

THE CITY OF YELLOWKNIFE

NORTHWEST TERRITORIES



BUILDING BY-LAW NO. 5058

Adopted May 30, 2022

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CITY OF YELLOWKNIFE

BY-LAW NO. 5058

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A BY-LAW of the Council of the Municipal Corporation of the City of Yellowknife in the Northwest Territories, to administer and regulate the construction, alteration, repair and demolition of buildings, structures, systems, excavations, and occupancy of structures pursuant to the relevant provisions of the *Cities, Towns and Villages Act*, S.N.W.T., 2003, c.22 as amended from time to time.

PURSUANT TO:

- (1) Sections 70, 71, 72, 73 and 75 of the *Cities, Towns and Villages Act* S.N.W.T. 2003, c.22, as amended; and
- (2) Due notice to the public, provision for inspection of this by-law and due opportunity for objections thereto to be heard, considered and determined;

NOW, THEREFORE, THE COUNCIL OF THE MUNICIPAL CORPORATION OF THE CITY OF YELLOWKNIFE, in regular sessions duly assembled, enacts as follows:

PART 1 – ADMINISTRATIVE REQUIREMENTS

SHORT TITLE

1. This By-law may be cited as the “Building By-law” and, as cited, includes future amendments unless specified otherwise.

INTERPRETATION

2. Unless otherwise defined in this By-law, the terms used in this By-law shall have the meanings as prescribed in the National Building Code.
3. In this By-law the following words, whenever used, shall mean:

“Accessory Building”	means a subordinate building or a structure located on the same lot or combination of lots under the same ownership as the principal building, which does not include a building or a structure used for human habitation;
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“Addition”	means an increase in building area, floor area, building height, or the number of structure storeys;
“Agent”	means a person who contracts with an owner for work under this By-law and has submitted an authorized agent form in the prescribed form with the permit application;
“Alteration”	means design, demolition, removal, reconstruction, and replacement that occurs within the existing building area, including any change in occupancy of the existing building;
“ASRAE”	means The American Society of Heating, Refrigeration and Air-Conditioning Engineers;
“Applicant”	means the owner or agent who makes a formal application for a permit under this By-Law;
“Building Services Division”	means the Building Services Division of the Department of Planning and Development of the City of Yellowknife;
“CASA”	means Canadian Automatic Sprinkler Association;
“Certified HVAC Designer”	means an individual recognized by the ASRAE. or the H.R.I.A. as a certified designer of the HVAC system for Part 9 buildings and who is an active member in good standing with the ASRAE. or H.R.I.A.;
“Certified Sprinkler System Designer”	means an individual recognized by the N.F.P.A. or the CASA as a certified designer of sprinkler systems, and who is an active member in good standing with the N.F.P.A. or the CASA;
“City”	means the Municipal Corporation of the City of Yellowknife, in the Northwest Territories;
“City Manager”	means the City Manager for the City appointed pursuant to the <i>Cities, Towns and Villages Act</i> , or their designate;
“C.W.B.S.P.”	means an individual recognized by the N.F.P.A. as a Certified Water-Based Systems and who is an active member and who in good standing with the N.F.P.A.;

“Construction Value”	means the total value of the work for which a permit is issued and shall include: <ol style="list-style-type: none">(1) value of labour supplied by the applicant based upon the current market costs of similar work;(2) the cost of materials; and(3) any other direct costs associated with the work;
“Constructor(s)”	means any person who performs work to which this By-law applies and may include an Owner or their Agent;
“Council”	means the Council of the City;
“E.R.S.”	means the EnerGuide Rating System, a national system developed by Natural Resources Canada to rate the energy performance of houses. Energy Management Specialists must be registered and in good standing with Natural Resources Canada following the EnerGuide Rating System Administrative Procedures and must adhere to the technical standards and procedures of the E.R.S. These standards and practices are available through Natural Resources Canada and include program requirements for energy modelling using the E.R.S.;
“Existing Building”	means a lawfully constructed and completed building or a part of the building, which has been in existence for at least five years.
“H.R.I.A.”	means the Heating, Refrigeration and Air-Conditioning Institute of Canada;
“Infrastructure”	means water mains, sewer mains, telephone lines, cable television lines, or similar facilities to provide utilities to a building;
“Inspection”	means a review of work performed by the Inspector or an RDP to determine the compliance of a Constructor's work with this By-law;
“Inspection Report”	means a written confirmation of the inspection to determine the compliance of construction with this By-law;

“Inspector”	an individual occupying one of the following positions within the Building Services Division: <ul style="list-style-type: none">(1) Manager, Building Services Division; and(2) An Inspector within the Building Services Division;
“Manufactured Building”	means a modular home, a manufactured home, or a manufactured building built in a manufacturing plant and transported to its point of installation;
“Mid-Construction”	means the stage of work at which installation of the major components of the air barrier system has been substantially completed and the building can be tested for airtightness and before interior finishes are installed;
“Minor Addition”	means an addition to an existing Part 9 building that increases the building’s floor surface area by not more than 10%. Minor additions must meet the energy efficiency requirements in the N.B.C.;
“Multi-Family Dwelling”	means a building or buildings containing more than two self-contained dwelling units;
“N.B.C.”	means as adopted from time to time by Council, the edition of the National Building Code of Canada, including amendments and errata's to the adopted edition;
“N.F.P.A.”	means National Fire Protection Association;
“Normalized Leakage Area (NLA)”	means the ratio of the equivalent leakage area at 10 pascals (ELA@10 Pa) to the area of the building envelope, where the area of the building envelope is defined as all floors, walls (including doors and windows) and ceilings (flat or sloping) that are correspondingly below, above and adjacent to unheated spaces and spaces heated to less than 10 °C (50 °F), and are based on interior dimensions; expressed in cm ² /m ² (sq.in./sq.ft.);
“Occupancy Certificate”	means a certificate issued by the Building Services Division to the applicant on the prescribed form for the occupancy and use of the work when all life safety equipment and devices are installed, functioning, have been tested

approved, the work meets the requirements of this By-law, and the work has achieved substantial completion;

“Officer” means an individual who is appointed in accordance with the *Cities, Towns and Villages Act* as a by-law officer to enforce the by-laws of the City and any Peace Officer who is entitled by law to enforce the by-laws of the City;

“Permit” means authorization in the prescribed form by an Inspector to perform work regulated by this By-law;

“Person” means an individual or a corporation, includes a partnership, society, association or a group of persons acting in concert;

“Prescribed Form” means a form to be followed as set out by the City Manager or their designate;

“RDP” means a Registered Design Professional who is an:

- (1) an engineer who is a member or licensee of the Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories in good standing and duly entitled to engage in the practice of engineering in the Northwest Territories; or
- (2) an architect who is a member or licensee of the Northwest Territories Association of Architects in good standing and duly entitled to engage in the practice of architecture in the Northwest Territories;

“Substantial Completion” means when work regulated by this By-law or designated portion thereof is sufficiently complete, and the work can be occupied or utilized for its intended purpose and substantially complies with the requirements set out in the permit, as determined by an Inspector;

“Temporary Building” means an accessory building used for a short term nature which the duration shall not exceed the time period and conditions specified in an approved development permit.

“Trucked Service System” means the part of the mechanical system that is a sewage holding tank and the water cistern (water holding tank),

including the drain and fill connections and any plumbing installed on the exterior of the building.

“Work”

means any design, construction, and occupancy of all new buildings, and the alteration, repair, demolition, remodel, reconstruction, relocation and change in occupancy for all existing buildings, structures and excavations.

APPLICATION

CODES AND STANDARDS

4. Subject to section 7, the 2020 National Building Code (N.B.C.) is adopted in its entirety and incorporated into this By-law.
5. The National Energy Code of Canada for Buildings 2020 (N.E.C.B.) is adopted in its entirety and incorporated into this By-law.
6. The EnerGuide Rating System Technical Procedures Version 15 is adopted in its entirety and incorporated into this By-law.
7. Notwithstanding Section 4, the N.B.C. is modified for the City as set out in this By-law.

REFERENCE AND SCOPE OF THIS BY-LAW

8. Unless the context requires otherwise, a reference to this By-law includes a reference to Part 1, Part 2, and all Schedules attached to this By-law. A reference within Part 1, Part 2 or the Schedules, not explicitly directed otherwise, is a reference within the context of the Part or Schedule where the reference is found.
9. This By-law applies to any work, as prescribed in the N.B.C. and as prescribed in the requirements outlined in this By-law.
10. It is not contemplated nor intended, nor does the purpose of this By-law extend:
 - (1) to the protection of applicant and owner from economic loss;
 - (2) to the assumption that the City or any Inspector is responsible for ensuring the compliance by any Owner, his agent or any employees, constructors or RDP's retained by the owner, with the N.B.C., and the requirements of this By-law or the obligation to meet all requirements under all City by-laws, and Territorial and Federal legislation or regulations;
 - (3) to providing any person a warranty of design or workmanship concerning any work for which a permit is issued under this By-law; or
 - (4) to provide a warranty or assurance that work undertaken according to the permits issued by the City is free from latent or any defects.

