

NO. 32

SUBDIVISION BYLAW

FOR

THE TOWN OF TRENTON

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SUBDIVISION BYLAW FOR THE
TOWN OF TRENTON

PART 1 - TITLE

- 1.1 This bylaw may be cited as the “Subdivision bylaw” for the Town of Trenton.

PART 2 - INTERPRETATION

- 2.1 In this bylaw the word “shall” is mandatory and not permissive. Words used in the present tense shall include the future. Words used in the singular shall include the plural except where otherwise indicated and words used in the plural number shall include the singular. All other words shall carry their customary meaning except those defined hereinafter.
- 2.2 SCHEDULES “A”, “B”, “C”, “D”, and “E” attached hereto are hereby declared to form part of this bylaw.
- 2.3 Where both metric and imperial measurements are specified, the metric measurements shall prevail should there be any discrepancy between the two measurements.

PART 3 - DEFINITIONS

- 3.1 a. AGREEMENT means a written contract entered into between the subdivider and the Town of Trenton relating to the provisions of services outlined in this Bylaw;
- b. AREA OF LAND means any lot or parcel as described by its boundaries;
- c. COUNCIL means the Council of the Town of Trenton;
- d. DIRECTOR means the Provincial Director of planning;
- e. DEPARTMENT OF HEALTH means the Department of Health and Fitness;
- f. DEVELOPMENT OFFICER means the officer who is charged with the duty of administering this subdivision bylaw;
- g. EXISTING STREET means any public street;
- h. FRONTAGE means the horizontal distance between the side lot lines, such distance being measured perpendicularly to the line joining the middle of the front lot line with either the middle of the rear lot line or the apex of the triangle formed by the side lot lines and at a point therein equal in distance to the minimum applicable front yard as contained in the Land-use bylaw for the Town;
- I. PROFESSIONAL ENGINEER means a registered member, in good standing, of the Association of Professional Engineers of Nova Scotia;
- j. PUBLIC SEWER SYSTEM means any sanitary sewer system which is owned by the Town;
- k. PUBLIC STORM SEWER SYSTEM means any storm sewer system which is owned by the Town;
- l. PUBLIC STREET means any street owned and maintained by the Town;
- m. PUBLIC WATER SYSTEM means any water system which is owned by the Town;

- n. PUBLIC WORKS SUPERINTENDENT means the superintendent appointed by Town Council;
- o. SUBDIVIDER means the owner or owners of the area of land proposed to be subdivided and includes anyone acting with his written consent.
- p. SUBDIVISION means the division of any parcel of land into two or more parcels, and includes a re-subdivision or a consolidation of two or more parcels;
- q. TOWN means the Town of Trenton; and
- r. TOWN CLERK means the Town Clerk of the Town of Trenton.

PART 4 - PRELIMINARY STEPS OF SUBDIVISION (OPTIONAL FIRST STEP)

- 4.1 The subdivider proposing to subdivide property may submit to the development officer five (5) copies of a preliminary plan of the proposed subdivision together with the following information and documentation:
 - a. name and address of the subdivider, and if the subdivider is not the owner of the area of land proposed to be subdivided, the name of the owner,
 - b. names and addresses of all owners or the lot identifiers of all properties abutting the land proposed to be subdivided, and
 - c. a plan or sketch of the land proposed to be subdivided for clarity of all particulars on the plan showing:
 - i. the dimensions and area of the area of land to be subdivided,
 - ii. the notice of the proposed subdivision and the lots therein,
 - iii. the approximate location of watercourses or other natural features on the land proposed to be subdivided that might affect the number of lots on the area proposed to be subdivided , and
 - iv. a key plan at a scale not smaller than 1:50,000 showing the general location of the area of land and indicating the north point.
- 4.2 The Development Officer shall, if applicable, forward a copy of all material received pursuant to subsection (1) to:
 - a. the Department of Health for an evaluation to determine what size is generally appropriate to meet the requirements Respecting Subdivision of Land to be serviced by On-site Sewage Disposal System,
 - b. the Town Clerk on behalf of the Town, the committee on Streets/Public works Superintendent, the Recreation committee/Recreation Coordinator,
 - c. Planning Department of the Pictou County District Planning Commission, and
 - d. any other agency of the Province or the Town the Development Officer deems necessary.
- 4.3 The Town Clerk shall consult with various Town Staff and committees as appropriate and in accordance with Policy established by the Town Council, the Town Clerk shall forward a written report to the development officer on behalf of the town, the committee on streets/ public works superintendent, the recreation committee/ recreation coordinator. The department of Health and any other agency or the Province or the town which has been forwarded a copy of the preliminary plan shall forward a written report of their findings to the development officer.

PART 5 - PROCEDURE FOR APPROVAL OF TENTATIVE PLANS OF SUBDIVISION

5.1 The subdivider proposing to subdivide an area of land shall submit to the Development Officer for approval an application in the form specified in Schedule "A" of this bylaw together with six (6) copies of the tentative plan of the proposed subdivision meeting the requirements of Part 6 of this bylaw.

5.2 Notwithstanding Section 5.1, the Development Officer may waive the requirement that tentative application and plan of subdivision be submitted, where:

- a. the lots about an existing street, and
- b. no public sanitary or storm sewer or water systems are to be installed.

provided that, if required, an assessment of the lots has been completed pursuant to the Regulations respecting subdivision of land to be serviced by on-site disposal systems by the Department of Health and the Development Officer is advised in writing of the classification of such lots pursuant to the regulations.

5.3 When the development officer is satisfied what an application and tentative plan of subdivision are complete he shall, if applicable, forward a copy to the Town Clerk on behalf of the Town, the committee on Streets/Public Works Superintendent, the Recreation committee/ recreation coordinator, and the Department of Health, the Department of Environment and any other agency of the Province or Town of the development officer deems necessary.

5.4 The Town Clerk shall forward a written report to the development office on behalf of the town, the committee on streets/ public works superintendent, the recreation committee/recreation coordinator. The department of health and any other agency of the province or town which has been forwarded a copy of the preliminary plan shall also forward a written report of their findings to the development officer.

5.5 The development office shall comply with the notification and approval provisions of Section 105 (2) and (3) of the PLANNING ACT.

5.6 Approval of a tentative plan of subdivision may not be refused or withheld as a result of the assessment or recommendations made by the department of health, the committee on streets, recreation committee, the public works superintendent or any other agency of the province or the town unless the tentative plan or subdivision is clearly contrary to the law of the province or bylaw of the town made pursuant to a law of the province including any applicable dimensions for lot area and lot frontage contained in a land-use bylaw of the town.

5.7 The following information shall be stamped or written on any tentative plan or subdivision which is approved together with any other information necessary for the tentative plan to proceed to the final plan stage:

- a. "This tentative plan of subdivision is approved for lots _____ . Such approval lapses if the lots are not shown on a final plan of subdivision approved within two years of the date of the approval of the tentative plan".
- b. the date of the approval of the tentative plan.
- c. "This tentative plan of subdivision shall not be filed in the Registry of Deeds as no subdivision takes effect until a final plan of subdivision is endorsed by the Development Officer and has been filed by him in the Registry of Deeds".

5.8 (1) Within 5 days of approving the tentative plan of subdivision, the development officer shall forward a copy of approved tentative plan to the subdivider and notify in writing, were applic-

able, the committee on streets, the recreation committee, the public works superintendent, the town clerk, the department of health, the department of the environment and any other agency of the province or town the development officer requested to review the plan of his decision to approve the tentative plan.

(2) Where the development officer refuses to approve a tentative plan of subdivision, he shall notify the subdivider pursuant to section 105(3)(c) of THE PLANNING ACT, advising the subdivider of the appeal provisions of Section 115 of THE PLANNING ACT.

PART 6 - TENTATIVE PLAN OF SUBDIVISION REQUIREMENTS

- 6.1 Tentative plans of subdivision submitted to the development officer shall be:
- a. drawn to a minimum scale or scales sufficient for clarity of all particular on the tentative plan of subdivision.
 - b. based on a description of the property to be subdivided, preferably but not necessarily as surveyed, and
 - c. folded to approximately 20x30 cm. (8x12 in) with the face of the folded print being the title block which is located in the lower right hand corner of the tentative plan of subdivision.
- 6.2 Tentative plans of subdivision shall show the following:
- a. name of subdivision, if any, and the name of the owner of the area of land,
 - b. names of all owners or the lot identifiers of all properties abutting the area of land proposed to be subdivided,
 - c. a location map, drawn to a scale not smaller than 1:50,000 (such scale to be shown on the map) preferable with the same orientation as the area of land,
 - d. the words "TENTATIVE PLAN" located above the title block,
 - e. a clear space for stamping, measuring at least 15 centimeters (5.90 in) wide by 15 centimeters (5.90 in.) high,
 - f. the approximate dimensions of the area of land proposed to be subdivided,
 - g. the proposed dimensions and shape of lots and blocks,
 - h. the area of each lot including the approximate area of the remainder lot, if any.
 - I. each proposed lot individually identified without duplication of lot identifiers, and where practicable, where a parcel is being added to or subtracted from an existing lot or where a lot shown on a plan of subdivision is being divided, the proposed lot or lots shall be identified by the existing lot identifier and a letter.
 - j. approximate locations of all existing main buildings on the area of land proposed to be subdivided with the graphical location for all buildings within 3 meters (9.8 feet) either side of the boundaries of the proposed lot,
 - k. the boundary lines of proposed lots shown by solid lines, and the vanishing boundaries of existing lots being re-subdivided, consolidated or both, shown as broken lines.
 - l. the scale to which the tentative plan of subdivision is drawn.
 - m. the width and location of railroads, and existing and proposed public streets, including intersections and turning circles,

- n. the names of existing and proposed streets.
 - o. a notation stating whether or not the lots for which approval is requested are serviced by public sanitary and storm sewers and public water systems.
 - p. the identification, location, dimensions, and area of land proposed to be reserved for park, playground, and similar public purposes.
 - q. the width, location and nature of any easements, right-of-way affecting the area of land proposed to be subdivided.
 - r. north point
 - s. the date on which the tentative plan of subdivision was drawn and the date of any revisions.
 - t. the location of any watercourses, prominent rock formations, area subject to flooding and any other prominent natural features which might affect the layout or provision of public streets and public sanitary and storm sewers and public water systems to the area where the subdivision is to be located, and
 - u. any other information which the development officer deems necessary to determine whether a tentative plan of subdivision conforms to this subdivision bylaw.
- 6.3 In addition to meeting the requirements of sections 6.1 and 6.2, where the proposed lots front on a proposed public street, a tentative plan of subdivision shall:
- a. show a boundary survey of the area of land proposed to be subdivided, excluding the remainder lot, certified and stamped by a Nova Scotia Land Surveyor in the manner required by the Nova Scotia Land Surveyors Act and the Regulations made thereunder,
 - b. be accompanied by FOUR (4) copies of a plan showing:
 - I. contours at 2 meter (5 foot) intervals, and drainage patterns, and
 - ii. with width and location of existing and proposed public streets,
 - iii. the location of existing and proposed public sanitary and storm sewers and public water systems, and proposed connections thereto, and
 - c. be accompanied by TWO (2) copies of a plan showing the center line profiles of the proposed public streets, and
 - d. be accompanied by any other information which the development officer deems necessary to determine whether the plans referred to in clause (b) and (c) conform to this subdivision bylaw.
- 6.4 Where plans or drawings or center-line profiles are prepared by or under the supervision of a professional engineer, they shall be signed and sealed by the professional engineer in accordance with the Engineering Profession Act.

PART 7 - PROCEDURE FOR APPROVAL OF FINAL PLANS OF SUBDIVISION

- 7.1 The subdivider proposing to subdivide an area of land shall submit an application in the form specified in Schedule "A" of this bylaw and EIGHT (8) copies of the final plan of subdivision meeting requirements of Part 8 of this bylaw to the development officer for approval.

- 7.2 The development officer shall comply with the notification and approval provisions of Section 105(2) and (3) of THE PLANNING ACT.
- 7.3 When the development officer is satisfied that an application and final plan of subdivision are complete he shall, if applicable, forward a copy of the application and final plan of subdivision to the town clerk on behalf of the town, the committee on streets/ public works superintendent the recreation committee/recreation coordinator, and to the department of health, the department of the environment and any other agency of the province of the town the development officer deems necessary.
- 7.4 The town clerk shall forward a written report to the development officer on behalf of the town, the committee on streets/public works superintendent, the recreation committee/ recreation coordinator. The department of health and any other agency of the province or town which has been forwarded a copy of the preliminary plan shall also forward a written report of their findings to the development officer.
- 7.5 Approval of final plan of subdivision shall not be refused or withheld as a result of the assessment or recommendations made by the department of health, the department of the environment, the committee on streets, the recreation committee, the public works superintendent or any other agency of the province or the town unless the final plan of subdivision is clearly contrary to a law of the province or by-law of the town made pursuant to a law of the province, including any applicable dimensions for lot area and lot frontage contained in the Land-use bylaw of the town.
- 7.6 Where a development officer refuses to approve a final plan of subdivision, he shall notify the subdivider pursuant to section 105 (3)(c) of THE PLANNING ACT, advising the subdivider of the appeal provisions of section 103 of THE PLANNING ACT.
- 7.7 Upon approval by the development officer of the final plan of subdivision, the development officer shall notify in writing the subdivider and where applicable, the committee on streets/ public works superintendent, the recreation committee/ recreation coordinator, the department of health and any other agency of the province or town which the development officer requested to review the final plan, of his decision to approve the final plan.

PART 8 - FINAL PLAN SUBDIVISION REQUIREMENTS

- 8.1 Final plan of subdivision submitted to the development officer shall be:
- a. drawn to a minimum scale or scales sufficient for clarity of all particulars on the final plan of subdivision.
 - b. certified and stamped by a Nova Scotia land surveyor that the lots for which approval is requested have been surveyed in the manner required by the Nova Scotia Land Surveyors Act and the regulations made thereunder, except for a final plan of subdivision prepared pursuant to Section 9.4(2) of this bylaw.
 - c. folded to approximately 20x30 cm. (8x12 in.) with the face of the folded print being the title block which is located in the lower right-hand corner of the final plan of subdivision.
- 8.2 Final plans of subdivision shall show the following:
- a. name of the subdivision, if any, and the name of the owner and property,
 - b. a location map, drawn to a scale not smaller than 1:50,000 (such scale to be shown not smaller than shown on the map) preferable with the same orientation as the area of land,

- c. the length of the boundaries of all existing and proposed lots, streets, and right-of-way and easements including the length or arc, points of curvature and radius in the case of curved lines,
- d. names of all owners or the lot identifiers of all properties abutting the proposed subdivision.
- e. a clear space for stamping, measuring at least 15cm (5.90 in.) wide and 15 cm (5.90 in.) high,
- f. the dimensions of the area of land proposed to be subdivided,
- g. approximate location of existing main buildings on the area of land proposed to be subdivided with the graphic location for all buildings within 3 meters (9.8 feet) either side of the boundaries of the proposed lot,
- h. the shape, dimensions and area of lots, blocks, and the remainder lot, if any,
- I. each proposed lot individually identified without duplication of lot identifiers, and where practicable, where a parcel is being added to or subtracted from an existing lot or where a lot shown on a plan of subdivision is being divided, the proposed lot or lots shall be identified by the existing lot identifier and a letter,
- j. the bearings of the boundaries of proposed lots,
- k. the width and location of railroads, and existing and proposed public streets, including intersections and turning circles.
- l. the boundaries of proposed lots shown by solid lines, and the vanishing boundaries of existing lots being re-subdivided, consolidated or both, shown as broken lines,
- m. a notation stating whether or not the lots for which approval is requested are serviced by public sanitary and storm sewers and public water systems,
- n. the identification, location, dimensions, and area of land proposed to be reserved for park, playground, and similar public purposes.
- o. the width, location and nature of any easements or rights-of -way on or affecting the area of land proposed to be subdivided.
- p. the date on which the final plan of subdivision was certified with all revisions to be identified, dated and initialed.
- q. north point
- r. the scale to which the final plan of subdivision is drawn
- s. the names of existing and proposed public streets, and
- t. any other information which the development officer deems necessary to determine whether a final plan of subdivision conforms to this subdivision bylaw.

- 8.3 Where the design or layout of the subdivision was designed by an individual or firm other than the individual or firm of the professional land surveyor who has certified the final plan of subdivision, the name of the individual or firm and the nature of the work performed shall be shown in the title block of the final plan of subdivision.

- 8.4 Where the requirements of Section 10.3, 10.4, 10.5 and 10.6 apply:
- a. Final plans of subdivision shall be accompanied by detailed engineering design drawings for the public water, sanitary and storm sewer systems to be installed
 - I. prepared in accordance with the specifications contained in SCHEDULE “D” of this bylaw, and
 - ii. stamped by a professional engineer,
 - b. In addition to the requirements of subsection (a) the drawings shall show the location and dimensions of existing public water, sanitary and storm sewer systems to which the proposed public water, sanitary and storm sewer systems will connect.
 - c. Final plans of subdivision shall be accompanied by detailed engineering design drawings for the public streets to be constructed:
 - I. prepared in accordance with the specifications contained in SCHEDULE “D” of this bylaw, and
 - ii. signed and stamped by a professional engineer.
 - d. Final plans of subdivision shall be accompanied by a copy of the agreement, entered into between the town and the subdivider pursuant to Section 10.9, outlining the terms for the installation of the public services and construction of the public street.

PART 9 - GENERAL PROVISIONS

- 9.1 All lots to be approved on a final plan of subdivision shall abut a public street
- 9.2 A proposed public street shown on a final plan of subdivision shall have a minimum right-of-way of 15.24 meters (50feet)
- 9.3 All lots for which approval is requested, shown on a final plan of subdivision, and the remainder lot, if any, for which no approval is requested, shall meet the applicable dimensions for minimum lot area and lot frontage contained in the Land Use Bylaw for the Town.
- 9.4 (1) Notwithstanding Section 9.1 and 9.3, the development officer may approve a final plan of subdivision altering the boundaries of two or more areas of land where:
- a. no additional lots are created, and
 - b. each lot:
 - I. meets the minimum dimensions for lot frontage of the Land Use Bylaw for the Town,
 - or
 - ii. has not had its frontage, if any, reduced, and
 - c. each lot:
 - I. meets the minimum dimensions for lot area of the Land Use Bylaw for the Town, or
 - ii. has not had its area reduced.
- (2) The final plan of subdivision prepared pursuant to subsection (1) shall:
- a. be certified and stamped by a Nova Scotia Land Surveyor that the boundaries of the parcel

proposed to be added to the existing area of land have been surveyed, and are shown as a heavy solid line, except the common boundary between the existing lots which should be shown as a heavy broken line, and

b. notwithstanding sections 8.1(b) and 8.2(j) and (1), other than the new boundaries which have been surveyed pursuant to the clause(a) of this subsection, show the remaining boundaries of the resulting lot for which approval is requested described graphically as a lighter solid line, and

c. have the following notation affixed to the plan adjacent to the certification required by the Nova Scotia Land Surveyor Act and Regulations made thereunder, and such notation is signed by the surveyor:

“NOTE: The boundaries shown on this plan which have been surveyed are the boundaries of Parcel_____. The Common Boundary between existing lots_____ and which is shown by a heavy broken line is hereby certified as having been the common boundary.

The remaining boundaries of resulting lots_____ shown on this plan are a graphic representation only and do not represent the accurate shape or position of the lot boundaries which are subject to a field survey.”

- 9.5 (1) Notwithstanding Section 9.3, the development officer may approve a maximum of two lots in accordance with section 107 of the planning act, provided all other requirements of this bylaw are met.
- (2) An application pursuant to subsection (1) shall be made using the application form in Schedule “C”.
- (3) This section shall apply to lots which are or are not intended to be served by municipal sewer and water services.
- 9.6 (1) Notwithstanding Section 9.3, where a development component of a permanent nature such as a structure, driveway, well, or septic tank is encroaching in or upon an immediately adjacent area of land, the development officer may approve a plan of subdivision to the extent necessary and practical to remove the encroachment.
- (2) Where the lots created pursuant to subsection (1) are not surveyed in accordance with section 8.1 (6) and 8.2 (j) and (1), the provisions of section 9.4 (2) shall apply.
- 9.7 A public street, unbroken by an intersection shall not exceed 365 meters (1,197.51 feet) in length unless such would prejudice the proper subdivision of land or adjoining land.
- 9.8 There shall be no more than four public street approaches in an intersection.
- 9.9 Where a proposed public street intersects a public street, the minimum sight distance along the public street shall be 65 meters (213.3 feet).
- 9.10 The distance between intersections of public streets with arterioles or highways shall not be less than 305 meters (1000.66 feet). The distance between all other public street intersection shall not be less than 65 meters (213.3 feet).
- 9.11 (1) The length of a proposed cul-de-sac shall not exceed 107 meters (351.05 feet) from an intersection to the turning circle; unless here exists an emergency exit of 3 meters (9.8 feet) wide to a public street, then the length of the cul-de-sac shall not exceed 228 meters (748.03 feet).

