SECTION 13125

PRE-ENGINEERED BUILDING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: A complete, integrated set of metal building system manufacturer's standard mutually dependent components and assemblies that form a metal building system capable of withstanding structural and other loads thermal movement, and exposure to weather without failure or infiltration of water into building interior. Include primary and secondary framing, roof and wall panels and accessories complying with requirements indicated and specified. The building system shall be an addition to the existing building system. Existing building system, the main wind force resisting system as well as cladding, shall be reinforced as required to comply with specified building codes. A small Cooling Tower Building is located on the site and is also pre-engineered. Cooling Tower Building roofing, siding, doors, etc. shall match that of the main (expanded) building. Shop drawings of existing building frame designed by Nucor Building Systems will be available upon request.

1. Building Profile: As indicated on the Drawings, with clear spans and roof slopes indicated. All buildings in this contract are to have similar exterior siding of type, color and profile to match existing buildings.
2. Structural steel framing of a solid-web beam and column type system, as follows:
    a. Single Span: Rigid frame with tapered or uniform depth rafters rigidly connected to tapered columns.
    b. Furnish anchor bolts to concrete trade for setting.
3. Roof construction, including:
    a. Standing-seam metal roofing with exposed blanket insulation, with 1/2 inch foot minimum slope or as indicated on the Drawings.
    b. Metal gutters and downspouts, metal fascias, and precast concrete splash blocks.
    c. Roof openings, curbs, vents, openings and flashings for roof penetrations, weathertight metal flashing and trim, roof opening steel framing, and roof equipment support framing.
4. Exterior wall construction, including:
    a. Metal siding with concealed blanket insulation with interior full-height metal liner panels, trim and flashing.
    b. Metal louvers.
    c. Exterior hollow metal doors and frames, including glass and finish hardware for same.
    d. Overhead coiling insulated steel doors, including steel frames, and motor-operators for same.
    e. Wall openings for doors, vents, fans, louvers, openings and flashings for wall penetrations, weathertight metal flashing and trim, and wall opening steel framing.
5. Sealant and calking for weathertightness.

B. Related work specified in other sections:
   1. Concrete foundations and floor slabs, receiving and setting of anchor bolts in concrete, and constructing non-shrink grout pads for column bases - Division 3.
   2. Interior masonry walls and partitions - Division 4.
   3. Field painting - Division 9.
   4. Mechanical and electrical services - Divisions 15 and 16.

C. Products Furnished But Not Installed
   1. Column anchor bolts, complete with setting plans and templates.

1.2 PERFORMANCE REQUIREMENTS

A. Manufacturer shall be a member of MBMA.

B. AISC Certification for Category MB: An AISC-Certified Manufacturer that designs and produces metal building systems and components in an AISC-Certified Facility.

C. Reference Standards
   1. Materials and workmanship are referenced to published standards (current issue at time of bidding unless otherwise noted) which are referred to by the following abbreviations:

AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ASTM	American Society for Testing and Materials
AWS	American Welding Society
DHI	Door and Hardware Institutute
FSS	Federal Specifications and Standards
SSPC	Steel Structures Painting Council
UL	Underwriters' Laboratories
MBMA	Metal Building Manufacturer's Association
SDI	Steel Deck Institute

   2. Structural mill sections and welded plate sections shall be designed in accordance with the AISC "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings", and cold-formed steel structural members shall be designed in accordance with AISI "Specifications for the Design of Cold-Formed Steel Structural Members".
   3. Roof and wall panels shall be designed in accordance with the AISI "Specifications for Design of Light Gage Cold-Formed Steel Structural Members".
   4. Welding shall be in accordance with the AWS "Structural Welding Code", D1.1 for steel and AWS D 1.3 for sheet steel.
   5. The application of loads, and the design of other components shall be as specified in the Metal Building Manufacturers Association's "Low Rise Building System Manual".
   6. The design of elements and components of the building shall also conform with the latest New York State Building Code, New York State existing building code and local building codes having jurisdiction, and the requirements of such building codes shall take precedence if they exceed the requirements of the specifications or referenced standards.

D. Erector Qualifications
   1. Erection of the pre-engineered building enclosure shall be performed by the manufacturer or by a firm franchised by, or certified by, the manufacturer.

