

Parks Canada Agency
Refection of Gauron and Lafleur Bridges on Lachine
Canal

Project N° CLAC-1524
Addendum n° 01

THIS ADDENDUM COMPLETES, MODIFIES OR ELIMINATES CERTAIN ELEMENTS OF THE TENDER DOCUMENTS, WHICH THE ADDENDUM REFERS TO. IT IS AN INTEGRAL PART OF THE TENDER DOCUMENTS.

MODIFICATIONS ON PLANS AND SPECIFICATIONS

The current precisions are provided, following questions received from contractors during the site visit, and other written questions received.

1. PLANS

1.1 Plan CL-02-220

- 1.1.1 Modifications on plans, sheet 03 revision 00 is cancelled and replaced by sheet 03 revision 01:**

Update drawings.

1.2 Plan CL-02-221

- 1.2.1 Modifications on plans, sheet 03 revision 00 is cancelled and replaced by sheet 03 revision 01:**

Update drawings.

- 1.2.2 Modifications on plans, sheet 09 revision 00 is cancelled and replaced by sheet 09 revision 01:**

Update drawings.

2. TENDER FORM

2.1 Replacement of bilingual tender form:

The bilingual tender form revision No 00 is cancelled and replaced by the bilingual submission tender form revision No 01.

3. PRECISIONS

3.1 Details of the item on tender 2.6.19 "Supply and installation of Batten Plates / Laces"

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There will be no explicit detail in the detail plans, since it is a question of replacing batten plate or laces by plates of the same section. For estimation, the average size of the plates is 318 x 686 x 9.5 mm and 2 rows of 5 rivets. In addition, these connecting plates are located on top of the bottom chord.

3.2 Mobilization

In the North-West zone: A site fence from another contractor will be in place approximately 3m behind the rear of the retaining wall of the canal over the entire length of the zone from April 1 to April 30, 2020. During this period, access to avenue St-Pierre and the rest of the area will be available to the Contractor. Thereafter, the complete area will be available.

3.3 Cleaning and Painting - Steel Surfaces - On Site

For estimation, the area to be painted at Gauron Bridge is $\pm 4,700 \text{ m}^2$.

3.4 Distribution panel

At THE CL-02-221.17 plan, it is requested to provide a 100A, 120/240 distribution panel, monophasé to 16 circuits. But in the retail of it at the plan CL-02-221.18, the distribution panel is 100A, 120/208, three-phase to 12 circuits. What should we expect?

Ans. : The panel must be at 120/240 V, 1 ph., 3 wires.

3.5 CL-02-220.37 and CL-02-221.15

To the legends of the 2 bridges (CL-02-220.37 and CL-02-221.15) 2-8-1-12V/G-27 diam. "Two conductors - 8 and one conductor - 12Vert, in a duct with a diameter 21mm." What should be the diameter of the 21 or 27 mm diameter duct?

Ans. : In the legends, in plans 15, 16, 37 and 38, one must read 27 mm for the diameter of the ducts. In addition, in detail, the "one-line scheme - proposed installation" of the plan 18 should read 27 mm instead of 21 for the lighting system. However, the contractor is required to check all the diameters of the ducts at the site.

3.6 Detail 4 of the PLAN CL-02-221.17

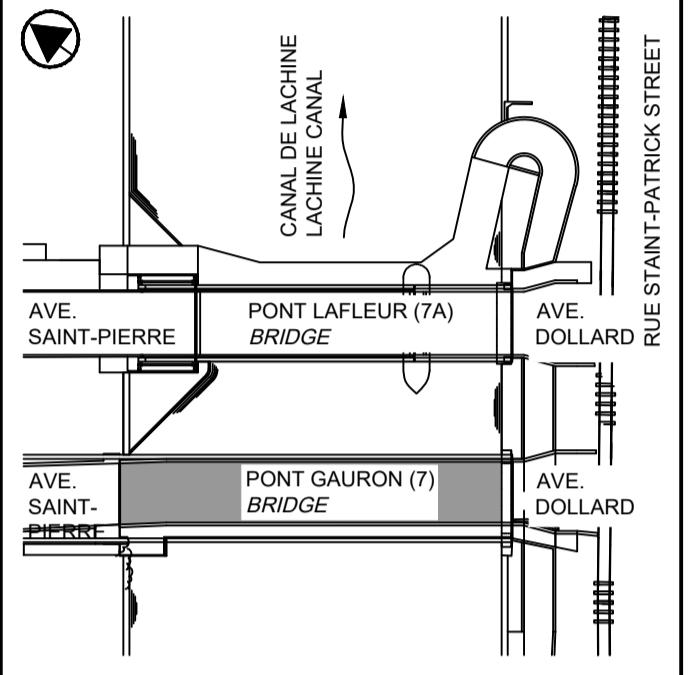
In detail 4 of the PLAN CL-02-221.17, the four new expansion joints (Item 6) should be of what diameter?

Ans. : The diameters of the ducts on which expansion joints will be installed are 21 mm, 27 mm and 63 mm. However, the contractor is required to check all the diameters of the ducts at the site.

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Project N° CLAC-1524
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Drawing



PLAN CLÉ / KEY PLAN

SCEAUX / SEALS

| révisions / revisions | | date |
|-----------------------|--|------------|
| 01 | ADDENDA No. 1 / ADDENDUM No. 1 | 2020/03/13 |
| 00 | EMIS POUR SOUMISSION / ISSUED FOR TENDER | 2020/02/11 |

