



# HILLSBOROUGH COUNTY AVIATION AUTHORITY

CONTRACT FOR SERVICES

BETWEEN

HILLSBOROUGH COUNTY AVIATION AUTHORITY

AND

BOMBARDIER TRANSPORTATION (HOLDINGS) USA,  
INC.

PROJECT NO. 8420 21

AIRSIDE A AND C SHUTTLE CAR AND CONTROL  
SYSTEM REPLACEMENT – PHASE 2

DATED: NOVEMBER 4, 2021

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**ATTACHMENTS:**

- 1: GUARANTEED MAXIMUM PRICE PROPOSAL
- 2: COMMON LAW PERFORMANCE BOND AND STATUTORY PAYMENT BOND
- 3: INSURANCE REQUIREMENTS
- 4: DIVISION 01: GENERAL REQUIREMENTS
- 5: DESIGN CRITERIA MANUAL
- 6: E-VERIFY CERTIFICATION

## CONTRACT

This Contract for services is made and entered into this 4th day of November, 2021 by and between the Hillsborough County Aviation Authority, a public body corporate under the laws of the State of Florida, hereinafter referred to as the "Owner", and Bombardier Transportation (Holdings) USA Inc., a Delaware Corporation, authorized to do business in the State of Florida, hereinafter referred to as the "Contractor".

For the following Project: Airside A and C Shuttle Car and Control System Replacement – Phase 2

Authority No. 8420 21

The design services described in Article 3 will be provided contractually through the Contractor by the following person or entity who is lawfully licensed to practice architecture/engineering:

Electrical engineering services will be provided contractually through the Contractor as indicated below:

Lavandera Electrical Company

The Owner and Contractor agree as set forth below.

## TERMS AND CONDITIONS—CONTRACT

### ARTICLE 1 GENERAL PROVISIONS

#### 1.1 BASIC DEFINITIONS

- 1.1.1 The Program consists of the replacement of eight (8) airside shuttle vehicles with eight (8) new INNOVIA APM 300R vehicles, an upgrade to CITYFLO 650 signaling system and power rail upgrades for legs A & C.
- 1.1.2 The Contract Documents consist of this Contract between Owner and Contractor and the following documents, but only to the extent they are not modified by this Contract: the Contractor's Guaranteed Maximum Price (GMP) Proposal, the Authority's Design Criteria Manual (Attachment 5), the Project Documents accepted by the Owner in accordance with Paragraph 3.3.2, payment and performance bonds, and Modifications issued after execution of this Contract.
- 1.1.3 A Modification is a written amendment to this Contract signed by both parties, or a change order, work order, or written order for a minor change in the Work issued by the Owner in accordance with the terms of Article 8 herein.
- 1.1.4 The term Day as used in the Contract Documents will mean calendar day, unless otherwise indicated.
- 1.1.5 The GMP Contract Sum as stated in this Contract is the maximum amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents, including authorized adjustments. When the Contract Documents state "no cost to the Owner", it means that those costs are the responsibility of the Contractor and are not reimbursable through the Contract Sum. When the Contract Documents state "no additional cost to the Owner", it means that those costs are reimbursable up to the Contract Sum.
- 1.1.6 The term Work means the construction and services provided by the Contractor to fulfill the Contractor's obligations under this Contract.
- 1.1.7 The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, to the extent approved by Owner, showing the design, location and dimensions of the Work, and generally include plans, elevations, sections, details, models, electronic data, schedules and diagrams.
- 1.1.8 The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards,

and workmanship for the Work and performance of related services, to the extent approved by Owner.

1.1.9 Notice means written notice by certified return receipt mail addressed to:

The Owner:  
Hillsborough County Aviation Authority  
Attn: Chief Executive Officer  
P.O. Box 22287  
Tampa, FL 33622

Copy to: General Counsel  
Vice-President of Planning and Development

The Contractor:  
Bombardier Transportation (Holdings) USA Inc.  
4000 George J. Bean Parkway  
Suite 7110  
Tampa, FL 33607

Copy to: Legal Department  
Bombardier Transportation (Holdings) USA Inc.  
1251 Waterfront Place  
Pittsburgh, PA 15222

1.1.10 In the event of a conflict between this Contract and any other Contract Documents, this Contract shall govern.

## **1.2 EXECUTION, CORRELATION AND INTENT**

1.2.1 It is the intent of the Owner and Contractor that the Contract Documents include all items necessary for proper execution and completion of the Work. The Contract Documents are complementary and what is required by one will be as binding as if required by all. Words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.2.2 The parties will not be bound by, or be liable for, any statement, representation, promise, inducement or understanding of any kind or nature not set forth herein. No changes, amendments or Modifications of any of the terms or conditions of this Contract will be valid unless reduced to writing and signed by both parties. This Contract may be amended or changed only by Modification.

- 1.2.3 If the Contractor believes, or is advised by another licensed design professional retained by the Owner to provide services on the Project, that implementation of any instruction received from the Owner would cause a violation of any applicable law, the Contractor will notify the Owner in writing. The Contractor will not be obligated to perform any act which will violate any applicable law.
- 1.2.4 Nothing contained in this Contract will create a contractual relationship between the Owner and any person or entity other than the Contractor, unless otherwise provided in this Contract.
- 1.2.5 Execution of this Contract by the Contractor is a representation and warranty that the Contractor (a) is particularly experienced and skilled in the construction of structures and improvements of the type described in the Contract Documents, and (b) has, by careful examination, satisfied itself as to and has taken into account (i) the nature, location and character of the Project Site, including but not limited to, the surface condition of the land and all structures and obstructions thereon, both natural and man-made, and all surface water conditions of the project site and the surrounding area; and (ii) the nature, location and character of the general area in which the Project sites are located included, but not limited to, weather and climate; and (iii) all other existing matters or things which, in the reasonable judgment of the Contractor, could in any manner affect the performance of the Work.
- 1.2.6 All Work mentioned or indicated in the Contract Documents will be performed by the Contractor as part of this Contract unless it is specifically indicated in the Contract Documents that such Work is to be performed by others. In the event of any conflict(s) among the Contract Documents, the Contractor will present conflict for resolution to the Owner.
- 1.2.7 All indications or notations which apply to one of a number of similar situations, materials or processes will be deemed to apply to all such situations, materials or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract Documents.
- 1.2.8 Where codes, standards, requirements and publications of public and private bodies are referred to in Division 01 - General Requirements and the Specifications, except to the extent otherwise expressly noted in the Contract Documents, references will be understood to be the latest edition, including all amendments thereto, in effect on the date applicable permits were issued by appropriate governmental authorities having jurisdiction or the date this Contract was executed, whichever is later.
- 1.2.9 Where no explicit quality or standards for materials or workmanship are established for Work, such Work is to be of suitable quality for the intended use and consistent with the quality of the surrounding Work.

- 1.2.10 All manufactured articles, materials and equipment will be applied, installed, connected, erected, started-up, tested, cleaned and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.
- 1.2.11 The electrical work will be installed, without additional cost to the Owner, to clear all obstructions, permit proper clearances for the Work of other trades and present an orderly appearance where exposed. Prior to beginning such Work, the Contractor will prepare coordination Drawings and complete detailed layout Drawings showing the exact alignment, physical location and configuration of the electrical installation and demonstrating to the Owner's satisfaction that the installations will comply with the preceding sentence. Coordination Drawings and complete detailed layout Drawings will be submitted to the Owner for Owner's review and acceptance prior to the commencement of the Work.
- 1.2.12 Where the Work is to fit with existing conditions or construction to be performed by others, the Contractor will fully and completely join the Work with such conditions or construction, unless otherwise specified. Any existing condition disturbed in whole or in part by Contractor's Work will be restored to the Owner's satisfaction at the Contractor's expense and is not included in the Contract Sum.
- 1.2.13 The Contractor is responsible for dimensions to be confirmed and correlated at the Project site, for information processes, for techniques of construction, and for coordination of the Work of all trades.
- 1.2.14 Press releases or other specialized publicity documents, including the Contractor's and subcontractor's advertising and news bulletins, which are related to this Contract and are intended by the Contractor and subcontractors for the press, broadcasting, or television, will be drawn up in consultation with the Owner. Except as otherwise required by law or regulation, the Contractor and subcontractors will not release or distribute any materials or information relating to this Contract or containing the name of the Owner or any of its employees without prior written approval by Assistant Vice President of Planning and Development. This requirement must be included in all subcontractor agreements entered into under this Project.
- 1.2.15 During the duration of the Project, other construction and/or design-build projects will be underway at Tampa International Airport. It will be the responsibility of the Contractor to coordinate its Work with these other projects. Any problems with such coordination will be brought to the attention of the Owner who will direct the affected parties accordingly.
- 1.2.16 The Contractor will conduct all Work in this Contract in accordance with the Owner's Policy P150, Code of Ethics and Ethics Program.

### 1.3 OWNERSHIP AND USE OF DOCUMENTS

1.3.1 Contractor acknowledges and agrees that all records, documents, drawings, notes, tracings, plans, specifications, maps, evaluations, reports, models, renderings and other technical data, electronic data and Architectural Works of the Project as defined by the Federal Architectural Works Copyright Protection Act, other than working papers, prepared, developed or furnished by Contractor or the design professional(s) employed or retained by the Contractor exclusively for this Contract will be conveyed, assigned and transferred from the Contractor to the Owner and remain the property of the Owner. Project Documents will consist of all Drawings, Specifications, electronic data and other documents sufficient to establish the size, quality and character of the entire Project, its architectural, civil, geotechnical, structural, mechanical and electrical systems, if required for the Project, materials and such other elements of the Project as may be appropriate. Project Documents will be deemed to be works made for hire, and all right, title and interest in and to the Project Documents will be vested in Owner. Contractor will take all actions necessary to secure for Owner all such right, title and interest. Contractor warrants that all materials comprising the Project Documents are original with Contractor and have not been copied or derived from any other material without the express written consent of the owner, proprietor and/or copyright holder of that other material, and are not subject to any other claim of copyright by any other person. Contractor will obtain any and all licenses necessary for the production and preparation of the Project Documents including, without limitation, licenses for the use of any material subject to copyright by other parties. Contractor will assign to Owner any and all rights, including any copyrights, in the Project Documents that Contractor or the design professional(s) employed or retained by the Contractor exclusively on this Project may possess now or in the future, and Contractor and its design professional(s) will claim no rights adverse to Owner in the Project Documents.

1.3.2 Ownership of As-Built Deliverables. All “nonproprietary” and “commercially available” plans, designs, and drawings provided shall be the unrestricted property of the Owner. The Owner shall have the unrestricted use of all documentation provided for “nonproprietary” and “commercially available” products, components, and other items for this Work and any future resupply, expansions, or extension of the System. “Proprietary,” as distinct from “commercially available,” shall mean that the design of the subsystem, equipment or component was not carried out under this Contract, or other contract with the Owner, or a federally funded contract but that such designs were included in the Contractor’s development of the items as part of the Contractor’s basic system technology that it is applying under this Contract as part of the Project.

Ownership of any “proprietary” designs shall not transfer to the Owner. Drawings and documents for proprietary products, components, subsystems and other items shall be protected and restricted as provided herein.



All “proprietary” As-Built Deliverables, as that term is defined in Article 1.3.2 above, shall be provided to the Owner or shall be, at the Contractor’s option, provided to a Trustee under a trust agreement entered into by the Owner, the Contractor and the Trustee. The basic terms of the trust agreement shall be as follows:

1.3.2.1 Trustee shall be a trust company qualified to do business in the State of Florida or a bank authorized to engage in a trust business in the State of Florida which bank or trust company shall be mutually acceptable to both the Owner and the Contractor.

1.3.2.2 All proprietary As-Built Deliverables shall be placed with the Trustee for safekeeping in the State of Florida.

1.3.2.3 Title to the designs, copyrights and patents divulged in the proprietary As-Built Deliverables shall remain with the Contractor subject to the rights and license granted to the Owner by and in accordance with this section and the trust agreement.

1.3.2.4 Upon occurrence of any of the following conditions, the Trustee, upon receipt of written notice from the Owner shall turn over to the Owner all proprietary As-Built Deliverables in its possession within a 60-day period from the date of receipt of the notice.

1.3.2.4.1 The Contractor fails to complete the Contract and the Contract is terminated for default in accordance with this Contract; or

1.3.2.4.2 The Contractor has sought protection under bankruptcy laws and seeks to reject its obligations to the Owner under this Contract, or otherwise liquidated its assets and wind up its business affairs; or

1.3.2.4.3 The Contractor, at any time, ceases to manufacture or otherwise provide systems and equipment equivalent to those procured under this Contract; or

1.3.2.4.4 The Contractor is unable or unwilling to manufacture or otherwise provide systems and equipment equivalent to those procured under this Contract; or

1.3.2.4.5 The Contractor is unable or unwilling to provide replacement parts and equipment as required under the terms of this Contract; provided that Contractor may identify portions of the proprietary As-Built Deliverables related to the manufacture and assembly of the replacement parts and equipment for release by the Trustee to the Owner; or

1.3.2.4.6 The Contractor is unwilling to propose and price an Owner request to expand or extend the system.

Upon the occurrence of any one or more of the release Conditions, the Owner may immediately request the release of the Deposited Materials from the Trustee by doing the following: a) The Owner will issue a written demand on the Trustee with a copy to the Contractor requesting the release of the Deposited Materials with a detailed description of the reasons(s) why the Deposited Materials are to be released; and b) The Owner must obtain a receipt of the written demand on the Trustee as well as a receipt of the copy sent to the Contractor. The Owner must give to the Trustee Proof of the Receipt of the written demand copy to the Contractor.

1.3.2.5 At such time as the proprietary As-Built Deliverables are turned over to the Owner by the Trustee, the Owner shall have the right and license to use the drawings and documents or allow any party to use same for the operation, maintenance and repair of the System, completion of the Work under the Contract and any future re-supply, expansion, or extension of the Work. However, the Owner may not sell the proprietary As-Built Deliverables or allow any party to use same for any other project without the Contractor's written approval. Contractor shall continue to have the full and complete right to use any and all duplicates or other originals of said As-Built Deliverables in any manner it chooses.

1.3.2.6 In the event the Contract is completed or terminated for reasons other than default of the Contractor, and Contractor is ready, willing and able to meet any requirement of the Owner for future resupply, expansion or extension of the System, and has proposed to do so in accordance with the Owner's procurement process and requirements but the Owner has not selected the Contractor for such resupply, expansion or extension due to non-competitive pricing, non-compliance or non-responsiveness by the Contractor or because the Contractor ceases to manufacture or produce equipment similar to the Work of this Contract, then the Owner may use the proprietary As-Built Deliverables only upon agreement to pay a license fee to the owner of the proprietary design to be mutually agreed by the Parties. The Trustee, upon receipt of written notice from the Owner shall turn over to the Owner all proprietary As-Built Deliverables in its possession within a 60-day period from the date of receipt of the notice.

1.3.2.7 The trust agreement shall automatically terminate after 50 years and all such proprietary As-Built Deliverables shall be turned over to the Owner.

1.3.2.8 The Contractor shall have no liability for any use authorized herein subsequent to completion of this Project unless the Contractor is employed for such subsequent use.

1.3.2.9 In the event that the proprietary As-Built Deliverables are not placed in trust, but are delivered to the Owner by the Contractor, the restrictive covenants set forth above shall govern the Owner's possession and use of the documentation. The Owner may require the Contractor to propose a

methodology and procedures for proposing and pricing future expansions of the system.

1.3.3 Protection of Information. Subject to Florida Statutes, the Owner shall employ sound business practices no less diligent than those used for the Owner's own confidential information and in accordance with the applicable law to protect all proprietary As-Built Deliverables and other materials provided by the Contractor pursuant to the Contract, which contain confidential commercial or financial information, trade secrets or proprietary information, against disclosure of such information and material to third parties except as permitted by the Contract. The Contractor shall be responsible for ensuring that confidential commercial or financial information, trade secrets or proprietary information bears appropriate notices relating to its confidential character.

1.3.2 Submission or distribution of the Contractor's documents to meet official regulatory requirements or for similar purposes in connection with the Project is not to be construed as publication in derogation of the rights reserved in Paragraph 1.3.1.

1.3.3 CHAPTER 119 FLA. STATUTES REQUIREMENTS

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:**

**(813) 870-8721, [ADMCENTRALRECORDS@TAMPAAIRPORT.COM](mailto:ADMCENTRALRECORDS@TAMPAAIRPORT.COM), HILLSBOROUGH COUNTY AVIATION AUTHORITY, P.O. BOX 22287, TAMPA FL 33622.**

Contractor agrees in accordance with Florida Statute Section 119.0701 to comply with public records laws including the following:

- 1.3.3.1 Keep and maintain public records required by the Owner in order to perform the Work contemplated by this Contract.
- 1.3.3.2 Upon request from the Owner's custodian of public records, provide the Owner with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119 Fla. Stat. or as otherwise provided by law.
- 1.3.3.3 Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Contract Term and following completion of the Contract.

- 1.3.3.4 Upon completion of this Contract, keep and maintain public records required by the Owner to perform the Work. Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the Owner, upon request from the Owner's custodian of public records, in a format that is compatible with the information technology systems of the Owner.

## **ARTICLE 2 OWNER RESPONSIBILITIES**

### **2.1 GENERAL RESPONSIBILITIES**

- 2.1.1 The Owner is the person or entity identified as such in this Contract and is referred to throughout the Contract Documents as if singular in number.
- 2.1.2 This Contract will be administered by the Owner's Chief Executive Officer or designee.
- 2.1.3 The Owner may designate a representative authorized to act on the Owner's behalf with respect to the Project. The Owner or such authorized representative will render decisions in a timely manner pertaining to documents submitted by the Contractor in order to avoid unreasonable delay in the orderly and sequential progress of the Contractor's services. The Owner may obtain independent review of the documents by a separate architect, engineer, contractor, or cost estimator under contract to or employed by the Owner. Such independent review will be undertaken in a timely manner so as to not unreasonably delay the orderly progress of the Contractor's services.
- 2.1.4 The Owner may appoint an on-site Project representative to observe and inspect the Work and to have such other responsibilities as the Owner may authorize. If the Owner has actual knowledge of a fault or defect in the Work or nonconformity with the Contract Documents, the Owner will give prompt written notice to the Contractor. Such observations and inspections by the Owner will not relieve the Contractor of its obligations to the Owner; the Contractor's obligations are non-delegable.
- 2.1.5 The Owner will cooperate with the Contractor in securing building and other permits, licenses and inspections. The Contractor is ultimately responsible for securing all permits, licenses and inspections related to the Works. All fees for such permits, licenses and inspections are included in the GMP.
- 2.1.6 To the extent known to and in the possession of the Owner, the Owner will provide copies of the results and reports of prior tests, inspections or investigations

conducted for the Project involving: structural or mechanical systems; chemical, air and water pollution; hazardous materials; or other environmental and subsurface conditions upon written request by the Contractor. The Owner will disclose information actually known to the Owner regarding the presence of pollutants at the Project's site, upon written request by the Contractor. In regards to the two previous sentences, the Owner does not warrant the accuracy or completeness of any such results, reports or information and accepts no responsibility for them and the Contractor will be solely responsible for all assumptions made in reliance thereupon. Notwithstanding the foregoing, Owner warrants to the Contractor the accuracy of any information contained in any document or drawing relating to subsurface conditions.

2.1.7 The results, reports and information required by Paragraph 2.1.6 which are within the Owner's control, and to the extent requested by Contractor, will be furnished at the Owner's expense. The Owner does not warrant the accuracy and completeness thereof and they are not part of the Contract Documents.

2.1.8 The Owner will communicate with persons or entities employed or retained by the Contractor through the Contractor, unless otherwise authorized by the Contractor or in the event of an emergency requiring immediate action.

2.1.9 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Article 9 or persistently fails to carry out Work in accordance with the Contract Documents, the Owner or authorized representatives may, in writing, order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work will not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Paragraph 12.4. Nothing in this paragraph limits the Owner's other rights and remedies including, but not limited to, the right to terminate the Contract.

## **2.2 ADMINISTRATION OF THE CONTRACT**

2.2.1 At all times the Contractor will provide Owner with full and adequate access to the Work, whether on or off site, so that Owner can become generally familiar with the progress and quality of the completed Work and to determine in general if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. However, the Owner will not be required to make exhaustive or continuous on-site inspections as to the quality or quantity of the Work. The Contractor will provide the Owner's personnel training and use of equipment on site to facilitate inspections.

- 2.2.2 The Owner will not have control over, be in charge of, or be responsible for coordination, construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility. However, the Owner reserves the right to implement a safety program that the Contractor will follow and coordinate. In the event the safety program adds additional costs to the Contractor, the Contractor may make a claim for the costs.
- 2.2.3 The Owner will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Owner will not have control over, be in charge of, or be responsible for acts or omissions of the Contractor, Contractor's licensed design professionals, consultants, subcontractors, or any of their agents or employees, or of any other persons performing portions of the Work.
- 2.2.4 The Owner will have authority to reject Work which does not conform to the Contract Documents. Whenever the Owner considers it necessary or advisable for implementation of the intent of the Contract Documents, the Owner will have authority to require additional inspection or testing of the Work in accordance with Article 18, whether or not such Work is fabricated, installed or completed. If the inspection or testing determines the Work is non-conforming, the Contractor shall be responsible for such inspection or testing expense. If the inspection or testing determines the Work is conforming, the Owner shall be responsible for such inspection or testing expense. However, neither this authority of the Owner nor a decision made in good faith either to exercise or not to exercise such authority will give rise to a duty or responsibility of the Owner to the Contractor, Contractor's licensed design professionals, consultants, subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work (of any tier).
- 2.2.5 The Contractor will submit draft Change Orders and Work Orders to the Owner for consideration. The Owner will prepare Change Orders and Work Orders as provided in Paragraphs 8.1 and 8.2.
- 2.2.6 Upon request by the Contractor, the Owner will conduct inspections to determine the date(s) of Substantial Completion and the date of Final Completion and Acceptance. The Contractor will submit to the Owner for review written warranties, electronic data and other documents required by this Contract. The Owner will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.
- 2.2.7 Interpretations and decisions of the Owner will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of Drawings. When making such interpretations and decisions, the Owner will not be liable for results of interpretations or decisions so rendered in good faith.

**ARTICLE 3**  
**CONTRACTOR'S SERVICES AND RESPONSIBILITIES**

**3.1 GENERAL SERVICES**

- 3.1.1 The Contractor will furnish services of all engineering related to electrical, electronic and information technology systems, or any other services when such services are deemed necessary by the Contractor to properly carry out the design services required by this Contract.
- 3.1.2 The design and construction services that the Contractor will provide to the Owner under this Contract will be as included in the Contractor's GMP Proposal dated October 22, 2021, entitled "Updated Firm Fixed Offer for new INNOVIA 300R vehicles, CITYFLO 650 signaling system, power rail upgrades for Legs A and C and options for in-vehicle cameras", which is incorporated by reference and attached hereto as Attachment 1.
- 3.1.3 Contractor designates Carl Ekstrand, whose business address is 4000 George J. Bean Parkway, Suite 7110, Tampa, FL 33607, to serve as the Project Manager. The Project Manager will be authorized and responsible to act on behalf of the Contractor with respect to directing, coordinating and administering all aspects of the Work to be provided and performed under this Contract. Contractor designates either of the following: Jennifer A. Callery or Johnetta Falk, and either of those will have full authority to bind and obligate the Contractor on all matters arising out of or relating to this Contract. The Contractor agrees that the Project Manager will devote whatever time is required to satisfactorily manage the services to be provided and performed by the Contractor hereunder. Any replacement of the Project Manager will be subject to the prior written approval and acceptance of the Owner.
- 3.1.4 The Contractor, as soon as practicable after execution by the Owner of this Contract, will furnish in writing to the Owner the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) that bid on and are proposed for each principal portion of the Work and their respective bid packages of the bids received with their bid tabulations. The Owner will promptly reply to the Contractor in writing stating whether or not the Owner, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner to reply within 10 days will constitute notice of no reasonable objection. Upon receipt and approval, such writing by Contractor, and any subsequent changes thereto, will be incorporated into the Contract Documents by reference. If person or entity is rejected, Contractor may make claim for cost and time.
- 3.1.5 Except to the extent otherwise expressly provided in the Contract Documents, the Contractor will provide, or cause to be provided, and will pay for, all design services,

labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.1.6 At all times the Contractor will keep the Owner informed of the progress and quality of the Work and the Owner will have access to all records and components of the Work at all times.

3.1.7 Any agreements between the Contractor and the persons or entities identified in this Contract and any subsequent modifications thereto will be in writing. These agreements, including financial arrangements with respect to this Project, will be promptly and fully disclosed to the Owner via Adobe pdf format. Though the contractual obligations of such professional persons or entities are undertaken and performed in the interest of the Contractor, it is expressly acknowledged and agreed by Contractor that the Owner will be identified as an intended third party beneficiary of the agreements between Contractor and the design professionals and Contractor and subcontractors.

3.1.8 The Contractor will be responsible to the Owner for acts and/or omissions of the Contractor's employees, consultants, contractors, subcontractors, sub-subcontractors, suppliers, materialmen, or agents of any tier or their respective employees, and other persons, including the licensed design professionals performing any portion of the Contractor's obligations under this Contract. Nothing herein shall waive or relieve any other individuals or entities who may have liability to the Owner.

3.1.9 Not used.

3.1.10 Contractor may self-perform portions of the Work at Owner's sole discretion.

3.1.11 The Contractor is required to provide all information and supporting documentation required to enable the Owner to receive any applicable state or federal grants.

### **3.2 PREFERENCE TO FLORIDA STATE RESIDENTS:**

3.2.1 Contractor will give preference to the employment of state residents in the performance of the Work on this Contract if state residents have substantially equal qualifications to those of non-residents. The term "substantially equal qualifications" means the qualifications of two or more persons among whom the Contractor cannot make a reasonable determination that the qualifications held by one person are better suited for the position than the qualifications held by the other person or persons. If required to employ state residents, Contractor must contact the Agency for Workforce Innovation to post the Contractor's employment needs in the state's job bank system.



### **3.3 DESIGN PROFESSIONAL SERVICES**

3.3.1 All design services required by this Contract will be performed by appropriately licensed architects, engineers and other licensed design professionals. The contractual obligations of such professional persons or entities are undertaken and performed in the interest of the Contractor and the Owner.

3.3.2 The Contractor will submit Project Documents for review, comment and approval by the Owner, as agreed by the Parties. Project Documents will consist of all Drawings, Specifications, electronic data and other documents sufficient to establish the size, quality and character of the entire Project, its architectural, civil, structural, mechanical and electrical systems, materials and such other elements of the Project as may be appropriate and will:

3.3.2.1 Be consistent with the intent of the Contractor's GMP Proposal Documents

3.3.2.2 Provide information for the use of those in the building trades;

3.3.2.3 Include documents customarily required for regulatory agency approvals;

3.3.2.4 Be consistent with the intent of the current version Owner's Design Criteria Manual.

Any deviations from the Owner's Design Criteria Manual must be separately highlighted and disclosed by Contractor and approved in writing by Owner with each applicable submittal. Owner approval of Project Documents does not relieve or release Contractor of any of its responsibilities or liability for the Project Documents.

3.3.3 Prior to starting the Work and at frequent intervals during the progress thereof, the Contractor will carefully study and compare the Contract Documents with each other and with the information furnished by the Owner and will at once report to the Owner any error, inconsistency or omission the Contractor may discover. Any necessary change will be accomplished as provided in Article 8.

3.3.4 The Contractor will take field measurements and verify field conditions and will carefully compare such field measurements, field conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered will be reported to the Owner at once.

- 3.3.5 The Contractor will give the Owner timely written notice of all additional information or instructions required from the Owner to define the Work in greater detail or to permit the proper progress of the Work.
- 3.3.6 If the Contractor proceeds with the Work without such notice to the Owner, having discovered such errors, inconsistencies or omissions, or if by reasonable study of the Contract Documents the Contractor could have discovered such, the Contractor will bear all increased or additional costs arising therefrom without reimbursement from the Owner.
- 3.3.7 In the event that Contractor seeks to change the staffing of the Project Manager(s) or Superintendent(s) named in the GMP proposal, the Contractor shall provide written notice no later than 30 days prior to the proposed staffing change with the proposed change, detailed resume and work history for the proposed replacement, the reasoning for the proposed change and a detailed transition plan. The Owner shall approve or disapprove the proposed change within 10 days following the date of receipt of Contractor's notice. Such approval shall not be unreasonably withheld. The Owner reserves the right to declare Contractor in breach if it fails to use proposed or approved staffing.

#### **3.4 CONSTRUCTION PHASE SERVICES**

- 3.4.1 The Contractor will not proceed with any Work not clearly and consistently defined in detail in the Contract Documents. If the Contractor proceeds with such Work, the Contractor will correct Work incorrectly done at the Contractor's own expense and without reimbursement from Owner.
- 3.4.2 The Contractor will be responsible for correcting Work which does not conform to the Contract Documents so that it conforms with the Contract Documents at the Contractor's own expense and without reimbursement from Owner. No additional payment will include costs of Work associated with Work required to be redone as a result of non-conformance with the Contract Documents.
- 3.4.3 The Contractor warrants that the materials and equipment furnished under this Contract will be merchantable, new and of recent manufacture unless otherwise specified and that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Owner, the Contractor shall furnish satisfactory evidence as to kind and quality of materials and equipment. The Owner reserves the right to reject any materials that are damaged and/or not in new condition.

- 3.4.4 The Contractor will keep the Project site free from accumulation of waste materials or rubbish caused by Contractor's operations on a daily basis. The Contractor will keep areas used by the public or exposed to public view in such a state of cleanliness so as not to reflect unfavorably upon the Owner. The Contractor will keep areas near aircraft operations free from materials which could possibly be ingested into aircraft engine or which could cause damage by being blown by aircraft engine blast effects. If the Contractor fails to clean-up, the Owner may do so and the cost thereof will be withheld from the Contractor. Refer to General Requirements Section 01110 - AIRPORT PROJECT PROCEDURES, Item 1.07 DAILY CLEAN-UP AND TRASH REMOVAL for additional requirements.
- 3.4.5 The Contractor will maintain at the Project site one current copy of the Project Manual. Project Manual is defined as the current working set of all Project Documents as well as all Drawings, Specifications, Product Data, electronic data, Samples, Shop Drawings, Change Orders and other Modifications, in good order and regularly updated to record the completed construction. The Contractor will make the Project Manual and such other record documents available for inspection by the Owner. If approved by the Owner, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records, documents and electronic data. If the Contractor fails to make the records, documents and electronic data available, the Owner may, after written notice to the Contractor, take such action as may be necessary including the withholding of any further payment. Furthermore, failure to make such records, documents and electronic data available may be grounds for termination pursuant to Article 19.
- 3.4.6 Not Used
- 3.4.7 The Contractor shall provide a copy of its daily field reports to the Owner no later than midnight the following day. The Contractor's daily field reports shall include the subcontractors and others on site; manpower of each subcontractor and others on site; equipment on site; Contractor staffing on site; weather; construction activities and other information as required by Owner. Daily reports must make clear distinctions between construction activities performed for base scope, change orders, or disputed work/potential insurance claims. For the avoidance of doubt, the obligation to provide daily field reports applies only to the scope of work that is performed in the field. To the extent that such daily field reports are required, if there is no activity in the field on a given day, then a daily field report must be provided indicating that no activity occurred. Contractor will provide an updated overall schedule weekly.
- 3.4.8 The Contractor will submit all record documents in accordance with General Requirements Section 01700 – PROJECT CLOSEOUT.

- 3.4.9 The Contractor will provide coordination of the Work with construction performed by the Owner's own forces or separate contractors employed by the Owner and coordination of services required in connection with construction performed and equipment supplied by the Owner. This will include an Owner approved coordinated phasing plan that will minimize Owner impacts. This phasing plan will be updated monthly and submitted with the pay application.
- 3.4.10 The Contractor will supervise, direct and inspect the Work, using the Contractor's best skill and attention. The Contractor will be solely responsible for and have control over construction means, methods, techniques, sequences, safety, quality control, and procedures and for coordinating all portions of the Work under this Contract. All Work by the Contractor will be performed in a manner satisfactory to the Owner with due consideration of the Contract documents.
- 3.4.11 The Contractor will be responsible for inspection of all portions of Work performed under this Contract to determine that such portions are in proper condition to be put to the intended use or receive subsequent work of others.
- 3.4.12 The Contractor will enforce strict discipline and good order among the Contractor's employees and other persons carrying out this Contract. The Contractor will not permit employment of unfit persons or persons not skilled in tasks assigned to them.
- 3.4.13 The Contractor will employ a competent Project management team (Team) acceptable to the Owner, consisting of at least one Project manager, Project superintendents and other representatives, as necessary, who will be in attendance at the Project site full time during the progress of the Work until the date of Substantial Completion of the whole Work, or for such additional time thereafter as the Owner may determine to be necessary for the expeditious completion of the Work. The Team will represent the Contractor and communications given to the Team will be as binding as if given to the Contractor. It is agreed and understood that if a Team member is found to be unsatisfactory to the Owner for whatever reason, the Contractor will replace that member of the Team with another qualified representative within a reasonable time, but no longer than 60 calendar days.
- 3.4.14 Should the Owner reasonably find any person(s) employed on the Project by Contractor or by anyone for whom Contractor is responsible to be incompetent unfit, to perform the Works, the Contractor will promptly cause the employee to be removed from the Project at no additional cost and said employee will not be re-employed on this Project without written consent of the Owner.

### **3.5 LEGAL REQUIREMENTS**

- 3.5.1 The Contractor will pay all sales, consumer, use and similar taxes which had been legally enacted at the time this Contract was executed by the Owner and will secure

and pay for building and other permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Work which are either customarily secured by a contractor or Contractor or otherwise were legally required at the time this Contract was executed by the Owner.

3.5.2 Pursuant to Sales and Use Tax Law Chapter 212, Florida Statutes, the Hillsborough County Aviation Authority is exempt from the payment of sales tax. The Hillsborough County Aviation Authority Certificate Number is 39-00-143184-53C. Work performed by all subcontractors for the Contractor and supplies provided to all subcontractors or Contractor are not exempt from state sales tax.

3.5.3 The Contractor will comply fully with all applicable federal, state, county, municipal and other governmental laws, executive orders, wage, hour and labor, equal employment opportunity, disadvantaged business enterprises, pollution control and environmental regulations, applicable national and local codes, Florida Department of Transportation (FDOT) Policies, Guidelines, Standards, Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (Commonly referred to as the "Florida Green Book"), Manual on Uniform Traffic Control Devices and requirements, FAA Advisory Circulars, and Owner's Rules and Regulations. Any projects with FDOT funding require the Contractor to comply with all applicable provisions of the FDOT Public Transportation Grant Agreement. The Contractor will obtain all necessary permits, pay all required charges, fees and taxes and otherwise perform these services in a legal manner. In the event that any construction occurs on FDOT right of way, the Contractor shall comply with all FDOT requirements contained in Exhibit C of the FDOT Public Transportation Grant Agreement.

3.5.3.1 The Contractor will give all notices necessary for the lawful prosecution of the Work so as not to delay the completion of the Work.

3.5.4 The Contractor will obtain permission and pay any applicable royalties and license fees for patents, copyrights and trademarks in anyway involved in the Work.

3.5.4.1 If the Contractor has reason to believe the use of a required design, process or product is an infringement, the Contractor will be responsible for such loss unless such information is promptly furnished to the Owner prior to its use and Owner expressly directs Contractor to use it anyway.

3.5.5 It is the Contractor's responsibility that the Project Documents are in accordance and compliance with all applicable laws, statutes, ordinances, building codes and rules and regulations. If the Contractor observes that portions of the Project Documents are at variance therewith, the Contractor will promptly notify the Owner in writing and any necessary changes will be accomplished by Contractor.

3.5.6 If the Contractor performs Work contrary to any laws, statutes, ordinances, building codes and rules and regulations, Owner's Design Criteria, the Contractor will assume full responsibility for such Work and will bear the attributable costs without reimbursement from Owner.

3.5.7 The Contractor will keep fully informed of all Federal and State Laws, including but not limited to ADA requirements, all local laws, ordinances and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority which in any manner affect those engaged or employed on the Work, or which in any way affect the conduct of the Work. The Contractor will at all times observe and comply with all such laws, ordinances, regulations, orders and decrees.

3.5.8 The Contractor is required to hire a qualified consultant for the design phase of the Project.

### 3.6 **GOVERNMENT APPROVALS AND PERMITS**

3.6.1 The Contractor, with the cooperation of the Owner, will file all documents required to obtain necessary permits and approvals of governmental authorities having jurisdiction over the Project.

3.6.2 The Contractor will obtain and pay for all license and permits, all fees and charges for connection to outside services and parking for Contractor's vehicles; 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; and comply with the requirements of Authorities Having Jurisdiction (AHJ).

### 3.7 **ADDITIONAL SERVICES**

3.7.1 The additional services described below are not included in the Work and will be paid for, if authorized in writing by the Owner, as provided in this Contract.

3.7.1.1 Revisions to Drawings, Specifications and other documents or electronic data when such revisions are required by the enactment or revision of codes, laws or regulations subsequent to the issuance of applicable permits by appropriate governmental authorities having jurisdiction or the execution of this Contract, whichever is later.

3.7.1.2 Consultation concerning replacement of Work damaged by fire or other casualty covered by Builder's Risk, OCIP or other insurance policy and furnishing of services required in connection with the replacement of such Work.

3.7.1.3 Services in connection with a public hearing, arbitration proceeding, mediation, other alternative resolution proceeding or litigation, except where the Contractor is a party thereto.

### **3.8 WARRANTY**

- 3.8.1 In addition to its general warranty obligations under Paragraph 3.4.3 and elsewhere in the Contract Documents, the Contractor warrants it will correct any defective Work or Work found not to be in compliance with the requirements of the Contract Documents, or applicable laws, building codes, rules or regulations for one year from the date of Substantial Completion. All defective Work or Work found not to be in compliance with the requirements of the Contract, or applicable laws, building codes, rules or regulations appearing within this one-year period will be promptly corrected by the Contractor at the Contractor's own cost, without reimbursement from the Owner. Only the Work corrected during this one-year period will be warranted for one year from the date of accepted correction. With respect to any portion of Work performed after Substantial Completion, the one year correction period shall be extended by the period of time between Substantial Completion and the actual performance of the later Work.
- 3.8.2 The warranty provided under this Paragraph 3.8 will be in addition to and not in limitation of any other warranty required by the Contract Documents or otherwise prescribed by law.
- 3.8.3 The Contractor will procure and deliver to the Owner, prior to Final Completion and Acceptance, all warranties required by the Contract Documents. Delivery by the Contractor will constitute the Contractor's guarantee to the Owner that the warranty will be performed in accordance with its terms and conditions. Refer to General Requirements Sections 01700 - PROJECT CLOSEOUT and 01740 - WARRANTIES for additional requirements.
- 3.8.4 The warranties set out herein are not in lieu of any other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose.
- 3.8.5 If the Contractor fails to correct any defective Work or Work found not to be in compliance with the requirements of the Contract Documents, or applicable laws, building codes, rules or regulations within a reasonable time after receipt of written notice from the owner, the Owner may correct it in accordance with the Owner's right to carry out the Work. If such case occurs prior to final payment, the Contractor agrees that an appropriate Change Order shall be issued deducting the cost of correcting such deficiencies from payments then or thereafter due to the Contractor. If payments then or thereafter due Contractor are not sufficient, the Contractor agrees to pay the difference to the Owner. All reasonable claims, costs,

losses, and damages arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work by others) will be paid by Contractor.

- 3.8.6 If the Contractor's correction or removal of Defective Work causes damage to or destroys other completed or partially completed construction, the Contractor shall be responsible for the cost of correcting the destroyed or damaged construction.
- 3.8.7 Nothing contained in Article 3.8 shall be construed to establish a period of limitations with respect to other obligations the Contractor has under this Contract. Establishment of the one-year period for correction of Work as described in this Article relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than to specifically correct the Work.
- 3.8.8 If after the one year correction period, but before the applicable limitations period, the Owner discovers any latent defective Work or Work found not to be in compliance with the requirements of the Contract Documents, or applicable laws, building codes, rules or regulations, the Owner shall unless the latent defective Work or Work found not to be in compliance with the requirements of the Contract Documents, or applicable laws, building codes, rules or regulations requires emergency correction, notify the Contractor. If the Contractor elects to correct the Work, it shall provide written notice of such intent within fourteen (14) days of its receipt of notice from the Owner. The Contractor shall complete the correction of Work within a mutually agreed time frame. If the Contractor does not elect to correct the Work, the Owner may have the Work corrected by itself or others and the Contractor shall pay the Owner for the reasonable costs of the correction no later than fourteen (14) days following its receipt of the invoice. The Owner shall provide Contractor an accounting of correction costs it incurs.
- 3.8.9 Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of the Work that is not in accordance with the Contractor Documents or release the Contractor's obligation to perform the Work in accordance with the Contract Documents: (1) observations by the Owner or the Owner's agents; (2) recommendations for payment made to the Owner or payment by the Owner (whether progress or final); (3) issuance of Certificates of Substantial or Final Completion; (4) use or occupancy of the Work or any part thereof by the Owner; (5) any review and approval of a Shop Drawing or sample submittal; (6) any inspection, test or approval by others; or (7) any correction of defective Work by the Owner.

### **3.9 CONTRACTOR'S DESIGN AND CONSTRUCTION SCHEDULES**



- 3.9.1 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.
- 3.9.2 The Contractor will submit preliminary and baseline design and construction schedules for Owner's review and approval in accordance with requirements specified under General Requirements Section 01315 - SCHEDULES, PHASING. These schedules will not exceed time limits set forth in the Contract Documents, will be revised at appropriate intervals as required by the conditions of the Work and Project (but not less frequently than monthly), will be related to the entire Project to the extent required by the Contract Documents and will provide for expeditious and practicable execution of the Work. These schedules and any subsequent changes thereto will be incorporated into the Contract Documents by reference.
- 3.9.3 The Contractor will prepare and keep current, for the Owner's approval, a schedule of submittals which is coordinated with the Contractor's design and construction schedule and allows the Owner reasonable time to review submittals.
- 3.9.4 The Contractor will conform to the most recent approved schedules.

### **3.10 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

- 3.10.1 Shop Drawings are drawings, diagrams, calculations, models, schedules and other data (including electronic data) specially prepared for the Work by the Contractor or a subcontractor, sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.
- 3.10.2 Product Data are illustrations, standard schedules, descriptions, performance charts, manuals, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
- 3.10.3 Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.
- 3.10.4 Shop Drawings, Product Data, Samples and similar submittals are not Project Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.
- 3.10.5 After Contractor's review and approval, stamped copies of all Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents will be submitted to the Owner for comments and review. This documentation will

be submitted with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of its separate Contractors. The review of the submittals by the Owner will not constitute any release or discharge of Contractor's sole liability and responsibility for all such submittals.

- 3.10.6 The Contractor will not perform any 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 Contractor's licensed design professional and reviewed by the Owner. Such Work will be in accordance with approved submittals.
- 3.10.7 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor thereby represents to Owner that the Contractor has determined and verified that all dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, and coordination with information on previously accepted Shop Drawings, Product Data, Samples, or similar submittals are in compliance with all the requirements of the Contract Documents. The accuracy and coordination of such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples and similar submittals, the Owner will be entitled to rely upon the Contractor's representation that such information is correct and accurate.
- 3.10.8 The Contractor is not authorized to deviate from requirements of the Contract Documents unless the Contractor has specifically informed the Owner and Contractor's licensed design professional in writing of such deviation at the time of submittal and both the Contractor's licensed design professional and Owner have given written approval to the specific deviation. Even if the deviation is authorized as provided above, the Contractor will not be relieved of its responsibility for any errors or omissions in Shop Drawings, Product Data, Samples or similar submittals.
- 3.10.9 The Contractor will keep one clean copy of each submittal brochure and each Shop Drawing, bearing the Contractor's licensed design professional's review stamp and all review comments, including the Owner's, at the Project site.
- 3.10.10 The Contractor will ensure that all products, materials, Shop Drawings, Product Data, Samples and other submittals comply with the Contract Documents in every respect.
- 3.10.11 The Contractor will coordinate all products, materials, Shop Drawings, Product Data, Samples and other submittals with any other Contractors or contractors working in direct relation to the Work in this Contract.
- 3.10.12 The Contractor warrants that any substitutions, variations, deviations or modifications to any products or materials and any substitutions, variation, deviations or modifications depicted in any Shop Drawings, Product Data, Samples

or other submittals will work in coordination and harmony and will serve the intended purpose.

- 3.10.13 The Contractor will be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. The Owner may require the Contractor to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence, which, in the opinion of the Owner, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data will be furnished at the Contractor's expense. This provision will not require the Contractor to pay for periodic testing (more than one testing) of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the Contractor's expense.
- 3.10.14 In all cases in which a manufacturer's name, trade name or other proprietary designation is used in connection with materials or articles to be furnished under this Contract, whether or not the phrase "or equal" is used after such name, the Contractor will furnish the product of the named manufacturer(s) without substitution, unless a written request for a substitution has been submitted by the Contractor and approved by the Owner as provided in Paragraph 3.10.13. Refer to General Requirements Section 01605 - PRODUCTS AND SUBSTITUTIONS for additional requirements.
- 3.10.15 If the Contractor proposes to use a material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents or Owner Design Criteria Manual, the Contractor will inform the Owner in writing of the nature of such deviations at the time the material is submitted for approval and will request written approval of the deviation from the requirements of the Contract Documents.
- 3.10.16 In requesting approval of deviations or substitutions, the Contractor will provide, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality or result at least equal to that otherwise attainable. If, in the sole discretion of the Owner, the evidence presented by the Contractor does not provide a sufficient basis for such certainty, the Owner may reject such substitution or deviation without further investigation.
- 3.10.17 Any additional cost, or any loss or damage arising from the substitute of any material or any method from those originally specified due to non-conformity to the requirements of the Contract Documents, will be borne by the Contractor without reimbursement from Owner, notwithstanding approval or acceptance of such substitution by the Owner, unless such substitution was made at the written request or written direction of the Owner. Contractor waives its rights to claim Economic

Waste or Betterment for any substituted material or method subsequently discovered.

- 3.10.18 Refer to General Requirements Section 01340 - SHOP DRAWINGS, PRODUCT DATA AND SAMPLES for additional requirements.

### **3.11 USE OF SITE**

3.11.1 Contractor will be responsible for coordination with Owner for site access. The right of possession of the Project site and the improvements made thereon by the Contractor will remain at all times with the Owner. The Contractor's right to entry and use thereof arises solely from the permission granted by the Owner under the Contract Documents. The Owner reserves the right to direct the Contractor with respect to the security of the site and access points.

3.11.2 The Contractor will confine the Contractor's apparatus, the storage of materials and the operations of the Contractor's workmen to areas permitted by law, ordinances, the Contract Documents and permits and/or directions of the Owner and will not unreasonably encumber the Project site with the Contractor's materials. The Owner will not be liable to the Contractor, the Contractor's licensed design professional, consultants, subcontractors, their employees (of any tier) or anyone else with respect to the conditions of the Project site.

3.11.3 Material will be arranged and maintained in an orderly manner with the unencumbered use of walks, drives, roads and entrances. Contractor will store, place and handle material and equipment delivered to the Project site so as to preclude inclusion of foreign substances or causing of discoloration or deterioration. Contractor will pile materials neatly and compactly, barricade all storage and work areas from public view and shield them to protect the public from injury and protect materials as required to prevent damage from weather or ground. Should it be necessary to move material, sheds or storage platforms at any time, the Contractor will move them as and when required at no additional cost to the Owner.

3.11.4 The Owner assumes no responsibility for materials stored in building or on the Project site. The Contractor will assume full responsibility for damage due to storing of materials. Restoring of areas used for placing of sheds, offices and storage of materials will be performed by the Contractor.

### **3.12 CUTTING AND PATCHING**

3.12.1 The Contractor will be responsible for all cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

3.12.2 The Contractor will not damage or endanger a portion of the Work on fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor will not cut or otherwise alter such construction by the Owner or a separate contractor except with prior written consent of the Owner and such separate contractor. Such consent will not be unreasonably withheld. The Contractor will not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

3.12.3 Refer to General Requirements Section 01045 - CUTTING AND PATCHING for additional requirements.

### 3.13 **MOBILIZATION**

3.13.1 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.

## **ARTICLE 4 PAYMENTS**

4.1 The schedule of values will be approved by the Owner prior to Contractor submitting the initial and subsequent application for payments. The schedule of values and any subsequent changes thereto will be incorporated into the Contract Documents by reference.

4.2 Refer to General Requirements Section 01370 - SCHEDULE OF VALUES for additional information.

4.3 The schedule of values will be prepared in such a form and supported by such data to substantiate its accuracy in reflecting the breakdown for administrative and payment purposes as the Owner may require and will be revised later if found by the Owner to be inaccurate. The schedule of values will be further arranged to conform to the Contractor's milestones. If the Contract involves multiple projects, phases, or airports, then project, phase and airport sub-totals will be required. The schedule of values must be sent electronically in Excel format along with the application for payment.

- 4.4 Not Used.
- 4.5 The application for payment, in a format satisfactory to the Owner, will constitute a representation by the Contractor to the Owner that the design and construction have progressed to the point indicated; the quality of the Work covered by the application is in accordance with the Contract Documents; and the Contractor is entitled to payment in the amount requested.
- 4.6 The administrative actions and submittals which will be a condition precedent to payment of the Contractor's initial application for payment will include but not be limited to:
- 4.6.1 Listing of subcontractors, principal suppliers and fabricators.
  - 4.6.2 Schedule of Values (electronic in Excel format with submission).
  - 4.6.3 Initial CPM (or Bar Chart) Design and Construction Schedule, in the format required by the Contract Documents.
  - 4.6.4 Schedule of submittals including testing and inspections.
  - 4.6.5 W/MBE form.
  - 4.6.6 Stored Material spreadsheet (electronically in Excel format with submission and verification form).
  - 4.6.7 Fully executed subcontractor contracts electronically by pdf, with copies of subcontractor licenses as appropriate.
  - 4.6.8 Submission detail will be organized by order using required standard section dividers identifying the supporting information.
  - 4.6.9 A detailed workforce report showing each of the Contractor's employees.
  - 4.6.10 E-Verify compliance plans for Contractor and subcontractors per Article 34, E-Verify Requirement. Subsequent applications for payment will include E-Verify compliance plans for subcontractors not included with the initial application for payment.
  - 4.6.11 E-Verify Certifications for subcontractors. Subsequent applications for payment will include E-Verify Certifications for subcontractors not included with the initial application for payment.
  - 4.6.12 E-Verify reports for any new employees hired by the Contractor and subcontractors since the start of the Contract Term. Subsequent applications

for payment will include E-Verify reports for any new employees hired by the Contractor and subcontractors not included with the initial application for payment. E-Verify reports will only be required when the Contractor and subcontractors hire new employees and will not be required if the Contractor and subcontractors do not hire any new employees.

- 4.7 The Contractor will submit an application for payment to the Owner as a condition to receiving any monthly payment.
- 4.8 For performance of this Contract, the Owner will make payments in U.S. Dollars to the Contractor in accordance with the schedule of values approved by the Owner, which will be based on the GMP Contract Sum amount contained in Paragraph 21.2.1.
- 4.9 With the exception of the month of September, all applications for payment will be submitted to the Authority by the third of each month. In the event that the third of the month falls on a Saturday, Sunday or holiday, applications for payment are due the prior business day. Payment will be made by the 25th of the month. Due to the end of fiscal year financial closeout, September applications for payment will be submitted by September 19th, and in the event that the 19th falls on a Saturday, Sunday or holiday, applications for payment are due the prior business day and subsequent payments will be made the second Friday of October. The Owner requires the Contractor to have a pencil copy review and approval of all applications for payment with the Owner's Construction Project Manager prior to submittal.
- 4.10 The Contractor will submit to the Owner, via the Owner's Records Management Department, an electronic copy of a sworn executed and notarized original and an electronic copy of an itemized application for payment prepared on a form by the Owner at the pre-construction meeting and based on the agreed schedule of values, supported by such data substantiating the Contractor's right to payment as the Owner may require and reflecting retainage for all Work performed through the last day of the previous month or agreed upon date. The application for payment will be certified by a person duly authorized in writing to execute contractual instruments on behalf of the Contractor. If applicable, accompanying the Application for Payment shall be Lien Waivers and Waivers of Right to Claim against the Payment Bond for each subcontractor or vendor who has rights to claim against the Payment Bond for the Work covered by the Application for Payment. Incomplete applications for payment will be returned by the Owner without action. If deficiencies are found, a standard deficiency e-mail will be sent to the Contractor to resolve within one business day. If the deficiency is not resolved within that time, the application for payment will be returned. The original complete sworn, executed and notarized application for payment with all attachments shall be retained by the Contractor for five years following Substantial Completion and delivered to the Owner upon request.

- 4.11 The Owner will make payment according to the Owner's standard payment procedures. The Contractor agrees to pay each subcontractor for satisfactory performance of its subcontract within 10 days after receipt of the Contractor's payment from the Owner. After the subcontractor's work is satisfactorily completed, the Contractor agrees further to release all retainage payments to each Subcontractor within 10 days after receipt of the Contractor's payment from the Owner. Any delay or postponement of payment from the above-referenced time frames may occur only for good cause following written notice to the Owner. This clause applies to both DBE or W/MBE and non-DBE or non-W/MBE subcontractors.
- 4.12 Each application for payment will include the Contractor's signed statement certifying previous payments, based on the agreed schedule of values of the value of the Work. The total payment for each month will be broken down according to the specific items from the schedule of values that have been completed/delivered for which payment is requested. Payment will be made only for Work in place with the exception of stored materials as defined in this Contract. All such payments will be commensurate with the actual progress of the Work which will be substantiated and itemized in the Monthly Construction Schedule. Payments will not be made for any Work which cannot be so substantiated. Refer to General Requirements Section 01315 - SCHEDULES, PHASING.
- 4.13 Each application for payment will be based upon the most recent updated schedule of values approved by the Owner in accordance with the Contract Documents. The schedule of values will allocate the entire GMP among the various portions of the Work, except that the Contractor's Fee will be shown as a single separate item. The schedule of values will be prepared in such form and supported by such data to substantiate its accuracy as the Owner may require. If the Contract involves multiple projects, phases or airports, then project, phase and airport sub-totals will be required. This schedule of values, unless objected to by the Owner, will be used as a basis for reviewing the Contractor's application for payment. Schedule of values will include amounts of each fully executed Change Order approved by the Owner prior to the last day of the period of Work covered by the application for payment. The schedule of values must be sent electronically in Excel format along with the application for payment.
- 4.14 Applications for payment will show the percentage completion of each portion of the Work as of the end of the period covered by the application for payment. The percentage completion will be the percentage obtained by dividing (a) the expense which has actually been incurred by the Contractor on account of that portion of the Work for which the Contractor has made by (b) the share of the GMP Contract Sum allocated to that portion of the Work in the schedule of values. Applications for payment will not include costs of Work associated with Work required to be redone as a result of construction errors or defects.



4.15 The Contractor will submit with each application for payment an electronic copy of a detailed accounting of the value of Work performed to date by certified W/MBEs on Owner provided forms. The Owner will not make payment on an application for payment without the Contractor's submission of the detailed W/MBE accounting. If deficiencies are found, a standard deficiency e-mail will be sent to the Contractor to resolve within one business day. If the deficiency is not resolved within that time, the application for payment may be rejected in writing and such rejection will specify the deficiency and the action necessary to make the application for payment proper.

4.15.1 This accounting will include:

4.15.1.1 The names and addresses of W/MBE firms that have participated under this Contract;

4.15.1.2 A description of the Work each named W/MBE firm has performed;

4.15.1.3 The value of Work performed by each named W/MBE firm;

4.15.1.4 Addition or replacement of approved W/MBE firms; and

4.15.1.5 At 50% completion, a written plan of action properly reflecting anticipated W/MBE achievement of commitment.

4.16 The Contractor will submit with each application for payment a detailed accounting of the value of Work performed to date by their subcontractors. The Owner will not make payment on an application for payment without the Contractor's submission of the detailed subcontractor accounting.

4.16.1 This accounting will include:

4.16.1.1 The names and addresses of their subcontractors that have participated under this Contract;

4.16.1.2 A description of the Work each of their subcontractors has performed;

4.16.1.3 The value of Work performed by each of their subcontractors: and

4.16.1.4 Complete fully signed subcontractor contracts, subcontractor change orders with detailed cost back-up

documentation and purchase orders in electronic pdf format.

4.16.1.5 Submission detail will be organized by order using required standard section dividers identifying the supporting information.

4.16.1.6 Equipment purchased for and paid by the Owner must be identified when being paid so that an asset tag can be attached to that equipment. A detail listing in Excel format must be submitted when equipment is purchased. Final accounting for all assets will be performed at the completion of the project. Any assets unaccounted for will be reimbursed to the Owner.

4.17 Subject to other provisions of the Contract Documents, the amount of each progress payment will be computed as follows:

4.17.1 Take that portion of the GMP properly allocated to completed Work as determined by detailed supporting documentation of each portion of the Work of the GMP listed in the schedule of values.

4.17.2 Add that portion of the GMP properly allocated to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work or, if approved in advance by the Owner, suitably stored off site at a location agreed upon in writing.

4.17.3 Add the Contractor's overhead and fee.

4.17.4 Subtract the aggregate of previous payments made by the Owner.

4.17.5 Subtract the shortfall, if any, indicated by the Contractor in the documentation required by Paragraph 4.12 to substantiate prior applications for payment, or resulting from errors subsequently discovered by the Owner in such documentation.

4.17.6 Subtract any applicable liquidated damages.

4.17.7 Subtract any applicable retainage.

4.17.8 Subtract any other applicable contractual amounts owed the Owner.

4.18 All payments will be subject to correction following the discovery of an error, misrepresentation, or unallowable cost in any previous application for payment. Approval of such erroneous application for payment will not in any respect be taken

as an admission by the Owner of the amount of Work completed or as the release of the Contractor from any of its responsibility under this Contract or a waiver of any of the Owner's rights. If deficiencies are found, a standard deficiency e-mail will be sent to the Contractor to resolve within one business day. If the deficiency is not resolved within that time, the application for payment will be rejected in writing and such rejection will specify the deficiency and the action necessary to make the application for payment proper.

4.19 The Contractor's design and construction schedule will be updated on a monthly basis and a copy thereof submitted with each of the Contractor's applications for payment. This schedule update shall include a thirty (30) day "look-ahead schedule", projected variances and calculation of the number of days difference between the as-built critical path and the Project Schedule critical path. Contractor shall, with each application for Payment, provide completed monthly updated information for the previous month on the Project Schedule and updated information on manpower indicated as-built and as-planned conditions. The updated information on the Project Schedule shall not modify any milestone dates in the Project Schedule that Owner has previously approved. In its sole and absolute discretion, the Owner may withhold whole or partial payment of an application for payment not containing the Contractor's submission of an approved monthly design and construction schedule update. Refer to General Requirements Section 01315 - SCHEDULES, PHASING.

