



AUS-SPEC

Infrastructure Specifications

1151 Road Openings and Restoration (Construction)

1151 ROAD OPENINGS AND RESTORATION

IMPORTANT: This document has been adapted from the NATSPEC suite of specification templates for use in the Cessnock City Council area by both Council and industry. NATSPEC regularly updates the base templates (currently in April and October each year), and Council may incorporate changes into its version of AUS-SPEC from time to time. To assist in highlighting any changes made by Council to the NATSPEC templates, the following conventions are used.

- See ANNEXURE M at the end of this document which contains (where practical) Cessnock City Council customisations (also known as 'office master' text). References to the Annexure are to also be inserted at relevant clauses in the main body of the document.
- Where content is added to the main body of the document, it is to be shown **in brown text like this**.
- Where content is deleted or excluded from the main body of the document, it is to be shown ~~struck through like this~~. Such clauses are to have no effect.

Where there is a conflict between main body text and Cessnock City Council specific clauses, Council's specific clauses shall prevail.

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide road opening and restoration works for installation of underground services within public road reserves or reserves under Council control including clearing, excavation, backfilling and restoration of surfaces, as documented. This worksection does not ~~include~~ **apply to** the installation activities of the relevant public utility ~~services~~ **authorities, in line with their powers under the relevant Acts. Work by those authorities is to conform to 1152 Road openings and restoration (Utility authorities) worksection.**

1.2 CROSS REFERENCES

General

Requirement: This worksection is not a self-contained specification. In addition to the requirements of this worksection, conform to the following:

- 0136 General requirements (Construction).
- 0152 Schedule of rates (Construction).
- 0161 Quality management (Construction).
- 1101 Traffic management.
- 1102 Control of erosion and sedimentation (Construction).
- 1141 Flexible pavement base and subbase.
- ~~1142 Cold mix asphalt.~~
- 1143 Sprayed bituminous surfacing.
- 1144 Asphalt (Roadways).
- 1145 Segmental paving.
- 1392 Trenchless conduit installation.

1.3 INTERPRETATION

Abbreviations

General: For the purposes of this worksection the following abbreviations apply:

- CBR: California Bearing Ratio.
- CRO: Council's Restoration Officer.
- CTPO: Council's Tree Preservation Officer.

Definitions

General: For the purposes of this worksection, the following definitions apply:

- Carriageway: That portion of a road or bridge devoted particularly to the use of vehicles, that is between guide posts, kerbs, or barriers where these are provided, inclusive of shoulders and auxiliary lanes.
- Clearing: The removal of vegetation or other obstacles at or above ground before the commencement of earthwork, drainage, etc.
- Date of **practical** completion: The date when:
 - . All excavation, backfill and **temporary permanent** restoration of the road opening is completed and safe for use by traffic, **to the satisfaction of the roads authority (e.g. Council) following practical completion inspection. Refer also to M3.**
 - . Permanent restoration is completed.
- Footpath (pathway): A public way reserved for the movement of pedestrians, motorised wheelchairs and personal mobility devices.
- Overlay zone: The part of the trench backfill immediately over the utility service, for a maximum of 300 mm.
- Pavement: The portion of a carriageway placed above the subgrade for the support of, and to form a running surface for, vehicular traffic including subbase and base course.
- Selected material zone: The top part of the upper zone of formation in which material of a specified higher quality is required.
- Shoulder: The portion of formed and sealed carriageway that is adjacent to the traffic lanes and flush with the sealed surface of the pavement.
- Verge (rural): Defined area of the formation in rural roads outside the shoulder at the top of the batter slope.
- Verge (urban): That portion of the road formation not covered by the carriageway or footpath.

1.4 TOLERANCES

Final carriageway restored surface tolerance

Surface deviation: ± 5 mm from a 3 m straightedge, with no impact on traffic passing over the restoration, when checked 5 to 10 working days after completion.

Asphalt thickness: Do not vary more than +10 mm or less than -0 mm at any point from the documented layer thickness.

Pathways and paved public areas

Lippage at patches: Match the surface level at any point along the patch's edge with the adjoining footpath surface within 5 mm.

