SECTION 27 53 21 – A-VDGS AND FINAL BAG INTEGRATION

PART 1 - GENERAL

1.1 SUMMARY

A. Provide all labor, materials, and equipment for the complete installation of Work called for in the Contract Documents.

B. This section includes the minimum requirements for the integration of the final bag/lightning notification light and ramp closed notification light with the Advanced Visual Guidance Docking System (A-VDGS).

C. Included in this section are the minimum composition requirements and installation methods for the following:

1. New final bag light fixtures on the ramp and at the gate counters.
2. Addition of the door release button at the gate counter.
3. Software modifications to the A-VDGS will cause the lights to be activated by the SAM system and by the lightning warning system.

1.2 DEFINITIONS AND TERMS

A. Trade association names and communications terminology are frequently abbreviated. The following acronyms or abbreviations may be referenced within this Section:

1. ANSI American National Standards Institute
2. AWG American Wire Gauge
3. BICSI Building Industry Consulting Service International
4. DFW Dallas/Fort Worth International Airport
5. EIA Electronics Industries Association
6. NECA National Electrical Contractors Association
7. NEMA National Electric Manufacturers Association
8. NFPA National Fire Protection Association
9. OAR Owner’s Authorized Representative
10. RCDD Registered Communications Distribution Designer
11. SAM Safegate SafeControl Apron Management System
12. STD Standard
13. TIA Telecommunications Industry Association
14. UL Underwriters Laboratories

1.3 QUALITY ASSURANCE

A. All cable and equipment shall be installed in a neat and workmanlike manner. All methods of construction that are not specifically described or indicated in the contract documents shall be subject to the control and approval of the OAR.

B. Equipment and materials shall be of the quality and manufacture indicated. The equipment specified is based upon the acceptable manufacturers listed. Where “approved equal” is stated,

or a substitution is requested, equipment shall be equivalent in every way to that of the equipment specified. All substitutions are subject to the control and approval of the OAR.

C. Contractor's Qualifications:

1. Firms regularly engaged in the installation of Electrical Systems or Data Communications cabling and that have five (5) years of installation experience with systems similar to that required for this project.
2. Provide references to include client names, phone numbers and a summary of project details. These references will be checked, and the clients will be asked questions relative to the performance of your company.
3. Provide verification that installation personnel responsible have been properly trained to install the products described in this Section.
4. Provide a BICSI RCDD certified professional for oversight on this project. This person does not have to be working on-site but must be accessible to answer questions and provide weekly status reports. The RCDD shall be a full-time employee of the contractor.
5. Provide full time project manager with a minimum of ten (10) years field experience in installation of communications systems and infrastructures. Project manager shall be assigned for the duration of the project and shall not be replaced without written consent from the OAR.

D. Manufacturer's Qualifications:

1. Firms regularly engaged in manufacture of products of the types, ratings and capacities required for this project; whose products have been in satisfactory use in similar service for not less than five (5) years, with production capabilities per applicable NEMA standards.

E. Material and Work specified herein shall comply with the applicable requirements of:

1. NECA 1 – Standard Practice of Good Workmanship in Electrical Construction, 2015
2. ANSI/NECA/BICSI-568 – Standard for Installing Commercial building Telecommunications Cabling, 2006
3. ANSI/TIA/EIA-569-D – Commercial Building Standard for Telecommunications Pathways and Spaces, 2015
4. ANSI/TIA/EIA-606-C – Administration Standard for the Telecommunications Infrastructure of Commercial Buildings, 2017
5. ANSI-J-STD-607-C – Joint Standard for Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications, 2015
6. NFPA 70 – National Electric Code, 2017
7. BICSI – Telecommunications Distribution Methods Manual, 14th Edition
8. DFW Airport Design Criteria Manual
9. Applicable codes and directives of authorities having jurisdiction

F. Work:

1. The Work shall be performed in compliance with the applicable manufacturer's installation instructions, Standards, and certifications listed herein, the Contract Documents, and governing codes and regulations of the authorities having jurisdiction.
2. The drawing and specification requirements govern where they exceed Code and Regulation requirements.
3. Where requirements between governing Codes and Regulations vary, the more restrictive provision applies.
4. Nothing in the Contract Documents grants authority or permission to disregard or violate any legal requirements.

1.4 CONFLICTS

A. This installation shall be made in strict accordance with the Specifications, Drawings, any applicable codes, referenced publications and standards. In case of conflicts between the aforementioned, notify the OAR in writing prior to commencement of affected work.

