



ADDENDUM TO THE CONTRACT

for the

Gastineau Elementary School Renovation Contract No. E11-137

ADDENDUM NO.: TEN

CURRENT DEADLINE FOR BIDS:
January 11, 2011

PREVIOUS ADDENDA: NINE

ISSUED BY: City and Borough of Juneau
ENGINEERING DEPARTMENT
155 South Seward Street
Juneau, Alaska 99801

DATE ADDENDUM ISSUED: January 5, 2010

The following items of the contract are modified as herein indicated. All other items remain the same. This is a faxed addendum. A confirming copy will not be mailed to you. If this fax is incomplete, please call (907) 586-0490, and we will re-send it. This addendum has been issued and is posted online. Please refer to the CBJ Engineering Contracts Division webpage at:
<http://www.juneau.org/engineering ftp/contracts/Contracts.php>

PROJECT MANUAL VOLUME I:

Item No. 1 Section 01354 – LEED for Schools 2009 Credit Summary. **Delete** this section in its entirety and **replace** with the attached Section 01354, labeled Addendum No. 10.

Item No. 2 Section 01500 – Construction Facilities/Temporary Controls. **Add** the following subsection:

“1.16: Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Temporary fire protection shall comply with NFPA 241 and 29 CFR 1926.

- A. Between construction seasons the fire sprinkler systems shall be operable in all areas.
- B. During construction seasons the fire sprinkler systems shall be operable in all areas where construction activity is not occurring. Coordinate with construction seasons' work areas.
- C. During construction seasons the sprinkler system shall be maintained and be in an operable state to the greatest extent possible in construction work areas.
- D. When the sprinkler system cannot be in operation during construction the CONTRACTOR shall implement a fire watch and fire protection plan. This plan shall include the use of portable fire extinguishers. The CONTRACTOR shall submit a fire watch and fire protection plan for review and approval by Capital City Fire & Rescue. The plan shall include the times that the sprinkler system is anticipated to be non operable; the location, size and type of portable fire extinguishers; documentation that workers have been trained to operate portable extinguishers; the means to alert others in the building; the amount of surveillance including intervals of periodic inspections; the personnel and their contact information responsible for supervising and implementing the plan; and the means of reporting fires to the Fire Department.”

- Item No. 3 Section 01734 – Indoor Air Quality. **Delete** this section in its entirety and **replace** with the attached Section 01734, labeled Addendum No. 10.

PROJECT MANUAL VOLUME II:

- Item No. 4 Section 08710 – Hardware. 2.14.B – **Delete** “4310 Series Surface Mount” and **replace** with “4130 Series Surface Mount”

PROJECT MANUAL VOLUME III:

- Item No. 5 Sheet A2.1 – Area B Floor Plan, Room 163. Casework in Room 163 to be similar to casework shown in elevation 3/A8.6 with full height cabinet located adjacent exterior wall, followed by ADA sink bay and uppers, followed by drawers bay and uppers.

- Item No. 6 Sheet A12.6 Renovation Door Hardware Schedule. **Delete** hardware item “4310 Series Closer” and **replace** with “4130 Series Closer”.

- Item No. 7 Sheet A12.7 – Renovation Door Schedule:

Delete hardware item “4310 Series Closer” and **replace with** “4130 Series Closer”.

At “Schedule Comment Notes” **add** “10. Provide new removable hollow metal mullion and strikes.”

At “General Schedule Notes” **add** “5. For electrically controlled devices at doors, coordinate power supply, wiring and controls, along with any existing contacts, with electrical.”

At door 162, **add** “10” in the Comments column. **Delete** (1) Power Transfer Cable. **Add** (1) Power Transfer Hinge. **Change** Card Reader – Section 13720 **from** (1) to (E). **Change** Door Control Device – Section 13720 **from** (1) **to** (E).

- Item No. 6 Sheet S3.2 – Roof Framing Details, Detail E. **Change** note **from** “cont. ¼” X 2 ½” X 8” bent plate” **to** “Cont. 3/8” X 2 ½” X 8” bent plate.”

