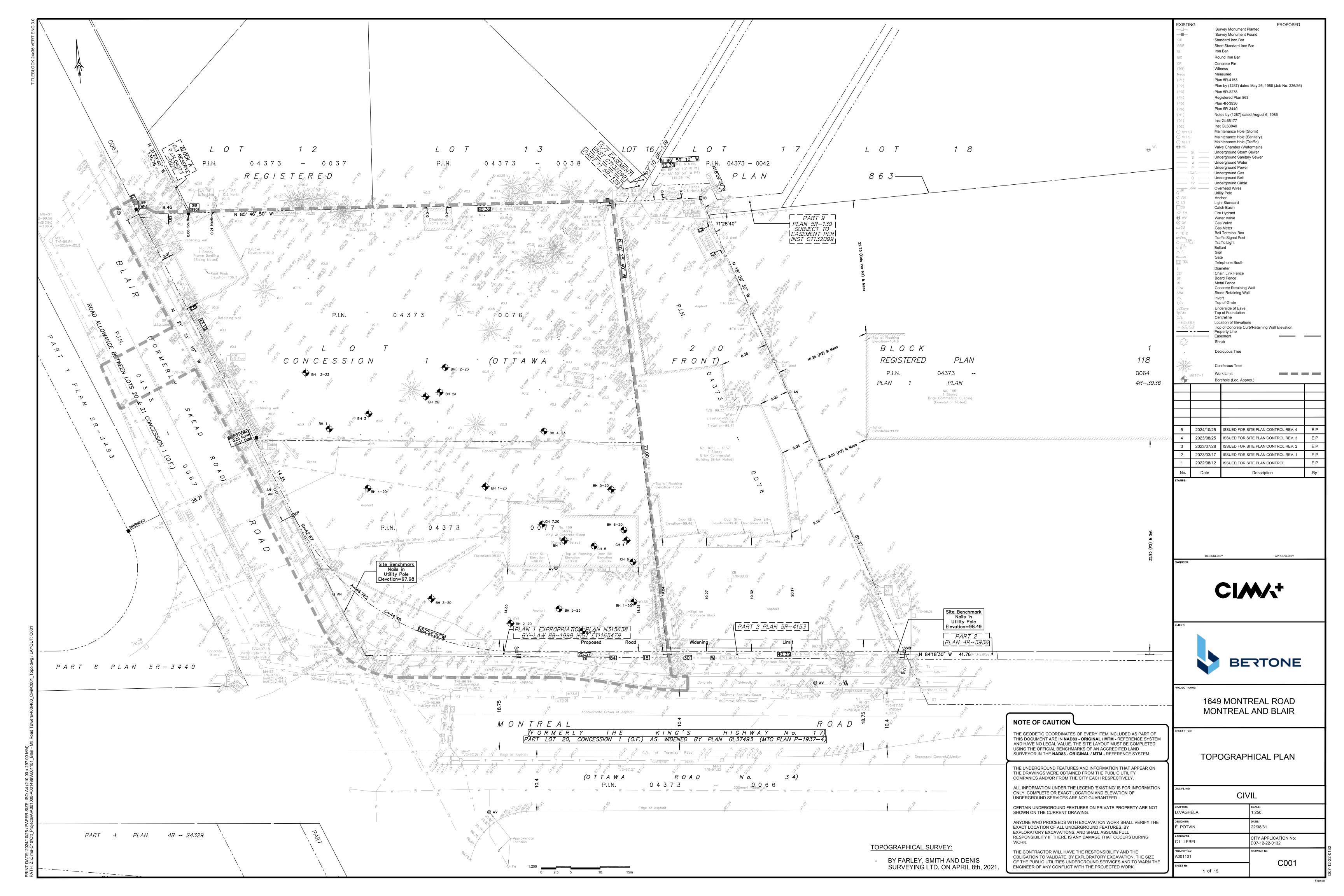


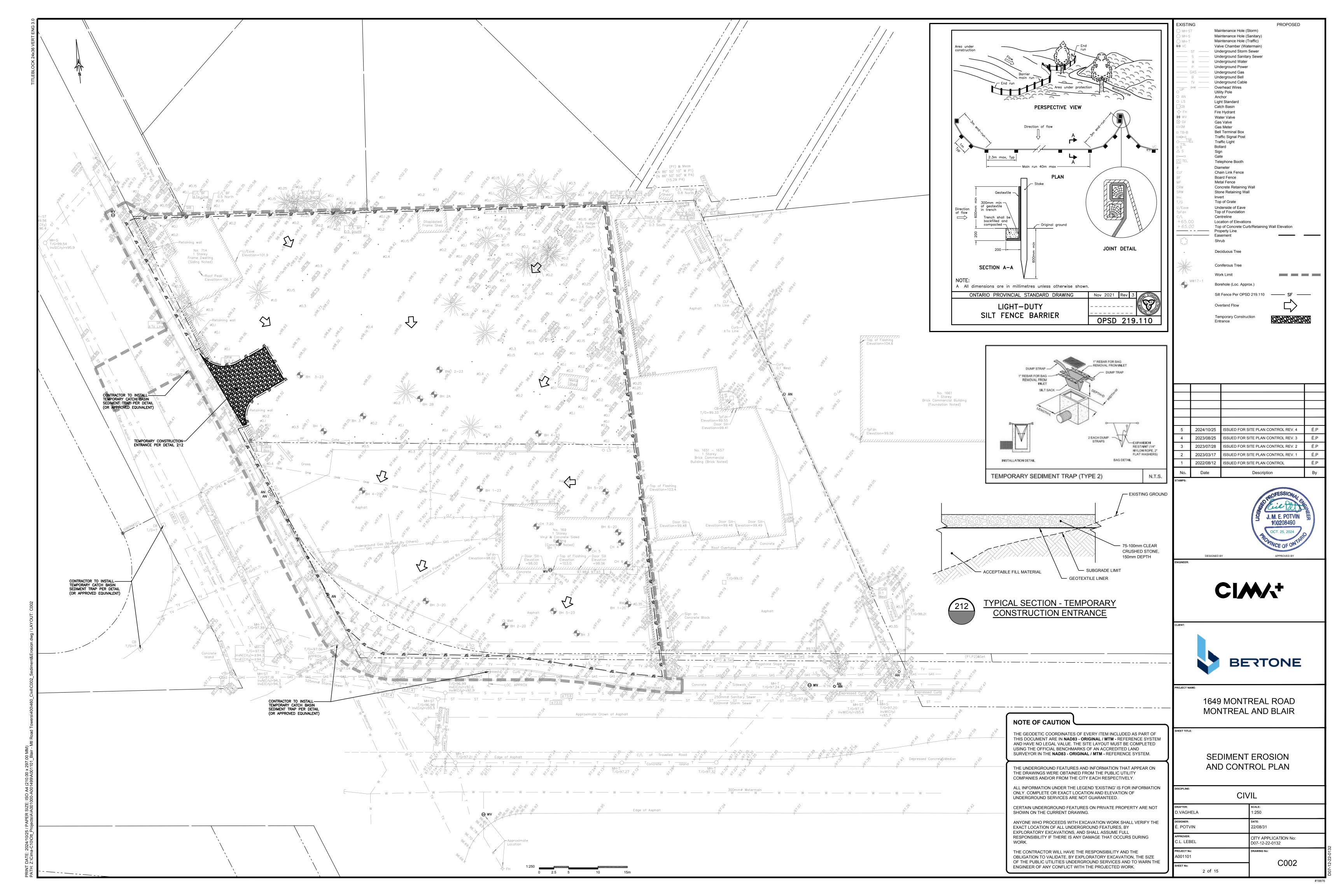
1649 MONTREAL ROAD MONTREAL AND BLAIR ROAD



| PLAN No: | DESCRIPTION |
|----------|----------------------------------|
| C000 | COVER PAGE |
| C000 | TOPOGRAPHICAL SURVEY PLAN |
| | |
| C002 | SEDIMENT AND EROSION CONTROL PLA |
| C003 | NOTES PLAN - 1 of 2 |
| C004 | NOTES PLAN - 2 of 2 |
| C005 | GRADE CONTROL AND DRAINAGE PLAN |
| C006 | SITE SERVICING PLAN |
| C006B | SANITARY SEWER LID REPLACEMENTS |
| C007 | STORM WATER MANAGEMENT PLAN |
| C008 | CIVIL DETAILS PLAN - 1 of 7 |
| C009 | CIVIL DETAILS PLAN - 2 of 7 |
| C010 | CIVIL DETAILS PLAN - 3 of 7 |
| C011 | CIVIL DETAILS PLAN - 4 of 7 |
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| C013 | CIVIL DETAILS PLAN - 6 of 7 |
| C014 | CIVIL DETAILS PLAN - 7 of 7 |

CIW\+





1. SEDIMENT AND EROSION CONTROL

- 1.1. Unless otherwise indicated, all materials and construction methods to be in accordance with the requirements of the latest edition of the Ontario Provincial Standard Specifications and Drawings (OPSS and OPSD), the Ontario Ministry of Environment, Conservation and Parks (MECP), applicable Conservation authorities, the municipal standard specifications and drawings, and all other governing authorities as they apply.
- 1.2. Wherever standards, laws and/or regulations are mentioned they refer to their current versions, modifications included.
- 1.3. Specifically, sediment and erosion control measures to be constructed as per OPSS.MUNI 805.
- 1.4. The Contractor must implement best management practices and provide adequate sediment and erosion control measures during construction:
 - Prevent soil erosion which can result from stormwater runoff or wind erosion during construction;
 Prevent sediment deposits in the storm sewer and/or collecting streams and;
 Prevent air pollution from dust and particulate matter.
- 1.5. Provisions must be made for sediment and erosion control measures prior to stripping the site of vegetation and other deleterious materials. Measures such as phase stripping, vegetation buffer zones, silt fences, straw bales, sediment traps/basins, rock checks, etc. must be constructed and maintained in order to control sediment, as required by the provincial and municipal governing authorities.
- 1.6. The Contractor must set up the measures shown on the plan, inspect them frequently and clean and repair or replace the deteriorated structures.
- 1.7. When the sediment and erosion control measures have to be removed in order to complete a portion of the work, these same measures must be reinstated.
- 1.8. When storing soil on site in piles the Contractor must cover each pile with tarps, straw or a geotextile fabric to avoid fine particle transport by wind and/or streaming rain water.
- 1.9. During the construction period, sediment capture silt sacks or filter cloths must be installed and maintained between the frame and cover of all catchbasins and catchbasin/manholes to minimize sediments entering the storm sewer system. All landscaping areas must be completed prior to the removal of the silt sacks or filter cloths.
- 1.10. The light duty silt fence barrier must be installed as per OPSD 219.110.
- 1.11. At all times the Contractor must maintain the municipal access roads clean and free of sediments. When cleaning the access roads, the Contractor must take the necessary precautions to clear the surfaces covered with sediment prior to cleaning with water.
- 1.12. For dust control, Contractor to apply calcium chloride (Type I OPSS 2501 and CAN/CGSB-15-1) and water with equipment approved by the Owner's representative at rate in accordance to OPSS.MUNI 506 when directed by Owner's representative.
- 1.13. At the end of the construction period, the Contractor is responsible for removal of the temporary sediment and erosion control measures and reconditioning the affected areas.
- 1.14. This plan is a "Living Document" which may be revised in the event that the control measures are not sufficient.
- 2. GRADE CONTROL AND DRAINAGE GENERAL
- 2.1. The Contractor must conform to all laws, codes, ordinances, and regulations adopted by federal, provincial or municipal government councils and government agencies, applying to work to be carried out.
- 2.2. Unless otherwise indicated, all materials and construction methods to be in accordance with the requirements of the latest edition of the Ontario Provincial Standard Specifications and Drawings (OPSS and OPSD), the Ontario Ministry of Environment, Conservation and Parks (MECP), applicable Conservation Authorities, the municipal standard specifications and drawings, and all other governing authorities as they apply.
- 2.3. Wherever standards, laws and/or regulations are mentioned they refer to their current versions, modifications included.
- 2.4. The boreholes and test pits shown on the plan are for information purposes only. Their location on the plan is approximate. The Contractor must refer to the boreholes and test pit records to obtain information about observed stratigraphy on site.
- 2.5. The Contractor is responsible for obtaining all permits required to complete all works and bear cost of same including road cut permit and water permit and their associated costs.
- same, including road cut permit and water permit and their associated costs.
- 2.7. Independent géotechnical laboratory for quality control:
- 7.1. An independent geotechnical laboratory hired by the Owner will perform material testing, inspection and quality control services.
- 2.7.2. Geotechnical laboratory to review asphalt and concrete mix designs as requested.

2.6. The Contractor is responsible for the coordination of his activities with others on site.

- 7.3. The Contractor must provide equipment required for executing inspection and testing by appointed geotechnical firm.
- 2.7.4. The Contractor must provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.
- 2.7.5. Employment of geotechnical laboratory does not relax responsibility to perform work in accordance with Contract Documents.
- 2.7.6. If defects are revealed during inspection and/or testing, appointed geotechnical firm will request additional inspection and/or testing to ascertain full degree of defect. Contractor to correct defect and irregularities at no cost to Owner. Contractor to pay costs for retesting and reinspection.
- 2.7.7. Submit copies of inspection and test reports to Owner's representative.
- 2.8. The location of existing underground municipal services and public utilities as shown on the plans are approximate. The Contractor must determine the exact location, size, material and elevation of all existing utilities (on-site and off-site) prior to any excavation work. Damage to any existing services and/or existing utilities during construction, whether or not shown on the drawings must be repaired by the Contractor at his own expense.
- 2.9. Site preparation includes clearing, grubbing, stripping of topsoil, demolition, removal of unsuitable materials, cut, fill and rough grading of all areas to receive finished surfaces.
- 2.10. All material must be compacted as per the requirements of the governing authority and be approved by the Consultant prior to delivery to the site.
- 2.11. Compaction must conform to the following requirements:
 - Exposed subgrade:
 - 95% Standard Proctor maximum dry density (SPMDD)
 Granular Subbase foundations:
 - 99% Standard Proctor maximum dry density (SPMDD)
 Granular Base foundations:
 - 99% Standard Proctor maximum dry density (SPMDD)
 - Asphalt pavement:
 As per City of Ottawa Special Provision F-3130
 - Subgrade fill (pavement areas OPSS Select Subgrade Material):
 - 95% Standard Proctor Maximum Dry Density (SPMDD)
 - Structural fill (building and light standard footprints OPSS Granular 'A' or Granular 'B' Type II Material):

 98% Standard Proctor Maximum Dry Density (SPMDD)
- 2.12. If groundwater is encountered during construction, dewatering of excavations could be required as per OPSS.MUNI 518. It is assumed that groundwater may be controlled by sump and pumping methods. As required under the "Ontario Water Resources Act (OWRA)", the Contractor must register all water taking activities on Ontario's "Environmental Activity and Sector Registry (EASR)" if water taking exceeds 50,000 l/day, and obtain a "Permit to Take Water (PTTW)" if water taking exceeds 400,000 l/day. Furthermore, Contractor must provide all necessary measures required to ensure dewatering operations does not affect in any way the integrity of the existing surrounding buildings and must plan his work accordingly. Water Taking and Discharge Plan to be prepared by a Qualified Person as stipulated under O.Reg. 63/16.

- 2.13. Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements and as follows:
- 2.13.1. Provide flocculation tanks, settling basins, or other treatment facilities to remove suspended solids or other materials to within the required parameters of the receiving body before discharging to storm sewers, watercourses or drainage areas.
- 2.13.2. Before discharging to storm sewers, watercourses or drainage areas, discharge water must be sampled and tested to ensure quality requirements in accordance with City of Ottawa Sewer Use By-Law No. 2003-514 and the MECP are adhered to. The Contractor is to perform all additional sampling and testing as required by City of Ottawa. All associated fees to be paid by the Contractor.
- 2.13.3. Where water is not suitable for discharge into the adjacent storm sewers, watercourses or drainage areas it must be discharged into the on-site sanitary sewer collection system, or disposed off-site at an approved disposal facility.
- 13.4. Sanitary Sewer Discharge: When discharging to the sanitary sewer, the Contractor must obtain a Sanitary Sewer Agreement for Dewatering from the City of Ottawa in accordance with City of Ottawa Sewer Use By-Law No. 2003-514 and pay all associated fees.
- A copy of the signed Sanitary Sewer Agreement for Dewatering must be provided to the
- Owner's Representative in advance of dewatering and discharge.

 The Contractor must ensure all requirements of the Discharge Agreement are adhered to and all
- prerequisite requirements of the Agreement are in place prior to commencing dewatering.

 Provide flow meter and record discharge rate in accordance with City of Ottawa requirements.

 Dewatering discharge rate to sanitary sewer not to exceed rate specified by City.

 For off-site disposal of dewatering effluent, Contractor to provide Departmental Representative
- proof of receipt that dewatering effluent was received at a licensed landfill facility and pay all associated disposal fees.
 Contractor must provide name of proposed licensed disposal facility to Owner's Representative in advance of any dewatering waste leaving the site.
 Contractor is responsible for paying all costs associated with any water quality sampling and
- 2.14. The Contractor must maintain benchmarks and landmark references as is. Otherwise these references
- 2.15. The Contractor is the only person in charge of safety on the building site. The Contractor is responsible for providing adequate protection of the workers, other personnel and the general public, protection of materials, as well as maintaining in good condition the completed works and works to be completed. The Contractor must supply, install and maintain an appropriate safety fence along the work perimeter until the work is complete.
- 2.16. The Contractor must provide at any time:- A sufficient number barriers, posters, guards and others to ensure safety;

will be repositioned by a certified land surveyor at the Contractor's expense.

- Necessary conveniences for the completion of the work such as heating, lighting, ventilation, etc.
 2.17. Temporary excavations in the overburden must be completed as per the requirements of the
- Occupational Health and Safety Act (OHSA), O. Reg. 213/91, Part III Excavations.

 The side slopes of excavations in the soil and fill overburden materials should either be cut back at acceptable slopes or should be retained by shoring systems from the star of the excavation until the structure is backfilled.
- The excavation side slopes above the groundwater level extending to a maximum depth of 3 m should be cut back at 1H:1V or flatter. The flatter slope is required for excavation below groundwater level. The subsurface soil is considered to be mainly a Type 2 and 3 soil according to the Occupational Health and Safety Act and Regulations for Construction Projects. Slopes in excess of 3 m in height should be periodically inspected by the geotechnical consultant in order to detect if the slopes are exhibiting signs of distress.
- 2.18. The Contractor must pace deliveries and removals in order to minimize and control stockpiles.
- 2.19. Excavated soil must not be stockpiled directly at the top of excavations and heavy equipment kept away from the excavation sides.
- 2.20. Cleanliness on the site:
- The Contractor must clean roadways at his own cost as directed by the Owner's representative;
 All site roads and walkways to and from the construction zone must be kept clean at all times, from mud, dirt, granular material, debris, etc.;
- The Contractor must leave the work area clean at the end of each day;Materials and equipment must be laid out in an organized and safe manner;
- All material, equipment and temporary structures which are no longer necessary for the execution of the Contract must be removed from the site;
 If required the Contractor must use screens, bulkheads, or any other recognized means in order to reduce noise, dust, interference, obstruction, etc., in conformity with the requirements of the
- provincial and municipal authorities having jurisdiction.
 2.21. During the construction period the Contractor is responsible for installing and maintaining temporary traffic signage, including traffic signs, traffic markings and temporary traffic lights, and flagmen, as
- required by the Owner, the Consultant, the Municipality, and other governing authorities.