4.20 In addition to the schedule updates required above, at a minimum of once per month, Contractor shall, in addition to documentation required under the Contract, and as a condition precedent to payment, submit the following information including a monthly status report concisely but completely describing in narrative form, the current status of the Work including, without limitation:

4.20.1 A review of actual progress during the month in comparison to the Project Schedule and, if actual progress is behind schedule, discussion of any "work around" or "catch up plan" that Contractor has employed or will employ to recover the original Project Schedule;

4.20.2 A concise statement of the outlook for meeting future Project Schedule dates, and the reasons for any change in outlook from pervious report;

4.20.3 A concise statement of significant progress on major items of Work during the report period, and progress photographs and aerial photographs as necessary to document the current status of the Work;

4.20.4 A review of any significant technical problems encountered during the pay application period and the resolution or plan for resolution of the problems;

- 4.20.5 An explanation of any corrective action taken or proposed;
  - 4.20.6 A complete review of the status of Change Orders, including a review of any changes in the critical path of the Project Schedule which result from Change Orders approved by Owner during the month, as well as a review of the schedule impact of Change Order requests then pending;
  - 4.20.7 A summary of any claims anticipated by the Contractor with respect to the Work, including the anticipated cost and schedule impacts of any such claims;
  - 4.20.8 A cumulative summary of the number of days of, and the extent to which the progress of the Work was delayed by, any of the causes for which Contractor believes it could be entitled to an extension of the Contract Time;
  - 4.20.9 An updated material purchase log;
  - 4.20.10 An updated phasing plan;
  - 4.20.11 An updated and approved schedule of values;
  - 4.20.12 All daily reports from the previous month; and
  - 4.20.13 Updated submittal and testing logs.
- 4.21 The Owner may withhold or suspend payments or portions thereof, to such extent as may be necessary to fully protect its interests, on account of:
- 4.21.1 Work or execution thereof not performed or not in accordance with the Contract Documents;
  - 4.21.2 Work performed by the Owner, or contracted to others by the Owner, on behalf of the Contractor where said Work, or the costs thereof, are identified in the Contract Documents as the responsibility of the Contractor;
  - 4.21.3 Work remaining to be corrected or completed; or
  - 4.21.4 Contractor's noncompliance with the Owner's W/MBE Program and Policy or failure to meet the prescribed W/MBE expectancy set forth in this Contract, or to establish a good faith effort to do so.
  - 4.21.5 Contractor's noncompliance with provisions of this Contract.

4.22 Until 100% of the total GMP Contract Sum has been expended, the Owner will pay to Contractor 100% of all Applications for Payment submitted by Contractor. The Applications for Payment will represent the actual value, based on the Contract amount, of the Work satisfactorily performed on the Schedule of Values, less the aggregate of all previous payments and will reflect a retainage of 0% of the total amount payable for Work satisfactorily completed to date. Upon written request from the Contractor, retainage may be released to the Contractor, in the sole discretion of the Owner, for the Work or designated portions thereof upon reaching Substantial Completion, as defined in Article 6, Completion. Any amounts that are the subject of a good-faith dispute, the subject of a claim brought pursuant to Fla. Stat. 255.05, or are otherwise the subject of a claim or demand, will not be released. Retainage will not be withheld on design and construction administration fees.

The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 10 days after the Contractor has received a partial payment. The Contractor is required to fully pay retainage to the subcontractor within 10 days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when (1) all the tasks called for in the subcontract have been accomplished and documented as required by the Owner, (2) the Work or a designated portion of the Work which the subcontractor worked on has reached Substantial Completion (incremental acceptance) and (3) no good-faith disputes or claims involving the subcontractor have manifested.

Notwithstanding the foregoing, at the Owner's sole option, when at least 95% of the Work has been completed, the Engineer shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done. Subject to Fla. Stat. 255.078 (if applicable), the Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. Upon written request from the Contractor, the remainder (if any) may be released to the Contractor.

Notwithstanding the foregoing, at the Contractor's option, the Contractor may request that the Owner deposit the retainage into an escrow account. The Owner's deposit of retainage into an escrow account is subject to the following conditions:

- a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.
- b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.

- c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.
- d. The Contractor shall obtain the written consent of the surety to such agreement.

4.23 Payments may be made for nonperishable materials or equipment not incorporated in the Work upon the following conditions being met:

- 4.23.1 The materials or equipment have been stored or stockpiled in a manner acceptable to the Owner at the project site.
- 4.23.2 The Contractor has furnished the Owner with satisfactory evidence that the material and transportation costs have been paid.
- 4.23.3 The Contractor has furnished the Owner with acceptable evidence of the quantity and quality of such stored or stockpiled materials or equipment.
- 4.23.4 The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to materials so stored or stockpiled upon receipt of said materials or equipment.
- 4.23.5 The Contractor has furnished to the Owner copies of vendor invoices for stored materials or equipment, proof of payment, stored material or equipment listed in Excel format and a stored material verification form. All supporting backup must be labeled with the schedule of values item number and calculation of item number listed on the schedule of values.
- 4.23.6 The Contractor has furnished to the Owner documentation that all materials or equipment meet Specifications requirements.
- 4.23.7 The Contractor is responsible for all loss or damage of any type to such materials or equipment and will make suitable replacement or repair as necessary at the Contractor's own expense.
- 4.23.8 The Contractor is responsible for security with respect to all such stored materials or equipment.
- 4.23.9 The Contractor has furnished to the Owner evidence that the material or equipment so stored or stockpiled is insured against loss by damage to, or disappearance of, such materials or equipment at any time prior to use in the Work.

- 4.23.10 Payments for material on hand or for delivered material to be used in one item of Work will exceed \$3,000.00 and not be scheduled to be incorporated into the Work within 60 days after delivery.
- 4.23.11 It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials or equipment will in no way relieve the Contractor of its responsibility for furnishing and placing such materials or equipment in accordance with the requirements of the Contract Documents.
- 4.23.12 No partial payment will be made for stored or stockpiled living or perishable plant materials.
- 4.23.13 The Contractor will bear all costs associated with the partial payment of stored or stockpiled materials or equipment in accordance with the provisions of this subsection.
- 4.23.14 Raw or unfabricated materials will not be accepted as stored materials.

Notwithstanding the foregoing, the Owner may in its sole and absolute discretion, in special circumstances approve in writing in advance the waiver of one or more of the above conditions for payment of non-perishable materials or equipment not incorporated in the Work.

- 4.24 The Contractor warrants that title to all Work covered by an application for payment will pass to the Owner when the Contractor receives payment. The Contractor further warrants that upon submittal of an application for payment, all Work for which applications for payment have been previously issued and payments received from the Owner, will, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances, in favor of the Contractor, subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and/or equipment relating to the Work.
- 4.25 The approval of the application for payment does not constitute a representation by the Owner that the Work has progressed to the point indicated nor that the quality of the Work is in accordance with the Contract Documents. Any approvals by Owner of any application for payment are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, subsequent audits or attestation engagements and to specific qualifications expressed by the Owner. The approval of the application for payment will not be a representation that the Owner has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or

procedures, (3) reviewed data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the GMP Contract Sum.

4.26 In taking action on the Contractor's applications for payment, the Owner will be entitled to rely on the accuracy and completeness of the information furnished by the Contractor and will not be deemed to represent that the Owner has made a detailed examination, audit or arithmetic verification of the documentation submitted. Such examinations, audits, attestation engagements, and verifications, if required by the Owner, will be performed by the Owner acting in the sole interest of the Owner.

4.27 The Owner may decide not to approve payment and may withhold an application for payment, in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Owner's opinion the representations required from Contractor cannot be made. If the Owner is unable to approve payment in the amount of the application, the Owner will notify the Contractor in writing of the Owner's reasons for withholding approval in whole or in part. If the Contractor and Owner cannot agree on a revised amount, the Owner will approve payment for the amount for which the Owner is able to make such representations. The Owner may also decide not to approve payment or, because of subsequently discovered evidence or subsequent observations, may not approve the whole or a part of an application for payment previously issued, to such extent as may be necessary in the Owner's opinion to protect the Owner from loss because of:

4.27.1 Defective work not remedied duly evidenced;

4.27.2 Third party claims not being defended or indemnified;

4.27.3 Damage to the Owner or another contractor not being defended or indemnified;

4.27.4 Evidence that the Work will not be completed within the Contract Time so long as the contractual Dispute Resolution process has commenced;

4.27.5 Evidence that the unpaid balance would not be adequate to complete the Work so long as the contractual Dispute Resolution process has commenced;

4.27.6 Evidence that the unpaid balance would not be adequate to cover actual or liquidated damage for the anticipated delay so long as the contractual Dispute Resolution process has commenced; or



- 4.27.7 Failure of the Contractor to carry out the Work in accordance with the Contract Documents.
- 4.28 When the above reasons for withholding approval are removed, payment will be made for amounts previously withheld.
- 4.29 The Contractor will receive and accept compensation provided for in this Contract as full payment for furnishing all materials, for performing all Work under this Contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the Work or the prosecution thereof.
- 4.30 The Contractor will promptly pay the licensed design professionals, suppliers and each subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such licensed design professional's, supplier's and subcontractor's portion of the work, the amount to which said licensed design professional, supplier and subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such licensed design professional's, supplier's and subcontractor's portion of the Work. The Contractor will, by appropriate agreement with the licensed design professionals, suppliers and each subcontractor, require each design professional, supplier and subcontractor to make payments to sub-subcontractors, sub-contractors, design professional of lower tiers in similar manner.
- 4.31 The Owner may pay but shall not be obligated to pay or to be responsible in any way for payment to licensed design professionals, subcontractors, or suppliers.
- 4.32 Any payment made prior to the Final Acceptance of the Work will in no way bind the Owner to the acceptance of any materials or work in place as to quality or quantity. The Contractor will be responsible to correct any damage, defects or imperfections discovered on or before Final Acceptance.
- 4.33 Provision for assessment of liquidated damages for delay will in no manner affect the Owner's right to terminate this Contract as provided in Article 19. The Owner's exercise of the right to terminate will not release the Contractor from its obligation to pay said liquidated damages in the amounts set out in this Contract.
- 4.34 Contractor's Contingency Fund. A Contractor's contingency fund may be included as a specified amount in the GMP. It is further understood and agreed that such contingency funds are to be used for costs to complete work considered to be within the original scope of work, including issued change orders, but which exceed the established estimated costs. Use of contingency funds may be considered by the Owner for the following:

- 4.34.1 Those items that were included in the proposal drawings and specifications that the Contractor missed in proposing the GMP.
- 4.34.2 Those items that were included in the proposal drawings and specifications that the Contractor underpriced in proposing the GMP.
- 4.34.3 Schedule acceleration as required to meet contract milestones, or as deemed necessary by the Contractor to improve the project schedule when required.
- 4.34.4 Increased general conditions or general requirements costs.
- 4.34.5 Higher costs for replacing a subcontractor which are not covered by subcontractor default insurance or surety. The Contractor's subguard deductible will not be chargeable to the contingency.
- 4.34.6 Costs associated with changes required by Authorities having jurisdiction following establishment of the GMP.
- 4.34.7 Construction costs associated with changes in design affecting completed Work.
- 4.34.8 Costs for repairs for unassignable damage to Work.

All contingency fund charges will be tracked in a log by the Contractor. This log will be submitted, reviewed and approved prior to the monthly application for payment. All payment of contingency funds is subject to approval by Owner. All remaining funds in the Contractor's contingency upon completion shall revert to the Owner. Contractor's contingency fund will not be used to fund liquidated damages.

- 4.35 Assets, including, but not limited to, supplies, temporary facilities, furniture, machinery, equipment and hand tools purchased for and paid by the Authority (not included in pre-negotiated lump sum General Requirements or General Conditions) for items exceeding \$100.00 in value must be identified when being purchased. Any items exceeding \$1,000.00 in value must also be identified so that an asset tag can be attached to that equipment. A detail listing in Excel format must be submitted with each application for payment. Final accounting for all assets will be performed at the completion of the project. Any assets unaccounted for will be reimbursed to the Owner at full purchase price.

Assets including, but not limited to, supplies, temporary facilities, furniture, machinery, equipment and hand tools purchased through the GMP by the Contractor and not fully consumed in the performance of the Work may be sold by the Contractor with the written approval of the Owner. The Value for those items

not fully consumed, whether sold to others or retained by the Contractor will be based on current fair market value as approved by Owner, and credited to the Owner via deductive Change Order.

## **ARTICLE 5 TIME**

- 5.1 Contract Time(s) is the period of time allocated in the Contract Documents for Substantial Completion of the Work or designated portion thereof.
- 5.2 The date of Substantial Completion is the date certified by the Owner in accordance with General Requirements Section 01700 - PROJECT CLOSEOUT.
- 5.3 The Owner and the Contractor will perform their respective obligations as expeditiously as is consistent with reasonable skill and care and the orderly progress of the Project.
- 5.4 Time limit(s) stated in this Contract are of the essence. The Work to be performed under this Contract will commence upon receipt of a Notice to Proceed and subject to authorized Modifications, Substantial Completion will be achieved on or before the date established in Article 23.
- 5.5 By executing this Contract, the Contractor confirms that the Contract Time is a reasonable period for performing the Work. In the event the Contractor fails to promptly complete the Work herein within the Contract Time(s) provided, liquidated damages will accrue in the amount(s) and manner specified in Paragraph 23.2 if liquidated damages are provided.
- 5.6 The date of commencement of the Work is the date established in a written Notice to Proceed. Work under this Contract will not commence until the Owner has issued a written Notice to Proceed. Notwithstanding the previous sentence, preliminary Work such as, design, procuring insurance policy endorsements, certificates of insurance and payment and performance bonds can proceed after this Contract is signed and prior to the Notice to Proceed. The Contractor will begin the Work to be performed under this Contract within ten (10) days of the date set by the Owner in a written Notice to Proceed. In any event, the Contractor will notify the Owner at least 48 hours in advance of the time actual construction on Project site will begin. The date will not be postponed due to any failure of the Contractor.
- 5.7 Based on the Contract Time(s), a design and construction schedule, including time required for the Owner's review and for approval of submissions by authorities having jurisdiction over the Project, will be provided consistent with Paragraphs 5.4 above and 23.1 below.
- 5.8 The Contractor will furnish sufficient forces, materials and equipment and will work such hours, including weekends, night shifts and overtime, as may be necessary to

insure prosecution of the Work in accordance with the design and construction schedule specified under General Requirements Section 01315 - SCHEDULES, PHASING.

- 5.9 Should the Work, in whole or in part, fall behind the design and construction schedule or should the progress of the Work appear to Owner to be inadequate to assure completion within the Contract Time(s) specified in this Contract, the Contractor will, upon written notice from the Owner, take appropriate measures within seven days of such notice to put the Work back on schedule and meet the specified Substantial Completion date(s) in accordance with General Requirements Section 01315 - SCHEDULES, PHASING.
- 5.10 Should the Contractor fail to institute appropriate measures within seven days, or should the measures taken fail to put the Work back on schedule within 14 days of such notice, the Owner may, but will not be required to, supplement the Contractor's forces, materials and/or equipment with other forces, materials and/or equipment furnished by the Owner. The cost of such other forces, materials and/or equipment will be deducted by the Owner from the GMP Contract Sum. Should the unpaid portion of the GMP Contract Sum be insufficient to cover all such costs incurred by Owner, Contractor will pay such insufficient amount to Owner within five (5) business days of Owner's demand for payment. The Owner's use of such supplemental forces, materials and/or equipment will not excuse the Contractor from performing all of its obligations under the Contract Documents or relieve the Contractor from liquidated damages. The Contractor will coordinate and work together with such forces, materials and/or equipment.
- 5.11 Failure of the Contractor to comply with the requirements under this Article will be grounds for determination that the Contractor is not prosecuting the Work with such diligence as will ensure completion within the Contract Time(s) specified and such failure will constitute a material breach of the Contract Documents. Upon such determination, the Owner may terminate for cause the Contractor's right to proceed with the Work, or any separate part thereof, in accordance with Article 19.
- 5.12 When the Work or a designated portion thereof is substantially complete, the Owner will prepare and sign a Certificate of Substantial Completion which will establish the date of Substantial Completion. The responsibilities for security, maintenance, HVAC, utilities, damage to the Work and insurance will transfer from the Contractor to the Owner. The Certificate of Substantial Completion will be submitted to the Contractor for their written acceptance of responsibilities assigned to it therein.
- 5.13 No claim for damages or any claim other than for an extension of time will be made or asserted against the Owner by reason of any Delay, whether such Delay is related to (i) late or early completion, (ii) delay in the commencement, prosecution or

completion of the Work, (iii) hindrance or obstruction in the performance of the work, (iv) loss of productivity, or (v) other similar claims (collectively "Delay"), whether or not such Delay is foreseeable, unless the Delay is caused by acts of the Owner constituting fraud or active interference with the Contractor's performance of the Work, and only to the extent such acts continue after Contractor furnishes the Owner with notice of such fraud or interference. The Contractor will not be entitled to an increase in the GMP Contract Sum or payment or compensation of any kind from the Owner for direct, indirect, consequential, impact or other costs, expenses or damages, including but not limited to damages related to loss of business, loss of opportunity, impact damages, loss of financing, principal office overhead and expenses, loss of profits, loss of bonding capacity and loss of reputation; costs of acceleration or inefficiency, arising because of Delay, disruption, interference or hindrance from any cause whatsoever; provided, however, that this provision will not preclude recovery of direct and actual damages by the Contractor for hindrances or delays due solely to fraud, or active interference on the part of the Owner. Otherwise, the Contractor may be entitled only to extensions of the Contract Time as the sole and exclusive remedy for such resulting Delay, in accordance with and to the extent specifically provided above. The Owner's exercise of any of its rights or remedies under the Contract Documents (including but not limited to, order changes in the Work, stop work orders, directing suspension, rescheduling or correction of the Work), regardless of the extent or frequency of Owner's exercise of such rights or remedies, shall not be construed as active interference with the Contractor's performance of the Work.

- 5.14 Claims relating to time will be made in accordance with the applicable provisions of Article 10. Contractor's plea that insufficient Contract Time(s) was specified will not be a valid reason for extension of Contract Time. Contract Time will not be extended for any weather related delay except as provided in Article 10.
- 5.15 Permitting the Contractor to continue and finish the Work, or any part of it, after the Contract Time(s) established for Substantial Completion, will in no way operate as a waiver on the part of the Owner of any of its rights under this Contract.

## **ARTICLE 6 COMPLETION**

- 6.1 Substantial Completion is the stage in the progress of the Work when, in Owner's reasonable opinion, the Work or a designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.
- 6.2 When the Contractor considers that the whole Work, or a portion thereof designated in the Contract Documents for separate completion, is complete, the Contractor shall notify the Owner in writing of the completion of the portion or the

whole of the construction; and for all design work that originally required certification by a Professional Engineer, this notification shall contain an Engineer's Certification of Compliance, signed and sealed by a Professional Engineer, the form of which is attached to the FDOT Public Transportation Grant Agreement. The certification shall state that work has been completed in compliance with the Project construction plans and specifications. If any deviations are found from the approved plans or specifications, the certification shall include a list of all deviations along with an explanation that justifies the reason to accept each deviation.

- 6.3 When the Contractor considers that the whole Work, or a portion thereof designated in the Contract Documents for separate completion, is substantially complete and the premises comply with Paragraph 3.4.4 and the prerequisites to Substantial Completion in General Requirements Section 01700 – PROJECT CLOSEOUT are satisfied, the Contractor will submit to the Owner: (1) the permits and certificates referred to in Paragraph 18.5 and (2) the Contractor's request for inspection by the Owner.
- 6.4 Upon receipt of the Contractor's request for inspection, the Owner will perform an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Owner's inspection discloses any item which is not in accordance with the requirements of the Contract Documents, the Contractor will then prepare and submit to the Owner a comprehensive list of items to be completed and/or corrected including all close out documentation included in General Requirements Section 01700 – PROJECT CLOSEOUT. The Owner will inform the Contractor of the items on the list which must be completed prior to the Work being considered substantially complete and the Contractor will proceed promptly to complete such items. The Contractor will then submit a request for another inspection by the Owner to determine Substantial Completion. Repeat inspections, if necessary, will be performed prior to issuance of the Certificate of Substantial Completion by the Owner.
- 6.5 All Work items or Contract requirements which remain incomplete/unsatisfied at the Date of Substantial Completion will become part of the Final Acceptance punch list. For Projects with a value under \$10 million, within 30 days after Substantial Completion, the Owner will develop the Final Acceptance punch list and will provide it to the Contractor within five days after its completion. The Contractor will be allowed a minimum of 30 days after delivery of the Final Acceptance punch list to complete the items listed on the Final Acceptance punch list. However, for Projects with a value over \$10 million, within 60 days after Substantial Completion, the Owner will develop the Final Acceptance punch list and will provide it to the Contractor within five days after its completion. The Contractor will be allowed a minimum of 30 days after delivery of the Final Acceptance punch list to complete the items listed on the Final Acceptance punch list. The Owner will establish in the

Final Acceptance punch list the maximum period of time within which all items on the list must be completed by the Contractor.

- 6.6 In accordance with all other terms and conditions of this Contract, and to the maximum extent allowed under applicable law, after Substantial Completion of the whole Work, the Owner may, at the Owner's discretion and with the consent of the Contractor's Surety, approve an application for payment from which will be retained an amount not less than twice the Contract value or twice the estimated cost, whichever is greater, of the Work remaining to be done.
- 6.7 Upon completion of all items on the Final Acceptance punch list, the Contractor will submit a written notice that the whole Work is ready for final inspection and acceptance. The Owner will promptly make such inspection. When the Owner finds the Work under this Contract fully performed, the Owner will promptly issue the Letter of Final Completion and Acceptance indicating the date and stating that to the best of the Owner's knowledge, information and belief, and on the basis of the Owner's observations and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents.
- 6.8 Upon receipt of the Letter of Final Completion and Acceptance, the Contractor may submit an application for payment for all remaining retainage withheld by Owner. If a good-faith dispute exists as to whether one or more items identified on the punch list have been completed pursuant to this Contract, the Owner may continue to withhold an amount not to exceed 150% of the total costs to complete such disputed items.
- 6.9 Neither partial, entire use nor occupancy of the Project by the Owner will constitute an acceptance of Work not in accordance with the Contract Documents.
- 6.10 The Owner or separate contractors may occupy or use any completed or partially completed portion of the Work at any stage. Such partial occupancy or use may commence whether or not the portion is substantially complete. The Owner and Contractor will jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.
- 6.11 The Owner may deduct from the balance due the Contractor under the provisions of the Contract Documents any liquidated damages which may have accrued.
- 6.12 Neither final payment nor amounts retained, if any, will be paid until the Contractor submits to the Owner (1) an affidavit that all payrolls, bills for materials and equipment and other indebtedness connected with the Work (less amounts withheld by the Owner) have been paid or otherwise satisfied; (2) a certificate and/or endorsements as applicable evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and

will not be canceled or allowed to expire until at least 30 days prior written notice has been given to the Owner; (3) a sworn statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents; (4) consent of surety, if any, to final payment and (5) if required by the Owner, other documentation establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of this Contract, to the extent and in such form as may be designated by the Owner. The receipt of the aforementioned documentation shall be a material inducement for final payment.

- 6.13 The Contractor will furnish releases or waivers as may be required to satisfy the Owner that there are no outstanding claims or liens. To the maximum extent permitted by Florida Law, the Owner may require the Contractor, at the Contractor's expense, to furnish a bond satisfactory to the Owner to indemnify the Owner, its board members, officers, employees, agents, servants and volunteers against any such claims or liens and the attorney's fees and legal costs that could be incurred defending against such claims or liens. This obligation to furnish a bond will be construed separately and independently. It is the parties mutual intent that if this clause is found to be in conflict with applicable law, the clause will be considered modified by such law to the extent necessary to remedy the conflict. Upon satisfactory Final Completion and Acceptance of the whole Work required by the Contract Documents, the Contractor will make application for final payment in the same format as progress payments. For the avoidance of doubt, this provision does not contemplate the procurement of bonds other than those required by Article 24.1 herein.
- 6.14 After Substantial Completion, all closeout documents must be submitted to the Owner. The Owner may provide a detailed list of the close out documents required after receipt and acceptance of the Final Acceptance punch list.
- 6.15 All closeout documentation shall be furnished at least seven days before submission of final application for payment. Sufficient evidence of testing of all systems and equipment shall be provided at least seven days before submission of final application for payment.
- 6.16 Final payment will be made by the Owner to the Contractor when (1) this Contract has been fully performed by the Contractor and (2) a final application for payment and the substantiated final accounting for the Cost of the Work and the Contractor's Fee have been submitted by the Contractor and approved by the Owner.
- 6.17 The amount of the final payment will be calculated as follows:
- 6.17.1 Take the sum of the Cost of the Work substantiated by the Contractor's final accounting and the Contractor's Fee, but not more than the GMP Contract Sum.



- 6.17.2 Subtract any amounts withheld by the Owner under the provisions of the Contract Documents.
- 6.17.3 Subtract the aggregate of previous payments made by the Owner.
- 6.18 If the aggregate of previous payments made by the Owner exceeds the amount due the Contractor, the Contractor will reimburse the difference to the Owner within five (5) business days of the Owner's demand for payment.
- 6.19 The making of final payment will not constitute a waiver of claims by the Owner including, but not limited to, those arising from:
  - 6.19.1 Unsettled claims, security interests or encumbrances arising out of this Contract;
  - 6.19.2 Negligence or misrepresentation related to or arising from this Contract;
  - 6.19.3 Failure of the Work to comply with the requirements of the Contract Documents;
  - 6.19.4 Terms of warranties required by the Contract Documents;
  - 6.19.5 Claims discovered during audit or attestation engagements;
  - 6.19.6 Latent defects; or
  - 6.19.7 Claims covered by insurance required by this Contract.
- 6.20 Acceptance of final payment will constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of final application for payment.
- 6.21 As part of the Final Acceptance punch list, the Contractor will comply with the project close out provisions of General Requirements Section 01700 – PROJECT CLOSEOUT. The Contractor will submit all documentation required under General Requirements Section 01700 – PROJECT CLOSEOUT promptly and before Final Acceptance.

**ARTICLE 7**  
**PROTECTION OF PERSONS AND PROPERTY**

- 7.1 The Contractor will be responsible for all damage or injury to property of any character during the prosecution of the Work resulting from any act, omission,

neglect or misconduct in the Contractor's manner or method of executing the Work, or at any time due to defective Work or materials, and said responsibility will not be released until the Project has been completed and accepted. No payment for correcting any damage or injury will be paid for from the GMP.

- 7.2 The Contractor will be responsible for initiating, maintaining and providing supervision of all safety precautions and programs in connection with the performance of this Contract including Owner mandated program for safety management and enforcement.
- 7.3 The Contractor will designate, in writing to the Owner, competent person in the Contractor's organization whose sole duty will be safety, protection of persons and property and the prevention of accidents at the Project site. The competent person will be required to be at the Project site full time. This requirement may be waived or modified at Owner's sole discretion in writing.
- 7.4 The Contractor will take reasonable precautions for the safety of and will provide reasonable protection to prevent damage, injury or loss to: (1) employees on the Project site, general public, passengers, other employees at the airport, volunteers, invitees, and other persons who may be affected thereby; (2) the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor; (3) other property at or adjacent to the Project site, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal relocation or replacement in the course of construction; and (4) any other property.,
- 7.5 The Contractor will comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on the safety of persons or property or their protection from damage, injury or loss.
- 7.6 The Contractor will promptly remedy damage and loss to property at the Project site caused in whole or in part by the Contractor, or by anyone for whose acts it may be liable. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Paragraph 16.4.
- 7.7 The Contractor will erect and maintain reasonable safeguards for safety and protection, including barricades, fencing and posting danger signs and other warnings against hazards, and will give appropriate notice and warnings to Owner and users of adjacent sites and utilities.
- 7.8 When use or storage of explosives, hazardous materials, equipment, or other unusual methods are necessary for execution of the Work, the Contractor will provide owner with prior written notice of such and will exercise utmost care and carry on such activities under the supervision of properly qualified personnel.

- 7.9 The Contractor will comply with the provisions of the Occupational Safety and Health Act of 1970, 84 Stat. 1190, 29 U.S.C. 651 et. seq. (as amended), 29 C.F.R. 1926 (as amended) and applicable regulations and requirements under said Act. The Contractor will maintain an accurate record of all accidents causing death, traumatic injury, occupational disease, or damage to property, materials, supplies and equipment incidental to Work performed under this Contract. Contractor will notify Owner immediately and as soon as practicable in writing, of an occurrence of all accidents involving serious injuries to or death or persons, criminal activity or damage to or loss of property occurring on the project site. The notification will be sent to the Owner's Project Manager. The Contractor, its subcontractors and sub-subcontractors will cooperate with the Owner's insurers in the reporting, investigation, and resolution of claims for property damage, personal injury, or industrial injury that may arise during the construction of the project.
- 7.10 The Contractor will be responsible for the preservation of all public and private property and will protect carefully from disturbance or damage all land monuments and property markers until the Owner has witnessed or otherwise referenced their location and will not move them until directed.
- 7.11 When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct, whether or not in the execution of the Work, by the Contractor, Contractor will restore such property, at the Contractor's own expense, to a condition similar or equal to that existing before such damage or injury was done, by repairing or otherwise restoring as may be directed by Owner, or Contractor will make good such damage or injury in a manner acceptable to Owner.
- 7.12 Existing property or Work that is to remain in place which is damaged or defaced by reason of Work performed under this Contract will be restored at no cost to the Owner.
- 7.13 Until final acceptance, the Contractor will be in charge and care of the Work and will take every precaution against injury or damage due to the action of the elements or any other cause, whether arising from the execution or from the nonexecution of the Work. The Contractor will rebuild, repair, restore and make good all damages to any portion of the Work resulting from any of the above causes and will bear all expenses, at no cost to the Owner.

## **ARTICLE 8 CHANGES IN THE WORK**

### **8.1 CHANGES**

- 8.1.1 Changes in the Work may be accomplished, after execution of this Contract and without invalidating this Contract, by Change Order or Work Order.
- 8.1.2 The Contractor, by executing this Contract, acknowledges and agrees that the Contractor will not be entitled to payment for changes in the Work unless such changes are specifically authorized in writing by the Owner in advance. The terms of this Article may not be waived by the Owner unless such waiver is in writing and makes specific reference to this Article.
- 8.1.3 A Change Order will be based upon written agreement between the Owner and the Contractor. A Work Order may be issued by the Owner without the agreement of the Contractor.
- 8.1.4 Contractor will promptly proceed with the changes in the Work, unless otherwise provided in the Change Order or Work Order.

## **8.2 CHANGE ORDERS**

- 8.2.1 A Change Order is a written instrument prepared by the Owner and signed by the Owner and the Contractor, stating their agreement upon all of the following:
  - 8.2.1.1 A change in the scope of the Work;
  - 8.2.1.2 The amount of the adjustment, if any, to the GMP Contract Sum;
  - 8.2.1.3 The extent of the adjustment, if any, to the Contract Time; and
  - 8.2.1.4 Changes to the terms and conditions of this Contract, including the W/MBE percentage, if any.
  - 8.2.1.5 Waiver (CO form)
- 8.2.2 If a Change Order provides for an additive or deductive adjustment to the GMP Contract Sum, the adjustment will be based on one of the following methods:
  - 8.2.2.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
  - 8.2.2.2 Unit prices stated in the Contract Documents or unit prices otherwise mutually agreed upon;
  - 8.2.2.3 Cost estimated by the Contractor plus mark-up, if applicable, as accepted by the Owner; or

- 8.2.2.4 Cost to be determined in a manner agreed upon by the parties plus mark-up, if applicable.
- 8.2.3 If the Owner requests a proposal for a change in the Work from the Contractor and subsequently elects not to proceed with the change, a Change Order will be issued to reimburse the Contractor for reasonable costs incurred for estimating services, design services or preparation of proposed revisions to the Contract Documents.
- 8.2.4 The maximum percentage for total overhead and profit and any other expense which is not included in the cost of the Work will be as follows:
  - 8.2.4.1 For the Contractor, 30% of any net increase of costs of any Work;
  - 8.2.4.2 For the subcontractor, 15% of any net increase of cost of any Work performed by the subcontractor's own forces, plus the agreed upon Contractor's Fee of any net increase in the cost of the Work for the Contractor; and/or
  - 8.2.4.3 Per the Change Order negotiations.
- 8.2.5 Subcontractor costs, other than overhead and profit, must be itemized costs and not identified as a percentage or percentages.

### **8.3 Work Orders**

Refer to Section 01020, Owner's Allowance for requirements.

### **8.4 MINOR CHANGES IN THE WORK**

- 8.4.1 Minor changes in the Work do not involve an adjustment to the GMP Contract Sum or extension of the Contract Time and do not materially and adversely affect the Work, including the design, quality, performance and workmanship required by the Contract Documents. Contractor may make minor changes in the Work consistent with the intent of the Contract Documents, provided, however, prior to making any such change, Contractor must inform Owner, in writing, of any such changes and, if approved by the Owner record such changes on the record documents maintained by Contractor.

### **8.5 REGULATORY CHANGES**

- 8.5.1 The Contractor will perform changes in the construction necessitated by the enactment or revision of a code or regulation by appropriate governmental authorities having jurisdiction of codes, laws or regulations subsequent to the issuance of applicable permits or execution of this Contract by the Owner,

whichever occurs last and said changes shall be considered a Change Order in accordance with section 8.2. However, if the changes in construction result from a different interpretation of an authority having jurisdiction (“AHJ”) of an existing code or regulation then the change shall be made by the Contractor at no additional cost to the Owner.

## **ARTICLE 9 CORRECTION OF WORK**

### **9.1 UNCOVERING OF WORK**

9.1.1 If a portion of the Work is covered contrary to the Owner’s request or to requirements specifically expressed in the Contract Documents, that portion of the Work will be uncovered for the Owner’s examination if required in writing by the Owner, and will be restored at no cost to the Owner without change in the Contract Time.

9.1.2 If a portion of the Work has been covered which the Owner has not specifically requested to observe prior to it being covered, the Owner may request to see such Work and it will be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and restoration will be at the Owner’s expense. If such Work is not in accordance with the Contract Documents, the Contractor will pay the costs of uncovering, correction and restoration at no cost to the Owner.

### **9.2 CORRECTION**

9.2.1 The Contractor will promptly correct Work not in accordance with the Contract Documents rejected by the Owner or known by the Contractor to be defective or failing to conform to the requirements of the Contract Documents, whether discovered before or after Final Completion and Acceptance and whether or not fabricated, installed or completed. The Contractor will bear all costs of correcting such rejected Work, including additional testing and inspections at no cost to the Owner.

9.2.2 If within one year after the Date of Substantial Completion of the whole Work or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any Work is found to be defective or not in accordance with the Contract Documents, the Contractor will correct it promptly after receipt of a written notice from the Owner to do so at no cost to the Owner. This obligation will survive termination of this Contract.

- 9.2.3 The Contractor will remove from the site Work which is not in accordance with the requirements of the Contract Documents and which is neither corrected by the Contractor nor accepted by the Owner at no cost to the Owner.
- 9.2.4 The Contractor will bear the cost of correcting destroyed or damaged construction or property of the Owner or separate contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents at no cost to the Owner.
- 9.2.5 Nothing contained in Article 9 will be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the time period of one year as described in Paragraph 9.2.2 relates only to the specific obligation of the Contractor to correct the Work and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, or to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.
- 9.2.6 If the Contractor fails to correct nonconforming Work as required or fails to carry out Work in accordance with the Contract Documents, the Owner, by written order, may order the Contractor to stop the Work or any portion thereof until the cause for such order has been eliminated; however, the Owner's right to stop the Work will not give rise to a duty on the part of the Owner to exercise that right for the benefit of the Contractor or other persons or entities.

### **9.3 ACCEPTANCE OF NONCONFORMING WORK**

- 9.3.1 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the GMP Contract Sum will be reduced, if appropriate, as determined by the Owner in its reasonable discretion. Such reduction will be effective whether or not final payment has been made.

## **ARTICLE 10 DISPUTE RESOLUTION**

### **10.1 CLAIMS AND DISPUTES**

- 10.1.1 A claim is a written demand or assertion by one of the parties seeking as a matter of right an adjustment or interpretation of the Contract Documents, payment of money, an extension of time or other relief with respect to the terms of this Contract. The term claim also includes other matters in question between the Owner and Contractor arising out of or relating to this Contract. The responsibility to substantiate claims will rest with the party making the claim.

- 10.1.2 If for any reason the Contractor deems that an increase to the GMP Contract Sum or Contract Time is due the Contractor for work not provided for in the Contract Documents or previously authorized changes in the Work, the Contractor will notify the Owner in writing of its intention to claim such increases to the GMP Contract Sum or Contract Time. The Contractor will maintain, and give the Owner the opportunity to keep, strict account of actual cost and/or time associated with the claim. The failure to give proper notification as required herein will constitute a waiver of any claim.
- 10.1.3 Written notice from the Contractor of its intention to claim will be made within 45 days after it first recognizes the condition giving rise to the claim or before the Work begins on which the Contractor bases the claim, whichever is earlier. The failure to give proper notice as required herein will constitute a waiver of any claim.
- 10.1.4 When the Work on which the claim for an increase to the GMP Contract Sum or Contract Time is based has been completed, the Contractor will, within sixty days, submit the Contractor's written claim to the Owner. Such claim by the Contractor and the fact that the Owner has kept account of the cost or time of the Work will not in any way be construed as proving or substantiating the validity of the claim. The failure to provide the written claim as required herein will constitute a waiver of any claim.
- 10.1.5 Pending final resolution of a claim, unless otherwise agreed in writing, the Contractor will proceed diligently with performance of this Contract and maintain effective progress to complete the Work within the Contract Time(s) set forth in the Contract Documents.
- 10.1.6 For claims related to concealed or unknown conditions, the Contractor will take the following into consideration when preparing its GMP Proposal and will not be entitled to any additional compensation on account of concealed conditions except as specifically set forth in Paragraph 10.1.7. The Owner will make available to the Contractor, prior to and during the performance of the Work, record documents and drawings pertaining to the existing buildings and/or facilities relative to this Project. Those record documents and drawings will not be considered a part of the Contract Documents. Owner does not warrant to the Contractor the accuracy of such record documents and drawings and the Contractor will be solely responsible for all assumptions made in reliance thereupon. Those record documents and drawings are not warranted or intended to be complete depictions of existing conditions, nor do they necessarily indicate concealed conditions. The locations of electrical conduit, telephone lines and conduit, computer cables, FAA cables, storm lines, sanitary lines, irrigation lines, gas lines, structural members, mechanical apparatus and appurtenances, HVAC piping/ductwork and plumbing may only appear schematically, if at all, and the actual location is in many cases unknown.



Notwithstanding the foregoing, Owner warrants to the Contractor the accuracy of any information contained in any document or drawing relating to subsurface conditions.

- 10.1.7 Should the Contractor encounter concealed conditions in an existing structure or below the surface of the ground not discoverable by a careful inspection and differing materially from conditions ordinarily encountered and generally recognized in or about a Project site of that type, the Contractor shall stop work at the location when the concealed condition was discovered, give immediate written notice of the condition to the Owner. The Owner shall investigate the alleged concealed condition if the Contractor's notice was made no later than ten days after the Contractor's first observance of the conditions. The Owner may direct the Contractor to proceed with the Work or adjust the Work and Contractor shall follow the claims procedure outlined in the Contract if it believes it is entitled to additional Contract Time or an increase to the GMP Contract Sum. Nothing herein is intended to limit or modify the obligations of the Contractor set forth in General Requirements Section 01545 - UTILITIES. Contractor shall not be entitled to a change order for the GMP Contract Sum and/or Time if the Contractor knew of the existence of such conditions at the time Contractor submitted the GMP or the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas as required by the Contract Documents; or if Contractor failed to give written notice as required by this Article.
- 10.1.8 Notice of intention to claim is not required for claims relating to an emergency endangering life or property. Claims associated with emergencies will be filed in accordance with the procedure established in this Article.
- 10.1.9 The GMP Contract Sum or Contract Time will not be increased for any reasonably anticipated weather related delay. Adverse weather conditions not reasonably anticipated may be considered as a basis of a claim for additional Contract Time.
- 10.1.10 If the Contractor wishes to make claim for an increase in the Contract Time a written notice of intention to claim as provided herein must be given. The Contractor will have the burden of demonstrating the effect of the claimed delay on the Contract Time and its adverse impact on the critical path of the Design or Construction Schedule, and will furnish the Owner with such documentation relating thereto as the Owner will reasonably require. In the case of a continuing delay only one claim is necessary.

## **10.2 RESOLUTION OF CLAIMS AND DISPUTES**

- 10.2.1 The following shall occur as a condition precedent to the Owner's review of a claim unless waived in writing by the Owner:

10.2.1.1 Field Representatives' Meeting: Within five days (5) after a dispute or claim occurs, the Contractor's senior project management personnel who have authority to resolve the dispute or claim shall meet with the Owner's project representative who has authority to resolve the dispute or claim in a good faith attempt to resolve the dispute or claim. If a party intends to be accompanied at a meeting by legal counsel, the other party shall be given at least three (3) working days' notice of such and also may be accompanied by legal counsel. All negotiations pursuant to this clause are confidential and shall be treated as compromise and settlement negotiations for purposes of rules of evidence.

10.2.1.2 Management Representatives' Meeting: If the Field Representatives' Meeting fails to resolve the dispute or claim or if they fail to meet, a senior executive for the Contractor and for the Owner, neither of which have day to day Project Management responsibilities, shall meet, within ten days (10) after a dispute or claim occurs, in an attempt to resolve the dispute or claim and any other identified disputes or any unresolved issues that may lead to disputes or claims. If a party intends to be accompanied at a meeting by legal counsel, the other party shall be given at least three (3) working days' notice of such and also may be accompanied by legal counsel. All negotiations pursuant to this clause are confidential and shall be treated as compromise and settlement negotiations for purposes of rules of evidence.

10.2.1.3 Following the Field Representatives' Meeting and the Management Representatives' Meeting, the Owner will review the Contractor's disputes or claims and may (1) request additional information from the Contractor which will be immediately provided to Owner, or (2) render a decision on all or part of the dispute or claim. The Owner will notify the Contractor in writing of the disposition of the dispute or claim within 21 days following the receipt of such dispute or claim or receipt of additional information requested.

10.2.2 If the Owner decides that the Work relating to such claim should proceed regardless of the Owner's disposition of such claim, the Owner will issue to the Contractor a written directive to proceed. The Contractor will proceed as directed.

10.2.3 For any claim made pursuant to this Contract, the Contractor will provide at the Owner's request all escrowed GMP Proposal Documents referenced in Paragraph 3.1.9. If the Owner requests to review the escrowed GMP Proposal Documents and the Contractor fails to timely provide them or has failed to preserve them, the subject claim will be deemed waived and no claim by the Contractor will be honored by the Owner.

- 10.2.4 Escrowed GMP Proposal Documents referred to in this Contract may be subject to an audit by the Owner. In the event the audit supports all of the Contractor's claim, the Owner will pay for the audit. Otherwise, the Contractor will pay for the audit.
- 10.2.5 Not used.
- 10.2.6 Any action initiated by either party associated with a claim or dispute will be brought in the Circuit Court in and for Hillsborough County, Florida, such Court having sole and exclusive jurisdiction. Mediation with a mediator approved by the Owner shall be a condition precedent to litigation. Any such mediation will be subject to Rule 1.700 et seq, Florida Rules of Civil Procedure and Chapter 44 Fla. Statutes.

## **ARTICLE 11 SUBCONTRACTS**

- 11.1 A subcontractor is a person or entity who has a direct or indirect agreement with the Contractor to perform or provide a portion of the Work.
- 11.2 The Owner does not have any contractual relationship with any subcontractor on the Work. The Contractor will at all times, when Work is in progress, be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Owner.
- 11.3 The Owner reserves the right to investigate the qualifications and responsibility of proposed or actual subcontractors and to prohibit same from performing Work under this Contract where such investigation, in the reasonable judgment of the Owner, reveals that such subcontractors are unqualified and/or non-responsible. The Owner's criteria for such determination may include, but is not limited to, financial condition, experience, character of workers, condition of equipment and/or past performance. If the Owner has reasonable objection to any such proposed person or entity, the Contractor will submit a substitute to whom the Owner has no reasonable objection. The Contractor will not contract with a proposed person or entity to whom the Owner has made reasonable and timely objection. The Contractor will not be required to contract with anyone whom the Contractor has reasonable objection.
- 11.4 The Contractor will not change a subcontractor, person or entity listed in Contractor's subcontractors list without permission of the Owner. Contractor will notify the Owner in writing within 48 hours of such change. The Owner will have three (3) business days to object to such change in writing.
- 11.5 By appropriate agreement, written where legally required for validity, the Contractor will require each subcontractor, to the extent of the Work to be performed by the subcontractor, to be bound to the Contractor by the terms and

conditions of this Contract and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Contract Documents, assumes toward the Owner. Contractor shall require all subcontractors and on site suppliers to comply with Owner's safety plan. Nothing herein shall limit the Contractor from imposing more stringent safety requirements than the Owner's safety plan on subcontractors and on site suppliers. Each subcontract agreement will preserve and protect the rights of the Owner under the Contract Documents with respect to the Work to be performed by the subcontractor so that subcontracting thereof will not prejudice such rights and will allow to the subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor will require each subcontractor to enter into similar agreements with sub-subcontractors. The Contractor will make available to each proposed subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the subcontractor will be bound and upon written request of the subcontractor identify to the subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed sub-subcontractors

- 11.6 The Contractor will provide to the Owner fully signed copies of all subcontracts and proposals with the submission of the subcontractor's first billing in the submitted application for payment. The Contractor will provide to the Owner fully signed copies of all Change Orders with subcontractors with the submission of all applicable subcontractor billings.
- 11.7 The Owner reserves the right, but does not assume the obligation to, pay any and all subcontractors and suppliers directly or via joint check if a dispute arises with the Contractor.
- 11.8 At the sole discretion of the Owner, the Contractor may provide subcontractor default insurance (SDI) in lieu of subcontractor bonds. The budget for SDI will be included in the GMP as an allowance. At the end of the project, the SDI allowance will be reconciled to the actual cost of the premium plus the Contractor's Fee. The Contractor will be responsible for all deductible and co-insurance amounts.

## **ARTICLE 12**

### **WORK BY OWNER OR OWNER'S SEPARATE CONTRACTORS**

- 12.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces and to award separate agreements in connection with other portions of the Project or other construction or operations on the Project site.

- 12.2 The Contractor will afford the Owner and Owner's separate contractor reasonable opportunity for delivery and storage of materials and equipment and performance of activities and will connect and coordinate the Contractor's construction and operations with the Owner or Owner's contractor as required in the Contract Documents at no additional cost to the Owner.
- 12.3 Costs or damages arising out of delays or defective construction will be borne by the party responsible subject to the terms of this Contract.
- 12.4 The Contractor, with the Owner's assistance, will coordinate the Work of the Contractor with each separate contractor, who will cooperate with them. The Owner will provide for the coordination of the Owner's own forces with the Work of the Contractor, who will cooperate with them. The Contractor will coordinate with other separate contractors and/or the Owner in reviewing their respective construction schedules. The Contractor will make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules will then constitute the schedules to be used by the Contractor, separate contractors and/or Owner until subsequently revised.

### **ARTICLE 13 INDEMNIFICATION**

- 13.1 To the maximum extent permitted by Florida law, in addition to Contractor's obligation to provide pay for and maintain insurance as set forth elsewhere in this Contract, Contractor will indemnify and hold harmless the Owner, its members, officers, agents, employees, and volunteers from any and all liabilities, suits, claims, procedures, liens, expenses, losses, costs, royalties, fines and damages (including but not limited to claims for attorney's fees and court costs) caused in whole or in part by the:
1. Presence on, use or occupancy of Owner property;
  2. Acts, omissions, negligence (including professional negligence and malpractice), errors, recklessness, intentional wrongful conduct, activities, or operations;
  3. Any breach of the terms of this Contract;
  4. Performance, non-performance or purported performance of this Contract;
  5. Violation of any law, regulation, rule, Advisory Circular or ordinance;
  6. Infringement of any patent, copyright, trademark, trade dress or trade secret rights; and/or
  7. Contamination of the soil, groundwater, surface water, storm water, air or the environment by fuel, gas, chemicals or any other substance

deemed by the Environmental Protection Agency or other regulatory agency to be an environmental contaminant

by the Contractor or the Contractor's officers, employees, agents, volunteers, subcontractors, invitees, or any other person directly or indirectly employed or utilized by the Contractor, whether the liability, suit, claim, lien, expense, loss, cost, fine or damages is caused in part by an indemnified party. This indemnity obligation expressly applies, and shall be construed to include, any and all claims caused in part by negligence, acts or omissions of the Owner, its members, officers, agents, employees, and volunteers.

13.2 In addition to the duty to indemnify and hold harmless, Contractor will have the separate and independent duty to defend the Owner, its members, officers, agents, employees, and volunteers from all suits, claims, proceedings or actions of any nature seeking damages, equitable or injunctive relief, liens, expenses, losses, costs, royalties, fines, attorney's fees or any other relief in the event the suit, claim, or action of any nature arises in whole or in part from the:

1. Presence on, use or occupancy of Owner property;
2. Acts, omissions, negligence (including professional negligence and malpractice), errors, recklessness, intentional wrongful conduct, activities, or operations;
3. Any breach of the terms of this Contract;
4. Performance, non-performance or purported performance of this Contract;
5. Violation of any law, regulation, rule, order, decree, Advisory Circular or ordinance;
6. Infringement of any patent, copyright, trademark, trade dress or trade secret rights; and/or
7. Contamination of the soil, groundwater, surface water, storm water, air or the environment by fuel, gas, chemicals or any other substance deemed by the Environmental Protection Agency or other regulatory agency to be an environmental contaminant

by the Contractor or the Contractor's officers, employees, agents, volunteers, subcontractors, invitees, or any other person directly or indirectly employed or utilized by the Contractor regardless of whether it is caused in part by the Owner, its members, officers, agents, employees, or volunteers. This duty to defend exists immediately upon presentation of written notice of a suit, claim or action of any nature to the Contractor by a party entitled to a defense hereunder. This indemnity obligation expressly applies, and shall be construed to include, any and all claims caused in part by negligence, acts or omissions of the Owner, its members, officers, agents, employees, and volunteers.

- 13.3 If the above indemnity or defense provisions or any part of the above indemnity or defense provisions are limited by Fla. Stat. § 725.06(2)-(3) or Fla. Stat. § 725.08, then with respect to the part so limited, Contractor agrees to the following: To the maximum extent permitted by Florida law, Contractor will indemnify and hold harmless the Owner, its members, officers, agents, employees, and volunteers from any and all liabilities, damages, losses, and costs, including, but not limited to, reasonable attorneys' fee, to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Contractor and persons employed or utilized by the Contractor in the performance of this Contract.
- 13.4 If the above indemnity or defense provisions or any part of the above indemnity or defense provisions are limited by Fla. Stat. § 725.06(1) or any other applicable law, then with respect to the part so limited the monetary limitation on the extent of the indemnification shall be the greater of the (i) monetary value of this Contract, (ii) coverage amount of Commercial General Liability Insurance required under this Contract or (iii) \$1,000,000.00. Otherwise, the obligations of this Article will not be limited by the amount of any insurance required to be obtained or maintained under this Contract.
- 13.5 In addition to the requirements stated above, to the extent required by FDOT Public Transportation Grant Agreement and to the fullest extent permitted by law, if applicable, the Contractor shall indemnify and hold harmless the State of Florida, FDOT, including the FDOT's officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor and persons employed or utilized by the Contractor in the performance of this Contract. This indemnification in this paragraph shall survive the termination of this Contract. Nothing contained in this paragraph is intended to nor shall it constitute a waiver of the State of Florida's and FDOT's sovereign immunity.
- 13.6 Contractor's obligations to defend and indemnify as described in this Article will survive the expiration or earlier termination of this Contract until it is determined by final judgment that any suit, claim or other action against the Owner, its members, officers, agents, employees, and volunteers is fully and finally barred by the applicable statute of limitations or repose.
- 13.7 Nothing in this Article or Contract will be construed as a waiver of any immunity from or limitation of liability the Owner, or its members, officers, agents, employees, and volunteers may have under the doctrine of sovereign immunity under common law or statute.
- 13.8 The Owner and its members, officers, agents, employees, and volunteers reserve the right, at their option, to participate in the defense of any suit, without relieving Contractor of any of its obligations under this Article.

- 13.9 If the above Article 13.1-13.8 or any part of Article 13.1-13.8 is deemed to conflict in any way with any law, the Article or part of the Article will be considered modified by such law to remedy the conflict.

**ARTICLE 14  
SUCCESSORS AND ASSIGNS**

- 14.1 The Owner and Contractor respectively, bind themselves, their partners, successors, assigns and legal representatives to the other party to this Contract and to the partners, successors, legal representatives and assigns of such other party with respect to all terms and conditions of this Contract.
- 14.2 Except as hereinafter provided, neither party to this Contract will assign this Contract or sublet it, in whole or in part, without the written consent of the other, nor will the Contractor assign any monies due or to become due hereunder, without the previous written consent of the Owner. If the Contractor attempts to make such an assignment without such consent, the Contractor will nevertheless remain legally responsible for all obligations under this Contract.
- 14.3 The Owner reserves the right to transfer its interests herein to any other governmental body authorized by law to operate the airport(s). The Contractor reserves the right to assign this Contract to any Contractor's affiliates upon approval by the Owner.

**ARTICLE 15  
TERMINATION OF PROFESSIONAL DESIGN SERVICES**

Prior to termination of the services of any licensed design professional employed by the Contractor, the Contractor will identify to the Owner in writing another licensed design professional with respect to whom the Owner has no reasonable objection, who will provide the services originally to have been provided by the licensed design professional whose services are being terminated.

**ARTICLE 16  
MUTUAL RESPONSIBILITY**

- 16.1 If any part of the Contractor's Work depends for proper execution or operation upon the work or any applicable portion thereof of any other separate contractor, the Owner will give the Contractor written notice of the date when the other contractor will have completed its construction or any applicable portion thereof and the Contractor will have 15 days from that date within which to inspect the other contractor's construction or any applicable portion thereof and to accept said construction or to reject said construction in writing to the Owner, reciting all discrepancies or defects which affect Contractor's Work and therefore will need



remediation. Upon receipt of such statement, the Owner will see that necessary remediation is made and will notify the Contractor when remedial work is complete. The Contractor will have 15 days from the completion date of remedial work to reinspect and report again to Owner, in order to determine that discrepancies or defects complained of have been corrected.

16.2 Failure of the Contractor to inspect and report as required will constitute an acceptance of the other contractor's construction, or any applicable portion thereof, as fit and proper to receive Contractor's Work, except as to latent defects which may develop in the other separate contractor's construction or any applicable portion thereof after the execution of the Contractor's Work.

16.3 Upon completion of the other contractor's construction or any applicable portion thereof the area will be turned over to the Contractor.

16.4 The Contractor will promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractor at no cost to the Owner.

#### **ARTICLE 17 RIGHTS AND REMEDIES**

17.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder will be in addition to duties, obligations, rights and remedies imposed or available by law and not a limitation thereon.

17.2 No action or failure to act by the Owner or Contractor will constitute a waiver of a right or duty afforded them under this Contract, nor will such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

17.3 Continued performance by the Contractor as to the terms and conditions of this Contract after default of the Contractor will not be deemed a waiver by the Owner of the right to cancel for any subsequent default. Inspections, measurements or certificates issued by the Owner, payments of money, acceptance of any Work, grants of any extension of time, or any other action taken by the Owner will not operate as a waiver of any provisions of this Contract or any power therein reserved to the Owner of any rights to damages therein provided.

17.4 Final acceptance of the Work will not preclude or estop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the whole Work, nor will the Owner be precluded or estopped from recovering from the Contractor or Contractor's surety, or both, such overpayment as may be sustained by the failure on the part of the Contractor to fulfill Contractor's obligations under

this Contract for any Work performed not under a Lump Sum. A waiver, on the part of the Owner, of any breach of any part of this Contract by Contractor will not be held to be a waiver of any other breach by Contractor.

- 17.5 The Contractor, without prejudice to the terms and conditions of this Contract, will be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as relates to the Owner's rights under any warranty or guaranty.
- 17.6 The Contractor's remedies are limited to those remedies specified herein. To the fullest extent permitted by law, Contractor agrees that it is not entitled to nor will it seek equitable adjustment of any of the terms if this contract including but not limited to the Contract Time and Contract Sum. This provision shall take precedence over any conflicting contract provisions.
- 17.7 The Contractor's obligations to indemnify under this Contract shall be limited to the GMP Contract Sum.

## **ARTICLE 18 TESTS AND INSPECTIONS**

- 18.1 In addition to quality control, which is the Contractor's sole responsibility, tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction will be made at appropriate times.
- 18.2 The Contractor will make arrangements and pay for such tests, inspections and approvals with an independent testing laboratory or entity selected by the Contractor and acceptable to the Owner or with the appropriate public authority other than the Owner. The Contractor will give the Owner no less than 24 hours' notice of when and where tests, inspections and approvals are to be made so that the Owner may observe such.
- 18.3 If the Owner or other public authority having jurisdiction determines that portions of the Work require additional testing, inspection or approval not included under Paragraph 18.1, the Owner will, in writing, instruct the Contractor to make arrangements for such additional testing, inspection or approval and the Contractor will give Owner no less than 24 hours' notice of when and where such tests, inspections and approvals are to be made so the Owner may observe such.
- 18.4 If such procedures for testing, inspection or approval under this paragraph reveal failure of portions of the Work to comply with requirements established by the Contract Documents, any additional testing, inspection or approval will be borne by the Contractor at no cost to the Owner. In addition, the Contractor will bear, at no cost to the Owner, all costs made necessary by such failure, including those of

corrective Work, repeated procedures and compensation for the Owner's services and expenses. If such procedures for testing, inspection or approval under this paragraph reveal the Work complies with requirements established by the Contract Documents, any additional testing, inspection or approval will be borne by the Owner at no cost to the Contractor.

- 18.5 The Contractor will secure and promptly deliver to the Owner within seven (7) days, any required certificates of testing, inspection or approval, any occupancy permits, any certificates of final inspection of any part of the Contractor's Work and any operating permits for any mechanical apparatus, such as elevators, boilers, air compressors, etc. which may be required by law to permit full use and occupancy of the premises by the Owner. Receipt of such permits or certificates by the Owner will be a condition precedent to Substantial Completion of the Work or designated portion thereof.
- 18.6 Management and documented tracking and control of all tests, inspections or approvals conducted pursuant to the Contract Documents will be the sole responsibility of the Contractor and all records will be verified, tracked, documented and conducted to avoid unreasonable delay in the Work. All tests, inspections and approvals documentation will be made available to the Owner for review upon request.

