

QPRC



**QUEANBEYAN PALERANG
REGIONAL COUNCIL**

**DEVELOPMENT DESIGN
SPECIFICATION**

C306

**ROAD OPENINGS AND
RESTORATIONS**

VERSION 2– APRIL 2018

**TRIM REF: SF140543
C1850686**

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
VERSION 1	Specification Version 1 reference, inspection requirements added	C306.01	A	KD	9/04/10
	Specification Version 1 reference, standards updated	C306.03.1	A		
	Specification Version 1 reference, Hold Point added	C306.04.2	A		
	Specification Version 1 reference, code reference updated, Hold Point added	C306.05(a)	A, M		
	Hold Point & Witness Point added	C306.08	A		
	Hold Points added	C306.09	A		
	Hold Point added	C306.09.5	A		
	Hold Point and Witness Point added	C306.11	A		
	Witness Point and Hold Point added	C306.12	A		
	Hold Point added	C306.13.3	A		
	Specification Version 1 reference, Witness Point added	C306.15	A		
	Specification Version 1 reference	C306.16	A		
	Specification Version 1 reference, Witness Point added	C306.17	A		
	Hold Point added	C306.20.3	A		
	Hold Point added	C306.21.1	A		
	Specification Version 1 reference	C306.24	A		
	Annexure added	C306-B	A		

ROAD OPENINGS AND RESTORATIONS

VERSION 2	Reference to QPRC amended		M	CS	29/09/2017
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SPECIFICATION C306 : ROAD OPENINGS AND RESTORATIONS – VERSION 2

GENERAL

306.01 SCOPE

1. The work to be executed under this Specification consists of the clearing, excavation, backfilling and restoration activities associated with the installation of Council and/or public utility services within public road reserves or other reserves under the control of the Council. This Specification shall be read in conjunction with Council's Utility Services Code Of Engineering Practice.

*Code of
Engineering
Practice*

2. The Specification shall apply to Works under Contract where the Principal to the Contract is either:

- a) The Council
- b) The relevant Public Utility Authority for the works under execution.

3. This Specification excludes the installation activities of the relevant public utility service.

4. Installation of utility services by open trenching methods in carriageway concrete pavements shall not be permitted without the prior approval of the Superintendent, or Council in the case where the Utility Authority is the Principal in the Contract. Utility services under carriageway concrete pavements shall be installed in accordance with the Specification for TRENCHLESS CONDUIT INSTALLATION - VERSION 2.

*Utility Services
Under
Concrete
Pavements*

5. The Council may require removal and restoration to footpaths and/or carriageway pavements, adjacent to the Works, in addition to the removal and restoration requirements of the scope of this specification. Such additional work shall be identified and defined by Council's Restoration Officer at the Set Out Inspection and Approval hold point of the Contract. In this case, payment for the additional removal and restoration activities shall be made as a Variation to the Contract at the schedule rates for the particular activities.

*Additional
Work*

6. The Contractor shall give notice so that inspection may be made of all **HOLD POINTS** and **WITNESS POINTS** documented in this specification and tabulated in Annexure C306-B. Release of **HOLD POINTS** and **WITNESS POINTS** shall be made by the Superintendent, with the concurrence of the Principal Certifying Authority to be obtained where stipulated in Annexure C306-B.

Inspections

306.02 DEFINITIONS

For the purposes of this Specification the definition of terms used to define the components of the road reserve shall be in accordance with AS 1348.1. The terms are:

Standard

- Carriageway - That portion of a road or bridge devoted particularly to the use of vehicles, inclusive of shoulders and auxiliary lanes.
- Clearing - The removal of vegetation or other obstacles at or above ground.
- Footpath - The paved section of a pathway.
- Pathway - A public way reserved for the movement of pedestrians and of manually propelled vehicles.
- Pavement - That portion of a carriageway placed above the subgrade for the support of, and to form a running surface for, vehicular traffic.

- Shoulder - The portion of the carriageway beyond the traffic lanes and contiguous and flush with the surface of the pavement.
- Verge - That portion of the formation not covered by the carriageway or footpath.

306.03 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

- 201 - Control of Traffic - Version 2
242 - Flexible Pavements - Version 2
243 - Bituminous Cold Mix - Version 2
244 - Sprayed Bituminous Surfacing - Version 2
245 - Asphaltic Concrete - Version 2
254 - Segmental Paving - Version 2
305 - Trenchless Conduit Installation - Version 2
Utility Services Code of Engineering Practice – Revision D

(b) Australian Standards

- AS 1289 Methods for testing soils for engineering purposes
- AS 1289.5.4.1:2007 Soil compaction and density tests - Compaction control test - Dry density ratio, moisture variation and moisture ratio.
- AS 1289.5.7.1:2006 Soil compaction and density tests - Compaction control test – Hilf density ratio and Hilf moisture variation (Rapid method)
- AS 1289.6.1.2:1998 Soil strength and consolidation tests - Determination of the California bearing ratio of a soil - Standard laboratory method for an undisturbed specimen.
- AS 1348.1:2002 Road and traffic engineering - Glossary of terms
- AS 1742 Manual of uniform traffic control devices
- AS 1742.3-2009 Traffic control devices for works on roads

(c) Other

- Street Openings Conference -Guide to Codes and Practices for Street Openings, 2009

306.04 PROVISION FOR TRAFFIC

1. The Contractor shall construct the Works in a safe manner with the least possible obstruction to traffic, both vehicular and pedestrian.

