East Anglia ONE
Offshore Windfarm

East Anglia ONE Offshore Windfarm

Highway Improvements and Access Management Plan - Substation
DCO Requirements 14 & 25 (c)
Work No 38 to 41
Final for Discharge

ID: EA1-CON-R-IBR-022981

Created by / date: IEC / 20th March 2017
Checked by / date: CD / 20th March 2017
Approved by / date: RM / 21st March 2017

SCOTTISHPOWER RENEWABLES

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REVISION CONTROL

Revision and Approvals					
Rev	**Date**	**Reason for Issue**	**Originated by**	**Checked by**	**Approved by**
0	12-12-2016	Final for review	IEC	CD	AC
1	26-01-2017	Final for Approval	IEC	CD	RM
2	21-03-2017	Final for Discharge updated following SCC comments	IEC	CD	RM

Abbreviations

AC	Alternating Current
CfD	Contract for Difference
DECC	Department for Energy and Climate Change
DC	Direct Current
DCO	Development Consent Order
EAOL	East Anglia One Limited
EA ONE	East Anglia One Offshore Wind Farm
HI&AP	Highway Improvements and Access Management Plan
MW	Megawatts
SCC	Suffolk County Council
SPR	ScottishPower Renewables

1.Introduction

1.1 Project Overview

1. East Anglia ONE Limited (EAOL), was awarded a Development Consent Order (DCO) by the Secretary of State, Department of Energy and Climate Change (DECC) on June 17th 2014 for East Anglia ONE Offshore Wind Farm (EA ONE). The DCO granted consent for the development of a 1200MW offshore windfarm and associated infrastructure.

2. In February 2015 EAOL secured a Contract for Difference (CfD) award to build a 714MW project and Scottish Power Renewables announced its role in leading East Anglia ONE towards construction. In April 2015 EAOL submitted a non-material change application to DECC to amend the consent from direct current (DC) technology to alternating current (AC). In March 2016, DECC authorised the proposed change application and issued a Corrections and Amendments Order.

3. This plan relates to the onshore construction works associated with EA ONE, which based on the AC technology with a capacity of 714MW and transmission connection of 680MW, comprises;

- A landfall site at Bawdsey, Suffolk
- Up to six underground cables, approx. 37km in length
- Up to four cable ducts for future East Anglia THREE project
- An onshore substation located at Bramford next to existing National Grid infrastructure

4. The scope of this document relates to the highway improvements and access management for the onshore substation at Bramford, referred to as Work No. 38 to 41 (Stage j) in the DCO.

1.2 Purpose and Scope

5. This Highway Improvements and Access Management Plan (HI&AP) focuses solely on the procedures for managing the impact of access to the new substation for the EA ONE onshore construction works. A separate HI&AP has been produced for the cable route (EA1-CON-R-IBR-009582) and is provided under separate cover. This HI&AP sets out the details of the localised highway improvement (HX-01) necessary to facilitate safe use of the existing road network and details of the access management measures to be installed (AX-subs) to allow safe access and egress to the substation and associated temporary compound area. This document has been produced to discharge DCO Requirements 14 and 25 (1) (c) in relation to the Work No 38 to 41 (Stage j), which state:

> **14**.—(1) *No stage of the connection works shall commence until for that stage written details(which accord with the outline access management plan) of the siting, design, layout and any access management measures for any new permanent or temporary means of access to a highway to be used by vehicular traffic, or any alteration to an existing means of access to a highway used by vehicular traffic, has, after consultation with the highway authority, been submitted to and approved by the relevant planning authority.*
>
> *(2) The highway accesses for that stage must be constructed or altered and the works described in sub-paragraph (1) in relation to access management measures must be carried out, as the case may be, in accordance with the approved details before they are brought into use for the purposes of the authorised development.*
>
> *(3) No stage of the connection works shall commence until for that stage, a scheme of highway improvements within the highway boundary (in accordance with table 1 of the outline traffic management plan) has been submitted to, and approved by the local planning authority in consultation with the relevant highway authority. The scheme must describe whether the proposed improvements are to be temporary or permanent.*
>
> *(4) The highway improvements must be constructed in accordance with the approved details before they are brought in to use for the purposes of the authorised development.*
>
> **25**.—(1) *No stage of the connection works shall be commenced until for that stage, after consultation with the relevant highway authority, the following have been submitted to and approved by the relevant local authority in consultation with the relevant highway authority—*
>
> *(c) an access management plan which must be in accordance with the outline access management plan*

6. This HI&AP sets out the location, frontage, general layout and visibility available for access (AX-subs) onto the existing road network from the onshore substation. It presents the requirements and standards that have been incorporated into the final access design.

7. This HI&AP also sets the required highway improvement (HX-01) within the highway boundary at the junction of Bullen Lane and Loraine Way and presents the details of the location and design. The improvement identified is a temporary measure, and the highway will be returned to the existing layout following construction, unless otherwise requested by Suffolk County Council (SCC) Highways Authority. The improvement has been designed to a standard required for a permanent improvement.

8. EAOL will work with the SCC Highways Authority to ensure appropriate resourcing is in place to monitor compliance with the provisions of this HI&AP, this will be done through the Planning Performance Agreement.

1.3 Background

9. An assessment was undertaken as part of the Traffic Assessment to inform the Environmental Statement which examined the appropriateness, viability and justification for the use of the existing transport networks available to ensure any impact of the additional delivery and transport movements are minimised to an acceptable level. The outcome of the assessment established construction routes that will adequately provide the requirements of the construction logistics which is based as far as reasonably practical upon the published Suffolk Lorry Route Network, thereby minimising the use of publically maintained local access roads as far as possible. Details of the Construction Access Routes are presented in Appendix 1.

10. A further Construction Access Route Assessment[1] was undertaken to evaluate the Local Access Routes of the construction road network, which do not form part of the Suffolk Lorry Route Network. The assessment included:

- An on-site engineering survey;
- An assessment and route evaluation of the construction access routes for the delivery of equipment, construction plant, materials; and
- The construction workforce along the Local Access Routes.

11. The assessment determined that the local access roads identified present viable and safe routes for use by construction traffic over the duration of the onshore construction works, subject to the implementation of mitigating measures and temporary road improvements.

12. This HI&AP takes account of the route surveys, assessments and route evaluations undertaken and has been developed in accordance with the Outline Access Management Plan (EA1-CON-N-IBR-00225).

[1]RSK, East Anglia ONE Offshore Windfarm Construction Access Route Assessment Document 371024-TRNS-REP-002 Rev02, September 2012

2.Local Community Liaison

13. EAOL will manage public relations with local residents and businesses that will be affected by construction traffic. Public relations for the entire works will be co-ordinated on site by a designated member of the construction management team. A proactive public relations campaign will be maintained, keeping local residents informed of the type and timing of works involved, the transport routes associated with the works, the hours of likely construction traffic movements and key traffic management measures. As provided for by the Code of Construction Practice (EA1-CON-F-GBE-008547), a combination of communication mechanisms such notices, exhibitions, letters, newsletters, posters, website and Parish Council meetings will be used to keep local residents and businesses informed.

14. A designated EA ONE Local Community Liaison Officer will field and respond to any public concerns, queries or complaints in a professional and diligent manner as set out in the Community Liaison and Public Relations Procedure contained within the Code of Construction Practice (EA1-CON-F-GBE-008547) provided under separate cover.

15. Bramford Parish Council will be contacted (in writing) in advance of the proposed works and ahead of key milestones. The information provided to the Parish Council will include a timetable of works, a schedule of working hours, the extent of the works, and a contact name, address and telephone number in case of complaint or query. Enquiries will be dealt with in an expedient and courteous manner. All complaints will be logged, investigated and, where appropriate, rectifying action will be taken.

16. As part of the Traffic Management Plan (EA1-CON-R-IBR-009583) all transport related to EA ONE onshore construction works will be registered and issued with a unique identification code from which an identification sticker/board will be placed in a prominent positions to enable the site management team and members of the public to identify the vehicle and its association to EA ONE. This will be monitored by both contractor Site Managers who will report into the designated Traffic Management Supervising Officer.

3.Requirement and Standards

18. This HI&AP and the works detailed within comply with the following guidance and standards:

- New Roads and Street Works Act 1991
- Highways Act 1980
- Design Manual for Roads and Bridges
- HSG47: Avoiding danger from underground Services (Third edition, 2014)
- Department of Transport's Chapter 8: Traffic Safety Measures and Signs for Road Works and Temporary Situations Parts 1 and 2

19. The design of the highway improvement works (HX-01) presented in this document have been reviewed and approved by SCC Highways Authority prior to inclusion in this plan (confirmed in email correspondence from David Stiff Highways Manager SCC 19.01.17).

4.Construction Details

20. The EA ONE onshore substation will be located within a fenced compound (150m by 190m) to the north of the existing National Grid Bramford Substation. The substation will contain electrical equipment including power transformers, switchgear, reactive compensation equipment, harmonic filters, cables, control buildings and other associated equipment, which will largely be outside with a number of the components being within the buildings.

21. The construction of the substation will include a number of key stages;

- Enabling works;
- Foundations, trenching and drainage installation;
- Construction of buildings; and
- Equipment installation and commissioning.

22. The enabling works will include grading and earthworks to remove any unsuitable materials from the substation area and provide a level platform. Where possible, the materials excavated will be reused on site as engineering fill or landscaping depending on material properties. The enabling works will also include the construction of the main concrete access road to the substation.

23. Following the completion of the enabling works, work will commence on the excavations for foundations for the buildings and trenches to accommodate electrical infrastructure and installation of the drainage networks. Work will also commence on the construction of the buildings. Once these works are complete, the substation equipment is installed and commissioned.

24. During the construction of the substation, site establishment and laydown areas will be required hereafter referred to as the temporary construction compound. This will include temporary offices, welfare, car parking, materials and equipment storage. The area directly east of the substation will be used as the substation temporary construction compound (referred to as Work No 38 within the DCO).

5. Access Management

25. Access to the onshore substation and associated temporary construction compound will be served from Bullen Lane, which leads eastwards from the substation location to the B1113. This road serves the existing Bramford National Grid substation and is suitable for use as a means of permanent access. The road is suitable to carry the vehicles which will be associated with the construction of the substation, and the alignment of Bullen Lane from its eastern end with the B1113 is suitable to accommodate abnormal loads.

26. Concrete access roads will be constructed to provide permanent access into and within the substation. A new concrete external access road will be constructed to lead into the substation (AX-sub), this will be used to access the temporary construction compound once constructed. Prior to the construction of the main access road a temporary trackway will be installed to access the temporary construction compound.

27. The main access road will run parallel to Bullen Lane and the bridleway to the north of the Bramford National Grid substation in an east-west direction. The junction with the new access road and Bullen Lane will be located immediately west of the private track to Bullenhall Farm. This will be a 5m access road with two lay-by/waiting areas suitably sized to accommodate vehicles used for the construction and maintenance of the substation. A concrete internal access and service road and car parking area will be constructed within the substation. This is a 5m wide circulation road designed to meet the load bearing capacity of the vehicles delivering the electrical components. The appearance of the access road will be further integrated into the landscape by hedgerow planting on either side.

28. Maintenance of the access point will be carried out via daily inspections by the site management team reporting of defects. Regular road sweeping and installation of wheel washing facilities shall prevent contamination of the adjacent highways.

29. The following procedures shall be adopted to manage the impact of access to the substation during the construction works:

- All access arrangements will be including in the briefing to all site staff at induction stage;
- All access routes will be given a unique identification number and each will have signage displaying the identification number;
- All access points will have appropriate advance warning signage;
- All gates will be manned or locked daily when there is no construction activity;
- All access points will have grit bins placed at the entrance way;
- Wheel wash facilities will be installed at all access points; and
- All Contractors will be advised of Traffic Management Plan (EA1-CON-R-IBR-009583) and this HI&AP prior to engagement by EAOL.

6. Access and Highway Improvements

30. This section presents the details of the access improvement (AX-subs) and highway improvement (HX-01) work to be undertaken to facilitate construction of the substation. Details of the improvement works, including location, frontage, general layout and visibility and details of the identified access point and associated improvements are provided.

6.1 Access Improvement

31. The access improvement for the substation (AX-subs) comprises of a new permanent access road installed from a new access junction at Bullen Lane.

32. The new access road will run parallel to Bullen Lane and the bridleway to the north of the Bramford National Grid substation in an east-west direction. The road will be constructed using concrete with a filter drain in one verge and utility services in the other. Details of the design of the access road are shown on drawing EA1-GRD-D-FHT-007834 Rev 4 'Road Construction Details Sheet 1' in Appendix 2. The location of the new access road is shown on drawing EA1-GRD-D-FHT-007836 Rev 2 'Setting Out' in Appendix 2.

33. The junction for the new access road at Bullen Lane will be located immediately west of the private track to Bullenhall Farm. The new access junction comprises a 2m verge and a 30m radius turn in area to the east side of the new junction only to facilitate safe HGV access and new road layout signage will be installed. Details of the new access junction are shown on drawing EA1-GRD-D-FHT-007840 Rev 1 'Junction Arrangement' presented in Appendix 2.

6.2 Highway Improvement

34. As part of the Traffic Assessment for the Environmental Statement, it was confirmed that the existing SCC Lorry Route Network adequately provides for the construction activities required. An appraisal[2] of the existing Local Road Network necessary to accommodate construction related traffic has been undertaken to identify where road improvements are required to facilitate the works.

35. The route appraisals have taken into consideration features pertinent to the geometry and safety of the route for the size of vehicle proposed. These included:

- Road width;
- Traffic volume and capacity;
- Visibility along route;
- Extent of hedgerows and trees along verges;
- Level of route in relation to adjacent land;
- Verges and extent of Public Highway;
- Third party land requirement;
- Pedestrian and non-motorised traffic flow; and
- Swept path tracking analysis

36. To facilitate access to the substation and the temporary construction compound a highway improvement is required at the junction of Loraine Way and Bullen Lane (HX-01). This comprises the widening of the Loraine Way road surface along the western verge to create a filter lane to permit traffic turning into Bullen Lane. Details of the highway improvement (HX-01) are shown on drawing on the following plans presented in Appendix 3:

- EA1-GRD-D-FHT-022159 Rev 8 'Layout of Junction Improvement at Bullen Lane/Loraine Way (HX-01)';
- EA1-GRD-D-FHT-022160 Rev 6'Bullen Lane/Loraine Way Road Construction Details'
- EA1-GRD-D-FHT-022180 Rev 5'Road Signs'

[2]RSK, East Anglia ONE Offshore Windfarm Construction Access Route Assessment Document 371024-TRNS-REP-002 Rev02, September 2012

37. The proposal presented is considered necessary as a temporary improvement unless otherwise requested by SCC Highways Authority. However the improvement has been designed to a standard required for a permanent improvement.

38. The highway improvement presented has been developed in discussion with SCC Highways Authority and has been submitted and approved by them prior to inclusion in this plan (confirmed in email correspondence from David Stiff Highways Manager SCC 19.01.17).

