

SPECIFICATIONS:

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Part 1 General

1.1 MINIMUM STANDARDS

- .1 Materials shall be new and work shall conform to the minimum applicable standards of the Canadian General Standards Board, the Canadian Standards Association, the Ontario Provincial Standards (OPSS) and all applicable Provincial and Municipal codes. In the case of conflict or discrepancy the most stringent requirement shall apply.

1.2 PRECEDENCE

- .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project.

1.3 SITE LOCATES AND CLEARANCE NUMBERS

- .1 Be responsible for all costs associated with obtaining site locates or clearance numbers for all utilities within the work area, including those utilities considered privately owned.
- .2 Engage the services of private locator firm to undertake the private locates. All known locations of Federal underground utilities ("private utilities") are indicated in the contract documents.
- .3 Provide copies of written correspondence from each respective underground utility agencies pertaining to their utility locates or work site clearance numbers.

1.4 TAXES

- .1 Pay all taxes properly levied by law (including Federal, Provincial and Municipal).

1.5 FEES, PERMITS, AND CERTIFICATES

- .1 Pay all fees and obtain all permits. Provide authorities with plans and information for acceptance certificates. Provide inspection certificates as evidence that work conforms to requirements of Authority having jurisdiction.

1.6 FIRE SAFETY REQUIREMENTS

- .1 Comply with the National Building Code of Canada 2017 (NBCC) for fire safety in construction and the National Fire Code of Canada 2010 (NFCC) for fire prevention, fire fighting and life safety on construction site.

1.7 HAZARDOUS MATERIALS

- .1 Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and the provision of Material Safety Data Sheets (MSDS) acceptable to Human Resources Development Canada, Labour Program.

1.8 WELDING AND CUTTING

- .1 At least 48 hours prior to commencing cutting or welding, provide to Departmental Representative:
 - .1 Completed welding permit.

- .2 A firewatcher shall be assigned when welding or cutting operations are carried out in areas where combustible materials within 10m may be ignited by conduction or radiation.

1.9 FIELD QUALITY CONTROL

- .1 Carry out Work using qualified licensed workers or apprentices in accordance with Provincial Act respecting manpower vocational training.
- .2 Permit employees registered in Provincial apprenticeship program to perform specific tasks only if under direct supervision of qualified licensed workers.
- .3 Determine permitted activities and tasks by apprentices, based on level of training attended and demonstration of ability to perform specific duties.

1.10 TEMPORARY UTILITIES

- .1 Existing services required for the work, are not to be used by the Contractor. Contractor responsible to supply all portable generators as required to meet all power requirements of the equipment and machinery required to undertake the work.
- .2 The contractor is responsible to supply water for the execution of this contract. The contractor should not use water taken from the watercourse.

1.11 REMOVED MATERIALS

- .1 Unless otherwise specified, removed materials must be taken off site by the contractor.
- .2 Unless otherwise specified, removed material becomes the property of the Contractor.

1.12 PROTECTION

- .1 Protect adjacent work against the spread of dust and dirt beyond the work areas.
- .2 Protect finished work against damage until take-over.
- .3 Protect operatives and other users of site from all hazards.

1.13 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to the normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2 Maintain vehicle and pedestrian access, including emergency vehicles to and from the site.
- .3 Where security is reduced by work provide temporary means to maintain security.

1.14 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.
- .3 Location of portable facility to be approved by Departmental Representative on site.

1.15 SITE STORAGE

- .1 Storage is not permitted on site.

1.16 CUT, PATCH AND MAKE GOOD

- .1 Cut existing surfaces as required to accommodate new work.
- .2 Remove all items as shown or specified.
- .3 Patch and make good surfaces cut, damaged or disturbed, to Departmental Representative's approval. Use similar existing material, colour, finish and texture.

1.17 EXAMINATION

- .1 Examine site and conditions likely to affect work and be familiar and conversant with existing conditions.

1.18 SIGNS

- .1 Provide common-use signs related to traffic control, information, instruction, use of equipment, public safety devices, and etcetera, in both official languages or by the use of commonly understood graphic symbols to the Departmental Representative's approval.
- .2 No advertising will be permitted on this project.

1.19 ACCESS AND EGRESS

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas in accordance with relevant municipal, provincial and other regulations.

1.20 DUST CONTROL

- .1 Prevent the spread of dust for the protection of workers, finished areas of work and public.

1.21 TESTING LABORATORY SERVICES

- .1 The Contractor must pay and hire a firm specialised in testing laboratory services to perform quality control of the work.
- .2 The Departmental Representative will undertake quality assurance inspections of the Contractor's work. The Departmental Representative's quality assurance inspections does not alleviate the contractor's responsibility to perform his own quality control testing program to ensure full compliance with the contract requirements.
- .3 Provide safe working areas and assist with testing procedures, including provisions for materials or services and co-ordination, as required by testing agency and as authorized by Departmental Representative.
- .4 Where tests indicate non-compliance with specifications, contractor to pay for all subsequent testing of work to verify acceptability of corrected work.

1.22 SCHEDULING

- .1 Within two (2) weeks of award of contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion. When schedule has been reviewed and approved by the Departmental Representative, take necessary measures to complete work within scheduled time.
- .2 Revisions, delays, or deviations from approved schedule are not permitted, unless request for changes are submitted in writing a minimum of seven (7) days in advance and approved by the Departmental Representative. Changes to the schedule are subject to the approval of the Departmental Representative.

- .3 All work on this project is performed within the following ranges:
 - Sunday evening to Thursday morning: between 8:00 p.m. and 6:30 a.m.
 - Thursday evening to Saturday morning: between 9:30 p.m. and 6:30 a.m.
- .4 The area of work should be reopened to traffic after each nights of work. The Contractor is responsible for all temporary works required to reopen and allow safe travelling of cars.

1.23 STAGING PLAN

- .1 Submit to Departmental Representative for review and approval, a Staging Plan that outlines work stages in compliance with specified implementation restrictions and in accordance with submitted schedule. Once approved by the Departmental Representative, do not make changes to specified stages without prior written approval of Departmental Representative. Any proposed changes to the Staging Plan will require a minimum of 7 days advanced notice. Do not work in staging areas outside of indicated times and dates.

1.24 TRAFFIC MANAGEMENT PLAN

- .1 Submit to Departmental Representative for review and approval, Traffic Management Plans in editable portable document format (pdf), based on earth or map aerial view of the work areas, a minimum of fourteen (14) days in advance of proposed implementation in each work area.
 - .1 Traffic Management Plan to clearly illustrate how all vehicle traffic, including emergency vehicles and pedestrian access, are to be maintained to buildings and site at all times during duration of this contract. Include effective dates on plan.
 - .2 Once approved by the Departmental Representative, do not make changes to approved plan without prior written approval of Departmental Representative. Any proposed changes to Traffic Management Plans will require a minimum of 7 days advanced notice prior to proposed implementation.

1.25 RECORDS

- .1 As work progresses, maintain accurate records to show deviations from contract drawings. Just prior to Departmental Representative's inspection for issuance of final certificate of completion, supply to the Departmental Representative one (1) set of white prints with all deviations neatly inked in. In addition, provide a complete colour scan of said final marked up drawings and submit each drawing in electronic PDF format to the Departmental Representative. The Departmental Representative will provide one set of clean white prints for this purpose.
- .2 Drawings are to be updated at the end of each work period.
 - .1 Drawings are to be submitted for review by the Departmental Representative at the regularly scheduled construction project meetings.
 - .2 Store drawings on site in a clean dry area.
- .3 Make drawings available for review when requested by Departmental Representative.

1.26 COST BREAKDOWN

- .1 Before submitting first progress claim submit breakdown of Contract Amount in detail as directed by Departmental Representative and aggregating the Contract Amount. After approval by Departmental Representative cost breakdown will be used as the basis of progress payments.

1.27 SUBSTANTIAL COMPLETION SITE VISIT

- .1 The Contractor must organize a final site visit with the Departmental Representative before demobilizing his equipment from the worksite. The goal of this site visit is to obtain approval from Departmental Representative of Substantial Completion of the work. Refer to section 01 78 00 – Closeout Submittals.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 ACCESS AND EGRESS

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas, including sidewalks and multi-use pathways, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

1.2 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2 Maintain existing traffic on roads and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security.