- Item No. 7 Sheet S6.0 – Moment Frame Elevations, Detail 2. **Add** section B/S6.0 (SIM), cut through HSS strut.

- Item No. 8 Sheet S6.0 – Moment Frame Elevations, Detail B. **Change** note **from** “W12 Beam” **to** “W12 Beam, @ Sim HSS Strut”.

- Item No. 9 Sheet S6.1 – Brace Frame Elevations, Detail 1. **Change** note **from** “Steel Deck” **to** “Steel Deck, terminate per E/S3.2”.

- Item No. 10 Sheet S6.3 – Brace Frame Details, Detail F. **Change** note **from** “3/8” bent plate, see E/S3.2” **to** “3/8 bent plate, see C/S3.2”.

By: 

Jennifer Mannix
Contract Administrator

Total number of pages contained within this Addendum: 2 plus 16 pages (two sections)

SECTION 01354 - LEED FOR SCHOOLS 2009 CREDIT SUMMARY

PART 1 GENERAL

1.1 DEFINITIONS

- A. LEED Rating System: LEED for Schools, 2009 Edition.
- B. Required: Achievement of this credit is essential for certification of this project.
- C. Preferred: Achievement of this credit would be desirable but is not mandatory.
- D. Not Required: Achievement of this credit is not expected or not possible for this project.
- E. See Section 01355 - LEED Certification Procedures, for CONTRACTOR's responsibilities.

PART 2 CREDIT SUMMARY

- 2.1 **CERTIFICATION TO BE ACHIEVED:** LEED Certified, requiring minimum of 40 points. Points to be achieved by CONTRACTOR are identified as "CONSTRUCTION". CONTRACTOR activity shall support the Prerequisites and Design points through construction effort.

2.2 SUSTAINABLE SITES (SS):

- A. SS Prerequisite 1 - Required – CONSTRUCTION - No points - Construction Activity Pollution Prevention.
 - 1. During Construction:
 - a. Preventive measures and remediation are specified in Section 01500.
 - b. Dust control and basic surface drainage are specified in Section 01732.
 - c. Preventive measures prescribed by state law will be followed.
 - 2. Permanent erosion and sedimentation prevention features are to be provided:
 - a. Lawns and grasses are specified in Section 02920.
 - b. Plants are specified in Section 02930.
- B. SS Prerequisite 2 - Required - No points - Environmental Site Assessment: The requirements have been or will be complied with.
- C. SS Credit 1 - Preferred- 1 point - Site Selection.
 - 1. The project is not located on any of the inappropriate or environmentally sensitive lands

defined for this credit.

- D. SS Credit 2 - Preferred - 4 points - Development Density and Community Connectivity.
 - 1. The project is on a site that meets the criteria for Option 2, Community Connectivity.
- E. SS Credit 4.1 - Preferred - 4 points - Alternative Transportation: Public Transportation Access.
 - 1. The project is on a site that meets the criteria for Option 2, Bus Stop Proximity.
 - 2. Dedicated walking or bike routes are provided with no barriers on school property.
- F. SS Credit 4.2 - Preferred - 1 point - Alternative Transportation: Bicycle Storage & Changing Rooms.
 - 1. Bicycle racks are specified in Section 02870.
- G. SS Credit 4.3 - Preferred - 2 points - Alternative Transportation: Low-Emitting & Fuel-Efficient Vehicles.
 - 1. Preferred parking spaces have been provided, in the quantity required.
- H. SS Credit 4.4 - Preferred - 2 points - Alternative Transportation: Parking Capacity.
 - 1. Parking space is sized to meet this requirement.
 - 2. Preferred parking spaces have been provided, in the quantity required, without adding new parking.
- I. SS Credit 5.1 - Preferred - 1 point - Site Development: Protect or Restore Habitat.
 - 1. The project site has previously been developed:
 - a. At least 50 percent of the site area not occupied by the building is to be covered with native or adapted vegetation.
- J. SS Credit 5.2 - Preferred - 1 point - Site Development: Maximize Open Space.
- K. SS Credit 6.1 - Undecided - 1 point - Stormwater Design: Quantity Control.
 - 1. The site design does not increase existing runoff rate and quantity.
 - 2. Methods used are:
 - a. Modifying existing stormwater flows:
 - 1) Grading is specified in Section 02300.
 - 2) Turf is specified in Section 02920.
 - 3) Plants are specified in Section 02930.
- L. SS Credit 6.2 - Undecided - 1 point - Stormwater Design: Quality Control.

