NEW APPROACHES IN THE MANAGEMENT OF PUBLIC UTILITIES IN THE RIGHT-OF-WAY

THE CONSULTATIVE AND COLLABORATIVE APPROACH DEVELOPED BY THE MINISTÈRE DES TRANSPORTS DU QUÉBEC

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Abstact

Managing utilities in the right-of-way (ROW) involves many complicated issues. Implementing a real partnership between road operators and utility operators seems essential and remains key to ensuring road assets are preserved and road user safety is maintained, particularly when work is carried out by utility companies. For these companies, the essential and high-priority needs are ensuring that utilities are long lasting and that relocation-related costs are fairly shared. Understanding and mutual respect of the standards that apply to both networks may be beneficial, particularly with respect to crossing rights and road/utility longitudinal coexistence. The challenges are therefore numerous.

Five years ago, the ministère des Transports du Québec began to implement a global strategy for managing utilities in the rights-of-way under its control. This has proven beneficial but is not without problems.

1.0 THE CHALLENGES INVOLVED IN MANAGING UTILITIES IN THE RIGHT-OF-WAY

Utilities have always followed the development of the Québec road network. Both underground and overhead telecommunications, transportation, and energy networks have been installed in the rights-of-way managed by the ministère des Transports du Québec, though they have not necessarily adhered to any general occupation guidelines.

The presence of a utility network in a right-of-way (ROW) and the activities this presence generates will impact traffic flow and road user safety. It will also place technical restrictions on the ministère des Transports du Québec, particularly with respect to:

- Road network use;
- Road network development projects.

In some cases, the presence of these networks is also likely to directly affect the structural integrity of the road and, consequently, the lifespan of road assets.

The occupation of ROWs must therefore be controlled, particularly since the resulting impacts and restrictions often result in additional expenses for the ministère des Transports du Québec. For instance, additional costs are incurred when utilities must be relocated so that road work can be completed.

The challenges involved in managing utilities in the right-of-way therefore include combining the ministère des Transports du Québec's mission with that of utility operators. These operators are major companies that contribute to the province's economic development.

2.0 ROAD CORRIDOR MANAGERS RESPONSIBLITY WHEN INSTALLING UTILITIES

The ministère des Transports du Québec is responsible for authorizing the use of road corridors to install utilities. But it must be careful and ensure that:

- o The integrity and optimal lifespan of the road assets are preserved;
- o Identified sites are future-proofed to avoid costly future relocations associated with roadwork projects;
- o Road networks and public utilities can coexist in harmony through the development and implementation of recognized practices.

This responsibility is firmly anchored in the ministère des Transports du Québec's current policies, even if many additional collaborative steps can still be taken.

3.0 FRAMEWORK DOCUMENTS FOR SUPPORTING UTILITIES MANAGEMENT

3.1 Standards for utilities

In 1998, the revised standards for utilities (the third chapter of *Tome IV – Abords de route* in the series Normes – Ouvrages routiers) set out guidelines for where utilities should be installed in a right-of-way or autoroute.

The goal of the standards is to specify the ministère des Transports du Québec's obligations with respect to the installation of utilities in a right-of-way under the ministère's responsibility. These standards are used by the ministère des Transports du Québec when preparing and reviewing documents given to utility companies for installing or maintaining their equipment.

In these standards, the ministère des Transports du Québec has defined two distinct zones: the inner and outer rights-of-way. The inner right-of-way is the part of the ROW that has been reserved exclusively for road traffic needs. It corresponds:

- o In urban areas, to the area located between the inner limit of the sidewalk and up to, but not including, the curb, or to the area between the inner limits of the sidewalks;
- o In rural areas, to the area between the limits of the bottom of the outer slopes.

The outer right-of-way is defined as the area bound by the limits of the right-of-way and the inner right-of-way. Utilities can be installed in this area.

The figures found at the end of this text define the inner and outer rights-of-way of a road (*entité primaire* and *entité secondaire* in the illustrations).

The standards for utilities stipulate that:

- o Underground facilities installed along a road must be located in the outer right-of-way, as close as possible to the limit of the right-of-way;

- Overhead facilities installed along a road must be located at the extreme limit of the right-of-way;
- Overhead or underground facilities must not be installed longitudinally in the right-of-way of an autoroute;
- Overhead or underground facilities that cross a road or an autoroute must, as far as possible, be grouped together to help minimize the technical and environmental impacts on the ROW. Crossings should be perpendicular to the centre line of the highway.

