

**Figure 5-397.162**

**Ornamental Metal Railing (Design T-4 Parapet Mount)**

Approved, and signed, November 06, 2013. Last date revised: October 22, 2019.

**Revised 10-22-2019**

At GENERAL NOTES:

- Changed the 3<sup>rd</sup> and 4<sup>th</sup> notes and numbered note®: Changed the term “per spec.” to “in accordance with spec.” in all instances.

At the BASE PLATE Detail:

- Added ½” radius to the corners of the 3” x 3” vent hole with accompanying note.
- Changed the vent hole note to read: “3” x 3” square vent hole centered under post”.

At DETAIL “C”:

- Added a slotted hole making the ½” x 1½” x 3” plates identical on each side of the post.

At SECTION A-A:

- Added a slotted hole making the ½” x 1½” x 3” plates identical on each side of the post.
- Added ½” radius to the corners of the ½” x 1½” x 3” plates with accompanying note.
- Changed the hole in tube note to: “⌀ 5/8” dia. hole in tube. 5/8” dia. x 1” slotted hole in plates on both sides of post. (Typ. top and bottom rails)”

At DETAIL “A”:

- Added a post to the detail and added a weld symbol with accompanying note at the cantilever.

At INSIDE ELEVATION of RAILING:

- Removed the weld symbol and note “Typ. at Cantilevers Only”.
- Added a larger referenced area to the Detail “A” (Typ.) due to the changes at that detail.

**Revised 02-27-2019**

At GENERAL NOTES:

- Changed 5<sup>th</sup> from “See special provisions for paint to be applied to metal railing” to “See special provisions for coating to be applied to metal railing.”
- Changed the Designer Note pointing to the 6<sup>th</sup> general note from “Designer shall consult with Bridge Office Architectural Specialist. Change note accordingly.” to “Designer shall consult with Bridge Office Architectural Specialist to choose one option (normal or plumb) and delete the other.”
- At end of 6<sup>th</sup> general note added italics and bold font to “[ Normal to grade or plumb ]”.

THROUGHOUT the STANDARD:

- Updated the weld symbols at multiple locations.

At INSIDE ELEVATION of RAILING:

- Removed the “Typ. @ Cantilevers Only” from the upper portion of the elevation, as it was repetitive.

**Revised 02-22-2018**

At SECTION B-B:

- Changed the concrete parapet height from 2’-4” to 2’-8”.
- Changed the note pointing to the concrete parapet from “See standard fig. 5-397.166, sheet no. \_\_\_ for parapet details” to “See concrete parapet plan sheet for details”.
- Changed the note pointing to the sidewalk from “⊙ Top of bridge deck or sidewalk” to “Top of raised sidewalk shown⊙”.

At the RAILING HEIGHT TABLE:

- Eliminated the 4’-6” nominal height option and added at a 10’-0” option. Updated all dimensions in columns Nominal Height and circled letters A & B due to increase in parapet height.

Combined two Railing Designer Notes into one note, note reads:

- For roadway design speeds greater than 45 mph T-4 ornamental railings must be protected by a traffic barrier. - Choose one height from railing height table and cross out other heights. - Rail heights greater than shown require special design.

At the INSIDE ELEVATION of railing:

- Removed the two 8 3/8" Max. dimensions from the ends of the spindle spacing dimension.
- Added a cantilevered end of metal railing to the bridge superstructure side of the expansion joint to match the approach or wingwall side. Added 2'-6" Max. , 2'-0" Min. to both cantilevered ends.
- Added "Max. 4" to the end of the Designer Note pertaining to the joint opening.
- Removed the parenthesis at the "Typ. at cantilever only" notes.
- At the expansion joint, changed the note to read: "See concrete parapet plan sheet for joint details".
- Changed note from "See Detail "A" (Typ.)" to "Detail "A" (Typ.)"

At the BASE PLATE:

- Changed the 2" diameter vent hole to a 3" x 3" square vent hole centered on the rail post.
- Changed note from "See detail "B" this sheet" to "Detail "B" this sheet".

At Detail "C":

- Added maximum and minimum dimensions between the rail post and the spindles.
- Changed the length of the horizontal slot in the bottom of the horizontal railing tube from 2" x 3/4" to 2" x 3". This 1/4" reduction allows for a minimum clear distance of 3/4" between the rail post face and the first spindle, if needed.
- Changed note from "See Detail "B" this sheet" to "Detail "B" this sheet".

At Detail "A":

- Updated the detail showing the cantilevered ends and appropriate weld symbols.

Under GENERAL NOTES:

- At note ⑤, replaced the Standard Figure number with "concrete parapet plan sheets".
- Replaced note ⑦, note reads: "For non-raised sidewalk, see concrete parapet plan sheet".

#### **Revised 05-25-2016**

Under GENERAL NOTES:

- Changed the first word in the 3<sup>rd</sup> note from "USE" to "PROVIDE".
- Removed from 3<sup>rd</sup> note: "Finial Caps shall be spec. 3322."

#### **Revised 11-20-2014**

REMOVED: the RAILPOST CAP MACHINE BOLT DETAIL and DETAIL "D" from the standard.

At SECTION B-B:

- Removed the cap screw note at the top of the railpost.
- Added the note: "Vent hole. See railpost cap detail" to the top of the post.
- Removed the "TYP." From the weld symbol at the railpost / base plate location.

ADDED: RAILPOST CAP DETAIL to the standard.

Under GENERAL NOTES: (sequence of notes has been adjusted, present sequence is listed below)

- Changed the 2<sup>nd</sup> note to read: Payment length shall be measured as the out to out length along the centerline of the railing between the outside ends, with deductions for the length of concrete posts, if present.
- Changed the 5<sup>th</sup> note to read: Coat the galvanized railing, base plates, and protruding portions of bolts, nuts, anchors, and washers.
- Changed the 8<sup>th</sup> note to read: See special provisions for requirements not included on this sheet.
- Changed the 9<sup>th</sup> note to read: Drill 1/2" dia. max. vent holes on the underside of rail tubes as necessary to facilitate galvanizing.
- Moved "Adhesive Anchorage" numbered note ① to numbered note ⑥ and also made the numbered note change at the Anchor Detail.
- New numbered note ① reads: Drill vent hole in the rail post within 2" of the underside of the cap, on the non-traffic side of the post as necessary to facilitate galvanizing. Maximum hole size is 1/2" dia.
- Changed the beginning of numbered note ④ *from*: The contractor shall coordinate.... *to*: Contractor to coordinate...
- Changed numbered note ⑥ to read: Provide a pyramid top style steel cap welded to top of post with a surface finish of 1000 micro-inch, or smoother, prior to galvanizing.

CHANGED: the Designer Note which refers to the Railing Height Table to read: Choose one height from railing height table above and cross out other heights. Rail heights greater than shown require redesign.

Approved, and signed, November 06, 2013

NEW STANDARD