- M. SS Credit 8 - Undecided - 1 point - Light Pollution Reduction.
 - 1. Appropriate exterior lighting fixtures are specified in Section 16521.
 - 2. Appropriate interior lighting fixtures are specified in Section 16511.
 - 3. Lighting control devices for automatic control of lighting are specified in Section 16420.
- N. SS Credit 9 - Preferred - 1 point - Site Master Plan: The requirements have been or will be complied with.
- O. SS Credit 10 - Undecided - 1 point - Joint Use of Facilities.
 - 1. The Owner will arrange for joint use of facilities.

2.3 WATER EFFICIENCY (WE):

- A. WE Prerequisite 1 - Required - No points - Water Use Reduction, 20% Reduction.
 - 1. Appropriate high efficiency and/or waterless fixtures are specified in Section 15410.
- B. WE Credit 1.1 - Required - 2 points - Water Efficient Landscaping, Reduce by 50%.
 - 1. The landscaping does not require irrigation and no permanent irrigation system is provided.
 - a. The climate provides adequate rainfall for the landscaping intended without need for irrigation.
 - b. Plants that do not require irrigation are specified in Section 02930.
- C. WE Credit 1.2 - Preferred - 2 points - Water Efficient Landscaping: No Potable Use or No Irrigation.
 - 1. The landscaping does not require irrigation and no permanent irrigation system is provided.
 - a. The climate provides adequate rainfall for the landscaping intended without need for irrigation.
 - b. Plants that do not require any irrigation are specified in Section 02930.

2.4 ENERGY & ATMOSPHERE (EA):

- A. EA Prerequisite 1 - Required - No points - Fundamental Commissioning of Building Energy Systems.
 - 1. Building commissioning is to be performed.
- B. EA Prerequisite 2 - Required - No points - Minimum Energy Performance.
 - 1. The building envelope, HVAC, lighting, etc., have been designed to meet the criteria.

2. The overall design solution is implemented in the drawings and many sections of the specifications.

C. EA Prerequisite 3 - Required - No points - Fundamental Refrigerant Management.

1. New equipment: No CFC-based refrigerants are used in any equipment. Non-CFC refrigerants are specified in the following sections:
2. Re-Used Equipment: Replacement of refrigerants in the following equipment is specified in Section 15186:

D. EA Credit 1 - Required – points to be determined - Optimize Energy Performance.

1. The building envelope, HVAC, lighting, etc., have been designed to meet the criteria required for the number of points indicated.
2. The overall design solution is implemented in the drawings and many sections of the specifications.

E. EA Credit 4 - Preferred - 1 point - Enhanced Refrigerant Management.

1. No Halon is used in any equipment or extinguishing system.
2. Fire Suppression:
 - a. Fire extinguishers specified in Section 10523 use agents other than Halon.
 - b. Existing Halon-based fire extinguishing system is to be replaced.
 - c. Fire extinguishing system using NFPA 2001 agents is specified in Section 13925.

F. EA Credit 6 - Undecided - 2 points - Green Power.

1. The City and Borough of Juneau & Juneau School District intends to or has already entered into a contract for electricity from renewable sources, but that is not part of the construction contract.

2.5 MATERIALS & RESOURCES:

A. MR Prerequisite 1 - Required - No points - Storage & Collection of Recyclables.

1. The area designated for collection and storage of recyclables is indicated on the drawings.
2. The area designated for collection and storage of landscape trimmings is indicated on the drawings.
3. Bins, waste cans, can crushers, etc., are considered furnishings and are therefore not part of the construction contract.

