

SCHEDULE 2

CITY OF JOHANNESBURG METROPOLITAN MUNICIPALITY

**CODE OF PRACTICE FOR
WORK IN THE ROAD RESERVE**

TABLE OF CONTENTS

Page No

FOREWORD

DEFINITIONS

1.	PROCEDURE	
2.	WORK IN THE ROAD RESERVE	
3.	WAYLEAVE	
4.	COSTS	
5.	EXISTING SERVICES IN THE ROAD RESERVE	
6.	ROAD CATEGORIES	
7.	PROTECTED ROADS	
8.	TRAFFIC SIGNS AND BARRICADING	
9.	ROAD CLOSURES	
10.	EXCAVATIONS	
11.	TRENCHLESS METHODS	
12.	EMERGENCY WORK	
13.	SPECIFICATIONS FOR BACKFILLING AND REINSTATEMENTS	
13.1	General	
13.2	Preparation of the Bottom of the Trench and Backfilling Around Service	
13.3	Backfilling of roads	
13.4	Backfilling of footways	
13.5	Permanent reinstatement of roads	

13.6 Permanent reinstatement of footways
13.7 Temporary reinstatements by the wayleave holder.....
13.8 Performance specifications
14. COMPLETION NOTICE AND CERTIFICATE OF COMPLETION.....

APPENDICES

- A Wayleave Procedure and Forms
- B Traffic Sign Sequences

FOREWORD

Although the JRA is solely responsible for its own road network, the value of other services in the road reserve are often more than that of the road itself and therefore require as much or more maintenance, rehabilitation and replacement. These activities, together with the work that has to be carried out on the road itself, result in considerable delays, inconvenience, danger and additional costs to the road users. Furthermore, any work which is done in the road reserve can have serious cost implications as a result of any of the following:

- damage to roads and other services;
- damage to vehicles;
- injury to vehicle occupants or pedestrians;
- reduction of the effective life of the road, footway or other services; and
- time and social costs caused by delays.

There is therefore a need to ensure careful control and co-ordination of all work in the road reserve. This is the duty of the road authority who is the custodian of all municipal road reserves. In order to fulfil this duty, the road authority has produced this document to ensure maximum co-ordination and co-operation between all the various service providers who share the road reserve to provide services to their customers and other persons who make use of the road reserve (such as outdoor advertising providers).

It is the aim of this document to minimise any negative effects of work in the road reserve to the benefit of all concerned, and in particular the ratepayers, road users (motorists and pedestrians), service providers and the road authority. Included are the procedures to apply, process and approve wayleaves, procedures to follow while doing the work and on completion of the work as well as specifications according to which the work must be done.

This initiative can only succeed if every agency, department, service provider and other person that works in the road reserve co-operate by working according to this Code of Practice and by providing feedback on how the system can be improved.

DEFINITIONS

In this Code, unless the context otherwise indicates -

“authorised agent” means an agent which is authorised by the Council to perform specified services;

“authorised person” means -

- (a) a wayleave holder; or
- (b) a licensee who has submitted notice in accordance with the requirements of the By-laws;

“lane rental” means the rental which is paid to the JRA by an authorised person whose work in the road reserve results in time delay costs (TDC) being incurred by the users of the road reserve;

“wayleave” means a formal approval to carry out works in the road reserve;

“wayleave holder” means a person to whom a wayleave has been issued.

1. PROCEDURE

- 1.1 The basic procedure which is required for work in the road reserve is as follows:
- 1.1.1 Service providers and other persons, other than licensees, must obtain any permit, permission or approval which is required to be obtained from the Council in respect of the activity to be performed which necessitates works in the road reserve.
- 1.1.2 A licensee must give notice to the Council in accordance with the procedures in the By-laws of any activity to be performed necessitating works in the road reserve.
- 1.1.3 Any person, other than a licensee, who intends to perform works in the road reserve must apply for a wayleave in accordance with the procedure set out in this Code of Practice, before the works in the road reserve can be carried out.
- 1.1.4 If the wayleave application conforms to the requirements in this Code of Practice, a wayleave will be issued by the JRA which allows for the work to be carried out.
- 1.1.5 The JRA must be informed forty-eight (48) hours prior to the commencement of any works in the road reserve (including works to be performed by a licensee which have been notified to the City in terms of the procedures set out in the By-laws);
- 1.1.6 The works in the road reserve must be carried out in accordance with the procedures and specifications in this Code of Practice, the conditions under which the work was approved and any other requirement of every affected service provider.
- 1.1.7 On completion of the works in the road reserve all trenches and excavations in the road reserve must be backfilled and reinstated according to the specifications contained in this Code of Practice.
- 1.1.8 On completion of the works in the road reserve and temporary or permanent reinstatement, as applicable, a completion notice must be sent to the road authority by the wayleave holder or licensee. A reinstatement order must accompany the completion notice if the road authority has to do the permanent reinstatement.
- 1.1.9 The road authority will then carry out an inspection and issue a certificate of completion once all requirements have been met.
- 1.2 This Code of Practice applies to every person who carries out work in municipal road reserves in the municipal area, such as internal municipal departments, external organisations, service agencies and contractors. It does not apply to work in motorway reserves or in national or provincial road reserves within the municipal area.

1.3 The JRA undertakes to inform the relevant service provider in writing before commencing with any work in the road reserve that may affect the services of the service provider in the road reserve.

2. WORK IN THE ROAD RESERVE

2.1 Works in the road reserve can be divided into three categories.

2.1.1 The first category is work in the installation or maintenance of underground or overhead services in the road reserve by public service providers, e.g. Eskom, Rand Water and Petronet. For this type of work a wayleave is required to be obtained but no separate approval is required to be obtained from the Council prior to applying for a wayleave to perform works in the road reserve.

2.1.2 The second category is work in the installation or maintenance of underground or overhead services in the road reserve for which a wayleave is required to be obtained but which is also required to be approved or permitted by the Council in terms of the By-laws or any other by-law. Obtaining the necessary approval or permission, is a separate procedure to be completed before any application for a wayleave can be made or considered. The applicable approval or permission and any approved drawings must be submitted with the application for a wayleave.

2.1.3 The third category is work in the installation or maintenance of electronic communications facilities by a licensee (including Telkom), which is required to be notified to the Council in terms of the Electronic Communications Act and the procedures in the By-laws and in respect of which a wayleave is not required.

