

DIVISION 01 SPECIFICATIONS

BOISE SSC NEW BUILDING

3001 W Harvard Street
Boise, ID 83705

July 2021



Prepared for:

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
800 Independence Avenue, S.W.
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SUMMARY OF WORK

PART 1 GENERAL

1.1 Summary

- A. This Section includes the following:
1. Work covered by the Subcontract Documents.
 2. Type of the Subcontract.
 3. Work phases.
 4. Work under other contracts.
 5. Products ordered in advance.
 6. Contractor-furnished products, materials, or equipment.
 7. Use of premises.
 8. Contractor's occupancy requirements.
 9. Work restrictions.
 10. Specification formats and conventions.
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1.2 Work Covered by the Contract Documents

- A. Project Location: 3001 W Harvard Street, Boise, ID 83705
(Google Maps Coordinates: 43.556183, -116.218832).
- B. The work consists of the following:
- a. Design-Build project. Design of the 8,885sf building and parking areas using the concept layouts provided at the end of this document.
 - b. Construction to include installation of the following:
 - i. Site work/site improvements
 - ii. Paving including striping, curbs, gutters and site drainage
 - iii. Roofing and waterproofing
 - iv. Dry wall and metal stud framing
 - v. Electrical
 - vi. Plumbing above and below the slab
 - vii. Acoustical Ceiling system in all spaces except where directed.
 - viii. Carpet tile in all areas except the Restrooms, Data, Kitchenette and Storage areas.
 - ix. VCT flooring in the Data, Kitchenette and Storage Rooms.
 - x. Ceramic Tile flooring in the Restrooms.
 - xi. The scope of work includes work at the old Boise SSC located at 3375 Rickenbacker Street, Boise ID 83705 including removal of all electronic components of the PBX telephone system to the extent necessary to re-install it in the new building. The phone system will need to be removed from the building within 30 days of the NTP and properly stored until the new building is completed. Once building is complete, the subcontractor will install the re-purposed phone system in the new building. The design build contractor will incorporate the telephone system into the new building design and install the central processing unit in the dataroom. The design build subcontractor will

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provide the services of a subcontractor that is familiar with the installation and operation of this type of phone system for the removal and re-installation of the phone system.

- C. The Subcontractor is responsible for accomplishing all items of work in accordance with the applicable drawings, specifications and conditions of the subcontract. Any additional labor, materials, equipment, and/or appurtenances not specifically detailed or specified, but required to complete the project, must be provided by the Subcontractor as an integral part of the scope of work specified.

1.3 Type of Contract

- A. Project will be designed and constructed under a single prime subcontract.

1.4 Work Phases

- A. The Work will be conducted in two phases in the following order, with each phase substantially complete before beginning the next phase:
 - 1. Phase One – Design: The subcontractor will provide the services of a Idaho Licensed Architect to provide the design using the division 1 specifications as provided in the RFO package and the provided concept design and design narrative. A native file will be provided to the subcontractor upon award. Work of this phase must be substantially complete within 40 days after the Design Notice to Proceed has been issued.
 - 2. Phase Two – Construction: Construction activities guided by the approved final drawing set approved by the Contractor and the FAA must be substantially complete and ready for occupancy at time of Substantial Completion.

1.5 Work under Other Contracts

- A. General: Cooperate fully with separate contractors and other building tenants so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.
- B. Preceding Work: <Not Used>
- C. Concurrent Work: <Not Used>
- D. Future Work: <Not Used>

1.6 Products Ordered in Advance <Not Used>

1.7 Contractor or Government Furnished Property <Not Used>

1.8 Use of Premises

- A. Access to the Worksite: Access to the Worksite must be with approval of the Resident Engineer RE. Access to the Worksite will be discussed prior to the start of actual construction. Only vehicles essential to the construction effort will be permitted in the construction area. All construction equipment and materials must be removed from the work areas and secured at the end of each work day and as directed by the RE.
- B. Restrictions: Access to certain locations of the project may be restricted due to facility operations. Subcontractor must yield to facility operations that require use of the premises, and when instructed must vacate the area in question. Unless otherwise indicated, Subcontractor will have complete and exclusive use of the premises within the limits of the construction staging area for the execution of the Work.

