



Office of General Services

DESIGN & CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 1 TO PROJECT NO. 47463

CONSTRUCTION AND ELECTRICAL WORK PROVIDE GUARD TOWER & LOWER PERIMETER FENCE MODIFICATIONS GROVELAND CORRECTIONAL FACILITY 7000 SONYEA ROAD, ROUTE 36 SONYEA, NY

September 30, 2026

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.
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INTRODUCTORY INFORMATION – ELECTRICAL WORK

1. DOCUMENT 000101.02 TITLE PAGE COVER STANDARD PRE-BID SITE VISIT: Discard the Document bound in the Project Manual and substitute the accompanying Section (page 000101.02 -1) noted "Revised 9/28/26."

CONSTRUCTION WORK SPECIFICATIONS

2. SECTION 051200 STRUCTURAL STEEL: Discard the Section bound in the Project Manual and substitute with the accompanying Section (pages 051200 – 1 thru 051200 – 15) noted "Revised 9/28/2026".

END OF ADDENDUM

Brady M. Sherlock, P.E.
Director, Division of Design
Design & Construction

PRE-BID SITE VISIT SCHEDULED

ON OCTOBER 9, 2026

SEE ADVERTISEMENT FOR BIDS INSIDE

PROJECT NO. 47463 - E

ELECTRICAL WORK

**PROVIDE GUARD TOWER & LOWER
PERIMETER FENCE MODIFICATIONS
GROVELAND CORRECTIONAL
FACILITY**

**7000 SONYEA ROAD, ROUTE 36
SONYEA, NY**

JANUARY 30, 2026

PROJECT MANUAL

KATHY HOCHUL
Governor

JEANETTE M. MOY
Commissioner



**Office of
General Services**

SECTION 051200

STRUCTURAL STEEL

PART 1 GENERAL

1.01 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Anchor Bolts: Installed under Section 033000 or 033001.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Drawings and general provisions of contract, including general and supplementary conditions and Division 1 specification sections, apply to this section.
- B. Concrete Fill for Columns: Section 033000.
- C. Refer to Specification Section 014533 and Schedule of Special Inspections.

1.03 REFERENCES

- A. Except as shown or specified otherwise, the Work of this Section shall meet the requirements of the following:
 - 1. Design, Fabrication, and Erection: "Specification for Structural Steel Buildings, Allowable Stress Design and Plastic Design", June 1, 1989, by the American Institute of Steel Construction (AISC Specification).
 - 2. Standard Practice: Fabrication and erection practices shall comply with the "Code of Standard Practice for Steel Buildings and Bridges", June 10, 1992, by the American Institute of Steel Construction (AISC Code).
 - 3. Welding: Welding shall comply with the provisions of the "Structural Welding Code - Steel, AWS D1.1", by the American Welding Society (AWS Code).
 - 4. High-Strength Bolting: High-strength bolting shall comply with the "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" approved by the Research Council on Structural Connections of the Engineering Foundation on November 13, 1985 (Specification for Structural Joints).
 - 5. Cleaning Steel: Comply with the appropriate specifications (SSPC SP-X) by the Steel Structures Painting Council.

1.04 DEFINITIONS

- A. AISC Manual: Where reference is made to the AISC Manual, it shall mean the Manual of Steel Construction, Fifteenth Edition, of the American Institute of Steel Construction.

1.05 REQUIREMENTS FOR CONNECTIONS

- A. General:

1. Except where Type 1 (rigid-frame) or Type 3 (semi-rigid framing) connections are indicated, the design has been prepared on the basis of Type 2 (simple or unrestrained) connections, complying with the provisions of Section A2.2 of the AISC Specification.
 2. Do not use connection details which depend upon sharing the stress between any combination of high-strength bolts in bearing-type connections and welds.
- B. Shop Connections: Unless otherwise indicated, all shop connections shall be welded or high strength bolted. Field connections required to be welded or fully-tensioned high-strength bolted shall meet the same requirements when fabricated in the shop.
- C. Design, Fabrication and Erection (Amendments to the AISC Specification):
1. In Item A6. of the specification, change “American Welding Society” to “American Welding Society (Latest Adoption Date)”. Delete the date from all referenced AWS Codes.
 2. In Item J1.8. of the specification, change the last sentence to read: “Weld access holes and beam copes in other shapes shall be ground smooth, but need not be inspected by dye penetrant or magnetic particle methods.”.
 3. In Item J1.12 of the specification, delete “or with A307 bolts” from the second paragraph.
 4. In Item J2. of the specification, change the introductory sentence to read: “All provisions of the American Welding Society Structural Welding Code-Steel, AWS D1.1, except Sections 2.3.2.4, 2.5, 8.13.1 and 9, apply to work performed under this Specification.”.
 5. In Item J3.2.c of the specification, change the first sentence to two sentences as follows: “Oversized holes are permitted in any or all plys of slip-critical connections, except those with galvanized faying surfaces. Oversized holes shall not be used in slip-critical connections with galvanized faying surfaces, or in bearing-type connections.”.
 6. In Item J3.2.d. of the specification, change the second sentence to two sentences as follows: “Short-slotted holes are permitted without regard to direction of loading in slip-critical connections, except those with galvanized faying surfaces. The length of the slot shall be normal to the direction of the load in slip-critical connections with galvanized faying surfaces and in bearing-type connections.”.
 7. In Item J3.2.e of the specification, change the second sentence to two sentences as follows: “Long-slotted holes are permitted without regard to direction of loading in slip-critical connections, except those with galvanized faying surfaces. The length of the slot shall be normal to the direction of the load in slip-critical connections with galvanized faying surfaces and in bearing-type connections.”.
 8. In Item M2.2. of the specification, delete the first two paragraphs.
 9. In Item M2.5. of the specification, change the second sentence of the fifth paragraph to read: “Burrs shall be removed.”.
 10. Delete Item M4.5. of the specification in its entirety.
 11. In Item M5.4. of the specification, delete “Slip-critical” from the heading and delete “slip-critical” from the first sentence.
- D. Fabrication and Erection (Amendments to the AISC Code):

1. In Item 4.1. of the code, delete the last sentence of the first paragraph.
2. In Item 5.1. of the code, change the first paragraph to read: "Contract Drawings are not considered released for construction. Orders for materials may be placed only after approval of erection drawings or written approval of the Director."

1.06 SUBMITTALS

- A. General: Review of submittals will be for general conformance only. Compliance with requirements for materials, fabrication, erection, and dimensioning of structural steel shall be Contractor's responsibility. Resubmitted shop drawings shall have revisions identified and dated.
- B. Shop Drawings: Submit shop drawings for all structural steel required by this Contract. Machine-duplicated copies of Contract Drawings will not be accepted as shop drawings. Shop drawings shall be standard 24 by 36 inch size sheets, except that erection drawings may be larger. The margin line shall be drawn a minimum of 1/2 inch from edge of sheet. The title block shall be placed in the lower right hand corner of the drawing, and shall contain the fabricator's name, address, and telephone number. Failure to submit legible drawings of required size will be cause for their disapproval without review. If the drawings are not prepared by a detailer under the direct control of the fabricator, the fabricator shall stamp each drawing and initial or sign the stamp to certify review and approval of the drawings, and conformance with the fabricator's shop practice and capability.
 1. Include the following in the initial submission:
 - a. Drawings of proposed job standards for shop and field connections, including standard and special connections, complying with the requirements.
 - b. Erection drawings indicating sizes, weights, and locations of all structural members. Including field installation details in Erection Drawings.
 - c. Anchor bolt and base plate plans.
 - d. Reference Contract Drawing number and addendum number in each shop and Erection drawing.
 - e. Details including cuts, copes, camber, connections, holes, bolts, and other pertinent information.
 - f. Connection design loads.
 - g. Material, including ASTM designations and grades or manufacturer's data as appropriate.
 2. Do not submit detail drawings, other than for anchor bolts and base plates, until after approval of the job standards and the erection drawings.
 3. All shop drawings shall be checked by the detailer before submission. Failure to submit checked shop drawings will be cause for their disapproval without review.
 4. Changes initiated by the detailer or fabricator to previously reviewed shop drawings shall be resubmitted.
 5. Include the following in subsequent submissions:
 - a. Index sheets and revised erection drawings to which erection marks have been added.

