

ADDENDUM NO. 01

TO THE

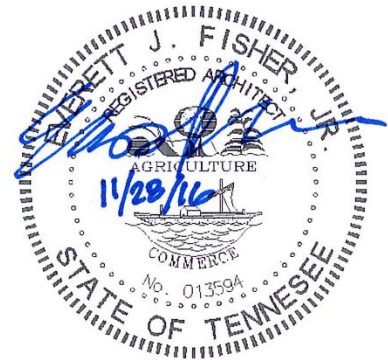
DRAWINGS AND SPECIFICATIONS

FOR

FIRE STATION NO. 5, HIGHLAND PARK

THE CHATTANOOGA FIRE DEPARTMENT
2009 VANCE AVENUE
CHATTANOOGA, TENNESSEE 37404

CITY OF CHATTANOOGA CONTRACT NO. F-14-002-201
ARCHITECT'S JOB NO. 6750



November 28, 2016

FRANKLIN ASSOCIATES, ARCHITECTS, INC.
142 N. MARKET STREET
P.O. BOX 4048
CHATTANOOGA, TENNESSEE 37405

This addendum consists of 3 items on 2 pages with three attachments in text and digital form. These items shall become a part of the contract documents.

- Item No. 01: Refer to the Drawings, Sheet A013, Exterior Monument Sign Details. Sign Type A is not used.
- Item No. 02: Refer to Specifications Section 00 05 90 – Request for Bidder Information. Change the Contract Number read: “F-14-002-201”. Substitute the attached revised Section for the version originally issued. Clarification: This form is to be used in submitting questions regarding the Bid Documents or Bid Procedures. All questions are to be submitted to City Purchasing as indicated on the form, who will then direct them to the Architect.
- Item No. 03: Refer to the Specifications. Add attached Specifications Section 13 34 19 – Metal Building Systems, which was inadvertently omitted. The Section is already listed in the Table of Contents. Substitute the digital file titled “Division 10-11-12-13 - Specialties-Equipment-Furnishings” for the file titled “Division 10-11-12 - Specialties-Equipment-Furnishings” originally issued.

TEXT ATTACHMENTS:

- Specifications Section 00 05 90 – Request for Bidder Information, revised 11/28/16, 1 page.
- Specifications Section 13 34 19 – Metal Building Systems, 6 pages.

DIGITAL ATTACHMENTS (PDF Format):

- Specifications file titled “00 05 90 Request for Bidder Information Rev 2016-11-28”.
- Specifications Section 13 34 19 – *Metal Building Systems*, file titled “13 34 19 Metal Building Systems”.
- Specifications, file titled “Division 10-11-12-13 - Specialties-Equipment-Furnishings”, 32 pages, including blank pages for two-sided printing.

REQUEST FOR BIDDER INFORMATION
Revised November 28, 2016

Questions regarding the project or the Bid Documents must be in writing as required by the Instructions to Bidders. Questions must be written on this form and sent by email, fax or mail to the email, fax number or address listed below. Upon timely receipt, if appropriate, an Addendum will then be issued to all persons who have received Bid Documents from the Owner.

City of Chattanooga
Purchasing Department
101 E. 11th Street, Suite G13
Chattanooga, TN 37402
bidinfo@chattanooga.gov
Phone Number: (423) 643-7230
Fax Number: (423) 643-7244

Contract: **CHATTANOOGA FIRE HALL NO. 5**

Contract Number: **F-14-002-201**

From: _____

Company: _____

Date: _____

CLARIFICATION IS NEEDED FOR THE FOLLOWING ITEMS:

(List Specification Section, Paragraph, Drawing Number and/or Detail Number)

END OF SECTION 00 05 90

PART ONE – GENERAL

1.01 SCOPE:

- A. ***DESIGN-BUILD RESPONSIBILITY: Regardless of design criteria shown on the Drawings or Specified herein, the Metal Building Systems Manufacturer and its Licensed Professional Engineer shall be completely and fully responsible for determining and verifying all necessary structural design criteria and other loading superimposed by the various building systems as necessary for full compliance with all applicable building codes. The Metal Building Systems Manufacturer and its Licensed Professional Engineer shall examine ALL Drawings and Sections of the Specifications as necessary to determine the full extent of load requirements.***
- B. Provide the materials, equipment, labor, engineering design, prefabrication, delivery and erection of the pre-engineered metal building structural framing package.
1. In addition, provide fabrication, delivery and erection of:
 - a. Other structural components shown or noted on Architect's Structural Engineer's Drawings.
 - b. Other structural systems associated with, suspended from or attached to the metal building structural framing package, as indicated on the Architect's Drawings.
 2. Comply with the Design Load criteria specified herein and required by applicable building codes.
 3. The structural design and locations of bracing and other components must respect the window and door locations, and other opening locations shown on the Architect's Drawings.

1.02 RELATED DOCUMENTS: Components specified in other Divisions:

- A. Building Roof Cover System - Division 07.
- B. Building Wall Systems - Divisions 03, 05, 06 and 07.
- C. Insulation - Division 07.

1.03 APPLICABLE STANDARDS, SPECIFICATIONS AND DESIGN STANDARDS:

- A. Metal Building Manufacturers Association, 2130 Keith Building, Cleveland, Ohio 44115. Metal Building Systems Manual.
- B. American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103. "Annual Book of ASTM Standards" Part 1 through Part 32 as applicable.
- C. American Institute of Steel Construction (AISC) 1221 Avenue of the Americas, New York, NY 10020:
 1. "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings".
 2. "Code of Standard Practice for Steel Buildings and Bridges".
 3. "Specification for Structural Joints Using ASTM A-325 or A-490 Bolts".
- D. American Iron and Steel Institute, (AISI), 150 East Forty-Second Street, New York, NY 10017: "Specification For the Design of Cold-Formed Steel Structural Members".
- E. American Welding Society, Inc. (AWS) 2501 N.W. 7th Street, Miami, Florida 33125: "Structural Welding Code".

1.04 DESIGN:

- A. GEOTECHNICAL REPORT: Design shall comply with applicable design criteria given in the “*Report of Geotechnical Exploration, Chattanooga Fire Hall No. 05*”, Chattanooga, Tennessee, by S&ME, Project No. 1281-16-048”, dated 29 July 2016 (49 pages), and bound within the Specifications as Section 02 32 02.
- B. The Architect’s Drawings indicate the basic configurations to which the Metal Building Systems and components must conform, such as width, length, span, spacing, eave height, roof slopes and required openings. The Metal Building Systems Manufacturer and its Licensed Professional Engineer shall assume all responsibility for structural performance characteristics of its systems. Where conflict arises between the Architect’s design intent, as expressed in the Contract Documents, and the reasonable accommodation of framing sizes, bracing requirements and metal building components, the Metal Building Systems Manufacturer shall immediately alert the Architect of such conditions. However, in bidding the Project, the Metal Building Systems Manufacturer acknowledges its acceptance of the intent of the Contract Documents and its ability to accommodate the Architect’s design.
- C. Building design is based on the use of structural members. Structural framing must meet or exceed the design loads and design load combinations as determined by ***the Metal Building Systems Manufacturer and its Licensed Professional Engineer***, specified herein and shown on the Architect’s Drawings.
- D. Building design is based on the use of:
1. Rigid Frame System (RF) frame design, by American Buildings Company with column spacing, roof pitch and eave heights as shown on the Architect’s Drawings, and girt locations as shown in American Buildings’ literature and on Architect’s Drawings.
 2. High Profile Rigid Frame System, Clear Span, as designed, fabricated and erected by Bigbee Steel Buildings, Inc., Muscle Shoals, Alabama, with single custom slope and a custom span, as indicated on the Architect’s Drawings.

1.05 DESIGN LOADS:

- A. Basic Design Loads shall include live and wind load, in addition to dead load and as follows:
1. ***No tributary live load reduction shall be allowed.***
 2. Risk Category IV, Importance Factor 1.50, Site Class 3, Seismic Design Category D [To be determined by the Metal Building Systems Manufacturer]
 3. Loads: To be determined by the Metal Building Systems Manufacturer, but in no case less than the following:
 - a. Live Load: 20 PSF with no roof live load reductions taken.
 - b. Wind Load: Refer to Notes on the Structural Engineer’s “S”-Series Drawings.
 - c. Seismic Data: Comply with Notes on the Structural Engineer’s “S”-Series Drawings
 4. Deflections: To be determined by the Metal Building Systems Manufacturer, but in no case greater than the following:
 - a. Live Load:

Roof Purlins	Span/180
Roof Joist	Span/240
 - b. Wind Load:

Wind Girt	Span/240
Building Frame	Span/240 using 10 year wind loads

5. Roof Live Load (Snow Load) shall be applied to the horizontal projection of the roof area.
 6. Wind Load shall be applied and proportioned as horizontal pressure, suction, and uplift forces in accordance with MBMA recommended design practices.
 7. Dead Load shall be applied as a pounds per square foot force to the horizontal projection of the roof surface.
- B. Dead Loads are in addition to the weight of the pre-engineered metal building structural package. Design the metal building framing shall carry the loads of, and the framing for: Roof Cover System; Wall System; Flashings, closures and trim; mechanical systems, plumbing systems, electrical systems, finish systems, sprinkler system, and other items indicated in the Contract Documents.
- 1.06 DESIGN LOAD COMBINATIONS:
- A. Unless otherwise specified the following combinations of loads shall be considered in the design of all load supporting members of the subject structure as they apply. Where dead load is shown it shall mean all of the dead, collateral and hanging loads.
 1. Dead Load plus Roof Live Load.
 2. Dead Load plus Wind Load or Seismic Load.
 3. Dead Load plus one half Wind Load or Seismic Load, plus Roof Live Load.
 4. Dead Load plus Wind Load or Seismic Load, plus one-half Roof Live Load uniformly distributed over the entire span.
 5. Dead Load plus Impact Load plus one-half Roof Live Load or one-half Wind Load or Seismic Load, whichever is critical.
 6. Building frames shall be designed for full live load plus dead load for the loaded area they support. No live load reduction shall be allowed.
 - B. Each member shall be designed to withstand the stresses resulting from the combinations of loads that produce the maximum percentage of actual to allowable stress in that member.
 - C. Special conditions of snow load accumulation as shall be applied per MBMA "Commentary on Loadings - Application of Snow Loads".
- 1.07 PROFESSIONAL ENGINEER: Engineering design shall be provided by the Metal Building Systems Manufacturer, and it shall be performed by, and shall bear the name, seal and registration number of a Licensed Professional Engineer licensed to practice in the State of Tennessee.
- 1.08 CERTIFICATIONS: Design calculations signed and sealed by a Registered Professional Engineer licensed to practice in Tennessee shall be submitted for the structural framing of the metal building system.
- 1.09 SMACNA: Where "SMACNA Manual" is referenced, it shall mean the "Architectural Sheet Metal Manual" issued by Sheet Metal and Air Conditioning Contractor's National Association, Seventh Edition, 2012.
- 1.10 SUBMITTALS: Comply with the requirements of Section 01 33 00, with other provisions of the Contract Documents and the following:
- A. SUBSTITUTIONS: Provide the exact same materials used under this Section 13 34 19 for use also under applicable Division 07 Sections and other appropriate Sections at other locations on the building. Any substitutions proposed for the materials under this Section 13 34 19 must also be suitable for the uses specified in applicable Division 07 Sections and other appropriate Sections.
 - B. DRAWINGS: Furnish complete erection drawings showing anchor settings, sidewall, endwall and roof framing, transverse cross sections, windbracing details, diagonal bracing, and accessory

installation details to clearly indicate the proper assembly of all building parts. Drawings shall bear stamp and signature of a Registered Professional Engineer licensed to practice in the State of Tennessee.

- C. Submit manufacturer's product literature for all components and actual samples of finishes for selection of and approval by the Architect.
- D. Submit list of column reactions and diameter and grade of anchor bolts.
- E. Perform and submit the engineering design for metal building structural framing package, and submit shop drawings to the Architect for approval prior to the fabrication of any components.
- F. Four copies of the pre-engineered building calculations, seismic data and shop drawings must be submitted to the Architect by the Contractor.
 - 1. Structural shop drawings for pre-manufactured buildings shall include manufacturer's name and model number or other designation. Show seismic information per IBC, Section 1613.

