STATE OF NEW YORK
OFFICE OF GENERAL SERVICES
DESIGN AND CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 1 TO PROJECT NO. 41135

CONSTRUCTION WORK, HVAC WORK, PLUMBING WORK and ELECTRIC WORK
CONSTRUCT MAINTENANCE SUBHEADQUARTERS
BUILDING NO. 4
DOT REGION 8, WESTCHESTER COUNTY
ROUTE 100, MILLWOOD, NY 10546

February 20, 2015

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

BIDDING REQUIREMENTS:

1. CONSTRUCTION, HVAC, PLUMBING & ELECTRIC SPECIFICATION
   DOCUMENT 013200 Construction Progress Documentation: Discard previously issued versions and substitute the accompanying Document (pages 013200– 1 thru 013200-7) noted "Updated 10/07/2014" issued for **each** of the four prime contracts.

2. SPECIFICATION SECTION 015000, 1.03 TEMPORARY LIGHT AND POWER, Delete Paragraph A. in its entirety. Add the following:
   " A. PHASE – 1: All Contracts:
      1. Electrical energy for temporary light and power is not available at the Site. Provide portable electrical source as required for the Work.
      2. Provide temporary wiring and equipment in conformance with the National Electrical Code.

   B. PHASE – 2 and 3 : Electrical Work Contract:
      1. Make necessary arrangements, through the Director's Representative, for temporary electrical service at location indicated.
      2. Provide portable source of electricity for temporary light and power of adequate capacity to supply the needs of all contractors for the performance of their Work until the temporary electrical service can be utilized for temporary light and power.
      3. Provide wiring and other equipment within the building for temporary light and power.
         a. Wiring for temporary light and single phase power shall, in general, consist of 3 wire, 120/240 volt or 4 wire, 120/208 volt feeders, with branch circuits of #12 conductors minimum.
            1) Install branch circuits with suitable fluorescent fixtures or incandescent lampholders for temporary lighting as required to maintain a minimum of 10 foot candles in the work areas. Equip fixtures and lampholders with guards. Fixtures and lampholders installed in damp or wet locations shall be of the weatherproof type.

2) Install branch circuits with fused grounding type receptacle outlets for single phase power (for power tools, etc.).

C. All Contracts:

1. Any Contractor requiring additional lighting shall provide additional fluorescent fixtures or incandescent lampholders (with lamps), but in no case shall the load on any branch circuit or feeder exceed its rated capacity.
2. Install materials for temporary light and power in conformance with the National Electrical Code.
3. Materials for temporary light and power need not be new if they are in satisfactory operating condition.
4. Provide ground-fault protection for personnel (such as portable plug-in type ground-fault circuit-interrupters) on single phase 15 and 20 ampere receptacle outlets which are in use.
5. Receptacle outlets, portable cord connectors and attachment plugs shall have standard NEMA configurations.
6. As the progress of the Work allows, and as approved, completed portions of the permanent wiring and electrical service may be utilized for temporary light and power. "

3. 015213 STATE FIELD OFFICE: Article 2.01 MOBILE OR RELOCATABLE OFFICE UNITS, PARAGRAPH C, NO. 14, Change to read: " 14. Pre-wire unit for 5 voice and 10 data connections as shown on the approved shop drawings or as directed. ".

4. 015213 STATE FIELD OFFICE: Article 2.02 FURNITURE AND EQUIPMENT, PARAGRAPH B OFFICE EQUIPMENT:
   a. No. 1, Change " MC561 " to read " MC562W(or latest model) "
   b. No. 2. a. After the word " PHONE." add the words " (or latest model) "
   c. No. 2. b. After the word " KX-TS4100B " add the words " (or latest model) "

5. 015213 STATE FIELD OFFICE: Article 3.01 INSTALLATION, PARAGRAPH C:
   a. Change the words " PROVIDE 30' X 40' PARKING AREA OF 6" SUB-BASE COURSE TYPE 2 AND MAINTAIN FOR THE DURATION OF THE CONTRACT INCLUDING SNOW REMOVAL. " to " PROVIDE TELEPHONE CONNECTIONS AND CABLE (200' MAX). "

   b. After paragraph F. add Paragraph G to read " G. CONTRACTOR SHALL INCLUDE AT LEAST ONE MOVE OF THE STATE FIELD OFFICE INCLUDING DISCONNECTING AND RECONNECTING ALL UTILITIES. "

6. 015213 STATE FIELD OFFICE: Delete the second specification section in the project manual dated 6/12/07 (Pages 015213-1 thru 015213-4).

7. 015214 DOT FIELD OFFICE: Add the attached specification section Updated 10/23/2014 (Pages - 015214-1 thru 015214-4) to the project manual and forms a part of the contract documents.

8. 015813 PROJECT IDENTIFICATION SIGN**:** Delete Page 3 Front Elevation dated 07/18/2008 enclosed in the project manual and add Page 3 Front Elevation Dated 2/19/2015 attached, to the project manual and forms a part of the contract documents.

CONSTRUCTION SPECIFICATION:

9. 072100 BUILDING INSULATION: Article 2.01 MATERIALS, Paragraph C. Roof - Vehicle Storage – Rigid (Board) Insulation, Change the word " ROOF " to read " 1" ROOF INSULATION " and after the words " a. 1 Inch Thick: Minimum LTTR 6.0 per inch thickness " Add the words, " 2. Facing Type:, a. ¼" thick gypsum roof board of a silicone treated gypsum core with fiberglass facers. "

10. 072100 BUILDING INSULATION: Article 2.01 MATERIALS, Paragraph D. Vehicle Storage – Interior Liner Panel Insulation, Change the word " Heavy Duty " to read " Metal Building ", Change the word " Celotex " to read " Dow " and Change the word " 4.0 mil (Heavy Duty) " to read " 1.25 mil ".

11. 074113 PREFORMED METAL ROOFING AND SIDING SYSTEM**:** Delete the specification section in the project manual dated REVISED 1/26/2007 (Pages 074113-1 thru 074113-15) and add the attached specification section dated 02/18/2015 (Pages 074113-1 thru 074113-18) to the project manual and forms a part of the contract documents.

12. 133419 PRE-ENGINEERED METAL BUILDING: Article 1.05 SUBMITTALS, Paragraph D. 2. Certificates: After the word " Certificates "Add the words " Metal building manufacturers written certification that they are a member of the AC472 ACCREDITATION PROGRAM. "

13. 133419 PRE-ENGINEERED METAL BUILDING: Article 1.06 QUALITY ASSURANCE, Paragraph A. Manufacturer's Qualifications: After the word " Qualifications "Add the words " The Pre-engineered Metal Building Manufacturer shall be a member of the AC472 ACCREDITATION PROGRAM. "

DRAWINGS:

14. Drawing No. T-001:
    a. CIVIL DRAWINGS: Add to the list of drawings:
       C-504 SITE DETAILS

    b. HEATING DRAWINGS: Add to the list of drawings:
       M-107 OIL PIPING SITE PLAN AND SCHEMATIC

    c. ELECTRIC DRAWINGS: Change drawing " E-102 " to read, " E-102 STORAGE BUILDING FLOOR PLAN ", Change existing drawing E-102 to " E-103 ",Change existing drawing E-103 to " E-104 ",Change existing drawing E-104 to " E-105 ", Change existing drawing E-105 to " E-106 ".

15. Drawing No. C-001
    a. CONSTRUCTION SEQUENCE: Delete Notes 1, 2, & 3 in their entirety, add the following notes to read:

    " **CONSTRUCTION SEQUENCE:**

    PHASE 1 WORK – CONSTRUCTION CONTRACTOR SHALL PROVIDE A DOT TEMPORARY OFFICE TRIALER, LOCATED AS SHOWN ON DRAWING C-104. All CONTRACTORS SHALL PERFORM ALL ASSOCIATED WORK TO CONSTRUCT AND MAKE OPERATIONAL THE OFFICE TRAILER AND STORAGE BUILDING (BUILDING NO.5). PROVIDE TRUCK PARKING SPACES AND POWER CENTERS AS SHOWN ON DRAWING C-104. ALL WORK SHALL BE COMPLETED PRIOR TO STARTING PHASE 2 WORK.
    COORDINATE WORK WITH THE DIRECTOR'S REPRESENTATIVE.

    PHASE 2 WORK – CONSTRUCTION CONTRACTOR SHALL PROVIDE A OGS TEMPORARY OFFICE TRIALER, LOCATED AS SHOWN OR AS DIRECTED BY THE DIRECTOR'S REPRESENTATIVE. All CONTRACTORS SHALL PERFORM ALL ASSOCIATED WORK TO CONSTRUCT AND MAKE OPERATIONAL THE SUB-HEADQUARTERS BUILDING (BUILDING NO.4). ALL WORK SHALL BE COMPLETED PRIOR TO STARTING PHASE 3 WORK.
    COORDINATE WORK WITH THE DIRECTOR'S REPRESENTATIVE.

