



RM of Lumsden No. 189

POLICY

Title: **Road Development Policy**

Effective: June 25, 2020

Amended: December 17, 2020
November 26, 2020
February 17, 2022
July 17, 2025

Policy Statement:

This policy is intended to guide the construction and upgrading of roads within the RM of Lumsden No. 189 in accordance with section 4.15 of the Zoning Bylaw.

Purpose:

To provide a uniform approach for specifications and requirements for roads constructed as a condition of subdivision or issuance of a development permit.

1. Background

Pursuant to the RM of Lumsden No. 189 Official Community Plan and Zoning Bylaw a Development Permit shall not be issued unless the site intended to be used, or upon which a building or structure is to be erected, abuts, or has frontage on a graded all-weather registered road. Therefore, subdivision or development applications that are situated along an undeveloped, seasonal, or Main Farm Access Class C Road as per the Road Classification Map attached as Schedule "A" to this policy, will require the Applicant to enter into a Road Development Agreement or Servicing Agreement, with the Municipality, to upgrade the required road/right-of-way to the applicable standard.

If a new road is to be built/upgraded on RM right of ways or other approved roads and streets, then the responsibility of incurring the initial cost of the road build is to be borne by the Applicant.

2. Conditions

The road design guidelines herein generally follow the most recent Transportation Association of Canada (TAC) and Saskatchewan Ministry of Highways and Infrastructure design standards. The Municipality may consider alternate design variations from these standards to

accommodate unique site circumstances, provided that public safety and the Municipality are not at risk. It is the Applicant's responsibility to ensure that the design, construction, and performance of all infrastructure constructed under the Development or Servicing Agreement meets or exceeds these standards/guidelines.

2.1 Design and Construction

- a) Good engineering practice and design is required for all road construction situations.
- b) All road design and construction must be certified by and performed under the supervision of a qualified professional engineer registered to practice in the Province of Saskatchewan. Prior to the construction of a new road*, an engineered road design must be approved by the Municipal Engineer and Public Works Department. The cost of the Municipal Engineer's review of the submitted engineered road design shall be borne by the Applicant. The design guidelines in this policy are minimum requirements and the Applicant's Engineer must certify that an adequate roadway structure is provided to the Municipality, both in design and as constructed. Where required, a complete traffic analysis may dictate the need for additional engineering.

* Upgrades to existing gravel roads may not require an engineered design prior to construction. However, all road upgrade work done to an existing road shall still be inspected by the Municipal Engineer and Public Works Department in accordance with the policy. The cost of any Municipal Engineer inspection and/or re-inspection (if required), is solely to be borne by the applicant.

- c) Design and construction practices shall take into consideration site specific conditions which might cause deviation from standard practice. Such deviations must be approved by the Municipality prior to entering into a Development or Servicing Agreement.
- d) Classification of roads and rights-of ways within the RM of Lumsden No. 189 are identified in the RM Road Classification Map, attached as Schedule "A" to this policy.
- e) All roadways constructed within the Municipality shall be constructed according to the design requirements appended to this policy based upon the road classifications provided below:

Appendix A. Heavy Haul/High Volume Road (HH/HV)

Appendix B. Primary Grid Road (PG)

Appendix C. Grid Road (G)

Appendix D. Internal Commercial/Industrial Subdivision Road (ICS/IIS)

Appendix E. Internal Residential Subdivision Road (IRS)

Appendix F. Main Farm Access Road Class A (MFA-A)

Appendix G. Main Farm Access Road Class B (MFA-B)

Appendix H. Main Farm Access Road Class C (MFA-C)

- f) Approaches to access lands from a municipal roadway shall be consistent with the Property Access Approach Standards attached as Appendix 'I'.
- g) Gravel incorporation shall be consistent with the Gravel Incorporation Specifications attached as Appendix 'J'.

2.2 Seeding of Ditches

- a) Seeding of ditches shall be required. Conventional Seeding as well as Hydroseeding are both permitted methods. The applicant may determine the seeding method based on the scope of the road development project.
- b) Prior to seeding, the area to be seeded shall be true to grade and cross section and free from irregularities.
- c) For Conventional Seeding, the applicant should ensure the seeded areas are harrowed immediately after seeding is completed. It is recommended the seed material used contain the following blend of seeds:

Seed Mix Common Name	Percentage (%) of Mix
Sheep's Fescue	15
Canada Blue Grass	15
Blue Fescue	15
Hard Fescue	15
Chewings Fescue	15
Creeping Red Fescue	15
Perennial Rye Grass	10

- d) Fertilizer may be applied in accordance with the Government of Canada Fertilizers Act and Fertilizers Regulations. The minimum recommended fertilizer application rate is 150 kg/hectare.
- e) Mulch may also be applied to the site to hold moisture and protect the seed, such as wood or wood cellulose fibre, which is free of growth and germination inhibiting factors or deleterious matter. The minimum recommended mulch application rate is 1500 kg/hectare.
- f) For Hydroseeding, the following seed mixture composition and application rates are recommended:

Seed Mixture Composition	Application Rate (kilogram/hectare)
Crested Wheat Grass	20.0 kg/ha
Creeping Red Fescue	5.0 kg/ha
Smooth Bromegrass	5.0 kg/ha
Fall Rye	30.0 kg/ha
Dryland Alfalfa	10.0 kg/ha

- g) The seeding of ditches must be completed with sufficient ground cover to the satisfaction of the Municipality prior to receiving a Final Acceptance of Services Certificate (FASC).

2.3 Special Conditions

- a) New subdivisions that require road building or upgrading shall ensure that any road allowance adjacent to the entire frontage of the parcel proposed for subdivision is built or upgraded in accordance with the applicable specification from this policy unless alternative arrangements are approved by Council.
- b) As per section 184 of *The Planning and Development Act, 2007* the RM may make a request to the approving authority to request the owner of land that is subject of a proposed subdivision to provide without compensation part of that land, in any amount and in any location that is deemed necessary to the Crown for the purpose of public highways.
- c) If dedicating or purchasing the additional right-of-way is not practical, Council may, at its sole discretion, execute easement agreements with adjacent landowners that would allow for road construction on their land in accordance with the specifications stated in this policy.
- d) At Council's sole discretion, new single parcel residential development or subdivision located along an established gravel or seasonal road which requires upgrading may have the Main Farm Access – Class B Road Specification applied.

3 Road Development Procedure

- 3.2 Prior to initiating construction, the Applicant shall submit a formal written request to Council indicating the location and the length of the roadway construction being requested; and subject to receiving approval from Council, the Applicant shall be required to enter into a Road Development Agreement or Servicing Agreement defining the financial security. Generally, the security shall be calculated based upon 125% of the construction cost estimated prepared by a qualified professional in support of the development.

