

**PROJECT CRITERIA**

**AND**

**PERFORMANCE**  
**SPECIFICATIONS**

**FOR THE DESIGN-BUILD OF**

**THE**

**SUSTAINABLE ROOFING PROJECT**

**CLEVELAND HOPKINS INTERNATIONAL AIRPORT**

**March 30, 2016**

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## **SECTION 1 - GENERAL**

### **1.01 PROJECT DESCRIPTION**

#### **1.01.01 PROJECT NAME**

Sustainable Roofing Project—Cleveland Hopkins International Airport

#### **1.01.02 GENERAL DESCRIPTION**

The Sustainable Roofing Project at Cleveland Hopkins International Airport generally includes:

1. Design and installation of combined total of approximately 8,000 sf. sustainable roof space on two (2) CLE roofs.
2. Construction management during installation of sustainable roof for duration of construction process.

#### **1.01.03 GENERAL REQUIREMENTS**

The Cleveland Airport System uses certain general requirements as noted in Section 4 that are being incorporated into the performance specification

### **1.02 EXISTING INFORMATION AVAILABLE**

The information listed in this section is included as Figures or on a CD. The data provided is for informational purposes only. The Design-Builder should independently verify the information.

#### **1.02.01 OVERALL SITE PLAN – Title Sheet**

This figure shows the general layout of the project.

#### **1.02.02 LAYOUT SITE PLAN – Exhibit A1**

This figure shows the conceptual layout of the sustainable roof at Concourse A between Gates A5 and A7.

#### **1.02.03 LAYOUT SITE PLAN – Exhibit B1**

This figure shows the conceptual layout of the sustainable roof west of the Food Court Area and south of the Concourse B Bridge.

#### **1.02.04 MC-031: CONTROL OF IMPACTED AND SOLID WASTE MATERIAL (ON CD)**

The City of Cleveland, Department of Port Control's (DPC) required specification for the control during construction of impacted and solid waste material.

**1.02.05 ITEM T-901: SEEDING (ON CD)**

A modified FAA specification for furnishing, hauling, and placing seeding and related operations where vegetative growth is required. Grass seed is not anticipated to be part of the sustainable roof.

**1.02.06 CITY OF CLEVELAND, DEPARTMENT OF PORT CONTROL CAD STANDARDS (ON CD)**

The City of Cleveland, Department of Port Control CAD standards dated September 17, 1999 has been included as a PDF file as an exhibit.

**1.03 DESIGN AND CONSTRUCTION PROCEDURES**

**1.03.01 DESIGN AND INSTALLATION SCHEDULE REQUIREMENTS**

The following dates are major milestones that are required to be met for the completion of this contract. Milestone Phases 3 and 4 may be installed at the same time.

	<u>Major Milestones</u>	<u>Start Date</u>	<u>Completion Date</u>
1.	City of Cleveland Department of Port Control to procure and enter into design-build agreement	April 2016	July 2016
2.	Design-Builder to design and procure needed materials	May 2016	June 2016
3.	Construction of Concourse A Sustainable Roof, installation of in-line flow meters and educational signs	June 2016	July 2016
4.	Construction of Concourse B Sustainable Roof, installation of in-line flow meters and educational signs	June 2016	July 2016
5.	Republican National Convention	July 2016	July 2016

General requirements for the Construction Schedules is included in Section 4 of this specification that shall be followed at a minimum for all design and construction phases for developing schedules for this project.

## **1.03.02 DESIGN REVIEW REQUIREMENTS**

### **30% Design Submittal**

1. Draft Engineering Report, which shall include at a minimum the following items:
  - a) The proposed development as it relates to other roof structures and /or improvements;
  - b) Potential problems to be encountered and available solutions with support for the recommended solution, including appropriate priorities and stages;
  - c) Description of structural analysis and confirmation of load to determine depth of sustainable roof media;
  - d) Explanation and justification for foundation and structural system design;
  - e) Explanation and justification for Plumbing-Roof Drains design;
  - f) Design loads and assumptions for structures;
  - g) Explanation of how new sustainable roof drainage system ties into existing storm drainage system;
  - h) Explanation on recommendations for architecture for all structures including the sustainable roof and other buildings;
  - i) Explanation on recommendations of finishes;
  - j) Explanation on recommendations for signs, markings and graphics;
  - k) Sequence of construction, including storage and staging area requirements, effect of construction on airport operations, gate operations, parking, and facilities;
  - l) Understanding of contract time, and milestones;
  - m) Detailed construction cost estimates;
  - n) Code requirements;
  - o) Permit and Zoning requirements;
  - q) Criteria for handling of hazardous and contaminated material;
  - r) Criteria for on-site materials handling;
  - s) Criteria for sustainable construction;
2. Engineering Calculations such as, but not limited to, roof drainage and structural design, etc.
3. Schematic Construction Drawings.
4. List of Construction Specifications to be used.
5. Construction Schedule showing major milestones by work area.

### **60% Design Submittal**

1. Final Engineering Report, which will include all items from 30% submittal as updated at a minimum, plus:

- a) A discussion on ease of maintenance of all materials, systems, equipment with estimated costs for operation and maintenance. Cost estimates of operation and maintenance shall include staff requirements, preventative maintenance costs, etc.;
  - b) Material sources
2. All Engineering Calculations.
  3. Preliminary Construction Drawings.
  4. Preliminary Construction Specifications.
  5. Updated Construction Schedule showing major milestones by work area.

#### **90% Design Submittal**

1. Any revised Engineering Calculations.
2. Final Construction Drawings.
3. Final Construction Specifications.
4. Updated Construction Schedule showing major milestones by work area.

#### **Construction Submittal**

1. Construction Drawings signed and sealed by a licensed Professional Engineer and/or licensed Registered Architect.
2. Construction Specifications signed and sealed by a licensed Professional Engineer and/or licensed Registered Architect.
3. Final Construction Schedule.

### **1.03.03 DESIGN SUBMITTALS**

The 30%, 60%, 90% and Construction submittals shall be submitted to the Cleveland Department of Port Control with the following conditions:

1. Engineering drawings shall be a standard ANSI or ARCH sheet size.
2. All documents shall be full size.
3. The drawings shall be prepared utilizing the City of Cleveland Department of Port Control CAD Standards.
4. There shall be three (3) sets with each design submission.
5. There shall be five (5) sets with the construction submission.
6. Cleveland Department of Port Control will provide review comments on each design submission within one (1) week from the day they are received.
7. Each design submission will contain three (3) compact discs (CDs) with all information provided in PDF format.
8. The Construction submission will contain the same as each design submission above plus CAD drawings in AutoCAD 2014, or newer.

### **1.03.04 CONSTRUCTION SUBMITTALS Project Record Documents**

During construction one set of all documents including drawings, shop drawings, permits, specifications, and any additional documents that are developed, used and or modified for this project shall be maintained on site. These documents shall record all changes made by addenda, by formal modification and in performing the work for the Cleveland Department of Port Control's use in the future.

1. Storage:
  - a. Separately from the documents used for construction and in a location where they can be kept clean and safe from fire and damage.
2. Changes to be recorded include:
  - a. Actual measured locations (horizontal and vertical) of foundations and concealed utilities and appurtenances relative the project datum.
  - b. Field changes of dimensions and details not on original documents.
  - c. Equipment labels matching field labels.
3. The project records shall be kept up to date during the entire construction process.
4. The project record documents shall be made available for review for the Cleveland Department of Port Control and their engineer.
5. Submit three (3) set of 100 percent as-built (i.e. surveyed) construction drawings and three (3) CDs containing AutoCAD files and PDF files of each sheet with as-built information incorporated into the construction drawings within six (6) weeks of final completion of the project.