    PHASE 3 WORK – CONSTRUCTION CONTRACTOR SHALL COMPLETELY DEMO THE 2 STORY OFFICE PORTION OF BUILDING NO. 1 AS INDICATED ON DRAWING C-101. All CONTRACTORS SHALL PERFORM ALL ASSOCIATED UTILITY DISCONNECTOIN WORK TO PERFORM ALL WORK ASSOCIATED WITH PHASE 3 WORK. CONSTRUCTION CONTRACTOR SHALL RELOCATE THE HEATING AND DIESEL TANKS AND MAKE OPERATIONAL. ALL WORK SHALL BE COMPLETELY TESTED FOR FULL OPERATION.
    COORDINATE WORK WITH THE DIRECTOR'S REPRESENTATIVE. "

16. Drawing No. C-104:
    a. SITE GRADING AND LAYOUT PLAN: Add the note " REMOVE EXISTING 10'W X 40'L X 3'H CONCRETE LOADING RAMP IN ITS ENTIRETY. ".

17. Drawing No. A-111:
    a. WINDOW TYPES: Change window type 2 to 3 and change window type 3 to 2.

18. Drawing No. M-503:
    a. DETAIL 2: Delete the words " WIRE MESH and WELDED WIRE FABRIC " and add the words " REBAR GRID ".

    b. Add note to drawing to read " H CONTRACTOR SHALL BE RESPONSIBLE FOR WEATHER PROTECTION, INCLUDING FREEZING OF INFLOOR RADIANT TUBING UNTIL PERIMENT HEAT IS OPERATIONAL. "

19. Drawing No. E-100:
    a. KEYED NOTE NO. 11, Change the words " MANUFACTURED BY MIDWEST ELECTRIC PRODUCTS MODEL NUMBER UO11G " To read " WITH A 2 GANG BOX WITH A LEVITON 5336-I (20A SWITCH LIGHT) AND LEVITON 5361-GY (20A SINGLE RECEPTACLE). "

20. Drawing No. E-100:
    a. KEYED NOTE NO. 12, Change the word " OGS " To read " DOT ".

END OF ADDENDUM

Margaret F. Larkin
Executive Director

SECTION 013200

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.01 RELATED REQUIREMENTS AND INFORMATION SPECIFIED ELSEWHERE

A. Summary of Work: Section 011000.

B. Administrative Requirements: Section 013000.

C. Project Meetings: Section 013119.

1.02 SUMMARY

A. Section includes administrative and procedural requirements to plan, schedule, and document the progress of the Project; realize boundaries and expectations for schedule development and management; and predict and prevent delays to established sequences and milestones during performance of the Work including the following:
   1. Critical Path Method schedule and reports.
   2. Material location and delivery reports.
   3. Field condition reports.
   4. Special reports.
   5. Change management.
   6. Time Impact Recognition and Time Impact Analysis.
   7. As-Planned vs. As-Updated

1.03 SUBMITTALS

A. Waiver of Submittals: The “Waiver of Certain Submittal Requirements” in Section 013300 does not apply to this Section.

B. Submittals Package: Submit required reporting, Scheduling Software files, and quality control submittals as indicated within this or related sections.

C. Schedule Submittals:
   1. CMU 01 Agreement Form

1.04 DEFINITIONS

A. Project: Work to be performed as part of one or more Contracts.

B. Project Team: Persons acting on behalf of the State or Contractors in an effort to successfully plan, schedule, and coordinate the Work of the Project.

C. Schedule: A comprehensive leveling of necessary procedural tasks, the sequencing of those tasks, and the resource allocation required to successfully complete the Work by the Project completion date.

D. Activity: An intricate part of the Work that can be identified and measured for planning, coordinating, monitoring, and controlling the project.

E. Milestone: A significant start or finish to Work on the Project defined by both the Director's Representative and the Contractors.

F. Bid Milestones: Milestones or phases identified and included in the Contract Documents to be utilized by the Contractors in developing the Baseline Project Schedule.

G. CPM: Critical Path Method is a scheduling process used to plan and coordinate the Project, arranging activities based on logical relationships in order to create a network diagram of interconnected procedures.

H. Preliminary Project Schedule: The initial CPM schedule submission capturing, at a minimum, the anticipated Work for the first 90 calendar-days after Project Award, and to be initiated by the Schedule Preparer prior to the Project Schedule Definition Meeting.

I. Baseline Project Schedule: The as-planned CPM schedule for completion of the Work of the Project in accordance with the Contract duration, approved by the Director's Representative and Contractors, and completed by the Schedule Preparer.

1. Following the initial update to the Baseline Project Schedule, including but not limited to starts, finishes, activity percent complete, logic adjustments, or duration amendments, as agreed upon at the Project Schedule meeting by the Project team, the current updated schedule rendering will be defined as the Project Schedule.
2. The Baseline Project Schedule will remain unaltered as a tool to measure progress outlined and anticipated during the Project Schedule Definition meeting and by the Schedule Basis document.

J. Project Schedule Update: The as-updated contemporary view of the Project Schedule, as understood by the Project team at the time of the schedule status, which comprehends the accurate reflection of Work started, progressed, and completed on the Project and the intended path of progress for Work going forward.

K. Schedule Basis: A well-organized, narrative rendering of the Project team's involvement in the development of the as-planned Baseline Project Schedule, documenting key understandings of the Project's scope, risks and threats to Substantial Completion, and the Schedule Management strategy.

L. Narrative Statement: A narrative description of the Project Schedule Update.

M. PDM: Precedence Diagram Method utilizes standard CPM calculations creating an interdependent logical relationship between activities and a dependent path from Project Award through Substantial and Physical Completion.

N. Float: The measure of latitude in starting and/or completing an activity without impeding on the successful realization of Project milestones.
   1. Float time is not for the exclusive use or benefit of either the State or the Contractors, but is a jointly owned expiring Project resource; float is available as needed to meet scheduled milestones and Project completion.
   2. Recognizing float within an activity, or chain of activities, does not permit the Contractors to disrupt progress or delay completion of an activity.

O. Critical Path: A progressing sequence of interdependent activities within the schedule network containing zero (0d) total float and establishing the minimum Project Substantial and Physical Completion duration.

P. Resource: Any labor, material, or equipment, shared or exclusive, required for the completion of an Activity or the Work, which recognizes an associated cost.

Q. OGS Scheduling: A member of the OGS Scheduling Department responsible for analyzing, reviewing, and interpreting schedule related information for the benefit of the Project team and to ensure compliance with this or related sections.

1.05 SCHEDULE PREPARER

A. The Director's Representative will provide a Schedule Preparer for the preparation and coordination of schedule related information for the Preliminary Project Schedule, the Baseline Project Schedule, and all required updates and reporting for the Project Schedule. The Schedule Preparer shall possess a minimum of five (5) years of construction related scheduling experience, shall have developed and maintained at least two (2) schedules for projects of similar size and scope utilizing the State's specified Scheduling Software.

1.06 DEVELOPMENT OF THE PROJECT SCHEDULE

A. The Director's Representative will schedule the Project Schedule Definition Meeting as outlined in Section 013119. The meeting will include members of the Project team and will be conducted by OGS Scheduling for the purpose of reviewing the Schedule Preparer's initial project schedule, defining the intent of the specification, and realizing applicable portions of the Schedule Basis. The discussions and mutual agreements reached at this and subsequent meetings by the Project team will form the basis for the CPM Preliminary Project Schedule and the development of the initial CPM Project Schedule, defined as the Baseline Project Schedule, and will be used for coordinating, scheduling, and monitoring the Work of all related contracts

B. The Schedule Preparer is to complete the Preliminary Project Schedule after the Project Schedule Definition Meeting with input from the Project team and after review of the Contract documents and drawings.

C. The Schedule Preparer is to complete the Baseline Project Schedule with information provided by the Project team after review of the Preliminary Project Schedule, following the Project Schedule Definition Meeting, and submit for review and approval.

1. The Project team will recommend tasks or summaries appropriate to planning, scheduling and coordinating, including but not limited to: establishing a focused work breakdown structure (WBS), phasing requirements, identifying logical connections critical to Substantial and Physical completion, accounting for contract award and critical submittals, fabrication and delivery of long-lead materials, products, specialized equipment or services, and recognizing critical testing, inspection, or commissioning durations for coordination and tracking.