2. The Contractor shall submit a Traffic Guidance Scheme and carry out all activities for controlling traffic, both vehicular and pedestrian, in accordance with the Specification for CONTROL OF TRAFFIC - VERSION 2. This is a **HOLD POINT**.

**Traffic
Guidance
Scheme (HP)**

3. Safe, all weather vehicular and pedestrian access to properties shall be maintained wherever possible. Notice of 48 hours shall be provided to property owners whose access will be restricted.

Access

CLEARING

306.05 SET OUT

1. The Contractor shall set out the limits of the proposed excavation for trenches, pits and chambers required for the utility service installation. The set out shall be in chalk or crayon so as to be readily understandable by Council's inspecting officer and will not permanently deface any surface.

Initial Limits

2. In order to minimise or eliminate residue small portions of paving slabs the set out shall be adjusted as necessary. Any adjustments will be with respect to the existing paved surfaces and joint patterns. Adjustments shall be in accordance with the following guidelines:

*Adjusted Limits***(a) Pathways**

1. The set out line shall be varied in accordance with the reinstatement requirements of the Street Opening Conference's publication, *Guide to Codes and Practices for Street Openings*, 2009

- (i) Bitumen and Concrete Paving - In accordance with the reinstatement provisions and sketches of the above guide.
- (ii) Segmental Paving Units - The set out line shall be at least one whole unit clear of both sides of the minimal alignment of the trench.
- (iii) Textured or Patterned Concrete - The set out line shall be as determined by Council's Restoration Officer in conjunction with the Contractor's surveyor.

2. Where the Superintendent directs that driveways are not to be disturbed, the utility services under driveways shall be installed in accordance with the Specification for TRENCHLESS CONDUIT INSTALLATION - VERSION 2.

(b) Carriageways

1. In asphalt pavements, the proposed trench set out shall be at the minimum width for the depth of service and, wherever possible, shall be at right angles to the road reserve boundary.

Minimum Width

2. Any trench or surface work proposed in the vicinity of Permanent or State Survey Marks shall be referred to the Land Information Centre, prior to commencement of Work, to obtain protection or relocation requirements.

Survey Marks

3. The set out line shall be presented to the Superintendent for approval prior to the commencement of any surface clearing work. This action constitutes a **HOLD POINT**. The Superintendent and Council's Restoration Officer shall inspect and approve the set out, and define any additional removal and restoration work required by Council, prior to the release of the hold point.

*Set Out (HP)***306.06 SURFACE TREATMENT REMOVAL**

1. Trench set out lines located on concrete or asphalt footpaths, and asphalt carriageway pavements, shall be sawcut for the full depths of the bound pavement layers except where the set out line is located along expansion joints. Where a concrete subbase is found, upon removal of segmental pavers, it shall also be sawcut along the trench set out lines.

Sawcut

ROAD OPENINGS AND RESTORATIONS

2. Concrete or asphalt footpath and carriageway pavement material shall be broken out, between the trench set out lines, removed and legally disposed of off-site by the Contractor or stockpiled at a site nominated by the Superintendent. **Concrete and Asphalt**
3. Segmental paving units both full and cut, between the trench set out lines, shall be taken up by hand and neatly stacked on wooden pallets at locations as directed by the Superintendent. Any dimension stone kerb and gutter units within the set out lines shall also be taken up and stacked in a similar manner. **Pavers**
4. Concrete edging, associated with the lifted segmental pavers, shall be broken out, removed and legally disposed of off-site by the Contractor or stockpiled at a site nominated by the Superintendent. **Paver Edging**
5. Grass turf, between trench set out lines, shall be neatly cut into squares of approximately 300mm square, taken up and stored at locations as directed by the Superintendent and shall be watered as directed during the storage period. If the grass is considered by the Superintendent to be unsuitable for reuse, it shall be removed and legally disposed of off-site by the Contractor. **Grass**
6. Small plants, shrubs and trees, between the set out lines, identified as being suitable for replanting shall be taken up and stored at locations nominated by the Superintendent. The root ball of such plants, shrubs and trees shall be wrapped in a hessian or plastic bag with drain holes and shall be watered as directed during the storage period. **Plants, Shrubs, Trees**
7. Other plants, shrubs and trees deemed unsuitable for replanting shall be removed and legally disposed of off-site by the Contractor. **Unsuitable Vegetation**
8. House stormwater pipes discharging into carriageway gutters shall be maintained at all times. Any damage to these pipes caused by the Contractor's activities shall be repaired or replaced to the satisfaction of the Superintendent. The costs of such rectification works shall be borne by the Contractor. **House SW Pipes Contractor's Cost**

