



THIS DOCUMENT REPLACES THE "REQUIREMENTS AND SPECIFICATION FOR THE OPENING & REINSTATEMENT OF WORKS IN THE PUBLIC HIGHWAY" (30TH MARCH 2010)

Index:

Part 1: General Conditions

Part 2: Excavation & Backfill

Part 3: <u>Fixed Features</u>

Part 4: Asphalt Reinstatements

Part 5: Modular Reinstatements

Part 6: Reinstatement Quality

ASSOCIATED DOCUMENTS:

GR2016-02 STREET FURNITURE

GR2016-03 DEFINITIONS

GR2016-04 APPROVED HIGHWAY CONTRACTORS

GR2016-05 GUIDANCE NOTES

GR2016-06 STANDARD HIGHWAY DETAILS

GR2016-07 APPLICATIONS TO UNDERTAKE HIGHWAY WORKS

GR2016-08 WORKING NEAR TREES & REMOVING TREE ROOTS



1. General Conditions

1.1 Introduction

Traffic & Highway Services forms part of **The Office** *of the* **Committee** *for the* **Environment & Infrastructure** and is tasked to undertake highway maintenance, the inspection of highway works and to execute the statutory requirements contained in The Public Thoroughfares (Guernsey) Law of 1958.

The conditions in this document are designed to assist those working in the highway. These conditions apply to all works, including remedial works, carried out within or adjacent to the public highway.

In order to enhance management of works in the highway, both Traffic & Highway Services and the Utilities will ensure that there are clear lines of communication for roadwork enquiries, notifications, and during works.

The various equipment including ducts, cables, chambers and access covers that are placed within the public highway are the property of the body in question and, as such, it is that body's responsibility to ensure they are fit and safe, inclusive of any associated risks to the health and safety of road users and residents.

1.2 PURPOSE OF SPECIFICATION

This specification document is to be considered part of Traffic & Highway Services' conditions for undertaking works in the Public Highway by Utilities and others in accordance with The Public Thoroughfares (Guernsey) Law of 1958.

Any works that are found not to have complied with these conditions (or the conditions in force at the time of completion) are considered to have been done without approval and will be corrected at the expense of the body undertaking the works.

Traffic & Highway Services acknowledges the need for Utilities to access apparatus buried beneath the highways and to improve or extend their networks. This specification attempts to ensure that reinstatement works are well-managed in order to achieve value for money for Islanders by ensuring that expenditure on highway maintenance is not increased unnecessarily due to poorly undertaken or defective works.

Traffic & Highway Services asks those undertaking works to appreciate that any such works irrevocably reduce the lifespan of a highway, increase maintenance costs and reduce the level of service to highway users in terms of both safety and ride quality.

Please note that reinstatement works within Green Lanes are not covered in this document. In these cases, Traffic & Highway Services should be consulted to determine the most appropriate form of reinstatement.

1.3 Traffic & Highway Services' Permission (Road Opening):

Any person who, or body which, intends to undertake excavation works or instruct excavation works to be carried out on their behalf within the Public Highway, requires prior written permission from Traffic & Highway Services in advance of such works commencing. Prior written permission is not required from Utilities, except where specified within this document.

For clarity, Traffic & Highway Services will issue a Right to Excavate Notice to the Utilities outlining the statutory basis for them to excavate in the public highway. (See GR2016-04 Guidance Notes)

1.3.1 Only Utilities have a separate right to excavate in the Public Highway. All other parties require prior written permission from Traffic & Highway Services.

An application form and a copy of Traffic & Highway Services' specification for opening and reinstatement of the public highway can either be requested from Traffic & Highway Services or downloaded from the following link:

http://www.gov.gg/roads

- **1.3.2** Any person or body undertaking works in the highway must do so in accordance with Traffic & Highway Services' specification. This is in order to achieve the best value for the community and ensure a proper level of service to highway users in terms of both safety and ride quality.
- 1.3.3 Any contractor wishing to carry out works within the public highway for a person or body other than a Utility must ensure that person or body has prior written permission from Traffic & Highway Services to undertake the works.
- **1.3.4** All works in the Public Highway must be kept accessible to Traffic & Highway Services for inspection.
- **1.3.5** Traffic & Highway Services has the discretion to depart from the standards or requirements where it can be demonstrated that to do so would be of overall benefit to the Island.

1.4 TRAFFIC & HIGHWAY SERVICES PERMISSIONS (TRAFFIC MANAGEMENT):

Traffic & Highway Services also administers the Island Road-works Information System (IRIS), which regulates and coordinates the traffic management required to undertake works in the highway. IRIS approvals (for traffic management) <u>do not</u> constitute an approval to excavate in the public highway.

Information concerning the programming, scheduling, and approval of traffic management for road works can be obtained from the traffic management section of **Traffic & Highway Services**, PO Box 145, Bulwer Avenue, St Sampson, Guernsey GY1 3FY and at the States of Guernsey Website at the following link:

http://www.gov.gg/roadworks

1.4.1 Applications to undertake any road works, including those on a shared works basis, must be submitted and approved using IRIS.

Any late completions, changes to traffic management or road closures must be notified to Traffic & Highway Services in accordance with IRIS conditions.

Applications should be completed in a manner that clearly indicates the nature of the works, its location and method of reinstatement. This is the responsibility of the Applicant.

Should an Applicant change the proposed reinstatement method to be used or make an inaccurate IRIS Application regarding this, Traffic & Highway Services must be notified at once.

Please note that failure to notify Traffic & Highway Services of the change of method or a mistake during application may result in Traffic & Highway Services recovering an administration fee in accordance with The Public Highways (Temporary Road Closures) (Fees and Penalties) Order, 2016.

1.5 SAFETY

The Applicant and any contractor are primarily responsible for all Health and Safety relating to their works. In addition to this, Traffic & Highway Services requires that:

1.5.1 All works shall be carried out in a safe manner. The principles and procedures adopted for safe working shall be no less comprehensive or effective than those set out in the Health and Safety at Work (General) (Guernsey) Ordinance, 1987 or HSG47, inclusive of the Applicant ensuring that the contractor has prepared a full method statement and risk assessment, which identifies any risks or hazards and the action to be taken to mitigate them.

All works in the public highway shall be signed, guarded and lit throughout their duration in accordance with the advice given in the most recent version of the "Safer Road Works" document published by **The Office** of the **Committee** for the **Environment & Infrastructure**.

- 1.5.2 It is <u>never</u> acceptable to use unbound materials as a running surface, even as a short-term measure. Suitable cover plates may be used on a temporary basis to cover an excavation where safe to do so but must be signed and lit to make the works safe and covers must be suitable to carry the anticipated traffic loading. Once works are completed, an interim or final reinstatement must be provided as soon as possible.
- 1.5.3 All services must be laid to a depth of at least 600mm below the highway level. Where it can be demonstrated to Traffic & Highway Services' satisfaction that this is not possible, the Applicant should discuss the site with Traffic & Highway Services who may authorise reducing the depth, with an absolute minimum depth of 450mm. Such discussions must take place before finalising works.
- 1.5.4 Following any works in the public highway, the site should be left in a clean and tidy state, free of spoil and debris, and fit for use by road users. Where this does not occur, Traffic & Highway Services reserves the right to arrange for cleaning to take place and pass on all associated costs to the party who commissioned the works.