D. The Contractors will sign the CMU 01 Agreement form (blank included at end of this Section) within five (5) calendar-days of final Baseline Project Schedule review and approval by the Director's Representative. Failure to develop and submit the Baseline Project Schedule and sign the CMU 01 Agreement form will not absolve the Contractors of the scheduling requirements. The Contractors will be required to provide the necessary resources, at no additional charge to the State, to complete the Project in the manner defined by a Schedule Preparer acting as a representative of the Project.

E. A Preliminary or Baseline Project Schedule recognizing early completion will be reviewed by members of the Project team prior to acceptance of the Preliminary or Baseline Project Schedule.

F. Bid Milestones included in the Contract Documents are to be incorporated into the project schedule.

G. During the period between Project Award and the execution of the CMU-01 Agreement by the Contractors and the Director's Representative, the Contractors will comply with the Preliminary Project Schedule and will be responsible for providing the necessary resources to complete the Work as defined by the Schedule Preparer.

1.07 UPDATING THE PROJECT SCHEDULE

A. Monthly Project Schedule meetings will be held to review updates to the actual starts, actual finishes, and the percent complete of in-progress activities, and consider logic changes, sequencing alterations, duration amendments, time impact events, and scope changes, for the purpose of determining the status of construction progress on the updated Project Schedule.

1. During the progress of Work on the Project, the Contractors are required to document actual start, actual finish, and activity percent complete on a daily basis, and provide the information to the Schedule Preparer no later than three (3) days prior to the required monthly update, and in the

manner defined by the Schedule Management strategy portion of the Schedule Basis.

2. The Contractors and Director's Representative will review the updated progress at the Project Schedule meeting prior to acceptance of progress information and anticipated work as the Project Schedule Update.
   i. Revisions and comments are to be incorporated within two (2) days of the Project Schedule update meeting, and required reports are to be presented for review.
3. Any Contractor failing to progress their Work as outlined in the updated Project Schedule will be informed of their deficiencies and, if required, be requested to provide a recovery option.
   i. The Schedule Preparer is responsible for incorporating any recovery options as needed by the Contractors for the duration of the Project.

B. The Contractors will furnish all schedule information requested by the Director's Representative and the Schedule Preparer, and as defined in the Schedule Management strategy outlined in the Schedule Basis**.** Any Contractor who fails to furnish accurate information prior to Project Schedule meeting will be required to provide all resources necessary to execute the updated Project Schedule based on progress information documented and recorded by the Director's Representative and submitted to the Schedule Preparer.

C. During the period between scheduled updates, any time impact event due to, but not limited to, a field condition or scope change, is to be noted by the Contractors; the impact is to be represented by the Schedule Preparer, at a minimum, with a milestone event, the time for resolution, and the impact to work.

D. Project Schedule updates recognizing early completion will be reviewed by members of the Project team prior to acceptance of the Project Schedule update.

1.08 MAINTAINING SCHEDULE

A. Perform the Work in accordance with the Project Schedule and provide resources necessary to maintain the progress of activities as scheduled so that no delays are caused to other Contractors engaged in the Work.
   1. Should any Contractor fail to maintain progress according to the Project Schedule, or cause delay to another Contractor, that Contractor shall provide such additional manpower, equipment, additional shifts, or other measures, at their own cost, to bring their operations back on schedule.
   2. Performing activities as part of the Work out of sequence with the Project Schedule is not permitted unless written approval is obtained prior to commencement.

1.09 RECOVERY SCHEDULE

A. CPM Recovery Schedule: When periodic updates indicate the Work is fifteen (15) or more calendar-days behind the approved Baseline Project Schedule's Substantial or Physical Completion dates, the Schedule Preparer will present

recovery options to the Contractors and Director's Representative to be incorporated into an updated Project Schedule by the Schedule Preparer; these include, but are not limited to, allocating additional resources for activity duration reduction, modifying network logic, or revising activity sequences.

B. Any Contractor failing to furnish information to assist in developing recovery options to the Director's Representative and Schedule Preparer, for a CPM Recovery Schedule, within 10 calendar-days subsequent to the monthly Project Schedule update, will be required to provide all resources necessary to execute an updated Project Schedule defined by a the Director's Representative and updated by the Schedule Preparer.

C. Alterations to the Project Schedule by a CPM Recovery Schedule will require approval.

D. Approved alterations to the Project Schedule by a CPM Recovery Schedule, will constitute the updated Project Schedule.
   1. The updated Project Schedule following the implemented CPM Recovery Schedule will be recognized as the primary baseline schedule for reporting. The Baseline Project Schedule will be retained as a secondary baseline schedule and will be utilized to measure progress against the alterations.

E. A CPM Recovery Schedule recognizing early completion will be reviewed by prior to acceptance of the Project Schedule update.

PART 2 PRODUCTS

2.01 SCHEDULING SOFTWARE

A. Scheduling Software: Schedule is to be prepared and managed utilizing Oracle Primavera P6© PPM or EPPM operating system.

PART 3 EXECUTION (Not Used)

END OF SECTION

PROJECT NO. _____

PROJECT NAME: _____

REPORT DATE: _____

REPORT NAME(S): _____

_____

_____

_____

It is agreed that the Baseline Project Schedule defined by the above listed computer reports has been reviewed and is accepted for use in coordinating, scheduling, and monitoring the work of all related contracts.

FOR THE CONSTRUCTION WORK CONTRACTOR: _____ DATE: _____

FOR THE HVAC WORK CONTRACTOR: _____ DATE: _____

FOR THE PLUMBING WORK CONTRACTOR: _____ DATE: _____

FOR THE ELECTRICAL WORK CONTRACTOR: _____ DATE: _____

THE DIRECTOR'S REPRESENTATIVE: _____ DATE: _____

SECTION 015214

DOT FIELD OFFICE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Provide and maintain a field office comprised of new custom built mobile or relocatable office units, new furniture, stair and ramp for the sole use of the DOT's Representative and staff. Include temporary services and accessories necessary for use of the items specified.

1.02 SUBMITTALS

A. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.

B. Shop Drawings:
   1. Site Plan: Show location of field office where directed. Indicate holding tank, utility services, connections and accessible stairs and ramps.

C. Product Data: Catalog sheets, specifications, and installation instructions, for all major items of the field office including furnishings and equipment. Submit within 15 days after award of Contract.

1.03 SCHEDULING

A. Provide units, ready for occupancy by the DOT's Representative and staff, within 30 days after shop drawings specified above are approved.

1.04 QUALITY ASSURANCE

A. Accessibility Requirements: Provide fully accessible units including stairs and ramps that comply with ICC/ANSI A117.1 as referenced by the Building Code of New York State.

B. Provide units and all related utility connections in accordance with the NYS Uniform Fire Prevention and Building Code.

C. Provide certification insignia from New York Department of State that certifies trailer unit is code compliant.

PART 2 PRODUCTS

2.01 MOBILE OR RELOCATABLE OFFICE UNITS

A. Manufacturers/Companies:
   1. ModSpace, 1620 Route 9, Clifton Park, NY 12065-0511, (518) 371-0384, www.modspace.com.
   2. Williams Scotsman, Corporate Headquarters, 8211 Town Center Dr., Baltimore, MD 21236, (800) 782-1500, www.willscot.com.
   3. Anchor Modular Buildings, PO Box 100, Medford, NJ 08055, (866) 396-0227, www.anchormodular.com.

B. Number, Approximate Size and Model:
   1. One, 48 x 10 feet, office unit Model GS-1048 by ModSpace.

C. Office Unit Requirements:
   1. Ceiling Height: 8'-0" minimum.
   2. Insulation: Exceed code required minimums for insulation. If wood frame construction, exceed the following values, walls R - 13, floor, R - 38 and roof R - 38. Provide code requirements and provided insulation values. 3. Exterior Doors: Minimum 2, minimum 34 inches wide, with key-in-lever locksets (U-factor to exceed 0._).
   4. Windows: Approximately 7 percent of exterior wall area with insect screens (U-factor to exceed 0._).
   5. Complete ducted heating, ventilating, and air conditioning system with sufficient capacity to maintain a summer office temperature of 75 degrees F and a winter office temperature of 70 degrees F.
   6. Water Heater: 6 gal minimum.
   7. VCT or sheet vinyl floor finish.
   8. Interior partitions to be wood 2 x 4 framing with ½" vinyl covered gypsum board.
   9. Fluorescent lights in all rooms as required to maintain a minimum of 60-foot candles at desktop level.
   10. Bulletin board (4 feet x 6 feet).
   11. Men's and Women's Toilet room with toilet, grab bars, toilet tissue dispenser, lavatory, built-in medicine cabinet, paper towel dispenser and mirror.
   12. Insulated skirting from bottom of units to grade, around entire unit. Skirting is to be 2' x 4' wood framing with 2" rigid insulation type SM and white ventilated vinyl siding to match unit.
   13. Electric energy and fuel for the duration of the Contract.
   14. Pre-wire unit for voice and data (5 connections each) as shown on approved shop drawings.