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- C. **General:** Subcontractor will have full use of premises for construction operations, including use of Project site, during construction period. Subcontractor's use of premises is limited only by Contractor's right to perform work or to retain other subcontractors on portions of Project.
- D. **General:** Subcontractor will have limited use of premises for construction operations as indicated on Drawings by the Subcontract limits.
- E. **Use of Site:** Limit use of premises to areas within the Contract limits as indicated on the conceptual layout plan. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. **Limits:** Confine construction operations to areas defined by the conceptual layout plan or subsequent layout plan in the design documents generated by the architect.
 - a. Limit site disturbance to the confines of the interior of the building and the internal work space. Subcontractor is responsible for exterior building incurred by the Subcontractor or their workforce. Work outside of the confines of the work space shall be limited to the provision of utilities (water, electric, etc.).
 - 2. **FAA Occupancy:** Allow for FAA occupancy of Project site.
 - 3. **Driveways and Entrances:** Keep driveways, parking areas and entrances serving premises clear and available to FAA, FAA's employees, other building tenants and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Coordinate all activities with the RE.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- F. **Use of Existing Building:** Maintain existing building in a weather tight condition throughout construction period. Report anything that could damage work in-place or future work to the RE. Repair damage caused by construction operations. Protect building and its occupants during construction period.

1.9 Contractor's Occupancy Requirements

- A. **FAA Occupancy of Completed Areas of Construction:** FAA reserves the right to occupy and to place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy does not constitute acceptance of the total Work.
 - 1. COTR will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied before FAA occupancy.
 - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before FAA occupancy.
 - 3. Before partial FAA occupancy, mechanical and electrical systems must be fully operational, and required tests and inspections must be successfully completed. On occupancy, FAA will operate and maintain mechanical and electrical systems serving occupied portions of building.
 - 4. On occupancy, FAA will assume responsibility for maintenance and custodial service for occupied portions of building.

1.10 Work Restrictions

- A. **On-Site Work Hours:** Work must be generally performed inside the existing building during normal business working hours of 6 a.m. to 6 p.m., Monday through Friday, except otherwise indicated.
 - 1. **Weekend Hours:** As coordinated with the PM after consultation with the FAA and Building Management.
 - 2. **Early Morning Hours:** As coordinated with the PM after consultation with the FAA and Building Management.
 - 3. **Hours for Utility Shutdowns:** Must be coordinated with the PM after consultation with the FAA and Building Management.

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4. Hours for Core Drilling or other exceedingly noisy work: As coordinated with the PM or RE after consultation with the FAA and Building Management.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by other building tenants or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 1. Notify Resident Engineer not less than five business days in advance of proposed utility interruptions. Show all interruptions on the Subcontractor's weekly Three-Week Look Ahead schedule.
 2. Do not proceed with utility interruptions without Resident Engineer's or Project Manager's written permission.
- C. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor air intakes.

1.11 Specification Formats and Conventions

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 50-division format and CSI/CSC's "MasterFormat" numbering system.
 1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Subcontract Documents. Sections in the specifications are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the specifications to determine numbers and names of Sections in the Subcontract Documents.
 2. Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Abbreviated Language: Language used in the Specifications and other Subcontract Documents is abbreviated. Words and meanings must be interpreted as appropriate. Words implied, but not stated, must be inferred as the sense requires. Singular words must be interpreted as plural, and plural words must be interpreted as singular where applicable as the context of the Contract Documents indicates.
 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Subcontractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
 - a. The words "must" or "must comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.12 Miscellaneous Provisions

- A. Project Specific Acronyms, Abbreviations, and References
 1. SSC – Service Support Center
- B. On-Site Communications: This Work is not being performed in an active or occupied FAA facility or an operating Airport or Airport facility. All communication is to be with and through the RE, the PM and/or the Subcontract Administrator. Direction received by anyone other than the Subcontract Administrator is not to be considered Work under this Subcontract and is not reimbursable under this Subcontract.
- C. Compliance with Local and Other Codes: The Subcontractor will be responsible for coordination of all Work. The Subcontractor must obtain any licenses or permits necessary to perform the Work not provided by the Contractor, and must comply with all applicable Federal, State, and local regulations in connection with the Work. The Subcontractor is responsible for paying for any permits or licenses required to perform

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the Work not provided by the Contractor, and such costs are deemed included in the Subcontract amount. The Contractor is not responsible for payment of any amount for actions taken by a state, local, or other jurisdiction as a result of Subcontractor's failure to comply with permit or license requirements.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.1 Submittals Required for Notice to Proceed

- A. Start of project work cannot occur until the Subcontractor has been provided a written NTP from the SA. Submittals required for NTP must be submitted to the PM prior to the Pre-Construction Meeting. Work cannot commence until interim or final approval is provided for submittals required for NTP. Payment and Performance Bonds (if required) and Certificates of Insurance must be submitted to the SA. The SA will advise the Subcontractor if bonds or insurance submittals are not acceptable.
- B. Submittals required for NTP are discussed in this section as well as other sections of the General Requirements (Division 1) and Subcontract. Required submittals of NTP include:
 - 1. Payment and Performance Bonds are required.
 - 2. Project Specific Insurance Requirements.
 - 3. Risk Management Plan
 - 4. Construction Progress Schedule and Work Plan
 - 5. Schedule of Values
 - 6. Submittal Schedule (shall be integrated with the Construction Progress Schedule)
 - 7. List of Lower Tier Subcontractors, Suppliers, and Fabricators
 - 8. Initial List of Personnel Working On-Site on a daily basis
 - 9. List of Subcontractor Staff Assignments and Project Organization Chart

