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## **8. TRENCHING AND REINSTATEMENT**

### **8.1 INTRODUCTION**

The purpose of this section is to clearly outline Council's requirements for excavation, backfilling and reinstatement works within the road reserve and public property.

It is important to ensure that all excavation works are completed to a high standard with minimal disruption to the surrounding environment.

#### **8.1.1 Objectives**

Council must ensure that all trenching and excavation works meet the following objectives:

- a) The health and safety of the public, particularly the local community, has been ensured;
  - 1) The level of the service is as good as or better than the existing standard of service following the new excavation works;
  - 2) All practicable steps have been taken to minimise the level of disruption;
  - 3) Council has been informed of excavation works and all steps have been taken to follow standards and conditions of notification;
  - 4) Any affected or potentially affected persons have been notified in advance of the proposed disruption;
- b) Remediation and reinstatement works have been completed to the same or higher standard than prior to the initiation of works.

#### **8.1.2 Key References**

- a) Table 8-1 sets out the New Zealand Standards and other publications that apply to the design and construction of trenching and reinstatement within the road reserve and public land. Where a Standard or publication is referenced this shall be the current version including any associated amendments

**Table 8-1 Minimum Standards for Trenching and Reinstatement with Road Reserve or Public Land**

Document	Reference
NCC Land Development Manual	Liability for maintenance in the road reserve lies with the Road Controlling Authority.
National Code of Practice for Utilities, Access to the Transport Corridors	Working on the Road - for Temporary Traffic Control and Safety at Roadwork Sites
NZS 6803	The Measurement and Assessment of Noise From Construction, Maintenance and Demolition Works'
NZS 3116	Concrete segmental and flagstone paving
New Zealand Standards	Compaction standards
NZ Health and Safety in Employment Act 1992	

## 8.2 GENERAL

- a) Unless resolved otherwise by the Council, all new telecommunications, broadcasting and electricity cables, fittings and equipment in the road reserve shall be laid underground.

### 8.2.1 Public Liability

- a) Any operator undertaking excavation and reinstatement works within the road reserve shall have current Public Liability Insurance cover. The policy shall also include a local authority Extension Clause indemnifying the Council against liability for any damage, loss or injury for an amount not less than \$2,000,000 for any claim or series of claims arising out of the existence of a trench or excavation or other obstacle associated with the work.
- b) Compliance with any instruction of the Council, or any person acting on its behalf, in performing what is considered to be necessary actions in terms of this "Specification" shall not absolve the operator from any legal liability that he would otherwise have had in regard to claims for damage or failure of work for his client.

### 8.2.2 Approved Operators

- a) Only Operators approved by the Council shall be permitted to undertake trenching and reinstatement works within road reserves within the Nelson City area.
- b) The Council may require the Operator to pay to the Council a Cash Deposit or enter into a Bond for the performance of their works in the District prior to work commencing. The amount of this deposit or bond shall be for the full cost of the said works to a maximum of \$10,000.

## 8.3 NOTIFICATION

### 8.3.1 Corridor Access Request

- a) A Corridor Access Request (CAR) as set out in the 'National Code of Practice for Utilities, Access to the Transport Corridors' is required to be lodged by the Operator at the Council for each separate job or section of a continuing job, which involves excavation, or the lifting of the surface within a road reserve in the City of Nelson. A copy of these CAR application forms is available on the NCC website ([www.nelsoncitycouncil.co.nz](http://www.nelsoncitycouncil.co.nz))
- b) For minor work the CAR must be lodged at least five working days before work starts, unless otherwise agreed. For major and project work, the CAR must be lodged at least fifteen working days before work starts, unless otherwise agreed.
- c) Where emergency maintenance is necessary, the notice shall be lodged on the next working day. For routine service connection where the area of surface disturbance is less than 1 square metre, a schedule of work completed shall be required to be submitted on a monthly basis. If the road involved is a State Highway, the notice shall require confirmation that New Zealand Transport Agency has been notified and if any special conditions imposed by that body have been received.

### 8.3.2 Plans

- a) Plans of the proposed work shall be submitted to the Council with the CAR. The plans shall be to a scale of 1:500 or 1:200 where needed for clarity and shall show the location and size of all existing and proposed cables, conduits, pipes, underground structures, property boundaries and kerb lines. Dimensions to boundaries and kerbs shall be shown and proposed depths below existing surface levels shall be shown at regular intervals.

