Corporate Finance Department
Materials Management Division

568-2020 ADDENDUM 4

WELLINGTON CRESCENT RIVERBANK, PATH, AND ROADWAY PROJECT

ISSUED: October 29, 2020
BY: Bruno Pierre Arpin, P.Eng.
TELEPHONE NO. 204 896-1209

URGENT

PLEASE FORWARD THIS DOCUMENT TO WHOEVER IS IN POSSESSION OF THE TENDER

THIS ADDENDUM SHALL BE INCORPORATED INTO THE TENDER AND SHALL FORM A PART OF THE CONTRACT DOCUMENTS

Template Version: A20190115

Please note the following and attached changes, corrections, additions, deletions, information and/or instructions in connection with the Tender, and be governed accordingly. Failure to acknowledge receipt of this Addendum in Paragraph 10 of Form A: Bid may render your Bid non-responsive.

PART A – BID SUBMISSION

Replace: 568-2020 Addendum 2 Bid Submission with 568-2020 Addendum **4** - Bid Submission. The following is a summary of changes incorporated in the replacement Bid Submission:

Form B(R1): Add Items C.43 to C.45 inclusive.

Revise description of Item F.2 a) v) from “Bur Oak (caliper)” to “Bur Oak (5 gal)”.

Revise description of Item F.2 a) vi) from “American Basswood (5 gal)” to “American Basswood (caliper)”.

Decrease approx. quantity of Item F.2 a) vi) from 30 to 5.

Revise description of Item F.2 a) vii) from “Prairie Expedition Elm (5 gal)” to “Prairie Expedition Elm (caliper)”.

Revise description of Item F.2 a) viii) from “Discovery Elm (caliper)” to “Discovery Elm (5 gal)”.

Revise description of Item F.2 b) i) from “Black Hills White Spruce (B&B 1.8-2.4m tall)” to “Black Hills White Spruce (W.B. Machine Dug, 2.0m height)”.

Revise description of Item F.8 from “River Access Path and Area” to “River Access Trail and Area”.

Delete Item G.2.

Add Items H.1 to H.10 inclusive.

PART B – BIDDING PROCEDURES

Add:	B10.6	Form B: Prices is organized into Parts: Part 1 of the Work and Part 2 of the Work. Bidders shall provide a total price for each Part and, on the summary sheet, a Total Bid Price consisting of the sum of prices for Part 1 and Part 2.
Add:	B18.2.1	Any bid with an apparent imbalance between the unit prices in Part 1 and Part 2 may be determined to be non-responsive and rejected by the Award Authority in its sole discretion, acting reasonably.

Add:	B19.5	As noted in D2 and identified in Form B: Prices, the Work of Part 2 will be contingent upon Manitoba Hydro approving funding for the Work. If sufficient funding for Part 2 Work is not approved by Manitoba Hydro the City shall have the right to eliminate all or any portion of Part 2 Work in accordance with D2.

PART D – SUPPLEMENTAL CONDITIONS

Revise:	D3.1 to read:	Part 1 – City Funded Work: The Work to be done under the Contract shall generally, albeit not in its entirety, consist of:
Add:	D3.2	Part 2 – Manitoba Hydro Funded Work shall include Streetlighting and Associated Works.
Add:	D3.3	The Contractor shall not commence Part 2 of the Work as described in D3 and identified in Form B: Prices, unless he/she has received notification from the Contract Administrator that the City has received notice of sufficient funding from the Manitoba Hydro.

PART E – SPECIFICATIONS

Revise: E1.4 to read

The following are applicable to the Work:

City Drawing No.	Drawing Name/Title
GENERAL	
P-3536-01	COVER SHEET
P-3536-02-R3	DRAWING LIST
P-3536-03	GENERAL LAYOUT AND MAJOR ITEM WORKS
P-3536-04-R1	CONSTRUCTION STAGING - OVERVIEW (SHEET 1 OF 6)
P-3536-05-R1	CONSTRUCTION STAGING - SLOPE STABILIZATION WORKS (SHEET 2 OF 6)
P-3536-06-R1	CONSTRUCTION STAGING - UNDERGROUND WORKS (SHEET 3 OF 6)
P-3536-07-R1	CONSTRUCTION STAGING - PATH AND ROADWAY WORKS - STAGE 1 (SHEET 4 OF 6)
P-3536-08-R1	CONSTRUCTION STAGING - PATH AND ROADWAY WORKS - STAGE 2 (SHEET 5 OF 6)
P-3536-09-R1	CONSTRUCTION STAGING - LANDSCAPE WORKS (SHEET 6 OF 6)
SLOPE STABILIZATION	
P-3536-10	EXISTING CONDTIONS AND TEST HOLE LOCATIONS
P-3536-11	TILL SURFACE PLAN, STRATIGRAPHIC PROFILE AND SECTIONS
P-3536-12	RIPRAP PLAN, SECTIONS AND DETAILS (SHEET 1 OF 2)
P-3536-13	RIPRAP PLAN, SECTIONS AND DETAILS (SHEET 2 OF 2)
P-3536-14	WEST SHEAR KEY PLAN, PROFILE AND DETAILS
P-3536-15	EAST SHEAR KEY PLAN, PROFILE AND DETAILS
P-3536-16	SCARP/ TRAILS INTERFACE PLAN AND SECTIONS
P-3536-17	CONSTRUCTION SEQUENCING SCHEMATICS
P-3536-18	EROSION CONTROL MEASURES
UNDERGROUND WORKS	
1-303O-D0005-001	UNDERGROUND & OUTFALL WORKS - INDEX SHEET
1-303O-C0015-001	PARK BOULEVARD OUTFALL - PLAN AND PROFILES - S-MA60004165
1-303O-C0016-001	DONCASTER - OUTFALL PLAN AND PROFILES - S-MA70019277
1-303O-C0017-001	OUTFALLS - MISCELLANEOUS DETAILS - S-MA60004165 AND S-MA70019277
12598-R1	FORCE MAIN - PLAN AND PROFILE - S-MA70018599
12599-R1	FORCE MAIN - DETAILS - S-MA70018599
12600-R1	SEWERMAIN - PLAN AND PROFILE - S-MA60006608, S-MA60006609 & S-MA60006610

