

**SCOPE OF WORK – CABLE REPLACEMENT AT DBPS**

---

**1. GENERAL**

**1.1 Directional Boring**

- .1 Provide a direction bore from the south east corner of the Deacon Booster Pumping Station to Valve Camber VC-4. Directional bore will be of sufficient size for the installation of 3 – 150 mm sleeves.

**1.2 Hydro-Excavation**

- .1 Provide hydro-excavation at Valve Camber VC-4 were cabling enters the valve chamber. The excavation is to extend a minimum of 4 meters in front of the Valve Camber VC-4 Building. This excavation is to expose the cables entering the VC-4 building and also the existing telephone cables that are installed to go past the VC-4 building to the telephone pedestal located at the fence line of DBPS.

**1.3 Replacement Cables**

- .1 Install power cables in one of the 150mm conduits in the directional bore. These power cables shall replace the existing power cables that exit from the DBPS in the Telephone/Storage Room. Power cables shall be installed from the Telephone Room in DBPS to VC-4. Extend into VC-4 with sufficient cable to allow terminations. *Provide spare capacity for power cables as indicated. All conduits shall have a pull line.*
  - .1 Power cables shall include but not be limited to the following:
    - .1 2 - 6/C #12 Teck Cable - From DBPS to VC-4  
*1 – 6/C #12 Teck Cable – Spare from DBPS to VC-4*
    - .2 3/C #10 Teck Cable – From DBPS to heater in VC-4
    - .3 6/C #10 Teck Cable – From DBPS to VC-4 to #3 Raw Water Valve Chamber  
*3/C #10 Teck Cable – Spare from DBPS to VC-4 to #3 Raw Water Camber*
    - .4 3/C # 6 Teck Cable – DBPS to VC-4 to Surge Tower  
*3/C #6 Teck Cable – Spare From DBPS to VC4 to Surge Tower*
    - .5 3/C #8 Teck Cable – DBPS to VC-4 to Surge Tower
    - .6 *1-6/C #10 Teck Cable – From DBPS to Dewatering Building*
- .2 Install communication and control wiring in the 150mm conduit in the directional bore dedicated for these cables. These communication and control cables shall replace the existing communication and control cables that exit from the DBPS in the Telephone/Storage Room. Communication and Control cables shall be installed from the Telephone Room in DBPS to VC-4. Extend into VC-4 with sufficient cable to allow

**SCOPE OF WORK – CABLE REPLACEMENT AT DBPS**

---

terminations. *Provide spare capacity for the communication and control wiring as indicated below. All conduits shall have a pull line.*

- .1 Communication and Control Cables shall include but not be limited to the following:
    - .1 *7/c cable #14 from DBPS to VC-4 with Teck jacket.*
    - .2 *6 pair #18 twisted per cable with Teck jacket from DBPS to VC-4 to Drain Chamber.*
    - .3 *7 twisted pair #18 with Teck jacket from DBPS to VC-4.*
    - .4 *10 #18 Teck control conductor from DBPS to VC-4 to #3 Raw Water Valve Chamber*
  - .3 Coordinate with MTS for the installation of the telephone cables that will be installed in the 150mm conduit in the directional bore dedicated for the MTS cables. These MTS cables shall replace the existing MTS cables that exit from the DBPS in the Telephone/Storage Room. MTS cables shall be installed from the telephone room in the DBPS to VC-4. MTS shall terminate in a new termination cabinet in VC-4. The existing MTS cables from VC-4 to the MTS pedestal using the exiting MTS cables set. This cable shall be 50 conductor cables.
    - .1 50 pair cable in conduit complete with pull line
  - .4 All existing cables shall be disconnected at the exterior wall of the DBPS and the exterior of the VC-4 valve chamber. *All existing cables to be removed*
  - .5 The Contractor shall confirm all cables that will be affected in the relocation and installation of these cables. Confirm the requirements prior to ordering and installing cable.
  - .6 Provide suitable terminal boxed or cabinet in the DBPS, VC-4 and Drain Chamber as may be required. Terminal cabinets shall be complete with suitable termination blocks to properly land and exit all wiring.
  - .7 All cables and wires shall be suitable tagged at each end of each cable wire.
- 1.4** *Provide three cabinets to be located in the "Telephone Room" in Valve Chamber 4 and one cabinet in the Drain Chamber. Each panel shall be 508 x 508 x 250mm and shall have terminal blocks as required. Provide full height terminal block rails for each row of blocks. Cabinet shall be complete with hinged lockable door and latches*

**2. WORK INCLUDED**

**2.1 Related Work**

- .1 The Administrative Sections under Division 00 (Bidding and Contract Requirements) and 01 (General Requirements) shall be considered to be part of these Specifications.

