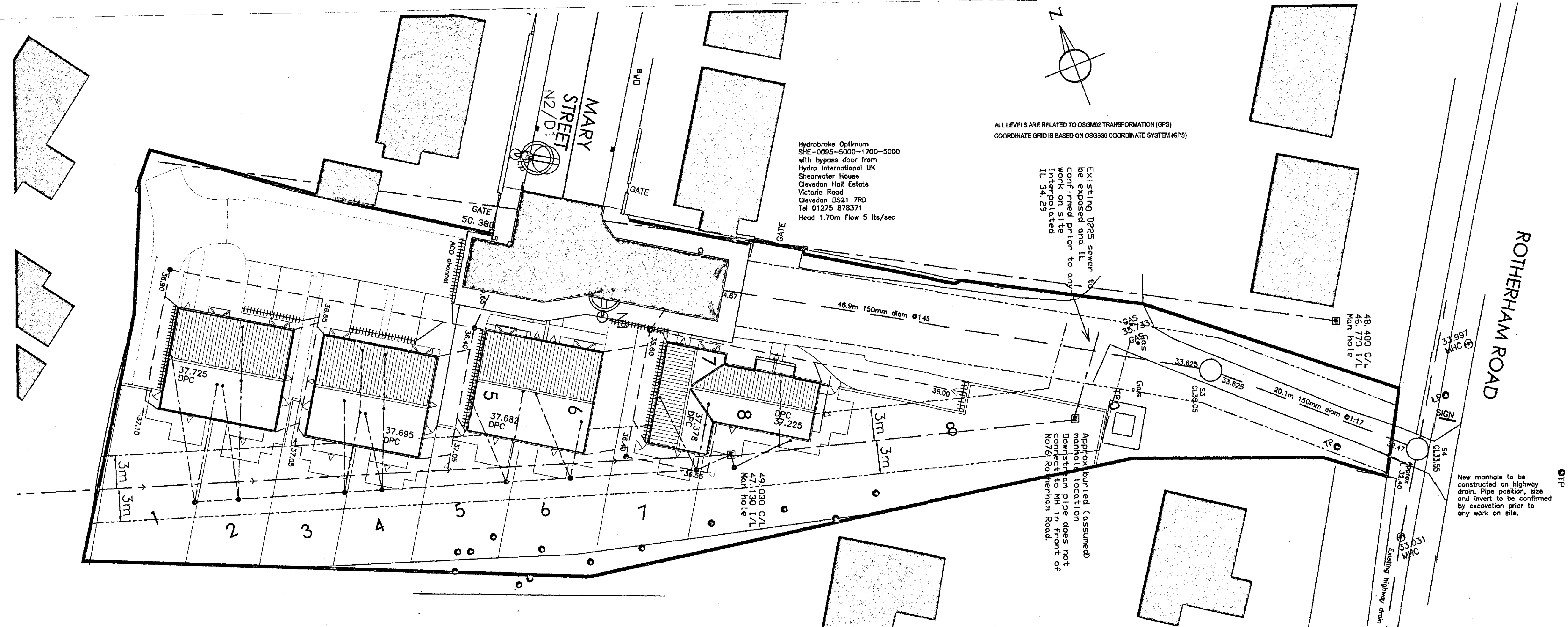




Manhole construction - refer to CPA technical bulletin Sept 2001 outlining changes to relevant British Product Standards BS5911-200:1994. All precast concrete products are to be kitemarked or they will be rejected as part of an adoptable system. Manhole cover slabs to BS5911. Manhole covers to have a clear opening of 800 x 600mm and shall be class D400 to BS5911 with 150mm deep frames. Filled ground must be filled and consolidated under the supervision of YW before any sewer works are carried out. All adoptable sewers to be BSI kitemarked, (certified to WS-4-35-01).

Plastic channels are not acceptable. All custom built ironwork to be hot dipped galvanised prior to final fitting.