City Drawing No.	Drawing Name/Title
STORM DRAINS	
P-3536-19-R2	STORM DRAINS LOCATIONS
P-3536-20-R2	STORM DRAINS SD58A AND SD-01 PLAN AND PROFILES
P-3536-21-R2	STORM DRAINS SD-11 AND SD-10 PLAN AND PROFILES
P-3536-22-R2	STORM DRAINS SD-02 AND SD-17 PLAN AND PROFILES
P-3536-23-R2	STORM DRAINS SD-14 AND SD6/19 PLAN AND PROFILES
P-3536-24-R2	STROM DRAINS SD-07 AND SD-15 PLAN AND PROFILES
P-3536-25-R2	STORM DRAINS SD-08 PLAN AND PROFILE
P-3536-26-R1	STORM DRAIN DETAILS
PATH AND ROADWAY WORKS	
P-3536-27-R1	INDEX PAGE
P-3536-28	KEY PLAN
P-3536-29	ROADWAY - HORIZONTAL GEOMETRY - ROAD
P-3536-30-R1	ROADWAY PLAN AND PROFILE STA. 9+90 TO 11+10
P-3536-31-R1	ROADWAY PLAN AND PROFILE STA. 11+10 TO 12+25
P-3536-32-R1	ROADWAY PLAN AND PROFILE STA. 12+25 TO 13+75
P-3536-33-R1	ROADWAY PLAN AND PROFILE STA. 13+75 TO 15+10
P-3536-34-R1	ROADWAY PLAN AND PROFILE STA. 15+10 TO FRANK ST
P-3536-35	PATHWAY - HORIZONTAL GEOMETRY (SHEET 1 OF 2)
P-3536-36	PATHWAY - HORIZONTAL GEOMETRY (SHEET 2 OF 2)
P-3536-37	MULTI-USE PATHWAY STA. 1+00 TO 2+25
P-3536-38	MULTI-USE PATHWAY STA. 2+25 TO 3+50
P-3536-39	MULTI-USE PATHWAY STA. 3+50 TO 4+75
P-3536-40	MULTI-USE PATHWAY STA. 4+75 TO 6+00
P-3536-41	MULTI-USE PATHWAY STA. 6+00 TO 7+25
P-3536-42	MULTI-USE PATHWAY STA. 7+25 TO 8+50
P-3536-43	MULTI-USE PATHWAY STA. 8+50 TO 9+75
P-3536-44	MULTI-USE PATHWAY STA. 9+75 TO 11+00
P-3536-45-R1	DETAILS
P-3536-46	INTERSECTION DETAILS (SHEET 1 OF 2)
P-3536-47	INTERSECTION DETAILS (SHEET 2 OF 2)
LANDSCAPE WORKS	
P-3536-48-R1	LANDSCAPE / NATURALIZATION PLAN (WEST)
P-3536-49-R1	LANDSCAPE / NATURALIZATION PLAN (EAST)
P-3536-50-R1	LANDSCAPE ENLARGEMENT PLAN (SHEET 1 OF 6)
P-3536-51-R1	LANDSCAPE ENLARGEMENT PLAN (SHEET 2 OF 6)
P-3536-52-R1	LANDSCAPE ENLARGEMENT PLAN (SHEET 3 OF 6)
P-3536-53-R1	LANDSCAPE ENLARGEMENT PLAN (SHEET 4 OF 6)
P-3536-54-R1	LANDSCAPE ENLARGEMENT PLAN (SHEET 5 OF 6)
P-3536-55-R1	LANDSCAPE ENLARGEMENT PLAN (SHEET 6 OF 6)
P-3536-56-R2	LANDSCAPE DETAILS (SHEET 1 OF 4)
P-3536-57-R1	LANDSCAPE DETAILS (SHEET 2 OF 4)
P-3536-58-R1	LANDSCAPE DETAILS (SHEET 3 OF 4)
P-3536-59-R1	LANDSCAPE DETAILS (SHEET 4 OF 4)
P-3536-60	TREATMENT INVENTORY OF EXISTING TREES
P-3536-61	PARK GATE PLAN, DETAILS & SPECIFICATIONS (SHEET 1 OF 2)
P-3536-62	PARK GATE PLAN, DETAILS & SPECIFICATIONS (SHEET 2 OF 2)
MANITOBA HYDRO WORKS	
1-04707—DE-50000-0526	RELOCATE STREET LIGHTS, SL CABLES AND ALL ASSOCIATED EQUIPMENT

Revise: E15.1 to read: The Contractor shall plan and implement the Work of this Contract strictly in accordance with the requirements of the Environmental Protection Plan, as herein specified. The

Contractor shall be responsible for all costs associated with the Environmental Protection Plan and is considered incidental to the Work and no separate measurement or payment will be made.

Revise: E15.3(h)(ii) to read: The Contractor shall provide, install, and maintain adequate warning signs and lighting on any structure beyond the water's edge to notify boats and other craft navigating on the Assiniboine River that construction is underway. These warnings shall meet the requirements of Transport Canada: signs stating “Construction Ahead” must be placed and maintained 50 metres upstream and 50 metres downstream of the work, must be legible from a minimum distance of 50 metres, must display black lettering on a yellow or orange background, must be place and maintained during all periods of in-stream activity, and must be removed immediately upon completion of the permanent work. The Minister or his representatives must be allowed unimpeded access to any site related to the project for inspection and/or monitoring purposes.

Delete: E15.3.1

Revise: E17.1(c)(i) to read: Work, as required, along and within the entire site.

Delete: E30.3.7(a)

Revise: E50.5.1(a) to read: Deciduous Trees

(i) Manitoba Maple (5 gal)
(ii) Ohio Buckeye (5 gal)
(iii) Hackberry (5 gal)
(iv) Plains Cottonwood (caliper)
(v) Bur Oak (5 gal)
(vi) American Basswood (65 mm caliper)
(vii) Prairie Expedition Elm (65 mm caliper)
(viii) Discovery Elm (5 gal)

Revise: E50.5.1(b) to read: Coniferous Trees

(i) Black Hills White Spruce (W.B. Machine Dug, 2.0m height)

Delete: E55.1(a)

Delete: E55.3(c)

Delete: E55.4(b)

Revise: E56.2.1 to read: All material shall conform to CW 3110-R12, CW3130-R5 and this Specification. Where the two do not agree, this Specification shall take precedence. All materials supplied under this Specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.

Revise: E56.2.4(a) to read: Geotextile fabric shall be in accordance with CW 3130-R5.

Revise: E56.3.5(a) to read: Geotextile fabric to be placed between Subgrade and granular base as per CW 3130-R5.

Add: **E58** **Vault and Duct Removal**

E58.1 Notwithstanding and in addition to the requirements of CW2030 the following shall be applicable to the Work.

E58.2 Description

E58.2.1 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the removal of existing concrete vaults and ducts.

(a) Each concrete vault is estimated at 2.0m wide x 2.0m long x 2.5m deep.

(b) Each concrete duct is estimated at 1.0m wide and 0.3m deep accommodating 3 conduit lines.

E58.3 Construction Methods

E58.3.1 All concrete and associated vault/duct components shall be removed and appropriately disposed off site.

E58.4 Measurement and Payment.

E58.4.1 The removal of concrete vaults will be measured and paid for at the Contract Unit Price per unit for "Removal of Concrete Vault".

E58.4.2 The removal of concrete duct will be measured and paid for at the Contract Unit Price per cubic metre for "Removal of Concrete Duct". Measured volume will include volume of internal conduit lines.

E58.4.3 Backfill material required to replace rock and unsuitable material will be measured on a volume basis for each type of backfill and paid for at the Contract Unit Price per cubic metre for "Backfill Material".

(a) Backfill material will be measured by cross sections in its compacted position and the volume computed using the method of Average End Areas

(b) Backfill material required for over excavation beyond specified limits will be at own expense.

Add: **E59. Installation of Street Lighting and Associated Works**

E59.1 DEFINITIONS

LIMITS OF APPROACH means the shortest distance that is permissible between live high voltage (>750 volts) conductors or apparatus and any part of a worker's body, material or tools being handled, or equipment operated.

MANITOBA HYDRO CENTRAL STORES means Manitoba Hydro's Waverley Service and Reclaim Centre - 1840 Chevrier Blvd - Winnipeg, Manitoba

OVERHEAD FEED means an electrical supply via an overhead conductor connected between streetlight standards. Typically strung between standards on a temporary basis.

OVERHEAD SOURCE means an electrical supply from Manitoba Hydro's system. (Typically, an overhead conductor from a wooden distribution pole or a DIP/RISER located on a wooden distribution pole.)

RECLAIM material means existing material that has been removed from Manitoba Hydro's system and to be returned to Manitoba Hydro.

SCRAP material means existing material that has been removed from Manitoba Hydro's system and to be recycled/disposed of by the Contractor.

SURPLUS material means new material that has been requisitioned by the Contractor and not incorporated into the work at the end of the Contract.

WORK CLEARANCE means an ELECTRICAL AND/OR NATURAL GAS FACILITIES LOCATE form (see SAMPLE ONLY included as Appendix F) issued by each of Manitoba Hydro's Customer Service Centre (CSC) affected to permit work to commence (Permit to work).