1.5 SUBMISSIONS

Authority approvals

Before starting work within classified road reserves, under Section 138 of the Roads Act 1993:

- **State roads: Obtain consent from the roads authority (e.g. Council) and concurrence from TfNSW. Works are to meet RMS (now TfNSW) specifications.**
- **Regional roads: Obtain consent from the roads authority (e.g. Council) and concurrence from TfNSW. Works are to meet the roads authority's specifications.**

Local roads: Obtain consent from the roads authority (e.g. Council). Works are to meet the roads authority's specifications.

Trenching: Submit proof of approval for trenching of utilities by the relevant public utility authorities

Existing services: Provide written confirmation from the Authority that retired services to be decommissioned and/or removed are inactive.

Location of subsurface utilities: Submit the accuracy of information of subsurface utilities and quality level: To AS 5488.1 (2022) and AS 5488.2 (2022).

Execution details

Traffic management plan: Submit proposal for controlling vehicular and pedestrian traffic in conformance with TRAFFIC MANAGEMENT PLAN in the 1101 Traffic management worksection.

Tree roots: Submit proposals for an elevated platform, to protect tree dripline during compaction, to suit proposed earthworks machinery.

- **Submission time: 3 working days before working near trees.**

Products and materials

Trench backfill: Submit details of backfill material, including source.

- Submission time: 5 working days before start of backfill.

Records

Work-as-executed drawings: Submit fully marked-up work-as-executed drawings for the whole of the Work.

- Format: To **SUBMISSION, Work-as-executed drawings** in the *0136 General requirements (Construction)* worksection.

Tests

Tests: Submit results, as follows:

- Relative compaction: Submit results of compaction tests on completed backfill within 10 working days after testing.

1.6 INSPECTIONS**Notice**

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

- Set-out of works: Set-out lines and markings before commencement of excavation and any surface clearing work.
- House stormwater pipes: If damaged, completion of repair/replacement, if required.
- Excavation: Completed excavation to the trench/foundation level.
- Surface restoration preparation: Area prepared for restoration.
- Surface restoration: Completed final surface installation of carriageway, footpath, driveway and planting, as appropriate.
- Verge, plants, shrubs and trees: Completed staking of trees and shrubs.
- Pathways and paved public areas: Completed reinstatement of pavement markings and street furniture.
- Clean up: Completed restored work after cleaning.

2 EXECUTION

2.1 GENERAL**Provision for traffic**

Traffic obstruction: Construct the Works in a safe manner with the least possible obstruction to vehicular and pedestrian traffic.

Access and notification

Impact of the Works: Liaise with the affected property owners/occupants to minimise the impact of the Works on the property owners/occupants including impact on surrounding businesses and commercial areas. Include these requirements in the Traffic control plan.

Access to properties adjacent to the Works: Provide continuous safe, all weather vehicular and pedestrian access **to each property and building**.

Notice to property owners/occupants affected by the Works: 48 hours before **the access restriction change**.

2.2 EXISTING UTILITY SERVICES**Marking**

Locating and marking services: Before starting earthworks, locate and mark existing underground services in the areas which will be affected by the earthworks operations including clearing, excavating and trenching.

Location of subsurface utilities: Contact **BEFORE YOU DIG AUSTRALIA** to identify location of underground utility services pipes and cables.

2.3 SET-OUT OF WORKS

Set-out

Initial limits: Set out limits of the proposed excavation for trenches, pits and chambers required for the utility service installation.

Set-out markings: Legibly mark without permanently defacing any surface.

Adjusted limits: Adjust set-out to minimise or eliminate residual small portions of paving slabs in the existing paved surfaces and joint patterns in conformance with **Pathways and driveways and Carriageways**, as appropriate.

Utility services under carriageway concrete pavements

Open trenching methods: If required, obtain approval before starting.

Coordination of the Works with utility services installation: Coordinate with the requirements of the *1392 Trenchless conduit installation* worksection or the relevant utility authority's specification.

Pathways and driveways

Set-out: Adjust set-out lines in conformance with the

Guide to codes and practices for streets opening (2018) and the following:

- Bitumen and concrete paving: Conform to the reinstatement requirements of the Guide to codes and practices for streets opening (2018).
- Segmental paving units: Set out line at least one whole unit clear of both sides of the minimal alignment of the trench.
- Textured or patterned concrete: Obtain directions for set-out lines.
- Driveways: Where driveways are not to be disturbed and utility services are to be installed, coordinate with the requirements of *1392 Trenchless conduit installation*. If trenchless installation methods are not practicable, locate and obtain approval for the set-out line to allow an aesthetically acceptable restoration of the pavement.