E. Design Criteria and System Performance Requirements
   1. The building structure and enclosure shall be designed per the requirements of the New York State Building codes for new and existing construction, local codes, and the following minimum design loads.
   2. Vertical Roof and Frame Loads:
      a. Snow: 31.5 pounds per square foot.
         1) Design the roof area around the roof top units for additional loading due to snow drifting per the building code.
      b. Utilities:
         1) To Purlins: None.
         2) To Main Frame: None.
      c. Roof Top Units: None.
      d. Dead Load: Loads due to roofing, insulation, ballast, siding, and structural systems shall be added to the above loads.
   3. Horizontal Wind Loads:
      a. Basic Wind Speed: 120 miles per hour. (Maximum 3 second gust)
      b. Roof Wind-Uplift Resistance: Provide roof panel assemblies that meet requirements of UL 580 for Class I-120 uplift resistance.
   4. Seismic Loads: Loads based on Seismic factors indicated and forces anticipated per the applicable building code.
   5. Lateral Bracing: Shall meet the following requirements:
      a. The main frames shall resist the lateral forces in the direction of the framing without vertical cross bracing.
      b. Vertical cross bracing shall be used to resist the lateral forces perpendicular to the main frames. Vertical cross bracing is required in the locations shown on the Drawings.

F. Air Infiltration for Roof Panels: Provide roof panel assemblies with permanent resistance to air leakage through assembly of not more than 0.09 cfm/sq. ft. (0,45 L/s per sq. m) of fixed roof area when tested according to ASTAM E 1680 at a static-air pressure difference of 4 lbf/sq. ft. (192 Pa).

G. Reinforcement of existing building:
   1. Existing building shall be reinforced to comply with specified design loads, criteria in accordance with specified building code requirements.
   2. Shop drawings of existing construction will be available upon request.
   3. All details and dimensions shall be field verified to supplement shop drawing information, to analyze and develop reinforcement requirements.
   4. All designs and details shall be performed and certified by a design professional registered in the State of New York, and submitted for approval.

H. Testing Agency Qualifications: An independent testing agency, accepted to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated, as according to ASTM E 548.

1.3 SUBMITTALS

A. Furnish submittals for items that are identified in this Section by a different typeface and a bracketed code (e.g., *Item [L]*). Refer to Division 1, General Requirements for definition of codes, types of submittals and the administrative requirements governing submittal procedure. General submittal requirements pertaining to this Section are specified under this Article.

B. *Pre-Engineered Building Shop Drawings [D]*: Fully detailed and dimensioned drawings of the complete building, including results of analysis, designs and details of required reinforcement of existing building, showing data and information to clearly describe the design, loading criteria, materials, sizes, gages, finishes, construction, layout, anchoring, fasteners, connections, and jointing. Drawings shall be signed and sealed by a registered Professional Engineer licensed in the State of the project location.
   1. Provide reactions to the foundation for foundation engineering within two weeks of bid award.
   2. Provide details, supporting elements, flashings and closures of all system components including any required doors, windows, louvers, insulation, and accessories specified.

C. *Pre-Engineered Building and Components Product Data [D]*: For standard catalogue-type items; if catalogue is submitted, clearly indicate the particular material proposed.

D. *Siding, Roofing and Components Samples [S]*: Submit a sample12 inches by 12 inches to illustrate color and shop applied finish for each material such as metal siding, metal roofing, aluminum, glass, gutters, and other items requiring color selection and approval. Submit sample profiles of metal siding and metal roofing.

E. *Pre-Engineered Building Manufacturer's Certificate [C]*: The pre-engineered building manufacturer shall certify in writing that the building, and all components incorporated into the building, meet the requirements of the Contract Documents, including design criteria, materials, and finishes.

F. *Panel Finish Guarantee [G]:* 20 year written guarantee on metal wall and roof panels, agreeing to repair the finish or replace the panels that show deterioration of the factory-applied polyvinylidene fluoride finishes within the guarantee period. Finish deterioration includes, but is not necessarily limited to, color fade, chalking, blistering, cracking and peeling.

G. Metal Roofing Weathertightness Guarantee [G]: 20 year written guarantee on metal roofing, agreeing to replace or repair metal roofing that fails to remain weathertight within the guarantee period.

1.4 PREINSTALLATION CONFERENCE

A. Preinstallation Conference: Conduct conference at Project Site to comply and coordinate all requirements of the project. Review methods and procedures related to metal building systems including, but not limited to, the following:
   1. Inspect and discuss condition of foundations and other preparatory work performed by other trades.
   2. Review structural load limitations.

3. Review and finalize construction schedule and verify availability of materials. Erector's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review required testing, inspecting, and certifying procedures.
5. Review weather and forecasted weather conditions and procedures for unfavorable conditions.