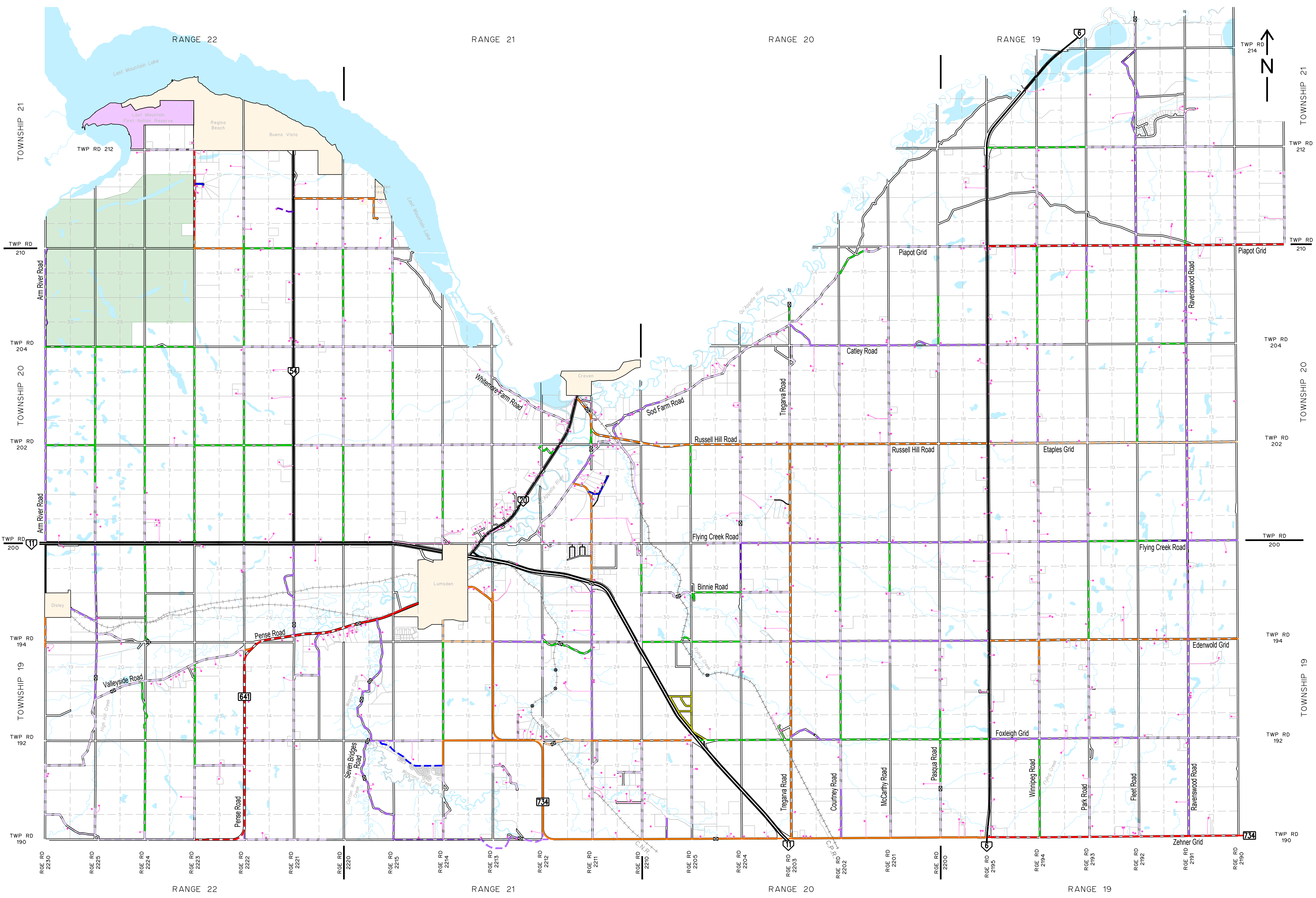
- 3.3 Where performance security is required, it shall be provided in the form of a Continuous (automatic renewal) unconditional/irrevocable letter of credit from a local branch of a chartered bank or Credit Union.
- 3.4 Upon completion of construction and submission of as-built drawings, a Construction Completion Certificate Inspection shall be undertaken by the Municipal Engineer and Public Works Department and if no deficiencies have been identified, a Construction Completion Certificate (CCC) shall be issued. The cost of the CCC Inspection shall be borne by the applicant.
- 3.5 If deficiencies are identified during the CCC Inspection, the applicant will be required to remediate such deficiencies prior to the issuance of a CCC. Upon completion of the remediation of the deficiencies identified in the initial CCC Inspection, the applicant shall notify the Municipality of the completion of the remediation of the deficiencies, so the Municipal Engineer and Public Works Department may re-inspect and verify that the deficiencies have been satisfactorily remediated. The cost of any re-inspections by the Municipal Engineer shall be borne by the applicant. Upon verification by the Municipal Engineer that all identified deficiencies have been remediated by the Applicant, the Municipality shall issue a CCC.
- 3.6 Upon issuance of a CCC, a maintenance period for **paved road** development is two (2) years.
- 3.7 Upon issuance of a CCC, the maintenance period for **gravel road** development is one (1) year.
- 3.8 The Municipality will retain financial security of sufficient amount to ensure repair to any deficiencies which might arise during the maintenance period. At the end of the maintenance period, the Municipal Engineer and Public Works Department will provide a Final Acceptance Certificate Inspection to verify that no deficiencies have arisen during the maintenance period. If no deficiencies are identified during the Final Acceptance Certificate Inspections, the Municipality shall issue a Final Acceptance Certificate (FAC). The cost of the FAC inspection shall be borne by the applicant.
- 3.9 If deficiencies are identified during the FAC Inspection, the applicant will be required to remediate such deficiencies prior to the issuance of a FAC. Upon completion of the remediation of the deficiencies identified in the initial FAC Inspection, the applicant shall notify the Municipality of the completion of the remediation of the deficiencies, so the Municipal Engineer and Public Works Department may re-inspect and verify that the deficiencies have been satisfactorily remediated. The cost of any re-inspections by the Municipal Engineer shall be borne by the applicant. Upon verification by the Municipal Engineer that all identified deficiencies have been remediated by the applicant, the Municipality shall issue a FAC.

- 3.10 CCC's and FAC's applied for after October 1 of a calendar year may not be considered for an inspection and issuance until the following spring after snow thaw.
- 3.11 Financial Security shall not be required for condominium road developments, but a building permit(s) shall not be issued until an FAC has been issued confirming the roadway has been property constructed.

SCHEDULE "A"



R.M. OF LUMSDEN NO. 189
ROAD CLASSIFICATION
DATE: OCTOBER 2022
JOB: 6710-000-00
SCALE: 1:30 000



- ROADS:**
- Provincial & Secondary Highway (Class 1 & 2)
 - Heavy High Volume Paved (HHV-P)
 - Heavy High Volume Gravel (HHV-G)
 - Primary Grid Road Paved (PG-P)
 - Primary Grid Road Gravel (PG-G)
 - Grid Road (G)
 - Internal Commercial/Industrial (ICSI-P)
 - Internal Commercial/Industrial Gravel (ICSI-G)
 - Internal Residential (IR)
 - Main Farm Access Class A (MFA)
 - Main Farm Access Class B (MFB)
 - Main Farm Access Class C (MFC)
 - Seasonal Dirt Road (SD)
 - Undeveloped Right-Of-Way
- MAP LEGEND:**
- Urban Municipality
 - First Nations Reserve
 - Community Pasture
 - Lake
 - River And Creek
 - Railway Crossing
 - Bridge
 - Farmhouse
 - Yard Access Road
 - Railway
 - Provincial Highway (6)
 - Secondary Provincial Highway (734)

NOTE:
All road classifications to be confirmed by public works.

Appendix 'A'

Heavy Haul/High Volume Road Standards

Description

The Heavy Haul/High Volume (HH/HV) Road is intended for commercial and industrial traffic levels and weights. The HH/HV Road may be paved or gravel.

BASIC STANDARDS

Right-of-Way Width

Minimum width, all roads: 30 meters to 46 meters
Minimum width, cul-de-sacs and turnabouts: 60 meters with a 15-meter radius on driving surface

The full width of right-of-way shall be cleared.

Finished Top Width

Minimum finished top width, gravel surface: 10 meters
Minimum finished top width, asphalt surface: 9 meters

Backslope

Minimum backslope: 5:1 with a maximum of 3:1

A 5:1 backslope is to be maintained until the top of the backslope reaches the edge of the right-of-way. The backslope will remain at the edge of the right-of-way to a maximum of 3:1.

Side slopes

Minimum side slopes: 4:1
Minimum side slope for fills 0 to 3 metres: 4:1
Minimum side slope for fills 3 to 4 metres: toe of slope to be 12 meters from shoulder
Minimum side slope for fills over 4 metres: 3:1

Ditch Width

Minimum ditch width: 4 meters to 5 meters

Gradient

Maximum gradient: 5% (in unusual circumstances 6%)

Stopping Sight Distance

Stopping Sight Distance: 200 meters minimum for 100 km/hr design

Curve Radius

Minimum curve radius: as per Ministry of Highways and Infrastructure Standard

Clear vision at road intersection

A minimum of 140 meters is required from the point of intersection on municipal road and grid intersections using 80 km/hr design speed.

A minimum of 200 meters is required for a highway on another heavy haul road using 100 km/hr design speed.

