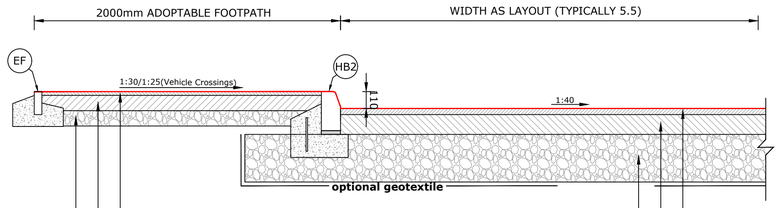
CONSTRUCTION CHART 1 - NON PERVIOUS, FLEXIBLE CONSTRUCTION (ROADS 1)

<2.5 msa



Measured CBR values	Depth of Type 1	Depth of Type 1 with Geotextile
CBR ≥ 6%	300mm	300mm
CBR 5%	300mm	300mm
CBR 4%	300mm	300mm
CBR 3%*	310mm	300mm
CBR 2.0%	400mm	340mm
CBR 1.5%	*Not Suitable*	440mm
CBR < 1.5%	*Not Suitable*	710mm

* Design CBR indicated in SI - EPS Ref: UK18.3082B, dated 26th June 2019
* * For CBR's <1.5% an approved contruction regime is to be agreed with LCC prior to commencement

Note 1 See Clauses 1.1.6, 1.1.7 and 1.1.8
Note 2 See Clause 1.1.6 - Assumes no improvement is possible using either sub-soil drainage or soil strengthening technique. 710mm is 410mm of 6F5 Capping Layer Granular Fill to clause 6.8 and 300mm of Type 1 sub-base. The thickness of 710mm can be reduced to 620mm if all Type 1 sub-base is used.
Note 3 For soft spots and sub-grades with a CBR of less than 1½% the geotextile shall be laid with an approved geogrid or shall be an approved geocomposite. Approved specialist design can be used with the agreement of the Authority.
Note 4 Initial Binder Course layer thickness **70mm** if the **alternative kerbing installation method** (two stage construction - kerbing to be laid at a later stage) is used. **Total Binder Course thickness remains 130mm** in these circumstances. **See Clause 1.1.17.**
Note 5 The use of a geosynthetic with a sub-grade with this bearing capacity offers no advantage or economy

FOOTWAY

SURFACE COURSE 25mm thick AC6 dense surf 70/100 or 100/150 pen binder

BINDER COURSE 100mm thick AC20 dense bin to BS EN 13108-1, 70/100 or 100/150 pen binder laid in 2 layers of 70 & 60mm (layers bonded)

SUB-BASE/CAPPING 100mm MOT type 1 laid in accordance with SHW cl 803, thickened to 150mm for vehicle crossings*
CAPPING TO BE USED WHERE LEVELS ARE TO BE RAISED

* For heavy duty crossings, construction to be the same as adjacent carriageway with HRA surface course

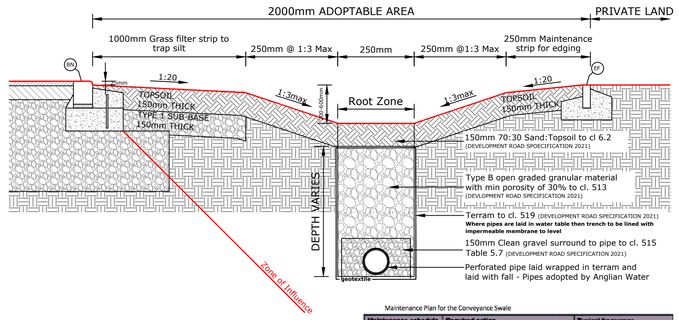
CARRIAGEWAY

SURFACE COURSE 40mm thick AC10 close surf 70/10 or 100/150 pen binder - Min PSV 55. Aggregate in accordance with LCC's Approved Supplies Information Booklet

BINDER COURSE 130mm thick AC20 dense bin to BS EN 13108-1, 40/60 pen binder laid in 2 layers of 70 & 60mm (layers bonded)

