

West Sussex County Council

Highways and Transport

Street Lighting Specification

Requirements for adoptable street lighting and illuminated signs in accordance with the Accrual
Required Standards of the Street Lighting PFI

Issue	Date	Amended	Agreed WSCC
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Version 8:

- Change of CMS system to Mayflower

Version 9

- Remove GPS of CMS system, improved lantern protection

Contents

0 – Scope	4
1 – Introduction for Developers	5
1.1 – Street Lighting in West Sussex	5
1.2 – Design review process	5
1.3 – Adoption process.....	7
1.4 – Maintenance before adoption	7
2 – Guidance on Power Supplies	8
2.1 - MPAN.....	8
2.2 – DNO – District Network Operator Power Supplies	8
2.3 – IDNO Independent Distribution Network Operators (IDNO) Power supplies	8
2.4 – Private Underground Service Cabling	9
3 – Guidance on applying design standards in West Sussex	10
3.1 – Road Lighting	10
3.2 – Subway Lighting.....	14
3.3 – Footbridge Lighting	14
3.4 – Traffic Signs Regulations & General Directions etc.....	15
3.5 – Electric Vehicle charging	15
3.6 – CDM and risk assessment.....	15
3.7 – Passive safety risk assessment	16
4 – Materials Specification	17
4.1 – Mayflower CMS system.....	17
4.2 – ‘Standard’ Road lighting luminaires	18
4.3 – ‘Non-standard’ road lighting luminaires	19
4.4 – ‘Standard’ Lighting columns / brackets.....	19
4.5 – ‘Non-standard’ heritage or decorative lighting columns / brackets / embellishments	20
4.6 – Method for Attachments to columns	20
4.7 – Subways & pedestrian underpasses	20
4.8 – Bridge Handrails & stairs	20
4.9 – Illuminated signs.....	21
4.10 – Illuminated bollards.....	22
4.11 – Islands where centre-island beacon is installed	22
4.12 – Zebra crossings.....	23
4.13 – Isolation & Internal Wiring	24
4.14 – Feeder Pillars	24
4.15 – Private Underground Service Cabling & Ducting	24
4.16 – Foundations, retention sockets	25
4.17 - Passive Safety materials.....	25
4.18 - Numbering of assets	26

Appendix A – Documents required for Design Review – Checklist.....	27
Appendix B – Documents required before pre-accrual inspection – Checklist	29
Appendix C – Pre-accrual Inspection Criteria – Checklist	30
Appendix D – Electrical Test Certificates	32
Appendix E – Mayflower Node Commissioning – form	33
Appendix F – Standard Detail Drawings	34
Appendix G – Column colours by Parish – list	57
Appendix H – Part-night lighting areas – plan	60
Appendix I – South Downs National Park – dark skies zone – plan	61
Appendix J – WSCC policy on the application of Commuted Sums	62

0 – Scope

The scope of this document includes:

Guidance to Developers:

- design review & technical approval process
- inspection & adoption process

Guidance to Designers:

- guidance on applying design standards
- requirements for electrical supply
- materials specification

General Guidance:

- Design proposals should be fully worked detailed designs undertaken by competent persons; indicative/outline desktop designs (e.g., as sometimes prepared by luminaire manufacturers) are not acceptable.
- Design validity. There is no defined time-period for a Lighting Design approval to remain valid. Developers should be aware that lighting technology is evolving rapidly, so an approval may cease to be valid after a matter of months (e.g. if proposed luminaires are updated or become unavailable).
- Revisions. Variation to the location of the illuminated equipment or other site changes affecting lighting should be discussed and agreed with Enerveo, prior to installation works being undertaken.

1 – Introduction for Developers

1.1 – Street Lighting in West Sussex

Streetlights, illuminated signs illuminated bollards and feeder pillars supplying adoptable equipment on West Sussex highways are maintained under a PFI contract (contract term 2010 - 2035).

The PFI Service Provider is **Tay Valley Lighting (West Sussex) Limited** – referred to hereafter as TVL.

The Operating Sub Contractor is **Enerveo** (formerly SSE Contracting).

This document is intended to ensure that new lighting proposals comply with the PFI's 'Development Standard for Highway Lighting' and the 'Accrual Required Standards'.

Adoptable equipment includes:

- Road lighting (lamp columns, wall-brackets)
- Subway lighting
- Illuminated road signs
- Illuminated traffic bollards
- Zebra belisha beacons & floodlights
- School crossing signs
- Footbridge (handrail) lighting
- Refuge Beacons
- Feeder Pillars supplying the adoptable equipment above

For traffic signals and signal-controlled crossings see:

- [Traffic Signal Design Standards: Requirements for Design of Permanent Traffic Signal in West Sussex](#)
- [Traffic Signal Installation Standards: Requirements for Installation of Permanent Traffic Signal in West Sussex](#)

1.2 – Design review process

Lighting design must be carried out by appropriately qualified competent persons in accordance with current CDM regulations. For further information refer to ILP Guidance Note 4 CDM 2015 Overview, and Design Manual for Roads and Bridges TD501 Road Lighting design clauses 1.5 and 1.6. All organisations and personnel delivering an exterior Highway Lighting Design shall be registered with an appropriate professional institution, such as the Institution of Lighting Professionals (ILP) and the Engineering Council (ECUK) or Society of Light and Lighting (SLL) through Chartered Institution of Building Services Engineers (CIBSE) and be able to demonstrate that a person has the appropriate qualifications and/ or experience. Designs by non-competent persons or organisations will not be accepted.

The County Council does **not** offer free design checks or a free design service. Designs can be carried out by a third-party Lighting designer or the PFI operating sub-contractor Enerveo.

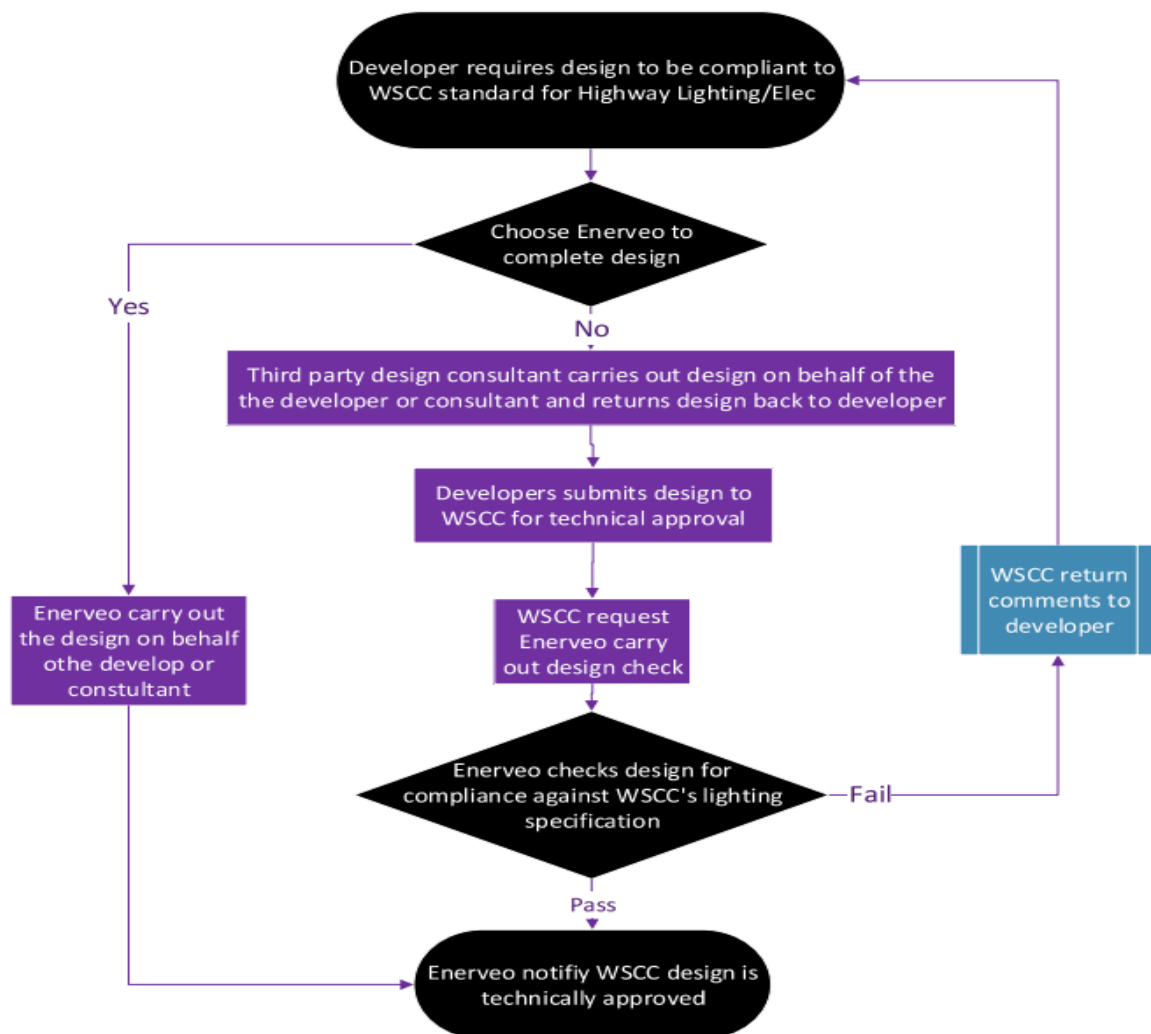
Third party proposals need go through an approval Process where the Council will ask TVL to request Enerveo to review design proposals; the Council will recover their costs through the agreement process. See [WSCC Section 278/ Section 38 guidance and technical notes](#).

Third party design submissions should comprise a stand-alone set of documents – for a list of the required documents, see: Appendix A - Documents required for Design Review – Checklist.

Enerveo provide a comprehensive design service and Enerveo designs are automatically accepted as meeting adoptable standard. So, if developers use Enerveo for designs the Council will not need to recover costs for reviewing the design.

Developers may obtain a quotation from Enerveo’s lighting design consultancy at lightingdesign@enerveo.com.

Technical Approval process for Lighting designs



The design must be approved, but prior to ordering equipment, the developer should check with designer that equipment specified is still available and compliant with adoption into the PFI Contract.

1.3 – Adoption process

TVL through Enerveo can provide a comprehensive **installation** service (NB - Enerveo is also an OFGEN-registered ICP, or Independent Connection Provider, licensed to make service connections to DNO/IDNO LV network) and if developers take this option, then the Council will not need to recover costs for inspecting the installations.

Developers that wish to utilise Enerveo for construction may obtain a quotation from:
westsussexquotations@enerveo.com.

All adoptable equipment needs to be inspected and approved.

The County Council does **not** offer free installation checks.

The Council will ask TVL to request Enerveo to inspect new installations; the Council will recover their costs prior to certifying works for the release of bonds or deposits. See [WSCC Section 278/ Section 38 guidance and technical notes](#).

For pre-adoption inspection requirements, see:

- Appendix B – Documents required before pre-accrual inspection – Checklist
- Appendix C – Pre-accrual Inspection Criteria – Checklist

1.4 – Maintenance before adoption

Developers are reminded of the legal responsibility to regularly inspect and test electrical apparatus in the public domain and to maintain it to prevent danger to the public (Electricity at Work Regulations).

Suggested frequency of maintenance activities during maintenance period before adoption

- Night time inspection to verify working/not working - monthly
- Visual inspection for damage – frequent
- Cleaning of base compartment and lantern - 24 months
- Electrical test – BS7671 required maximum 6 years – **at the time of accrual/adoption electrical test certificates should be ≤ 3 years old**
- Lamp change (non-LED lanterns) – SONT/CPO/PLL at 48 months – **at the time of accrual/adoption lamps should be ≤ 6 months old**

2 – Guidance on Power Supplies

2.1 - MPAN

Developers are responsible to setup their own UNMETERED Supply and setup an MPAN (Metered Point Administration Number) for all assets connected directly or indirectly to the electricity supply network. They must keep inventory of all assets and are liable for all electricity consumption of installed assets prior to accrual. It is not possible to use the MPAN associated with the existing equipment owned by West Sussex County Council.

2.2 – DNO – District Network Operator Power Supplies

Unless agreed with the Service Provider and Highway Authority prior to approval of the design, lighting columns and illuminated sign units are required to have individual un-metered power supplies supplied by the local District Network Operator (DNO) via service connections to the Low Voltage mains network (for exceptions see 2.3 below).

The DNOs for West Sussex geographical area are:

- Scottish & Southern Electricity Networks
- UK Power Networks

2.3 – IDNO Independent Distribution Network Operators (IDNO) Power supplies

As part of new S38 housing development the Developer may use an IDNO as an alternative to the DNO Network.

IDNOs own and operate smaller networks located within the areas covered by the DNOs, usually serving discrete areas such as new housing and commercial developments.

Detail of licensed IDNOs can be found on the [Ofgem](https://www.ofgem.gov.uk) website.

Before adoption of any site with an IDNO Network, the Developer must ensure that a Service Level Agreement (SLA) is in place between the following parties:

- Service Provider: Enerveo;
- Highway Authority: West Sussex County Council
- Independent Distribution Network Operators (IDNO)

The SLA shall include:

- Agreed Costs for engaging the IDNO to cover a variety of works – new connections, disconnection of services, transference of services and the like
- Agreed timescales for engaging the IDNO to undertake new connections, disconnection of services, transference of services and the like
- Liability following the failure of power supplies
- Duties of Responsibility for the Site
- Emergency Services – Agreed extent of services covered by such works, Contact Details, Costs and Timescales for carrying out works

2.4 – Private Underground Service Cabling

Private cabling should be used for these scenarios:

- Any unit installed on a traffic island
- Illuminated bollards
- Passively safe lamp columns and signposts
- Subway lighting
- Where there is no DNO or IDNO supply cable network and where approval has been granted by the Service Provider and the Highway Authority

Requirements for design of networks

- Electrical designs to comply with the current edition of the BS 7671 Requirements for Electrical Installations IEE Wiring Regulations.
- The preferred software for calculations is Trimble Pro Design (formerly Amtec) with files submitted both in electronic file format and PDFs.
- The following design information to be clearly identified on schematic drawings or calculations: fuse type & rating (or circuit breaker for passively safe systems); supply type (single phase/three phase); Earth fault on the incoming supply from the DNO; total volt drop at the end of each circuit; cable sizes; total power requirement (in kWh); Earth fault loop impedance (Z_s); cable lengths; passive disconnection system (if required); electrical loads of each luminaire & inrush currents; transformers used on systems with extra low voltage (ELV).

3 – Guidance on applying design standards in West Sussex

Guidance for lighting design is from BS 5489-1:2020 and ILP publications; the following notes qualify that guidance and clarify how it should be applied in West Sussex

3.1 – Road Lighting

Design strategy & road classification risk assessment – further to BS 5489 (5.2)

- Lighting class selection should follow BS5489 Annex A.
- Design proposals should tie-in with existing lighting.
- Design process should follow BS5489 Annex E, F or G.
- Designer’s commentary to discuss all relevant issues – see checklist at Appendix A.

Obtrusive light – further to BS 5489 (4.23) and ILP GN01

- See also ILP’s GN01/20 Guidance notes for the reduction of obtrusive light.
- The majority of lighting in West Sussex is within the E3 “suburban” zone (Table 2, ILP GN01/20); therefore, values of vertical illuminance onto properties should not exceed post-curfew value 2 lux Ev (Table 3, ILP GN01/20).
- South Downs National Park has been designated a Dark Sky Zone (E1 zone). Within the designated area Zones have been specified to buffer sensitive areas from light intrusion. Consideration to controlling light in and around the area must be made and all lights must be set at zero tilt. Louvres should be considered to limit light spill beyond the target highway area. See Appendix I.
- Light intrusion problems should be dealt with using the lantern manufacturer’s bespoke louvres and shields. Extraneous third-party manufactured shields fitted to column or lantern are not acceptable.
- If louvres/shields are used, then the photometric data file used in lighting calculations must correspond.

Ecology – further to BS 5489 (4.2.4) and ILP GN08

- The designer’s commentary should discuss any relevant Environmental Impact Assessments or development-specific design codes and describe any mitigations applied. See Appendix A.
- Light sources of 4000K CCT (correlated colour temperature) are specified throughout West Sussex; ILP GN08 advises that in special circumstances ‘warmer’ light sources may be advisable (e.g. 3000K or 2700K CCT); designer commentary to discuss any departure from standard 4000K.

Trees – further to BS 5489 (6.1.2)

- To ensure unimpeded light distribution attention must be paid when designing so that there is not any conflict with trees. Whether these are existing or proposed trees, both highway trees & privately-owned.
- Horizontal clearance - maximum growth of a tree canopy should be >5m from any light.
- Vertical clearance - in some cases (e.g., with mature trees) it may be possible to locate columns beneath the tree canopy provided that ≥1.6m clearance is kept above the lantern.

- See standard detail drawing– 009 rev A in Appendix F.

Conservation areas – further to BS 5489 (7.4.10)

- For any proposal within conservation areas there should be consultation with the local Parish Council.
- For detail of conservation areas see Local Planning Authority websites.

Control of glare on traffic routes – further to BS 5489 (5.3.1.4)

- Control of glare on traffic routes should be accomplished using Threshold Increment; G classes are not specified; designs should be compliant with GN01/20.
- At conflict areas on traffic routes glare may be managed by ensuring that the G class of luminaires at the conflict area are not poorer than luminaires on the approach roads. Adhering to G class may not always be necessary when luminaire orientation does not produce glare to the observer.

Control of glare on subsidiary roads – further to BS 5489 (5.3.2.4)

- Threshold Increment & G classes are not specified as a means for control of glare on subsidiary roads.
- Designs should utilise the best optics for efficient design while remaining compliant with GN01/20.

Conflict areas – further to BS 5489 (7.5), PLG02, TR12

- **Conflict creep** – designers should be aware of this risk; conflict areas should be limited to the area of the hazard and should not be extended (e.g. not taken out to stopping site distance).
- **Large conflict areas** (e.g., large roundabouts) should be broken down to multiple grids/layers to ensure that each part truly achieves target illuminance and uniformity (e.g. to avoid distorting Eave unrelated areas should be excluded and shown on separate grids/layers).
- **TR12 zebra crossings:** experience has shown that seeking target Emin on the vertical grids may cause the crossing carpet target Eave to be greatly exceeded; if the crossing carpet Eave exceeds double the target (e.g. seven times the calculated Eave of the roadway) then Eave may be used for the vertical grids. Designer's commentary should discuss this.

Traffic calming – further to BS 5489 (7.2.4), TR25

- Formal features (accompanied by TSRGD signs & lines) on low-speed roads - if lighting meets baseline target it should be unnecessary to increase levels in the locality of features. Designer's commentary to discuss if other factors add complexity.
- Vertical features (road humps) – road lighting illuminated all-night; to be detailed on layout drawing key.
- Column positioning relative to traffic calming features is advised in ILP TR25.

Cycle paths & footpaths – further to BS 5489 (7.3) and TR23

- Optics should be chosen to achieve the target levels efficiently and without excessive spill light; at open areas some spill light may be desirable for safety, but it is undesirable at paths enclosed by houses.

Column positioning – further to BS 5489 (6.1.3)

- Horizontal clearance - columns should be at the rear of the footway or if installed within a verge must maintain minimum horizontal clearance to the adjacent kerb/running lane.

Road speed	Horizontal clearance (minimum)	Reference
≤30 mph	0.8m	BS5489 Table 1
40/50 mph	1.0m	BS5489 Table 1
60/70 mph	1.5m	BS5489 Table 1

- Footways/carriageways at grade - where subsidiary roads have footways at carriageway level any columns may need greater horizontal clearance or to be placed adjacent to solid features for protection (designer's commentary to discuss).
- Vertical clearance – minimum clearances as described in BS5489.
- Column door apertures – for safe maintenance doors must be aligned away from oncoming traffic such that maintenance operatives accessing the base access will be facing towards oncoming traffic.
- Access must be unrestricted from highway land. If necessary and to allow safe maintenance, then 1m square Easements should be established adjacent to columns.
- Hinged columns are to be positioned to ensure that obstructions do not impede lowering.
- Columns on cycle paths should be offset a minimum 0.5m to minimize hazard to cycles (as per ILP TR23).
- Unrestricted maintenance access must be considered in column positioning. The table for setbacks below should not be exceeded, as the height of columns will reduce the distance a maintenance vehicle can reach. In some situations, it may be necessary to construct maintenance hard standings to allow maintenance vehicle to reach the luminaire.

Column Height	Maximum Setback
12m	3.3m
10m	4.4m
8m and below	6m

Lighting unit assemblies – further to BS 5489 (6.2.2.3, 6.2.2.4)

- Generally, "Post-top" columns shall be used; for standard detail drawings see Appendix G.
- in exceptional circumstances columns with outreach brackets may be used (special detail drawings to be incorporated into the design package).
- Column/Post Paint finishes should be factory-applied – specification as standard detail drawings.
- Finish colour varies dependent on Town/Parish - see Appendix G.
- Non-standard "heritage" or Contemporary styles of equipment need to be approved with any proposals to be accompanied by special detail drawings – and may be liable for commuted sums - see Appendix J.

Mounting heights – further to BS 5489 (6.2.1)

- Subsidiary roads – generally 6m (exceptionally 5m)
- Traffic routes – generally 8m, 10m (exceptionally 12m)
- Consideration should be given to matching existing heights

Lighting Design Calculations

- The acceptable format for calculations is Lighting Reality PRO. Both roadway 'rtmr' and Outdoor 'rtma' files are to be supplied in electronic format and also as a .pdf version.
- Firstly - Roadway calculations are required to demonstrate optimal optics/flux are selected.
- Secondly - Outdoor calculations are required in order to incorporate real-world constraints.
- [NB designers should use sufficient grids & layers to demonstrate compliance and should avoid masking that includes unrelated areas as this may distort average illuminance].

Keeping light balanced and proportional

- Designs will look for balance in achieving Eave throughout different sections of any road, with one section not to be more than 50% brighter than another, without good reason (designer commentary to discuss).
- Minor shortfalls in Emin at cul-de-sac turning heads may sometimes be acceptable to avoid superfluous columns and excess light at the quietest section of the road (designer commentary to discuss).
- On subsidiary roads P3/P4/P5 it is our aspiration that adjacent lanterns within a road should vary in brightness $\leq 30\%$ (this aspiration may not always be practical – designer commentary to discuss).

Maintenance factors – further to BS 5489 (5.1.6)

Example: Axia 3 – Neutral White LED (4000K CCT) – lumen maintenance 98.8% at 100,000hrs.

Environmental zone	Luminaire maintenance factor		Overall maintenance factor	
	$\leq 6m$	$> 6m$	$\leq 6m$	$> 6m$
E1/E2	0.94	0.94	0.93	0.93
E3/E4	0.88	0.94	0.87	0.93

Legacy luminaires - a generic overall maintenance factor **0.8** should be applied when modelling contribution from existing SONT/CPO luminaires that impact on a design proposal.

3.2 – Subway Lighting

Further to BS 5489 (7.4.7)

- Lighting classes as per BS5489-1:2020 Table 3
- Lighting should be integral to the design of subways and not be an afterthought
- Due to the specialist nature of subway lighting design, it is recommended that the approved luminaire manufacturer be engaged to prepare lighting calculations
- Tie-in of the enclosed subway and lighting on any approach ramps remain important
- Subway lighting will require a private electrical supply
- For materials specification see 4.7

3.3 – Footbridge Lighting

Further to BS5489 (7.6.3)

- Lighting classes as per BS5489-1:2020 Table 3
- Design of lighting should be integral to the design of structures and must not be an afterthought.
- Early engagement with the County Council is strongly advocated
- In some cases, freestanding lamp columns may not be a viable solution for the lighting of footbridges
- It is noted that LED handrails have often been found to offer the most practical solution
- As with any novel design using bespoke equipment these require specific prior approval
- Equipment must be inconspicuous and supply cables accessible and routed securely
- Due to the specialist nature of handrail systems, it will be necessary that the luminaire manufacturer be engaged to prepare lighting calculations
- Due to the complexity of handrail systems and for warranties these systems must only be installed by the manufacturer's approved installers
- Footbridge lighting will require a private electrical supply
- Due to the risk of tampering Extra Low Voltage (24V) supply is required
- For materials specification see 4.8
- These systems will incur commuted sum payments. See Appendix J.+

3.4 – Traffic Signs Regulations & General Directions etc.

- Lighting of signs to be compliant with Traffic Sign Regulations & General Directions (2016)
- Layout drawings and sign schedules must have reference numbers that correlate
- For detail of equipment configurations see 4.9, 4.10, 4.11, 4.12

3.5 – Electric Vehicle charging

Further to BS 5489 (7.4.14)

Electrical vehicle charging systems must be entirely separate from all public lighting apparatus.

Electric vehicle charging in the vicinity of Adoptable lighting columns

- Current guidance states that EV chargers are to be excluded within 2.5m of any adoptable lighting column that has a traditional PME/TN-C-S earthing arrangement. The 2.5m exclusion includes the car when it is plugged in and any underground PME (gas pipes/water pipes/cables etc.). Where a 2.5m exclusion zone is impractical then the placing of any charger within 2.5m of an adoptable lighting column requires that the affected column be provided with a local earth (creating a TT supply arrangement). This is not a practical solution in the crowded street scene (and would generate commuted sum payments for future maintenance liability).
- CDM requires that foreseeable hazards should be eliminated at the design stage. The preferred option is that charging systems located on the public highway should use an O-PEN device built into the charger, meaning that all of the PME issues become obsolete as a PME earthing system can be used. There are a number of these available on the market, such as the City EV device which uses the patented Volt-Safe system.

See also:

- [WSCC electric vehicle strategy statement](#)
- The IET Code of Practice for Electric Vehicle Charging Equipment Installation, Current Edition

3.6 – CDM and risk assessment

Further to BS 5489 (6.3.1, 7.4.12.2)

- **Hazard Elimination & Management (Risk Assessment).** In accordance with Construction Design and Management Regulations 2015 a site-specific appraisal of the risks at each stage of the asset life cycle is required (construction, maintenance, decommissioning & replacement); the risks identified, mitigations proposed and residual risks should be evaluated by the Designer using an appropriate matrix. This is required for Design Review - see Appendix A.
- HEA Guidance Note **CDM 2015 Regulations / Applicability to Highway Lighting Design** classifies different Highway Electrical Design Procedures that may be used by the designer; a solely desktop indicative lighting design is not acceptable; if the lighting designer uses Design Method Statement 2 then the Principal Designer will need to produce a Hazard Elimination & Management List (HEML) for inclusion with the detailed design submission.

3.7 – Passive safety risk assessment

Further to BS 5489 (6.1.4) and ILP TR30

- Passively safe lamp columns and road signs are an alternative to road restraint systems
- Determining the need for protective systems is a task for the Principal Designer of the project and is not the Lighting Designer's task. The Lighting Designer's task is to prepare the detailed design and specifications.
- Risk assessment of the need for barriers or passive equipment should be made in these circumstances:
 - All roads $\geq 50\text{mph}$
 - Rural roads $\geq 40\text{mph}$
 - Urban dual-carriageway $\geq 40\text{mph}$
- If non-passive equipment is proposed, it should be justified in a risk assessment.
- Useful risk assessment methodologies for local authority roads are contained in UKRLG/DFT document "Provision of Road Restraint Systems on Local Authority Roads".
- If the risk assessment derives from CD377 then a comprehensive RRRAP is required; the flowchart in ILP document TR30 (2011) must not to be used.
- For performance classes for passively safe structures - see BS EN 12767:2019 National Annex.
- For materials specification – see 4.17

4 – Materials Specification

4.1 – Mayflower CMS system

All lanterns

- Before accrual, all lanterns should be commissioned with Mayflower CMS nodes which allow individual streetlights to be monitored and switched and for light output to be dynamically controlled, except illuminated road signs and bollards are controlled by individual miniature photo-cells.