Appendix 1 Construction Access Routes

610000 620000 630000

250000

240000

Legend

- Development Area (Incorporating Haul Route)

Detail of Route Works

- HDD Section
- Primary CCS (Site B + E)
- Secondary CCS (Sites A, C, D, F, G, H, I)

Access Routes

- Strategic Access Route
- Suffolk Lorry Route Network
- Local Access Route

Notes:
Data derived from Suffolk County Council, Department for Transport and RSK Surveys

A B C D E F G H I

IPSWICH WOODBRIDGE WICKHAM MARKET

Datum: OSGB36
Projection: OSNG

© ESRI

Rev	Date	By	Comment
E	26/04/13	JG	Updates to layout
D	25/04/13	JG	Updates to legend
C	24/04/13	JG	Updates to access routes

Original A3 Plot Scale 1:80,000

0 2 4 km

East Anglia Offshore Wind

Construction Access Routes (HGVs)

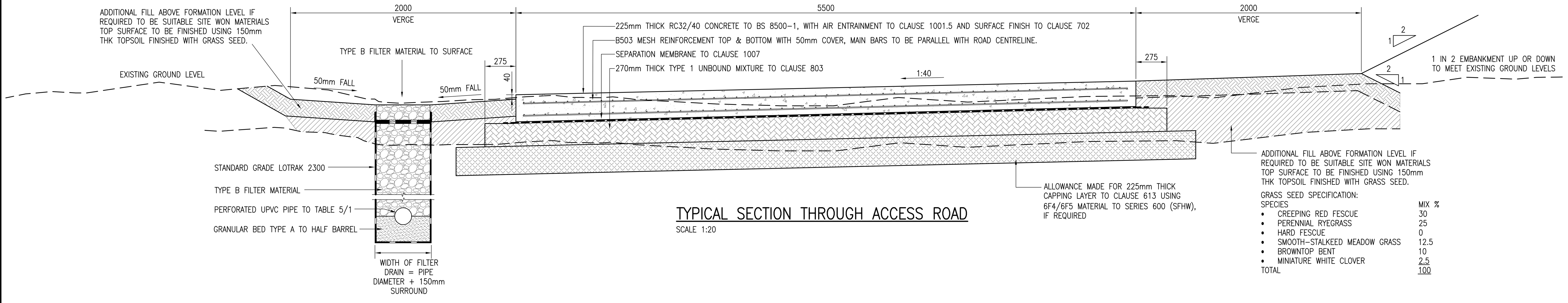
Drg No	371024-SEI-2.1
Rev	E
Date	26/04/13
Layout	N/A

SEI

Figure 2.1

Ref: \\hh-nas3\p-projects\EIA\40000-Helsby Projects\P41388 - East Anglia ONE\07 GIS\Access Routes for CCSs.mxd

Appendix 2 Substation Access Improvement Details

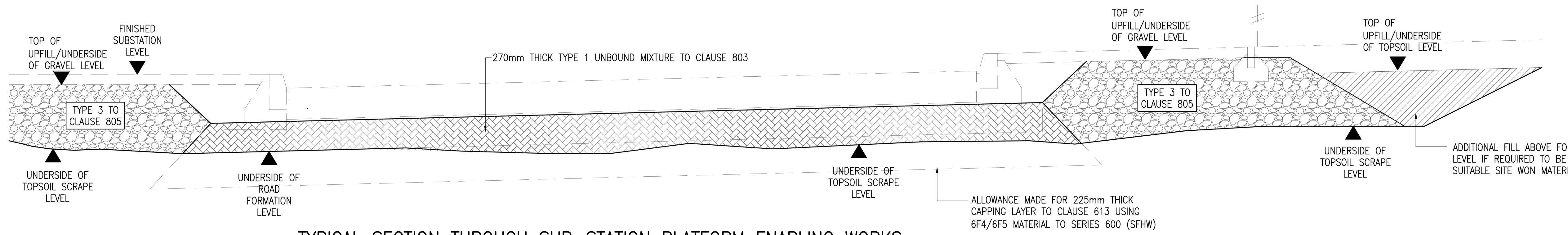


GRASS SEED SPECIFICATION:

SPECIES	MIX %
CREEPING RED FESCUE	30
PERENNIAL RYEGRASS	25
HARD FESCUE	0
SMOOTH-STALKED MEADOW GRASS	12.5
BROWNTOP BENT	10
MINIATURE WHITE CLOVER	2.5
TOTAL	100

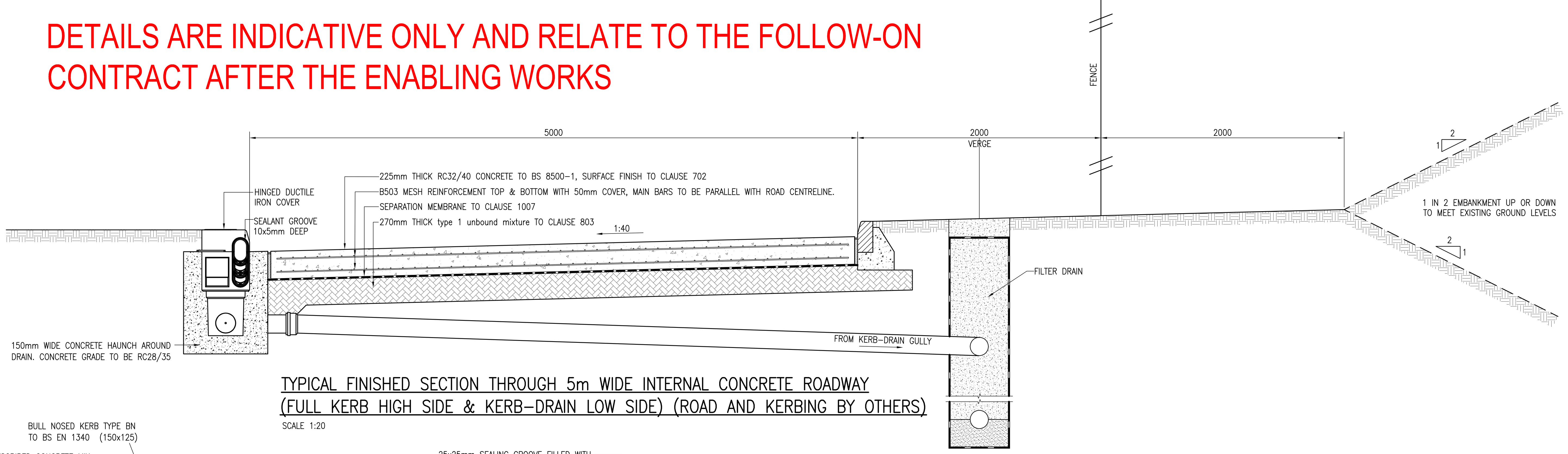
TYPICAL SECTION THROUGH ACCESS ROAD
SCALE 1:20

AN ALLOWANCE HAS BEEN MADE FOR 225mm THICK 6F4/6F5 CAPPING BASED ON THE AVAILABLE GROUND INVESTIGATION INFORMATION. HOWEVER, THE CONTRACTOR IS TO UNDERTAKE CBR TESTING (IN-SITU) @ 25m INTERVALS ALONG CENTERLINE OF ROADS PRIOR TO THE COMMENCEMENT OF WORKS TO CONFIRM CAPPING REQUIREMENTS.
IF THE INSITU CBR RESULTS ARE GREATER THAN 8% NO CAPPING LAYER IS REQUIRED
IF INSITU CBR RESULTS ARE BETWEEN 4% AND 8% A 225mm CAPPING LAYER IS REQUIRED
IF THE INSITU CBR RESULTS ARE LESS THAN 4% ENGINEER TO BE CONSULTED PRIOR TO ANY WORKS IN THIS AREA.

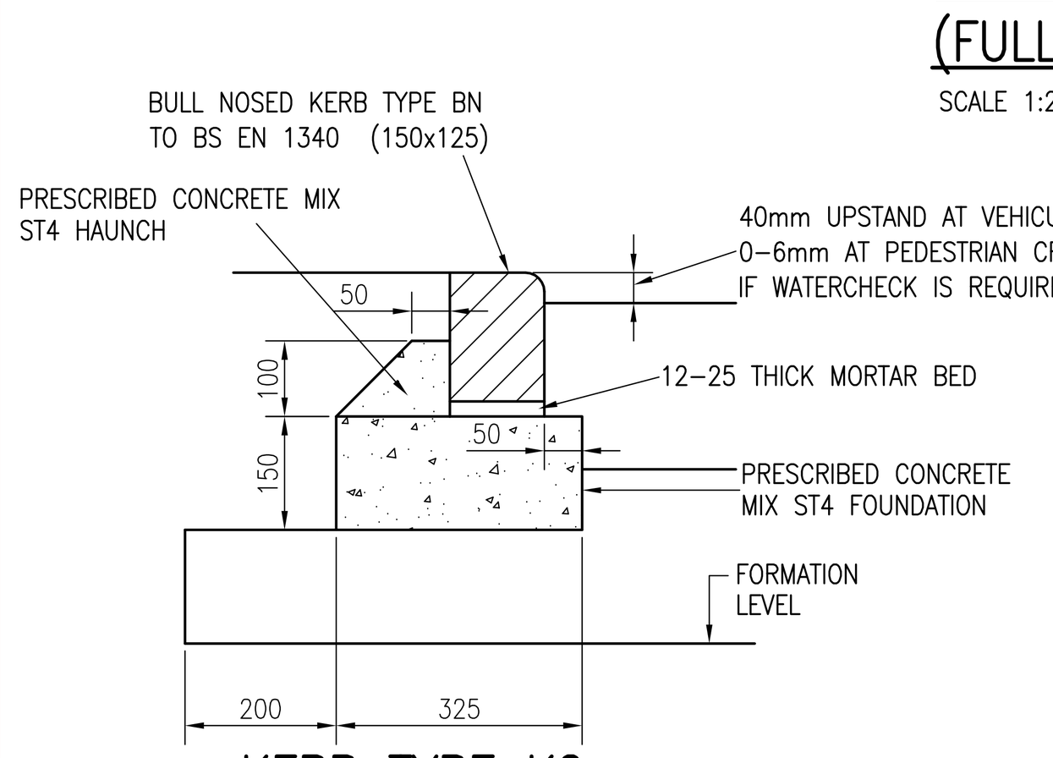


TYPICAL SECTION THROUGH SUB-STATION PLATFORM ENABLING WORKS
SCALE 1:20

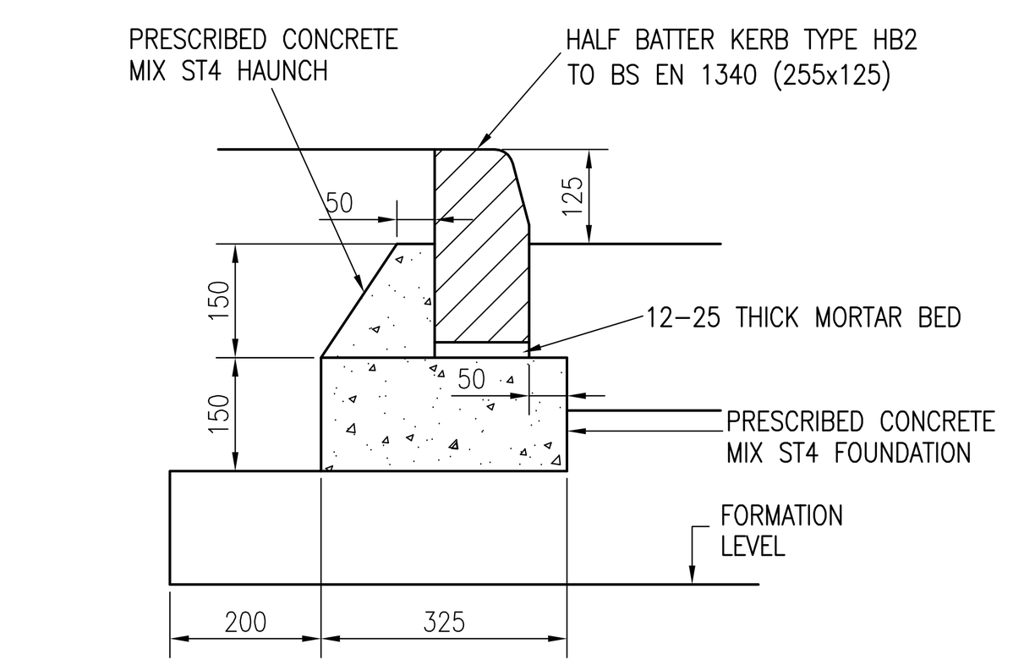
DETAILS ARE INDICATIVE ONLY AND RELATE TO THE FOLLOW-ON CONTRACT AFTER THE ENABLING WORKS



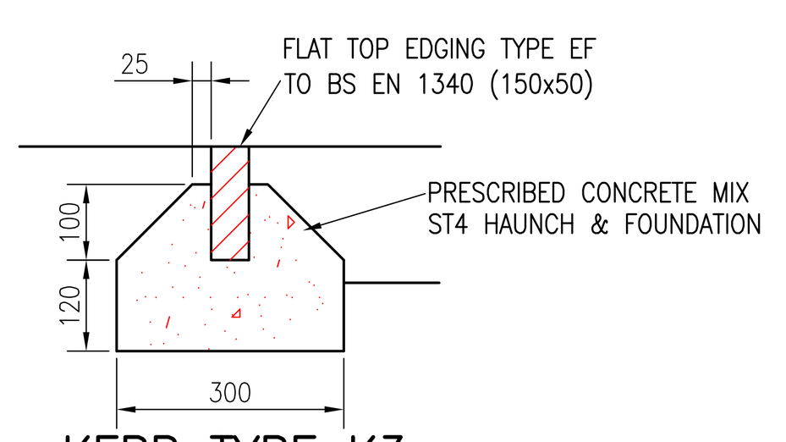
TYPICAL FINISHED SECTION THROUGH 5m WIDE INTERNAL CONCRETE ROADWAY
(FULL KERB HIGH SIDE & KERB-DRAIN LOW SIDE) (ROAD AND KERBING BY OTHERS)
SCALE 1:20



