SECTION 32 33 00 – site furnishings

1. General
   1. Summary
      1. Section Includes:
         1. Seating.
         2. Tables.
         3. Bicycle racks.
         4. Bicycle lockers.
         5. Trash receptacles.
         6. Ash receptacles.
         7. Planters.
         8. Bollards.
      2. Related Requirements:

Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

If pipe sleeves or anchor bolts are cast in concrete, retain applicable option in first subparagraph below. If supports are grouted in place, retain third option for oversized recessed voids.

* + - 1. Section 03 30 00 – Cast-In-Place Concrete for [installing pipe sleeves cast] [installing anchor bolts cast] [formed voids] in concrete footings.
      2. Section 31 20 00 – Earth Moving for excavation for installing concrete footings.
  1. action Submittals
     1. Product Data: For each type of product.
     2. Sustainable Design Submittals:

Retain "Product Data" Subparagraph below to require minimum recycled content for LEED 2009 MR Credit 2 - "Recycled Content."

* + - 1. Product Data: For recycled content, indicating postconsumer and pre-consumer recycled content and cost.
      2. Chain-of-Custody Certificates: For certified wood products. Include statement of costs.

Retain "Samples" Paragraph below for single-stage Samples, with a subordinate list if applicable. Retain "Samples for Initial Selection" and "Samples for Verification" paragraphs for two-stage Samples.

* + 1. Samples: For each exposed product and for each color and texture specified.
    2. Samples for Initial Selection: For units with factory-applied finishes.
    3. Samples for Verification: For each type of exposed finish, not less than 6-inch- (152-mm-) long linear components and 4-inch- (102-mm-) square sheet components.
       1. Include full-size Samples of [bench] [table] [bicycle rack] [trash receptacle] [ash receptacle] <Insert product>. Approved samples may be incorporated into the Work.
    4. Product Schedule: For site furnishings. [ Use same designations indicated on Drawings].
  1. INFORMATIONAL SUBMITTALS

Retain "Material Certificates" Paragraph below to require submittal of material certificates from manufacturers.

* + 1. Material Certificates: For site furnishings manufactured with preservative-treated wood.
       1. Indicate type of preservative used and net amount of preservative retained. [ For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.]
  1. CLOSEOUT SUBMITTALS
     1. Maintenance Data: For site furnishings to include in maintenance manuals.
  2. MAINTENANCE MATERIAL SUBMITTALS
     1. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
        1. Bench Replacement [Slats] [Planks]: No fewer than [two] <Insert number> full-size units for each size indicated.
        2. Trash Receptacle Inner Containers: [Five] <Insert number> full-size units for each size indicated, but no fewer than [two] <Insert number> units.
        3. Anchors: <Insert type and number>.

1. Products
   1. seating

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

Retain "Manufacturers" Subparagraph below and list of manufacturers to require products from manufacturers listed or a comparable product from other manufacturers.

* + 1. Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
       1. 4Topps Premium Seating.
       2. A&T Iron Works, Inc.
       3. BCI Burke Company, LLC.
       4. Bison, Inc.
       5. brp by bison.
       6. Canterbury International.
       7. Columbia Cascade Company.
       8. Country Casual.
       9. Creative Pipe, Inc.
       10. DuMor Inc.
       11. FairWeather Site Furnishings; a division of Leader Manufacturing, Inc.
       12. Fibrex Group Inc. (The).
       13. Forms+Surfaces.
       14. GameTime; a PlayCore, Inc. company.
       15. Gardenside, Ltd.
       16. Henderson Recreation Equipment Ltd.
       17. Huntco Supply, LLC.
       18. Kay Park Recreation.
       19. Keystone Ridge Designs, Inc.
       20. Kingsley~Bate, Ltd.
       21. L. A. Steelcraft Products, Inc.
       22. Landscape Forms.
       23. Landscape Structures Inc.
       24. Madrax; Graber Manufacturing Co.
       25. Maglin Site Furniture Inc.
       26. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
       27. <Insert manufacturer's name>.
    2. Frame: [Cast aluminum] [Cast iron] [Steel] [Stainless steel] [Wrought iron] [Cedar] [Teak] <Insert material>.

If sizes of units or components are critical and are not indicated on Drawings, insert in "Seat( and Back)" Paragraph below to suit Project.

* + 1. Seat [ and Back]:
       1. Material:
          1. Aluminum Sheet: [Perforated] [Expanded] metal.
          2. [Painted] Steel: [Perforated metal] [Expanded metal] [Evenly spaced, parallel flat straps or bars] [Evenly woven, flat straps or bars] [Edge framed, evenly spaced, parallel rods or rolled bars] <Insert description>.
          3. Stainless Steel: [Perforated metal] [Expanded metal] [Evenly spaced, parallel flat straps or bars] [Evenly woven, flat straps or bars] [Edge framed, evenly spaced, parallel rods or rolled bars] <Insert description>.
          4. Wood: [Douglas fir] [Pine] [Cedar] [Redwood] [Teak] <Insert species>; formed into [evenly spaced parallel slats] [planks] <Insert description>.
          5. [Recycled] [Plastic] [Fiberglass] Planks: [Evenly spaced, parallel] <Insert description>.
          6. [Recycled] [Plastic] [Fiberglass] Sheet: [Solid] [Perforated].
       2. Seat Height: [As indicated] <Insert dimension>.
       3. Seat Surface Shape: [Flat] [Contoured or dished].

If bench has no back, and arm or seat is highest element, delete "Overall Height" Subparagraph below.

* + - 1. Overall Height: [As indicated] <Insert dimension>.
      2. Overall Width: [As indicated] <Insert dimension>.
      3. Overall Depth: [As indicated] <Insert dimension>.
      4. Arms: [None] [One, as indicated] [Two, one at each end] [Three, one at each end and in center] <Insert requirements>.
         1. Arm Material: Match [frame] [seat] <Insert component>.