2.02 FURNITURE AND EQUIPMENT

A. Furniture:
   1. Two swivel type chairs with arms suitable for use at office desks.
   2. Ten straight back stackable chairs.
   3. Two lockable metal office desk, 30 x 60 inches, double pedestal type with keys.

5. One conference table, 44 x 96 inches.
7. Two lockable 4-drawer letter size file cabinets.
8. One 4'x 6' wall mounted dry erase board.

B. Office Equipment:

1. One Panasonic Voicemail system installed, with programming and maintenance for the duration of the project to handle 3 outside lines and 5 compatible instruments. Provide the instruments and all wiring.
   a. System - Panasonic KX-TDA50 Digital Hybrid IP-PBX with wall rack.
   b. Voicemail System - Panasonic KX-TVA50.
   c. Telephones - Main 2 each KX-T7636.
   e. Provide all wiring between all stations, equipment rack, etc. such that a complete system is installed and operates properly. Maintain the system for the life of the contract.
3. One refrigerated bottled water dispenser,(Hot & Cold Type) with cups, bottled water and necessary supplies. Provide water and cups for duration of contract.
4. One first aid kit.
5. One 15 cubic foot refrigerator, EnergyStar energy efficient model.
6. Fire Extinguisher: Multipurpose Dry-Chemical Type in Steel Container UL-rated 20-A:120-B:C, 20-lb nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container.
7. Security System
   a. Acceptable manufacturer: X10 Wireless Technology, Inc. 19823 58th Place South, Kent, WA 98032, Telephone # 1-800-675-3044, Website address: http://www.x10.com
   b. Acceptable Model: Protector Plus Voice Dialer, 12 piece system, http://www.x10.com/security/ds7000_s_12pc_ps152.html
      1. Base Station Voice Dialer Console for Protector Plus - X10 Model # PS561 - Quantity: 1.
      2. Lamp Module - X10 Model # LM465 - Quantity: 2.
      3. Door/Window Sensor - X10 Model # DS10A - Quantity: 4.
      4. Security Motion Detector - X10 Model # MS10A - Quantity:
      5. Security Remote Control - X10 Model # SH624 - Quantity: 1.
      6. Security Keychain Remote - X10 Model # KR10A - Quantity: 2.
      7. Battery back-up power.
   c. Maintain the system for the life of the contract.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install units where directed. Remove wheels and store them where directed.

B. Provide manufacturer's stair with platform at one exterior door and ramp with platform(s) at one exterior entrance.

C. Provide self-contained sanitary system and maintenance for the life of the contract.

D. Provide self-contained water service for office and maintenance for the life of the contract.

E. Provide electric service to units from nearest available source (100' max). Include 10' above grade 4x4 mast for overhead connections. Retain and pay contractor to do the electrical service and connections.

F. Install security system and set up per manufacturer's instructions.

3.02 MAINTENANCE AND CLEANING

A. Maintain and clean the office units for the duration of this Contract. Include the following:
   1. Daily removal of rubbish.
   2. Daily cleaning of toilet room, including the plumbing fixtures. Replenish toilet room supplies as needed.
   3. Weekly mopping of floors.
   4. Weekly dusting of offices and other rooms.
   5. Weekly pump sanitary holding tank system.
   6. Weekly fill water tank system.

B. Maintain approaches free of mud and snow.

C. Protect water lines from freezing.

3.03 OWNERSHIP

A. Relocate units and ramps on facility property as directed. Extend electrical and sanitary services as required. Modify ramp as required by conditions at new location.

END OF SECTION

SECTION 074113

PREFORMED METAL ROOFING AND SIDING SYSTEM

PART 1 GENERAL

1.01 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

A. The following items will be furnished under HVAC Contract for installation under this Contract:
   1. Storm collars for prefabricated chimney.
   2. Mechanical equipment curbs.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Fluted Steel Decks: Section 053100.

B. Building Insulation: Section 072100.

C. Flashing And Trim: Section 076000.

E. Gutters And Downspouts: Section 077123.

F. Joint Sealers: Section 079200.

1.03 DEFINITIONS

A. Company Field Advisor: An employee of the Company which lists and markets the primary components of the system under their name who is certified in writing by the Company to be technically qualified in design, installation, and servicing of the required products or an employee of an organization certified by the foregoing Company to be technically qualified in design, installation, and servicing of the required products.

B. Concentrated Loads: Positive downward acting, localized loads.

C. Uniform Design Loads: Positive downward acting loads and negative upward acting loads specified in this section, including wind uplift and snow loads.

D. Test Loads: The ultimate uniform test load at which each element of the standing seam roof system fails.

E. Allowable loads: The ultimate tested load on each element of the roof system divided by the appropriate safety factor for the failure mode being evaluated. Allowable loads may be increased by 1/3 for wind loading only.
   1. For yielding type failure modes such as panel buckling, use a factor of safety of 2.0.

2. For connection related failure modes such as fastener withdrawal, clip failure, panel disengagement from clip and seam failure, use a factor of safety of 2.5.
   a. For fastener withdrawal use a leverage factor of 2 in addition to a safety factor of 2.5.

F. Hydrostatic Joinery: Watertight joints that can withstand a static head of water without leaking. Flashings shall contain hydrostatic joinery, with no joint dependant on exterior sealants for water tightness at panel to panel, flashing to flashing or flashing to panel transitions.

1.04 SYSTEMS DESCRIPTION

A. Preformed Metal Roofing System: Structural standing seam roof panels with concealed clips and spreader plates installed over rigid insulation, vapor retarder and a structural deck. The system includes all related metal flashings and concealed flashings.

B. Preformed Metal Siding System: Interlocking siding panels formed with stiffening ribs and secured with exterior concealed fasteners to metal framing and furring.

C. Preformed Metal Soffit System: Interlocking, perforated soffit panels secured with concealed fasteners.

1.05 PERFORMANCE REQUIREMENTS

A. UL Wind Uplift Rating: Minimum UL class 90 rated roofing systems tested in accordance with UL 580 test method.

B. Standard Test Method for Water Penetration: ASTM E2140-01 Standard Test Method for Water Penetration of Metal Roof Panel System by static water pressure head. (Hydrostatic Roof System Test)

C. Concentrated Roof Loads: The panels shall withstand a 250 pound concentrated load applied to a four square inch area located at the center of the panel and at the center of the maximum span without any sign of permanent panel deformation, rib buckling, or panel sidelap separation.

D. Uniform Roof Design Loads:
   1. The roofing system shall safely resist the positive and negative loads specified below, plus the appropriate safety factors, when tested in accordance with the principles of ASTM E 1592-01. Installed roof system shall withstand negative wind uplift pressures complying with the following criteria:
      a. The Component and Cladding Chart shown on Drawing S-201 of the Contract Documents or Design Code: ASCE-7, Method 2 for Components and Cladding
      b. Safety Factor: 4.0 after any load reduction or material stress increase

c. Building Category: 1 with an importance factor of 1.0
d. Wind Speed: 90 mph
e. Exposure Category: C
f. Mean Roof Height: +/- 26'-0"
g. Minimum Building Width: As shown on the Contract Documents
h. Roof Pitch: 2 inches per 12"

2. Add appropriate drifting snow factor to positive (+) snow loads specified, in accordance with ASCE 7-02.
3. The width of the high pressure zones 2 and 3(corners, rakes, eaves, ridges and hips) that may require additional clips to resist the negative (-) loads specified shall be as shown on the Component and Cladding Chart on Drawing S-201 of the Contract Documents.

E. Test Performance Criteria For Uniform Roof Design Loads:
1. The roof system when tested in accordance with the specified test methods, must meet the following conditions:
a. The ultimate test loads must be sustained for at least one minute.
b. There are no signs of permanent panel deformation, rib buckling, sidelap separation, tearing, cracking, rupture, clip disengagement, or other evidence of permanent distortion.
c. Fasteners shall remain secure and maintain the securement of the connected components and show no sign of deformation or loosening.
d. Deflection Limitations: Maximum L/140 for negative uniform loads and maximum L/180 for positive uniform loads.
2. Design capacity for conditions of gauge, span or loading other than those tested may be determined by the interpolation of test results in accordance with the AISI Cold Formed Steel Manual. Extrapolation outside the range of the tests is not acceptable.