SUB-BASE/CAPPING 310mm MOT type 1 laid in accordance with SHW cl 803 or 300mm MOT type 1 + Terram geotextile seperating membrane

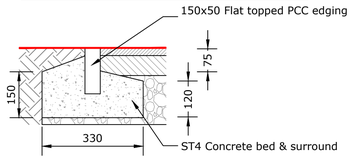
TYPICAL HIGHWAY SWALE DETAIL



Maintenance Plan for the Conveyance Swale

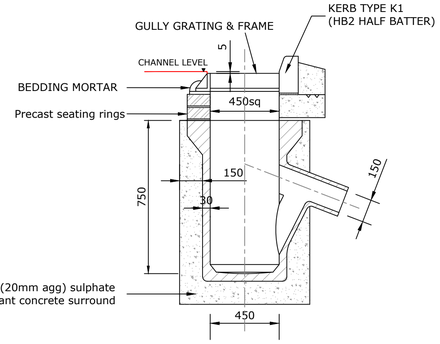
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter and debris	Monthly, or as required
	Cut grass – to retain grass height within specified design range	Monthly (during growing season), or as required
	Manage other vegetation and remove nuisance plants	Monthly at start, then as required
	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspect infiltration surfaces for ponding, compaction, silt accumulation, record areas where water is ponding for > 48 hours	Monthly, or when required
	Inspect vegetation coverage	Monthly for 6 months, quarterly for 2 years, then half yearly
	Inspect inlets and facility surface for silt accumulation, establish appropriate silt removal frequencies	Half yearly
Occasional maintenance	Reseed areas of poor vegetation growth, alter plant types to better suit conditions, if required	As required or if bare soil is exposed over 10% or more of the swale treatment area
Remedial actions	Repair erosion or other damage by re-turfing or reseeding	As required
	Reinvel uneven surfaces and reinstate design levels	As required
	Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface	As required
	Remove build-up of sediment on upstream gravel trench, flow spreader or at top of filter strip	As required
	Remove and dispose of oils or petrol residues using safe standard practices	As required

CONCRETE EDGING (EF)



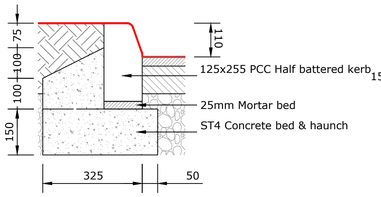
PCC 'TRAPPED' ROAD GULLY (RG)

TRAFFICKED AREAS

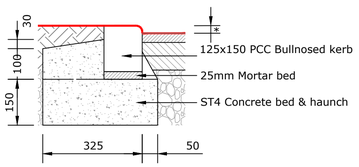


GULLY NOTES:
1. Gully grating & frame uncoated iron to cl.5.11.1;
2. Mortar & bed benching to cl.5.11.8;
3. Standrad pre-cast seating rings to comply with BS 5911-4:2010;
4. All insitu concrete ST4;
5. Insitu concrete to pipe 150mm thick surround to outlet pipe for first metre under verge or total length under carriageway;
6. Where grate is to be trafficked or load against within 24hrs of frame being set, then Ultra rapid hardeneing mortar to be used (Monoset 241 or similar) to bed cover and frame.

HALF BATTERED (HB2)

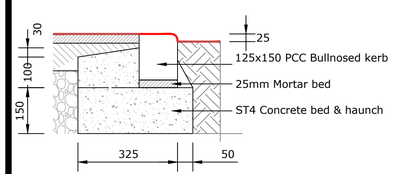


BULLNOSED (BN)