Consider retaining "Weight" Subparagraph below to help specify quality. When comparing similar products made from same materials, heavier units may provide better quality. See the Evaluations.

* + - 1. Weight: <Insert weight>.

Retain "Seating Configuration" Subparagraph below for multiple seating units or revise to suit Project; delete if not applicable.

* + - 1. Seating Configuration: Multiple units [ as indicated].
         1. [Straight] [Angled] [Curved] shape.
         2. Closed [hexagon] [circle] [shape indicated] around a [tree trunk] [planter] [light post] <Insert central element>.
    1. Aluminum Finish: [Mill finish] [Color coated].

Retain "Color" Subparagraph below if aluminum is color coated.

* + - 1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert color>.
    1. Steel Finish: [Galvanized and] [color] [PVC-color] coated.
       1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert color>.
    2. Stainless Steel Finish: [ASTM A480/A480M, No. 6] <Insert description>.
    3. Wood Finish: [Unfinished] [Factory-applied transparent finish] [Factory-applied stain and transparent finish] [Factory-applied opaque finish] [Manufacturer's standard finish].

Retain "Stain" Subparagraph below if retaining third option in "Wood Finish" Paragraph above.

* + - 1. Stain: [Manufacturer's standard] <Insert stain type and color>.
    1. [Fiberglass] [HDPE] Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    2. Graphics: [Surface-applied] [Engraved] [Attached brass plaque with engraved] copy, content, and style [according to manufacturer's standard] [as indicated on Drawings].
  1. TABLES

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

Retain "Manufacturers" Subparagraph below and list of manufacturers to require products from manufacturers listed or a comparable product from other manufacturers.

* + 1. Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
       1. 4Topps Premium Seating.
       2. A&T Iron Works, Inc.
       3. BCI Burke Company, LLC.
       4. Bison, Inc.
       5. brp by bison.
       6. Canterbury International.
       7. Columbia Cascade Company.
       8. Country Casual.
       9. Creative Pipe, Inc.
       10. DuMor Inc.
       11. FairWeather Site Furnishings; a division of Leader Manufacturing, Inc.
       12. Fibrex Group Inc. (The).
       13. Forms+Surfaces.
       14. GameTime; a PlayCore, Inc. company.
       15. Gardenside, Ltd.
       16. Henderson Recreation Equipment Ltd.
       17. Huntco Supply, LLC.
       18. Kay Park Recreation.
       19. Keystone Ridge Designs, Inc.
       20. Kingsley~Bate, Ltd.
       21. L. A. Steelcraft Products, Inc.
       22. Landscape Forms.
       23. Landscape Structures Inc.
       24. Madrax; Graber Manufacturing Co.
       25. Maglin Site Furniture Inc.
       26. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
       27. <Insert manufacturer's name>.
    2. Frame: [Cast aluminum] [Cast iron] [Steel] [Stainless steel] [Wrought iron] [Cedar] [Teak] <Insert material>.

If sizes of units or components are critical and are not indicated on Drawings, insert in "Table Top" Paragraph below to suit Project.

* + 1. Table Top:
       1. Material:
          1. Aluminum Sheet: [Perforated] [Expanded] metal.
          2. [Painted ]Steel: [Perforated metal] [Expanded metal] [Evenly spaced, parallel flat straps or bars] [Evenly woven, flat straps or bars] [Edge framed, evenly spaced, parallel rods or rolled bars] <Insert description>.
          3. Stainless Steel: [Perforated metal] [Expanded metal] [Evenly spaced, parallel flat straps or bars] [Evenly woven, flat straps or bars] [Edge framed, evenly spaced, parallel rods or rolled bars] <Insert description>.
          4. Wood: [Douglas fir] [Pine] [Cedar] [Redwood] [Teak] <Insert species>; formed into [evenly spaced parallel slats] [planks] <Insert description>.
          5. [Recycled] [Plastic] [Fiberglass] Planks: [Evenly spaced, parallel] <Insert description>.
          6. [Recycled] [Plastic] [Fiberglass] Sheet: [Solid] [Perforated].
       2. Surface Shape: [Round] [Hexagon] [Shape indicated] <Insert shape>.
       3. Feature: [Center umbrella hole] <Insert feature>.
    2. Aluminum Finish: [Mill finish] [Color coated].

Retain "Color" Subparagraph below if aluminum is color coated.

* + - 1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert color>.
      2. Steel Finish: [Galvanized and] [color] [PVC-color] coated.
      3. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert color>.
    1. Stainless Steel Finish: [ASTM A480/480M, No. 6] <Insert description>.
    2. Wood Finish: [Unfinished] [Factory-applied transparent finish] [Factory-applied stain and transparent finish] [Factory-applied opaque finish] [Manufacturer's standard finish].

Retain "Stain" Subparagraph below if retaining third option in "Wood Finish" Paragraph above.

* + - 1. Stain: [Manufacturer's standard] <Insert stain type and color>.
    1. [Fiberglass] [HDPE] Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    2. Graphics: [Surface-applied] [Engraved] [Attached brass plaque with engraved] copy, content, and style [per manufacturer's standard] [as indicated on Drawings].
  1. BICYCLE RACKS

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

Retain "Manufacturers" Subparagraph below and list of manufacturers to require products from manufacturers listed or a comparable product from other manufacturers.

