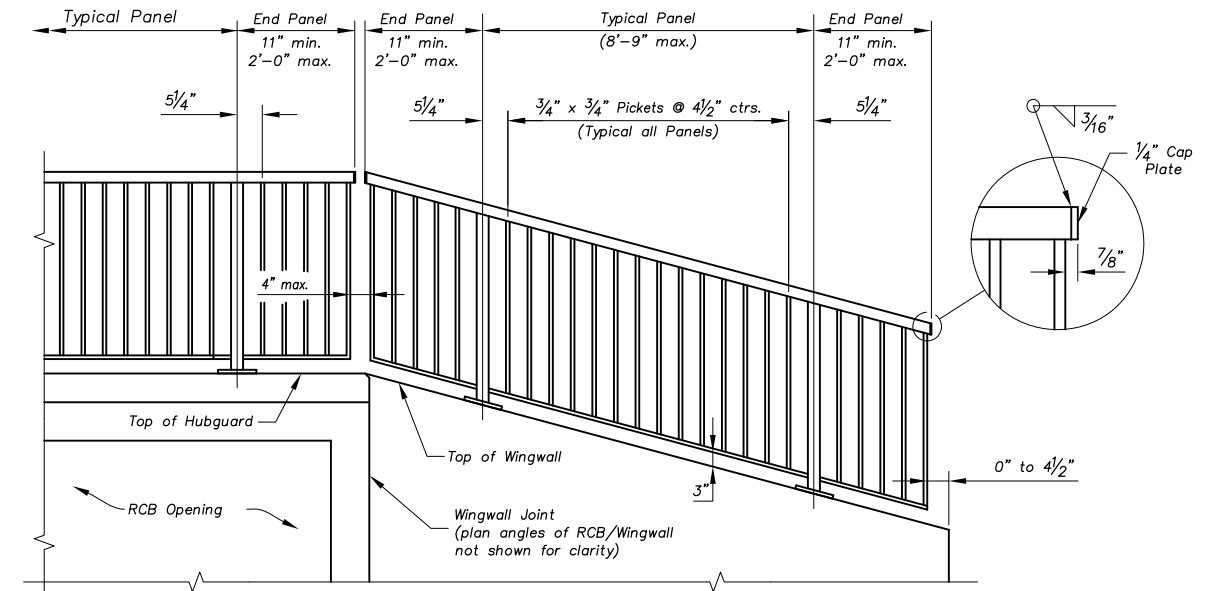


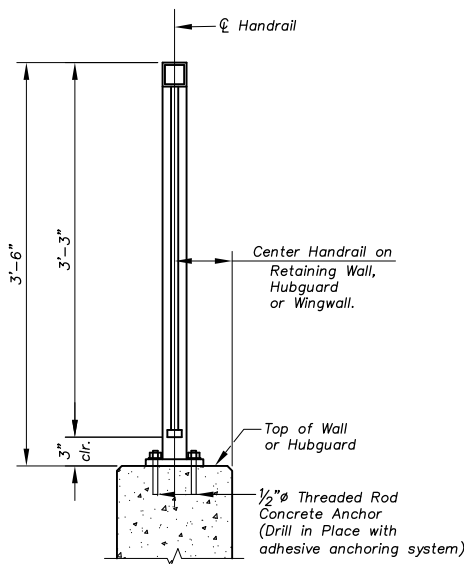
**TYPICAL METAL HANDRAIL ELEVATION ON CONCRETE RETAINING WALL**

Not to Scale

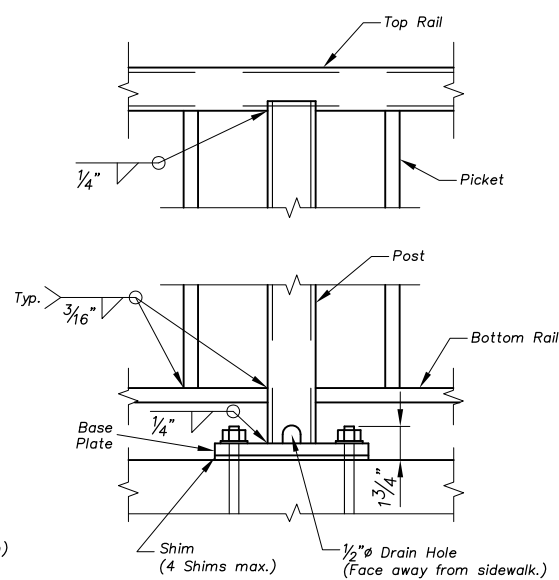


**TYPICAL METAL HANDRAIL ELEVATION ON RCB HUBGUARD & WINGWALL**

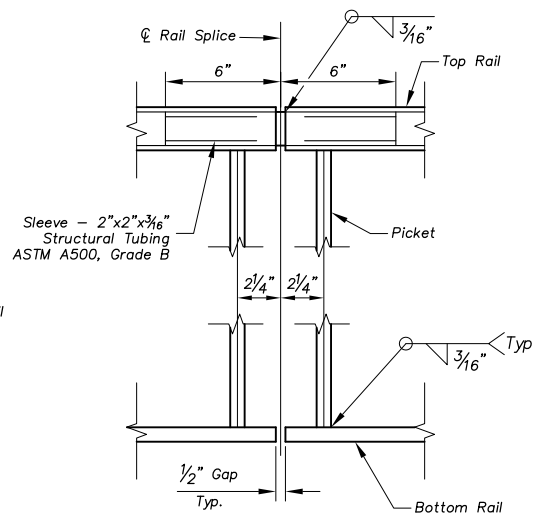
Not to Scale



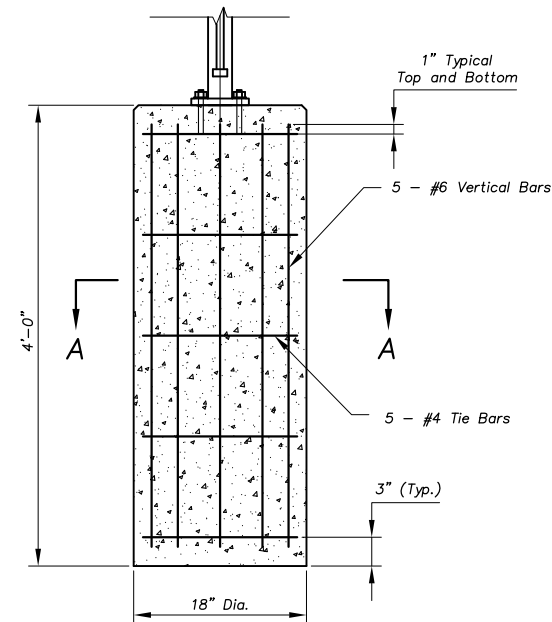
**SECTION THRU RAIL**



**POST DETAIL**



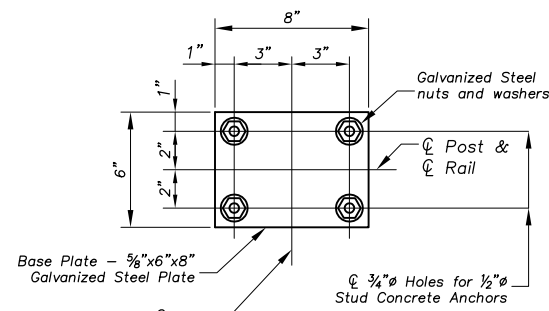
**RAIL SPLICE DETAIL**



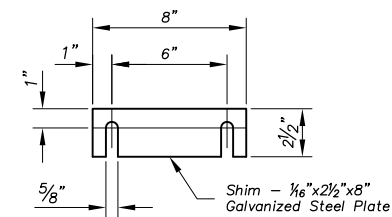
**POST FOUNDATION DETAIL**

**Handrail General Notes:**

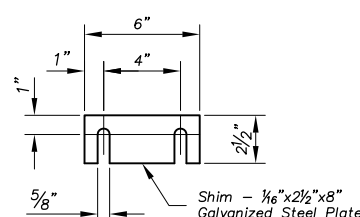
- Overland Park Municipal Code (OPMC) and Overland Park Design and Construction Standards Manual (OPDCSM) are incorporated, except as otherwise noted.
- Galvanize all rail, posts, pickets, and base plates after fabrication in accordance with the requirements of ASTM A123. No field galvanizing will be allowed. Handrails shall be protected from any damage to the galvanized surfaces. Handrails delivered to the job site with damaged galvanizing shall be returned to the manufacturer to be re-galvanized.
- Set rails parallel to the top of the wall. Set posts and pickets vertical in both planes of the handrail. Top of handrail elevations to match at hubguard - wingwall interface. Shims may be used between concrete and base plate of steel post (1/2" max. shim without prior City approval).