- (2) Proposed cul-de-sac or other dead-end public streets shall have a turnaround with a minimum radius of 15.24 meters (50 feet) from the center of the proposed cul-de-sac.
- 9.12 The grade of a proposed public street shall be a maximum of 8% with 4% being the maximum for 30 meters (100 feet) from the intersection of two center lines. The minimum grade of any street shall be 0.5%.
- 9.13 All proposed intersecting streets must intersect at an angle of 70 to 90 degrees for a minimum distance of 30 meters (98.43 feet) from the intersection measured from the respective center lines.
- 9.14 Where a public street in an adjoining subdivision abuts the boundaries of a plan of subdivision submitted for approval, the public street in the latter shall, if reasonably feasible, be laid out in prolongation of such public streets, unless it would be in violation of this bylaw.
- 9.15 Wherever possible, side lot lines shall be substantially at right angles to a public street, or radial to a curved public street.
- 9.16 Wherever possible, the rear lot lines of a series of adjoining lots shall be continuous, not stepped or jogged.
- 9.17 All lots to be approved on a tentative or final plan of subdivision, and a remainder lot if any, shall have a minimum width and minimum depth of at least 6 meters (19.7 feet).
- 9.18 (1) An application to amend or repeal an endorsed plan of subdivision or a plan of subdivision drawn prior to 28 October 1975, shall be in accordance with section 113 of the planning act, and shall satisfy the requirements of this bylaw concerning approvals of final plans of subdivision.
- (2) The application to amend shall refer to the plan of subdivision as originally endorsed or drawn, and such reference shall include the file number of the earlier subdivision plan filed at the office of the Registrar of Deeds for this Town.

PART 10 - WATER, SEWER, AND OTHER SERVICES

- 10.1 Under this bylaw, a subdivider shall be exempt from the following requirements for the installation of public water, sanitary and storm sewer systems where:
- (1) roads and services are currently owned and maintained by the town, or
- (2) public water, sanitary and storm sewer systems are not provided at the property line of the area of land proposed to be subdivided.
- 10.2 When not required to do so pursuant to Section 10.1, but where the subdivider wishes to install services, the subdivider shall agree in writing with the town to construct the public streets and install the public water, sanitary and storm sewer systems prior to endorsement of approval on the final plan of subdivision in accordance with sections 10.8 and 10.9.
- 10.3 (1) Subject to Section 10.1, a subdivider who proposes to subdivide an area of land in the town shall install a public water system for the area of land proposed to be subdivided.
- (2) The public water system shall include mains and laterals to the boundaries of the proposed lots and the system shall be designed by a professional engineer and shall comply with the specifications set forth in section 4 of SCHEDULE "D" of this bylaw.
- 10.4 (1) Subject to Section 10.1, a subdivider who proposes to subdivide an area of land in the town shall install a public sanitary sewer system for the area of land to be subdivided.

- (2) The public sanitary sewer system shall include collectors and laterals to the boundaries of the proposed lots and the system shall be designed by a Professional Engineer and shall comply with the specifications set forth in Section 3 of SCHEDULE “D” of this bylaw.
- 10.5 (1) Subject to Section 10.1, a subdivider who proposes to subdivide an area of land in the Town shall install a public storm sewer for the area of land proposed to be subdivided.
- (2) The public storm sewer system shall include collectors and laterals to the boundaries of the proposed lots and the system shall be designed by a professional Engineer and shall comply with the specifications set forth in Section 5 of SCHEDULE “D” of this bylaw.
- (3) The proposed storm sewer system shall be designed to discharge into the existing streams and brooks utilizing the natural run-off channels dictated by virgin topography. Connections may only be made to existing storm sewers with the prior approval of the Public works superintendent and approval shall only be refused if the existing storm sewer is inadequate.
- 10.6 (1) A subdivider who proposes to subdivide an area of land shall layout and construct all proposed public streets as shown on the street plan.
- (2) The public street shall include all roadway culverts and drainage ditches and the public street shall be designed by a professional engineer and shall comply with the specifications set forth in Section 2 of SCHEDULE “D” of this bylaw.
- 10.7 The application for approval of a final plan of subdivision, submitted to the development officer shall be accompanied by a copy of the joint approval of the public water and sanitary sewer systems from the department of health and the department of the environment.
- 10.8 The subdivider shall satisfy the requirements of Section 10.3, 10.4, 10.5 and 10.6 by one of the following alternatives:
- (1) The subdivider shall agree in writing with the Town to install the required systems and construct the public streets prior to endorsement of approval on the final plan of subdivision, or
- (2) The subdivider shall agree in writing with the Town to install the required systems and construct the public streets after receiving endorsement of approval on the final plan of subdivision and shall deposit with the clerk, prior to endorsement.
- I. cash, or
- ii. a certified cheque, or
- iii. a bond or indemnity acceptable to the Council,
- in an estimated amount sufficient to cover 125% of installation costs of the required systems and 125% of construction costs of the public streets, such estimates to be approved by the Public Works Superintendent.
- 10.9 (1) An agreement entered into between the Town and the subdivider pursuant to Section 10.8 (1) shall be executed on behalf of the Town and by the subdivider and shall be given to the Clerk and the subdivider applying for final approval of the plan subdivision.
- (2) The agreement shall contain terms with respect to:
- a. commencement and completion dates for construction of public streets and installation of public water, sanitary and storm sewer systems,
- b. such phasing as may be agreed upon by the subdivider and the Town,

c. the provision and acceptance of easements and rights-of-way associated with the public streets and systems, and

d. any other matter required by the provisions of the bylaw.

10.10 In addition to section 10.9, the subdivider who is responsible for the construction of public streets and the installation of public water, sanitary and storm sewer systems, shall.

a. arrange and pay for the engineering design specifications for the public streets, and public water, sanitary and storm sewer systems in accordance with the specifications set forth in SCHEDULE "D" of this bylaw.

b. arrange for complete testing of the systems, and shall advise the public works superintendent of proposed test dates, sites and times.

c. allow the Town to inspect the construction and installation at any stage.

10.11 Following construction and installation of the required services and before acceptance by the town of the public streets, water, sanitary and storm sewer systems, the subdivider shall:

a. provide the "as built" reproducible engineering drawings for all public systems stamped and signed by a professional engineer, plus a certificate from a professional engineer, here-in-after called the certifying engineer, certifying that all services have been installed in accordance with the engineering design drawings submitted in accordance with the engineering design drawings submitted in accordance with the engineering specifications as laid out in SCHEDULE "D" of this bylaw, and

b. provide all operating and procedural manuals for each public water or sanitary or storm sewer systems, and

c. provide the results of all required test reports of the public systems demonstrating that the required systems have been constructed and are operating according to the standards of the agreement and this bylaw, and

d. provide all easements and rights-of-way associated with the public streets and systems, and

e. post and maintenance bond acceptable to the Council made in favour of the Town in an amount equal to 10% of the actual costs of construction of public streets and installation of public streets and installation of public water, sanitary and storm sewer systems, such bond to be posted for one (1) year.

10.12 Following completion of the public streets, water, sanitary and storm sewer systems a certificate of compliance, in the form prescribed in Schedule "E", shall be issued by the Town Clerk and Public Works Superintendent to the subdivider, and a copy to the development officer.

10.13 (1) upon receipt of the certificate of compliance under Section 10.12, the subdivider shall convey the public streets, water, sanitary and storm sewer systems to the Town free of encumbrances, at no cost to the Town.

(2) Following acceptance of the public streets, water, sanitary and storm sewer systems under section 10.13 (1), the Town shall forward a letter of acceptance to the Development Officer.

PART 11 - PARKLAND TRANSFERS

11.1 (1) Before endorsement of approval on the final plan of subdivision by the Development

officer, the subdivider shall reserve and convey to the Town free of encumbrances, for park, playground or similar public purposes, an area of useable land equal to 5% of the area of land shown on the final plan of subdivision exclusive of public streets and walkways and the remainder lot, if any, or pay a sum of money equal to 5% of the assessed value of the new lots created exclusive to public streets and the remainder lot, if any.

(2) Notwithstanding subsection (1), where 5% of the subdivided area is less than the minimum lot required for park, playground and similar public purposes as set out in the Town's Land Use Bylaw, the clerk shall accept for park, playground or similar public purposes, a sum of money equal to 5% of the assessed value of the new lots created, exclusive or public streets and the remainder lot, if any, before endorsement of approval on the final plan of subdivision by the development officer.

- 11.2 In the alternative to Section 11.1, before endorsement of approval on the final plan of subdivision a subdivider may offer to Council, and at Council's option, the clerk may accept an amount of useable land of equivalent value to that required under section 11.1, outside the area of land to be subdivided and within the boundaries of the Town.
- 11.3 At the option of Council, a combination of land and cash may be accepted by the Clerk on behalf of the Town provided that its combined value is equivalent in value to that required under Section 11.1.
- 11.4 Following the completion of parkland transfers under sections 11.1, 11.2, or 11.3, the town shall forward a letter of acceptance to the development officer.
- 11.5 The requirements of these sections 11.1 through 11.3 inclusive are waived when the applicant is requesting approval for the consolidation or re-subdivision of existing lots.

PART 12 - REQUIREMENTS FOR ENDORSEMENT AND FILING OF FINAL PLANS OF SUBDIVISION

- 12.1 (1) When the requirements of THE PLANNING ACT, this bylaw and the regulations respecting subdivision of land to be serviced by on-site Sewage Disposal Systems pursuant to the HEALTH ACT have been met, letters of acceptance have been received and the final plan of subdivision has been approved by the Development Officer, approval shall be endorsed on the final plan of subdivision by the Development Officer.

(2) The Development Officer shall forward a copy of the endorsed final plan of subdivision to the subdivider.

(3) In addition to Section 110(8) of the PLANNING ACT, the Development Officer shall give notice of the endorsement of approval on the final plan of subdivision to:

a. the surveyor, and

b. any other department or agency of the province or the Town who has been requested to review the final plan of subdivision.

- 12.2 The following information shall be written or stamped on any final plan of subdivision which is endorsed:

a. "This final plan of subdivision is approved for lots _____."

b. the classification of each lot within one of the classes A,B,C, or D, including the definition of such class, specified in the regulations respecting subdivision of Land to be serviced by on-site sewage disposal systems or "Lots _____ are serviced with a public sewer".

- 12.3 Pursuant to section 110(2) of the PLANNING ACT, the Development Officer shall forward by certified mail or hand deliver two endorsed copies of the final plan of subdivision to the office of the Registrar of Deeds for the County of Pictou (one copy to be filed and one copy to be certified and returned to the development officer) and pay the fees required under Part 13 of this bylaw to file the final plan.
- 12.4 Pursuant to section 110(4) of the Planning Act, the Development Officer shall register a notice, in the form specified in schedule "B", in the Registry of Deeds which indicates approval of the final plan of subdivision and forward to the Registrar of Deeds the fees required in Section 13 of this bylaw.

PART 13 - FEES FOR THE FILING OF A FINAL PLAN OF SUBDIVISION

- 13.1 (1) the subdivider shall pay the fees contained in the COSTS AND FEES ACT R.S.N.S., 1989, c. 104, for filing the endorsed final plan of subdivision and certification of a copy of the plan and registering a notice of approval of the plan.
- (2) The fees referred to in subsection (1) shall be paid at the time of application for approval of the final plan of subdivision by cheque or money order made payable to the Registry of Deeds.
- (3) Where the final plan of subdivision does not receive endorsement of approval by the development officer, the subdivider shall be entitled to the return of the cheque or money order referred to in subsection (2).

PART 14 - REPEAL OF ALL FORMER SUBDIVISION BYLAWS

- 14.1 All former bylaws of the Town in respect to Subdivisions heretofore passed by the Council are hereby repealed.

SCHEDULE "A"

APPLICATION FOR THE APPROVAL OF A PLAN OF SUBDIVISION

File no. _____

Subdivider Related Information Phone No. _____
Name of Land Owner (s) _____

Address of Land Owner (s) _____
Postal Code _____

Subdivision Name _____
Document to be returned to _____
Address _____

Land to be subdivided
Town of _____ Location _____
Type of Application _____ Preliminary _____ Tentative _____ Final
Type of Development Proposed _____ single family
_____ other (specify) _____
Zone _____ Approval requested for lot(s) _____

<u>Services</u>	<u>Existing</u>	<u>Proposed</u>
Public Water other (specify)	_____	_____
Public Sanitary Sewer other (specify)	_____	_____
Public Road Access other (specify)	_____	_____
Public Storm Sewer other (specify)	_____	_____

_____ Registration Fee submitted (payable to the Registry of Deeds)

I certify that I am the owner of the area of land proposed to be subdivided or am acting with the owner's written consent.
Signature of Subdivider _____ Date _____

FOR OFFICE USE ONLY

Comments requested from: _____ 5% Open space required

dates	sent	rec'd
Dept. Health	_____	_____
Streets Comm	_____	_____
Engineer	_____	_____
Recreation	_____	_____
Planning	_____	_____
Other	_____	_____

Land _____ Cash _____
Area _____ Amount _____
Council approved option:
Date _____

Agreements: _____

Registered: _____

SCHEDULE "B"

NOTICE OF APPROVAL OF PLAN OF SUBDIVISION IN
ACCORDANCE WITH SECTION 100 (2B) OF THE PLANNING ACT

Name of Owner(s) _____

Name of Subdivision _____

Location _____

Date of Approval _____ For Lot(s) _____

Surveyor _____ Date of Plan _____

Dated this ____ day of
_____, 20__

Municipal Development Officer

Plan of Subdivision filed in the Registry of Deeds as Plan# _____

Dated this ____ day of
_____, 20__

This plan of subdivision also contains information regarding the lots approved on this plan with respect to one or more of the following:

1. The lots' eligibility for on-site sewage disposal systems.
2. The availability of public sewer and water systems.
3. Information indicating whether or not the lots abut a public street or highway.

SCHEDULE "C"

APPLICATION FOR THE APPROVAL OF A MINOR VARIANCE

This application form should be completed in full and forwarded to the Development Officer for the Town of Trenton. The applicant is applying under the provisions of Section 9.5 of this Subdivision bylaw and Section 107 of the Planning Act, S.N.S., 1989, C.346, for a variance on the minimum lot dimensions or lot area required by the Land Use bylaw and said variance is within the following guidelines:

1. The request involves a maximum of two (2) lots.
2. The lots are/or are intended to be served by municipal sewer and water services.
3. The difficulty experienced is not general to the properties in the area or resulting from the intentional disregard of the requirements of this subdivision bylaw.
4. The proposed lot area and dimensions are no less than ninety percent of the required minimum for the lot area dimension.

Name of Property Owner: _____

Address: _____

Phone: _____

Name of Applicant (if not owner): _____

Phone: _____

Location of lot/lots for which a variance is requested: _____

	Lot #1		Lot #2	
	Required	Proposed	Required	Proposed
Area	_____	_____	_____	_____
Lot lines:				
Front	_____	_____	_____	_____
R. Side	_____	_____	_____	_____
L. Side	_____	_____	_____	_____
Rear	_____	_____	_____	_____

Why is it not possible to comply with the provisions of this bylaw?

Has a variance ever been applied for on these lots? YES NO If yes, describe briefly,

I certify that I am the owner or am acting with the owner's written consent.

Signature of Applicant _____ Date _____

MUNICIPAL SERVICE STANDARD SPECIFICATIONS

MARCH 2022

TOWN OF TRENTON



TOWN OF TRENTON

MUNICIPAL SERVICE STANDARD SPECIFICATIONS

Town of Trenton

March 2022

REVISION LIST:

<u>REV.</u>	<u>DESCRIPTION</u>	<u>DATE</u>
1	Final for Adoption and Implementation	March 25, 2022
0	Draft for Review	March 7, 2022



Preface

The *Municipal Service Standard Specifications* of the Town of Trenton herein applies to all development within the Town and supersedes *Schedule D – Town of Trenton: Engineering Specifications* contained within *No.32 Subdivision By-law for The Town of Trenton* and apply to that By-law and all other development within the Town of Trenton.



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1. Drawing Specification

1.1 General

- .1 The purpose of this section is to standardize the preparation and delivery of all hardcopy and digital drawings submitted to the Town for approval.

1.2 Design Drawings

- .1 The engineering design drawing shall include, but are not necessarily limited to:
 - .1 Plan
 - .2 Profile
 - .3 Details as required (project specific)
 - .4 Overall plan
- .2 The presentation of the plan and profile views of the engineering design drawing shall be as follows:
 - .1 Units: All drawings submitted for approval shall be prepared using metric units.
 - .2 Scale: The plan shall be drawn to a scale of 1:500 or 1:250 (metric). The profile shall be drawn with a horizontal scale of 1:500 or 1:250 (metric) and a vertical scale of 1:50 or 1:25 (metric) unless otherwise approved by the Town.
 - .3 Title Block: The title block, located on the right side of the sheet shall include a key plan, legend, notes, revisions, dates, scales, drawing number, approving signatures, drawing title, and company name.
 - .4 Sheet Size: The drawing size shall be Arch D (604mm x 914mm) or as otherwise approved by the Town.
 - .5 North Arrow: Drawing plan view to include a grid north arrow in the upper right corner. Where possible, the plan view should be orientated so that direction of north points to the top half of the sheet.
 - .6 Key Plan: All drawings shall contain a key plan on each sheet indicating the section of the project covered by the sheet.
 - .7 Stations: The plan and profile view stations shall be aligned vertically at one end of the sheet. Stations should increase from left to right and when possible, from lowest elevation to highest elevation. When it is not possible to achieve both



increasing stations and increasing elevation from left to right, then the requirement for increasing stations will take precedence.

- .3 Details to be included as necessary or as directed by the Town Engineer.

- .4 Plan: The plan of the engineering design drawing shall include:
 - .1 The existing and proposed location and horizontal alignment of:
 - .1 The water distribution system including all valves, water service laterals, hydrants, hydrant branches, tees, bends and appurtenances (i.e. chambers, reducers, couplings), and pipe with the length, size, material and class.
 - .2 Sprinkler and large diameter water service pipes (>50 mm) with the length, size, material and class, to the street lines.
 - .3 The wastewater sewers, storm water sewers, manholes, and culverts, with offsets from the water main.
 - .4. All other public services and their appurtenances including any underground power, telecommunication system, or gas lines.
 - .5 Topography, surface site drainage, water courses, and site features.
 - .2 The street and its dimensions and name.
 - .3 Curbs and gutters, sidewalks, and driveways.
 - .4 The boundary lines of each lot, lot numbers and property identification (PID) numbers if available.
 - .5 The chainage at 10m intervals with labels every 50m along the centerline of the street, and the chainage of all intersecting street center lines.
 - .6 Any control monuments and bench marks that are within the area of the plan.
 - .7 Limits of the construction.
 - .8 At least two points of known chainage on the centerline of the street, to be related to the Nova Scotia Coordinate Survey System (NAD83).
 - .9 Match Lines: Where a water main extends over more than one drawing sheet corresponding match lines with labels shall be provided with sufficient overlap on each drawing to include all information on fronting properties.

- .5 Profile: The profile of the engineering design drawing shall include the existing and proposed location and vertical alignment of:
 - .1 The water system, including length, size, material and class of pipe, and the chainage and size of all fittings corresponding directly to the plan. Pipe shall be shown as a two-dimensional figure indicating pipe invert and outlet.



