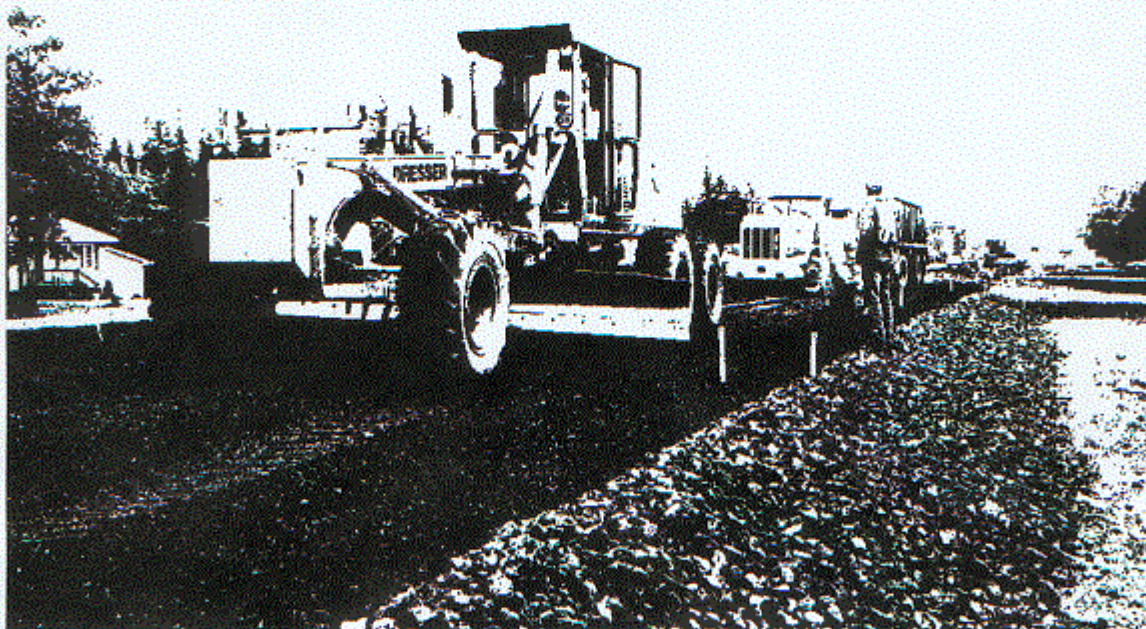


New  Brunswick

a guide to the  
**Minimum Standards**

for the  
**Construction of  
Subdivision Roads & Streets**



**Planning & Land Management Branch**  
Department of Transportation / Province of New Brunswick

Fredericton, January 2003



**NEW BRUNSWICK**

**A GUIDE**

**TO THE**

**MINIMUM STANDARDS**

**FOR THE CONSTRUCTION OF**

**SUBDIVISION ROADS AND STREETS**

**DEPARTMENT OF TRANSPORTATION**

**PROVINCE OF NEW BRUNSWICK**

**APPROVED BY:** \_\_\_\_\_

**MINISTER OF TRANSPORTATION**

**January 2003**

## FOREWORD

A guide to the Minimum Standards for the Construction of Subdivision Roads and Streets was first published in 1976, revised in 1992 and 1996. This edition of the guide reflects changes in matters that affect roads and streets, including engineering practices, regulations and government policies. The purposes of the Minimum Standards contained within this guide are to develop efficient streets that will effectively serve the various land uses in rural areas, and to ensure good highway development.

The authority to require the construction of roads and streets to meet certain prescribed minimum standards is vested in the Minister of Transportation by the Community Planning Act, R.S.N.B. 1973, Chapter C-12 and amendments thereto.

The requirements prescribed in this guide are minimum standards, which must be met or exceeded in the construction of subdivision roads and streets. However, the Minister of Transportation may specify higher standards where required by the circumstances of a particular development.

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## 1.0 INTRODUCTION

The purpose of the Minimum Standards contained within this guide is to promote the development of streets, which will effectively serve the various land uses in the unincorporated areas of New Brunswick. The Minimum Standards are also intended to ensure the proper development and construction of this part of the provincial highway system.

In accordance with Section 55 of the Community Planning Act, the Minimum Standards must be adhered to in the construction of public roads and streets in all areas of the province outside of municipal boundaries as a condition of approval and acceptance of the streets by the Minister of Transportation.

In addition to review for compliance with the Minimum Standards set by the Minister of Transportation, a subdivision is reviewed by the Planning Commission, which considers the overall subdivision potential with regard to street layout, the further subdividing of land or adjoining land, the general topography, present and potential problems with storm drainage, the interest of future lot owners and the general public, as well as the maintenance provided to and the serviceability of existing roads leading to the proposed subdivision.

Substandard roads that provide access to a proposed subdivision must be constructed/upgraded to meet the requirements of the Minimum Standards. These include public roads, so-called, in the unincorporated areas that are not serviceable as highways under the Highway Act, and are evaluated on a similar basis as any street to be constructed in a subdivision. More detailed information concerning streets in subdivisions and the designation of roads may be obtained from the Planning and Land Management Branch (453-2418) of the Department of Transportation, Third Floor, Kings Place, Fredericton or from the District Transportation Engineer in your area. A map of New Brunswick showing each Transportation District and a list of their respective addresses and telephone numbers is included in Appendix "A".

## 2.0 DEFINITION OF TERMS

The following definitions are for use in conjunction with this guide only:

**"ACT"** means the Community Planning Act, R.S.N.B. 1973, Chapter C-12 and amendments thereto.

**"AGGREGATE BASE"** means a layer of specified or selected granular or crushed rock aggregate of planned thickness, constructed on the subgrade or subbase for the purpose of distributing load, providing drainage, and/or upon which a wearing surface is placed.

**"ARTERIAL HIGHWAY"** means a road intended to move a relatively large volume of traffic at medium to high speeds and includes a highway classified by the Minister of Transportation as an arterial highway under Section 14 of the Highway Act and all highways assigned a route number from 1 to 99 or given a name. Arterial highways are used where traffic movements are the primary consideration and land access is secondary. Arterial highways may be subject to control line and/or controlled access regulation.

**"BOND"** means a certified cheque or term deposit required by the Minister of Transportation in accordance with the Community Planning Act.

**"CERTIFICATE OF SETBACK"** means a certificate issued in accordance with a by-law or regulation established under the Community Planning Act. The certificate must be signed by the applicant and countersigned by the Development Officer (for land within a village) or the District Transportation Engineer having jurisdiction (for land within an unincorporated area).

**"COLLECTOR HIGHWAY"** means a road intended to collect traffic from local streets and land-access roads and includes a highway classified by the Minister of Transportation as a collector highway under Section 14 of the Highway Act and all highways assigned a route number from 100-199 or given a name. Collector highways are used where traffic movement and land access are of approximately equal importance. Collector highways may be subject to control line and/or controlled access regulation.

**"CONTROL LINE"** means a line offset from and normally, but not always, running parallel to the centreline of an arterial or collector highway. A control line shall not be more than 180 metres from the centre of the highway right-of-way. A control line creates a land use restriction pursuant to Section 65 of the Highway Act.

**"CONTROLLED ACCESS HIGHWAY"** means a highway, which has been designated to be a controlled access highway pursuant to Sections 38 of the Highway Act.

**"CUL-DE-SAC"** means a road or street that is closed at one end thereby having only one access to/from another road, street or highway.

**"DEPARTMENT OF TRANSPORTATION"** means the Department of Transportation, Province of New Brunswick.

**"DEVELOPER"** means a person undertaking a development and includes a landowner or authorized agent submitting a subdivision plan.

**"DEVELOPMENT"** means

- (a) the erecting, placing, relocating, removing, demolishing, altering, repairing or replacing of a building or structure other than utility poles and wires, traffic control devices or statutory notices
- (b) where the purposes for which land, buildings and structures may be used are set out in a regional, municipal or area plan, basic planning statement, development or urban renewal scheme or zoning by-law or regulation, any change in the purpose for which any land, building or structure affected thereby is used
- (c) any excavation of sand, gravel, clay, shale, limestone or other deposit for a development mentioned in (a) or for purposes of the sale or other commercial use of the material excavated or
- (d) the making of land by cutting or filling to a depth in excess of one metre.

**"DRAINAGE DITCH"** means an artificially constructed open depression for the purpose of carrying off surface water.

**"DRIVEWAY"** means a private roadway used to provide access from a road, street or highway to abutting lands.

**"FILED SUBDIVISION PLAN"** means a subdivision plan approved by a development officer under the Community Planning Act, or a commission under a previous Act, which has been filed in the Registry Office and includes a subdivision plan filed in the Registry Office when there was no subdivision by-law or regulation under the Community Planning Act or a previous Act applicable to the land comprised in the plan.

**"FINISHED GRADE"** means the chipsealed or paved surface of the roadbed.

**"FUTURE STREET"** means a parcel of land, delineated on a subdivision plan as a "Future Street", which is to be used as a street at some date in the future. The title to the land vests in the Crown upon the filing of the subdivision plan.

**"HIGHWAY"** means the entire right-of-way, which is reserved for the purpose of constructing and maintaining the roadway and its appurtenances and includes a road, street or common public road designated by the Minister of Transportation under Section 15 of the Highway Act to be a highway.

**"INSPECTION"** means field inspection by the Department of Transportation, District Transportation Engineer or their designate.

**"LAND FOR PUBLIC PURPOSES<sup>1</sup>"** means land, other than streets, for the recreational or other use and enjoyment by the public and includes:

- (a) An access to a lake, river, stream, sea or other body of water,
- (b) A beach or scenic area along the shore of a lake, river, stream, sea or other body of water,
- (c) A conservation area,
- (d) Land adjoining a school, for joint recreational purposes,
- (e) Land for a community hall, public library, recreational use or other similar community facility,
- (f) Open space, to provide air and light, to afford a view to or from a development or to a lake, river, stream, sea or other body of water, or for other purposes,
- (g) A park, green belt or buffer area dividing developments, parts of a highway or a development and a highway,
- (h) A pedestrian way to a school, shopping centre, recreational area or other facility,
- (i) A protection area for a watercourse, stream, marsh, water supply lake or other body of water,
- (j) A public park, playground or other recreational use,
- (k) A visual feature, or
- (l) A wooded area, slope area or a site giving view to a scenic area to provide diversity.

**"CONTROLLED ACCESS"** means land access control under Section 38 of the Highway Act; imposes land access restriction only, does not affect use of the land; any means intended for or capable of providing access to such highway is prohibited, subject to obtaining a permit from the Minister of Transportation allowing conditional access.

**"LOCAL HIGHWAY"** means a highway classified by the Minister of Transportation as a local highway and includes a highway classified under Section 14 of the Highway Act as a local highway, all highways assigned a route number greater than 199 or given a name and classified as A or B. Local highways are primarily intended to provide land access and may be subject to controlled access regulation.

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<sup>1</sup> Pursuant to the Community Planning Act, land for public purposes located in unincorporated areas vests in the Crown.

**"MINIMUM STANDARDS"** means the standards prescribed by the Minister of Transportation for the construction of public roads and streets.

**"MINISTER"** means the Minister of Transportation.

**"MUNICIPAL SERVICES EASEMENT FOR DRAINAGE PURPOSES"** means the legal right to use the property of another for drainage purposes including the right to construct, maintain and repair a drain for the carrying of water, either on the surface of the land or through buried pipes.

**"PLANNING COMMISSION"** means the planning body established under the Community Planning Act to approve subdivision of land.

**"P-LOOP"** means a relatively short street that has a more or less circular loop at one end with significant non-street land in its centre; closes back on itself and has only one point of access to another street.

**"PRIVATE STREET"** means a parcel of land, commonly delineated on a subdivision plan as an "Access Road", on which an access has been constructed for private use. Title to the land is not held by the Crown. The Department of Transportation is not responsible for maintenance or repairs to private streets.

**"PROFESSIONAL ENGINEER"** means a Professional Engineer who is a registered member of the Association of Professional Engineers and Geoscientists of New Brunswick and licensed to practise in New Brunswick.

**"PROVINCIAL SUBDIVISION REGULATION"** means the Provincial Subdivision Regulation or By-Law, Community Planning Act, as amended from time to time. The Regulation or By-Law is promulgated under the Community Planning Act, R.S.N.B. 1973, Chapter C-12, and amendments thereto.



**"PUBLIC STREET"** includes a parcel of land, delineated on a subdivision plan as a "Public Street", on which a street for public use has been constructed in accordance with standards prescribed by the Minister of Transportation. Title to the land is vested in the Crown.

**"RECREATIONAL SUBDIVISION"** means the subdivision of land for the primary purpose of recreational enjoyment on a seasonal basis as opposed to use and enjoyment on a year-round or continuous basis. Recreational subdivisions must be approved and constructed to standards set by the Planning Commission and/or the Department of Transportation. The Department of Transportation is not responsible for maintenance or repairs to recreational subdivision streets.

**"RIGHT-OF-WAY"** means those portions of land constructed and maintained as a highway that is under the administration and control of the Minister of Transportation.

**"ROADBED"** means that portion of the road course between the inside edges of slopes of ditches and fills.

**"ROADWAY"** means, for a street with curbs and gutters, that portion of the finished street surface between the outside lines of gutters; and for a street with open ditches, that portion of the finished street surface between the outside edges of the shoulders; in all instances, that part of a street designed, constructed, maintained or intended for physical contact by traffic in the course of normal passage and use.