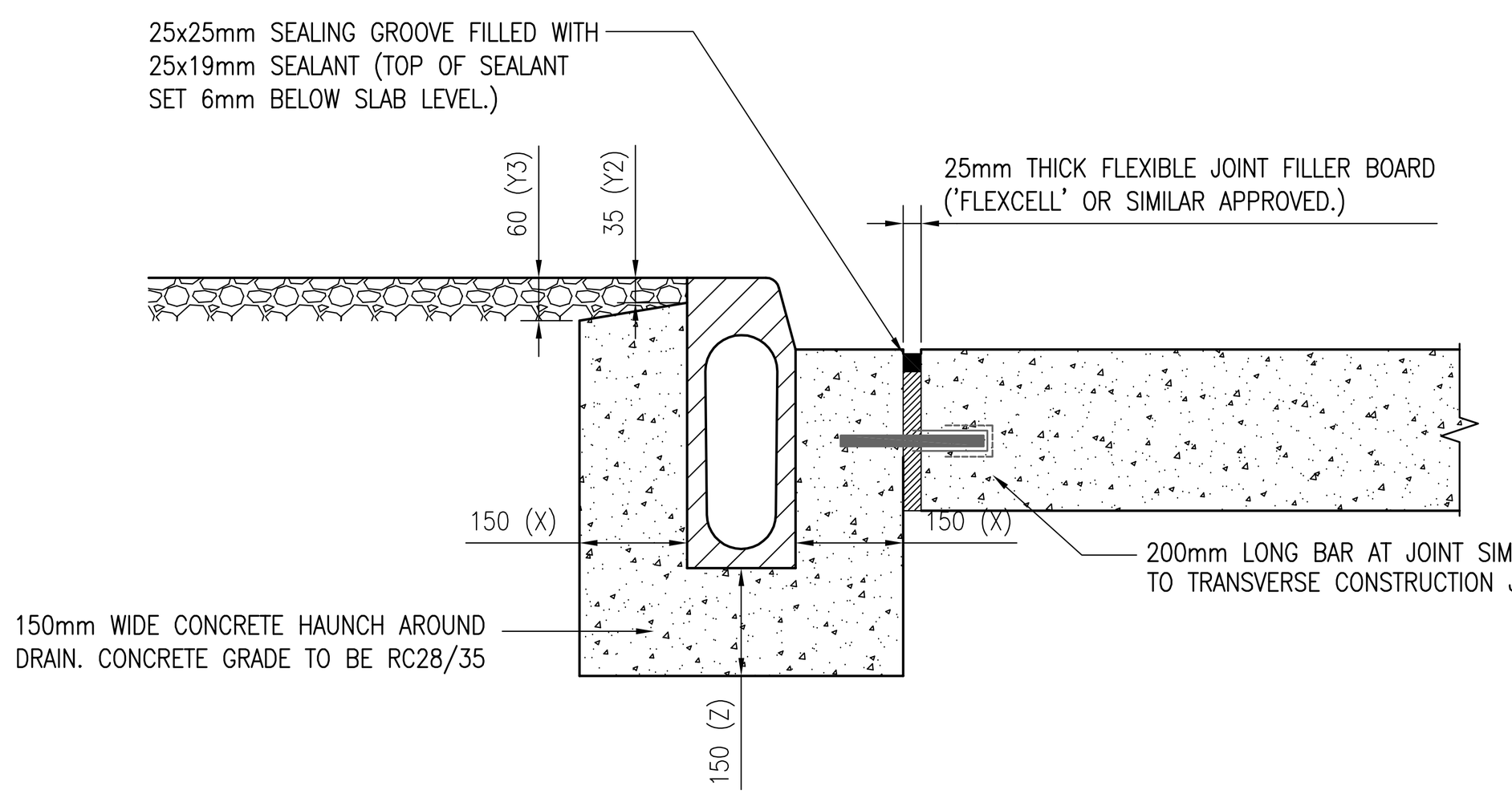
KERB TYPE K2
SCALE 1:10



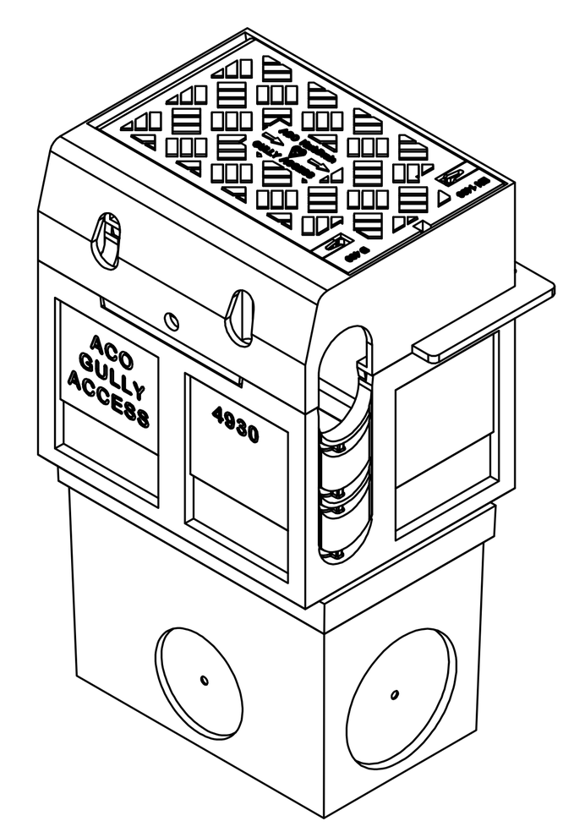
KERB TYPE K1
SCALE 1:10
AT TRANSITION BETWEEN HALF BATTERED KERBS AND BULLNOSE KERBS DROPPER KERB TYPE DL1 AND DR1 (BS EN 1340) TO BE USED.



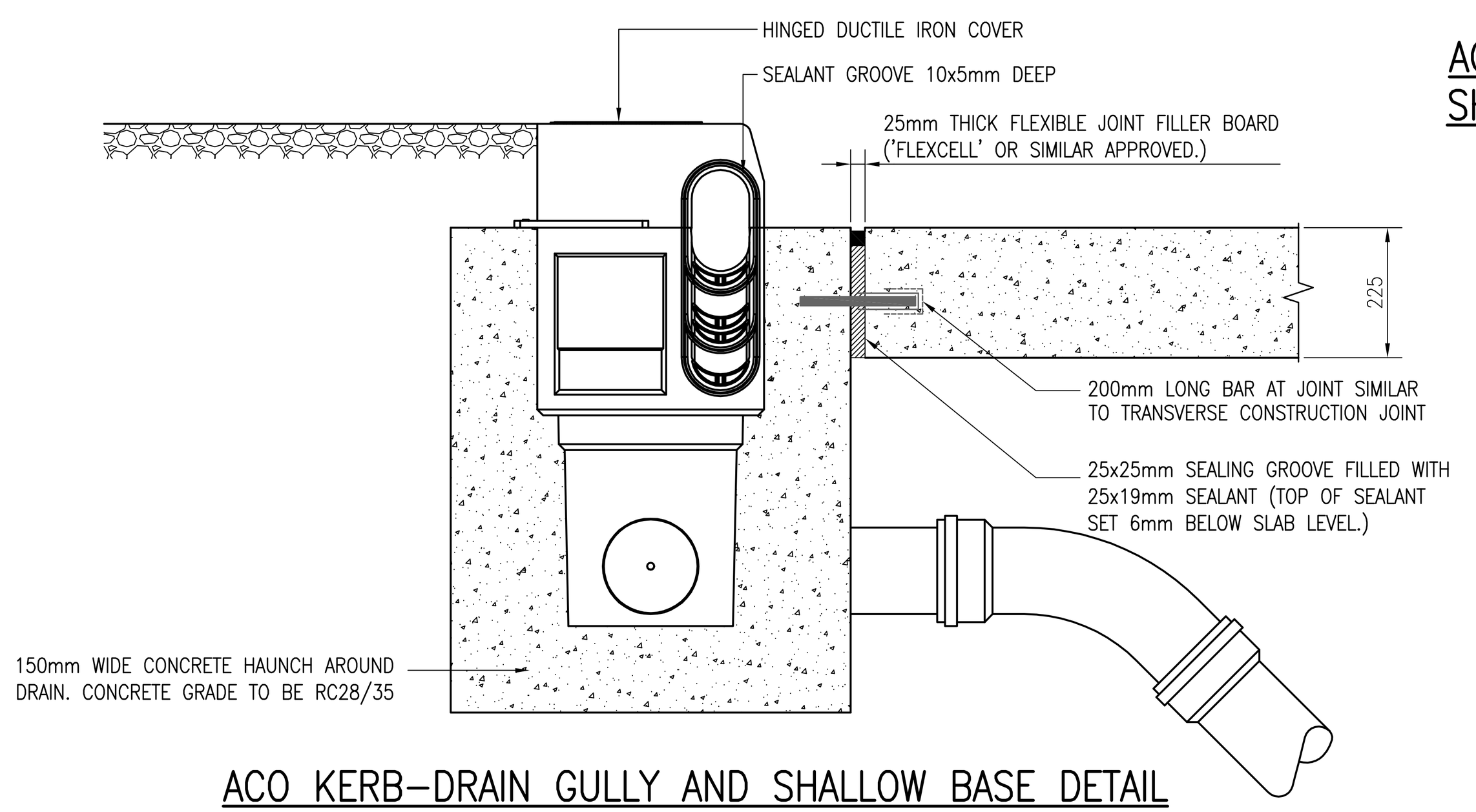
KERB TYPE K3
SCALE 1:10



ACO KERB-DRAIN 305 CHANNEL DETAIL
SCALE 1:10



ACO KERB-DRAIN GULLY AND SHALLOW BASE SCHEMATIC



ACO KERB-DRAIN GULLY AND SHALLOW BASE DETAIL
SCALE 1:10

ACO KERB-DRAIN NOTES:

1.0 GROUND CONDITIONS: THE CUSTOMER SHOULD ENSURE THAT THE MINIMUM DI
FOR THE EXISTING GROUND CONDITIONS. ENGINEERING ADVICE MAY BE NECESSARY.

2.0 BLOCK PAVEMENTS: THE CHANNEL MUST BE SUPPORTED LATERALLY AND THE
RESTRAINED FROM MOVEMENT BY BEDDING SECURELY. E.G. BY USING AN EPOXY O
FOR BED AND PERPENDICULAR JOINTS (FOR EXAMPLE RONAFIX MORTAR MIX C OR
01279 638700). ALTERNATIVELY, EXTEND CONCRETE HAUNCH UPTO FINISHED PAVIN
ENGINEERING ADVICE MAY BE REQUIRED.

3.0 SURFACE CRACKS: ALTERNATE CRACK CONTROL AND MOVEMENT JOINTS TRANS
HAUNCH MAY REDUCE UNSIGHTLY SURFACE CRACKING. ENGINEERING ADVICE MAY

4.0 JOINT SEALANT: WHERE ACO DRAIN CHANNEL JOINTS AND FITTINGS ARE TO BE
USED IN FOUL WATER APPLICATIONS OR WHERE IMPERMEABILITY IS REQUIRED), USE
SEALANT SUCH AS A ONE PART POLYURETHANE TOGETHER WITH CLEANER AND/OR
SEALANT MANUFACTURER.

FILL THE SEALING GROOVE WITH A GENEROUS BEAD OF SEALANT, SUFFICIENT TO E
SEALED WHEN THE CHANNEL UNITS ARE PUSHED TOGETHER.

5.0 INSTALLATION DETAILS FOR KERBDRAIN ACCESSORIES ARE AVAILABLE ON REQU

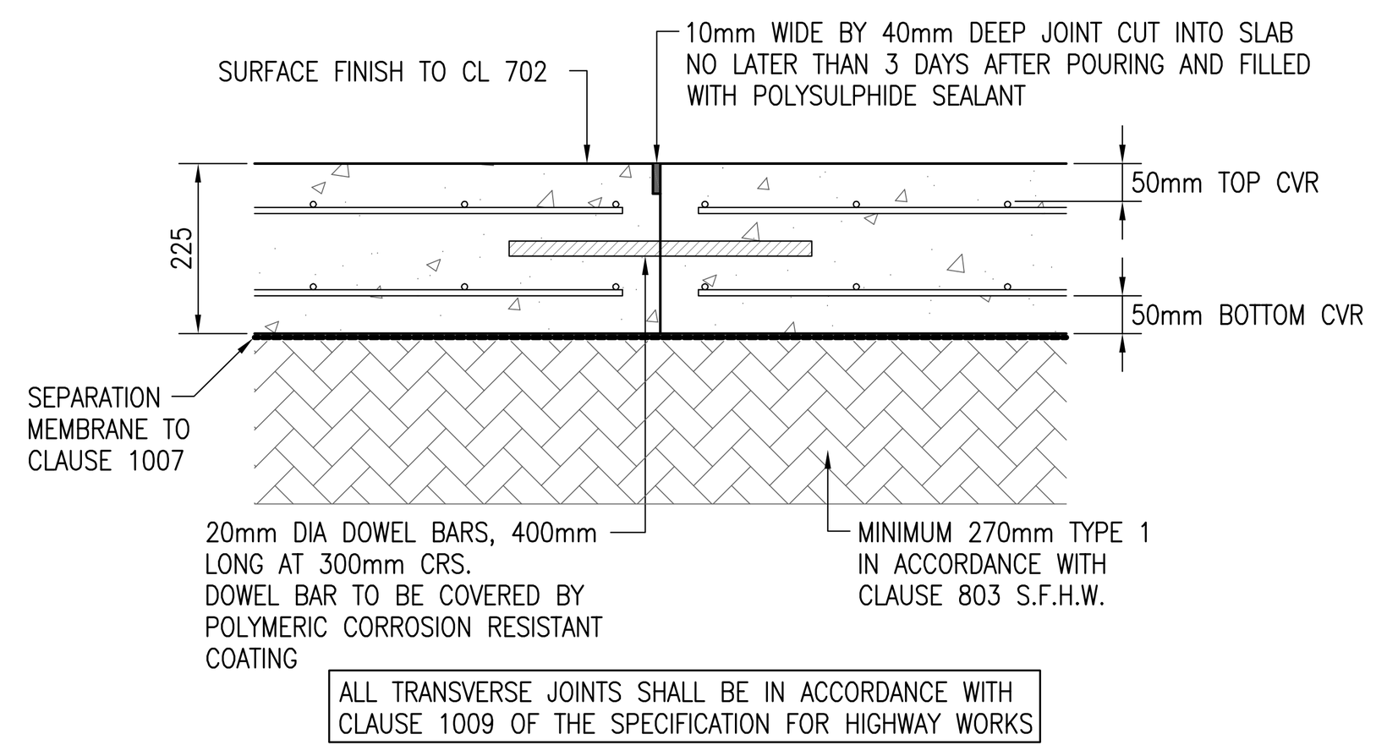
6.0 SEE NOTE 8.0 FOR MINIMUM CONCRETE HAUNCH DIMENSIONS FOR BS EN14
THE REQUIREMENT IS FOR LOAD CLASS C250 OR LESS, THE FRONT HAUNCH MAY

7.0 GENERAL INSTALLATION NOTES: SEE DRAWING E1-E01-003-3 FOR GENERAL N
INSTALLED AGAINST CONCRETE ROADWAYS, NOTE PARTICULARLY THE REQUIREMENT F
ALLOW FOR THERMAL EXPANSION OF SLABS.