 2.22. The Contractor must control surface runoff from precipitation during construction.
- 2.23. Protection of existing trees and shrubs:
- Where trees and naturalized areas are to be retained, the following best management practices as outlined in the City of Ottawa Tree Protection By-law No. 2020-340 (City of Ottawa 2021b) should be followed when construction activities occur near trees. These protection measures must be in place prior to any work and maintained until the work is complete.
 Establish a buffer (i.e., fencing, stakes) around the critical root zone (CRZ) of trees as per TREE PROTECTION SPECIFICATION detail of drawing C013.
- Do not attach any signs, notices, or posters to any tree.
- Do not damage the root system, trunk, or branches of any tree.Do not place any material or equipment within the CRZ of the tree.
- Do not raise or lower the existing grade within the CRZ.
- Do not direct exhaust fumes from equipment towards any tree's canopy.
 Construction equipment and heavy equipment should arrive at the site clean and free of mud and debris to prevent the spread of additional noxious weeds species to the site. Upon completion of work, the equipment should be cleaned to prevent the spread of weeds to the next work area.
 Prune tree branches as needed to complete the work.
- The Contractor must perform any tree cutting prior to April 15 or after August 31 (i.e., outside of the migratory birds General Nesting Period).
- 2.24. The Contractor must ensure the following mitigation measures are implemented in order to reduce
- the risk of ground contamination from petroleum products:

 The list of persons and agencies to contact in the event of an emergency must be posted in plain
- The list of persons and agencies to contact in the event of an emergency must be posted in plain sight on the work site for the duration of the construction period;
 Machinery must be clean and kept clean to limit any grease or oil deposits inside the work area;
- Frequent inspections must be performed to detect any oil, fuel, grease or other leaks. If a leak is detected, the necessary corrective action must be taken immediately;
 An emergency kit for the recovery of petroleum products must be kept on site at all times. The kit must include at least 30 m of absorbent booms, a box of absorbent pads and solid absorbent material (powder or granules). The kit must be stored near the location of work and machinery, and
- kept within easy reach at all times to ensure a rapid response;

 In the event of a spill the Contractor must immediately report to the Spills Action Centre of the MECP at 1-800-268-6060. Hydrocarbons and contaminated soils will be recovered by a specialized firm.
- 2.25. The Contractor must ensure the following measures are implemented regarding the handling of concrete:
 - Concrete should either be mixed away from the site or should be prepared on paved surfaces if only small quantities are required (i.e. minor repairs);
 Excess concrete must be disposed off-site at a location that meets all regulatory requirements;
 - carried out within 30 m of a watercourse or wetland and should take place outside of the work site;All concrete trucks should collect their wash water and recycle it back into their trucks for

The washing of concrete trucks and other equipment used for mixing concrete should not be

- 3. <u>DEMOLITION AND REMOVALS</u>
- 3.1. The Contractor must visit the premises in order to be fully aware of existing conditions on site, including all elements to be removed and demolished. No claim will be accepted due to a poor evaluation of the work to be completed.

disposal off-site at a location meeting all regulatory requirements.

3.2. The Contractor must protect and maintain in service the existing works which must remain in place. If they are damaged, the Contractor must immediately make the replacements and necessary repairs to the satisfaction of the Owner's representative and without additional expense to the Owner.

- 3.3. The Contractor must perform the nessessary clearing and grubbing in accordance with OPSS.MUNI 201.
- 3.4. The Contractor must carry out necessary saw cuts even if they are not shown on the drawings.
- 3.5. The Contractor must entirely remove the demolition wreckage from the construction site in accordance with the requirements of the MECP and in accordance with OPSS.MUNI 180 and OPSS.MUNI 510.
- The Contractor must discard recyclable demolition materials in collaboration with a regional recycling company. The Contractor must be able to provide proof, upon request, that the materials were properly recycled and that the chosen recycling company is recognized in the recycling field.
 All other demolition materials must be disposed off-site at authorized licensed landfills and in conformity with the applicable laws and regulations. The Contractor must be able to provide, upon request, copies of the disposal tickets.
- 3.6. The Contractor is responsible for locating existing public utilities and (if required) submit a request for the interruption of public utility services, such as gas, telephone, power, cable, sewers, watermain, etc.
- 3.7. The Contractor must conduct all removals required to make the work complete.
- 3.8. Unless otherwise specified, all materials, products and others coming from the demolition belong to the Contractor.
- 3.9. Surfaces and works located outside of the construction work limit must be reinstated as they were before beginning of work.

4. GENERAL SUBGRADE PREPARATION

- 4.1. Earth removal must be inspected by an experienced Geotechnical Engineer to ensure that all unsuitable materials are removed prior to the placement of fill, including concrete and/or others, and to confirm the compaction degree and condition of the founding soils. All unsuitable materials must be hauled off site and disposed as per provincial and municipal regulations.
- 4.2. Subgrade must be approved by experienced geotechnical personnel before proceeding with placement
- 4.3. All soft, wet or disturbed areas revealed under surface compaction must be removed to a minimum depth of 500 mm and replaced with compacted suitable subgrade fill as directed by the Geotechnical Engineer and/or an approved non-woven Class 1 geotextile, as per OPSS 1860.MUNI. Transition around sub-excavation, where backfill and native material are not of similar nature, must be sloped at 3 horizontal to 1 vertical, within 1.8 m of finished surface.
- 4.4. If construction is required during freezing temperatures, the native soils should be protected immediately from freezing using straw, propane heaters, polystyrene insulation, insulated tarpaulins, or other suitable means that prevent the underlying native soils from freezing, which could cause significant frost heave.
- 4.5. All granular fill must be placed in maximum 300 mm thick loose lifts and compacted using suitable methods as per the requirements.
- 4.6. All heavy equipment must not operate directly on the subgrade. A minimum of 500 mm of fill must be used to allow traffic over subgrade. Subgrade surfaces will be prone to disturbance by weather and traffic, therefore preparation of the subgrade must be scheduled such that the granular materials are placed as quickly as possible.
- 4.7. Excess soils generated must be managed in accordance O.Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, c.E19 (EPA) and the adopted by reference "Rules for Soil Management and Excess Soil Quality Standards" (the 'Soil Rules') as well as other regulatory amendments related to the management of excess soil. Excess soil is defined as non-hazardous soil, or soil mixed with rock, that has been excavated as part of a project and removed from the project area for the project. As it relates to this Contract, the Project Leader is "the Client", as per the definition under O.Reg. 406/19.
 - Where excess soils are anticipated to be generated, a notice is to be filed to the Resource Productivity and Recovery Authority (RPRA or successor organization) Excess Soils Registry (the 'Registry') prior to the removal of excess soil from the project area unless exempt in accordance with the Regulation. The Contractor is to provide "the Client" all information required for filing the notice to the Registry.
 - A Soil Management Plan is to be developed by the Contractor for submission to "the Client". Where applicable, the Soil Management Plan is to be prepared in accordance with the MECP Management of Excess Soil - A Guide for Best Management Practices and in accordance with O.Reg. 406/19.
 - The Contractor is responsible for retaining a Qualified Person (QP_{ESA}, as per the definition under O.Reg. 153/04) to evaluate and provide all the necessary services required in accordance with O.Reg. 406/19. The services may include but not be limited to an Assessment of Past Uses, Sampling and Analysis Plan, Soil Characterization Report, and Excess Soil Destination Assessment Report, collectively described as the 'Planning Documents', as specified within the Soil Rules. The Contractor may rely on existing Planning Documents and/or site characterization reports where provided "within the Contract Documents OR by the Engineer" in relation to Excess Soils. The Contractor is responsible to finalize any preliminary Planning Document reports required, identify
 - specified by the selected destination site.The Contractor is responsible to notify "the Client" if actual construction activities and/or site conditions encountered are not consistent, or appear not to be consistent, with the information

proposed soil destination site(s) for "the Client" approval, and satisfy all associated requirements

- presented within the Planning Documents.
 The Contractor is responsible to implement a tracking system in accordance with O.Reg. 406/19, to track each load of excess soil during its transportation and deposit at the approved destination site (i.e. reuse site, Class 1 soil management site, local waste transfer facility, landfilling site or dump, and any transportation to and from a Class 2 soil management site).
- 4.8. If contaminated material is encountered during the work, the Contractor must dispose off-site all materials from the contaminated area in accordance with the requirements of the MECP and OPSS.MUNI 180. Prior to the start of work the Contractor must provide the name and location of landfill(s) where the contaminated materials will be disposed to the Consultant. The Contractor must obtain from the landfill Owner documents confirming that he has the right to accept the contaminated material. During the work, the contractor must provide the Consultant copies of all check-in receipts issued by the landfill Owner.
- 4.9. The Contractor is responsible for providing a confirmation that the imported material used as subgrade fill is free of any contaminants such as Petroleum Hydrocarbons (C_{10} - C_{50}), PAH (Polycyclic Aromatic Hydrocarbons), MAH (Monocyclic Aromatic Hydrocarbons) and metals like mercury, silver, arsenic, cadmium, cobalt, chromium, copper, tin, manganese, molybdenum, nickel, lead and zinc.

5. EXCAVATION AND BACKFILL

density of 95% SPMDD.

- 5.1. Subgrade preparation must be completed as per Section "4.0 General Subgrade Preparation".
- 5.2. The management of excess materials to comply with OPSS.MUNI 180 and any excess soils with O.Reg
- 5.3. Topsoil and deleterious fill, such as those containing organic materials, must be stripped from under any buildings, paved areas, pipe bedding, and other settlement sensitive structures.
- 5.4. Due to the relatively shallow depth of the bedrock surface and the anticipated founding level for the proposed building, all existing overburden material must be excavated from within the proposed building footprint.
- 5.5. Existing foundation walls and other construction debris must be entirely removed from within the building perimeter. Under paved areas, existing construction remnants, such as foundation walls, must be excavated to a minimum of 1 m below final grade.
 5.6. Subgrade fill used for grading beneath asphalt or concrete pavement must consist of OPSS Select
- Subgrade fill used below rigid surfaces, such as concrete sidewalks and concrete slabs, must not contain more than 25% silt.

 5.7. Non-specified fills and on-site excavated soils may be used in landscaping areas and beneath paved areas where settlement of the ground surface is of minor concern. In landscaped areas the fill must be

Subgrade Material or equivalent, approved by the Geotechnical Engineer prior to delivery to the site.

spread in thin lifts and compacted by the tracks of spreading equipment to minimize voids. When used

to build up subgrade level in areas to be paved fill should be compacted in thin lifts to a minimum

5.8. Non-specified fills and on-site excavated soils are not suitable for use as backfill against foundation walls unless used in conjunction with a drainage geocomposite, such as Miradrain G100N or Delta Drain 6000, connected to the perimeter foundation drainage system. Imported granular materials, such as clean sand or OPSS Granular B Type I granular material, should otherwise be used for this purpose. It is recommended that the composite drainage system extend down to the footing level. It is recommended that 150 mm diameter sleeves at 3 m centres be cast in the foundation wall at the footing interface to allow the infiltration of water to flow to an interior perimeter drainage pipe. The

perimeter drainage pipe should direct water to sump pit(s) within the lower level area.

5.9. Structural fill used for grading beneath the footings of buildings, signs and light standards must consist of OPSS Granular 'A' or Granular 'B' Type II Material.

- 5.10. It is expected that line-drilling in conjunction with hoe-ramming, rock grinding and controlled blasting will be required to remove the bedrock for the underground parking levels. In areas of weathered bedrock and where only a small quantity of bedrock is to be removed, bedrock removal may be possible by hoe-ramming.
- 5.11. Rock excavation must conform to OPSS 403.MUNI and to all laws, codes, ordinances and regulations adopted by federal, provincial and municipal government councils and government agencies, applying to the work to be carried out.
- 5.12. It is expected that line-drilling in conjunction with hoe-ramming, rock grinding and controlled blasting will be required to remove the bedrock for the underground parking levels. In areas of weathered bedrock and where only a small quantity of bedrock is to be removed, bedrock removal may be possible by hoe-ramming.

 Pro-Construction Survey (Piling/Hee Pamming, Pock Anchors, Shoring and/or close provimity to City.
 - Pre-Construction Survey (Piling/Hoe Ramming, Rock Anchors, Shoring and/or close proximity to City Assets) or Pre-Blasting Survey will be required for any buildings/dwellings within proximity of 75m of the site. Circulation of notice of vibration/noise is required to residents within 150 m of site. Conditions for Pre-Construction/ Pre-Blast Survey & Use of Explosives will be applied to agreements. Refer to City's Standard S.P. No. F-1201 entitled Use of Explosives, as amended.
- 5.13. Excavation side slopes in sound bedrock may be completed with almost vertical side walls. A minimum of 1 m horizontal ledge must remain between the bottom of the overburden and the top of the bedrock surface to provide an area for potential sloughing. The 1 m horizontal ledge set back can be eliminated with a shoring program which has drilled piles extending below the proposed founding
- 5.14. In consideration of the groundwater conditions encountered at the time of the field investigation, an underfloor drainage system, will be required to control water infiltration below the lowest level floor slab. For design purposes, it is recommended that 150 mm perforated pipes be placed along the interior perimeter of the foundation wall and one drainage line within each bay. The spacing of the underfloor drainage system should be confirmed at the time of completing the excavation when water infiltration can be better assessed.

6. PAVEMENT STRUCTURES, CURBS, AND SIDEWALKS

- 6.1. Construction of granular foundation must conform to City of Ottawa Special Provisions.
- 6.2. Granular materials used on site must conform to the requirements of OPSS.MUNI 1010.
- 6.3. Asphalt pavements to be constructed as per Details #202 and #203.
- 6.4. Road cut reinstatement as per City of Ottawa Detail R10 with surface course key.
- 6.5. Where the proposed pavement structure abuts the existing pavement, the pavement structure should match the existing pavement layers.
- 6.6. Construction of asphalt must conform to City of Ottawa Special Provision F-3130.
- 6.6.1. Paving must not be carried out if the roadbed is frozen or wet.
- 6.6.2. The granular grade must be free of standing water at the time of hot mix asphalt placement. The surface of a pavement upon which hot mix asphalt is to be placed must be dry at the time of hot mix asphalt placement. Following the final compaction of a hot mix asphalt course, a 4 hour minimum time laps must be respected before placing a new new hot mix asphalt course. Additionally, the temperature of the previous course must be 60 °C or less.
- 6.6.3. The asphalt base coarse must not be placed unless the air temperature at the surface of the road is a minimum of 2°C and rising.
- 6.6.4. The asphalt surface coarse must not be placed unless the air temperature at the surface of the road is a minimum of 7°C.
- 6.7. Asphalt concrete material must conform to City of Ottawa Special Provision F-3104 for HL hot mix asphalt mixtures, and City of Ottawa Special Provision F-3106 for Superpave hot mix asphalt mixtures. Minimum Performance Graded (PG) 58-34 asphalt cement must be used for this project.
- 6.8. Asphalt mix design must be reviewed and approved by a Geotechnical Engineer before paving.
- 6.9. Concrete curbs and gutters must conform to OPSS 353.MUNI, OPSS 904.MUNI and City of Ottawa Special Provisions F-3531, F-9040 and F-9045.
- 6.10. Concrete curbs to be constructed as per City of Ottawa Detail SC1.1 and Detail 113B and 112B.
- 6.11. Elevation at top of concrete curbs to be 150 mm above the asphalt, unless otherwise indicated on the drawings.

6.12. Concrete sidewalks must conform to OPSS.MUNI 351 and OPSS 904.MUNI and City of Ottawa

- 6.13. Concrete sidewalks to be constructed as per City of Ottawa Detail SC2, SC7.1 and SC7.5.
- 6.14. Concrete pavers as per details 217C and 217D.

the duration of the curing period.

cured with moisture vapour barrier.

Special Provisions F-3510, F-9040 and F-9045.

- 6.15. For all concrete placement during cold weather Contractor must place material in accordance to OPSS.904.MUNI.
- 6.15.1. When ambient air temperature is 5°C or less, forms for concrete work must be left in place for
- 6.15.2. When the ambient air temperature is below 0°C at the time of placing, components must be
- 6.15.3. Contractor must conform to OPSS.MUNI 904.07.11 for Control of Temperature when subjected

7. MISCELLANEOUS

OPSS.MUNI 1712.

- 7.1. Existing pavement markings in municipal right-of-way to be reinstated if erased/partially removed during construction. Pavement markings to be "Organic Solvent Based" as per OPSS.MUNI 710 and
- 7.2. Tactile Walking Surface Indicators (TWSI) to be constructed as per detail SC7.3. Product shall be

from the following list or approved equivalent:

Manufacturer Specific Model (when applicable)

ADA Solutions → Irondome

Advantage Cast Iron

Bibby Ste. Croix → Safety Detection System

Cedar Infrastructure

East Jordan → Duralast

Ironped

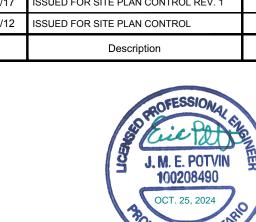
Neenah

OUC

7.3. Pour-in-place bollards to be constructed as per detail 403C.

Star Pipe Products

5 2024/10/25 ISSUED FOR SITE PLAN CONTROL REV. 4 É.P
4 2023/08/25 ISSUED FOR SITE PLAN CONTROL REV. 3 É.P
3 2023/07/28 ISSUED FOR SITE PLAN CONTROL REV. 2 É.P
2 2023/03/17 ISSUED FOR SITE PLAN CONTROL REV. 1 É.P
1 2022/08/12 ISSUED FOR SITE PLAN CONTROL REV. 1 É.P
No. Date Description By



DESIGNED BY



BERTONE

1649 MONTREAL ROAD MONTREAL AND BLAIR

NOTES PLAN

3 of 15

DISCIPLINE:

CIVIL

DRAFTER:
D.VAGHELA

DESIGNER:
É. POTVIN

APPROVER:
C.L. LEBEL

PROJECT No:
A001101

SHEET No:

CIVIL

SCALE:

DATE:
22/08/31

CITY APPLICATION No:
D07-12-22-0132

DRAWING No:

C003

D07-12-22-01

- 1.1. Unless otherwise indicated, all materials and construction methods to be in accordance with the requirements of the latest edition of the Ontario Provincial Standard Specifications and Drawings (OPSS and OPSD), the Ontario Ministry of Environment, Conservation and Parks (MECP), applicable Conservation Authorities, the municipal standard specifications and drawings, and all other governing
- 1.2. Wherever standards, laws and/or regulations are mentioned they refer to their current versions, modifications included.
- 1.3. The boreholes and test pits shown on the plan are for information purposes only. Their location on the plan is approximate. The Contractor must refer to the boreholes and test pit records to obtain information about observed stratigraphy on site.
- 1.4. The location of existing underground municipal services and public utilities as shown on the plans are approximate. The Contractor must determine the exact location, size, material and elevation of all existing utilities (on-site and off-site) prior to any excavation work. Damage to any existing services and/or existing utilities during construction, whether or not shown on the drawings must be repaired by the Contractor at his own expense.
- 1.5. The Contractor is responsible for obtaining all permits required to complete all works and bear cost of same, including water permit and associated costs.
- 1.6. The Contractor is responsible for the coordination of his activities with others on-site.
- 1.7. Terminate and plug all service connections at 1.0 meter from edge of the building.
- 1.8. The Contractor must complete trench and backfill compaction as per OPSS.MUNI 401/City special

| MATERIALS | COMPACTION | |
|-------------------|------------|---|
| Pipe bedding | 99% SPMDD | _ |
| Pipe cover | 99% SPMDD | |
| Trench backfill | 95% SPMDD | |
| Structure bedding | 98% SPMDD | |

- 1.9. The Contractor is responsible for making or arranging all connections to the existing sewers as per municipal requirements. Prior to connection, the Contractor must provide, to the Engineer and the City for approval, all test results performed on the internal services. Test results must include C.C.T.V. inspection of sewers, infiltration/exfiltration tests for sewers and manholes, deformation tests of sewers, watermain hydrostatic leakage test, flushing and disinfecting operations, and bacteriological water
- 1.10. Advise the City Public Works at least 72 hours in advance before any connection to the City services.
- 1.11. The Contractor must determine the exact invert (geodetic elevation), diameter and construction material of the existing conduits at the proposed connections. He must also carry out, if necessary, exploratory excavations in order to determine the exact location and inverts of existing duct banks. This information must immediately be provided to the Engineer prior to start undertaking any municipal services work and a 48 hour period must be allocated to the Engineer for design review.
- 1.12. The Contractor is responsible for all excavation, backfill and reinstatement of all areas disturbed during construction to existing conditions or better and all associated works to the satisfaction of the Engineer and municipal authorities.
 - Asphalt reinstatement must be in accordance with OPSS.MUNI 310 and City of Ottawa Special - Landscape areas to be reinstated with 150 mm of topsoil and sod in accordance with OPSS.MUNI 802 and OPSS.MUNI 803.
- 1.13. It is recommended that a trench box be used at all times to protect personnel working in trenches with steep or vertical sides. Services are expected to be installed by "cut and cover" methods and excavations should not remain open for extended periods of time.
- 1.14. The pipe bedding for sewer and water pipes must consist of at least 150 mm of OPSS Granular A material The material must be placed in maximum 300 mm thick lifts and compacted to a minimum of 95% of its SPMDD. The bedding material should extend at least to the spring line of the pipe.
- 1.15. The cover material, which must consist of OPSS Granular A, will extend from the spring line of the mm thick loose lifts and compacted to a minimum of 95% of its SPMDD.
- 1.16. Where hard surface areas are considered above the trench backfill, the trench backfill material within the frost zone (about 1.8 m below finished grade) must match the soils exposed at the trench walls to minimize differential frost heaving. The trench backfill must be placed in maximum 300 mm thick loose lifts and compacted to a minimum of 95% of the material's SPMDD..
- 1.17. Dewatering of pipeline, utility and associated structure in rock excavations to be completed as per
- 1.18. Trenching, backfilling and compacting must conform to OPSS.MUNI 401.
- WATERMAIN
- 2.1. Watermain, water service connections and associated appurtenances must be constructed in accordance with the Ontario Provincial Standard Specifications and the City of Ottawa Standards Specifications. Specifically watermains must conform to OPSS.MUNI 441.
- 2.2. Watermain must be constructed as per OPSS.MUNI 441 and specifically OPSD 802.010 for earth excavations and 802.013 for rock excavation.
- 2.3. Watermain pipe materials must be class 150 PVC DR 18 or approved equivalent, unless otherwise shown on the Drawings. Materials must conform to City of Ottawa Material Specification MW-18.1: Manufactured to AWWA C-900 and CSA B137.3 or Pressure Class 235psi/1620 kPA AWWA C-909 and CSA B137.3.1 standards. Pipe shall have the cast iron outside diameter dimensions, be blue in colour and supplied complete with gaskets.
- 2.4. All watermain must be installed with a minimum of 2.40 metres cover from finished grade. Where a minimum of 2.40 metres cover is not reached, thermal insulation is required as per City of Ottawa Details W22. Insulation for use in roads over pipe trenches shall:
 - be type Extruded Polystyrene Foam Insulation Boards (XPS) in 600 x 2400 x 50mm size;
 - meet the requirements of OPSS.MUNI 1605; Grade A (275 kPa compressive strength shall meet ASTM C578 Type VI;
 - Grade B (400 kPa compressive strength shall meet ASTM C578 Type VII.
- 2.1. Cathodic protection (if required) must be installed as per City of Ottawa Details W40 and W42.
- 2.2. Thrust block and restraints must be as per City of Ottawa Details W25.3, W25.4, W25.5 and W25.6.
- 2.3. Valves to be installed as per OPSS 441 and City of Ottawa Special Provision F-4413 and conform to
 - All valves must open in a clockwise direction; - Designed for cold water working pressure of 1035 kPa;
- Valves greater than or equal to 75 mm, and less than or equal to 300 mm, to be cast or ductile iron
- 2.4. A continuous 12 gauge copper tracer wire must be installed over all watermains.
- 2.5. Valve box assembly to be as per City of Ottawa Detail W24.
- 2.6. Watermains must be thoroughly flushed and cleaned to remove all dirt and debris prior to the disinfection process.
- 2.7. All watermains must be hydrostatically and bacteriologically tested as per provincial and municipal regulations. It is the Contractor's responsibility to ensure that all requirements are followed.
- 2.8. The Contractor must make arrangements with and give a minimum of 24 hours' notice to the City for the closing off of necessary valves in the water distribution system. The City will operate valves at the time of tie-ins, etc. at no expense to the Contractor under normal conditions; however the Contractor will be responsible for all costs associated with emergency shutdowns if they occur outside of the normal working hours of the City forces (Monday to Friday, 7:00 a.m. to 5:00 p.m.)