EXCAVATION

306.07 TOPSOIL

1. Before undertaking trench excavation, topsoil which is considered by the Superintendent to be suitable for reuse in the restoration work, shall be removed and stockpiled at a site nominated by the Superintendent. **Suitable for Reuse**

306.08 TRENCH EXCAVATION

1. Trenches shall be excavated to the standard widths and depths for the particular utility service installation or to dimensions as shown on the Drawings.
2. In undertaking trench excavation, the Contractor shall provide any shoring, sheet piling or other stabilisation of the sides necessary to comply with statutory requirements. **Safety**
3. Where other public utilities exist in the vicinity of the Works, the Contractor shall obtain the approval of the relevant authority to the method of excavation before commencing excavation. The locations of existing underground services shall be established by exploratory excavation prior to the principal trench excavation. Proof of approval of the relevant authority shall be provided to the Superintendent, if requested. **Approval by Other Public Utility authorities**
4. The "Dial Before You Dig" Service, telephone 1100, shall be contacted to obtain locations of water, sewer, stormwater, gas, electricity and telephone services. **Location of Services**

5. The relevant Utility Authorities shall also be contacted to verify the location of services.

**Services
Verification**

6. Existing retired services shall be excavated and removed off-site and legally disposed of by the Contractor. The resulting excavation shall be backfilled in accordance with Clause 306.11.

**Retired
Services**

7. Trench or foundation excavation shall be undertaken to the planned level for the bottom of the specified bedding or foundation level or such other depth as directed by the Superintendent. This action constitutes a **HOLD POINT**. The Superintendent's approval of the trench or foundation level is required prior to the release of the hold point.

**Excavation
Level
(HP)**

8. The excavated earth and rock material shall be segregated and stockpiled, at sites nominated by the Superintendent, for reuse in backfilling operations. Excavated material shall not, at any time, be stockpiled against tree trunks, buildings, fences or obstruct the free flow of water along gutters where stockpiling is permitted along the line of the trench excavation. Where stockpiling is not permitted the excavated material shall be legally disposed of off-site.

Stockpiles

9. Any material at the bottom of the trench or at foundation level which the Superintendent deems to be unsuitable shall be removed and legally disposed of off-site by the Contractor and replaced with backfill material in accordance with the requirements of this Specification. The bottom of the excavated trench or foundation, after any unsuitable material has been removed and replaced, shall be aligned at the specified level and slope of the utility service. This is a **WITNESS POINT**.

**Unsuitable
Material
(WP)**

306.09 PROTECTION OF TREES

1. Existing trees shall be protected from all damage during the Works.

2. The Contractor shall not store, stockpile, dump or otherwise place under or near trees bulk materials and harmful materials including oil, waste concrete, clearings, boulders and the like and shall prevent wind blown materials from harming trees and plants.

**Materials Clear
of Trees**

3. The Contractor shall not attach stays, guys and the like to trees and shall prevent damage to tree bark.

**No
Attachments**

4. When working near trees the Contractor shall not remove topsoil from within the drip line of trees unless otherwise specified or directed. Where it is necessary to excavate within the drop line, hand methods or trenchless methods, such that root systems are preserved intact, shall be used. The duration of open excavations under tree canopies shall be determined by the Superintendent at the time of the excavation and shall comply with the requirements of Council. This is a **HOLD POINT**.

**Work Near
Trees
(HP)**

5. The Contractor shall not cut tree roots exceeding 50mm in diameter without the approval of Council. This is a **HOLD POINT**. Where it is necessary to cut tree roots, a saw or similar means shall be used such that the cutting does not unduly disturb or rock the remaining root system. Immediately after cutting, an approved bituminous fungicidal sealant shall be applied to the cut to prevent the incursion of root disease.

**Tree Roots
(HP)**

BACKFILL

306.10 BEDDING ZONES

- 1. Bedding material for the bed, haunch, side and overlay zone shall be to the requirements, and shall be installed in accordance with the Specification for the particular utility service being installed.
- 2. The overlay zone is defined as that part of the trench backfill immediately over the utility service for a maximum of 300mm. With the side zones material, overlay zone material typically comprises selected backfill compacted in accordance with Clause 306.12.

Particular Service Specification
Overlay Zone

306.11 TRENCH BACKFILL

- 1. Between the overlay zone and the top of subgrade, the trench shall be backfilled with 14 to 1 moist sand/cement mix using washed river sand or non-cohesive backfill material approved by the Superintendent in layers as directed. Backfill material shall be nominated for approval of the Superintendent at least 7 days prior to commencement of work. This is a **HOLD POINT**.
- 2. Where the trench excavation material has been disposed of off-site, the trench shall be backfilled with imported backfill material, from a source approved by the Superintendent, free of tree stumps and roots and capable of being compacted in accordance with Clause 306.12.
- 3. Where excavation is through a selected material zone below the subbase layer, the section of trench within the select material zone shall be backfilled with selected material free from stone larger than 100mm maximum dimension and the fraction passing a 19mm AS sieve shall have a 4 day soaked CBR value, in accordance with AS 1289.F1.2, not less than that of the adjacent selected material zone.
- 4. Except in carriageway pavements, backfilling, for a minimum 300mm thickness, around tree roots shall consist of a topsoil mixture approved by the Superintendent, placed and compacted in layers of 150mm minimum depth to a dry density equal to that of the surrounding soil.
- 5. The Contractor shall not place backfill material above the original ground surface around tree trunks or over the root zone unless approved by the Superintendent. This is a **WITNESS POINT**.
- 6. Immediately after backfilling the tree root zone shall be thoroughly watered.