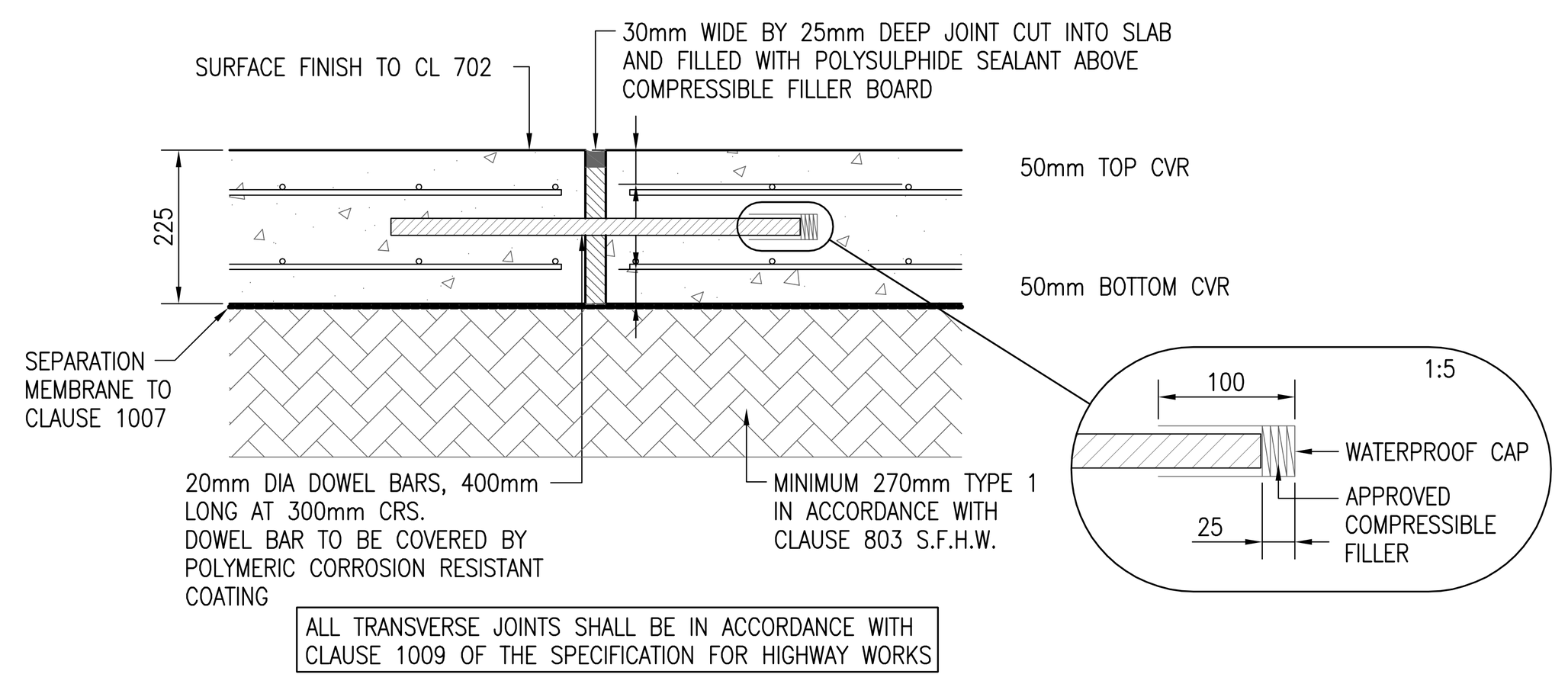
8.0 CONCRETE SURROUND DIMENSIONS

X	Minimum 150mm haunch to front and back of unit
Z	Minimum 150mm haunch beneath unit
Y2	Maximum 35mm* from top of unit (back haunch)
Y3	Maximum 60mm* from top of unit (back haunch)
Y4	Maximum 100mm below finished road level (front haunch) (Max 50mm for HB255)

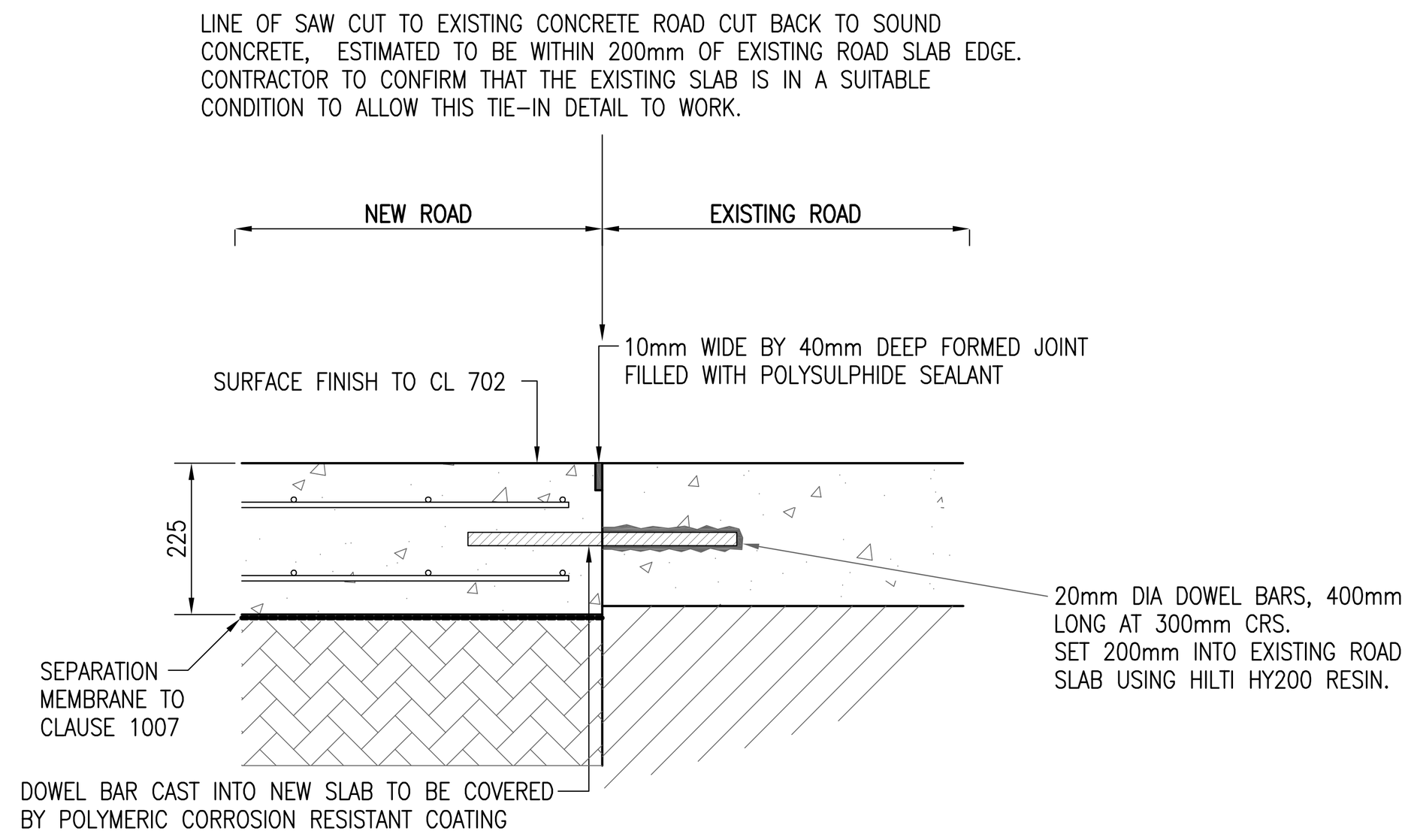
*WHERE REGULAR HGV IMPACTS ARE ANTICIPATED (E.G. ROUNDABOUTS),
WE RECOMMEND THAT THE CONCRETE BACKING IS LAID TO THE TOP OF THE KERB



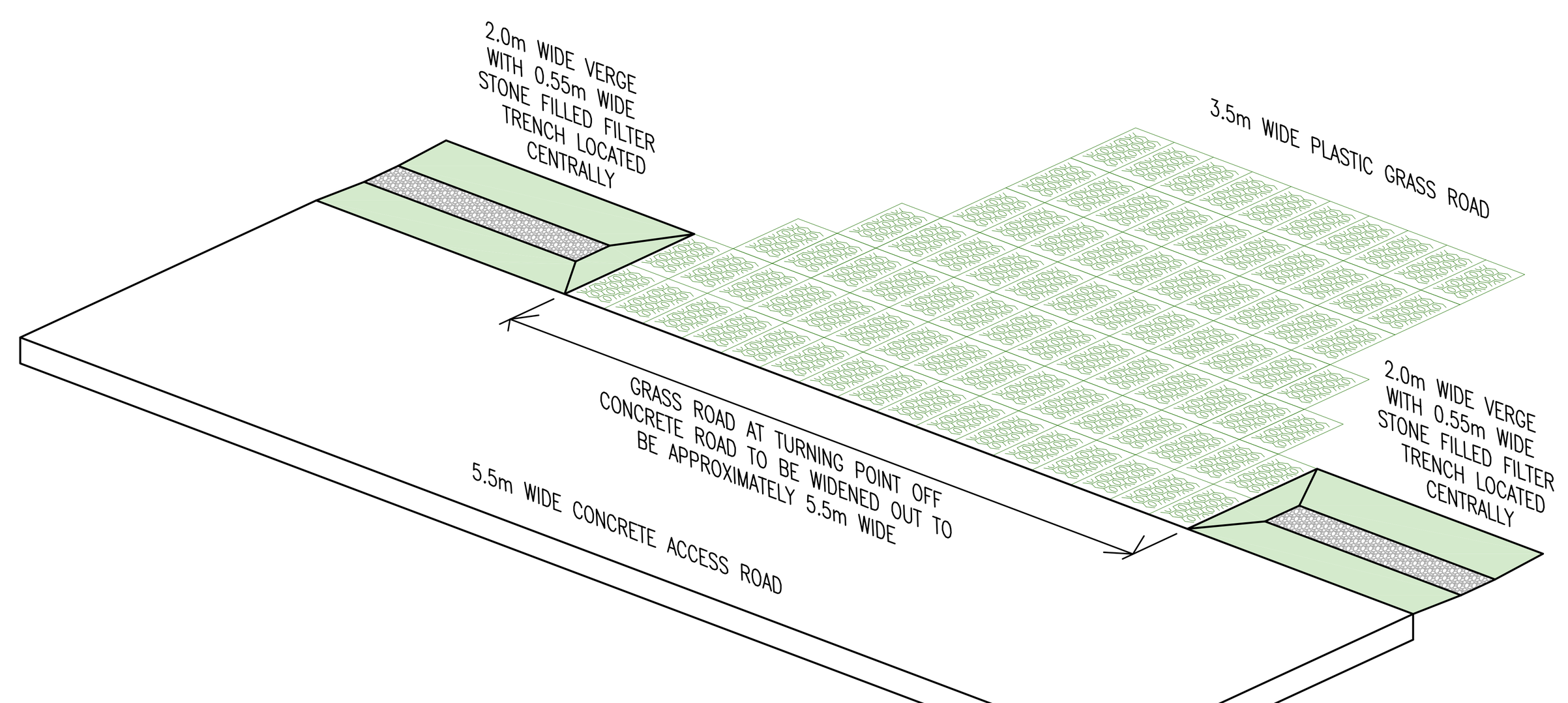
TRANSVERSE CONTRACTION JOINT DETAIL
SCALE 1:10



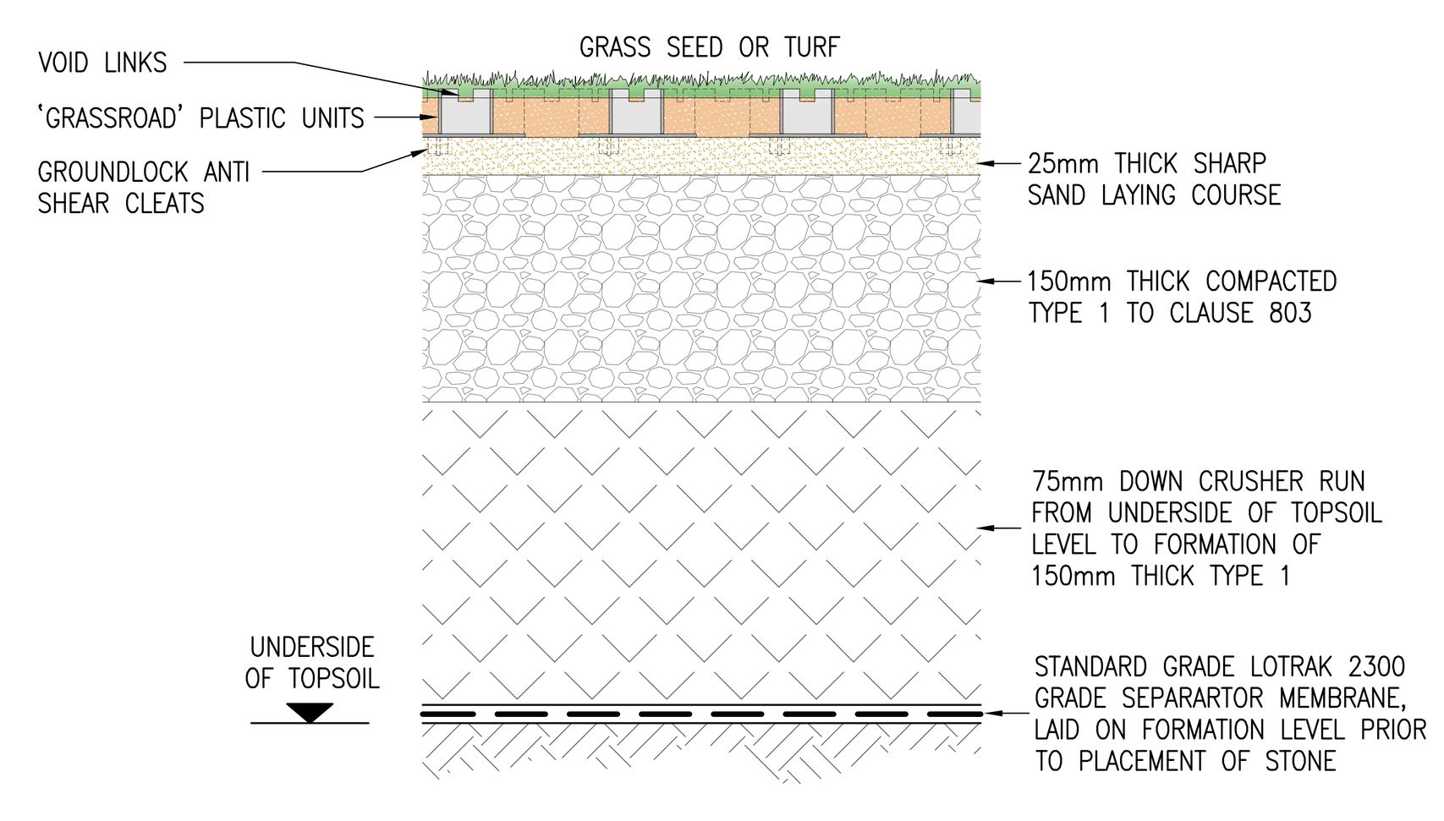
TRANSVERSE EXPANSION JOINT DETAIL
SCALE 1:10



