

NOTES :-

1. All dimensions are to be checked prior to construction or manufacturing. Any discrepancy must be reported to the Engineer or his representative immediately.
2. Do not scale this drawing, work to figured dimensions only.
3. This drawing should be read in conjunction with all other relevant Engineering, Architectural, landscaping details, drawings and specifications and all relevant Neath Port Talbot Council Standard Engineering Details.

Surfacing

4. The minimum carriageway thickness shall be 530mm. However greater construction depth may be required(Capping Layers)depending on individual CBR values. (Refer table within drawing)
5. CBR values are to be obtained at road formation levels.
6. All bituminous surfacing works shall be machined layed unless other agreed in writing with the Local Highway Authority.
7. No wearing course shall contain and Limestone or Slag aggregate.
8. The specifications for Type 1 unbound granular material shall conform to BS EN 13285 : 2003 and Clause 803 of the Specification for Highway Works amended November 2007.
9. The transportation, laying and compacting and trafficking of Type 1 unbound granular material shall comply with the requirements of BS EN 13285 : 2003 and Clause 802 of the Specification for Highway Works, amended November 2004.
10. All bituminous material specifications for Asphalt Concrete shall conform to BS EN 13108 : 1 : 2006 and Clause 909 of the Specification for Highway Works amended November 2008.
11. All bituminous material specifications for Stone Mastic Asphalt (SMA) shall conform to BS EN 13108 : 5 : 2006 and Series 900 of the Specification for Highway Works amended August 2008.
12. The Testing for bituminous mixtures, material specifications shall conform to BS EN 13108 : 20 : 2006.
13. The specifications for Transporting, laying & compacting and type testing protocols for asphalt for roads and other paved areas shall conform to BS EN 4987 : 2007
14. Where gradients are steeper than 1 in 12, grit stone aggregate must be used.
15. Where it is envisaged that the Binder or Base Course materials within both the carriageway and footways areas are to be trafficked for more than 4 weeks before the application of the Surface Course, then a grit stone aggregate shall be used within the Binder content of 5.7 +/- 0.6% (Slag aggregate will not be permitted)
16. In situations where the Binder or Base Course materials are not covered immediately under the Surface or Binder Course respectively the Binder and Base Courses shall be sprayed with a hot sealing tack coat of bituminous splay in accordance with Clause 920 of the Specification for Highway Works amended November 2007 prior to laying of the Surface or Binder courses.

17. All precast concrete kerbing, channels, edgings and quadrants shall comply with BS EN 1340 : 2003 and their dimensions unless otherwise stated.
18. All precast concrete kerbing, channels, edgings and quadrants shall be laid in accordance with BS 7533 Part 6 : 1999 unless otherwise instructed by the Highway Authority's representative.
19. All in situ concrete for foundations & Haunch shall be grade C6 / 8 or ST1 concrete in accordance with BS EN 206 - 1 & BS 8500 - 2 : 2006.
20. The foundation thickness shall be increased as necessary to rest on the carriageway sub-base.
21. Concrete edge beams shall have a minimum depth of 150mm & sufficient width to accommodate the unit & the concrete haunch.
22. Where precast concrete kerbs are to be laid on existing concrete edge beam, a hardened concrete foundation / haunch or existing carriageway base. Units shall be bedded down in accordance with BS 522 - 6 : 1999 in a layer of 12 - 40 mm thick of 1 : 3 cement and sand mortar (by Volume) and backed with C6 / 8 or ST1 concrete haunch.
23. The bedding and surround of all pipes within the area of carriageway, footway or cycleway with a cover of less than 1.2m shall be Type Z (Encased in concrete, grade ST4 (C16 / 20) unless otherwise agreed in writing by the Highway Authority's representative.
24. The minimum/maximum width of the trench applies on and below a line 300mm above the top of the pipe. Above the 300mm line the trench shall be in accordance with Clause 505 of the Specification for Highway works.
25. The concrete bed or surround may extend to the side of the trench or be a minimum width. Class 8 material to be used to fill any voids so formed.
26. For type Z trench the concrete cover may be formed to a radius batter or horizontal surface. Minimum cover of concrete 150mm.

Kerbing and Edging

17. All precast concrete kerbing, channels, edgings and quadrants shall comply with BS EN 1340 : 2003 and their dimensions unless otherwise stated.
18. All precast concrete kerbing, channels, edgings and quadrants shall be laid in accordance with BS 7533 Part 6 : 1999 unless otherwise instructed by the Highway Authority's representative.
19. All in situ concrete for foundations & Haunch shall be grade C6 / 8 or ST1 concrete in accordance with BS EN 206 - 1 & BS 8500 - 2 : 2006.
20. The foundation thickness shall be increased as necessary to rest on the carriageway sub-base.
21. Concrete edge beams shall have a minimum depth of 150mm & sufficient width to accommodate the unit & the concrete haunch.
22. Where precast concrete kerbs are to be laid on existing concrete edge beam, a hardened concrete foundation / haunch or existing carriageway base. Units shall be bedded down in accordance with BS 522 - 6 : 1999 in a layer of 12 - 40 mm thick of 1 : 3 cement and sand mortar (by Volume) and backed with C6 / 8 or ST1 concrete haunch.

