



**LIGHTING SCHEDULE**

- L1 Philips Roadgrace 26W LED luminaire (BPR711 LED30W 26W PSDD I DWP) mounted on Standard SDC ground planted frangible Subdivisional sectional steel 7.4m octagonal column with a 1.5m 10° degree tilt curved outreach arm & 5° degree 42mm O.D. spigot. Luminaire c/w an integral TMS compatible dimmable DALI Driver and a pre-wired 7 pin NEMA socket and shorting cap. (manufactured by Spunlite Pole Ltd.) Column, Outreach arm and luminaire to be painted Black.
- L2 Philips Roadgrace 20W LED luminaire (BPR711 LED23NW 20W PSDD I DWP) mounted on a 7.5m SDC standard decorative stepped column with a 1.0m 90° outreach arm. Luminaire c/w an integral TMS compatible dimmable DALI Driver and a pre-wired 7 pin NEMA socket and shorting cap. (manufactured by Spunlite Pole Ltd.) Column, Outreach arm and luminaire to be painted Black.

**DESIGN CRITERIA**

Designed in accordance with AS/NZS 1158, Category P3(NZ) and SDC IDS and SDC construction standards. Refer to lighting specification for lighting installation requirements.

**MAXIMUM DESIGN SPACING**

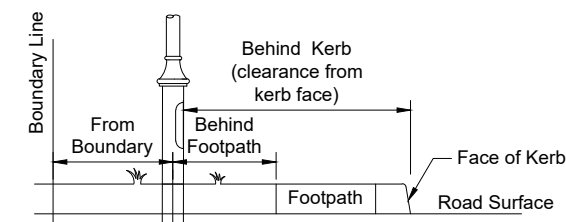
Street Name	Width	Arrangement Type*	Max Spacing
Fairbairn Road	18.0m	Staggered	69.6m

\* = Arrangement type as per AS/NZS 1158.2:2005 Fig. 5.1

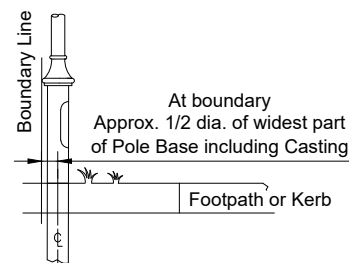
**SYMBOLS:**

- New column, outreach arm and luminaire.
- Existing Pole, outreach arm and luminaire to remain.
- New pole, outreach arm and luminaire. To be supplied and installed as part of neighboring Sub-Division.