Carriageways

Trenches in asphalt pavements: Set-out at the minimum width for the depth of service and, wherever possible, at right angles to the road reserve boundary.

Survey marks: For trench or surface work in the vicinity of Permanent or State Survey Marks, do not remove existing survey marks. Obtain protection or relocation requirements from the Land Information Centre of the State Authority responsible for survey records, before commencement of Work..

2.4 SURFACE TREATMENT REMOVAL

Concrete and asphalt pavements

Sawcutting: Sawcut trench set-out lines of concrete or asphalt footpaths and asphalt footpath/carriageway pavements for the full depths of the bound pavement layer, except where set-out line is located along expansion joints.

Concrete and asphalt removal: Break out concrete or asphalt footpath and carriageway pavement material between the trench set-out lines, remove and legally dispose off-site.

Segmental paving units

Paving units removal: Take up full and cut paving units, between trench set-out lines, by hand and neatly stack on wooden pallets for re-use. Obtain agreement for storage locations.

Dimension kerb and gutter units removal: Take up units located between trench set-out lines and store as for paving units.

Concrete edging: Break out, remove and legally dispose off-site.

Concrete subbase: If present, sawcut along the trench set-out lines.

Decorative pavers laid on mortar bed

Decorative pavers laid on mortar bed and concrete base: If services installation is required, do not disturb except where trenchless conduit installation is impractical.

Pavement removal: If disturbing these surfaces is required, remove pavers for re-use, stack and secure against theft or damage. Remove mortar bedding mix.

Sawcutting: Do not sawcut pavers. If required, provide evidence that replacement pavers, of the same type, size, colour and decoration, are available.

Concrete subbase removal: Sawcut along the trench set-out lines and remove. If percussion equipment is required for removal, make sure adjacent areas of paving are not disturbed.

Grass

Removal method: Neatly cut turf between trench set-out lines into 300 mm squares and stockpile for re-use or dispose off-site if unsuitable for re-use.

Stockpiling for re-use: Obtain agreement for storage locations. Water grass as required for replanting during the storage period.

Grass unsuitable for re-use: Replace with grass turf of the same species.

Small plants, shrubs and trees

Plants required for replanting: Identify and confirm with the CTPO plants suitable for replanting between set-out lines. Take up heritage listed/protected plants and plants confirmed suitable for replanting for storage.

Storage: Wrap rootball in a hessian or plastic bag with drain holes and water as required during the storage period.

Plants unsuitable for replanting: Remove and dispose off-site.

House stormwater pipes

Pipes discharging into carriageway gutters: Maintain operational at all times.

Pipes damaged by the Works: Repair or replace pipes, including house supply pipes, to match existing. Provide watertight seals to all joints and connections.

Street furniture

Furniture likely to interfere with or be damaged by the Works: Remove and store furniture, including signage, seats and litter bins. Obtain direction for storage location.

2.5 EXCAVATION**Topsoil**

Topsoil suitable for re-use: Strip, remove and stockpile. Obtain direction for stockpile location. If on-site stockpiling is impracticable, stockpile the topsoil off-site or legally dispose off-site.

Removal timing: Before trench excavation.

Trenching

Dimensions: Excavate trenches to the standard widths and depths for the particular utility service installation or as documented.

Stabilisation of sides: Provide shoring, sheet piling or other necessary measures in conformance with statutory requirements.

Approval by utility/service provider: If public utilities exist in the vicinity of the Works, obtain approval from the authority relevant to the method of excavation before starting excavation.

Excavation level: Excavate trench or foundation to the planned bedding or foundation bottom level.

Existing services

Existing underground services: Conform to **EXISTING UTILITY SERVICES** in *0136 General requirements (Construction) and Work near underground assets - Guide (2007)* from Safework NSW. Locate by exploratory excavation or by ground penetrating radar (GPR) before principal trench excavation.

Disused, retired or abandoned services: Before removal, provide written confirmation from the appropriate Authority that services are inactive.

Removal of retired services: **Do not grout fill and/or leave in situ unless approved by the roads authority.** Excavate, remove all components and legally dispose off-site. Backfill the excavation in conformance with **TRENCH BACKFILL**.

Excavated material stockpiles

Excavated material: Segregate earth and rock material and stockpile for re-use in backfilling operations. Obtain approval for stockpile locations.

Stockpile locations: Obtain direction for stockpile locations. Do not stockpile 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.