23. The bedding and surround of all pipes within the area of carriageway, footway or cycleway with a cover of less than 1.2m shall be Type Z (Encased in concrete, grade ST4 (C16 / 20) unless otherwise agreed in writing by the Highway Authority's representative.
24. The minimum/maximum width of the trench applies on and below a line 300mm above the top of the pipe. Above the 300mm line the trench shall be in accordance with Clause 505 of the Specification for Highway works.
25. The concrete bed or surround may extend to the side of the trench or be a minimum width. Class 8 material to be used to fill any voids so formed.
26. For type Z trench the concrete cover may be formed to a radius batter or horizontal surface. Minimum cover of concrete 150mm.

Trench and Bedding Details

23. The bedding and surround of all pipes within the area of carriageway, footway or cycleway with a cover of less than 1.2m shall be Type Z (Encased in concrete, grade ST4 (C16 / 20) unless otherwise agreed in writing by the Highway Authority's representative.
24. The minimum/maximum width of the trench applies on and below a line 300mm above the top of the pipe. Above the 300mm line the trench shall be in accordance with Clause 505 of the Specification for Highway works.
25. The concrete bed or surround may extend to the side of the trench or be a minimum width. Class 8 material to be used to fill any voids so formed.
26. For type Z trench the concrete cover may be formed to a radius batter or horizontal surface. Minimum cover of concrete 150mm.

15. All Blister Paving for uncontrolled pedestrian crossings shall be ' Buff ' in Colour.
16. All Blister Paving should be at right angles to the direction of the crossing. Where the back edge is not parallel to the kerb line (i.e the crossing itself is not at right angles to the kerb) the tactile surface should not be less than the minimum depth at any point.

Pipeworks (Pure Highway Drainage Systems only)

27. All pipe materials and associated with pure Highway Drainage systems shall be double ribbed twin wall UPVC pipes and couplings which shall comply with DTLR Specifications for Highway Works and carry a BBA & HAPAS Roads and Bridge Agreement Certificate.

28. The minimum diameter of a highway carrier drain shall be 225mm diameter unless otherwise agreed in writing with the Highway Authority's representative.

29. All Gully connections shall not be less than 150mm in diameter.

Road Gullies

30. All gully gratings and frames to be located within the limits of a carriageway or footway shall be of Ductile Iron construction and have minimum grade of D400 complying with BS EN 124 : 1994 and section 508 of the Specifications for Highway Works, amended November 2009 and shall carry the BSI Kitemark.

31. Gully grating and frames have a minimum depth of 100mm and shall be single piece non rocking anti theft captive hinged and be free from defects with either kerbside hinged or end / side hinged units appropriate to the traffic flow are approved.

32. Gully Slot dimensions in the gully grating shall be selected having a regard to the hydraulic capacity and the slots shall be evenly distributed over the clear area. The water way area shall not be less than 30% of the clear area as given in the manufacturer's catalogue.

33. Gully grating and frames shall have a clear opening of 450 x 450mm unless otherwise agreed in writing by the Highway Authority prior to installation and having minimum waterway area of 1300cm² of which there shall be a minimum waterway area of 45cm² between the kerb face of the frame and a parallel line 50mm distant and there shall be a minimum waterway area of 65cm² between the kerb face of the frame and a parallel line 90mm distant.

34. The slot orientation to direction of traffic is between 0 to 45 degrees and 135 to 180 degrees and the maximum length of slot shall be 150mm if the slot is wider than 20mm.

35. Without exception all gully pots shall be Precast Concrete units complying with BS 5911 - 6 : 2004 1994 and section 508 of the Specifications for Highway Works, amended November 2009 and shall carry the BSI Kitemark.

36. Gully pots shall be trapped shall have a minimum internal diameter of 450mm, depth of 750mm and a gully outlet of 150mm.

37. Gullies shall be constructed so that no part of the Trap or spout has cross sectional area less than 2/3rd that of the outlet. The depth of water seal in trapped gullies shall not be less than 50mm.

38. Depth 'A' to be 750mm minimum below carriageway to allow for services to clear gully connections and reduce the risk of damage to pipes due to settlement. Where depth of run is 1.2m below carriageway level a flex joint is to be used at every joint.

39. All brickwork shall be solid Class 'B' clay engineering brick complying with BS EN 771-1:2003 and Series 2400 of the Specifications for Highway Works, amended November 2009.