Nodes

- Individual Mayflower CMS nodes fit into a 7-pin NEMA socket that is built into each standard road lighting lantern.
- The 7-pin NEMA socket can accommodate a standard NEMA-type photocell, which could be fitted temporarily, allowing installation of the Nodes & Sub-Master at a later date (Pre-Accrual); any conventional photocells fitted temporarily should be set to switch on at 35 lux & to switch off at 18 lux.
- For some other lantern types internal nodes are fitted inside the lantern e.g. heritage road lighting, subway lighting units.

Sub-master

- Every lighting scheme is required to install one Mayflower Complete Lighting Control DALI Sub-master unit to control Nodes and link up with the back office Central Management System.
- The Sub-Master Unit (which fits into the 7-pin NEMA socket) should be fitted to a lantern which is near the population of nodes that it controls.
- Once energised the Sub-Master will control any individual node on nearby lanterns.
- If required Mayflower can advise on the optimum location for the Sub-master.
- If the lantern style is a 'heritage' non-standard type, then the Sub-master unit will need to be installed on a suitably located standard lantern.

Records

- Each Sub-Master and each individual Node is identified by a unique sixteen-digit barcode that is supplied with the apparatus. One sticker is to be mounted in the base of each column (suggested that the top of the supply cut-out should be wiped clean and the sticker affixed) and one sticker on a plan/column installation sheet which the Developer shall present prior to Accrual (see appendix E).

For further details please contact: Mayflower Complete Lighting Control, Solent Park, Walton Road, Portsmouth, Hampshire PO6 1UJ. Email: enquiries@mayflowercontrol.com - tel. 0345 076 7664

4.2 – ‘Standard’ Road lighting luminaires

Standard road lighting luminaire is:

- Urbis Axia 3, Neutral White LED – NW 740 (4000K), CLO, Luminaire body colour: AKZO Grey 900 GS, Cover colour: Black RAL9005

In order to limit the number of luminaire configurations the selected optic will be dimmed from the maximum available output (max driver current) for each LED configuration.

Note that the 16LED has two driver outputs available – 600mA and 870mA.

Note there is a maximum design dim for each configuration (this is to allow further dimming in future).

Manufacturer	Lantern	LEDs	Maximum available Driver Current (mA)	Design Dim not to be below
Urbis Schreder	Axia 3.1	8	700	13%
Urbis Schreder	Axia 3.1	16	600	57%
Urbis Schreder	Axia 3.1	16	870	74%
Urbis Schreder	Axia 3.2	24	1000	60%
Urbis Schreder	Axia 3.2	32	800	88%
Urbis Schreder	Axia 3.3	48	880	64%
Urbis Schreder	Axia 3.3	64	880	75%

In circumstances that require exceptional optical performance other options may be considered:

- Signify Luma Gen 2 - 5.2S Neutral White LED – NW 740 (4000K CCT), CLO, Luminaire colour dark grey.

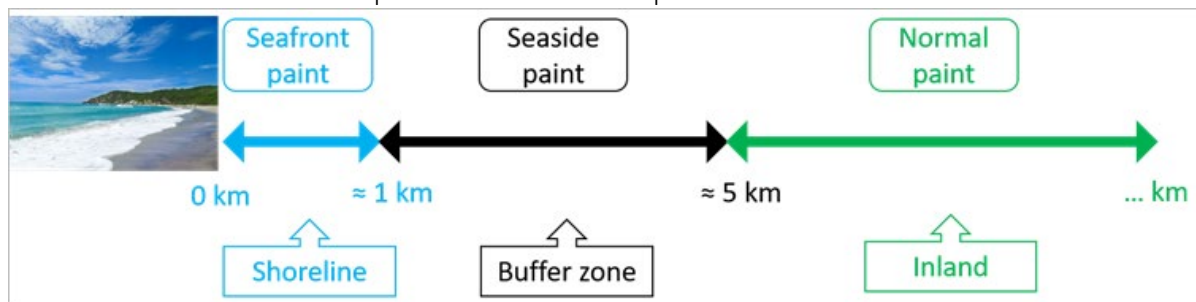
For TR12 calculations at Zebra and “parallel” crossings to enhance use the following: -

- Signify Luma Gen 2 – 5.2S Cool White LED – CW 757 (5700K CCT), CLO

Road lighting luminaires should be configured as follows:

- Switch control: Individual Mayflower Node fitted into the 7-pin Nema socket built into each lantern

Within 5km of coast enhanced paint finishes will be required



4.3 – ‘Non-standard’ road lighting luminaires

Use of non-standard luminaires for aesthetic reasons must be subject to prior agreement.

Contemporary and Heritage lantern styles previously approved in special circumstances include:

- Urbis Schreder – Citea NG
- DW Windsor – Dover
- Urbis Schreder – Allura
- Urbis Schreder – Saturn
- Urbis Schreder – Abbey
- Urbis Schreder – Karl Johan
- Urbis Schreder – Albany
- DW Windsor – Iffley

Non-standard Contemporary and Heritage style road lighting luminaires should be configured as follows:

- Luminaire colour: to be agreed
- All LEDs to be CCT 4000K
- Switch control: Mayflower Internal node

Note: Commuted sums will apply to these luminaires (see Appendix J).

4.4 – ‘Standard’ Lighting columns / brackets

Minimum requirements are detailed on standard detail drawings (see Appendix F).

The Design Specification, Lantern Specification, Sign Specification, Paint Specification as shown on the standard detail drawings are for a generic suburban environment in West Sussex and are a **minimum** requirement. Columns need to be able to carry the lantern weight/windage as shown **regardless** of whether lantern actually proposed is lighter & of less windage:

Column paint finish colour varies according to Town/Parish (see Appendix G)

Other requirements

- If columns are proposed close to seafront locations, on embankments, on elevated roads or bridges then increased wind loadings may require specifically designed enhanced/heavy-duty columns, in which case detail drawings should be included in the design package.
- If columns are required to carry excess signage, CCTV cameras, banners, festive attachments, commando sockets and other non-standard attachments then increased wind loadings may require specifically designed enhanced/heavy-duty columns, in which case detail drawings should be included with the design package.
- If columns with outreach brackets are proposed this will need to be justified by the Designer and detail drawings should be incorporated in the design package.
- Any special detail drawings should include full details of the Design Specification, Lantern Specification, Sign Specification, Paint specification.

4.5 – ‘Non-standard’ heritage or decorative lighting columns / brackets / embellishments

- Use of any non-standard lighting columns for aesthetic reasons must be subject to prior agreement.
- Detail drawings for any heritage/contemporary columns must be included in design package and these drawings must include a full summary of Design Specification, Lantern Specification, Sign Specification, and Paint Specification.
- Minimum shaft diameter 89mm.
- Commuted sums will apply to these columns/brackets (see Appendix J).

4.6 – Method for Attachments to columns

- To protect painted surfaces any attachments to columns (e.g. sign plate fixings) should not make direct contact with the column and must be separated by 5mm thick solid neoprene banding placed between sign Tamtorque mounting clips and the painted surface. Neoprene Spec: Viton/Nitrile/EPDM based material of 80-90 SHORE hardness. (maximum attachment as per Appendix F SD1 column detail drawings)
- No extraneous attachments are permitted on passively safe equipment.

4.7 – Subways & pedestrian underpasses

- Subway lighting unit supplier: Simmonsigns - Safeway subway light unit LED high frequency controlled with Mayflower Internal node in each unit and Dali Ballast.
- See design guidance 3.2.

4.8 – Bridge Handrails & stairs

- Alina LED Handrail lighting - supplier Urbis Schreder - stainless steel 316 handrail brushed finish, Anti-tamper fixings, Class III Safety - Extra Low Voltage.
- Mayflower Internal node to be located at circuit isolator/feeder pillar
- See design guidance 3.3
- Commuted sums will apply to these systems (see Appendix J)

4.9 – Illuminated signs

- For Diagram 610 sign plates mounted on centre-island beacon posts – see 4.11.
- Retro-reflective sign plates to be Cbond composite (not solid aluminium).
- Illuminated sign posts within conservation areas are to be the same finish colour as the adjacent lamp columns.

Item: TSRGD Road Sign

Road speed	Location	Post type	Supply	Voltage	Sign Ø	Luminaire	Control
<40mph	road side	Galvanised steel wide-base post	DNO	LV	600mm 750mm	Simmons signs LUA LED low voltage HF electronic ballast	Lucy Zodion SS12 PECU
					>750mm	Simmons signs LUB 2xLED low voltage HF electronic ballast	Lucy Zodion SS12 PECU
<40mph	traffic island	Galvanised steel wide-base post mid-hinged	Private	ELV	600mm 750mm	Simmons signs LUA LED extra low voltage	Microstar 2000 24volt 35lux PECU
					>750mm	Simmons signs LUB 2xLED extra low voltage	Microstar 2000 24volt 35lux PECU
≥40mph	all locations	Galvanised steel wide-base post passively safe	Private	LV	600mm 750mm	Simmons signs LUA LED low voltage HF electronic ballast	Lucy Zodion SS12 PECU
					>750mm	Simmons signs LUB 2xLED low voltage HF electronic ballast	Lucy Zodion SS12 PECU

4.10 – Illuminated bollards

(Standard detail drawing WSCC-SD1-1400-023 in Appendix F)

Item: Illuminated bollard (without centre-island post)

Road speed	Location	Post type	Supply	Voltage	Sign Ø	Luminaire	Control
all speeds	traffic island	n/a	Private	ELV	300mm (larger if only specified by traffic engineer)	Simmons signs SIMBOL base light bollard LED with electronic gear 24 volt supply	Internal Royce Thompson 2000 BL mini one-part lowlight bollard photocell

4.11 – Islands where centre-island beacon is installed

(Standard detail drawing WSCC-SD1-1400-021 & 022 in Appendix F)

Item: Centre island beacon (with reflective bollards)

Road speed	Location	Post type	Supply	Voltage	Sign Ø	Luminaire	Control
<40mph	traffic island	Galvanised steel wide-base post mid-hinged	Private	ELV	beacon	Simmons signs White LED beacon 24 volt supply	24hr operation
					610	Simmons signs Invinca internally illuminated, 24 volt	24hr operation
≥40mph	traffic island	Simmons signs Passively safe	Private	ELV	beacon	Simmons signs White LED beacon 24 volt supply	24hr operation
					610	Simmons signs Invinca internally illuminated, 24 volt	24hr operation

4.12 – Zebra crossings

(see Standard detail drawing WSCC-SD1-1400-061 in Appendix F)

Item: Zebra crossing beacon

Road speed	Location	Post type	Supply	Voltage	Luminaire	Control
<40mph	road side	Road lighting column (black with white bands)	DNO	LV	Belisha beacon - Simmons signs Midubel or Modubel	24hr operation
					Luminaire for TR12: Signify Micro/Mini Luma LED CW 5700K	Dali with Mayflower CMS node 7-pin NEMA socket

4.13 – Isolation & Internal Wiring

- Secondary isolator - where units are supplied via statutory cable connections (DNO, IDNO) they shall be fitted with a secondary isolator in addition to the DNO/IDNO double pole supply cut-out. Secondary isolator type to be Tofco type 1 with BS88 fuses.
- Circuit breakers/MCBs are only to be used where passively safe equipment is required - see 4.17.
- Internal wiring - columns $\leq 10\text{m}$ - 1.5mm² 3-core flex cable (H05VV-F) from the secondary isolator to the lantern.
- Internal wiring - columns $> 10\text{m}$ - 2.5mm² 3-core flex cable (H05VV-F) from the secondary isolator to the lantern.
- Earth bonding conductor to be 10mm² PVC insulated coloured green/yellow; connections to be by bolted crimped terminations. Attached to the earth bonding stud will be a durable Safety Electrical earth tag that must be metal (earth tag not to be plastic), Or to current BS7671 regulations.
- Internal cabling to be neatly clipped to the backboard by use of 2no. fixed plastic cable clips securing the flex to the backboard. All fixing screws to be stainless steel.
- There should be no earth connected to the removable door.

4.14 – Feeder Pillars

- Galvanised steel as Lucy Zodion Fortress range, size to suit.
- The internal equipment must be detailed on a design drawing.
- Feeder pillars are not to include internal heaters or lights or a 13amp power socket.
- All pillars should be sand fill at base.
- A suitable working platform should be provided.
- Standard detail drawings in Appendix F.

4.15 – Private Underground Service Cabling & Ducting

Private cabling should be used for these scenarios:

- Any unit installed on a traffic island
- Illuminated bollards
- Passively safe lamp columns and sign posts
- Subway lighting
- Where there is no DNO or IDNO supply cable network and where approval has been granted by the Service Provider and the Highway Authority

Requirements:

- Feeder pillars, ducts and cables are to be used exclusively for street lighting and illuminated signs.

- Private cable circuits will be isolated by secondary isolator located above ground in IP54 enclosure.
- Each isolator to have separate outgoing ways for each individually fused circuit.
- Private cables are to be SWA XLPE\SWA\PVC that will be terminated in the base of the column/sign post at the Tofco cut-out via B21 Extension box fitted with IP7 Plate and 5 x Encapsulated Terminals. Glands used will be CW and be covered by shroud. All cut outs must have HRC fuse in pull-out carrier and provision for Live, Neutral & Earth cable connections including a PME link.
- Private cable to be laid in orange PVC ducts marked "Street Lighting" (only DNO/IDNO cables should be in black duct).
- Ducts are to be 100mm internal diameter with draw cords left secured in place.
- Ducting systems to include necessary chambers/draw pits.
- Cable ducts below footways to be >450mm below finished level; ducts below carriageways to be >600mm below finished level. See NJUG "Guidelines on the Positioning and Colour Coding of Underground Utilities Apparatus".
- 150mm-wide yellow heavy gauge PVC tape marked "street lighting" to be placed over private cables/ducts.
- All outgoing circuits must be labelled by a securely fixed encapsulated schematic drawing detailing the outgoing cable route & the population of lighting units on each circuit.
- Additional requirements for the cabling of passively safe equipment - see 4.17.

4.16 – Foundations, retention sockets

In the absence of site-specific calculations foundations shall make worst-case assumptions about ground conditions and wind-loading. See standard detail for guidance.

- Where retention sockets need to be used see [NAL's website](#) for design of foundation.

4.17 - Passive Safety materials

For Passive Safety Risk Assessment see 3.7

- All Passive Safe equipment must be on a private electrical supply with above-ground NAL electrical disconnection system.
- The column or feeder pillar housing the isolator must be located safe from areas at risk of vehicle strike.
- Sensor Cable LOOP2X2/5SWA 1X2X2.5mm² (1) PE, PE, SWA, PE OR 0.6/1KV – Orange.
- All Passive Safe equipment to be installed in NAL sockets with foundations in accordance with NAL Retention Socket foundation details.
- Foundation dimensions shall be indicated on the design drawings.
- Installation shall be in accordance with the manufacturer's guidelines: [NAL's website](#).
- Preferred manufacturers of Passive lighting columns: NE and LE HYDRO; HE Valmont Stainton.
- Preferred manufacturers of Passive wide-base sign posts – HYDRO.

4.18 - Numbering of assets

The numbers applied to assets must correspond to the 'as-built' drawing.

Generally, the numbering of lighting units will follow the same direction as the house numbering although this may not be practical in some circumstances, e.g. one-way streets.

If an additional piece of electrical equipment is installed midway within an existing numbering system, the preference is to renumber the whole road sequentially incorporating the new equipment.

Any changes to numbering on existing assets must be coordinated with Enerveo west.sussex.inspections@enervo.com.

Letters & numerals shall be 50mm high, black on white background, on adhesive labels suitable for exterior use.

Street Lights:

- Columns shall be numbered consecutively per road starting with 1 through to the conclusion of the road, in conjunction with the house number or in the case of a one-way street the direction the road is driven.
- Column number labels are to be positioned facing the carriageway at 1.8m height above ground level (no suffix is required).
- For wall-mounted brackets or floodlights – number to be applied to the box housing the isolator.

Illuminated Signs and Bollards:

- Signs and Bollards shall be numbered consecutively per road starting with 1 through to the conclusion of the road, in conjunction with the house number or in the case of a one way street, the way the road is driven. To confirm this should be the same direction as any streetlighting (where present).
- Sign post number labels are to be positioned at 90o degrees to the carriageway and not to be obscured by sign plates and fixings.
- Bollard number labels shall be positioned on the rear of the bollard.
- Sign and bollard numbers should have a suffix - the first letter of the road name precedes the number (for new roads where the road name is not determined use the letter X as a temporary placeholder for design and substitute the correct suffix on installation).
- Labels must never be placed on the TSRGD sign plates.

Appendix A – Documents required for Design Review – Checklist

Document	Requirements	Complete?
1 – Document register	Index of documents (pdf format), listing all file names & file types	
2 – General information	<p>Site location plan (at appropriate scale)</p> <p>Details of WSCC agreement number ('PS1' reference)</p> <p>Agreement type (S38/278/S111)</p> <p>Identity of parties involved in the development</p> <p>Written confirmation that the proposal complies with the Accrual Required Standards of the PFI</p>	
3 – Designer's commentary	<p>To declare:</p> <ul style="list-style-type: none"> the presence/absence of relevant Local Planning Authority (LPA) planning constraints; the presence/absence or any Environmental Impact Assessments; use of any development-specific design codes; the place of the development within context of the Local Plan framework and other proposals in the locality <p>To discuss:</p> <ul style="list-style-type: none"> Designer's response to any design constraints; BS5489 lighting class selection criteria and risk assessment; presence of road restraint systems, traffic calming features, special road surfaces, speed limits, anticipated traffic flows, tie-in with existing lighting levels, other relevant highway factors 	
4 - Layout drawings	<p>1:500 scale and supplied in both PDF & DWG/DXF format and to show:</p> <ul style="list-style-type: none"> the proposed road layout and adoptable extents; positions of the adoptable road lighting, illuminated signs, any private cables; any easements required should be clearly marked; full materials specification to be shown in key/legend; UMSUG codes and energy consumption, orientation/tilt of luminaires, setting-out information including setbacks from carriageway, schedule identifying electrical supply type for each proposed unit; Lighting regimes proposed following adoption. ID numbers of proposed and existing lighting units; site clearance drawings to show ID numbers of existing assets; presence of trees and other relevant physical features; statement confirming which Highway Electrical Design Procedure used [see "HEA Guidance Note CDM 2015 Regulations / Applicability to Highway Lighting Design"] 	

Document	Requirements	Complete?
5 – Hazard Elimination & Management - Risk Assessment	Site-specific appraisal of the risks at each stage of the asset life-cycle (construction, maintenance, decommissioning & replacement); the risks identified and the mitigations proposed should be evaluated using an appropriate matrix	
6 – Lighting design calculations	Lighting Reality ‘roadway’ and Lighting Reality ‘outdoor’ – files to be supplied in both native (‘rtmr’ & ‘rtma’) format and also as pdf	
7 – Illuminated sign schedules	If applicable – schedules to include TSRGD diagram number, dimensions of sign plates, specification of sign-lights	
8 – Private Cable network layout drawings & calculations	If applicable – Schematic diagram and calculations required for any private cable networks supplying adoptable lighting units; calculations to reference the item numbering shown on layout drawings	
9 – Other	NB – if a project is being managed through a Specification for Highway Works contract – documents required from Series 1200, 1300, 1400, 1900, 13/1	

Appendix B – Documents required before pre-accrual inspection – Checklist

Document	Requirements	Completed?
1 - Document register	Index of documents (pdf format), listing file names & file types	
2 - General information	Site location plan (at appropriate scale) Drawing of area to be adopted Details of WSCC agreement number ('PS1' reference) Agreement type (S38/278/S111) Identity of parties involved in the development Written confirmation that the proposal complies with the Accrual Required Standards of the PFI	
4 - Layout drawings	"As-built" revision	
7 - Illuminated sign schedules	If applicable - "As-built" revision	
8 - Private Cable network layout drawings	If applicable - "As-built" revision	
9 - Electrical test certificates	Test certificates for every adoptable asset (including private cable networks) – to reference the numbering system used on the as-built layout drawings. Test Certificates to be not more than 3 years old.	
10 - Mayflower Node schedule	Schedule of Mayflower node and sub master addresses and which units they are recorded against (see Appendix E)	
11 - IDNO service level agreement	If applicable - a copy of the IDNO (Independent Distribution Network Operator) Service Level Agreement (SLA)	
12 - Street Lighting Specification document	A copy of the street lighting specification document current at the time the design was approved (this document)	
13 – Other	As applicable - other documentation required to satisfy legislation at the time of the Accrual/Adoption	
	NB – if a project is being managed through a Specification for Highway Works contract – documents required from Series 1200, 1300, 1400, 1900, 13/2, 13/3, 14/1, 14/2, 14/4, 14/5	

Appendix C – Pre-accrual Inspection Criteria – Checklist

All apparatus will be checked with these criteria/tolerances

Item	Description of Inspection	Tolerances
Planting depth	Remove door and measure from the bottom of aperture to finished ground level	Manufacturers specification +/- 50mm
Reinstatement	Check quality final reinstatement	Visual Does tarmac have straight edge? Have blocks or grass been cut neatly and laid level? During periods of inclement weather grass seeding may be deferred.
Site clearance	Check that the site has been left clean and tidy	None
Column / Post alignment	Is the pole upright and plumb?	Spirit level bubble touching line
Bracket alignment	Is the bracket Installed as designed?	Visual
Bracket outreach	Is the bracket outreach as designed?	None
Column / bracket protective system	Is colour / finish correct and undamaged?	Minor scratches not through to galvanising
Numbering	Is unit numbered correctly and number not obscured?	Height +/- 25mm
Location of unit	Check for compliance with design	+/- 500mm longitudinal +/- 50mm across
Lighting column door	Check for correct orientation	None
Locking device	Check that the lock operates correctly and is greased (this also applies to the lowering mechanism on raise and lowering columns. Also any doors fits securely.	None
Column root protection	Check that correct root protection is evident	None
Lighting column height	Check that the height complies with the Output Specification	None
Lighting columns	Check that where vehicular access is restricted or where maintenance cannot be carried out by a purpose-built vehicle a raising and lowering column has been used.	None
Column Attachments	Check that any attachments are authorised and as per the layout/as-built drawing	None
Sign light attached to lighting column	Check that hole in column has been adequately sealed to prevent ingress of water.	None
Sign light wiring	Check correct cables, sleeving, wiring is neat, insulation at terminals and terminals are tight.	None
Lighting column type	Suitable for banners, hanging baskets, festive illuminations etc	None

Item	Description of Inspection	Tolerances
Redundant equipment removed	Check redundant units have been removed and that permanent reinstatement has been carried out.	None
Illuminated Traffic Signs	Check the sign face type, post location, orientation and door position.	
Illuminated Traffic Bollards	Check the shell type, base to the correct depth and base opens in the correct direction.	None
Luminaire alignment	Is luminaire straight or twisted?	Visual
Luminaire bowl clean	Is the Luminaire bowl clean and free from blemishes	Visual
Luminaire optic setting	Is the optic setting as per design?	None
Correct lamp, Luminaire and Control Gear	Check that the correct lamp, gear and Luminaire are as per the design	None
Switching device	Is the correct switching device fitted and set?	None
Internal wiring	Check the correct cable has been used, wiring is neat, insulation at terminals is maintained and that all terminations and earth bonds are tight. Check that all electrical equipment is securely attached to the backboard.	None
Double pole isolation	Where relevant check if double pole isolation has been Installed	None
Protection device	Check that the protection device is correctly Installed and rated.	None
Private supply cables	Check that private supply cables are correctly sized and glanded, with the fed items identified at the source column/isolator (cable diagram encapsulated for longevity)	None
Feeder Pillars / locations	Check for condensation, distribution board, rating of protection devices, wiring is neat, all terminations, glanding, insulation, cables sizes, cables are identified, earthing and schematic cable diagram.	None
Lighting design – trees and other vegetation	Check that the effect of trees and other vegetation has been adequately accommodated in the design and positioning of the columns.	None
General - Power	Check that there is electrical power at the secondary isolation point.	None
General – Lamp operation	Check that the lamp strikes.	None
General – Condition	Check for any signs of damage to any item of Apparatus.	None

Appendix D – Electrical Test Certificates

BS 7671 tests for new installations must include:

- Continuity of protective conductors including main and supplementary equipotential bonding
- Insulation resistance at a test voltage of 500V to be not less than 1.0 MΩ
- Insulation of the site-built assemblies
- Polarity, including the continuity of circuit conductors
- Earth fault loop impedance at every fuse junction unit
- Operation of residual current devices where necessary
- Each separately fused lantern requires circuit tested

BS 7671 tests for private cable networks must additionally include:

- Cable Sheath Insulation Test
- Earth electrode Resistance

View an [example test certificate](#) format.

At Accrual/Adoption the Electrical Test certificates should be ≤ 3 years old.

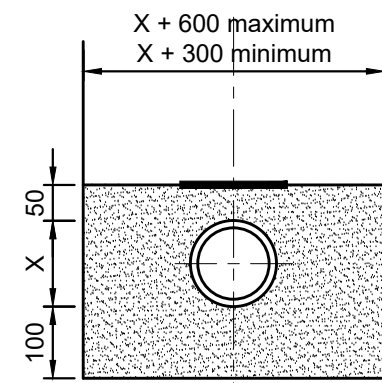
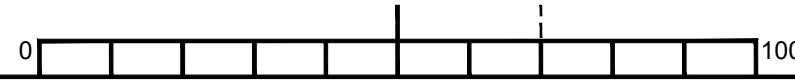
Certificates should refer to a named 'As-Built' drawing and the numbering should correlate.