### 8.3.3 Notification to other Service Authorities

- a) The operator shall advise other affected Service Authorities of proposed construction works. Confirmation that other affected Service Authorities have been advised of planned works shall be indicated on the CAR.

### 8.3.4 Issue of Work Approval Notice

- a) Providing that all required information has been supplied with the CAR, the Council shall issue a Work Approval Notice (WAN) and advise of existing Council services in the locality and any specific conditions related to the proposal. No works may commence in advance of the WAN being issued. WAN are valid for six (6) months from the date of issue unless agreed otherwise by the Engineering Manager.

### 8.3.5 Fees

- a) A charge for each WAN issued will be made in accordance with the rates that may be set by the Council from time to time.

## **8.4 CONSTRUCTION REQUIREMENTS**

### **8.4.1 Disruption to Public**

- a) Normal work hours shall be between 0700-1800 hours, Monday to Saturday. Works on arterial streets may be limited to 0900-1600 hours or other hours as may be appropriate. Work hours within the CBD (Central Business District) shall be as approved by the Council.
- b) During any construction in the street, the disruption to the public and adjacent residents shall be kept to a minimum.
- c) Noise created by construction shall be kept to a minimum and shall not exceed the levels described in part 5 of NZS 6803P.
- d) Arterial streets comprise of: all State Highway 6, Main Road Stoke, Waimea Road, Rutherford Street, Haven Road and Trafalgar Street between Halifax Street and Queen Elizabeth 2 Drive.
- e) Arrangements shall be made to damp down work areas and excavated material as may be required from time to time to eliminate any dust nuisance.

### **8.4.2 Public Relations and notification**

- a) Prior to planned excavation commencing, the operator shall give written notice (48 hours) to all affected residents and business owners of the nature of the work and who to contact for further information or to convey complaints. Twenty four (24) hours notice shall be given to the occupiers of any property which will have its access blocked for more than one hour and shall be notified in writing and in sufficient time to enable them to remove any vehicles etc from their property. The Operator shall also ensure parked cars etc are moved off the site.

### **8.4.3 Temporary Traffic Control, Public Safety**

- a) The Operator's attention is drawn to the employees' and sub-contractors' obligations under the Health and Safety in Employment Act 1992.
- b) All Operator's who carry out work which may impact on the normal use of the roads and/or footpaths must submit a Traffic Management Plan to NCC for approval before commencing works. The Operator shall as a minimum comply with the requirements of the NCC Traffic Management Guidelines, June 2003 and submit a Traffic Management Plan prior to the commencement of work.
- c) The Operator shall be responsible for the supply, erection and maintenance of all necessary barricades, lights, warning notices, traffic control signs etc.
- d) Should the Operator wish to use any alternative methods of traffic control, the prior consultation with and approval of the Council shall be required.

- e) Should the Police (Traffic Safety Branch), Occupational Safety and Health Service or the Council consider at any time there is a risk to traffic, the general public or the Operator's employees, the Operator shall immediately provide such other traffic control etc, necessary to achieve the required standards. This may include the erection of additional barricades, lights, warning notices or traffic control signs including, where necessary, the provision of staff to control traffic.
- f) Failure by the Operator to provide adequate safety measures may result in a work suspension notice being issued by the Council, until such time as adequate control is provided.
- g) The carriageway shall be fully open to traffic during hours of darkness and not more than half the carriageway shall be closed at any one time, except with the express permission in writing of the Council.

#### **8.4.4 Closure of Streets**

- a) No street may be closed to any traffic without the specific written approval of the Council.
- b) The closure of any streets requires public notification. This notification will be carried out by the Council at the Operator's expense.
- c) Where any closure is required for less than twelve (12) hours within any twenty four (24) hour period the Council requires a minimum of forty eight (48) hours notice to approve and advertise any closure.
- d) Where any closure is required for more than twelve (12) hours within any twenty four (24) hour period the Council requires a minimum of 45 days to approve and advertise any closure.
- e) Approval for street closure will only be given where all other options are unsatisfactory.

#### **8.4.5 Position of Service**

- a) The positioning of services or mains, wherever possible, shall be in accordance with SD 414 and 415.
- b) Variations from these alignments shall be by written agreement from the Council, following discussions with other affected Service Authorities.

#### **8.4.6 Existing Services**

- a) The position of existing Water mains, sewers and other services or structures above or below ground, insofar as they are known, are available for the information of the operator at the offices of the Council and respective Service Authorities, but their positions are not guaranteed. The Operator is strongly advised to make itself fully aware of the position of all underground services in the locality, before commencing work.