### **Submittal Procedure**

General requirements for the Submittals are included in Section 4 of this specification and shall be followed at a minimum for the submission of the submittals during the construction phase.

In addition to construction submittals required above any field changes that are made shall be provided to the Cleveland Department of Port Control in a written documentation (minimum of three (3) copies), for information, for all proposed changes made during construction to the Construction Drawings. Documents shall include concurrence from the design engineer and/or architect who sealed and signed the drawings.

## **SECTION 2 – PROJECT PROGRAM**

### **2.01 DETAILED DESCRIPTION**

The CLE Sustainable Roofing Project includes:

#### **2.01.01 Construction of a Sustainable Roof at CLE Concourse A**

This location of the project includes the design/build and construction of approximately 5,100 sf. of sustainable roof space at the north end of Concourse A on the west side between Gates A5 and A7. The sustainable roof will be visible from the terminal as well as by airline passengers taking off or landing, creating a unique airport experience for passengers. The sustainable roof requirements are further defined in Section 3.06.

#### **2.01.02 Construction of Sustainable Roof at CLE Concourse B**

This location of the project includes the design/build and construction of approximately 3,200 sf. of sustainable L-shaped roof space visible west of the Food Court Area and south of the Concourse B Bridge. The sustainable roof will also be visible from the terminal as well as by airline passengers taking off or landing, creating a unique airport experience for passengers. The sustainable roof requirements are further defined in Section 3.06.

### **2.02 TEMPORARY FACILITIES AND CONSTRUCTION CONTROLS**

General requirements for the temporary facilities and construction controls are included in Section 4 of this specification that shall be followed at a minimum. Access to all ingress and egress including all AOA perimeter roads and concourse tarmacs must remain open during construction.

## **SECTION 3 – PERFORMANCE REQUIREMENTS**

### **3.01 GENERAL**

#### **3.01.01 CODE REQUIREMENTS**

The design shall comply with City of Cleveland Codified Ordinances, Part 5 – Municipal Utilities and Services Code, Title – XI, Chapter 571 City Airport, and all other applicable codes can be found here: <http://caselaw.lp.findlaw.com/clevelandcodes/>, Ohio Department of Transportation, Federal, State and Industry codes, standards and regulations hereinafter referred to as “Code Requirements” in the design and construction of the parking structures. When codes conflict, the most stringent code shall govern. The latest applicable version of each code is to be used. The Design-Builder is responsible for complying with these

codes and any other codes that may be applicable. Any conflict among codes is to be promptly brought to the attention of the Cleveland Department of Port Control.

1. Compliance with codes, statues, regulations, and the Cleveland Department of Port Control requirements shall be the responsibility of the Design-Builder. Regulatory agencies will review and comment, at the Owner's request, to assist in verifying compliance with applicable codes, statues and policies.

### **3.01.02 BUILDING AND ZONING REQUIREMENTS**

All building and zoning requirements shall meet City of Cleveland Codified Ordinances, including Part Three – Building Code, Title XIII - Zoning, Chapter 352 – Landscaping and Screening, and Part Three – Building Code, Title XIII - Building Code, Chapter 3111 – Ohio Building Code and Chapter 3129 – Loads, and all other applicable building and zoning requirements which can be found at <http://caselaw.lp.findlaw.com/clevelandcodes/>, state, federal and FAA requirements for all work. The Design-Builder is responsible for obtaining all permits and ensuring all building and zoning requirements are being met. When requirements conflict, the most stringent zoning requirement governs. The Design-Builder is responsible for complying with these requirements and any other requirements that may be applicable. Any conflict among zoning requirements is to be promptly brought to the attention of the Owner and the Owner's Project Architect or Design Criteria Developer.

### **3.01.03 TECHNICAL SPECIFICATION CRITERIA**

Technical specifications shall be submitted and organized in accordance with the Construction Specifications Institute Master Format, Section Format and Page Format or in accordance with the State of Ohio, Department of Transportation, Construction and Material Specifications, latest edition.

All specifications shall meet or exceed the above referenced code requirements.

### **3.01.04 QUALITY CONTROL**

The Design-Builder shall employ a testing organization that is independent of the Design-Builder's organization and subcontracted directly by the Design-Builder to perform all required tests. All the test data shall be reported to the DPC after the results are known. A legible, handwritten copy of all test data shall be given to the DPC daily, along with printed

reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Design-Builder shall submit a final report to the DPC showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

All materials and each part or detail of the work shall be subject to inspection by the DPC. The DPC shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Design-Builder as is required to make a complete and detailed inspection and any additional quality control / assurance testing.

Inspections during construction are needed to ensure that the sustainable roof is built in accordance with these specifications. Detailed inspection checklists should be used that include sign-offs by qualified individuals at critical stages of construction and confirm that the contractor's interpretation of the plan is consistent with the intent of the designer and/or manufacturer.

An experienced installer (three (3) continuous years of experience in the last five (5) years) should be retained to construct the sustainable roof system. The sustainable roof should be constructed in sections for easier inspection and maintenance access to the membrane and roof drains. Careful construction supervision is needed during several steps of sustainable roof installation.

### **3.02 HAZARDOUS MATERIAL**

Investigation and survey was performed for asbestos. Roof A is at the North end of Concourse A on the West side between Gates A5 and A7 and has a textured coated (RF-03 & 04) foam insulation assumed to be over an existing asphalt-based built-up roof material. The hidden asphalt-based roofing materials are assumed to be asbestos-containing. Only the top of Concourse B roof foam roof layer was sampled and inspected because the structure is still occupied and the integrity of the roof was to be maintained. The assumption is that there is a suspect asbestos-containing asphalt-based roofing material underneath the foam coating.

The site should be inspected for the following items prior to demolition: asbestos-containing materials, PCB caulk, universal wastes (i.e., lamps, ballasts, mercury-containing devices, and pesticides), and other items that should not go into the regular trash.

A certified Engineering Laboratory shall perform all field and/or laboratory testing in accordance with applicable Federal, State, and/or local standards and submit proper certification of the testing laboratory. The Engineering Laboratory shall collect ample samples to fulfill all requirements to determine if the presence or absence of

hazardous materials. The Engineering Laboratory shall submit test reports for all samples and determine the appropriate facility, if any, required for proper disposal.

Disposal of any collected material shall be in accordance with applicable Federal, State, and/or local standards. Item MC-031: Control of Impacted and Solid Waste Material shall also be followed and it is included in the attached compact disc.