40. All mortar required for bonding brickwork, haunching and bedding the manhole cover and frame shall be Class (i) with a cement / lime / sand ratio of 1 : 1 : 3 complying with BS EN 998-1 : 2003, BS EN 998-2 : 2003 and Series 2400 of the Specifications for Highway Works, amended November 2009.

41. All precast concrete gully pots shall be set on and surrounded with a minimum of 150mm bedded on a insitu concrete with minimum grade of ST4 / C16 / 20 concrete in accordance with the relevant sections of BS EN 206-1, BS 8500-1 : 2006, BS 8500-2 : 2006 and item 2602 of Series 2600 of The Specifications for Highway Works, amended November 2009.

Miscellaneous

30. All new surface / highway drainage systems and adjoining existing systems shall at the developers / contractors expense be cleaned and kept clear of obstructions during the course of the works. On completion of the whole of the works, all chambers, catchpits, gullies and drains shall be flushed from end to end with water and left free from obstructions.

33. All new surface / highway drainage systems installed by the developer / contractor shall be tested using the water test method identified within clause 509 of the specifications for Highway Works PRIOR to final wearing course being laid in order that any defects can be rectified.

34. All existing and newly installed highway / surface water drainage systems (Gullies, manhole / catchpits / carrier drains) shall be mechanically cleaned following resurfacing works.

Tactile Paving

13. All Precast Concrete Tactile Paving shall comply with DD-CEN / TS 15209 : 2008.

14. All controlled and un-controlled pedestrian crossing facilities incorporating tactile paving shall comply with The Department of the Environment, Transport and the Regions & The Scottish Office, DETR, London,1988 - Guidance on the Use of Tactile Paving Surfaces, The Department for Transport Inclusive Mobility - A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure and BSI British Standard BS 6300:2009 - Design of Buildings & their approaches to meet the needs of disabled People - Code of Practice where applicable.

15. All Blister Paving for uncontrolled pedestrian crossings shall be ' Buff ' in Colour.

16. All Blister Paving should be at right angles to the direction of the crossing. Where the back edge is not parallel to the kerb line (i.e the crossing itself is not at right angles to the kerb) the tactile surface should not be less than the minimum depth at any point.

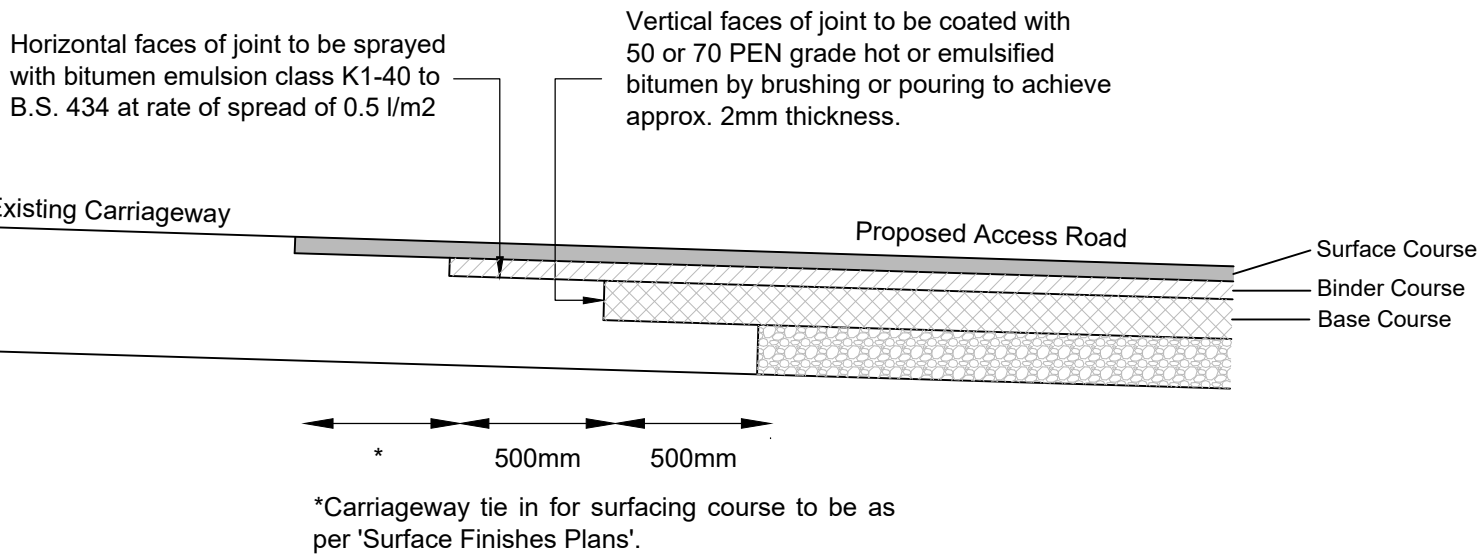
NOTE :-
No works are to be undertaken until approval has been confirmed.