- .2 The proposed centerline street grade. Where the water line is offset from the street centre line, the elevation of the water main must maintain the minimum depth of cover with consideration for the street cross slope.
 - .3 The finished grade above the water main where the water line is not under a street.
 - .4 The wastewater and storm water sewers, including pipe inverts at manholes (inlet/outlet), manhole cover elevations and catch basin lead invert information. Show all water, wastewater and storm water main/culvert crossings in profile.
 - .5 Any other underground services and appurtenances.
-
- .6 The engineering design drawing shall be stamped and signed by a Professional Engineer currently registered to practice in Nova Scotia.
 - .7 Format: The format of design drawing submission shall be:
 - .1 Hard copy on 20 lb (minimum) bond paper.
 - .2 Digital design drawing files shall be delivered in an electronic format compatible with AutoCAD (2016 or older) or Autodesk Civil 3D (2018 or older). The minimum requirement for CAD file submission (for final design drawings only) shall include the plan portion of the drawing to facilitate GIS updating. This CAD file shall include the location of proposed pipes, hydrants, valves, services, and any water system appurtenances. In addition to the water system, the CAD file shall include any proposed buildings (outline) and property parcels.
 - .3 All drawings shall also be submitted in .pdf format.
 - .4 Delivery Media: USB drive, clearly labelled with the project name, project phase, date, and consultant's name.
 - .5 CAD Layer Names: Provide a list of all layer names used within the CAD drawing file to the Town for identification of features within the file.

1.3 Record Drawings

- .1 The record drawing shall include all information on the "Design Drawing" as per subsection 1.2, revised to reflect the "As Constructed" information and labelled as "Record Drawing". As a minimum the field coordinates of the following shall be obtained for the purpose of producing Record Drawings:
 - .1 valves
 - .2 hydrants



- .3 finish grade
 - .4 pipe elevations
 - .5 curb stops
 - .6 catch basins
 - .7 manholes (tops and inlet / outlet inverts)
 - .8 storm water system inlet / outlet elevations
- .2 Additional information which must be included on the Record Drawings includes:
- .1 Swing ties from permanent above ground fixtures (i.e. buildings, power poles, hydrants) to locate main line valves, manholes, catch basins, large service and sprinkler valves, and other servicing appurtenances.
 - .2 The location of all service laterals from main to property boundary.
 - .3 Dimensions to locate tees, bends, and other below ground fixtures.
 - .4 Hydrant leads to include measurement from:
 - .1 centre of hydrant valve to centre of hydrant.
 - .2 centre of hydrant valve to main.
 - .5 Start and end of rock profile (if any).
 - .6 Start and end of insulation (if any).
 - .7 Start and end of water main encasement pipes (if any).
 - .8 The location of restrained joints / pipe.
- .3 Format: The format of the record information submission shall be electronic format as per Section 1.2.7.

2. Street & Property Access Specifications

2.1 General

- .1 In all respects, the criteria set out by the Transportation Association of Canada (TAC) and the Standard Specifications for Municipal Services, Part II (latest edition) as developed by the Nova Scotia Road Builders Association (NSRBA) and Consulting Engineers Nova Scotia (CENS) Joint Committee on Contract Documents (JCCD), except as otherwise specified herein, shall serve as the basic guidelines for road design and property access in the Town.



2.2 Street Types

- .1 Streets to be constructed as an urban cross-section type shall:
 - .1 Contain standard curb and gutter, as shown on SD-1 and SD-3
 - .2 Be paved with a minimum of 75mm hot-mix asphalt (see Section 2.8 below).
 - .3 Have an area behind the curb of 3m (to the right-of-way line) filled with material not exceeding 100mm in any direction and graded 2% to the top of the curb.

- .2 Streets to be constructed as a rural cross-section type shall:
 - .1 Contain roadside ditches on each side of the road, as shown on SD-2.
 - .2 Be paved with a minimum of 75mm hot-mix asphalt (see Section 2.8 below).
 - .3 Have a 1.6m wide gravel road shoulder.

- .3 Extensions of existing roads are to maintain the same cross-section type as the existing road.

2.3 Street Classifications

- .1 The Town street classification and basic criteria shall be as follows:



Type	Designation	Right-of-Way Width	Pavement Width
Urban Cross-section	Collector & Local	15.24m	6.72m
	Cul-de-sac	Minimum Radius of 19.5m from Centre of Bulb to edge of right-of-way	Minimum Radius of 15m from Centre of Bulb to Face of Curb
Rural Cross-section	Collector & Local	20m	6m
	Cul-de-sac	Minimum Radius of 19.8m from Centre of Bulb to edge of right-of-way	Minimum Radius of 13m from Centre of Bulb to edge of road shoulder.

2.4 Design Speed

- .1 In general, a design speed of 50 km/hr will be used for all subdivision streets unless a higher speed is deemed to be required by the Town.

2.5 Street Layout

- .1 Streets must be laid out where reasonably possible in prolongations of other streets, either within the same subdivision or in adjacent subdivisions.
- .2 Temporary Turn-arounds:
 - .1 A street is not permitted to terminate as a "dead-end" and shall terminate with a cul-de-sac as shown on SD-4.
 - .2 For streets that shall be extended in the future, as approved by the Town Engineer, a temporary turn-around is to be installed at the end of the street developed as shown on SD-5.
- .3 Intersections:



- .1 The minimum distance between intersections within a subdivision of local streets shall be 75m measured centreline to centreline.
- .2 All intersecting streets must intersect at an angle of 90-degrees +/- 10 degrees for a minimum distance of 30m from the intersection measured from respective centrelines.
- .3 The minimum distance between offset intersections shall be 60m.

2.6 Street Sub-grade:

- .1 All clearing and grubbing operations, including the removal of rock, shall be undertaken to the full extent of the street right-of-way. All rocks, trees, stumps and other organic matter removed during the clearing and grubbing operations shall be transported entirely from the site.
- .2 The top 300mm of the proposed sub-grade shall be compacted to 98% standard proctor and graded with a 2% crown along the center line at an elevation of a minimum of 338mm below the finished grade of the street.
- .3 Where rock exists to the sub-grade, it shall be fractured to 300 mm (12 in) below sub-grade and graded.
- .4 All slopes in cut and fill sections shall be constructed outside the street right-of way and shall be a minimum of 3:1 horizontal to vertical or as otherwise required for less stable material.
- .5 Rock cuts shall be a minimum of 1:4 or as otherwise required. All overhanging and/or loose rocks shall be removed and, in areas where a minimum of 1:4 cannot be obtained, slope protection shall be required.
- .6 Except as specified in Section 2.6.2, in fill sections, all fill material shall be compacted in uniform layers of 300mm and compacted to 95% standard proctor density. It shall be evenly distributed to ensure proper mixing of rocks and fill materials so that proper compaction and consolidation can be achieved. Under no circumstances shall rock migration, creating voided areas, be permitted around underground structures or elsewhere. No rock fill exceeding 300mm in any dimension shall be placed within the top 600mm of sub-grade elevation.



- .7 Under stable conditions, the base course gravel shall consist of Type-2 and Type-1 material in compacted minimum layers of 200mm and 100mm respectively, compacted to 100% standard proctor density, and graded with a 2% crown along the centre line of the street.
- .8 The required depth of base course gravels is directly dependent on the conditions of the sub-grade. Therefore, the specific design shall be determined by a Professional Geotechnical Engineer licensed to practice in the Province of Nova Scotia prior to placement and paving.

.9 The gradation of Type-2 and Type-1 gravel materials shall be as follows:

.1 Type-1:

Sieve Size, μm	Percent Passing
20,000	100
14,000	50 - 85
5,000	20 - 50
160	5 - 12
80	3 - 8

.2 Type-2:

Sieve Size, μm	Percent Passing
80,000	100
56,000	70 - 100
28,000	50 - 80
14,000	35 - 65
5,000	20 - 50
160	3 - 10
80	0-7

.10 All records of sieve analysis for all road sub-grade materials are to be submitted to the Town Engineer for review.



- .11 All records of compaction testing completed by a qualified testing company and in accordance with all applicable CSA standards are to be submitted to the Town Engineer for review.

2.7 Street Grades

- .1 The maximum allowable grade of any street shall be 8%. Where topographic conditions warrant, and upon written approval from the Town Engineer, may exceed 8% but in no case shall it exceed 10%.
- .2 The minimum allowable grade of any street shall be 0.5%.
- .3 Where two streets intersect, the streets shall intersect at right-angles and the maximum grade shall be 2% from at least 15m from the intersection.

2.8 Street Asphalt & Surfaces

- .1 All streets shall be surfaced with asphaltic concrete paving conforming to this specification.
- .2 Written certification from the Design Engineer, including applicable testing and inspection reports, that the asphaltic concrete paving supplied and installed conforms to this specification is to be submitted to the Town Engineer for review.
- .3 Asphaltic concrete installed on gravel grade shall be Type C-HF Asphalt top lift at a minimum thickness of 40mm Type B-HF Asphalt base lift at a minimum thickness of 50mm.
- .4 Asphaltic concrete installed as resurfacing shall be Type C-HF Asphalt at a minimum thickness of 40mm or as specified by the Town Engineer.
- .5 All manholes, catch basins, frames and valves boxes shall be adjusted to match the finished surface of asphalt concrete paving.
- .6 Sodding shall be placed from the back of the curb to the right-of-way line at 2% to the top of the curb.



2.9 Street Signage

- .1 Street signs showing street names shall be placed at all intersections.
- .2 Sign posts shall be 50mm galvanized breakaway traffic posts, 3m long.
- .3 Posts are to be installed using V-Loc sign bases complete with wedges supplied by J. J. MacKay of New Glasgow, Nova Scotia.
- .4 Street name signs shall be 150mm deep extruded aluminum with reflective white letters on green, top-mounted with Unistrut caps style 28A.

2.10 Property Access

- .1 All driveway entrances shall have unobstructed visual sightlines for entry and exit for any part of the street including sidewalks and bike trails.
- .2 All driveways are to intersect the street at 90-degree angles.
- .3 In the case that a driveway is to be placed over a roadside ditch, a culvert is to be supplied by the property owner at the property owner's expense and installed by the Town at the Town's expense.
 - .1 The minimum size of a driveway culvert shall comply with subsection 5.5.4.3 herein.
- .4 Residential property access shall comply with the follow:
 - .1 The width of any residential driveway shall be no less than 3m for one-way traffic and no wider than 5m, and no less than 6m for two-way traffic and no wider than 10m.
 - .2 Residential property containing a single family dwelling with frontage less than 30m shall be permitted one (1) driveway only.
 - .3 Residential property containing a single family dwelling with frontage equal to or greater than 30m may be permitted two (2) driveways at the discretion of the Town Engineer and local Traffic Authority.



- .4 Residential property containing multi-unit dwellings shall be permitted either one (1) two-way driveway of width specified in subsection 2.10.4.1, or two (2) one-way driveways of width specified in subsection 2.10.4.1.
 - .5 Minimum separation between two (2) driveways of a residential property referred to in subsection 2.10.4.3 shall be 12m.
 - .6 Corner lot residential property shall be permitted a secondary access, one (1) driveway from each of the two (2) streets.
 - .7 Residential property driveways are to be located no closer than 9m from an adjacent street intersection.
- .5 Commercial, industrial and institutional property access shall comply with the following:
- .1 Commercial, industrial, or institutional property that requires four (4) or more parking spaces is required to have vehicle traffic to enter and exit the property in a forward motion.
 - .2 The width of any commercial, industrial, or institutional property driveway shall be no less than 6m to provide an ingress and egress safely for two-way traffic.
 - .3 Commercial, industrial or institutional property may have a secondary driveway along the lot frontage provided:
 - .1 The lot frontage is greater than 20m with one driveway acting as ingress for traffic flow and the other acting as egress for traffic flow, or;
 - .2 The lot frontage is greater than 30m.
 - .4 Minimum separation between two (2) driveways of a commercial, industrial, or institutional property referred to in subsection 2.10.5.3 shall be 15m.
 - .5 Corner lot commercial, industrial, or institutional property shall be permitted a secondary access, one (1) driveway from each of the two (2) streets, except if subsection 2.10.5.3 applies for which two (2) driveways from one street and one (1) driveway from the second street are permitted.
 - .6 Commercial, industrial, or institutional property driveways are to be located no closer than 9m from an adjacent street intersection.



3. Sanitary Sewer Specifications

3.1 General

Sanitary sewer systems shall conform to the specifications and design criteria herein.

3.2 Design Requirements - Gravity Systems

- .1 The sanitary sewer system shall be designed for peak flow based on:
- .1 Peak domestic sewage flow calculated by the following equation:

$$Q(d) = \frac{PqM}{86.4} + IA + SN$$

where:

- Q(d) = peak domestic sewage flow (including extraneous flow) in L/sec.
P = design population, in thousands
q = average daily per capita domestic flow in L/cap·d. (exclusive of extraneous flows)
M = peaking factor as derived from the greater of:

$$M = 1 + \frac{14}{4 + P^{0.5}} \quad \text{or} \quad M = \frac{5}{P^{0.2}}$$

The minimum permissible peaking factor shall be 2.0.

- I = unit of peak extraneous flow (0.28 L/sec per hectare with the area based on inflow generated from within 50m on both sides of the road within the new serviced areas).
A = tributary area in gross hectares.
S = unit of manhole inflow allowance for each manhole in sag location (0.4 L/sec per manhole).
N = number of manholes in sag locations.



- .2 For individual commercial and institutional users, the sewage flow rates in the table below are to be used for design.

Sewage Flows (Average Daily)

Type of Establishment		Flow (L/day)
Residential	Private Dwelling	340 per person
	Apartment Building	340 per person
Transient Dwelling	Hotels	340 per bedroom
	Lodging Houses / Tourist Homes	270 per bedroom
	Motels / Tourist Cabins	300 per bedroom (restaurant extra)
Industrial / Commercial Buildings	<i>Does not include process water or cafeteria</i>	90 per employee
Camps	Campsite	500 per campsite
	Trailer Camps	340 per person
	Children's Camps	230 per person
	Labour Camps	230 per person
Restaurants	Average Type	225 per seat + 100 per employee
	Bar / Lounge	25 per patron
	Short Order / Drive-in Service	25 per patron
	24 hour	225 per seat
Clubhouses	Residential Type	340 per person
	Non-residential Type	160 per person
	Golf Club - General	40 per member
	Golf Club with Bar & Restaurant	40 per member + 115 per seat
Institutions	Hospitals	950 per bed
	Other	450 per resident



Sewage Flows (Average Daily)

Type of Establishment		Flow (L/day)
Schools	Basic	50 per person
	With Cafeteria	70 per person
	With Cafeteria & Showers	90 per person
	With Cafeteria, Showers & Laboratories	115 per person
	Boarding	340 per person
Theatres	Indoor Theatre	25 per seat
	Drive-in Theatre	25 per car
Automobile Service Stations	No Car Washing	20 per car served
	Car Washing	340 per car washed
Miscellaneous	Stores, Shopping Centres & Offices	6 per m ²
	Factories (8 hour shifts)	115 per person
	Self-service Laundries	1,800 per machine
	Bowling Alleys	900 per alley
	Swimming Pools & Beaches	70 per person
	Fairgrounds	25 per person
	Assembly Halls	35 per seat
	Airports	15 per passenger
	Churches - General	25 per seat
Churches - with Kitchens	35 per seat	



Sewage Flows (Average Daily)

Type of Establishment		Flow (L/day)
	Beauty Parlours	200 per seat
	Barber Shops	75 per seat
	Hockey Rinks	15 per seat
	Day Care Centres	115 per child
	Liquor Licence Establishments	115 per seat
Miscellaneous	Mobile Home Parks	1,350 per space
	Nursing Homes	450 per resident
	Senior Citizen Homes	600 per apartment
	Recreational Vehicle Park	180 per space

.3 Peak Factor: When using the above unit demands, maximum day and peak rate factors must be developed. For establishments in operation for only a portion of the day, such as schools, shopping plazas, etc., the water usage should also be factored accordingly.

.2 Sanitary Sewer Main:

- .1 The sanitary sewer main shall be PVC SDR 35 pipe material with locked-in rubber gasket joints.
- .2 The minimum size of pipe to be used for sanitary sewer main lines shall be 200mm diameter.
- .3 All pipe shall be laid at a uniform vertical grade and horizontal alignment in a compacted Type C5 Clear Stone bedding placed in an undisturbed or approved trench bottom.
 - .1 Type C5 Clear Stone:



Sieve Size, mm	Percent Passing
28	100
20	90 - 100
10	0 - 40
5	0 - 10

- .2 All records of sieve analysis for all pipe bedding materials are to be submitted to the Town Engineer for review.
- .4 Stone bedding along the sides of the pipe shall be installed and compacted in such a way as not to alter the alignment or grade of the pipe. Bedding shall extend to 300mm above top of pipe for full trench width.
- .5 Further backfilling shall be placed in layers to achieve a 95% standard Proctor density and shall be carried out in a manner which ensures that no rock migration will occur around manhole structures. Refer to Standard Detail SD-6.
- .6 When manhole and water main structures are located within 300mm of each other, this area must be backfilled and compacted using Type-1 or Type C5 Clear Stone.
- .7 All pipe shall be laid in accordance with Nova Scotia Road Builders Association Standard Specifications for Municipal Service, Section 33 31 00.
- .8 When a new sanitary sewer main line is to be connected to an existing sanitary sewer main line at mid-span between existing manholes (e.g. at a new street intersection), the existing pipe of the existing sanitary sewer main line is to be replaced with new between the existing immediate preceding and existing immediate subsequent manholes.
 - .1 If the condition of the existing sanitary sewer main line can be demonstrated to be in good and functional condition by way of inspection by a qualified company in accordance with the Standard Specifications for Municipal Services, Part II (latest edition) as developed by the Nova Scotia Road Builders Association (NSRBA) and Consulting Engineers Nova Scotia (CENS) Joint Committee on Contract Documents (JCCD), at the developer’s own expense, and approved by the Town Engineer, the existing sanitary sewer main line may be maintained for use.
- .9 All sanitary sewer mains shall have a minimum grade of 1%.



- .10 Sanitary sewer flow velocities shall be a minimum of 0.6 m/s and a maximum of 4.5m/s.
- .11 Detailed calculations of sanitary sewer flows are to be submitted to the Town Engineer for review prior to approval and construction.

- .3 Location:
 - .1 All sanitary sewer pipes and appurtenances shall be located within a street right-of-way along the centre of the street for all new streets.
 - .2 Sanitary sewer pipes may be installed within an easement granted in favour of the Town if deemed to not be feasible to install within a street right-of-way and written approved is obtained from the Town Engineer.
 - .3 Depth:
 - .1 In general, all sanitary sewer pipes shall be installed at a sufficient depth to provide service by gravity flow to all proposed lots within the proposed subdivision and provide service to adjoining lands.
 - .2 The minimum depth of sanitary sewer pipes shall be 1.8m.
 - .4 Refer to Standard Detail SD-6 for common trench requirements.

- .4 Manholes:
 - .1 All manholes shall be standard ASTM C-478 and shall have precast or cast-in-place concrete bases.
 - .2 All manholes shall have a minimum diameter of 1050mm.
 - .3 All manholes shall be constructed using pre-cast concrete sections and "O"-ring gasketed joints.
 - .4 Grade rings shall be a minimum of 150mm thick.
 - .5 Manhole covers shall be IMP R10.
 - .6 Manholes shall be installed at all changes in grade or alignment, at all intersections, and at intervals not exceeding 120m.
 - .7 Installation of manholes shall be in accordance with the Standard Specifications for Municipal Services, Part II (latest edition) as developed by the Nova Scotia Road Builders Association (NSRBA) and Consulting Engineers Nova Scotia (CENS) Joint Committee on Contract Documents (JCCD).
 - .8 Internal drop precast concrete manholes shall be sized to ensure a minimum width of 1050mm for inside edges of internal drop to the opposite inside wall of the manhole.



- .5 Sanitary Sewer Laterals:
- .1 All sanitary sewer laterals shall be PVC SDR 28 pipe material with locked-in rubber gasket joints and laid at a minimum grade of 2%, graded uniformly to the sanitary sewer main line in a compacted Type C5 Clear Stone pipe bed and backfilled in accordance with Standard Detail SD-9.
 - .2 All sanitary sewer laterals shall have clean-outs installed at the street right-of-way lines.
 - .3 100mm diameter sanitary sewer lateral connections to the sanitary sewer main line shall be made using properly engineered saddles or tees.
 - .4 Connections of sanitary sewer laterals of diameter 150mm or larger to the sanitary sewer main line shall be achieved with use of a manhole.
 - .5 The depth of sanitary sewer laterals shall be not less than 1.2m at the right-of-way and shall have sufficient depth to be capable of servicing the basement level of a dwelling by gravity feed unless otherwise approved by the Town Engineer.
 - .6 Sanitary sewer laterals installed to service Commercial and Industrial developments shall have one (1) manhole installed on the property between the service facility and the street right-of-way.
 - .1 Access is to be granted at any and all time to the Town for inspection and sampling ensure compliance of wastewater quality being disposed of through the sanitary sewer system.
 - .6 Downspouts from roof gutters and basement sump pumps are not permitted to be discharged into the Town's sanitary sewer system.
 - .7 All sanitary sewer laterals shall be capped at the street right-of-way and a 50mm x 100mm wooden marker shall be erected at the end of the lateral indicating depth of bury and marked "SEWER" and painted RED.
- .6 Groundwater Movement:
- .1 The Design Engineer shall assess the possible change in groundwater movement caused by the use of pervious bedding material and shall be responsible for the design of corrective measures to prevent localised flooding as a result of this groundwater movement.
 - .2 Trench relief drains shall be incorporated in the design at valley locations.



