



WESTERN AUSTRALIA SPECIFICATION

303

SERVICE CONDUITS

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 |
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SPECIFICATION 303 - SERVICE CONDUITS

GENERAL

303.01 SCOPE

1. The work to be executed under this Specification includes the supply of materials and the installation of electrical and telephone conduits, pits and footings for streetlighting columns in accordance with the Specification and Drawings.
2. The Specification excludes the installation of wiring, equipment and streetlighting columns
3. Electrical conduits and pits shall be installed in accordance with AS 3000 (SAA Wiring Rules) and the Service and Installation Rules of the local electricity supply Authority. **Electricity**
4. Telephone conduits and pits shall be installed in accordance with the AUSTEL Customer Premises Cabling Manual. **Telephone**
5. The Contractor shall complete all necessary notices, pay all fees and charges and arrange for all inspections and tests required by the relevant Authority.

303.02 REFERENCE DOCUMENTS

1. Documents referenced in this Specification are listed in full below whilst being cited in the text in the abbreviated form or code indicated. **Documents
Standards
Test Methods**

(a) Council Specifications

271 - Minor Concrete Works

(b) Australian Standards

AS 1289.5.4.1 - Compaction control test - Dry density ratio, moisture variation and moisture ratio.
 AS 1477 - Unplasticised PVC (UPVC) pipes and fittings for pressure applications.
 AS/NZS 2053 - Conduits and fittings for electrical installations.
 AS 3000 - Electrical Installation - Buildings, Structures and Premises (known as the SAA Wiring Rules)

(c) Australian Telecommunications Authority (AUSTEL) Standards

Customer Premises Cabling Manual

MATERIALS

303.03 GENERAL

1. All pipes, fittings and pits shall not be placed in position until the Contractor has produced documentary evidence to the Superintendent that the components conform to the requirements of this Specification. This action constitutes a **HOLD POINT**. The Superintendent's approval of the documentary evidence is required prior to the release of the hold point.

HP

303.04 CONDUITS

1. Conduits and conduit fittings for all electrical cabling shall be category 'A' orange coloured heavy duty rigid UPVC manufactured in accordance with AS/NZS 2053 and with solvent welded joints. All conduits shall be of the sizes shown on the Drawings.

Electrical

2. Conduits and conduit fittings for all telephone cabling shall be Class 12 white coloured UPVC manufactured in accordance with AS 1477 and with solvent welded joints. All conduits shall be of the sizes shown on the Drawings.

Telephone

303.05 JUNCTION PITS

1. Electrical junction pits shall be precast in polymer concrete with 'Electricity' impressed in the lid, or equivalent approved by the Superintendent, to the requirements of the local Electricity Authority.

Electrical

2. Telephone pits shall be precast in glass reinforced concrete with the relevant telephone Company's symbol impressed in the lid, or equivalent approved by the Superintendent, to the requirements of the relevant telephone Company.

Telephone

303.06 CONCRETE FOOTINGS

1. Concrete footings for streetlighting columns shall be 20MPa compressive strength in accordance with the requirements of the Specification for MINOR CONCRETE WORKS.

Quality

303.07 ANCHOR BOLTS

1. Anchor bolt assemblies to be cast into streetlighting column footings shall be supplied as a Principal supplied (TBS) item.

Supply

CONSTRUCTION

303.08 LAYOUT OF CONDUIT

(a) Roadway Crossings

1. The conduits shall be installed where shown on the Drawings or as directed by the Superintendent after construction of earthworks to subgrade level. The grade of the conduit shall be such as to provide a minimum cover over the conduit of 400mm to the top of select subgrade level under pavement and shoulders.

Minimum Cover

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| <p>2. The conduit shall be laid on a straight grade and line, in a trench not more than 300mm wide and on a bed of compacted sand of 50mm minimum thickness. Backfill over the conduit shall be compacted so that the relative compaction as determined by AS 1289.5.4.1 is not less than 100 per cent.</p> | <p>Laying Conditions</p> |
| <p>3. Draw wire shall be provided in all conduits.</p> | <p>Draw Wire</p> |
| <p>4. A mark shall be made in the face of kerb on both sides of the road indicating the location of the conduit crossing. The mark shall consist of the letter E for electrical or T for telephone, as appropriate, routed into the concrete and at minimum 75mm high.</p> | <p>Marks in Kerb</p> |
| <p>5. Where kerb construction has not yet commenced, temporary timber post markers shall be installed at the conduit crossings so that markings in the face of kerb can be made at the correct locations at the time of kerb construction.</p> | <p>Temporary Markers</p> |