**TYPICAL POLE POSITION:**



Pole to be installed from Boundary Line, Behind Footpath or from Face of Kerb



Pole to be installed at Boundary Line

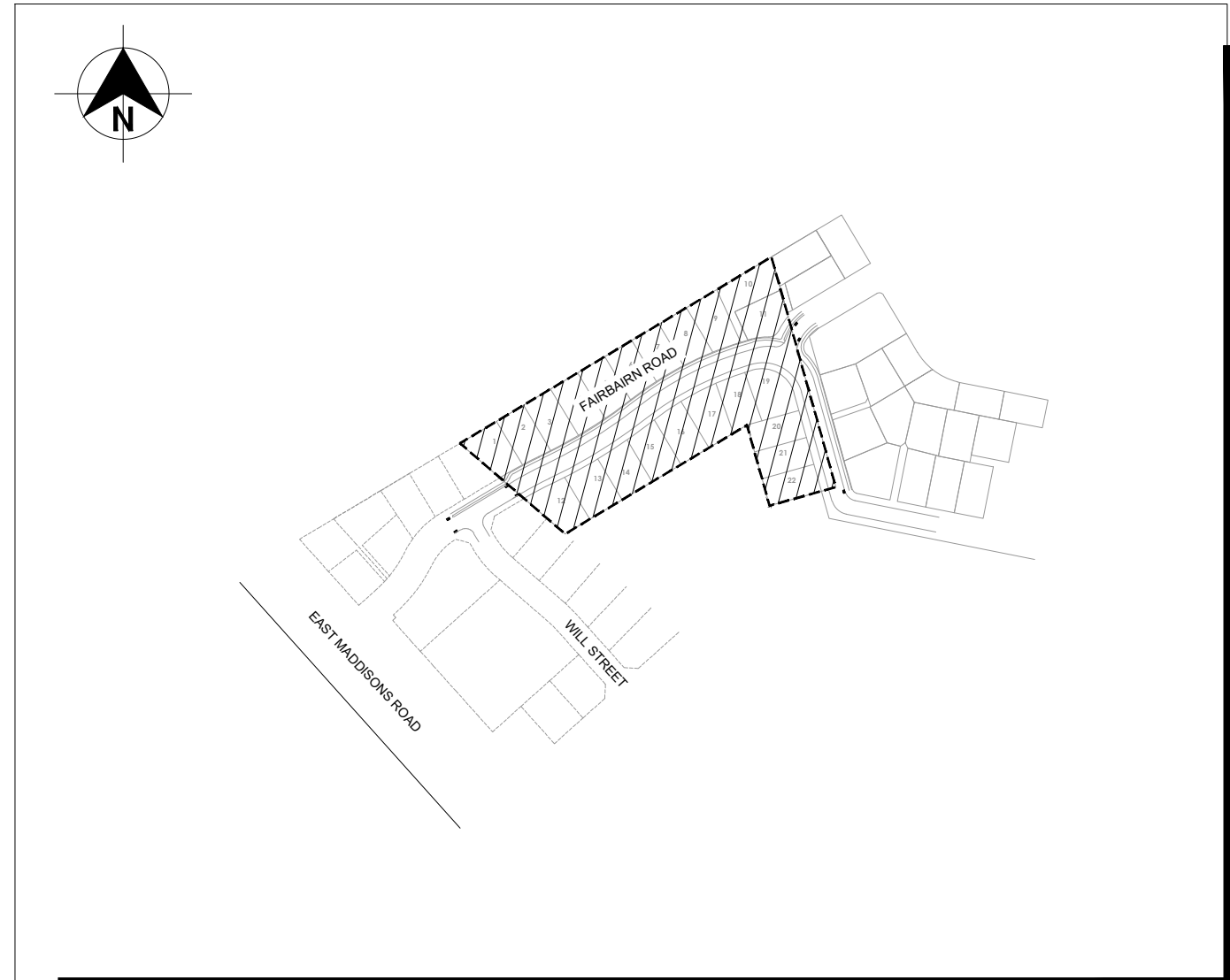
**SYMBOLS LEGEND:**

- LX Lighting Schedule Reference
- XXXW Lamp Wattage
- P1 Pole Identification
- 0.0-XX Pole offset
- X° Luminaire Tilt from the horizontal (See Adjustment Table)
- B** At Boundary
- BEOS** Behind Edge of Seal
- BEL** Behind Edge Line
- BF** Behind Footpath
- BK** Behind Kerb
- FB** From Boundary

For Sectional Octagonal Column	
With Mitred Arms and 5° Spigot*	
With Elliptical Arms and 5° Spigot*	
With Curved Arms and 5° Spigot*	
Subdivisional with 5° Spigot*	
Value Shown on Plan	Adjustment on Luminaire
10°	5°
5°	0°
0°	-5°
-5°	-10°

\* As per CCC and SDC Standard Column Requirements

**KEY PLAN**



**SPUNLITE NOTE:**

The use of this **FREE** Lighting design, is authorised by Windsor Urban Ltd and Spunlite Poles Ltd, and is conditional upon the specified lighting items (columns and luminaires), being purchased directly from Windsor Urban Ltd and Spunlite Poles Ltd, or our nominated agents. All nominated installing agents are to contact Windsor Urban Ltd and Spunlite Poles Ltd, to obtain product prices related to this project.