11. When a structure is damaged by fire or other cause, the requirements of this By-law and any other requirements under all City by-laws, and Territorial and Federal legislation or regulations are applicable to the work necessary to reconstruct the damaged portions of the structure.
12. When an unsafe condition exists in or about a structure, the requirements of this By-law and any other requirements under all City by-laws, and Territorial and Federal legislation or regulations applicable to the work the applicant shall immediately take all necessary actions to correct the unsafe condition.
13. In consultation with the Building Services Division, Council may make planning and policy decisions respecting the level of allocation of resources to the Buildings Services Division, which may affect the operational performance of the division, concerning the frequency of and extent to which inspections are made under this By-law. In making such planning and policy decisions, Council may consider social and economic factors, including the resources available to it and the various demands made upon those resources by the residents of the City.
14. This By-law shall be administered and enforced by the Building Services Division.

15. **Paramountcy:**

If there is any inconsistency between this By-law and the N.B.C., to the extent this By-law exceeds the N.B.C., this By-law shall prevail to the extent of the conflict.

16. **Severability:**

Each provision of this By-law is independent of all other conditions. If a court of competent jurisdiction declares any provision invalid for any reason. In that case, all other provisions of this By-law shall remain valid and enforceable, and the By-law shall be interpreted as such.

EXEMPTION TO THE REQUIREMENTS OF THIS BY-LAW

17. Subject to the discretion of the Inspector this By-law does not apply to:
 - (1) infrastructure, except that portion lying within one (1) metre of a structure;
 - a. notwithstanding 17(1) water and sewer services connections to the mains require a permit as outlined in the Water and Sewer Services By-law, as amended,
 - (2) temporary field office, otherwise known as temporary buildings used directly for the purpose of facilitating work on active work sites and shall be removed by the applicant immediately upon completion of the work;
 - (3) accessory buildings – 10 square meters or less;
 - (4) landscaping works provided that excavation or placing of fill does not exceed 600 mm over the original existing grade;

- (5) residential decks, patios and retaining walls provided that the distance between the top of the platform and the adjacent finished grade does not exceed 600 mm; and
 - (6) a mechanical permit is not required when a valve, faucet, fixture or service water heater is repaired or replaced with similar equipment, a blockage cleared or a leak repaired, where no change to the piping is required.
18. This By-law does not apply to any lawful permit applications received by the Building Services Division before the effective date of this By-law.

PERMITS AND OCCUPANCY

19. Subject to sections 17 and 18, a permit is required whenever the work regulated by this By-law is to be undertaken. It is an offence under this By-law to commence work prior to a permit being issued. Additional permits may be required if determined necessary by an Inspector to comply with this By-law.
20. Neither the issuance of a permit under this By-law nor the acceptance or review of plans, specifications or supporting documents, nor any inspections made by or on behalf of the City shall in any way:
- (1) relieve the applicant from complete and sole responsibility to perform the work in strict compliance with this By-law and the obligation to meet all requirements under all City by-laws, and Territorial and Federal legislation and regulations; and
 - (2) constitute a representation, warranty, assurance or statement that this By-law or all requirements under all City By-laws, and Territorial and Federal legislation and regulations have been complied with.
21. No person shall:
- (1) unless authorized in writing by an Inspector, reverse, alter, deface, cover, remove or in any way tamper with any notice, order, permit or certificate affixed to the work, or posted on the property according to this By-law;
 - (2) do any work that is substantially at variance with the accepted design plans of a building for which a permit has been issued, unless that variance has been accepted in writing by an Inspector;
 - (3) knowingly submit false or misleading information to an Inspector concerning any permit application or work undertaken according to this By-law;
 - (4) contravene the conditions of any permit issued or any order or notice an Inspector gives; or
 - (5) refuse entry, obstruct, or interfere with an Inspector or Officer on property in the administration of this By-law.

22. All work shall comply with the requirements of this By-law, the N.B.C., all City by-laws, and Territorial and Federal legislation and regulations.
- (1) Refusal – Building Services Division may refuse to issue any permit:
 - a. whenever information submitted is incorrect or inadequate to determine compliance with the provisions of this By-law;
 - b. where the effective date of an approved development permit has not been reached, where required by the Zoning By-law, as amended; or
 - c. that would authorize any work or occupancy that this By-law or any other by-law would not permit.
 - (2) Issue permit – When an Inspector has received a completed application in the prescribed form and is satisfied the work described in the application meets the requirements of this By-law, and the applicant has paid the City the permit fee, the Inspector shall issue a permit to the applicant.
 - (3) Conditions – The Inspector may impose such conditions on the permit as the Inspector deems necessary to ensure compliance with this By-law. Work performed under a permit must meet all the requirements stated on the permit as well as any direction issued by the Inspector.
 - (4) Partial permit – An Inspector may issue a permit for a portion of the work before the plans and specifications for the entire work have been accepted, provided the application demonstrates that the portion of the work complies with this By-law, as determined by an Inspector, and the applicable permit fee has been paid. Where a permit is issued for a portion of the work, the applicant may proceed with the approved work according to the partial permit at their own risk.
 - (5) Restore site – Where only a foundation is constructed, and a permit is not subsequently issued, or a permit has expired without the rest of the work commencing, the applicant shall restore the site to a safe and clean condition within 60 days of being served an order by the City.
 - (6) Expired permits – Every permit is issued on the condition that the permit shall expire, and the applicant's rights under the permit may terminate if work has not been completed within two years of the date the permit was issued.
 - (7) Permit extension – The applicant may request in writing to Building Services an extension to the expiry date of a permit where work has been discontinued or slowed due to:
 - a. adverse weather;
 - b. strikes;
 - c. material strikes;
 - d. material or labour shortages; or

e. similar hardship beyond the applicant's control.

(8) Revoking a permit – An Inspector may revoke a permit upon written notice to the applicant where:

- a. there is an infringement of any condition under which the permit was issued;
- b. the permit was issued in error; or
- c. the permit was issued based on incorrect or false information.

23. Permit Applications:

- (1) The applicant shall submit an application using the City's online application software to obtain a permit. If the applicant is an agent, the application shall include an authorized agent form.
- (2) To obtain a permit, the application shall contain the legal description of the land on which the work is to be done and a description in detail of the work to be performed, including the occupancy classification to be covered by the permit. An applicant shall provide any other information required by the Inspector in order to confirm the work is compliant with this By-law.
- (3) Site plans shall reference an up-to-date survey showing all structures and locations on site.
- (4) An Inspector may require the involvement of an RDP for professional plans with letters of assurance and any other supporting documentation, as needed if the work involves Part 3, 4, 5 or 6 of the N.B.C. or as required by this By-law. This information shall be provided in digital format.
- (5) Demolition Permits – No permit shall be issued, and no person shall demolish and remove any work, unless a permit has been issued and all municipal taxes and utility levies are paid on the property on which the work is located.
- (6) Revisions – Where an applicant requests a modification to an application or documentation submitted, an Inspector may require any or all of the information previously submitted to be resubmitted for review.
- (7) Permit Abandoned – A permit is considered to be abandoned, and the information may be destroyed, if the work sits idle for 180 days.

24. Occupancy:

- (1) Occupancy Certificate – When the applicant determines the work is substantially complete and ready for occupancy, but before any occupancy takes place, the applicant shall apply to the Building Services Division for an occupancy certificate.
- (2) No person shall occupy the work or part of the work unless an occupancy certificate has been issued.
- (3) An occupancy certificate shall not be issued unless:

- a. all required letters of assurance have been submitted in accordance with this By-law;
 - b. all life safety equipment is functioning and has been successfully tested, inspected, and the reports prepared by the RDP have been submitted to the Inspector; and
 - c. the work can be used for its intended purpose.
- (4) The Inspector may issue an occupancy certificate for a portion of the work if that part of the work is self-contained, provided with essential services, and the requirements set out in this By-law have been met concerning that part of the work.
- (5) Notwithstanding section 24(3), an Inspector may issue an occupancy certificate if the work is substantially complete and can be used for its intended purpose, as determined by the Inspector. If an occupancy application is incomplete, the applicant shall pay a refundable deposit plus the administration fee before the Inspector issues the occupancy permit. The deposit less the administration fee will be returned to the applicant if the required documentation is submitted within 90 days of the occupancy permit's date. If the documents are not received within 90 days, the deposit will be forfeited to the City.

INSPECTIONS

25. Notification – The applicant shall request inspections as outlined on the permit after each stage of work is completed or as otherwise required by an Inspector. An Inspector may inspect work subject to a permit under this By-law at any time during the work.
26. Inspection and inspection report – The Inspector shall schedule an inspection within two business days of the applicant's request. Inspections shall be conducted during regular business hours or as agreed with the applicant. The Inspector shall provide an inspection report to the applicant within two business days of the inspection. The applicant shall not cover any work subject to an inspection until an Inspector has inspected and accepted the work.
27. Direction of Inspector:
- (1) An Inspector may give direction in the form of an inspection report to the applicant during the course of the work.
 - (2) Following a direction, the Inspector may perform a re-inspection or may require further testing to demonstrate compliance with the By-law.
 - (3) Direction to proceed shall be given by the Inspector when satisfied the work is compliant with this By-law.
28. Posting:
- Except as authorized by an Inspector in writing, no person shall alter, cover or remove a permit, notice, order or decision posted at the work.