(b) Other Locations

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| <p>1. The conduit shall be laid on a straight grade and line and in normal trench conditions on a bed of compacted sand 50mm minimum thickness. The width of trench shall not exceed 300mm and the minimum cover over the conduit to finished surface level shall be 300mm. Backfill over the conduit shall be compacted so that the relative compaction as determined by AS 1289.5.4.1 is not less than 95 per cent.</p> | <p>Laying Conditions</p> |
| <p>2. Draw wire shall be provided in all conduits.</p> | <p>Draw Wire</p> |

303.09 JUNCTION PITS

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| <p>1. Junction pits shall be installed at locations shown on the Drawings or as directed by the Superintendent.</p> | <p>Location</p> |
| <p>2. All junction pits shall be installed firmly in the ground on a drainage bed of 5mm nominal size screened aggregate of minimum thickness 150mm. All conduit connections to junction pits shall be made waterproof by bitumastic sealant or other method approved by the Superintendent.</p> | <p>Installation Method</p> |
| <p>3. A 50mm diameter UPVC drain shall be provided in each junction pit. The drain shall be graded to a stormwater drainage pit or discharge through an embankment batter.</p> | <p>Drain</p> |

303.10 FOOTINGS FOR STREETLIGHTING COLUMNS

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| <p>1. The Contractor shall construct concrete footings at the locations for streetlighting columns shown on the Drawings or as directed by the Superintendent.</p> | <p>Location</p> |
| <p>2. Excavation for footings shall be neatly cut from solid material. Excavated material shall be disposed of at locations approved by the Superintendent.</p> | <p>Excavation</p> |
| <p>3. Footings shall be constructed to the dimensions and details as shown on the Drawings.</p> | <p>Dimensions</p> |
| <p>4. The anchor bolt assembly shall be accurately located and firmly supported.</p> | <p>Anchor Bolt Assembly</p> |
| <p>5. Concrete and reinforcement shall be supplied and placed in accordance with the requirements of the Specification for MINOR CONCRETE WORKS.</p> | <p>Concrete Specification</p> |

6. Concrete shall not be placed until the formwork and anchor bolt assembly location have been approved by the Superintendent. This action constitutes a **HOLD POINT**. The Superintendent's approval of the formwork and anchor bolt assembly is required prior to the release of the hold point.

HP

SPECIAL REQUIREMENTS

303.11 RESERVED

303.12 RESERVED

303.13 RESERVED

MEASUREMENT AND PAYMENT

303.14 PAY ITEMS

1. Payment shall be made for all activities associated with completing the work scheduled in this Specification on a schedule of rates basis in accordance with Pay Items 303(a) to 303(c) inclusive.
2. A lump sum price for any of these items shall not be accepted.
3. If any item, for which a quantity of work is listed in the Schedule of Rates, has not been priced by the Contractor, it shall be understood that due allowance has been made in the prices of other items for the cost of the activity which has not been priced.
4. Concrete and reinforcement for footings is measured and paid in accordance with this Specification and not in the Specification for MINOR CONCRETE WORKS.

Pay Item 303(a) Supply and Lay UPVC Conduit

1. The unit of measurement shall be the linear metre of conduit installed.
2. A separate unit rate shall be included in the Schedule of Rates for each size and type of conduit.
3. The schedule rate shall be inclusive of the supply of conduit and bends, excavation, laying of conduit in trench or structure, backfilling, the provision of draw wire and connection to junction pits.

Pay Item 303(b) Junction Pits

1. The unit of measurement shall be per "each" pit installed.
2. A separate unit rate shall be included in the Schedule of Rates for each type of junction pit.
3. The schedule rate shall be inclusive of the supply of the junction pits, excavation, installation, backfilling and drain from pit.

Pay Item 303(c) Concrete Footing for Streetlighting Columns

1. The unit of measurement shall be per "each" footing installed.
2. A separate unit rate shall be included in the Schedule of Rates for each type of footing.
3. The schedule rate shall be inclusive of all work and materials required for the construction of the footing including excavation, formwork, concrete reinforcement and installation of the supplied anchor bolt assembly.