Snow Clearance

When shoulder grade elevation is 0.3 meters or less above natural surface at 23 meters from the centerline then the backslope must be flattened using a variable slope of 5:1 to a maximum of 3:1

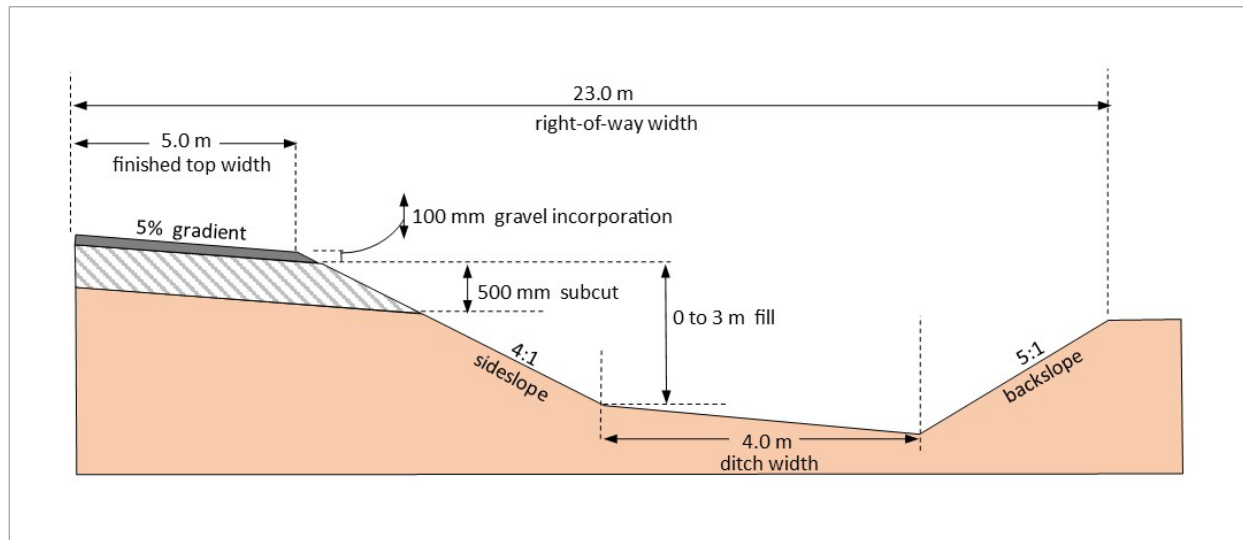


Figure 1. Minimum basic standards for a Heavy Haul/Heavy Volume Road

REQUIRED CONSTRUCTION STANDARDS

1. Construction shall include the installation of all necessary drainage structures and construction of drainage ditches. Culverts should be designed for at least a Q^{25} flow, with a minimum culvert size of 500 mm diameter. Riprap only where necessary to avoid undue erosion. All culverts will be constructed of steel gauge 12. Compaction around culverts shall be to a density of 98% and utilize Type 108 gravel (minimum 50% fracture).
2. Construction shall include all road connections and approaches. See attached plan – Standard Approach.
3. The average shoulder elevation of the road surface to be approximately 0.5 meters above the adjacent ground surface, except in cuts.
4. Objectionable organic material shall be subcut where the fill of subgrade is less than 0.5 meters in depth for gravel surfaces and 0.6 meters for asphalt surfaces.
5. The subgrade surface shall not be less than 1.5 meters above high-water level on the ground water table (i.e. Level to which free water should rise in a hole sunk in the ground).
6. Road surface, side slopes, ditches, and backslopes shall be bladed smooth to conform to the typical cross-section.
7. Where necessary to provide a smooth, stable driving surface, the road shall be capped with a layer of clay material. The depth of the clay cap shall be a minimum of 0.3 meters. If the subgrade is to be surfaced, clay material should be avoided if possible and a granular subgrade should be constructed. Gravel shall be incorporated in the top 100 mm of the subgrade prior to traffic gravel

being applied. Gravel incorporation shall be at a rate of 550 mt/mile. The gravel specification for incorporation is Type 31 Base.

8. Gravel surfacing for the subgrade required at the rate 550 mt/mile for the first application, 550 mt/mile for the year following construction, and additional applications as required. The required gravel specification for traffic gravel is Type 108 (minimum 50% fracture).
9. Alignment
Curves must be constructed with the proper super-elevation as per the Ministry of Highways and Infrastructure Standards.
10. Asphalt surface
Soil testing is required to determine surface design. Along with soil testing, traffic volume and vehicle configurations must be considered when selecting the surface structure.

Appendix 'B'

Primary Grid Road Standards

Description

The Primary Grid (PG) Road may be gravel or paved.

BASIC STANDARDS

Right-of-Way Width

Minimum width, all roads: 46 metres
Minimum width, cul-de-sacs and turnabouts: 60 meters, with a 15 meter radius on driving surface

The full width of right-of-way shall be cleared.

Top Width

Minimum finished top width, gravel surface: 8.6 meters
Minimum finished top width, asphalt surface: 8 meters

Backslopes

Minimum backslope: 5.1 with maximum 3:1

A 5:1 backslope is to be maintained until the top of the backslope reaches the edge of the right-of-way. The backslope will remain at the edge of the right-of-way to a maximum of 3:1.

Side slope

Minimum side slope: 4:1
Minimum side slope for fills 0 to 3 metres: 4:1
Minimum side slope for fills 3 to 4 metres: toe of slope to be 12 meters from shoulder
Minimum side slope for fills over 4 metres: 3:1

Ditch Width

Minimum ditch width: 5 meters to 7 meters

Gradient

Maximum gradient: 6%, or 7% in unusual circumstances

Stopping Sight Distance (SSD)

Minimum SSD: 140 meters for 80 km/hr design

Curve Radius

Minimum curve radius: as per Ministry of Highways and Infrastructure Standard

Clear vision at road intersection

A minimum of 140 meters is required from the point of intersection on municipal roads and grid intersections using an 80 km/hr design speed.

Snow Clearance

When shoulder grade elevation is 0.3 meters or less above natural surface at 21 meters from center line then the backslope must be flattened using a variable slope of 5:1 to a maximum of 3:1

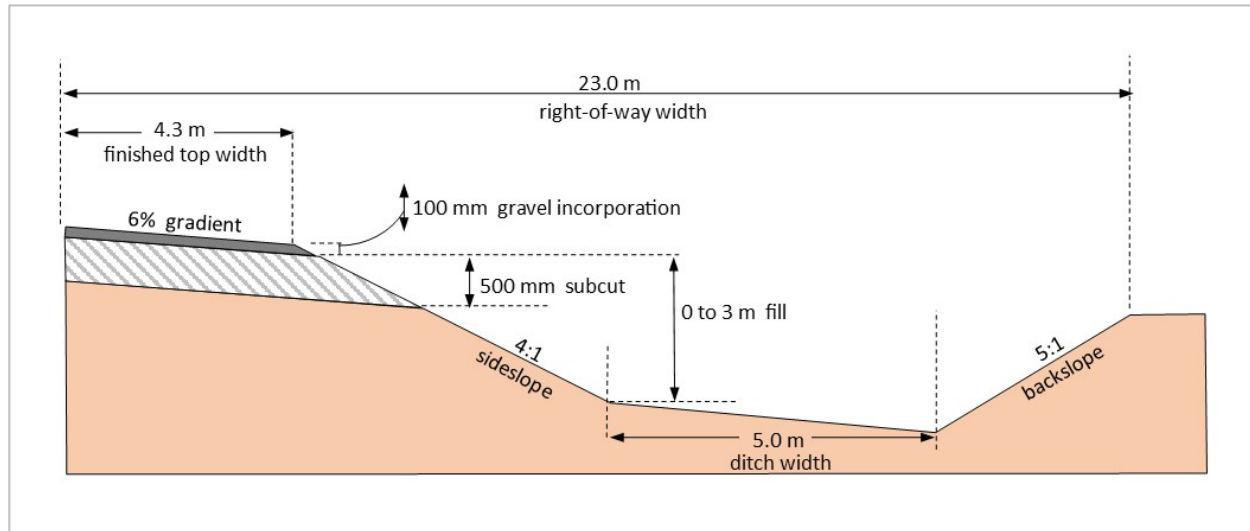


Figure 2. Minimum basic standards for a Primary Grid Road

REQUIRED CONSTRUCTION STANDARDS

1. Construction shall include the installation of all necessary drainage structures and construction of drainage ditches. Culverts should be designed for at least a Q^{25} flow, with a minimum culvert size of 500 mm diameter. Riprap only where necessary to avoid undue erosion. All culverts will be constructed of steel gauge 12. Compaction around culverts shall be to a density of 98% and utilize Type 108 gravel (minimum 50% fracture).
2. Construction shall include all road connections and approaches as per Appendix 'I' of this policy.
3. The average shoulder elevation of the road surface to be approximately 0.5 meters above the adjacent ground surface, except in cuts.
4. Objectionable organic material shall be subcut where the fill of subgrade is less than 0.5 meters in depth for gravel surfaces and 0.6 meters for asphalt surfaces.
5. The subgrade surface shall not be less than 1.5 meters above high water level on the ground water table (i.e. Level to which free water should rise in a hold sunk in the ground).
6. Road surface, side slopes, ditches, and backslopes shall be bladed smooth to conform to the typical cross-section.
7. Where necessary to provide a smooth, stable driving surface, the road shall be capped with a layer of clay material. The depth of the clay cap shall be a minimum of 0.3 meters. If the subgrade is to be surfaced, clay material should be avoided if possible and a granular subgrade should be constructed. Gravel shall be incorporated in the top 100 mm of the subgrade prior to traffic gravel