E59.2 DESCRIPTION

E59.2.1 The work shall consist of the supply of all supervision, labour, materials (except as indicated under MATERIAL SUPPLIED BY MANITOBA HYDRO below) insurance, tools, backfill and equipment (and their maintenance), transportation, fuel, oil, meals and lodging, mobilization and de-mobilization, and warranty of workmanship as required to install and remove temporary Overhead Feeds, remove existing street light poles as required, install new street light poles and associated underground cables/conduits, all in accordance with the requirements specified in the tender documents.

E59.3 WORK LOCATIONS

E59.3.1 The proposed street light installation and removals are shown on construction drawings and are as follows:

(a) Wellington Cres

E59.4 COORDINATION OF WORK

E59.4.1 The Contractor shall provide a minimum of ten (10) working days notice to Manitoba Hydro prior to the start of construction. The work shall be conducted and coordinated with Manitoba Hydro in a manner to ensure street lighting is maintained at all times for the duration of the work. The construction drawings provide the Proposed Sequence of Construction.

E59.4.2 The Contractor shall obtain Work Clearance from Manitoba Hydro's Customer Service Centre(s) (CSC) affected prior to the work commencing. No additional compensation shall be paid to the Contractor for delays obtaining Work Clearance for any reason.

E59.4.3 Manitoba Hydro's CSC will provide the Limits of Approach applicable to the Contractor on the Work Clearance form.

E59.5 ORIENTATION

E59.5.1 Prior to the commencement of the proposed work, the Contractor's crew foremen, electricians, and other key personnel shall attend one (1) day of orientation provided by Manitoba Hydro for various operations such as cable handling, cable splicing/termination, installation of street light poles, concrete bases, luminaires and various other construction standards and procedures. The Contractor will be responsible for all costs associated with personnel salaries, travel, sustenance and overheads, etc., during training.

E59.6 PRE-CONSTRUCTION MEETING

E59.6.1 Prior to the commencement of the work, the Contractor shall attend a pre-construction meeting with Manitoba Hydro. The agenda for this meeting shall include but not be limited to the following:

(a) Reference the Contractor's Safe work Procedures;

(b) Prime Contractor;

(c) materials;

(d) sequence of construction;

(e) communication plan;

(f) any training requirements & qualifications;

(g) Drawing and Project review;

(h) a review of the Contractor's proposed work schedule; and

(i) any and all other topics of clarification that the Contractor and the Contract Administrator may wish to discuss.

E59.6.2 The Contractor's cost to attend this pre-construction meeting shall be incorporated into the unit prices for the work.

E59.7 QUALIFICATIONS AND CERTIFICATION

E59.7.1 The Contractor's Crew Foreman, installers and other key Contractor's Personnel shall possess the necessary certification, licensing, training, experience and familiarity with safety rules, procedures and hazards relating to the work. Journeyman Power Line Technician (PLT), Journeyman Lineman, Journeyman Cableman or Journeyman Electricians shall be required to perform portions of this work.

E59.7.2 Journeyman Power Line Technician (PLT), Journeyman Cableman and Journeyman Lineman are also required to possess a "Limited Specialized Trade Licence – 'M-P' Licence – Power Line" issued by the Province of Manitoba.

E59.7.3 Office of the Fire Commissioner Bulletin OFC 18 – 002 dated May 23, 2018 regarding Electrician Licenses discusses the requirements for a "Limited Specialized Trade Licence – 'M-P' Licence – Power Line".

For more information contact:
Office of the Fire Commissioner
500-401 York Avenue
Winnipeg, Manitoba R3C 0P8
Tel. 204-945-3373

Fax 204-948-2089
Toll Free: 1-800-282-8069
firecomm@gov.mb.ca

E59.7.4 Licensed Journeyman Electricians or Journeyman PLT or Journeyman Cableman or Journeyman Lineman ARE REQUIRED for all cable handling operations included but not limited to: disconnecting cables in the handhole, installation and removal of temporary overhead feeds, installation and connection of ground rods, streetlight cable splices, termination of streetlight cables in handholds and at luminaires. The Contractor shall employ sufficient qualified personnel on its crews to conform to the Electrician's Licensing Act. The Contractor shall be prepared to provide proof of licences to Manitoba Hydro upon request.

E59.7.5 The Contractor shall assess the hazards associated with the work and have documented Safe work Procedures to perform the work. It is the Contractor's responsibility to train employees on these procedures. The Contractor shall be prepared to provide proof of training to Manitoba Hydro upon request.

E59.8 REFERENCED STANDARD CONSTRUCTION SPECIFICATIONS

E59.8.1 In addition to these Specifications, the work to be performed by the Contractor relative to the installation and/or replacement of street lighting poles, concrete bases and associated cabling shall be in accordance with the following:

(a) Manitoba Hydro 66kV and Below Standards;

(b) CSA C22.3 No. 7 (latest edition);

(c) Canadian Electrical Code (CEC) Part 1 (latest edition); and

(d) Any other applicable codes

(e) (collectively, the "Standards")

E59.8.2 Revisions and updates to the Manitoba Hydro 66kV and Below Standards are issued periodically and the latest issued version of the Standard will apply. For the convenience of the Contractor for bidding purposes, excerpts of the Manitoba Hydro 66kV and Below Standards have been included as Appendix C.

E59.8.3 In some cases, Municipal, Provincial or Federal laws or this Technical Specification may be more stringent than the CSA Standards. Whenever conflict exists, the Contractor shall comply with the most stringent requirements applicable at the place of the work.

E59.9 TOOLS, EQUIPMENT AND MATERIALS

E59.9.1 The Contractor shall be required to provide all tools and equipment required for performing the specified tasks. Equipment shall be in good operating condition, shall be properly maintained using original equipment manufacturer replacement parts and shall be provided with letters of testing/inspection from the manufacturer when requested. Where the equipment is provided as a kit with multiple parts and tools, the kit shall be complete with all parts required to perform the designed task. Contractor fabricated tools or equipment will not be accepted for use.

E59.9.2 The Contractor shall obtain the following specific Electrical Equipment including but not limited to:

(a) Compression tool or tools and associated dies to perform compressions to a maximum size of 1/0 Al (MD-6 compression tools shall not be used).

(b) Approved compression tools are:

Manufacture	Type	Model No.	Range
Burndy	In-line, battery	PATMD68-14V	350 Kcmil AL
Cembre	In-line, battery	B54Y (06V081E)	4/0 AWG AL
Burndy	Pistol, battery	BUR PAT60018V	350 Kcmil AL

E59.9.3 Dies shall be of the type shown in Standard CD210-21 and CD 210-24 only, must have identical markings, and compression tool die must match die number stamped on connector.

(a) Modiewark Model #4444 or Fluke 1AC-II Volt Alert potential Indicator

(b) Voltage meter – Fluke model #T3C

(c) Insulated wire cutters – used for cutting cable ends square.

E59.9.4 Alternative equipment manufacturers may be considered upon request by the Contractor and shall be approved for use by Manitoba Hydro prior to use.

E59.9.5 Manitoba Hydro may reject any tools or equipment that do not appear to be in good condition or fail to successfully provide the required function.

E59.10 MATERIAL SUPPLIED BY MANITOBA HYDRO

E59.10.1 Manitoba Hydro shall supply all street light poles, concrete bases, breakaway bases, luminaires, street light arms, ground rods, compression sleeves, grommets, nuts, electrical cables, conduits, relays, cable guards, Gel-caps and all other materials noted in the Standards. The Contractor shall sign receipts indicating the location on which the materials are to be used. The material shall be picked up by the contractor from the following locations:

E59.10.2 Manitoba Hydro Central Stores (contact personnel will be provided to the successful contractor).