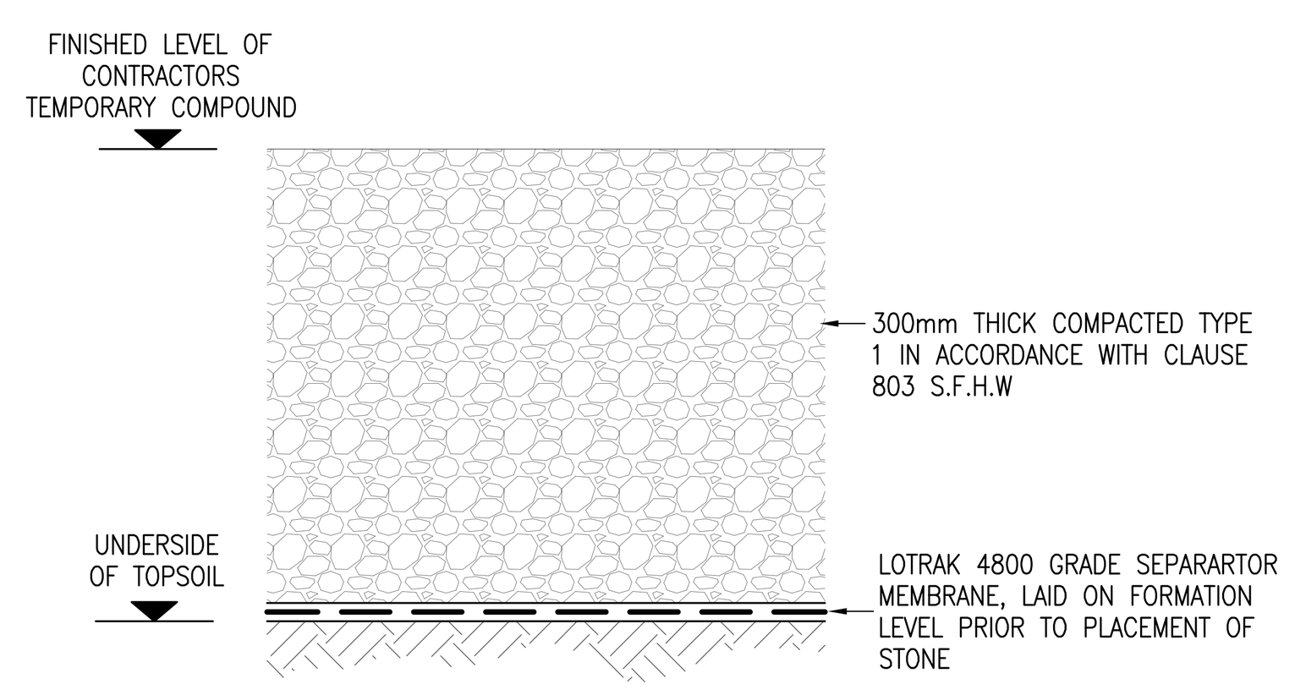
EXISTING SLAB TIE-IN DETAIL
SCALE 1:10



ACCESS POINT TO WET WOODLAND ACCESS TRACK
NOT TO SCALE



TYPICAL SECTION THROUGH BASIN ACCESS TRACK USING 'GRASSROAD' by GRASS CONCRETE LIMITED
SCALE 1:5



TYPICAL SECTION THROUGH CONTRACTORS TEMPORARY COMPOUND
SCALE 1:5

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.

RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO.

CONSTRUCTION:
- INTERFACE WITH THE PUBLIC
- DEEP EXCAVATIONS
- PRESENCE OF UNKNOWN LIVE SERVICES
- OVERHEAD SERVICES

FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

NOTES:
1. FOR ROAD LAYOUT, REFER TO THE FOLLOWING DRAWINGS:
EA1-GRD-D-FHT-007830
EA1-GRD-D-FHT-007831
EA1-GRD-D-FHT-007832
2. FOR DRAINAGE LAYOUT, REFER TO THE FOLLOWING DRAWING:
EA1-GRD-D-FHT-007838
EA1-GRD-D-FHT-007839
EA1-GRD-D-FHT-007840

REV.	DATE	Drawn	Prep.	Checked	Approv.	REASON. STATUS OF REVISION
4	11.08.16	GAV	GAV	AJR	-	DESIGN UPDATES AND RE-ISSUE. DETAILS FOR FUTURE WORKS CLARIFIED
3	20.07.16	GAV	GAV	SGD	-	VERGE TREATMENT AT BASIN ACCESS TRACK DETAIL CLARIFIED. SECTION THROUGH CONTRACTORS COMPOUND MAKE-UP REVISED.
2	18.07.16	GAV	GAV	SGD	-	WIDTH OF STONE FILTER TRENCH TO SURFACE OF VERGE MINIMISED
1	13.07.16	GAV	GAV	SGD	-	UPDATED TO SUIT DESIGN CHANGES RELATING TO LAYOUT REV 6

Client : SCOTTISHPOWER RENEWABLES
Client drawing nº : -
Other ref. of client :
General Contractor / Engineering : IBERDROLA Ingenieering and Construction
QUALITY LIST: YES ☐ NO ☑
DESIGN VERIFICATIONS: LEVEL 1 ☐ LEVEL 2 ☐ NOT APPL. ☑
Approval / Release for Construction : According stamps on drawing
Author : FAIRHURST
Project : OSS EAST ANGLIA ONE
Classification :
Titles : ROAD CONSTRUCTION DETAILS SHEET 1
Type of Document :
Sheet: 00
Next Sh: -
First issue : 10-05-16 INITIAL ISSUE

Sign:	Drawn	Prep.	Check.	App.
Acron:	SF	SF	GAV	IDW

Draw. nº : EA1-GRD-D-FHT-007834
Rev : 4
Replaces : -
SCALE : 0 100MM 200MM 400MM 1:20
SIZE: A0

SETTING OUT SCHEDULES

ALIGNMENT ROAD 1

LOCATION	CHAINAGE	EASTING	NORTHING	LEVEL	RADIUS	BEARING	ANGLE	ARC LENGTH	TANL
SP1–1	0.000	610212.740	246137.757	55.384		337.61826			
TP1–1a	8.883	610209.358	246145.971	55.532		337.61826			
IP1–1		610206.756	246152.290		13.000		55.46073	12.584	6.834
CP1–1	10.000	610208.889	246146.985	55.551					
CP1–2	20.000	610201.488	246153.341	55.718					
TP1–1b	21.467	610200.075	246153.730	55.742		282.15753			
CP1–3	30.000	610191.733	246155.527	55.884					
CP1–4	40.000	610181.957	246157.633	56.051					
CP1–5	50.000	610172.182	246159.739	56.218					
CP1–6	60.000	610162.406	246161.845	56.384					
CP1–7	70.000	610152.630	246163.951	56.551					
CP1–8	80.000	610142.854	246166.057	56.718					
TP1–2a	81.169	610141.712	246166.303	56.737		282.15753			
IP1–2		610093.560	246176.676		120.000		44.63368	93.481	49.257
CP1–9	90.000	610133.018	246167.844	56.873					
CP1–10	100.000	610123.068	246168.811	56.927					
CP1–11	110.000	610113.072	246168.947	56.867					
CP1–12	120.000	610103.099	246168.250	56.787					
CP1–13	130.000	610093.219	246166.726	56.707					
CP1–14	140.000	610083.500	246164.385	56.627					
CP1–15	150.000	610074.009	246161.242	56.547					
CP1–16	160.000	610064.813	246157.321	56.498					
CP1–17	170.000	610055.976	246152.648	56.528					
TP1–2b	174.649	610052.006	246150.228	56.565		237.52385			
CP1–18	180.000	610047.492	246147.355	56.608					
CP1–19	190.000	610039.056	246141.986	56.688					
CP1–20	200.000	610030.620	246136.616	56.768					
CP1–21	210.000	610022.184	246131.247	56.848					
CP1–22	220.000	610013.747	246125.877	56.928					
CP1–23	230.000	610005.311	246120.508	57.008					
CP1–24	240.000	609996.875	246115.138	57.088					
CP1–25	250.000	609988.439	246109.769	57.168					
CP1–26	260.000	609980.003	246104.399	57.248					
TP1–3a	266.821	609974.249	246100.737	57.283		237.52385			
IP1–3		609963.403	246093.834		120.000		12.23023	25.615	12.856
CP1–27	270.000	609971.544	246099.065	57.286					
CP1–28	280.000	609962.765	246094.284	57.245					
CP1–29	290.000	609953.617	246090.251	57.165					
TP1–3b	292.436	609951.341	246089.385	57.146		249.75409			
CP1–30	300.000	609944.244	246086.767	57.085					
CP1–31	310.000	609934.862	246083.307	57.005					
CP1–32	320.000	609925.480	246079.846	56.925					
CP1–33	330.000	609916.098	246076.386	56.845					
CP1–34	340.000	609906.715	246072.925	56.765					
CP1–35	350.000	609897.333	246069.465	56.692					
CP1–36	360.000	609887.951	246066.004	56.684					
CP1–37	370.000	609878.569	246062.544	56.750					
CP1–38	380.000	609869.187	246059.083	56.830					
CP1–39	390.000	609859.805	246055.623	56.910					
CP1–40	400.000	609850.422	246052.162	56.990					
CP1–41	410.000	609841.040	246048.702	57.070					
CP1–42	420.000	609831.658	246045.241	57.150					
CP1–43	430.000	609822.276	246041.781	57.230					
CP1–44	440.000	609812.894	246038.320	57.310					
CP1–45	450.000	609803.512	246034.860	57.390					
CP1–46	460.000	609794.129	246031.399	57.458					
CP1–47	470.000	609784.747	246027.939	57.447					
TP1–4a	472.685	609782.228	246027.009	57.428		249.75409			
IP1–4		609726.307	246006.383		70.000		80.82764	98.750	59.604
CP1–48	480.000	609775.245	246024.841	57.354					
CP1–49	490.000	609765.411	246023.077	57.246					
CP1–50	500.000	609755.425	246022.732	57.138					
CP1–51	510.000	609745.492	246023.812	57.030					
CP1–52	520.000	609735.814	246026.295	56.923					
CP1–53	530.000	609726.588	246030.130	56.815					
CP1–54	540.000	609718.002	246035.240	56.707					
CP1–55	550.000	609710.231	246041.520	56.599					
CP1–56	560.000	609703.434	246048.843	56.491					
CP1–57	570.000	609697.748	246057.059	56.384					
TP1–4b	571.435	609697.030	246058.302	56.368		330.58173			
CP1–58	580.000	609692.823	246065.762	56.276					
CP1–59	590.000	609687.911	246074.473	56.168					
CP1–60	600.000	609683.000	246083.183	56.060					
CP1–61	610.000	609678.088	246091.894	55.960					
CP1–62	620.000	609673.176	246100.605	55.893					
CP1–63	630.000	609668.264	246109.315	55.857					
CP1–64	640.000	609663.352	246118.026	55.824					
CP1–65	650.000	609658.441	246126.736	55.791					
CP1–66	660.000	609653.529	246135.447	55.757					
CP1–67	670.000	609648.617	246144.157	55.724					
CP1–68	680.000	609643.705	246152.868	55.691					
CP1–69	690.000	609638.793	246161.579	55.662					
CP1–70	700.000	609633.881	246170.289	55.663					
CP1–71	710.000	609628.970	246179.000	55.692					
CP1–72	720.000	609624.058	246187.710	55.726					
CP1–73	730.000	609619.146	246196.421	55.759					
CP1–74	740.000	609614.234	246205.131	55.782					
CP1–75	750.000	609609.322	246213.842	55.773					
CP1–76	760.000	609604.411	246222.553	55.741					
CP1–77	770.000	609599.499	246231.263	55.708					
CP1–78	780.000	609594.587	246239.974	55.674					
EP1–1	789.522	609589.910	246248.268	55.643		330.58173			

ALIGNMENT ROAD 2

LOCATION	CHAINAGE	EASTING	NORTHING	LEVEL	RADIUS	BEARING	ANGLE	ARC LENGTH	TANL
JP2–1	0.000	609678.077	246091.913	–999.900		240.58172			
CP2–1	10.000	609669.367	246087.001	56.096					
CP2–2	20.000	609660.656	246082.089	56.149					
CP2–3	30.000	609651.946	246077.177	56.127					
CP2–4	40.000	609643.235	246072.266	56.077					
CP2–5	50.000	609634.524	246067.354	56.027					
CP2–6	60.000	609625.814	246062.442	55.977					
CP2–7	70.000	609617.103	246057.530	55.927					
CP2–8	80.000	609608.393	246052.618	55.877					
CP2–9	90.000	609599.682	246047.706	55.827					
CP2–10	100.000	609590.972	246042.795	55.778					
CP2–11	110.000	609582.261	246037.883	55.764					
CP2–12	120.000	609573.550	246032.971	55.798					
TP2–1a	124.500	609569.631	246030.761	55.820		240.58172			
IP2–1		609558.742	246024.621		12.500		90.00000	19.635	12.500
CP2–13	130.000	609564.408	246029.183	55.848					
CP2–14	140.000	609555.187	246032.306	55.897					
TP2–1b	144.135	609552.603	246035.509	55.909		330.58172			
CP2–15	150.000	609549.722	246040.618	55.911					
CP2–16	160.000	609544.810	246049.328	55.877					
CP2–17	170.000	609539.898	246058.039	55.827					
CP2–18	180.000	609534.986	246066.750	55.778					
CP2–19	190.000	609530.075	246075.460	55.764					
CP2–20	200.000	609525.163	246084.171	55.798					
CP2–21	210.000	609520.251	246092.881	55.848					
CP2–22	220.000	609515.339	246101.592	55.897					
CP2–23	230.000	609510.427	246110.302	55.911					
CP2–24	240.000	609505.515	246119.013	55.877					
CP2–25	250.000	609500.604	246127.724	55.827					
CP2–26	260.000	609495.692	246136.434	55.777					
CP2–27	270.000	609490.780	246145.145	55.727					
CP2–28	280.000	609485.868	246153.855	55.677					
CP2–29	290.000	609480.956	246162.566	55.627					
CP2–30	300.000	609476.045	246171.276	55.577					
CP2–31	310.000	609471.133	246179.987	55.527					
EP2–1	310.146	609471.061	246180.115	55.526		330.58172			

ALIGNMENT ROAD 3

LOCATION	CHAINAGE	EASTING	NORTHING	LEVEL	RADIUS	BEARING	ANGLE	ARC LENGTH	TANL
JP3–1	0.000	609494.594	246138.381	–999.900		60.58172			
CP3–1	10.000	609503.305	246143.293	55.866					
CP3–2	20.000	609512.015	246148.205	55.915					
CP3–3	30.000	609520.726	246153.116	55.931					
CP3–4	40.000	609529.436	246158.028	55.898					
CP3–5	50.000	609538.147	246162.940	55.848					
CP3–6	60.000	609546.858	246167.852	55.798					
CP3–7	70.000	609555.568	246172.764	55.757					
CP3–8	80.000	609564.279	246177.675	55.762					
CP3–9	90.000	609572.989	246182.587	55.808					
CP3–10	100.000	609581.700	246187.499	55.858					
CP3–11	110.000	609590.410	246192.411	55.904					
CP3–12	120.000	609599.121	246197.323	55.909					
CP3–13	130.000	609607.832	246202.235	55.868					
JP3–2	137.000	609613.929	246205.673	–999.900		60.58172			

ALIGNMENT ROAD 4

LOCATION	CHAINAGE	EASTING	NORTHING	LEVEL	RADIUS	BEARING	ANGLE	ARC LENGTH	TANL
JP4–1	0.000	609540.482	246164.257	–999.900		150.58172			
CP4–1	10.000	609545.394	246155.546	55.935					
CP4–2	20.000	609550.306	246146.836	55.951					
CP4–3	30.000	609555.218	246138.125	55.902					
CP4–4	40.000	609560.130	246129.415	55.822					
CP4–5	50.000	609565.042	246120.704	55.771					
CP4–6	60.000	609569.953	246111.994	55.785					
CP4–7	70.000	609574.865	246103.283	55.858					
CP4–8	80.000	609579.777	246094.572	55.943					
EP4–1	81.121	609580.328	246093.596	55.953		150.58172			