1.11 DELIVERY, STORAGE AND HANDLING:

- A. As applicable, materials shall be delivered in the manufacturers' original sealed and labeled packaging and in quantities adequate to allow continuity of application.
- B. Material shall be stored out of direct exposure to the elements. Cover materials with canvas tarpaulin if inside storage is not available. Material shall be protected against moisture.
- C. Handling - Material shall be handled in such a manner as to preclude damage and contamination with moisture or foreign matter.

1.12 WARRANTIES: Provide American Buildings Company Standard One-Year Warranty.

PART TWO – MATERIALS

2.01 GENERAL:

- A. All materials furnished shall be within the standard industry tolerances for that material as specified for the building and the stated design conditions.
- B. All framing members shall be shop fabricated for field assembly and shall carry an easily identifiable piece part mark.
- C. All light gage cold-formed sections shall be manufactured by precision roll or brake forming. All dimensions shall be true and the formed member shall be free of fluting, buckling, or waviness.

2.02 STRUCTURAL FRAMING:

- A. Hot Rolled Shapes shall conform to ASTM A-36, 36,000 PSI min. yield or ASTM A-572, 50,000 PSI min. yield.
- B. Welded Shapes shall conform to ASTM A-570, 50,000 PSI min. yield.
- C. Cold-Formed Secondary Components shall conform to: ASTM A-607, Grade 50.

2.03 SECONDARY COMPONENTS:

- A. Purlins and Girts shall be "C" or "Z" sections, 8" deep, with 2-1/2" wide flanges and 3/4" stiffening lips. Purlins shall be of the continuous design with a minimum total back lap of 2-1/2". The bottom of all purlins shall be supported with a channel at the midpoint to prevent rotation. Girts shall be set as shown in the specified manufacturer's product literature for the system specified. All girts 24' and longer shall be supported by rods from the eave strut at the midpoint for support and stability.
- B. Eave struts shall be cold-formed, unequal flange, "G" sections, 8-1/2" or 9" deep with adequate strength to act as a purlin or girt. The web shall be vertical and free to receive the side wall covering.

- C. Rake channels shall be supplied to cap the purlins at each end of the building and shall be cold-formed, "C" sections, 8" deep, with 2-3/8" wide flanges.
- D. Diagonal brace angles shall be installed as required by design calculations in all rigid and modular frame structures.
- E. Wind Bracing shall be designed utilizing either 3/4" or 1" diameter steel rods placed diagonally in the roof and walls of the building.
 - 1. When supported by published test data and engineering calculations, roof and wall cover diaphragm action can be used in lieu of steel rods.
 - 2. When supported by engineering calculations, fixed base columns, rigid bents, wind trusses can be used in lieu of steel rods. Steel cables must not be used.
- F. Brace Rods shall conform to ASTM A-615, Grade 40, smooth reinforcing bar, 40,000 PSI minimum yield.
- G. Framed openings for louvers, windows, doors and other accessories shall be designed to structurally replace the wall and/or roof covering and framing they displace.
- H. Windbracing shall be coordinated with Architect's Drawings to avoid conflict with building design.
- I. Structural bridging and/or other bracing of roof purlins must be designed and installed to permit installation of the specified roof insulation system and the floating clip design of the roof panels. Special or customized design of the bridging may be required in order to accommodate the roof insulation and roof panels attachment.

2.04 BOLTED FIELD CONNECTIONS:

- A. Bolts shall be machine bolts conforming to:
 - 1. ASTM A-307, 60,000 PSI minimum tensile strength (application as shown on project drawings).
 - 2. ASTM A-325, Type 1 and ASTM A-490, 120,000 PSI minimum tensile strength for up to 3/4" diameter and 115,000 PSI for 7/8" and 1" diameter bolts. All A-325 and A-490 bolted connections shall be tightened by the turn-of-nut method.
- B. The faying surfaces of all bolted connections shall be smooth and free from burrs or distortions.
- C. All connections made with high strength bolts shall be in accordance with the specifications for Structural Joints using ASTM A-325 or A-490 bolts as approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.

2.05 PRIMERS:

- A. Painting of all primary structural and light gage, steel components shall consist of factory applied light grey, or red, 2 mil thick oil base metal priming paint conforming to federal specification TTP-636-Modified.
- B. All surfaces to be painted shall be cleaned of detrimental foreign matter, loose mill scale, loose rust, weld slag and deposits of oil and grease.
- C. The shop coat of primer is not intended to provide corrosive protection on steel structures exposed to long term weathering.
- D. It shall be the responsibility of the erector to remove all dirt, mud and dust from the structural steel following erection, and touch up all scratches.

PART THREE – EXECUTION

3.01 ERECTION AND INSTALLATION:

- A. Unloading instructions, storage of materials and erection procedure as outlined and recommended by the building manufacturer shall be followed and together with accepted trade practices, shall conform to details and instructions as shown on the erection or assembly drawings.
- B. Erection shall conform to MBMA "Code of Standard Practice." Erection shall be performed in accordance with the erection drawings by a qualified erector using proper tools and equipment.
- C. Workmanship shall be such that the parts of the building are accurately made and true to dimension so that, in erection, all parts will properly fit together. Minor alterations of material and the corrections of minor misalignments by cutting, etc., are part of erection.
- D. There will be no field modification of primary structural members, unless authorized and specified on the manufacturer's erection drawings.

3.02 WORKMANSHIP:

- A. All material shall be new, unused, and fabricated in a workmanlike manner.
- B. All materials furnished shall be within the standard industry tolerances for that material as specified for the building and the stated design conditions.
- C. All framing members shall be shop fabricated for field assembly and shall carry an easily identifiable piece part mark.
- D. Workmanship shall be such that the parts of the building are accurately made and true to dimension so that in erection all parts will properly fit together.
- E. All structural steel components shall be sheared, formed, punched, welded and painted in the plant of the manufacturer. Welding shall conform to AWS "Structural Welding Code." Holes and clips required for primary and secondary connections shall be provided by the manufacturer. Structural components fabricated of plate or bar stock shall have the flanges joined to the webs by a continuous automatic submerged arc welding process.

- 3.03 CLEAN-UP: Comply with applicable provision of Sections 01 77 00 and 02 41 21. Remove all packaging, scrap and other unused material. Leave the Building and Site in a condition at least comparable to that prior to initial delivery of Metal Building components and suitable for other trades to continue the Work.

END OF SECTION 13 34 19

REQUEST FOR BIDDER INFORMATION*Revised November 28, 2016*

Questions regarding the project or the Bid Documents must be in writing as required by the Instructions to Bidders. Questions must be written on this form and sent by email, fax or mail to the email, fax number or address listed below. Upon timely receipt, if appropriate, an Addendum will then be issued to all persons who have received Bid Documents from the Owner.

City of Chattanooga
Purchasing Department
101 E. 11th Street, Suite G13
Chattanooga, TN 37402
bidinfo@chattanooga.gov
Phone Number: (423) 643-7230
Fax Number: (423) 643-7244

Contract: **CHATTANOOGA FIRE HALL NO. 5**

Contract Number: **F-14-002-201**

From: _____

Company: _____

Date: _____

CLARIFICATION IS NEEDED FOR THE FOLLOWING ITEMS:

(List Specification Section, Paragraph, Drawing Number and/or Detail Number)

END OF SECTION 00 05 90

PART ONE – GENERAL

1.01 SCOPE:

- A. ***DESIGN-BUILD RESPONSIBILITY: Regardless of design criteria shown on the Drawings or Specified herein, the Metal Building Systems Manufacturer and its Licensed Professional Engineer shall be completely and fully responsible for determining and verifying all necessary structural design criteria and other loading superimposed by the various building systems as necessary for full compliance with all applicable building codes. The Metal Building Systems Manufacturer and its Licensed Professional Engineer shall examine ALL Drawings and Sections of the Specifications as necessary to determine the full extent of load requirements.***
- B. Provide the materials, equipment, labor, engineering design, prefabrication, delivery and erection of the pre-engineered metal building structural framing package.
1. In addition, provide fabrication, delivery and erection of:
 - a. Other structural components shown or noted on Architect's Structural Engineer's Drawings.
 - b. Other structural systems associated with, suspended from or attached to the metal building structural framing package, as indicated on the Architect's Drawings.
 2. Comply with the Design Load criteria specified herein and required by applicable building codes.
 3. The structural design and locations of bracing and other components must respect the window and door locations, and other opening locations shown on the Architect's Drawings.

1.02 RELATED DOCUMENTS: Components specified in other Divisions:

- A. Building Roof Cover System - Division 07.
- B. Building Wall Systems - Divisions 03, 05, 06 and 07.
- C. Insulation - Division 07.

1.03 APPLICABLE STANDARDS, SPECIFICATIONS AND DESIGN STANDARDS:

- A. Metal Building Manufacturers Association, 2130 Keith Building, Cleveland, Ohio 44115. Metal Building Systems Manual.
- B. American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103. "Annual Book of ASTM Standards" Part 1 through Part 32 as applicable.
- C. American Institute of Steel Construction (AISC) 1221 Avenue of the Americas, New York, NY 10020:
 1. "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings".
 2. "Code of Standard Practice for Steel Buildings and Bridges".
 3. "Specification for Structural Joints Using ASTM A-325 or A-490 Bolts".
- D. American Iron and Steel Institute, (AISI), 150 East Forty-Second Street, New York, NY 10017: "Specification For the Design of Cold-Formed Steel Structural Members".
- E. American Welding Society, Inc. (AWS) 2501 N.W. 7th Street, Miami, Florida 33125: "Structural Welding Code".

1.04 DESIGN:

- A. GEOTECHNICAL REPORT: Design shall comply with applicable design criteria given in the “*Report of Geotechnical Exploration, Chattanooga Fire Hall No. 05*”, Chattanooga, Tennessee, by S&ME, Project No. 1281-16-048”, dated 29 July 2016 (49 pages), and bound within the Specifications as Section 02 32 02.
- B. The Architect’s Drawings indicate the basic configurations to which the Metal Building Systems and components must conform, such as width, length, span, spacing, eave height, roof slopes and required openings. The Metal Building Systems Manufacturer and its Licensed Professional Engineer shall assume all responsibility for structural performance characteristics of its systems. Where conflict arises between the Architect’s design intent, as expressed in the Contract Documents, and the reasonable accommodation of framing sizes, bracing requirements and metal building components, the Metal Building Systems Manufacturer shall immediately alert the Architect of such conditions. However, in bidding the Project, the Metal Building Systems Manufacturer acknowledges its acceptance of the intent of the Contract Documents and its ability to accommodate the Architect’s design.
- C. Building design is based on the use of structural members. Structural framing must meet or exceed the design loads and design load combinations as determined by ***the Metal Building Systems Manufacturer and its Licensed Professional Engineer***, specified herein and shown on the Architect’s Drawings.
- D. Building design is based on the use of:
 - 1. Rigid Frame System (RF) frame design, by American Buildings Company with column spacing, roof pitch and eave heights as shown on the Architect’s Drawings, and girt locations as shown in American Buildings’ literature and on Architect’s Drawings.
 - 2. High Profile Rigid Frame System, Clear Span, as designed, fabricated and erected by Bigbee Steel Buildings, Inc., Muscle Shoals, Alabama, with single custom slope and a custom span, as indicated on the Architect’s Drawings.