3.2 Payment and Performance Bonds

- A. Bonds must comply with the requirements of Section H of the Subcontract, and be on the bond forms provided by the SA.
- B. Payment and performance bond requirements must increase or decrease if the subcontract amount changes.
- C. A Third-Party Obligee Rider is not required for this project on the form provided by the SA.

3.3 Project Specific Insurance Requirements

- A. Certificates of Insurance (COI): Subcontractor must submit COI(s) to the SA in accordance with Section H of the Subcontract. In addition to Waiver of Subrogation and other requirements of Sections H, each COI must include, in the "Description of Services" section of the ACORD Form, the Subcontract Number, Location of the Project, and the following statement: "As required by written contract, the following entities are covered as additional insureds on a primary basis with regards to general and employers liability: PTSI Managed Services Inc., Parsons Corporation and its subsidiaries, and the United States of America acting by and through the Federal Aviation Administration. Waiver of subrogation applies as required by contract."

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- B. Project Specific Requirements: In addition to the insurance requirements specified in Section H.17 of the Subcontract, the following project specific insurance requirements apply:
1. Builder's Risk Insurance. The Subcontractor will provide and maintains Builder's Risk Insurance for the materials, supplies, machinery, fixtures, and equipment, which will become a part of the installation, fabrication, or erection project as shown in the Contract Documents. Coverage under the Subcontractor's Builder's Risk Insurance must pay for direct physical loss to property while in transit; at the site of installation, fabrication, or erection, as shown and described in the Contract Documents; and in storage awaiting installation, fabrication, or erection. The Subcontractor's Builder's Risk Insurance must be sufficient to cover the value of the installation. The Subcontractor must be solely responsible for any deductibles carried under its Builder's Risk Insurance.
 2. Installation Floater Insurance. The Subcontractor will provide and maintain an "All Peril" Installation Floater Insurance for the materials, supplies, machinery, fixtures, and equipment which will become a part of the installation, fabrication, or erection project as shown in the Contract Documents. Coverage under the Subcontractor's Installation Floater must pay for direct physical loss to property while in transit; at the site of installation, fabrication, or erection, as shown and described in the Contract Documents; and in storage awaiting installation, fabrication, or erection. The Subcontractor's Installation Floater Limits of Insurance must be sufficient to cover the value of the installation. The Subcontractor must be solely responsible for any deductibles carried under its Installation Floater.
 3. Cargo Insurance. The Subcontractor, at the Subcontractor's expense, must provide and maintain, during the continuance of this contract, cargo insurance of \$ xxx.xx per vehicle to cover the value of property on each vehicle and of \$ xxx.xx to cover the total value of the property in the shipment. All insurance must be written on companies acceptable to Parsons, and policies must include such terms and conditions as required by Parsons or the FAA. The Subcontractor must provide evidence of acceptable cargo insurance to the Subcontract Administrator before commencing operations under this Subcontract. Each cargo insurance policy must include the following statement: "It is a condition of this policy that the Company must furnish -- (1) Written notice to Parsons, 30 days in advance of the effective date of any reduction in, or cancellation of, this policy; and (2) Evidence of any renewal policy to the address specified in paragraph (1) of this statement, not less than 15 days prior to the expiration of any current policy on file with Parsons."
 4. Defense Based Act Insurance. [Not Used]
 5. Longshore and Harbor Worker's Compensation Act Insurance. [Not Used]
 6. Environmental Liability Insurance. [Not Used]
 7. Other Insurance. [Not Used]
- C. Other Additional Insureds: [Not Used]
- D. Required Limits of Insurance. The insurance requirements set out in Section H of the Subcontract are minimum requirements for this Project.

3.4 Project Safety and Quality

- A. Risk Management Plan (RMP): Subcontractor must develop a RMP that covers safety, [security], and quality for the project. The RMP must be submitted for approval in accordance with Section H.10 of the Subcontract. Construction must not commence until the RMP has been approved by the PM.
- B. On Site Communications: Appropriate on site communications must be established with the RE and Subcontractor to disseminate all information pertaining to safety requirements on site. This will include the notification of hazards brought on the site or created during the course of the work. Notification may be done by posting hazard sheets on notice boards, or advising personnel during regular Toolbox Talks or daily meetings.

