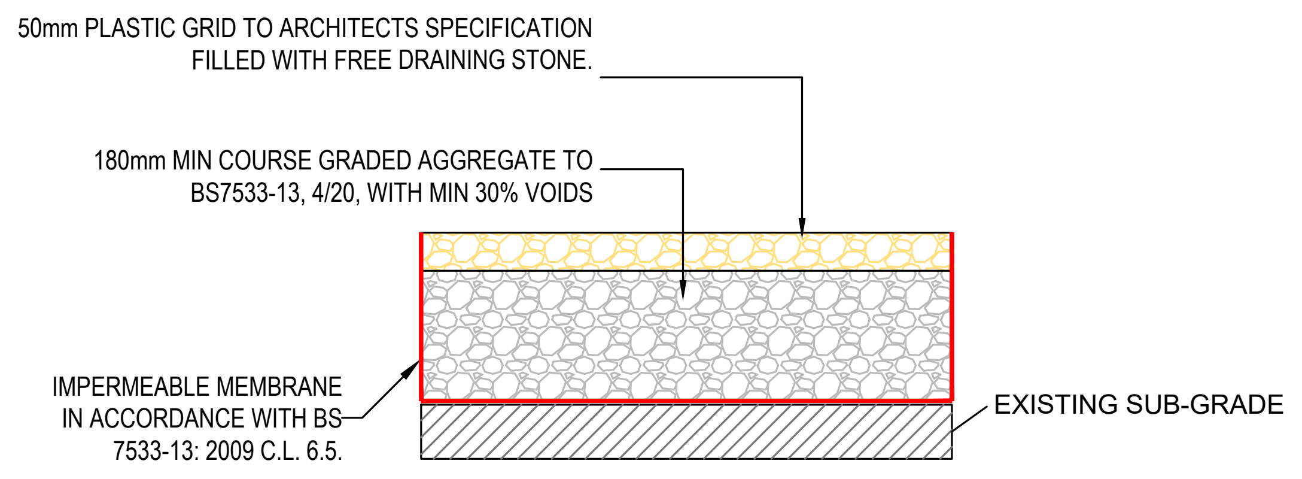
DEVELOPMENT BOUNDARY	🟩
EXISTING PUBLIC COMBINED SEWER	▬
EXISTING PRIVATE COMBINED DRAIN	╍
PROPOSED SURFACE WATER DRAINAGE. 100mm (UNO) PERFORATED PIPE.	╍
PROPOSED FOUL WATER DRAINAGE 150mm UNO	▬
PROPOSED LINED PERMEABLE PAVING	P01
PROPOSED LINED PERMEABLE GRAVEL (FOOTWAY ONLY)	P02
PROPOSED LINED PERMEABLE GRAVEL (CAR PARK)	P03
PROPOSED PAVING	P04
FOUNDATIONS	🟨
PROPOSED RAIN WATER PIPE AND 100mm CONNECTION. UNO.	RWP
PROPOSED SOIL VENT PIPE AND 100mm CONNECTION. UNO.	SVP
PROPOSED WASH DOWN GULLY AND 100mm CONNECTION.	FG
PROPOSED RODDING EYE.	RE
PROPOSED 100mm GATIC SLOT DRAIN. ACCESS AND OUTLET BOXES TO EACH END. OUTLET SIZE 100mm.	╍
PROPOSED 75mm GATIC FACADE SLOT AT THRESHOLD. ACCESS AND OUTLET BOXES TO EACH END.OUTLET SIZE 100mm.	╍
PASS ABOVE FOUNDATION.	PA

REFER TO ARCHITECTS LANDSCAPE PROPOSALS FOR LOCATIONS OF P01-P04.