Appendix E – Mayflower Node Commissioning – form

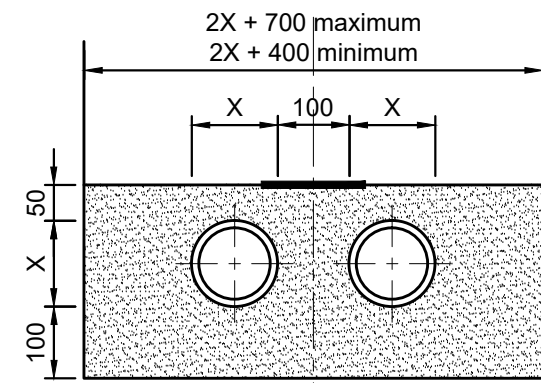
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Checked by Team Manager (<i>sign</i>):			Date:
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Appendix F – Standard Detail Drawings

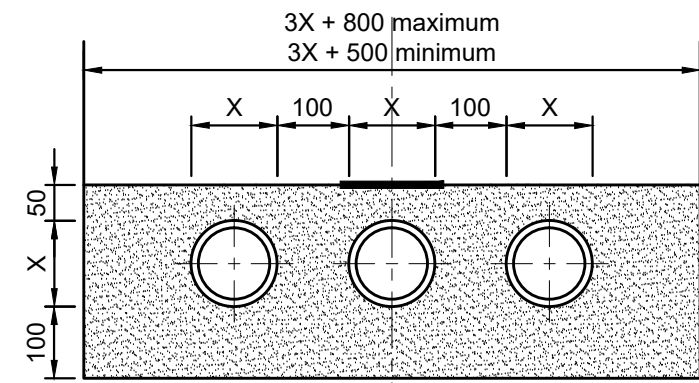
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- WSCC-SD1-0500-042 – Duct in carriageway
- WSCC-SD1-0500-059 – Street Lighting Twin-Walled access chamber box
- WSCC-SD1-1400-001 – Feeder pillars
- WSCC-SD1-1400-011 – Illuminated Traffic signs
- WSCC-SD1-1400-021 – Refuge island, beacon & non-illuminated bollards – <= 40mph
- WSCC-SD1-1400-022 – Refuge island, beacon & non-illuminated bollards – > 40mph
- WSCC-SD1-1400-023 – Refuge island & illuminated bollards
- WSCC-SD1-1400-031 – 5-6m col post top column
- WSCC-SD1-1400-032 – 8m post top column
- WSCC-SD1-1400-033 – 10m post top column
- WSCC-SD1-1400-034 – 12m post top column
- WSCC-SD1-1400-041 – 5m raise and lower column
- WSCC-SD1-1400-042 – 6m raise and lower column
- WSCC-SD1-1400-043 – 6m base hinged 'Abacus' raise and lower column
- WSCC-SD1-1400-051 – Foundation for Lighting Columns & Signs
- WSCC-SD1-1400-061 – Zebra beacon pole & floodlight
- WSCC-SD1-1400-071 – Tree exclusion zones



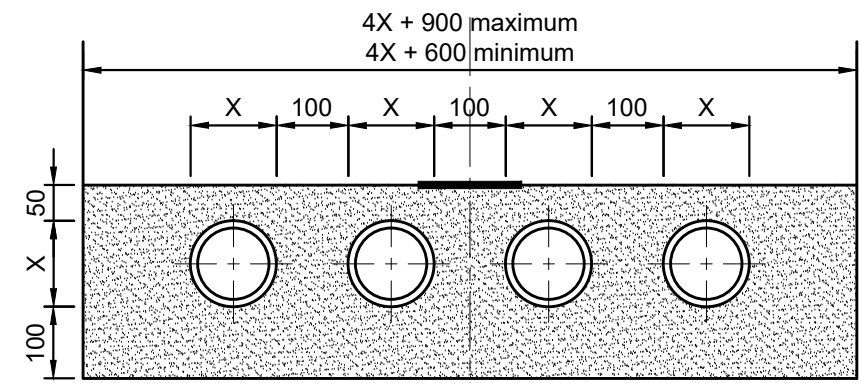
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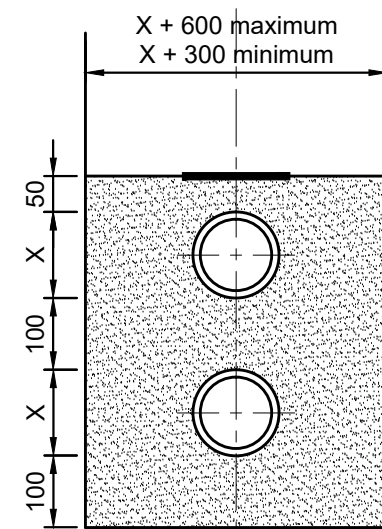
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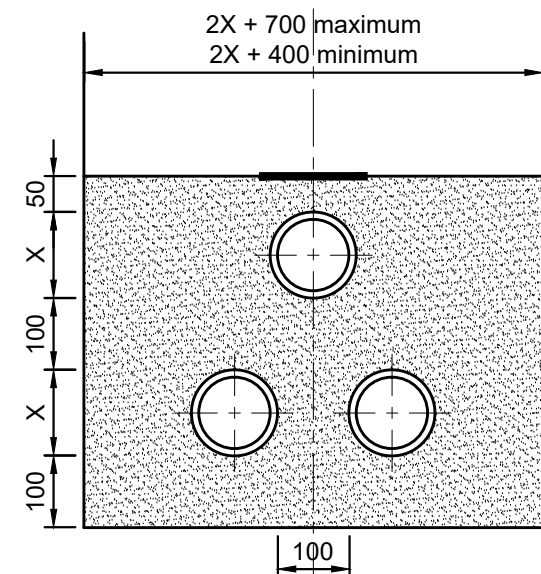
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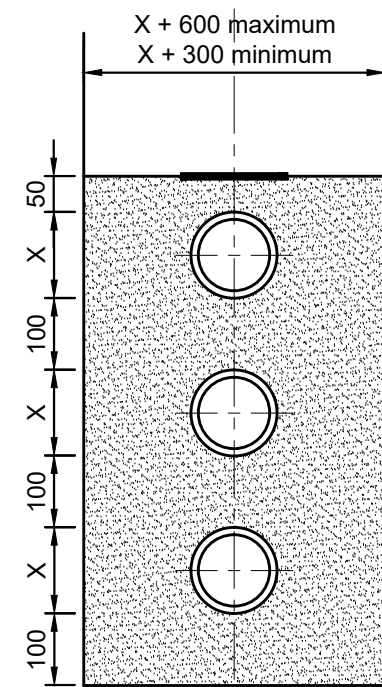
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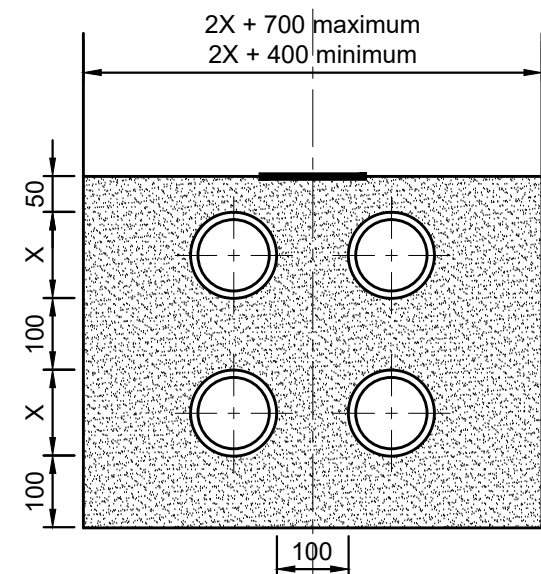
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INSTALLATION



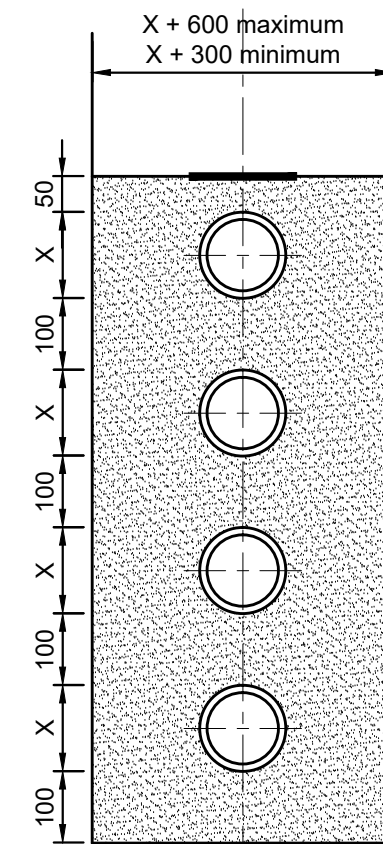
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INSTALLATION (1)



TRIPLE DUCT
RESTRICTED WIDTH
INSTALLATION (2)




QUADRUPLE DUCT
RESTRICTED WIDTH
INSTALLATION (1)



QUADRUPLE DUCT
RESTRICTED WIDTH
INSTALLATION (2)

LEGEND


Lightly compacted
sand to Clause
503.3 (ii)


Polythene marker
tape marked
TRAFFIC SIGNALS
or STREET
LIGHTING at 1000
minimum intervals
as specified

NOTES

1. All dimensions in millimetres unless stated otherwise.
2. Dimension X is the external duct diameter.
3. The minimum or maximum trench width applies on or below a line 300 above the outside top of the uppermost duct.
4. The bed or surround may extend to the sides of the trench or be to the minimum width. Class 8 material is to be used to fill any void so formed
5. Typical footway reinstatement details are shown on Drawings WSCC-SD1-1100-081 & 082.
6. Typical verge reinstatement details are shown on Drawing WSCC-SD1-3000-001.
7. Where ducts are beneath verge or footway within 2000 from the carriageway edge, cover to uppermost duct shall be minimum 600.
8. Where ducts are under verge or footway further than 2000 from the carriageway edge, cover to uppermost duct shall be minimum 450.
9. All ducting to be twin-walled uPVC to specified diameters and colours complying with BS EN 61386-24: 2010.
10. Ducts are to be laid at a single depth (standard installation) unless otherwise specified. Vertical clearance between ducts shall be 100 minimum.

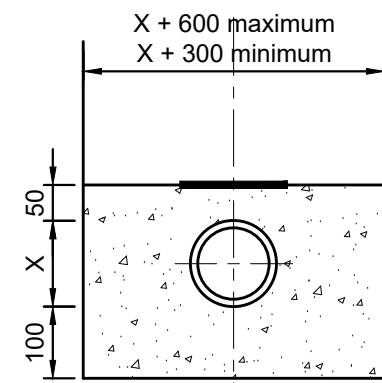
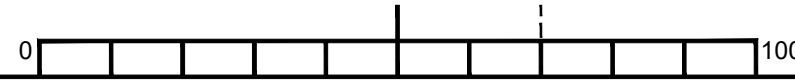
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Chkd:	AR			For tender
Appd:	AR	X		For construction
Date:	21/02/2017			As constructed
File ref:				
IWP Ref:				

West Sussex County Council
Infrastructure Group
County Hall,
West Street
Chichester
West Sussex
PO19 1RH
(01243) 642105

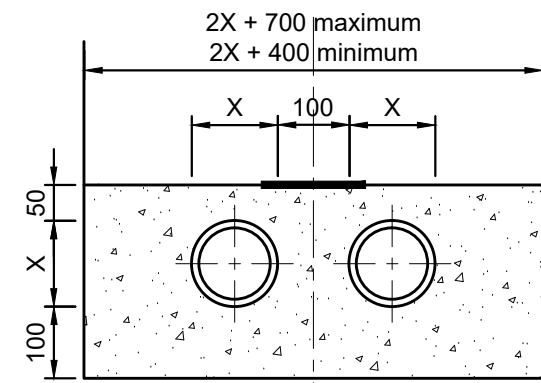
**west
sussex
county
council**

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Date Adopted:	
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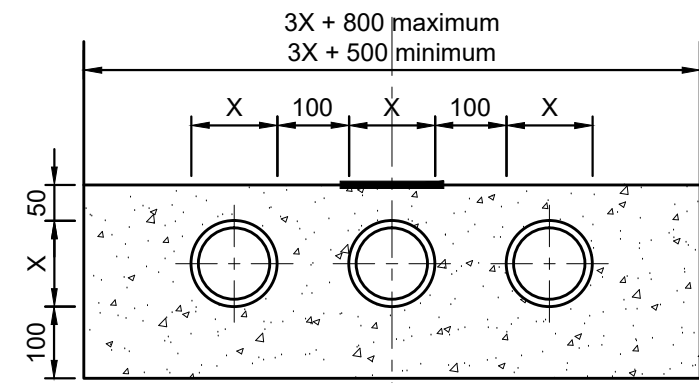
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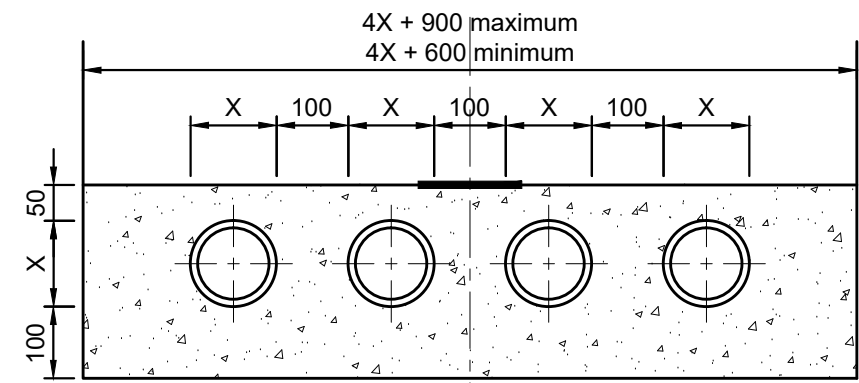
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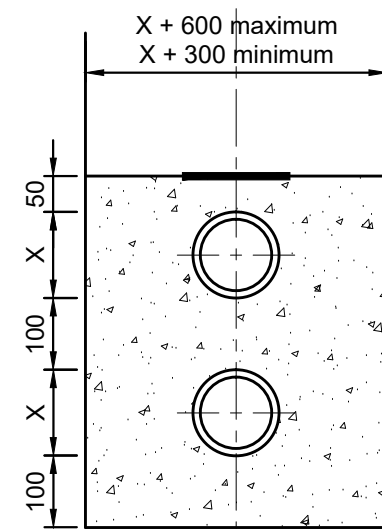
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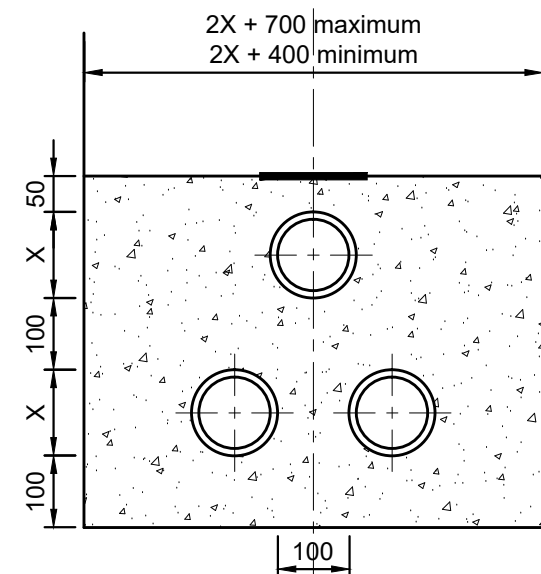
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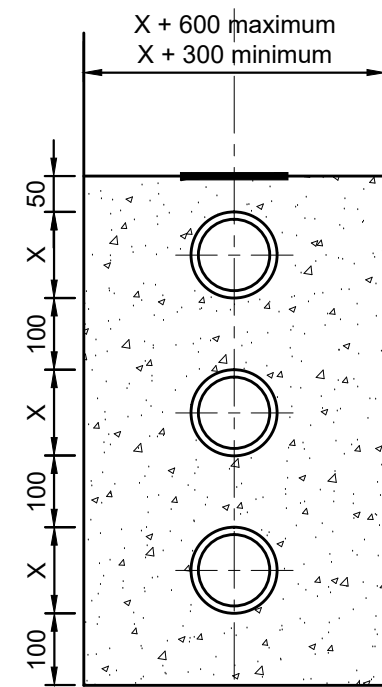
QUADRUPLE DUCT
STANDARD INSTALLATION



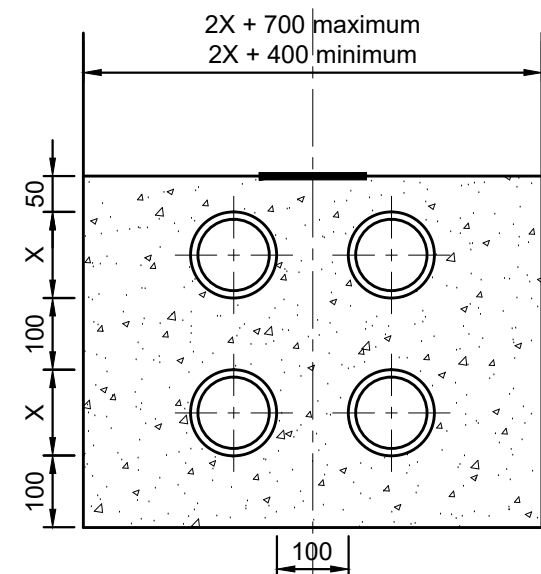
TWIN DUCT
RESTRICTED WIDTH
INSTALLATION



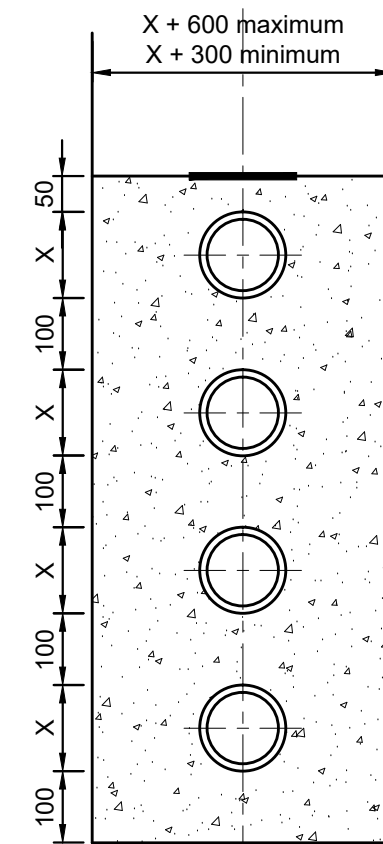
TRIPLE DUCT
RESTRICTED WIDTH
INSTALLATION (1)



TRIPLE DUCT
RESTRICTED WIDTH
INSTALLATION (2)



QUADRUPLE DUCT
RESTRICTED WIDTH
INSTALLATION (1)



QUADRUPLE DUCT
RESTRICTED WIDTH
INSTALLATION (2)

LEGEND



Concrete mix ST2
to Clause 2602

Polythene marker tape
marked TRAFFIC
SIGNALS or STREET
LIGHTING at 1000
minimum intervals as
specified

NOTES

1. All dimensions in millimetres unless stated otherwise.
2. Dimension X is the external duct diameter.
3. The minimum or maximum trench width applies on or below a line 300 above the outside top of the uppermost duct.
4. The bed or surround may extend to the sides of the trench or be to the minimum width. Class 8 material is to be used to fill any void so formed.
5. Typical carriageway reinstatement details are shown on Drawing WSCC-SD1-700-021.
6. Cover to uppermost duct shall be minimum 600.
7. All ducting to be twin-walled uPVC to specified diameters and colours complying with BS EN 61386-24: 2010.
8. Ducts are to be laid at a single depth (standard installation) unless otherwise specified. Vertical clearance between ducts shall be 100 minimum.

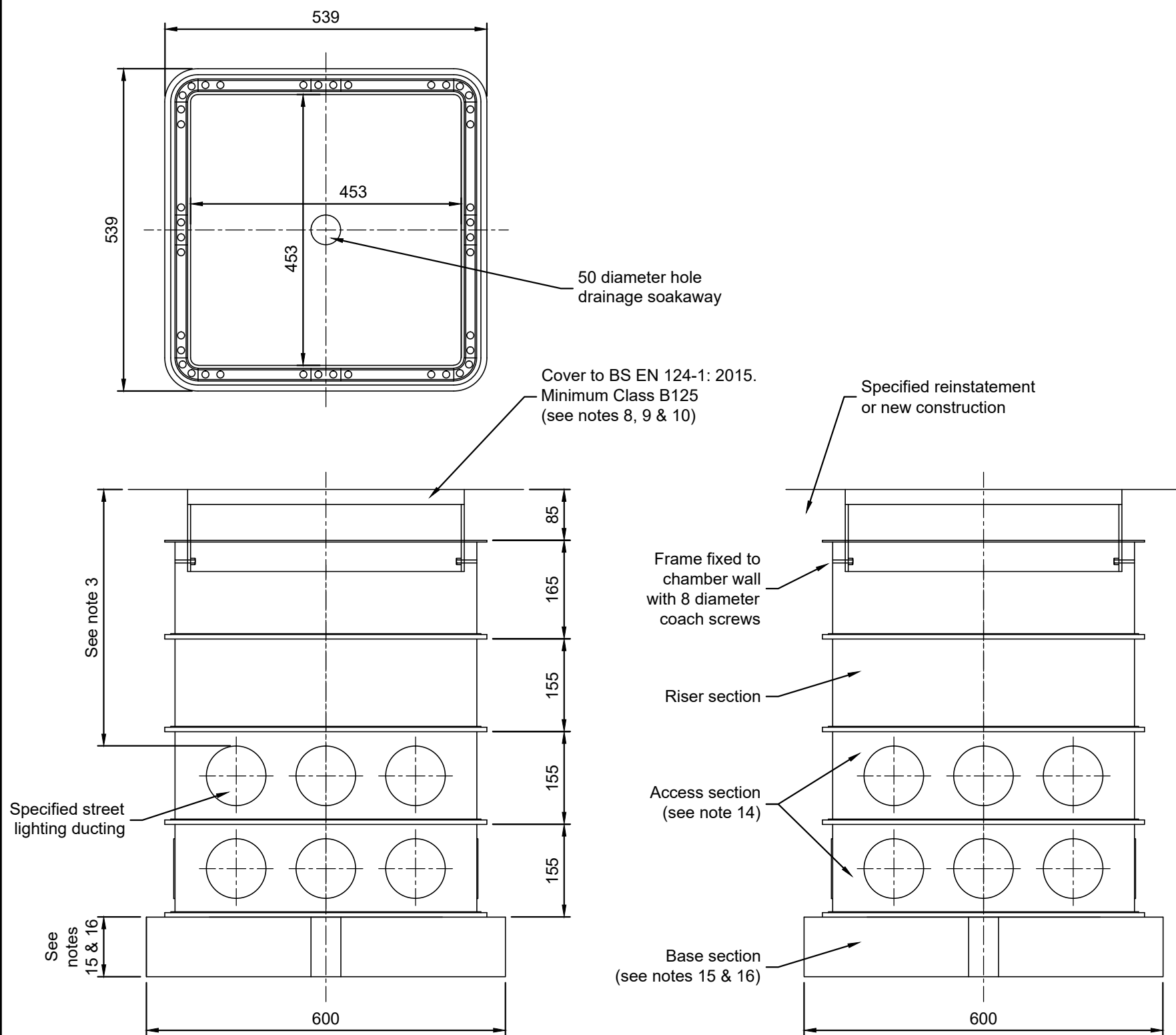
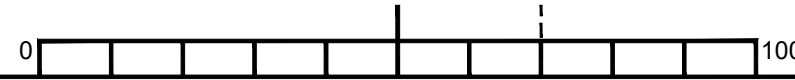
C1	First Construction Issue	AN	MD	6/06/2018
Rev	Revision details	Chkd	Appd	Date
Drawn:	DK			For comment
Chkd:	AR			For tender
Appd:	AR	X		For construction
Date:	21/02/2017			As constructed
File ref:				
IWP Ref:				

West Sussex County Council
Infrastructure Group
County Hall,
West Street
Chichester
West Sussex
PO19 1RH
(01243) 642105




Project Name	
STANDARD DETAILS	
Drawing Title	
DUCTS IN CARRIAGEWAY	
Date Adopted:	
OS Sheet No.	

Original Drawing Size :	A3
Scale :	NTS
Dimensions :	mm
Drawing No	Rev
WSCC-SD1-0500-042	C1

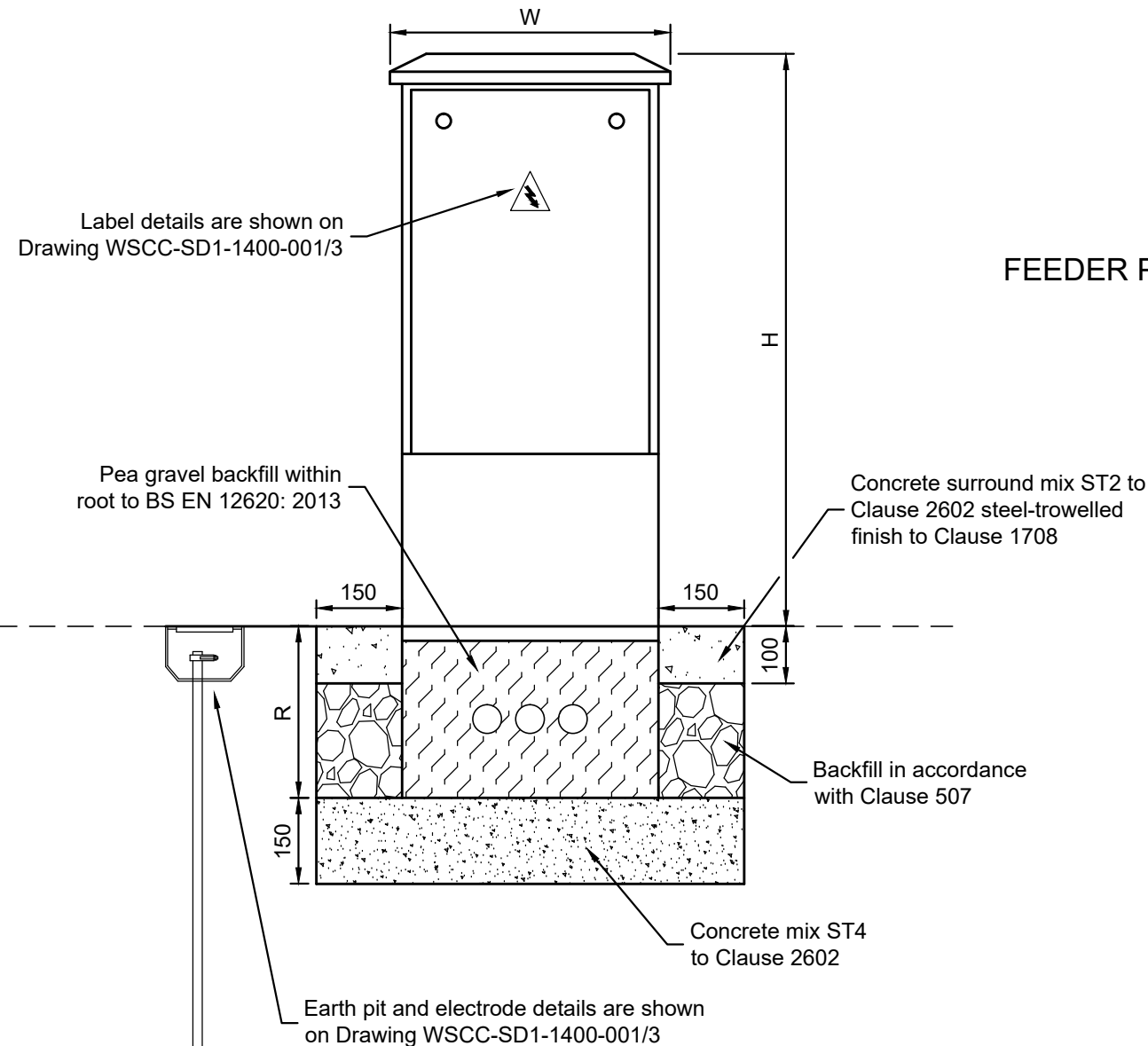


NOTES

1. All dimensions are in millimetres unless stated otherwise.
2. Ducts must not project more than 10 inside any access chamber box.
3. Depth of access chamber box to be increased as required to obtain specified ground cover to ducts (minimum 450 beneath verge and/or footway further than 2000 from carriageway edge, minimum 600 beneath carriageway) and verge and/or footway within 2000 from carriageway edge).
4. Alternative types of modular chamber systems may be used subject to WSCC approval. Preferred types of modular chamber systems consist of twin-wall preformed segments with each section castellated to positively interlock with adjacent units. Chambers shall include a deep galvanised frame (minimum 85 deep) and be able to withstand 50kN shear loading and side wall loading of 50kN when installed in a well-compacted surround. All units must have a functioning drainage hole. Installation of these systems must be in accordance with the manufacturer's instructions.
5. All ducts to be orange in colour, 100 diameter and marked STREET LIGHTING (except where otherwise specified) and provided with a suitable draw wire or cord.
6. Frame to be bedded on minimum 20 depth Class (i) mortar to Clause 2404 when chamber box is installed in verge or footway. A 100 depth fillet of the same material must be applied around the frame when chamber box is installed in grassed or loose-surfaced areas.
7. Frame to be bedded on minimum 25 depth proprietary epoxy resin when chamber box is installed in carriageway or other areas where the frame or cover will be subjected to traffic loading.
8. Class of cover and frame to be increased to D400 if chamber box is installed in carriageway or other areas where the frame or cover will be subjected to traffic loading.
9. Cover shall be black, 450x450 clear opening, badged STREET LIGHTING, and made from structural moulding composite material with minimum skid resistance values (SRV) of 84 when dry and 50 when wet. the cover shall have a surface profile to reduce foot and vehicle contact with slip lubricants.
10. Cover/frame unit to be locked as standard.
11. Holes for brackets and/or steps shall be drilled using a 11 diameter bit before the chamber box is lowered into the ground. Fit brackets and/or steps using M16 bolts (M10 galvanised coach bolts to be used when retrofitting brackets and/or steps).
12. Backfill to excavation in accordance with Clause 507 when chamber box is installed in verge or footway.
13. Backfill to excavation using 150 minimum concrete mix ST1 to Clause 2602 surround when chamber box is installed in carriageway or other areas where the frame or cover will be subjected to traffic loading.
14. The chamber box access sections shall have pre-trepaned knockout areas to accept 50 and 100 internal diameter 5 thickness twin wall ducting.
15. Base section to be formed of minimum 100 thickness concrete mix ST4 to Clause 2602 when chamber box installed in verge or footway.
16. Base section to be formed of minimum 150 thickness concrete mix ST4 to Clause 2602 reinforced with A393 square reinforcement mesh to BS 4483: 2005 with 40 reinforcement cover when chamber box is installed in carriageway or other areas where the frame or cover will be subjected to traffic loading.
17. Typical carriageway reinstatement details are shown on Drawing WSCC-SD1-0700-021.
18. Typical footway reinstatement details are shown on Drawings WSCC-SD1-1100-081 & 082.
19. Typical verge reinstatement details are shown on Drawing WSCC-SD1-3000-001.