**SCOPE OF WORK – CABLE REPLACEMENT AT DBPS**

---

**2.2 General Requirements**

- .1 General Clean-up.
- .2 All inspection and other permits, licenses required by various Inspection Agencies and local regulations related to Electrical Trade.
- .3 Special testing or inspection, additional to the above as specified or covered by a Cash Allowance.
- .4 Utility connections (charges included as a Cash Allowance by Contractor when specified).
- .5 Shop Drawings.
- .6 Project Record Documents (As-Built Drawings) where specified.
- .7 Operating and Maintenance Data, where specified.

**2.3 Materials**

- .1 Alarm, annunciation and signalling systems, including burglar, fire or smoke detection, intercom, Complete, including detection, control, indicating and recording devices.
- .2 Batteries, chargers and ancillary equipment required for auxiliary or emergency lighting or power systems.
- .3 Conductors, including all types of wires, conductors, cables, which form an integral part of the electrical power system.
- .4 Cables and bus support systems which are intended to enclose or support all forms of electrical conductors used for any purpose covered by this scope. This includes cable trays, raceways and all forms of rigid, flexible, metallic and non-metallic conduit, and including conduit for communication systems or others, which may be installed at a later date, or buried conduit for wiring work by others, only when such buried conduit is indicated in the Contract Documents.
- .5 Control panels associated with any electrical equipment covered under this section of Work.
- .6 Circuit breakers of all types, and for all applications associated with electrical equipment which receives its power supply from the main, auxiliary or emergency (including battery) system.
- .7 Grounding systems, as required by the Electrical Code, or as otherwise specified in the bid documents.
- .8 Control and instrumentation systems - electrical or electronic including infrared, solar, high frequency, ultra high frequency and microwave control and instrumentation systems, with auxiliary equipment and components, unless specified otherwise.

**SCOPE OF WORK – CABLE REPLACEMENT AT DBPS**

---

- .9 Electronic data processing and transmission systems, including auxiliary equipment, interface and components.
- .10 Space and telecommunications and power transmission systems - including auxiliary equipment and components.
- .11 Electro-magnetic wave control systems (covering whole frequency spectrum) including auxiliary equipment and components.

**2.4 Specified Work by Utilities**

- .1 *MTS Cabling in the DBPS building, and Valve Chamber VC-4, shall be installed by the Contractor. Contractor shall arrange to have MTS complete termination of telephone wire at DBPS and MTS pedestal.*

**3. UNITS OF MEASUREMENT**

**3.1 General**

- .1 The Contract Documents have been prepared using the modified International System (SI) units of metric measurement. Whenever appropriate, available metric products shall be used unless otherwise specified herein.
- .2 Only metres (m) and millimetres (mm) are used. Generally, metres are used for measurements of 10 metres or more, and millimetres for measurements below 10 m.
- .3 All measurements on drawings are in millimetres unless otherwise indicated.

**3.2 Conversions**

- .1 The following three conversion methods were used in product and location dimensions:
  - .1 Hard Conversion: Industry available products which are manufactured in metric measurements.
  - .2 Soft Conversion: Products which are still manufactured in Imperial units and are converted in specifications using arithmetic conversion factors.
  - .3 Rationalized Conversion: Dimensions which are soft converted and rounded off for ease of measurements.
- .2 In cases where measurements may be open for interpretation, dual dimensions have been incorporated until hard conversions can be used exclusively.

**SCOPE OF WORK – CABLE REPLACEMENT AT DBPS**

---

**4. DEFINITIONS**

**4.1 General**

- .1 All terminologies, abbreviations and acronyms used in this document are as listed in the various Standards, Codes, Rules and Bulletins used herein.

**5. CODES**

**5.1 General**

- .1 All Codes, Standards, Rules, Regulations, Bulletins, By-laws etc., shall be those that are currently enforced in the locality of job site, unless otherwise specified herein.

**END OF SECTION**