F. Uniform Siding and Soffit Design Loads: The uniform load capacity of the siding and soffit systems shall safely resist a positive and negative load requirement listed in Zone 4 and Zone 5 as shown below.
a. The Component and Cladding Chart shown on Drawing S-201 of the Contract Documents or Design Code: ASCE-7, Method 2 for Components and Cladding.

G. Air Infiltration: No more than 0.0036 CFM at 20 PSF when tested in accordance with ASTM E 1680-95.

H. Water Penetration: None, when tested at 20 PSF for 15 minutes in accordance with ASTM E 1646-95.

I. Thermal Expansion: The system including all flashings, shall allow for expansion and contraction within a minimum ambient temperature range of 200 degrees F.

J. Metal panel assembly shall be listed with Underwriter's Laboratories as a Class "A" roof system with regards to their resistance to external flame sources.

K. Metal panels shall be listed with Underwriter's Laboratories as Class 4 Hail resistant panels.

1.06 SUBMITTALS

A. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.

B. Submittals: Submit product data, samples, all the items listed under Quality Control Submittals, and any proposed deviations from the Contract Documents, at the same time as one complete package. Partial submittals will not be considered.

1. Proposed Deviations From The Contract Documents: To be considered for approval, proposed deviations must be submitted with the initial submittal package. Proposed deviations submitted after the initial submittals package is approved will not be considered or approved and may be cause for rejection of the previously approved manufacturer or system.
2. Product Data: Catalog sheets, specifications, load tables, and installation instructions for each material specified.
   a. Contract Documents: Unless approved otherwise, the Contract Documents have precedence over manufacturer's details and specifications except when a specific detail or condition is not addressed in the Contract Documents.
   b. Manufacturer's Details: Do not use or submit manufacturer's details unless there is an omission or proposed deviation from the Contract Documents. In such instances, submit the proposed detail for approval. The proposed detail shall be referenced directly to the related detail on the Contract Drawings.
   c. Manufacturer's Specifications: When there is a proposed deviation from the Specifications of the Contract Documents, submit the proposed deviation for approval. The proposed deviation shall be referenced directly to the related article in the Contract Specifications.
   d. Manufacturer's Warranty: Sample copy of the metal roof system manufacturer's single source 20 year no leak warranty and 20 year finish warranty, covering workmanship and materials.

C. Samples:

1. Roof Panel: Full panel width, 12 inches long.
2. Siding Panel: Full panel width, 12 inches long.
3. Soffit Panel: Full panel width, 12 inches long, each type.
4. Fasteners: 1 of each type.
7. Warranty: Copy of printed warranty applicable to this project.
8. Color Samples: Panel manufacturer's standard range of colors for finish specified.

D. Shop Drawings: Show fabrication and installation details and methods of joining and fastening panels, fastener spacing, flashings, curbs, snow guards and other accessories in accordance with the Contract Documents and approved deviations

(if any). Shop drawings shall be prepared by the metal roof and siding panel manufacturer. All shop drawings to be stamped and sealed by an engineer employed by the metal roof manufacturer and shall be registered in the state of New York.

a. Show the location and spacing of the concealed clips and bearing plates as required to resist the uniform roof design loads.
b. Show the location and spacing required at; main roof, eaves, rakes, roof ends and corners.
c. Concealed clips and bearing plates spacing not to exceed 4'-0" on center maximum.
d. Show the location and spacing of the snow guards.

E. Quality Control Submittals:

1. Test Reports:
   a. UL Wind Uplift Rating: Statement certifying that the roof system has been tested in conjunction with the type of structural roof deck and roof slope applicable to the project and has achieved a UL 90 Wind Uplift rating. Acceptable certification: Letter from UL or a copy of the UL classification listing for the roofing system.
   b. Test Report of ASTM E 1592-01: Test report written and signed by a professional engineer from a recognized independent test laboratory listing the complete documentation and test results. Include a letter certifying that the roof system as tested, meets or exceeds the specified uniform design loads.
   c. Air and Water Infiltration Tests: Statement certifying that the roof system has been tested in accordance with the specified test procedure and that the specified minimum requirements have been achieved.
2. Summary Report: In addition to the test reports specified above, submit a separate Summary Report as follows:
   a. Failure Mode(s) and Ultimate Test Load(s):
      1) Permanent panel deformation at: + PSF - PSF.
      2) Seam failure at: + PSF - PSF
      3) Panel disengagement from clip: + PSF - PSF.
      4) Clip failure: + PSF - PSF.
      5) Fastener withdrawal: + PSF - PSF.
   b. Allowable loads (including safety factors and a 1/3 increase for negative (-) wind loads):
      1) For yielding type failures: (ultimate test load divided by safety factor of 2) + PSF - PSF.
      2) For connection related failure modes: (ultimate test load divided by safety factor of 2.5) + PSF - PSF.
      3) The allowable loads are ( ) greater than, ( ) less than the design loads.
   c. Maximum allowable clip spacing at:
      Zone 1) Main roof = on center.
      Zone 2) Ridge, eave, rake = on center.
      Zone 3) Roof corners = on center.

d. Fastener manufacturer's ultimate fastener withdrawal value for the type of fastener submitted:
   1) Steel deck (20 gage) = Lbs.

e. Allowable fastener load per fastener including factor of safety of 2.5 and a leverage factor of 2 (ultimate load divided by rib spacing, divided by clip spacing, divided by factor of safety, divided by leverage factor):
   1) Steel deck (20 gage) = Lbs.

3. Fixed point calculations: Provide calculations and a written statement certifying that the strength of the fixed point is adequate to resist sliding forces, including snow and panel weight loads.

4. Manufacturer's Qualifications Data:
   a. Certified statement that the metal roofing system manufacturer has been actively marketing the proposed standing seam metal roofing system for a minimum of 5 years.
   b. If requested, submit the names and addresses of 5 previous standing seam metal roofing projects of the type specified herein. Include the size of each project, and name and telephone number of a contact person at the project location.

5. Installer's Qualifications Data:
   a. Statement from the roof system manufacturer certifying that the installer is licensed or approved to install the roof system.
   b. Statement certifying that the installer has been actively installing concealed clip standing seam metal roofing systems for a minimum of 5 years.
   c. If requested, the names and addresses of 5 previous standing seam metal roofing projects of the type specified. Include the size of each project, the metal roofing manufacturer's name, and the name and telephone number of a contact person at the project location.
   d. Statement certifying that the supervisor, job foreman or crew chief and the workers installing the standing seam metal roofing system are qualified architectural sheet metal workers and have had a minimum of 3 years experience in the installation of concealed clip standing seam metal roofing systems.

6. Company Field Advisor Data:
   a. Name, business address and telephone number of Company Field Advisor secured for the required services.
   b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
   c. Services for which authorization is given by the Company, listed specifically for this Project.

F. Maintenance Data: For metal roof panels to include in maintenance manuals.

G. Contract Closeout Submittals:
   1. Warranties: Specified warranties.

1.07 QUALITY ASSURANCE

A. Manufacturer's Qualifications:
   1. The manufacturer shall have been actively marketing the proposed concealed clip standing seam metal roofing system for a minimum of 5 years.
   2. The proposed metal roofing system shall have previously been installed on a minimum of 5 roofing projects of comparable scope and complexity to the Work of this Section.

B. Installer's Qualifications:
   1. The installer shall be licensed or approved by the metal roof system manufacturer.
   2. The installer shall have been actively installing concealed clip metal roofing systems for a minimum of 5 years.
   3. The installer shall have previously installed and completed a minimum of 5 concealed clip metal roofing projects of comparable scope and complexity to the Work of this Section.
   4. The people supervising the Work of this Section, the job foreman or crew chief, and the workers installing the metal roofing system, must be qualified architectural sheet metal workers and shall have had a minimum 3 years of experience in the installation of concealed clip metal roofing systems.

C. Source Limitations: Obtain metal roofing or siding system through one source from a single Manufacturer.

D. Field Example: Prior to installation of the Work of this Section, construct a roofing and siding assembly example at the Site. When approved, the example will be the standard of workmanship required for all metal roofing and siding assemblies. The field example will be field fabricated.
   1. Construct a 4 foot long x 3 foot wide outside corner assembly that shows the eave, rake, ridge, fascia, soffit and siding details and their relationship and connection to each other. Permanently fasten the parts in their proper locations.
   2. Do not start the metal roofing and siding until the example assembly has been approved in writing by the Director's Representative.
   3. Maintain the approved example assembly intact until all metal roofing and siding has been installed and approved, then remove the example assembly from the site.

