



CITY OF PROVIDENCE, RHODE ISLAND

**Department: Public Works**

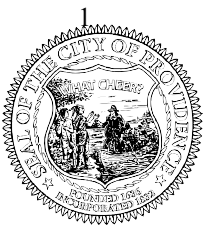
**RFP Title: SLIDE GATE OPERATOR REPAIR – FOX POINT HURRICANE BARRIER, ALLENS AVENUE**

**Opening Date: 12/19/2022**

**Addendum #: 3**

**Issue Date: 12/14/2022**

The purpose of this addendum is to respond to bidder questions regarding the RFP and provide clarification / modifications to the contract documents.



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FOX POINT HURRICANE BARRIER, ALLENS AVENUE**

**ADDENDUM NO. 3**

The following changes, revisions and/or supplemental information, as applicable, are hereby issued as ADDENDUM NO. 3 in connection with the Contract Documents (Specifications) issued for the above-referenced project.

**RESPONSE TO BIDDER QUESTIONS**

**Response to Questions Submitted 12/13/22:**

**1. Question Submitted:**

“REXA has indicated that the electrical requirements will be 230 VAC single phase power to each actuator, 40 Amps Max. We are assuming the control building can accommodate the electrical requirements, please confirm.”

**Response from DPW:**

There is currently three phase power at the control house and a spare single-phase switch. It is anticipated that the Contractor will coordinate with the actuator supplier to provide a transition from available power sources within the control house to the actuators.

**2. Question Submitted:**

“Please confirm whether the intent for electrical conduits specified in Spec Section 16131 is to be used for the 3-1/2” steel conduit for the hydraulic and electrical lines, shown on Sheet 14.”

**Response from DPW:** Yes, the intent is to use 2- 3-1/2” steel conduits; one for low voltage electric and the other for hydraulics.

**3. Question Submitted:**

“Please provide a detail for the snow plow guards that are shown on the Precast Vault Lid details on Sheet 17.”

**Response from DPW:**

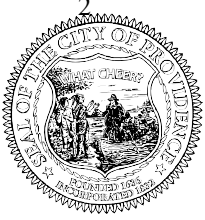
The snow guard shall be constructed of 4”x4”x3/8” 316 Stainless steel angle with 1/2” diameter x 6” long 316 Stainless steel studs welded to the angle at 12” o.c.

**4. Question Submitted:**

“Based on the lead time of the access hatches (9-10 weeks), the May 31st milestone for installation of the precast vault lids may still be problematic. Please confirm whether the City of Providence will allow an alternative to do a closure pour for setting the access hatches.”

**Response from DPW:**

To accommodate lead time associated with procuring the access hatches, the City will allow the use



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of steel plates to temporarily cover the vault openings. Until the hatches are installed, the plates must be watertight and sufficiently secured to the vault to withstand a storm surge and traffic loads without shifting. Full substantial completion will be required within two weeks of receipt of the access hatches.

**5. Question Submitted:**

A specification has not been provided for the Permanent Interior Bracing. Please confirm whether this steel will be galvanized.

**Response from DPW:**

Specification Section 05500 – Miscellaneous Metals, has been revised to cover the interior bracing for the vault. The bracing shall be hot dipped galvanized. Replace the existing specification section 05500 – Miscellaneous Metals with the attached, revised section.

**6. Question Submitted:**

The Painting Specification section 09900 references the work to be done under this section on Sheet No. 15 of 22. Sheet No. 15 does not include any painting references. Please provide a painting schedule.

**Response from DPW:**

Refer to pages 10 and 11 in Section 09900 Painting for “Schedule 09900-A-Coating Types” and “Schedule 09900-B-Coating Systems.”

**7. Question Submitted:**

Existing Dig Safe markings and manhole structure castings in and around the proposed work zone indicates the presence of underground utilities. As no utility drawings were provided with the bid package, please confirm that the General Contractor is not responsible for any delays or additional costs associated with utility interferences.

**Response from DPW:**

Refer to Specifications Section 6 – Special Conditions, Article 6.31 “Interference with Existing Structures” and Article 6.39 “Existing Utilities or Connections”.

Should you have any questions, please do not hesitate to contact Roger Biron at 401-680-7531.

Respectfully,

Roger Cardoso Biron  
City of Providence  
Department of Public Works

**Attachments:** Specification Section 05500 – Miscellaneous Metals

**SECTION 05500  
MISCELLANEOUS METALS**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Aluminum ladders.
  - 2. Fasteners for Miscellaneous Metals items.
  - 3. Galvanized steel interior bracing.
  - 4. Safety climb device.
- B. Related Sections
  - 1. Section 09900 – Painting.