being applied. Gravel incorporation shall be at a rate of 550 mt/mile. The gravel specification for incorporation is Type 31 Base.

8. Gravel surfacing for the subgrade required at the rate 550 mt/mile for the first application, 550 mt/mile for the year following construction, and additional applications as required. The required gravel specification for traffic gravel is Type 108 (minimum 50% fracture).
9. Alignment
Curves must be constructed with the proper super-elevation as per the Ministry of Highways and Infrastructure Standards.
10. Asphalt surface
Soil testing is required to determine surface design. Along with soil testing, traffic volume and vehicle configurations must be considered when selecting the surface structure.

Appendix 'C'

Grid Road Standards

Description

The Grid (G) Road is gravel.

BASIC STANDARDS

Right-of-way width

Minimum width, all roads: 42 meters, or 30 meters with municipal approval
Minimum width, cul-de-sacs and turnabouts: 60 meters with 15 meters radius on driving surface

The full width of right-of-way shall be cleared.

Finished Top Width

Minimum finished top width: 8 meters

Backslope

Minimum backslope: 5:1 to a maximum of 3:1

A 5:1 backslope is to be maintained until the top of the backslope reaches the edge of the right-of-way. The backslope will remain at the edge of the right-of-way to a maximum of 3:1.

Side slope

Minimum side slope: 4:1
Minimum side slope for fills 0 to 3 metres: 4:1
Minimum side slope for fills 3 to 4 metres: toe of slope to be 12 meters from shoulder
Minimum side slope for fills over 4 metres: 3:1

Ditch Width

Minimum ditch width: 4 meters to 6 meters

Gradient

Maximum gradient: 9% (in unusual circumstances 11%)

Stopping Sight Distance (SSD)

Minimum SSD: 140 meters for 80 km/hr design

Curve Radius

Minimum curve radius: 300 meters

Clear vision at road intersection

A minimum of 140 meters is required from the point of intersection on municipal roads and grid intersections using an 80 km/hr design speed.

Snow Clearance

When shoulder grade elevation is 0.3 meters or less above natural surface at 15 to 21 meters from center line then the backslope must be flattened using a minimum variable slope of 5:1 to a maximum of 3:1.

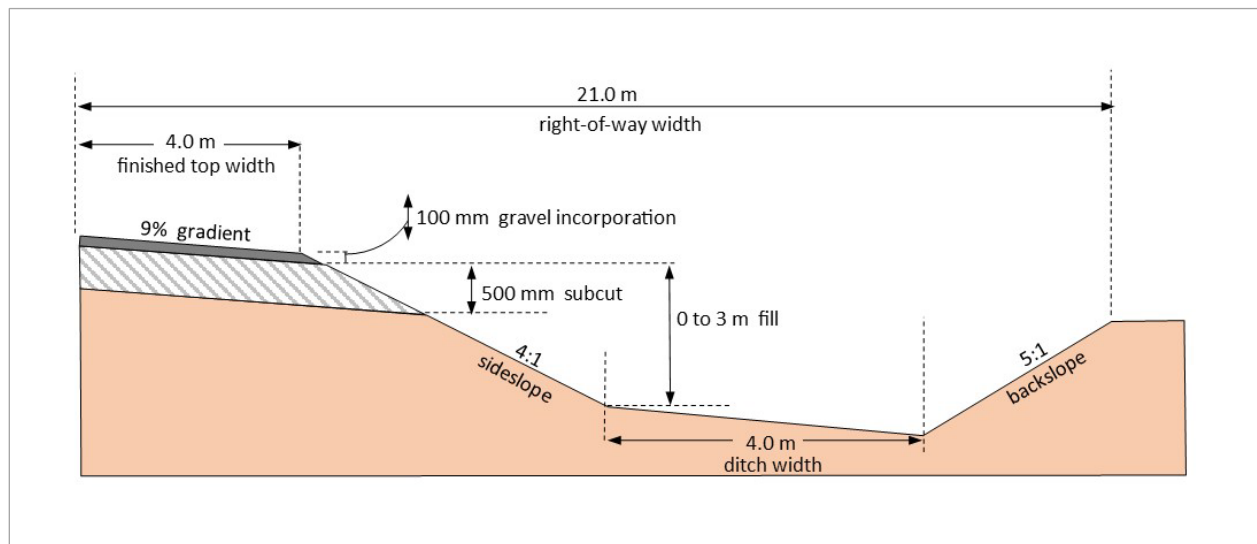


Figure 1. Minimum basic standards for a Grid Road

REQUIRED CONSTRUCTION STANDARDS

1. Construction shall include the installation of all necessary drainage structures and construction of drainage ditches. Culverts should be designed for at least a Q^{25} flow, with a minimum culvert size of 500 mm diameter. Riprap only where necessary to avoid undue erosion. All culverts will be constructed of steel gauge 12. Compaction around culverts shall be to a density of 98% and utilize Type 108 gravel (minimum 50% fracture).
2. Construction shall include all road connections and approaches as per Appendix '1' of this policy.
3. The average shoulder elevation of the road surface to be approximately 0.5 meters above the adjacent ground surface, except in cuts.
4. Objectionable organic material shall be subcut where the fill of subgrade is less than 0.5 meters in depth for gravel surfaces and 0.6 meters for asphalt surfaces.
5. The subgrade surface shall not be less than 1.5 meters above high-water level on the ground water table (i.e. Level to which free water should rise in a hole sunk in the ground).
6. Road surface, side slopes, ditches, and backslopes shall be bladed smooth to conform to the typical cross-section.
7. Where necessary to provide a smooth, stable driving surface, the road shall be capped with a layer of clay material. The depth of the clay cap shall be a minimum of 0.3 meters. If the subgrade is to be surfaced, clay material should be avoided if possible and a granular subgrade should be

constructed. Gravel shall be incorporated in the top 100 mm of the subgrade prior to traffic gravel being applied. Gravel incorporation shall be at a rate of 550 mt/mile. The gravel specification for incorporation is Type 31 Base.

8. Gravel surfacing for the subgrade required at the rate 550 mt/mile for the first application, 550 mt/mile for the year following construction, and additional applications as required. The required gravel specification for traffic gravel is Type 108 (minimum 50% fracture).
9. Alignment
Curves must be constructed with the proper super-elevation as per the Ministry of Highways and Infrastructure Standards.

Appendix 'D'

Internal Commercial/Industrial Subdivision Road Standards

Description

The Internal Commercial/Industrial Subdivision (ICS/IIS) Road is intended for service roads, and internal roads to provide access to commercial and industrial subdivisions. The ICS/IIS Road may be gravel or paved.

BASIC STANDARDS

Right-of-Way Width

Minimum width, all roads:	30 meters to 46 meters
Minimum width, cul-de-sacs and turnabouts:	60 meters (purchased) with a 15 meter radius on the driving surface

The full width of right-of-way shall be cleared

Finished Top Width

Minimum finished top width, gravel surface:	10 meters
Minimum finished top width, asphalt surface:	9 meters

Backslope

Minimum backslope: 5:1 with a maximum of 3:1

A 5:1 backslope is to be maintained until the top of the backslope reaches the edge of the right-of-way. The backslope will remain at the edge of the right-of-way to a maximum of 3:1.

