

BuildingName
The Description of the Project
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SPECIFICATION DIVISION 5

NUMBER SECTION DESCRIPTION

DIVISION 05 METALS

SECTION 055000 - METAL FABRICATIONS

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DIVISION 05 METALS
SECTION 055000 - METAL FABRICATIONS

NOV 2004 - CHANGED LADDER RUNGS PER ROOFING DEPT. REQUEST.

PART 1 - GENERAL

1.1 SUMMARY

- A. Types of metal fabrications include the following:

EDIT BELOW TO SUIT PROJECT

1. Rough hardware.
2. Steel ladders.
3. Loose bearing and leveling plates.
4. Loose steel lintels.
5. Railings and guards.
6. Metal stairs.
7. Metal bar gratings.
8. Miscellaneous framing and supports.
9. Miscellaneous steel trim.
10. Structural steel door frames.

1.2 SUBMITTALS

- A. Product data indicating compliance with requirements for the following:

EDIT BELOW TO SUIT PROJECT

1. Grout.
 2. Metal grating.
- B. Shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, sections, and details of metal fabrications and their connections. show anchorage and accessory items. Provide templates for anchors and bolts installed under other Sections.
- C. Welder certificates signed by the Contractor and indicating that welders comply with requirements specified under "Quality Assurance" Article.

1.3 QUALITY ASSURANCE

- A. Codes and Standards: AISC "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings"; AWS "Structural Welding Code"; comply with applicable provisions.
- B. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code - Steel," AWS D1.2 "Structural Welding Code - Aluminum," and AWS D1.3 "Structural Welding Code - Sheet Steel."
1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and if pertinent, has undergone recertification.

1.4 PROJECT CONDITIONS

- A. Where field measurements cannot be made without delaying The Work, guarantee dimensions and proceed with fabricating products without field measurements. Coordinate construction to ensure that actual dimensions correspond to guaranteed dimensions. Allow for trimming and fitting.

PART 2 - PRODUCTS

2.1 FERROUS MATERIALS

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- B. Steel Plates, Shapes, Bars: ASTM A 36.
- C. Rolled Steel Floor Plates: ASTM A 786.
- D. Steel Tubing: Product type (manufacturing method) as follows:
 - 1. Cold-Formed Steel Tubing: ASTM A 500.
 - 2. Hot Formed Steel Tubing: ASTM A 501.

REVISE BELOW AS REQUIRED.

- a. For exterior installations and where indicated, provide tubing with hot-dip galvanized coating per ASTM A 53.
- E. Steel Pipe: ASTM A 53, standard weight (schedule 40), unless otherwise indicated, or another weight required by structural loads.
 - 1. Black finish, unless otherwise indicated.

DELETE ABOVE OR BELOW IF NOT APPLICABLE.

- 2. Galvanized finish for exterior installations and where indicated.
- F. Welding Rods and Bare Electrodes: Select according to AWS specifications for the metal alloy to be welded.

2.2 PAINT

DELETE BELOW IF NO SHOP PRIMING REQUIRED.

- A. Shop Primer for Ferrous Metals: Fast-curing, lead- and chromate-free universal modified-alkyd primer with good resistance to normal atmospheric corrosion, complying with performance requirements of FS TT-P-664. Select paint for compatibility with finish paint systems indicated, and for capability to provide a sound foundation for field-applied topcoats, despite prolonged exposure.

DELETE BELOW IF NO GALVANIZING.

- B. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in galvanized steel, with dry film containing not less than 94 percent zinc dust by weight, and complying with SSPC Paint 20.

2.3 FASTENERS

BELOW IS GENERAL ONLY. IF SPECIFIC FASTENERS ARE REQUIRED AND NOT INDICATED ON DRAWINGS, ADD REQUIREMENTS HERE.

- A. General: Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating, for exterior use or where built into exterior walls. Provide fasteners as indicated on drawings, or if not indicated, select fasteners for the type, grade, and class required to provide a complete, secure installation.