RESPONSIBILITIES

29. Applicant:

- (1) It is the full and sole responsibility of the applicant to carry out the work in respect of which the permit was issued in compliance with this By-law and the applicant shall:
 - a. provide the Inspector with written notice in advance of any change in, or termination of, any of the following during the work:
 - i. a constructor,
 - ii. an RDP performing any function required under a permit or this By-law,
 - iii. any change in ownership of the property or change in the address of the owner that occurs before the issuance of an occupancy certificate for the work, or
 - iv. intent to occupy any part of the work if it is to be occupied in stages;
 - b. ensure that:
 - i. the document submissions for which a permit is issued are available at the work site for an Inspector,
 - ii. there are no deviations from the submissions forming a part of the permit without written approval from an Inspector,
 - iii. no unsafe condition shall be permitted at the work,
 - iv. the permit and civic address is posted conspicuously at the work site during construction,
 - v. the Inspector is permitted to enter any work at any reasonable time with notice to administer and enforce this By-law,
 - vi. all required permits are issued before commencing the work,
 - vii. tests, inspections, and field reviews necessary to verify compliance with this By-law are completed, and
 - viii. as soon as practicable, submit a copy of all required tests, inspections and field review reports to the Inspector;
 - c. not conceal any work subject to inspection until the work has been inspected and approved by an Inspector;
 - d. call for an inspection before concealing any stage of the work, as required in section 25, when the inspection is required by the Inspector or identified in the permit;
 - e. be solely responsible for the cost of repair of any damage to public property or municipal works that may occur due to undertaking the work, whether or not a permit is required;
 - f. ensure that no occupancy occurs before obtaining an occupancy certificate for the

work from an Inspector;

- g. ensure that where an applicant discontinues the work, including for reasons of bankruptcy or insolvency, the applicant shall ensure that no unsafe condition remains at the construction site;
- h. ensure that no work commences without an approved building permit being issued; and
- i. shall provide an up-to-date Real Property Report to the Building Services Division prior to occupancy being issued.

30. RDPs (Registered Design Professional):

- (1) Where an Inspector determines that the proposed work requires specialized knowledge, an Inspector may require the involvement of RDPs for the proposed work and:
 - a. plans and related documents are prepared, signed and sealed by RDPs with letters of assurance and any other supporting documentation as required by the Inspector; and
 - b. field reviews are performed by RDPs or their designate as directed and submitted to the Inspector.
- (2) An RDP who designs the work or part thereof shall:
 - a. ensure the design complies with this By-law;
 - b. coordinate, with the applicant and an Inspector, the review and acceptance of any changes to the design and specifications that have occurred after the permit was issued; and
 - c. provide all required letters of assurance to the Inspector.
- (3) An RDP or their designate who undertakes a field review of the work shall inspect the work at intervals appropriate to determine general compliance with the design and permit.
- (4) Letter of Assurance and Field Reviews:
 - a. where letters of assurance have been provided, an Inspector may rely solely on the letters of assurance as confirmation the design and work comply with the permit and this By-law.
 - b. notwithstanding Section 30(4)(a), an Inspector may attend the work from time to time to complete an inspection and provide any direction deemed necessary.

31. Inspectors:

- (1) In the administration of this By-law, an Inspector may:
 - a. exercise the powers of an Inspector as set out in this By-law;
 - b. give written directions, decisions and issue orders to the applicant regarding compliance with this By-law and require the correction of any work that has been done

in contravention of this By-law; and

- c. enter on any land or work at any reasonable time to ascertain whether the terms of this By-law are being observed, except where a structure is occupied, in which case such entry shall be in accordance with section 37 of this By-law.

32. Qualifications:

- (1) An Inspector certified, licensed or qualified to perform some or all of the functions of a building official under the legislation of another province or territory may perform plan reviews and inspections within the City of Yellowknife as listed below, including, or in addition to, the duties assigned to their position upon being employed with the City of Yellowknife as an Inspector:
 - a. Class 1 – covers one and two-unit dwellings;
 - b. Class 2 – covers any structure that falls under Part 9 of the N.B.C., including Class 1; and
 - c. Class 3 – covers all structures under the N.B.C., including Classes 1 and 2.

33. Identification:

- (1) Each Inspector shall carry identification establishing their position as an Inspector, which shall be produced on request.

34. Exclusions of Liability:

- (1) No proceeding may be commenced in any court against the Manager of Building Services Division or an Inspector for anything done or omitted in good faith by them in exercising their powers or carrying out their duties under this By-law.

35. City:

- (1) The City may take measures it considers necessary to protect the public, including:
 - a. when any work or part thereof is in an unsafe condition and when due notice to correct such condition has not been complied with, the City may at the applicant's expense:
 - i. demolish, remove or make safe such work or part thereof, and
 - ii. take such other measures it considers necessary to protect the public.
 - b. when immediate measures must be taken to avoid imminent danger of fire or risk of accident, the City may take such action as is appropriate, without notice, and at the applicant's expense.

ENFORCEMENT

36. Enforcement:

- (1) In the administration of this By-law, an Inspector may enforce the provisions of this By-law and, where necessary, involve an Officer. For ensuring compliance with this By-law, an Inspector may request assistance from an Officer to, at any reasonable time:
 - a. enter the work;
 - b. enter in or on an adjoining structure, premises or property necessary for conducting inspections or investigations;
 - c. be accompanied into the work and assisted by a person who has special or expert knowledge on any matter to which this By-law relates;
 - d. require the production of any document or thing that the Inspector considers relevant to inspections or investigations;
 - e. conduct any test, make any inquiry and take any sample, measurement, photograph or video recording that the Inspector considers necessary; and
 - f. require the applicant to take and supply such tests and samples at their expense as the Inspector considers necessary.

37. Entry of the Work:

- (1) Notwithstanding section 36, an Inspector shall not enter the occupied part of a structure except:
 - a. with the consent of the occupant;
 - b. where the Inspector has reasonable grounds to believe that exigent circumstances exist;
 - c. with 24-hour notice to the property owner; or
 - d. unless there is an imminent and serious danger to public health or safety which requires the City to take any action or measure necessary to eliminate the danger.

ORDERS

38. An Inspector may order an applicant or a person who contravenes this By-law to comply with its provisions within a period of time specified in the order. If the applicant or person does not comply with the order within the specified time, the City may take a specified action or measure at the expense of the applicant or person subject to the order.

(1) Types of orders:

- a. Order to "Uncover Work"

An Inspector may, for an inspection, order that the work be uncovered, if:

- i. the work has been carried out without a permit being issued,
- ii. the Inspector observes work has been covered without an inspection being completed, or
- iii. the Inspector has reasonable grounds to believe that the work has not been constructed in compliance with this By-law or the permit conditions.

b. Order to "Stop-Work"

- i. The owner of the property on which a stop-work order has been posted, and every other person, shall cease all work immediately and shall not do any work until all applicable provisions of this By-law have been complied with to the satisfaction of the Inspector and the Inspector has rescinded the stop-work order in writing.
- ii. If a stop-work order is issued or posted, no person shall perform any act in respect of the work for which the stop-work order is made other than:
 1. such work as is necessary to carry out any other order of the Inspector made according to this section; or
 2. such work as is required to make the work safe.

c. Order of "Unsafe Condition"

- i. Where an Inspector determines the work is in an unsafe condition because of non-compliance with the By-law, faulty work, dilapidation, unsoundness of structural strength, open or unguarded condition, abandonment or any other reason, an Inspector may issue an unsafe condition order. The Inspector may order the work to be repaired, demolished, or any other action that the Inspector considers necessary to eliminate the unsafe condition. Any costs incurred to stop an unsafe condition are the sole responsibility of the applicant or other person to whom the order was issued.

d. Order to "Do Not Occupy"

- i. Where an applicant or a person occupies the work or part of the work in contravention of this By-law, an Inspector may post visibly on the work a do not occupy order in the prescribed form.
- ii. The owner of the property on which a do not occupy order has been posted, and every other person, shall cease occupancy immediately. No other occupancy shall be permitted until all applicable provisions of this By-law have been substantially complied with and the Inspector has rescinded the order.

e. Order for "Removal of Unauthorized Encroachment"

- i. An Inspector may order the removal of any unauthorized encroachment onto the property line.

- f. Order for "Removal of Structure"

- i. An Inspector may order the removal of any structure constructed in contravention of this By-law.

39. Content of Orders:

- (1) An order made under this By-law shall be on the form prescribed by the City Manager.

40. Posting Orders:

- (1) The Inspector shall post a copy of the order at the work, and no person, except as authorized in writing by the Inspector, shall remove or alter an order.

- (2) The order is effective when posted.

41. Service of Orders:

- (1) An order shall be served personally on:

- a. the applicant; or
- b. on such other persons affected by the order as the Inspector considers appropriate.

42. Effect of Order:

- (1) If an Inspector issues an order, no person shall contravene any aspect of the order except:

- a. work necessary to carry out the order or make the work safe as permitted by this By-law; or
- b. work authorized by the Inspector in writing.

43. Responsibility for Cost of Complying with an Order:

- (1) The applicant is responsible for the costs of complying with an order made under this By-law, including any costs arising out of satisfying an Inspector that the order has been complied with.

44. Review of Order:

- (1) The applicant or person who receives a written order may request Council review the order.