### **3.03 DEMOLITION**

#### **3.03.01**

1. Demolition shall include all items necessary to complete the structures. This may include but not be limited to:
  - Removal of original roof membrane and insulation
  - Demolition of internal wall for construction of access door to roof
2. Submittals
  - a. Qualification Data: For demolition the contractor and primary subcontractors are to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and Owners, and brief description of project scope and methods used.
  - b. Proposed Dust Control and Noise Control Measures: Submit statement that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation.
  - c. Schedule of Demolition activities: Indicate the following:
    - i. Detailed sequence of demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
    - ii. Prior to placement of recycled material, submit a plan that shows the locations that the material will be used. The locations shall be approved by the DPC prior to placing the material.
  - d. Pre-demolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by demolition operations. Submit before Work begins.
  - e. Demolition Plan: Submit detailed sequence of deconstruction prepared by a professional engineer. Indicate all bracing and temporary shoring measures required to maintain structure stability during demolition.
  - f. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes, if applicable. Manifests for disposal items such as roofing material shall be provided to the City for record keeping.
3. Quality Assurance
  - a. Demolition Firm Qualifications: An experienced firm that has

- specialized in demolition work similar in material and extent to that indicated for this Project.
- b. Regulatory Requirements: Comply with governing notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
  - c. Standards: Comply with ANSI A10.6 “Safety Requirements for Demolition Operations” and NFPA 241 “Standard for Safeguarding Construction, Alteration and Demolition Operations”.
  - d. Pre-demolition Conference: Conduct conference at Project site. Review methods and procedures related to demolition including, but not limited to, the following:
    - i. Inspect and discuss condition of construction to be demolished.
    - ii. Review and finalize demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Project Conditions
- a. Maintain existing site roadways, walkways, and other adjacent occupied or used facilities. Do not close or obstruct roadways or other occupied or used facilities without written permission from authorities having jurisdiction.
  - b. Coordinate with air traffic safety authorities regarding height of equipment permitted and pertinent details of demolition means and methods.
  - c. Owner assumes no responsibility for condition of structures to be demolished.
  - d. Hazardous materials may be encountered in the Work. Hazardous materials are to be removed by demolition contractor before start of the Work. See Section 3.02.
  - e. Maintain existing utilities to remain in service, existing storm drain, gas, electric and protect them against damage during demolition operations. See 3.04.
5. Examination
- a. Demolition contractor shall survey the configuration and condition of the existing items to be removed and make themselves familiar with any conditions required to perform the work. Surveys will also be performed as the Work progresses to detect hazards resulting from demolition activities.
6. Utility Services
- a. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
  - b. Utility Requirements: Locate, identify, disconnect, and seal or cap

utilities serving area to be demolished.

7. Structures Description
  - a. To be determined
8. Demolition
  - a. Use of explosives is prohibited.
9. Disposal of Demolished Materials
  - a. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
  - b. Burning: Do not burn demolished materials.
  - c. Disposal: Transport demolished materials off Owner's property and legally dispose of them. Disposal information and manifests shall be provided to the City.
10. Backfill and Grading
  - a. Construct the roof deck with the appropriate slope and material
  - b. Install waterproofing method per manufacturer's specifications
  - c. Leave site rough graded and suitably prepared for additional system components (insulation, root barrier, drainage layer, filter fabric etc).

### **3.04 UTILITIES**

Multiple utilities traverse the site. Utility services may need to be maintained throughout construction. The Design-Builder shall coordinate with utility providers and users prior to the start of construction. The Design-Builder is responsible for maintaining all necessary utility services during construction.

A number of existing utilities in and around the project sites are shown to the extent known on the attached record drawings and are offered in good faith solely for informational purposes. They may not reflect actual locations and may not be inclusive. It is the Design-Builder's responsibility to locate utilities prior to construction and protect against damage and/or disruption to existing utilities throughout construction.

Design-Builder to provide live/hot power and communication connections. Any utility outages, road closures, etc. shall be coordinated with DPC and may be required to be accomplished at off hours/weekends.

#### **3.04.01**

#### **ELECTRICAL**

#### **General Electrical Requirements:**

Design-Builder shall provide electrical for items such as lighting, monitoring equipment, etc.

### **3.05 CIVIL**

#### **3.05.01 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND STORM WATER MANAGMENT**

The minimum requirements for Storm Water Pollution Prevention Plan (SWPPP) and storm water management shall meet the Ohio EPA's Storm Water Program, Ohio Department of Natural Resources' Rainwater and Land Development Manual, Low Impact Development (LID) controls.

#### **3.05.02 CONCEPTUAL LAYOUT FOR CONCOURSE A SUSTAINABLE ROOF**

Conceptual layout for Concourse A sustainable roof can found in FIGURE NO. 2 - EXHIBIT A1. Final layout is the responsibility of the Design-Builder. The design and layout of the new sustainable roof on the existing Concourse A roof shall be in accordance with the City of Cleveland Codified Ordinances, Part 3 Building Code, and Part 5 – Municipal Utilities and Services Code, and all other applicable requirements can be found here: <http://caselaw.lp.findlaw.com/clevelandcodes/>). Layout shall include, but not be limited to, considerations for facility users, relation to existing Airport Operations Area (AOA) traffic circulation, construction, and maintenance.

#### **3.05.03 CONCEPTUAL LAYOUT FOR CONCOURSE B SUSTAINABLE ROOF**

Conceptual layout for Concourse B sustainable roof can be found in FIGURE NO. 3 - EXHIBIT B1. Final layout is the responsibility of the Design-Builder. The design and layout of the new sustainable roof on the existing Concourse B roof shall be in accordance with the City of Cleveland Codified Ordinances, Part 3 Building Code, and Part 5 – Municipal Utilities and Services Code, and all other applicable requirements can be found here: <http://caselaw.lp.findlaw.com/clevelandcodes/>). Layout shall include, but not be limited to, considerations for facility users, relation to existing Airport Operations Area (AOA) traffic circulation, construction, and maintenance.

#### **3.05.04 OVERALL SIZING CRITERIA**

Sustainable roof areas should be sized to capture a portion of the Treatment Volume (Tv). The required size of a sustainable roof will depend on several factors, including the porosity and hydraulic conductivity of the growing media (if utilized) and the underlying drainage materials. The designer

should consult with a licensed structural engineer or architect to review the feasibility roof study completed by outside consultant and to ensure that the building will be able to support the additional live and dead structural load and determine the maximum depth of the sustainable roof system and any needed structural reinforcement.

### **3.05.05 LANDSCAPING CRITERIA**

Landscape specifications shall be in accordance with ODOT Construction and Material Specifications Sections 600 and 650. Plant materials shall be in conformance with ANSI Z60.1-2004, American Standard for Nursery Stock. Landscape design shall be in accordance with the City of Cleveland Codified Ordinances, Part IIB, Zoning Code, Title VII – Zoning and Section 352 Landscaping and Screening and Part IIIIE Land Use, Title XIII Building Code, Chapter 3129 Loadings. Screening Barriers and all other applicable City of Cleveland requirements. These ordinances can be found here: <http://caselaw.lp.findlaw.com/clevelandcodes/>. Landscaping criteria shall also be in accordance with Item T-901 Seeding.

## **3.06 BUILDING**

### **3.06.01 SUSTAINABLE ROOFING SYSTEMS**

Concourse A and Concourse B areas are to be covered with a sustainable roofing system as noted in the conceptual plan exhibits. The sustainable roofing system must cover the majority of designated areas of both concourse roofs, leaving areas for roof access and maintenance paths.

#### **Building and Zoning Requirements**

- a. The design of the sustainable roofs for the two (2) concourses shall meet City of Cleveland Codified Ordinances, including Part Three – Building Code, Title XIII - Zoning, Chapter 352 – Landscaping and Screening, and Part Three – Building Code, Title XIII - Building Code, Chapter 3111 – Ohio Building Code and Chapter 3129 – Loads, all other applicable state, federal, FAA and Cleveland Department of Port Control requirements.