2.4 GROUT AND ANCHORING CEMENT

RETAIN BELOW FOR HEAVY-DUTY STRUCTURAL GROUTING APPLICATIONS. DO NOT USE IN WET AREAS OR ON EXTERIOR.

- A. Nonshrink, Metallic Grout: Factory-packaged, ferrous-aggregate grout complying with ASTM C 1107, specifically recommended by manufacturer for heavy-duty loading applications. Subject to compliance with requirements, provide one of the following:

Hi Mod Grout; Euclid Chemical Co.
Embeco 885 and 636; Master Builders Technologies, Inc.
Ferrolith G Redi-Mix and G-NC; Sonneborn Building Products-ChemRex, Inc.

RETAIN BELOW FOR GROUTING APPLICATIONS WHERE NONSTAINING GROUT IS REQUIRED.

- B. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications. Subject to compliance with requirements, provide one of the following:

Construction Grout; W. R. Bonsal Co.
Sure-grip High Performance Grout; Dayton Superior Corp.
Euco N-S Grout; Euclid Chemical Co.
Five Star Grout; Five Star Products.
Vibropruf #11; Lambert Corp.
Crystex; L & M Construction Chemicals, Inc.
Masterflow 928 and 713; Master Builders Technologies, Inc.
Sealtight 588 Grout; W. R. Meadows, Inc.
SonogROUT 14; Sonneborn Building Products-ChemRex, Inc.

BELOW FOR SETTING HANDRAILS AT INTERIOR APPLICATIONS ONLY.

- C. Interior Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Use for interior applications only. Subject to compliance with requirements, provide one of the following:

Ankertite Cement; Dayton Superior Corp.
Por-Rok; Minwax Construction Products Division.

BELOW SETTING HANDRAILS AT BOTH INTERIOR AND EXTERIOR APPLICATIONS.

- D. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without need for protection by a sealer or waterproof coating and is recommended for exterior use by manufacturer. Subject to compliance with requirements, provide one of the following:

Bonsal Anchor Cement; W.R. Bonsal Co.
Super Por-Rok; Minwax Construction Products Division.
Thorogrip; Thoro Systems Products.

2.5 FABRICATION, GENERAL

- A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
- B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

BELOW IS INTENDED FOR EXTERIOR METALWORK. REVISE TO SUIT PROJECT CONDITIONS AND METALWORK EXPOSURE.

- C. Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.
1. Temperature Change (Range): 100 deg F.
- D. Shear and punch metals cleanly and accurately. Remove burrs.
- E. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- F. Remove sharp or rough areas on exposed traffic surfaces.
- G. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
- H. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
 - I. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
 - J. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
 - K. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
 - L. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

BELOW FOR SUPPORTING AND ATTACHING WOODWORK.

2.6 ROUGH HARDWARE

- A. Furnish bent, or otherwise custom-fabricated, bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Division 06 Sections.
- B. Fabricate items to sizes, shapes, and dimensions required. Furnish malleable-iron washers for heads and nuts that bear on wood structural connections, and furnish steel washers elsewhere.

2.7 STEEL LADDERS

SEE AIA MASTERSPEC FOR SAFETY CAGES AND SHIP'S LADDERS, IF REQUIRED.

- A. General: Fabricate ladders for the locations shown, with dimensions, spacings, details, and anchorages as indicated. Comply with requirements of ANSI A14.3.

DELETE REQUIREMENTS BELOW IF LADDERS ARE DETAILED ON DRAWINGS.

- B. Side Rails: Continuous, steel, 1/2-by-2-1/2-inch flat bars, with eased edges, spaced 18 inches apart.