- 2.9. Hydrostatic testing to be completed as per OPSS 441.07.24. Testing must be completed under the supervision of the Contract Administrator. The test section will be either a section between valves or the completed watermain. Test pressure to be 1035 kPa.
- 2.10. Flushing and Disinfecting to be completed as per OPSS 441.07.25 under the supervision of the
- 2.11. The Contractor must obtain a permit from the City before using an existing fire hydrant located within
- 2.12. The Contractor must coordinate and pay the cost of connection, inspection and disinfection by
- 2.13. Contractor must coordinate the supply and installation of water meter and remote water meter for the building with the mechanical engineer.
- STORM SEWER

the City's territory.

- 3.1. Storm sewers, laterals and storm service connections must be constructed in accordance with the Ontario Provincial Standard Specifications / City of Ottawa Standards Specifications / Ministry of Environment and Climate Change Requirements. Specifically storm sewers must conform to OPSS.MUNI 410 and City of Ottawa Special Provisions.
- 3.2. PVC storm sewer material to conform to OPSS.MUNI 1841 and City of Ottawa Material Specification MS-18.1. PVC storm sewers to be installed as per OPSD 802.010 for earth excavation and 802.013 for rock excavation. Bedding and cover material to be OPSS Granular 'A'.
- 3.3. The allowable deflected pipe diameter when using flexible pipe is as follows: - Pipes 100 to 750 mm: 7.5% of the base inside diameter of the pipe

- Greater than 750 mm: 5.0% of the base inside diameter of the pipe

- 3.4. Final backfill material for storm sewers must be approved native material or select subgrade material in conformance with OPSS.MUNI 212 and City of Ottawa Special Provision F-2120.
- 3.5. Storm sewer pipes must be type PVC SDR-35, unless noted otherwise on the drawings.
- 3.6. All storm sewers to be C.C.T.V. inspected by the Contractor as per OPSS.MUNI 409 and City of Ottawa Special Provision F-4090. Report must be provided to the Engineer in two (2) copies and the C.C.T.V. inspection in DVD format only.
- 3.7. Storm manholes, manhole/catchbasins, catchbasins, ditch inlets and valve chambers to be installed as per OPSS.MUNI 407 and conform to OPSS 1351 and City of Ottawa Special Provision F-4070.
- 3.8. Adjustment or rebuilding of manholes, manhole/catchbasins, catchbasins, ditch inlets and valve chambers to be completed as per OPSS.MUNI 408 and City of Ottawa Special Provisions F-4080 and
- 3.9. Excavating, backfilling, and compacting for manholes, manhole/catchbasins, catchbasins, ditch inlets and valve chambers to be completed as per OPSS 402.
- 3.10. Storm manhole, manhole/catchbasin and catchbasin excavations to be backfilled with OPSS Granular 'B'. Joints between sections must be wrapped in a non-woven geotextile.
- 3.11. Concrete storm manholes and manhole/catchbasins to be as per OPSD 701.010 and must be equipped with safety platform as per OPSD 404.020 when exceeding 5.0 m to the lowest invert.
- 3.12. Concrete storm manhole frame and cover to be as per OPSD 401.010 Type "A" closed cover (on private property)excepted for MH-3 which must have watertight frame and cover as per OPSD 401.030 and City of Ottawa Details S24.1 and S25 (on municipal ROW).
- 3.13. Storm rear yard elbow catch basin to be as per City of Ottawa Detail S31.
- 3.14. For building roof drain sizes and location refer to architectural and mechanical drawings.
- 3.15. When a minimum cover of 1.5 m is not reached, frost protection is required required as per detail 500.
- 4. SANITARY SEWER
- 4.1. Sanitary sewers, laterals and service connections must be constructed in accordance with the Ontario Provincial Standard Specifications / City of Ottawa Standards Specifications / Ministry of Environment and Climate Change Requirements. Specifically sanitary sewers must conform to OPSS.MUNI 410 / City of Ottawa Special Provisions.
- 4.2. If specified in the servicing drawings that the sanitary sewer pipes are to be PVC SDR-25, the sewer must be constructed with materials and joints that are equivalent to watermain standards of construction (as per F-6-1 procedures) and must be pressure tested in accordance with the OPSS.MUNI 441, with no leakage.
- 4.3. PVC sanitary sewer pipe material to conform to City of Ottawa Material Specification MS-18.1. PVC sanitary sewers to be installed as per OPSD 802.010 (Class B Bedding) for earth excavation and 802.013 (Class B Bedding) for rock excavation. Bedding and cover material to be OPSS Granular 'A'.
- 4.4. The allowable deflected pipe diameter when using flexible pipe is as follows:
- Pipes 100 to 750 mm: $\,$ 7.5% of the base inside diameter of the pipe - Greater than 750 mm: 5.0% of the base inside diameter of the pipe
- 4.5. Final backfill material for sanitary sewers must be approved native material or select subgrade material in conformance with OPSS.MUNI 212 and City of Ottawa Special Provision F-2120.
- 4.6. All sanitary sewers to be C.C.T.V. inspected by the Contractor as per OPSS.MUNI 409 and City of Ottawa Special Provision F-4090. Report must be provided to the Engineer in two (2) copies and the C.C.T.V. inspection in DVD format only.
- 4.7. Sanitary manholes to be installed as per OPSS.MUNI 407 and conform to OPSS 1351 and City of Ottawa Special Provision F-4070.
- 4.8. Adjustment or rebuilding of sanitary manholes to be completed as per OPSS.MUNI 408 and City of Ottawa Special Provisions F-4080 and F-4081.
- 4.9. Excavating, backfilling, and compacting for sanitary manholes to be completed as per OPSS.MUNI
- 4.10. Sanitary manholes to be backfilled with OPSS Granular 'B'. Joints between sections must be wrapped
- 4.11. Sanitary manholes to be as per OPSD 701.010 and must be equipped with safety platform as per
- OPSD 404.020 when exceeding 5.0 m to the lowest invert.
- 4.12. Sanitary manhole frame and cover to be as per OPSD 401.010 Type "A" closed cover.
- 4.13. Sanitary manhole frame and cover to be as per OPSD 401.010 (on private property) and Watertight frame and covers as per OPSD 401.030 (on municipal ROW).
- 4.15. When a minimum cover of 1.8 m is not reached, frost protection is required as per detail 500.

4.14. Benching is required inside the concrete bottom of sanitary manholes as per OPSD 701.021.

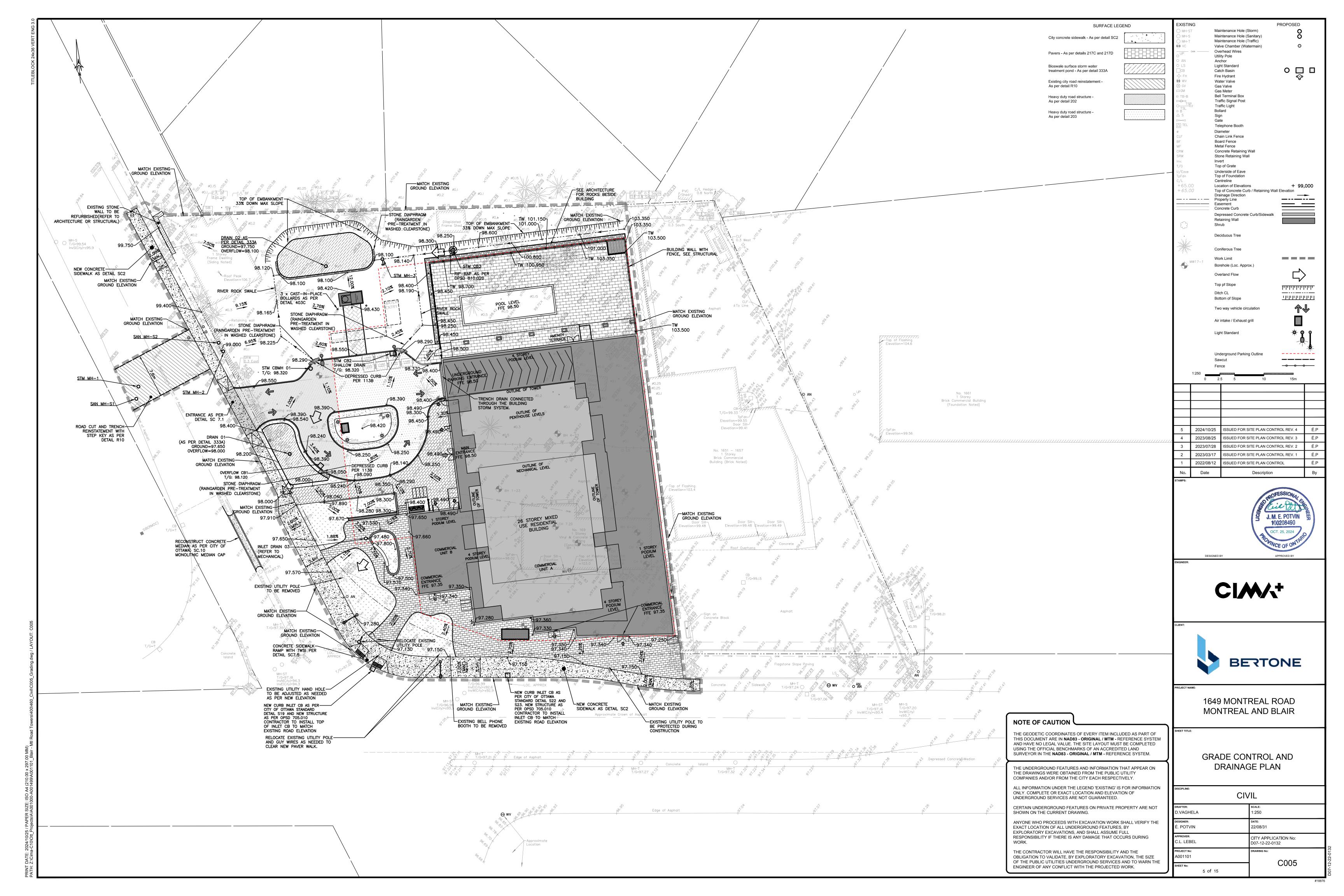
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|---------|------------|-------------------------------------|-----|
| 4 | 2023/08/25 | ISSUED FOR SITE PLAN CONTROL REV. 3 | É.P |
| 3 | 2023/07/28 | ISSUED FOR SITE PLAN CONTROL REV. 2 | É.P |
| 2 | 2023/03/17 | ISSUED FOR SITE PLAN CONTROL REV. 1 | É.P |
| 1 | 2022/08/12 | ISSUED FOR SITE PLAN CONTROL | É.P |
| No. | Date | Description | Ву |
| STAMPS: | | | |

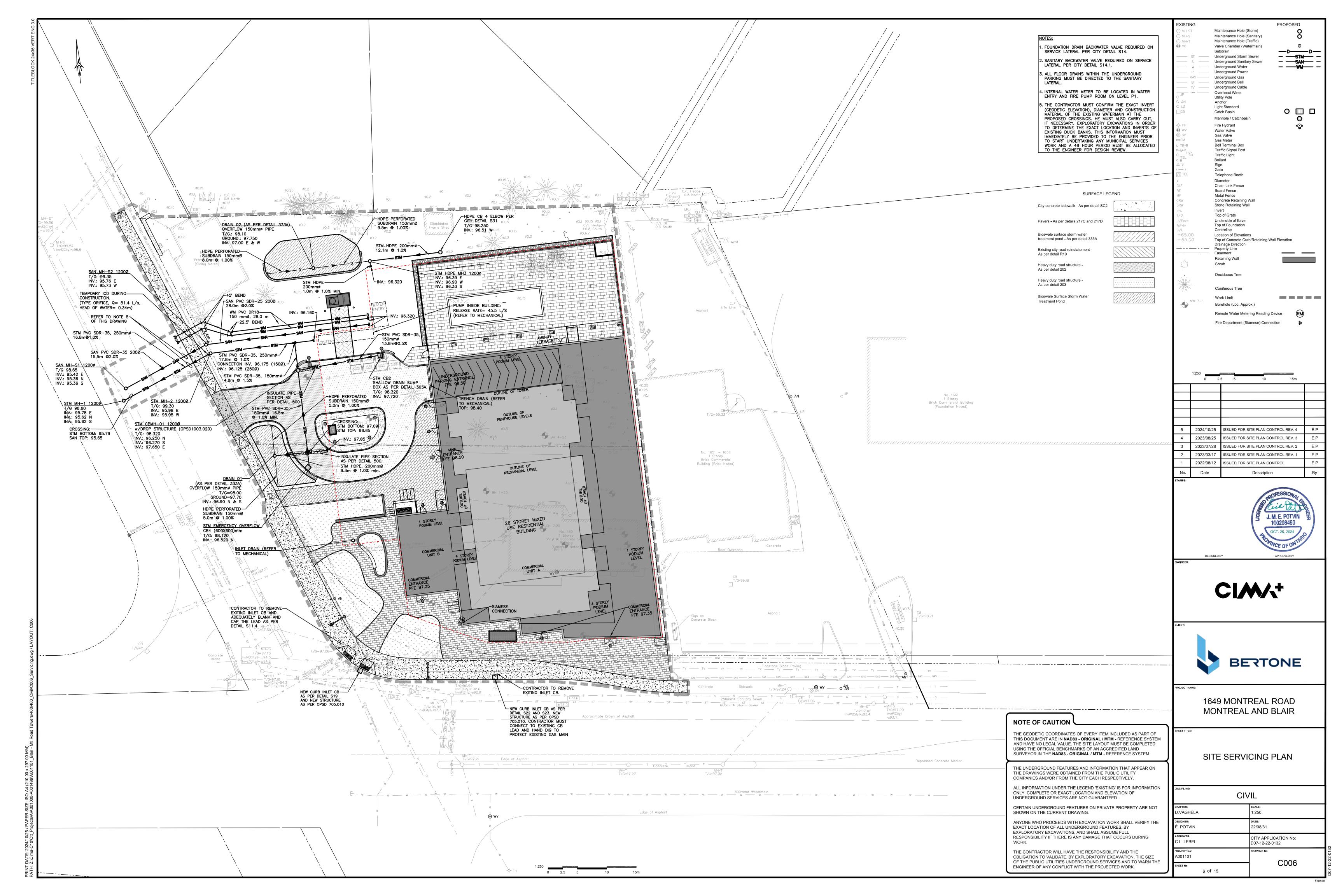


1649 MONTREAL ROAD MONTREAL AND BLAIR

NOTES PLAN

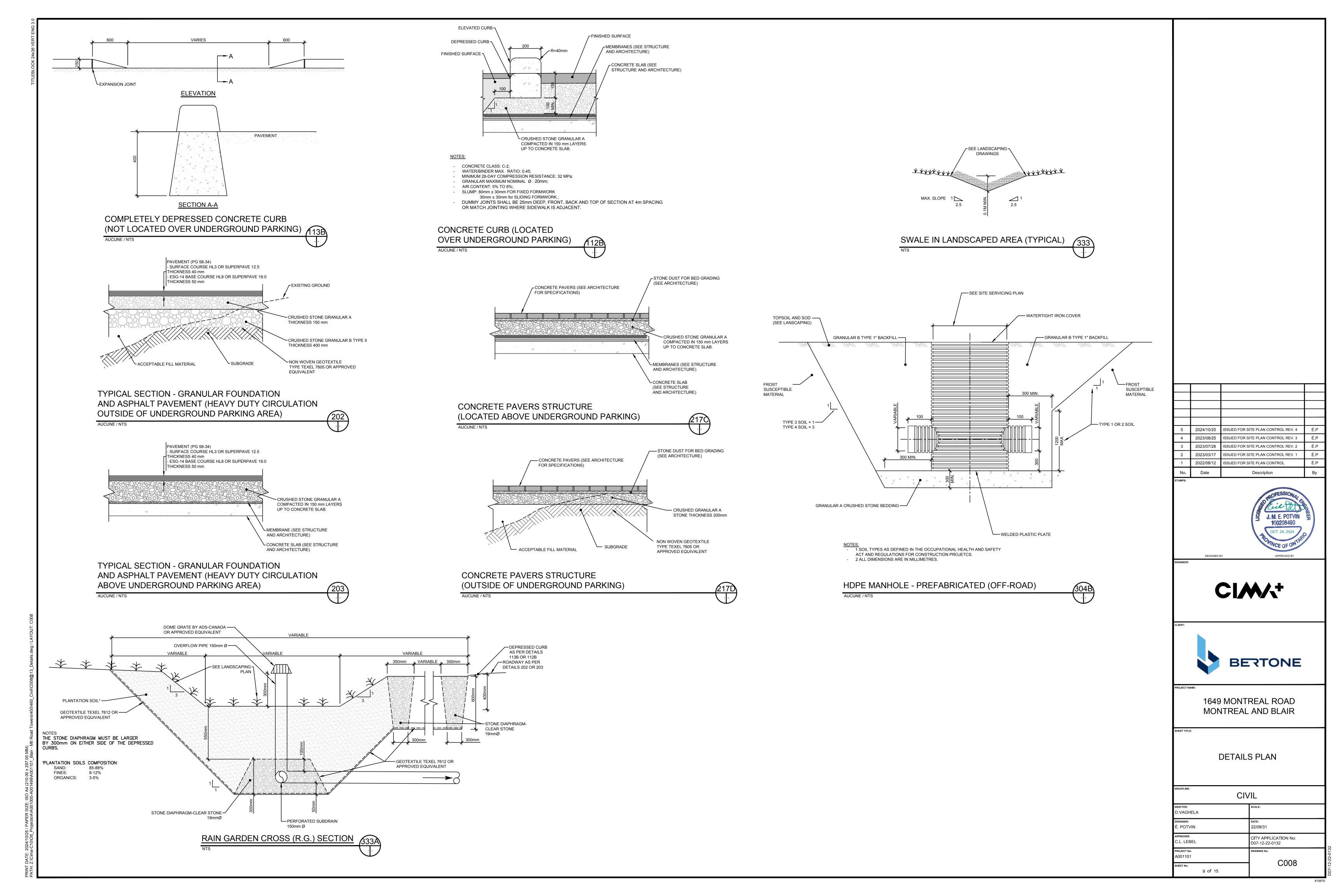
CIVIL D.VAGHELA É. POTVIN 22/08/31 CITY APPLICATION No: C.L. LEBEL 07-12-22-0132 A001101 C004 4 of 15