B. MR Credit 1.1 - Required - 1 point - Building Reuse: Maintain 75% of Existing Walls, Floors & Roof.

1. The overall design of the project achieves this credit.
 2. Procedures for alterations and selective demolition are specified Section 01732.
- C. MR Credit 2.1 - Preferred - 1 point - CONSTRUCTION - Construction Waste Management, Divert 50% from Disposal.
1. Construction procedures and measurement of diverted waste are specified in Section 01732. This section requires the CONTRACTOR to perform the measurement and computation.
 2. Waste prevention and disposal procedures specific to certain types of work are specified in many sections.
- D. MR Credit 4.1 – Preferred - 1 point - CONSTRUCTION - Recycled Content: 10% (post-consumer plus ½ pre-consumer).
1. The definition of recycled content for the purposes of the contract documents is established by ISO14021. Qualifying products do not include plumbing, HVAC, electrical, or communications equipment, piping, conduit, ductwork, or wiring.
 2. This project is steel-framed and contains many other steel-containing products; submission of a complete list of all metal-containing products will be required, with documentation showing steel mill source and mill process, allowing computation by using industry-averages for recycled content.
 3. Other specific products that must contain recycled content are specified in the appropriate section(s).
 4. CONTRACTOR is required to achieve this credit through selection of products (materials and equipment) plus any mandatory recycled content specified in the contract documents.
 5. CONTRACTOR's reporting and measurement requirements are specified in Section 01355; calculation of project totals is the responsibility of CONTRACTOR.
- F. MR Credit 7 – Required - CONSTRUCTION - 1 point - Certified Wood.
1. For the purposes of the contract documents, the term "sustainably harvested wood" is used instead of "certified wood" and is defined in the same way as for this credit.
 2. Specific wood products that must be sustainably harvested are specified in the appropriate section(s).
 - a. Lumber framing, sheathing, blocking, curbing, and miscellaneous carpentry are specified in Section 06100, 06150, and 06160.
 - b. Wood decking is specified in Section 06100.
 - c. Finish woodwork is specified in Section 06200.
 - d. Custom cabinets are specified in Section 06410.
 - e. Countertops are specified in Section 06410.
 - f. Wood veneer paneling is specified in Section 06200.

3. CONTRACTOR's reporting and measurement requirements are specified in Section 01355; calculation of project totals is not the responsibility of CONTRACTOR.

2.6 INDOOR ENVIRONMENTAL QUALITY:

- A. EQ Prerequisite 1 - Required - No points - Minimum IAQ Performance.
- B. EQ Prerequisite 2 - Required - No points - Environmental Tobacco Smoke (ETS) Control.
 1. City and Borough of Juneau & Juneau School District intends to prohibit smoking in the building.
 2. Exterior smoking areas are located at least 25 feet (8 meters) away from entries, outdoor air intakes, and operable windows.
- C. EQ Prerequisite 3 - Required - No points - Minimum Acoustical Performance.
 1. Classrooms and other core learning spaces have been designed to achieve the stated acoustical performance criteria; the overall design solution is implemented in the drawings and many sections of the specifications.
- D. EQ Credit 1 - Undecided - 1 point - Outdoor Air Delivery Monitoring.
 1. Outdoor airflow measurement devices in HVAC system, integrated with HVAC control system, are specified in Section 15730.
 2. CO2 sensing and measurement devices in HVAC system, integrated with HVAC control system, are specified in Section 15730.
 4. Direct-digital HVAC control system is specified in Section 15926.
- E. EQ Credit 2 - Undecided - 1 point - Increased Ventilation.
 1. The building and HVAC design will provide additional ventilation air for occupied spaces sufficient to meet the credit criteria, using natural and mechanical ventilation.
 2. The overall design solution is implemented in the drawings and many sections of the specifications.
- F. EQ Credit 3.1 - Preferred - 1 point – CONSTRUCTION - Construction IAQ Management Plan, During Construction.
 1. Good construction procedures intended to prevent future problems are specified in Section 01734.
- G. EQ Credit 3.2 – Required - CONSTRUCTION - 1 point - Construction IAQ Management Plan, Before Occupancy.