1.3 REPAIRS TO EXISTING ROADWAY

- .1 Execute work with least possible interference or disturbance to public and traffic. Arrange with Departmental Representative to facilitate execution of work.

1.4 EXISTING SERVICES

- .1 Notify, Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Departmental Representative hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Carry out interruptions as per Section 01 00 10 – General Instructions.
- .3 Provide for pedestrian and vehicular traffic.

1.5 SPECIAL REQUIREMENTS

- .1 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .2 Keep within limits of work and avenues of ingress and egress.
- .3 Ingress and egress of Contractor vehicles at site is limited to the area of work.
- .4 Deliver materials outside of peak traffic hours 18:00 to 07:00 unless otherwise approved by Departmental Representative.

Part 2 Products

2.1 NOT USED

BRONSONS & OHEPC ASPHALT REPAIRS

EP168 22 1188

R.088005.011

Part 3

Execution

3.1

NOT USED

Section 01 14 00

WORK RESTRICTIONS

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END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Ontario Traffic Manual (OTM):
 - .1 Book 2 - Sign Design, Fabrication and Patterns. March 2005
 - .2 Book 7 - Temporary Conditions. June 2014.
- .2 Province of Ontario: Occupational Health and Safety Act and Regulation (OHSA and Regs.)
 - .1 Occupational Health and Safety Act, R.S.O. 1990 Updated 2019.
 - .2 Construction Regulation, Ontario Reg. 213/91.

1.2 PROTECTION OF PUBLIC TRAFFIC

- .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 When working on travelled way:
 - .1 Place equipment in position to present minimum of interference and hazard to travelling public.
 - .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
 - .3 Do not leave equipment on travelled way after working hours.
- .3 Do not close any lanes of road without approval of Departmental Representative. Before re-routing traffic erect suitable signs and devices in accordance with instructions contained in Book 7 of OTM.
- .4 Keep travelled way graded, free of pot holes and of sufficient width for required number of lanes of traffic.
 - .1 Provide minimum 7 m wide temporary roadway for traffic in two-way sections through Work and on detours.
 - .2 Provide minimum 4 m wide temporary roadway for traffic in one-way sections through Work and on detours.

1.3 INFORMATIONAL AND WARNING DEVICES

- .1 Provide and maintain signs, flashing warning lights, and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response. All traffic signs are to be in accordance with Book 2 of the OTM.
- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Book 7 of the OTM.
- .3 Place signs and other devices in locations recommended in Book 7 of the OTM.

- .4 Meet with Departmental Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Departmental Representative.
- .5 Continually maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Removing or covering signs which do not apply to conditions existing from day to day.

1.4 CONTROL OF PUBLIC TRAFFIC

- .1 Provide competent traffic control persons, trained and properly equipped in accordance with the OHSA and Regs.:
 - .1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
 - .3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
 - .5 For emergency protection when other traffic control devices are not readily available.
 - .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
- .2 At all times, where roadway, carrying two-way traffic, is restricted to one lane, provide full time traffic control flag persons.

1.5 OPERATIONAL REQUIREMENTS

- .1 Maintain existing conditions for traffic throughout period of contract except that, when required for construction under contract and when measures have been taken as specified and approved by Departmental Representative. Refer to Section 01 00 10 – General Instructions for site operation requirements and restrictions.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Province of Ontario
 - .1 Occupational Health and Safety Act, R.S.O. 1990 Updated 2019.

1.2 SUBMITTALS

- .1 Submit site-specific Health and Safety Plan: Within 5 days after contract award and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .2 Submit 2 copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative weekly.
- .3 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .4 Submit copies of incident and accident reports.
- .5 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 00 10 – General Instructions.
- .6 Personnel training requirements including, but not limited to, the following:
 - .1 Training of personnel and alternates responsible for site safety and health.
 - .2 Training requirements for hazards present on site.
 - .3 Training for use of personal protective equipment.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 3 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 2 days after receipt of comments from Departmental Representative.
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.3 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.

1.4 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

1.5 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

1.6 REGULATORY REQUIREMENTS

- .1 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.

1.7 PROJECT/SITE CONDITIONS

- .1 Work at site will involve contact with:
 - .1 Vehicular Traffic.
 - .2 Heavy Construction Equipment.

1.8 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
 - .1 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns. Relief from or substitution for any portion or provision of minimum Health and Safety Guidelines specified herein or reviewed site-specific Health and Safety Plan must be submitted to Departmental Representative in writing. Departmental Representative will respond in writing, either accepting or requesting improvements.

1.9 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.10 COMPLIANCE REQUIREMENTS

- .1 Comply with Ontario Health and Safety Act, R.S.O.

1.11 UNFORSEEN HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occurs during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

1.12 HEALTH AND SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:

- .1 Have working knowledge of occupational safety and health regulations.
- .2 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
- .3 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
- .4 Be on site during execution of Work and report directly to site supervisor.

1.13 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative.

1.14 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.15 BLASTING

- .1 Blasting or other use of explosives is not permitted.

1.16 POWDER ACTUATED DEVICES

- .1 Use powder actuated devices only after receipt of written permission from Departmental Representative.

1.17 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 FIRES

- .1 Fires and burning of rubbish on site not permitted.

1.2 DISPOSAL OF WASTES

- .1 Do not bury rubbish and waste materials on site.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

1.3 DRAINAGE

- .1 Provide temporary drainage and pumping as necessary to keep site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.4 EROSION CONTROL AND SEDIMENT PLAN

- .1 Submit for review and approval of Engineering Erosion Control and Sediment Plan (ECSP). This review is to ensure general compliance of the erosion control and sediment measures and does not alleviate the contractor of his obligations and responsibilities.
 - .1 ECSP to identify procedures and temporary elements put in place during the execution of the work to prevent erosion and spread of sediment beyond the work limits.
 - .2 Measures of ECSP are to put into effect prior to commencement of main works.
 - .3 Once approved by Departmental Representative do not make changes to the ECSP without written approval of the Departmental Representative.
 - .4 Continually monitor effectiveness of erosion and sediment control measures installed under this contract. On a daily basis, check condition of erosion and sediment control measures. Repair any measures found damaged or defective.

1.5 VEHICLE REFUELING

- .1 Prior to commencing construction provide for review and approval of Departmental Representative vehicle refueling plan to be followed during execution of this work. The plan must also contain a list of spill equipment to be kept on site.
- .2 In the event of a spill, immediately notify the Departmental Representative.

1.6 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities' emission requirements.

- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

1.2 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies will be engaged by the Contractor for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by the Contractor.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and reinspection.

1.3 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.4 PROCEDURES

- .1 Notify appropriate agency and Departmental Representative 48 hours in advance of requirement for tests.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.

- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.5 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

1.6 REPORTS

- .1 Submit 1 copy of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested.

1.7 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs as requested.
- .2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Departmental Representative and may be authorized as recoverable.

1.8 MILL TESTS

- .1 Submit mill test certificates as requested.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2-94, Stipulated Price Contract.
- .2 Owner's identification of existing survey control points and property limits.

1.2 QUALIFICATIONS OF SURVEYOR

- .1 Qualified registered land surveyor, licensed to practice in Place of Work, acceptable to Departmental Representative.

1.3 SURVEY REFERENCE POINTS

- .1 Existing base horizontal and vertical control points are designated on drawings.
- .2 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
- .3 Make no changes or relocations without prior written notice to Departmental Representative.
- .4 Report to Departmental Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- .5 Require surveyor to replace control points in accordance with original survey control.

1.4 SURVEY REQUIREMENTS

- .1 Establish one permanent bench marks on site, referenced to established bench marks by survey control points. Record locations, with horizontal and vertical data in Project Record Documents.
- .2 Establish lines and levels, locate and lay out, by instrumentation.
- .3 Stake for grading and fill .

1.5 EXISTING SERVICES

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.

1.6 RECORDS

- .1 Maintain a complete, accurate log of control and survey work as it progresses.
- .2 On completion of major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of Work.
- .3 Record locations of maintained, re-routed and abandoned service lines.

