

## **PART 1 – GENERAL**

### **1.1 Related Sections**

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 32 12 17 – Asphalt Paving
- .3 Section 32 16 15 – Concrete Walks, Curbs and Gutters

### **1.2 References**

- .1 CSA International
  - .1 CSA A23.1/A23.2-14, Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
  - .2 CAN/CSA-A3000-13, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
  - .3 CSA G30.18-09 (R2014), Carbon Steel Bars for Concrete Reinforcement.
- .2 American Society for Testing and Materials (ASTM)
  - .1 ASTM A327/A327M-11, Standard Test Methods for Impact Testing of Cast Irons
  - .2 ASTM A48/A48M-03(2012), Standard Specification for Gray Iron Castings.
  - .3 ASTM B117-11, Standard Practice for Operating Salt Spray (Fog) Apparatus.
  - .4 ASTM D790-10, Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
  - .5 ASTM G151-10, Standard Practice for Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Sources.
  - .6 ASTM G155-13, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-metallic Materials
  - .7 ASTM E84-15a, Standard Test Method for Surface Burning Characteristics of Building Materials.

### **1.3 Submittals**

- .1 Shop Drawings
  - .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Submit shop drawings at least two weeks before TWSI installation showing the proposed plate arrangement at each TWSI location, the width and radius as shown on the Contract Drawings, and the width and radius achieved by the proposed plates, for review by the Contract Administrator.

#### **1.4 Accessibility Design Standards**

- .1 Ontario Regulation 191/11: Integrated Accessibility Standards Part IV.1 - Design of Public Spaces Standards (Accessibility Standards for the Built Environment), as amended.

#### **1.5 Coordination**

- .1 Layout and installation of TWSIs to be coordinated with installation of concrete sidewalks and curbs.

### **PART 2 - PRODUCTS**

#### **2.1 Materials**

- .1 Cast iron, tactile raised dimple, detectable warning plates to meet OADA standards.
  - .1 Cast gray iron, to ASTM-A-48.
  - .2 Minimum tensile strength – 35,000 p.s.i.
  - .3 Natural patina.
  - .4 Quantity to accommodate full length of depressed curbs as shown on plans and details.
- .2 Approved manufacturer:
  - .1 Neenah Foundry, 1-800-558-5075, distributed by Crozier Enterprises, 1-800-665-3821.
  - .2 Model: Quick Connect plates.
  - .3 Sizes:
    - .1 24" x 36" & 24" x 24"(4984-36Q & 4984-24Q), to accommodate the length of the depressed curb.
  - .4 Colour: natural, unpainted.

### **PART 3 - EXECUTION**

#### **3.1 Examination**

- .1 Verification of Conditions: verify that conditions of aggregates previously installed under other Sections are acceptable for concrete placement.
  - .1 Visually inspect aggregate.
  - .2 Prepare for cast-in-place concrete work to CSA A23.1/A23.2 and Section 32 16 15 – Concrete Walks, Curbs and Gutters.

#### **3.2 Installation**

- .1 Install as per manufacturer's guidelines and the following.
- .2 Install TWSIs in conjunction with Concrete Pour.

- .3 Isolate work area by using barricades or cones to block off the work area from pedestrian or vehicular traffic. Consult with local governmental agency or other standard to be certain safety guidelines are followed.
- .4 Before pouring concrete determine the layout of tiles.
  - .1 TWSI's shall be set back 150 to 200mm from the back of curb. Where TWSI's are installed in monolithic sidewalk, plates shall be set back 300 to 350mm from the front face of curb.
  - .2 For curb ramps and single transition areas, TWSI's shall extend the full width of the curb ramp/area.
- .5 Pour and finish concrete according to the drawings and Section 32 13 15 – Concrete Walks, Curbs and Gutters. Check the slope of the concrete with an electronic level to assure compliance.
- .6 All TWSIs shall have 6mm wide x 6mm deep drain grooves at corners between the TWSI and the curb.
- .7 Connect tiles together before placement. Use lifting supplied springs and a lifting bar to lift plates into position.
- .8 Set plates in wet concrete at final position. Remove lifting springs.
- .9 Press assembly into wet concrete to final elevation. Tops of TWSI's shall be aligned and level with the adjacent concrete surface .
- .10 Carefully finish the edges, and clean of any concrete that has spilled during the installation.
- .11 Finish concrete surround as per Section 32 13 15 – Concrete Walks, Curbs and Gutters.
- .12 Protect area from pedestrian and vehicular traffic until the concrete has cured sufficiently.

### **3.3 Cleaning**

- .1 Progress Cleaning:
  - .1 Leave Work area clean at end of each day.
  - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

### **3.4 Protection**

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by site furnishings installation.

**END OF SECTION**