- C. Rungs: Steel 13 ga. HRP0 rungs with cold-formed closely spaced perforated buttons for slip resistance.
- D. Fit rungs in centerline of side rails, plug weld and grind smooth on outer rail faces.
- E. Support each ladder at top and bottom and at intermediate points spaced not more than 5 feet o.c. with welded or bolted steel brackets.
 - 1. Size brackets to support design dead and live loads indicated and to hold centerline of ladder rungs clear of the wall surface by not less than 7 inches.
 - 2. Extend side rails 42 inches above top rung, and return rails to wall or structure unless other secure handholds are provided. If the adjacent structure does not extend above the top rung, goose-neck the extended rails back to the structure to provide secure ladder access.
- F. Galvanize ladders, including brackets and fasteners, in exterior locations.

2.8 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction, made flat, free from warps or twists, and of the required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required. Galvanize after fabrication.

2.9 LOOSE STEEL LINTELS

- A. Fabricate loose structural steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.
- B. Weld adjoining members together to form a single unit where indicated.

DELETE BELOW IF BEARING LENGTHS ARE INDICATED ON DRAWINGS OR SCHEDULES.

- C. Size loose lintels for equal bearing of 1 inch per foot of clear span but not less than 8 inches bearing at each side of openings, unless otherwise indicated.
- D. Galvanize loose steel lintels located in exterior walls.

2.10 RAILINGS AND GUARDS

- A. Railings, General: Fabricate tube handrails with dimensions, spacing, and anchorages indicated. Comply with requirements of Michigan Building Code, unless otherwise indicated.

- B. Railings: Interconnect railing members by butt-welding. Notch ends of intersecting members to fit contour of tube to which end is joined and weld all around at tee and cross intersections. Form curves by bending tube in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross-section of tube throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of tube.
1. Shape for Handrails: Round.
 2. Shape for Members Other Than Handrails: Round, unless otherwise indicated on drawings.
 3. Outside Diameter of Tube for Handrails: 1-1/2 inches.
 4. Dimensions of Members Other Than Handrails: As indicated on drawings.
 5. Tube Wall Thickness: 11 gage.
 6. 1-1/4-inch O.D. pipe is not acceptable for use as a handrail.
 7. Rail Ends: Provide wall returns at ends of wall-mounted handrails. Weld 3/16-inch thick steel plate at ends of tube, except where clearance between tube end and adjoining wall surface is less than 1/4-inch.
 8. Supports: Space support posts or brackets as shown on drawings, but not more than 6 feet on center.
 9. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnections of tube attachment of railings and handrails to other work. Furnish inserts and other anchorage devices for connecting railings and handrails to concrete or masonry work.

MODIFY BELOW FOR VERTICAL BARS OR TUBES.

- C. Guards: Provide infill panels where indicated for interior stairs. Fabricate units from 10 gage flattened, expanded carbon steel sheet with 3/4 inch diamond pattern and weighing approximately 1.7 lbs per sq. ft. Provide each panel with a continuous "U" shaped perimeter frame fabricated of 18 gage sheet metal, lapping both sides of panel 1-inch, and with mitered corners. Include mounting tabs indicated on drawings.
- D. Finish: As follows:
1. Interior Handrails and Components: Black finish.
 2. Exterior Handrails and Components: Galvanized after fabrication.

2.11 METAL STAIRS

- A. Metal Stairs: Construct stairs to conform to sizes and arrangements indicated. Join pieces together by welding, unless otherwise indicated. Provide complete stair assemblies, including metal framing, hangers, columns, railings, newels, balusters, struts, clips, brackets, bearing plates, and other components necessary for the support of stairs and platforms, and as required to anchor and contain the stairs on the supporting structure.

1. Comply with NAAMM "Metal Stair Manual" "Recommended Voluntary Minimum Standards for Fixed Metal Stairs" for Commercial class stair, except where more stringent requirements are indicated.
2. Framing: Fabricate stringers of structural steel shapes shown. Provide closures for exposed stringer ends. Construct platforms of structural steel channel headers and miscellaneous framing members as shown. Weld headers to strings and framing members to strings and headers.
3. Metal Pan Risers, Subtreads, and Subplatforms: Uncoated, 12 gage, cold-rolled steel sheet metal formed into risers and subtreads to conform to configuration shown. Weld brackets to stringers and metal pans to brackets.
4. Stair Railings and Handrails: Comply with applicable requirements specified elsewhere in this Section. Connect to stair framing by direct welding.

