

Public Lighting

Technical Specification for Road Lighting Poles, Outreach Arms & Brackets



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Technical Specification

Poles, Outreach Arms, & Brackets



1. PURPOSE & SCOPE

This specification sets out the technical requirements for road lighting poles, outreach arms, foundation assemblies, & wood pole brackets used to support a range of Luminaires and pedestrian crossing floodlights for use in road lighting systems in Queensland, providing for the following:

- A) Major Roadway Lighting
 - Poles base plate mounted (BPM) (steel)
 - Poles slip base mounted (SBM) (steel)
 - Slip base pole adaptor assembly
- B) Minor Roadway Lighting
 - Poles base plate mounted (BPM) including Estate Pole
- C) Outreach Assemblies
 - Outreach Arms (Major and Minor Roadway)
 - Outreach Arm Extension (Major Roadway)
 - Outreach Head Frame 3 Way and 4 Way (Major Roadway)
 - Outreach Arms 3 Way and 4 Way (Major Roadway)

As such the specification specifically covers the design, manufacture, testing at works, supply of and delivery to a nominated site for use in the Purchaser's network of the following items:

Item	EGX Stock Code	EE Stock Code	Description
1	05637	2401888	Pole, BPM, 7.0m, Major Rd
2	05639	2401889	Pole, BPM, 8.5m, Major Rd
3	05641	2491890	Pole, BPM, 10.0m, Major Rd
4	05645	2403017	Pole, BPM, 13.0m, Major Rd
5	13215	2403016	Pole, SBM, 7.0m, Major Rd
6	13216	0924076	Pole, SBM, 8.5m, Major Rd
7	13217	2403010	Pole, SBM, 10.0m, Major Rd
8	13218	Nil	Pole, SBM, 13.0m, Major Rd
9	16889	Nil	Pole, BPM, 10.0m, Major Rd, Mid Hinge
10	16890	Nil	Pole, BPM, 13.0m, Major Rd, Mid Hinge
11	13940	Nil	High Mast Headframe Assembly 2 way
12	05390	Nil	High Mast Headframe Assembly 4 way
13	05389	Nil	High Mast Headframe Assembly 3 way
14	05734	2403718	MA5 Outreach, Major Rd 1.5m Single
15	05728	2403723	MA5 Outreach, Major Rd 1.5m Double
16	05750	1104685	MA6 Outreach, Major Rd 3.0m Single
17	05747	2405754	MA6 Outreach, Major Rd 3.0m Double
18	16824	1104682	MA7 Outreach, Major Rd Extension 1.5m (Order with Item 16 or 17 for Total 4.5m Outreach)
19	Nil	0104681	3 Way Spider Head Frame Suit 1.5 Outreach
20	Nil	0104680	3 Way Spider Head Frame Suit 3.0 Outreach
21	Nil	0104679	4 Way Spider Head Frame Suit 1.5 Outreach
22	Nil	0104678	4 Way Spider Head Frame Suit 3.0 Outreach
23	Nil	0104677	Outreach arm 1.5m
24	Nil	0104676	Outreach arm 3.0m
25	12177	Nil	Pole 3 Bolt BPM 6.5m w/- integral 0.5 O/R Minor Rd (Mtce Stock Only)
26	22394	Nil	Pole 4 Bolt BPM 6.5m w/- integral 0.5 O/R Minor Rd

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Item	EGX Stock Code	EE Stock Code	Description
27	05631	Nil	Pole, BPM, 4.5m, Minor Rd- 3 Hole Base Plate (Maint Stock Only)
28	05635	Nil	Pole, BPM, 5.5m, Minor Rd- 3 Hole Base Plate (Maint Stock Only)
29	22393	0126019	Pole, BPM, 5.5m, Minor Rd- 4 Hole Base Plate
30	15529	Nil	Pole, Estate, BPM, 3.5m Green Minor Rd (Maint Stock Only)
31	14769	Nil	Pole, Estate, BPM, 3.5m Black Minor Rd (Maint Stock Only)
32	15530	0924058	Pole, Estate, BPM, 4.5m Green Minor Rd
33	17196	0924965	Pole, Estate, BPM, 4.5m Blue/Grey Minor Rd
34	14770	0924065	Pole, Estate, BPM, 4.5m Black Minor Rd
35	16427	Nil	Pole, Estate, BPM, 4.5m Navy Minor Rd
36	22398	Nil	Pole BPM 5.0m Minor Rd. Mid Hinged 4 Bolt (Right) w/-Hinged Base Plate
37	Nil	Nil	Pole BPM 5.0m Minor Rd. Mid Hinged 4 Bolt (Left) w/-Hinged Base Plate
38	22397	Nil	Pole BPM 5.0m Green Minor Rd. Mid Hinged 4 Bolt (Right) w/-Hinged Base Plate
39	22395	Nil	Pole BPM 5.0m Black Minor Rd. Mid Hinged 4 Bolt (Right) w/-Hinged Base Plate
40	22396	Nil	Pole BPM 5.0m Blue/Grey Minor Rd. Mid Hinged 4 Bolt (Right) w/-Hinged Base Plate
41	16891	Nil	Outreach, Minor Rd 0.5m Single 0 deg Upcast
42	05733	0126029	Outreach, Minor Rd 1.5m Single
43	05727	2403725	Outreach, Minor Rd 1.5m Double
44	16580	Nil	Stay. Type A for SC 5346 (Maint Stock Only)
45	16582	Nil	Stay. Type C for SC 5346 (Maint Stock Only)
46	05336	2433712	Bracket, 0.3m PT Wood Pole
47	22390	0104186	Bracket MA1, 1.5m Outreach Major Rd Wood pole
48	22402	0104187	Bracket MA2, 3.0m Outreach, 1.0m Uplift Major Rd Wood pole
49	22403	0104188	Bracket MA3, 4.5m Outreach, 2.5m Uplift Major Rd Wood pole
50	22404	0104190	Bracket MA4, 3.0m Outreach, 4.0m Uplift Major Rd Wood pole
51	05335		Bracket MI3, 0.5m Minor Rd Wood Pole
52	22405	1140638	Bracket MI1, 1.2m Minor Rd Wood Pole
53	22406	0104692	Bracket MI2, 3.0m, Minor Rd Wood Pole 1.0m Uplift
54	18671	Nil	Outreach, Black for Estate Pole 0.5m Single
55	18672	Nil	Outreach, Green for Estate Pole 0.5m Single
56	18673	Nil	Outreach, Blue/Grey for Estate Pole 0.5m Single
57	17870	Nil	Outreach, Black for Estate Pole 0.5m Double
58	17871	Nil	Outreach, Blue/Grey for Estate Pole 0.5m Double
59	19533	Nil	Outreach, Navy for Estate Pole 0.5m Single
60	19534	Nil	Outreach, Navy for Estate Pole 0.5m Double
61	17231	Nil	Outreach, Green for Estate Pole 0.5m Double
62	18070		Adaptor Converter Major Rd to Minor Rd
63	14379	Nil	Adaptor Pole Post Top Ref 3-15 (Maint Stock Only)
64	14773	Nil	Adaptor Pole Post Top Ref 3-16 Black (Maint Stock Only)
65	13166	1104726	Pole Mounted Transformer Bracket Minor to Major Conversion Sleeve
66	13795	0924070	SBM Assembly for M24 Bolts (350PCD)
67	16826	Nil	SBM Assembly for M24 Bolts (500PCD)
68	19847	Nil	Pole BPM 5.0m Minor Rd. Mid Hinged 3 Bolt (Right) w/-Hinged Base Plate (Maint Stock Only)
69	20262	Nil	Pole BPM 5.0m Minor Rd. Mid Hinged 3 Bolt (Left) w/-Hinged Base Plate (Maint Stock Only)