1.7 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit name and address of Surveyor to Departmental Representative.
- .2 On request of Departmental Representative, submit documentation to verify accuracy of field engineering work.
- .3 Submit certificate signed by surveyor certifying and noting those elevations and locations of completed Work that conform and do not conform with Contract Documents.

1.8 SUBSURFACE CONDITIONS

- .1 Promptly notify Departmental Representative in writing if subsurface conditions at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of probable conditions based thereon.
- .2 After prompt investigation, should Departmental Representative determine that conditions do differ materially, instructions will be issued for changes in Work as provided in Changes and Change Orders.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Provide on-site containers for collection of waste materials and debris.
- .4 Dispose of waste materials and debris as directed by Departmental Representative.
- .5 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .6 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

1.2 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .6 Remove dirt and other disfiguration from exterior surfaces.
- .7 Sweep and wash clean paved areas.

1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Not used.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 REGULATIONS

- .1 Comply with the Environmental Protection Act, Ontario Regulations O. Reg. 102/04 and O. Reg. 103/94 for waste management programs on construction and demolition projects.

1.2 DEFINITIONS

- .1 Waste Audit (WA): Relates to projected waste generation. Involves measuring and estimating quantity and composition of waste, reasons for waste generation, and operational factors which contribute to waste.
- .2 Waste Reduction Workplan (WRW): Written report which addresses opportunities for reduction, reuse, or recycling of materials. WRW is based on information acquired from WA.

1.3 WASTE AUDIT (WA)

- .1 Conduct a "waste audit" to determine the waste generated during demolition or construction operations, prepare written "waste reduction workplan" and implement procedures to reduce, reuse and recycle materials to the extent possible

1.4 WASTE REDUCTION WORKPLAN (WRW)

- .1 Within ten days of Award of Contract, submit for review by the Departmental Representative a detailed "Waste Reduction Workplan" for the project. Include procedures for disposal of demolition and construction waste materials..

1.5 SOURCE SEPARATION PROGRAM

- .1 Provide a "source separation program" to disassemble and collect in an orderly fashion the materials identified in the "waste audit" that were designated for "alternative disposal" from "general waste" stream.

1.6 CONSTRUCTION PERSONNEL BRIEFING

- .1 All construction personnel shall be fully briefed on the waste management workplan and shall be required to conform to it for all aspects of the work. The contractor shall be responsible for the enforcement of this requirement. The Departmental Representative reserves the right to require the dismissal from the site personnel who fail to comply with the requirements of the waste management workplan.

1.7 STORAGE, HANDLING AND PROTECTION

- .1 Place materials defined as hazardous or toxic in designated containers.
- .2 Ensure emptied containers are sealed and stored safely.

1.8 RECORDS

- .1 Submit complete records of all removals from the site to the Departmental Representative for both "materials designated for alternative disposal" and "general waste" including:
 - .1 Time and date of removal
 - .2 Description of material and quantities by weight in kilograms.
 - .3 Proof that materials have been received at an Approved Waste Processing Site or certified Waste Disposal Site as required.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 APPLICATION

- .1 Do Work in compliance with WRW.
- .2 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canadian Environmental Protection Act (CEPA)

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-warranty Meeting:
 - .1 Convene meeting one week prior to contract completion with Departmental Representative to:
 - .1 Verify Project requirements.
 - .2 Review warranty requirements.
 - .2 Departmental Representative to establish communication procedures for:
 - .1 Notifying construction warranty defects.
 - .2 Determine priorities for type of defects.
 - .3 Determine reasonable response time.
 - .3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.
 - .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide evidence, if requested, for type, source and quality of products supplied.

1.4 FORMAT

- .1 Pdf format.

1.5 CONTENTS - PROJECT RECORD DOCUMENTS

- .1 Table of Contents for Each Volume: provide title of project;
 - .1 Date of submission; names.
 - .2 Addresses, and telephone numbers of Departmental Representative and Contractor with name of responsible parties.
 - .3 Schedule of products and systems, indexed to content of volume.

1.6 AS -BUILT DOCUMENTS AND SAMPLES

- .1 Maintain at site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.

- .3 Addenda.
- .4 Change Orders and other modifications to Contract.
- .5 Reviewed shop drawings, product data, and samples.
- .6 Field test records.
- .7 Inspection certificates.
- .8 Manufacturer's certificates.
- .2 Store record documents and samples apart from documents used for construction.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
 - .1 Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition.
 - .1 Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

1.7 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

- .1 Record information on set of black line opaque drawings, provided by Departmental Representative.
- .2 Record information concurrently with construction progress.
 - .1 Do not conceal Work until required information is recorded.
- .3 Contract Drawings and shop drawings: mark each item to record actual construction, including:
 - .1 Measured depths of elements of foundation in relation to datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 References to related shop drawings and modifications.
- .4 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
- .5 Other Documents: maintain field test records required by individual specifications sections.
- .6 Provide digital photos, if requested, for site records.

1.8 SUBSTANTIAL COMPLETION SITE VISIT

- .1 The Contractor must organize a final site visit with the Departmental Representative before demobilizing his equipment from the worksite. The goal of this site visit is to obtain approval from Departmental Representative of Substantial Completion of the work.

1.9 FINAL SURVEY

- .1 Submit final site survey certificate in accordance with Section 01 71 00 - Examination and Preparation, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

1.10 WARRANTIES AND BONDS

- .1 Develop warranty management plan to contain information relevant to Warranties.
- .2 Submit warranty management plan, 7 days before planned pre-warranty meeting, to Departmental Representative approval.
- .3 Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.
- .6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
 - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
 - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
 - .4 Verify that documents are in proper form, contain full information, and are notarized.
 - .5 Co-execute submittals when required.
 - .6 Retain warranties and bonds until time specified for submittal.
- .7 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .8 Conduct joint four (4) month warranty inspection, measured from time of acceptance, by Departmental Representative.
- .9 Include information contained in warranty management plan as follows:
 - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.

- .2 Contractor's plans for attendance at 9 month post-construction warranty inspections.
- .3 Procedure and status of tagging of equipment covered by extended warranties.
- .4 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
- .10 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .11 Written verification to follow oral instructions.
 - .1 Failure to respond will be cause for the Departmental Representative to proceed with action against Contractor.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 WASTE MANAGEMENT AND DISPOSAL

- .1 Excavated asphalt paving is to be removed and delivered to a recycling facility. Provide name of the asphalt recycling facility to be utilized within 5 days of award of contract. Do not change recycling facility without prior approval of Departmental Representative.

Part 2 Products

2.1 EQUIPMENT

- .1 Keying in to existing pavement
 - .1 Use cold milling, planning or grinding equipment with automatic grade controls capable of removing part of pavement surface to depths or grades indicated.
- .2 Removal
 - .1 Use equipment capable of stripping off existing asphalt paving without contaminating underlying materials.

Part 3 Execution

3.1 PREPARATION

- .1 Prior to beginning removal operation, inspect and verify with Departmental Representative areas, depths and lines of asphalt pavement to be removed.

3.2 PROTECTION

- .1 Protect existing pavement not designated for removal in addition to surrounding structures and features. In event of damage, immediately replace or make repairs to approval of Departmental Representative at no additional cost.

3.3 REMOVAL (GENERAL)

- .1 Remove existing asphalt pavement as indicated.
- .2 Use equipment and methods of removal and hauling which do not damage or disturb underlying and adjacent pavement, waterproofing membrane, curbs, sidewalks, manholes, catchbasins, and deck drains.
- .3 Prevent contamination of removed asphalt pavement by topsoil, underlying gravel or other materials.
- .4 Provide for suppression of dust generated by removal process.
- .5 Milling should be done without notching and with transverse and longitudinal profiles that allow free flow of water to the drains. Immediately after grading, the contractor shall

clear the openings on the sides of the existing drains or, if required, drill holes in the existing drains to allow drainage.