1.5 DELIVERY, STORAGE AND HANDLING

A. Wrap, carton, and crate, as required, to provide physical and climatic protection during loading, shipping and job site storage and handling.

B. Deliver packaged materials to the project site in the manufacturer's original, unopened containers which bear intact, legible and visible labels that identify the manufacturer's name and brand name, the contents, grade and type.

C. Upon delivery, immediately inspect shipments to assure their compliance with the requirements of the CONTRACT DOCUMENTS and approved submittals, and that products are complete, undamaged and adequately protected. Immediately report damaged, missing, or defective items. Remove broken, damaged or unlabeled items from the site immediately.

D. Store products in accordance with manufacturer's instructions with seals and labels intact, legible, and visible. Store products in a manner to prevent to prevent damage, soiling, theft, deterioration and contamination. Marred surfaces, cracked, checked spilt or warped materials will be rejected, Store materials subject to damage by climatic conditions in weathertight enclosures. Maintain temperature and humidity within the ranges required or recommended by the manufacturer.

E. Repair or clean items that have been damaged or soiled that can be restored to an "as new" condition at not cost to the OWNER. The OWNER'S REPRESENTATIVE shall be the judge of the effectiveness of remedial measures. Additional time or expense required to secure replacements and to make repairs will not be considered by the OWNER'S REPRESENTATIVE to justify and extension in the CONTRACT time of completion or an increase in the CONTRACT amount.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Pre-engineered metal building enclosure, modified as necessary to comply with the requirements shown on the Drawings and specified, shall be designed and manufactured by:
1. Nucor Building Systems, Waterloo, Indiana, or other approved equal.
2. American Buildings Company, Eufaula, AL.
3. Butler Manufacturing Company, Kansas City, MO.
4. Star Builidng Systems, Oklahoma City, OK.
5. Steelox Building Systems, Mason, OH.
6. Varco-Pruden Buildings, Memphis, TN.

2.2 MATERIALS

A. Steel Framing
   1. As indicated on the Drawings, with clear spans and roof slopes indicated. Provide steel framing as specified. Steel framing shall be given a shop applied coat of white colored rust-inhibitive metal primer as standard with the building manufacturer.
   2. *Building Frame [D]*:
      a. The pre-engineered structure shall be a rigid frame type, of columns and beams with roof slopes indicated.
      b. Space main (and interior) columns as indicated. Furnish anchor bolts for columns to concrete trade.
      c. Members of the main frame and columns shall be rolled or built-up steel members of minimum 3/16 inch thick steel.
   2. *Purlins and Roof Framing [D]*:
      a. The configuration, thickness, and spacing of the purlins shall be the building manufacturer's responsibility.
      b. Provide supplemental structural framing for roof openings and provide roof equipment support framing. Verify sizes with roof equipment manufacturers' approved certified shop drawings.
   3. *Girts and Wall Framing [D]*:
      a. Provide girts and wall framing as indicated and to support load specified. Locate girts in relation to columns as indicated. Provide sag rods as required.
      b. Provide supplemental structural framing for wall openings, including doors and louvers.
      c. Provide end wall framing of corner columns, end columns, and rake beams.
   4. *Lateral Bracing [D]*:
      a. Longitudinal vertical wall bracing shall meet the following requirements:
         1) Lateral force resisting system shall consist of concentric diagonal-braced frames or moment frames.
         2) Brace locations shall be as shown on the Drawings and or coordinated with required roof and wall openings
      b. General Requirements:
         1) Bracing end connections shall be capable of transferring loads from structure to foundation in a direct manner. Eccentricities shall be avoided and shall be accounted for where they exist. Stiffeners shall be added where required so that buckling of column or beam webs perpendicular to the plane of the webs is avoided.
         2) There shall be a complete and continuous "collector and chord" system capable of delivering the code-specified lateral forces to the bracing systems. Collector and chord members shall be designed to resist axial tension and compression forces in combination with any other loads delivered simultaneously to these members.
   5. Non-High-Strength Bolts, Nuts, and Washers: ASTM A 307, Grade A, (ASTM F568M, Property Class 4.6),l carbon-steel, hex-head bolts; carbon-steel nuts; and flat, unhardened steel washers.
      a. Finish: Plain, uncoated.
      b. Finish: Hot-dip zinc coating, ASTM A 153, Class C.
      c. Finish: Mechanically deposited zinc coating, ASTM B 695. Class 50.