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Item	EGX Stock Code	EE Stock Code	Description
70	20069	Nil	Pole BPM 5.0m Green Minor Rd. Mid Hinged 3 Bolt (Right) w/- Hinged Base Plate (Maint Stock Only)
71	20070	Nil	Pole BPM 5.0m Black Minor Rd. Mid Hinged 3 Bolt (Right) w/- Hinged Base Plate (Maint Stock Only)
72	20071	Nil	Pole BPM 5.0m Blue/Grey Minor Rd. Mid Hinged 3 Bolt (Right) w/-Hinged Base Plate (Maint Stock Only)

2. APPLICABLE STANDARDS

The road lighting poles, outreach arms, & wood pole brackets must comply with the latest revision of all relevant Queensland Acts / Regulations and Australian Standards, and all amendments issued from time to time except where varied by this specification.

Should inconsistencies be identified between standards and/or this specification, the Tenderer shall immediately refer such inconsistencies to the Purchaser for resolution.

Standards that are applicable to this specification include the following:

Item	Description
AS 1074	Steel tubes and tubulars for ordinary service
AS/NZS 1111.1	ISO metric hexagon bolts and screws - Product grade C - Bolts
AS/NZS 1111.2	ISO metric hexagon bolts and screws - Product grade C – Screws
AS/NZS 1112.1	ISO metric hexagon nuts - Style 1 - Products grades A & B
AS/NZS 1112.2	ISO metric hexagon nuts - Style 2 - Products grades A & B
AS/NZS 1112.3	ISO metric hexagon nuts - Products grade C
AS/NZS 1158.6	Lighting for roads and public spaces – Luminaires
AS/NZS 1163	Structural steel hollow sections
AS/NZS 1170	Structural design actions - General principles
AS/NZS 1170.1	Structural design actions - Permanent, imposed and other actions
AS/NZS 1170.2	Structural design actions – Wind actions
AS1199.1	Sampling Procedures for Inspection by Attributes
AS 1214	Hot-dip galvanised coatings on threaded fasteners
AS 1237.1	Plain washers for metric bolts, screws and nuts for general purposes - General Plan
AS 1237.2	Plain washers for metric bolts, screws and nuts for general purposes - Tolerances
AS/NZS 1252	High strength steel bolts with associated nuts and washers for structural engineering
AS 1275	Metric screw threads for fasteners
AS/NZS 1397	Sheet steel and strip – Hot-dipped zinc-coated or aluminium/zinc-coated
AS 1450	Steel tubes for mechanical purposes
AS/NZS 1554.1	Structural steel welding - Welding of steel structures
AS/NZS 1554.2	Structural steel welding - Stud welding (steel studs to steel)
AS/NZS 1554.3	Structural steel welding - Welding of reinforcing steel
AS/NZS 1554.5	Structural steel welding - Welding of steel structures subject to high levels of fatigue loading
AS/NZS 1594	Hot-rolled steel flat products
AS/NZS 1627	Preparation and pre-treatment of surfaces
AS 1721	General purpose metric screw threads
AS/NZS 1789	Electroplated zinc (electro galvanized) coatings on ferrous articles (batch process)
AS/NZS 1798	Lighting poles and bracket arms - Preferred dimensions
AS/NZS 2700	Colour Standards for general purposes
AS/NZS 2700S	Colour Standards for general purposes - Swatches
AS/NZS 3678	Structural steel-Hot-rolled plates, floor plates and slabs

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Item	Description
AS/NZS 3679.1	Structural steel - Hot-rolled bars and sections
AS 4100	Steel structures
AS/NZS 4506	Metal finishing - Thermoset powder coatings
AS/NZS 4600	Cold-formed steel structures
AS/NZS 4671	Steel reinforcing materials
AS/NZS 4676	Structural design requirements for utility services poles
AS/NZS 4680	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
AS/NZS 4792	Hot-dip galvanized (zinc) coatings on ferrous hollow sections, applied by a continuous or specialised process
BS EN 40-3-3	Lighting columns. Design and verification. Verification by calculation
AS/NZS 9001	Quality Management System

3. DRAWINGS

The following drawings are attached and form part of this specification.

Drawing No.	Rev.	Title
MAJOR ROADS		
05-02-02	B	Road lighting pole - Base plate mounted (BPM) Major Road
05-02-03	C	Road lighting pole - Slip base mounted (SBM) Major Road
05-02-04	F	Road lighting pole - Slip base pole adaptor assembly Major Road
05-02-06	B	Road lighting - Outreach Headframe (High Mast) Major Road – 1,2,3,4 Way
05-02-07	C	Road lighting - Outreach arm and extension Major Road
4927-A4	B	Major Road, Mid Hinged, Counter Balanced BPM Pole Footing / Erection Details (Ref 2-42)
860256-01	0B	Outreach (Spider) head frame – Major Road, 3 way & 4 way
860256-02	0B	Outreach (Spider) arm – Major Road, for 3 way & 4 way head frame
MINOR ROADS		
05-02-09	C	Road Lighting Pole – Integral Outreach (BPM) Minor Road
05-02-11	C	Road lighting pole - Base plate mounted (BPM) Minor Road (Ref Nos 1-11 in 3 hole base plate, & 2-11 in both 3 hole & “Alternative” 4 hole base plate)
05-02-12	C	Road lighting pole - Base plate mounted (BPM) Estate Minor Road (Ref No 1-12 & 2-12 required)
5HG-A3	C	Pole BPM 5.0m Minor Rd. Mid Hinged (Right & Left) w/-Hinged Base Plate
05-02-14	B	Road lighting Outreach Arm Minor Road (Uplift 2.0m, Outreach 1.5m)
05-02-15	B	Road Lighting Post Top Adaptor Minor Road
7668-A2	B	Special Outreach – Minor Road

Drawing No.	Rev.	Title
Wood Pole Brackets		
A31012883-01	0A	Street Light Bracket Type MI3 0.5m Outreach – Minor Road (4730-A2 – Old Ref with MCB)
A31012884-01	0A	Street Light Bracket 0.3m Type PT – Minor & Major Road (4732-A2 – Old Ref with MCB)
A3 875174-01	0A	Type MI1, 1.2m outreach (Minor Road)
A3 897227-01	0B	Type MI2, 3.0m outreach, 1.0m uplift (Minor Road)
A3 875179-01	0A	Type MA1, 1.5m outreach (Major Road)
A3 875180-01	0A	Type MA2, 3.0m outreach, 1.0m uplift (Major Road)
A3 875170-01	0B	Type MA3, 4.5m outreach, 2.5m uplift (Major Road)
A3 875173-01	0B	Type MA4, 3.0m outreach 4.0m uplift (Major Road)