#### **Minimum Design Criteria**

- a. The major design goal for sustainable roofs is to maximize nutrient removal and runoff volume reduction. The functional elements (i.e. systems or layers) of the sustainable roofs are the choice of the Design-Builder. The Design-Builder must submit the sustainable roofing to the DPC for approval prior to completion of final design and construction. All new material shall be compatible with existing/adjacent material.
- b. All types of design loads for the sustainable roofs are required as

- specified in the local building code (City of Cleveland and Ohio Building Code) and all other related codes.
- c. The design of the sustainable roofing system must cover the majority of designated areas of both concourse visual roofs, leaving areas for roof access and maintenance paths.
  - d. All roof water drainage must tie into an information technology element (i.e. in-line flow meters) including the amount of rain captured and the difference in contaminants from the airport sustainable roof runoff versus traditional runoff.
  - e. Provide landscaping lighting (LED, solar, etc.) throughout the structures to highlight the roofs during nighttime hours. See Section 03.04.01 Electrical.
  - f. Provide means to prevent problems with birds on roof system (e.g. choosing plants (required sedums or approved alternate; USDA suggestion list available upon request).
  - g. The Design-Builder should provide a minimum Care and Replacement Warranty that specifies a 75% minimum survival after the first growing season of species planted.
  - h. Submit building design calculations and shop drawings signed and sealed by Registered Professional Engineer licensed in the State of Ohio.
  - i. For the most part, the intent of the sustainable roofing system is to be a “Maintenance Free” structure. The Design-Builder shall submit the sustainable roofing system maintenance requirements if any to the DPC for approval prior to start of design.

#### Building Description

- a. The sustainable roofing system is to be free standing and self-supporting and must meet minimum design requirements of all state and local building codes.
- b. Slope of roof to provide positive roof water drainage. A drainage layer is to be placed between the root barrier and the growing media
- c. Roof Material - per manufacturer’s standards and specifications.
- d. Deck, Waterproofing and Insulation Layers – per manufacturer’s standards and specifications.
- e. Root barrier and root permeable filter fabric – per manufacturer’s standards and specifications.

### **3.07 SUSTAINABLE CONSTRUCTION**

#### **3.07.01 GENERAL**

Criteria for sustainable construction will be considered, including the potential for sustainable project elements such as storm water management, heat island reduction, landscaping, construction waste management, and recycled content of demolition debris.

### **Storm Water Management**

Consider all components of the hydrologic cycle (evapotranspiration, runoff, and infiltration) in design. Minimize impervious cover, and maximize cover of pervious or semi-pervious surfaces that allow water to infiltrate into soil. Use soil- and vegetation-based methods to capture, slow, and treat runoff.

Appropriate Best Management Practices are described in Chapter 2 of the Rainwater and Land Development: Ohio's Standards for Stormwater Management, Land Development and Urban Stream Protection (Third Edition), published by the Ohio Department of Natural Resources, Division of Soil and Water Conservation.

### **Landscaping**

Wildlife strikes cost civil and military aviation in the USA millions of dollars per year as well as pose a serious threat to human safety. Landscaping provides wildlife habitat and can attract hazardous wildlife species to an airport and thereby increase the risk to aircraft and human safety. Habitat management is the most effective long-term method to limit the amount of wildlife using the airport environment. Habitat management includes managing landscape characteristics which may potentially provide food, cover or water for wildlife. Generally the more simple and sparse the landscaping the less attractive it is to wildlife. The landscape architects shall select species appropriate for the airport environment thus developing landscapes which produce minimal wildlife habitat or result in low to no wildlife use.

The grass (if used) and design must be reviewed by the Airport Wildlife Management Program Coordinator (AWMPC). The AWMPC will provide written final approval/signature on design submittal. This protocol will help ensure that the appropriate plant species are selected and help to avoid landscape designs that conflict with habitat management goals at the airport.

Use only appropriate grass species adapted to site conditions, climate, and design intent. The following attributes should be considered in determining whether species are appropriate for the site: cold hardiness, heat tolerance, salt tolerance, soil moisture range, plant water use requirements, soil volume requirements, soil pH requirements, sun/shade requirements, pest susceptibility, and maintenance requirements.

Use only species that are nursery grown, legally harvested, or salvaged for reuse from on or off site. All nursery grown species must use an applicable regional standard, or must use the ANSI Z60.1-2004

American Standard for Nursery Stock.

Use non-potable water, or other natural surface or subsurface water resources, for landscape irrigation beyond the establishment phase. During the species establishment phase, temporary irrigation systems that use potable water may be used only if they are removed or disconnected within one year for cover. If temporary irrigation systems are used, describe the process and timeline for removing/disconnecting the temporary irrigation system in the site maintenance plan.

After the establishment phase, use only captured rainwater, recycled wastewater, recycled graywater, air-conditioner condensate, blowdown water from boilers and cooling towers, or water treated and conveyed by a public agency specifically for non-potable uses.

### **Construction Waste Management**

A construction waste management plan can be implemented from design through construction. All materials that are removed from the site can either be separated on site or at offsite facilities so the materials can be separated. These separated piles can then be reused or recycled and only the true “trash” will be brought to the landfills. Manifest, shipping papers, disposal receipts, and recycling certifications shall be submitted to DPC.

## **SECTION 4 – GENERAL REQUIREMENTS**

### **4.01 SUBMITTALS**

#### **4.01.1 RELATED DOCUMENTS**

Drawings and general conditions of the Contract, including General and Special Provisions and other Specification Sections, apply to this clause.

#### **4.01.2 SUMMARY**

1. This section specifies requirements for submittals required for performance of Work, including:
  - a. Design-Builder’s Construction Schedule;
  - b. Submittal Schedule;
  - c. Shop Drawings;
  - d. Product Data;
  - e. Conceptual Layout.
2. Definitions:
  - a. Submittals: General term including schedule, samples, shop

- drawings and product data, as applicable.
- b. Shop Drawings: Drawings, diagrams, schedules, related submittals and other data specifically prepared for the Work by the Design-Builder or a subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.
  - c. Product Data: Illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Design-Builder to illustrate materials or equipment for some portion of the Work.
3. The Specifications of this Section are minimum requirements. Where more stringent requirements are specified elsewhere in these documents, the more stringent requirement shall prevail.
  4. Provide a complete list of required submittals to the DPC.
  5. Submit to DPC for formal review, all items listed herein by the time indicated as received, checked, and approved as required, accompanied with a transmittal letter.
  6. Keep an accurate record of the date of each submittal and the date received on the Project.
  7. Submit the following items prior to Contract signing:
    - a. Performance Bonds;
    - b. Subcontractor and Material Supplier List;
    - c. Installer Certification;
    - d. Certificate(s) of Insurance; and
    - e. Equal employment opportunity requirements.
    - f. Site Specific Health and Safety. In addition to the Project Site Specific Health and Safety each sub-contractor shall be required to provide a Site Specific Health and Safety Plan for its part of the work or must comply with the Design-Builder Project Site Specific Health and Safety Plan.
    - g. At least two (2) references of past design-build projects of similar scope, timeliness, and constructability.
  8. The following is a general list of required submittals and the time frame for delivery to DPC.
    - a. Prior to first progress payment:
      - i. Progress schedule;
      - ii. Submittal schedule;
      - iii. Testing and Inspection; and
      - iv. Schedule of values.

