Section 3 Details: New Fourth Avenue Road

NOTE: The following are the full item descriptions corresponding to the summary sheet given on the previous page. These descriptions are to be referred to when pricing, and are to be retained by your office for future reference.

001 SUPPLY Trenching, Backfilling & Compaction.

SUPPLY Trenching, Backfilling & Compaction of 1.37m (54") deep trench in soil, minimum cover with clean backfill to be 0.37m (30"). In accordance with Horizon Utilities Corporation specifications, and enclosed trenching & distribution drawings.

002 As above except 2 Way Joint Use

003 As above except 3 Way Joint Use

004 S&I 0.60m Deep Sand Envelope.

SUPPLY & INSTALL 0.60m (24") deep trench in soil envelope around hydro cables within the above hydro trench. In accordance with Horizon Utilities Corporation specifications latest revisions.
NOTE:
PRIMARY ONLY or PRIMARY & SECONDARY or PRIMARY & STREETLIGHT or PRIMARY & SECONDARY & STREETLIGHT in any given trench location.

005 S&I Warning Tape.

SUPPLY & INSTALL 0.15m (6") wide plastic warning tape placed 0.15m (6") below finished grades within all of the above hydro trenches. In accordance with Horizon Utilities Corporation latest specifications.

006 PREMIUM For Hand Excavation.

Provide a PRICE PREMIUM for Hand Excavation OVER EXISTING CABLE. All Hand Excavation must be co-ordinated and performed in conjunction with Horizon Utilities Corporation Personnel. The Contractor will be responsible for obtaining all U/G Utility locates.
NOTE:
THIS ITEM'S UNIT RATE WILL BE ADDED TO TRENCHING ITEM #001, ONLY WHERE HAND EXCAVATION IS REQUIRED.

007 SUPPLY Trench Restoration.

SUPPLY the complete restoration of all trench locations that disturb presently sodded areas. Include the placement of 2-1/2" Clean Top-Soil c/w grading and placement of fresh quality sod c/w watering, and restore to "As Found" conditions.
NOTE:
CONTRACTOR IS RESPONSIBLE TO BE AWARE OF PRESENT SITE CONDITIONS PRIOR TO QUOTING ON THIS UNIT ITEM.

008 SUPPLY Rd. Xing Trenching (TYPE-1).

SUPPLY Trenching, Backfilling and Compaction (to 100% SPD) across required roadways maintaining a minimum of 0.95m (36") cover over all structures. INCLUDE Removal & Replacement of Granular "A" under the travelled portion of roadway. All in accordance with Horizon Utilities Corporation & The City of St. Catharines latest requirements.

009 As above except 2 Way Joint Use

010 As above except 3 Way Joint Use

011 Cut & Replace B.C. Asphalt.

Cut & Replace Base Course Asphalt at the above road crossing locations if required. INCLUDE UNSHRINKABLE BACKFILLING under curbs & travelled portion of road. In accordance with Horizon Utilities Corporation and The City of St. Catharines specifications.
NOTE:
CONTRACTOR TO CO-ORDINATE ROAD CROSSINGS PRIOR TO ASPHALT WHERE POSSIBLE.

012 S&I Electronic Marker Disks

SUPPLY & INSTALL electronic marker disks below grade at EACH END of ALL road crossing trenches, ALL primary splice locations and ALL areas where empty duct has been left for future cables & ALL areas where cable has been buried & left coiled for future extension. All to Horizon Utilities Corporation latest standardsand specifications.

013 R&R Concrete Sidewalk Bay.

REMOVAL & REPLACEMENT of EXISTING sidewalk bay. Contractor is to PROVIDE the saw-cutting of, removal of and disposal of the EXISTING sidewalk. REPLACE the sidewalk with concrete of equivalent grade. All in accordance with the City of St. Catherines latest standards and specifications.

