

**DIVISION 01**

---

**GENERAL REQUIREMENTS**

SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.01 DESCRIPTION

A. Project/Work Identification:

1. The general overall description of the Work of the Contract for the:  
**Airside F Cooling Tower Refurbishment**  
**Tampa International Airport**  
**Tampa, Florida**

can be summarized for purposes of administration and payment in the manner of project segments as follows:

Authority Project No.: 5645 18

Project Title: Airside F Cooling Tower Refurbishment

Project Description: The purpose of the Project is to complete structural, cosmetic, and mechanical refurbishments to the cooling tower at Airside F in order to prolong its life and ensure years of capable cooling of the airside.

B. Contract Documents:

Requirements of the Work are contained in the Contract Documents. Cross-references in the Contract Documents to published information are not necessarily bound with the Contract Documents.

C. Intent:

The intent of the Contract is to provide for construction and completion in full compliance with the Contract requirements with all Work performed and completed in a good workmanlike manner in every detail. It is further intended that the Contractor will furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the Work in a good workmanlike manner in accordance with the Contract Documents.

1.02 LIMITS OF CONSTRUCTION

Any existing condition disturbed due to Contractor's Work will be restored to the Owner's satisfaction at the Contractor's expense.

1.03 ARCHAEOLOGICAL AND HISTORICAL FINDINGS.

- A. Unless otherwise specified in this subsection, the Contractor is advised that the site of the Work is not within any property, district, or site, and does not contain any

building, structure, or object, listed in the current National Register of Historic Places published by the United States Department of Interior.

- B. Should the Contractor encounter, during its operations, any building, part of a building, structure, or object that is incongruous with its surroundings, it will immediately cease operations in that location and notify the Owner. The Owner will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume its operations or to suspend operations.
- C. Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such will be covered by an appropriate Contract modification (change order or supplemental contract). If appropriate, the Contract modification will include an extension of Contract time.

#### 1.04 REMOVAL OF EXISTING STRUCTURES

- A. All existing structures encountered within the established lines, grades, or grading sections will be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the Work or to remain in place. The cost of removing such existing structures will not be measured or paid for directly, but will be included in the Contract Sum.
- B. Should the Contractor encounter an existing structure that interferes with Contractor's Work, the Owner will be notified prior to disturbing such structure. The disposition of existing structures so encountered will be determined by the Owner in accordance with the provisions of the Contract.
- C. Wherever existing structures interfere with Contractor's Work, Contractor shall be responsible for all modifications, including removal if appropriate, to fit Contractor's Work.
- D. Where existing structures are determined to be removed, Contractor shall remove and dispose of the material. Where such structures are determined to remain and are integrated into Contractor's Work, such materials and structures will remain the property of the Owner when so utilized in the Work.

#### 1.05 RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK

- A. Should the Contractor encounter any material such as, but not restricted to, sand, stone, gravel, slag, or concrete slabs, within the established lines, grades, or grading sections, the use of which is intended by the terms of the Contract to be either embankment or waste, Contractor may at its option either:
  - 1. Use such material in another Contract item, providing such use is approved by the Owner and is in conformance with the Contract Specifications applicable to such use; or
  - 2. Remove such material from the Project site, upon written approval of the Owner; or

3. Use such material for Contractor's own temporary construction on the Project site; or
  4. Use such material as intended by the terms of the Contract.
- B. Should the Contractor wish to exercise option 1, 2., or 3., Contractor will request the Owner's approval in advance of such use.
  - C. Should the Owner approve the Contractor's request to exercise option 1., 2., or 3., the Contractor will be paid for the excavation or removal of such material at an agreed upon unit price. The Contractor will replace, at Contractor's own expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the Work. The Owner will not be charged for Contractor's use of such material so used in the Work or removed from the Project site.
  - D. It is understood and agreed that the Contractor will make no claim for delays by reason of Contractor's exercise of option 1., 2., or 3.
  - E. The Contractor will not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the Work, except where such excavation or removal is provided for in the Contract Documents.

#### 1.06 SCHEDULING

- A. The Contractor will be responsible for the planning, scheduling and coordination of all Work performed under the Contract Documents and the entire Project as a whole so that materials will arrive on schedule and Work will proceed without delay.
- B. Contractor will be responsible for complying with Scheduling requirements contained in the Contract Documents. Contractor will be responsible for coordination with Owner for site access.

#### 1.07 COOPERATION BETWEEN CONTRACTORS

- A. When separate contracts are awarded for different portions of the Project, the Contractor in each case will be the person other than the Owner who signs each separate contract.
- B. The Owner reserves the right to contract for and perform other or additional construction on or near the Work covered by this Contract.
- C. When separate contracts are let within or near the limits of this Project, the Contractor will conduct its Work so as not to interfere with or hinder the progress of completion of the construction performed by other contractors. Contractors working near each other will cooperate with each other as directed by the Owner.
- D. The Contractor will assume all liability, financial or otherwise, in connection with

Contractor's Work and will protect and save harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays or loss experienced by the Contractor because of the presence and operations (or lack thereof) of other contractors working within or near the limits of this Project.

- E. The Contractor will arrange the Work and will place and dispose of the materials as not to interfere with the operations of the other contractors within or near the limits of this Project. The Contractor will join the Work with that of the others in an acceptable manner and will perform it in proper sequence to that of the others.

#### 1.08 LAWS, PERMITS, AND REGULATIONS

The Contractor will:

- A. Comply with all applicable laws, ordinances, regulations, codes, and ADA requirements.
- B. Obtain and pay for all license and permits, all fees and charges for connection to outside services and parking for Contractor's vehicles.
- C. Abide by FAA, TSA, and Owner's safety and security regulations and procedures relative to access to, and work in, Airport Operations Areas and secured facilities.
- D. Comply with Owner's insurance requirements.
- E. Comply with the requirements of Authorities Having Jurisdiction (AHJ).

#### 1.09 COORDINATION WITH CONTRACTS

- A. The Contractor will be responsible for directly coordinating and reviewing all schedule dates with the contracts listed above in Item 1.07 LIST OF RELATED WORK, Paragraph A., and shall plan its Work accordingly to not cause any delays or hinder the progress of its Work or that of the Related Work.
- B. It is the sole and full responsibility of the Contractor to coordinate the whole Work directly with the contracts listed above in Item 1.07 LIST OF RELATED WORK, Paragraph A.
- C. The listing of contracts under 1.07 LIST OF RELATED WORK, Paragraph A., may not be inclusive of other related work performed at the Project site; however, the Contractor will be required to coordinate same as directed under Paragraphs A. and B. above.

#### PART 2 – PRODUCTS

Not used.

#### PART 3 – EXECUTION

Not used.

END OF SECTION

## SECTION 01015 - MOBILIZATION

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

##### A. Scope:

The Work specified as Mobilization consists of preparatory work and operations in mobilizing for beginning work on the Project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the Project site, building permit costs, and for the establishment of temporary offices, building facilities, utilities, safety equipment and first aid supplies, sanitary and other facilities, as required by these Contract Documents and State and local laws and regulations. The costs of bonds and all required insurance and other preconstruction expense necessary for the start of the Work, excluding the cost of construction materials, will also be included in Mobilization.

### PART 2 - PRODUCTS

Not used.

### PART 3 - EXECUTION

Not used.

END OF SECTION

## SECTION 01020 - OWNER'S ALLOWANCES

### PART 1 - GENERAL

#### 1.01 DESCRIPTION OF REQUIREMENTS

- A. Owner's allowances in the amounts indicated and as described below have been established for certain types of work. The Contractor will perform such Work only upon receipt of written work orders from the Owner. For this purpose, a Work Order will have the same meaning for requirements pertaining to submittals, approvals, etc. as in Section 00700, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, Paragraph 7.3 CONSTRUCTION CHANGE DIRECTIVES, as modified, except the Work Order is only signed by the Owner.
- B. If the Work Order directs that the allowance work be performed, the provisions of Section 00700, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, as modified, will govern the conduct and payment for this Work.
- C. Definitions and Explanations: All Work, including any allowance work if authorized, shall be performed in full compliance with the requirements of the Contract. All allowance work, if and when authorized, shall be performed by the Contractor in accordance with the Work Order.
  - 1. Contractor shall coordinate allowance Work with related Work to ensure that each selection is completely integrated and interfaced with related Work, and shall include all aspects of Work to fully integrate the Work with all other Work and Related Work.
- D. "Purchase and Installation" means the allowance covers both the purchase and installation of the indicated Work. The Contractor will bear the cost of coordinating the Work, providing the installer with access to the Work, temporary heat, ventilation, light, workspace, storage space, parking and toilet facilities, the cost of which will be included in the Contract Sum and not in the allowance.
- E. Work Order Data: Where applicable, Contractor shall include in each Work Order proposal both the quantities of products being purchased and units requested, and furnish survey-of-requirements data to substantiate quantities. Indicate applicable taxes, delivery charges, and amounts of applicable trade discounts.
- F. Work Order Mark-Up: The amount of each Work Order resulting from final selection and installation of products and systems covered by an allowance will be the difference between the amount of installed Work and the allowance. This is a procedural clarification of Section 00700, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, as modified.

## PART 2 - PRODUCTS

Not used.

## PART 3 - EXECUTION

### 3.01 SCHEDULE OF OWNER'S ALLOWANCES

- A. These allowances will cover the total cost of all Work authorized under a Work Order, including but not limited to design, cost of materials and equipment delivered and unloaded at the Project site, and all applicable taxes, permits, fees, labor, installation costs and integration as applicable. The Contractor's percentage, overhead and profit for the allowance will be included in the Work Order amount.
- B. Should the aggregate of charges for all approved Work Orders issued by the Owner under the allowances be less than the amount of the allowance, the final Contract Sum will be decreased by the amount of the difference. No Work will be performed that would cause total charges under the allowances to exceed the authorized allowance amount. The authorized allowance amount may be increased by Change Order.
- C. The following allowance amounts will be included in the Contract Sum bid amount on the Bid Form:

OWNER'S ALLOWANCE: Allow an amount of \$45,000.00 of the Contract Sum for:

1. Owner's Allowance may be used for repair and/or replacement of utilities (sanitary and storm sewer, potable water, fire protection, mechanical ductwork, pipe and duct insulation, conduits, electrical conductors, communications cabling, security lines, etc.) and structural steel located above ceilings when found to be deteriorated and/or damaged as determined by the Owner. A Work Order for this condition will be issued within seven days after Contractor permits unrestricted access to an environmentally safe and clean area for Owner's inspection.
2. Owner's Allowance may be used for relocation and adjustments of Work within the airport tenants' space (airlines, rental car companies, etc.) and other contracts. This Work shall include all disciplines: architectural, structural, mechanical, plumbing, electrical, communications, fire protection, etc.
3. Owner's Allowance may be used for resolution of unforeseeable conditions between proposed work and the work of tenants and other contracts. Include all disciplines: architectural, structural, mechanical, plumbing, electrical, communications, fire protection, etc.
4. Owner's Allowance may be used for any Work not shown in the Contract Documents, but which is necessary to complete the Project, with approval of executive management.

- D. Contract Time will not be extended as a result of the issuance of any Work Order under this Section 01020 – OWNER’S ALLOWANCES.
  
- E. The Contract Sum will not be adjusted for any costs of acceleration resulting from the issuance of Work Orders under this Section 01020 – OWNER’S ALLOWANCES. In addition, the Contract Sum will not be adjusted for any costs of acceleration of the whole work resulting from the issuance of Work Orders under this Section 01020 – OWNER’S ALLOWANCES.

END OF SECTION

## SECTION 01025 – FIELD OFFICES

### PART 1 – GENERAL

#### 1.01 REQUIREMENTS

For the purpose of prosecuting its Work, including but not limited to conducting onsite Project and Contract meetings, the Contractor will furnish, install and maintain temporary field offices for the Owner's representatives and the Contractor during the entire construction period and Contractor will furnish, install and maintain storage and work sheds needed for its on-site activities, including storage of equipment, materials and construction. Upon completion of the Work, the Contractor will remove field offices, sheds and contents, and restore site to original condition.

#### 1.02 OTHER REQUIREMENTS

Prior to installation of offices, the Contractor will consult and coordinate with the Owner on location, access and related facilities. Contractor's field offices, staging and laydown areas, and Contractor's employee parking, will be located within Tampa International Airport. Such areas will not be exclusive to the Contractor. Contractor shall coordinate its requirements with others having access to the areas through the Owner.

#### 1.03 REQUIREMENTS FOR FACILITIES

##### A. Construction will:

1. Be structurally sound, weather tight, with floors raised above ground.
2. Have temperature transmission resistance compatible with occupancy and storage requirements.
3. At Contractor's option consist of portable or mobile buildings subject to the following:
  - a. Mobile trailers, when used, will be modified for office use.
  - b. Mobile trailers will not be used for living quarters.

##### B. Contractor's Office and Facilities shall:

1. Be sized as required for Contractor's general use and to provide space for Owner and Project meetings.
2. Have lighting and temperature control as follows:
  - a. Lighting: 50-foot candles at desk top height.
  - b. Exterior lighting at entrance door.

- c. Automatic heating and mechanical cooling equipment sufficient to maintain comfort conditions.
  3. Have at least one direct line telephone instrument.
  4. Have racks and files for Project Record Documents.
  5. Have other furnishings at Contractor's option.
  6. Have at least one copy machine with reduction and enlargement capabilities.
- C. The Contractor will make all provisions and pay for all installations and other costs including maintenance and supplies in order to provide telephone service, high speed internet service, power service, exterior lights, copy machine and facsimile machine at the Project site available for the Owner's use. The Contractor will pay all monthly charges for the various services provided to the Contractor's field office throughout the period of use and until 60 days after the Contractor has reached Final Completion of the Work (including "punch list" items), or until Contractor removes the facilities, whichever is later.

## PART 2 – PRODUCTS

### 2.01 MATERIALS, EQUIPMENT, FURNISHINGS

Materials, equipment and furnishings may be new or used, but must be serviceable, adequate for required purpose, and must comply with all applicable Laws and Regulations.

## PART 3 – EXECUTION

### 3.01 PREPARATION

The Contractor will fill and grade sites for temporary structures to provide adequate surface drainage.

### 3.02 INSTALLATION

The Contractor will construct temporary field offices on proper foundations; provide connections for utility services; secure portable or mobile buildings when used; provide steps and landings at entrance doors; and provide hurricane or high wind tie-downs, all in accordance with all applicable Laws and Regulations.

### 3.03 MAINTENANCE AND CLEANING

The Contractor will provide regular maintenance and cleaning for temporary structures, furnishings, equipment and services to maintain such facilities in good hygienic condition compatible with their intended use.

### 3.04 REMOVAL

- A. The Contractor will remove temporary field offices, contents and services at a time when no longer needed and as approved by the Owner.
- B. The Contractor will remove foundations and debris and grade the site to required elevations and clean the areas.

### 3.05 LOCATION OF FIELD OFFICES

The Contractor will locate all temporary field offices on the Owner's property at the location(s) to be coordinated with the Owner per Paragraph 1.02 above or per agreement between the Contract parties if no on site space is available. No additional compensation will be provided to the Contractor for the off-site rental/purchase of space.

END OF SECTION

## SECTION 01040 - PROJECT COORDINATION

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

The minimum administration and supervisory requirements necessary for coordination of work on the Project include but are not necessarily limited to the following:

- A. Preconstruction Conference.
- B. Coordination and Progress Meetings.
- C. Preinstallation Conferences.
- D. Preconstruction and Progress Photographs.
- E. Reporting and Schedules.
- F. Special Reports.
- G. Service Interruption Requests.

#### 1.02 COVENANT OF GOOD FAITH AND FAIR DEALING

- A. This Contract imposes an obligation of good faith and fair dealing in its performance and enforcement.
- B. The Contractor and the Owner, with a positive commitment to honesty and integrity, agree to the following mutual duties:
  - 1. Each will function within the laws and statutes applicable to their duties and responsibilities.
  - 2. Each will assist in the other's performance.
  - 3. Each will avoid hindering the other's performance.
  - 4. Each will proceed to fulfill its obligations diligently.
  - 5. Each will cooperate in the common endeavor of the Contract.

#### 1.03 PRECONSTRUCTION CONFERENCE

- A. Before beginning work at the Project site, the Contractor will attend a preconstruction conference and bring the Project Management Team, including but not limited to, the Project Manager and Superintendent employed for this Project. In the event the Project Manager or Superintendent is unable to attend, the Contractor will bring a Letter of Introduction in which Contractor advises the full names and duties of the Project

Manager and Superintendent and states that they are assigned to the Project and will be in full responsible charge. This conference will be requested by the Contractor and called by the Owner who will arrange for other interested parties to be present.

- B. The Contractor will also notify its major subcontractors and suppliers of this meeting if their attendance is required. At this time, all parties will discuss the Project under Contract and prepare a program of procedure in keeping with requirements of the Contract Documents. The Contractor's Project Management Team will make every effort to expeditiously coordinate all phases of the Work, including the required reporting procedure, to obtain the end result within the full purpose and intent of the Contract Documents for this Project.

#### 1.04 COORDINATION AND PROGRESS MEETINGS

The Contractor will:

- A. Prepare a written memorandum on required coordination activities. Included will be such items as required notices, reports, and attendance at meetings. This memorandum will be distributed to each entity performing construction at the Project site.
- B. In addition to specific coordination and preinstallation meetings for each element of Work, and other regular project meetings for other purposes, hold general progress meeting each week with time coordinated with preparation of payment request. Require each party then involved in planning, coordination, or performance of Work to be properly represented at each meeting. Review present and future needs including interface requirements, time, sequences, deliveries, access, site utilization, temporary facilities and services, hours of work, hazards and risks, housekeeping, change orders, and documentation of information for payment requests.
- C. Discuss whether each element of current Work is ahead of schedule, on time, or behind schedule in relation with updated progress schedule. Determine how behind schedule Work will be expedited and secure commitments from parties involved. Discuss whether schedule revisions are required to ensure that current Work and subsequent Work will be completed within Contract Time.
- D. Review everything of significance which could affect progress of Work.
- E. Prepare written minutes of the meeting and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

#### 1.05 PREINSTALLATION CONFERENCES

The Contractor will:

- A. Well in advance of installation of every major unit of Work which requires coordination and interfacing with other Work, meet at Project site with installers and representatives of manufacturers and fabricators who are involved in or affected by unit of Work, and in coordination or integration with other Work which has preceded or will follow.

- B. Advise Owner of schedule meeting dates.
- C. At each conference, review progress of other Work and preparations for particular Work under consideration, including requirements of Contract Documents, options, related change orders, purchases, deliveries, shop drawings, product data, quality control samples, possible conflicts, compatibility problems, time schedules, weather limitations, temporary facilities, space and access limitations, structural limitations, governing regulations, safety, inspection and testing requirements, required performance results, recording requirements, and protection.
- D. Record significant discussions of each conference. Record agreements and disagreements. Record final plan of action. Distribute written minutes of conference promptly to everyone concerned, including Owner and others in attendance.

#### 1.06 PRECONSTRUCTION AND PROGRESS PHOTOGRAPHS

The Contractor will provide:

- A. Preconstruction and progress photographs as required by the Contract. Contractor will promptly forward two copies (one hard copy and one electronic copy) to the Owner.
- B. Photographs, videotape(s) or other video recording media will be labeled with the item and date and properly identified and categorized with the name of the person taking the photographs and/or video.

#### 1.07 REPORTING AND SCHEDULES

- A. Within 48 hours after each conference/meeting date, distribute copies of minutes-of-the-meeting to each entity present and to others who should have been present.
- B. Include brief summary, in narrative form, of progress of the Work since previous conference/meeting and report.
- C. Schedule Updating:
  - 1. Immediately following each conference/meeting, where revisions to Progress Schedule have been made or recognized, revise Progress Schedule.
  - 2. Reissue revised Project Schedule concurrently with report of each conference/meeting where appropriate but no later than five days after the conference/meeting.

#### 1.08 SPECIAL REPORTS

- A. Reporting Unusual Events: When an event of an unusual and significant nature, including, but not limited to an accident, injury, or criminal activity, occurs at the Project site, Contractor will prepare and submit a special report to the Owner. The special report will list chain of events, persons participating, response by the Contractor's personnel, an evaluation of the results or effects and similar pertinent information. The

Contractor will advise the Owner as soon as possible when such events are known. Time is of the essence.

- B. The Contractor will submit special reports directly to the Owner no later than one day of occurrence. The Contractor will also submit a copy of the special reports to other entities that are affected by the occurrence no later than one day of the occurrence.

#### 1.09 COORDINATION DURING CONSTRUCTION

The Contractor will:

- A. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work.

Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation including, but not limited to:

1. Scheduling construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  2. Coordinating installation of different components to assure maximum accessibility for required maintenance, service, and repair.
  3. Making provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination; include such items as required notices, reports, and attendance at conference/meeting; and prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.
  - C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
    1. Preparation of schedules.
    2. Installation and removal of temporary facilities.
    3. Delivery and processing of submittals.
    4. Progress meetings.
    5. Project closeout activities.
  - D. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials and Owner's Sustainability Master Plan and salvage materials and equipment involved in performance of, but not actually incorporated in, the Work.

## 1.10 GENERAL COORDINATION PROVISIONS

The Contractor will:

- A. Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed and not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

## 1.11 STAFF NAMES

The Contractor will:

- A. At the Preconstruction and Preinstallation conferences, submit a list of the Contractor's principal staff assignments, including the superintendent and other personnel in attendance at the Project Site. Identify individuals and their duties and responsibilities. List their addresses and telephone numbers.
- B. Post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone.

END OF SECTION

## SECTION 01045 - CUTTING AND PATCHING

### PART 1 - GENERAL

#### 1.01 REQUIREMENTS INCLUDED

- A. Cutting and patching includes cutting into existing construction to provide for installation or performance of other Work, subsequent fitting, and patching required to restore surfaces to original condition.
- B. The Contractor will proceed with cutting and patching at earliest feasible time to complete the Work without delay.
- C. The Contractor will execute cutting, fitting, and patching, including excavation and backfill, required to perform Work and to:
  - 1. Make several parts fit together properly.
  - 2. Uncover portions of Work to make provisions for installation of ill-timed Work.
  - 3. Remove and replace defective Work.
  - 4. Remove and replace Work not conforming to requirements of Contract Documents.
  - 5. Remove samples of installed Work as required for testing.
  - 6. Make routine penetrations of non-structural surfaces for installation of piping and electrical conduit.
  - 7. Uncover Work to allow for Owner's observation of covered Work, which has been covered prior to required observation of Owner.
- D. Cutting and patching performed during manufacture of products or during initial fabrication, erection or installation processes is not considered to be cutting and patching. Drilling of holes to install fasteners and similar operations is also not considered to be cutting and patching.
- E. Refer to other sections of Specifications for specified cutting and patching requirements and limitations applicable to individual units of Work.  
Do not cut and patch Work without Owner's written acceptance of procedures.
- F. The Contractor will for new Work, retain original installer or fabricator or another recognized, experienced and specialized firm to perform cutting and patching.

#### 1.02 BUILDING MODIFICATIONS

- A. Modifications to the structure and its mechanical and electrical parts will be provided as indicated and as necessary to accomplish the Work of these Contract Documents.

- B. Modifications will include the removal of existing structure or parts as applicable, relocation of materials and/or parts, termination and relocation of utilities, cutting, patching, cleaning, adjusting, and refinishing, and all incidental Work related to these tasks.
- C. It is the Owner's intent to maintain daily occupancy functions during the progress of this Work. The Contractor will closely coordinate this Work to minimize inconvenience thereto.
- D. No utilities will be interrupted without first notifying the Owner and obtaining concurrence with the interruption. Refer to Section 01545 - UTILITIES for requirements.

### 1.03 SUBMITTALS

- A. Procedural Proposal for Cutting and Patching:
  - 1. Where prior acceptance of cutting and patching is required, the Contractor will submit proposed procedures for Work well in advance of time Work will be performed.
  - 2. The Contractor will include the following information, as applicable, in submittal:
    - a. Nature of Work and how it is to be performed, indicating why cutting and patching cannot be avoided. Describe the extent of the cutting and patching required and how it is to be performed.
    - b. Anticipated results of Work in terms of change to existing conditions including structural, operational and visual changes, as well as other significant elements.
    - c. List products to be used and firms that will perform Work.
    - d. Dates when cutting and patching are to be performed.
    - e. List utilities that will be disturbed or otherwise be affected by Work, including utilities that will be relocated and utilities that will be out-of-service temporarily.
    - f. Indicate how long utility service will be disrupted.
- B. Where cutting and patching of structural Work involves addition of reinforcement, the Contractor will submit details and engineering calculations to show how reinforcement is integrated with original structure to satisfy requirements.
- C. Review of procedural proposal by Owner does not waive Owner's right to later require complete removal and replacement of Work found to be cut and patched in unsatisfactory manner.

- D. The Contractor will not cut or patch structural elements in a manner that would impact their load carrying capacity or load-deflection ratio.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. The Contractor will use materials for cutting and patching that are identical to existing materials. If identical materials are not available, or cannot be used, use materials that match existing adjacent surfaces to fullest extent possible with regard to visual effect.
- B. The Contractor will use materials for cutting and patching that will result in equal-or-better performance characteristics.
- C. The Contractor will comply with specifications and standards for each specific product involved.
- D. Should conditions of Work or schedule indicate change of products from original installation, the Contractor will submit requirements for substitution with sufficient documentation to substantiate that the proposed substitution is equivalent in terms of performance to the original installation.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

The Contractor will:

- A. Before cutting, examine surfaces and conditions under which Work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with Work.
- B. Before the start of cutting Work, meet at Work site with all parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict between various trades. Coordinate layout of Work and resolve potential conflict before proceeding with Work.

### 3.02 PREPARATION

The Contractor will:

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of Work.
- B. Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of Project that may be exposed during cutting and patching operations.

- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Take precautions not to cut existing pipe, conduit, or duct serving building(s) scheduled to be relocated until provisions have been made to bypass them.

### 3.03 CUTTING

The Contractor will:

- A. Cut Work using methods that are least likely to damage Work to be retained or adjoining Work.
- B. Use handheld small power tools designed for sawing or grinding, not hammering and chopping. Cut through concrete and masonry using cutting machine such as carborundum saw or core drill to ensure a neat hole. Cut holes and slots neatly to size required with minimum disturbance of adjacent Work. To avoid marring existing finished surfaces, cut or drill from exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.
- C. Bypass utility services such as pipe and conduit before cutting, where such utility services are shown or required to be removed, relocated, or abandoned. Cut-off conduit and pipe in walls or partitions to be removed. After bypass and cutting, cap, valve, or plug and seal tight remaining portion of pipe and conduit to prevent entrance of moisture or other foreign matter.
- D. Not cut and patch operational elements or safety related components in a manner that would result in reduction of capacity to perform in manner intended, including energy performance, or that would result in increased maintenance, decreased operational life or decreased safety.
- E. Not cut and patch Work exposed on building's exterior or in occupied spaces, in a manner that would result in lessening building's aesthetic qualities. Do not cut and patch Work in a manner that would result in substantial visual evidence of cut and patch Work. Remove and replace Work judged by the Owner to be cut or patched in a visually unsatisfactory manner.
- F. Where structural members and/or other construction elements penetrate smoke and fire rated assemblies and sound barriers, including walls around and floor below mechanical equipment rooms, provide acoustical fire rated sealant between such Work and barrier to maintain acoustical attenuation, as well as smoke and fire integrity of the barrier.

### 3.04 PATCHING

The Contractor will:

- A. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for Work.

- B. Where feasible, inspect and test patched areas to demonstrate integrity of Work.
- C. Restore exposed finishes of patched areas and where necessary extend finished restoration into retained adjoining Work in a manner which will eliminate evidence of patching and refinishing.
- D. Install new products to complete Work in accordance with requirements of Contract Documents.
- E. Where removal of walls or partitions extends one finished area into another finished area, patch and repair floor and wall surfaces in new space to provide an even surface or uniform color appearance. If necessary to achieve uniform color and appearance, remove existing floor and wall coverings and replace with new materials.
- F. Where patch occurs in smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received prime and base coat.

### 3.05 ADJUSTING

The Contractor will:

- A. Restore damaged pipe covering to original conditions.
- B. Remove and replace Work cut and patched in visually unsatisfactory manner.

### 3.06 CLEANING

The Contractor will:

Thoroughly clean areas and spaces where Work is performed or used as access to Work. Remove paint, mortar, oils, putty, and items of similar nature. Thoroughly clean piping, conduit, and similar features before painting or other finish is applied.

END OF SECTION

## SECTION 01050 - FIELD ENGINEERING

### PART 1 - GENERAL

#### 1.01 REQUIREMENTS INCLUDED

- A. The Owner will furnish horizontal and vertical control points only, which may be outside the limits of the Project site. The Contractor will preserve all horizontal and vertical control points furnished by the Owner.
- B. The Contractor will:
  - 1. Furnish all lines, grades, and measurements necessary for the proper prosecution and control of the Work under these Contract Documents. The Work will include performing all calculations required and setting all controls needed such as offsets, reference points, and other reference marks or points necessary to provide lines and grades for construction. The Contractor is responsible to maintain these control points for use by subsequent contractors.
  - 2. Establish the building grades, lines, levels, columns, walls and partition lines required.
  - 3. Calculate and measure required dimensions indicated within recognized tolerances.
  - 4. Not scale drawings to determine dimensions.
  - 5. Advise subcontractors performing Work of marked lines and levels provided for use in layout of Work.

#### 1.02 SURVEY

- A. Surveyor:

The Contractor will retain a competent Professional Engineer or Land Surveyor, experienced and specialized in land survey work, registered and licensed by the State of Florida, and acceptable to the Owner, who will establish the exterior lines and required elevations of all buildings and structures to be erected on the Project site and will establish sufficient lines and grades for the construction of associated Work such as, but not limited to, roads, utilities, aircraft aprons, and site grading. The Professional Engineer or Land Surveyor will certify as to the actual location of the constructed facilities in relation to property lines, building lines, easements, and other restrictive boundaries.

- B. Procedures:

The Contractor will:

- 1. Verify layout information indicated in relation to property survey and existing

benchmarks before proceeding with layout of actual Work.

2. As Work proceeds, check major element for line, levels, and plumb.
3. Maintain accurate surveyor's log or record book of such checks, available for Owner's reference at reasonable times.
4. Record deviations from required lines and levels.
5. Advise Owner promptly upon detection of deviations exceeding indicated or recognized tolerances.
6. Record deviations which are accepted on Project Record Drawings.

### 1.03 RECORDS

The Contractor will:

- A. Maintain complete accurate log of control and survey Work as it progresses.
- B. Upon completion of foundation walls and major Project site improvements, prepare certified survey showing dimensions, locations, angles, and elevations of construction.
- C. With respect to the final Survey:
  1. Immediately before time of Substantial Completion, prepare final survey showing significant features resulting from construction of Project.
  2. Include on survey certification, signed by surveyor, to effect that principal lines and levels of Project are accurately positioned as shown on survey.
- D. Furnish two copies of survey data and two copies of final survey.
- E. Furnish three copies, one of which will be returned for inclusion in Project Record Documents as specified in Section 01700 - PROJECT CLOSEOUT.

### 1.04 UNDERGROUND OBSTRUCTIONS

- A. The Contractor acknowledges that pipe lines, existing underground installation, and underground structures in vicinity of Work are shown on drawings according to best information available.
- B. The Contractor will verify location of underground pipe lines, conduits, and structures by contacting owners of underground utilities and by prospecting in advance of excavation.
- C. The Contractor will secure written permission from proper authority before initiating new construction over existing utilities. The Contractor will submit copy or original written permission before commencing Work. The Contractor will furnish the proper release from proper authority before Final Acceptance of Work.

- D. The Contractor will repair cuts to existing utilities made during construction process as part of Project Work to satisfaction of utility Owner, unless otherwise stated in the Contract Documents.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

## SECTION 01095 - DEFINITIONS AND STANDARDS

### PART 1 - GENERAL

#### 1.01 DESCRIPTION OF REQUIREMENTS

##### A. General:

1. This section specifies procedural and administrative requirements for compliance with governing regulations and the codes and standards imposed upon the Work. These requirements include the obtaining of permits, licenses, inspections, releases and similar requirements associated with regulations, codes and standards.
2. Regulations are defined to include laws, statutes, ordinances, and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the Work regardless of whether they are lawfully imposed by governing authority or not.
3. Codes, standards and requirements of the Owner are identified within the Contract Documents. Contractor must examine, determine and identify other codes, standards and requirements that may be applicable to the Contractor's Work, such that the intent of the Contract is fully realized.

##### B. Governing Regulations:

Refer to Section 00700, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, as modified, for requirements related to compliance with governing regulations.

#### 1.02 DEFINITIONS

##### A. General Requirements:

The provisions or requirements of Division 01 sections apply to the entire Work of this Contract and supplement the requirements in the Contract Documents.

A substantial amount of specification language consists of definitions of terms found in the Contract Documents. Certain terms used in Contract Documents are defined in this section. Definitions and explanation contained in this section are not necessarily either complete or exclusive, but are general for the Work to the extent they are not stated more explicitly in another element of the Contract Documents.

##### B. Subject to 1.02 A, whenever the following terms are used in the Contract Documents or any other documents or instruments pertaining to the construction of this Project, the intent and meaning will be interpreted as follows:

1. **ACCESS ROAD.** The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public highway.

2. **ADVERTISEMENT.** A public announcement, as required by local law, inviting bids for Work to be performed and materials to be furnished. Also referred to as "Invitation to Bid" or "Notice to Bidders."
3. **AIR OPERATIONS AREA (AOA).** For the purpose of these Specifications, the term AOA means any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An AOA includes such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway or apron.
4. **AIRPORT.** Airport means Tampa International Airport.
5. **AIRPORT IMPROVEMENT PROGRAM (AIP).** The AIP means a grant-in-aid program administered by the Federal Aviation Administration.
6. **APPROVE.** Where used in conjunction with Owner's response to submittals, requests, applications, inquiries, reports and claims by the Contractor, the term "approved" will be held to limitations of Owner's responsibilities and duties as specified in the Contract Documents. In no case will "approval" by Owner be interpreted as a release of Contractor from responsibilities to fulfill requirements of the Contract Documents.
7. **APM: Automated People Mover.** A guided transit mode with fully automated operation, featuring vehicles that operate on guideways with exclusive right-of-way.
8. **APM SYSTEM:** The vehicles, running surfaces or track, switches, other guideway equipment, active graphics, any platform barrier doors, power distribution, central control, communications, maintenance equipment, and all other equipment, which when integrated results in the operation of the APM trains.
9. **AWARD.** The acceptance by the Owner of the successful Bidder's Bid.
10. **BID.** The written offer of the Bidder to perform the Work and furnish the necessary materials and labor in accordance with the provisions of the Contract Documents.
11. **BID BOND.** The security furnished with a Bid to guaranty that the Bidder will enter into a Contract if Bidder's Bid is accepted by the Owner.
13. **BIDDER.** Any individual, partnership, firm or corporation, acting directly or through a duly authorized representative, who submits a Bid for the Work contemplated.
14. **BUILDING AREA.** An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way, together with all airport buildings and facilities located thereon.

15. DAY. As used in the Contract Documents means calendar day unless otherwise specifically defined.
16. CONSTRUCTION SCHEDULE. The Contractor-prepared schedule as adjusted from time to time in accordance with the Contract Documents showing planned and actual progress by items of the Work.
17. DESIGN PROFESSIONAL: The individual, partnership, firm or corporation duly authorized by the Owner (Sponsor) to be responsible for the architectural and engineering supervision of the contract work and acting directly or through an authorized representative.
18. CONTRACT DOCUMENTS. The Contract Documents consist of the executed Contract between the Owner and Contractor, the Contractor's GMP Proposal as accepted by the Owner, Bonds, Insurance Requirements, the Division 1 Documents, E-Verify Certification and any Contract Modifications issued after execution of the Contract.
19. DIRECTED, REQUESTED, ETC. Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "accepted", and "permitted" mean "directed by Owner or Design Professional", "requested by the Owner or Design Professional", and similar phrases. However, no such implied meaning will be interpreted to extend Owner's or Design Professional's responsibility into the Contractor's area of Contractor, including but not limited to construction supervision.
20. DRAINAGE SYSTEM. The system of pipes, ditches, ponds, and structures by which surface or subsurface waters are collected and conducted from the airport area.
21. DRAWINGS. The official Drawings or exact reproductions which show the location, character, dimensions and details of the airport and the Work to be done.
22. EQUIPMENT. The articles, devices, software, control system, and other assets used to serve a function in the operation of the Project. Also, used to refer to all machinery, together with the necessary supplies for upkeep and maintenance, as well as all tools and apparatus, necessary for the proper construction and acceptable completion of Work.
23. EXPERIENCED. The term "experienced" when used with the term "Installer" means having previous projects similar in size and scope to the installation to be performed, being familiar with the procedures required, and having complied with requirements of the authority having jurisdiction.
24. EXTRA WORK. An item of Work not provided for in the awarded Contract as previously modified by work order or change order but which is found by the Owner to be necessary to complete the Work within the intended scope of the Contract as previously modified.