BELOW IS LIGHT-DUTY UNIT FOR PEDESTRIAN TRAFFIC. REFER TO AIA MASTERSPEC FOR MORE COMPLETE SELECTION OF GRATING TYPES AND MATERIALS.

2.12 METAL BAR GRATINGS

- A. Welded Steel Gratings: Fabricate welded steel gratings to comply with requirements of "Standard Specifications for Metal Bar Grating and Metal Bar Grating Treads" published in ANSI/NAAMM A202.1 "Metal Bar Grating Manual" and as indicated below:

1. Mark/Size: W-19-4 (welded with bearing bars 1-3/16 inch o.c. and cross bars 4 inches o.c.)/bearing bar sizes as indicated.
2. Bearing bar size: 1-1/2" by 3/16".
3. Traffic Surface: Plain.

SELECT ABOVE OR BELOW.

4. Traffic Surface: Applied abrasive finish consisting of aluminum oxide aggregate in an epoxy resin adhesive.
5. Steel Finish: Hot-dip galvanized with a coating weight of not less than 1.8 oz. per sq. ft. of coated surface.
6. Fabricate removable grating sections with banding bars attached by welding to entire perimeter of each section. Include anchors and fasteners of type recommended by manufacturer, for attachment to supports.
 - a. Provide not less than 4 saddle clips for each grating section and spaced not less than 15/16 inch o.c, with each clip designed and fabricated to fit over 2 bearing bars.
 - b. Furnish threaded bolts with nuts and washers for each clip required.
7. Fabricate cutouts in grating sections for penetrations indicated. Arrange layout of cutouts to permit grating removal without disturbing items penetrating gratings.
 - a. Edge band openings in grating that interrupt 4 or more bearing bars with bars of same size and material as bearing bars.
 - b. Do not notch bearing bars at supports to maintain elevation.

8. Manufacturers: Subject to compliance with requirements, provide metal bar gratings by one of the following:
Alabama Metal Industries Corp.
Barnett/Bates Corp.
Blaw-Knox Grating Div., Blaw-Knox Corp.
IKG Industries
Klemp Corp.
Ohio Gratings, Inc.
Reliance Steel Products, Inc.
Seidelhuber Metal Products, Inc.
Trueweld, Inc.

2.13 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports for applications indicated that are not a part of structural steel framework as required to complete the Work.
- B. Fabricate units to sizes, shapes, and profiles indicated and required to receive other adjacent construction retained by framing and supports. Fabricate from structural steel shapes, plates, and steel bars of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware, hangers, and similar items.
 1. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed.
 - a. Except as otherwise indicated, space anchors 24 inches o.c. and provide minimum anchor units in the form of steel straps 1-1/4 inches wide by 1/4 inch thick by 8 inches long.

REVISE BELOW TO SUIT SPECIFIC PROJECT REQUIREMENTS. ADD SIMILAR PROVISIONS FOR OTHER SUPPORTS, SUCH AS FOR OPERABLE PARTITIONS, OVERHEAD DOORS, ETC.

- C. Toilet Partition Supports: Fabricate support for suspended toilet partitions as follows:
 1. Beams: Continuous steel shapes as shown on drawings, or if not shown, of size required to limit deflection to L/360 between hangers, but use not less than C8 by 11.5 channels or another shape with equivalent structural properties.
 2. Hangers: Steel rods as shown on drawings, or if not shown, 1/2-inch minimum diameter, spaced not more than 36 inches o.c. Thread rods to receive anchor and stop nuts. Fit hangers with wedge-shaped washers for full bearing on sloping flanges of support beam.
 3. Braces and Angles: Steel angles of size required for rigid support of beam and for secure anchorage.