**1.2 REFERENCES**

- A. American Iron and Steel Institute (AISI), Stainless Steel Types
  - 1. AISI Type 316 - Stainless Steel Bolts, Bars, Sheets and Shapes
  - 2. AISI Type 316L - Stainless Steel Bars, Shapes, Plates and Pipe
- B. American National Standards Institute (ANSI)
  - 1. A14.3, Safety Requirements for Fixed Ladders
- C. American Society for Testing and Materials (ASTM)
  - 1. A123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
  - 2. A143, Standard Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedures for Detecting Embrittlement
  - 3. B209, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
  - 4. B210, Standard Specification for Aluminum-Alloy Drawn Seamless Tubes
  - 5. B221, Standard Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
  - 6. B241, Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube
  - 7. B316, Standard Specification for Aluminum and Aluminum-Alloy Rivet and Cold Heading Wire and Rods
  - 8. B429, Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube
  - 9. A276, Standard Specification for Stainless Steel Bars and Shapes

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10. A384, Standard Practice for Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing of Steel Assemblies
  11. A780, Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
  12. F593, Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
- D. International Conference of Building Officials (ICBO): Evaluation Reports for Concrete and Masonry Anchors.
- E. Occupational Safety and Health Administration (OSHA):
1. 29 CFR 1910.27, Fixed Ladders.
- 1.3 SUBMITTALS
- A. Product Data:
1. Concrete and Masonry Drilled Anchors:
    - a. Manufacturer's product descriptions.
    - b. Specific installation instructions, including drilled hole size, preparation, placement procedures, and instructions for safe handling of anchoring systems.
  2. Safety Climb System:
    - a. Manufacturer's product descriptions.
    - b. Certification of system load ratings.
    - c. Installation, Operation, and Maintenance Instructions.
  3. Prime Paint.
  4. Bitumastic Troweling for Surfaces in Contact with Concrete.
  5. Structural Steel for Interior Bracing
- B. Shop Drawings:
1. Detailed shop drawings, including erection drawings, schedules, and index sheets, showing:
    - a. Grades of steel
    - b. Identification marks of members
    - c. Dimensions
    - d. Size, arrangement, and weight of members
    - e. Framing to support bracing
    - f. Location and size of openings, slots, and holes

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- g. Requirements, such as punched or drilled holes, for the attachment of other materials or parts of construction
  - h. Type, size, and extent of welds
  - i. Joint welding procedures and sequences
  - j. Notations indicating members to be galvanized for all metal fabrications, including welding and fastener information:
  - k. Submit for approval before fabrication.
  - l. Identify sizes of structural members, method of assembly, anchorage, and connection to other members.
- 2. Welding notations on submittal drawings shall be in accordance with the requirements of AWS A2.0, Standard Welding Symbols.
  - 3. Except as otherwise noted, approval of Shop Drawings will be for size and arrangement of components. Errors in dimensions shown on Shop Drawings shall be the responsibility of Contractor. Check and coordinate structural steel work with work of other trades before submitting Shop Drawings.
  - 4. Do not proceed with the fabrication of material or performance of the work until the corresponding item on the Shop Drawings has been approved.
- C. Quality Control Submittals:
- 1. Triplicate copies of certified mill test reports of structural steel in accordance with ASTM A6, prior to delivery of structural steel to job site.
  - 2. Triplicate copies of High-Strength Bolts (Plain Noncoated and Hot-Dip Galvanized) certifications:
    - a. Certificates of Compliance that products meet chemical and mechanical requirements of standards specified.
    - b. Manufacturer's inspection test report results for production lot(s) furnished, to include:
      - 1) Tensile strength.
      - 2) Yield strength.
      - 3) Reduction of area.
      - 4) Elongation and hardness.
    - c. Certified Mill Test Reports for Bolts and Nuts:
      - 1) Name and address of manufacturer.
      - 2) Bolts correctly marked.