1. CONTRACTOR is required to perform air quality testing prior to occupancy, specified in Section 01734.
- H. EQ Credit 4.1 - Required – CONSTRUCTION - 1 point - Low-Emitting Materials, Adhesives & Sealants.
1. Product criteria and reporting requirements for VOC-restricted products are specified in Section 01616.
 2. Firestopping sealants; specified in Section 07840.
 3. Architectural joint sealants; specified in Section 07900.
 4. Duct sealers and sealants; specified in Section 15810.
 - a. All adhesives used on the project, whether explicitly specified or not, are considered VOC-restricted products.
- I. EQ Credit 4.2 - Required – CONSTRUCTION - 1 point - Low-Emitting Materials, Paints & Coatings.
1. Product criteria and reporting requirements for VOC-restricted products are specified in Section 01616.
 2. Paints and stains are specified in Section 09900.
 - a. Water-based paints or solvent-based paints with VOC content meeting the credit criteria are used for all interior opaque applications.
 3. High performance coatings specified in Section 09960.
- J. EQ Credit 4.3 - Required – CONSTRUCTION - 1 point - Low-Emitting Materials, Flooring Systems.
1. Product criteria and reporting requirements for VOC-restricted products are specified in Section 01616.
 2. The following products are used in this project and will comply with the specified VOC restrictions:
 - a. Resilient flooring and base; specified in Section 09650.
 - b. Resilient athletic flooring; specified in Section 09625.
 3. Carpet; specified in Section 09680.
 4. Adhesives used in connection with carpet systems.
- K. EQ Credit 4.4 - Required – CONSTRUCTION - 1 point - Low-Emitting Materials, Composite Wood & Agrifiber Products.
1. Product criteria and reporting requirements for VOC-restricted products are specified in Section 01616.

2. The products covered by this credit include ONLY particleboard, plywood, medium density fiberboard (MDF), wheatboard, strawboard, panel substrates, door cores, and laminating adhesives used on-site or in the shop.
 3. A project-wide prohibition on use of these products if they contain added urea-formaldehyde is specified.
- L. EQ Credit 4.5 - Preferred - 1 point - Low-Emitting Materials, Furniture.
1. Product criteria and reporting requirements for VOC-restricted products are specified in Section 01616.
 2. All applicable furniture is more than one year old and is excluded from this credit.
 3. All applicable furniture will meet the criteria but is not included in the construction contract.
- M. EQ Credit 4.6 - Preferred - CONSTRUCTION - 1 point - Low-Emitting Materials, Ceiling and Wall Systems.
1. Product criteria and reporting requirements for VOC-restricted products are specified in Section 01616.
 2. The following products are used in this project and will comply with the requirements:
 - a. Insulation in exterior walls; specified in Section 07212.
 - b. Acoustical insulation; specified in Section 07212.
 - c. Acoustical insulation; specified in Section 09850.
 - d. Gypsum board; specified in Section 09260.
 - e. Acoustical ceilings; specified in Section 09511.
 - f. Wall coverings; specified in Section 09841 and 10121.
- N. EQ Credit 5 - Required - 1 point - Indoor Chemical & Pollutant Source Control.
1. At High Volume Entryways: Permanent grilles or grates to capture dirt, etc., are provided.
 - a. Metal gratings are specified in Section 05530.
 2. Rooms Where Hazardous Gases or Chemicals May Be Present: Independent exhaust is provided for each room; this is a design solution involving building construction and HVAC.
 - a. These rooms include: Janitor closets, laundry, high-volume copy rooms, and garage.
 - b. Closers for self-closing doors are specified in Section 08710.
 - c. Gypsum board construction is specified in Section 09260.
 - d. Ducts are specified in Section 15810.
 - e. Exhaust fans are specified in Section 15833.
 3. Air Filtration Media: Outside air and return air are to be provided with filtration media meeting the criteria.
 - a. Air filters are specified in Section 15720.
- O. EQ Credit 6.1 - Preferred - 1 point - Controllability of Systems: Lighting.