2.2 The second category of work includes, but is not restricted to -

2.2.1 the erection of structures that require approved building plans in terms of the National Building Regulations;

2.2.2 the erection of advertising signs and structures that require approval in terms of the relevant by-laws;

2.2.3 road works, such as construction of new roads, road widenings or accesses to developments, undertaken by developers;

2.2.4 connections to municipal services, such as water, sewers, electricity and

stormwater drainage from developments;

2.2.5 erection of hoardings in the road reserve;

2.2.6 the installation or construction of kerbing, paving, bollards, walls, gardens, etc. on sidewalks by property owners or occupiers;

2.2.7 road closures;

2.2.8 traffic calming devices.

2.3 The third category of work includes the installation of wires, cables, antennas and masts which will make up an electronic communications network. In order to install these types of facilities in a road reserve, a person is required to hold a licence to provide electronic communications network services in terms of the Electronic Communications Act or to be exempted in terms of that Act from the requirement to hold such a licence.

3. WAYLEAVE AND LANE RENTAL

3.1 Wayleave

3.1.1 The road authority has jurisdiction over the road reserve and no works in the road reserve may be done before a wayleave in respect thereof has been issued by the JRA or, in the case of a licensee, notice has been given to the Council in terms of the By-laws. A wayleave is permission ("leave") to cross the "way", i.e. the road.

3.1.2 To obtain a wayleave, a wayleave application form (see Appendix A) must be submitted, accompanied by three copies of the approved drawing showing details of the proposed work. Details required on the drawing are -

3.1.2.1 a clear depiction of the proposed work;

3.1.2.2 where any service is to be installed, the depth of the every service below the level of the surface of the road;

3.1.2.3 distance of the service from the road reserve boundary (i.e. the property boundary);

3.1.2.4 position and extent of all structures including underground structures such as manholes, chambers, junction boxes, etc.

3.1.2.5 the location of all other services in the road reserve (see section 4).

- 3.1.3 Once all these requirements have been complied with, a wayleave will be issued by the road authority. An example of a wayleave appears in Appendix A.
- 3.1.4 The application for a wayleave must be submitted timeously to ensure that a wayleave can be issued before the work is programmed to start. **Work being carried out in the road reserve without a wayleave or, in the case of a licensee, where the required notice has not been given, will be stopped by the JRA.** A copy of the wayleave or notice (and acknowledgment of receipt) must therefore always be on site when works in the road reserve are being done.
- 3.1.5 The wayleave holder or licensee has full responsibility for all costs associated with the works in the road reserve, including any damage to any other service, the cost of relocation of any other service, backfilling and reinstatement, tests and any claim that may result from the work.
- 3.1.6 Only work described in the wayleave or notice, as the case may be, may be done and only at the locations given in the wayleave or notice. The work described in a wayleave must commence within 90 days of date of issue of the wayleave, failing which the wayleave lapses and re-application is required. The works described in the notice given by a licensee must commence and be completed in accordance with the By-laws.

3.2 Lane Rental

- 3.2.1 Lane rental refers to the rental in respect of a demarcated traffic lane in a road reserve which is payable to the JRA by an authorised person whose works in the road reserve results in time delay costs (TDC) being incurred by the users of the road reserve.
- 3.2.2 Lane rental is based on a cost per traffic lane (or part of a traffic lane) occupied per day (or part of a day). An occupied traffic lane is considered as being not longer than one street block. If a traffic lane is closed for two street blocks, for example, then the cost will be for two traffic lanes.
- 3.2.3 A prescribed fee is payable by an authorised person to the JRA and such fee may differentiate between different road categories.
- 3.2.4 The JRA and the authorised person must, before the commencement of the work, agree on the days that will be allowed during which the work must be completed. During the agreed days the service agency will pay a lane rental

that is equal to 50% of the TDC. However, after the agreed completion date, the lane rental will be 100% of TDC. All costs will be based on average TDC's that have been calculated for each road category.

3.2.5 An authorised person is entitled to a reduced rate if works in the road reserve are undertaken after normal working hours, but precautions must be taken by the authorised person to avoid disturbance in any residential area. For every day that work is done after normal working hours and the lane is fully opened for all the normal working hours of the following day, the lane rental will only be 10% of TDC.

3.2.6 For the purpose of calculating lane rental, normal working hours will be considered as being between 06:00 and 19:00 on Monday to Friday and between 06:00 to 14:00 on Saturday. These times are not fixed and may change depending on local conditions and special events in the vicinity where works are to be undertaken.

- 3.2.7 The JRA or any organisation working on behalf of the JRA is exempt from payment of lane rental when any construction, resurfacing, maintenance, improvement or rehabilitation work is being done on the road itself.
- 3.2.8 During the days that have been agreed to in terms of 3.2.6 above, no lane rental will be payable if all traffic lanes are kept open at all times. If work continues after the agreed completion date, a lane rental of 25% of TDC will be charged if all traffic lanes are kept open. If a traffic lane is closed for any part of a day, normal lane rental for a full day will be charged (50% of TDC before the official completion date and 100 % thereafter).
- 3.2.9 Lane rental will also be charged if a footway is affected by work. If the footway is totally closed so that pedestrians are required to use a traffic lane, then lane rental will be payable in the normal way for the occupation of a traffic lane, since the traffic lane will not be available for vehicular traffic. If a footway is partially obstructed in such a way that it causes a delay for pedestrians, then 50% of the lane rental that is applicable for that road, will be charged.
- 3.2.10 For the purpose of determining lane rental for footways, a footway will be considered that part of the verge that is normally used by pedestrians. For constructed footways the whole constructed width will be considered as footway.

4. COSTS

4.1 Processing Fee

A processing fee is a fixed amount that is payable by the applicant when submitting a wayleave application form or, in the case of a licensee, notice in terms of the By-laws. This fee is to cover the cost of processing the wayleave application or notice and will be prescribed by the Council on the recommendation of the JRA, from time to time.

4.2 Reinstatement Cost

- 4.2.1 When the JRA does the permanent reinstatement, the cost involved will be payable by the applicant to the JRA. The cost will be determined using the relevant reinstatement rates appearing on the wayleave application form and prescribed form in which notice as required by the By-laws must be given to the Council. These rates are determined by the Council and will be reviewed from time to time.

4.2.2 In this case the wayleave application form or notice, as the case may be, must be accompanied by an official order for an amount based on the expected area to be reinstated. The final invoiced amount payable will be determined using the measured area of the final reinstatement as agreed between the JRA and the authorised person.