3.3 Design Requirements - Pumping Stations & Force Mains

- .1 Pumping Stations & Force Mains:
 - .1 Pumping stations and force mains represent a long-term financial burden to the Town in terms of operating and maintenance costs and eventual replacement of system components. Designs are to preclude the need for pumping stations. Pumping stations will be permitted only when a gravity system is not physically possible or when the life cycle costs of a gravity sewer are shown to be greater than those of a pumping station.
 - .2 The type of sewage pumping station should be selected on the basis of such considerations as reliability and serviceability; operation and maintenance factors; relationship to existing stations/equipment; sewage characteristics; flow patterns and discharge; and long-term capital, operating and maintenance costs.
 - .3 Pumping stations and force mains, where necessary, shall be designed and constructed in accordance with engineering best practices and shall conform to the standards and specifications of the East River Pollution Abatement System.
- .2 Force Mains for Private Dwellings:
 - .1 Where existing topography dictates a need to service a dwelling unit utilizing a force main, the force main service shall be entirely upon the private property, connect to a gravity service lateral at the right-of-way line.

3.4 Inspection & Testing

- .1 Inspection:
 - .1 The Developer shall not bury any pipe or appurtenances until they have been inspected by the designated representative of the Design Engineer.
 - .2 Inspections shall be performed by a qualified company in accordance with the Standard Specifications for Municipal Services, Part II (latest edition) as developed by the Nova Scotia Road Builders Association (NSRBA) and Consulting Engineers Nova Scotia (CENS) Joint Committee on Contract Documents (JCCD), Section 33 31 00.
- .2 Testing:



- .1 Testing of sanitary sewer mains and force mains shall be performed by a qualified testing company in accordance with the Standard Specifications for Municipal Services, Part II (latest edition) as developed by the Nova Scotia Road Builders Association (NSRBA) and Consulting Engineers Nova Scotia (CENS) Joint Committee on Contract Documents (JCCD), Section 33 31 00 in the presence of the Town Engineer or his designate.
- .2 The Town Engineer is to be provided 48 hours' notice of when each testing is to be conducted.
- .3 Test results shall be submitted to the Town Engineer for review.
- .4 The Design Engineer shall provide written certification that the sanitary sewer system is installed as designed and is complete and operational.

4. Water Distribution System Specifications

4.1 General

- .1 This section specifies the requirements for a central water distribution system which consists of water mains, service laterals and appurtenances which is designed to carry and distribute an adequate supply of potable water for domestic, institutional, commercial, industrial, and fire protection purposes.
- .2 Reference standards and organizations supported by these specifications include:
 - .1 *Water Supply for Public Fire Protection*, Fire Underwriters Survey - Insurance Advisory Organization (IAO)
 - .2 The National Fire Protection Association (NFPA)
 - .3 American Waterworks Association (AWWA)
 - .4 Canadian Standards Association (CSA)
 - .5 National Building Code of Canada (NBCC)
 - .6 Nova Scotia Building Code (NSBC)
 - .7 National Plumbing Code of Canada (NPCC)
 - .8 Underwriters Laboratories of Canada (ULC)



- .3 All water systems shall conform to all requirements established by the Nova Scotia Department of Environment. No system shall be constructed until the design has been approved by the Town and the Nova Scotia Department of Environment.
- .4 Water quality is monitored by the Town and the system must be designed such that quality is maintained and distributed to the customers at an adequate pressure to supply their needs.

4.2 Design Requirements

- .1 Water distribution systems shall be designed to accommodate fire flows plus maximum daily demand unless otherwise approved by the Town Engineer.
- .2 Hydraulic analysis of any system shall be carried out by the Design Engineer using the Hydraulic Grade Line for that particular serviceable area.
- .3 Minimum & Maximum Pressure:
 - .1 Water distribution systems shall be designed and sized such that during a fire flow condition, a residual positive pressure of 150 kPa (20 psi) is maintained at all points in the water distribution system.
 - .2 For any water system extension, it is desirable to maintain a minimum residual water pressure of 275 kPa (40 psi) at all points along the distribution mains within the water distribution system during maximum hourly demand conditions.
 - .3 Maximum water pressure during minimum demand periods shall not exceed 620 kPa (90 psi).
 - .4 Detailed calculations of water distribution system are to be submitted to the Town Engineer for review prior to approval and construction.
- .4 Looping & Dead Ends:
 - .1 The water distribution system is to be looped as frequent as street and / or easement layouts permit.
 - .2 Where dead-ends of water mains are required, the water pipe shall have a negative slope to the loop section of the water distribution system to prevent accumulation of debris within dead end sections.



- .1 Provisions for water sampling access shall be provided to the approval of the Town Engineer.

- .5 Minimum Sizes:
 - .1 The minimum size of water distribution system main lines for looped lines shall be 150mm diameter.
 - .2 The minimum size of water distribution system main lines for dead-ended lines shall be 150mm diameter unless approved or instructed otherwise by the Town Engineer.
 - .3 Over-sizing of water main lines to accommodate the water supply of future off-site development may be required as instructed by the Town Engineer.

- .6 Location:
 - .1 All water distribution system main lines and appurtenances shall be located within a street right-of-way.
 - .2 Water distribution system main lines may be installed within an easement granted in favour of the Town if deemed to not be feasible to install within a street right-of-way and written approval is obtained from the Town Engineer.
 - .3 Depth:
 - .1 The minimum depth of water distribution system main line pipes shall be 1.5m.
 - .4 Refer to Standard Detail SD-6 for common trench requirements.

- .7 Valves:
 - .1 All water distribution system main line valves shall be resilient seat valves complete with valve boxes to finished grade with covers marked "WATER".
 - .2 Valve locations:
 - .1 At locations required to adequately isolate sections of the water system as approved by the Town Engineer.
 - .2 Four (4) valves per cross-section; one (1) per leg of a cross.
 - .3 Three (3) valves per tee section; one (1) per leg of a tee.
 - .4 One (1) per 150m.

- .8 Main Line Pipe Material:
 - .1 PVC DR18
 - .2 Ductile Iron Class 52



.9 Pipe Bedding:

.1 All pipe shall be laid at a uniform vertical grade and horizontal alignment in a compacted Type C5 Clear Stone bedding placed in an undisturbed or approved trench bottom.

.1 Type C5 Clear Stone:

Sieve Size, mm	Percent Passing
28	100
20	90 - 100
10	0 - 40
5	0 - 10

.2 All records of sieve analysis for all pipe bedding materials are to be submitted to the Town Engineer for review.

.3 Stone bedding along the sides of the pipe shall be installed and compacted in such a way as not to alter the alignment or grade of the pipe. Bedding shall extend to 300mm above top of pipe for full trench width.

.4 Further backfilling shall be placed in layers to achieve a 95% standard Proctor density and shall be carried out in a manner which ensures that no rock migration will occur around manhole structures. Refer to Standard Detail SD-6.

.5 When manhole and sanitary sewer main structures are located within 300mm of each other, this area must be backfilled and compacted using Type-1 or Type C5 Clear Stone.

.6 All pipe shall be laid in accordance with the Nova Scotia Road Builders Association (NSRBA) and Consulting Engineers Nova Scotia (CENS) Joint Committee on Contract Documents (JCCD), Section 33 11 00.

.10 Changes in Direction:

.1 Any change in direction which is in excess of the pipe joint deflection tolerance shall require a suitable thrust block in accordance with Standard Detail SD-13, or equivalent approved by the Town Engineer.

.2 Gradient restraint anchor blocks shall be provided for pipes installed at grades steeper than 16%.



- .3 Fittings are required at all changes of vertical or horizontal direction greater than the pipe manufacturer's tolerance for pipe deflection in joints.
- .3 Approved thrust restraint shall be provided for all valves on PVC pipe larger than 150mm in diameter.
- .4 Thrust blocks shall be provided for service lateral connections greater than 100mm in diameter.

- .11 Fire Hydrants:
 - .1 Fire hydrants shall be McAvity M-67, 1.5m bury.
 - .2 Maximum spacing of fire hydrants shall not exceed 150m.
 - .3 Install fire hydrants at the following locations:
 - .1 At high points of the water distribution system main line profile.
 - .2 At low points of the water distribution system main line profile.
 - .3 At all intersections of streets.
 - .4 At the end of dead-end streets or cul-de-sacs greater than 90m in length.

- .12 Service Laterals:
 - .1 All service laterals shall be installed at a minimum depth of 1.5m.
 - .2 All service laterals shall be installed in a separate trench from the water distribution main line pipe to the street right-of-way.
 - .3 Service laterals shall be connected at 90-degrees to the water distribution main line pipe and made with brass corporation stops to ASTM B62, compression type.
 - .4 A single service lateral is to be provided to each existing and / or potential future lots which could be created under the zoning in effect at the time of installation of services.
 - .5 Size:
 - .1 Minimum 20mm diameter for lengths up to 55m.
 - .2 Minimum 25mm diameter for lengths exceeding 55m.
 - .6 Pipe Material:
 - .1 Type K Copper.
 - .2 MUNICIPEX.
 - .7 Backflow Prevention Devices:
 - .1 Backflow prevention devices are required on new services.



- .8 All service laterals shall be capped at the street right-of-way and a 50mm x 100mm wooden marker shall be erected at the end of the lateral indicating depth of bury and marked "WATER" and painted BLUE.
- .13 Groundwater Movement:
 - .1 The Design Engineer shall assess the possible change in groundwater movement caused by the use of pervious bedding material and shall be responsible for the design of corrective measures to prevent localised flooding as a result of this groundwater movement.
 - .2 Trench relief drains shall be incorporated in the design at valley locations.

4.3 Testing & Disinfection:

- .1 Testing of the water distribution system shall be carried out to ensure that the system is properly installed and watertight.
- .2 The testing and disinfection of the water distribution system shall be performed by a qualified testing company in accordance with the Standard Specifications for Municipal Services, Part II (latest edition) as developed by the Nova Scotia Road Builders Association (NSRBA) and Consulting Engineers Nova Scotia (CENS) Joint Committee on Contract Documents (JCCD) and ANSI/AWWA C651-14 as developed by the American Water Works Association.
 - .1 Disinfection of new water main lines for commissioning shall be accomplished by way of the *Continuous-feed Method of Chlorination* as defined within ANSI/AWWA C651-14 as developed by the American Water Works Association.
 - .2 Testing of new water main lines for commissioning shall be accomplished in accordance with the Standard Specifications for Municipal Services, Part II (latest edition) as developed by the Nova Scotia Road Builders Association (NSRBA) and Consulting Engineers Nova Scotia (CENS) Joint Committee on Contract Documents (JCCD).
- .3 Test results shall be submitted to the Town Engineer for review.
- .4 The Design Engineer shall provide written certification that the water distribution system is installed as designed and is complete and operational.



5. Source Water Protection

5.1 General

- .1 This section specifies the requirements of developments regarding protection, monitoring, and contingency plans as it relates to the protection of the Town's source water supply for municipal domestic water supplied to the Town.
- .2 This protection, monitoring, and contingency plans are to be integrated with the Town's Emergency Response Plan.

5.2 Residential

- .1 The main risk to the source water supply of the Town relates to maintenance and replacement of residential home heating fuel tanks. In addition, there are also risks associated with combined sanitary / storm sewers.
- .2 Home Heating Fuel Tanks:
 - .1 When replacing existing home heating fuel tanks, the replacement tanks are to be of double wall construction.

5.3 Industrial and Commercial

- .1 Commercial developments and operations located within any of the three (3) areas denoted as "Zone B" within SD-17 are required to provide annual groundwater monitoring reports completed by a professional engineer licensed in Nova Scotia to the Town Engineer produced by a professional engineer licensed to practice within Nova Scotia.
- .2 A site specific Contingency Plan is to be developed by a professional engineer licensed in Nova Scotia and submitted by the owner / developer for approval by the Town as part of the permit approval process that outlines:
 - .1 Measures taken to prevent groundwater contamination;
 - .2 Ground water monitoring program on the site, and;



- .3 Mitigating measures to be taken should an adverse event occur that would present a risk of groundwater contamination as well as corrective actions to be taken should contamination be detected within the groundwater.

6. Storm Water Management

6.1 General

- .1 This section specifies the requirements for a storm drainage system.
- .2 A storm drainage system is a system which receives, carries, and regulates storm water flows in response to rain and snow which includes overland flow, sub-surface flow, and snow melt.
- .3 Design objectives that are all required to be satisfied for the design of storm drainage systems within the Town are as follows:
 - .1 To prevent loss of life, protect infrastructure, and property from damage due to a major storm event.
 - .2 To provide for safe and convenient use of streets, properties, and other improvements following storm events.
 - .3 To preserve natural watercourses and minimize the long term effect of development on receiving watercourses and groundwater.
 - .4 Convey storm water from upstream and on-site sources and to mitigate adverse effects of such flow on downstream properties.
- .4 All storm drainage systems shall satisfy all requirements of the Nova Scotia Department of Environment & Climate Change, in addition to these specifications herein, and shall not be constructed until the design has been approved by the Town Engineer.
- .5 New developments shall be required to achieve no net increases in storm water run-off to the requirements outlined within this section.



6.2 Design Approach

- .1 Storm Drainage Systems:
 - .1 A *Minor Drainage System* consists of ditches, swales, driveway culverts, subsurface interceptor drains, curb and gutter, catch basins, pipes, and laterals.
 - .2 A *Major Drainage System* consists of ditches, roadways / streets, roadway / street culverts, open channels, detention / retention ponds, floodplains, and natural watercourses.
- .2 Downstream Drainage Systems:
 - .1 All downstream drainage systems must have sufficient capacity to receive and carry storm water discharge from the proposed storm drainage system in addition to its natural rate of discharge.
 - .2 An investigation of the downstream system shall be carried out by the Design Engineer from the outfall location of the proposed storm drainage system to a point sufficiently downstream that will demonstrate no adverse impacts on downstream lands such as erosion and / or flooding.
 - .3 The effect on downstream development will be assessed by the Design Engineer based on this investigation. Mitigative measures may be required to alleviate and adverse downstream impacts.
 - .4 For design purposes the capacity of a natural watercourse including a flood plain or any drainage system where a minor drainage system is not provided, shall be based on a design storm frequency of 1 in 100 years.

6.3 Meteorological Data

- .1 Meteorological data will vary depending on the design methodology used. All meteorological data must be supplied by Environment Canada, or other similar government agency approved by the Town Engineer.

6.4 Design Methodology

- .1 The following frequencies shall be used for design of storm drainage systems for developments:
 - .1 Where an underground drainage system is designed as a minor system, the design of the minor system shall be based on storm frequencies of:



- .1 1 in 10 years for all lands, except high value commercial and business areas designated by the Town.
- .2 1 in 25 years for high value business and commercial areas designated by the Town, unless greater capacity is required by the Town Engineer.
- .2 Where an underground system is designated according to subsection 5.4.1.1, the total capacity of the major and minor systems shall be based on a storm frequency of 1 in 100 years.
- .3 Watercourses (including designated floodplains), drainage channels, and underground drainage systems that do not conform to subsection 5.4.1.1 shall be designed on the basis of a storm frequency of 1 in 100 years.
- .2 The Town will require the designer to indicate the design methodology used to obtain the storm water flows. Examples of techniques generally considered acceptable include:
 - .1 The Rational Method may be used for the calculation of peak runoff.
 - .2 Methods described in TR55 may be used to estimate flows for rural areas, and to estimate urbanization impacts and to determine effects of storage facilities.
 - .3 The ILLUDAS model may be used for the design of minor drainage systems and for preliminary evaluation of storage facilities.
 - .4 Other methods may be used if appropriate justification is provided.
- .3 Storm systems of developments shall accommodate the following runoff criteria:
 - .1 Basis of design is as follows:
 - .1 Designs shall be based on the state of development expected to exist 20 years from the time of design or complete development of both the area under design and upstream areas.
 - .2 The developer is responsible for downstream effects of the storm drainage system and therefore shall provide for a zero increase in peak runoff or alternatively provide increased downstream capacity in a manner acceptable to the Town.
 - .2 Design flows for ordinary residential, commercial, or industrial land uses shall be based on annual rainfall data. Where the area under design includes a significant portion of undeveloped land, design flow shall be the largest of flows estimated for winter and year-round conditions.
 - .3 Design method criteria (runoff coefficients, times of concentration, etc.) shall be clearly indicated in the calculations.



- .4 Storage Facilities:
- .1 Storm water storage facilities (e.g. detention basins) shall be designed to accommodate a design storm frequency of 1 in 100 years.
 - .2 An overflow spillway that discharges into a major storm drainage system or a watercourse capable of receiving such flows is to be incorporated into storm water storage facilities to accommodate storm events exceeding a design storm frequency of 1 in 100 years.
 - .3 Information must be supplied to the Town Engineer regarding maintenance and safety issues of a storm water storage facility complete with long term maintenance and life cycle costs.

6.5 Design Requirements

- .1 Location:
- .1 No storm drainage is to be carried on, through, or over private property within a development.
 - .2 All storm drainage shall be carried by either an unconfined natural watercourse, excavated ditch, or piped storm drainage system.
 - .3 All excavated ditches and storm sewers within a subdivision shall be located either within a right-of-way or on an easement in favour of the Town. The minimum width of an easement is 6 meters (20 ft).
 - .4 Where development storm drainage flows or is directed onto abutting land other than through a natural watercourse, a right of way or easement in favour of the Town must be provided.
 - .5 Where a need is identified by the Design Engineer to accommodate future upstream development, and where no future road reserve is available, a drainage right-of-way or an easement in favour of the Town must be provided.
 - .6 Natural watercourses shall not be carried in roadside ditches or piped storm drainage systems within street right-of-ways.
- .2 Discharge to Adjacent Properties:
- .1 All storm drainage shall be self-contained within the development boundaries, except natural run-off from undeveloped areas.
 - .2 All run-off from the developed limits of a development must be directed to either a natural watercourse or storm drainage system owned by the Province of Nova Scotia or the Town.



- .3 Discharge of run-off to adjacent properties other than in a natural watercourse, where approved by the Nova Scotia Department of Environment & Climate Change, is prohibited unless the developer obtains consent in writing from the adjacent property owner(s), and drainage easements are provided in favour of the Town. The written consent must be filed with the Town and filed in the Registry of Deeds along with the appropriate easements.
- .3 Buried Storm Drainage Systems:
- .1 Storm sewer pipes shall be designed to carry, without surcharging, the peak rate of storm flow.
- .2 Velocities:
- .1 The minimum design velocity for storm sewers shall be 0.6m/s.
- .2 Consideration shall be given to initial minimum cleansing velocity for phased development.
- .3 The maximum design velocity for storm sewer shall be 4.6m/s for pipes up to and including 760mm in diameter.
- .4 The maximum design velocity for storm sewer pipes greater than 760mm in diameter shall be 6.1m/s.
- .3 Pipe Size:
- .1 The minimum diameter for a storm sewer main shall be 300mm.
- .2 The minimum diameter for a catch basin lead shall be 250mm.
- .3 Pipe sizes shall not decrease in the downstream direction unless approved by the Town Engineer.
- .4 Depths:
- .1 The minimum depth for a storm sewer main located within the road right of way is 1.5m.
- .2 The minimum depth for storm or clear water laterals at the property line is 1.2m.
- .5 Manholes:
- .1 Manholes within a storm sewer storm drainage system shall be installed at all changes in grade or alignment at all intersections and at intervals not exceeding 120m.
- .2 The minimum internal diameter of a manhole shall be 1050mm.
- .6 Service Laterals:
- .1 All laterals from the main to the property line shall be provided by the developer or owner and shall have a minimum grade of 2%.