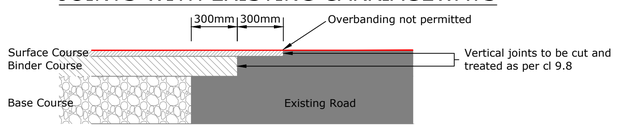


* 0-6mm Pedestrian crossing
25mm Vehicular access

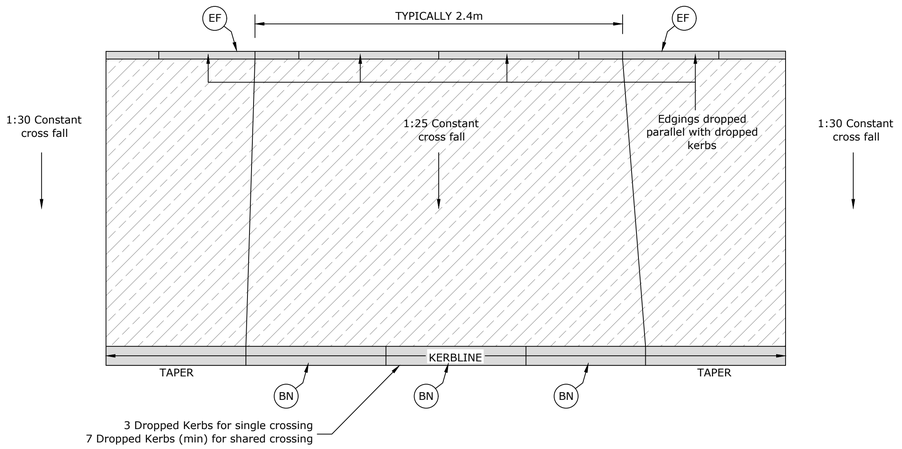
BULLNOSED - SWALE EDGE (BNS)



JOINTS WITH EXISTING CARRIAGEWAYS



DOMESTIC VEHICLE CROSSING



LATEST DRAWING?

NOTES/LEGEND

S38/104 ADOPTION REQUIREMENTS

1. DO NOT SCALE FROM THIS DRAWING. WHILST THE DRAWING HAS BEEN PRODUCED DIMENSIONALLY, THE ACCURACY DURING REPRODUCTION CANNOT BE GUARANTEED;

2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND DOCUMENTS PRODUCED BY OTHERS, INCLUDING ENGINEERS, ARCHITECTS AND SPECIALIST DESIGNS. FOR THE PURPOSES OF THIS DRAWING, THE FOLLOWING HAVE BEEN REFERENCED;

TOPOGRAPHICAL SURVEY: ASHWOOD HOLBEACH 040718 BY AXIS SURVEYS LTD, DATED 10.7.2018
ARCHITECTS LAYOUT: 127-SL-01D BY ASHWOOD HOMES LTD, DATED 17.09.2021;

LIN CONSULTING ACCEPT NO RESPONSIBILITY FOR THE INACCURACIES OF INFORMATION THAT IS PROVIDED BY THIRD PARTY;

3. ALL DIMENSIONS SPECIFIED ARE IN (MILLI)METERS AND ALL LEVELS ARE IN METERS (RELATING TO METERS ABOVE ORDNANCE DATUM WHERE AVAILABLE);

4. ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY;

5. THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE LINCOLNSHIRE COUNTY COUNCIL DEVELOPMENT ROAD AND SUSTAINABLE DRAINAGE SPECIFICATION AND CONSTRUCTION;

6. THE CONTRACTOR SHALL CHECK ALL TIE-INS FOR LINE AND LEVEL PRIOR TO COMMENCEMENT OF WORKS SHOULD ANY DISCREPANCIES BE FOUND THEN THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY;

7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE EXISTING UTILITY APPARATUS. THE CLIENT WILL ACCEPT NO CLAIMS WHATSOEVER IN RESPECT OF ANY LOSSES OR DAMAGES CAUSED THROUGH CONSTRUCTION;

8. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL WORKS ARE CARRIED OUT TO THE SATISFACTION OF THE ADOPTING ENGINEER AND IS DEEMED TO HAVE INCLUDED WITHIN THEIR RATES FOR NECESSARY TESTING;

9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERTAKE THE WORKS AT ALL TIMES IN STRICT ACCORDANCE WITH THE HEALTH & SAFETY AT WORK 1974 AND THE CDM REGULATIONS 2015, AND WILL BE DEEMED TO HAVE INCLUDED WITHIN THEIR RATES;