25. FAA (Federal Aviation Administration). When used to designate a person, FAA means the Administrator or its duly authorized representative.
26. FAA SUPPLEMENT. It is understood that federal grant funds may be used in the Project. In the event federal grant funds are used, the Contract Documents will be governed by all applicable rules and regulations of the FAA and U.S. Department of Transportation, as well as applicable requirements incorporated in any grant agreement between the Owner and the FAA with regard to said funding, which requirements are set forth in the attached "FAA Construction Contract Clauses, Airport Improvement Program," and which will be incorporated herein if federal grant funds are utilized.
27. FEDERAL SPECIFICATIONS. The Federal Specifications and Standards, and all supplements, amendments and indices thereto as prepared and issued by the General Services Administration of the Federal Government. They may be obtained from the Specifications Unit, 7th and D Street, SW, Washington, DC 20406, Tele: (202) 472-2205 or 472-2140.
28. FHWA (Federal Highway Administration). When used to designate a person, FHWA will mean the Administrator or its duly authorized representative.
29. FURNISH. Except as otherwise defined in greater detail, the term "furnish" is used to mean supply and delivery to Project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance for incorporation and installation into the Work.
30. INDICATED. The term "indicated" is a cross-reference to graphic representations, notes, or schedules on drawings, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used in lieu of "indicated", it is for the purpose of helping the reader locate the cross-reference, and no limitation of location is intended except as specifically noted.
31. INSPECTOR. An authorized representative of the Owner assigned to make all necessary inspections and/or tests of the Work performed or being performed, or of the materials furnished or being furnished by the Contractor.
32. INSTALL. Except as otherwise defined in greater detail, the term "install" is used to describe operations at the Work site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations, as applicable in each instance, to incorporate the element being installed into the Work.
33. INSTALLER. The term "installer" is the entity (person or firm) engaged by the Contractor, its Subcontractor or Sub-subcontractor for performance of a particular unit of Work at the Project site, including installation, erection, application, and similar required operations. It is a general requirement that

such entities (installers) be expert in the operations they are engaged to perform.

34. INTENTION OF TERMS. Whenever, in the Contract Documents, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used, it will be understood that the direction, requirement, permission, order, designation, or prescription of the Design Professional is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import will mean approved by, acceptable to, or satisfactory to the Design Professional.
  - a. Any reference to a specific requirement of a numbered paragraph of the Contract Document or a cited standard will be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.
35. LABORATORY. The official testing laboratories of the Contractor or Owner or such other laboratories as may be designated by the Owner.
36. LIGHTING. A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
37. MAJOR AND MINOR CONTRACT ITEMS. A major contract item will be any item that is listed in the Bid, the total cost of which is equal to or greater than 20% of the total amount of the awarded Contract. All other items will be considered minor contract items.
38. MATERIALS. Any substance to be used in the Work.
39. NO EXCEPTIONS TAKEN. The term "No Exceptions Taken" where used in conjunction with the Design Professional's action on the Contractor's submittals, applications, and requests, is limited to the Design Professional's duties and responsibilities as stated in Section 00700, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, as modified.
  - a. Refer to Section 01340 - SHOP DRAWINGS, PRODUCT DATA AND SAMPLES for more specific information.
40. NOT APPROVED. Where used in conjunction with the Design Professional's response to submittals, requests, applications, inquires, reports, and claims by the Contractor, indicates that the item or material is unsatisfactory, and must be revised, new material prepared in accordance with notations, and the item or material resubmitted. Material marked in this manner will not be released for any Work.
41. NOTE MARKINGS. Where used in conjunction with the Owner's response to

submittals, requests, applications, inquires, reports, and claims by the Contractor, "Note Markings" indicates that the item or material submitted is approved subject to corrections noted. Correction and re-submittal of the item is not required unless specifically called for in the notations. Approval of Contractor's submitted item does not constitute approval of the design. Approval does not permit any deviation from the Contractor's requirements and does not relieve the Contractor of the responsibility for errors or deficiencies in design, dimension, details, or for coordinating installation and/or construction with actual conditions at the Project site.

42. NOTICE TO PROCEED (NTP). A written notice to the Contractor to begin the actual Contract Work. If applicable, the NTP will state the date on which the Contract Time begins.
43. OWNER (SPONSOR). The term Owner or Sponsor will mean the party of the first part or the contracting agency signatory to the Contract. The Hillsborough County Aviation Authority is the Owner, and will include its agents, employees, representatives and contractors when acting at its direction or on its behalf. The Hillsborough County Aviation Authority is also referred to as the "Owner" in these Contract Documents. For AIP Contracts, the term Sponsor will have the same meaning as the term Owner.
44. PAVEMENT. The combined surface or friction course, structural course, base course, and sub-base course, if any, considered as a single unit.
45. PAYMENT BOND. The approved form of security furnished by the Contractor and Contractor's surety as a guaranty that the Contractor will pay in full all bills and accounts for material and labor used in the construction of the Work under the contract.
46. PERFORMANCE BOND. The approved form of security furnished by the Contractor and Contractor's surety as a guaranty that the Contractor will complete the Work in accordance with the terms of the Contract and will complete the guarantee of the Work specified therein.
47. PROJECT. The Work defined in the Contract Documents.
48. PROJECT SITE. The term "Project Site" is defined as the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other Work, as part of the Project. The extent of the Project Site may or may not be identical with the description of the land upon which the Project is to be built but it is within or near Tampa International Airport.
49. PROVIDE. Except as otherwise defined in greater detail, the term "provide" means furnish and install, complete, and ready for intended use, as applicable in each instance.
50. RETENTION. Retention (or Retainage) is the amount of compensation for Work

accomplished by the Contractor which is retained by the Owner to be paid to the Contractor as specified herein.

51. RUNWAY. The area on the airport designated for the landing and takeoff of aircraft.
52. SHOP DRAWINGS. All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a subcontractor, manufacturer, supplier or distributor and which illustrate the equipment, material or some portion of the Work.
53. SHUTTLE. A guided transit mode with fully automated operation, featuring vehicles that operate on guideways between the Main Terminal and Airsides
54. SPECIFICATIONS. A part of the Contract Documents containing the written directions and requirements for completing the Contract Work. Standards for specifying materials or testing which are cited in the Contract Specifications by reference will have the same force and effect as if included in the Contract physically.
54. SPONSOR. See "Owner".
55. STRUCTURES. Airport facilities such as buildings, aprons, bridges, culverts, catch basins, inlets, retaining walls, cribbing, storm and sanitary sewer lines, waterlines, underdrains, electrical ducts, manholes, hand-holes, lighting fixtures and bases, transformers, flexible and rigid pavements, navigational aids, buildings, vaults, and other manmade features of the airport that may be encountered in the Work and not otherwise classified herein.
56. SUBGRADE. The soil which forms the pavement foundation.
57. SUPERINTENDENT. The Contractor's executive representative who is present on the Work during progress, authorized to receive and fulfill instructions from the Owner, and who will supervise and direct the construction.
58. SUPPLEMENTAL CONTRACT. A written agreement between the Contractor and the Owner covering (1) Work that would increase or decrease the total amount of the awarded Contract, or any major Contract item, by more than 25%, such increased or decreased work being within the scope of the originally awarded Contract; or (2) Work that is not within the scope of the originally awarded Contract.
59. SURETY. The corporation, partnership, or individual, other than the Contractor, executing Payment and Performance Bonds which are furnished to the Owner by the Contractor.
60. TAXIWAY. The portion of the AOA of an airport that has been designated by the airport authority for movement of aircraft to and from the airport's runways or aircraft parking areas.

61. TESTING LABORATORIES. An independent entity engaged to perform specific inspections or tests of the Work, either at the Project site or elsewhere, and to report and (if required) interpret results of those inspections or tests.
62. TRADES. Use of titles such as "carpentry" is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
63. UNIT PRICE. Cost per unit of Work.
64. WORK. The construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

#### 1.03 SPECIFICATION FORMAT AND CONTENT EXPLANATION

##### A. General:

1. This article is provided to help the user of the Specifications to more readily understand the format, language, implied requirements and similar conventions of content. None of the following explanations will be interpreted to modify the substance of the Contract requirements.

##### B. Specification Content:

1. The Project Specifications and the Contract Documents have been produced employing certain conventions in the use of language as well as conventions regarding the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
  - a. In certain circumstances, the language of the Specifications and other Contract Documents is of the abbreviated type. It implies words and meanings that will be interpreted as plural. Plural words will be interpreted as singular where applicable and where the full context of the Contract Documents so indicates.
  - b. Imperative Language is used generally in the Specifications. Requirements expressed imperatively are to be performed by the Contractor. At certain locations in the text, for clarity, contrasting subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor or by others when so noted.

#### 1.04 INDUSTRY STANDARDS

A. Applicability of Standards:

Except where more explicit or stringent requirements are written into the Contract Documents, applicable industry standards have the same force and effect as if bound into or copied directly into the Contract Documents. Such industry standards are made a part of the Contract Documents by reference. Contractor shall keep available copies of all applicable codes and standards at locations where Work is being performed, including the Project Site.

B. Publication Dates:

Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of Contract Documents.

C. Conflicting Requirements:

Where compliance with two or more standards is specified, and where these standards establish different or conflicting requirements, the Contractor shall call the conflict to the Owner's attention and the most stringent requirement will be enforced as determined by the Owner.

D. Copies of Standards:

1. The Contract Documents require that each entity performing Work be experienced in that part of the Work being performed. Each entity is also required to be familiar with industry standards applicable to that part of the Work. Copies of applicable industry standards are not bound with the Contract Documents.

a. Where copies of industry standards are needed for proper performance of the Work, the Contractor is required to obtain such copies directly from the publication source.

b. Although certain copies of industry standards needed for enforcement of the requirements may be required submittals, the Owner reserves the right to require the Contractor to submit additional copies of these standards as necessary for enforcement of requirements.

E. Abbreviations and Names:

Trade association names and titles of general standards are frequently abbreviated. Where acronyms or abbreviations are used in the Specifications or other Contract Documents they are defined to mean the recognized name of the trade association, standards generating organization, governing authority or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co.

F. Comply with applicable standards for work promulgated by organizations, associations,

institutes, societies, boards and generally recognized organizations including but not limited to:

Acoustical Materials Association.....	AMA
Air Conditioning & Refrigeration Institute.....	ARI
Air Moving & Conditioning Association.....	AMCA
Aluminum Association.....	AA
American Association of State Highway and Transportation Officials	AASHTO
American Concrete Institute.....	ACI
American Gas Association.....	AGA
American Institute of Steel Construction.....	AISC
American National Standards Institute.....	ANSI
American Petroleum Institute.....	API
American Plywood Association.....	APA
American Society for Testing and Materials.....	ASTM
American Society of Heating, Refrigerating & Air Conditioning Engineers.	ASHRAE
American Water Works Association.....	AWWA
American Welding Society.....	AWS
American Wood Preservers Bureau.....	AWPB
Architectural Precast Association.....	APA
Architectural Woodworking Institute.....	AWI
Cast Iron Pipe Research Association.....	CIPRA
Concrete Reinforcing Steel Institute.....	CRSI
Contracting Plasterers and Lathers International Association.....	CPLIA
Factory Mutual Engineering Corporation.....	FM
Federal Specifications.....	FED. SPEC.
Flat Glass Jobbers Association.....	FGJA
Gypsum Association.....	GA
Industrial Power Cable Engineers Association.....	IPCEA
Institute of Boiler & Refrigeration.....	IBR
Institute of Electrical & Electronic Engineers.....	IEEE
Joint Industry Council.....	JIC
Metal Lath Manufacturers Association.....	MLMA
Metal Lath/Steel Framing Association.....	ML/SFA
Military Specifications.....	MIL. SPEC.
National Association of Architectural Metal.....	NAAM
National Bureau for Lathing and Plastering.....	NBLP
National Concrete Masonry Association.....	NCMA
National Electric Code.....	NEC
National Electrical Manufacturers Association.....	NEMA
National Fire Protection Association.....	NFPA
National Lumber Manufacturers Association.....	NLMA
National Roofing Contractors Association.....	NRCA

National Terrazzo & Mosaic Association.....	NTMA
National Woodwork Manufacturers Association.....	NWMA
Portland Cement Association.....	PCA
Post-Tensioning Institute.....	PTI
Precast Concrete Institute.....	PCI
Product Standards.....	PS
Research Council on Riveted and Bolted Structural Joints.....	RCRBSJ
Rubber Manufacturer's Association.....	RMA
Sealing and Waterproofers Institute.....	SWI
Sheet Metal & Air Conditioning Contractors National Assoc.....	SMACNA
Southern Pine Inspection Bureau.....	SPIB
Steel Boiler Institute.....	SBI
Steel Door Institute.....	SDI
Steel Joist Institute.....	SJI
Steel Structures Painting Council.....	SSPC
Stucco Manufacturer's Association.....	SMA
Tile Council of America.....	TCA
Tubular Exchange Manufacturers Association.....	TEMA
Underwriter's Laboratories.....	UL
United States Department of Commerce - Commercial Standards.....	CS
United States Department of Commerce – Products Standards	PS
United States Gypsum Company.....	USG
United States Postal Service.....	USPS
Vermiculite Institute.....	VI
Warnock Hersey.....	WH
West Coast Lumber Inspection Bureau.....	WCLIB

- G. Where more than one quality or requirement is set forth in such standards and reference is not made in these Specifications to which specific quality or requirement is intended, the conflict shall be brought to the attention of the Owner who will determine which one to follow. The Contractor will be deemed to have bid the most stringent and furnished the most stringent. Where under such standards options occur, the Owner will be called upon to designate which applies.
  
- H. No provisions of any referenced standard, specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) will be effective to change the duties and responsibilities of the Owner, Contractor or any of their consultants, agents or employees, from those set forth in the Contract Documents, nor will it be effective to assign to the Owner any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of the Contract Documents.

1.05 CODES/MANUFACTURER'S RECOMMENDATIONS

- A. Applicable code requirements are included herein by this reference. However, such are

minimum criteria and no reduction from Drawings or Specifications will be permitted, even if allowed by applicable code.

- B. Electrical and mechanical apparatus, fixtures and equipment will bear approved device label of Underwriter's Laboratories.
- C. The local building code and the Florida Building Code (Latest Edition) apply to all Work. In the event a conflict occurs between the local and Florida Building Codes, the greater requirements will govern. The Contractor shall call to the attention of the Owner any conflict which may arise due to revisions to codes and regulations subsequent to the Contract Date.
- D. Specifically, comply with following codes and regulations:
  - .1. Florida Building Code, Latest Edition.
  - 2. Florida Plumbing Code, Latest Edition.
  - 3. Florida Mechanical Code, Latest Edition.
  - 4. Florida Fire/Gas Code, Latest Edition.
  - 5. Local Building Code.
  - 6. Local Public Utility regulations.
  - 7. City of Tampa Water Department "Developer-Install" Manual.
  - 8. City of Tampa Department of Sanitary Sewer Developer Review Package.
  - 9. National Standard Plumbing Code.
  - 10. National Electric Code (NEC).
  - 11. ASME Code for unfired pressure vessels.
  - 12. Building exits code (life safety code), NFPA 101.
  - 13. Standards of National Board of Fire Underwriters.
  - 14. ASHRAE Safety Code for Mechanical Refrigeration.
  - 15. National Fire Codes.
  - 16. National Fire Protection Association.
  - 17. Occupational Safety and Health Administration (OSHA).
  - 18. International Council of Building officials.
  - 19. Housing and Urban Development.
  - 20. Council of American Building Officials.
  - 21. ANSI A17.1-1987 Safety Code for Elevators and Escalators.
  - 22. American National Standards Institute (ANSI).
  - 23. Florida Department of Environmental Regulation.
  - 24. United States Environmental Protection Agency.
  - 25. Americans with Disabilities Act (ADA).
  - 26. Hillsborough County Environmental Protection Commission.
  - 27. Florida Department of Transportation (FDOT).
  - 28. Federal Aviation Administration (FAA).
- E. Comply with recommendations of pertinent manufacturer to achieve first quality work.

## 1.06 ABBREVIATED SPECIFICATIONS

- A. In order to shorten these Specifications, certain terminology and form common in specification writing is employed. The following words are often omitted when meaning remains clear without the same, i.e., "the," "the Contractor will," "of," "a," "will comply with," etc.
- B. Uses of a period or colon after a general mention of a material lists means "will be," or "will comply with." Example:

"Portland Cement: ASTM C 150, Type 1."

## PART 2 – PRODUCTS

Not used.

## PART 3 – EXECUTION

Not used.

END OF SECTION

## SECTION 01110 - AIRPORT PROJECT PROCEDURES

### PART 1 - GENERAL

#### 1.01 AIRPORT OPERATIONS

Airport operations will be maintained throughout this Contract. The Contractor will in no way curtail or handicap normal operational characteristics of the airport facility except as specifically indicated and specified in these Contract Documents.

#### 1.02 PERMITS, LICENSES AND TAXES

- A. Contractor will be required to procure and pay for all permits, licenses, fees, duties and taxes and arrange for all inspections and similar procedural items as required by the authorities having jurisdiction.
- B. The Contractor will procure all necessary and required permits and licenses, including batch plant permit(s), pay all charges, fees and taxes and give all notices necessary and incidental to the due and lawful prosecution of the Work so as not to delay the completion of the Project. The Contractor's claim that insufficient Contract Time was specified will not be a valid reason for extension of Contract Time. No extensions of Contract Time for completion will be granted for failure to timely procure all necessary and required permits and licenses, including batch plant permit(s), or failure to pay all charges, fees and taxes, or failure to give all notices timely.

#### 1.03 VERIFICATION OF EXISTING CONDITIONS

Prior to bidding and commencing with construction, the Contractor will familiarize themselves with the existing conditions of the Project and requirements of the Contract Documents. Should the Contractor discover any inaccuracies, errors, or omissions between the actual existing conditions and the Contract Documents, Contractor will within 7 calendar days of discovery, notify the Owner in writing or otherwise Contractor will be deemed to have waived any claim arising therefrom. Submission of Bid by the Contractor will be held as an acceptance of the existing conditions and the requirements of the Contract Documents by the Contractor.

#### 1.04 MAINTENANCE OF TRAFFIC

- A. It is the explicit intention of the Contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. It is understood and agreed that the Contractor will provide for the free and unobstructed movement of aircraft in the AOA of the Airport, including approach and departure surfaces, with respect to Contractor's own operations and the operations of all Contractor's subcontractors. It is further understood and agreed that the Contractor will provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport.
- B. The cost of maintaining the aircraft and vehicular traffic will be borne by the Contractor as part of its Work and is included in the Contract Sum Bid Amount.

- C. The Contractor will not prevent public traffic from using active aviation and public areas in and around the Airport. The Work will be coordinated with the Owner and other agencies having an interest in the capability of the Airport and will be programmed and stated accordingly so that public traffic may be routed over partially completed Work. Appropriate safety precautions will be provided by the Contractor to protect employees, the public and the Work.
- D. Should it be necessary for the Contractor to complete portions of the Contract Work for the beneficial occupancy of the Owner prior to completion of the whole Work, such "phasing" of the Work will be specified herein and indicated on the Drawings. When so specified, the Contractor will complete such portions of the Work on or before the date specified or as otherwise specified.
- E. If the Contractor, with the concurrence of the Owner, elects to complete one increment of Work prior to completion of the whole Work, the Owner may accept the Work for beneficial occupancy. Upon completion of any portion of the Work listed above, such portion will be accepted by the Owner in accordance with the Contract.
- F. No portion of the Work may be opened by the Contractor for public use until ordered by the Owner in writing. Should it become necessary to open a portion of the Work to public traffic on a temporary or intermittent basis, such openings will be made when, in the opinion of the Owner, such portion of the Work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the Work and will not constitute either acceptance of the portion of the Work so opened or a waiver of any provision of the Contract. Any damage to the portion of the Work so opened that is not attributable to traffic which is permitted by the Owner will be repaired by the Contractor at Contractor's expense.
- G. The Contractor will make its own estimate of the inherent difficulties involved in completing the Work under the conditions herein described and will not claim any added compensation by reason of delay or increased cost due to opening a portion of the Contract Work.
- H. When the Work is in or near vehicular traffic and pedestrian areas, the Contractor will arrange the Work so as to avoid disruption of normal traffic patterns. The Contractor will provide, erect and maintain effective barricades, danger signals, signs and equipment to provide protection of the Work and the safety of the public throughout the area in accordance with the "FDOT Roadway and Traffic Design Standards."
- I. The Contractor will maintain traffic within the limits of the Project for the duration of the construction period, including all temporary suspensions of Work. It will include the construction and maintenance of all necessary detour facilities; the furnishing, installing and maintaining of traffic control and safety devices during construction; the control of dust; and any other special requirements for safe and expeditious movement of aircraft, vehicular traffic and pedestrians. Before contracting with any outside agency for a uniformed law enforcement officer to assist in the maintenance of traffic, the Contractor will first coordinate availability of Tampa International Airport Police with the Police Department dispatch office at (813) 870-8760.

1. Beginning Date of Contractor's Responsibility: The Contractor's responsibility for maintenance of traffic will begin on the day Contractor starts Work on the Project at the Project site and will continue until the date of Final Acceptance of the Work.
  2. Number of Traffic Lanes: Unless otherwise specified, the Contractor will close no more than one lane on each roadway and ramp. Unless otherwise specified, the effective width of each lane used for maintenance of traffic will be at least as wide as the traffic lanes existing in the area prior to commencement of construction. Traffic control and warning devices will not encroach on lanes used for maintenance of traffic. All closures on any traffic lanes will be coordinated with the Owner a minimum of seven calendar days prior to any closure.
  3. High Traffic Areas: When the Work is in or near vehicular traffic and pedestrian areas, arrange the Work so as to avoid disruption of normal traffic patterns. Provide, erect and maintain effective barricades, variable message boards, danger signals, signs and equipment to provide protection of the Work and the safety of the public throughout the area.
- J. The Contractor will be responsible for performing daily inspections, including weekends and holidays with some inspections at night time, of the installations on the Project and replacing all equipment and devices not conforming to the approved standards during that inspection. The Owner will be advised of the schedule of these inspections and be given the opportunity to join in the inspection as deemed necessary.
- K. Sections Not Requiring Traffic Maintenance: Contractor will not be required to maintain traffic over those portions of the Project where no Work is to be accomplished or where construction operations will not affect existing roads. Contractor, however, will not obstruct nor create a hazard to any traffic during the prosecution of the Work and will be responsible for repair of all damage to existing pavement or facilities caused by Contractor's operations.
- L. Traffic Plan: If applicable, the Contractor will present its Maintenance of Traffic Plan at the Pre-construction Conference/meeting. Maintenance of Traffic Plan will be in written form and include plan sheets which indicate the type and location of all signs, lights, barricades, variable message boards, arrow boards, striping and barriers to be used for the safe passage of pedestrians, vehicular and aircraft traffic through the Project. The plan will indicate conditions and set-up for each phase of the Contractor's activities. In no case may the Contractor begin Work until the Maintenance of Traffic Plan has been approved in writing by the Owner. Modifications to the Maintenance of Traffic Plan that may become necessary will also be approved in writing. Except in an emergency, no changes to the approved Maintenance of Traffic Plan will be allowed until approval of the change has been received.
- M. Traffic During Construction: All construction vehicles are required to use existing public traffic routes. Normal public traffic lanes are not to be used as staging areas for arriving delivery vehicles. The Contractor's employees will utilize the designated Contractor

employee parking area.

1. Adequate accommodations for intersecting and crossing traffic will be provided and maintained and, except where specific permission is given, no road or street crossing the Project will be blocked or unduly restricted.
- N. The "FDOT Roadway and Traffic Design Standards" manual sets forth the basic principles and prescribes minimum standards to be followed in the design, application, installation, maintenance, and removal of all traffic control devices and all warning devices and barriers which are necessary to protect the public and workers from hazards within the Project limits. The standards established in the aforementioned manual constitute the minimum requirements for normal conditions and additional traffic control devices, warning devices, barriers or other safety devices will be required where unusual, complex or particular hazardous conditions exist.
- O. Installation: The responsibility for installation and maintenance of adequate traffic control devices, warning devices and barriers for the protection of the public and workers, as well as to safeguard the Work, will rest with the Contractor. The required traffic control devices, warning devices and barriers will be erected by the Contractor prior to creation of any hazardous condition and in conjunction with any necessary re-routing of traffic. The Contractor will immediately remove, turn or cover any devices or barriers which do not apply to existing conditions.
1. The Contractor will make the Owner aware of any scheduled operation which will affect patterns or safety sufficiently in advance of commencing such operation to permit Owner's review of the plan for installation of traffic control devices or barriers proposed by the Contractor.
  2. The Contractor will assign one of its employees the responsibility of maintaining the position and condition of all traffic control devices, warning devices and barriers throughout the duration of the Contract. The Owner will be kept advised at all times as to the identification and means of contacting this employee on a 24 hour basis.
- P. Furnishing of Devices and Barriers: All traffic control devices including signs, warning devices, variable message boards, arrow boards, and barriers will be furnished by the Contractor.
1. When the Work requires closing an AOA of the airport or portion of such area, the Contractor will furnish, erect, and maintain temporary markings and associated lighting conforming to the requirements specified in the Contract Documents or FAA Advisory Circular 150/5340-latest edition, "Marking of Paved Areas on Airports," as applicable.
  2. The Contractor will furnish and erect all barricades, warning signs, and markings for hazards prior to commencing Work which requires such erection and will maintain the barricades, warning signs, and markings for hazards until their dismantling is directed by the Owner.

- Q. Maintenance of Devices and Barriers: Traffic control devices, warning devices, and barriers will be kept in the correct position, properly directed, clearly visible and clean, at all times. Damaged, defaced or dirty devices or barriers will immediately be repaired, replaced or cleaned as directed.
- R. Flagmen: The Contractor will provide competent flagmen to direct traffic where one-way operation in a single lane is in effect and in other situations as may be required by the standards established herein.
- S. Contractor Signing: The Contractor may furnish and install construction traffic directional signs along the existing traffic route. The signs will depict Contractor's logo or name, directional arrows and "deliveries". Signs will be of sufficient size to have 6" high lettering and will be located at each decision point. All signs and their locations will be approved by the Owner. NO OTHER SIGNS ARE PERMITTED ON OWNER PROPERTY. There will be no writing or signing on printed screen fences.
- T. Material Deliveries: The Contractor will make its own material and equipment deliveries. No deliveries will be made by vendors or suppliers without escort by a representative of the Contractor.
1. Deliveries to the Baggage Claim Drive, if required, will be made between the hours of 1:00 a.m. and 8:00 a.m. and prescheduled with the Owner.
  2. Deliveries to the Ticket Level Drive, if required, will be made between the hours of 9:00 p.m. and 5:00 a.m. and prescheduled with the Owner.
  3. Deliveries for trafficking of materials and equipment within public areas of the Main Terminal Building or Long Term Parking Garage will be made only between the hours of 9:00 p.m. and 5:00 a.m.
  4. Deliveries and trafficking of materials and equipment within public areas of the Airside Terminal Building will be made only between the hours of 10:00 p.m. and 6:00 a.m.
  5. All trash is to be sealed and tied down in such a manner that it will not dirty the floor. The removal, in dustproof sealed containers, of debris will be scheduled the same as deliveries. Specific requirements will be covered at the Preconstruction Conference.
- U. Elevator Use: Existing passenger elevators and escalators will not be used. However, the existing "Service Elevator" may be used if requested.
- V. All dollies, floats, or other conveyances used for debris removal will be rubber tired, box type, and lined with plastic barrier to prevent debris falling from the cart. All carts are to be loaded within the confines of the dust barrier. Transport of debris through public spaces, if permitted, will be made only after coordination of times and routes with the Owner.
- W. Notification: On days when construction traffic is expected to be extra heavy or when

oversized pieces of equipment are to be delivered, give the Owner a minimum of 72 hour notice prior to the event.

X. Interference Request:

1. The Contractor will be responsible for notifying the Owner in writing of, and securing approval for, any and all interruptions or interference with traffic (pedestrian, automobile), or other necessary function of the Airport or any of the airlines.
2. The request will include a traffic control plan indicating barricades, arrow boards, variable message boards, lighting and flagmen where required.
3. Such notification will be made as soon as possible but in no case less than 48 hours prior to the interference.
4. The Contractor should utilize a standard form addressed to the Owner with a blank space for a description of the interference, the exact area affected, the exact times and dates the interference will take place and blanks for Owner's approval. The forms will be submitted in electronic format. No interference will be allowed until the Contractor has received back a copy of the approved interference request form.

Y. Personnel Traffic:

1. General: All construction personnel will be restricted to construction areas. They will wear shirts with sleeves and long pants at all times.
2. Walkways: When walking from the Contractor's parking lot to the job site, existing walkways and crossings will be used. The Contractor will not use vehicle traffic lanes as walkways.
3. Elevators/Escalators: Existing elevators and escalators will not be used at any time for the transporting of construction personnel or construction materials. The entry to all elevators will not be blocked at any time.
4. Use of Public Areas: The Contractor's workers will not utilize public areas for taking their "work breaks" or "lunch breaks." Areas for this purpose can be designated by the Owner upon request. No public toilets will be used by any workers at any time.
5. Use of Restaurants: The Contractor's workers will not use restaurants, lounges or other concession areas within the Airport, unless approved by the Owner.

Z. Character of Workers:

1. The Contractor will, at all times, employ sufficient labor and equipment for prosecuting the Work to full completion in the manner and time required by the Contract Documents.

2. All workers will have sufficient skill and experience to properly perform the Work assigned to them. Workers engaged in special Work or skilled Work will have sufficient experience in such Work, and in the operation of the equipment required, to perform the Work satisfactorily.
3. The failure to provide adequate labor and equipment may be considered cause for terminating the Contract.
4. Any person employed by the Contractor or a subcontractor who, in the opinion of the Owner, does not perform their Work in a proper and skillful manner or is intemperate or disorderly, will, at the written request of the Owner, be removed forthwith by the Contractor or subcontractor employing such person and will not be employed again in any portion of the Work without the approval of the Owner.
5. Should the Contractor or subcontractor fail to remove such person or persons or fail to furnish suitable and sufficient personnel for the proper prosecution of the Work, the Owner may suspend the Work by written notice until compliance with such orders.
6. No firearms are permitted on Project site at any time.

#### 1.05 METHODS AND EQUIPMENT

- A. All equipment which is proposed to be used on the Work will be of sufficient size and in such mechanical condition as to meet requirements of the Work and to produce a satisfactory quality of Work. Equipment used on any portion of the Work will be such that no injury to previously completed Work, adjacent property, or existing Airport facilities will result from its use.
- B. When the methods and equipment to be used by the Contractor in accomplishing the Work are not prescribed in the Contract, the Contractor is free to use any methods or equipment that will accomplish the Work in conformity with the requirements of the Contract Documents.
- C. When the Contract specifies the use of certain methods and equipment, such methods and equipment will be used unless others are authorized by the Owner. If the Contractor desires to use a method or type of equipment other than specified in the Contract, Contractor may request approval from the Owner to do so. The request will be in writing and will include a full description of the methods and/or equipment proposed and the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with the Contract Documents. If, after trial use of the substituted methods or equipment, the Owner determines that the Work produced does not meet the Contract Documents, the Contractor will discontinue the use of the substitute method or equipment and will complete the remaining Work with the specified methods and equipment.
- D. The Contractor will remove any deficient Work and replace it with Work of specified

quality, or take such other corrective action as the Owner may direct. No change will be made in basis of payment for items in the Contract involved or in Contract Time as a result of authorizing a change in methods or equipment under this Section.

#### 1.06 HOURS OF WORK

- A. Work hours will comply with the Project Schedule requirements specified in Section 01315 - SCHEDULES, PHASING. In addition, the following limitations apply:
1. Work may proceed at any time (24 hours a day) unless otherwise indicated on Drawings with the following exceptions.
    - a. All Work in areas above and including suspended ceilings which are above areas open for access by the public, tenant, and non-construction personnel will be restricted to times when these areas are unoccupied, typically 12:00 p.m. midnight to 8:00 a.m.
    - b. All Work in areas above entrance roadways to the Long Term Garage will be restricted to periods between 10:00 p.m. and 5:00 a.m.
    - c. All Work in areas above roadways will be restricted to periods between 9:00 p.m. and 5:00 a.m. on the Ticket Level Drive and between 1:00 a.m. and 8:00 a.m. (after the last arriving flight) on the Baggage Claim Level Drive.
    - d. All Work in areas above exit roadways to the Long Term Parking Garage will be restricted to periods between 1:00 a.m. and 8:00 am.
    - e. Work involving total isolation (i.e. floor to the underside of the deck) of a site may proceed at any time (24 hours a day).
  2. Disruptive Work will be defined as any activity (including excessive noise, air pollution [dust, etc.] and similar events) that adversely disrupts, hinders or impacts normal Airport operations. These activities will be conducted so as not to interfere with the normal operation of the Airport. Work which may be considered disruptive will be conducted by the Contractor during middle of the night hours as designated by the Owner. When directed by the Owner to cease Disruptive Work, the Contractor will immediately suspend and discontinue the Disruptive Work. Work will not be resumed until directed by the Owner. Contractor's claim for additional cost or additional Contract Time for suspending Disruptive Work will not be accepted.

#### 1.07 DAILY CLEAN-UP AND TRASH REMOVAL

- A. Debris from Work will be promptly removed from the Project site at least daily. Debris will not be allowed to become a hazard to the safety of the public. Areas occupied by the Owner and Building Tenants will be kept clean at all times.
- B. The Contractor will be responsible for clean-up and trash removal. Accumulation of trash and debris will not be allowed and the Owner may at any time direct the

Contractor to immediately remove its trash and debris from the site of the Work when, in the opinion of the Owner, such trash constitutes a nuisance or in any way hinders the Work or the Airport's operations. If the Contractor should fail to remove its trash and debris from the site of the Work in a timely manner, the Owner may have this Work performed and deduct the cost of such from Contractor's payment.

#### 1.08 CLEANING AND PROTECTION

- A. General: During all Work at the Project Site, clean and protect Work in progress and adjoining Work on the basis of continuous daily maintenance. Apply protective covering on installed Work to ensure freedom from damage or deterioration.
- B. Clean and perform maintenance on installed Work as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Limiting Exposures of Work: To the extent possible through appropriate control and protection methods, supervise performance of the Work in such a manner and by such means which will ensure that none of the Work, whether completed or in progress, will be subjected to harmful, dangerous, damaging or otherwise deleterious exposure during the construction period. Such exposures include, where applicable, but are not limited to, the following:
  - 1. Excessive static or dynamic loading.
  - 2. Excessive internal or external pressures.
  - 3. Excessive electrical loading.
  - 4. Solvents.
  - 5. Chemicals.
  - 6. Light.
  - 7. Puncture.
  - 8. Abrasion.
  - 9. Heavy Traffic.
  - 10. Soiling.
  - 11. Combustion.
  - 12. High speed operation, improper lubrication, unusual wear.
  - 13. Improper shipping or handling.

14. Theft.
  15. Vandalism.
- D. Protection at Openings: Contractor will provide protection at all openings in structures and finishes to maintain the building weather and dust tight. All protection will be of solid material and substantial so that it will not be disturbed by wind and weather normal to the area and season, and will also be tight fitting to prevent noise infiltration.
- E. Protection of Improvements:
1. Damage to Existing Facilities: Existing surfaces and materials of the Owner's property not requiring work by the Contract Documents that are damaged by the Contractor's operations will be immediately repaired. Repaired surfaces and materials will match existing adjacent undamaged surfaces and materials. Repair work will be coordinated with the Owner with regards to time and method.
  2. All roads used by the Contractor during construction will be restored and/or replaced to their original condition.
  3. Accidental Demolition: All structures or parts thereof that may become damaged due to accident or Contractor's error will be restored to their original condition at no cost to the Owner. Materials and equipment being used in the repair or replacement resulting from damage will be new and will perform at the manufacturer's published capacities. If the existing equipment or materials cannot be identified, or if unavailable, the selection of the replacement will be subject to approval by the Owner in writing.
  4. New Carpet: Where new carpeting has been installed, Contractor will fully protect such new carpeting from all damage and staining by Contractor's forces and the Owner may deduct from the Contractor's Contract Sum such sums as may be necessary to cover the cost of repairing and replacing such new carpeting.
- F. Owner's - Standards of Construction:
1. Hazardous Materials:
    - a. ANY PRODUCT OR MATERIAL THAT CONTAINS ASBESTOS MATERIAL WILL NOT BE PERMITTED ON THIS PROJECT.
    - b. ANY PAINT CONTAINING LEAD WILL NOT BE USED ON THIS PROJECT.
  2. Building:
    - a. Materials and finishes used in the Work will have a fire rating at least equal to the rating required for the type of space in which the Work is to be performed.

- b. No work will be performed which, when complete, will result in the degradation of the fire rating for the space.
  - c. Any penetration of existing ceilings or walls which will break the fire rating of the ceiling or wall will be patched to obtain the same fire rating and to the satisfaction of the Owner.
  - d. Any ceiling access panel now existing will remain in its present location and cannot be covered in a manner to prevent access.
  - e. Any ceiling, other than Contractor's own space, that must be accessed or crossed from above will be done only with prior permission of the Owner.
  - f. Wood framing is prohibited for partitioning.
3. Electrical:
- a. All work will conform to applicable codes and standards.
  - b. All work will conform to the National Electric Code.
  - c. All work will conform to the City of Tampa Electric Code and a City of Tampa Electric Permit will be obtained and displayed at the work site.
  - d. In addition, the Owner requires:
    - (1) All temporary or permanent conductors (power, lighting, control or communication) to be placed in conduit or routed by way or existing approved cable trays.
    - (2) ALL CONDUITS AND RACEWAYS WILL BE CONCEALED. (Special permission may be granted for exposed conduit in shop areas or some other places that are completely removed from office, commercial, and public areas.)
    - (3) All items to be independently supported from the structural portion of the building. All items will be installed as close as possible to the structure; i.e., tight up against the structure. Conduits and raceways will be installed parallel to the building structural members. Conduits and raceways will not be located within 6-inches of other systems (HVAC ducts, chilled water lines, sprinkler lines, domestic water lines, bus ducts, etc.) and multiple runs of conduits or raceways will be routed together. Bus duct will be separately supported using manufacturer's standard equipment allowing for removal and inspection of all cover plates. Contractor will furnish drawings, prior to installation, showing layout and elevations of all multiple

conduits, raceways, cable tray and bus duct routes.

