1. This information provides guidelines for metal fabrications, custom fabricated framing connectors for heavy wood framing, ladders, special brackets, bollards, and similar items. Temporary facilities and controls are covered in other parts of these standards or are available from the Facilities Management (FM) project representative.

2. FM project representative, Public Safety Office, and Environmental Health and Safety Office (EHS) shall approve selection of materials, means, and methods. Unless otherwise approved, design intent requires means and methods that provide minimal disruption to adjacent building activities and operations.

3. When working on or adjacent to existing buildings, match existing materials as closely as possible.

   a. Require MSDS information for all products.

5. Require all structural (load-bearing) connectors to be fabricated by a WABO-certified welder. Submittal of WABO welder certificate is required for all structural connectors.

6. Permanent maintenance accessibility to be provided to all equipment and roofs. Exceptions must be approved by FM Operations. This includes ladders, catwalks, and platforms.

7. Recommended finishes:
   a. Grind all welds smooth and remove all rough edges and burrs.
   b. Galvanize fabricated items as appropriate when exposed to moisture or corrosive environment.
   c. Shop-prime with rust inhibitive primer.

8. Design access ladders (for maintenance personnel only) to meet WISHA/WAC regulations.
   a. Non-conforming ladder installations shall be modified to conform to WISHA/WAC standards.
   b. Consult with WWU EHS office for current WISHA/WAC standards for access ladders, cages, and railings.
   c. Design protective platform to protect all roofing and parapet caps at roof access ladders.

9. Typical ladder:
   a. 2" x ¼" steel rail; ½" diameter bar stock for rungs.
   b. Support brackets: 2" x ¾" steel at 4'-0" o. c. max, with ½" diameter anchors to supporting materials.
   c. All ladders to have handholds a minimum of 48" to top rung. This can be extended when under a hatch.

10. Metal bollards use to protect gas meters, fire hydrants, utility vault covers, drive-in doors, building corners and the like. (See “Site and Street Furnishings” section for other bollards.)
   a. Fixed: 4" ID schedule 40 iron pipe filled with concrete. Set 3’ minimum into 16" diameter concrete cylinder. Provide full welded pipe cap on exposed end. Verify paint color with project manager.
   b. Removable: A bollard installed in a street or fire lane for traffic control shall be removable. 3" pipe in a pipe sleeve set in concrete. Provide for a padlock. The removable bollard is to be tack-welded in 4 places equally spaced at the ground flange with no more than a ½" long tack for break-away purposes by emergency vehicles. Verify paint color with project manager.
11. Tunnel access hatches should be fabricated with aluminum frames with built-in gutter system and aluminum diamond plate cover rated at 300#/square feet and self-latched with an underside handle. Top side opening with square drive under a thread plug. Cover is to be counterweighted for easy one person opening.

End