- (2) A request for review made under this section must:

- a. be in writing;

- b. include the fee required in the Fees and Charges By-law, as amended;
 - c. include the following information:
 - i. the reasons for the review and the relief sought;
 - ii. a summary of any facts relevant to the review; and
 - iii. the contact information of the person requesting the review.
 - d. be delivered to the City Clerk within 14 days after the order is received; and
 - e. be heard by Council at a regular or special Council meeting within 21 days from the date the City Clerk receives the request for review.
- (3) When reviewing the order, Council may confirm, vary, replace or cancel the order. Council's decision may not contravene the N.B.C.;
- (4) Council shall serve a copy of its decision on the applicant or person requesting the review within 14 days after making the decision.
- (5) Where Council, the City Manager, Director of Planning and Development, or such other person as may be authorized to take action under this By-law believes that there is imminent danger to public health or safety, they may:
- a. shorten the period of time specified in the order; or
 - b. initiate action to remedy and eliminate the danger before the review is heard by Council.

OFFENCES AND PENALTIES

45. Any person who contravenes a provision of this By-law is guilty of an offence and is liable upon Summary Conviction to a fine not exceeding:
- (1) Two thousand (\$2,000.00) dollars for an individual;
 - (2) Ten thousand (\$10,000.00) dollars for a corporation; and
 - (3) Imprisonment for a period not exceeding six months, in default of payment of a fine.
46. General Offences:
- (1) Every person who does any of the following is guilty of an offence:
 - a. knowingly provides false or misleading information in any application or any statement required under this By-law;
 - b. fails to comply with any order, direction, or other requirement made under this By-law; or
 - c. contravenes any provision of this By-law.
 - (2) Any offence created under this By-law shall be considered to be a strict liability offence.

- (3) An officer may issue a Summary Offence Ticket Information in the prescribed form by the *Summary Conviction Procedures Act* to any person who violates any provision of this By-law. Such a person may, in lieu of prosecution, pay the City the Voluntary Penalty set out in **Schedule A** Offences and Penalties.
- (4) In the case of an offence that is continuing, a contravention constitutes a separate offence in respect of each day, or part of a day, on which it continues, and a person guilty of such an offence is liable to a fine in an amount not less than that established by this By-law for each such day.
- (5) Whenever there are fines, fees or charges payable under this By-law and more than one owner of the property to which they apply, each shall be jointly and severally liable for their payment.

FEES AND CHARGES

47. Permit Fees – A permit fee calculated following the Fees and Charges By-law, as amended, shall be paid in full before issuing any permit under this By-law.
48. Where a building permit fee depends on the construction value, an Inspector may use the current market value to validate the application's declared value.
49. Refund – Where an applicant makes a written request to have a permit application cancelled, the applicant is entitled to a refund of the permit fee paid, except:
 - (1) the amount of the permit fee refunded shall exclude the administration fee included in each permit fee paid as described in section 47;
 - (2) if the permit has been issued, but no work has begun, one-half the fee will be refunded; and
 - (3) no refund shall be made where work has begun or an inspection has been completed.
50. Re-Inspection Fee – Where work fails an inspection due to non-compliance with this By-law, or an inspection is requested, and the work is not at a stage ready for inspection, a re-inspection charge may apply, at the discretion of the Manager of Building Services as set out in the Fees and Charges By-law, as amended.
51. Double fees – At the discretion of the Manager of Building Services, permit fees may be doubled whenever any work occurs before a permit is issued, and additional fines may be applied per **Schedule A** – Offences and Penalties, except where the work is required in emergency circumstances and is authorized by the City.

SCHEDULES

52. The following Schedules are attached to and form part of this By-law:

- | | | |
|-----|------------|---------------------------|
| (1) | Schedule A | OFFENCES and PENALTIES |
| (2) | Schedule B | CONCRETE PIERS |
| (3) | Schedule C | ENERGY Part 9 RESIDENTIAL |
| (4) | Schedule D | ENERGY Part 3 RESIDENTIAL |
| (5) | Schedule E | RETAINING WALLS |

PART 2 – LOCAL CONSTRUCTION REQUIREMENTS

APPLICATION

53. Part 2 outlines the local construction requirements in addition to the requirements in the N.B.C.

FOUNDATIONS

54. Continuous concrete foundation directly pinned to bedrock for a Part 9 building may be approved without requiring an RDP and subject to the following requirements:

- (1) 20 mm rebar dowels at a maximum of 1200 mm on centre or 15 mm rebar dowels at a maximum of 900 mm On centre dowels shall be grouted a minimum of 300 mm into the bedrock and extended a minimum of 300 mm above the bedrock;
- (2) 10 mm rebar secured to each dowel extending vertically to within 150 mm of the top of the concrete wall;
- (3) 10 mm horizontal rebar spaced a maximum of 600 mm on centre with the bottom row within 300 mm of the bedrock and the top row within 200 mm of the top of the concrete with a minimum of 2 rows is required;
- (4) the maximum height of concrete walls shall be 3.66 m; and
- (5) all concrete slabs within concrete foundations shall be supported by compacted granular fill to bedrock.

55. Notwithstanding section 54, all other aspects of concrete foundations shall be in conformance with this By-law.

56. Concrete pier foundation directly pinned to bedrock for a Part 9 building may be approved without requiring an RDP where the foundation is designed in conformance with **Schedule B** of this By-law.

57. Surface Mount Foundation: woodblocks, concrete pads or minimum 100 mm thick concrete floor slab foundation; may be approved without requiring an RDP if it supports a non-residential one-story garage storage structure or accessory building with a total floor area less than 55 m². The structure shall not be masonry or a masonry veneer construction. Concrete used for a slab shall have a compressive strength of 30 M.P.A. after 28 days and has air entrainment of 5%-8%. Slab shall be reinforced with 10M Rebar spaced 12" (305 mm) O/C in both directions with a concrete coverage of 40 mm.
58. All other foundation types shall be designed in conformance with Part 4 of the N.B.C. Plans and specifications shall be prepared by an RDP with applicable letters of assurance provided at the time of a plan examination and field review reports as required by an Inspector.

STANDPIPE SYSTEM

59. All standpipe systems shall:
- (1) be designed following the N.F.P.A. 14 "Installation of Standpipe and Hose Systems" and this By-law;
 - (2) be an approved fire department connection of 65 mm Straight Iron Pipe Thread (SIPT) or 8 thread per inch; and
 - (3) be designed by an RDP with stamped and sealed drawings, specifications and letters of assurance required for a plan examination.

SPRINKLER SYSTEM

60. A building required to have a sprinkler system shall be designed and installed in accordance with this By-law and require the following:
- (1) Certified Sprinkler System Designer (CSSD), CWBSP or RDP is permitted to design a sprinkler system for Part 9 buildings. Confirmation of the designer's qualification shall be provided at the time of submission;
 - (2) drawings, specifications and hydraulic calculation demonstrating the compliance of design with the N.F.P.A. and the N.B.C.; and
 - (3) an RDP shall design a sprinkler system for a Part 3 building with sealed and stamped drawings, hydraulic calculation and applicable letters of assurance required for a plan examination.

MULTI-FAMILY DWELLING

61. A building required to have a sprinkler system shall be designed and installed in accordance with this By-law and require the following:

- (1) All multi-family dwellings three units or more must have a sprinkler system installed.
- (2) The sprinkler systems in all multi-family dwellings, including four stories and higher in building height, must be designed, installed, and tested to comply with N.F.P.A. Standard 13, "Standard for the Installation of Sprinkler Systems."

HYDRANTS

62. All hydrants shall be equipped with 4-inch and two 2½ inch National Standard Thread outlets and shall be compatible with the Yellowknife Fire Department requirements.
63. Wall hydrants will not be considered a water source and will not be used to calculate the distance for Fire Department Connections. This requirement applies to both a standpipe system and sprinkler system connections.

ENERGY EFFICIENCY

64. All N.B.C. Part 9 residential buildings shall:
 - (1) Comply with Prescriptive Path or Performance Path; and
 - (2) Provide a Residential-Building-Energy-Efficiency-Form.
 - (3) Notwithstanding the requirements 66(1) and (2), Part 9 residential factory-constructed buildings may be exempt if the factory-constructed prefabricated buildings, modules, and panels constructed of any materials:
 - a. will be used as temporary worker's accommodation, as defined by the Zoning By-Law and
 - b. Shall have attached a legible CSA certification or equivalent Canadian certification standard, illustrating the factory-constructed building, modules, and panels were constructed to meet the minimum standard at the date and jurisdiction of construction; and

This standard applies to the prefabricated buildings, modules, panels of any occupancy to accommodate workers and act as temporary worker's accommodation.

- (4) Prescriptive Path: The effective thermal resistance of building enclosure assemblies or portions thereof shall be not less than that shown in Table 1.