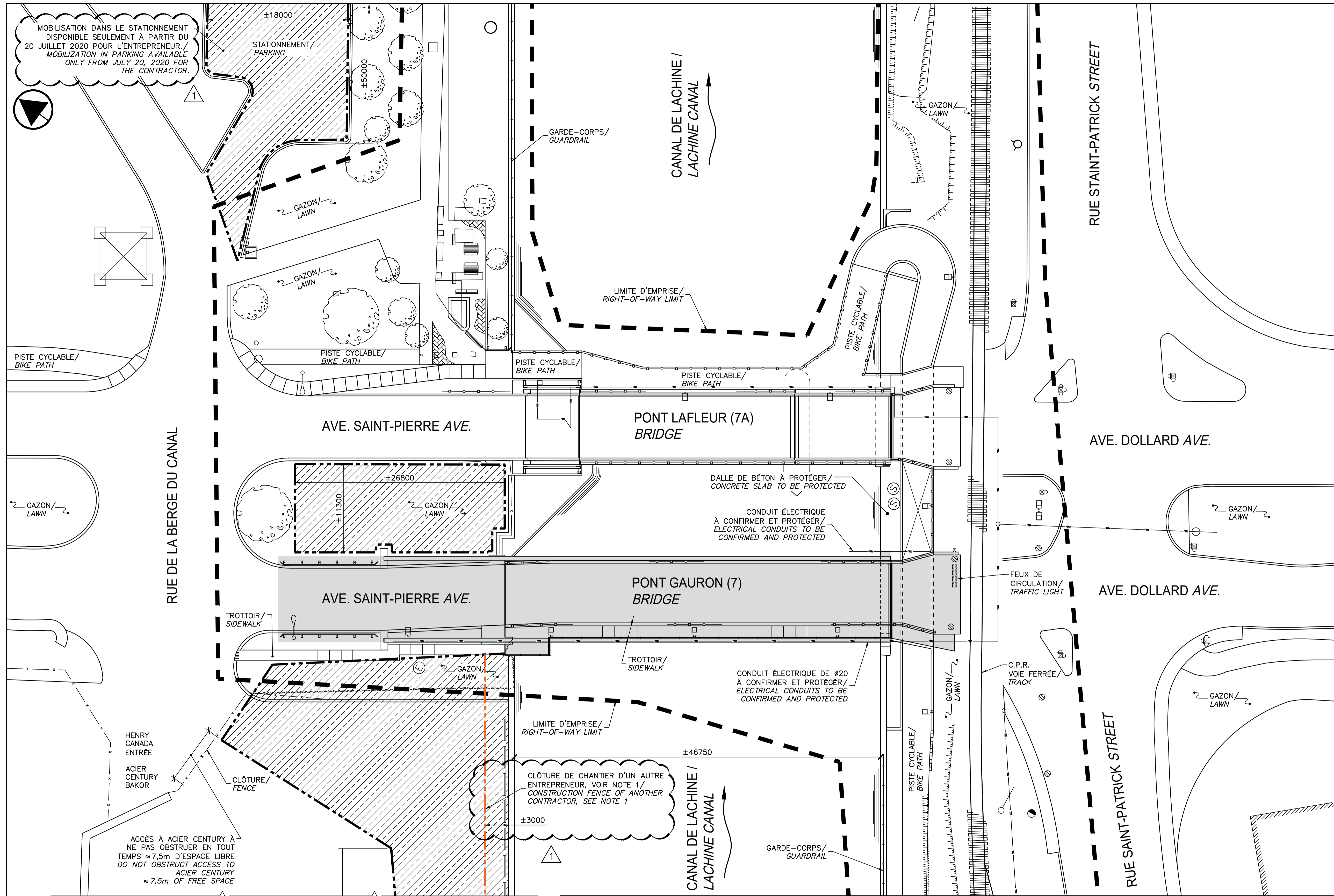
Projet / Project: PARCS CANADA / PARKS CANADA

RÉFECTION DU PONT GAURON (7)
 CANAL DE LACHINE - MONTRÉAL, QUÉBEC
 REFECTION OF BRIDGE GAURON (7)
 LACHINE CANAL - MONTRÉAL, QUÉBEC

Dessin / Drawing

STRUCTURE / STRUCTURE
 PLAN D'ENSEMBLE / CONDITIONS EXISTANTES
 GENERAL LAYOUT / EXISTING CONDITIONS

| Conçu par / Designed by | | Date | |
|---|---------------------------------|----------------------------|--|
| Jean-François Cloutier, ing. | | 2019/12/20 | |
| Dessiné par / Drawn by | | Date | |
| Gabriel Blanchette | | 2019/12/20 | |
| Approuvé par / Approved by | | Date | |
| Jean Lizotte, ing. | | 2019/12/20 | |
| Soumission / Tender | | Date | |
| Parcs Canada / Parks Canada | | 2019 | |
| Administrateur de projets APC / PCA Project Manager | | | |
| No de projet / Project number | No de contrat / Contract number | | |
| CLAC-1524 | | | |
| Nom du fichier / File name | | No de classement / File no | |
| CL-02-220.03.DWG | | | |
| No de plan ou dessin / File name | | No feuillet / Drawing no | |
| CL-02-220.03 | | 03/36 | |



VUE EN PLAN / PLAN VIEW

ÉCH./SCALE 1:250

LÉGENDE / LEGEND:

- ZONE DES TRAVAUX / WORK ZONE
- CÂBLE ÉLECTRIQUE / ELECTRIC CABLE
- LIMITE D'EMPRISE / RIGHT-OF-WAY LIMIT
- ZONE DE MOBILISATION / MOBILIZATION ZONE

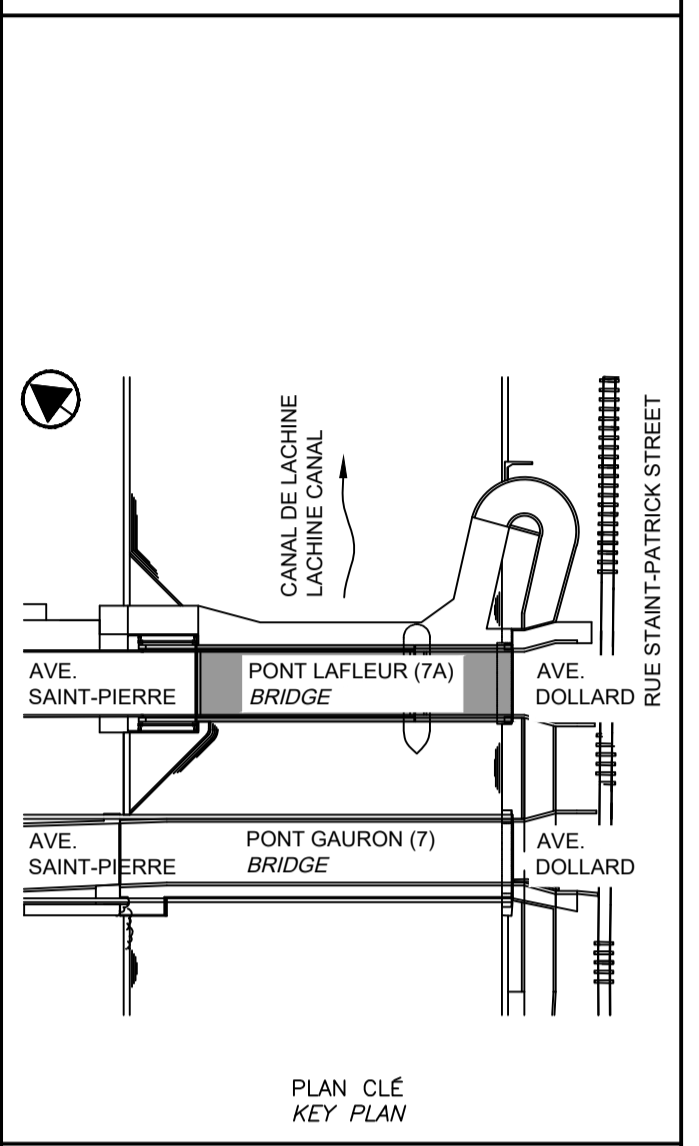
CE DOCUMENT NE DOIT PAS ÊTRE UTILISÉ À DES FINS DE CONSTRUCTION

THIS DOCUMENT SHALL NOT BE USED FOR CONSTRUCTION

MOBILISATION DANS LE STATIONNEMENT DISPONIBLE SEULEMENT À PARTIR DU 20 JUILLET 2020 POUR L'ENTREPRENEUR. / MOBILIZATION IN PARKING AVAILABLE ONLY FROM JULY 20, 2020 FOR THE CONTRACTOR.

ACCÈS À ACIER CENTURY À NE PAS OBSTRUER EN TOUT TEMPS ≈ 7,5m D'ESPACE LIBRE / DO NOT OBSTRUCT ACCESS TO ACIER CENTURY ≈ 7,5m OF FREE SPACE

NOTE 1: CLÔTURE EN PLACE DU 1er AVRIL AU 30 AVRIL 2020. DURANT CETTE PÉRIODE, L'ACCÈS DE L'AVENUE ST-PIERRE ET LE RESTE DE LA ZONE SERONT DISPONIBLES POUR L'ENTREPRENEUR. PAR LA SUITE, LA ZONE COMPLÈTE DE MOBILISATION MONTRÉE AUX PLANS SERA DISPONIBLE. / FENCE IN PLACE FROM APRIL 1 TO APRIL 30, 2020. DURING THIS PERIOD, ACCESS TO AVENUE ST-PIERRE AND THE REST OF THE AREA WILL BE AVAILABLE TO THE CONTRACTOR. THEREFORE, THE FULL MOBILIZATION AREA SHOWN ON DRAWINGS WILL BE AVAILABLE.