1.6 RECORDING OF WORKS

- **1.6.1** All Applicants must keep exact records of their equipment within the highway and make these records freely available to other parties.
- **1.6.2** Any services encountered which are either not shown on the Applicant's records, not in the position shown on the Applicant's records, or are dead services, must be reported to the appropriate Utility and the respective Utility must update their records accurately and immediately.
- 1.6.3 The Applicant will make accurate records of any excavations or reinstatements undertaken, including exact measurements and photographs. These are to be attached to the relevant IRIS application in order to identify clearly the location and extent of the works undertaken.

1.7 EMBARGO AND LEAD IN PERIOD

Embargo:

When a section of Public Highway has been resurfaced or reconstructed by Traffic & Highway Services, it is standard policy to place that section of highway under embargo, during which no excavation works will be permitted. In some circumstances, Traffic & Highway Services may decide not to place a section under embargo: typically where the works involve extensive patching as opposed to the complete resurfacing of a road.

This embargo will run for a period of three years from the date of the completion of the resurfacing works. The purpose of the embargo period is;

- a) To prevent immediate damage to the newly laid surface of the public highway and the associated reduction in its service life.
- b) To encourage greater forward planning of works programmes by Applicants.
- c) To provide a period where residents and businesses are not subject to further disruptions.

Exceptions to the embargo are emergency works. These are works where a Utility can demonstrate clearly that works are required to end or prevent either <u>immediate</u> danger to persons or property, or the failure to maintain an existing statutory obligation.

In exceptional circumstances, Traffic & Highway Services may grant approval for excavations in embargoed section of road where it is clearly shown to be of overall benefit to the island in general or where overriding special circumstances prevail.

The details of Embargoed Sections of Highway are held on the States of Guernsey's Highways Management IRIS Website and can be viewed on the interactive map located at this web link:

http://www.iris.gov.gg/Website/roads/embargo/cutembargos.asp

- **1.7.1** No excavation works will be allowed in a section of public highway under embargo without prior written permission from Traffic & Highway Services. Permission will only be given in exceptional circumstances.
 - Emergency works do not require prior approval, but Traffic & Highway Services must be notified within one working day after the start of the works and a clear explanation must be provided for the reasons why the work needed immediate attention.
- **1.7.2** If, following Emergency or exceptional works, Traffic & Highway Services believes the structure of the highway has been affected, inclusive of any extended area past the excavation, it will direct either that:
 - a) An interim reinstatement is to be provided to allow for settlement or
 - b) The foundation layers within the affected areas are to be replaced and fully compacted and final reinstatement undertaken.
- 1.7.3 In all circumstances where emergency work has been undertaken within an embargoed section of an asphalt highway, Traffic and Highway Services would seek to reduce the amount of joints present in a road surface, as these areas are known to be more likely to deteriorate prematurely.

Therefore;

- a) A full width reinstatement will be required if the excavation crosses the centre of the carriageway or the carriageway width is less than 4.0m
- b) A half-width reinstatement will be permitted where there is an existing centre joint and the excavation does not cross that joint.
- c) At Traffic & Highway Services' discretion, full or half-width reinstatement may not be required if Traffic & Highway Services believes that an adapted solution would offer greater overall public benefit by extending the life of the road in question.
- **1.7.4** Traffic & Highway Services must be consulted prior to the reinstatement of any emergency works. Where this is not possible, including emergency works that occur out of hours:
 - a) One of the options detailed in 1.7.2 must be followed and either option a) or
 b) in 1.7.3 must be adhered to and
 - b) Full photographic records of any damage to the highway, the extent of the excavation and its reinstatement must be made and supplied to Traffic & Highway Services.

Lead-in Period

There will be a six months period, prior to the start of any major works planned by Traffic & Highway Services, during which there will be restrictions in undertaking excavation works.

Disturbing a highway's foundation layers is very likely to produce an unacceptable risk of further settlement under traffic loading, especially within the first six months of any such disturbance. In order to avoid such settlement occurring to a newly laid road surface, restrictions will be applied to excavations during the six month lead in period.

1.7.5 Traffic & Highway Services will impose a "no dig" embargo on excavation works during the six month period prior to resurfacing works. Exceptions to this embargo are Emergency Works and works required due to extraordinary need where a clear, written case is provided in advance. These works will require prior written permission from Traffic & Highway Services.

Traffic & Highway Services has extended significantly its forward notice of resurfacing works to householders and Utilities in order to reduce the need for works prior to resurfacing. Therefore, permission will only be given where a detailed case is made for the exceptional need for the works. 'Oversight' will not be an acceptable reason for works to take place prior to the six month lead-in period.

If works are permitted in exceptional circumstances, these works are likely to be subject to reasonable conditions, which are designed to ensure that the community does not incur any additional cost which may be caused by these late works.

Where works have received prior written permission, Traffic & Highway Services reserves the right to nominate and/or manage the Approved Highways Contractor appointed to undertake the backfilling, reinstatement, or other associated works within a highway during the lead-in period.

Traffic & Highway Services will <u>only</u> be responsible for any remedial works relating to the reinstatement when the contractor is managed by Traffic & Highway Services.

1.7.6 Should any remedial or finalisation works be required and the Applicant has not undertaken the works prior to the Major Works, Traffic & Highway Services may take over the responsibility for the remedial or finalisation works and the Applicant will pay Traffic & Highway Services for any such works not already undertaken.

1.8 SHARED WORKING & ROUTE SELECTION

In order to minimise disruption to the road network, when Traffic & Highway Services receives two or more requests to work within a road, these may be combined and the Applicants will be encouraged by Traffic & Highway Services to share the workings or road closure.

1.8.1 Traffic & Highway Services will nominate a Lead Applicant for the full or part duration of the works. Any Applicant wishing to share the closure will communicate with the Lead Applicant and all works will need to be agreed with them. Requests to share workings must not be unreasonably refused, curtailed or conditioned by the Lead Applicant.

If the Lead Applicant does refuse, curtail, or condition a request for shared working, they must immediately notify the Traffic & Highway Services. In such cases, Traffic & Highway Services reserves the right to transfer the Lead Applicant designation to ensure that Applicants act reasonably with respect to shared workings.

When trenches or excavations are being shared, this must be arranged with the Lead Applicant and any conditions agreed beforehand. The Lead Applicant will be responsible for the guarantee of this reinstatement and the costs of any remedial works.