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- 3) Marked bolts and nuts used in required mill tests and manufacturer's inspection tests.
3. Methods proposed to resolve misalignment between anchor bolts and bolt holes in steel members.
4. Welding Procedures, Qualifications, Inspection Report and manufacturer's certification of filler metal for welding.
5. Hot-Dip Galvanizing certificate of compliance, signed by the galvanizer, with a description of the material processed and the ASTM standard used for coating.
6. Manufacturer's and/or fabricator's and/or erector's affidavit, upon request, stating that the materials or products provided complies with the Specifications.
7. Connection Design Calculations: stamped by a licensed professional structural engineer, registered in the State where the work will be performed, properly coordinated with Shop Drawings.
8. Concrete and Masonry Drilled Anchors:
  - a. Current test data or ICBO evaluation report.
  - b. Adhesive Anchor Installer Certification.
9. Ladders:
  - a. Certification of load and fatigue tests to verify design loads and deflection on rungs and rungs to side rail attachments:
    - 1) Testing shall be certified by an independent testing laboratory.
    - 2) Design loads shall be applied and released for a minimum of 200,000 cycles to demonstrate fatigue resistance and service life.
    - 3) Deflection shall be checked periodically and shall not exceed L/360 at any time under full load.
    - 4) After completion of testing, all components and attachments shall be inspected and certified to be free of cracks, distortion, permanent deformation (bending) or other signs of defect or damage.

**1.4 QUALITY ASSURANCE**

- A. Shop Assembly: Pre-assemble items in shop to the greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- B. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are familiar with the specified

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requirements and the methods needed for proper performance of the work of this Section.

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Handle and stack materials carefully to prevent deformation or damage.

**PART 2 PRODUCTS**

- A. Unless otherwise indicated, meet the following requirements:

**2.1 DOMESTIC PREFERENCES FOR PROCUREMENTS**

Contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States, as defined by 2 CFR § 200.322(b) (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subcontracts and purchase orders for work or products under this contract.

**2.2 MANUFACTURED UNITS**

- A. Concrete and Masonry Drilled Anchors

- 1. General: Materials shall be AISI Type 316 stainless steel.
- 2. Adhesive Anchors:
  - a. Threaded Rod:
    - 1) ASTM F593 stainless steel threaded rod, diameter as shown on Drawings.
    - 2) Length as required, to provide minimum depth of embedment.
    - 3) Clean and free of grease, oil, or other deleterious material.
    - 4) For hollow-unit masonry, provide galvanized or stainless steel wire cloth screen tube to fit threaded rod.
  - b. Adhesive:
    - 1) Disposable, self-contained cartridge system capable of dispensing both components in the proper mixing ratio and fitting into a manually or pneumatically operated caulking gun.
    - 2) Two-component, designed to be used in adverse freeze/thaw environments, with gray color after mixing.
    - 3) Cure Temperature, Pot Life, and Workability: Compatible for intended use and environmental conditions.
    - 4) Nonsag, with selected viscosity base on installation temperature and overhead application where applicable.
  - c. Manufacturers and Products:



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- 1) ITW Ramset/Red Head, Wood Dale, IL; Epcon Ceramic 6 Epoxy or A7 Adhesive Anchor System. (Use only Epcon A7 Adhesive System for hollow masonry.)
  - 2) Hilti, Inc., Tulsa, OK; HIT Injection Adhesive System, HIT HY 200 (HIT HY 70 for hollow masonry).
  - 3) Powers Rawl, New Rochelle, NY; Power Fast Epoxy Injection Gel Cartridge System.
  - 4) Simpson Strong-Tie Co., Inc., Pleasanton, CA; Epoxy-Tie Adhesive ET.
  - 5) Covert Operations, Inc., Long Beach, CA; CIA-Gel 7000 Epoxy Anchors.
  - 6) Unitex, Kansas City, MO; Pro-Poxy 300 and Pro-Poxy 300 Fast Epoxy Adhesive Anchors.
3. Adhesive Threaded Inserts:
- a. Stainless steel, internally threaded insert.
  - b. Manufacturer and Product: Hilti, Inc., Tulsa, OK; HIS-R Insert with HIT HY 200 adhesive.
- B. Fasteners:
1. Use stainless steel material types as indicated in Data Sheet – 05500 – A, FASTENER MATERIALS SCHEDULE, at the end of this section.
  2. Bolts, Nuts and Washers: ASTM A325, galvanized to ASTM A153 for galvanized members.
  3. Anchor Bolts: ASTM F1554, Grade 36
  4. High-Strength Bolts: ASTM A325 or ASTM A490, Type 1, plain uncoated. Bolt length and thread length shall be as required for the connection type shown, with hardened washers as required.
  5. Tension Control (TC) Bolts:
    - a. ASTM F1852, Type 1, equivalent to A325 or A490
    - b. Manufacturers:
      - 1) LeJeune Bolt Company, Burnsville, MN.
      - 2) Nucor Fastener, Saint Joe, IN.
      - 3) T.S. Bolts and Tools, Bristol Machine Co., Walnut, CA.
      - 4) Haydon Bolts, Philadelphia, PA.
      - 5) Vermont Fasteners Manufacturing, Swanton, VT.
      - 6) Or equal.
- C. Aluminum Ladders