10. THE CONTRACTOR IS TO COMPLY IN ALL RESPECTS WITH CURRENT BRITISH STANDARDS, BUILDING LEGISLATION WHETHER OR NOT IT IS STATED UPON THIS DRAWING;

11. EXISTING FOUL & SURFACE WATER MANHOLE COVERS TO BE RAISED TO SUIT THE PROPOSED ROAD ALIGNMENT LEVELS AS INDICATED;

12. ANY CONSTRUCTION UNDERTAKEN PRIOR TO THE RELEVANT TECHNICAL APPROVALS HAVE BEEN OBTAINED, IS UNDERTAKEN AT RISK TO THE CLIENT/DEVELOPER/CONTRACTOR;

13. ALL MATERIALS WITHIN 450mm OF FINISHED ROAD LEVELS ARE TO BE NON - FROST SUSCEPTIBLE;

14. PSV, AGG SIZES, AGG ABRASION VALUES AND PENETRATION VALUES OF ALL SURFACE COURSES MATERIALS TO BE CHECKED WITH HIGHWAY AUTHORITY PRIOR TO LAYING AND MUST COMPLY WITH THE RELEVANT BRITISH STANDRAD FOR LAYING AND WORKMANSHIP;

15. CBR TESTS TO BE CONDUCTED IN ACCORDANCE WITH LCC REQUIREMENTS. FINAL SUB-BASE AND CAPPING REQUIREMENTS TO BE AGREED WITH ENGINEER PRIOR TO COMMENCEMENT OF WORKS. ALL SOFT SPOTS TO BE RECORDED AND REPLACED WITH SUITABLE GRANULAR MATERIAL - ADOPTING ENGINEER TO CONFIRM;

16. WITHIN THE CATCHMENT OF TRADITIONAL DRAINAGE DESIGN, THE MINIMUM LONGITUDINAL FALL FOR HIGHWAYS, WITHOUT CHANNEL BLOCKS SHALL BE 1 IN 150, AND WITH CHANNEL BLOCKS 1 IN 250;

17. GENERAL DETERIORATION OF THE EXISTING HIGHWAY/FOOTWAY/VERGES CREATED THROUGH CONSTRUCTION OF THE NEW SECTION 38 DEVELOPMENT WILL BE REINSTATED TO THE DEVELOPMENT ROAD AND SUSTAINABLE DRAINAGE SPECIFICATION AND CONSTRUCTION AT THE DEVELOPERS' OWN COST AT THE AGREEMENT OF THE INSPECTING DEVELOPMENT MANAGEMENT OFFICER;

18. NO PRIVATE SURFACE WATER SHALL DISCHARGE ONTO THE ADOPTABLE HIGHWAY;

19. NO PRIVATE STRUCTURAL FEATURES SHALL OVERHANG THE ADOPTABLE HIGHWAY;

20. NO PRIVATE RETAINING WALLS EXCEEDING 1.37 METRES SHALL BE WITHIN 3.66 METRES OF THE HIGHWAY BOUNDARY;

21. ALL ADOPTABLE DRAINAGE WORKS TO BE IN ACCORDNACE WITH DCG MARCH 2020;

Rev	Date	Description	Made	Checked
C	05/05/2022	UPDATED FOLLOWING S38 COMMENTS	ZJ	SON
B	31/10/2021	ISSUED FOR TECHNICAL APPROVAL	ZJ	SON
A	18/10/2021	ISSUED FOR CLIENT COMMENT	ZJ	SON

Status of Drawing: FOR COMMENT

Client: ASHWOOD HOMES

Project: FEN ROAD, PHASE 2 HOLBEACH

Drawing Title: ROAD CONSTRUCTION DETAILS SHEET 1

LIN Consulting
07341 337283
www.linconsulting.co.uk
stuart@linconsulting.co.uk

Drawn	Check'd	Approved	Scales	Drawing No.	Rev
ZJ	SON	SON	NTS	ASH/FEN2/106	C

Date: OCT 2021