This distinction helps protect road infrastructure integrity, since no utility can be installed in the inner right-of-way.

There is, however, one exception. Occasionally, occupying an engineering structure (when the structure is part of the inner ROW) is permitted, although installing utility conduits or pipelines on or near an engineering structure is not recommended. This type of installation should be considered only as a last resort in cases where technology and implementation do not permit overhead or underground crossings.

In addition, out of concern for the safety of road users, when the width of a ROW is reduced, the standards stipulate that overhead utilities must be placed so as to adhere to the side clearance restrictions defined for stationary objects in chapter 13 of *Tome I – Conception routière*: Dispositifs de retenue.

The standards also include specific requirements for overhead crossings of autoroutes. Only overhead crossings of utilities that transport and distribute electrical energy are permitted. Therefore, in special cases, the ministère des Transport du Québec allows crossings of overhead power lines of less than 50 kV when these lines are close to an overpass, provided that:

- the area is a single viaduct or an intersection with a small slope;
- the line is installed approximately 20m from the overpass;
- the line is designed to conform to class 1 construction characteristics (same as railways) found in standard CAN/CSA-C22.1, “overhead systems”;
- clearance complies with standard CAN/CSA-C22.1, “overhead systems”.

To help preserve the structural integrity of the road, the standards stipulate at what depth underground utilities should be installed:

- when crossing a road, the top of a conduit must be situated under the infrastructure and at least 1m under the pavement. Outside the pavement, the top of a conduit must be situated at least 1m below a slope and 0.8m below the normal profile of ditches and banked edges. The covers of splicing chambers must in no case exceed the level of the improved land;
- when crossing an autoroute, the top of a conduit must be situated under the infrastructure and at a depth of at least 1.2m below the pavement;
- along a road, the top of a conduit must be situated at a depth of at least 1m below a slope and 0.8m below the normal profile of a banked edge.

The standardization process currently established by the ministère des Transports du Québec includes a permanent structure for discussions with utility companies via the standards harmonization committee, which meets approximately three times per year. This committee’s mandate is to discuss issues that arise when applying standards and

to propose solutions that meet the needs of both parties with respect to co-occupying road and utility networks. Representatives from both the ministère des Transports du Québec and two large utilities companies (Hydro-Québec and Bell Canada) sit on this committee.

Finally, the standards cover many aspects related to the location of utilities, which cannot be installed where they would negatively affect roads or traffic.

3.2 The Act Respecting Roads

The Act Respecting Roads (R.S.Q., chapter V-9) sets out the obligations of the ministère des Transports du Québec with respect to managing Québec's upper road system. Sections 37 and 38 stipulate that:

- "No person may construct, upon the right of way of a road, a sidewalk, an aqueduct or sewer network or any other work unless he has obtained the authorization of the Minister."
- "No person may encroach upon the right of way of a road or install thereupon telecommunications or power transmission or distribution equipment unless he has obtained the authorization of the Minister."

To fulfil these obligations, the ministère has developed encroachment permits (*permission de voirie)* that specify both the ministère des Transports du Québec's requirements for the location of facilities and the responsibilities of a utility network operator who requests authorization for the installation.

It is important to point out that one clause of this permit, which is not actually an actual right, states that when the ministère des Transports du Québec grants a permit, it reserves the right to take any actions it deems necessary to maintain, exploit, improve and develop a right-of-way.

During the 2005-2006 year, nearly $30M was spent completing work and relocating Hydro-Quebec's electrical energy transmission system. Major road network development and improvement projects, such as the construction of the new autoroute 30 or the expansion of existing roads by adding additional lanes, affect installed utilities, which have to be relocated.

Since the Act Respecting Roads also stipulates that "the Minister may enter into an agreement with a person supplying telecommunications or power transmission or distribution services concerning the installation and maintenance, upon the right of way of a road, of the equipment and material necessary for supplying such services", the ministère des Transports du Québec has begun to collaborate with utility companies.

So, in January 2000, the Ministère adopted a renewed global management approach. The Ministère's policies will focus on innovation, communication and partnership when managing issues of common interest with utility companies. The goal is to be more effective and efficient so that administrative and technical costs and time can be reduced, while the still taking into account the constraints and concerns of each party.