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1. The ladders and all ancillary equipment shall be fabricated in accordance with the details on the plans and described herein and shall comply with the requirements of ANSI-A14.3.
2. Ladder side rail shall be 1-1/2 inch diameter Schedule 40 pipe, alloy 6063-T6, 6105-T5 or 6105-T6. Ladder side rail pipe shall conform to ASTM B429 or ASTM B221.
3. Ladder rungs shall be extruded aluminum, alloy 6063-T6, with a non-slip power grip surface, flat 1 inch wide serrated top surface, straight sides and a semi-circular bottom. The rung sides and bottom shall have striations at approximately 5/16 inch centers for gripping surface.
4. Other ladder system components:
  - a. Brackets and base flanges - aluminum.
  - b. Anchors, bolts, and screws - stainless steel (unless noted otherwise on the plans).
  - c. The contractor shall refer to the plans for ladder system details and component locations.
5. The ladder shall be designed for the following minimum loads:
  - a. Rungs - 250 lbs concentrated load plus 30 percent impact. (Maximum rung deflection shall not exceed L/360). The design load shall be applied at the center of the rung over a 4 inch wide area.
  - b. Side rails - 250 lbs. live load plus 30% impact concentrated between any two consecutive attachments.
6. Submit test reports for approval to verify design loads and deflection on rungs and rungs to side rail attachments. Testing shall be certified by an independent testing laboratory. Design loads shall be applied and released for a minimum of 200,000 cycles to demonstrate fatigue resistance and service life. Deflection shall be checked periodically and shall not exceed L/360 at any time under full load. After completion of testing all components and attachments shall be inspected and certified to be free of cracks, distortion, permanent deformation (bending) or other signs of defect or damage.

**2.3 ACCESSORIES**

- A. Electrolysis Isolators: All dissimilar metals shall be isolated over their full length with 1/8 inch thick neoprene unless otherwise noted.

**2.4 SHOP FABRICATION**

- A. General
  1. All dimensions shall be verified at the site before fabrication is started.
  2. Galvanized items shall be shop fabricated and completely welded prior to galvanizing.

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3. Fit and shop assemble items in largest practical sections, for delivery to site.
4. Fabricate items with joints tightly fitted and secured.
5. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
6. Exposed Mechanical Fastenings: Flush countersunk screws or bolts, unobtrusively located, consistent with the design of the component, except where specifically noted otherwise.
7. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
8. Miscellaneous metals work shall be formed true to detail, with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture and free from defects impairing strength or durability.
9. Metal Surfaces: For fabrication of miscellaneous metal work that will be exposed to view, use only materials that are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.
10. Connections and accessories shall be of sufficient strength to safely withstand stresses and strains to which they will be subjected. Accessories and connections to steel or cast iron shall be steel, unless otherwise specified. Threaded connections shall be made so that the threads are concealed by fittings.
11. Castings shall be of good quality, strong, tough, even-grained, smooth, free from scale, lumps, blisters, sand holes, and defects of any kind which render them unfit for the service for which they are intended. Castings shall be thoroughly cleaned and will be subjected to a hammer inspection in the field by the Engineer. Finished surfaces shown on the Drawings and/or specified shall be machined to a true plane surface and shall be true and seat at all points without rocking. Allowances shall be made in the patterns so that the thickness specified or shown shall not be reduced in obtaining finished surfaces. Castings will not be acceptable if the actual weight is less than 95% of the theoretical weight computed from the dimensions shown.
12. No splicing of any member or part of the work will be allowed where full-length members are commercially available.
13. Screws, bolts, studs and other connecting devices required in the work shall be concealed wherever possible. On all finish work where fasteners must be exposed to view, they shall be countersunk and finished flush with the exposed surfaces. All screws, bolts and other fastening devices used for exterior work shall be aluminum, bronze or stainless steel, whichever is appropriate for the work in which it is to be used.