1.5 SCHEDULING

A. The Contractor shall comply with all scheduling requests established by OAR, both prior to commencing Work, and during construction. The Contractor shall provide a detailed schedule of work to be performed.

1.6 REQUIREMENTS

A. All references to manufacturers, model numbers and other pertinent information herein are intended to establish standards of performance and quality of construction. The OAR must approve material submittal and substitutions in writing.

B. Verification that all the components specified and installed meet the criteria specified by the respective component manufacturer, supplier and designer is the responsibility of the Contractor.

C. All installation tools, special equipment and testing apparatus required to accomplish field connections and related work as described herein shall be furnished by the Contractor at no additional cost.

D. The requirements as given in this document are to be adhered to unless revised by the OAR in writing.

E. The Owner reserves the right to waive these requirements at any time.

1.7 SUBMITTALS

A. Comply with provisions of Division 01.

B. Comply with provisions of Section 27 05 00.

C. Provide product data for the following:

1. Product data consisting of manufacturers specifications for each type of product to be installed, all applicable certifications and elevation/plan documents supporting compliance with stated Specifications.
2. Proposed format of as-built documentation.

1.8 CONTRACTOR CLOSE OUT SUBMITTALS

A. Submit Closeout documentation in accordance with Division 01 of the Project Manual and any applicable supplements. The number of submittal sets required is the greater of either the requirements of Division 01 of the Project Manual, or a minimum of four (4) sets.

1. Segregate documents into separate binders containing data relevant to operational, maintenance, and warranty issues.

2. Provide above closeout documentation as an electronic file in PDF format.

B. Warranty and Maintenance:

1. Record Drawings

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials factory-packaged in containers or reels and handle in accordance with manufacturer's recommendations. Store in a clean, dry space and protect products from damaging fumes and traffic. Handle materials carefully to avoid damage.

B. Storage space on project site may be limited. Contractor shall coordinate delivery and arrange storage of materials and equipment with the OAR.

C. Components sensitive to damage in a harsh environment shall be stored off-site and delivered as needed.

D. Provide protective covering during construction to prevent damage or entrance of foreign matter.

E. Contractor is responsible for on-site security of tools, test equipment and materials.

F. Replace at no expense to Owner, product damaged during storage, handling or the course of construction.

1.10 PROJECT CONDITIONS

A. Verify conditions on the job site are applicable to this Work. Notify Architect in writing of discrepancies, conflicts, or omissions promptly upon discovery.

B. The Drawings diagrammatically show cabling and arrangements of equipment fitting the space available without interference. If conditions exist which make it impossible to install Work as shown, recommend solutions and/or submit drawings to the Architect for approval, showing how the Work may be installed.

1.11 WARRANTY

A. Warrant labor and product to be free of defects and deficiencies, and to conform to the drawings and specifications as to kind, quality, function, and characteristics, following Contractor Warranty requirements defined in Division 01, or for a period of 1 year from date of final completion, whichever is longer. Repair or replace defects occurring in labor or product within the Warranty period without charge.

B. All surplus parts and pieces to the installation shall be maintained as a spare parts inventory at the building site. Parts replaced during the warranty period shall have a warranty matching that of the original part from date of replacement.

PART 2 - PRODUCTS

2.1 GENERAL

A. The products specified in this document do not necessarily constitute the exhaustive list of products required to complete the statement of work. Except where described in the SUMMARY subpart of this document, the contractor is responsible for providing any other parts and materials needed to deliver a complete and working system.

2.2 GATE COUNTER, SERVICE DESK, BSO COUNTER AND GATEHOUSE INDICATORS

A. SAM I/O Module

1. Provide a network-attached I/O module to be integrated with the Safegate Apron Management System. This module shall be used to illuminate a multi-status indicator at the gate counter.
2. Module shall have the following properties:
    a. (16) digital inputs
    b. (16) digital input or outputs
    c. (2) 10/100BASE-T Ethernet ports
    d. Management via Web interface and SNMP
    e. Modbus/TCP interface
3. Include a 24VDC, 10A power supply.
4. Include a 2RU vented rack shelf to serve as a mounting surface.
5. Approved products:
    a. Phoenix Contact ILB ETH 24 DI16 DIO16-2TX
    b. Approved equivalent

