Application Guideline for Construction of Bridges, Culverts, Subways, Overhead Signs or Any Other Type of Structure



GUIDELINE FOR MANAGEMENT OF THE ROAD RESERVE

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APPLICATION GUIDELINE FOR CONSTRUCTING BRIDGES, CULVERTS, SUBWAYS AND ANY OTHER TYPE OF STRUCTURE

1 PURPOSE OF GUIDELINE

This guideline contains information on the submission of an application to obtain approval for construction of bridges, culverts, subways, overhead signs or any other type of structure in a road reserve of an existing Roads Directorate road but not under contract with Roads Directorate. The guideline provides a standard format for the application to simplify and expedite applications. It also provides the applicant with a broad reference of the relevant information necessary to submit such an application.

Note the following:

- a. A formal application letter is to be addressed to the Director General (Attention to the relevant Regional Manager Central, North or South), Roads Directorate, PO Box 194, Maseru 100, Lesotho and submitted to Roads Directorate office at the relevant district.
- b. Submission of a Wayleave Application Form and the accompanying letters and plans will not automatically result in approval for the construction of bridges, culverts, subways and overhead signs and approval could still be denied.
- c. The application shall be submitted under the signature of a representative engineer.
- d. The responsibility rests with the applicant to provide all necessary plans, reports and information.
- e. The application shall conform to the standards adopted by Roads Directorate.
- f. Additional information not covered in this guideline may be requested by Roads Directorate.
- g. No work is allowed within a declared road reserve of Roads Directorate without an approved wayleave. A Wayleave Agreement will be established with the applicant on approval of this application.
- h. The applicant shall introduce an authorised representative Engineer to Roads Directorate for communication of his/her application.

2 PROCEDURE

- a. The applicant shall discuss the pending application with Roads Directorate verbally and/or in writing.
- b. The applicant shall then conduct a Service Enquiry, which is the process of:
 - i. Obtaining service plans indicating the positions of existing services from service utility providers identified by Roads Directorate. The service plans should indicate the positions and type of services in the area where work will be done;
 - ii. Investigating the area where work will be done for service markers and signs of existing services not yet identified, confirming with these service providers and obtaining service plans directly from them;
 - iii. Confirming with service providers not yet consulted in i and ii above regarding potentially unmarked services;
 - iv. Obtaining requirements from utility service providers regarding work under, adjacent to or over their utility services. Service providers may impose reasonable additional conditions relating to work in the proximity of their services. These shall be provided in writing to the applicant;
 - v. Verifying with all utility service providers whether future work is planned in the area where work will be done. If any, these shall be provided in writing to the applicant.
- c. The applicant shall always assume that underground utility services are present until proven otherwise. For the purpose of the application, location of underground services shall only be based on the Service Enquiry and non-invasive methods.
- d. The applicant shall then submit an application form for formal approval to construct a bridge, culvert, subway, overhead sign or any other type of structure within the road reserve. A reference number will be allocated to the applicant by means of acknowledgement of receipt of the formal application.
- e. The application shall be evaluated and an Approval issued in the form of a wayleave agreement to construct the services.
- f. The applicant may be requested to supply additional information.
- g. Approvals shall be issued in the form of a wayleave agreement to construct the bridge, culvert, subway, overhead sign or any other type of structure.
- h. A Wayleave Agreement shall only be issued once all details concerning the legal, financial, contribution, compensation and technical matters are in place.
- i. A wayleave shall also only be issued once the Bridge with Schedule and Preliminary General Plan are approved by the Design Section of Roads Directorate. For more complicated structures, the Design Section may insist that some or all of the Detail Drawings be finalised before the wayleave is granted.



- j. The applicant can only proceed with construction after formal approval of this application, and signing of the Wayleave Agreement.
- k. A Wayleave Agreement shall only be issued once all details concerning the legal, financial, contribution, compensation and technical matters are in place.
- I. Note that 4 to 6 weeks are required to evaluate an application, starting from the date on which all the required information is received.

3 COVERING LETTER

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 - a. The purpose of the letter is to request approval for the construction of the bridge, culvert, subway, overhead sign or other type of structure, referring to all / any relevant documentation and correspondence. The letter shall state clearly and concisely the scope of the application.
 - b. State the full name and postal addresses of the client / owner / developer clearly. Provide the particulars of the legally responsible body / individual / representative engineer / Local Authority.
 - c. Provide the following:
 - i. The road number and name of the road with the destinations.
 - ii. Description of the planned bridge, culvert, subway, overhead sign or other type of structure, with property description and kilometre position(s) of the planned structure on the Roads Directorate road.
 - iii. Reference to any previous correspondence / approvals, etc. and supporting documents where necessary.
 - iv. Background information.
 - v. Proof of arrangements made with the relevant utility service providers regarding utility services to be relocated, as discussed in the Roads Directorate's documents "General Information for Wayleaves", "Wayleaves: Service Locations" and relevant utility service guidelines. Note that the affected utility service providers (if any) will have to submit applications for relocation of their services.
 - vi. Construction programme, including allowance for relocation of affected services.
 - vii. List of plans submitted.
 - viii. Discussion of traffic volumes (the traffic feasibility study where necessary, or requested before by a Local Authority), services to be shifted, drainage/ pavement design or any aspect of the design warranting specific explanation or motivation.
 - ix. Discussions or motivation of any aspect not in accordance to standards adopted by Roads Directorate.