- **1.8.2** Each Applicant must submit separate IRIS Applications to Traffic & Highway Services, even when sharing a Road closure or other form of traffic management.
- 1.8.3 The selection of the location or route of an excavation is the sole responsibility of the Applicant. The Applicant should take account of pre-existing trench lines, highway defects or other factors. It is Traffic & Highway Services' policy that the Applicant should bear the costs of remedial measures where the Applicant's works have exacerbated an existing condition and remedial measures would not have otherwise been required at that point in time.
- **1.8.4** Areas of highway defects which are induced to fail due to excavation works will be remedied at the Applicant's expense.
- **1.8.5** Where these, or any, standards are not followed and completion of them needs to be requested by Traffic & Highway Services, its standard administration charge will be levied.

1.9 OTHER REQUIREMENTS

- 1.9.1 The Applicant should arrange to replace, on a like-for-like basis, any special structures or materials, such as road humps, rumble strips, high friction materials, coloured materials, specially bound materials, imprinted surfaces, asphalt reinforcement grids and painted or thermoplastic markings and lines.
- **1.9.2** Grassed areas shall be reinstated using the original turf, replacement turf or an equivalent seed as appropriate. In all cases, a reasonable growth shall be established within 3 months. In previously mown areas, the surface shall be left free of stones greater than 20 mm nominal size.
- **1.9.3** Any shrubs, trees or planted areas shall be reinstated with the same species, unless otherwise agreed with Traffic & Highway Services, and shall be fully established within 12 months.
- **1.9.4** Grassed areas, ditches and drainage channels shall be restored to their original profile on reinstatement unless otherwise agreed.
- 1.9.5 The Applicant must arrange for the resetting of any pre-existing fixed feature such as kerbstones, channel blocks and boundary setts, which their works have disturbed, to the pre-existing line and level, ensuring that they are bedded and jointed in accordance with Traffic & Highway Services' Standard Highway Details GR2016-06. Any undermined features should be fully supported and any base or foundations re-provided.

If unsure on a matter concerning reinstatement requirements or conditions relating to other forms of highway structure not mentioned within this specification, the Applicant should consult with Traffic & Highway Services who will be happy to assist.

1.10 CHARGES FOR EXCAVATIONS

In 2015, the States agreed to charge companies that dig up the Island's roads. This commenced in January 2017 and applies to any work that involves digging a trench or hole through the surface of the road to install, maintain or repair pipework, cables, or any other services under the ground.

- **1.10.1** There are two elements to the charge. A fixed administration and inspection fee and a variable rate based on the size of the excavation, the road hierarchy and the road age.
- 1.10.2 There is a facility in IRIS to enter the area excavated, under the original application number, after works have been completed. Accurate information must be entered into IRIS within 5 working days of the completion of the works. If this is not entered within this time a further administration charge may be levied.
- **1.10.3** The level of charges for the following year will be issued to all utilities in advance of the start of the calendar year.
- **1.10.4** Road age, hierarchy and embargo status is available on the interactive map using this link:

http://maps.digimap.gg/gsyRoadAge.htm

2. Excavation & Backfill

2.1 Breaking the surface

Asphalt Surface

2.1.1 To avoid undue damage to the surface course, or to the bond between the surface course and binder course, the surface layers must be cut out by machine, e.g. road saw or planer.

In some circumstances, Traffic & Highway Services may take the opportunity to request that the Applicant extend their reinstatement works to rectify adjacent defects (and thus reduce disruption to the public) under agreement. Otherwise the Applicant is required to reinstate in accordance with Section 4.

Modular Surface

- **2.1.2** Modular surfaces will need to be re-laid as they were found unless there are breakages, when these will need to be replaced on a like-for-like basis.
- **2.1.3**. Applicants are advised to arrange an inspection with Traffic & Highway Services <u>prior</u> to the commencement of any excavation of a modular surface (where possible), to allow Traffic & Highway Services and the Applicant to agree on the existing state of the surface.
- 2.1.4 Should such an agreement not be in place in advance of works commencing, Traffic & Highway Services will presume that the surface was in good condition, free of breakages and other defects and any liability for repair to damage to the surface will be the responsibility of the Applicant.
- **2.1.5** Where replacement modules are required due to existing breakages (as noted during the pre-works inspection), Traffic & Highway Services will provide suitable replacements to the Applicant free of charge. At all other times, sourcing these replacements will be the sole responsibility of the Applicant.
- **2.1.6** Traffic & Highway Services may take the opportunity to request that the Applicant extend their reinstatement works to rectify adjacent defects (and thus reduce disruption to the public) under agreement. Otherwise the Applicant is required to reinstate in accordance with Section 5.
- **2.1.7** When excavating in modular construction, the existing modules must be lifted carefully and stored for re-use.
- **2.1.8** Works must not commence if the exact materials required cannot be readily sourced.
- **2.1.9** Traffic & Highway Services' prior agreement must be obtained to use alternative materials.

2.2 EXCAVATION WORKS

2.2.1 All excavations and works in the road shall be carried out in a manner which avoids causing undue damage to the structure and surface of the road. This includes the actual excavation or any other works, the movement or use of plant and the storage of materials or equipment. Any damage will be rectified at the Applicant's expense.

Traffic & Highway Services shall be informed of any buried modular units, cobbles, or setts encountered and shall be afforded the opportunity to inspect the material prior to it being excavated. Traffic & Highway Services may direct the units to be reused, if they are not to be reused these modular units should be separated from the spoil and transported to Traffic & Highway Services' compound.

The trench width must provide adequate access for compaction of both the surround to apparatus and the reinstatement of the trench.

2.3 WORKING NEAR TREES

Trees are a valuable part of our Island and additional care should be taken when working near them.

2.3.1 When excavating near trees, the advice of the Principal Environmental Services Officer, Agriculture, Countryside and Land Management Services should be sought prior to starting the works. Further information can be obtained from the National Joint Utilities Group publication "Guidelines for the Planning, Installation and Maintenance of Undertaker Services in Proximity to Trees" (NJUG 10).

Traffic & Highway Services, Applicants and Contractors should take the advice of the Principal Environment Services Officer into consideration and undertake works in such a manner to protect reasonably trees from harm.

2.4 EXCAVATED MATERIAL

2.4.1 Topsoil removed during the excavation shall be kept for re-use during reinstatement, when it shall be replaced to the original extent and thickness and topped up with imported topsoil of similar composition and pH value where necessary.

All excavated materials that are to be re-used should be protected from excessive drying or wetting during storage. Additionally, these materials should be excavated, stored, handled and laid to avoid contamination and loss of fine materials.

Excavated material that is unsuitable for re-use should be removed from site as soon as practicable. Excavated material which is retained on site shall be stockpiled within the confines of site barriers, at a safe distance from the trench edge and prevented, so far as is practicable, from entering any drainage system or water course.

Any material that has entered the drainage system shall be flushed or removed from the system and the water system left in a clean condition, otherwise Traffic & Highway Services will undertake works to clean the drainage system at the expense of the Applicant.

2.5 SIDE SUPPORT

2.5.1 The sides of all excavations, in either soft or loose ground, shall be provided with a side-support system. The support system shall be properly designed and installed to restrain lateral movement of the sidewalls and should be installed immediately.