- (4) The Contractor to supply drawings showing all Work to be performed. Drawings will show new branch or feeder circuits and identify panel and breaker numbers where originating, size of conduit, size of wire, number of conductors and full load current.
- (5) All conduits or raceways crossing expansion joints are to be equipped with expansion-type fittings. Cable extensions from raceway terminations will not exceed 5-feet. Sleeves will be used when conduits pass through walls, floors and roofs and will be galvanized steel, sized to allow for a minimum 1/4-inch clearance. Fire rating integrity will be restored after penetration.
- (6) Flexible steel conduit is limited to final connections to motors and transformers and will be restricted to 18 to 36-inches in length. Flexible steel conduit may also be used to connect outlet boxes to recessed lighting fixtures in lengths not to exceed 4 to 6-feet.
- (7) Self-stripping electrical wire connectors are prohibited.
- (8) Fixtures mounted in suspended ceilings are to be supported independently of the ceiling. Fixtures will be supported on all four corners with near-vertical supports.
- (9) All lighting fixtures and signs are to be equipped with a renewable fuse in an external GLR holder.
- (10) A manufacturer's drawing is to be submitted on all new light fixtures showing type and size.
- (11) Existing lighting fixtures that are scheduled for removal will not be salvaged to the Owner, unless otherwise noted.
- (12) All restroom automatic sensor system components are to be low voltage 24V, without exception.
- (13) All new fire alarm, security/access control and other systems are to match existing. Coordinate with Owner, as required

G. Overhead Protection:

1. No cranes with or without loads or other construction equipment will cross over non-construction personnel, their travel ways which include but are not limited to, walkways, roadways, or passenger transfer system tracks.

2. The plan of operation of cranes and other hoisting equipment will be established in writing by the Contractor. This plan of operation will be subject to review by the Owner.
3. Specific areas affected by construction may require protective covering. These protection coverings will be adequate to insure the protection of life and property and the continuous operation of the Airport. The layout and location of the protective systems will be subject to review and rejection by the Owner. Structural integrity of protection systems will be the responsibility of the Contractor.
4. The use of helicopters to lift, place, or otherwise maneuver equipment is expressly prohibited.

#### 1.09 CONSERVATION AND SALVAGE

##### A. General:

Contractor shall refer to the Owner's Sustainability Master Plan for Owner's conservation and salvage policies prior to the start of construction.

1. It is a requirement for supervision and administration of the Work that construction operations be carried out with the maximum possible consideration given to conservation of energy, water and materials. In addition, maximum consideration will be given to salvaging materials and equipment involved in performance of the Work but not incorporated therein.
2. Refer to other sections for required disposition of salvage materials which are the Owner's property.

#### PART 2 – PRODUCTS

Not used.

#### PART 3 – EXECUTION

Not used.

END OF SECTION

## SECTION 01150 - MEASUREMENT AND PAYMENT

### PART 1 - GENERAL

#### 1.01 MEASUREMENT AND PAYMENT

A. Measurement of Quantities: The following requirements, in general, apply to those items listed by unit prices in BID SCHEDULE, Section 00340:

1. All "Unit Price" Work completed under the Contract will be measured by the Owner or Design Professional in conjunction with the Contractor, using United States Customary Units of Measurement. Any measurements made by the Contractor without the Owner or Design Professional present shall not be the basis for, or otherwise used for, payment.

2. The method of measurement and computations to be used in determination of quantities of material furnished and of Work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

3. Unless otherwise specified, longitudinal measurements for area computations will be made horizontally and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the Drawings or ordered in writing by the Design Professional.

4. Structures will be measured according to neat lines shown on the Drawings or as altered to fit field conditions.

5. Unless otherwise specified, all Contract Unit Price Items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items will be measured parallel to the base or foundation upon which such items are placed.

6. In computing volumes of excavation, the average end area method or other acceptable methods will be used.

7. The thickness of plates and galvanized sheets used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inches.

8. The term "ton" will mean the short ton consisting of 2,000 pounds avoirdupois. All materials which are measured or proportioned by weights will be weighed on a certified, approved scale by competent, qualified personnel. If material is shipped by rail, the car weight may be accepted, provided that only the actual weight of material be paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight will be weighed empty

daily at such times as the Owner or Design Professional directs, and each truck will bear a plainly legible identification mark.

9. Materials to be measured by volume in the hauling vehicle will be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Owner or Design Professional, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles will be loaded to at least their water level capacity and all loads will be leveled when the vehicles arrive at the point of delivery.

10. When requested by the Contractor and approved by the Owner in writing, material specified to be measured by the cubic yard may be weighed and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Owner or Design Professional and will be agreed to by the Owner and Contractor before such method of measurement of pay quantities is used.

11. Bituminous materials will be measured by the gallon or ton. When measured by volume, such volumes will be measured at 60-degrees F or will be corrected to the volume at 60-degrees F using ASTM D 1250 for asphalts or ASTM D 633 for tars.

12. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the Work.

13. When bituminous materials are shipped by rail or truck transport, net certified weights by volume, subject to correction for loss or foaming, may be used for computing quantities.

14. Cement will be measured by the ton or hundredweight.

15. Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thickness and the extreme length of each piece.

16. The term "Lump Sum" when used as an Unit Price Item of payment will mean complete payment for the Work described in the Contract.

17. When a complete structure or structural unit (in effect, "Lump Sum" Work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

18. When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc. and these items are identified by gage, unit weight, section dimensions, etc., such identification will be

considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

19. Scales for weighing materials which are required to be proportioned or measured and paid for by weight will be furnished, erected, and maintained by the Contractor, or by certified, permanently installed commercial scales.

20. Scales will be accurate within one-half percent of the correct weight throughout the range of use. The Contractor will have the scales checked under the observation of the Owner before beginning Work and at such other times as requested. The intervals will be uniform in spacing throughout the graduated or marked length of the beam or dial and will not exceed one-tenth of one percent of the nominal rated capacity of the scale, but not less than one pound. The use of spring balances will not be permitted.

21. Beams, dials, platforms, and other scale equipment will be so arranged that the operator and inspector can safely and conveniently view them.

a. Scale installations will have available ten standard 5.0-pound (2.3 kilogram) weights for testing the weighing equipment or suitable weights and devices for other approved equipment.

22. Scales must be tested for accuracy and serviced before use at a new site. Platform scales will be installed and maintained with the platform level and rigid bulkheads at each end.

23. Scales "overweighing" (indicating more than correct weight) will not be permitted to operate and all materials received subsequent to the last previous correct weighing-accuracy test will be reduced by the percentage of error in excess of one-half of one percent.

24. In the event inspection reveals the scales have been "underweighing" (indicating less than correct weight) they will be adjusted and no additional payment to the Contractor will be allowed for materials previously weighed and recorded.

25. All costs in connection with furnishing, installing, certifying, testing and maintaining scales for furnishing check weights and scale house and for all other items specified in this section and for the weighing of materials for proportioning or payment will be included in the Unit Contract Prices for the various items of the Project.

26. When the estimated quantities for a specific portion of the Work are designated as the pay quantities in the Contract, they will be the final quantities for which payment for such specific portion of the Work will be made, unless the dimensions of said portion of the Work shown on the Drawings are revised by the Design Professional. If revised dimensions result in an increase or

decrease in the quantities of such Work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

## SECTION 01315 - SCHEDULES, PHASING

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

Scope includes construction scheduling and phasing/sequencing required for proper execution of the Work as described herein and indicated on the Drawings.

#### 1.02 CONSTRUCTION SCHEDULE

##### A. Preliminary Schedule:

1. Within 15 days after the date of award of the Contract, Contractor will submit Contractor's preliminary network phasing diagram (preliminary schedule) indicating a comprehensive overview of the Project including an activity line for each of the work segments to be performed at the site.
  - a. Arrange schedule to indicate required phasing of Work as outlined below and in the Contract Documents and to indicate time allowances for submittals and material acquisitions including the scheduled dates for purchase orders or subcontract issuance or execution, inspections, and similar time margins.
  - b. The Contractor may submit suggestive modifications and revisions to Work sequencing and barricade arrangements indicated in the Drawings. All suggestions are dependent on Owner's approval.
  - c. Submitted schedule will be reviewed for comment by Owner and Design Professional for conformance to overall Project completion time criteria. Lack of this information will be cause for rejection of schedule.

##### B. Bar-Chart Schedule:

1. Subsequent to review and comment by the Owner of the preliminary schedule, the Contractor will submit a comprehensive bar-chart type construction schedule indicating a time bar for each significant category or unit of work to be performed. Arrange schedule to indicate required phasing of units and to show time allowances for submittals and material acquisitions including the scheduled dates for purchase orders or subcontract issuance or execution, inspections, and similar time margins.
  - a. Show critical submittal dates related to each time bar or prepare separate coordinated listing of critical submittal dates.
  - b. Superimpose an S-curve on schedule to show "estimated" total dollar-volume of work performed at any date during Contract Time, with a column of cost figures in left hand margin, ranging from zero to Contract Sum.

- c. Submit updated schedule and S-curve with monthly pay request as herein specified.
2. This initial Construction Schedule, along with electronic media containing all activity data including but not limited to early start, early finish, late start, late finish and float, will be submitted to the Owner and Design Professional for review and comment within 30 days after the date of the Notice to Proceed but no later than seven days before the first Application for Payment request is submitted. Owner's review and recognition of this schedule will not relieve the Contractor of responsibility for scheduling of the Work and maintaining progress in accordance with the Contract Documents.

The initial Construction Schedule will be recognized by the Owner and Design Professional when it is prepared in accordance with the Contract Documents.

C. Distribution:

After Owner's and Design Professional's review and recognition, the Contractor will print and distribute the Construction Schedule to entities with a need-to-know responsibility, including three copies each to the Owner and Design Professional. Contractor will also post the Construction Schedule in temporary office space. Revise at intervals matching payment requests and redistribute. Provide copies required with payment requests.

D. Maintenance of Schedule:

1. The Contractor's recognized Construction Schedule will be updated monthly, and three printed copies and electronic media will be submitted with each of the Contractor's Applications for Payment. The updated Construction Schedule will include copies of issued Purchase Orders and contracts (subcontracts) for materials and services scheduled to have been purchased during the period of time covered by the Application for Payment. The updated Construction Schedule will describe Work completed during the preceding month, Work in progress, major problems, schedule deviations, organizational changes, subcontractor progress and "Record Document" schedule progress dates. The updated Construction Schedule will also include a section detailing activities planned for the next month. Progress will be reported in comparison with the recognized Construction Schedule. A special section of the updated Construction Schedule will address any activities that are behind schedule, describing the reason therefore, any impact on the overall Contract Completion Dates and the Contractor's plans for overcoming any delays. Updates will also be made any time that changes in the design, construction, procurement and installation cause any major change in the overall Construction Schedule.
2. The Owner will review the updated Construction Schedule and provide comment with regard to the Construction Schedule's compliance with the provisions of the Contract Documents. The updated Construction Schedule will be recognized by the Owner when it is prepared in accordance with the Contract Documents. The Owner will not approve the Contractor's Application for

Payment without the Contractor's monthly submission of a recognized Construction Schedule. Each monthly Construction Schedule will show all Work substantially complete by the Contract Completion Dates.

3. If the Contractor's monthly schedule update reflects or Owner or Design Professional determines that the Contractor is at least 10% behind the original Construction Schedule or 21 or more days behind the original Construction Schedule for:
  - a. the Work as a whole;
  - b. a major Contract item;
  - c. an major item of Work; or
  - d. an item of Work not on the original critical path that, because of the delay or anticipated delay, becomes a critical path item;

then such may constitute a material breach of the Contract. The Contractor will submit with the monthly update of the Construction Schedule, Contractor's proposed plan for bringing the Work back on schedule and completing the Work by the Contract Completion Dates.
4. The Construction Schedule will be coordinated by the Owner and Design Professional with the overall schedule for the total Project as a whole. The Contractor will revise the Construction Schedule promptly in accordance with the conditions of the Work, subject to approval by the Owner and Design Professional.
5. The Contractor will comply fully with all time and other requirements of the Contract Documents. Recommendation of an Application for Payment by the Design Professional and payment thereon by the Owner, without the submission of a recognized monthly schedule update of the Construction Schedule, will not constitute a waiver of the requirements for such updates, nor will it relieve the Contractor from the obligation to complete the Work within the Contract Time(s).
6. Should a review indicate the Work has fallen behind the recognized Construction Schedule, at the option of the Owner or Design Professional, funds equal to the established liquidated damages for the number of days behind schedule will be withheld until the Work is brought back on schedule.
7. If the Work is determined to be unsatisfactory for any reason and requires removal and replacement, rework, or any action that will affect the operation of the Airport, it will be considered part of the Construction Schedule and if the time period exceeds that specified, liquidated damages will be assessed.
8. If the Owner or Design Professional has determined that the Contractor should be permitted to extend the time for completion as provided in Section 00700,

Paragraph 8.03 of GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, as modified, the date(s) in the Construction Schedule will be adjusted accordingly to retain their same relationship to the adjusted date of Substantial Completion, and the dollar value of Work to be completed as of the first of each month will be adjusted pro rata.

END OF SECTION

## SECTION 01340 - SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS:

- A. Requirements of the Contract Documents, including Division 01.

#### 1.02 SUMMARY:

- B. This Section specifies administrative and procedural requirements for submittal of Shop Drawings, Product Data and Samples to verify that products, materials and systems proposed for use comply with provisions of the Contract Documents.
- C. Shop Drawings include, but are not limited to, the following:
  - 1. Fabrication Drawings.
  - 2. Installation Drawings.
  - 3. Setting diagrams.
  - 4. Shop-work manufacturing instructions.
  - 5. Templates and patterns.
  - 6. Schedules.
  - 7. Design mix formulas.
  - 8. Coordination Drawings.
- D. Product Data include, but are not limited to, the following:
  - 1. Manufacturer's product specifications.
  - 2. Manufacturer's installation instructions.
  - 3. Standard color charts.
  - 4. Catalog cuts.
  - 5. Roughing-in diagrams and templates.
  - 6. Standard wiring diagrams.
  - 7. Printed performance curves.
  - 8. Operational range diagrams.
  - 9. Mill reports.
  - 10. Standard product operating and maintenance manuals.
  - 11. Safety Data Sheets (SDS).
- E. Samples include, but are not limited to, the following:
  - 1. Partial Sections of manufactured or fabricated components.
  - 2. Small cuts or containers of materials.
  - 3. Complete units of repetitively-used materials.
  - 4. Swatches showing color, texture and pattern.
  - 5. Color range sets.
  - 6. Components used for independent inspection and testing.

- F. Administrative Submittals: Refer to other Division 01 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
1. Schedule of Submittals.
  2. Permits.
  3. Applications for payment.
  4. Performance and payment bonds.
  5. Insurance certificates and endorsements.

### 1.03 SUBMISSION AND APPROVAL SCHEDULE

- A. Immediately following development and acceptance of a fully developed Progress Schedule specified under Section 01315 - SCHEDULES, PHASING, prepare complete schedule of work-related submittals, including Shop Drawings, Product Data, and Samples. Submit within ten days of date required for establishment of Progress Schedule. Correlate Submittal Schedule listing of principal subcontractors with listing of products or procurements schedule as specified in Section 01315 - SCHEDULES, PHASING. The Contractor will prepare and keep current, for the Owner's and Design Professional's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Owner and Design Professional reasonable time to review submittals.
- B. Color Schedule: Submit to Owner separate listing of items requiring color selection by the Owner and the Design Professional.
- C. The Contractor will prepare and submit in triplicate to the Owner a complete itemized Schedule of Shop Drawings, Product Data and Samples, listing each and all such items as required under these Specifications. Schedules will indicate for each required item:
1. Chronological sequence of first submittals.
  2. Category of submittal, generic description of work covered, activity or event number on Progress Schedule, scheduled date for first submission, and blank columns for actual date of submittal, resubmittal, and final release or acceptance by Design Professional.
  3. Identification as to pertinent Specification Division.
  4. Item(s) involved.
  5. Name of pertinent subcontractor or supplier and the name of pertinent manufacturer.
  6. Schedule date of delivery of pertinent items to the Project.

## 1.04 PROCEDURE REQUIREMENTS

### A. General:

1. The Contractor will submit all Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents to the Owner for Owner's comments and review in coordination with the Design Professional.
2. The Contractor will review, approve and submit to the Owner, Shop Drawings, Product Data, Samples and similar 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 Owner, Design Professional or of separate contractors.
3. The Contractor will perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Design Professional. Such Work will be in accordance with approved submittals.
4. By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor thereby represents that the Contractor has determined and verified all dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on previously accepted Shop Drawings, Product Data, Samples, or similar submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples and similar submittals, the Owner and Design Professional will be entitled to rely upon the Contractor's representation that such information is correct and accurate.
5. The Contractor will not be relieved of responsibility for deviations from requirements of the Contract Documents by the Owner's review of, or the Design Professional's approval of, Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Owner and Design Professional in writing of such deviation at the time of submittal and that the Design Professional has given written approval to the specific deviation. The Contractor will not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals.
6. Burden of proof that products, materials, Shop Drawings, Product Data, Samples and similar submittals comply with the Contract Documents in every respect and that any substitutions, variations, deviations or modifications to exactly what is specified will, in fact, work well in coordination and harmony and will serve the intended purpose, will rest solely with the Contractor.
7. Listing of subcontractors, subcontracts and purchase orders.

8. Contractor's construction schedule.
9. Progress Schedules.
10. Progress reports.

1.05 SUBMITTAL PROCEDURES:

- G. Coordination: Coordinate preparation and processing of submittals with performance of the Work.
1. The Contractor shall review submittals before submitting to the Owner. Transmit each submittal to the Owner sufficiently in advance of scheduled performance of related construction activities to avoid delay. If any submittals will be delayed, inform the Owner in writing giving reasons for the delay and a revised submittal schedule. Delays will be subject to Owner's approval. No extension of time will be authorized because of a Contractor's failure to transmit submittals to the Owner sufficiently in advance of the Work to permit processing.
  2. The Owner will review all submittals for conformance with the Contract Documents.
  3. Request for payment of stored materials will not be considered until submittals have been received and approved by the Owner.
  4. Transmit submittals to the Owner to prevent delays. The Contractor is responsible for delays accruing directly or indirectly from submission or resubmission of submittal date.
  5. The Contractor shall coordinate each submittal with other submittals and related activities that require sequential activity including:
    - a. Testing.
    - b. Purchasing.
    - c. Fabrication.
    - d. Delivery.
  6. The Contractor shall coordinate transmittal of different types of submittals for the same element of the Work and different elements of related parts of the Work so that processing will not be delayed by the Owner's need to review submittals concurrently for coordination.
    - a. The Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are delivered to the Owner.
  7. Processing: The Contractor shall allow sufficient review time so that Work will not be delayed as a result of the time required to process submittals, including time for re-

submittals.

- a. The Contractor shall allow for time for the Owner's initial review of each submittal per the schedule. Where processing must be delayed to permit coordination with subsequent submittals, allow additional time. The Owner will advise the Contractor promptly when a submittal being processed must be delayed for coordination.
  - b. The Contractor shall where necessary to provide an intermediate submittal between the initial and final submittals, process the intermediate submittal in the same manner as the initial submittal.
  - c. The Contractor shall allow time for reprocessing each of submittal per the schedule.
  - d. No extension of time will be authorized because of a Contractor's failure to transmit submittals to the Owner sufficiently in advance of the Work to permit processing.
- H. Submittal Preparation: Place a permanent label or title block on each submittal for identification, and submit the information in Submittal Binders. The Contractor has the option to provide Submittals in electronic (PDF) format for the Contractor's own uses, but the specified number of hard copy submittals shall be met. PDF files will be required for all Operations & Maintenance (O&M) and Close-out documents. The PDF file shall be enabled for Adobe Reader's Comment and Markup functionality. All stamps and markings described herein shall be electronically duplicated or added before scanning. The PDF files shall be transmitted on a CD/DVD to the Owner.
1. The Contractor shall place a permanent label or title block on each submittal for information.
  2. The Contractor shall indicate the name of the firm or entity that prepared each submittal on the label or title block.
  3. The Contractor shall provide a space approximately 4 inches by 5 inches on the label or adjacent to the title block to record the Contractor's review and approval markings and the action taken by the Owner.
  4. The Contractor shall include the following information on the label for processing and recording action taken.
    - a. Project name.
    - b. Project Number.
    - c. Date.
    - d. Name and address of Owner.
    - e. Name and address of Contractor's Designer.
    - f. Name and address of Contractor.

- g. Name and address of subcontractor.
- h. Name and address of supplier.
- i. Name of manufacturer.
- j. Number and title of appropriate Specification Section.
- k. Drawing number and detail references, as appropriate.
- l. Similar definitive information as necessary.

5. The Contractor shall stamp each page (sheet) of the submittal with the Contractor's certification statement, or other approval statement, as follows:

"Contractor hereby certifies that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated in the work, is in compliance with the Contract Documents, can be installed in the allocated spaces, and is submitted for review by the Owner. Contractor acknowledges that Owner may rely on the information contained in this submittal.

Certified by Submittal Reviewer\_\_\_\_\_. Date:\_\_\_\_\_"

- a. The Contractor's authorized representative shall sign the certifying statement or approval statement. The signatures shall be in original ink. Stamped or photocopied signatures are not acceptable.

6. The Contractor shall provide additional tabs (blank sections) in each manual for future submittals.

- I. Submittal Transmittal: The Contractor shall package each submittal appropriately for transmittal and handling. The Contractor shall transmit each submittal from Contractor to Owner, as indicated, by use of a transmittal form. Submittals received from sources other than the Contractor will be returned to the sender without action. Electronic transmittals must have descriptive subject lines for ease of retrieval. The transmittal form should be the first page in the attached PDF.

- 1. The Contractor shall record relevant information and requests for data on the transmittal form. On the form, or an attached separate sheet, the Contractor shall call attention to deviations from requirements of the Contract Documents, including minor variations and limitations.
- 2. The Contractor shall include the Contractor's signed certification stating that information submitted complies with requirements of the Contract Documents.
- 3. The Contractor shall prepare a draft of a transmittal form and submit it to the Owner's review and acceptance. The Contractor shall provide places on the form for the following information:
  - a. Project name.
  - b. Project Number.
  - c. Date.

- d. Destination (To:).
- e. Source (From:).
- f. Names of subcontractor, manufacturer and supplier.
- g. Category and type of submittal.
- h. Submittal purpose and description.
- i. Submittal and transmittal distribution record.
- j. Remarks.
- k. Signature of transmitter.

1.06 SPECIFIC SUBMITTAL REQUIREMENTS:

- J. Shop Drawings: The Contractor shall submit newly prepared information, drawn to accurate scale. THE CONTRACTOR SHALL NOT REPRODUCE CONTRACT DOCUMENTS OR COPY STANDARD PRINTED INFORMATION AS THE BASIS OF SHOP DRAWINGS.
  - 1. The Contractor shall include the following information on Shop Drawings:
    - a. Dimensions.
    - b. Identification of products and materials included.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
  - 2. The Contractor shall submit Coordination Drawings where required for integration of different construction elements. The Contractor shall show construction sequences and relationships of separate components where necessary to avoid conflicts in utilization of the space available.
  - 3. The Contractor shall encircle, identify with arrow, or otherwise indicate deviations from the Contract Documents on the Shop Drawings.
    - a. THE CONTRACTOR SHALL NOT USE COLORED HIGHLIGHTERS TO INDICATE SELECTIONS.
  - 4. The Contractor shall not allow Shop Drawing copies which do not have an appropriate final stamp or other marking indicating action taken by the Owner to be used for construction.
  - 5. Except for templates, patterns and similar full-size Drawings, the Contractor shall submit Shop Drawings on sheets at least 8-1/2" x 11" but no larger than 30" x 42". Shop drawings submitted as PDF files shall be generated full size of the original and not scale to fit.
  - 6. In submitting paper, the Contractor shall submit a sufficient number of copies to enable the Owner to retain four (4) copies of each required Product Data submittal; submit two (2) additional copies where copies are required for operating and maintenance manuals. The Owner will return the other marked copies with the

action taken and corrections or modifications required as appropriate. One (1) print of each drawing larger than 11" x 17" for review will be returned to the Contractor.

7. The Contractor shall leave a blank area, approximately 4 inches by 2.5 inches, near the title block for the Owner's review stamp in print.
- K. Product Data: The Contractor shall collect Product Data into a single submittal for each element of construction or system.
1. The Contractor shall encircle and identify with an arrow, each copy to show which choices and options are applicable to the Project.
    - a. The Contractor shall not use colored highlights to indicate selection.
  2. Where Product Data has been printed to include information on several similar products, some of which are not required for use on the Project, or are not included in this submittal, the Contractor shall mark copies to clearly indicate which information is applicable.
  3. Where Product Data must be specially prepared for required products, materials or systems, because standard printed data are not suitable for use, the Contractor shall submit as "Shop Drawings" not "Product Data."
  4. The Contractor shall include the following information in Product Data:
    - a. Manufacturer's printed recommendations.
    - b. Compliance with recognized trade association standards.
    - c. Compliance with recognized testing agency standards.
    - d. Application of testing agency labels and seals.
    - e. Notation of dimensions verified by field measurement.
    - f. Notation of coordination requirements.
  5. The Contractor shall not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
  6. In submitting paper, the Contractor shall submit a sufficient number of copies to enable the Owner to retain four (4) copies of each required Product Data submittal; submit two (2) additional copies where copies are required for operating and maintenance manuals. The Owner will return the other marked copies with the action taken and corrections or modifications required as appropriate.
    - a. Unless the Owner observes noncompliance with provisions of the Contract Documents or requires re-submittal for other reasons, the initial submittal may serve as the final submittal, if appropriate.
  7. The Contractor shall furnish copies of final Product Data submittal to manufacturers, subcontractors, suppliers, fabricators, installers, governing authorities and others as

required for performance of the construction activities. The Contractor shall show distribution on transmittal forms.

- a. The Contractor shall not proceed with installation of materials, products and systems until a copy of Product Data applicable to the installation is in the installer's possession.
  - b. The Contractor shall not permit use of unmarked copies of Product Data in connection with construction.
- C. Samples: The Contractor shall submit Samples physically identical with the material or product proposed for use; submit full-size, fully fabricated Samples, cured and finished in the manner specified.
1. The Contractor shall mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. The Contractor shall prepare Samples to match Designers' Sample where so indicated and include the following information:
    - a. Generic description of the Sample.
    - b. Size limitations.
    - c. Sample source.
    - d. Product name or name of manufacturer.
    - e. Compliance with recognized standards.
    - f. Compliance with governing regulations.
    - g. Availability.
    - h. Delivery time.
  2. The Contractor shall submit three samples (sets). One set will be returned marked with the action taken. The Owner will retain copies.
- D. Operating and Maintenance Manuals: Operating and Maintenance Manuals shall be initially submitted for review at the appropriate 30 percent completion stage of Work per requirements under these Sections. The Manuals will be reviewed and comments returned to the Contractor. Corrections shall be made before submittal of the Manuals at subsequent completion levels for Owner review and at Project Close-out.
- E. In order to facilitate review of product data and shop drawings, they shall be noted, indicating by cross reference the contract drawing sheet number, note, and specification paragraph numbers, where and what item(s) are used for and where item(s) occur in the contract documents.

#### 1.07 OWNER ACTION:

- A. Except for submittals for the record, for information and similar purposes, where action and return on submittals is required or requested, the Owner will review each submittal, mark with appropriate "action," and where possible return within the time period allotted for Owner review. Where the submittal must be held for coordination, the Owner will so

advise the Contractor without delay.

1. Compliance with specified characteristics is the Contractor's responsibility, and not considered part of the Owner's review and indication of action taken.
- B. The Owner will stamp each submittal sheet or page to be returned with a uniform, self-explanatory action stamp appropriately marked and executed to indicate whether the submittal returned is for unrestricted use (no exceptions taken), final-but-restricted use (as marked), must be revised and resubmitted (use not permitted), or without action (as explained on the transmittal form), or other similar type wording.
- C. The Owner's review of submittals is for design conformity and general conformance of the Contract Documents only and does not relieve the Contractor from responsibility for any deviations from the requirements of the Contract Documents. The Owner's review shall not be construed as a complete check nor shall it relieve the Contractor from responsibility for errors of any sort in shop drawings or schedules, or from the necessity of furnishing any work required by the Contract Documents which may have been omitted on the shop drawings. The Owner's review of a separate item shall not indicate review of the complete assembly in which it functions.

1.08 SUBMITTAL BROCHURE BINDERS: This section is applicable only to hard copy submittals.

- D. Brochure Binders shall be 3-ring, vinyl covered, with clear view insert type cover and spine.
  1. Binder Size: 8.5 x 11.0 inches x size (spine) adequate to easily contain the required submittals. Minimum spine size shall be 1-inch, maximum shall be 3-inches. Provide additional binders if the 3-inch size is not sufficient to properly contain submittals.
  2. Binder Cover: Binders shall have a clear view, vinyl pocket on the front cover, adequate to hold an 8.5 inch by 11 inch description sheet. The binder shall have a clear view, vinyl spine pocket adequate to hold an 11 inch long description sheet.
- E. Binder Contents shall include the following.
  1. Cover sheet; cover sheet shall be white with black letters, minimum 11-inches high and full width of spine pocket. See "EXAMPLES" included at end of this Section.
  2. First page shall be a copy of the Specification table of contents.
  3. Second page shall be a list of project addresses (see "EXAMPLE").
  4. Third page shall be Project information (see "EXAMPLE").
  5. Provide reinforced separation sheets tabbed with appropriate specification reference number.
  6. Product data sheets.
  7. Shop drawings.

## PART 2 - PRODUCTS

Not used.

## PART 3 - EXECUTION

### 3.01 SCHEDULE OF SUBMITTALS DESCRIPTION AND SUBMITTAL REGISTER

- A. General: The following is a description of each submittal type, specified in other Sections, required for the Contract. Contractor shall include each submittal description in the Submittal Register included as part of this Section.
1. Product Data means submittals that provide calculations, descriptions or other documentation regarding the work.
  2. Manufacturer's Catalog Data (Product Data) means data composed of information sheets, brochures, circulars, specifications and product data, and printed information in sufficient detail and scope to verify compliance with requirements of the Contract Documents.
  3. Manufacturer's Standard Color Charts (Product Data) means preprinted illustrations displaying choices of color and finish for a material or product.
  4. Shop Drawings means graphic representations illustrating the relationship of various components of the work, schematic diagrams of systems, details of fabrications, layout of particular elements, connections, and other relational aspects of the work.
  5. Design Data (Shop Drawings) means design calculations, mix designs, analyses, or other data written and pertaining to a part of the work.
  6. Instructions (Product Data) means preprinted material describing installation of a product, system, or material, including special notices and Safety Data Sheets, if any, concerning impedance, hazards, and safety precautions.
  7. Schedules (Shop Drawings) means a tabular list of data or a tabular listing of locations, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.
  8. Statements (Shop Drawings) means documents, required of the Contractor, or through the Contractor by way of a supplier, installer, manufacturer, or other lower tier contractor, the purpose of which is to further the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verification of quality.
  9. Reports (Product Data) mean reports of inspection and laboratory tests, including analysis, an interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

10. Test Reports (Product Data) mean reports signed by an authorized official of a testing laboratory that a material, product, or system identical to the material, product or system to be provided has been tested in accordance with requirements specified by naming the test method and material. The test report must state the test was performed in accordance with the test requirements; state the test results; and indicate whether the material, product, or system has passed or failed the test. Testing must have been within three years of the date of award of this Contract.
11. Factory Test Reports (Shop Drawings) mean written reports which includes the findings of a test required to be performed by the Contractor or an actual portion of the work or prototype prepared for this project before it is shipped to the job site. The report must be signed by an authorized official of a testing laboratory and must state the test was performed in accordance with the test requirements; state the test results; and indicate whether the material, product, or system has passed or failed the test.
12. Field Test Reports (Shop Drawings) mean written reports which include the findings of a test made at the job site, in the vicinity of the job site, or on a sample taken from the job site, on a portion of the work, during or after installation. The report must be signed by an authorized official of a testing laboratory or agency and must state the test was performed in accordance with the test requirements; state the test results; and indicate whether the material, product, or system has passed or failed the test.
13. Certificates (Shop Drawings) mean statements signed by responsible officials of a manufacturer of a product, system, or material attesting that the product, system, or material meets specified requirements. The statements must be dated after the award of this contract, name the project, and list the specific requirements which it is intended to address.
14. Warranties (Product Data) include but are not limited to statements signed by responsible officials of a manufacturer of a product, system, or material attesting that the product, system, or material will perform its specific function over a specified duration of time. The statement must be dated, and include the name of the project, the Owner's name, and other pertinent data relating to the warranty.
15. Samples (Samples) include both fabricated and non-fabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.
16. Color Selection Samples (Samples) mean samples of the available choice of colors, textures, and finishes of a product or material, presented over substrates identical in texture to that proposed for the work.
17. Sample Panels (Samples) mean assemblies constructed at the project site in a

location acceptable to the Owner and using materials and methods to be employed in the work; completely finished; maintained during construction; and removed at the conclusion of the work or when authorized by the Owner.

18. Sample Installations (Samples) mean portions of an assembly or material constructed where directed and, if approved, retained as a part of the work.
19. Record means documentation to ensure compliance with an administrative requirement or to establish an administrative mechanism.
20. Operating and Maintenance Manuals (Records) mean data intended to be incorporated in an Operating and Maintenance Manual.
21. Test Reports of Existing Conditions mean documents describing existing conditions and operations of systems and components prior to the start of any work. Testing shall be held in the presence of the Owner. Contractor shall provide copies of the test reports to the Owner.
22. Demonstration means physical operation of equipment and systems by factory authorized representatives to demonstrate to the Owner's Maintenance personnel proper operation of systems. Provide all required documentation that certified completed demonstration.
23. As-Built Drawings means delineated documentation accurately depicting final installation location of components and systems of the building.
24. Shop Drawings in Electronic format mean that when drawings are required all materials shall be provided in AUTOCAD latest release and PDF and/or BIM on a CD/DVD.
25. Coordination Drawings mean the special type of Shop Drawings that show the relationship and integration of different construction elements that require close and careful coordination during fabrication or during installation to fit in the restricted space provided or to function as intended.
26. Certification of Approved Disposal of Hazardous Materials means the certification signed by the Contractor indicating legal disposal of hazardous materials.
27. CD/DVD Training Video means the recorded training instructions to be used by the Owner's personnel.
28. Spare Parts Memo means the listing of spare parts required; refer to Section 01700, 3.01 B.3.
29. UL Letter of Finding means a document from Underwriters Laboratories Inc., attesting compliance with UL's standard for connection to an existing lightning protection system; a document from Underwriters Laboratories Inc., attesting

compliance with UL's standard for UL Master Label.

30. Equipment Check-Out Memos mean documents signed by the manufacturer's authorized representative stating that equipment has been installed and is operating in accordance with the manufacturer's specifications; refer to Section 01700 B.

B. Submittal Register: The Contractor is to maintain an accurate updated submittal register and will bring this register to each scheduled Jobsite Coordination Meeting with the Owner. This register should include the following items:

1. Submittal-Description and Number assigned.
2. Date to Owner.
3. Date to Designer as appropriate.
4. Date returned to Owner.
5. Date returned to Contractor from Owner.
6. Submittal Status.
7. Date of Re-submittal and Return (as applicable).
8. Date material released (for fabrication).
9. Projected date of fabrication.
10. Projected date of delivery to site.
11. Status of submittal.
12. Specification Section Number.
13. Specification Paragraph Number.
14. Owner Reviewer.
15. Designer Reviewer.
16. Transmittal Control Number.
17. Planned Submittal Date.
18. Action Code.
19. Date of Action.
20. Remarks.

END OF SECTION

## SECTION 01370 - SCHEDULE OF VALUES

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. This Section includes requirements for preparation and submission of "Schedule of Values."
- B. Related work specified elsewhere:
  - 1. SCHEDULES, PHASING: Section 01315.
  - 2. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES: Section 01340.
  - 3. PRODUCTS AND SUBSTITUTIONS: Section 01605.
- C. Time Coordination: In coordination of initial submittals and other administrative start-up activities, the Contractor shall submit Schedule of Values to the Owner at earliest feasible date, but in no case later than seven days before initial payment request is to be submitted.
- D. Upon request by the Owner, the Contractor shall support values given with data that will substantiate their correctness.
- E. The Contractor shall use Schedule of Values only as a basis for the Contractor's Applications for Payment.

#### 1.02 FORM OF SUBMITTAL

- A. The Contractor shall submit the Schedule of Values on AIA Document G-703 "Continuation Sheet", latest edition.
- B. The Contractor shall use Table of Contents of this Project Manual as basis for format for listing costs of Work for Sections under Divisions 01 through 50 of this Project Manual. The Contractor may provide additional breakdown of the Work in certain sections.
- C. The Contractor shall identify each line with number and title as listed in Table of Contents of this Specification.

#### 1.03 PREPARING SCHEDULE OF VALUES

- A. The Contractor shall prepare a Schedule of Values in coordination with preparation of Progress Schedule. The Contractor shall correlate line items with other administrative schedules and forms required for Work, including progress schedule, payment request form, listing of subcontractors, schedule of allowances, schedule of alternatives, listing of products, principal suppliers and fabricators, and schedule of submittals.
- B. The Contractor shall provide a breakdown of the Contract Sum in sufficient detail to

facilitate continued evaluation of payment requests and progress reports. The Contractor shall breakdown principal separate Contract amounts into several line items. The Contractor shall round off to nearest whole dollar, but with total equal to Contract Sum.

- C. The Contractor shall submit three copies of Schedule of Values to the Owner.
- D. Listing: The Contractor shall arrange Schedule with columns to indicate generic name of item; related Specifications Sections; subcontractor, supplier, manufacturer, or fabricator; change orders which have affected value; dollar value of item; and percentage of Contract Sum to nearest 1/100% and adjusted to total 100%.
- E. Margins of Cost:
  - 1. The Contractor shall show line items of indirect costs and margins on actual costs, only to extent such items will be individually listed in payment requests.
  - 2. The Contractor shall establish each item in Schedule of Values and in payment requests to be complete with total expenses.
  - 3. Major cost items which are not directly cost of actual work-in-place, such as distinct temporary facilities, may be either shown as line items in Schedule of Values or distributed as general overhead expense.
- F. The Contractor shall itemize separate line item cost for Work required by each Section of this Specification including Section 00700, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION.
  - 1. The Cost of General Conditions of the Contract will be paid based on the percentage of the Work completed and this cost will appear in the Contractor's monthly Application for Payment.
- G. The Contractor shall break down installed costs into:
  - 1. Cost of product, delivered and unloaded at job site with taxes paid. (List under Column F, G-703).
  - 2. Total installed cost, with overhead and profit. (List under Column C, G-703).
- H. For each line item which has installed value of more than \$20,000.00, the Contractor shall break down costs to list major products or operations under each item.
- I. The Contractor shall round-off figures to nearest dollar.
- J. The Contractor shall make sum of total costs of all items listed in schedule equal to total Contract Sum.