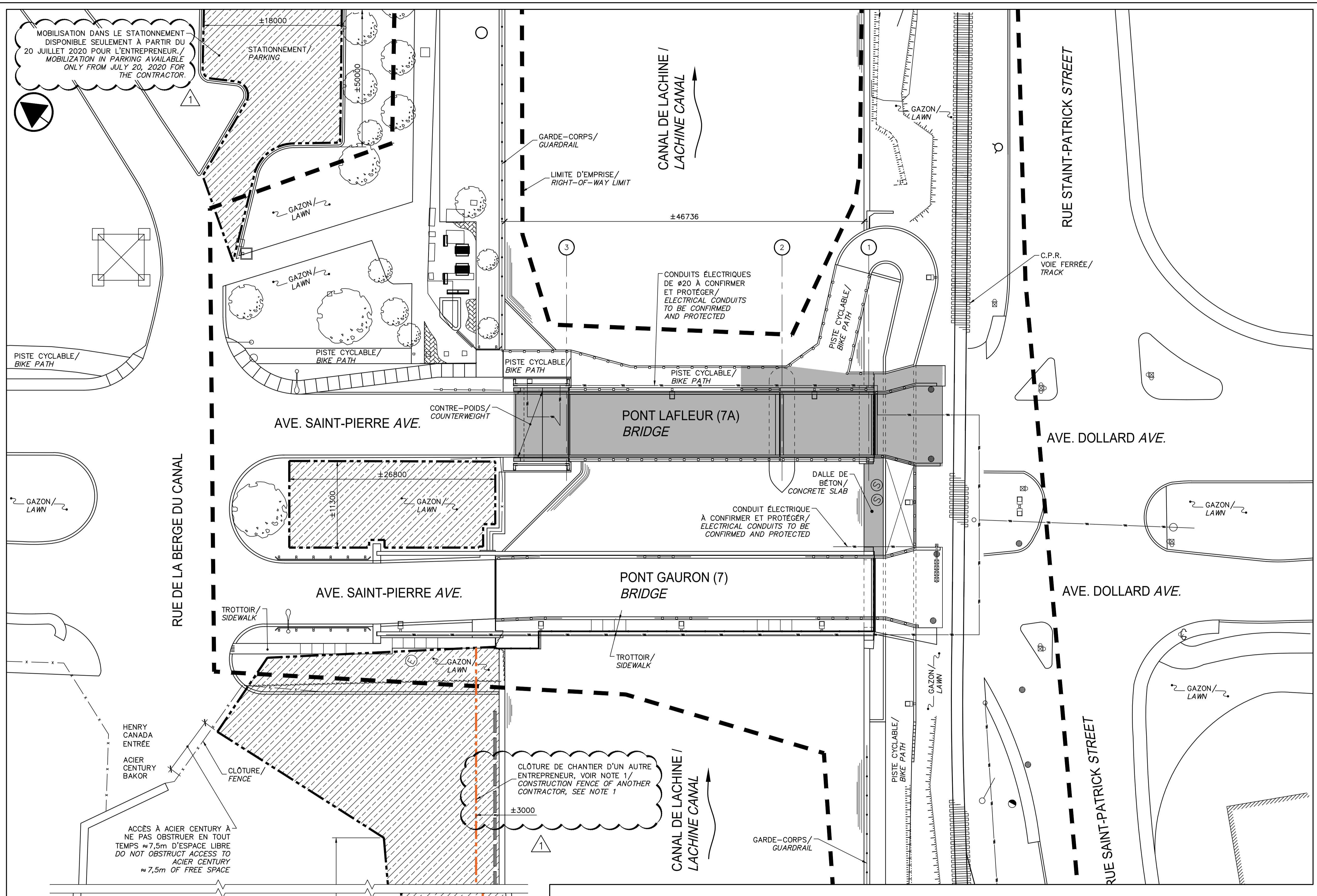


| révisions / revisions | date |
|-----------------------|--|
| 01 | ADDENDA No. 1 ADDENDUM No. 1 2020/03/13 |
| 00 | EMIS POUR SOUMISSION ISSUED FOR TENDER 2020/02/11 |

Projet: PARCS CANADA / PARKS CANADA
 RÉFECTION DU PONT LAFLEUR (7A)
 CANAL DE LACHINE – MONTRÉAL, QUÉBEC
 REFECTION OF BRIDGE LAFLEUR (7A)
 LACHINE CANAL – MONTRÉAL, QUÉBEC

Dessin: STRUCTURE / STRUCTURE
 PLAN DE LOCALISATION
 LOCATION PLAN

| Conçu par / Designed by | Date |
|--|---------------------------------|
| Jean-François Cloutier, ing. | 2019/12/20 |
| Dessiné par / Drawn by | Date |
| Caroline Plouffe Gabriel Blanchette | 2019/12/20 |
| Approuvé par / Approved by | Date |
| Jean Lizotte, ing. | 2019/12/20 |
| Soumission / Tender | Date |
| Parcs Canada / Parks Canada Administrateur de projets APC / PCA Project Manager | 2019 |
| No de projet / Project number | No de contrat / Contract number |
| CLAC-1524 APC / PCA | |
| Norm du fichier / File name | No de classement / File no |
| CL-02-221.03.DWG | |
| No de plan ou dessin / File name | No feuillet / Drawing no |
| CL-02-221.03 | 03/14 |



VUE EN PLAN / PLAN VIEW
 ÉCH./SCALE 1:250

LÉGENDE / LEGEND:

- ZONE DES TRAVAUX / WORK ZONE
- CÂBLE ÉLECTRIQUE / ELECTRIC CABLE
- LIMITE D'EMPRISE / RIGHT-OF-WAY LIMIT
- ZONE DE MOBILISATION / MOBILIZATION ZONE

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MOBILISATION DANS LE STATIONNEMENT
 DISPONIBLE SEULEMENT À PARTIR DU
 20 JUILLET 2020 POUR L'ENTREPRENEUR.
 MOBILIZATION IN PARKING AVAILABLE
 ONLY FROM JULY 20, 2020 FOR
 THE CONTRACTOR.