## **ARTICLE 19 TERMINATION OR SUSPENSION OF THE CONTRACT**

### **19.1 WRITTEN NOTICE FOR TERMINATION OR SUSPENSION**

- 19.1.1 Written notice will be deemed to have been duly served if delivered at or sent by certified mail to the address provided in Article 1.

### **19.2 TERMINATION BY THE OWNER FOR CAUSE**

- 19.2.1 Owner may terminate this Contract if the Contractor:
- 19.2.1.1 Fails to commence the Work within the time specified, fails to maintain adequate progress toward completion of the Work, discontinues the prosecution of the Work, abandons the prosecution of the Work, or fails to resume Work which has been discontinued within a reasonable time after notice to do so, provided that the failure, discontinuity and abandon lasts at least 30 days; or
  - 19.2.1.2 Fails to perform the Work, fails to provide a sufficient number of adequately skilled workers or supervisory staff who actively staff the Project and prosecute the Work, or fails to have available at the site

proper equipment or materials to assure completion of the Work in accordance with the terms of the Contract Documents; or

- 19.2.1.3 Performs the Work unsuitably, or neglects or refuses to remove materials or to perform anew such Work as may be rejected by Owner as unacceptable or unsuitable; or
- 19.2.1.4 Fails to comply with Contract requirements regarding minimum wage payments, EEO or W/MBE requirements; or
- 19.2.1.5 Disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction; or
- 19.2.1.6 Allows any final judgment against it to remain unsatisfied for a period of 30 days; or
- 19.2.1.7 Becomes insolvent, is declared bankrupt, files for reorganization under the bankruptcy code or commits any act of bankruptcy or insolvency, either voluntarily or involuntarily; or
- 19.2.1.8 Makes an assignment or attempts to assign its rights or obligations under this Contract or any part thereof to any third-party without the prior written consent of the Owner; or
- 19.2.1.9 Consents to or is the subject of any order or decree of any court or governmental authority or agency having jurisdiction appointing a receiver, trustee, or liquidator to take possession or control of all or substantially all of the Contractor's property for the benefit of creditors; or
- 19.2.1.10 Materially breaches any provision in this Contract; or
- 19.2.1.11 If at any time the Surety executing the bonds is determined by the Owner to be unacceptable and the Contractor fails to furnish an acceptable substitute Surety within ten days after notice from the Owner; or
- 19.2.1.12 Fails or refuses to perform any other obligation under the Contract, and fails to remedy such nonperformance within ten days after notice of the occurrence by the Owner; or
- 19.2.1.13 Fails to achieve the required Interim, Substantial or Final Completion dates.

- 19.2.2 When any of the above reasons exist, the Owner may without prejudice to any other rights or remedies available shall give notice, in writing, to the Contractor and the Contractor's Surety, if required. If the Contractor within a period of ten days after receiving such notice has not presented a plan to cure such cause, or has not commenced in good faith to cure such cause or breach, or if having commenced such cure is not proceeding diligently to complete the cure, the Owner will have full power and authority, without violating this Contract, collectively or individually:
- 19.2.2.1 Declare the Contractor in default; or
  - 19.2.2.2 Terminate, in whole or in part, this Contract; or
  - 19.2.2.3 Exercise any other remedy available to it at law or under the Contract.
- 19.2.3 Upon termination of this Contract according to clause 19.2.1, the Owner may, subject to any prior rights of the Contractor's Surety:
- 19.2.3.1 Take possession of the site and of all materials, equipment, tools, and machinery thereon owned by the Contractor that the Owner has paid for; and
  - 19.2.3.2 Finish the Work by whatever method the Owner may deem expedient and necessary.
- 19.2.4 When the Owner terminates this Contract for cause according to clause 19.2.1, the Owner will be entitled to hold all amounts due the Contractor at the date of termination until completion of the Work and final evaluation of the Owner's damages associated with the termination. The Contractor will be liable to the Owner for costs and expenses incurred by the Owner in completing the Work, and also for losses, damages, costs and expenses including, but not limited to, direct, indirect and consequential damages. If such costs and expenses exceed the sum that would have been payable under this Contract, then the Contractor and the Surety will be liable and will pay to the Owner the amount of such excess. If the unpaid balance of the GMP Contract Sum exceeds the cost of finishing the Work, including any and all additional costs and expenses to the Owner, such excess to the extent earned will be paid to the Contractor and/or Contractor's Surety.
- 19.2.5 Upon termination of this Contract for cause according to clause 19.2.1, the Owner has no liability for anticipated profits for unfinished work.
- 19.2.6 Termination of this Contract, or any portion thereof, will not relieve the Contractor or the Contractor's Surety of their liability for past and future damages, losses or claims on Work performed or on account of any act, omission, or breach by the

Contractor. Liability for liquidated damages, if any, will continue to accrue as set forth in the Contract Documents.

19.2.7 The Owner's right of termination, as set forth herein, shall be in addition to and not a limitation of any and all other rights and remedies available to the Owner, at law, or under the terms of the Contract. If the Owner improperly terminates this Contract for cause, this termination for cause will be converted to and deemed to be a termination for convenience in accordance with the provisions of Paragraph 19.3 and Contractor shall only be entitled to those rights and remedies expressly stated in Paragraph 19.3 and in no event shall Contractor be entitled to any damages or remedies for wrongful termination.

19.2.8 When the Owner terminates this Contract for cause according to clause 19.2.1, the Contractor will be entitled to payment for Work finished, installed or in process which is acceptable according to the Contract Documents up to the date of termination, subject to offsets.

### **19.3 TERMINATION BY THE OWNER FOR CONVENIENCE**

19.3.1 Notwithstanding anything else in this Contract, the Owner, in its sole and absolute discretion, may at any time terminate the Work under this Contract, in whole or in part, for the Owner's convenience and without cause by written notice to the Contractor with 30 days in advance to termination specifying the extent of the termination and the effective date.

19.3.2 Upon receipt of the written notice from the Owner of such termination, the Contractor will promptly proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due:

19.3.2.1 Complete performance of the Work not terminated and cease operations as directed by the Owner in the notice;

19.3.2.2 Take actions necessary, or as directed by the Owner, for the protection and preservation of the Work;

19.3.2.3 Except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and orders for materials, services or facilities and enter into no further subcontracts and orders, unless otherwise directed by the Owner;

19.3.2.4 With approval or ratification to the extent required by the Owner, settle outstanding liabilities and termination settlement proposals, if any, arising out of the termination of subcontracts;

- 19.3.2.5 As directed by the Owner, transfer title and deliver to the Owner (1) the fabricated or unfabricated parts, Work in progress, completed Work, supplies and other material produced or acquired for the portion of the terminated Work, and (2) the completed or partially completed plans, Drawings, electronic data, information and other property that, if this Contract had been completed, would be required to be furnished to the Owner; and
- 19.3.2.6 Use its best effort to sell, as directed or authorized by the Owner, any property of the types referred to in Paragraph 19.3.2.5 of this clause; provided, however, that the Contractor (1) is not required to extend credit to any purchaser and (2) may acquire the property under the conditions prescribed by and at prices approved by the Owner. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Owner under this Contract, credited to the price or cost of the Work, or paid in any manner directed by the Owner.
- 19.3.3 The Contractor will submit to the Owner a complete list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Owner, within 30 days of the termination. Within 30 days, the Owner will accept title to those items and remove them or enter into a storage agreement. The Owner may verify the list upon removal of the items, or if stored, within 45 days from submission of the list and will correct the list, as necessary, before final settlement.
- 19.3.4 When the Owner terminates this Contract or any portion thereof for convenience, the Contractor will be entitled to payment for Work finished, installed or in process which is acceptable according to the Contract Documents up to the date of termination, including reasonable profit on the completed Work and for the Contractor's reasonable increased direct costs incurred as a result of the termination and for reasonable increased direct costs as described in Section 19.3.5. The agreed amount may not exceed the total GMP Contract Sum as reduced by the amount of payments previously made. No payment of any kind or amount will be made for items of Work not started. The Contractor shall not be entitled to and expressly waives any claim for loss of anticipated profit, overhead of any kind, including home office and jobsite overhead, or other indirect impacts.
- 19.3.5 The reasonable increased direct costs incurred as a result of the terminated Work include:
- 19.3.5.1 Reasonable non-legal expenses including accounting and clerical expenses necessary only for the preparation of termination settlement proposals and support data; and

- 19.3.5.2 Storage, transportation and other costs incurred, which are reasonably necessary for the preservation, protection, or disposition of the termination inventory.
- 19.3.6 In arriving at the amount due the Contractor, the following amounts may be deducted:
  - 19.3.6.1 All advances or other payments to the Contractor under the terminated portion of this Contract;
  - 19.3.6.2 Any claim which the Owner has against the Contractor under this Contract, so long as the contractual Dispute Resolution process has commenced;
  - 19.3.6.3 The agreed price for, or the proceeds from, the sale of materials, supplies, or any other asset acquired by the Contractor or sold under the provisions of this Contract and not recovered by or credited to the Owner; and
  - 19.3.6.4 The value, as determined by the Owner, for property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Owner.
- 19.3.7 Unless otherwise provided in this Contract or by statute, the Contractor will maintain all records and documents (including but not limited to subcontracts, subcontractor change orders, purchase orders, bid tabulations, proposals and all other documents associated with the project) relating to the terminated portion of this Contract for five years after final settlement. This includes all books, records, documents, electronic data and other evidence bearing on the Contractor's costs and expenses under this Contract. The Contractor will make these records, documents and electronic data available to the Owner, at the Contractor's office, at reasonable times without any direct charge to the Owner. If approved by the Owner, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.
- 19.3.8 The Owner will terminate this Contract or portion thereof by written notice when the Contractor is prevented from proceeding with this Contract as a direct result of an Executive Order of the President of the United States.
- 19.3.9 Termination of this Contract, or portion thereof, under this Paragraph 19.3 does not relieve the Contractor or the Contractor's Surety of its responsibilities for the completed portion of the Work or its obligation for and concerning any just claims arising out of the Work performed.

#### **19.4 SUSPENSION BY OWNER FOR CONVENIENCE**



- 19.4.1 The Owner may, without cause, by written order, direct the Contractor to suspend, delay or interrupt all or any part of the Work for such period of time as the Owner may determine to be appropriate for the convenience of the Owner.
- 19.4.2 If it should become necessary to suspend Work for an indefinite period, the Contractor will be granted an appropriate extension to the Contract Time for the period of suspension, which will not exceed the day-for-day period of suspension. The Owner shall adjust the GMP Contract Sum for reasonable increases in the direct cost of performance of the Work including a negotiated profit necessarily caused by such suspension, delay or interruption.
- 19.4.3 The Contractor will maintain and secure the Project, properly store all materials, provide for suitable drainage and provide any temporary structures that may be required during the suspension period. All established living material will be properly and continuously maintained in an acceptable growing condition throughout the suspension period.
- 19.4.4 No adjustments will be made for any suspension, delay or interruption to the extent that:
- 19.4.4.1 Performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is solely responsible; or
  - 19.4.4.2 An adjustment is made or denied under another provision of this Contract.

**ARTICLE 20**  
**OWNER'S RIGHT TO CARRY OUT THE WORK**

- 20.1 If the Contractor neglects to carry out the Work in accordance with the Contract Documents and fails within a thirty day period after receipt of written notice from the Owner to commence and continue correction of such Work with diligence and promptness, the Owner may, without prejudice to other remedies, correct such deficiencies. In such case an appropriate Change Order will be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Owner's additional services and expenses made necessary by such default, neglect or failure to perform. In the event the Contractor disagrees with the Change Order, the parties agree to follow the Dispute Resolution process. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor will pay the difference to the Owner within ten (10) days of Owner's demand for same.

- 20.2 The Owner may remove such nonconforming Work and store the salvageable materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage within ten days after written notice, the Owner may sell such materials and equipment at auction or a private sale and will account for the proceeds thereof after deducting costs and damages that should have been borne by the Contractor, including compensation for the Owner's services and expenses made necessary. If such proceeds of sale do not cover costs which the Contractor should have borne, the GMP Contract Sum will be reduced by the deficiency. If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor will pay the difference to the Owner within ten days.

## **ARTICLE 21 BASIS OF COMPENSATION**

- 21.1 The Owner will compensate the Contractor for services rendered under this Contract, as described below:

The sum of the Cost of the Work and the Contractor's Fee are guaranteed by the Contractor not to exceed the amount provided in Paragraph 21.2.1, subject to additions and deductions by changes in the Work as provided in the Contract Documents. Such maximum sum as adjusted by approved changes in the Work is referred to in the Contract Documents as the GMP Contract Sum.

### **21.2 COMPENSATION**

- 21.2.1 For the Contractor's successful performance of the Work as described in the Contract Documents, the Owner will pay the Contractor the Cost of the Work up to the GMP Contract Sum of Fifty Million Eight Hundred Eighty Two Thousand Eight Hundred Fifty Eight and No One Hundredth Dollars (\$50,882,858.00), subject to additions and deductions by changes in the Work as provided in the Contract Documents.
- 21.2.2 Costs which would cause the GMP Contract Sum to be exceeded will be paid by the Contractor without reimbursement by the Owner.
- 21.2.3 The Contractor's GMP Proposal on which the GMP Contract Sum is based includes allowance items, assumptions, clarifications, the Drawings, Specifications and addenda made in preparing the GMP Contract Sum.
- 21.2.4 Compensation for additional services under this Contract will be based on the scope of work required, all in accordance with the terms of Article 8.

### **21.3 COST OF THE WORK**

21.3.1 The term “Cost of the Work” will mean costs necessarily incurred by the Contractor in the proper performance of the Work. Such costs will be at rates not higher than those customarily paid, except with prior consent of the Owner. The reimbursable Cost of the Work is limited to the following:

**21.3.1.1 LABOR COSTS**

21.3.1.1.1 Wages of construction workers directly employed by the Contractor to perform the Work at the site or at off-site workshops.

21.3.1.1.2 Wages or salaries of the Contractor’s supervisory and administrative personnel stationed at the site with the Owner’s concurrence.

21.3.1.1.3 Only with the Owner’s prior written approval, salaries of technical and professional employees of the Contractor when engaged at the Contractor’s off-site office performing Work required in the areas of project management, estimating, engineering, accounting and purchasing.

21.3.1.1.4 Wages and salaries of the Contractor’s supervisory or administrative personnel engaged, at factories, workshops or on the road in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time required for the Work.

21.3.1.1.5 Costs paid or incurred by the Contractor for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays, and vacations, provided that such costs are based on wages and salaries included in the Cost of the Work under Paragraphs 21.3.1.1.1 through 21.3.1.1.4. In lieu of the above Costs, agreed upon burden rate(s) for the above Costs may be paid.

**21.3.1.2 SUBCONTRACT COSTS**

21.3.1.2.1 Payments made or owed by the Contractor to subcontractors for Work performed in accordance with the requirements of this Contract.

**21.3.1.3 COSTS OF MATERIALS AND EQUIPMENT INCORPORATED IN TO THE WORK**

21.3.1.3.1 Costs, including transportation, of materials and equipment incorporated or to be incorporated in to the Work.

21.3.1.3.2 Costs of materials described in the preceding paragraph in excess of those actually installed but required to provide reasonable allowance for waste and for spoilage. Unused excess materials, if any, will be handed over to the Owner at the completion of the Work or, at the Owner's option, will be sold by the Contractor. Amounts realized from such sales will be credited to the Owner as a deduction from the Cost of the Work.

**21.3.2 COSTS OF OTHER MATERIALS AND EQUIPMENT, TEMPORARY FACILITIES AND RELATED ITEMS**

21.3.2.1 Costs, including transportation, of installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by the construction workers which are provided by the Contractor at the Project site and fully consumed in the performance of the Work. Costs for those items not fully consumed less salvage value, whether sold to others or retained by the Contractor. Cost will be based on current fair market value.

21.3.2.2 Rental charges for temporary facilities, machinery, equipment and hand tools not owned by the construction workers which are provided by the Contractor at the Project site, whether rented from the Contractor or others, and costs of transportation, installation, minor repairs and replacements, dismantling and removal thereof. Rates and quantities of equipment rented will be subject to the Owner's approval. Rental rates or charges for equipment owned by Contractor or a Contractor's affiliates will not exceed rates or charges for equipment supplied by a rental agency. Owner shall not pay more than 75% of the replacement value of the each piece of equipment or hand tool as a rental charge. Any rental charges in excess of 75% of replacement value of each piece of equipment or hand tools shall be borne by Contractor. The terms of this Article may not be waived by the Owner unless such waiver is in writing and makes specific reference to this Article.

21.3.2.3 Costs of removal of debris from the Project site.

21.3.2.4 Reproduction costs, including plotting, facsimile transmissions, long-distance telephone calls, internet service, field office postage, express delivery charges, cellular and telephone service, at the Project site and reasonable petty cash expenses of the Project site office.

21.3.2.5 With the Owner's prior approval, expenses for parking at Tampa International Airport and transportation related to the Project outside of Hillsborough, Pinellas and Pasco Counties, including airplane and

automobile travel and the cost of meals and lodging in the event overnight travel related to the Project is required. Only travel expenses related to the performance of the Work are reimbursable. The most efficient and economical means of transportation is required. Travel included in Attachment 1, Guaranteed Maximum Price Proposal is to be considered approved by execution of this Contract. Any additional travel will require pre-approval by the Owner. Employee expense sheets are required as well as supporting originals or legible copies of all receipts.

### **21.3.3 OWNER'S ALLOWANCES**

21.3.3.1 The Contractor has included in the GMP Contract Sum all Owner's Allowances stated in the Contract Documents. Items covered by allowances will be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor will not be required to employ persons or entities against which the Contractor makes reasonable objection.

21.3.3.2 Unless otherwise provided in the Contract Documents:

21.3.3.2.1 Owner's Allowances will cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts.

21.3.3.2.2 The Contractor's mark-up costs are included in the Owner's Allowance amount for authorized work and are not included in the Contractor's Fee.

21.3.3.2.3 Whenever costs are more than or less than the Owner's Allowance, the GMP Contract Sum will be adjusted accordingly by Change Order.

21.3.3.3 The maximum percentage for total overhead and profit and any other expense items covered by the Owner's Allowance, not including the Owner's allowance for Electrical Installation, will be as follows:

21.3.3.3.1 For the Contractor, 30% of any items covered by the Owner's Allowance;

21.3.3.3.2 For the subcontractor, 15% of any items covered by the Owner's Allowance performed by the subcontractor, plus the agreed upon Contractor's Fee for the Contractor; and/or

21.3.3.3.3 Per the Work Order negotiations.

21.3.3.4 The maximum percentage for total overhead and profit and any other expense items covered by the Owner's Allowance for Electrical Installation, will be as follows:

21.3.3.4.1 For the Contractor, 5.63% of any items covered by the Owner's Allowance;

21.3.3.4.2 For the subcontractor, 20% of any items covered by the Owner's Allowance performed by the subcontractor, plus the agreed upon Contractor's Fee for the Contractor; and/or

21.3.3.4.3 Per the Work Order negotiations.

#### **21.3.4 MISCELLANEOUS COSTS**

21.3.4.1 That portion of insurance and bond premiums directly attributable to this Contract.

21.3.4.2 Sales or other similar taxes imposed by a governmental authority which are related to the Work and for which the Contractor is liable.

21.3.4.3 Fees and assessments for permits, licenses and inspections for which the Contractor is required to pay in accordance with the Contract Documents.

21.3.4.4 Fees of testing laboratories for tests required by the Contract Documents, except those related to nonconforming Work.

21.3.4.5 Royalties and license fees paid for the use of a particular design, process or product required by the Contract Documents.

21.3.4.6 Data processing labor costs for scheduling and estimating services related to the Work.

21.3.4.7 Deposits lost for causes other than the Contractor's negligence.

21.3.4.8 The costs incurred in repairing and/or correcting damaged Work performed by the Contractor or the Contractor's subcontractors or suppliers, only to the extent that the cost of repair or correction is not recoverable by the Contractor from insurance, bonds, subcontractors or suppliers.

#### **21.3.5 OTHER COSTS**

Other costs that may be incurred in the performance of the Work, if any, to the extent approved in writing by the Owner.

#### **21.4 COSTS NOT INCLUDED IN THE COST OF THE WORK**

- 21.4.1 The Cost of the Work for non-lump sum work unless otherwise negotiated will not include:
  - 21.4.1.1 Salaries and other compensation of the Contractor's personnel stationed at the Contractor's principal office or offices other than the site office, except as specifically provided in Paragraphs 21.3.1.1.1 thru 21.3.1.1.4.
  - 21.4.1.2 Expenses of the Contractor's principal office and offices other than the Project site office except as specifically provided in Paragraph 21.3.
  - 21.4.1.3 Overhead and general expenses, except as may be expressly included in this Article 21.
  - 21.4.1.4 The Contractor's capital expenses, including interest on the Contractor's capital employed for the Work.
  - 21.4.1.5 Rental costs of machinery and equipment, except as specifically provided in Paragraph 21.3.2.
  - 21.4.1.6 Bonuses and/or profit sharing for any employee of the Contractor.
  - 21.4.1.7 Software and IT support, unless identified elsewhere in the GMP.
- 21.4.2 The Cost of the Work for non-lump sum work will not include nor will Contractor seek line item reimbursement for the following:
  - 21.4.2.1 Costs which would cause the GMP Contract Sum to be exceeded, as appropriately adjusted by change orders.
  - 21.4.2.2 Interest payments of any kind.
  - 21.4.2.3 The cost of defending suits or claims for royalties, licenses, infringement of patent or other intellectual property rights arising from requirements of the Contract Documents, payments made in accordance with legal judgments against the Contractor resulting from such suits or claims and payments of settlements made with the Owner's consent.
  - 21.4.2.4 Costs due to the negligence or failure of the Contractor, contractors, subcontractors or suppliers or any one directly or indirectly employed by any of them to fulfill a specific responsibility of the Contractor, contractors, subcontractors and suppliers or any one directly or indirectly employed by any of them for whose acts any of them may be liable.

- 21.4.2.5 Costs to repair or replace damaged or stolen material, equipment, temporary facilities and related items.
- 21.4.2.6 Costs associated with construction warranties except as required herein.
- 21.4.2.7 Costs to remedy defective, rejected or nonconforming Work, materials or equipment.
- 21.4.2.8 Except as included in the Contractor's general risk provision, costs arising from Contractor's contractual indemnification and defense obligations.
- 21.4.2.9 Liquidated or actual damages imposed by the Owner for failure to complete the Work in the Contract Time.
- 21.4.2.10 Attorney fees, expert witness fees and Costs incurred by the Contractor in any dispute with the Owner except as otherwise required by law.

## **21.5 DISCOUNTS, REBATES AND REFUNDS**

- 21.5.1 Discounts obtained on payments made by the Contractor will accrue to the Owner if (1) before making the payment, the Contractor included them in an application for payment and received payment from the Owner, or (2) the Owner has deposited funds with the Contractor with which to make payments; otherwise, discounts will accrue to the Contractor. Trade discounts, rebates, refunds and amounts received from sales of surplus materials and equipment will accrue to the Contractor and the Contractor will make provisions so that they can be secured. All premiums for any insurance and bonds required for the Project shall reflect the net actual costs to Contractor after taking into consideration cost adjustments due to experience modifiers, premium discounts, policy dividends, retrospective rating plan premium adjustments, assigned risk pool rebates, Owner Direct Purchase Program, and other savings.
- 21.5.2 Amounts which accrue to the Owner in accordance with the provisions of Paragraph 21.5.1 will be credited to the Owner as a deduction from the GMP.

## **ARTICLE 22**

### **OWNER'S RIGHT TO PERFORM AUDITS, INSPECTIONS, OR ATTESTATION ENGAGEMENTS**

- 22.1 In connection with payments to the Contractor under this Contract, it is agreed the Contractor will maintain full, accurate and detailed books of account and records customarily used in this type of business operation in accordance with generally accepted accounting principles. The Owner, Federal Aviation Administration, Federal Highway Administration, Florida Department of Transportation, Florida Department of Financial Services, Florida Auditor General, Florida Inspector General, Florida Chief



Financial Officer, and the Comptroller General of the United States, or any duly authorized representative of each, may have the right to audit the Contractor's records for the purpose of making audits, examinations, excerpts, and/or transcriptions and to determine payment eligibility under this Contract and compliance with this Contract. The Owner also has the right to perform inspections or attestation engagements. Access will be to any and all of the Contractor's records, including books, documents, papers, accounting procedures and practices, and any other supporting evidence the Owner deems pertinent to this Contract as well as records of parent, affiliate and subsidiary companies. The Contractor shall maintain such books and records for five years after the end of the term of this Contract.

- 22.2 If the records are kept at locations other than the Airport, Contractor will arrange for said records to be brought to a location convenient to Owner's auditors to conduct the engagement as set forth in this Article. Or, Contractor may transport Owner's team to location of records for purposes of undertaking said engagement. In such event, Contractor will pay reasonable costs of transportation, food and lodging for Owner's team.
- 22.3 In the event the Contractor maintains its accounting or Project information in electronic format, upon request by the Owner's auditors, the Contractor will provide a download of its accounting or Project information in an electronic format allowing readership in Microsoft Office products or Adobe Acrobat software.
- 22.4 Contractor agrees to deliver or provide access to all reasonably requested records by Owner's auditors within 14 calendar days of the request at the initiation of the engagement and to deliver or provide access to subsequent request during the engagement within 7 calendar days of each request. The parties recognize that the Owner will incur additional costs if records requested by Owner's auditors are not provided in a timely manner and that the amount of those costs is extremely difficult to determine with certainty. Consequently, the parties agree that Contractor may be assessed liquidated damages of \$100.00, in addition to other contractual financial requirements, for each records request, per calendar day, for each time Contractor is late in submitting requested records to perform the engagement. Accrual of fee will continue until specific performance is accomplished. This liquidated damage rate is not an exclusive remedy and Owner retains its rights including but not limited to its rights to elect its remedies and pursue all legal and equitable remedies. The parties expressly agree that these liquidated damages are not a penalty and represent reasonable estimates of fair compensation for the losses that reasonably may be anticipated from such failure to comply.
- 22.5 The Owner has the right during any engagement to interview the Contractor's employees, subcontractors, subconsultants, suppliers or any other persons associated with the Work or this Contract, to make photocopies, and to inspect any and all records upon request. The right to initiate an engagement, inspection or attestation

engagement will extend during the contract period and for six years after the completion date of the Work, or six years after the termination of this Contract, whichever occurs later.

- 22.6 The Contractor will provide all information and reports requested by the Owner, or any of their duly authorized representatives, or directives issued pursuant thereto, and will permit access, for the purpose of performing an audit, examination, inspection, or attestation engagement, to the Contractor's books, records, accounts, documents, papers, or other sources of information, and its facilities as may be determined by the Owner to be pertinent to ascertain compliance with this Article. The Contractor will keep all Project accounts and records which fully disclose the amount of the Contractor's GMP Proposal. The accounts and records will be kept in accordance with an accounting system that will facilitate an effective audit in accordance with the Single Audit Act of 1984, as amended.
- 22.7 In the event the Contractor has overcharged the Owner, the Contractor will re-pay the Owner the amount of the overcharge.
- 22.8 The Contractor will include in all subcontractor, subconsultant and supplier contracts a provision which provides the Owner the same rights to audit as provided in this Article.
- 22.9 Approvals by Owner's staff for any services not included in this Contract do not act as a waiver or limitation of the Owner's right to perform audits, inspections, or attestation engagements.
- 22.10 The Contractor will notify the Owner no later than seven days after receiving knowledge that it is subject to any other audit, inspection or attestation engagement related to this Contract and provide a copy of any audit documents so received.
- 22.11 The Contractor agrees to comply with Section 20.055(5), Florida Statutes, and to incorporate in all subcontracts the obligation to comply with Section 20.055(5), Florida Statutes.

### **ARTICLE 23 GUARANTEED COMPLETION DATE**

- 23.1 The Contractor will commence the Work within 10 days of the date set by the Owner in a written Notice to Proceed. The Contractor will achieve Substantial Completion of the Work no later than the Guaranteed Completion Date of March 26, 2025, subject to authorized adjustments and in accordance with the Contract Documents.
- 23.2 It is mutually agreed between the parties hereto that time is of the essence of this Contract and in the event the Work has not achieved Substantial Completion by the

Guaranteed Completion Date herein specified, it is agreed that from any money due or to become due the Contractor or the Contractor's Surety, the Owner may retain the sum of Five Hundred Dollars (\$500.00) per day, for each day thereafter, Sundays and holidays included, until the Work is substantially completed, not as a penalty but as liquidation of a reasonable portion of loss that will be incurred by the Owner if Work is not completed on or before the Guaranteed Completion Date. Multiple Substantial Completion Dates may be defined as part of this Contract. In addition, the Owner may retain different sums as liquidated damages if Work is not completed on or before the Substantial Completion Dates. The maximum amount of liquidated damages shall not exceed 10% of the Contract Sum.

## **ARTICLE 24 PERFORMANCE BOND AND PAYMENT BOND**

- 24.1 The Contractor will furnish a Statutory Payment Bond and a Common Law Performance Bond (Bonds) for the full and faithful performance of the Work, meeting the standards specified herein, on the bond forms attached to this Contract as Attachment 2, with a certified Power of Attorney Affidavit attached, each in the full amount of the GMP Contract Sum.
- 24.2 All Bonds required under this Contract will be written through a reputable and responsible surety bond agent, licensed to do business in the State of Florida and with an acceptable Surety company which holds a Certificate of Authority authorizing it to write surety bonds in Florida. Bonds will be furnished to the Owner not later than seven days after Notice of Award. Prior to the commencement of any of the Work, but not later than 30 days from the date of Notice of Award, the Contractor will record the Bonds in the public records of Hillsborough County, Florida.
- 24.3 An acceptable Surety company must meet all of the following requirements:
- 24.3.1 Hold a Certificate of Authority authorizing it to write surety bonds in Florida.
  - 24.3.2 Have been in business and have a record of successful continuous operations for the last five years.
  - 24.3.3 Be listed and maintain a current Certificate of Authority as acceptable surety on federal bonds and as acceptable reinsuring companies in accordance with U.S. Department of Treasury Circular 570, current revision. The amount of Bonds issued pursuant to this Contract will not exceed the underlying limitation in the Federal Register for that Surety.

24.3.4 Have a current rating by A.M. Best Company of "B+" up to \$2,500,000.00 bond amount and "A" or better if over \$2,500,000.00 bond amount.

24.3.5 Be a responsible Surety company at the time of the Bond execution.

Should the Surety lose its Certificate of Authority according to the current Federal Register published by the U.S. Department of the Treasury, and/or should its Best rating be reduced below the rating required in Paragraph 24.3.4, the Owner will have the right to require Contractor to change the Surety to an acceptable Surety company, all at Contractor's expense without reimbursement from Owner.

24.4 The Surety company will have a Florida licensed agent who is authorized to execute bonds for the Surety company and whose name is listed in the prescribed space on the bond forms and affidavit for all Bonds required by the Owner.

24.5 Upon the request of any person or entity appearing to be a potential beneficiary of the Bonds covering payment of obligations arising under this Contract, the Contractor will promptly furnish a copy of the Bonds or will permit a copy to be made.

24.6 If the Surety on any Bond furnished by the Contractor under this Contract is declared bankrupt, becomes insolvent, has its right to do business in the State of Florida terminated, ceases to be licensed to conduct business in the State of Florida, if the Owner deems the Surety upon any Bond to be unsatisfactory, or if for any reason such Bond ceases to be adequate, the Contractor will, at its expense, within five days after such occurrence, furnish additional or replacement Bond or Bonds in such form, amount, and with such Surety or Sureties as will be acceptable to the Owner. In such event, no further payment to the Contractor will be deemed to be due under this Contract until such new or additional security for the faithful performance of the Work is furnished in a manner and form acceptable to the Owner.

24.7 In the event the Bonds required in this Article are not provided, the Owner will have the right to terminate this Contract for cause.

24.8 Bond coverage shall be adjusted during the term of this Contract to reflect additions or deductions made by Change Orders or Work Orders.

24.9 The Owner is entitled to receive any refunded bond premiums resulting from Bond coverage adjustments.

24.10 The provisions of Attachment 2 – COMMON LAW PERFORMANCE BOND AND STATUTORY PAYMENT BOND are incorporated by reference into this Contract.

**ARTICLE 25  
GOVERNING LAW AND VENUE**

This Contract has been made in and will be construed in accordance with the laws of the State of Florida. Any litigation involving this Contract and all rights and obligations hereunder will lie exclusively in the Thirteenth Judicial Circuit Court in and for Hillsborough County, Florida.

**ARTICLE 26  
RESTRICTED VENDOR LISTS**

- 26.1 A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a Contractor, supplier, subcontractor, or consultant under a contract with any public entity and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 of the Florida Statutes, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.
- 26.2 A person or affiliate who has been placed on the discriminatory vendor list kept by the Florida Department of Management Services may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a Contractor, supplier, subcontractor, or consultant under a contract with any public entity and may not transact business with any public entity as provided in Section 287.134, Florida Statutes.
- 26.3 An entity or affiliate who has had its Certificate of Qualification suspended, revoked, denied, or have further been determined by FDOT to be a non-responsible contractor, may not perform work under this Contract.

**ARTICLE 27  
NON-DISCRIMINATION**

- 27.1 During the performance of this Contract, the Contractor, for itself, its assignees and successors in interest (hereinafter in this Article 27 being collectively referred to as 'Contractor') agrees as follows:
- 27.1.1 The Contractor will comply with the regulations relative to non-discrimination in federally assisted programs of the Department of Transportation (DOT) Title 49, Code of Federal Regulations, Part 21, as

amended from time to time (hereinafter referred to as the Regulations), which are incorporated herein by reference and made a part of this Contract.

27.1.2 Civil Rights. The Contractor, with regard to the work performed by it under the Contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. Contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the Contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21. During the performance of this Contract, Contractor, for itself, its assignees, and successors in interest agrees to comply with the following nondiscrimination statutes and authorities, including but not limited to:

27.1.2.1 Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);

27.1.2.2 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);

27.1.2.3 The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);

27.1.2.4 Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;

27.1.2.5 The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);

27.1.2.6 Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);

27.1.2.7 The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the

Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);

27.1.2.8 Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;

27.1.2.9 The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

27.1.2.10 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

27.1.2.11 Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, Contractor must take reasonable steps to ensure that LEP persons have meaningful access to Contractor’s programs (70 Fed. Reg. at 74087 to 74100); and

27.1.2.12 Title IX of the Education Amendments of 1972, as amended, which prohibits Contractor from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

27.1.3 In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subcontractor or supplier must be notified by the Contractor of the Contractor’s obligations under this Contract and the Regulations relative to nondiscrimination on the grounds of race, color or national origin.

27.1.4 The Contractor will provide all information and reports required by the Regulations or directives issued pursuant thereto and must permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the Owner or the Federal Aviation Administration (FAA) to be pertinent to ascertain compliance with such Regulations, orders

and instructions. Where any information required of Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor will so certify to the Owner or the FAA, as appropriate, and will set forth what efforts it has made to obtain the information.

27.1.5 In the event of the Contractor's non-compliance with the non-discrimination provisions of this Contract, the Owner will impose such contractual sanctions as it or the FAA may determine to be appropriate, including, but not limited to, withholding of payments to the Contractor under this Contract until the Contractor complies, and/or cancellation, termination or suspension of this Contract, in whole or in part.

27.1.6 The Contractor will include the provisions of Paragraphs 18.1.1 through 18.1.5 in every subcontract and subconsultant contract, including procurement of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The Contractor will take such action with respect to any subcontract or procurement as the Owner or the FAA may direct as a means of enforcing such provisions, including sanctions for non-compliance. Provided, however, that in the event the Contractor becomes involved in or is threatened with litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the Owner to enter into such litigation to protect the interests of the Owner and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

27.1.7 Contractor assures that, in the performance of its obligations under this Contract, it will fully comply with the requirements of 14 CFR Part 152, Subpart E (Non-Discrimination in Airport Aid Program), as amended from time to time, to the extent applicable to Contractor, to ensure, among other things, that no person will be excluded from participating in any activities covered by such requirements on the grounds of race, creed, color, national origin, or sex. Contractor, if required by such requirements, will provide assurances to the Owner that Contractor will undertake an affirmative action program and will require the same of its subconsultants.

## **ARTICLE 28**

### **WOMAN AND MINORITY OWNED BUSINESS ENTERPRISE (W/MBE) ASSURANCES**

#### **28.1 Owner's Policy**

Owner is committed to the participation of Woman and Minority-Owned Business Enterprises (W/MBEs) in non-concession, non-federally funded contracting opportunities in accordance with Authority's W/MBE Policy and Program. Contractor will take all necessary and reasonable steps in accordance therewith to ensure that



W/MBEs are encouraged to compete for and perform subcontracts under this Contract.

28.1.1 Non-Discrimination. Contractor and any subcontractor of Contractor will not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. Contractor will carry out applicable requirements of Owner's W/MBE Policy and Program in the award and administration of this Contract. Failure by Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as Owner deems appropriate which may include, but not limited to:

28.1.1.1 Withholding monthly progress payments;

28.1.1.2 Assessing sanctions;

28.1.1.3 Liquidated damages; and/or

28.1.1.4 Disqualifying the contractor from future bidding as non-responsible.

28.1.2 The Contractor agrees that it will not discriminate against any business owner because of the owner's race, color, national origin, or sex in connection with the award or performance of any contract, management contract, or subcontract, purchase or lease contract.

28.1.3 The Contractor agrees to include the statements in paragraphs (1) and (2) above in any subsequent contract or contract that it enters and cause those businesses to similarly include the statements in further contracts.

28.2 The Contractor agrees to ensure that W/MBEs, as defined in the Owner's W/MBE Policy and Program, have the maximum opportunity to participate in the performance of this Contract, and the Contractor will take all necessary and reasonable steps in accordance therewith to ensure that W/MBEs have the maximum opportunity to compete for and perform subcontracts.

28.3 W/MBE Goals. No specific goal for W/MBE participation has been established for this Contract; however, Contractor agrees to make a good faith effort, in accordance with Authority's W/MBE Policy and Program, throughout the term of this Contract, to contract with W/MBE firms certified as a woman-owned or minority-owned business by the City of Tampa, Hillsborough County, the State of Florida Department of Management Services, Office of Supplier Diversity, or as a Disadvantaged Business Enterprise (DBE) under the Florida Unified Certification Program pursuant to 49 CFR part 26 in the performance of this Contract.

- 28.4 W/MBE Termination and Substitution: Contractor is prohibited from terminating or altering or changing the scope of work of a W/MBE subcontractor except upon written approval of Owner in accordance with Owner's procedures relating to W/MBE terminations contained in the W/MBE Policy and Program. Failure to comply with the procedure relating to W/MBE terminations or changes during the Contract will be a material violation of the Contract and will invoke the sanctions for non-compliance specified in this Contract and the W/MBE Policy and Program.
- 28.5 Reporting Requirements: The Contractor agrees that, within 15 days after the expiration of each calendar month during the term of the Contract beginning on the effective date of the Contract, it will provide a W/MBE Utilization Activity report to the Owner's Business Diversity Manager reflecting, as applicable, in a form acceptable to the Owner, the Contractor's total dollar value received under the Contract for the applicable period and the amount expended for the purchase of goods and services from each W/MBE firm during that period, calculated in accordance with the requirements of the Owner's W/MBE Policy and Program.
- 28.6 Monitoring: The Owner will monitor the compliance and good faith efforts of the Contractor in meeting these requirements. The Owner will have access to the necessary records to examine such information as may be appropriate for the purpose of investigating and determining compliance with this subsection, including, but not limited to, records, records of expenditures, contracts between the Contractor and the W/MBE participant, and other records pertaining to the W/MBE participation plan, which the Contractor will maintain for a minimum of three years following the end of the Contract. Opportunities for W/MBE participation will be reviewed prior to the exercise of any renewal, extension or material amendment of the Contract to consider whether an adjustment in the W/MBE requirement is warranted. Without limiting the requirements of the Contract, the Owner reserves the right to review and approve all subleases or subcontracts utilized by the Contractor for the achievement of these goals.
- 28.7 Contractor agrees to indemnify the Owner from the loss of any funds or other damages that may result from Contractor's failure to achieve the W/MBE goals set forth herein or to establish a good faith effort to do so, including attorneys' fees and costs associated with said failure by Contractor or good faith investigation by Owner. Failure of Contractor to make a good faith effort to achieve W/MBE goals will be a material breach of this Contract. The determination of whether Contractor's efforts were made in good faith will be made by the Owner. At 50% completion, a plan of action properly reflecting anticipated W/MBE achievement of the commitment is required to be submitted to the Owner.
- 28.8 In the event of the Contractor's non-compliance with the Owner's W/MBE Policy and Program, failure to meet the prescribed W/MBE goal set forth in this Contract, or

failure to establish a good faith effort to do so, the Owner will impose such contract sanctions as the Owner may determine to be appropriate, including but not limited to:

- 28.9.1 Withholding of payments to the Contractor under this Contract until the Contractor complies; and/or
- 28.9.2 Assessing sanctions; and/or
- 28.9.3 Liquidated damages; and/or
- 28.9.4 Cancellation, termination or suspension of this Contract in whole or in part; and/or
- 28.9.3 Suspension or debarment of Contractor from eligibility to contract with the Owner in the future or to receive bid packages or request for qualification (RFQ) packages, pursuant to the Owner's Policy P414, Suspension/Debarment of Contractors.

#### **ARTICLE 29 TRUTH IN NEGOTIATIONS**

The Contractor certifies that the wage rates and other factual unit costs supporting the compensation described herein are accurate, complete and current as of the date of this Contract and that the original compensation and any additions thereto will be adjusted to exclude any significant sums where the Owner determines the GMP Contract Sum amount was increased due to inaccurate, incomplete or non-current wage rates and other factual unit costs. All such Contract adjustments must be made within five years following the end of the Contract.

#### **ARTICLE 30 PROHIBITED INTEREST**

The following provision is made a part of this Contract and will be inserted in each of the Contractor's subcontracts:

"No member, officer, or employee of the Hillsborough County Aviation Authority during their tenure or for two years thereafter will have any interest, direct or indirect, in this Contract or the proceeds thereof."

#### **ARTICLE 31 PROHIBITION AGAINST CONTINGENT FEES**

The Contractor warrants that Contractor has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor, to solicit or secure this

Contract and that the Contractor has not paid or agreed to pay any person, company, corporation, individual or firm, other than a bona fide employee working solely for the Contractor, any fee, commission, percentage, gift, or other consideration, contingent upon or resulting from the award or making of this Contract. If the Owner finds that Contractor violates this provision, the Owner may terminate this Contract without liability and, at its discretion, deduct from this Contract, or otherwise recover, the full amount of any fee, commission, percentage, gift, or consideration.

**ARTICLE 32**  
**CERTIFICATION OF NON-SEGREGATED FACILITIES**

The Contractor certifies that it does not maintain or provide for its employees any segregated facilities at any of its establishments and that Contractor does not permit its employees to perform their services at any location under Contractor’s control where segregated facilities are maintained. The Contractor certifies that it will not maintain or provide for its employees segregated facilities at any of its establishments and that Contractor will not permit its employees to perform their services at any location under Contractor’s control where segregated facilities are maintained. The Contractor agrees that a breach of this certification is a violation of the equal opportunity clause in this Contract. As used in this certification, the term “segregated facilities” means any waiting room, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees which are segregated by explicit directives or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The Contractor agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000.00 (U.S.) which are not exempt from the provisions of the equal opportunity clause and that Contractor will retain such certifications in its files.

**ARTICLE 33**  
**PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES**

This Contract will be terminated in accordance with Florida Statute Section 287.135(3) if it is found that the Contractor submitted a false Scrutinized Company Certification as provided in Florida Statute Section 287.135(5) or has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List.

**ARTICLE 34**  
**E-VERIFY REQUIREMENT/UNAUTHORIZED ALIENS**

34.1 In accordance with the State of Florida, Office of the Governor, Executive Order Number 11-116 (Verification of Employment Status) and Fla. Stat. Section 448.095, all

agencies under the direction of the Governor are to include as a condition of all state contracts for the provision of goods or services to the state in excess of nominal value, an express requirement that contractors utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the contractor during the Contract term, and an express requirement that contractors include in such subcontracts the requirement that subcontractors performing work or providing services pursuant to the state contract utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the Contract term. Any Programs with Florida Department of Transportation (FDOT) funding will contain this assurance as a condition for any new Joint Participation Agreements dated after January 4, 2011. The Contractor will verify all of their new employees and will require that their subcontractors verify all of their new employees in accordance with the E-verify requirements set out above.

- 34.2 FDOT considers the employment by any contractor of unauthorized aliens a violation of Section 274A(e) of the Immigration and Nationality Act. If the Design Builder knowingly employs unauthorized aliens, such violation will be cause of unilateral cancellation of this Contract.

### **ARTICLE 35 HAZARDOUS MATERIALS**

- 35.1 A Hazardous Material is any substance or material identified now or in the future as hazardous under any federal, state or local law or regulation, or any other substance or material that may be considered hazardous or otherwise subject to statutory or regulatory requirement governing handling, disposal or cleanup. The Contractor shall not be obligated to commence or continue work until any Hazardous Material discovered at the Worksite has been removed, rendered or determined to be harmless by the Owner as certified by an independent testing laboratory and approved by the appropriate government agency.

If after commencement of the Work, Hazardous Material is discovered at the Worksite, the Contractor shall be entitled to immediately stop Work in the affected area. The Contractor shall report the condition to the Owner and if required, the government agency with jurisdiction.

Regardless of fault and regardless of any other clause in this Contract, the Design-Builder shall not, as a result of the Hazardous Materials encountered on site, be entitled to any compensatory damages, including but not limited to, damages for delay, disruption, liquidated damages, consequential damages of any type, including lost profits. If the Hazardous Material introduction is caused by the Owner or was located at the Worksite before Work commenced on the Project, the Contractor shall only be entitled to an extension of the Contract Time if it impacts the Critical

Path and the Owner shall assume responsibility for the remediation of such substances.

- 35.2 If the Contractor, or any of its subcontractors or suppliers of any tier, or any person or entity under the control of the Contractor or any of its subcontractors or suppliers of any tier, is responsible for (i) introducing and discharging Hazardous Material onto the site which was not otherwise specified by the plans and specifications; and/or (ii) disturbing Hazardous Material clearly identified in the Contract Documents, the Contractor shall hire a qualified remediation Contractor at Contractor's sole cost to eliminate the condition as soon as possible. Under no circumstances shall the Contractor perform Work for which it is not qualified. Owner, in its sole discretion, may require the Contractor to retain at its cost an independent testing laboratory.

Material Safety Data Sheets as required by law and pertaining to materials or substances used or consumed in the performance of the Work, whether obtained by the Contractor, subcontractors, the Owner or Others, shall be maintained at the Worksite by the Contractor and made available to the Owner, subcontractors and Others.

The Contractor shall be responsible for the proper delivery, handling, application, storage, removal and disposal of all materials and substances brought to the Worksite by the Contractor in accordance with the Contract Documents and used or consumed in the performance of the Work.

- 35.3 To the maximum extent permitted by applicable law, The Contractor shall indemnify and hold harmless the Owner and its board members, officers, employees, agents, servants and volunteers or any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from (a) use, disturbance or storage of Hazardous Materials for execution of the Work; and (b) disturbing any Hazardous Materials found on the site, provided that Contractor had prior notice of the existence and location of the Hazardous Materials. The terms of this paragraph survive the completion of the Work or any termination of this Contract. This obligation to indemnify and hold harmless will be construed separately and independently. It is the parties mutual intent that if this clause is found to be in conflict with applicable law, the clause will be considered modified by such law to the extent necessary to remedy the conflict. Contractor's obligations to indemnify under this Contract will survive the expiration or earlier termination of this Contract until it is determined by final judgment that an action against the Owner or an indemnified party for the matter indemnified hereunder is fully and finally barred by the applicable statute of limitations.

- 35.4 In addition to the duty to indemnify and hold harmless the Owner, Contractor will have the separate duty to defend Owner and its board members, officers, employees, agents, servants and volunteers or any of them from and against claims,

damages, losses and expenses, arising out of or resulting from (a) use, disturbance or storage of Hazardous Materials for execution of the Work; and (b) disturbing any Hazardous Materials found on the site, provided that Contractor had prior notice of the existence and location of the Hazardous Materials. Contractor's obligations to defend under this Contract will survive the expiration or earlier termination of this Contract until it is determined by final judgment that an action against the Owner or party for whom the Contractor owes the duty to defend for a matter for which the Contractor owes the duty to defend is fully and finally barred by the applicable statute of limitations.

### **ARTICLE 36 INSURANCE**

- 36.1 The provisions of Attachment 3 - INSURANCE REQUIREMENTS are incorporated by reference into this Contract.
- 36.2 The Contractor will comply with the insurance requirements and coverage limits detailed in Attachment 3- INSURANCE REQUIREMENTS. Such insurance will protect the Owner and Contractor from claims which may arise out of or result from operations under this Contract by the Contractor, by a subcontractor of the Contractor, by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.
- 36.3 Pursuant to Fla. Stat. 255.0517(2)(d), nothing contained herein prohibits the Contractor or subcontractor from purchasing any additional insurance coverage that the Contractor or subcontractor believes is necessary for protection against any liability arising out of the contract. However, in the event that the Contractor or subcontractor elects to purchase additional insurance, the cost of any additional insurance procured by the Contractor or subcontractor must be disclosed to the Owner.
- 36.4 If implemented, the Owner OCIP Wrap Up Manual, is incorporated into this Contract by reference and the terms of OCIP Wrap Up Manual are terms of this Contract.

### **ARTICLE 37 DIVISION 01, GENERAL REQUIREMENTS**

The provisions of Attachment 4 - DIVISION 01, GENERAL REQUIREMENTS are incorporated by reference into this Contract.

### **ARTICLE 38 DESIGN CRITERIA MANUAL**

The provisions of Attachment 5 - DESIGN CRITERIA MANUAL, dated October 16, 2017, are incorporated by reference into this Contract.

**ARTICLE 39  
LOBBYING**

No funds received pursuant to this Contract may be expended for lobbying the Florida Legislature, judicial branch, or any state agency, in accordance with Section 216.347, Fla. Stat.

**ARTICLE 40  
LIMITATION OF LIABILITY**

Contractor's overall liability to Owner under this Contract shall be limited to the GMP Contract Sum, except for (i) fraud, willful misconduct or gross negligence, (ii) third party personal injury and property damage claim indemnity and (iii) indemnity relating to intellectual property rights.

**ARTICLE 41  
COMPLETE CONTRACT**

This Contract represents the entire agreement between the Owner and the Contractor and supersedes prior negotiations, representations or agreements, either written or oral. This Contract may be amended only by written instrument signed by both the Owner and the Contractor.



**ARTICLE 42  
CONTRACT**

This Contract entered into as of the day and year first written above.

IN WITNESS WHEREOF, the parties hereto have set their hands and corporate seals by their proper officers, duly authorized to do so;

By the Contractor this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

ATTEST:

**BOMBARDIER TRANSPORTATION (HOLDINGS) USA INC.**

\_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Print Name

Print Address

Signed, sealed, and delivered  
in the presence of:

By: \_\_\_\_\_

Title: \_\_\_\_\_

Witness

Print Name

Print Name

Print Address

Witness

Print Name

**Notary for Bombardier Transportation (Holdings) USA INC.**

**STATE OF \_\_\_\_\_**

**COUNTY OF \_\_\_\_\_**

The foregoing instrument was acknowledged before me by means of  physical presence or  online notarization, this \_\_\_\_ day of \_\_\_\_\_, 2021, by \_\_\_\_\_ as

(Name of person)

\_\_\_\_\_, for \_\_\_\_\_  
(type of authority) (name of party on behalf of whom contract was executed)

\_\_\_\_\_  
Signature of Notary

\_\_\_\_\_  
Print, Type, or Stamp Commissioned Name of Notary

Personally Known OR Produced Identification  
Type of Identification Produced

By the Authority this 4th day of November, 2021.

**HILLSBOROUGH COUNTY AVIATION AUTHORITY**

*(Affix Corporate Seal)*

By: \_\_\_\_\_  
Gary Harrod, Chairman

**ATTEST:**

\_\_\_\_\_  
Jane Castor, Secretary

Signed, sealed, and delivered  
in the presence of:

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Print Name

**APPROVED AS TO FORM FOR LEGAL  
SUFFICIENCY:**

By: \_\_\_\_\_  
Michael T. Kamprath, Assistant General Counsel

**Notary for Hillsborough County Aviation Authority**

**STATE OF FLORIDA  
COUNTY OF HILLSBOROUGH**

The foregoing instrument was acknowledged before me by means of  physical presence or  online authorization, this \_\_\_\_ day of \_\_\_\_\_, 2021, by Gary Harrod, in the capacity of Chairman, and by Jane Castor in the capacity of Secretary, for Hillsborough County Aviation Authority, a public body corporate under the laws of the State of Florida, on its behalf.

\_\_\_\_\_  
Signature of Notary  
\_\_\_\_\_  
Print, Type, or Stamp Commissioned Name of Notary

Personally Known OR Produced Identification  
Type of Identification Produced

# **ATTACHMENT 1**

To

Contract for Services between Owner and Contractor as modified

For

## **Airside A and C Shuttle Car and Control System Replacement – Phase 2**

Authority Project No. 8420 21

Tampa International Airport

# **GUARANTEED MAXIMUM PRICE PROPOSAL**

1251 Waterfront Place  
Pittsburgh, PA 15222, United States  
Tel +1 412-803-8200  
Fax +1 412-803-8201  
[www.alstom.com](http://www.alstom.com)

October 26, 2021

Mr. Tom Thalheimer  
Director, Procurement, Capital Programs  
Hillsborough County Aviation Authority (HCA)

Dear Tom,

**Subject: Updated Firm Fixed Offer for new *INNOVIA* APM 300R vehicles, *CITYFLO* 650 signaling system, power rail upgrades for Legs A and C and options for in-vehicle cameras**

Bombardier Transportation (Holdings) USA Inc, an Alstom Group company ("Alstom") is pleased to present you with Firm Fixed pricing for:

- Eight (8) new *INNOVIA* APM 300R cars, upgrade to *CITYFLO* 650 signaling system, power rail upgrades for legs A & C and enhanced onboard CCTV cameras that enable real-time video transmission to central control for \$50,382,858. This offer is valid until November 15, 2021. The first four vehicles would be delivered by Q4 2024 and the subsequent four vehicles by Q1 2025.
- Option pricings for four (4) additional new *INNOVIA* APM 300R cars if the option is exercised by:
  - January 1, 2023 with delivery commencing in Q1 2025 is \$14,709,529, plus \$112,701 for the enhanced CCTV cameras of these cars for a total Contract Value of \$65,205,088.
  - June 1, 2023 with delivery commencing in Q4 2026 (for further confirmation) is \$17,977,307, plus \$112,701 for the enhanced CCTV cameras of these cars for a total Contract Value of \$68,472,866.

Alstom's pricing matrix these is as follows:

	Base Offer - 8 cars	4-car option to be exercised by Jan 1, 2023	4-car option to be exercised by mid-2023
Vehicle (Base - 8)	\$34,231,058		
Vehicle (Option - 4)	-	\$14,709,529	\$17,977,307
Vehicles Subtotal	\$34,231,058		
Systems Integration + Signaling	\$11,474,254		
Power Rail legs A and C	\$3,615,448		
Insurance	\$1,007,000		
<b>Subtotal</b>	\$50,327,760		
<b>Additional Reduction</b>	<b>(\$986,415)</b>	\$0	<b>(\$986,415)</b>
<b>Subtotal w/reduction</b>	\$49,341,345	\$65,092,387	\$68,360,165
CCTV Camera Option	\$1,041,513 (for 8 cars)	\$112,701 (for 4 cars)	\$112,701 (for 4 cars)
<b>Total Offer Amount</b>	\$50,382,858	\$65,205,088	\$68,472,866
<b>Owner's Allowance</b>	\$500,000		
<b>Total Contract Amount</b>	\$50,882,858		

The System Integration and Signaling cost component includes the following scope:

- Overall System integration of the subsystems: vehicles, onboard and wayside signaling, power rail upgrade to ensure consistency with all performance requirements. This cost element includes engineering to ensure proper interface control and design amongst all subsystems as well as the final full dynamic systems integration testing to demonstrate the final system performance. While systems integration is a project wide activity, for simplicity we include it with the signaling scope of work.
- *Upgrade to CITYFLO 650 Signaling*: Includes the engineering & project management associated with the system specification for the onboard and wayside signaling elements, the design and software programming of the signaling system, the Verification and Validation of the design, and the build, deployment, testing and commissioning of the design. This scope also includes the Electrical/Installation scope to install the CITYFLO 650 equipment along the wayside.

**Detailed Scope of Work as follows:**

<b>Description - Vehicles</b>
<b>Base Offer:</b> Supply of eight (8) <i>INNOVIA</i> APM 300R cars for the base offer, including overhead displays, manual control panels and drawbar for permanent married pair config.; Couplers at train ends are replaced with end plates; on-board CCTV cameras with real-time video transmission to central control are included
<b>Options</b> for four (4) additional <i>INNOVIA</i> APM 300R cars, configured exactly as the eight cars in the base offer with pricing based on exercise dates of: <ul style="list-style-type: none"> <li>• January 1, 2023 with delivery commencing in Q1 2025</li> <li>• June 1, 2023 with delivery commencing in Q4 2026 (for further confirmation)</li> </ul>
Special Tools and Portable test equipment are included. Bench test equipment is NOT included in this offer.
Spare parts are included to the end of the warranty period
<b>Delivery to site</b> - Delivery will be FOB Tampa airport. Alstom to offload the new APM 300R vehicles with crane, and vehicles will be installed on running surfaces
<b>Removing old CX100 vehicles from rail</b> - Alstom to salvage some critical spares from old vehicles and then transport vehicles to recycling facility located near Tampa airport. Residual value, if any, owned by Alstom. (Note that historically, residual value has been insignificant)
Installation on rails + Crane + lifting devices + lifting Beam + Supervision by Alstom all included
<b>Testing and Commissioning</b>
Routine & Qualification Testing – Alstom’s Pittsburgh APM Manufacturing Facility
Qualification Testing - at Tampa Airport
Commissioning of vehicles - at Tampa Airport
<b>Manuals &amp; Training</b>
Operation manuals
Maintenance manuals
<b>Description – Signaling/Wayside</b>
VATC - <i>CITYFLO</i> 650
Desktop Load flow study for the <i>INNOVIA</i> APM 300R vehicles – electrical load flow study done by Alstom and findings provided to HCAA on September 24, 2021
Vehicle Comms/Radio: <ul style="list-style-type: none"> <li>o ORS (radios) – Included in vehicle price.</li> <li>o DADS (display signs) – Included in vehicle price.</li> </ul>
Buffer replacement – rehab.
Buffer supports analysis, reinforcement and/or rehabilitation to be determined by HCAA structural consultants
<b>Documentation/Training included</b>
Operation manuals
Maintenance manuals
Maximum of 40 Training hours have been allocated in the schedule – HCAA and Alstom to agree on the number of training sessions to achieve this
<b>Others</b>
Power Rail – removal and replacement of the power rail on Legs A and C

Analysis of the current PDS (Power Distribution System) equipment done and results provided to HCAA on September 24, 2021

### **Project Schedule Assumptions:**

Alstom has provided a preliminary project schedule to HCAA based on conditions known as of time of offer. The parties agree to continue to meet to develop a mutually acceptable schedule as project coordination efforts continue.

