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Planning Advisory Committee Meeting Agenda
Thursday, September 24, 2026 – 7:00 p.m.
MODL Council Chambers, 10 Allee Champlain Drive, Cookville NS
In Person and Via Audio and Video Conference

- 1. Call To Order**
 - 1.1 Mi’kma’ki Territorial Acknowledgement
- 2. Review of Procedure for Public to Address the Committee – Chairperson (below)**
- 3. Approval of Agenda** (any other items to be added)
- 4. Approval of Minutes of Thursday July 23, 2026**
- 5. Business Arising from Minutes**
 - 5.1. Proposed Rezoning of PID 60631009 in Osprey Village Update
- 6. Planning Advisory Committee Matters**
 - 6.1. Private Road Design and Construction Standards..... 1-25
- 7. Heritage Advisory Committee Matters – Nil**
- 8. Added Items**
- 9. In Camera - Nil**
- 10. Next Meeting Date: Thursday, October 22, 2026**
- 11. Adjournment**

Procedure for Addressing the Committee

An opportunity will be provided to all citizens to address the Committee on each agenda item shown on this Agenda or added to the Agenda by the Committee. Individuals who wish to address the Committee are asked to note the following:

- On each matter on the Committee’s Agenda, the Chair will seek public comment upon the completion of staff’s presentation.
- Each person shall state their name.
- All statements and questions shall be directed to the Chairperson.
- Presentations shall be limited to 10 minutes. Persons wishing to address the Committee a second time will be given opportunity to do so once all others in attendance have had the opportunity to address the Committee. Persons addressing the Committee for a second time shall limit their presentations to 5 minutes.

Anyone wishing to address the Committee on a matter not included on this Agenda can have the matter added to the next meeting’s Agenda by contacting Jeff Merrill, Director of Planning, at 902-541-1340 or by email at planning@modl.ca



The Municipality of the District of Lunenburg

Request for Decision

Report to: Planning Advisory Committee

Submitted by: Jeff Merrill, LPP, MCIP Director of Planning & Development Services

Date: September 24, 2026

Re: Proposed Private Road Design and Construction Standards (Policy 85)

Recommendation

This report is presented to the Planning Advisory Committee for information, review, and feedback. No recommendation or motion is required at this time.

Background

Private designed roads were first enabled in 1975, with the intent of serving seasonal cottage developments. Over time, however, many cottage properties transitioned to year-round use, and the expectation of services on private roads evolved.

The regulatory framework for private designed roads has also evolved over the years. Between 1975 and 1993, private designed roads were permitted for cottage lot developments, with up to 10 lots being exempt from the road construction requirements. Construction of a private designed road was required upon the creation of the 11th lot. From 1993 to 1997, the provisions were expanded to apply regardless of whether occupancy was intended to be seasonal or permanent. During this period, up to six lots were exempt from the construction requirements, while the creation of a seventh lot triggered the requirement to construct a private designed road. In 1997, the regulations were amended to remove construction standards for private designed roads, meaning they were no longer required to be built.

In 2018, Council approved new private road design standards and reinstated the requirement that private roads be constructed in accordance with those standards.

Discussion

The current private road standards have raised concerns among developers regarding the cost of road construction as a significant upfront investment is required before lots can be sold. Since Council adopted the current standards in 2018, only one private road has been constructed.

Since 2018, some developers have pursued development through the bare-land condominium model, which does not require roads to be constructed to the same standard. This has limited the effectiveness of the current policy framework in achieving its intended objectives.

The proposed amendments are intended to ensure that private roads are constructed to a standard that supports safe and reliable access for emergency vehicles and other service providers, while also recognizing the economic realities of rural development. The amendments seek to balance public safety and infrastructure expectations with the cost of development.

A deferred construction option is being proposed to provide greater flexibility for phased developments. Under this approach, up to five lots may be created before construction of the private road is required. This would reduce the upfront costs associated with new developments while ensuring that the road is ultimately constructed to the approved standard as future phases proceed.

The proposed private road design and construction standards are contained within the attached Draft Policy 85 Road Design and Construction Standards on pages 1 to 6.

Summary of Proposed Private Road Design and Construction Standards are as follows:

- Private roads must be designed by a Professional Engineer licensed to practice in Nova Scotia.
- Construction of private roads must be inspected and certified by a Professional Engineer as meeting the approved design.
- Introduces a deferred construction option for multi-lot subdivisions containing more than six lots:
 - no more than five lots are approved prior to road construction;
 - the subdivision is developed in phases;
 - construction of the private road commences within five years; and
 - Phase 2 includes construction of the road to serve the previously approved lots.
- For phased developments utilizing deferred road construction:
 - all lots relying on the private road for access, including flag lots and access-exempt lots, count toward the five-lot maximum.

- The minimum private road right-of-way width is 15.2 metres, with additional width required where site conditions warrant as determined by the Design Engineer.
- The minimum road surface width is 6.1 metres, consisting of a 5.5-metre travelled surface and 0.3m shoulder rounding (on each side).
- Sets road alignment parameters, including design speed, maximum grades, sight distances, and requirements for intersections and turning areas.
- Road surfaces must be crowned (minimum of 3%) to direct drainage toward roadside ditches.
- Road structure and materials must be designed by a Professional Engineer to accommodate emergency vehicles and other anticipated traffic loads.
- Minimum erosion control and prevention measures shall be as per the Standard Specifications for Municipal Services or as per designed by the Design Engineer.
- Private roads must include stormwater management systems capable of handling at least a 1-in-10-year storm event.
- The Design Engineer shall ensure that the storm water drainage system does not negatively impact the receiving environment or create property damage.
- Detailed engineering drawings, geotechnical reports, and as-built drawings are required before final acceptance.