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- C. **Project Induction:** All persons starting work on this site must go through a formal induction process and be briefed on a regular basis on changes in safety requirements depending on the progress of the Work. As part of the induction process, and as appropriate, the Subcontractor will be required to provide evidence of employee skills training.
- D. **Competent Persons:** Competent person training documentation must be provided where required by 29 CFR 1910 and 29 CFR 1926, such as for fall protection, excavations over four feet deep, crane and rigging operations, working in confined spaces, lockout/tagout of energy sources and equipment, and working with live electricity. Additional training records may be required on a case-by-case basis.
- E. **Toolbox Meetings:** Toolbox Meetings will be scheduled on a daily basis and used to discuss safety rules and various site specific issues. The aim is to ensure that all workers on site are aware of the hazards as they arise and equally to be advised when they no longer exist. A sign-in sheet for the previous days toolbox talk should be included with the Subcontractor's daily report and submitted each day.
- F. **List of On Site Personnel:** A list of all Subcontractor personnel as well as a list of lower tier subcontractor personnel working on site must be maintained. The list of on-site personnel must be provided to the RE on a daily basis.
- G. **Liaison Person:** If English is a second language of Subcontractor employees, then Subcontractor must maintain on site a liaison person who can effectively communicate with on-site personnel. Subcontractor must also have a person on site that is trained in First Aid in case of an injury or accident to any of its personnel.
- H. **Hazard Analysis:** All hazards brought on site or created during the course of the Work must be identified and controlled. Activity Hazard Analysis (AHA) should be used to analyze the tasks within the various elements of work to identify significant safety hazards and detail the method of control. Hazardous substances that may be used on site must have the appropriate MSD Sheets and be addressed as part of the AHA analysis.
- I. **Accident Reporting:** All serious harm accidents must be reported immediately to the RE. Accident and investigation reports are to be copied to the RE and PM within 48 hours. Accident scenes must not be disturbed until a full and complete accident investigation has been undertaken with the RE and other required personnel.
- J. **Subcontractor Safety Inspections:** The Subcontractor is expected to carry out regular documented safety inspections (minimum weekly) on its work areas while on site. Copies of the inspection reports must be provided to the RE for discussions at safety meetings. Any recommended completed corrective action will be advised at these meetings.

3.5 Pre-Construction Meeting

- A. The PM will schedule a pre-construction meeting after Notice of Award. Required attendance includes Subcontractor, Subcontractor's Superintendent, and major lower tier subcontractors. An agenda will be provided, but must include at a minimum the review of the submittals required for NTP. The Subcontractor must submit other items, including those identified in Section G of the Subcontract, for review at the meeting. Acknowledgements of all the reviews made at the session will be noted in the meeting minutes.

3.6 Site Inspection

- A. The Contractor reserves the right to enter the premises during the term of the Subcontract for quality assurance work inspections and/or maintenance of existing navigational and communication facilities.
- B. After NTP and prior to initiating Work, Subcontractor and RE must conduct joint inspections of the jobsite to determine the existing conditions and note any existing damage or defects. Existing damage or defects will be used as the basis for determination of damages caused by the Subcontractor's operations.

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- C. Subcontractor will be responsible for the cost of any repair caused by Subcontractor's operations or the operations of its lower tier subcontractors. All damage to the existing Site including, but not limited to, existing utilities and cables, facilities, equipment, buildings, and vegetation must be repaired. All such repairs must match the original finish and must be made utilizing materials, equal to or greater than the original materials, as approved by RE. All repairs must be made with no additional cost to Contractor.
- D. Contractor retains the right to inspect all Work on the project, but has no obligation to do so. Contractor's inspections and tests are for the sole benefit of Contractor and do not:
 - 1. Relieve the Subcontractor or its lower tier subcontractors of the responsibility to provide adequate quality control measures.
 - 2. Relieve the Subcontractor or its lower tier contractors of the responsibility for damage to or loss of material before acceptance.
 - 3. Constitute or imply acceptance.
- E. The presence or absence of the RE does not relieve the Subcontractor or its lower tier contractors from any Subcontract requirement, nor is the RE authorized to change any requirement of the Subcontract.