Approved Material
(HP)
Imported Material
Selected Material Zone
Tree Roots
Backfill at Trees (WP)
Watering Root Zone

306.12 COMPACTION

1. Backfilling shall be compacted to the following requirements when tested in accordance with AS 1289.5.4.1 for modified compactive effort.

	Relative Compaction
Foundations or trench base to a depth of 150mm below foundation levels	92%
Material replacing unsuitable material	92%
Bedding material	92%
Selected backfill and ordinary backfill material	
· below 1.5m of finished surface	92%
· within 1.5m of finished surface	97%
Backfill material within the selected material zone	97%

2. All material shall be compacted in layers not exceeding 150mm compacted thickness. Each layer shall be compacted to the relative compaction specified before the next layer is commenced.

Layers

3. At the time of compaction, the moisture content of the material shall be adjusted so as to permit the specified compaction to be attained at a moisture content which, unless otherwise approved by the Superintendent, is neither less than 60 per cent nor more than 95 per cent of the apparent optimum moisture content, as determined by AS 1289.5.7.1 (modified compaction). This is a **WITNESS POINT**.

**Moisture
Content (WP)**

4. The Contractor shall arrange for compaction testing in accordance with AS 1289.5.7.1 on the completed backfill and shall submit the results of such tests to the Superintendent within 2 weeks of the tests being performed. Compaction tests shall be undertaken by the Contractor at a minimum frequency of 1 per every second layer per 50 square metres of backfill surface area. This is a **HOLD POINT**.

Testing (HP)

5. When compacting adjacent to utility services, the Contractor shall adopt compaction methods which will not cause damage or misalignment to any utility service.

Precautions

RESTORATION

306.13 GENERAL

1. Carriageway pavements and pathways shall be restored in a continuous manner to a condition equivalent to that existing at the commencement of the Works as determined by Council's Restoration Officer.

Equivalent Condition

2. Utility service surface pits, access chamber frames and lids, etc, shall be set such that carriageway pavements and footpaths can be restored to original levels. The Contractor shall liaise with other utility authorities should any other utility service surface box be required to be adjusted or replaced prior to restoration.

Surface Pits, etc

3. The Contractor shall form up and prepare the areas for paved restoration and present the prepared areas to the Superintendent for approval prior to the commencement of any paving restoration work. This action constitutes a **HOLD POINT**. The Superintendent and Council's inspecting officer shall inspect and approve the prepared areas, and verify any additional restoration work required by Council, prior to the release of the hold point.

Prepare Areas (HP)

306.14 TEMPORARY PAVEMENT

(a) Carriageways

1. Immediately after backfilling to subgrade level the carriageway pavement shall be temporarily restored and re-opened to traffic, if the planned date for final restoration exceeds 5 days.

Re-open to Traffic

2. Temporary restoration shall consist of either:

- Bituminous cold mix, of a maximum thickness 50mm, on a base of compacted crushed stone, gravel or other material approved by the Superintendent.
- Steel plating, over the trench, of sufficient thickness to support traffic loadings and suitably secured with pins or bituminous cold mix to the satisfaction of the Superintendent.

Flexible Pavement

Steel Plating

3. Where steel plating is used, advance warning signs shall be provided in accordance with AS 1742.3.

(b) Footpaths, including driveways

1. Immediately after backfilling to subgrade level the footpaths, including driveways, shall be temporarily restored and re-opened for pedestrian use, if the planned date for final restoration exceeds 2 days.

Re-open to Traffic

2. Temporary restoration shall consist of:

- Bituminous cold mix, of maximum thickness 50mm, or other material approved by the Superintendent.

306.15 CARRIAGEWAY SUBBASE AND BASE

1. Prior to final carriageway pavement restoration, the temporary pavement material shall be removed and disposed of off-site by the Contractor. If approved by the Superintendent, the temporary base material may remain in place and be incorporated into the final pavement. This is a **WITNESS POINT**. In any case the asphaltic material shall be removed and disposed of off-site by the Contractor.

**Remove
Temporary
Pavement
(WP)**

2. Subbase and base shall consist of crushed rock, DGS20 or DGB20 material, from a source approved by the Superintendent and configured in layers and depths as indicated in Annexure 306-A. Subbase and base layers shall be supplied and installed in accordance with the Specification for FLEXIBLE PAVEMENTS - VERSION 2.

Material

3. Each layer of the subbase and base courses shall be uniformly compacted over the full area and depth within the trench to a relative compaction of 100 per cent when tested in accordance with AS 1289.5.4.1. Compaction tests shall be undertaken by the Contractor at a minimum frequency of 1 per every second layer per 50 square metres of restoration surface area.