**"SETBACK LINE"** means a line drawn parallel to the boundary of a highway or village street, which is located at the setback distance required by the Provincial Set-back Regulation or By-Law.

**"STREET"** means the entire width between the boundary lines of a street, road or highway and includes a public thoroughfare in an urban setting with buildings or residential dwellings more or less continuously housed on each side of it along its limits.

"**STRUCTURE**" means a bridge, culvert, catch basin, drop inlet, retaining wall, cribbing, manhole and wall, building, sewer, service pipe, under drain, foundation drain and other features which may be encountered in the construction of the road and not otherwise classed herein.

"**SUBBASE**" means the granular or crushed rock aggregate placed immediately above the subgrade.

"**SUBDIVIDE**" means to divide a parcel of land into two or more parcels.

"**SUBDIVISION**" means a parcel of land, which has been subdivided.

"**SUBDIVISION DEVELOPMENT AGREEMENT**" means a formal agreement entered into between the developer of a proposed subdivision and the Minister of Transportation.

"**SUBDIVISION LOT**" means a subdivided part, parcel or lot of land depicted on, created by, and identified as a separate and individual lot on a filed subdivision plan.

"**SUBDIVISION PLAN**" means a plan of survey prepared and certified to be correct by a registered New Brunswick Land Surveyor by which a parcel of land is being subdivided.

"**SUBGRADE**" means the prepared earth or rock surface parallel to the finished grade upon which the aggregate base or subbase material is to be placed, or the grade line to indicate the finished elevation of the centreline of subgrade.

"**TENTATIVE PLAN**" means a provisional plan of the proposed subdivision prepared in compliance with the requirements of the Community Planning Act.

"**UNINCORPORATED AREA**" means those areas of the Province lying outside the municipal boundaries of cities, towns and villages.

### **3.0 APPROVAL OF SUBDIVISION PLAN**

#### **3.1 General**

The first step in the approval process is the preparation of a tentative plan, unless the type of subdivision proposed by a developer is exempted under the Community Planning Act from submitting a filed subdivision plan. The completed tentative plan is forwarded to the development officer who then sends a copy of the plan to government departments for their consideration. When the required parties have approved the tentative subdivision plan and the street construction has been completed to the subgrade including ditching, cross-culverts, municipal services easements for drainage purposes and turnaround areas, the developer may proceed with the street construction or post a bond guaranteeing street construction in accordance with the Minimum Standards. Once the District Transportation Engineer and the Department of Transportation's Planning and Land Management Branch have reviewed the final plan, the plan is assented to by the required parties and filed in the county registry office. Only those streets included within the heavy line on the plan are affected by the approval or assent by the Minister of Transportation, regarding the vesting of title to the Crown.

#### **3.2 Consideration of Tentative Plan by the Department of Transportation**

The Department of Transportation becomes involved with proposed subdivisions, which involve

- (i) the laying out of new public or future streets and accesses in an unincorporated area,
- (ii) the conversion of a private street (access road) located in an unincorporated area to a public street, or
- (iii) the creation of a lot or lots abutting an existing local class D highway (a highway which is not designated for maintenance).

In the above cases, the Development Officer forwards a copy of the Tentative Plan to the Department of Transportation, Planning and Land Management Branch and the District Transportation Engineer. The tentative plan is reviewed by the Department of Transportation based on "THE MINIMUM STANDARDS FOR THE CONSTRUCTION OF SUBDIVISION ROADS AND STREETS" and accepted engineering standards.

The Community Planning Act requires that a tentative plan show certain information regarding the proposed subdivision of the land. The information is necessary for the proper consideration and assessment of the proposed development. The Department of Transportation uses the information to assess the overall subdivision potential of the area with respect to the street layout, the future subdividing of the land or adjoining lands, present and future problems with water drainage, the interests of future lot owners and the condition of and the maintenance provided to existing roads leading to the proposed subdivision.

In addition to the provisions of the Community Planning Act, the Department of Transportation may require the following additional data to aid in the assessment process:

- a) such contours and elevations as may be necessary to determine the grade of existing highways, the grade of the proposed new streets and the location of necessary drainage ditches as well as to allow the Department to suggest alternate layouts if the proposed layout does not meet the criteria necessary to obtain approval;
- b) the sight distance at the point of access of new streets to the existing highway, as well as the proposed internal streets;
- c) the location and local names of existing adjacent subdivisions, bridges, and any nearby sewage treatment facilities or dynamite storage sites, etc.;
- d) the location of existing control lines, control access or similar zoned land use restrictions along major highways;
- e) the true shape and dimensions and property lines of the developer's parcel of land being subdivided;
- f) explanation of extra width of street right-of-way for a cut or fill and type of soil involved;
- g) identification on the plan of any areas subject to spring flooding;
- h) a grid north or magnetic north arrow marked on the small key plan;
- i) existing land use and immediately adjacent property showing buildings, fields, streams, rivers, swamps, wooded areas and areas subject to flooding;
- j) the name, address and telephone number of the New Brunswick Land Surveyor, if the tentative plan was prepared by or under the supervision of same;
- k) the name of the owner of the land being subdivided, his or her address and the registration data for the land being proposed for subdivision; and

- l) unless otherwise authorized by the District Transportation Engineer in writing, an acceptable storm drainage study and design must be carried out and stamped by a registered Professional Engineer.

The department may require additional information, such as detailed soil tests, centreline profiles, proposed grades, cross sections, street design, etc., before making a recommendation to the development officer. Where such additional information is required, it must be completed and stamped by a registered Professional Engineer.

The Department of Transportation will evaluate the proposed streets shown on the tentative subdivision plan based on the information provided and an on-site inspection of the property. The Department of Transportation has three options:

- a) to recommend the proposed location of the streets as shown on the tentative plan;
- b) to recommend the proposed location of the streets as shown, with terms and conditions attached; or
- c) to reject the proposed location of the streets and offer alternatives.

This recommendation is prepared by the Department's Planning and Land Management Branch and sent to the Development Officer.

### **3.3 Final Approval of Streets by the Minister of Transportation**

Before the Minister of Transportation assents to a subdivision plan under the Community Planning Act, the Planning Commission must consider the tentative plan and recommend the location of any public or future streets shown on the plan.

In addition to satisfying the requirements of the Planning Commissions, a subdivision plan must comply with the minimum standards contained within this guide before the Minister of Transportation will assent to the subdivision plan. The Community Planning Act gives the Minister of Transportation the authority to prescribe minimum standards for the construction of public streets within a subdivision.

The Minister of Transportation will only assent to the final subdivision plan once street construction is completed or a bond is posted guaranteeing construction in accordance with the Minimum Standards. After the assent of the Minister of Transportation and the approval of the development officer is received, as well as the necessary assent or approval of any other

Government department, the final subdivision plan may be filed with the registry office thereby allowing lots to be sold.

## **4.0 MINIMUM STANDARDS**

### **4.1 Introduction**

The Community Planning Act, R.S.N.B. 1973, Chapter C-12 and amendments thereto, vests the Minister of Transportation with the authority to require the construction of roads and streets to meet certain prescribed Minimum Standards. The construction requirements embodied in the Minimum Standards are, to a large extent, those prescribed by Provincial legislation and enhanced by experienced planning, maintenance and construction engineers familiar with New Brunswick's topography and climate. The Minimum Standards contained within this guide are intended to ensure the safety of the public and road user, to protect the interests of present and future lot owners and to promote the development of efficient streets which will effectively serve the various land uses in unincorporated areas of the province.

In cases where the Minimum Standards need to be expanded or additional specifications are required, the "Geometric Design Guide for Canadian Roads" as published by the Transportation Association of Canada, as well as the latest versions of the Department of Transportation's "Standard Specifications," "Environmental Field Guide" and "Environmental Protection Plan," shall be used for guidance.

### **4.2 Application**

The Minimum Standards apply to all of the unincorporated areas of the province. They are to be incorporated in

- (i) the planning, design and construction of new public and future streets,
- (ii) the reconstruction or upgrading of existing unserviceable or inadequate public streets,  
and
- (iii) the conversion of private streets (access roads) to public streets.



## **4.3 Street Design Standards**

### **4.3.1 Access**

Every lot, block and other parcel of land in a proposed subdivision shall abut a street owned by the Crown or such other access as may be approved by the Planning Commission as being advisable for the development of land. The approving body may establish standards for the construction/design of private streets or access roads.

Where entry to a proposed subdivision will be gained by means of an existing road or street or other access, by whomever owned, the person seeking approval of the plan of such subdivision shall make provision to bring the existing access to the same standard as is required for streets within the proposed subdivision.

A permit shall be obtained from the Minister of Transportation before a person shall "construct, use [...] or permit the use of any private road, entrance way, driveway or gate or any municipal road or street intended for or capable of providing access to any part of a highway that has [not] been designated to be a controlled access highway;" however, subject to subsection 39(2) of the Highway act, "no person shall construct, use [...] or permit the use of any private road, entrance way, driveway or gate or any municipal road or street intended for or capable of providing access to any part of a highway designated to be a controlled access highway."

Where a subdivision borders on or contains a rail road right-of-way or controlled access right-of-way, the Minister of Transportation may require, as part of the subdivision design, a street approximately parallel to such right-of-way on each side at such a distance suitable for the appropriate use of intervening land. Such distances shall also be determined with due regard for the requirement of approach grades and future grade separations.

### **4.3.2 Street Layout**

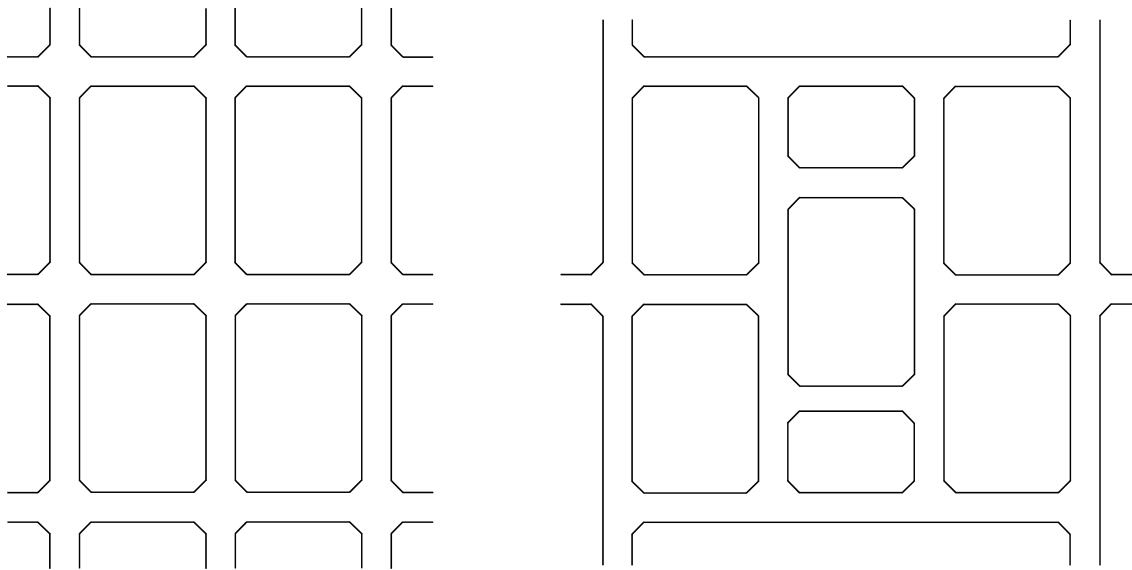
#### **4.3.2.1 General**

The arrangement, character and location of all new streets shall conform to acceptable planning principles and shall be considered in relation to existing and future streets, topographical conditions, public safety and convenience and the proposed uses of the land. Proposed subdivision streets must be laid out where reasonably possible in prolongations of other existing roads, either in the same subdivision or in adjacent subdivisions.

The street system must be integrated with the existing network of streets such that there are at least two points of access to each street. The street layout should be designed to take advantage of existing contours in order to provide satisfactory street gradients and suitable building lots, and to facilitate the provisions of piped services or open drainage of storm water. Natural features such as watercourses, trees and rock outcrops should be preserved if possible so that they may be incorporated into the layout to enhance the overall design of the development.

#### **4.3.2.2 Grid Pattern**

A grid pattern consists of straight streets running at right angles to each other at regular intervals as shown in Figure 4.3.2.2A. The grid pattern may be modified by breaking some streets to avoid monotony and provide a sense of enclosure.



**FIGURE 4.3.2.2A: GRID PATTERNS**

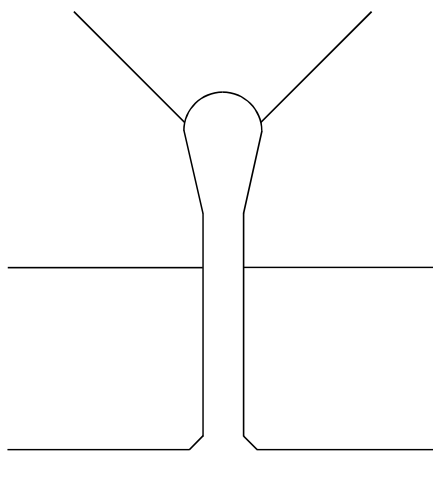
Care must be taken to determine if a grid plan is suitable for a new or rural community where the scale and type of housing is different from the development of the traditional urban grid plan. Using straight streets on hilly terrain may result in uncomfortable and undesirably steep grades for walking and driving. A grid pattern does not clearly define vehicular circulation patterns, inviting traffic to move in all directions, which increases the potential for traffic hazards. Long straight streets are not visually pleasing, and require careful house grouping and landscaping to provide some relief from the monotony of the plan.