Supports shall be progressively withdrawn as backfilling and compaction work progresses, taking care not to form additional voids. If the Applicant believes that it is likely that additional voids will be formed (which cannot be adequately compacted) then an Interim Restatement should be used and after the settlement period a Final Reinstatement undertaken.

2.6 PROTECTION OF SERVICES

As with any Applicant's equipment, Traffic & Highway Services' equipment must be protected from damage and any alterations to the equipment should only be undertaken with the prior written approval of Traffic & Highway Services.

2.6.1 Any Applicant carrying out works shall immediately report any damage caused by their works or excavation to buried services including drainage runs. Any disturbed service must be restored to the requirements and satisfaction of the relevant Service Owner <u>prior</u> to any reinstatement of the works.

Failure to notify the relevant Service Owner, or to allow the damage to be inspected, or to undertake any instructed repair, shall render the Applicant carrying out the works liable to subsequent charging by the relevant Service Owner for all subsequent remedial works, including any investigation, required due to the damage to the service.

2.6.2 In some circumstances, either damage cannot be avoided or services will need to be diverted. The Applicant will agree with the owners of the respective service how they will be replaced or diverted before they are permitted to undertake the works.

Traffic sensors (including traffic loops) are cut into the highway to detect and monitor traffic; these may not always be visible. If these cannot be worked around without significant damage to the sensors The Applicant will make provision for their replacement when they are encountered.

These sensors are sited at a number of traffic counter sites and at most traffic signals. For further advice on location of traffic sensors, the Applicant should contact Traffic & Highway Services.

2.7. TRENCH DRAINAGE

Trench backfill may act as a land drain, which can have an adverse effect on the water table, the structural layers of the Highway and adjacent properties. The Applicant shall agree with Traffic & Highway Services the measures required to prevent this occurring.

2.7.1 The Applicant would be expected to consider preventative measures during ducting works or where there is an existing hazard and undertake reasonable practicable measures to minimise any such hazard. If water does enter into the trench, during or post works, it is the Applicant's responsibility to resolve this issue.

2.7.2 Excavations shall be protected, as far as is reasonably practical, from the ingress of water and any water running into them shall be drained or pumped to an approved disposal point. Any drainage sumps shall be sited in a way to prevent damage to the excavation.

Where drained water is likely to contain fine material, reasonable measures must be taken to remove such material, such as by using a silt catchment tank. Where this is not done, the Applicant will be charged for cleansing the disposal point and any affected area/drainage pipework.

Sections of trench, especially on steep inclines, that are likely to have water ingress should have land drains installed prior to backfilling. The land drains should be capable of discharging into the surface water system.

2.7.3 The physical reinstatement works will be subject to the standard guarantee periods.

However, if water drains out of the Applicant's chamber/cover, causing a potential hazard to road users, it will always be the responsibility of the Applicant, as owner of the cover, to undertake any remedial measures to ensure the safety of road users. Such remedial measures will need to be agreed with Traffic & Highway Services in advance.

2.8 SURROUND TO SERVICES AND BACKFILLING

Applicants and Contractors should note that a major reason for trench failure and the need for subsequent remedial measures is the poor compaction of either the surround material or the backfill material.

The use of certain backfill materials, such as high strength concrete, has an adverse effect on the future access, maintenance and provision of services. Therefore, concrete may <u>only</u> be used in extreme situations. If concrete is to be used then adequate layer thickness should be achieved taking account of the likely traffic loading.

Cut-Back

2.8.1 All excavation edges (in either an asphalt or modular surface) shall be cut back immediately prior to backfilling so that they are essentially smooth and vertical with no significant undermining.

Surround

2.8.2 Surround to the apparatus may be laid up to a maximum thickness of 150 mm above the crown of the Applicant's apparatus. Preformed modules or other protective measures may be placed within the surround to apparatus, according to the Applicant's requirements.

Granite dust or other 3mm down aggregate should have adequate moisture content to enable compaction.

Marker tape or other means of identification must be correctly placed over services whenever they have been disturbed (even if they were not present in the first place).

Backfill

2.8.3 When selecting back-fill materials, it is essential that they do not adversely affect any future works. The selected backfill material must be fit for purpose, laid and



compacted to form stable foundation layers. Any material should have adequate moisture content in order to achieve proper compaction and any dry material shall be watered to achieve this moisture content.

Suitable backfill materials must be used. It is permissible to use excavated or imported material provided it conforms to:

- Class A Graded Granular Materials, materials with a maximum of 10% by weight passing a 63 micron (μ m) BS sieve, and with all material passing a 425 micron (μ m) BS sieve showing a plasticity index of 6 or less, or Type 2 Granular Sub-base [Clause 804 SHW] or Type 1 Granular Sub-base [Clause 803 SHW].
- Class B Granular Material, materials with a maximum of 10% by weight passing a 63 micron (μm) BS sieve.

The laying and compaction procedures used for all materials shall be the responsibility of the Applicant, and thus any subsequent settlement, will also be the responsibility of the Applicant.

Sub-base

2.8.4 Where a sub-base is present it should be replaced with Class A material.

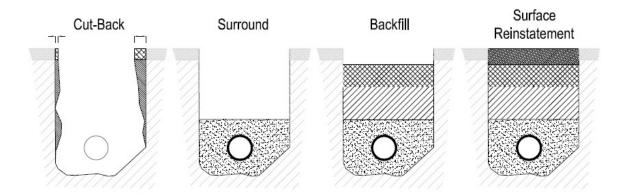
Concrete

2.8.5 If an Applicant wishes to use concrete as a backfill material in any reinstatement greater than 1m² then the written permission of Traffic & Highway Services must be first obtained. Traffic & Highway Services will require full justification of why this particular method is desirable and why the Applicant believes the benefits outweigh the disadvantages.

Concrete distribution slabs less than 200mm thick laid below the foundation layers and immediately above the surround will be permissible.

The applicant should contact Traffic and Highway Services where a concrete road-base is encountered. The composite structure should be maintained and the existing material as encountered should be replaced to its full original thickness.

The four stages to an excavations reinstatement.



3. Fixed Features and Covers

Fixed features are items such as concrete kerbs, granite setts, channel blocks, drainage fixtures, marker slabs, covers and ironware.

Applicants, when designing schemes or giving instructions to contractors, should take account of the effect manholes, covers and frames have on the road handling of vehicles; especially two wheeled vehicles.

The number and position of covers or frames will have a significant impact on the cost of required road maintenance and the ability to achieve the maximum life of the highway structure without interim intervention. Where there is to be a number of small meter covers or frames in close association with each other it is advantageous that these are grouped and housed within one larger cover or frame.

Care must be taken in the choice and installation of manhole frames and covers.

3.1.1 All covers must conform to BS EN 124: Gully tops and manhole tops for vehicular and pedestrian areas.

Applicants should avoid placing covers and other such equipment on bends when reasonably possible. A risk assessment should be undertaken and, if required, an anti-slip surface must be applied to the cover/frame and maintained to the correct standard.