6. High-Strength Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy hex steel structural bolts, heavy hex carbon-steel nuts, and hardened carbon-steel wahers.
    a. Finish: Plain, uncoated.
    b. Finish: Hot-dip zinc coating, ASTM A 153, Class C.
    c. Finish: Mechanically deposited zinc coating, ASTM B 695, Class 50.
7. Where future expansion is noted on Drawings, fabricated steel framing with holes and connections required for future framing.

B. Roof System
1. *Standing Seam Roof with Exposed Insulation [D,G,P,S]*: Standing seam roof shall consist of exposed blanket insulation, hidden clips and fasteners type anchorage, and interlocking standing seam type metal roof panels, to match existing building construction. Roof construction shall have an Underwriters Laboratories Class I-120 Uplift Classification. Provide written guarantee for specified warranty period that the roofing will remain weathertight and free of rupture, structural failure, and corrosion perforation.
    a. Fabricate roof panels of pre-painted minimum 24 gage G90 galvanized steel to form interlocking standing-seam panels, with female rib factory calked with sealant. Provide concealed clip system (with thermal block spacers) for securing panels in place. Concealed fasteners shall be galvanized. Exposed fasteners shall be of stainless steel with gasketed washers. Each roof panel shall be nominal 24 inches wide, with nominal 3 inch high double-locked standing seam.
    b. Roof insulation shall be exposed fiberglass blanket insulation meeting North American Insulation Manufacturers Association “NAIMA 202 Standard” and ASTM C991 Type 1, and having an “R” value of 19, with a white vinyl-scrim-foil vapor barrier facing laminated on exposed side.
    c. Shop apply on exterior metal surfaces a baked polyvinylidiene fluoride paint finish standard with the building manufacturer, in color to match the metal siding exterior sheet, and guaranteed in writing for specified warranty period against blistering, peeling, cracking, flaking, checking, chipping, excessive color change not to exceed 5 NBS units per ASTM D2244, and excessive chalking minimum 8 rating per ASTM D659.
    d. New roof panels shall overlap and shall be attached to existing roof panels for a leak proof roofing system.
2. *Roof Flashing and Sealant [G,P]*: Provide metal flashings and sealant as required for a weathertight roof, as standard with the manufacturer. Provide flashings for roof openings and penetrations.
3. *Roof Curbs [D,P]*: Provide roof curbs indicated or as required, of metal as standard with the manufacturer. Verify actual curb sizes required with roof equipment manufacturer’s approved certified shop drawings. Installed tops of curbs shall be level.
4. *Fascias, Gutters, Downspouts and Splash Blocks [D,G,S]*: Provide fascias, gutters, and downspouts, of galvanized steel with a shop applied baked polyvinylidene fluoride finish (guarantee same as for metal siding finish) in standard color as selected. Provide precast concrete splash blocks at discharge end of downspouts.

C. Metal Wall System
   1. *Metal Wall System with Concealed Insulation [D,G,P,S]*: System shall consist of a fluted exterior metal wall panel, concealed fiberglass batt thermal insulation, and interior metal liner panel, to match existing building system.
      a. Fabricate exterior metal siding panels of minimum 26 gage pre-painted G90 galvanized steel, 36 inch wide panels, 1-1/2 inches deep, with overlapping edges, designed for installation with concealed fasteners. Provide one-piece full-height panels, without end joints. Exterior surfaces shall have a shop applied polyvinylidiene fluoride finish standard with the manufacturer, in standard color as selected, guaranteed in writing for specified warranty period against blistering, peeling, cracking, flaking, checking, chipping, excessive color change not to exceed 5 NBS units per ASTM D 2244, and excessive chalking minimum 8 rating per ASTM D 659.
         1) Where exposed fasteners are required, they shall be stainless steel or aluminum screws, bolts or rivets, with weather-seal washers; carbon steel shank fasteners with vinyl or stainless steel-capped heads shall also be acceptable.
      b. Provide unfaced fiberglass batt insulation between liner panel and exterior metal siding, to provide an "R" value of 13. Wall insulation shall meet North American Insulation Manufacturers Association "NAIMA 202 Standard" and ASTM C991, Type I.
      c. Fabricate interior metal liner panels of minimum 26 gage G90 galvanized steel sheet, 36 inch wide panels, 1-1/2 inches deep, with overlapping edges, designed for installation with concealed fasteners, equivalent to Butler Manufacturing Co., "Butlerib Liner Panel". Provide one-piece full-height panels, without end joints. Exposed interior surfaces shall have a baked-on white-color polyester paint finish.
         1) Use color-capped screw fasteners to secure liner panels to the girt system.
   2. *Wall Flashing and Trim [D,G]*: Provide metal flashing and trim for exterior metal siding and interior metal liner panels (of same materials and finish as the panels) at top and bottom ends of panels, interior and exterior corners, at all wall openings and penetrations, etc., as required for appearance and weathertightness. Sealant calk joints where required to provide weathertightness.
   3. Provide 4 inch deep minimum extruded aluminum, 45 degree angled fixed stormproof blade type blade louvers, with bird screen and finish to match metal siding. Louver shall be as manufactured by one the following approved manufacturers.
      a. The Airolite Co.
      b. Ruskin
   4. Provide metal louvers in exterior walls where indicated, of same material and finish as exterior metal siding, with bird screen on interior side of louvers, as standard with the manufacturer.
   5. Provide girts and supplemental framing and supports as required for metal siding support and load specified