E. Pre-Installation Conference: Prior to commencement of the roofing work, a conference will be scheduled by the Director's Representative at the site to review the Drawings and Specifications and resolve questions. The conference shall be attended by the Contractor, the authorized system installer, the person supervising the Work, the job foreman or crew chief, and the Company Field Advisor. OGS designers and facility personnel may attend.

1.08 SIDING AND ROOFING MANUFACTURER'S COMPANY FIELD ADVISOR

A. The manufacturer of the siding and roofing system, issuing the final system guarantee on this siding and roofing project, must supply a Company Field Advisor, as a technical representative, with the following minimum qualifications:
   1. Documentation of 5 years of field experience on the same type of roofing system.
   2. Documentation of 10 projects where role was a Company Field Advisor; include contact names and phone numbers for each project.
   3. Documentation of attendance at a roof specific instructional seminar within the last two years.

B. Secure the services of the Company Field Advisor for a minimum of 8 days at a minimum of 4 hours per day to inspect the workmanship of the roofing system installer.

C. Company Field Advisor Duties and Responsibilities:
   1. Become familiar with the Contract Documents and approved submittals prior to the pre-siding and roofing conference.
   2. Attend the pre-siding and roofing conference and the beginning of the actual membrane installation for the purpose of:
      a. Rendering technical assistance to the Contractor regarding installation procedures of the system.
      b. Familiarizing the Director's Representative with all aspects of the system including inspection techniques.
      c. Answering questions that might arise.
   3. Attend each bi-weekly meeting.
   4. Be objective, unbiased and impartial in each inspection, recommendation, conversation, action and written report.
      a. Inspect and approve the existing substrate, flashing, blocking, and related materials as being acceptable for the installation of the roofing system.
      b. Ensure proper fastening patterns and fastener sizes of wood blocking, insulation, edge flashing, and related components.
   5. Immediately report non-compliant conditions, if any, to the Director's Representative.
   6. Provide to the Director's Representative a written report, submitted prior to leaving the Project Site each day the Company Field Advisor is present. Each daily written report shall contain at a minimum:
      a. Date of report and inspection.
      b. Weather conditions at the start, middle, and end of the work day.
      c. Work performed including Contractor activity, contractor crew size, supervisor's name, area of activity, and progress and quality of the work as observed.
      d. Discussions with Contractor regarding work anomalies and resolution.
      e. Conditions that are not in compliance with the Contract documents.
         1) Continue documenting non-compliance issues in subsequent reports until the issue has been resolved.

Document resolution of non-compliance issues when resolved.

7. Report to the Director's Representative in writing failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
8. Confirm, after completion of the siding and roofing work and based on the Company Field Advisor's inspections and tests, that the Company Field Advisor has observed no applications procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Store metal panels flat on slightly sloped, raised platforms. Store preformed and prefinished materials in a manner that will prevent twisting, bending or abrasion.

B. Handle materials by methods which will prevent damage to components, including finishes.

C. Lift up prefinished panels when unstacking; do not slide.

D. Remove damaged or permanently stained materials from the site.

1.10 PROJECT CONDITIONS

A. Unless directed otherwise, do not execute the Work of this Section unless the Director's Representative is present.

B. Do not install the Work of this Section unless the substrate is dry and free of dirt and debris.

1.11 WARRANTY

A. Warranty Extension: The one year period required by Paragraph 9.8 of the General Conditions is extended to 2 years for the Work of this Section. Refer to Supplementary Conditions 007306.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal roof panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Finish: Deterioration includes, but is not limited to, the following:
      a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
      b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
      c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
      d. Finish Warranty Period: 20 years from date of final Completion.

C. Manufacturer's Warranty:

1. Furnish a single source warranty issued by the roofing system manufacturer for the Work of this Section as follows:
   a. Twenty year, no leak weather tightness warranty covering workmanship and all materials provided by the metal roof manufacturer.
   b. Twenty Year Finish Warranty for all elements of the roofing and siding systems including, but not limited to; corrosion, rust, finish durability, and other defects which would impair the aesthetic or waterproofing properties of the roofing and siding system.
   c. The warranty shall include, but not be limited to; repair and/or replacement of the roofing and siding panels, gable and eave trim, flashings, penetrations, underlayments and as necessary to correct defects in materials or workmanship.
   d. The warranty shall include, but not be limited to, repair of leakage and the repair and/or replacement of the roofing system as necessary to correct defects or damage caused by wind speeds less than 72 MPH.

D. Warranties shall commence on the date of completion of the roof when accepted.

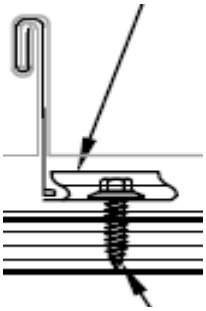
PART 2 PRODUCTS

2.01 MATERIALS

A. Structural Standing Seam Roof Panels: Prefinished, , 24 gauge minimum ASTM A 653/A 653M; AZ55 galvalume, fabricated from “tension leveled” coil stock and meeting the following criteria;
   1. “Oil Canning”: Excessive oil canning in individual roof panels or throughout the roof area is not permitted, however minor oil canning that is not readily apparent to the eye and does not detract from the aesthetic look of the building is acceptable provided that it only occurs on a minimum number of panels. Acceptance or rejection of individual roof panels or the finished roof based on oil canning will be at the sole discretion of The Director’s Representative.
   2. Panel Width: 16 inches.
   3. Panel Length: Continuous up to 40 feet with no end laps. Runs over 40 feet may have one end lap.
   4. Stiffening Ribs: The panels must be formed with stiffening ribs, but the ribs must be small enough to allow the panel to be bent over the roof edge to form a hem with an inside bend of 2T without distorting or cracking the rib or paint finish.
   5. Seam Configuration: Form the seams with vertical ribs at 90 degrees to the panel face. Acceptable seam types are as follows:

      a. Mechanically Finished Seam: The ribs shall be a minimum of 2 inches high and designed so that the panels can be securely interlocked to each other with an electric seaming machine.

Provide factory applied in-seam sealant. Trapezoidal shaped seams are not allowed.
Acceptable Seam Configurations



C. Wall Panel:
   1. Prefinished, 22 gauge min, to meet the maximum deflection limit of L/360, AZ55 galvalume, steel sheet ASTM A 792, fabricated from "tension leveled" coil stock, continuous up to 40 feet with no endlaps.
   2. "Oil Canning": Excessive oil canning in individual wall panels or throughout the all area is not permitted, however minor oil canning that is not readily apparent to the eye and does not detract from the aesthetic look of the building is acceptable provided that it only occurs on a minimum number of panels. Acceptance or rejection of individual wall panels or the finished wall based on oil canning is at the sole discretion of the Director's Representative.
   3. Covering Width: 16 inch maximum.
   4. Seam Design (Sidejoint): Interlocking side ribs.
   5. Cross Section Profile:
      a. 3 inch deep with alternating high and low planes at 5 to 6 inch on center. (Shadow Rib or equal)
   6. Panel Length: Continuous with no end laps. Shop cut the bottom of the panel so the finished edge is straight and 90 degrees to the panel seams. Field cutting of the bottom edge will not be allowed.
   7. Attachment to Supporting Members: Exterior Concealed fasteners.

D. Soffit: Perforated or Solid prefinished, 24 gage AZ55 galvalume ASTM A 792 steel panels. Soffit panels shall be manufactured by the roof panel manufacturer. See Drawings for locations of perforated panels.
   1. Panel Width: 12 inches maximum.
   2. Panel Length: As required to run perpendicular to the building wall.
   3. Seam Configuration: Form the panel with a flush joint design and interlocking seams with flanges for concealed fastening.

E. Finish: Full strength 70 percent Kynar 500 Fluorocarbon Coating (polyvinyldene fluoride, PVF) applied by the coil coating process. Minimum dry film thickness .9 mil.
   1. Cover concealed side with the manufacturer's standard protective finish.

F. Concealed Clips:
   1. Two Piece Clips: Provide the panel manufacturer's two piece clip designed to allow maximum expansion and contraction of the roof

relative to the structure within a minimum ambient temperature range of 200 degrees F.

a. The top floating portion of the clip shall move without binding on the bottom portion of the clip. The clip shall also have a centering indent or other means of centering the floating portion of the clip.

b. The clip shall support the pan section of the metal roofing panels so that the panel does not come in contact with the clip mounting screws.

G. Bearing Plates: Roof panel manufacturer's 16 gage galvanized steel plates. Minimum 6 inches square with 2 predrilled fastener holes to mate with holes in clip.

H. Blocking At Eaves and Ridge: 5/4 x pressure treated wood blocking. Blocking shall finish flush with the top of the insulation.