E59.10.3 Materials requested will be supplied to the Contractor by Manitoba Hydro upon presentation of Manitoba Hydro's Stores Material Order Form. The Contractor shall assume all responsibilities for the loading, unloading, transportation, proper handling, secure storage and working of the materials and shall make replacements at its own expense in case any material is damaged, stolen or lost due to improper handling, storage or poor workmanship.

E59.10.4 The Contractor shall, at the time of materials release, check and confirm the quantity of materials. Shortages, discrepancies, or damages to materials shall be immediately reported in writing to Manitoba Hydro.

E59.10.5 After commencing performance of the work, the Contractor shall continually monitor all material required for the timely completion of the work and shall report additional material requirements to Manitoba Hydro a minimum of 72 hours prior to materials being required to perform the work. No additional compensation shall be paid as a result of delays due to material shortages where additional material requirements were not reported a minimum of 72 hours prior to being required for the work on an active project.

E59.11 MATERIAL SUPPLIED BY CONTRACTOR

E59.11.1 The Contractor shall be responsible to furnish gravel, sand, ¾" down limestone, ¼" down limestone, protective hose (i.e. typically 2" fire hose), duct seal and pit-run material for backfilling around street light poles and around cables as per the Standards. The cost of furnishing the above listed materials shall be incorporated into the unit prices for the work.

E59.12 SURPLUS, RECLAIM AND SCRAP MATERIAL

E59.12.1 Upon completion of the work, the Contractor shall, at its own expense, deliver to Manitoba Hydro Central Stores, all Surplus materials furnished by Manitoba Hydro and not used in the work, regardless of the location of said material at that time.

E59.12.2 In addition, the Contractor shall, at its own expense, deliver to Manitoba Hydro Central Stores all Reclaim materials from the work specifically HPS luminaires. Manitoba Hydro shall be responsible for the proper disposal of Reclaim HPS luminaires. The HPS bulb shall remain installed and unbroken in the Reclaim luminaire. The Contractor shall handle the Reclaim luminaires with care and shall avoid breaking the bulb or refractor.

E59.12.3 Manitoba Hydro's preference is to recycle as much Scrap Material as practicable. The Contractor is responsible to remove the Scrap Material, transport to the recycler or Manitoba Hydro approved disposal site, pay for any disposal fees and may retain any recycling value.

E59.13 DE-ENERGIZATION AND LOCKOUT

E59.13.1 **Manitoba Hydro -** Where a standard is supplied from an Overhead Source, Manitoba Hydro's staff shall be responsible to disconnect and isolate the street light standard or standards between the standard and Overhead Source. Some street light standards may be temporarily fed from an Overhead Source. This Overhead Source shall be disconnected and removed by Manitoba Hydro staff prior to commencing with the work. The streetlight circuits will not be Locked Out by Manitoba Hydro.

E59.13.2 **The Contractor** - The Contractor shall assess the hazards associated with the work and employ its own Safe Work Procedure for the work to be performed. The Contractor's Safe Work Procedure shall include provisions that the street light circuits will not be Locked Out by Manitoba Hydro. The Contractor's Safe Work Procedure shall achieve Lock Out or techniques equivalent to Lock Out.

E59.13.3 The Contractor shall complete a job planning form (an example is included as Appendix G) on a daily basis before any work commences and provide Manitoba Hydro with copies of the job plans if requested.

E59.14 TEMPORARY OVERHEAD FEEDS

E59.14.1 Manitoba Hydro in consultation with the Contractor will determine if temporary lighting will be provided by the existing street lights or from the new street lights.

E59.14.2 When using the existing poles for temporary lighting, Manitoba Hydro shall remove an Overhead Source in accordance with DE-ENERGIZATION AND LOCKOUT section above, prior to the Contractor installing a #4 duplex overhead conductor between the existing poles. The #4 duplex overhead conductor will normally be attached to the tenon of the davit arm near the luminaire with a pre-form grip. Older poles may require a spool insulator be attached to the pole using a pre-form grip to support the #4 duplex overhead conductor. A short length of 2C/#12 copper conductor is connected to the terminals of the luminaire brought out and connected to the #4 duplex overhead conductor. The final span to the Overhead Source shall be installed by Manitoba Hydro.

E59.14.3 When using the new poles for temporary lighting, the Contractor shall install the new bases, poles and #4 duplex overhead conductor. The #4 duplex overhead conductor will be attached to the tenon of the davit arm near the luminaire with a pre-form grip. A short length of 2C/#12 copper conductor is connected to the terminals of the luminaire brought out and connected to the #4 duplex overhead conductor. The final span to the Overhead Source shall be installed by Manitoba Hydro.

E59.14.4 All material used to provide the temporary overhead feed shall be returned to Manitoba Hydro. Care shall be taken to coil and tag Reclaim conductor for reuse. If used, insulators shall be handled carefully to prevent breakage.

E59.15 SAFE EXCAVATION

E59.15.1 The work shall be performed in accordance with the requirements of Manitoba Hydro's Safe Excavation and Safety Watch Guidelines (latest revision) included as Appendix D and Manitoba Workplace Safety and Health Regulation 217 latest revision.

E59.16 SAFE HANDLING

E59.16.1 The Contractor shall apply handling techniques in accordance with Manitoba Workplace Health and Safety Regulation 217 (latest revision).

E59.17 ELECTRIC CABLES AND CONDUITS

(a) The Contractor shall use diligent care and proper equipment in handling of all cables, so as not to injure the jacket and avoid gouging, kinking, scratching or abrading the cables. If any material is damaged to any extent, the Contractor shall repair the damages at its own expense, in a manner approved by Manitoba Hydro or will be charged the full cost of the damaged items.

(b) Cable reels shall not be dropped and must be handled and placed/stored in an upright position at all times and shall not be laid flat for any purpose or reason. Cable reels shall be adequately supported on hard surface to prevent the reel from sinking into the ground that can cause undue stress on the cables. Cable reels should be inspected for damages prior to use. If a cable reel is found to be defective, such defect shall be reported immediately to Manitoba Hydro.

(c) The Contractor shall place all material and string the cables in such a manner as to cause the least interference with normal use of the land, street or roadway. All material shall be unloaded in a manner to preserve its condition, prevent loss and/or theft and permit easy access for Manitoba Hydro's inspection.

(d) The Contractor shall provide Manitoba Hydro's inspector sufficient opportunity, in the sole discretion of Manitoba Hydro, to inspect the work.

E59.18 PRECAST CONCRETE BASES

E59.18.1 The Contractor shall handle, store, transport and unload the precast concrete bases in a manner to prevent damage to the threaded bolts and conduit casing.

E59.18.2 Precast Concrete Bases are extremely heavy. Approximate weight of pre-cast concrete bases are found in the Standards. The Contractor shall only use equipment rated for such weight.

E59.19 STREET LIGHT POLES AND ARMS

E59.19.1 The Contractor shall handle, store, transport, and provide proper load securement for the poles and arms in a manner to prevent damage.

E59.20 LUMINAIRES

E59.20.1 The Contractor shall handle, store, transport and unload the luminaires in their original packaging and in a manner to prevent damage.

E59.21 SMALL MATERIAL

E59.21.1 Photo electric cells, shorting caps, shims, nut covers and associated supplies shall be kept in a suitable warehouse provided by the Contractor at its own expense. Photo electric cells shall be transported and stored in such a manner as to prevent breakage.

E59.22 CARE OF MATERIALS

E59.22.1 The Contractor shall assume all responsibilities of all the materials and shall replace, at its own expense, any materials damaged, stolen or lost due to improper handling or poor workmanship.

E59.23 WIRE AND CABLE REEL STORAGE

E59.23.1 Cable reels shall be stored with the flanges upright and resting on a hard surface. At temporary storage sites where the soil may be soft, preservative-treated plywood sheets may be used to keep the flanges from sinking into the ground.