January 1, 2023 vehicle option pricing assumes continuous production with other APM projects, allowing Alstom Transportation to leverage non-recurring costs on procurement and manufacturing.

Considering that Alstom is currently manufacturing APM 300Rs for other customers, and Options for those customers will be negotiated over the course of 2021, it is essential for planning and plant capacity purposes, to solidify the November 15, 2021 NTP date. We will aim to hold the place in the manufacturing line for Tampa with an NTP of November 15, 2021, but should this slip, we would revisit in collaboration with you.

### **Notes specific to this offer:**

- Pricing is in USD Firm and Fixed and valid until November 15, 2021
- Pricing is based on standard *INNOVIA* APM 300R vehicle configuration as per the Technical Proposal provided in Appendix A and *CITYFLO* 650 as per the Technical Proposal provided in Appendix B
- Construction provisions of the Contract Documents only apply to the electrical installation of signalling equipment along the wayside and the upgrading of the power rails
- Pricing assumes:
  - Standard technical documentation and manuals will be provided.
  - Suppliers' quality assurance will be managed by Alstom's robust internal QA process, thus no involvement required by HCAA at Alstom's supplier locations.
  - All necessary testing, including qualification, will be performed by Alstom.
  - NTP date of November 15, 2021.
  - A 41-month overall project schedule adjusting site activities to accommodate high traffic months
  - 1-year warranty period starting from substantial completion (end of March 2025).
  - HCAA is exempt from sales and use tax. Sales and use tax apply only to items purchased for Alstom's own consumption. (HCAA to provide tax exemption certificate)
  - 30-day payment terms and a positive cashflow for Alstom as per the Milestone Payment Schedule provided in Appendix C
  - Reasonable involvement of an HCAA third-party consultant or Independent Safety Assessor. It is understood that reasonable involvement will mean that any Third Party Consultant will review documents with Owner without direct interaction with Alstom and with a minimal number of iterations (2-3) and expeditiously (within 3-5 days), based on a quality submittal by Alstom, so as not to delay Alstom's work
  - Sufficient O&M site personnel support, including Health, Safety, and Environment (HSE), Field Service Engineer (FSE) and a Technician – any engagement of O&M personnel does not relieve Alstom of maintenance obligations and responsibilities under the current O&M contract.
  - Alstom will provide recommendations, technical specifications, interface requirements and review support, but will have no responsibility for the civil works, which include repairs and rehabilitation of the running surfaces, buffer supports, guidebeams and their supports.
  - Any necessary modifications to the superstructure to accommodate this scope will be identified and performed by HCAA.

- HCAA to provide site access, parking spaces and room for Alstom employees during the course of the project.
- Alstom pricing does not include providing an office trailer. HCAA will assist in providing Alstom's project staff with on-site office space.
- Alstom pricing does not include providing Division 1-specification signage during project execution.
- HCAA will pay for out of the Owner Allowance the following items:
  - an office trailer if HCAA cannot provide available office spaces for the Alstom project team, including finding suitable place to locate such office trailer
  - Division 1-specification signage during project execution should HCAA require the signage
- HCAA to allow full 24-hr shutdown of lanes to allow installation of signaling equipment and testing of new APM vehicles. Work is to be performed simultaneously on one lane per Airside with concurrent work at both Airsides.
- Policies meeting the requirements of the Contract for insurance coverage for the 41-month project duration are included. An additional \$50,000 must be added to the contract price if Terrorism Risk Insurance Act (TRIA) coverage is required.
- The 1% transaction fee for MyFloridaMarketPlace is not applicable to HCAA and therefore is not included
- Performance and Payment Bond in the amount of 100% of the Contract Value (exclusive of insurance price) in place for 41 months.
- Required duties on material coming from outside the USA.

The contents of this proposal is intended for the exclusive use of HCAA for the purposes of a Contract with Alstom for the supply of the scope described herein. Its contents are strictly confidential and should not be shared with any third-party entity unless expressly agreed in writing with Alstom.

Should you have any questions regarding the information or wish to further discuss any aspect of this offer, please do not hesitate to contact me at +1 (607) 590-7117.

Sincerely,

**B. Jill Hampton**

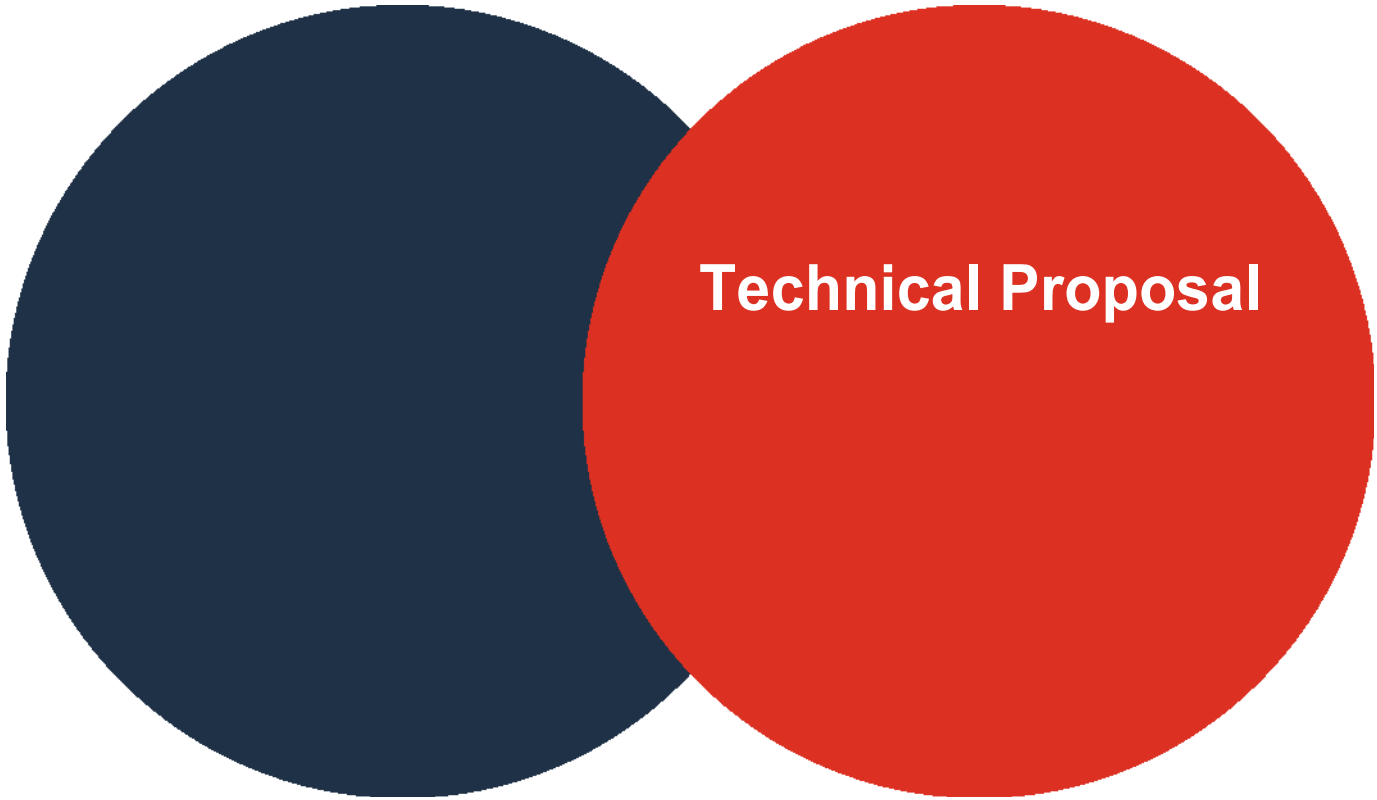
VP Business Development - Turnkey Systems  
ALSTOM

cc: Jeff Siddle, Paul Ridgeway, Tom Thalheimer – HCAA



## Appendix A

Technical Proposal - Vehicles



# Technical Proposal

## VEHICLES

DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING FOR  
AUTOMATED PEOPLE MOVER (APM) AND ASSOCIATED WORKS AT  
HILLSBOROUGH COUNTY AVIATION AUTHORITY (HCAA)



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# 1 ABBREVIATIONS

Abbreviation	Definition
ADA	Americans with Disabilities Act
ANSI	American National Standards Institute
APM	Automated People Mover
ASCE 21	American Society of Civil Engineers – Automated People Mover Standards
BWAN	Bombardier Wireless Access Network
CDRL	Contract Data Requirements List
NFPA	National Fire Protection Association
OCC	Operation Control Centre
ORS	Operational Radio System
TCMS	Train Control and Management System
VLT	Visible Light Transmission

*Table 1: Abbreviation List*

## 2 INTRODUCTION

The vehicles covered by this specification will be **ALSTOM\* INNOVIA\*** APM 300R. APM 300R is an Alstom Product designed to meet the operational and infrastructure interfaces of existing Systems using APM 100 generation vehicles. The Vehicle weight and construction outline are different than the Existing APM 100 currently used in Tampa. Detailed information about the clearance gauge and weight limits of the Tampa infrastructure will be validated in the first weeks of the project by HCAA.

The proposed vehicles will utilize the same wheelbase, door size and spacing, as the vehicles currently in service. Guidance and power collection will be the same as the existing fleet. The vehicles will offer improvements in interior appearance, energy consumption, diagnostics, and other areas.

The vehicles will utilize an AC-AC propulsion system similar to the **ALSTOM\* INNOVIA\*** APM 300 vehicle technology and will be able to operate with the newly installed **ALSTOM\* CITYFLO\*** 650 signaling control system.

This combination of subsystems is intended to combine the advantage of maintenance reduced energy saving AC-AC propulsion technology with the modern properties of the **ALSTOM\* INNOVIA\*** APM 300 series and make them available for the TPA APM system.

The product reviews will be performed as "for Information Only".



## 3 VEHICLES

**ALSTOM\* INNOVIA\*** APM 300R Vehicles will be automatically controlled and operate normally without a driver. The TPA APM, two-car married-pair vehicles will be deployed. All newly supplied cars will be identical.

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*Figure 1: Vehicle Isometric View*

### 3.1 Clearance Envelope and Platform Length

**ALSTOM\* INNOVIA\*** APM 300R vehicles and the existing **ALSTOM\*** APM100 vehicles were both developed in line with ASCE 21.

### 3.2 Vehicle Space and Weight Allocations

Vehicle space and weight allocations in accordance with the Particular Specification will be:

Mass	Floor Area per Passenger			
		Seating Capacity	Normal Capacity	Design Capacity
Standing	70 kg (154 lbs)	n/a	0.33 m <sup>2</sup> (3.55 ft <sup>2</sup> )	0.25 m (2.69 ft <sup>2</sup> )
Seated	70 kg (154 lbs)	0.14 m <sup>2</sup> (1.51 ft <sup>2</sup> )	0.14 m <sup>2</sup> (1.51 ft <sup>2</sup> )	0.14 m <sup>2</sup> (1.51 ft <sup>2</sup> )
Wheelchair	272 kg (600 lbs)	0.465 m <sup>2</sup> (5 ft <sup>2</sup> )	0.465 m <sup>2</sup> (5 ft <sup>2</sup> )	0.465 m <sup>2</sup> (5 ft <sup>2</sup> )

Table 2: Space and Weight Allocations

- Vehicle weight definitions are:AW0 – The weight of an empty car.
- AW1 – The weight of the car computed by adding AW0 and the passenger weight, assuming all seats are occupied with passengers, no wheelchair passengers, and one standing passenger for each 0.25 m<sup>2</sup> for all the remaining floor space in the vehicle, including the space for wheelchairs that is available to standees.
- AW2 – The maximum weight of the car. This weight will be computed by adding AW0, 520 kg for each square meter of floor area available to standees, 70 kg for each fixed seat, and 170 kg per square meter of wheel well, sill, or other interior surface area on which passengers or passenger cargo can be loaded. This definition shall apply for references to AW2 in the ASCE APM Standards.
- AW3 – As defined in ASCE 21-13, Section 7.1, Car Capacity and Load, shall be AW2 as defined above. All references to AW3 in the ASCE APM Standards

The following table is based on the current estimated weight for the proposed TPA car.

Condition	Mass
AW0	16,435 kg (36 233 lbs)
AW1	23,838 kg (52 554 lbs)
AW2	29,712 kg (65 504 lbs)
AW3	29,712 kg (65 504 lbs)

Table 3: Vehicle Weight

For vehicle dimensions, see the **Attachment** - Drawing 1.

Fatigue analysis were conducted and there is no need of a weight limiting function to protect the vehicle. As such, ALSTOM proposal does not include a weight management function to close the vehicle doors in automatic operation when a certain car weight is reached.

The current proposal does not account for any civil infrastructure work or vehicle weight reduction initiatives related to the APM 300R weight increased compared to the APM 100 current weight.

### 3.3 Car Capacity

The vehicle passenger capacity, calculated in accordance with the Particular Specification, is as shown below:

Number of Passengers			
	Seating Capacity	Normal Capacity	Design Capacity
Standing	0	71	94
Seated	8	8	8
Wheelchair	2	2*	2*
TOTAL	10	79	102

Table 4: Vehicle Passenger Capacity

### 3.4 Structural Design

This Section defines the structural requirements for the System vehicle. A complete structural analysis of the car major suspension elements and frame load paths has been performed and documented by Alstom.

The car body will be made from aluminum with friction-stir welded extrusions, where applicable, and fiberglass end caps.

The following figure shows an example of a car body model.



Figure 2: Car body FEA model example

#### 3.4.1 Design Criteria

The vehicle is designed to sustain all of the loading conditions defined in the above section without detrimental permanent deformation or any interference with safe operation.

The design criteria for a car structure will include the following:

- Design loads for the frame, coupler and draft gear, trucks, and major steering/suspension members. They will be defined as either working loads (normal loads expected in service) or limit loads (worst-case loads expected in service).
- The safety factor applied to these loads. The safety factor will be identified as being with respect to yield strength, ultimate strength, or endurance limits.
- Additional safety factor applied to castings and welds.

- Additional safety factor applied to any part, the failure of which could result in an unsafe condition.
- The torsional and flexural deflection of the car frame under load and how these criteria are to be verified.

Any structural material used in the car structure will not have a yield strength that exceeds 80 percent of its tensile strength, unless the design can be substantiated to have a proven record of successful use in a similar transit application.

All structural body and panels will have resonant frequencies that are sufficiently removed from primary excitation frequencies to preclude resonant vibrations at all speeds and power conditions below 110 percent of maximum cruise speed.

Car structural design will comply with ASCE 21-13 Section 7.4.

### 3.4.1.1 Fail-safe structured design

Tipping analysis will be performed as a hand calculation (sum of moments) to verify that the drive tires remain loaded under all required scenarios. The following figure shows a typical example of a tipping stability free body diagram (FBD).

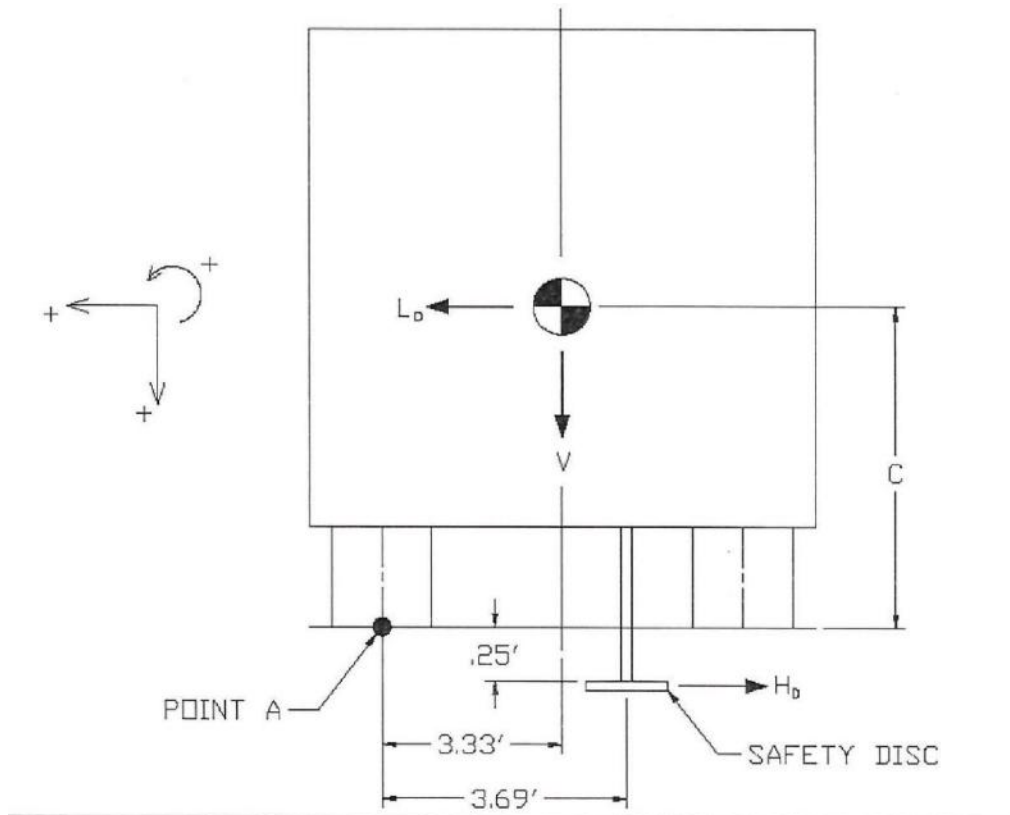


Figure 3: Typical tipping stability FBD

### 3.4.2 Deformation

Notwithstanding any of the foregoing, the car structure will be shown to be capable of meeting the following additional design criteria:

- Deformation will comply with ASCE 21-13 Section 7.4.4.6.
- All exposed parts of the drawbar which a person can stand on will withstand a downward vertical load of 350 pounds without damage or permanent deformation. Drawbar and draft gear will be designed so that no

combination of car deflections including failures to suspension components, loss of tire pressure, and guideway lateral and vertical curvature, will cause the drawbar to bind or produce stresses which will damage the drawbar or the cars.

- The Seats, doors, floor, roof, and stanchions will withstand loading as specified in ASCE 21-13 Section 7.4.4.1.2.

### 3.4.3 Tipping Stability

Alstom will determine the location of the center of gravity (C.G.) for the car at AW0 and AW2 loads. Alstom will analyze the tipping stability of the car and document its compliance with the requirements defined below. If the height above the running surface and longitudinal and lateral location of the proposed car's C.G. is within 5 percent of the C.G. location of essentially identical cars that have been successfully proven in previous deliveries, the approval of the customer will not be required. However, the results of analyses and/or testing of tipping stability for car C.G. location changes greater than 5 percent will be submitted to the customer for record.

The car will be verified as stable under the conditions specified in ASCE 21-13 Section 7.4.4.8.

### 3.4.4 Jacking Pads and Hoists

Adequate attachment points for hoisting the car with a crane, including any special slings or fixtures, will be provided by Alstom. Jacking pads will be provided to facilitate jacking the chassis at all suspension tie-down points. If the cabin is not integral with the chassis, jacking pads or hoisting points will be provided to permit its removal. It will be possible to jack the car where required to remove a disabled car or train, with sufficient space to place jacking equipment at all locations along the guideway.

Jacking and lifting will comply with ASCE 21-13 Section 7.4.4.2.

### 3.4.5 Crashworthy Design

The car and/or train will be capable of withstanding collisions with overtravel buffers, deceleration rates and damage limitation just as with the existing System. Cars will be designed with an anti-climbing capability to maintain alignment and engagement of the collision structure and to prevent excessive damage and telescoping. The passenger compartment will be completely enclosed with no openings through which passengers' heads or limbs may protrude.

The cars will be provided with a shell design compliant with crashworthiness requirements specified in ASCE 21-13 Section 7.4.4.9.

### 3.4.6 Bolts, Nuts, Fasteners, and Welding Standards

All bolts will be equal in strength to, at least, an SAE grade 5.

Unless otherwise specified, all structural connections will be designed and implemented so that the ultimate strength of a fastener or the local area of the fastened structure will not be the limit of the load-carrying capacity of that structure.

Each removable bolt, screw, nut, pin, or other fastener will incorporate a locking device, if it is:

- Part of a major structural load path, including all suspension members and propulsion and braking force paths; or
- Part of a sensor, detector, or antenna mounting essential to control system operation; or
- Part of an actuator or control linkage essential to car control; or
- Performing any other safety-related function.

Self-locking nuts may be used to satisfy this requirement only if Alstom provides data specifically demonstrating that such fasteners are suitable for the above applications.

## 3.5 Car Design Life

Alstom is offering a car that will operate up to or exceeding 67,000 miles per year for 25 years in passenger service in an operating duty cycle. The car will provide safe and reliable service during its entire design life. Normal deterioration

due to causes such as corrosion and fatigue will not degrade safety or performance of the body, chassis, and running gear.

Axles and suspension, propulsion motors and controls, door equipment, HVAC and draft gear will operate 10 years without major overhaul. Consumables, such as tires, and brake linings, are excluded from this requirement.

All car-borne wiring, conduit, and piping will not require replacement during the design life of the car.

### 3.6 Safety and Reliability

Alstom's Reliability, Availability, Maintainability & Safety (RAMS) group carries the right authority and resources to influence the evolution of the vehicle design. Through a dedicated Reliability and Safety program, Alstom RAMS group ensures that all the reliability and safety requirements are well captured, allocated, designed in, optimized, and verified, and managed through all the design phases. In the past, using this approach, Alstom has developed and delivered many successful products globally that have achieved and sustained high levels of reliability and safety.

For the TPA APM 300R cars, Alstom will ensure that safety and reliability is built in the design by implementing its proven Design for Reliability and Safety processes.

### 3.7 Passenger Comfort

This Section defines the requirements for passenger comfort on the car. The following sub-sections provide descriptions of acceptable environmental performance, and testing conditions with regards to HVAC, interior noise, and ride quality.

#### 3.7.1 Heating, Ventilation, and Air Conditioning

Car heating, ventilation, and air conditioning (HVAC) will meet the following performance requirements. HVAC load calculations will be submitted for information.

The **ALSTOM\* INNOVIA\*** APM 300R Heating, Ventilation, and Air Conditioning (HVAC) system will consist of two independent, identical package units (no split units) per car, mounted to the undercar at each end. The HVAC units will use R-407C; an environmentally friendly, non-ozone-depleting refrigerant. Each unit uses highly reliable scroll compressors. The condenser coils are cooled by air drawn through the coils by an axial fan.

The evaporator blower unit draws air through the evaporator coils and forces it through the sidewall ducts to the air distribution diffusers in the ceiling of the car. The air diffusers distribute the supply air throughout the length of the passenger compartment to maintain temperature uniformity.

The controls of each fully automatic unit are accessible only to authorized personnel. A temperature sensor is in the return air stream of the unit and provides an input signal to the temperature controller, which compares the return air temperature to an adjustable set point temperature. In automatic operation, the HVAC units will automatically select the necessary mode of operation: recirculation, cooling or, heating. An HVAC maintenance page will be available on the Pedestal Driver's Desk (PDD) to control and monitor the two HVAC units of the car. It will provide the control of the target temperature and the units' operating mode. It will also provide real-time visualization of units' operational parameters and fault information.

The HVAC blower assemblies provide the required airflow at design conditions. Fresh air enters the unit in the evaporator section and mixes with the return air before it enters the evaporator coil. Normal operation supplies fresh outside air. Return air filters in each unit filter the air before it enters the evaporator coil.

##### 3.7.1.1 Air Conditioning

Each car will have two equal and independent air conditioning units having an aggregate cooling capacity equal to the maximum calculated cooling requirement for the car. The failure of one unit will not cause extreme temperature differences along the length of the car.

The systems will maintain car interior conditions of 75.5°F (24°C) Design Dry-Bulb and 60% relative humidity under the specified ambient design conditions. Ambient design conditions will be the 0.4% Design Dry-Bulb and the mean coincident 0.4% Design Summer Wet-Bulb temperatures reported in the ASHRAE, 2017 Fundamentals Volume, for the Official Weather Observation Station closest to the Airport.

### 3.7.1.2 Ventilation

Each HVAC unit will condition 153 CFM of fresh air for a total of 306 cfm per car which provides 3 CFM per passenger at design conditions. The proposed fresh airflow is in line with the existing Tampa APM 100 cars. While the proposal ensures equivalent comfort as the existing Tampa vehicles, it is noted that it offers a lower fresh airflow than the recommended 9 CFM per passenger from ASCE 21-13. All of the ventilated air will be introduced through the air conditioning equipment and will not include air which might be introduced when the doors are open. Incoming as well as recycled air within will be sufficiently filtered. This air flow rate considers 100% solar load in the performance analysis; higher air flow rates can be achieved only if a higher shading coefficient is used (note that the current APM100 vehicle's HVAC performance was analyzed with reduced solar load).

### 3.7.1.3 Heating

Each air conditioning system will contain direct resistance electric heaters located in the air stream and arranged to provide heating for the vehicle interior when the control system so dictates. Heaters will maintain the vehicle interior at 75°F when the ambient conditions are at the 99.6% Design Dry-Bulb Winter temperature as listed in the previously-cited ASHRAE reference. Heating capacity calculations will include only the transmission and ventilation losses. Heating may be provided elsewhere in the vehicle if the above performance requirements, including ambient air, are met. The maximum air supply outlet temperature will not be greater than 100°F.

### 3.7.1.4 Controls/Temperature Uniformity

A control system will be provided to control the interior temperature at 75°F during cooling condition. The control set point will be adjustable between 65°F to 85°F. The inside temperature in the occupied portion of the car will not vary more than +/-4°F from the design temperature one (1) foot from any inside surface.

### 3.7.1.5 Temperature Variations

If temperatures encountered throughout the year exceed the defined design values, the car interior temperature will be permitted to rise or drop degree for degree with the temperature in excess of or below the design values at full load.

### 3.7.1.6 Air Flow and Diffusion

The air distribution system will provide sufficient diffusion at the outlet or diffuser so that air mixing will prevent direct impingement of coil discharge temperature air onto occupants. In addition, air velocities one foot from the diffuser or outlet face will not exceed 400 fpm and velocities throughout the occupied portion of the car will not exceed 150 fpm. Moisture carryover from cooling coils will not be permitted. The air will be longitudinally distributed throughout the car.

### 3.7.1.7 Failure Operations

In the event of failure of both cooling systems, indicated by an inability to maintain interior temperatures, the systems will continue the highest speed blower operation.

If the car's primary electrical power is lost, ventilation of at least 5.3 cfm (per ASCE 21-13) of outside air per passenger at AW1 loading will be provided for at least 60 minutes, using power from the car batteries (see Section 3.9.2).

## 3.7.2 Interior Noise Level

Interior noise, measured at five feet above, and at the geometric center of the floor, will not exceed the levels indicated below under normal operating conditions with all equipment functioning, in accordance with ASCE 21-13:

- Vehicle stationary, doors shut 74 dBA
- Vehicle moving up to 48km/h (30 mi/h) 76 dBA
- Vehicle moving above 48km/h (30 mi/h) 79 dBA

All noise measurements will be taken with no more than three (3) test/observation personnel and necessary equipment in an otherwise empty car. All auxiliary systems, including maximum air conditioning and all air compressors and pumps will be operating. Noise measurements will be made using a Type II instrument, as defined in ANSI Standard S1.4, "Sound Level Meters," with a fast response setting.

Pure tones, as defined in ASCE 21-13, will be eliminated if found to exist.

### 3.7.3 Ride Comfort

The **ALSTOM\* INNOVIA\*** APM 300R bogie and suspension incorporate the latest design changes and improvements which should improve ride quality compared to the current cars.

Car ride characteristics for maximum sustained acceleration and deceleration, maximum rate of change of acceleration, and ride quality will satisfy the following:

- Maximum Sustained Acceleration/Deceleration
  - Lateral 0.10g
  - Vertical 0.05g with respect to 1g datum
  - Longitudinal – normal 0.16g
  - Longitudinal emergency 0.32g including effects of grade
- Maximum Jerk
  - Lateral 0.06g/sec.
  - Vertical 0.04g/sec.
  - Longitudinal 0.04 to 0.09g/sec., selectable
- Ride Quality
  - Weighted RMS values of acceleration averaged over any single station to station trip will fall below the ISO 2631 one-hour whole body reduced comfort limits, in accordance with ASCE 21-13 §7.7.3.

“Sustained” refers to the nominal values used for design of curves, crests, sags, and speed profiles and excluding random vibration effects. Sustained will include durations equal to or greater than 0.10 seconds.

“Longitudinal” is fore and aft motion, the x direction in ISO 2631; “vertical” is up and down motion, the z direction in the ISO 2631; and “lateral” is side to side motion, the y direction in ISO 2631.

Lateral and vertical acceleration and deceleration include grade effects and are the values obtained with an inertial accelerometer.

Longitudinal acceleration and deceleration ignoring grade are the rates of change of speed as determined from the maximum slope of tachometer-generated data. Longitudinal acceleration and deceleration including grade are the values obtained with a standard piezoelectric accelerometer with a frequency range of at least 0.1 – 80 Hz.

“Jerk” is the rate of change of sustained acceleration/deceleration with lateral and vertical acceleration/deceleration and with longitudinal acceleration/deceleration ignoring the effect of grade. In switch turnouts, lateral acceleration need not be jerk limited, providing the total change of lateral acceleration and braking. Longitudinal jerk during removal of emergency brakes need not be controlled.

Ride quality will be measured on an empty car, with no more than three (3) test/observation personnel and necessary equipment, using a Bruel & Kjaer Type 2512 Human Response Vibration Meter or equivalent with a 4322 triaxial accelerometer located on the floor of the car at the geometric center of the floor. The “equivalent continuous vibration level” or “1 eg.,” weighted according to ISO 2631, will not exceed the value for one hour of exposure using the “whole body reduced comfort” criteria. This value is 0.038g RMS or 111.43 dB re 1 micrometer per second squared. Weighted peak acceleration as measured by the peak detector will not exceed 0.14g (122.76 dB re 1 micrometer per second squared) for lateral vertical acceleration and 0.08g (117.90 dB re 1 micrometer per second squared) for longitudinal acceleration.

### 3.7.4 Elderly and Handicapped Considerations

Special consideration will be given to the car interior so as not to impede elderly and handicapped passengers from having full accessibility to the System. Each car will provide a clear space to accommodate one wheelchair. This wheelchair parking area will be free of vertical stanchions or other obstructions. There is currently no wheelchair restraint device in the standard vehicle design. Passengers will be able to walk on and off the car without being impeded by the wheelchair. Maneuvering room inside the car will provide easy travel for a passenger in a wheelchair between the door and the designated wheelchair parking area. No width dimension will be less than 34 inches. Areas requiring 90° turns



of wheelchairs will have a clearance arc dimension no less than 45 inches. In the wheelchair parking area, where 180° turns are expected, space will be clear in a full 60-inch diameter circle. A vertical clearance of 12 inches above the floor surface will be provided on the outside of turning areas for wheelchair footrest clearance. Wheelchair locks are not consistent with automatically controlled, short-duration airport APM station stops; wheelchair passengers do not have sufficient time to park and engage the lock prior to departure nor disengage the lock and exit the vehicle upon arrival. Alstom will incorporate its standard solution, a wheelchair space defined by stanchions and handrails that will restrain wheelchair motion in three directions, with handholds to supplement the wheelchair's own parking brakes.

Cars will have automatic on-board audible announcements that identify each station as it is approached to inform passengers, particularly the visually impaired, of the impending stop. Automatic announcements will also announce the next station the car is destined for after the car departs. This subsystem may have other appropriate messages related to passenger information and safety. The graphic station door displays will visually indicate the impending door movements before the closing operations commence. On-board dynamic signs located for good visibility will provide station information concurrently with the station identification announcements (see Section 3.14.9).

### 3.8 Propulsion and Braking Systems

The TPA vehicle composed of 2-car unit will be capable of continuous operation at the maximum speeds proposed for the System for an AW1 vehicle operating on tangent System guideway. All vehicles will be fully bi-directional, with equal propulsion and braking performance in either direction.

Each car will have two separate propulsion traction circuits, using proven **ALSTOM\* INNOVIA\*** APM 300 technology, 3 phase AC-AC propulsion equipment. The cars will have two brushless 3 phase AC motors, that will also be used for regenerative braking. Each traction circuit will have two **ALSTOM\* MITRAC\*** converters, one to rectify the 600V (Line Converter Module), 3-phase AC line current to a DC link, and then a second to variable-voltage, variable-frequency AC to power AC traction motors (Motor Converter Module). This system enhances energy efficiency through full regenerative braking and power factor correction, in addition to the inherent efficiency increase of an AC control system.

The vehicle will be capable of continuous operation at sustained cruise speed in either direction for the maximum speeds proposed for the system for vehicles loaded at AW1 and operating on level, tangent system guideway.

Simulation analysis of the cars will be performed for all configurations under AW1 load conditions to verify that the operating system technology can:

- Cruise at least at maximum normal cruise speed under all conditions along the guideway where grade, geometry, and station constraints permit.
- Maintain normal cruise speeds on the steepest grade in the Operating System guideway.
- When stopped on the steepest uphill grade, start and accelerate without violating the ride quality requirements.

The propulsion and braking systems are rated to provide traction and all train movement along the guideway, under the expected loads and environmental conditions. The vehicle ATC, in automatic mode, and TCMS (Train Control and Management System), in manual mode, will ensure motion control up to the maximum specified speed, such that acceleration, deceleration and jerk rates are within the acceptable range of passenger comfort.

Each car has two independent traction circuits each powering one bogie. Each traction circuit is equipped with a dedicated CM-DUO propulsion converter assembly which is made up of a four-quadrant line converter and traction converter built into a single unit. Each traction converter assembly receives power from 600VAC three phase distribution, converts this power to a dedicated DC link voltage via the line converter and, based on communication between the car control system and propulsion control system, converts the DC link voltage to variable frequency variable voltage which is fed to an AC traction motor mounted on the car bogie.

The design of the line converter at the input of each traction circuit allows energy recovered from motor braking to be fed back to the 600VAC distribution system. A resistor element is included also in each traction circuit to facilitate control of the link voltage and quickly discharge the DC link capacitor for maintenance activity. These independent traction circuits maximize the use of available adhesion and minimize performance loss in a failure condition.

Both traction converter circuits are equipped with the drive control units (DCUs) which receive commands and information from a single propulsion subsystem controller. This propulsion subsystem controller interfaces directly with the TCMS system where Input/output functional control signals such as direction request, tractive effort request, wheel diameter, line voltage, tractive effort delivered, etc., as well as various protection features are computed, converted, and passed.

The energy savings per car are expected to be over 30% with a fully-receptive wire compared to a regular TPA APM100 vehicles. The regenerated brake energy will be fed into the system for other cars to be used or, whenever this is not possible, will be fed into the feeding power system. Alstom will coordinate the electrical energy feedback with the local power supply company.

The unity power factor of the **ALSTOM\* INNOVIA\*** APM 300R will be 0.99 in all modes. The live harmonic will be controlled per IEEE-519.

### 3.8.1 Propulsion and Braking Control

The propulsion control system will respond to signals from the TCMS and adjust tractive effort, blend friction with electrical braking, and produce the tractive effort and braking necessary for smooth vehicle acceleration, deceleration, and cruising. The propulsion control system will accelerate the cars and any length train up to and including the Ultimate-length for the System from rest to a maximum cruise speed at rates not to exceed the maximum longitudinal acceleration and jerk rates given in Section 3.7.3.

The propulsion control system will be stable over time. Periodic adjustments required to compensate for drift or other problems will be capable of being incorporated efficiently in the car check-out routine. Under no circumstances will the propulsion control require adjustments more than once every 10,000 car miles to maintain performance within specifications.

The propulsion control equipment will have thermal overload protection.

Upon the occurrence of an overtemperature condition in either the propulsion controller or the propulsion motor, an alarm will be sent to Central Control indicating that condition with the affected car identified. Upon cooldown, the overtemperature sensing device will automatically reset and the alarm at Central Control will automatically discontinue. A change of state (e.g., "return to normal") message will be sent to Central Control and be displayed.

The TCMS system passes the required information to the propulsion subsystem controller based on a network of data collection as well as interaction directly with the ATC system. This allows the TCMS system to adjust tractive effort, blend friction with electrical braking, and produce the tractive effort and braking necessary for smooth car acceleration, deceleration, and cruising.

Communication with the propulsion system is done over a car network connection between the TCMS and the propulsion subsystem controller. The propulsion subsystem controller has multifunction vehicle bus (MVB) Network connections to control the drive control units (DCU) located at each traction converter. The DCUs are designed to work in a structure where the propulsion subsystem controller performs the vehicle level control interface and supports the communication between DCUs. Inter-vehicle communication on a multi-car train is performed by TCMS and ATC (levels above the propulsion subsystem controller) so the functions of the propulsion control system on a particular car pertain strictly to the commands communicated through the TCMS interface on that car.

### 3.8.2 Duty Cycle

The thermal capacity of the propulsion and service brake systems will be based on the greater of the following two requirements:

- Continuous operation of an Ultimate-length train over the System guideway. Dwell time as currently used on the existing system. Headways will be set for the maximum line capacity. All cars in the train will be loaded to AW2. The maximum ambient temperature will be assumed and does not include local temperature changes due to car or wayside equipment. Air conditioning and other accessories will be operating.
- One AW0-loaded car will be able to push or pull another AW2-loaded inoperative car into the most convenient station, regardless of where it is located, and then push or pull the same car with both cars empty (AW0) to the Online Maintenance Facility. The environmental and operating conditions of the above paragraph will apply except when degradation in speed, acceleration, and deceleration rates will be permitted. Assuming only one car is operable, the brakes on one car will be able to stop both cars. Emergency braking will be available from both cars; that is, an emergency brake condition will cause emergency brake application on both cars, except under special conditions when the emergency brakes of the failed train will be disabled for it to be moved.

### 3.8.3 Service Brakes

A service braking system will be provided. It will be designed to stop the car within its normal deceleration profile and deceleration and jerk constraints for all car speeds, loadings, grades, turn radii, and environmental conditions within the System's operating range. Brake capacity will be sufficient to stop any length AW2-loaded train under the conditions specified in Section 3.8.2 and will be designed to ASCE 21-13 Section 8. Service brake system failure will result in application of emergency brakes in accordance with this proposal Section 3.8.4 and 3.8.5.

Service brakes will use either electric motor braking and friction braking or only friction braking. If both are used a smooth transition from one braking mode to the other will be provided in accordance with the acceleration and jerk requirements of Section 3.7.3. If regenerative braking is used, the power generated will be accepted by the System or will be fed back into the supply system. Friction braking wear material will have a minimum service life of 50,000 miles, except that no more than 3 percent of all such wear components may have a service life of less than that amount.

The friction brake is an electro-pneumatic controlled, air or spring actuated drum brake. The friction brake system provides 1) supplemental service braking to blend with dynamic brakes when it is fading; 2) substitute service braking to dynamic brake when it is unavailable; 3) emergency braking for safe operation; and 4) holding/parking braking.

The friction brakes are used for supplementing service braking or emergency braking as a fail-safe back-up. Normal service braking is accomplished by dynamic braking. When dynamic braking is insufficient, the friction brakes automatically blend in to supplement the dynamic brake. If dynamic braking is not available, the friction brakes take over the entire braking duty.

The pressure-applied service brakes are also used to hold the car docked in a station during a passenger exchange. The service braking pressure is monitored to ensure that this braking effort is sufficient to hold the car at a standstill, under the worst conditions. The emergency brakes also function as a parking brake for holding the car at a standstill when the car needs long term parking.

Service braking is normally accomplished by the dynamic brake. When dynamic braking is insufficient, the friction brakes automatically blend to provide seamless braking effort. If the dynamic braking is not available, the friction brakes take over the entire braking duty.

### 3.8.4 Emergency Brakes

The emergency brakes will stop the train whenever a potentially dangerous condition occurs. Such conditions include failure to maintain proper safe speed, failure of the normal braking system, or other ATP conditions as required. Emergency braking rates will meet the requirements of Section 3.7.3.

During automatic operation, the emergency brakes will be irrevocable, that is, once the command is issued for them to be applied, they will remain applied until the train comes to a complete stop, even if the initiating command is removed. After the train has stopped, the emergency brakes may be reset for normal operation by a manual reset on the train by authorized personnel; additionally, the emergency brake may be reset by a control signal to that train from the Central Control Operator, unless otherwise prohibited for specific situations by these Technical Provisions. If conditions are not safe for the train to move, the emergency brakes will remain applied regardless of any reset signals or actions. If, when safe conditions exist, and the train is allowed to move, a subsequent malfunction occurs, the emergency brakes will be applied as before.

The emergency brake controls will be interlocked with the propulsion controls, to include removal of propulsion power during emergency braking, in a fail-safe or checked-redundant manner such that braking commands dominate. The emergency brake may use components of the service braking system but will operate properly without any guideway or propulsion system power and in the event of failure of electrical, or pneumatic power sources. In addition, the emergency brake will incorporate sufficient redundancy and capacity such that the safe train separation assurance requirements can be met with a single worst-case element failure of the emergency brakes considering the design stopping analysis and in compliance with Section 3.8.5.

#### 3.8.4.1 Heat Fade

The emergency braking system will function without degradation for three (3) successive applications from the maximum speed with an AW2 load and without overheating at the maximum ambient temperature. If the emergency braking system has any components in common with the service braking system, then the emergency braking system will function without degradation after meeting all requirements for the service brake duty cycle as specified in Section 3.8.2.

### 3.8.4.2 Wet Fade

Verified by calculations, ingress of water to the braking system will not cause any departure of the braking capability from the deceleration and stopping distance requirements necessary for the safe train separation assurance requirements.

### 3.8.4.3 Contaminants

Contamination of the emergency braking system by any fluids or foreign substances in proximity to braking components that might reasonably enter through a leak or other system malfunction will not adversely affect the deceleration levels required for the safe train separation assurance requirements.

## 3.8.5 Design Stopping Conditions

Design stopping distances for the System will be developed analytically according to ASCE 21-B 5.1.2 and the results provided for review in the appropriate design review. Such computations will include all worst-case time delays, train and motor over speeds, and acceleration conditions. The effects of any grade will be properly accounted for. The Ultimate-length, AW2 loaded train will be used. Guideway, tire, and other relevant conditions will be the cumulative worst-case conditions. The deceleration rate will be appropriately reduced to reflect the emergency brake performance and holding capability resulting from a single worst-case element failure or loss within the brake system. This consideration is to be applied irrespective of emergency brake fail-safe design criteria.

The stopping distances, as computed above, will be greater than the actual worst-case stopping distance exhibited by the completed System.

## 3.8.6 Parking Brake

The parking brake function will be provided by a mechanical or friction parking brake. It will be activated wherever the car is stopped including normal service stops in station. The parking brake function may be provided by elements of the service and/or emergency brake equipment, provided that the requirements of Sections 3.8.3 and 3.8.4 that are applicable to that equipment are met.

The parking brake will sustain an AW2-loaded, Ultimate-length train in a stopped position for an indefinite period on the maximum grade without application of guideway or car-borne power and with 50% of the parking brakes inoperative. Alternatively, it will hold for at least 24 hours, provided that subsequently a method capable of holding, such as chocking the wheels, is provided to immobilize the train indefinitely. If a separate parking brake is provided, it does not have to be applied during normal service such as regular stops in stations. Parking brake system failure will result in application of emergency brakes in accordance with Sections 3.8.4 and 3.8.5.

## 3.8.7 Additional Overrun Protection

The standard vehicle length (2 cars) is required to operate near end of line devices. Therefore, the system will provide end of line overrun protection.

# 3.9 Electrical Subsystem

The car electrical subsystem will comply with the following requirements.

## 3.9.1 Primary Power Subsystem

Primary power for the car will be obtained from 3-phase, 60Hz, 600V AC power rails on the guideway and conditioned on the car to 120V AC single phase via as well as 24V DC control power.

## 3.9.2 Emergency Power Subsystem

In the event of loss of primary power, on-board battery emergency power will assure uninterrupted continuation of the following functions for a period of at least one hour, unless otherwise specified:

- Public address and continuous two-way communications with Central Control;

- Fresh air ventilation;
- Car emergency illumination levels of Section 3.9.8 or better and all car exterior lights;
- Any car function required for disabled car recovery;
- TCMS System; and
- Alarm and malfunction reporting.

Each car will have a means of keeping the emergency battery(ies) in a constant state of readiness and an indicator showing the level of charge in the battery(ies). All batteries on the car will be suitable for a transit application, will be properly encased, ventilated, if necessary, and mounted in a corrosion-resistant mounted box isolated from the passenger compartment. Also contained in this box is a temperature sensing device. A low battery charge condition will be alarmed at Central Control. The emergency batteries will be Lithium Iron Magnesium Phosphate, or similar, specifically designed for motive applications with single-cell monitoring through the TCMS.

Implementation of lithium-ion chemistry requires use of a Battery Management System (BMS) to provide additional autonomous protection and ensure that the battery is maintained within safe operating limits. The BMS is designed to communicate directly with the battery modules via an RS-485 communication link which is directly connected to a processor within the battery module case. The BMS will act to remove the batteries from the distribution system if threshold limits are exceeded to ensure safe operation is maintained.

### 3.9.3 Power Collection

Car power will be obtained via the power collectors. Each car will be provided with power collectors compatible with the characteristics of the existing contact rail. The power collector will function under the maximum expected excursions of the car from wind loads, passenger load, centrifugal load, dynamic load, and normal variations in tire pressure.

Power collector redundancy will be provided to ensure continued contact throughout the guideway. Each collector assembly will be sized to carry the entire car electrical load for an indefinite period.

The brushes used in the power collectors will have a minimum service life of 7,500 miles, except that no more than 3 percent of all brushes may have a service life of less than that amount.

The connector(s) of the power collectors and the car electrical system will ensure that power to the collectors is disconnected whenever maintenance shop power is provided to the car. This connector and the location(s) for application of shop power will be protected from the environment by a manually operated cover which cannot be left open for revenue service. They will include a locking device to ensure that connections are not broken while the car is in service. They will not expose maintenance personnel to hazardous conditions.

### 3.9.4 Circuit Breakers and Interrupters

All onboard circuits and devices of the auxiliary subsystems will be protected from overload and faults by circuit breakers, fuses, or other interrupt devices. All such devices will be manufactured in accordance with NEMA standards or have demonstrated proven operation in same or similar service. All faults will be isolated to the smallest isolatable segment of circuit.

Each breaker will have a name plate clearly and permanently marked with the name of the circuit it protects.

The electrical system distributes the 600V AC through the appropriate circuit breakers for power and protection of HVAC system, the air supply unit, low voltage power supply, convenience outlets, battery charger, and the propulsion subsystem. The low voltage DC system is distributed to user loads through a circuit breaker distribution panel accessible in the above floor compartment. User loads are distributed among circuit breaker distribution by function, redundancy, and criticality (for load shed purposes).

### 3.9.5 Wiring

All wiring will be unalloyed copper and at least equal to that specified in NFPA 130, 2020 Section 8.6.7. Wiring will be clearly marked in accordance with the car electrical schematic for ease of identification in maintenance and troubleshooting. Wiring will meet the requirements for flammability and smoke emission described in this proposal Section 3.15.

All car wiring will be properly secured and protected in enclosures or secured in wiring trays that are properly drained and that physically separate high and low voltage wiring. All plastic materials will meet the flammability and smoke emission requirements of Section 3.15.

All conduits will be of a material capable of withstanding the duty and environment into which it is applied. Wire in conduit, ducts, and raceways will be free of kinks, insulation abrasions, and insulation skinning.

Wire will not be bundled in a conduit, duct, or raceway. Each wire will be removable for replacement without disturbing other wiring in the enclosure. Where wire is in open areas, bundling will be permitted if this wire removal criterion is met. Any exposed wire will be cleated, tied, or secured by other suitable means.

### 3.9.6 Connections, Connectors, and Splices

Connections will be through environmentally protected locking-type plugs, or bolt-on terminal strips. Wires between terminals will not be spliced or soldered. Bolted terminal connections with overall insulating sleeves may be used to connect car wiring to the propulsion motor leads and the maintenance power connection. If unavoidable, solderless connectors installed under a controlled process may be used.

### 3.9.7 Grounding

Each car will be grounded at all times by means of a non-fused grounding circuit. A minimum of two grounding brushes, each with sufficient current-carrying capacity to handle fault currents of the entire car electrical subsystem, will be in contact with the ground rail at all times. The worst-case fault current will not permit a voltage greater than 25 volts to appear between the car with the car operating at any location on the guideway and with only one ground brush contacting the ground rail.

The car body, frame, or structure will not be used to carry current for any vehicle electrical circuit. All electrical and electronic metal enclosures and all equipment that uses electrical power will provide a low-impedance path from the enclosure/equipment to the car structure. Where feasible, bonding will be direct metal-to-metal contact between the enclosure/equipment and car structure; otherwise, conductors of sufficient cross-sectional area to carry fault current of the equipment will be used.

### 3.9.8 Lighting

#### 3.9.8.1 Interior Lighting

Car interiors will be designed with lighting fixtures that are secure, rattle free, and vandal resistant. Powered fixtures will be inaccessible to passengers. Diffusers of a material that is shatterproof will be provided.

Interior lighting is provided by 2 rows of energy efficient LED lighting fixtures that run the full length of the car and are integral to the ceiling. These fixtures provide a consistent level of light throughout the car interior with no "hot spots" unpleasant to the eye. These LED light fixtures also house air diffusers that run the entire length on both sides of the car for even air distribution ensuring passenger comfort.

The LED light fixtures also provide emergency lighting in the event of track power loss. End interior lighting can be manually dimmed via the manual controller located on the car by an operator to reduce glare while operating in manual mode.

Interior LED-type lights will provide illumination levels that will be at least 210 lux (20-foot candles) when measured 76 cm (30 in) above the floor level and at least 54 lux (5-foot candles) at all floor level locations. When power is provided by the car emergency battery, lighting system will provide minimum illumination level per NPFA 130:2017. Emergency LED spotlights will illuminate the path from each car exit to walkway. The values are to be measured with all light diffusing panels in place.

LED units are guaranteed for the design life of 50,000h.

#### 3.9.8.2 Exterior Lighting

LED-type headlights and directional lights will be provided on each end of each car. The exterior lights are designed to function as follows:

- During normal (automatic) operation of the vehicle, all the headlights are off.

- During manual mode driving (including manual supervision of ATP), only headlights of forward end will be illuminated such that they provide a good view of the guideway ahead such as to permit safe manual operation of the vehicle.
- Under any operation conditions, the directional lights are always illuminated in WHITE in direction of travel and RED at the tail end.
- Directional lights between cars are off.

The headlights are compliant to FMVSS 108 and will provide sufficient illumination for forward visibility of at least 5 lux at 10 m (0.5 foot-candle at 33 ft).

### 3.9.9 120-Vac Power Supply

An on-board power supply will provide 120V AC, 60 Hz sine wave power through two (2) American standard, three-prong grounded outlets. Each outlet will be protected against unauthorized use or vandalism by a tamper-resistant cover.

### 3.9.10 Maintenance Power Connection

The car will include a device to accommodate the connection of electrical power to the car from a source other than the power collectors described in Section 3.9.3. This device will be protected from weather when not in use. Such a connection will be for the purposes of conducting car maintenance and will be through an umbilical cable and connector assembly. It will be possible to operate all car electrical loads, including propulsion at AWO loading, through this connection. Connection of this umbilical connector to the car electrical subsystem will ensure that it is not possible for the car collectors to be powered from the maintenance power source. When the shop power is connected, the car is not operationally limited in speed. While connected to the maintenance power source, the car will be grounded through a non-fused grounding circuit.

## 3.10 Suspension and Guidance Subsystems

The car suspension and guidance subsystems will provide positive mechanical methods for retaining the car in the lateral direction. The car will be stable against tipping for all operating and environment conditions (see Section 3.4.2).

### 3.10.1 Suspension and Guidance System Overview:

Each bogie incorporates a single rigid truck axle equipped with two sets of dual pneumatic tires. Each car bogie has a fully functional drive train that consists of the following major items:

- Traction motor;
- Drive shaft;
- Drive axle.

These major underframe subassemblies are standard designs that have millions of miles of proven field service at all APM 100 sites where Alstom systems are in operation. Bogie structural elements which support the wheels and suspension are designed and analyzed in accordance with load cases defined in ASCE 21.2-08; in particular, a horizontal static load of 0.3g.

Two AC traction motors provide the propulsion to each car to obtain the required speeds and accelerations. Connecting the motor and the axle is a short tubular drive shaft, utilizing single Cardan U-joints and a slip-yoke at the motor end.

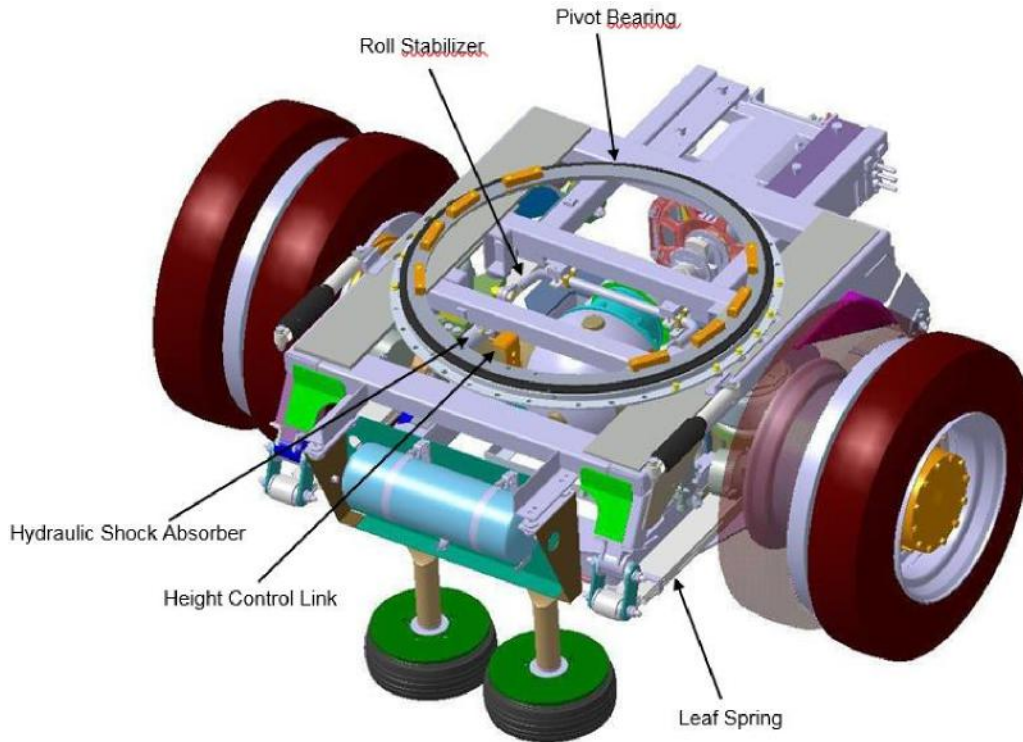
Central to each bogie is a rigid (non-steering) truck axle suspended from the bogie by conventional leaf springs. The drive axle assembly on a bogie is composed of an off-highway rigid axle with planetary hubs commonly used as a rear axle of a tandem arrangement. Primary speed reduction is through a full-floating differential with hypoid-type gears mounted in a machined housing. Planetary geared hubs provide a secondary speed reduction.

The vertical suspension consists of two semi-elliptic taper leaf springs and two air springs per bogie. The leaf springs support the empty car weight while the air springs support the passenger load. Height control valves are provided with the air springs to level the suspension.

In the event of an air spring failure, the air springs are equipped with an internal rubber spring. The car envelope is studied under various failure conditions to guarantee clearance between the car and civil structures. Failure conditions include all possible combinations of failures at the drive tires, guide tires and air springs.

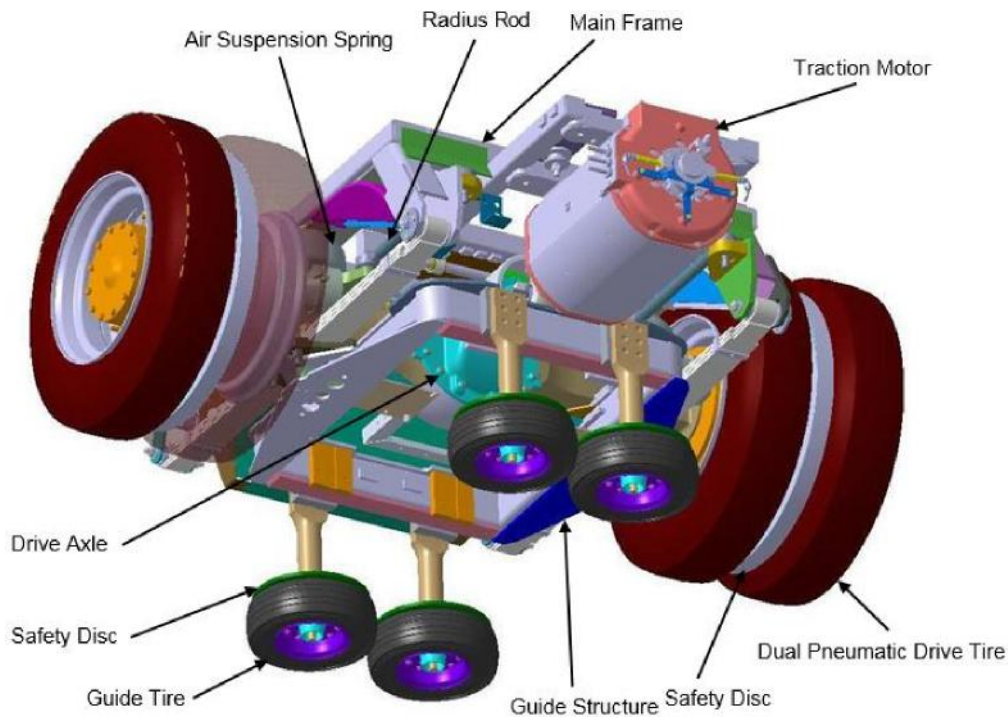
Steering is affected by allowing the rigid axle and the entire suspension system to pivot on a large diameter bearing that attaches the bogie to the underframe of the car.

A combination of split lock washers, cotter pins and safety wire are utilized on the bogie and underframe equipment to ensure fastener integrity. Fastener configuration has evolved to the current level through years of operating experience.