TABLE 1

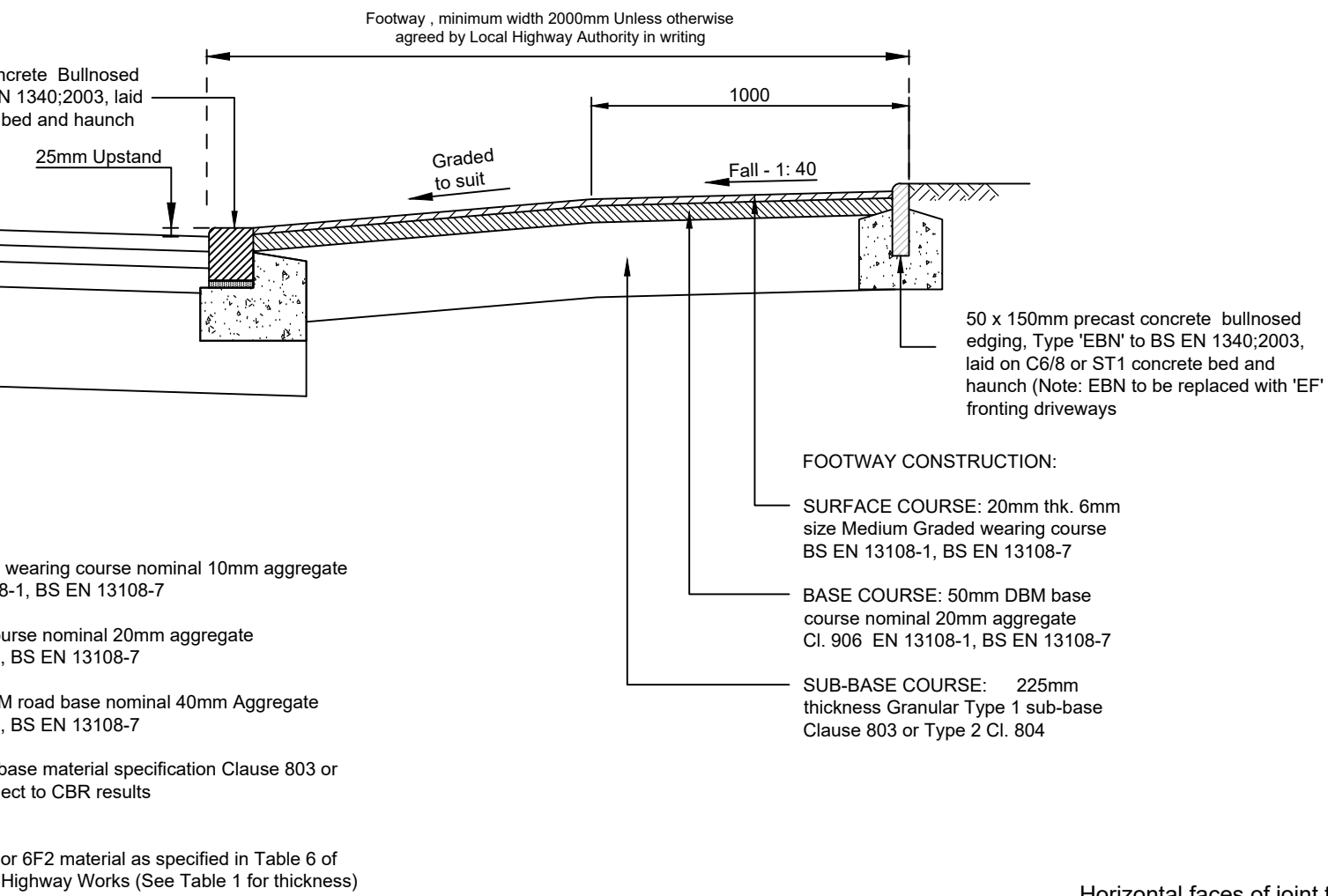
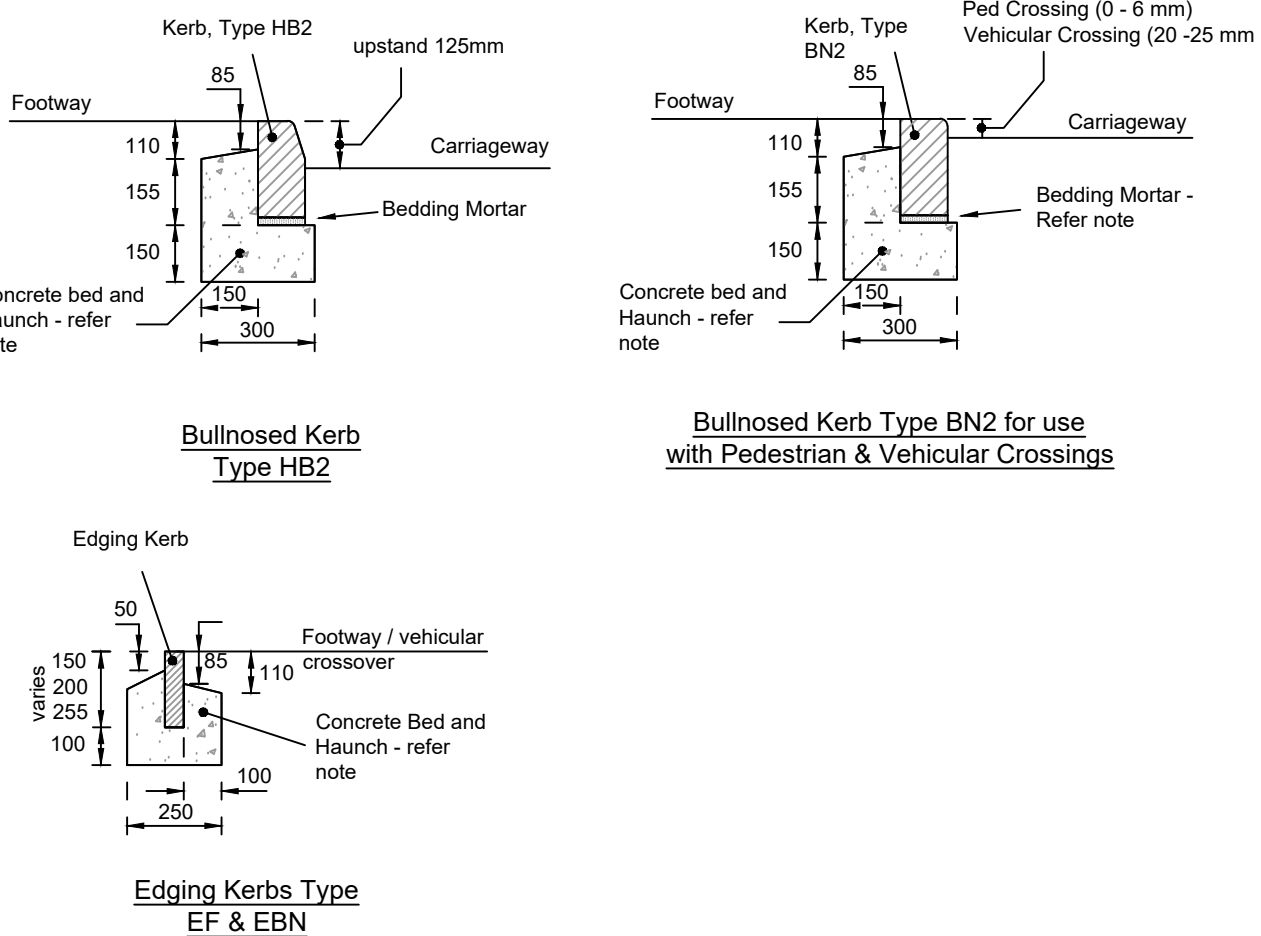
CBR VALUE (%)	SUB BASE (mm)
CBR>15	150
5<CBR<15	225
2<CBR<5	150
CBR<2	150