- .6 Milling of surfaces near sidewalks, curbs, bike paths, guardrails, drains and other obstacles must be done after the levelling of the other surfaces of the slab. In the vicinity of deck joints, leveling should be done just prior to the installation of new asphalt;
- .7 In areas inaccessible to the milling equipment, and on top of the concrete of deck joints, the asphalt must be removed by hand tools;

3.4 REMOVAL OF FULL DEPTH ASPHALT PAVEMENT FROM CONCRETE SURFACES

- .1 The work shall include the removal of asphalt pavement and waterproofing from the concrete surfaces on structures. All materials shall be managed as specified in the Contract Documents.
- .2 When pavement-milling equipment is used, the weight of the milling equipment, including water, shall not exceed the lesser of the posted capacity of the bridge corresponding to the two-axle truck or 32 tons.
- .3 When the method of asphalt removal results in impact damage or excessive vibration is observed, operations shall be modified to eliminate these effects.
- .4 Unless the Contract Documents specify a concrete or latex-modified concrete overlay is to be placed on the existing concrete deck, the milling operation shall be controlled such that the milling teeth do not come in contact with the concrete deck surface and bridge joints. Any remaining asphalt pavement and waterproofing not removed by rotary milling equipment shall be removed by other methods.
- .5 Unless the Contract Documents specify a concrete or latex-modified concrete overlay is to be placed on the existing concrete deck, the milling operation shall be controlled such that the milling teeth do not come in contact with the concrete deck surface and bridge joints. Any remaining asphalt pavement and waterproofing not removed by rotary milling equipment shall be removed by other methods.

3.5 REMOVAL OF ASPHALT PAVEMENT, PARTIAL-DEPTH

- .1 The work shall include the partial-depth removal of asphalt pavement. Such material shall be managed as specified in the Contract Documents.
- .2 The asphalt pavement shall be removed to the average depth specified in the Contract Documents.
- .3 When pavement-milling equipment is used, the weight of the milling equipment, including water, shall not exceed the lesser of the posted capacity of the bridge corresponding to the two-axle truck or 32 tons.
- .4 Before commencing removal operations, all debris, deleterious material, and existing windrows shall be removed from the roadway surface, including material beyond the theoretical roadway width, to provide positive drainage.

- .5 If the remaining asphalt pavement does not require further processing or if the remaining asphalt pavement is to be recycled using CIR or CIREAM or HIR processes, then the equipment used for partial depth removal shall be automatically controlled for grade and slope during removal. The surface remaining after removal shall have a constant and continuous crossfall matching the intended surface course crossfall. The surface remaining after removal shall have an even texture and be free of significantly different grooves and ridges in all directions.
- .6 Removed asphalt pavement material shall not remain on the roadway after completion of the day's operation. Placing of the material on grade other than a bituminous surface prior to hauling to a stockpile shall not be permitted.
- .7 Temporary transverse ramping shall be as specified in the Contract Documents. If due to unforeseen circumstances, removal cannot be done full width prior to shut down at the end of the day, then temporary, longitudinal ramping shall also be provided as specified in the Contract Documents. All ramping shall be removed prior to placing adjacent hot mix asphalt pavement.
- .8 Partial-depth asphalt pavement removal operations and the resulting surfaces from partial-depth asphalt removal operations shall not be permitted between November 16th and June 1st, unless approved by the Departmental Representative.

3.6 DISPOSAL OF MATERIAL

- .1 Dispose of removed asphalt pavement to approved facility capable of recycling asphalt material.
- .2 Provide weigh bills of material delivered for recycling as proof of conformance.

3.7 SWEEPING

- .1 Sweep remaining asphalt pavement surfaces clean of debris resulting from removal operations using rotary power brooms and hand brooming as required.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 American Association of State Highway and Transportation Officials (AASHTO)
 - .1 AASHTO M081-92-UL-04, Standard Specification for Cutback Asphalt (Rapid-Curing Type).
- .2 ASTM International
 - .1 ASTM D140/D140M-09, Standard Practice for Sampling Bituminous Materials.
 - .2 ASTM D633-11, Standard Volume Correction Table for Road Tar.
 - .3 ASTM D1250-08, Standard Guide for Use of the Petroleum Measurement Tables.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-16.2-M89, Emulsified Asphalts, Anionic Type, for Road Purposes.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for asphalt tack coat and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Submit two - 4 L samples of asphalt tack coat material proposed for use in new, clean, airtight, sealed, wide mouth plastic lined cans to Departmental Representative, at least 2 weeks prior to beginning Work.
 - .2 Sample asphalt tack coat material to: ASTM D140.
 - .3 Provide access on tank truck for Departmental Representative to sample asphalt material to be incorporated into Work to ASTM D140.

1.3 QUALITY ASSURANCE

- .1 Upon request from Departmental Representative, submit manufacturer's test data and certification that asphalt prime material meets requirements of this Section.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

- .2 Store and protect asphalt tack coats from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.
- .4 Deliver, store and handle materials in accordance with ASTM D140.
- .5 Provide, maintain and restore asphalt storage area.
- .6 Develop Construction Waste Management Plan related to Work of this Section.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for recycling in accordance with the Waste Reduction Workplan.

Part 2 Products

2.1 MATERIALS

- .1 Anionic emulsified asphalt: to CAN/CGSB-16.2, grade: SS-1.
- .2 Cut-back asphalt; to AASHTO M081-92-UL, grade RC-70 or RC-250.
- .3 Water: clean, potable, free from foreign matter.

2.2 EQUIPMENT

- .1 Equipment required for Work of this Section to be in satisfactory working condition and maintained for duration of Work.
- .2 Pressure distributor:
 - .1 Designed, equipped, maintained and operated so that asphalt material can be:
 - .1 Maintained at even temperature.
 - .2 Applied uniformly on variable widths of surface up to 5 m.
 - .3 Applied at readily determined and controlled rates from 0.2 to 5.4 L/m² with uniform pressure, and with allowable variation from any specified rate not exceeding 0.1 L/m².
 - .4 Distribute in uniform spray without atomization at temperature required.
 - .2 Equipped with meter, registering travel in metres per minute, visibly located to enable truck driver to maintain constant speed required for application at specified rate.
 - .3 Equipped with pump having flow meter graduated in units of 5 L or less per minute passing through nozzles and readily visible to operator. Pump power unit to be independent of truck power unit.
 - .4 Equipped with easily read, accurate and sensitive device which registers temperature of liquid in reservoir.
 - .1 Measure temperature to closest whole number.
 - .5 Equipped with accurate volume measuring device or calibrated tank.
 - .6 Equipped with nozzles of same make and dimensions, adjustable for fan width and orientation.
 - .7 Equipped with nozzle spray bar, with operational height adjustment in increments of 0.6 metres and capable of being raised or lowered.

- .8 Cleaned if previously used with incompatible asphalt material.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for asphalt tack coat installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 APPLICATION

- .1 Apply asphalt tack coat only on clean and dry surface.
- .2 Dilute asphalt emulsion with water at 1:1 ratio for application.
 - .1 Mix thoroughly by pumping or other method approved by Departmental Representative.
- .3 Apply asphalt tack coat evenly to pavement surface at rate as directed by Departmental Representative, but not to exceed 0.7 L/m².
- .4 Paint contact surfaces of curbs, gutters, headers, manholes and like structures with thin, uniform coat of asphalt tack coat material.
- .5 Apply asphalt tack coat only when air temperature greater than 10 degrees C and when rain is not forecast within 2 hours minimum of application.
- .6 Apply asphalt tack coat only on unfrozen surface.
- .7 Evenly distribute localized excessive deposits of tack coat by brooming as directed by Departmental Representative.
- .8 Where traffic is to be maintained, treat no more than one half of width of surface in one application.
 - .1 Control traffic in accordance with Section 01 35 00.06 - Special procedures for Traffic control.
- .9 Keep traffic off tacked areas until asphalt tack coat has set.
- .10 Re-tack contaminated or disturbed areas as directed by Departmental Representative.
- .11 Permit asphalt tack coat to set break before placing asphalt pavement.
- .12 Submit summary report within 7 days minimum of date of application and include information as follows:
 - .1 Total area tack coated.
 - .2 Quantity of tack coat used.
 - .3 Mean application rate.