Covers will not be located:

- a) where they straddle or interfere with kerbs or other thresholds
- b) along channel runs
- c) where they otherwise impede drainage along the carriageway edge.

Large covers that cannot match the camber, profile or level of the adjoining surfaces may not be used.

Any covers or fixed features that form part of the Applicant's equipment will remain the responsibility of the Applicant indefinitely, except as detailed in Clause 3.1.3 below.

- **3.1.2** All fixed features which includes, but is not limited to, concrete kerbs, granite setts, channel blocks, drainage fixtures, covers and ironware, shall be laid and maintained in accordance with the Acceptance Criteria.
- **3.1.3** During resurfacing works, Traffic & Highway Services will reset all affected covers and frames. When this resetting also corrects a failure of the 'Acceptance Criteria' or requires changing of ironwork for whatever reason, the Applicant will be charged.

Once the resurfacing is completed, Traffic & Highway Services will assume responsibility for any cover which fails the 'Acceptance Criteria' for a period of three years.

During this time, the relevant Utility may inspect and notify Traffic & Highway Services of any need for remedial works however, after the three year guarantee period, the Utility will resume responsibility.



Figure 1: Cover with failed surround

4. Asphalt Surface Layer Reinstatement

The integrity of the road structure depends on the soundness or compaction of its foundation layers and the ability of the surfacing layers (binder and surface course) to accommodate traffic loadings and environmental conditions in order to produce an even surface with good driving characteristics. The compaction of the foundation layers over a significant number of years has provided many of the Island's roads with a structurally sound base and this meant that the previous surface layers were able to maintain good driving characteristics.

The disruption of these layers by excavations, even if backfill materials achieve a high level of compaction, will leave the road structure in a weaker state and, therefore, reduce the capability of the surface layers to maintain good driving characteristics.

4.1 ASSOCIATED CLAUSES:

See 2.1 Breaking the Surface clause 2.1.1

4.2 ASPHALT REINSTATEMENT METHODS

The Applicant must carry out either an 'All-in-One' or an 'Interim' reinstatement, unless agreed in advance with Traffic & Highway Services, and must endeavour to achieve the greatest degree of permanent reinstatement in the long term.

4.2.1 All-In-One Reinstatement:

Following backfilling of the excavation, the final asphalt surface is laid. Traffic & Highway Services recommends this only when there is a low probability of settlement over time due to traffic loading. If there is likely to be settlement, this may result in a failure of the Acceptance Criteria leading to remedial action then being required.

An All-In-One reinstatement will be trimmed back (see 4.3) and the asphalt surface laid with a minimum of 70mm of AC20 binder course, and minimum of 30mm thick layer of AC10 or AC6 surface course to a combined thickness specified in Table 4.4.1

AC10 Surface asphalt may be used in place of AC20 binder asphalt.

4.2.2 Interim Reinstatement:

Following backfilling, an interim surface is laid and, after a settlement period, this is then removed fully or in part and then finalised with a permanent asphalt surface course.

The settlement period will be six months unless extended by Traffic & Highway Services.

Traffic & Highway Services recommends its use when there is the likelihood of settlement over time due to traffic loading as any defects can be made good, following this settlement period, during the finalisation of the reinstatement. This will give a better long-term reinstatement than an 'All-In-One' Reinstatement that has required remedial action.

4.2.3 The surface shall be reinstated to a permanent standard up to and including the binder course, using AC20. The binder course could be extended to act as the temporary surface course if the Applicant wishes or a temporary surface course can be provided with or without a separating layer.

'Trim-back' is not required at this point but the total thickness of asphalt must be laid as specified in Table 4.4.1

4.2.4 Finalisation

During the finalisation of an interim reinstatement, all temporary surfacing materials shall be removed to the top of the permanent binder course, typically by cold-planing. Where binder course is used as temporary surface a minimum of 30mm in depth should be removed. All joints are to be saw-cut. A permanent AC10 or AC6 surface course shall then be laid, inclusive of tack coat, edge sealing and over-banding.

4.2.5 Iron Work

Traffic and Highway Services approved cold-lay asphalt materials may be used on minor excavations. These include reinstatements around covers less than 500mm wide and with a reinstatement area not exceeding 0.5m².

4.3 PREPARATION

Trim-back

Joints are an inherent weakness which can cause delamination of the surface layers and increase the incidence of fretting and deterioration due to water penetration. Therefore joints should be kept to a minimum to prevent water penetration. In footways, the surface course must be trimmed back in accordance with clause 4.5.1

4.3.1 The edges of any excavation need to be trimmed to meet the following requirements;

All 'final' reinstatements must have a regular shape when viewed from above, free of areas where compaction may be problematic, and minimising overall length of the joint. This is not required for an 'Interim' Reinstatement.

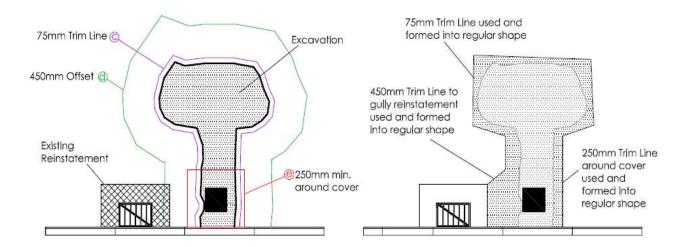
- a) All edges shall be essentially straight, regular and vertical.
- b) When finalising an interim reinstatement, the trim-back must extend at least 75mm beyond the previous interim reinstatement
- c) When the trim line of any reinstatement falls within 450mm of any fixed feature such as the road edge, kerbing, ironwork, other fixed feature or any previous reinstatement, the reinstatement must extend to the interface with that feature.
- d) When reinstating around a contained fixed feature, such as the road edge, kerbing, channel blocks, cover or ironwork, the trim line must be extended to either the nearest adjacent feature (within 450mm see above), or be at least 250mm away from the contained feature.

When the trim line extends to a previous reinstatement and subsequent movement is recorded at the intersection of these two reinstatements, it will be the most recent Applicant who will be held liable for any remedial works required.

Should an Applicant wish to have pre-existing conditions noted, Traffic & Highway Services' Highways Inspector must be informed in reasonable time to be given the



opportunity to inspect the site <u>prior</u> to commencing works, otherwise Traffic & Highway Services will assume the road surface was in otherwise good condition.



Tack Coat

- **4.3.2** A tack coat shall be applied to the surface in the following circumstances:
 - a) Where bituminous material is to be laid onto an existing bituminous surface that has been trafficked or otherwise disturbed and where bituminous material is to be laid onto an existing bituminous surface laid more than 72 hours earlier.
 - b) The tack coat shall be applied at a rate of 0.3 to 0.5 litres per m², unless otherwise recommended by the manufacturer. The tack coat shall be applied evenly, with no pooling or dry areas. A bitumen emulsion edge sealant may be used as a tack coat in small excavations and narrow trenches.