- b. Detail drawings of all structural members.
 6. Indicate all required shop and field welds by Standard AWS Welding Symbols in accordance with AWS A2.4.
 7. Indicate shop painting requirements.
 8. When shop drawings are marked “Approved as Noted”, promptly resubmit copies of corrected shop drawings for formal approval and record.
 9. Contract Drawings are not considered released for construction. Orders for materials may be placed only after approval of erection drawings or written approval of the Director.
- B. Connections: Submit as follows:
 1. Submit proposed connection types and calculations for review before preparing detailed shop drawings.
 2. Submit connection calculations in accordance with Option 3 of AISC Code of Standard Practice for Steel Buildings and Bridges. Calculations shall be stamped by a licensed Professional Engineer in New York State [or other state] (Connection Design Engineer) retained by Fabricator.
 3. Connections shown on shop drawings shall be coordinated with the submitted connection calculations. Submit written confirmation from Fabricator’s Connection Design Engineer that the shop and erection drawings accurately incorporate the connection designs.
- C. Product Data:
 1. Shop Paint: Manufacturer’s name and printed product literature, including storage and application instructions.
- D. Material Data: Submit to Special Inspector and Engineer laboratory test reports and other data as required to show compliance with specifications. Submit producer’s or manufacturer’s specifications and installation instructions for the following products:
 1. Structural steel, including certified copies of mill reports covering chemical and physical properties.
 2. High-strength bolts, including nuts and washers.
 3. Unfinished bolts and nuts.
 4. Structural steel primer paint if used.
 5. Welding electrodes.
 6. Post-installed anchors (expansion, sleeve, or chemical adhesive) if used.
 7. For fasteners to be accepted, lot numbers on kegs, boxes, or bags must correlate with lot numbers shown in accepted test certificates and identification numbers in mill test reports. Manufacturer's symbol and grade markings must appear on bolts and nuts.
- E. Quality Control Submittals:
 1. Test Reports: Submit test reports no later than the end of the week covered by the reports. Submit copy of each test report required under Quality Assurance Article.
 2. Certificates: Certificates required under Quality Assurance Article.
 3. Fabricator’s Qualifications Data:
 - a. Firm’s name, business address and telephone number.
 - b. Summary of their quality control programs.

4. Erector's Qualifications Data:
 - a. Firm's name, business address and telephone number.
 - b. Summary of their quality control programs.
5. Welder's Qualifications Data:
 - a. Name of each person who will be performing the Work and their employer's name, business address and telephone number.
 - b. Copy of AWS certification for type of welding required.

1.07 QUALITY ASSURANCE

- A. Comply with latest editions of:
 1. American Welding Society, Inc. (AWS)
 - a. AWS D1.1 "Structural Welding Code - Steel."
 - b. AWS C5.4 "Recommended Practices for Stud Welding."
 2. Research Council on Structural Connections (RCSC), Educational Bulletin No. 4, "Recommended Erection and Field Inspection Procedures for High-Strength Bolts in Structural Steel Assemblies."
 3. American Hot-Dip Galvanizers Association, Inc.; Zinc Institute Inc.
 - a. "Inspection Manual for Hot-Dip Galvanized Products."
 4. Steel Structures Painting Council (SSPC)
- B. Test Reports:
 1. Steel Manufacturer's Mill Test Reports: Covering physical and chemical tests, for all main material.
 2. Bolt Manufacturer's Test Reports: Covering physical and chemical tests, for each lot of high strength bolts supplied.
- C. Certification: Affidavit by the structural steel manufacturer certifying that structural steel items meet the contract requirements.
 1. Submit evidence of steel material compliance with this Specification. Evidence shall consist of certification of source of material, copies of purchase orders and manufacturer's certifications. For stock material, submit copies of latest mill or purchase orders for material replacement.
 - a. Documentation to confirm compliance with General Conditions Article 25.4 Domestic Steel.
- D. The Contractor agrees, that if the value of this contract exceeds \$100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.
- E. Qualifications:
 1. Fabricator's Qualifications: The fabricator of the structural steel shall be regularly engaged in the fabrication of structural steel for a minimum of 5 years, and shall be subject to the approval of the Director.
 - a. AISC Quality Certified Fabricators (latest list issued) are approved, Category STD.
 2. Erector's Qualifications: The structural steel erector shall be regularly engaged in the erection of structural steel for a minimum of 5 years, and shall be subject to the approval of the Director. Erector shall be AISC Certified Erector, Category CSE.