- b) Where existing services are damaged as a result of the construction work, the Operator shall immediately advise the owner of the damaged services, (public or private).
- c) The cost of repair or reinstatement of any disturbances or damage to any water pipe, sewer or stormwater drain, other underground services or structure, shall be borne by the Operator.

#### **8.4.7 Road Markings/Survey Marks**

- a) All works that are likely to cause damage to any road markings must be brought to the attention of the Council in order that they may be replaced at the earliest possible opportunity for the safety of the general public. The Operator shall be responsible for the cost of any remarking that is necessary. All road marking shall be undertaken by a registered Road Marking Contractor to the current New Zealand Transport Agency standards. Road marking shall be completed within 5 days of resurfacing. Limit lines must be replaced when trafficked. This can be a temporary marking for the first five days. All edgelines, centrelines, continuity lines and limit lines shall be reflectorised Road Markings
- b) The Operator shall avoid disturbance to any survey marks within the vicinity of their work. Where any survey marks are disturbed, the cost of replacing and re-surveying the mark shall be met by the Operator.

#### **8.4.8 Trenchless Technology**

- a) Unless impractical or unsafe, installation by trenchless technology shall be required under concrete carriageways and vehicle crossings; at intersections; where there is a large number of existing services; and in areas with any high quality paving surface.
- b) Water jetting shall not be permitted.
- c) Drilling with an auger shall not be permitted under carriageways.

#### **8.4.9 Length of Open Trench**

- a) The maximum permitted length of trench to be open shall be 100m unless specifically authorised by the Council.
- b) Notwithstanding this the Operator shall not exceed any length that is not capable of being backfilled and opened to traffic in the same day, nor shall it interfere with two-way traffic flow.
- c) Open trenches shall not be permitted overnight without the prior authority of the Council.

#### **8.4.10 Trees, Shrubs etc**

- a) All works that are likely to cause damage to any trees, shrubs, or ornamental gardens within the road reserve, shall be brought to the attention of the Council prior to work commencing. It shall be the Operator's responsibility to make good or replace any damaged trees, shrubs or ornamental gardens.

#### **8.4.11 Water in Trenches/Sediment Control**

- a) All open trenches shall be maintained in a dewatered condition and water logged material removed to the satisfaction of the Council. Water from any excavation shall be disposed of to the stormwater main so as not to cause any damage or nuisance.
- b) The Operator shall take all due care to prevent excavated material from being washed into the stormwater system in the event of rain occurring during a trenching operation (See Section 9)

#### **8.4.12 Damage to Kerb and Channel**

- a) Where damage occurs to existing kerb and channel the damage shall be made good to the satisfaction of the Council. Where any kerb and channel requires replacing this shall be done by the Council's approved kerbing contractor at the Operator's expense.

#### **8.4.13 Traffic Signals**

- a) Where work is to take place within 50m of traffic signals the Operator shall consult with the Council.
- b) Special conditions when working near traffic signals may be imposed by the Council to protect the detector loops and the operation of the signals.
- c) A traffic signals communication network is located in Halifax Street, Collingwood Street, Rutherford Street and Selwyn Place, Putaitai Street and Songer Street. The Operator shall liaise with the Council to locate this network.

#### **8.4.14 Clean Up and Make Good**

- a) As work proceeds the Operator shall progressively carry out all restoration and tidying up work. If regular tidying up and restoration is not being done, the Council shall require and instruct the Operator concerned to carry out this work immediately. On completion of the work, the Operator shall remove all plant, materials and other things that may have been brought upon the site in aid of the works, and generally clear away all rubbish and leave the site in a similar or better condition to that which existed before the work was commenced.
- b) Any trees or branches cut down or tree stumps uprooted during the work shall be removed. Branches that require removal should be cut by saw and not broken by machinery. The Operator shall at its own expense, clean out all sumps and repair or reinstate all road surfaces, fencing, walls, floors, lawns, gardens, paths, inclusive of transplanting trees, shrubs etc and make good all damage which may have been caused through his operations to at least as good as the "as found condition" in connection with the work.