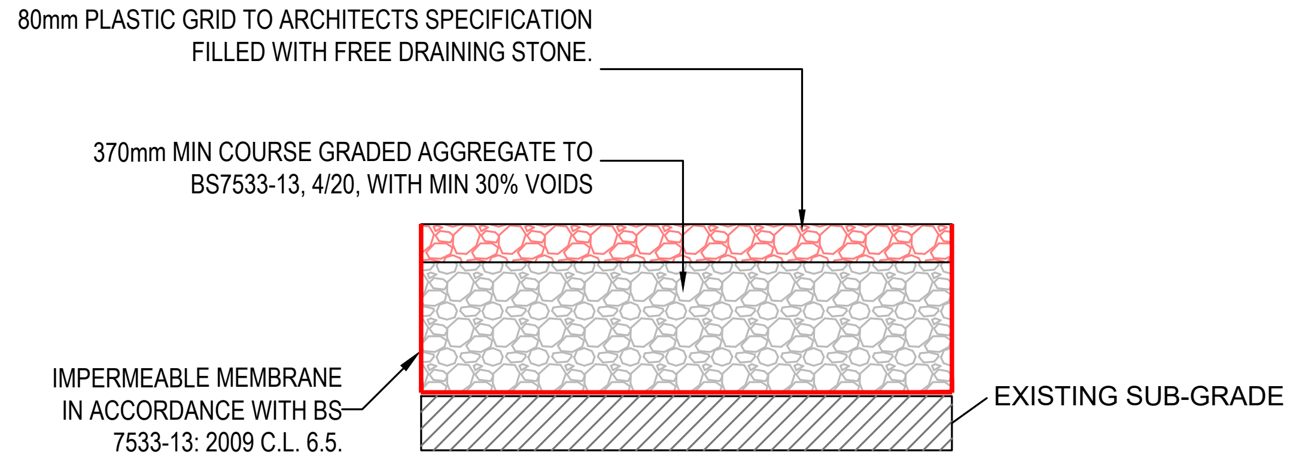

60 or 80mm BRETT FLOW PERMEABLE PAVING BLOCK (OR SIMILAR APPROVED).
50mm 2-6.3mm CHIPPING IN ACCORDANCE WITH BS7533-13, 2009 TABLE A.2.
350mm MIN COURSE GRADED AGGREGATE TO BS7533-13, 4/20, WITH MIN 30% VOIDS
IMPERMEABLE MEMBRANE IN ACCORDANCE WITH BS 7533-13: 2009 C.L. 6.5.
EXISTING SUB-GRADE

MIN DEPTH 450mm FOR FROST SUSCEPTIBILITY.