E59.23.2 If cable reels must be pancaked or stored on their side in vertical racks, do not lift the reel by the top flange. Spacers (two 2 X 4s placed wide side up) should be placed under the bottom flange and between the reels in order to create a space to insert the forks and lift the reels without damaging the cable.

E59.24 REEL HANDLING

E59.24.1 When off-loading reels from a truck, reels shall be lowered using a hydraulic gate, hoist or forklift truck. When a reel is rolled from one point to another, care must be taken to see that the reel does not straddle objects such as rocks, pipes, curbs or wooden blocks which could damage the cable or protective covering. A reel should always be rolled on hard surfaces to avoid sinkage and in the opposite direction to the cable wraps to ensure that the reel is rolled in such a direction as to tighten the cable on the reel.

E59.24.2 When using a hoist, install a mandrel through the reel arbour hole and attach a sling. Use a spreader bar approximately 6 inches longer than the overall reel width placed between the sling ends just above the reel flanges. This will prevent bending of the reel flanges and damage to the cable.

E59.24.3 If a forklift is used to move a reel, the reel is to be approached from the flange side. Position the forks such that the reel is lifted by both reel flanges. The lift forks shall not contact the cable.

E59.24.4 Returnable reels shall be returned promptly to Manitoba Hydro Central Stores and in no case later than three (3) days after the completion of the work unless otherwise mutually agreed between the Contractor and Manitoba Hydro.

E59.25 PRESSURIZED WATER/VACUUM EXCAVATION

E59.25.1 Pressurized water/vacuum excavation (PW/VE) shall be used to daylight all buried utilities and structures where excavation by other mechanical means would be expected to provide a physical risk to that utility or structure.

E59.25.2 The work shall be performed in accordance with the requirements of Manitoba Hydro's Safe Excavation and Safety Watch Guidelines (latest revision) included as Appendix D.

E59.26 REMOVAL STREET LIGHT POLE FROM EXISTING BASE

E59.26.1 This shall include all work required to remove a street light pole from an existing base as set forth in this Technical Specification. The pole may be on an existing precast concrete base, steel power installed screw base or poured in place concrete base.

E59.26.2 The Contractor shall furnish all labour, supplies and materials (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary for the removal of the street light pole from the existing base. Care shall be taken to preserve the luminaire. The luminaire shall be reinstalled on the new street light pole or returned to Manitoba Hydro's stores as instructed by the Manitoba Hydro.

E59.26.3 The Contractor shall be responsible to transport all Surplus and Reclaim materials to Manitoba Hydro Central Stores and transport and dispose of all Scrap material as set forth in this Specification.

E59.27 REMOVAL OF BASE AND DIRECT BURIED STREET LIGHT POLE

E59.27.1 This shall include all excavation, whether by auger, pressurized water/vacuum excavation, by hand, or by other methods which may be necessary to remove a base or direct buried street light pole. The base may be poured in place concrete, steel power installed or precast concrete.

E59.27.2 The Contractor shall be responsible to transport all Surplus and Reclaim materials to Manitoba Hydro Central Stores and transport and dispose of all Scrap material as set forth in this Specification.

E59.27.3 The Contractor is responsible to supply all backfill material as specified in the Standards and carry out all backfill, compacting and leveling of all excavations and voids for removed bases and direct buried street light poles so as to be ready for top soil and seed or sod or as directed by Manitoba Hydro.

E59.28 INSTALLATION OF FOUNDATION - CONCRETE BASE

E59.28.1 This shall include all excavation, whether by auger, pressurized water/vacuum excavation, by hand, or by other methods which may be necessary to replace or install a concrete base as set forth in this Specification.

E59.28.2 The Contractor shall furnish all labour, supplies and material (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary to install a new or replace a concrete base. Excavation for the precast concrete base shall be to a diameter and depth specified in Standard CD 300-6. All excess material is to be removed by the Contractor.

E59.28.3 The concrete base shall be set on a bed of ¾" down limestone. The concrete base backfill material shall be compacted in lifts no more than 150 mm. Backfill material shall be ¾" down limestone. Compacting of backfill material shall be done using a hydraulic tamper. Alternative tamping methods shall be approved by Manitoba Hydro. Underground cables entering the concrete base shall be protected by a length of protective hose supplied by the Contractor and a layer of sand surrounding the cables to protect it from the limestone. The concrete base shall be installed level in all 4 directions. Final grade must be established prior to installing the concrete bases.

E59.28.4 The completed backfill shall be at least equal in compaction to undisturbed soil, as required by the Municipal authorities or elsewhere in this Specification. The Contractor shall level all excavations.

E59.28.5 Should settlement occur in the excavation and cause a depression in the surface, the Contractor shall repair the surface. Placing of additional backfill material due to settlement shall be at the Contractor's expense.

E59.28.6 The concrete base shall be oriented in the proper direction to allow the easy entrance of the underground cables into the plastic pipe preinstalled in the concrete base. Care shall be taken to prevent damage to the

insulation or jacket of the conductors. The cable shall be left long enough to extend one (1) metre beyond the top of the hand hole.

E59.29 BASE MOUNTED STREET LIGHT POLES

E59.29.1 This shall include all work required to install the street light pole on the concrete base as set forth in this Specification.

E59.29.2 The Contractor shall furnish all labour, supplies and material (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary for the installation of the pole (straight shaft or davit) on the concrete base.

E59.29.3 Unless otherwise specified on the construction drawings, the Contractor shall orient the poles so that the hand hole is on the left side of the pole when viewed from the road. A worker should be able to see oncoming traffic when working in the hand hole.

E59.29.4 The Contractor shall level the street light pole in all 4 directions. Leveling shims may be used.

E59.29.5 Tightening of bolts shall be performed in a manner that brings the surfaces up evenly. All nuts shall be tightened and torqued in accordance with Standard CD 300-9. The Contractor shall install the nut covers included with the pole.

E59.29.6 Unless otherwise specified, excess underground cable and 2C-12 wire shall be left inside the hand hole with the hand hole cover loosely installed.

E59.29.7 Existing street light poles may have street signs attached. The Contractor shall remove the signs from the existing pole and temporarily reattach the signs to the new pole. The Contractor shall notify Manitoba Hydro of the location where the signs have been removed.

E59.30 LUMINAIRES AND ASSOCIATED WIRING

E59.30.1 The Contractor shall furnish labour, supplies and material (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary to install the luminaire and associated wiring. Unless otherwise specified, the luminaire shall be installed with a tilt of zero (0) degrees. The Contractor shall install a length of 2 conductor No. 12 gauge (2C-12) wire from the terminals of the luminaire, through the arm (if applicable), down the pole to the hand hole. One (1) metre of 2C-12 wire shall be left at the hand hole. Impact equipment (air or electric) shall not be used to tighten luminaire mounting bolts. The Contractor shall be liable for damage due to over tightening.

E59.30.2 The Contractor shall verify the luminare voltage matches the source voltage as shown on the construction drawings. If luminaire voltage does not match the source voltage, the Contractor shall re-wire the luminaire in accordance with the wiring diagram provided. NOTE: Not applicable for LED luminaires.

E59.30.3 As specified on the construction drawings, the luminaire will require either a photo electric cell (PEC) or shorting cap installed. When installing the PEC the eye shall be oriented north. The Contractor shall also install the appropriate wattage bulb in the luminaire. NOTE: Bulb installation not applicable for LED luminaires.

E59.31 BREAK AWAY BASES

E59.31.1 Break away bases shall be installed in accordance with Standard CD 300-10. The height of the concrete base above grade shall not exceed 50mm. The surface of the concrete base shall be flat and level. A reaction plate shall be installed between the concrete base and the break-away base.