- Grind smooth all top and bottom rail-to-post welded connections. Field welding is not permitted. The Contractor shall submit shop drawings to the Engineer for approval prior to fabrication of the handrail. Field verify as-built dimensions and elevations of retaining walls, hubguards or wingwalls prior to fabrication of handrail. Post spacing will be reviewed during the shop drawing review period to coordinate with expansion and contraction joint spacing in the wall.
- Fabricate handrail in lengths to include a minimum of one and a maximum of three panels.
- Attach top rail members to at least two posts. Locate center of rail splices 1'-9" from centerline of post unless shown otherwise.
- The threaded rod concrete anchors shall be galvanized and provide a minimum pullout strength of 8000 pounds on 4000 psi concrete. Length of embedment into concrete shall conform to manufacturer's recommendations. After the holes are drilled, remove all loose material by using a wire brush to free the dust from the side of the hole and then vacuuming to remove material and dust. Place epoxy capsule system in the hole and insert the threaded rod in accordance with the manufacturer's directions.
- All tools, materials, labor and incidentals necessary to complete the work shall be paid for under the bid item "Handrail". The handrail is to be bid on a per linear foot basis measured from end to end of handrail.



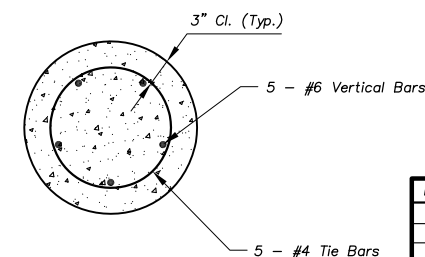
**BASE PLATE DETAIL**



**8" SHIM DETAIL**



**6" SHIM DETAIL**



**Section A-A**

REVISIONS:	
RELATED ORDINANCES:	
	OPMC Title 13;
	OPMC Title 15;

Year 2018 Edition

**OVERLAND PARK**  
KANSAS  
ABOVE AND BEYOND. BY DESIGN.

DEPARTMENT OF PUBLIC WORKS  
STANDARD DETAILS

**METAL HANDRAIL DETAILS**