**Uniform
Compaction**

306.16 CARRIAGEWAY BITUMINOUS WEARING SURFACE

1. The bituminous wearing surface shall meet the requirements set out in Annexure 306A. Bituminous wearing surface shall also be supplied and laid in accordance with the Specifications for SPRAYED BITUMINOUS SURFACING - VERSION 2 or ASPHALTIC CONCRETE - VERSION 2, as applicable.

2. The evenness of the resulting restored surface shall be such that when tested with a 3m straightedge, seven to ten days after completion, departures from the straightedge are less than $\pm 5\text{mm}$ and the surface is such that an impact is not transmitted to traffic passing over the restoration.

**Surface
Tolerance**

3. The bituminous surfacing tack coat for asphalt or seal coat for sprayed bituminous seals shall present a waterproof surface at application. This bituminous surfacing shall extend a minimum dimension of 100mm beyond the perimeter of any trench excavation.

**Tack Coat
Limits**

4. Asphalt placed as restoration shall similarly extend in plan a minimum dimension of 100mm beyond the perimeter of any trench excavation.

Asphalt Limits

5. The joint between new and existing asphalt shall be vertical and cut by diamond saw or milling machine. The vertical face and subgrade surface of the old asphalt shall be treated by bituminous tack coating.

Joint

6. The thickness of asphalt at any point shall not vary from the specified layer thickness by more than +10mm or less than -0mm.

**Thickness
Tolerance**

306.17 PATHWAYS

1. Pathways, and other public areas, shall be restored with materials consistent with the existing surface before commencement of the Works, or as directed by the Superintendent.

2. Prior to final footpath restoration, the temporary pavement material shall be removed and disposed of off-site by the Contractor. If approved by the Superintendent, the temporary material may remain in place and be incorporated into the final subbase. This is a **WITNESS POINT**.

**Remove
Temporary
Material
(WP)**

3. All paved footpaths, and paved areas, shall be constructed on a subbase of 150mm crushed stone DGB20 compacted to 100 percent relative compaction in accordance with AS 1289.5.4.1

**Subbase
Material**

4. For restoration patches in footpath surfaces, the surface level at any point along the patch's edge shall match the adjoining footpath surface within $\pm 2\text{mm}$.

Patches

(a) Concrete Footpaths, including Textured and Patterned

1. Concrete footpaths shall be constructed in 20 MPa concrete to the same thickness (with a minimum of 100mm), surface finish and pattern as the adjoining footpaths and driveways as appropriate or as directed by the Superintendent.

**Match Existing
Footpaths**

2. In concrete footpaths, expansion joints consisting of a 15mm thick preformed jointing material of bituminous fibreboard or equivalent approved by the Superintendent shall be placed where new concrete abuts existing concrete and in-line with joints in existing concrete.

**Expansion
Joints**

3. Control joints shall be formed strictly in line with the control joints in existing concrete.

Control Joints

4. Around electricity supply poles, the concrete paving shall be terminated 200mm from the pole and the resulting space filled with cold mix asphalt.

Poles

(b) Asphalt Footpaths

1. Asphalt footpaths shall consist of asphalt in accordance with the Specification for ASPHALTIC CONCRETE - VERSION 2, or BITUMINOUS COLD MIX - VERSION 2, where nominated by Council's Restoration Officer, and shall be constructed to the same thickness as the adjoining footpath and compacted to a smooth even surface.

**Match Existing
Footpaths**

(c) Segmental Paving Units

1. All activities associated with the restoration of segmental paving units shall be carried out to the requirements of the Specification for SEGMENTAL PAVING - VERSION 2.

Specification

2. Existing paving units, taken up and stored, shall be relaid to match the pattern and surface levels of the existing paving.

Match Existing

3. Cut or damaged paving units which are unsuitable for relaying, as determined by the Superintendent, shall be replaced with new units. Such new paving units shall be supplied by the Contractor and shall be of the same material, type, size and colour as the existing paving units.

**Damaged
Units
Replaced**

4. The paving pattern at tree surrounds, service boxes, poles, etc, shall match the pattern at similar existing features in the immediate area or be as directed by the Superintendent in consultation with Council's inspecting officer.

**Paving around
Trees, etc.**

306.18 TURFED VERGES

1. A bed of stockpiled topsoil, of minimum thickness 50mm, shall be placed on the subgrade prior to restoration of turfed verges.

Topsoil Bed

2. Existing grass turfs, taken up and stored, shall be relaid to conform with the original grassed surface. Turfs shall be hard butted against each other in rows and the seams topdressed with topsoil. Turf shall be rolled and watered to ensure direct and uniform contact with the topsoil.

Relay Turfs

3. Any additional turf required to fully restore grassed verges shall be supplied by the Contractor and shall be the same type as the existing grass.

