

Cast-in-Place Concrete Vault Collars



1. Scope

This standard covers the requirements for cast-in-place concrete vault collars.

2. Application

Concrete collars are slabs of concrete installed around vault openings to prevent damage to the vault roofs, risers, and openings by vehicles.

Concrete collars are not required when the vault is installed below concrete pavement. In these cases, the vault openings must be secured to the concrete pavement to prevent the casting and frame from shifting.

3. Requirements

Concrete collars shall be installed around every vault opening, except where surrounding surface is concrete pavement. Collars shall be poured separately from any vault risers.

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Vault openings shall be secured to the concrete collar or concrete pavement.

Concrete collars shall be a rectangular slab, 10 ft by 10 ft minimum, with a minimum thickness of 6 inches.

Collars shall be manufactured with Class 4000 concrete and shall meet the requirements of section 6-02 of the City of Seattle Standard Specifications.

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Collars shall be centered on each vault opening and sized to provide 2 ft minimum of concrete from the edge of the opening to the edge of the collar.

Concrete shall have a broom finish perpendicular to the direction of traffic or match the roadway finish when installed in a concrete roadway.

Opening frames shall be secured to the concrete collar or pavement with rebar hairpins. Rebar hairpins shall be #4, grade 60, 2 ft long minimum. See Figure 3a.

Examples of common collar and vault opening layouts are shown in figures 3b–3e.