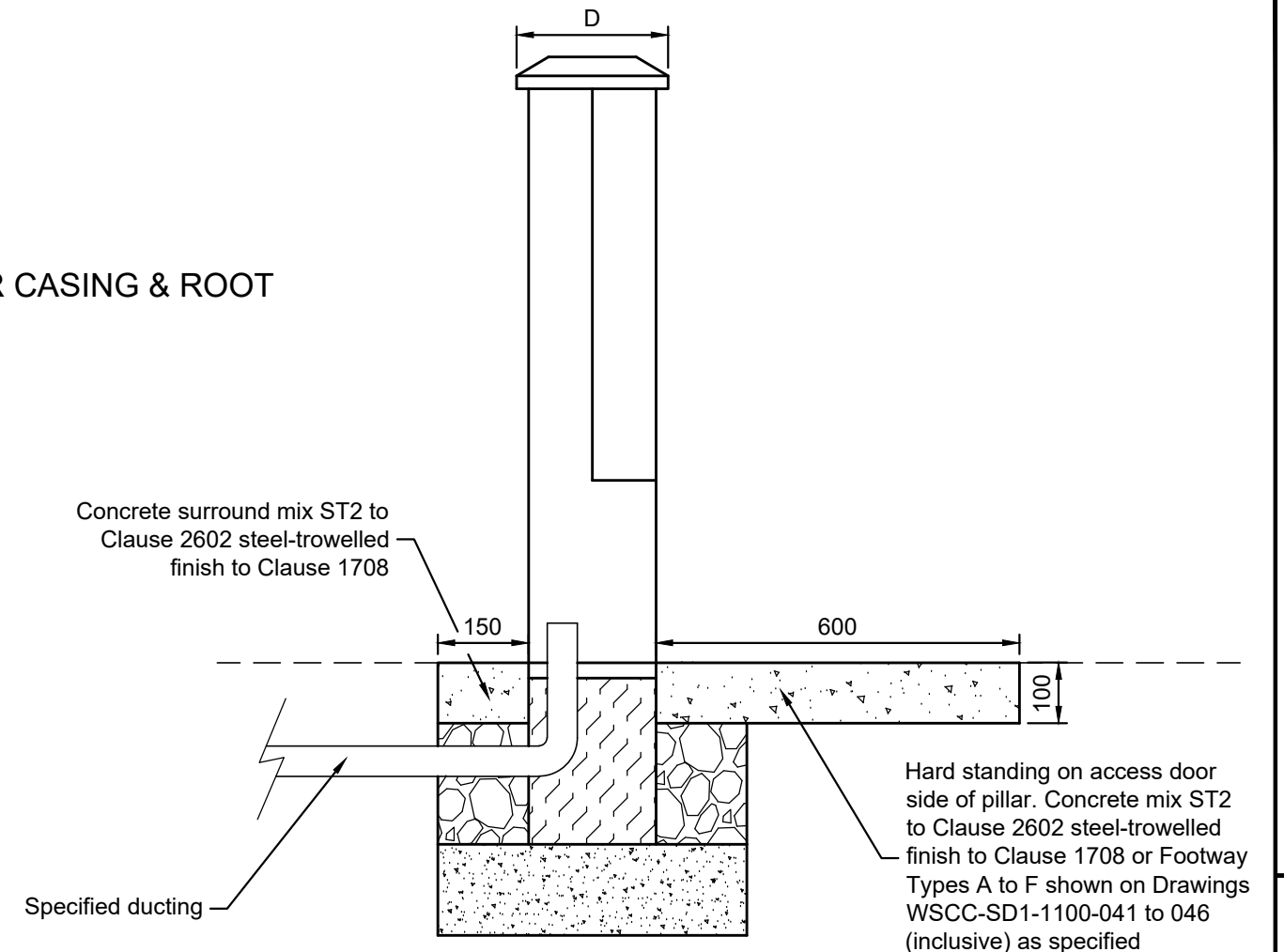
C1	First Construction Issue	TM	MD	6/06/2018	<div>West Sussex County Council Infrastructure Group County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105</div> <div></div>	Project Name			
Rev	Revision details	Chkd	Appd	Date		STANDARD DETAILS			
Drawn: DNJ			For comment			Original Drawing Size : A3			
Chkd: TM			For tender			Scale : NTS			
Appd: MD		X	For construction			Dimensions : mm			
Date: 29/06/2017			As constructed			Drawing No			
File ref: IWP Ref:						Date Adopted: OS Sheet No.			Rev
					STREET LIGHTING TWIN-WALLED ACCESS CHAMBER BOX			WSCC-SD1-0500-059	
								C1	

THIS DRAWING MUST BE READ IN CONJUNCTION WITH WSCC-SD1-1400-001/2 & 3



FRONT ELEVATION


Feeder Pillar Table				
Feeder pillar reference	Overall height above ground (H)	Root section (R)	Width (W)	Depth (D)
FP1	787	223	210	170
FP2	1000	300	490	250



END ELEVATION

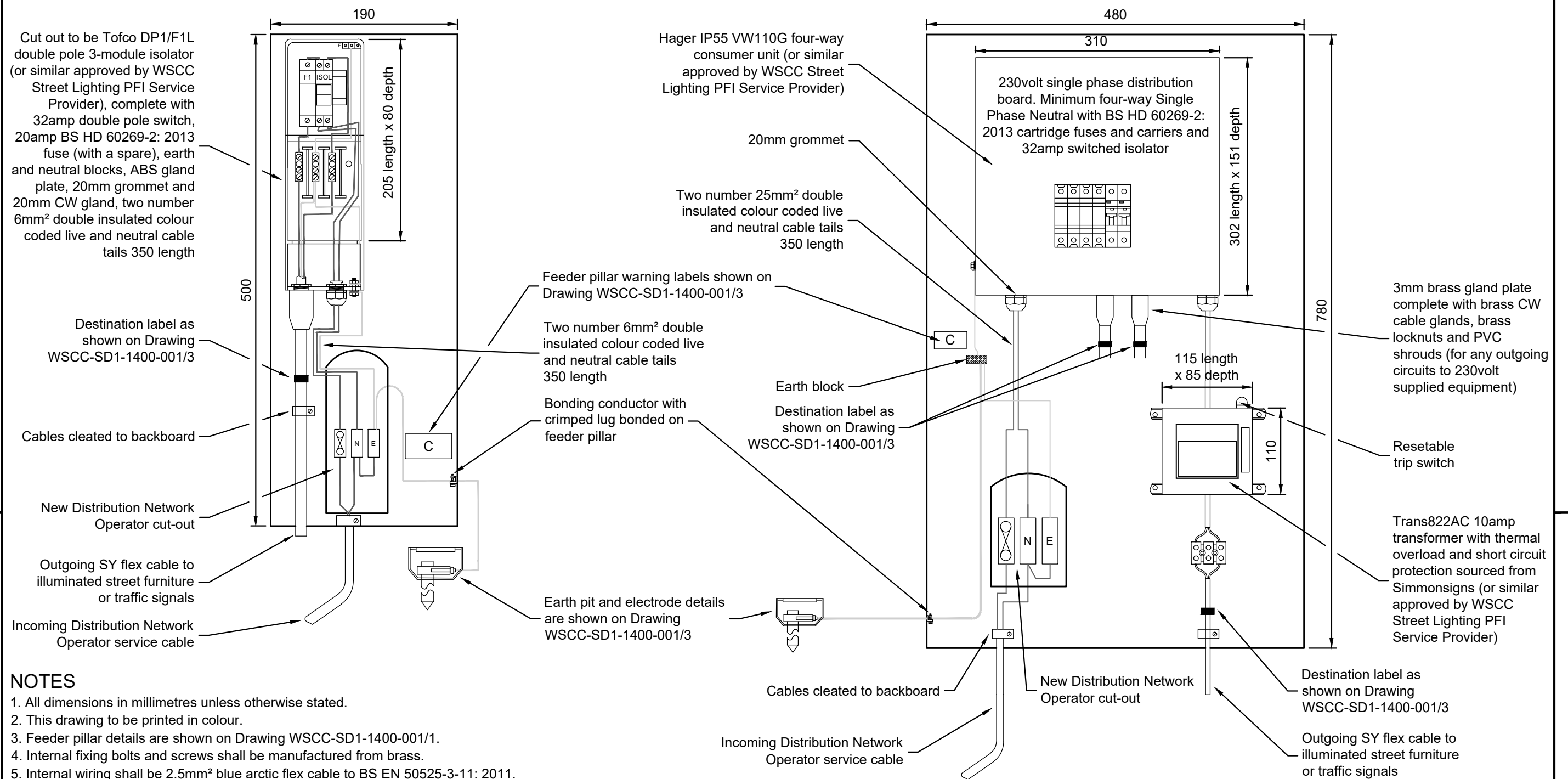
NOTES

1. All dimensions in millimetres unless otherwise stated.
2. Feeder pillar type to be approved by WSCC and be installed in accordance with manufacturer's instructions.
3. Incoming Distribution Network Operator (DNO) service cable to be housed in black 50 internal diameter twin walled smooth bore duct to BS EN 61386-24: 2010 in surround.
4. Typical ducts in verge and footway are shown on Drawings WSCC-SD1-0500-041, HCD F1 & HCD F2.
5. Typical footway reinstatement details are shown on Drawings WSCC-SD1-1100-081 & 082.
6. Typical verge reinstatement details are shown on Drawing WSCC-SD1-3000-001.
7. Backboard details are shown on Drawing WSCC-SD1-1400-001/2.
8. Installation notes are shown on Drawing WSCC-SD1-1400-001/3.

C1	First Construction Issue	TM/CB	-	-	<div>West Sussex County Council Infrastructure Group</div> <div>County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105</div> <div></div>	Project Name			
Rev	Revision details	Chkd	Appd	Date		STANDARD DETAILS			
Drawn: DNJ			For comment			Original Drawing Size : A3			
Chkd: TM/CB			For tender			Scale : NTS Dimensions : mm			
Appd:		X	For construction			Drawing No			
Date: 04/10/2017			As constructed			WSCC-SD1-1400-001/1			
File ref: IWP Ref:							Date Adopted: OS Sheet No.		Rev C1

BACKBOARD DETAILS FOR FEEDER PILLAR TYPE FP1


BACKBOARD DETAILS FOR FEEDER PILLAR TYPE FP2

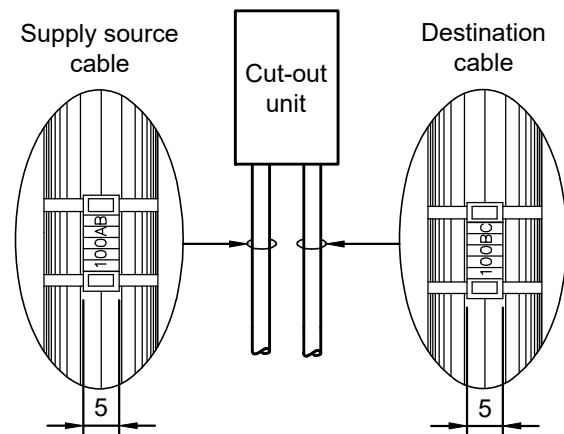


NOTES

1. All dimensions in millimetres unless otherwise stated.
2. This drawing to be printed in colour.
3. Feeder pillar details are shown on Drawing WSCC-SD1-1400-001/1.
4. Internal fixing bolts and screws shall be manufactured from brass.
5. Internal wiring shall be 2.5mm² blue arctic flex cable to BS EN 50525-3-11: 2011.
6. Cable entries through metal enclosures shall be provided with a U-shaped rubber gasket.
7. Installation notes are shown on Drawing WSCC-SD1-1400-001/3.
8. All circuits to be clearly identified and labelled on feeder pillar distribution panel.

THIS DRAWING MUST BE READ IN CONJUNCTION WITH WSCC-SD1-1400-001/1 & 3

C1	First Construction Issue	TM/CB	-	-	<div>West Sussex County Council Infrastructure Group</div> <div>County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105</div> <div><div>west sussex county council</div></div>	Project Name			
Rev	Revision details	Chkd	Appd	Date		STANDARD DETAILS			
Drawn: DNJ			For comment			Original Drawing Size : A3			
Chkd: TM/CB			For tender			Scale : NTS			
Appd:		X	For construction			Dimensions : mm			
Date: 06/10/2017			As constructed			Drawing No			
File ref: IWP Ref:						FEEDER PILLAR INSTALLATION DETAILS - SHEET 2 OF 3		WSCC-SD1-1400-001/2	
					Date Adopted: OS Sheet No.		Rev C1		

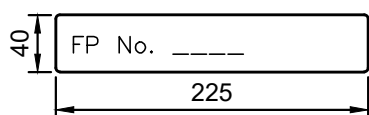


TYPICAL CABLE LABELLING DETAIL

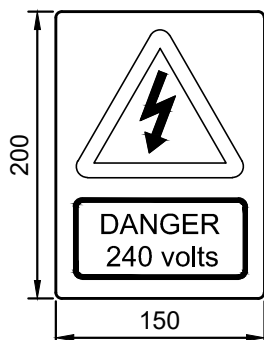
NOTES

1. All cables at both ends of the circuit shall be marked to indicate the supply source and destination. Final details shall be agreed with WSCC Street Lighting PFI Service Provider.
2. Cable markers shall be black on yellow and manufactured from plasticised PVC by Critchley (or similar approved by WSCC Street Lighting PFI Service Provider) and held in position with black plastic tie wrap.

EXTERNAL REFERENCE NUMBER



DOOR WARNING LABEL

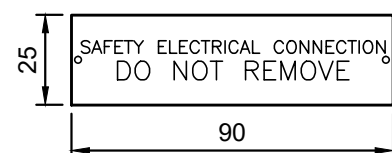


FEEDER PILLAR LABELLING DETAILS

NOTES

1. Triangular warning labels shall comply with BS 5499-5: 2002.
2. Refer to installation note F for details of external reference number acquisition and application.
3. Door warning labels shall consist of black triangular flash symbol and text on yellow backgrounds, all centrally mounted on a white background.
4. Door warning labels to be fabricated from 1.5mm thickness rigid plastic or equivalent adhesive mounted label.
5. Door warning labels shall be applied to external and internal surfaces of both doors.

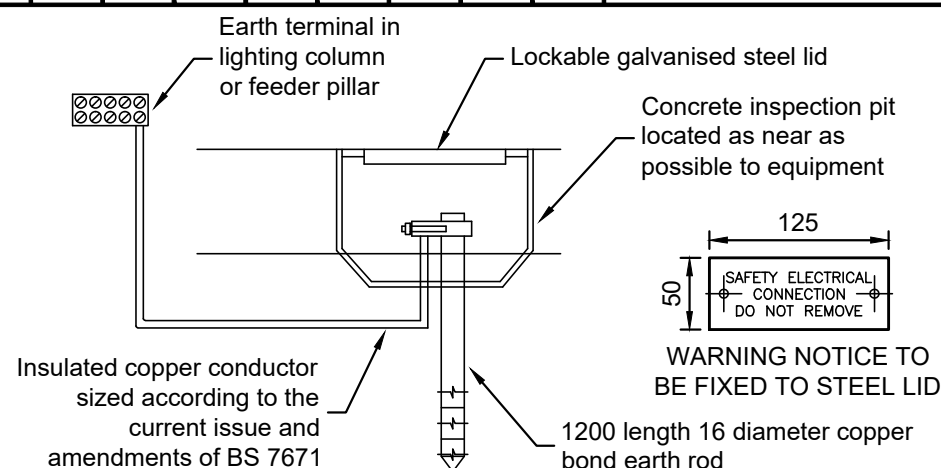
LABEL C



FEEDER PILLAR WARNING LABEL

NOTE

1. Label C shall be:
 - a) manufactured from rigid PVC of 2mm minimum thickness,
 - b) secured to the backboard with two number stainless steel screws,
 - c) installed irrespective of any other labels provided by the Distribution Network Organisation, and
 - d) clearly legible following installation.



NOTES

1. The value of resistance to earth electrode shall be measured by the contractor.
2. Additional earth electrodes shall be installed as required to achieve the maximum impedance of 20ohms.
3. Electrode(s) to be installed and tested to BS 7430: 2011 + A1: 2015.

EARTH PIT & ELECTRODE DETAIL

INSTALLATION NOTES

- A. Recognised lighting contractors that are members of ASLEC and NICEIC must be used for street lighting, illuminated sign and bollard installation works. Current membership numbers for these bodies will be given to the WSCC Street Lighting PFI Service Provider before the start of works.
- B. The approved lighting contractor shall not sub-contract any part of the works.
- C. All materials shall be to the relevant British and European standards.
- D. Works shall comply with the Department for Transport Specification for Highway Works, and shall also conform to the Electricity at Work Regulations, the Health and Safety at Work Act, the Control of Substances Hazardous to Health Regulations, and the Construction (Design and Management) Regulations.
- E. Erection and installation works shall comply with the current issue and amendments of BS 7671, the current editions of the ILE Code of Practice for Electrical Safety in Public Lighting Operations, and the Code of Practice for the Erection of Street Lighting published by the Association of Street Lighting Electrical Contractors.
- F. Proposed asset numbers for new illuminated street furniture units shall comply with the WSCC Street Lighting PFI specification. A copy of the relevant clauses will be made available to the approved lighting contractor by WSCC. Numbering must be consistent with drawings and test certificates. Letters and numbers shall be 50 high black font on white adhesive labels and be positioned where instructed by the WSCC Street Lighting PFI Service Provider.

INSTALLATION NOTES (CONTINUED)

- G. The lighting contractor must verify all existing electrical circuits prior to permanent disconnection and removal of redundant equipment.
- H. The locations of proposed electrical street furniture shall be agreed on site by WSCC or its nominated representative before the installation of any equipment. The contractor must satisfy himself of the precise locations and depths of statutory undertakers' plant and services, surface water drains and gully connections by reference to the authority concerned and/or by checks and/or by using safe digging practices laid out in the HSE publication HSG47: Avoiding Danger from Underground Services before starting construction.
- I. All electrical equipment to comply with WSCC Street Lighting PFI specification. A copy of the relevant clauses will be made available to the approved lighting contractor on request to WSCC or its nominated representative.
- J. Operatives removing the isolator/cut-out must use full face visor and electrical rubber gloves when removing main fuse in accordance with G39.
- K. A competent trained workforce must be used for installations.
- L. No work is to be carried out on live equipment.
- M. WSCC or its nominated representative shall obtain connection quotations from the Distribution Network Operator (DNO).
- N. The contractor shall undertake all subsequent duties in respect to the DNO connection(s), including all payments to the DNO, and shall liaise with the DNO before starting works on site.

THIS DRAWING MUST BE READ IN CONJUNCTION WITH WSCC-SD1-1400-001/1 & 2

C1	First Construction Issue	TM/CB	-	-
Rev	Revision details	Chkd	Appd	Date
Drawn:	DNJ			For comment
Chkd:	TM/CB			For tender
Appd:		X		For construction
Date:	06/10/2017			As constructed
File ref:				
IWP Ref:				

West Sussex County Council
Infrastructure Group
County Hall,
West Street
Chichester
West Sussex
PO19 1RH
(01243) 642105



Project Name

STANDARD DETAILS

Drawing Title

FEEDER PILLAR INSTALLATION DETAILS - SHEET 3 OF 3

Date Adopted:
OS Sheet No.

Original Drawing Size : A3

Scale : NTS

Dimensions : mm

Drawing No

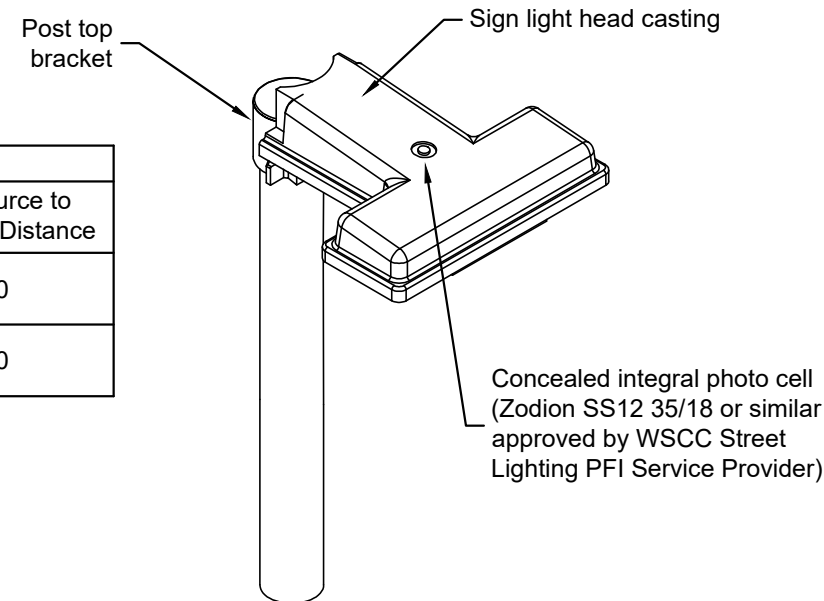
WSCC-SD1-1400-001/3

Rev

C1

THIS DRAWING MUST BE READ IN CONJUNCTION WITH WSCC-SD1-1400-011/2 & 3

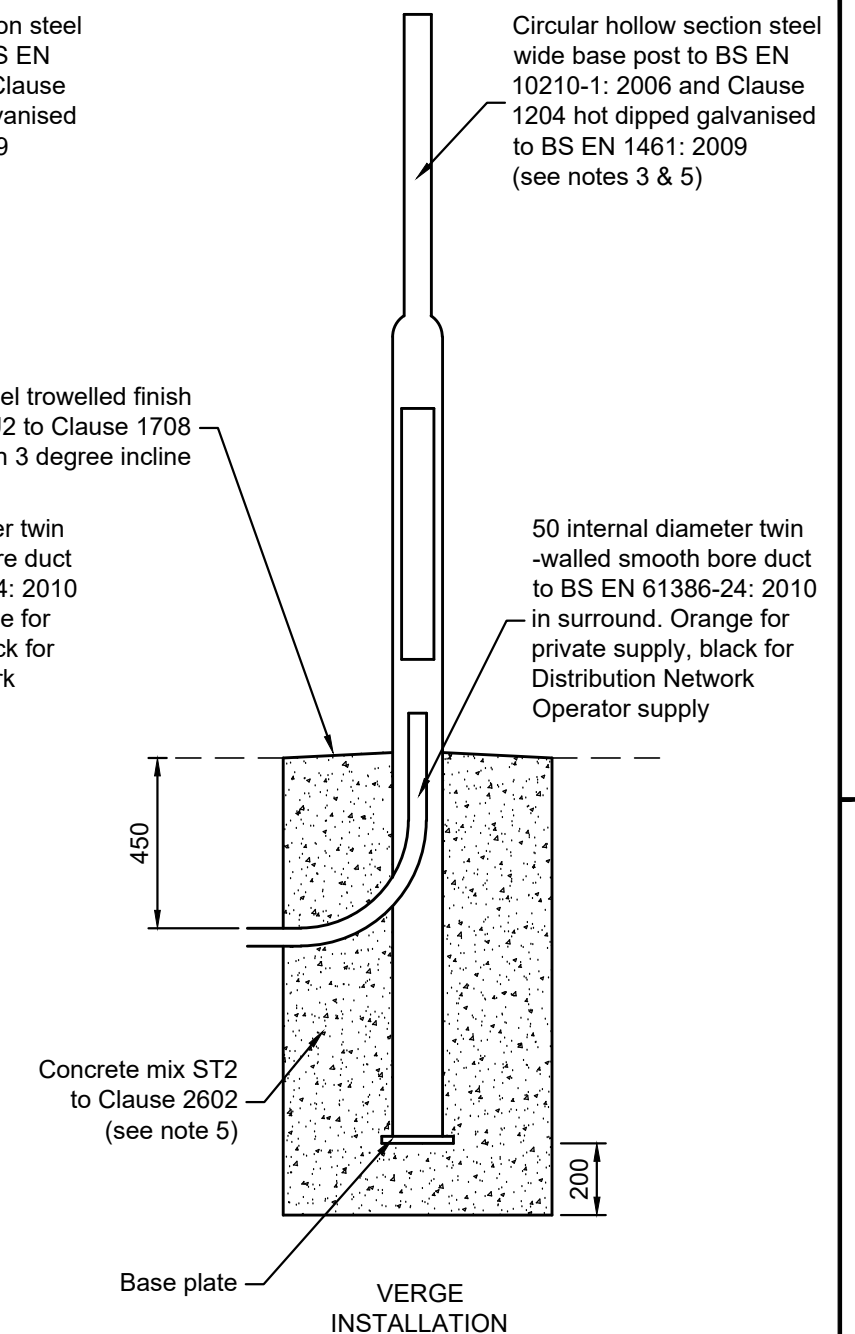
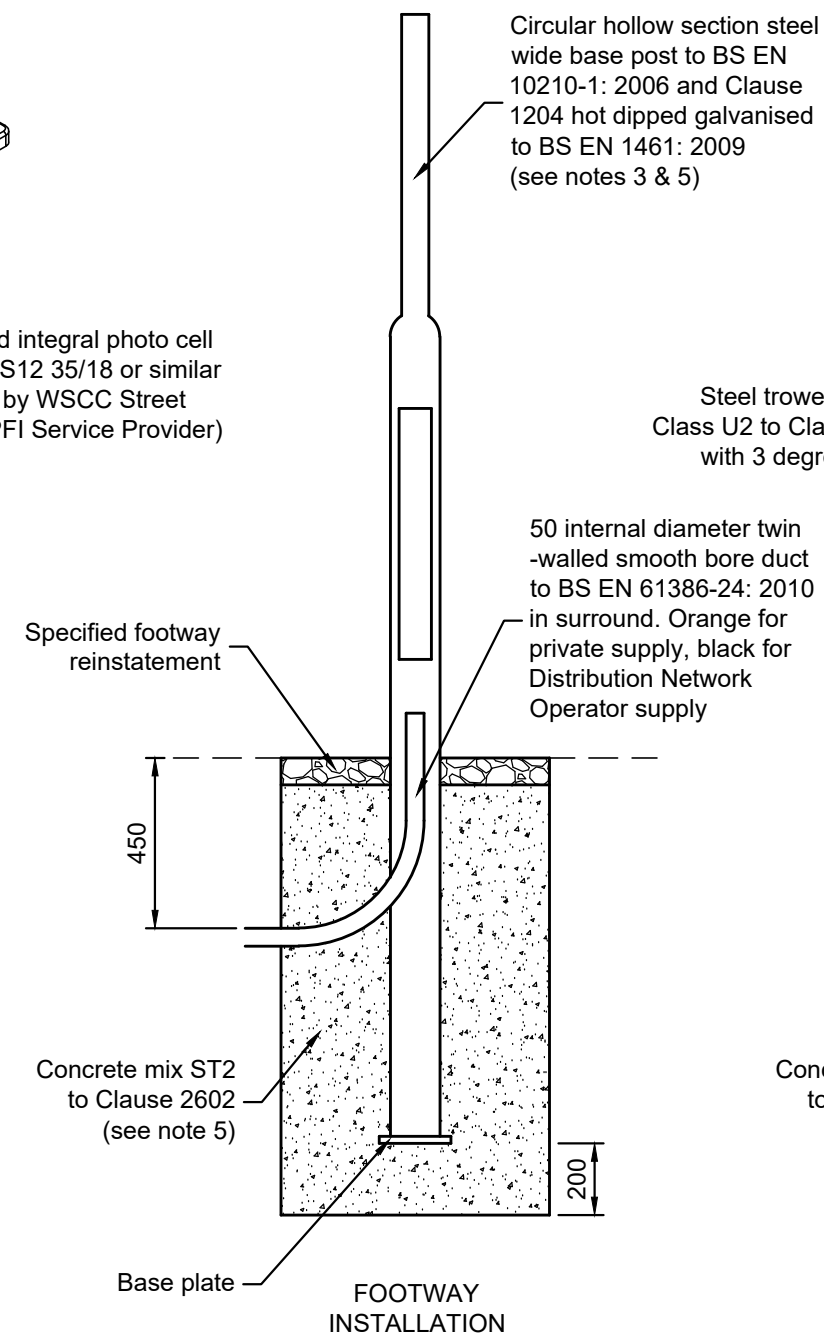
Type of Sign Light Unit			
Type	LED Light Source	Maximum Sign Area	Light Source to Sign Face Distance
LU-A	3 x 1W	760 x 760	300
LU-B	10 x 1W	1400 x 1400	600