1.05 DESIGN LOADS:

- A. Basic Design Loads shall include live and wind load, in addition to dead load and as follows:
 - 1. ***No tributary live load reduction shall be allowed.***
 - 2. Risk Category IV, Importance Factor 1.50, Site Class 3, Seismic Design Category D [To be determined by the Metal Building Systems Manufacturer]
 - 3. Loads: To be determined by the Metal Building Systems Manufacturer, but in no case less than the following:
 - a. Live Load: 20 PSF with no roof live load reductions taken.
 - b. Wind Load: Refer to Notes on the Structural Engineer’s “S”-Series Drawings.
 - c. Seismic Data: Comply with Notes on the Structural Engineer’s “S”-Series Drawings
 - 4. Deflections: To be determined by the Metal Building Systems Manufacturer, but in no case greater than the following:
 - a. Live Load:

Roof Purlins	Span/180
Roof Joist	Span/240
 - b. Wind Load:

Wind Girt	Span/240
Building Frame	Span/240 using 10 year wind loads

5. Roof Live Load (Snow Load) shall be applied to the horizontal projection of the roof area.
 6. Wind Load shall be applied and proportioned as horizontal pressure, suction, and uplift forces in accordance with MBMA recommended design practices.
 7. Dead Load shall be applied as a pounds per square foot force to the horizontal projection of the roof surface.
- B. Dead Loads are in addition to the weight of the pre-engineered metal building structural package. Design the metal building framing shall carry the loads of, and the framing for: Roof Cover System; Wall System; Flashings, closures and trim; mechanical systems, plumbing systems, electrical systems, finish systems, sprinkler system, and other items indicated in the Contract Documents.
- 1.06 DESIGN LOAD COMBINATIONS:
- A. Unless otherwise specified the following combinations of loads shall be considered in the design of all load supporting members of the subject structure as they apply. Where dead load is shown it shall mean all of the dead, collateral and hanging loads.
 1. Dead Load plus Roof Live Load.
 2. Dead Load plus Wind Load or Seismic Load.
 3. Dead Load plus one half Wind Load or Seismic Load, plus Roof Live Load.
 4. Dead Load plus Wind Load or Seismic Load, plus one-half Roof Live Load uniformly distributed over the entire span.
 5. Dead Load plus Impact Load plus one-half Roof Live Load or one-half Wind Load or Seismic Load, whichever is critical.
 6. Building frames shall be designed for full live load plus dead load for the loaded area they support. No live load reduction shall be allowed.
 - B. Each member shall be designed to withstand the stresses resulting from the combinations of loads that produce the maximum percentage of actual to allowable stress in that member.
 - C. Special conditions of snow load accumulation as shall be applied per MBMA "Commentary on Loadings - Application of Snow Loads".
- 1.07 PROFESSIONAL ENGINEER: Engineering design shall be provided by the Metal Building Systems Manufacturer, and it shall be performed by, and shall bear the name, seal and registration number of a Licensed Professional Engineer licensed to practice in the State of Tennessee.
- 1.08 CERTIFICATIONS: Design calculations signed and sealed by a Registered Professional Engineer licensed to practice in Tennessee shall be submitted for the structural framing of the metal building system.
- 1.09 SMACNA: Where "SMACNA Manual" is referenced, it shall mean the "Architectural Sheet Metal Manual" issued by Sheet Metal and Air Conditioning Contractor's National Association, Seventh Edition, 2012.
- 1.10 SUBMITTALS: Comply with the requirements of Section 01 33 00, with other provisions of the Contract Documents and the following:
- A. SUBSTITUTIONS: Provide the exact same materials used under this Section 13 34 19 for use also under applicable Division 07 Sections and other appropriate Sections at other locations on the building. Any substitutions proposed for the materials under this Section 13 34 19 must also be suitable for the uses specified in applicable Division 07 Sections and other appropriate Sections.
 - B. DRAWINGS: Furnish complete erection drawings showing anchor settings, sidewall, endwall and roof framing, transverse cross sections, windbracing details, diagonal bracing, and accessory

installation details to clearly indicate the proper assembly of all building parts. Drawings shall bear stamp and signature of a Registered Professional Engineer licensed to practice in the State of Tennessee.

- C. Submit manufacturer's product literature for all components and actual samples of finishes for selection of and approval by the Architect.
- D. Submit list of column reactions and diameter and grade of anchor bolts.
- E. Perform and submit the engineering design for metal building structural framing package, and submit shop drawings to the Architect for approval prior to the fabrication of any components.
- F. Four copies of the pre-engineered building calculations, seismic data and shop drawings must be submitted to the Architect by the Contractor.
 - 1. Structural shop drawings for pre-manufactured buildings shall include manufacturer's name and model number or other designation. Show seismic information per IBC, Section 1613.

1.11 DELIVERY, STORAGE AND HANDLING:

- A. As applicable, materials shall be delivered in the manufacturers' original sealed and labeled packaging and in quantities adequate to allow continuity of application.
- B. Material shall be stored out of direct exposure to the elements. Cover materials with canvas tarpaulin if inside storage is not available. Material shall be protected against moisture.
- C. Handling - Material shall be handled in such a manner as to preclude damage and contamination with moisture or foreign matter.

1.12 WARRANTIES: Provide American Buildings Company Standard One-Year Warranty.

PART TWO – MATERIALS

2.01 GENERAL:

- A. All materials furnished shall be within the standard industry tolerances for that material as specified for the building and the stated design conditions.
- B. All framing members shall be shop fabricated for field assembly and shall carry an easily identifiable piece part mark.
- C. All light gage cold-formed sections shall be manufactured by precision roll or brake forming. All dimensions shall be true and the formed member shall be free of fluting, buckling, or waviness.

2.02 STRUCTURAL FRAMING:

- A. Hot Rolled Shapes shall conform to ASTM A-36, 36,000 PSI min. yield or ASTM A-572, 50,000 PSI min. yield.
- B. Welded Shapes shall conform to ASTM A-570, 50,000 PSI min. yield.
- C. Cold-Formed Secondary Components shall conform to: ASTM A-607, Grade 50.

2.03 SECONDARY COMPONENTS:

- A. Purlins and Girts shall be "C" or "Z" sections, 8" deep, with 2-1/2" wide flanges and 3/4" stiffening lips. Purlins shall be of the continuous design with a minimum total back lap of 2-1/2". The bottom of all purlins shall be supported with a channel at the midpoint to prevent rotation. Girts shall be set as shown in the specified manufacturer's product literature for the system specified. All girts 24' and longer shall be supported by rods from the eave strut at the midpoint for support and stability.
- B. Eave struts shall be cold-formed, unequal flange, "G" sections, 8-1/2" or 9" deep with adequate strength to act as a purlin or girt. The web shall be vertical and free to receive the side wall covering.

- C. Rake channels shall be supplied to cap the purlins at each end of the building and shall be cold-formed, "C" sections, 8" deep, with 2-3/8" wide flanges.
- D. Diagonal brace angles shall be installed as required by design calculations in all rigid and modular frame structures.
- E. Wind Bracing shall be designed utilizing either 3/4" or 1" diameter steel rods placed diagonally in the roof and walls of the building.
 - 1. When supported by published test data and engineering calculations, roof and wall cover diaphragm action can be used in lieu of steel rods.
 - 2. When supported by engineering calculations, fixed base columns, rigid bents, wind trusses can be used in lieu of steel rods. Steel cables must not be used.
- F. Brace Rods shall conform to ASTM A-615, Grade 40, smooth reinforcing bar, 40,000 PSI minimum yield.
- G. Framed openings for louvers, windows, doors and other accessories shall be designed to structurally replace the wall and/or roof covering and framing they displace.
- H. Windbracing shall be coordinated with Architect's Drawings to avoid conflict with building design.
- I. Structural bridging and/or other bracing of roof purlins must be designed and installed to permit installation of the specified roof insulation system and the floating clip design of the roof panels. Special or customized design of the bridging may be required in order to accommodate the roof insulation and roof panels attachment.

2.04 BOLTED FIELD CONNECTIONS:

- A. Bolts shall be machine bolts conforming to:
 - 1. ASTM A-307, 60,000 PSI minimum tensile strength (application as shown on project drawings).
 - 2. ASTM A-325, Type 1 and ASTM A-490, 120,000 PSI minimum tensile strength for up to 3/4" diameter and 115,000 PSI for 7/8" and 1" diameter bolts. All A-325 and A-490 bolted connections shall be tightened by the turn-of-nut method.
- B. The faying surfaces of all bolted connections shall be smooth and free from burrs or distortions.
- C. All connections made with high strength bolts shall be in accordance with the specifications for Structural Joints using ASTM A-325 or A-490 bolts as approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.

2.05 PRIMERS:

- A. Painting of all primary structural and light gage, steel components shall consist of factory applied light grey, or red, 2 mil thick oil base metal priming paint conforming to federal specification TTP-636-Modified.
- B. All surfaces to be painted shall be cleaned of detrimental foreign matter, loose mill scale, loose rust, weld slag and deposits of oil and grease.
- C. The shop coat of primer is not intended to provide corrosive protection on steel structures exposed to long term weathering.
- D. It shall be the responsibility of the erector to remove all dirt, mud and dust from the structural steel following erection, and touch up all scratches.

PART THREE – EXECUTION

3.01 ERECTION AND INSTALLATION:

- A. Unloading instructions, storage of materials and erection procedure as outlined and recommended by the building manufacturer shall be followed and together with accepted trade practices, shall conform to details and instructions as shown on the erection or assembly drawings.
- B. Erection shall conform to MBMA "Code of Standard Practice." Erection shall be performed in accordance with the erection drawings by a qualified erector using proper tools and equipment.
- C. Workmanship shall be such that the parts of the building are accurately made and true to dimension so that, in erection, all parts will properly fit together. Minor alterations of material and the corrections of minor misalignments by cutting, etc., are part of erection.
- D. There will be no field modification of primary structural members, unless authorized and specified on the manufacturer's erection drawings.

3.02 WORKMANSHIP:

- A. All material shall be new, unused, and fabricated in a workmanlike manner.
- B. All materials furnished shall be within the standard industry tolerances for that material as specified for the building and the stated design conditions.
- C. All framing members shall be shop fabricated for field assembly and shall carry an easily identifiable piece part mark.
- D. Workmanship shall be such that the parts of the building are accurately made and true to dimension so that in erection all parts will properly fit together.
- E. All structural steel components shall be sheared, formed, punched, welded and painted in the plant of the manufacturer. Welding shall conform to AWS "Structural Welding Code." Holes and clips required for primary and secondary connections shall be provided by the manufacturer. Structural components fabricated of plate or bar stock shall have the flanges joined to the webs by a continuous automatic submerged arc welding process.

- 3.03 CLEAN-UP: Comply with applicable provision of Sections 01 77 00 and 02 41 21. Remove all packaging, scrap and other unused material. Leave the Building and Site in a condition at least comparable to that prior to initial delivery of Metal Building components and suitable for other trades to continue the Work.

END OF SECTION 13 34 19

PART ONE – GENERAL

1.01 SCOPE: Furnish and install Signage, including:

- A. Interior Room Identification signs at entrances to all rooms and at other locations indicated on the Drawings.
 - 1. Interior Sign Types are illustrated and scheduled on Sheet A801. Sign messages shown on the Architect's Drawings are generic in nature; the Sign Manufacturer and Installer shall be responsible for establishing each message associated with each sign.
 - 2. Exterior Sign Types and locations are illustrated on Sheet A013.

1.02 QUALITY ASSURANCE

- A. Manufacturer: Products under this section shall be supplied by manufacturers regularly engaged in work of this type, magnitude and scope for minimum of five years.
- B. Pre-Installation Conference: Prior to finalizing the signage schedule, Representatives of the Signage Supplier(s) and Installer(s) shall meet with representatives of the Owner and Architect to review the Signage Schedule and finalize each message associated with each sign.
- C. Each Installer shall assign a Forman to the project who is experienced in the installation of signage for the duration of the work. The Forman who begins the work must remain on the project through completion.