4.2.3 It is important to note that the decision on who does the permanent reinstatement lies with the JRA.

5. EXISTING SERVICES IN THE ROAD RESERVE

5.1 An applicant for a wayleave or licensee, as the case may be, must obtain information from every service provider supplying a service within the municipal area on the location of its service. Every service must then be indicated on the drawings to be submitted with the wayleave application form or notice. Service providers may impose reasonable additional conditions relating to work in the vicinity of their services.

5.2 As part of the undertaking/indemnity on the wayleave application form or prescribed form for notice by a licensee, the applicant or licensee has to confirm that the necessary information has been obtained from every service agency and has to undertake to adhere to any additional condition imposed by any service agency.

6. ROAD CATEGORIES

6.1 All roads are classified into one of the following categories as described below. The category of a road determines the nature of the specification for backfilling and reinstatement.

6.2 The following definitions apply for the road categories:

Function	Category	Road Type	Administration
A (Class 1)	A1	National Roads	SANRAL
	A2	Primary – (inter) provincial	Gauteng DoT
	A3	Urban Freeway/Motorways	JRA
B (Class 2)	B2	Primary – (inter) provincial	Gauteng DoT
	B3	Major (inter) urban arterials	JRA
C (Class 3)	C2	(Inter) district connectors	Gauteng DoT
	C3	Minor (intra) urban arterials	JRA
D (Class 4)	D2	Intra district connectors	Gauteng DoT
	D3	(Intra) district collectors	JRA
	D4	(Intra) district collectors & industrial roads	JRA
E (Class 5)	E4	Urban distributors	JRA
F (Class 6)	F4	Local access roads	JRA
G (Class 7)	G5	Private roads / Culs de Sac	JRA / Residents

6.3 Every road has been categorised into one of the above by the JRA and this

information can be obtained from it.

7. PROTECTED ROADS

- 7.1 Over and above the four road categories, defined in section 6 of this Code of Practice, certain roads are further classified as protected roads (no-dig roads).
- 7.2 A protected road is a road across which no digging of trenches is permitted. A road is protected if it has been designated a protected road by the JRA. A road is designated as protected when it is of particular strategic importance or if it poses special engineering difficulties. Every arterial is, for example, protected. Any road that has been newly constructed, overlaid or resurfaced will be protected for a period of seven years.
- 7.3 If a road is protected it will be indicated as such on the wayleave or in the acknowledgment of receipt from the Council in respect of notice given by a licensee. A protected road may only be crossed using a trenchless method. If a trenchless method cannot be used for some reason in a protected road, special permission to excavate must be obtained from the JRA.
- 7.4 For the purpose of planning work done by a service provider, F4 and G5 may be regarded as unprotected unless the road has been newly constructed, overlaid or resurfaced and fall within the seven years protected period: Provided that the first 20m from an intersection with any other class road is considered to be protected.

8. TRAFFIC SIGNS AND BARRICADING

- 8.1 It is the responsibility of the authorised person to ensure that any law regarding traffic, safety, traffic signs and barricading is complied with.
- 8.2 The authorised person must take all necessary measures and provide all necessary facilities to ensure an adequately safe and easy passage for traffic and pedestrians through areas in which work is in progress, or is uncompleted.
- 8.3 Any traffic sign and barricading must be done according to the latest edition of the South African Roads and Traffic Signs Manual (SARTSM), Volume 2, Chapter 13. An extract from that document appears in Appendix B.
- 8.4 An authorised person may contact the relevant traffic authority to ensure that all requirements have been met for the particular location where the work is being done.
- 8.5 The importance of adequate traffic signs and barricading must be stressed. These measures are intended to ensure the maximum safety for motorists, pedestrians and

workers and also the minimum disruption of vehicles and pedestrians. Work sites must be properly barricaded and signed irrespective of how long the work will take.

9. ROAD CLOSURES

- 9.1 The granting of a wayleave or, in the case of a licensee, the giving of notice in terms of the By-laws does not give the authorised person the authority to close the road completely to traffic. Methods of construction and programmes of work must be determined on the basis that no road, or portion of road, may be completely closed to traffic for any appreciable period.
- 9.2 In exceptional circumstances permission will be granted for the closure of a road or portion of road to traffic, subject to the provisions of any law. The authorised person must apply to the JRA separately for approval of such closure two weeks prior to the road being closed. Such a road closure will be approved for a specific period, i.e. from and to a specific time on a specific date and is only valid for this specific period. If the work is not completed in this specific period, an application for a new road closure will have to be made.
- 9.3 Work carried out on any arterial, major collector and CBD road will be restricted to outside the following periods, namely from 6:30 to 09:00 and 15:30 to 18:00, to ensure free flow of traffic during peak hours.

10. EXCAVATIONS

- 10.1 The area which is excavated must always be kept to a minimum. The width of the trench must be uniform in length and in depth, in other words the sides must be parallel and vertical. The top of the trench must be cut with a saw to ensure smooth, uniform edges.
- 10.2 The minimum depth that any service may be placed under a road is 800 mm measured from the level of the surfacing of the road to the top of the service. The minimum depth at any other place in the road reserve, e.g. on a verge, is also 800 mm measured from the level of the surfacing of the road and not from natural ground level. Any services not subject to being laid at a specific grade such as water pipes and cables, should not be placed at a depth in excess of the 800 mm as this could interfere with a future service that has to be laid at a specific grade, such as sewers and stormwater pipes.
- 10.3 All excavated material and equipment must be placed and demarcated in such a way as to cause the minimum disruption to vehicles and pedestrians. A safe passage must be kept open for pedestrians at all times.

- 10.4 The authorised person will be responsible for any damage to any existing service. Any service, indicated on the drawings or on site by a representative from any service provider, must be opened by careful hand digging. If the service cannot be found, the relevant service provider must be contacted again for further instructions. Under no circumstances may an authorised person dig with mechanical equipment before every known service have been found and marked. When found, a service must be marked and protected or supported as required by the service provider. If any service needs to be moved, instructions from the service provider must be followed carefully. The authorised person will be responsible for all reasonable expenses incurred in moving services costs. If any service is damaged during excavations, the relevant service provider must be contacted immediately.
- 10.5 Adequate preventative measures must be taken to ensure that no water (e.g. due to rain) flows into the open trenches since this will result in the weakening of the structural layers of the road. Any water that is present in a trench must be pumped out before backfilling. Water must be pumped into the stormwater system and not into a sewer manhole. Any material that has become wet must be removed from the bottom of the trench before backfilling.
- 10.6 The authorised person must prevent any foreign material from entering any drain and ensure that silting does not occur either from pumping operations or as a result of rain. If any silting or other contamination does occur, the authorised person must clean the drain or request the JRA to do it at the cost of the authorised person.
- 10.7 All re-usable material such as concrete blocks, slabs, kerbs, gutters, channels and stormwater inlets must be removed with care and re-used if possible.
- 10.8 If any street furniture (e.g. street names, traffic signs, bus shelters, etc.) has to be removed, arrangements must be made with the relevant authority for the removal, storage and re-erection.
- 10.9 If an excavation is made through entrances to properties, access must be maintained by using steel plates, planks or other temporary bridges of sufficient strength and properly secured against movement. The occupants of the properties must be kept informed at all times of how their access will be affected.

