



DETAIL - 1
DRAINASPHALT FULL CONSTRUCTION (MAIN ACCESS)

DETAIL - 2
DRAINASPHALT SURFACE FULL CONSTRUCTION (PARKING BAYS)

Private Drainage Key

- Foul Inspection Chamber (Depth <0.6m [1 side connection])
- Foul Inspection Chamber (Depth <1.2m [2 side connections])
- Foul BR manhole PCC Ring (1.2-1.5m)
- Foul BR manhole PCC Ring (1.50-2.7m)
- Storm Inspection Chamber (Depth <0.6m [1 side connection])
- Storm Inspection Chamber (Depth <1.2m [2 side connections])
- Storm BR manhole PCC Ring (1.2-1.5m)
- Storm BR manhole PCC Ring (1.50-2.7m)
- Backdrop on SW Chamber
- Backdrop on FW Chamber
- Rodding eye with Invert Level
- Dished drainage channel with gully
- ACO channel or similar approved with gully and rodding point
- Filter Drain / French drain
- Private Gully
- Road Gully
- Floor Level
- Low Point
- High Point
- Bullnose dropped kerb

Adoptable Sewer Key

- Foul sewer with pipe dia. & gradient incl. adoptable FVWMH with reference & Invert.
- Storm sewer with pipe dia. & gradient incl. adoptable SWMH with reference & Invert.

Surface Water Attenuation

- Wavin "Aquacell" Storm Water Management System Cellular storage tanks suitable for vehicular loading (where applicable) with 95% voids wrapped in a permeable geo-membrane
- Permeable Block Paving See Detail 1 - Drainasphalt Full Construction (Main Access)
- Permeable Block Paving See Detail 2 - Drainasphalt Surface Full Construction (Parking Bays)

North Arrow

NOTES

- The contractor shall check all tie-ins for line and level with existing before commencing any works. The Engineer shall be notified immediately, in writing, should any errors be found.
- Any discrepancies, of whatever nature, must be reported to the Engineer prior to the commencement or continuance of any further works.
- All private drainage works to be in accordance with the requirements of Building Regulations 2010, Part H, "Drainage and waste disposal", (01st October 2015).
- All pipes to be bedded and backfilled in accordance with Part H, Diagram 10. Shallow pipes shall be protected in accordance with Part H, Diagram 11.
- Unless otherwise stated, all private drainage to be 100mm diameter. Gradients have been shown where there are pipe capacity issues and these should be regarded as minimums. Unless there are constraints dictating otherwise, gradients shall generally be 1 in 60. 100mm diameter pipes shall not be laid flatter than 1 in 60, 150mm diameter pipes shall not be laid flatter than 1 in 150.
- All pipes, chambers and fittings to be installed strictly in accordance with the manufacturers instructions.
- Pipes which run adjacent to buildings shall be installed in strict accordance with Part H, Clauses 2.2.3 to 2.2.5 and Diagram 8.
- All private manholes, inspection chambers and drainage channels to comply with BS EN124: Cover strengths to be:
 - Class D400 in heavily trafficked areas (access roads, service yards etc.)
 - Class C250 in lightly trafficked areas (car parks, driveways etc.)
 - Class B125 in Non trafficked areas
 - Class A15 in landscaping areas
- All drains in the vicinity of existing or proposed trees to be constructed in accordance with the requirements of BS EN124: Part 3.
- Private drainage frames must be tied to manhole risers by use of manufacturers ties (e.g. Polypipe ref. FRK500 fixing kit and FRK501 black ties). The ground works contractor will be held fully responsible for any accidents due to incorrect fitting or failure to use the correct manufacturers fixing equipment.
- All existing land drains encountered on site during construction to be re-connected.
- Should any departure from the slab level be considered, agreement shall be sought from the Engineer immediately and prior to commencement or continuance of any works, and should take full account of all restrictions to the slab level.
- Garage slabs relate to the finished level of the concrete at the front entrance of the garage.
- Where a drive slopes towards a garage there is to be a 75mm ramp up to the garage slab.
- Maximum gradients of gardens to be 1 in 6 (unless stated otherwise), except for designed banking works.
- All dimensions in metres unless otherwise stated.
- As underlying ground conditions may be variable across the site the Contractor shall undertake onsite percolation tests at the location and depth of each soakaway. Tests should be undertaken in accordance with BS5635 and results forwarded to the Engineer to allow verification of design.
- All existing services, sewers and drains indicated on this drawing and any other related drawings are shown only indicatively, and shall have their positions and level confirmed on site by the Contractor.
- The invert levels of all existing sewers, drains, ditches, tanks or other features and apparatus where a new connection is to be made shall have their precise position and level confirmed on site by the Contractor prior to commencement of any construction work. The results of the investigations shall be confirmed to MTC Engineering (Cambridge) Ltd so that the design can be verified.