1.03 SUBMITTALS: Submit the following in accordance with Section 01 33 00 Submittals:

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: furnish complete shop drawings, including:
 - 1. Floor plans illustrating the location of each sign.
 - 2. Elevations of each sign type indicating materials, sizes, configurations, and mounting details for:
 - a. Room Identification Signs.
 - b. Exterior Signage.
- C. Complete Signage Schedule for Room Identification Signs, listing each sign by room number, sign type and message.
- D. Product Samples:
 - 1. Room Identification Signs: Submit three full size samples of typical room identification sign with holder, insert, and a typical message in the type face and in the colors specified on the Drawings. Submit color samples in the materials of which the signs are to be composed illustrating the manufacturer's full range of colors.
 - 2. Exterior Monument Signs: submit one of each type of letter in the specified finish at least 4" high.
 - 3. Submit three samples of anchoring devices for each type of application.
- E. Warranties: Sample copies of warranties for products specified in this Section.
- F. Manufacturer Literature: Furnish complete installation and maintenance instructions for each type of product. Furnish cleaning instructions for Room Identification Signs.

1.04 DELIVERY, STORAGE AND HANDLING:

- A. Materials shall be delivered in the manufacturers original sealed and labeled containers and in quantities adequate to allow continuity of application.
- B. Schedule delivery such that all work that could adversely affect the products specified in this section is complete. Schedule installation of Room Identification Signs after Painting is substantially complete. Schedule installation of Stainless Steel Letters after brick surfaces to which the letters are to be mounted have received their final cleaning. Refer to Section 04 22 00. Schedule installation of the Electronic Message Board after the paving of roads and drives has been completed, after the masonry monument has been constructed, and after all surfaces have received their final cleaning.
- C. Handling - Material shall be handled in such a manner as to preclude damage and contamination with moisture or foreign matter.

PART TWO – PRODUCTS

- 2.01 ROOM IDENTIFICATION SIGNS: Provide signs as scheduled equal to IM Series signs by APCO Graphics, Atlanta, Georgia, in the sizes and configurations show on the Drawings.
- 2.02 EXTERIOR MONUMENT SIGNS: Construct as indicated on the Drawings.
- 2.03 HANDICAPPED PARKING SIGNS AND POSTS: If not included in the Site Work sections of the Specifications (Divisions 31 and 32) or Division 10 “Signage”, furnish and install as described and shown on Drawings. Signs themselves are available from A & H Safety Supply Co., P.O. Box 4782, Chattanooga, TN 37405; telephone 423-265-3054. Comply with City of Chattanooga requirements.
 - A. Provide the manufacturer’s 5 year warranty on parts.
 - B. Equal systems by other manufacturers will be considered.
 - C. Refer to Sheet A013.
- 2.04 ANCHORS AND FASTENERS: All products are to be mounted to masonry. Furnish all fasteners and anchors.

PART THREE – EXECUTION

- 3.01 INSPECTION:
 - A. Examine substrates, areas, and conditions, with Installer present, for compliance with the manufacturers’ requirements and other conditions affecting the installation. Verify that surfaces comply with the requirements of Paragraph 1.05-B of this Section.
- 3.02 PREPARATION:
 - A. Clean substrates of dust, debris, moisture, and other substances detrimental to installation according to manufacturer's written instructions. Remove sharp projections.
- 3.03 INSTALLATION:
 - A. GENERAL: Comply with manufacturer’s instructions and recommendations for the handling, installation and anchorage. Install exterior products in manner capable of resisting the wind loads shown on the Structural Engineer’s Drawings and in compliance with the 2006 International Building Code.
 - B. ROOM IDENTIFICATION SIGNS: Attach securely to walls at locations and mounting heights indicated on the Drawings, approved shop drawings and the Signage Schedule, using approved adhesives.

- 3.04 PROTECTION: Protect all signage from damage by subsequent construction activity. Do not remove protective films until immediately prior to Substantial Completion inspection.
- 3.05 CLEAN-UP: Comply with the requirements of Section 02 41 21. Clean all affected surfaces of masonry and concrete dust resulting from drilling and installing anchors. Completely remove from the site all tools and packaging.
- 3.06 SERVICE AND SUPPORT: Provide a minimum of one-year support service following the date of Substantial Completion, including, but not limited to, furnishing additional signage materials (at additional cost per item furnished), replacement of damaged materials (at additional cost per item furnished) and software support (at no additional cost).

END OF SECTION 10 14 00

TOILET PARTITIONS
(SOLID PLASTIC)

SECTION 10 21 13

PART ONE – GENERAL

- 1.01 WORK INCLUDED: Furnish and install toilet partitions, screens, and related items for a complete installation.
- A. Regardless of indications on the Drawings or manufacturing standards to the contrary, products and installation shall comply with the requirements of IBC 2012 – 1210.3; ICC/ANSI A117.1, *Accessible and Usable Buildings and Facilities*, 2009 Edition; and 2010 ADA Standards for Accessible Design.
 - B. Regardless of indications on the Drawings or manufacturing standards to the contrary, Urinal Screens must comply with IBC 2012 – 1210.3.2.
- 1.02 SUBMITTALS: Comply with Section 01 33 00. Submit manufacturer's product literature. Furnish complete shop and erection drawings showing all pertinent details of fabrication and erection, including dimensions, finish, required blocking, anchorage, hardware, and miscellaneous accessories. Furnish color samples for color selections. Upon request, furnish samples of materials proposed for use.
- A. Where wall-mounted urinal screens are mounted to steel stud partitions, shop drawings shall indicate wall reinforcing, whether furnished under this section or other sections of the Specifications, including dimensioned locations of all attachments. Provide loading requirements (weights) for structural evaluation.
 - B. Requirements for LEED Submittals:
 - 1. Product Data for Credit MR 4.1: For products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content. Include statement indicating costs for each product having recycled content.

PART TWO – PRODUCTS

- 2.01 TOILET PARTITIONS AND PRIVACY SCREENS: Pilaster supported and overhead braced solid plastic, as manufactured by Scranton Products, or approved equal, 1" thick self-lubricating solid plastic panels of color(s) noted on the Drawings. Provide each compartment with coat hook and bumper, latch, bolt, stop and keeper, gravity hinges, door pull, and door stops. Furnish extra bumper where doors open against walls. Provide no less than two coat hooks on the compartment side of door in H/C stalls, one at standard height and one at height suitable for handicapped use.
- A. NOTE: Due to the oversized nature of Owner-Furnished toilet tissue dispensers, the Contractor shall verify that toilet accessories do not interfere with toilet compartment door swings. Prior to installation of doors, the Contractor shall be prepared to reverse door swings of standard compartments outward to avoid conflict at no additional expense to the Owner.
- 2.02 URINAL SCREENS: Wall-hung, bracket supported solid plastic, equal to Hiny Hiders, Poly-Mar HD, as manufactured by Santana Products Co., or approved equal, 1" thick self-lubricating solid plastic panels, of color(s) noted on the Drawings.
- 2.03 FABRICATION AND HARDWARE: Edges shall be machined to a radius of 0.250" with no sharp corners. Provide shoes on pilasters fastened with theft-proof stainless sex bolts. Door latches, keepers and door strikes shall be heavy aluminum extrusion (6364-T5 alloy) clear anodized finish. Fasteners shall be stainless steel. Headrail shall be heavy aluminum extrusion (6364-T5 alloy) mill finish with anti-grip configuration. Door pulls, door stops and bumper/hooks shall be heavy chrome-plated Zamac. Provide all fasteners, trim, accessories, etc. required for a complete installation. Set hinge to hold door slightly open when not in use. Provide integral hinge system. Provide solid plastic continuous wall brackets.

2.04 COLORS: As noted on the Drawings. Multiple colors may be required.

PART THREE – EXECUTION

- 3.01 SURFACE CONDITIONS: Inspect the installed work of other trades and verify that such work, including required blocking, is complete to the point where this installation may commence. Do not proceed with installation in areas of discrepancies until such discrepancies have been resolved.
- 3.02 Where wall-mounted urinal screens are mounted on wood stud partitions, reinforce the partitions with additional wood studs, extending from the floor to substantial structure above. Install vertical wood blocking complying with requirements of Section 06 10 00 with horizontal blocking at a minimum of top, bottom and midpoint of each screen.
- 3.03 INSTALLATION: Install in accordance with manufacturer's written instructions, best industry practices and other provisions of the Specifications. Where conflicts or inconsistencies occur, the most stringent standards shall apply. Install partitions, panels, doors and screens plumb and true, and securely anchor in place. Fit and set trim and accessories. Use non-removable screws throughout. Check all moving parts for smooth, free operation. Set hinge to hold door slightly open when not in use.
- 3.04 CLEAN-UP: Comply with the requirements of Section 02 41 21.
- 3.05 WARRANTIES: Comply with the requirements of Section 01 78 36.

END OF SECTION 10 21 13

PART ONE – GENERAL

- 1.01 WORK INCLUDED: Furnish and install all toilet accessories and related items as scheduled and shown on the Drawings.
- A. Regardless of indications on the Drawings or manufacturing standards to the contrary, products and installation shall comply with the requirements of ICC/ANSI A117.1, *Accessible and Usable Buildings and Facilities*, 2009 Edition; and 2010 ADA Standards for Accessible Design.
 - B. Furnish and install items shown on the Plans, Interior Elevations and Schedules.
 - C. Provide blocking and perform any other necessary preparation work for items shown on the Plans, Interior Elevations and Schedules indicated as “Owner Furnished, Owner Installed” (O.F.O.I.).
- 1.02 RELATED WORK OF OTHER SECTIONS:
- A. Blocking is specified in Section 06 10 00.
 - B. Installation of items specified in this Section may be installed under this Section, or under Section 06 20 00 – Finish Carpentry.
- 1.03 SUBMITTALS: Comply with Section 01 33 00. Submit manufacturer's product literature. Submit shop and installation drawings showing details of fabrication and erection, including types of materials, dimensions, arrangements of component parts, finishes, fittings, anchorage, and/or any other pertinent information.

PART TWO – PRODUCTS

- 2.01 MANUFACTURERS: Unless otherwise noted, design is based on use of accessories, anchors, backplates, mounting plates, fasteners and other products manufactured by Bobrick Washroom Equipment, Inc. Catalog numbers of this manufacturer are shown as an indication of the quality and style required. Items of equal material, gauge, function, appearance and performance, by other manufacturers are acceptable, subject to the approval of the Architect.
- 2.02 ANCHORS, BACKPLATES, MOUNTING PLATES, AND FASTENERS:
- A. Provide the heaviest gage or most substantial anchors, backplates, mounting kits, mounting plates and fasteners manufactured by the manufacturer of toilet accessories and well suited for use with the substrate material.
 - 1. In addition to other necessary anchors and backplates, with each grab bar provide the following:
 - a. Equal to Bobrick No. 2562 Series anchor plate for each grab bar installed on a stud wall.
 - b. Equal to Bobrick No. 2573 anchor for each flange of each grab bar installed on a solid wall.
 - B. Where exposed fasteners are used, provide oval head fasteners with finish matching the accessory.
 - C. Provide gasket seal at fastener penetrations at toilet partitions.

PART THREE – EXECUTION

- 3.01 SURFACE CONDITIONS: Prior to installation of the work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence. In the event of discrepancies, do not proceed with installation in areas of discrepancies until all such discrepancies have been fully resolved.

- A. NOTE: Due to the oversized nature of Owner-Furnished toilet tissue dispensers, the Contractor shall verify that toilet accessories do not interfere with toilet compartment door swings. Coordinate with the installation of toilet compartments and resolve conflicts at no additional expense to the Owner.
- 3.02 INSTALLATION:
 - A. Install accessories in strict accordance with current ADA, ANSI and IBC requirements, the manufacturer's written instructions, at heights and locations shown on Drawings, and as directed by Architect.
 - B. Install grab bars to withstand a 250 lb. force applied in any direction at any point on the grab bar.
 - C. Install folding shower seats to support a 250 lb. static load each.
- 3.03 CLEAN-UP: Comply with the requirements of Section 02 41 21.
- 3.04 WARRANTIES: Comply with the requirements of Section 01 78 36.

END OF SECTION 10 28 13

PART ONE – GENERAL

- 1.01 SCOPE: Furnish and install fire extinguishers, fire extinguisher cabinets, and brackets.
- 1.02 SUBMITTALS: Comply with Section 01 33 00. Submit manufacturer's product literature and installation instructions for each item specified.