Only HAPAS approved tack coat should be used.

Edge Sealing

4.3.3 At least the top 100mm of all bound vertical edges of the binder/surface courses, inclusive of the equivalent area on kerbs and exposed fixed features, shall be painted (or otherwise applied) with a bitumen based edge sealant or equivalent material. There shall be no significant splashing, spillage or any deliberate over-painting of the adjacent road or other surfaces.

Only HAPAS approved *Edge Sealant* can be used.

Overbanding

- **4.3.4** 'Overbanding' will be provided at the interface between the existing road and the reinstatement edge, with the following requirements:
 - a) The minimum skid resistance value (SRV) for all overbanding materials shall be 55 SRV. The SRV shall be measured in accordance with Transport Research Laboratory (TRL) Road Note 27, second edition 1969.
 - b) Overbanding shall not exceed 3mm thickness OR 40mm width.
 - c) Overbanding shall not be used as a substitute for any edge sealing required.

Only HAPAS approved *Overbanding* can be used.

4.4 LAYING OF THE ASPHALT SURFACE LAYERS

Machine laying far surpasses hand laying in terms of both compaction and finished surface and, where practical, should be used.

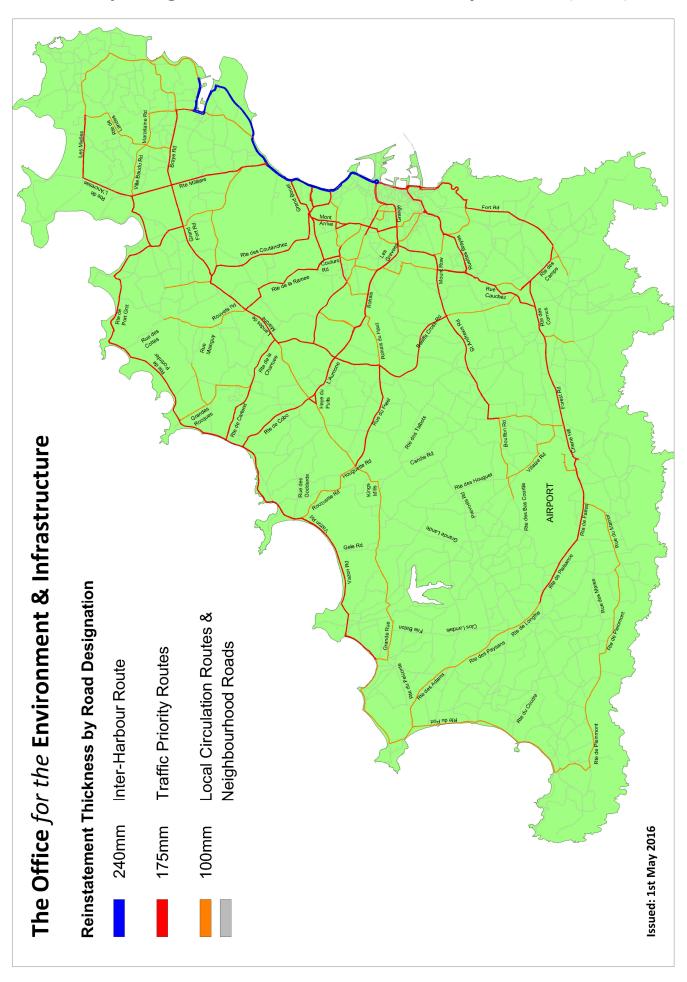
When a flexible road (with unbound foundations and asphalt bound surfacing layers) has a weakened foundation, the surface layers will have a reduced ability to resist damage under traffic loading and additional thickness of asphalt is required.

4.4.1 Applicants are required to reinstate the surface layers of their works to the minimum thickness as per Table 4.4.1 and Road Designation Map 4.4.1. Unless agreed in advance with Traffic & Highway Services, this must comprise at least 70mm AC20 binder course, and 30mm AC10 or AC6 surface course on any asphalt reinstatement. AC20 binder material can be substituted for AC10 surface material.

Table 4.4.1 Road Designations & Minimum Asphalt Thickness					
Roads Designation	Equivalent UK Category	Design Loading in HGV Million Standard Axles	Minimum Thickness		
Inter Harbour Route	Type 2	2.5 – 10.0	240mm		
Traffic Priority Route	Type 3	0.5 – 2.5	175mm		
Circulation and Neighbourhood Roads	Type 4	up to 0.5	100mm		

4.4.2 The Applicant must ensure that bitumen materials comply with BS EN 13108, inclusive of laying temperatures and compaction. The Applicant should obtain details of laying temperatures from the surfacing contractor and have them available for inspection by Traffic & Highway Services staff.

Unless agreed by Traffic & Highway Services, all asphalt final reinstatements must be formed using hot laid asphalt. Interim or temporary surfacing can be formed using either hot or cold laid asphalt materials or similar deferred set materials but this material will be removed when finalisation is undertaken with either AC10 or AC6 surface courses. Excavations less than $2m^2$ may have a surface course material laid in place of a binder course material provided it is placed and compacted in at least two layers and complies with the overall thickness requirements for binder/surface courses as per clause 4.4.1



4.5 ASPHALT FOOTWAYS

4.5.1 Footways are to be reinstated with 100mm granular base and 30mm AC6 surface course unless adjacent to a narrow road, where vehicle over-running of the footway is likely to occur, in which case a 180mm C20 concrete base and 30mm of AC6 surface course must be provided, or 180mm AC20 Binder and 30mm of AC6 surface course.

The sub-base below the concrete or asphalt base must be properly compacted.

A narrow road is any two-way section of carriageway less than 5.2m wide, or any one-way section less than 2.8m, excluding any official parking area.

Width of Reinstatement:

- a) Footways less than or equal to 1.5m wide, measured from back of kerb to back of footway, will have a full width final reinstatement.
- b) Footways greater than 1.5m wide will have the surface course trimmed back in accordance with clause 4.3.1.

Minor reinstatements (less than 250mm) at the kerb edge or back of footpath may be reinstated with a 250mm wide strip, if the disrupted area is greater than 250mm wide then the reinstatement must comply with (a) and (b) above.



5. Modular Reinstatement

5.1 Associated Clauses

See 2.1 Breaking the Surface clause 2.1.2

5.2 Modular Reinstatement Methods

5.2.1 The Applicant must carry out either an 'All-in-One' or 'Interim' reinstatement, unless agreed in advance with Traffic & Highway Services, and must endeavour to achieve the greatest degree of permanent reinstatement in the long term.

'All-In-One' Reinstatement, following backfilling the final modular surface is laid.

Traffic & Highway Services recommends its use only when there is a low probability of settlement over time due to traffic loading. If there is likely to be settlement this may result in a failure of the Acceptance Criteria leading to remedial action then being required.

5.2.2 The permanent reinstatement of modular surface layers should be carried out in accordance with BS 7533. The method of jointing will match existing in terms of style, material and colour.