ALIGNMENT BASIN

LOCATION	CHAINAGE	EASTING	NORTHING	LEVEL	RADIUS	BEARING	ANGLE	ARC LENGTH	TANL
JPBASIN–1	0.000	609691.703	246067.749	–999.900		241.14328			
CPBASIN–1	10.000	609682.944	246062.923	56.578					
CPBASIN–2	20.000	609674.186	246058.097	56.838					
CPBASIN–3	30.000	609665.428	246053.271	56.935					
CPBASIN–4	40.000	609656.670	246048.445	56.883					
CPBASIN–5	50.000	609647.911	246043.618	56.854					
TPBASIN–1a	53.172	609645.133	246042.087	56.862		241.14328			
IPBASIN–1		609638.484	246038.424		25.000		33.78334	14.741	7.592
CPBASIN–6	60.000	609639.674	246038.021	56.904					
TPBASIN–1b	67.913	609634.995	246031.681	56.968		207.35994			
CPBASIN–7	70.000	609634.036	246029.828	56.984					
CPBASIN–8	80.000	609629.440	246020.946	57.064					
CPBASIN–9	90.000	609624.844	246012.065	57.138					
CPBASIN–10	100.000	609620.249	246003.183	57.145					
CPBASIN–11	110.000	609615.653	245994.302	57.079					
TPBASIN–2a	119.652	609611.217	245985.729	57.002		207.35994			
IPBASIN–2		609605.687	245975.044		25.000		51.39948	22.427	12.032
CPBASIN–12	120.000	609611.055	245985.422	56.999					
CPBASIN–13	130.000	609604.721	245977.770	56.919					
CPBASIN–14	140.000	609595.907	245973.188	56.839					
TPBASIN–2b	142.080	609593.887	245972.698	56.821		258.75942			
CPBASIN–15	150.000	609586.118	245971.155	56.749					
CPBASIN–16	160.000	609576.310	245969.205	56.643					
CPBASIN–17	170.000	609566.502	245967.256	56.532					
CPBASIN–18	180.000	609556.694	245965.307	56.421					
CPBASIN–19	190.000	609546.885	245963.357	56.311					
CPBASIN–20	200.000	609537.077	245961.408	56.200					
CPBASIN–21	210.000	609527.269	245959.459	56.088					
CPBASIN–22	220.000	609517.461	245957.510	55.937					
CPBASIN–23	230.000	609507.653	245955.560	55.731					
CPBASIN–24	240.000	609497.845	245953.611	55.507					
TPBASIN–3a	244.296	609493.631	245952.774	55.410		258.75942			
IPBASIN–3		609464.537	245946.991		25.000		99.75062	43.524	29.663
CPBASIN–25	250.000	609488.211	245951.036	55.282					
CPBASIN–26	260.000	609480.152	245945.229	55.058					
CPBASIN–27	270.000	609474.990	245936.742	54.835					
CPBASIN–28	280.000	609473.540	245926.915	54.666					
TPBASIN–3b	287.820	609475.163	245919.297	54.591		159.00880			
CPBASIN–29	290.000	609475.944	245917.263	54.578					
CPBASIN–30	300.000	609479.526	245907.926	54.518					
TPBASIN–4a	307.775	609482.311	245900.668	54.471		159.00880			
IPBASIN–4		609493.014	245872.774		50.000		61.71846	53.860	29.876
CPBASIN–31	310.000	609483.062	245898.573	54.457					
CPBASIN–32	320.000	609485.259	245888.834	54.370					
CPBASIN–33	330.000	609485.477	245878.853	54.227					
CPBASIN–34	340.000	609483.708	245869.028	54.055					
CPBASIN–35	350.000	609480.022	245859.750	53.883					
CPBASIN–36	360.000	609474.567	245851.389	53.711					
TPBASIN–4b	361.634	609473.521	245850.133	53.683		220.72727			
CPBASIN–37	370.000	609468.062	245843.794	53.528					
TPBASIN–5a	374.522	609465.112	245840.366	53.433		220.72727			
IPBASIN–5		609453.967	245827.422		50.000		37.72321	32.920	17.081
CPBASIN–38	380.000	609461.318	245836.419	53.306					
CPBASIN–39	390.000	609453.373	245830.374	53.058					
CPBASIN–40	400.000	609444.385	245826.028	52.808					
TPBASIN–5b	407.442	609437.231	245824.002	52.622		258.45048			
CPBASIN–41	410.000	609434.725	245823.490	52.558					
TPBASIN–6a	414.407	609430.407	245822.607	52.448		258.45048			
IPBASIN–6		609420.737	245820.631		25.000		43.08933	18.801	9.870
CPBASIN–42	420.000	609424.849	245822.107	52.318					
CPBASIN–43	430.000	609415.159	245824.295	52.135					
TPBASIN–6b	433.209	609412.324	245825.794	52.090		301.53981			
CPBASIN–44	440.000	609406.536	245829.347	52.007					
EPBASIN–1	445.720	609401.661	245832.339	51.937		301.53981			

ALIGNMENT COMP

LOCATION	CHAINAGE	EASTING	NORTHING	LEVEL	RADIUS	BEARING	ANGLE	ARC LENGTH	TANL
JPCOMP–1	0.000	609692.616	246066.129	–999.900		60.58173			
CPCOMP–1	10.000	609701.327	246071.041	56.380					
CPCOMP–2	20.000	609710.038	246075.953	56.625					
EPCOMP–1	22.250	609711.997	246077.058	56.680		60.58173			

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.

RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO.

CONSTRUCTION
- INTERFACE WITH THE PUBLIC
- DEEP EXCAVATIONS
- PRESENCE OF UNKNOWN LIVE SERVICES
- OVERHEAD SERVICES

FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

NOTES:
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS.
2. ALL SETTING–OUT INFORMATION PROVIDED IS BASED ON THE PROJECT TOPOGRAPHIC SURVEY AND RELATES TO ORDNANCE DATUM.

REV.	DATE	Drawn	Prep.	Checked	Approv.	REASON. STATUS OF REVISION
2	01.11.16	SF	SF	GAV	SGD	SETTING OUT LAYOUT AND SCHEDULE UPDATED TO SUIT NEW PLATFORM LEVEL OF 55.900m.
1	11.08.16	GAV	GAV	AJR	-	SUPERFLUOUS INFORMATION AT JUNCTION REMOVED

Client : SCOTTISHPOWER RENEWABLES

Client drawing nº : -

Other ref. of client :

General Contractor / Engineering : IBERDROLA Ingenieering and Construction

QUALITY LIST: YES ☐ NO ☑
DESIGN VERIFICATIONS: LEVEL 1 ☐ LEVEL 2 ☐ NOT APPL. ☑

Approval / Release for Construction : According stamps on drawing

Author : FAIRHURST

Project : OSS EAST ANGLIA ONE

Classification :

Titles : SETTING OUT

Type of Document :

First issue : 12-05-16 INITIAL ISSUE

Sheet: 00 Next Sh: -

Sign:	Drawn	Prep.	Check.	App.
Acron:	GAV	GAV	SGD	GLB

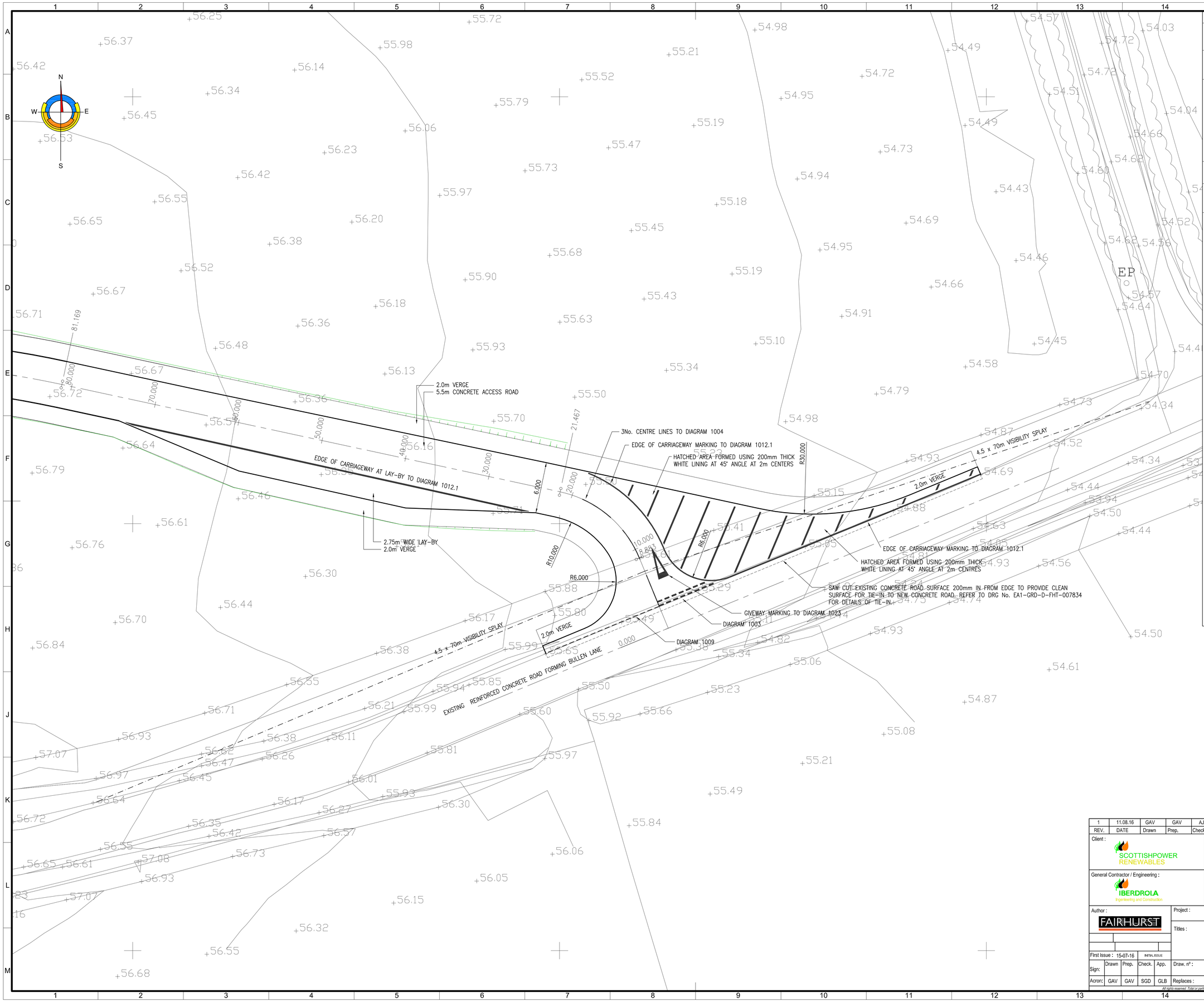
Draw. nº : EA1-GRD-D-FHT-007836

Rev : 2

Replaces : -

SCALE : 0 10M 20M 40M 1:1000

SIZE: A0



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NOTES:
1. FOR ROAD LAYOUT, REFER TO THE FOLLOWING DRAWINGS:
   EA1-GRD-D-FHT-007830
   EA1-GRD-D-FHT-007831
   EA1-GRD-D-FHT-007832
2. FOR DRAINAGE LAYOUT, REFER TO THE FOLLOWING DRAWING:
   EA1-GRD-D-FHT-007838
   EA1-GRD-D-FHT-007839
   EA1-GRD-D-FHT-007840
3. ROAD MARKING TO COMPLY WITH THE REQUIREMENTS OF 'THE TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS 2002' AS PUBLISHED by THE STATIONERY OFFICE.
4. THERMOPLASTIC SCREED TO COMPLY WITH BS3262 TYPE A.
5. WHEN LAID, THE THICKNESS OF THE THERMOPLASTIC SCREED SHOULD NOT BE LESS THAN 2.0mm NOR MORE THAN 5.0mm (THICKNESS TO BE DETERMINED IN ACCORDANCE WITH APPENDIX B OF BS3262: PART 3)
6. THERMOPLASTIC MARKINGS TO BE REFLECTORISED USING SOLID GLASS BEADS. APPLICATION RATE OF THE GLASS BEADS TO BE BETWEEN 500 AND 850g/sqm. (GLASS BEADS TO COMPLY WITH BS EN 1423)
7. NEW ROAD LAYOUT AHEAD SIGN TO BE PROVIDED IN BULLEN LANE, SET AT A DISTANCE OF 100m FROM THE JUNCTION ON EACH APPROACH. SIGN AS FOLLOWS:

NEW ROAD LAYOUT AHEAD

SIGN REFERENCE : DIAGRAM 7014 (VARIANT 4)
X-HEIGHT : 62.5mm
MATERIAL : TABLE A

POSTS : 1x76mmø CHAMBER BASED
BASE : 650x650x650mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : BACK OF THE VERGE
SIGN TO BE REMOVED AFTER 3 MONTHS

REV.	DATE	Drawn	Prep.	Checked	Approv.	REASON, STATUS OF REVISION
1	11.08.16	GAV	GAV	AJR	-	NOTE 7 RE ADVANCE WARNING SIGNAGE ADDED

Client : SCOTTISHPOWER RENEWABLES
Client drawing nº : -
Other ref. of client :
General Contractor / Engineering : IBERDROLA Ingeniería and Construcción
QUALITY LIST: YES ☐ NO ☒
DESIGN VERIFICATIONS: LEVEL 1 ☐ LEVEL 2 ☐ NOT APPL. ☒
Approval / Release for Construction : According stamps on drawing

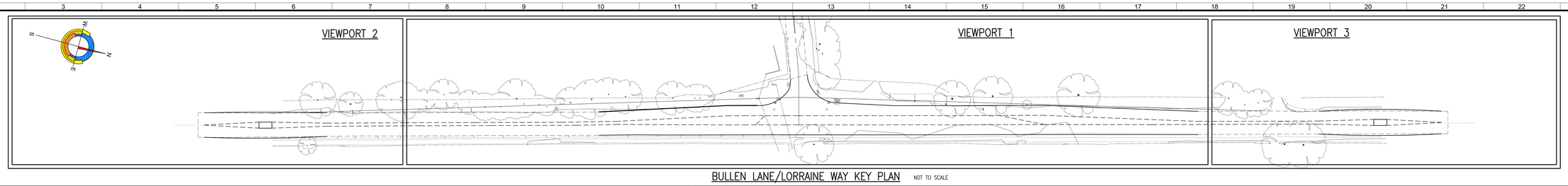
Author : FAIRHURST

Project : OSS EAST ANGLIA ONE
Classification :
Titles : JUNCTION ARRANGEMENT
Type of Document :
Sheet: 00
Next Sh: -