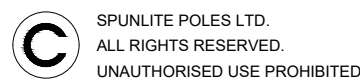
Any use of alternative manufacturer's products, differing from those listed in this design, and installed by any contractor, will automatically forfeit the right to use this intellectual property (lighting design).

Windsor Urban Ltd and Spunlite Poles Ltd hold all copyrights to any of our designs and manufactured products in accordance with the Berne Convention.

The lighting designer reserves the right to request that any alternative products, sourced from a non-listed manufacturer, be removed and replaced with the specified products, prior to any audit being conducted.

**ISSUED FOR CONSTRUCTION**

Friday, July 5, 2019 12:33:26 PM



Rev	Description	Date	Des	Dn	Chk	Apd	Or Acp	Contractor	Designed	Scale
A	Issued for Client Comments	08/05/19	RSD	RSD	-	-	-	-	R. St-Denis / Conn	May 19
B	Issued for SDC Approval	25/06/19	RSD	RSD	-	-	-	-	R. St-Denis / Conn	May 19
									W. Azmi / Conn	June 19
									B. Hayman for SDC	05/07/19
									Connetics	4002094

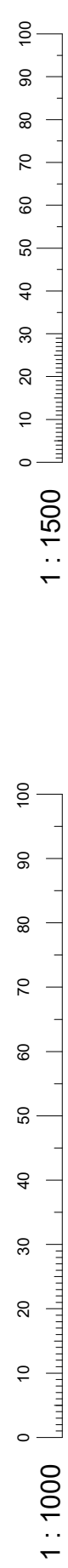
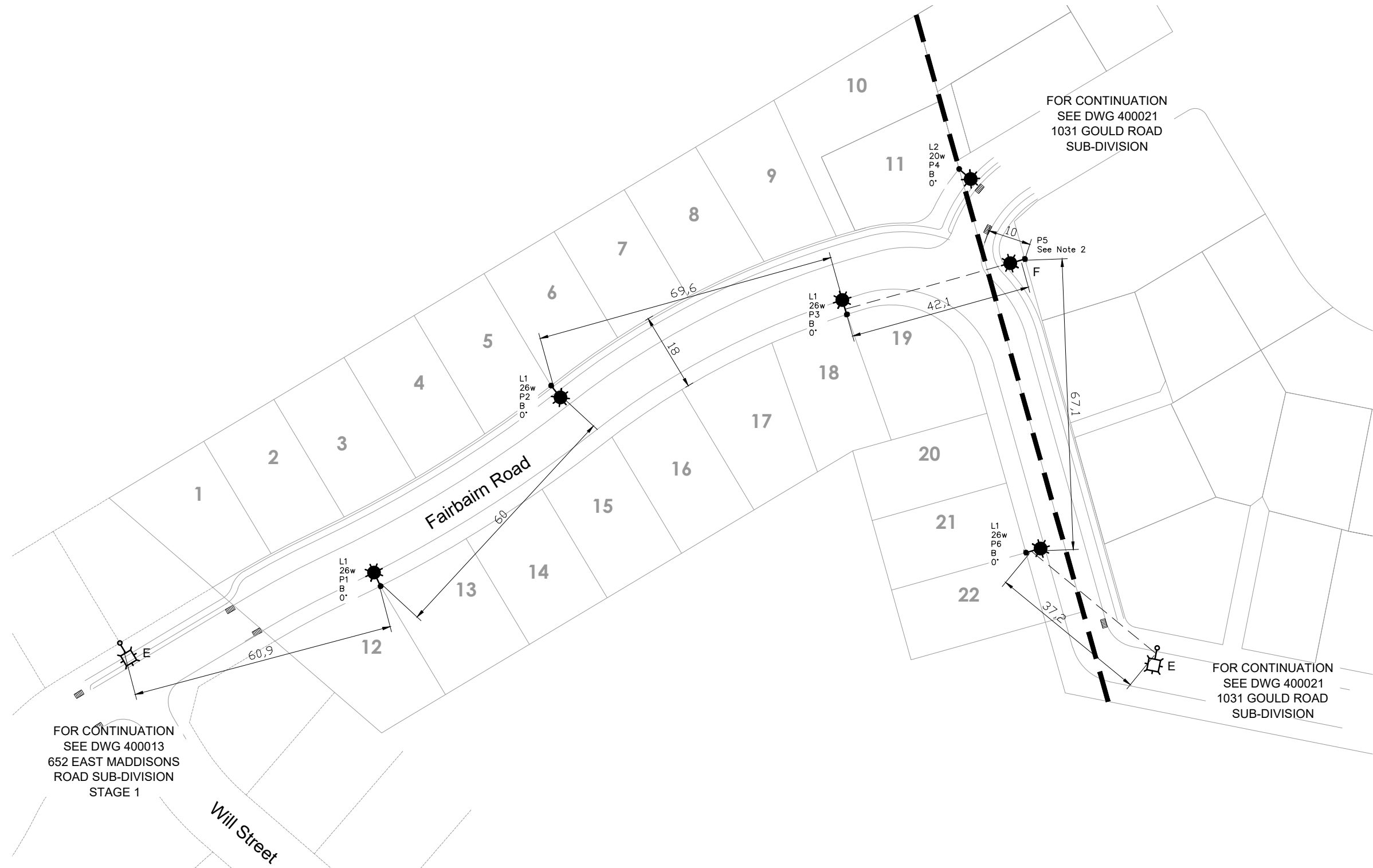
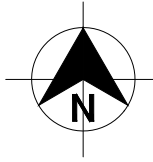
**STREETLIGHTING LAYOUT**