I. Concealed Fasteners:

1. For Securing All Components Of The Metal Roof System To Light Gage Sheet Metal (14 gage, .0747" and lighter):

a. No. 14 Type A sheet metal screws manufactured of H3 or 300 Series stainless steel with cadmium plating. Holes shall be pre-drilled with a twist drill recommended by the fastener manufacturer for the total material thickness. As an alternate #14 diameter, 410 stainless steel self-drilling fasteners with cadmium plating may be used. Where two fasteners are required per clip, #12 diameter fasteners are acceptable.

b. Fasteners shall penetrate the underside of the steel deck a minimum of 1/2 inch.

2. For Securing All Components Of The Metal Roof System To Structural Steel and Sheet Metal (13 gage .0897 inch and heavier):

a. Type B fasteners manufactured of H3 or 300 Series stainless steel with cadmium plating. Pre-drill holes with a No. 1 twist drill.

b. Fasteners shall penetrate through the structural steel a minimum of 1/2 inch.

3. For Securing Vapor Retarder Underlayment to The Structural Deck: Hardened, self-tapping, Phillips pan head screws with 3 inch round, square or hexagonal steel stress plates.

J. Exposed Fasteners:

1. For Securing All Components Of The Metal Roof System, Except Panel End Laps, To Wood Blocking, Framing, Plywood, Structural Steel and Sheet Metal:

a. Type A Fasteners: Manufactured of H3 or 300 series stainless steel with cadmium plating. Fasteners shall have a minimum diameter of #14.

1) For weather tightness, fasteners shall have an aluminum or stainless steel dish type washer with hot bonded EPDM or neoprene faces. Aluminum or stainless steel

shall be a minimum thickness of 20 gage. EPDM or neoprene shall have a minimum thickness of .065 inch. The minimum outside diameter of the sealing washer shall be 5/8 inch.

2. For Securing Sheet Metal To Sheet Metal, one of the following as indicated on the Drawings:
   a. Rivets: Stainless steel, minimum diameter 3/16 inch.
   b. Type A Fasteners; Manufactured of H3 or 300 series stainless steel with cadmium plating. Fasteners shall have a minimum diameter of #14.
      1) For weather tightness, fasteners shall have an aluminum or stainless steel dish type washer with hot bonded EPDM or neoprene faces. Aluminum or stainless steel shall be a minimum thickness of 20 gage. EPDM or neoprene shall have a minimum thickness of .065 inch. The minimum outside diameter of the sealing washer shall be 5/8 inch.
3. For Securing Roof Panel End Laps: Molly Type Fasteners.
   a. Acceptable Products: "Fab-Lok" fasteners by ABE Specialty Fastening Solutions, 1313 Copeland Oaks Drive, Morrisville, NC 27560 (866) 404-2291, www.aboveboardelectronics.com; or "Bulb-Tite" blind rivets by Bolt Products Inc., 16725 East Johnson Dr., City of Industry, CA 91745 (800) 423-6503, www.boltproducts.com.
4. Color Finish for Exposed Surfaces of Fasteners: Paint all fasteners to match color of panels, trim, and accessories being fastened.

K. Sealant:
1. Exposed Sealant: ASTM C 920; elastomeric polyurethane sealant; of type, grade, class, and use classifications required to seal joints in metal roof panels and remain watertight; and as recommended in writing by metal roof panel manufacturer. Color to match metal panel as close as possible.
2. Concealed Sealant:
   a. Preformed Tape Sealant: Pressure-sensitive, 99 percent solids, gray butyl rubber compound sealant tape with release-paper backing. Provide permanently elastic, non-sag, nontoxic, non-staining tape 1 inch wide and 1/16 inch thick minimum containing nylon spacer beads
   b. Type 3 Sealant: One part butyl rubber sealant specified in Section 079200.

L. Flashings and Trim:
1. Metal Flashings and Trim: Prefinished, 24 gage galvalume steel panels ASTM A 792.
   a. Panels for flashing and trim shall be manufactured by the roof panel manufacturer.
   b. Color and finish of flashings and trim shall be the same as the roof panels.
2. Round Projections: Premolded EPDM boot with malleable metal collar.

a. Acceptable Product: "Dektite" by ITW Buildex, 1349 West Bryn Mawr Ave., Itasca, IL 60143, (800) 284-5339, www.itwbuildex.com

3. Ridge Vent: Factory fabricated 20 gage AZ55 galvalume steel with 10.8 sq. in. free area per linear foot closure and non-woven modified polyester weather filter.

a. Acceptable Product: Prevent by Metalic Products Corporation, 7777 Hollister, Houston, TX 77040, (800) 356-7746, www.mpvent.com

Q. Composite Vapor Retarder / Slip Sheet: Self adhering, self sealing, modified rubber asphalt sheet membrane and integral top face of polyolefin or woven polyethylene with manufacturer's primer for masonry surfaces where applicable.

1. Acceptable Products: "WIP 300HT"by Carlisle Residential, 1285 Ritner Highway, Carlisle, PA 888-717-1440, www.carlisleresidential.com or "Clad-Gard SA-S" by Firestone Building Products Co., 250 W 96th Street, Indianapolis, IN 46260, 800-428-4442, www.firestonebppco.com.

R. Mechanically Attached Snow Guards: Aluminum, non-penetrating clamps devices which are secured to the standing seams of metal roofs utilizing stainless steel round point set screws to clamp them in place. Use no glue or sealants to attach. Design, location and quanity of snow guards shall be determined by a engineer licensed in New York State and employed by the snow guard manufacturer.

1. Acceptable Products: "ColorGard S-5" by Metal Roof Innovations, Ltd., 8655 Table Butte Road, Colorado Springs, CO 80908, (888) 825-3432, www.s-5.com or "Sno Barricade" by Snow Gem, 4800 Metalmaster Way, McHenry, IL 60050, (888) 766-4367, www.snogem.com.

S. Touch Up Paint: Panel manufacturers recommended paint compatible with the panel finish. Color to match the exposed surfaces.

T. Foam Closures: Factory precut closed cell foam meeting ASTM D1056, matching roofing and siding panel profile when used at ridge, rakes, head, jambs, bottoms and tops of siding panels.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine surfaces to receive the metal roofing system for defects that will adversely affect the execution and quality of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

A. Install the Work of this Section in accordance with the Contract Documents, the approved shop drawings and approved deviations (if any) from the Contract Documents.

1. Coordinate the installation of the metal roofing system with other Work of the Contract.
2. Install the Work of this Section so the system is secure, watertight, plumb, and straight and true to adjacent work.
3. Exposed metal shall be free of visible dents, scratches, tool marks, cuts, and other imperfections.
4. Paint to match adjacent surfaces, all exposed edges of metal roof panels and flashings which have been cut to install the work of this Section.
5. The type and size of power screwdrivers used shall be properly matched to the fastener and shall be equipped with depth sensing nose pieces and slip clutches to prevent overdriving and stripping. Use the fastener manufacturer's recommended power screwdriver.
6. Use sealing washers at all locations on the roof panels and roof flashings where exposed fasteners are required. Do not use sealing washers on vertical siding panels or siding trim.
7. To prevent fastener heads from coming in contact with the underside of the metal panels at the eaves and rakes, form the trim with a 1/4 inch deep step down where the fasteners are to be installed.

B. Installing Wood Blocking At Eaves, Rakes, Ridges, and Base Flashings: Install wood blocking as indicated on the Drawings. Secure the wood blocking through the structural deck to the framing members, and to the structural deck one foot on center.

C. Installing Composite Vapor Retarder / Slip Sheet:

1. On steel decks the vapor retarder must be installed the same day the underlayment board is installed. Unprotected underlayment board will not be allowed.
2. Install the vapor retarder over the entire surface of the underlayment board. Follow the manufacturer's installation instructions. Unsealed lap joints and holes which will allow the passage of air or moisture will not be allowed.
3. Install the vapor retarder so that the flow of water is not against the edges of the sheets. Lap edges and ends a minimum of 3 inches.
4. Broom the surface of the sheets to insure that the vapor retarder is firmly attached to the substrate and that all lap joints are sealed.
5. Lap the vapor retarder over ridges, hips and valleys.
6. Repair punctures and other defects immediately.
7. Install composite vapor retarder / slip sheet over the underlayment board over the entire roof area and up walls, parapets, curbs and other roof accessories a minimum of 8 inches.

D. Installing Spreader Plates and Concealed Clips:

1. Secure the concealed clips and spreader plates to the structural deck at the center line of each panel joint. Accurately align the clips so that the panels will not be distorted when they are secured to the clips.
    a. Secure each clip and spreader plate with 2 fasteners.
    b. Two Piece Clips: Center the top floating portion of the clip in the base to allow for maximum expansion and contraction of the panels in each direction.