3. Welders' Qualifications: Provide one of the following certifications for welders to be employed in work.
 - a. Welding shall be performed only by welders, welding operators, and tackers who have been qualified by tests within previous 12 months as prescribed in the AWS Code to perform the type of welding required. Welders shall be certified for each type weld and position before fabrication.
 - b. Work record signed by supervisor showing regular employment within previous 12 months to perform type of welding in work.
 4. Submit written description of ability.
 5. At completion of fabrication, Fabricator shall submit Certificate of Compliance to Special Inspector and Code Enforcement Official stating work was performed in accordance with approved Construction Documents in accordance with Chapter 17 of the *International Building Code* (IBC) as referenced by the *New York State Uniform Code*.
- F. Do not deviate from the requirements of the Contract Documents except where an option is specifically mentioned. The Director, however, may accept deviations proposed by the Contractor when it is deemed in the best interest of the State and if the deviations are consistent with sound and accepted engineering practice. Requests for deviations shall be made prior to the submission of shop drawings to preclude delay in the expeditious preparation and approval of the required shop drawings. In addition, design calculations or other data may be required to establish conformity of such deviations with the applicable Standards.
- G. Galvanizing: Stamp galvanized items with galvanizer's name, weight of coating, and applicable ASTM number.
- H. Contractor shall employ testing laboratory acceptable to Engineer and Architect to perform material evaluation tests.
- I. Submit testing service qualifications demonstrating experience with similar types of projects.
- J. The Registered Design Professionals (RDPs) for Structural Engineering and Architecture will visit construction site at appropriate intervals to determine if work is in general conformance with Contract Documents and specifications. Notify RDPs 48 hours before anticipated time of completion for a given section of work so they may determine if site observations are required. If site observations are required, do not conceal framing until RDPs have had opportunity to make observations.

1.08 INSPECTION

- A. Quality Control Inspection: Maintain Quality Control (QC) inspection during the fabrication and erection of structural steel.
1. Submit for approval a summary of the QC programs of the proposed fabricator and erector, including a list of their QC personnel and respective duties. Failure to obtain approval of the QC programs will result in rejection of the proposed fabricator and erector. AISC Quality

Certified Fabricators submit copy of QC Certificate (Submission of QC program summary is waived).

2. At least one of the fabricator's and one of the erector's QC personnel shall be an American Welding Society Certified Welding Inspector (CWI). If the fabricator and/or the erector find it necessary to temporarily employ an independent CWI, they shall not utilize Atlantic Testing Laboratories (under contract to the State) for structural steel inspection.
3. The fabricator's CWI shall make minimum QC inspections as follows and shall prepare daily reports of such inspections:
 - a. At the start of fabrication to review welder qualifications, welding procedure specifications and qualifications, welding equipment and consumables, structural steel identification and tracking procedures and to perform all other CWI duties appropriate to start up of the specific project.
 - b. Periodically during the preparation and fit up of material for groove welding.
 - c. At all times that full penetration groove welding is being performed.
 - d. As necessary to ensure that all welding related requirements of this section are being complied with.
 - e. Minimum QC inspection time by the CWI shall be one-half day every other day that any welding related structural steel fabrication is being performed.
4. The erector's CWI shall make minimum QC inspections as follows, and shall prepare daily reports of such inspections:
 - a. Prior to commencement of field welding operations to review welder qualifications, welding procedure specifications and qualifications, welding equipment and consumables and to perform all other CWI duties appropriate to start up of field welding for the specific project.
 - b. Periodically during fit-up of material for full penetration groove welds.
 - c. At all times that full penetration groove welding is being performed.
 - d. As necessary to ensure that all welding related requirements of this section are being complied with.
 - e. Minimum QC inspection time shall be one-half day on at least three separate days for every week that any structural steel field welding is being performed. This minimum time may be reduced if, in the opinion of the Director's Representative, such reduction is appropriate.