Strategic Communications

The draft private road standards policy is being presented to the Planning Advisory Committee (PAC) for review and feedback. A public information session is anticipated to be held in October 2026. Following public engagement, draft amendments to the Subdivision By-law are expected to be presented to the Planning Advisory Committee on October 22, 2026, for recommendation.

Work plan

- September 24, 2026 - Draft Policy 85 presented to PAC
- October 2026 - Public Information Session
- October 22, 2026 - Draft Policy and Subdivision By-law amendments presented to PAC
- November 10, 2026 - Council first reading of Subdivision By-law amendments
- December 8, 2026 - Public Hearing; approval of Subdivision By-law amendments and Policy 85.

Conclusion

The proposed amendments seek to balance public safety, infrastructure expectations, and development feasibility. The proposed Private Road Design and Construction Standards establish a clear framework for the design and construction of private roads, ensuring that roads are built to support access for emergency vehicles and other service providers while

providing flexibility for phased development. Feedback received from the Planning Advisory Committee and the public will help inform the final policy and related amendments to the Subdivision By-law before Council considers adoption.

Report Preparation	
Department	Planning & Development Services
Report Prepared by	Jeff Merrill, LPP, MCIP, Director
Report Approved by	
Date Reviewed by C.A.O.	

Municipality of the District of Lunenburg

Policy Details	
Name	Road Design and Construction Standards
Number	85
Legislative Authority	Municipal Government Act s. 211(1)(a) and 271(3)(g)
Effective Date	

This policy forms Schedule “H” and “H-1” of the Subdivision By-law.

PRIVATE ROAD DESIGN AND CONSTRUCTION STANDARDS

1.0 GENERAL

The Private Road Design and Construction Standards is intended to balance emergency vehicle access and road quality with the cost of construction of private roads.

1.1 In every case, roadway designs will be prepared by a qualified Professional Engineer licensed to practice in the Province of Nova Scotia and holding valid errors and omissions insurance.

1.2 For greater certainty, all Private Designed Roads shall be designed in accordance with this Schedule and the design drawings shall be prepared and certified by a qualified Professional Engineer licensed to practice in Nova Scotia. Construction of the Private Designed Road shall be inspected and certified as conforming to the approved design by a qualified Professional Engineer licensed to practice in Nova Scotia and retained by the Subdivider at their expense.

2.0 COMPLIANCE

2.1 This policy does not exempt any person from complying with the requirements of other laws or regulation (Federal, Provincial or Municipal) within the Municipality of the District of Lunenburg, or from obtaining any license, permit, permission, authority or approval required thereunder.

2.2 The following are the minimum road standards for all Private Designed Roads in the Municipality. Private Designed Roads shall be designed and constructed to the standard outlined in the following Schedule H.

2.3 Deferred Construction of Private Designed Roads

Where a proposed multi-lot subdivision contains more than six (6) lots and is served by a proposed Private Designed Road, the Subdivider may defer construction of the Private Designed Road provided that:

- (a) the proposed Private Designed Road has been designed in accordance with the requirements of Schedule H, and the design drawings have been prepared and certified by a qualified Professional Engineer licensed to practice in Nova Scotia;
- (b) no more than five (5) lots are approved prior to construction of the Private Designed Road;
- (c) the subdivision plan identifies the development as a phased development and provides for completion in a minimum of two phases;
- (d) Phase 2 of the development shall commence, with the commencement of construction of the private design road, within five (5) years of the approval of the initial subdivision plan;
- (e) for the purpose of clause (b), the first five (5) approved lots shall be located commencing at the intersection of the proposed Private Designed Road with the Public Road and proceeding sequentially along the proposed Private Designed Road;
- (f) for the purpose of determining the maximum of five (5) approved lots, all lots utilizing the proposed Private Designed Road for access shall be counted, including:
 - (i) lots with frontage on the proposed Private Designed Road;
 - (ii) flag lots; and
 - (iii) access exempt lots;but excluding lots that have direct frontage on and direct access to a Public Road.
- (g) Phase 2 of the development shall include construction of the Private Designed Road to serve the lots approved in Phase 1, in accordance with the approved design and the requirements of Schedule H.
- (h) Where Phase 2 has not commenced within five (5) years of approval of the initial subdivision plan, no additional lots shall be approved unless the Private Designed Road has been constructed in accordance with Schedule H.

2.4 Submitted drawings will include:

- (a) legal survey plans showing property boundaries, and proposed rights-of-way and easements;
- (b) topographic contour drawings, to minimum 1 m intervals, within the project area, and to minimum 2 m within the contributing drainage area outside the project area;
- (c) road and drainage design plans and profile drawings, with preferred metric scales at 1:100 or 1:250 – horizontal, and 1: 10 or 1: 25 – vertical, with each drawing stamped, signed and dated by the Professional Engineer responsible for its preparation; and
- (d) all other details of the roadway project design and construction to meet requirements.

Submitted drawings will be clearly drawn and annotated, to scale, and include a title block with appropriate project information and location, and professional engineer and subdivision applicant identification.

Drawing sets will be submitted electronic. In this Standard, regulatory dimensions are stated in metric.

3.0 REQUIREMENTS FOR CONFIRMATION UPON ROAD CONSTRUCTION COMPLETION

To approve a Private Designed Road for the creation and development of lots fronting a Private Designed Road, the Municipality of Lunenburg must be in receipt of confirmation from the Developer's consulting Engineer that the Designed Private Road has been constructed as per the design. The Developer's Consulting Engineer "Design Engineer" confirmation of construction shall include a summary report with certification along with complete Geotechnical Report and an As-built drawing package.