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Drawing No.	Rev.	Title
Wood Pole Brackets		
A4 875181-01	0A	Spigot Adaptor for Wood Poles (Major Road)
Miscellaneous		
05-02-16	B	Road lighting pole - Design parameters Major Road
05-02-17	B	Road lighting pole - Design parameters Minor Road
05-02-18	A	Outreach arms, extensions and/or headframes - Design parameters Major/Minor Roads
895814-01	0A	Major Road pole - Design parameters – (Spider) 3 and 4 outreach headframe
05-02-20	A	Road lighting pole - base plate - limit gauges - 4 bolt
05-02-21	A	Road lighting pole - base plate and slip base plate - limit gauges - 3 bolt (Mtce Spares Only)
6332-A4	B	Electricity Supply Pillar Bollards

4. SERVICE CONDITIONS

4.1. Environmental Conditions

Pole Brackets will be exposed to the environmental conditions as detailed in AS 1158.6 All items will be installed outdoors and will be exposed to and must be able to withstand the following environmental conditions:

Description	Condition
Humidity	Extended periods of relative humidity, ranging from 10% to 90% (IEC60721-2-1 Figure 6)
Solar Radiation Level	1100 W/m ² with high ultra violet content (IEC60721-2-4 Table 1)
Ambient Air Temperature	50°C summer daytime (maximum) -10°C winter night time (minimum) (for very hot climates – refer AS2650 Clause 2.2.3)
Precipitation	Annual rainfall in excess of 1500 mm (Bureau of Meteorology)
Wind Speed	Tropical summer storms with gust wind speeds above 160 km/h
Isokeraunic Level	35-40 (Bureau of Meteorology)
Pollution / Atmospheric Classification	Level IV – very heavy (for installation in polluted ambient air with areas of coastal salt spray and industrial pollution refer AS4436 Table 1) Equivalent salt deposits in the range of 2.0-3.0 g/m ² (AS4436 Table 3)
Below Ground Soil	Variable soil conditions ranging from high resistivity rock to normal clays to areas of acidic soils with resistivity less than 20 Ω-m
Below Ground Temperatures	28°C summer day time (maximum) 18°C winter night time (minimum)

5. DESIGN & CONSTRUCTION

5.1. General Requirements

5.1.1 Steel Components

Steel used in the construction of poles, outreach arms, extensions, and wood pole brackets, luminaire headframes and slip base assemblies shall be commercially available, and in accordance with AS/NZS 1594, or AS/NZS 3678, AS/NZS 3679.1 for plates and flats, AS 1074, AS 1163 or AS 1450 for tubes, and shall comply with the following:

Item Description	Minimum Grade of Steel	Minimum Steel Thickness (mm)
BPM Pole	250	3
SBM Pole	250	3
Outreach arms (Major and Minor)	250 or as specified on drawing	3
Outreach arm extension	350 (only)	3
Outreach Headframe	250	3
Slip Base Assembly	250	8
Wood Pole Brackets	250	3

5.1.2 Alternative Materials

Alternative materials, such as composite fibreglass reinforced material, may be submitted, however the purchaser reserves the right to accept or reject alternative material.

Full details of alternatives must be provided with tender including reference to relative Australian or International Standards.

5.1.3 Tolerances

Tolerances shall be in accordance with AS 1798 unless otherwise shown on the relevant drawing.

5.1.4 Welding

Welding of poles, outreach arms, and wood pole brackets shall be in accordance with AS/NZS 1554 and welding certificates shall be provided when requested.

5.1.5 Marking

All items shall be permanently and legibly identified by way of a stainless steel or aluminium plate. The marking plate shall be stamped and located as shown on the relevant drawing and full details of the plate and method of fixing shall be provided. The Purchaser will consider alternate means of permanent marking with such proposals to be detailed in the Tender.

5.1.6 Aesthetics

Aesthetics will be an important consideration in analysing tenders and therefore all poles shall have a uniform taper and/or be as slim as possible, and continuous with the outreach arm.

The cross-sectional shape of poles shall be either circular or, alternatively, octagonal (minimum).

5.1.7 Protective Coatings & Warranty

The Purchaser requires a superior resilient finish whereby the pole will resist flaking, crazing, loss of adhesion and colour fade.

Coloured poles, Estate poles and Post Top adaptors: shall be galvanised and powder coated / painted in accordance with the following specifications:

Galvanising: All steel items shall be hot dip galvanised in accordance with AS 4680. All coating, other than on threads of bolts, shall be to zinc coating class Z600 in accordance with AS 1397. All ash and drainage spikes should be removed during the dressing and inspection process prior to despatch to the powder coaters.

All steel pole brackets, with the exception of stays to brackets Type MA3 and MA4, shall be hot dip galvanised in accordance with AS 4068.

Stays to brackets Type MA3 and MA4 shall be hot dip galvanised in accordance with AS/NZS 4792, coating class HDG300, with cut ends of tube treated in accordance with Appendix D of that Standard.

Surface preparation: This shall be in accordance to AS1627.4. No more than 5%, of the depth, of the original galvanised coating shall be removed during the blast process.

Powder Coating: To minimise the potential for pin holing of the coating, degassing grades of powder should be used, such as Dulux Dupole FPG or equivalent, where the required colours allow the supply of these grades.

Where degassing grade powders cannot be used, the application of an epoxy powder primer such as Dulux Zincshield or equivalent is required. This will seal the zinc surface and prevent salt and other airborne contaminants passing through the porous surface of the powder coat and reacting with the zinc. It will also prevent under creep should the finish powder coat be damaged. It is essential that Green Cure procedures be adopted with this primer coat. Powder coating should be done in accordance with AS 4506.

Particular attention must be paid to the full curing of the polyester thermosetting resin. The curing of the polymer is dependent on its meeting "time at temperature" requirements specified by the powder manufacturer. The performance requirements and testing procedures for thermosetting resins is addressed in AS/NZS 4506.

Estate Poles: All estate poles shall be finished to a colour as specified. This must resist flaking, crazing, loss of adhesion and colour fade.

Equivalent Surface Preparation / Paint / Powder Coating processes may be acceptable. Tenderers that wish to use a different paint process shall provide comprehensive details of the proposed process.

Warranty: Poles and post top adaptors are to be provided with an unconditional seven (7) year warranty against flaking, crazing, loss of adhesion or colour fade in excess of 5 Delta E CIE laboratory units in accordance with ASTM D2244-85. Tenderers shall supply a sample of their warranty document with their tender.

5.2. Pole Construction

Base Plate Mounted Poles (BPM) and Slip Base Poles (SBM) shall be constructed from steel in accordance with the requirements of the relevant drawings and this specification.

Poles that are manufactured and assembled from a number of tapered sections to achieve the required height shall be assembled prior to despatch and the method of assembly shall ensure that, subject to normal transport and handling, sections will not part during transport and subsequent erection. Additionally, the Tenderer shall employ a means, acceptable to the Purchaser, which provides a clearly visible indication of movement or slippage, should any occur, between the tapered sections prior to pole erection. The proposed method of indicating movement or slippage need not be permanent and shall be submitted with the Tender.

5.3. Pole Design Parameters

5.3.1 General

All poles shall be designed to withstand without permanent deformation the worst combination of the following loadings: -

- Dead loading due to pole, outreach arm/s, extensions and luminaire/s.
- Live loading, due to aerial supply cable.
- Wind loading on pole; outreach arm/s, extensions and luminaire/s.