D. Paint Finishes
   1. *Liner Panel Baked Enamel Finish [S]:* Provide manufacturer's standard shop-applied baked enamel finish to exposed side of galvanized steel (wall) (roof) liner panels, and related metal trim and accessories for same. Apply a baked-on thermosetting acrylic/polyester resin minimum 1 mil thick (0.2 mil primer and 0.8 mil top coat) in white

2. *Siding and Roofing Polyvinylidene Fluoride Finish [S]*: Siding and Roofing Polyvinylidene Fluoride Finish: Provide on exterior surfaces of metal siding panels, metal roofing panels, exterior flashings and trim, gutters and downspouts and wall louvers, a 2-coat themocured system composed of a specially formulated inhibitive primer and a polyvinylidene fluoride color topcoat containing not less than 70% Kynar 500 or Hylar 5000 resin by weight with a total minimum dry film thickness of 1.0 mil (0.2 mil primer and 0.8 mil finish) in standard color per approved samples. Coating and primers shall be VOC compliant and within governing limitations of the project location.

E. Hollow Metal Doors And Frames
   1. *Hollow Metal Doors and Frames [D,P]*: Provide pre-engineered building manufacturer's standard hollow metal pedestrian doors and frames where shown, of sizes indicated, complete with glass and finish hardware. Doors and frames shall meet the Steel Door Institute (SDI) standard for Grade II, Model No. 4 doors with polyurethane or rigid polystyrene core.
   2. Provide 1-3/4 inch thick full-flush type heavy-duty steel doors, of minimum 18 gage G-60 galvanized steel, with foam insulation cores. Provide glazed lights in doors where scheduled, of sizes noted. Provide 1/4 inch thick clear tempered glass unless otherwise noted. Prepare and reinforce doors to receive finish hardware specified.
   3. Provide minimum 16 gage G-60 galvanized steel door frames, constructed for non-hand installation. Provide sizes as required for doors. Prepare and reinforce frames to receive finish hardware specified.
   4. Shop apply manufacturer's standard baked-on prime paint finish to exposed surfaces of doors and frames, suitable for receiving field-applied finish paint.
   5. *Finish Hardware [D,P]*: Comply with ANSI A115. Finish hardware for exterior hollow metal doors shall be as follows:
      a. Reinforce to receive field-applied, surface-mounted finish hardware.
      b. Locate finish hardware as indicated and in accordance with DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames".l
      c. Provide hardware for each door leaf, as follows:
         1) Hinges: 1-1/2 pair, steel, template hinges, 4-1/2 x 4-1/2 inches.
         2) Lockset: Mortise type keyed to Owner's system.
         3) Overhead door holder.
         4) Threshold: Extruded aluminum (exterior doors only).
         5) Weatherstrip Set: Head and side jambs.
         6) Door Closer: Rectangular surface, top jamb mount type.

F. Overhead Coiling Steel Doors
   1. *Overhead Coiling Steel Doors [D,P]*: Provide motor-operated overhead coiling insulated steel doors where shown, of sizes indicated, complete with motor operators, controls, pushbuttons, track, weather-stripping, etc. as required for complete installation and proper operation. Design door construction, including slat profile and gage, guides, windlocks, and other accessories, of sufficient rigidity to withstand a wind pressure of 20 pounds per square foot uniformly applied to either side. Overhead doors shall be as manufactured by one of the following acceptable manufacturers
      a. Atlas Door Corporation.

b. The Cookson Company.
c. Cornell Iron Works, Inc.
d. Kinnear Division of Harsco Corporation.
e. Mahon Door Corporation.
f. Overhead Door Corporation.
g. J. G. Wilson Corporation.