'Interim' Reinstatement, following backfilling an interim surface is laid.

After a settlement period this is removed fully or in part and the final modular surface is laid.

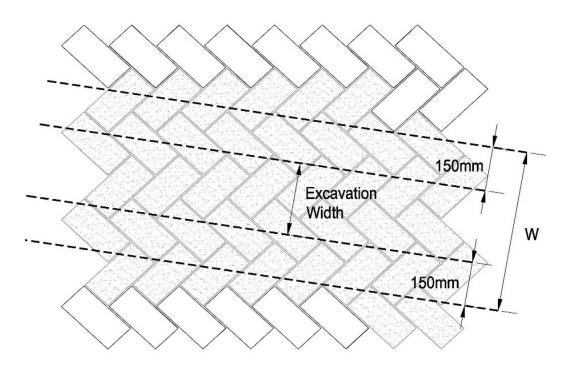
The settlement period will be 6 months unless extended by Traffic & Highway Services.

5.2.3 Where a temporary reinstatement is required within a modular surface, the existing modules should be reused, including the use of broken modules if necessary, provided that they are secure and will not present a tripping hazard. Where damage has resulted in fragmentation or widespread breakage of modules, then bituminous mixtures may be used for the interim reinstatement, provided they meet the performance requirements and that compaction of such mixtures do not result in further damage to adjacent modules.

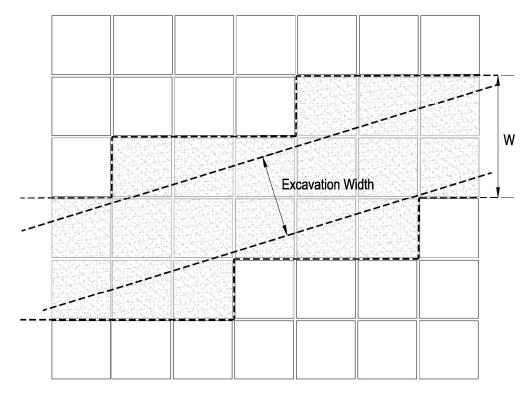


5.3 TRIM-BACK

5.3.1 For modular surfaces where any side of the module is less than 300mm, all modules which fall partially or completely within a "trim line" 150mm away from the excavation, shall be re-laid, unless otherwise agreed with Traffic & Highway Services.



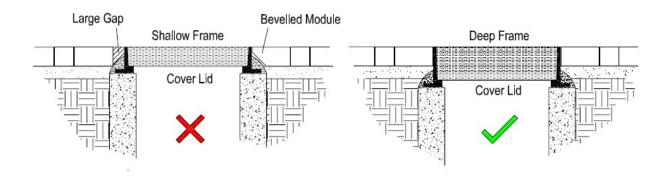
5.3.2 For modular surfaces where all sides of the module are greater than 300mm, there is no trim line, and only Modules which fall partially or completely over the excavation shall be re-laid, unless otherwise agreed with Traffic & Highway Services.



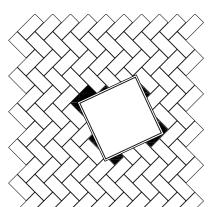
5.3.3 In modular surfaces, shallow frames will reduce the ability to reinstate the surface up to the manhole edge, which may then require a wide joint around the manhole or frame. In many circumstances this will not be acceptable, due to aesthetic and environmental considerations.

Consideration must be given to the selection of a frame with deep sides that will enable modular units to be laid close to the frame without the need to bevel the paving unit or have wide joints.

If wide joints are likely and cannot be avoided advance agreement must be sought on the method and materials of the surface reinstatement.

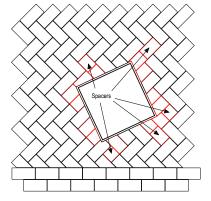


5.3.4 When cutting modular units to fit to manholes, frames, or edge lines it is not acceptable to use small units as they will easily become loose over time. When required, adjustments will be made to other modular units in order to use larger edge cut units, or stretcher courses used to negate the need for small edge cut units.



When reinstating a modular pattern around an access or to an edge; small units and brittle cuts reduce the strength of the surrounding pattern and are likely to come loose.

Such units are highlighted in black on this diagram.



By using spacers and breaking the pattern, small units can be eliminated, making bedding easier and maintaining the interlocking strength of the Modules.

This can, in certain cases, also be achieved through altering the orientation of the manhole in the first place. The same can be achieved around edges using a stretcher course.



5.4 LAYING OF THE SURFACE LAYER

5.4.1 Bedding material shall be sand or mortar, to match the characteristics of the existing type, thickness and exact colour. Sand, mortar or other grouting to match the performance of the existing material shall be applied to gaps between individual modules at the time of final reinstatement.

Final reinstatement of modules shall include all modules which are situated within or extend beyond the effective width of the reinstatement or as per prior agreement with Traffic & Highway Services.

Clean, undamaged modules shall be re-used for final reinstatement; broken modules must not be used for the final reinstatement and shall be replaced.

Where replacement modules are required due to breakages caused during the course of the Applicant's works or reinstatement, the Applicant shall reinstate using like-for-like modules purchased at the Applicant's expense. Where like-for-like cannot be used, Traffic & Highway Services must be consulted on the modules to be used for final reinstatement.



6. Reinstatement Quality

6.1 GUARANTEE PERIOD:

6.1.1 The guarantee period for a reinstatement will be that shown in Table 5.1.1 below. Following the guarantee period, Traffic & Highway Services will only take over the responsibility of that reinstatement if it complies with the Acceptance Criteria.

There is an indefinite guarantee period for Interim Reinstatements. However, it is expected that unless written agreement is otherwise obtained from Traffic & Highway Services, a final reinstatement will take place within 2 years. Failure to meet the acceptance criteria at any time will require remedial works to be carried out at the Applicant's expense.

Table 5.1.1 Guarantee period				
Reinstatement Type	Guarantee Period	Guarantee Start Date:		
All-In-One	5 years	Completion of the All-In-One reinstatement.		
Interim	Indefinite	Completion of the Interim reinstatement.		
Final (Post-Interim)	3 Years	Completion date of Final Reinstatement.		

6.1.2 Failure to meet the Acceptance Criteria during the guarantee period will require remedial action to be carried out at the Applicant's expense. This will result in a new guarantee period of 3 years, commencing from the date that remedial action was completed or the original guarantee period whichever is greater, during which time the Applicant maintains responsibility for the remedial works undertaken.

Please note that whilst a contractor might guarantee their own works to the Applicant (their employer), it is the Applicant who is responsible for the guarantee of any reinstatements to Traffic & Highway Services for the full or extended guarantee period. As such, the Applicant will be held responsible for any remedial works necessary. In short, a Utility will always be responsible for the works of their contractor, as it is undertaken on their behalf and through their legal right to excavate the highway.

Settlement and/or cracking of either the reinstatement <u>or surrounding surface</u> (whether asphalt or modular) of the works undertaken will be regarded as a failure of the Acceptance Criteria, and remedial action required.