- .4 Actual product quantity used when using equipment on pressure distributors.
- .5 Dipstick measurements or electronic printouts are acceptable.
- .13 Carry out measurements in presence of Departmental Representative upon request.
- .14 Inspect tack coat application to ensure uniformity.
 - .1 Re-spray areas of insufficient or non-uniform tack coat coverage as directed by Departmental Representative.
 - .2 Ensure tack coating performed using hand held devices is consistent in appearance with adjacent areas of machine applied material.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 32 12 16.60 – Asphalt Tack Coat

1.2 REFERENCES

1. American Society for Testing and Materials International, (ASTM)
 - i. ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
2. Canadian General Standards Board (CGSB)
 - i. CAN/CGSB-1.5-M91(March 1999), Low Flash Petroleum Spirits Thinner (Reaffirmation of December 1991).
 - ii. CAN/CGSB-1.74-2001, Alkyd Traffic Paint.
 - iii. CAN/CGSB-16.2-M89, Emulsified Asphalts, Anionic Type, for Road Purposes.
3. Provincial Standard Specifications (OPSS)
 - i. OPSS 302-November 2007, Construction Specification for Primary Granular Base.
 - ii. OPSS 310-November 2017, Construction Specification for Hot Mixed Asphalt.
 - iii. OPSS.MUNI 914-November 2014, Construction Specification for Waterproofing Bridge decks with Hot Applied Asphalt Membrane.
 - iv. OPSS.MUNI 1003-November 2013, Material Specification for Aggregates - Hot Mix Asphalt.
 - v. OPSS.PROV 1101- April 2007, Material Specification for Performance Graded Asphalt Cement.
 - vi. OPSS 1103-November 2007, Material Specification for Emulsified Asphalt.
 - vii. OPSS.MUNI 1151-April 2018, Material Specification for Superpave and Stone Mastic Asphalt Mixtures.
 - viii. OPSS 1213-March 1998, Material Specification for Hot Applied Rubberized Asphalt Waterproofing Membrane

1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Dispose of unused paint and paint thinner materials at official hazardous material collections site.
- .2 Do not dispose of unused paint and paint thinner material into sewer system, into streams, lakes, onto ground or in other location where it will pose health environmental hazard.
- .3 Divert unused asphalt from landfill to facility capable of recycling materials.

Part 2 Products

2.1 MATERIALS

- .1 Tack coat: SS-1 to CAN/CGSB-16.2.
- .2 Asphalt concrete: to OPSS.MUNI 1151.
- .3 Asphalt cement: performance graded (PG) 58-34 to OPSS.PROV 1101.
- .4 Asphalt concrete mix:
 - .1 Wear course: Superpave 12.5 (Class A)
 - .2 Base course: Superpave 12.5 (Class A)
 - .3 Leveling course: Superpave 4.75 (Class A)
- .5 Traffic paint: yellow and white to CAN/CGSB-1.74.
- .6 Paint thinner: to CAN/CGSB-1.5.

Part 3 Execution

3.1 PAVEMENT THICKNESS

- .1 Pavements for overlays:
 - .1 Wear course: Superpave 12.5 (Class A), thickness as indicated.
 - .2 Base course: Superpave 12.5 (Class A), thickness as indicated.
 - .3 Leveling course: Superpave 4.75 (Class A), As required to achieve proposed grades.

3.2 PAVEMENT CONSTRUCTION

- .1 Construction of asphalt concrete: OPSS 310.

3.3 EQUIPMENT

- .1 Pavers: mechanical grade controlled self-powered pavers capable of spreading mix within specified tolerances, true to line, grade and crown indicated.
- .2 Rollers: sufficient number of type and weight to obtain specified density of compacted mix.
- .3 Haul trucks: sufficient number and of adequate size, speed and condition to ensure orderly and continuous operation and as follows:
 - .1 Boxes with tight metal bottoms.
 - .2 Covers of sufficient size and weight to completely cover and protect asphalt mix when truck fully loaded.

- .3 In cool weather or for long hauls, insulate entire contact area of each truck box.
- .4 Use only trucks that can be weighed in single operation on scales supplied.

.4 Hand tools:

- .1 Lutes or rakes with covered teeth for spreading and finishing operations.
- .2 Tamping irons having mass not less than 12kg and bearing area not exceeding 310cm² for compacting material along curbs and other structures inaccessible to roller. Mechanical compaction equipment, when approved by Departmental Representative may be used instead of tamping irons.
- .3 Straight edges, 4.5 m in length, to test finished surface.

3.4 TACK COAT

- .1 Apply asphalt tack coat only on clean and dry surface. Obtain Departmental Representative's approval of surface before applying asphalt tack coat.
- .2 Dilute asphalt emulsion with water as required for application. Mix thoroughly by pumping or other method approved by Departmental Representative.
- .3 Apply asphalt tack coat evenly to pavement surface.
- .4 Paint contact surfaces of curbs, manholes and like structures with thin, uniform coat of asphalt tack coat material.
- .5 Do not apply asphalt tack coat when air temperature is less than 10°C or when rain is forecast within 2 hours of application.
- .6 Apply asphalt tack coat only to surfaces that are expected to be overlaid on same day.
- .7 Evenly distribute localized excessive deposits of tack coat by brooming as directed by Departmental Representative.
- .8 Keep traffic off tacked areas until asphalt tack coat has set.
- .9 Re-tack contaminated or disturbed areas as directed by Departmental Representative.
- .10 Permit asphalt tack coat to set before placing asphalt pavement.

3.6 TRANSPORTATION OF MIX

- .1 Transport mix to job site in vehicles cleaned of foreign material.
- .2 Paint or spray truck beds with limewater, soap or detergent solution, or non-petroleum based commercial product, at least daily or as required. Elevate truck bed and thoroughly drain. No excess solution to remain in truck bed.
- .3 Deposit mix from surge or storage silo to trucks in multiple drops to reduce segregation. Do not dribble mix into trucks.

- .4 Deliver material to paver at uniform rate and in an amount within capacity of paving and compacting equipment.
- .5 Deliver loads continuously in covered vehicles and immediately spread and compact. Deliver and place mixes at temperature within range as directed by Departmental Representative, but not less than 135 °C.

3.7 PLACING

- .1 Obtain Departmental Representative's approval of base and existing surface and tack coat prior to placing asphalt. Prior to laying mix, clean surfaces of loose and foreign material.
- .2 Place asphalt concrete to thicknesses, grades and lines as indicated.
- .3 Placing conditions:
 - .1 Place asphalt mixtures only when air temperature is above 5 °C.
 - .2 When temperature of surface on which material is to be placed falls below 10 °C, provide extra rollers as necessary to obtain required compaction before cooling.
 - .3 Do not place hot-mix asphalt when pools of standing water exist on surface to be paved, during rain, or when surface is damp.
- .4 Where possible do tapering and levelling where required in lower lifts. Overlap joints by not less than 300mm.
- .5 Commence spreading at high side of pavement or at crown and span crowned centerlines with initial strip.
- .6 Spread and strike off mixture with self propelled mechanical finisher.
 - .1 Construct longitudinal joints and edges true to line markings. Position and operate paver to follow established line closely.
 - .2 When using pavers in echelon, have first paver follow marks or lines, and second paver follow edge of material placed by first paver. Work pavers as close together as possible.
 - .3 Maintain constant head of mix in auger chamber of paver during placing.
 - .4 If segregation occurs, immediately suspend spreading operation until cause is determined and corrected.
 - .5 Correct irregularities in alignment left by paver by trimming directly behind machine.
 - .6 Correct irregularities in surface of pavement course directly behind paver. Remove by shovel or lute excess material forming high spots. Fill and smooth indented areas with hot mix. Do not broadcast material over such areas.
 - .7 Do not throw surplus material on freshly screeded surfaces.
- .7 When hand spreading is used:
 - .1 Use approved wood or steel forms, rigidly supported to assure correct grade and cross section. Use measuring blocks and intermediate strips to aid in obtaining required cross-section.
 - .2 Distribute material uniformly. Do not broadcast material.

- .3 During spreading operation, thoroughly loosen and uniformly distribute material by lutes or covered rakes. Reject material that has formed into lumps and does not break down readily.
- .4 After placing and before rolling, check surface with templates and straightedges and correct irregularities.
- .5 Provide heating equipment to keep hand tools free from asphalt. Control temperature to avoid burning material. Do not use tools at higher temperature than temperature of mix being placed.