Adoptable sewer pipes to be laid in max 3m lengths unless there is a specific operational need to lay longer lengths.

Yorkshire water are not obliged to accept filter drain / land drainage runoff into the public sewer network or adoptable drainage network (directly or indirectly). An alternative method of disposal of land drainage runoff will therefore be required.

Cover slabs must carry the BSI kitemark or will be rejected by YW Inspector. Where the clear opening of a kitemarked product is different to that of the cover and frame a load bearing slab should be fitted below the cover slab to bring the size down to 600x600mm for YWA specified cover size. Please refer to CPSE technical bulletin Autumn 2004 for kitemarked cover slab opening sizes.

Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.

Sewers to be laid in class S bedding (150mm granular bed and surround. Where depth of cover is less than 1.2m in highways and verges (or less than 800mm in non vehicle access areas) then a concrete slab should be provided above the granular bed and surround.

The chamber size of manholes with more than one connection in them may need to be increased one increment to accommodate the connection and bends.

Yorkshire Water policy is not to accept type C brick manholes and 1050mm diameter manhole rings. Instead it is preferred to use a type B manhole construction with a 1200 or 1500mm cover slab with the opening sited over the channel where the depth of cover to pipe soffit is 1.0-1.5m.

Contractors should be aware of significantly large diameter pipes and manhole chamber rings proposed in this design and precautions should be taken in movement and placing of such items. Also to be considered is the depth of excavation of the drainage works especially the large diameter components up to 8m deep excavations.

All adoptable sewer works and materials to be in accordance with Sewers for Adoption 6th edition. The relevant British / European and Yorkshire Water standards / requirements / addendum & kitemarked.

The adoptable sewers shall be a min 1.0m and manholes 0.5m from the kerb and service margins.

Sewers must have 5m clearance from trees and hedges see S1A6 for restrictions on tree planting / types.

Bedding and backfill material to conform with the Water Industry specification 4-08-02 (table A2).

All existing drainage, services and sewers to be exposed at location confirmed to ensure no clashing with proposed sewers.

