



Muswellbrook Shire Council

CONSTRUCTION SPECIFICATION

AUS-SPEC (Cot 09)

1196 Street Lighting

Version 01

Amendment Record for this Specification Part

This Specification is Council's edition of the AUS-SPEC generic specification part and includes Council's primary amendments.

Details are provided below outlining the clauses amended from the Council edition of this AUS-SPEC Specification Part. The clause numbering and context of each clause are preserved. New clauses are added towards the rear of the specification part as special requirements clauses. Project specific additional script is shown in the specification as italic font.

The amendment code indicated below is 'A' for additional script 'M' for modification to script and 'O' for omission of script. An additional code 'P' is included when the amendment is project specific.

Amendment Sequence No.	Key Topic addressed in amendment	Clause No.	Amendment Code	Author Initials	Amendment Date
0	No amendment has been made	all	Nil		13 June 2012

CONTENTS

1196 STREET LIGHTING	1
1 General	1
1.1 Responsibilities	1
1.2 Cross references	1
1.3 Referenced documents	1
1.4 Standards	2
1.5 Submissions	2
1.6 Inspection	2
2 Pre-construction planning	2
2.1 Network distribution	2
3 Materials	2
3.1 General	2
4 Execution	2
4.1 Provision for traffic	2
4.2 Establishment	2
4.3 Lighting Design	2
4.4 Luminaires	3
4.5 Lighting Supports	3
4.6 Power supply	3
5 Measurement and payment	3
5.1 Measurement	3
5.2 Pay items	4

1196 STREET LIGHTING

1 GENERAL

1.1 RESPONSIBILITIES

Objectives

General: Provide road lighting and electrical systems as documented.

Designer

Qualifications: Use only persons appropriately experienced and qualified to undertake the lighting and electrical design work on the systems documented.

Performance

General: Carry out verification tests and measurements to show compliance with the documentation.

Authority requirements

General: Liaise with and comply with the requirements of the local network distributor.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- 0152 *Schedule of rates – supply projects.*
- 0161 *Quality (Construction) or 0167 Integrated management.*
- 0179 *General requirements (Construction).*
- 0319 *Minor concrete works.*
- 1101 *Control of traffic.*
- 1151 *Road openings and restorations.*
- 1152 *Road openings and restorations (utilities).*
- 1391 *Service conduits*

1.3 REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

Standards

AS/NZS 1158	Lighting for roads and public spaces
AS/NZS 1158.6-2004	Luminaires
AS 1798-1992	Lighting poles and bracket arms - Preferred dimensions
AS 3600-2001	Concrete structures
AS 4100-1998	Steel structures
AS/NZS 4676-2000	Structural design requirements for utility services poles
AS/NZS 4680-2006	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles.
AS/NZS 4782	Double-capped fluorescent lamps - Performance specifications
AS/NZS 4782.2-2004	Minimum Energy Performance Standard (MEPS)
AS/NZS 4783	Performance of electrical lighting equipment - Ballasts for fluorescent lamps
AS/NZS 4783.2-2002	Energy labelling and minimum energy performance standards requirements
AS/NZS 4847	Self-ballasted lamps for general lighting services
AS/NZS 4847.2 (Int)-2008	Minimum Energy Performance Standards (MEPS) requirements

Other publications

Austrroads

AP-G11.12-2004 Guide to Traffic Engineering Practice Part 12 – Roadway Lighting

AGRD06B/09 Guide to road design Part 6B – Roadside environment.

1.4 STANDARDS

General

Standard: Conform to the following:

- AS/NZS 1158 series.
- AP-G11.12 Guide to Traffic Engineering Practice Part 12 – Roadway Lighting.
- AGRD06B/09 Guide to road design Part 6B – Roadside environment.

1.5 SUBMISSIONS

Acceptance criteria

General: All submissions will be subject to the approval of the Superintendent.

Compliance certificate: Submit a compliance certificate stating that all works have been completed as specified to this worksection and the local network provider

1.6 INSPECTION

Notice

General: Give notice so that the inspection may be made of the following:

Summary of HOLD POINTS

Clause title/ Item	Requirement	Notice for inspection	Release by
Provision of traffic	Traffic guidance scheme	2 weeks	Superintendent
Luminaires	Manufacturers information		Superintendent

2 PRE-CONSTRUCTION PLANNING

2.1 NETWORK DISTRIBUTION

General

Approvals: Obtain documented approval of the design from the local network distributor.

3 MATERIALS

3.1 GENERAL

Standards

Materials: All materials to the Network Distributors standards.

4 EXECUTION

4.1 PROVISION FOR TRAFFIC

General

Control of traffic: Conform to the following:

- Conform with *1101 Control of traffic*.
- Conform with **Traffic Guidance Scheme** in *1101 Control of traffic*. This is a **HOLD POINT**.

4.2 ESTABLISHMENT

Protection of services and utilities

Locate and protect services: Insure that all services and utilities have been located and protected prior to carrying out any excavation work.