- B. Quality Assurance (QA) inspection of structural steel fabrication and field welding and high-strength bolting may be made at the discretion of the Director. The qualification of welding procedures, welders, and tackers will be covered by such QA inspection. Representatives of the Director and/or designated inspection laboratory shall be given free and easy access to fabrication shop and field at all times that work is in progress. QA inspections will be made without cost to the Contractor.

1. If QA inspection is made by the State, it shall not relieve the Contractor, fabricator, and erector of responsibility for their own QC programs.
2. When QA inspection is made by the State, schedule and perform the Work as required to minimize the cost to the State for QA inspection. When failure to schedule and perform the Work, or to coordinate with the QA inspectors, results in excessive QA inspection costs, the State will backcharge such excess cost to the Contractor.
3. When non-destructive testing, Radiographic Testing (RT) or Ultrasonic Testing (UT), is required by the contract documents, it shall be performed by the State or its designated inspection laboratory, at the State's expense.
4. When QA inspection is made by the State, send 3 additional copies of required material certifications and mill test reports to the designated inspection laboratory, or to OGS Design & Construction, Division of Construction when no inspection laboratory has been designated.
5. Keep copies of the results of welder qualification test on file and make them available to the QA inspector upon request.
6. Do not ship structural steel, except anchor bolts and base plates, from the fabricating shop prior to QA inspection and approval by the State or designated inspection laboratory, unless such inspection is waived by the Director. A waiver of prior QA inspection and approval shall not reduce the Contractor's responsibility to provide structural steel in conformance with the Contract Documents.

1.09 WELDING PROCESSES

- A. Use only shielded metal arc, submerged arc, gas metal arc, or flux cored arc welding.

1.10 WELDING PROCEDURE QUALIFICATION

- A. Shielded metal arc, submerged arc, gas metal arc, or flux cored arc welding procedures which conform to the provisions of the AWS Code shall be considered to be prequalified.
- B. The welding procedures requiring qualification shall conform to the requirements of AWS D1.1.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Deliver anchor bolts and other devices which are to be embedded in cast-in-place concrete or masonry construction, for anchorage of structural steel, one week prior to the start of that Work, unless otherwise required.
- B. Receiving Shop Paint: Receive paint in original, unopened containers bearing paint manufacturer's printed label.
 1. Label shall show manufacturer's name, trade name of paint, Federal Specification compliance (if applicable), shelf life, and date of manufacture.

- C. Protection:
 - 1. Upon delivery to the site, promptly cover and protect steel items (which are not required to receive shop paint) from rusting.
 - 2. Store shop paint in accordance with paint manufacturer's printed instructions.
 - 3. Store material in horizontal position on supports above ground.
 - 4. Protect from weather, and keep free of dirt and debris.
 - 5. Handle material carefully so it is not bent or marred.
 - 6. Repair or replace damaged materials. Do not incorporate in work fastener components that accumulate rust or dirt.

1.12 WORKMANSHIP

- A. Contractor shall be responsible for correction of work not conforming to specified requirements. Correct deficient work as directed by Engineer.
- B. Remove work found to be defective. Replace with new acceptable work.

1.13 ENVIRONMENTAL REQUIREMENTS FOR SHOP PAINTING

- A. Comply with the following conditions for the application of paint unless otherwise stated in the paint manufacturer's printed directions.
 - 1. Minimum ambient, steel surface, and paint temperatures: 40 degrees F.
 - 2. Maximum steel surface temperature: 100 degrees F.
 - 3. Maximum relative humidity: 85 percent.
 - 4. Surface of steel: Dry.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Rolled-Steel Plates and Bars: ASTM A 36 or ASTM A 572, Grade 50. Provide ASTM A 572, Grade 50 where indicated in the drawings.
- B. Rolled-Steel Angles, C, MC, S, M, ST and MT Shapes: ASTM A 36 or ASTM A 572, Grade 50. Provide ASTM A 572, Grade 50 where indicated in the drawings.
- C. Rolled-Steel W and WT Shapes: ASTM A 992.
- D. Steel for Anchor Bolts, Tie Rods, Sag Rods, and other Detail Material Not Proportioned for Calculated Stress: ASTM A 36; or ASTM A 675, Grade 70.
- E. Steel for Shims and Fillers: ASTM A 569.
- F. Unfinished Bolts, Nuts, and Washers: ASTM A 307, Grade A.
- G. High-Strength Threaded Fasteners (High-Strength Bolts): ASTM A 325 heavy hexagon structural bolts, nuts, and hardened washers. or A 490, Type 1, plain.
- H. High-Strength Bolts, Stainless Steel: ASTM F 593, Alloy Group 1 Condition CW.