Figure 3a. Rebar Hairpin Example



Figure 3b. Single Round Access Example

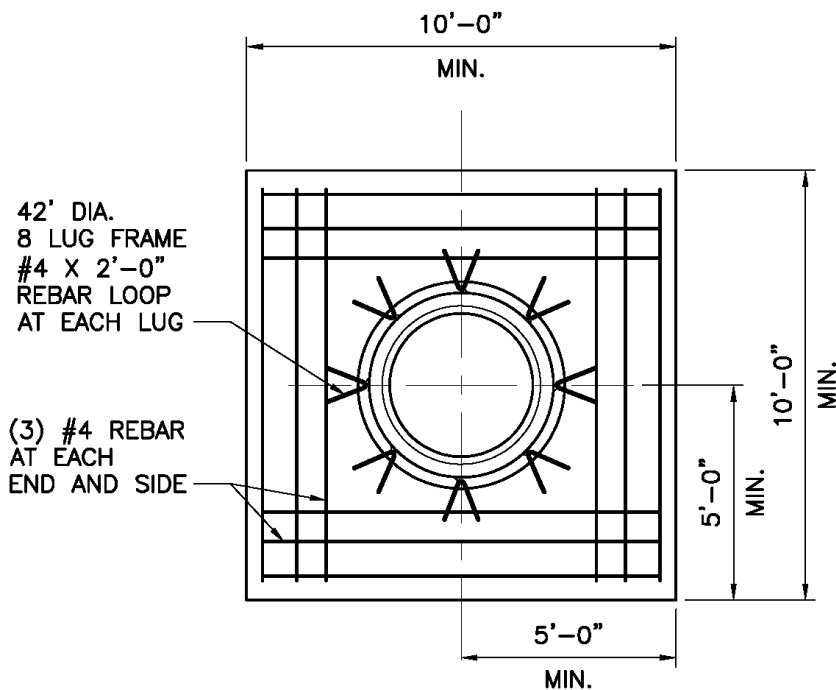


Figure 3c. Two Round Accesses Example

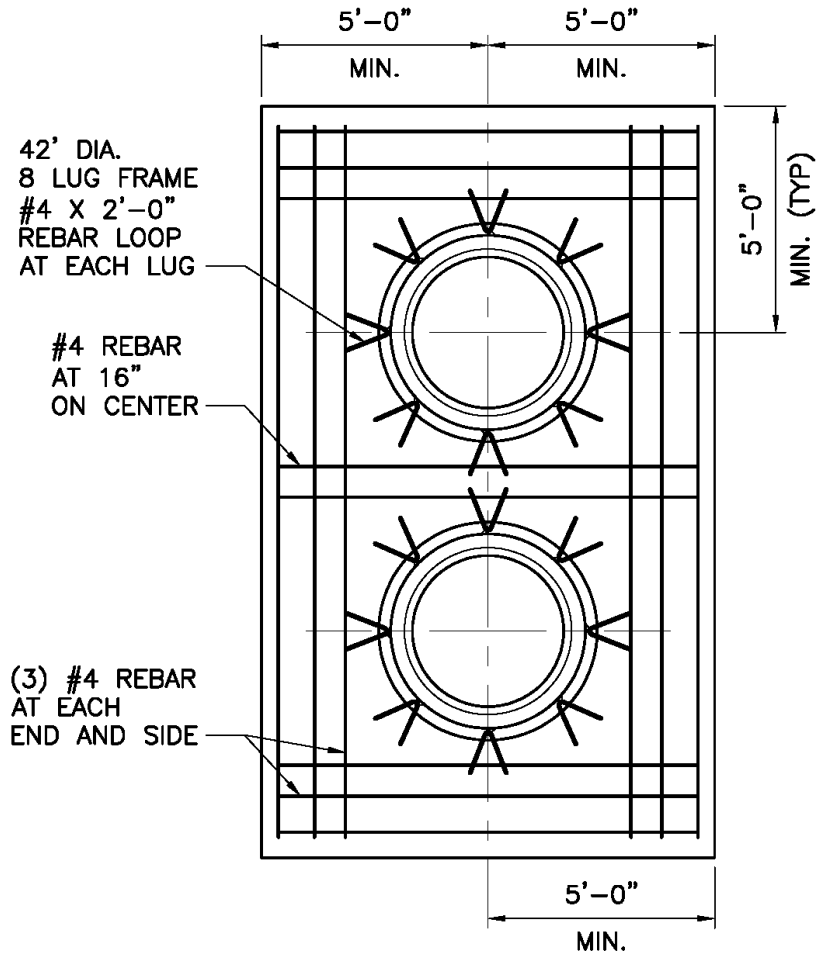


Figure 3d. Round Access and Rectangular Hatch

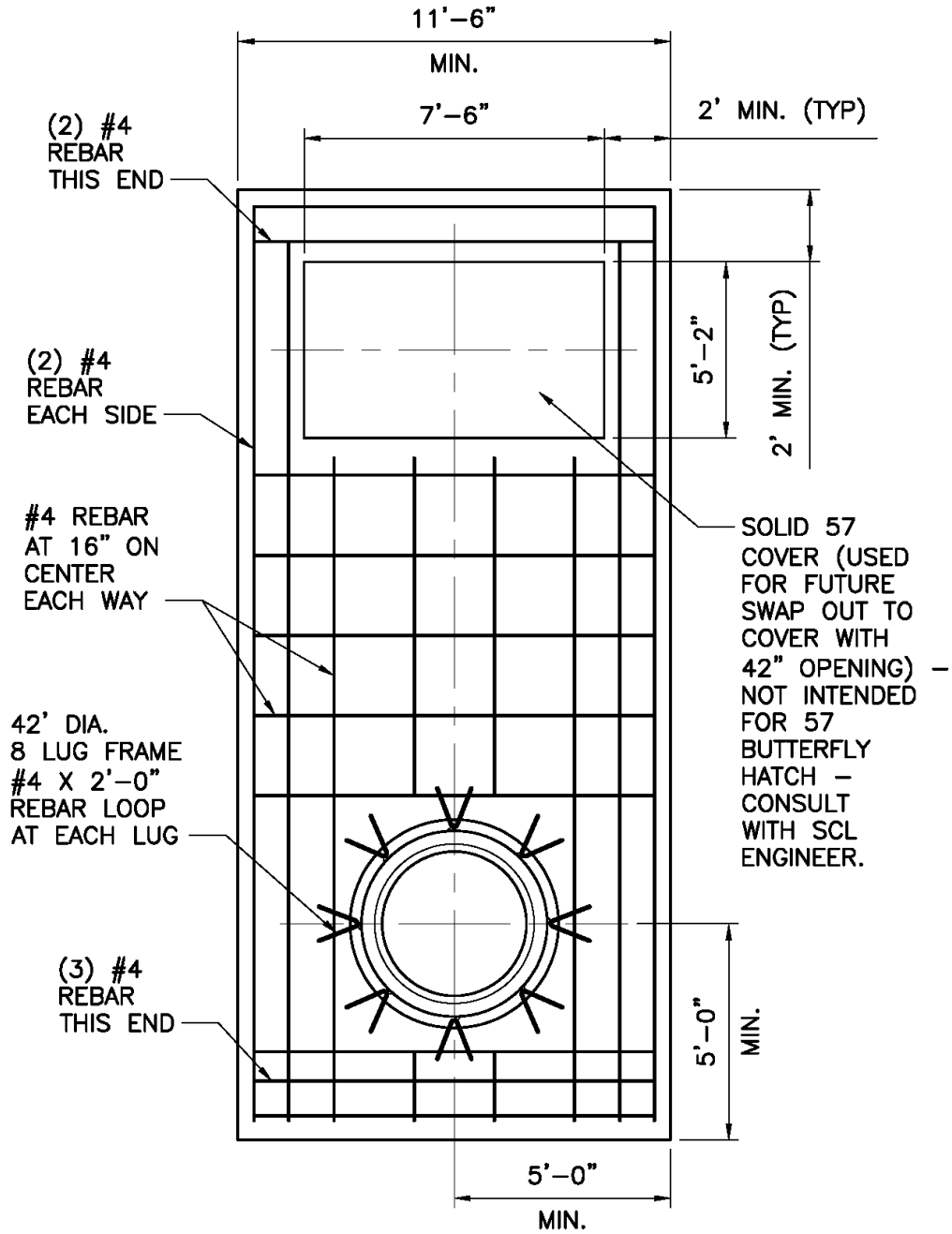
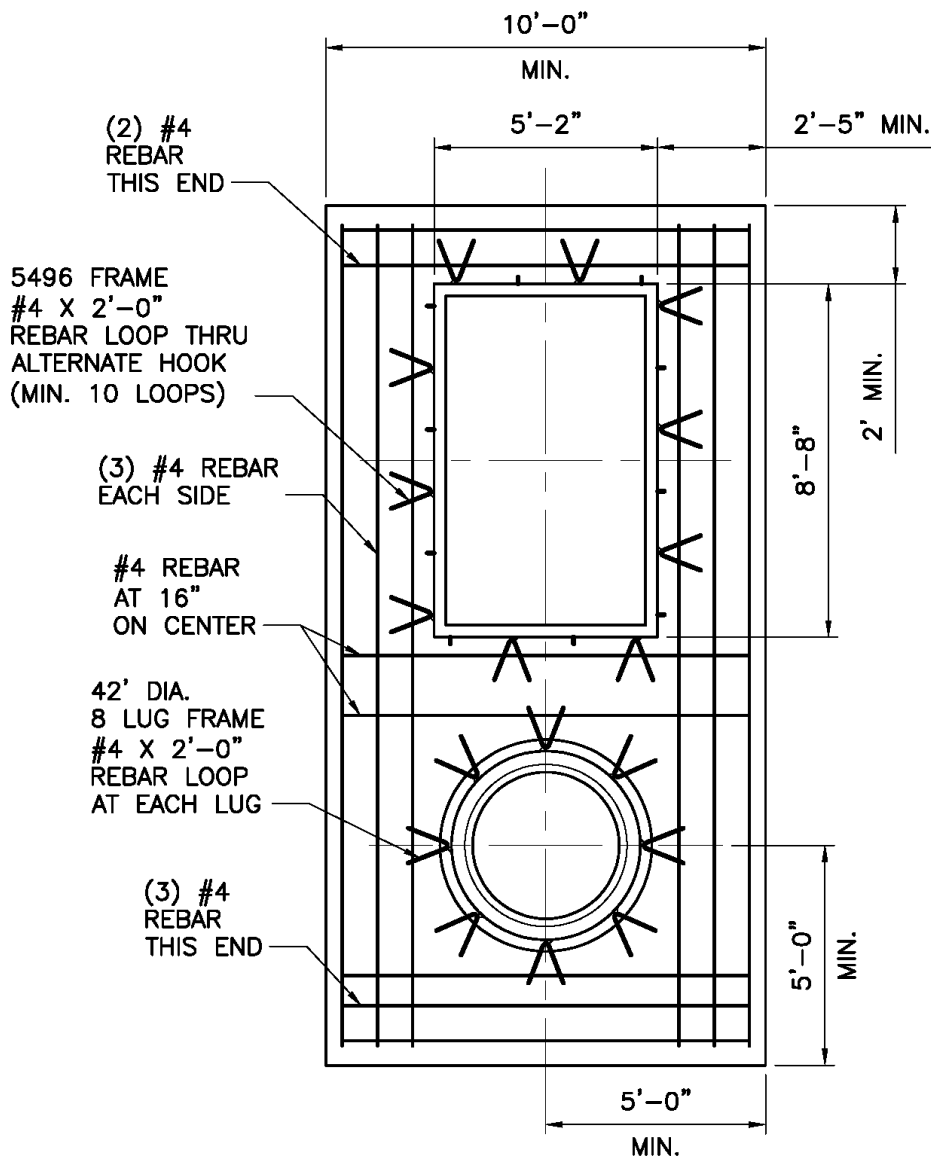


Figure 3e. Round Access and 5496 Hatch



4. Sources

City of Seattle Standard Specifications for Road, Bridge, and Municipal Construction; 2020 Edition

Hanson, Brett; SCL Standards Engineer, originator, and subject matter expert for 0223.33

Kohashi, Owen; Structural Engineer and subject matter expert for 0223.33

Ng, Sharon; Senior Civil Engineer and subject matter expert for 0223.33

SCL Material Standard 7203.81; "Precast Reinforced Concrete Panel Vaults"

SCL Material Standard 7204.15; "Covers and Risers for Electric Vaults"

SCL Material Standard 7204.70; "Frames and Covers, 42-Inch Round, Iron"