Repair at Contractor's cost: Any damages incurred as a result of the Contractor's failure to locate a service or utility to be repaired at the Contractor's cost.

4.3 LIGHTING DESIGN

General

Standard: To AS/NZS 1158 series and Austroads AGRD06B.

Lighting category: To AS/NZS 1158.3.1.

4.4 LUMINAIRES

General

Standard: Lighting to AS/NZS 1158.6.

Proprietary equipment: Provide manufacturers information for luminaires, fittings and accessories. This is a **HOLD POINT**.

Minimum energy performance standards

Performance of electrical lighting equipment: To AS/NZS 4783.2 and AS/NZS 4782.2.

Self-ballasted lamps: To AS/NZS 4847.2(Int).

Lamps

Lamps: Provide all luminaires complete with lamps and accessories.

Lighting control system

Control: Provide local or integrated photo electric control of each luminaire.

Installation

Mounting: Mount luminaires on proprietary supports as documented.

Completion

Replacement of lamps: At the time of practical completion verify the operation of all luminaires.

Replace lamps which have been in service at the time of practical completion for a period > 50% of the lamp life as published by the lamp manufacturer.

4.5 LIGHTING SUPPORTS

General

Free standing luminaires: Provide columns for free standing road lighting luminaires including in situ reinforced concrete footings as specified.

Footings for street lighting columns: To *1391 Service conduits*.

Luminaires on network power poles: Mount luminaires with proprietary hardware on network power poles to conform with network distributors standards.

Columns

General: Conform to the following standards for fabricated columns:

- AS 1798 for public lighting poles.
- AS 3600 for concrete structures.
- AS 4100 for steel structures.
- AS/NZS 4676 for structural design of columns.
- AS 4680 for hot-dipped galvanized (zinc) coatings on ferrous articles.

4.6 POWER SUPPLY

Connection

Local network system: Provide power supply and connection to each luminaire from the local network distributor's low voltage system to conform with the network distributor's standards.

Earthing: Provide earthing to meet the requirements of the local power supply authority.

5 MEASUREMENT AND PAYMENT

5.1 MEASUREMENT

General

Payment made to the schedule of rates: To *0152 Schedule of rates – supply projects*, this worksection, the drawings and Pay items 1196.1.

If activities like excavation, concrete footings, installation of conduits, cable pits, poles and columns are to be carried out by the Contractor. Include **Pay items 1196.2 – 1196.7** above and in *0152 Schedule of rates – supply projects*.

Lump Sum prices: Not acceptable.

Unpriced items: If any item, for which a quantity of work is listed in the Schedule of Rates, has not been priced by the Contractor, due allowance is made in the prices of other items for the cost of the activity which has not been priced.

Methodology

The following methodology will be applied for measurement and payment:

Basis

Concrete: Construction of footings, including concrete, reinforcement and formwork is measured and paid to conform with this worksection and not in the *0319 Minor concrete works* worksection.

5.2 PAY ITEMS

Pay items	Unit of measurement	Schedule Rate scope
1196.1 Installation of street lighting		All costs associated with all materials, plant, equipment and labour for the installation of all overhead cabling, outreaches, luminaries, lamps on new poles and the replacement of existing for connection to the existing power supply, commissioning and testing, and the removal and disposal of redundant items.
Pay items	Unit of measurement	Schedule Rate scope
1196.2 Excavation	m ³ , measured in volume of excavation. Determine the volume by the End Area Method using design cross-sectional areas calculated at each change in height or width of the wall.	Include in the rate for excavation: Excavation and backfilling of all types of materials, with no separate rates for earth and rock. The disposal of surplus material. The control of stormwater runoff. Do not include: Drying out wet excavated material or replacement of over excavation beyond the design cross-sectional limits defined above.
1196.3 Unsuitable material below foundation	m ³ , measured as volume of excavation below foundation level which is directed to be removed and replaced.	All operations involved in the excavation and removal to spoil of unsuitable material below foundation level of the concrete footing and the backfilling and compaction to foundation level with replacement material.
1196.4 Reinforced concrete footing	m ³ of reinforced concrete.	All operations involved in the supply and placement of all formwork, embedments, reinforcement (including starter bars where specified), concrete (including 50 mm mass concrete blinding layer), stepping of footing, joints, curing and backfilling to the footing. Take the volume from the Drawings, excluding the volume of the 50 mm mass concrete blinding layer.
1196.5 Installation of conduits	Per lineal m. of conduit	All materials, plant equipment and labour for the installation of the conduits and required bends, trenching and laying of conduit in trench or structure, backfilling

Pay items	Unit of measurement	Schedule Rate scope
		and provision of draw wire.
1196.6 Installation of cable pits	Per each pit installed	Supply of cable pits, excavation and installation
1196.7 Installation of poles and columns	Per unit	All materials, poles and columns, all plant, equipment and labour for the installation of all the poles and columns.