E59.31.2 The Contractor shall torque the couplers in accordance with Standard CD 300-10. Impact tools shall not be used to tighten or torque couplers or nuts associated with a break away base.

E59.32 SPLICING/CONNECTING CABLES

E59.32.1 The electric cable shall be spliced/terminated as per Standards CD 215-12, CD 215-13, CD 310-1, CD 310-4, CD 310-9 and CD 310-10 with the exception that the Contractor will use a GELCAP-SL-2/0 splice kit (See Appendix E). Termination in the hand hole may include the installation of an inline fuse holder.

E59.32.2 The Contractor shall furnish all labour, supplies and material (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary to splice/terminate the street light conductor(s).

E59.33 EXCAVATION

E59.33.1 The Contractor shall furnish all labour, supplies and material (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary for the completion and maintenance of grade and line of the street light cables and conduit including water control if found to be necessary. The trench shall be graded to conform to the street light cables and conduit so that the street light cables and conduit rest firmly on a smooth surface throughout its length. All stones or other objects which, in the opinion of Manitoba Hydro might damage the street light cable jacket and conduit shall be removed. Where the presence of rock or other condition prevent a satisfactory bed for the cables, 150 mm of well-tamped, clean soil or ¼" down crushed limestone shall be placed in the bottom of the trench. In this case, the spoil bank from trenching operations shall not be allowed to fall into the trench or mix with the soil to be used in backfilling the trench. Loose debris or foreign matter and the spoil bank shall be placed so as not to hinder drainage, damage property, or obstruct traffic.

E59.33.2 Trenches shall be dug to such a depth that will provide a minimum cover of 600 mm from final grade in sodded areas and 1000 mm in roadways in accordance with Standard CD 305-1.

E59.34 LAYING CABLES

E59.34.1 Cables are to be lowered in the trench in an orderly fashion so as to maintain a consistent path and straight alignment. All cables shall be lowered in a continuous run (NO SPLICING) and in accordance with the construction drawings; and shall maintain the necessary separation, where required. All cables shall be of continuous runs and capped and sealed if they are not being installed in the pole at that time. Cables shall not be dragged over paved surfaces.

E59.34.2 Once a cable is cut its ends must be sealed immediately with an approved and appropriately sized, heat shrink or cold shrink sealing cap to prevent moisture ingress unless the cable is being installed in the pole at that time.

E59.34.3 During the removal of the cable, the reels shall be placed on jacks, stands or trailers with a bar through the arbour holes which will allow the reel to be turned easily, and the cable to be paid out. Cables can be paid out from the bottom or the top of the reel. Cable in coils shall be handled in a similar manner. This can be achieved by supporting the coil in a vertical plane and rotating it by hand as the cable is carefully uncoiled. The cable shall never be pulled over the flange of a reel, or pulled off the side of a coil, since this will introduce a twist in the cable.

E59.34.4 During installation, under no circumstance is the cable to be subjected to a bending radius tighter than that detailed in the Standards.

E59.34.5 Where specified in the Standards or on the construction drawings, the Contractor shall install the street light cable in a conduit.

E59.35 INSTALLING CONDUIT AND CABLE BY BORING (HORIZONTAL DIRECTIONAL DRILLING)

E59.35.1 The Contractor shall dig the approaches and openings necessary to install boring equipment, and the boring equipment used shall be of such a nature as to minimize the opening size required. The boring equipment shall produce a straight hole without unnecessary dips or bends. The bore hole shall be only slightly larger than the outside diameter of the conduits or cables to minimize possible settlement. Cables and conduits shall be pulled in with pulling eyes or using a kellum grip in a manner so as to guard against damage.

E59.35.2 During construction as the drill bit crosses each existing facility a lookout shall be assigned by the Contractor to visually confirm the drill bit is maintaining a minimum 300 mm clearance from the existing facility all in accordance with Manitoba Hydro Safe Excavation and Safety Watch Guidelines (latest revision) included as Appendix D. Maximum pulling tensions on any streetlight cable shall be limited to 2.9 kN/0.65 kips.

E59.35.3 Drilling fluids and associated waste materials shall be disposed of in a manner that minimizes environmental effects.

E59.35.4 The Contractor shall properly compact the backfill material and will be responsible for placing additional material should settlement occur for the duration of the warranty period.

E59.36 BURIED UTILITY CROSSINGS

E59.36.1 All buried obstructions are not necessarily shown on the reference drawings and the locations of those indicated are approximate only.

E59.36.2 The Contractor shall determine the location of all buried obstructions and shall notify the appropriate authorities and obtain all necessary permits prior to excavation, trenching and directional drilling near or across such obstructions. All buried obstructions where the new buried cable route crosses other utilities including but not limited to gas, water, sewer, telephone and electric lines shall be exposed as per each utilities guidelines by the Contractor, including the use of Pressurized Water/Vacuum Equipment (PW/VE) where necessary. Should any damage occur to such lines during the course of the work, the Contractor shall be responsible for the damage and the costs of repairs to buried obstructions caused by its operations and shall fully indemnify the City of Winnipeg and Manitoba Hydro from and against all claims arising out of such damage. Manitoba Hydro Safe Excavation and Safety Watch Guidelines (latest revision) included as Appendix D shall be followed when crossing natural gas pipelines and electrical cables by the directional boring method.

E59.36.3 The PW/VE technique, used to expose underground plant in certain conditions, must be performed in accordance with each utility's requirements, including but not limited to Manitoba Hydro, Manitoba Telecom Services, Shaw Cable, etc. PW/VE costs that the Contractor will incur during the work must be factored into the Contractor's bid prices. The Contractor shall not be entitled to extra compensation for the use of PW/VE on the work.

E59.36.4 The Contractor shall be responsible to supply all backfill material and carry out all backfill, compacting and leveling of all excavations so as to be ready for topsoil and seed or sod or as directed by Manitoba Hydro.

E59.37 BENDING CABLES/CONDUITS AND INSTALLATION INTO STANDARDS

E59.37.1 It is desired to reduce to a minimum the required number of bends and to lay the cables/conduits to conform to the contour of the ground and maintain a normal covering. This shall be accomplished by cutting the trench slightly deeper in approaches to road crossings and drainage ditches. It is intended that the Contractor shall eliminate unnecessary bending by operating the trenching machine at various depths rather than by finishing grading the trench by hand whenever practical.

E59.37.2 Sharp bends of the cables/conduits shall be avoided at all times. All bends shall meet the requirements set out in this Specification. If excessive bending was exerted on any cable, the cable shall be replaced at the Contractor's cost. During installation, under no circumstance is the cable to be subjected to a bending radius tighter than that detailed in the Standards. At street light poles the Contractor shall install the ends of the cables into the plastic pipe preinstalled in the concrete base. Care shall be taken to prevent damage to the insulation or jacket of the conductors. Underground cables entering the concrete base shall be protected by a length of protective hose supplied by the Contractor and by a layer of sand surrounding the cables to protect it from the limestone. The cable shall be left long enough to extend one (1) metre beyond the hand hole. The street light cable in the trench shall be installed in conduit for mechanical protection and the ends sealed with duct seal supplied by the Contractor. Care shall be taken to prevent damaging the cable where it exits the conduit. The conduit shall only be installed into the concrete base if conduit sizes make it practicable.

E59.37.3 Unless otherwise directed, excess underground cable and 2C-12 wire shall be left inside the hand hole with the hand hole cover loosely installed.