TYPICAL SIGN LANTERN DETAIL

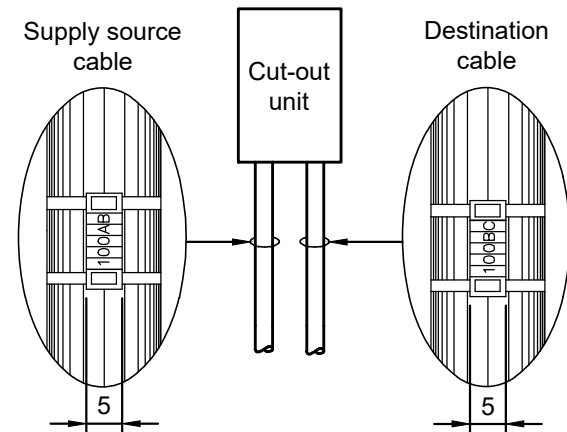
NOTES

1. All dimensions in millimetres unless otherwise stated.
2. Final paint colour to be specified by WSCC where a painted finish is required.
3. Wide base posts shall be installed only on roads with a speed limit not exceeding 40mph or on roads with a greater speed limit when adequately protected by a vehicle restraint barrier system. Passively safe posts of a type approved by WSCC and WSCC Street Lighting PFI Service Provider shall otherwise be installed in accordance with the manufacturer's instructions.
4. Ducts into illuminated sign posts shall be incorporated in the concrete foundation ensuring there are no sharp bends in the duct run.
5. Post and foundation sizes are dependant upon the sign area and must be specified as part of the road traffic sign design in accordance with BS EN 12899-1: 2007. 139 diameter base posts are available with 76 or 89 diameter upper sections and 168 diameter base posts are available with 76, 89 or 114 diameter upper sections.
5. Typical footway reinstatement details are shown on Drawings WSCC-SD1-1100-081 & 082.
6. Typical verge reinstatement details are shown on Drawing WSCC-SD1-3000-001.
7. Electrical termination details are shown on Drawings WSCC-SD1-1400-011/2 & 3.
8. Termination notes are shown on Drawing WSCC-SD1-1400-011/2.
9. Cable connection notes are shown on Drawing WSCC-SD1-1400-001/3.
10. 24 Volt lanterns shall be used on island sites.
11. Sign light units to be Simmons LU-A or LU-B (or similar approved by WSCC Street Lighting Service Provider).



ILLUMINATED SIGN POST INSTALLATION

C1	First Construction Issue	TM/CB	-	-	West Sussex County Council Infrastructure Group County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105	Project Name STANDARD DETAILS		
Rev	Revision details	Chkd	Appd	Date		Drawing Title ILLUMINATED ROAD TRAFFIC SIGNS - SHEET 1 OF 3	Original Drawing Size : A3	
Drawn:	DNJ			For comment		Date Adopted: OS Sheet No.	Scale : NTS	Dimensions : mm
Chkd:	TM/CB			For tender			Drawing No WSCC-SD1-1400-011/1	Rev C1
Appd:		X		For construction				
Date:	10/10/2017			As constructed				
File ref:								
IWP Ref:								

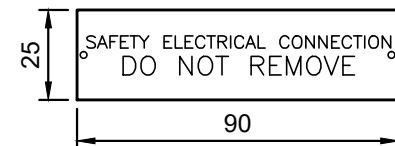


TYPICAL CABLE LABELLING DETAIL

NOTES

1. All cables at both ends of the circuit shall be marked to indicate the supply source and destination. Final details shall be agreed with WSCC Street Lighting PFI Service Provider.
2. Cable markers shall be black on yellow and manufactured from plasticised PVC by Critchley (or similar approved by WSCC Street Lighting PFI Service Provider) and held in position with black plastic tie wrap.

LABEL C

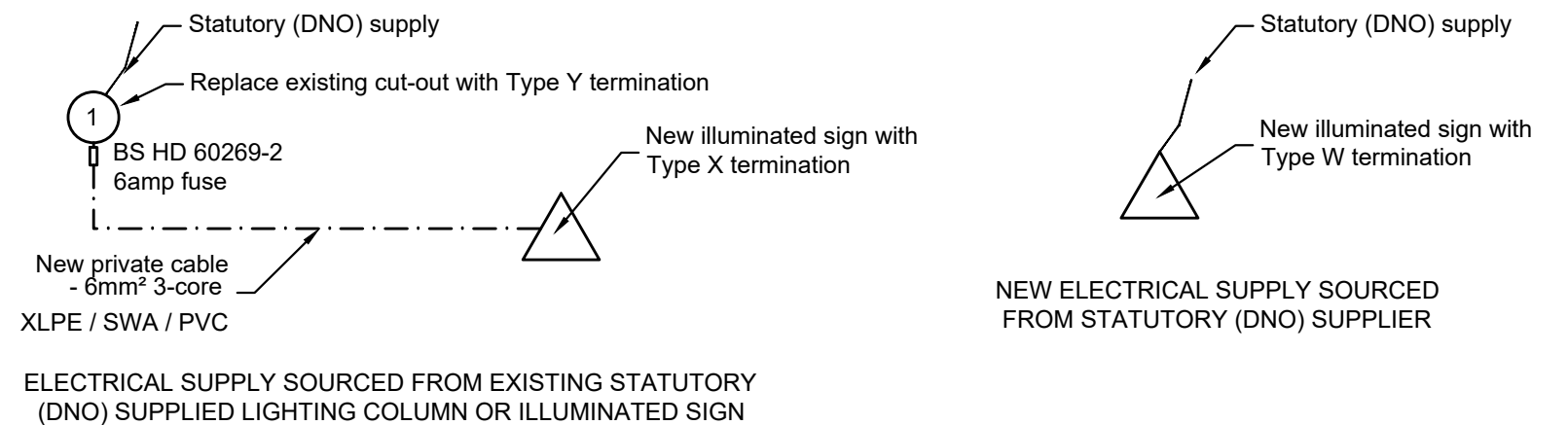
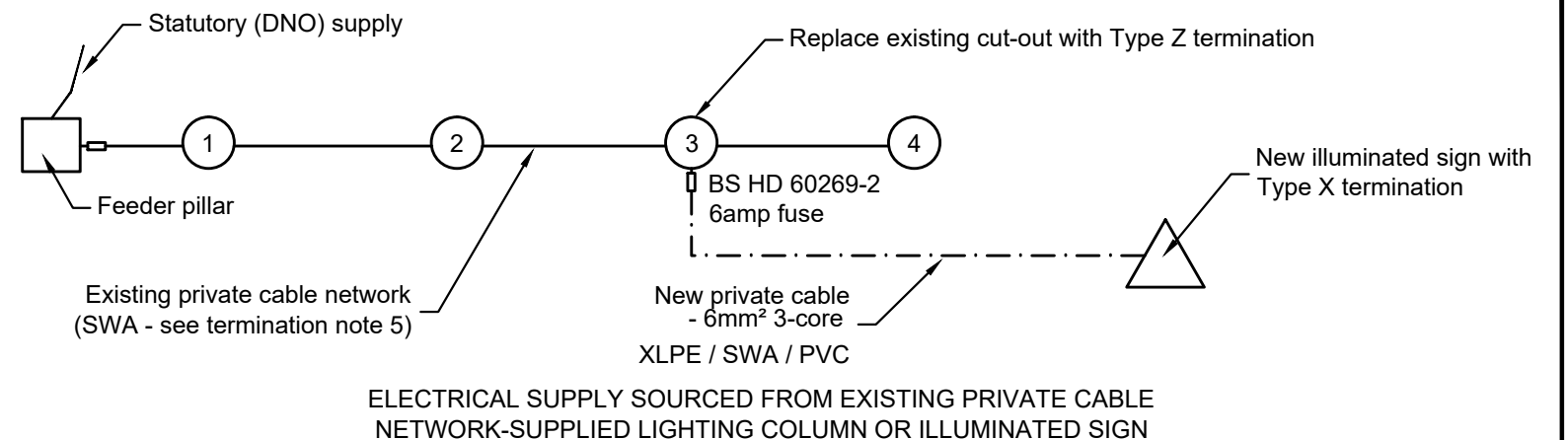


NOTE

1. Label C shall be:
 - a) manufactured from rigid PVC of 2mm minimum thickness,
 - b) secured to the backboard with two number stainless steel screws,
 - c) installed irrespective of any other labels provided by the DNO, and
 - d) clearly legible following installation.

CABLE TERMINATION WARNING LABEL

TYPICAL TERMINATION EXAMPLES



TERMINATION NOTES


1. All dimensions in millimetres unless otherwise stated.
2. All terminations must comply with WSCC Street Lighting PFI specification. Copies of the relevant clauses will be made available to the approved lighting contractor by WSCC.
3. All apparatus shall be securely fixed to the back board or housing using stainless steel screws (Posi-drive or Philips).
4. BS HD 60269-2: 2013 fuses shall be rated in accordance with the equipment manufacturer's requirements.
5. CW glands are required for outgoing supply cable to illuminated sign.
6. Refer to Drawing WSCC-SD1-1400-011/3 for cable termination details and notes.

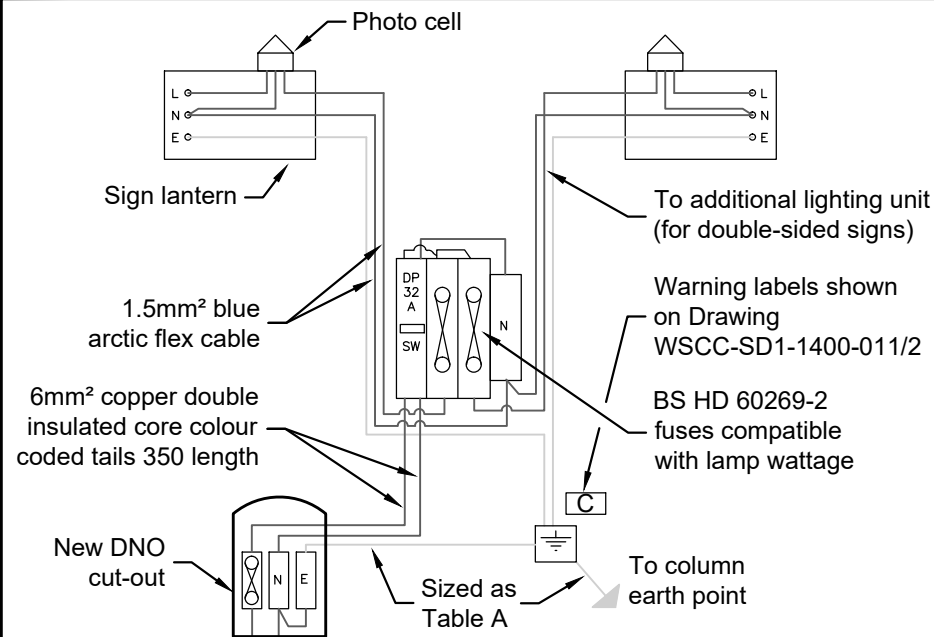
GLOSSARY

DNO	Distribution Network Operator
SWA	Steel Wire Armoured
XLPE	Cross-linked Polyethylene
PVC	Polyvinyl Chloride

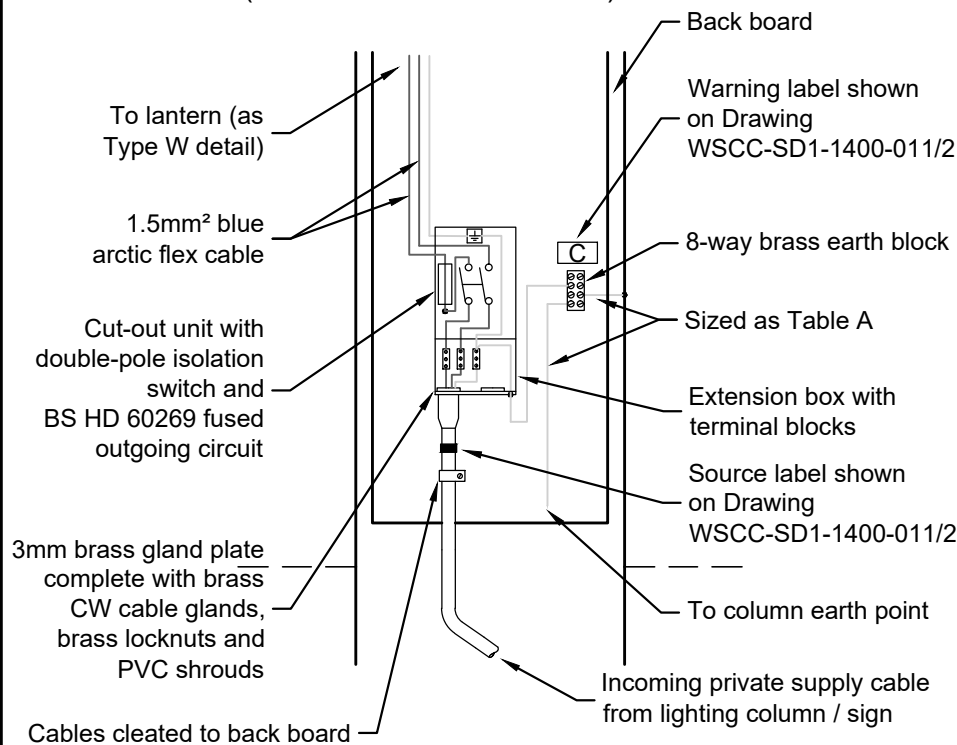
Termination Table		
Isolator / cut-out type	Termination type	Statutory (DNO) or Private Cable Network (PCN) supply to new illuminated sign
Tofco WSCC PFI Type 1 (1 up)	W	DNO
Tofco F244DL or Lucy Titan2 NT06 with 2-way ABS gland plate	X	PCN
Tofco WSCC PFI Type 5 (1 up and 1 spur)	Y	DNO
Tofco F244DS or Lucy Titan2 NT10 with 3-way ABS gland plate	Z	PCN

THIS DRAWING MUST BE READ IN CONJUNCTION WITH WSCC-SD1-1400-011/1 & 3

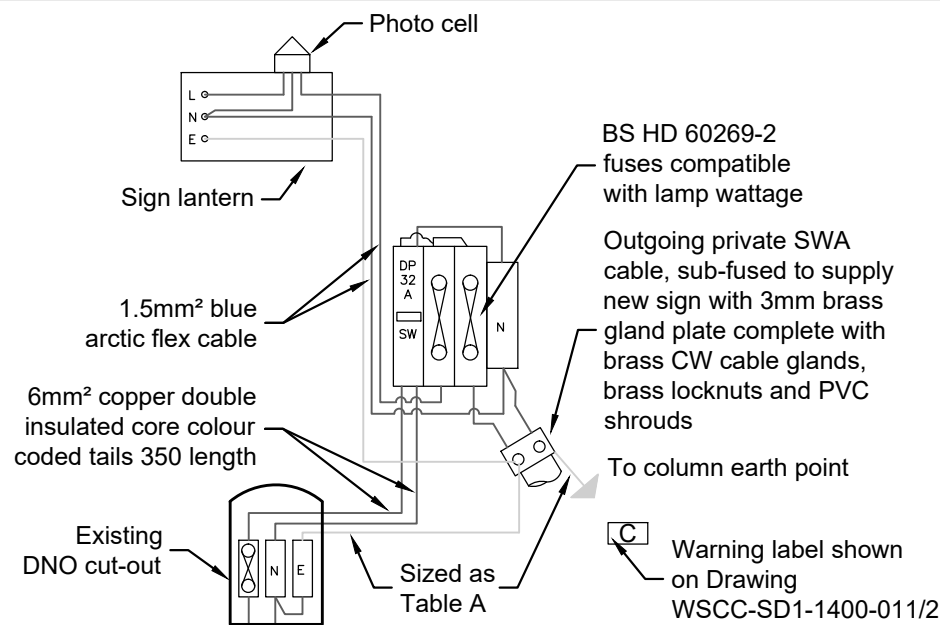
C1	First Construction Issue	TM/CB	-	-	<div>West Sussex County Council Infrastructure Group County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105</div> <div></div>	Project Name					
Rev	Revision details	Chkd	Appd	Date		STANDARD DETAILS					
Drawn: DNJ			For comment			Drawing Title		Original Drawing Size : A3			
Chkd: TM/CB			For tender			ILLUMINATED ROAD TRAFFIC SIGNS - SHEET 2 OF 3		Scale : NTS		Dimensions : mm	
Appd:		X	For construction					Drawing No		Rev	
Date: 11/10/2017			As constructed			Date Adopted: OS Sheet No.		WSCC-SD1-1400-011/2		C1	
File ref: IWP Ref:											



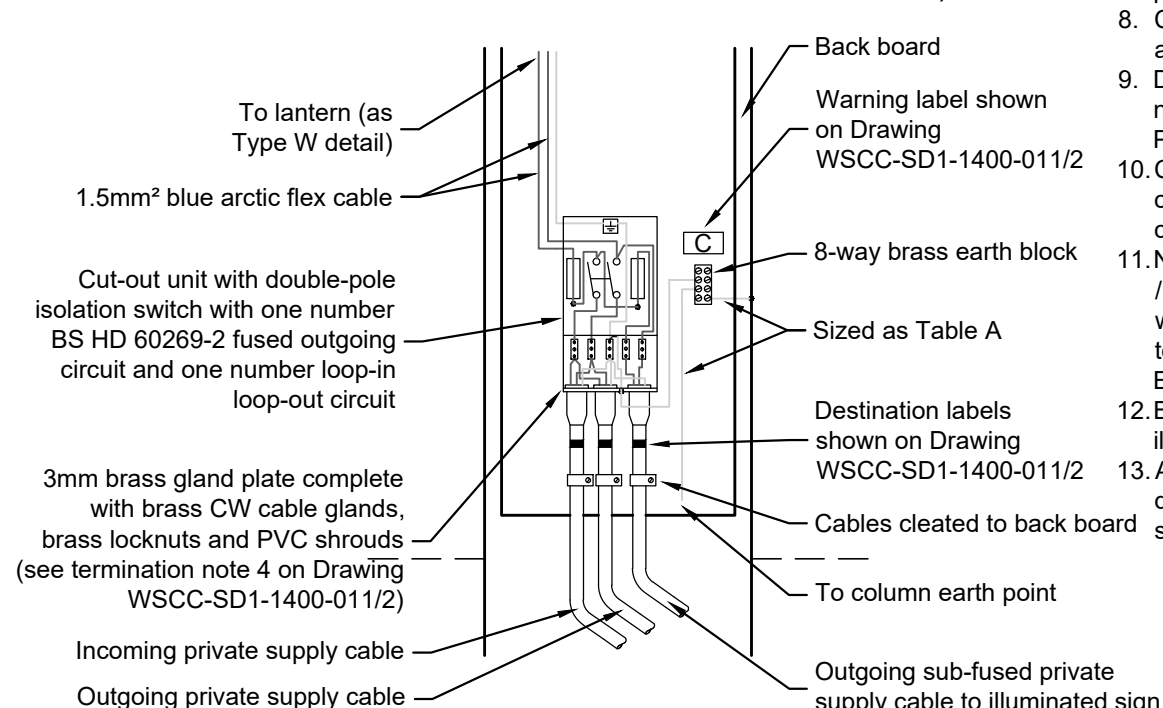
CABLE TERMINATION TYPE W
(FOR NEW DNO SERVICE)



CABLE TERMINATION TYPE X
(IN SIGN WITH PRIVATE SUPPLY)



CABLE TERMINATION TYPE Y
(IN LIGHTING COLUMN/SIGN WITH EXISTING DNO
SERVICE FOR PRIVATE OUTGOING SUPPLY)



CABLE TERMINATION TYPE Z
(IN LIGHTING COLUMN/SIGN WITH EXISTING PRIVATE
SUPPLY FOR PRIVATE OUTGOING SUPPLY)

CABLE CONNECTION NOTES

1. This drawing to be printed in colour.
2. Internal wiring must comply with WSCC Street Lighting PFI specification. A copy of the relevant clauses will be made available to the approved lighting contractor by WSCC.
3. The wiring in the base compartment shall be neatly cleated to the base board with sufficient tail length to connect into DNO cut-out for DNO supply.
4. All apparatus shall be securely fixed to the back board or housing using stainless steel screws (Posi-drive or Philips). All earth connections shall be bolted crimped terminations.
5. Internal wiring to the lantern shall be 1.5mm² 3-core blue arctic flex to BS EN 50525-3: 2011.
6. Double pole isolator shall be to BS EN 60947-3: 2009 + A2: 2015 and sourced from Tofco or Lucy Lighting (or similar approved by WSCC Street Lighting PFI Service Provider).
7. Fuses in double pole isolator to be 6amp BS HD 60269-2: 2013 in signposts and 10amp BS HD 60269-2: 2013 in supply lighting column, feeder pillar or illuminated sign for outgoing circuit.
8. CW glands shall be used to terminate the outgoing and incoming private supply cables.
9. Double pole isolator shall be attached using two number stainless steel screws (Posi-drive or Philips).
10. Cable armour shall be bonded at all joints and connected to the earth terminal with 6mm² PVC cable.
11. New private cable to be 6mm² 3-core XPLE / SWA / PVC to WSCC Street Lighting PFI specification with the armour connected to the earth core. PVC to be to BS 5467: 2016, flame propagation to BS EN 50265-1: 1999.
12. BS HD 60269-2: 2013 fuses for cut-out in illuminated sign shall be 4amp.
13. All circuits to be clearly identified and labelled on distribution board when more than one circuit is supplied.

Table A	
Cross-sectional area of phase conductor (mm²)	Minimum cross-sectional area of corresponding protective conductor (mm²)
5 < 16	10
25	16

THIS DRAWING MUST BE READ IN CONJUNCTION WITH
WSCC-SD1-1400-011/1 & 2

C1	First Construction Issue	TM/CB	-	-
Rev	Revision details	Chkd	Appd	Date
Drawn:	DNJ			For comment
Chkd:	TM/CB			For tender
Appd:		X		For construction
Date:	11/10/2017			As constructed
File ref:				
IWP Ref:				

West Sussex County Council
Infrastructure Group
County Hall,
West Street
Chichester
West Sussex
PO19 1RH
(01243) 642105



Project Name

STANDARD DETAILS

Drawing Title

ILLUMINATED ROAD TRAFFIC SIGNS - SHEET 3 OF 3

Date Adopted:
OS Sheet No.

