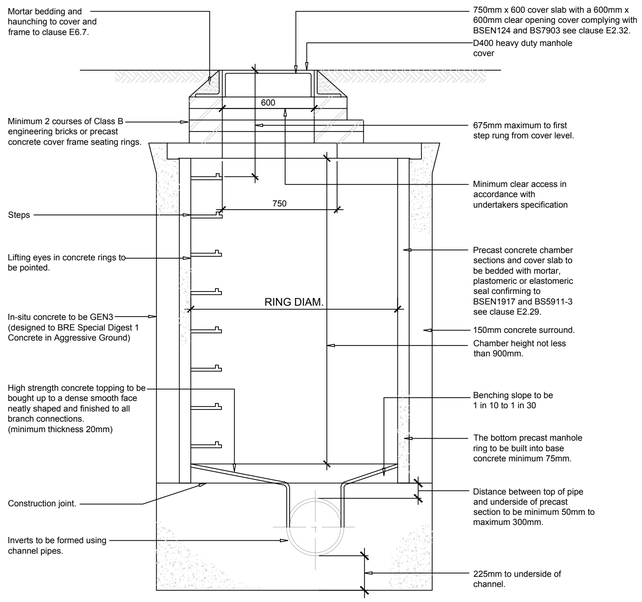
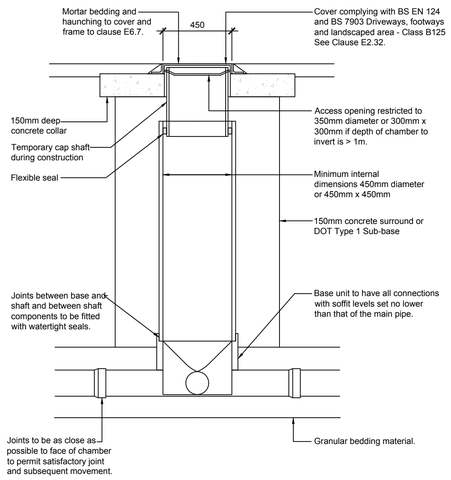


Section

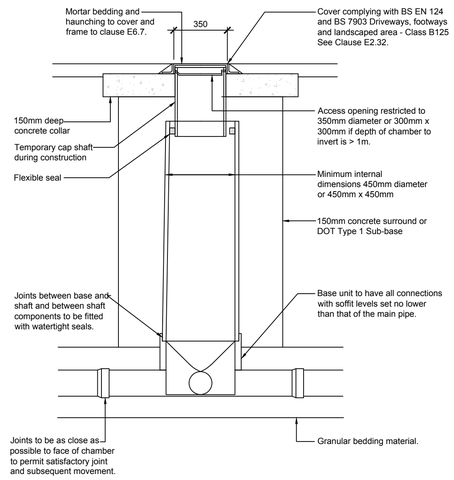
Note: Plastic chambers and rings shall comply with BS EN 13598-1 and BS EN 13598-2 or have equivalent independent approval.



Inspection chamber for Light Vehicle loading and Landscaped Areas / Demarcation chamber for Cover Level to Invert Level less than 1200mm.

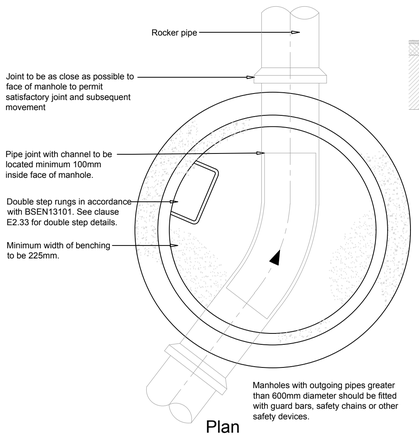
Scale 1:20

Note: Plastic chambers and rings shall comply with BS EN 13598-1 and BS EN 13598-2 or have equivalent independent approval.



Inspection chamber for Light Vehicle loading and Landscaped Areas / Demarcation chamber for Cover Level to Invert Level greater than 1200mm.

Scale 1:20

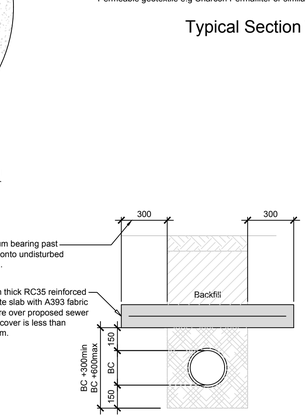


Plan

Diameter of Largest Pipe in Manhole (mm)	Internal Diameter of Manhole (mm)
LESS THAN 375	1200
375 - 700	1500
750 - 900	1800
900 - 1350	2100

Manhole Type B
(In accordance with Sewers For Adoption 6th edition)