3.8 COMPACTING

- .1 Do not change rolling pattern unless mix changes or lift thickness changes. Change rolling pattern only as directed by Departmental Representative.
- .2 Roll asphalt continuously to achieve a compaction between 92% to 96.5% of the maximum relative density when tested in accordance with the requirements of OPSS 310.
- .3 General:
 - .1 Provide at least two rollers and as many additional rollers as necessary to achieve specified pavement density. When more than two rollers are required, one roller must be pneumatic tired type.
 - .2 Start rolling operations as soon as placed mix can bear weight of roller without excess displacement of material or cracking of surface.
 - .3 Operate roller slowly initially to avoid displacement of material. Do not exceed 5 km/h for breakdown and intermediate rolling for static steel-wheeled and pneumatic tired rollers. Do not exceed 9km/h for finish rolling.
 - .4 For overlays, adjust speed and vibration frequency of vibratory rollers to produce a minimum of 25 impacts per meter of travel, but not exceeding 40 impacts per meter.
 - .5 Overlap successive passes of roller by minimum of 200 mm and vary pass lengths.
 - .6 Keep wheels of roller slightly moistened with water to prevent pick-up of material but do not over-water.
 - .7 Do not stop vibratory rollers on pavement that is being compacted with vibratory mechanism operating.
 - .8 Do not permit heavy equipment or rollers to stand on finished surface before it has been compacted and has thoroughly cooled.
 - .9 After traverse and longitudinal joints and outside edge have been compacted, start rolling longitudinally at low side and progress to high side. Ensure that all points across width of pavement receive essentially equal numbers of passes of compactors.
 - .10 When paving in echelon, leave unrolled 50 to 75mm of edge which second paver is following and roll when joint between lanes is rolled.
 - .11 Where rolling causes displacement of material, loosen affected areas at once with lutes or shovels and restore to original grade of loose material before re-rolling.
- .4 Breakdown rolling:
 - .1 Commence breakdown rolling with immediately following rolling of transverse and longitudinal joint and edges.

- .2 Operate rollers as close to paver as necessary to obtain adequate density without causing undue displacement.
- .3 Operate breakdown roller with drive roll or wheel nearest finishing machine.
- .4 Use only trained roller operators.
- .5 Intermediate rolling:
 - .1 Use pneumatic-tired, steel wheel or vibratory rollers and follow breakdown rolling as closely as possible and while paving mix temperature allows maximum density from this operation.
 - .2 Rolling to be continuous after initial rolling until mix placed has been thoroughly compacted.
- .6 Finish rolling:
 - .1 Accomplish finish rolling with two-axle or three-axle tandem steel wheeled rollers while material is still warm enough for removal of roller marks. If necessary to obtain desired surface finish, use pneumatic-tired rollers as directed by Departmental Representative.
 - .2 Conduct rolling operations in close sequence.

3.9 JOINTS

- .1 General:
 - .1 Remove surplus material from surface of previously laid strip. Do not deposit on surface of freshly laid strip.
 - .2 Paint contact surfaces of existing structures such as manholes, curbs or gutters with bituminous material prior to placing adjacent pavement.
- .2 Transverse joints:
 - .1 Offset transverse joint in succeeding lifts by at least 600 mm.
 - .2 Cut back to full depth vertical face and tack face with thin coat of hot asphalt prior to continuing paving.
 - .3 Compact transverse joints to provide smooth riding surface. Use methods to prevent rounding of compacted surface at joints.
- .3 Longitudinal joints:
 - .1 Offset longitudinal joints in succeeding lifts by at least 150 mm.
 - .2 Cold joint is defined as joint where asphalt mix is placed, compacted and left to cool below 100°C prior to paving of adjacent lane.
 - .3 Overlap previously laid strip with spreader by 25 to 50 mm.
 - .4 Before rolling, carefully remove and discard coarse aggregate in material overlapping joint with lute or rake.
 - .5 Roll longitudinal joints directly behind paving operation.
 - .6 When rolling with static or vibratory rollers, have most of drum width ride on newly placed lane with remaining 150mm extending onto previously placed and compacted lane.

- .4 Construct feather joints so that thinner portion of joint contains fine graded material obtained by changed mix design or by raking out coarse aggregate in mix. Place and compact joint so that joint is smooth and without visible breaks in grade. Location of feather joints as indicated.

3.10 TOLERANCES

- .1 Finished asphalt surface to be within 5 mm of design elevation but not uniformly high or low.
- .2 Finished asphalt surface not to have irregularities exceeding 5 mm when checked with 4.5m straight edge placed in any direction.

3.11 DEFECTIVE WORK

- .1 Correct irregularities that develop before completion of rolling by loosening surface mix and removing or adding material as required. If irregularities or defects remain after final compaction, remove surface course promptly and lay new material to form true and even surface and compact immediately to specified density.
- .2 Repair areas showing checking, rippling, or segregation.
- .3 Adjust roller operation and screed settings on paver to prevent further defects such as rippling and checking of pavement.

3.12 TRAFFIC MARKINGS

- .1 Paint traffic markings in accordance with manufacturer's recommendations and as indicated in Drawings.
- .2 Use paint thinner in accordance with manufacturer's requirements.
- .3 Application:
 - .1 Lay out pavement markings as indicated.
 - .2 Unless otherwise approved by Departmental Representative, apply paint only when air temperature is above 10°C, wind speed is less than 60km/h and no rain is forecast within next 4h.
 - .3 Apply traffic paint evenly at rate of 3m² /L.
 - .4 Do not thin paint unless approved by Departmental Representative.
 - .5 Paint lines to be of uniform colour and density with sharp edges.
 - .6 Thoroughly clean distributor tank before refilling with paint of different colour.
- .4 Tolerance:
 - .1 Paint markings to be within plus or minus 12mm of dimensions indicated.
- .5 Protection of Completed Works:
 - .1 Protect pavement markings until dry.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-15.1-92, Calcium Chloride.

1.2 DELIVERY STORAGE AND HANDLING

- .1 Supply calcium chloride in quantities and at times required to control the spread of dust, more often if directed by Departmental Representative.
- .2 Deliver calcium chloride to site in moisture-proof bags. Indicate name of manufacturer, name of product, net weight or mass, and percentage of calcium chloride guaranteed by manufacturer.
- .3 Store bags of calcium chloride in weather- proof enclosures.

Part 2 Products

2.1 MATERIALS

- .1 Calcium chloride, Type I: to CAN/CGSB-15.1, flake.
- .2 Water: to Departmental Representative's approval.

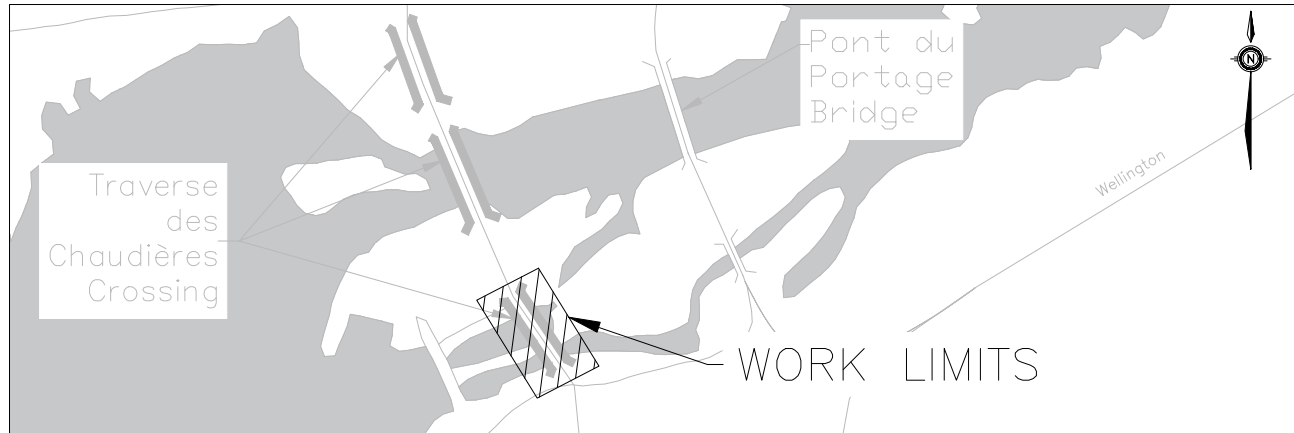
Part 3 Execution

3.1 APPLICATION

- .1 Use of either calcium chloride or water is acceptable as means of dust control:
 - .1 Apply calcium chloride with equipment approved by Departmental Representative.
 - .2 Apply water with distributors equipped with means of shut-off and with spray system to ensure uniform application.
- .2 Do not use water during adverse temperatures.