3.1 The Geotechnical report will include but is not limited to the following:

- a. Post Grubbing Inspection report.
- b. Proof roll results prior to placing gravels.
- c. Representative compaction tests on both Type 2 and Type 1 Gravels.

3.2 The As-Built drawings will include but are not limited to the following information:

- a. Center line Elevations
- b. Shoulder Elevations
- c. Center of Ditch Elevations
- d. Road widths along road length
- e. The grade of backslopes
- f. Vertical Curve Data
- g. Horizontal Curve Data
- h. All stormwater infrastructure
- i. Culvert locations
- j. Culvert lengths
- k. Culvert invert in and invert out elevations
- l. All Signage locations
- m. Utility pole locations

4.0 TECHICNAL REFERENCES

Unless specified otherwise in this Policy, a Private Road will be designed to comply with the requirements of the Geometric Design Guide for Canadian Roads (Transportation Association of Canada) for a design speed of 40 km/h and the NSRBA/CENS Standard Specifications for Municipal Services.

5.0 ALIGNMENT CONTROLS

5.1 PDR Alignment Parameters are:

Posted Speed Limit	30 km/h
Design Speed	40 km/h
Maximum Gradient	12%
Horizontal Curve Radius	60 m
Stopping Sight Distance	45 m
Vertical Sag. Curve k	7 m
Vertical Crest Curve k	4 m

5.2 Private Design Road Intersections with Public Roads

Private Design Roads shall have intersection angles at no less than 70 degrees and no greater than 110 degrees to existing Public Roads or Existing Private Designed Roads.

Roadway gradient adjustments for intersections with existing Public Roads shall be designed in accordance with the Geometric Design Guide for Canadian Roads.

New intersections shall be designed in accordance with the Geometric Design Guide for Canadian Roads.

5.3 Cul-de-sac and Turning Tee

Cul-de-Sacs or Turning Tees shall be placed at the end of all dead-end streets on Private Roads, and the geometric layout shall be as designed by the Design Engineer.

5.4 Road and Driveway Layout

Residential driveway access design shall conform to the recommendations contained in the Geometric Design Guide for Canadian Roads provided that where the road traffic will consist of a mix of residential, commercial and/or industrial traffic volumes, the Design Engineer may, at their sole discretion, specify other driveway design requirements.

6.0 CROSS-SECTION CONTROLS

6.1 Minimum right-of-way Width

The minimum right-of-way width for a Private Designed Road shall be 15.2 m, assuming maximum drainage ditch back slopes can be accommodated. Where the maximum drainage ditch back slopes cannot be accommodated within the 15.2 m, the right-of-way width shall be determined by the Design Engineer, at their sole discretion.

While the Private Designed Road and related infrastructure must be constructed within the designated right-of-way, the Private Designed Road does not necessarily have to be designed and constructed in the centre of the designated right-of-way.

6.2 Minimum Road Surface Width

The minimum road surface width for a Private Designed Road shall be 6.1 m consisting of 5.5 m compacted travel surface and 0.3 m (on each side) for rounding shoulders.

6.3 Guard Rails, Rock Slopes, Retaining Walls

The Design Engineer, at their sole discretion, shall determine whether guard rails or retaining walls are required to be placed on the Private Designed Road.

6.4 Roadway Surface Slope

The roadway surface is to be crowned in the centre, with a minimum of a 3% slope towards each drainage ditch provided that the Design Engineer, at their sole discretion, may determine that a greater crown slope is required.

7.0 ROADBED CONSTRUCTION

7.1 Base Course and Surface Course

The base course and surface course of a Private Designed Road shall be Designed by a Professional Engineer licensed to practice in Nova Scotia based on site-specific conditions as determined by the Design Engineer, at their sole discretion, provided that the specified design shall be sufficient to accommodate a Category 1 motor vehicle with an axle weight of 18,000 kg.

7.2 Erosion Control and Prevention

Minimum erosion control and prevention measures shall be as per the Standard Specifications for Municipal Services or as per designed by the Design Engineer.

8.0 STORM WATER DRAINAGE

8.1 General

All lands serviced by the proposed Private Designed Road system shall be serviced by a drainage system. The drainage system shall consist of open ditches and closed conduits as required to collect and remove stormwater from at least a one (1) in ten (10) storm event.

The type and placement of culverts, conduits and drainage ditches shall be designed by the Design Engineer provided that all ditches and conduits shall be placed in the road right-of-way or in a storm utility easement.

8.2 Hydrology and Hydraulic Design

The Design Engineer is responsible to determine what, if any, hydrology and hydraulic design calculations and design are required for the Private Designed Road.

8.3 Storm Water Disposal

The Design Engineer shall ensure that the storm water drainage system does not negatively impact the receiving environment or create property damage.

8.4 Construction Methods

Installation of culverts, conduits or ditches and related appurtenances shall be, at a minimum, as per the Standard Specifications for Municipal Services or as determined by the Design Engineer.

8.5 Road Names

All Private Designed Road names shall be subject to approval by the Civic Address Coordinator prior to final approval being given by the Development Officer.

8.6 Road Name Signage

All Private Design Roads are required to have road name signage placed on each road intersection.

MUNICIPAL ROAD DESIGN AND CONSTRUCTION STANDARDS

1.0 GENERAL

The following are the minimum road standards for proposed Public Roads in the Municipality. In every case, roadway designs will be prepared by a qualified Professional Engineer licensed to practice in the Province of Nova Scotia and holding valid errors and omissions insurance. All roadway design drawings will be subject to approval by the Municipal Engineer. No roadway will be considered a Public Road unless stamped engineered drawings, designed to standard, and related survey plans, are approved, and construction of the roadway is completed in accordance with such approved drawings.