Fairbairn Road Sub-Division  
Rolleston

**SPUNLITE POLES LIMITED**  
 611 Halswell Junction Rd, Hornby, Christchurch, NZ  
 (03) 349-7853 fax (03) 349-6529 freeph (0800) 845-845  
 Inet: www.spunlite.co.nz

Size	Drawing Number	Sheet
A3	400067	1/2

1 : 1500  
1 : 1000



**NOTES:**

1. Refer to Sheet 1 for Luminaire Schedule and Legend.
2. Pole P5 is to be installed as part of 1031 Goulds Road Sub-Division. (See Drawing No. 400021)

**ISSUED FOR CONSTRUCTION**  
Friday, July 5, 2019 12:34:51 PM

**SPUNLITE POLES LTD.**  
ALL RIGHTS RESERVED.  
UNAUTHORISED USE PROHIBITED

Rev	Description	Date	Des	Dn	Chk	Apd	Or Acp	Contractor	Designed	R. St-Denis / Conn	May 19	Scale
A	Issued for Client Comments	08/05/19	RSD	RSD	-	-	-	-	Drawn	R. St-Denis / Conn	May 19	1:1000
B	Issued for SDC Approval	25/06/19	RSD	RSD	-	-	-	-	Checked	W. Azmi / Conn	June 19	
									Approved	B. Hayman for SDC	05/07/19	
												Revision
												<b>B</b>
								Connetics	4002094			

**STREETLIGHTING LAYOUT**

Fairbairn Road Sub-Division  
Rolleston

**SPUNLITE POLES LIMITED**  
611 Halswell Junction Rd, Hornby, Christchurch, NZ  
(03) 349-7853 fax (03) 349-6529 freeph (0800) 845-845  
inet: www.spunlite.co.nz

Size	Drawing Number	Sheet
<b>A3</b>	<b>400067</b>	<b>2/2</b>



# SPECIFICATION FOR ROAD LIGHTING

**ROAD LIGHTING DESIGN AT:**

**Fairbairn Road Sub-Division**

**Rolleston**

**Selwyn District Council**

**Connetics Ltd**  
**Design + Engineering**  
**11 Islington Avenue**  
**Islington**  
**Christchurch**  
**(03) 353 7320**