TABLE 1: NBC PART 9 PRESCRIPTIVE PATH VALUES		
ASSEMBLY	EFFECTIVE RSI [m ² .K/W]	EFFECTIVE R-VALUE [ft ² .°F/btu]
Walls (above grade)	5.28	30
Walls (below grade)	4.96	28
Attic ceilings/roof	10.6	60
Cathedral ceilings/roof	7.0	40
Slab on ground	5.64	32
Exposed floor	7.0	40
Floors above unheated space	6.28	36
Insulation skirt extending out	5.64	32
	EFFECTIVE USI [W/m ² .K]	EFFECTIVE U- VALUE [btu/ft ² .°F]
Doors excluding glazing	0.91	0.16
Windows and glazed doors	1.00	0.18
	OTHER	
Maximum fenestration and door to-wall ratio (F.D.W.R.)	15%	

- (5) Performance Path: Buildings conforming to the requirements of the performance path will be designed and constructed to conform to the energy performance requirements in Table 2.

Table 2: NBC PART 9 PERFORMANCE PATH VALUES	
Metric	Target
TEDI	105 kWh/(m ² a)
%<Ref (no 9.36.5 or ERS base loads)	-25%

- a. Energy modelling is to be performed by the energy advisor, as defined by Natural Resources Canada.
 - b. Technical specifications for the energy modelling and requirements for the airtightness are listed in **Schedule C** of this By-law.
- (6) Part 9 Non-Residential Buildings as defined in the N.B.C. shall comply with the N.B.C.
- (7) Part 3 Residential Buildings as defined in the N.B.C. shall be designed to comply with **Schedule D** of this By-law.
- (8) Part 3 Non-Residential Buildings as defined in the N.B.C. shall comply with the N.E.C.B.

MECHANICAL SYSTEM

65. Unless a new mechanical system or alterations to an existing mechanical system for a Part 9 building can be designed per Part 9 of the N.B.C., subject to the Inspector's discretion, the Inspector is authorized to require the involvement of an RDP in the system design or alterations.

WATER AND SEWER

66. The design shall comply with the City's Water and Sewer Services By-law, as amended, and this By-law.

RETAINING WALL

67. The construction of retaining walls and retaining structures with a height not exceeding 600 mm and not supporting any structure above it does not require a building permit.
68. The construction of retaining walls with a height exceeding 600 mm, but less than 1200 mm and not supporting any structure above it shall be designed to prevent sliding and overturning. Applicable drawings shall be provided for the building permit. Examples of acceptable designs are identified in Schedule E.
69. The construction of retaining walls or retaining structures with a height exceeding 1200mm or supporting any structure above shall be designed by an RDP. The RDP shall submit to Building Services the stamped and sealed structural drawings with letters of assurance.

SIGNS

70. Unless otherwise permitted by an inspector, all sign structures shall be designed per Part 4 of the N.B.C.

REPEALS

71. By-law No. 4469 and all subsequent amendments are hereby repealed.

EFFECT

That this by-law shall come into effect upon receiving Third Reading and otherwise meets the requirements of Section 75 of the *Cities, Towns and Villages Act*.

Read a First time this 9TH day of MAY, A.D. 2022.

[Signature]
Mayor

[Signature]
City Manager

Read a Second Time this 9TH day of MAY, A.D. 2022.

[Signature]
Mayor

[Signature]
City Manager

Read a Third Time and Finally Passed this 30 day of MAY, A.D., 2022.

[Signature]
Mayor

[Signature]
City Manager

I hereby certify that this by-law has been made in accordance with the requirements of the *Cities, Towns and Villages Act* and the by-laws of the Municipal Corporation of the City of Yellowknife.



[Signature]
City Manager

**CITY OF YELLOWKNIFE
BY-LAW NO. 5058
Schedule A**

**Offences and Penalties
Voluntary Fines**

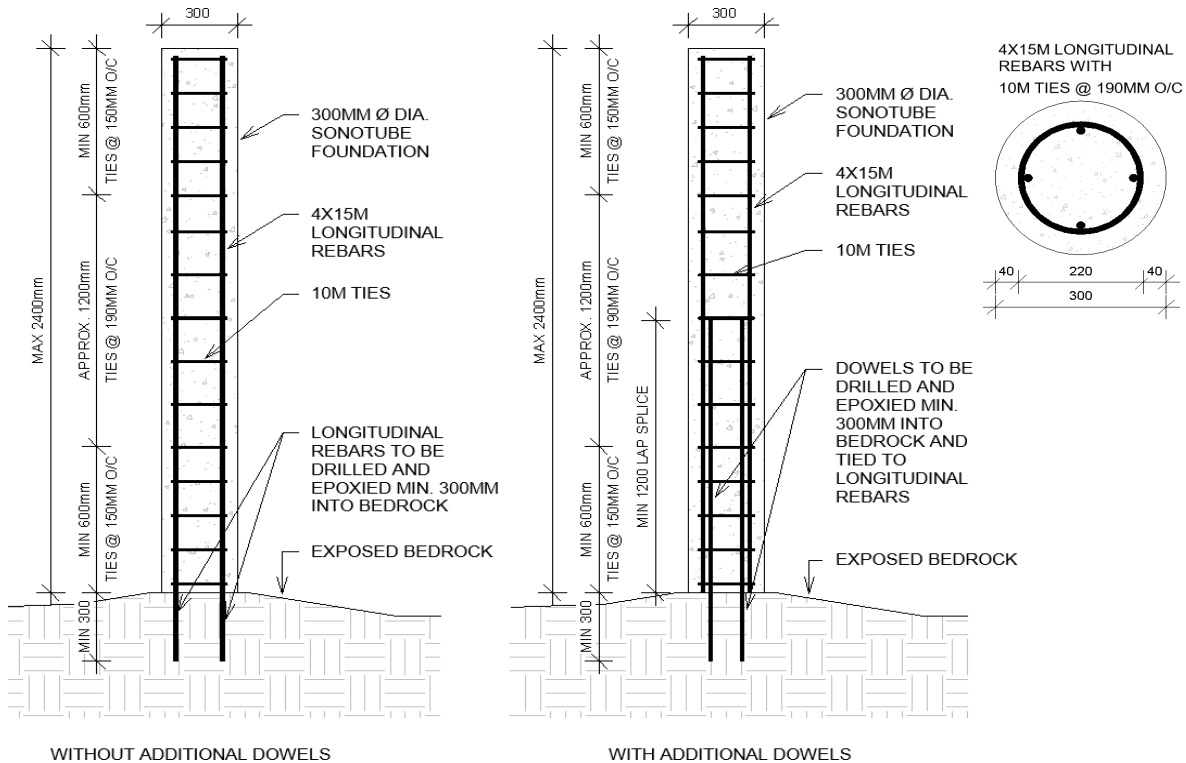
(1) Failure to comply with an order	
a. individual	\$ 200.00
b. corporation	\$ 1,000.00
(2) Failure to display permit	\$ 50.00
(3) Failure to obtain a permit	
a. individual	\$ 200.00
b. corporation	\$ 1,000.00
(4) Failure to comply with permit conditions	\$ 500.00

**CITY OF YELLOWKNIFE
BY-LAW NO. 5058
Schedule B**

Concrete Piers

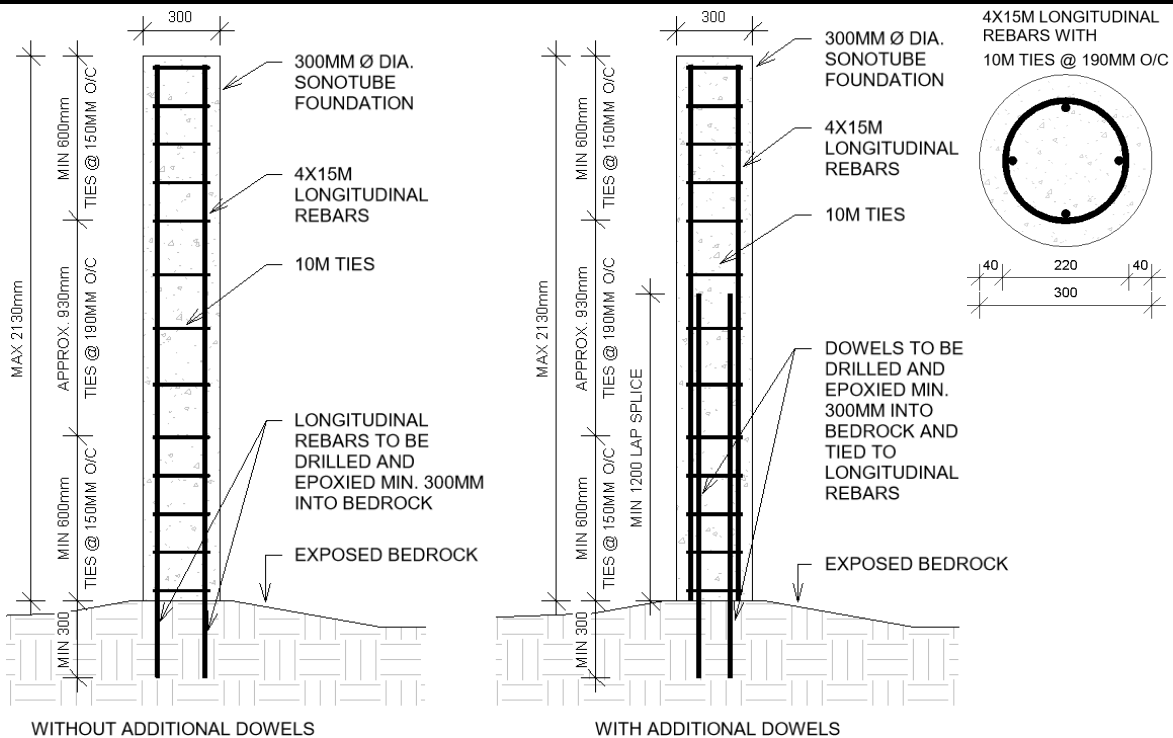
(1) Concrete pier foundation directly pinned to bedrock for a Part 9 buildings