E59.38 BACKFILL

E59.38.1 All backfilling material within 300 mm of the cables/conduits shall be clean, free of sod, vegetation, organic material, stones or other debris, and of a consistency as to not create significant voids or air spaces around the cables/conduits. Other backfilling material shall be free of stones greater than 150 mm on their maximum dimension. Where cinders or very acid soil are encountered or where gravel or incompressible fill is required by Municipal authorities, ¼" down crushed limestone shall be placed all around the cables for a depth of at least 300 mm. The completed backfill shall be at least equal in compaction to undisturbed soil or as directed by Manitoba Hydro. Backfill material is to be placed and compacted in lifts not exceeding 300 mm. All excess material is to be removed by the Contractor.

E59.38.2 Tamping or flushing methods must be used where necessary to give the required compaction. Where tamping is used, hand tampers shall be used to at least 300 mm above the cable before machine tamping may be used. The Contractor shall level all excavations so as to be ready for topsoil and seed or sod or as directed by the Manitoba Hydro. Should settlement occur in the excavation and cause a depression in the surface, the Contractor shall repair the surface to the satisfaction of the Manitoba Hydro at the Contractor's cost.

E59.38.3 Excavations remaining where poles have been removed shall be backfilled with spoil, pit run gravel or ¾" down limestone and compacted in lifts of 150mm as directed by Manitoba Hydro. The top 300 mm of the excavation shall be backfilled with topsoil.

E59.38.4 Excavations remaining where utility crossings have been exposed shall be backfilled with sand or clean spoil and compacted in lifts of 150mm. The top 300 mm of the excavation shall be backfilled with topsoil.

E59.38.5 Backfill of all excavations shall be in accordance with City of Winnipeg Standard Construction Specification CW 2030 (latest revision), to the satisfaction of the authority having jurisdiction and Manitoba Hydro.

E59.39 DEFECTIVE WORK & WARRANTY

E59.39.1 If any portion of the work fails to comply with the requirements of this Specification, fails within the Warranty period, or if the final tests prove or indicate the existence of any fault or defect in the work, or any part thereof, Manitoba Hydro may forthwith re-execute or make good the faulty or defective work or alter the same to make it comply with requirements of the Specification at the Contractor's expense. Manitoba Hydro shall give the Contractor notice together with particulars of such failure, fault or defect, Manitoba Hydro's cost to re-execute or make good the faulty or defective work and the Cost shall be deducted from the Contract.

E59.39.2 At the completion of the work for each location, Manitoba Hydro shall prepare and issue a Network Commissioning Report, a sample of which is included as Appendix H, to the Contractor. The Network Commissioning Report shall be dated indicating the commencement of the Warranty period for the work performed at the location.

E59.40 AS-BUILT DRAWING

E59.40.1 The Contractor shall provide an as-built drawing or mark-up drawing to Manitoba Hydro which accurately displays the "as-built" location of the buried street light cables, conduits and street light poles.

E59.41 MEASUREMENT AND PAYMENT

E59.41.1 Removal of 25' to 35' street light pole and precast, poured in place concrete, steel power installed base or direct buried including davit arm, luminaire and appurtenances

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Removal of 25' to 35' street light pole and precast, poured in place concrete, steel power installed base or direct buried including davit arm, luminaire and appurtenances". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including removal of the pole, base, luminaire, appurtenances, use of pressurized water/vacuum excavation, transportation of Reclaim, Surplus and Scrap material, payment of associated disposal fees and all other items incidental to the work included in the Specification.

E59.41.2 Removal of 45' street light pole and precast, poured in place concrete, steel power installed base or direct buried including davit arm, luminaire and appurtenances

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Removal of 45' street light pole and precast, poured in place concrete, steel power installed base or direct buried including davit arm, luminaire and appurtenances". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including removal of the pole, base, luminaire, appurtenances, use of pressurized water/vacuum excavation, transportation of Reclaim, Surplus and Scrap material, payment of associated disposal fees and all other items incidental to the work included in the Specification.

E59.41.3 Installation of Conduit and #4 AL C/N or 1/0 AL Triplex Streetlight Cable in Conduit by Open Trench Method

(a) This pay item will be measured on a linear metre basis and paid for at the Contract Unit Price per linear metre for “Installation of Conduit and #4 AL C/N or 1/0 AL Triplex streetlight cable in Conduit by open trench method.” The number of meters to be paid for at the Contract Unit Price shall be measured and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of the conduit, pulling cable into the conduit, backfilling the trench, buried utility crossings, use of pressurized water/vacuum excavation and all other items incidental to the work included in the Specification.

E59.41.4 Installation of 50 mm Conduit by Boring Method complete with Cable Insertion (#4 AL C/N or 1/0 AL Triplex)

(a) This pay item will be measured on a linear metre basis and paid for at the Contract Unit Price per linear metre for “Installation of 50 mm conduit or conduits by boring method complete with cable insertion (#4 AL C/N or 1/0 AL Triplex).” The number of meters to be paid for at the Contract Unit Price shall be measured and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of 50mm conduit or conduits by boring method, inserting the #4 AL C/N or 1/0 AL Triplex streetlight cable into the conduit(s), buried utility crossings, use of pressurized water/vacuum excavation and all other items incidental to the work included in the Specification.

E59.41.5 Installation of cable (#4 AL C/N or 1/0 AL Triplex) by boring method.

(a) This pay item will be measured on a linear metre basis and paid for at the Contract Unit Price per linear metre for “Installation of cable(s) (#4 AL C/N or 1/0 AL Triplex) by boring method.” The number of meters to be paid for at the Contract Unit Price shall be measured and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of the cable or cables by boring method, buried utility crossings, use of pressurized water/vacuum excavation and all other items incidental to the work included in the Specification.

E59.41.6 Installation of 25'/35' Pole, Davit Arm and Precast Concrete Base Including Luminaire and Appurtenances

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for “Installation of 25'/35' pole, davit arm and precast concrete base including luminaire and appurtenances.” The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of the pole, davit arm, base, luminaire, appurtenances, placing the cable(s) into the base, use of pressurized water/vacuum excavation and all other items incidental to the work included in the Specification.

E59.41.7 Installation of 45' Pole, Davit Arm and Precast Concrete Base Including Luminaire and Appurtenances

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for “Installation of 45' pole, davit arm and precast concrete base including luminaire and appurtenances.” The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of the pole, davit arm, base, luminaire, appurtenances, placing the cable(s) into the base, use of pressurized water/vacuum excavation and all other items incidental to the work included in the Specification.

E59.41.8 Installation of One (1) 10' Ground Rod at Every Third Street Light, at the End of a Street Light Circuit or Anywhere Else as Shown on the Design Drawings. Trench #4 Ground Wire up to 1 m From Rod Location to New Street Light and Connect (Hammerlock) to Top of Ground Rod

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for “Installation of one (1) 10' ground rod at every third street light, at the end of a street light circuit or anywhere else as shown on the design drawings. Trench #4 ground wire up to 1 m from rod location to new street light and connect (hammerlock) to top of the ground rod.” The number of units to be paid for at the Contract Unit Price shall be verified and accepted

by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including install one (1) 10' ground rod, trench the #4 ground wire to the new streetlight pole, connect (hammerlock) ground wire to rod and all other items incidental to the work included in the Specification.

E59.41.9 Installation of Lower 3 m of Cable Guard, Ground Lug, Cable Up Pole, and First 3 M Section of Ground Rod Per Standard CD 315-5

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Install/lower 3 m of Cable Guard, ground lug, cable up pole, and first 3 m section of ground rod per Standard CD 315-5". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installing the lower section of cable guard, ground lug, ground rod, coiling cable(s) up the pole and all other items incidental to the work included in the Specification.

E59.41.10 Installation and Connection of Externally-Mounted Relay and PEC Per Standards CD 315-12 and CD 315-13

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Installation and connection of externally-mounted relay and PEC per Standards CD 315-12 and CD 315-13".The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including mounting the relay, PEC, wiring as per the schematic and all other items incidental to the work included in the Specification.