# Contents

---

1. PRELIMINARY AND GENERAL .....	1
2. SCOPE OF WORK.....	1
3. DRAWINGS AND DOCUMENTS.....	1
4. STANDARDS, SPECIFICATIONS AND CODES.....	2
5. COMPETENT PERSONNEL .....	2
6. REMOVAL OF EXISTING ROAD LIGHTNG EQUIPMENT – (IF REQUIRED).....	2
7. NEW ROAD LIGHTING COLUMNS AND OUTREACH ARMS .....	3
8. LUMINAIRES AND LAMPS.....	3
9. CONTROL GEAR .....	4
10. CONDUCTORS, WIRES AND CABLES .....	4
11. TEMPORARY LIGHTING – (AS REQUIRED).....	4
12. TESTING, COMMISSIONING AND DOCUMENTATION.....	5
13. MAINTENANCE AND GUARANTEES .....	5
14. HEALTH AND SAFETY .....	5
15. AS BUILT DRAWING, MAINTENANCE AND WARRANTIES.....	6
APPENDIX 1: Road Lighting Construction Completion Form.....	7
APPENDIX 2: Asset Code Summary and Schedule of Prices .....	8

## 1. PRELIMINARY AND GENERAL

The Principal for this project is Spunlite Poles Ltd.

The Engineer's representative for this project is Robert St-Denis, Connetics Ltd., Design and Engineering.

---

Telephone: 03 353 7230

E-mail: Robert.St-Denis@connetics.co.nz

Facsimile: 353 7201

---

## 2. SCOPE OF WORK

A complete and fully functional road lighting system is required and the work shall include:

- Supply, installation, testing and commissioning of new Road Lighting equipment, including new columns, arms, fuse panels, luminaires and cables, etc. as detailed on the drawings and specified herein.
- Liaison with Orion including application for any permissions or approvals, etc. as detailed in Orion's Network Standards.
- Liaison with the Engineer's representative throughout.
- Preparation and supply to the Engineer's representative of Test Certificates for individual road lights and "M" or "EL" Type Certificates of Compliance as detailed in Orion Network Standard NW 21 72 01.
- Preparation and supply to the Engineer's representative of all "As Built" documentation including drawing(s).
- Record GPS location of all new, removed and existing lighting poles / columns.
- Preparation and supply of Road Lighting Valuation schedules for all new and removed equipment. These schedules shall be submitted with all other completion paperwork requirements.
- Preparation and supply of a completed Schedule of Prices using the Asset code summary. This asset code summary shall be submitted with the tender / quotation.
- Delivery of all start work notices.

## 3. DRAWINGS AND DOCUMENTS

The following drawings and documents form part of this specification:

Spunlite Poles Ltd. Drawings numbered 400067 sheets 1 and 2, Rev-B.

Appendix 1: Lighting Construction Completion Form

Appendix 2: Asset Code Summary & Schedule of Prices

## 4. STANDARDS, SPECIFICATIONS AND CODES

All parts of the installation shall comply with the following:

- Selwyn District Council (SDC) Infrastructure Design Standards and SDC Construction Standard Specifications (CSS);
- Electricity act, the Electricity Regulations and Codes of Practise (current edition);
- Orion Standard “Connecting Equipment to Orion’s Street Lighting Network” - NW21.72.0;
- Health and Safety in Employment Act.
- Code of Practice for Temporary Traffic Management.

## 5. COMPETENT PERSONNEL

The specified work is to be undertaken by Orion and/or SDC competent / approved contractors. Any and all Subcontractors employed on this project must work under the supervision of a competent (approved) person.

Works on the Orion Network can only be carried out by or under the direct supervision of Orion’s approved personnel.

The contractor is responsible for ALL safety procedures throughout the work site(s) and must use and maintain appropriate safety barriers, warning signs etc. to protect all workers and the public from all hazards and hazardous situations.