STORM WATER

- All run-off from domestic roofs shall drain via a series of surface drainage systems with each outlet to cellular soakaways. The soakaways and drainage systems are to remain private and have been designed to accommodate all storms up to and including the 100yr + 40% event.
- All private driveways and shared accesses shall drain via permeable paving. The paving shall be designed based on CBR results and to accommodate the required loading.

FOUL WATER DRAINAGE

- Domestic foul sewerage from all properties shall drain via a private gravity foul water drainage system which shall discharge to the existing public foul sewer at new Type B manhole chamber F4. Connection will be subject to a S108 Connection Agreement with the Water Authority.

SOAKAWAY PROTECTION:
Please ensure that during the construction phase all soakaways, gullies and gully laterals are protected from the ingress of silt or grit from the site. Placing a fine heavy duty geotextile under the gully grating, between it and the frame should suffice.

NOTE:
At the location of the proposed lateral connection the contractor shall establish the position and depth of any existing services to prevent any clash in level and abortive costs.

IC NO	IC TYPE	X-ORD	Y-ORD	INVERT	CL
SIC 1	SI6	524461.99	310812.654	1.555	1.905
SIC 2	SI9	524454.849	310808.007	1.981	2.67
SIC 3	SI9	524484.825	310797.416	1.813	2.67
SIC 4	SI6	524443.164	310807.189	1.84	1.99
SIC 5	SI9	524451.227	310804.956	1.779	2.67
SIC 6	SI9	524454.195	310789.255	2.046	2.67
SIC 7	SI9	524442.195	310799.994	1.761	2.67
SIC 8	SI9	524461.559	310793.546	1.925	2.67
SIC 9	SI9	524472.065	310785.688	1.75	2.67
SIC 10	SI9	524478.67	310781.233	1.814	2.5
SIC 11	SI9	524480.419	310771.895	1.614	2.35
SIC 12	SI9	524477.342	310767.417	1.705	2.67
SIC 13	SI9	524465.412	310765.172	1.907	2.67
SIC 14	SI9	524460.51	310761.536	1.7	2.67
SIC 15	SI9	524462.332	310752.174	1.541	2.67
SIC 16	SI9	524458.847	310747.006	1.437	2.2
SIC 17	SI9	524452.383	310745.747	1.425	2.2
SIC 18	SI9	524449.708	310759.408	1.657	2.67
SIC 19	SI9	524475.279	310759.349	2	2.67
SIC 20	SI9	524485.45	310761.326	1.827	2.67
SIC 21	SI9	524487.461	310750.978	1.652	2.67
SIC 22	SI9	524483.934	310745.749	1.548	2.35
SIC 23	SI9	524444.332	310789.302	1.948	2.67
SIC 24	SI9	524465.145	310795.995	0	2.67
SIC 25	SI9	524457.105	310795.897	1.944	2.67

IC NO	IC TYPE	X-ORD	Y-ORD	INVERT	CL
FIC 1	FI9	524447.736	310766.284	1.35	2.225
FIC 2	FI9	524455.747	310779.968	1.598	2.25
FIC 3	FI9	524456.791	310790.208	1.727	2.35
FIC 4	FI9	524465.765	310796.738	1.912	2.67
FIC 5	FI9	524471.316	310796.005	2.007	2.67
FIC 6	FI9	524464.749	310802.221	2.005	2.67
FIC 7	FI9	524462.513	310797.857	1.907	2.67
FIC 8	FI9	524454.07	310804.787	1.974	2.67
FIC 9	FI9	524452.567	310796.624	1.855	2.67
FIC 10	FI9	524444.049	310787.636	1.833	2.67
FIC 11	FI9	524442.705	310794.749	1.95	2.67
FIC 12	FI9	524461.305	310780.995	1.692	2.67
FIC 13	FI9	524462.488	310774.614	1.801	2.67
FIC 14	FI9	524473.413	310776.639	1.986	2.67
FIC 15	FI9	524458.475	310765.922	1.579	2.67
FIC 16	FI9	524463.269	310763.752	1.666	2.67
FIC 17	FI9	524474.811	310753.874	1.919	2.67
FIC 18	FI9	524469.245	310764.841	1.767	2.67
FIC 19	FI9	524475.664	310766.078	1.876	2.67
FIC 20	FI9	524474.492	310772.198	1.98	2.67
FIC 21	FI9	524462.34	310754.747	1.817	2.67
FIC 22	FI9	524458.784	310763.248	1.622	2.67
FIC 23	FI9	524472.999	310778.874	2.024	2.67

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TITLE
PHASE 3, SUNRISE GARDENS
CROWLAND
PROPOSED DRAINAGE LAYOUT

ORIG	DATE
J.T.C	NOVEMBER 2018

CHKD	SCALE
	1/200 @ A1

APPR	DRAWING NO
	2277-02

REV C

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