This approach should result in negotiated terms to be included in a framework agreement.

3.3 Framework agreements

At the moment, framework agreements have been signed or are being developed. These agreements are intended to support business relationships between the ministère des Transports du Québec and utility companies. The framework agreements cover administrative and technical procedures governing the presence of utilities near or in a right-of-way managed by the ministère des Transports du Québec. They also identify which costs will be covered by the utility company and which by the ministère des Transports du Québec. The agreements are designed to develop and explain the relationships and practices that must be established to provide a framework for installing new facilities or relocating or modifying existing facilities.

The established procedure is for the parties to first agree to draw up a negotiation protocol that clearly stipulates the principles and objectives of the framework agreement. In general, the framework agreement sets out the following principles:

- Respect the mission of each party, which manages its own network;
- Respect laws and regulations;
- Recognize and maximize the expertise of each party;
- Mutually consider constraints and concerns;
- Be willing to collaborate and to plan and execute projects together.

The parties would like conclude a framework agreement that will allow the following objectives to be achieved:

- Ensure the integrity and durability of utilities and road infrastructures by optimizing projects and innovating where necessary;
- Ensure the ministère des Transports du Québec's various projects as well as those of the utility company are treated uniformly by establishing straightforward and easy-to-apply rules that reflect the priorities of both parties;
- Create a cooperative and collaborative relationship founded on transparency and reciprocity by establishing simple and effective communication procedures;
- Look for flexibility when developing and applying standards and recognized practices by pooling the expertise of both parties;
- Agree on principles for benefits when the nature of a service involves costs.

Both partners would therefore be able to improve the organization's performance.

Benefits include reduced costs for different projects and better response time. With effective communication and established procedures, the utility company can predict the impacts road projects will have on its network, while the ministère des Transports du Québec will be able to plan projects with a better understanding of the impacts. The partners are therefore acting and making decisions proactively. As part of the framework agreements, then, discussion groups will be implemented in each territory. These groups will be in charge of fostering cooperation, communication and the exchange of information related to road projects and the utility company's

development projects in particular. The goal of this task is to share and develop a vision of innovation and quality assurance.

Additional benefits include better appreciation of the expertise each party offers and the sharing of common practices through jointly offered information, awareness and training sessions.

A joint committee has been implemented to help ensure that framework agreements are followed. This committee is to constantly try to improve business relationships. The committee, which meets three times per year, has a mandate to ensure that the terms of the framework agreement are respected. Moreover, it can, if necessary, recommend adjustments to the terms already in place and discuss problems encountered to help work out solutions that will satisfy both parties.

The most significant problem encountered when applying the terms of the framework agreement is treating all projects uniformly in every administrative unit in Québec. This problem exists because many stakeholders are involved and spread out over a wide area: the ministère des Transports du Québec has 14 territorial areas and 60 service centres.

To overcome this problem, the ministère des Transports du Québec helped create a network of utility experts (14 people, or one (1) person per territorial area) who support workers, technicians, engineers, or operators in their territory. Representatives from the ministère des Transports keep these experts informed of anything that concerns the framework agreements. These representatives are from the central unit that coordinates the network of utility experts and are members of the joint committee.

The ministère des Transports du Québec also expects that its relationship with utility companies will become strained when it tries to force them to comply with certain standards related to the protection of a road corridor's integrity. In fact, globalizing and opening markets to competition has generated problems for utility companies, as these companies are worried about their operating costs, which they must reduce.

A research project jointly financed by the ministère des Transports and utility companies was carried out recently by the Centre d'expertise et de recherche en infrastructures urbaines (CERIU). This goal of project was to develop an innovative system for affixing utility conduits to long-lasting components on bridges. In particular it aimed to:

- Make it easier for bridge operators to carry out maintenance activities;
- Ensure conduits belonging to the utility companies are future-proof;
- Reduce costs associated with future relocations.

4.0 CONCLUSION

The ministère de Transports du Québec, because of its experience partnering with utility companies, feels that collaborating with other right-of-way operators across

Canada is essential. These operators have varied experience that deserves to be shared. Together, they can develop reference tools for managing public utilities.

A permanent public utilities management subcommittee was created in September 2005. Its current focus is on developing a synthesis of best practices for managing public utilities in the right-of-way.