- .2 The depth of laterals shall not be less than 1.2m within the right-of-way.
- .3 Laterals for future development shall be brought to the property line, capped, and a marker stake 50mm x 100 mm placed with the depth of the lateral indicated and be marked "STORM" and painted GREEN.
- .7 Catch Basins:
 - .1 Catch basins shall be installed at the curb of the street and shall be adequately spaced to prevent ponding on the street and to prevent water from entering on or flowing in the travel lanes during storm events corresponding to the design of the minor system.
 - .2 In no case shall the spacing of the catch basins exceed 100m.
 - .3 Catch basin leads shall be connected to a storm drainage main at a manhole.
- .8 Inlets:
 - .1 Vertical grates shall be installed at all inlets.
- .9 Outfalls:
 - .1 The design of outfalls shall take into consideration such factors as public safety, erosion control, appearance, etc.
 - .2 Horizontal grates shall be installed at outfalls.
- .4 Ditches/Open Channel Drainage System:
 - .1 Roadway ditches shall conform to the standard cross section for local subdivision roads, and shall have adequate capacity for the 1 in 100 year's storm.
 - .2 Velocities:
 - .1 The maximum velocity during a 1 in 100 years storm event in ditches or open channels shall not exceed the values which will cause erosion.
 - .3 Culverts:
 - .1 All culvert sizes shall be indicated on Design Drawings.
 - .2 The minimum size for any culvert shall be 450mm in diameter.
 - .3 The minimum depth of bury for any culvert is 500mm.
 - .4 Culverts shall be designed for the 1 in 100 year peak flow with a headwater depth not greater than the diameter of the pipe.
 - .5 Roadway and driveway culverts generally do not require grating.
 - .6 Storm sewer outfalls and culverts greater than 26m in length require inlet and outlet grating.



- .7 All culverts shall be reinforced concrete pipe to ASTM C76-M or CAN/CSA A257.2, as defined in the Standard Municipal Services Specifications unless alternate types are approved by the Town Engineer.
- .5 Minor Drainage System Connections:
 - .1 Roof Drains:
 - .1 Roof drains shall discharge on the ground surface directing water away from the building and shall not be connected to a storm drainage system or foundation drainage system.
 - .2 Foundation Drains:
 - .1 Building foundation drains SHALL NOT be connected to the storm sewer system.
- .6 Retention Structures and Detention Structures:
 - .1 For safety purposes storm water retention structures and detention structures must be enclosed by a 2m high chain link fencing system approved by the Town Engineer.

6.6 Erosion and Sediment Control

- .1 An Erosion and Sediment Control Plan shall be provided in compliance with Provincial regulations and a copy submitted to the Town Engineer.
- .2 The plan shall address measures during construction of roads, services and houses, as well as long term measures after the completion of development.
- .3 During construction, surface water flows across the construction site must be minimized.
- .4 The Erosion and Sediment Control Plan, as well as control measures taken, shall comply with the latest edition of the Erosion and Sedimentation Control Handbook for Construction Sites as prepared by the Nova Scotia Department of the Environment.
- .5 Long term environmental protection measures to be addressed in the subdivision design may include, but are not limited to:



- .1 Protection of wetlands and waterways in accordance with Nova Scotia Department of Environment & Climate Change Guidelines.
- .2 Minimization of erosion and sediment transport.
- .3 Protection of outfall areas.
- .4 Utilization of wetland areas for filtration of storm water run-off minimization of disruption to natural watercourse.

6.7 Submissions

- .1 The following documents are to be submitted to the Town Engineer for review for approval and prior to construction:
 - .1 A plan of the overall watershed area of the downstream drainage system and / or associated watercourse including the proposed development that illustrates the delineation of the associated drainage areas within the watershed.
 - .2 A storm water management plan shall apply to the entire area of land to be developed.
 - .3 A drainage plan to address all drainage patterns within the developed area and shall prescribe a method for the proper drainage and collection of storm water based on the full development of the area.
 - .4 A grading plan to address the conveyance of all surface runoff from the developed subdivision area to a stable outlet or established drainage area in accordance with the specifications herein.
 - .5 Details of function and construction of retention structures and / or detention structures incorporated within the storm drainage system.
 - .6 Detailed calculations illustrating the design methodology utilized, demonstrating the performance of the storm drainage system and the satisfaction of the objectives outlined herein, and compliance with the specifications herein and to requirements of Nova Scotia Environment & Climate Change.
- .2 All documents shall be completed and sealed by a Professional Engineer licensed to practice in the Province of Nova Scotia and shall be subject to the approval of Nova Scotia Environment and the Town Engineer.
3. All drawings shall comply with the requirements of Section 1: Drawing Specifications.



7. Sidewalk, Curb and Gutter, and Boulevards

7.1 General

- .1 Sidewalk, curb and gutter, and boulevards shall conform to the specifications and design criteria herein.

7.2 Sidewalk

- .1 All sidewalks shall be in accordance with Standard Detail SD-14a.
 - .1 Standard Detail SD-14b may be applied at the discretion and approval of the Town Engineer.
- .2 The width of all sidewalks shall be 1500mm unless otherwise approved by the Town Engineer in accordance with sound engineering practices.
- .3 The sidewalk shall be separated from the back of the street curb by a minimum 900mm sodded boulevard unless otherwise approved by the Town Engineer.
- .4 Pedestrian ramps shall be installed at all intersections having a minimum of 1200mm low-back curb and a 300mm taper on both ends.
- .5 Gravel base shall be 150mm (minimum) thick Type-1 gravel compacted to 100% standard Proctor density and shall extend 150mm outside of each edge of the concrete sidewalk.
- .6 Sidewalk slabs for residential sidewalks shall be a minimum of 100mm thick.
- .7 Sidewalk slabs servicing driveways shall be 150mm reinforced concrete.
- .8 All driveway ramps shall be of concrete construction and conform to Standard Detail SD-15.
 - .1 One driveway ramps shall be provided at each residential building lot unless otherwise approved by the Town Engineer.



- .9 Construction Joints:
- .1 All sidewalk slab construction joints shall be dowelled using 20M rebar a minimum of 450mm long extending a minimum of 150mm into each side of the construction joint.
 - .2 Dowels shall be in the centre of the slab thickness at a maximum spacing of 300mm centre to centre.
 - .3 Construction joints are to be constructed using pre-moulded, non-extruded bituminous impregnated fibre-board, 12mm thick, installed 6mm below the surface of the concrete and at locations as follows:
 - .1 Where fresh concrete is to be poured against previously poured concrete.
 - .2 Where sidewalk abuts curbs.
 - .3 Around all structures abutting the sidewalks (poles, catch basins, etc.).
- .10 Control Joints:
- .1 Control joints shall be formed by saw cutting or by use of a jointing tool.
 - .2 Control joints shall be constructed at right-angles to the edge of the sidewalk.
 - .3 Saw cuts shall be made one-quarter of the depth of the section and extend along the entire exposed face.
 - .4 Saw cutting shall be completed within 24 hours of the concrete achieving final set.
- .11 Concrete:
- .1 Minimum 28 day Compressive Strength: 32MPa.
 - .2 Air content: 5% to 7%
 - .3 Maximum Water / Cementing Material Ratio: 0.45
 - .4 Minimum Cementitious Content: 350kg/m³
 - .5 Slump: 60mm to 100mm
 - .6 Testing:
 - .1 A testing company shall be employed by the sub-divider to advise on quality control regarding all aspects of protection, mixing, transporting, placing, and finishing of the cast-in-place concrete.
 - .2 The testing company shall perform all strength, mix, and consistency tests including taking of samples and production of test specimens.



- .3 The technical representative of the testing company shall be in full time attendance during concreting operations, and no mixing or placement works shall be undertaken in his absence.
 - .4 Test results shall be sent directly to the Town Engineer for review.
 - .5 A minimum of three (3) 100mm x 200mm cylinders are required for compressive strength testing of cast-in-place concrete for all of:
 - .1. Each day's pour.
 - .2. Each change of concrete supplier.
 - .3. Each 100m³ of concrete or fraction thereof.
 - .4. Additional test specimens shall be taken as necessary to verify concrete quality.
 - .6 At least one (1) slump test shall be performed with each compression test.
 - .7 At least one (1) air entrainment test shall be performed with each compression test.
 - .8. All concrete tests shall be performed in accordance with the requirements of CAN/CSA-A23.2.
 - .9 Concrete testing laboratories and technical representatives performing concrete cylinder preparation and strength tests shall be certified by the Canadian Standards Association.
- .12 Concrete Surface Finish:
- .1 All joints shall be rounded using a 6mm radius edging tool.
 - .2 Sidewalk surfaces shall be struck-off with a strike board and floated.
 - .3 The finished surface shall not vary more than 3mm under a 3m straight edge and shall be lightly broomed transversely to produce a textured, non-slip surface.
 - .4 All pedestrian ramps shall be of an exposed aggregate finish.
- .13 Asphalt:
- .1 Type C-HF Asphalt.

7.3 Curb and Gutter

- .1 All curb and gutter shall be in accordance with Standard Detail SD-3.



- .2 Gravel base shall be 150mm thick Type-1 gravel compacted to 100% standard Proctor density and shall extend 150mm outside of each edge of the concrete curb and gutter.
- .3 Construction Joints:
 - .1 Construction joints are to be constructed using pre-moulded, non-extruded bituminous impregnated fibre-board, 12mm thick, installed 6mm below the surface of the concrete and at locations as follows:
 - .1 Where fresh concrete is to be poured against previously poured concrete.
 - .2 Where sidewalk abuts curbs.
- .4 Control Joints:
 - .1 Control joints shall be formed by saw cutting or by use of a jointing tool.
 - .2 Control joints shall be constructed at right-angles to the edge of the sidewalk.
 - .3 Saw cuts shall be made one-quarter of the depth of the section and extend along the entire exposed face.
 - .4 Saw cutting shall be completed within 24 hours of the concrete achieving final set.
- .5 Concrete:
 - .1 Minimum 28 day Compressive Strength: 32MPa.
 - .2 Air content: 5% to 7%
 - .3 Maximum Water / Cementing Material Ratio: 0.45
 - .4 Minimum Cementitious Content: 350kg/m³
 - .5 Slump: 60mm to 100mm
 - .1 Lower slump may be required when a slip-form machine is used to place concrete.
 - .6 Testing:
 - .1 A testing company shall be employed by the sub-divider to advise on quality control regarding all aspects of protection, mixing, transporting, placing, and finishing of the cast-in-place concrete.
 - .2 The testing company shall perform all strength, mix, and consistency tests including taking of samples and production of test specimens.
 - .3 The technical representative of the testing company shall be in full time attendance during concreting operations, and no mixing or placement works shall be undertaken in his absence.
 - .4 Test results shall be sent directly to the Town Engineer for review.



- .5 A minimum of three (3) 100mm x 200mm cylinders are required for compressive strength testing of cast-in-place concrete for all of:
 - .1 Each day's pour.
 - .2 Each change of concrete supplier.
 - .3 Each 100m³ of concrete or fraction thereof.
 - .4 Additional test specimens shall be taken as necessary to verify concrete quality.
- .6 At least one (1) slump test shall be performed with each compression test.
- .7 At least one (1) air entrainment test shall be performed with each compression test.
- .8. All concrete tests shall be performed in accordance with the requirements of CAN/CSA-A23.2.
- .9 Concrete testing laboratories and technical representatives performing concrete cylinder preparation and strength tests shall be certified by the Canadian Standards Association.

7.4 **Boulevards and Landscaping**

- .1 Boulevards are referred to as the areas between the sidewalk and the curb and gutter reserved for utility and municipal infrastructure and the areas and shall be landscaped.
- .2 The minimum width of a boulevard shall be 900mm unless otherwise approved by the Town Engineer.
- .3 Boulevards shall be landscaped with topsoil and sod.
- .4 The set-back distance from the right-of-way line and the back edge of the sidewalk shall be landscaped with topsoil and sod.



8. Easements

8.1 General

- .1 Service mains installed outside of the street right-of-way shall be facilitated through the provision of an easement having a minimum width of 6m.

8.2 Grading and Appurtenances

- .1 The total width and length of the easement shall be graded in such a way as to control surface drainage.
- .2 All manholes, water chambers, and valves shall be adjusted such the tops of each are a minimum of 0.5m above finished grade.

9. Sodding & Landscaping

9.1 General

- .1 All sodding and landscaping shall conform to the specifications and design criteria herein.

9.2 Topsoil

- .1 Excavated and/or fill areas shall be evenly graded and compacted to 100 mm below finished grade.
- .2 Topsoil shall be medium loam capable of supporting good agricultural growth and have a pH of 5.5 to 7.5 and minimum thickness when placed of 100mm.



- .3 Land lime and fertilizer shall be applied using separate applications and evenly cultivated throughout the depth of the topsoil at the following application rate.
 - .1 Lime: 50kg/100m².
 - .2 Fertilizer: 15kg/100m².
- .4 Topsoil shall be compacted to 12mm of finished grade, then the top 25mm shall be loosened by raking or cultivating.

9.3 Sod

- .1 Sod shall be nursery sods of not less than 40% Kentucky Blue Grass, free of weeds, and with no surface soil visible when mowed to height of 50mm.
- .2 Sod shall be placed with staggered joints perpendicular to slope in a close knitted pattern.
- .3 There shall be no open areas and sods shall match evenly into existing conditions.
- .4 Sodding on slopes greater than 1:2, the sods shall be secured with wooden pegs.
- .5 Sodding on slopes greater than 1:3, the sods shall be secured with poultry mesh in strips from top to bottom of slopes and then pegged.
- .6 Sod shall be rolled to consolidate and remove irregularities in grade.
- .7 Sod shall be watered within 4 hours of placement, to obtain moisture penetration into top 100mm of topsoil.
- .8 Sod will be accepted upon completion of the third mowing provided that:
 - .1 Growth is properly established,
 - .2 Area is free of bare and dead spots and without weeds, and
 - .3 No surface soil is visible when grass has been cut to a height of 50 mm.
- .9 Areas sodded in the fall will be accepted the following spring, one month after start of growing season, provided that acceptance conditions 11.9, a), b), and c) are fulfilled.



10. Utilities

10.1 General

- .1 The design for utility service to be placed within the street right-of-way shall incorporate the requirements of the individual utility and follow the criteria and all material specified shall be CSA approved material.

10.2 Utility Poles

- .1 Utility poles shall be centred within the standard minimum boulevard or within roadside ditches.
- .2 Guy wires for utility poles shall be placed within the boulevard or the set-back distance between the street right-of-way and the edge of the sidewalk with a sidewalk brace.
- .3 Where applicable, all poles shall be set adjacent to lot property lines.

10.3 Overhead Service Wires

- .1 All overhead service wires shall have a minimum clearance over the street right-of-way of 5.5m.

10.4 Underground Services

- .1 All primary underground services for a street shall be located under the boulevard and under crosswalks when crossing the streets.
- .2 All primary underground services shall in conduit, encased in concrete, and marked with warning tape.
- .3 All secondary underground services shall be in conduit, bedded in sand, and marked with warning tape.



- .4 All fixtures at grade associated with servicing shall identify the utility owner.

10.5 Street Lighting

- .1 Street lighting is owned by the Town in residential areas.
- .2 Street lights are placed on every second utility pole, or a standard spacing of 100m.

11. List of Standard Details

- SD-1 Residential Street Detail
- SD-2 Rural Street Detail
- SD-3 Curb and Gutter Detail
- SD-4 Cul-de-sac Details
- SD-5 Temporary Turn-around Details
- SD-6 Common Trench Detail
- SD-7 Pre-cast Manhole Detail
- SD-8 Pre-cast Manhole with Inside Drop Detail
- SD-9 Sanitary Sewer Lateral Detail
- SD-10 Water Service Connection Detail
- SD-11 Pre-cast Catch Basin Detail
- SD-12 Hydrant Detail



SD-13 Thrust Block Details

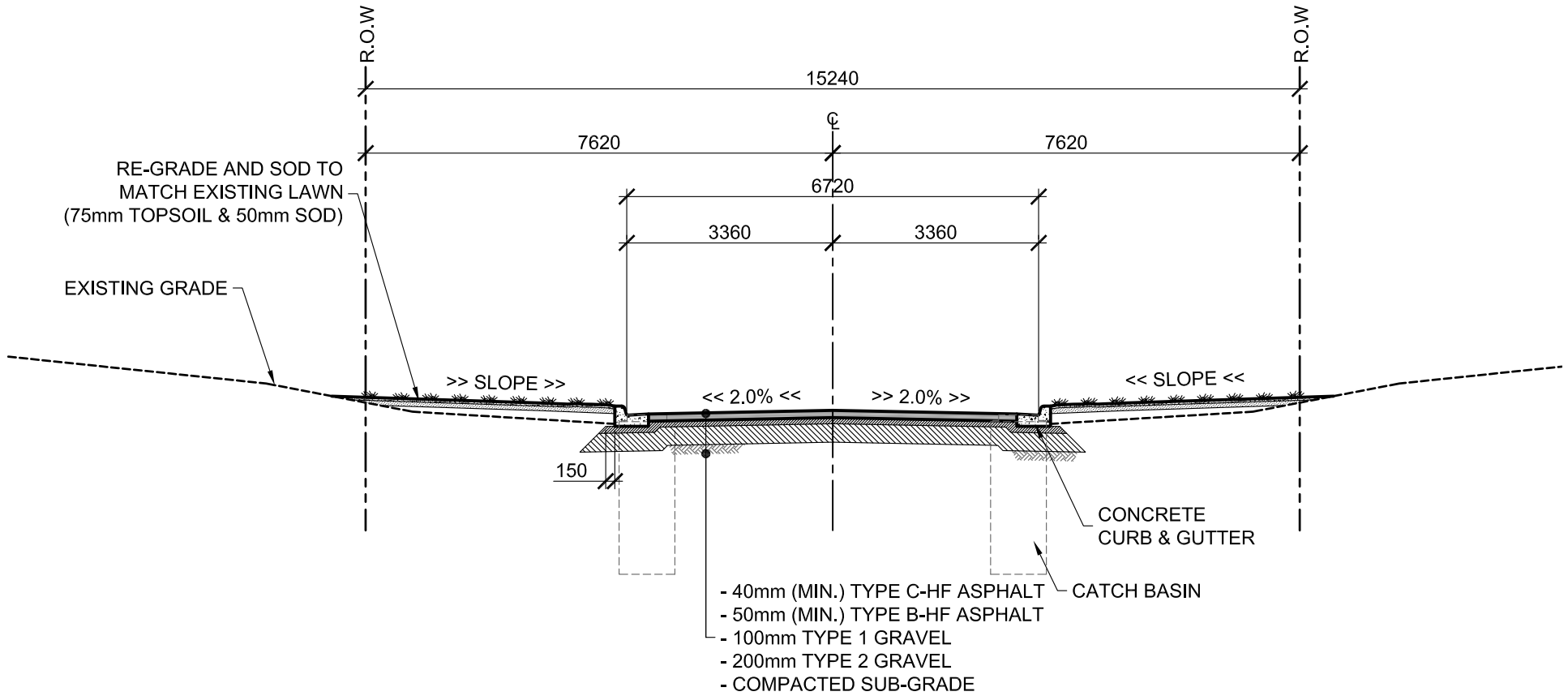
SD-14 Curb and Gutter and Sidewalk Detail

