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SECTION 1**GENERAL CONDITIONS****1.1 SCOPE**

This manual of Engineering Standards and Specifications has been compiled to reflect the minimum requirements for the design and construction of municipal works and services within the Town of Ladysmith. The manual is intended to provide information to Developers, Contractors and Consultants. These standards may be required to be exceeded based on site conditions. In all cases, good engineering judgment must prevail.

These standards are intended to provide information related to design and construction only; requirements related to development approval processes are not covered by this manual.

1.2 DEFINITIONS

In the specifications, unless the context otherwise requires, the following definitions shall apply:

"Consulting Engineer" or "Consultant" shall mean that Professional Engineer, retained by the Developer to be responsible for design, preparation of drawings and specifications, contract administration, inspection, as-built records and any other engineering services required in connection with the provision of municipal works and services. The Consulting Engineer shall be registered in the Province of British Columbia and possess the appropriate qualifications and experience to provide the required professional services.

"Contractor" shall mean any person or company, including sub-contractors, which shall undertake the installation of municipal works and services on behalf of either the Developer or the Municipality.

"Developer" means a person applying for the approval of a subdivision, whether as the owner of the property proposed to be subdivided or as the agent authorized in writing by the owner.

"Developer/Contractor" shall mean either the Developer or Contractor as may apply, depending upon the particular project.

"Engineer" means the Director of Operations of the Town appointed by Council and such other person as may be appointed by the Engineer to act on his or her behalf.

"Municipal" or "Municipality" shall refer to the Town of Ladysmith.

"Municipal right-of-way" shall refer to any road or easement right-of-way, statutory right-of-way, laneway or other right-of-way registered in the name of the Municipality.

"Other Utilities" shall mean those utilities located in Municipal rights-of-way that are owned and operated by other jurisdictions. These utilities shall include hydro, telephone, cablevision and gas.

1.3 WORKS AND SERVICES TO BE PROVIDED

Works and services shall be provided as required by all applicable bylaws and Council policies.

1.4 ENGINEERING

The Developer shall retain a Consulting Engineer who shall be responsible for design, preparation of drawings and specifications, contract administration, inspection, testing, as-built records and any other engineering services required in connection with the provision of municipal works and services for a project. Where necessary, other Professional Engineers shall be retained to provide specialized engineering services.

1.5 DESIGN APPROVAL

Design approval must be obtained from the Engineer prior to any construction. Construction may not commence until design drawings stamped "Approved for Construction:" signed by the Engineer, have been returned to the Consulting Engineer by the Municipality.

It is also the Developer's responsibility to obtain the approval of any other authority having jurisdiction over any aspect of a project prior to submitting for construction approval.

1.6 DESIGN CHANGES

If the Consulting Engineer or Contractor wishes to make a change in the design either before or during the execution of the work, a written request, including prints of the proposed revisions, shall be submitted by the Consulting Engineer to the Engineer for review. Installation of the works shall not proceed unless approval has been granted.

1.7 LEGAL BOUNDARIES

Before commencing the works, all existing legal boundaries shall be clearly staked. It is the Developer's/Contractor's responsibility to maintain legal stakes, monuments and pins and to replace those removed or damaged during construction.

1.8 PERMITS, NOTICES, LAWS AND REGULATIONS

The Developer/Contractor shall obtain and pay for all necessary permits or licenses required for the execution of the work. The Developer/Contractor shall give all necessary notices and pay all fees required by law and comply with all laws, ordinance, rules and regulations relating to the work and to the preservation of public health and safety.

1.9 SAFETY

The Developer/Contractor shall be responsible for the safety of all workmen and equipment on the project in accordance with all applicable safety legislation passed by federal, provincial and local authorities governing construction safety. The attention of the Developer, Contractor and Consulting Engineer is specifically directed to the safety regulations of the Workers compensation Board. No approval will be given to installations, which cannot be inspected because of unsafe working conditions. The Contractor shall be registered under the Workers' Compensation Act and the Contractor and the Contractor's employees shall be entitled to the benefits thereof. Before the start of a project, a Notice of Project shall be forwarded to the local Workers' Compensation Board office.

1.10 MUNICIPAL UTILITY CONNECTIONS

Connections to existing Municipal utilities shall be by Municipal forces at the Developer's expense, unless otherwise permitted by the Engineer. Payment of the estimated charge is required prior to installation, with final charges based on actual cost. No work will be scheduled prior to receipt of payment. Work schedule will be subject to availability of labour, equipment and materials.

1.11 CONTRACTOR'S QUALIFICATIONS

The required works and services must be installed by a contractor qualified to carry out the particular type of work required. The Engineer may request the contractor's previous experience on similar projects and reserves the right to disqualify a contractor should the contractor be unqualified.

1.12 CONSTRUCTION SITE

Sites under development shall be signed or barricaded to identify them as private property until final approval and acceptance by the Municipality.

1.13 CONSTRUCTION PERMIT

Prior to undertaking any construction in an existing Municipal right-of-way, the Contractor shall obtain a Construction permit from the Municipality.

1.14 TRAFFIC CONTROL

Certified traffic control personnel and approved signage shall be provided for construction taking place in municipal rights-of-way. The Municipality and all local emergency services (Police, Ambulances, Fire Departments, etc.) must be notified and advised of proposed construction, and any anticipated lane closures, detour routes, etc., 24 hours in advance.

1.15 OPERATION OF NEW WORKS

Underground services shall not be permitted to operate as part of the existing Municipal system until the works have been approved and accepted by the Engineer in writing.