Existing provincial public roadways transferred, by law, from the Province of Nova Scotia to the Municipality will not be subject to these road standards.

Requirements in excess of the minimum standards may be necessary for certain roadways, subject to the Municipal Engineer's discretion.

Submitted drawings will include:

- (a) legal survey plans showing property boundaries, and proposed rights-of-way and easements;
- (b) topographic contour drawings, to minimum 1 m intervals, within the project area, and to minimum 2 m within the contributing drainage area outside the project area;
- (c) road and drainage design plans and profile drawings, with preferred metric scales at 1:100 or 1:250 – horizontal, and 1: 10 or 1: 25 – vertical, with each drawing stamped, signed and dated by the Professional Engineer responsible for its preparation; and
- (d) all other details of structures, equipment and appurtenances, including manufacturer's and fabricator's shop drawings, and material and equipment test reports, necessary for the Municipal Engineer in their sole discretion to properly complete the review of the roadway project design and construction.

Submitted drawings will be clearly drawn and annotated, to scale, and include a title block with appropriate project information and location, and professional engineer and subdivision applicant identification. No drawing sheet in the drawing set will be larger than 1.0 m² (ANSI E size).

Drawing sets will be submitted in both paper form and electronic data, with electronic data in either the *.dwg, *.dxf or IGES file format, and will be on electronic data media that can be read by Municipality personal computer equipment.

In this Standard, regulatory dimensions are stated in metric. The use of metric (Système International – S.I.) units in engineering design submissions is required.

2.0 TECHNICAL REFERENCES

The following technical references are noted in these Standards:

- 2.1 “Geometric Design Guide for Canadian Roads”, June 2017, latest revision, issued by the Transportation Association of Canada.
- 2.2 “Manual of Uniform Traffic Control Devices for Canada”, January 2014, latest revision, issued by the Transportation Association of Canada.
- 2.3 “Standard Specifications for Municipal Services”, January 2017, Latest revision, issued by the Joint Committee on Contract Documents of the Nova Scotia Road Builders Association and the Nova Scotia Consulting Engineers Association.
- 2.4 “Nova Scotia Department of Transportation Metric Standard Specification Book”, February 1997, Latest revision, issued by the Nova Scotia Department of Transportation and Infrastructure Renewal.
- 2.5 “Guidelines for Residential Subdivision Street Design”, recommended practice, 1997, Institute of Transportation Engineers.
- 2.6 “Erosion and Sedimentation Control Handbook for Construction Sites”, 1988, Nova Scotia Department of Environment and Labour.
- 2.7 “Canadian Highway Bridge Design Code”, CAN/CSA-S6-00, latest revision.
- 2.8 “Urban Hydrology for Small Watersheds, TR-55”, Technical Release 55, June 1986, United States Department of Agriculture, Natural Resources Conservation Service.
- 2.9 “Standards for Concrete Pipe”, CAN/CSA-A257-Series-M92, latest revision.
- 2.10 “Thermoplastic Pressure Piping Compendium”, CAN/CSA-B137-Series-02, latest revision.
- 2.11 “Corrugated Steel Pipe Products”, CAN/CSA-G401-01, latest revision.
- 2.12 “Guide for Design of Pavement Structures”, AASHTO, latest revision.

3.0 ROAD CLASS DESIGNATION

Municipal Public Roads shall be designed and built according to one of the following road design classes:

- Urban Streets - Laneways, Urban Local Undivided (ULU)
- Rural Local Undivided Road (RLU)
- Rural Collector Undivided (RCU)

3.1 Urban Streets, Urban Local Undivided (ULU)

A developer may desire to build roads or streets that are more urban in nature. If the nature of the proposed development is to create a dense cluster of urban, centrally-serviced buildings and streets, then those Public Roads will be classified as Urban Local Undivided (ULU) and be expected to conform to Urban category standards issued by the Transportation Association of Canada (TAC).

3.2 Rural Local Undivided Road – RLU

Except where a Public Road is classed as Urban Local Undivided (ULU), Public Roads will be classed as Rural Local Undivided (RLU) roads where the AADT is forecast to be fewer than 600 vehicles per day.

3.3 Rural Collector Undivided Road – RCU

Except where a Public Road is classed as Urban Local Undivided (ULU), Public Roads will be classed as Rural Collector Undivided (RCU) roads where the AADT exceeds 600 vehicles or more per day. For RCU roads, special design requirements, specific to each case, if any, will be established, by the Municipal Engineer.

3.4 Average Annual Daily Traffic Estimation

At the Municipal Engineer's sole discretion, submission of road design trip generation calculations will be required in order to support the AADT forecast necessary to determine road classification. In any case, the Municipal Engineer will determine and approve the road classification.

3.5 Design Speed

Unless lower design speeds are specified by the Municipal Engineer, based upon the projected use of the roadway, minimum design speeds for road classes will be as follows:

RLU	50 km/hr
RCU	70 km/hr

4.0 ALIGNMENT CONTROLS

Alignments for roads classed as ULU shall be in accordance with the Urban category of the Geometric Design Guide for Canadian Roads.

Design controls for horizontal and vertical road alignment will be for the design speeds as per the assigned rural road classes in Subsection 3.6 of this schedule, and will be in accordance with the Geometric Design Guide for Canadian Roads or as indicated in Table 4.1, below. Note that for the ranges of design speed, there are corresponding ranges of geometric design criteria.