Where a grid or modified grid plan is considered to be appropriate, a block shall not be less than 120 metres nor exceed 240 metres in length and shall have a depth of at least two lots. As few houses as possible should face the shorter linking streets.

Where a proposed street or road intersects with an existing public street or road, driveway access to corner lots shall be from the proposed street or road. The driveway access will not be located within 30 metres of the right-of-way limits of the intersection.

#### **4.3.2.3 Cul-de-sacs**

A cul-de-sac or "dead end" street is a short length of street with access only at one end. The street terminates with a turnaround area to facilitate the turning of vehicles as shown in Figure 4.3.2.3A.



**FIGURE 4.3.2.3A: CUL-DE-SAC**

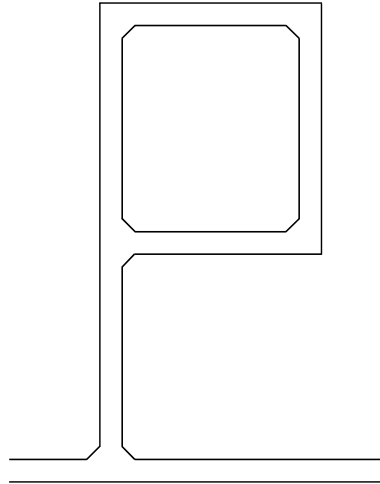
Cul-de-sac arrangements are generally not permitted and will be acceptable only if land topography and dimensions offer no alternate method of development.

Those cul-de-sacs that do not have a closed loop communal water system and/or sanitary sewage system shall not exceed 180 metres in length. Cul-de-sacs that have no communal water system or sanitary sewage system, or have a closed loop communal water system and/or sanitary sewage system shall not exceed 365 metres in length, as shown in Figure 4.3.2.3B (see Appendix "A"). A permanent cul-de-sac shall terminate with a circular turnaround area having a minimum radius of 23 metres to the edge of the right-of-way, as shown in Figure 4.3.2.3C (see Appendix "A"). The grade of the turnaround area shall not exceed 3%. The travelling surface shall have a minimum radius of 18 metres. A temporary cul-de-sac may end

with a T-intersection meeting the requirements of Figure 4.3.2.3D (see Appendix "A"). A cul-de-sac shall not be located to intersect with a railroad line nor shall it contain a bridge structure at any point along its length.

#### **4.3.2.4 P-Loops**

A "P-Loop" is a looped street in the shape of the letter "P" as shown in Figure 4.3.2.4A.



**FIGURE 4.3.2.4A: P-LOOP STREET**

P-Loop arrangements are generally not permitted and will be acceptable only if land topography and dimensions offer no other method of development. The entrance leg length shall not be less than 120 metres nor greater than 180 metres as shown in Figure 4.3.2.4B (see Appendix "A"). The inside of the P-Loop shall contain a minimum of 4 lots.

A P-Loop shall not be located to intersect with a railroad line nor shall it contain a bridge structure at any point along its entrance length.

#### **4.3.3 Horizontal and Vertical Alignment**

All subdivision streets shall have a minimum horizontal curve radius of 90 metres and shall be superelevated according to the values set out in Table 4.3.3A. Two thirds of the superelevation shall be developed at the beginning and run out at the end of the curve.

Table 4.3.3A

SUPERELEVATION FOR HORIZONTAL CURVES  
(DESIGN SPEED 50 km/h)

Radius of Curve (m)	Superelevation (m/m)
2000	NC (Normal Crown)
1000	NC
800	NC
700	0.02
400	0.02
250	0.026
160	0.035
90 (min radius)	0.04

The vertical curve length of a subdivision street for both sag and crest curves shall not be less than the minimum values indicated in Figure 4.3.3B (see Appendix "A") for a 50 km/h design speed.

#### **4.3.4 Street Widths**

Every subdivision street shall have a minimum right-of-way width of 20 metres. Additional right-of-way allowance must be provided where the topography of the land or the soil type requires extra width for foreslopes, ditches and backslopes for cuts and fills. The street shall have a minimum surface width of 10 metres.

Unless directed otherwise by the District Transportation Engineer, the right-of-way limits at street intersections shall be as shown in Figure 4.3.4A (see Appendix "A").

#### **4.3.5 Gradient**

The street gradients in a proposed subdivision shall not exceed eight percent (8%). Street intersections require more stringent grade limitations because of their higher accident potential. As shown in Figure 4.3.5A (see Appendix "A"), where two streets intersect, the grade on the minor road shall conform to the cross slope of the major road for a distance of 20 metres beyond the edge of the travelled surface of the major road. However, in no case shall the grade of the minor road exceed five percent (5%) within 20 metres of the edge of the travelled surface of the major road.

Unless required to slope to the invert of a cross culvert, open ditches shall not have a gradient in excess of eight percent (8%). The minimum ditch grade shall be one half of one percent (0.5 %). All embankment slopes shall have a 2:1 horizontal to vertical slope or flatter, unless otherwise directed by the District Transportation Engineer.

#### **4.3.6 Street Names and Traffic Control Signs**

Street names, which will duplicate or be confused with the names of existing streets or roads in the general area of the proposed subdivision, shall not be used. The proposed street names must be shown on the tentative plan and are subject to the approval of the Minister of Transportation. The developer is responsible for the costs associated with the manufacture and placement of all traffic control signs. All signs will be manufactured and placed by the Department of Transportation.

#### **4.3.7 Intersections**

The minimum distance between a proposed cross intersection and an existing intersection is dependent upon the class of the existing highway and shall be determined in accordance with Table 4.3.7A. Intersections shall be located in such a manner as to satisfy sight distance requirements.

Table 4.3.7A :            CROSS INTERSECTION SPACING

Class of Highway	Minimum Distance Between Intersections
Local	120 metres
Collector	240 metres
Arterial	450 metres

Intersecting streets shall meet one another at an angle of 90 degrees where possible; however, in no case shall the angle of intersection be less than 70 degrees or greater than 110 degrees. As shown in Figure 4.3.7A (see Appendix "A"), this alignment shall be maintained for a distance of 50 metres measured from the centreline of the existing highway. Where a new street giving access to a subdivision enters an arterial or collector highway subject to a control line, the



alignment of the new street shall be maintained at right angles where possible for a distance of 25 metres from the point of intersection of the centreline of the new street with the control line as shown in Figure 4.3.7B (see Appendix "A").

Intersections of more than two cross streets and Y-intersections shall generally be avoided and will be considered only in exceptional circumstances. Where T-intersections are located to intersect with an arterial or collector highway they shall be offset a minimum of 240 metres centreline to centreline as shown in Figure 4.3.7C (see Appendix "A"). Where T-intersections are located to intersect with a local highway or subdivision street, they shall be offset a minimum of 120 metres centreline to centreline as shown in Figure 4.3.7C (see Appendix "A").

#### **4.3.8 Municipal Services Easements for Drainage Purposes**

The overall drainage pattern of a proposed development, including the location of municipal services easements for drainage purposes, shall be shown on the subdivision plan. Unless otherwise authorized in writing by the District Transportation Engineer, an acceptable storm drainage study and design must be carried out by a registered Professional Engineer. An exception will only be made for the most basic subdivisions and drainage patterns.

**All municipal services easements for drainage across lands adjoining those of the developer shall be acquired by the developer and conveyed to the Crown. All municipal services easements for drainage purposes shall have a minimum width of 10 metres.**

When subdividing land, the existing drainage patterns should not be altered since severe disruption may cause erosion, salutation and damage to water supply systems and adjoining land. No watercourse may be obstructed and no pond or swamp may be filled in such a manner as to alter the storm water run-off without the approval of the Department of Environment and the District Transportation Engineer. **Where a watercourse traverses a subdivision, the developer shall provide a municipal services easement for drainage purposes conforming substantially with the lines of such watercourse, and such further width or construction or both, as will be adequate for the purpose. Where a drainage ditch is constructed from a subdivision street to the edge of a developer's property, the developer is responsible for constructing a continuation of the drainage ditch across the adjoining properties to a natural storm water drain or stream.**

Drainage ditches must be properly graded and left in a condition acceptable to the District Transportation Engineer. The developer shall construct all off-take drainage ditches and follow the guidelines of the Department of Transportation's "Environmental Protection Plan" and/or "Environmental Field Guide" during and after construction activities have been completed.

Generally, off-take ditches shall not be piped. The embankment slopes shall have a 2:1 horizontal to vertical slope or flatter, unless otherwise directed by the District Transportation Engineer. Off take ditches shall slope away from the road at a minimum grade of one half of one percent (0.5%).

#### **4.3.9 Storm Sewers**

Where the installation of a storm sewer and curb and gutter is required in a proposed subdivision to provide for the proper drainage of the land, because of excessive gradients or potential soil erosion, the storm sewer system shall be designed and certified by a registered Professional Engineer in accordance with the "Recommended Standards for Water & Sewer Projects" handbook published by the Association of Professional Engineers and Geoscientists of New Brunswick.

#### **4.3.10 Lots, Blocks and Other Parcels**

As required by Section 6 of the Provincial Subdivision Regulation, every lot, block and other parcel of land in a proposed subdivision shall abut a street owned by the Crown or such other access as may be approved by the Planning Commission as being advisable for the development of land.

The size of every lot or other parcel of land in a subdivision shall meet the requirements set out in Table 4.3.10A. The minimum lot sizes listed below are established under the Community Planning Act and are subject to revision.

**TABLE 4.3.10A: MINIMUM LOT SIZES**

Service	Minimum Width (m)	Minimum Depth (m)	Minimum Area (m <sup>2</sup> )
Water & Sewer System	18	30	540
Sewer System Only	23	30	690
No Sewer System	54	38	4000

Lots fronting on more than one street should be avoided, except where they are required because of proximity to controlled access highways. In such cases, the lot should normally front on the minor road and, if possible, be screened from the controlled access highway. Generally no street shall be approved that creates residential lots with double street frontage, except for corner lots, if an alternate layout is available.

A street allowance to adjacent property should be provided at a maximum of every 240 metres along the boundary of a developer's land and in such a manner as to not prejudice development of adjacent land. Reserve strips abutting a street in a proposed subdivision are prohibited except where they are vested in the Crown.

#### **4.3.11 Future Streets**

The Minister of Transportation shall not assent to a proposed subdivision until the developer constructs any future street(s), shown on a previous subdivision plan, that provide(s) access to the proposed development. The developer has the option of constructing the future street(s) or posting a bond guaranteeing its/their construction in accordance with the Minimum Standards.

### **4.4 Construction of Streets**

#### **4.4.1 Inspection of Work**

The District Transportation Engineer or a person designated by him/her shall act as the inspector of road construction for the Minister of Transportation. The Department of Transportation reserves the right to inspect the work at any time during the construction of a subdivision street. However, for greater certainty, inspection and approval are required at the following stages before additional work is carried out:

- a) After clearing and grubbing;
- b) After construction of the street to subgrade including ditching, cross-culverts, municipal services easements for drainage purposes and turnaround areas;
- c) After application of the subbase material; and
- d) After the completion of all aspects of street construction.

It is the developer's responsibility to arrange for the District Transportation Engineer to inspect the work at each stage before any additional work is performed. Failure to inform the District

Transportation Engineer may result in the work being uncovered and inspected at the developer's expense.

#### **4.4.2 Clearing**

The full width of the right-of-way shall be cleared of all trees, logs, bushes, cuttings and other perishable matter, unless otherwise directed by the District Transportation Engineer. In no case will it be permitted for bushes, trees, cuttings or other perishable matter to be buried in the roadbed.

Cleared material must be removed by cutting and burning or disposed of in some other satisfactory manner. All salvaged merchantable timber shall be removed from the right-of-way before the completion and final inspection of the street.

#### **4.4.3 Grubbing**

All roots, stumps and other organic matter shall be grubbed for the full width of the right-of-way and disposed of in a satisfactory manner. In fill sections, roots and stumps within 2 metres of the subgrade shall be removed and disposed of as directed by the District Transportation Engineer. No material removed during grubbing shall be buried in the roadbed.

#### **4.4.4 Grading**

Grading consists of the excavation and placement of material within the limits of the right-of-way, or satisfactory disposal of excavated materials outside the right-of-way and includes the preparation and construction of the roadbed, embankment slopes, side ditches, trenches, waterways, off-takes and approaches to intersecting highways and private entrances.

The width of excavation at subgrade and inclination of side slopes shall be as required by the District Transportation Engineer. All cuts and embankments shall be shaped to conform to lines and grades approved by the District Transportation Engineer. Shaping shall be carried out as the excavation or embankment progresses so as to ensure that surface drainage is maintained at all times.

Solid rock excavation shall be carried out in accordance with the standards set out in the Department of Transportation's Standard Specifications.

Excavated material or imported borrow, as approved by the District Transportation Engineer shall be placed in layers of not more than 300 mm and compacted to a minimum of 95%

of ASTM D-698 or D-4253 maximum dry density, as determined by one of the following ASTM tests: D-1556, D-2167, or D-2922. In ungrubbed areas, swamps and rough terrain, the initial layer of an embankment shall be placed as directed by the District Transportation Engineer. Large stones and unsuitable materials in the roadbed shall be disposed of so that the roadbed is left in an acceptable condition.

#### **4.4.5 Aggregate Subbase**

Aggregate subbase shall be pit run gravel, crushed gravel, sandstone or quarried rock. Aggregate subbase shall be at least 300 mm thick and may be placed in one lift. Subbase shall be compacted to 95% of maximum dry density per the tests described under grading.