* + 1. Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
       1. A A A Ribbon Rack Co., Inc.; a division of Brandir.
       2. American Bicycle Security Company.
       3. BCI Burke Company, LLC.
       4. Bike Fixation.
       5. Bison, Inc.
       6. brp by bison.
       7. Canterbury International.
       8. Columbia Cascade Company.
       9. Cora Bike Rack.
       10. Creative Pipe, Inc.
       11. CycleSafe.
       12. Dero.
       13. DuMor Inc.
       14. FairWeather Site Furnishings; a division of Leader Manufacturing, Inc.
       15. GameTime; a PlayCore, Inc. company.
       16. Henderson Recreation Equipment Ltd.
       17. Huntco Supply, LLC.
       18. Kay Park Recreation.
       19. Keystone Ridge Designs, Inc.
       20. L. A. Steelcraft Products, Inc.
       21. Landscape Forms.
       22. Landscape Structures Inc.
       23. Madrax; Graber Manufacturing Co.
       24. Maglin Site Furniture Inc.
       25. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
       26. Neenah Foundry Company.
       27. <Insert manufacturer's name>.
    2. Bicycle Rack Construction:
       1. Frame: [Aluminum] [Steel] [Galvanized steel] [Stainless steel] [Steel and redwood] [Steel and pine] <Insert description>.

Retain "(Pipe) (Tubing) OD" Subparagraph below or revise to suit Project. Not all bicycle racks are made from pipe or tubing and solid bars. Most manufacturers recommend Schedule 40 pipe, complying with ASTM A53/A53M, for heavy-duty applications.

* + - * 1. [Pipe] [Tubing] OD: Not less than [1-5/8 inches (41 mm)] [2-3/8 inches (60 mm)] [2-7/8 inches (73 mm)] [4-1/2 inches (115 mm)] <Insert dimension>.
        2. Locking Bars: Solid round bar, not less than [3/4 inch (19 mm)] [1 inch (25 mm)] in diameter.
      1. Style: [Single-side parking] [Double-side parking] [Bollard] [As indicated] <Insert description>.
         1. Overall Height: [As indicated] <Insert dimension>.
         2. Overall Width: [As indicated] <Insert dimension>.
         3. Overall Depth: [As indicated] <Insert dimension>.
         4. Capacity: Designed to accommodate no fewer than [two] [three] [four] <Insert number> bicycles.
      2. Security: Designed to lock [wheel] [and] [frame].
      3. Accessories: [Base covers for each pipe and tubing anchored end] [Wheel stops] <Insert accessory>.
      4. Installation Method: [Freestanding] [Surface flange anchored at finished grade to substrate indicated] [Surface flange anchored below finished grade to substrate indicated] [Cast in concrete] [Bolted to cast-in anchor bolts] [Wall mounted] [As indicated].

Retain appropriate finish from "Aluminum Finish," "Steel Finish," "Stainless Steel Finish," or "Wood Finish" Paragraph below.

* + 1. Aluminum Finish: [Mill finish] [Color coated].

Retain "Color" Subparagraph below if aluminum is color coated.

* + - 1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    1. Steel Finish: [Galvanized] [Color coated].

Retain "Color" Subparagraph below unless galvanized coating is final finish.

* + - 1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert color>.
    1. Stainless Steel Finish: [ASTM A480/A480M, No. 4] <Insert description>.
    2. Wood Finish: [Unfinished] [Manufacturer's standard finish].
  1. BICYCLE LOCKERS

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

Retain "Manufacturers" Subparagraph below and list of manufacturers to require products from manufacturers listed or a comparable product from other manufacturers.

* + 1. Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
       1. American Bicycle Security Company.
       2. Columbia Cascade Company.
       3. Cora Bike Rack.
       4. Creative Pipe, Inc.
       5. CycleSafe.
       6. Dero.
       7. Huntco Supply, LLC.
       8. Madrax; Graber Manufacturing Co.
       9. <Insert manufacturer's name>.
    2. Bicycle Locker Construction:
       1. Locker: [Molded one-piece fiberglass] [Steel sheet, 0.053 inch (1.4 mm) thick] [Steel sheet, 0.053 inch (1.4 mm) thick, with perforated metal sides] [with welded tubular steel frame] <Insert material>.
       2. Door: [Molded one-piece fiberglass] [Steel sheet, 0.053 inch (1.4 mm) thick] [with tubular steel frame] [Match locker] <Insert material>.
       3. View [Window] [Grille]: [Lexan, 12 inches (305 mm) square] [Perforated metal].
       4. Lock: [Manufacturer's standard] [Key lock with internal locking bar] [Coin/token lock] <Insert description>.
          1. Provide [four] <Insert number> keys.
       5. Overall Height: [As indicated] <Insert dimension>.
       6. Overall Width: [As indicated] <Insert dimension>.
       7. Overall Depth: [As indicated] <Insert dimension>.
       8. Capacity: Designed to accommodate [one] [two] bicycle(s).
       9. Installation Method: [Locker anchored at finished grade to substrate indicated] [Locker anchored below finished grade to substrate indicated] [As indicated].
       10. Locker Configuration: [Multiple] [Four] <Insert number> units[ as indicated], in [straight row] [curved shape] [shape indicated] <Insert description>.
    3. Steel Finish: Color coated.
       1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    4. Fiberglass Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
  1. TRASH RECEPTACLES

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

Retain "Manufacturers" Subparagraph below and list of manufacturers to require products from manufacturers listed or a comparable product from other manufacturers.