- b. As Work progresses:
  - i. Wage Rate and Payroll Certificates;
  - ii. Certified Payroll (4 copies from Design-Builder and all Design-Builder's subcontractors)
  - iii. Materials Certifications;
  - iv. Shop Drawings;
  - v. Product Data;
  - vi. Reference Submittals;
  - vii. Affidavits and Waivers of Lien;
  - viii. Hardware Schedule;
  - ix. Progress Photographs;
  - x. A.A.B.C. Guarantee Certificates; and
  - xi. Operating and Maintenance Instructions.
9. With Final Application for Payment
  - a. Special Guarantees and Warranties;
  - b. UL Certificates;
  - c. Final affidavits and Waivers of Lien;
  - d. Complete package of Shop drawings and Product Data;
  - e. Record drawings;
  - f. Extra stock;
  - g. Final photographs and negatives;
  - h. Keys and key schedule;
  - i. Certificate of Inspection;
  - j. Bound set of all Testing and Inspection Reports; and
  - k. Bound set of Operating Maintenance manuals.
10. General Requirements
  - a. There shall be NO SUBSTITUTIONS for specified products or systems other than those approved prior to signing of the Contract, unless the substitution can be shown to be of significant benefit to The City, no progress payments will be approved until such unauthorized substitutions have been removed and replaced with the specified material or system.
  - b. Shop Drawings and Product Data are the sole responsibility of the Design-Builder and shall be checked by Design-Builder. The DPC takes no responsibility whatsoever for such documents submitted for review.
  - c. Shop drawings and Product Data shall be submitted in sufficient detail to permit the reviewer to:
    - i. Review that the product or system is as specified or shown.
    - ii. Review details of fabrication, installation or attachment.
    - iii. Review for complete conformance to each requirement of performance specifications, line item by line item.
  - d. Shop Drawings show the following:

- i. General arrangement of each product or assembly by necessary plans, elevations and sections.
  - ii. Dimensions, finishes, location on the building roof and details of fabrication and installation.
  - iii. Any equipment with electric motors or wiring must show wiring diagram and schematics. Lack of either of the above will be cause for automatic rejection.
- e. Product Data include:
- i. Specifications and details
  - ii. Performance characteristics
  - iii. Wiring diagrams
  - iv. Test data
  - v. Installation instructions

#### **4.01.3 SUBMITTAL PROCEDURES**

1. Coordination: Coordinate preparation and processing of submittals with performance of activities. Transmit each submittal sufficiently in advance of performance of related fabrication and installation activities to avoid delay.
  - a. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
  - b. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
  - c. The DPC reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
  - d. Job delays occasioned by requirement of resubmission of shop drawings and product data not in accordance with Contract Documents are Design-Builder's responsibility and will not be considered valid justification for extension of contract time.
  - e. As soon as practical after executing the Contract, or as required by other Contract Documents, request from each Subcontractor and submit properly processed and identified items as required in the Specifications.
  - f. The Design-Builder shall be solely responsible for scheduling and coordinating of submittals among Subcontractors.
2. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.
  - a. Allow 1 week for initial review. Allow additional time if processing must be delayed to permit coordination with

- subsequent submittals. The DPC will promptly advise the Design-Builder when a submittal being processed must be delayed for coordination.
- b. If an intermediate submittal is necessary, process the same as the initial submittal.
  - c. Allow 1 week for reprocessing each submittal.
  - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the DPC sufficiently in advance of the Work to permit processing.
  - e. Commence no portion of work requiring submittals until submittal has been reviewed by the DPC and stamped by DPC's engineer.
3. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
- a. Provide a minimum blank space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Design-Builder's review and approval markings and the action taken.
  - b. Include the following information on the label for processing and recording action taken.
    - i. Project name and DPC WBS Number
    - ii. Date of Submittal
    - iii. Name, address and phone # of DPC's engineer
    - iv. Name, address and phone # of Design-Builder
    - v. Name, address and phone # of Subcontractor
    - vi. Name, address and phone # of Supplier
    - vii. Name of Manufacturer
    - viii. Number and title of appropriate Specification Section
    - ix. Drawing number and detail references, as appropriate
4. Submittal Transmittal:
- a. Package each submittal appropriately for transmittal and handling. Transmit each submittal from Design-Builder to DPC using a transmittal form. Submittals received from sources other than the Design-Builder will be returned without action.
  - b. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Design-Builder's certification that information complies with Contract Document requirements.

#### **4.01.4 SUBMITTAL SCHEDULE**

1. Maximum of five (5) days after the Notice to Proceed for construction has been granted, Design-Builder shall prepare and submit a complete schedule of submittals. Indicate timing for submission of required submittals and relation to construction sequence.

2. During course of the Work, maintain an updated submittal schedule showing status of all submittals. Provide copies for the DPC at project meetings and at other times when requested.
  - a. Coordinate submittal schedule with the list of subcontracts and the list of products as well as the Design-Builder's fabrication and installation schedule.
  - b. Prepare the schedule in chronological order; include submittals required during the first 30 days of work. Provide the following information:
    - i. Scheduled date for the first submittal.
    - ii. Related Section Number
    - iii. Submittal category.
    - iv. Name of subcontractor.
    - v. Description of the part of the Work covered.
    - vi. Scheduled date for re-submittal.
    - vii. Scheduled date for the DPC's final release and the DPC's engineer approval.
3. Distribution: Following response to initial submittal, print and distribute copies to the DPC, subcontractors and other parties required to comply with submittal dates indicated.

#### **4.01.5 SHOP DRAWINGS**

1. Submit newly prepared information, drawn to accurate scale. Highlight, encircle or otherwise indicate deviations from the Construction Documents. Do not reproduce Construction Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.
2. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. These drawings are to show all materials, mechanical fasteners, electrical apparatuses, construction details, and installation detailing of typography and sign structure. Include the following information:
  - a. Dimensions;
  - b. Identification of products and materials included;
  - c. Compliance with specified standards;
  - d. Notation of coordination requirements; and
  - e. Notation of dimensions established by field measurement.
3. Submittal Format:

Submittal format shall be determined by Design-Builder using Standard Industry Practices. DPC reserves the right to request resubmittals in a different size configuration because of program requirements.

  - a. Sheet Size: Except for templates, patterns and similar full-

size Drawings, submit Shop Drawings on sheets at least 8 ½ by 11" but no larger than 30" by 42".

b. Initial Submittals:

Submit shop drawings and product data in reproducible form as noted below. Provide samples as requested. Submit three (3) complete sets of the sizes indicated. The following represents typical distribution of said submittal sets:

DPC Three (3) copies

2-DPC

1-Document Control

c. Final Submittals of re-submittals: For larger than 11" x 17" Shop Drawings, submit three reproducible copies. Two copies will be retained: 1 for DPC's engineer and 1 for Document Control. The third copy will be returned which shall be used for distribution by Design-Builder and marked up and maintained as a "Record Document."

4. Coordination Drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or function as intended. Submit Coordination Drawings for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.

**4.01.6 PRODUCT DATA**

1. Collect Product Data into a single submittal for each element of fabrication or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

2. Mark each copy to show applicable choices and options. Where Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

- a. Manufacturer's printed recommendations
- b. Compliance with recognized trade association standards
- c. Compliance with recognized testing agency standards
- d. Application of Testing Firm labels and seals
- e. Notation of dimensions verified by field measurement

- f. Notation of coordination requirements
3. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
4. Submittals: Submit three (3) copies of each required submittal. Distribution will be as identified in 4.01.05 Shop Drawings. The returned copy will be marked with action taken and corrections or modifications required. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
5. Distribution: Furnish copies of final submittal to DPC, installers, subcontractors, suppliers, manufacturers, fabricators and others required for performance of construction activities. Show distribution on transmittal forms.
  - a. Do not proceed with installation until an applicable copy of Product Data is in the installer's possession.
  - b. Do not permit use of unmarked copies of Product Data in connection with fabrication.
  - c. The Design-Builder shall provide, in writing, maintenance specifications, and upkeep instructions to the DPC. These specifications shall speak to the upkeep needs of all elements contained in this project. They shall identify in a concise, easily understandable form the materials/product specifications for often required changes or maintenance.