Design parameters can be derived from the relevant "Road Lighting Pole Design Parameters" drawings 05-02-16 (Major) and 05-02-17 (Minor).

Design strength of poles shall be analysed over a minimum of 100 increments in accordance with AS 4100, AS 4600. Access door reinforcing shall be analysed to BS EN 40-3-3. less than 320 Joules.

5.3.2 Wind Loading

Pole wind loads shall be determined from methods detailed in AS 1170.2 given the following parameters: - Wind velocity V_z shall be defined as:

Height (m)	V_z (m/s)	
	V_s (Serviceability Requirements)	V_u (Ultimate Requirement)
15	29	57
10	27	53
5	25	50

The wind loading design drag coefficients shall be 1.0 for luminaires and 1.2 for outreach arms.

5.3.3 Aerial Connection

The pole shall be designed to withstand wind forces upon the surface of the pole and any attached equipment determined from clause 5.3.2. In addition to the wind load, all major road lighting poles with aerial supply shall be designed to withstand a maximum

safe working load of 1kN (Limit State Load of 1.8kN) exerted by the aerial cable at the point of attachment to the pole in the same direction as the wind load.

5.3.4 Load Combination

Load combination of dead loads, live loads and wind loads for design purposes shall be determined from AS/NZS 1170.0 Clause 4.2 and AS/NZS 4100 or AS/NZS 4600.

5.3.5 Deflection

The deflection of the pole from the vertical position under serviceability limit state shall be calculated according to the serviceability wind speeds in table 5.3.2 and shall not exceed 4% of the nominal height of the pole measured at the base of the outreach arm spigot.

5.3.6 Tip Loading

The Tenderer shall state the maximum allowable tip load and the permissible tip load for all poles offered. These tip loadings together with the overturning moment shall be specified in Attachment 1 and the maximum tip loading indelibly marked on the nameplate of each pole manufactured.

The maximum allowable tip load is defined as the maximum continuous load that can be applied horizontally (in any direction) to the base of the spigot with the pole installed in its normal vertical working position.

5.3.7 Proof Loading

The Tenderer shall state the maximum bending moment that may be applied at the ground line of each pole type offered under ultimate limit state conditions.

5.4. Frangible Poles

Frangible poles offered may be either Slip Base Mounted (SBM) or Impact Absorbent type. The Purchaser may consider Impact Absorbent Poles provided full details of pole crash behaviour and pole crash performance tests are submitted and acceptable to the Purchaser.

5.4.1 Impact Absorbent Poles

These poles shall conform to the requirements of this Specification, and in particular Clauses 6.4.3 and 5.4.4

5.4.2 Slip Base Mounted Poles

Poles shall conform to the requirements of this Specification and Drawing 05-02-03.

5.4.3 Slip Base Mounted Poles

The impact absorbent poles shall deform progressively when a vehicle crashes into them. The poles must deform progressively to decelerate an impacting vehicle in a controlled and uniform manner.

The base of the pole is to remain attached to the footing after impact and the pole is to collapse upon vehicle impact in a predictable and acceptable manner.

5.4.4 Impact Absorbent Pole Crash Performance Tests

The Tenderer shall supply evidence of full scale impact testing, carried out by an organisation acceptable to the purchaser from which the purchaser will assess the adequacy and suitability of the pole as being impact absorbent.

The falling pole shall fall away from, and in the same direction as the travel of, the impacting vehicle, coming to rest within an angle of $\pm 15^\circ$ to the impacting vehicle's longitudinal axis.

Should the pole not fall away from the vehicle (eg. fall towards and on top of the vehicle), the falling pole shall not crush the vehicle turret in a manner dangerous to the occupants.

Typical of the performance required is that for frontal impact of a vehicle of 1200 kg mass impacting at 60 km/h, the pole will produce decelerations, measured at the vehicle floor pan, no greater than 10g averaged over any 50 millisecond period, not greater than 10g for any period longer than 5 milliseconds.

The point of impact is to be not more than 1/4 width of the vehicle from the longitudinal centre line of the vehicle. In impacting the pole, the vehicle must be brought to rest by the pole in a controlled manner. Any pitch, yaw or roll shall be such that the vehicle will not overturn or spin away from the pole.

With regard to the above crash performance criteria, the purchaser reserves the right to:

- Accept any pole type where satisfactory evidence indicates that the above requirements are substantially, but not precisely met; or
- Waiver the right to further testing where the pole design has been previously tested and found to be satisfactory; or
- Reject any pole type.

5.5. Outreach Arms, Extensions, Outreach Headframes - Construction

All outreach arms, extensions, Luminaire headframes and post top adaptors shall be constructed in steel in accordance with the requirements of the relevant drawings and this specification.

5.5.1 Design Parameters

Outreach arms and extensions are to be designed to withstand without permanent deformation the worst application of the following loadings:-

- Dead loading due to outreach arm/s, extensions and Luminaires.
- Wind loading on arm/s, extensions and Luminaires.

All luminaire headframes and post top adaptors are to be designed to withstand without permanent deformation the worst application of the following loadings: -

- Dead loading due to luminaire headframe and luminaire/s.
- Wind loading on luminaire headframe and luminaire/s.

Design strength of outreach arms, extensions, luminaire headframes and post top adaptors shall be calculated in accordance to AS 4600 or AS 4100.

The design parameters can be derived from the "Outreach Arm and Extensions Design Parameters Major and Minor Roads" tabulation (drawing 05-02-18).

5.5.2 Wind Loading

The outreach arm wind loading shall be determined by the method as detailed in clause 5.3.2 of this specification.

5.5.3 Load Combination

Load combinations of dead load and wind load shall be determined from AS 1170.0 by the method as detailed in Clause 5.3.4 of this specification.

5.5.4 Deflection

The outreach arm or bracket shall be designed so that under loading with Luminaires and/or extension arm where fitted (ie when fitted to a vertical pole spigot), the Luminaire spigot uplift angle shall not be less than 5° or greater than 7°.

The deflection of the outreach arm or bracket when fitted to a fixed non-deflecting spigot shall under the serviceability Limit State be calculated in accordance with the serviceability wind speeds in Table 5.3.2 and AS 1170, and shall not exceed 4% of the nominal horizontal outreach length.

5.6. Slip Base Pole Adaptor Assembly Construction

All slip base pole adaptor assemblies shall be constructed in steel in accordance with the requirements of the relevant drawings and this specification.

The slip base pole adaptor assembly shall also include 3 x M36 bolts, washers and shear washers.

5.7. Slip Base Pole Adaptor Assembly Design Parameters

All slip base pole adaptor assemblies shall be designed to withstand without permanent deformation the worst application of the following loadings: -

- Dead loadings due to pole, outreach head frame, outreach arm/s, extension/s and luminaire/s.
- Wind loadings on pole, outreach head frame, outreach arm/s, extension/s and luminaire/s.

Design strength shall be calculated in accordance with AS 4100 or AS/NZS 4600 as applicable.

5.7.1 Wind Loading

The wind loading shall be determined by the method as detailed in clause 5.3.2 of this specification.

5.7.2 Load Combination

Load combinations of dead load and wind load shall be determined by the method as detailed in clause 5.3.4 of this specification.