Original Drawing Size : A3

Scale : NTS

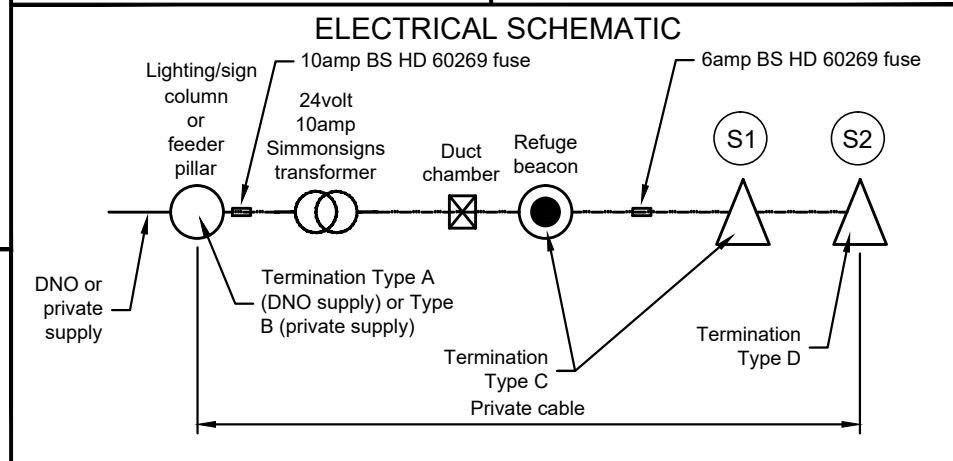
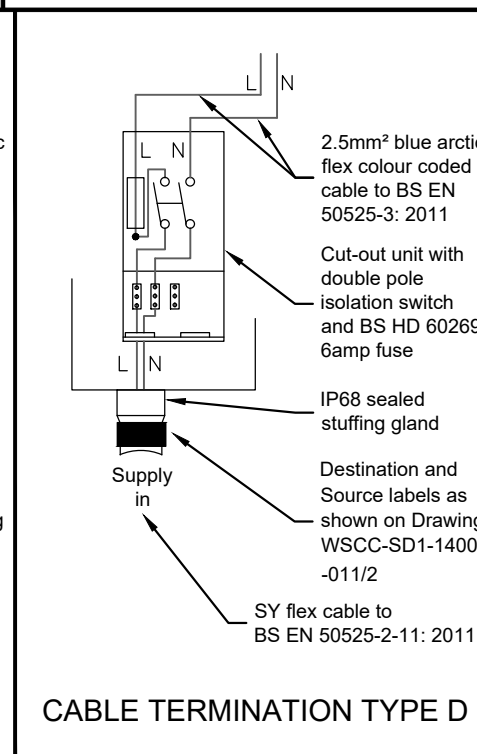
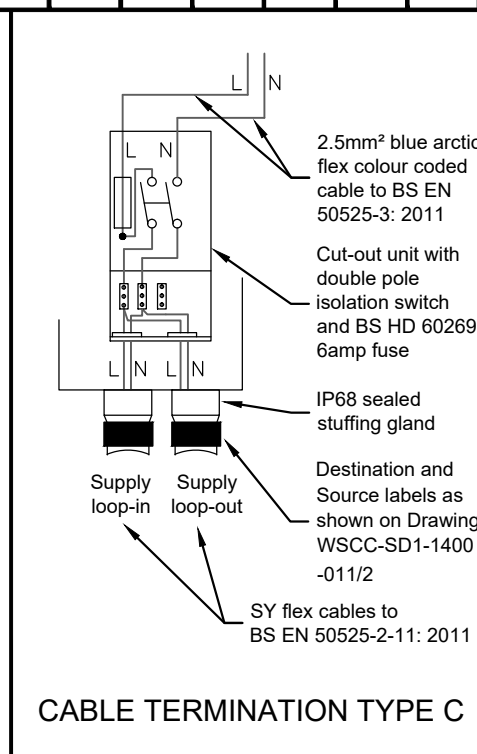
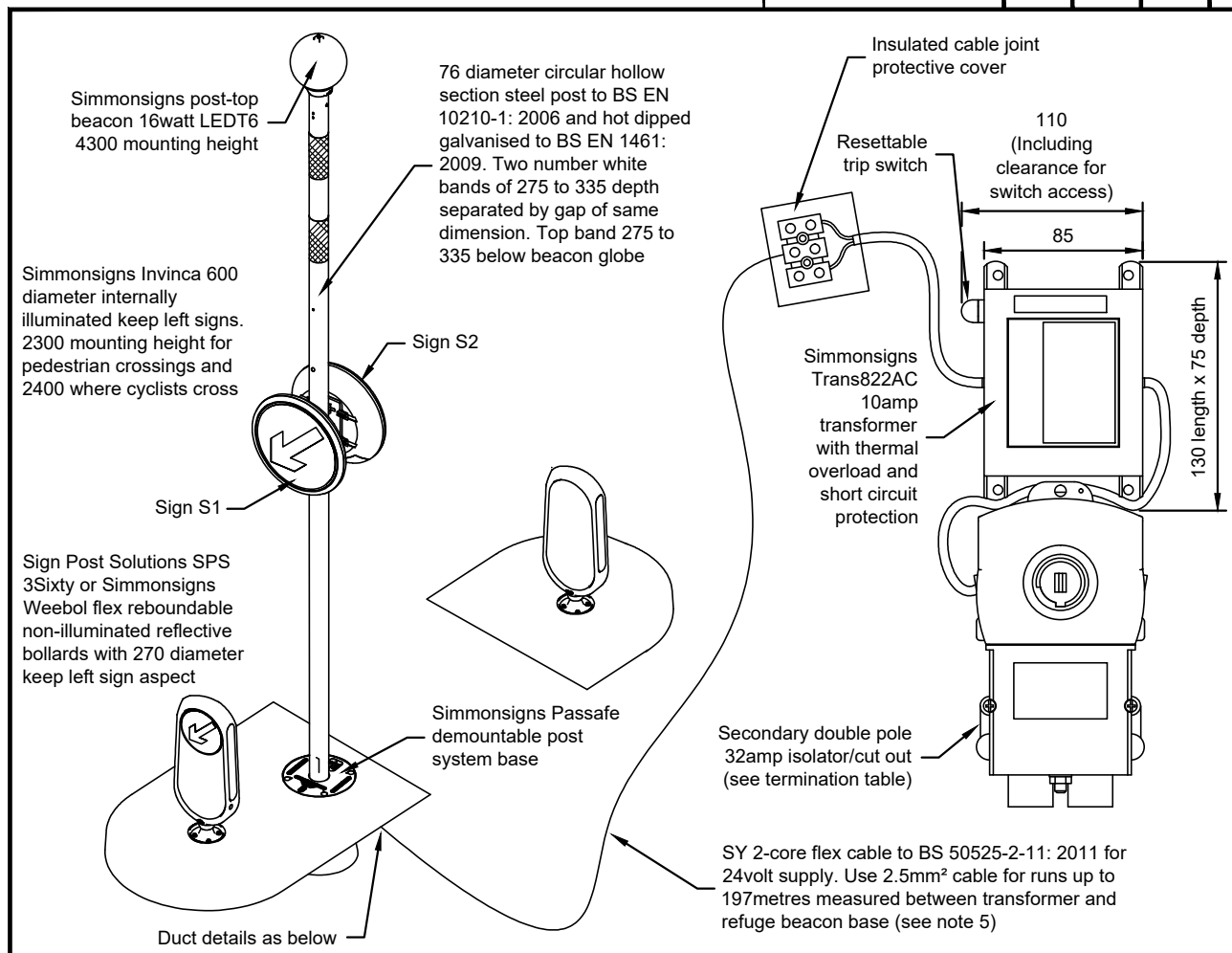
Dimensions : mm

Drawing No

WSCC-SD1-1400-011/3

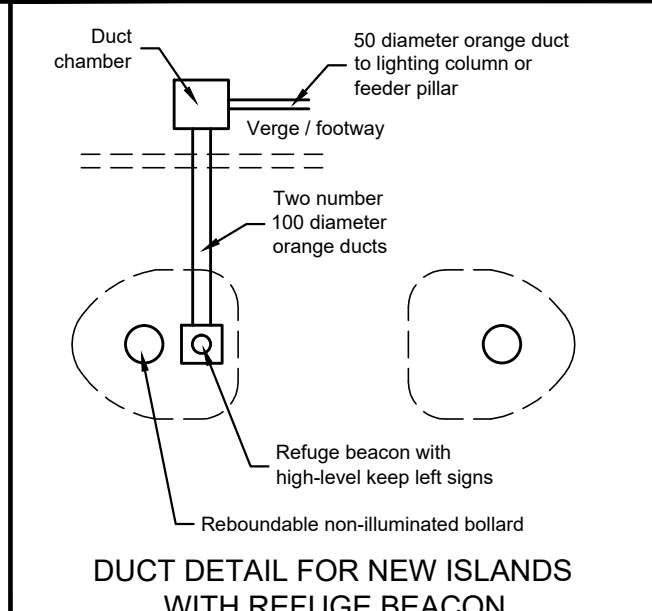
Rev

C1



Termination Table			
Isolator / Cut-out Type	Termination Type	Location of Isolator / Cut-out	Statutory (DNO) / Private Cable Network (PCN)
Tofco WSCC PFI Type 4 (2 up & 1 spur)	A	Lighting column, lit sign base or feeder pillar	DNO
Tofco F244DS or Lucy Titan2 NT06 with 3-way ABS gland plate	B	Lighting column, lit sign base or feeder pillar	PCN
Tofco F144DP or Lucy Titan2	C	Refuge beacon & Sign S1	PCN
Tofco F144DP or Lucy Titan2	D	Sign S2	PCN

- NOTES**
- All dimensions in millimetres unless otherwise stated.
 - All equipment shall comply with the WSCC Street Lighting PFI specification. A copy of the relevant clauses will be made available to the approved lighting contractor by WSCC.
 - Specified bollards, refuge beacon base and refuge beacon (or similar approved by WSCC Street Lighting PFI Service Provider) shall be installed in accordance with the manufacturer's instructions.
 - Refuge island construction details are shown on Drawing WSCC-SD1-1100-072.
 - The maximum 197m cable length between the transformer and refuge beacon has been calculated in accordance with the requirements of BS 7671: 2008 + A3: 2015. Simmonsins also produce a guidance table showing recommended cable sizes for outgoing flex cable to beacons.
 - Cross-carriageway slot cut trenches must only be used when installing replacement bollards and refuge beacons on existing refuge islands. New refuge islands must be serviced via cross-carriageway ducts.
 - BS HD 60269-2: 2013 fuse sizes for cut-outs in illuminated sign lanterns to be 4amps.
 - Internal refuge beacon post wiring to be a minimum 1.5mm² 3-core blue arctic flex cable to BS EN 50525-3: 2011 in accordance with WSCC Street Lighting PFI specification.
 - Ducting to be twin-walled smooth bore to stated colours and internal diameters complying with BS EN 61386-24: 2010 in surround as shown on Drawings WSCC-SD1-0500-041 & 042, HCD F1 and HCD F2.
 - Duct chambers to be constructed as shown on Drawing WSCC-SD1-0500-059.
 - For use on single carriageway roads with a speed limit exceeding 40mph** (Refer to Drawing WSCC-SD1-1400-021 for electrical details of Type B islands on roads with a speed limit of 40mph or lower).



C1	First Construction Issue	TM/CB	-	-
Rev	Revision details	Chkd	Appd	Date
Drawn:	DNJ			For comment
Chkd:	TM/CB			For tender
Appd:		X		For construction
Date:	12/10/2017			As constructed
File ref:				
IWP Ref:				

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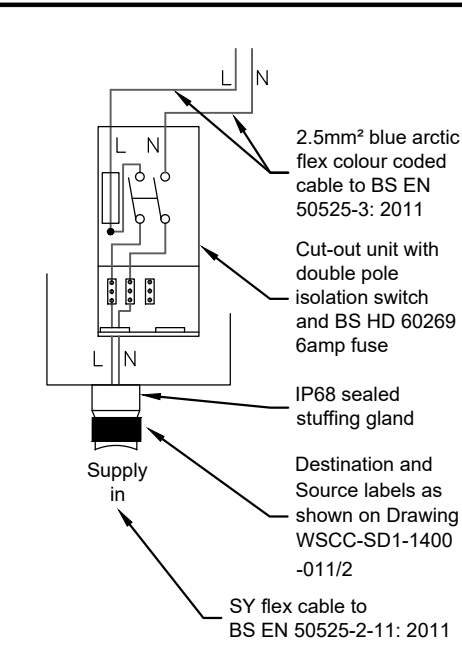
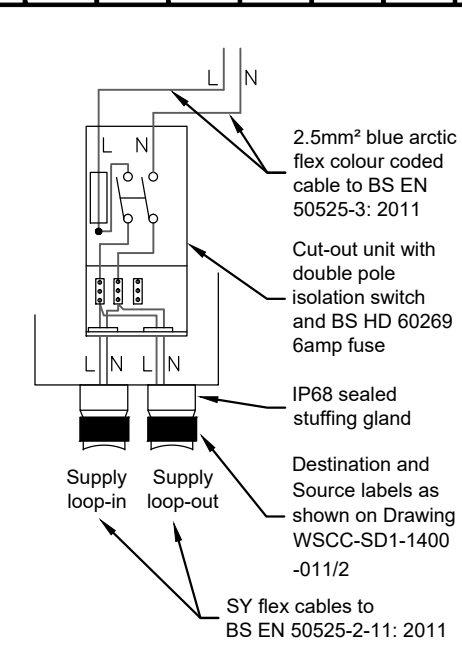
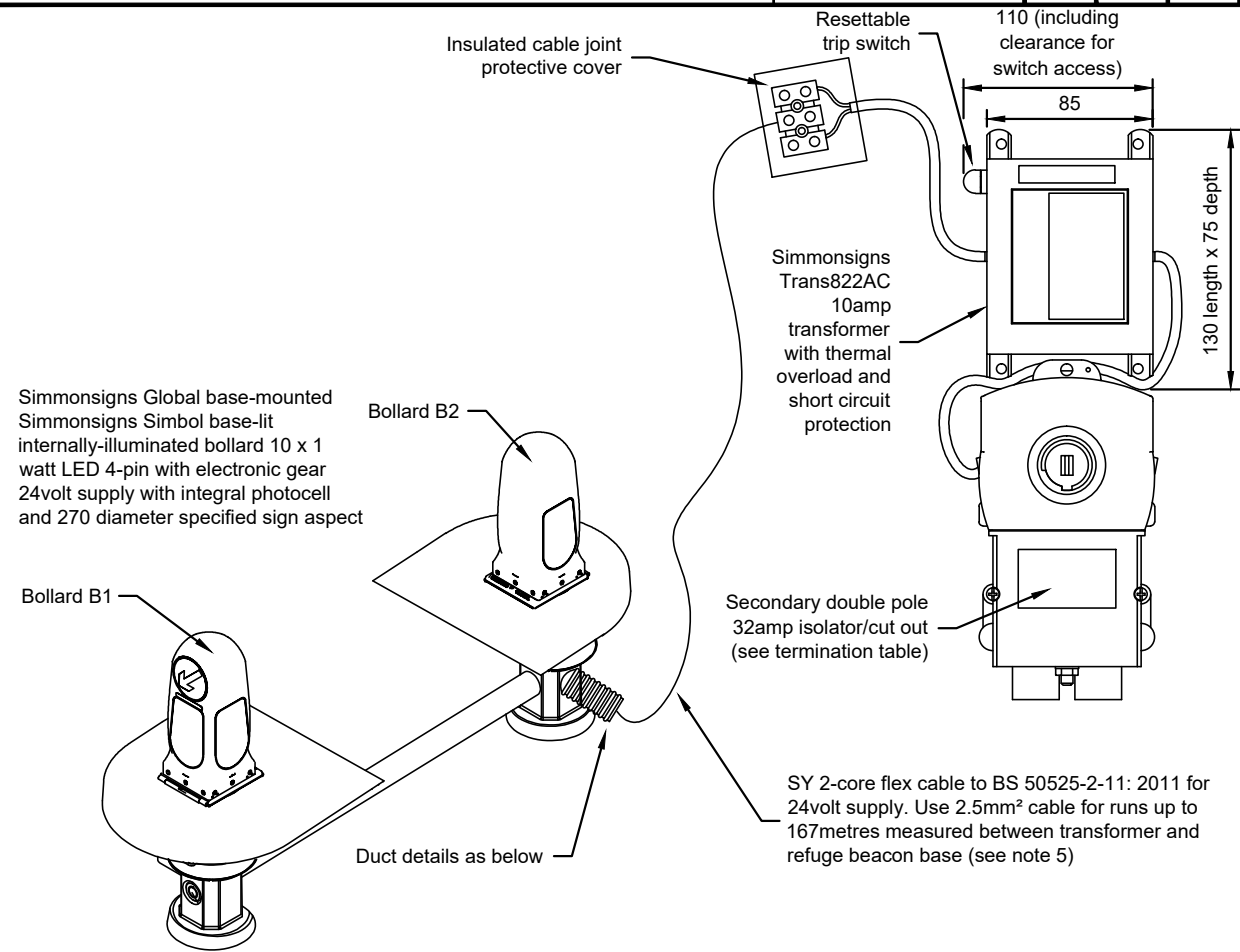
Project Name

STANDARD DETAILS

Drawing Title
PEDESTRIAN REFUGE ISLANDS - TYPE B ELECTRICAL
DETAILS FOR ROADS 40MPH AND OVER

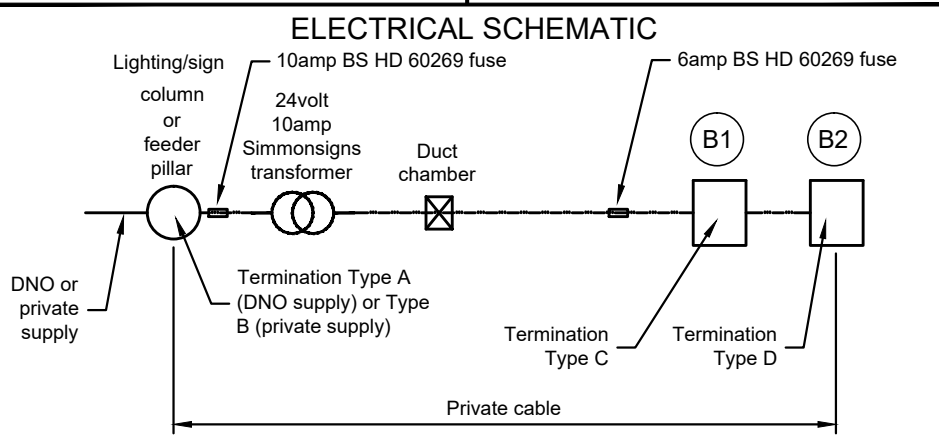
Date Adopted:
OS Sheet No.

Original Drawing Size : A3	
Scale : NTS	Dimensions : mm
Drawing No WSCC-SD1-1400-022	Rev C1



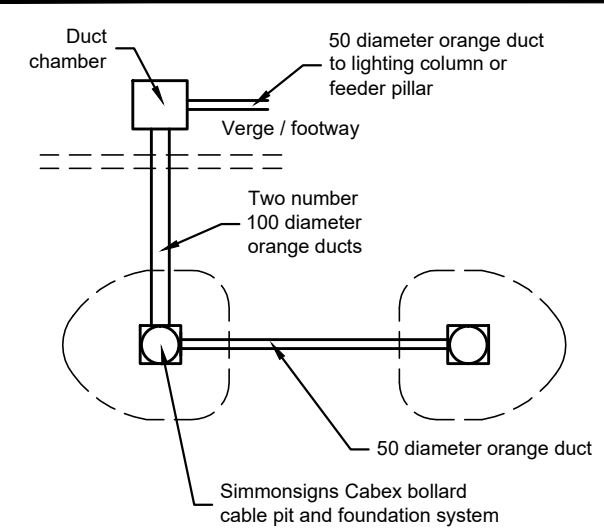
CABLE TERMINATION TYPE C

CABLE TERMINATION TYPE D



Termination Table			
Isolator / Cut-out Type	Termination Type	Location of Isolator / Cut-out	Statutory (DNO) / Private Cable Network (PCN)
Tofco WSCC PFI Type 4 (2 up & 1 spur)	A	Lighting column, lit sign base or feeder pillar	DNO
Tofco F244DS or Lucy Titan2 NT06 with 3-way ABS gland plate	B	Lighting column, lit sign base or feeder pillar	PCN
Tofco F144DP or Lucy Titan2	C	Bollard B1	PCN
Tofco F144DP or Lucy Titan2	D	Bollard B2	PCN

- NOTES**
1. All dimensions in millimetres unless otherwise stated.
 2. All equipment shall comply with the WSCC Street Lighting PFI specification. A copy of the relevant clauses will be made available to the approved lighting contractor by WSCC.
 3. Specified bollards, refuge beacon base and refuge beacon (or similar approved by WSCC Street Lighting PFI Service Provider) shall be installed in accordance with the manufacturer's instructions.
 4. Refuge island construction details are shown on Drawing WSCC-SD1-1100-073.
 5. The maximum 167m cable length between the transformer and Bollard B1 has been calculated in accordance with the requirements of BS 7671: 2008 + A3: 2015. Simmons Signs also produce a guidance table showing recommended cable sizes for outgoing flex cable to beacons.
 6. Cross-carriageway slot cut trenches must only be used when installing replacement bollards and refuge beacons on existing refuge islands. New refuge islands must be serviced via cross-carriageway ducts.
 7. BS HD 60269-2: 2013 fuse sizes for cut-outs in illuminated sign lanterns to be 4amps.
 8. Internal bollard wiring to be a minimum 1.5mm² 3-core blue arctic flex cable to BS EN 50525-3: 2011 in accordance with WSCC Street Lighting PFI specification.
 9. Ducting to be twin-walled smooth bore to stated colours and internal diameters complying with BS EN 61386-24: 2010 in surround as shown on Drawings WSCC-SD1-0500-041 & 042, HCD F1 and HCD F2.
 10. Duct chambers to be constructed as shown on Drawing WSCC-SD1-0500-059.
 11. **For use within an urban street lighting installation on roads with a speed limit not exceeding 30mph except when located within a junction bellmouth.**



DUCT DETAIL FOR NEW ISLANDS WITH ILLUMINATED BOLLARDS

C1	First Construction Issue	TM/CB	-	-
Rev	Revision details	Chkd	Appd	Date
Drawn:	DNJ			For comment
Chkd:	TM/CB			For tender
Appd:		X		For construction
Date:	12/10/2017			As constructed
File ref:				
IWP Ref:				

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(01243) 642105

Project Name

STANDARD DETAILS

Drawing Title
PEDESTRIAN REFUGE ISLANDS - TYPE C
ELECTRICAL DETAILS FOR STREET-LIT 30MPH ROADS

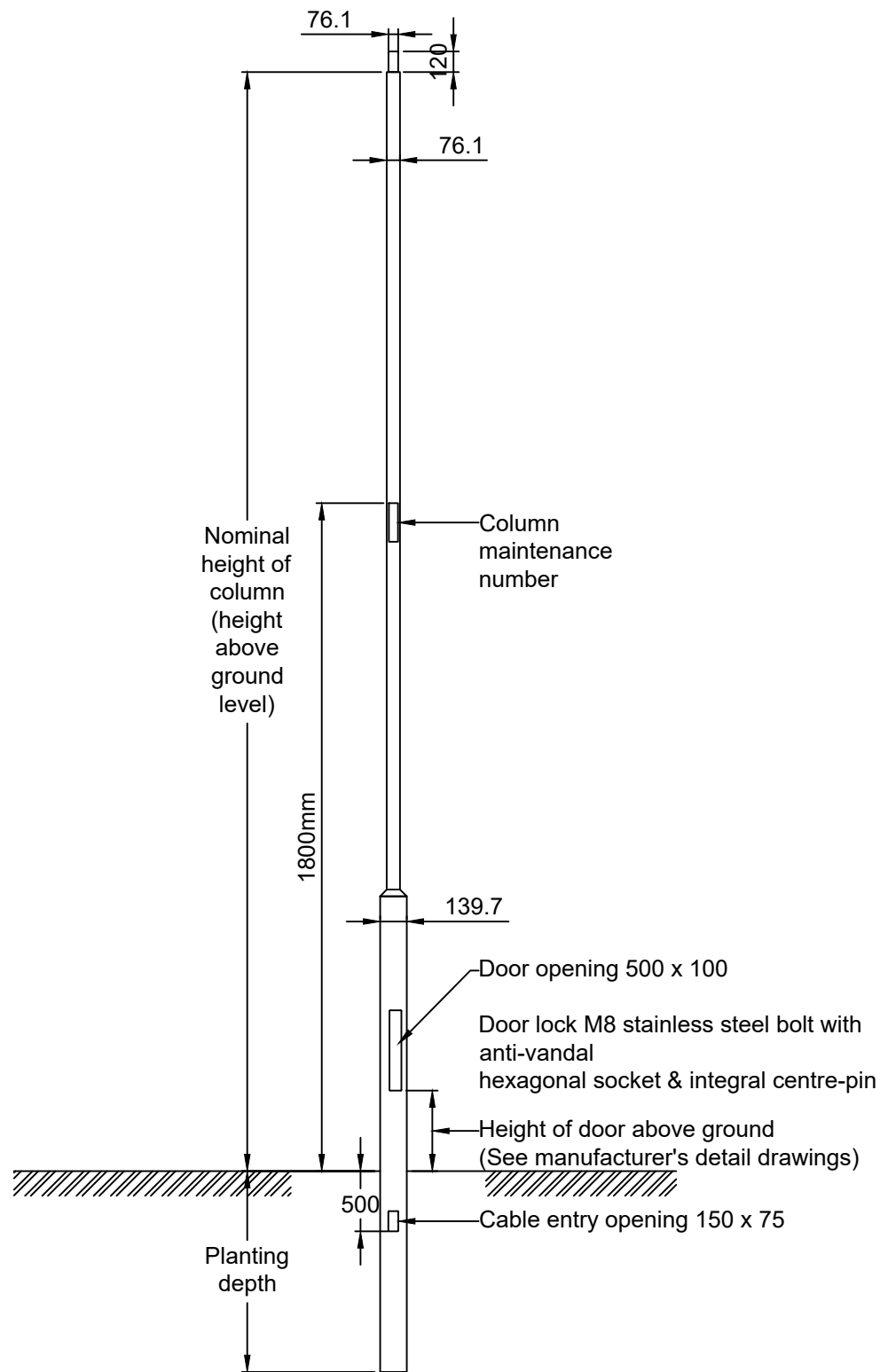
Date Adopted:
OS Sheet No.

Original Drawing Size : A3

Scale : NTS Dimensions : mm

Drawing No
WSCC-SD1-1400-023

Rev
C1




Design Standards	BS EN 40.3.1, BS EN 40.3.3, PD6547-2022
Design Life	50 years
10 min mean wind velocity	22m/s
Terrain Category (inland)	III - 5m, 6m
Max altitude (inland)	132m
Terrain category (coastal)	II - 5m, 6m
Max altitude (coastal)	100m

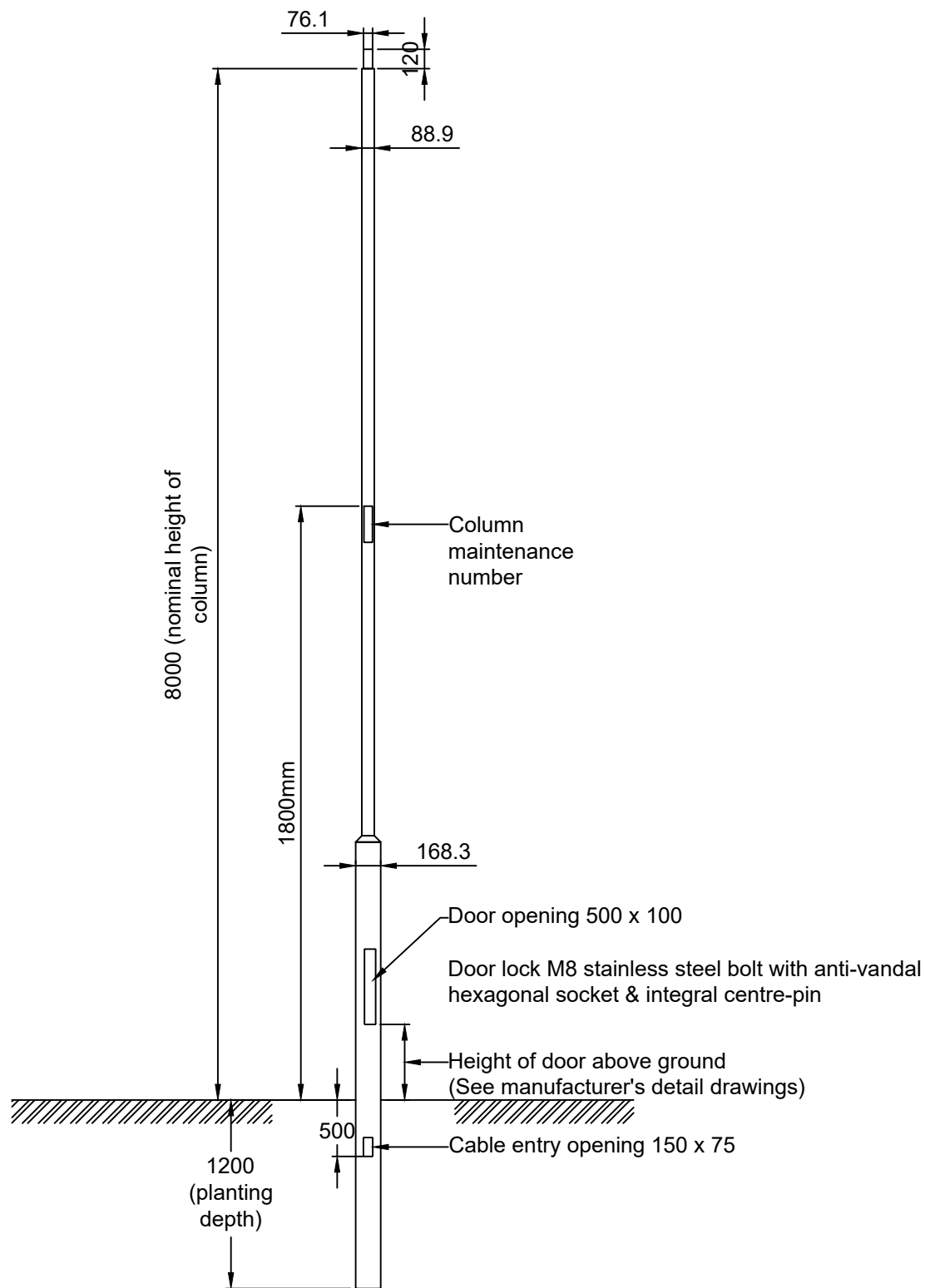
Standard dimensions and minimum performance criteria		
Dimension	Nominal Height	5000 or 6000
	Planting depth	800 (5m) or 1000 (6m)
	Base diameter	139.7
	Shaft diameter	76.1
	Height of door above ground*	400
	Size of door aperture	500 x 100
Performance criteria	Luminaire weight	16.0kg
	Luminaire windage	0.13m²
	Luminaire tilt**	5°
	Sign height above ground	2.5m
	Sign eccentricity	0.4m
	Sign area	0.6m²
	Sign weight	5.0kg
	Sign drag coefficient	1.8
* May vary - see manufacturer detail and data sheet		
** Maximum tilt capability. Tilt will be stipulated in design drawing		

Protective system and paint specification for tubular steel columns
Paint system applied direct to clean de-greased, lightly abraded hot-dipped galvanised steel
Suitable two-pack epoxy primer, dry film thickness 75 microns (including internal surface to 250mm above ground level)
Polysiloxane finish PSX 700, dry film thickness 75 microns
Paint to be factory applied. Finish colour as per WSCC lighting specification for the given region unless otherwise specified

Notes

- All dimension in millimetres.
- Columns shall comply with BS EN 40, PD6547:2022 and departmental standard CD354 in addition to the WSCC column specification; designers to verify that column proposed is suitable for any proposed attachments; data sheets to be provided.
- Column base backboard 500x85mm and made of treated hardwood of sufficient size to accommodate all control equipment, cut-outs and service cut-outs; boards shall be positively secured to the column by two flush screws.
- Extraneous attachments (if agreed) to be fixed with circumferential clamps of stainless steel AISA Grade 201 with Neoprene gasket under the clamps to prevent damage to the column and its protective coating.
- Columns in exceptional locations (on embankments, coast locations, etc); columns with brackets; columns with multiple luminaires or brackets; these may require special column design.
- For column foundation schematic see WSCC-SD1-1400-051. Columns in exceptional locations may need special foundation design.
- Column setbacks will be stipulated in design drawing.