CASE 1					
Building Dimensions	Pier Spacing (On Both Directions)	Maximum Axial Load on Piers	Max Lateral Load on Piers	Diameter of Piers	Maximum Height of Piers
13.2mX15.15m	2400mm (8 ft)	630 KN (142 kips)	4.5 KN (1 kips)	300mm (12")	2400mm (7'-10 1/2")
Minimum Required Reinforcement					
Longitudinal Rebars	Ties	Dowels Epxoied into the bedrock	Lap Length for Dowels and Longitudinal Rebars	Concrete Min. Strength and cover	
4 X 15M	10M ties @ 190mm o/c with 150mm o/c spacing at top and bottom for 600mm	4 X 15M with min 300mm (12") embedment length into bedrock. (Check Epoxy manufacturer's manual)	1200mm (4') tied to longitudinal rebars (Drill and Epoxy the longitudinal rebars into bedrock as dowels whenever possible)	Min. 30 M.P.A., 28d, 5-8% air 40mm cover	



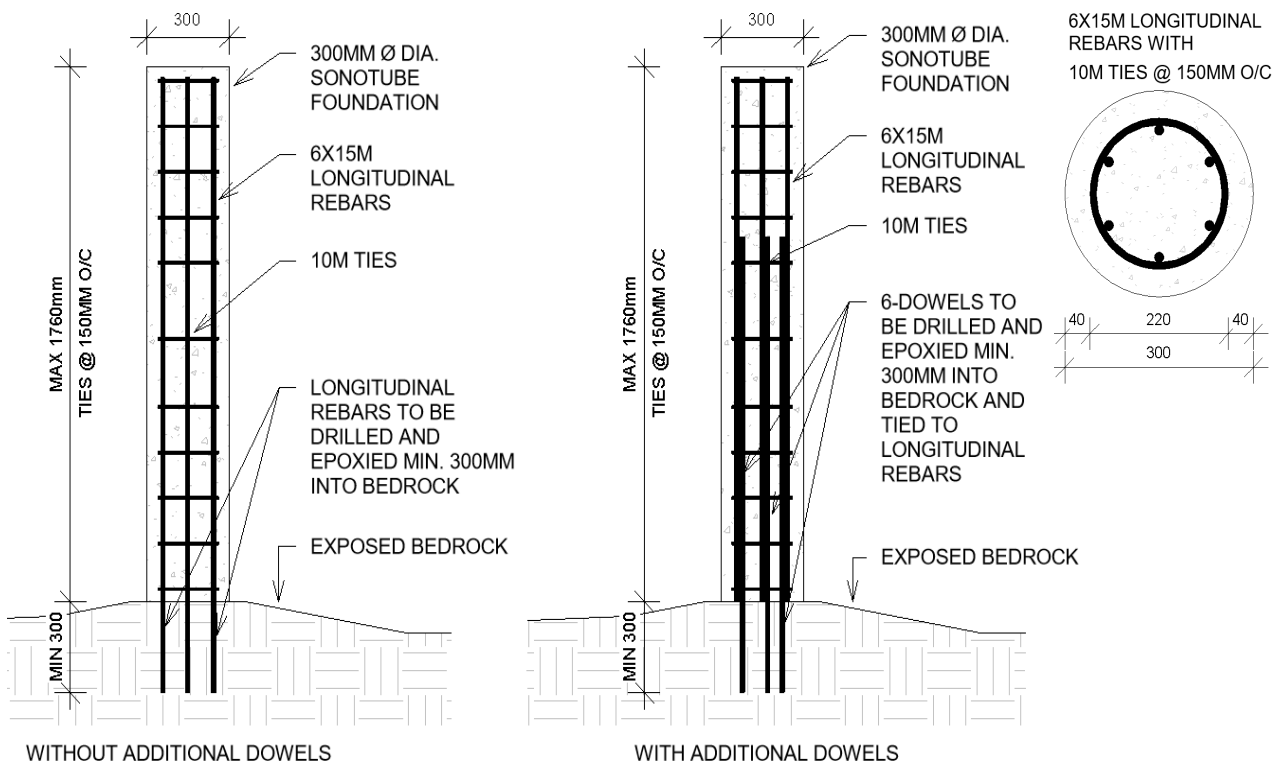
**CITY OF YELLOWKNIFE
BY-LAW NO. 5058
Schedule B**

CASE 2					
Building Dimensions	Pier Spacing (On Both Directions)	Maximum Axial Load on Piers	Max Lateral Load on Piers	Diameter of Piers	Maximum Height of Piers
13.2mX15.15m	3000mm (10 ft)	800 KN (180 kips)	6.3 KN (1.4 kips)	300mm (12")	2130mm (6'-11 7/8")
Minimum Required Reinforcement					
Longitudinal Rebars	Ties	Dowels Epoxied into the bedrock	Lap Length for Dowels and Longitudinal Rebars	Concrete Min. Strength and cover	
4 X 15M	10M ties @ 190mm o/c with 150mm o/c spacing at top and bottom for 600mm	4 X 15M with min 300mm (12") embedment length into bedrock. (Check Epoxy manufacturer's manual)	1200mm (4') tied to longitudinal rebars (Drill and Epoxy the longitudinal rebars into bedrock as dowels whenever possible)	Min. 30 M.P.A., 28d, 5-8% air 40mm cover	



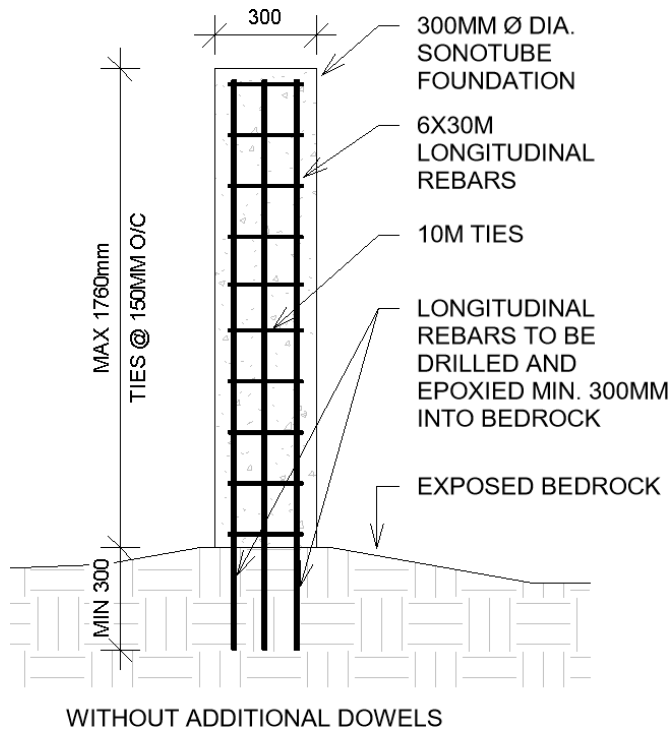
**CITY OF YELLOWKNIFE
BY-LAW NO. 5058
Schedule B**

CASE 3					
Building Dimensions	Pier Spacing (On Both Directions)	Maximum Axial Load on Piers	Max Lateral Load on Piers	Diameter of Piers	Maximum Height of Piers
14.15mX14.15m	4500mm (15 ft)	1175 KN (264 kips)	9.75 KN (2.2 kips)	300mm (12")	1760mm (5'-9 5/16")
Minimum Required Reinforcement					
Longitudinal Rebars	Ties	Dowels Epoxied into the bedrock	Lap Length for Dowels and Longitudinal Rebars	Concrete Min. Strength and cover	
6 X 15M	10M ties @ 150mm o/c	6 X 15M with min 300mm (12") embedment length into bedrock. (Check Epoxy manufacturer's manual)	1200mm (4') tied to longitudinal rebars (Drill and Epoxy the longitudinal rebars into bedrock as dowels whenever possible)	Min. 30 M.P.A., 28d, 5-8% air 40mm cover	



**CITY OF YELLOWKNIFE
BY-LAW NO. 5058
Schedule B**

CASE 4					
Building Dimensions	Pier Spacing (On Both Directions)	Maximum Axial Load on Piers	Max Lateral Load on Piers	Diameter of Piers	Maximum Height of Piers
13.2mX15.15m	6000mm (20 ft)	1822 KN (410 kips)	21 KN (4.7 kips)	300mm (12")	1410mm (4'-7 1/2")
Minimum Required Reinforcement					
Longitudinal Rebars	Ties	Dowels Epoxied into the bedrock	Lap Length for Dowels and Longitudinal Rebars	Concrete Min. Strength and cover	
6 X 30M	10M ties @ 150mm o/c	6 X 30M with min 300mm (12") embedment length into bedrock. (Check Epoxy manufacturer's manual)	Drill and Epoxy the longitudinal rebars into bedrock as dowels	Min. 30 M.P.A., 28d, 5-8% air 40mm cover	



CITY OF YELLOWKNIFE
BY-LAW NO. 5058
Schedule C

Energy N.B.C. Part 9 Residential

Technical specifications for the energy modeling and requirements for the airtightness for a Part 9 residential buildings.