#### 8.4.15 Inspections/Maintenance

- a) The Operator shall notify the Council immediately upon the completion of final reinstatement so that an inspection may be made of the completed surface reinstatement works.
- b) The Operator will be held responsible for any street maintenance work required as a result of the excavation and reinstatement operations until twenty four (24) months after notification to the Council that the final surfacing material has been applied including Polymer Modified Bitumen (PMB) and Road Marking. Any such maintenance work required by Council shall be undertaken by the Operator at the Operator's cost within five (5) working days of being notified by the Council to undertake repair works. If on the grounds of safety there is a need for more immediate action this remedial work shall be completed within forty eight (48) hours or such other time as may be directed by the Council. Should this not be complied with, Council reserves the right to arrange or undertake such maintenance work and this work shall be at the cost of the Operator. The (24) month maintenance period will start from the time that the council is notified of completion of remedial works.

#### 8.5 EXCAVATIONS

- a) When an excavation is required to be made through any cement concrete, asphaltic concrete or chip seal surface, the proposed edges of the excavation or trench shall be cut with a power saw prior to the excavation of the trench. The cut is to extend through the full thickness of the surface layer in a clean straight vertical line. The cut shall be 150mm beyond and parallel to the edge of the trench or to a line outside any pavement damage, whichever is greater. Within footpaths all saw cuts shall be parallel to or at right angles to the centreline of the footpath.
- b) Only wet cutting shall be permitted in the CBD, in the vicinity of Suburban Shopping Centres or where directed by the Council, to minimise the problems caused by dust.
- c) Unless approved otherwise by the Engineering Manager, all excavated material shall be removed from the site immediately as excavation proceeds.
- d) Areas adjacent to the excavation shall not be undercut. If slumping of material from the sides of the excavation causes depressed areas adjacent to the excavation or if the edges of the pavement are lifted during excavation, additional saw cutting outside of the original line of the excavation and out side the area of damage shall be required before reinstatement is permitted.
- e) Trench widths shall be kept to the minimum necessary to lay the service and correctly compact the backfill.

## 8.6 BACKFILLING

- a) The backfilling of excavations shall be undertaken in accordance with SD 801 - 803 using imported backfill material that comply with New Zealand Transport Agency specifications.
- b) Basecourse used in the Pavement section of the backfill shall be to New Zealand Transport Agency (TNZ) M /4 Specifications or SD 402.
- c) The material used for bedding underneath and around the service or service duct shall be as required by the Service Authority. In no case shall it exceed 100mm above the top of the service, unless specific coverage is required by a reticulation pipe laying specification.

## 8.7 SURFACE REINSTATMENT

### 8.7.1 General

- a) Surface reinstatement (including sealing) shall be completed prior to vehicle and pedestrian traffic being permitted to use the surface. In all other situations, surface reinstatement shall be completed within 5 days of the trench being opened or such other period as directed by the Council. Variation from this condition shall require the written agreement of the Council. For works within the CBD or Arterial Roads, surface reinstatement shall be completed within 24 hours of the trench being opened or such other period as directed by the Council.
- b) Failure to complete reinstatement within the specified period may result in Council arranging reinstatement at the Operator's expense.
- c) All excavations shall be backfilled, as detailed on SD 801 - 803 to the underside of the proposed wearing surface, or to the finished level if permanent reinstatement is not being undertaken immediately. This temporary over filling shall be removed when permanent reinstatement is carried out. If permanent reinstatement cannot be undertaken immediately, in areas to be reopened for vehicle or pedestrian use, the Operator shall arrange for a 10mm thick layer of fine plant mix or a rubberised pre fabricated chip seal with 100mm over lap laid to manufactures instructions to be applied to the trench immediately backfilling is completed. If Plant Mix is not available a temporary seal of sprayed Emulsion and Grade 6 chip may be substituted with the approval of the Council.
- d) This is to be regarded as a temporary seal only and shall be removed before the permanent resurfacing of the trench is carried out. The Operator shall maintain this surface, even and free draining, until the final restoration is complete. The cost of all temporary resurfacing and subsequent removal shall be born by the Operator

- e) Where work is required within an area that has been re-surfaced within the last five years an alternative route must be identified. If this is not possible then a full width reinstatement shall be carried out. The length of the reinstatement shall be not less than the width of the carriageway (or footpath)
- f) All temporary markings to locate services shall be removed on completion of the works.