TABLE 2

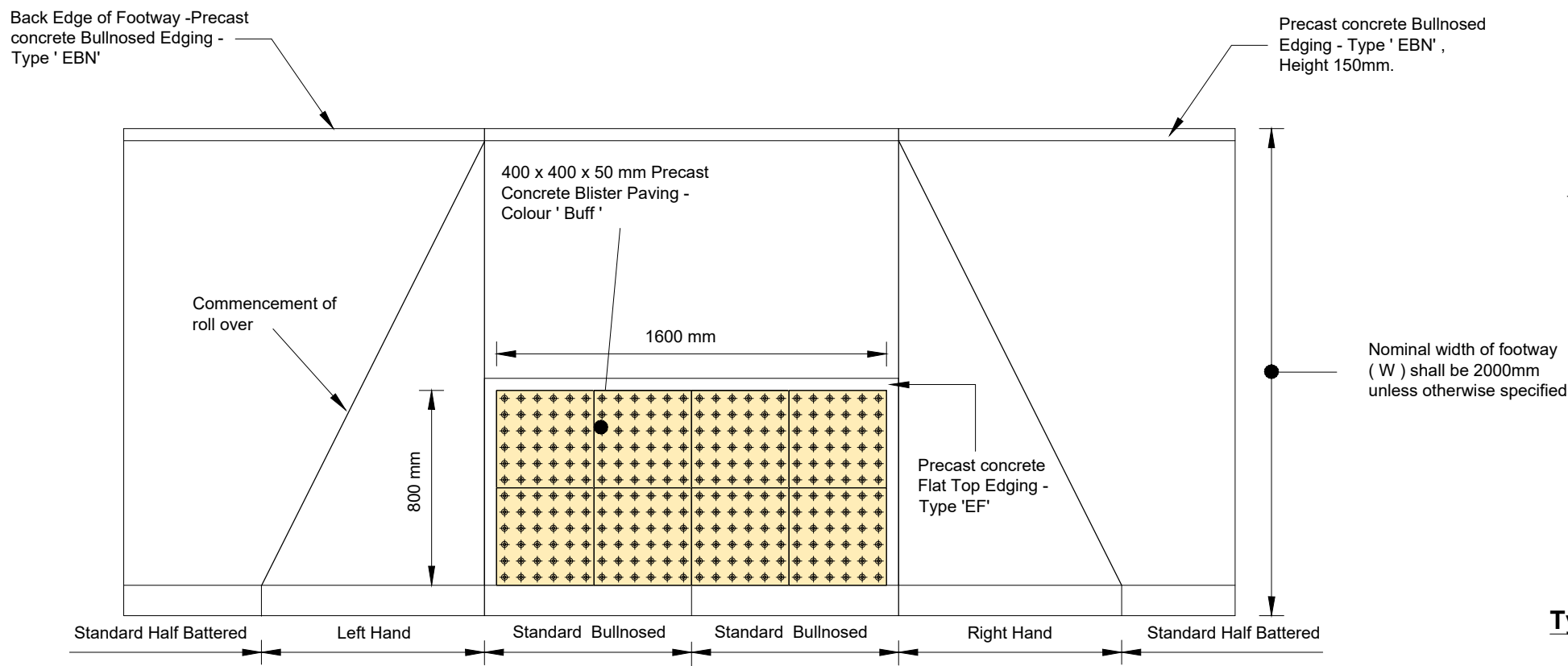
CBR VALUE (%)	CAPPING (mm)
CBR>15	-
5<CBR<15	-
2<CBR<5	300
1<CBR<2	450
CBR<1	600



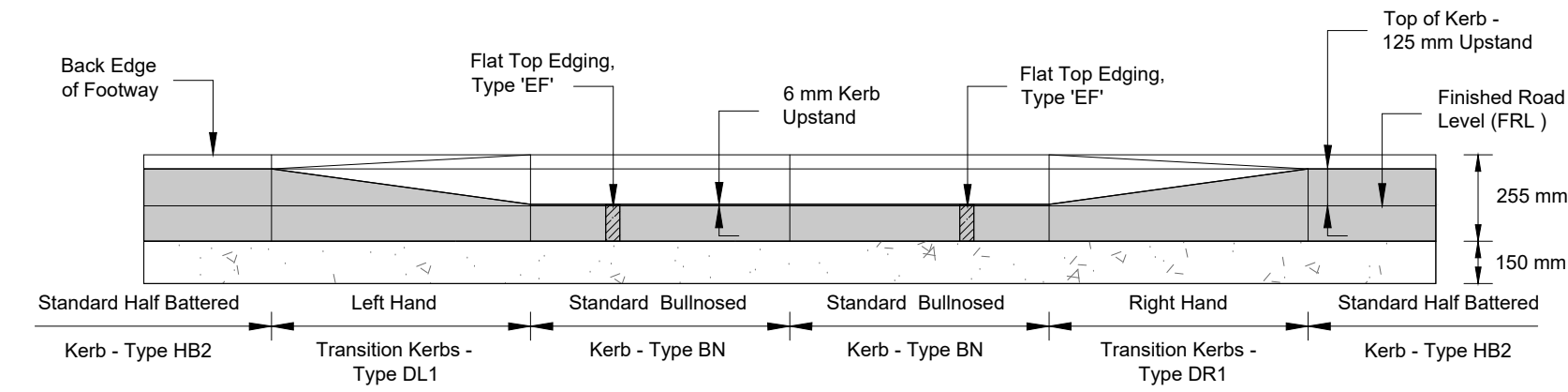
CARRIAGEWAY TIE-IN DETAIL



Typical Section Through Highway

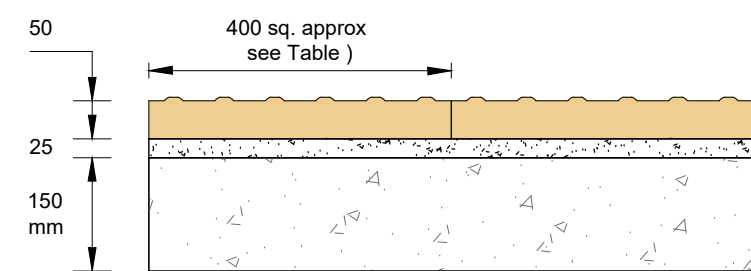


Typical Plan View of Crossing - (Scale N.T.S)