- (1) Energy modelling shall be performed using a computer program that employs calculation methods that have been tested following ANSI/ASHRAE 140, "Evaluation of Building Energy Analysis Computer Programs". Energy modelling shall conform to Subsection 9.36.5 of the N.B.C. or the E.R.S.
- (2) Buildings shall be tested for airtightness twice and meet a Mid-Construction target of 3.0 ACH50 (1.5 cm²/m² NLA for buildings with < 1,200 ft² floor area) during mid-construction test and 1.5 ACH50 (1.0 cm²/m² NLA for buildings with < 1,200 ft² floor area) during final post-construction test in accordance with:
 - a. CAN/CGSB 149.10, "Determination of the Airtightness of Building Envelopes by the Fan Depressurization Method"; and
 - b. ASTM E 779, "Standard Test Method for Determining Air Leakage Rate by Fan Pressurization"; or
 - c. U.S.A.C.E. Version 3, "Air Leakage Test Protocol for Building Envelopes"; and
 - d. The applicable standards and requirements of E.R.S.
- (3) All housing types, as defined in the E.R.S., must have an EnerGuide rating label affixed somewhere visible in the home at the time of final inspection by the City.
- (4) A house performance compliance calculation report, in a form prescribed by the Senior Administrative Officer, shall be provided per Article 2.2.8.3 Division C of the N.B.C.

**CITY OF YELLOWKNIFE
BY-LAW NO. 5058
Schedule D**

Energy N.B.C. Part 3 Residential

Technical specifications for the energy modelling and requirements for the airtightness for buildings containing Part 3 residential occupancy.

- (1) All buildings shall be designed with ventilation in conformance with ASHRAE 62.1-2001 (except addendum n) and constructed to conform to:
 - a. The current version of the N.E.C.B., except that where N.E.C.B. refers to the N.B.C., the provisions of this By-law shall apply.
- (2) Comply with Prescriptive Path or Performance Path, and all other requirements.
- (3) Prescriptive Path: The effective thermal resistance/transmittance of building enclosure assemblies or portions thereof shall be not less than that shown in Table 3.

Table 3: Part 3 Residential Buildings Prescriptive Path Values		
ASSEMBLY	Effective R.S.I. [m ² ·K/W]	EFFECTIVE R-VALUE [ft ² ·°F/btu]
Walls (above grade)	6.82	38
Walls (below grade)	5.95	34
Ceilings/roof	9.09	52
Slab on ground	3.30	18
Exposed floor	8.75	50
Floors above unheated space	8.55	49
Perimeter insulation (1.0 m out)	3.30	18
	Effective U.S.I. [W/m ² ·K]	Effective U-value [btu/ft ² ·°F]
Doors excluding glazing	1.4	0.25

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Schedule D**

Windows and glazed doors	1.4	0.25
	OTHER	
Maximum fenestration and door-to-wall ratio (FDWR)	17%	

OR

(4) Performance Path: Buildings conforming to the requirements of the performance path shall be designed and constructed to conform to the energy performance requirements table 4 and air leakage rate of 1.50 L/(s·m²) at 75 Pa (the Q/S term of the equation in (b) below, using the total surface area of the enclosure). Energy modelling shall conform to the below formula used in the energy model.

- a. The applicable requirements of Part 8 of the N.E.C.B.
- b. the operating air leakage rate shall be calculated from the assumed or measured air leakage rate using the equation:

$$I_{AGW} = C \times Q/S \times S/A_{AGW}, \text{ where}$$

- i. $I_{A.G.W.}$ = infiltration rate [L/s·m²] to be used for energy modelling and applied to the modelled above-ground wall area
 - ii. $C = (5Pa/75Pa)^n$
 - iii. n = If whole building testing is done, then the calculated n shall be valued. If no whole building test result is available, the default value for the flow exponent 'n' is 0.60.
 - iv. Q = volume of air in L/s flowing through the building envelope when subjected to a pressure differential of 75 Pa.
 - v. S = total surface area [m²] of the building envelope included in the air leakage test (i.e. the pressure boundary), including ground floors and roofs, and possibly below-grade walls.
 - vi. $A_{A.G.W.}$ = modelled area [m²] of above-ground walls (including windows)
- c. Good energy modelling practice and as described in the ASHRAE Handbooks and Standards, and other professional practice energy modelling guidelines.
 - d. Until air leakage determined by airtightness testing is available, an air leakage rate of 1.50 L/(s·m²) at 75 Pa shall be converted to operating pressure using the above formula and used in the energy model.

Table 4: Part 3 Residential Buildings Performance Path Values	
METRIC	TARGET

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BY-LAW NO. 5058
Schedule D**

TEDI [kWh/(m ² a)]	120
TEUI [kWh/(m ² a)]	225

And

- (5) Building envelope airtightness testing:
 - a. The air barrier system shall have a normalized air leakage rate no greater than 1.50 L/(s·m²) when tested per:
 - i. ASTM E 3158, "Standard Test Method for Measuring the Air Leakage Rate of a Large or Multizone Building"; or
 - ii. U.S.A.C.E. Version 3, "Air Leakage Test Protocol for Building Envelopes".

At a pressure differential of 75 Pa, where:

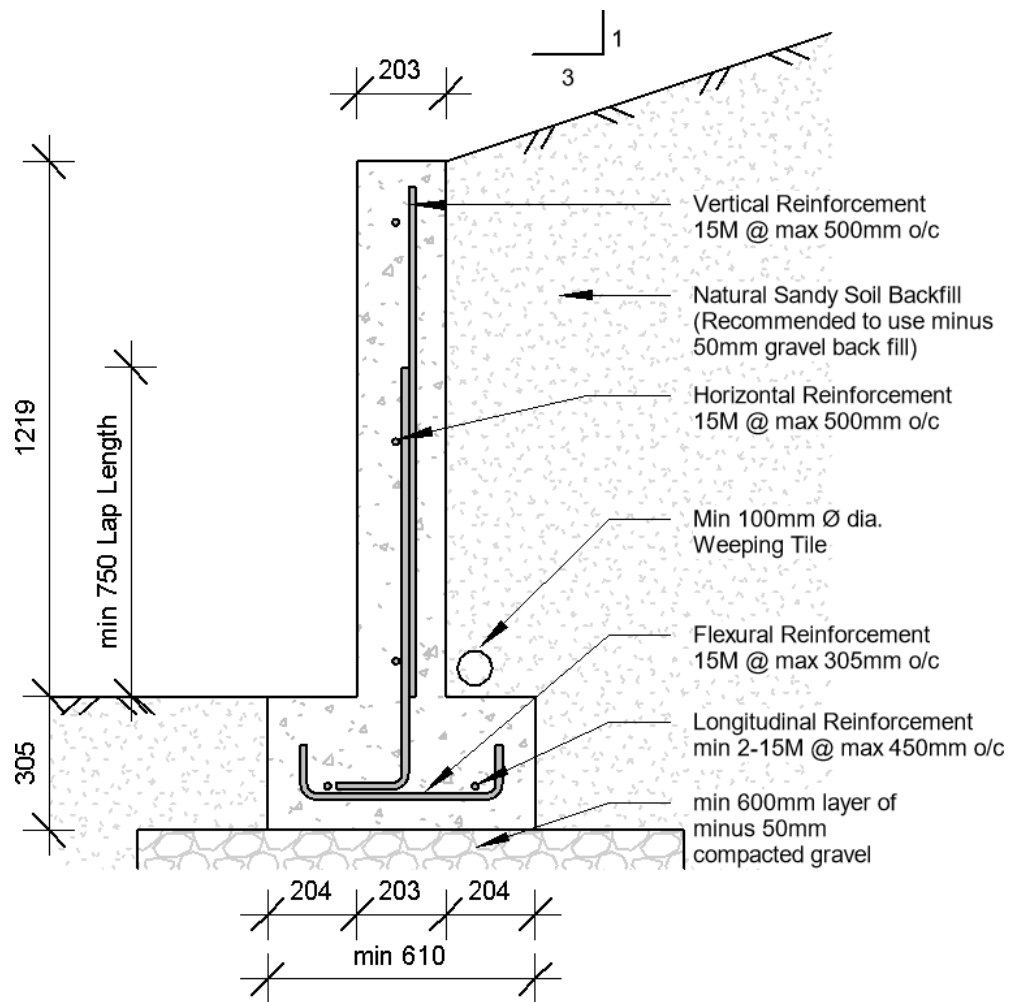
 - i. The building is prepared in accordance with the building envelope test;
 - ii. The test is conducted for both pressurized and depressurized conditions;
 - iii. The air leakage rates measured in Clause (ii) are averaged and comply with Sentence 6.(a); and
 - iv. When determining the normalized air leakage rate, the normalized leakage area shall include all the surfaces separating the conditioned space from the exterior, above and below ground (i.e. the six sides of the box).
 - b. Where airtightness is determined in accordance with Sentence (a) with intentional openings for mechanical equipment left unsealed, the airtightness rate shall be adjusted in the energy model calculations to account for air leakage through mechanical equipment.
 - c. Part 3 residential buildings shall be tested twice to meet the target for airtightness. The first test will occur Mid-Construction.
- (6) Buildings shall use heat recovery systems per Article 5.2.10 Division B of the N.E.C.B.
- (7) Mechanical equipment efficiency: Mechanical systems shall be designed following Article 5.2.12 of the N.E.C.B. Components of mechanical ventilation systems not specifically described in Article 5.2.12 of the N.E.C.B. shall be designed, constructed, and installed in accordance with good engineering practice and as described in the ASHRAE Handbooks and Standards, H.R.I.A. Digest, T.E.C.A. Ventilation Guideline, Hydronics Institute Manuals or the SMACNA manuals.