***Additional
Turf***

306.19 VERGE PLANTS, SHRUBS AND TREES

1. Stockpiled topsoil shall be placed on the subgrade to the same thickness as the surrounding topsoil, prior to replanting. Planting holes shall be excavated, at locations determined by the Superintendent in consultation with Council's Restoration Officer, and the material spread evenly around each hole.

Topsoil Bed

2. Existing plants, shrubs and trees, taken up and stored which are suitable for replanting as determined by the Superintendent, shall be replanted in the prepared holes.

Replanting

3. The planting hole shall be backfilled with topsoil and compacted by foot up to surface level. The shrubs and trees shall be staked as directed by the Superintendent, watered and maintained for 2 months after the date of formal completion of the restoration works.

***Compacted,
Staked and
Watered***

306.20 CLEANUP

1. Upon completion of all restoration Works, the areas affected by the Works and associated construction activities shall be cleaned up and restored to a condition equivalent to that existing at the commencement of the Works.

2. All formwork, rubbish and residue construction materials, including material left at stockpiles, shall be legally disposed of off-site by the Contractor.

3. The Contractor shall present the cleaned up restoration works to the Superintendent for approval. This action constitutes a **HOLD POINT**. The Superintendent's approval is required prior to the formal completion of the restoration works.

***Inspection
(HP)***

306.21 WORK-AS-EXECUTED DRAWINGS

1. The Contractor shall supply the Superintendent with fully marked-up Work-as-Executed Drawings for the whole of the Contract within 2 weeks of approval of the restoration works by the Superintendent. Prints or reproducibles of the Contract Drawings will be supplied by the Principal free of charge for this purpose. This is a **HOLD POINT**.

***Submission
(HP)***

SPECIAL REQUIREMENTS

306.22 RESERVED

306.23 RESERVED

MEASUREMENT AND PAYMENT

306.24 PAY ITEMS

1. Payment shall be made for all the activities associated with completing the work detailed in this specification on a schedule of rates basis in accordance with Pay Items 306(a) to 306(p) 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. Provision for traffic, both vehicular and pedestrian, shall be deemed to be included in the schedule rates generally in accordance with this Specification and not in the Specification for CONTROL OF TRAFFIC - VERSION 2.
5. Segmental paving works are measured and paid in accordance with this Specification and not in the Specification for SEGMENTAL PAVING - VERSION 2.
6. Trenchless installation of utility services under driveways is measured and paid in accordance with the Specification for TRENCHLESS CONDUIT INSTALLATION - VERSION 2.

Pay Item 306 (a) SAWCUT EXISTING PAVEMENT/FOOTPATH

- (1) Bituminous Carriageway Pavement
- (2) Bituminous Footpath
- (3) Concrete Footpath, including Textured or Patterned Concrete.

1. The unit of measurement shall be the linear metre measured along the actual line of cut. Separate rates shall be given for sawcuts in each type of material.
2. The schedule rate shall include all activities associated with the sawcutting operations including hire of plant and provision of water.

Pay Item 306 (b) REMOVE EXISTING PAVEMENT/FOOTPATH

- (1) To Stockpile
- (2) Disposal off-site

1. The unit of measurement shall be the square metre of pavement removed including both bituminous and concrete material and including concrete subbase from segmental paving where applicable. Separate rates shall be given for removal to stockpile and disposal off-site.
2. The width and length shall be as shown on the Drawings or as directed by the Superintendent.
3. The schedule rate, for, item 306b(1), shall include all activities associated with breaking out, removing, carting and placing into stockpile.
4. The schedule rate, for item 306b(2), shall include all activities associated with breaking out, removing, transporting off-site, disposal and any tipping fees applicable.

Pay Item 306 (c) SEGMENTAL PAVING UNITS

- (1) Take Up and Stack Existing Units - Carriageway
- (2) Take Up and Stack Existing Units - Footpath
- (3) Lay Existing Units - Carriageway
- (4) Lay Existing Units - Footpath
- (5) Supply and Lay New Units - Carriageway
- (6) Supply and Lay New Units - Footpath

1. The unit of measurement shall be the square metre of surface of segmental paving units taken up or laid. Separate rates shall be given for taking up existing, laying existing and supply and lay new paving units for carriageways or footpaths as appropriate.

2. The width and length shall be as shown on the Drawings or as directed by the Superintendent.

3. The schedule rate, for items 306c(1) and 306c(2), shall include all activities associated with taking up and stacking units on pallets at locations as directed. Concrete subbase, where applicable, shall be removed under Pay Item 306(b).

4. The schedule rate, for items 306c(3) and 306c(4), shall include all activities involved in the laying and compaction of subbase, including concrete subbase where applicable, and existing segmental paving units, bedding sand and joint filling sand, including any cutting of units, concrete edging, joints overlying concrete pavement joints, and concrete surrounds or aprons around surface penetrations.

5. The schedule rate, for items 306c(5) and 306c(6), shall include all activities involved in the laying and compaction of subbase, including concrete subbase where applicable, and supply, laying and compaction of segmental paving units, bedding sand and joint filling sand, including any cutting of units, concrete edging, joints overlying concrete pavement joints, and surrounds or aprons around surface penetrations.