4.1 Road Alignment Parameters

Table 4.1 Road Alignment Parameters

	RLU	RCU
Posted Speed Limit	70-50 km/h	70 km/h
Design Speed Range	70-50 km/h	80-70 km/h
Max Gradient	10 %	8 %
Horizontal Curve radius	190-90 m (with design speed)	250-190 m (with design speed)
Stopping Sight Distance	110-65 m (with design speed)	140-110 m (with design speed)
Vertical Sag Curve, k	25-11 m (with design speed)	30-25 m (with design speed)
Vertical Crest curve, k	22-7 m (with design speed)	35-22 m (with design speed)
Passing Sight	490-350 m	550-490 m

4.2 Intersections with Existing Roads

4.2.1 Horizontal Approach

Roadway intersections with existing municipal roadways shall have intersection angles at no less than 70 degrees and no greater than 110 degrees to the existing municipal roadway.

Roadway intersections with existing provincial roadways shall be subject to the approval of the Nova Scotia Department of Transportation and Infrastructure Renewal.

4.2.2 Vertical Approach

Roadway gradient adjustments for intersections with existing municipal roadways shall be designed in accordance with the Geometric Design Guide for Canadian Roads.

Roadway intersections with existing provincial roadways shall be subject to the approval of the Nova Scotia Department of Transportation and Infrastructure Renewal.

4.3 Intersections for New Roads

New intersections shall be designed in accordance with the Geometric Design Guide for Canadian Roads.

4.4 Cul-de-Sac Design

Cul-de-sacs shall be placed at the end of all dead-end streets on Public Roads. The geometric layout shall be, at a minimum, as per attached drawing H – 1.

All culs-de-sacs shall be constructed to applicable minimum road standards.

4.5 Reserve Road Allowances

As required by this By-law, all subdivisions shall provide for a reserve road allowance for future extension of the public road to the boundaries of an adjacent lot or watercourse, at minimum intervals of 400 metres, as determined to be feasible at the sole discretion of the Municipal Engineer.

4.6 Road and Driveway Layout

Road layout design shall optimize use of materials and future maintenance without compromising safety, the surrounding natural environment, or the convenience of access to properties served by the road network. The Municipal Engineer will review submitted designs and assess the life-cycle economy provided by such designs. Generally, the Municipal Engineer will approve a road layout design that will result in optimal future maintenance costs and reduced environmental impact. Guidance in road layout design is available through several publications of the Transportation Association of Canada and the Institute of Transportation Engineers, including the documents referenced in Section 2 of this schedule.

Residential driveway access design shall conform to the recommendations contained in the “Guidelines for Residential Subdivision Street Design” and the “Geometric Design Guide for Canadian Roads”. Where the road traffic will consist of a mix of residential, commercial and/or industrial traffic volumes, the Municipal Engineer may, at their sole opinion, specify other driveway design requirements. Proposed and existing (if applicable) driveway locations shall be shown on the submitted plan drawings.

5.0 CROSS-SECTION CONTROLS

Cross-section controls refer to the cross-sectional geometry of the roadway. Except where varied in this Section, all Public Roads shall meet the cross-sectional geometry outlined in Schedule 'J' for the applicable road class, as determined by Section 3 of this Schedule.

5.1 Minimum Right-of-Way Width

The minimum right-of-way width for all municipal Public Roads, except public laneways in the ULU class of roads, shall be 20 m, assuming maximum drainage ditch back slopes can be accommodated. Where the maximum drainage ditch back slopes cannot be accommodated, the right-of-way width shall be determined by the Municipal Engineer at their sole discretion. The minimum right-of-way for public laneways in the ULU class of roads shall be the width of the road, as required by Schedule 'J', plus 3.6 m.

Where a road right-of-way was approved under a previous Subdivision By-law and is less than 20 metres wide and the road is a private road subject to a municipal takeover of ownership, the Municipal Engineer may specify special engineering criteria regarding the placement of the road and drainage infrastructure within the confined right-of-way, without requiring widening of the right-of-way to the standard width.

5.2 Guard Rails

Guard rails shall be placed where the drop from the road surface is greater than 3 m and the slope is less than 6:1 (H:V). If guard rails are placed, fill side slopes for RLU and RCU class may be reduced to 2:1. Where guard rails are placed, roadway width is to be increased by a minimum of 0.5 m, adjacent the guard rail. Guard rail installation shall be as per the Nova Scotia Department of Transportation and Infrastructure Renewal Standard Specification Book.

5.3 Rock Slopes

Back slopes in rock are maximum 1:4 for all road classes. Fill side slopes in rock are 1.5:1 with guard rail for all classes. Without guard rail, fill side slopes in rock are the same as for earth fill slopes as per road class.

5.4 Roadway Surface Slope

Generally, the roadway surface is to be crowned in the centre, with a 3% slope towards each drainage ditch, for gravel-surfaced roads, and a 2% slope towards each roadside drainage structure for asphalt concrete surfaced roads. Exceptions can occur where superelevations are required to accommodate turning radii or intersection alignment, or where hydraulic analysis indicates a greater crown slope is required.

5.5 Design for Wide-Turning Vehicles

Where it is expected that wide-turning vehicles (trucks) may be occasionally encountered on the road, adjustments to roadway width, particularly at turns, may be required, in conformance with the Geometric Design Guide for Canadian Roads.

5.6 Retaining Walls

Other than undisturbed, or otherwise stable, naturally-occurring rock faces, all exposed vertical cuts of soil in the road right-of-way shall be stabilized and prevented from failure by a retaining wall of sufficient height and strength where a cut slope conforming to the requirements of Schedule 'J' is uneconomic. The design and the construction inspection of retaining walls will be prepared by and directed through a Professional Engineer, licensed in the province of Nova Scotia, and competent in the field of geotechnical engineering. The design will be subject to the review and approval of the Municipal Engineer, at their sole discretion.