1.04 REVIEW AND RESUBMITTAL

- A. After review by the Owner and Design Professional, revise and re-submit Schedule (and Schedule of Material Value) as required.
- B. The Contractor shall re-submit revised schedule in same manner.
- C. Schedule Updating: The Contractor shall update and resubmit the Schedule of Values when Change Orders affect the listing and when actual performance of Work involves necessary changes of substance to values previously listed.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

## SECTION 01390 - CONTROL OF WORK

### PART 1 - GENERAL

#### 1.01 AUTHORITY OF THE OWNER

The Owner will decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, and/or the manner of performance and rate of progress of the Work. The Owner will decide all questions which may arise as to the interpretation of the Contract Documents relating to the Work, the fulfillment of the Contract on the part of the Contractor, and the rights of different Contractors on the Project. The Owner will determine the amount and quality of the several kinds of work performed and materials furnished which are to be paid for under the Contract.

#### 1.02 CONFORMITY WITH DRAWINGS AND SPECIFICATIONS

- A. All Work and all materials furnished will be in reasonably close conformity with the lines, grades, grading sections, cross sections, dimensions, material requirements, and testing requirements that are specified, including specified tolerances, in the Contract Documents.
- B. If the Owner finds the materials furnished, Work performed, or the finished product not within reasonably close conformity with the Contract Documents but that the portion of the Work affected will, in Owner's opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, the affected Work may be accepted and remain in place at the Owner's sole discretion. In this event, the Owner will document its determination and provide for an adjustment in the Contract Sum for the affected portion of the Work. The Owner's determination and Contract Sum adjustments will be based on good engineering judgment and such tests or retests of the affected Work as are, in Owner's opinion, needed. Changes in the Contract Sum will be covered by Contract modifications as applicable.
- C. If the Owner finds the materials furnished, Work performed, or the finished product are not in reasonably close conformity with the Contract Documents and have resulted in an unacceptable finished product, the affected Work or materials will be removed and replaced or otherwise corrected by, and at the expense of, the Contractor in accordance with the Owner's written orders.
- D. For the purpose of this section, the term "reasonably close conformity" will not be construed as waiving the Contractor's responsibility to complete the Work in accordance with the Contract Documents. The term will not be construed as waiving the Owner's right to insist on strict compliance with the Contract Documents during the Contractor's prosecution of the Work, when, in the Owner's opinion, such compliance is essential to provide an acceptable finished portion of the Work.
- E. For the purpose of this section, the term "reasonably close conformity" is also intended to provide the Owner with the authority to use good architectural and engineering judgment in its determinations as to acceptance of Work that is not in strict conformity but will provide a finished product equal to or better than that intended by the

requirements of the Contract Documents.

### 1.03 COORDINATION OF CONTRACT DOCUMENTS

- A. The Contract Documents and all referenced standards cited are essential parts of the Contract requirements. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide the complete Work. In case of discrepancy, figured dimensions, unless obviously incorrect, will govern over scaled dimensions. Cited standards for materials or testing and cited FAA advisory circulars will be considered as Standard Specifications.
- B. Any table, gradation, size, dimension, rate, mix, method, nomenclature, pay item number, basis of payment or method of measurement shown on the Drawings, which is in variance with the Standard Specifications, will be considered an amendment or supplement to the applicable Specification.
- C. The Contractor shall not take advantage of any apparent error or omission on the various Contract Documents. In the event the Contractor discovers any apparent conflict, error or discrepancy, Contractor shall immediately call upon the Owner for the Owner's interpretation and decision, and such decision shall be final.
- D. From time to time, discrepancies within cited standards for testing occur due to the timing of changing, editing, and replacing of standards. In the event the Contractor discovers any apparent discrepancy within standard test methods, the Contractor shall immediately call upon the Owner for interpretation and decision, and such decision shall be final.

### 1.04 DRAWINGS

- A. The Drawings furnished by the Owner consist of general drawings showing such details as are necessary to give a comprehensive idea of the Work. Roadway Drawings will show, in general, alignment, profile grades, typical cross sections and general cross sections. Structure Drawings, in general, will show in detail all dimensions of the Work contemplated.
- B. When the Structure Drawings do not show dimensions in detail, they will show general features and such details as necessary to give a comprehensive idea of the structure.
- C. Not all conflicts are known within the Project area. Not all conflicts are shown on the Drawings. The Contractor is solely responsible for the location and protection of all equipment and facilities which are to remain in service and in place during and after all Project Work.

### 1.05 FIELD NOTES

Adequate field notes and records will be kept as layout work is accomplished. These field notes and records will be available for review by the Owner as the Work progresses and copies will be furnished to the Owner at the time of completion of the Project. An inspection or checking of the Contractor's field notes or layout work by the Owner, and the acceptance of all or any part

thereof will not relieve the Contractor of its responsibility to achieve the lines, grades, and dimensions shown in the Drawings and Specifications.

#### 1.06 AUTHORITY AND DUTIES OF INSPECTORS

- A. Inspectors employed by the Owner will be authorized to inspect all Work done and all materials furnished. Such inspection may extend to all or any part of the Work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors are not authorized to revoke, alter, or waive any provision of the Contract. Inspectors are not authorized to issue instructions contrary to the Drawings and Specifications or to act as foreman for the Contractor.
- B. Inspectors employed by the Owner are authorized to notify the Contractor or its representatives of any failure of the Work or materials to conform to the requirements of the Contract, Drawings, or Specifications and to reject such nonconforming materials until such issues can meet Owner's approval.

#### 1.07 INSPECTION OF THE WORK

- A. All materials and each part or detail of the Work will be subject to inspection by the Owner. The Owner will be allowed access to all parts of the Work and will be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.
- B. If the Owner requests it, the Contractor, at any time before acceptance of the Work, will remove or uncover such portions of the finished Work as may be directed. After examination, the Contractor will restore said portions of the Work to the standard required by the Specifications. Should the Work thus exposed or examined prove acceptable, the uncovering or removing and the replacing of the covering or making good of the parts removed will be paid for as extra work. Should the Work so exposed or examined prove unacceptable, the uncovering or removing and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.
- C. Any Work done or materials used without supervision or inspection by the Owner may be ordered removed and replaced at the Contractor's expense unless the Owner or Design Professional failed to inspect after having been given reasonable notice in writing that the Work was to be performed.
- D. Should the Contract Work include relocation, adjustment, or any other modification to existing facilities not the property of the Owner, authorized representatives of the owners of such facilities will have the right to inspect such Work. Such inspection will in no way make any facility owner a party to the Contract, and will in no way interfere with the rights of the parties to this Contract. Inspection and/or approval of the Work or any portion thereof will not relieve the Contractor of responsibility for faulty materials or workmanship.

#### 1.08 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK

- A. All Work which does not conform to the requirements of the Contract Documents will

be considered unacceptable, unless otherwise determined acceptable by the Owner as provided in Item 1.02 CONFORMITY WITH DRAWINGS AND SPECIFICATIONS of this Section.

- B. Unacceptable Work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the Final Completion of the Work, will be removed immediately and replaced in an acceptable manner in accordance with the provisions of Section 00700, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, PART 11, UNCOVERING AND CORRECTION OF WORK, as modified.
- C. Work done contrary to the instructions of the Owner, work done beyond the lines shown on the Drawings or as given, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the Contract. Work so done may be ordered removed or replaced at the Contractor's expense.
- D. Upon failure on the part of the Contractor to comply with any order of the Owner made under the provisions of this Section, the Owner will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs (incurred by the Owner) from any monies due or to become due the Contractor.

#### 1.09 MAINTENANCE DURING CONSTRUCTION

The Contractor will maintain the Work during construction and until the Work is accepted. This maintenance will constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the Work is maintained in satisfactory condition at all times. All Work will be protected during any delay between phases or sub-phases of construction required to complete the Work.

#### 1.10 FAILURE TO MAINTAIN THE WORK

- A. Should the Contractor at any time fail to maintain the Work as provided in Item 1.09 MAINTENANCE DURING CONSTRUCTION of this Section, the Owner or Design Professional will immediately notify the Contractor of such noncompliance. Such notification will specify a reasonable time within which the Contractor will be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the urgency that exists.
- B. Should the Contractor fail to respond to the Owner's or Design Professional's notification, the Owner may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the urgency that exists. Any maintenance cost incurred by the Owner will be deducted from monies due or to become due the Contractor.

## PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

## SECTION 01410 - TESTING LABORATORY SERVICES

### PART 1 - GENERAL

#### 1.01 PROCEDURE

##### A. Contractor's Testing Laboratory:

The Contractor will provide the services of an independent testing laboratory acceptable to the Owner to inspect and test the materials and methods of construction as hereinafter specified for compliance with the requirements of the Contract Documents and to perform such other specialized technical services as may be required by the Contractor or Owner to demonstrate compliance. Inspections or testing performed as part of the Contractor's operations will be included as part of the Work. Employment of a testing laboratory will in no way relieve the Contractor of its obligation to perform the Work in accordance with the Contract Documents.

#### 1.02 QUALIFICATIONS OF CONTRACTOR'S TESTING LABORATORY

##### A. The Testing Laboratory:

1. The Testing Laboratory selected will meet the basic requirements of ASTM E329 "Standard of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction." The Testing Laboratory will submit to the Owner a copy of the report of inspection of their facilities made by the Materials Reference Laboratory of the National Bureau of Standards during the most recent tour of such inspections and will submit a memorandum stating steps taken to remedy all deficiencies reported by this inspection.
2. The Testing Laboratory selected will meet "Recommended Requirements for Independent Laboratory Qualification", latest edition, as published by the American Council of Independent Laboratories.

##### B. Testing Machines:

Must be calibrated at intervals not exceeding 12 months by devices of accuracy traceable to the National Bureau of Standards or accepted values of natural physical constants.

##### C. Tests and Inspections:

Must be conducted in accordance with specified requirements, and if not specified, in accordance with the applicable standards of the American Society for Testing and Materials or other recognized and accepted authorities in the field.

#### 1.03 AUTHORITIES AND DUTIES OF THE LABORATORY:

##### A. Attending Preconstruction Conferences:

The Testing Laboratory will obtain and review the Project plans and specifications with the Contractor as soon as possible prior to the start of construction. The Testing

Laboratory will attend preconstruction conferences as required to coordinate materials inspection and testing requirements with the planned construction schedule. The Testing Laboratory will participate in such conferences throughout the course of the Project.

B. Outline Testing Program:

The Testing Laboratory will be responsible for outlining a written detailed testing program conforming to the requirements as specified in the Contract Documents and in consultation with the Owner and Design Professional. The testing program will contain an outline of inspections and tests to be performed with reference to applicable sections of the Specifications or Drawings.

C. Cooperation with Design Team:

The Testing Laboratory will cooperate with the Owner, Design Professional, and Contractor and provide qualified personnel promptly on notice.

D. Inspections, Sampling, Testing, Reports and Certifications:

1. The Testing Laboratory will perform the required inspections, sampling, and testing of materials as specified under each Section of the Contract Documents and observe methods of construction for compliance with the requirements of the Contract Documents.
2. The Testing Laboratory will perform all inspections and submit all reports and certifications as required by all governing authorities.

E. Notification of Deficiencies in the Work:

The Testing Laboratory will notify the Owner and Contractor first by telephone and then in writing of observed irregularities and deficiencies in the Work and other conditions not in compliance with the requirements of the Contract Documents.

F. Reports:

1. Information on Reports:
  - a. The Testing Laboratory will submit copies of all reports of inspections and tests promptly and directly to the parties named below. All reports will contain at least the following information:
    - (1) Project Name.
    - (2) Project Number.
    - (3) Date report issued.
    - (4) Testing Laboratory name and address.
    - (5) Name and signature of inspector.
    - (6) Date of inspection and sampling.
    - (7) Date of test.
    - (8) Identification of product and Specification Section.
    - (9) Location in the Project.

- (10) Identification of inspection or test.
- (11) Record of weather conditions and temperature (if applicable).
- (12) Results of test regarding compliance with Contract Documents.
- (13) Deficiency log, including deficiencies from previous reports.

2. Copies:

a. The Testing Laboratory will submit certified copies of all test and inspection reports promptly and directly to the following parties:

- (1) 3 copies to the Owner.
- (2) 2 copies to the Contractor
- (3) 1 copy to the Design Professional.
- (4) 1 copy to the supplier of the material tested.

3. Certification by Notary Public:

Upon completion of the job, the Testing Laboratory will furnish to the Owner a statement, under oath and certified by a Notary Public, that all required tests and inspections were made in accordance with the requirements of the Contract Documents.

4. Accounting:

The Testing Laboratory will be responsible for separating and billing costs attributed to the Owner and costs attributed to the Contractor where appropriate, in accordance with the Contract Documents.

5. Obtaining Product and Material Certifications:

The Testing Laboratory will be responsible for obtaining all product and material certifications from manufacturers and suppliers as specified in the Specifications.

6. Limitations of Authority:

The Testing Laboratory is not authorized to revoke, alter, relax, enlarge upon or release any requirements of the Specifications or to approve or accept any portion of the Work or to perform any duties of the Contractor and its Subcontractors.

#### 1.04 CONTRACTOR'S RESPONSIBILITY

A. Cooperation:

The Contractor will cooperate with laboratory personnel and provide access to the Work and manufacturer's operations.

B. Furnishing Samples:

The Contractor will provide to the laboratory representative samples of materials proposed for use in the Work in quantities sufficient for accurate testing as specified.

C. Furnishing Labor, Equipment and Facilities:

The Contractor will furnish labor, equipment, and facilities as required for sampling and testing by the laboratory and otherwise facilitate all required inspections and tests.

D. Advance Notice:

The Contractor will be responsible for notifying the Testing Laboratory sufficiently in advance of operations to allow for assignment of personnel and scheduling of tests.

E. Payment for Substitution Testing:

The Contractor will arrange with the Testing Laboratory and pay for any additional samples and tests above those required by the Contract Documents as requested by the Contractor for its convenience in performing the Work.

F. Notification of Source Change:

The Contractor will be responsible for notifying the Owner and Testing Laboratory when the source of any material is changed after the original tests or inspections have been made.

G. Tests for Suspected Deficient Work:

If, in the opinion of the Owner, any of the Work of the Contractor is not satisfactory, the Contractor will make all tests that the Owner deems advisable to determine its proper construction. The Owner will pay all costs if the tests prove the questioned work to be satisfactory.

H. Associated Services: The Contractor shall cooperate with the Owner and with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. The Contractor shall notify the Owner and the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required of the Contractor include but are not limited to the following:

1. Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.
2. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
3. Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.
4. Providing the agency with a preliminary design mix proposed for use for material mixes that require control by the testing agency.

5. Security and protection of samples and test equipment at the Project site.

#### 1.05 PAYMENT OF TESTING LABORATORY

The Contractor will pay for the initial Testing Laboratory services for testing of materials for compliance with the requirements of the Contract Documents. The Contractor will pay for testing and retesting of materials that do not comply with the requirements of the Contract Documents and all other items as specified in these Specifications.

#### PART 2 - PRODUCTS

Not Used.

#### PART 3 – EXECUTION

##### 3.01 SCOPE OF WORK

The work to be performed by the Testing Laboratory will be as specified in this Section and as determined in meetings with the Owner and Contractor. These are the Owner's minimum requirements; more stringent requirements may be required by the technical specifications.

##### 3.02 EARTHWORK

###### A. Tests of Proposed Fill Material (if applicable):

The Testing Laboratory will conduct a survey of the Contractor's proposed location of borrow soil materials and will establish the suitability of any proposed fill material by determining the required engineering properties. Soil tests will include soil classification by the Atterberg Limit Tests ASTM D 4318, and grain size determination by ASTM D 422 "Particle Size Analysis of Soils."

###### B. Moisture Density Relationship for Natural and Fill Materials:

The Testing Laboratory will provide one optimum moisture density curve for each type of soil, natural fill, imported fill, or on-site fill encountered in subgrade and fills under building slabs and paved areas. Curves will be generated in accordance with ASTM D 1557 "Test Methods for Moisture Density Relationships of Soils and Soil Aggregate Mixtures."

###### C. Quality Control Testing Required During Construction:

1. Inspection of Subgrade and Fill: The Testing Laboratory will inspect and approve the following subgrades and fill layers before further construction work is performed thereon:

- a. Paved Areas and Building Slab Subgrade: Make at least one field density test of the natural subgrade for every 2,500 square feet of paved area or building slab but in no case less than three tests. In each compacted fill layer or lift, make one field density test for every 2,500 square feet of building slab or paved area but in no case less than three tests.

- b. Foundation Wall Backfill: Make at least one field density test for each 200 lineal feet of wall with a minimum of four (4) tests for each basement wall around the perimeter of the building and a minimum of one test for every other type of foundation wall on the Project site. Tests will be at random locations and elevations for each wall.

2. Field Density Tests:

Field Density Tests will be run according to ASTM D 1556 "Density of Soil in Place by the Sand Core Method," ASTM D 2167 "Density of Soil in Place by the Rubber Balloon Method" or ASTM D 2922 "Density of Soil and Soil Aggregate in Place by Nuclear Methods" as applicable.

3. Report Copies:

The Testing Laboratory will submit all moisture density curves and results of field density tests to the parties specified at Paragraph 1.03.F.2.a. of this section  
Additional Testing:

If reports by the Testing Laboratory indicate field densities lower than specified above, additional tests will be run by the Testing Laboratory with at least the frequencies scheduled above on recompacted fill and/or natural subgrade. The Testing Laboratory will notify the Contractor on a timely basis for any required retesting so as not to delay the Work. The costs of such tests will be borne by the Contractor.

Foundation:

- a. Mat and Dug Footing Subgrade Inspection: The Contractor's Geotechnical Engineer will provide inspection service of each mat and dug footing subgrade prior to placing foundation concrete. Such inspection will verify that field conditions are consistent with soil report test results and that the foundation is being installed in the proper soil strata at the proper elevation. The Design Professional will submit written field inspection reports promptly after inspection to all parties listed at Paragraph 1.03.F.2.a of this Section and report its findings after each inspection by telephone to the Owner and Design Professional.
- b. Field Inspection: The Design Professional may provide inspection of drilled pier installation.
- c. Pier Load Test: The Design Professional may supervise the test pier program and submit a written report of its findings to all parties listed at Paragraph 1.03.F.2.1.

D. Extent of Services for Reinforcing Steel for Concrete:

- 1. When the Contractor or reinforcing steel fabricator notifies the Testing Laboratory that a shipment of reinforcing steel is in the final stages of fabrication and ready for shipment, the Testing Laboratory will inspect the shipment to determine the following:

- a. The bars will be free from injurious defects and will have a workmanlike finish.
- b. Deformations will be of the proper sizes, shapes, and spacing as detailed in ASTM A 615.
- c. The bars will not have excessive rust and/or pelting.
- d. The bars will not have any unusual twists or bends.

2. Identified Stock:

Where job material is taken from bundles as delivered from the mill, is properly identified as to heat number and is accompanied by mill and analysis test reports, such material will be used without further local tests provided an affidavit is given from the supplier to the Testing Laboratory that the materials conform with the requirements of the ASTM Specification listed on the Structural Drawings. In case of controversy, the procedure as stipulated below for unidentified stock will be followed.

3. Unidentified Stock:

- a. For all unidentified stock, the Testing Laboratory will secure samples of the reinforcing steel bars at the time of inspection. The samples will conform to the following:
  - (1) The sample will include two bars for each ten tons or fraction thereof of each bar size, heat number, and manufacturer being shipped.
  - (2) The sample bars will be a minimum of 24-inches in length and will be identical to the material being shipped.
  - (3) The Testing Laboratory will tag each of the steel bundles with the laboratory identification tag and appropriately mark the samples corresponding to the steel being inspected and shipped. The fabricator will supply shipping lists showing the weight of each bar to the Testing Laboratory for tensile strength tests and bend tests according to ASTM A 615.

3.03 CONCRETE MATERIALS AND POURED IN PLACE CONCRETE, OTHER THAN P-501 CONCRETE PAVING

A. Tests of Portland Cement:

- 1. Mill certificates certifying that the cement has been tested and meets the requirements of the Specification will be acceptable as test results, provided the cement proposed for use can be identified with test lots. Mill certificates will be submitted by the Contractor prior to use of any such material.

2. Retesting of cement will be required if:
  - a. In the opinion of the Testing Laboratory the cement has been damaged in storage or transit or is in any way defective.
  - b. The cement has
3. Compressive strength cube been in storage at the mixing site for over 30 days.

specimens will be made at the start of the job and at a frequency of one set per 250-tons of cement or whenever the source or brand of cement changes so that the quality of cement can be observed throughout the Project. Each set of two-inch cubes will consist of four cubes tested according to ASTM C 109 at 28-day strengths.

B. Tests of Aggregates:

1. The Testing Laboratory will verify that concrete aggregates proposed for use conform to the following specifications:
  - a. ASTM C 33 "Specification for Concrete Aggregates"
  - b. ASTM C 330 "Specification for Lightweight Aggregates for Structural Concrete"
2. Tests of aggregates by the Testing Laboratory will be made before the concrete mix is established and thereafter as the character of the aggregate changes and whenever the service of materials is changed. The following tests will be required:
  - a. Sampling: The Testing Laboratory will secure samples of aggregate in accordance with ASTM D 75 from the concrete supplier. The proposed aggregate will not be used until the pit source has been approved by the Testing Laboratory and the plant capacity and ability to produce products has been verified.
  - b. Sieve Analysis: ASTM C 136.
  - c. Organic Impurities: ASTM C 40.
  - d. Soundness: ASTM C 88.
  - e. Abrasion of Concrete Aggregate: ASTM C 131.
  - f. Specific Gravity: ASTM C 127 (coarse aggregate), ASTM C 128 (fine aggregate).
  - g. Deleterious Materials: ASTM C 33.
  - h. Materials Passing No. 200 Sieve: ASTM C 177.

3. Suppliers records of such tests run on the proposed material will be adequate provided a written affidavit is furnished as a shop drawing submittal.

C. Concrete Mix Designs:

1. The Contractor will submit for approval by the Owner and Design Professional, at least 15 days prior to the start of construction, concrete mix designs for each class of concrete indicated on the Structural Drawings and in the Specifications. The Contractor will not begin work until the applicable mix design has been approved.
2. The Contractor acting in conjunction with Contractor's concrete supplier and Testing Laboratory will submit in writing the mix designs, indicating whether the concrete is to be proportioned by either of the following methods as outlined in ACI 318:
  - a. Field Experience Method.
  - b. Laboratory Trial Batch Method.
3. When field experience methods are used to select concrete proportions, establish proportions as specified in ACI 301 and ACI 211. When Testing Laboratory trial batches are used to select concrete proportions, the procedure as outlined in ACI 318 will be followed. Prepare test specimens in accordance with ASTM C192 and conduct strength tests in accordance with ASTM C39.
4. Required types of concrete and compressive strengths as specified in the various sections of the Specifications.
5. All mix design will state the following information:
  - a. Mix design number or code designation by which the Contractor will order the concrete from the supplier.
  - b. Structural member for whom the concrete is designed (i.e. columns, walls footings, etc.).
  - c. Type of concrete (whether normal weight or lightweight).
  - d. 28 day compressive strength.
  - e. Aggregate type, source, size, gradation, fineness modulus.
  - f. Cement type and brand.
  - g. Fly ash type and brand (if any).
  - h. Admixtures including air entrainment, water reducers, accelerators, and retarders.
  - i. Slump.

- j. Proportions of each material used.
- k. Water cement ratio and maximum allowable water content.
- l. Method by which the concrete is intended to be placed (bucket, chute, or pump).

D. Concrete Supplier's Record of Quality Control:

The concrete supplier's past record of quality control will be used in the design of the concrete mixes to determine the amount by which the average concrete strength  $f'_c$  should exceed the specified  $f'_c$  as outlined in ACI 318. If a suitable record of test results is not available, the average strength must exceed the design strength by 1200 PSI as specified in ACI 318. After sufficient data becomes available from the job, the statistical methods of ACI 214 may be used to reduce the amount by which the average strength must exceed  $f'_c$  as outlined in ACI 318.

E. Admixtures:

- 1. Admixtures to be used in concrete will be subject to the approval of the Testing Laboratory.
- 2. Quantities of admixtures to be used will be in strict accordance with the manufacturer's instructions.
- 3. Admixtures containing chloride ions will not be used.
- 4. Air entraining admixtures will conform to "Specification for Air Entraining Admixtures for Concrete" ASTM C260.
- 5. Water reducing admixtures, retarding admixtures, accelerating admixtures, water reducing and retarding admixtures and water reducing and accelerating admixtures will conform to "Specification for Chemical Admixtures for Concrete" ASTM C494.
- 6. Fly ash or other Pozzolons used as admixtures will conform to "Specification for Fly Ash and Raw or Calcined Natural Pozzolons for use in Portland Cement Concrete" ASTM C618. Obtain mill test reports for approval.
- 7. Use amounts of admixtures as recommended by the manufacturer for climatic conditions prevailing at the time of placing. Adjust quantities of admixtures as required to maintain quality control.

F. Lightweight Structural Concrete:

- 1. Comply with requirements of ACI 211 and ACI 301.
- 2. Lightweight concrete aggregate will conform to ASTM C 330 "Specification for Lightweight Aggregates for Structural Concrete."

3. Provide concrete with a dry unit weight of not more than 116-pounds per cubic foot and not less than 95-pounds per cubic foot. Design mix to produce strengths as indicated on the Drawings with a split cylinder strength factor ( $f_{ct}/(f'c) 0.5$ ) of not less than 5.3 (Mpa) and a drying shrinkage limit of 0.03% at 28 days.

G. Slump Limits:

Refer to Drawings and Specifications for slump limits.

H. Adjustments of Concrete Mixes:

Mix design adjustments may be requested by the Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant. Such mix design adjustments will be provided at no additional cost to the Owner. Any adjustments in approved mix designs, including changes in admixtures, will be submitted in writing to the Testing Laboratory for approval prior to field use.

I. Shrinkage:

All concrete will be proportioned for maximum allowable unit shrinkage of 0.03% at 28 days as determined by ASTM C157.

J. Chloride Ion Content:

A written submittal will be made with each mix design proposed for use on the Project that no soluble chloride ion exist in the concrete mixes.

K. Concrete Test Cylinders by the Testing Laboratory:

Molding and Testing: Cylinders for strength tests will be molded and Testing Laboratory cured in accordance with ASTM C31 "Method of Making and Curing Concrete Test Cylinders in the Field" and testing in accordance with ASTM C39 "Method of Testing for Compressive Strength of Cylindrical Concrete Specimens."

L. Field Samples:

Field Samples for strength tests will be taken in accordance with ASTM C172 "Method of Sampling Fresh Concrete".

M. Frequency of Testing:

Each set of test cylinders will consist of a minimum of four standard test cylinders. A set of test cylinders will be made according to the following frequency guidelines:

1. One set for each class of concrete taken not less than once a day.
2. Piers: One set for each 50 cubic yards or fraction thereof.
3. Spread Footings: One set for each 50 cubic yards or fraction thereof.

4. Foundation Walls: One set for each 150 cubic yards.
5. Pier Caps and Spread Footings: One set for each 50 cubic yards or fraction thereof.
6. Floors: One set for each 150 cubic yards or fraction thereof but not less than one set for each 5000 square feet of floor area.
7. Columns: One set for each 50 cubic yards or fraction thereof with a minimum of two sets per floor.
8. All Other Concrete: A minimum of one set for each 150 cubic yards or fraction thereof.
9. No more than one set of cylinders at a time will be made from any single truck.
10. The above frequencies assume that one batch plant will be used for each pour. If more than one batch plant is used, the frequencies cited above will apply for each plant used.
11. The cylinders will be numbered, dated, and the point of concrete placement in the building recorded. Of the four cylinders per set, break one at seven days, two at 28 days, and one automatically at 56 days, only if either 28 day cylinder break is below required strength.

N. Additional Cylinder for Floor Form Stripping:

One additional cylinder per set will be required for formed slab and pan joist floors for the purpose of evaluating the concrete strength at the time of form stripping. This cylinder will be stored on the floor where form removal is to occur under the same exposure conditions as the floor concrete. The cylinder will be cured under field conditions in accordance with ASTM C31 "Method of Making and Curing Concrete Test Specimens in the Field". Field cured test cylinders will be molded at the same time and from the same samples as Testing Laboratory cured test specimens. The cylinder will be broken at the time of form removal as directed by the Contractor.

O. Cylinder Storage Box:

The Contractor will be responsible for providing a protected concrete cylinder storage box at a point on the Project site mutually agreeable with the Testing Laboratory for the purpose of storing concrete cylinders until they are transported to the Testing Laboratory.

P. Transporting Cylinders:

The Testing Laboratory will be responsible for transporting the cylinders to the Testing Laboratory in a protected environment such that no damage or ill effect will occur to the concrete cylinders until they are transported to the Testing Laboratory.

Q. Information on Concrete Test Reports:

1. The Testing Laboratory will make and distribute concrete test reports after each job cylinder is broken. Such reports will contain the following information:
  - a. Truck number and ticket number.
  - b. Concrete Batch Plant.
  - c. Mix design number.
  - d. Accurate location of pour in the structure.
  - e. Strength requirement.
  - f. Date cylinders made and broken.
  - g. Technician making cylinders.
  - h. Concrete temperature at placing.
  - i. Air temperature at point of placement in the structure.
  - j. Amount of water added to the truck at the batch plant and at the Project site and whether it exceeds the amount allowed by the mix design.
  - k. Slump.
  - l. Unit weight.
  - m. Air content.
  - n. Cylinder compressive strengths with type of failure if concrete does not meet Specification requirements. Seven day breaks are to be flagged if they are less than 60% of the required 28 day strength. 28 day breaks are to be flagged if either cylinder fails to meet Specification requirements.
  
2. Other Required Tests of Concrete by the Testing Laboratory (unless noted otherwise):
  - a. Slump Tests: (ASTM C143) will be made at the beginning of concrete placement for each batch plant and for each set of test cylinders made.
  - b. Air Entrainment: (ASTM C233) tests will be made at the same time slump tests are made as cited above.
  - c. Concrete Temperature: Will be measured at the same time slump tests are made as cited above.
  - d. Chloride Ions: If calcium ions are not approved, the following will not

apply. If calcium ions are permitted per requirements of Concrete Section(s) of the Specifications, comply with the following.

- (1) The Contractor will have Testing Laboratory verify in a written submittal with the mix designs that the chloride ion concentration will not exceed the limits specified.
- (2) Tests will be run for each class of concrete according to AASHTO Designation T260-82 "Sampling and Testing for Total Chloride Ion in Concrete and Concrete Raw Materials" to determine that the maximum chloride ion content does not exceed the limits stated in the Concrete Section(s) of the Specifications. One set of tests will be run at the beginning of the Project for each class of concrete.

R. Evaluation and Acceptance of Concrete:

1. Strength Test: Will be defined as the average strength of two 28 day cylinder breaks from each set of cylinders.
2. Quality Control Charts and Logs: The Testing Laboratory will keep the following quality control logs and charts for each class of concrete containing more than 2,000 cubic yards. The records will be kept for each batch plant and submitted on a weekly basis with cylinder test reports:
  - a. Number of 28 day strength tests made to date.
  - b. 28 day strength test results containing the average of all strength tests to date, the high test result, the low test result, the standard deviation, and the coefficient of variation.
  - c. Number of tests under specified 28 day strength.
  - d. A histogram plotting the number of 28 day cylinders versus compressive strength.
  - e. Quality control chart plotting compressive strength test results for each test.
  - f. Quality control chart plotting moving average for strength where each point plotted is the average strength of three previous test results.
  - g. Quality control chart plotting moving average for range where each point plotted is the average of ten previous ranges.

S. Acceptance Criteria:

1. The strength level of an individual class of concrete will be considered satisfactory if both of the following requirements are met:
  - a. The average of all sets of three consecutive strength tests equal or

exceed the required f'c.

- b. No individual strength test (average of two 28 day cylinder breaks) falls below the required f'c by more than 500 PSI.

2. If either of the above requirements is not met, the Testing Laboratory will immediately notify the Contractor and Owner by telephone. Steps will immediately be taken to increase the average of subsequent strength tests.

T. Investigation of Low Strength Concrete Test Results:

1. Contractor Responsibility for Low Strength Concrete:

If any strength test of Testing Laboratory cured cylinders falls below the required f'c by more than 500 PSI, the Contractor will take steps immediately to assure that the load carrying capacity of the structure is not jeopardized.

2. Nondestructive Field Tests:

The Testing Laboratory will, under the direction of the Owner or Design Professional, perform nondestructive field tests of the concrete in question using Swiss Hammer, Windsor Probe, or other appropriate methods as approved by the Owner or Design Professional and report the results in the same manner as for cylinder test reports.

3. Core Tests:

- a. If the likelihood of low strength concrete is confirmed and computations indicate that the load carrying capacity of the structure has been significantly reduced, tests of cores by the Testing Laboratory, drilled from the area in question under the direction of the Owner or Design Professional, will be required in accordance with ASTM C42 "Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete". In such case, three cores will be taken for each strength test more than 500 PSI below required f'c.

- b. If concrete in the structure will be dry under service conditions, cores will be air dried (temperature 60° to 80°F, relative humidity less than 60 %) for seven days before test and will be tested dry. If concrete in the structure will be more than superficially wet under service conditions, cores will be immersed in water for at least 48 hours and tested wet. The Contractor will fill all holes made by drilling cores with an approved drypack concrete.

4. Acceptance Criteria for Core Tests:

Concrete in an area represented by core tests will be considered structurally adequate if the average of three cores is equal to at least 85% of f'c and if no single core is less than 75% of f'c. If approved by the Owner and Design Professional, locations of erratic core strengths may be retested to check testing accuracy.

5. Cost of Investigations for Low Strength Concrete:

The costs of all investigations of low strength concrete will be borne by the Contractor.

U. Concrete Inspection by the Testing Laboratory:

1. The following types of concrete inspection will be provided by the Testing Laboratory for the classes of concrete described in each type of inspection:

a. Continuous concrete inspection at the batch plant and point of discharge at the Project site. This type of inspection will be followed for the following classes of concrete:

- (1) Mat Foundations or any other foundation types where more than two columns are supported on a common foundation unit.
- (2) All architectural concrete.
- (3) Columns.

The Testing Laboratory will assign the required number of technicians with the necessary equipment for each scheduled concrete placement to provide continuous concrete inspection at both the batch plant and the point of discharge at the Project site.

b. Initial concrete inspection at the batch plant for first pour and travel to the Project site with the first truckloadings to inspect concrete placement at the point of discharge. This type of inspection will be followed for all structural concrete for foundation and floors not specified above.

c. The Testing Laboratory will assign a technician with the necessary equipment to each scheduled concrete placement. The technician will initiate concrete mix inspection at the batch plant, then will proceed to the Project site with the first truckloadings to continue to inspect the mix at the point of discharge. The technician will remain at the Project site to inspect the mix for the required consistency for the duration of the concrete placement.

V. Batch Plant Inspection by the Testing Laboratory:

1. The scope of Batch Plant inspection by the Testing Laboratory will include the following:

a. Prior to start of Concrete Work, the Testing Laboratory will inspect batch plant facilities proposed for use in the Work and report, in writing, inspection results to the Contractor, Owner, and Design Professional for approval before the start of the Work. The inspection will follow that outlined in ASTM C 94 and as recommended by the National Concrete Ready Mix Association. Inspection will include:

- (1) Batch plant operations and equipment.
- (2) Truck mixers.
- (3) Scales.
- (4) Stockpile Placement.
- (5) Material storage.
- (6) Admixture dispensers.

b. The duties of the batch plant inspector will include the following:

- (1) Perform initial inspection of batch plant facilities as specified above.
- (2) Secure samples of aggregates for testing.
- (3) Perform visual inspection of aggregate stockpiles to determine uniformity, cleanliness, and moisture variation.
- (4) Adjust design weights for moisture in aggregates.
- (5) Inspect aggregate conveying system for possible segregation to be performed at each visit.
- (6) Observe batching procedure. Verify that concrete mix design number is being batched and randomly monitor weighing operation for correct weights of each mix ingredient, including admixture dosages.
- (7) Prior to loading the truck at the batch plant, verify that the drum is free of water, fresh concrete, or aggregates. Check conditions and cleanliness of drum, fins, and blades.
- (8) During loading, observe loading procedures.
- (9) After loading, hold the truck for proper mix time and inspect concrete for thorough mix and consistency prior to leaving the batch plant.
- (10) Check size of batch for rated truck capacity.

W. Job Site Inspection:

1. The scope of the work to be performed by the inspection on the Project site will be as follows:
  - a. Verify that air temperatures at the point of placement in the structure are within acceptable limits defined above prior to ordering of concrete by the Contractor.
  - b. Inspect concrete upon arrival to verify that the proper concrete mix number, type of concrete, and concrete strength is being placed at the proper location.
  - c. Inspect plastic concrete upon arrival at the Project site to verify proper batching. Observe mix consistency and adding of water as required to achieve target slumps in mix designs. Record the amount of water added and note if it exceeds that allowed in the mix design. The responsibility for adding water to trucks at the Project site will rest only with the Contractor's designated representative. The Contractor is responsible for verifying that all concrete placed in the field is in

conformance to the Contract Documents.

- d. Obtain concrete test cylinders.
- e. Perform slump tests and air entrainment tests.
- f. Record information for concrete test reports.
- g. Verify that all concrete being placed meets Specifications. Report concrete not meeting the specified requirements and immediately notify the Contractor, batch plant inspector, and Owner.
- h. Pick up and transport to Testing Laboratory cylinders cast the previous day.
- i. Check concrete placing techniques to determine that concrete deposited is uniform and that vertical drop does not exceed six feet.
- j. The Project site inspector will report and irregularities that occur in the concrete at the Project site or test results to the Contractor, Owner, and Design Professional.