An onsite Management Plan and record sheet must be available to all personnel at all times

## 6. REMOVAL OF EXISTING ROAD LIGHTNG EQUIPMENT – (IF REQUIRED)

Disconnect and carefully remove from Orion Network; columns, luminaires, outreach arms, mounting hardware, cables, etc. as detailed on the drawings.

All of the disconnected and removed materials and equipment remain the property of the Principal. They must be handled carefully so as to avoid damage, vandalism or contamination.

An inventory of the removed materials and equipment shall be made by using the SDC’s standard document - “Road lighting Valuation – Removed equipment” (see Appendix 1).

All of the disconnected and removed materials and equipment shall be temporarily stored at a suitable location at the Contractor’s cost pending inspection by the Engineer’s representative. An inspection request will require at least 2 working days’ notice.

On satisfactory completion of the inspection (to the Engineer’s representative’s satisfaction) all of the inspected materials and equipment suitable for reuse shall, as soon as practicable, be delivered to the local authority nominated Street Lighting Maintenance Depot.

All transport costs to be allowed for by the Contractor. Materials and equipment shall NOT be delivered to the depot until the Engineer's representative has inspected them.

Materials and equipment not suitable for reuse shall be correctly disposed of at the contractor's cost.

Attention is drawn to various publications (Ministry of Health, etc.) regarding the identification, safe handling and storage of equipment containing polychlorinated biphenyls (PCBs). All removed equipment shall be examined. If any equipment is found that contains (or is suspected of containing) PCBs, the Engineer's representative shall be notified immediately.

All lamp disposals are to be carried out in accordance with SDC and/or NZ Ministry of Health recommendations.

## 7. NEW ROAD LIGHTING COLUMNS AND OUTREACH ARMS

The columns and outreach arms shall be as specified on the drawings and guaranteed by the luminaire manufacturer's (and/or supplier).

Columns shall be fitted with a standard SDC fuse panel and installed to meet all requirements specified in CSS. (Refer to Appendix 5 for clarification of behind kerb and at boundary).

Base compartment door must face towards the footpath, or any other appropriate direction that allows clear and safe access. Door shall be secured by at least one mushroom head, stainless steel, 6mm Allen Key bolt. The bolt(s) threads shall be coated with a suitable (long life) grease to prevent seizing.

Proposed locations of all columns shall be clearly marked on the ground by the project surveyor. It is the contractor responsibility to contact the project surveyor. Excavations must not be made in the ground, nor columns installed, until the surveyor has approved the proposed location of each column. A minimum of three working days' notice is required for the surveyor to mark new column locations. Column mark out to be completed 2 weeks prior to any construction commencement.

Supply and install all equipment necessary to complete the installation and/or as documented on the drawings.

Columns shall be installed as documented in accordance with the manufacturer's instructions and recommendations. They shall be vertical (+ or - 1° from vertical) after compacting, and shall remain so (except for fair wear and tear) until the end of the defects liability period. The disturbed ground around the column shall be reinstated to match the (undisturbed) surrounding ground. The ground line identification mark shall be +/- 100mm from the finished ground level.

If any outreach arms being recovered for relocation or identified as suitable for reuse within the works are to be checked and confirmed as being suitable for reuse. The Engineer's representative is to be advised of any item identified for recovery that is not suitable for relocation/reuse.

## 8. LUMINAIRES AND LAMPS

Road lighting luminaires and lamps/LEDs shall be as specified on the drawings and guaranteed by the luminaire manufacturer's (and/or supplier). All luminaires shall be installed in accordance with the manufacturer's instructions and recommendations. They shall be of an approved type as indicated in NZTA M30 luminaire approved list.



The luminaire label must be permanent, remain on the luminaire throughout its life and identify the type and wattage of lamp used. LEDs should be labelled as per AS/NZS1158 Part 6.

If any luminaire being recovered for relocation or identified as suitable for reuse within the works are to be checked and confirmed as being suitable for reuse. The Engineer's representative is to be advised of any item identified for recovery that is not suitable for relocation/reuse.