Also under consideration is the possibility of developing a Canadian guide that defines the technical criteria for supporting requests from road operators to install utilities in the rights-of-way.

Finally, managing public utilities is essential, since road operators are faced with strategic challenges when carrying out their missions to:

- Maintain road user mobility;
- Preserve the integrity of road infrastructures;
- Maintain the lifespan of road assets;
- Reduce future costs for relocating utilities during road work.

Managing public utilities is complex, and the economic and financial challenges are considerable.

The best approach is to implement a structured procedure that supports continued collaboration with both road network operators and utility companies.

Figure I – Definition of the inner ROW (*entité primaire*) and outer ROW (*entité secondaire*) in urban areas

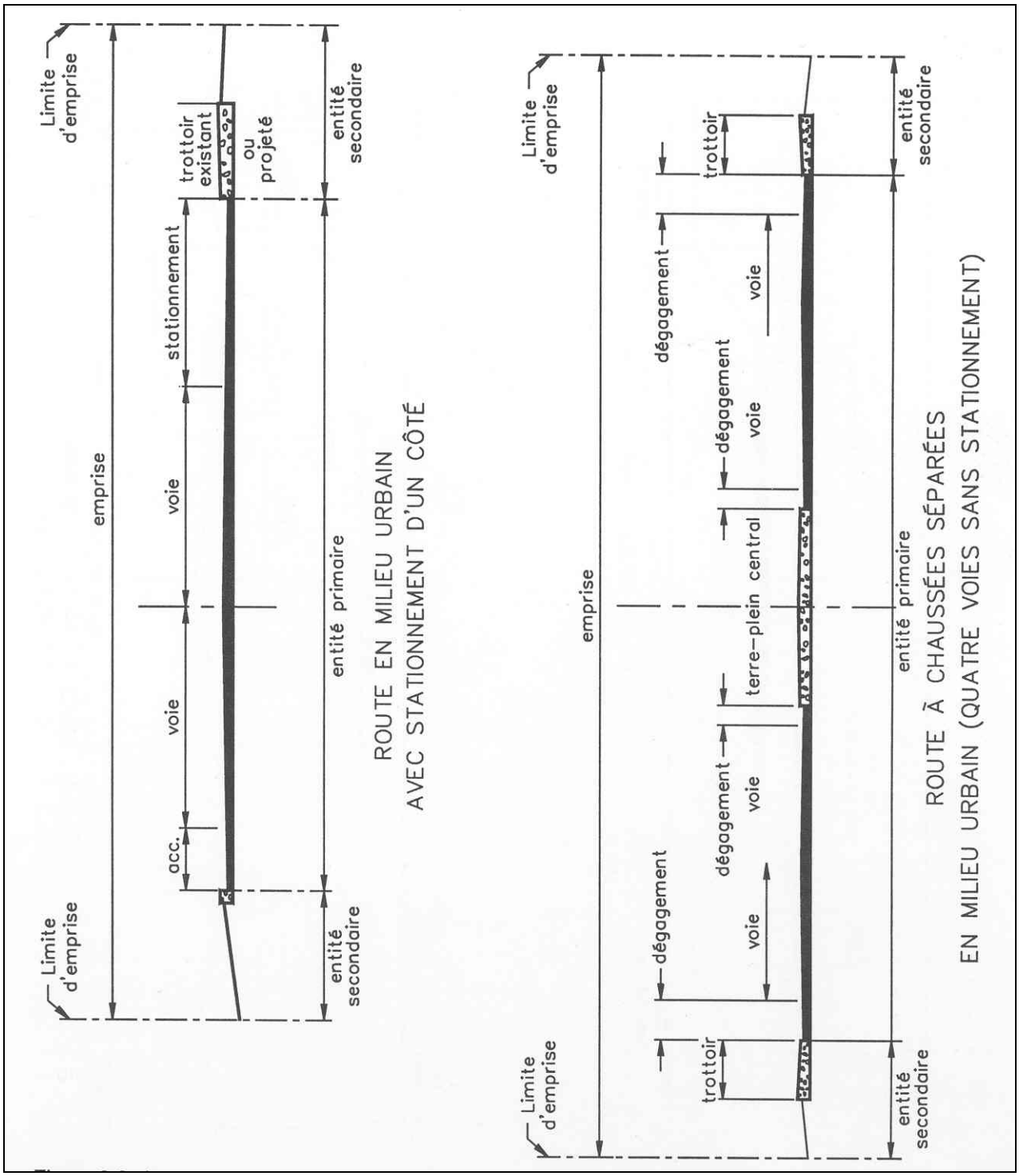
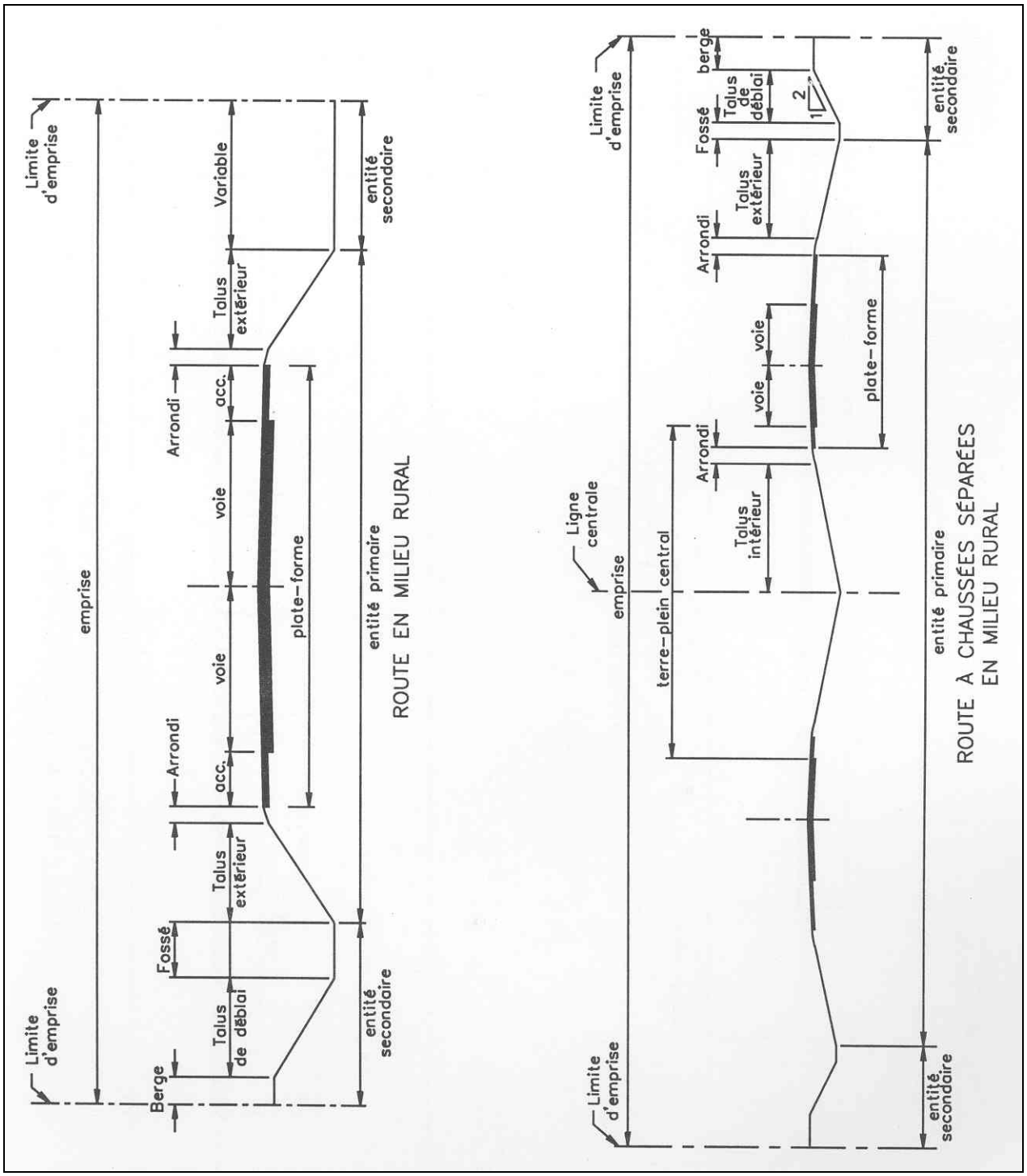


Figure II – Definition of the inner ROW (*entité primaire*) and outer ROW (*entité secondaire*) in rural areas



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