P01 - PERMEABLE PAVING CAR PARK

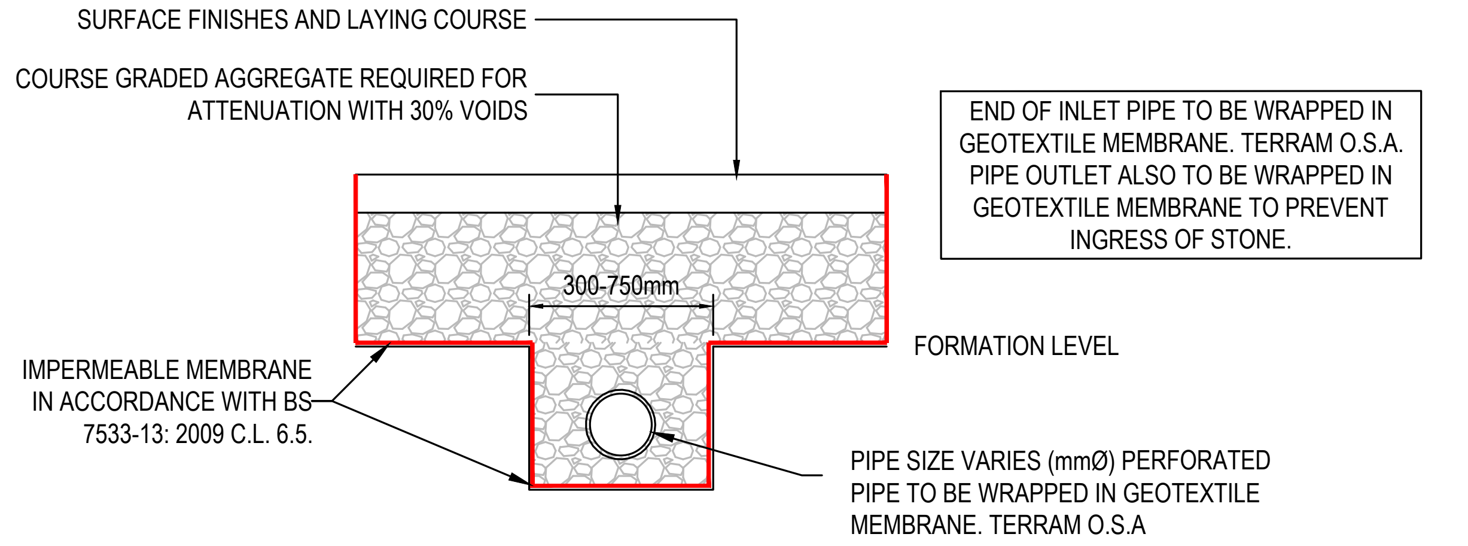

50mm PLASTIC GRID TO ARCHITECTS SPECIFICATION FILLED WITH FREE DRAINING STONE.
180mm MIN COURSE GRADED AGGREGATE TO BS7533-13, 4/20, WITH MIN 30% VOIDS
IMPERMEABLE MEMBRANE IN ACCORDANCE WITH BS 7533-13: 2009 C.L. 6.5.
EXISTING SUB-GRADE

P02 - PERMEABLE GRAVEL PEDESTRIAN ONLY


80mm PLASTIC GRID TO ARCHITECTS SPECIFICATION FILLED WITH FREE DRAINING STONE.
370mm MIN COURSE GRADED AGGREGATE TO BS7533-13, 4/20, WITH MIN 30% VOIDS
IMPERMEABLE MEMBRANE IN ACCORDANCE WITH BS 7533-13: 2009 C.L. 6.5.
EXISTING SUB-GRADE

MIN DEPTH 450mm FOR FROST SUSCEPTIBILITY.

P03 - PERMEABLE GRAVEL CAR PARK


SURFACE FINISHES AND LAYING COURSE
COURSE GRADED AGGREGATE REQUIRED FOR ATTENUATION WITH 30% VOIDS
300-750mm
FORMATION LEVEL
IMPERMEABLE MEMBRANE IN ACCORDANCE WITH BS 7533-13: 2009 C.L. 6.5.
PIPE SIZE VARIES (mmØ) PERFORATED PIPE TO BE WRAPPED IN GEOTEXTILE MEMBRANE. TERRAM O.S.A

END OF INLET PIPE TO BE WRAPPED IN GEOTEXTILE MEMBRANE. TERRAM O.S.A. PIPE OUTLET ALSO TO BE WRAPPED IN GEOTEXTILE MEMBRANE TO PREVENT INGRESS OF STONE.