6.0 ROADBED CONSTRUCTION

6.1 Earthwork, Grubbing, Excavation, Compacted Fills, Retaining Structures

Preparation of road sub-grade and related works shall be as per the Standard Specifications for Municipal Services. The Municipal Engineer may request geotechnical test reports regarding the bearing capacity of the in'situ subgrade material, as well as other relevant geotechnical information, at the Engineer's sole discretion.

6.2 Base Gravel Course

The base gravel course of all Public Roads shall consist of Type 2 material placed and compacted to approved grade, as per the Standard Specifications for Municipal Services. The material shall meet the specification of the Nova Scotia Department of Transportation and Infrastructure Renewal, as per the Standard Specification Manual, and shall meet the sulphide content limits of the Sulphide-Bearing Material Disposal Regulations of Nova Scotia Environment.

The minimum thickness of the base gravel course of Public Roads shall be as outlined in Schedule 'J' for the applicable road class, as determined by Section 3 of this Schedule. The required thickness of the base course may be reduced at the discretion of the Municipal Engineer where a site-specific road bed design has been provided by a Professional Engineer licensed to practice in Nova Scotia.

6.3 Surface Course

The surface course of all Public Roads shall consist of Type 1 or Type 1S material and/or asphalt. Type 1 and Type 1S material, where used, shall be compacted to approved grade and shall meet the specification of the Nova Scotia Department of Transportation and Infrastructure Renewal, as per the Standard Specification Manual, and shall meet the sulphide content limits of the Sulphide-Bearing Material Disposal Regulations of Nova Scotia Environment. Asphalt material and construction specification shall be as per the Nova Scotia Department of Transportation and Infrastructure Renewal Standard Specification Book, and the Standard Specifications for Municipal Services.

The minimum thickness of the surface course of Public Roads shall be as outlined in Schedule 'J' for the applicable road class, as determined by Section 3 of this Schedule. The required thickness of the surface course may be reduced at the discretion of the Municipal Engineer where a site-specific road bed design has been provided by a Professional Engineer licensed to practice in Nova Scotia.

6.4 Erosion Control and Prevention

Minimum erosion control and prevention measures shall be as per the Standard Specifications for Municipal Services, and the Erosion and Sedimentation Control Handbook for Construction Sites, latest edition, or as per an approved design drawing submitted as part of the design, and sealed by a Professional Engineer licensed to Practice in the Province of Nova Scotia.

6.5 Municipal Public Road Inspections and Approval of Construction

Municipal Public Road inspections shall occur, at a minimum, by appointment:

- i) prior to construction;
- ii) after clearing and grubbing;
- iii) during placement of drainage culverts and structures;
- iv) after placement of base gravel;
- v) after placement of surface gravel; and,
- vi) during placement of asphalt concrete pavement (where required).

Municipal inspections are not a substitute for the proponent's on-going quality control of the construction of the roadway. All proponents of roadway development and construction will require continuous, independent quality control inspection of the construction of the proposed works under the direct supervision of a named professional engineer, licensed to practice in the Province of Nova Scotia, and competent in the field of civil engineering.

Municipal Engineer's approval shall be given only for construction in accordance with approved plans.

Prior to Municipal acceptance and takeover of the road the Municipal Engineer must be in receipt of and have approved a certification by the design engineer, and their geotechnical

and materials engineering consultants, stating that the road was constructed to the approved design and standards of this by-law, or as modified in writing by the Municipal Engineer. No final approval of the constructed works will be given unless complete record drawings and satisfactory test results, at identified points of inspection have been submitted to and approved by, the Municipal Engineer.

7.0 STORM WATER DRAINAGE

General

All lands serviced by the proposed roadway system shall be serviced by a drainage system. This shall consist of such open ditches and closed conduits as required to collect and remove storm water from at least a 1 in 5 year storm event for urban areas and urban class roads and streets that have storm sewers; a one in 10 year storm event for RLU class roads; and at least a 1 in 100 year storm event for RCU class roads. The Municipal Engineer may specify a greater return period storm event where infrastructure and/or property are at greater risk of damage due to flooding, or due to the critical service nature of the affected infrastructure and/or property. Rainfall intensity curves to be used for specified return periods will be based on the most recent Environment Canada trending data available for Shearwater, Nova Scotia, adjusted for local meteorological conditions. The Culvert Sizing program sponsored by Nova Scotia Environment is not an acceptable substitute for this engineering work, and is not applicable to any culvert sizing in the Municipality. Only a Professional Engineer shall size culverts under a Public Road.

All ditches and conduits shall be placed in the municipal road right-of-way or in a storm utility easement, identified as such in the submitted plans. Storm utility easements are to be a minimum of 9.144 m, unless otherwise approved by the Municipal Engineer. In any case, easements must be of sufficient width to permit safe and efficient public works maintenance operations within the easement.

7.2 Nova Scotia Environment Approval; Other Agency Approvals

Design and construction of all storm water drainage systems shall comply with the Storm Drainage Works Approval issued by Nova Scotia Environment. No construction shall take place unless such approval is received in compliance with the Activities Designation Regulations of Nova Scotia Environment.