If stockpiling is not permitted: Dispose legally off-site.

Unsuitable material

Disposal: Remove any material from the bottom of the trench or at foundation level which is deemed unsuitable, legally dispose off-site and replace with backfill material in conformance with **TRENCH BACKFILL**.

Bottom of excavated trench/foundation level: Align with the slope of the utility service after unsuitable material has been removed and replaced.

2.6 EXISTING TREES**Protection during works**

Existing trees: Existing trees are legally protected by Council's Tree Preservation Order. Protect from damage during the Works.

Bulk and harmful materials: Do not store, stockpile, dump or otherwise place under or near trees materials such as oil, waste concrete, clearings and boulders. Prevent wind blown materials from harming trees and plants.

Work near trees

Damage: Prevent damage to tree bark. Do not attach stays and guys to trees.

Topsoil: Do not remove topsoil within the dripline of the trees.

Excavating within driplines: If required, use hand or trenchless methods so that root systems remain intact and undamaged.

Duration of open excavations under tree canopies: Obtain direction from the CTPO.

Tree roots

Cutting roots: If cutting roots more than 50 mm diameter, obtain approval from the CTPO before proceeding. Cut using methods that do not unduly disturb the remaining root system. Immediately after cutting, water the tree and apply a liquid rooting hormone to stimulate the growth of new roots.

Compacted ground: Do not compact the ground or use skid-~~steel~~-steer vehicles under the tree driplines.

Compaction protection: Protect areas adjacent to the tree dripline.

Watering trees: Water as necessary, including where roots are exposed at ambient temperatures higher than 35°C.

Mulching: Spread 100 mm thick organic mulch to the whole area covered by the driplines of protected trees.

2.7 TRENCH BACKFILL**Bedding, haunch, side and overlay zones**

Materials and installation: Conform to the Utility Authority's requirements.

Side zone and overlay material: Install as required for the utility service being installed. Make sure material performance conforms to **TRENCH BACKFILL** and **COMPACTION**.

Geotextile: Install a geotextile sheet on any coarse overlay material to prevent piping of fines.

Backfill

Extent: Between the overlay zone and the top of subgrade.

Material: Backfill with one of the following:

- 14:1 moist washed river sand/cement mix or non-cohesive backfill material.
- Stockpiled excavated material.
- Imported fill: If trench backfill material has been disposed off-site, use imported material free of stumps or roots, and capable of being compacted to **COMPACTION**.

Selected material zone below subbase level

Excavation through a selected material zone: If required, backfill within the selected material zone using materials conforming to the following:

- Free from stones larger than 100 mm maximum dimension.
- The fraction passing a 19 mm Australian Standard sieve with a 4 day soaked CBR value not less than that of the adjacent selected material zone, tested to AS 1289.6.1.2 (1998).

Backfilling at/near trees

Backfill at trees: Backfill 300 mm minimum thickness around tree roots with a topsoil and compost mixture. Place and compact in layers of 150 mm maximum depth, to a dry density equal to that of the surrounding soil.

Backfill level: Do not place backfill material above the original ground surface around tree trunks or over the root zone.

Backfill material: A 3:1 topsoil:well-rotted compost mixture, free from weed growth and harmful materials, and with a neutral pH value.

Watering: Thoroughly water the tree root zone immediately after backfilling.

2.8 COMPACTION**Relative compaction**

Testing: Conform to one of the following:

- AS 1289.5.2.1 (2017) for modified compactive effort (MMDD).
- AS 1289.5.1.1 (2017) for standard compactive effort (MSDD).
- AS 1289.5.6.1 (1998) for non-cohesive materials.

Sand/cement backfill material: No compaction testing is required.

Layers: Compact all material in maximum 150 mm thick layers unless it can be demonstrated that the required compaction can be achieved with thicker layers.

Moisture content: During compaction, adjust the moisture content of the material to attain the required compaction at a moisture content 60% to 95% of the apparent optimum moisture content, tested to AS 1289.5.7.1 (2006) (modified compaction).

Compacting adjacent to utility services: Use compaction methods which will not damage or cause misalignment to underlying or adjacent utility services and adjacent structures.