3.7 Special Scheduling Requirements

- A. Protect existing facilities and equipment from physical or electrical damage as a result of accidental or incidental negligence, such as, but not limited to, disruption of standby power to the facility or equipment.
- B. All preparatory work must be completed by the Subcontractor prior to shutdown/cutover to minimize downtime. The requested time and date of shutdown and cutover must be approved by the RE a minimum of two working days in advance of the requested shutdown or cutover. Contractor personnel will perform the actual shutdown/cutover of systems that affect operations.
- C. In the event any services are interrupted, restore services with a full crew available to restore such services on a 24-hour basis, including Work during holidays and weekends, at no additional cost to Contractor or delay in the Schedule.
- D. Request any utility interruptions in writing per Facility requirements but not less than five working days before the scheduled interruption, unless otherwise specified. RE review is required before interruption. In this notification, the Subcontractor must certify that all equipment, materials, and personnel necessary to conduct such testing will be available on the scheduled date and that the systems have been pre-checked by personnel and are ready for performance and acceptance testing.
- E. Subcontractor must also confirm that all operations and maintenance manuals have been submitted and approved. No performance and acceptance testing will be permitted until the operations and maintenance manuals have been approved.
- F. At the option of Contractor, Contractor and Contractor personnel will travel to the site to witness testing. If the testing must be postponed or canceled for whatever reason not the fault of the Contractor, the Subcontractor must provide Contractor at least three working days advance written notice of this postponement or cancellation.
- G. Coordinate all required outages with Contractor through the RE. The Subcontractor must determine quantity and duration of outages required to complete the Work. The Subcontractor may have to schedule work and outages at a time when air traffic is at a minimum. This could mean late night or early morning hours.
- H. Do not interrupt services outside of permitted, scheduled outage periods.

3.8 Project Specific Work Plans

- A. Required Work Plans: The Subcontractor must be required to submit written work plans in accordance with the Subcontract submittal requirements for critical items of work set out in this Section, in the

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Technical Specifications, or elsewhere in the Subcontract Documents. Work associated with the required work plans must not commence until approval has been provided.

- B. **Underground Utility Damage Prevention Work Plan:** Subcontractor is responsible for complying with all OSHA regulations related to underground utility damage prevention. Subcontractor must take all reasonable steps necessary to make certain that all active, abandoned, or unknown utilities are identified. Such steps are to include the use of 811 **AND** the utilization of an individual or firm acceptable to the Contractor and knowledgeable in Subsurface Utility Designation techniques and underground utility designation best practices published by the Common Ground (CGA) Alliance copy of CGA’s best practices can be found at: <http://commongroundalliance.com/best-practices-guide.htm>. The elements of the prevention Plan are detailed in Section 01 35 20 – Workplace Safety and Health.
- D. **Fall Protection Work Plan:** The aim of the Fall Protection Work Plan is 100% Fall Protection. Whenever activities are to be performed 6 feet or higher above a lower level by subcontractor or lower-tier subcontract personnel, the Subcontractor must:
1. Include a detailed Fall Protection Plan as part of the Safety and Health Plan submittal. The Fall Protection Plan must identify specific situations where fall protection is required by all subcontract and lower-tier subcontract personnel who will be engaged in activities at elevations of 6 feet or higher, identify the fall protection system and associated components to be used, and explain the specific methods and procedures to be followed to assure 100% fall protection.
 2. 100% fall protection means that the employee is protected 100% of the time by an approved fall protection system regardless of activity. **100% of the time an employee is engaged in activities at elevations of 6 feet or higher; the employee must be protected - without exception.**
 3. Guardrail Systems when used as the means of fall protection on the job must comply with 29 CFR 1926.502(b). Additionally, these systems must:
 - a. Be provided on every open-sided floor or platform 4 feet or more above adjacent floor or ground level on all open sides, except where there is an entrance to a ramp, stairway, or fixed ladder.
 - b. Consist of a top rail, intermediate rail, and posts, and must have a vertical height of 42 inches nominal from upper surface of top rail to floor, platform, runway, or ramp level. When used mid-rails must be half the distance between the top rail and to floor, platform, runway, or ramp level.
 - c. Be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge of the top rail, in any outward or downward direction, at any point along the top edge.
 - d. Be capable of withstanding, without failure, a force of at least 150 pounds applied to the mid-rail, in any outward or downward direction.
 - e. Use toeboards or screens when objects could fall to a lower level.
 4. Safety Net Systems when used as the means of fall protection on the job site must comply with 29 CFR 1926.502(c). Additionally, these systems must:
 - a. Be installed as close as practicable under the walking/working surface on which employees are working, but in no case more than 30 feet below such level.
 - b. Extend outward from the outermost projection of the work surface as follows:

<i>Vertical distance from working level to horizontal plane of net:</i>	<i>Minimum required horizontal distance of outer edge of net from the edge of the moving surface:</i>
<ul style="list-style-type: none"> ➤ Up to 5 feet ➤ More than 5 feet up to 10 feet ➤ More than 10 feet 	<ul style="list-style-type: none"> ➤ 8 feet ➤ 10 feet ➤ 13 feet