Side slope

Minimum side slope:	4:1
Minimum side slope for fills 0 to 3 metres:	4:1
Minimum side slope for fills 3 to 4 metres:	toe of slope to be 12 meters from shoulder
Minimum side slope for fills over 4 metres:	3:1

Ditch Width

Minimum ditch width: 4.0 meters to 6.0 meters

Gradient

Maximum gradient: 5% or 6% in unusual circumstances

Stopping Sight Distance (SSD)

Minimum SSD: 140 meters for a 80 km/hr design

Curve Radius

Minimum curve radius: as per Ministry of Highways and Infrastructure Standard

Clear vision at road intersection

A minimum of 85 meters is required from the point of intersection on a municipal road and grid intersection to a maximum of 140 meters on primary grid roads using 80 km/hr design speed.

A minimum of 200 meters is required for a highway on another heavy haul road using 100 km/hr design speed.

Snow Clearance

When shoulder grade elevation is 0.3 meters or less above natural surface at 15 meters from the centerline then the backslope must be flattened using a variable slope of 5:1 to a maximum of 3:1.

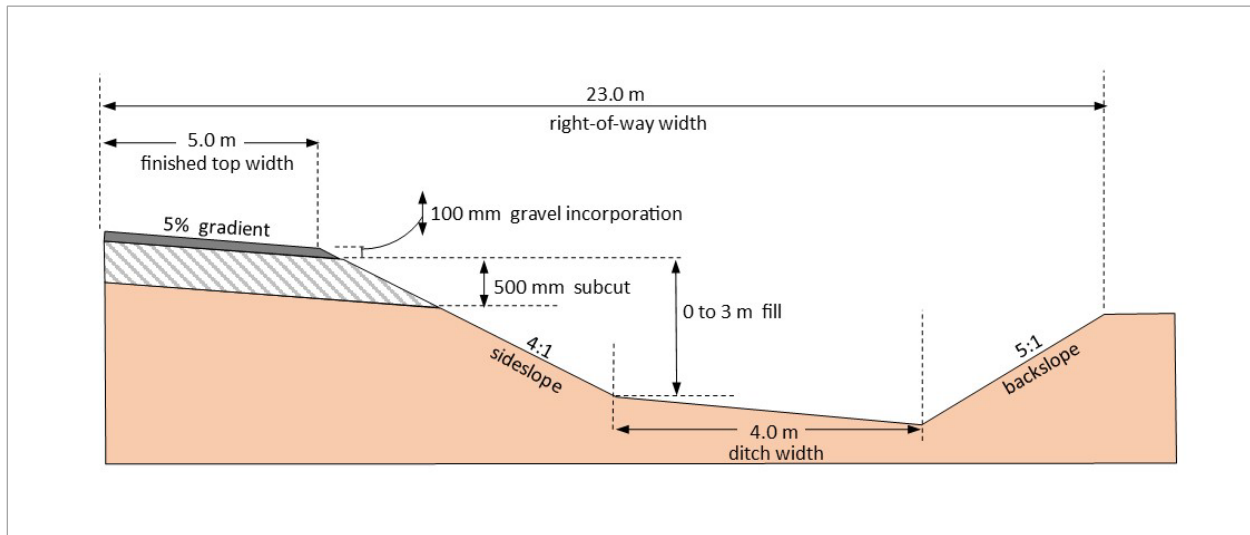


Figure 4. Minimum basic standards for an Internal Commercial/Industrial Subdivision Road

REQUIRED CONSTRUCTION STANDARDS

1. Construction shall include the installation of all necessary drainage structures and construction of drainage ditches. Culverts should be designed for at least a Q^{25} flow, with a minimum culvert size of 500 mm diameter. Riprap only where necessary to avoid undue erosion. All culverts will be constructed of steel gauge 12. Compaction around culverts shall be to a density of 98% and utilize Type 108 gravel (minimum 50% fracture).
2. Construction shall include all road connections and approaches. See attached plan – Standard Approach.
3. The average shoulder elevation of the road surface to be approximately 0.5 meters above the adjacent ground surface, except in cuts.
4. Objectionable organic material shall be subcut where the fill of subgrade is less than 0.5 meters in depth for gravel surfaces and 0.6 meters for asphalt surfaces.
5. The subgrade surface shall not be less than 1.5 meters above high-water level on the ground water table (ie. Level to which free water should rise in a hole sunk in the ground).
6. Road surface, side slopes, ditches, and backslopes shall be bladed smooth to conform to the typical cross-section.
7. Where necessary to provide a smooth, stable driving surface, the road shall be capped with a layer of clay material. The depth of the clay cap shall be a minimum of 0.3 meters. If the subgrade is to be surfaced, clay material should be avoided if possible and a granular subgrade should be constructed. Gravel shall be incorporated in the top 100 mm of the subgrade prior to traffic gravel being applied. Gravel incorporation shall be at a rate of 550 mt/mile. The gravel specification for incorporation is Type 31 Base.

8. Gravel surfacing for the subgrade required at the rate 550 mt/mile for the first application, 550 mt/mile for the year following construction, and additional applications as required. The required gravel specification for traffic gravel is Type 108 (minimum 50% fracture).

9. Alignment

Curves must be constructed with the proper super-elevation as per the Ministry of Highways and Infrastructure Standards.

10. Asphalt surface

Soil testing is required to determine surface design. Along with soil testing, traffic volume and vehicle configurations must be considered when selecting the surface structure.

Appendix 'E'

Internal Residential Subdivision Road Standards

Description

The Internal Residential Subdivision (IRS) Road is to access internal parcels, intended for residential traffic levels and weights. The IRS Road may be gravel or paved.

BASIC STANDARDS

Right-of-Way Width

Minimum width, all roads: 30 metres
Minimum width, cul-de-sacs and turnabouts: 60 meters with a 15 meter radius on driving surface

The full width of right-of-way shall be cleared.

Finished Top Width

Minimum finished top width for fills 0 to 3 metres: 7.4 meters
Minimum finished top width for fills over 3 metres: 8 meters

Backslope

Minimum backslope: 5:1 with maximum 3:1

A 5:1 backslope is to be maintained until the top of the backslope reaches the edge of right-of-way. The backslope will remain at the edge of the right-of-way to a maximum of 3:1.

Side slope

Minimum side slopes: 4:1 (preferred), 3:1 (with permission from municipality)
Minimum side slope for fills 0 to 3 metres: 4:1
Minimum side slope for fills 3 to 4 metres: toe of slope to be 12 meters from shoulder
Minimum side slope for fills over 4 metres: 3:1

Ditch Width

Minimum ditch width: 4.0 meters to 5.0 meters

Gradient

Maximum gradient: 5% (in unusual circumstances 6%)

Stopping Sight Distance (SSD)

Minimum SSD: 140 meters at 80 km/hr design

Curve Radius

Minimum curve radius: with proper super elevation

Clear vision at road intersection

A minimum of 85 meters is required from the point of intersection on municipal road and grid intersections to a maximum of 140 meters on primary grid roads using 80 km/hr design speed.