Compaction table

Layer	Relative compaction (%)	Density index (%)
Foundations or trench base to a depth of 150 mm below foundation levels	92%	70
Material replacing unsuitable material	92%	70
Bedding material	92%	70
Selected backfill and ordinary backfill material		
– Below 1.5 m of finished surface	92%	70
– Within 1.5 m of finished surface	97%	80
Backfill material within the selected material zone	97%	80

2.9 SURFACE RESTORATION PREPARATION**Carriageway pavements and pathways**

Rectification: Restore so that pavement/pathway is continuous and the condition is equivalent to that at start of Works.

Safety: Make sure all temporary and final restorations in carriageways and pathways is of the quality required to maintain site safety for pedestrians and vehicular traffic.

Structures and surface pits

Levels: Set the levels of utility service surface pits, access chamber frames and lids and other affected structures, so that carriageway pavements and footpaths can be restored to the original levels. If utility service surface box requires adjustment or replacement before restoration, liaise with the Utility Authorities.

Restoration approval

Before paving restoration work: Form up and prepare the areas to be restored and present the prepared areas for approval.

Temporary carriageways

Temporary restoration: Temporarily restore carriageway if reopening to traffic before final restoration. Maintain temporary restorations in a safe condition until the final restoration is completed.

Temporary restoration method: Restore carriageway using one of the following:

- Bituminous cold mix: 40 to 50 mm thick, on a base of compacted crushed stone or gravel.
- Steel plating: Over trench, of sufficient thickness and bearing area outside the trench to support traffic loadings, and suitably secured with pins or bituminous cold mix.

Advance warning signs: If using steel plating, provide signs in conformance with AS 1742.3 (2019).

Temporary footpaths and driveways

Temporary restoration: Temporarily restore footpath or driveway if reopening to pedestrian traffic before final restoration. Maintain temporary restoration in a safe condition until the final restoration is completed.

Pedestrian and vehicular access: Liaise with property owners and make sure access is provided to all properties at the end of each day's work.

Restoration material: 20 to 40 mm thick bituminous cold mix.

2.10 SURFACE RESTORATION

Temporary pavement removal

Temporary pavement material: Remove and dispose off-site before final carriageway and pathway pavement restoration.

Temporary base material: If approved, the temporary base material may remain in place and be incorporated into the final pavement if it conforms to the following:

- The requirements of this worksection for the **subbase base (or subbase in the case of a paved surface)** (including the requirements for compaction and testing).
- Has not been disturbed or contaminated during removal of the temporary surfacing.

Subbase and base

Material: Crushed rock, CRB20-2 or CRS20 material, from an approved source, configured in layers and depths in conformance with **ANNEXURE – RESTORATION REQUIREMENTS**.

Materials and installation: To *1141 Flexible pavement base and subbase*.

Compaction: Uniformly compact each layer of the subbase and base courses over the full area and depth within the trench to a relative compaction of 100%, tested to AS 1289.5.4.1 (2007).

Completion test frequency: Minimum 1/every second layer/50 m² of restoration surface area.

Carriageway bituminous wearing surface

Materials and installation: Conform to the following:

- *1143 Sprayed bituminous surfacing* or *1144 Asphalt (Roadways)*, as appropriate.
- **ANNEXURE – RESTORATION REQUIREMENTS**.

Tack coat for asphalt or seal coat for sprayed bituminous seals: Present a waterproof surface at application.

Bituminous surfacing and/or asphalt: Extend 100 mm minimum beyond the perimeter of any trench excavation.

Joints between new and existing asphalt: Conform to the following:

- Joint: Vertical and cut by diamond saw or milling machine.
- Vertical face and subgrade surface of the old asphalt: Treat by bituminous tack coating.
- Defects: Seal any joints between the existing and new asphalt during the defects maintenance period with an approved joint sealant.

Pathways and paved public areas

Matching finishes: Restore pathways, and other public areas, with materials consistent with the existing surface before commencement of the Works.

Subbase Base: 150 mm crushed stone CRB20-2 compacted to 100 percent relative compaction in conformance with AS 1289.5.4.1 (2007).

Concrete footpaths

Surface finish and pattern: To match existing adjoining footpaths and driveways.

Material: 20 MPa concrete.

Expansion joints: 15 mm thick preformed bituminous fibreboard jointing material, or other approved material, placed where new concrete abuts existing concrete, in line with joints in existing concrete.

Control joints: Form in line with the control joints in the existing concrete.

Around electricity supply poles: Terminate the concrete paving 200 mm from the pole and fill resulting space with cold mix asphalt.