LINED PIPE TRENCH DETAIL BELOW PERMEABLE SURFACING

TRENCH WIDTH (MIN)
100mmØ PIPE = 300mm
150mmØ PIPE = 450mm
450mmØ PIPE = 750mm

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. ALL ADOPTABLE DRAINAGE WORKS INCLUDING WORKS TO EXISTING PUBLIC SEWERS TO BE UNDERTAKEN IN ACCORDANCE WITH "SEWERS FOR ADOPTION 7th EDITION" AND "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION" AND CONSTRUCTED TO THE RELEVANT STATUTORY UNDERTAKERS DETAILS.
3. ALL PRIVATE DRAINAGE WORKS TO BE IN ACCORDANCE WITH "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION", BS EN 752 2017 'DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS' AND THE BUILDING REGULATIONS APPROVED 'DOCUMENT H'.
4. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
5. DESIGN BASED ON TOPOGRAPHICAL SURVEY AND INFORMATION AVAILABLE AT THE TIME OF THE DESIGN.
6. OUTFALL CONNECTION(S) SUBJECT TO AGREEMENT WITH THE APPROVING AUTHORITY.
7. ALL DIMENSIONS ARE IN METRES AND LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS OTHERWISE NOTED.
8. COVER LEVELS, GULLY POSITIONS, AND BUILDINGS LOCATION ARE APPROXIMATE AND SHALL BE CONFIRMED BY ARCHITECT. CONTRACTOR TO ALLOW FOR ADJUSTMENT TO SUIT AGREED POSITIONS AND FINISHED LEVELS, AND CONFIRM ALL COVER LEVELS ON SITE.
9. ALL BELOW SLAB DRAINAGE CONNECTIONS SHOWN TO THE PENETRATION POSITIONS ARE INDICATIVE ONLY. REFER TO DIMENSIONED LOCATIONS AND DIAMETERS ON ARCHITECT'S GROUND FLOOR SETTING-OUT PLANS.
10. ALL UNDERGROUND FOUL DRAINAGE SHOULD BE SUITABLY VENTED AT OR NEAR TO THE HEAD OF RUNS.
11. ALL ACCESS FITTINGS, STACKS, RWP'S AND GULLIES TO BE RODDABLE. ALL TO HAVE LOW LEVEL RODDING ACCESS PLATES UNLESS AN ALTERNATIVE MEANS OF ACCESS IS AGREED. ACCESS POINT TO BE ABOVE ANY GROUND FLOOR CONNECTED APPLIANCE SPILL LEVEL.
12. LARGE ACCESS FITTING REQUIRED ABOVE GROUND WHERE GREATER THAN 12m UP TO 22m TO A JUNCTION. SMALL ACCESS FITTING REQUIRED UP TO 12m TO A JUNCTION.
13. ALL GULLY AND CHANNEL DRAIN OUTLETS AND TERMINATION POINTS TO BE TRAPPED AND RODDABLE. INTERNAL GULLIES AND CHANNEL DRAINS TO BE SPECIFIED BY OTHERS.
14. WHERE NO WC'S ARE CONNECTED UPSTREAM, UNDERSLAB FW DRAINAGE TO BE LAID AT 1:40 MIN. AFTER THE CONNECTION OF AT LEAST 1NO WC, A MIN. FALL OF 1:80 APPLIES.
15. ALL CONNECTIONS FROM POP-UPS TO BE LAID AT A CONSTANT GRADIENT TO JUNCTION/ INSPECTION CHAMBER/ MANHOLE UNLESS NOTED OTHERWISE. ANY ISSUES RELATING TO CLASHES WITH FOUNDATIONS ARE TO BE FORWARDED TO THE ENGINEER, ALLOWING SUFFICIENT TIME FOR AN ALTERNATIVE SOLUTION TO BE PROPOSED.
16. INVERT LEVELS AT MANHOLES/ INSPECTION CHAMBERS TO BE USED TO SET OUT PIPEWORK. PIPE GRADIENTS ARE SHOWN INDICATIVELY ONLY.
17. ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.
18. ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE:
    - 100mm to 300mm DIA TO BE VITRIFIED CLAY.
    - 375mm DIA AND GREATER TO BE CLASS 120 CONCRETE PIPES.
19. AS AN ALTERNATIVE THE CONTRACTOR MAY USE AN APPROVED UNPLASTICISED POLYVINYL CHLORIDE (PVCU) WITH APPROVAL FROM THE ENGINEER.
20. SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
21. THE FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.
22. ALL NEW CONNECTIONS INTO EXISTING MANHOLES (OR INTO EXISTING SEWERS) TO BE 'SOFFITS LEVEL' UNLESS OTHERWISE NOTED.
23. ALL PRIVATE DRAINAGE PIPES WITH A COVER OF LESS THAN 600mm IN NON-TRAFFICKED AREAS AND LESS THAN 1200mm IN TRAFFICKED AREAS TO BE BEDDED AND SURROUNDED IN CONCRETE (CLASS Z). COMPRESSIBLE MATERIAL SHALL BE PROVIDED AT EVERY PIPE JOINT. WHERE COVER EXCEEDS THIS DEPTH, PIPES ARE TYPICALLY BEDDED AND SURROUNDED IN CLASS S. REFER TO PIPE EMBEDMENT DETAILS DRAWING FOR SPECIFIC TYPES.
24. WHERE DRAINAGE PIPES ARE LESS THAN 300mm BELOW THE UNDERSIDE OF THE GROUND FLOOR SLAB, CONCRETE ENCASEMENT IS REQUIRED (CLASS Z). COMPRESSIBLE JOINTS ARE TO BE PROVIDED AT EVERY PIPE JOINT WITHIN THE CONCRETE.
25. WHERE PIPES ARE MORE THAN 300mm BELOW THE UNDERSIDE OF THE SLAB, CLASS S BEDDING IS ACCEPTABLE.
26. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.
27. WHERE FOUL SEWERS RUN ABOVE SURFACE SEWERS, CONCRETE PROTECTION MAY BE REQUIRED AT CROSSOVERS TO PREVENT ANY POTENTIAL CONTAMINATION.
28. ALL CONNECTIONS PASSING THROUGH BASES OR EDGE BEAMS TO BE IN SEALED SLEEVES. ALTERNATIVELY CONNECTIONS MAY BE CAST-IN WITH FLEXIBLE JOINTS NOT GREATER THAN 150mm FROM FACE OF CONCRETE.
29. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION MAY NEED TO BE INCREASED TO ACCOMMODATE THE CONNECTIONS AND BENDS.
30. ALL MANHOLE COVERS IN BLOCK/SLAB AND EXTERNAL PAVING AREAS TO HAVE RECESSED COVERS OF THE APPROPRIATE GRADE TO ACCEPT ARCHITECT'S PAVING PROPOSAL. ARCHITECT TO CONFIRM.
31. UNLESS NOTED OTHERWISE IN THE MANHOLE SCHEDULE, ALL MANHOLE, GULLY AND CHANNEL COVERS (IRONWORK) SHOULD BE THE FOLLOWING SPECIFICATION:
    - B125 LOAD CLASS IN PEDESTRIAN AREAS
    - D400 LOAD CLASS IN VEHICULAR AREAS.
33. ALL PROPRIETARY PRODUCTS TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.
34. CONNECTIONS OUT OF LINEAR DRAINS TO MATCH SIZE OF CHANNEL or minimum 100mm.
35. 100mm CONNECTION SIZE TO POP UPS SUBJECT TO CHANGE FOLLOWING RECEIPT OF ABOVE GROUND DRAINAGE DESIGN. MEP AND ARCHITECT TO CONFIRM.