PISTE CYCLABLE/
 BIKE PATH

PISTE CYCLABLE/
 BIKE PATH

PISTE CYCLABLE/
 BIKE PATH

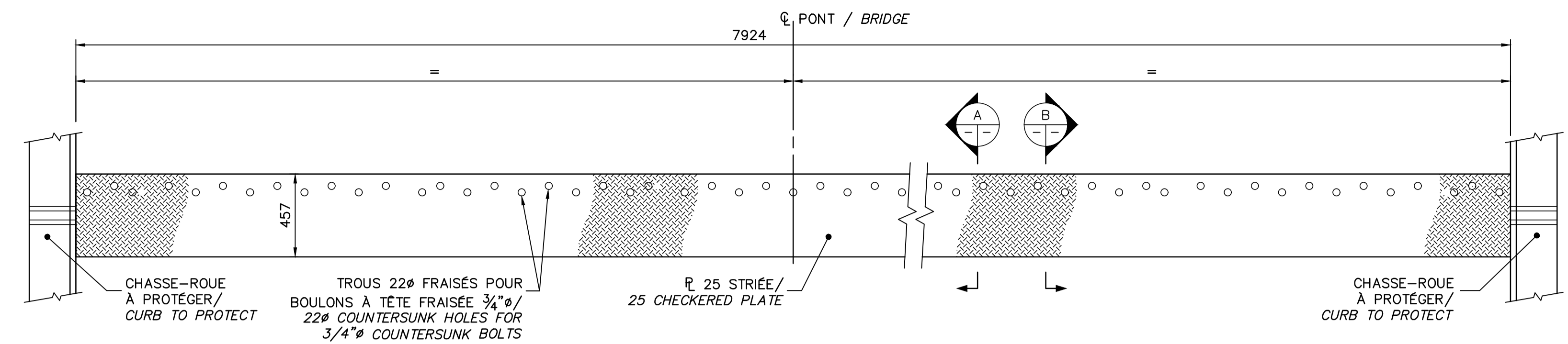
PISTE CYCLABLE/
 BIKE PATH

CONDUITS ÉLECTRIQUES
 DE Ø20 À CONFIRMER
 ET PROTÉGER /
 ELECTRICAL CONDUITS
 TO BE CONFIRMED
 AND PROTECTED

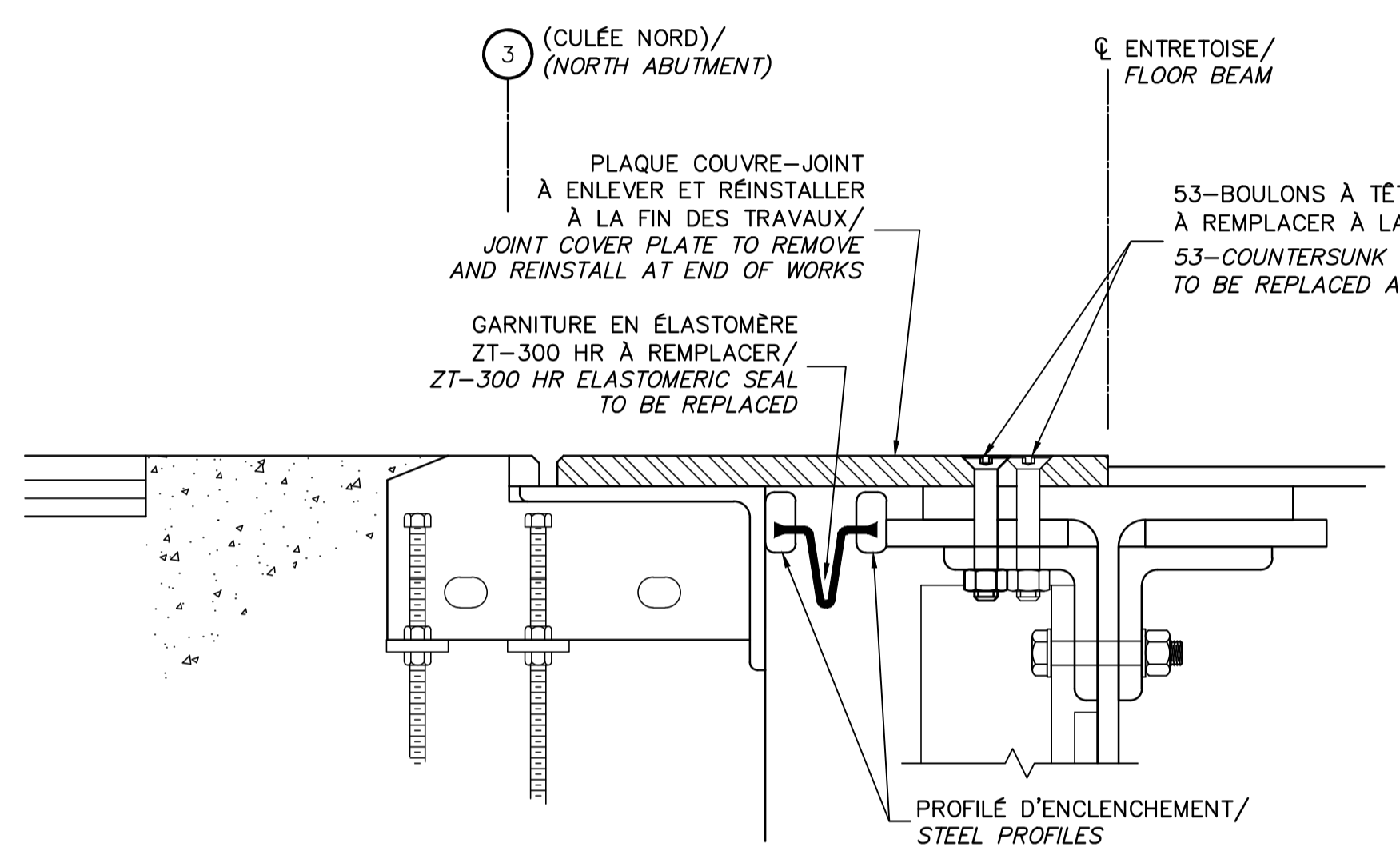
CONDUIT ÉLECTRIQUE
 À CONFIRMER ET PROTÉGER /
 ELECTRICAL CONDUITS TO BE
 CONFIRMED AND PROTECTED