<div><div><div>A</div><div>First construction issue</div><div>PBS</div><div>SAB/TM</div><div>27/10/22</div></div><div><div>Rev</div><div>Revision details</div><div>Chkd</div><div>Appd</div><div>Date</div></div><div><div>Drawn: MWG</div><div>Chkd: PBS</div><div>Appd: SAB/TM</div><div>Date: 27/10/22</div><div>File ref:</div><div>IWP Ref:</div></div><div><div>For comment</div><div>For tender</div><div>For construction</div><div>As constructed</div></div></div>					<div>West Sussex County Council</div> <div>Infrastructure Group</div> <div>County Hall,</div> <div>West Street</div> <div>Chichester</div> <div>West Sussex</div> <div>PO19 1RH</div> <div>(01243) 642105</div> <div></div> <div><div>west</div><div>sussex</div><div>county</div><div>council</div></div>	<div>Project Name</div> <div>STANDARD DETAILS</div> <div>Drawing Title</div> <div>5m & 6m "POST TOP" TUBULAR STEEL PLANTED COLUMNS</div> <div>Date Adopted:</div> <div>OS Sheet No.</div>		<div>Original Drawing Size :</div> <div>Scale : NTS</div> <div>Drawing No</div> <div>WSCC-SD1-1400-031</div>	
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Design Standards	BS EN 40.3.1, BS EN 40.3.3, PD6547-2022
Design Life	50 years
10 min mean wind velocity	22m/s
Terrain Category (inland)	II - 8m
Max altitude (inland)	132m
Terrain category (coastal)	I - 8m
Max altitude (coastal)	100m

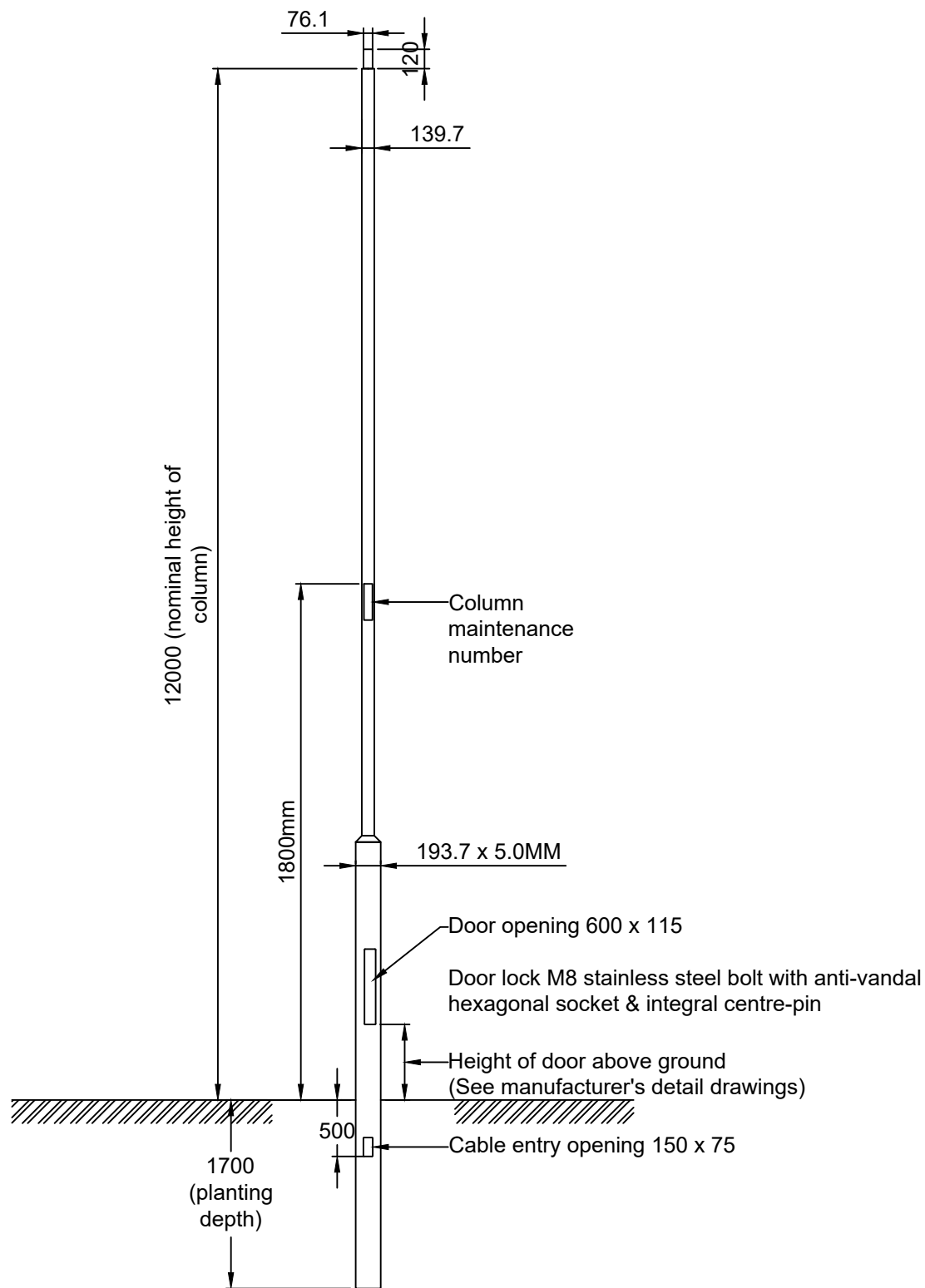
Standard dimensions and minimum performance criteria		
Dimension	Nominal Height	8000
	Planting depth	1200
	Base diameter	168.3
	Shaft diameter	88.9
	Height of door above ground*	400
	Size of door aperture	600 x 115
Performance criteria	Luminaire weight	20.0kg
	Luminaire windage	0.17m²
	Luminaire tilt**	5°
	Sign height above ground	2.5m
	Sign eccentricity	0.4m
	Sign area	0.6m²
	Sign weight	5.0kg
	Sign drag coefficient	1.8
* May vary - see manufacturer detail and data sheet		
** Maximum tilt capability. Tilt will be stipulated in design drawing		

Protective system and paint specification for tubular steel columns
Paint system applied direct to clean de-greased, lightly abraded hot-dipped galvanised steel
Suitable two-pack epoxy primer, dry film thickness 75 microns (including internal surface to 250mm above ground level)
Polysiloxane finish PSX 700, dry film thickness 75 microns
Paint to be factory applied. Finish colour as per WSCC lighting specification for the given region unless otherwise specified

Notes

- All dimension in millimetres.
- Columns shall comply with BS EN 40, PD6547:2022 and departmental standard CD354 in addition to the WSCC column specification; designers to verify that column proposed is suitable for any proposed attachments; data sheets to be provided.
- Column base backboard 500x85mm and made of treated hardwood of sufficient size to accommodate all control equipment, cut-outs and service cut-outs; boards shall be positively secured to the column by two flush screws.
- Extraneous attachments (if agreed) to be fixed with circumferential clamps of stainless steel AISA Grade 201 with Neoprene gasket under the clamps to prevent damage to the column and its protective coating.
- Columns in exceptional locations (on embankments, coast locations, etc); columns with brackets; columns with multiple luminaires or brackets; these may require special column design.
- For column foundation schematic see WSCC-SD1-1400-051. Columns in exceptional locations may need special foundation design.
- Column setbacks will be stipulated in design drawing.

<div><div><div>A</div><div>First construction issue</div><div>PBS</div><div>SAB/TM</div><div>27/10/22</div></div><div><div>Rev</div><div>Revision details</div><div>Chkd</div><div>Appd</div><div>Date</div></div><div><div>Drawn: MWG</div><div>Chkd: PBS</div><div>Appd: SAB/TM</div><div>Date: 27/10/22</div><div>File ref:</div><div>IWP Ref:</div></div><div><div>For comment</div><div>For tender</div><div>For construction</div><div>As constructed</div></div></div>					<div>West Sussex County Council</div> <div>Infrastructure Group</div> <div>County Hall,</div> <div>West Street</div> <div>Chichester</div> <div>West Sussex</div> <div>PO19 1RH</div> <div>(01243) 642105</div> <div></div> <div><div>west</div><div>sussex</div><div>county</div><div>council</div></div>	<div>Project Name</div> <div>STANDARD DETAILS</div> <div>Drawing Title</div> <div>8m "POST TOP" TUBULAR STEEL PLANTED COLUMNS</div> <div>Date Adopted:</div> <div>OS Sheet No.</div>		<div>Original Drawing Size :</div> <div>Scale : NTS</div> <div>Drawing No</div> <div>WSCC-SD1-1400-032</div>	
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Design Standards	BS EN 40.3.1, BS EN 40.3.3, PD6547-2022
Design Life	50 years
10 min mean wind velocity	22m/s
Terrain Category (inland)	II - 8m
Max altitude (inland)	132m
Terrain category (coastal)	I - 8m
Max altitude (coastal)	100m

Standard dimensions and minimum performance criteria		
Dimension	Nominal Height	12000
	Planting depth	1700
	Base diameter	193.7
	Shaft diameter	139.7
	Height of door above ground*	1000
	Size of door aperture	600 x 115
Performance criteria	Luminaire weight	21.0kg
	Luminaire windage	0.27m ²
	Luminaire tilt**	5°
	Sign height above ground	2.5m
	Sign eccentricity	0.4m
	Sign area	1.0m ²
	Sign weight	5.0kg
	Sign drag coefficient	1.8
* May vary - see manufacturer detail and data sheet		
** Maximum tilt capability. Tilt will be stipulated in design drawing		

Protective system and paint specification for tubular steel columns
Paint system applied direct to clean de-greased, lightly abraded hot-dipped galvanised steel
Suitable two-pack epoxy primer, dry film thickness 75 microns (including internal surface to 250mm above ground level)
Polysiloxane finish PSX 700, dry film thickness 75 microns
Paint to be factory applied. Finish colour as per WSCC lighting specification for the given region unless otherwise specified

Notes

1. All dimension in millimetres.
2. Columns shall comply with BS EN 40, PD6547:2022 and departmental standard CD354 in addition to the WSCC column specification; designers to verify that column proposed is suitable for any proposed attachments; data sheets to be provided.
3. Column base backboard 500x85mm and made of treated hardwood of sufficient size to accommodate all control equipment, cut-outs and service cut-outs; boards shall be positively secured to the column by two flush screws.
4. Extraneous attachments (if agreed) to be fixed with circumferential clamps of stainless steel AISA Grade 201 with Neoprene gasket under the clamps to prevent damage to the column and its protective coating.
5. Columns in exceptional locations (on embankments, coast locations, etc); columns with brackets; columns with multiple luminaires or brackets; these may require special column design.
6. For column foundation schematic see WSCC-SD1-1400-051. Columns in exceptional locations may need special foundation design.
7. Column setbacks will be stipulated in design drawing.

A	First construction issue	PBS	SAB/TM	27/10/22
Rev	Revision details	Chkd	Appd	Date
Drawn:	MWG		For comment	
Chkd:	PBS		For tender	
Appd:	SAB/TM	X	For construction	
Date:	27/10/22		As constructed	
File ref:				
IWP Ref:				

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Infrastructure Group
County Hall,
West Street
Chichester
West Sussex
PO19 1RH
(01243) 642105



**west
sussex
county
council**

Project Name

STANDARD DETAILS

Drawing Title

12m "POST TOP" TUBULAR STEEL PLANTED COLUMNS

Date Adopted:

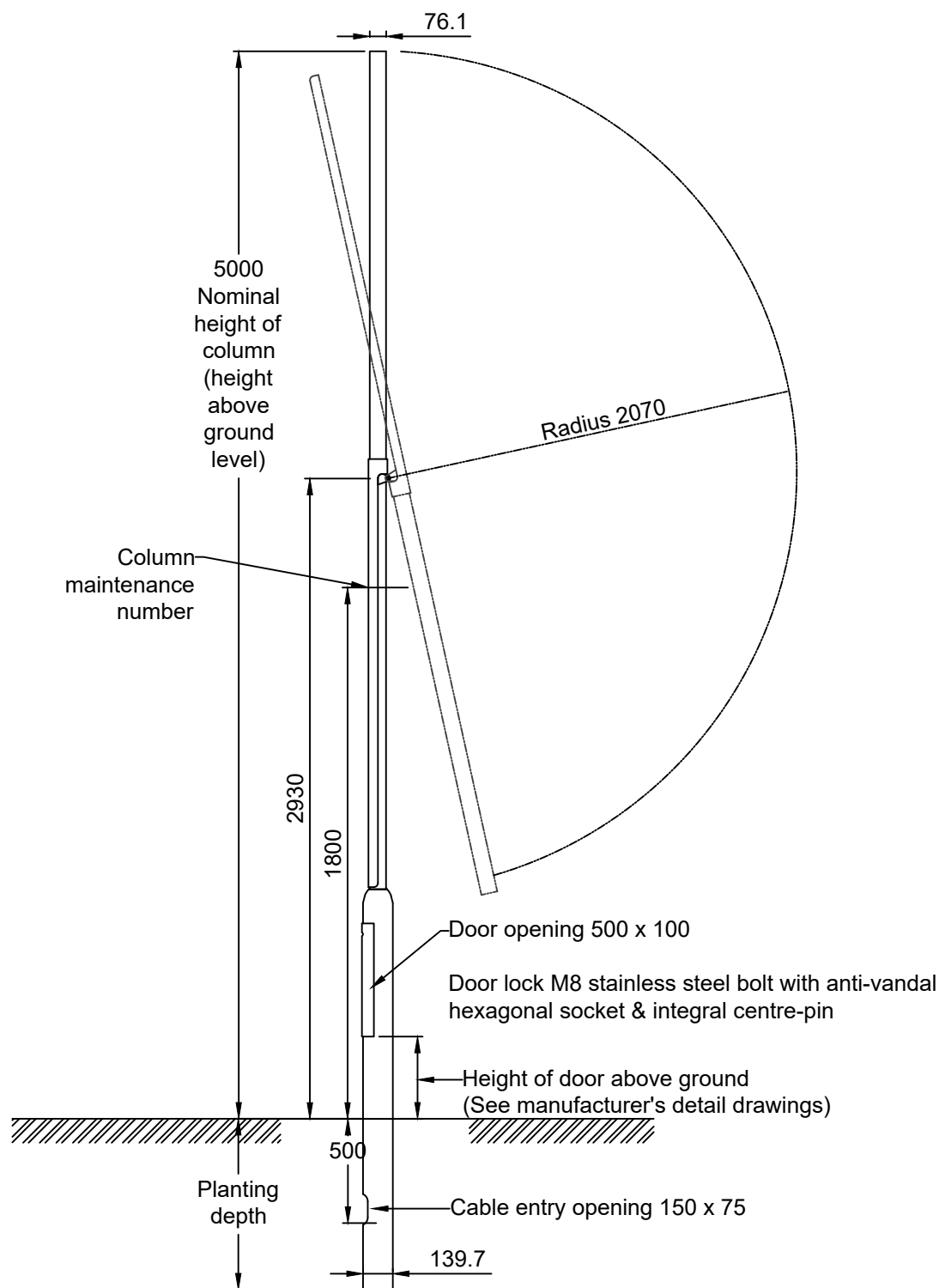
OS Sheet No.

Original Drawing Size :

Scale : NTS

Drawing No

WSCC-SD1-1400-034




Design Standards	BS EN 40.3.1, BS EN 40.3.3, PD6547-2022
Design Life	50 years
10 min mean wind velocity	22m/s
Terrain Category (inland)	III - 5m
Max altitude (inland)	132m
Terrain category (coastal)	II - 5m
Max altitude (coastal)	100m

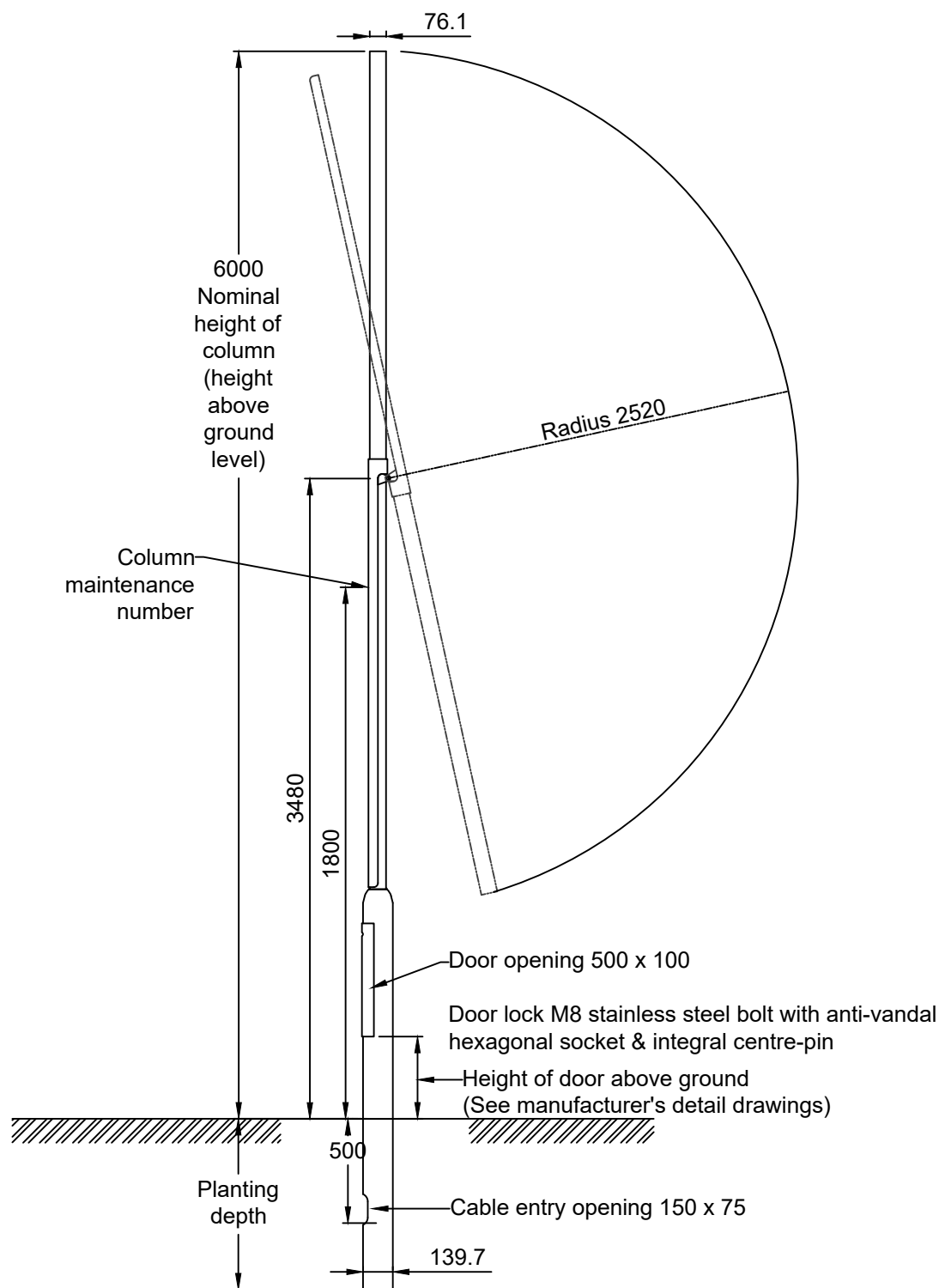
Standard dimensions and minimum performance criteria		
Dimension	Nominal Height	5000
	Planting depth	800
	Base diameter	139.7
	Shaft diameter	76.1
	Height of door above ground*	300
	Size of door aperture	500 x 100
Performance criteria	Luminaire weight	16kg
	Luminaire windage	0.13m ²
	Luminaire tilt**	5°
	Sign height above ground	2.5m
	Sign eccentricity	0.4m
	Sign area	0.6m ²
	Sign weight	5.0kg
	Sign drag coefficient	1.8
* May vary - see manufacturer detail and data sheet		
** Maximum tilt capability. Tilt will be stipulated in design drawing		

Protective system and paint specification for tubular steel columns
Paint system applied direct to clean de-greased, lightly abraded hot-dipped galvanised steel
Suitable two-pack epoxy primer, dry film thickness 75 microns (including internal surface to 250mm above ground level)
Polysiloxane finish PSX 700, dry film thickness 75 microns
Paint to be factory applied. Finish colour as per WSCC lighting specification for the given region unless otherwise specified

Notes

1. All dimension in millimetres.
2. Columns shall comply with BS EN 40, PD6547:2022 and departmental standard CD354 in addition to the WSCC column specification; designers to verify that column proposed is suitable for any proposed attachments; data sheets to be provided.
3. Column base backboard 500x85mm and made of treated hardwood of sufficient size to accommodate all control equipment, cut-outs and service cut-outs; boards shall be positively secured to the column by two flush screws.
4. Extraneous attachments (if agreed) to be fixed with circumferential clamps of stainless steel AISA Grade 201 with Neoprene gasket under the clamps to prevent damage to the column and its protective coating. Attachments must not impede raising & lowering functionality and need to be specifically agreed.
5. Columns in exceptional locations (on embankments, coast locations, etc); columns with brackets; columns with multiple luminaires or brackets; these may require special column design.
6. For column foundation schematic see WSCC-SD1-1400-051. Columns in exceptional locations may need special foundation design.
7. Column setbacks will be stipulated in design drawing.

A First construction issue PBS SAB/TM 27/10/22					West Sussex County Council Infrastructure Group County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105		Project Name STANDARD DETAILS			
Rev	Revision details	Chkd	Appd	Date			Drawing Title 5m "POST TOP" RAISE & LOWER - "HINGED" TUBULAR STEEL PLANTED COLUMNS		Original Drawing Size :	
Drawn:	MWG								Scale : NTS	
Chkd:	PBS								Drawing No	
Appd:	SAB/TM	X							WSCC-SD1-1400-041	
Date:	27/10/22									
File ref: IWP Ref:							Date Adopted: OS Sheet No.			