2. Cause for Rejection of Concrete:

- a. The Contractor will reject all concrete delivered to the Project site for any of the following reasons:
  - (1) Wrong class of concrete (incorrect mix design number).
  - (2) Air temperature: Air temperature limits will be as follows:
    - (a) Cold Weather: Air temperature must be 40°F and rising.
    - (b) Hot Weather: Air temperature must be cooler than 100°F.
    - (c) Concrete may be placed at other air temperature ranges only with approval of the job inspector for the Testing Laboratory or other duly appointed representative.
  - (3) Concrete with temperatures exceeding 95°F may not be placed in the structure.
  - (4) Air contents outside the limits specified in the mix designs.
  - (5) Water added outside the limits specified in the mix designs.
  - (6) Slumps outside the limits specified in the mix designs.
  - (7) Excessive Age: Concrete will be discharged within 90 minutes of

plant departure or before it begins to set if sooner the 90 minutes unless approved by the Testing Laboratory job inspector or Owner representative.

- b. The Contractor will be responsible for verifying that all concrete placed in the field is in conformance with the Contract Documents.
- c. Concrete Batch Trip Tickets: All concrete batch trip tickets will be collected and retained by the Contractor. Compressive strength, slump, air, and temperature tests will be identified by reference to a particular trip ticket. All tickets will contain the information specified in ASTM C 94. Each ticket will also show the amount of water that may be added in the field for the entire batch that will not exceed the specified water cement ration for the design mix. The Testing Laboratory will immediately notify the Contractor, Owner, and Design Professional of tickets not meeting the criteria specified.

### 3.04 STRUCTURAL STEEL

#### A. Contract Obligations:

- 1. The Contractor will pay for all initial shop and field inspections and tests as required during the fabrication and erection of the structural steel.
- 2. The Contractor will pay for and arrange with the Testing Laboratory for the certification of all shop and field welders. Each bolting crew and welder will be assigned an identifying symbol or mark and all shop and field connections will be so identified so that the inspector can refer back to the person or crew performing the work. The costs of all retesting of material or workmanship not in conformance with the Contract Documents will be borne by the Contractor. The fabricator and erector will provide the Testing Laboratory inspector with access to all places where work is being done. A minimum of 24 hours notification will be given prior to commencement of work.
- 3. The Contractor will provide the Testing Laboratory with the following:
  - a. A complete set of Contractor's and Design Professional's approved shop and erection drawings including all revisions and addenda.
  - b. Cutting lists, order sheets, material bills, shipping bills and mill test reports.
  - c. Information as to time and place of all rollings and shipment of material to shops.
  - d. Representative sample pieces requested for testing.
  - e. Full and ample means and assistance for testing all material.
  - f. Proper facilities, including scaffolding, temporary work platforms, hoisting facilities, etc., for inspection of the work in the mills, shop and

field.

B. Testing Laboratory Responsibility:

1. The inspection of shop work by the Testing Laboratory will be performed in the fabricator's shop to the fullest extent possible. Such inspections will be in sequence, timely, and performed in such a manner as to minimize disruptions in operations and to permit the repair of all nonconforming work while the material is in process in the fabricating shop. Inspection of field work will be completed promptly so that corrections can be made without delaying the progress of the work.
2. Inspections will be performed by qualified technicians with a minimum of two years experience in structural steel testing and inspection. All inspection personnel will be certified in accordance with AWS QC-1. The Testing Laboratory will provide test reports of all shop and field inspections. Shop test reports will include shop welders certifications. All test reports will indicate types and locations of all defects found during inspection, the measures required and performed to correct such defects, and statements of final approval of all welding and bolting of shop and field connections and other fabrication and erection data pertinent to the safe and proper welding and bolting of shop and field connections. In addition to the parties listed in this Specification, the fabricator and erector will receive copies of all test reports.

C. Rejection of Material or Workmanship:

The Owner, Contractor, and Testing Laboratory reserve the right to reject any material or workmanship not in conformance with the Contract Documents at any time during the progress of the Work. However, this provision does not allow waiving the obligation for timely, in sequence inspections.

D. Mill Tests of Structural Steel:

Mill Order Steel: The fabricator will furnish certified mill test reports and an affidavit stating that the structural steel furnished meets the requirements of the grade specified on the structural drawings for all mill order steel. In case of controversy, tests of the material according to ASTM A6 or A568, as applicable, made by the Testing Laboratory with certified test reports paid for by the Contractor will be made to verify conformity with ASTM standards. Tests will be made for each 10 tons of material used, unless approved otherwise by the Owner.

E. Local Stock Steel:

1. Materials taken from stock by a fabricator for use for structural purposes must be of a quality at least equal to that required by the ASTM specifications applicable to the classification covering the intended use. Certified mill test reports will be accepted as sufficient record of the quality of materials carried in stock by the fabricator provided the stock steel can be identified by heat or melt numbers. In case of controversy, tests by the Testing Laboratory with certified reports as specified for mill order steel will be required.

2. If tests are required, test specimens will be taken by the Contractor under the direction of its Testing Laboratory and will be machined by the Testing Laboratory to dimensions as required by the applicable ASTM standards.

F. Shop Inspections and Tests:

1. The Testing Laboratory will provide inspection at the designated fabrication shops for the designated periods of time to perform shop inspection and tests. The designated fabrication shops and time periods of inspection will be determined in consultation with the Owner prior to the start of fabrication in a timely manner so as to not delay the fabrication process. The following tests and inspections will be performed:
  - a. Review shop drawings and shop procedures with fabricator's supervisory personnel.
  - b. Request and obtain necessary mill certifications of steel and verify proper material throughout the duration of the Project.
  - c. Verify welding qualifications either by prequalification or by witnessing qualification tests.
  - d. Verify welder qualifications either by certification and/or by retesting. Obtain welder certificates.
  - e. Check layout and dimensions of jigs and fixtures for multiple fabrication, joint preparation, and fit up of members.
  - f. Verify welding electrodes to be used and other welding consumables as the Project progresses.
  - g. Check preheating procedures for uniformity and thoroughness through the full thickness of the material. Inspect preheating and interpass temperatures for conformance to AWS D1.1, Table 4.2. Verify procedure for control of distortion and shrinkage stresses.
  - h. Verify procedures for welding in accordance with applicable portions of Section 4, "Technique", AWS D1.1.
  - i. Inspect welding equipment for capacity, maintenance, and working condition.
  - j. Perform random dimensional checks of completed members.
  - k. Provide inspection of surface preparation for coating and coating operations.
  - l. Check shipping preparation schedules and obtain copies of shipping lists.
  - m. Check bolted connections according to inspection procedures outlined

in the "Specification for Structural Joints" using ASTM A325 or A490 Bolts.

- n. Make visual inspection of welding in progress for size, length, and quality.
- o. Perform nondestructive examination services for various weldments of shop fabrication determined in consultation with the Contractor and Owner prior to the start of fabrication. The testing agency will submit recommendations to the Owner for approval as to the type of nondestructive inspection methods best suited to the member being tested. Specifically, the Testing Laboratory will provide a qualified technician with the necessary equipment to perform the following:
  - (1) Nondestructive examination conduct in accordance with the specific requirements for the item being examined including radiographic, ultrasonic, magnetic particle, or dye penetrate inspection. All nondestructive inspection procedures will conform to Section 6 of AWS D1.1.
  - (2) Interpret, record, and report all results of the nondestructive tests.
  - (3) Mark for repair any area not meeting Specifications requirements. Correction of rejected welds will be made in accordance with Paragraph 3.7, "Corrections," AWS D1.1.
  - (4) Re-examine all repair areas and interpret, record, and report the results of examinations of repair welds.
- p. Verify that quality of welds meet the requirements of Paragraph B.15, "Quality of Welds," AWS D1.1.
- q. Unless otherwise specified, test all partial and complete penetration welds in connections of beams, girders, columns, trusses, and braces. Test a minimum of 10% of connections with fillet welds. Increase the testing rate for welders having a high rejection rate as required to ensure acceptable welds. Visual inspection is required for all welds. The costs of repairing all defective welds and the costs of retesting by the Testing Laboratory will be borne by the Contractor. If removal of a backing strip is required by the Testing Laboratory to investigate a suspected weld defect, such cost will be borne by the Contractor.

G. Field Inspections and Tests:

- 1. The Testing Laboratory will provide inspection in the field in a timely manner for a period of time as determined in consultation with the Owner prior to the start of erection so as to not delay the start of erection. The following tests and inspections will be made:
  - a. Obtain the planned erection procedure and review with the erector's

supervisory personnel.

- b. Check the installation of base plates for proper leveling, grout type, and grout application.
- c. Verify field welding procedures and obtain welder certificates.
- d. Check steel as received in the field for possible shipping damage, workmanship, and piece marking.
- e. Check plumbness and frame alignment as erection progresses.
- f. Check required camber of floor beams.
- g. Check joint preparation and fit up, backing strips, and runout plates for welded moment connections and column splices.
- h. Check preheating to assure proper temperature, uniformity, and thoroughness through the full material thickness.
- i. Review welding sequence.
- j. Visually inspect all field welding for size, length, and quality.
- k. Perform nondestructive examination services for various weldments of field erection determined in consultation with the Contractor and Owner prior to the start of erection. The Testing Laboratory will furnish a qualified technician with the necessary equipment to perform radiographic, ultrasonic, magnetic particle, or dye penetrant inspection as required for the item being tested and other duties as outlined for shop inspection in the previous Section. Unless specified otherwise, check all partial and complete penetration welds in connections of beams, girders, columns, and braces. Check 10% of connections with fillet welds. Visual inspection is required for all welds.
- l. Check calibration of impact wrenches used in field bolted connections.
- m. Check high strength friction field bolted connections according to inspection procedures outlined in the "Specification for Structural Joints Using ASTM A3256 or A490 Bolts". Unless specified otherwise, test 10% of the bolts, but not less than two bolts, selected at random in each connection. If any bolt is found to be improperly tightened, test all bolts in the connection. Visually inspect all bearing type bolts to verify that the bolts are snug tight.
- n. Visually inspect the welding of metal deck to the structure.
- o. Perform field tests on 10% of completed shear connectors in each beam according to inspection procedures outlined in AWS D1.1.

2. The costs of repairing all defective welds and the costs of retesting by the

Testing Laboratory will be borne by the Contractor. If removal of a backing strip is required by the Testing Laboratory to investigate a suspected weld defect, such cost will be borne by the Contractor.

H. Tests and Inspection of Sprayed-On Fireproofing:

1. The Testing Laboratory will confirm that sprayed-on fireproofing conforms to all performance criteria as specified in the Project Specifications by obtaining and reviewing manufacturer's certification or test reports.
2. The Testing Laboratory will sample sprayed-on fireproofing at each floor for each day's operations and verify oven dry density and compression strength as specified on the Drawings.
3. The Testing Laboratory will verify proper installation method, proper material, and proper material thickness for each day's operation.
4. The Testing Laboratory will randomly inspect the thickness of the sprayed-on fireproofing as specified in the UL designation numbers on the Drawings.

3.05 NON-SHRINK GROUT FOR BASE PLATES AND BEARING PLATES AND PRECAST PAVERS

A. Compressive Strength Tests (by the Testing Laboratory):

1. Compressive strength of grout will be determined by testing four cubes two inches in dimension according to the requirements of ASTM C109 "Compressive Strength of Hydraulic Cement Mortars." Each strength test will be the average of two 28 day strengths. Test one cube at seven days, two at 28 days, and one at 56 days, only if either 28 day test is low.
2. Frequency of Testing: One set of cubes (four cubes) will be made for every ten base plates and bearing plates or fraction thereof cut not less than one set for each day's operation. One set of cubes will be made for each day's operation of grouting wall panels.

3.06 OPEN WEB STEEL JOISTS

A. Scope: The Testing Laboratory will perform inspection of open web steel joists in the field as herein described.

1. Obtaining Manufacturer's Product Certification: The Testing Laboratory will obtain product certification for open web steel joists and joist girders as required by the Specifications.
2. The Testing Laboratory will perform the following field inspections:
  - a. Inspect joists for damage during shipment.
  - b. Verify proper bearing of joists supports.
  - c. Verify camber requirements of joists arriving in the field.

- d. Confirm bridging size and location.
- e. Confirm attachment of joists to supports (welding or bolting).
- f. Confirm bolting of joists to supports at column lines as required by OSHA requirements.
- g. Verify that no joists have been damaged during erection.

END OF SECTION

## SECTION 01505 - TEMPORARY FACILITIES

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. Specific administration and procedural minimum requirements are specified in this Section as extensions of provisions in Section 00700, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION and other Contract Documents. Provisions of this Section are applicable to, but not by way of limitation, utility services, construction facilities, security and protection provisions, and support facilities. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.
- B. The Contractor will furnish, install, maintain, and protect temporary utilities, construction facilities, and controls necessary for construction at locations and in a manner which will be safe, nonhazardous, sanitary, protective of persons and property, and free of deleterious effects.
- C. The Contractor will provide and maintain methods, equipment, and temporary construction as necessary to provide controls over environmental conditions at Project site and related areas under Contractor's control.
- D. The Contractor will remove physical evidence of temporary facilities upon completion of Work and restore site to original condition to satisfaction of Owner.
- E. The Contractor will provide temporary services and facilities ready for use when first needed to avoid delay in the Work. The Contractor will maintain, expand and modify as needed. Do not remove until no longer needed or replaced by authorized use of permanent facilities. Refer to Section 01315 - SCHEDULES, PHASING for additional requirements.
  1. Temporary utilities required include, but are not limited to:
    - a. Water service and distribution.
    - b. Temporary electric power and light.
    - c. Telephone service.
    - d. Storm and sanitary sewer.
    - e. Building systems.
    - f. Internet service.
  2. Temporary construction and support facilities required include, but are not limited to:

- a. Temporary heat.
  - b. Field offices and storage sheds.
  - c. Sanitary facilities, including drinking water.
  - d. Temporary enclosures.
  - e. Hoists and temporary elevator use.
  - f. Temporary Project identification signs and bulletin boards.
  - g. Waste disposal services.
3. Security and protection requirements include, but are not limited to:
- a. Temporary fire protection.
  - b. Barricades, warning signs, lights.
  - c. Environmental protection.
  - d. Temporary enclosures.

#### 1.02 GENERAL DEFINITIONS

- A. Energy Considerations: Administer the use of temporary facilities in a manner which conserves energy without delaying Work or endangering persons or property. The Contractor will comply with reasonable requests by the Owner.
- B. Costs: Except as otherwise indicated, Contractor will pay for all costs associated with the temporary facilities, including use charges. Temporary facilities remain the property and responsibility of the Contractor.
- C. Dust Control: Adequate measures will be taken by the Contractor to prevent the transfer of dust to all other areas.
- D. Noise Control: Where Work is being conducted in or adjacent to occupied areas, the Contractor will make every effort to keep construction noise to a minimum.
- E. Environmental Protection: Contractor will review exposure to possible environmental problems with the Owner and Design Professional. Contractor will establish procedures and discipline among tradesmen and provide needed facilities which will protect against environmental problems (erosion control at all laydown areas and trailer compounds, pollution of air, air quality, water and soil, excessive noise, and similar problems).

#### 1.03 QUALITY ASSURANCE

- A. Regulations: The Contractor shall comply with industry standards and applicable laws

and regulations of authorities having jurisdiction, including, but not limited to:

1. Building Code requirements.
  2. Health and safety regulations.
  3. Utility company regulations.
  4. Police, Fire Department and Rescue Squad rules.
  5. Environmental protection regulations.
- B. Standards: Comply with the requirements of NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and the NECA Electrical Design Library, "Temporary Electrical Facilities."
1. The Contractor shall refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services," prepared jointly by AGC and ASC, for industry recommendations.
  2. The Contractor shall comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- C. Inspections: The Contractor shall inspect and test each service before placing temporary utilities in use. The Contractor shall arrange for authorities having jurisdiction to inspect and test each temporary utility before use. The Contractor shall obtain required certifications and permits.

#### 1.04 SUBMITTALS

A. Reports and Tests:

The Contractor shall submit copies of reports and permits required or necessary for installation and operation, including reports of tests, inspections and meter readings performed on temporary utilities and permits and legal description of easements necessary for installation, use and operation.

B. Implementation and Termination Schedule:

The Contractor shall submit a schedule indicating implementation and termination of each temporary utility within 15 days of the date established for commencement of the Work.

#### 1.05 PROJECT CONDITIONS

A. Temporary Utilities:

At the earliest feasible time, when acceptable to the Owner and Design Professional, change over from use of temporary service to use of permanent service.

B. Conditions of Use:

The Contractor shall keep temporary services and facilities clean and neat in appearance. The Contractor shall operate in a safe and efficient manner. The Contractor shall take necessary fire prevention measures. The Contractor shall not overload facilities or permit them to interfere with progress. The Contractor shall not allow hazardous, dangerous or unsanitary conditions, or public nuisances to develop or persist on the Project site.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General: The Contractor shall use qualified tradesmen for installation of temporary services and facilities, or to disconnect existing services or facilities that must be temporarily removed to complete the Work. The Contractor shall locate temporary services and facilities where they will serve the entire Project adequately and result in minimum interference with performance of the Work and the operation of the Airport.
- B. The Contractor shall ensure that the proper permits are secured before starting any utility Work. The Contractor shall require that tradesmen accomplishing this Work be licensed as required by local authority for the Work performed.
- C. The Contractor shall relocate, modify, and extend services and facilities, as required, during the course of the Work so as to accommodate the entire Work of the Project. The Contractor shall not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.02 TEMPORARY STAGING AREAS

- A. The staging area(s) located within the property defined as Tampa International Airport to be used to house the Contractor's field offices will be coordinated with Owner. The layout of the staging area(s) will be coordinated with the Owner.
- B. The Contractor may provide a trailer or portable type field office for its own use. Location of field office will be approved by the Owner. Costs for connections to utilities will be paid for by the Contractor. Water, electric and telephone may be available at that location. The Contractor is responsible for obtaining and paying for all utilities that it requires.
- C. The Contractor may erect and maintain throughout the life of the Contract, at Contractor's expense, a floor to ceiling plywood Type 1 barricade around the perimeter of each staging area used (or a six foot high chain link fence around the perimeter of each staging area used). Contractor may also install vehicle and pedestrian gates as necessary to provide adequate ingress/egress to its exclusive sites. The Contractor is

solely responsible for its own security. Upon completion of all Work, Contractor shall remove all construction barricades from the Project site.

### 3.03 TEMPORARY STORAGE AND SPOIL AREAS

- A. The Contractor's vehicles, equipment, and materials will be stored in the staging area designated on the Drawings. Upon completion of the Work, the storage areas will be cleaned-up and returned to their original condition to the satisfaction of the Owner. No special payment will be made for clean-up and restoration of the storage area. Personal vehicles will not be permitted beyond the Contractor's staging area. Drivers of personal vehicles being operated beyond the Contractor's staging area will be subject to loss of permission to enter the construction site.
- B. Stockpile areas will be used to store all materials needed for the Project and may or may not be fenced at the Contractor's option. However, red flashing barricades will be installed where potential conflicts with air or ground vehicular traffic might occur. Stockpiles will not penetrate the FAR Part 77 imaginary surfaces. Stockpile areas will be used to store all materials needed for the Project and must be accommodated within the work area.
- C. If storage areas are needed, the Contractor will request them from the Owner. The request will be reviewed on the basis of what is to be stored and the area needed. The Contractor will provide all necessary fencing and/or security.
- D. All waste material, including rubble and debris, and environmental hazardous material will be removed from the Airport at the Contractor's expense. No hazardous materials will be stored within the Airport complex. Burning on Airport property is prohibited.
- E. Equipment not in use during construction, nights, and/or holidays will be parked in the staging area. Exceptions will only be approved by the Owner when absolutely necessary. Parking of construction worker's private vehicles will also be within the staging area.

### 3.04 TEMPORARY UTILITY INSTALLATION

- A. General:
  - 1. The Contractor will coordinate the requirements for temporary utilities with the Owner and will install at the Contractor's expense all necessary utilities in a safe, acceptable manner. Should leaks, breaks, etc., occur during installation or use, the Contractor will immediately notify the Owner and the appropriate utility personnel and promptly repair the utility so as to keep disruption of service to a minimum.
  - 2. Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with the company's recommendations.
    - a. Arrange with the company and existing users for a time when service

can be interrupted, where necessary, to make connections for temporary service.

- b. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
- c. Cost or use charges for temporary facilities are not chargeable to the Owner, with exception of the utilities furnished by the Owner as defined under Section 01505, Item 3.04, Paragraph B.1 and Item 3.04, Paragraph C.1., and will not be accepted as a basis of claims for a Change Order.

B. Water Service:

- 1. General: The Contractor will provide and pay for all water except within existing building structures where, if possible, the Owner will furnish water at the nearest available potable water outlet. Water connection (without charge) to Owner's existing potable water system is limited to one 3/4" pipe-size connection, and a maximum flow of 10 gpm to the cold water supply. The Contractor shall install using vacuum breakers or other backflow preventer as required by local authority.
  - a. The Contractor shall maintain hose connections and outlet valves in leak proof condition. Where finish work below an outlet might be damaged by spillage or leakage, the Contractor shall provide a drip pan of suitable size to minimize the possibility of water damage. The Contractor shall drain water promptly from pans as it accumulates.
- 2. Temporary Water Service Connection: Contractor may use the Owner's water as described above in Paragraph 3.04, B.1. for this Project; however, all connections to the Owner's water system will include backflow protection. Valves will be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings will be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves will be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.
- 3. Water Hoses: The Contractor shall employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area. The Contractor shall provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.
- 4. The Contractor shall install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.
- 5. The Contractor shall sterilize temporary potable water piping prior to use.

6. Non-Potable Water: Where non-potable water is used, the Contractor shall mark each outlet with adequate health-hazard warning signs.

C. Electrical Service:

1. General: The Contractor will provide and pay for all electricity. The Contractor is responsible for obtaining and paying for all required permits and for temporary electric connections, maintenance, installation and removal, and other attributable costs.
  - a. The Contractor shall provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of Work during the construction period. The Contractor shall install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of Work.
  - b. The Contractor shall supply temporary electrical service to construction site utilizing a State of Florida Certified Electrician. Contractor will comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.
  - c. The Contractor shall provide weather tight, grounded, temporary electrical service-entrance and distribution system, with automatic ground-fault circuit interrupters and ground-fault interrupter features of proper types, sizes, electrical ratings and characteristics to fulfill Project requirements during construction period.
  - d. The Contractor shall provide meters, transformers, and over current protective devices at main distribution panel for power and light circuitry. Provide disconnections for equipment circuits. The Contractor shall coordinate installation of all temporary wiring with the Owner.
  - e. The Contractor shall connect service to local power company main supply in the manner directed by utility company officials. The Contractor shall pay usage charges for electricity used by entities authorized to perform the Work at the Project site. The Contractor shall exercise control over power usage to conserve energy.
  - f. Except where overhead service must be used, the Contractor shall install electric power service underground.
  - g. The Contractor shall provide temporary power, telephone, and system connections, where required by the Owner, to continue operation of existing equipment or systems during construction.
  - h. The Contractor shall replace all damaged receptacles. The Contractor shall provide temporary extension rings, wiring, boxes, and related hardware to allow power, telephone, and systems to function normally

during the interim period between removal of existing surface treatment(s) and installation of new treatment.

- i. All electrical conductors for temporary power and lighting will be placed in conduits if exposed to public view. All temporary wiring for communication, security, fire protection and signal systems will be installed in accordance with all appropriate codes and will also be placed in conduits if exposed to public view.

2. Power Distribution System:

- a. All wiring and grounding will meet all safety requirements of the National Electrical Code and all federal, state and local requirements. In addition, all wire will be so sized that it is not overloaded according to the National Electrical Code, and all wire used will be fused to adequately protect that wire according to the National Electric Code referred to.
- b. The Contractor shall provide circuits of proper sizes, characteristics, and ratings for each use indicated. The Contractor shall install wiring overhead and risers vertically where least exposed to damage. The Contractor shall provide rigid steel conduit to protect wiring on grade, floors, decks or other areas exposed to possible damage.
- c. The Contractor shall provide properly configured NEMA polarized outlets to prevent insertion of 110-120 Volt plugs into higher voltage outlets. The Contractor shall provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light for connection of power tools and equipment.
- d. Electric power will be limited to 120-Volts for lighting and hand tools that can be operated on a circuit protected at 15-Amps.
- e. The Contractor shall provide grounded extension cords and use "hard service" cords where exposed to abrasion and traffic. The Contractor shall provide weatherproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress.
- f. Lockout: In all facilities, wherever possible, the Contractor shall lockout all existing power to or through the Work area as described below. Unless specifically noted otherwise, existing power and lighting circuits to the Work area are not to be used. All power and lighting to the Work area are to be provided from temporary electrical panel described below.
  - (1) The Contractor shall lockout power to Work area by switching of all breakers serving power or lighting circuits in Work area. The Contractor shall label breakers with tape over breaker with

notation "DANGER circuit being worked on." All panels shall be locked and all keys shall be under the control of Contractor's Superintendent or the Owner.

(2) The Contractor shall lockout power to circuits running through Work area wherever possible by switching off all breakers serving these circuits. The Contractor shall label breakers with tape over breaker with notation "DANGER Circuit Being Worked On." The Contractor shall sign and date danger tag All panels shall be locked and all keys shall be under the control of Contractor's Superintendent or the Owner. If circuits cannot be shut down for any reason, the Contractor shall label at intervals 4'-0" on center with tags reading, "DANGER Live Electric Circuit Electrocutation Hazard."

- g. Temporary Electrical Panel: The Contractor shall provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the Work. The Contractor shall connect temporary panel to existing facility electrical system. The Contractor shall protect with circuit breaker or fused disconnect. The Contractor shall locate temporary panel as directed by the Owner.
- h. Circuit Protection: The Contractor shall protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. The Contractor shall not use outlet type GFCI devices.
- i. Temporary Wiring: Inside the Work area or above the Work platforms will be type UF non-metallic sheathed cable located overhead and exposed for surveillance. The Contractor shall not wire temporary lighting with plain, exposed (insulated) electrical conductors. The Contractor shall provide liquid tight enclosures or boxes for wiring devices.
- j. Number of Branch Circuits: The Contractor shall provide sufficient branch circuits as required by the Work. All branch circuits are to originate at temporary electrical panel.

3. Temporary Lighting:

- a. Lockout: In facilities, wherever possible, the Contractor shall lockout all existing power to lighting circuits in Work area. Unless specifically noted otherwise, existing lighting circuits to the Work area are not to be used. All lighting to the Work area is to be provided from temporary electrical panel described above.
- b. The Contractor shall provide inside the Work areas or above the Work platforms the following where natural lighting or existing facility lighting does not meet the required light level:

(1) One 200-Watt incandescent lamp per 1,000 square feet of floor area, uniformly distributed, for general construction lighting or equivalent of a similar nature. In corridors and similar construction traffic areas provide one 100-Watt incandescent lamp every 50 feet. In stairways and at ladder runs in construction areas, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere by combined use of daylight, general lighting, and portable plug-in task lighting.

- c. The Contractor shall provide lighting in areas where Work is being performed.
- d. The Contractor shall provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.
- e. Wherever overhead floor or roof deck has been installed, the Contractor shall provide temporary lighting with local switching.
- f. The Contractor shall install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system, and will provide adequate illumination for construction operations and traffic conditions.
- g. The Contractor shall provide general service fluorescent lamps of wattage required for adequate illumination. The Contractor shall protect lamps with guard cages or tempered glass enclosures. The Contractor shall provide exterior type fixtures where exposed to weather or moisture. The Contractor shall provide local switching to allow lights to be turned off in patterns to conserve energy.
- h. Number of Lighting Circuits: The Contractor shall provide sufficient lighting circuits as required by the Work. All lighting circuits are to originate at temporary panel.
- i. Circuit Protection: The Contractor shall protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

D. Temporary Telephones:

Where existing telephone service is unavailable, the Contractor may install a temporary telephone at the Contractor's own expense. All charges for calls made from such telephone will be paid by the Contractor.

E. Sewers and Drainage:

1. If sanitary sewers are available, the Contractor shall provide temporary connections to remove effluent that can be lawfully discharged. If sanitary sewers are not available or cannot be used, the Contractor shall provide containers to remove and dispose of effluent off the Project site in a lawful manner.
  - a. The Contractor shall connect temporary sewers to the municipal system as directed by the City of Tampa Sewer Department Officials.
  - b. The Contractor shall maintain temporary sanitary sewer facilities in a clean, sanitary condition.
  
2. If drainage systems are available, the Contractor shall provide temporary connections to remove stormwater that can be lawfully discharged. If drainage systems are not available, the Contractor shall provide drainage ditches, dry wells, stabilization ponds and similar facilities. The Contractor shall provide earthen embankments and similar barriers in and around excavations and subgrade construction sufficient to prevent flooding by runoff of stormwater from heavy rains.
  - a. The Contractor shall filter out excessive amounts of soil, construction debris, chemicals, oils and similar contaminants that might clog storm sewers or pollute waterways before discharge.
  - b. The Contractor shall maintain drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.

F. Internet Service:

If available, the Contractor may install internet service at the Contractor's own expense. All charges will be paid by the Contractor.

### 3.05 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

A. General:

1. The Contractor shall locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
2. The Contractor shall maintain temporary construction and support facilities until no longer necessary for the Work.
3. The Contractor shall provide incombustible construction for offices, shops and sheds located within the construction area, or within 30 feet of building lines. The Contractor shall comply with requirements of NFPA 241.
4. The Contractor will furnish all temporary wiring, piping connection and other apparatus that is needed to operate the utilities and will remove all evidence of same when Work is complete.

5. The Contractor will be responsible for obtaining and paying for utilities that Contractor requests at the Project site, except for the utilities furnished by the Owner as defined under Section 01505, Item 3.04, Paragraph B1 and Item 3.04, Paragraph C1.
6. The Contractor will at all times protect excavations, trenches, buildings, and materials from rain water, ground water, backup and leakage of sewers, drains, other piping, and from water of any other origin, and will remove promptly all accumulation of water. The Contractor will provide and operate all pumps, piping and other equipment necessary to this end.
7. The Contractor shall provide facilities and services as necessary to effectively protect Project from losses and persons from injury during the course of the Work.
8. The existing utilities will not be modified for use by the Contractor.
9. The Contractor shall not interrupt existing services serving occupied or used facilities, except when authorized in writing by the Owner. The Contractor shall provide temporary services during interruptions to existing utilities, as acceptable to the Owner.
10. The Contractor shall provide scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes, other facilities, and equipment required by personnel and required to perform Work and facilitate inspection.
11. The Contractor shall comply with reasonable requests of governing authorities performing inspections.
12. When permanent stairs are available for access during construction, the Contractor shall protect surface by covering to prevent damage and deterioration at time of Substantial Completion.

**B. Field Offices:**

The Contractor shall provide insulated, weather tight temporary offices of sufficient size to accommodate required office personnel at the Project site. The Contractor shall keep the office clean and orderly for Contractor's use, Owner's use and for progress meetings. The Contractor shall furnish and equip offices with adequate furniture, heat, air conditioning, lights, telephones, water cooler, private toilet complete with water closet, lavatory, mirror, medicine cabinet and janitor services. Location of field office will be approved by the Owner. Costs for connections to utilities (electrical power, water, sanitary sewer, etc.) will be paid for by the Contractor. Contractor is responsible for obtaining and paying for all utilities that Contractor requires, except for the utilities furnished by the Owner under Section 01505, Item 3.04, Paragraph B1 and Item 3.04, Paragraph C1.

**C. Storage and Fabrication Sheds:**

The Contractor shall install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on the Project site.

D. Temporary Heat:

1. The Contractor shall provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. The Contractor shall select safe equipment that will not have a harmful effect on completed installations or elements being installed. The Contractor shall coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
2. The Contractor shall provide adequate forced ventilation of enclosed areas for curing of installed materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
3. Prior to enclosure, the Contractor shall provide heating as necessary to protect Work, materials, and equipment against damage from dampness and cold.
4. The Contractor shall provide connections to existing facilities and extend and supplement with temporary units as required to comply with requirements.
5. The Contractor shall provide temporary heating units that have been tested and labeled by UL, FM or other recognized trade associations related to the type of fuel being consumed.
6. Heating Facilities:
  - a. Except where use of the permanent system is authorized, the Contractor shall provide vented self-contained LP gas or fuel oil heaters with individual space thermostatic control.
  - b. Use of gasoline-burning space heaters, open flame, or salamander type heating units is prohibited.

E. Temporary Paving:

1. The Contractor shall construct and maintain temporary roads and paving to adequately support the indicated loading and to withstand exposure to traffic during the construction period. The Contractor shall locate temporary paving for roads, storage areas and parking where the same permanent facilities will be located. The Contractor shall review proposed modifications to permanent paving with the Owner.
2. Temporary paving will comply with applicable requirements of the Florida

Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, latest edition, as amended.

3. The Contractor shall coordinate temporary paving development with subgrade grading, compaction, installation and stabilization of subbase, and installation of base and finish courses of permanent paving.
4. The Contractor shall install temporary paving to minimize the need to rework the installations and to result in permanent roads and paved areas that are without damage or deterioration when occupied by the Owner.
5. The Contractor shall delay installation of the final course of permanent asphalt concrete paving until immediately before Substantial Completion. The Contractor shall coordinate with weather conditions to avoid unsatisfactory results.
6. The Contractor shall extend temporary paving in and around the construction area as necessary to accommodate delivery and storage of materials, equipment usage, administration and supervision.

F. Sanitary Facilities:

1. The Contractor shall include temporary toilets, wash facilities and drinking water fixtures. The Contractor shall comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. The Contractor shall install where facilities will best service the Project's needs.
2. The Contractor shall provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. The Contractor shall provide covered waste containers for used material.
3. Toilets:
  - a. Use of the Owner's existing toilet facilities will not be permitted.
  - b. The Contractor shall install single occupant, self-contained toilet units of a chemical type, properly vented and fully enclosed with a shell of glass fiber, reinforced polyester or other similar non-absorbent material. Use of pit-type privies will not be permitted. The Contractor shall provide minimum ratio of one toilet per 25 construction personnel, or a greater number of toilets if required by governing regulations. The Contractor shall provide separate toilet facilities for male and female personnel. The Contractor shall thoroughly disinfect toilet facility a minimum of two times each week. The Contractor shall provide means to lock door from outside and keep locked at all times except during hours that construction personnel are at Project.

G. Wash Facilities:

1. The Contractor shall install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. The Contractor shall dispose of drainage properly. The Contractor shall supply cleaning compounds appropriate for each condition.
2. The Contractor shall provide safety showers, eye-wash fountains and similar facilities for convenience safety and sanitation of personnel.

H. Drinking Water Fixtures:

The Contractor shall provide drinking water fountains including paper supply.

I. Drinking Water Facilities:

1. The Contractor shall provide containerized tap-dispenser bottled-water type drinking water units, including paper supply.
2. Where power is accessible, the Contractor shall provide electric water coolers to maintain dispensed water temperature at 45° to 55° F (7° to 13° C).
3. Drinking and Water Fixtures: The Contractor shall provide drinking water fountains where and when piped potable water, approved by local authorities, is reasonably accessible from permanent or temporary lines. Otherwise, the Contractor shall provide electric cooled bottled water type drinking water units spaced so that personnel at Project site will travel not more than 300 feet.
4. The Contractor will provide all temporary lines and connection from existing sources of the water as required for the Work. The Contractor shall be responsible for proper drainage of water used.

J. Dewatering Facilities and Drainage:

The Contractor shall maintain construction work free of water accumulation. The Contractor shall not endanger the Work or adjacent properties.

K. Miscellaneous Facilities:

The Contractor shall provide miscellaneous facilities as needed, including ladders, runways, shoring, scaffolding, railing, bracing, barriers, closures, platforms, temporary partitions, and similar items.

L. Temporary Enclosures:

1. The Contractor shall provide temporary enclosure for protection of construction in progress and completed from exposure, foul weather, other construction operations and similar activities.
2. Where heat is needed and the permanent building enclosure is not complete,

the Contractor shall provide temporary enclosures where there is no other provision for containment of heat. The Contractor shall coordinate enclosure with ventilation and material drying or curing requirements to avoid dangerous conditions and effects.

3. The Contractor shall install Type 1 barricades securely with incombustible wood framing and other materials. The Contractor shall close openings of 25 square feet or less with plywood or similar materials.
4. The Contractor shall close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction.
5. Where temporary wood or plywood enclosure exceeds 100 square feet in area, the Contractor shall use UL-labeled fire-retardant treated material for framing and main sheathing. For job-built temporary offices, shops and sheds within the construction area, the Contractor shall provide UL labeled, fire treated lumber and plywood for framing, sheathing and siding.

M. Temporary Lifts and Hoists:

The Contractor shall provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities. The Contractor shall not permit employees to ride hoists which comply only with requirements for hoisting materials.

N. Temporary Elevator Use:

The Contractor shall use Owner's Service Elevator ONLY, upon Owner's approval.

O. Project Identification and Temporary Signs:

1. The Contractor shall prepare project identification and other signs of the size indicated. The Contractor shall install signs where indicated to inform the public and persons seeking entrance to the Project.
2. Contractor's identification sign located at its staging area:
  - a. Contractor may provide one 8 foot x 4 foot x 3/4" exterior grade plywood sign, properly supported with bottom 6 foot above grade. The Contractor shall engage professional sign painter to apply graphics and lettering as approved by Owner. **NO OTHER SIGNS ARE PERMITTED WITHIN THE AIRPORT COMPLEX.**

P. Stairs:

Until permanent stairs are available, the Contractor shall provide temporary stairs where ladders are not adequate. The Contractor shall cover finished permanent stairs with a protective covering of plywood or similar material so finishes will be undamaged at the time of acceptance.