Aggregate subbase material shall require approval by the District Transportation Engineer prior to its use, and shall be composed of clean, hard, uncoated particles free of lumps of clay or other deleterious material. The subbase material shall conform to the grading limits and property requirements set out under Item 201 in the Department of Transportation's Standard Specifications.

#### **4.4.6 Aggregate Base**

All streets shall have an aggregate base layer composed of a 150 mm layer of 31.5 mm crushed gravel or crushed quarried rock. Base shall be compacted as described for Aggregate Subbase. Base shall be placed to provide a minimum surface width of 10 m. The crushed material shall conform to the grading limits and property requirements set out under Item 201 in the Department of Transportation's Standard Specifications.

#### **4.4.7. Finished Grade**

All streets shall be chip sealed to a minimum width of 7.3 m. The chip sealing shall be performed to the specifications outlined by the District Transportation Engineer.

#### **4.4.8 Guide Rail**

Guide rail and guideposts shall be installed in the locations specified by the District Transportation Engineer. The installation cost shall be the responsibility of the developer. Guide rail and guide posts shall meet the material and installation requirements specified in the Department of Transportation's Standard Specifications.

## **4.5 Culverts**

### **4.5.1 General**

The location and placement of culverts shall be as directed by the District Transportation Engineer. The size of the culverts shall be dictated by the potential of the watershed rather than that of an isolated small development. Unless otherwise approved by the District Transportation Engineer all culverts shall be Class III reinforced concrete pipe; aluminium-coated corrugated steel pipe with a wall thickness of 2.0 mm (14 gauge); or plastic pipe, either smooth-lined corrugated polyethylene (PE) conforming to CAN/CSA B182.6 and having a minimum stiffness of 320 kPa in accordance with ASTM D2412, or polyvinyl chloride (PVC) piping DR 28 minimum, conforming to CAN/CSA B182.1 and/or B182.2.

### **4.5.2 Subdivision Entrance Culverts**

The developer shall install entrance culverts for roads or streets joining an existing designated highway with a new subdivision. Unless directed otherwise by the District Transportation Engineer, all entrance culverts shall have a minimum inside diameter of 600 mm and be covered with at least 1000 mm of material as shown in Figure 4.5.2A (see Appendix "A").

### **4.5.3 Street Cross Culverts**

The developer shall install cross culverts where required for the proper drainage of the proposed development. Unless otherwise approved by the District Transportation Engineer, all cross culverts shall have a minimum inside diameter of 600 mm and be covered with at least 1000 mm of material as shown in Figure 4.5.2A (see Appendix "A").

### **4.5.4 Driveway Culverts**

Installation of all driveway culverts to individual lots within a proposed subdivision shall be the responsibility of the lot owners and must be installed in accordance with the "Access Point Policy" of the Department of Transportation.



#### **4.6 Serviced Subdivisions**

Where the installation of a domestic water or sanitary sewer system or both is proposed to provide a water or sanitary sewer service to lots in the subdivision, the Minister of Transportation shall not assent to the subdivision plan until the requirements of the Community Planning Act have been met. Where the installation of a storm sewer and curb and gutter is required in a proposed subdivision to provide for the proper drainage of the land, due to excessive gradients or potential soil erosion, the storm sewer system shall be designed and certified by a registered Professional Engineer in accordance with the "Recommended Standards for Water and Sewer Projects" handbook published by the Association of Professional Engineers and Geoscientists of New Brunswick. A serviced local residential street shall meet the requirements set out in Figure 4.6A (see Appendix "A").

#### **4.7 Sight Distance Requirements**

##### **4.7.1 General**

All driveway accesses and street intersections shall be located so as to provide adequate sight distance in both the horizontal and vertical planes. The required sight distance shall be determined from Figure 4.7A (see Appendix "A").

##### **4.7.2 Driveway Accesses**

All accesses established on local, collector, and arterial highways shall have a minimum sight distance specified by Table 1 of Figure 4.7A (see Appendix "A"). The sight distance is to be measured using an eye height in the vertical plane of 1.05 m and an object height of 0.38m.

The sight distances for Tables 2 and 3 are to be measured using an eye height in the vertical plane of 1.05m and an object height of 1.3 m.

Residential driveway access on arterial highways must also meet the minimum requirement specified by Table 2 of Figure 4.7A. Commercial, industrial and institutional driveway access on a local or collector highway shall also meet the minimum requirement specified by Table 2 of Figure 4.7A. Commercial, industrial and institutional driveway accesses

on an arterial highway shall also meet the minimum requirement specified by Table 3 of Figure 4.7A.

The District Transportation Engineer may exempt a farm or woodlot owner from a sight distance requirement if the driveway is to be used on a seasonal basis and no other reasonable access location is available. No driveway of any kind shall be located near the crest of a hill or other location where a driver's vision is likely to be obstructed.

All residential driveways shall have a minimum surface width of 6.0 metres. A commercial or industrial driveway shall have a maximum finished surface width of 12.0 metres.

#### **4.7.3 Subdivision Street Intersection with Local, Collector or Arterial Highway**

A proposed subdivision street, which intersects an existing local or collector highway, shall have a minimum sight distance determined by Table 1 and Table 2 of Figure 4.7A (see Appendix "A"). A proposed subdivision street, which intersects with an arterial highway, shall meet the minimum sight distance determined by Table 1 and Table 3 of Figure 4.7.A. Site distance is to be measured using the procedures outlined in Section 4.7.2.

### **5.0 CONSTRUCTION SCHEDULE**

#### **5.1 Construction Season**

The normal completion date for street construction and related works within a subdivision is to be November 30 of each year in order to allow for inspection and approval by the District Transportation Engineer. Street construction may not be approved from December 1 to June 1.

#### **5.2 Developer Builds Completed Street and Posts Bond for Chip Sealing before the Minister Approves Subdivision Plan**

After the Planning Commission has approved the tentative plan, the developer may proceed to develop the proposed subdivision in accordance with the Minimum Standards.

The streets must be constructed under the supervision of a person designated by the Minister of Transportation before the Minister will sign the subdivision plan. The developer shall

notify the District Transportation Engineer of the work progress so that the work can be inspected at the stages required by subsection 4.4.1 of the Minimum Standards.

The developer will be required to deposit a bond with the Department of Transportation for the costs associated with the chip sealing of subdivision streets. The developer will have the option of being directly responsible for the chip sealing or having the work performed by the Department of Transportation. Should the Developer request to perform the chip sealing; the Developer may be required to enter into a formal agreement with the Minister of Transportation called a "Subdivision Development Agreement." This agreement will be entered into before the Minister of Transportation signs the final subdivision plan. The chip sealing will be performed to the specifications established by the Department of Transportation. At least one winter will have to have passed before the chip sealing will be performed.

Lots in a proposed subdivision may be sold once the developer has completed construction of the street system in accordance with the Minimum Standards and has paid the Department of Transportation for the supply and installation of all traffic control signs within the subdivision and the subdivision plan has been signed by the Minister and filed with the Registry Office.

### **5.3 Developer Builds Part of the Street and Posts a Bond for the Remaining Portion**

After the Planning Commission has approved the tentative plan, the developer may construct part of the street system and post a bond for the remaining portion. The Minister of Transportation will only consider accepting a bond once the developer has completed street construction to the subgrade including ditching, cross-culverts, municipal services easements for drainage purposes and turnaround areas. The developer may then post a bond for the remaining work, including the application of the subbase, base and wearing surface. The amount of the bond is determined by the District Transportation Engineer and is forwarded to and administered by the Planning and Land Management Branch of the Department of Transportation.

A bond shall be valid for one calendar year. If the remaining work is not completed by the date specified on the bond, the Minister may use the money to complete construction of the street. Before any bond is accepted, the developer may be required to enter into a formal agreement with the Minister of Transportation called a "Subdivision Development Agreement."

The streets must be constructed and inspected in accordance with the Minimum Standards before the Minister of Transportation accepts the bond and signs the Subdivision plan.

Lots in the proposed subdivision can only be sold after the Minister accepts the bond and the developer has paid, the Department, for the supply and installation of all traffic control signs within the subdivision, and the plan has been filed with the Registry Office.

#### **5.4 Environmental Protection Requirements**

Before the Minister of Transportation will assent to the subdivision plan the construction site must pass all requirements of the Department of the Environment and meet the requirements of the Department of Transportation's Environmental Protection Plan and/or Environmental Field Guide. If the Developer has posted a surety for the subdivision the developer will be required to keep in place or improve all environmental protection requirements until all construction activities have been completed.

**APPENDIX "A"**

## **DISTRICT TRANSPORTATION OFFICES**

District No. 1  
3109 Miramichi Avenue  
PO Box 476  
Bathurst, NB  
E2A 3Z4  
Telephone: 547-2144  
Toll Free: 1-888-624-7077  
Fax: 548-2838

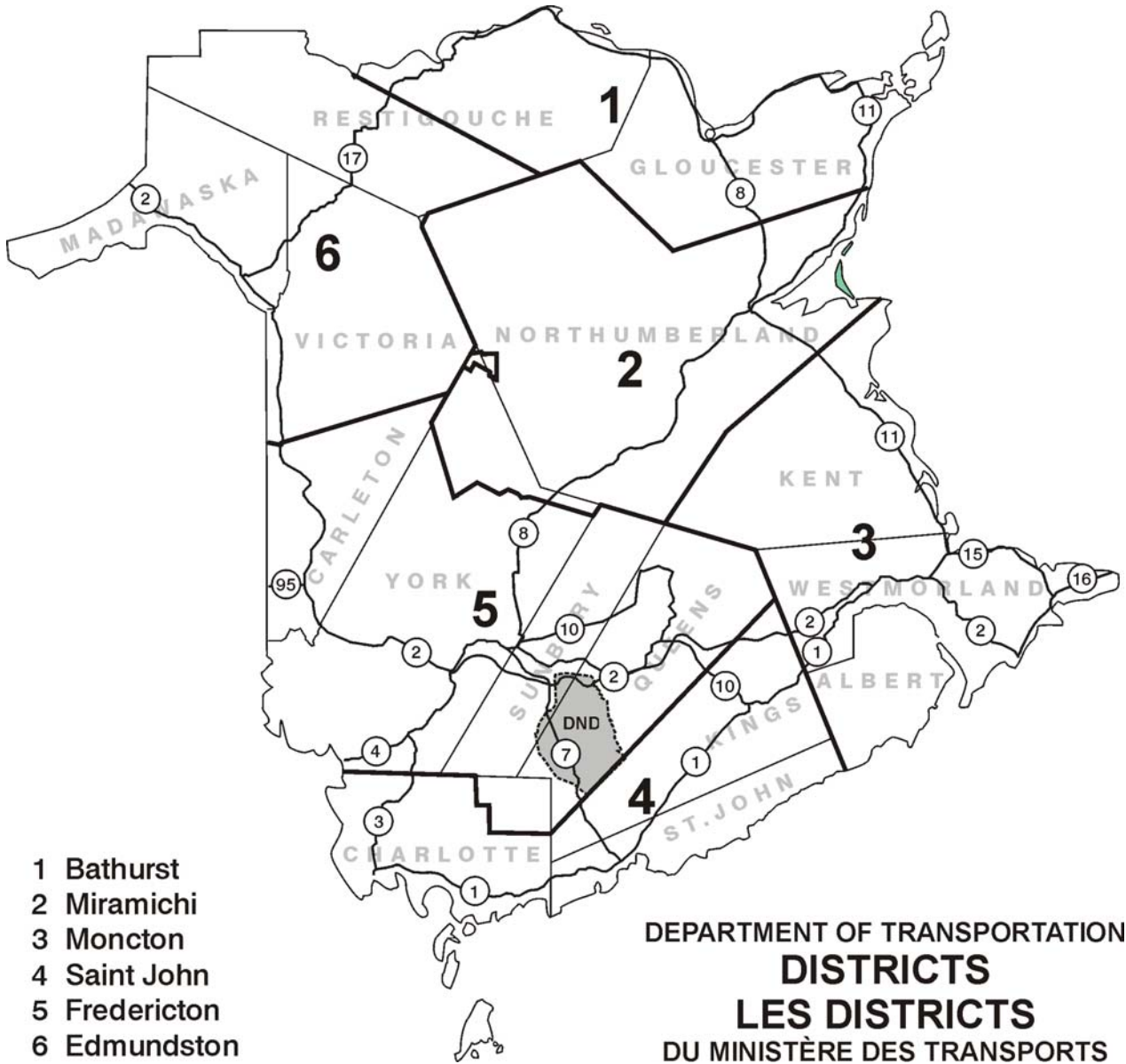
District No. 4  
50 Crown Street  
Suite 105  
Saint John, NB  
E2L 2X6  
Telephone: 643-7463  
Toll Free: 1-888-915-1011  
Fax: 643-7464

District No. 2  
1310 Water Street  
PO Box 248  
Chatham Station  
Miramichi, NB  
E1N 3A6  
Telephone: 778-6046  
Toll Free: 1-888-787-3133  
Fax: 773-6368

District No. 5  
1025 College Hill Road  
PO Box 6000  
Fredericton, NB  
E3B 5H1  
Telephone: 453-2611  
Toll Free: 1-888-922-9399  
Fax: 453-7905

District No. 3  
46 Toombs Street  
PO Box 129  
Moncton, NB  
E1C 8R9  
Telephone: 856-2000  
Toll Free: 1-888-679-4044  
Fax: 856-2019