SD-15 Sidewalk Driveway Ramp Detail

SD-16 Concrete Joints and Asphalt Milling Details

SD-17 Trenton Source Water Protection Plan

TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



URBAN STREET DETAIL

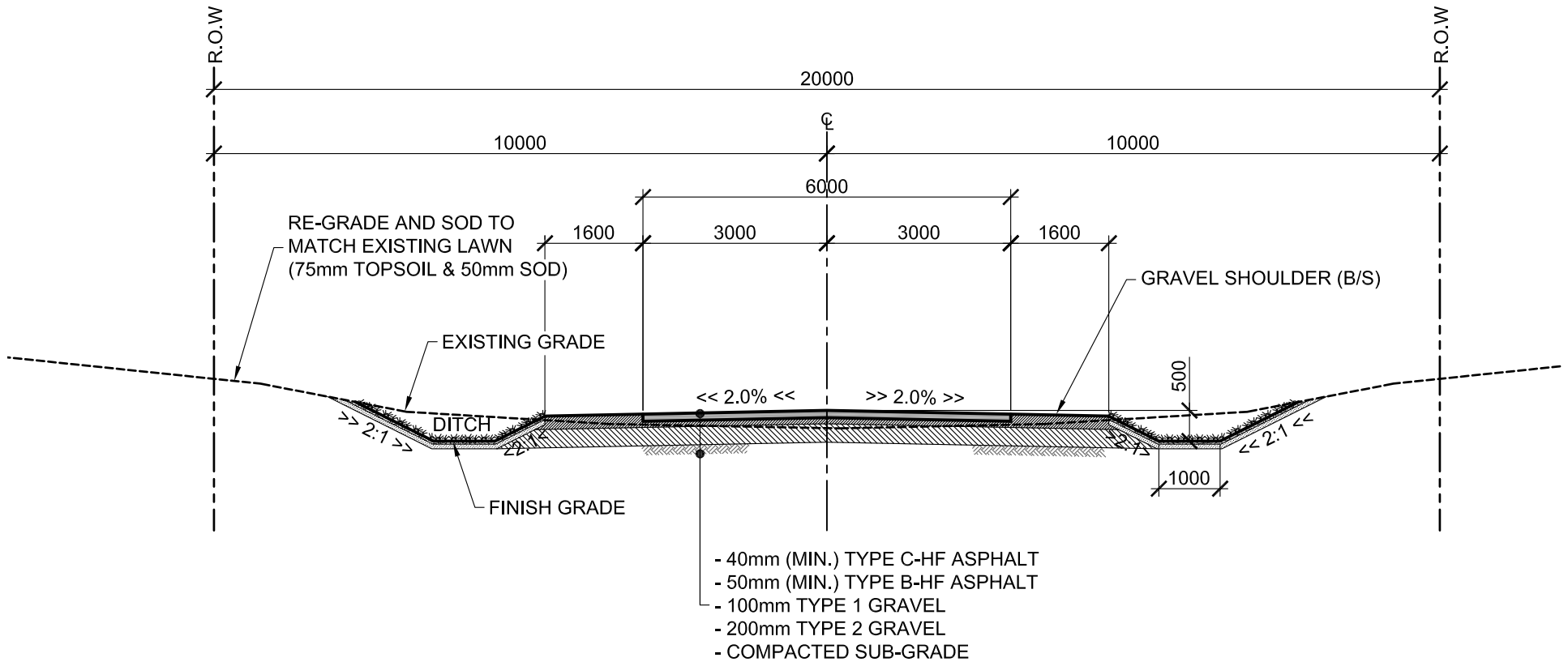
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TOWN OF TRENTON



0	ISSUED	MARCH, 2022	Figure No. SD-1
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TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



RURAL STREET DETAIL

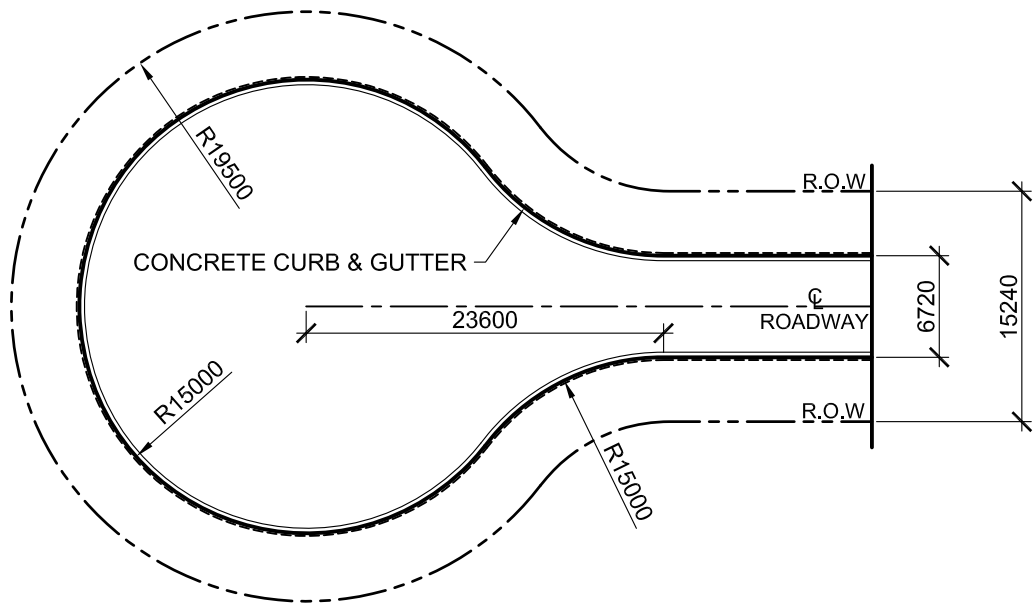
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TOWN OF TRENTON



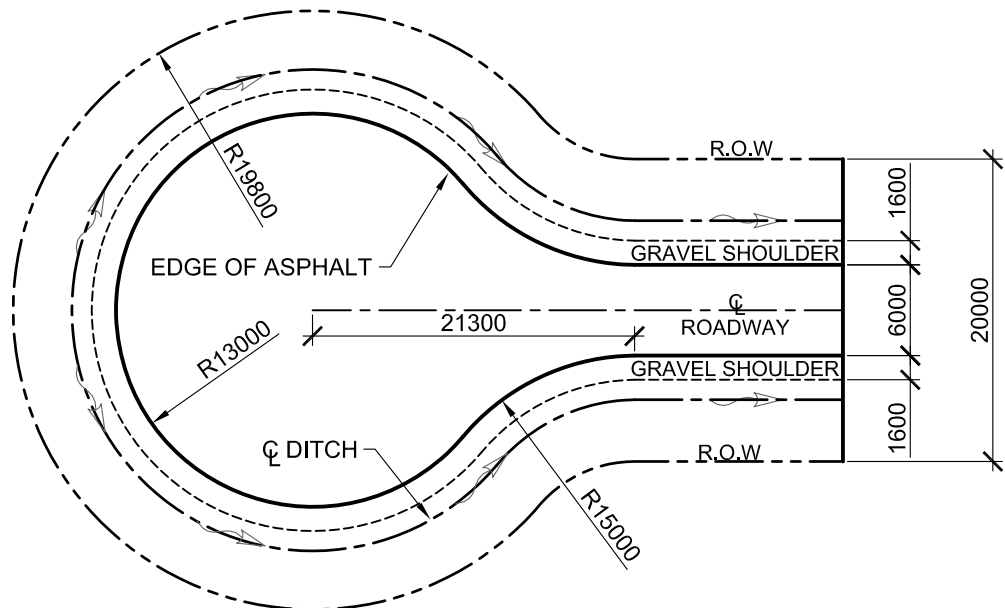
0	ISSUED	MARCH, 2022	Figure No. SD-2
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TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



URBAN CUL-DE-SAC DETAIL

SCALE = 1 : 500



RURAL CUL-DE-SAC DETAIL

SCALE = 1 : 500

TOWN OF TRENTON

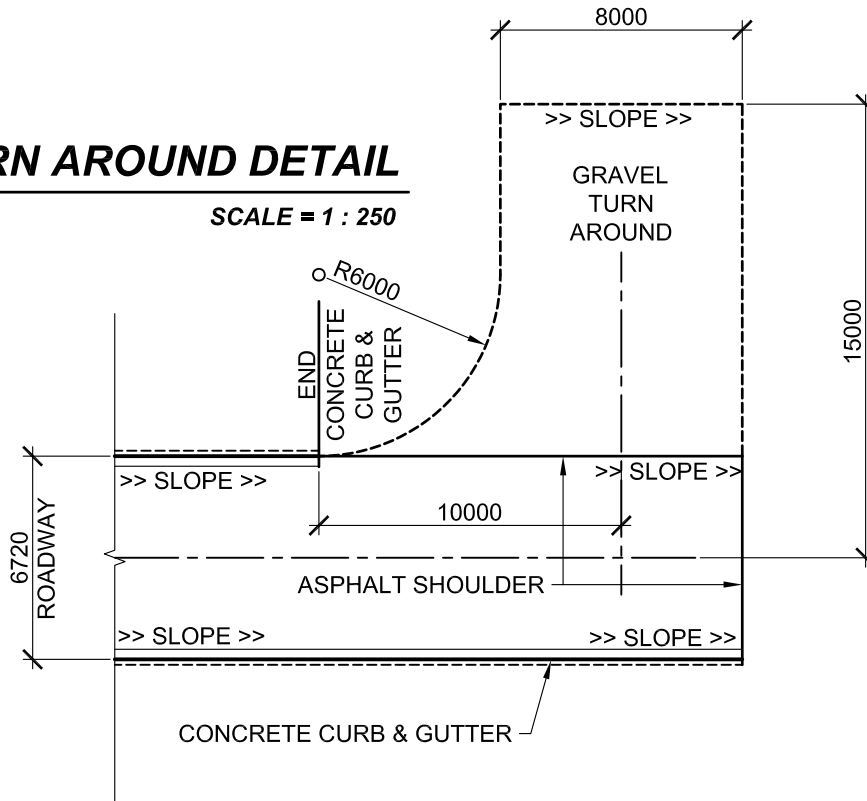


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TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS

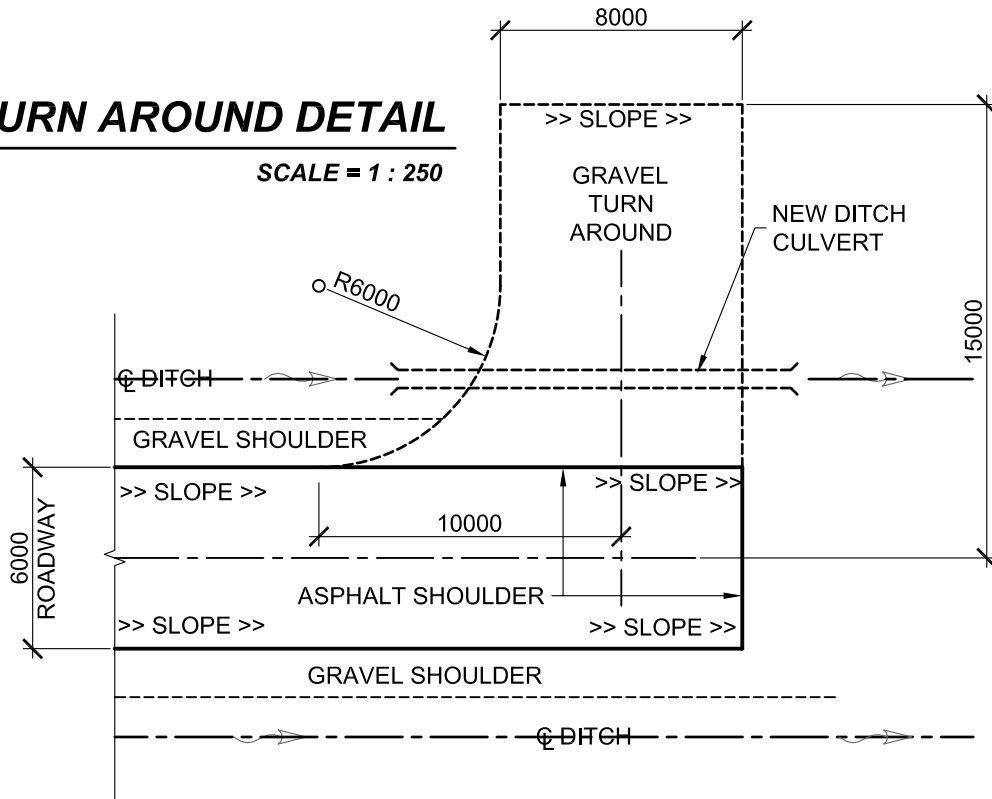
URBAN TURN AROUND DETAIL

SCALE = 1 : 250



RURAL TURN AROUND DETAIL

SCALE = 1 : 250

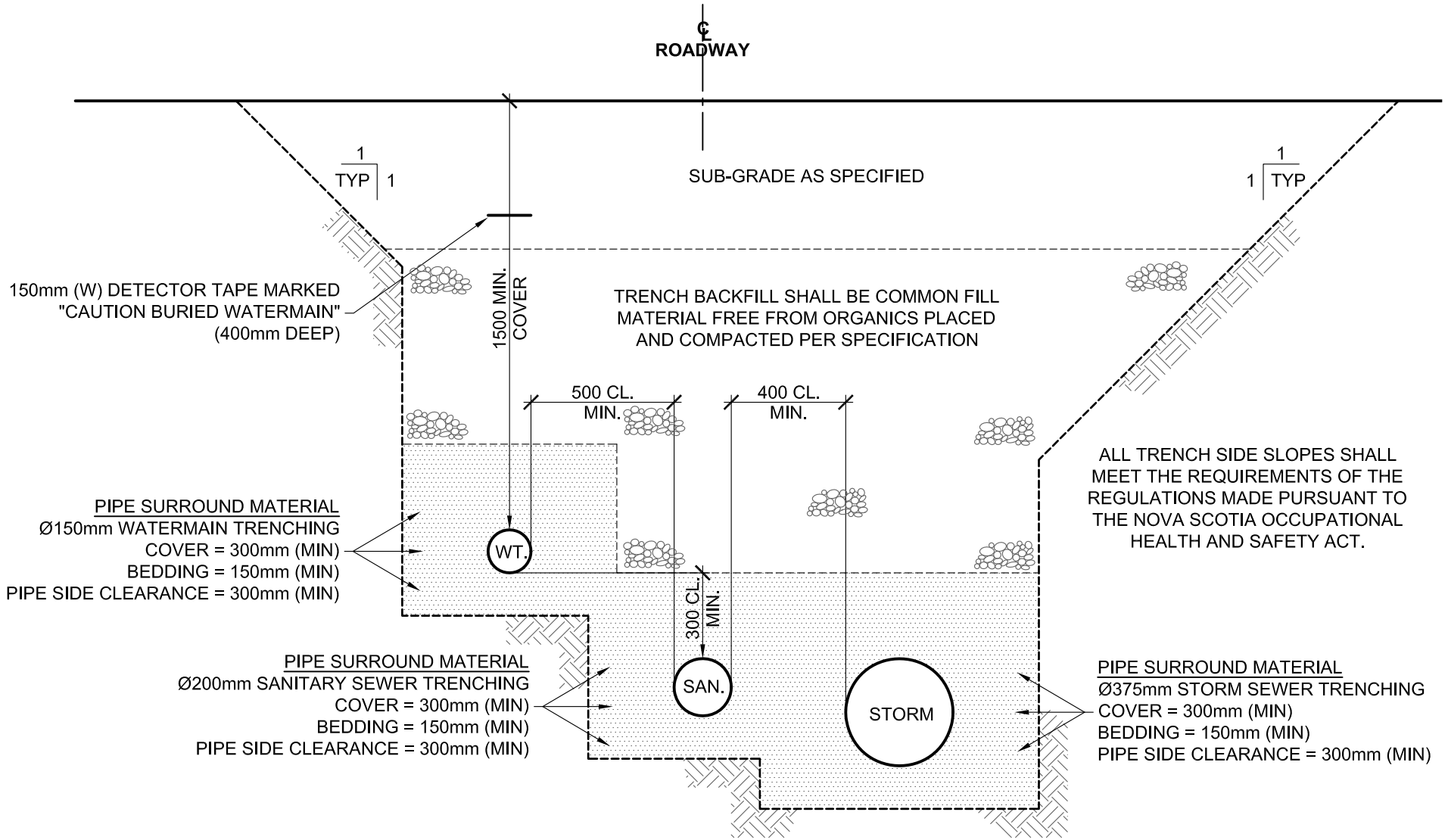


TOWN OF TRENTON



			Figure No.
0	ISSUED	MARCH, 2022	SD-5

TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



ALL TRENCH SIDE SLOPES SHALL MEET THE REQUIREMENTS OF THE REGULATIONS MADE PURSUANT TO THE NOVA SCOTIA OCCUPATIONAL HEALTH AND SAFETY ACT.

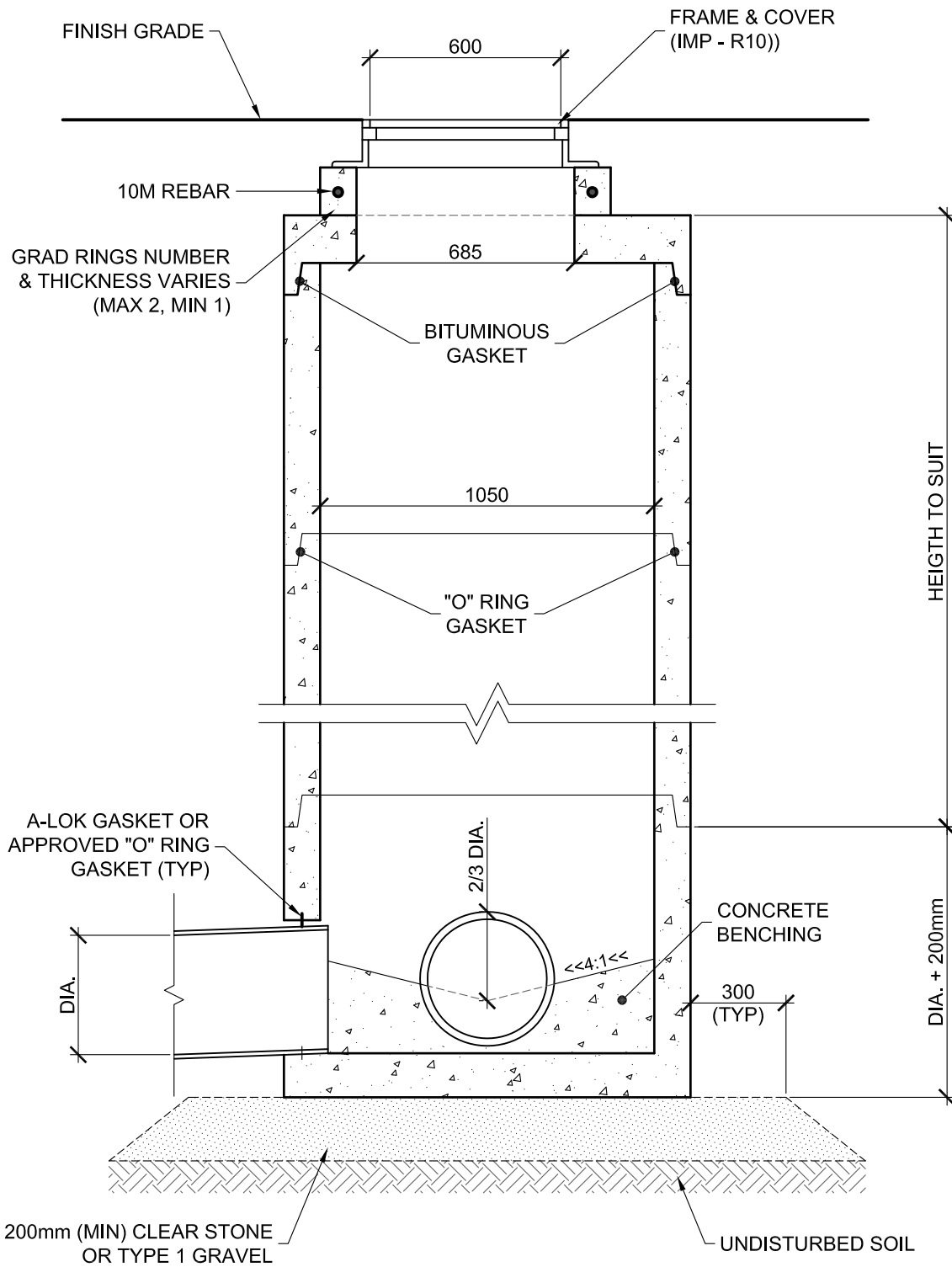
COMMON TRENCH DETAIL

SCALE = 1 : 20



0	ISSUED	MARCH, 2022
		Figure No. SD-6

TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



TOWN OF TRENTON

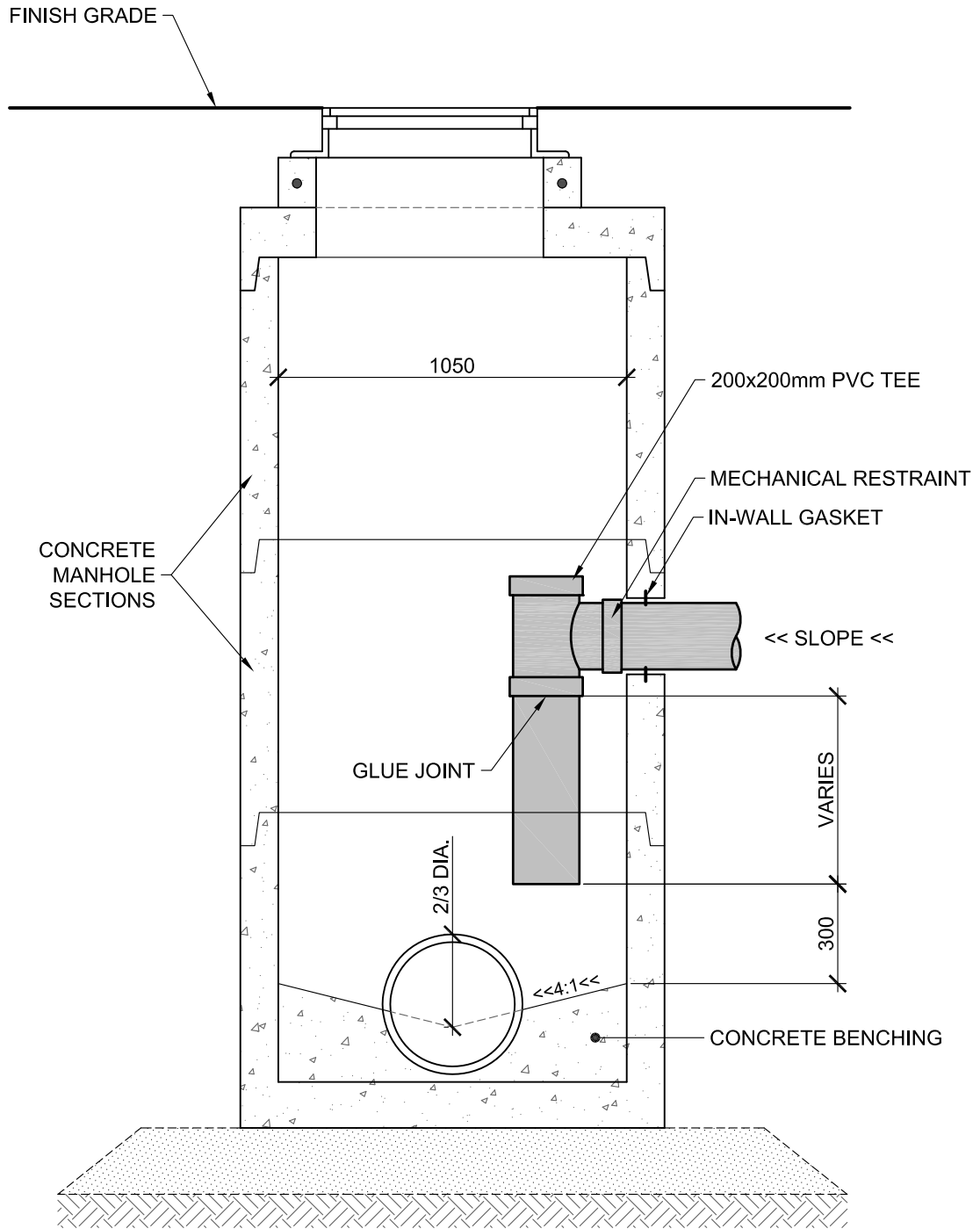


PRE-CAST MANHOLE DETAIL

SCALE = 1 : 20

0	ISSUED	MARCH, 2022	Figure No. SD-7
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TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