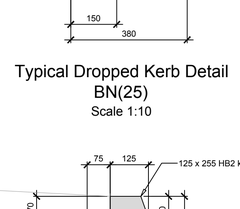
Scale 1:20



Car Park Bay Specification
80mm Permeable Paving Blockwork. Colour TBC laid in herringbone pattern
50mm Laying Course 2/6.3mm clean crushed stone (no fines) to BS EN 13242:2002.
70mm 28mm size dense basecourse in accordance with clause 4.7, table 3&4 of BS4987:2001 punctured/cored at 750mm centres (75mmØ holes)
Permeable geotextile e.g Charcon Permafilter or similar approved.
650mm minimum coarse graded aggregate type 4/20 to BS EN 13242:2002 for a soaked CBR greater than 5%. (For a soaked CBR value lower than 5% add the following thicknesses:- 4% 100mm, 3% 125mm, 2% 175mm and 1% 300mm)
Permeable geotextile e.g Charcon Permafilter or similar approved.

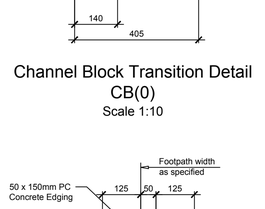
Typical Section Through Permeable Driveway

Scale 1:20



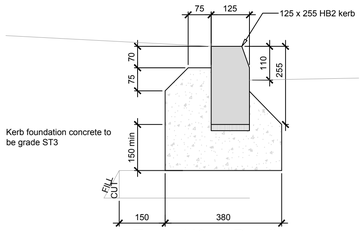
Typical Dropped Kerb Detail
BN(25)

Scale 1:10



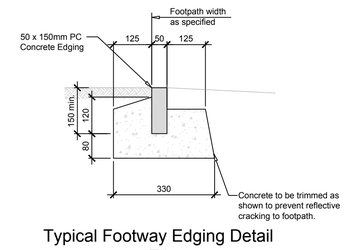
Channel Block Transition Detail
CB(0)

Scale 1:10



Typical Kerb Detail
HB2

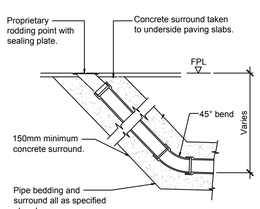
Scale 1:10



Typical Footway Edging Detail
E1

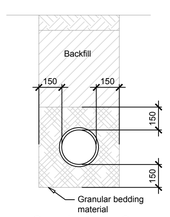
Scale 1:10

Concrete Protection Slab



Rodding Point

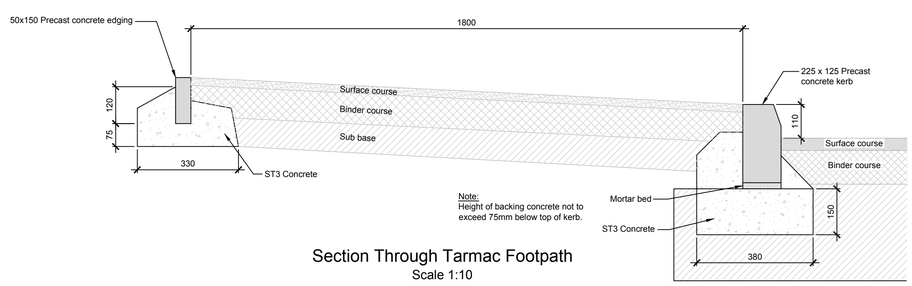
Scale 1:20



Granular Class S

Pipe Bedding Details

Scale 1:20



Note:
Height of backing concrete not to exceed 75mm below top of kerb.

Section Through Tarmac Footpath

Scale 1:10

DRAINAGE NOTES

The base specification for all adoptable drainage works shall be the Water Authorities Association 'Sewers for Adoption' (6th edition). For private (non-adoptable) drainage works, the base specification shall be Part H of the Building Regulations.

This drawing is to be read in conjunction with all other relevant engineers and architects details.

The following pipe strengths shall be adopted unless otherwise noted:-

- pipes upto and including 150mm diameter to be upvc to bsen1401 (plastic inspection chambers to bs7158) or clayware to bsen295 (28kN/m crushing strength).
- pipes 225mm diameter to be class 160 clayware to bsen295.
- pipes 300mm diameter to be class 160 clayware to bsen295 or class C120 concrete to bs5911.
- pipes above 300mm diameter to be class C120 concrete to bs5911.

Plastic pipes conforming to the Water Industry Specification WIS 4-35-01 may be used as an alternative, subject to the approval of Anglian Water and confirmation of contaminated land assessment.

All pipe runs to be laid with flexible joints.

All pipes entering and exiting manholes are to be connected with pipe soffits level unless otherwise noted.