Depending on the nature of the works proposed, approvals may also be required from other public agencies and public and private utilities, including, but not limited, to the Nova Scotia Department of Transportation and Infrastructure Renewal, the Nova Scotia Department of Natural Resources, Fisheries and Oceans Canada, the Canadian Coast Guard (Navigable Waters Protection Act section), Nova Scotia Power Inc., applicable telecommunications companies and other municipal units. The obtention of these approvals is the responsibility of the subdivision applicant. No construction will take place unless all necessary approvals have been received.

7.3 Acceptable Drainage Structures

The type and placement of culverts, conduits and drainage ditches shall be clearly shown on all engineering drawings. Acceptable culvert and conduit materials include concrete Class III pipe to CAN/CSA-A257 Series-M92, PVC and HDPE pipe, complete with smooth interior surface and ribbed exterior, to CAN/CSA-B137 Series-02. Other culvert and conduit structures may be acceptable pending Municipal Engineer's approval of their appropriate structural and hydraulic characteristics, and their life-cycle economic maintenance.

7.4 Structural Design

All culvert and conduit structures shall be of sufficient design and strength to resist soil, hydraulic, earthquake, temperature, traffic, and other loads reasonably expected to be imposed upon them.

Structural design calculations and drawings shall be submitted for the Municipal Engineer's approval for all drainage structures spanning in excess of 1.5 m at their greatest cross-sectional extent (i.e. distance between supports or maximum distance between structure sidewalls). Such calculations and drawings shall be prepared by a Professional Engineer, licensed in the Province of Nova Scotia, and competent in the field of structural engineering. A geotechnical report regarding the soil conditions in the location of the proposed drainage structure(s) shall be submitted upon request of the Municipal Engineer. Such geotechnical report shall be prepared by a Professional Engineer, licensed in the Province of Nova Scotia, and competent in the field of geotechnical engineering.

Drainage structures with a span greater than 2.5 m and subject to traffic or pedestrian loading shall be designed and constructed in accordance with the Canadian Highway Bridge Design Code, CAN/CSA – S6-00. Such design and construction inspection and supervision shall be prepared by and directed through a Professional Engineer, licensed in the Province of Nova Scotia, and competent in the field of structural engineering.

7.5 Hydrology and Hydraulic Design

Hydraulic calculations may be based on the Rational Method, where the contributing drainage area for the designed drainage system is estimated to be 40 hectares or less, or storm water detention is not required. Otherwise, flow calculations must be developed from storm water management modeling using TR-55 hydrologic methods, or another equivalent method recognized in civil engineering practice. Empirical methods such as that used by the Nova Scotia Environment Culvert Sizing protocols are not acceptable.

Hydraulic calculations and designs shall include complete topographical information regarding structure inverts, crowns, head water and tail water elevations and, where applicable, backwater elevations, throughout the proposed system.

All drainage culverts, conduits and other structures shall be constructed with headwalls and tail walls of approved design, and of stable and durable material, including stone,

concrete, pressure-treated wood cribbing, and pre-manufactured plastic and metal assemblies. Where appropriate, security screening at culvert openings may be specified at the sole discretion the Municipal Engineer.

All culverts and drainage structures with a span greater than 1.5 m shall include bevelled edge entries, smooth inlet transition and smooth interior surface throughout the flow length.

Hydraulic calculations and designs shall be prepared by, and the construction inspection of structures directed through, a Professional Engineer, licensed in the Province of Nova Scotia, and competent in the field of civil engineering.

Hydraulic calculations shall be submitted for review and approval by the Municipal Engineer.

7.6 Watercourse Alterations, Detention Pond Design and Storm Water Disposal

All necessary watercourse alteration permits and approvals required from Nova Scotia Environment, and all other relevant agencies and departments, shall be obtained prior to construction and presented to the Municipal Engineer.

All detention pond designs shall clearly state the pond dimensions, the volume of water retained during the specified return storm period, the minimum freeboard available at the specified return storm period, the location of the outfall, the anticipated flow and impact on the receiving watercourse, and the security features of the structure to prevent unauthorized access.

All storm water drainage systems shall drain to a public watercourse with flow and water quality in compliance with the approval issued by Nova Scotia Environment.

No storm water drainage system shall be acceptable to the Municipal Engineer where, in their sole opinion the disposal location of collected storm water negatively impacts the receiving environment or can create property damage.

7.7 Construction Methods

Installation of culverts, conduits and ditches, and related appurtenances shall be, at a minimum, as per the Standard Specifications for Municipal Services. Other requirements shall be as determined at the sole discretion of the Municipal Engineer.

7.8 Stormwater Management

Wherever possible, roadside ditches shall be vegetated and designed to capture, treat, and infiltrate stormwater runoff as it moves downstream.

8.0 ROAD SIGNAGE

All road signage, signals and markings shall be in accordance with the Manual of Uniform Traffic Control Devices for Canada manual and the Nova Scotia Traffic Signs Regulations. All road signage shall be placed in the right-of-way, subject to approval by the Municipal Engineer. Signage shall not be placed in the municipal right-of-way without the prior approval of the Municipal Engineer.

8.1 Stop Signs

Stop signs shall be placed within 5 m of all intersections, at the minor leg approaches. Intersections with equal traffic for all approaches may be designated as a four way stop, subject to approval by the Municipal Engineer.

8.2 Traffic Signals

If traffic volumes indicate electrified traffic signals are necessary, a traffic signal warrant shall be submitted for approval by the Municipal Engineer.

8.3 Road Names

All Municipal Public Road names shall be subject to approval by the Civic Address Coordinator prior to final approval being given by the Development Officer.

8.4 Road Name Signage

All Public Roads are required to have road name signage placed on each road intersection.