DRAWINGS BASED ON THE FOLLOWING INFORMATION

- TOPOGRAPHICAL SURVEY - 100816JC-01
- UNITED UTILITIES SEWER RECORDS
- CCTV SURVEY - 11.11.2019 BY GUNN
- SITE LAYOUT - A695_T_101D-PROPOSED EXTERNAL WORKS PLAN
- BUILDING GF LAYOUT - A695_T_110D_PROPOSED GROUND FLOOR PLAN
- FOUNDATIONS - 1-21590-CCL-ZZ-ZZ-M3-S-001
- MEP INFO - AWAITING

DRAINAGE DESIGN SUBJECT TO APPROVAL FROM THE LEAD LOCAL FLOOD AUTHORITY AND UNITED UTILITIES.

Rev	Date	Description	By	Check	App.
C02	29.06.23	CONSTRUCTION ISSUE	CD	SW	DS
C01	09.06.23	PRELIMINARY CONSTRUCTION	CD	SW	DS
P01	24.04.23	PRELIMINARY	CD	DS	DS

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Client
MCCAUL DEVELOPMENTS

Project
EVERY STREET,
RESIDENTIAL DEVELOPMENT.

Office
ALTRINCHAM

Discipline
CIVILS

Title
DRAINAGE LAYOUT

Scale @ A1 1:100
Status STAGE 5

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Job Number	Originator	Building/Zone	Level
1-21590	CCL	XX	XX
Type	**Discipline**	**Drawing No.**	**Revision**
DR	C	500	C02

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