District No. 6  
486 St-Francois Street  
PO Box 308  
Edmundston, NB  
E3V 3K9  
Telephone: 735-2088  
Toll Free: 1-888-767-9899  
Fax: 735-2051

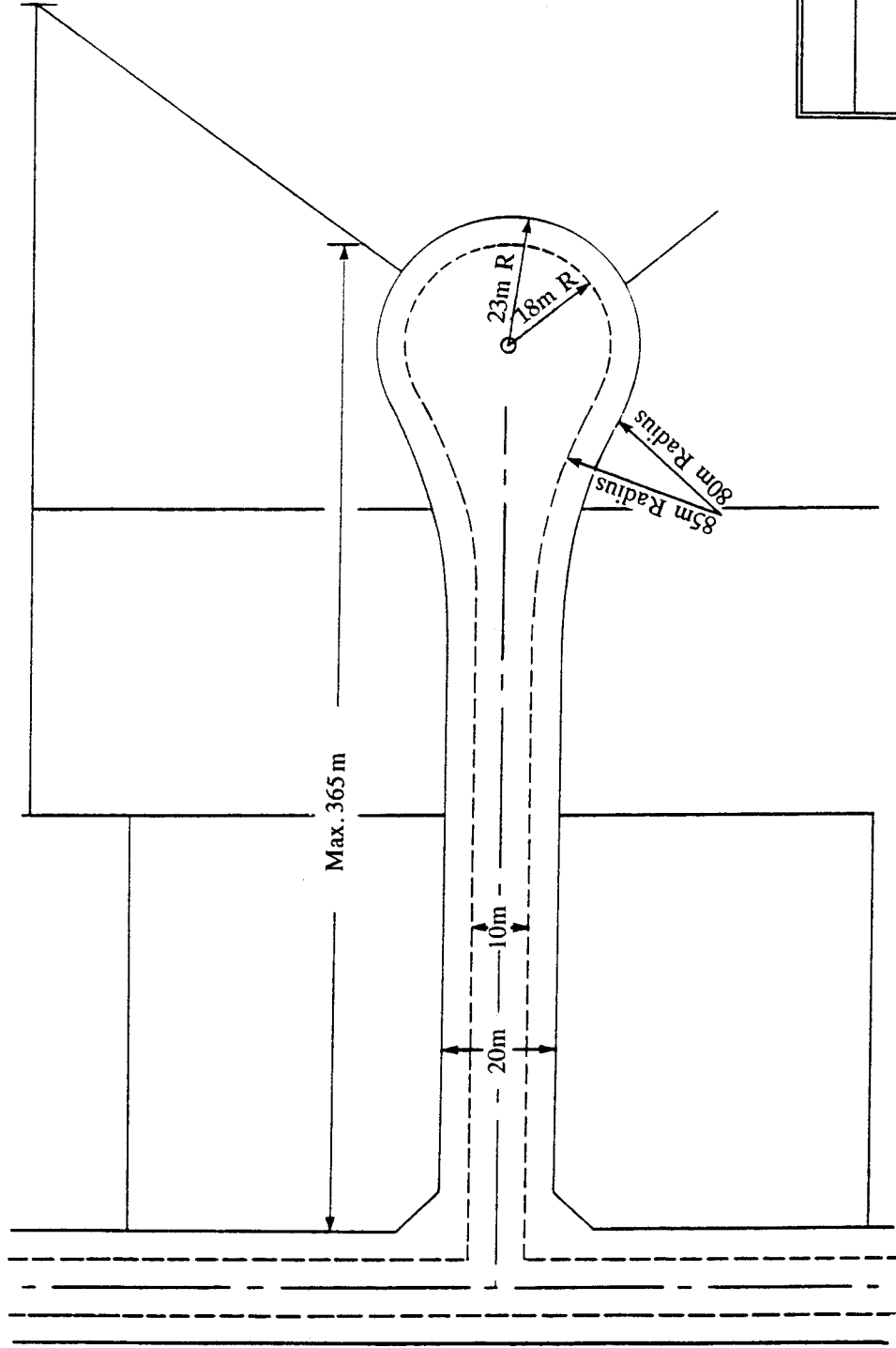


- 1 Bathurst
- 2 Miramichi
- 3 Moncton
- 4 Saint John
- 5 Fredericton
- 6 Edmundston

DEPARTMENT OF TRANSPORTATION  
**DISTRICTS**  
**LES DISTRICTS**  
 DU MINISTÈRE DES TRANSPORTS

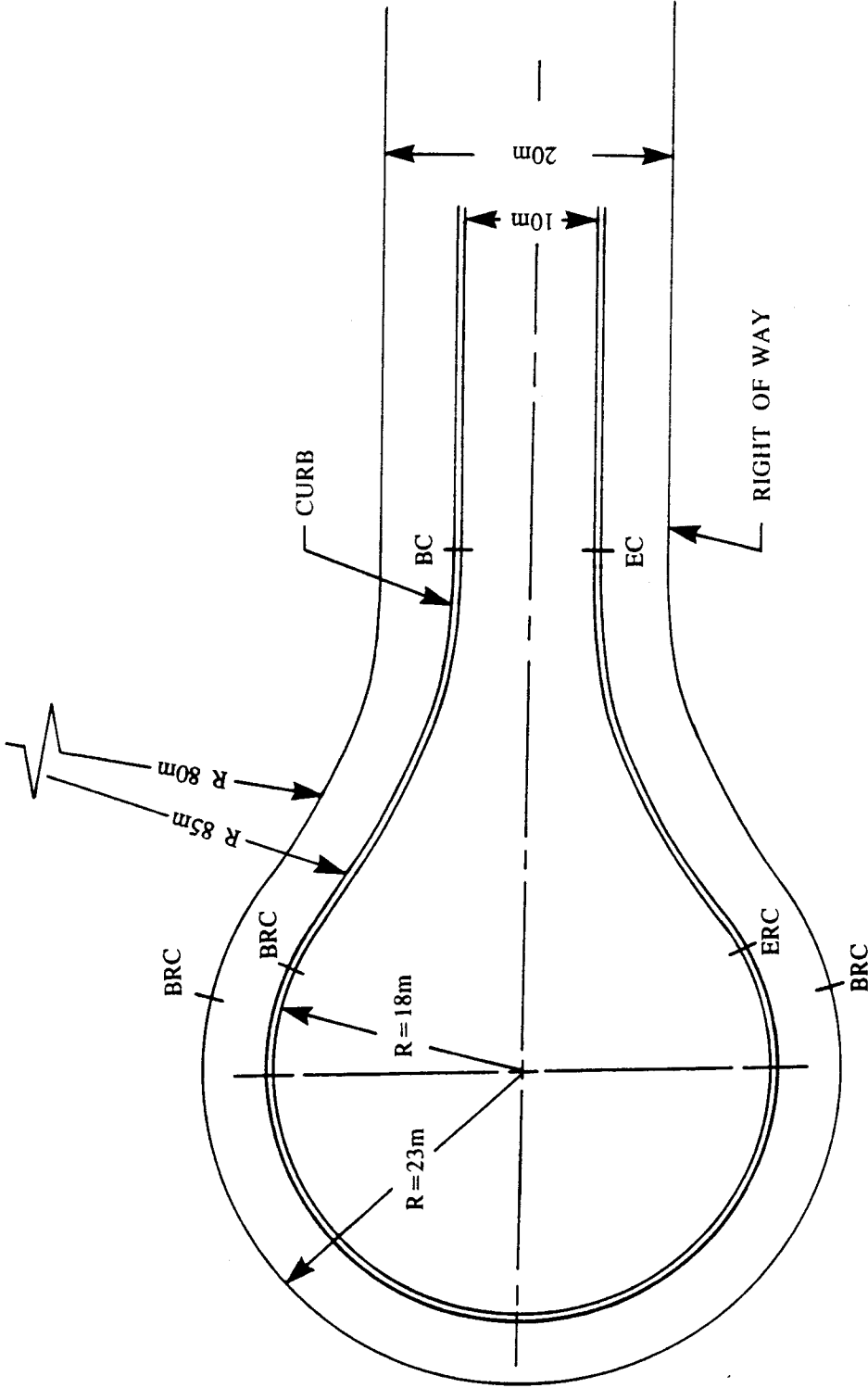






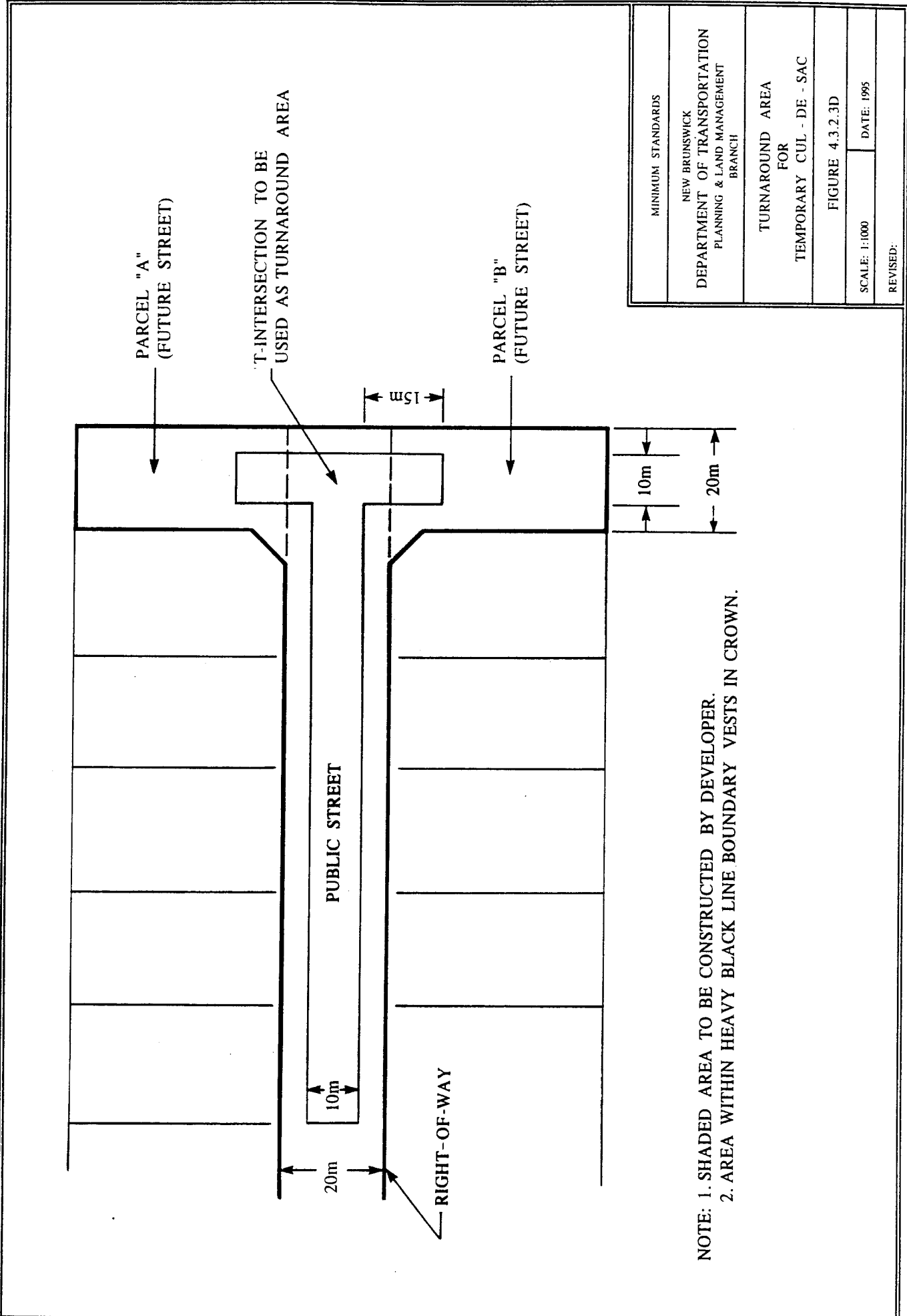
NOTE: CHECK WITH THE TRANSPORTATION ENGINEER IN REGARD TO MUNICIPAL SERVICES EASEMENTS, PIPE SIZES & CONSTRUCTION MATERIALS.