All reinstatements must comply with the Acceptance Criteria.

6.2 ACCEPTANCE CRITERIA:

After the guarantee period has elapsed, Traffic & Highway Services will resume responsibility for the reinstated section of highway from the Applicant <u>only if</u> the reinstatement complies with the Acceptance Criteria. The Acceptance Criteria consider both the previous profile of the surrounding road and the Performance Requirements of the reinstatement.

The Performance Requirements have been developed to reflect the expectation expressed by both the States of Guernsey and the public that a high standard of reinstatement should be achieved. The Performance Requirements for Interim Reinstatements broadly follows that of the UK and reflects the need to maintain the safety of road users; however, the Performance Requirements for Final Reinstatements is more stringent than that of the UK, which reflects the desire to have reasonable ride quality.

The intention is that the road should not be left in a worse condition than it was prior to any works being undertaken and adherence to the Performance Requirements will be subject to the prior condition and profile of any surfaces.

It is recognised that there is a frequent need in Guernsey for pedestrians to use carriageways and for vehicles to mount areas of footpath. Unless specifically stated, the Acceptance Criteria apply to both carriageways and footways equally. It should be recognised that the surface profile of reinstatements carried out in awkward areas (for example, around surface boxes and fixed features) using hand tools, may need greater care.

6.2.1 The reinstatement of the highway surface will:

- a) Be free of tripping hazards for pedestrians.
- b) Provide an acceptable ride quality for vehicles.
- c) Provide a safe running surface for vehicles, including two wheeled vehicles.
- d) Be free draining with no significant puddles in that no standing water wider than 500mm, or exceeding 1m² in area shall be present 2 hours after the cessation of rainfall.
- e) Have no significant cracking and crazing.
- f) Be able to take the anticipated traffic loading.
- g) Not induce other failures in the highway surface.
- h) Comply with Table 6.2.3 Performance Requirements.

6.2.2 The installation of any cover, frame, ironwork or associated chamber will:

- a) Not induce other failures in the highway surface.
- b) Not constitute a noise nuisance, skid or trip hazard
- c) Comply with Table 6.2.3 Performance Requirements.

6.2.3 Any reinstatement may not have any Depression, Crown, or Combined defect greater than the threshold listed or any reinstatement an Edge (up or down) greater than the threshold listed. Any cover or frame may not have a Cover Lip (up or down) greater than the threshold listed.

TABLE 6.2.3 Performance Requirements					
Reinstatement Width (mm)	Depression or Crown [mm]		Combined [mm]		
	Final or All- in-One	Interim	Final or All-in- One	Interim	
<400	5.0	10.0	8.0	15.0	
400 to 650	8.0	15.0	10.0	20.0	
650 to 900	10.0	20.0	12.0	25.0	
>900	12.0	25.0	15.0	30.0	
Edge (±mm)	5.0	10.0			
Cover Lip (±mm)	5.0	10.0			



Figure 2: A subsided reinstatement

6.3 REMEDIAL ACTION:

When determining whether a reinstatement requires any remedial action, the quality of the reinstatement shall be assessed relative to the condition of the adjacent surfaces.

6.3.1 Remedial actions will be required by the Applicant where any reinstatement works fail the Acceptance Criteria and in particular, but not solely, the Performance Requirements and where the condition of the highway is generally better than the reinstatement.

Remedial actions will be required by the Applicant where any cover, frame, ironwork or associated chamber has failed the Acceptance Criteria and in particular, but not solely, the Performance Requirements.

Covers, ironware or associated chambers deemed to be causing damage/weakening to the highway surface, through settlement or movement, will be deemed to have failed and remedial action will be required by the Applicant, including outside the normal Guarantee Period.

Any induced failures to the highway will be required to be made good by remedial action this includes any settlement, cracking or fretting past the reinstatement's edge.

Traffic & Highway Services may direct that any structural defects will require the full removal of any surface layers, re-compaction of the foundation layers and the reinstatement of the surface layers.

Any damage to any part of the highway caused through careless work by the Applicant's contractor (i.e. teeth marks or gouges from operating plant) will require remedial action and be repaired to Traffic & Highway Services' satisfaction.

All remedial action will be completed at the Applicant's expense.

6.3.2 When rejecting a reinstatement or cover, the categorisation below will be used.

TABLE 6.3.2 Severity Category			
Severity Category	Defect Description	Notes	
Ride Quality	Generally effects ride quality only. Exceeds the Final Reinstatement threshold but not the Interim Reinstatement threshold.	Applicable only to Final and All-In-One Reinstatements.	
Low	Low risk or poor ride quality.	All reinstatement types.	
Medium	Medium risk that has a reasonable potential to cause an accident or injury and should be addressed as a matter of urgency.	Assessment undertaken by Highway Inspector.	
Severe	Severe risk that is very likely to cause an accident or injury and should be addressed as an emergency.	Assessment undertaken by Highway Inspector.	

6.3.3 When a reinstatement or works has been rejected, IRIS approval for the works must be sought by the Applicant and scheduled to be completed within a reasonable period, as in Table 6.3.3

Table 6.3.3 Scheduling of Remedial Works				
	Ride Quality	Low	Medium	Severe
Notification to:	Applicant	Applicant	Applicant	Applicant & Environment
Signed & made safe:	NA	NA	If required	Within 1 day
Completed within:	52 weeks	16 weeks Subject to normal IRIS approvals.	8 weeks To be given priority over other works.	4 days To be undertaken as an Emergency Application.

6.3.4 Where the rejection was deemed to be 'medium to severe' (as determined by the highway inspector), the Applicant will place signage and make the site safe until full remedial measures are taken. If Traffic & Highway Services is required to undertake these initial safety works, Traffic & Highway Services will be entitled to recover these costs from the Applicant, inclusive of Traffic & Highway Services' Administration Costs.

If the Applicant fails to ensure either remedial action or the final reinstatement is completed within a reasonable period, then Traffic & Highway Services reserves the right to:

- a) Instruct an approved highway contractor to undertake the works on behalf of the Applicant, and recover the expense from the Applicant <u>inclusive of Traffic & Highway Services' Administration Costs.</u>
- b) Suspend applications or approvals until the Applicant has undertaken measures to reduce overdue works.
- **6.3.5** Where an Interim Reinstatement has been passed for finalisation following the Settlement Period, IRIS approval for the finalisation works must be sought by the Applicant and scheduled to be undertaken within a reasonable period not exceeding 52 weeks.
- **6.3.6** Should an Applicant wish to appeal the Highway Inspector's rejection of a reinstatement, this must be done through IRIS with clear reasons given as to why the decision is not accepted. A manager at Traffic & Highway Services will then consider the Highway Inspector's rejection of the reinstatement. Should the manager of Traffic & Highway Services support the rejection and the Applicant still wishes to appeal then the matter will be escalated in order to resolve the matter.



Figure 3: A failed reinstatement