- c. Be capable of absorbing an impact force equal to that produced by the required drop test. The drop-tested must be performed at the job site after initial installation and before being used as a

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- fall protection system, whenever relocated, after major repair, and at 6-month intervals if left in one place. The drop-test must consist of a 400 pound bag of sand 30± inches in diameter dropped into the net from the highest walking/working surface at which employees are exposed to fall hazards, but not from less than 42 inches above that level.
- d. Be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to the required drop test.
 - e. Be inspected at least once a week for wear, damage, and other deterioration. Defective nets and components must be removed from service.
 - f. Be inspected daily, at the beginning and end of each shift, and all materials, scrap pieces, equipment, and tools which have fallen into the safety net must be removed as soon as possible from the net.
 - g. Be inspected after any occurrence that could affect the integrity of the safety net system. Defective nets and components must be removed from service.
5. Personal Fall Arrest Systems when used as the means of fall protection on the job site must comply with 29 CFR 1926.502 (d). The subcontractor must identify, in writing, an observer to be present on the ground at all times when personnel are engaged in activities requiring the use of these systems. (This person must have certification by training and experience as a competent person in fall protection and must not have any other duties that will encumber the observing duties.) Additionally, these systems must:
- a. Utilize full body harnesses (which meet ANSI A10.14-1991) to distribute the fall arrest forces as defined in 29 CFR 1926.500(b). **Body belts must not be used.**
 - b. Utilize shock absorbing lanyards or retractable lifelines with locking type snap hooks to prevent "roll-out."
 - c. Limit the free fall distance, as defined in 29 CFR 1926.502(d)(16)(iii), to less than six feet and minimize associated swing hazards.
 - d. Ensure anchor points meet the 5,000-lb. strength requirements outlined in 29 CFR 1926.502(d)(15).
 - e. Ensure that all fall protection systems and components are inspected prior to each use and continue to be inspected by a competent person in accordance to the requirements set forth in 29 CFR 1926.502(d)(21). The Subcontractor must maintain records of inspection at the job site for review by Parsons personnel and/or regulatory agencies.
6. Positioning Device Systems must comply with 29 CFR 1926.502(e). The Subcontractor must identify, in writing, an observer to be present on the ground at all times when personnel are engaged in activities requiring the use of these systems. (This person must have certification by training and experience as a competent person in fall protection and must not have any other duties that will encumber the observing duties.) Additionally, these systems must:
- a. Utilize full body harnesses (which meet ANSI A10.14-1991). **Body belts must not be used.**
 - b. Utilize positioning lanyards with locking type snap hooks to prevent "roll-out."
 - c. Limit the free fall distance, as defined in 29 CFR 1926.502(e)(1), to less than two feet.
 - d. Ensure anchor points meet the 3,000-lb. strength requirements outlined in 29 CFR 1926.502(e)(2).
 - e. Ensure that all positioning device systems and components are inspected prior to each use and continue to be inspected by a competent person in accordance to the requirements set forth in 29 CFR 1926.502(e)(9). The Subcontractor must maintain records of inspection at the job site for review by Parsons personnel and/or regulatory agencies.
7. Warning Lines and Controlled Access Zones when used as means of fall protection must comply with the requirements of 29 CFR 1926.502(f & g). Additionally, use of warning lines and controlled access zones must require the designation of a competent person to perform as a safety monitor. The competent person must be on the same working level as employees, be able to readily observe and communicate orally with employees on the working level, and not have any other duties that will encumber the safety monitoring duties.

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8. Fall Protection training must be provided as described in 29 CFR 1926.503(a) and 29 CFR 1926.21(b)(2), be conducted by a competent person according to 29 CFR 1926.503(a)(2), and be current within 12 months of issuance of the Notice To Proceed.
 9. A training certification record showing the names of employees trained, the date(s) of the training, training topics, and the signature of the trainer in accordance with 29 CFR 1926.503 (b & c) must be submitted to Parsons.
 10. A Notice To Proceed will not be issued until written evidence is received by Parsons showing compliance with the fall protection training requirement. All Subcontractor employees will be required to have, on file with Parsons, their training records before they will be permitted on the job site. Delays and related costs associated with the Subcontractor's failure to comply must be the sole responsibility of the Subcontractor.
- E. Storm Water Pollution Prevention Plan (SW3P): The aim of the SW3P is to prevent silt run off from rain and other water related events. The SW3P is a living document. Regardless of the acreage of work, the SW3P must be provided. The contents and format of the Plan must be in accordance with State or Federal requirements.