Snow Clearance

When shoulder grade elevation is 0.3 meters or less above natural surface at 15 meters to 20 meters from venter line and backslope must be flattened to using a variable slope of 5:1 to a maximum of 3:1

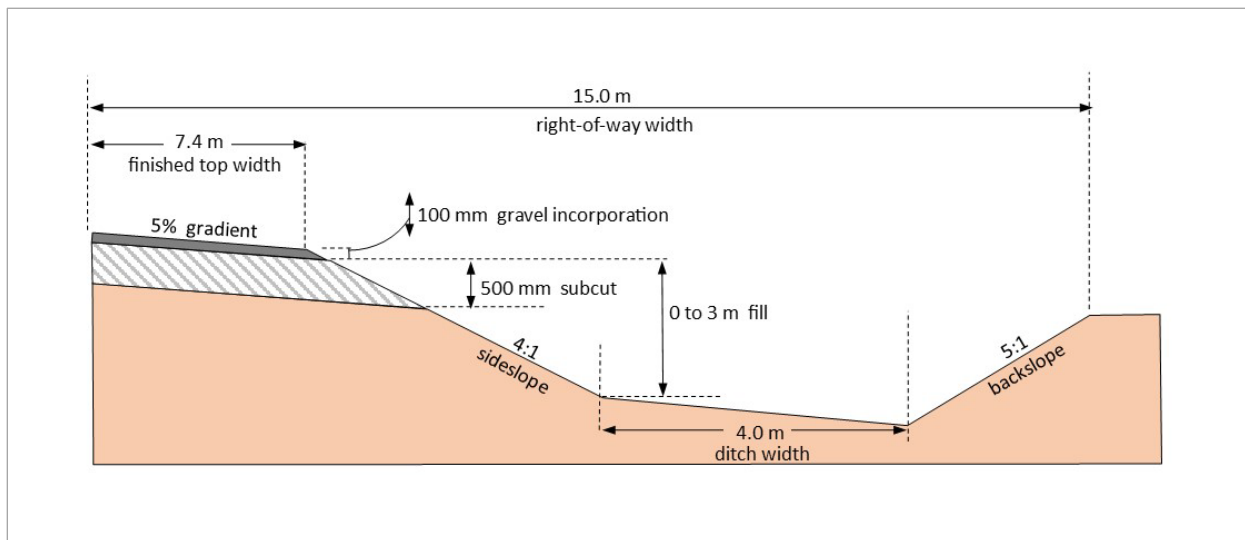


Figure 5. Minimum basic standards for an Internal Residential Subdivision Road

REQUIRED CONSTRUCTION STANDARDS

1. Construction shall include the installation of all necessary drainage structures and construction of drainage ditches. Culverts should be designed for at least a Q^{25} flow, with a minimum culvert size of 500 mm diameter. Riprap only where necessary to avoid undue erosion. All culverts will be constructed of steel gauge 12. Compaction around culverts shall be to a density of 98% and utilize Type 108 gravel (minimum 50% fracture).
2. Construction shall include all road connections and approaches. See attached plan – Standard Approach.
3. The average shoulder elevation of the road surface to be approximately 0.5 meters above the adjacent ground surface, except in cuts.
4. Objectionable organic material shall be subcut where the fill of subgrade is less than 0.5 meters in depth for gravel surfaces and 0.6 meters for asphalt surfaces.
5. The subgrade surface shall not be less than 1.5 meters above high-water level on the ground water table (i.e. Level to which free water should rise in a hole sunk in the ground).
6. Road surface, side slopes, ditches, and backslopes shall be bladed smooth to conform to the typical cross-section.
7. Where necessary to provide a smooth, stable driving surface, the road shall be capped with a layer of clay material. The depth of the clay cap shall be a minimum of 0.3 meters. If the subgrade is to be surfaced, clay material should be avoided if possible and a granular subgrade should be constructed. Gravel shall be incorporated in the top 100 mm of the subgrade prior to traffic gravel being applied. Gravel incorporation shall be at a rate of 550 mt/mile. The gravel specification for incorporation is Type 31 Base.

8. Gravel surfacing for the subgrade required at the rate 550 mt/mile for the first application, 550 mt/mile for the year following construction, and additional applications as required. The required gravel specification for traffic gravel is Type 108 (minimum 50% fracture).
9. Alignment
Curves must be constructed with the proper super-elevation as per the Ministry of Highways and Infrastructure Standards.
10. Asphalt surface
Soil testing is required to determine surface design. Along with soil testing, traffic volume and vehicle configurations must be considered when selecting the surface structure.

Main Farm Access Road Class A Standards

Description

The Main Farm Access Road Class A (MFA-A) is the modern main farm access road standard to which all undeveloped, seasonal, and existing main farm access shall be upgraded to in accordance with this policy. The MFA-A Road is gravel.

BASIC STANDARDS

Right-of-Way Width

Minimum width, all roads: 30 meters
Minimum width, cul-de-sacs and turnabouts: 60 meters with a 15 meter radius on driving surface

The full width of the right-of-way shall be cleared.

Finished Top Width

Minimum finished top width: 7 meters, 7.6 meters for curve (if applicable)

Backslope

Minimum backslope: 5:1, with maximum of 3:1

A 5:1 backslope is to be maintained until top of the backslope reaches the edge of the right-of-way. The backslope will remain at the edge of the right-of-way to a maximum of 3:1.

Side slope

Minimum side slope: 3:1
Fills 2 to 3 meters: 7.6 top width
Fills over 3 meters: 8.0 top width

Ditch Width

Minimum ditch width: 4 metres to 5 metres

Gradient

Maximum gradient: 9% (in unusual circumstances, 11%)

Sight Stopping Distance (SSD)

Minimum SSD: 140 meters for 80 km/hr design

Curve Radius

Minimum curve radius: 250 metres

Clear vision at road intersection

A minimum of 140 meters is required from the point of intersection on municipal roads and grid intersections using an 80 km/hr design speed.

Snow Clearance

When shoulder grade elevation is 0.3 meters or less above natural surface at 15 to 20 meters from center line, then the backslope must be flattened using a variable slope of 5:1 to a maximum of 3:1.

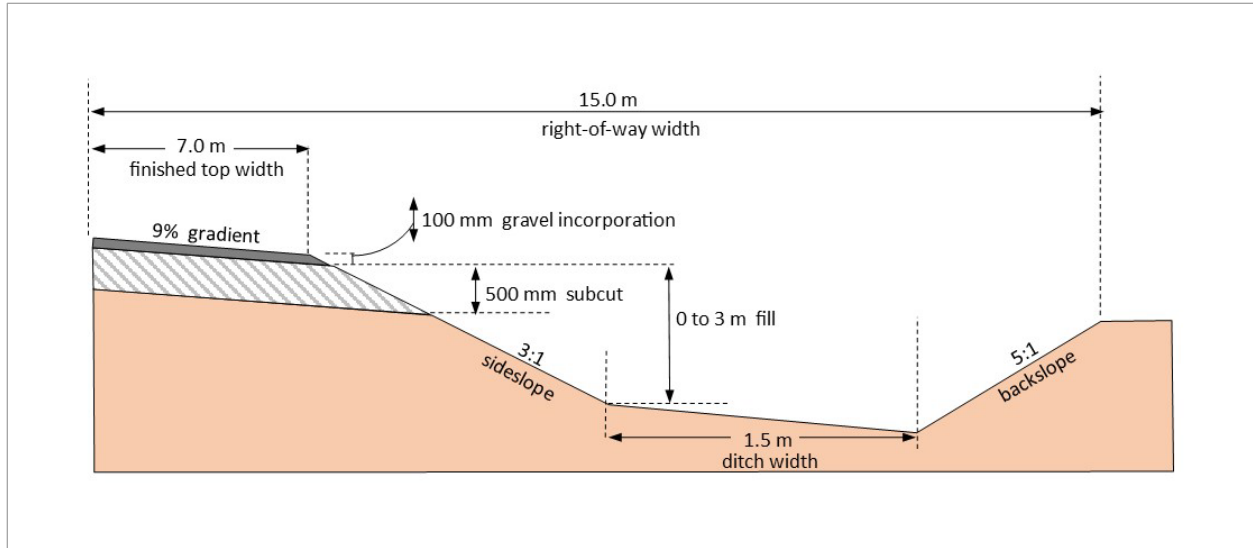


Figure 6. Minimum basic standards for a Main Farm Access Class A Road

REQUIRED CONSTRUCTION STANDARDS

1. Construction shall include the installation of all necessary drainage structures and construction of drainage ditches. Culverts should be designed for at least a Q^{25} flow, with a minimum culvert size of 500 mm diameter. Riprap only where necessary to avoid undue erosion. All culverts will be constructed of steel gauge 12. Compaction around culverts shall be to a density of 98% and utilize Type 108 gravel (minimum 50% fracture).
2. Construction shall include all road connections and approaches. See the attached plan – Standard Approach.
3. The average shoulder elevation of the road surface to be approximately 0.5 meters above the adjacent ground surface, except in cuts.
4. Objectionable organic material shall be subcut where the fill of subgrade is less than 0.5 meters in depth for gravel surfaces and 0.6 meters for asphalt surfaces.
5. The subgrade surface shall not be less than 1.5 meters above high-water level on the ground water table (i.e., level to which free water should rise in a hole sunk in the ground).
6. Road surface, side slopes, ditches, and backslopes shall be bladed smooth to conform to the typical cross-section.
7. Where necessary to provide a smooth, stable driving surface, the road shall be capped with a layer of clay material. The depth of the clay cap shall be a minimum of 0.3 meters. If the subgrade is to be surfaced, clay material should be avoided if possible and a granular subgrade should be constructed. Gravel shall be incorporated in the top 100 mm of the subgrade prior to traffic gravel being applied. Gravel incorporation shall be at a rate of 550 mt/mile. The gravel specification for incorporation is Type 31 Base.