11. TRENCHLESS METHODS

- 11.1 If a trenchless method is used, disruption of traffic flow and pedestrian movement can be reduced considerably or totally eliminated. However, it is important that the authorised person using such method must have all the necessary equipment and

expertise to complete the work successfully. Trenchless methods can be used for all road categories, but must be used for all roads classified as protected in terms of section 7.

11.2 The position of every existing service must be located accurately. If any service is damaged, the authorised person will be responsible for all costs to repair such damage.

11.3 The depth to the top of any tunnel that is drilled for the installation of a new service, must be at least 800 mm measured from the level of the surfacing of the road.

12. EMERGENCY WORK

12.1 As defined in the By-laws, emergency work is defined as any work which is required to prevent or end a dangerous situation, to prevent or end an unplanned interruption in the supply of a service, or to avoid any substantial losses.

12.2 The JRA must be informed of emergency work by the service provider concerned in writing within twenty-four (24) hours from commencing such work. If the JRA is not timeously informed, the work will be reinstated by the JRA and the cost thereof will be invoiced to the service provider at the increased tariff for work without a wayleave permission.

13. SPECIFICATIONS FOR BACKFILLING AND REINSTATEMENTS

13.1 General

13.1.1 Any trenching activity disturbs the structural integrity of a road or footway. Backfilling and reinstatement must therefore be done in such a way as to ensure that the reinstated trench and its immediate surroundings do not fail structurally, thus resulting in road user discomfort and increased costs.

13.1.2 As defined in the By-laws, backfilling refers to the replacement of the structural layers in the trench or excavation and includes the base, subbase, selected subgrade and subgrade, but excludes the surfacing.

13.1.3 As defined in the By-laws, reinstatement refers to replacing the bituminous surfacing or paving blocks in the case of roads, or the paving blocks, paving slabs, bituminous surfacing or grass in the case of footways and verges.

- 13.1.4 Backfilling must in every case be done by the authorised person in accordance with the applicable specifications in sections 13.2 and 13.3. Permanent reinstatement (100 mm asphalt layer), as specified in section 13.4 and 13.5, can either be done by the JRA or by the authorised person, subject to permission having been granted by the JRA and provided the authorised person has the required expertise and experience. Permanent backfilling and reinstatement (100 mm asphalt layer) done by the authorised person, is subject to a guarantee period of one year based on the performance specifications described in section 13.8.
- 13.1.5 If the permanent reinstatement must be done by the JRA, the authorised person must do a temporary reinstatement as specified in section 13.7. The authorised person will then be charged for the permanent reinstatement at the applicable rates appearing on the wayleave application form and prescribed form for notice submitted by a licensee. A reinstatement order must in such case be submitted together with the completion notice. The temporary reinstatement will be removed by the JRA and the backfilling will then be tested. If this does not comply with the applicable specifications, it will be replaced at the cost of the authorised person. These costs are be over and above the normal reinstatement costs.
- 13.1.6 Temporary reinstatement must also be done if the JRA abandons the site for a period not exceeding two months with the view of returning to complete the work. The authorised person must maintain this temporary reinstatement.

13.2 Preparation of the Bottom of the Trench and Backfilling Around Service

The trench bottom must be prepared and compacted according to the requirements of the service provider concerned, to ensure that the service is not damaged. The same applies to the backfilling around the service. If any service with a diameter of more than 300 mm is installed, the subgrade material used for the reinstatement must be soilcrete (in-situ material mixed with 8% cement), placed with poker vibrators, up to a level of 300 mm above the top of the service.

13.3 Backfilling of Roads

- 13.3.1 The minimum requirements of the JRA are that the structural layers of the backfilled trench, i.e. the base, subbase, selected subgrade and subgrade

down to a depth of 800 mm below the level of the surfacing of the road, must have at least the same shear strengths as those of the adjacent undisturbed structural layers.

13.3.2 It should be noted that it is generally very difficult to obtain the same quality structural layers in the confinement of a narrow trench as that of the undisturbed adjacent structural layers when the same materials are re-used.

13.3.3 One of the following methods must therefore be used to ensure adequate shear strengths in trench backfill. The authorised person may use any one of the three methods for backfilling.

Method A. Re-using excavated material

During excavation of the trench, the material from the top 400 mm of the excavation (or in the case of arterials, collectors and industrial roads, the top 550 mm) must be stockpiled separately from the rest of the material being excavated. This material must then be improved through chemical stabilisation with cement and used for the base and subbase layers during backfilling, and in the case of arterials, collectors and industrial roads also for the selected subgrade layers.

The requirements for this method is given in Figure 1 following on section 13.8.7.

If the material is not stockpiled separately during excavation, the road authority will require that material with the required properties be imported. Material which was originally stabilised cannot be re-used and must be discarded.

Method B. Importing material

Import a G5 gravel material and stabilise with 60 kg of cement per m³ of material. Water must be uniformly mixed into the material. The material must then be placed in the trench in 75 to 100 mm layers and compacted to the required Mod. AASHTO densities as specified in Figure 1 to the Code. The

final layer must be finished to a level of 100 mm below the level of the surrounding sound surface of the road.

Method C. Low strength concrete: Specially designed concrete mix (SDCM) for Trench Backfilling

All Road Trenches / Openings: Place 300 mm SDCM concrete of minimum 2.5 Mpa crushing strength (28 days) and manufactured to an approved manufacturer's specification. The SDCM concrete mix is to be placed 50 mm below the level of the surrounding sound surface of the road. The rest of the trench is backfilled with selected approved material compacted to 90% of MOD AASHTO density.

All Footway Trenches / Openings: Place 150 mm SDCM concrete of minimum 2.5 Mpa crushing strength (28 days) and manufactured to an approved manufacturer's specification. The SDCM concrete mix is to be placed 30 mm below the level of the surrounding sound surface of the road. The rest of the trench is backfilled with selected approved material compacted to 90% of MOD AASHTO density.