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Schedule E**

Retaining Walls

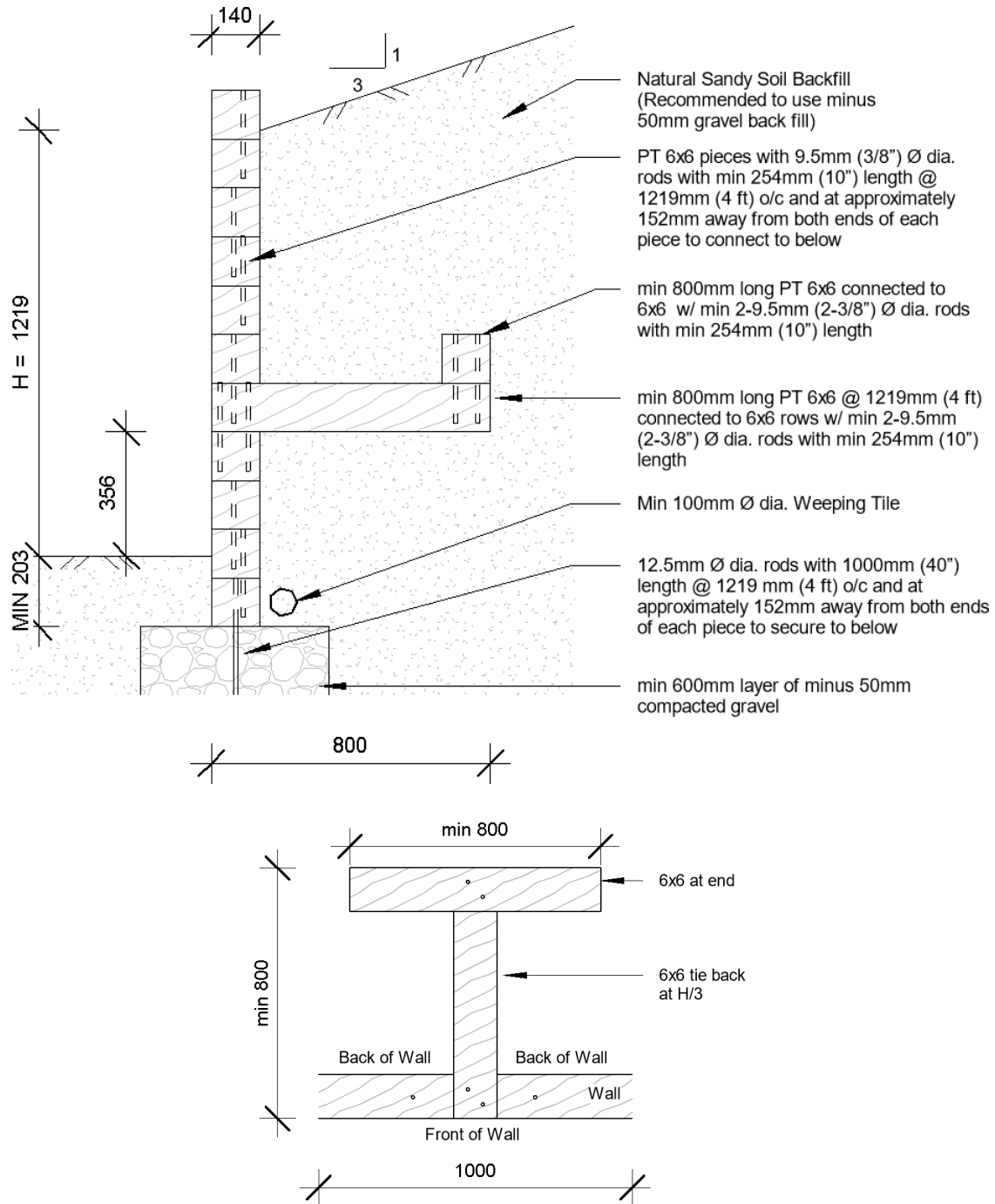
Reinforced Concrete Retaining Wall Design Summary

- (1) Design of a retaining wall with a height not acceding 1200 mm.
- (2) Concrete specification: Min. 25 M.P.A. compression strength at 28d, 5-8% air, Aggregate size 14mm– 20mm, 75mm cover.
- (3) Note all the above dimensions are based on initial design assumptions, and all are minimum required amounts.



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 Schedule E

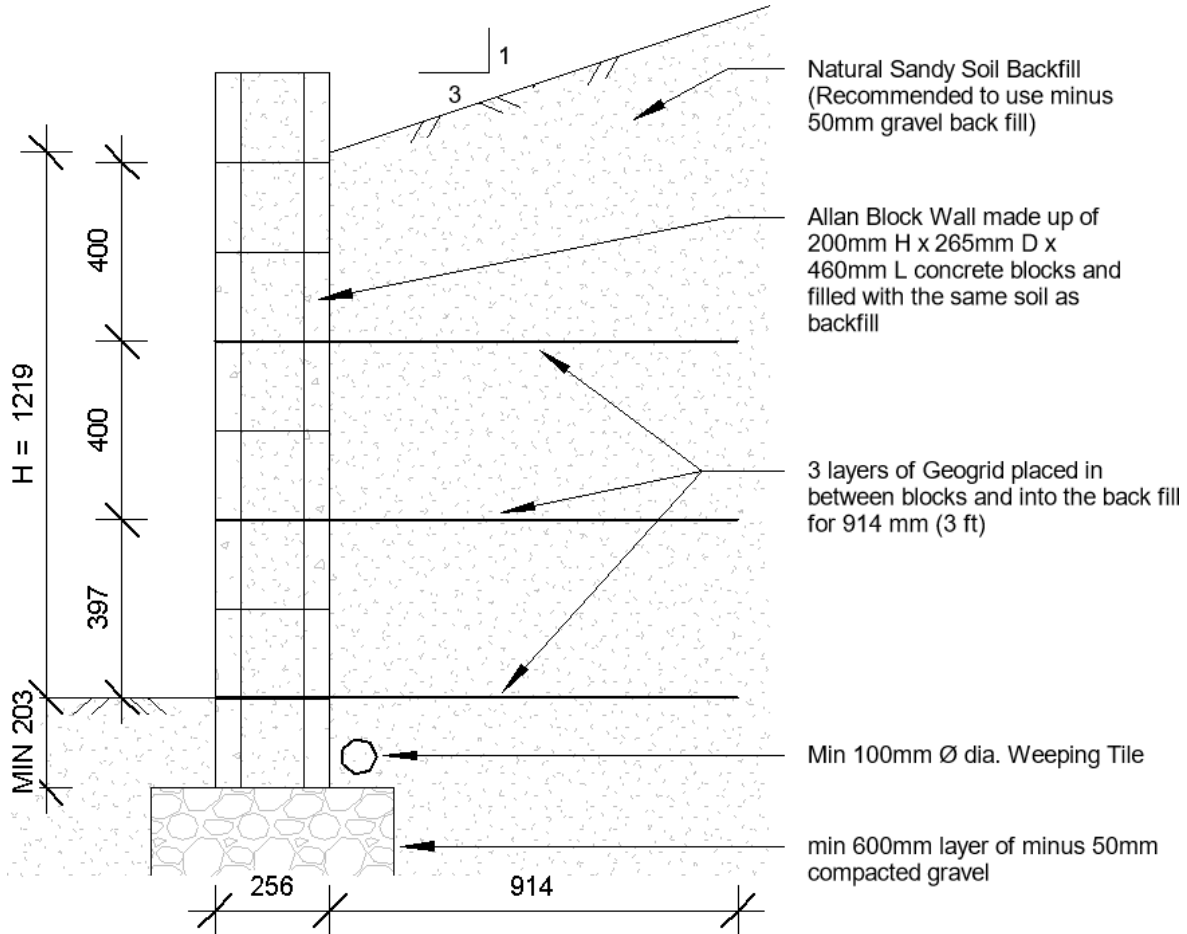
P.T. 6x6 timber Wall Design Summary:



All above dimensions are based on initial design assumptions, and all are minimum required amounts.

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 BY-LAW NO. 5058
 Schedule E

Allan Block Wall Design Summary:



All above dimensions are based on initial design assumptions, and all are minimum required amounts. When the wall is entirely vertical, a minimum of 3 layers of Geogrid is necessary to provide lateral stability and connection for the blocks. Please, refer to manufacturers' manuals for Allan blocks and Geogrid for details and application instructions.