8. Gravel surfacing for the subgrade required at the rate 550 mt/mile for the first application, 550 mt/mile for the year following construction, and additional applications as required. The required gravel specification for traffic gravel is Type 108 (minimum 50% fracture).
9. Alignment
Curves must be constructed with the proper super-elevation as per the Ministry of Highways and Infrastructure Standards.

Appendix 'G'

Main Farm Access Class B Road Standards

Description

The Main Farm Access Road Class B (MFA-B) is the former Alternative Main Farm Access Road standard. In accordance with this policy, Council, in their sole discretion, may apply the MFA-B standard where a new single parcel residential development or subdivision is located along an established gravel or seasonal road, generally where there are limiting factors in obtaining the required right-of-way to meet the Main Farm Access Class A (MFA-A) standard.

BASIC STANDARDS

Right-of-Way Width

Minimum width, all roads: 20 meters
Minimum width, cul-de-sacs and turnabouts: 60 meters with a 15 meter radius on the driving surface

The full width of right-of-way shall be cleared.

Finished Top Width

Minimum finished top width: 7 meters, 7.6 meters for curve (if applicable)

Backslope

Minimum backslope: 3:1

Side slope

Minimum side slope: 3:1
 Fills 2 to 3 meters: 7:6 top width
 Fills over 3 meters: 8:0 meter top width

Ditch Width

Minimum ditch width: 1.5 meters to 3.0 meters

Gradient

Maximum gradient: 9% (in unusual circumstances 11%)

Sight Stopping Distance (SSD)

Minimum SSD: 140 meters for 80 km/hr design

Curve Radius

Minimum curve radius: 250 meters

Clear vision at road intersection

A minimum of 140 meters is required from the point of intersection on municipal roads and grid intersections using an 80 km/hr design speed.

Snow Clearance

When shoulder grade elevation is 0.3 meters or less above natural surface at 15 to 20 meters from center line than the backslope must be flattened using a variable slope of 5:1 to a maximum of 3:1.

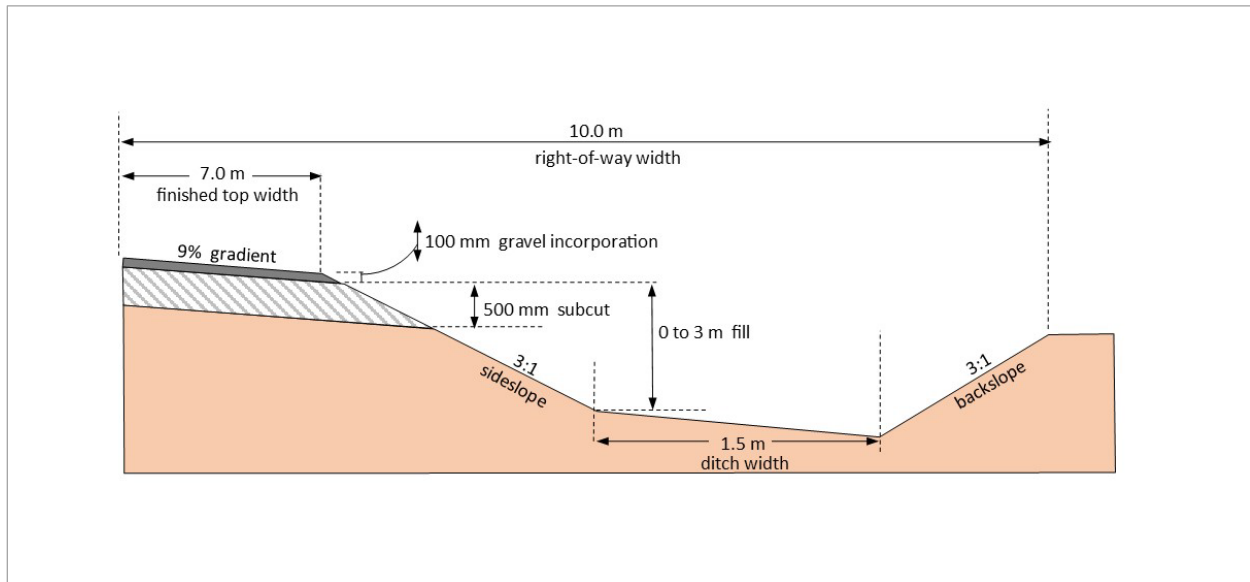


Figure 7. Minimum basic standards for a Main Farm Access Class B Road

REQUIRED CONSTRUCTION STANDARDS

1. Construction shall include the installation of all necessary drainage structures and construction of drainage ditches. Culverts should be designed for at least a Q^{25} flow, with a minimum culvert size of 500 mm diameter. Riprap only where necessary to avoid undue erosion. All culverts will be constructed of steel gauge 12. Compaction around culverts shall be to a density of 98% and utilize Type 108 gravel (minimum 50% fracture).
2. Construction shall include all road connections and approaches. See attached plan – Standard Approach.
3. The average shoulder elevation of the road surface to be approximately 0.5 meters above the adjacent ground surface, except in cuts.
4. Objectionable organic material shall be subcut where the fill of subgrade is less than 0.5 meters in depth for gravel surfaces and 0.6 meters for asphalt surfaces.
5. The subgrade surface shall not be less than 1.5 meters above high-water level on the ground water table (i.e. Level to which free water should rise in a hole sunk in the ground).
6. Road surface, side slopes, ditches, and backslopes shall be bladed smooth to conform to the typical cross-section.
7. Where necessary to provide a smooth, stable driving surface, the road shall be capped with a layer of clay material. The depth of the clay cap shall be a minimum of 0.3 meters. If the subgrade is to be surfaced, clay material should be avoided if possible and a granular subgrade should be constructed. Gravel shall be incorporated in the top 100 mm of the subgrade prior to traffic gravel being applied. Gravel incorporation shall be at a rate of 550 mt/mile. The gravel specification for incorporation is Type 31 Base.
8. Gravel surfacing for the subgrade required at the rate 550 mt/mile for the first application, 550 mt/mile for the year following construction, and additional applications as required. The required gravel specification for traffic gravel is Type 108 (minimum 50% fracture).

9. Alignment

Curves must be constructed with the proper super-elevation as per the Ministry of Highways and Infrastructure Standards.

Main Farm Access Class C Road Standards

Description

The Main Farm Access Road Class C (MFA-C) represents the historical road standard and will be used for classification purposes only. No roads may be constructed to this standard and any existing roads classified under this standard will be required to be upgraded in accordance with this policy.