* + 1. Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
       1. A&T Iron Works, Inc.
       2. BCI Burke Company, LLC.
       3. Bison, Inc.
       4. brp by bison.
       5. Canterbury International.
       6. Columbia Cascade Company.
       7. Country Casual.
       8. Creative Pipe, Inc.
       9. DuMor Inc.
       10. FairWeather Site Furnishings; a division of Leader Manufacturing, Inc.
       11. Fiberglass Engineering Company.
       12. Fibrex Group Inc. (The).
       13. Forms+Surfaces.
       14. GameTime; a PlayCore, Inc. company.
       15. Gardenside, Ltd.
       16. Henderson Recreation Equipment Ltd.
       17. Huntco Supply, LLC.
       18. Kay Park Recreation.
       19. Keystone Ridge Designs, Inc.
       20. L. A. Steelcraft Products, Inc.
       21. Landscape Forms.
       22. Landscape Structures Inc.
       23. Maglin Site Furniture Inc.
       24. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
       25. Playworld Systems, Inc.
       26. Recreation Creations, Inc.
       27. <Insert manufacturer's name>.
    2. Aluminum Facing Surrounds: [Aluminum sheet] [Perforated aluminum sheet] [Grid in tubular frame] [Evenly patterned, parallel flat aluminum straps, bars, or tubular shapes] [Match benches] <Insert material and description>.
    3. Steel Facing Surrounds: [Steel sheet] [Perforated-steel sheet] [Evenly patterned, parallel flat steel straps, bars, or tubular shapes] [Evenly patterned, parallel round steel rods, bars, or tubular shapes] [Grid in tubular frame] [Match benches] <Insert material and description>.
    4. Stainless Steel Facing Surrounds: [Steel sheet] [Perforated-steel sheet] [Evenly patterned, parallel flat steel straps, bars, or tubular shapes] [Evenly patterned, parallel round steel rods, bars, or tubular shapes] [Grid in tubular frame] [Match benches] <Insert material and description>.
    5. Wood Facing Surrounds: [Evenly spaced, Douglas fir slats] [Evenly spaced pine slats] [Evenly spaced cedar slats] [Redwood panels] [Evenly spaced redwood slats] [Teak panels] [Evenly spaced teak slats] [Match benches] <Insert wood type and description>.
    6. Fiberglass Facing Surrounds: Molded fiberglass shape.
    7. Plastic Facing Surrounds: [Molded HDPE shape] [Evenly spaced HDPE slats] [Evenly spaced, recycled HDPE slats] [Match benches] <Insert plastic type and description>.

Retain "Support Frames" Paragraph below if support frames are a part of unit. Designs with slatted facing surrounds and other repeating parallel members typically require support framing; sheet or molded materials may not.

* + 1. Support Frames: [Steel] [Galvanized steel]; welded.
    2. Trash Receptacles:
       1. Receptacle Shape and Form: [Round cylinder] [Round cylinder with tapered funnel top] [Round, tapered column] [Square column] [Rectangular column] [As indicated] <Insert shape and form>; with opening for depositing trash in [lid or top] [side of lid or top] [receptacle side].

Delete "Lids and Tops" Subparagraph below if uncovered top suits Project.

* + - 1. Lids and Tops: [Matching facing panels] [Aluminum] [Steel] [HDPE] [Recycled HDPE] <Insert material and description> secured by cable or chain, hinged, swiveled, or permanently secured.
         1. Description: [Flat rim ring lid with center opening] [Dome top] [Arched top] [Elevated flat or shallow dome rain-cap lid] [Combination ash sand pan and rim lid] [Combination ash sand pan and dome top] [Combination ash sand pan and elevated flat or shallow dome rain-cap lid] <Insert description>.

Retain first subparagraph below if openings are covered by flaps.

* + - * 1. Opening for depositing trash covered by [self-closing, spring-loaded-hinged, push-in] [rotating] weather flap.
      1. Receptacle Height: [As indicated] <Insert dimension>.
      2. Overall Width: [As indicated] <Insert dimension>.

Consider retaining "Weight" Subparagraph below to help specify quality. When comparing similar products made from same materials, heavier units may provide better quality. See the Evaluations.

* + - 1. Weight: <Insert weight>.
      2. Inner Container: [Aluminum] [Galvanized-steel sheet] [Perforated-metal] [Fiberglass] [Rigid plastic] container with [drain holes] [lift-out handles]; designed to be removable and reusable.
      3. Disposable Liners: Provide receptacle designed to accommodate disposable liners.
      4. Capacity: Not less than [22 gal. (83 L)] [28 gal. (106 L)] [30 gal. (114 L)] [32 gal. (121 L)] [40 gal. (151 L)] [55 gal. (208 L)] <Insert value>.
      5. Service Access: [Removable lid or top] [Fixed lid or top, side access]; inner container and disposable liner lift or slide-out for emptying[; lockable with padlock hasps] [; keyed lock with two keys per receptacle] [; self-latching hinge].
      6. Post Mount: [Color-coated steel pipe; color to match receptacle] [Galvanized-steel pipe] [Wood]; for mounting [one] [two] [three] receptacle(s).
    1. Aluminum Finish: [Mill finish] [Color coated].

Retain "Color" Subparagraph below if aluminum is color coated.

* + - 1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    1. Steel Finish: [Galvanized and] [color] [PVC-color] coated.
       1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    2. Stainless Steel Finish: [ASTM A480/A480M, No. 6] <Insert description>.
    3. Wood Finish: [Unfinished] [Factory-applied transparent finish] [Factory-applied stain and transparent finish] [Factory-applied opaque finish] [Manufacturer's standard finish].

Retain "Stain" Subparagraph below if retaining third option in "Wood Finish" Paragraph above.

* + - 1. Stain: [Manufacturer's standard] <Insert stain type and color>.
    1. [Fiberglass] [HDPE] Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    2. Graphics: [Surface-applied] [Engraved] [Attached brass plaque with engraved] copy, content, and style [according to manufacturer's standard] [as indicated on Drawings].
       1. Copy: [Litter] [Trash] [Waste] [Recycle] <Insert term>.
  1. ASH RECEPTACLES

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

Retain "Manufacturers" Subparagraph below and list of manufacturers to require products from manufacturers listed or a comparable product from other manufacturers.