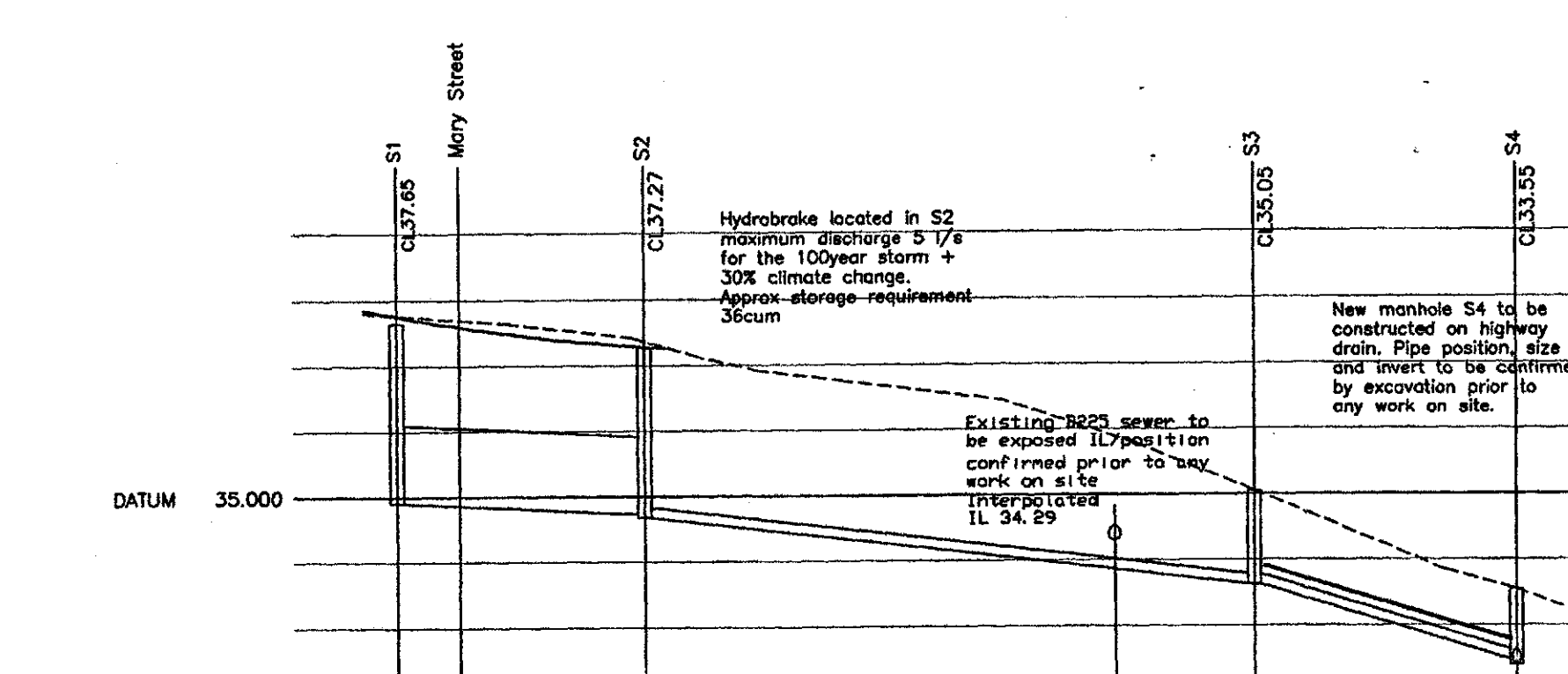
PRIVATE DRAINAGE

All drainage to comply with BS8301 100mm drains to be laid at minimum gradient 1:150. 150mm drains to be laid at minimum gradient 1:150. All drainage to be 100mm diameter, unless otherwise stated. All final connections to main sewer to be 150mm diameter. All connections joints to remain flexible.