### 3.05 SECURITY AND PROTECTION FACILITIES INSTALLATION

#### A. General:

1. The Contractor shall provide a neat and uniform appearance in security and protection facilities acceptable to the Owner. The Contractor shall maintain site in a safe, lawful and publicly acceptable manner. The Contractor shall take necessary measures to prevent erosion.
2. Temporary Construction Barricades:
  - a. A barricade plan will be submitted to and approved by the Owner prior to the start of any Work. Following approval and subsequent installation of barricades, a representative from the Owner will inspect the Work to insure compliance with the barricade plan and the following requirements.
  - b. The Contractor will be fully responsible for the protection of the public and adjacent areas during the construction process. The Contractor shall safely isolate the construction areas while maintaining normal airport operations. The Contractor will use temporary barricades of the following types:
    - (1) Type 1 Terminal Construction Barricades:
      - Barricade walls will be constructed with a minimum of ½" AC-1 plywood panels, UL labeled fire-retardant treated as required, with the grain orientated vertically, securely fastened to 2 x 4 wood or steel stud framing, minimum 24" on center, capable of structurally supporting barricades up to 21' high.
      - Fastening devices will not protrude or present a hazard on the public side.
      - Framing will be on the non-public side of the barricade.
      - Barricades will run from floor to bottom of ceiling secured without nailing to the floor or ceiling, and they will be plumb and aligned in a straight line utilizing appropriate bracing.
      - Sections will fit together tightly to present a first class appearance and will not permit light to show through to the public.
      - Corners of the barricades will be at four foot wide 45° angles with tapered plywood edges.

- Floor covering under the barricade will be protected with ½” plywood and 6 mil. plastic.
- The non-public side of the barricade will be lined with 6 mil. plastic for dust control, and all joints of the plastic will be taped to prevent dust from escaping.
- All barricade material, work platforms, and scaffold systems (including support systems) will be pre-painted prior to delivery to the Project with paint in a color selected by the Owner. The Type 1 barricade material will be pre-painted prior to delivery to the Project with a textured latex paint in a color selected by the Owner.
- All screws on the public side, as well as doors and frames, will be painted.
- Barricades, work platforms, and scaffold systems will be painted to represent a finished appearance in the view of the public that is compatible with adjacent areas.
- Wood doors, 1-3/8” to 1-3/4” hollow core, located in barricades, will swing inward into the construction area and will be locked when not in use with a common key passage door lockset. When fire code dictates, doors will be constructed in a recessed enclosure and swing outward. Doors will be installed in pre-hung frames.
- The Contractor will provide walk-offs (4’ x 6’ minimum) inside the barricade area and keep the mats and the area in front of the mats clean.
- The Owner will be given copies of all barricade keys.
- Erecting and dismantling of all barricades will be performed between the hours indicated elsewhere in the Contract Documents and with prior approval of and coordination with the Owner.

(2) Type 2 Terminal Short-Term Barricades:

- In the event that very short-term work is required within, overhead or above the ceiling of the public and tenant areas of the Airport Administrative Offices Building, the work side will be separated from the common-use public areas by temporary barricades.
- Work can only be accomplished in (or above) the public

and tenant areas between the hours of 12:00 a.m. and 8:00 a.m. on the Transfer Level, 12:00 p.m. midnight and 8:00 a.m. on the Baggage Claim Level, 9:00 p.m. and 5:00 a.m. on the Ticketing Level, and 12:00 p.m. midnight and 8:00 a.m. in the Airport Administrative Offices Building.

- Erecting and dismantling of all barricades will be performed between the hours described above and with prior approval of and coordination with the Owner.
- All temporary barricades will be removed by 8:00 a.m. each morning on the Transfer Level, the Baggage Claim Level and Airport Administrative Offices Building, and by 5:00 a.m. on the Ticketing Level.
- Short-term barricades will be solid panels, a minimum of 4' height, using a minimum of 1/2" AC-1 plywood, securely fastened to 1 x 2 wood framing (minimum of 24" on center). Panels will be hinged with all hardware on the non-public side.
- All bracing will be on the non-public side of the barricade.
- The public side of the panels will be painted with textured latex paint in a color selected by the Owner.
- Barricade sections will be fitted together to prevent accidental entry into the Work area by Airport patrons.
- Fastening devices will not protrude or present a hazard on the public side. Floor covering inside the barricade will be protected with 1/2" plywood and 6 mil plastic.

(3) Road Barricades:

- Roadway barricades will be in accordance with FDOT Roadway and Design Standards and in accordance with the Contract Documents.

(4) Airfield Barricades:

- Runway and taxiway barricades will be in accordance with Owner Standard Low Profile Barricade Specifications.

- c. If at any time barricades are not maintained to these standards, or if the public areas are not protected from excessive noise, dust, or other

interference, the Contractor will be required to cease all Work until the non-conforming situation is corrected.

- d. The Contractor shall provide warning signs and lighting where needed, including steady burn red lights where appropriate. The Contractor shall comply with recognized standards and code requirements.
- e. Contractor will cooperate and coordinate with Owner for installation of all barricades to allow continuous Airport operations. Access will be maintained into all Building Tenant spaces and existing mechanical and electrical control devices.

**B. Temporary Fire Protection:**

Until fire protection needs are supplied by permanent facilities, the Contractor shall install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. The Contractor shall comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."

- 1. The Contractor shall locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
- 2. The Contractor shall store combustible materials in containers in fire-safe locations.
- 3. The Contractor shall maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. The Contractor shall prohibit smoking in hazardous fire exposure areas.
- 4. The Contractor shall provide and maintain temporary fire protection during construction in accordance with requirements of the local protection code.
- 5. The Contractor shall provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil flammable liquid fires. In other locations, the Contractor shall provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case. Extinguishers will have a minimum UL rating of AZ-10BC.
- 6. The Contractor shall provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.

**C. Permanent Fire Protection:**

At the earliest feasible date in each area of the Project, the Contractor shall complete installation of the permanent fire protection facility, including connected services, and

place into operation and use. Instruct key personnel on use of facilities.

D. Security Enclosure and Lockup:

1. Storage:

Where materials and equipment must be stored and are of value or attractive for theft, the Contractor shall provide a secure lockup. The Contractor shall enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

2. The Contractor shall erect weatherproof closures for exterior openings.

3. The Contractor shall erect and maintain dustproof partitions composed of gypsum board and wood studs to prevent spread of dust, fumes, and smoke to other parts of the building.

E. Environmental Protection:

1. The Contractor shall provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations and minimize the possibility that air, waterways and subsoil might be contaminated or polluted or that other undesirable effects might result. The Contractor shall avoid use of tools and equipment which produce harmful noise. The Contractor shall restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the Project site.

2. The Contractor shall install and operate temporary facilities and perform construction activities in a manner which will be reasonably conservative and avoid waste of energy and materials including water.

3. The Contractor shall provide facilities, establish procedures, and conduct construction activities in compliance with regulations controlling construction activities at Project site.

4. The Contractor shall designate one person to enforce strict discipline on activities related to generation of wastes, pollution of air, water, and soil, generation of noise, and similar harmful or deleterious effects which might violate regulations or reasonably irritate persons at or in vicinity of Project site and inform Owner of designee.

F. Dust Control:

The Contractor shall provide positive methods and apply dust control materials to minimize raising dust from construction operations. The Contractor shall provide positive means to prevent airborne dust from dispersing into atmosphere.

G. Water Control:

1. The Contractor shall provide methods to control surface water to prevent damage to Project site and adjoining properties.
2. The Contractor shall control fill, grading, and ditching to direct surface drainage away from excavations, pits, tunnels, and other construction areas, and to direct drainage to proper runoff.
3. The Contractor shall provide, operate, and maintain hydraulic equipment of adequate capacity to control surface and runoff water.
4. The Contractor shall dispose of drainage water in manner that prevents flooding, erosion, or other damage to any portion of Project site or adjoining areas.

H. Pest and Rodent Control:

1. The Contractor shall provide pest and rodent control as necessary to prevent infestation of construction or storage area.
2. The Contractor shall employ methods and use materials which will not adversely affect conditions at Project site and on adjoining properties.
3. Should use of rodenticides or pesticides be considered necessary, the Contractor shall submit informational copy of proposed program to Owner. Clearly indicate:
  - a. Area or areas to be treated.
  - b. Materials to be used, with copy of manufacturer's printed instructions.
  - c. Pollution preventative measures to be employed.
4. Use of any rodenticide or pesticide will be in full accordance with manufacturer's printed instructions and recommendations.
5. Before foundation Work has been completed, the Contractor shall retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches and other pests. The Contractor shall employ this service to perform extermination and control procedures at regular intervals so that the Project will be relatively free of pests and their residues at Substantial Completion of the whole Work. The Contractor shall perform control operations in a lawful manner using environmentally safe materials.

I. Debris Control:

1. The Contractor shall maintain areas under Contractor's control free of extraneous debris.

2. The Contractor shall initiate and maintain specific program to prevent accumulation of debris at construction site, storage and parking area, or along access roads and haul routes.
  - a. The Contractor shall provide containers for deposit of debris as specified.
  - b. The Contractor shall prohibit overloading of trucks to prevent spillages on access and haul routes.
  - c. The Contractor shall provide periodic inspection of traffic areas to enforce requirements.
3. The Contractor shall schedule daily collection and disposal of debris.
4. The Contractor shall provide additional collections and disposal of debris whenever periodic schedule is inadequate to prevent accumulation.
5. The Contractor shall transport debris and waste material in covered trucks.

J. Pollution Control:

The Contractor shall:

1. Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by discharge of noxious substances from construction operations.
2. Provide equipment and personnel and perform emergency measures required to contain any spillage, and remove contaminated soil or liquids.
3. Excavate and dispose of contaminated earth off site in accordance with local environmental regulations and replace with suitable clean, compacted fill and topsoil.
4. Take special measures to prevent harmful substances from entering public waters.
5. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams or in sanitary or storm sewers.
6. Provide systems for control of atmospheric pollutants.
7. Prevent toxic concentrations of chemicals.
8. Prevent harmful dispersal of pollutants into atmosphere.

K. Erosion Control:

The Contractor shall:

1. Plan and execute construction and earthwork by the following methods to control surface drainage from cuts and fills and borrow and waste disposal areas and to prevent erosion and sedimentation:
  - a. Hold areas of bare soil exposed at one time to minimum.
  - b. Provide temporary control measures, such as berms, dikes, and drains.
2. Construct fills and waste areas by selective placement to eliminate surface silts or clays which will erode.
3. Periodically inspect earthwork to detect any evidence of start of erosions. Apply corrective measures as required to control erosion.

L. Collection and Disposal of Waste:

1. The Contractor shall collect waste from construction areas and elsewhere daily. The Contractor shall comply with requirements of NFPA 241 for removal of combustible waste material and debris. The Contractor shall enforce requirements strictly. The Contractor shall not hold materials more than seven days during normal weather or three days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. The Contractor shall dispose of material in a lawful manner.
2. In case of non-compliance with the above, the Owner, after having given a 24-hour notice, has the right to take any corrective action required at the expense of the Contractor.
3. Burying or burning of waste materials on the Project site or washing waste materials down sewers will not be permitted.
4. The Contractor shall provide rodent proof containers on each floor level to encourage depositing of wastes by construction personnel.

### 3.06 OPERATION, TERMINATION AND REMOVAL

A. Supervision:

The Contractor shall enforce strict discipline in use of temporary facilities. The Contractor shall limit availability of temporary facilities to essential and intended uses to minimize waste and abuse. The Contractor shall not permit temporary installations to be abused or endangered.

B. Maintenance:

1. The Contractor shall maintain facilities in good operating condition until

removal. The Contractor shall protect from damage by freezing temperatures and similar elements.

2. The Contractor shall maintain operation of temporary enclosures, heating, cooling, humidity control ventilation and similar facilities on a 24-hour day basis where required to achieve indicated results and to avoid possibility of damage. The Contractor shall not allow unsanitary conditions, public nuisances or hazardous conditions to develop or persist on the Project site.

C. Protection:

The Contractor shall prevent water filled piping from freezing. The Contractor shall maintain markers for underground lines. The Contractor shall protect from damage during excavation operations.

D. Termination and Removal:

1. The Contractor shall remove each temporary service and facility promptly when need for has ended or when replaced by use of a permanent facility, but no later than Final Acceptance of the whole Work. Complete or if necessary restore permanent Work delayed because of interference with the temporary service or facility. The Contractor shall repair damaged Work, clean exposed surfaces and replace Work which cannot be repaired.
2. At Substantial Completion of the whole Work, the Contractor shall clean and renovate permanent services and facilities that have been used to provide temporary services and facilities during the construction period.
3. At Substantial Completion of the whole Work, the Contractor shall clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
  - a. Replacing air filters and clean inside of ductwork and housings.
  - b. Replacing significantly worn parts and parts that have been subject to unusual operating conditions.
  - c. Replacing lamps that are burned out or noticeably dimmed by substantial hours of use.

END OF SECTION

## SECTION 01540 - CONSTRUCTION SAFETY AND SECURITY REQUIREMENTS

### PART 1 – GENERAL

#### 1.01 PURPOSE AND OBJECTIVE

- A. The purpose of this section is to set forth guidelines concerning construction and safety during construction of the Project. Described herein are methods, procedures, rules and authorities to be adhered to during said construction period. In the event the Owner implements an Owner Controlled Insurance Program (OCIP), the Hillsborough County Aviation Authority Construction Safety & Health Guidelines Manual shall apply. The Contractor shall also comply with all safety requirements herein, unless in direct conflict with the Hillsborough County Aviation Authority Construction Safety & Health Guidelines Manual; in such case, the more stringent requirements will govern, as determined by Owner.
- B. The following are the general safety objectives that must be achieved in order to maximize safety and to minimize time and economic loss to the aviation community, construction contractors and others directly affected by the Project.
  - 1. Keep the Airport operational for all users.
  - 2. Minimize delays to Airport operations.
  - 3. Maintain safety of Airport operations.
  - 4. Minimize delays to construction operations.
  - 5. Minimize Airport-operation/construction-activity conflicts.

#### 1.02 OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION

- A. All of Contractor's operations will be conducted in accordance with this Section. If the operations include work within the AOA or impacts the AOA or aircraft flight surfaces, the operations will be conducted in accordance with the current version of Advisory Circular 150/5370-2. The Contractor will prepare and submit a safety plan that details how it proposes to comply with the requirements when working.
- B. The Contractor will implement all necessary measures required by the safety plan prior to commencement of any work activity. The Contractor will conduct routine checks of the safety plan measures to assure compliance with the safety plan.
- C. The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the Project. The Contractor will assure that all subcontractors are made aware of the requirements of the safety plan and that they implement and maintain all necessary measures.
- D. No deviation or modifications may be made to the approved safety plan unless approved in writing by the Owner.

- E. This Contract is intended to provide for the optimum degree of safety to aircraft, both parked and operating; Airport personnel, passengers and general public, equipment, and associated facilities; and to the Contractor's operations consistent with minimum interference to the movement of aircraft, vehicles, and/or personnel engaged in the day-to-day operation of the Airport. To this end, the Contractor will observe all Airport rules and regulations and all other operational limitations which may be imposed from time to time. Contractor will provide marking, lighting, barricades, signs, or other measures which are required to properly identify Contractor's construction areas, Work sites, equipment, vehicles, storage areas, and/or conditions which may be hazardous to Airport operations.
- F. If the Contractor fails to maintain the marking, lighting barricades, signs, etc., as required, the Owner will cause appropriate safety measures to be installed by others and all costs thereof will be charged to the Contractor and deducted by the Owner from monies due to the Contractor.
- G. The Contractor's responsibility for safety and security will begin on the day the Contractor starts Work or on the date of the Notice To Proceed and will continue until Contractor is complete.
- H. The Contractor is fully and solely responsible for all project safety as it pertains to the Contractor's Work. This includes complying with the Hillsborough County Aviation Authority Construction Safety & Health Guidelines Manual, if applicable, implementing and enforcing its safety plan and procedures. Owner's acceptance, directives, approval, comments or any such action regarding Contractor's safety plan or Work shall not relieve the Contractor of its obligations.

### 1.03 SAFETY PROCEDURES

- A. In as much as each Work area will be accessible to and used by the public, the Owner, airlines, and other companies doing business at the Airport during the construction period, it is the Contractor's responsibility to maintain each Work area in a safe, hazard free condition at all times. This will include barricades, fencing, taping up sharp corners or any other precautions necessary to protect the public. Should the Owner find an area unsafe at any time, Owner will notify the Contractor and the Contractor will take whatever steps necessary to remedy the unsafe condition. Should the Contractor not be immediately available for corrective action, the Owner will cause appropriate safety measures to be installed by others and all costs thereof will be charged to the Contractor and deducted by the Owner from monies due to the Contractor.
- B. Fire Control: Open flame torch cutting or welding is prohibited unless adequate safety precautions have been taken and approved by the Owner via Owner's cutting and welding permit process. Flame cutting will be permitted only on steel parts that cannot be removed in any other manner and only when at least one person is standing by exclusively with a fire extinguisher within ten feet of the Work and within full view of the area. The fire extinguisher will have been tested and ready for use. The Contractor will submit a fire protection plan for approval prior to conducting the Work requiring said protection plan.

- C. Work Near Fire Alarm: Caution will be exercised as necessary when working near fire alarms so as not to accidentally activate fire alarms, doors or barriers.
- D. Protection of Property: Fixed structures, equipment, paving, landscaping, vehicles (automobiles, trucks, etc.) and aircraft will be protected with drop cloths, shielding and other appropriate measures to assure maximum protection.
- E. Use of explosively operated fastening devices within the confines of any Owner facilities or within Tampa International Airport is strictly prohibited.

#### 1.04 GENERAL SAFETY REQUIREMENTS

- A. An initial construction/safety meeting will be coordinated with the Owner after the award of the Contract, and prior to commencing construction, during which the Contractor will become aware of and assume responsibility for all safety issues. Additional construction/safety meetings may be scheduled as deemed necessary by the Owner throughout the Contract. Representatives from the Owner, Contractor, Design Professional, and any others deemed necessary by the Contractor may attend.
- B. The Contractor will inform its supervisors and workers of the Airport activity and operations that are inherent to this Airport, the safety regulations of the Airport, and the prohibition of driving or walking on any area of the AOA without clearance. The Contractor will conduct its construction activities to conform to both routine and emergency requirements. The Contractor will provide initial and continuing instructions to all supervisors, employees, subcontractors, and suppliers to enable them to conduct their Work in a manner that will provide the maximum safety with the least hindrance to air and ground traffic, the general public, Airport employees, and to the workers employed on the Project site.
- C. Work may be stopped/suspended by the Owner anytime the Owner considers that the intent of this Section is being violated or that a hazardous condition has been/was created. This decision to suspend the Work will be final and will only be rescinded by the Owner when satisfied that the Contractor has taken action to prevent recurrence. Delays/work stoppage as a result of the suspension of Work will be considered the fault of the Contractor and will not stop the Contract Time for assessing liquidated damages.
- D. All Contractor vehicles authorized to operate on the Airport outside of the Construction Area Limits as defined herein and to cross active runways, safety areas, taxiways, aprons, instrument or approach clear zones or any area within the AOA will do so only under the direct control of a trained, qualified flagman who is monitoring (two-way) radio communication with the ground controller of the Air Traffic Control Tower or UNICOM. All aircraft have priority over ground vehicles.
  - 1. When necessary, the Contractor will provide a radio to monitor communications from the Air Traffic Control Tower or UNICOM. This operator will be familiar with aircraft/ground controller communications and will be on duty whenever vehicles are operating in areas referenced above.
  - 2. Between sunset and sunrise, all vehicles operating in the AOA will be equipped

with an operating yellow flashing beacon.

- E. All Contractor vehicles and equipment that are authorized to operate on or near the AOA or the Airport outside of the designated Construction Area Limits or haul routes as defined in the Contract Documents or Drawings will display 3-foot x 3-foot flags or larger, orange and white checkerboard pattern, each checkerboard color being 1-foot square.
- F. Any construction activity within 250-feet of an active runway centerline or 107-feet from an active taxiway centerline requires the closure of the affected runway or taxiway, unless otherwise approved by the Owner. No runway, taxiway or apron area will be closed without approval of the Owner. This will enable "Notices to Airmen" or other advisory communications to be issued. A minimum of 48 hour notice of requested closing will be directed to the Owner who will coordinate the request with Authority Operations.
  - 1. Debris, waste and loose material capable of causing damage to aircraft landing gears, propellers or being ingested in jet engines will be removed from the active portion of the AOA, placed in protected areas or otherwise secured to prevent dispersal into active portions of the AOA. The AOA is defined as all areas used or intended to be used for aircraft operations including active runways, aprons, taxiways, taxilanes, etc. Debris will be promptly removed from the AOA. The Contractor will exercise care in the transportation of materials within the AOA. Materials tracked or spilled in the AOA will be removed immediately.
  - 2. When hauling, loading, grading, or when any of the Contractor's activities are likely to cause the deposit of loose materials in the AOA, powered vacuum sweepers will patrol the affected areas continuously to remove such deposits. The sweepers will be supplemented by hand sweepers, loaders, trucks, etc., as necessary.
  - 3. Closures:
    - a. Prior to the commencement of any demolition or other Work which will cause an interruption or modification to existing aircraft operations, the Contractor will confer with and obtain authorization from the Owner.
    - b. If the Contractor requires access to operational areas not delineated on the Drawing(s), the Contractor will participate in discussions leading to the imposition of restrictions on Airport operations in the affected areas. Contractor will strictly abide by all conditions imposed by the Owner relating to Contractor's entry and use of such areas and Contractor will not enter these areas until granted temporary, conditional entry clearance by the Owner.
    - c. Unless otherwise described in the Contract Documents, trenching, excavation and other work requiring temporary runway or taxiway closure will be limited by the Contractor to that amount of work that can be completed within the hours of minimal operation. All ditches,

excavations, etc., will be restored prior to the end of the Work period and affected pavements returned to service. This Work will be scheduled during hours of minimal operations. Hours of minimal operation will be the hours between 10:00 p.m. and 6:00 a.m. All other hours will be hours of normal operation.

- d. The Contractor may be required to pursue affected portions of the Work on a continuous 24-hour per day basis during construction of the various phases and subphases shown on the Drawings and described in the Contract Documents (such as when runways or taxiways, aprons, service or access roadways, or service gates are closed for operations or when hazards of any kind arise).
- e. The Owner will arrange for inspection prior to opening for aircraft use any taxiway that has been closed for Work, on or adjacent thereto, or that has been used for a crossing point or haul route by the Contractor.

4. Operations Safety Inspections:

- a. The entire Project site will be inspected daily and more frequently if construction activities are of a nature that debris may accumulate on AOA pavements. Special inspections will be conducted for each Work area prior to return to service for aircraft operation. The purpose of these inspections is to ascertain that areas returned to aircraft service are in satisfactory condition and that the overall Project site and its activities are within the safety criteria set forth in these Contract Documents. Inspections will be conducted jointly by representatives of the Contractor and the Owner.
- b. Any violations of safety criteria found during these inspections will be rectified immediately. If a violation cannot be corrected on an immediate basis by the Contractor, the Contractor will immediately notify the Owner. No areas will be approved for operations with violations occurring unless specifically authorized by the Owner.

G. The Contractor will preserve and/or protect existing and new pavements plus other facilities from damage due to construction operations. Existing pavements and facilities which are damaged will be replaced or reconstructed to original strength at the Contractor's expense. The Contractor will take immediate action to reconstruct any damaged area which is to remain in service. Unless indicated on the Drawings, existing pavements will not be cut for the installation of any utilities. Jack and bore or directional bore method will be required.

H. Construction Area Limits:

- 1. Contractor will be required to conform to safety requirements contained in AC 150/5370-2, prohibits construction within the safety areas or Obstacle Free Zone (OFZ), as defined in Advisory Circular 150/5300-13, latest edition for both runways and taxiways. For Aircraft Group V pavements, this is 250 feet from the

runway centerline and 107 feet from the taxiway centerline. The activity limits will be adequately signed and marked by the Contractor to preclude violation of this restriction. The area will be well identified by warning signs and lights at night. The Contractor will install lighting, marking, barricades, signs and other measures to delineate closed and hazardous areas during construction. The guidance and procedures provided by FAA Advisory Circular AC 150/5340-1, "Standards for Airport Markings," will be utilized as depicted on the Drawings. Barricades will be weighted or otherwise secured to sufficiently prevent displacement by aircraft engine and propeller blast and ambient winds. Steady burning red obstruction lights may be required in certain instances to supplement lighted barricades or highlight hazardous or potentially dangerous objects. The location of these lights will be as requested in the field by the Owner. Obstruction lights and barricades will not be located within runway, taxiway and/or taxiway obstacle clearance areas.

2. The limits of construction, material storage area, plant site, equipment storage area, parking area and other areas defined as required for the Contractor's exclusive use during construction will be marked by the Contractor. The Contractor will erect and maintain around the perimeter of these areas suitable marking and warning devices visible for day/night use. Temporary fencing, barricades, flagging and/or flashing warning lights will be required at critical access points. Type of marking and warning devices will be approved by Owner. Open trenches, excavations and stockpiled materials will be permanently marked with flags and lighted by approved light units during hours of reduced visibility and darkness. No separate pay item is included for this Work and all costs must be included in the Contract Sum.
  - I. The Contractor will erect and maintain throughout the Contract, at Contractor's expense, a 6-foot high chain link opaque green fabric fence or barricade, with no advertising or writing visible, around the perimeter of the Construction Area as required. The Contractor will also install vehicular and pedestrian gates/doors as necessary to provide ingress/egress. Additionally, the perimeter of any fenced area which abuts an active operation pavement will be marked with red flashing barricades no more than 50-feet apart. The Contractor will be solely responsible for access control through any access gate leading to the AOA. This access control will be for all personnel using the gate/door for access to the AOA. This gate/door will be manned by the Contractor whenever unlocked. The Contractor is solely responsible for all security within the Construction Area from the date of the Notice to Proceed until the date of Final Acceptance. Equipment not in use during construction, nights and/or holidays will be parked in the Construction Area. The Contractor will at all times conduct all operations under the Contract in a manner to avoid or minimize the risk of loss, theft or damage by vandalism, sabotage or other means to any property. The Contractor will promptly take all reasonable precautions which are necessary and adequate to correct all conditions which threaten a risk of loss, theft, or damage to property.
  - J. During construction, the Contractor will maintain these areas in a neat condition. Upon completion of the Work, the staging and storage areas will be cleaned-up and returned to their original condition to the satisfaction of the Owner. Remove all construction fencing and barricades from the Project site. No special payment will be made for clean-

up and restoration of the storage area. Personal vehicles will not be permitted beyond Contractor's Construction Area. Drivers of personal vehicles being operated beyond this Contractor's Construction Area will be subject to loss of permission to enter the construction site.

K. Intermittent Construction Operations:

1. Construction activity may require closing of certain areas by the Owner, including the AOA. However, some Work may be done on an intermittent basis. The Contractor will maintain constant communication with the Owner when working and immediately obey all instructions from the Owner. Failure to so obey instructions or maintain constant communications with the Owner will be cause to suspend the Contractor's operations in the areas until satisfactory conditions are assured.
2. When directed to cease Work and move from the area, the Contractor will immediately respond and move all material, equipment and personnel outside areas. Operations will not be resumed until directed by the Owner. Every reasonable effort will be made by the Owner to cause minimum disturbance to the Contractor's operations. However, no guarantee can be made as to the extent to which disturbance can be avoided. Contractor's claim for additional Contract Time for any such disruption will not be accepted.
3. Open trenches or excavations exceeding 3-inches in depth and 3-inches in width will not be permitted within 250-feet of the centerline of an active runway or within 100-feet of the centerline of active taxiways and taxilanes. If an area is to be opened to aircraft movement, either at night or during the day, the Contractor will decrease the drop off to 3-inches by placing compacted fill. This fill will taper away from the paved area at a 5% maximum slope to existing grade. There is no separate payment for this temporary construction.
4. Disruptive Work will be defined as any activity, including excessive noise, air pollution, dust, and similar events that adversely disrupts, hinders or impacts normal Airport operations. These activities will be conducted so as not to interfere with the normal operation of the Airport. Work which may be considered disruptive will be conducted by the Contractor during the middle of the night hours as designated by the Owner. When directed by the Owner to cease Disruptive Work, the Contractor will immediately suspend and discontinue the Disruptive Work. Work will not be resumed until directed by the Owner. Contractor's claim for additional cost or additional Contract Time for suspending of Disruptive Work will not be accepted.

L. Limitation of Operations:

1. When the Work requires the Contractor to operate on or adjacent to any public area, the operation will be coordinated with the Owner at least 72-hours prior to commencement of the Work. At no time will the Contractor close a public area until authorization to do so is granted by the Owner.

2. When the Contract Work requires the Contractor to operate on or adjacent to the apron or taxiway AOA, the operation will be coordinated with the Owner at least 72-hours prior to commencement of the Work. At no time will the Contractor close an AOA until authorization to do so is granted by the Owner and until temporary marking and associated lighting is provided and in place as specified in FAA Advisory Circular 150/5340-1, "Marking of Paved Area on Airports" and/or the Drawings and Specifications.
3. The Contractor will be responsible for controlling its operations and those of its subcontractors so as to provide for the free and unobstructed movement of all passengers and private vehicles on the Airport.
4. The Contractor will be responsible for controlling its operations and those of its subcontractors so as to provide for the free and unobstructed movement of aircraft in the apron and taxiway areas of the Airport AOA.

M. Obstructions to Navigation:

1. Penetrations of the imaginary surfaces defined in FAR Part 77 will not be permitted without advance notification of and approval by the Owner and the FAA Tower Chief. It may be necessary to file Form 7460-1 with the Owner to obtain approval prior to operation of exceptionally tall equipment. This includes any penetrations whatsoever by the Contractor, including but not limited to vehicles, cranes, other construction equipment, structures, stockpiled materials, excavated earth, etc.
2. When penetrations are unavoidable they will be brought to the attention of the Owner and the FAA as far in advance as is practical to allow Notices to Airmen (NOTAMS) to be prepared and distributed to appropriate FAA divisions for publication and dissemination.
3. Appropriate sketches will be prepared by the Contractor with precise locations shown on the Airport Layout Plan along with elevations depicting the obstruction object's relationship to the imaginary surfaces.
4. Cranes, draglines, derricks, or other unusually tall equipment operating on the Airport will be in direct radio communication with the control tower. To effect this communication, the Contractor will provide two-way VHF radios capable of communicating on ground control frequency. Operators of such construction equipment will be qualified and knowledgeable in the use of radio equipment communication protocols with the Tower and capable of following instructions in a timely fashion.
5. The maximum height allowed on the Airport is 15 feet above ground level unless, in special instances, this requirement is waived by the Owner and the FAA. During times when the safety of flight operations could be impaired, particularly during Instrument Flight Rules (IFR) weather, or when the equipment is idle, all booms, towers and other movable appendages will be lowered to the maximum extent.

N. Emergency Procedures:

1. The Contractor will familiarize itself with Airport emergency procedures and will endeavor to conduct its operations so as not to conflict with them. Clear routes for crash/fire/rescue equipment will be maintained in operable condition at all times.
2. Emergency Procedure: In case of an emergency caused by an accident, fire, or personal injury or illness, Airport Police are to be immediately notified by Page Phone found throughout the Terminal buildings or by calling them at 911 or Airport Police Emergency Phone No. (813) 870-3911. The caller must accurately report the location and type of emergency. Airport Police will then coordinate with other Owner representatives and/or other outside emergency agencies as necessary.

O. Access to the Construction Site:

1. The Contractor's access to the site will be defined by the Owner. This access route may also be used by Airport employees or others. **No other access routes will be allowed unless approved by the Owner. At Tampa International Airport, the vertical clearance in the Short Term Parking Garage is 6'-8". No vehicle taller than 6'-8" will be allowed to operate in the Short Term Parking Garage structure. The vertical clearance in the Long Term Parking Garage is 7'-10". No vehicle taller than 7'-10" will be allowed to operate in the Long Term Parking Garage structure.** All Contractor traffic authorized to enter the site will be experienced in the route or guided by the Contractor's personnel. The Contractor will be responsible for traffic control to and from the various construction areas on the site. The Contractor will be responsible to verify and coordinate with all vertical clearances for the George J. Bean Parkway, Bessie Coleman Service Road, Red and Blue Side Arrivals, Departure and Crossover Drives, as well as all other ramps, roads, drives and overpasses over and along or otherwise a component of the Contractor's access route.
2. The Contractor will familiarize its employees with the route. Material and equipment delivery trucks will be accompanied by an employee of the Contractor familiar with the route. The Contractor will be responsible for access control through any AOA access gate for the duration of this Contract. This access control will be for all personnel. Any AOA access gate will be manned, whenever unlocked, by a licensed, bonded security agency guard, contracted by the Contractor. Contractor personnel are not acceptable substitutes for the licensed, bonded security agency guard.
3. The Contractor will monitor and coordinate all Contractor traffic with the Owner. The Contractor will not permit any unauthorized construction personnel or traffic on the site, including food and beverage vendors or caterers. If breaches of security occur, the Owner may, at the Owner's option, close the AOA gates until adequate actions have been taken to prevent further breaches of security.

4. The Contractor will provide and operate an escort vehicle to lead other vehicles when operating within the site.
5. The following procedure will be used for access to site by AOA unauthorized persons:
  - a. The unauthorized person will inform the gate guard of their reason for entrance to the site and which Contractor they intend to visit.
  - b. Guard will notify the Contractor by telephone.
  - c. Contractor will go to gate and escort visitor to Contractor facility.

The Contractor will provide and operate an escort vehicle to lead other vehicles when operating within the AOA.

6. The Contractor is responsible for immediate cleanup of any debris deposited along the access route as a result of Contractor's construction traffic. The entire access route and construction site will be kept free and clean of all debris at all times, will be maintained in good repair by the Contractor or its agents, and will be immediately repaired to the satisfaction of the Owner. Directional signing along the delivery route to the storage area or work site will be as directed by the Owner.

P. Load Restrictions:

1. The Contractor will comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the Work. A special permit will not relieve the Contractor of liability for damage which may result from the moving of material or equipment.
2. The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction will be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor will be responsible for all damage done by Contractor's hauling equipment and will correct such damage at Contractor's own expense.
3. It is especially noted that the existing Airport pavements may not be capable of supporting certain types of construction equipment. Prior to submitting the Bid, the Contractor will fully satisfy itself as to the ability of the existing Airport pavements to satisfactorily sustain the type of equipment Contractor plans to use. Should damage occur as a result of construction operations, the Contractor will repair the damaged areas to an acceptable condition at Contractor's expense.

Q. Contractor's Security Requirements:

1. General Intent: It is intended that the Contractor will comply with all requirements of the Airport Security Plan and with the Safety Plan specified herein. The Contractor will designate to the Owner, in writing, the name of its Contractor Security Officer (CSO). The CSO will be the Contractor's representative on the "Construction Security Committee" and will be accountable for these security requirements for the Contractor.
2. Contractor Security Personnel Orientation: The CSO will be responsible for all safety precautions. Prior to the commencement of the Work, the CSO will provide the Owner an outline of a proposed accident and fire protection plan for all Work contemplated under the Contract. The CSO will also conduct safety meetings as directed by the Owner for each shift and require the attendance of all supervisors at such meetings. Copies of the minutes of safety meetings will be kept on file in the Contractor's Office.
3. Identification - Personnel: All employees of the Contractor or subcontractors requiring access to the construction site are required to be supplied with identification badges to be worn at all times while within the area. Badges will be supplied by the Contractor and will state **"TPA – Airside F Cooling Tower Refurbishment Contractor."** Badges can be plastic wallet size, metal pin or sticker with a minimum of 2-1/2" diameter and worn on outer garments so as to be clearly visible. Badging is to be uniform in appearance and sufficiently distinctive in design or color to clearly distinguish, on sight, employees assigned to this Contract. The badge number will be prominent for easy identification. Badges are to be identified numerically and issued individually to whom it was assigned. Blocks of numbers can be assigned to subcontractors. Responsibility for supply issuance and control of identification badges will be that of the Contractor, through the CSO.

In addition, for all Work within the AOA at Tampa International Airport only, the Contractor's onsite supervisors will be badged with Airport ID badges provided by Authority Operations. Supervisors requiring unescorted access to the Security Identification Display Area (SIDA) will be subjected to a FBI fingerprint-based Criminal History Records Check (CHRC) and a Transportation Security Administration Security Threat Assessment (STA). An ID badge will not be issued to an individual until they successfully pass a CHRC and STA.

New applicants applying for a TPA ID badge will continue to be charged \$27.00 for the CHRC and an additional \$3.00 (ID badge with an expiration less than 12 months from date of issue) or \$6.00 (ID badge with an expiration greater than 12 months from date of issue). The new STA fees will also apply to ID badge renewals. Each time an individual renews their ID badge (including lost, stolen, name change, etc.), the authorized issue will be charged the STA fee of either \$3.00 or \$6.00 (depending on expiration date period).

Personnel will wear the badge on outermost garment at all times while on the AOA. All employees of Contractor or subcontractor requiring access to the construction site are required to be supplied with identification badges to be

worn at all times while within the area. Blocks of numbers can be assigned to subcontractors. Responsibility for supply issuance and control of identification badges will be that of the Contractor, through the CSO and the Owner. Contractor agrees that the determination of damages for a lost badge is uncertain. The Contractor will be assessed Three Hundred Dollar (\$300.00) in liquidated damages for each security badge that is not returned to the Owner at the time of badge expiration or Project completion. These damages will be paid promptly by the Contractor by company check, or the amount will be withheld by Owner from payments due to the Contractor.