### **8.7.2 Within Carriageways**

- a) All permanent surface reinstatement on carriageways shall be completed as shown on SD 801 and 803, and 806, with the finished wearing surface depth, matching that of the existing road and finishing flush with or no more than 5mm above the existing surface. All parts of the surface damaged during or as a result of the work shall be reinstated to an "as found" condition or better. Excavations that are closer than 1.0m horizontal to the existing edge of the seal, kerb and channel or previous excavation reinstatement, shall have a reinstated sealed surface that extends to join with the existing edge of seal, kerb and channel or adjacent reinstatement.
- b) Subject to favourable weather conditions, PMB bandaging shall be completed within 5 days of resurfacing.
- c) On unsealed rural roads and metal shoulders backfilling shall be as for chipsealed carriageways with 50mm of top course being placed as the final reinstatement. Finished levels shall be compatible with the existing pavement.
- d) Surface boxes, e.g. water hydrant boxes, manholes etc shall be installed in their final location during trench compaction and their finished level shall be finished flush with or no more than 5mm above the reinstated pavement surface. All surface boxes and lids shall be raised and adjusted to final level prior to placement of surfacing seal coat.

### **8.7.3 Within Footpaths and Vehicle Crossings**

- a) All permanent surface reinstatement on footpaths shall be completed as shown on SD 802 and 804 - 806 with a finished surface matching the existing and finishing flush with or no more than 5mm above the existing surface. The minimum dimension of any reinstated portion of the footpath shall not be less than 600mm wide. The width of remaining undamaged footpath shall not be less than 600mm. (See SD 804). If these criteria cannot be met the reinstatement shall be across the full width of the footpath. Also the full width of the footpath shall be replaced when trenching in footpaths within the Nelson CBD, Stoke and Tahunanui shopping area, or Arterial, and Principal roads or new footpaths less than 5 years old. (Note, patching of small areas, eg around service boxes, may be permitted by Council).

- b) In concrete footpaths the depth shall match the existing with a minimum thickness of 100mm and the concrete shall attain a minimum compressive strength of 25 MPa after 28 days. Construction joints shall be formed at 6.0m centres and the line and level of the finished surface shall match the crossfall and level of the adjacent undamaged surface.
- c) Vehicle crossings which are affected by the work shall be reinstated with a minimum of 150mm thick concrete for residential crossings, 200mm thick concrete for commercial crossings, while industrial crossings are to match existing with a minimum of 300mm thick concrete. Concrete for commercial and industrial entrance slabs shall be reinforced with 665 WWF. (see SD 409)
- d) Note: In asphaltic concrete and chipsealed footpaths the depth of basecourse at vehicle crossings shall match the depth of the existing basecourse, with a minimum depth of 200mm for commercial and industrial crossings and 150mm for residential crossings.
- e) Surface boxes etc shall be finished to the tolerances specified in Sec. 8.7.2.d).

#### **8.7.4 Within Interlocking Pavement Block Surfaces**

- a) The blocks removed during excavation or new blocks of identical shape, thickness and colour shall be replaced on a subgrade similar to that in adjoining undisturbed areas and compacted and filled to give a true surface in accordance with NZS 3116. All paving work shall be carried out by staff competent in this work. Gaps between blocks shall be 2-3mm. Jointing sand shall be 'Pavelock' or similar approved sand. A neoprene sheet shall be used to protect blocks when a plate compactor is used. The minimum size of part blocks used shall be a half block.

#### **8.7.5 Within Grassed Berms and Shoulders**

- a) Surface reinstatement to grassed berms and shoulders shall be completed as shown on SD 802. The final 100mm shall consist of topsoil, which shall be raked level with surrounding areas and shall be free of all stones. A dressing of Superphosphate shall be applied at the rate of 30 grams per square metre. Alternative fertiliser and application rates may be used subject to prior consultation and agreement with the Council. After two months a dressing of Sulphate of Ammonia applied at a rate of 30g per square metre shall be applied.
- b) The reinstated area shall be sown with the following grass seed mixture at a rate of 1Kg to 40 square metres and raked into the soil:
  - 1.0kg chewing fescue
  - 4.5kg dwarf rye grass
  - 0.5kg browntop

- c) Alternatively, turfs may be cut from the berm 75mm in thickness and 50mm wider than the trench and stacked for re-use. Full reinstatement shall be achieved within 48 hours with screened top soil being raked into all cut joints, with all turfs being adequately watered immediately following completion of reinstatement.
- d) Surface boxes etc shall be finished to the tolerances specified in Sec. 8.7.2.d) unless in a planted/landscaped (non-pedestrian) area then surface lids shall be finished to 40mm higher than surrounding finished surface.