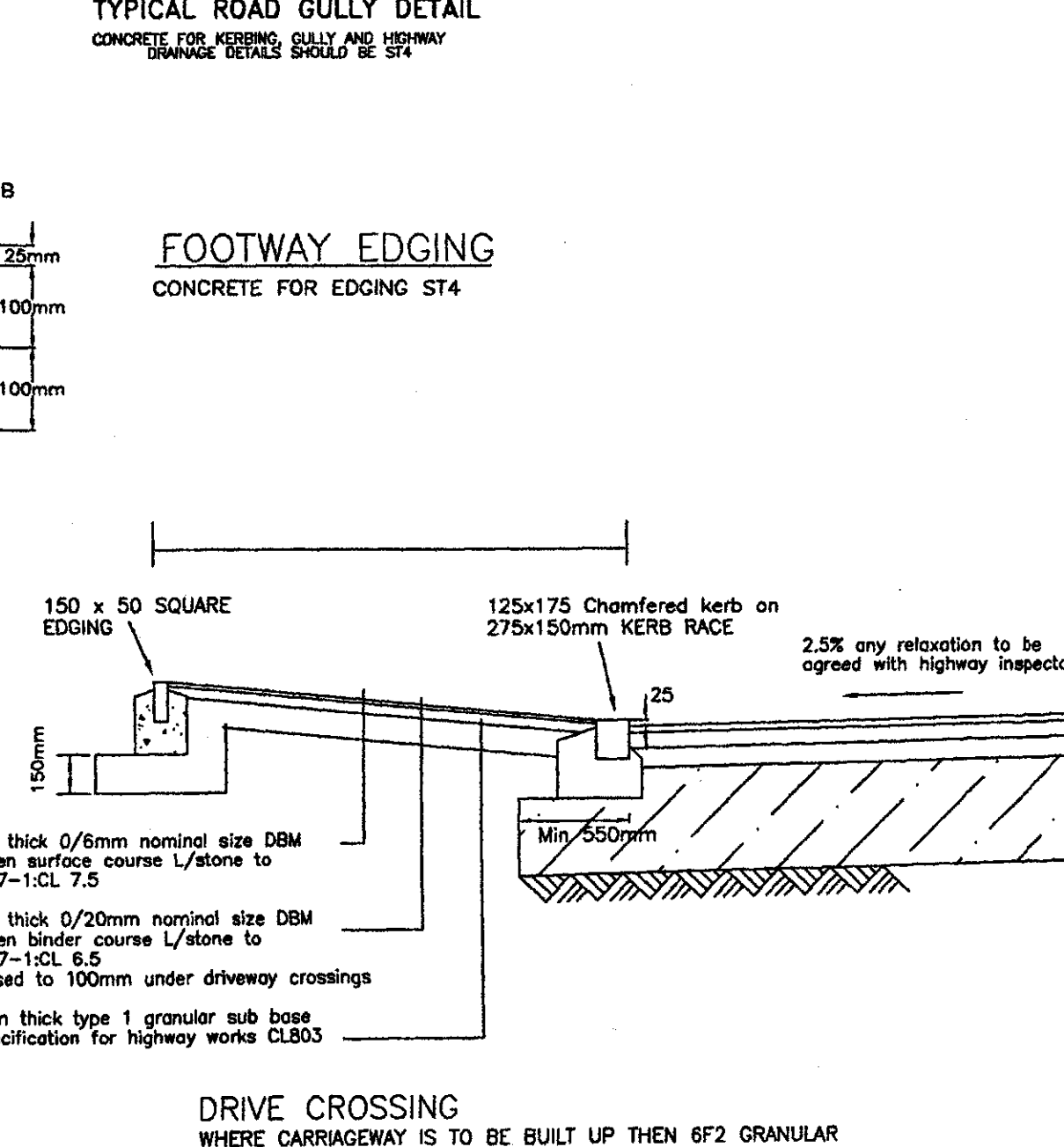
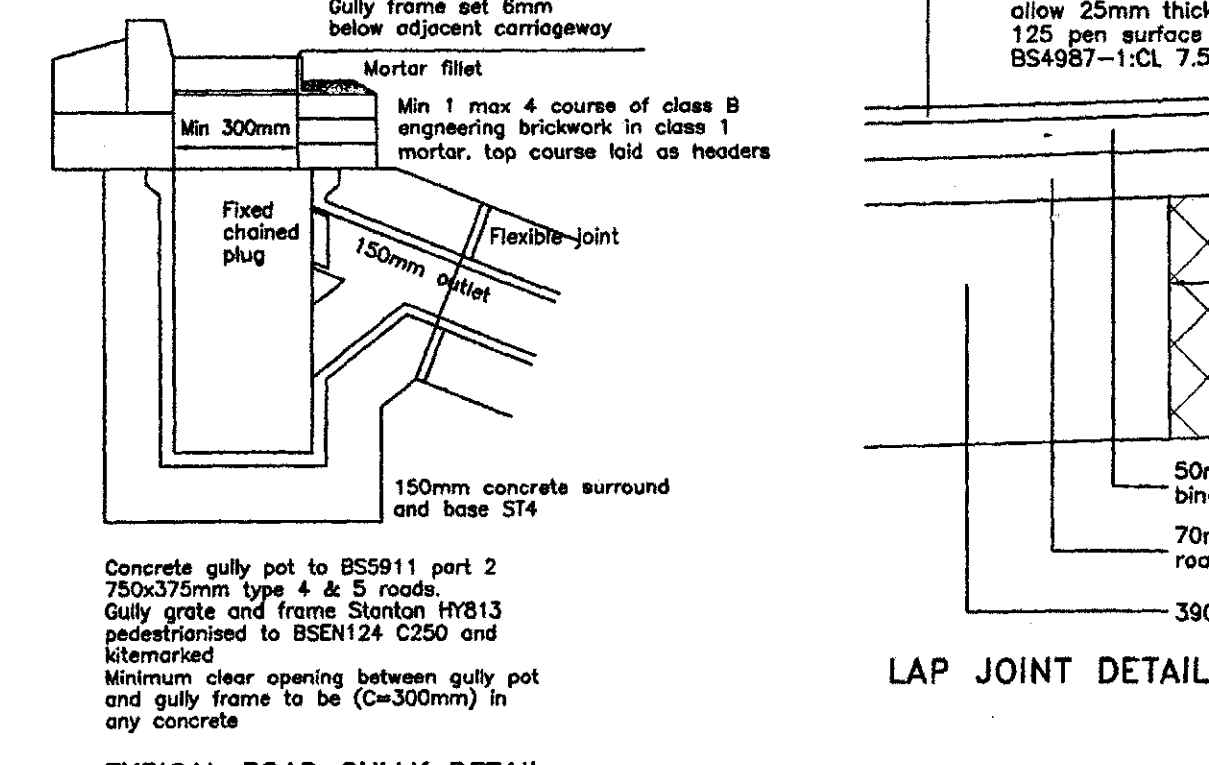
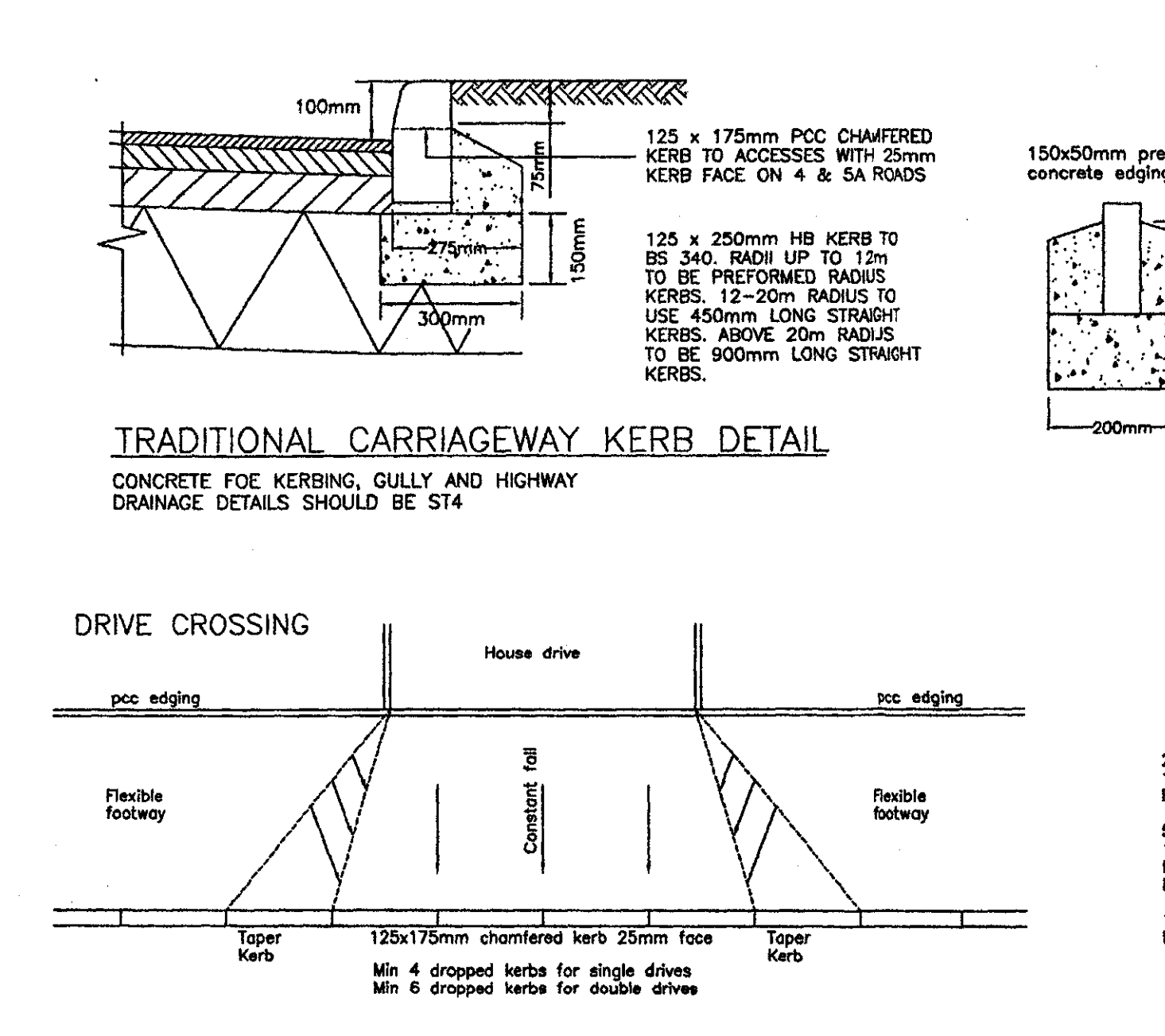