014 Provide Concrete Bends.

Contractor is to Provide Concrete Encasement for all PRIMARY and FEEDER DUCTS through all bend locations to facilitate cable pulling. All in accordance with Horizon Utilities Corp. latest standards and specifications.

015 S&I 100mm PVC D.B. Primary Duct.

SUPPLY & INSTALL 100mm PVC Type-2 duct Direct Buried FOR ALL PRIMARY CABLE, IN MAIN TRENCHES and IN DESIGNATED BOULEVARD TRENCHES, where required. INCLUDE all SOLVENT WELDED Bends, Couplings and End-Caps where required and a 3/8" Polypropylene fish rope in occupied and non-occupied ducts. In accordance with H.U.C. latest standards and specifications.

016 **S&I 50mm D.B. PVC Type 2 Duct (S/L)**

SUPPLY & INSTALL a 50 mm PVC Type-II Direct Buried duct within the above trench UTILIZED FOR ALL STREETLIGHT CABLES. Contractors must INCLUDE all required Solvent-Welded Bends, Couplings & 3/8" poly-fish rope.
In accordance with ESA latest standards and specifications.

017 **S&I Concrete Encased & Steel Reinforced Ducts.**

SUPPLY and INSTALL Concrete Encased and Steel Reinforced PVC Type II ducts in the above trenches, as required.
INCLUDE ALL BELL-ENDS, COUPLINGS, BENDS, CAPS, FISH-ROPE and SOLVENTS in complete accordance with all Hydro standards and specifications.

018 **As above except 50mm x 1 only.**

019 **As above except 100mm x 2 only**

020 **S&I 2-#6 RWU-90 Streetlight Cable.**

SUPPLY & INSTALL 2-#6 RWU-90 300V and 1-#6 RWU ground streetlighting cabl,e CSA-Approved for and U/G installation. INSTALLED within the above trenches and PULLED THROUGH DUCTS as required. In accordance with Electrical Safety Authority latest standards and specifications.

021 **S&I 3-#2 RWU-90 Supply Cable.**

SUPPLY & INSTALL 3-#2 RWU-90 c/w ground jacketed streetlighting cable, CSA-Approved for and U/G installation. INSTALLED within the above trenches and PULLED THROUGH DUCTS as required. In accordance with Electrical Safety Authority latest standards and specifications.

022 **Supply 32.5' Pole & 41W LED Luminaire (8' Arm)**

SUPPLY ONLY 9.91m Round Grey PRE-Stressed, RE-inforced concrete streetlight pole by STRESS/CRETE style #120 & mold finished. Aluminum tapered elliptical arm to be 2.44m (8'). Luminaire to be 41WATT LED by General Electric c/w photo control shall be Fisher-Pierce instant response TRS series or SELC 8483. In accordance with photometric file # ERL1_05A140-120-277V_TCM201-104021.IES c/w individual photo control.

Pole Cat#: E-325-BPR-G-MOO-CSA s/f Style 120
Arm Cat#: RE8MA or Approved Equivalent
Lum Cat#: ERL1-0-05-A1-40-A-GRAY-RL-10YR
Warranty c/w Individual Photo Control

023 **INSTALL Streetlighting Assembly.**

Contractor to INSTALL ONLY the above streetlight poles and luminaires. Contractor must also SUPPLY AND INSTALL all materials as specified below. NOTE: INCLUDE ALL INTERNAL GROUNDING, ALL HAND-HOLE CONNECTIONS, THE CONCRETE POURING OF A SONO TUBE FROM BELOW THE FROST LINE TO 3" ABOVE PROPOSED FINISHED GRADES, ALL ANCHOR BOLTS SET INTO THE CONCRETE CONFIGURED TO THE MANUFACTURER'S BOLT PATTERN ON THE BOTTOM OF EACH POEL, 50mm PVC DUCT ELBOWS AND Hydro One INSPECTION AND ALL PERMITS COSTS. INCLUDE INTERNAL WIRING (i.e. 2-#12 Cu. NMW with #14 BARE ground wire), CONNECTIONS AT HAND HOLES (i.e. With BURNDY Insulated Crimping Sleeves), FUSING (i.e. ELASTIMOLD #65 & #D65 in-line fuse connector kit complete with one (1) FUSETRON 10-Ampere fuse.