*Figure 4: Suspension System Outline*





*Figure 5: Suspension System Outline*

### 3.10.2 Suspension and Guidance System Component Description

#### 3.10.2.1 Drive Tires

The drive tires are 10R22.5 tires in a dual set configuration. They are equipped with a safety disc located between each dual set to limit the drop of the car in the unlikely event of dual flat tires. The drive tires will achieve a minimum life of 50,000 miles. The tires are equipped with a tire pressure monitoring system. In the event of pressure falling below the designated threshold, an alarm will be sent to central control and the car will hold at its next station.

#### 3.10.2.2 Air Springs

Four air springs (two on each suspension assembly) support all loads added to an empty car. They are controlled by height control valves to keep the car floor the same height as the station platform.

Two height control valves (one at each side) on the #2 end axle, and one in the center of the #1 end axle, provide a stable tripod arrangement of height-sensing that adjusts the air pressure in all four of the air springs to keep the car body height constant at all times.

As the car is loaded, the leaf springs deflect, lowering the main body frame. The height control valves sense this lowering and open to provide air to the air springs, raising the car floor back to platform height.

When the load lightens as passengers leave the car, the frame rises. The height control valves sense this rise and open to exhaust air from the springs, lowering the car body until the floor is even with the station platform.

The air springs receive air from the car's compressed air system that also supplies the brakes. Air enters the springs via a hollow box-beam reservoir that is part of the drive and suspension assembly frame.

### 3.10.2.3 Leaf Springs

The weight of the car and its passenger load is shared by a combination of leaf springs and air springs. The leaf springs support the car weight when it is empty, while the air springs support the passenger load. The weight of the car is supported by four of these leaf springs, one on each side of each drive and suspension assembly.

### 3.10.2.4 Pivot Bearing

The pivot bearings are ball-bearing ring assemblies that attach the drive and suspension assemblies to the underframe. The drive and suspension assemblies pivot on these bearings to address any curves on the guideway.

### 3.10.2.5 Radius Rod

Two radius rods stabilize each drive and suspension assembly by overcoming the tendency of the springs to wrap-up due to the torque produced when accelerating or braking. One end of the rod is attached to a bracket on the drive and suspension assembly, the other end attaches to the axle. There are ball joints on each end of the radius rods.

### 3.10.2.6 Shock Absorbers

Two heavy-duty shock absorbers are attached diagonally between the axles and the suspension frame. These shock absorbers stabilize the car against sway and wheel bounce due to irregularities in the roadway. Each drive and suspension assembly are equipped with twin-opposed horizontally mounted shock absorbers that dampen rotational motion of the drive and suspension assembly with respect to the car body.

### 3.10.2.7 Guide Structure

The guide structure is a welded steel frame attached to the underside of each drive and suspension assembly. It supports the four guide wheel assemblies and the current collectors.

The guide structure steers the drive and suspension assembly along the roadway, following the central guide beam with the guide wheels. When following a curved section of the guide beam, the guide structures pivot the drive and suspension assemblies on the pivot bearings beneath the car.

The four guide wheel assemblies are bolted to the guide structure so that each wheel is in contact with either side of the web of the guide beam. The guide tires are designed to operate for a minimum life of 50,000 miles.

### 3.10.2.8 Main Frame

The main frame connects the suspension components to the ring bearing. The main frame sits above the axle and is rigidly connected to the guide structure. Structural hollow tubes of the main frame act as the air reservoir for the air suspension system.

### 3.10.2.9 Guide Wheel Safety Disc

The outside diameter of the safety disc is 14.50", slightly smaller than the outside diameter of the rubber guide tire (16.00") it attaches to. It is provided just above the wheel to engage the upper flange of the guide beam. This lock-on feature precludes the need for debris deflectors, as debris cannot cause vehicle derailment.

### 3.10.2.10 Roll Stabilizer

A roll stabilizer is provided to minimize car roll motion. This function is provided by a simple mechanical torsion type anti-sway bar mounted between the drive axle and the bogie main frame.

## 3.10.3 Loss of Load Levelling

Load levelling is used to provide vertical alignment. Unsafe car tilting in the event of a failure will be prohibited. In addition, the sides of the cars that might contact the platform edge will be sufficiently strong to withstand such contact without being damaged.

### 3.10.4 Odometers

Each wheeled car will have its mileage recorded. The propulsion application will compute the car travelled mileage regardless of the direction of vehicle travel on a car basis. The car mileage will be displayed on the Manual Controller Driver's screen.

## 3.11 Doors

Automatic, power-operated, bi-parting, horizontally sliding doors will be provided on both sides of the car for passenger entrance and exit. These car doors will operate in coordination with the station platform barrier doors. There will be a minimum of two sets of doors per side of each car. The number of doors will be the same as the existing APM100 vehicles.

### 3.11.1 Features and Dimensions

Both door panels of a car door will be controlled and operated by one overhead door operator. The dimensions of the car doors will be identical to the existing APM100 car fleet, apart from the door height.

The car door system configuration is a bi-parting outside sliding arrangement with overhead door operators. There are left-hand and right-hand door panels. Door panels are honeycomb design with safety glass. Both panel leading edges have a rubber seal to prevent pinching when the door is closed. The door panels also have a trailing edge seal which forms a watertight seal at the end of the door. The door operator is mounted under a cover for easy access from the outside.

Each door operator is controlled by a Door Control Unit (DCU). The DCU controls the function of the door opening according to the signals from train network or the ATC alternate door opening trainline in case of train control failure.

The door operator is powered by a 24 Volt motor. The motor drives a screw which then opens or closes the doors depending on the rotation direction.

The doors nominal opening time is 3 seconds and the closing time is 4 seconds.

### 3.11.2 Door Operation

Enabling of the car and corresponding station doors will be authorized by the ATP sub-system and will occur only if the following conditions are satisfied.

- The train speed is zero;
- The train is properly aligned with the station doors, and;
- The brakes have been properly applied and power has been removed from the propulsion motors.

Automatic operation of the car and corresponding station doors will be controlled by the ATO sub-system, subject to the safety checks of the ATP sub-system.

The TCMS interfaces to the door control units and the TCMS controls the doors based on train-wide commands received from the controlling vehicle ATC.

The door system normally operates fully automatically. Under certain conditions it may be necessary for the passengers to open the doors, however this can only occur when the car is stopped and only at the positions and side that are permitted to be opened.

### 3.11.3 Door Safety

Door or door control subsystem failures will not result in a car door unlocking or opening when not commanded to do so and will meet the following requirements.

The ATP subsystem will ensure that no automatic mode failure will result in the unlocking or opening of a car or station door.

If any car door or emergency exit unlocks for any reason while a train is in motion, the train will be irrevocably service braked to a stop. For all instances in this paragraph, only manual reset on board the train will be permitted.

If any station platform or emergency door is unlocked for any reason, cars will be prohibited from entering or leaving that station platform. If any station platform or emergency door is unlocked for any reason after a car has entered the station platform area, the car will be emergency braked or irrevocably service braked to a stop. Brake reset will be only by local manual reset onboard the car. For any unscheduled car or station door unlocking or opening, regardless of the cause, an alarm will be automatically annunciated at the Central Control indicating that this emergency condition has occurred.

It will not be possible to entrap fingers, hands or clothing between door panels and adjacent fixed sections while doors are opening or closing. All car door panels will have a door reopening feature which, when door motor senses a resistance, will cause both panels to recycle stop, reverse direction, return to the fully opened position, and then begin the closing cycle again. The cars will conform to EN 14752 wherever applicable. Entrapment of any object down to 10mm in width will cause reopening with both door panels operating. Door test will be performed with test object the size of 10x50mm at three locations (high, middle, low). The force to extract will not be greater than 33lbs (150 N). The door reopening period in this cycle will be adjustable from one to ten seconds and in not greater than one second increments. Activation of the door reopening feature on any car or station door panel will operate all car and station door panels at the affected doorway. Door panels at unaffected doorways on the train will not be recycled. Activation of the door reopening feature causing the doors to recycle three times will result in an alarm at Central Control.

The ATP subsystem will ensure that a train stopped in a station will not be allowed to move unless all train and station platform doors are properly closed and locked and the train brakes have been released. Once these conditions are satisfied, the service brakes will be applied, and an alarm will be sent to Central Control if the train does not move within ten (10) seconds of being commanded to do so. Manual and remote brake reset will be provided.

With car power applied to the door operating mechanism, the door panels will automatically unlock and open, and close and lock. The doors will not be locked until the space between door edges is 0.25in (6.5mm) or less. This will be tested with a test object in the size of 5x30mm at three locations (high, middle, low). In the event of loss of power to any car door mechanism, it will be possible to open the failed door manually (after unlocking) with a force not exceeding 156 N. All car doors will have a mechanism on the exterior of the car to unlock and open the door panels manually without car power and without the use of a key or similar device.

No door will exert a closing force in excess of 35lb (133 N) for the full range of door motion, even when the reopening feature has been deactivated. The kinetic energy of each car door panel, including all parts rigidly connected to the door and completed for an average closing speed will not exceed 7 foot- pounds (9.5 J). The average closing speed will be calculated by measuring the time required for the leading edge of the door to travel from a point 1 inch (25.4mm) away from the open jamb to a point 1 inch (25.4mm) away from the point of closure. When the door reopening feature is no longer active, just before door closure, the kinetic energy, as computed above, will not exceed 2.5 foot-pounds (3.4 J).

The door panels will not separate due to forces from acceleration or deceleration in combination with guideway grades.

Each door panel will be of sufficient strength to meet the requirements of Section 3.4.2. Door performance will not be adversely affected after such loads are removed.

### 3.11.4 Door Alignment

Under all load conditions, the car door threshold will be level with the platform floor so that the difference in elevation between the car and station floors will not exceed 7/8-inch in either direction (see also Section 3.10.3). The horizontal gap between the platform edge and the car floor edge, with the door open, will not exceed 2.0 inches.

### 3.11.5 Emergency Exits

Each car will be equipped with one or more emergency exit(s) which will lead to a safe emergency egress route at any point in the System, regardless of train length. If emergency exits separate from the regular passenger doors are required to meet evacuation requirements, they will meet the retention and release requirements of Federal Motor Vehicle Safety Standard 217. Emergency doors will not impede passenger exiting. Opening any emergency door and/or regular passenger door used as an emergency door will be possible from inside and outside the car by means of a mechanical latch that operates independently of any on-board power and complies with Section 3.11.3 and the following requirements. The emergency door-operating mechanisms on the inside of the car will be conspicuously marked including simple operating instructions and will be permitted only on the emergency walkway side. The mechanism on the unsafe side of the car will be electrically disabled to prevent the possibility of unsafe opening. These mechanisms

and instructions will be clearly visible under normal and emergency lighting conditions. The emergency door and any such operable passenger door will open onto the emergency walkway. The emergency door operating mechanism will fail in a manner which permits the emergency doors to open when operated. Such failure will result in an alarm message to Central Control. (See Section 3.11.3)

### 3.11.6 Door Reliability

Car doors have been tested for operation for at least one million cycles without failures exceeding predicted reliability values with normal scheduled maintenance. After one million cycles, doors will continue to meet all performance requirements of this specification.

## 3.12 Exterior Design

The car will have a clean, smooth, simple design. The exterior and body features will allow complete and easy cleaning, including in an automatic car wash. Body and windows will be sealed to prevent leaking of air, dust, or water under normal operating conditions and during cleaning by personnel or the automatic car wash.

The color scheme and design of the cars will include a maximum of five colors. Alstom will submit a color rendering of the proposed final car exterior design, including color scheme.



*Figure 6: Vehicle Side and Front Views*

### 3.12.1 Passenger Module

The passenger module will be fabricated of stainless steel, aluminum, high-strength low-alloy (HSLA) steel, gel-coated fiberglass reinforced plastic, high-strength composite material, or a combination of these materials. Aluminum will be “A” in resistance to corrosion as defined in the Aluminum Association Structural Handbook. All exterior metallic car body materials (as shown in Figure 7 Passenger Module) will be designed for corrosion-resistance sufficient to withstand salt spray test in accordance with ASTM Procedure B117, “Method of Salt Spray (Fog) Testing”. Weathering steel, such as ASTM A588, will not be used. All dissimilar metal components including fasteners will be electrically insulated from each other to prevent galvanic corrosion.

The passenger module is primarily made up of aluminum extrusions welded and or bolted into large sub-assemblies as shown in Figure 7 Passenger Module. These panels are joined together using structural fasteners. The undercar has some steel substructures associated with various interfaces. The passenger module uses modern materials and assembly techniques, minimizing the use of special processes at assembly and maximizing the value of the assembly.

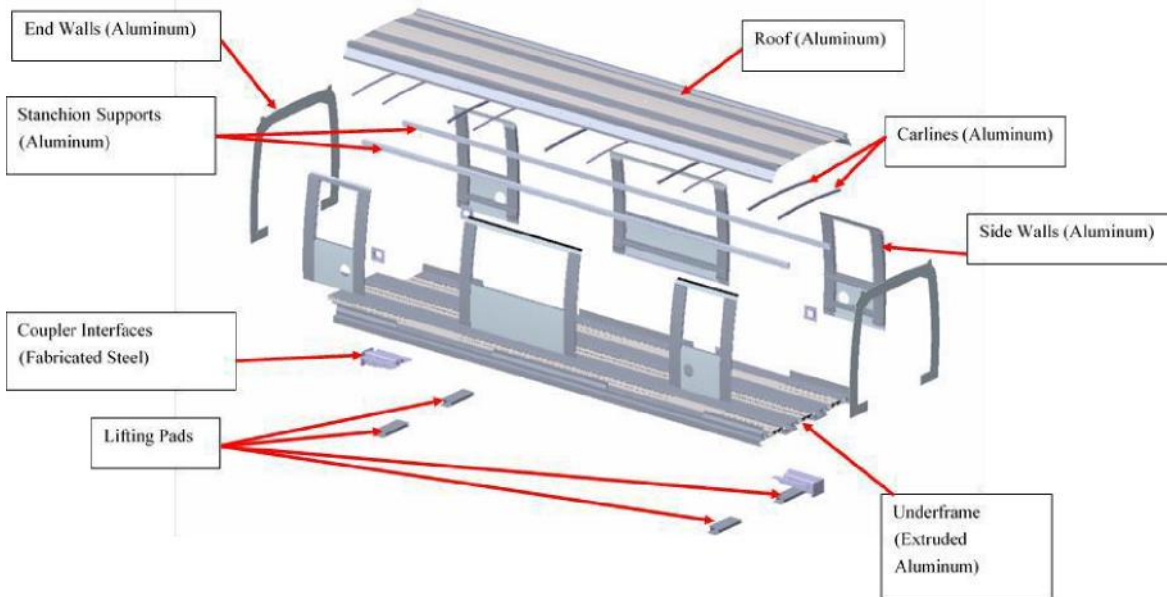


Figure 7: Passenger Module

### 3.12.2 Finishing

The car exterior will be painted completely to conform with the approved color scheme and design. Fiberglass need not be painted if the desired finish colors are an integral part of the gel-coat. Steel will be completely primed and painted. Stainless steel will be painted only as needed to meet aesthetic and thematic design requirements. Aluminum will be anodized or completely coated with zinc-chromate primer or similar and painted.

Numbers, signage, and logos are applied to the exterior using decals. The exterior paint system is suitable for the purpose of transit applications and is expected to provide protection and aesthetics throughout the design life of the car.

### 3.13 Watertight Construction

Each Car/Vehicle, at AW0 and AW2 loading with doors and window seals installed, shall be watertight when exposed to water spray from a 40 psi, 5 gpm nozzle located five feet from the exterior surface and directing the water perpendicular to the surface during factory tests required. The entire Vehicle, sides, ends, and roof shall be tested after a minimum soak time of ten (10) minutes.

At least one watertightness test shall be performed on one Car/Vehicle.

At least one watertightness test shall be performed with the passenger compartment loaded to simulate the normal passenger floor loading condition, to reflect actual floor loading on the vehicle, and another shall be performed at AW0 and AW2 after all materials and equipment have been installed. Insulation that is integral with walls of a sandwich construction shall be permitted in both tests as long as tests include detection of any leaks and seepage at any holes in, and at the edges of, such wall material. A small amount of seepage will be permitted at the door seals; however, no water shall spray into the Vehicles at the door seals. During the watertightness testing, water will not enter, or in any way impair the operation of, any subsystem or equipment.

Each car will be watertightness tested as a finished car over its range of AW0 loads, including doors and window seals.

### 3.14 Interior Design

Car interior dimensions will accommodate the range of the 5th percentile of female population to the 95th percentile of male population in accordance with ISO 3411. Corridors and aisles will have a height of at least 80 inches. The main aisle width will be at least 34 inches to permit access by a wheelchair (see Section 3.7.4 ). All standing passengers will have access to vertical stanchions or handholds (see Section 3.14.8).

The interior will have no sharp depressions or inaccessible areas and will be easy to clean and maintain. Handholds, lights, air vents, armrests, and other interior fittings will appear to be integral with the car interior. There will be no sharp, abrasive edges, corners, or surfaces and no unnecessary or hazardous protuberances.

Interior panels and partitions will be permanently mounted by tamper-resistant and vandal-resistant fasteners or welded in place. Interior panels will be attached so that there are no exposed edges or rough surfaces. Panels and fasteners will not be removable by passengers. Use of moldings and small pieces of trim will be minimized. Individual trim panels and parts will be interchangeable to maximum extent practicable.

As part of the car design review and in conjunction with the similar requirement of Section 3.12, Alstom will submit a color rendering and other drawings showing general layout and design of the proposed interior design and color scheme for review with customer.

During the project, The Customer can customize some elements of the **ALSTOM\* INNOVIA\*** APM 300R car, including:

- Static Interior graphics;
- Color schemes for the following:
  - Interior floor covering;
  - Main interior panels;
- Stanchions and handholds finish (#4 brushed) or colored powder coated;
- Ceiling grips handstraps colors;
- Other elements of the **ALSTOM\* INNOVIA\*** APM 300R car technology are integral to the car's structural design and cannot be modified. These elements include:
  - The location and configuration of the light and air diffusers;
  - The location, size, and shape of the end seats;
  - The equipment lockers, which are housed beneath the end seats;
  - The area available for graphics above the door openings, which is a fixed size based on the car interior design;
  - The size and shape of the car body, including door openings, windows, and interior panels.



*Figure 8: Interior Layout*

### 3.14.1 Interior Materials

Materials will be selected based on ease of maintenance, durability, appearance, safety, and tactile qualities. Materials will comply with the requirements of Section 3.15. Trim and attachment details will be simple and unobtrusive. Interior trim will be secured to avoid resonant vibration.

All composite panels, floor covering, and interior materials are easy to maintain, resistant to vandalism, and impervious to normal cleaners and ink from most felt tip pens. The materials meet the minimum requirements for flammability and smoke emission characteristics as defined by NFPA 130 with revision current at time of Notice to Proceed. Gelcoat color for the FRP liners is a customer choice item.

Interior panel material will permit easy removal of paint, greasy fingerprints, and ink from felt tip pens, etc. Materials will be strong enough to resist everyday abuse and vandalism and will be resistant to scratches and markings. Door frames will be manufactured in stainless steel.

Flooring is described in Section 3.14.4. Seat materials are described in Section 3.14.5.

Samples of floor covering, seat, trim, panel, and stanchion/handhold materials will be submitted to customer.

### 3.14.2 Access Panels

Access for maintenance and replacement of equipment will be provided by panels and doors that appear to be an integral part of the interior. All equipment compartments will be sealed to prevent unauthorized entry. Opening of all interior access panels will require a special tool or key. The manual controller cover and equipment cover use the same key, which is different from other access panel keys. Panel fasteners will be standardized so that only one tool is required for special fasteners within the car. Access doors for the door actuator compartments will prevent entry of mechanism lubricants into the car interior. Removal of fixtures or equipment unrelated to the repair task to gain access will be minimized. Access doors will be hinged with props to hold the doors out of the technician's way. Overhead access panels will have safety catches to prevent the panel from dropping.

### 3.14.3 Fire Barriers

The passenger compartment will be separated from any of the compartments containing the propulsion units, the propulsion control units as well as any high-voltage powered auxiliary equipment by the car structural floor which incorporates fire-resistant materials in its construction. These fire barriers will resist the propagation of any fire from propulsion or propulsion control unit compartment into the passenger compartment. These fire barriers will meet the requirements of NFPA 130 (2020), which includes compliance to ASTM E119 (2015) and ASTM E648.

All panels that provide separation between the car interior and any electrical or mechanical equipment other than communication panels, light switches, destination switches, etc., will meet the requirements of NFPA 130 (2020).

Any penetration through the fire barrier into the passenger compartment will be designed to meet the requirements of NFPA 130 (2020) and ASTM E119 (2015).

### 3.14.4 Floor

The floor deck will be made of floating floor panels resting on the structure securely to prevent chafing or horizontal movement and increase passenger comfort. Floor fasteners will be secured and protected from corrosion for the service life of the car. Floor covering will withstand a pressure of 5 MPa with a maximum residual indentation of 0.15 mm as per ISO 24343. Floors will meet the structural requirements of Section 3.4.1.

The floor covering material is a 2mm thick rubber ultra-resistant to wear.

The floor of the passenger cabin will be a continuous flat plane. The entire floor will be covered with material that remains skid-resistant in all weather conditions. Flooring material will be installed to prevent edges from coming loose. Floor covering joints are transverse to reduce the waste of material and ease the installation. The floor covering and transitions of floor material to thresholds will be smooth and create no tripping hazards. Door threshold plates are raised above the top of the finished floor approximately 6.4 mm to cap the floor covering edge; this is within the ADA definition of "flat" with respect to tripping hazard. Where the flooring meets the walls of the car, the surface edges will be blended to prevent debris accumulation. Samples of floor covering material will be submitted to customer for review and approval as part of the car design review with a choice of standard colors.



The floor, as assembled, including the sealer, attachments, and covering, will be waterproof, non-hygroscopic, resistant to wet and dry rot, resistant to mold growth, and impervious to insects. Any access openings in the floor will prevent entry of fumes, flames, and water into the car interior.

Side kick panels will be mounted to a minimum 1ft high and will be made from stainless steel.

### 3.14.5 Seats

Per the current **ALSTOM\* INNOVIA\*** APM100 vehicles of Tampa system, the cars will offer bench seating at both ends of the passenger compartments sufficient for eight (8) persons (four per bench); there are no seat backs on these seats. There are no free-standing or wall-mounted seats within the floor area of the passenger compartments.

Interior equipment is housed under each hinged bench seat and is easily accessible with removable covers and panels.

### 3.14.6 Windows

All windows will be fixed in position. The windows should be structurally designed to withstand the impact of a falling person during emergency braking. All windows will be replaceable without disturbing adjacent windows. Flexing during operation will not be apparent. The window glazing will be free of visual distortions.

Visible light transmittance (VLT) of all windows (side and end windows) will be 23%. The tint color will be dark grey.

All car glazing will be certified to meet the requirements of ANSI Z26.1. Front and rear windows will be certified to item 1 tests (AS1) (except for VLT test which is less than 70%). All other windows will be certified to item 3 tests (AS3). All windows will be of laminated glass with a minimum thickness of 0.25 inches.

The window in front of the operator's position at both ends of trains equipped with on-board manual controllers will provide a field of view which will permit the operation of the car manually on the guideway. During manual driving of the car, reflection from inside the car on the end windows will be reduced by dimming interior light fixtures. The current standard design does not include interior condensation removal system.

### 3.14.7 Insulation

Any insulation material used between the inner and outer panels will be fire-resistant as identified in Section 3.14 and sealed to minimize entry of moisture and to prevent moisture retention in sufficient quantities to impair insulation properties. Insulation properties will be unimpaired by vibration compacting or settling during the service life of the car. The insulation system will be non-hygroscopic, resistant to fungus and breeding of insects, and will not absorb or retain oils.

Alstom will incorporate modern design philosophies by creating a vapor barrier to prevent the formation of condensation behind insulation against cold surfaces.

The insulation will have a foil sheet material (FSK) applied to the inner surface. This FSK material will be a barrier against water and air (vapor) and prevent passage from the inner face. To complete the system, the edges of the insulation will be sealed with a similar foil tape to the adjacent insulation pieces or the vehicle structure.

Air will not pass through the insulation barrier to make contact with cold surfaces, and any potential moisture from the front face will be blocked by tape and foil.

In addition, the foil will be a deterrent to vermin and the insulation possesses no nutrient properties to support growth.

The combination of inner and outer panels on the sides, roof, and ends of the car and any material used between these panels will provide a thermal insulation sufficient to meet the interior temperature requirements identified in Section 3.7.1. The car body will be thoroughly sealed so that drafts cannot be felt by the passengers during normal operations with the passenger doors closed.

### 3.14.8 Stanchions and Handrails

Any standing passengers at any location in the car will be able to easily reach either a vertical stanchion, a horizontal handhold between vertical stanchions, or a handhold.

Handrails and stanchions will be convenient in location, shape, and size for both the 95th percentile male and the 5th percentile female standee in accordance with ISO 3411. Vertical stanchions will be located throughout the car interior

but not in areas where they obstruct aisles, doors, or wheelchair access or cause congestion near doors. While any person within the 5<sup>th</sup> to 95<sup>th</sup> percentile will have access to at least one handhold, not all types of handholds will be accessible to all passengers in this range (i.e., ceiling handgrips will not be accessible to 5<sup>th</sup> percentile females but limited to 11<sup>th</sup> percentile females).

Stanchions and handholds will be of colored powder coating finish or stainless-steel tubing with brush satin finish. They will be able to support the forces in accordance with ASCE21-13 section 7.4.4.1.2 analysis and design requirements. Any joints in the handrails or stanchions will prevent vibration or passengers from moving or twisting them.

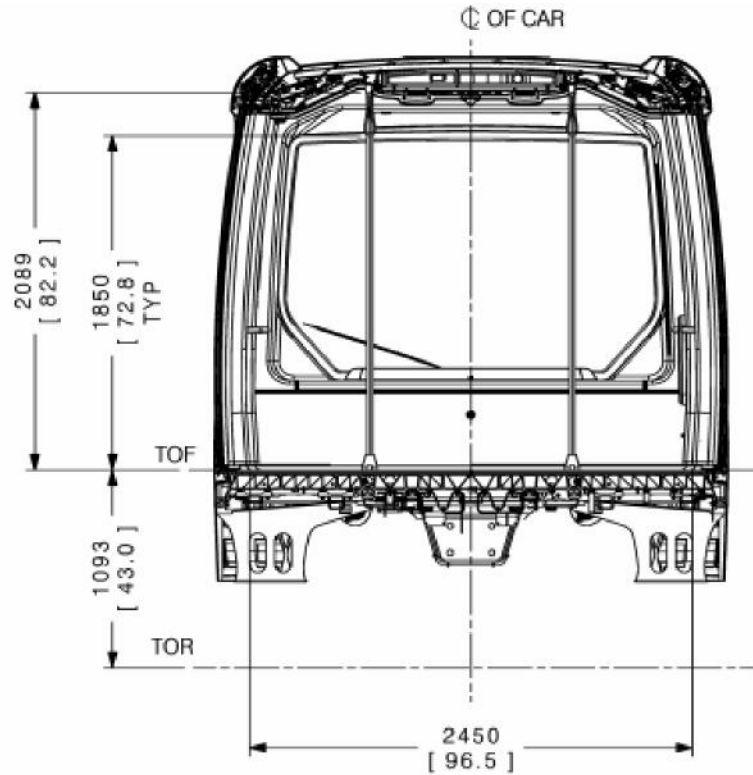


Figure 9: Griping Layout – Vertical Position

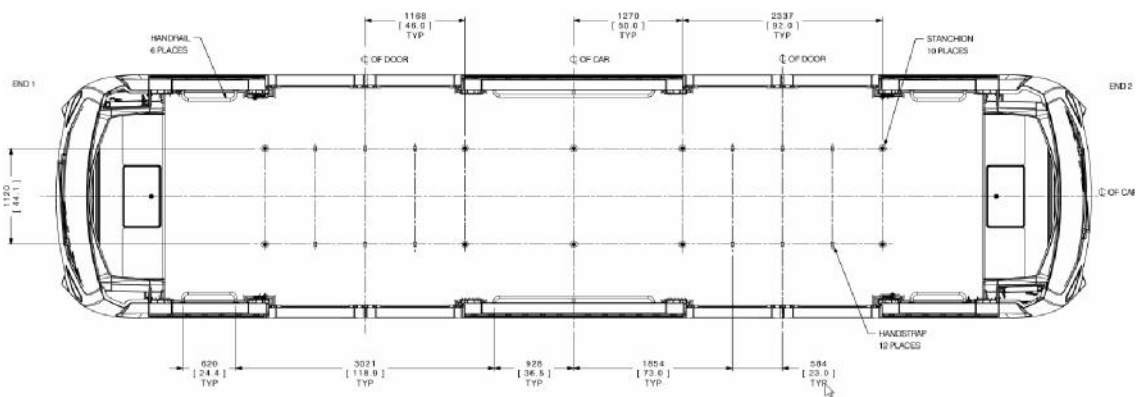


Figure 10: Griping Layout – Horizontal Position

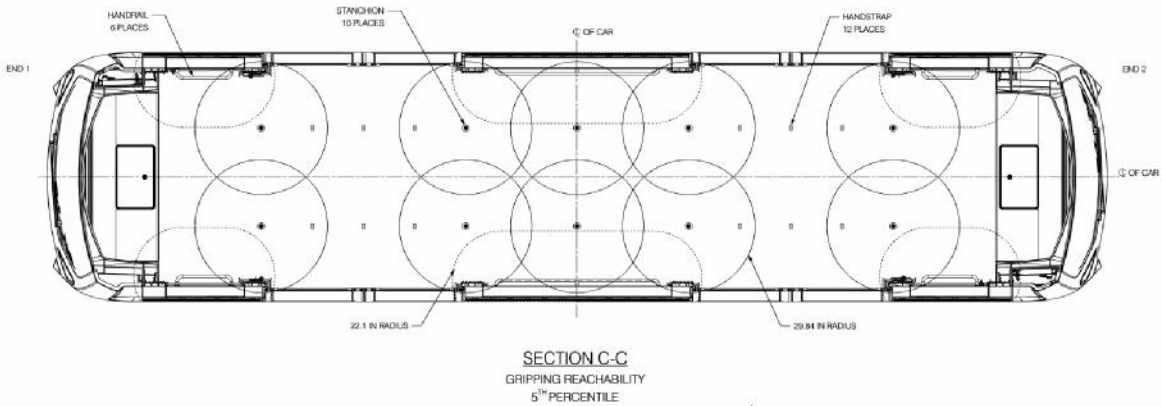


Figure 11: Gripping Layout – Reachability by 5<sup>th</sup> percentile

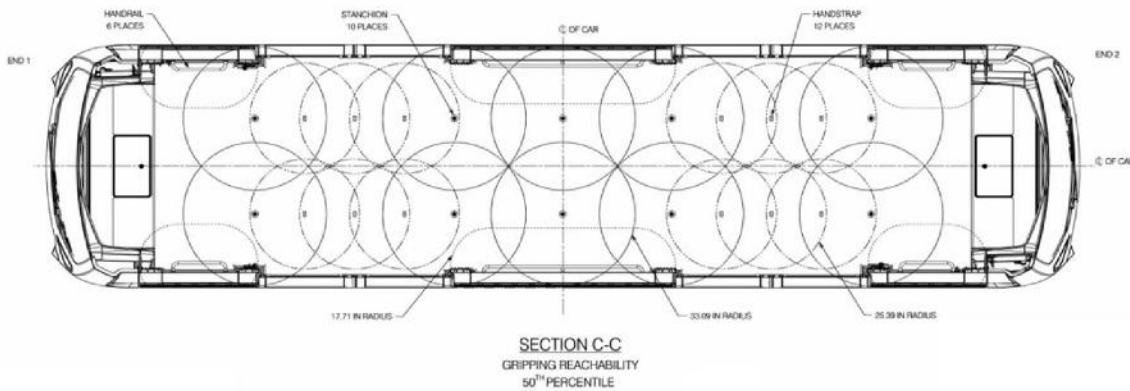


Figure 12: Gripping Layout – Reachability by 50<sup>th</sup> percentile

### 3.14.9 Passenger Information

#### 3.14.9.1 Audio Announcements

All passenger compartments for all cars will have automatic on-board announcements, provided in English that accomplish the following:

- Pre-Departure message from either station;
- Arriving Airside message;
- Arriving Landside message;
- Door obstruction message;
- Improper stop message.

### 3.14.9.2 Graphics

Static graphical information for passengers will be self-evident representations that require minimal written instructions. Alstom will provide graphics to indicate the normal exit doors, priority seating for mobility challenged passengers. Emergency instructions to passengers concerning use of fire extinguisher, the two-way communication system, emergency braking, emergency egress, and manual door opening controls will be prominently displayed using pictorial representations as much as possible. Where words are necessary, graphics will meet the requirements of the latest edition of ANSI Z35.1. Each passenger compartment will have standard provisions for “advertising graphics” where feasible, along the tops of the side and end walls. Other information, including prominent “no smoking” and similar prohibition signs will be provided in accordance with Section 3.7.4. All interior graphics will be subject to the review and approval of customer as part of the Graphics Plan.

Dynamic LCD signs will be provided for each passenger compartment of such trains that indicate the name of the station at which the train is approaching or has stopped. These dynamic signs will be located above each door set.

These devices will conform to the following requirements:

- Be observable and readable from all standing locations within the car;
- Display the same messages in each display of a car;
- Display messages in characters at least the same height as the existing cars;
- Automatically display passenger informational messages as initiated by the car position; these messages will be substantially the same as the audio messages described in Section 3.14.9.1;
- Can display any message type such as text, images and video or any such combination.

### 3.14.10 Resistance to Vandalism

Blind fasteners are preferred for fastening trim, and panels. Where blind fasteners cannot be used, tamper-resistant screws are to be used. Walls and ceilings will meet, at a minimum, the graffiti-resistance rating of two (2) as specified in the “Transit Security Guidelines Manual”, Section 21, published by the American Public Transit Association.

A CCTV system can also be installed as an option on each car to further discourage vandalism. (Not included in the base offer, refer to section 3.21.1 CCTV for option description)

## 3.15 Flammability and Smoke Emission

The car, including its materials, will comply with the requirements contained in Chapter 8 of NFPA 130-2020 or later revision as applicable at time of contract execution. These requirements apply to all combustible materials used in the cars.

No polyvinyl chloride, polyurethane foam, or polystyrene foam will be used. No flammable oils or hydraulic fluids will be used except as required for normal lubrication.

Calculations of the combustible fire load of a car will be submitted by Alstom. These calculations will include a listing of all non-metallic materials used in the construction of the vehicle. Each element within a section and each element’s fire load will be identified.

### 3.15.1 Electrical Wire Insulation

All wires and cable will be resistant to the spread of fire and will have reduced smoke emissions by complying to NFPA 130-2020 Section 8.6.7 as described in Section 3.9.5 of this proposal.

## 3.16 Fire Protection

Each passenger compartment will have three (3) smoke detectors which, when activated, will annunciate a discrete alarm in Central Control. The detectors will be appropriate for transit car application. One smoke and heat detector will be mounted on the ceiling side cove at the center of the passenger compartment and not directly in the air flow from the HVAC system. One smoke detector will also be located in the return air duct of each air conditioner. There will be a means to test the smoke detectors.

Each car will be equipped with two five-pound Class C fire extinguisher clearly visible in a compartment enclosed with a breakable glass cover and with clear instruction for its use. Removal of an extinguisher from its mounting location will activate an audible alarm on the car and send an alarm to Central Control.

Thermal protection for each electric motor will be provided. This protection will be in accordance with NFPA 70 Article 430.32(A) revision current at time of contract execution.

### 3.17 Car Coupling

A car-to-car connection with drawbar will be used to form a married-pair vehicle. All mechanical couplings will be slack-free and will have bearing and/or wear surfaces which have a means to compensate for wear. All couplings, regardless of type, will meet the requirements of Sections 3.4.1 and 3.4.4.

Failure of the critical mechanical, electrical, or pneumatic connections in any coupler in a train or car will result in the application of car brakes. Reset of this brake application will be accomplished only on each car and only by authorized personnel.

#### 3.17.1 Trainlines

Trainline couplings will be used to provide pneumatic and electrical connection between cars. It will not be possible to move a mechanically coupled train automatically unless all trainlines necessary for safe operation are complete.

Intercar electrical couplings will provide proper trainline connections and will be weather- and moisture-resistant. High-voltage circuits will not be trainlined. To prevent ground loop currents, electrical grounds will not be connected between cars. Shielded cables will have shields grounded only at one end.

Pneumatic trainline will share the pneumatic power between the two cars of the married-pair vehicle.

#### 3.17.2 Drawbar & End plates

The two cars will be semi-permanently connected using a drawbar. In place of automatic or mechanical couplers, end plates to accommodate wayside buffer will be provided at both ends of married-pair vehicle. Drawbars will allow to form closed and fixed consists that would not be resized during system operation.

As per the current APM100 vehicles, coupling and uncoupling of the two cars per married-pair will be possible as part of maintenance activities.

### 3.18 Train Interaction

Trains operating on adjacent guideways will not interact with one another to adversely affect acceleration and braking rate limits, jerk limits, stability, stopping precision, or in any way degrade the operating efficiency or safety of each other.

Controls and coupling slack within individual cars will ensure that when two cars are coupled together, they will not interact with one another in any way to cause hunting, instability, overheating, degradation of operating efficiency or safety, or acceleration and jerk limits in excess of those specified in Section 3.7.3. This requirement will be met in all operating modes and for any combination of allowable passenger loading within the individual cars.

### 3.19 Communications and Passenger Information

On-board public-address speakers will be located along the sides of the car to provide undistorted messages at a sound level of at least 5 dBA above the ambient noise levels of Section 3.7.2 in each car. It will be possible for maintenance personnel, but not passengers, to adjust the volume of each on-board speakers in each car individually. Other aspects of car communications and passenger information are contained in Sections 3.7.4 and 3.14.9.

Two passenger intercoms will be located near diagonally opposite side doors of the car. The intercoms will provide full-duplex voice communications between the car and Central Control.

The intercoms will:

- Be clearly identifiable;
- Be vandal-resistant;

- Have a push-to-call button, a speaker and microphone and no handset; and
- Have clear instructions.

### 3.19.1 CCTV

There will be no CCTV installed in the cars as part of the base offer, two (2) CCTV options are available if desired.

#### Option1:

For the first option, ALSTOM propose to provide two fixed-mount forward facing network cameras, and one ruggedized Network Video Recorder (NVR) per car. The cameras, NVR and car network switch are designed for a vibration prone environment. The cameras are powered by the network switch through Power over Ethernet (PoE).

The car cameras will be tamper and vandal resistant with IP66 rated protection against dust and water, and able to withstand tough conditions such as vibrations, shocks and temperature fluctuations. The cameras can respond quickly to changes in light level, ensuring high image quality is maintained for viewing the car interiors. The placement of the cameras will be in the ceiling at the end of the cars. The cameras will provide a high definition 1920 x 1080 resolution. A typical car camera is shown in following figure.



*Figure 13: CCTV Camera*

The ruggedized Network Video Recorder (NVR) will be used to continuously record video from the cameras on the car. The NVR will use hard drives designed for 24x7 operation in a harsh industrial environment, and have enough storage to record at least 30 days of 1080p video at 25/30 fps (50Hz/60Hz).

#### Option 2:

For the second option, Alstom propose to provide the CCTV system described in the above option 1 with the addition of the Live stream communication for datalink from vehicle to wayside via BWAN. The on-board CCTV video will be transmitted over the BWAN at 4 Common Intermediate Format (CIF) (704x480) resolution and 7 fps. The live video streams will be available at a CCTV workstation provided at the Data Center and Maintenance Central Control.

## 3.20 Vehicle Control

### 3.20.1 Automated Mode

The **ALSTOM\* INNOVIA\*** APM 300R vehicles will be fitted with the **ALSTOM\* CITYFLO\*** 650 ATC solution. The **ALSTOM\* CITYFLO\*** 650 on-board unit will be upgraded to the latest product components by utilizing the Common On-Board Hardware Platform (CoHP-2) VATC and the latest generation of train to wayside transmitter and receivers.

The VATC is the on-board ATC sub-system that ensures safe automatic train operation (ATO) within all system constraints by interfacing train lines with the propulsion system, brake system, door system and manual controllers.

The ATC system includes the VATP, VATO, and TWC sub-systems. The VATP handles the vital safety-related functions onboard the train (e.g., determining the location of the train, speed limit enforcement, maintaining the train within its movement authority, and vital door enabling).

The VATO handles the non-safety-related functions onboard (e.g., speed regulation, accurate station position stopping, door opening and closing, controlling passenger information devices and fault and data logging). The TWC communicates between the train and the wayside ATC systems.

CoHP-2 is a computer-based hardware and software platform dedicated to safely executing VATP and VATO applications and providing vital input and output. The onboard VATC is a dual-channel, checked-redundant architecture that uses the fail-safe principle.

To ensure system safety, two Central Processing Units (CPUs) independently read the same inputs and determine the proper state of the outputs. The inputs and outputs are then cross-checked by each CPU board to ensure that no undetected single-point failure has occurred.

All safety-related outputs are either fail-safe in design or implemented with dual output architecture so that a single failure in the output hardware cannot cause an unsafe condition.

The VATC performs the following functions:

### 3.20.1.1 VATP Functions

The vehicle ATP functions establish the criteria for safe vehicle operation and guarantee that the safety criteria are met regardless of any requests made by the ATO functions.

#### 3.20.1.1.1 Train Position Determination

All communicating passenger trains will be continually detected on the system. Train detection, or train position in the ATC is determined by the VATC which continually reports its position to the RATC. The VATP system uses two types of sensors to determine the position of the train in the system: (tachometers and norming points).

**Tachometers:** There are four located on each VATC equipped car. The tachometer outputs a pulse that equates to the displacement the wheel has travelled. These tachometers are also used to determine the speed and direction of the train for other VATP and VATO functions that require this information. Direction is determined by the phase relationship of the tachometers on an axle. Train distance travelled is the average displacement of the known good tachometers. Train speed is the highest velocity reading from the tachometers.

**Norming points:** A norming point is a self-contained device located along the track. These devices normalize the train's actual position by transmitting unique identities that correspond to a physical location in the VATC's physical map. A norming point antenna (one for each ATC) for reading the wayside norming points. As a train travels through the transit system, its reader determines the unique identity of all norming points encountered, giving the ATC an exact geographical point of reference. When a norming point is encountered, the location of the norming point is compared with the VATC-assumed location of the train using the on-board system map. The norming point is used to eliminate the accrued errors in positioning that may occur in the on-board position system.

#### 3.20.1.1.2 Safe Train Separation Assurance

The controlling VATP will vitally determine the safe distance that the train must maintain from the preceding train or other obstacles. An obstacle will be defined as a conflict point. The RATP sends the nearest Conflict Point to the VATP. The VATP is constantly calculating a worst-case stopping distance. This is the safe distance the train must use. If the safe distance is encroached upon, then the emergency brakes will be applied, and the propulsion will be disabled. The emergency brakes are permitted to be reset either locally at the train or remotely via a central control operator command.

#### 3.20.1.1.3 Unauthorized Motion Prevention

In the situation where a standstill condition is required but is not fulfilled, irrevocable emergency brakes will be applied. If the conditions for standstill are met, the emergency brakes will not be applied. The conditions of standstill are:

- The train must be at zero speed;
- The propulsion must be disabled;
- The service brakes must be applied.

Brake reset can be accomplished through remote CCO command from ATS, or locally on-board the train.

#### 3.20.1.1.4 Overspeed Protection

If an overspeed condition occurs, the emergency brakes will be applied and bring the train to a full and complete stop. Brake reset will be by remote CCO command from ATS, or locally on-board the affected train.

Given the train's route through the system, the VATP enforces safe movement by calculating a velocity versus distance braking profile (overspeed ramp). This is the maximum safe speed allowed leading up to a conflict point. By monitoring the actual speed of the train as it approaches the conflict point (such as a buffer), the VATP enforces the overspeed ramp. The VATP permits movement if the actual speed of the train is less than the overspeed ramp. If the actual speed exceeds the overspeed ramp, the VATP applies the emergency brakes to bring the train to a full stop.

The VATP generates a similar overspeed ramp when the train is approaching a section of track with a reduced civil speed, such as a curve. The overspeed ramp causes the train to decelerate so that it is at the lower speed limit prior to reaching the new speed zone.

RATP generates an authorized path for the train to travel, as well as the speed limits along that path. The speed limits are determined based upon a maximum civil speed as provided through the system map, vital zero speeds generated from emergency stops and unscheduled door operations, as well as non-vital speed restriction from ATS and RATO. In the case of multiple speed restrictions on a particular section of track, the RATP will always send the most restrictive speed limit to the train. The path and speed limits are sent to the train via the NRS. As the train is traveling along its path, the VATP will use the speed limits to compare it against the actual speed of the train. If the train exceeds its speed limit, the VATP will command the emergency brakes to be applied and bring the train to a full stop.

Train speed is the highest velocity reading from the tachometers. If the maximum error on the actual velocity measurement, due to all tachometer reading errors, exceeds a limit, or, if tachometer power is lost, the VATP applies emergency brakes. If the VATC loses indication from all tachometers, the VATC hardware will report that it is inoperable and the active VATC halts. The train will emergency brake to a stop once the active VATC halts. Each VATC uses independent tachometers. Remote reset of emergency brakes is possible after the train is at zero speed. Also, as usual, a manual reset is possible on board the train. The VATP can distinguish between a simultaneous loss of all tachometers and actual zero speed.

#### **3.20.1.1.5 Unscheduled Door Open Protection**

Except where train doors are being operated in stations as part of passenger operations, the ATP will irrevocably service brake the train to a stop, if any train door is opened. If a station door or station platform emergency door is opened, all trains occupying the ATC-defined protection area shall be irrevocably braked to a stop. Once all trains are stopped, the ATC prohibits any additional trains from entering the area using a zero-speed restriction. The occupying trains will only be permitted to move after the unlocked door condition has been removed, the zero-speed restriction has been removed from the station area and a local reset of the train's brakes has been applied. The speed restriction placed on the ATC-defined protection area can only be cleared once the offending door(s) are no longer open.

The VATP will electrically enable train door operation only when the footprint of the train is within the designated passenger exchange area (station platforms) and the train is at zero speed. If any of the system doors are unlocked or opened for any unscheduled reason, an alarm will be generated and displayed at the CCF along with an alarm at the station platform.

Alarming at a station platform for an unscheduled door opening is not an ATC specific alarm.

The VATP will ensure that no automatic mode failure will result in the unlocking or opening of a train door.

#### **3.20.1.1.6 Departure Interlocks**

The VATP will not allow the train to start-up from zero speed until all the train and station doors are closed and locked and a movement authority has been granted by the RATP.

Once the above requirements are satisfied, the VATC system will initiate departure of the train from the station. The VATC will release the brakes and attempt to start the train. If the train fails to start-up, the emergency brakes will be irrevocably applied, and an alarm will be generated and displayed at the CCF. Independently, the ATS will also report a Late Departure alarm when the time the train remains in the station exceeds a period during an expected departure.

#### **3.20.1.2 VATO Functions**

The ATO governs planned vehicular movements within the pre-established safety principles. It manages speed regulation, precision stopping, dwell times, graphics and announcements.

During automatic operation, the train travels along the guideway under the control of the ATO within speed limits set by the RATP and monitored by the VATP. The VATC processes wayside signals into commands to the propulsion and



braking systems, the train door system and other equipment. The controlling VATC controls door operation for the whole train.

### 3.20.1.2.1 Station Stop

The ATC is a position-based system where the VATC always calculates the location of the train. The VATC is programmed with an infrastructure database referred to as the physical map. The physical map contains all the information required for the ATP to calculate the train's location. Elements within the physical map include the location of all station platforms, the number of berths within each platform, and the stopping location for each berth. The stopping location for each berth is set to the location where the centerline of the car doors will align exactly with the centerline of the station doors.

If the train is scheduled to stop in a station, the RATP issues a route into the station to the VATP. The VATP informs the VATO that it is to stop at the station. Based on a default berth location or the berth location sent from the RATP, the VATO determines the distance from the train's current location to the berthing location in the station. The VATO then determines the proper approach speed for the train based on the predefined deceleration and jerk rates. The approach speed is used to guide the train into the station and to stop it at the desired berth locations. Once the train is stopped and zero speed is detected, the VATO applies the parking or friction brakes and holds them applied until the train is ready to depart the station. The stopping positions will be specified so that all train and station doors align for a maximum length train.

### 3.20.1.2.2 Train Movement Control

Fully automatic, bi-directional control will be provided throughout the system within limits prescribed by the ATP system.

The VATO regulates train speed under the safe speed and distance limits established by the RATP. If, at any time, the speed of the train exceeds the safe speed limit established by the VATP, the VATP disables the propulsion and applies the emergency brakes. The VATO will generate a "tractive effort request" to the propulsion/braking systems to regulate the speed of the train in a comfortable, jerk-limited fashion. The VATO also configures the propulsion system for the proper direction of travel.

For train start-up, the VATP will determine if all safety conditions are met. If the safety conditions are met, the train will be permitted to begin movement. During the initial movement period, the VATP speed and direction integrity checks are relaxed to allow the VATO to propel the train to a speed sufficient for sensing of dynamic speed sensors.

The VATO generates an acceleration and jerk-limited speed control ramp that is the commanded velocity of the train. If the train is at zero speed, the VATO must wait for the VATP to permit start-up before generating the command velocity. The command velocity increases, at the pre-programmed rate, until it reaches 2 MPH below the safe speed limit set by the VATP.

When approaching a section of track with a lower speed limit, the VATO decreases the command velocity, at the pre-programmed rate, until it reaches two mph below the speed limit of the approaching track section. The command velocity will reach the new speed just before the train enters the next track section.

When approaching a section of track with a higher speed limit, the VATO waits until the entire train (train footprint) clears the section of track with the lower speed limit. Then the VATO increases the command velocity at the pre-programmed rate until it reaches 2 MPH below the speed limit of the occupied track section.

When approaching a station where the train is scheduled to stop, the speed control ramp follows the station stopping profile into the station stopping location.

The starting, stopping, and regulation of speed and operation of the trains traveling over the guideway is controlled by the VATO such that acceleration, deceleration, and jerk are within the required ride comfort limits.

### 3.20.1.2.3 Loss of Propulsion Power

If propulsion power is lost, the VATC will continue to coast under VATO control and RATP protection. If the train has enough kinetic energy, it can coast into the next station and perform a normal station stop. Normal train operation will resume once power has been restored to the train. When the train reaches zero speed, the service brakes will be irrevocably applied to hold the train at rest. Brake reset will be accomplished through remote CCO command, or locally on-board the train, under the constraints of the ATO and ATP.

When a section of track is detected to be un-powered, the RATO will initiate zero speed restrictions on the segments associated with the un-powered section. These speed restrictions are applied to prevent stopping a train in the un-powered sections and avoid stopping trains that are approaching these sections between stations. As part of the automatic routing of trains the RATO, prior to initiating the process for a train to depart a station, will make a check to determine if the train can make it to the next station.

An alarm will be generated and displayed at the CCF anytime a train stoppage occurs due to a loss of propulsion.

### 3.20.2 Manual Mode

A manual mode of operation will be incorporated. Each self-propelled car will be capable of manual operation. This will be implemented by means of a permanently installed manual control panel at each end of each car. Remote manual train operation will not be possible, regardless of the means of propulsion or control. In manual operation, the on-board operator will have direct control over all necessary train functions, and the Central Control Operator will have no control of any train functions. It will be possible to operate a train manually in either direction. Manual train operations will be limited to a maximum speed of 5 mph in all locations and conditions throughout the system; there is no separate speed limit for operation within the maintenance facility or when connected to maintenance power rather than track power. Each self-propelled car/train will enable on-board personnel to operate a train manually to push/pull a train. A train will be switchable between the automatic and manual modes of operation only by a manual action performed on the train by authorized personnel. A status change update will be sent to the Central Control Facility and require Central Control Operator acknowledgement. It will not be possible to affect a change-over between manual and automatic modes solely from Central Control. The manual control equipment will be interlocked with the car propulsion control system so that only the manual control equipment at the forward (direction of travel) end of the train can be used to move a train manually. It will not be possible to move, drive under power, or coast unpowered, a train in the reverse direction from the manual control panel in the forward end of the train.

Controls for manual operation of self-propelled cars will be in special, locked control panels convenient to each end of the car. The manual control panel key ("Auto/Manual key") is unique from equipment locker cover keys to ensure that only technicians authorized to operate trains (as compared to those authorized to maintain equipment within the manual control locker) can do so. An operator at this position will have a field of view which will permit an operator to perform all manual operations anywhere in the System (see also Section 3.14.6). The manual operations controls will be designed and configured in a manner that provides an acceptable level of operator comfort should extended manual operations be required. All manual control designs will be submitted for review as part of the car interior design CDRL process. Each panel will control all cars in a train and have at least braking and propulsion thrust level controls, a stop button to operate the emergency brakes, and a key switch to activate the panel. The propulsion control will have a "dead man" control to prevent train movement without positive manual actuation by the operator. If that control is released, emergency braking only will be immediately applied.

All panels will also have door, propulsion, and braking controls.

Manual operations are not subject to any ATP safety restrictions; however, cars being manually operated will be detected by the ATP subsystem and all other cars which are under automatic control will remain subject to all ATP safety restrictions.

## 3.21 On-Board Diagnostics

### 3.21.1 Malfunction Annunciation

An annunciator device will be provided on each car to indicate Priority I and Priority II car malfunctions. Each malfunction will be uniquely indicated on an onboard status panel readily accessible to maintenance personnel. Each indicator will continue to annunciate the specific malfunction until the indicator is reset. For malfunctions which are remotely reset, the indications will also be remotely reset at the same time. Those malfunctions which are "manually reset only" will have their indications also reset when the emergency brakes are reset. All Priority II malfunction indications will be resettable by a separate means on-board the car.

All Priority I and II car alarms are transmitted to the wayside by the ATC. There are dual-path car alarms that are routed through the car ORS to the wayside.

### 3.21.2 Malfunction Classifications

Malfunctions will be indicated in one of at least two classifications. The level of classification and reporting of faults will be developed by Alstom and will be sufficiently detailed to allow operating and maintenance personnel to make rational decisions in reacting to the reports.

Priority I malfunctions are those which pose an immediate threat to passenger safety and/or system operation.

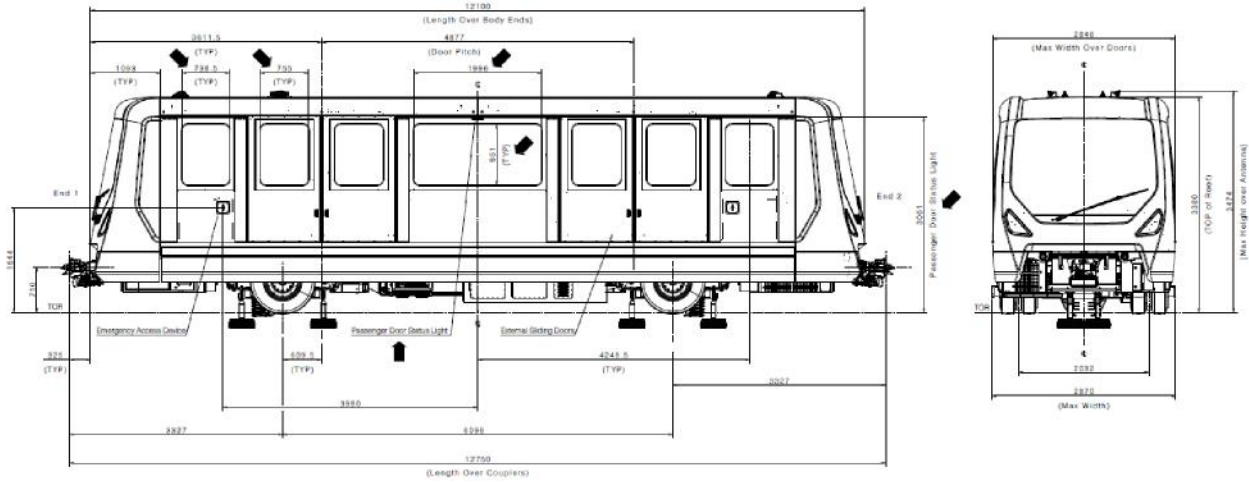
Priority II malfunctions are those which do not pose an immediate threat to either passenger safety or system operations, but which cause a potential threat to system operation or safety if not corrected.

Alstom will develop a complete list of Priority I and Priority II malfunctions for annunciation on-board the cars. The list will reflect both the unique characteristics of Alstom's system, and the proposed operational procedures, and will be submitted for customer's review as part of the car design review.

## Appendix A. Attachments

## A.1. Drawings

Attachment 1. Drawing 1. **ALSTOM\* INNOVIA\* APM 300R** Vehicle Plan and Elevations



## A.2 APM 300R Platform Enhanced Features

- **Modern aesthetics**
- **Vehicles interchangeable with existing APM 100**
- **Incorporates advanced technology for improved performance and functionality**



Illustrations for information purposes only.