PART TWO – PRODUCTS

- 2.01 FIRE EXTINGUISHERS: Multi-purpose dry chemical type, by Larsen's Manufacturing Company, or approved equal. Furnish one extinguisher per bracket and cabinet.
- A. At all locations: Provide MP-6 (3A-40BC).
 - B. Provide fire extinguishers on brackets mounted on columns at locations indicated on the Drawings.
 - C. Provide other extinguishers, brackets and cabinets at locations scheduled herein or shown on Drawings.
 - D. LEED REQUIREMENTS FOR PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS:
 - 1. Clean-Agent Type in Steel Container: UL-rated of nominal capacity noted in 2.01, A, above, with HFC blend agent and inert material in enameled-steel container; with pressure-indicating gage.
- 2.02 WALL BRACKETS (FEB): Equal to Larsen's No. 5525 wall brackets, suitable for use with fire extinguishers by Larsen's Manufacturing Company, or approved equal. Furnish where indicated on the Drawings.
- 2.03 FIRE EXTINGUISHER CABINETS (FEC): Equal to Larsen's Manufacturing Company Architectural Series; with white baked enamel finish for doors and trim; Vertical Duo door with 1/4" clear tempered glass; no lock.
- A. Provide non-fire-rated cabinets in non-fire-rated walls, equal to Larsen's Model No. 2409.
 - 1. Where available rough opening depth is 4" to 6-1/4", provide semi-recessed cabinets with 2 1/2" rolled edged trim, equal to Larsen's 6R.
 - 2. Where available rough opening depth is 6-1/4" or greater, provide fully recessed cabinets with 5/16" flat trim, equal to a Larsen's R2.
 - B. Provide fire-rated cabinets in fire-rated walls, certified and listed by Warnock-Hersey for use in one and two hour combustible and non-combustible wall systems conforming to the requirements of UBC Standard 43-6 (ASTM E-814). Provide fire-rated cabinets with factory drilled mounting holes and factory supplied anchoring devices, equal to Larsen's Model No. FS-2409.
 - 1. Where available rough opening depth is 4-7/8" to 7-1/8", provide semi-recessed cabinets with 2 1/2" rolled edged trim, equal to Larsen's 6R.
 - 2. Where available rough opening depth is 7-1/8" or greater, provide fully recessed cabinets with 5/16" flat trim, equal to Larsen's R2.

PART THREE – EXECUTION

- 3.01 LOCATIONS: Fire extinguishers, cabinets and brackets shall be furnished and installed in conformance with NFPA 10 at locations shown on Drawings. Additional fire extinguishers, brackets and cabinets may be required by the Authority Having Jurisdiction, for which a Work Changes Proposal Request will be issued, with the costs incorporated in the Contract by Change Order.

- 3.02 INSTALLATION: Mount cabinets and brackets securely to substrate, using suitable fasteners, in accord with manufacturer's directions. Top of fire extinguisher shall be not more than 48-inches above finished floor and leading edge of cabinet must be at or below 27-inches above the finished floor.
- 3.03 CLEAN-UP: Comply with the requirements of Section 02 41 21.
- 3.04 WARRANTIES: Comply with the requirements of Section 01 78 36.

END OF SECTION 10 44 00

METAL LOCKERS AND
LOCKER ROOM ACCESSORIES

SECTION 10 51 13

PART ONE – GENERAL

- 1.01 SCOPE: Furnish and install metal lockers, complete with accessories, finish metal trim, sloped tops, metal bases and end closures. Furnish locker room benches, fixed and moveable, where indicated on the Drawings.
- 1.02 QUALITY ASSURANCE:
- A. Uniformity: All metal lockers of each type shall be produced by a single manufacturer, including necessary accessories, fittings and fasteners.
- 1.03 SUBMITTALS: Comply with Section 01 33 00. Submit manufacturer's product literature and installation instructions, and complete shop and installation drawings, showing dimensions, special anchoring requirements, and other pertinent details; indicate specifically all requirements for blocking by others. Furnish samples for color selection.
- A. Numbering: The locker numbering sequence shall be provided by the Owner and noted on approved shop drawings.
- B. Color Charts: Provide color charts showing manufacturer's available colors. Furnish samples of paint on metal.
- 1.04 JOB CONDITIONS: Do not deliver metal lockers until building is enclosed and ready for locker installation. Protect from damage during delivery, handling, storage and installation.

PART TWO – PRODUCTS

- 2.01 LOCKERS, GENERAL:
- A. Provide lockers of varying types, sizes and configuration as indicated on the Drawings and as specified herein.
- B. End metal bases, end closures and sloped tops of match materials and colors.
- C. All major steel parts shall be made of mild cold rolled steel, free from imperfections and capable of taking a high grade enamel or powder coat finish.
- D. Lockers shall be built on the unit principle with each locker having an individual door (as applicable) and frame, an individual top, bottom, back and shelves with common intermediate uprights separating units.
- E. Number Plates: Each locker shall have a polished aluminum number plate with black numerals not less than 1/2" high. Plates shall be attached with rivets to the lower surface within the recessed handle pocket.
- F. Provide all items indicated or required for a complete installation, including recess trim, sloping tops, splice plates, closure panels, mitered corners, support angles, etc., finished to match lockers.
- G. FASTENERS: Provide all nuts, bolts, screws and anchor bolts necessary to complete the work.
- 2.02 TURNOUT GEAR LOCKERS: Wall Mounted: GEARGRID Wall Mounted Storage System, Standard 20" Opening; Overall dimension-79" high x 21.25" wide x 20" deep; Clear Opening Width: 18.75"; Mid-Minnesota Wire (GearGrid Product Line), 670 SW 15th Street, Forest Lake, MN 55025. Toll-free 888-643-6694. Phone 651-464-4468. Fax 651-464-4780. Web site www.geargrid.com. Email: sales@geargrid.com.

- 2.03 HEAVY DUTY PERSONNEL LOCKERS: In Locker Rooms, furnish and install First Responder Series Heavy Duty Personnel Lockers, 24" x 24" x 73" high, with integral drawer base and bench, as manufactured by DeBourgh Manufacturing Company.
- 2.04 BENCHES: Benches: Furnish and install fixed and moveable benches, as manufactured by Republic Storage Systems Company, Canton, Ohio, or approved equal. Locker benches shall be laminated maple, 1-1/4" full finished thickness. All corners are to be rounded and sanded. Top and edges shall have two coats of a clear finish with one coat on the bottom. Bench tops are to be 9-1/2" wide and furnished in lengths of 3' through 12' (whole foot increments).

PART THREE – EXECUTION

- 3.01 INSTALLATION:
 - A. LOCKERS: Install lockers on built-in metal base in accordance with approved shop and erection drawings, and in accordance with manufacturer's recommendations. Anchor all lockers to floor and walls.
 - B. BENCHES: Anchor fixed benches securely in place using appropriate anchors in accordance with manufacturer's instructions. Immediately prior to Substantial Completion, place moveable benches at locations indicated on the Drawings unless instructed otherwise by the Owner.
- 3.02 CLEAN-UP: Comply with the requirements of Section 02 41 21.
- 3.03 WARRANTIES: Comply with the requirements of Section 01 78 36.

END OF SECTION 10 51 13

PART ONE - GENERAL

- 1.01 WORK INCLUDED: Furnish and install one (1) ground mounted aluminum flagpole, with halyards, fittings and other accessories. Comply with Section 03 30 00 for concrete requirements.
- 1.02 SYSTEM DESCRIPTION:
- A. Pole type: Ground set; fixed type.
 - B. Pole Design: Cone tapered.
 - C. Nominal Height: One (1) 40 feet, measured from ground.
 - D. Halyards: Internal type, mechanically operated, non-electrical.
 - E. Lighting: Tunnel lights are required.
- 1.03 PERFORMANCE:
- A. Pole with Flag Flying: Resist without permanent deformation, 90 mile/hr wind velocity, non-resonant, with safety design factor of 2.5.
 - B. Pole without Flag: Resist without permanent deformation, 110 miles/hr wind velocity, non-resonant, with safety design factor of 2.5.
- 1.04 DELEGATED ENGINEERING DESIGN: flagpole foundations shall be designed under direct supervision of a Professional Structural Engineer experienced in the design of this work, registered in the State of Tennessee.
- 1.05 QUALITY ASSURANCE: Design flagpole foundations under direct supervision of a Professional Structural Engineer experienced in the design of this work, registered in the State of Tennessee.
- 1.06 SUBMITTALS: Comply with Section 01 33 00. Submit manufacturer's product literature and installation instructions.
- A. Submit manufacturer's product literature, installation instructions, and shop drawings for flagpole under provisions of Section 01 33 00.
 - B. Indicate on shop drawings, detailed dimensions, base, details of anchoring requirements and imposed loads.
 - C. Submit product data on each pole, all accessories, and configurations.
- 1.07 DELIVERY, STORAGE AND HANDLING:
- A. Spiral wrap flagpole with protective covering and pack in protective shipping tubes or containers.
 - B. Protect flagpole and accessories on site from damage or moisture.

PART TWO - PRODUCTS

- 2.01 ACCEPTABLE MANUFACTURERS:
- A. American Flagpole.
 - B. Concord Industries, Inc.
 - C. Pole-Tech Co., Inc.
 - D. Substitutions: Permitted under provisions of Section 01 33 00.

2.02 POLE MATERIALS: Aluminum: ASTM B241; 6063 alloy T6 temper.

2.03 COMPONENTS AND ACCESSORIES:

- A. Finial Ball: Aluminum; 6 inch diameter, Clear anodized finish to match flagpole.
- B. Truck Assembly: Cast aluminum; non-revolving; non-fouling.
- C. Cleat: Manually operated with flush access door to match finish of flagpole, cylinder lock and piano hinge.
- D. Halyard: 5/16" diameter polypropylene, braided white.
- E. Asphaltic Paint: Bituminous coating, black color.
- F. Flag: One (1) American Flag, 60 x 96 inch size, of nylon fabric.

2.04 MOUNTING COMPONENTS:

- A. Foundation Tube sleeve: ASSHTO M-36, corrugated 16 gage steel, galvanized.
- B. Lighting Ground Rod: 12 inch long copper rod, 3/4 inch diameter.

2.05 POLE FABRICATION:

- A. Outside Butt Diameter: Manufacturer's standard for required height and performance characteristics; but no less than 6 inches.
- B. Outside Tip Diameter: Manufacturer's standard for required height and performance characteristics; but no less than 3 1/2 inches.

2.06 FINISHES:

- A. Metal Surfaces in Contact with Concrete: Asphaltic paint.
- B. Concealed Steel Surfaces: Galvanized to 1.25 oz / s.f.
- C. Exposed Aluminum: Clear anodized.

2.07 Flags: Owner Furnished and Owner Installed, one American flag and one flag of Owner's choice, 60" x 96", of nylon fabric.

PART THREE - EXECUTION

3.01 INSTALLATION: Shipping, handling, storage and protection shall be in accordance with manufacturer's printed instructions and recommendations. Excavate for foundation, align and plumb flagpole and install in accordance with manufacturer's instructions.

END OF SECTION 10 75 16

VENDING EQUIPMENT

SECTION 11 21 13

PART ONE - GENERAL

1.01 SCOPE:

- A. Vending Equipment will be provided by other contractors or suppliers under separate agreement with the Owner.
- B. Under Divisions 22 and 26 of this Contract, Contractor shall furnish and install all utility services required for vending equipment.

1.02 SHOP DRAWINGS: Upon request, the Owner shall furnish the Contractor with Shop Drawings showing pertinent details of installation for all vending equipment, so that Contractor may coordinate the work to properly receive such equipment.

PART TWO - MATERIALS:

2.01 VENDING EQUIPMENT: Drawings indicate certain items of vending equipment to be furnished and installed by other contractors under separate agreement with the Owner; such items are shown N.I.C. (Not in Contract).