Bedding and surround to be as per the following table:-

Location	Cover to Soffit	Bedding
Domestic gardens and pathways without any possibility of vehicular access.	>0.35m <0.35m	Class S Granular Bed and Surround Concrete Protection Slab
Domestic driveways, parking areas and yards with height restrictions to prevent any vehicle with gross weight in excess of 7.5 tonnes.	>0.5m <0.5m	Class S Granular Bed and Surround Concrete Protection Slab
Domestic driveways, parking areas and narrow streets without footways with limited access for vehicles with a gross weight in excess of 7.5 tonnes.	>0.9m <0.9m	Class S Granular Bed and Surround Concrete Protection Slab
Agricultural land and public open space.	>0.9m <0.9m	Class S Granular Bed and Surround Concrete Protection Slab
All other highways and parking area with unrestricted access to vehicles with a gross vehicle weight in excess of 7.5 tonnes.	>1.2m <1.2m	Class S Granular Bed and Surround Concrete Protection Slab

The following concrete mixes are to be used (in accordance with bs8500)

Standard mix reference	Applications
ST1 (C7.5)	fillings, bindings, soft spots and drainage sumps.
ST4 (C20)	all other applications

For ST4 mix, sulphate resisting portland cement shall be used in accordance with sulphate class within the recommendations of the site investigation report.

All precast concrete products (ie pipes, manholes rings etc.) shall comply with BS EN 1916 (pipes, fittings,etc) are BS EN 1917 (manhole, inspection chambers, etc...) and shall be of suitable concrete mix to cater for sulphate class DC1.

Pre-formed channels are to be used in manholes where applicable.

Granolithic 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.

All connections to be turned in direction of flow using pipe bends.

Manhole covers and frames to be ductile iron group 4 class D400 double triangular to BS EN124 in vehicular trafficked areas.
Manhole covers and frames to be ductile iron group 2 class B125 circular or rectangular to BS EN 124 in areas of driveways, public open space, paved areas and landscaping.

Drainage channel gratings shall be ductile iron group 4 class D400 to BS EN 124.

First flexible joint in pipes adjacent to a manhole shall be a maximum of 600mm from inside face of manhole, connecting to rocker pipe. The length of rocker pipe is as follows:-

Pipe diameter	Length of rocker pipe
150mm - 600mm	600mm
675mm - 750mm	1000mm
825mm and over	1250mm

Manholes with outgoing pipes greater than 600mm diameter shall be fitted with guard bars, safety chains or other safety devices.

The principal contractor shall be responsible for checking the existing line and invert levels of any connection points for both the foul and surface water systems, prior to undertaking installation of any new drainage works. Any deviation to the levels and positions indicated on the drawing should be brought to the immediate attention of the project engineer.

All inverts specified are outgoing (except backdrop)

Road gully connections to be 150mm dia. laid at a minimum gradient of 1:150 unless noted otherwise.

RWP connections to be 100mm dia. laid at minimum gradient of 1:80 unless noted otherwise.

All foul connections to be 100mm dia. laid at a minimum gradient of 1:40 unless noted otherwise.

All connections to be made by purpose made junctions as far as practicable.

All bypass separators and other proprietary tanks, attenuation etc are to be installed strictly in accordance with manufacturers recommendations. Where located within trafficked areas a 300mm thick concrete cover slab mix RC35 reinforced with 2 layers A393 mesh shall be constructed over the buried tanks if required by the manufacturer.

All drains to be tested prior to backfilling, after backfilling and upon completion of hard landscaping. In addition all drains to be inspected by CCTV methods prior to hard landscaping where required by the specification.

All drainage works within the zone of influence of trees are to be constructed in accordance with the NHBC standards.

ASSOCIATED DRAWINGS

No.	TITLE

NOTES

GENERAL NOTES

Do not scale this drawing. If in any doubt ask.
This drawing is to be read in conjunction with all relevant engineers and specialists drawings and specifications.
All setting out is to be checked on site prior to any works commencing. Any discrepancies are to be reported to millward immediately.
All dimensions are shown in millimetres unless otherwise noted.
All levels are shown in metres unless otherwise noted.

REV	DATE	BY	DETAILS	CHK'D

AMENDMENTS

CLIENT

LarkfleetHomes

PROJECT

Proposed Development
Shivean Gate, Moulton
Spalding, PE12 6PL

TITLE

CONSTRUCTION DETAILS

DRAWING No:	DRAWING STATUS
MA10453 / 201	PRELIMINARY

SCALE	DRAWN	ENGINEER
1:20 @A1	J Harrison	J McKellar
DATE	CHECKED	APPROVED BY
April 2017	J McKellar	J McKellar

millward
t: 0115 941 4560
no.1 malin hill, nottingham ng1 1jq
e: info@millward.co.uk w: www.millward.co.uk

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