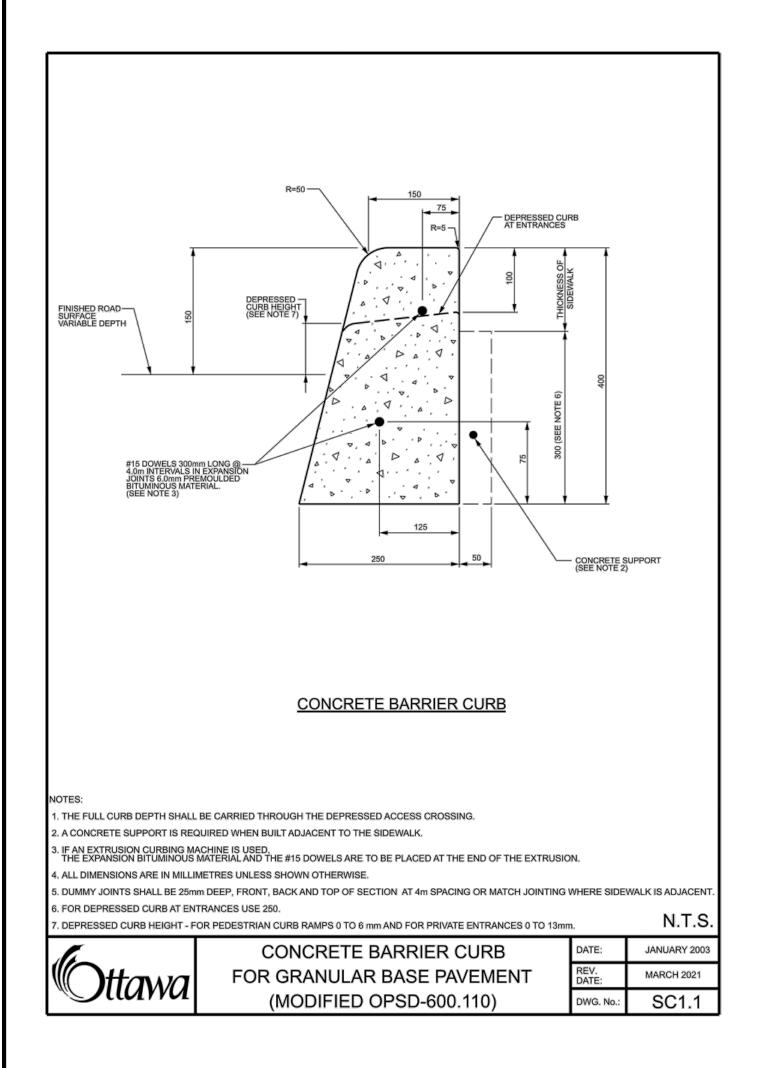


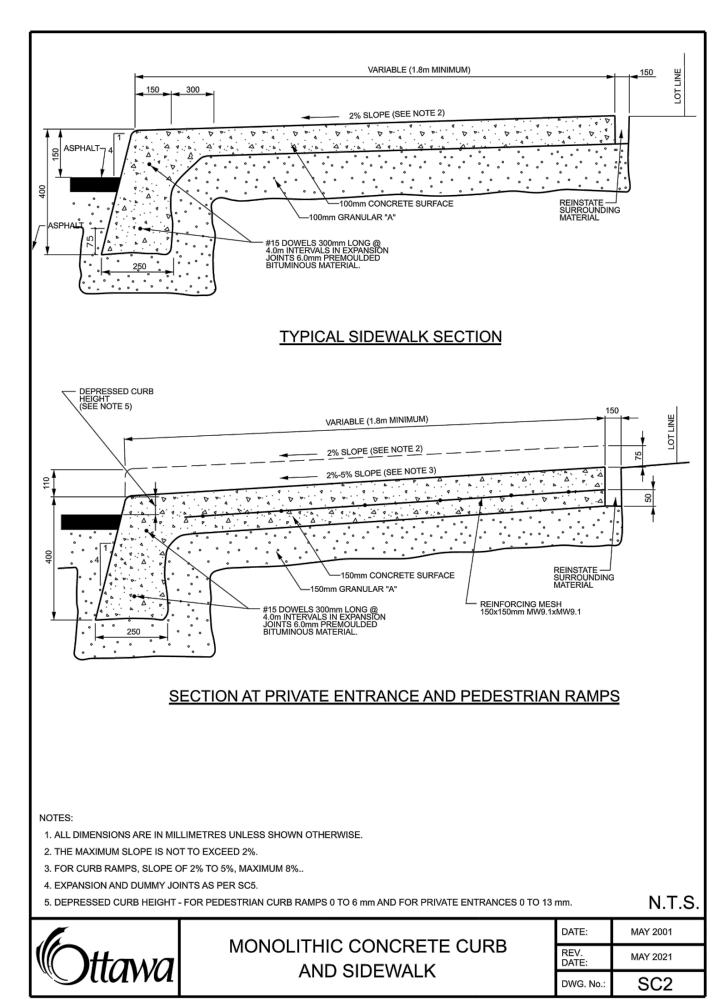


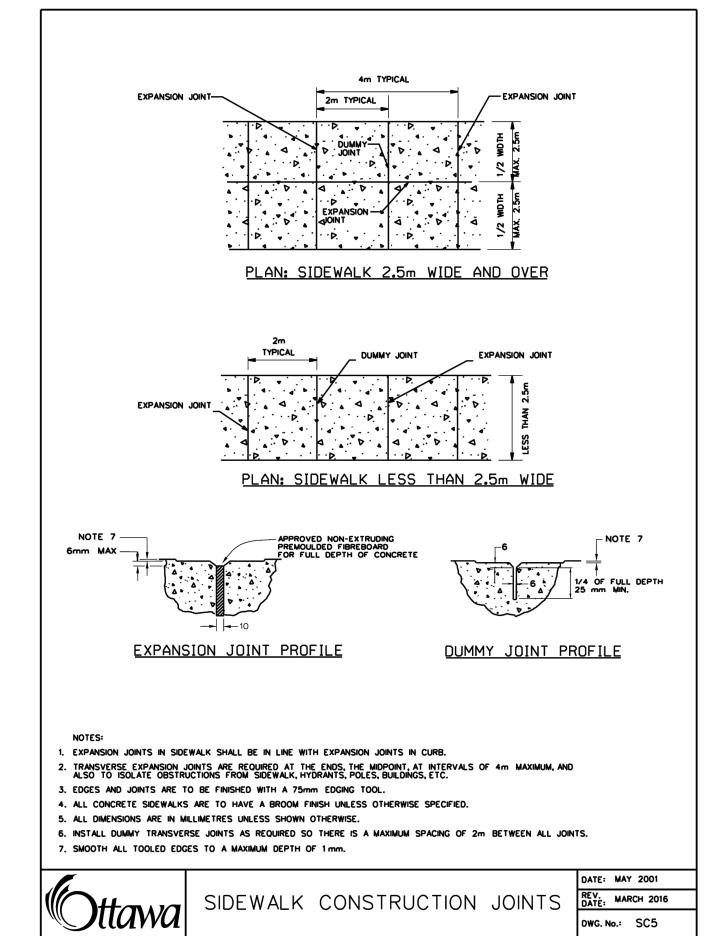


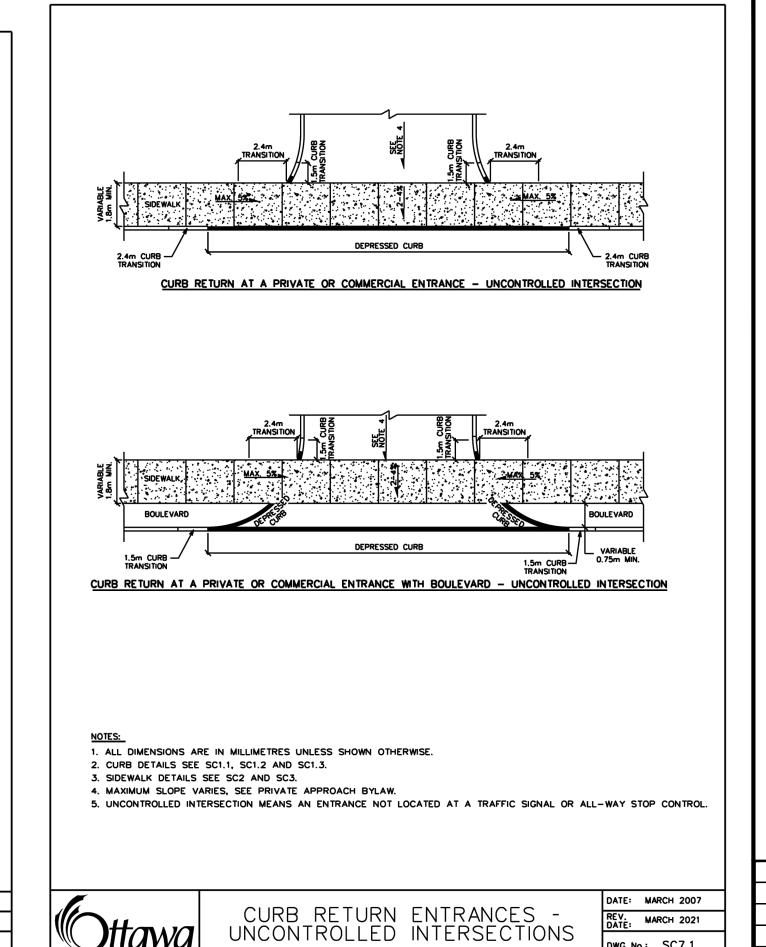




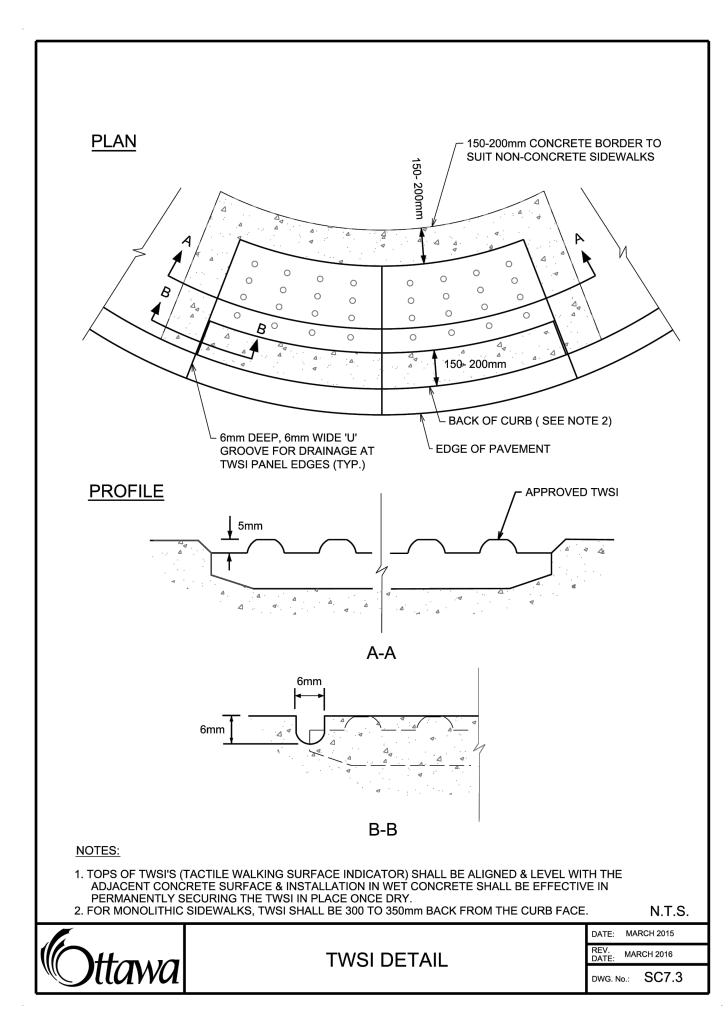


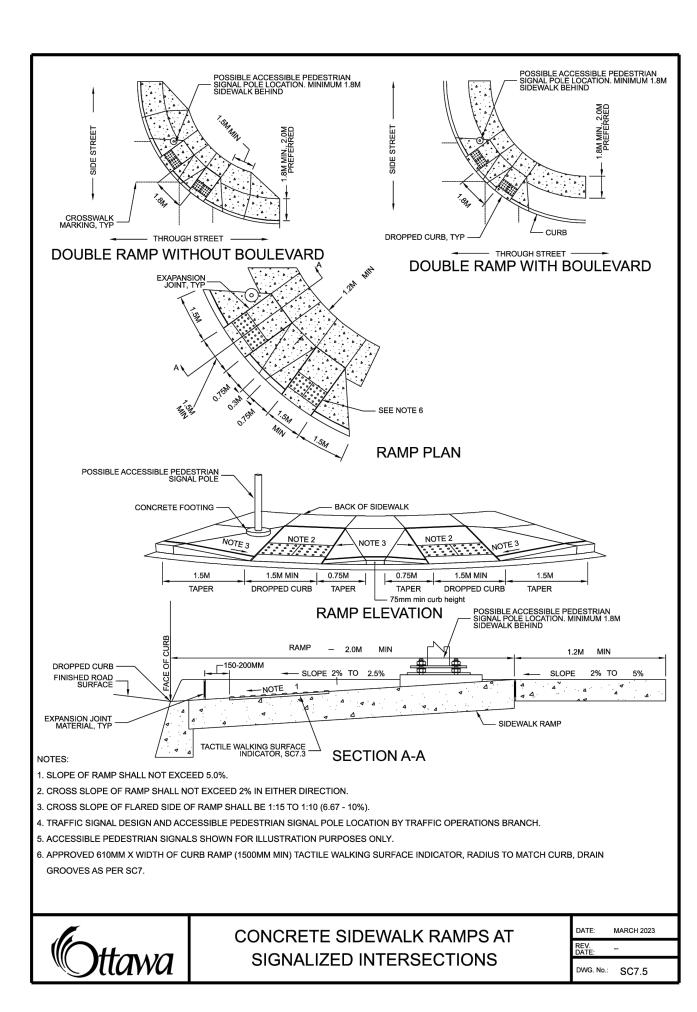


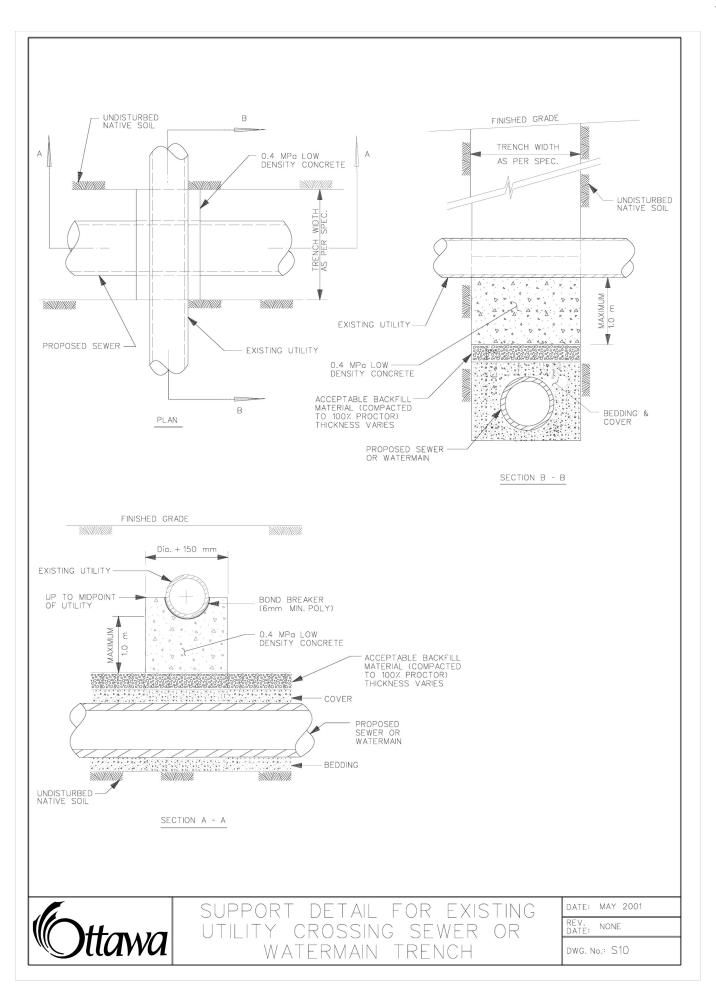


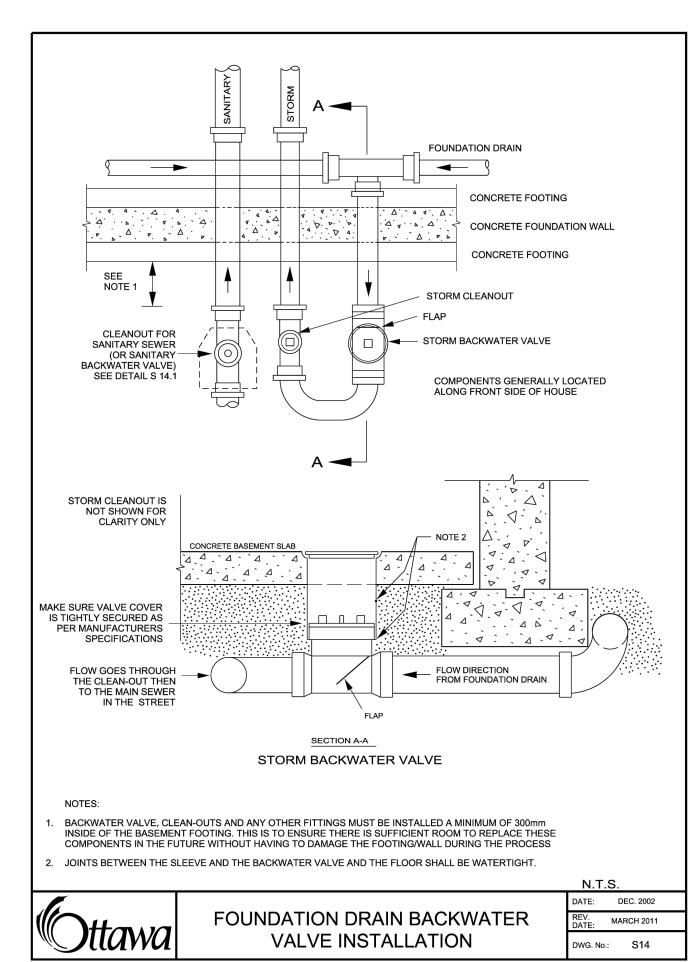


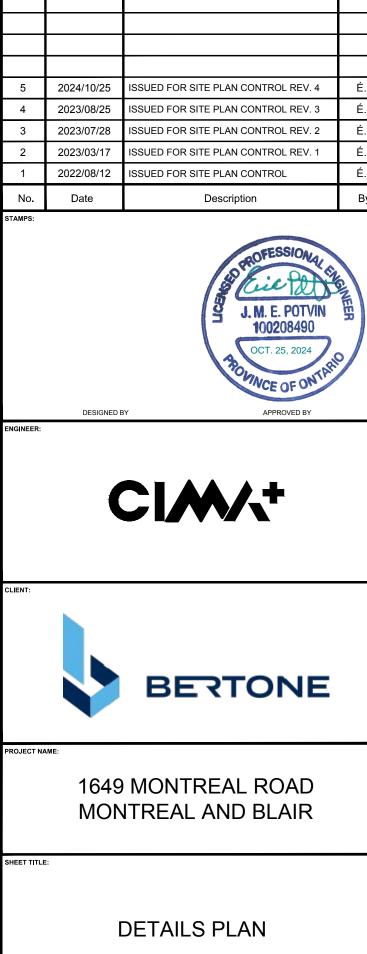
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C009

007-12-22-0132

CITY APPLICATION No:

22/08/31

CIVIL

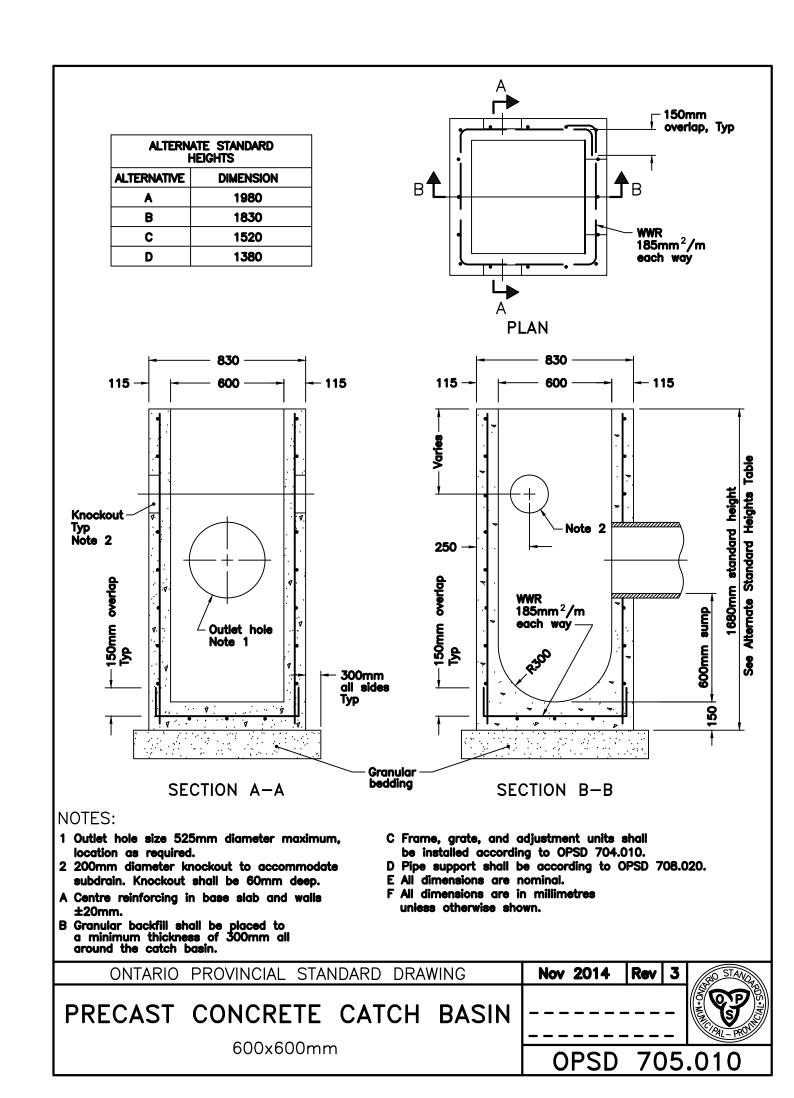
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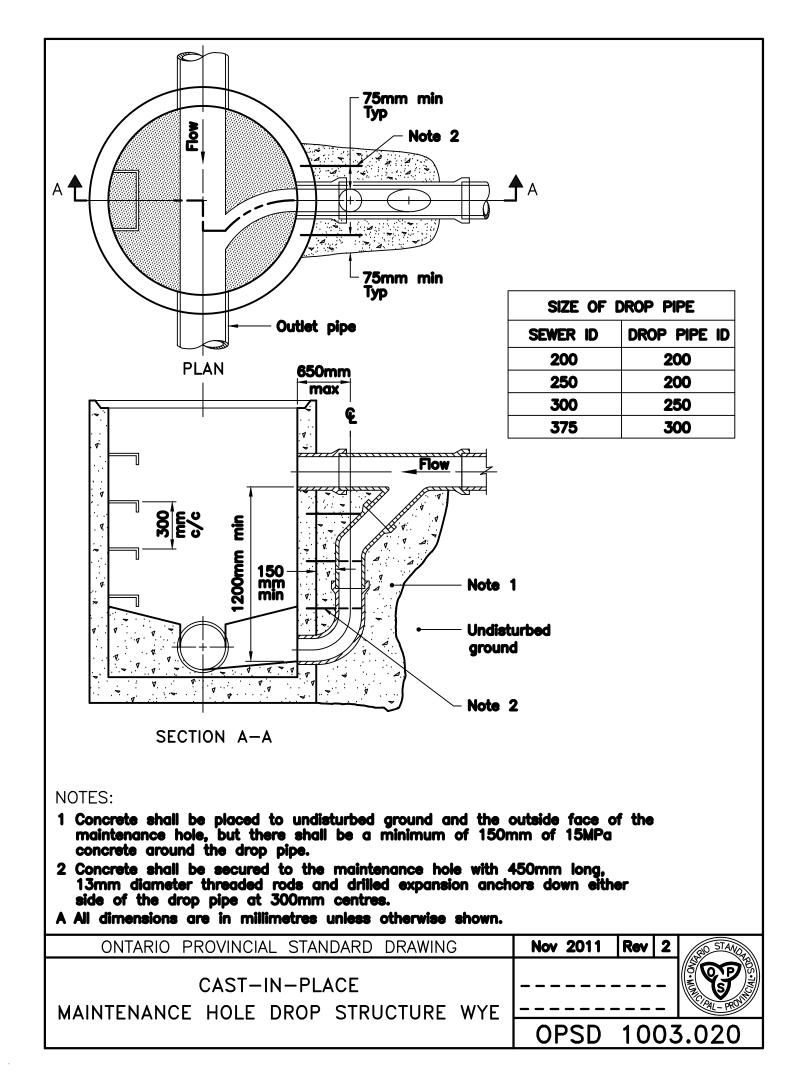
É. POTVIN

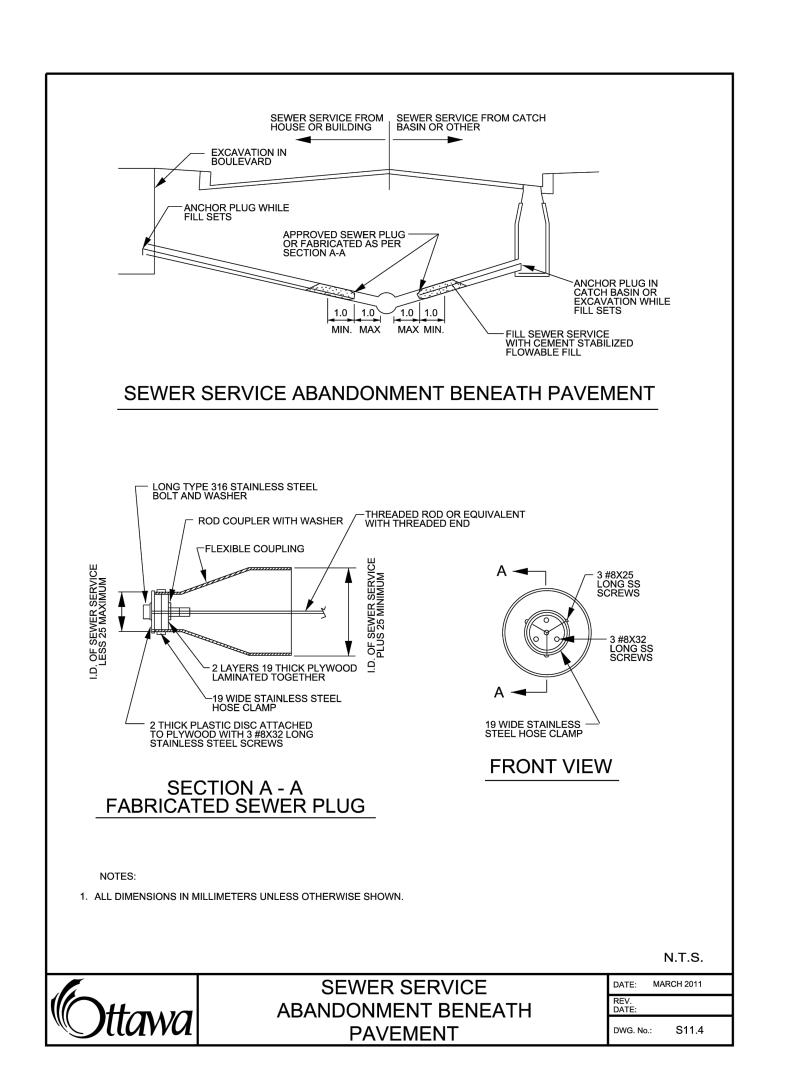
.L. LEBEL

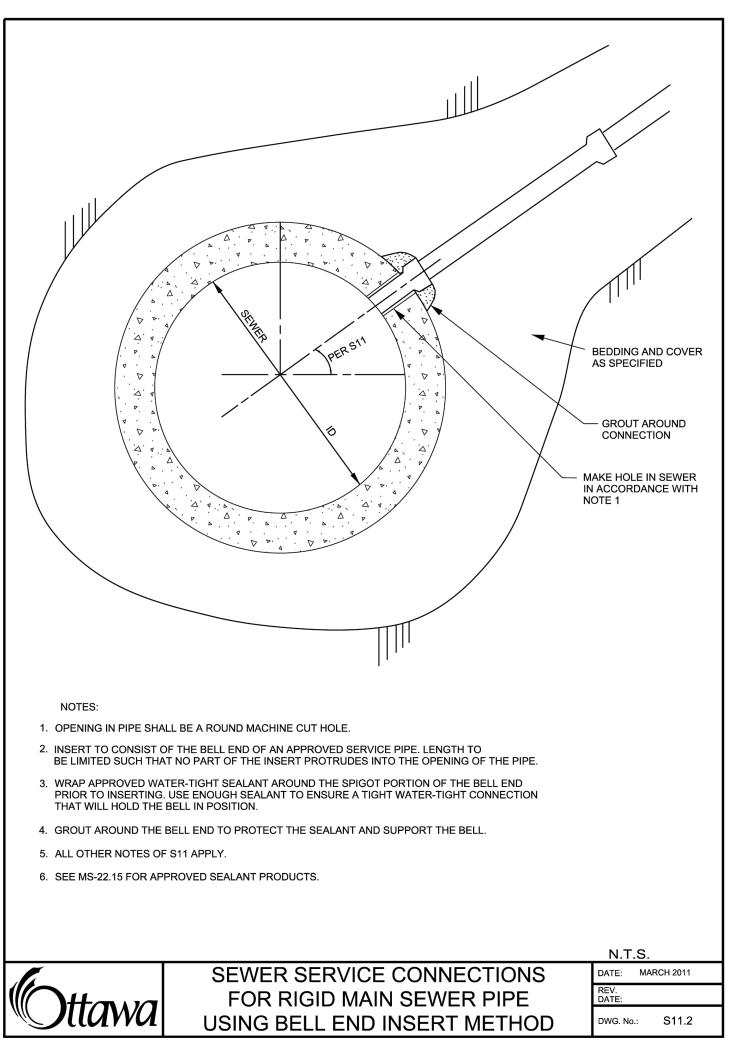
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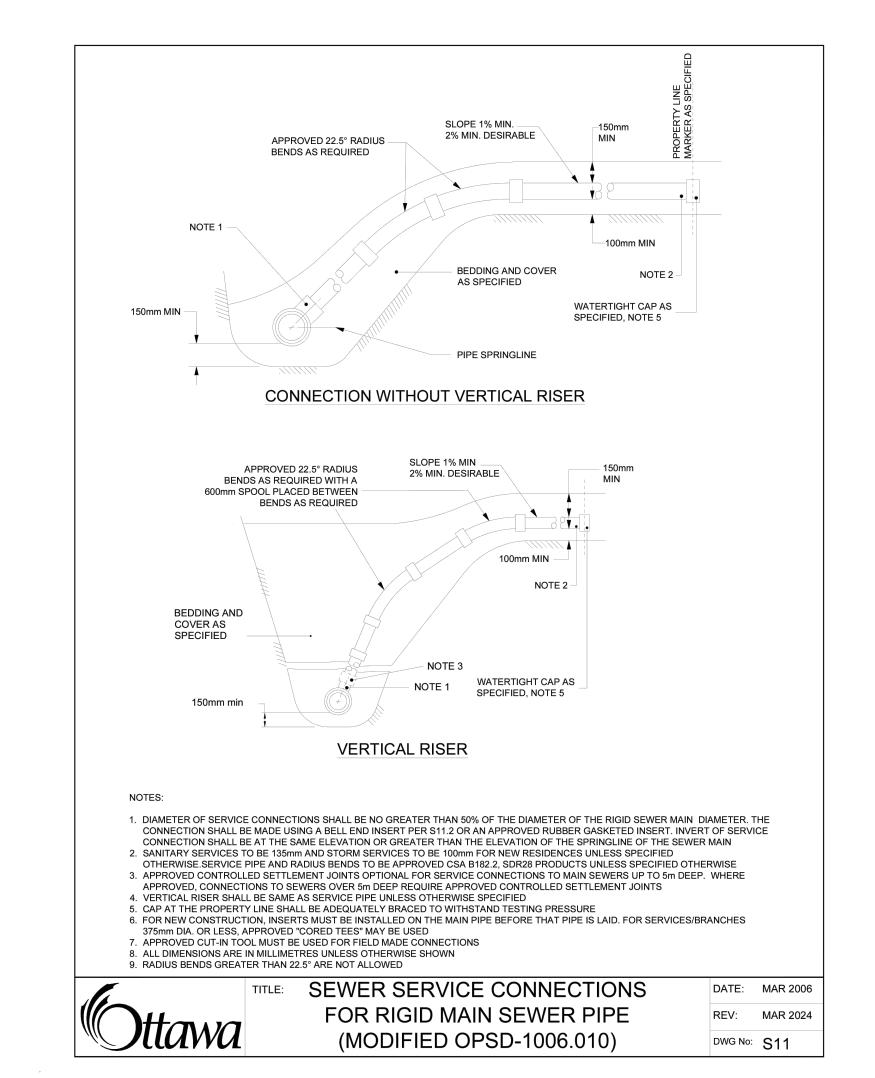
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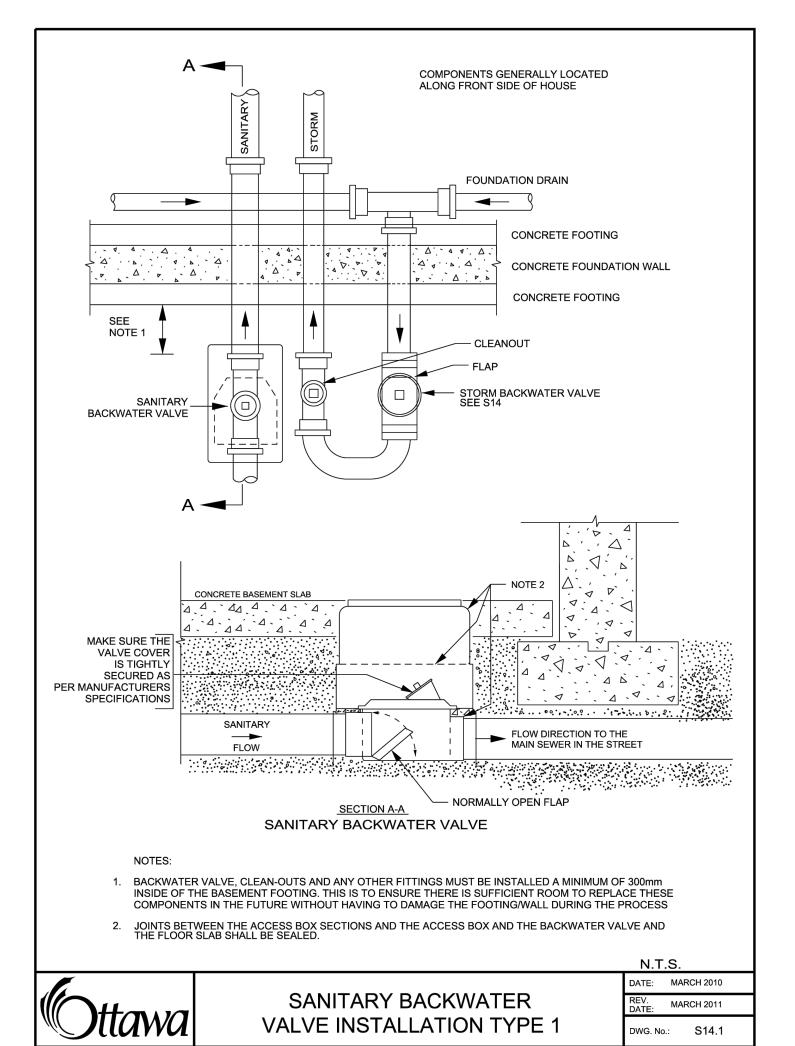


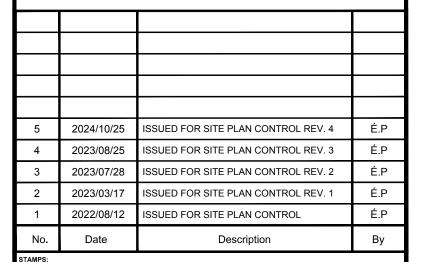














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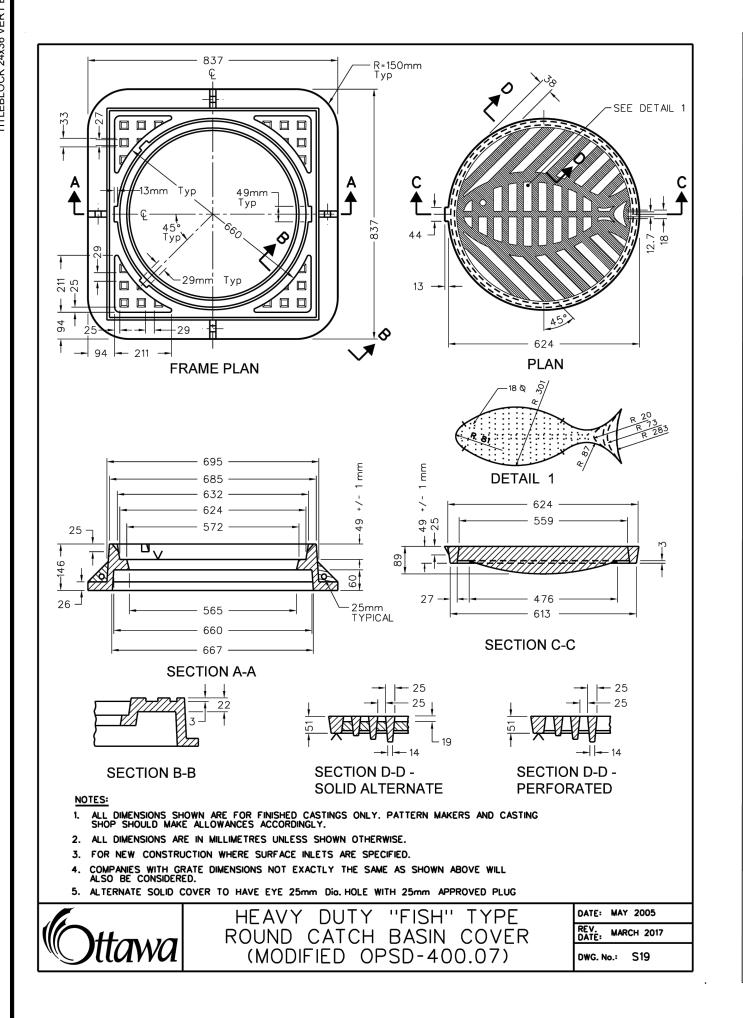