BASIC STANDARDS

Right-of-way width: 20 meters

Finished top width: ≤ 7 meters

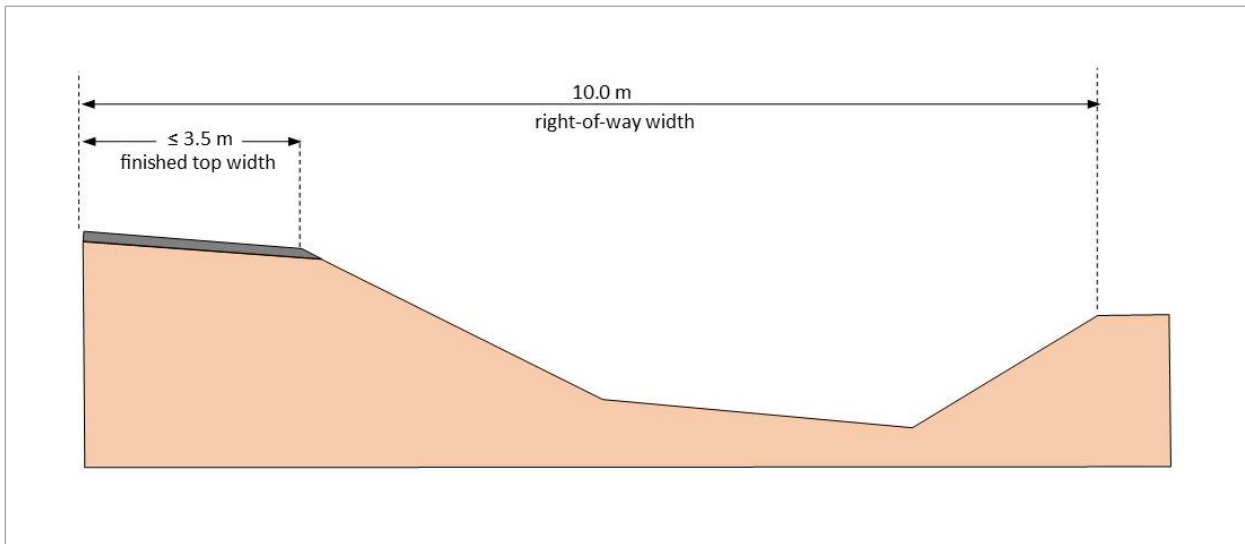


Figure 8. Minimum basic standards for a Main Farm Access Class C Road

Property Access Approach Standards

Description

A Property Access Approach is an improved surface that serves as a private crossing of a municipal right-of-way (i.e., ditch).

Approach Application and Approval

1. No person shall construct, relocate, or alter an approach without first obtaining written notice of approval from the RM of Lumsden No. 189.
2. Application
 - (a) A Property Access Approach Application Form and Site Plan showing the proposed location of a new approach or the location of an existing approach to be altered, relocated, or removed shall be submitted with a \$50.00 application fee to the Lumsden Municipal Office to obtain approval from the RM Department of Public Works.
 - (b) Applications shall be made by the landowner of the property accessed by the proposed approach, or by a person authorized by the landowner.
 - (c) Flags/stakes should be used to mark the proposed physical location of the approach in addition to the site plan submitted with the application.
 - (d) If after completion of a site inspection of the proposed approach the RM Department of Public Works is satisfied that the property access approach application complies with the standards and conditions outlined in this policy, written notice of approval will be provided by the RM. Written notice shall include the minimum required culvert size and any special conditions.
3. All approaches shall be constructed in conformance with all existing RM standards and conditions, and any applicable government regulations.
4. Construction of an approved approach shall be completed within six (6) months, unless granted an extension by the RM, as specified in a written notice. If not completed within six (6) months, the applicant may be required to submit a new application and fee.
5. The applicant or developer of the property access approach shall be responsible for locating any existing utilities within municipal rights-of-way prior to construction.
6. Any costs or inconvenience resulting from delays shall be borne by the applicant. If the approach is not constructed to the specified standards, or if the site is not cleaned up appropriately, Public Works may undertake the work to rectify the matter and invoice the landowner accordingly.

General Regulations

1. The approach shall be constructed with clean earth, such as clean granular/gravel/clay material. The material should be free of objectionable materials such as frozen soil, topsoil, trees and large boulders.
2. Slag is prohibited for the construction of an approach.

3. Approaches shall be constructed as set out in the Basic Standards below.
4. No approach shall be constructed in such a manner as to restrict sight lines or in any way adversely affect traffic safety.
5. All construction and all costs of construction are the responsibility of the applicant. This includes all materials, including the culvert, equipment rentals or purchases, labour costs or any other costs incurred to complete construction.
6. The approach shall be constructed with no resulting damage to the RM road, including the shoulder, surface, side slopes and ditches.
7. Approaches should have a minimum separation distance of 30 metres (100 feet) and align with existing approach(es) across from both sides of the municipal road where possible.
8. Approaches should be a minimum of 100 metres (328 feet) from the intersection of any municipal roads and highways.
9. Approaches should be aligned perpendicular with the road centreline unless otherwise determined by the RM Department of Public Works.
10. Multi-lot subdivision, at a density greater than two (2) residential sites per quarter section, may be required to develop an internal subdivision road to provide access at Council's discretion.

Maintenance

Maintenance of the approach shall be the responsibility of the landowner of the property to which the approach grants access.

BASIC STANDARDS

Minimum basic standards (Figure 9.) for property access approaches include:

- A 7.0 metre approach width
- A 0.3 metre cover
- A 5:1 side slopes

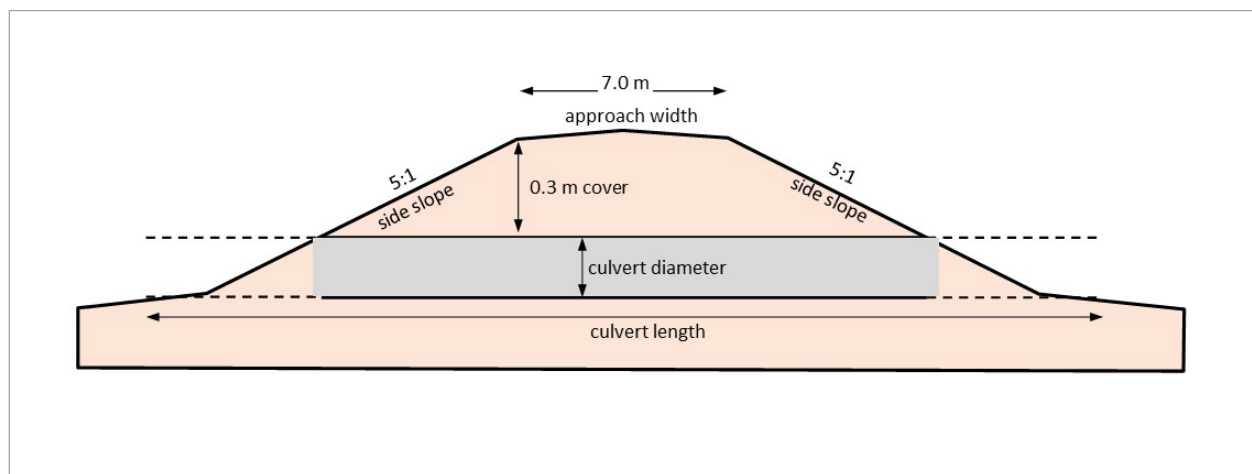


Figure 9. Minimum basic standards for a Property Access Approach

Approaches must include a culvert, the size of which varies with the amount of cover proposed. Culvert size shall be determined using the following standards:

Table 2. Culvert standards for amount of cover

Cover	Culvert Length	Culvert Diameter
0.3 m	12 m	400 mm
0.3 m	12 m	600 mm
0.4 m	12 m	500 mm
0.4 m	12 m	600 mm
0.6 m	13 m	500 mm
0.6 m	13 m	600 mm

Appendix 'J'

Gravel Incorporation Specifications

Description

The work will consist of traffic gravel uniformly mixed with the insitu material in the top of the subgrade.

Materials

The gravel will be supplied, hauled, and placed on the road by the Applicant.

The gravel will meet Type 31 Base of Type 108 (minimum 50% fracture) specifications, as required in Appendices A to H.

The gravel will be mixed with insitu material from the top of the subgrade.

A water source will be supplied by the developer.

REQUIRED CONSTRUCTION STANDARDS

1. The contractor may use any machine, combination of machines, or equipment that will result in gravel being uniformly mixed with the subgrade material in the top **100 millimeters** of the finished road top. The mixture of gravel and subgrade material shall be packed enough to produce a smooth firm surface that will support normal road traffic without rutting or becoming unstable.
2. The amount of gravel to be blended into the subgrade will be determined by the Road Construction Standards, Appendices A to H. the width and depth of subgrade material scarified or loosened up may also vary as designated by the Engineer, however, the width will normally be two (2) meters less than the subgrade road top width and the depth will be between 75 to 100 millimeters.
3. Adding water to the mixture will be directed by the Engineer if there is insufficient moisture to produce a stable driving surface.
4. All surplus rock (80 millimeters and larger) shall be removed from the surface and disposed of as directed by the municipality. All small rocks from thirty millimeters (30 mm) to eighty millimeters (80 mm) shall be bladed off the road top into the ditch or onto the side slope.
5. The subgrade of all RM roadways shall be compacted to a 100% density.