B. Gate Counter, service desk, BSO counter and gatehouse Multi-Status Indicator

1. Provide a panel mount status indicator at each gate counter for the final bag and lightning notification systems.
2. The indicator is to have the following properties:
3. 22 mm diameter
4. Tri-color illumination, with red, yellow and green LED colors
5. Prominent Metal, black chrome bezel with diffused lens
6. Unit contains separate red and green LEDs. When both are lit, yellow is produced.
7. The indicator shall operate from a 24 VDC source.
8. Acceptable products:
    a. Apem Group Q22P1BZZRYG24E
    b. Owner approved equivalent

C. Jetbridge Leveler Indicator (Gate Counter Only)

1. Provide a combination panel mount status indicator and buzzer at each gate counter for the jetbridge leveler.
2. The indicator is to have the following properties:
    a. Barrel type enclosure.
    b. Red LED lamp
    c. Buzzer sound level of approximately 80dB
3. The indicator shall operate from a 24 VDC source.

4. Acceptable products:

    a. Shamrock Controls RB2-KS-24V
    b. Owner approved equivalent.

D. Boarding Door Magnetic Hold Release Button (Gate Counter Only)

1. Provide a pushbutton at each gate counter for the release of the door hold open mechanism.
2. The button is to have the following properties:

    a. Barrel type enclosure.
    b. Flush push button with spring return.
    c. Momentary operation
    d. Non-illuminated green button color.

3. Basis of design:

    a. Shamrock Controls RCP2-BA3
    b. Owner approved equivalent.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Gate counter multi-status indicator.

1. Install the indicator on a double gang faceplate.
2. Utilize a standard Category 6A data port to connect the SAM I/O module to the indicator.

    a. Fashion a break-out pigtail on each end from a patch cord and wire conductors from one cord to the SAM I/O module and the other to the multi-status indicator.
    b. Patch each cord to the corresponding patch panel and work area outlet port.

3. Install the multi-status indicator in a faceplate on a surface mount double gang box in the gate counter, in a location that is in plain sight of the agent(s) occupying the counter.

B. Gate counter door release button.

1. Install the release button on a double gang faceplate.
2. Utilize a standard Category 6A data port to connect the SAM I/O module to the button.

    a. Fashion a break-out pigtail on each end from a patch cord and wire conductors from one cord to the SAM I/O module and the other to the release button.
    b. Patch each cord to the corresponding patch panel and work area outlet port.

3. Install the release button in a faceplate on a surface mount double gang box in the gate counter, in a location that is in plain sight of the agent(s) occupying the counter.

C. The jet bridge leveler indicator is to be wired to the R1 pull box on the respective jet bridges.

1. Install on Category 6 cable between the R1 pull box and the JIB. Terminate the white/blue pair in the R1 box on the jetbridge leveler terminate strip lugs. Terminate the JIB end of the cable on the existing 110 field.
2. Install an additional Category 6 cable between the JIB and the serving AA TR. Terminate the cable in the AA TR with a green Category 6 jack. Cross connect the leveler signal cable to the new cable in the JIB.

3. Cross connect the leveler signal in the AA TR to an available port on a work area outlet in the gate podium.
4. Install the leveler light in the gate podium and solder to a pigtail, with an RJ-45 plug, that will plug into the leveler port in the podium.

3.2 OPERATION

A. The multi-status indicator can be tested manually by a user at a Safegate SAM workstation.

1. Activating the "Final Bag" state shall illuminate the green indicator, until released by the user.
2. Activating the "Headsets Off" state should not cause any of the gate counter indicators to light.

    a. Activating the "Final Bag" state at a particular gate, while the "Headsets Off" indication is being displayed shall illuminate the green indicator, until released by the user.

3. Activating the "Ramp Closed" state shall illuminate the red indicator, until released by the user.

B. When the jet bridge leveler activates, the jet bridge indicator should illuminate and the buzzer simultaneously sound.

3.3 TESTING

A. Test each final bag indication to ensure the appropriate ramp and gate counter indicator lights.

B. Test the headsets off indication to ensure that the gate counter indicators do not light.

C. Test the combination of headsets off and final bag at each gate, to ensure that the appropriate gate counter indicator lights.

D. Test the ramp closed indication to ensure that the gate counter indicators light. Ensure that a final bag indication cannot be inserted and displayed during this state.

E. Test each final leveler indicator in each counter for proper operation.

F. Test each door release button in each counter for proper operation.

END OF SECTION 27 53 21

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