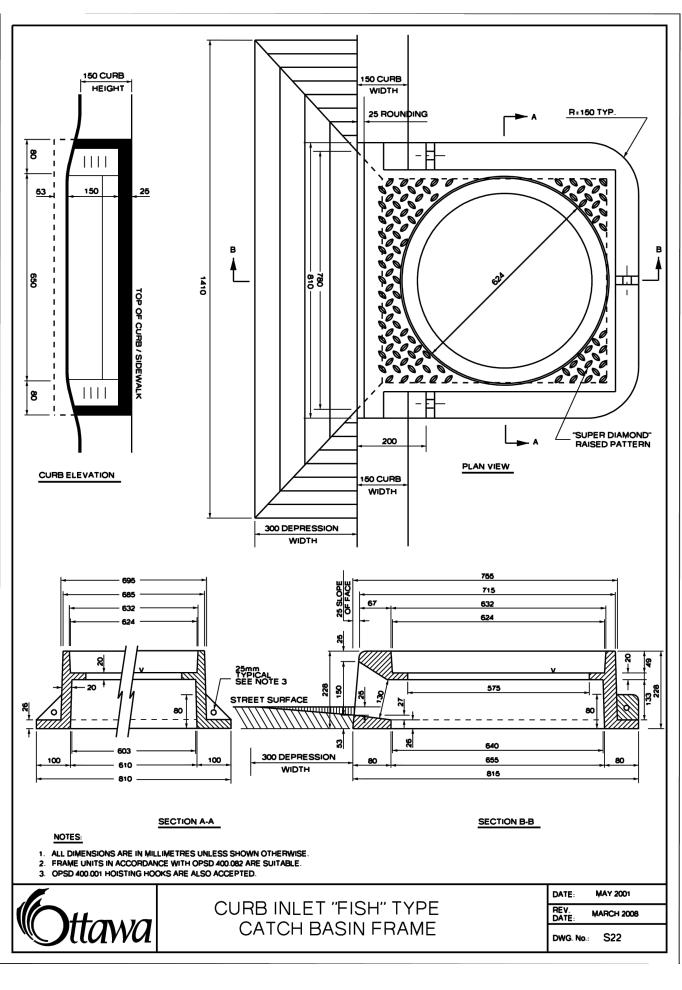
1649 MONTREAL ROAD MONTREAL AND BLAIR

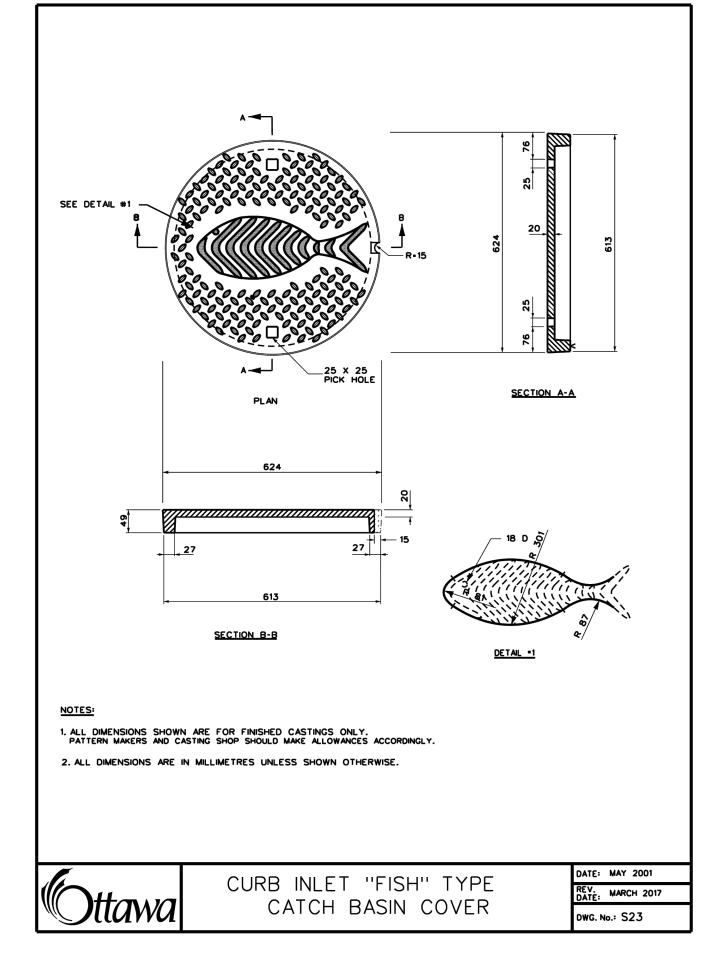
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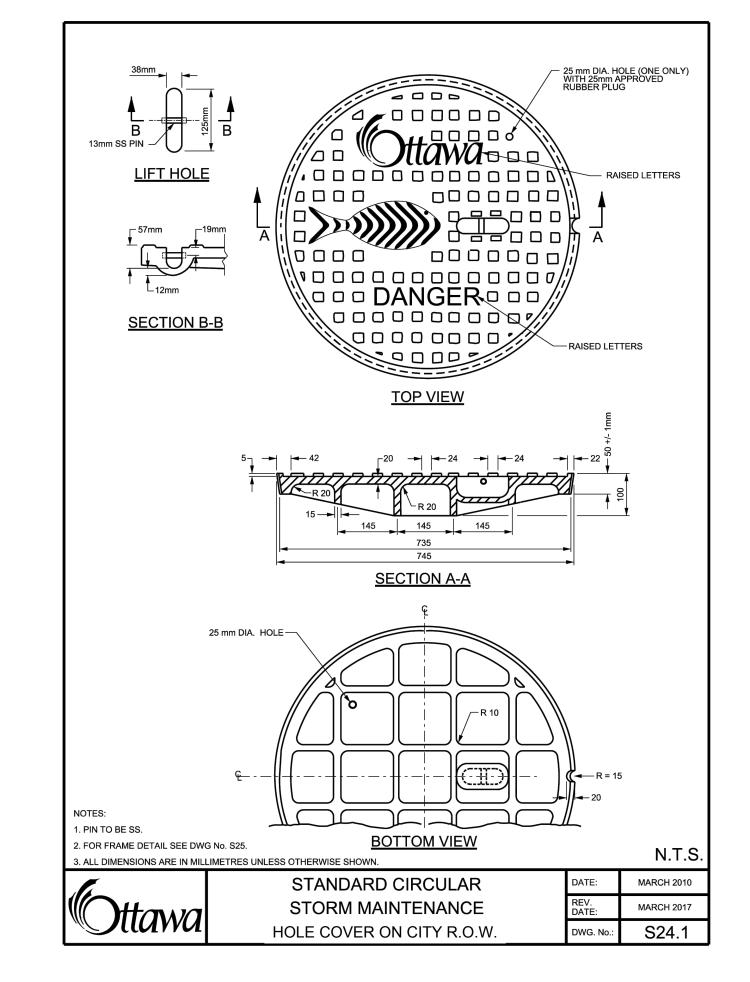
DETAILS PLAN

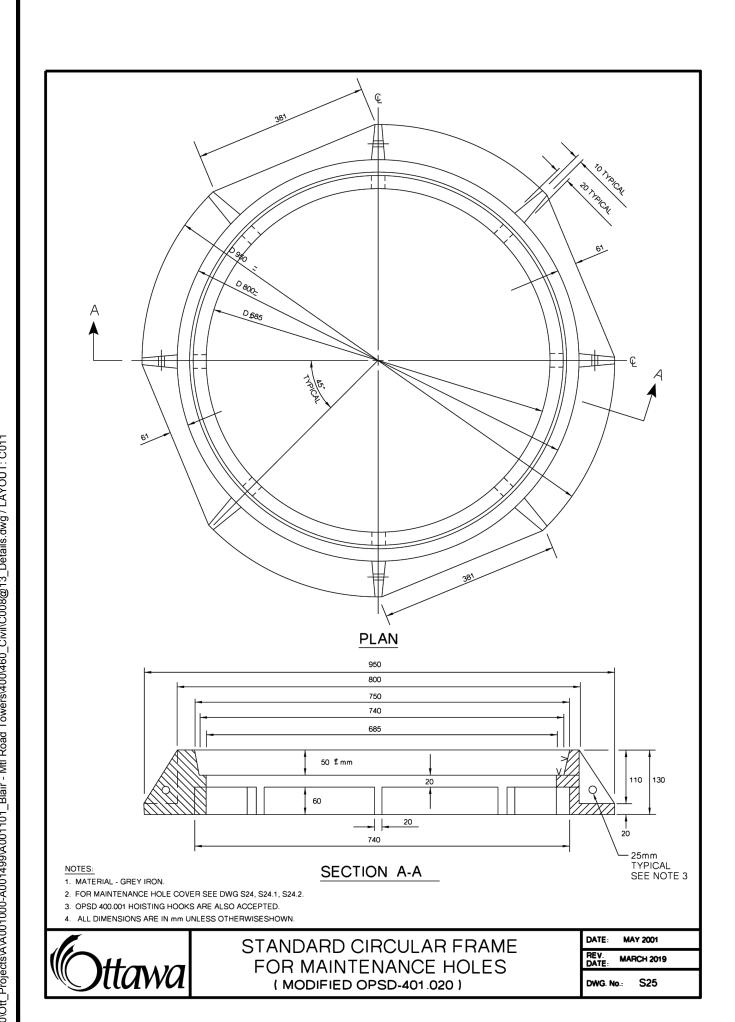
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|-------------------------|--|--|--|--|
| DRAFTER: D.VAGHELA | SCALE: | | | |
| DESIGNER: É. POTVIN | DATE: 22/08/31 | | | |
| APPROVER: C.L. LEBEL | CITY APPLICATION No: D07-12-22-0132 | | | |
| PROJECT №: A001101 | C010 | | | |
| SHEET No: 11 Of 15 | | | | |

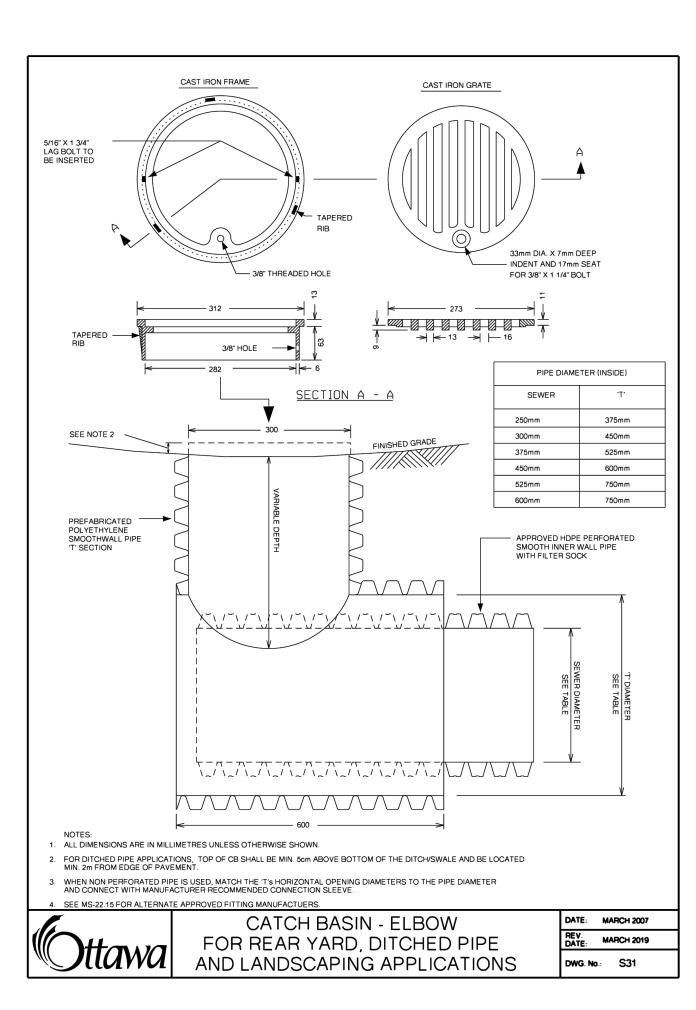


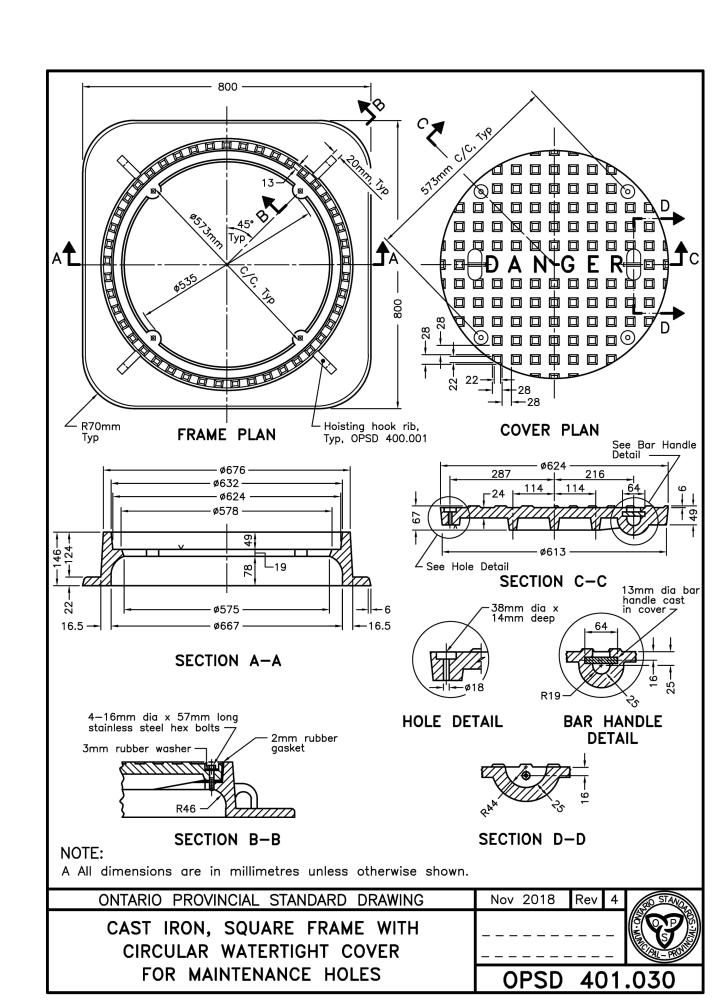


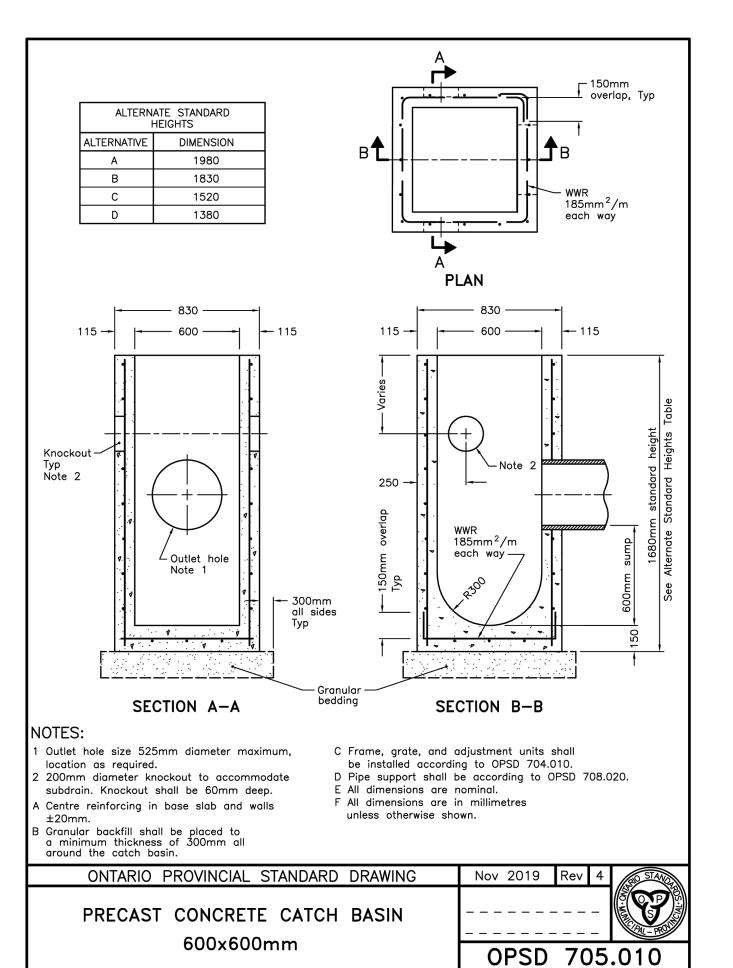














D.VAGHELA

É. POTVIN

C.L. LEBEL

A001101

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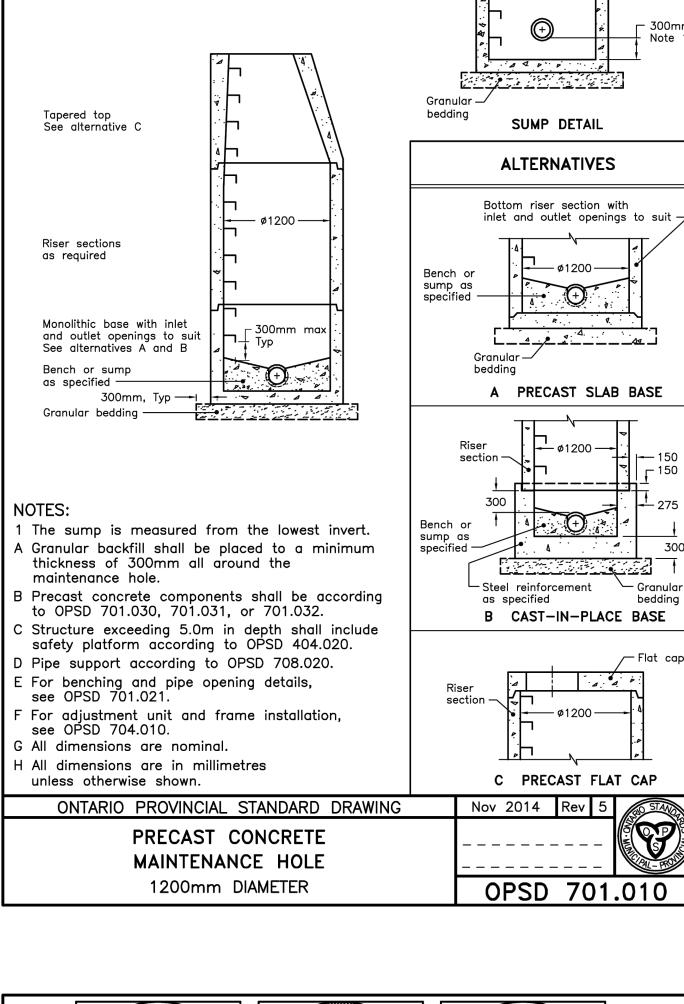
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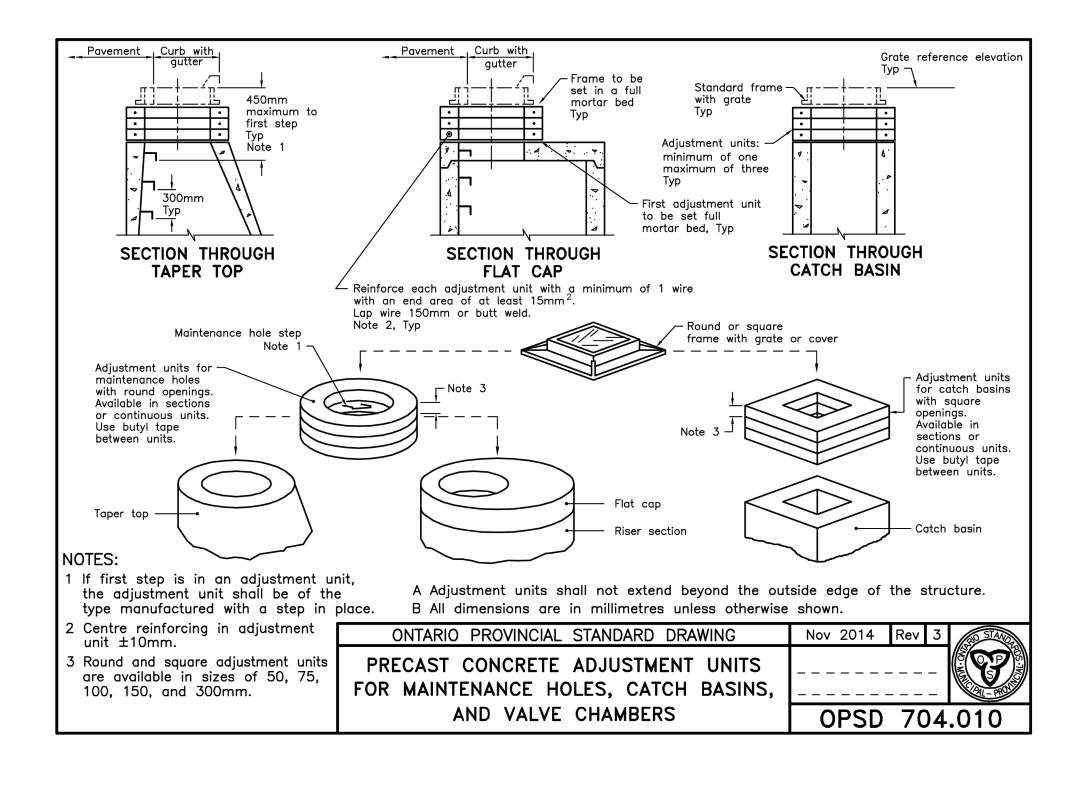
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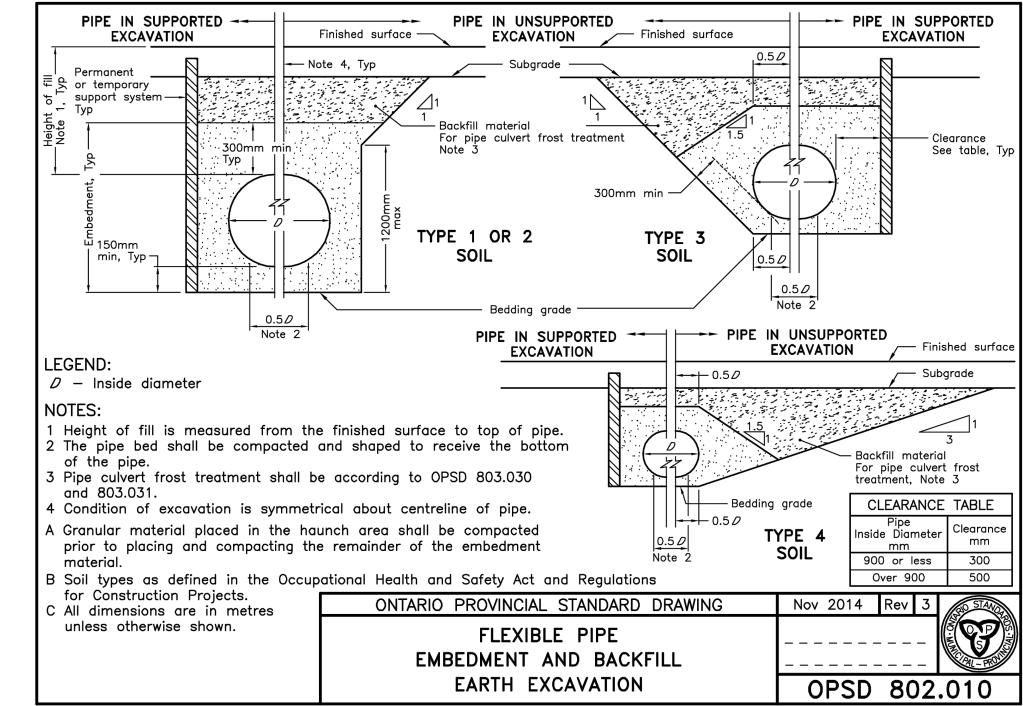
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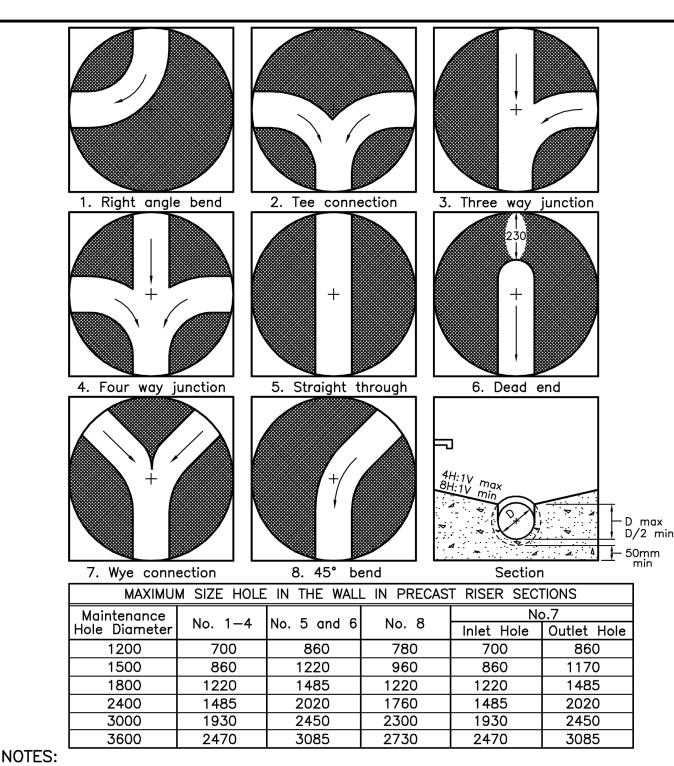
CITY APPLICATION No:

007-12-22-0132









1 Slopes shall be maintained from the outlet hole opening for top of benching.

ONTARIO PROVINCIAL STANDARD DRAWING

MAINTENANCE HOLE BENCHING

AND PIPE OPENING ALTERNATIVES

B When benching is hand—finshed, it shall be given wood float finish, channel shall be given steel trowel finish.

may be prebenched at the manufacturer with standardized benching slope and channel orientation.

D When specified, maintenance holes that are 1200mm in diameter with a uniform channel for 200 or 250mm pipe

Nov 2014 Rev 4

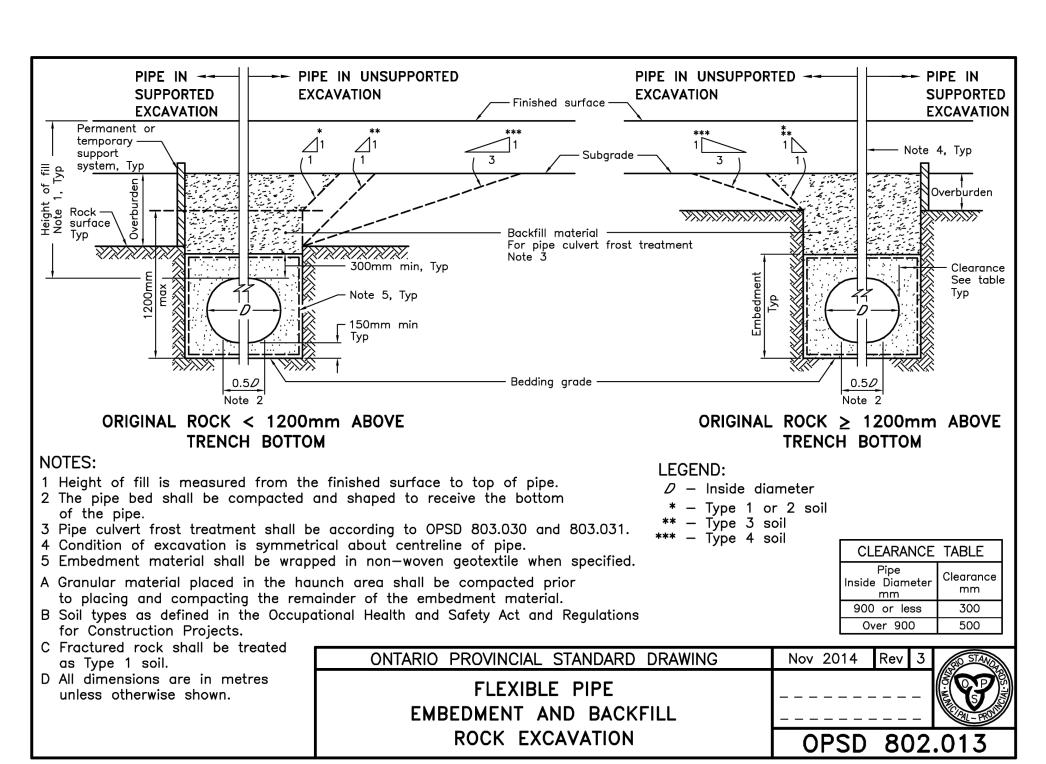
OPSD 701.021

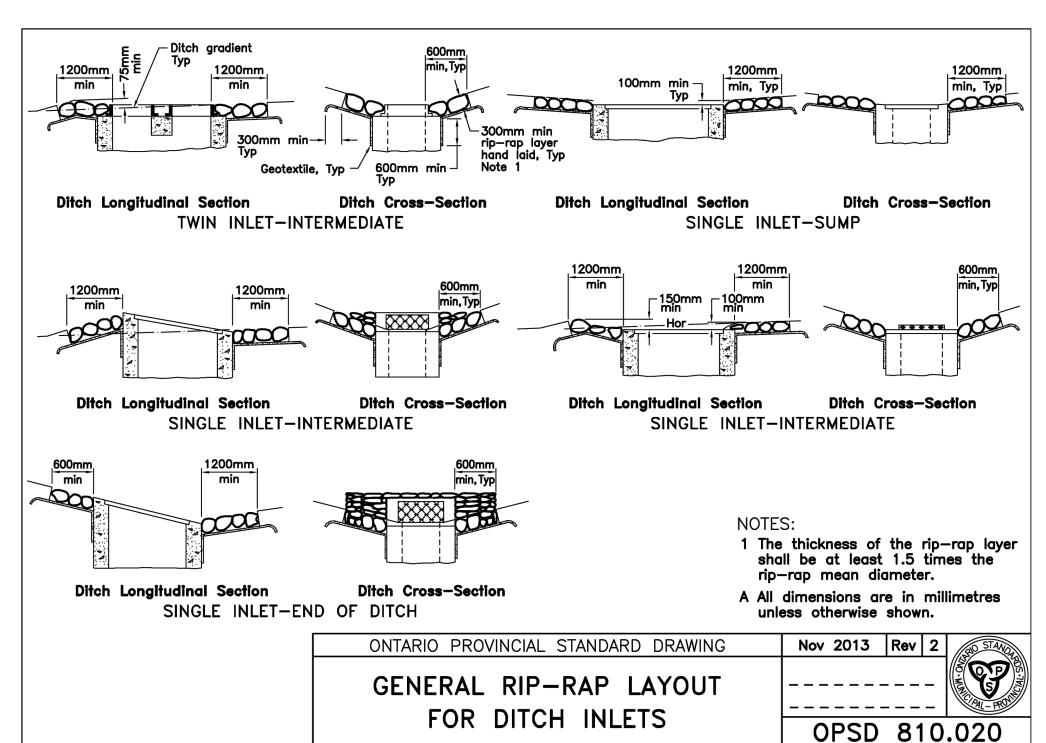
A Concrete for benching shall be 30MPa.

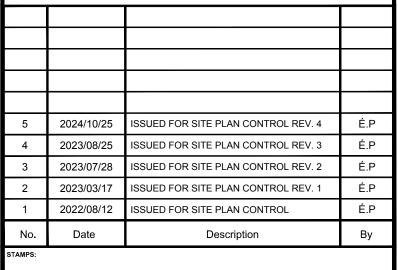
E All dimensions are nominal.

Benching slope and height shall be as specified.

All dimensions are in millimetres unless otherwise shown.













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DETAILS PLAN

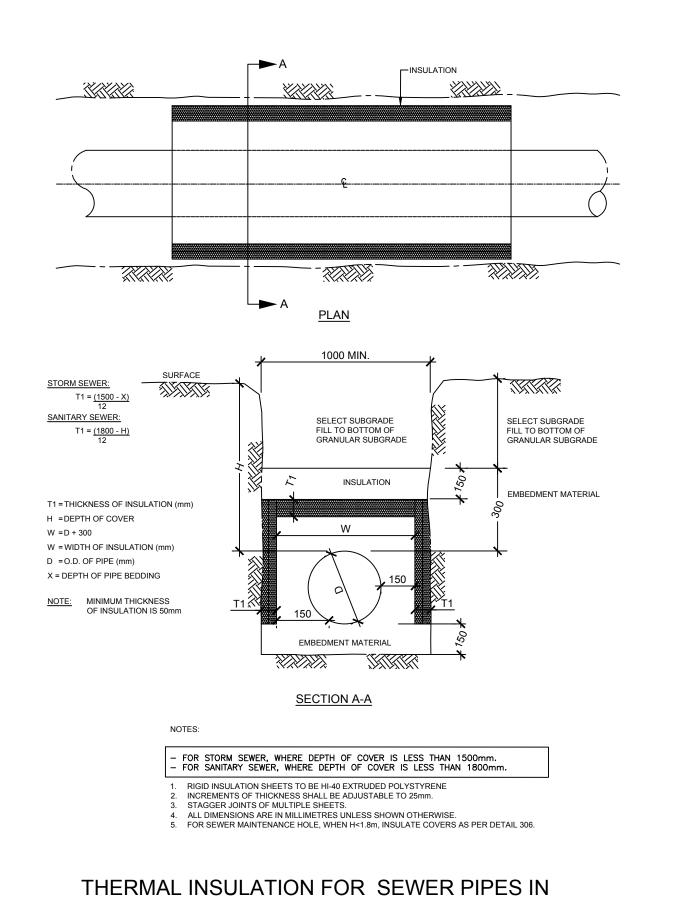
CIVIL D.VAGHELA É. POTVIN 22/08/31 CITY APPLICATION No: C.L. LEBEL 007-12-22-0132 A001101 C012 13 of 15

WATERMAINS IN SHALLOW

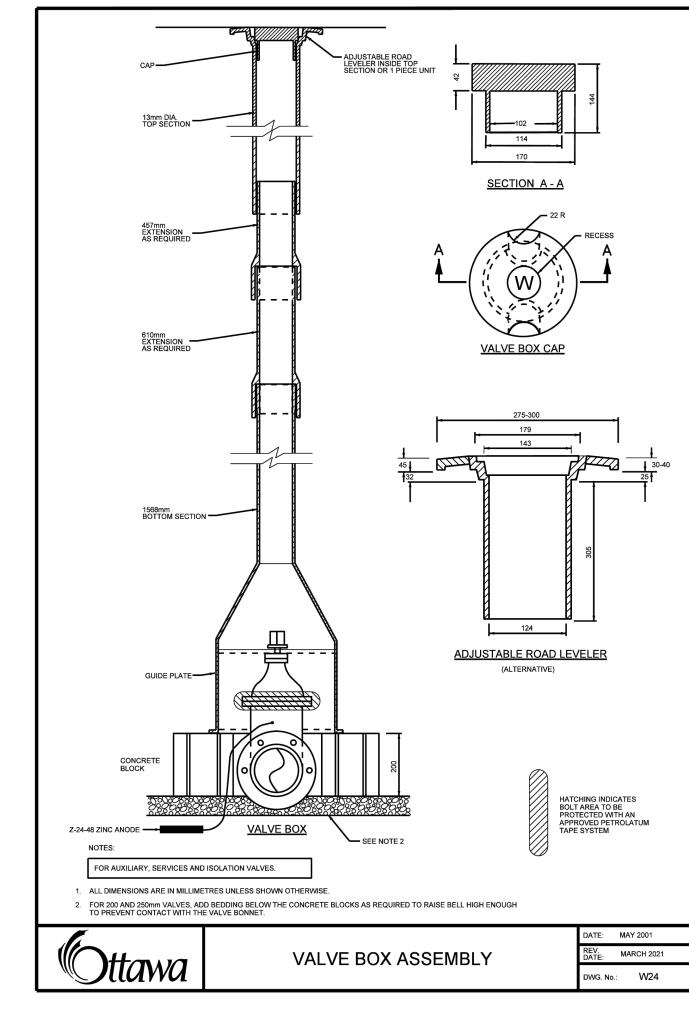
TRENCHES

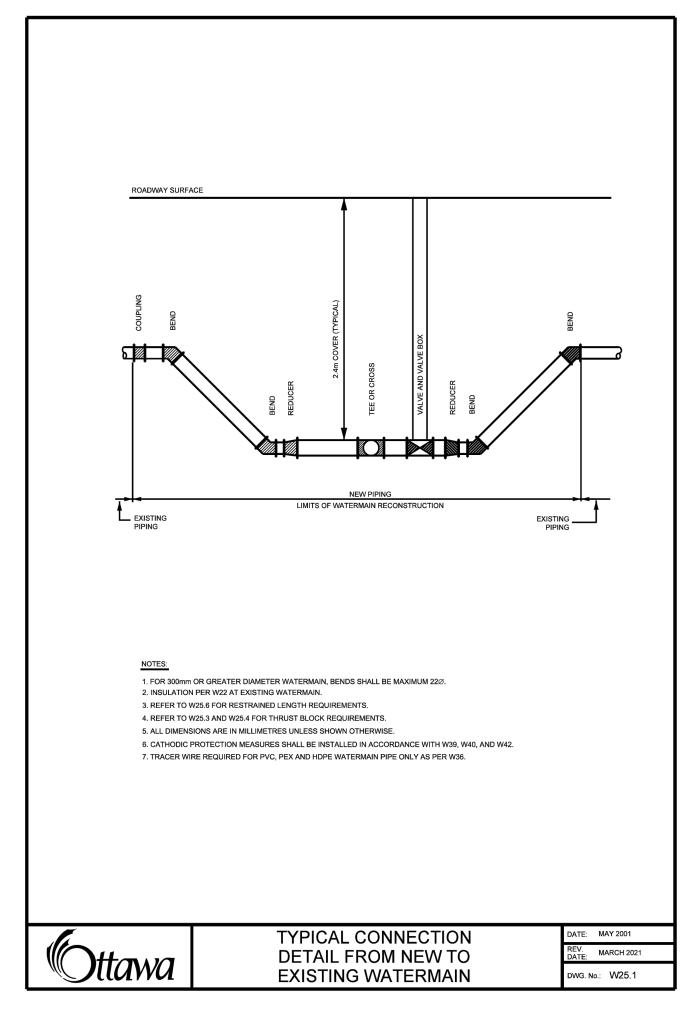
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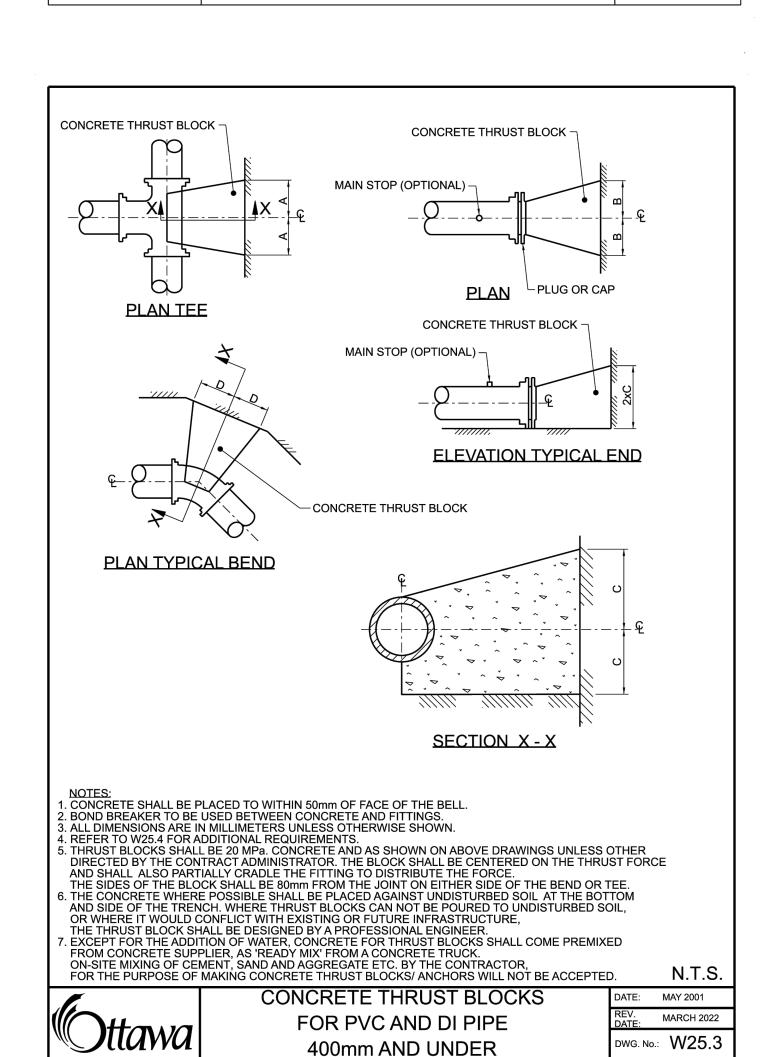
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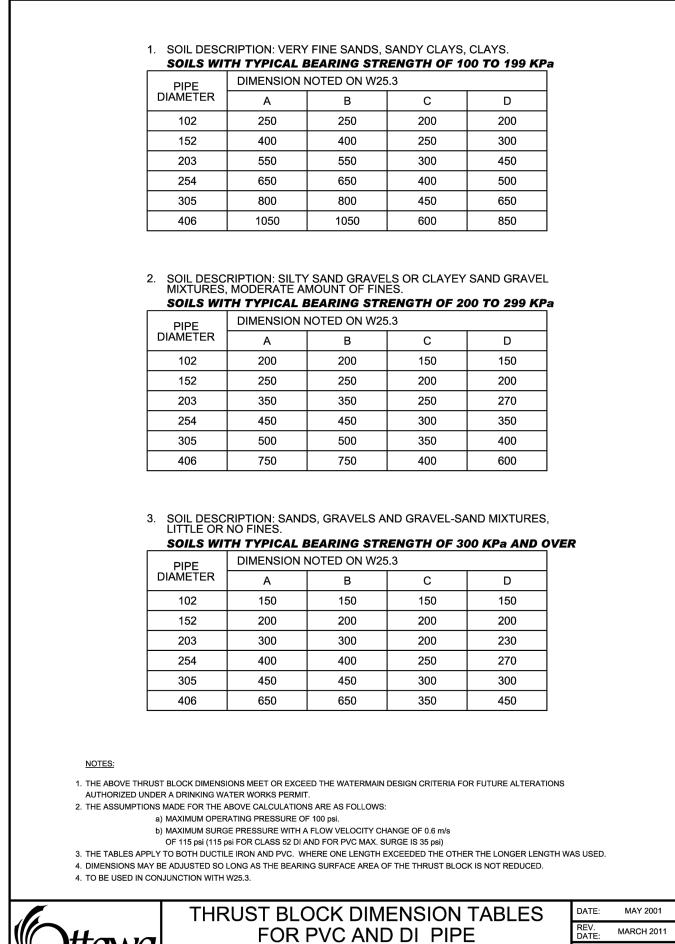