#### **4.01.9 DESIGN-BUILDER'S REVIEW**

1. Review, stamp with approval and submit to DPC submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the DPC and Airport Engineering Manager or of separate Design-Builders. Submittals made by the Design-Builder which are not required by the Contract Documents may be returned without action.
2. By approving and submitting submittals, Design-Builder represents that he has determined and verified materials, quantities, fabrication requirements, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.
3. The Design-Builder shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the DPC's review of shop drawings, product data, or similar submittals unless the Design-Builder has specifically informed the DPC in writing of such deviation

- at the time of submittal and the DPC has given written acceptance to the specific deviation. The Design-Builder shall not be relieved of responsibility for errors or omissions in shop drawings, product data, or similar submittals by the DPC's review thereof.
4. The Design-Builder shall direct specific attention, in writing or on resubmitted shop drawings, product data, or similar submittals, to revisions other than those requested by the DPC on previous submittals.
  5. When professional certification of performance criteria of materials, or equipment is required by the Contract Documents, the DPC shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.
  6. Design-Builder shall be responsible for coordinating all work, whether by subcontractors or under separate contracts.
  7. Design-Builder agrees that submittals processed by DPC are not construction change directives or change orders. The purpose of submittals is to demonstrate to the DPC that the Design-Builder understands the design concept and demonstrates an understanding by indicating which equipment and material he intends to furnish and install and by detailing fabrication and installation methods intended to use.
  8. Design-Builder represents by submitting shop drawings and product data that he has complied with provisions specified herein. Submissions made without Design-Builder's approval indicated thereon will be returned without being reviewed for compliance with this requirement.
  9. Date each submittal and indicate name of Project, DPC, Design-Builder, subcontractor, as applicable, description or name of equipment, material or product, and identify location at which it is to be used in the Work.
  10. Accompany submittal with transmittal letter containing project name, Design-Builder's name, number of drawings, titles and other pertinent data. Transmittal shall outline deviations, if any, in submittals from requirements of Contract Documents.
  11. Perform no portion of the Work requiring submittal and review of submittals until the respective submittal has been reviewed by the DPC and stamped by the DPC's engineer. Such work shall be in accordance with submittals bearing the DPC's engineer's stamp.

12. Upon receipt of submittals, check each item for:
  - a. Conformance to submittal requirements;
  - b. Conformance of materials and details to the Contract Documents;
  - c. Accuracy of all measurements; and
  - d. Field construction criteria related thereto.
13. Reject items which do not conform to these requirements and return them to the originator with an explanation for rejection. Do not submit rejected items to the DPC.
14. For items approved by the Design-Builder, stamp each item with a review stamp to warrant and represent approval.
15. The Design-Builder is totally responsible for the following items that will not be reviewed by the DPC:
  - a. Dimensions to be confirmed and correlated at the Site.
  - b. Fabrication process information.
  - c. Means, methods, techniques, sequences, procedures of construction and construction safety.

#### **4.01.10 DPC REVIEW**

1. All submittals will be processed by the DPC. Deliver or send each item shipping charges prepaid to DPC.
2. DPC will distribute submittals to all reviewers noted in 4.01.05.3.b of this Section.
3. All DPC review comments will be forwarded to the DPC engineer for incorporation on the master set of the submittal. The DPC engineer will make a copy of the master set with final disposition for their files and return the master set to Design-Builder.
4. DPC will make two (2) copies, one for the DPC's office and one for Document Control. DPC will return the original master set to Design-Builder for Design-Builder's copying and distribution.

#### **4.01.11 DPC's ENGINEER REVIEW**

1. Design-Builder will deliver or send each item, shipping charges prepaid, to DPC.
2. DPC will immediately reject any item without further review if it is not:
  - a. Accompanied by a transmittal letter containing the required information;
  - b. Submitted with 3 sets of reproducibles; and

- c. Stamped "Approved" by the Design-Builder.
3. The review will be for conformance to the design concept and compliance with information given in the Contract Documents. The DPC engineer will make notations directly on the reproducible.
4. DPC's engineer's review or other appropriate action is only for checking for conformance with information given and the design concept expressed in the Contract Documents. DPC engineer's acceptance of a specific item shall not indicate acceptance of an assembly in which item is a component.
5. DPC engineer's review of submittals shall not relieve Design-Builder of responsibility for deviation from requirements of Contract Documents unless Design-Builder has informed the DPC engineer in writing of such deviation at time of submission and DPC has given written acceptance to the specific deviation. DPC engineer's review shall not relieve Design-Builder from responsibility for errors or omissions in submittals.
6. Submittals required to be submitted "For Designer's Information Only" are required to demonstrate that the Work complies with performance requirements of the Contract Documents. Such submittals, if acceptable to DPC's engineer, will not be returned to Design-Builder.
7. Reference submittals shall be reviewed by the DPC for informational purposes only. The contents of such submittals and compliance with all other requirements of the Contract Documents shall be the responsibility of the Design-Builder.
8. DPC will return one reproducible copy of reviewed shop drawings for distribution by Design-Builder.

#### **4.01.12 VARIATIONS FROM CONTRACT DOCUMENTS**

1. If the DPC determines a variation from the Contract Documents is in the best interest of DPC, and it does not involve a change in the Contract price or time, the DPC engineer shall permit such variation and stamp the item "CONFORMS AS IS."
2. DPC will assume the Design-Builder approves the variation shown if not in receipt of immediate written notification stating otherwise.
3. If the Design-Builder fails to mention variations from the Contract Documents, Design-Builder will not be relieved of the responsibility for executing the Work in accordance with the Contract Documents.

4. When a variation from the Contract Documents is permitted and such variation involves corresponding adjustment in an adjacent or related item, the responsibility for making and paying all costs for such adjustments rest with the Design-Builder requesting the original variation.

#### **4.01.13 DPC ENGINEER'S STAMP AND LETTER OF ACKNOWLEDGEMENT**

Each Shop Drawing, Product Data or sample processed by the DPC engineer will be stamped with following notation:

1. If the item conforms to all requirements of the Contract Documents or if the item contains permitted variations as determined by the DPC engineer in concurrence with the DPC, it will be stamped, "APPROVED" which means that fabrication, manufacture or construction may proceed immediately, no other action required.
3. If the item is marked-up by the Design-Builder or the DPC engineer to make it conform and such mark-ups are not extensive, it will be stamped "APPROVED AS NOTED." Process immediately and make corrections for final Record Documents.
4. If the item does not conform to the Contract Documents and/or if the item is extensively marked-up, it will be stamped "REVISE AND RESUBMIT." Make corrections and resubmit for review, however proceeding without either box B or C checked, is prohibited.
5. If the item does not conform to the Contract Documents and the variation is not permitted, it will be stamped "REJECTED." Proceeding without either box B or C checked is prohibited. Review, follow remarks and resubmit for review.

