Add the following to Section 705 (In accordance with Section 101.01 of the 2001 Standard Specifications)

**705007 - SIDEWALK SURFACE DETECTABLE WARNING SYSTEM**

**Description:**

Furnish and install a detectable warning surface system that complies with the Americans with Disabilities Act (ADA) of 1990, as amended, for outdoor facilities, in accordance with the Plans, the Standard Construction Details and as directed by the Engineer.

**Materials:**

A. Provide materials as specified in:
   - Portland Cement Concrete Section 801
   - Fine Aggregate Section 818
   - Water Section
B. Submit samples of the proposed system to the Engineer for approval prior to the start of work.

C. Submit mortar mix formula for concrete sidewalk applications to the Engineer for approval prior to the start of work.

D. Utilize the dome pattern shown in the Standard Construction Details.

E. Use one of the following material systems:
   1. Precast concrete, or fired clay brick, paver units: manufactured with the truncated dome pattern, set on the concrete sidewalk surface.
      a. Use mortar for adhesion to the sidewalk surface and for joint filling.
   2. Cast iron plates: manufactured with the truncated dome pattern, set on the concrete sidewalk surface.
      a. Anchor the plates down according to manufacturer's recommendations.
   3. Stamping systems, applied membranes, or ceramic tiles are not acceptable for new work.
      a. Applied membranes may only be used if placing on an existing curb ramp which meets ADA standards upon approval by the Engineer.

F. Submit test results certifying that the surface of the system is slip resistant using one of the following standard methods:
   • ASTM C1028 B Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method
   • ASTM D2047 B Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine
   • ASTM D5859 B Determining the Traction of Footwear on Painted Surfaces Using the Variable Incidence Tester
   • ASTM E303 B Measuring Surface Frictional Properties Using the British Pendulum Tester
   • VOSI V41.21-98 B Universal Specification / Test Method for Slip Resistant Walkways, in the Field and Laboratory, as measured by a Drag Type Friction Tester (Voices of Safety International (VOSI): www.voicesofsafety.com)

G. The color of the final surface of the system must conform to the table below or as specified on the Plans.

<table>
<thead>
<tr>
<th>Sidewalk Surface</th>
<th>Detectable Warning System Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brick</td>
<td>white, federal yellow, pale yellow</td>
</tr>
<tr>
<td>Hot-mix</td>
<td>white, light gray, federal yellow, pale</td>
</tr>
</tbody>
</table>
Concrete: brown, dark gray, red, brick red, black, yellow

The Engineer will determine the color, with a light to dark contrast, for sidewalk surfaces not listed above if not already specified on the Plans.

Construction Methods:

A. P.C.C. sidewalk: Use precast concrete or fired brick paver units.
   1. Construct the base material of the sidewalk section receiving the detectable warning surface at a lower elevation to allow the thickness of the concrete under the detectable warning system to be the same as the sidewalk (minimum of 4" (100 mm)).
   2. Install paver units to achieve a flush surface with the surrounding ramp/sidewalk surfaces.
   3. Mortar:
      a. Mix portland cement mortar in the following proportion: one part portland cement to three parts fine aggregate, add hydrated lime not to exceed 10% of the cement by weight.
      b. Dry mix the fine aggregate, portland cement, and lime until the mixture assumes a uniform color.
      c. Add water as the mixing continues until the mortar attains a consistency that can be easily handled and spread with a trowel.
      d. Mortar that is not used within 30 minutes after water has been added cannot be used.
      e. Retempering of mortar will not be permitted.
   4. Place the mortar to form a firm bond.
   5. Set paver units in a bed of mortar and mortar the joints.
      a. Maintain 1/4 in. (6 mm) wide joints, no larger than 3/8 in. (9 mm) Plastic spacers may be used.
      b. Keep joints uniform and straight in all both directions.
   6. Maintain clean surfaces and joints prior to applying grout.
   7. Bevel edges of the system with grade changes in between 0.25 and 0.50 inch (6 and 13 mm) with a slope no steeper than 2 to 1.
   8. Grade changes up to 0.25 inch (6 mm) may be vertical.