END OF SECTION

ASPHALT REPAIRS ON BRONSON CHANNEL & OTTAWA HYDRO ENERGY POWER CHANNEL STRUCTURES



BRONSON SPAN



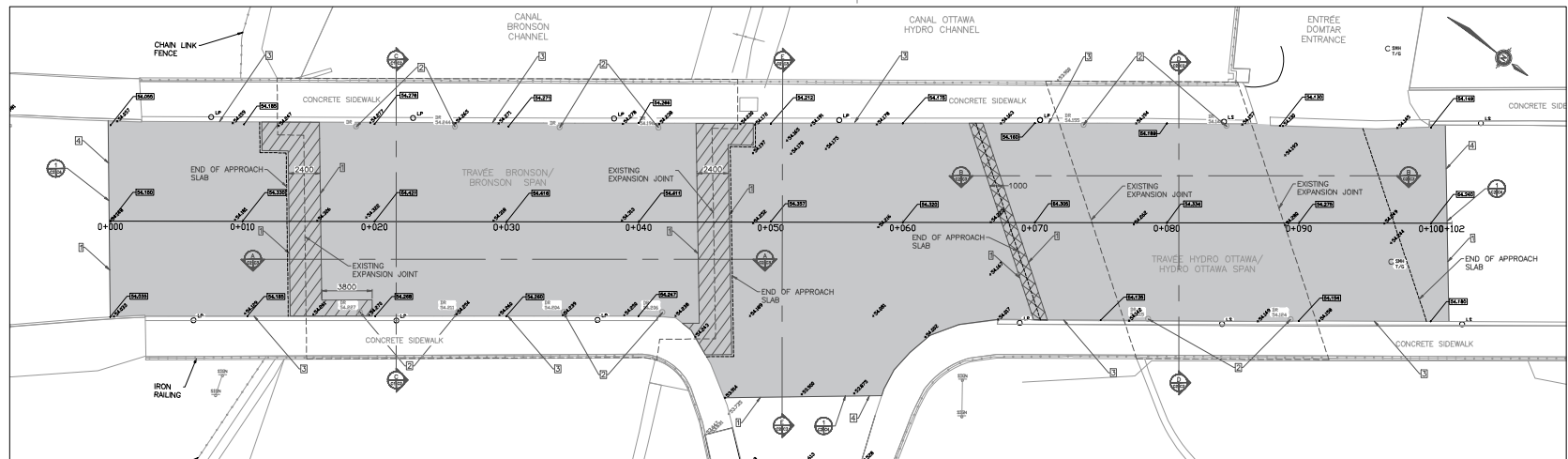
OHEPC SPAN

DRAWINGS LIST

- C1 – KEY PLAN
- C2 – PAVING & GRADING PLAN / LINE PAINTING
- C3 – CROSS SECTIONS
- C4 – DETAILS

Canada Public Works and Government Services Canada Travaux publics et Services gouvernementaux Canada Road Property Branch Director générale des biens routiers	
LEGEND	
— EXISTING STORM SEWER — EXISTING WATERMAIN — EXISTING SANITARY SEWER — GAS LINE — A/O BELL TELEPHONE SERVICE — A/O HIGH VOLTAGE ELECTRICAL — U/A ELECTRICAL SERVICE — GUARD RAIL	
○ SMH SANITARY MANHOLE ○ STM STORM MANHOLE ○ SR SOCK DRAIN ○ BOLLARD ○ BHP BELL-HYDRO POLE ○ HP HYDRO POLE	
HYDRANT VALVE BOX VALVE CHAMBER CAP EXST. LIGHT STANDARD EXST. LAMP POST EXST. DECIDUOUS TREE EXST. CONIFEROUS TREE STUMP EXST. TREE STUMP	
NEW ELEVATION EXISTING SURFACE ELEVATION	
Contractor to verify all dimensions & conditions on site and immediately notify the engineer of all discrepancies.	
00 ISSUED FOR TENDER 2022-2-31	
revisions description date	
A detail no. no. du détail B location drawing no. sur dessin no. C drawing no. dessin no.	
project CHAUDIERE CROSSING BRONSON & OHEPC ASPHALT REPAIRS OTTAWA, ON - GATINEAU, QC	
drawing KEY PLAN	
Designed By E. FERGUSON Conçu par Date 2022/01/31 Drawn By E. FERGUSON Dessiné par Date 2022/01/31 Reviewed By N. HOUDE Examiné par Date 2022/01/31 Approved By T. TREMBLAY Approuvé par Date 2022/01/31 Tender T. TREMBLAY Soumission Project Manager Administrateur de projet Project no. No. du projet R.088005.011 Drawing no. No. du dessin C1	





PAVING LEGEND

- ① GRIND DOWN EXISTING ASPHALT CONCRETE $\pm 1600\text{M}^2$ AND $\pm 50\text{mm}$ THICK.
- ② APPLY TACK COAT TO ACCOMMODATE ASPHALT LEVELING COURSE AS REQUIRED TO ACHIEVE PROPOSED GRADES.
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- ④ NEW MIN 50mm WEAR COURSE ASPHALT CONCRETE TO FINISHED GRADES INDICATED.

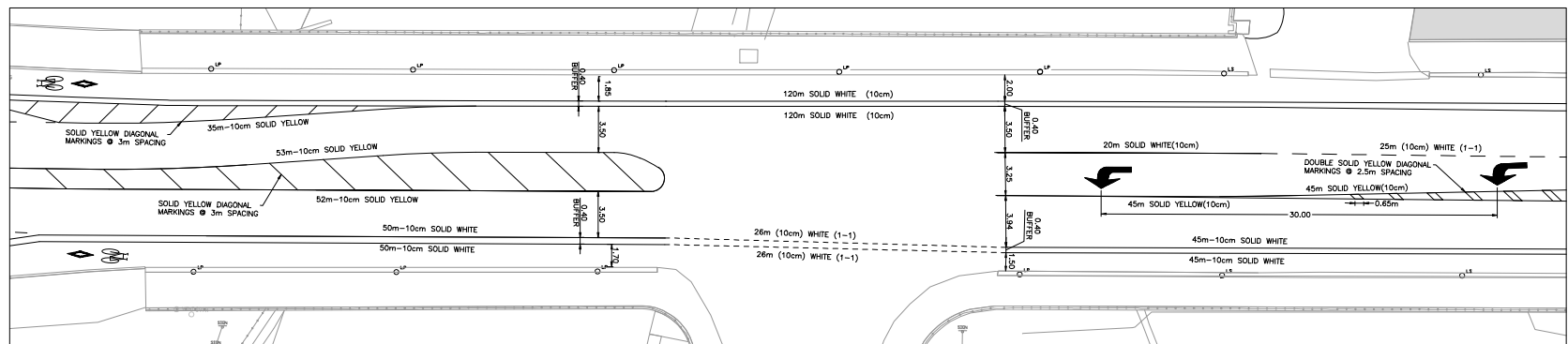
PAVING & GRADING PLAN ÉCHELLE/SCALE (1:150)

DRAWING NOTES

- ① SAW CUT $\pm 50\text{mm}$ DEPTH
- ② PROTECT EXISTING CONCRETE BARRIERS
- ③ PROTECT EXISTING DECK DRAINS
- ④ MATCH TO EXISTING GRADE

GENERAL NOTES:

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- CONTRACTOR SHALL PROVIDE DOCUMENTATION REGARDING WORK SITE AT THE END OF EACH WORKDAY.
- CONTRACTOR SHALL PROVIDE DOCUMENTATION OF FINAL CLEAN-UP OF WORK SITE.
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- CONTRACTOR SHALL CONDUCT REPAIR WORK IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT FOR THE PROVINCE OF ONTARIO.
- ASPHALT CONCRETE MIX:
 - WEAR COURSE: SUPERPAVE 12.5 (CLASS A)
 - BASE COURSE: SUPERPAVE 12.5 (CLASS A)
 - LEVELING COURSE: SUPERPAVE 4.75 (CLASS A)



NOTE: ALL NEW LINE PAINTING TO TIE INTO EXISTING LINE PAINTING OUTSIDE THE EXTENTS OF THE WORK AREA.