- 13.3.4 Quality control of the backfilled structural layers can be done by measuring the shear strengths of the adjacent structural layers as well as that of the backfilled layers. The shear strength can be measured with a dynamic cone penetrometer (DCP) or a rapid compaction control device (RCCD). Although the shear strengths of the backfilled layers will be measured against the undisturbed structural layers, an indication of probable acceptance on most roads can be obtained from the typical DCP and RCCD Penetration diagram shown on Figure 2 following on section 13.8.7.

13.4 Backfilling of Footways

- 13.4.1 Any footway, where there is no possibility of vehicles crossing the footway, must be backfilled using the excavated material, placed in the trench in 150 mm layers and compacted to 90% Mod AASHTO density (maximum DCP penetration of 19 mm/blow) for all layers below the base and 93 % Mod AASHTO density (maximum DCP penetration of 14 mm/blow) for the base.
- 13.4.2 Any footway where there is a possibility of light vehicles (cars and LDVs) crossing the footway, typically where there is mountable kerbing, must be

backfilled using Method A or Method B described in section 13.3.3 according to the standards for local streets specified in Figure 1 following on section 13.8.7.

13.4.3 Where any heavy vehicles make use of a footway, such as loading zones in industrial areas, the footway must be backfilled using Method A or Method B described in section 13.3.3 according to the standards for arterials, collectors and industrial roads on Figure 1 following on section 13.8.7.

13.4.4 Any excavation in an unconstructed verge must be backfilled in such a way that the verge is in the same condition after backfilling as it was before excavation. All excess material must be removed and not spread over the verge. Topsoil must be removed and stored separately and replaced as the final layer.

13.5 Permanent Reinstatement of Roads

13.5.1 The same method of reinstatement must be used independent of the method of backfilling of the structural layers.

13.5.2 The permanent reinstatement of the surfacing must consist of 100 mm hot-mix asphalt. The lower 70 mm must be "blackbase" (26,5 mm nominal stone size, continuously graded) and the top 30 mm fine (4,75 mm nominal stone size, continuously graded). Cold mix may only be used for temporary reinstatement. Both these surfacing layers must be compacted to 95% Marshall density.

13.5.3 The reinstated surfacing must be at least 100 mm wider than the trench on both sides to accommodate any edge break where saw cutting was not possible.

13.5.4 The material used for the reinstatement of the surfacing must comply with the relevant requirements of Section 4200: Asphalt Base and Surfacing of the Committee of Land and Transport Officials (COLTO) or any document which replaces it, Standard Specification for Road and Bridge Works.

13.5.5 In the case of any road surfaced with interlocking paving blocks, the general procedure would be to re-use the material removed during the excavation of the trench. If new material has to be used, it must be of the same type and size as the existing material and must comply with the requirements of SABS

1058-1985, as amended or replaced from time to time.

13.6 Permanent Reinstatement of Footways

13.6.1 The general procedure would be to re-use all the material removed during the excavation of the trench. If new material has to be used, it must comply with the following requirements.

- (a) Precast concrete kerbs and channels: Any precast concrete kerbs and channel must comply with the requirements of Section 2300: Concrete Kerbing, Concrete Channelling, Open Concrete Chutes and Concrete Linings for Open Drains of the COLTO Standard Specification for Road and Bridge Works. All cast in-situ concrete must be Class 25/19.
- (b) Concrete paving blocks: All concrete paving blocks must comply with the requirements of SABS 1058-1985, as amended or replaced from time to time.
- (c) Cast In-situ concrete: All cast in-situ concrete must comply with the relevant requirements of Section 6400: Concrete for Structures of the COLTO Standard Specification for Roads and Bridge Works. All cast in-situ concrete must be Class 25/19.
- (d) Precast concrete paving slabs: All concrete paving slabs must comply with the requirements of SABS 541-1971, as amended or replaced from time to time.

13.6.2 Any constructed footway must be reinstated with the same surfacing materials that existed originally (e.g. concrete blocks, slabs, etc.). Material may be re-used if undamaged, or else replaced with similar material.

13.6.3 If a private driveway and footway with non-standard materials are to be excavated, the owner of the property concerned must be informed in advance and in writing of the intended work. The owner must then [supply/specify to]the authorised person [with] the materials that are to be used for the reinstatement.

13.6.4 If any unconstructed verge has an established lawn, this must be removed, stored and replaced in sods in such a way that the lawn is in the same condition after reinstatement as it was before excavation. If the sods are allowed to dry out or become damaged in any way, they must be replaced with similar sods.

13.6.5 If an unconstructed verge has been planted with garden vegetation other than lawn, the owner of the adjacent property must be consulted before excavation, to obtain instructions on what to do with the plants that are affected. Every effort must be made to preserve all plants.

13.7 Temporary Reinstatements by the Wayleave Holder

13.7.1 If the permanent reinstatement is to be done by the JRA, the authorised person must do temporary reinstatement with a suitable material that is compacted to an adequate density to ensure that it will carry the traffic for a period of at least fourteen (14) days without deforming or potholing. The temporary reinstatement must be maintained by the authorised person in a serviceable condition for a period of fourteen (14) days from the date on which the completion certificate has been issued by the JRA. After the fourteen (14) day period the maintenance will be taken over by the JRA.

13.7.2 It is recommended that cold mix asphalt be used for temporary reinstatement.

13.8 Performance Specifications

13.8.1 The performance of any trench permanently reinstated by the authorised person will be monitored for twelve (12) months, during which period the authorised person will be held responsible for any remedial work that may be required.

13.8.2 The tests that were used for quality control (density or shear strength) will be used to determine whether or not the work was done according to specifications. The JRA may do additional tests if the quality control tests are not considered to be adequate.

13.8.3 Remedial work will be required if any of the following defects exists:

- (a) Depressions;
- (b) humps (crowning);
- (c) edge depression (trips, vertical discontinuities) at the interface; or
- (d) cracking.

13.8.4 Any depression or hump will be measured with a straight edge across the reinstatement and will require remedial work if the following limits are exceeded over 100 mm or more of the length of the trench:

<i>Reinstatement Width (mm)</i>	<i>Height of Deformation or Hump as measured with straight edge (mm)</i>
Up to 400	10
400 to 500	12
500 to 600	14
600 to 700	17
700 to 800	19
800 to 900	22
Over 900	25

13.8.5 Remedial work will also be required if a depression results in standing water wider than 500 mm or exceeding one square metre, two hours after rain has stopped.