5.8. Special Requirements for Mid Hinged Poles

5.8.1 General

All mid hinged pole assemblies shall be constructed in steel in accordance with the requirements of the relevant drawings and this specification. A lock down facility is to be provided to secure the pole in its operational position. A suitable attachment point is also to be provided at the base of the counterbalance skirt for attachment of a safety rope used to control the lowering function.

Pole spigots should include a post top collar compatible with the internal diameter of the headframe assembly so the headframe is secured and will not detach from the pole

in an inverted position on lowering if the headframe attachment bolts have been loosened.

The terminal panel attachment point and access hatchway dimensions shall be consistent with standard minor or major pole fabrications with an added facility provided for access to the hinge lock down mechanism which shall be internally accessed.

5.8.2 Major Road Mid Hinged Poles for Roundabouts and Interchanges

The assemblies shall also include base plates suitable for mounting on foundation assemblies with 4 x M24 bolts on 350mm or 500mm PCDs. The individual counterbalance weights shall be unique for each headframe design and luminaire combination of which there are 4 possible combinations (1,2,3, & 4 way headframes).

Each Luminaire is estimated to weigh between 10.5 – 20 kg.

5.8.3 Minor Road Mid Hinged Poles for Pedestrian Laneways

The assemblies shall also include base plates suitable for mounting on foundation assemblies with 3 or 4 x M20 bolts on 167mm or 350mm PCDs respectively. 3 bolt assemblies are intended for maintenance spares only. All new construction shall be 4 bolt assemblies.

A stand-up hinge facility at the base of the pole may be provided in addition to the mid hinge in both 3 & 4 bolt configurations.

The maximum fabrication weight should not exceed 65 kg.

5.9. Design Changes During Contract

In the course of the contract for the supply of items under this specification, any changes proposed to the design or components shall be notified in writing. Such advice shall be forwarded to the Purchaser as early as practicable before implementation.

Acceptance of the modified equipment shall be subject to prior agreement concerning the acceptance of the change or changes.

6. PERFORMANCE & TESTING

Ratings and performance requirements are detailed in Attachment '1'. The Tenderer

6.1. General

Should failure occur during proving tests, further testing of a replacement pole shall take place only after full details of design modifications have been approved in principle

For pole brackets, Tenderers must submit as part of their offer full calculations and drawings on each item offered. The calculations should be in sufficient detail to enable checking and verification of compliance with specification and appropriate codes. A Registered Professional Engineer of Queensland (RPEQ) must certify all designs as structurally adequate. The name and registration details of the engineer are to be supplied.

6.2. Type Test Compliance

All Equipment offered shall be fully type tested (as required by the relevant Australian Standards) at the time of tendering. Type test certificates shall be included with the tender. Where Equipment is offered of a similar design to that previously tested, consideration may be given to accepting previous type test reports. Tenderers shall state if such tests exist.

Tenderers may be requested (during the tender evaluation period) to substantiate their claims with written engineering evaluation. Such evaluation must provide all relevant details so that the Purchaser can establish the validity of existing type tests.

6.3. Routine Tests

All Equipment must be routine tested in accordance with the relevant Australian Standards.

6.4. Acceptance Tests

The equipment may be tested by the Purchaser to prove it conforms to the requirements of this Technical Specification.

6.5. Witnessing of Tests

The Purchaser reserves the right to witness all testing.

The Tenderer shall give the Purchaser reasonable notice of when testing will be carried out.

The Tenderer, when requested, shall supply to the purchaser full detailed calculations of stress and deflection, which will serve as a comparison with the test results.

6.6. Test Certificates

Routine test certificates shall be held by the manufacturer and provided to the Purchaser within 1 working day upon request.

All test certificates must include the manufacturer's serial number(s). On allocation, the Purchaser's order number, contract/item number and specification number must be added to the certificate, or attachment to the test report.

The Tenderer when requested shall supply to the purchaser full detailed calculations of stress and deflection of the pole or outreach, which shall serve as a comparison with the test results.

7. RISK ASSESSMENT

7.1. Legislation

Tenderers must comply with the requirements of the Queensland Workplace Health and Safety Act 1995, Queensland Electrical Safety Act 2002 and associated regulations, codes of practice and compliance/ advisory to Attachment 3).

7.2. Documentation

Tendered items shall be subjected to a formal risk assessment. The Plant Code of Practice 2005 requires the Tenderer to perform a risk assessment and provide the resultant documentation to the Purchaser with their tender in accordance with the 'Risk Assessment' schedule (Attachment 3) included with this specification. Where required in the attachment, full details to support answers must be furnished.

If the complete risk assessment documentation is not provided with the tender, or does not meet the required standard, the tender may be rejected. Any documented risk assessment that accompanies the tender must meet the requirements of the Risk Management Advisory Standard 2000 as a minimum standard and address the five main steps of the risk management process. It is preferred that the risk assessment methodology uses an energy model to identify hazards.

The risk assessment/s must both state recommended practices and identify hazards to the Corporation's personnel, public and property associated with the Poles, Outreaches & Brackets offered as follows:

- Installation.
- Transport, handling and storage.
- Operation and maintenance during life expectancy.
- Dismantling/ disposal at end of life.
- The range of uses for which the offered items are intended.
- Effects of environmental conditions.
- The 'Risk Assessment' schedule (Attachment 3) included with this specification shall be completed by the Tenderer. Where required by some questions, full details to support answers must be furnished.

8. QUALITY ASSURANCE

It is the Purchaser's policy to procure goods, equipment and services from sources that demonstrate the ability to supply quality products.

It is expected that Tenderers and manufacturers will have a quality system certified to ISO 9001 in operation.

Documentary evidence shall be provided concerning the level of Quality System Certification associated with the Tenderer and/or Manufacturer. This documentation shall include the Capability Statement associated with the Quality System Certification.

Tenderers shall complete Attachment 4 in documenting the above requirements and shall include it with their Tender submission.

9. SAMPLES

9.1. Production Samples

Tenderers who have not previously supplied samples may be requested to supply production samples.

9.2. Delivery & Purchase

Production samples shall be delivered freight free, suitably packaged and labelled including this Contract Number and Contract Item number. The Purchaser may at its discretion either purchase the samples at the tendered price or return the samples to the respective Tenderer after the contract has been awarded. Samples must be delivered within two weeks of the date requested to a location nominated at time of request.

10. PACKAGING & LABELING

All items supplied under this contract shall be suitably packaged and labelled to ensure that the items are able to be identified and are delivered undamaged giving due consideration to the methods and distance of transportation and handling.

Each item (ie individual Poles, Outreach arms, & Brackets), and each package lot shall be marked with the following information:

Item Marking	Package Marking
Road Type (Minor or Major)	Manufacturer's and Purchaser's Name
EGX / EE Stock Code (ie 05637)	Order Release Authority/Order Number
Manufacturer's Name or Trade Mark (ie BIG Pole Company)	Item Description
Month and Year of Manufacture (ie 10/03)	Pack Quantity
Maximum Tip Loading (ie 3.0 kN)	
Outreach projection (ie 1.5 m)	Pack Mass (kg).
Pole Height (ie 10.0m)	
Mass (ie 67.0 kg)	

10.1. Poles & Outreach Arms

Equipment shall be packed in such a way as to ensure that there is no metal to metal contact in the finished package. To effect this, it is preferred that CW1 carpet felt underlay is used in the following manner:

- A 300mm wide bandage is applied to the tip and butt of each individual pole/outreach arm.
- A 300mm wide bandage is applied under the banding strap used to contain the full package.