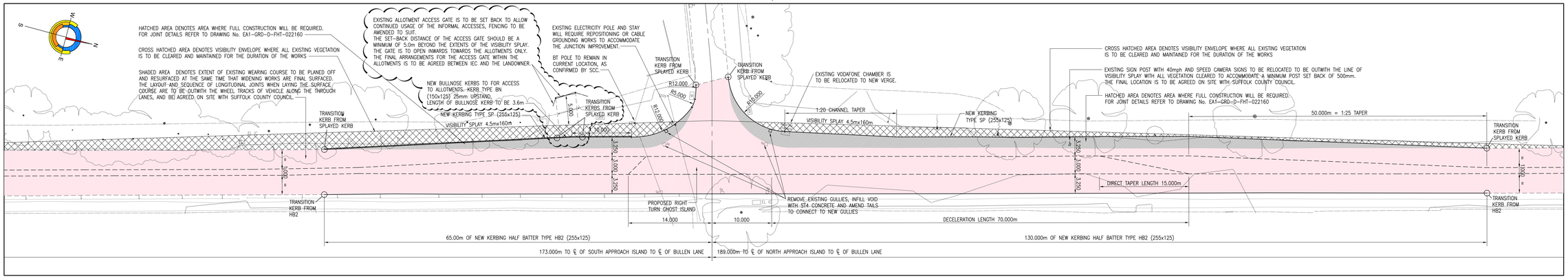
First Issue : 15-07-16	INITIAL ISSUE			
Sign:	Drawn	Prep.	Check.	App.
Acron:	GAV	GAV	SGD	GLB

Draw. nº : EA1-GRD-D-FHT-007840
Rev : 1
Replaces : -
SCALE : 0 1M 2M 4M SM 1:200
SIZE: A1

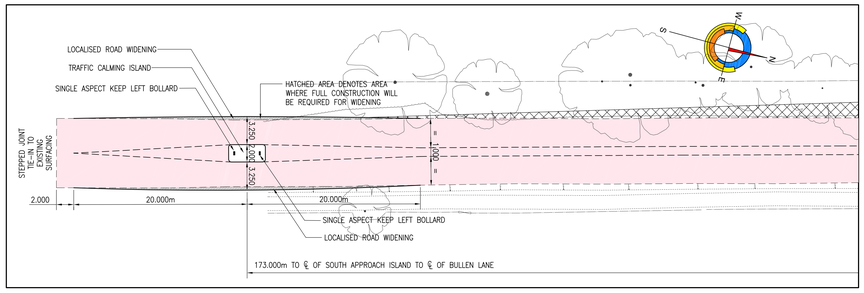
Appendix 3 Substation Highways Improvement Details



BULLEN LANE/LORRAINE WAY KEY PLAN NOT TO SCALE

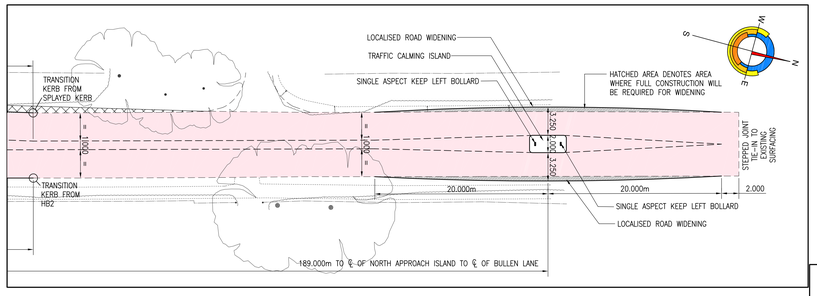


VIEWPORT 1: BULLEN LANE/LORRAINE WAY JUNCTION LAYOUT SCALE: 0 5m 10m 1:250



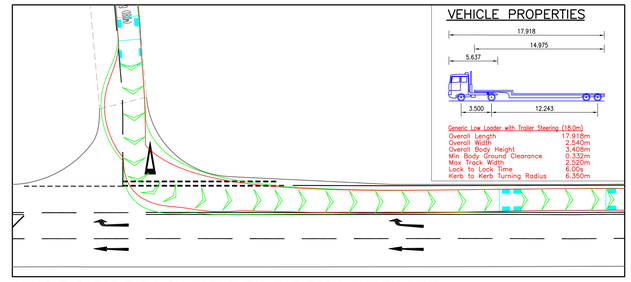
VIEWPORT 2: LAYOUT OF TRAFFIC CALMING ISLAND ON LORRAINE WAY TOWARDS SPROUGHTON

SCALE: 0 5m 10m 1:250

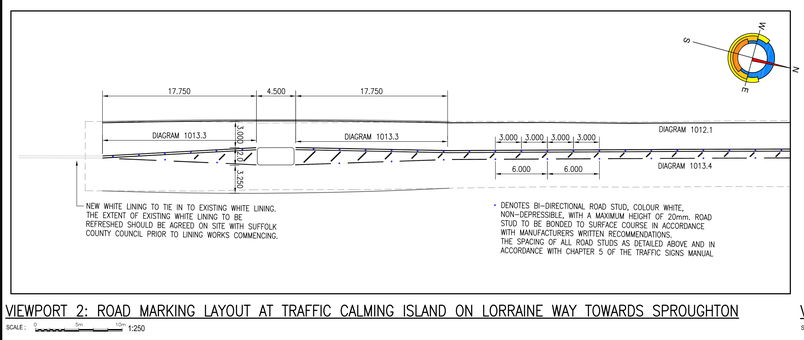


VIEWPORT 3: LAYOUT OF TRAFFIC CALMING ISLAND ON LORRAINE WAY TOWARDS CLAYDON

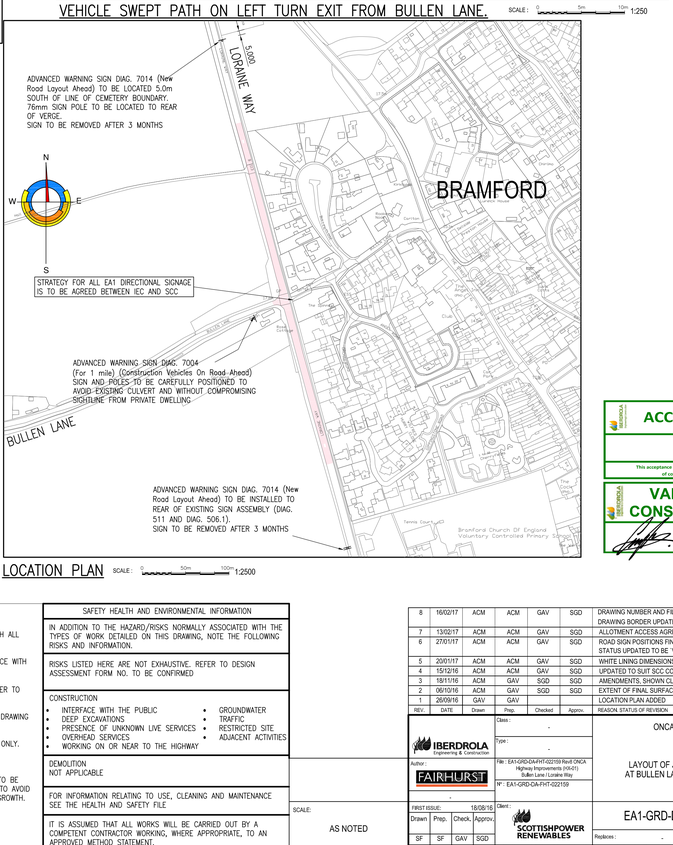
SCALE: 0 5m 10m 1:250



VEHICLE SWEPT PATH ON LEFT TURN EXIT FROM BULLEN LANE. SCALE: 0 5m 10m 1:250



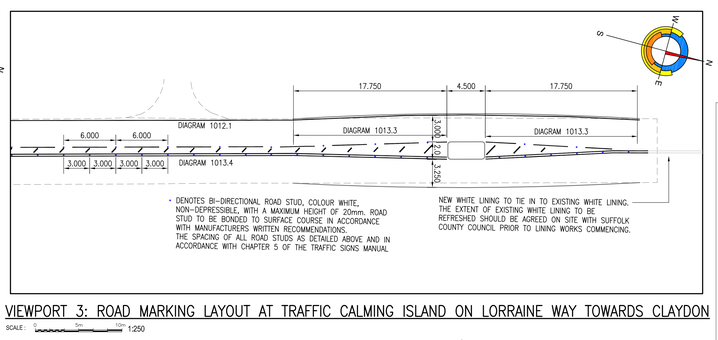
VIEWPORT 1: BULLEN LANE/LORRAINE WAY JUNCTION ROAD MARKING LAYOUT SCALE: 0 5m 10m 1:250



LOCATION PLAN SCALE: 0 50m 100m 1:2500

VIEWPORT 2: ROAD MARKING LAYOUT AT TRAFFIC CALMING ISLAND ON LORRAINE WAY TOWARDS SPROUGHTON

SCALE: 0 5m 10m 1:250



VIEWPORT 3: ROAD MARKING LAYOUT AT TRAFFIC CALMING ISLAND ON LORRAINE WAY TOWARDS CLAYDON

SCALE: 0 5m 10m 1:250

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS.
2. ALL WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH 'THE SPECIFICATION FOR HIGHWAY WORKS'.
3. FOR ROAD CONSTRUCTION DETAILS AND NOTES, REFER TO DRAWING No. EA1-GRD-D-FHT-022160.
4. FOR ROAD SIGNAGE DETAILS AND NOTES REFER TO DRAWING Nos. EA1-GRD-D-FHT-022180
5. PROPOSED SIGN LOCATIONS SHOWN ARE INDICATIVE ONLY. FINAL POSITIONS TO BE ESTABLISHED ON SITE IN CONJUNCTION WITH SUFFOLK COUNTY COUNCIL.
6. REGULAR SIGNAGE INSPECTIONS AND MAINTENANCE TO BE CARRIED OUT, FOR THE DURATION OF THE WORKS, TO AVOID POSSIBLE OBSTRUCTION BY SEASONAL VEGETATION GROWTH.

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.

RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO. TO BE CONFIRMED

CONSTRUCTION
- INTERFACE WITH THE PUBLIC
- DEEP EXCAVATIONS
- PRESENCE OF UNKNOWN LIVE SERVICES
- OVERHEAD SERVICES
- WORKING ON OR NEAR TO THE HIGHWAY
- GROUNDWATER
- TRAFFIC
- RESTRICTED SITE
- ADJACENT ACTIVITIES

DEMOLITION
NOT APPLICABLE

FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

SCALE: AS NOTED

ACCEPTED
This acceptance does not release the fulfillment of contract obligations

VALID FOR CONSTRUCTION
Gavin Park - 27/01/2017 for FAIRHURST

REV.	DATE	Drawn	Prep.	Checked	Approv.	REASON / STATUS OF REVISION
8	16/02/17	ACM	ACM	GAV	SGD	DRAWING NUMBER AND FILE CODE REFERENCE UPDATED DRAWING BORDER UPDATED.
7	13/02/17	ACM	ACM	GAV	SGD	ALLOTMENT ACCESS AGREED WITH SCC. DRAWING UPDATED
6	27/01/17	ACM	ACM	GAV	SGD	ROAD SIGN POSITIONS FINALISED AFTER JOINT SURVEY WITH SCC STATUS UPDATED TO BE VALID FOR CONSTRUCTION
5	20/01/17	ACM	ACM	GAV	SGD	WHITE LINING DIMENSIONS ADDED. NOTE re BT POLE AMENDED.
4	15/12/16	ACM	ACM	GAV	SGD	UPDATED TO SUIT SCC COMMENTS
3	18/11/16	ACM	ACM	GAV	SGD	AMENDMENTS, SHOWN CLOUDED, FOLLOWING SAFETY AUDIT
2	06/10/16	ACM	ACM	GAV	SGD	EXTENT OF FINAL SURFACING AMMENDED AFTER SCC MEETING
1	26/09/16	GAV	GAV			LOCATION PLAN ADDED

IBERDROLA Engineering & Construction
Author: FAIRHURST
Class: -
Type: -
File: EA1-GRD-DA-FHT-022159 Rev8 ONCA Highway Improvements (HX-01) Bullen Lane / Loraine Way
'A1' - EA1-GRD-DA-FHT-022159
FIRST ISSUE: 18/08/15

Drawn	Prep.	Check.	Approv.
SF	SF	GAV	SGD

Client: SCOTTISHPOWER RENEWABLES

ONCA EAST ANGLIA ONE

LAYOUT OF JUNCTION IMPROVEMENT AT BULLEN LANE / LORAINE WAY (HX01)

EA1-GRD-DA-FHT-022159 Rev: 8

Replaces: - Sheet: - Next: - Size: A0

DIAGRAM 506.1

SIZE : 600mm
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 507.1

SIZE : 600mm
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 513 (VAR)

DIAGRAM 513

SIZE : 600mm
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 544.1

SIZE : 600mmø
LINE COLOUR : BLACK
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 512 (left)

DIAGRAM 512 (right)

SIZE : 600mm
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 602

SIZE : 600mm
TEXT COLOUR : BLACK
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 512.1 (VAR)

DIAGRAM 512.1

SIZE : 600mm
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 575

SIZE : 600mm
X-HEIGHT : 62.5mm
BACKGROUND : WHITE
TEXT : BLACK
BORDER : BLACK
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 612

SIZE : 600mm
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 670 (50mph)

SIZE : 600mmø
TEXT COLOUR : BLACK
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 670 (40mph)

SIZE : 600mmø
TEXT COLOUR : BLACK
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 670 (30mph)

SIZE : 600mmø
TEXT COLOUR : BLACK
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

DIAGRAM 671

SIZE : 600mmø
LINE COLOUR : BLACK
BACKGROUND : WHITE
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

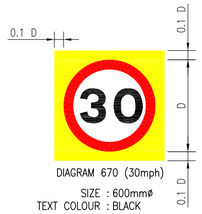


DIAGRAM 670 (30mph)

SIZE : 600mmø
TEXT COLOUR : BLACK
BACKGROUND : WHITE
BORDER : RED
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN
BACKING BOARD : YELLOW

Signing Project	EA1				
Sign Reference	7004	Width (mm)	1665	Background	Yellow
x Height	75.0	Height (mm)	600	Border	Black
Material	Class RA2	Area (m²)	1.00	Legend	Black

Signing Project	EA1				
Sign Reference	7004	Width (mm)	1925	Background	Yellow
x Height	75.0	Height (mm)	1065	Border	Black
Material	Class RA2	Area (m²)	2.05	Legend	Black

DIAGRAM 822

SIZE : 450mm
X-HEIGHT : 62.5mm
BACKGROUND : WHITE
TEXT : BLACK
BORDER : BLACK
MATERIAL : CLASS RA2
POSTS : 76mmø POST
BASES : 600x600x600mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

SIGN REFERENCE : DIAGRAM 611.1
X-HEIGHT : N/A
MATERIAL : CLASS RA2

POSTS : 1x76mmø CHAMBER BASED
BASE : 650x650x650mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN
EXTERNAL ILLUMINATION IS REQUIRED

SIGN REFERENCE : DIAGRAM 7014 (VARIANT B)
X-HEIGHT : 62.5mm
MATERIAL : CLASS RA2

POSTS : 1x76mmø CHAMBER BASED
BASE : 650x650x650mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN
SIGN TO BE REMOVED AFTER 3 MONTHS

7306 (LEFT)

7306 (RIGHT)

X-HEIGHT : 62.5mm
MATERIAL : CLASS RA2

POSTS : 1x76mmø CHAMBER BASED
BASE : 650x650x650mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

SIGN REFERENCE : DIAGRAM 511 (VARIANT)
X-HEIGHT : 62.5mm
MATERIAL : CLASS RA2

POSTS : 1x76mmø CHAMBER BASED
BASE : 650x650x650mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

SIGN REFERENCE : DIAGRAM 7301 (VARIANT)
X-HEIGHT : 62.5mm
MATERIAL : CLASS RA2

POSTS : 1x76mmø CHAMBER BASED
BASE : 650x650x650mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

7306 (LEFT)

7306 (RIGHT)

SIGN REFERENCE : DIAGRAM 7304
X-HEIGHT : 62.5mm
MATERIAL : CLASS RA2

POSTS : 1x76mmø CHAMBER BASED
BASE : 650x650x650mm
MOUNTING HEIGHT : 2250mm
LATERAL CLEARANCE : 500mm MIN

NOTE:
FOR REQUIRED DISTANCE ANNOTATION, REFER TO THE LAYOUT DRAWINGS LISTED UNDER NOTE 2

Structural Calculation Details SIGN 7004

Signs:
Reference: 7004
Width: 1925mm, Height: 1065mm
Shape: Rectangle
Orientation: Facing front
Mounted on posts: 1, 2
Mounting height: 2100mm
Posts:
Quantity: 2
Type: 88.9 x 3.2 CHS
Spacing: 1425mm
Post 1 Length: 3865mm
Post 2 Length: 3865mm
Base:
Type: Combined
Width: 1900mm
Length: 1900mm
Depth: 600mm
Volume: 2.17cu.m
Earth cover: 100mm
Blinding layer: 0mm

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.

RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO. 114503-DA-01 CONTAINED WITHIN DOCUMENT REFERENCE EA1-GRD-F-FHT-022328

CONSTRUCTION :
- INTERFACE WITH THE PUBLIC
- DEEP EXCAVATIONS
- PRESENCE OF UNKNOWN LIVE SERVICES
- OVERHEAD SERVICES
- WORKING ON OR NEAR TO THE HIGHWAY
- HIGH GROUNDWATER WITHIN LOW LYING AREAS

FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS.
2. FOR LOCATION OF SIGNS REFER TO THE FOLLOWING DRAWING NUMBERS:
   - EA1-GRD-D-FHT-022159
   - EA1-GRD-D-FHT-022161
   - EA1-GRD-D-FHT-022164
   - EA1-GRD-D-FHT-022166
   - EA1-GRD-D-FHT-022167
   - EA1-GRD-D-FHT-022168
   - EA1-GRD-D-FHT-022169
   - EA1-GRD-D-FHT-022170
   - EA1-GRD-D-FHT-022171
   - EA1-GRD-D-FHT-022172
   - EA1-GRD-D-FHT-022173
   - EA1-GRD-D-FHT-022174
   - EA1-GRD-D-FHT-022175
   - EA1-GRD-D-FHT-022176
   - EA1-GRD-D-FHT-022177
   - EA1-GRD-D-FHT-022178
   - EA1-GRD-D-FHT-022179

APPROVED
This approval does not release the fulfillment of contract obligations

VALID FOR CONSTRUCTION
Gavin Park - 27/01/2017
for FAIRHURST

REV.	DATE	Drawn	Prep.	Checked	Approv.	REASON, STATUS OF REVISION
5	08.02/17	ACM	ACM	GAV	SGD	DRAWING BORDER UPDATED.
4	30-01-17	ACM	ACM	GAV	SGD	ADDITIONAL SIGN DETAILS ADDED, DIAGRAMS 513 AND 7304
3	27-01-17	ACM	ACM	GAV	SGD	STATUS UPDATED TO BE 'VALID FOR CONSTRUCTION'
2	13-01-17	SF	AM	GAV	SGD	ADDITIONAL SIGN DETAILS ADDED FOLLOWING SCC COMMENTS 506.1, 507.1, 513, 612, 822
1	02-12-16	SF	SF	AM	SGD	30mph SIGN WITH YELLOW BACKING BOARD ADDED

IBERDROLA Engineering & Construction
Author : FAIRHURST
Class : -
Type : -
File : EA1-GRD-D-FHT-022180 Rev 5 ONCA Road Sign Details
N° : EA1-GRD-D-FHT-022180

ONCA EAST ANGLIA ONE

ROAD SIGNS

SCALE: NOT TO SCALE

FIRST ISSUE: 04/10/16

Drawn	Prep.	Check.	Approv.
GAV	GAV	AM	SGD

Client : SCOTTISHPOWER RENEWABLES

EA1-GRD-D-FHT-022180 Rev : 5

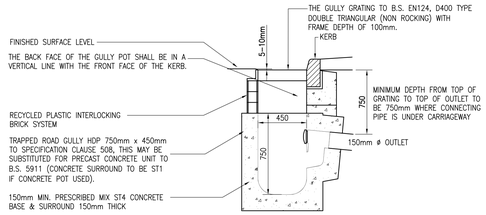
Replaces : - Sheet: - Next: - Size : A1

NOTES:

1. FOR BULLEN LANE/LORRAINE WAY JUNCTION LAYOUT, REFER TO DRAWING EA1-GRD-D-FHT-022159

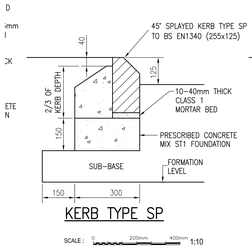
GULLY NOTES :

1. GULLY TO COMPLY WITH SPECIFICATION CLAUSE 508 AND MAY BE CAST INSITU USING A PLASTIC GULLY AS PERMANENT FORMWORK, OR PRECAST CONCRETE TO B.B. 5911.
2. THE MINIMUM DEPTH FROM THE TOP OF THE GRATING TO THE TOP OF THE GULLY OUTLET IS TO BE 750mm WHEN THE CONNECTING PIPE IS UNDER THE CARRIAGEWAY, ELSEWHERE 600mm. ABANDONED GULLIES TO BE DISCONNECTED AND INFILLED WITH CONCRETE GRADE ST4.
3. GULLY GRATING AND FRAME TO B.S. EN124, TO BE D400, 100MM DEEP, DOUBLE TRIANGULAR OR HINGED, AS REQUIRED BY S.C.C.
4. GULLY FRAME TO BE SET 5-10mm BELOW CARRIAGEWAY SURFACE.
5. BOTH PRECAST AND INSITU GULLIES CAN BE INSTALLED ADJACENT TO KERB OR VERGE.



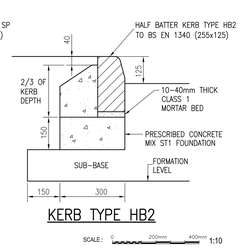
GULLY DETAIL

SCALE: 0 400mm 800mm 1:20



KERB TYPE SP

SCALE: 0 200mm 400mm 1:10

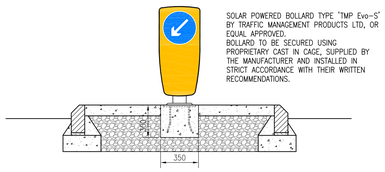


KERB TYPE HB2

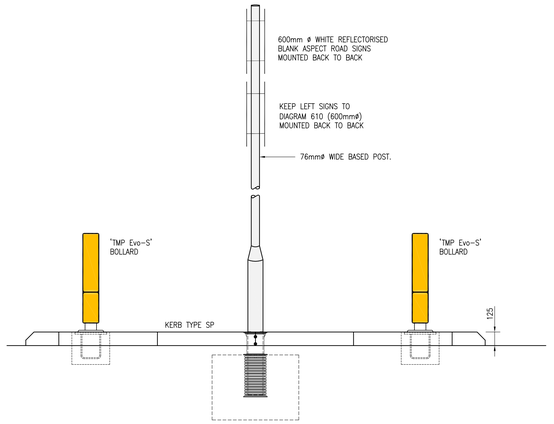
SCALE: 0 200mm 400mm 1:10

KERB NOTES :

1. THESE DETAILS ARE FOR KERBING LAID IN CONJUNCTION WITH NEW CARRIAGEWAY CONSTRUCTION INCLUDING HAUNCHING.
2. CONCRETE BED TO BE MECHANICALLY VIBRATED AND THE SURFACE ROUGHENED TO PROVIDE A KEY FOR BACKING.
3. THE MORTAR BED MAY BE OMITTED IF METHOD OF LAYING KERBS DIRECT ONTO WET CONCRETE IS APPROVED BY S.C.C. THE BACKING CONCRETE MUST BE PLACED WITHIN ONE HOUR OF LAYING THE CONSRETE BED. ALL CONCRETE TO BE MIX ST1.
4. KERB FACE TO BE 125mm.
5. KERBS LAID TO SMOOTH HORIZONTAL AND VERTICAL ALIGNMENT.
6. BACKING TO KERBS TO BE A MINIMUM OF 2/3 OF KERB DEPTH UNLESS OTHERWISE STATED.
7. 0-6mm UPSTAND FOR PEDESTRIAN CROSSINGS AND 25mm FOR VEHICULAR ACCESS.

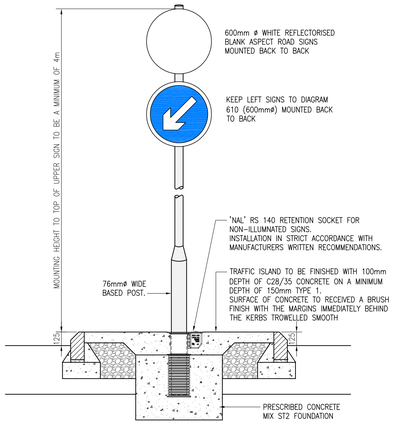


ELEVATION ON KEEP LEFT BOLLARD

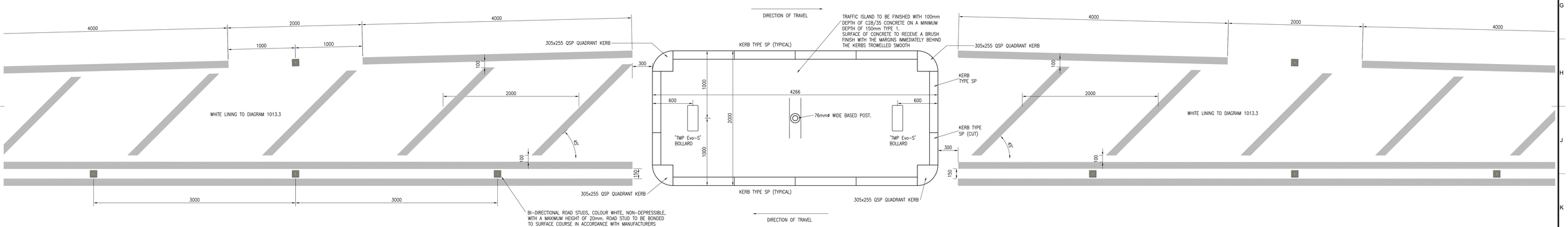


ELEVATION ON TRAFFIC CALMING ISLAND

SCALE: 0 400mm 800mm 1:20

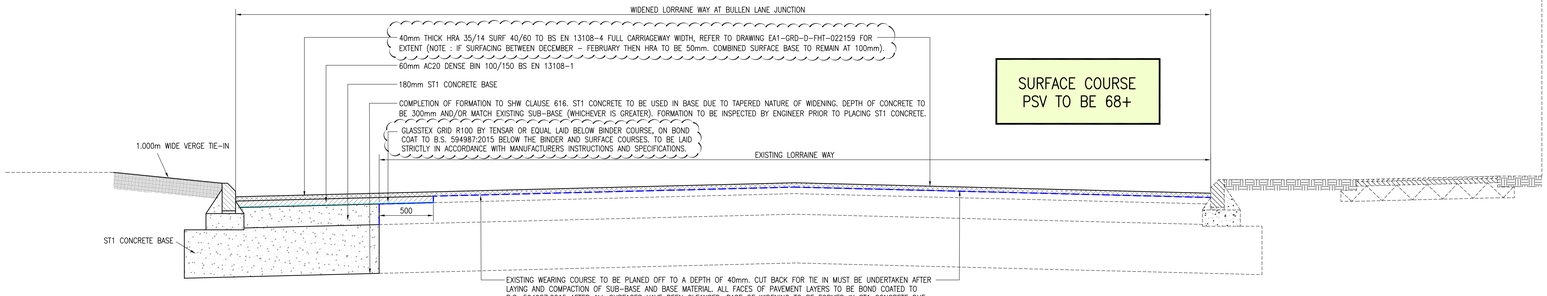


NON-ILLUMINATED SIGN POLE DETAIL



PLAN ON TRAFFIC CALMING ISLAND

SCALE: 0 400mm 800mm 1:20



SECTION THROUGH ROAD WIDENING AT LORRAINE WAY/BULLEN LANE

SCALE: 0 400mm 800mm 1:20

ACCEPTED

This acceptance does not release the fulfillment of contract obligations

VALID FOR CONSTRUCTION

Gavin Park - 27/01/2017 for FAIRHURST

REV.	DATE	Drawn	Prep.	Checked	Approv.	REASON, STATUS OF REVISION
6	16-02-17	ACM	ACM	GAV	SGD	SURFACE COURSE SPECIFICATION UPDATED TO SUIT SCC COMMENTS DATED 16/02/16, NOTE RE 'GLASSTEX' UPDATED. DRAWING BORDER & CODE UPDATED TO SUIT IEC CURRENT STANDARDS.
5	01-02-17	ACM	ACM	GAV	SGD	SECTION NOTE AMENDED TO ST1 CONCRETE IN BASE LAYER
4	27-01-17	ACM	ACM	GAV	SGD	STATUS UPDATED TO BE 'VALID FOR CONSTRUCTION'
3	23-01-17	ACM	GAV	SGD	SGD	SURFACE COURSE UPDATED TO BE HRA, PSV OF 68+ NOTED.
2	13-12-16	ACM	GAV	SGD	SGD	ALL DETAILS REDRAWN FOLLOWING S.C.C. COMMENTS
1	11-10-16	ACM	GAV	SGD	SGD	FULL WIDTH WEARING COURSE NOW SHOWN TO LORAINE WAY

IBERDROLA Engineering & Construction

Author: FAIRHURST

Class: -

Type: -

File: EA1-GRD-DK-FHT-022160 Rev 6 ONCA Bullen Lane-Lorraine Way Construction Details

N°: EA1-GRD-DK-FHT-022160

FIRST ISSUE: 31/08/16

Drawn	Prep.	Check.	Approv.
SF	SF	GAV	SGD

Client: SCOTTISHPOWER RENEWABLES

ONCA EAST ANGLIA ONE

BULLEN LANE/LORRAINE WAY ROAD CONSTRUCTION DETAILS

EA1-GRD-DK-FHT-022160

Rev: 6

Replaces: - Sheet: - Next: -

SCALE: AS NOTED

Size: A0