3.9 Miscellaneous Requirements

- A. Layout of Work: The Subcontractor must layout its work from established base lines and bench marks indicated on the drawings, and will be responsible for all measurements in connection with the layout. The Subcontractor should furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. The Subcontractor will be responsible for the execution of the Work to the lines and grades that may be established or indicated by the RE. The Subcontractor will also be responsible for maintaining and preserving all stakes and other marks established by the Contractor until authorized to remove them. If such marks are destroyed by the Subcontractor or through its negligence before their removal is authorized, the Contractor may replace them and deduct the expense of the replacement from any amounts due or to become due to the Subcontractor.

END OF SECTION 01 11 00

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SUMMARY

PART 1 GENERAL

1.1. Section Includes

- A. These Specifications, together with referenced specifications, standards and concept drawings specified in the Contract Documents, cover the Subcontract requirements of Contractor and Federal Aviation Administration (FAA) for the Work.

1.2. Related Sections

- A. Drawings and General Conditions of the Contract, including other Division 1 through Division 32 Specification Sections, and any attachments to this Subcontract apply to this section and to the Subcontractor's performance of the Work.

1.3. Definitions, Acronyms, Abbreviations, And References

- A. See Part I – Section H Special Subcontract Requirements for other definitions relevant to these specifications.

DEFINITIONS/ACRONYMS

Contractor: Refers to Parsons (PTSI)

GFE/GFP Government Furnished Equipment/Property.

NTP Notice to Proceed.

Project Manager (PM) Refers to the Contractor's representative as identified in the Documents to monitor the performance of the Subcontract and progress of construction, and to identify, advise of, and assist in resolving any discrepancies that may arise during the course of construction. The PM or his/her RE acts as the on-site "eyes and ears" of the Contractor, as well as the liaison for coordination of the Work.

Provide The word "provide" as it appears in Subcontract specifications and drawings means, "furnish and install."

POC Point of Contact

Quality Conformance to the requirements established by the contract specifications and drawing.

Record Documents Drawings, Specifications, Addenda, Change Orders and other Modifications; also approved Shop Drawings, Product Data, Samples, and similar submittals required to be provided by the Subcontractor.

Record Drawings Drawings submitted by Subcontractor to show the construction of a particular structure or Work as actually completed under the Subcontract.

Request for Information (RFI) The method used by the Subcontractor and Contractor to document and transmit field generated technical issues relating to design and construction of the Project.

Resident Engineer (RE) Parsons representative identified and assigned to monitor the performance of the Subcontract and progress of construction on site.

Risk Management Plan (RMP) - Comprehensive plan that identifies, and mitigates risk associated with Safety, Security, and Quality.

Schedule of Values The method used by the Subcontractor and Contractor to allocate values to various portions of the Work that, when approved by the Contractor, provides the basis for Subcontractor's application for payment.

Shop Drawings Specific drawings, schedules, diagrams, and other data prepared for this Subcontract by the Subcontractor, their lower tier subcontractors, manufacturers, suppliers, or distributors, to illustrate a portion of the Work.

Submittal A submittal is a Subcontractor's or manufacturer's drawing, brochure, sample, certificate, warranty, or other material which provides detail for construction and quality control of the permanent Work and includes deliverables such as schedules, product cut sheets, Work procedures, or product samples that are required under the terms of the Subcontract.

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Test Plan A detailed step-by-step procedure for testing major equipment and systems.

Test Results Documentation of specified quality assurance test results.

1.4 Summary of Work

A. General:

This specification, along with related documents specified in Paragraph 1.1, covers the requirements for all Design-Build work associated with designing and constructing the Boise Service Support Center (SSC) new building, construction located adjacent to the Boise Air Traffic Control Tower, 3001 W Harvard Street, Boise, Idaho 83705 (Google Maps Coordinates: 43.556183, -116.218832). Additional labor, materials, equipment, and/or appurtenances not specifically detailed or specified, but required to complete the project, shall be provided by the Subcontractor as an integral part of the scope of work specified. A minimum of 15% of the Work is to be performed by the Subcontractor's own forces.

B. Scope of Work

A. Site Conditions and Utilities

The Design-Build contractor is responsible for providing complete and accurate information regarding the existing conditions of the site in accordance with the scope of services. Unless otherwise indicated, information regarding property lines, easements, rights-of-way, etc., will be furnished by FAA for inclusion in the plans by the Design-Build contractor. Complete and accurate drawings are the responsibility of the Design-Build contractor.