Estate poles shall be packed in cradles. The preferred cradle is available for inspection upon contacting the Contract Manager. It is recommended that all Tenderers avail themselves of this opportunity.

10.2. Slip Base Pole Adaptor Assemblies & Luminaire Headframes

The structural bolts, washers and shear washer associated with each slip base pole adaptor assembly shall be securely packaged and attached to the adaptor cable clamp bracket.

Where the items are palletised the following shall be noted:-

- (a) Palletised goods are to be secure and stabilised with no overhang to facilitate safe unloading.
- (b) Equipment shall be packed in such a way as to ensure there is no metal to metal contact in the finished package
- (c) Energex operates an exchange system for standard 'Chep' and/or 'Luscom' type pallets. Tenderers are strongly encouraged to take advantage of this system. Ergon Energy operates only with non returnable pallets.

Full details of proposed packaging must be supplied with tender.

11. SERVICE HISTORY

Potential first time Tenderers to the Purchaser shall state: -

- The period of service achieved by the items offered within Australian conditions;
- Australian electricity supply authorities who have a service history of the items offered;

- Contact names and phone numbers of relevant employees of those supply authorities who can verify the service performance claimed.

12. RELIABILITY

12.1. Guarantee

Tenderers are required to guarantee the reliability and the performance of the Poles, Outreach Arms & Brackets offered for a service life of thirty five (35) years under the specified system and environmental conditions by specifying the guaranteed performance and service life in the Attachments of Technical Details.

12.2. Service Life

Where the specified guaranteed service life is less than thirty five (35) years Tenderers are required to provide comment and submit evidence in support of the reliability and performance claimed including detailed information on Failure Mode and Effect Analysis.

13. TRACEABILITY

Details of the sub-components of the Poles, Outreach Arms, & Brackets that are traceable shall be provided by the Tenderer by completion of Attachment 5. The criteria for traceability shall be based on previously identified failure modes which may necessitate the recall of Poles, Outreach Arms, & Brackets from service for rework or replacement should they occur either in the field or are discovered during manufacture or testing at works. The Purchaser will give due recognition to the number of sub-components incorporating traceability when assessing conformance of the Tenderer's Quality Assurance System to the specified requirements.

14. TRAINING

14.1. General

Training material in the form of drawings, instructions and/or audio visuals may be required for the items accepted under this offer. This material shall include but is not limited to the following topics:

- Handling
- Storage
- Application (particularly in areas of heavy coastal pollution)
- Installation
- Maintenance
- Environmental performance
- Mechanical performance
- Disposal.

15. ENVIRONMENTAL CONSIDERATIONS

15.1. General

Tenderers are required to comment on the environmental soundness of the design and the materials used in the manufacture of the items offered. In particular, comments should address such issues as recyclability and disposability at the end of service life and also disposal of packaging materials. Tenderers are required to document Environmental Management particulars in Attachment 4.

16. SPECIAL TOOLS, GAUGES & ACCESSORIES

Tenderers are advised that the Purchaser and Contractors to the Purchaser have a wide range of general equipment and special tools available to complete the installation.

Tenderers shall submit separate details, including price, of any special tools, gauges or accessories that are identified as being necessary for installation and ongoing maintenance procedures.

Tools, gauges and accessories that are available from normal commercial outlets should not be included.

17. INFORMATION TO BE PROVIDED

17.1. General

The specific technical requirements for the items offered shall be as stated in Attachments "1", "2", & "5" of this specification. The Tenderer shall provide all details requested by Attachments "1", & "2" and shall guarantee such data. A separate Schedule/ Column of a Schedule shall be completed for each item offered.

In addition to the completed schedules, Tenderers shall submit with their tender dimensioned drawings detailing the construction of the Poles, Outreach Arms & Brackets and a complete description of each item.

- Full design calculations and drawings on each item offered. The calculations should be of sufficient detail so as to enable checking and verification of compliance with the specification and appropriate codes.
- An RPEQ must certify all designs are structurally adequate. The name and registration details of the engineer are to be supplied.
- Typical erection, test, operation and maintenance manuals.
- Description of the principle of operation and operating mechanism(s).
- Type test certificates for all equipment offered.
- A list of all departures of the tender from this Technical Specification

The Purchaser may require additional information to be provided for tender analysis purposes and such information is to be provided within seven days of the request.

17.2. Drawings & Information to be Supplied by the Successful Tenderer

All information to be supplied under this contract shall be in the English language and all drawings shall be dimensioned in metric units in accordance with AS ISO 1000. Where a drawing is dimensioned in imperial units, the equivalent metric unit shall be shown in brackets adjacent to it.

When requested by the Purchaser, the Supplier shall:

- Provide within two weeks of the date of the formal execution of the Standing Order, a comprehensively detailed program of works indicating timing for all activities required to achieve contract performance.
- Within six weeks from the date of the formal execution of the Standing Order, the Supplier will provide three copies of drawings and information necessary to enable the Purchaser to examine the general design and arrangement.

The Purchaser will comment on drawings supplied under this contract in relation to how the equipment interfaces with the Purchaser's design, construction, operation, maintenance and other requirements.

Comments about drawings by the Purchaser will not in any way absolve the Supplier of responsibility for the safety and reliability aspects of the plant or equipment supplied. The Supplier will amend the drawings as directed and resubmit them to the Purchaser within one week.

In the event of the Supplier proceeding with work before such comment has been given in writing, any necessary alterations and modifications will be carried out at the Tenderer's own expense.

Drawings will include a fully dimensioned general arrangement drawing.

If the drawings submitted for approval require modification by either the Supplier or the Purchaser, the Supplier shall carry out the modifications and submit a further three copies of the modified drawings for comment. This procedure shall continue until the Purchaser notifies the Supplier that the drawings are acceptable.

When requested by the Purchaser, the Supplier shall supply not later than four weeks prior to the date of dispatch of the equipment from the manufacturer's works the following:

- Final copies of all drawings listed in this section of the specification.
- Final Inspection and Test Plan covering at minimum the manufacturing and packaging procedures.
- Three certified copies of routine test reports called for in this specification verifying compliance with this specification.
- Final Inspection and Test Plan covering the dispatch and all transport handling activities from manufacturer's works to site.

When requested by the Purchaser, the Supplier shall provide one month prior to the arrival of the equipment on site, three (3) copies of instruction manuals containing the following information and drawings:

- Prints of all drawings listed under this section of the specification.
- Detailed instructions for erection and dismantling.
- Recommended parts list.
- Detailed instructions for operation and maintenance of the equipment.
- Any other drawings which might be required for erection, maintenance and repair.
- Final Inspection and Test Plan covering the receipt of the equipment at site and erection procedures.

17.3. Risk Assessment

The Tenderer shall complete a risk assessment and respond to the referenced items in Attachment 3 of this specification.

17.4. Management Systems

The Tenderer shall complete Attachment "4" including details of Quality, Environmental, & Workplace Health & Safety Management Systems.

17.5. Traceable Item Reliability Performance Guarantee

The Tenderer shall complete Attachment "5" including details of performance reliability of traceable items per Section 13.