* + 1. Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
       1. A&T Iron Works, Inc.
       2. BCI Burke Company, LLC.
       3. brp by bison.
       4. Canterbury International.
       5. Columbia Cascade Company.
       6. Country Casual.
       7. Creative Pipe, Inc.
       8. DuMor Inc.
       9. FairWeather Site Furnishings; a division of Leader Manufacturing, Inc.
       10. Fiberglass Engineering Company.
       11. Fibrex Group Inc. (The).
       12. Forms+Surfaces.
       13. GameTime; a PlayCore, Inc. company.
       14. Gardenside, Ltd.
       15. Henderson Recreation Equipment Ltd.
       16. Huntco Supply, LLC.
       17. Kay Park Recreation.
       18. Keystone Ridge Designs, Inc.
       19. L. A. Steelcraft Products, Inc.
       20. Landscape Forms.
       21. Landscape Structures Inc.
       22. Maglin Site Furniture Inc.
       23. Miracle Recreation Equipment Co.; a division of PlayPower, Inc.
       24. Playworld Systems, Inc.
       25. Recreation Creations, Inc.
       26. RPI.
       27. <Insert manufacturer's name>.
    2. Aluminum Facing Surrounds: [Aluminum sheet] [Perforated aluminum sheet] [Grid in tubular frame] [Evenly patterned, parallel flat aluminum straps, bars, or tubular shapes] [Match benches] <Insert material and description>.
    3. Steel Facing Surrounds: [Steel sheet] [Perforated-steel sheet] [Evenly patterned, parallel flat steel straps, bars, or tubular shapes] [Evenly patterned, parallel round steel rods, bars, or tubular shapes] [Grid in tubular frame] [Match benches] <Insert material and description>.
    4. Stainless Steel Facing Surrounds: [Steel sheet] [Perforated-steel sheet] [Evenly patterned, parallel flat steel straps, bars, or tubular shapes] [Evenly patterned, parallel round steel rods, bars, or tubular shapes] [Grid in tubular frame] [Match benches] <Insert material and description>.
    5. Fiberglass Facing Surrounds: Molded fiberglass shape.

Retain "Support Frames" Paragraph below if support frames are a part of unit. Designs with slatted facing surrounds and other repeating parallel members typically require support framing; sheet or molded materials may not.

* + 1. Support Frames: [Steel] [Galvanized steel]; welded.
    2. Ash Receptacles:
       1. Receptacle Shape and Form: [Round cylinder] [Round cylinder with tapered funnel top] [Round, tapered column] [Square column] [Rectangular column] [As indicated] <Insert shape and form>; with opening for depositing trash in [lid or top] [side of lid or top] [receptacle side].

Some options in "Function" Subparagraph below (e.g., uncovered receptacles) may be more suitable for locations protected from direct exposure to the weather, such as under canopies and in protected doorways.

* + - 1. Function: [Uncovered receptacle with sand pan] [Uncovered receptacle with bowl and funnel] [Covered receptacle with sand pan] [Covered receptacle with bowl and screen] [Covered receptacle with slots] [Uncovered receptacle with sand pan attaching to side of trash receptacle] <Insert description and accessories> for depositing cigarette butts; fire-proof design; bowl and pan removable for cleaning.

Delete "Lids and Tops" Subparagraph below if uncovered top suits Project.

* + - 1. Lids and Tops: [Matching facing panels] [Aluminum] [Steel] [HDPE] [Recycled HDPE] <Insert material and description> secured by cable or chain, hinged, swiveled, or permanently secured.
         1. Description: [Flat rim ring lid with center opening] [Dome top] [Arched top] [Elevated flat or shallow dome rain-cap lid] [Combination ash sand pan and rim lid] [Combination ash sand pan and dome top] [Combination ash sand pan and elevated flat or shallow dome rain-cap lid] <Insert description>.
      2. Receptacle Height: [As indicated] <Insert dimension>.
      3. Overall Width: [As indicated] <Insert dimension>.

Consider retaining "Weight" Subparagraph below to help specify quality. When comparing similar products made from same materials, heavier units may provide better quality. See the Evaluations.

* + - 1. Weight: <Insert weight>.
      2. Post Mount: [Color-coated steel pipe; color to match receptacle] [Galvanized-steel pipe] [Wood]; for mounting [one] [two] [three] receptacle(s).
      3. Accessories: [Sand sifter] [Butt stub-out] <Insert accessory>.
    1. Aluminum Finish: [Mill finish] [Color coated].

Retain "Color" Subparagraph below if aluminum is color coated.

* + - 1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    1. Steel Finish: [Galvanized and] [color] [PVC-color] coated.
       1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    2. Stainless Steel Finish: [ASTM A480/A480M, No. 6] <Insert description>.
    3. [Fiberglass] [HDPE] Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
  1. PLANTERS

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

Retain "Manufacturers" Subparagraph below and list of manufacturers to require products from manufacturers listed or a comparable product from other manufacturers.

* + 1. Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
       1. Country Casual.
       2. DuMor Inc.
       3. FairWeather Site Furnishings; a division of Leader Manufacturing, Inc.
       4. Fiberglass Engineering Company.
       5. Fibrex Group Inc. (The).
       6. Gardenside, Ltd.
       7. Kay Park Recreation.
       8. Keystone Ridge Designs, Inc.
       9. Kingsley~Bate, Ltd.
       10. Maglin Site Furniture Inc.
       11. Omni Ecosystems.
       12. RPI.
       13. Sitecraft.
       14. Thomas Steele.
       15. Victor Stanley, Inc.
       16. Wausau Tile Inc.
       17. Weatherend Estate Furniture.
       18. <Insert manufacturer's name>.
    2. Aluminum Facing Surrounds: [Aluminum sheet] [Perforated aluminum sheet] [Grid in tubular frame] [Evenly patterned, parallel flat aluminum straps, bars, or tubular shapes] [Match benches] <Insert material and description>.
    3. Steel Facing Surrounds: [Steel sheet] [Perforated-steel sheet] [Evenly patterned, parallel flat steel straps, bars, or tubular shapes] [Evenly patterned, parallel round steel rods, bars, or tubular shapes] [Grid in tubular frame] [Match benches] <Insert material and description>.
    4. Stainless Steel Facing Surrounds: [Steel sheet] [Perforated-steel sheet] [Evenly patterned, parallel flat steel straps, bars, or tubular shapes] [Evenly patterned, parallel round steel rods, bars, or tubular shapes] [Grid in tubular frame] [Match benches] <Insert material and description>.
    5. Wood Facing Surrounds: [Evenly spaced, Douglas fir slats] [Evenly spaced pine slats] [Evenly spaced cedar slats] [Redwood panels] [Evenly spaced redwood slats] [Teak panels] [Evenly spaced teak slats] [Match benches] <Insert wood type and description>.
    6. Fiberglass Facing Surrounds: Molded fiberglass shape.
    7. Plastic Facing Surrounds: [Molded HDPE shape] [Evenly spaced HDPE slats] [Evenly spaced, recycled HDPE slats] [Match benches] <Insert plastic type and description>.