PRE-CAST MANHOLE WITH INSIDE DROP

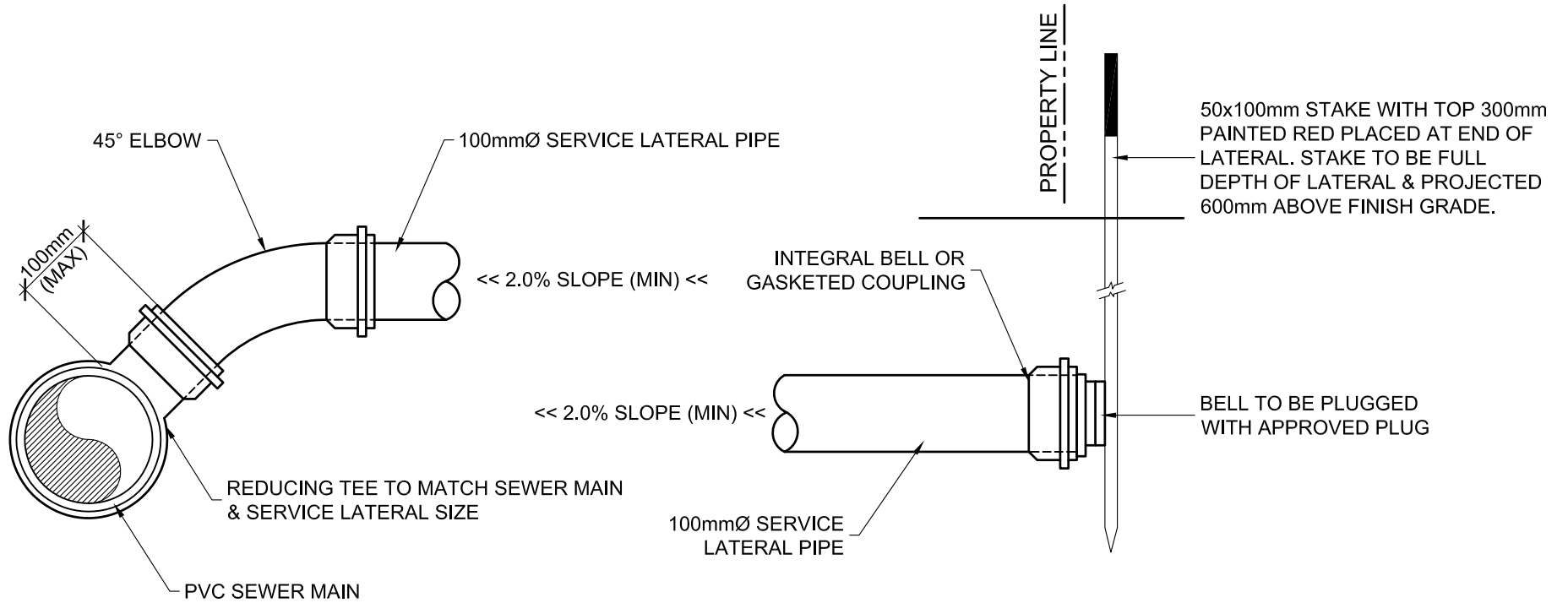
SCALE = 1 : 20

TOWN OF TRENTON



			Figure No.
0	ISSUED	MARCH, 2022	SD-8

TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



SANITARY SEWER LATERAL DETAIL

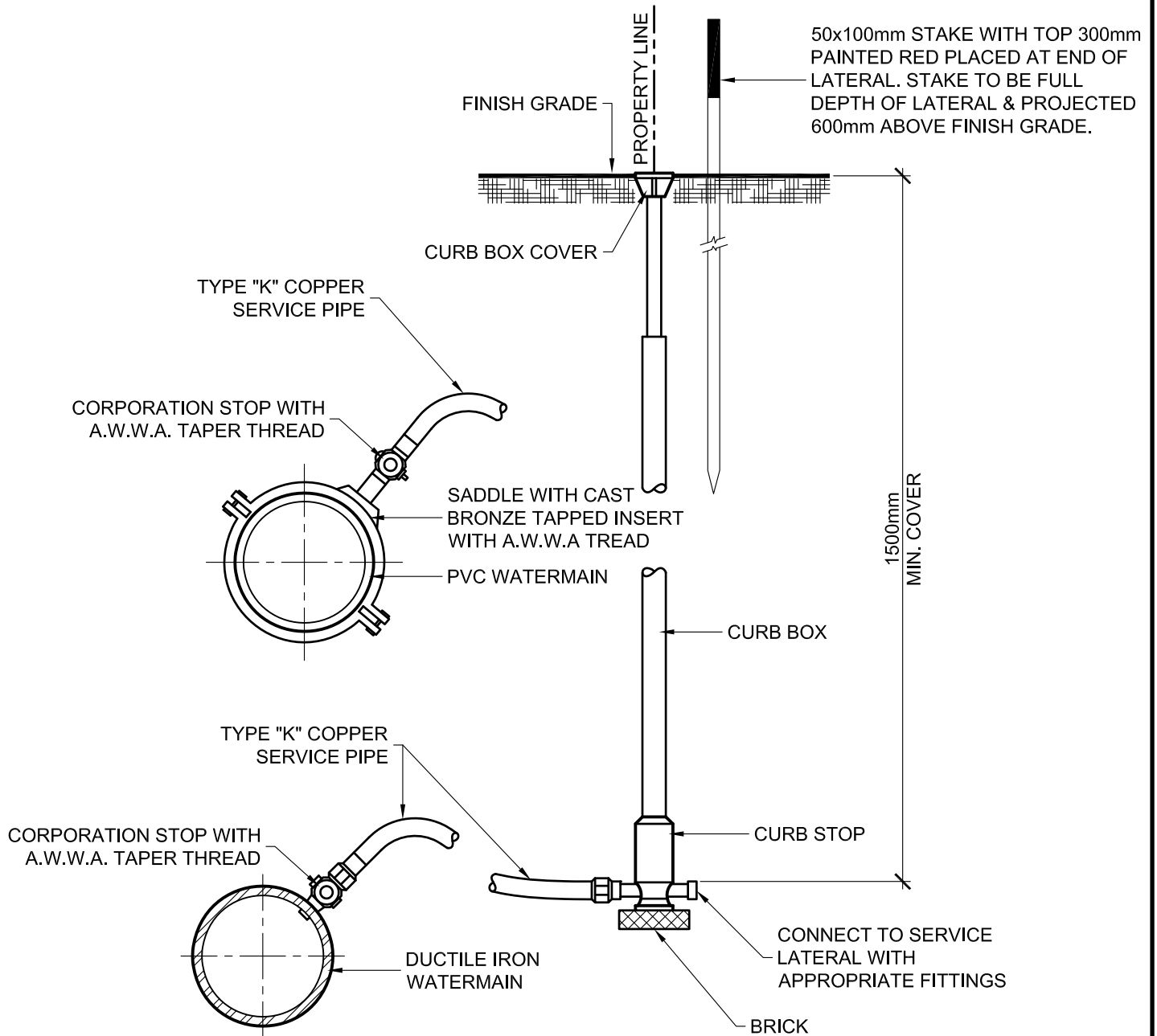
N.T.S

TOWN OF TRENTON



0	ISSUED	MARCH, 2022	Figure No. SD-9
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TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



WATER SERVICE CONNECTION DETAIL

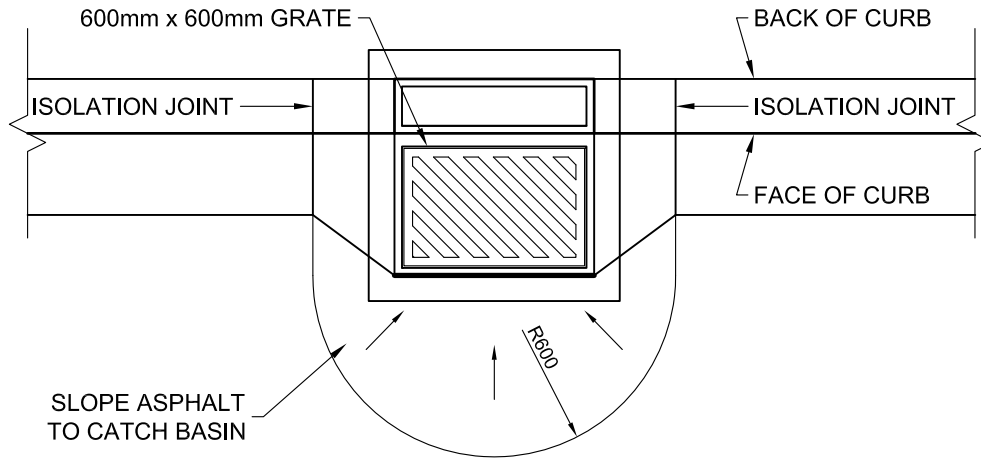
N.T.S

TOWN OF TRENTON



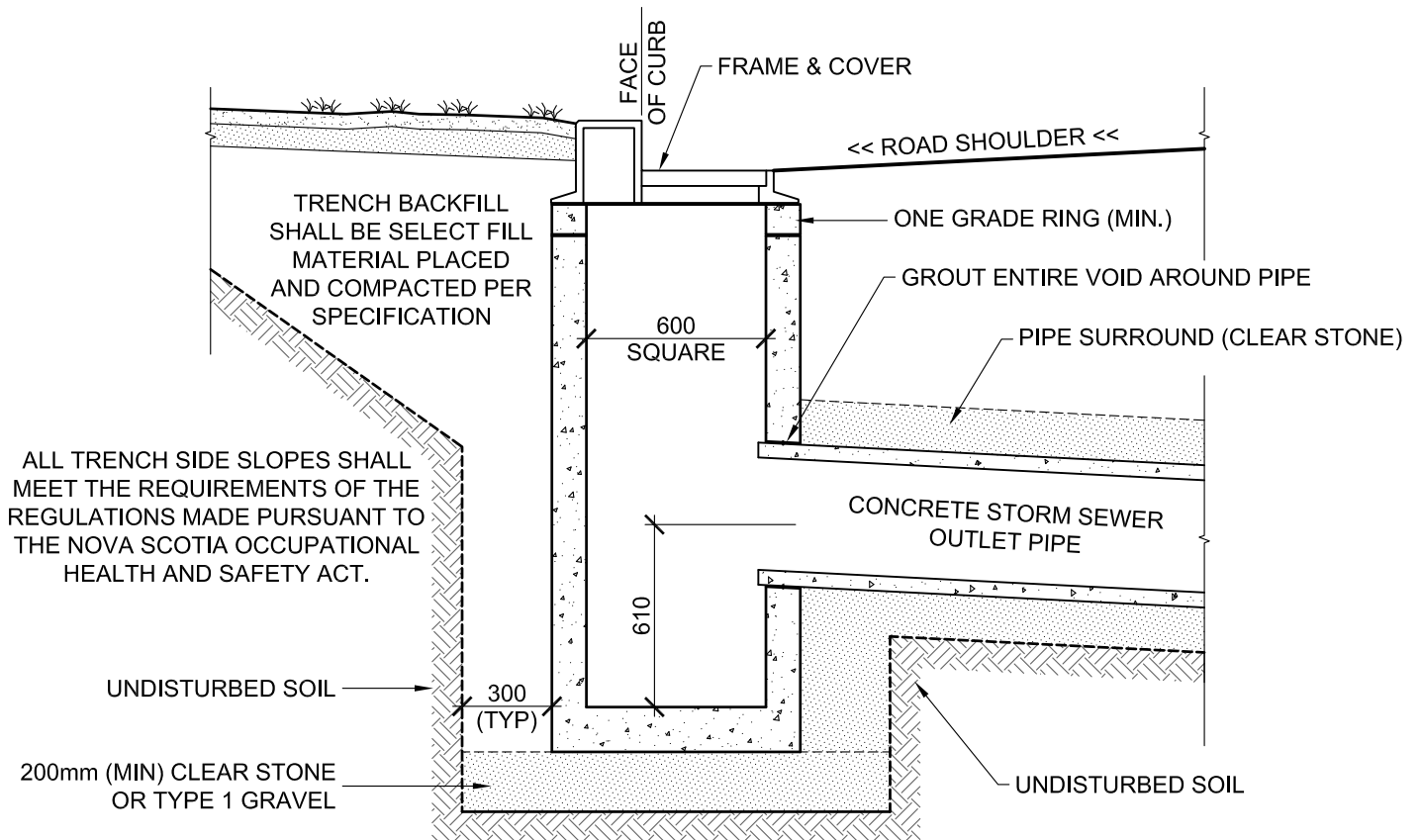
0	ISSUED	MARCH, 2022	Figure No. SD-10
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TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



CATCH BASIN / CURB DETAIL

SCALE = 1 : 25



PRE-CAST CATCH BASIN DETAIL

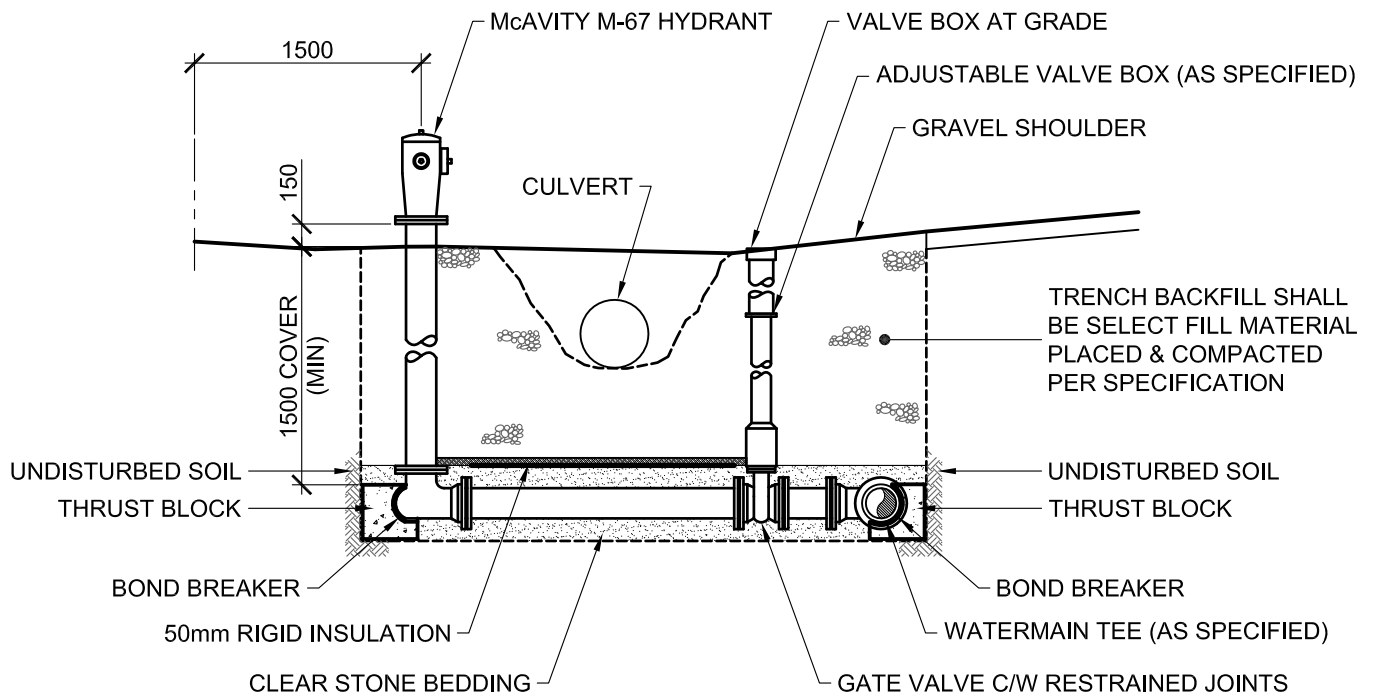
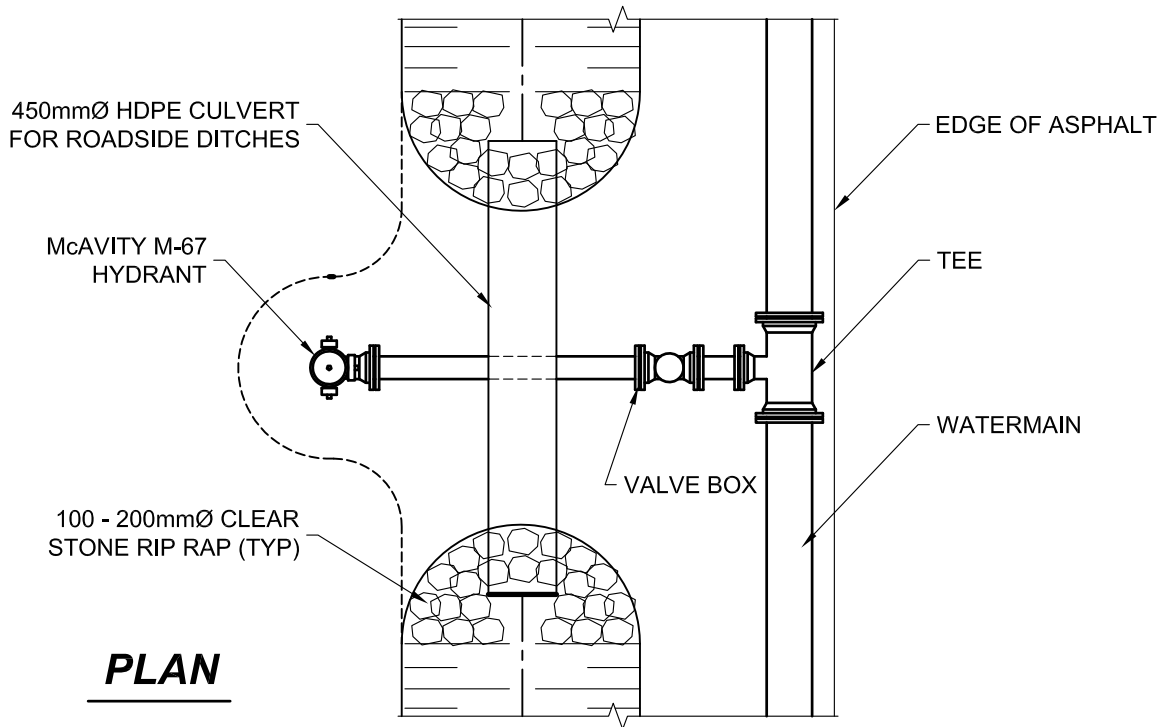
SCALE = 1 : 25