## 9. CONTROL GEAR

New control gear/electronic drivers used shall be supplied and guaranteed by manufacturer (and/or supplier).

The electronic Control Gear/Driver shall be matched to the LEDs to provide reliable and efficient operation (i.e. Driver current, system wattage etc.)

The power factor of each luminaire (when stable operation at a supply voltage of 230V is established) shall be greater than 0.90 lagging.

If any Control Gear being recovered for relocation or identified as suitable for reuse within the works is to be checked and confirmed as being suitable for reuse. The Engineer's representative is to be advised of any item identified for recovery that is not suitable for relocation/reuse.

## 10. CONDUCTORS, WIRES AND CABLES

A new switchboard is to be installed within the base compartment of every new column.

To maintain the IP rating of all luminaires all internal cabling from the switchboard protection device to the luminaire shall be either a minimum of 1.5mm<sup>2</sup> circular 3 core TPS cable or a minimum of 1.5mm<sup>2</sup> 2C neutral screen cable, continuous throughout the entire length.

If flat 1.5mm<sup>2</sup> 2C+E TPS cable is used from the switchboard to the luminaire, the termination to the luminaire shall occur within a suitable IP65 (or higher) connector within 300mm of entering the luminaire. The IP rating of the luminaire is not to be compromised in any way.

Flat TPS cable is **NOT** to be used for direct connection into an IP rated luminaire unless an IP66 gland suitable for flat TPS cable is used. Particular care shall be taken to ensure that the TPS cable is not damaged as it is drawn into the column or outreach arm.

All terminations in the base compartment shall be in accordance with Orion standard and Selwyn District Council Construction Standards.

## 11. TEMPORARY LIGHTING – (AS REQUIRED)

Existing lighting levels (at a minimum) must be maintained at all time. If existing luminaires must be disconnected or removed before adjacent new lighting has been commissioned, then temporary lighting shall be provided.

If temporary lighting is required, the Engineer's representative shall approve the temporary lighting proposals. Existing lighting arrangements must not be altered or disconnected until the approval has been obtained, and the temporary lighting is fully operational.

Any temporary lighting is to comply with AS/NZS1158 and any Local Authority lighting requirements.

Temporary asymmetrical floodlights mounted on low height columns attached to mobile trailers are unacceptable.

All costs associated with temporary lighting is to be included within the tender sum.

## 12. TESTING, COMMISSIONING AND DOCUMENTATION

All equipment shall be tested and the road lighting system commissioned in accordance with Orion Network Standard.

Originals of Test Certificates for Individual Road Lights shall be supplied to the Engineer's representative within 48 hours of commissioning or livening of the road light. All certificates shall be completely filled out (all fields completed) in a legible manner. Copies of certificates will not be accepted. Refer to Orion Network Standard for details of the Test Certificate for Individual Road Lights.

The original of the Certificate of Compliance ("M" or "EL" Type) shall be supplied to the Engineer's representative within 48 hours of commissioning or livening of the last luminaire.

Records of the installation shall be maintained as the work proceeds, and copies of "as built" drawings shall be supplied to the Engineer's representative within 48 hours of commissioning the last of the works. Data shall be recorded in accordance with Orion's standards & SDC's construction standards.

The completed Road Lighting Valuation - New Equipment schedule shall be supplied to the Engineer's representative together with the tender documents at time of tender.

The completion certificate and approval to the Council for all new subdivision lighting is subject to the completion of ALL paperwork and the livening of all lighting.

## 13. MAINTENANCE AND GUARANTEES

All work, materials and equipment shall be guaranteed against defect or failure of any kind (excepting fair wear and tear) for a period of twelve months starting from the installation is livened. Refer to NZS 3910 for details of liability with respect to defects arising during this period. The maintenance and guarantee liabilities shall be vested in the SDC as owners of the road lighting system for all SDC owned equipment.