- I. Stainless Steel Nuts: ASTM F 594, Alloy Group 1 Condition CW.
- J. Twist-Off-Type, Tension-Control Bolt Assemblies: ASTM F1852 or ASTM F2280.
- K. High-Strength Bolts, Galvanized: ASTM A 325, Type 1.
- L. Anchor Rods: ASTM F 1554, Grade 36 or Grade 55 with Supplement S1, unless otherwise indicated in Drawings.
- M. Threaded Rods: ASTM A 36 unless otherwise indicated in Drawings.
- N. Nuts: ASTM A 563. Grade and finish to match bolt or rod type.
- O. Washers: ASTM F 436 (ASTM F 844 for ASTM A 307 bolts, A 36 rods and F 1554 Grade 36 anchor rods). Finish to match bolt or rod type.
- P. Direct Tension Indicator Washers: ASTM F959 for use in pretensioned and slip-critical joints where direct-tension-indicator method is used. DTI "Squirter" as manufactured by Applied Bolting Technology or accepted equivalent.
- Q. Electrodes: E70 and in accordance with AWS.
 - 1. E308 for Type 304 stainless steel.
 - 2. E316 for Type 316 stainless steel.
- R. Headed Stud Anchors: ASTM A 108, AWS Type B, minimum tensile strength 65 ksi, solid-fluxed and in accordance with AWS. Use arc shield (ferrule) with each anchor. Size as indicated in drawings.
- S. Weld Filler Metal:
 - 1. General: Weld filler metal shall be in accordance with Table 4.1.1 of the AWS Code, except as follows:
 - a. Only electrode and flux combinations complying with AWS Classifications F7AX-EXXX or F7AX-EXXX-a, (a = B2, Ni1, Ni2, Ni3 or W), shall be used for submerged arc welding.
 - b. Only electrode and shielding gas combinations complying with AWS Classifications E 7XT-1 or E 7XT-5 shall be used for flux cored arc welding.
 - 2. Weld filler metal for shielded metal arc, submerged arc, gas metal arc, and flux cored arc welding which conforms to AWS Specifications A5.1 or A5.5 shall be considered to be prequalified.
- T. Hot-Dip Galvanizing: Hot-dip galvanize after fabricating in accordance with ASTM A 123. Restraighten members after galvanizing if necessary to be square and true. Items to be hot-dip galvanized are identified in drawings.
- U. Cold Galvanizing Compound: Single component compound giving 93 percent pure zinc in the dried film, and meeting the requirements of DOD-P-21035A (NAVY).

- V. Galvanizing Touch-up Compound: Zinc-rich, anti-corrosion paint complying with ASTM A780. "ZRC Galvilite" by ZRC Worldwide; "Roval ZC Galvanizing Repair" by Roval Corporation; or accepted equivalent. Use for field touch-up of hot-dip galvanized surfaces.
- W. Below-Grade Coating: Coal-Tar Epoxy, "TNEMEC 46H-413" or accepted equivalent.
- X. Screw Anchors: "Kwik HUS-EZ Screw Anchor" by Hilti; "Large Diameter Tapcon (LDT) Anchor" by ITW Ramset/Red Head; "Wedge-Bolt +" by Powers Fasteners; "Titen HD" by Simpson/Strong-Tie; or accepted equivalent.
- Y. Chemical Adhesive Anchors:
 - 1. Anchors to solid concrete:
 - a. Anchors for use when base material temperature is 0°F or greater: "HIT-Ice" by Hilti; "Epcon A7" by ITW Ramset/Red Head; "AC 100 Plus" by Powers Fasteners; "AT Acrylic-Tie" by Simpson/Strong-Tie; or accepted equivalent.
 - b. Anchors for use when base material temperature is 40°F or greater; "HIT-HY 200 Safe Set System with HIT-Z Rod or Hollow Drill Bit System" or "HIT-RE 500-SD" by Hilti; "Epcon C6" by ITW Ramset/Red Head; "T308 Plus" by Powers Fasteners; "ET Epoxy-Tie" by Simpson/Strong-Tie; or accepted equivalent.
- Z. Shop Paint (General): Steel primer selected from the following:
 - 1. TNEMEC 10-99 (Red), 10-99G (Green) or 10-1009 (Gray).
 - 2. Rust-Oleum 769.
 - 3. Valspar 13-R-53.
 - 4. Sherwin-Williams "Kromik".
- AA. Shop Paint for Galvanized Steel: FS TT-P-641, Type II.
- AB. Shop Paint for Exterior Structural Steel (High-Ratio Water Based Inorganic Zinc Silicate): Steel primer selected from the following:
 - 1. Sherwin Williams ZincClad X1.
 - 2. Carboline Carbozinc 18 WB.