#### **4.01.14 REJECTION AND RESUBMITTAL**

1. Items not meeting the requirements of this Section, or stamped "REVISE AND RESUBMIT OR REJECTED," will be returned for correction and resubmittal by the same process. The DPC engineer will indicate reasons for the rejection and will retain one copy or sample to check against resubmittal.
2. Make indicated changes only, unless further change is required for conformance to the Contract Documents.
3. Direct attention on the item to all revisions, other than those requested, and explain such in detail on the transmittal form.
4. The Design-Builder shall be completely responsible for changes not

indicated or specifically noted as revised.

#### **4.01.15. ACCEPTANCE AND USE**

1. Items stamped "APPROVED" or "APPROVED AS NOTED" will be returned to the Design-Builder who shall reproduce copies from the original stamped reproducible.
2. Distribute copies as required to transmit the information to all parties involved.
3. The DPC engineer will retain copies of conforming Shop Drawings and Product Data as well as one sample, for comparison with work installed.
4. Keep copies of each approved item on the job site at all times for reference.
5. Retain the original reproducible of each item until final completion of the Work and turn them over to the DPC.
6. Do not commence Work requiring Shop Drawings, and Product Data until the DPC has approved submittal. Perform all work in accordance with said submittal.

## **4.02 SCHEDULES**

### **4.02.01 RELATED DOCUMENTS**

Drawings and general conditions of the Contract, including General and Special Provisions and Specification Sections, apply to this section.

### **4.02.02 SUMMARY**

1. General Requirements:
  - a. Within seven (7) days after award of Contract, prepare and submit to DPC estimated construction progress for construction activities. Include sub-schedules of related activities essential to its progress.
  - b. Submit revised progress schedule with each Application for Payment.
2. Other Requirements: Additional sections may contain additional scheduling requirements.

### **4.02.03 SUBMITTALS**

1. Schedules:
  - a. Schedule construction work, including that of Subcontractors, in

Critical Path Method (CPM).

- b. Prepare CPM diagrams and reports utilizing a simple bar chart.
  - i. Activity identification number.
  - ii. Activity description.
  - iii. Estimated duration in working days.
  - iv. Earliest start date.
  - v. Earliest finish date.
  - vi. Actual start date.
  - vii. Actual finish date.
  - viii. Latest start date.
  - ix. Latest finish date.
  - x. Total float.
  - xi. Responsibility for activity. (Design-Builder, subcontractors, suppliers, etc.)
  - xii. Project for activity. (By location, specification section, etc.)
- c. The mathematical analysis shall list all activities in separate sorts as follows:
  - i. By activity number from lowest to highest with all predecessor and successor restraints.
  - ii. By total float, then in order of earliest finish date.
  - iii. By responsibility, then in order of early start date.
  - iv. By project, then in order of early start date.
- d. The written narrative shall include Design-Builder's calculation of duration's of all critical path activities. The calculations shall indicate hours per shift and number of shifts with a listing of major items of construction equipment planned to be used for each critical path activity. Should DPC require similar information on any noncritical activity, this information shall be supplied by Design-Builder in writing.
- e. Initial submittal, revisions and monthly updates of network diagram, mathematical analysis, and written narrative shall be submitted in six copies. Submittals will not be approved unless they are complete as described herein.
- f. Participates in a review and evaluation of proposed network diagram and mathematical analysis by DPC.
- g. Resubmit revisions necessary as a result of this review to DPC within five calendar days after this review. The mutually acceptable schedule shall then be used by Design-Builder for planning, organizing and directing work for reporting progress.

- h. If Design-Builder desires to make changes in the method of performing Work, he shall notify DPC in writing, stating reason for changes.

#### **4.02.04 REPORTS**

1. Twice-Monthly progress reports:
  - a. At intervals of 15 calendar days, submit a progress report of all activities by updating mathematical analysis, and corresponding computerized network diagram of the as-planned CPM schedule.
  - b. Update schedule by entering the following: Actual start and completion dates of complete activities and the actual start date and remaining duration of activities in progress.
  - c. Submit updated network diagram in the same format as specified for Construction Schedule, with the calendar starting from the date of the update.
  - d. The updated mathematical analysis shall be submitted in same format as specified for Construction Schedule.
2. Submit twice-monthly narrative report including, but not limited to, the following:
  - a. Progress of project milestones, including earliest finish date, latest finish date and total float.
  - b. Progress along critical path.
  - c. If project is behind schedule, report progress along paths with negative float.
  - d. Description of all revisions made to the schedule including all added, deleted and revised activities; all logical revisions and all duration revisions.
  - e. Description of the problem areas, current and anticipated delaying factors and their impact, and an explanation of corrective actions taken or proposed.
3. If Design-Builder fails to submit the required progress and narrative reports, DPC will withhold approval of progress payment until such time as Design-Builder submits required reports.

#### **4.02.05 DESIGN-BUILDER COVENANTS AND GUARANTEES**

1. Design-Builder covenants and guarantees that Design-Builder will not:
  - a. Misrepresent to City or the DPC it's planning, scheduling or execution of the Work.
  - b. Utilize schedules materially different from those made available by Design-Builder to the City or the DPC or to any Subcontractor or separate Design-Builders for the direction, execution and coordination or (*sic*) the Work, or which are not feasible or realistic.

- c. Prepare schedules, updates, revisions, or reports for the Work which do not accurately reflect the actual intent or reflect the reasonable and actual expectations of the Design-Builder and its Subcontractors pertaining to:
  - i. The sequences of activities.
  - ii. The duration of activities.
  - iii. The responsibility for performing activities.
  - iv. Resource availability.
  - v. Labor availability or efficiency.
  - vi. Foreseeable weather conditions.
  - vii. The cost associated with the activity.
  - viii. The percentage complete of any activity.
  - ix. Completion of any item of work or activity.
  - x. Project milestone completion.
  - xi. Delays, slippages or problems encountered or expected.
  - xii. Subcontractor requests for time extensions or delay claims of subcontractors.
  - xiii. Float available.

If the Design-Builder should desire or intend to complete the Work earlier than any required milestone or completion date, the City or the DPC shall not be liable to the Design-Builder for any costs or other damages should the Design- Builder be unable to complete the Work before such milestone completion date.

#### **4.02.06 FLOAT TIME**

1. Float or slack time is defined as the amount of time the start or finish of an activity can be delayed without affecting the project finish date. Float or slack time is for the exclusive use and benefit of the City. Design-Builder's work shall proceed according to early start dates, and the DPC shall have the right to reserve and apportion float time according to the needs of the project. The Design-Builder acknowledges and agrees that actual delays, affecting paths of activities containing float time, will not have any effect upon contract completion times, providing that the actual delay does not exceed the float time associated with those activities.

#### **4.02.07 USE OF SITE**

1. All damage to haul routes drives, or other features of the grounds designated to remain or adjacent property resulting from any operations connected with the Work shall be repaired by utilizing the unit prices in the contract and to the satisfaction of DPC. Repairs are the responsibility of the Design-Builder and will not be paid for utilizing the unit prices in the contract. Photographs shall be taken of haul routes before work begins and compared to conditions at the end

of the Project.

2. Each contractor or subcontractor must keep all pavement free from mud and debris at all times which results from his work.
3. At the completion of the Project, remove all construction debris, equipment, and temporary items.