Design Standards	BS EN 40.3.1, BS EN 40.3.3, PD6547-2022
Design Life	50 years
10 min mean wind velocity	22m/s
Terrain Category (inland)	III - 5m
Max altitude (inland)	132m
Terrain category (coastal)	II - 5m
Max altitude (coastal)	100m

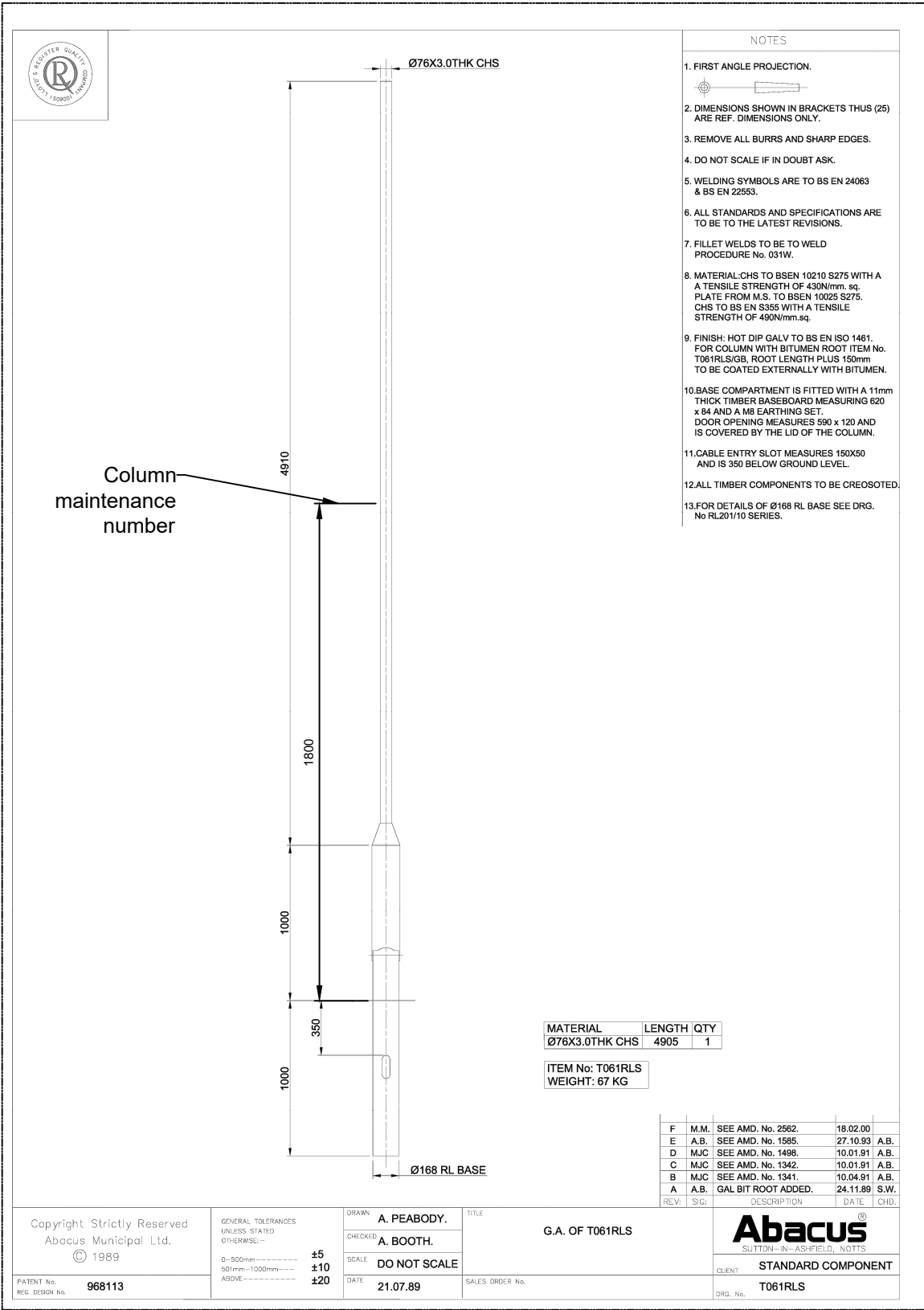
Standard dimensions and minimum performance criteria		
Dimension	Nominal Height	6000
	Planting depth	1000
	Base diameter	139.7
	Shaft diameter	76.1
	Height of door above ground*	300
	Size of door aperture	500 x 100
Performance criteria	Luminaire weight	16kg
	Luminaire windage	0.13m ²
	**Luminaire tilt	5°
	Sign height above ground	2.5m
	Sign eccentricity	0.4m
	Sign area	0.6m ²
	Sign weight	5.0kg
	Sign drag coefficient	1.8
* May vary - see manufacturer detail and data sheet		
** Maximum tilt capability. Tilt will be stipulated in design drawing		

Protective system and paint specification for tubular steel columns
Paint system applied direct to clean de-greased, lightly abraded hot-dipped galvanised steel
Suitable two-pack epoxy primer, dry film thickness 75 microns (including internal surface to 250mm above ground level)
Polysiloxane finish PSX 700, dry film thickness 75 microns
Paint to be factory applied. Finish colour as per WSCC lighting specification for the given region unless otherwise specified

Notes


- All dimension in millimetres.
- Columns shall comply with BS EN 40, PD6547:2022 and departmental standard CD35417 in addition to the WSCC column specification; designers to verify that column proposed is suitable for any proposed attachments; data sheets to be provided.
- Column base backboard 500x85mm and made of treated hardwood of sufficient size to accommodate all control equipment, cut-outs and service cut-outs; boards shall be positively secured to the column by two flush screws.
- Extraneous attachments (if agreed) to be fixed with circumferential clamps of stainless steel AISA Grade 201 with Neoprene gasket under the clamps to prevent damage to the column and its protective coating. Attachments must not impede raising & lowering functionality and need to be specifically agreed.
- Columns in exceptional locations (on embankments, coast locations, etc); columns with brackets; columns with multiple luminaires or brackets; these may require special column design.
- For column foundation schematic see WSCC-SD1-1400-051. Columns in exceptional locations may need special foundation design.
- Column setbacks will be stipulated in design drawing.

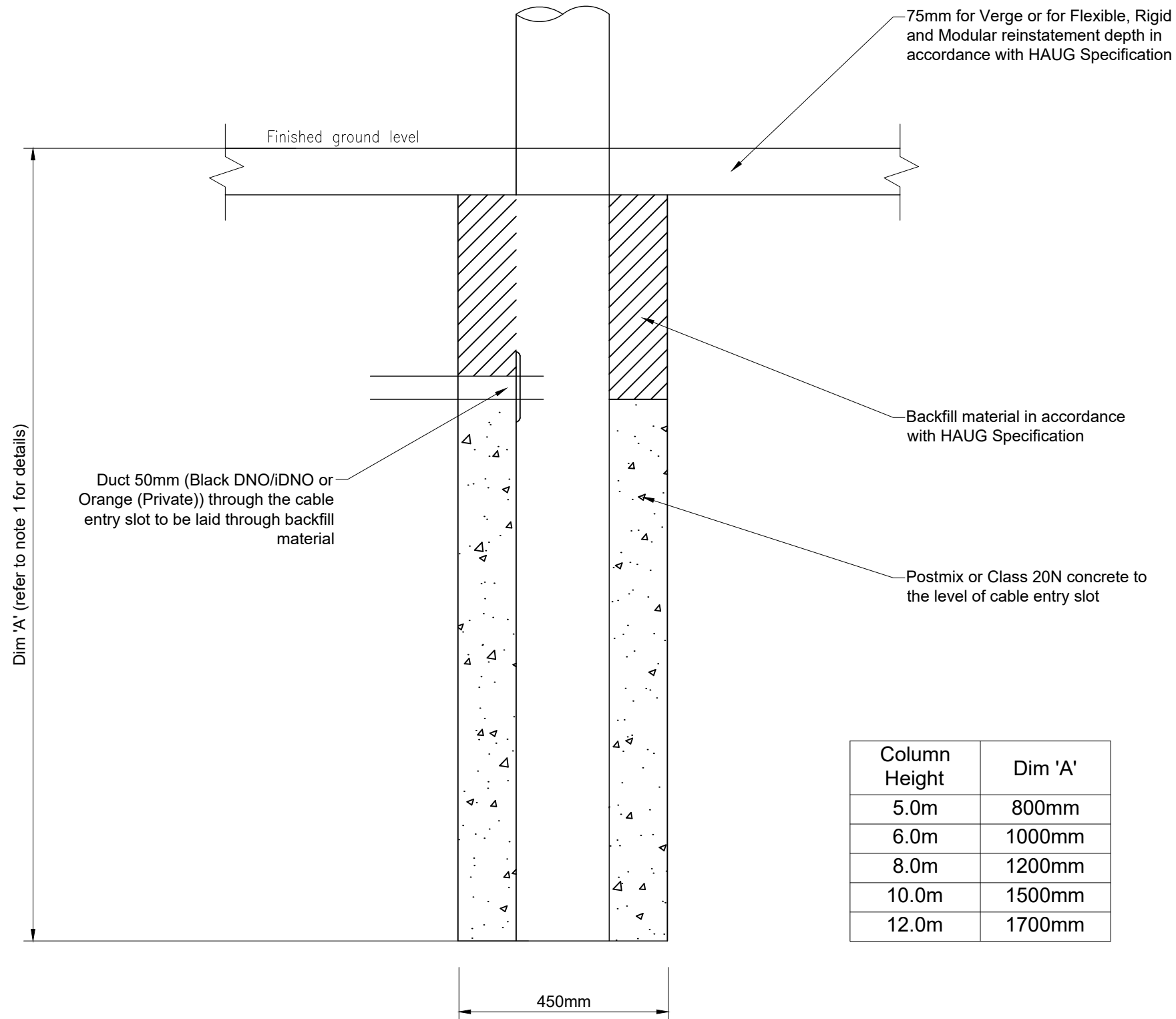
A		First construction issue		PBS		SAB/TM		27/10/22		<div>West Sussex County Council Infrastructure Group County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105</div> <div><div>west sussex county council</div></div>		Project Name STANDARD DETAILS							
Rev		Revision details		Chkd		Appd		Date											
Drawn:		MWG				For comment						Drawing Title 6m "POST TOP" RAISE & LOWER - "HINGED" TUBULAR STEEL PLANTED COLUMNS				Original Drawing Size :			
Chkd:		PBS				For tender						Date Adopted: OS Sheet No.				Scale : NTS			
Appd:		SAB/TM		X		For construction						Drawing No WSCC-SD1-1400-042							
Date:		27/10/22				As constructed													
File ref: IWP Ref:																			




Notes

- All dimension in millimetres.
- Columns shall comply with BS EN 40, PD6547:2022 and departmental standard CD354 in addition to the WSCC column specification; designers to verify that column proposed is suitable for any proposed attachments; data sheets to be provided.
- For column foundation schematic see WSCC-SD1-1400-051. Columns in exceptional locations may need special foundation design.
- Column setbacks will be stipulated in design drawing.

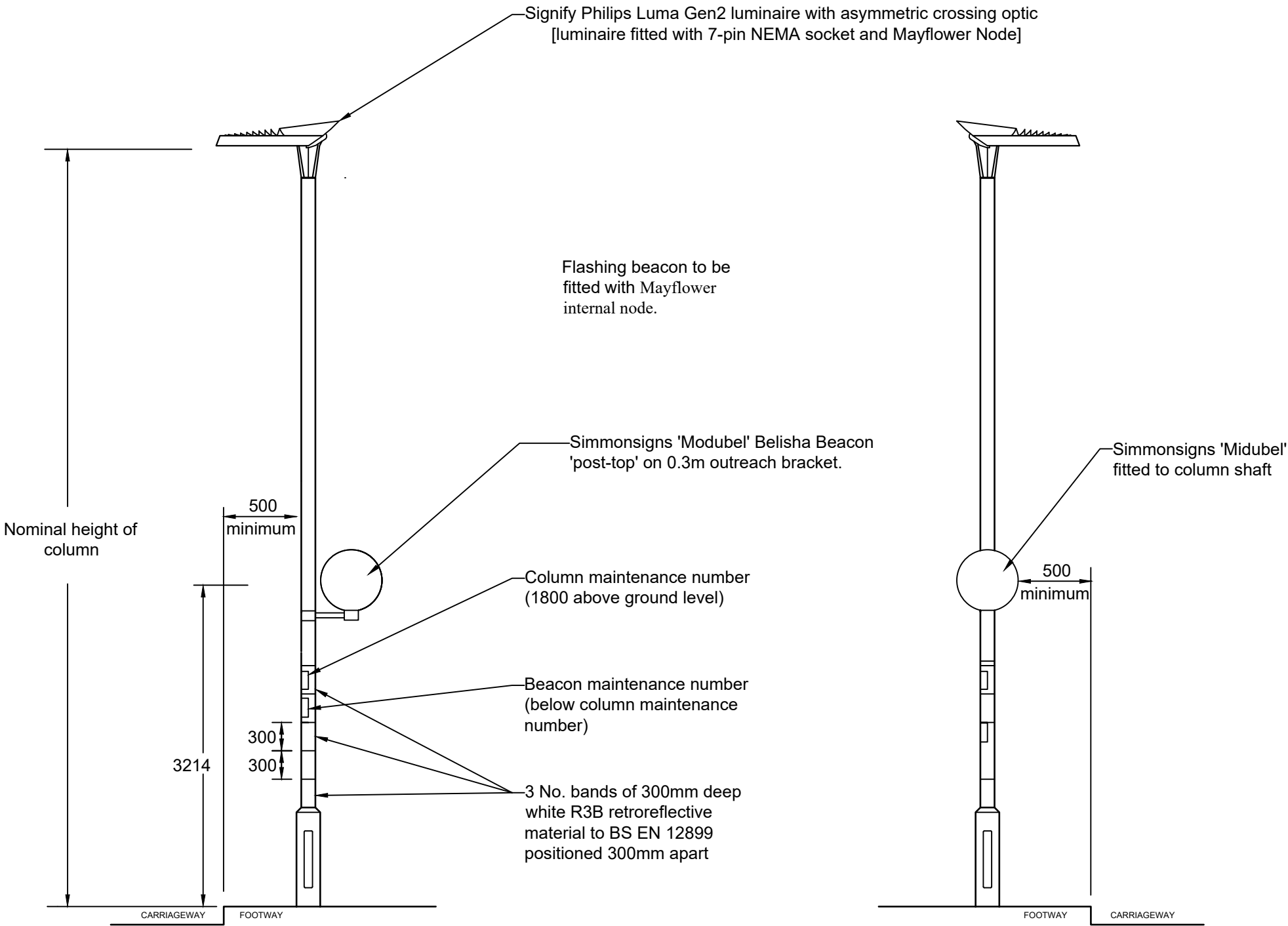
A	First construction issue	PBS	SAB/TM	27/10/22	<div>West Sussex County Council Infrastructure Group County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105</div> <div></div>	Project Name STANDARD DETAILS					
Rev	Revision details	Chkd	Appd	Date		Drawing Title 6m "POST TOP" RAISE & LOWER - "BASE HINGED" TUBULAR STEEL PLANTED FOR CENTRE ISLAND POST				Original Drawing Size :	
Drawn: MWG			For comment			Date Adopted: OS Sheet No.				Scale : NTS	
Chkd: PBS			For tender					Drawing No			
Appd: SAB/TM		X	For construction					WSCC-SD1-1400-043			
Date: 27/10/22			As constructed								
File ref: IWP Ref:											




A	First construction issue	PBS	SAB/TM	27/10/22	<div>West Sussex County Council Infrastructure Group County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105</div> <div><div>west sussex county council</div></div>	Project Name STANDARD DETAILS			
Rev	Revision details	Chkd	Appd	Date		Drawing Title FOUNDATION FOR LIGHTING COLUMNS IN VERGE FLEXIBLE REGID AND MODULAR SURFACES			
Drawn: MWG			For comment			Date Adopted: OS Sheet No.		Scale : NTS	
Chkd: PBS			For tender						
Appd: SAB/TM		X	For construction					Drawing No	
Date: 27/10/22			As constructed					WSCC-SD1-1400-051	
File ref: IWP Ref:									

Notes

1. All dimension in millimetres.
2. Crossings to be illuminated as per ILP Technical Report TR12 'Lighting of pedestrian crossings'
3. Standard WSCC specification columns (as shown on detail drawings.....) are suitable; no additional sign attachments or extraneous attachments are to be fitted to the column
4. Column finish to be black with three retroreflective white bands at spacing show deep white R3B retroreflective material to BS EN 12899, set 300mm apart).
5. Column door to face away from oncoming traffic.
6. For column foundation schematic see WSCC-SD1-1400-051.



						West Sussex County Council Infrastructure Group County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105				Project Name STANDARD DETAILS			
A	First construction issue	PBS	SAB/TM	27/10/22						Drawing Title ZEBRA CROSSING BELISHA BEACON AND SUPPLEMENTARY LIGHTING		Original Drawing Size :	
Rev	Revision details	Chkd	Appd	Date						Date Adopted: OS Sheet No.		Scale : NTS	
Drawn: MWG			For comment								Drawing No		WSCC-SD1-1400-061
Chkd: PBS			For tender										
Appd: SAB/TM		X	For construction										
Date: 27/10/22			As constructed										
File ref: IWP Ref:													

Appendix G – Column colours by Parish – list

Paint colours shall be as indicated on the chart below except “Heritage” columns which shall be painted black (except in Park Place, Horsham); in conservation areas illuminated sign posts shall colour-match the lamp columns; all paint to be factory-applied. Where a scheme straddles a parish boundary, or where the intention is that a boundary will change to encompass a new development the designer shall seek further guidance on which paint colour applies.

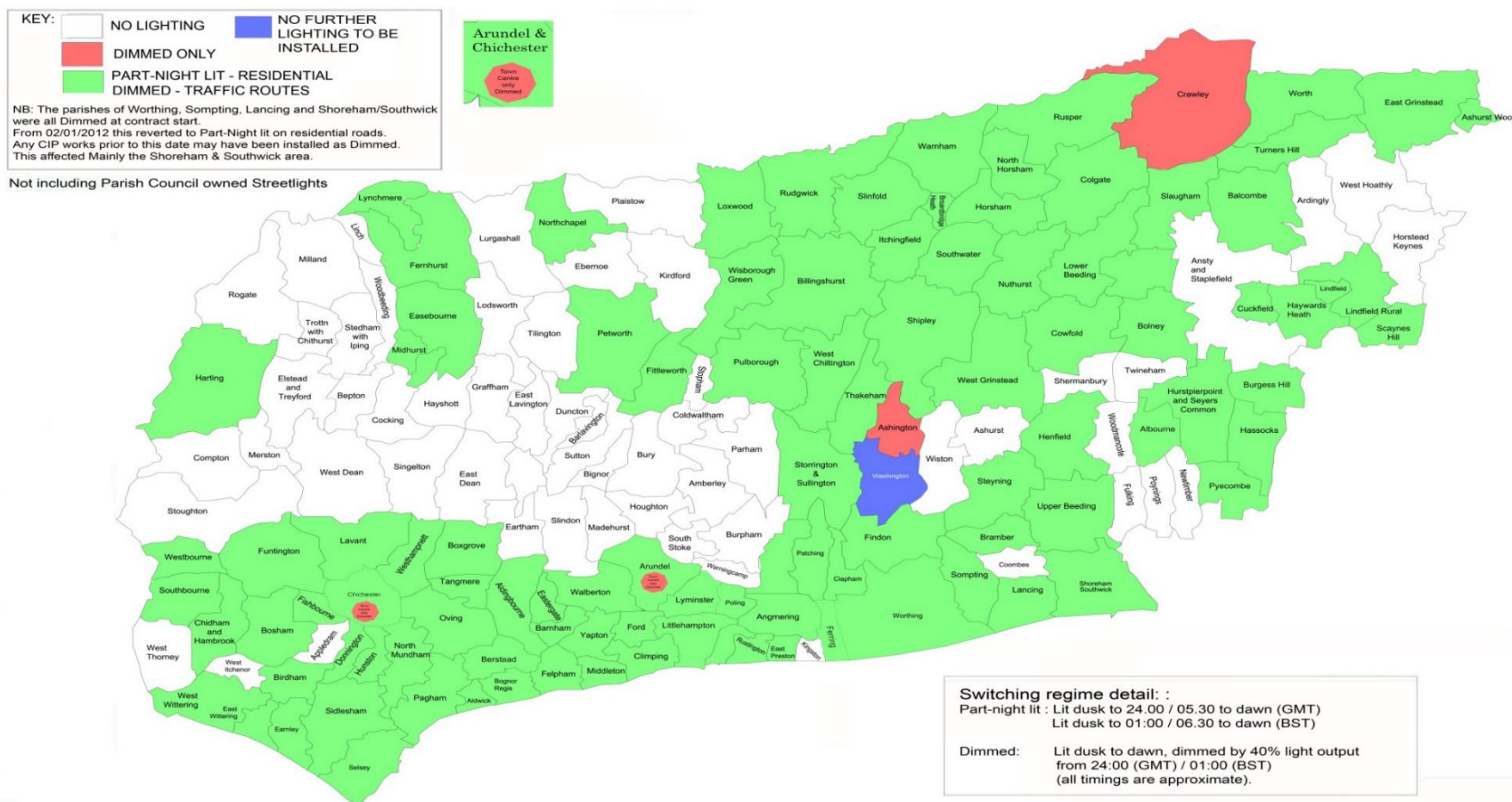
West Sussex County Council: Area Paint Colours

Town	Colour	BS Number
Albourne	Sherwood Green	BS12C39
Aldingbourne	Sherwood Green	BS12C39
Aldwick	Cupress	BS14C39
Angmering	Black	BS00E53
Arundel	Sherwood Green	BS12C39
Ashington	Black	BS00E53
Barnham	Sherwood Green	BS12C39
Bersted	Cupress	BS14C39
Billingshurst	Sherwood Green	BS12C39
Birdham	Sherwood Green	BS12C39
Bognor Regis	Cupress	BS14C39
Bognor Regis seafront	Cream	BS08C31
Bolney	Sherwood Green	BS12C39
Bosham	Sherwood Green	BS12C39
Boxgrove	Sherwood Green	BS12C39
Bramber	Sherwood Green	BS12C39
Broadbridge Heath	Sherwood Green	BS12C39
Burgess Hill	Black	BS00E53
Chichester	Sherwood Green	BS12C39
Chidham	Sherwood Green	BS12C39
Christs Hospital	Sherwood Green	BS12C39
Clapham	Sherwood Green	BS12C39
Climping	Sherwood Green	BS12C39
Copthorne	Sherwood Green	BS12C39
Cowfold	Sherwood Green	BS12C39
Crawley	Juniper	BS12B29
Cuckfield	Sherwood Green	BS12C39
Dial Post	Sherwood Green	BS12C39

Town	Colour	BS Number
Donnington	Sherwood Green	BS12C39
East Grinstead	Silver	BS00A01
East Preston	Sherwood Green	BS12C39
East Wittering	Sherwood Green	BS12C39
Eastergate	Sherwood Green	BS12C39
Felpham	Cupress	BS14C39
Fernhurst	Sherwood Green	BS12C39
Ferring	Sherwood Green	BS12C39
Findon	Sherwood Green	BS12C39
Fishbourne	Sherwood Green	BS12C39
Ford	Sherwood Green	BS12C39
Goddards Green	Sherwood Green	BS12C39
Handcross	Sherwood Green	BS12C39
Hassocks	Sherwood Green	BS12C39
Haywards Heath	Sherwood Green	BS12C39
Haywards Heath main roads	Black	BS00E53
Henfield	Sherwood Green	BS12C39
Hickstead	Sherwood Green	BS12C39
Holbrook	Sherwood Green	BS12C39
Horsham	Sherwood Green	BS12C39
Hunston	Sherwood Green	BS12C39
Hurstpierpoint	Sherwood Green	BS12C39
Hurstpierpoint High Street	Silver	BS00A01
Lancing	Sherwood Green	BS12C39
Lavant	Sherwood Green	BS12C39
Linchmere	Sherwood Green	BS12C39
Lindfield	Sherwood Green	BS12C39
Littlehampton	Sherwood Green	BS12C39
Lyminster	Sherwood Green	BS12C39
Mannings Heath	Sherwood Green	BS12C39
Middleton-on-Sea	Cupress	BS14C39
Midhurst	Sherwood Green	BS12C39
North Horsham	Sherwood Green	BS12C39
Northchapel	Sherwood Green	BS12C39
Oving	Sherwood Green	BS12C39

Town	Colour	BS Number
Pagham	Cupress	BS14C39
Partridge Green	Sherwood Green	BS12C39
Patching	Sherwood Green	BS12C39
Pease Pottage	Sherwood Green	BS12C39
Petworth	Juniper	BS12B29
Poling	Sherwood Green	BS12C39
Pulborough	Sherwood Green	BS12C39
Pyecombe	Sherwood Green	BS12C39
Rose Green	Cupress	BS14C39
Rudgwick	Sherwood Green	BS12C39
Rustington	Sherwood Green	BS12C39
Sayers Common	Sherwood Green	BS12C39
Selsey	Sapphire	BS20D45
Shoreham	Sherwood Green	BS12C39
Shoreham Beach	Sherwood Green	BS12C39
Slaugham	Sherwood Green	BS12C39
Slinfold	Sherwood Green	BS12C39
Sompting	Sherwood Green	BS12C39
Southwater	Sherwood Green	BS12C39
Southwick	Sherwood Green	BS12C39
Steyning	Sherwood Green	BS12C39
Storrington	Sherwood Green	BS12C39
Tangmere	Sherwood Green	BS12C39
Upper Beeding	Sherwood Green	BS12C39
Walberton	Sherwood Green	BS12C39
West Grinstead	Sherwood Green	BS12C39
West Wittering	Sherwood Green	BS12C39
Westbourne	Sherwood Green	BS12C39
Westhampnett	Sherwood Green	BS12C39
Worthing	Grey	BS22B17
Worthing conservation areas	Black	BS00E53
Yapton	Sherwood Green	BS12C39

Appendix H – Part-night lighting areas – plan

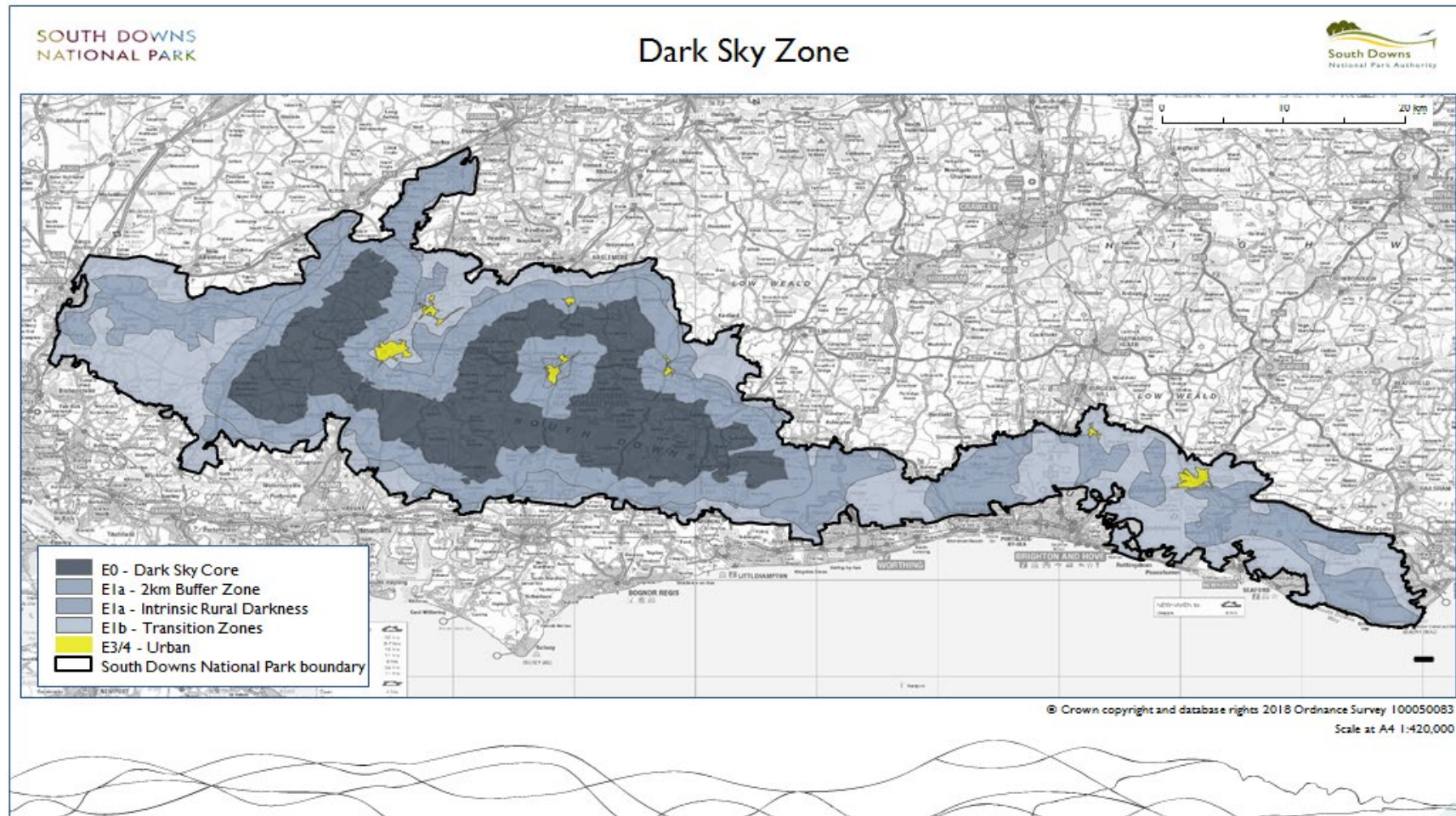


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West Sussex Dimmed and Part Night Lighting Map (by Parish)

DATE OF ISSUE:
 JULY 2015

Appendix I – South Downs National Park – dark skies zone – plan



Appendix J – WSCC policy on the application of Commuted Sums

‘Standard’ street lighting assets are not liable to commuted sums.

‘Non-standard’ street lighting assets are liable to commuted sums – e.g.:

- heritage or decorative style lighting columns & luminaires (see 4.3, 4.5) - [NB – commuted sums do not apply to these units if sited within conservation areas]
- handrail lighting systems (see 4.8)

See: [Policy on Commuted Sums for Maintaining Infrastructure Assets in Association with Section 278 and Section 38 Highway Agreements](#).