2.02 FABRICATION

- A. Do not commence fabrication until the fabricator has been approved and the fabrication schedule has been coordinated with the designated Quality Assurance inspection agency (independent inspection laboratory or the State).
 - 1. Give the Director's Representative one week advance notice of the commencement of fabrication.
- B. Fabricate and assemble structural material in shop to greatest extent possible.

- C. Progress shop fabrication from “Approved” or “Approved as Noted” detail drawings only.
 - 1. When detail drawings are “Approved as Noted”, progress fabrication in strict accordance with notes thereon.
 - 2. Fabrication progressed from “DISAPPROVED” or “RETURNED FOR CORRECTION” detail drawings will be rejected. The contractor shall have no claim against the State for any costs or delays due to rejection of items fabricated from “DISAPPROVED” or “RETURNED FOR CORRECTION” detail drawings.
- D. Finish column ends at base plates and at load carrying cap plates to a true plane square to the column, with a maximum American National Standards Institute surface roughness value of 500 microinches.
- E. For column base plates up to 24 inches, use 1/4-inch-thick, flat leveling plates unless noted otherwise in Drawings. For column bases over 24 inches, use leveling nuts and four anchor rods with heavy washers unless otherwise indicated in drawings.
- F. Anchor Rods: Furnish anchor rods, leveling plate, or other devices necessary for setting anchoring rods required for securing structural steel to foundation, concrete, or masonry.
- G. Pipe and Tube Columns: Cap columns with a closure plate shop welded to the top of the columns to exclude water and foreign material from entering the column.
- H. Make provision for connections of other Work, including all cutting and punching of structural members where required by the Drawings, or for which information is furnished prior to approval of the shop drawings.
- I. Weld and inspect steel studs in accordance with Section 7 of the AWS Code.
- J. Remove extension bars or run-off plates upon the completion and cooling of groove welds. Grind the ends of the welds smooth and flush with the edges of the abutting parts.
- K. Remove tack welds not incorporated into the final weld, and temporary welds. Grind affected surfaces smooth and flush.
- L. Detail all fillet welded joints so as to permit the welding electrode or wire to be positioned at a minimum angle of 30 degrees from the face of any material upon which weld metal is to be deposited.
- M. Prepare material in accordance with Section 3 of the AWS Code. Do not use gas or air carbon-arc cutting to cut or enlarge bolt holes.

2.03 GALVANIZING

- A. Unless otherwise specified or noted, items indicated to be galvanized shall receive a zinc coating by the hot-dip process, after fabrication, complying with the following:
 - 1. ASTM A 123 for plain and fabricated material.
 - 2. ASTM A 153 for iron and steel hardware.