**New door system with obstacle detection**



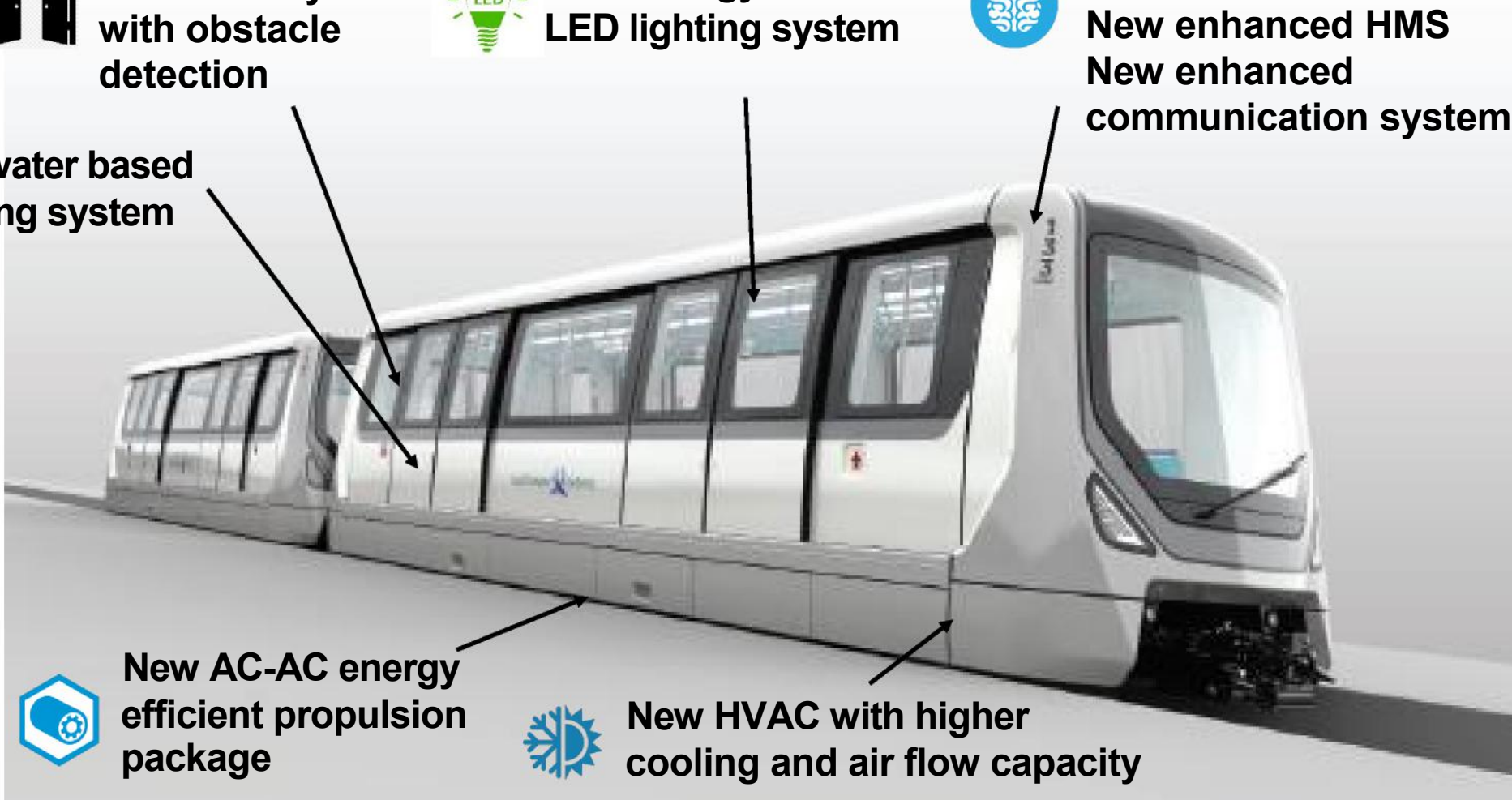
**New Energy efficient LED lighting system**



**New ATC 'CF650'**  
**New enhanced TCMS**  
**New enhanced HMS**  
**New enhanced communication system**



**New water based painting system**

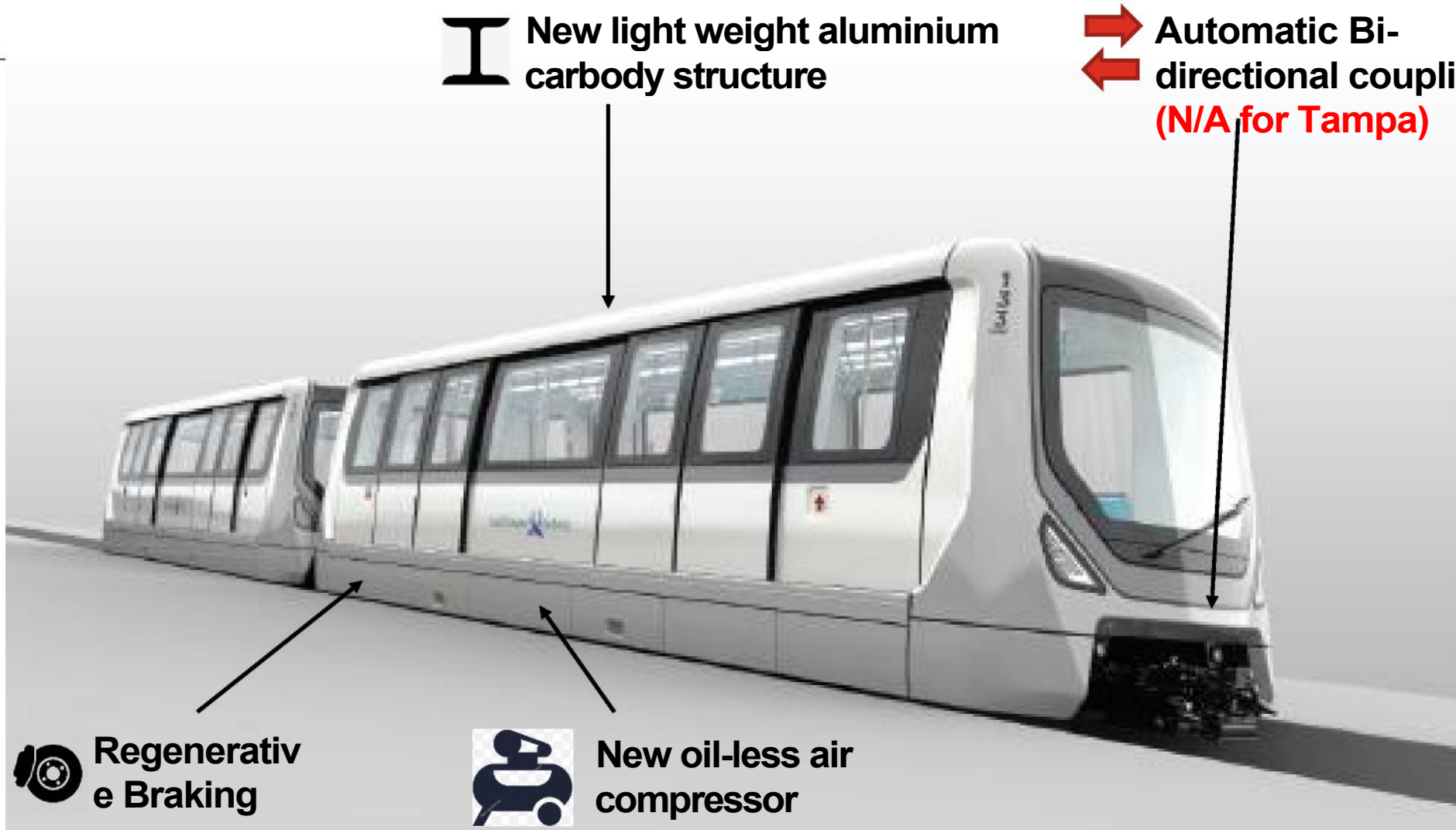


**New AC-AC energy efficient propulsion package**



**New HVAC with higher cooling and air flow capacity**

Illustrations for information purposes only



**I** New light weight aluminium carbody structure

**↔** Automatic Bi-directional coupling  
**(N/A for Tampa)**

**Regenerative Braking**

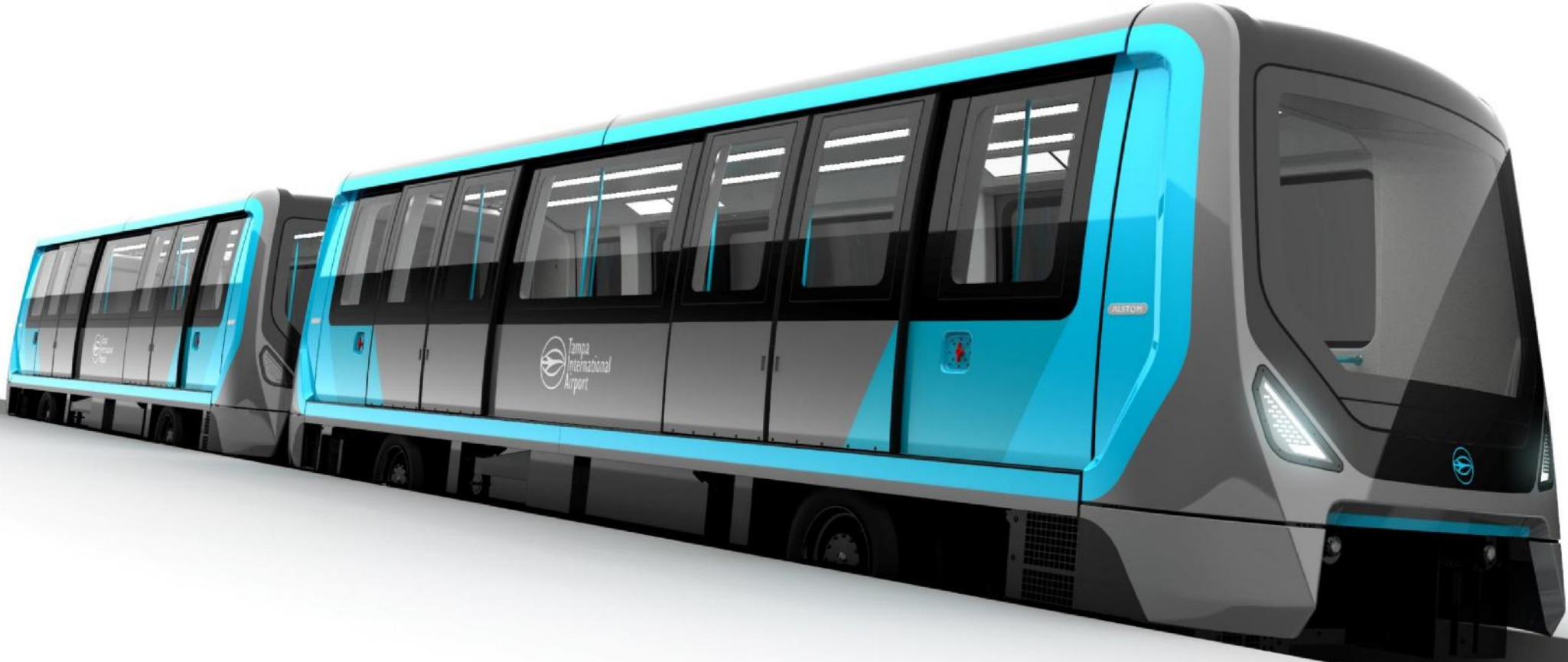


**New oil-less air compressor**

Illustrations for information purposes only.



Exterior Main View



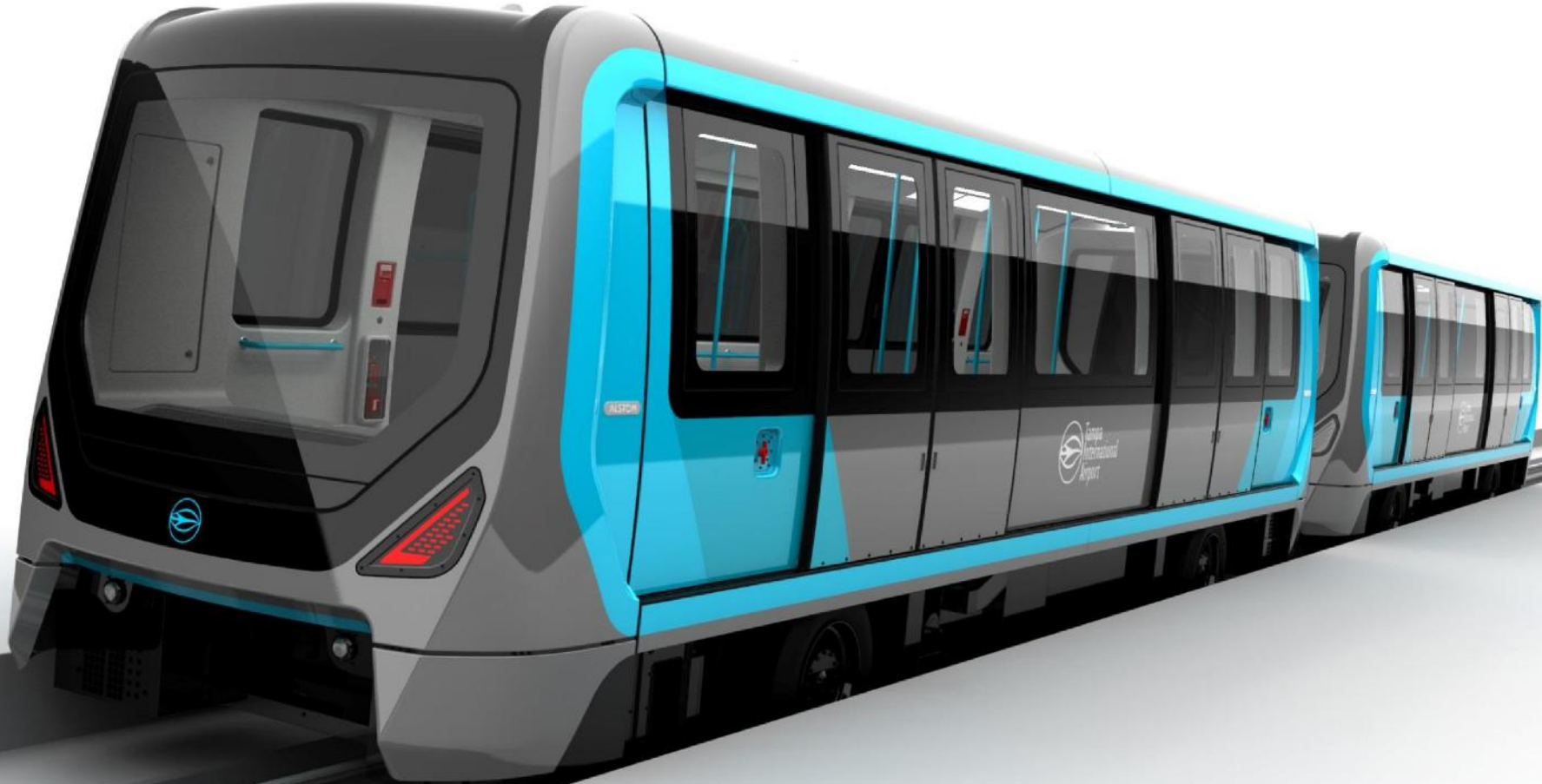
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Exterior Main View  
Orange Scheme Alternative



Illustrations for information purposes only.

Exterior Rear View



Illustrations for information purposes only.

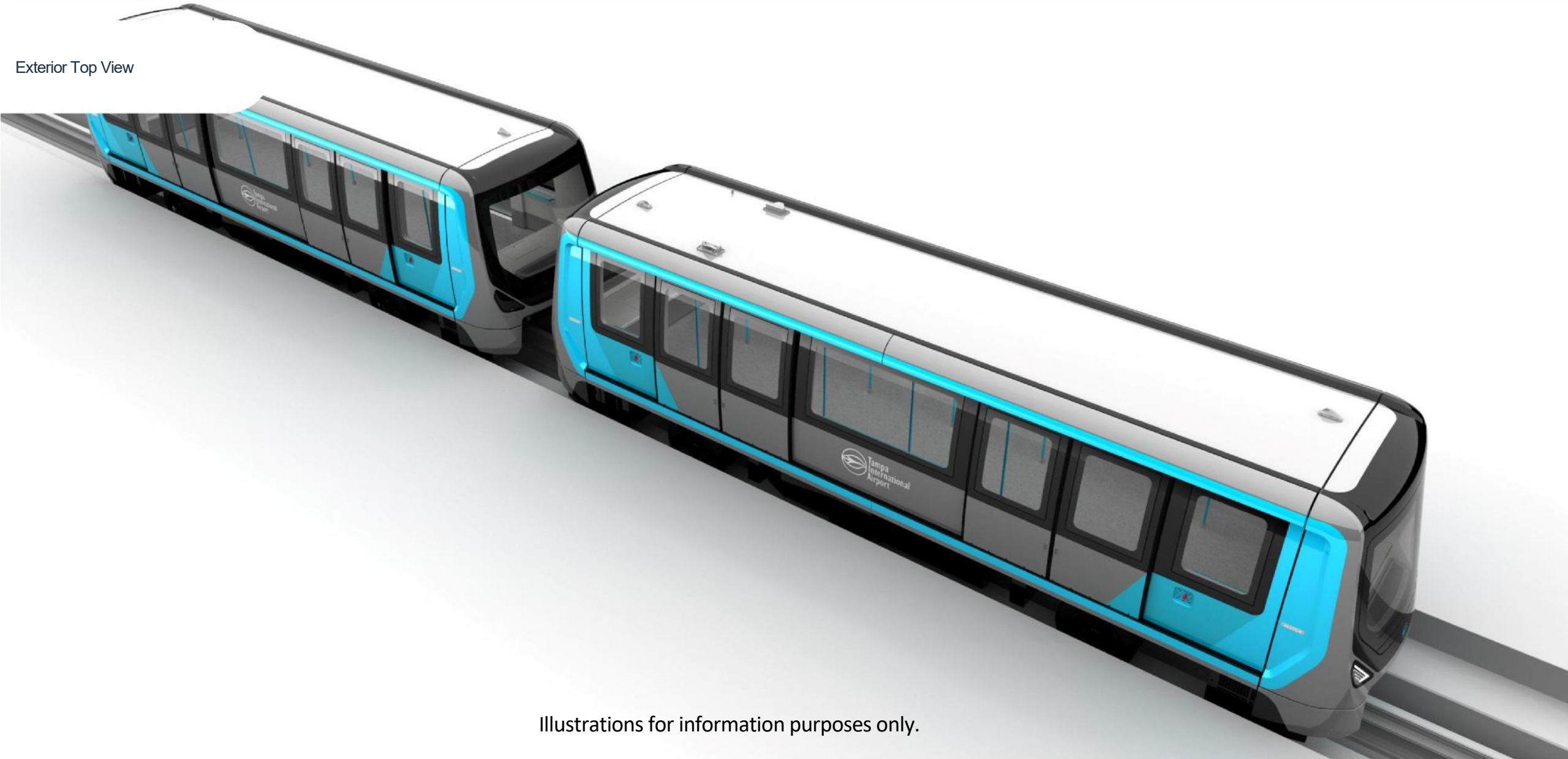
## Exterior Intercar View



Illustrations for information purposes only.

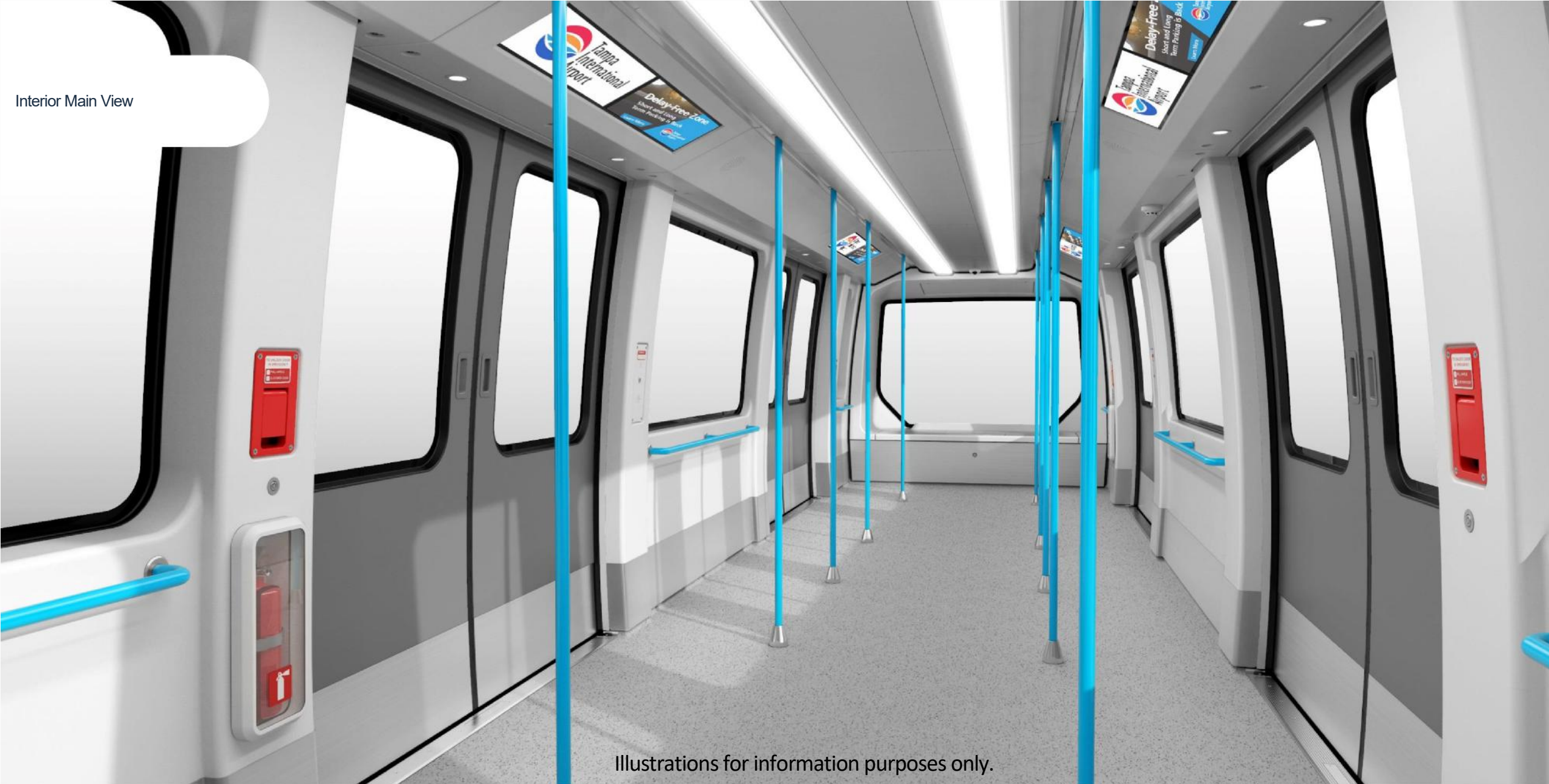
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Exterior Top View



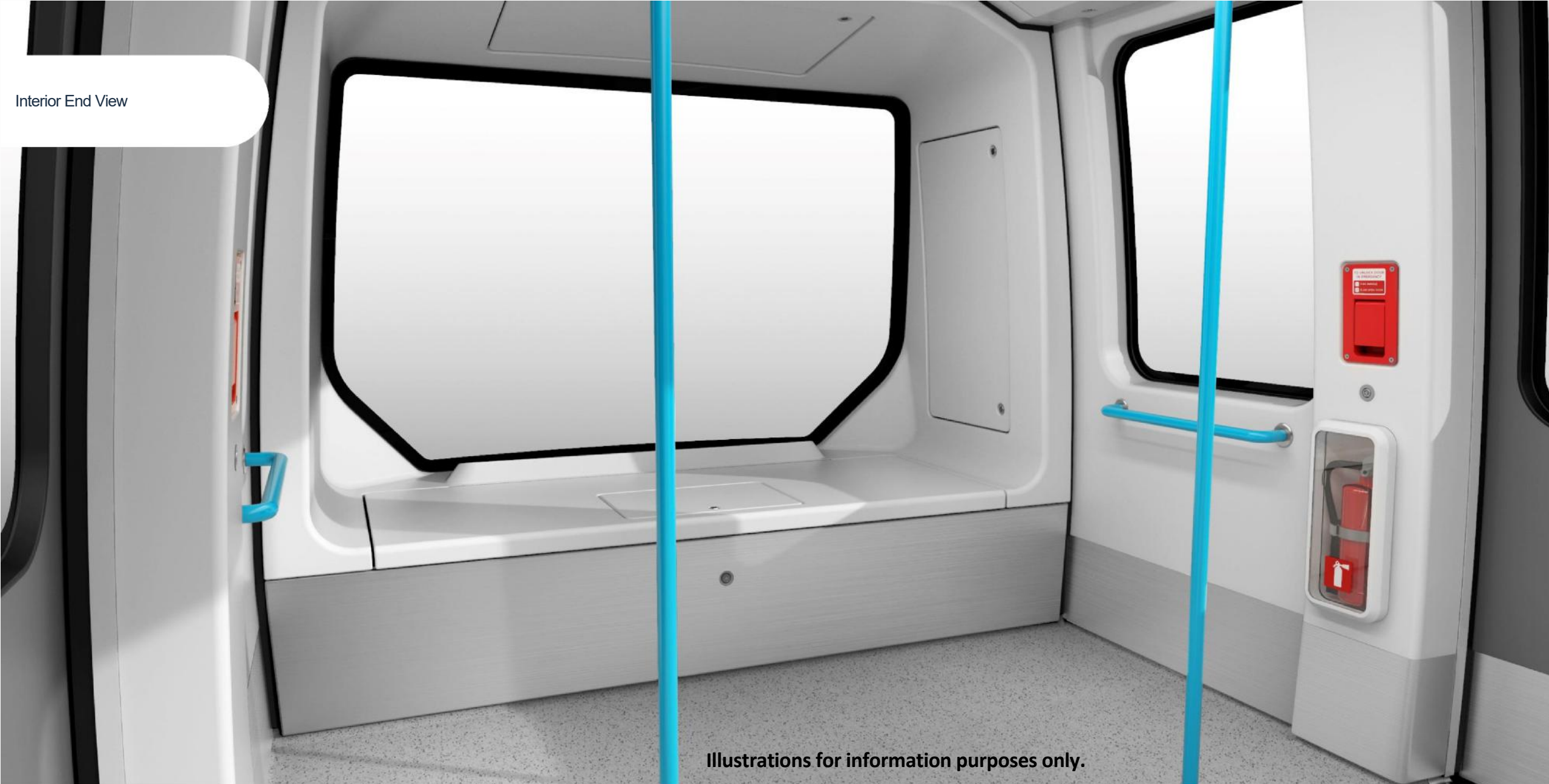
Illustrations for information purposes only.

Interior Main View



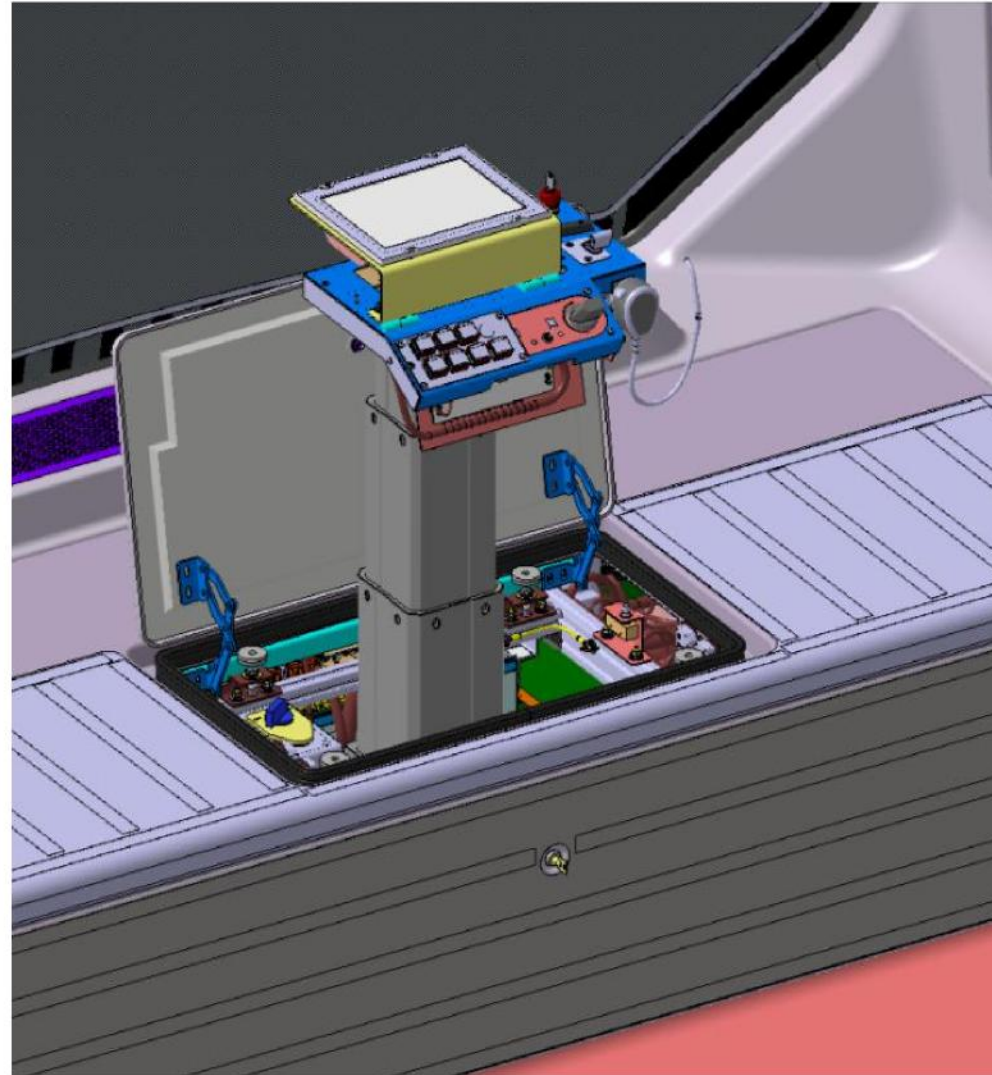
Illustrations for information purposes only.

Interior End View



**Illustrations for information purposes only.**

# APM 300R Manual Control Panel



**Illustrations for information purposes only.**



## Appendix B

Technical Proposal – *CF 650* and Power Rail Upgrade





# Technical Proposal *CITYFLO* 650 and Power Rail Upgrade



# 1 PROJECT WIDE

- The Hillsborough County Aviation Authority has been evaluating programs to upgrade the existing APM to a modern level of technology and sustainability.
- In 2020, Bombardier was awarded a contract to upgrade and relocate the central control to the new Airport Operations Center. Additionally, a backup central control will be installed in the new Operations and Maintenance offices located in the long-term parking garage.
- As a part of the central control relocation, network infrastructure and object controllers are being installed to manage the existing hardwired I/O for power cutout and signaling train stop.
- The signaling system currently in use is at end of life and a signaling upgrade is necessary to provide the availability required for the system.
- The existing vehicles are at the end of their life and new vehicles are being proposed.

## 1.1 Acronyms

ADA	Americans with Disabilities
ATS	Automatic Train Supervision
CBTC	Communication Based Train Control
DB	Design, Build
DCS	Data Communication System
DTN	Data Transmission Network
ECS	Environmental Control System
EMC	Electrical Magnetic Compatibility
ICS	Integrated Control System
NMS	Network Management System
OCS	Object Controller Subsystem
OTB	Overtravel Buffer
PDS	Power Distribution System
RAMS	Reliability, Availability, Maintainability, Safety
RATC	Region Automatic Train Control
RATO	Region Automatic Train Operation
RATP	Region Automatic Train Protection
RTU	Remote Terminal Unit
SER	Signaling Equipment Room
TBD	To Be Determined
TRA	Trackside Radio Assembly
TWC	Train to Wayside Communication
UPS	Uninterruptable Power Supply
VATC	Vehicle Automatic Train Control
VATO	Vehicle Automatic Train Operation
VMSF	Vehicle Maintenance Storage Facility

## 1.2 Project Description

- Design Build project
- Upgrade existing CITYFLO550 to CITYFLO650 for Legs A and C
- Maintain interfaces to existing CITYFLO550 on Legs E and F
- Provide new INNOVIA 300R APM vehicles equipped with CITYFLO650 on-board
- Replace worn-out areas of power and signal rail
- Analyze existing switchgears and provide recommendation to the Tampa customer for any required upgrades

## 1.3 Design Life

- New wayside Automatic Train Control (ATC) and communications equipment ~15 years, with the expectation that they will be replaced with new equipment that will have at least a 15-year design life
- New traction power rails ~15 years, with the expectation that they will be replaced with new equipment that will have at least a 15-year design life
- All new wayside wiring and cabling ~30 years

## 1.4 Standards

The following industry standards are referenced in the project contract:

- NFPA 130
- ADA Americans with Disabilities Act
- ACSE 21-13 Automated People Mover Standard
- To be developed further as part of Basis of Design
- EN 50126, 50128 and 50129
- All local codes and standards as applicable.

## 1.5 Other Considerations

- Outdoor equipment to consider marine environment
- Equipment to be compatible with salt/corrosive environment
- Florida Professional Engineer Stamp required on all structural and electrical installation, including ATC antenna poles.

## 1.6 Climate Data

The system will operate normally under the full range of normal climatic conditions that occur in Tampa. The following ambient conditions are assumed.

**Tampa Climatic Data**

Observations for Tampa*	
Maximum Recorded Temperature <sup>(1)</sup>	99° F
Minimum Recorded Temperature <sup>(1)</sup>	18° F
Average High Temperature <sup>(2)</sup>	81.7° F
Average Low Temperature <sup>(2)</sup>	65.1° F
Average Number of Days below 40F/4C <sup>(2)</sup>	1.3
Average Number of Days below 32F/4C <sup>(2)</sup>	0.1

Average Annual Rainfall	46.3 in
Most Rain in a Month (Aug)	7.8 in
Relative Humidity (morning, evening)	88%, 58%

(1) over 66 years of data

(2) over 30 years of data

<http://www.weatherbase.com>

## 1.7 EMC Requirements

All vehicle / rolling stock equipment and wayside / trackside equipment within Alstom’s scope of supply will be electromagnetically compatible within themselves and with the power supply system, signaling system, communication system, electrical, and other electronic equipment carried by passengers or exist in the environment. To achieve this, Alstom will apply EMC management and a control plan for the system design with IEC 62236 or equivalent EN 50121 series of EMC standards for railway applications.

For overall system and vehicle, the following standards will be applied:

- IEC 62236-2 and EN 50121-2 - Railway Applications – Electromagnetic Compatibility Part 2: Emission of the whole railway system to the outside world
- IEC 62236-3-1 and EN50121-3-1 - Railway Applications – Electromagnetic Compatibility Part 3-1: Rolling Stock Train and Complete Vehicle

For the vehicle onboard signaling and communications system, the following standard will be applied:

- IEC 62236-3-2 and EN50121-3-2 - Railway Applications – Electromagnetic Compatibility Part 3-2: Rolling Stock Apparatus

For the wayside signaling and communications system, the following standard will be applied:

- IEC 62236-4 and EN50121-4 - Railway Applications – Electromagnetic Compatibility Part 4: Emissions and Immunity of Railway Signaling and Telecommunications Apparatus

In addition, all system transmitting and receiving equipment, such as for ATC and audio and visual communications, will meet the FCC regulation requirements when applicable.

## 1.8 Earthing, Bonding and Lightning Protection

An Earthing, Bonding and Lightning Protection Plan will specify the common rules for earthing and bonding related to exposed conductive elements, metallic structures or reinforced civil structures along the line, at stations, substations, and depot. This protection plan will be implemented in order to ensure the safety of the public, staff, and third-party structures or elements that may be compromised by the traction power supply system.

Both the civil works and the E&M systems will ensure that the system is compliant with the railway stray current specifications, standards and guidelines, as noted in the table below:

Standard	Title
EN 50121-5	Railway applications, signaling, and metropolitan – Electromagnetic compatibility – Part 5: Emission and immunity of fixed power supply installations and apparatus
EN 61000-2-12	Electromagnetic compatibility (EMC) – Part 2 through 12: Environment - Compatibility levels for low-frequency conducted disturbances and signaling in public medium-voltage power supply systems

EN 61000-2-4	Electromagnetic compatibility (EMC) – Part 2 through 4: Environment – Compatibility levels in industrial plants for low-frequency conducted disturbances
EN 50122-1	Railway applications -- Fixed installations – Part 1: Protective provisions relating to electrical safety and earthing

## 2 OPERATIONS

Key Customer Requirements:

- Maintain existing operation of the system with current functionality

### 2.1 System Performance

The following table summarizes the System Performance parameters:

Round Trip Travel Distance Leg A (ft)	2,200'
Round Trip Travel Distance Leg C (ft)	1,600'
Scheduled Round Trip Time Leg A (s)	188s
Scheduled Round Trip Time Leg C (s)	168s
Round Trip Total Station Dwell Time Leg A (s)	74s
Round Trip Total Station Dwell Time Leg C (s)	74s
Initial Phase Required Operation Headway (s)	

## 3 SIGNALLING / TRAIN CONTROL

The signaling system proposed for the Tampa upgrade is Alstom's state of the art moving block CBTC system which is an application of the *CITYFLO650\_CORE* solution.

The 650\_CORE solution is made up of the following components:

- EBI Screen 1500 Automatic Train Supervision (ATS) System
- Region Automatic Train Control [RATC] System (RATO+RATP) for non-vital and vital wayside functionality
- Vehicle Automatic Train Control [VATC] System (VATO+VATP) (CoHP-2) for non-vital and vital onboard functionality
- Data Transmission System – Wayside Network
- End-to-End IP Radio System (E2EIP) – Train to Wayside Wireless Communication
- OCS950 Object Controllers for wayside device control – Distributed Vital Smart I/O System
- Platform Door Control system (PDCU) – System that provides coordinated platform and vehicle door control

### 3.1 650 CORE Solution

The 650\_CORE solution is designed to provide a fully automated and driverless train control system. The proposal from RCS is to provide the basic functionality implemented on the current APM and Monorail projects (for example Phoenix Airport Phase II). Most APM and Monorail projects apply the *CITYFLO650 Core* solution.

*CITYFLO650* core solution incorporates moving block interlocking and movement authority calculation functionality into an integrated sub-system called the Region ATP. There is no independent computer-based interlocking, it is integrated into the RATP itself.

A *CITYFLO650* system is modular and a system is defined in regions. Each region will have one RATP and one RATO. Regions are defined based on a number of factors. These include number of trains to control, physical size of the region, phases of the project or specific definition of a zone of control.

### 3.2 Architecture

The system will be configured as a 1-region system for CBTC operation. The system design will support 2-car train operation.

### 3.3 Main Function

For *CITYFLO650* specifications which is the communication-based moving block train control systems (CBTC), moving block means the train occupancy moves along with the train in a continuous mode. This is achieved by the train calculating its physical and virtual occupancy. A virtual occupancy is the result of applying the distance that will be travelled by the train with the current speed using the ATP braking curve added to the front of the train.

Communications-based train control means the information of the train's physical and virtual occupancy is communicated to the wayside and the movement authority. Speed is sent from the wayside to the train through a wireless radio as known as Train-to-Wayside Communication (TWC) system.

The signaling system, *CITYFLO650*, will be provided including Automatic Train Supervision subsystem (ATS), Automatic Train Protection subsystem (ATP), Automatic Train Operation subsystem (ATO), Object Controller Subsystem (OCS) and Data Communication System (DCS), which are installed based on one area control principle.

Please note, all key subsystems use multiple redundancy fault-tolerant designs. In case of a fault, it supports a quick restoration.



## 3.4 Key Equipment

### 3.4.1 ATS Automatic Train Supervision

The ATS system will be installed and operate in conjunction with *CITYFLO550* in the Central Relocation Project. The ATS will require software upgrades to interact with both *CITYFLO550* and *CITYFLO650* legs of the system.

### 3.4.2 OCS Object Controller System

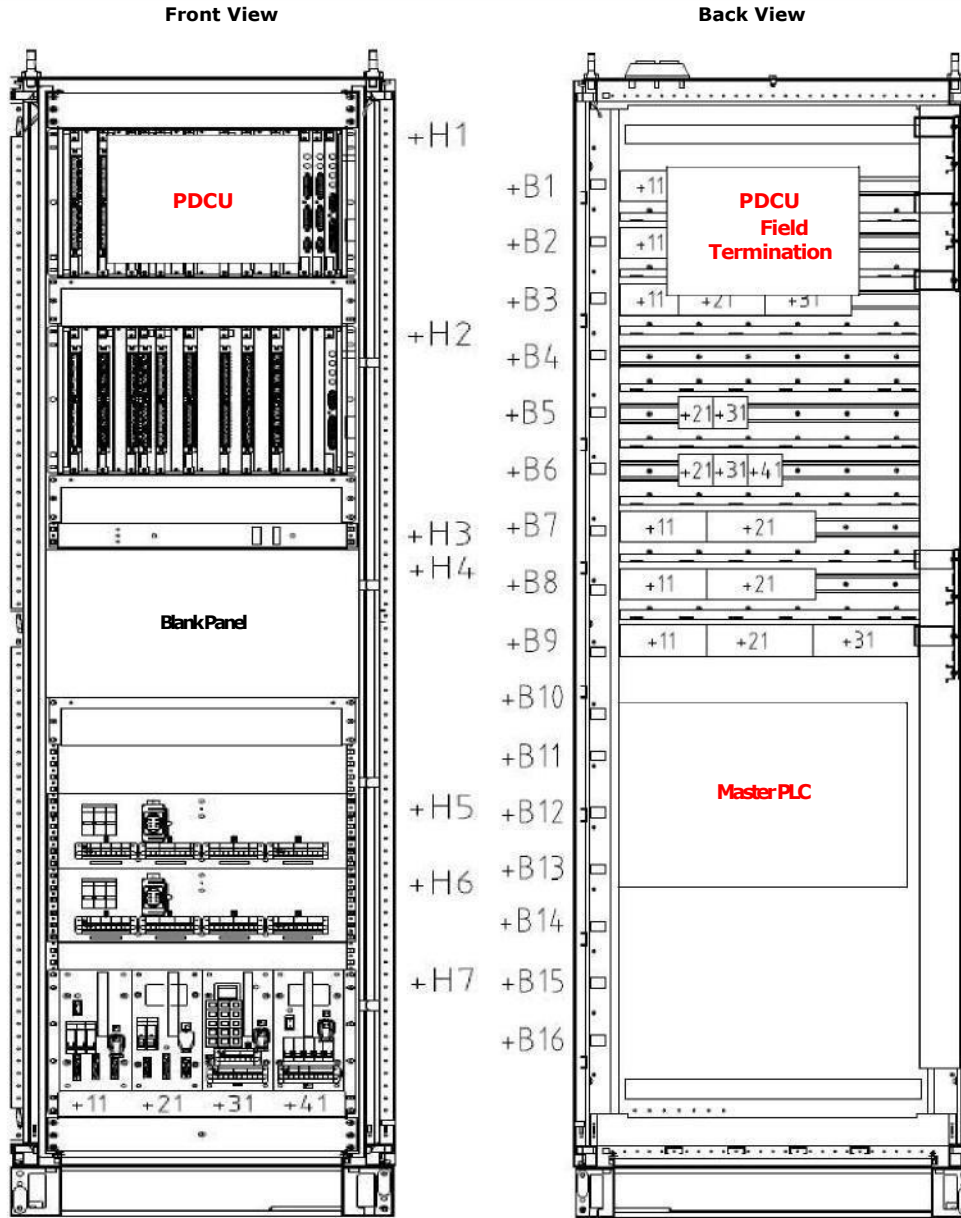
The function of OCS is controlling the wayside objects. Its cabinets are distributed along the line, in each Signaling Equipment Room (SER) to close to Wayside objects. Object information and commands from the RATP are transmitted to the OCS via the DTS (Data Transmission System). The OCS will be configured to receive status and issue commands to all switch machines, signals if present and any other object configured for this project.

The Object Controller System will be deployed under the Central Relocation Project. In Central Control the Vital Application Controller (VAC) will be installed with the EBLOCK software and a Generic Adaptation and Application will be developed to manage the vital I/O for PDS power removal and ATC stopping of trains.

A special OCS is configured to operate as a Platform Door Control Unit called a PDCU. This OCS type manages the interfaces with the platform screen doors and communicates to the trains in the station to coordinate the operation of platform and vehicle doors.

The PDCU communicates to the RATO for non-vital control of the doors and communicates directly with the vehicle to coordinate the opening and closing of the platform doors. There are two components that make up the PDCU, the OCS and the PLCs. The OCS manage all control and synchronization between the vehicle and the wayside. The OCS also handles all vital connections. The PLC manages the non-vital interface between the OCS and the door system.

The OCS will be installed as part of the Central Relocation Project, however the PDCU will be installed as part of this bid. Please refer to the diagram on the next page as to the planned additions of OCS at each airside leg.



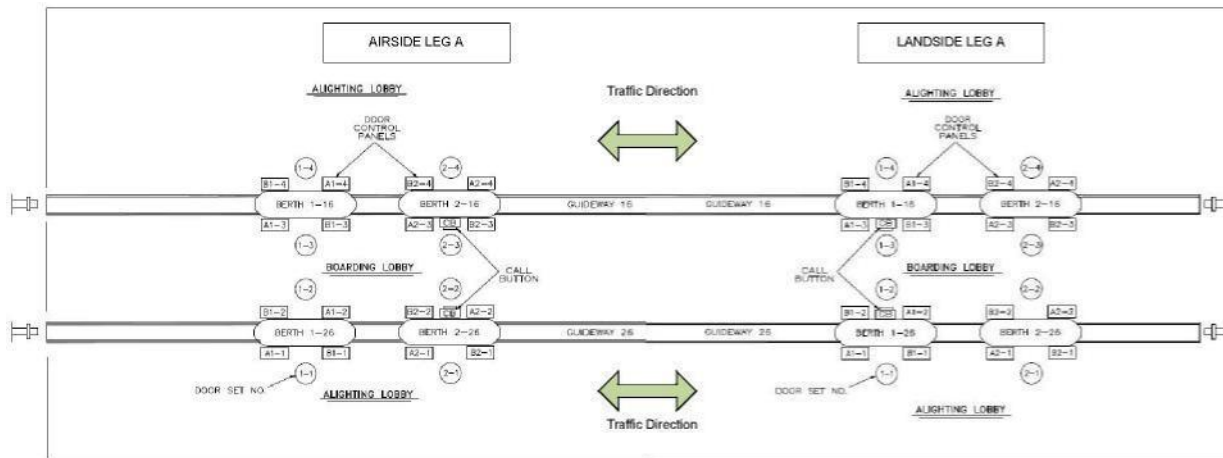
### 3.4.3 RATO Regional Automatic Train Operation

Manages non-safety operation for CBTC train including determining the choice of the train's performance level and station dwell in relation to Train Control and Status Information, Train Routing and Degraded Operation, Door Operations and Station Hold.

### 3.4.4 RATP Regional Automatic Train Protection

The RATP system is a major subsystem which is responsible for the vital safety functions with train information and information from the wayside equipment such as Train Initialization, Train Tracking, Train Movement Authority, Safe Train Separation, Speed Restriction, Traffic Direction Control, Backup RATP Switchover, Remote Reset, and Diagnostic Tool Interface.

In a shuttle system, the RATP will mainly control traffic direction and movement authority as a result of train tracking.



**Traffic Zone**

### 3.4.5 DCS Data Communication System

To support a transparent transmission channel for each equipment and ensure accurate and real-time data transmissions by:

- Wired network (DTS) for central control ATS, wayside to wayside subsystems, and connects internal and external systems. The wired network is being implemented during the Central Relocation Project.
- Wireless network (TWC) for onboard and wayside equipment, including Trackside Radio Assembly (TRA), LoS antenna, onboard antenna and a 5.8GHz radio.

### 3.4.6 VATC Vehicle Automatic Train Control

The VATC takes control of the train lines with two main subsystems:

- Vehicle Automatic Train Protection (VATP) subsystem for the vital functions - determining the location of the train, speed limit enforcement, maintaining the train within its movement authority, and vital door enabling.
- Vehicle Automatic Train Operation (VATO) subsystem for the non-vital functions - speed regulation, accurate station position stopping, door opening and closing, controlling passenger information devices, and fault and data logging.

The VATC also provides the train operating modes. The following modes of operation will be available for this monorail system:

- 1) ATO – Automatic Operation in driverless mode.
- 2) Manual plus ATP – Manually driving the train with ATP protection.
- 3) Manual – VATC is in bypass and the driver is in control of train movement with a speed limit.

The VATC for Tampa will be based on the Singapore NCX2 design and it is expected that no changes to the design will occur for this project. All interfaces will remain the same including the PA/PI triggers and vehicle alarms.

Physical interfaces will also remain the same as the NCX2 design for Singapore.

## 3.5 Wayside Signaling Equipment

### 3.5.1 Norming Points

Wayside Signaling equipment is limited in a Communication Based Train Control system. The train determines its location using RFID tags that are embedded into the guideway so when the train passes over, the RFID reader on the train interrogates the tag to get the ID of the tag. This ID is stored in a table on the train that is related to the position in the system. From this the train identifies its position in the system and calculates its physical and virtual occupancies. As the train moves, the odometry system on the train provides the distance travelled.

The RFID tags are placed such that when read, the position of the train is corrected due to the position error of the train odometry. The location for the RFID tags is determined to cap the position error or “normalize” the position of the train. Alstom coined the term for the RFID tags called “Norming Points.”

## 4 COMMUNICATIONS

Alstom intends to provide the following communication subsystems onboard the vehicles as part of the upgrades for the new *INNOVIA* 300R APM vehicles proposed for Legs A and C.

The equipment to be installed in the vehicles includes:

- Operational Radio System (ORS) Radio Assembly
- ORS Antenna (roof)
- ORS Communication Controller Cradle
- ORS Power Converter Assembly
- LED Dynamic Displays
- Network Switch
- Vehicle Communications Controller Unit - Audio (VCCU-A)
- Passenger Call Panels
- Driver's Communication Panel
- PA Amplifier
- PA Speakers

The ORS (Operational Radio System) provides live PA from Central Control, two-way calling between the vehicle and Central Control, and transmission of vehicle alarms to Central Control. These features will function in the same way as the existing vehicle fleet. All hardware will be compatible with the existing wayside RF infrastructure. The existing RF distribution system, base station, and control equipment will not be changed.

Four (4) LED dynamic signs will be similar in design to existing dynamic signs used on the Tampa cars. In case of hardware or software failure, pre-recorded audio announcements will fail-over in a similar way to existing vehicles. An on-board audio level controller will monitor two audio inputs and switch to the secondary input if the primary fails.

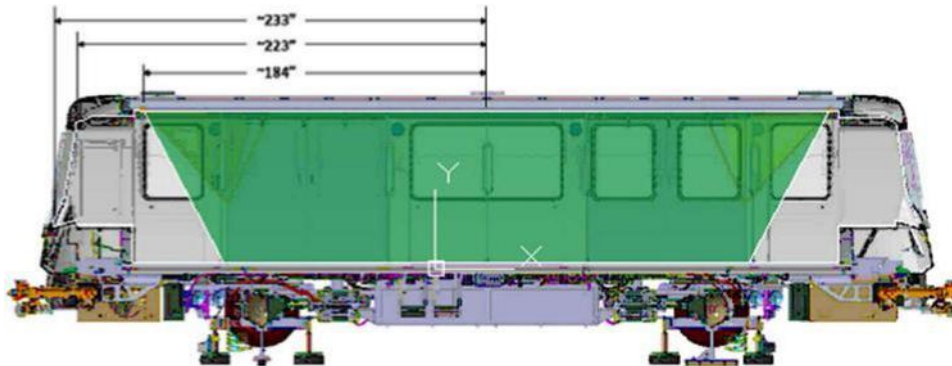
An on-board ethernet network switch will be installed to support IP connections between on-board devices. The devices attached to the network switch include dynamic signs and the Vehicle Communications Controller Unit - Audio (VCCU-A).

### 4.1 On Board CCTV Options

As part of the proposal request, Alstom is proposing two (2) options for on-board CCTV surveillance.

#### 4.1.1 Option 1 Onboard CCTV w/Onboard Recording only

An on-board video surveillance system (VSS) will be installed on each vehicle. Two cameras will face inside the vehicle compartment as shown below.



The on-board Vehicle Communications Controller Unit will be modified with additional hard drives for video storage. The VSS will record on-board each vehicle utilizing the VCCU. The VCCU will record the IP video streams from all on-board cameras. The VCCU will have enough storage capacity to store the recorded video for 31 days at a resolution of 720p, 30 frames per second. The VCCU will permit a method to export the video to a mass storage device via a local connection.

#### 4.1.2 Option 2 Onboard CCTV with Live Streaming

Option 2 contains all the equipment and features described in Option 1. In addition, the wayside network (DataTrans) will be modified to accept a high throughput wireless network along Leg A and C only. A Central Control workstation will be provided at AOC and Maintenance Central for viewing CCTV.

### 4.2 Bombardier Wireless Access Network (BWAN)

The Bombardier Wireless Access Network (BWAN) is a wireless data network based on switched mesh wireless networking. The BWAN serves to augment the DataTrans, providing real-time train-to-wayside communications integrated with the DataTrans, the BWAN is designed to support high-capacity, low-latency, and vehicular mobility. It utilizes a 2x2 Multiple Input-Multiple Output (MIMO) Orthogonal Frequency Division Multiplexing (OFDM) technology by Fluidmesh.

The major components of the BWAN are:

- Wayside (Fixed) Access Points
- Vehicle (Mobile) Access points
- Wayside Antenna System
- Vehicle Antenna System

The BWAN will operate in the U-NII3/ISM or a licensed spectrum on the channels identified during a preliminary RF survey. The in-vehicle data network is connected to a rugged, high-performance mobile node which then wirelessly connects to similar nodes installed along the guideway. These wayside radios then connect to DataTrans through ethernet switches along the guideway. Antennas are used to transmit and receive the data. Thus, the combination of onboard and wayside infrastructure provides continuous network connectivity throughout the APM system.

The on-board vehicle network is connected to a rugged, high-performance mobile node which wirelessly connects to similar fixed nodes installed along the guideway. The radio system supports rapid handoff to provide continuous network connectivity throughout the track area.

Each vehicle will contain mobile BWAN radios, connected to the on-board network switch. Roof-mounted mobile antennas will be required for each vehicle.

Wayside (fixed) access points will be placed strategically along the guideway and station areas. The wayside access points will be connected to strategically placed network switch enclosures. The network switches will be connected to each other in a ring configuration to a core switch at Central Control.

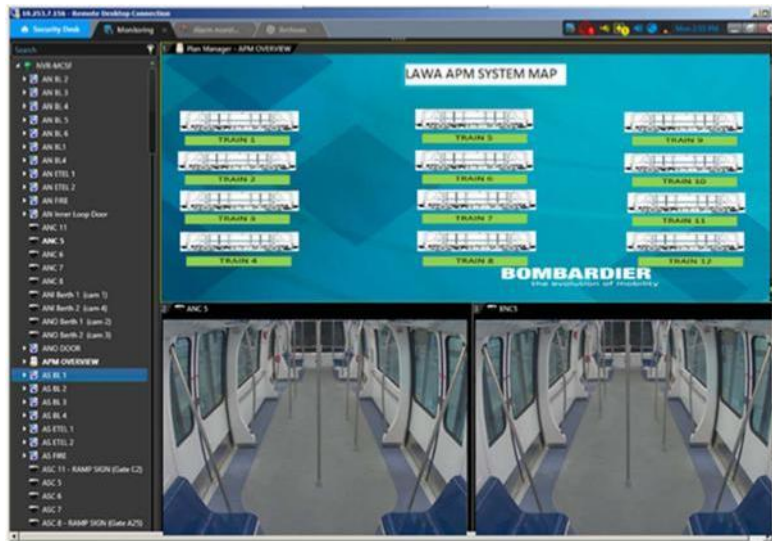
New single-mode fiber optic cabling will be installed along each guideway. This fiber is required to support the number of splice enclosures required to implement the BWAN system.

### 4.3 Video Surveillance System

A Video Surveillance System (VMS) will be provided for monitoring the passenger space of the APM vehicles as shown below.

The VMS provides a Graphical User Interface (GUI) allowing complete control of the camera using the workstation mouse. The CCO can select the camera to be viewed on any available video tiles either by selecting it from the area view by drag-and-drop, or by double clicking on the camera. The GUI also provides an integrated overview map with camera icons. The cameras can be selected from the map by either single clicking on the camera for a thumbnail live view, or by double clicking the camera to be populated in an available video file.

The overview map shall display all cameras onboard the vehicles. The GUI provides full access to all live and recorded video.



**VSS User Interface**

The VMS will use the BWAN system to transport live video from the vehicle cameras to the wayside VMS workstation. Recorded video onboard the cars can also be retrieved on-demand when needed.

The video will be streamed at 704x480 resolution and 7 frames per second.

## 5 TRACTION POWER DISTRIBUTION SYSTEM ANALYSIS

For the traction power distribution system substations, both Legs A & C will be analyzed to determine the effect of the new vehicles regarding power load flow and voltage drop on each system. The analysis will include scenarios for normal operation and worst-case failure mode as in loss of a primary utility input supply with both two-car trains in operation from one transformer. This result of the study will determine if any changes are required to the existing substations. Presently, it is not expected that any substation changes will be necessary due to the increased electrical efficiency of the new vehicles. The existing maintenance stinger cables for offline vehicle auxiliary power will be replaced to match the receptacle configuration of the new vehicles.

For low voltage control power distribution to the new wayside equipment, the existing 120Vac UPS distribution system will be utilized. There is sufficient capacity in the existing UPS system to accommodate the new equipment until the existing equipment is decommissioned. Please note that the existing UPS units have likely reached end of life and/or are obsolete. Also, the existing UPS configuration does not have the capability to be taken offline as there is presently no external maintenance bypass. Therefore, a UPS failure would result in total system shutdown. This existing configuration is not as robust as preferred. Recommendation for each leg is to replace the UPS with a new cabinet, batteries, and an external maintenance bypass.



# 6 CIVIL UPGRADES

A part of the Upgrades to Legs A and C, Alstom is proposing the following:

## 6.1 Power Rail

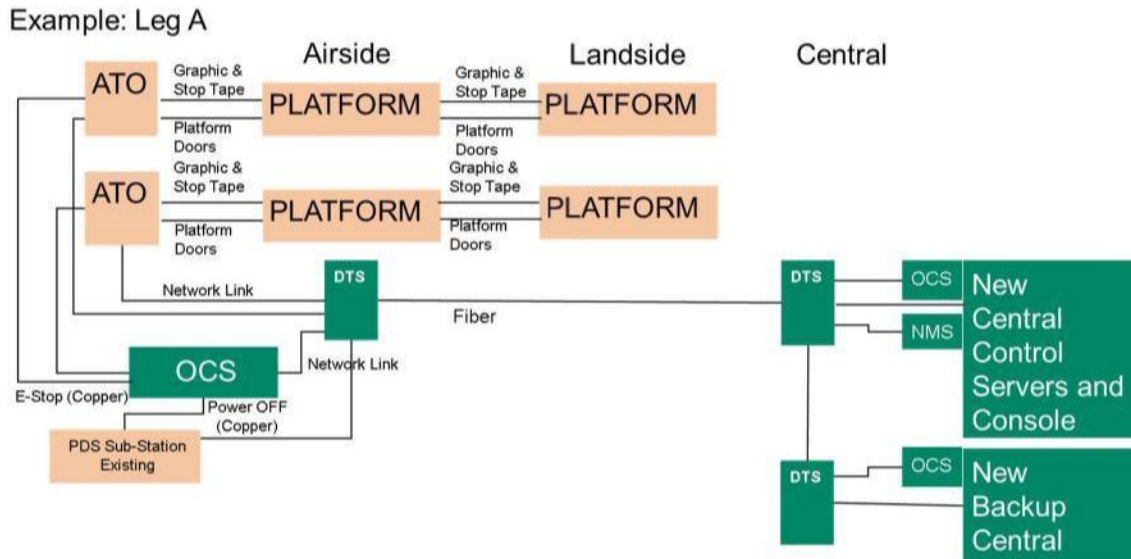
The INNOVIA APM 300R power rail and signal/ground rail design is the same as the CX-100 APM. The power, signal and ground rail configuration are service proven and has been in revenue service at multiple APM sites around the world for more than 40 years. The existing power and signal/ground rails will be evaluated for current condition and wear, including wear surface measurement, excessive movement at the mounting bracket, damage, etc. It is anticipated that due to the current age of the Tampa Airport A and C legs, a significant portion of the existing power and ground/signal rail will require replacement. All components will be replaced with the most current designs for each. Replacement for each leg will be staggered to ensure an agreed upon level of service for each leg is maintained throughout the duration of the project.