13.8.6 Any edge depression exceeding 10 mm over 100 mm or more of the length of the trench will require remedial work.

13.8.7 Any open crack wider than 3 mm and longer than 100 mm will require remedial work.

<i>Layer</i>	<i>Treatment</i>		<i>Layer thickness (mm)</i>	<i>Depth (mm)</i>
Surfacing	<u>Temporary Surfacing</u>	<u>Permanent Surfacing:</u>	100	100
	Material from top 400 (550)mm 4 % OPC 98 % Mod AASHTO	30mm Bitumen hot-mix fine 70mm Bitumen hot-mix BTB		
Base	Material from top 400 (550)mm stockpile Stabilize with 4 % OPC Compact to 98 % Mod AASHTO		150	250
Subbase	Material from top 400 (550)mm stockpile Stabilize with 4 % OPC Compact to 95 % Mod AASHTO		150	400
Selected Subgrade	<u>Local streets:</u>	<u>Arterials, collectors and Industrial streets:</u>	150	550
	Compact to 93 % Mod AASHTO	Material from top 550mm stockpile Stabilize with 4 % OPC Compact to 93 % Mod AASHTO		
Subgrade	Compact to 90 % Mod AASHTO		250	800

Figure 1
Recommended method for permanent backfilling

Maximum Penetration

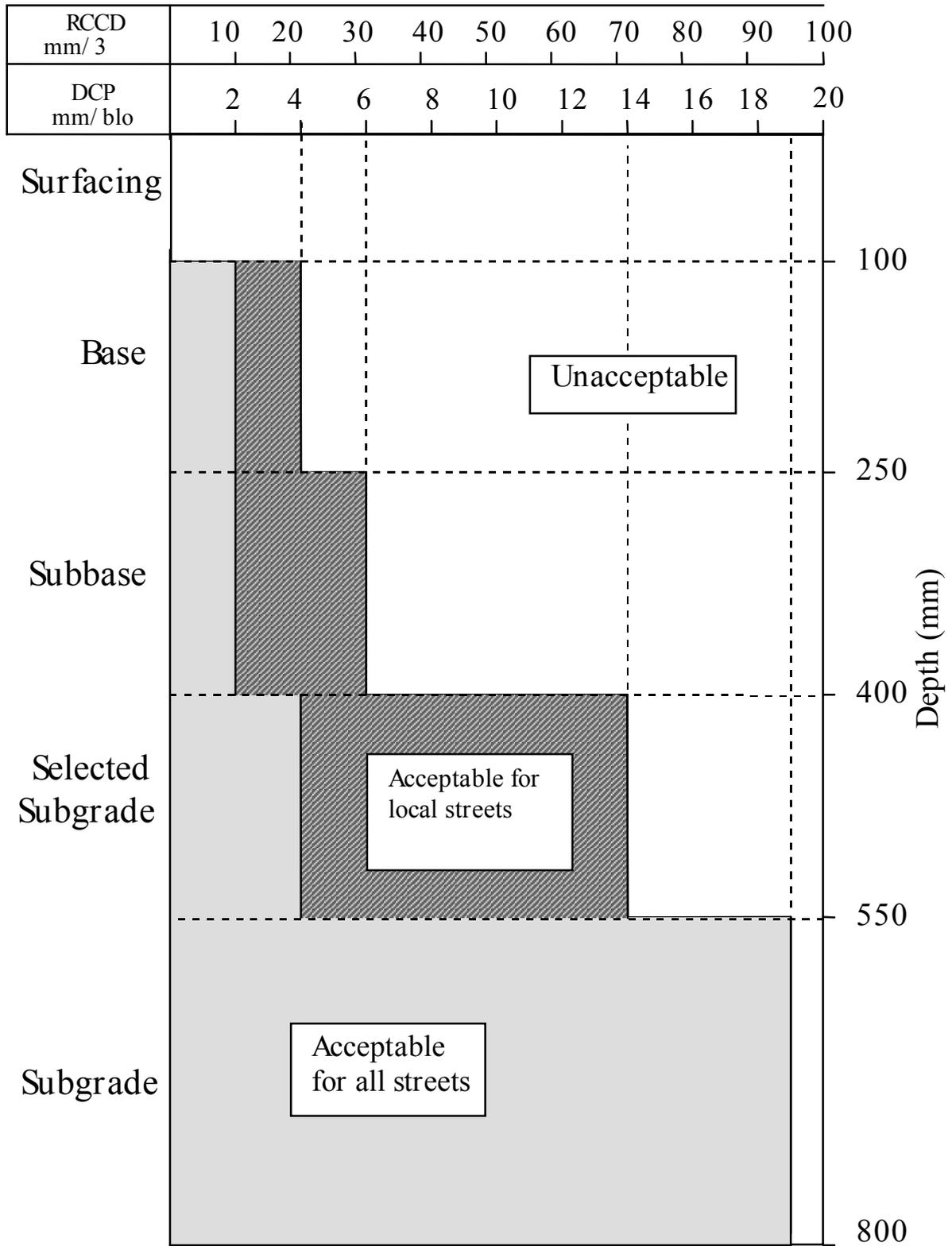


Figure 2
Typical DCP and RCCD Penetration Diagram

14. COMPLETION NOTICE AND CERTIFICATE OF COMPLETION

- 14.1 On completion of the work concerned the authorised person must fill in a completion notice and return it to the road authority within twenty-four (24) hours (see Appendix A for an example of a completion notice). The road authority will then arrange a site meeting with the authorised person to do an inspection and to issue a certificate of completion if all requirements have been met. The twelve (12) month guarantee period for permanent reinstatement by the wayleave holder, or the fourteen (14) day maintenance period for temporary reinstatement by the authorised person, commences on the day after the date of issue of the certificate of completion.
- 14.2 Completion of the work means that all work has been completed and that all material, equipment and rubble have been removed and the site is completely cleared and cleaned and that either the permanent or temporary reinstatement, as applicable, has been done by the authorised person.
- 14.3 If work involves more than one street link (street block), a completion notice must be submitted after completion of each link.

APPENDIX A

WAYLEAVE PROCEDURE AND FORMS

Procedure for Wayleave Application

Wayleave Application Form

Undertaking and indemnity

Completion Notice and Certificate of Inspection

Annexure A: Summary of Conditions for Work in the Road Reserve

**JOHANNESBURG ROADS AGENCY
PROCEDURE FOR WAYLEAVE APPLICATION**

STEP 1:	BY APPLICANT
----------------	--------------

Obtain detailed information from all relevant service agencies with regard to all services adjacent to where the work is to be carried out. Provide them with a drawing at minimum scale 1:500, with NORTH POINT, BLOCK PLAN WITH STAND NUMBERS, STREET NAMES AND HOUSE NUMBERS (where possible). All service information must be obtained before applicant applies for wayleave.