Asphalt footpaths

Materials and installation: To 1144 Asphalt (Roadways) or 1142 Cold mix asphalt, as required by the CRO.

Thickness: Match the adjoining footpath.

Finish: Compact to a smooth even surface.

Segmental paving units

Materials and installation: To the 1145 Segmental paving worksection and as follows:

- Laying: Re-lay to match the pattern and surface levels of the existing paving.
- Damaged paving units unsuitable for re-laying: Replace with new units of the same material, type, size and colour as the existing.

Paving around trees, service boxes and poles: Match the paving pattern at similar existing features in the immediate area.

Turfed verges

Stockpiled topsoil: 50 mm minimum thickness. Place on the subgrade before restoring turfed verges.

Existing grass turf: Take up and store until required for laying. Re-lay in conformance with the original grassed surface.

Turfing: Hard butt turfs against each other in rows and top-dress the seams with topsoil. Roll and water turf, make sure there is direct and uniform contact with the topsoil.

Additional turf: If required, complete the affected area using turf of the same species as the existing grass.

Verge plants, shrubs and trees

Stockpiled topsoil: Place on the subgrade, to the same thickness as the surrounding topsoil, before replanting.

Planting holes: Excavate at locations matching the original locations and spread the topsoil material evenly around each hole.

Existing plants, shrubs and trees: If suitable for replanting, replant in prepared holes. Backfill the planting hole with topsoil and compact by foot up to surface level.

Plants unsuitable for replanting: Replace with plants of the same species and size, or as agreed with the CTPO or other appropriately authorised Council Officer.

Staking and watering: Stake, water and maintain for ~~2 months~~ the duration of the Defects Liability Period after the date of practical completion of the restoration works.

2.11 COMPLETION

Clean up

Requirement: Upon Prior practical completion of all restoration works, clean up the areas affected by the Works and associated construction activities, and restore to condition existing before commencement of the Works.

Waste: Remove and legally dispose of all formwork, waste and residue construction materials off-site including material left at stockpiles.

Surfaces stained by construction activities: Clean and restore to approval.

3 ANNEXURE A

3.1 ANNEXURE – RESTORATION REQUIREMENTS

This Annexure may optionally include additional project specifications as required by the Superintendent.

Restoration requirements schedule

Pavement layer	Location	Type/material	Thickness (mm)	Stone size
Wearing surface				
Base layer				
Subbase layer				

Special restoration requirements schedule

Item	Location
Linemarking	
Traffic signs	
Advice to property owners	
Other	

3.2 ANNEXURE – SUMMARY OF HOLD AND WITNESS POINTS

For private developments, certain Hold and Witness Points where specifically noted below require representatives of either or both the Superintendent and the Principal Certifier (e.g. Council) to authorise release.

Clause and description	Type	Submission/Inspection details	Submission/Notice times	Process held
SUBMISSIONS, Execution details Traffic management plan	H – Principal Certifier	Traffic management plan for controlling vehicles and pedestrians.	10 days before commencement	Commencement
SUBMISSIONS, Authority approvals Trenching	H – Principal Certifier	Approval for trenching from the public utilities authorities.	10 days before excavation	Excavation
SUBMISSIONS, Authority approvals Existing services	H	Confirmation retired services are inactive.	10 days before excavation	Excavation
SUBMISSIONS, Authority approvals	H	Location of subsurface utilities	10 days before commencement	Excavation
INSPECTIONS, Notice Set-out of works	H– Principal Certifier	Set-out of lines and markings before excavation and clearing.	5 days before start of work	Surface clearing work
INSPECTIONS, Notice House stormwater pipes	H	Repaired/replacement of damaged pipes.	5 days before start of work	Surface installation
INSPECTIONS, Notice Excavation	H	Excavation to the trench/foundation level.	5 days before backfilling	Backfilling
INSPECTIONS, Notice Surface restoration preparation	H – Principal Certifier	Prepared area to be restored.	5 days before paving	Paving
INSPECTIONS, Notice Surface restoration	W	Final surface installation.	3 days before completion of works	-

Clause and description	Type	Submission/Inspection details	Submission/Notice times	Process held
INSPECTIONS, Notice Verge, plants and shrubs	W	Staking of trees and shrubs.	3 days before completion of works	-
INSPECTIONS, Notice Pathways and paved public areas	W – Principal Certifier	Reinstated pavement markings and street furniture.	3 days before completion of works	-
INSPECTIONS, Notice Clean up	W – Principal Certifier	Restored work after cleaning.	3 days before completion of works	Practical completion

Note: H = Hold Point, W = Witness Point

3.3 ANNEXURE – PAY ITEMS

This Annexure applies to Council projects. For private development works use of this schedule is optional, at the Superintendent's discretion.