PART THREE - EXECUTION

3.01 INSTALLATION: The Contractor shall provide all required points of connections, power service, drains, etc. necessary for proper installation of and operation of vending equipment, as shown on drawings, and in strict accordance with Owner's approved shop drawings.

END OF SECTION 11 21 23

MISCELLANEOUS EQUIPMENT AND RESIDENTIAL APPLIANCES
(CONTRACTOR FURNISHED, CONTRACTOR INSTALLED)

SECTION 11 30 00

PART ONE – GENERAL

1.01 SCOPE:

- A. The Contractor shall purchase, furnish and install all Residential Appliances in the locations shown or noted on the Drawings, and specified and scheduled herein.
- B. The Contractor shall deliver, unload, store, handle, unpack, and install appliances to preclude damage, place appliances in their final position, haul off all packing materials, retrieve all warranties and operating documents, connect appliances to utility services (after rough-ins and final utility connections have been provided by the Contractor or by sub-contractors designated by the Contractor), place appliances into service, perform operation and testing, demonstrate operation to the Owner, and train the Owner in the proper use and maintenance of all Residential Appliances.
- C. The Contractor (or sub-contractors designated by the Contractor) shall furnish and install all required sleeves for utilities passing through floors, walls and ceilings. The Contractor (or sub-contractors designated by the Contractor) shall seal all penetrations in accordance with Division 07 sections of the Specifications, and, where applicable, shall perform all required Through-Penetration Firestopping.

1.02 RELATED WORK:

- A. Rough-ins for utility services, and final utilities connections, are included in the work of Divisions 22, 23 & 26.
- B. The Contractor and each designated subcontractor shall carefully check all sheets of the Drawings, all sections of the Specifications, and the project site in order to advise the Contractor and each other, and help coordinate their phases of the work. Each subcontractor shall leave the required space and clearances for the work of others. Field check all dimensions and file a written report to the Architect when discrepancies occur between the work to be performed and the Drawings and Specifications, or project site conditions. If no report is filed prior to approvals of shop drawings and samples, it will be assumed that no conflict occurs. Resolution of conflicts after shop drawings and sample approval shall be resolved by the Architect and the conflicts corrected in the field at no increase in the Contract Sum.
 - 1. The Contractor shall examine the Drawings and the Site to determine that delivery access is adequate and all intervening door openings are large enough to accommodate deliveries of the specified appliances without excessive unpacking in the exterior environment.
- C. The Contractor shall furnish and install all necessary blocking and backing necessary for the installation and support of wall mounted equipment. Reinforce studwork as required. Comply with the requirements of:
 - 1. Section 06 10 00 – Rough Carpentry.
 - 2. Section 09 21 16 – Gypsum Drywall and Metal Framing.
- D. Plumbing Subcontractor, under Division 22, shall be responsible for:
 - 1. Furnishing and installing all hot and cold water piping and hoses, up to, and including, the points of connection for the appliances, furnishing each line with a shut-off valve and, where required, a pressure reducer, and making final connections of each appliance.
 - 2. Furnishing and installing all waste piping, traps, vents, etc. and making final connections of each appliance.

- E. Mechanical Subcontractor, under Division 23, shall be responsible for:
1. Furnishing and installing hoods, ducts, vent fans and other items required for proper operation of the appliances, up to, and including, the points of connection for the appliances, and making final connections of each appliance.
- F. Electrical Subcontractor, under Division 26, shall be responsible for:
1. Furnishing and installing all roughing-in wiring and “pigtails”, up to, and including, the points of connection for the appliances, and making final connections of each appliance (pigtails or terminals). Wiring and connections to the appliances shall be made in accordance with wiring diagrams furnished by the manufacturer or supplier and in accordance with the requirements of the National Electrical Code.
 2. Providing and installing all electrical receptacles at walls, countertops, tables, etc. shown on the plans and/or required for the equipment.
- 1.03 SUBMITTALS: Submit the following in accordance with Division 01 Sections for Submittals.
- A. Proposed substitutions for the scheduled appliances must be approved by the Architect and Owner in writing prior to their purchase. Submittals must be legible and must include a side-by-side comparison of the proposed substitute with the originally specified item.
 - B. Furnish copies of complete product literature, installation instructions and maintenance instructions for all approved appliances.
- 1.04 DELIVERY, STORAGE AND HANDLING:
- A. Appliances shall be furnished and delivered to the job site by the Contractor or by the Contractor’s Supplier. Contractor shall schedule deliveries in such a manner that the equipment will require minimum on-site storage time and will not require excessive handling.
 - B. Appliances and materials shall be delivered in the manufacturers’ original packaging and in a sequence that will permit continuity of installation.
 - C. Handling - Material shall be handled in such a manner as to preclude damage and contamination by moisture or foreign matter.
- 1.05 JOB CONDITIONS: Prior to installation, the building shall be completely dried in and secure. The affected areas shall have all finished surfaces complete, with permanent heating and air conditioning operational, and with proper temperature and humidity being maintained. The areas shall not be subject to dust generating activities in other areas of the building. Installation of exhaust hoods shall be complete and equipment shall be operational. The installed units must be protected from surrounding construction activities.
- 1.06 WARRANTIES: Furnish manufacturers’ warranties for all items.

PART TWO – PRODUCTS

- 2.01 GENERAL REQUIREMENTS: Products listed below are also shown and scheduled on the Drawings. Where conflicts exist between the Drawings and these Specifications, furnish the better quality, unless space does not permit.
- 2.02 RECYCLE BINS: Equal to Ecolad Corporation Model Nexus 50, 11.6” wide x 20” deep x 26.77” high, 13.2 gallons. Furnish 3 units as follows:
- A. Red aperture lid with 4” diameter hole and bottle & can decal.
 - B. Pastel green lid with 1” x 12” paper slot and paper decal.
 - C. Dark gray aperture lid with 4” x 12.5” oval waste opening and waste can decal.
- 2.03 RESIDENTIAL APPLIANCES AND EQUIPMENT: Furnish and install each item of the following Residential Appliances and Equipment at each location where each item is shown or

noted on the Drawings. The Owner requires Stainless Steel finish for each appliance, if available. If specified appliance is not available with Stainless Steel finish, provide appliance with White-on-White finish, but only with prior approval of the Owner.

- A. Refrigerator: GE Energy® Star 21.2 Cu. Ft. Top-Freezer, Model Number GIE21GSHSS (Stainless Steel); 66 3/4" high x 32-1/4" deep x 32-7/8" wide.
 - B. Range: smeg Opera A1XU6, 36" wide, stainless steel, dual fuel, with gas cooktop and multifunction electric oven.
 - C. Range Hood: Broan E66136SS, 36" wide, under-cabinet mount, internal blower, with Broan Elite E661 hood system (ducting and roof or wall cap. Note: Dry-Chemical fire extinguishing system specified in Section 21.
 - D. Dishwasher: Whirlpool Gold® Dishwasher with Silverware Spray, Model WDT720PADM, Stainless Steel.
 - E. Under Counter Ice Maker: Scotsman CU50GA-1 Under Counter Compact Ice Machine; Stainless Steel, 14-7/8" w x 33-3/8" h x 22" d or Sears Kenmore Model No. 89583, stainless steel; 14-7/8" w x 34-3/8" h x 25-1/4" d.
 - F. Disposal: insinkerator Evolution Excel, each kitchen sink.
 - G. Automatic Coffee Maker: One (1) each location, Bunn-Omatic Model Axiom DV 3 (2 upper, 1 lower warmers), all stainless steel Automatic Three-Warmer Coffee Brewers. Dimensions: 18.9" high x 8.0" wide x 17.7" deep. Three (3) each location, Bunn Easy-Pour decanters.
 - H. Over-the-Counter Microwave: Sharp Carousel, 1.5 cu. ft., 23-7/8" wide x 15-9/16" deep x 14-1/16" high, 1100W, Stainless Steel, Model R-1214.
 - I. Commercial washer/extractor: IPSO WE-233.
- 2.04 MISCELLANEOUS PRODUCTS: Furnish all necessary, fasteners, connectors and brackets not otherwise shown, but necessary for a complete installation. All such items shall be of compatible materials, and of equal quality to the materials used in the products herein specified.

PART THREE – EXECUTION

- 3.01 INSPECTION: Comply with the Paragraph "JOB CONDITIONS" in PART ONE of this Section of the Specifications.
- 3.02 PREPARATION: If interior surfaces are found to be non-compliant, correct all deficiencies and clean all surfaces of dust, debris, moisture, and other substances detrimental to installation according to manufacturer's written instructions. Correct any other conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- 3.03 INSTALLATION – GENERAL:
 - A. Appliances shall be installed in accordance with recommendations of the manufacturer and the equipment supplier, as approved by the Owner, and in conformance with any pertinent UL design requirements.
- 3.04 COMPLETION:
 - A. After installation is complete, and immediately before Substantial Completion inspection, adjust appliances to ensure proper working order and condition, and remove and replace any appliances not operating properly.
- 3.05 CLEANING UP: In addition to other stipulated requirements for cleaning, remove masking or protective coatings or coverings from stainless steel and other finished surfaces. Wash, clean and polish equipment, fittings and accessories, and completely remove finger prints and traces of soil from the surfaces of all work of this Section, using only those cleaning materials recommended for the purpose by the manufacturer of the material being cleaned.

3.06 CLOSEOUT PROCEDURES:

- A. TRAINING: As a part of this Contract and a condition of Final Completion, conduct on-site training in the proper operation and maintenance of all products and appliances with the Owner's staff. Provide any available training videos on DVD or provide on-line links to such videos.
- B. OPERATIONS AND MAINTENANCE MANUALS: Furnish Operations and Maintenance Manuals.
- C. WARRANTIES: The Contractor shall secure and present to the Architect properly executed and signed copies of any and all required warranties. All warranties shall commence on the Date of Substantial Completion, regardless of their duration.

END OF SECTION 11 30 00

PART ONE – GENERAL

- 1.01 SCOPE: Furnish and install window blinds at all windows.
- 1.02 SUBMITTALS: Submit the following in accordance with Section 01 33 00 Submittals:
- A. Submit Product Data and manufacturer's literature for each type of product indicated.
 - B. Shop Drawings: Submit complete shop drawings indicating proposed location of all brackets not fastened directly to exposed wood or metal and indicating wood blocking required under interior finish materials for receiving screws to secure brackets. Such blocking shall be furnished and installed by the Contractor. Refer to Section 06 10 00.
 - C. Where anchored directly into masonry, submit samples of proposed anchors.
 - D. Submit full range of color samples of slats representative of actual material, size, shape and contour.
 - E. Submit complete cleaning and maintenance instructions. Submit installation instructions.
- 1.03 DELIVERY, STORAGE AND HANDLING: Do not deliver window blinds until building is enclosed and ready for their installation. Protect materials of this section from damage during delivery, handling, storage and installation.

PART TWO – PRODUCTS

- 2.01 BLINDS: Furnish and install product equal to Mark I DustGuard 1" (25mm) Blind, by Levolor Lorentzen, Inc.; colors to be selected by the Architect (multiple colors for the project; the same color on each side of the slats); having components as follows:
- A. Head Channel: Fabricated of .025" thick Tomized steel, U-shaped 1" high x 1-9/16" wide with flanged edges at top, and coated with a baked-on finish. All hardware shall be enclosed in the metal head.
 - B. Tilter: Fabricated of 0.40" nylon with automatically disengaging worm and gear mechanism.
 - C. Tilt Wand: Transparent, with hexagonal cross section 5/16" across flats.
 - D. Drum and Cradle: Furnish one for each blind ladder; drums fabricated of .031" Tomized steel with rolled edges to anchor barbs of both ladder ends; cradles fabricated of .042" Tomized steel with two holes with rolled edges to guide cords through bottom of head channel without abrasion.
 - E. End Braces: Fabricated of .037" thick Tomized steel with reinforcing ribs and adjustable tabs.
 - F. Brackets: Fabricated of .048" thick Tomized steel with baked-on finish to match head channel; bracket shall incorporate a hinged safety locking front cover.
 - G. Ladders: Slat supports shall be fabricated of braided polyester yarn; rungs shall consist of (minimum) two crossed cables inter-braided with vertical components. Ladders shall support slats without visible distortion. Distance between ladders shall not exceed 23".
 - H. Slats Fabricated of virgin aluminum alloy, with nominal 1" width, with elliptical crown formed after coating and curing. Slat thickness and ladder support distances shall prevent visible sag or bow after continued use. Slats shall be unperforated.
 - I. Bottom Rail: Fabricated of .031" Tomized steel formed after coating, with color-compatible molded plastic ladder and end caps.
 - J. Lift Cord: Fabricated of braided high-strength polyester yarn, of sufficient length and equalized to control raising and lowering of blinds; lift cords shall be spaced maximum 46" on center.