Please Note:

If information of the position, or levels or the services are required, exposing and backfilling these services must be undertaken by hand. Give the relevant service agency two weeks prior notice to obtain this information.

STEP 2:	BY APPLICANT
----------------	--------------

Prepare a drawing of the proposed work showing the following details:

1. PROPOSED WORK.
 2. DEPTH OF PROPOSED SERVICE BELOW ROAD LEVEL.
 3. DISTANCE OF PROPOSED SERVICE FROM BOUNDARY.
 4. POSITION OF ALL STRUCTURES INCLUDING UNDERGROUND STRUCTURES.
 5. EXTENT OF UNDERGROUND STRUCTURES.
 6. LOCATION OF ALL OTHER SERVICES.
- (If there is no service from a particular service agency for that area, written confirmation to that effect from that agency is required)

STEP 3:	BY APPLICANT
----------------	--------------

The signed copies of the drawings and the signed application form must be handed to the central wayleave registration office, for final approval.

STEP 4:	BY APPLICANT
----------------	--------------

The central wayleave registration office will check whether all requirements have been met.

The central wayleave registration office will register the application on the GIS and the applicant must pay the prescribed registration fee. When it has been registered a wayleave number will be allocated and the wayleave will be issued. The applicant must take note of all the special conditions. (see Annexure A to the Code).

The central wayleave registration office will forward the details of the approved wayleave to the relevant road authority wayleave inspector in whose area the excavation will take place and he will monitor the site and make sure that the correct standards and the Code is adhered to during the excavation. The road authority wayleaves inspector must be present when the DCP tests are done to approve the backfilling.

STEP 5:	BY WAYLEAVE OFFICE
----------------	--------------------

On completion of the work the applicant must contact the road authority wayleave inspector who will arrange a site meeting to sign off the completed work.

Thereafter a completion certificate of completion will be issued once all requirements have been met. The 12 month guarantee period for permanent reinstatements by the wayleave holder or the 14 day maintenance period for temporary reinstatements by the wayleave holder, commences on the day after the date of issue of the certificate of completion.



WAYLEAVE APPLICATION FORM

Application is hereby made by the undersigned to do work in the road reserve as detailed below. The applicant undertakes to do the work according to the latest edition of the CODE OF PRACTICE FOR WORK IN THE ROAD RESERVE contained in Schedule 2 to the Public Roads and Miscellaneous by-laws, 2003.

No work may commence before a wayleave is issued in respect thereof. All permanent reinstatements (100 mm asphalt layer) will be done by the road authority unless specific permission is granted to the applicant to do it for this wayleave. All applicable fees are to accompany this application.

APPLICANT

AGENCY/DEPARTMENT / PRIVATE: _____
 CONTACT PERSON: _____ CONTACT TEL: _____
 CONTRACT FAX: _____ E-mail: _____
 CONTRACTOR: _____ PROJECT NO: _____
 REINSTATEMENT ORDER NO: _____

2.

3. PROVISIONAL DATES

STARTING DATE: _____ COMPLETION DATE: _____

3.1.1 DRAWING NUMBER: _____

LOCATION OF WORK (give full details)

SUBURB	:	_____	STREET NAME:	_____
STREET (FROM)	:	_____	STREET (TO):	_____
ERF NO'S	:	_____		
HOUSE NO'S	:	_____		

EXCAVATION DETAILS:

LENGTH OF EXCAVATION: RIDING SURFACE _____ m² : KERBS _____ m²
 ASPH FOOTWAY: _____ m² INTERNAL BLOCK _____ m²:UNPAVED FOOTWAYS _____ m²

3.1.1.1 SPECIAL NOTE

For the purpose of planning work done by service providers, local streets may be regarded as unprotected unless it has been newly surfaced and provided that the first 20 m from an intersection with any other class road are considered to be protected.

THE FOLLOWING AGENCIES ARE AWARE THAT THE APPLICANT WILL BE WORKING WITHIN THE VICINITY OF THEIR SERVICES, HAVE GIVEN THE APPLICANT THEIR CONDITIONS FOR WORKING WITHIN THE VICINITY OF THEIR SERVICES AND THEREFORE HAVE NO OBJECTION TO APPLICANT APPLYING FOR A WAYLEAVE.

<i>AGENCY</i>	<i>REMARKS/SIGNATURE /DATE</i>
CITY POWER	
EGOLI GAS	
JHB WATER	
CITY PARKS	

<i>AGENCY</i>	<i>REMARKS / SIGNATURE/DATE</i>
TELKOM	
ESKOM	
Rand Water	
SASOL	

Road Authority OFFICE USE:

DATE RECEIVED NAME OF OFFICIAL SIGNATURE

APPROVED:

YES	NO	WAYLEAVE NO:	
-----	----	--------------	--

UNDERTAKING/INDEMNITY:

**JOHANNESBURG ROADS AGENCY
UNDERTAKING / INDEMNITY:**



I, the undersigned hereby,

- acknowledge the receipt of a brochure containing the procedures and conditions pertaining to wayleave applications and understand that it will be my responsibility to contact the relevant service agencies within and outside the area of jurisdiction of the City of Johannesburg Municipality, undertake to adhere to the conditions not applicable to this Department, e.g. TELKOM, ESKOM, RAND WATER.
- Undertake to furnish the relevant service agencies with all necessary application forms and information obtained as a result of this application, in order to obtain final wayleave approval and permission to work within the road reserve,
 - ⇒ Acknowledge that service information is given in good faith and that the accuracy of this information is not guaranteed.
 - ⇒ Guarantee all backfilling and permanent reinstatement work done by Contractor, for a period of 12 months that will start 14 days after the work is signed off as completed by the JOHANNESBURG ROADS AGENCY Inspector.
 - ⇒ accepts responsibility for all costs associated with the work, including any damage to other services, backfilling and reinstatements of trenches, the cost of any tests that may be required and any claims that may result from the work done by the Contractor until the work is taken over by the road authority the permanent reinstatement is completed.
 - ⇒ accept the terms and conditions of the aforesaid Code of Practice for Work in the Road Reserve.