Pay items	Unit of measurement	Schedule rate inclusions
1151.1 Sawcut existing pavement/footpath - 1151.1(1) Bituminous carriageway pavement - 1151.1(2) Bituminous footpath - 1151.1(3) Concrete footpath, including textured or patterned concrete.	Linear metre measured along the actual line of cut.	All costs associated with sawcutting operations including plant hire and provision of water.
1151.2 Remove existing pavement/footpath - 1151.2(1) Removal to stockpile - 1151.2(2) Disposal off-site.	m ² of pavement removed, bituminous and concrete material, including concrete subbase from segmental paving where applicable. Width and length as documented.	For 1151.2(1) , all costs associated with breaking out, removing, carting and placing into stockpile. For 1151.2(2) , all costs associated with breaking out, removing, transporting off-site, disposal and any applicable tipping fees.
1151.3 Segmental paving units - 1151.3(1) Take up and stack existing units – Carriageway - 1151.3(2) Take up and stack existing units – Footpath - 1151.3(3) Lay existing units – Carriageway - 1151.3(4) Lay existing units – Footpath - 1151.3(5) Supply and lay new units – Carriageway	m ² of surface of segmental paving units taken up or laid. Width and length as documented.	For items 1151.3(1) and 1151.3(2) , all costs associated with taking up and stacking units on pallets at locations, as documented. Remove concrete subbase, where applicable, under 1151.2 . For items 1151.3(3) and 1151.3(4) , all costs associated with 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. For items 1151.3(5) and 1151.3(6) , all costs associated with the laying and compaction of

Pay items	Unit of measurement	Schedule rate inclusions
- 1151.3(6) Supply and lay new units – Footpath		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.
1151.4 Remove existing edge strips	Linear metre measured along the length of the edge strip.	All costs associated with breaking out, removing, transporting off-site, disposal and any applicable tipping fees.
1151.5 Grass turf - 1151.5(1) Take up and store existing turf - 1151.5(2) Lay existing turf - 1151.5(3) Supply and lay new turf	m ² of surface of grass turf taken up or laid. Width and length as documented.	For item 1151.5(1) , all costs associated with cutting, taking up and storing turf at locations, as documented. For item 1151.5(2) , all costs associated with the topsoil bedding, rolling, laying of existing turf and topdressing. For item 1151.5(3) , all costs associated with the topsoil bedding, rolling, supply and laying of new turf and topdressing.
1151.6 Verge plants, shrubs and trees - 1151.6(1) Take up and store existing - 1151.6(2) Replant existing	Each plant, shrub or tree taken up or planted.	For item 1151.6(1) , all costs associated with taking up, storing and watering at locations, as documented. For Item 1151.6(2) , all costs associated with topsoil placement, preparatory work, planting, staking and subsequent care of each plant for 2 months the duration of the Defects Liability after the date of practical completion of the restoration works.
1151.7 Stockpiling of topsoil	m ³ as bank volume. The area, derived from the documented width and length, by the depth of topsoil to be removed.	All costs associated with stripping topsoil, carting and placing into stockpile.
1151.8 Trench excavation - 1151.8(1) Excavation to stockpile - 1151.8(2) Excavation to disposal off-site	m ³ as bank volume of excavation. The width by the depth by the length defined as follows: Width: Required for the particular utility service installation. Depth: Average actual depth from topsoil stripped ground surface to underside of required bedding. Length: Actual excavation length, centre to centre of pits.	The schedule rate to be an average rate to cover all types of material encountered during excavation. Do not include separate rates for earth and rock. All costs 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. Also include: For item 1151.8(1) , all costs associated with carting and placing into stockpile. For item 1151.8(1) , all costs associated with transporting off-site, disposal and any applicable tipping fees.
1151.9 Trench backfill - 1151.9(1) From stockpiled material - 1151.9(2) From imported material	m ³ measured as backfill compacted volume in place in the trench. The width by the depth by the length defined as	All costs associated with backfilling, compaction, testing and treatment around tree roots. Also include: For item 1151.9(1) , all costs associated with loading and carting from stockpile.