#### **4.02.08 CONSTRUCTION PLANT**

1. Provide all items, such as hoists, and other lifting devices; all scaffolding, staging, platforms, and ladders; and all temporary flooring, partitioning and stairs as required by the various trades for the proper execution of all work. Comply with FAA requirements for height restrictions near or at airports, including submittal of FAA Form 7460-1 for pertinent airspace determinations. Such determinations can take between 45 to 60 days; thus, a 7460-1 was submitted by DPC in advance.
2. Provide such equipment with proper guys, bracing, guards, railings, and other safety devices as required by governing authority and safety standards.

#### **4.02.09 SAFETY, PROTECTION AND SECURITY**

1. General
  - a. Erect and maintain, as required by OSHA and DPC/City of Cleveland, existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including, but not limited to, posting conspicuous danger signs and other warnings against hazards, promulgating safety regulations, and notifying Owners and users of adjacent utilities areas.
  - b. Provide protection at all times against damage from vandalism, theft, weather, and other causes of all completed work, materials, and apparatus.
  - c. Protect existing structures, road, and walks during progress of the Work.
  - d. Design Build team to provide for Safety Programs and Job Safety Meetings in their bid documentation, similar to DPC Planning and Engineering's General Conditions. Such General Conditions can be provided upon request.
  - e. The Design-Builder shall not load or permit any part of the Work to be loaded so as to endanger its safety.
2. Safety
  - a. General
    - i. Design-Builder shall comply with all applicable Federal, State, and Local Laws and Regulations including but not limited to:

1. OSHA Standards 29 CFR 1910 and 1926, Safety Standards for Fall Protection in the Construction Industry
  2. Applicable Standards and Regulations established by the Industrial Commission of Ohio.
  3. The DPC Employee Safety Handbook and Occupational Safety Manual.
- ii. Design-Builder shall participate in Weekly Safety Meetings with management.
- b. Design-Builder shall designate a Safety Manager for each contract and if a contract has more than one site designate one (1) for each site.
    - i. Design-Builder shall report any accidents, injuries or safety incidents to DPC Safety Designee through the DPC Project Manager, Inspector, CLE Operations, or duly authorized DPC representative on site. Design-Builder shall forward this report to the DPC in such a manner that the DPC Project Manager can forward it to DPC Safety Designee and within twenty four (24) hours of the event. Design-Builder shall cooperate fully in any DPC investigation of the event.
    - ii. Erect and maintain, as required by OSHA, existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including, but not limited to, posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying Owners and users of adjacent utilities areas.
    - iii. The Design-Builder shall not load or permit any part of the Work to be loaded so as to endanger its safety.
3. Water
    - a. Protect completed work from rain, spring or ground water, backing up of drains or other flooding.
    - b. Construct and maintain temporary drainage and dispose of pumped water to prevent flooding in the construction and storage areas.
4. Security
    - a. Maintain building and Site security at all times.
    - b. Provide temporary weather tight enclosures for all exterior openings. Equip exterior doors with locks. At the end of each day's work, close and lock all temporary enclosures.
5. Safety Devices
    - a. Provide all railings and guards for protection of construction personnel and the public, including proper delineation of work zones and public areas.

6. Fire Protection
  - a. Schedule means of fire protection for all construction, materials, and personnel prior to starting Work in accordance with governing authority.
  - c. Provide and perform protection and prevention during the construction period in accordance with FM or IRI recommendations and all other laws and regulations for protection of buildings under construction.
7. First Aid
  - a. Provide all articles necessary for first aid treatment.
  - b. Make arrangements with the nearest hospital for treatment of seriously injured workmen.

#### **4.02.10 REPORTS**

##### **DAILY REPORTS**

1. Each workday, the Design-Builder shall submit to the DPC a full report of the previous workdays work. The report shall include, but not limited to:
  - a. Description of work activity referenced to the activity numbers of the project schedule, trades and subcontractors employees. Include all inspections made by the Design-Builder or the Subcontractors including but not limited to the Design-Builder's Quality Control Inspections, Code Conformance Inspections, and Daily Safety Inspections.
  - b. Equipment lists; the description, units, type and work areas columns shall be filled out. Field Force; Personnel count; and minority representation.
  - c. Visitors; All columns shall be filled out.
  - d. Materials; Delivery time, name, quantity, and description shall be filled out. All others as required.
  - e. Schedule; May be used in lieu of referencing the activity numbers in the description portion of the report.
  - f. Temperature, precipitation, sky, wind conditions.
  - g. Dates, Times, and subject of all meetings and daily toolbox safety meeting comments and results.

##### **WEEKLY**

1. Each week, the Design-Builder shall submit to DPC, a full report of the previous week's work, noting trades and subcontractors employed, with a count of personnel, and minority representation. Also note work performed, accepted, weather and conditions affecting the progress of the Work. Record also dates of safety meeting comments and results of the same.

**MONTHLY**

1. By the fifth of each month, Design-Builder shall submit to DPC a full report of the previous month's injury and illness cases and incident rate statistics based on OSHA record keeping requirements which includes, but is not limited to, number of first-aid cases, near miss reports, accidents reports and the number of man-hours worked for the month.

**4.02.11 DUST AND NOISE CONTROL**

1. The infiltration of dust and spread of noise from demolition and new work is of great concern to the Owner. Design-Builder must exercise all precautions to minimize dust from migrating to occupied areas of the Airfield.
2. At a minimum, the following temporary standards must be adhered to:
  - a. Caulk all joints in barriers, either temporary or permanent, to prevent the travel of dust and noise.
  - b. Temporary partitions shall be plywood and painted color as selected by DPC and also be insulated with sound batts to minimize noise and in certain circumstances for thermal protection. Take partitions up to bottom of overhead deck.
  - c. Whenever possible, an enclosed space shall be put under negative pressure to prevent dust migration.
  - d. Turn off return air ducts from areas of work.
  - e. Temporary wrap enclosures are required for escalators indicated on drawings. Wrap enclosures shall be plastic, completely protecting units from dust. All ends of wrap shall be sealed. Contact escalator manufacturer prior to wrap enclosure in order to comply with their requirements for enclosing and sealing escalators.
3. Provide access through barriers as required for maintenance, safety, etc. Doors shall be locked at all times.

**4.02.12 CLEAN UP AND REMOVAL**

1. Cleaning  
Remove burnable materials from the job site immediately. The Design-Builder shall, prior to commencement of Work, supply all dumpsters in locations as directed by DPC. Design-Builder shall arrange for pick-up and replacement of dumpsters when capacity is reached.
2. Trash/Debris  
Immediately dispose of trash and debris too large for dumpsters.

**4.02.13 SPECIAL PROTECTION**

1. Protect buildings and building components from damage, staining or defacing due to the Work. Correct or replace damaged materials or replace damaged materials or finishes to satisfaction of DPC.
2. Drives shall not be blocked to extent of restricting vehicular access and parking area restrictions shall be kept to a minimum. Barriers and restrictions shall be approved in advance by DPC. Do not work with materials subject to being wind-blown during times of high winds.
3. Protect building from rain or water leakage during the course of the Work. Do not open joints or roof areas to extent that openings cannot be protected from inclement weather. Openings shall not be left unprotected overnight.

## FIGURE NO. 1—Title Sheet- Overall Site Plan

Concourse A  
Sustainable Roofing



Concourse B  
Sustainable  
Roofing

**FIGURE NO. 2—Exhibit A1**  
**Conceptual layout for Concourse A Sustainable Roof**



**FIGURE NO. 3—Exhibit B1**  
**Conceptual layout for Concourse B Sustainable Roof**



## **APPENDIX A: ASBESTOS REPORT**