4. Identification - Vehicles: The Contractor, through the CSO, will establish and maintain a list of Contractor and subcontractor vehicles authorized to operate on the Project site and will issue a TPA validation sticker to each vehicle to be made available upon demand by the Owner or any Airport Security Officer. Vehicle validation sticker will be placed on the front left portion of the vehicle and be assigned in a manner to assure positive identification of the vehicle at all times. In lieu of issuing individual vehicle permits, the CSO can require each vehicle to display a large company sign on both sides of the vehicle and advise the Owner of a current list of companies authorized to enter and conduct Work on the Airport.
5. Identification – Equipment: The Contractor will clearly identify all on-site equipment such as portable motorized or non-motorized equipment, job boxes, material storage containers, port-a-lets, etc., whether owned or rented, with the Contractor’s name. Identification must be physically marked on equipment or attached with a durable removable device such as a wire tie.
6. Employee Parking:
  - a. Area for parking of the Contractor's employee's vehicles is in the Contractor's Construction Area or Staging Area to be defined by the Owner. Parking will be accomplished in straight equally spaced rows. Contractor will organize traffic flow and parking patterns, and supply traffic control signs and markings subject to approval of the Owner. Maintain the parking surface and pick up trash daily. No storage will be allowed at parking site. The Contractor will restore the shape and grade of this parking area upon Project completion, seed and mulch portions where existing ground cover is damaged and perform all Work required to restore the area to its original condition.
  - b. When the Contractor's employee parking area is adjacent to another Contractor's parking area performing other construction for the Owner, cooperation is required to avoid any interferences in the performance of each respective construction. Any difficulties experienced will be brought to the attention of the Owner immediately.
  - c. All vehicles entering any public parking garages will be required to pay the normal parking fee which will be calculated at the exit. Free parking will not be authorized.

7. Materials Delivery to the Site: All Contractor's material orders for delivery to the Work site will use as a delivery address the street name and number assigned to the access point onto the Airport.
8. Breach of Security Fine: Contractor agrees that liquidated damages in the amount of Ten Thousand Dollar (\$10,000.00) per occurrence will be assessed against the Contractor if the Contractor violates the requirements of the Airport Security Plan or the Security requirements specified herein. Contractor agrees that actual damages for breach of security are uncertain and the liquidated damages described herein are not a penalty and are reasonable considering the impacts that a Breach of Security could have to public safety and welfare and the operations of the Airport.

Notwithstanding the foregoing, repeated and/or flagrant violations of the Security Plan will be grounds for the suspension of the Work at no cost to the Owner, default of the Contractor and/or termination of the Contract.

9. Amendments to this Safety Plan and Security requirements may be made by the Owner and will be immediately binding on Contractor.

END OF SECTION

SECTION 01545 - UTILITIES

PART 1 - GENERAL

1.01 GENERAL

- A. Existing facilities, utilities, and features depicted on the Drawings are not guaranteed to be accurate with respect to location, condition, and characteristics. Also, there may be additional facilities, utilities, and features existing that could affect the construction of the Work which are not depicted or described in the Contract Documents.
- B. Prior to Bidding, the Contractor will make a thorough investigation of the Project area to satisfy itself as to the location, condition, and characteristics of any and all facilities, utilities, and features which may affect Contractor's Work. No additional compensation will be made for any extra expense relating to an existing facility, utility, or feature.
- C. The Contractor hereby agrees to make no claims against the Owner and/or its representatives relating to the existence, or lack thereof, location, condition, and/or characteristics of any existing facilities, utilities, or features.
- D. Contractor will pay for the removal and installation of all utilities required by the Contract Documents.

1.02 PROTECTION OF EXISTING UTILITIES

- A. The term "utilities" includes FAA power and control cables, TECO power lines, other power lines, telephone cables, lines and fiber optics, Sheriff's Department lines, elevator control cables, airline communication cables, computer cables, airfield lighting cables, Owner underground electrical and communication lines, cables and fiber optics, water lines, irrigation lines, HVAC equipment, sanitary force mains, sanitary lines, stormwater lines and fuel and gas lines. These utilities may be located in the areas of construction. Disruption of these utilities could seriously disrupt the operation of the airport. Although the Drawings attempt to locate the cables and all utilities including fuel and gas lines, actual locations are uncertain and the Contractor is required to verify all locations.
- B. To the extent that such public and private utility services, FAA facilities, or utility services of another government agency are known to exist within the limits of the Work, the approximate locations have been indicated on the Drawings and some, but not all, utility services and FAA facilities are indicated as follows:

Utility Service or Facility Person to Contact Telephone

(To the best of the Owner's knowledge, the below information is correct, but it may change without notice.)

FAA Control Cables	Mr. Charles Hinnant	(813) 371-7751
HCAA	Mr. Paul Ridgeway	(813) 870-8744
TECO	Mr. Greg Keininger	(813) 228-4231
Fuel Lines	Mr. Enos Sage	(813) 396-3626
Irrigation Lines	Mr. Michael Garcia	(813) 554-1482

- C. Any intentional, temporary interruption of existing utilities for the purpose of carrying out the Work will be carried out so as to minimize the length and scope of the interruption. Before any such interruption, Contractor will give a minimum of 72 hours written notice to the Owner and will also give at least 72 hours' notice to the appropriate "Person to Contact" listed in Paragraph B of this Section.
- D. The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the Work.
- E. Contractor will not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or FAA facilities located within the limits of the Work without the written permission of the Owner.
- F. Should the Owner, public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or FAA facility during the progress of the Work, the Contractor will cooperate with such utility service or FAA facility by arranging and performing the Work in this Contract so as to facilitate such construction, reconstruction, or maintenance by others. In addition, the Contractor will control its operations to prevent the unscheduled interruption of such utility services, FAA facility, and other facilities. It is understood and agreed that the Contractor will not be entitled to make any claim due to such authorized construction by others or for any delay to the Work resulting from such authorized construction. The Contractor will coordinate all Work with all utility services, FAA facility, or other facility.
- G. To the extent that such public or private utility services, FAA or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the Contract Work, the approximate locations can be obtained by the Contractor from the Owner.
- H. It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, FAA facilities or structures that may be shown on the Drawings or encountered in the Work. Any inaccuracy or omission in such information will not relieve Contractor of its responsibility to protect such existing features from damage or unscheduled interruption of service.
- I. It is further understood and agreed that Contractor will, upon execution of the Contract, notify all utility services, FAA facility, or other facilities of the Contractor's plan of operations. Such notification will be in writing addressed to the Person to Contact as provided herein. A copy of each notification will be given to the Owner.
- J. In addition to the general written notification hereinbefore provided, it will be the responsibility of the Contractor to keep such individual utility service or FAA facility advised of changes in Contractor's plan of operation that would affect such utility

service or FAA facility.

- K. Prior to commencing the Work in the general vicinity of an existing utility service or FAA facility, the Contractor will again notify each such utility service or FAA facility in writing, copying the Owner, of Contractor's plan of operations. If, in the Contractor's opinion, assistance is needed to locate the utility service or FAA facility or the presence of a representative of the utility service or FAA facility is desirable to observe the Work, such advice will be included in the written notification. Such notification will be given by the most expeditious means to reach the utility service or FAA facility Person to Contact no later than two business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor will furnish a written summary of the notification to the Owner.
- L. Failure of the Contractor to properly coordinate in advance Work on or near existing utilities will be cause for the Owner to suspend Contractor's operations in the general vicinity of such utilities.
- M. Power and control cables leading to and from any FAA facilities will be marked in the field by the local FAA Airway Facilities Sector personnel for the information of the Contractor before any Work in the general vicinity is started. Thereafter, through the entire time of the Work, the Contractor will not allow any construction equipment to cross these cables without first protecting the cable with steel boiler plate or similar structural devices on 3-feet either side of the marked cable route. All excavation within 3-feet of existing cables will be accomplished by hand digging only. No grading will be permitted over FAA cables under any conditions.
- N. Approval to work in areas where active utility services or FAA facilities are located is subject to withdrawal at any time because of change in the weather, emergency conditions on the existing airfield areas, anticipation of emergency conditions, or for any other reason determined by the Owner or the designated FAA and/or utility service representative. All instructions by the Owner, the utility service, or the FAA facility (by radio or other means) to the Contractor to clear any given area, at any time, will be immediately executed. Construction Work will be commenced in the cleared area only when additional instructions are issued by the Owner.
- O. FAA CABLES AND UTILITIES MUST BE PROTECTED AT ALL TIMES.
- P. Where the outside limits of an underground utility service or FAA facility have been located and staked on the ground, the Contractor will be required to use excavated methods acceptable to the Owner within 3-feet of such outside limits at such points as may be required to insure protection from damage due to the Contractor's operations.
- Q. If damage occurs to any utilities, the Contractor will be assessed a fee of \$2,000 liquidated damages per cut per cable, line or strand, which liquidated damages will only represent the expense incurred by the Owner in coordinating the repair, and which will not prevent the Owner or others from recovering from the Contractor other costs, damages, or expenses of any other nature incurred on account of damages to utilities. Contractor agrees that damages for cut cables are uncertain and these liquidated damages are reasonable and are not a penalty and a reasonable consideration of the

impact that damage to utilities could have to the operation of the Airport. There is no intention to double count damages under this provision.

- R. FAA FACILITIES AND CABLE RUNS. The Contractor is hereby advised that the construction limits of the Project include existing facilities and buried cable runs that are owned, operated and maintained by the FAA. The Contractor, during the prosecution of the Project work, will comply with the following:
1. The Contractor will permit FAA maintenance personnel the right of access to the Project work site for purposes of inspecting and maintaining all existing FAA owned facilities.
  2. The Contractor will notify the above named FAA Airway Facilities Point-of-Contact seven days prior to commencement of construction activities in order to permit sufficient time to locate and mark existing buried cables and to schedule any required facility outages.
  3. If prosecution of the Project work requires a facility outage, the Contractor will contact the above named FAA Person to Contact a minimum of 72 hours prior to the time of the required outage.
  4. If prosecution of the Project work results in damages to existing FAA equipment or cables, the Contractor will repair the damaged item in conformance with FAA Airway Facilities' standards to the satisfaction of the above named FAA Point-of-Contact.
  5. If the Project work requires the cutting or splicing of FAA owned cables, the above named FAA Point-of-Contact will be contacted a minimum of 72 hours prior to the time the cable work commences. The FAA reserves the right to have an FAA Airway Facilities representative on site to observe the splicing of the cables as a condition of acceptance. All cable splices are to be accomplished in accordance with FAA Airway Facilities' specifications and require approval by the above named FAA Point-of-Contact as a condition of acceptance by the Owner. The Contractor is hereby advised that FAA Airway Facilities restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA Airway Facilities, the Contractor will furnish and install a sufficient length of new cable that eliminates the need for any splice.
- S. Should the Contractor damage or interrupt the operation of a utility service or FAA facility by accident or otherwise, Contractor will immediately notify the proper utility service or FAA facility and the Owner and will take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such an event, will cooperate with the utility service or FAA facility and the Owner continuously until such damage has been repaired and service restored to the satisfaction of the utility service or FAA facility.
- T. The Contractor will immediately repair, at Contractor's own expense, with identical material by skilled workers, all utilities, FAA cables, and other facilities which are damaged by Contractor's workers, equipment, or work. Prior approval of the appropriate utility service and/or FAA facility and Owner will be obtained for the

materials, workers, time of day or night, method of repairs, and for any temporary or permanent repairs the Contractor proposes to make to any FAA cables or utility service damaged by the Contractor.

- U. Airport publicly owned facilities and privately owned facilities located on Airport property, including underground cables, pavements, piping, buildings, turfed areas, vehicles and other facilities/improvements, that are damaged by the Contractor will, at the election of the Owner, (1) be replaced/repared by the Contractor to the satisfaction of the Owner or (2) be replaced/repared by the Owner at the Contractor's expense.

#### PART 2 – PRODUCTS

Not used.

#### PART 3 – EXECUTION

Not used.

END OF SECTION

SECTION 01560 - PREVENTION, CONTROL AND ABATEMENT OF EROSION  
AND WATER POLLUTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This specification includes requirements for prevention, control and abatement of erosion, siltation and water pollution resulting from construction of the Project until Final Acceptance.
- B. Contractor will comply with all applicable provisions of local Codes concerning grading, filling, excavation, and soil removal.

1.02 PERMITS

It will be the responsibility of the Contractor to obtain all federal, state, and local permits and to conduct its Work in the manner designated by all applicable permits. Violations of any permit by the Contractor will in no way involve the Owner regardless of who obtained the permit initially.

1.03 ECOLOGICAL REQUIREMENTS

- A. Contractor shall take sufficient precautions to prevent pollution of rivers, streams, lakes, tidal waters, reservoirs, canals and other water impoundments with fuels, oils, bitumens, calcium chloride or other harmful materials. Also, Contractor shall conduct and schedule operations so as to avoid interference with movement of migratory fish. No residue from dust collectors or washers will be dumped into any live stream.
- B. Construction operations in rivers, streams, lakes, tidal waters, reservoirs, canals and other water impoundments will be restricted to those areas where it is necessary to perform filling or excavation to accomplish the Work shown in the Plans and to those areas which must be entered to construct temporary or permanent structures. As soon as conditions permit, rivers, streams, lakes, tidal waters, reservoirs, canals and other water impoundments will be promptly cleared of all obstructions placed therein or caused by construction operations.
- C. Except as necessary for construction, excavated material will not be deposited in rivers, streams, lakes, tidal waters, reservoirs, canals and other water impoundments, or in a position close enough thereto to be washed away by high water or runoff.
- D. Contractor shall not disturb lands or waters outside the limits of construction except as may be found necessary and authorized by the Owner.

1.04 SCHEDULING/COORDINATION

- A. Clearing and grubbing will be so scheduled and performed that grading operations can follow immediately thereafter. Grading operations will be so scheduled and performed that permanent erosion control features can follow immediately thereafter if conditions on the Project permit.

- B. Contractor shall schedule operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations, and the duration of exposed, uncompleted construction to the elements will be as short as practicable.

1.05 PROTECTION OF STORM DRAINS

- A. Storm drainage facilities, both open and closed conduit, serving the construction area will be protected from pollutants and contaminants by Contractor.
- B. If the Owner determines that siltation of drainage facilities has resulted due to the Project, the Owner will advise the Contractor to remove and properly dispose of the deposited materials and Contractor will comply.
- C. Should the Contractor fail to or elect not to remove the deposits, the Owner will provide maintenance cleaning as necessary and charge all costs of such service against the amount of money due or to become due the Contractor.

1.06 PREVENTION, CONTROL AND ABATEMENT REQUIREMENTS

- A. Contractor shall provide, install, construct, and maintain all coverings, mulching, sodding, sand bagging, berms, slope drains, hay and straw bales, sedimentation structures, or other devices necessary to meet City, State and Federal regulatory agency codes, rules and laws, and as indicated on the Drawings.
- B. The locations of and methods of operation in all detention areas, borrow pits, material supply pits and disposal areas furnished by the Contractor will meet the approval of the Owner as being such that erosion during and after completion of the Work will not likely result in detrimental siltation or water pollution.
- C. The Owner may limit the surface areas of unprotected erodible earth exposed by clearing and grubbing, excavation or filling operations and may direct the Contractor to provide immediate erosion or pollution control measures to prevent siltation or contamination of any river, stream, lake, tidal water, reservoir, canal, and other water impoundment or to prevent damage to the Project or property outside the Project limits.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

## SECTION 01561 - CONSTRUCTION CLEANING

### PART 1 - GENERAL

#### 1.01 REQUIREMENTS INCLUDED

- A. Contractor shall execute daily cleaning during progress of Work. Contractor shall execute final cleanup prior to Substantial Completion and again prior to Final Acceptance.
- B. Hazards Control:  
Contractor shall:
  - 1. Store volatile wastes in covered metal containers.
  - 2. Remove containers from premises daily.
  - 3. Prevent accumulation of wastes which create hazardous conditions.
  - 4. Provide adequate ventilation during use of volatile or noxious substances.
- C. Contractor shall conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws:
  - 1. Contractor shall not burn or bury rubbish and waste materials on Project site.
  - 2. Contractor shall not dispose of volatile wastes, such as mineral spirits, oil, or paint thinner, in storm or sanitary drains.
- D. Contractor shall transport waste materials and debris across Airport property in covered trucks.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

Contractor shall use cleaning materials recommended by manufacturer of surface to be cleaned which will not create hazards to health or property and which will not damage surfaces.

### PART 3 - EXECUTION

#### 3.01 CLEANING DURING CONSTRUCTION

- A. Contractor shall execute periodic cleaning to keep building, grounds, and public properties free of accumulation of waste materials, rubbish, and wind-blown debris resulting from construction operations.
- B. Contractor shall apply protective covering on newly installed Work where reasonably

required to ensure freedom from damage or deterioration at time of Substantial Completion and Final Acceptance. Contractor shall clean and perform maintenance on other newly installed Work as frequently as necessary through remainder of construction period.

- C. Contractor shall adjust and lubricate operable components to ensure operability without damaging effects.
- D. Contractor shall furnish on-site containers for collection of waste materials, debris, and rubbish.
- E. Contractor shall remove waste material, debris, and rubbish from Project site daily.
- F. Contractor shall not drop or throw materials from heights.
- G. Contractor shall continue cleaning daily until building is ready for occupancy.

### 3.02 DUST CONTROL

Contractor shall:

- A. Clean interior building areas prior to start of finish painting or special coatings.
- B. Wet down materials and rubbish to prevent blowing dust.
- C. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

### 3.03 FINAL CLEANING

- A. Contractor shall provide final cleaning of the Work, including all adjacent protection areas surface or unit of Work to normal "clean" condition expected for a first-class building cleaning and maintenance program. Contractor shall comply with manufacturer's instructions for cleaning operations. The following are examples, but not by way of limitation, of cleaning levels required:
  - 1. Removal of labels which are not required as permanent labels.
  - 2. Cleaning of transparent materials, including mirror, window, and door glass, to polished condition. Remove substances which are noticeable as vision obscuring materials.
  - 3. Replacing of broken glass and damaged transparent materials.
  - 4. Cleaning of exposed exterior and interior hard-surfaced finishes to dirt-free condition, free of dust, stains, films, and similar noticeable distracting substances.
  - 5. Restoring of reflective surface to original reflective condition.

6. Wiping of surfaces of mechanical and electrical equipment clean, including elevator equipment.
  7. Removal of excess lubrication and other substances.
  8. Removal of debris and surface dust from limited access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, and similar spaces.
  9. Broom cleaning of concrete floors in non-occupied spaces.
  10. Vacuum cleaning of carpeted surfaces and similar soft surfaces.
  11. Cleaning of plumbing fixtures to sanitary condition, free of stains, including those resulting from water exposure.
  12. Cleaning of equipment to condition of sanitation ready and acceptable for intended use.
  13. Cleaning of light fixtures and lamps to function with full efficiency.
  14. Cleaning of Project site, including landscape development areas, of litter and foreign substances.
  15. Sweeping of paved areas to broom-clean condition. Remove stains, petro-chemical spills, and other foreign deposits.
  16. Raking of grounds which are neither planted nor paved to smooth, even-textured surface.
- B. Contractor shall remove waste materials from Project site daily and dispose of in a lawful manner.
- C. Protection - Limiting Exposures: Contractor shall supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
- D. Removal of Protection:

Contractor shall remove temporary protection devices and facilities which were installed during course of the Work to protect previously completed Work during remainder of construction period.

END OF SECTION

## SECTION 01600 - MATERIALS AND EQUIPMENT

### PART 1 - GENERAL

#### 1.01 TRANSPORTATION AND HANDLING

Contractor shall:

- A. Deliver, handle, and store products in accordance with manufacturer's recommendations and by methods and means which will prevent damage, deterioration, and loss, including theft.
- B. Control delivery schedule to minimize long-term storage of products at Project site from overcrowding of construction spaces. Coordinate delivery and installation to minimize holding of storage times for products recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.
- C. Deliver products in undamaged conditions, in manufacturer's original containers and repackaging, with identifying labels intact and legible.
- D. Immediately upon delivery, inspect shipments for compliance with requirements of Contract Documents and accepted submittals and to verify that products are properly protected and undamaged.
- E. Promptly remove unsatisfactory materials from Project site.
- F. Furnish equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.
- G. Provide transportation and delivery F.O.B. Project Site.

#### 1.02 STORAGE

Contractor shall:

- A. Store materials subject to damage from exposure to weather in weather tight storage facilities of suitable size with floors raised above ground. Materials not subject to weather damage may be stored on blocks off ground.
- B. Store fabricated products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store products subject to damage by elements in weather tight enclosures. Maintain temperature and humidity within range required by manufacturer's instructions.
- C. Cover materials which are subject to deterioration with impervious sheet covering providing adequate ventilation to avoid condensation.
- D. Store loose granular materials in well-drained area on solid surfaces to prevent mixing with foreign matter and cover during inclement weather. Store cementitious and clay

products clear of earth or concrete floors, away from walls.

- E. Arrange storage in manner to permit easy access for inspections.
- F. Protect metal from damage, dirt, or dampness. Furnish flat, solid support for sheet products during storage.
- G. Make periodic inspections of stored materials to verify that products are maintained under specified conditions and are free from damage or deterioration.
- H. Not use materials in Work which have deteriorated, become damaged, or are otherwise unfit for use.
- I. Store and mix paints in assigned room or area kept under lock and key.
- J. Remove oil, rags, and other combustible materials daily, store in covered metal containers and take precautions to prevent fire hazards.
- K. Not load structure during construction by storing materials with load greater than structure can bear safely.

## PART 2 - PRODUCTS

### 2.01 MATERIAL AND EQUIPMENT INCORPORATED INTO WORK

Contractor shall:

- A. Comply with applicable Specifications and Standards.
- B. Comply with size, make, type, and quality specified or as specifically accepted in writing by Owner.
- C. Design, fabricate, and assemble products in accordance with engineering and shop practices normal to trade.
- D. To greatest extent possible, for each unit of Work, provide products, materials, or equipment of singular generic kind and from single source.
- E. Manufacture like parts of duplicate units to standard interchangeable sizes and gages. Two or more items of same kind may be identical by same manufacturer.
- F. Provide products suitable for service conditions.
- G. Adhere to equipment capacities, sizes, and dimensions shown or specified unless variations are specifically accepted in writing.
- H. Not use material or equipment for any purpose other than that for which it is designed or is specified.

- I. Nameplates:
  - 1. Not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view either in occupied spaces or on exterior of Work, except for Testing Laboratory approval labels and operating data.
  - 2. Locate required labels and stamps on concealed surface or, where required for observation after installation, on accessible surface which in occupied spaces are not conspicuous.
  
- J. Equipment Nameplates:
  - 1. Provide permanent nameplate on each item of service-connected or power-operated equipment.
  - 2. Indicate manufacturer, product name, model number, serial number, capacity, speed, ratings, and similar essential operating data.
  - 3. Locate nameplates on an easily accessed surface which, in occupied spaces, is not conspicuous.
  
- K. Provide products which comply with requirements, which are undamaged and unused at time of installation, and which include accessories, trim, finish, safety guards, and other devices and details needed for installation, intended use, and effect.
  
- L. Standard Products: Where available, provide standard products of types which have been produced and used previously and successfully on other projects and in similar applications.
  
- M. Contractor shall affix Owner property tags to all equipment required to be inventoried by Owner. Contractor shall verify requirement with Owner for each purchased equipment.

### PART 3 - EXECUTION

#### 3.01 MANUFACTURER'S INSTRUCTIONS

Contractor shall:

- A. When Contract Documents require that installation of Work will comply with manufacturer's printed instructions, obtain and distribute copies of instructions to parties in installation, including two copies to the Owner, prior to commencing Work.
- B. Maintain one set of complete instructions at Project site during installation and until completion.
- C. Maintain copies for Project Record Documents.

- D. Handle, install, connect, clean, condition, and adjust products in strict accord with manufacturer's instructions and in conformity with specified requirements.
- E. Inspect substrate to receive Work and conditions under which Work is to be performed.
- F. Notify the Owner in writing for further instructions, should job conditions or specified requirements conflict with manufacturer's instructions and not proceed with Work without clear instructions.
- G. Perform Work in accordance with manufacturer's instructions and not omit preparatory steps or installation procedures.
- H. Install Work during conditions of temperature, humidity, exposure, forecasted weather, and status of Project completion which will ensure best possible results for each item of material or equipment.
- I. Isolate noncompatible materials to prevent deterioration.
- J. Mount individual units of Work at industry recognized standard mounting heights for applications indicated and refer questionable mounting height choices to Owner for final decision.

### 3.02 PROTECTION

Contractor shall:

- A. Furnish protection against weather. Cover building openings to protect interior of building from weather.
- B. Maintain Work, materials, apparatus, and fixtures free from damage.
- C. Protect items having factory finish to prevent damage to finish and equipment.
- D. At end of day's Work, cover new Work likely to be damaged or otherwise protect as necessary.
- E. After installation, secure substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations.
- F. Remove protection when no longer needed and upon completion of Work, remove storage facilities from Project site.

END OF SECTION

## SECTION 01605 - PRODUCTS AND SUBSTITUTIONS

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. Definitions: Definitions used in this paragraph are not intended to negate the meaning of other terms used in the Contract Documents, including such terms as, "Specialties", "Systems", "Structure", "Finishes", "Accessories", "Furnishings", "Special construction" and similar terms. Such terms are self-explanatory and have recognized meanings in the construction industry.
1. "Products" are defined to include purchased items for incorporation into the Work, regardless of whether specifically purchased for Project or taken from Contractor's stock of previously purchased products.
  2. "Named Products" are products identified by use of the Manufacturer's name for a product, including such items as a make or model designation, as recorded in published product literature, of the latest issue as of the date of the Contract Documents.
  3. "Materials" are defined as products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed or applied to form units of Work.
  4. "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, etc).
- B. Substitutions: The Contractor's requests for changes in the products, materials, equipment and methods of construction required by the Contract Documents are considered requests for "substitutions" and are subject to the requirements specified herein.
1. The requirements for substitutions do not apply to specified Contractor options on products and construction methods. Revisions to Contract Documents, where requested by the Owner or Contractor's Design Professional, are "changes" not "substitutions".
  2. Requested substitutions during subcontractor bidding period, which have been accepted prior to Receipt of Bids, are included in Contract Documents and are not subject to requirements for substitutions as specified herein.
  3. Contractor's determination of and compliance with governing regulations and orders issued by governing authorities does not constitute "substitutions", and does not constitute a basis for Change Orders, except as provided for in the Contract Documents. Otherwise, Contractor's requests for changes in products, materials and methods of construction required by Contract Documents are

considered requests for "substitutions" and are subject to the requirements hereof.

C. Standards:

Refer to Specification Section 01095 - DEFINITIONS AND STANDARDS for acceptability of industry standards to products of Project and for acronyms used in text of Specification sections.

## 1.02 REQUIREMENTS INCLUDED

- A. Materials specified are to define standard of quality or performance and to establish basis for evaluation of selections.
- B. Size of each item of material and equipment shown on the Drawings is based on dimensions of individual manufacturers. While other manufacturers may be acceptable, it will be responsibility of the Contractor to determine whether or not material and equipment proposed will fit into available space.
- C. Compliance requirements for individual products as indicated in Contract Documents are multiple in nature and may include generic, descriptive, proprietary, performance, prescriptive, compliance with standards, compliance with codes, conformance with graphic details, and other similar forms and methods of indicating requirements, all of which must be complied with. Allowances, alternatives, and similar provisions of the Contract Documents will have bearing on selection process.
- D. Where materials or equipment are specified by trade or brand name, it is not intended to discriminate against an equivalent product of another manufacturer, except where specifically noted NO SUBSTITUTION.
- E. Contractor's options for selecting products are limited by Contract Document requirements and governing regulations and are not controlled by industry traditions or procedures experienced by Contractor on previous construction projects.
- F. Revisions to Contract Documents, where requested by Owner or Design Professional, are changes not substitutions.
- G. When specified products do not comply with requirements or are not a feasible selection, advise Owner before proceeding.

## 1.03 QUALITY ASSURANCE

- A. Source Limitations:
  - 1. To the greatest extent possible for each unit of Work, provide products, materials, or equipment of a singular generic kind from a single source.
  - 2. When it is discovered that specified products are available only from sources

that do not or cannot produce a quality adequate to complete Project requirements in a timely manner, consult with the Design Professional for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities to the fullest extent possible.

B. Compatibility of Options:

When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected will be compatible with products previously selected, even if previously selected products were also options. Complete compatibility between the various choices available to the Contractor is not assured by the various requirements of the Contract Documents but will be provided by the Contractor.

#### 1.04 SUBSTITUTIONS

A. Procedures:

1. During Bidding:

- a. Refer to requirements specified under Section 00100 - INSTRUCTIONS TO BIDDERS for substitutions during Bidding.

2. After Contract is Awarded:

- a. Contractor's request for substitutions will be received and considered when extensive revisions to Contract Documents are not required and changes are in keeping with general intent of Contract Documents, when timely, fully documented and properly submitted, and when one or more of the following conditions are satisfied, all as judged by the Owner. Otherwise requests will be returned without action except to record non-compliance with these requirements.

- (1) Where request is directly related to an "or equal" clause or other language of same effect in Contract Documents.
- (2) Where required product, material or method cannot be provided within Contract Time, but not as a result of Contractor's failure to pursue the Work promptly or to coordinate various activities properly.
- (3) Where required product, material or method cannot be provided in a manner which is compatible with other materials of the Work, or cannot be properly coordinated therewith, or cannot be warranted as required, or cannot be used without

adversely affecting Owner's insurance coverage on completed Work, or will encounter other substantial non-compliances which are not possible to otherwise overcome except by making requested substitution, which Contractor thereby certifies to overcome such non-compatibility, non-coordination, non-warranty, non-insurability or other non-compliance as claimed.

- (4) Where required product, material or method cannot receive required approval by a governing authority and requested substitution can be so approved.
- b. Noncomplying requests will be returned without action except to record noncompliance with requirements.
  - c. Properties of proposed substitution, including but not limited to the following, as applicable, will be considered:
    - (1) Physical dimension requirements to satisfy space limitations.
    - (2) Static and dynamic weight limitations, structural properties.
    - (3) Audible noise levels.
    - (4) Vibration generation.
    - (5) Interchangeability of parts or components.
    - (6) Accessibility for maintenance, possible removal or replacement.
    - (7) Colors, textures, and compatibility with other materials, products, assemblies, and components.
    - (8) Equipment capacities and performance characteristics.
    - (9) Electromagnetic interference.
  - d. Substitutions will not be considered if:
    - (1) They are indicated or implied on Shop Drawing or Project Data submittals without formal request.
    - (2) Acceptance will require substantial revision of Contract Documents as determined by Owner.
    - (3) Additional cost to Owner is involved.
    - (4) Requests for substitutions are not submitted in a timely fashion.
  - e. Contractor will bear all costs for additional compensation to Owner's Design Professional for redesign and evaluation services, increased costs of other work by Owner or separate contractors, and other incurred costs or similar considerations due to acceptance of substitution.
  - f. Should substitution be accepted under provisions of above clauses, and substitution subsequently proves defective or otherwise unsatisfactory for service for which it was intended within warranty period, the Contractor will replace defective material with material specified at no additional cost to Owner.

- g. Submittal of, and Contractor's acceptance of, shop drawings, product data, or samples which relate to work not complying with requirements of Contract Documents does not constitute an acceptable and valid request for substitution, nor approval thereof.
- h. If proposed substitution is not accepted or all requirements are not entirely complied with, provide specified product or material. Costs for delays will be borne by Contractor.

B. Form of Requests:

- 1. Submit three copies, fully identified for product or method being replaced by substitution, including related Specifications section and drawing number(s), and fully documented to show compliance with requirements for substitutions.
- 2. Proposed substitutions will state:
  - a. Product Data, Drawings.
  - b. Changes required in other elements of Work because of substitution.
  - c. Availability of maintenance service and source of replacement parts as applicable.
  - d. When requested, test data from independent testing laboratory to show compliance with performance characteristics specified.
  - e. Related Specifications sections and drawing numbers, fully documented to show compliance with requirements for substitutions.
  - f. Description of methods.
  - g. Samples where applicable.
  - h. Detailed comparison of significant qualities between specified item and proposed substitution.
  - i. Statement of effect on construction time and coordination with other affected work.
  - j. Statement to the effect that proposed substitution will result in Work equal to or better than Work originally indicated.
  - k. Cost information or proposal.

C. Shop Drawings, Product Data and Sample Submittals:

Contractor's submittal of (and Owner's acceptance of) Shop Drawings, Product Data or samples which relate to Work not complying with requirements of Contract Documents does not constitute an acceptable or valid request for a substitution, nor approval thereof.

#### 1.05 CONTRACTOR'S REPRESENTATIONS

- A. Request for substitution constitutes representation that Contractor:
  - 1. Has investigated proposed product and determined that it is equal to or superior in all respects to that specified.
  - 2. Will furnish same warranties or bonds for substitution as for product specified.
  - 3. Will coordinate installation of accepted substitution into Work and make such other changes as may be required to make Work complete in all respects.
  - 4. Waives all claims for additional costs which may subsequently become apparent.

#### 1.06 OWNER'S DUTIES

- A. Owner will determine acceptability of proposed substitutions.
- B. Owner will review requests for substitutions with reasonable promptness and notify Contractor, in writing, of decision to accept or reject requested substitution. Owners judgment and decision is final.
- C. Review of Owner's acceptance or failure to take exceptions to substitutions or other review documents will not relieve Contractor of its responsibility for item actually meeting performance or other requirements of Contract Documents.

#### 1.07 SUBMITTALS

- A. Product List Schedule:
  - 1. Prepare a schedule showing products specified in a tabular form acceptable to the Owner. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.
  - 2. Coordinate the product listing with the Contractor's Construction Schedule and the Schedule of Submittals.
  - 3. Form:
    - a. Prepare the product listing schedule with information on each item tabulated under the following column headings:

- (1) Related Specification heading number.
- (2) Generic name used in Contract Documents.
- (3) Proprietary name, model number and similar designations.
- (4) Manufacturer's name and address.
- (5) Supplier's name and address.
- (6) Installer's name and address.

4. Initial Submittal:

Within 14 days after date of commencement of the Work, submit three copies of an initial product list schedule. Provide a written explanation for omissions of data and for known variations from Contract requirements.

5. Owner's Action:

a. The Owner will respond in writing to the Contractor. The Owner's response will include the following:

- (1) A list of unacceptable product selections, containing a brief explanation of reasons for this action.
- (2) A request for additional data necessary for the review and possible acceptance of the products and manufacturers listed.

## PART 2 - PRODUCTS

### 2.01 GENERAL PRODUCT REQUIREMENTS

A. General:

1. Provide products which comply with requirements, which are undamaged and unused at time of installation, and which are complete with accessories, trim, finish, safety guards, and other devices and details needed for complete installation and for intended use and effect.
2. Compliance with codes, graphic details, allowances, and similar provisions of the Contract Documents also have a bearing on the selection process.
3. Refer to Section 01600 - MATERIALS AND EQUIPMENT.

B. Standard Products:

Where available, provide standard products of types which have been produced and used previously and successfully on other projects and in similar applications.

C. Continued Availability:

Where additional amounts of a product, by nature of its application, are likely to be needed by Owner at a later date for maintenance and repair or replacement work, provide a standard, domestically produced product which is likely to be available to Owner at such later date.

## 2.02 PRODUCT SELECTION LIMITATIONS

A. Product Selection Procedures: Contractor's options in product selection are governed by the Contract Documents and governing regulations, not by previous industry tradition or project experience. Procedures governing product selection include, but are not limited to, the following:

1. Proprietary Specification Requirements:

- a. Where a single product or manufacturer is named, provide the product indicated. Other products may be considered by the Owner in compliance with provisions concerning substitutions. Where the term NO SUBSTITUTION is indicated, provide only product indicated.
- b. Advise the Owner before proceeding when it is discovered that the named product is not a feasible solution.

2. Semi-proprietary Specification Requirements:

- a. Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted, unless the Specifications indicate possible consideration of other products.
- b. Acceptable Manufacturers: When products are specified by one or more manufacturers' model or performance criteria with reference to other acceptable manufacturers, products manufactured by acceptable manufacturers listed must meet minimum performance criteria specified or meet quality of models specified.
- c. Advise the Owner before proceeding when it is discovered that the named product is not a feasible solution.
- d. Where products or manufacturers are specified by name accompanied by the term "or equal" or "or approved equal," comply with Item 1.04 SUBSTITUTIONS of this Section for procedural requirements governing substitutions to obtain approval for use of an unnamed product.

3. Non-Proprietary Specifications:

When the Contract Documents list products or manufacturers that are available and may be incorporated in the Work but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract Document requirements. Comply with Item 1.04

SUBSTITUTIONS of this Section for procedural requirements to obtain approval for use of an unnamed product.

4. Descriptive Specification Requirements:

Where Contract Documents describe a product or assembly listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides those characteristics and otherwise complies with the Contract Documents.

5. Prescriptive Requirements:

Provide products which have been produced in accordance with prescriptive requirements, using specified materials and components and complying with specified requirements for mixing, fabricating, curing, finishing, testing, and similar operations in manufacturing process.

6. Performance Specification Requirements:

- a. Where Contract Documents require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
- b. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.

7. Compliance with Standards, Codes and Regulations:

Where the Contract Documents only require compliance with an imposed code, standard or regulation, select a product that complies with the code, standard or regulation specified.

8. Visual Matching:

- a. Where Contract Documents require matching an established sample, the Owner's decision will be final on whether a proposed product matches satisfactorily.
- b. Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another category, or for noncompliance with specified requirements.

9. Visual Selection:

- a. Where specified product requirements include the phrase ".....as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Owner will select the color, pattern and texture from the product line selected.
- b. Where specified product requirements include "..as selected from standard colors, patterns, textures available within the industry..", or words to that effect, selection of product complying with requirements and within established cost category is Owner's selection, including designation of manufacturer where necessary to obtain desired color, pattern, or texture.

10. Compatibility of Products:

- a. Where more than one choice is available as an option for Contractor's selection of product or material, select the option which is compatible with other products and materials already selected which may have been from among options for other products and materials.
- b. Total compatibility among options is not assured by limitations within Contract Documents, but must be provided by Contractor.
- c. Compatibility is basic general requirement of product and material selections.

