

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

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**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 where 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 cable 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 50% spare capacity for power cables. All conduits to have pull line.
  - .1 Power cables shall include but not be limited to the following:
    - .1 2 x 6/C #12 Teck Cable - From DBPS to VC-4 to Drain Chamber
    - .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 Raw Water Valve Chamber
    - .4 3/C # 6 Teck Cable – DBPS to VC-4 to Surge Tower
    - .5 3/C #8 Teck Cable – DBPS to VC-4 to Surge Tower
  - .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 terminations. Provide 50% spare capacity for the communication and control wiring. All conduits to have pull line.
    - .1 Communication and Control Cables shall include but not be limited to the following:
      - .1 3/C #14 cable from DBPS to VC-4
      - .2 8 x 6/C # 16 twisted pair cables with Teck jacket

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- .3 1-6/C twisted pair #18 with Teck.
- .4 1-6/C #18 Teck control conductor from DBPS to VC-4 to 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 existing 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.
- .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.

**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.

**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.

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- .7 Operating and Maintenance Data, where specified.

**2.3 Materials**

- .1 Alarm, annunciation and signalling systems, including burglar, fire or smoke detection, intercom, nurses call. 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.
- .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.

**3. WORK EXCLUDED**

**3.1 General Requirements**

- .1 Temporary power.

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- .2 Barriers.
- .3 Special testing or inspection not specified or covered by Cash Allowance.

**3.2 Other Work Excluded**

- .1 Control wiring associated with equipment (not necessarily mechanical equipment) not included in the Electrical Specifications, (buried conduit for such wiring shall be included).
- .2 Special starters, including multi-speed switches, which are associated with packaged units not detailed in the Electrical specifications.
- .3 All excavation, backfill and removal of surplus material to Electrical Service Trenching (Division 02).
- .4 Concrete protective encasement around duct, conduit systems and concrete light standard bases and pull pits (Division 02).
- .5 Cast iron covers to pull pits (Division 05).
- .6 Perforations through roofing materials for electrical servicing or attachments (Division 07).
- .7 Painting (on site), except touch-up of electrical equipment (Division 9).
- .8 Ducted fans (Division 15).
- .9 Fuel, cooling, exhaust and miscellaneous mechanical systems related to generators (Division 15).
- .10 Ducted heaters (Division 15).
- .11 Pneumatic tube systems (Division 15).
- .12 Control transformers supplied with Mechanical Equipment (Division 15).

**3.3 Specified Work by Utilities**

- .1 MTS Cabling and terminations in the DBPS building, and Valve Chamber VC-4

**4. UNITS OF MEASUREMENT**

**4.1 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.

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- .3 All measurements on drawings are in millimetres unless otherwise indicated.

**4.2 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.

**5. DEFINITIONS**

**5.1 General**

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

**6. CODES**

**6.1 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**