TOWN OF TRENTON



			Figure No.
0	ISSUED	MARCH, 2022	SD-11

TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



HYDRANT DETAIL

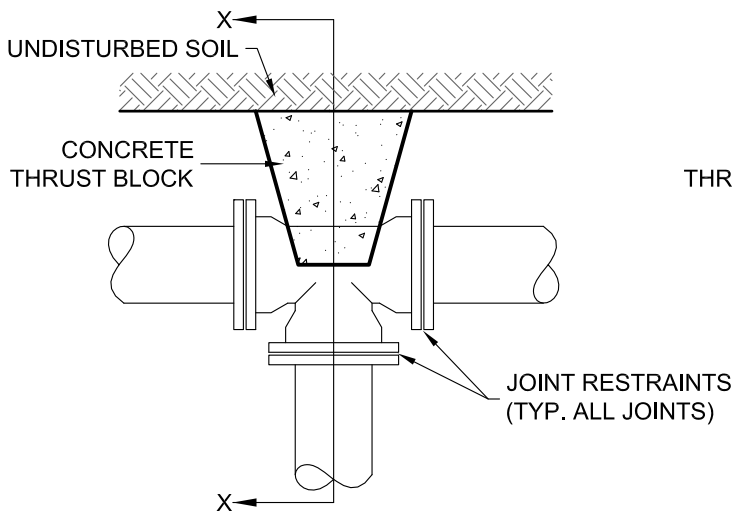
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TOWN OF TRENTON

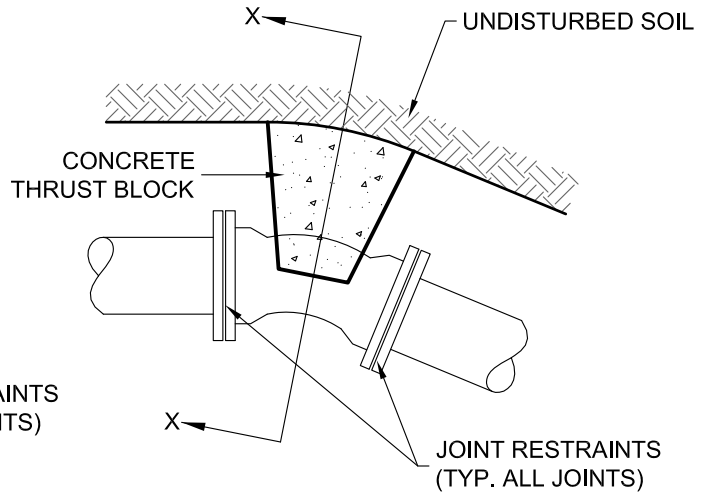


			Figure No.
0	ISSUED	MARCH, 2022	SD-12

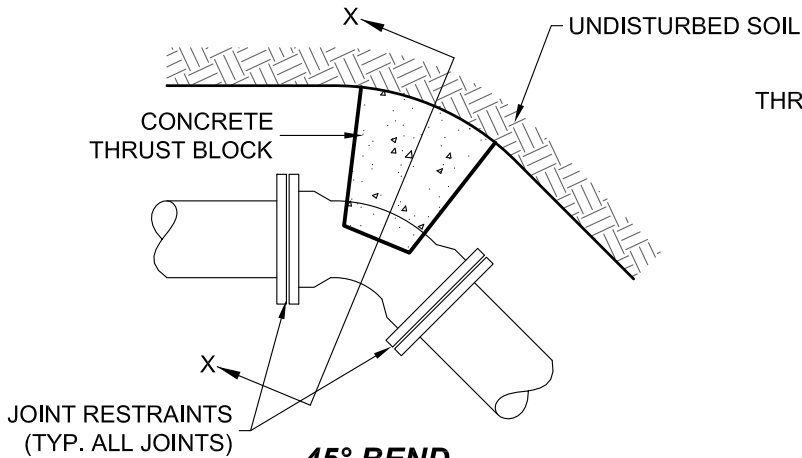
TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



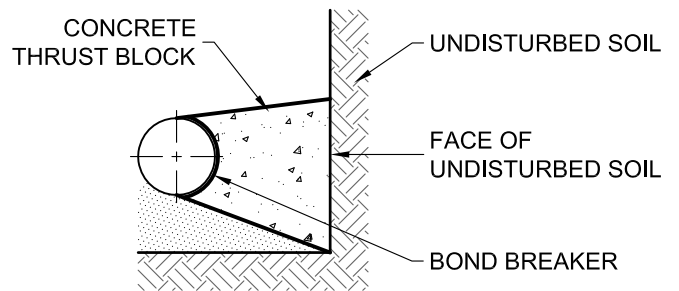
TEE



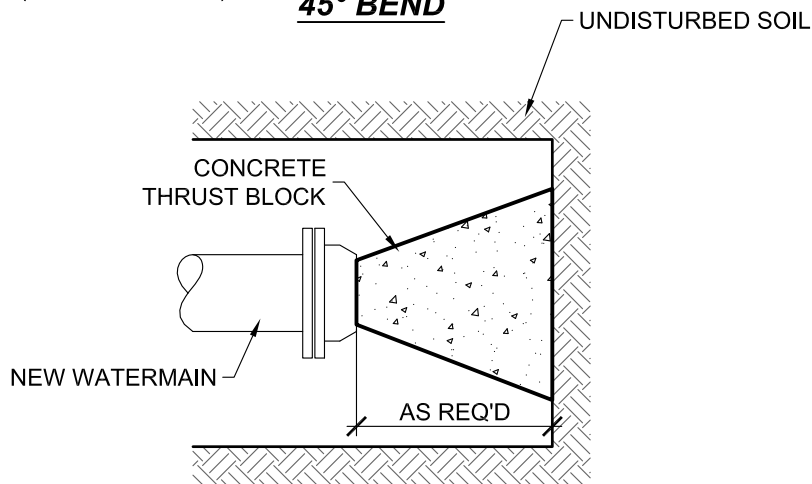
11.25° & 22.5° BENDS



45° BEND



SECTION X - X



PLAN - CAPPED END

FITTING DIA. (mm)	AREA OF BEARING (m ²)		
	CAPPED END	45° BEND	22.5° & 11.25° BEND
100	0.17	0.10	0.09
150	0.23	0.14	0.12
200	0.42	0.29	0.21
250	0.60	0.42	0.30
300	0.80	0.50	0.40
450	1.70	0.90	0.5

TOWN OF TRENTON

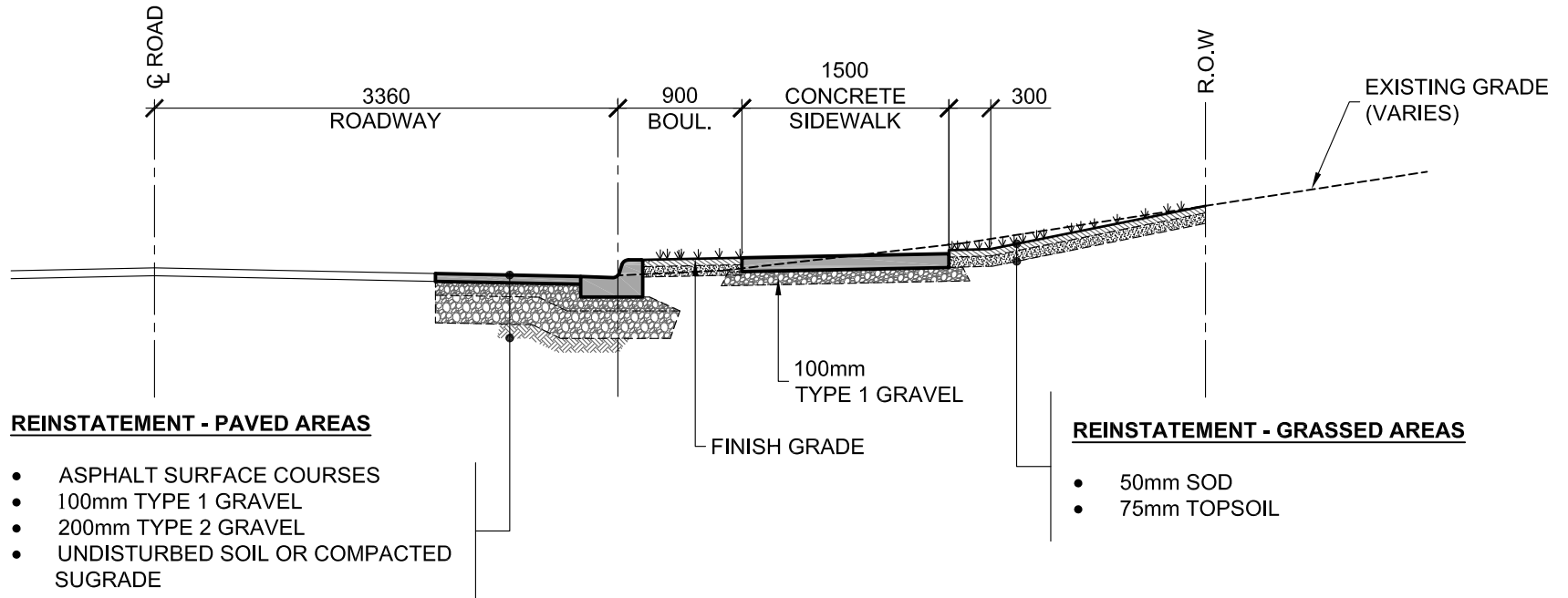


THRUST BLOCK DETAILS

N.T.S

0	ISSUED	MARCH, 2022	Figure No. SD-13
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TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



SHOULDER, CURB & SEPARATE CONCRETE SIDEWALK DETAIL

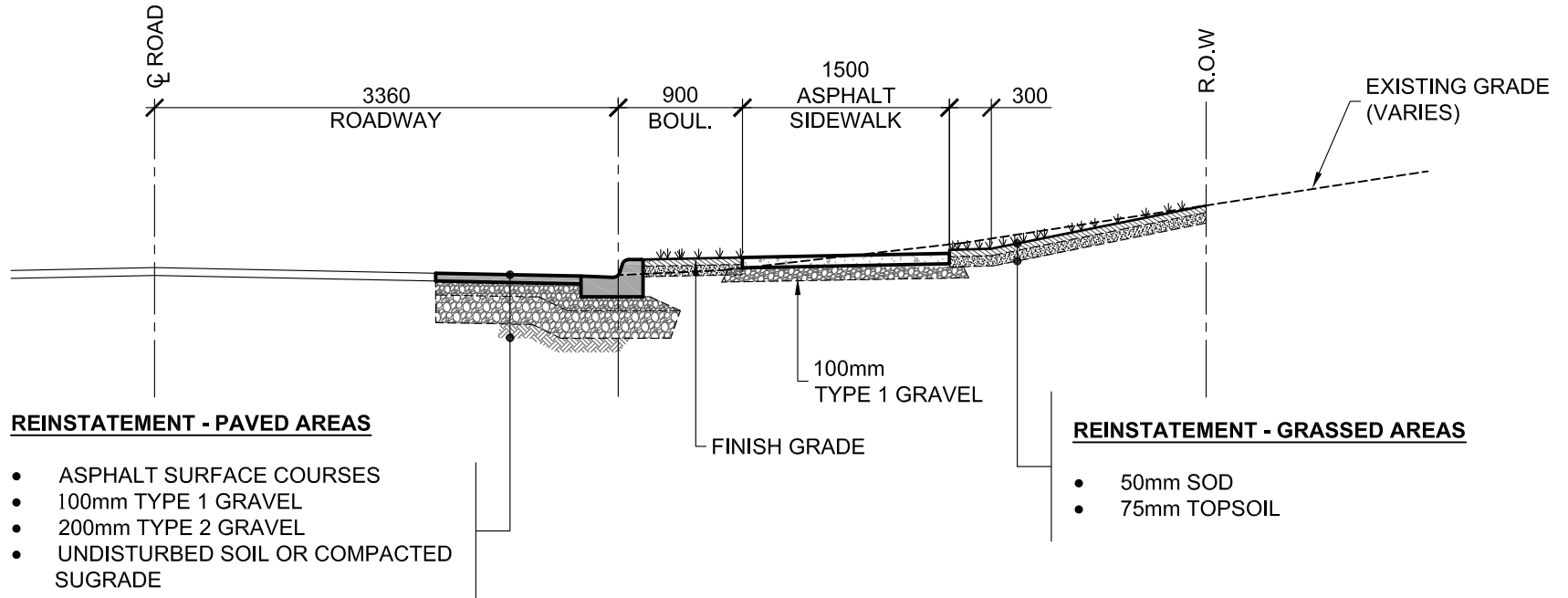
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TOWN OF TRENTON



0	ISSUED	MARCH, 2022	Figure No. SD-14a
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TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



SHOULDER, CURB & SEPARATE ASPHALT SIDEWALK DETAIL

SCALE = 1 : 50

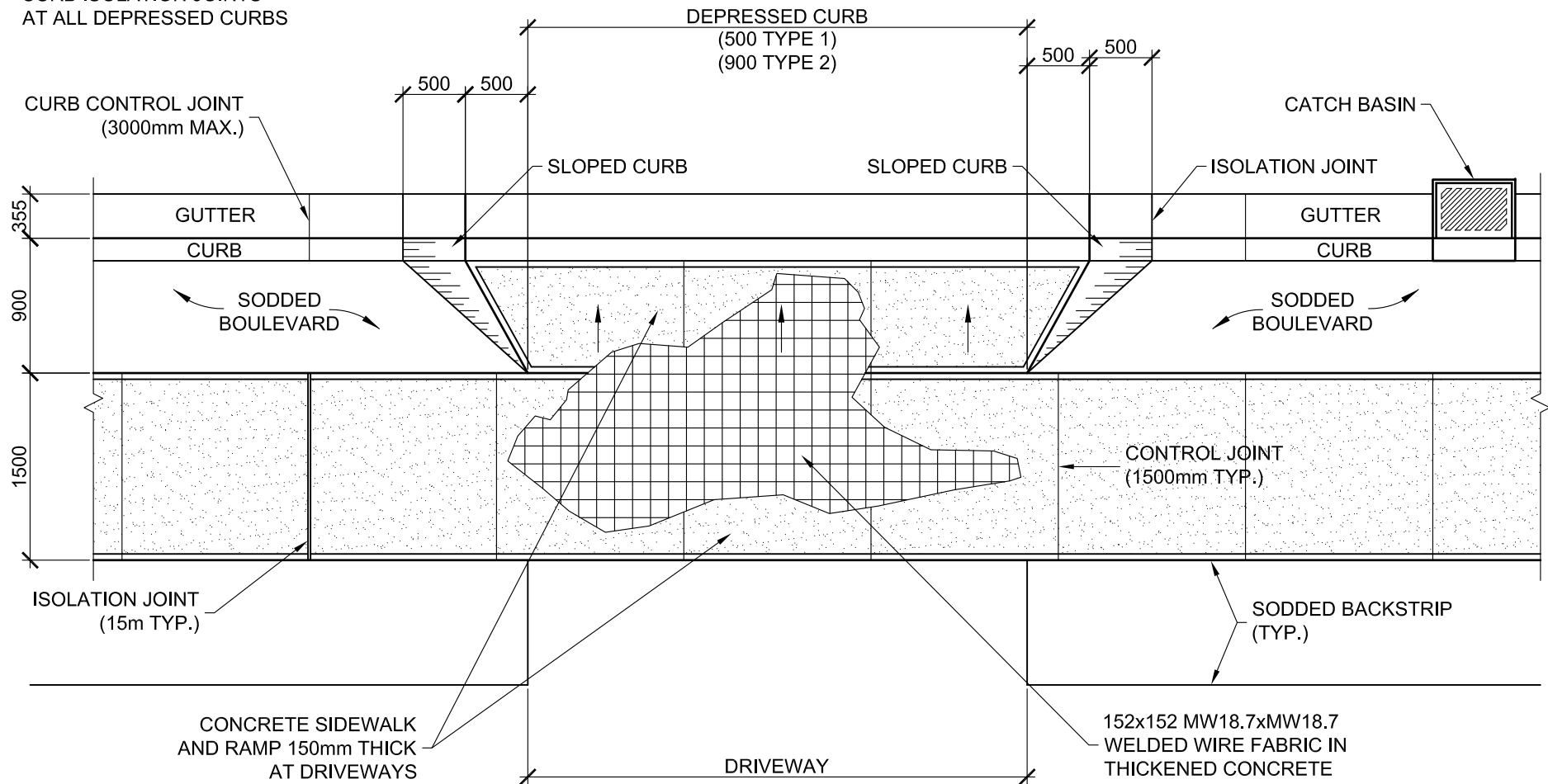
TOWN OF TRENTON



0	ISSUED	MARCH, 2022	Figure No. SD-14b
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TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS

NOTE:
CURB ISOLATION JOINTS
AT ALL DEPRESSED CURBS



CURB / RAMP / SIDEWALK AT DRIVEWAY DETAIL

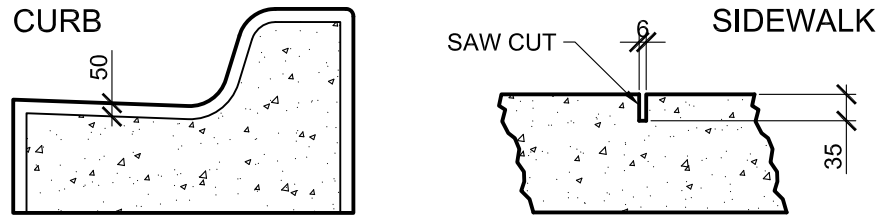
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TOWN OF TRENTON



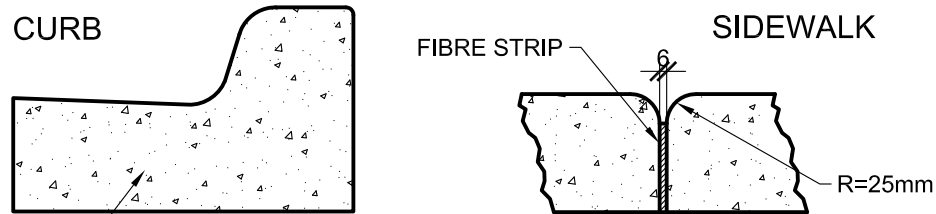
0	ISSUED	MARCH, 2022	Figure No. SD-15
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TOWN OF TRENTON DESIGN & CONSTRUCTION DETAILS



TYPICAL CONTROL JOINT

N.T.S



SAW CUT THROUGH
ENTIRE CURB & GUTTER

TYPICAL ISOLATION JOINT

N.T.S

TOWN OF TRENTON



			Figure No.
0	ISSUED	MARCH, 2022	SD-16

SOURCE WATER PROTECTION PLAN MAP

N.T.S.



TOWN OF TRENTON



Map Disclaimer:
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0	ISSUED	MARCH, 2022	Figure No. SD-17
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SCHEDULE "E"
TOWN OF TRENTON
CERTIFICATE OF COMPLIANCE OF WITH SECTION 10.11
OF THE SUBDIVISION BYLAW

E.2

Application File Number _____

Name of Owner(s) _____

Name of Subdivision _____

Location _____

This is to certify that the subdivider has provided the following as provided by Section 10.11 of the Town of Trenton Subdivision bylaw.

	Comments:	Initial:
1. Professional Engineering Certificate	_____	_____
2. As Built Drawings	_____	_____
3. Operating and Procedure Manuals	_____	_____
4. Public systems Test Report	_____	_____
5. Easements and Right of Ways	_____	_____
6. Maintenance Bond	_____	_____
7. Other (List)	_____	_____

Notwithstanding this certificate, section 10.11 of the Town's Subdivision Bylaw provides that the maintenance bond be posted for a period of one (1) year.

Town Clerk

Public Works Superintendent