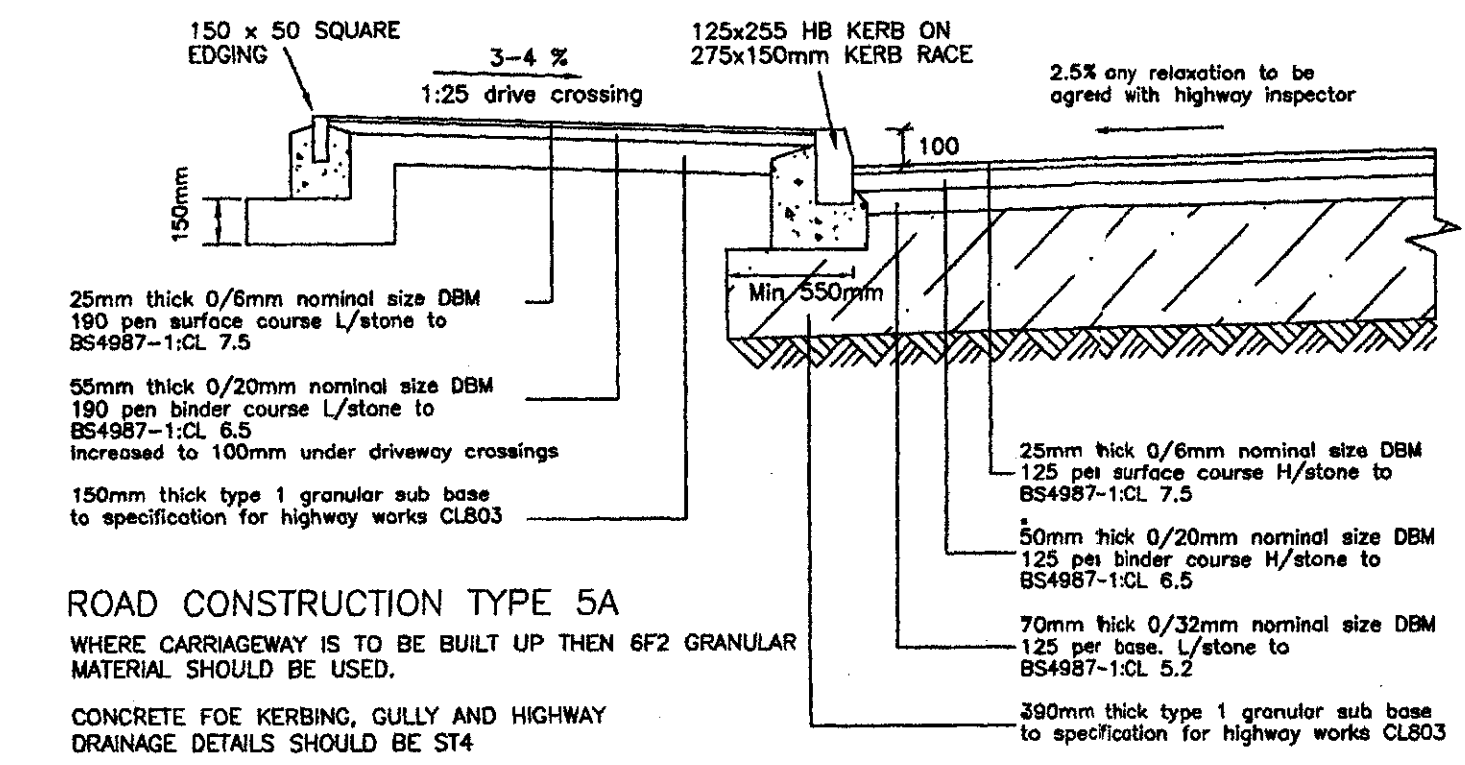
Drains passing under buildings to be retained flexible with a bed and surround of pea gravel. All drains to be bridged over with concrete inlets when passing through walls.