1. Lighting controls meeting the criteria are to be provided.
 - a. Manual switching devices are specified in Section 16140.
 - b. Lighting control devices are specified in Section 16140 and 16410.
- P. EQ Credit 6.2 - Preferred - 1 point - Controllability of Systems: Thermal Comfort.
1. Operable Windows: Windows in lieu of comfort controls are to be provided for occupants of areas that are 20 feet inside of and 10 feet to either side of the operable part of the window.
 - a. Aluminum windows are specified in Section 08520.
- Q. EQ Credit 7.1 - Required - 1 point - Thermal Comfort: Design.
1. Thermal comfort meeting the credit criteria is to be provided, with ventilation by natural and mechanical means.
 2. The overall design solution is implemented in the drawings and many sections of the specifications.
- R. EQ Credit 7.2 - Required - 1 point - Thermal Comfort: Verification.
1. City and Borough of Juneau & Juneau School District's O&M program will address procedures for identifying and implementing corrective actions.
 2. A survey of building occupants will be conducted by City and Borough of Juneau & Juneau School District within 6 to 18 months after building occupancy to determine level of comfort; City and Borough of Juneau & Juneau School District will develop a plan for corrective action if more than 20 percent of occupants report dissatisfaction with thermal comfort in building.
 3. The HVAC control system to be provided includes permanent, automatic and operator-adjustable thermal and humidity monitoring controls that will operate throughout all seasons.
 4. Direct-digital HVAC control system is specified in Section 15926.
 5. Commissioning of these controls is specified in the sections referenced for EA Prerequisite 1, Fundamental Building Systems Commissioning.
- S. EQ Credit 8.1 - Preferred - 1 point - Daylight & Views: Daylighting.
1. Daylighting to meet the credit criteria is to be provided.
 2. The overall design solution is implemented in the drawings with light-admitting materials specified in many sections of the specifications, including:
 - a. Glazed aluminum storefront specified in Section 08410.
 - b. Aluminum windows specified in Section 08520.
- T. EQ Credit 8.2 - Preferred - 1 point - Daylight & Views, Views for 90% of Spaces.

1. Views meeting the credit criteria are to be provided.
2. The overall design solution is implemented in the drawings with vision glazing specified in many sections of the specifications, including:
 - a. Glazed aluminum storefront specified in Section 08410.
 - b. Aluminum windows specified in Section 08520.

U. EQ Credit 9 – Required - 1 point - Enhanced Acoustical Performance.

1. Classrooms and other core learning spaces have been designed to achieve the stated acoustical performance criteria; the overall design solution is implemented in the drawings and many sections of the specifications.

V. EQ Credit 10 - Preferred - 1 point - Mold Prevention.

1. EQ Credits 3.1, 7.1, and 7.2 are required.
2. The HVAC system design complies with the criteria.
3. The Owner will implement an on-going IAQ management program meeting the criteria.

2.7 INNOVATION & DESIGN PROCESS (ID):

A. ID Credit 3 - Preferred - 1 point - The School as a Teaching Tool.

1. City and Borough of Juneau & Juneau School District will implement the curriculum described.

2.8 LEED ACREDITED PROFESSIONAL (ID):

A. ID Credit 2 - Required - 1 point – Appointed principal participant is a LEED Accredited Professional.

2.9 REGIONAL PRIORITY (RP):

A. RP Credit 1.1 - Undecided - 1 point - Region Specific Environmental Priority : Verify with registration.

END OF SECTION 01354

SECTION 01734 - INDOOR AIR QUALITY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Construction procedures to promote adequate indoor air quality during and after construction, in compliance with LEED criteria for Indoor Air Quality Credit 3.1 and 3.2.
- B. Application of filtration media at system intake locations during construction.
- C. Testing indoor air quality after completion of construction.