CLÔTURE DE CHANTIER D'UN AUTRE
 ENTREPRENEUR, VOIR NOTE 1 /
 CONSTRUCTION FENCE OF ANOTHER
 CONTRACTOR, SEE NOTE 1

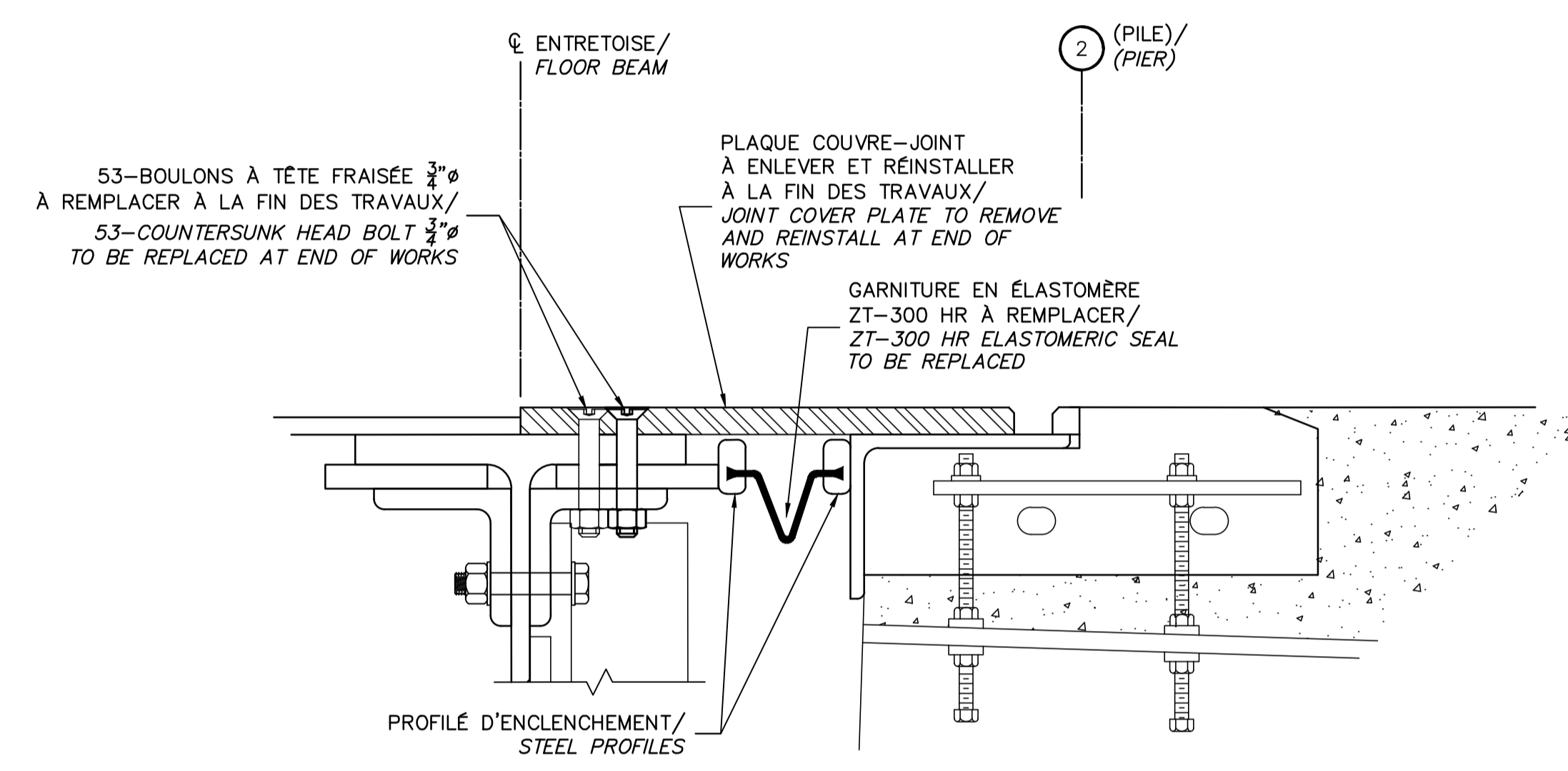
NOTE 1:
 CLÔTURE EN PLACE DU 1er AVRIL AU 30 AVRIL 2020.
 DURANT CETTE PÉRIODE, L'ACCÈS DE L'AVENUE ST-PIERRE
 ET LE RESTE DE LA ZONE SERONT DISPONIBLES POUR
 L'ENTREPRENEUR. PAR LA SUITE, LA ZONE COMPLÈTE DE
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 FENCE IN PLACE FROM APRIL 1 TO APRIL 30, 2020.
 DURING THIS PERIOD, ACCESS TO AVENUE ST-PIERRE AND
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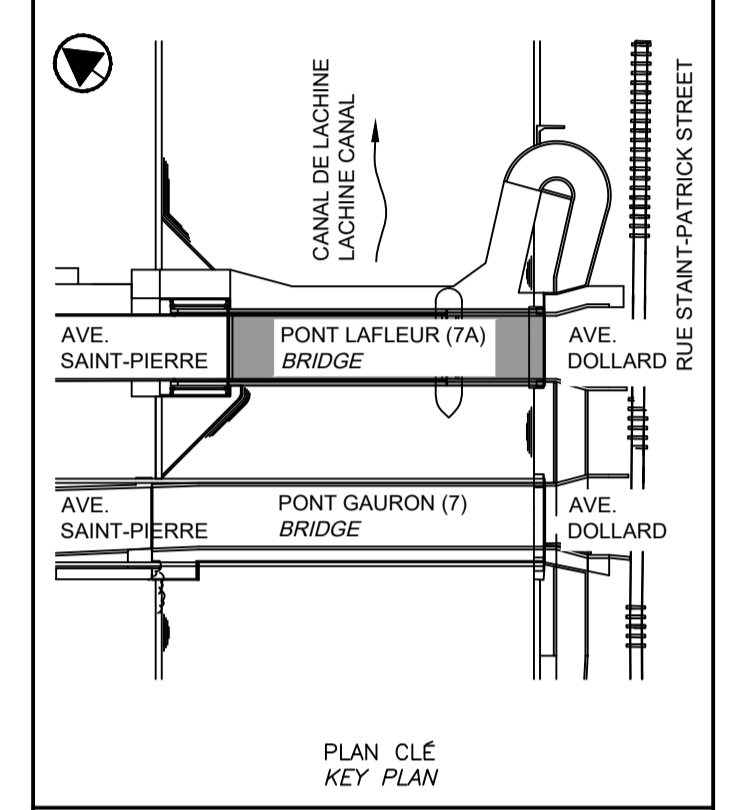
VUE EN PLAN / PLAN VIEW
 ÉCH./SCALE 1:20
 JOINT À LA PILE MONTRÉ – (JOINT À LA CULÉE NORD INVERSÉ)/
 JOINT AT PIER SHOWN – (JOINT AT NORTH ABUTMENT REVERSED)



COUPE / SECTION A
 ÉCH./SCALE 1:5



COUPE / SECTION B
 ÉCH./SCALE 1:5



PLAN CLÉ / KEY PLAN

| révisions / revisions | date |
|-----------------------|---|
| 01 | ADDENDA No. 1 / ADDENDUM No. 1 2020/03/13 |
| 00 | ÉMIS POUR SOUMISSION / ISSUED FOR TENDER 2020/02/11 |

Projet / Project: PARCS CANADA / PARKS CANADA

RÉFECTION DU PONT LAFLEUR (7A)
 CANAL DE LACHINE – MONTRÉAL, QUÉBEC
 REFECTION OF BRIDGE LAFLEUR (7A)
 LACHINE CANAL – MONTRÉAL, QUÉBEC

Dessin / Drawing: STRUCTURE
 ÉTANCHÉISATION DES JOINTS DE TABLIER À LA PILE ET À LA CULÉE NORD
 SEALING OF DECK JOINTS AT THE PIER AND THE NORTH ABUTMENT

| | |
|---|--------------------------------------|
| Conçu par / Designed by: Jean-François Cloutier, ing. | Date: 2019/12/20 |
| Dessiné par / Drawn by: Mario Senterre | Date: 2019/12/20 |
| Approuvé par / Approved by: Jean Lizotte, ing. | Date: 2019/12/20 |
| Soumission / Tender: Parcs Canada / Parks Canada | 2019 |
| Administrateur de projets APC / PCA Project Manager | |
| No de projet / Project number: CLAC-1524 | No de contrat / Contract number: APC |
| Norm du fichier / File name: CL-02-221.09.DWG | No de classement: CL-02-221.09 |
| No de plan ou dessin / File name: CL-02-221.09 | No feuillet / Drawing no: 09/14 |

NOTES :

- EN PRÉSENCE DU REPRÉSENTANT DU MINISTÈRE, L'ENTREPRENEUR DOIT PROCÉDER À UN ESSAI D'ÉTANCHÉITÉ DE LA GARNITURE À L'AIDE D'UN JET D'EAU DE 20 MM DE DIAMÈTRE ET D'UNE PRESSION MINIMALE DE 700 KPA. LE JET D'EAU DOIT ÊTRE MAINTENU AU-DESSUS DU JOINT AVEC UN MOUVEMENT DE VA-ET-VIENT PENDANT UNE PÉRIODE D'AU MOINS 30 MINUTES. L'ENTREPRENEUR DOIT FOURNIR AU REPRÉSENTANT DU MINISTÈRE L'ACCÈS À L'ASSISE DU TABLIER SITUÉE SOUS LE JOINT DE TABLIER LORS DE L'ESSAI D'ÉTANCHÉITÉ.
- TOUTE GARNITURE NON ÉTANCHE DOIT ÊTRE REMPLACÉE ET SUBIR UN NOUVEL ESSAI D'ÉTANCHÉITÉ. AUCUNE RÉPARATION DE LA GARNITURE N'EST AUTORISÉE.