- x. Correspondence reflecting approvals given by owners / developers, Local Authorities, financiers, etc., as relevant.
- xi. Construction methods and actions to be employed. These could include excavating, piling, assembling of staging and formwork, concreting, stressing of prestressing tendons, assembling of reinforcement, precast beams, incremental launching, balanced cantilever, cable stay, advanced shoring, etc. The use of haulage trucks, concrete mixers, cranes and any other planned large equipment shall be described.
- xii. Whether alternative roads or deviations will be used during construction. Provide the proposed traffic management plan, signage, posted speed limits, deviation layout plans, implications of construction on public and road users.

4 LIST OF PLANS

The following shall be submitted with the covering letter (refer to 3):

- One (1) paper print of each individual plan (see below), all plans shall be folded to A4 size.
- All individual plans in electronic drawings, in DXF, DWG, DGN or ESRI shape file format in South African Lo27 Transverse Mercator projected Coordinate System referenced to the Cape Datum.
- One electronic copy of all XYZ coordinates in MS Excel, in South African Lo27 Transverse Mercator projected Coordinate System referenced to the Cape Datum.

All plans shall be in metric units.

The Plans necessary for submission in support of the application for approval are:

- a. Locality Plan Refer to 5.1
- b. Key Plan Refer to 5.2
- c. Layout Plan Refer to 5.3
- d. Services Layout Plan / Relocation of Services Plan Refer to 5.4
- e. Road Signs and Markings Plan Refer to 5.5
- f. Longitudinal Sections Refer to 5.6
- g. Level and Contour Plan Refer to 5.7
- h. Structural Plans- Refer to 5.8



5 DESCRIPTION OF PLANS

5.1 Locality Plan

The area on the plan covered by the Locality Plan shall be part of the Key Plan. A scale of 1:50 000 shall be used showing the following information:

- a. Scale;
- b. Existing roads to be shown in a thinner line than that used for the road under discussion;
- c. Indicate all existing and proposed intersection and access positions;
- d. The relevant area under consideration must be circled or high-lighted;
- e. All road numbers and street names.

5.2 Key Plan

A scale of 1:5 000 shall be used showing the following information:

- a. Location of proposed new bridge, culvert, subway, overhead sign or any other type of structure;
- b. Intersection and access positions;
- c. Road numbers and street names;
- d. Destinations;
- e. Existing roads and public or access roads;
- f. Kilometre distance of the Roads Directorate road;
- g. Subdivision of properties, community council boundaries;
- h. Road reserves;
- i. North point.

5.3 Layout Plan

Use a scale of 1:500 or 1:250. The purpose of the layout plan is to show the detail of the proposed geometric layout of the proposed bridge, culvert, subway, overhead sign or any other type of structure against the background of topographical detail, existing roads, properties and improvements as well as the extent of road reserve influenced.

The geometric layout, intersection of roads and rivers will influence the position, level and orientation of bridges, culverts, subways, overhead signs and any other type of structure.

The following information, as applicable, shall be shown on the Layout Plan:

- a. Proposed works.
- b. Existing and planned road numbers and street names.

- c. Destinations.
- d. Existing roads and service roads.
- e. Roads to be closed or deviated.
- f. Kilometre post and peg (design chainage) distances.
- g. Community council and cadastral boundaries. Sub-division of properties, rivers and their names (where applicable).
- h. Radii of horizontal curves on existing roads (and future roads, where applicable).
- i. Beginnings and ends of horizontal curves on existing roads (and future roads, where applicable).
- j. Distance between carriageways (for dual carriageways cross-section dimensions).
- k. Lane and shoulder widths.
- I. Dimensions of proposed works.
- m. Reserve widths showing existing and future road reserves.
- n. Direction of traffic movements.
- o. Extent of cuts and fills, i.e. earthworks details.
- p. Guardrails where applicable.
- q. All drainage structures (existing and proposed), including flows / capacity calculations.
- r. Angles of intersection between roads.
- s. Coordinates of reference points to nearest 0.01 m.
- t. North arrow.
- u. Scale.
- v. Kerb types.
- w. Line of sight.
- x. Bus and taxi stops (if applicable) with dimensions.

