INSTRUMENTATION CABLE

1. GENERAL

1.1 Product Data

.1 Submit Product data in accordance with Division 1 and Division 16.

1.2 Related Work

.1 Refer to Division 16.

1.3 Inspection

.1 Provide adequate notice to the Contract Administrator so that all cable installations can be inspected prior to connecting equipment.

1.4 Standards

.1 All wire and cable shall be CSA approved.

2. PRODUCTS

2.1 Fibre Optic Cables

.1 Provide fiber optic cable assemblies where indicated in the Specification and Drawings.

.2 Fiber optic cables shall be indoor/outdoor direct burial rated loose tube, rodent protected and constructed with specified quantity of 62.5/125µm multi-mode glass fibres, spiral interlocked armour and outer polyethylene jacket. Maximum attenuation shall be 3.5/1.0 dB/km. Minimum modal bandwidth shall be 220MHz*km.

.3 Provide terminations for fiber optic cables including; buffer tube fan out kits, connectors, termination panels, and wall mount enclosure.

.4 Provide fiber optic jumpers 62.5/125 µm multi-mode for inter-cabinet connections.

.5 Number of fibres are indicated on Drawings, in general fibre optic loop shall be 12 fibre.

.6 Connector type shall be ST.

3. EXECUTION

3.1 Installation

.1 Always follow the Manufacturer's guidelines for minimum bend radius and tension. Minimum bend radius shall be a minimum of 20 times the cable diameter.

.2 When installing loose-tube cables, use a silicone injection or sealer to prevent gel migration.

.3 All fibre installations and terminations shall be performed by personnel experienced in fibre optic cable installation.

.4 Fibre Terminations:

.1 Ensure that the fibres are not damaged when the buffer tubes and fibre coatings are removed.

.2 After the coating is removed, clean the fibre with isopropyl alcohol to assure the fibre is clean.

.3 Use only high performance connectors as classified and required by TIA-568-A.

.5 Perform cable testing with optical time domain reflectometer instrument and provide complete detailed test report. Test all runs upon completion of permanent terminations, using instrumentation acceptable to Contract Administrator. Before commencing testing, submit sample test data sheets and information with respect to test instrumentation to be used.

.1 Ensure that test instrument is temperature-stabilized or is temperature-independent or temperature-compensated before commencing test.

.2 Test for following:

.1 Run attenuation at [850] and [1300] wavelengths.
.2 Run length.

.3 Before recording results, compare readings to predicted values based on cable specification and run length, using connector an patch cord losses as part of predicted value. Retest runs with:

.1 Attenuation values grater than 6.0 dB / km @ 850 nm and 4.0 dB / km @ 1300 nm

.6 All fibres must pass the cable testing.

3.2 Identification

.1 Identify all instrumentation cables.

.2 Identify each conductor with wire numbers using a machine printed heat shrink wire marker, similar to Raychem TMS or equivalent.

END OF SECTION