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- B. Fabrication Tolerances:
1. Squareness: 1/8 inch maximum difference in diagonal measurements.
  2. Maximum Offset Between Faces: 1/16 inch.
  3. Maximum Misalignment of Adjacent Members: 1/16 inch.
  4. Maximum Bow: 1/8 inch in 48 inches.
  5. Maximum Deviation From Plane: 1/16 inch in 48 inches.

**2.5 FINISHES**

- A. Aluminum Materials
1. Finished contact surfaces shall be finished in accordance with the Aluminum Association designation AA-M32C22A41.

**B. Galvanizing:**

1. Fabricate steel to be galvanized in accordance with ASTM A143, A384, and A385. Avoid fabrication techniques that could cause distortion or embrittlement of steel.
2. Remove welding slag, splatter, burrs, grease, oil, paint, lacquer, and other deleterious material prior to delivery for galvanizing.
3. Remove by blast cleaning or other methods surface contaminants and coatings not removable by normal chemical cleaning process in the galvanizing operation.
4. Hot-dip galvanize steel members, fabrications, and assemblies after fabrication in accordance with ASTM A123, as modified in Section 05500.
5. Hot-dip galvanize A325 bolts, nuts, washers, and hardware components in accordance with ASTM A153. Oversize holes to allow for zinc alloy growth. Shop assemble bolts, nuts, and washers with special lubricant and test in accordance with ASTM A325 and A563.
6. Tension-control (TC) bolts, nuts, and washers shall be mechanically zinc coated in accordance with ASTM F1852 and B695, Class 50.
7. Galvanize components of bolted assemblies separately before assembly.

**2.6 SOURCE QUALITY CONTROL**

- A. Miscellaneous Metals fabrications, materials, and workmanship shall be subjected to inspection and testing in mill, shop and/or field by the Engineer.
- B. Maintain inspection and quality control records of shop and field work.
- C. The Contractor shall maintain records of each impact wrench used in the shop, showing dates, sizes of bolts tested and the corresponding torque values. Certified copies of the records shall be made available to the Engineer, upon request.

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- D. Notify the Engineer prior to start of any fabrication, the start of sandblasting and painting, or other phases of work so as to afford them reasonable opportunity to inspect work.
- E. Furnish the Engineer upon request, with the following:
  - 1. Complete sets of approved Shop Drawings and corrective work procedures at fabricating shop(s) and in field.
  - 2. Cutting lists, order lists, material bills, and shipping lists.
  - 3. Information as to time and place of all rollings and shipments of material to shops and field.
  - 4. Representative sample pieces requested for testing.
  - 5. Full and ample means and assistance for testing materials, and proper facilities for inspection of work, in mill, shop and field.
- F. Do not remove any marks or tags identifying rejected work.
- G. Any work found deficient shall be corrected or replaced in accordance with these specifications. Deficient welds shall be cut out to sound material and re-welded. Deficient assemblies shall be taken apart, corrected and reassembled, using new materials as required. ASTM A490 bolts shall not be reused. ASTM A325 bolts may be retightened once only.
- H. Miscellaneous Metals work that has been rejected by the Engineer in the mill or shop shall be corrected without delay and at no expense to the Owner.

**PART 3 EXECUTION**

**3.1 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Verify that anchor bolts, bearing plates, and other items furnished to be installed by others have been installed correctly.

**3.2 PREPARATION**

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. All steel and aluminum surfaces to come in contact with exposed concrete or masonry shall receive a protective coating of an approved heavy bitumastic troweling applied in accordance with manufacturer's instructions prior to installation.

**3.3 FIELD FABRICATION**

- A. No fabricated section shall be cut in the field without the permission of the Engineer.
- B. All miscellaneous metals work shall be formed true to detail, with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture and free from defects impairing strength or durability.

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- C. Connections and accessories shall be of sufficient strength to safely withstand stresses and strains to which they will be subjected. Accessories and connections to steel or cast iron shall be steel, unless otherwise specified. Threaded connections shall be made so that the threads are concealed by fittings.
- D. No splicing of any member or part of the work will be allowed where full-length members are commercially available. Jointing shall meet the approval of the Engineer.
- E. Screws, bolts, studs and other connecting devices required in the work shall be concealed wherever possible. On finish work where fasteners must be exposed to view, they shall be countersunk and finished flush with the exposed surfaces. Screws, bolts and other fastening devices used for exterior work shall be aluminum, bronze or stainless steel, whichever is appropriate for the work in which it is to be used.