B. Brick sidewalks: Use precast concrete panels or fired brick paver units.
   1. Place units on the same base material and lift thickness as used under the brick sidewalk.
   2. Place units to achieve a flush surface with the surrounding ramp/sidewalk surfaces.

Method of Measurement:
The quantity of sidewalk surface detectable warning system will be measured as the actual number of square feet (square meters) installed and accepted. The sidewalk is measured and paid for separately.

**Basis of Payment:**

The quantity of sidewalk surface detectable warning system will be paid for at the Contract unit price per square foot (square meter). Price and payment will constitute full compensation for furnishing all materials, installing a truncated dome patterned surface system, and for all labor, equipment, tools, and incidentals required to complete the work.

**Section 705 – Portland Cement Concrete Sidewalk.** (10/12/2010) (10/22/2013)

Add the following to Section 705 (In accordance with Section 101.01 of the 2001 Standard Specifications)

705008 - CURB RAMP, TYPE 1
705009 - CURB RAMP, TYPE 2, 3, AND/OR 4
705010- CURB RAMP, TYPE 5

**Description:**

Furnish all materials and construct curb ramp(s) at the indicated location(s) on existing sidewalks in accordance with the Standard Construction Details, notes and details shown on the Plans, and/or as directed by the Engineer.

**Materials:**

E. Provide materials as specified in:

- Portland Cement Concrete Section 812, Class B
- Graded Aggregate Section 821, Type B
- Hot-Mix Section 823

**Construction Methods:**

A. Construct Curb ramps in accordance with the requirements of the Standard Construction Details, any modifications on Plans and to all the applicable requirements of Sections(s) 302, 401, 705, 758 and 762 of the Standard Specifications.

B. Provide and install PVC sleeves, 4" minimum or 6" maximum inside diameter. Place the lower end of the sleeve on top of the subbase material in the proposed concrete sidewalks for future traffic sign posts as directed by the Engineer.
**Method of Measurement:**

A. The quantity of curb ramps will be the measured square foot (square meter) surface area of curb ramp acceptably completed.
   1. The area of curb ramps will be established by the measurement of the curb, sidewalk and taper areas shown in the Standard Details.
   2. No measurement for payment will be made on vertical surfaces of curb or sidewalk.
B. Sidewalk or curb removed and/or replaced beyond the minimum limits required to achieve the slopes shown in the Standard Details as measured from the nearest edge of the landing area, are paid under the appropriate items for concrete removal, graded aggregate, sidewalk, and curb unless otherwise noted on the plans.
C. Curb ramps constructed in conjunction with the new P.C.C. sidewalk shall be measured and paid for under other items.

**Basis of Payment:**

The area of curb ramps will be paid for at the Contract unit price per square foot (Square Meter). Price and payment constitutes full compensation for furnishing and placing all materials including concrete, aggregate, hot-mix or concrete for patching along the curb line, expansion material, saw cutting, removal and disposal of the existing curb, gutter, sidewalk, and pavement, excavation, grading and compacting, including the curb and pavement areas within the limits of the ramp, and for all equipment, labor, tools, and incidentals necessary to complete the work. The limits of removal and replacement shall be the minimum area required to achieve the allowable slopes as shown in the Standard Details.

**Subsection 705.04 Curing Material.** (3/28/2012)

Delete and replace with the following:

Curing Material. Curing materials shall conform to the requirements of Subsection 812.02 (m).

**Subsection 705.09 Curing.** (5/15/2006)

Modify the sentence as follows:

Concrete shall be cured according to Section 501 for a period of 72 hours. The sidewalk shall not be opened to pedestrian traffic for 72 hours. Vehicular traffic shall not be permitted until after 5 days.

**Subsection 705.12 Basis of Payment.** (5/15/2006)
Add the following sentence:

Curb ramps constructed along the new P.C.C. sidewalk shall be incidental to the sidewalk item in this Section 705-Portland Cement Concrete Sidewalk.