DELETE BELOW IF NO EXTERIOR FRAMING AND SUPPORTS.

- D. Galvanize miscellaneous framing and supports in exterior locations.

2.14 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from structural steel shapes, plates, and bars of profiles shown with continuously welded joints, and smooth exposed edges. Miter corners and use concealed field splices wherever possible.
- B. Provide cutouts, fittings, and anchorages as required to coordinate assembly and installation with other work. Provide anchors, welded to trim, for embedding in concrete or masonry construction, spaced not more than 6 inches from each end, 6 inches from corners, and 24 inches o.c., unless otherwise indicated.
- C. Galvanize miscellaneous steel trim in exterior locations.

2.15 STRUCTURAL STEEL DOOR FRAMES

- A. Fabricate steel door frames from structural shapes and bars of size and to dimensions indicated, fully welded together, with 5/8-by-1-1/2-inch steel bar stops, unless otherwise indicated. Plug-weld built-up members and continuously weld exposed joints. Secure removable stops to frame with countersunk machine screws, uniformly spaced at not more than 10 inches o.c. Reinforce frames and drill and tap as required to accept finish hardware.
- B. Provide steel strap anchors for securing door frames into adjoining concrete or masonry, using 1/8-by-2-inch straps of the length required for a minimum 8-inch embedment, unless otherwise indicated. Weld anchors to frame jambs no more than 12 inches from both bottom and head of frame and space anchors not more than 30 inches apart.

**DELETE BELOW IF NOT REQUIRED. DOOR FRAMES CONNECTED TO
STRUCTURAL STEEL FRAMING ARE SPECIFIED WITH THAT WORK IN
ANOTHER DIVISION 05 SECTION.**

- C. Extend bottom of frames to floor elevation indicated with steel angle clips welded to frames for anchoring frame to floor with expansion shields and bolts.
- D. Galvanize frames and anchors in exterior locations.

2.16 STEEL AND IRON FINISHES

- A. Galvanizing: For those items indicated for galvanizing, apply zinc coating by the hot-dip process complying with the following requirements:
 - 1. ASTM A 153 for galvanizing iron and steel hardware.
 - 2. ASTM A 123 for galvanizing both fabricated and unfabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299 inch thick or thicker.
- B. Preparation for Shop Priming: Prepare uncoated ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:

BOTH OF BELOW APPLY TO LOCATIONS THAT WOULD NORMALLY REMAIN DRY IN SERVICE.

1. Exteriors (SSPC Zone 1B): SSPC-SP 6 "Commercial Blast Cleaning."
 2. Interiors (SSPC Zone 1A): SSPC-SP 3 "Power Tool Cleaning."
- C. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA 1 "Paint Application Specification No. 1" for shop painting.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.
- B. Set sleeves in concrete with tops flush with finish surface elevations. Protect sleeves from water and concrete entry.

3.2 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.
- E. Field Welding: Comply with the following requirements:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.

4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.

DELETE ARTICLES BELOW NOT APPLICABLE TO PROJECT.

3.3 SETTING LOOSE PLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.
- B. Set loose leveling and bearing plates on wedges or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout.
 1. Use nonshrink, metallic grout in concealed locations where not exposed to moisture; use nonshrink, nonmetallic grout in exposed locations, unless otherwise indicated.

DELETE BELOW IF NOT REQUIRED.

2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.4 INSTALLING SUPPORTS FOR TOILET PARTITIONS

- A. Anchor supports securely to and rigidly brace from overhead building structure.

3.5 ADJUSTING AND CLEANING

- A. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of the shop paint on miscellaneous metal is specified in Division 09 Section "Painting."
- B. For galvanized surfaces, clean welds, bolted connections, and abraded areas, and apply galvanizing repair paint to comply with ASTM A 780.

END OF SECTION 055000