2.04 SHOP PAINTING

- A. Thoroughly clean all structural steel. Remove oil, grease, and similar contaminants in accordance with SSPC SP-1 "Solvent Cleaning". Remove loose mill scale, loose rust, weld slag and spatter, and other detrimental material in accordance with SSPC SP-2 "Hand Tool Cleaning", SSPC SP-3 "Power Tool Cleaning", SSPC SP-6 "Commercial Blast Clean" or SSPC SP-7 "Brush-Off Blast Cleaning, or SSPC SP-10 "Near-White Blast Cleaning".
- B. Galvanized Items:
 - 1. Welded and abraded galvanized surfaces shall be wire brushed and repaired with a coating of cold galvanizing compound applied in accordance with compound manufacturer's instructions.
- C. Exterior Exposed Steel:
 - 1. Provide surface profile range of 1.5 -2.0 mils for structural steel to receive High-Ratio Water Based Inorganic Zinc Silicate.
 - 2. Apply a stripe coat of High-Ratio Water Based Inorganic Zinc Silicate paint on all horizontal and vertical edges of exterior steel members, 2.0 mil dry film thickness.
- D. After surface preparation, immediately apply structural steel primer paint in accordance with manufacturer's instructions at rate to provide uniform dry-film thickness of 2 mils. Use painting methods that will result in full coverage of joints, corners, edges, and exposed surfaces.
- E. Apply paint and compound to the following minimum thickness per coat:
 - 1. Shop Paint (General): 4.0 mils wet film.
 - 2. Shop Paint for Galvanized Steel: 3.0 mils wet film.
 - 3. Cold Galvanizing Compound: 2.0 mils dry film.
 - 4. Shop Paint for Steel to receive Sprayed-On Fireproofing: Follow manufacturer's recommendations.
 - 5. Shop Paint (Water-Based Zinc Silicate): 3.0 mils dry film.
- F. Apply coal-tar epoxy coating to steel below slab on grade and in contact with soil or subbase materials or as indicated in drawings. Extend coating 1 inch into slab.

PART 3 EXECUTION

3.01 ERECTION

- A. Erect steel in accordance with the AISC Specification, the AISC Code, the AWS Code and the Specification for Structural Joints, except as otherwise specified.
- B. Set structural frames accurately to lines and elevations indicated. Align and

adjust various members forming part of a complete frame or structure before permanently fastening.

- C. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact after assembly.
- D. Prepare and place shrink-resistant grout in accordance with grout manufacturer's printed instructions.
 - 1. Comply with manufacturer's instructions for preparation of surfaces in contact with the grout, and for curing and protection of the grout.
- E. Install and inspect steel studs in accordance with Section 7 of the AWS Code.
- F. Remove extension bars and run-off plates upon the completion and cooling of groove welds. Grind the ends of the welds smooth and flush with the edges of the abutting parts.
- G. Remove tack welds not incorporated into the final weld, and temporary welds. Grind affected surfaces smooth and flush.
- H. Delete Paragraph M2.2 of the AISC Specification. Prepare material in conformance with Section 3 of the AWS Code. Do not use gas or air carbon-arc cutting to cut or enlarge bolt hole.
- I. Do not make corrections or alterations to fabricated steel without prior written approval by the Director's Representative.
- J. Contractor may field modify anchor rods and embedded structural supports incorrectly located or damaged after installation as indicated in Section 033000 and tested by Testing Agency. Submit documentation showing proposed field modification for review and acceptance by Engineer before beginning.
- K. Maintain work in stable condition during erection.
- L. Install snug-tightened, pretensioned, and slip-critical bolted joints to comply with RCSC "Specification for Structural Joints Using High-Strength Bolts" and to comply with RCSC Educational Bulletin No. 4, "Recommended Erection and Field Inspection Procedures for High-Strength Bolts in Structural Steel Assemblies." Compliance with RCSC Specifications and Bulletins is mandatory for installation of all high-strength bolted connections including pretensioned or slip-critical joints.
- M. Install field connections and framing as detailed in Contract Documents and accepted shop drawings. If Contractor finds field modifications are necessary, submit documentation of proposed field modifications to Architect and Engineer for review and acceptance before beginning.
 - 1. Use of thermal cutting for field modifications is prohibited unless documented and accepted by Engineer before beginning.
 - 2. Use of thermal cutting for enlarging or cutting bolt holes in field is prohibited.

3.02 SCHEDULE OF GALVANIZED STRUCTURAL STEEL

- A. In addition to members indicated on the Drawings, hot-dip galvanize structural steel members as indicated below:
 - 4. Nuts, washers and the top 12 inches of exterior anchor bolts.
- B. Two shop coats of High-Ratio Water Based Inorganic Zinc Silicate paint may be substituted in lieu of hot-dip galvanizing.

3.03 TOLERANCES

- A. Tolerances shall be within limits in AISC "Code of Standard Practice."
- B. Fabrication and mill tolerance shall be within limits in AISC "Standard Mill Practice."

END OF SECTION