- 2.02 FASTENERS: Provide all fasteners, appropriate for substrates, as recommended by the blind system manufacturer.

PART THREE – EXECUTION

- 3.01 PREPARATION: Obtain field measurements, inspect substrate and mounting surfaces, and approve installation conditions prior to starting work.
- 3.02 INSTALLATION: Install blinds between jambs at the locations indicated in accordance with the manufacturer's instructions. Install blinds level, plumb, secure, and at the proper height. Cooperate with other trades for securing brackets to substrates and finished surfaces.
- 3.03 PROTECTION: Provide protection for installed units so they will be in perfect operating condition without damage, blemish or indication of use at completion of the project.
- 3.04 CLEANING: Clean finish installation of dirt and finger marks. Leave work area clean and free of debris.

END OF SECTION 12 21 13

BICYCLE RACKS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Bicycle racks.

1.2 REFERENCES

- A. Reference Standards:
1. AAMA 2603 - Pigmented Organic Coatings on Aluminum Extrusions and Panels.
 2. ASTM A36 – Carbon Structural Steel.
 3. ASTM A53 - Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 4. ASTM A312 - Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes.
 5. ASTM A959 - Harmonized Standard Grade Compositions for Wrought Stainless Steels.

1.3 ACTION SUBMITTALS

- A. Manufacturer's Product Data.
- B. Samples for Initial Selection: Color card of manufacturer's standard colors.
- C. Samples for Verification: Specified finish.
- D. LEED Submittals:
1. Credit SS 4.2, Alternative Transportation – Bicycle Storage and Changing Rooms: Provide Product Data indicating number of bicycles stored by each bicycle storage unit. Include statement indicating total number of bicycle storage units and total number of bicycles stored.
 2. Credit MR 4, Recycled Content: For products having recycled content, provide Product Data indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
- E. Setting Drawings: Show embedded items and cutouts required for work specified in other Sections.

1.4 CLOSEOUT SUBMITTALS

- A. Manufacturer's Maintenance Instructions for field touch-up of finishes, cleaning, and maintenance.
- B. Warranty Documentation: Submit sample of manufacturer's warranty.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Security Nut Tools: Tools provided or recommended by security nut manufacturer for operating security nuts (not provided by manufacturer)
1. Type: [Bit for drill or power screwdriver] [Hand driver with handle]
 2. Quantity: [2] [Other number of tools required]
 3. Delivery: Submit tools directly to [Owner] [Owner's Representative].

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect racks and accessories during delivery, storage, and handling to comply with manufacturer's instructions and prevent damage.

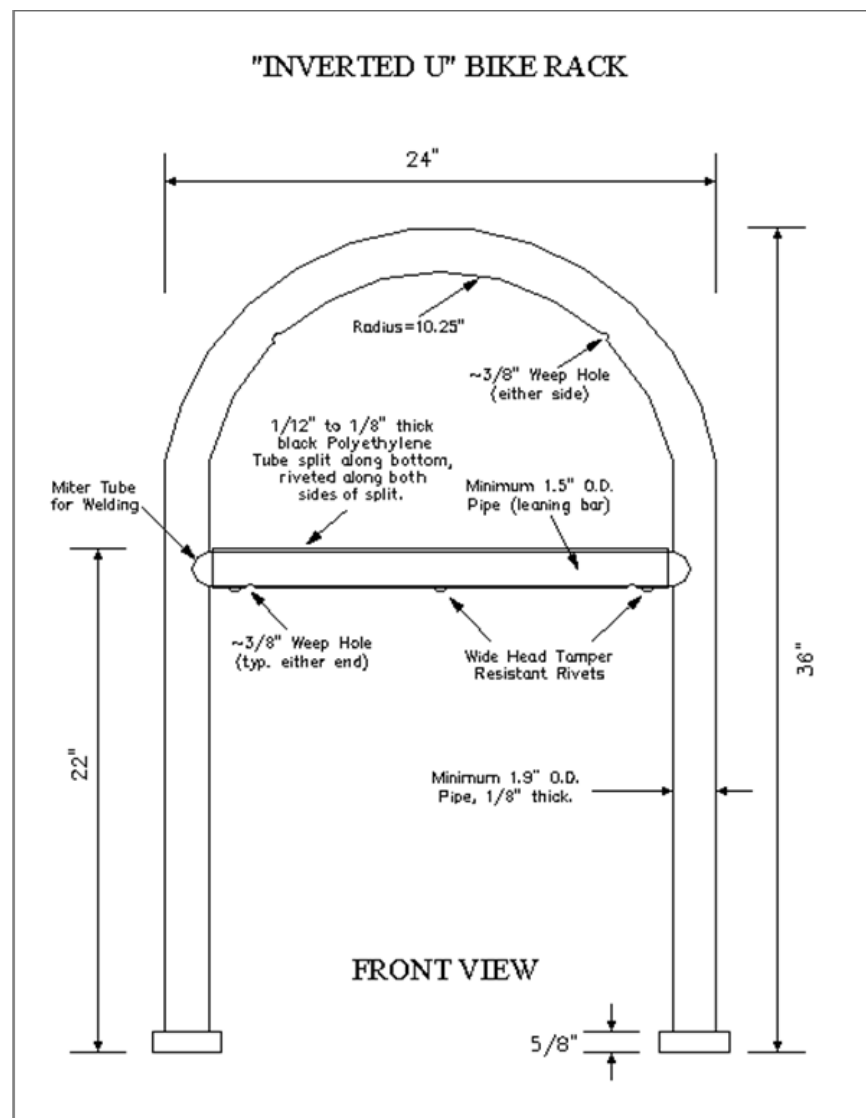
1.7 WARRANTY

- A. Manufacturer's Warranty: agreeing to repair, replace, or refund the purchase price of bike parking products found defective, within the following time periods.
 - 1. Material and workmanship: Five-year metal components warranty.
 - 2. Coatings: Two-year warranty against peeling, cracking, and significant color change.

PART 2 - PRODUCTS

2.1 BICYCLE RACKS

- A. Manufacturer: Reliance Foundry Co. Ltd.
 - 1. Phone: 604-592-4333 or 888-735-5680
 - 2. Fax: 604-590-8875
 - 3. Website: <http://www.reliance-foundry.com/bike-storage>
 - 4. Email: info@reliance-foundry.com.
- B. Substitutions: Equal products by the
- C. Bicycle Racks:
 - 1. Reliance Foundry Model **R-8238**
 - a. Height: 36 inches.
 - b. Width: 22 inches.
 - c. Weight: 28 lbs.
 - d. Design: Inverted U.
 - e. Metal: Steel.
 - f. Installation: Concrete Embedded, In-ground Mount
 - g. Color: Dark green.
 - h. Bike racks shall in general conform to the following illustration, with minor deviations to accommodate manufacturers' standards (following page):



2.2 METALS

A. Steel:

1. Pipe: ASTM A53, Type F or Type S, Grade A.
2. Plate, Shapes and Bars: ASTM A36.
3. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
4. Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions.

2.3 ACCESSORIES

A. Mounting Accessories

1. Epoxy adhesive: As recommended in writing by adhesive manufacturer for outdoor use with concrete and steel.

-
2. Fasteners: Drop in place concrete anchors, for 1/2 inch UNC bolts.
 3. Sealant: Silicone elastomeric sealant recommended for outdoor use.

2.4 FABRICATION

- A. Fabricate units with welded connections.
- B. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- C. Provide inserts and other anchorage devices for connecting bicycle racks to substrate.
- D. Protect finishes from damage before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine paving or other substrates for compliance with manufacturer's requirements for placement and location of embedded items, condition of substrate, and other conditions affecting installation of bicycle racks.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Comply with manufacturer's installation requirements and setting drawings.
- B. Install according to manufacturer's written instructions for specified setting method.
- C. Embed a minimum of 12" into 12" diameter by 16" deep concrete at each embed.
- D. Do not install damaged, cracked, chipped, deformed or marred bicycle racks. Field touch-up minor imperfections in accordance with manufacturer's instructions. Replace bicycle racks that cannot be field repaired.

3.3 CLEANING

- A. Immediately prior to Substantial Completion, clean racks in accordance with manufacturer's instructions to remove dust, dirt, adhesives, and other foreign materials.

3.4 PROTECTION

- A. Protect bicycle racks against damage.

END OF SECTION 12 93 13

PART ONE – GENERAL

1.01 SCOPE:

- A. ***DESIGN-BUILD RESPONSIBILITY: Regardless of design criteria shown on the Drawings or Specified herein, the Metal Building Systems Manufacturer and its Licensed Professional Engineer shall be completely and fully responsible for determining and verifying all necessary structural design criteria and other loading superimposed by the various building systems as necessary for full compliance with all applicable building codes. The Metal Building Systems Manufacturer and its Licensed Professional Engineer shall examine ALL Drawings and Sections of the Specifications as necessary to determine the full extent of load requirements.***
- B. Provide the materials, equipment, labor, engineering design, prefabrication, delivery and erection of the pre-engineered metal building structural framing package.
1. In addition, provide fabrication, delivery and erection of:
 - a. Other structural components shown or noted on Architect's Structural Engineer's Drawings.
 - b. Other structural systems associated with, suspended from or attached to the metal building structural framing package, as indicated on the Architect's Drawings.
 2. Comply with the Design Load criteria specified herein and required by applicable building codes.
 3. The structural design and locations of bracing and other components must respect the window and door locations, and other opening locations shown on the Architect's Drawings.

1.02 RELATED DOCUMENTS: Components specified in other Divisions:

- A. Building Roof Cover System - Division 07.
- B. Building Wall Systems - Divisions 03, 05, 06 and 07.
- C. Insulation - Division 07.

1.03 APPLICABLE STANDARDS, SPECIFICATIONS AND DESIGN STANDARDS:

- A. Metal Building Manufacturers Association, 2130 Keith Building, Cleveland, Ohio 44115. Metal Building Systems Manual.
- B. American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103. "Annual Book of ASTM Standards" Part 1 through Part 32 as applicable.
- C. American Institute of Steel Construction (AISC) 1221 Avenue of the Americas, New York, NY 10020:
 1. "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings".
 2. "Code of Standard Practice for Steel Buildings and Bridges".
 3. "Specification for Structural Joints Using ASTM A-325 or A-490 Bolts".
- D. American Iron and Steel Institute, (AISI), 150 East Forty-Second Street, New York, NY 10017: "Specification For the Design of Cold-Formed Steel Structural Members".
- E. American Welding Society, Inc. (AWS) 2501 N.W. 7th Street, Miami, Florida 33125: "Structural Welding Code".