Pay Item 306 (d) REMOVE EXISTING EDGE STRIPS

1. The unit of measurement shall be the linear metre measured along the length of the edge strip.

2. The schedule rate shall include all activities associated with breaking out, removing, transporting off-site, disposal and any tipping fees applicable.

Pay Item 306 (e) GRASS TURF

- (1) Take Up and Store Existing Turf
- (2) Lay Existing Turf
- (3) Supply and Lay New Turf

1. The unit of measurement shall be the square metre of surface of grass turf taken up or laid. Separate rates shall be given for taking up existing, laying existing and supply and lay new turf.

2. The width and length shall be as shown on the Drawings or as directed by the Superintendent.

3. The schedule rate, for item 306e(1), shall include all activities associated with cutting, taking up and storing turf at locations as directed.

4. The schedule rate, for item 306e(2), shall include all activities associated with the topsoil bedding, rolling, laying of existing turf and topdressing.

5. The schedule rate, for item 306e(3), shall include all activities associated with the topsoil bedding, rolling, supply and laying of new turf and topdressing.

Pay Item 306 (f) VERGE PLANTS, SHRUBS AND TREES

- (1) Take Up and Store Existing
- (2) Plant Existing

1. The unit of measurement shall be each plant, shrub or tree taken up or planted. Separate rates shall be given for taking up existing or replanting existing.
2. The schedule rate, for item 306f(1), shall include all activities associated with taking up, storing and watering at locations as directed.
3. The schedule rate, for Item 306f(2), shall include all activities associated with topsoil placement, preparatory work, planting, staking and subsequent care of each plant for 2 months after the date of formal completion of the restoration works.

Pay Item 306 (g) STOCKPILING OF TOPSOIL

1. The unit of measurement shall be the cubic metre as bank volume.
2. The volume shall be calculated by multiplying the area, derived from the width and length as shown on the Drawings or as directed by the Superintendent, by the depth of topsoil directed to be removed by the Superintendent.
3. The schedule rate shall include all activities associated with stripping topsoil, carting and placing into stockpile.

Pay Item 306 (h) TRENCH EXCAVATION

- (1) To Stockpile
- (2) Disposal off-site

1. The unit of measurement shall be the cubic metre as bank volume of excavation. Separate rates shall be given for excavation to stockpile and disposal off-site.
2. The volume shall be calculated by multiplying the width by the depth by the length as follows:

Width -as specified for the particular utility service installation.
Depth -average actual depth from topsoil stripped ground surface to underside of specified bedding.
Length -actual excavation length, centre to centre of pits.
3. The schedule rate shall be an average rate to cover all types of material encountered during excavation. Separate rates shall not be included for earth and rock.
4. The schedule rate shall include all activities associated with:
 - Excavation, including excavation and replacement of unsuitable material.
 - Replacement for over-excavation for any reason.
 - Excavation, removal and disposal of retired services, and backfilling of the resulting excavations.
 - Protection of trees and treatment to cut tree roots.
5. The schedule rate, for item 306h(1), shall include all activities associated with carting and placing into stockpile.

6. The schedule rate, for item 306h(2), shall include all activities associated with transporting off-site, disposal and any tipping fees applicable.

Pay Item 306 (i) TRENCH BACKFILL

- (1) From Stockpiled Material
- (2) From Imported Material

1. The unit of measurement shall be the cubic metre measured as backfill compacted volume in place in the trench.

2. The volume shall be calculated by multiplying the width by the depth by the length as follows:

Width -average trench width

Depth -average actual depth from top of subgrade to top of bedding overlay material around the utility service.

Length -actual trench length, centre to centre of pits.

3. The schedule rate shall include all activities associated with backfilling, compaction, testing and treatment around tree roots.

4. The schedule rate, for item 306i(1), shall include all activities associated with loading and carting from stockpile.

5. The schedule rate, for item 306i(2), shall include all activities associated with supply and delivery of imported material, including material for a selected material zone where specified.

Pay Item 306 (j) TEMPORARY PAVEMENT - CARRIAGEWAY AND FOOTPATH

1. The unit of measurement shall be the square metre of trench area restored with temporary pavement.

2. The area shall be calculated by multiplying the trench width by the actual length of temporarily restored pavement.

3. The schedule rate shall include all activities associated with the supply, delivery, placing and compaction of the base material and bituminous cold mix. It shall include all activities and material necessary for maintenance of the temporary pavement in a safe condition until the permanent restoration is executed.

Pay Item 306 (k) TEMPORARY STEEL PLATING

1. The unit of measurement shall be the square metre of trench area plus adequate allowance for support on both sides of the trench.

2. The area shall be calculated by multiplying the trench width by the actual length of trench to be covered.

3. The schedule rate shall include all activities associated with the hire, delivery, placement, securing and subsequent removal and return to depot of the steel plates. It shall include all activities and materials necessary for maintenance of the plating until permanent restoration is executed.

ROAD OPENINGS AND RESTORATIONS

Pay Item 306 (l) SUBBASE

1. The unit of measurement shall be the square metre of trench.
2. The area shall be calculated by multiplying the trench width by the length.
3. The schedule rate shall include all activities associated with the removal of temporary pavement, supply, delivery, spreading and compaction in accordance with Annexure 306-A.