Retain "Support Frames" Paragraph below if support frames are a part of unit. Designs with slatted facing surrounds and other repeating parallel members typically require support framing; sheet or molded materials may not.

* + 1. Support Frames: [Steel] [Galvanized steel]; welded.
    2. Planter Shape and Form: [Round cylinder] [Round cylinder with tapered funnel top] [Round, tapered column] [Square column] [Rectangular column] [As indicated] <Insert shape and form>.

Retain "Style" Paragraph below if applicable; revise to suit Project.

* + 1. Style: [To match benches] [As indicated by manufacturer's designation].
    2. Overall, Height: [As indicated] <Insert dimension>.
    3. Overall [Diameter] [Width]: [As indicated] <Insert dimension>.
    4. Overall Depth: [As indicated] <Insert dimension>.

Consider retaining "Weight" Paragraph below to help specify quality. When comparing similar products made from same materials, heavier units often provide better quality. See the Evaluations.

* + 1. Weight: <Insert weight>.
    2. Inner Container: [Aluminum] [Galvanized-steel sheet] [Fiberglass] [Rigid plastic] container [ with drain holes].
    3. Capacity: Not less than [22 gal. (83 L)] [28 gal. (106 L)] [30 gal. (114 L)] [32 gal. (121 L)] [40 gal. (151 L)] [55 gal. (208 L)] <Insert value>.
    4. Installation Method: [Freestanding] [Freestanding with weighted base] [Anchored to substrate indicated on Drawings] [Wall mounted] [Post mounted] [Mounted on elevated leg angles anchored at finished grade to substrate indicated on Drawings] [Mounted on elevated leg angles anchored below finished grade to substrate indicated on Drawings] [As indicated on Drawings].
       1. Post Mount: [Color-coated steel pipe; color to match receptacle] [Galvanized-steel pipe] [Wood]; for mounting [one] [two] [three] planter(s).
    5. Aluminum Finish: Color coated.
       1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    6. Steel Finish: [Galvanized and] [color] [PVC-color] coated.
       1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    7. Stainless Steel Finish: [ASTM A480/A480M, No. 6] <Insert description>.
    8. Wood Finish: [Unfinished] [Factory-applied transparent finish] [Factory-applied stained and transparent finish].
       1. Stain: <Insert stain type and color>.
    9. [Fiberglass] [HDPE] Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.

Retain one option in "Finish" Subparagraph below for fiberglass; otherwise, delete subparagraph.

* + - 1. Finish: [Smooth] [Textured].
  1. BOLLARDS

Copy this article and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

Simple steel pipe bollards can also be specified in Section 05 50 00 – Metal Fabrications.

Retain "Manufacturers" Subparagraph below and list of manufacturers to require products from manufacturers listed or a comparable product from other manufacturers.

* + 1. Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
       1. brp by bison.
       2. Canterbury International.
       3. Columbia Cascade Company.
       4. Creative Pipe, Inc.
       5. Dero.
       6. DuMor Inc.
       7. FairWeather Site Furnishings; a division of Leader Manufacturing, Inc.
       8. Huntco Supply, LLC.
       9. Keystone Ridge Designs, Inc.
       10. L. A. Steelcraft Products, Inc.
       11. Maglin Site Furniture Inc.
       12. Neenah Foundry Company.
       13. Thomas Steele.
       14. Urban Accessories, Inc.
       15. Victor Stanley, Inc.
       16. <Insert manufacturer's name>.
    2. Bollard Construction:

Retain "(Pipe) (Tubing) (Cast Iron) OD" Subparagraph below or revise to suit Project. Most manufacturers recommend Schedule 40 pipe, complying with ASTM A53/A53M, for heavy-duty applications.

* + - 1. [Pipe] [Tubing] [Cast Iron] OD: Not less than [4-1/2 inches (115 mm)] <Insert dimension>[, fluted].
         1. Steel: [Schedule 40] [Schedule 80] pipe.
         2. Aluminum: [Extruded pipe and tubes] [Castings].
         3. Stainless Steel: [Tubes] [Pipe].
         4. Cast Iron: [Tapered] [As indicated].
      2. [Round] [Square] Wood: [Cedar] <Insert material>, [8 inches (203 mm) square] [10 inches (254 mm) in diameter].
      3. Style: [Manufacturer's standard] [Chamfered top] [Dome top] [Ornamental cap] [As indicated] <Insert description>.
      4. Overall Height: [As indicated] <Insert dimension>.
      5. Overall Width: [As indicated] <Insert dimension>.
      6. Overall Depth: [As indicated] <Insert dimension>.
      7. Accessories: [Eye bolts] <Insert accessory>.
      8. Installation Method: [Surface flange anchored at finished grade to substrate indicated] [Surface flange anchored below finished grade to substrate indicated] [Cast in concrete] [Bolted to cast-in anchor bolts] [As indicated].
    1. Aluminum Finish: [Mill finish] [Color coated].

Retain "Color" Subparagraph below if aluminum is color coated.

* + - 1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    1. Steel Finish: [Galvanized] [Color coated].

Retain "Color" Subparagraph below unless galvanized coating is final finish.