## 2.03 NAMEPLATES

- A. Except as otherwise indicated for required approval labels and operating data, do not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view either in occupied spaces or on exterior of the Work.
  - 1. Labels: Locate required labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface which, in occupied spaces, is not conspicuous.
  - 2. Equipment Nameplates: Provide permanent nameplate on each item of service-connected or power-operated equipment. Locate nameplates on an easily accessed surface which, in occupied spaces, is not conspicuous. The nameplate will contain the following information and other essential operating data:
    - a. Name of product and manufacturer.
    - b. Model and serial number.
    - c. Capacity.

- d. Speed.
- e. Ratings.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION OF PRODUCTS

- A. Except as otherwise indicated in individual sections of the Contract Documents, comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
- B. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion of the whole Work.

END OF SECTION

## SECTION 01640 - PRODUCT HANDLING

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

A. Scope:

Contractor shall protect products scheduled for use in the Work by means including, but not necessarily limited to, those described in this Section.

B. Related Work:

Additional procedures also may be prescribed in other Sections of these Contract Documents.

#### 1.02 QUALITY ASSURANCE

Contractor shall:

A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of Work and materials and:

1. Deliver, handle and store products in accordance with manufacturer's recommendations and by methods and means which will prevent damage, deterioration, and loss, including theft.
2. Control delivery schedules to minimize long-term storage of products at Project site and overcrowding of construction spaces.
3. In particular, provide delivery/installation coordination to ensure minimum holding or storage times for products recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.
4. Deliver products to the Project site in the manufacturer's sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
5. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
6. Store products at the Project site in a manner that will facilitate inspection and measurement of quantity or counting of units.
7. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
8. Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation.

Maintain temperature and humidity within range required by manufacturer's instructions.

#### 1.03 MANUFACTURER'S RECOMMENDATIONS

Except as otherwise approved by the Owner, Design-Builder shall determine and comply with manufacturer's recommendations on product handling, storage, and protection.

#### 1.04 PACKAGING

- A. Contractor shall deliver products to the Project site in their manufacturer's original containers, with labels intact and legible.

Contractor shall:

1. Maintain packaged materials with seals unbroken and labels intact until time of use.
2. Promptly remove damaged material and unsuitable items from the Project site, and promptly replace with material(s) meeting the specified requirements, at no additional cost to the Owner.

- B. The Owner may reject as non-complying such material and products that do not bear identification satisfactory to the Owner as to manufacturer, grade, quality, and other pertinent information.

#### 1.05 PROTECTION

Contractor shall:

- A. Protect finished surfaces, including jambs and soffits of openings used as passageways, through which equipment and materials are handled.
- B. Provide protection for finished floor surfaces in traffic areas prior to allowing equipment or materials to be moved over such surfaces.
- C. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

#### 1.06 REPAIRS AND REPLACEMENTS

Contractor shall:

- A. In the event of damage, promptly make replacements and repairs to the approval of the Owner and at no additional cost to the Owner.
- B. Additional time required to secure replacements and to make repairs will not be considered by the Owner to justify an extension in the Contract Time.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

## SECTION 01650 – CONSTRUCTION SALVAGE AND WASTE MANAGEMENT

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This section includes demolition and construction salvage and construction waste management requirements. This section does not include hazardous materials removed. Refer to other sections, as applicable, for hazardous materials removed.

#### 1.02 DEFINITIONS

- A. Alternative Daily Cover (ADC): Material, other than earthen material, placed on the surface of the active face of a municipal solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter and scavenging.
- B. Co-mingled or Off-site Separation: Collecting all material types into a single bin or mixed collection System and separating the waste materials into recyclable material types at an off-site facility.
- C. Construction and Demolition Waste (CDW): Includes all nonhazardous solid wastes resulting from construction, remodeling, alterations, repair, and demolition. This includes material that is recycled, reused, salvaged or disposed as garbage.
- D. Diversion Rate:  $(\text{Total Waste Diverted from Landfill} / \text{Total Waste produced by project}) \times 100$ .
- E. Garbage: Product or material typically considered to be trash or debris that is unable to be salvaged for resale, salvaged and reused, returned, or recycled.
- F. Hazardous Materials/Hazardous Substance: Any substance that is or becomes defined as a “hazardous waste”, “hazardous material”, “hazardous substance”, “pollutant”, or “contaminant” under any environmental law or any substance that is toxic, explosive, corrosive, flammable, infectious, radioactive, carcinogenic, mutagenic, or otherwise hazardous or any substance that contains gasoline, diesel fuel, oil, or other petroleum hydrocarbons or volatile organic compounds; or any substance that contains polychlorinated biphenyls, asbestos or urea Formaldehyde foam insulation; or any substance that contains or emits radioactive particles, waves, or materials, including, without limitation, radon gas.
- G. Land Clearing Debris (LCD): Materials that are natural (e.g., rock, soil, stone, vegetation). This also includes uncontaminated soils that are designated as geotechnically unsuitable or excess excavation.

- H. Proper Disposal: Disposal pursuant to all laws, rules, regulations and codes of the law.
- I. Recyclable Materials: Products and materials that can be recovered and remanufactured into new products.
- J. Recycling: The process of sorting, cleaning, treating and reconstituting materials for the purpose of using the material in the manufacture of a new product. This may be conducted on-site (e.g., as in the grinding of concrete).
- K. Recycling Facility: An operation that is permitted to accept materials for the purpose of processing the materials into an altered form for the manufacture of a new product.
- L. Salvage for Reuse: Existing usable product or material that can be saved and reused in some manner on the project site or other projects off-site.
- M. Salvage for Resale: Existing usable product or material that can be saved and removed intact (as is) from the project site to another site for resale to others without remanufacturing.
- N. Solid Waste including Universal Waste: Any waste that is or becomes defined as a “solid waste”, “waste”, “special waste”, “garbage”, or “commercial solid waste” under any environmental law or any waste that can require special handling and management, including but not limited to, white goods, waste tires, used oil, lead-acid batteries, construction and demolition debris, ash residue, yard trash, biological wastes, pesticides, pharmaceuticals and mercury-containing devices and lamps; or any waste that is not hazardous waste and that is not prohibited from disposal in a lined landfill or yard trash, construction and demolition debris, processed tires, asbestos, carpet, cardboard, paper, glass, plastic, or furniture other than appliances.
- O. Source Reduction: Eliminating project waste through reduced packaging, prefabrication, modular construction, or incorporating standard material lengths or sizes into construction documents.
- P. Source-Separated Materials: Materials that are sorted at the site into separate containers for the purpose of reuse or recycling.
- Q. Sources Separation: Sorting the recovered materials into specific material types with no, or a minimum amount of, cross-contamination on site.
- R. Time-Based Separation: Collecting waste during each phase of construction or deconstruction that results in primarily one major type of recovered material. The material is removed before it becomes mixed with the material from the next phase of construction.
- S. Waste Diversion: A management activity that disposes of waste through

methods other than incineration or landfilling. Examples include reuse and recycling.

- T. Waste-to-Energy: The conversion of non-recyclable waste materials into usable heat, electricity, or fuel through a variety of processes, including combustion, anaerobic digestion, and landfill gas (LFG) recovery.

### 1.03 SUBMITTALS

- A. Construction Waste Management Plan
- B. Contractor Staging Area Site Plan
- C. Construction Waste Management Monthly Report
- D. Construction Waste Management Final Report

### 1.04 PERFORMANCE GOALS

- A. General: Divert CDW and LCD from landfill disposal by one or more combination of the following activities:
  - 1. Salvage
  - 2. Reuse or refurbishment
  - 3. Source separated recycling
  - 4. Co-mingled recycling
  - 5. Donation to approved non-profit organization
  - 6. Resale in accordance with Authority Standard Procedure S440.05 Transfer/Disposal of Equipment/Construction Salvage
  - 7. Incineration in approved waste-to-energy facility
- B. CDW materials that can be salvaged, resold, reused or recycled, include, but are not limited to the following:
  - 1. Clean dimensional wood, pallet wood, plywood, Oriented Strand Board (OSB), and particleboard
  - 2. Asphalt
  - 3. Concrete and concrete masonry units
  - 4. Brick
  - 5. Ferrous and non-ferrous metals
  - 6. Gypsum products
  - 7. Acoustical ceiling tile
  - 8. Glass, both window and bottle
  - 9. Plastics, including plastic film
  - 10. Carpet and pad
  - 11. Cardboard packaging
  - 12. Insulation
  - 13. Field office waste paper, aluminum cans, glass, plastic, and

- cardboard
- 14. Non-hazardous solid waste or universal waste

#### 1.05 CONSTRUCTION WASTE MANAGEMENT PLAN

- A. Submit to the Engineer a Construction Waste Management (CWM) Plan narrative in accordance with these specifications.
- B. The Construction Waste Management Plan shall include the following:
  - 1. Name of designated Waste Management Coordinator.
  - 2. The plan must account for all materials, including land-clearing debris, materials to be used for alternative daily cover (ADC), and other materials not contributing to diversion but not included in the diverted waste total.
  - 3. A list of demolition or construction waste materials that will be diverted from landfill disposal. Materials may be structural or non-structural.
  - 4. Include approximate percentage of overall project waste each materials represents.
  - 5. Separately track CDW, LCD, landfill disposal, and recycled materials.
  - 6. Identify materials as demolition or construction waste.
  - 7. Include reference to separate hazardous materials removal, tracking and disposal procedures in accordance with other sections, as applicable.
  - 8. Identify waste handling methods to be used, including one or more of the following:
    - a. Method 1 - Contractor or subcontractor(s) hauls recyclable materials to an approved recycling facility.
    - b. Method 2 - Contracting with diversion/recycling hauler to haul recyclable material to an approved recycling or material recovery facility.
    - c. Method 3 - Recyclable material reuse on-site.
    - d. Method 4 - Recyclable material salvage for resale.
  - 9. Identification of each recycling or material recovery facility to be utilized, including name, address, types of materials being recycled at each facility and/or how the materials will be disposed or reused onsite.
  - 10. Description of the method to be employed in collecting, and handling, waste materials.
  - 11. Description of methods to communicate Construction Waste Management Plan to personnel and subcontractors.

#### 1.06 CONTRACTOR STAGING AREA SITE PLAN

- A. Submit a Contractor Staging Area Site Plan to achieve salvage and waste management goals prior to the start of construction.
  - 1. Identify designated areas in coordination with the Owner for stockpiling recyclable materials, including non-contaminated soils for re-use on

- site, including but not limited to infrastructure elevation changes, development of noise berms and consideration for landscape needs.
2. Designate on-airport contractor haul routes in coordination with the Owner, focusing on safety and minimizing on-airport travel distances.

#### 1.07 CONSTRUCTION WASTE MANAGEMENT MONTHLY REPORTS

- A. Submit a monthly construction waste management status report.
  1. Include items-to-date as noted in 1.08 CONSTRUCTION WASTE MANAGEMENT FINAL REPORT.

#### 1.08 CONSTRUCTION WASTE MANAGEMENT FINAL REPORT

- A. Submit a Construction Waste Management Final Report. The report shall list the following for the project:
  1. A record of each waste material type and quantity recycled, reused, salvaged, or disposed from the Project.
  2. Include total quantity of waste material removed from the site and hauled to a landfill.
  3. Percentage of total waste material generated that was recycled, reused, or salvaged.
  4. Documentation of recycling rates for commingled facilities if applicable.
  5. Total waste per gross floor area of project if applicable.
- B. Quantities shall be reported by weight (tons) unless otherwise approved by the Owner.
- C. Submit copies of manifests, weight tickets, recycling/disposal receipts or invoices, which validate the calculations or a signed certification of completeness and accuracy of the final quantities reported.
- D. Submit a construction and demolition waste calculator or equivalent tool, tracking total and diverted waste streams.
- E. The final reporting of hazardous materials removal will be in accordance with other sections and will not be included in the project's tracking total.

#### 1.09 QUALITY ASSURANCE

- A. Regulatory Requirements: The Contractor shall maintain compliance with all applicable Federal, State, or Local laws.
- B. Disposal Sites, Recyclers and Waste Materials Processors: All facilities utilized for management of any materials covered under this specification must maintain all necessary permits as required by federal, state and local

jurisdictions.

PART 2 – PRODUCTS - Not used.

PART 3 – EXECUTION

3.01 SOURCE-SEPARATED CDW AND LCD RECYCLING

- A. Provide individual containers for separate types of CDW and LCD to be recycled clearly labeled with a list of acceptable and unacceptable materials.

3.02 CO-MINGLED CDW AND LCD RECYCLING

- A. Provide containers for co-mingled CDW and LCD to be recycled, clearly labeled with a list of acceptable and unacceptable materials.

3.03 LANDFILL

- A. Provide containers for CDW and LCD that are to be disposed of in a landfill clearly labeled as such.

3.04 REMOVAL OF CDW and LCD FROM PROJECT SITE

- A. Transport CDW and LCD off Owner's property and legally dispose of it.

PART 4 – MEASUREMENT AND PAYMENT

4.01 GENERAL

- A. No separate measurement or payment will be made for the work required by this section. The cost for this portion of the Work will be considered incidental to and included in the payments made for the applicable project amount or bid item(s).

END OF SECTION

## SECTION 01700 - PROJECT CLOSEOUT

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

Closeout is hereby defined as the performance of activities and the preparation and submittal of documents following Substantial Completion as specified in the Contract Documents as necessary to Final Acceptance and Contract closure. Specific requirements for individual units of Work are specified in other Sections.

#### 1.02 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. Prior to requesting Owner's and Design Professional inspection for Certificate of Substantial Completion, for either the whole Work or designated portions thereof, complete the following and list known exceptions in request:
1. In progress payment request, coinciding with, or first following date claimed, show 100% completion for portion of Work claimed as substantially completed, or list incomplete items, value of incompleteness, and reasons for being incomplete.
  2. Include supporting documentation for completion as indicated in the Contract Documents.
  3. Submit statement showing accounting of changes to the Contract sum.
  4. Advise Owner of pending insurance change-over requirements.
  5. Obtain and submit releases enabling Owner's full and unrestricted use of the Work and access to services and utilities, including, where required, occupancy permits, operating certificates, and similar releases.
  6. Deliver tools, spare parts, extra stocks of materials, and similar physical items to Owner.
  7. Make final change-over of locks and transmit keys to Owner, and advise Owner's personnel of change-over in security provisions.
  8. Complete start-up testing of systems and instructions of Owner's operating-maintenance personnel. Discontinue, or change over, and remove from Project site temporary facilities and services, along with construction tools and facilities, mock-ups, and similar elements.
- B. Cleaning and Repairs:
- Immediately prior to the Owner's and Design Professional's inspection for Substantial Completion of the whole Work or designated portions thereof, the Contractor will completely clean the premises. Concrete and ceramic surfaces will be cleaned and

washed. Resilient coverings will be cleaned, waxed and buffed. Woodwork will be dusted and cleaned. Sash, fixtures, and equipment will be thoroughly cleaned. Stains, spots, dust, marks, and smears will be removed from all surfaces. Hardware and all metal surfaces will be cleaned and polished. Glass and plastic surfaces will be thoroughly cleaned by professional window cleaners. All damaged, broken or scratched glass or plastic will be replaced by the Contractor at the Contractor's expense. Refer to Section 01561 - CONSTRUCTION CLEANING.

C. Inspection Procedures:

1. Incomplete Items Prior to Substantial Completion:
  - a. One week prior to anticipated date of Substantial Completion, the Contractor will furnish the Owner a list of items which Contractor expects will be incomplete at date of Substantial Completion.
  - b. The Owner will review the list and confirm its acceptability, or itemize objections and transmit such to the Contractor for action. Approval of this list by Owner will be a precondition for conducting the Substantial Completion inspection.
2. Upon receipt of Contractor's request for inspection, the Owner will either proceed with inspection or advise Contractor of prerequisites that are not fulfilled. Following initial inspection, the Owner will either prepare the Certificate of Substantial Completion or advise Contractor of work which must be performed prior to issuance of certificate. The Owner will repeat inspection when requested and when assured that the work has been substantially completed. A listing of work to be completed or corrected and the submission of closeout documents specified in Paragraph 1.03.A.1 will constitute the Final Acceptance punch list.
  - a. For projects under \$10 million, the Final Acceptance punch list will be developed within 30 days after Substantial Completion and will be provided to the Contractor within five days after its completion.
  - b. For projects over \$10 million, the Final Acceptance punch list will be developed within 60 days after Substantial Completion and will be provided to the Contractor within five days after its completion.
3. Following Substantial Completion, the Contractor will correct or complete all Final Acceptance punch list items, excluding closeout documents, to the satisfaction of the Owner within 30 days after delivering the Final Acceptance punch list. If subsequent inspections are necessary after the prescribed time in order to eliminate all deficiencies, the cost of all subsequent inspections with respect to Owner's time will be paid by the Contractor. When ready, the Contractor will request in writing a final inspection of the Work. Upon completion of re-inspection, the Owner will either prepare a Certificate of Final Acceptance or advise Contractor of Work that is not completed or obligations that are not fulfilled as required for Final Acceptance. If necessary, procedures

will be repeated. In the event of unacceptable Work discovered on the final inspection or if the submission of the closeout document is incomplete, the issuance of the Certificate of Final Acceptance will be withheld until all Final Acceptance punch list items and closeout documents are corrected or submitted to the Owner's satisfaction.

### 1.03 PREREQUISITES FOR FINAL COMPLETION AND ACCEPTANCE

- A. Prior to requesting Owner's final inspection for Certification of Final Acceptance as required by this Part 2 Contract, complete the following and list known exceptions in requests:
1. Submit certified copy of Final Acceptance punch list with a statement that each item has been completed, submitted or otherwise resolved for acceptance, and has been endorsed and dated by Owner. The Final Acceptance punch list will contain the requirement that the following named items will be submitted as closeout documents:
    - a. Consent of Surety to Payment
    - b. Contractor's Final Payment Affidavit.
    - c. Contractor's Affidavit of Release of Liens
    - d. List of subcontractors and suppliers
    - e. Final release of lien from each subcontractor and supplier listed in d. above
    - f. Statement of compliance with labor standards and payment of all applicable taxes
    - g. Statement of Contractor's one-year general warranty
    - h. Specific warranties as specified in Contract Documents
    - i. Accounting of final Contract amount
    - j. Accounting of actual DBE (W/MBE) participation
    - k. As-Built drawings sufficient for the production of record drawings
    - l. O&M manuals, Record Project Manual and record documents (see paragraph 1.06)
    - m. Evidence of continuing insurance complying with specified requirements
    - n. Contractor's final pay application
    - o. Final amendment – when applicable
  2. Submit final meter readings for utilities, measured record of stored fuel, and similar data either as of time of Substantial Completion or when Owner took possession of and responsibility for corresponding elements of the Work.
  3. Complete final cleaning requirements, including touch-up of marred surfaces. Refer to Section 01561 - CONSTRUCTION CLEANING, Paragraph 3.03 FINAL CLEANING.
  4. Touch-up and otherwise repair and restore marred exposed finishes.

### 1.04 PREREQUISITES TO FINAL PAYMENT

A. Final Payment: Final Payment will be made after Final Acceptance of the whole Work by the Owner upon request by the Contractor and on condition that the Contractor:

1. Acceptance and final payment: The Owner will check the final estimate submitted by the Contractor of the items of Work actually performed. The Contractor will approve the Owner's final estimate or advise the Owner of Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities.

The Contractor and the Owner will resolve all disputes in the measurement and computation of final quantities to be paid within 30 days of the Contractor's submission of the final estimates. If, after such 30 day period, a dispute still exists, the Contractor may approve the Owner's estimate under protest of the portions of Work in dispute, and such disputed quantities will be considered by the Owner as a claim in accordance with the Contract Documents.

- a. After the Contractor has approved, or approved under protest, the Owner's final estimate, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the Contract. All prior progress payments will be subject to correction in the final estimate and payment.
- b. If the Contractor has filed a claim for additional compensation under the provisions of the Contract, such claims will be considered by the Owner. Upon final resolution of such claims, any additional payment determined to be due the Contractor, if any, will be paid.

#### 1.05 COMPLIANCES

- A. Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at Project site, bury debris or excess materials on Owner's property, or discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of in a lawful manner.
- B. Where extra materials of value remain after Work has been completed and become Owner's property, they will be relocated and stored as directed by Owner.

#### 1.06 RECORD DOCUMENT SUBMITTALS

- A. Specific requirements for record documents are shown in this Section. Other requirements are indicated in the General Conditions. General submittal requirements are indicated in submittals sections. Contractor should not use record documents for construction purposes, should protect record documents from deterioration and loss in a secure, fire-resistant location and should provide access to record documents for Owner's reference during normal working hours.
  1. Definition: Record documents are defined to include those documents relating directly to performance of the Work which Contractor is required to prepare or

maintain for Owner's records and which record the Work as actually performed. In particular, record documents show changes in the Work in relation to way in which shown and specified by original Contract Documents and show additional information of value to Owner's records but not indicated by original Contract Documents. Record documents include newly-prepared drawings (if any are specified), marked-up copies of Contract Documents, specifications, addenda and change orders, field records for variable and concealed conditions such as excavations and foundations, and miscellaneous record information on Work which is otherwise recorded only schematically or not at all.

2. Record Drawings: Upon receipt of acceptable as-built drawings, Design-Builder will produce the official record drawings in the manner prescribed by the Contract Documents. The Contractor will submit the as-built drawings to the Owner for coordination.
3. Record Project Manual: Upon completion of mark-up, Contractor will submit to Owner for Owner's records.
4. Maintenance Manuals: Contractor will complete, place in order, properly identify and submit to Owner for Owner's records.
5. Miscellaneous Record Submittals: Complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Contractor should submit to Owner for Owner's records.

B. Contractor's as-built drawings:

1. As-built drawings: The Contractor will maintain a set of as-built drawings at the Project site. These will be kept legible and current and will be available for inspection at all times by the Owner. Changes or work added on these drawings will be shown in a contrasting color.
  - a. Mark-up Procedure: During progress of the Work, maintain a white-set (blue-line or black-line) of contract drawings and shop drawings, with mark-up of actual installations which vary substantially from the Work as originally shown. Mark fully and accurately whatever drawing is most capable of showing actual physical condition. Where shop drawings are marked-up, mark cross-reference on contract drawings at corresponding location. Mark with erasable colored pencil, using separate colors where feasible to distinguish between changes for different categories of Work at same general location. Mark-up important additional information which was either shown schematically or omitted from original drawings. Give particular attention to information on Work concealed which would be difficult to identify or measure and record at a later date. Note alternate numbers, change order numbers and similar identification. Require each person preparing mark-up to initial and date mark-up and indicate name of firm. Label each sheet "AS-BUILT" in 1/2 inch high letters. Contractor will provide in BIM format if BIM specification submittals are required

- b. Show actual position of all underground and otherwise concealed civil, mechanical and electrical lines, conduit, pipes, ducts, etc. Items in areas with accessible ceilings or other ready access will not be considered as being concealed.
- c. In showing changes in the Work, use the same legends as used on the original drawings. Indicate exact locations by dimensions and exact elevations by job datum. Give dimensions from a permanent point.
- d. When manholes, boxes, underground conduits, plumbing hot or chilled water lines, inverts, etc., are involved as part of the Work, the Contractor will furnish true elevations and locations, all properly referenced by using the original bench mark used for this Project.
- e. The Contractor will submit completed as-built drawings to the Owner for coordination.
- f. As-built drawings will contain the names, addresses and phone numbers of the Contractor and the major subcontractors.
- g. The Owner will be the sole judge of the acceptability of the as-built drawings. Receipt and acceptance of the as-built drawings is a pre-requisite for Final Payment.

C. Record Project Manual:

- 1. During progress of the work, maintain one copy of the record project manual, including addenda, change orders and similar modifications issued in printed form during construction. Mark-up variations in actual Work in comparison with text of specification and modification as issued. Give particular attention to substitutions, selection of options, and similar information on Work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data, where applicable.
- 2. Where record project manual is printed on one side of page only, mark variation on blank left-hand pages of record project manual, facing printed right-hand pages containing original text affected by variation.
- 3. Upon completion of the Work, the document information maintained during construction such as addenda, alternates, construction change directives, change orders, work orders, etc. will be recorded as follows:
  - a. Neatly cross out the non-conforming portion of the record project manual and add by writing in the revised portion of the record project manual. Do not revise the record project manual by cutting and pasting the actual addenda, alternates, construction change directive, change orders, work orders, etc., as actually issued by the Owner. The revisions have to be actually written by the Contractor.

- b. The volume(s) of record project manual will be clearly marked "PROJECT RECORD" in 1/2 inch high letters and bear the name of the Contractor and where applicable, the name of the subcontractor.
  - c. The Contractor will review the completed record project manual and ascertain that all data furnished in the record project manual is accurate and truly represents the Work as actually installed.
  - d. Any deviations from the method of executing the record project manual as described above will be considered just cause for disapproval by the Owner and the Design-Builder will be required to conform and resubmit.
  - e. Submit the record project manual to the Owner for compliance review and approval.
  - f. Upon Owner's approval, the Contractor will submit the completed record project manual and two copies of the record project manual (at Contractor's expense) to the Owner.
4. Information maintained during construction such as addenda, alternates, construction change directives, change orders, work orders, etc. will also be electronically recorded in original word processed documents using strike-throughs for deletions, bold and italic for revisions and additions, and/or other acceptable method(s) where feasible to distinguish between changes.

D. Record Product Data:

During progress of the Work, maintain one copy of each product data submittal and mark-up significant variations in the actual Work in comparison with submitted information. Include both variations in product as delivered to Project site and variations from manufacturer's instructions and recommendations for installation. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned at a later date by direct observation. Note related change orders and mark-up of record drawings and specifications. Upon completion of mark-up, submit three complete sets of product data submittal to Owner for Owner's records. Label each data submittal "PROJECT RECORD" in 1/2 inch high letters.

E. Record Sample Submittal:

Immediately prior to date(s) of Substantial Completion, Owner's personnel will meet with Contractor at Project site and will determine if any of submitted samples maintained by Contractor during progress of the Work are to be transmitted to Owner for record purposes. Comply with Owner's instruction for packaging, identification marking, and delivery to Owner's sample storage space. Dispose of other samples in manner specified for disposal of surplus and waste materials, unless otherwise indicated by Owner.

F. Miscellaneous Record Submittals:

1. Refer to other Sections of these Contract Documents for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to date(s) of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit three sets to Owner for Owner's records. Categories of requirements resulting in miscellaneous work records are recognized to include, but not limited to, the following:
  - a. Required field records on excavations, foundations underground construction, wells and similar Work.
  - b. Accurate survey showing locations and elevations of underground lines, including invert elevations of drainage piping, valves, tanks and manholes.
  - c. Surveys establishing lines and levels of building.
  - d. Soil treatment certification.
  - e. Inspection and Test Reports, where not processed as shop drawings or product data.
  - f. Concrete mix design record.
  - g. Concrete Block Certification.

G. Digital Electronic Format:

1. The Contractor will submit Record Documents, after review and approval by the Owner, in digital electronic format as follows:
  - a. All textual data will be provided in Microsoft Word 2010 (or higher) format, as well as a PDF document of each file. All formatting and tabular data will be preserved. Tabular data will be embedded in the document in Excel 2010 (or higher) for Windows format.
  - b. All Drawings will be provided in Revit 2014 (or higher) or AutoCAD 2007 (or higher) format, as well as a PDF document of each drawing. The software utilized for the design process will dictate which format shall be utilized. Drawings will be clearly marked "PROJECT RECORD" in 1 1/2 inch high letters and bear the name of the Contractor, Architect/Engineer of Record, and, where applicable, the name of the subcontractor.
  - c. After the documents are in correct digital electronic format, they will be submitted to the Owner on the following media:
    - (1) DVD-R (minimum 4.7 GB capacity per disk).

- d. All media transmittals will be accompanied by a detailed paper printout of the files on each media. This printout will consist of:
  - (1) File name.
  - (2) File size.
  - (3) Date of creation.
  - (4) Submittal number.
  - (5) A brief but accurate description of the file.

#### 1.07 GUARANTEES AND WARRANTIES

- A. Prior to Final Acceptance, all guarantees and warranties, as specified under various sections of the Contract Documents, will be obtained by the Contractor, addressed to and in favor of the Owner, and delivered to the Owner in duplicate giving a summary of the guarantees and warranties attached and stating the following with respect to each:
  - 1. Character of work affected
  - 2. Name of subcontractors
  - 3. Period of guarantee/warranty
  - 4. Conditions of guarantee/warranty
- B. Delivery of said guarantees and/or warranties will not relieve the Contractor from any obligations assumed under any other provision of the Contract.
- C. If, within any guarantee and/or warranty period, repairs or changes are required in connection with the guaranteed and/or warranted work, which in the opinion of the Owner is rendered necessary as the result of the use of materials, equipment or workmanship which are defective, inferior or not in accordance with the terms of the Contract, the Contractor will, upon receipt of notice from the Owner, and without expense to the Owner, proceed within seven calendar days to:
  - 1. Place all guaranteed and/or warranted work in satisfactory conditions correct all defects therein, and make good all damages to the structure or site.
  - 2. Make good all work or materials, or the equipment and contents of structures or site, disturbed in fulfilling any such guarantee and/or warranty.
- D. If the Contractor, after notice, fails to comply with the terms of the guarantee and/or warranty, the Owner may have the defects corrected and the Contractor and Contractor's surety will be liable for all expenses incurred, including Owner's fees.

#### 1.08 OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS

- A. Prior to Final Acceptance, complete operating instructions and maintenance manuals will be obtained by the Contractor for each piece of equipment or system furnished

under the Contract. Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder.

1. Submit three copies of each completed manual on equipment and systems, in final form, to the Owner for review and distribution. Provide separate manuals for each unit of equipment, each operating system, and each electric and electronic system.
2. Refer to Specification Sections for individual requirements on operating and maintenance of the various pieces of equipment and operating systems.

**B. Equipment and Systems:**

1. Provide the following information for each piece of equipment, each building operating system, and each electric or electronic system.
  - a. Description: Provide a complete description of each unit and related component parts, including the following:
    - (1) Equipment or system function.
    - (2) Operating characteristics.
    - (3) Limiting conditions.
    - (4) Performance curves.
    - (5) Engineering data and tests.
    - (6) Complete nomenclature and number of replacement parts.
  - b. Manufacturer's Information: For each manufacturer of a component part of a piece of equipment provide the following:
    - (1) Printed operating and maintenance instructions.
    - (2) Assembly drawings and diagrams required for maintenance.
    - (3) List of items recommended to be stocked as spare parts.
  - c. Maintenance Procedures: Provide information detailing essential maintenance procedures, including the following:
    - (1) Routine operations.
    - (2) Trouble-shooting guide.
    - (3) Disassembly, repair and reassembly.
    - (4) Alignment, adjusting and checking.
  - d. Operating Procedures: Provide information on equipment and system operating procedures, including the following:
    - (1) Start-up procedures.
    - (2) Equipment or system break-in.
    - (3) Routine and normal operating instructions.

- (4) Regulation and control procedures.
  - (5) Instructions on stopping.
  - (6) Shut-down and emergency instructions.
  - (7) Summer and winter operating instructions.
  - (8) Required sequences for electric or electronic systems.
  - (9) Special operating instructions.
- e. Servicing Schedule: Provide a schedule of routine servicing and lubrication requirements, including a list of required lubricants for equipment with moving parts.
  - f. Controls: Provide a description of the sequence of operation and as-installed control diagrams by the control manufacturer for systems requiring controls.
  - g. Coordination Drawings: Provide each Contractor's coordination drawings.
    - (1) Provide as-installed color-coded piping diagrams, where required for identification.
  - h. Valve Tags: Provide charts of valve tag numbers with the location and function of each valve.
  - i. Circuit Directories: For electric and electronic systems, provide complete circuit directors of panel-boards, including the following:
    - (1) Electric service.
    - (2) Controls.
    - (3) Communication.

## 1.09 REPLACEMENT MATERIALS

Prior to Final Acceptance, Contractor will store at the Project site, in location directed by Owner, all replacement materials which may be required by other sections of these Contract Documents.

## PART 2 - PRODUCTS

Not Used.

## PART 3 - EXECUTION

### 3.01 EQUIPMENT OPERATIONAL DEMONSTRATIONS

- A. Subsequent to Substantial Completion of the whole Work or designated portions thereof, and prior to Final Acceptance, the Contractor will provide a competent and experienced person thoroughly familiar with the Work to demonstrate and instruct the Owner's personnel in operation, adjustment and maintenance of products, equipment and systems. This instruction will include normal start-up, run, stop, and emergency

operations, location and operation of all controls, alarms and alarm systems, etc. The instruction will include tracing the system in the field and on the diagrams in the instruction booklets so that the Owner's operating personnel will be thoroughly familiar with both the system and the data supplied. Provide instruction at mutually agreed upon times.

1. Use operation and maintenance manuals for each piece of equipment or system as the basis of instruction. Review contents in detail to explain all aspects of operation and maintenance.
  2. For equipment that requires seasonal operation, provide similar instruction during other seasons.
- B. If installers and/or Contractor's personnel are not experienced in procedures, provide instruction be manufacturer's representatives. Include a detailed review of the following items:
1. Maintenance manuals.
  2. Record documents.
  3. Spare parts and materials.
  4. Tools.
  5. Lubricants.
  6. Fuels.
  7. Identification systems.
  8. Control sequences.
  9. Hazards.
  10. Cleaning.
  11. Warranties and bonds.
  12. Maintenance agreements and similar continuing commitments.
  13. Similar procedures and facilities.
  14. Any other appropriate item.
- C. As part of instruction for operating equipment, demonstrate the following procedures:
1. Start-up.
  2. Shut down.
  3. Emergency operations.
  4. Noise and vibration adjustments.
  5. Safety procedures.
  6. Economy and efficiency adjustments.
  7. Effective energy utilization.
  8. Similar operations.
  9. Any other appropriate procedure.
- D. Review maintenance and operations in relation to applicable warranties, agreements to maintain bonds, and similar continuing commitments.
- E. Owner will be notified in writing of scheduling and completion of all equipment operational instructions and demonstrations.

END OF SECTION

## SECTION 01740 - WARRANTIES

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.
1. Refer to Section 00700, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, as modified, for terms of the Contractor's special warranty of workmanship and materials.
  2. General closeout requirements are included in Section 01700 - PROJECT CLOSEOUT.
  3. Specific requirements for warranties for the Work and products and installation that are specified to be warranted are included in the individual Sections of the Specifications.
  4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- B. Disclaimers and Limitations:
- Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor of Contractual warranty requirements.

#### 1.02 DESCRIPTION OF REQUIREMENTS/DEFINITIONS

- A. Categories of Specific Warranties:
1. It is recognized that warranties on the Work are in several categories, including those of the conditions of the Contract and including (but not necessarily limited to) the following specific categories related to the individual units of Work specified in the sections of the Specifications:
    - a. Special Warranty (Guarantee): A warranty specifically written and signed by the Contractor for a defined portion of the Work; and, where required, countersigned by subcontractor, installer, manufacturer or other entity engaged by Contractor. Formerly generally recognized as (and sometimes specified in Contract Documents as) a "guarantee".
    - b. Specified Product Warranty: A warranty which is required by Contract Documents to be provided for a manufactured product which is incorporated into the Work, regardless of whether the manufacturer

has published the warranty without consideration for specific incorporation of product into the Work, or has written and executed the warranty as a direct result of Contract Documents requirements.

- c. Coincidental Product Warranty: A warranty which is not specifically required by Contract Documents (other than as specified in this Section) but which is available on a product incorporated into the Work by virtue of the fact that the manufacturer of the product has published the warranty in connection with purchases and uses of product without regard for specific applications, except as otherwise limited by terms of the warranty.

B. Definition: Manufactured Product:

A physical item for incorporation into the Work which has been produced from raw or natural materials by a manufacturing process and which is purchased from a manufacturer either specifically for the Work or for Contractor's/subcontractor's/fabricator's/installer's stock from which it is drawn for incorporation into the Work.

C. General Limitations:

- 1. It is recognized that specific warranties are intended primarily to protect Owner against failure of Work to perform as required and against deficient, defective and faulty materials and workmanship, regardless of sources. Except as otherwise indicated, specific warranties do not cover failures in Work which result from:
  - a. Damage or defect caused by abuse
  - b. Modifications not executed by the Contractor
  - c. Improper or insufficient maintenance
  - d. Improper operations, or normal wear and tear under normal usage
- 2. Although manufacturer's commitments in product warranties on products used in the Work are generally written to exclude product failures which result from failure of other Work (such as failure of substrate supporting product), such limitations in product warranties do not relieve Contractor of the more general warranties on Work which incorporates use of such products. Except as otherwise indicated, this same relationship applies to units of Work performed by other entities (other than manufacturers), such as fabricators, installers and subcontractors, who are required to countersign special Project warranties with Contractor for such units of Work.

### 1.03 WARRANTY REQUIREMENTS

A. Related Damages and Losses:

When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

B. Reinstatement of Warranty:

When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty will be equal to the original warranty from the date of correction or rebuilding.

C. Replacement Cost:

Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

D. Owner's Recourse:

1. Written warranties made to the Owner are in addition to implied warranties and will not limit the duties, obligations, right and remedies otherwise available under the law, nor will warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
  - a. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
2. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work until evidence is presented that entities required to countersign such commitments are willing to do so.

#### 1.04 SUBMITTALS

A. Submit written warranties to the Owner prior to the date certified for Final Payment.

1. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties.

Submit a draft to the Owner for approval prior to final execution.

- a. Refer to individual sections of Division 2 through 16 for specific content requirements and particular requirements for submittal of special warranties.

2. Submit specific warranties for beginning of the warranty periods. Date(s) will be inserted to correspond with certification or acceptance dates, as established and accepted by the Owner.

B. Form of Submittal:

1. Compile two copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Record Project Manual.
2. Bind warranties in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, with thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.
  - a. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address and telephone number of the installer.
  - b. Identify each binder on the front and the spine with the typed or printed title 'WARRANTIES AND BONDS,' the Project title or name, and the name of the Contractor.
3. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

---

## **TECHNICAL SPECIFICATIONS**