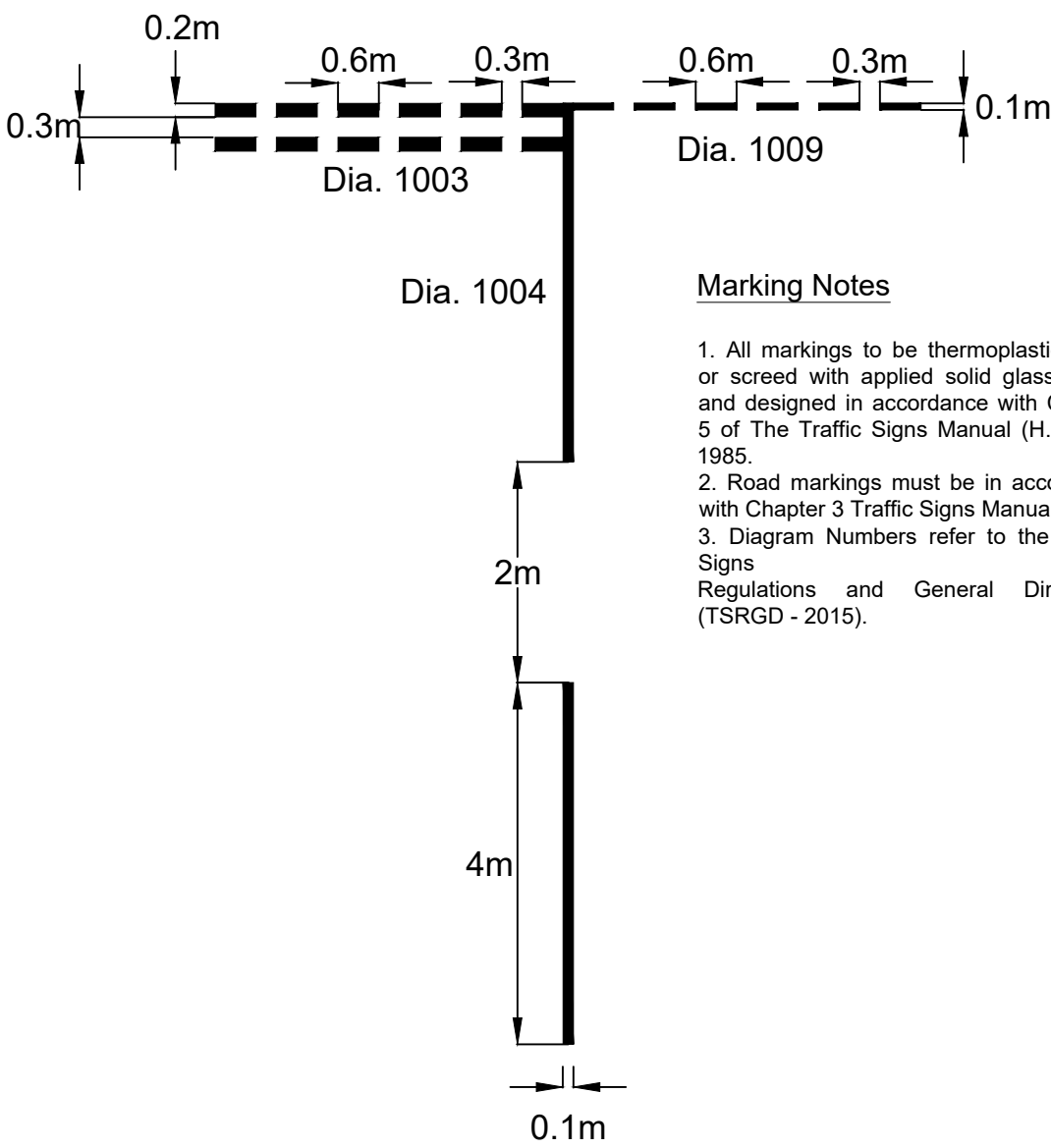
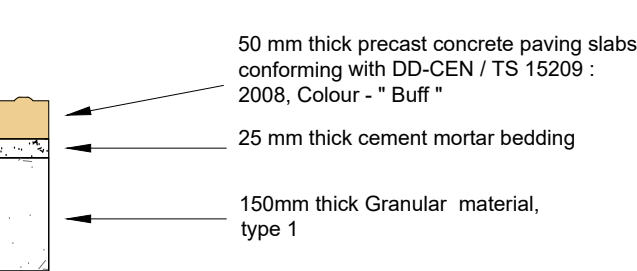
Typical Front Elevation of Crossing - (Scale N.T.S)

Typical Plan View of Tactile Blister Paving - (Scale N.T.S)



Typical Section Through Tactile Blister Paving Bedding Detail - (Scale N.T.S)