8.5 Other Road Signage

Other directional, speed rating and cautionary signage shall be placed in the right-of-way, as warranted, in the sole discretion of the Municipal Engineer. Information or advertising signage shall only be placed in the right-of-way with the approval of the Municipal Engineer, and only to such specifications, and terms and conditions, as directed.

8.6 Signage Material

8.6.1 Signs

Signs shall be made of plate or extruded anodized aluminum, with high-intensity grade reflective vinyl markings. Signage shall be securely fixed to posts.

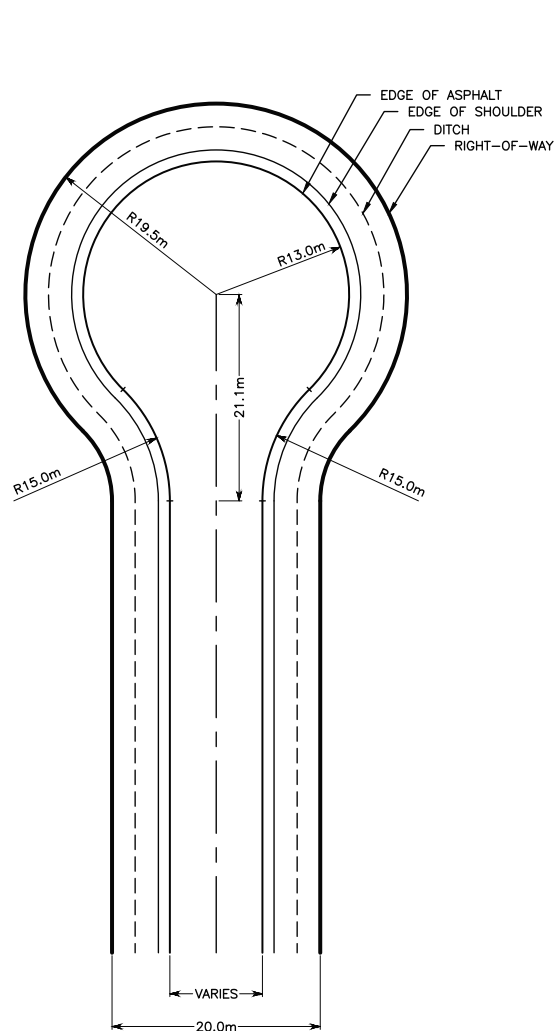
Street name signs shall generally consist of all the letters of the primary street name, with the letters made from 100 mm black vinyl marking stock, applied to extruded aluminum plate covered with white, high-intensity grade reflective vinyl material. All letters shall be capitalized.

Other highway signage shall generally be made from highway sign grade aluminum plate with high-intensity vinyl reflective markings. The minimum size of signs shall conform to the Uniform Traffic Control Devices for Canada manual, and the Nova Scotia Traffic Signs Regulations.

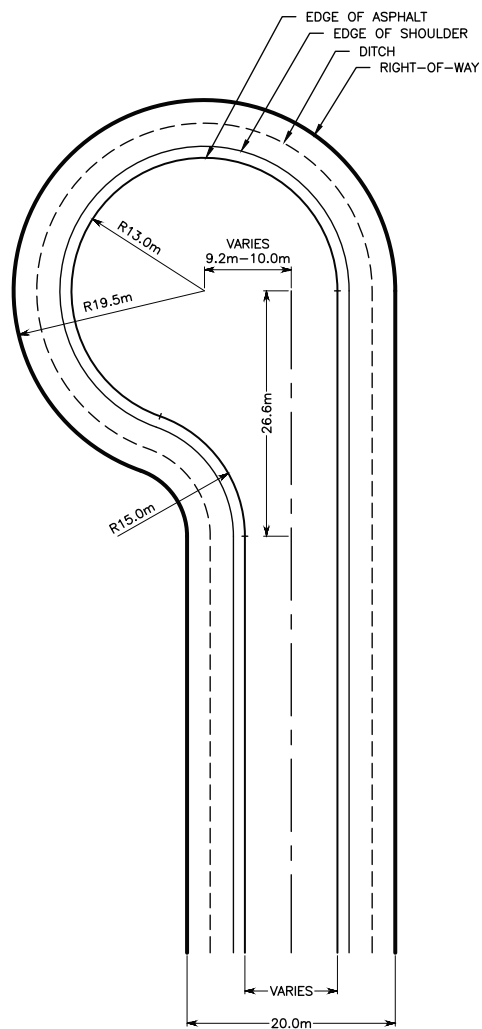
8.6.2 Posts

Generally, roadside marking posts shall be of galvanized, perforated steel, of nominal 51 mm X 51 mm members; including galvanized steel post anchors and sleeves. Posts shall be placed a minimum of 600 mm in firm ground and in all cases will be designed and constructed to securely hold all signs and signals upright, and resist loading due to wind, snow, temperature and other environmental factors. All sign anchors and fasteners will be of galvanized steel or anodized aluminum.

There will be special structural requirements for sign assemblies that have an exposed sign area of greater than 0.675 m², with approval of the assembly design and construction subject to approval by the Municipal Engineer.



7
J SYMMETRICAL CUL-DE-SAC
SCALE: N.T.S.



8
J OFFSET CUL-DE-SAC
SCALE: N.T.S.

DRAWING H-1

Policy Adoption	
Date of Original Passage	
Date of Notice of Intent to Amend/Repeal/Consider	
Date of Council Approval	
Date of Effective Date (if different from approval date)	
I certify that this Policy XXX was adopted by Municipal Council as indicated above.	
Signature of Municipal Clerk	Date

Version	Amendment Description	Effective Date
Original V1	<<<Policy # and name>>>	<<date>>
V2	<<short description of amendments)	<<date>>