1.16 OPERATION OF MUNICIPAL WORKS

Unless otherwise approved, municipal works shall be operated by Municipal personnel only. The Contractor shall not be permitted to operate or alter any portion of any existing Municipal system without the written consent of the Engineer.

1.17 DAMAGE TO MUNICIPAL WORKS

Any damage to Municipal works must be reported immediately, with all repairs to be performed by or under the supervision of Municipal personnel or at the Developer's/Contractor's expense. The Developer/Contractor shall also be responsible for maintaining all Municipal roads and utilities in a clean and acceptable condition as determined by the Engineer. Any costs incurred by the Municipality will be charges to the Developer/Contractor.

1.18 STOPPAGE OF WORK

The Engineer has authority to stop the progress of the work whenever in his opinion such stoppage may be necessary to ensure the protection of public safety, public utilities, or private property. This includes authority to make such changes and to order, assess and award the cost of such work extra to the Developer/Contractor or otherwise as may in his opinion be necessary.

1.19 INSPECTION

General and sufficient resident inspection shall be provided by the Consulting Engineer to ensure that the works and services are constructed in accordance with the approved design drawings. Sufficient inspection shall range from a minimum of one site visit per day during construction to full time resident inspection for major developments. The Consulting Engineer shall submit copies of his daily inspection reports to the Engineer. At least 24 hours advance notice shall be given to the Engineer prior to the start of construction and subsequent stages, i.e. start of watermain installation, start of sewer installation, start of curb installation etc., and prior to the testing of roadworks, underground municipal utilities and street lighting. A series of Inspection Checklists have been included in Appendixes "A" and "B". These checklists shall serve as a general guide as to the extent and standard of inspection expected by the Municipality.

1.20 FINAL INSPECTION

Prior to requesting a final inspection of the works and services by the Municipality, the Consulting Engineer and Contractor shall carry out a thorough review of the project to identify and remedy any deficiencies. The Inspection Checklists contained in Appendixes "A" and "B" shall be used as references. The Consulting Engineer shall also thoroughly review as-built record information and make any changes necessary.

Upon request for a final inspection, the Consulting Engineer shall submit the following:

- (a) Two copies of the as-built drawings.
- (b) A copy of the draft legal plan and confirmation that the legal pins have been installed.

- (c) Copies of all test results
- (d) Video inspection reports.
- (e) Completed copies of the Final Inspection Checklist.

Following receipt and review of the above noted information, a final inspection shall be carried out with the Consulting Engineer, Contractor and Engineer in attendance. The Consultant shall provide the Contractor and Engineer with a written summary of the final inspection, listing any deficiencies and the proposed course of action.

1.21 **AS-BUILT RECORDS**

The Consulting Engineer shall be responsible for the preparation of as-built records as detailed in Section 2. Certified, reproducible as-built drawings and service cards shall be submitted to the Municipality within four weeks of completion of the project and prior to final approval of the works.

1.22 **SURVEY MONUMENTS**

Integrated survey monuments shall be installed in new developments at the time of construction. Proposed monument locations shall be submitted for approval and installed as detailed in Section 2.16.

1.23 **RECTIFICATION, REPAIR AND MAINTENANCE**

The Developer shall be responsible for and at his own expense execute all work, repair, alteration, reconstruction or replacement required to remedy any defect, fault or deficiency in or developing in the completed work during construction and also during a minimum period, herein referred to as the "maintenance period", of one year after the date of approval of all the works by the Approving Officer. The Developer shall also be responsible for the design and construction of additional works and services as may be required to remedy faults that arise during the maintenance period. Extension of the maintenance period may be required by the Approving Officer where maintenance items or concerns are still outstanding after the one-year period.

All such works of rectification, repair and maintenance shall, during the maintenance period, be executed as the need for them becomes apparent or upon the written request of the Municipal Engineer. Should the Developer neglect or fail to commence the execution of such works within a space of seven (7) days from the date of written request for their performance, the Municipality shall be entitled to obtain the remedy using the maintenance security. Work, which is deemed to be in need of urgent repair, will be performed by the Municipality at a cost to the Developer.

All work shall be carried out by a qualified contractor and a Consulting Engineer shall provide design and inspection services.

1.24 **FINAL APPROVAL OF WORKS**

Prior to requesting final approval and acceptance of the works the Consulting Engineer shall ensure that the

following has been submitted to the Municipality:

- (a) Two sets of certified, as-built drawings and one reproducible set.
- (b) Service cards.
- (c) Letter of Certification (Appendix D).
- (d) Copies of test results.
- (e) Copies of any geotechnical or other engineering reports.
- (f) Video inspection reports.
- (g) Final inspection summary (see section 1.20).
- (h) Certification of Streetlight Installation (Appendix E).
- (i) Municipal Works Statistics Summary (Appendix F).
- (j) List of any works that are proposed to be bonded.
- (k) Any cost estimates that are required to determine bonding amounts.
- (l) Proposed maintenance bond amount.
- (m) Copies of any legal plans and documents including statutory rights-of-way, easements, covenants and other legal agreements.
- (n) Confirmation of final approval from other agencies as may be required.

Final approval of the works will not be considered until all required information has been received and reviewed.

1.25 **ENGINEER'S DECISION**

The Engineer shall decide on questions relating to the interpretation of these standards and specifications, and the performance of the work, and his decision shall be final.

Variances from these standards and specifications are permitted at the discretion of the Engineer.