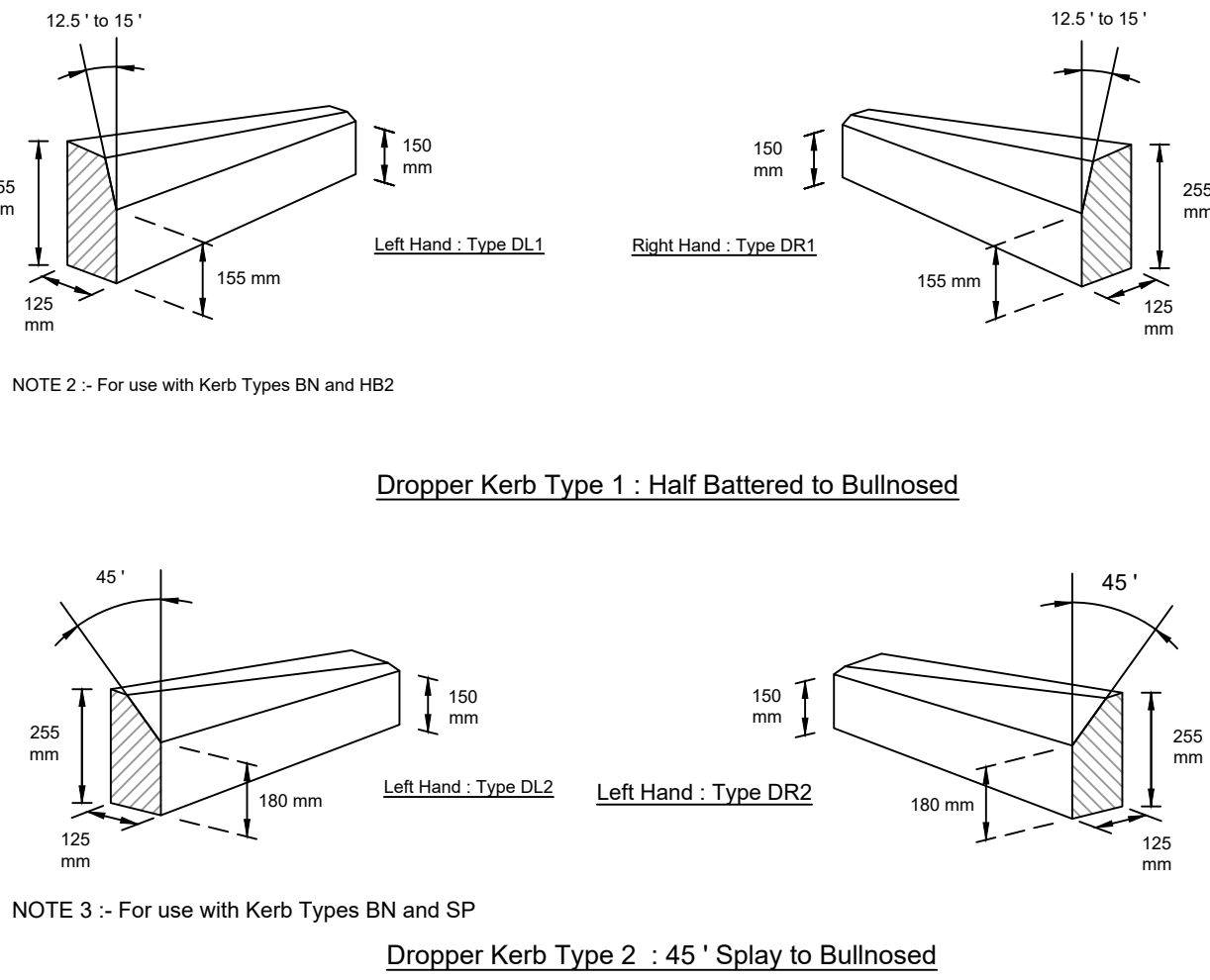
Typical End View of Tactile Blister Paving - (Scale N.T.S)



GIVE WAY MARKINGS

Marking Notes

1. All markings to be thermoplastic spray or screed with applied solid glass beads and designed in accordance with Chapter 5 of The Traffic Signs Manual (H.M.S.O.) 1985.
2. Road markings must be in accordance with Chapter 3 Traffic Signs Manual.
3. Diagram Numbers refer to the 'Traffic Signs Regulations and General Directions' (TSRGD - 2015).



Dropper Kerb Type 1 : Half Battered to Bullnosed

Dropper Kerb Type 2 : 45° Splay to Bullnosed

Ramp to Junction Plateau on Tank Farm Road

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rev	date	description	by
A	May 2020	Tactile crossing details added.	RMJ
B	July 2020	Ramp to junction plateau detail revised to be concrete construction.	RMJ

Status:

COMMENT / APPROVAL

Drawn:	VCH
Checked:	RMJ
Date:	Feb 2020
Scale:	NTS (A1)

Client:	Waterstone Homes
Project:	Coed Darcy, Phase 2
Title:	Highway Construction Details
Ref:	2432-730
Rev:	B