**UH STANDARD - REMOVABLE BOLLARD**

**JULY 2022**

- **Basis of Design:** Calpipe security bollards or comparable product by traffic guard or 1-800-BOLLARDS. See Section 01 2500 "Substitution Procedures".

- **Embedment sleeve lid:** Embedment sleeve assembly, flush with top of paving, centered in concrete pier, install per manufacturer requirements.

- **Paving, Ref Material Plan:** 2-#4x4'-0" (1 each side) each way centered at bollard.

- **#4 circular ties:** Place 4 ties within embedment depth of bollard and rest @ 10" O.C.

- **6 - #7 vertical:** 24" dia. shaft.

- **Min concrete 28 day compressive strength is 4000 PSI.**

**Notes:**

1. The general contractor is responsible for the coordination of the bollard locations with the architectural and landscape drawings.

2. Bollards shall meet or exceed S-10 rating which correlates to a 5,000 lb vehicle traveling at 10 MPH, unless noted otherwise.

3. Pier depth indicated is based on IBC 2015 Equation 18-2 considering "constraint" provided by pavement and allowable lateral bearing pressure of 100 psf/ft based on the minimum value in IBC 2015 Table 1806.2 if a project geotech report is available, the project engineer shall use it to confirm the required depth of bollard foundation based on the allowable passive pressure for the site.

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**UH STANDARD - FIXED BOLLARD**

**JULY 2022**

- **Basis of Design:** Calpipe security bollards or comparable product by traffic guard or 1-800-BOLLARDS. See Section 01 2500 "Substitution Procedures".

- **Choose finish:** T304 stainless, #4 polished (public spaces) or galvanized steel (back of house/service spaces).

- **Paving, Ref Material Plan:** 2-#4x4'-0" (1 each side) each way centered at bollard.

- **#4 circular ties:** Place 4 ties within embedment depth of bollard and rest @ 10" O.C.

- **6 - #7 vertical:** 24" dia. shaft.

- **Min concrete 28 day compressive strength is 4000 PSI.**

**Notes:**

1. The general contractor is responsible for the coordination of the bollard locations with the architectural and landscape drawings.

2. Bollards shall meet or exceed S-10 rating which correlates to a 5,000 lb vehicle traveling at 10 MPH, unless noted otherwise.

3. Pier depth indicated is based on IBC 2015 Equation 18-2 considering "constraint" provided by pavement and allowable lateral bearing pressure of 100 psf/ft based on the minimum value in IBC 2015 Table 1806.2 if a project geotech report is available, the project engineer shall use it to confirm the required depth of bollard foundation based on the allowable passive pressure for the site.