





## **Legend for Decorative Tree Lighting Details TL-1 and TL- 2**

1. handwell as per City specifications. (see transportation drawing No. 802-L2) )
2. sceptre box or equivalent, with low voltage potted transformer ( 500 watt 120 / 24 volt )
3. rigid 50mm PVC conduit installed 450 mm below grade.
4. flexible 38 mm PVC conduit.
5. S.O.W. cable under mulch in TL – 1 under precast panel in TL – 2.
6. 80 mm of mulch ( in raised tree planters only )
7. continuous run of S.O.W. cable from transformer in handwell into crown of tree.
8. vulcanized rubber tape to secure S.O.W. cable.
9. receptacle box with cover secured with vulcanized rubber tape 2.5 m above grade minimum
10. low voltage decorative lights draped over branches ( wires not to be wrapped around any part of the tree).
11. hydro pole
12. 25 mm PVC weather-head
13. B-100 hub with close nipple and female adaptor.
14. service entrance switch square D-Q02rb or equivalent.
15. contactor switch with photo-cell.
16. 50mm rigid steel conduit for service wire.
17. #6 ground wire in 12 mm rigid steel conduit.
18. ground plate or approved Hydro inspected grounding means
19. female adaptor - sceptre fitting

## **Low Voltage Decorative Tree Lighting Specifications :**

### **1.0 In – ground Installation :**

#### **1.1 Handwells :**

- 1.1.1. Each tree to have handwell located flush with sidewalk fronting tree pit.
- 1.1.2. Handwell to be 775mm deep, 610mm wide with 460mm inner cavity and steel bolt down lid. See transportation drawing No. 802-SL2
- 1.1.2. S.L.U. Lug to be attached to ring and grounded with #6 ground wire.

#### **1.1 Point of Service :**

- 1.2.1. Requires approval by Electrical Safety Authority
- 1.2.2. 50mm rigid PVC conduit from last handwell to point of service.
- 1.2.3. On a hydro pole: Riser shall be 50mm galvanized steel conduit joined to 50mm PVC conduit 460mm below grade.  
This conduit to terminate at a square D-Q02rb or equivalent service switch mounted a minimum 4.8 m above finished grade or as determined by P.U.C.C.
- 1.2.4. Galvanized conduit to be connected to ground through grounding clamp. Cables to be left coiled for connection by Toronto Hydro.
- 1.2.5. 25mm PVC conduit weather-head fitting from top of switch to point of connection.

#### **1.2 Wiring :**

- 1.3.1. #6 T.W.U. or equivalent, red, blue, white and green ground between handwells and to service point.
- 1.3.2. 50mm rigid PVC conduit to be installed a minimum 450mm below grade between handwells and to service point.
- 1.3.3. Continuous run of S.O.W. Cabtire from handwell to tree
- 1.3.4. Cabtire fed through 38mm flexible PVC conduit from handwells to grade within tree pit.
- 1.3.5. Cabtire fed through 25mm rigid PVC conduit on grade within tree pit to base of tree covered by 80 mm of mulch in raised tree planters.
- 1.3.6. Connections in handwell to be done with burundy split bolt connectors wrapped with vulcanized rubber and #88 scotch tape.

#### **1.3 Transformers:**

- 1.4.1. Transformers to be low voltage 500 VA 120 V primary and 24V secondary in Sceptre Box or equivalent, located in handwells.
- 1.4.2. Appropriate fusing to be installed on primary side. Primary to be protected with fuse installed at source.

## **Low Voltage Decorative Tree Lighting Specifications – continued**

### **1.0 Above ground Installation :**

#### **2.1 Installation at tree :**

- 2.1.1. All wires to be secured with weather resistant vulcanized rubber tape.
- 2.1.2. All taping of wires to tree should be loose to avoid girdling.(Girdling of any part of the tree will cause it serious harm or death).
- 2.1.2. Use only low voltage decorative lights.
- 2.1.3. Lights to be draped over branches. Do not wrap wires around any part of the tree.
- 2.1.4. S.O.W. Cabtire and low voltage lighting to be connected within a weather proof receptical box with cover ( install 2 – 10 amp fuses for 24 volt circuits ) located a minimum 2.5 M from grade, secured using weather resistant vulcanized tape.

#### **2.2 Installation at service entrance :**

- 2.2.1. Photo cell control preferred. Require 2 circuits covered by D-Q02rb at service entrance switch.
- 2.2.2. Contactor relay to be mounted in approved weather proof enclosure to City of Toronto standards.

#### **2.3 Maintenance :**

- 2.3.1. The vulcanized tape securing lights and wiring must be replaced annually to avoid girdling.
- 2.3.2. Lights must be removed within a reasonable time period (usually two weeks) after notification by the City when pruning is required or the tree needs to be replaced.

Note: See also **Detail TL 1** and **Detail TL 2**