NOTES :

- IN THE PRESENCE OF THE GOVERNMENT REPRESENTATIVE, THE CONTRACTOR SHALL CONDUCT A TRIM LEAK TEST USING A WATER JET OF 20 MM DIAMETER AND A MINIMUM PRESSURE OF 700 KPA. THE WATER JET MUST BE HELD OVER THE JOINT WITH A BACK AND FORTH MOTION FOR A PERIOD OF AT LEAST 30 MINUTES. THE CONTRACTOR MUST PROVIDE THE GOVERNMENT REPRESENTATIVE WITH ACCESS TO THE DECK SEAT UNDER THE DECK SEAL DURING THE LEAK TEST
- ANY UNSEALED TRIM MUST BE REPLACED AND RETESTED. NO REPAIR OF THE TRIM IS ALLOWED.

LÉGENDE / LEGEND:

BÉTON EXISTANT / EXISTING CONCRÈTE

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Canal

Project N° CLAC-1524
Addendum n° 01

Specifications

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 26 05 00 - Common Work Results for Electrical.

1.2 REFERENCE STANDARDS

- .1 American National Standards Institute (ANSI).
 - .1 ANSI C82.1-04, Lamp Ballasts-Line Frequency Fluorescent Lamp Ballast.
 - .2 ANSI C82.4-02(R2007), Ballasts for High-Intensity-Discharge and Low-Pressure Sodium Lamps Multi Supply Type.
- .2 American National Standards Institute/Institute of Electrical and Electronics Engineers (ANSI/IEEE).
 - .1 ANSI/IEEE C62.41-1991, Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits.
- .3 ASTM International Inc.
 - .1 ASTM F1137-00(2006), Standard Specification for Phosphate/Oil and Phosphate/Organic Corrosion Protective Coatings for Fasteners.
- .4 CSA Group (CSA).
- .5 ICES-005-07, Radio Frequency Lighting Devices.
- .6 Underwriters Laboratories of Canada (ULC).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 -Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications, and data sheet, and include product characteristics, performance criteria, physical size, finish, and limitations.
 - .2 Provide complete photometric data prepared by independent testing laboratory for luminaires where specified, for approval by Departmental Representative.
 - .3 Photometric data to include: VCP Table where applicable.

1.4 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.

Part 2 Products

2.1 TYPE C LAMP POST

- .1 General.
 - .1 The streetlights are designed to meet the requirements of the Canadian Highway Bridge Calculation Code CAN/CSA-S6. The calculations must be provided as well as the workshop drawings of the poles and stems, and must be signed and sealed by a member engineer in good standing of the Order of Engineers of Quebec.
- .2 Product.
 - .1 Steel pole.
 - .1 Pole: Is made of a tube of 4 in. (102 mm) round in high-tensile steel, having a wall of 0.250 in. (6.4 mm) thick, welded to the upper and lower part of the anchor base.
 - .2 Access door: The pole is equipped with an opening of 2 in. x 4½ in. (51 mm x 114 mm) whose centre is 20 in. (508 mm) of the bottom of the anchor base, complete with a sealed aluminum door and a copper grounding terminal. The pole is equipped with a second opening of 2 in. x 4½ in. (51 mm x 114 mm) at 0° of the standard access door, complete with an aluminum watertight door, allowing access to the wire mill.
 - .3 Base cover: Molded aluminum 356 round shape in two sections, mechanically assembled using stainless-steel screws.
 - .4 Hardware: All accessible fasteners from the outside will be stainless steel and will be coated with a ceramic sealer to reduce the attachment of parts. All gaskets and gaskets are ethylene propylene EPDM and/or silicone.
 - .5 Finish: Black textured color (BKTX). Application of thermosetting polyester paint (4 mils/100 microns). The chemical compounds constituting the thermosetting resins must provide resistance to ultraviolet and saline mist according to ASTM Standard-B117-73 and be impervious to moisture according to ASTM-D2247-68.
 - .2 Lighting fixture.
 - .1 Description of the components:
 - .1 Roof: Made of injection-molded 360.1 aluminum and mechanically assembled to the heatsink.
 - .2 Cage: Round-shaped, the cage is equipped with four arms with a single-piece molded technical ring in aluminum 360.1 per injection and is mechanically assembled on the sleeve.
 - .3 Sleeve: Aluminum A 360.1 injection molded, the sleeve is equipped with a watertight door giving access to the regulator and a connector block that is used with bare wires (max. 2 gauge) in the primary. Sealing factor IP66. Complete with easy-to-install self-adjusting system with 2 3/8 pressure screws-16 Unc. Adapts to a post of 4 in. (102 mm) outside diameter x 4 in. (102 mm) of length.

- .4 Lens: Tempered sodocalcite glass, assembled and mechanically sealed to the upper technical ring.
- .5 Lighting system: Type ES, 120 lumens per watt. Composed of 16 high-performance white LEDs, the wattage of the lamp is 20 W. colour temperature 4000 ° K nominal, 70 IRC. Based on the LM80 results, at the end of their lifespan, 50% maintain more than 70% (L70) of their initial luminous flux. Aluminum-based printed circuit used to ensure a better heat transfer and extended the life of the lighting system. The LED platform contains a connector for easy replacement.
- .6 Optical system: (LE2), I.E.S., type II (asymmetric). Equipped with high-performance acrylic lenses optimized by the variation of beam angles in order to achieve maximum spacing, the targeted lumens give a perfect uniformity. The optical system offers an IP66 class sealing protection rating. Photometric performance is certified by an independent laboratory using the standard LM63, LM79 and TM15 (IESNA). On the upper technical ring a marker indicates the street side. Meets the requirements of the starry sky with 0% of light pointing upwards.
- .7 Regulator: High-power factor of 95%. Electronic regulator, frequency between 50-60 Hz. Automatically adjusts to a voltage between 120 and 277 VAC, class I, TDH of up to 20%. Maximum operating ambient temperature of -40°F (-40°C) up to 130°F (55°C). Certified according to ULC Standards. Sealing factor IP66. Assembled on a turntable and equipped with a Tyco-type plug-in to withstand a temperature of 221°F (105°C).

The regulator will reduce the current power sent to the LEDs if the regulator temperature exceeds 176°F (80°C) protecting the LEDs and electrical components.