* + - 1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    1. Cast-Iron Finish: [Manufacturer's standard] [Galvanized] [Color coated].
       1. Color: [As indicated by manufacturer's designation] [Match Architect's samples] [As selected by Architect from manufacturer's full range] [As indicated in a site furnishing schedule] <Insert description>.
    2. Stainless Steel Finish: [ASTM A480/A480M, No. 4] <Insert description>.
    3. Wood Finish: [Unfinished] [Manufacturer's standard finish].
  1. MATERIALS
     1. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated; free of surface blemishes and complying with the following:
        1. Rolled or Cold-Finished Bars, Rods, and Wire: ASTM B211 (ASTM B211M).
        2. Extruded Bars, Rods, Wire, Profiles, and Tubes: ASTM B221 (ASTM B221M).
        3. Structural Pipe and Tube: ASTM B429/B429M.
        4. Sheet and Plate: ASTM B209 (ASTM B209M).
        5. Castings: ASTM B26/B26M.
     2. Steel and Iron: Free of surface blemishes and complying with the following:
        1. Plates, Shapes, and Bars: ASTM A36/A36M.
        2. Steel Pipe: Standard-weight steel pipe complying with ASTM A53/A53M, or electric-resistance-welded pipe complying with ASTM A135/A135M.
        3. Tubing: Cold-formed steel tubing complying with ASTM A500/A500M.
        4. Mechanical Tubing: Cold-rolled, electric-resistance-welded carbon or alloy steel tubing complying with ASTM A513/A513M, or steel tubing fabricated from steel complying with ASTM A1011/A1011M and complying with dimensional tolerances in ASTM A500/A500M; zinc coated internally and externally.
        5. Sheet: Commercial steel sheet complying with ASTM A1011/A1011M.

Revise "Perforated Metal" Subparagraph below if specific pattern is critical for Project.

* + - 1. Perforated Metal: From steel sheet not less than [0.075-inch (1.9-mm)] [0.090-inch (2.3-mm)] [0.120-inch (3.0-mm)] <Insert dimension> nominal thickness; manufacturer's standard perforation pattern.

Revise "Expanded Metal" Subparagraph below if specific designation is critical.

* + - 1. Expanded Metal: Carbon-steel sheets deburred after expansion, and complying with ASTM F1267.
      2. Malleable-Iron Castings: ASTM A47/A47M, grade as recommended by fabricator for type of use intended.
      3. Gray-Iron Castings: ASTM A48/A48M, Class 200.
    1. Stainless Steel: Free of surface blemishes and complying with the following:
       1. Sheet, Strip, Plate, and Flat Bars: ASTM A240/A240M or ASTM A666.
       2. Pipe: Schedule 40 steel pipe complying with ASTM A312/A312M.
       3. Tubing: ASTM A554.
    2. Wood: Surfaced smooth on four sides with eased edges; kiln dried, free of knots, solid stock of species indicated.
       1. Wood Species: [ Manufacturer's standard.]

Retain one wood species below or revise to suit Project.

* + - * 1. Douglas Fir: Clear Grade, vertical grain.
        2. Pine: Southern pine; No. 2 or better[; preservative treated, kiln dried after treatment].
        3. [Eastern White] [Red] [Yellow] Cedar: Select Grade or better.
        4. Redwood: [Clear all heart] [Construction heart or better], free-of-heart center.
        5. Teak (Tectona Grandis): Clear Grade.
        6. <Insert wood species>: <Insert grade, if applicable, and other requirements>.

"Certified Wood" Paragraph below applies to LEED 2009. Manufacturers certifying products as "FSC Mixed Credit" do not have to use 100 percent certified wood in the products; however, in their total production, manufacturers must use an amount equal to or greater than the percentage of their production that is labeled "FSC Mixed Credit."

* + 1. Certified Wood: Wood products shall be certified as "FSC Pure"[ or "FSC Mixed Credit"] according to FSC STD-01-00 and FSC STD-40-004.

"Certified Wood" Paragraph below applies to LEED v4. Manufacturers certifying products as "FSC Mixed Credit" do not have to use 100 percent certified wood in the products; however, in their total production, manufacturers must use an amount equal to or greater than the percentage of their production that is labeled "FSC Mixed Credit."

* + 1. Certified Wood: Wood products shall be certified as "FSC Pure"[ or "FSC Mixed Credit"] according to FSC STD-01-001 and FSC STD-40-004.

"Certified Wood" Paragraph below applies to IgCC.

* + 1. Certified Wood: Wood products shall be labeled according to the AFPA's Sustainable Forestry Initiative, be certified as "FSC Pure" according to FSC STD-01-001 and FSC STD-40-004, or be certified and labeled according to the standards of the Programme for Endorsement of Forest Certification.

"Certified Wood" Paragraph below applies to ASHRAE 189.1.

* + 1. Certified Wood: Wood products shall [contain not less than 60 percent] [be made from] certified wood tracked through a chain-of-custody process. Certified wood documentation shall be provided by sources certified through a forest certification system with principles, criteria, and standards developed using ISO/IEC Guide 59 or the World Trade Organization's "Technical Barriers to Trade."

"Certified Wood" Paragraph below applies to Green Globes.

* + 1. Certified Wood: Wood products shall be certified according to the American Tree Farm System's "AFF Standard," the AFPA's Sustainable Forestry Initiative, FSC STD-01-001 and FSC STD-40-004, or the standards of the Programme for Endorsement of Forest Certification.

Manufacturers may apply sealers and colorants for durability or if required for local climates; insert other treatments in "Finish" Subparagraph below to suit Project.

* + - 1. Finish: Manufacturer's standard [stain] [and] [transparent sealer] [transparent wood-preservative treatment and sealer] <Insert treatment or finish>.
    1. Fiberglass: Multiple laminations of glass-fiber-reinforced polyester resin with UV-light stable, colorfast, nonfading, weather- and stain-resistant, colored polyester gel coat, and with manufacturer's standard finish.
    2. Plastic: Color impregnated, color and UV-light stabilized, and mold resistant.