17.6. Technical Documentation

Attachment "6" details a checklist of supporting technical documentation which is required to be submitted with the tender.

18. QUALITY OF DRAWINGS PROVIDED

18.1. Drawing Title Block

The drawing title shall be a concise description of the contents of the drawing; it shall contain a sufficient number of distinct lines each describing an aspect of the drawing so that all lines together represent an accurate and complete description.

The title shall be designed so that it reads from the general to the particular, top to bottom, as indicated in the following example:

CONTRACT NUMBER
MANUFACTURE TYPE (Pole, Outreach or Bracket Type)
DRAWING FUNCTION (Manufacturing / Installation)

18.2. Drawing Revisions

A revision space shall be provided on each drawing sheet. The original issue of the drawing is usually indicated as an 'A'; the first revision is therefore 'B'.

Revision descriptions should be as brief and concise as possible and, where appropriate, should indicate the previously existing situation, e.g. "Section 'B' dimension 1028 mm was 1044 mm".

Where there are numerous revisions on the same drawing it shall be necessary to highlight the revision note with a 'cloud effect' or similar highlighting, and similarly each correspondingly revised area of the drawing.

The revision block for each revision shall contain:

- The revision letter in prominent display.
- A brief description of the revision.
- The draftsman's initials.
- An approval signature and date.

18.3. Drawings in Electronic Format

Tenderers shall provide final copies of drawings in electronic format to AS 1102 and AS 4383. The Purchaser has a preference for MICROSTATION J format however the Purchaser will accept AUTOCAD 2000 format.

Initial copies of drawings submitted for approval purposes may be submitted in a version of Adobe Acrobat V 6.0 format (PDF).

Technical Specification Poles, Outreach Arms, & Brackets



ATTACHMENT 1

Technical Details – Poles (Part A)

This Attachment must be completed by the Tenderer for each item offered including alternatives.

PARTICULARS	Item No. _____	Item No. _____	Item No. _____
Pole / Bracket Construction Material			
Steel Components: Section 5.1.1			
Grade of Steel			
Australian Standard:			
Minimum steel thickness	(mm)		
Welding: Section 5.1.4			
Compliance with AS 1554.1:	(YES/NO)		
At time of manufacture, can a Welders Certificate be provided?	(YES/NO)		
Protective Coatings: Section 5.1.7			
Galvanised to AS 4680:	(YES/NO)		
Compliance with Drawing No. 05-02-19:	YES/NO)		
Compliance with Drawing No. 05-02-12	(YES/NO)		
7 Year Paint Warranty	(YES/NO)		
Deflection:			
Compliance with AS 1170 Section 5.3.5	(YES/NO)		
Maximum Tip loading Section 5.3.6	(kN)		
Overturning Moment Section 5.3.6	(kN/m)		
Proof loading Section 5.3.7	(kN/m)		
Frangible Poles:			
<u>(Impact Absorbent Poles)</u>			
Compliance with Section 5.4	(YES/NO)		
Crash tests carried out:	(YES/NO)		
Results of tests supplied	(YES/NO)		
<u>(Slip Base Poles)</u>			
Compliance with Section 5.4	(YES/NO)		

NAME OF TENDERER: _____

Technical Specification Poles, Outreach Arms, & Brackets



Technical Details – Poles (Part B)

This Attachment must be completed by the Tenderer for each item offered including alternatives.

PARTICULARS		Item No. _____	Item No. _____	Item No. _____
Structural Design: Section 17.1 Certificate by RPEQ:	(YES/NO)			
Engineer's Name:				
Engineer's Certificate Number:				
Technical Details: Section 17.1 Full calculations supplied:	(YES/NO)			
Fabrication drawings supplied:	(YES/NO)			
Quality Assurance: Tenderer & Designer rated to AS/NZS ISO 9001:	(YES/NO)			
Packaging: Section 10 Details of packaging provided: Pack quantity Pack mass Special lifting or handling requirements?	(YES/NO)			
Service History: Section 11 Service history information provided:	(YES/NO)			
Reliability: Section 12 Reliability evidence provided:	(YES/NO)			
Training: Section 14 Training material available:	(YES/NO)			
Diameter at top of pole (mm)				
Diameter at bottom of pole (mm)				

NAME OF TENDERER: _____

Technical Specification Poles, Outreach Arms, & Brackets



ATTACHMENT 2

Technical Details – Outreach Arms, Extensions, & Luminaire Headframes

PARTICULARS		Item No.	Item No.	Item No.
		_____	_____	_____
Structural Design Section 17.1				
Certificate by RPEQ:	(YES/NO)			
Engineer's Name:				
Engineer's Certification Number:				
Steel Components Section 5.1.1				
Grade of Steel				
Australian Standard:				
Welding Section 5.1.4				
Compliance with AS 1554.1:	(YES/NO)			
At time of manufacture, can a Welders Certificate be provided?	(YES/NO)			
Protective Coatings Section 5.1.7				
Galvanised to AS 4680:	(YES/NO)			
Minimum 7 Year paint warranty provided	(YES/NO)			
Is galvanising of stays to brackets Type MA3 & MA4 coating class HDG300 in accordance with AS/NZS 4792?	(YES/NO)			
Deflection:				
Compliance with AS 1170 & Section 5.5.4	(YES/NO)			
Technical Details Section 17.1				
Full calculations supplied:	(YES/NO)			
Fabrication drawings supplied:	(YES/NO)			
Quality Assurance Section 8	(YES/NO)			
Tenderer & Designer rated to AS/NZS ISO 9001:				
Packaging: Section 10				
Details of packaging provided:	(YES/NO)			
Pack quantity				
Pack mass				
Special lifting or handling requirements?				
Service History Section 11				
Service history information provided:	(YES/NO)			
Reliability Section 12				
Reliability evidence provided:	(YES/NO)			
Traceability: Section 13				
Traceable materials listed:	(YES/NO)			
Training Section 14				
Training material available:	YES/NO)			
Outreach or extension arm mass (kg)				

NAME OF TENDERER: _____

Technical Specification Poles, Outreach Arms, & Brackets



Technical Details – Post Top Adaptor & Slip Base Mounts

PARTICULARS		Item No.	Item No.	Item No.
		_____	_____	_____
Structural Design	Section 17.1			
Certificate by RPEQ:	(YES/NO)			
Engineer's Name:				
Engineer's Certification Number:				
Steel Components:	Section 5.1.1			
Grade of Steel				
Australian Standard:				
Welding:	Section 5.1.4			
Compliance with AS 1554.1:	(YES/NO)			
At time of manufacture, can a Welders Certificate be provided?	(YES/NO)			
Protective Coatings	Section 5.1.7			
Galvanised to AS 4680:	(YES/NO)			
Technical Details:	Section 17.1			
Full calculations supplied:	YES/NO)			
Fabrication drawings supplied:	(YES/NO)			
Quality Assurance:	Section 8			
Tenderer & Designer rated to AS/NZS ISO 9001:	(YES/NO)			
Packaging:	Section 10			
Details of packaging provided:	(YES/NO)			
Pack quantity				
Pack mass				
Special lifting or handling requirements?				
Service History:	Section 11			
Service history information provided:	(YES/NO)			
Reliability:	Section 12			
Reliability evidence provided:	YES/NO)			
Traceability:	Section 13			
Traceable materials listed:	(YES/NO)			
Training:	Section 14			
Training material available:	(YES/NO)			
Outreach, extension arm, post top adaptor or slip base mount mass	kg			