SHALLOW TRENCHES



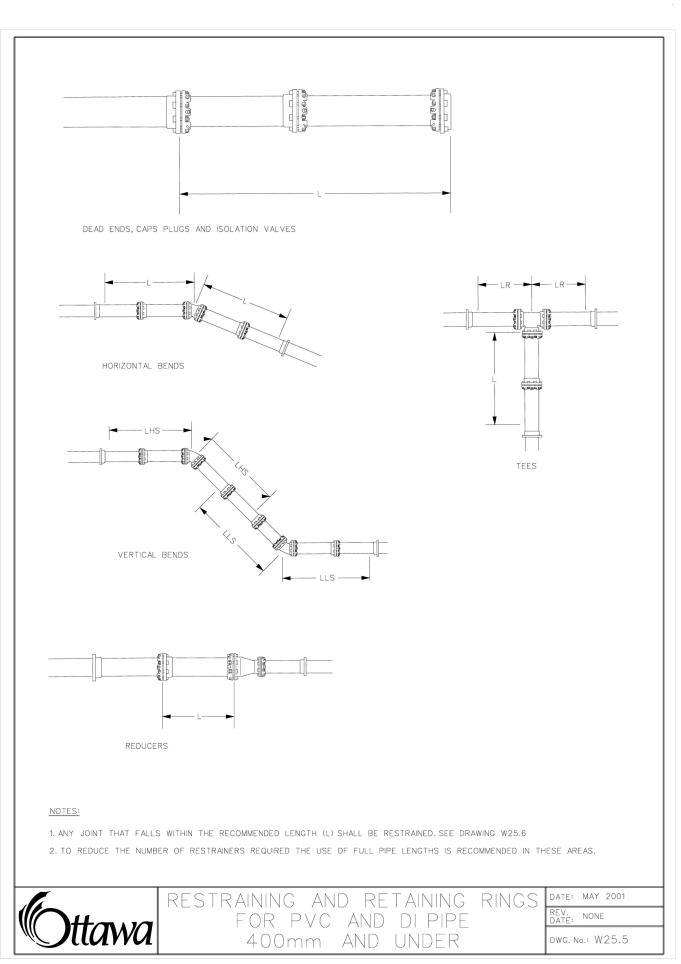


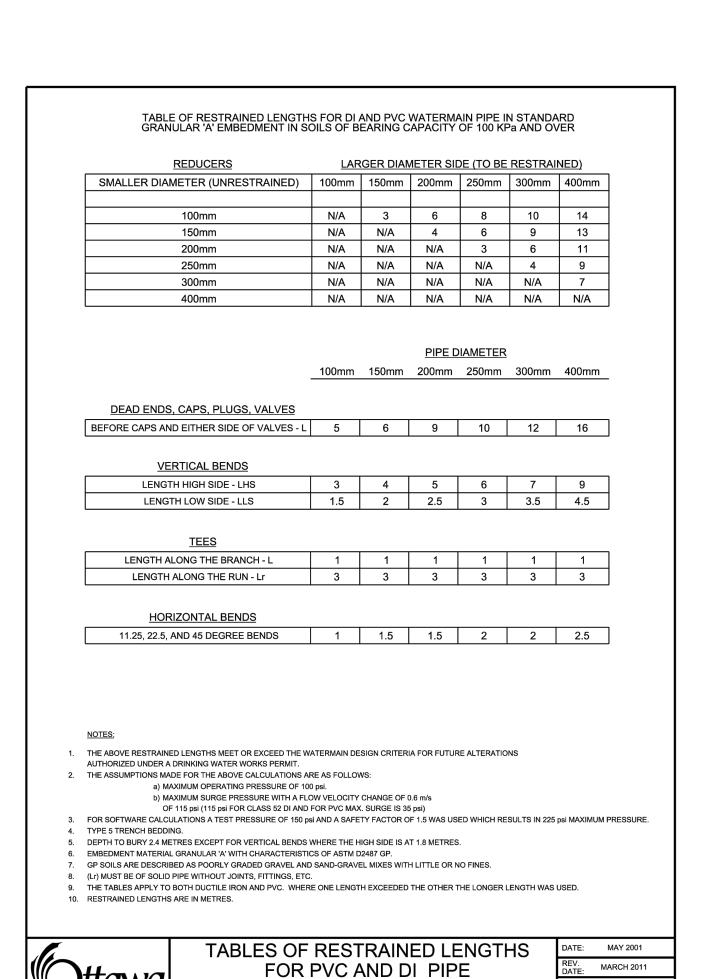




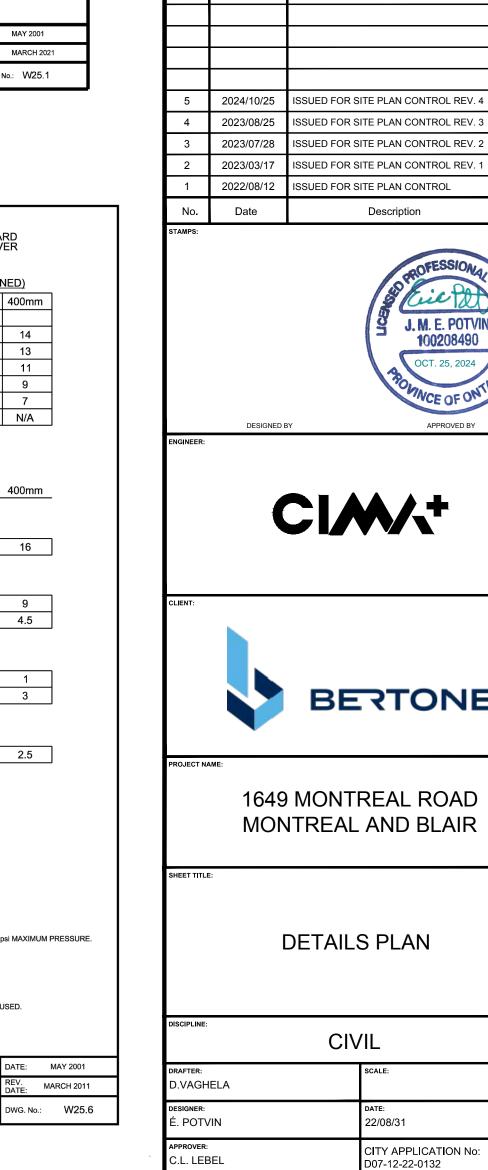
400mm AND UNDER

DWG. No.: W25.4





400mm AND UNDER

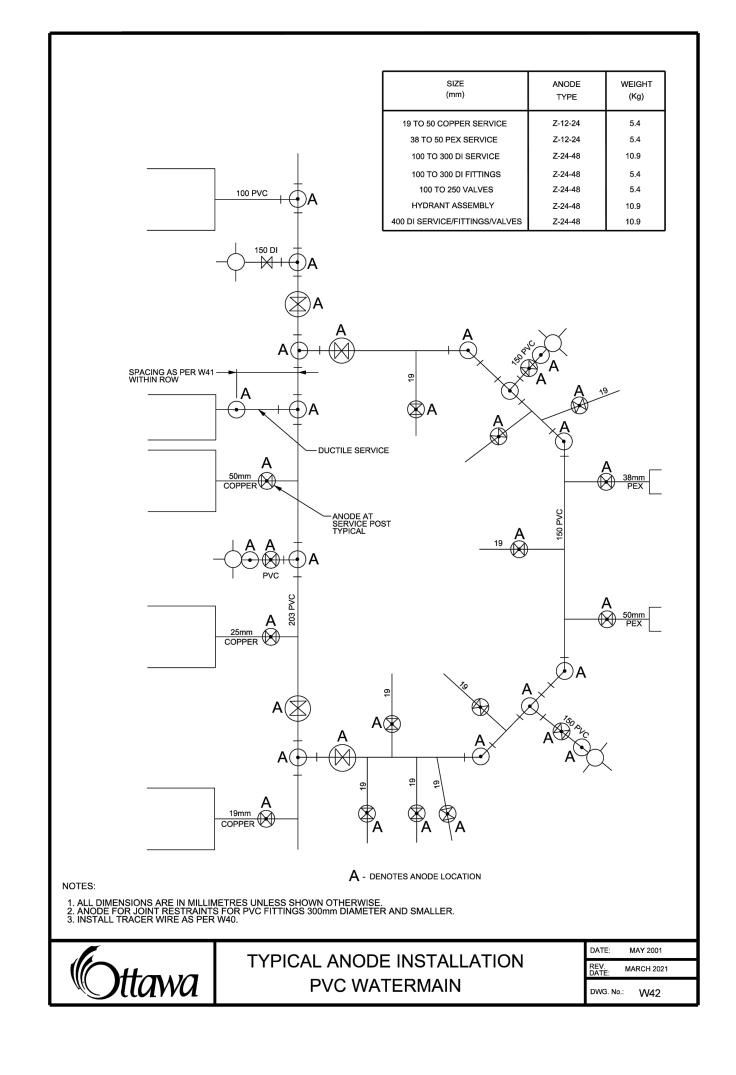


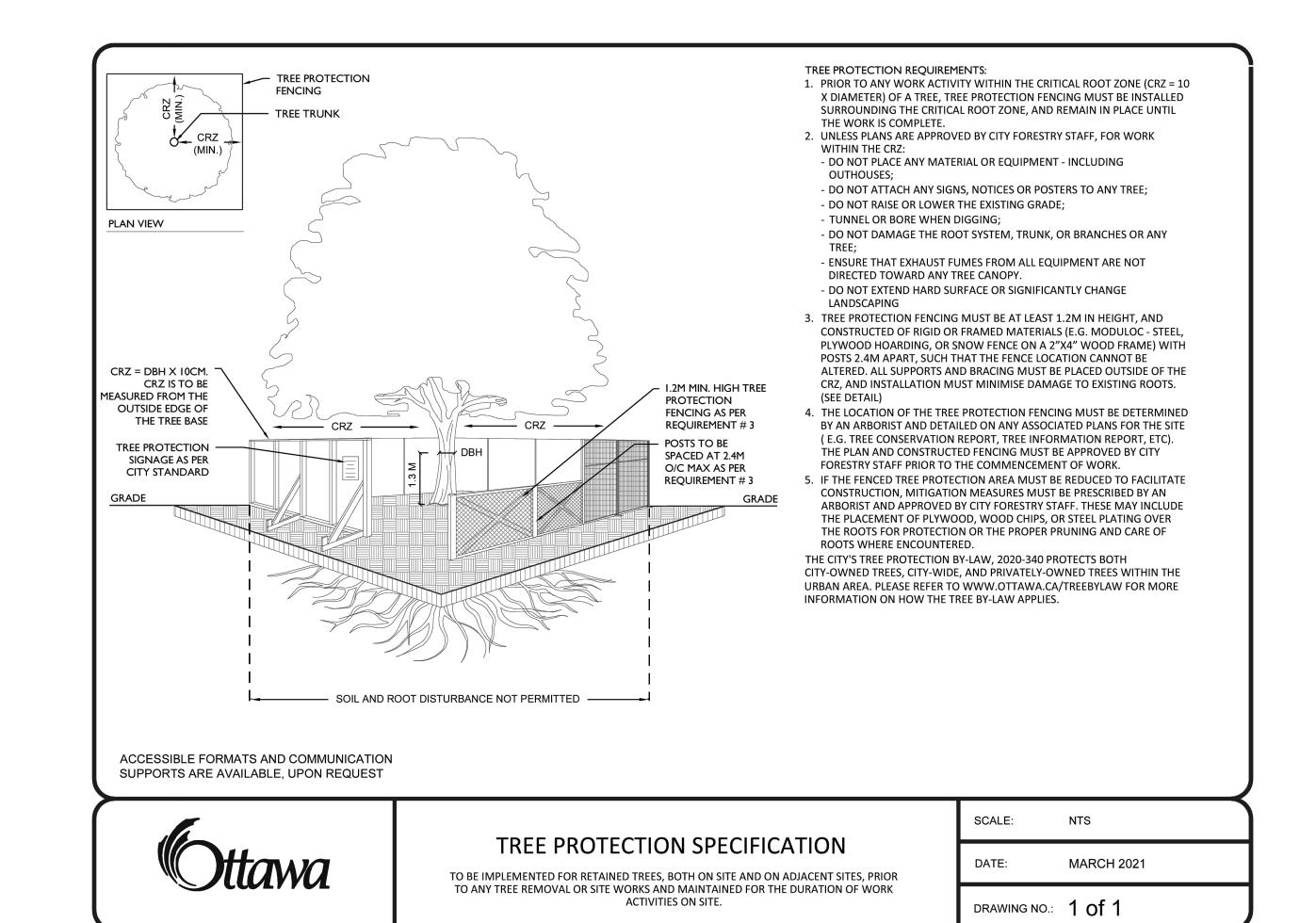
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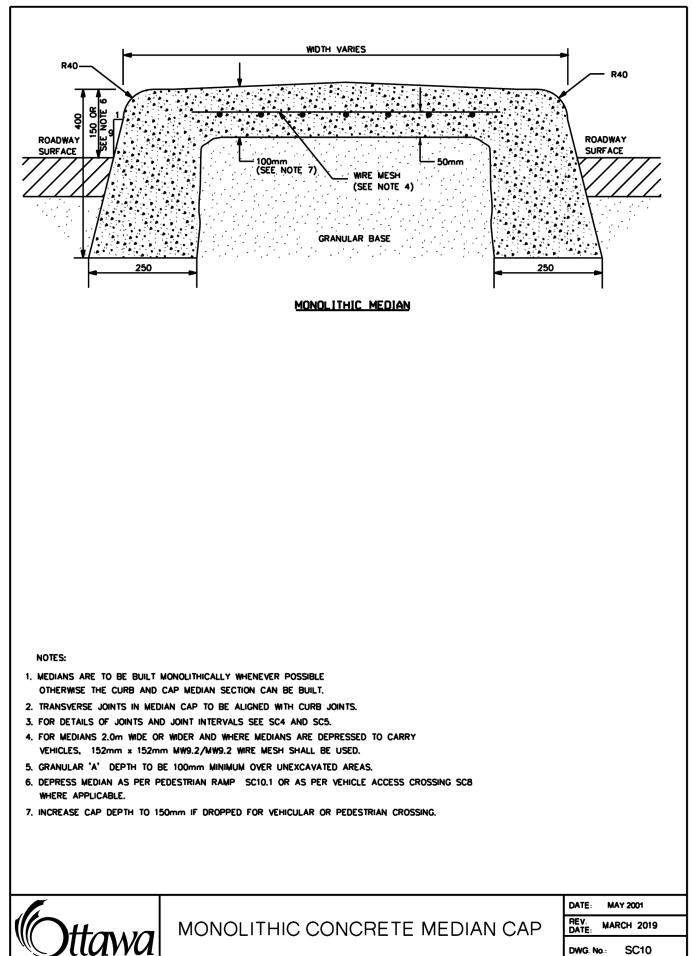
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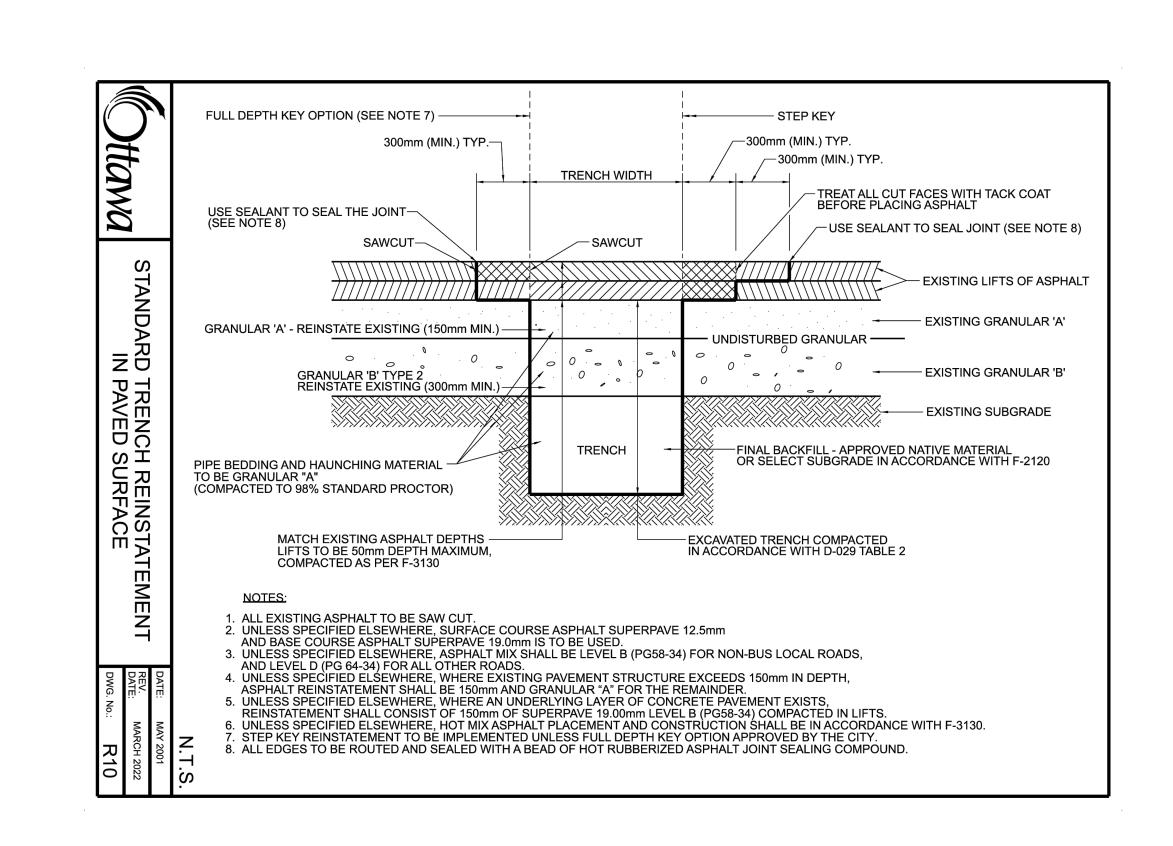
PRINT DATE: 2024/10/25 / PAPER SIZE: ISO A4 (210.00 x 297.00 MM)

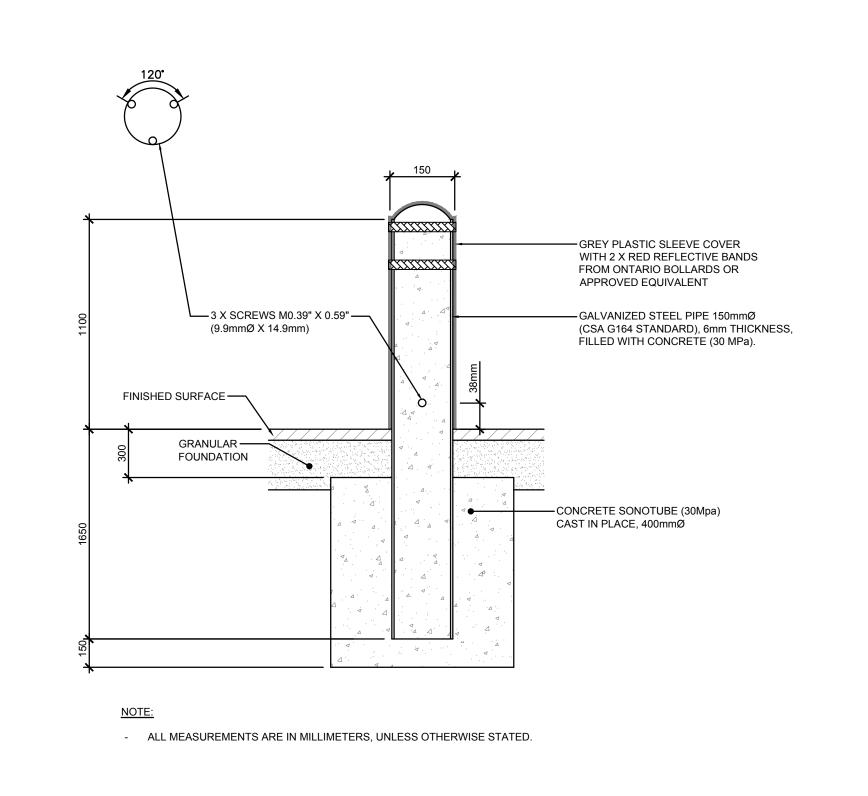
C013











150mmØ STEEL BOLLARD



C014

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