Pay items	Unit of measurement	Schedule rate inclusions
	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.	For item 1151.9(2) , all costs associated with supply and delivery of imported material, including material for a selected material zone where documented.
1151.10 Temporary pavement – Carriageway and footpath	m ² of trench area restored with temporary pavement. Trench width by the actual length of temporarily restored pavement.	All costs associated with the supply, delivery, placing and compaction of the base material and bituminous cold mix including all activities and material necessary for maintenance of the temporary pavement in a safe condition until the permanent restoration is executed.
1151.11 Temporary steel plating	m ² of trench area. The trench width by the actual length of trench to be covered.	All costs associated with the hire, delivery, placement, securing and subsequent removal and return to depot of the steel plates, of sufficient dimensions to provide support on both sides and ends of the trench, and all activities and materials necessary for maintenance of the plating until permanent restoration is executed.
1151.12 Subbase	m ² of trench. The trench width by the length.	All costs associated with the removal of temporary pavement, supply, delivery, spreading and compaction in conformance with the Restoration requirements schedule.
1151.13 Base	m ² of trench. The trench width by the length.	All costs associated with the removal of temporary pavement where no subbase is required, supply, delivery, spreading and compaction in conformance with the Restoration requirements schedule.
1151.14 Bituminous wearing surface	m ² of new surface area. The trench width +200 mm by the length.	All costs associated with the removal of temporary pavement or existing pavement to the new perimeter, supply, delivery, spreading and compaction in conformance with the Restoration requirements schedule.
1151.15 Footpath - 1151.15(1) Asphalt/sprayed bituminous seal - 1151.15(2) Plain concrete - 1151.15(3) Textured/patterned concrete	m ² of paved surface, including driveways. The width and length as documented.	For item 1151.15(1) , all costs associated with the forming, compaction of foundations, supply, delivery and compaction of subbase and bituminous material. For items 1151.15(2) and 1151.15(3) , all costs 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, and placement of reinforcing steel, as documented.
1151.16 Cleanup	m ² of carriageway and/or footway surface or other surface as applicable. The lengths and widths as documented.	All costs associated with the cleaning up of the Work site, and transporting off-site and disposal of material including any applicable tipping fees.
Traffic management	Lump sum.	Provision for traffic, both vehicular and pedestrian to <i>1101 Traffic management</i> .

Pay items	Unit of measurement	Schedule rate inclusions
Erosion and sedimentation control		To 1102 Control of erosion and sedimentation (Construction).
Segmental paving works		To 1145 Segmental paving.

3.4 ANNEXURE - REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 1289		Methods of testing soils for engineering purposes
AS 1289.5.1.1	2017	Soil compaction and density tests - Determination of the dry density/moisture content relation of a soil using standard compactive effort
AS 1289.5.2.1	2017	Soil compaction and density tests - Determination of the dry density/moisture content relation of a soil using modified compactive effort
AS 1289.5.4.1	2007	Soil compaction and density tests - Compaction control test - Dry density ratio, moisture variation and moisture ratio
AS 1289.5.6.1	1998	Soil compaction and density tests - Compaction control test - Density index method for a cohesionless material
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 1742		Manual of uniform traffic control devices
AS 1742.3	2019	Traffic control for works on roads
AS 5488		Classification of subsurface utility information (SUI)
AS 5488.1	2022	Subsurface utility information
AS 5488.2	2022	Subsurface utility engineering (SUE)
SOCC Guide	2018	Guide to codes and practices for streets opening
SWN Underground assets	2007	Work near underground assets - Guide

4 ANNEXURE M – CESSNOCK CITY COUNCIL SPECIFIC CLAUSES

M1.	Variations to or non-conformances with Council's AUS-SPEC are to be evaluated with reference to the procedure in Council's <i>Development Engineering Handbook</i> . Acceptance is to be obtained in writing from: an authorised representative of Council's Director of Infrastructure and Engineering Services.	Variation procedure
M2.	This specification applies in addition to any development consent (DA) conditions. If there is any inconsistency, the conditions of consent shall prevail.	DA Conditions
M3.	Refer to the Cessnock City Council <i>Development Engineering Handbook</i> for final inspection, works-as-executed and handover requirements.	Completion

5 AMENDMENT HISTORY

0	15/01/2024	First Published
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