MINIMUM STANDARDS	
NEW BRUNSWICK DEPARTMENT OF TRANSPORTATION PLANNING & LAND MANAGEMENT BRANCH	
CUL - DE - SAC - LAYOUT	
FIGURE 4.3.2.3B	
SCALE: NOT TO SCALE	DATE: 1995
REVISED:	



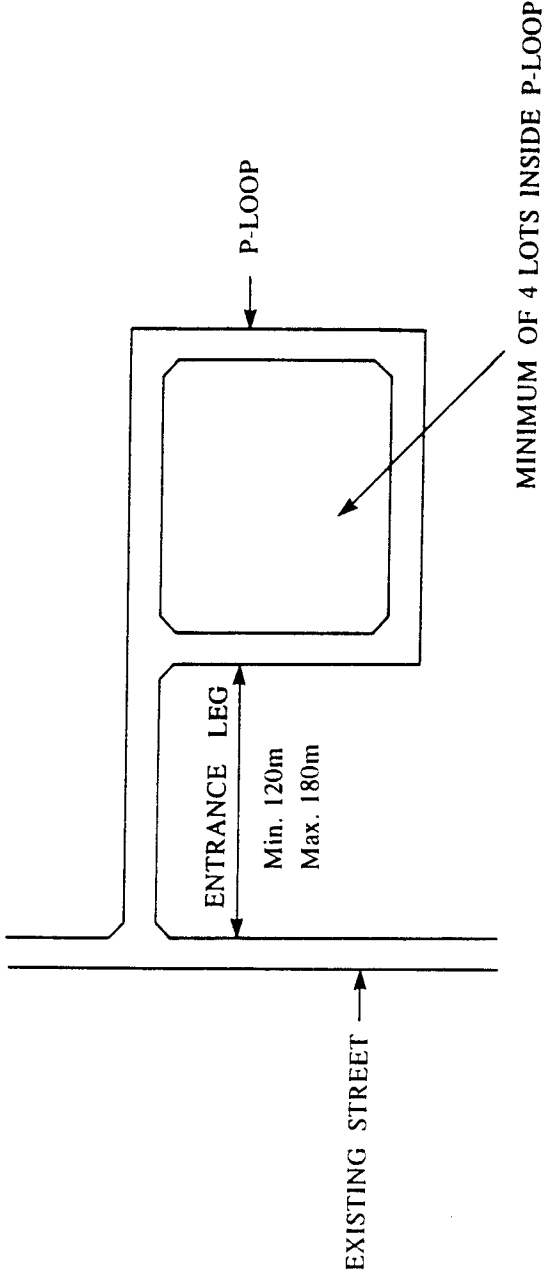
NOTE: TYPICAL TURNING CIRCLE. AT CLOSED END OF A CUL-DE-SAC SHOWING MINIMUM RADII AND START OF EXTRA RIGHT-OF-WAY REQUIRED FOR TURNAROUND CONSTRUCTION AND MAINTENANCE.

MINIMUM STANDARDS	
NEW BRUNSWICK DEPARTMENT OF TRANSPORTATION PLANNING & LAND MANAGEMENT BRANCH	
CUL - DE - SAC TURNING CIRCLE	
FIGURE 4.3.2.3C	
SCALE: 1:500	DATE: 1995
REVISED:	



NOTE: 1. SHADED AREA TO BE CONSTRUCTED BY DEVELOPER.  
 2. AREA WITHIN HEAVY BLACK LINE BOUNDARY VESTS IN CROWN.

MINIMUM STANDARDS	
NEW BRUNSWICK DEPARTMENT OF TRANSPORTATION PLANNING & LAND MANAGEMENT BRANCH	
TURNAROUND AREA FOR TEMPORARY CUL - DE - SAC	
FIGURE 4.3.2.3D	
SCALE: 1:1000	DATE: 1995
REVISED:	



- NOTE: 1. P-LOOP STREETS DESIGNED TO BE PERMANENT WILL ONLY BE PERMITTED IF LAND TOPOGRAPHY & DIMENSIONS OFFER NO OTHER ALTERNATIVE METHOD OF DEVELOPMENT.
2. THE ENTRANCE LEG LENGTH SHALL NOT BE LESS THAN 120m OR GREATER THAN 180m.
3. THE INSIDE OF THE P-LOOP SHALL CONTAIN A MINIMUM OF 4 LOTS.
4. LAND FOR FUTURE STREETS MAY BE REQUIRED TO GIVE ACCESS TO ADJOINING LAND.
5. MUNICIPAL SERVICES EASEMENTS MAY BE REQUIRED, DEPENDING ON THE DRAINAGE PATTERN IN THE AREA.

MINIMUM STANDARDS	
NEW BRUNSWICK DEPARTMENT OF TRANSPORTATION PLANNING & LAND MANAGEMENT BRANCH	
P - LOOP STANDARD	
FIGURE 4.3.2.4B	
SCALE: 1:5000	DATE: 1995
REVISED:	

SAG AND CREST CURVE MINIMUM VERTICAL CURVE LENGTH IN METRES FOR 50km/h

		EXIT GRADE %								
		-8	-6	-4	-2	0	+2	+4	+6	+8
-8		0	50	50	66	88	110	132	154	176
-6		50	0	50	50	66	88	110	132	154
-4		50	50	0	50	50	66	88	110	132
-2		50	50	50	0	50	50	66	88	110
0		56	50	50	50	0	50	50	66	88
2		70	56	50	50	50	0	50	50	66
4		84	70	56	50	50	50	0	50	50
6		98	84	70	56	50	50	50	0	50
8		112	98	84	70	56	50	50	50	0

MINIMUM STANDARDS

NEW BRUNSWICK  
DEPARTMENT OF TRANSPORTATION  
PLANNING & LAND MANAGEMENT  
BRANCH

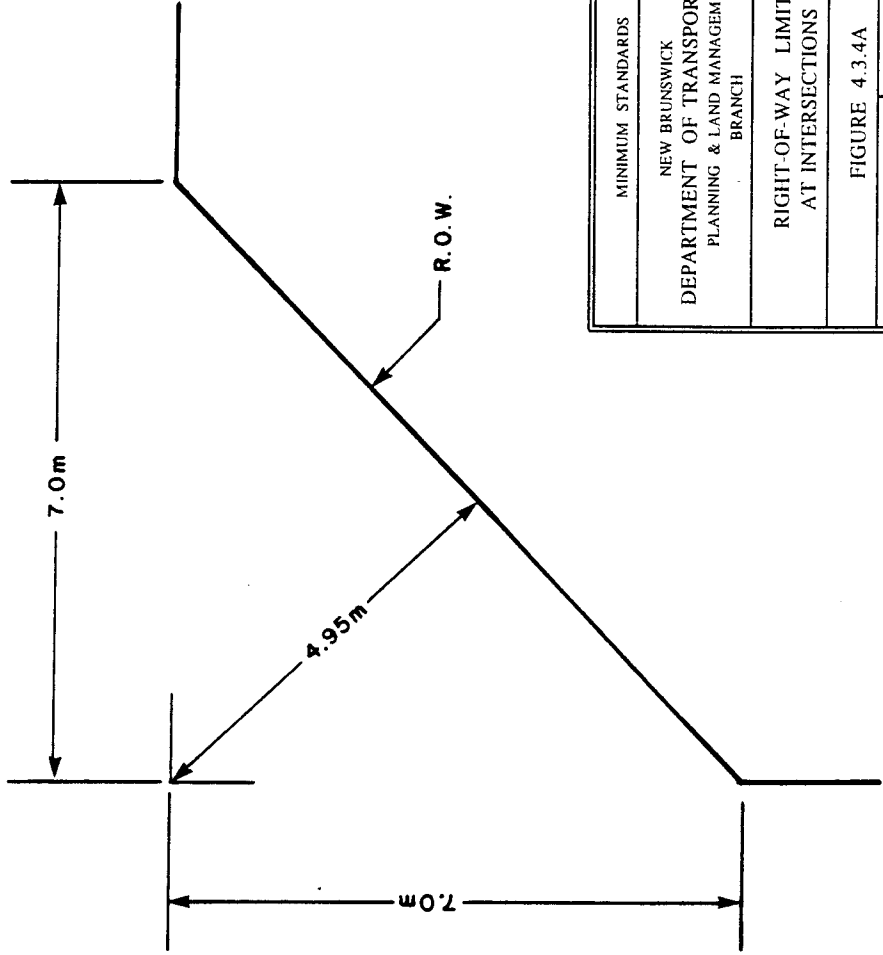
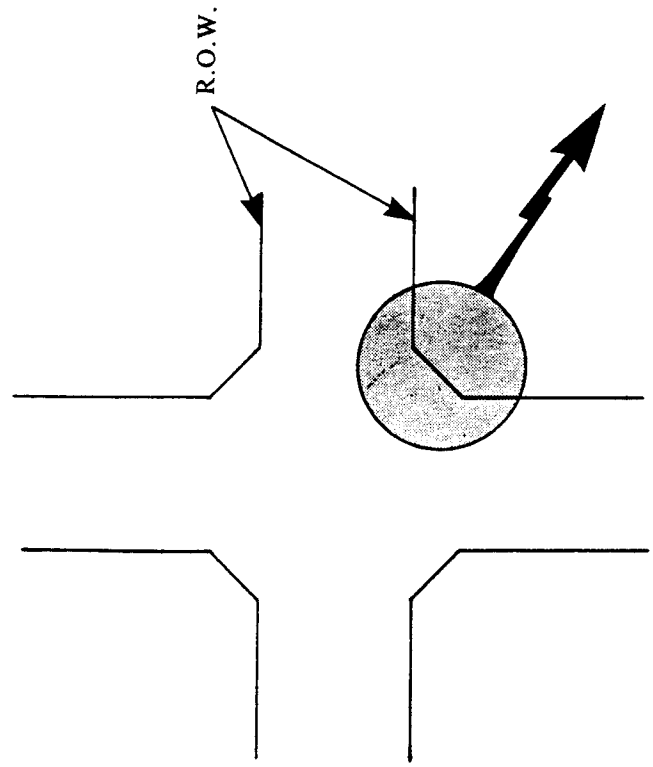
SAG & CREST CURVE  
MINIMUM VERTICAL  
CURVE LENGTH

FIGURE 4.3.3B

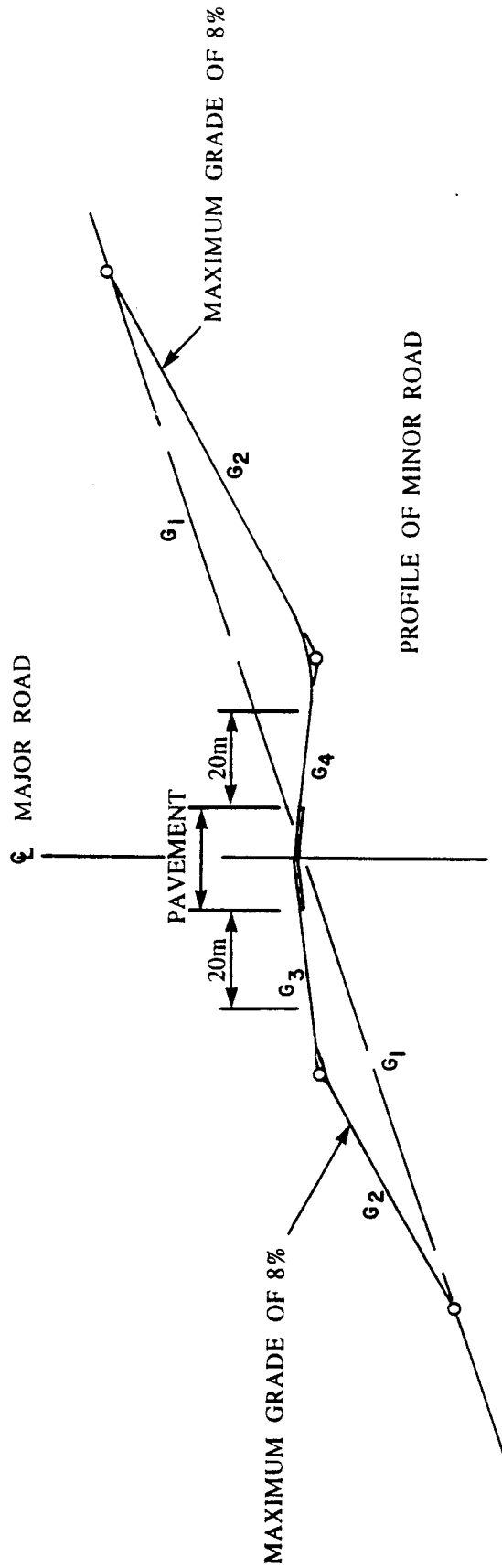
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DATE: 1995

REVISED:

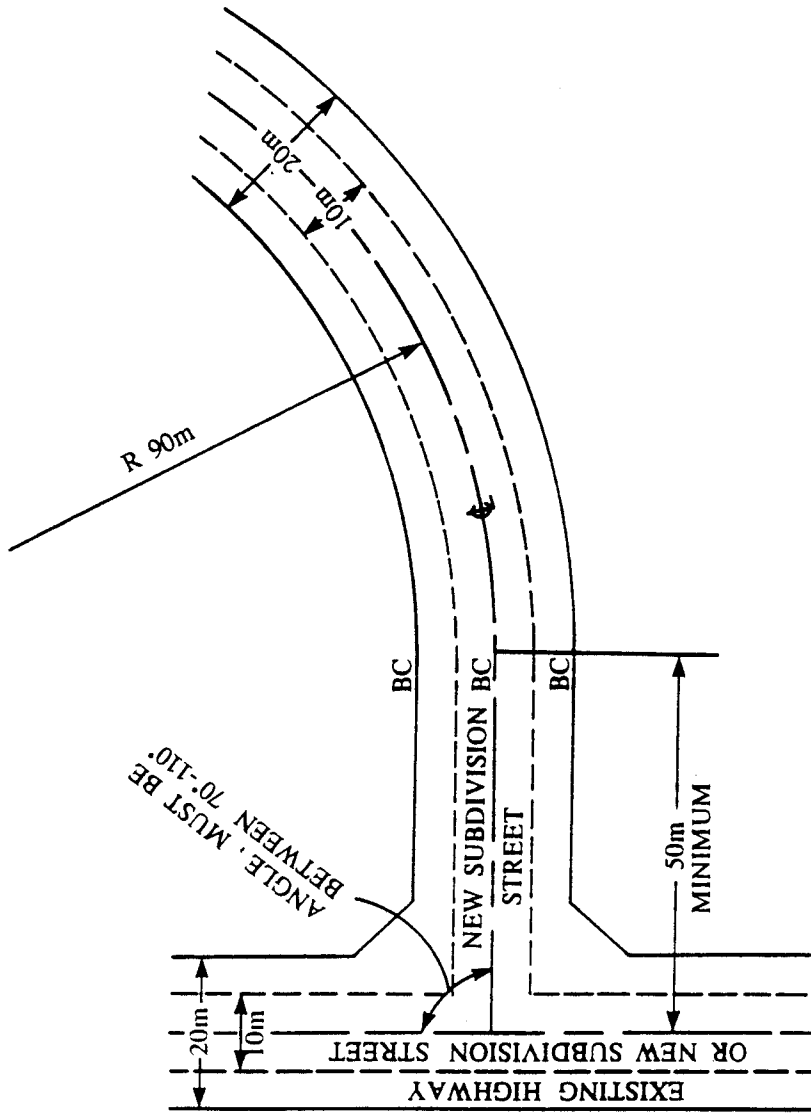


MINIMUM STANDARDS	
NEW BRUNSWICK	
DEPARTMENT OF TRANSPORTATION	
PLANNING & LAND MANAGEMENT	
BRANCH	
RIGHT-OF-WAY LIMITS	
AT INTERSECTIONS	
FIGURE 4.3.4A	
SCALE: NOT TO SCALE	DATE: 1995
REVISED:	