E. Installing Metal Roof Panels:
1. Layout the panels so that the standing seams of the end panels at each rake are equidistant from each end.
2. Install the panels so they are in straight alignment, and free of buckles or distortions.
    a. Maximum lateral camber per panel is not to exceed 1/2 inch in 100 feet.
3. Install all panels up to 40 feet long in one continuous length from eave to ridge.
    a. Panels over 40 feet long may have one end lap per panel.
    b. Stagger end laps 2 feet apart, lap ends a min of 6 inches.
    c. At end laps, apply 1 inch wide preformed butyl tape over holes and studs on lower panel. Apply butyl sealant along the notched area on the lower panel before placing the upper panel. Position the upper panel in proper alignment and firmly press the panel end to insure that the tape makes a watertight seal. Secure the panels together and to a 16 gage, 4 inch wide galvanized steel splice plate with 4 fasteners equally spaced apart.
4. Securely interlock adjoining panels to each other. Where machine seaming is required, use the type of seamer recommended by the manufacturer for the specific type seam.
    a. The finished seam shall be vertical to the panel face with no buckles, wrinkles, or distortions.
5. Except where shown or specified otherwise, do not rigidly fasten panels to the deck or to structural members.
6. Fixed Securement Point:
    a. The fixed securement point of the panels shall be at the eave.

F. Hydrostatic Eave Flashing:
1. Set panel in run of butyl tape set over eave flashing. Fasten through panel, butyl tape, and eave flashing into structural member or wood blocking below. Use a minimum 4 fasteners per panel.

G. Ridges and Hips: Allow for panel expansion provisions at ridge cap detail.
1. Apply 1 inch wide sealant tape on the top and bottom flanges of the closure. Set the tape 1/4 inch in from the finished edges of the closure.
2. Fasten the panel closure to the metal panels and compression plate on the concealed side of the panel closure with a minimum of 4 Type A fasteners between the ribs of each roof panel.
3. Secure the ridge cap to the panel closure with 3 fasteners per panel.
4. Apply urethane sealant around all four sides of the closure.

H. Installing Roof Flashings, Trim, and Accessories:

1. Form and install flashings, trim, and accessories as detailed and specified in the contract documents unless approved otherwise by the Director.
2. Do not fasten flashings, trim, or accessories, in any way that will restrict differential movement caused by expansion and contraction.
3. Installing Valley Flashings: Set panel in run of double-sided-adhesive butyl tape set over valley flashing. Fasten through panel, butyl tape, and valley flashing into structural member to wood blocking below. Use a minimum 4 fasteners per panel.
4. Installing Metal Panel Closures: Where metal panel closures are required, form the closures to fit snugly against all adjoining surfaces so there are no gaps.
   a. Base Flashing Closures:
      1) When panel closures are installed parallel to the slope of the roof, lap the ends so they are not against the flow of water.
      2) Apply one inch wide sealant tape between end laps and on all surfaces of the panel closure that will be in contact with adjoining surfaces. Set the tape 1/4 inch in from the finished edges of the panel closure.
      3) Fasten the panel closure to the metal panels on the concealed side of the panel closure with a minimum of 4 fasteners. Fasten the vertical leg of the panel closure at the ends.
      4) Apply 1”butyl tape sealant along the concealed edges of the panel closure. Remove excess sealant.
5. Installing Hydrostatic Rake Flashings:
   a. Allow for rake to move with the panel system. Ensure hydrostatic seal along rake-to-panel transition.

I. Installing Siding Panels:

1. Install the panels in one continuous length. Install the panels in straight vertical plumb alignment, free of buckles or distortions.
2. Fasten the panels with exterior concealed fasteners as recommended by the panel manufacturer, and as indicated on the Drawings.
3. Install flashings and trim for siding panels as indicated and specified, unless approved otherwise by the Director.

J. Installing Soffit Panels:

1. Install the panels perpendicular to the building wall. Install the panels free of buckles or distortion.
2. Fasten the panels with concealed fasteners as recommended by the panel manufacturer, and as indicated.
3. Install flashings and trim for soffit panels as indicated and specified, unless approved otherwise by the Director.

K. Installing Snow Guards: Install snow guards in accordance with the manufacturer’s recommendations.

3.03 ADJUSTING

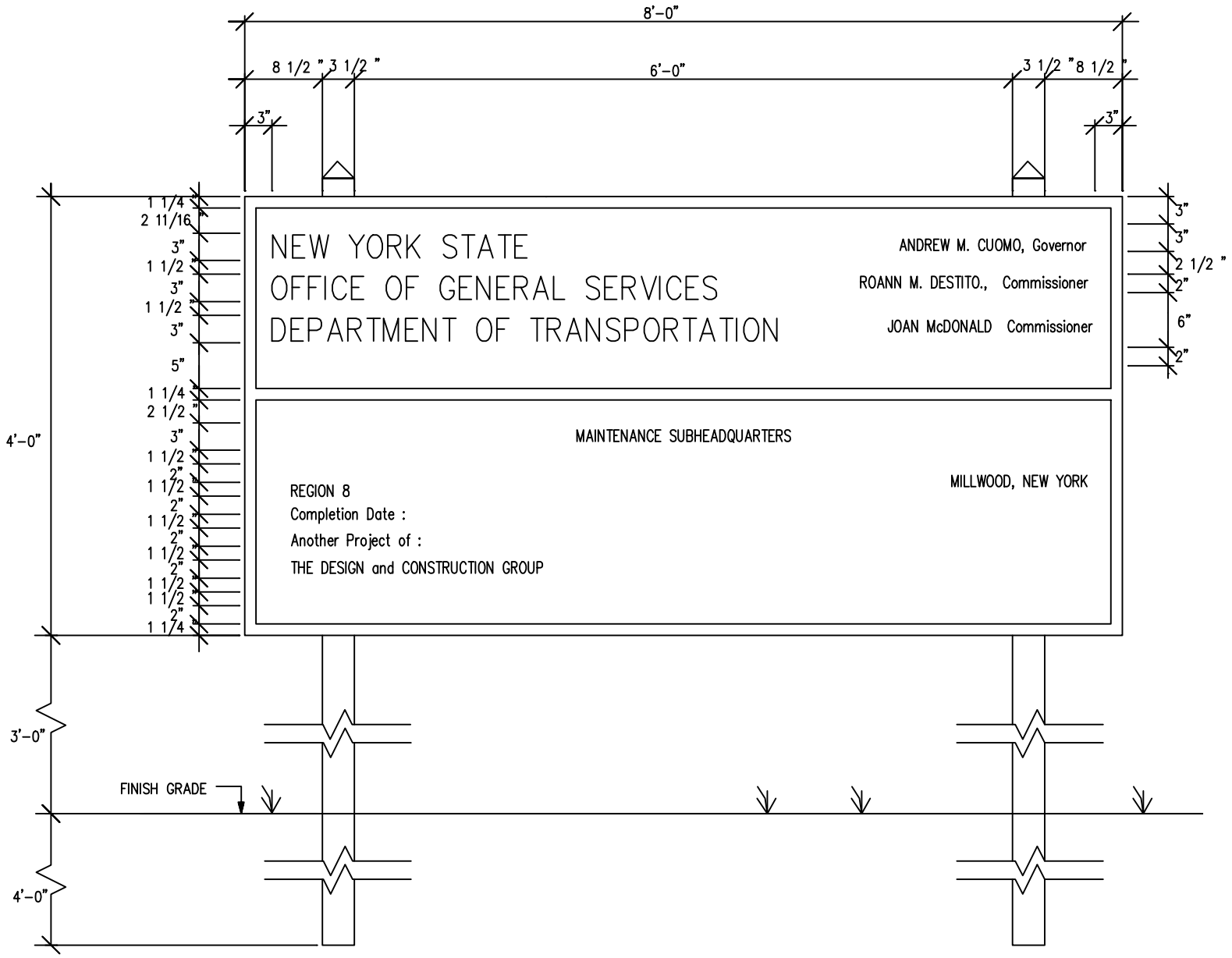
A. Restore minor visual damage to factory applied finishes in a manner to match the appearance and performance of the original finish, or remove the damaged parts and replace them with undamaged parts.

3.04 CLEANING

A. Remove strippable protective coatings; if any, immediately after completion of Work.

B. Clean exposed exterior surfaces. Remove residue from strippable coatings. Comply with manufacturer's printed instructions for cleaning.

END OF SECTION



FRONT ELEVATION

NOT TO SCALE