## 6.2 CUTOVER

The upgrade of the Tampa APM signaling is tied with the installation of new vehicles in each lane of the system. This upgrade will only include Legs A and C but will apply to Legs E and F when new vehicles are procured for those Legs.

The upgrade will be designed so that each lane can be taken down for vehicle installation and when complete will be started up with the new vehicle in CITYFLO650. Therefore, the cutover must take into consideration running one lane in CITYFLO550 and the other in CITYFLO650.

To start, when the Central Control Relocation Project is complete the following will be in place for the system:



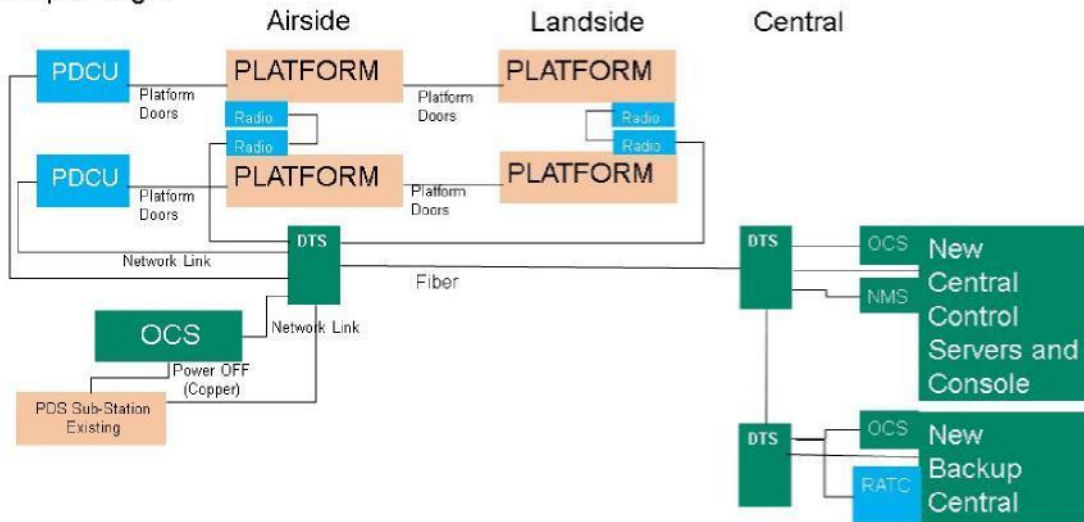
All new equipment in the Central Control Upgrade Project is highlighted in Green and the existing CITYFLO550 equipment remaining is highlighted in a Peach color.

None of the wayside signaling will be modified in the Central Re-location project. Station ATO and Door control will remain as a CITYFLO550 shuttle system. The only Signaling equipment that will be replaced is the ATS. A new EBISCREEN 1500 ATS system will be deployed in the Central Control Relocation Project.

This EBISCREEN 1500 will be capable of handling the upgrade to CITYFLO650 without hardware modification.

The additional Equipment being added for the CITYFLO650 upgrade is highlighted in Blue.

Example: Leg A



High Level Cutover Leg A

- Install Line of Site *CITYFLO650* hardware at wayside including all required cabling back to Leg A ATC equipment room during nighttime shutdown.
- Shutdown Lane 1 during shutdown period.
- Tweak software in Lane 1 ATO cabinet for *CITYFLO650* operation and upgrade Vital I/O controller to R4.
- Replace existing Power/Ground rail during shutdown period. Requires removal of all ATO and PDS cable terminations and subsequent re-termination of PDS cables only.
- Remove existing 2 cars from Lane 1 and install 2 new *INNOVIA* APM 300R's during shutdown period.
- Test and commission new *CITYFLO 650* with new vehicles on Lane 1 during shutdown period.
- Remove existing 550 hardware from guideway (lane 1) during shutdown period.
- Repeat previous procedures for Lane 2.
- Test and commission for dual lane operation.

High Level Cutover Leg C

- Install Line of Site *CITYFLO650* hardware at wayside including all required cabling back to Leg C ATC equipment room during nighttime shutdown.
- Shutdown Lane 1 during shutdown period.
- Tweak software in Lane 1 ATO cabinet for *CITYFLO650* operation and upgrade Vital I/O controller to R4.
- Replace existing Power/Ground rail during shutdown period. Requires removal of all ATO and PDS cable terminations and subsequent re-termination.
- Remove existing 2 cars from Lane 1 and install 2 new *INNOVIA* APM 300R's during shutdown period.
- Test and commission new *CITYFL650* with new vehicles on Lane 1 during shutdown period.
- Remove existing 550 hardware from guideway Lane 1.
- Repeat previous procedures for Lane 2.
- Test and commission for dual lane operation.

## 7 KEY CUSTOMER ASSUMPTIONS

1. Customer moves forward with *CITFLO650* upgrade as part of this contract.
2. UL compliance expected.
3. Buy America not part of terms.
4. No Building Information Modeling (BIM) required.
5. Internal Safety Assessment acceptable by the Customer.
6. One (1) Preliminary Design Review and one (1) Final Design Review only. No Intermediate Design Review required.
7. Reasonable involvement of an HCAA third-party consultant or Independent Safety Assessor.
8. Authorization for operation to be done separately for each Leg.
9. No availability or reliability analysis required.
10. Florida Professional Engineer stamp required on all Electrical Installation and Civil/Structural drawings.
11. Civil Engineering analysis by Alstom to be performed on guidebeam and support connections only.
12. All guideway superstructure analysis and repair by the Customer.
13. Offer includes Cyber Liability Insurance.
14. Onboard Operational Radio System (ORS) will function same as existing Legs.
15. No ORS software changes required for existing fleet or Central.
16. No vehicle sign control from Central.
17. 5.8 Ghz frequency for *CITYFLO650* operation is acceptable to Customer.
18. Alstom to meet same operational characteristics (Dwells Times, Round Trip Times, Passenger Flow Rates, etc.) as current system on Legs A and C.
19. No changes to the mechanical portion of the existing platform doors or platform dynamic signs as part of this upgrade.
20. Upgrades to Legs E or F are not part of this contract.



# Tampa - Legs A and C Payment Schedule

Month	NTP +	Percentage	Cumulative Percentage	Amount	Events	Evidence
Nov-21	0	11.2437%	11.2437%	\$ 5,664,910.55	Down Payment/Mobilization	Signed Contract
Feb-22	3	0.3846%	11.6283%	\$ 193,775.67	Issue PO for Power Rail	Provide PO
Mar-22	4	5.1003%	16.7287%	\$ 2,569,690.45	Hold Conceptual Design Review	Issue Design Review minutes
Apr-22	5	2.9348%	19.6634%	\$ 1,478,620.97	Place PO for Vehicle Equipment	Provide POs
May-22	6	7.0391%	26.7025%	\$ 3,546,502.81	Place PO for Wayside Equipment	Provide POs
Nov-22	12	14.5160%	41.2186%	\$ 7,313,586.28	Start Fabrication/Build of Wayside Equipment	Provide pictures of occurrence or site visit
Apr-23	17	2.4772%	43.6957%	\$ 1,248,065.97	Hold Software Factory Test Review	Verification through Site Visit
May-23	18	2.9863%	46.6820%	\$ 1,504,561.65	Occurrence of Vehicle Sub-Assemblies (to be Identified) First Article Inpections (FAIs)	Provide pictures of occurrence or site visit
Jun-23	19	3.2762%	49.9582%	\$ 1,650,640.63	Occurrence of Carbody FAI	Provide pictures of occurrence or site visit
Jul-23	20	4.9740%	54.9322%	\$ 2,506,065.02	Occurrence of Vehicle Sub-Assemblies (to be Identified) First Article Inpections (FAIs)	Provide pictures of occurrence or site visit
Nov-23	24	5.2849%	60.2172%	\$ 2,662,701.45	Start Car Splicing Process for Cars 1 to 8	Provide pictures of occurrence or site visit
Feb-24	27	5.6035%	65.8206%	\$ 2,823,196.56	Start Factory Testing for Car 1	Provide pictures of occurrence or site visit / Car Assembly Book to Indicate Readiness for Testing
May-24	30	6.9679%	72.7886%	\$ 3,510,643.84	Start Factory Testing for Car 8	Provide pictures of occurrence or site visit / Car Assembly Book to Indicate Readiness for Testing
Jul-24	32	7.5586%	80.3471%	\$ 3,808,222.21	Cars 1 to 8 Factory tests Completed	Provide Car Testing Documents
Aug-24	33	5.7582%	86.1053%	\$ 2,901,122.20	Start Installation of Wayside Equipment on Site	Site Tour/Audit
Sep-24	34	4.9020%	91.0072%	\$ 2,469,745.07	Car 1 Ex-Works	Shipping Documents
Oct-24	35	3.3790%	94.3863%	\$ 1,702,441.72	Remove first 4 CX100 Cars from Site	Site Audit
Nov-24	36	2.0113%	96.3975%	\$ 1,013,329.46	Start Wayside Field Testing Activities	Site Audit
Jan-25	38	1.5131%	97.9106%	\$ 762,327.44	Car 8 Ex-Works	Shipping Documents
Mar-25	40	1.9124%	99.8230%	\$ 963,533.29	Substantial Completion	Substantial Completion Documents
Sep-25	46	0.1770%	100.0000%	\$ 89,174.77	Final Acceptance	Final Acceptance Documents

\$ 50,382,858.00

**Appendix D**  
Project Schedule



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# **ATTACHMENT 2**

To

Contract for Services between Owner and Contractor as modified

For

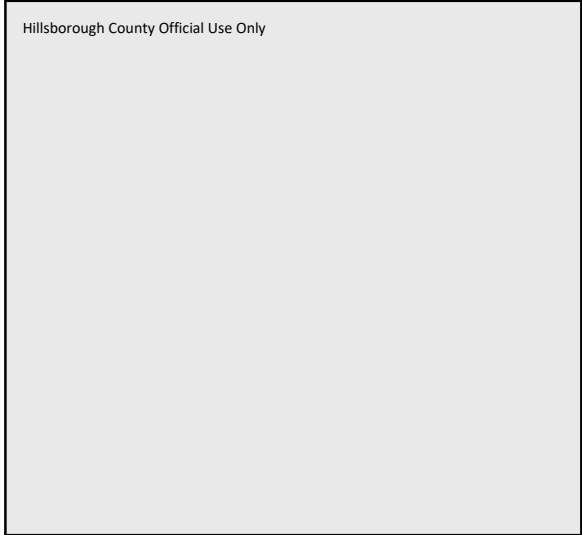
**Airside A and C Shuttle Car and Control System Replacement –  
Phase 2**

Authority Project No. 8420 21

Tampa International Airport

**COMMON LAW  
PERFORMANCE BOND  
AND  
STATUTORY  
PAYMENT BOND**

COMMON LAW PERFORMANCE BOND



BOND NO. \_\_\_\_\_

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

BY THIS BOND, Bombardier Transportation (Holdings) USA, Inc. , whose principal business address is 1251 Waterfront Place, Pittsburgh, PA 15222, business phone number is 312-803-8200 as Principal, hereinafter "Contractor", and \_\_\_\_\_, whose principal business address is \_\_\_\_\_, business phone number is \_\_\_\_\_ as Surety, hereinafter "Surety", are held and firmly bound to the Hillsborough County Aviation Authority, whose principal address is P.O. Box 22287, Tampa, Florida 33622, business phone number is (813) 870-8700, as Obligee, hereinafter "Owner", in the amount of Fifty Million Eight Hundred Eighty Two Thousand Eight Hundred Fifty Eight Dollars (U.S.) (\$50,882,858.00) for the payment of which Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, as provided herein.

WHEREAS, Contractor has by written Contract dated November 4, 2021 entered into an agreement with Owner for **AUTHORITY PROJECT NUMBER 8420 21, Airside A and C Shuttle Car and Control System Replacement – Phase 2 at TAMPA INTERNATIONAL AIRPORT** to perform in accordance with the Contract, and the Contract Documents incorporated by reference in the Contract or otherwise. The Contract is incorporated by reference into this Performance Bond, hereinafter "Bond".

It is the condition of this Bond that if the Contractor performs its Contract obligations (the "Work"), then the Surety's obligations under this Bond are null and void; otherwise the Surety's obligations will remain in full force and effect.

The Contractor will perform, carry out and abide by all the terms, conditions and provisions of the Contract and complete the Work in accordance with its terms. If the Contractor fails to perform its Contract obligations, it will be the duty of the Surety to promptly assume responsibility for performance of the Contract including but not limited to completion of the Work. The Surety must and does hereby agree to indemnify the Owner and hold it harmless of, from and against any and all liability, loss, cost, damage, expense, attorney fees, including appellate proceedings, engineering and architectural fees or other professional services which the Owner may incur or which may accrue or be imposed upon the Owner by reason of any negligence, default, breach or misconduct on the part of the Contractor, Contractor's agents, servants, subcontractors or employees, in, about, or on account of the Work or performance of the Contract. Surety will be required to repay and reimburse the Owner, promptly upon demand, all sums of money including, but not limited to, attorney, architect, engineer and any other professional fees reasonably paid out or expended by the Owner on account of the failure or refusal of the Contractor to carry out, perform, or comply with any of the terms, conditions or provisions of the Contract including, but not limited to, the guarantee of the Work and materials furnished under the Contract for the time specified in the Contract.



The Surety hereby stipulates and agrees that any modification, omission, or addition, in or to the terms of the Contract, including the Contract Documents, will not affect the obligation of the Surety under this Bond.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

CONTRACTOR MUST INDICATE WHETHER CORPORATION, PARTNERSHIP, COMPANY, (OR INDIVIDUAL). THE PERSON SIGNING FOR THE CONTRACTOR WILL SIGN HIS/HER OWN NAME AND SIGN CORPORATE TITLE. WHEN THE PERSON SIGNING FOR A CORPORATION IS OTHER THAN THE PRESIDENT OR VICE PRESIDENT, HE/SHE MUST FURNISH A CORPORATE RESOLUTION SHOWING HIS/HER AUTHORITY TO BIND THE CORPORATION.

(Affix Contractor's Corporate Seal)

\_\_\_\_\_  
Name of Contractor

By: \_\_\_\_\_  
(Signature)

Type Name and Title Below: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Telephone Number Fax Number

(Affix Surety's Corporate Seal)

\_\_\_\_\_  
Name of Surety

By: \_\_\_\_\_  
Attorney in Fact for Surety (Signature)

By: \_\_\_\_\_  
Florida Licensed Agent (Signature)

Type name of Attorney in Fact: \_\_\_\_\_  
Type name of Fla. Licensed Agent: \_\_\_\_\_

Attorney in Fact Address: \_\_\_\_\_  
License Number \_\_\_\_\_

Attorney in Fact Address: \_\_\_\_\_  
Agent Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Telephone Number Fax Number Telephone Number Fax Number

(ATTACH "SURETY'S BOND AFFIDAVIT" ON COPY OF FORM BOUND IN THESE SPECIFICATIONS).  
(ATTACH "POWER OF ATTORNEY" FOR SURETY COMPANY REPRESENTATIVE).

Hillsborough County Aviation Authority

THE FOREGOING BOND IS HEREBY APPROVED FOR LEGAL SUFFICIENCY:

By: \_\_\_\_\_ By: \_\_\_\_\_

Michael Kamprath, Assistant General Counsel

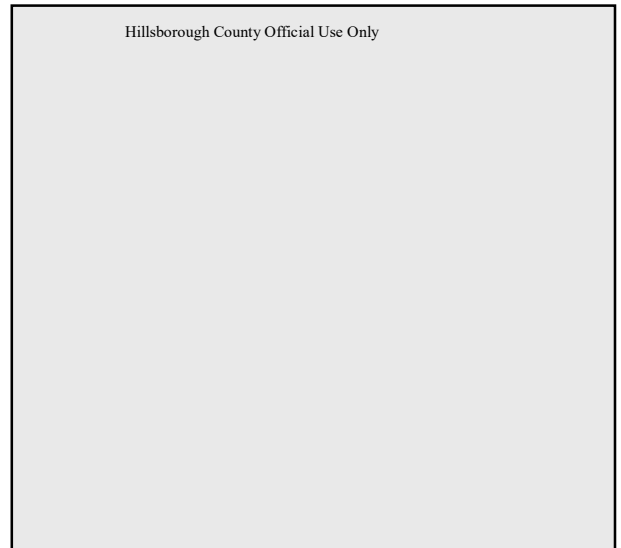
**THIS BOND MUST BE RECORDED IN THE PUBLIC RECORDS OF HILLSBOROUGH COUNTY FLORIDA PRIOR TO COMMENCING ANY WORK UNDER THE CONTRACT.**

STATUTORY PAYMENT BOND

BOND NO. \_\_\_\_\_

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_



BY THIS BOND, Bombardier Transportation (Holdings) USA, Inc. , whose principal business address is 1251 Waterfront Place, Pittsburgh, PA 15222, business phone number is 312-803-8200 as Principal, hereinafter "Contractor", and \_\_\_\_\_, whose principal business address is \_\_\_\_\_

\_\_\_\_\_, business phone number is \_\_\_\_\_ as Surety, hereinafter "Surety", are held and firmly bound to the Hillsborough County Aviation Authority, whose principal business address is P.O. Box 22287, Tampa, Florida 33622, business phone number is (813) 870-8700, as Obligee, hereinafter "Owner", in the amount of Fifty Million Eight Hundred Eighty Two Thousand Eight Hundred Fifty Eight Dollars (U.S.) (\$50,882,858.00) for the payment of which Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, as provided herein.

THE CONDITION OF THIS BOND is that if Contractor:

1. Performs the Contract dated November 4, 2021, between Contractor and Owner for **AUTHORITY PROJECT NUMBER 8420 21, Airside A and C Shuttle Car and Control System Replacement – Phase 2 at TAMPA INTERNATIONAL AIRPORT**, the Contract being made a part of this Bond by reference, at the times and in the manner prescribed in the Contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Contractor with labor, materials, or supplies, used directly or indirectly by Contractor in the prosecution of the work provided for in the Contract; and
3. Pays Owner all losses, damages, expenses, costs, and attorney’s fees, including appellate proceedings, that Owner sustains because of a default by Contractor under the Contract; and
4. Performs the guarantee of all work and materials furnished under the Contract for the time specified in the Contract, then this Bond is void; otherwise it remains in full force.

Any action instituted by claimant under this Bond for payment must be in accordance with the notice and time limitation provisions in Sections 255.05(2) and (10), Florida Statutes.

SECTION 00620  
STATUTORY PAYMENT BOND

Any changes in or under the Contract Documents and compliance or non-compliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this Bond.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

CONTRACTOR MUST INDICATE WHETHER CORPORATION, PARTNERSHIP, COMPANY, (OR INDIVIDUAL). THE PERSON SIGNING FOR THE CONTRACTOR WILL SIGN HIS/HER OWN NAME AND SIGN CORPORATE TITLE. WHEN THE PERSON SIGNING FOR A CORPORATION IS OTHER THAN THE PRESIDENT OR VICE PRESIDENT, HE/SHE MUST FURNISH A CORPORATE RESOLUTION SHOWING HIS/HER AUTHORITY TO BIND THE CORPORATION.

(Affix Contractor's Corporate Seal)

_____	By: _____
Name of Contractor	(Signature)
Type Name and Title Below:	Address: _____
_____	_____
_____	_____
Telephone Number	Fax Number

(Affix Surety's Corporate Seal)

_____	_____
Name of Surety	
By: _____	By: _____
Attorney in Fact for Surety (Signature)	Florida Licensed Agent (Signature)
Type name of Attorney in Fact: _____	Type name of Fla. Licensed Agent: _____
Attorney in Fact Address: _____	License Number: _____
_____	Agent Address: _____
_____	_____
Telephone Number	Fax Number
Telephone Number	Fax Number

(ATTACH "SURETY'S BOND AFFIDAVIT" ON COPY OF FORM BOUND IN THESE SPECIFICATIONS).  
(ATTACH "POWER OF ATTORNEY" FOR SURETY COMPANY REPRESENTATIVE).

Hillsborough County Aviation Authority

By: \_\_\_\_\_

THE FOREGOING BOND IS HEREBY APPROVED FOR LEGAL SUFFICIENCY:

By: \_\_\_\_\_  
Michael Kamprath, Assistant General Counsel

**THIS BOND MUST BE RECORDED IN THE PUBLIC RECORDS OF HILLSBOROUGH COUNTY FLORIDA PRIOR TO COMMENCING ANY WORK UNDER THE CONTRACT.**

STATUTORY PAYMENT BOND

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

BEFORE ME, the undersigned authority, personally appeared \_\_\_\_\_,  
who being duly sworn, deposes and says that they are a duly authorized Florida agent, properly licensed  
under the laws of the State of Florida, to represent \_\_\_\_\_,  
a company authorized to make corporate surety bonds under the laws of the State of Florida (the "Surety").

Said \_\_\_\_\_ further certifies that as agent for the said Surety,  
they have countersigned the attached Bond as the Florida Licensed Agent in the sum of Fifty Million Eight  
Hundred Eighty Two Thousand Eight Hundred Fifty Eight Dollars (U.S.) (\$50,882,858.00) on behalf of  
\_\_\_\_\_ to the **HILLSBOROUGH COUNTY AVIATION AUTHORITY** covering the **PROJECT  
8420 21 Airside A and C Shuttle Car and Control System Replacement – Phase 2 at TAMPA INTERNATIONAL  
AIRPORT.**

Said \_\_\_\_\_ further certifies that the premium on the said Bonds is  
\_\_\_\_\_, which will be paid in full directly to  
them as agent and included in their regular accounts to the said Surety, and that they will receive their  
regular commission as agent for the execution of said Bond and that their commission will not be divided  
with anyone except to \_\_\_\_\_, who is a duly authorized insurance agent properly  
licensed under the laws of the State of Florida.

SIGNED:

By: \_\_\_\_\_  
Florida Licensed Insurance Agent (Signature)

Type Name or Agent Below:  
\_\_\_\_\_

Address of Agent: \_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

FAX Number: \_\_\_\_\_

Florida License Number: \_\_\_\_\_

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me by means of  physical presence or  online  
notarization, this \_\_\_\_ day of \_\_\_\_\_, 2021, by \_\_\_\_\_ as  
(Name of person)  
\_\_\_\_\_, for \_\_\_\_\_.  
(type of authority) (name of party on behalf of whom contract was executed)

\_\_\_\_\_  
Signature of Notary

\_\_\_\_\_  
Print, Type, or Stamp Commissioned Name of Notary

Personally Known OR Produced Identification  
Type of Identification Produced

# **ATTACHMENT 3**

To

Contract for Services Between Owner and Contractor as modified

For

## **Airside A and C Shuttle Car and Control System Replacement – Phase 2**

Authority Project No. 8420 21

Tampa International Airport

# **INSURANCE REQUIREMENTS**

## INSURANCE REQUIREMENTS

Contractor agrees to provide its full required limits for every policy specified herein, without restriction or reduction, and to the extent required by Florida Department of Transportation Public Transportation Grant Agreement, shall require the same of all of its contractors, subcontractors, suppliers, consultants, and subconsultants at each tier. To the extent that there is any exclusion, deficiency, reduction, or gap in a policy, which makes the insurance more restrictive than the coverage required, the Contractor agrees to remain responsible and obligated to make the Owner whole as if the Contractor and all of its contractors, subcontractors, suppliers, consultants, and subconsultants at each tier fully met the insurance requirements of the contract. Every policy shall be maintained without interruption or material amendment throughout the life of this Contract, including but not limited to any warranty or limitation periods, and for any period of extension described herein. In the event the Contractor becomes in default of any requirement, the Owner reserves the right to take whatever actions deemed necessary to protect its interests. The Contractor shall require every policy, other than Workers' Compensation, Employer's Liability and Professional Liability, cyber liability and technology professional liability, to be endorsed to include the Owner, members of the Owner's governing body, and the Owner's officers, volunteers, agents, and its employees as additional insureds. To the extent required by Florida Department of Transportation Public Transportation Grant Agreement, Contractor shall also ensure that the Florida Department of Transportation is added as an additional insured on the Commercial General Liability policy of the Contractor. The Contractor will submit evidence that it, and to the extent required by the Florida Department of Transportation Public Grant Agreement, all subcontractors, suppliers, consultants, and subconsultants at each tier has complied with this provision to the Owner before any work or service commences under this contract. Except for Professional Liability Insurance below, such evidence shall describe the full policy limits along with any deductible, retentions, attachment point, and any deviation from a fully insured program.

### Workers' Compensation/Employer's Liability

The Contractor, its contractors, subcontractors, suppliers, consultants, or subconsultants at each tier, shall provide the following minimum limits of insurance:

Part One:	"Florida Statutory"
Part Two:	
Each Accident	\$1,000,000
Disease – Policy Limit	\$1,000,000
Disease – Each Employee	\$1,000,000

It is the responsibility of the Contractor to ensure that all entities and person(s) working for or behalf of itself or any contractor, subcontractor, supplier, subconsultant, independent contractor, sole proprietorship, partner, "leased employee", person obtained through a professional employer organization ("PEO's"), operator, and any personnel obtained under an agreement, including equipment rental agreements have Workers' Compensation Insurance in accordance with Florida's Workers' Compensation law.

### Commercial General Liability

The Contractor will maintain and ensure that all contractors, subcontractors, suppliers, consultants, and subconsultants at each tier have Commercial General Liability insurance providing continuous coverage for all liability resulting out of, or in connection with, any ongoing operations performed by, including

## INSURANCE REQUIREMENTS

the use or occupancy of Owner premises, or on behalf of the Contractor under this Contract. The insurance required under this contract shall be the full required policy limits without reduction or limitation.

The limits of coverage required shall apply fully to the work or operations performed under this Contract and may not be shared with or diminished by claims unrelated to this Contract. The coverage cannot contain any deductible, retention or self-insurance without prior approval of the Owner and must clearly identify any such deductible, retention or other than a fully insured plan. Any deductible, retention, or self-insurance will be the responsibility of and paid by the First Named Insured and not by the Owner. To the extent required by the Florida Department of Transportation Public Transportation Grant Agreement, the Commercial General Liability insurance of Contractor may not contain or be subject to any self-insured retentions.

Such coverage shall be primary as to any other available insurance and shall not be more restrictive than the coverage afforded to the Named Insured. It is to be written on an "occurrence" basis on a form no more restrictive than ISO Form CG 00 01 10 01 and shall include Products/Completed Operations coverage. Additional insured coverage shall be provided on a form no more restrictive than ISO Form CG 20 10 10 01 and CG 20 37 10 01. The policy or policies shall not include a Contractual Liability Limitation (ISO CG 21 39), a Limitation of Coverage to Designated Premises or Project (CG 21 44), or any endorsement that similarly restricts or limits coverage to the Owner. The Contractor shall provide the following minimum limits of insurance (subject to the provisions of S250.06 C. Reduction of Aggregate Limits):

	<u>Contract Specific</u>
General Aggregate	\$10,000,000
Each Occurrence	\$10,000,000
Personal and Advertising Injury	\$10,000,000
Products and Completed Operations	\$10,000,000

Contractor shall ensure that all of its contractors, subcontractors, suppliers, consultants, or subconsultants at each tier procure and maintain Commercial Liability Insurance with the following minimum limits of insurance:

General Aggregate	\$5,000,000
Each Occurrence	\$5,000,000

Products and Completed operations coverage will be maintained for a period of 5 year(s) from the date of termination of this Contract.

### Business Auto Liability

The Contractor agrees to provide its full policy limits for commercial auto coverage, without restriction or reduction, on all owned, hired and non-owned vehicles. Coverage shall be provided on a form no more restrictive than ISO Form CA 00 01. The Contractor shall not allow its coverage to drop below or become encumbered below the following minimum limits of insurance:

Each Occurrence – Bodily Injury and Property Damage Combined	\$10,000,000
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## INSURANCE REQUIREMENTS

### Professional Liability

The Contractor agrees to provide its full policy limits for its professional liability exposures, without restriction or reduction. Such insurance will be maintained by the Contractor without interruption or amendment throughout the life of this Contract and for a period of 3 year(s) following termination of the Contract. Any deductible, retention or self-insured amount must be approved in writing by the Owner. Coverage will include all work of the Contractor, and all contractors, subcontractors, suppliers, consultants, and subconsultants at each tier that provide professional services, work, or advice as it relates to this agreement, including but not limited to areas with possible environmental impact, without any exclusions unless approved in writing by the Owner. The Contractor shall provide the following minimum limits of insurance (subject to the provisions of S250.06 C. Reduction of Aggregate Limits):

Each Occurrence	\$5,000,000
Annual Aggregate	\$5,000,000

### All-Risk Coverage

The Contractor agrees to provide, in a policy or policies acceptable to the Owner, "all risk" property, installation floater and transit insurance on all such construction, additions, modifications, machinery, and equipment. The policy shall be issued on a non-reporting form of policy. The amount of the insurance shall be no less than the Contract sum, subject to a maximum of \$30,000,000 any one occurrence in respect natural catastrophe events and a maximum of \$10,000,000 any one occurrence for named storms, and a maximum of \$20,000,000 In respect of property in transit as amended from time to time. The coverage shall not be subject to any restriction with respect to occupancy or use by the Owner and shall remain in full effect until Substantial Completion. The maximum deductible for other than testing, commissioning, windstorm or hail shall be \$100,000 per occurrence. The maximum deductible per occurrence for testing and commissioning shall be \$250,000. The maximum deductible per occurrence for windstorm and hail shall be 5% of the Contract Price, subject to a minimum of \$125,000 and a maximum of \$1,250,000. Contractor shall pay on behalf of the Owner or the Owner's members, officials, officers and employees any such deductible.

The property policies must not contain language which excludes expediting/extra expense.

The property policy(s) must be endorsed to provide the following: (i) to waive the insurer's right to subrogate against the Owner, members of the Owner's governing body, the Owner's officers, volunteers, agents and its employees and to the extent required by the Florida Department of Transportation Grant Agreement and (ii) to provide a notice of cancellation endorsement assuring that the Owner shall receive not less than 45 days advance written notice of cancellation. All endorsements shall be properly completed and signed by an authorized representative of the insurer providing the coverage and shall indicate the policy number.

Property "All Risk" Coverage will be maintained by the Contractor and evidenced on the certificate during the life of the Project.

### Cyber Liability & Data Storage

The Contractor shall purchase and maintain Cyber Liability Insurance, throughout the life of the Agreement and such insurance will be maintained for a period of three years thereafter for services completed during the term of the Agreement. Such insurance shall cover, at a minimum, the following:



## INSURANCE REQUIREMENTS

- Network Security Liability covering liability for failures or breaches of network security and unauthorized access, including hackings and virus transmission or other type of malicious code, and electronic disclosure or use of confidential information, including personally identifiable information and personal health information, whether caused by Company, any of its subcontractors, or cloud service providers used by Company;
  - Privacy Liability covering liability, PCI fines, expenses, defense costs, and regulatory actions for disclosure of confidential information, including personally identifiable information and personal health information;
  - Digital Asset Protection, including costs to reconstruct, restore or replace damaged software and data;
  - Media liability, covering liability and defense costs for media wrongful acts such as defamation, disparagement, and copyright/trademark infringement and trade dress in the dissemination of internet content and media;
  - Cyber-Extortion coverage, including negotiation and payment of ransomware demands and other losses from “ransomware” attacks resulting from the Services provided by Contractor to the Authority. Coverage extends to those payments made via traditional currencies, as well as non-traditional crypto-currencies such as Bitcoin;
- First and Third-party Business Interruption and Dependent Business Interruption Coverage resulting from a security breach and/or system failure;
- Data Breach Response Coverage for up to twelve (12) months from the time the breach is reported, including coverage for notifying affected parties, setting up call center services, provision of credit monitoring services, identity theft protection services, computer forensic expenses, conduct, data reconstruction, legal expenses, and public relations expenses resulting from a breach of Network Security or other Privacy breach involving personally identifiable information and personal health information.

The minimum limits of liability shall be:

Each Occurrence	\$5,000,000
Annual Aggregate	\$5,000,000
Event Management Expenses	\$5,000,000

Such Cyber Liability coverage must be provided on an Occurrence Form or, if on a Claims Made Form, the retroactive date must be no later than the first date of Services provided. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the Contractor must purchase “extended reporting” coverage, which will provide coverage to respond to claims for a minimum of three years after completion of services completed during the term of the Agreement.

The Cyber Liability Insurance coverage may be subject to a deductible or self-insured retention, which may not exceed \$500,000 per claim.

Technology Professional Liability/Errors and Omissions insurance coverage may be included as part of the Cyber Liability insurance coverage required above.

### Technology Professional Liability/Errors and Omissions Insurance

The Contractor shall purchase and maintain, throughout the life of this Agreement, a Technology Professional Liability/Errors and Omissions insurance policy covering liability arising from or in

## INSURANCE REQUIREMENTS

connection with acts, errors, or omissions, in rendering or failure to render technology professional services or in connection with the specific services described in this Agreement, including technology-related design and consulting by the Contractor, its agents, representatives, or employees.

The minimum limits of Technology Professional Liability/Errors and Omissions insurance covering all work of Contractor without any exclusions unless approved in writing by Authority will remain in force for a period of three years following termination of this Contract. The minimum limits of coverage are:

Each Claim	\$5,000,000
Annual Aggregate	\$5,000,000

Such Technology Professional Liability/Errors and Omissions coverage must be provided on an Occurrence Form or, if on a Claims Made Form, the retroactive date must be no later than the first date of this contract. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the Contractor must purchase "extended reporting" coverage, which will provide coverage to respond to claims for a minimum of three years after completion of services completed during the term of the Contract.

The Technology Professional Liability/Errors and Omissions insurance coverage may be subject to a deductible or self-insured retention, which may not exceed \$500,000 per claim.

Cyber Liability insurance coverage may be included as part of the Technology Professional Liability/Errors and Omissions insurance coverage required above.

### Environmental Impairment (Pollution) Liability

Not required.

### Utility and Railroad Protective Liability

To the extent required by the Florida Department of Transportation Public Transportation Grant Agreement when work performed under this Contract is on or in the vicinity of utility-owned property or facilities the utility shall also be listed as an additional insured along with the Owner, members of the Owner's governing body, the Owner's officers, volunteers, agents and its employees and to the extent required by the Florida Department of Transportation Grant Agreement in the manner as described herein.

To the extent required by the Florida Department of Transportation Public Transportation Grant Agreement if the work performed is on or in the vicinity of a railroad right-of-way, including any encroachments thereon from such work or operations, the entities and persons involved shall require, procure, and maintain Railroad Protective Liability Coverage. Such coverage shall be no more restrictive than that provided by the latest occurrence form edition of the Railroad Protective Liability Coverage (ISO Form CG 00 35) as filed for use in the State of Florida.

Contractor agrees to provide its full policy limits for any Utility or Railroad, without restriction or reduction, and shall require the same of all of its contractors, subcontractors, suppliers, consultants, and subconsultants at each tier. The Contractor shall not allow its coverage or that of any of its contractors, subcontractors, suppliers, consultants, or subconsultants at each tier required to have this coverage to drop below or become encumbered below \$2,000,000 combined single limit for bodily injury and/or

## INSURANCE REQUIREMENTS

property damage for each occurrence or have an annual aggregate of less than a \$6,000,000, inclusive of amounts provided by an umbrella or excess policy.

The coverage shall include the railroad and utility along with the Owner and State of Florida, Department of Transportation as additional insureds in the manner as described herein.

## CONTRACTUAL INSURANCE TERMS AND CONDITIONS

This Section incorporates the Owner's Standard Procedure S250.06 and establishes the insurance terms and conditions associated with contractual insurance requirements. This Section is applicable to all Contractors with Owner contracts, and to the extent required by the Florida Department of Transportation Public Transportation Grant Agreement, includes every contractor, subcontractor, consultant, and subconsultant at each tier. Unless otherwise provided herein, any exceptions to the following conditions or changes to required coverages or coverage limits must have prior written approval from the Owner.

### INSURANCE COVERAGE:

#### A. Procurement of Coverage:

With respect to each of the required coverages, the Contractor will, at the Contractor's expense, procure, maintain and keep in force the types and amounts of insurance conforming to the minimum requirements set forth in the applicable contract. In addition to the extent required by Florida Department of Transportation Public Transportation Grant Agreement, the Contractor shall further require that all contractors, subcontractors, suppliers, consultants, and sub-consultants at each tier satisfy and meet all the requirements of the applicable Grant Agreement, including the terms and conditions of this Standard Procedure. Coverage will be provided by insurance companies eligible to do business in the State of Florida and having an AM Best rating of A- or better and a financial size category of VII or better. Utilization of non-rated companies, companies with AM Best ratings lower than A-, or companies with a financial size category lower than VII must be submitted by the company to the Owner Director of Risk Management for approval prior to use. The Owner retains the right to approve or disapprove the use of any insurer, policy, risk pooling or self-insurance program.

#### B. Term of Coverage:

Except as otherwise specified in the contract, the insurance will commence on or prior to the effective date of the contract and will be maintained in force throughout the duration of the contract, including but not limited to any warranty or limitation periods and for any period of extended coverage required in the contract. If a policy is written on a claims-made form, the retroactive date must be shown and this date must be before the earlier of the date of the execution of the contract or the beginning of contract work, and the coverage must respond to all claims reported within three years following the period for which coverage is required unless a longer period of time is otherwise stated in the contract.

#### C. Reduction of Aggregate Limits:

If the general or aggregate limit for any policy is exhausted, the company, and to the extent required by Florida Department of Transportation Public Transportation Grant Agreement, all of the Contractor's contractors, subcontractors, consultants, and sub-consultants at each tier, will

## INSURANCE REQUIREMENTS

immediately take all possible steps to have it reinstated. The commercial general liability policies and any excess or umbrella policies used to provide the required amount of insurance shall include a per project designated aggregate limit endorsement providing that the limits of such insurance specified in the contract shall apply solely to the work under the contract without erosion of such limits by other claims or occurrences.

### 1. Cancellation Notice

Each insurance policy will be specifically endorsed to require the insurer to provide written notice to the Owner at least 30 days (or 10 days prior notice for non-payment of premium) prior to any cancellation, non-renewal or adverse change, initiated by the insurer, and applicable to any policy or coverage described in the contract or in this Standard Procedure. The endorsement will specify that such notice will be sent to:

Hillsborough County Aviation Authority  
Attn.: Chief Executive Officer  
Tampa International Airport  
Post Office Box 22287  
Tampa, Florida 33622

Additionally, to the extent required by Florida Department of Transportation Public Transportation Grant Agreement, the workers' compensation, commercial general liability and railroad protective insurance of every contractor, subcontractor, consultant, and sub-consultant at each tier shall be specifically endorsed to require the insurer to provide the Florida Department of Transportation notice within 10 days of any cancellation, notice of cancellation, lapse, renewal, or proposed change to any policy or coverage described in the contract or this Standard Procedure.

### D. No waiver by approval/disapproval:

The Owner accepts no responsibility for determining whether the company or any contractor, subcontractor, consultant, or sub-consultant at each tier is in full compliance with the insurance coverage required by the contract. The Owner's approval or failure to disapprove any policy, endorsement coverage, or Certificate of Insurance does not relieve or excuse the company of any obligation to procure and maintain the insurance required in the contract or in this Standard Procedure, nor does it serve as a waiver of any rights or defenses the Owner may have.

### E. Future Modifications – Changes in Circumstances:

#### 1. Changes in Coverage and Required Limits of Insurance

The coverages and minimum limits of insurance required by the contract are based on circumstances in effect at the inception of the contract. If, in the opinion of the Owner, circumstances merit a change in such coverage or minimum limits of insurance required by the contract, the Owner may change the coverage and the minimum limits of insurance required, and the Contractor will, within 60 days of receipt of written notice of a change in the coverage and/or the minimum limits required, comply with such change and provide evidence of such compliance in the manner required by the contract and the Owner will bear any such reasonable cost. Provided,

## INSURANCE REQUIREMENTS

however, that no change in the coverages or minimum limits of insurance required will be made by the Owner until at least two years after inception of the contract. Subsequent changes in the coverage or minimum limits of insurance required will not be made by the Owner until at least two years after any prior change by the Owner unless extreme conditions warrant such change and are agreeable to both parties and any reasonable difference in cost shall be paid for by the Owner. To the extent required by Florida Department of Transportation Public Transportation Grant Agreement, any such change or modification in coverage or limits shall also apply to the contractors, subcontractors, suppliers, consultants, and sub-consultants at each tier.

If, in the opinion of the Owner, compliance with the insurance requirements is not commercially practicable for the Contractor, contractors, subcontractors, suppliers, consultants or subconsultants at any tier, at the written request of the Contractor, the Owner may, at its sole discretion and subject to any conditions it deems appropriate, relax or temporarily suspend, in whole or in part, the insurance requirements which would otherwise apply to the Contractor, contractors, subcontractors, suppliers, consultants, and sub-consultants at any tier. Any such modification will be subject to the prior written approval of the Owner's General Counsel and Executive Vice President of Legal Affairs or designee, and subject to the conditions of such approval.

### F. Proof of Insurance – Insurance Certificate:

#### 1. Prior to Work, Use or Occupancy of Owner's Premises

The Contractor and, to the extent required by Florida Department of Transportation Public Transportation Grant Agreement, the Contractor's contractors, subcontractors, suppliers, consultants, and sub-consultants at each tier will not commence work, or use or occupy Owner's premises in connection with the contract until the required insurance is in force, preliminary evidence of insurance acceptable to the Owner has been provided to the Owner, and the Owner has granted permission to the company to commence work or use or occupy the premises in connection with the contract.

#### 2. Proof of Insurance Coverage

As preliminary evidence of compliance with the insurance required by the contract, the Contractor will furnish the Owner with an ACORD Certificate of Liability Insurance (Certificate) reflecting the required coverage described in the contract and this Standard Procedure.

The Certificate must:

- a. Be signed by an authorized representative of the insurer. Upon request of the Authority, Contractor will furnish the Owner with any specific endorsements effecting coverage required by the contract. The endorsements are to be signed by a person authorized by insurer to bind the coverage on the insurer's behalf;
- b. State that: "Hillsborough County Aviation Authority, members of the Authority's governing body and the Authority's officers, volunteers, agents, and its employees are additional insureds for all policies described above other than workers' compensation employer's liability and professional liability, cyber liability and technology professional liability, (if required by Contract)";

## INSURANCE REQUIREMENTS

- c. To the extent required by Florida Department of Transportation Public Transportation Grant Agreement, state that the Florida Department of Transportation is an additional insured for commercial general liability;
- d. Indicate that the insurers for all required policies shown on the Certificate have waived their subrogation rights against the Hillsborough County Aviation Authority, members of the Authority's governing body and the Authority's officers, volunteers, agents, and its employees;
- e. Indicate that the Certificate has been issued in connection with the contract;
- f. Indicate the amount of any deductible or self-insured retention applicable to all coverages;
- g. State that the deductible or self-insured retention is the responsibility of the Contractor; and
- h. Identify the name and address of the Certificate holder as:

Hillsborough County Aviation Authority  
Attn.: Chief Executive Officer  
Tampa International Airport  
Post Office Box 22287  
Tampa, Florida 33622;

If requested by the Owner, the Contractor will, within 15 days after receipt of written request from the Owner, provide the Owner, or make available for review, a certified complete copy of the policies of insurance. The Contractor may redact those portions of the insurance policies that are not relevant to the coverage required by the contract. The Contractor will provide the Owner with renewal or replacement evidence of insurance, acceptable to the Owner, prior to expiration or termination of such insurance.

### G. Deductibles, Self-Insurance, Alternative Risk or Insurance Programs:

1. All deductibles, as well as all self-insured retentions and any alternative risk or insurance programs (including, but not limited to, the use of captives, trusts, pooled programs, risk retention groups, or investment-linked insurance products), must be approved by the Owner's General Counsel and Executive Vice President of Legal Affairs or designee. The Contractor agrees to provide all documentation necessary for the Owner to review the deductible, self-insurance or alternative risk or insurance program.
2. The Contractor will pay on behalf of the Owner, members of the Owner's governing body, the Owner's officers, volunteers, agents and its employees and to the extent required by the Florida Department of Transportation Grant Agreement, any deductible, self-insured retention (SIR), or difference from a fully insured program which, with respect to the required insurance, is applicable to any claim by or against the Owner, or any member of the Owner's governing body, or any officer or employee of the Owner.
3. The contract by the Owner to allow the use of a deductible, self-insurance or alternative risk or insurance program will be subject to periodic review by the Director of Risk Management. If, at any time, the Owner deems that the continued use of a deductible, self-insurance, or alternative risk or insurance program by the Contractor should not be permitted, the Owner may, upon 60 days' written notice to the company, require the

## INSURANCE REQUIREMENTS

Contractor to reasonably replace or modify the deductible, self-insurance, or alternative risk or insurance program in a manner satisfactory to the Owner.

4. Any deductible amount, self-insurance, or alternative risk or insurance program's retention will be included and clearly described on the Certificate prior to any approval by the Owner. This is to include fully insured programs as to a zero deductible per the policy. Owner reserves the right to deny any Certificate not in compliance with this requirement.
5. To the extent required by Florida Department of Transportation Public Transportation Grant Agreement, the commercial general liability may not be subject to a self-insured retention. Subject to approval by the Owner under sub-paragraphs 1-4 above, the commercial general liability may contain a deductible, provided that such deductible shall be paid by the named insured.

### H. Contractor's Insurance Primary:

The insurance required by the contract will apply on a primary and non-contributory basis. Any insurance or self-insurance maintained by the Owner will be excess and will not contribute to the insurance provided by or on behalf of the Contractor.

To the extent required by Florida Department of Transportation Public Transportation Grant Agreement, the coverage afforded to the Florida Department of Transportation as an additional insured under the Commercial General Liability policy shall be primary coverage.

### I. Incident Notification:

In accordance with the requirements of Standard Procedure S250.02, the Contractor will promptly notify the Airport Operations Center (AOC) of all incidents involving bodily injury or property damage occurring on Authority-owned property, tenant owned property or third party property.

### J. Customer Claims, Issues, or Complaints:

In addition to complying with all terms outlined in Standard Procedure S250.02, all customer claims, issues, or complaints involving property damage or bodily injury related to the Contractor will be promptly handled, addressed and resolved by the Contractor.

The Contractor will track all customer claims, issues, or complaints involving property damage or bodily injury and their status on a Claims Log available for review, as needed, by Risk Management. The Claims Log should include a detailed report of the incident along with the response and/or resolution. Risk Management has the option to monitor all incidents, claims, issues or complaints where the Owner could be held liable for injury or damages.

### K. Applicable Law:

With respect to any contract entered into by the Owner with a value exceeding \$10,000,000, if any required policy or program is: (i) issued to a policyholder outside of Florida or (ii) contains a "choice of law" or similar provision stating that the law of any state other than Florida shall govern disputes

## INSURANCE REQUIREMENTS

concerning the policy, then such policy or program must be endorsed so that Florida law (including but not limited to Part II of Chapter 627 of the Florida Statutes) will govern any and all disputes concerning the policy or program in connection with claims arising out of work performed pursuant to the Contract. The Contractor will ensure that all contractors, subcontractors, suppliers, consultants, and subconsultants at each tier are contractually bound and remain in compliance with this provision.

### L. Waiver of Subrogation:

The Contractor, for itself and on behalf of its insurers, to the fullest extent permitted by law without voiding the insurance required by the Contract, waives all rights against the Owner, members of the Owner's governing body and the Owner's officers, volunteers, agents and its employees, as well as the State of Florida, Department of Transportation, including the Department's officers and its employees for damages or loss to the extent covered and paid for by any insurance maintained by the Contractor. The Contractor shall require all contractors, subcontractors, suppliers, consultants and subconsultants at each tier for themselves and their insurers, to the fullest extent permitted by law without voiding the insurance required by the Contract, to waive all rights against the Owner, members of the Owner's governing body and the Owner's officers, volunteers, agents and its employees, as well as the State of Florida, Department of Transportation, including the Department's officers and its employees for damages or loss to the extent covered and paid for by any insurance maintained by the Contractor to the extent covered and paid for by any insurance maintained by the Contractor's contractors, subcontractors, suppliers, consultants and subconsultants at each tier. The Contractor shall further require that all contractors, subcontractors, suppliers, consultants, and subconsultants at each tier include the following in every contract and on each policy the following:

"Hillsborough County Aviation Authority, members of the Authority's governing body and the Authority's officers, volunteers, agents, and its employees, as well as the State of Florida, Department of Transportation, including the Department's officers and its employees are additional insureds for the coverages required by all policies as described above other than workers compensation, employers liability and professional liability, cyber liability and technology professional liability."

### M. Contractor's Failure to Comply with Insurance Requirements:

#### 1. Owner's Right to Procure Replacement Insurance

If, after the inception of this Contract, the Contractor or any of its contractors, subcontractors, suppliers, consultants, or subconsultants fails to fully comply with the insurance requirements of the Contract, in addition to and not in lieu of any other remedy available to the Owner provided by the Contract, the Owner may, at its sole discretion, procure and maintain on behalf of the Contractor, insurance which provides, in whole or in part, the required insurance coverage.

#### 2. Replacement Coverage at Sole Expense of Contractor

The entire cost of any insurance procured by the Owner pursuant to this Attachment will be paid by the Contractor. At the option of the Owner, the Contractor will either directly pay the entire cost of



## INSURANCE REQUIREMENTS

the insurance or immediately reimburse the Owner for any costs incurred by the Owner, including all premiums, fees, taxes, and 15% for the cost of administration.

a. Contractor to Remain Fully Liable

The Contractor agrees to remain fully liable for full compliance with the insurance requirements in the Contract and shall require the same of all of its contractors, subcontractors, suppliers, consultants, and subconsultants at each tier. To the extent that there is any exclusion, deficiency, reduction, or gap in a policy which makes the insurance more restrictive than the coverage required, the Contractor agrees to remain responsible and obligated to make the Owner whole as if the Contractor and all of its contractors, subcontractors, suppliers, consultants, and subconsultants at each tier fully met the insurance requirements of the contract.

b. Owner's Right to Terminate, Modify, or Not Procure

Any insurance procured by the Owner is solely for the Owner's benefit and is not intended to replace or supplement any insurance coverage which otherwise would have been maintained by the Contractor or by any of its contractors, subcontractors, suppliers, consultants, or sub-consultants at each tier. Owner is not obligated to procure any insurance pursuant to these requirements and retains the right, at its sole discretion, to terminate or modify any such insurance which might be procured by the Owner pursuant to this Attachment.

# ATTACHMENT 4

To

Contract for Services Between Owner and Contractor as modified

For

## Airside A and C Shuttle Car and Control System Replacement – Phase 2

Authority Project No. 8420 21

Tampa International Airport

### DIVISION 01 GENERAL REQUIREMENTS

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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 A and C Shuttle Car and Control System Replacement – Phase 2  
Tampa International Airport  
Tampa, Florida**

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

Authority Project Number(s): 8420 21  
FAA AIP Project Number: N/A  
FDOT FM Project Number: 447220-1 & 448026-1  
Description:

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 design, installation and construction of the relocation of the central control room from the current location to the Monorail office 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 [RESERVED]

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

Not Used.

#### 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. Refer to Section 01315.

1.07 LIST OF RELATED WORK

- A. During performance of the Work under this Contract, the following other contracts will be under construction:

Monorail System Decommissioning and Moving Walkway Installation  
SkyCenter Authority Offices  
Main Terminal Curbside Expansion

1.08 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.
- F. The terms of this Section may not be waived by the Owner unless such waiver is in writing and makes specific reference to this Section.

1.09 [Reserved]

1.10 COORDINATION WITH CONTRACTS

- A. In coordination with the Owner, the Contractor will be responsible for 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. In coordination with the Owner, it will be the responsibility of the Contractor to coordinate the whole Work 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 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 the Contract, 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 the Contract, 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 when a lump sum price has not been agreed, 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. Upon issuance of a Work Order, the Work Order funds will be tracked separately on the Contractor's Schedule of Values by Work Order number and the amount of the Cost of Work. If multiple subcontractors are employed for the Work Order, each Subcontractor's Pay Requisition will include a separate line with the description Work Order number that will flow to the Contractor's Schedule of Values. Once work is complete on the Work Order, the Contractor has 30 days in which to reconcile the Work Order, as follows:
  - 1. Provide Owner Project Management with a package containing cost support documents totaling the Cost of Work.
  - 2. Calculate mark-ups and fee using the same formula/calculations used to create the original Work Order budget.

3. Any unused Work Order funds will be returned to the Owner's Allowance budget via a negative Work Order.

The Contractor will forfeit their fee on the Work Order for any Work Orders that have not been reconciled within 60 days of the completion of the work, following the process above.

- G. 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 the Contract, 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. Should the aggregate charge for an approved Work Order issued by the Owner under the Allowance be less than the amount of the Work Order, the Owner may issue another Work Order in a negative amount to reconcile the Work Order. Such reconciliation Work Orders do not require executive management approval.
- C. The following allowance amounts will be included in the Contract Sum amount in the Contractor's proposal:

OWNER'S ALLOWANCE: Allow an amount of \$500,000.00 of the Contract Sum for:

1. Owner's Allowance may be used for repair, removal, relocation and/or replacement of utilities (sanitary system, storm system, potable water system, fire protection system, mechanical system, electrical system, communications, security system, etc.).
2. Owner's Allowance may be used for the resolution of unforeseen conditions with the existing airport property. This includes all elements associated with or discovered during the current contract scope including structural, sub surface,



paving, lighting, signage, navigational aid, civil, irrigation, building envelope, or other elements associated with the contract scope.

3. Owner's Allowance may be used for relocation and adjustments of Work associated with the airport's tenants (airlines, rental car companies, concessions, TSA, CBP, FAA, Fed Ex, FBO, etc.) and other contracts. This Work shall include all disciplines: architectural, structural, mechanical, plumbing, electrical, communications, fire protection, civil, signage, etc.
  4. Owner's Allowance may be used for temporary signage as directed by the Owner.
  5. Owner's Allowance may be used for Contractor's office trailer as directed by the Owner.
  6. 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 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.
- H. Drawing Log (updated weekly).

#### 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 (virtual and/or in-person) and bring the Project Management Team, including but not limited to, the Project Manager and Superintendent employed for this

Project. 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 (either virtual or in-person ) 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 (either virtual or in-person ) 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 (either virtual or in-person ). 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 or potential claims.
- 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 in format required by Owner.

#### 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 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. Preinstallation and coordination meetings (either virtual or in-person ) shall also occur prior to a new trade or new scope of work starting. These meetings are also intended to review the approved submittals, means and methods, testing requirements, mock-up requirements, egress, MOT, and other relevant items.

The Contractor shall have a preinstallation and coordination meeting (either virtual or in-person ) prior to starting work in a new area that could potentially impact the Authority. This pertains to multiple phased projects. Prior to transitioning to a new area of work, a preinstallation and coordination meeting shall occur to discuss impacts, schedule, temp signage, potential utility interruptions, MOT, delivery options, and other relevant items.

The Owner shall be invited to all preinstallation and coordination meetings. At the Owner's discretion, they may invite other parties that could include other contractors, engineers, department heads, or any other personnel that they deem necessary. These meeting should occur well in advance of any mobilization so as to allow the Owner to communicate to other team members and review the contract documents prior to the meetings. An agenda shall be distributed by the Contractor no later than 48 hours in advance.

- 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 in format required by Owner.

#### 1.06 PRECONSTRUCTION AND PROGRESS PHOTOGRAPHS

The Contractor will provide:

- A. Preconstruction and progress photographs are required by the Contract. Contractor will promptly forward electronic copies 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 in format required by the Owner 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 telephone numbers and email addresses. The Contractor will update the list as required. The list will be entered into the Owner's software management system. The Contractor will coordinate with the Owner's Document Control Manager to ensure that this information is up to date on a quarterly basis by providing this list and indicating all changes to the list each time.

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.
- G. The Contractor will locate all utilities and structural elements within a slab or deck.

#### 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.
- C. Slabs and walls shall be X-rayed for locations of any utilities and structural elements before coring or cutting begins. Due to the inability of GPR (ground penetrating radar) to properly locate PVC piping and conduit, GPR shall only be used with written approval by Owner.

### 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 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, codes, conventions and agreements within the construction industry which effectively control the performance of the Work, as well as applicable FAA Advisory Circulars.
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 the Contract, 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. 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. AASHTO. The American Association of State Highway and Transportation Officials.

2. ACCESS ROAD. The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public highway.
3. 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."
4. 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.
5. AIRPORT. Airport means Tampa International Airport.
6. AIRPORT IMPROVEMENT PROGRAM (AIP). The AIP means a grant-in-aid program administered by the Federal Aviation Administration.
7. 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.
8. APM: Automated People Mover. A guided transit mode with fully automated operation, featuring vehicles that operate on guideways with exclusive right-of-way.
9. 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.
10. APRON. Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
11. ASTM INTERNATIONAL (ASTM). Formerly known as the American Society for Testing and Materials (ASTM).
12. AWARD. The acceptance by the Owner of the successful Bidder's Bid.
13. 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.
14. Not Used.

15. **BIDDER.** Any individual, partnership, firm or corporation, acting directly or through a duly authorized representative, who submits a Bid for the Work contemplated.
16. **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.
17. **CERTIFICATE OF ANALYSIS (COA).** The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
18. **CERTIFICATE OF COMPLIANCE (COC).** The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
19. **CHANGE ORDER.** A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
20. **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.
21. **CONTRACT.** A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment.  
  
The awarded contract includes but may not be limited to:, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, , standards incorporated by reference and issued addenda.
22. **CONTRACT ITEM (PAY ITEM).** A specific unit of work for which a price is provided in the contract.
23. **CONTRACT TIME.** The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.
24. **CONTRACTOR.** The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.

25. CONTRACTORS QUALITY CONTROL (QC) FACILITIES. The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).
26. CONTRACTOR QUALITY CONTROL PROGRAM (CQCP). Details the methods and procedures that will be taken to assure that all materials and completed construction required by the contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
27. CONTROL STRIP. A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.
28. CONSTRUCTION SAFETY AND PHASING PLAN (CSPP). The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.
29. DAY. As used in the Contract Documents means calendar day unless otherwise specifically defined.
30. 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.
31. 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.
32. 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.
33. DRAINAGE SYSTEM. The system of pipes, ditches, ponds, and structures by which surface or subsurface waters are collected and conducted from the airport area.
34. DRAWINGS. The official Drawings or exact reproductions which show the location, character, dimensions and details of the airport and the Work to be done.

35. ENGINEER. The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.
36. 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.
37. 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.
38. 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.
39. FAA (Federal Aviation Administration). When used to designate a person, FAA means the Administrator or its duly authorized representative.
40. 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.
41. Not Used.
42. FHWA (Federal Highway Administration). When used to designate a person, FHWA will mean the Administrator or its duly authorized representative.
43. FORCE ACCOUNT. Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis. Owner Force Account - Work performed for the project by the Owner's employees.
44. 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.
45. 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.