E59.41.11 Termination of 2/C #12 Copper Conductor to Street Light Cables Per Standard CD310-4, CD310-9 or CD310-10

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Terminate 2/C #12 copper conductor to street light cables per Standard CD310-4, CD310-9 or CD310-10".The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including connection of the 2/C # 12 copper conductor to the #4 C/N or 1/0 Al Triplex cable(s) using a GELCAP-SL-2/0 splice kit and all other items incidental to the work included in the Specification.

E59.41.12 Splicing #4 AL C/N or 2 Single Conductor Street Light Cables

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Splicing #4 Al C/N or 2 single conductor street light cables". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including splicing the #4 AL C/N or 2 single conductor cables in accordance with Standard CD 215-12 and CD 215-13 and all other items incidental to the work included in the Specification.

E59.41.13 Splicing 1/0 AL Triplex Cable or 3 Single Conductor Street Light Cables

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Splicing 1/0 AL triplex cable or 3 single conductor street light cables". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including splicing the 1/0 Al triplex cable or set of 3 single conductor cables in accordance with Standard CD 215-12 and CD 215-13 and all other items incidental to the work included in the Specification.

E59.41.14 Installation of Break-Away Base and Reaction Plate on Base-Mounted Poles up to 35'

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Installation of break-away base and reaction plate on base mounted poles up to 35'". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of the reaction plate, break-away base and all other items incidental to the work included in the Specification.

E59.41.15 Installation of Overhead Span of #4 Duplex Between New or Existing Streetlight Poles and Connect Luminaire to Provide Temporary Overhead Feed

(a) This pay item will be measured on per span basis and paid for at the Contract Unit Price per span for "Installation of Overhead Span of #4 duplex Between New or Existing Streetlight Poles and Connect Luminaire to Provide Temporary Overhead Feed". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including attachment of the #4 duplex overhead conductor using a perform grip (c/w spool insulator(s) to davit arm if necessary), sagging conductor, connection of luminaire using 2C#12 copper conductor and all other items incidental to the work included in the Specification.

E59.41.16 Removal of Overhead Span of #4 Duplex Between New or Existing Streetlight Poles to Remove Temporary Overhead Feed

(a) This pay item will be measured on a per span basis and paid for at the Contract Unit Price per span for "Removal of Overhead Span of #4 duplex Between New or Existing Streetlight Poles to Remove Temporary Overhead Feed". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by the Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including removal of the #4 duplex overhead conductor, spool insulator(s) and all other items incidental to the work included in the Specification.

E59.41.17 Expose Underground Cable Entrance of Existing Streetlight Pole and Install New Streetlight Cable(s).

(a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Expose Underground Cable Entrance of Existing Streetlight Pole and Install New Streetlight Cable(s)". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including excavation and exposure of the underground cable entrance by any means necessary including use of pressurized water/vacuum excavation, installation of the new streetlight cables(s), backfill, compaction and all other items incidental to the work included in the Specification.

DRAWINGS

Replace: 568-2020 _Addendum_2-Drawing_ P-3536-02-R2 with 568-2020 _Addendum_4 -Drawing_ P-3536-02-R3

Replace: 568-2020 _ Addendum_2-Drawing_ P-3536-56-R1 with 568-2020 _Addendum_4 -Drawing_ P-3536-56-R2

Add: 568-2020 _Addendum_4 -Drawing_1-04707—DE-50000-0526_R0

APPENDICES

Add: 0568-2020_Addendum_4-Appendix_C - Manitoba Hydro Streetlighting Standards

Add: 0568-2020_Addendum_4-Appendix_D - Safe Excavation and Safety Watch Guidelines

Add: 0568-2020_Addendum_4-Appendix_E - GelCap Kit

Add: 0568-2020_Addendum_4-Appendix_F - Electric and/or Natural Gas Facilities Locates

Add: 0568-2020_Addendum_4-Appendix_G - Manitoba Hydro Job Plan – Engineering and Construction

Add: 0568-2020_Addendum_4-Appendix_H - Manitoba Hydro Network Commissioning Report

QUESTIONS AND ANSWERS

Q1: Can a floorless manhole with cast in place floor be used at the 1200mm manhole being installed on the existing 450mm sewer at Doncaster St?

A1: A cast in place manhole with a floor could be used, however the contractor would need to provide flow control while installing and making connections.

Q2: In regard to E30.3.7 Concrete, where does this need to be done?

A2: This is generic information in the Outfall Sewer Repairs spec to cover off where lean mix is called out on the Drawings; For the current project no lean mix concrete pipe bedding or backfill was specified on the Drawings, therefore it is not required. Clause E30.3.7(a) has been deleted as per Addendum 4.

Q3: On Page 29 of the drawings Storm Drain-17 Plan at the bottom it states “plug and abandon culvert” but points to nothing?

A3: This note is pointing to a culvert under an existing path. That culvert is to be abandoned, as noted.

Q4: What is the second line that ties into the existing manhole at the 300mm service line? What is to be done with this line?

A4: This line is a 250 mm Private CB Lead, this will need to be tied into the new manhole. The new manhole includes connections of existing services

Q5: Is the E.43 (i) for the stabilized fill, is this for around the tie-in manhole and by-pass manhole?

A5: This pay item is for the cement stabilized fill that may be used below existing utilities to protect against settlement or to fill voids around existing infrastructure that may be discovered during construction.

Q6: Assuming waterway permits are pulled, is it feasible to request an alternative access point adjacent to the West limit of the West Shear Key on Assiniboine Park property?

A6: Development of alternative access points would be permissible; however, alternative access points must be developed in a manner that does not detrimentally impact riverbank stability. The Contractor would be responsible to secure all required permits, including a City of Winnipeg Waterways Permit, to develop any alternative access points. Any alternative access points proposed within the Assiniboine Park property would also need to be approved for use, and restored to a level satisfactory to, by the Assiniboine Park Conservancy.

Q7: Can you please provide more detail on acceptable temporary bridging over structures for site development and restoration per E17.3(c)(i)?

A7: The Contractor is advised that no known structures exist within the footprint of the proposed riverbank access points. Should any structure located within the Site require bridging or otherwise in order to protect the structure from the Contractor’s activities, the Contractor shall be responsible for this incidental Work and no separate measurement or payment will be made for the Work.

Q8: In regard to the flexible couplings referred to on the drawings of the force main tie-ins. Are the couplers something that are beyond the City’s Approved Product’s list?

A8: Yes, the type of product we are looking to use here is not covered by the City’s list. The product is as specified by the Engineer (KGS).

Q9: Addendum #2 added AP-009 Beehive Manhole Cover. Does that we mean we should disregard the detail for the Beehive Inlet Grate on sheet 33? And just to confirm, there is only one beehive cover on the job?

A9: The price for the beehive inlets is for use (as required) at one or more of the ditch inlets. The final number and locations will be determined in the field. For the purpose of bidding we have assumed one. AP-009 is the intended Beehive detail associated with the unit price. The detail shows the general layout of what is expected. For clarity, the pay items for the grate and riprap, however, are separated out on the Form B. For bidding purposes, unless notified otherwise by Addendum, please submit Form B pricing based on the latest version Form B units and quantities listed therein.

Q10: In regard to C.3 Supplying and Placing Suitable Site Sub-Grade Material. The quantity increased from 10 m^3 to 3,200 m^3. Can you give me an idea of where this material is to be placed?

A10: The majority of this volume is to fill the portions of Wellington that are removed and replaced with landscaping due to the realignment. Smaller amounts of volume will be used to develop discrete berms.

Q11: Are you able to provide clarifications of the proposed general location of the shrubs and vines placement?

A11: The planting detail on the details sheet indicates “plants in individual holes” – that is the intent.