LINE PAINTING ÉCHELLE/SCALE (1:150)

Public Works and
Government Services
Travaux publics et
Services gouvernementaux

Road Property
Div. Direction générale
des biens routiers

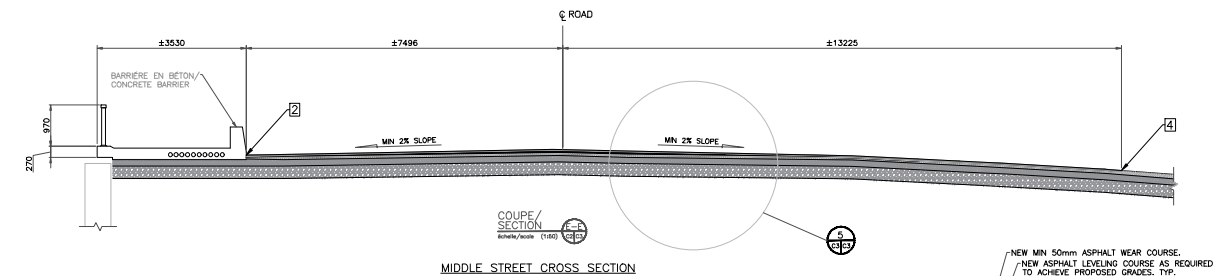
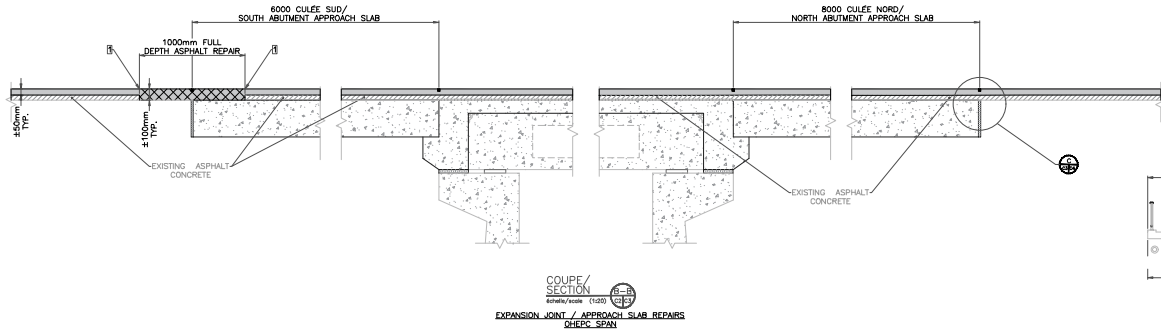
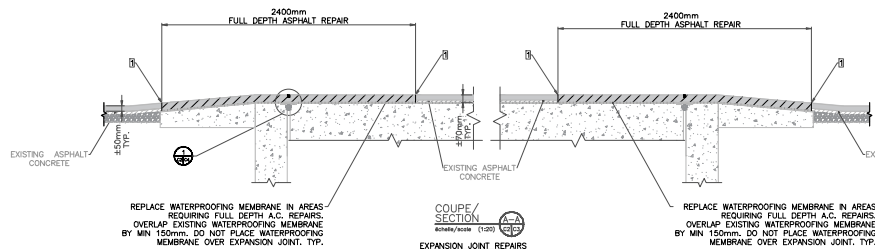
LEGEND

- EXISTING STORM SEWER
- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- GAS LINE
- A/O BELL TELEPHONE SERVICE
- A/O HIGH VOLTAGE ELECTRICAL
- A/O ELECTRICAL SERVICE
- GUARD RAIL

PAVING & GRADING PLAN LINE PAINTING

OTTAWA, ON - GATINEAU, QC

designed by E. FERGUSON
Date: 2022/01/31
Drawn by E. FERGUSON
Date: 2022/01/31
Reviewed by N. HOLDE
Date: 2022/01/31
Approved by T. TREMBLAY
Date: 2022/01/31
Tender T. TREMBLAY
Project Manager: 2022/01/31
Project no. R.088005.011
Drawing no. C-2

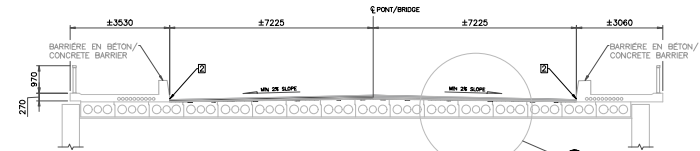


PAVING LEGEND

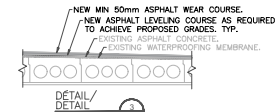
- | | |
|--|--|
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DRAWING NOTES

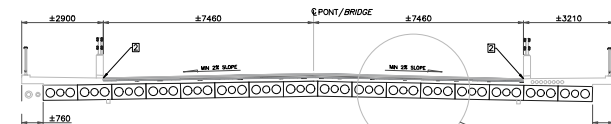
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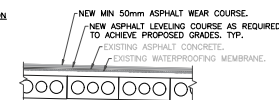
BRONSON SPAN CROSS SECTION



DETAIL / DETAIL Bronson/Scale (1:20)



CHEPC SPAN CROSS SECTION



DETAIL / DETAIL Chepc/Scale (1:20)

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LEGEND

- | | |
|--|-----------------------------|
| | EXISTING STORM SEWER |
| | EXISTING WATERMAN |
| | EXISTING SANITARY SEWER |
| | GAS LINE |
| | A/B BELL TELEPHONE SERVICE |
| | A/B HIGH VOLTAGE ELECTRICAL |
| | A/B ELECTRICAL SERVICE |
| | GUARD RAIL |
| | SMH SANITARY MANHOLE |
| | STM STORM MANHOLE |
| | DECK DRAIN |
| | BOLLARD |
| | BELL-HYDRO POLE |
| | HYDRO POLE |
| | HYDRANT |
| | VALVE BOX |
| | VALVE CHAMBER CAP |
| | EXIST. LIGHT STANDARD |
| | EXIST. LAMP POST |
| | EXIST. DECIDUOUS TREE |
| | EXIST. CONIFEROUS TREE |
| | EXIST. TREE STUMP |
| | NEW ELEVATION |
| | EXISTING SURFACE ELEVATION |

Contractor to verify all dimensions & conditions on site and immediately notify the engineer of all discrepancies.

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revisions	description	date

A	A
C	C

project project

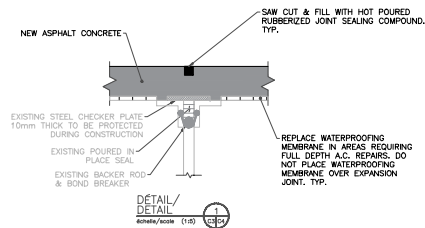
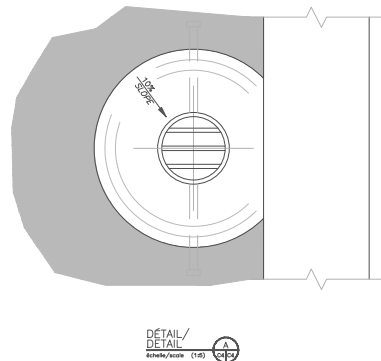
CHAUDIÈRE CROSSING
BRONSON/OHEPC
ASPHALT REPAIRS

OTTAWA, ON - GATINEAU, QC

drawing dessin

CROSS SECTIONS

Designed By	E. FERGUSON	Conçu par	
Date	2022/01/31		
Drawn By	E. FERGUSON	Dessiné par	
Date	2022/01/31		
Reviewed By	N. HOUE	Examiné par	
Date	2022/01/31		
Approved By	T. TREMBLAY	Approuvé par	
Date	2022/01/31		
Tender	T. TREMBLAY	Soumission	
Project Manager		Administrateur de projet	
Project no.	R.088005.011	No. du projet	
Drawing no.		No. du dessin	




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- | | |
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- 2 PROTECT EXISTING CONCRETE BARRIERS
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- 4 MATCH TO EXISTING GRADE