Retain "Polyethylene" or "Polyethylene with Recycled Content" Subparagraph below.

* + - 1. Polyethylene: Fabricated from virgin plastic HDPE resin.

Retain "Polyethylene with Recycled Content" Subparagraph below to specify recycled content if required. An alternative method of requiring recycled content is to retain requirement in Project's Division 01 sustainable design requirements Section that gives Contractor the option and responsibility to determine how recycled content requirements will be met.

* + - 1. Polyethylene with Recycled Content: Fabricated from HDPE and other resins with postconsumer recycled content plus one-half of pre-consumer recycled content not less than <Insert number> percent.
    1. Anchors, Fasteners, Fittings, and Hardware: [Stainless steel] [Brass] [Galvanized steel] [Zinc-plated steel] [Manufacturer's standard, corrosion-resistant-coated or noncorrodible materials]; commercial quality [, tamperproof, vandal and theft resistant] [, concealed, recessed, and capped or plugged].

Indicate locations of anchors and brackets on Drawings.

* + - 1. Angle Anchors: For inconspicuously bolting legs of site furnishings to [on] [below]-grade substrate; [one per leg] [extent as indicated] <Insert extent>.
      2. Antitheft Hold-Down Brackets: For securing site furnishings to substrate; [two per unit] [extent as indicated on Drawings] <Insert extent>.

Retain "Nonshrink, Nonmetallic Grout" or "Erosion-Resistant Anchoring Cement" Paragraph below if site furnishings are set in pipe sleeves or voids in concrete; otherwise, delete both paragraphs.

* + 1. Non-shrink, Non-metallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M; recommended in writing by manufacturer, for exterior applications.
    2. Erosion-Resistant Anchoring Cement: Factory-packaged, non-shrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound; resistant to erosion from water exposure without needing protection by a sealer or waterproof coating; recommended in writing by manufacturer, for exterior applications.

Retain "Galvanizing" Paragraph below if ferrous components are used to fabricate site furnishings.

* + 1. Galvanizing: Where indicated for steel and iron components, provide the following protective zinc coating applied to components after fabrication:
       1. Zinc-Coated Tubing: External, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. (0.27 kg/sq. m) of zinc after welding, a chromate conversion coating, and a clear, polymer film. Internal, same as external or consisting of 81 percent zinc pigmented coating, not less than 0.3 mil (0.0076 mm) thick.
       2. Hot-Dip Galvanizing: According to ASTM A123/A123M, ASTM A153/A153M, or ASTM A924/A924M.
  1. WOOD-PRESERVATIVE-TREATED MATERIALS

Retain this article if using treated wood components.

* + 1. Preservative Treatment: Pressure-treat wood according to AWPA U1, Use Category UC3b, and the following:
       1. Use preservative chemicals acceptable to authorities having jurisdiction and containing no arsenic or chromium. Use chemical formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
       2. Kiln-dry lumber and plywood after treatment to a maximum moisture content, respectively, of 19 and 15 percent. Do not use materials that are warped or do not comply with requirements for untreated materials.
  1. FABRICATION
     1. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.
     2. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended, so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.
     3. Pipes and Tubes: Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.
     4. Preservative-Treated Wood Components: Complete fabrication of treated items before treatment if possible. If cut after treatment, apply field treatment complying with AWPA M4 to cut surfaces.
     5. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.
     6. Factory Assembly: Factories assemble components to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.
  2. GENERAL FINISH REQUIREMENTS
     1. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
  3. ALUMINUM FINISHES

Revise this article if less-durable, non-powder-coat, baked-enamel finish suits Project and product. Most manufacturers listed in the Evaluations finish products with baked, polyester, powder-coat finish. Verify availability with manufacturers.

* + 1. Powder-Coat Finish: Manufacturer's standard polyester powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.
  1. STEEL AND GALVANIZED-STEEL FINISHES

Revise "Powder-Coat Finish" Paragraph below if less-durable, non-powder-coat, baked-enamel finish suits Project and product. Most manufacturers listed in the Evaluations finish products with baked, polyester, powder-coat finish. Verify availability with manufacturers.

* + 1. Powder-Coat Finish: Manufacturer's standard polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.
    2. PVC Finish: Manufacturer's standard, UV-light stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on, PVC-plastisol finish, with flame retardant added; complying with coating manufacturer's written instructions for pretreatment, application, and minimum dry film thickness.
  1. IRON FINISHES

Revise "Powder-Coat Finish" Paragraph below if less-durable, nonpowder-coat, baked-enamel finish suits Project and product. Most manufacturers listed in the Evaluations finish products with baked, polyester, powder-coat finish. Verify availability with manufacturers.

* + 1. Powder-Coat Finish: Manufacturer's standard polyester powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.
  1. STAINLESS-STEEL FINISHES
     1. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
     2. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.
        1. Run directional finishes with long dimension of each piece.
        2. Directional Satin Finish: ASTM A480/A480M, No 4.
        3. Dull Satin Finish: ASTM A480/A480M, No. 6.

1. Execution
   1. examination
      1. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance of the Work.
      2. Proceed with installation only after unsatisfactory conditions have been corrected.
   2. INSTALLATION
      1. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.
      2. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.
      3. Install site furnishings level, plumb, true, and [securely anchored] [positioned] at locations indicated on Drawings.

Retain "Post Setting" or "Posts Set into Voids in Concrete" Paragraph below if site furnishings are supported by embedded pipe or tubing posts, or revise to suit Project.

* + 1. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
    2. Posts Set into Voids in Concrete: Form or core-drill holes for installing posts in concrete to depth recommended in writing by manufacturer of site furnishings and 3/4 inch (19 mm) larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.

Retain "Pipe Sleeves" Paragraph below if site furnishings are installed in pipe sleeves.

* + 1. Pipe Sleeves: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with [non-shrink, non-metallic grout] [or] [anchoring cement], mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.

END OF SECTION