Equipped with output protection on the circuit, on voltage, current overload, automatic recovery after correction.
- .8 Closing system: An injection-molded 360.1 aluminum technical ring with a hinged latch. The mechanism provides tool-free access to the lamp. A silicone seal with a shape memory helps to ensure the sealing. Sealing factor IP66.
- .9 Electrical components comply with the RoHS. 40°C (104°F) temperature maximum operating ambient.
- .10 Heatsink: Molded aluminum to optimize the efficiency and the life of the LEDs. No moving part cooling system is used.
- .11 Surge protection: Protector 10 K3-pole V for led regulator that protects phase to ground, mass to neutral and ground neutral in accordance with IEEE Guidelines / ANSI C 62.41.2.

- .3 Finishing.
 - .1 The color of the lighting fixtures must be black textured (BKTX) and applied to the baked polyester powder.
 - .2 The painting process of lighting fixtures should include the following steps:
 - .1 Soap wash heated to 100-120°F;
 - .2 Rinsing with a conditioner at room temperature;
 - .3 Vaporization with zinc phosphate heated to 100-200°F;
 - .4 Rinsing with water at room temperature;
 - .5 Application by spraying a non-chemical sealer, at approximately 90-100°F;
 - .6 Drying;
 - .7 Application by vaporization of polyester powder (electrostatic system);
 - .8 Baking in a convection oven at 500°F.
 - .9 The polyester powder coating must have a minimum thickness of 100 microns (4 thousandths of an inch) electrostatically deposited on all surfaces.
 - .10 The paint coating must meet the requirements of the moisture resistance standards:
 - .1 1 000 hours of exposure according to ASTM-B2247.

and the standards of resistance to ultraviolet rays and saline mist:
 - .2 2 500 hours of exposure according to ASTM-B117.
 - .11 The manufacturer shall provide the certifications demonstrating that his process meets the above-mentioned Standards.
- .4 Material.
 - .1 Lamp post C type:
 - .1 Lighting fixture:
 - .1 Model: Philips MPTC-55W32LED4K-G2-LE4-120/277-AST-RC-SP2-PH9-BKTK or approved equivalent product by Departmental Representative.
 - .2 Pole:
 - .1 Model: Philips SPR4V-14-G-BKTX or approved equivalent product by Departmental Representative.

2.2 TYPE A AND D LIGHTING FIXTURES

- .1 General.
 - .1 The streetlights are designed to meet the requirements of the Canadian Highway Bridge Calculation Code CAN/CSA-S6. The calculations must be provided as well as the workshop drawings of the poles and stems, and must be signed and

sealed by a member engineer in good standing of the Order of Engineers of Quebec.

- .2 Products.
 - .1 Console.
 - .1 Arm: Must be made of construction steel and fitted with an anchor plate and an HSS steel tube with a post. The anchor plate has four holes for its installation on the structure.
- .3 Lighting Fixtures.
 - .1 The housing is A360 injection molded aluminum 0.090 in. (2.4 mm) minimum thickness. The housing accepts a post with a diameter ranging from 1.66 in. (42 mm) to 2³/₈ in. (60 mm) by 6 in. (152 mm) in length. The fastening device includes a reversible zinc-plated mounting bracket, retained by 4 bolts ³/₈-16 UNC. The mounting bracket is pre-assembled for a 2³/₈ in. (60 mm) diameter post. For use on a post de 1.66 in. (42 mm) or 1.9 in. (48 mm) diameter. The mounting bracket must be reversed by others. A molded part in the housing allows an adjustment to ± 5° for ease of maintenance and installation. The enclosure is complete including a secure door preventing it from accidentally falling into the opening and allowing tool-free access to electronic components and a connector block used with bare wires (max. 2 gauge) in the primary. A 13-in. (330 mm) rear clearance is required to remove the door.
 - .2 Lighting system: LEDgine composed of four main components:
 - .1 Heatsink.
 - .2 LED lamp.
 - .3 Optical system.
 - .4 Regulator.
 - .3 Electrical components comply with RoHS. Maximum operating ambient temperature of 40°C (104°F).
 - .4 Heatsink: Molded aluminum to optimize the efficiency and the life of the LEDs. No moving part cooling system is used.
 - .5 Lamp: LED module (included), Philips Lumileds LUXEON R LED type, composed of 160 high performance white LEDs. Colour temperature 4,000 K nominal, 70 IRC. Operating lifetime based on TM extrapolation-21 to obtain the results after which 50% of the LEDs maintain more than 70% (L70) of their initial luminous flux. Aluminum-based printed circuit used to ensure better heat transfer and extend the life of the lighting system.
 - .6 Optical system: IES type. Equipped with optimized high-performance polymer lenses to achieve maximum spacing, the targeted lumens provide perfect uniformity. The optical system offers an IP66 Class sealing protection rating. Photometric performance is certified by an independent laboratory using the LM Standard-63, LM-79 and TM-15 (IESNA). Street side indicated. Meets the requirements of the starry sky with 0% light pointing upwards and "U0" according to IESNA TM-15.
 - .7 Regulator: High power factor of 95%. Electronic regulator, frequency between 50/60 Hz. Automatically adjusts to a voltage between 120 and 277 VAC, Class II, TDH of up to 20%. Maximum operating ambient temperature of -40°F

(-40°C) up to 130°F (55°C). Certified to ULC UL1310 Standards. For wet and dry place. Assembled on a turntable and equipped with a Tyco-type slip plug that is resistant to a temperature of 221°F (105°C). The regulator is compatible for dimmer 0-10 V.

- .8 The regulator must reduce the current power sent to the LEDs, if the temperature of the regulator undergoes an internal overheating protecting the LEDs and the electrical components. Equipped with a short output protection-circuit, surge, current overload, automatic recovery after correction. Includes a 2.5 kV (min) built-in surge protector.
 - .9 Surge protection: Built-in surge protector tested in accordance with ANSI/IEEE C 62.45 ANSI/IEEE c 62.41.2 Scenario I, Category C, high exposure of combined 10 kV/10 kA waveforms for combination line-ground, line-neutral and neutral-ground, and complying with the requirements of US DOE (Department of energy) MSSLC Specification Model (Municipal Solid-State Street Lighting Consortium) for road luminaires for the requirements of electrical immunities for high-level tests 10 kV/10 kA.
 - .10 Sleeve: In injection molded aluminum 360.1, the sleeve is equipped with a watertight door giving access to the regulator and a connector block that is used with bare wires (max. 2 gauge) in the primary. Sealing factor IP66. With an easy-to-install self-adjusting system with two ³/₈ pressure screws-16 UNC. Fits on 4 in. (102 mm) outside diameter x 4 in. (102 mm) long.
 - .11 Manufacturing standards for LED products: Electronic components sensitive to electrostatic discharge (ESD) such as light-emitting diodes (LEDs) are assembled in accordance with the Standards IEC61340-5-1 and ANSI/ESD S 20.20 to eliminate the events of the risk of decreasing the useful life of the product.
 - .12 Vibration resistance: The floor lamp meets the vibration requirements of the ANSI C 136.31 Standard, American National Standard for a Bridge/Viaduct Application (Tested by an independent laboratory for 3G with 100,000 cycles).
- .4 Finishing.
- .1 Finished: Color with black textured finish (BKTX) and complies with AAMA 2603 Standard. Application of a thermosetting polyester paint (4 mils/100 microns) with a tolerance of ± 1 mils/24 microns. Thermosetting resins provide fading resistance according to ASTM D2244, gloss retention according to ASTM D523, and is impervious to moisture according to ASTM D2247.
 - .2 The surface treatment achieves a minimum of 2,000 hours for the resistance to saline mist and the tests are carried out according to the ASTM Standard- B117.
- .5 Material.
- .1 Type A - Lighting fixture:
 - .1 Lighting fixture: Philips, Model RVS-55W32LED4K-G2-LE3-UNV-AST-SP2-RC-PH9-BK or approved equivalent product by Departmental Representative.
 - .2 Console: Specifically made.