All foundations to be below the invert level of localized drains where within 1.00m of foundations. All sink wastes not connected to an inspection chamber or manhole to be connected via a roadable gully. 225mm dia inspection chambers to be laid at a maximum depth of 600mm below finished ground level. 450mm dia inspection chambers to be laid at a maximum depth of 1200mm below finished ground level. 1200 x 1000mm pc concrete sections to BS 5911 to be laid at a maximum depth of 3.00m below finished ground level.

Roading eye
Aco channel or similar



MARY ST TURNING		CL37.05 S1	CL37.27 S2	CL36.05 S3	CL33.55 S4
CHAINAGE	-2.600 0.000 4.000 8.000 12.000 16.000 17.950 20.530				
EXISTING GROUND LEVEL	37.80 37.850 37.754 37.683 37.617 37.556 37.449 37.401 37.360 37.323 37.292 37.254		37.64	37.46	33.95 33.29
ALIGNMENT LEVEL					
VERTICAL ALIGNMENT	1:27 KF= 8.15886 L= 17.950				
HORIZONTAL ALIGNMENT					
STORMWATER INVERT	34.90	34.72 34.67	33.625 33.625	32.47 Approx IL 32.40	
STORMWATER DETAILS	Pipe 1.000 Dia 1200 Circular CONCRETE in 108 Class 120 54Kn/m	Pipe 1.001 Dia 150 Circular CLAY 1 in 45 VC BSEN 295-1:1991	Pipe 1.002 Dia 150 Circular CLAY 1 in 45 VC BSEN 295-1:1991		
STORMWATER LENGTHS	BSEN 1917:2002 19.00 Type S granular surround	46.90 Type S granular surround	20.1 Type A concrete slab		



Street Lighting Arrangement

Denotes 6M galvanised steel column with 20 ArieLED lantern complete with electronic PEC.

Denotes existing column to be removed.

All materials to comply fully with current BMBC Street Lighting Specification.

It is the responsibility of the developer to advise their clients of the location of street lighting columns relative to their property and to programme column installation works commensurate with property occupation.

Column positions may be adjusted slightly to suit site conditions and services, but must not normally be erected within 500mm of defined driveway boundaries. BMBC will not enter into third party discussion on column positions, any such discussions will be carried out between BMBC and the developer.

The street lighting columns and lanterns and their maintenance remain the responsibility of the developer until completion of the adoption process.

All lighting columns are to be provided with an unswitched single phase electricity supply via the REC cable network. It is expected that the developer will coordinate with the REC regarding the installation of any cable ducts they may require.

R.A.B. ENGINEERING DESIGN LTD

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Developments by Boutique

Mary St, Little Houghton
Engineering layout
Section 38

DRAWN BY rab

SCALE 1:200 DATE May15

DRAWING No 1026-2-38 REV G

PRELIMINARY ONLY