NAME OF TENDERER: _____

Technical Specification Poles, Outreach Arms, & Brackets



ATTACHMENT 3

Risk Assessment

Ref.	Particulars	Response
1.	<p>Does the Equipment offered comply with the Queensland Workplace Health and Safety Plant Code of Practice 2005? If so, have the following obligations been fulfilled for Manufacturers and/or Tenderers of Plant to ensure (according to the definitions under the Workplace Health and Safety Act 1995 s. 32B): that the Equipment offered has been examined and tested to ensure it is safe and without risk to health when used properly? the Equipment offered is accompanied by information about the way the equipment must be used to ensure health and safety?</p> <p>In particular, information relating to the following points? <u>If so, please provide provision of appropriate information?</u></p> <p>_____</p>	
2.	Does the Equipment offered comply with the Queensland Electrical Safety Act 2002?	
3.	<p>Has a Risk Assessment been performed on the Equipment offered, which meets the requirements of the Workplace Health and Safety Act Risk Management Advisory Standard 2000?</p> <p>If so, please include a copy of the risk assessment with the tender.</p>	
4.	<p>Do any of the items offered involve assembly of components from a variety of sources? If so, are the components compatible to ensure the item is safe and without risk to health and safety when used properly?</p>	
5.	<p>Has the Equipment been examined and tested to ensure it is safe when used properly? In particular, have all Test Certificates specified in this Technical Specification been supplied? Is information available for safe operation and maintenance of the Equipment?</p>	

Name & Signature of Tenderer /

Date: _____

Address: _____

Name & Signature of Witness / Date: _____

ATTACHMENT 4

Management Systems Information Schedule

1. Tenderer Details

Tenderer:-	Representative's Name:-
Address:-	Telephone:- Facsimile:- Mobile / Other:-
Product / Service:-	ABN:-

2. Quality Assurance

Do you have a fully implemented Quality Management System in place which has been certified by an external certification body? (3 rd Party Industry Specific Certification)	YES / NO
If YES, advise name of certification body and Certificate number. Attach copy of the certificate and Standard number	Certified by: Certificate Number:
Copy of Certificate and Schedule(s) attached	YES / NO
Do you hold a current Ergon Energy or other Electricity Authority and/or the Queensland Government Contractor Rating? (2 nd Party)	YES / NO
If YES, advise Electricity Authority, Certificate Number and rating	Elec. Authority: Number: Rating:

If you answered “**YES**” to having 3rd Party Industry Specific Quality Certification and

- this is **not** “by association” with another entity please complete **Sections 5 and 6**.
- this **is** “by association” with another entity please complete **Section 3**.

If you answered “**NO**” to having 3rd Party Industry Specific Quality Accreditation, please complete **Section 4**.

Technical Specification Poles, Outreach Arms, & Brackets



3. Quality Assurance Certification by Association

If you have answered “**YES**” to having Quality Assurance Certification, and have used another entity in providing this answer please provide details of this entity below.

Registered Company Name:	
Address:	
ABN:	

Please complete **Sections 5 and 6**.

4. Internal Quality System Questions

Have you developed and implemented your own internal non-certified Quality Management System?	YES/NO
---	--------

If you answered “**NO**” to the above question please complete **Section 5**.

If you answered “**YES**” to the above question please complete the remaining questions in **Section 4**.

Do you have a Quality Manual?	YES/NO
Do you have procedures in place to ensure Quality of product and / or service?	YES/NO
Do you have a sample Quality Inspection and Test Plan or similar that you could provide on request?	YES/NO
Do you have an Internal Audit System?	YES/NO
Do you produce Internal Audit Reports that have suitable corrective action mechanisms?	YES/NO
Do you require your Tenderers / contractors to have a documented Quality Management System in place?	YES/NO
How do you evaluate your Tenderer’s / contractors quality performance?	Audit Yes/No Inspections Yes/No Performance History Yes/No
If requested, would your company be able to provide a copy of its Internal Quality Management System to Ergon Energy?	YES/NO

Technical Specification Poles, Outreach Arms, & Brackets



5. Environmental

Do you have a fully implemented Environmental Management System in place which has been certified by an external certification body? If YES attach a copy of the certificate.	YES/NO
--	--------

If YES go to **Section 6**.

Do you have an Environmental Management Policy that is available to the Purchaser within 7 days of request?	YES/NO
Do you have a formal Environmental Management Plan that is available to the Purchaser within 7 days of request that outlines how you will address environmental risks relevant to your activities and conditions?	YES/NO
Are the requirements of your Environmental Management Plan incorporated into your Work Procedures?	YES/NO
Do you have a fully implemented Environmental Management System in place in accordance with ISO14001 which has been certified by an external certification body?	YES / NO
If YES, advise name of certification body and Certificate number. Attach copy of the certificate and Standard number	Certified by: Certificate Number:
Copy of Certificate and Schedule(s) attached	YES / NO

6. Workplace Health and Safety

Do you have a formal Workplace Health and Safety Management Plan that is available to the Purchaser within 7 days of request that outlines how you will address safety risks relevant to your activities and conditions?	YES/NO
Are the requirements of your Workplace Health and Safety Management Plan incorporated into your Work Procedures?	YES/NO
Do you have a Workplace Health and Safety Policy that is available to the Purchaser within 7 days of request?	YES/NO

NAME OF TENDERER	
SIGNATURE (FOR AND ON BEHALF OF TENDERER)	
DATE	

Technical Specification Poles, Outreach Arms, & Brackets



ATTACHMENT 5

Traceable Items Reliability Performance Guarantee

The following information shall be supplied by the Tenderer whose attention is drawn to the relevant Clauses of the Specification.

Traceability			
1.	Sub-components incorporating traceability – for all Tendered main, optional and alternative items - please list:		

NAME OF TENDERER _____

ATTACHMENT 6

Technical Documentation Checklist

The following information shall be supplied by the Tenderer whose attention is drawn to the relevant Clauses of the Specification.

Tenderer to answer each question “Yes” or “No”

Clause Ref.	Particulars	Response
	Have full and comprehensive details been submitted WITH the tender documents associated with each of the following.	
5.1.2	Alternative Materials.	Yes/No
5.1.7	Protective Coatings and Warranties.	Yes/No
5.3.6	Tip Loading	Yes/No
5.3.7	Proof Loading	Yes/No
6	Performance and Testing.	Yes/No
7	Risk Assessment	Yes/No
8	Quality Assurance.	Yes/No
9	Samples	Yes/No
10	Packaging	Yes/No
11	Service History	Yes/No
12	Reliability	Yes/No
13	Traceability	Yes/No
14	Training	Yes/No
15	Environmental Considerations	Yes/No
16	Special Tools, Gauges & Accessories	Yes/No
17	Information to be provided	Yes/No
18	Quality of Drawings Provided	Yes/No
	Completed Technical Details Attachment 1.	Yes/No
	Completed Technical Details Attachment 2	Yes/No
	Completed Risk Assessment Attachment 3	Yes/No
	Completed Management Information Attachment 4	Yes/No

NAME OF TENDERER: _____