5.4 Services Layout Plan / Relocation of Services Plan

Use a scale of 1:1000; 1:500 or 1:250. The purpose of the layout plan is to show the detail of any existing services and the proposed relocated services on the background of road geometry and topographical detail, property descriptions and the extent of existing and future road reserves. The following information, as applicable, shall be shown on the Layout Plan:

a. Existing services include electrical, telecommunications, water, sewerage, stormwater systems. Tabulate the points of change in alignment of all services and



fully describe the type of service and name the responsible authority or name of owners. Refer to the Service Enquiry mentioned in Section 2.

- b. The proposed relocated services shall be distinguishable from existing infrastructure and be labelled clearly.
- c. Indicate any physical obstacles in the vicinity of the proposed relocated service(s), such as trees, road signs and all other existing services.
- d. Existing and planned road reserves, community council and cadastral boundaries, servitudes and property descriptions, rivers, water courses and their names.
- e. The road geometry shall be displayed, with chainages on the centre line relative to the distance markers for future and existing roads. Provide road numbers, street names and destinations.
- f. Provide full dimensions of road surface and reserve widths. The distance between the centreline of the relocated services and the line of the road reserve, as well as the edge of the road surfacing shall be shown.
- g. Direction of traffic movement.
- h. North arrow and scale.
- i. Bench mark for levels.

5.5 Road Traffic Signs and Markings

This information shall be shown on a separate plan.

5.5.1 Preliminary Design Proposal

These drawings will constitute the documentation necessary for consultation with Roads Directorate. A separate appointment shall be made.

Prepare a key plan showing all relevant road numbers and destinations (can be similar to 1:5 000 key plan (5.2) above).

Show the sign face designs (concept only) of all guidance signage (scale 1:50; 1:25).

Show the road marking layout (concept only) (1:500; 1:250).

5.5.2 Final Working Drawings

a. Road markings (scale 1:500, 1:250)

Layout of proposed structure, to a suitable scale showing (only) all the road markings with all necessary setting out dimensions. Include reference numbers, lengths, spacings and colours. Also show positions of all regulatory, warning and guidance signs. b. Guidance signs (scale 1:50, 1:25)

These drawings shall show a detail design of each guidance sign, clearly showing the sign face design. Details to be shown are: different colours and classes of materials, letter styles and sizes, types and sizes of borders, symbols and arrows, intermediate spaces between the elements of the sign face (borders, arrows, road numbers, names, symbols, etc); length, height and area.

c. Regulatory and Warning Signs

A schedule indicating size and quantity of all regulatory and warning signs (these can also be included on the Guidance Signs drawing(s)).

5.6 Longitudinal Sections of Roads Directorate Road where a New Bridge, Culvert, Subway, Overhead Sign or any Other Type of Structure is Constructed

A horizontal scale of 1:1 000, vertical scale of 1:100 shall be used, showing the following details:

- a. Ground line on centreline, dotted line.
- b. Vertical alignment on centre line (solid line).
- c. Destinations and directions of vehicular movement.
- d. Datum levels.
- e. Grade (%).
- f. Length of vertical curves.
- g. K-values, design speed.
- h. Beginnings and ends of vertical curves.
- i. Beginnings and ends of horizontal curves, radii, curve lengths and tangent lengths.
- j. Super elevation (%).
- k. Ground levels at 10 m intervals (to the nearest 0.01 m).
- I. Road levels at 10 m intervals (to the nearest 0.01 m).
- m. Positions of intersection and access points.
- n. Culverts and drain pipes (kilometre distance, size and skew).
- o. Bridges (size, skew and flood level) (where applicable).
- p. Guardrails.
- q. Design speed and/or operational speed.

5.7 Level and Contour Plan

These drawings shall be provided on request. All the contours shall be provided in 100 mm intervals.



5.8 Structural Plans

These plans shall show all details of all proposed structures. General specifications shall also be given, e.g. class of concrete, finish on concrete, etc. Reinforcing details shall also be shown, where applicable. All drawings shall be fully dimensioned.

6 STANDARD DOCUMENTATION

6.1 Geometric layout and Positioning

- a. Roads Directorate's Design Standards for Geometric Design.
- b. Typical plans for road design of Roads Directorate.

6.2 Road Signs and Markings

a. SADC Road Traffic Signs Manual.

6.3 Jacking, Drilling and Open Trenches

a. Refer to Application Guideline for Jacking, Drilling and Open Trenches.

6.4 General Information on Wayleaves

a. Refer to General Information on Wayleaves.

6.5 Service Locations

a. Refer to Preferred Utility Service Locations.

6.6 **Construction Access**

a. Refer to Application Guideline for Construction Access.

NOTE: Roads Directorate reserves the right to alter, delete or add to the contents of this guideline without prior warning or notification.



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