1.04 DESIGN:

- A. GEOTECHNICAL REPORT: Design shall comply with applicable design criteria given in the “*Report of Geotechnical Exploration, Chattanooga Fire Hall No. 05*”, Chattanooga, Tennessee, by S&ME, Project No. 1281-16-048”, dated 29 July 2016 (49 pages), and bound within the Specifications as Section 02 32 02.
- B. The Architect’s Drawings indicate the basic configurations to which the Metal Building Systems and components must conform, such as width, length, span, spacing, eave height, roof slopes and required openings. The Metal Building Systems Manufacturer and its Licensed Professional Engineer shall assume all responsibility for structural performance characteristics of its systems. Where conflict arises between the Architect’s design intent, as expressed in the Contract Documents, and the reasonable accommodation of framing sizes, bracing requirements and metal building components, the Metal Building Systems Manufacturer shall immediately alert the Architect of such conditions. However, in bidding the Project, the Metal Building Systems Manufacturer acknowledges its acceptance of the intent of the Contract Documents and its ability to accommodate the Architect’s design.
- C. Building design is based on the use of structural members. Structural framing must meet or exceed the design loads and design load combinations as determined by ***the Metal Building Systems Manufacturer and its Licensed Professional Engineer***, specified herein and shown on the Architect’s Drawings.
- D. Building design is based on the use of:
 - 1. Rigid Frame System (RF) frame design, by American Buildings Company with column spacing, roof pitch and eave heights as shown on the Architect’s Drawings, and girt locations as shown in American Buildings’ literature and on Architect’s Drawings.
 - 2. High Profile Rigid Frame System, Clear Span, as designed, fabricated and erected by Bigbee Steel Buildings, Inc., Muscle Shoals, Alabama, with single custom slope and a custom span, as indicated on the Architect’s Drawings.

1.05 DESIGN LOADS:

- A. Basic Design Loads shall include live and wind load, in addition to dead load and as follows:
 - 1. ***No tributary live load reduction shall be allowed.***
 - 2. Risk Category IV, Importance Factor 1.50, Site Class 3, Seismic Design Category D [To be determined by the Metal Building Systems Manufacturer]
 - 3. Loads: To be determined by the Metal Building Systems Manufacturer, but in no case less than the following:
 - a. Live Load: 20 PSF with no roof live load reductions taken.
 - b. Wind Load: Refer to Notes on the Structural Engineer’s “S”-Series Drawings.
 - c. Seismic Data: Comply with Notes on the Structural Engineer’s “S”-Series Drawings
 - 4. Deflections: To be determined by the Metal Building Systems Manufacturer, but in no case greater than the following:
 - a. Live Load:

Roof Purlins	Span/180
Roof Joist	Span/240
 - b. Wind Load:

Wind Girt	Span/240
Building Frame	Span/240 using 10 year wind loads

5. Roof Live Load (Snow Load) shall be applied to the horizontal projection of the roof area.
 6. Wind Load shall be applied and proportioned as horizontal pressure, suction, and uplift forces in accordance with MBMA recommended design practices.
 7. Dead Load shall be applied as a pounds per square foot force to the horizontal projection of the roof surface.
- B. Dead Loads are in addition to the weight of the pre-engineered metal building structural package. Design the metal building framing shall carry the loads of, and the framing for: Roof Cover System; Wall System; Flashings, closures and trim; mechanical systems, plumbing systems, electrical systems, finish systems, sprinkler system, and other items indicated in the Contract Documents.
- 1.06 DESIGN LOAD COMBINATIONS:
- A. Unless otherwise specified the following combinations of loads shall be considered in the design of all load supporting members of the subject structure as they apply. Where dead load is shown it shall mean all of the dead, collateral and hanging loads.
 1. Dead Load plus Roof Live Load.
 2. Dead Load plus Wind Load or Seismic Load.
 3. Dead Load plus one half Wind Load or Seismic Load, plus Roof Live Load.
 4. Dead Load plus Wind Load or Seismic Load, plus one-half Roof Live Load uniformly distributed over the entire span.
 5. Dead Load plus Impact Load plus one-half Roof Live Load or one-half Wind Load or Seismic Load, whichever is critical.
 6. Building frames shall be designed for full live load plus dead load for the loaded area they support. No live load reduction shall be allowed.
 - B. Each member shall be designed to withstand the stresses resulting from the combinations of loads that produce the maximum percentage of actual to allowable stress in that member.
 - C. Special conditions of snow load accumulation as shall be applied per MBMA "Commentary on Loadings - Application of Snow Loads".
- 1.07 PROFESSIONAL ENGINEER: Engineering design shall be provided by the Metal Building Systems Manufacturer, and it shall be performed by, and shall bear the name, seal and registration number of a Licensed Professional Engineer licensed to practice in the State of Tennessee.
- 1.08 CERTIFICATIONS: Design calculations signed and sealed by a Registered Professional Engineer licensed to practice in Tennessee shall be submitted for the structural framing of the metal building system.
- 1.09 SMACNA: Where "SMACNA Manual" is referenced, it shall mean the "Architectural Sheet Metal Manual" issued by Sheet Metal and Air Conditioning Contractor's National Association, Seventh Edition, 2012.
- 1.10 SUBMITTALS: Comply with the requirements of Section 01 33 00, with other provisions of the Contract Documents and the following:
- A. SUBSTITUTIONS: Provide the exact same materials used under this Section 13 34 19 for use also under applicable Division 07 Sections and other appropriate Sections at other locations on the building. Any substitutions proposed for the materials under this Section 13 34 19 must also be suitable for the uses specified in applicable Division 07 Sections and other appropriate Sections.
 - B. DRAWINGS: Furnish complete erection drawings showing anchor settings, sidewall, endwall and roof framing, transverse cross sections, windbracing details, diagonal bracing, and accessory

installation details to clearly indicate the proper assembly of all building parts. Drawings shall bear stamp and signature of a Registered Professional Engineer licensed to practice in the State of Tennessee.

- C. Submit manufacturer's product literature for all components and actual samples of finishes for selection of and approval by the Architect.
- D. Submit list of column reactions and diameter and grade of anchor bolts.
- E. Perform and submit the engineering design for metal building structural framing package, and submit shop drawings to the Architect for approval prior to the fabrication of any components.
- F. Four copies of the pre-engineered building calculations, seismic data and shop drawings must be submitted to the Architect by the Contractor.
 - 1. Structural shop drawings for pre-manufactured buildings shall include manufacturer's name and model number or other designation. Show seismic information per IBC, Section 1613.

1.11 DELIVERY, STORAGE AND HANDLING:

- A. As applicable, materials shall be delivered in the manufacturers' original sealed and labeled packaging and in quantities adequate to allow continuity of application.
- B. Material shall be stored out of direct exposure to the elements. Cover materials with canvas tarpaulin if inside storage is not available. Material shall be protected against moisture.
- C. Handling - Material shall be handled in such a manner as to preclude damage and contamination with moisture or foreign matter.

1.12 WARRANTIES: Provide American Buildings Company Standard One-Year Warranty.

PART TWO – MATERIALS

2.01 GENERAL:

- A. All materials furnished shall be within the standard industry tolerances for that material as specified for the building and the stated design conditions.
- B. All framing members shall be shop fabricated for field assembly and shall carry an easily identifiable piece part mark.
- C. All light gage cold-formed sections shall be manufactured by precision roll or brake forming. All dimensions shall be true and the formed member shall be free of fluting, buckling, or waviness.

2.02 STRUCTURAL FRAMING:

- A. Hot Rolled Shapes shall conform to ASTM A-36, 36,000 PSI min. yield or ASTM A-572, 50,000 PSI min. yield.
- B. Welded Shapes shall conform to ASTM A-570, 50,000 PSI min. yield.
- C. Cold-Formed Secondary Components shall conform to: ASTM A-607, Grade 50.

2.03 SECONDARY COMPONENTS:

- A. Purlins and Girts shall be "C" or "Z" sections, 8" deep, with 2-1/2" wide flanges and 3/4" stiffening lips. Purlins shall be of the continuous design with a minimum total back lap of 2-1/2". The bottom of all purlins shall be supported with a channel at the midpoint to prevent rotation. Girts shall be set as shown in the specified manufacturer's product literature for the system specified. All girts 24' and longer shall be supported by rods from the eave strut at the midpoint for support and stability.
- B. Eave struts shall be cold-formed, unequal flange, "G" sections, 8-1/2" or 9" deep with adequate strength to act as a purlin or girt. The web shall be vertical and free to receive the side wall covering.

- C. Rake channels shall be supplied to cap the purlins at each end of the building and shall be cold-formed, "C" sections, 8" deep, with 2-3/8" wide flanges.
- D. Diagonal brace angles shall be installed as required by design calculations in all rigid and modular frame structures.
- E. Wind Bracing shall be designed utilizing either 3/4" or 1" diameter steel rods placed diagonally in the roof and walls of the building.
 - 1. When supported by published test data and engineering calculations, roof and wall cover diaphragm action can be used in lieu of steel rods.
 - 2. When supported by engineering calculations, fixed base columns, rigid bents, wind trusses can be used in lieu of steel rods. Steel cables must not be used.
- F. Brace Rods shall conform to ASTM A-615, Grade 40, smooth reinforcing bar, 40,000 PSI minimum yield.
- G. Framed openings for louvers, windows, doors and other accessories shall be designed to structurally replace the wall and/or roof covering and framing they displace.
- H. Windbracing shall be coordinated with Architect's Drawings to avoid conflict with building design.
- I. Structural bridging and/or other bracing of roof purlins must be designed and installed to permit installation of the specified roof insulation system and the floating clip design of the roof panels. Special or customized design of the bridging may be required in order to accommodate the roof insulation and roof panels attachment.

2.04 BOLTED FIELD CONNECTIONS:

- A. Bolts shall be machine bolts conforming to:
 - 1. ASTM A-307, 60,000 PSI minimum tensile strength (application as shown on project drawings).
 - 2. ASTM A-325, Type 1 and ASTM A-490, 120,000 PSI minimum tensile strength for up to 3/4" diameter and 115,000 PSI for 7/8" and 1" diameter bolts. All A-325 and A-490 bolted connections shall be tightened by the turn-of-nut method.
- B. The faying surfaces of all bolted connections shall be smooth and free from burrs or distortions.
- C. All connections made with high strength bolts shall be in accordance with the specifications for Structural Joints using ASTM A-325 or A-490 bolts as approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.

2.05 PRIMERS:

- A. Painting of all primary structural and light gage, steel components shall consist of factory applied light grey, or red, 2 mil thick oil base metal priming paint conforming to federal specification TTP-636-Modified.
- B. All surfaces to be painted shall be cleaned of detrimental foreign matter, loose mill scale, loose rust, weld slag and deposits of oil and grease.
- C. The shop coat of primer is not intended to provide corrosive protection on steel structures exposed to long term weathering.
- D. It shall be the responsibility of the erector to remove all dirt, mud and dust from the structural steel following erection, and touch up all scratches.

PART THREE – EXECUTION

3.01 ERECTION AND INSTALLATION:

- A. Unloading instructions, storage of materials and erection procedure as outlined and recommended by the building manufacturer shall be followed and together with accepted trade practices, shall conform to details and instructions as shown on the erection or assembly drawings.
- B. Erection shall conform to MBMA "Code of Standard Practice." Erection shall be performed in accordance with the erection drawings by a qualified erector using proper tools and equipment.
- C. Workmanship shall be such that the parts of the building are accurately made and true to dimension so that, in erection, all parts will properly fit together. Minor alterations of material and the corrections of minor misalignments by cutting, etc., are part of erection.
- D. There will be no field modification of primary structural members, unless authorized and specified on the manufacturer's erection drawings.

3.02 WORKMANSHIP:

- A. All material shall be new, unused, and fabricated in a workmanlike manner.
- B. All materials furnished shall be within the standard industry tolerances for that material as specified for the building and the stated design conditions.
- C. All framing members shall be shop fabricated for field assembly and shall carry an easily identifiable piece part mark.
- D. Workmanship shall be such that the parts of the building are accurately made and true to dimension so that in erection all parts will properly fit together.
- E. All structural steel components shall be sheared, formed, punched, welded and painted in the plant of the manufacturer. Welding shall conform to AWS "Structural Welding Code." Holes and clips required for primary and secondary connections shall be provided by the manufacturer. Structural components fabricated of plate or bar stock shall have the flanges joined to the webs by a continuous automatic submerged arc welding process.

- 3.03 CLEAN-UP: Comply with applicable provision of Sections 01 77 00 and 02 41 21. Remove all packaging, scrap and other unused material. Leave the Building and Site in a condition at least comparable to that prior to initial delivery of Metal Building components and suitable for other trades to continue the Work.

END OF SECTION 13 34 19