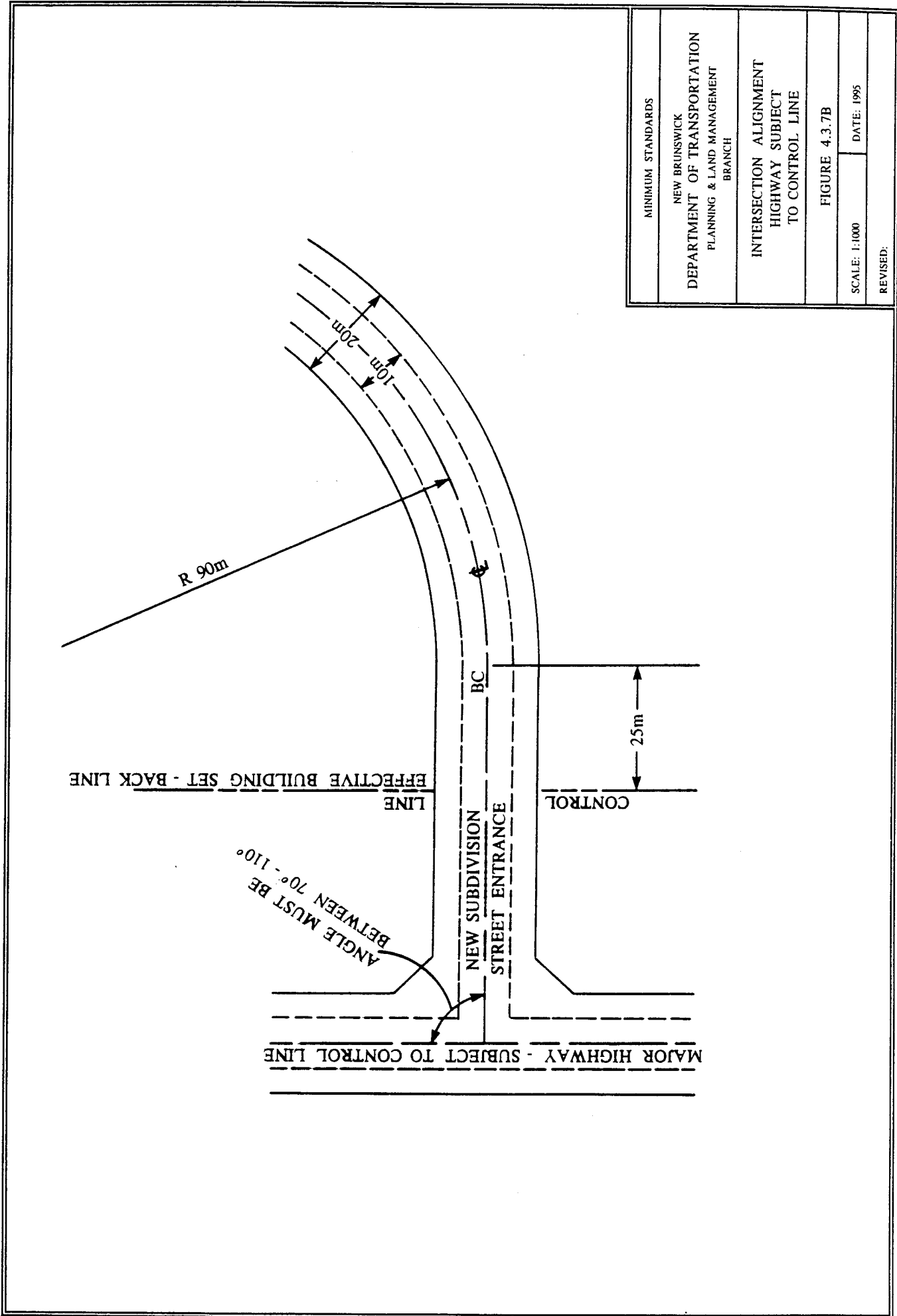
NOTE: G1 ORIGINAL GRADE OF MINOR ROAD.  
 G2 GRADE INTRODUCED TO REDUCE GRADE AT INTERSECTION.  
 G3 & G4 - GRADE ON MINOR ROAD CONFORMS TO CROSS SLOPE  
 ON MAJOR ROAD ( GRADES 0.5% TO 5.0% ).

MINIMUM STANDARDS	
NEW BRUNSWICK DEPARTMENT OF TRANSPORTATION PLANNING & LAND MANAGEMENT BRANCH	
PROFILE OF MINOR ROAD	
FIGURE 4.3.5A	
SCALE: NOT TO SCALE	DATE: 1995
REVISED:	



MINIMUM STANDARDS	
NEW BRUNSWICK DEPARTMENT OF TRANSPORTATION PLANNING & LAND MANAGEMENT BRANCH	
INTERSECTION ALIGNMENT	
FIGURE 4.3.7A	
SCALE: 1:1000	DATE: 1995
REVISED:	





MINIMUM STANDARDS

NEW BRUNSWICK  
 DEPARTMENT OF TRANSPORTATION  
 PLANNING & LAND MANAGEMENT  
 BRANCH

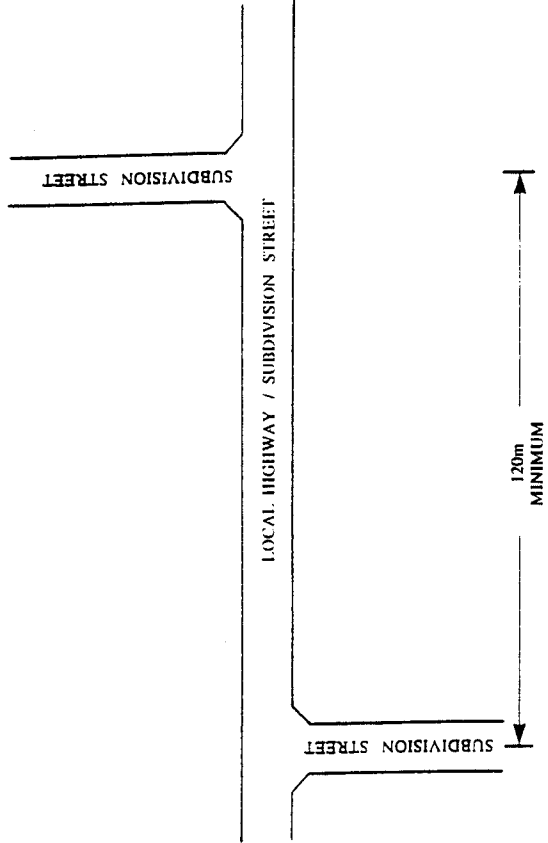
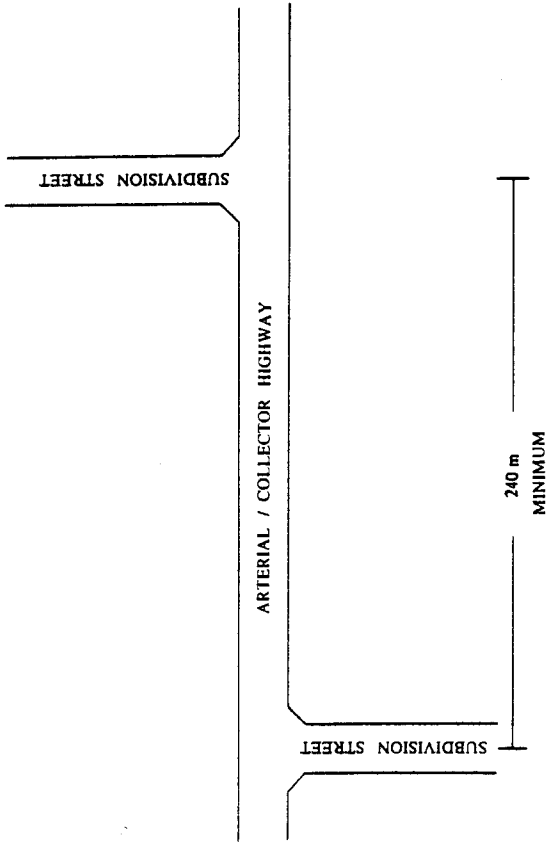
INTERSECTION ALIGNMENT  
 HIGHWAY SUBJECT  
 TO CONTROL LINE

FIGURE 4.3.7B

SCALE: 1:1000

DATE: 1995

REVISED:



MINIMUM STANDARDS	
NEW BRUNSWICK DEPARTMENT OF TRANSPORTATION PLANNING & LAND MANAGEMENT BRANCH	
T - INTERSECTION SPACING	
FIGURE 4.3.7C	
SCALE: 1:2000	DATE: 1995
REVISED:	

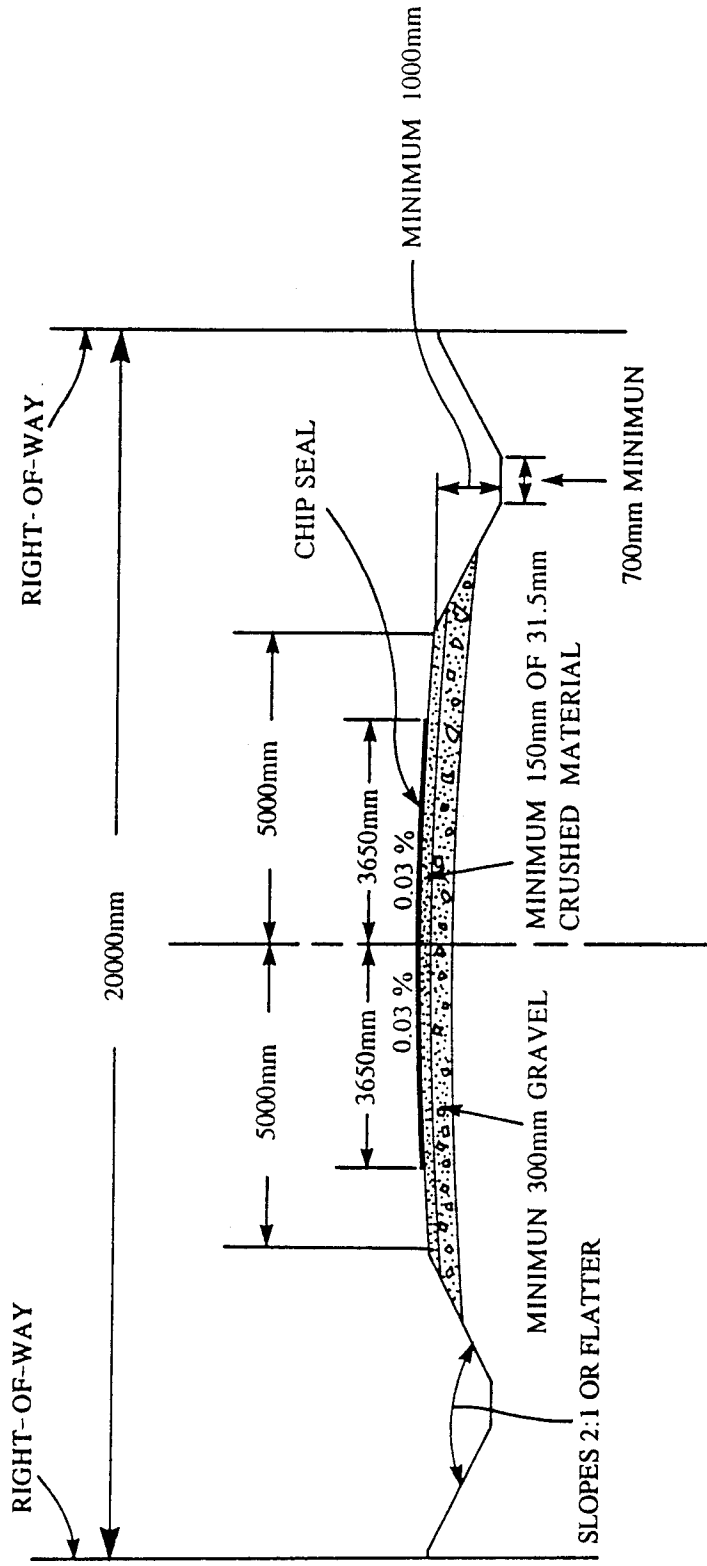
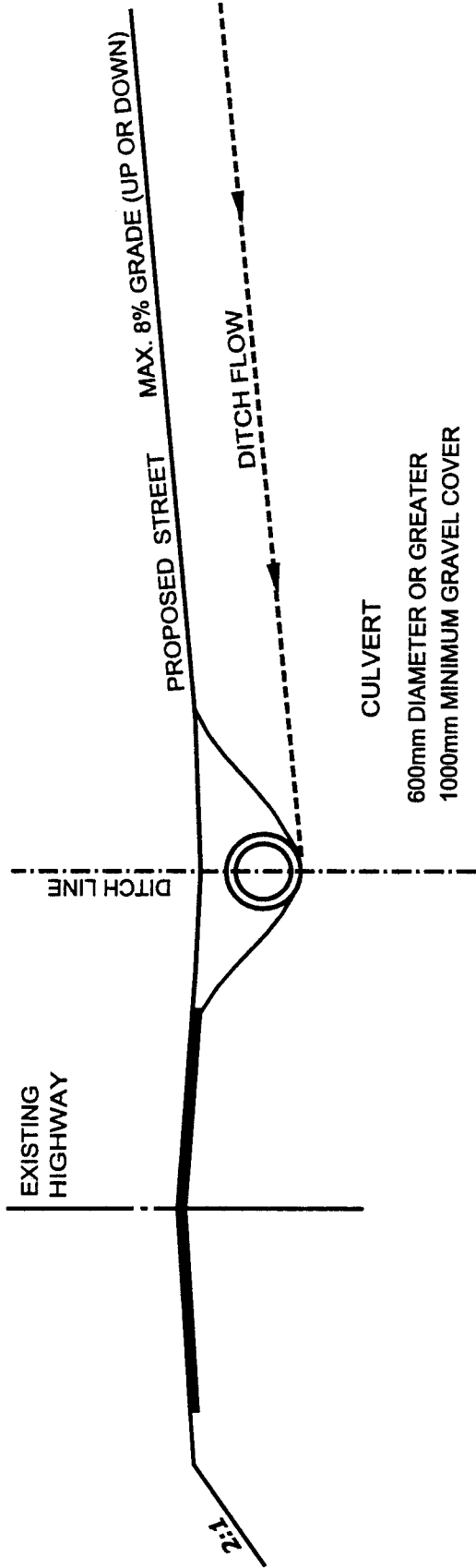