1.2 PROJECT GOALS

- A. See Section 01355 - LEED Certification Procedures, for overall project goals relating to environment and energy.
- B. Dust and Airborne Particulates: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
 - 1. Cleaning of ductwork is not anticipated under this Contract, unless otherwise specifically required as a part of mechanical design.
 - 2. CONTRACTOR shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.
 - 3. Establish condition of existing ducts and equipment prior to start of alterations.
- C. Airborne Contaminants: Procedures and products have been specified to minimize indoor air pollutants.
 - 1. Furnish products meeting the specifications.
 - 2. Avoid construction practices that could result in contamination of installed products leading to indoor air pollution.
- D. Ventilation: HVAC system has been designed to achieve the minimum requirements for ventilation specified in ASHRAE 62.1 with air change effectiveness of 0.9 or greater.

1.3 RELATED REQUIREMENTS

- A. Section 01355 - LEED Certification Procedures: LEED credits relating to indoor air quality.

- B. Section 01400 - Quality Control: Testing and inspection services.
- C. Section 01616 - Volatile Organic Compound (VOC) Content Restrictions.

1.4 REFERENCE STANDARDS

- A. ASHRAE Std 62.1 - Ventilation For Acceptable Indoor Air Quality; 2007 (errata 2008).
- B. ASHRAE Std 129 - Measuring Air-Change Effectiveness; 1997 (Reaffirmed 2002).
- C. SMACNA (OCC) - IAQ Guideline for Occupied Buildings Under Construction; 2007.

1.5 DEFINITIONS

- A. Adsorptive Materials: Gypsum board, acoustical ceiling tile and panels, carpet and carpet tile, fabrics, fibrous insulation, and other similar products.
- B. Contaminants: Gases, vapors, regulated pollutants, airborne mold and mildew, and the like, as specified.
- C. Particulates: Dust, dirt, and other airborne solid matter.
- D. Wet Work: Concrete, plaster, coatings, and other products that emit water vapor or volatile organic compounds during installation, drying, or curing.

1.6 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. LEED Submittals: Submit all submittals required in this section in accordance with procedures specified in Section 01355.
- C. Indoor Air Quality Management Plan: Describe in detail measures to be taken to promote adequate indoor air quality upon completion; use SMACNA IAQ Guidelines for Occupied Buildings Under Construction as a guide, 2nd Edition 2007, ANSI/SMACNA 008-2008 (Chapter 3).
 - 1. Submit not less than 60 days prior to commencement of construction activity for each construction season. A separate plan will be required for each of the two construction seasons for this project, limited to the specific areas of the work in each season.
 - 2. Identify potential sources of odor and dust.
 - 3. Identify construction activities likely to produce odor or dust.

4. Identify areas of project potentially affected and define how work areas are to be separated from non-work areas during construction seasons.
 5. Evaluate potential problems by severity and describe methods of control.
 6. Describe construction ventilation to be provided, including type and duration of ventilation, use of permanent HVAC systems, types of filters and schedule for replacement of filters.
 7. Describe cleaning and dust control procedures.
- D. Interior Finishes Installation Schedule: Identify each interior finish that either generates odors, moisture, or vapors or is susceptible to adsorption of odors and vapors, and indicate air handling zone, sequence of application, and curing times.
- E. Duct and Terminal Unit Inspection Report.
- F. Air Contaminant Test Plan: Identify:
1. Testing agency qualifications.
 2. Locations and scheduling of air sampling.
 3. Test procedures, in detail.
 4. Test instruments and apparatus.
 5. Sampling methods.
- G. Air Contaminant Test Reports: Show:
1. Location where and when each sample was taken.
 2. Test values for each air sample.
 3. HVAC operating conditions.
 4. Certification of test equipment calibration.
 5. Other conditions or discrepancies that might have influenced results.