## 14. HEALTH AND SAFETY

- The requirements of Health and Safety in Employment Act plus and amendments shall be met at all times;
- A site safety management plan is to be implemented and a record sheet kept on site at all times
- Any accidents, near miss and remedial actions are to be reported in writing to the Engineer's representative as soon as possible;
- The Transit NZ Code of Practise for Temporary Traffic Management (COPTTM) are to apply to all activities within the road reserve or adjacent to and affecting the road reserve users;

### 15.AS BUILT DRAWING, MAINTENANCE AND WARRANTIES

The contractor shall provide clear marked up drawings of the completed installation along with Test Certificates and Certificates of Compliance for all lights/columns/cable as the installation progresses and is livened.

The contractor shall provide a 12 months warranty on the street lighting installation. Any defects shall be rectified within 1 week of notification. The warranty shall commence on the date the full (or part) installation is connected to the Orion network and commissioned.

Following completion of the installation the contractor shall supply completed as-built information, including marked up drawings, all information required for updating the SDC database and a Lighting Construction Completion Form.

The information required for the database is as follows:

Type	Inventory Data	Location (incl GPS)	Property Address	Other Fields
Streetlight	Wattage, material, surface treatment, supply, type, bulk circuit	Yes	Yes	Height, offset from kerb, date tested, date completed
Column	Type, mount			Owner, purpose

APPENDIX 1: Road Lighting Construction Completion Form

**CONSTRUCTION COMPLETION FORM**

To: The Engineer's Representative  
Connetics Design & Engineering  
P O Box 2237  
CHRISTCHURCH

Attention: Robert St-Denis

From: \_\_\_\_\_ (Contractor's Name)  
\_\_\_\_\_ (Address)  
\_\_\_\_\_

Dear Sir,

Road Lighting Works at: Fairbairn Road Sub-Division

has been completed. All work has been carried out in accordance with the Project Specifications

After all the tests were successfully completed, the entire lighting project was commissioned on \_\_\_\_\_ and the Defects Liability Period should commence from this date.

The following documentation is enclosed:

- Test Certificate for each Lighting Column
- Certificate of Compliance for the complete Installation
- As Built Drawings

\_\_\_\_\_  
*Print Name*

\_\_\_\_\_  
*Signed*

Date: \_\_\_\_\_

## APPENDIX 2: Asset Code Summary and Schedule of Prices

Asset Codes, Categories and the Descriptions for Selwyn District Council are summarised below.

Asset Code	Code Description	Asset Category	Category Description
CE	Column and Arm Existing	66	Road Lighting - Columns and Arms
CIE	Column and Arm Install Existing	66	Road Lighting - Columns and Arms
CIN	Column and Arm Install New	66	Road Lighting - Columns and Arms
CN	Column and Arm Supply New	66	Road Lighting - Columns and Arms
LE	Luminaire Supply Existing	79	Road Lighting - Luminaires
LIE	Luminaire Install Existing	79	Road Lighting - Luminaires
LIN	Luminaire Install New	79	Road Lighting - Luminaires
LN	Luminaire Supply New	79	Road Lighting - Luminaires
OPC	Orion Pole Replacement	66	
CTC	Cable & Trenching & O/H Parts	66	
TMC-60%	Traffic Management	66 - 60%	60% to Columns and Arms
TML-40%		79 - 40%	40% to Luminaires
TCC-60%	Test, Commission and Documentation	66 - 60%	60% to Columns and Arms
TCL-40%		79 - 40%	40% to Luminaires
GPC-60%	GPS Record and Document	66 - 60%	60% to Columns and Arms
GPL-40%		79 - 40%	40% to Luminaires

All tenders and quotations for this project MUST prepare a 'SCHEDULE OF PRICES' using the above asset codes and categories for all the equipment priced in the format given on the following page.

ALL invoices being claimed for this project MUST be presented using the asset code reference and asset code category as per this "Schedule of Prices".