- .2 Type D - Lighting fixture:
 - .1 Lighting fixture: Philips, Model RVS-55W32LED4K-G2-LE4-UNV-AST-SP2-RC-PH9-BK or approved equivalent product by Departmental Representative.
 - .2 Console: Specifically made.
- .6 Execution.
 - .1 Installation.
 - .1 Erection of lighting fixtures:
 - .2 After receiving the approval of the Departmental Representative, the Contractor can install the luminaires and consoles, perfectly cleaned beforehand. The anchor bolts and nuts must be coated with a fibrous grease and tightened thoroughly so as not to leave any play.

2.3 LIGHTING FIXTURES - TYPES B, E, AND F

- .1 Description.
 - .1 These projectors are a high-output, exterior-rated LED lighting luminaires designed for accent and site lighting. Architectural and Landscape versions deliver high-quality white light output in 2700 K, 3000 K, 3500 K, and 4000 K to support a range of uplighting, floodlighting, and decorative lighting applications.
 - .2 Expands customization with a wide range of new accessory options. In addition to the native 6° lens, six (6) different spread lenses can customize the luminaire to produce 10°, 20°, 40°, 60°, 80°, and 10° x 40° (asymmetric) beam angles. Four (4) housing color choices (black, gray, white, and bronze) - plus the option to add a louver, full glare shield, and half glare shield.
 - .3 Complies with ASTM B117 corrosion resistance standard for > 1,500 hours and ANSI C136.31-2010 Standard with a 3G vibration rating.
 - .4 Integrates patented technology that controls power output to luminaires directly from line voltage - rapidly, efficiently, and accurately. The data enabler control merges line voltage with control data and delivers them to luminaires over a single standard cable, dramatically simplifying installation, and lowering total system cost.
 - .5 Improves durability with new flat lens that prevents water from pooling into the luminaire, keeping the LEDs protected and secure over the course of a luminaire's lifetime.
 - .6 Universal power input range of 100 to 277 VAC.
 - .7 Precision Dimming - Smooth dimming down to 1% with optional Data controller and digital control interface. Optional ELV dimming versions available as custom configurations.
 - .8 Works seamlessly with a full range of controllers, including Light System Manager, Video System Manager, Video System Manager Pro, iPlayer 3, Antumbra Color Keypad, and ColorDial Pro - as well as third-party controllers.

.2 Specification.

.1 Output.

| | | | |
|--------------------------|---------|---------|---------|
| Colour Temp. | 4,000 K | 4,000 K | 4,000 K |
| Beam Angle | 10° | 20° | 40° |
| Lumens | 1,847 | 1,812 | 1,782 |
| Efficiency (lm/W) | 65.4 | 64.4 | 63.4 |
| CRI | 82 | 82 | 82 |

.2 Electrical.

- .1 Input Voltage: 100 to 277 VAC, auto-ranging, 50/60 Hz Power Consumption 30 W (Maximum at full output, steady state)
- .2 Power Factor:> 0.9 at 100 to 240 VAC; > 0.85 at 277 VAC.

.3 Control.

- .1 Dimmer:
 - .1 "ON/OFF", precision dimming by four (4) conductor cables and Data Enabler Pro, Remote Monitoring and Management, ActiveSite Ready, works with Interact Landmark.

.4 Lumen Maintenance.

| Threshold | Ambient Temperature | Reported | Calculated |
|------------------|----------------------------|-----------------|-------------------|
| L90 | 25°C | 28,000 | 28,000 |
| | 50°C | 27,000 | 27,000 |
| L70 | 25°C | 51,000 | 84,000 |
| | 50°C | 51,000 | 83,000 |
| L50 | 25°C | 51,000 | > 100,000 |
| | 50°C | 51,000 | > 100,000 |

.5 Physical.

- .1 Dimensions: 287 x 210 x 186 mm (11.3 x 8.3 x 7.3 in.) (height x width x depth).
- .2 Weight: 5.5 kg (12.1 lbs).
- .3 Effective Projected Area (EPA): 0.026 m² (0.28 ft²).
- .4 Luminaire plus Full Glare Shield.
- .5 Housing Material: Die-cast aluminium, powder-coated finish, lens clear tempered glass.
- .6 Luminaire Connections: 1.8 m (6 ft) unified power/data cable.

.6 Temperature Ranges.

- .1 -40 to 50 °C (-40 to 122°F) / Operating.
- .2 -20 to 50 °C (-4 to 122°F) / Startup.
- .3 -40 to 80 °C (-40 to 176°F) / Storage.

.7 Vibration Resistance.

- .1 Complies with ANSI C136.31, 3G.
- .2 Mechanical Impact: IK08.

- .8 Corrosion Resistance.
 - .1 Complies with ASTM B117 Standard for > 1,500 hours.
 - .2 Humidity: 0 to 95%, non-condensing.
- .9 Certification and Safety.
 - .1 Approbation: UL/cUL, FCC Class A, CE, PSE, CQC, RCM.
 - .2 Certification: DLC.
 - .3 Environment: Dry/Damp/Wet Location, IP66.
- .10 Manufacturer.
 - .1 Lighting fixtures.
 - .1 Type B:
 - .1 Luminaire:
 - .1 Color Kinetics, eW Burst PowerCore gen2, 4,000 K, Black housing, Architectural.
 - .2 Spec No.: 523-000098-16.
 - .3 10° spread lens: 120-000189-18.
 - .4 Trim ring, black: 120-000189-21.
 - .5 Wiring box: 106-000011-30.
 - .6 Power supply: 106-000004-00.
 - .7 Support: Custom made.
 - .8 Or approved equivalent product by Departmental Representative
 - .2 Type E:
 - .1 Luminaire:
 - .1 Color Kinetics, eW Burst PowerCore gen2, 4,000 K, Black housing, Architectural.
 - .2 Spec No.: 523-000098-16.
 - .3 10° spread lens: 120-000189-12.
 - .4 Trim ring, black: 120-000189-21.
 - .5 Wiring box: 106-000011-30.
 - .6 Power supply: 106-000004-00.
 - .7 Support: Custom made.
 - .8 Or approved equivalent product by Departmental Representative
 - .3 Type F:
 - .1 Luminaire:
 - .1 Color Kinetics, eW Burst PowerCore gen2, 4,000 K, Black housing, Architectural.
 - .2 Spec No.: 523-000098-16.
 - .3 10° Spread Lens: 120-000189-13.
 - .4 Trim Ring, black: 120-000189-21.
 - .5 Wiring box: 106-000011-30.

- .6 Power supply: 106-000004-00.
- .7 Support: Custom made.
- .8 Or approved equivalent product by
Departmental Representative

Part 3 Execution

3.1 INSTALLATION

- .1 Locate and install the lamp posts and lighting fixtures as indicated.

3.2 WIRING

- .1 Connect the equipment to electrical and control circuits:
 - .1 Install wiring in rigid conduit.

3.3 CLEANING

- .1 Clean and remove surplus materials, excess materials, rubbish, tools, and equipment.

END OF SECTION