Signature (Applicant)Date

Signature (Road Authority Officer)

JOHANNESBURG ROADS AGENCY



3.1.1.1.1

ANNEXURE A

SUMMARY OF CONDITIONS FOR WORK IN THE ROAD RESERVE

This page is intended to provide a summary of conditions and specifications. Please refer to City of Johannesburg Municipality's **Code of Practice for Work in the Road Reserve** for more detail.

Before any work is done in the road reserve, a wayleave must be issued by the roads authority wayleaves office. This will only be done after a completed wayleave application form has been received by the wayleave officer and the reinstatement fee paid. Before submitting the form to the Wayleave Officer, approval must be obtained from all other agencies indicated on the form.

In the case of emergency work, e.g. burst pipes, a wayleave application form must be submitted within 24 hours and the road authority maintenance depot must be informed.

All work must be done according to the aforesaid Code of Practice. Only work indicated on the wayleave form may be done and only during the period indicated, unless approval has been obtained from the relevant wayleave office to change the dates.

The wayleave holder is responsible for all costs, including any damage to another service, backfilling, reinstatement, tests and any claim that may result. The wayleave holder is also responsible for traffic signs, barricading and the safety of motorists, pedestrians and workers.

If any trees or road furniture are affected by the proposed work, then the relevant office must be contacted.

Any underground service must not have less than 800 mm cover and all manhole or valve covers must be finished flush with the surface of the road or the verge.

Backfilling and reinstatement: Backfilling must be done according to the specifications given in the aforesaid Code of Practice. The minimum requirement is that the backfilled layers must have at least the same shear strengths as those of the adjacent undisturbed pavement layers. The tests done with a DCP or a RCCD will either be done by the road authority or a copy of the results handed into the issuing wayleave office. The reinstatement (100 mm asphalt layer) of the surface will be done by the road authority unless specific permission is granted to the wayleave holder to do the work.

The wayleave holder is responsible for obtaining the required strengths, but the following is recommended as a method that should be adequate in most cases.

The wayleave holder must ensure that the top 400 mm (550 mm for arterials, collectors and industrial streets), be stockpiled separately and stabilised with 4 % Ordinary Portland Cement (OPC) approximately 80 kg/m³ of cement. The material must be compacted in thin (75 to 100 mm) layers with a vibratory compactor at optimum moisture content (OMC) to the required densities (base: 98 %, subbase: 95 %, selected subgrade: 93 % and subgrade: 90 % Mod AASHTO) to within 100 mm of the existing road surface. This method should provide the required shear strengths in most cases, but it should be noted that material that was originally stabilised cannot be re-used and must be discarded.

The reinstatement of the surfacing must consist of 100 mm hot-mix asphalt. The lower 70 mm must be "blackbase" (26,5 mm nominal stone size, continuously graded) and the top 30 mm fine (4,75 mm nominal stone size, continuously graded hot mix). Cold mix may only be used for temporary backfills (Emergency backfill).

If desired the wayleaves holder may place foamed concrete of a minimum 4 MPa crushed strength and manufactured to an approved manufacturers specification. The foamed concrete is to be placed to level 100 mm below the surrounding surface level. As soon as the foamed concrete has set sufficiently, a 70 mm layer of asphalt basecourse material must be placed on top followed by a 30 mm layer of continuously graded asphalt wearing course material.

The top 100 mm of a trench must be backfilled by the wayleave holder, compacted and maintained in a serviceable condition for a period of 14 days commencing on the day after the date of issue of the certificate of completion.

Constructed footways must be reinstated with the original surfacing materials and the supporting layers compacted to obtain shear strengths at least equal to those of the adjacent undisturbed footway.

Un-constructed verges must be backfilled in such a way that the verge is in the same condition as it was before excavation.

After completion of any work in the road reserve, the site must be cleared and cleaned and all excess material, tools and equipment must be removed.

The wayleave form, or a copy thereof, must be returned to the wayleave officer within 24 hours after completion of the work with the completion notice and signed by all parties and must be accompanied by the DCP or RCCD test results.

Any excavation left unattended for a period of more than 5 days, will be made safe by the road authority and charged to the service agency or contractor, who made the excavation.

JOHANNESBURG ROADS AGENCY



CERTIFICATE OF INSPECTION AND COMPLETION

Wayleave No.: _____

The road authority inspector must sign this form. The signature is just for administrative control and by no means implies that the work has been done according to the specifications and conditions of the wayleave. The onus and responsibility of ensuring that the service has been correctly installed, is that of the applicant.

Description of wayleave _____ Date: _____
Street on _____ Street from _____ Street to _____ Suburb _____

Responsible person (for the erection / installation of the service)

Name: _____ Company: _____

Telephone No.: (____) _____

COMPLETION NOTICE

The central wayleave office is hereby informed that:

- The work done in terms of the above wayleave has been completed according to the conditions as prescribed in the wayleave.

AND

- The permanent reinstatement has been done in accordance with the specifications in the Code of Practice for work in the Road Reserve.

OR

- A temporary reinstatement has been done and a reinstatement order to the amount of R_____ is attached for the road authority to do the permanent reinstatement.

Name: _____ Signed: _____ Date _____
Wayleave Holder

CERTIFICATE OF COMPLETION

It is hereby certified that the site of the work carried out in terms of the above wayleave was inspected on the above date and that:

- The work has been completed; and
- The site has been cleared and cleaned; and
- The wayleave holder did the permanent reinstatement and the 12 month guarantee period commences from date.

3.1.1.1.1.1.1 OR

The wayleave holder did a temporary reinstatement and the 14 day maintenance period commences from the day after the date of issue of the certificate of completion. A reinstatement order was received from the wayleave holder.

SITE INSPECTIONS

REMARKS:

REINSTATEMENT ORDER NO: _____

The road authority waysleave inspector was present when the DCP tests were done (see site inspection remarks).

NAME: _____ Signed: _____ DATE _____
ROAD AUTHORITY INSPECTOR

APPENDIX B

3.2

3.3 **ROADWORKS SIGNING FOR URBAN STREETS**

(Extract from the South African Roads and Traffic Signs Manual (SARTSM), Volume 2, Chapter 13)

	Page No
General 1	3.10.1
Urban roadworks	13.10.1
Temporary traffic signals	13.10.2
Sidewalk deviation	13.10.4
Localised work site – good visibility	13.10.6
Lane closed beyond a junction	13.10.8
Work within a junction	13.10.10
Work in a one-way street	13.10.12
Road closure - CBD	13.10.14
Road closure – dual carriageway street	13.10.16
Road closure - detour	13.10.18