Pay Item 306 (m) BASE

1. The unit of measurement shall be the square metre of trench.
2. The area shall be calculated by multiplying the trench width by the length.
3. The schedule rate shall include all activities associated with the removal of temporary pavement where no subbase is required, supply, delivery, spreading and compaction in accordance with Annexure 306-A.

Pay Item 306 (n) BITUMINOUS WEARING SURFACE

1. The unit measurement shall be the square metre of new surface area in accordance with this Specification.
2. The area shall be calculated by multiplying the trench width +200mm by the length.
3. The schedule rate shall include all activities associated with the removal of temporary pavement or existing pavement to the new perimeter, supply, delivery, spreading and compaction in accordance with Annexure 306-A.

Pay Item 306 (o) FOOTPATH

- (1) Asphalt/Sprayed bituminous seal
- (2) Plain Concrete
- (3) Textured/Patterned Concrete

1. The unit of measurement shall be the square metre of paved surface, including driveways.
2. The width and length shall be as shown on the Drawings or as Directed by the Superintendent.
3. The schedule rate, for item 306o(1), shall include all activities associated with the forming, compaction of foundations, supply, delivery and compaction of subbase and bituminous material.
4. The schedule rate, for items 306o(2) and 306o(3) shall include all activities associated with the forming, compaction of foundations, supply, delivery and compaction of subbase, supply delivery, placing, finishing and curing concrete, including texturing or patterned finish where applicable. Where shown on the Drawings or as directed by the Superintendent this pay item shall include the supply and placement of reinforcing steel.

Pay Item 306 (p) CLEANUP

1. The unit of measurement shall be the square metre of carriageway and/or footway surface or other surface as applicable.
2. The lengths and widths shall be as shown on the Drawings or as directed by the Superintendent.
3. The schedule rate shall include all activities associated with the cleaning up of the Work site, and transporting off-site and disposal of material including any tipping fees applicable.

ANNEXURE 306 - A

RESTORATION REQUIREMENTS

(TO BE COMPLETED BY COMPILER)

Description of Location:.....

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Restoration Pavement Layers:

Wearing Surface Type.....Thickness (mm).....
(or nominal stone size)

Base Layer Type.....Thickness (mm).....

Sub Base Layer Type.....Thickness (mm).....

Selected Material.....Thickness (mm).....

Special Requirements (e.g. Linemarking, Traffic Signs, Advice to adjacent property owners etc.)

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ANNEXURE C306 - B

INSPECTIONS

Give notice so inspection may be made of the following:

Summary of HOLD POINTS

Clause title/subclause	Requirement	Notice for inspection	Release by
PROVISION FOR TRAFFIC			
Traffic Guidance Scheme			
C306.04.2	Submit Traffic Guidance Scheme for approval	14 days before work is scheduled to commence	Superintendent – Council concurrence required
CLEARING			
Set Out			
C306.05(b).3 – Set Out	Present set out line	5 working days before work is scheduled to commence	Superintendent – Council concurrence required
EXCAVATION			
Trench Excavation			
C306.08.7 – Excavation Level	Submit trench or foundation excavation for approval	2 working days	Superintendent
Protection of Trees			
C306.09.4 – Work Near Trees	Obtain approval for duration of open excavations	7 days before work is scheduled to commence	Superintendent – Council concurrence required
C273.09.5 – Tree Roots	Obtain approval for cutting of roots exceeding 50mm in diameter	2 working days	Superintendent – Council concurrence required
BACKFILL			
Trench Backfill			
C306.11.1 – Approved Material	Obtain approval for nominated backfill material	7 days before work is scheduled to commence	Superintendent
Compaction			
C306.12.4 - Testing	Submit compaction test results	5 working days	Superintendent
RESTORATION			
General			
C306.13.3 – Prepare Areas	Call for inspection	5 working days	Superintendent – Council concurrence required
Cleanup			
C306.20.3 - Inspection	Present cleaned up restoration works for inspection	2 working days	Superintendent

Work-As-Executed Drawings

C306.21.1 - Submission	Submit drawings	Within 2 weeks of approval of the restoration works	Superintendent
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Summary of WITNESS POINTS

Clause title/subclause	Requirement	Notice for inspection
EXCAVATION		
Trench Excavation		
C306.08.9 – Unsuitable Material	Remove unsuitable material and replace to specified slope and level	Progressive
BACKFILL		
Trench Backfill		
C306.11.5 – Backfill at Trees	Backfill to original ground surface	Progressive
Compaction		
C306.12.3 – Moisture Content	Obtain approval for any proposed variation to moisture content limits	Progressive
RESTORATION		
Carriageway Subbase and Base		
C306.15.1 – Remove Temporary Pavement	Obtain approval for any temporary material proposed to remain in place	Progressive
Pathways		
C306.17.2 – Remove Temporary Material	Obtain approval for any temporary material proposed to remain in place	Progressive