46. 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.
47. 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.
48. 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.
49. 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.
50. LABORATORY. The official testing laboratories of the Contractor or Owner or such other laboratories as may be designated by the Owner.
51. 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.
52. Not Used.
53. MATERIALS. Any substance to be used in the Work.

54. Not Used.
55. 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.
56. 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.
57. 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.
58. 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.
59. 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.
60. PAVEMENT. The combined surface or friction course, structural course, base course, and sub-base course, if any, considered as a single unit.
61. 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.

62. 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.
63. PLANS. The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
64. PROJECT. The Work defined in the Contract Documents.
65. 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.
66. PROPOSAL. The written offer of the bidder to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.
67. PROPOSAL GUARANTY. The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
68. 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.
69. QUALITY ASSURANCE (QA). Owner's responsibility to assure that construction work completed complies with specifications for payment.
70. QUALITY CONTROL (QC). Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
71. QUALITY ASSURANCE (QA) INSPECTOR. An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
72. QUALITY ASSURANCE (QA) LABORATORY. The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.

73. RESIDENT PROJECT REPRESENTATIVE (RPR). The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
74. 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.
75. RUNWAY. The area on the airport designated for the landing and takeoff of aircraft.
76. RUNWAY SAFETY AREA (RSA). A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
77. SAFETY PLAN COMPLIANCE DOCUMENT (SPCD). Details how the Contractor will comply with the CSPP.
78. 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.
79. SHUTTLE. A guided transit mode with fully automated operation, featuring vehicles that operate on guideways between the Main Terminal and Airsides
80. 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.
81. SPONSOR. See "Owner".
82. 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, handholes, 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.
83. SUBGRADE. The soil which forms the pavement foundation.
84. 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.

85. SUPPLEMENTAL CONTRACT. A written agreement between the Contractor and the Owner covering Work that would increase the total amount of the awarded Contract, such Work that is not within the scope of the originally awarded Contract, excluding Change Orders or Work Orders.
86. SURETY. The corporation, partnership, or individual, other than the Contractor, executing Payment and Performance Bonds which are furnished to the Owner by the Contractor.
87. TAXILANE. A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
88. 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.
89. TAXIWAY/TAXILANE SAFETY AREA (TSA). A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
90. 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.
91. 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.
92. UNIT PRICE. Cost per unit of Work.
93. 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.
94. WORKING DAY. A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces

engage in regular work will be considered as working days.

### 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
	FED.
Federal Specifications.....	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)(Including, but not limited to applicable Advisory Circulars.) applicable Advisory Circulars.)

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. No extensions of Contract for the foregoing will be granted. 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 Cutting & Welding permits, 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, with the exception of subsurface conditions, 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 from the time it was discoverable 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. If applicable, 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 including holidays and blackout periods. 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. Flagger: The Contractor will provide competent flagger 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. 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 Maintenance / Construction



Notification (MCN) form addressed to the Owner with a blank space for a description of the interference, the exact area affected, map of the location, and 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. This includes proper certification or training for equipment operators. Upon request by the Owner, the Contractor shall supply copies of all certification or training certificates.
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 subject to Sections 3.4.13 and 3.4.14 of the Contract, 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 (all hours subject to Owner approval).
  2. Holiday blackout periods

- a. FAA Moratorium at Thanksgiving: Saturday in November before Thanksgiving through 4th Monday in November following Thanksgiving. No work allowed near navigational aid critical areas and working in proximity to FAA cables. No runway closures.
  - b. FAA Moratorium at Christmas: 3rd Saturday in December until January 2. No work allowed near navigational aid critical areas and working in proximity to FAA cables. No runway closures.
  - c. Spring Break: Second week in March through mid-April. No runway closures.
  - d. All three blackout periods noted above will have limited or restricted work hours throughout the campus. Work shall not impact the normal operations of the airport. Close coordination and Owner approval will be required for all work activities during these time periods.
3. 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. Flooring: Where new carpeting, tile, terrazzo, or other flooring material has been installed, Contractor will fully protect such flooring 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 flooring.

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.
  - c. Any product or material that contains per- and polyfluoroalkyl substances (PFAS) will only be permitted on this project if the Contractor prepares an alternatives analysis to determine if a non-PFAS alternative product or material is viable. If a non-PFAS alternative is determined to be viable, it will be used pending Authority review and approval of the alternatives analysis. No additional costs will be considered for the alternatives analysis or the incorporation of the non-PFAS alternative. After October 4, 2021, construction products or material containing PFAS will not be permitted 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.

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 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. These requirements supplement the other requirements in the Contract Documents. In cases of conflict, the more stringent requirement shall govern as determined by the Owner.

#### 1.02 SUMMARY

This Section is to provide for the comprehensive depiction, measurement, assessment and reporting of project progress and status pursuant to the sub-articles entitled "Contractor's Construction Schedules" of the Contract Provisions. The Contractor's responsibility shall include scheduling of all work within its contractual scope of work, creation of a Preliminary Schedule, a Baseline Schedule, production of reports, narratives, execution of the plan described by the current accepted schedule, participation in meetings with the Owner, and submission of Progress Schedules and revision data, as set forth herein and in the Contract Documents. Conventional Critical Path Method (CPM) techniques must be utilized to satisfy the requirements of this section.

#### 1.03 Schedule Requirements:

- A. Scheduling System: The scheduling system shall utilize computerized CPM scheduling techniques and be capable of identifying the critical path for the entire project as well as the critical path to completion of Contract Milestone dates.
- B. Schedule Activities: In addition to construction activities, the Baseline Schedule shall include activities for submittals, shop drawings, testing, turnover and training, review and approval cycles, meetings and operations by other agencies and all other activities that will affect the Contractor's schedule. Material selections, procurement, delivery, receiving and issuing restrictions shall be accounted for by additional activities. Contractual milestones, such as "Notice of Award," "Notice to Proceed," "Substantial Completion" and "Final Completion," etc., shall be included along with other Contract Milestones and the Contractor's own milestones. The Owner may identify additional interfaces during the course of the Work and the Contractor will incorporate these in the Progress Schedule as required.
- C. Relationships: The relationships defined between activities shall be restricted to the following:
  - 1. FS - Predecessor must finish before successor starts.
  - 2. SS - Predecessor must start before successor starts.
  - 3. FF - Predecessor must finish before successor finishes.



4. SF – Predecessor must start before successor finishes.
- D. Relationships shall also include, where necessary, definition of lag times between predecessors and successors. The use of lags is not encouraged; it is preferable to use an activity to represent the reason for the waiting period between activities.
- E. Calendars: Calendar information will include the number of working days per week and the Contractor's holiday schedule, including any other non-work periods. Each calendar must identify the planned working hours per workday. Multiple calendars may be used; in which case, documentation supporting each calendar shall be submitted.
- F. The schedule must correspond to the accepted Schedule of Values for the Contract, though a finer level of detail may be reflected in the schedule activities, these should roll up to a Schedule of Values cost item.
- G. Schedule Submission and Acceptance:
  1. Preliminary Meeting: The Contractor shall participate in a preliminary meeting to discuss the proposed schedule and the Contract requirements prior to submission of the Baseline Schedule.
  2. Preliminary Schedule: A Preliminary Schedule shall be submitted to the Owner for review as required in the Contract Provisions within fourteen (14) days from "Notice of Intent to Award." Baseline Schedule: The Baseline Schedule showing all activities shall be submitted to the Owner as required in the Contract Provisions within thirty (30) days of the issuance of the Notice to Proceed.
  3. Baseline Schedule Review and Evaluation: The Contractor shall participate in a review and evaluation of the proposed Baseline Schedule by the Owner in accordance with the schedule of events. Any revisions necessary as a result of this review shall be resubmitted for review within fourteen (14) days after the schedule review conference. This review cycle will continue until the Contractor submits a Baseline Schedule that is accepted by the Owner. The accepted Baseline Schedule shall be the schedule used by the Contractor for planning, organizing, directing the Work and reporting progress. Baseline Schedule submittals shall be in accordance with the "Schedule Submittal Format" as outlined in paragraph I.

Failure to establish an acceptable Baseline Schedule may result in the Owner withholding the payment for the Application for Payment.
  4. Progress Schedules: Progress Schedule reporting frequency shall be monthly as specified in the General Conditions. Progress Schedule submittals shall be in accordance with the "Schedule Submittal Format" as outlined in paragraph I.
  5. Job Coordination Meeting (JCM) Look-Ahead Schedule: This schedule shall be in the form of a time-scaled bar chart schedule including all Contractor activities in the window of time seven (7) days prior to the meeting and fourteen (14) days after the meeting. The Look-Ahead Schedule is to be accurately updated as of

the day before the JCM. The Look-Ahead Schedule should be printed on letter size (8.5"x11") paper for incorporation into the JCM minutes. The Contractor is to provide copies of the Look-Ahead Schedule to all JCM attendees.

6. As-Built Schedule: After all Contract work items are complete, and prior to final payment, the Contractor shall submit the final Progress Schedule that will be called the "As-Built" Schedule, showing actual start and actual finish dates for all schedule activities and milestones.
- H. Changes: The Contractor will incorporate Contract changes into the Progress Schedules for the period in which the change was issued. Contract changes that must be incorporated in Progress Schedules include Work Orders and Change Orders.
- I. Schedule Submittal Format:
1. Time-scaled bar chart schedules shall be submitted on letter, legal or ledger size paper. Font size on the submitted schedules shall not be smaller than 8 point. Each schedule shall contain a title block with the following information:
    - a. Contractor's name.
    - b. Owner's Bid Package number and project name.
    - c. Plot date.
    - d. Data date.
    - e. Symbol definitions.
  2. All project schedule files shall be copied and submitted as 2 paper copies, 1 PDF version and 1 electronic version of Primavera P6 Version 6.0. The electronic versions may be transmitted to the Owner either on CD/DVD and an email with the appropriate transmittal.
- J. Not Used.
- K. Float: Float or slack is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any of the activities in the Schedule. Float or slack time is not for the exclusive use of or benefit of the Contractor. Extensions of time for performance required under the Contract Terms and Conditions will be granted only to the extent the time adjustment for the activity or activities affected exceeds the total float or slack along the channels involved at the time notice to proceed was issued for the change.

#### 1.04 GENERAL

- A. The following phasing constraints will universally apply to all phases and elements of this Work.

1. Work shall be performed in a manner and during times so as to not impact Owner or Airport operations. Work times shall be submitted to the Owner for acceptance.
2. Work area access is not exclusive to the Contractor. Contractor shall coordinate its Work activities, times and schedules so as to not impact work by others having concurrent access to the work area.

#### 1.05 PHASING/SEQUENCING

##### A. General:

1. The Work of this Contract will be performed in a phased construction schedule which will include all requirements for submittals, material and equipment procurement, material stockpiling, setting up Contractor's staging area, surveying of existing conditions and preparation of necessary schedules to meet the rigid requirements for Project completion according to the specific phases herein outlined and for the Project Substantial Completion, in accordance with Contract Documents. Where clock times are specified for specific work elements, these times will be local times.
2. THE CONTRACTOR WILL NOTIFY THE OWNER, IN WRITING, AT LEAST 72 HOURS PRIOR TO THE DATE OF COMMENCEMENT OF ANY ON-SITE WORK, INCLUDING TEMPORARY FACILITIES, MOBILIZATION AND MATERIAL AND EQUIPMENT DELIVERIES.
3. The Contractor will coordinate with Owner and adjust Project Schedule so as not to interfere with the on-going operations of the Airport, nor impact the previously accepted work schedules of others having concurrent access to the Work area.

##### B. Work Sequence of Construction:

The sequence of construction, if any, is provided solely for the purpose of indicating the general overview of the progressive steps to the Work so that existing Airport operations and functions and other contracts will be maintained in accordance with the requirements of the Owner. The descriptions of construction sequence will not be considered as definitive explanations of all the Work which may be required during each sequence.

#### PART 2 – PRODUCTS

Not used.

#### PART 3 – EXECUTION

Not used.

END OF SECTION

## SECTION 01330 – DESIGN SUBMITTALS

### PART 1 - GENERAL

#### 1.01 DESCRIPTION:

Scope includes design submittals required for proper execution of the Work as described herein. These requirements supplement the other requirements in the Contract Documents. In cases of conflict, the more stringent requirement shall govern as determined by the Owner.

#### 1.02 SUMMARY:

- A. This Section specifies procedural requirements for submittal of Design Documents to verify that the design intent complies with provisions of the Contract Documents. The section contains detailed information required to be included in each design progress submittal made by the Contractor. All submittals shall conform to Owner's Design Standards which include, but are not limited to, Owner's Project Deliverables Requirements, Owner's CADD Standards, Owner's Design Criteria Manual, Owner's Sustainability Plan and BIM. The Contractor shall submit Design Review Documents at Preliminary, In-Progress and Final Design Level for review by the Owner, in accordance with the schedule of submittals required by the Contract Documents. Contractor shall also submit 100% completed set of documents in conformance with the Contract Documents.
- B. All drawings, calculations, and specifications submitted by the Contractor shall be prepared under the direct supervision and under the responsible charge of an appropriate Design Professional currently registered in the State of Florida. Such submittals shall be attested to by the responsible registered professional before submission and shall bear the name, registration number and discipline of the professional. Signed and sealed drawings and calculations shall be submitted for the Owner's records. Signed and sealed documents shall be submitted to Owner in a format that retains the Design Professional's name, registration number, discipline of the professional, and seal.
- C. Preliminary Design (30%) Submittal Level. The Contractor shall submit these design documents at a 30% or an appropriate level of design completion. At this review point, all design elements should appear on the drawings and specifications. Submittal shall conform to the requirements of the Contract Documents.
- D. In-Progress Design (60%) Submittal Level. For this submittal, the design, including all disciplines, shall be at 60% or an appropriate level of completion and submitted to demonstrate appropriate progress of the Preliminary Design and assure the Owner that the Final Design submittal will address all items such that the intent of the Contract is fully realized. The plans shall show all details necessary for construction and shall be coordinated among the various disciplines prior to submittal. All elements included in the scope of work, shall be completed. Submittal data for this review includes design drawings (including standards), specifications, calculations, long lead items list (if applicable), schedule of submittals, Owner's general conditions, and schedule of quality assurance testing.

- E. In-Progress Design (90%) Submittal Level. For this submittal, the design, including all disciplines, shall be at 90% or an appropriate level of completion and submitted to demonstrate appropriate progress of the Preliminary Design and assure the Owner that the Final Design submittal will address all items such that the intent of the Contract is fully realized. The plans shall show all details necessary for construction and shall be coordinated among the various disciplines prior to submittal. All elements included in the scope of work shall be completed. Submittal data for this review includes design drawings (including standards), specifications, calculations, long lead items list (if applicable), schedule of submittals, Owner's general conditions, and schedule of quality assurance testing.

Resolution of all previous design review comments shall be accomplished by Design-Builder and incorporated in the plans and specifications.

- F. Final Design (100%) Submittal Level. The purpose of this submittal is to provide completed construction documents. This submittal includes the incorporation of In Progress Review Comments. The approval by the Owner of this submittal shall constitute acceptance of such documents as Construction Documents pending issuance of Building Department permits for construction. The construction documents must be checked, signed, and sealed by the Engineer or Architect of Record, as applicable, in accordance with Florida Statutes prior to the start of construction. Any changes to approved 100% design documents must be documented using established change control procedures.

The data required for the Final Design Submittal Level is:

1. Original contract drawings and specifications.
  2. Final schedule.
  3. Long lead list if applicable.
  4. Actions and minutes from Pre-Final Review.
  5. Calculations.
  6. Standard drawings.
- G. Monthly As-Builts. Contractor will maintain an up-to-date electronic set of contract documents including drawings and specifications that are updated with ASIs, ESIs, RFIs, and other revisions. Contractor will provide adequate staffing to provide this function including up to a full time dedicated person or team to keep updated on a continuous basis. Owner shall be provided access 24 hours per day, 7 days per week to review. All sets will be merged for a complete updated set each month.
- H. Record Documents. At project closeout, Contractor will submit Record Documents to Owner reflecting as-built conditions of the project in accordance with Section 01700 – PROJECT CLOSEOUT.

### 1.03 SUBMITTAL PROCEDURES:

- A. Submittal Copy Requirements. The Contractor shall provide documents for review for each required submittal as indicated below unless otherwise directed by the Owner. The documents shall be in sets, indexed, and clearly marked to indicate the date of issue and the stage of development.

All drawing review submittals shall be in electronic format (i.e. pdf files (in searchable format) and CAD files in a format that allows them to be incorporated into the BIM Model) and submitted through the Owner's Management Software. . Supportive documentation shall be presented with standard format including, but not limited to, the following requirements for printed materials for each submittal with quantities per the Owner's request:

1. Drawings:
  - a. Up to five sets of full-size black and white prints.
  - b. Up to five sets of half-size black and white prints.
  - c. One set of electronic format documents submitted through the Owner's Management Software. (for each submittal).
  - d. Drawing index file, including font files and list of external reference files. External reference files shall not be bounded to drawing files. A layer matrix for each file will be submitted with each level of design documents.
2. Calculations:
  - a. Up to three sets of bound full-size paper copies.
  - b. Up to one set of full-size reproducible.
  - c. Calculations in electronic format with professional label and submitted through the Owner's Management Software.
3. Specifications:
  - a. Up to five sets of bound full-size copies.
  - b. Up to one set of full-size reproducible.
  - c. Specifications in electronic format with professional label and submitted through the Owner's Management Software.
4. Owner Design Standard Drawings. Contractor will list only that list including the revision designation. Final package shall include actual drawings (reproducibles) supplied to the Contractor for addition of contract numbers, sheet number, etc. (standard only).
5. Cost and Schedule. Same as for calculations.
6. Actions and Minutes for Previous Design Review.

- B. Requirements for the Preparation of Design Submittals. All design submittals between the Contractor and the owner or its agents must follow adhere to the Owner’s format and design standards.

1.04 OWNER’S ACTION:

- A. Upon receipt of a design submittal, the Owner will review the submittal for content and format. Failure to provide a complete submittal or variations from the Owner’s design standards will be cause for its rejection and return to the Contractor.
- B. The Owner will distribute the submittal in accordance with the deliverables matrix developed for each project. A copy of the design review comments form will be distributed with the design documents. The Owner will determine the date design review comments are to be returned.
- C. Design documents will be reviewed by the Owner within the time periods set forth in the Contract Documents or three weeks whichever is longer, for conformance to the requirements and intent of the Contract Documents. Comments resulting from the review will be collected by the Owner and transmitted to the Contractor. After the Contractor’s review and responses are provided on the technical review form and delivered to the Owner, the Owner will coordinate a technical review meeting, with select Owner’s agents, at which the Contractor will present the proposed corrective action for each review comment. Contractor’s questions will also be addressed at this meeting. The agreed upon review comment actions will be incorporated on the project documents prior to the next design submittal. The Contractor will take and publish minutes for these meetings through the Owner’s Management Software. A technical review meeting will be conducted at each stage of the design.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION



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

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS:

- A. Requirements of the Contract Documents, including Division 01. The Contractor will be required to follow the Submittal Management Process for the development of a Submittal Register Log and submission of Submittal Packet.

#### 1.2 SUMMARY:

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.

- A. 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.

- B. 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. Material Safety Data Sheets (MSDS).

- C. 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.
- D. 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.
  6. Listing of subcontractors, subcontracts and purchase orders.
  7. Design-Builder's construction schedule.
  8. Progress Schedules.
  9. Progress reports.

### 1.3 SUBMITTAL PROCEDURES:

- A. Coordination: Coordinate preparation and processing of submittals with performance of the Work.
1. At the beginning of the Work, the Contractor will prepare and submit a Submittal Register based on all of the submittal requirements in the specifications. Each item called out shall have an individual record (line) in the Submittal Register and this will be submitted for Owner approval and comment. The Owner will indicate on the Submittal Register those submittals that will be reviewed by the Owner.
  2. 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.
  3. The Owner will review submittals for general conformance with the Contract Documents. The review of the submittals by the Owner will not constitute any release or discharge of Contractor's sole liability and responsibility for all such submittals.
  4. Request for payment of stored materials will not be considered until submittals have been received and approved by the Owner.
  5. Transmit submittals to the Owner to prevent delays. The Contractor is responsible for delays accruing from submission or resubmission of submittal date.
  6. 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.
7. 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 Contractor's submittal requiring coordination with Contractor's other submittals until related Contractor's submittals are delivered to the Owner.
8. 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. The standard time for Owner review will be three weeks unless a different duration has been agreed to by Owner and Contractor.
  - 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 of each submittal to meet 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.
- B. All submittals shall be submitted electronically through the Owner's Management Software and use the Packages to pull register items in for review. Close-out submittals, including O&M Manuals shall be submitted through the Close-out Register for review and tracking purposes.
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.
- f. Name and address of subcontractor.
- g. Name and address of supplier.
- h. Name of manufacturer.
- i. Number and title of appropriate Specification Section.
- j. Drawing number and detail references, as appropriate.
- k. Similar definitive information as necessary.

5. The Contractor shall include on 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: \_\_\_\_\_"

C. Submittal Transmittal: The Contractor shall package each submittal appropriately for electronic 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. Submittal descriptions shall follow the Owner's naming conventions. 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.

#### 1.4 SPECIFIC SUBMITTAL REQUIREMENTS:

A. 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.

B. 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 included 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. 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 a Sample log at the beginning of the project to the Owner based on the required samples per the submittals.
  - 3. In-place samples are only allowed with written approval by Owner.
- 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.

#### 1.5 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 mark each submittal 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.

## PART 2 - PRODUCTS

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Not used.

## PART 3 - EXECUTION

### 3.5 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 Material 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 include 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 includes 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 meet 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. 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 facility 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.
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 OAC meeting with the Owner. The Submittal 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 14 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 using a modified AIA Document G-703 "Continuation Sheet". Modifications to the Template Microsoft Excel Schedule of Values will be required per Owner's direction. The basic format structure for the Schedule of Values will be governed by the following elements. Changes or clarification to the format will be at the sole approval of the Owner.
  - 1. No negative line items without Owner approval.
  - 2. Should a negative line item be allowed, it shall be billed out 100% during the first month that the negative line item appears.
  - 3. Any approved negative line items shall have all retainage dropped to 0% by the second pay application following the initial item appearing on the Schedule of Values.
  - 4. Schedule of Values shall be crafted using Excel. Monthly adjustments shall be made using a tracking mechanism. This tracking mechanism will be dictated by the Owner.
  - 5. Each Schedule of Values line item must be specific to one subcontractor once bought out.
  - 6. Once the SOV has been established, the Contractor may not add additional line items to the Schedule of Values without Owner approval unless new work is added by Owner Change Order or by Work Order.

7. Changes to existing work shall not have a new line added to the Schedule of Values but shall be adjusted using a tracking method approved by the owner.
8. A column will be added to track funding source if required by Owner.
9. Columns will be included to track status of retainage and release of retainage.

#### 1.03 PREPARING SCHEDULE OF VALUES

- A. The Contractor shall prepare Schedule of Values in coordination with preparation of Progress Schedule.
- 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 based on the Work Break Down Structure approved through the Baseline schedule review process.
- C. The Contractor shall submit copies of Schedule of Values to the Owner through the Owner's management software.
- 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. Major cost items which are not directly cost of actual work-in-place, such as distinct temporary facilities, shall be either shown as line items in Schedule of Values as General Conditions or General Requirements.
- F. The Contractor shall itemize separate line item cost for Work required by each Section of this Specification including conditions of the Contract.
- G. For each line item, the installed value should not exceed more than \$20,000.00, this value can be raised as needed with Owner approval.
- H. 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 01380 - PRE-CONSTRUCTION VIDEO

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes: construction video

#### 1.3 SUBMITTALS

- A. The Contractor shall submit a video of the entire construction site prior to the commencement of any Work. Video shall be submitted on a portable media device/hard drive. Video format shall be compatible with the latest release of Windows Media Player. The video shall be submitted for review and approval by the Owner prior to the commencement of construction activity.

### PART 2 - PRODUCTS

(Not Applicable)

### PART 3 - EXECUTION

#### 3.1 PRE-CONSTRUCTION VIDEO

- A. Before starting construction, the Contractor shall record video of the site and surrounding properties from different points of view as selected by the Owner. The Contractor shall record pre-existing conditions of the site and abutting properties obtained from several perspectives. The Contractor shall provide narrative describing the vantage point and area being recorded.
  1. The Contractor shall take videos in sufficient number to show existing conditions adjacent to the property before starting Work.
  2. The Contractor shall take videos of existing improvements adjoining the site in sufficient detail to record accurately the physical conditions at the start of construction.

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 the 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 his/her 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 DESIGN PROFESSIONAL'S DRAWINGS

- A. The Drawings furnished by the Design Professional 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.
- D. No changes (additions, deletions, or substitutions) to the drawings or specifications shall occur without the express written approval of the Owner.

### 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 and Design Professional as the Work progresses and copies will be furnished to the Owner and Design Professional at the time of completion of the Project. An inspection or checking of the Contractor's field notes or layout work by the Owner or Design Professional, 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 their 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 be referred to the Design Professional for recommendation and Owner's approval.
- C. Inspectors have the authority to immediately suspend the Work upon observation of any condition that could adversely impact or interfere with the safety or protection of persons or property.

#### 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 or Design Professional. The Owner or Design Professional 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. Required assistance from the Contractor might include use of qualified personnel and equipment to gain access to the area, safety or personal protection equipment, and other resources to provide safe egress to and from the area to be inspected.
- B. If the Owner or Design Professional 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 or Design Professional 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 01400 - QUALITY CONTROL SERVICES

### PART 1 – GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Contract Documents: drawings, contract articles, special provisions, supplementary conditions, and all Division 01 specification sections attached to the project contract.

#### 2.01 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced within the contract documents. The publications are referred to in the text by the basic designation only.
  - 1. FEDERAL AVIATION ADMINISTRATION (FAA).
    - a. FAA Advisory Circular (AC) 150/5370-2 (latest edition).
  - 2. HILLSBOROUGH COUNTY AVIATION AUTHORITY (Owner).
    - a. Owner Construction Safety and Health Guidelines Manual.
    - b. Owner Design Criteria Manual.
    - c. Tampa International Airport Sustainable Management Plan.

#### 3.01 DEFINITIONS

- A. Commissioning (Cx) - a systematic process of ensuring that all building systems meet the requirements and perform interactively according to the contract documents.
- B. Commissioning Agent or Commissioning Authority (CA) – an individual who meets the qualification requirements and is experienced in leading the commissioning effort.
- C. Control – to guide and have influence over.
- D. Definable Feature of Work (DFOW) - a task that is separate and distinct from other tasks and has control requirements and work crews unique to that task. A DFOW is identified by different trades or disciplines and is an item or activity on the construction schedule. For example, excavation, electrical, concrete, roofing, mechanical, HVAC, etc. are all definable features of work.
- E. Experienced – a minimum of five (5) years' experience.
- F. Hillsborough County Aviation Authority (Owner) – An agent or approved representative

having authority to act on behalf of the airport.

- G. Project Management Software (PMS) – software utilized for the purpose of submitting required information, correspondence, etc.; organizing and archiving project information; and managing and recalling project information.
- H. Quality – conformance to the requirements established by the contract documents, specification, and drawings.

#### 4.01 SUBMITTALS

- A. Contractor will provide a Quality Control Plan acceptable to the Owner. Initial draft of the Quality Control Plan is attached to this specification.

#### 5.01 QC PROGRAM REQUIREMENTS

- A. Establish and maintain a QC program as described in this specification section.
- B. Establish and maintain an effective QC program which produces a product that complies with the Contract Documents. A QC program comprises plans, procedures, and an organization that supports project design, construction, and commissioning. The QC program must cover all design, construction, and commissioning operations, both onsite and offsite, and be keyed to the contract design and construction sequence schedule.
- C. Contractor will incorporate the attached Quality Control Program, as described in Contractor’s “Tampa International Airport Central Relocation Quality and System Acceptance Plan.” This plan has a track record of success and was previously accepted by the Owner during the MTAC project. This program will include but not be limited to: project coordination, testing, inspections, certifications and off-site verification of test results with Bombardier engineering as required. QC updates will be covered as part of weekly project update meetings. Quality related documentation will be provided to the Owner in compliance with the Contract. All off-site quality related project activities are included in the provided project schedule (please refer to Attachment A of the offer letter). Contractor will designate Joe Frazier as the on-site QC manager for the duration of this project and authorize him to designate supervisory roles, as needed, to provide acceptable supervision during all on-site quality related project activities. No quality related project activities will occur without on-site supervision from the QC manager or a designated supervisor. No independent inspections are required, nor included in Contractor’s proposal. Any independent inspection required by the Owner will be the responsibility of the Owner.

#### 6.01 COMMISSIONING

- A. Commissioning (Cx) is a systematic process of ensuring that all building systems meet the requirements and perform interactively according to the Contract. The QC Program is a key to this process by coordinating, verifying, and documenting measures to achieve the following objectives:

1. Verify and document that the applicable equipment and systems are installed in accordance with the design intent as expressed through the Contract Documents, according to the manufacturer's recommendations, and industry accepted standards.
  2. Verify and document that equipment and systems receive complete operational checkout by the installing contractors.
  3. Verify and document proper performance of equipment and systems.
  4. Verify and document that the interaction between associated equipment and systems performs per the sequences of operation outlined in the contract documents.
  5. Verify that Operation and Maintenance (O&M) documentation is complete.
  6. Verify the Training Plan and training materials are accurate, and provide correct instruction and documentation on the critical elements of the products, materials, and systems in the constructed facility. Verify that all identified Owner operating and maintenance personnel are trained.
- B. Additional information and requirements for commissioning are specified in the HCAA Design Criteria Manual.

#### 7.01 QC CERTIFICATIONS

A. QC Report Certifications:

1. Contain the following statement within the QC Reports: "On behalf of the Contractor, I certify that this report is complete, correct, and equipment and material used along with the work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report."

B. Invoice Certifications:

1. Furnish a certificate to Owner with each payment request, signed by the QC Manager, attesting that the work for which payment is requested, including stored material, is in compliance with Contract requirements and that redline and as-built drawings are current and coordinated.

C. Redline and As-built Drawings Certifications:

1. The QC Manager shall provide a certification along with the redline and as-built drawing submissions stating that the drawings have been reviewed and provide an

accurate depiction of the actual field installed condition.

D. Completion Certifications:

1. Upon completion of work under this Contract, or a portion thereof in the case of phased completion, the QC Manager must furnish a certificate to Owner attesting that "the work has been completed, inspected, tested, and is in compliance with the Contract."

8.01 COMPLETION INSPECTIONS

A. Punch-Out Inspection:

1. Near the completion of all work or any phased increment thereof, the QC Manager and the CA must conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings, specifications and Contract. Include in the punch list any remaining items on the "Rework Items List", which were not corrected prior to the Punch-Out Inspection. Include within the punch list the estimated date by which the deficiencies will be corrected. Provide a copy of the punch list to Owner per Article 6 and Division 1 specification section 01700 - PROJECT CLOSEOUT of the contract. The QC Manager must make follow-on inspections to ascertain that all deficiencies have been corrected. Once this is accomplished, notify Owner that the facility, or portion thereof, is ready for Owner's Pre-Final Inspection.

B. Pre-Final Inspection:

1. Owner and the QC Manager will perform this inspection to verify that the facility is complete and ready to be occupied. An Owner "Pre-Final Punch List" will be documented by the contractor's QC Manager as a result of this inspection. The QC Manager will ensure that all items on this list are corrected prior to notifying Owner that a "Final" inspection can be scheduled. Any items noted on the "Pre-Final" inspection must be corrected in a timely manner and be accomplished before the contract completion date for the work, or any particular increment thereof, if the project is divided into increments by separate completion dates.

C. Final Acceptance Inspection:

1. Notify Owner at least 14 calendar days prior to the date a final acceptance inspection can be held. State within the notice that all items previously identified on the pre-final punch list will be corrected and acceptable, along with any other unfinished Contract work, by the date of the final acceptance inspection. The Contractor must be represented by the QC Manager, the Project Superintendent, the CA, and others deemed necessary. Attendees for Owner will include the Project Manager, other Owner personnel, and personnel representing clients or tenants. Failure of the Contractor to have all contract



work acceptably complete for this inspection will be cause for Owner to bill the Contractor for additional inspection costs in accordance with the Contract.

## 9.01 DOCUMENTATION

- A. Maintain current and complete records of on-site and off-site QC program operations and activities. Establish and maintain QC documentation in an electronic format within an approved PMS database, organized, bookmarked, searchable, and readily accessible to Owner 24-hours a day, 7-days a week.
- B. Construction Documentation:
1. Reports are required for each day that work is performed and must be attached to the Contractor QC Report prepared for the same day. Maintain current and complete records of on-site and off-site QC program operations and activities. Account for each calendar day throughout the life of the Contract. The Project Superintendent and the QC Manager must prepare and sign the Contractor Production and QC Reports, respectively.
- Daily reporting, QC or otherwise, is not included in Contractor's scope of work. Contractor will submit QC reports at the weekly scheduled project meetings.
- C. Testing Plan and Registers:
1. As tests are performed, the CA and the QC Manager will record on the "Testing Plan and Register" the date the test was performed and the date the test results were forwarded to Owner. Attach a copy of the updated "Testing Plan and Log" to the last daily QC Report of each month. Provide a copy of the final "Testing Plan and Register" to the CA for inclusion into the final commissioning documentation.
- D. Rework Items List:
1. The QC Manager must maintain a list of work that does not comply with the Contract, identifying what items need to be reworked, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected. There is no requirement to report a rework item that is corrected the same day it is discovered. Attach a copy of the "Rework Items List" to the last daily QC Report of each month. The Contractor is responsible for including those items identified by Owner.
- E. Redline and As-Built Drawings:
1. The QC Manager is required to ensure the redline and as-built drawings, required by Section 01700 closeout submittals are kept current on a daily basis and marked to show deviations which have been made from the Contract drawings. Ensure each deviation has been identified with the appropriate modifying documentation

(e.g. Change Order, Request for Information (RFI), etc.). The QC Manager or QC Specialist assigned to an area of responsibility must initial each revision. Upon completion of work, the QC Manager will furnish a certificate attesting to the accuracy of redline and as-built drawings prior to submission to Owner.

10.01 NOTIFICATION ON NON-COMPLIANCE

- A. Owner will notify the Contractor of any detected non-compliance with the Contract Documents. The Contractor shall take corrective action after receipt of such notice per the Contract requirements. Such notice, when delivered to the Contractor at the work site, is deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders will be made the subject of claim for extension of time for excess costs or damages by 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.

##### B. Test Register:

The Contractor shall provide a Test Register identifying all required testing in accordance with the contract documents. Register shall be kept updated and used to track test information including, but not limited to, date, time and location of tests.

#### 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 Contract Documents and the design drawings and specifications.

#### 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 email 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 through the Owners Project Management Software Inspections and Tests modules:

- (1) Owner.
- (2) Contractor
- (3) Designer of Record.
- (4) 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 notarized 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 materials 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 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.

### 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 been in storage at the mixing site for over 30 days.
3. Compressive strength cube 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 curing 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. Cylinder storage curing box must meet ACI guidelines.

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 charge 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 laboratory 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.

X. 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.

3.04 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 01520 - TEMPORARY SIGNAGE

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

Provide all Work including all equipment, appliances, labor, materials, related electrical work, transportation and all operations required to provide temporary signs as specified herein or as instructed by the Owner.

#### 1.02 QUALITY ASSURANCE

##### A. Qualifications:

1. Contractor will submit evidence of having successfully completed a contract of similar nature and magnitude and will have at least five years of documented experience in the type of Work specified herein.
2. Where special job conditions occur or where there is uncertainty as to interpretation, before execution of the Work, Contractor will request clarification from the Owner in writing.
3. Contractor will visit the Project site to determine specific installation and job conditions.
4. Commencement of work will constitute an unqualified acceptance by the Contractor of the installed Work on which signage work depends and that work as installed is suitable for the satisfactory execution of signage work.

##### B. Requirements of Regulatory Agencies:

1. Work performed under this Section will be strictly governed by local and state authorities of this expertise.
2. Maintain safety amongst persons employed in accordance with latest standards set by OSHA.

#### 1.03 SUBMITTALS

##### A. In accordance with Section 01340 - SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES, submit the following:

1. Shop Drawings
  - a. Submit Shop Drawings for review prior to fabrication of all items furnished under this Contract.
  - b. Submit Shop Drawings for approval prior to fabrication of all items furnished under this Contract.
  - c. Exact identification of all paint formulas and colors.

2. Contractor will not order any materials or perform any construction, demolition or fabrication until all submittals have been reviewed and approved.
3. Any construction, demolition or fabrication performed or materials ordered prior to the approval of the prototypes will be done at the Contractor's own risk and expense.
4. Approval by the Owner of the Contractor's submittal relates to the requirements for design and compliance with the Contract Documents only.
5. Approval does not relieve the Contractor from responsibility for errors in dimension or for inadequate or improper use of materials for construction.

#### 1.04 SEQUENCING AND COORDINATION

Integrate and schedule coordination of removal, installation and all work related to signage with other related trades.

#### 1.05 REMOVAL AND STORAGE

- A. This portion of the Work will be included in the Contract Sum and not included in the Allowance.
- B. Contractor will remove and reuse all existing signage in accordance with the Contract Documents.
- C. All signs, extrusions, graphic or signage material will be carefully disassembled, removed from premises and stored by the Contractor prior to refurbishing and reinstallation.
- D. All signs, extrusions, graphic or signage material will be carefully protected with wrapping material and will be on palettes, platforms or other support structures and not stored directly on the floor during construction operations.
- E. All signs, extrusions, graphic or signage materials will not be exposed to damaging conditions or abrasion during removal, storage, fabrication, delivery or installation.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. To establish a standard of quality, design, and function desired, portions of the Contract Documents have been based on the products of manufacturers mentioned hereafter.
- B. All materials shown on the Contract Documents will be of the best quality products available.
- C. All additional parts necessary to complete fabrication and installation will be furnished by the Contractor.
- D. Should conflicts occur in or between the Drawings, sign schedules, Specifications and on-site

conditions, Contractor is deemed to have included under the Contract Sum the more expensive item or method of construction.

E. All message patterns will be die cut.

## 2.02 VINYL SHEETING (for lettering and Authority Logos)

- A. Manufacturer: 3M Traffic Controls Divisions or equal  
2860 Bankers Industrial Drive  
Atlanta, GA 30360
- B. Type: "Scotchlite" Reflective Sheeting Engineer Grade or equal  
Parkway White 3290 (for lettering) and  
Blue and Red for logos.
- C. Thickness: 3.5 Mils
- D. Adhesive Backing: Continuous pressure sensitive backing manufactured by Minnesota Mining and Manufacturing Company or equal.

## 2.03 POLYURETHANE PAINTS - EXTERIOR

- A. Manufacturer: Sherwin Williams
- B. Type: Acrylic polyurethane

## 2.04 PLYWOOD

- A. Manufacturer: Simpson or equal
- B. Type: MDO

## 2.05 WOOD

- A. All wood will be kiln dried, select furniture of quality A or better, for all exposed surfaces.
- B. Interior wood blocking or framing will be kiln dried, Wolmanized "B" grade or better.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Where adhesive mounting is specified, only adhesives specifically recommended by the manufacturer for compatibility with the base materials and adhesive strength will be used.
- B. Sign material lamination will utilize proper adhesives and will be smooth, consistent and free of bubbles, bulging and foreign matter.
- C. All message pattern applications will be crisp, sharp, clean and free of nicks, discontinuous curves, line wavers and other imperfections.

- D. All finished work will be smooth, free of scratches, gouges and other imperfections. Sign edges will be straight, smooth, free of cutting marks and other defects.
- E. Contractor will repair and replace damaged materials or signs caused by installer or any other related trades.
- F. Contractor will coordinate with other related trades the removal and installation of signage and components to insure uninterrupted progress of Work.

### 3.02 FABRICATION

- A. All Work will be fabricated to approved Shop Drawings.
- B. All cuffing, fabrication, and assembly will be done in the factory and shipped to the Project site as one complete unit, unless otherwise approved by the Owner.
- C. All joints, corners, miters, splices, or signage will be accurately machined, filled, fitted and rigidly framed together at joints and contact points and will be painted smooth to produce a monolithic appearance with visually imperceptible joints.
- D. All mechanical fasteners will be counter-sunk, filled, ground smooth, and painted as to render them visually imperceptible, unless otherwise specified as exposed.
- E. The heads of removable mounting fasteners will match the color and finish of the sign area where they occur.
- F. Work will be erected plumb, level, and true, with proper alignment and proper relationship to the work of the trades.
- G. All priming, surface preparation and paint application will be in accordance with the manufacturer's written data, description and instruction.
- H. All signs will be flat, true, and free from waviness. All exposed surfaces will not deviate from flat by more than 1/16 inch in any 36 inch distance.

### 3.03 MESSAGE PATTERNS

- A. The Contractor will fabricate sign text from master alphabet and master symbols approved by the Owner and Contractor's Design Professional. Interior signage will be Furtiger 65 Bold at 106% spacing and exterior signage will be Furtiger 55 Roman at 106% spacing.
- B. Full size message patterns for each sign will be prepared by the Contractor. These patterns will be used for correction and/or additions prior to fabrication. Changes will be considered as part of the scope of work.
- C. All vinyl message patterns used for final sign application will be die cut and not hand cut from vinyl, unless otherwise approved by the Contractor's Design Professional in writing.
- D. Sign text mechanicals are not to be enlarged for position only and are not to be used for photographic reproduction.

- E. All panel or background sizes will be full size showing seam placement.
- F. Full scale message patterns will be submitted on paper showing proper size of the alphabet, airport logo or any other message legend. Hand drawn patterns are not acceptable.

#### 3.04 LETTER FORMS AND SYMBOLS

- A. Letter forms for all signs will match existing airport sign letter forms and symbol standards.
- B. All letter forms and symbols will be free of nicks, burns, cuts, bubbles and any other irregularities.
- C. All symbols or forms used for final sign application or final finishing will be die cut. Hand cut letters or symbols are not acceptable.

#### 3.05 MATERIALS CLEANING AND INSTALLATION

- A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, and holes, joints and cracks filled flush and smooth with adjoining surface prior to attaching signage.
- B. Do not commence installation until backup materials are in a condition satisfactory to the Contractor to receive surfacing.
- C. Applications of adhesives should comply with adhesive manufacturer's application instructions on the container regarding:
  - 1. Method of application
  - 2. Spread rate
  - 3. Drying-time
  - 4. Open time
  - 5. Temperature and relative humidity limitations.

#### 3.06 VINYL SHEETING AND DIE CUTS

- A. Text material for finished letter form, symbol or friskets on all signs, unless otherwise noted, will be die-cut pressure sensitive and will be pre-aligned and pre-spaced on carrier tape according to the sign text layouts.
- B. Hand cut finished letter forms, symbols or friskets will not be accepted.
- C. Vinyl sign text material for all sign types will be die cut and conform to the prescribed letter forms with a tolerance of +.015 inches and will be free of irregularities such as nicks, burrs, broken points and discontinuous curves.
- D. All letter sizes indicated on the sign text layouts will be determined by the letter height of the capital "B."



- E. All letters, symbols and targets will be pre-aligned and pre-spaced on carrier tape in accordance with the spacing guides.
- F. The colors will be as specified and will not be limited to manufacturer's standard colors.
- G. All vinyl sign text will be installed as per written instructions and recommendations of the manufacturer.
- H. All surfaces receiving application of vinyl sign text will first be cleaned of all dirt and/or accumulated foreign matter.

### 3.07 PAINTS AND INKS

- A. All paints and inks will be of type specially formulated and manufactured for application on the surface material upon which it is to be applied and recommended for such use by the manufacturer on the paint or ink.
- B. Priming, surface preparation and application of all materials will be in strict accordance with manufacturer's written product data and description and as otherwise necessary to produce data with a finish free of blistering, bleeding, fading and other imperfections.
- C. Order or mix paint for each color in quantity to assure consistent application for all signs in a given color.
- D. All paint and ink colors and samples will match specified manufacturer's color number, swatches and/or samples supplied by the Owner and/or the Contractor's Design Professional and will be as selected and approved by the Owner and/or Contractor's Design Professional during shop drawing review.
- E. All paint colors will be consistent in chroma and value and will maintain proper opacity or translucency.
- F. All paint and inks will be of the finest quality of heat, moisture and fade proof pigments and vehicles. For each color specified on sign schedule, paint will be mixed in sufficient quantity to accommodate every sign application of the specified color.
- G. The Contractor will allow paint surfaces to air dry 48 hours prior to the application of masking film which will be applied to protect all sign surfaces during shipping and erection.

### 3.08 PAINTING APPLICATION

All painting and spraying will be performed in well ventilated conditions and all precautions taken as necessary and as recommended by the paint manufacturer.

### 3.09 TEMPORARY SIGNAGE

- A. Temporary signage will conform to all conditions, Specifications and Drawings.
- B. All temporary signage will be finished to appear as permanent signage.

- C. All cuts and rounded edges will be smooth sanded prior to painting.
- D. All edges will be painted to match the front of sign as per painting specifications.
- E. Backs of sign will be painted where installation of sign shows exposed back.
- F. Refer to Owner's Allowances Section for temporary signage allocation.

### 3.10 CLEANUP

- A. The Contractor will be obliged to keep all areas and items clean, neat, and free of waste material, dirt and debris during construction and installation.
- B. After installation is complete, remove and dispose of all packing, packaging, waste materials and debris.
- C. All areas and items will be left clean and free from marks, scratches, dust, lint and other defects.

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 safety and security during construction of the Project. The following methods, procedures, rules and authorities must be adhered to during project construction., The Hillsborough County Aviation Authority (HCAA) Construction Safety & Security Guidelines Manual applies to the project, and the Contractor will also comply with all safety requirements described below, unless in direct conflict with the HCAA Construction Safety & Security 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 safe for all users.
  - 2. Keep the Airport operational for all users.
  - 3. Maintain safety of Airport operations.
  - 4. Minimize delays to Airport operations.
  - 5. Minimize delays to construction operations.
  - 6. Minimize Airport-operation/construction-activity conflicts.
  - 7. Minimize impacts to tenants and passengers.

#### 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 site specific safety plan (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 inspected, tagged 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, unless Owner provides prior written approval and Design-Builder provides safety plan.

#### 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. 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 herein will display 3-foot by 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, taxi lanes, 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 sub phases 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 once per work shift 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 FAA Advisory Circular 150/5370-2. Construction within the safety areas or Obstacle Free Zone (OFZ), as defined in FAA Advisory Circular 150/5300-13, latest edition is prohibited 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 taxi lane 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 or Contract Sum 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 taxi lanes. 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 a Temporary Permit Application 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. The maximum height allowed on the Airport is subject to review by the Owner 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 Owner 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. No vehicle taller than 13'-6" will be allowed to operate on the first floor of the Economy Parking Garage structure or 8'-0" on all levels above the first floor.** 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.

1.05 Contractor's Security Requirements:

- A. 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. Also, if applicable, the Contractor will execute the Airport Access Request Form and follow all rules and guidelines stated therein. 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. The Contractor will also comply with all requirements concerning sensitive security information as promulgated by the TSA.

- B. 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.
  
- C. 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 – (Project Name) 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 for the CHRC and an additional STA fee based upon the expiration length 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 (depending on expiration date period). Contractor shall inquire as to the current applicable rates for the above fees.

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. The Contractor will be assessed Three Hundred Dollars (\$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 liquidated 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. Contractor agrees that 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.

- D. 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.
- E. 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.
- F. Employee Parking:
1. 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.
  2. 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.
  3. 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.
- G. 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.
- H. Breach of Security Fine: Contractor agrees that liquidated damages in the amount of Ten Thousand Dollars (\$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.

- I. Amendments to this Safety Plan and Security requirements may be made by the Owner and will be immediately binding on Contractor upon notice of such applicable amendments.

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.
- E. Notwithstanding the foregoing, Owner warrants to the Contractor the accuracy of any information contained in any document or drawing relating to subsurface conditions.

#### 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, FAA	(813) 371-7751
HCAA	Mr. Nick D'Jimas	(813) 676-4346
TECO	Mr. Greg Keininger	(813) 228-4231
Fuel Lines	Mr. Enos Sage	(813) 396-3626
Irrigation Lines	Mr. Bruce Sather	(813) 870-7883
City of Tampa - Water	Mr. Chad Bailey	(813) 274-3344
City of Tampa – Wastewater	Mr. Jeff Hilton	(813) 274-7844

- 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 (1) Call Sunshine 811, and (2) 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. At the Owner's sole discretion, the Contractor may be directed to camera the line to ensure that all siltation or materials have been removed. Cost for this work will not be an increase to the Contract Lump Sum amount.
- 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 2 – 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, petrochemical 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 prepackaging, 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 written 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 non-compatible 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.
- G. Install and maintain barricades, stanchions, or other means of protection to keep traffic off of installed product as necessary.

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 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 in writing 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. Not Used

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, Project Data submittals, or mock-ups 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, mock-ups, 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 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 ingredients 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 standards, codes or regulations 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 and Design Professional'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.

See Section 014000 – Quality Control, 1.14 Material Receipt and Storage Inspections.

#### 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:

B. Submit a material receipt, offloading, and storage plan to the Owner for approval that addresses the following at a minimum:

1. Delivery, handling, and storage of 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. Delivery of 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. Inspection of products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected. Submission of a material receipt inspection report including checklists, pictures, etc. along with the daily production report.
6. Storage of products at the Project site in a manner that will facilitate inspection and measurement of quantity or counting of units.

7. Storage of 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.
  9. Compliance with laws and regulations regarding storage of material and equipment such as quantity restrictions, stacking, compatibility with adjacent material, fire protection, containment, etc.
  10. Provision of drawings indicating delivery routes, off-loading and lay-down areas, and storage areas.
- C. Revise and resubmit the material receipt, offloading, and storage plan to the Owner for approval as onsite conditions change and/or project phasing progresses.

#### 1.03 MANUFACTURER'S RECOMMENDATIONS

Except as otherwise approved by the Owner, Contractor 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. At the time of delivery, inspect and 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.
- D. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
- E. Restore storage areas to their previous condition regarding cleanliness. Remove all trash, debris, and clean up any spills.

#### 1.06 REPAIRS AND REPLACEMENTS

Contractor shall:

- A. In 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.

#### 1.07 REMOVAL OF NON-COMPLIANT MATERIAL AND EQUIPMENT

- A. Material or equipment that is determined to be non-compliant with contract requirements shall not be off-loaded or stored onsite. The Contractor shall make prompt arrangements to have the material or equipment removed from the site. In the event the Contractor cannot or refuses to remove the material or equipment, the Owner reserves the right to have the non-compliant material or equipment removed from the site and stored at an appropriate location at the Contractor's expense.

#### 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; or any substance that contains per- and polyfluoroalkyl substances (PFAS).
- 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. Unless specifically waived by the Owner in writing, the Contractor shall include a Construction Waste Management Plan as outlined in this section.
- B. Submit to the Owner a Construction Waste Management (CWM) Plan narrative in accordance with these specifications.
- C. 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 [Note to Designer: Insert # of applicable waste streams to project scope here, typically no greater than five (5)] 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. Should phased Substantial Completion be requested by the Owner, the Contractor and Owner will establish the extent of the area and scope that reached Substantial Completion. For each phased Substantial Completion area, the Contractor shall comply with this section.

#### 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.

In Owner's sole discretion, it may waive the above requirements in writing and provide a deadline after Substantial Completion, but before Final Completion for compliance.

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 impacted by Work under the Contract. 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. In the event the Contractor does not strictly comply with these cleaning requirements, Owner may have the Work cleaned and backcharge the Contractor.

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 for projects under \$10 million and 60 days for projects above \$10 million. 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 pursuant to Contract Documents 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 pursuant to Contract Documents.

### 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 on Owner or statutory forms:
    - a. Consent of Surety to Payment
    - b. Contractor's Final Affidavit of Payment of Debts and Claims
    - c. Contractor's Affidavit of Releases of Lien waivers
    - d. Waiver of Right to Claim Against Payment Bond upon Final Payment
    - e. List of Contractor's first tier and second tier subcontractors and suppliers, including addresses, phone numbers and a summary of the scope of work.
    - f. Final release of lien from each subcontractor and supplier listed in d. above
    - g. Statement of compliance with labor standards and payment of all applicable taxes

- h. Statement of Contractor's one-year general warranty
  - i. Specific warranties as specified in Contract Documents and include the subcontractor or supplier with its contact information when applicable.
  - j. Accounting of final Contract amount
  - k. Accounting of actual DBE (W/MBE) participation
  - l. As-Built drawings sufficient for the production of record drawings
  - m. O&M manuals, Record Project Manual and record documents (see paragraph 1.06)
  - n. Evidence of continuing insurance complying with specified requirements
  - o. Contractor's final pay application
  - p. 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, Designer of Record 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. Record Drawings shall be sent electronically through the Owner's Management Software.
  - 3. Record Project Manual: Upon completion of mark-up, submit to Owner for Owner's records. Record Project Manual shall be sent electronically through the

Owner's Management Software.

4. Maintenance Manuals: Contractor will complete, place in order, properly identify and submit to Owner for Owner's records. Maintenance Manuals shall be sent electronically through the Owner's Management Software (close-out module) prior to required training and before substantial completion when applicable.
  5. Miscellaneous Record Submittals: As defined in F, 1, a-g of this Section: Provide Reports from Owner's Management Software for each of the areas of Miscellaneous Records with Bookmarks for each section. Complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to Owner for Owner's records through the Owner's Management Software Close-out Module after Substantial Completion.
- B. Contractor's as-built drawings:
1. As-built drawings: The Contractor will maintain one conformed 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. Should as-built drawings be maintained electronically, the Owner shall have access to them at all times.
    - 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, or editable in electronic format, 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. The Contractor will transmit original ½ size hard copy to the Owner and the Contractor will submit a consolidated electronic copy via Owner's Management Software and organized by design packages inclusive of all ASIs/ESIs.
- f. As-built drawings will contain the names, addresses and phone numbers of the Contractor and the major subcontractors.
- g. As-built drawings will be reviewed monthly for compliance and acceptability.
- h. 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 through the Owner's Management Software Close-out Module
  - f. Upon Owner's approval, the Contractor will submit the completed record project manual to the Owner through the Owner's Management Software Close-out Module
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 converted to PDF format prior to submittal using strike-throughs for deletions, bold and italic for revisions and additions, and/or other acceptable method(s) where feasible to distinguish between changes. All of this information is to be submitted through the Owner's Management Software in individual records for each document.

D. Record Product Data:

During progress of the Work, maintain electronic copies 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. Product Data should be submitted through the Owner's Management Software Close-out Module by Specification Division with each Specification Subdivision requirement bookmarked. Submit prior to Final Completion.

E. Record Sample Submittal:

After Substantial Completion, and prior to Final 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 should be properly entered in to the Owner's Management Software in the appropriate modules for the types of records, and ready for continued use and reference. For Close-Out submission, provide reports as described in section 1.06.A.5 above. Categories of requirements resulting in miscellaneous work records are recognized to include, but, 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 PDF with Optical Character Recognition

(OCR) and a report quality of 300 dpi or higher format. All formatting and tabular data will be preserved. Tabular data will be embedded in the document in Excel for Windows format.

- b. All Drawings will be provided in AutoCAD 2000 (or higher) format, as well as a PDF document of each drawing.
- c. After the documents are in correct digital electronic format, they will be submitted to the Owner on a solid state hard drive containing all documents in an organized document library.

#### 1.07 GUARANTEES AND WARRANTIES

- A. After Substantial Completion and 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.
- 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.
- E. All Guarantees and Warranties will be submitted to the Owner through the Owner's Management Software Close-Out Module and via original hard copy, giving a summary of the guarantees and warranties attached and stating the following with respect to each:
  - 1. Description of work included
  - 2. Name of subcontractors
  - 3. Period of guarantee/warranty

4. Conditions of guarantee/warranty

1.08 OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS

- A. Prior to any required training, and 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. Each manual will be uploaded to the Owner's Management Software Close-out Module in a separate record and the documents will be properly bookmarked for ease of use.
1. In addition to the electronic version submitted through Owner's Management Software, the Contractor will submit one copy of each completed manual on equipment and systems, in final form, to the Owner for review and distribution. There should be an individual manual that is organized and indexed 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 will be submitted through the BIM Model submittal requirement.
- 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 transmit and turn over, at the Project site, in a 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. Prior 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 by 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.
- 3. Owner's signature on any manufacturer's or other warranties does not excuse the Contractor from its common law warranty obligations or its contractual warranty obligations.

## 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. Only the Work corrected during this one-year period will be warranted for one year from the date of accepted correction. With respect to any portion of Work performed after Substantial Completion, the one-year correction period shall be extended by the period of time between Substantial Completion and the actual performance of the later Work.

### 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 contractual warranties and will not limit the duties, obligations, rights 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 not in accordance to the requirements of the Contract Documents 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.
3. Written warranties shall not require the signature of the Owner for compliance.

## 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. Provide one Electronic Copy and one Hard copy 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. All Warranties should be submitted through the owners Project Management Software.
  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

# **ATTACHMENT 5**

To

Contract for Services Between Owner and Contractor as modified

For

## **Airside A and C Shuttle Car and Control System Replacement – Phase 2**

Authority Project No. 8420 21

Tampa International Airport

## **DESIGN CRITERIA MANUAL**

The Design Criteria Manual is posted on the Authority's website at [Tampaairport.com/Airport Business under Capital Development/Resources](http://Tampaairport.com/Airport Business under Capital Development/Resources).

# **ATTACHMENT 6**

To

Contract for Services Between Owner and Contractor as modified

For

## **Airside A and C Shuttle Car and Control System Replacement – Phase 2**

Authority Project No. 8420 21

Tampa International Airport

## **E-VERIFY CERTIFICATION**



Hillsborough County Aviation Authority  
PO Box 22287  
Tampa, FL 33622  
Telephone: 813-870-8700

## E-Verify Certification

### Airside A and C Shuttle Car and Control System Replacement – Phase 2

This certification is required in accordance with the State of Florida, Office of the Governor, Executive Order Number 11-116 (Verification of Employment Status) and Fla. Stat. Section 448.095.

The State of Florida, Office of the Governor, Executive Order Number 11-116 (Verification of Employment Status), and any projects with Florida Department of Transportation (FDOT) funding as part of a Joint Participation Agreement between FDOT and the Authority, require, as a condition of all contracts for the provision of goods or services, an express requirement that contractors utilize the U.S. Department of Homeland Security’s E-Verify system to verify the employment eligibility of all new employees hired by the contractor during the term of the contract, and an express requirement that contractors include in subcontracts the requirement that subcontractors performing work or providing services pursuant to the contract utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

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Company: \_\_\_\_\_ FID or EIN No.: \_\_\_\_\_

Address: \_\_\_\_\_ City/State/Zip: \_\_\_\_\_

I, \_\_\_\_\_, as a representative of \_\_\_\_\_, certify and affirm that this company will comply with the E-Verification requirements of Executive Order Number 11-116 and Fla. Stat. Section 448.095.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

[Affix Corporate Resolution if not signed by the President or Vice President of the Company]