**3.4 INSTALLATION**

- A. Install all items furnished except items to be imbedded in concrete or masonry. Items to be attached to concrete or masonry after such work is completed shall be installed in accordance with the details shown. Fastening to wood plugs in masonry will not be permitted.
- B. Where aluminum contacts wood, apply two coats of aluminum metal and masonry paint to the wood.

**3.5 ANCHOR BOLTS**

- A. Accurately locate and hold anchor bolts in place with templates at the time concrete is placed.
- B. Use sleeves for location adjustment and provide two nuts and one washer per bolt of same material as bolt.

**3.6 CONCRETE AND MASONRY DRILLED ANCHORS**

- A. Begin installation only after concrete or masonry to receive anchors has attained design strength.
- B. Install in accordance with manufacturer's instructions.
- C. Provide minimum embedment, edge distance, and spacing as follows, unless indicated otherwise by anchor manufacturer's instructions or shown otherwise on Drawings:

<b>Anchor Type</b>	<b>Min. Embedment (bolt diameters)</b>	<b>Min. Edge Distance (bolt diameters)</b>	<b>Min. Spacing (bolt diameters)</b>
Wedge	9	6	12
Expansion and Sleeve	4	6	12

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<b>Anchor Type</b>	<b>Min. Embedment (bolt diameters)</b>	<b>Min. Edge Distance (bolt diameters)</b>	<b>Min. Spacing (bolt diameters)</b>
Undercut	9	12	16
Adhesive	9	9	13.5

- D. Use only drill type, bit type, and diameter recommended by anchor manufacturer. Clean hole of debris and dust with brush and compressed air.
- E. For undercut anchors, use special undercutting drill bit and rotary hammer drill and apply final torque as recommended by anchor manufacturer.
- F. When embedded steel or rebar is encountered in the drill path, slant drill to clear obstruction. If drill must be slanted more than 10 degrees to clear obstruction, notify Engineer for direction on how to proceed.
- G. Adhesive Anchors:
  - 1. Do not install adhesive anchors when temperature of concrete is below 40 degrees F or above 100 degrees F.
  - 2. Remove any standing water from hole with oil-free compressed air. Inside surface of hole shall be dry where required by manufacturer’s instructions.
  - 3. Do not disturb anchor during recommended curing time.
  - 4. Do not exceed maximum torque as specified in manufacturer’s instructions.

**3.7 FIELD QUALITY CONTROL**

- A. The fact that Miscellaneous Metals work has been accepted at the shop shall not prevent its final rejection at the job site, even after it has been erected, if it is found to be defective in any way.
- B. Miscellaneous Metals erection, materials, and workmanship shall be subjected to inspection and testing in mill, shop and/or field by the Engineer.
- C. Maintain inspection and quality control records of shop and field work.
- D. Furnish the Engineer upon request, with the following:
  - 1. Complete sets of approved Shop Drawings and corrective work procedures at fabricating shop(s) and in field.
  - 2. Full and ample means and assistance for testing materials, and proper facilities for inspection of work, in mill, shop and field.
- E. Do not remove any marks or tags identifying rejected work.
- F. Any work found deficient shall be corrected or replaced in accordance with these specifications, without delay and at no expense to the Owner.

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**3.8 ADJUST AND CLEAN**

- A. Touch-Up Painting - Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as approved for use for shop painting.
- B. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- C. For galvanized surfaces, clean field welds, bolted connections and abraded areas and touch-up all damage using suitable touch up material complying with ASTM A780.

**3.9 FASTENERS**

- A. Anti-seizing Lubricant: Use on all stainless steel threads.
- B. Do not use adhesive anchors to support fire-resistive construction or where ambient temperature will exceed 120 degrees F.
- C. Provide fasteners in accordance with Data Sheet – 05500 – A, unless otherwise noted on the drawings.

**DATA SHEET 05500-A**

Fastener Materials Schedule

<b>Service Use and Location</b>	<b>Product</b>	<b>Remarks</b>
<b>Drilled Anchors for Metal Components to Concrete (Ladders, Handrail Posts, Electrical Panels, and other Equipment)</b>		
Exterior and Interior Wet and Dry Areas	Hot-dip galvanized steel or stainless steel sleeve, wedge, or expansion anchors, or stainless steel adhesive anchors	Use zinc-plated undercut anchors for overhead and ceiling installations.
Submerged or Corrosive Areas	Stainless steel adhesive anchors	

END OF SECTION

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