FIGURE 4.4.5A: TYPICAL CROSS SECTION OF NON-CURBED LOCAL HIGHWAY, SHOWING THE MINIMUM REQUIREMENTS FOR OPEN DRAINAGE DITCHES.

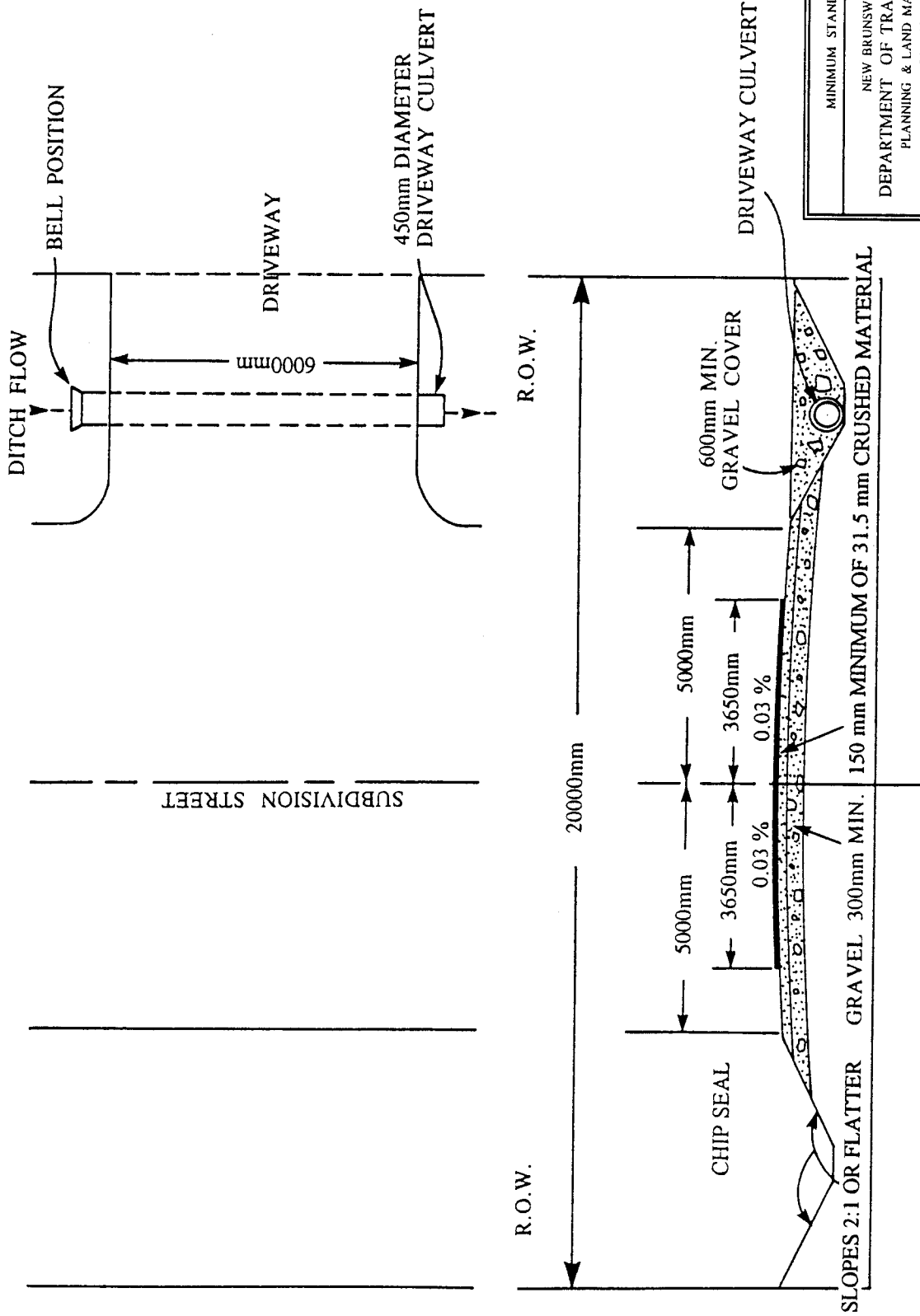
NOTE : THE REQUIRED WIDTH OF THE STREET RIGHT-OF-WAY WILL DEPEND UPON THE TOPOGRAPHY AND SOIL CONDITIONS. THE MINIMUM STREET RIGHT-OF-WAY IS 20000mm.

MINIMUM STANDARDS	
NEW BRUNSWICK	
DEPARTMENT OF TRANSPORTATION PLANNING & LAND MANAGEMENT BRANCH	
NON - CURBED LOCAL HIGHWAY	
FIGURE 4.4.5A	
SCALE: 1:2000	DATE: 1995
REVISED:	



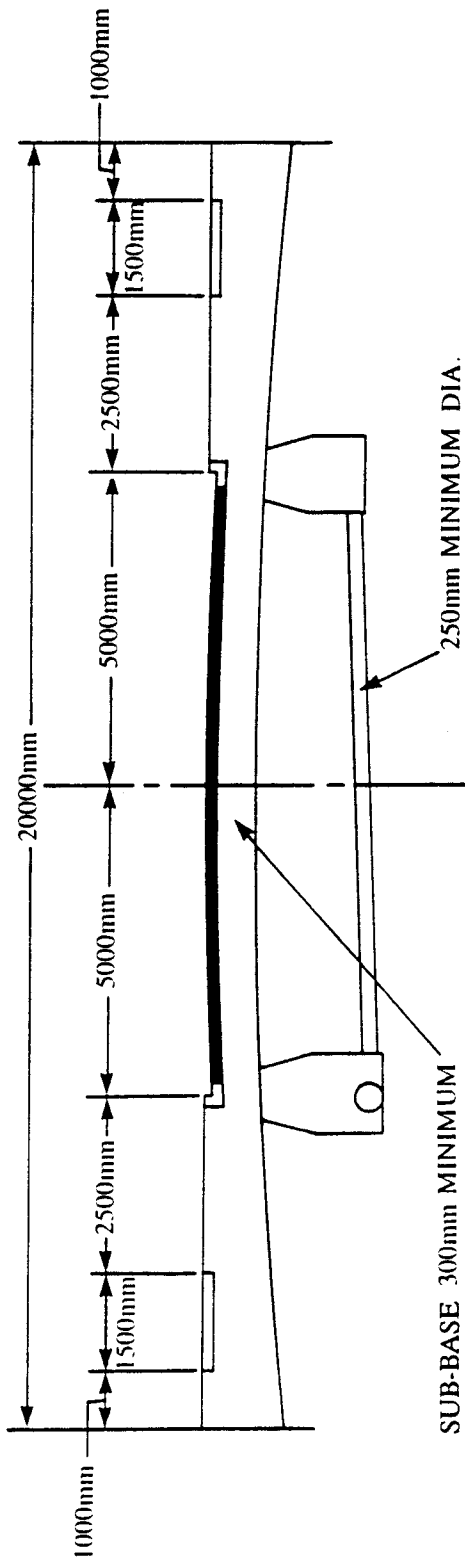
- NOTE: -THE ENTRANCE CULVERTS TO A SUBDIVISION ARE THE DEVELOPERS RESPONSIBILITY.  
 -THE SIZE AND LENGTH OF THE CULVERT PIPE IS TO BE DETERMINED BY THE DISTRICT TRANSPORTATION ENGINEER TO CONFORM TO EXISTING CONDITIONS.  
 -THE PROPOSED STREET SHALL BE LOWER AT THE DITCH LINE THAN THE EXISTING HIGHWAY AND GRADED TO PREVENT WATER FROM FLOWING ONTO HIGHWAY.

MINIMUM STANDARDS	
NEW BRUNSWICK	
DEPARTMENT OF TRANSPORTATION PLANNING & LAND MANAGEMENT BRANCH	
ENTRANCE CULVERT & CROSS CULVERT	
FIGURE: 4.5.2A	
SCALE: NOT TO SCALE	DATE:
REVISED:	2002



MINIMUM STANDARDS
NEW BRUNSWICK
DEPARTMENT OF TRANSPORTATION
PLANNING & LAND MANAGEMENT
BRANCH
STANDARD DRIVEWAY CULVERT
FIGURE 4.5.4A
SCALE: NOT TO SCALE
DATE: 1995
REVISED:

NOTE: - DRIVEWAY CULVERTS ARE TO BE INSTALLED BY THE LOT OWNERS.  
 - MINIMUM PIPE SIZE - 450mm.  
 - THE DRIVEWAYS ARE TO BE GRADED TO PREVENT WATER FROM FLOWING ONTO THE STREET.



NOTE: CHECK WITH THE DISTRICT TRANSPORTATION ENGINEER IN REGARD TO MUNICIPAL SERVICES EASEMENTS, PIPE SIZES & CONSTRUCTION MATERIALS.

MINIMUM STANDARDS	
NEW BRUNSWICK	
DEPARTMENT OF TRANSPORTATION	
PLANNING & LAND MANAGEMENT	
BRANCH	
RESIDENTIAL STREETS	
SERVICED LOCAL	
FIGURE 4.6A	
SCALE: NOT TO SCALE	DATE: 1995
REVISED:	

# SIGHT DISTANCES

TABLE 1

*SPEED LIMIT (KM/H)	MINIMUM SIGHT DISTANCE (M)
50	65
60	85
70	110
80	140
90	170
100	200
EYE HEIGHT = 1.05m OBJECT HEIGHT = 0.38m	

TABLE 1 APPLIES TO:

ALL ACCESSES INCLUDING COMMERCIAL, INDUSTRIAL, INSTITUTIONAL AND PROPOSED SUBDIVISION STREET ACCESS.

TABLE 2

*SPEED LIMIT (KM/H)	MINIMUM SIGHT DISTANCE (M)
50	115
60	135
70	160
80	180
90	200
100	215
EYE HEIGHT = 1.05m OBJECT HEIGHT = 1.30m	

TABLE 2 APPLIES TO:

COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL DRIVEWAY ACCESSES ON LOCAL OR COLLECTOR HIGHWAYS.

RESIDENTIAL DRIVEWAY ACCESS ON ARTERIAL HIGHWAYS.

PROPOSED SUBDIVISION STREET ACCESS ON LOCAL OR COLLECTOR HIGHWAYS.

TABLE 3

*SPEED LIMIT (KM/H)	MINIMUM SIGHT DISTANCE (M)
50	120
60	165
70	215
80	265
90	320
100	380
EYE HEIGHT = 1.05m OBJECT HEIGHT = 1.30m	

TABLE 3 APPLIES TO:

COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL DRIVEWAY ACCESSES ON ARTERIAL HIGHWAYS

PROPOSED SUBDIVISION STREET ON AN ARTERIAL HIGHWAY.

NOTE: TABLE 1 IS TO BE USED FIRST IN ALL CASES AND IF MINIMUM SIGHT DISTANCE IS MET REFER TO TABLE 2 OR TABLE 3 IF APPLICABLE.

\* IN CASES WHERE THE PREVAILING SPEEDS VARY CONSIDERABLY FROM THE POSTED SPEED LIMIT, THE HIGHER OF THE TWO MAY BE USED.

MINIMUM STANDARDS

NEW BRUNSWICK

DEPARTMENT OF TRANSPORTATION  
PLANNING & LAND MANAGEMENT  
BRANCH

MINIMUM SIGHT DISTANCE

FIGURE: 4.7A

NOT TO SCALE DATE:

REVISED: 2002