1.7 QUALITY ASSURANCE

- A. Testing and Inspection Agency Qualifications: Independent testing agency having minimum of 5 years experience in performing the types of testing specified.

PART 2 PRODUCTS (not used)

PART 3 EXECUTION

3.1 CONSTRUCTION PROCEDURES

- A. Prevent the absorption of moisture and humidity by adsorptive materials by:
 - 1. Sequencing the delivery of such materials so that they are not present in the building until wet work is completed and dry.
 - 2. Delivery and storage of such materials in fully sealed moisture-impermeable packaging.
 - 3. Provide sufficient ventilation for drying within reasonable time frame.
- B. Permanent ventilation systems shall not to be used during construction. In the event that construction work activity occurs after the project's substantial completion dates and the building ventilation system is operational, the CONTRACTOR shall:
 - 1. Provide temporary intake filters suitable for the filtration of dust generated in the work of this project at all intake locations affected.
- C. Prevent movement of air from construction season work area to construction season non-work area.
- D. Do not store construction materials or waste in mechanical or electrical rooms.
- E. Prior to use of return air ductwork without intake filters clean up and remove dust and debris generated by construction activities.
 - 1. Clean and inspect duct intakes, return air grilles, and terminal units for dust.
 - 2. Clean plenum spaces, including top sides of lay-in ceilings, outsides of ducts, tops of pipes and conduit.
 - 3. Clean tops of doors and frames.
 - 4. Clean mechanical and electrical rooms, including tops of pipes, ducts, and conduit, equipment, and supports.
 - 5. Clean return plenums of air handling units.
 - 6. Remove intake filters last, after cleaning is complete.
- F. Do not perform dusty or dirty work after starting use of return air ducts without intake filters.
- G. Use other relevant recommendations of SMACNA IAQ Guideline for Occupied Buildings Under Construction for avoiding unnecessary contamination due to construction procedures.

3.2 AIR CONTAMINANT TESTING

- A. CONTRACTOR to provide air contaminant testing meeting the LEED Indoor Air Quality Credit 3.2 parameters at the end of each season of construction.
- B. Perform air contaminant testing before occupancy.
- C. Do not start air contaminant testing until:
 - 1. All construction is complete, including interior finishes.
 - 2. HVAC systems have been tested, adjusted, and balanced for proper operation.
 - 3. New HVAC filtration media have been installed.
- D. Indoor Air Samples: Collect from spaces representative of occupied areas:
 - 1. Collect samples while operable windows and exterior doors are closed, HVAC system is running normally as if occupied, with design minimum outdoor air, but with the building unoccupied.
 - 2. Collect samples from spaces in each contiguous floor area in each air handler zone, but not less than one sample per 25,000 square feet (2300 square meters); take samples from areas having the least ventilation and those having the greatest presumed source strength.
 - 3. Collect samples from height from 36 inches (915 mm) to 72 inches (1830 mm) above floor.
 - 4. All interior finishes must be installed, including but not limited to millwork, doors, paint, wall panels, and acoustic ceiling tile.
 - 5. When retesting the same building areas, take samples from at least the same locations as in first test.
- F. Outdoor Air Samples: Collect samples at outside air at the same time as indoor samples are taken.
- G. Analyze air samples and submit report.
- H. Air Contaminant Concentration Determination and Limits:
 - 1. Carbon Monoxide: Not more than 9 parts per million and not more than 2 parts per million higher than outdoor air.
 - 2. Formaldehyde: Not more than 27 parts per billion.
 - 3. Total Volatile Organic Compounds (TVOC): Not more than 500 micrograms per cubic meter.
 - 4. Particulates (PM10): Not more than 50 micrograms per cubic meter.

- I. If air samples show concentrations higher than those specified, ventilate with 100 percent outside air and retest the non-compliant concentrations. Repeat until all requirements are met at no additional cost to OWNER.
- J. CONTRACTOR shall complete online form and provide supporting air quality testing documentation required to achieve LEED Indoor Air Quality Credit 3.2 point.

END OF SECTION 01734