024 **S&I S/L Power Supply Pedestal.**

SUPPLY & INSTALL streetlight power pedestal for the electrical supply of the streetlighting circuits manufactured by Pedestal Solutions Inc# SLS1-6-15, 60A - 2 pole main breaker, 6-15A branch breakers & provision for up to 12 branch breakers, weatherproof cabinet, tamper proof cabinet, dark green paint, padlock, mounted on pre-cast concrete foundation (UP 1420). All in accordance with the enclosed streetlighting design drawings and Electrical Safety Authority latest standards and specifications.

025 **S&I Ground Rods.**

SUPPLY & INSTALL 3m (10') galvanized steel ground rods as designated on the enclosed municipal streetlighting drawing.

026 **S&I 3-#2 RWU-90 Terminations @ Tx**

SUPPLY and INSTALL all streetlight supply cable terminations at transformer locations c/w connectors, inhibitor and identification of each supply cable. In accordance with City of St. Catharines latest standards and specifications.

027 **S&I 3-#2 RWU-90 Terminations @ Pedestal**

SUPPLY and INSTALL all streetlight supply cable terminations at pedestal locations c/w connectors, inhibitor and identification of each supply cable. In accordance with City of St. Catharines latest standards and specifications.

028 **S&I 2-#6 Streetlight Terminations @ Pedestal**

SUPPLY and INSTALL all streetlight supply cable terminations at pedestal locations c/w connectors, inhibitor and identification of each supply cable. In accordance with City of St. Catharines latest standards and specifications.

029 **S&I Riser Pole Conduit**

SUPPLY & INSTALL 50mm (2") RIGID PVC conduit for protection of all hydro cables installed at riser pole locations. Pre-formed Bell-Ends are required c/w all strapping. In accordance with Hoirzon Utilities Corporation's latest standards and specifications.

030 **PROJECT CO-ORDINATION.**

Under this item the Contractor is to enter a LUMP-SUM price for any costs that may be associated with co-ordinating this installation AND any splicing with HUC Personnel. The Contractor shall be responsible for ensuring the proper outages are obtained prior to construction.
**********LUMP
SUM**********

031 **Provide 24 Month Maintenance Bond**

Contractor is to provide 24 month Maintenance Bond.

032 **Electrical Safety Authority Inspection/Permit**

The Contractor is responsible for obtaining all required Electrical Safety Authority Inspection and Permits for all lighting installations included within this scope of work. Provide a price to cover the inspection and permits.

Section 3 Details: New Fourth Avenue Road

NOTE: Do NOT include the following items in the total amount of contract. Unit prices MUST include applicable Provincial Taxes. Do NOT include Federal Goods and Services Tax as it will be accounted for at the time of the invoice. All additional work to be approved by Owner or Engineer prior to execution.

033 **S&I Additional Sand.**

SUPPLY & INSTALL additional sand padding around direct buried cables & ducts within the above trench if requested by the Horizon Utilities Corporation "on site" hydro inspector.
NOTE: INVOICE SUBMISSION TO BE CERTIFIED IN WRITING BY HYDRO INSPECTOR.

034 **As above except 0.15m Deep**

035 **As above except 0.30m Deep.**

036 **As above except 0.45m Deep.**

037 **Frost Removal 0.0m-0.2m Deep**

****NO CHARGE****

038 **Frost Removal 0.2m-0.4m Deep**

039 **Frost Removal 0.4m-0.6m Deep.**

040 **Frost Removal 0.6m-0.8m Deep.**

041 **Frost Removal 0.8m-1.0m Deep.**

042 **Frost Removal OVER 1.0m Deep.**