2. Construct coiling door of galvanized interlocking steel slats of flat profile, with each slat enclosing a foam urethane core with a steel backing sheet, complete with integral slat lugs for windlocks. Provide clear safety glass lights in doors as indicated. Provide an electrical safety edge device in a tubular astragal on bottom of each door to stop downward travel of door and reverse direction to open position upon contact with any obstruction in the door opening. Provide weather-stripping on bottom, head, and jambs of doors.
3. Provide electric motor operators in NEMA 12 enclosures for each door. Provide all electrical components per National Electric Code and NEMA Standards. Provide a control panel for each door, containing a fusible disconnect switch, starter, control transformer, resistors, terminal blocks, and contacts (including for door heaters by others), mounted in a NEMA 12 enclosure. Provide electric pushbuttons on interior side at truck door. Provide wiring, conduit, and other electrical work required, starting at door control panels and connect up parts including, but not limited to, motor operators, pushbuttons, safety reversing device. Electric power to control panels is by the electrical trades.
4. Provide a shop applied prime paint finish on doors, suitable for receiving field-applied finish paint.
5. After installation, adjust and test-operate the doors in the presence of the Owner's Representative, until doors operate properly.

PART 3 EXECUTION

3.1 GENERAL

A. Work shall be coordinated with work of other trades so that construction work of all trades can be properly completed.

B. Erection of the pre-engineered building enclosure and associated work shall be by an authorized agent of the manufacturer. The erector shall follow the manufacturers published erection manual procedures and approved shop drawings. The erector shall touch-up the paint finishes which are damaged during the erection process.

C. Verify dimensions by making field measurements and be fully responsible for measurements, laying out of the work, accurate fitting together of the work and the accurate fitting of the work to the work of other trades.

D. Before proceeding with the erection and in time to permit correction of defective setting, verify the location and elevation of anchor bolts for accurate fit of column bases.

3.2 ERECTION

A. Field welding, burning or other field modifications or fabrication of structural members, will not be permitted unless approved by the Owner's Representative.

B. Set, shim and secure building columns at proper base plate elevation.

C. Install work sloped where indicated, otherwise install all work plumb, level, square, and true to line.

D. Anchor components securely in place. Provide for necessary thermal and structural movements.

E. Do not install any prefinished components which have defects, including damaged finish, dents, warps, and bends. Replace with new components at no additional cost to Owner.

F. Install flashings and sealant as required to provide a weathertight installation. The exterior envelope of the building shall be watertight; no water shall infiltrate into the building. Provide temporary covers over roof openings until permanent equipment is installed.

G. Adjust doors, finish hardware, and motor-operators for proper operation.

H. Clean exposed surfaces of the building promptly after erection is completed. Clean prefinished work per coating manufacturers's directions. Clean shop-primed surfaces to leave same acceptable for receiving field-applied finishes of others.

3.3 LOCATION AND TOLERANCES

A. Structural-Steel Erection Tolerances: Comply with erection tolerance limits of AISC S303, "Code of Standard Practice for Steel Buildings and Bridges".

B. Roof Panel Installation Tolerances: Shim and align units within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

C. Wall Panel Installation Tolerances: Shim and align units within installed tolerance of 1/4 inch in 20 feet (6mm in 6 m) on level, plumb, and location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Contractor will engage a qualified independent testing agency to perform field quality-control testing.

B. Extent and Testing Methodology: Testing and verification procedures will be required of high-strength bolted connections.
   1. Bolted connections will be visually inspected.

2. High-strenght, field-bolted connections will be tested and verified according to procedures in RCSC's "Load and Resistance Factor Design Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".
3. Field-bolted connections will be tested and verified according to procedures in RCSC's "Load and Resistance Factor Design Specification for Structural Joints Using ASTM A 325 or A 490 Bolts".

C. Testing agency will report test results promptly and in wiring to Contractor and Architect.

3.5 FIELD PAINTING

A. After erection, structural framing shall have touch-up painting of areas damaged in handling, and of exposed unpainted surfaces such as bolts, nuts, washers, welds. Touch-up paint shall be same as shop paint. Welds and bolts shall be brushed clean prior to touch-up painting.

B. Touch up factory color finished surfaces with paint supplier's recommended product.

END OF SECTION

Revision History	
Date	**Rev. No.**
A	0
B	0
C	0
D	0
E	0
F	0
02-19-09	0

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