All existing utility lines, including those underground, should be shown on the existing condition plans. Unless specifically tasked, FAA policy does not require excavation to locate buried utilities, tanks, and other structures. The Design-Build contractor is responsible for investigating accessible structures (manholes, vaults, etc.) and including information from readily available sources such as center, municipal and utility company documents. When complete/accurate information is unavailable and cannot be obtained with reasonable effort, the Design-Build contractor will notify the FAA for additional direction. In all cases, indeterminate items should be indicated using best judgment and should be noted as such.

Drawings indicating existing conditions will be prepared in CADD format, using AIA layering conventions, and will be plotted at a scale that is clearly readable. Existing features and contours will be shown using dashed/shaded line types and line weights, which are distinguishable from new work. Features and contours should be clearly labeled. Drawings that are cluttered are unacceptable.

B. General Building Design Requirements

Design a new approximately 8,885SF new light industrial building at the FAA property located adjacent to the Boise Air Traffic Control Tower, 3001 W Harvard Street, Boise, Idaho 83705 (Google Maps Coordinates: 43.556183, -116.218832).

(1) Architectural

(a) Codes and References

The following documents comprise the minimum basis-of-design for the project. The work shall conform to the applicable portions of the following codes:

- NFPA 101 Life Safety Code
- International Building Code

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- Americans with Disabilities Act - Accessibility Guidelines for buildings and Facilities (ADAAG), and Uniform Federal Accessibility Standards (UFAS).
- ASCE Manual on Engineering Practice NO. 37, Design of Storm and Sanitary Sewers.

Although the Federal Government is not required to comply with local codes or obtain local permits for projects on Federal properties, FAA follows a “good neighbor policy” and meets the spirit of state and local codes and regulations to the greatest extent possible. All variances from these requirements will be discussed with and approved by the FAA.

The space located at adjacent to the Boise Air Traffic Control Tower, 3001 W Harvard Street, Boise, Idaho 83705 (Google Maps Coordinates: 43.556183, -116.218832) has been identified as FAA property. Any and all licenses or permits that are required by any state or local municipalities are required at the sole expense of the Subcontractor.

(b) Accessibility

The offices will be accessible to those with disabilities. As part of the design documentation, the Design-Build will indicate all building exits that are required to be accessible (note: any place of assembly that is accessible to a disabled person will have at least two accessible means of egress.) An accessible means of egress is, “a path of travel that is useable by a person with severe mobility impairment, and that leads to a public way or an area of refuge.”

(2) Mechanical/Plumbing

(a) General

Mechanical work shall conform to applicable codes and will be coordinated with work of other trades and government furnished equipment. The mechanical work includes installation of insulated duct work connected to the lessor provided air handling units as well as plumbing to support the restrooms and breakroom area. The existing lessor provided air handling systems will require new electrical service from within the suite and will require individual condensation pumps to a suitable drain.

Mechanical Systems design will be in accordance with the Mechanical Life-Cycle Cost analysis, Design Guideline and latest industry standards. The plans, specifications, and calculations shall be prepared in a thorough and logical manner. Sufficient detail will be included to permit a thorough technical review of the project documents.

The building mechanical system infrastructure supporting the new facility will be life safety code-compliant, energy efficient, sustainable for the life of the facility, and economical to construct, operate and maintain.

(b) Codes and References

The following documents comprise the minimum basis-of-design for the mechanical (plumbing, HVAC, and fire protection) requirements for the new facility:

- 2012 International Building Code
- 2012 International Mechanical Code
- 2012 Uniform Plumbing Code
- 2102 International Fire Code
- 10 CFR 435 and 436 – Code of Federal Regulation
- American Society of Heating, Refrigerating and Air-Conditioning Engineers
- (ASHRAE) Standards (latest edition as applicable)

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- Executive Order 13514 – Federal Leadership in Environmental, Energy and Economic Performance
- National Fire Protection Association (NFPA) Standards (as applicable)

(c) Life Cycle Cost Analysis (LCCA)

A Life Cycle Cost Analysis (LCCA) is required for all new construction. The analysis shall be performed in accordance with 10 CFR 435 and 436 procedures and FAA Order 6480.7E requirements. The design shall comply with the Energy Policy Act of 2005 and Executive Order 13423 "Strengthening Federal Environmental, Energy, and Transportation Management." A minimum of three HVAC systems shall be analyzed. The ultimate selection of an HVAC system shall be based upon the Lowest Life-Cycle Cost system of the three evaluated systems.

(d) Design Criteria

The following assumptions shall be used for the calculating building loads:

- Weather Data:
 - Heating - ASHRAE 99.6% Column – 3.4°F db.

- Indoor Design Temperatures:

Office Spaces, Break Rooms, etc.

Summer: 75°F ± 3°F DB, 30% - 55% RH

Winter: 75°F ± 3°F DB, 30% - 55% RH

Mechanical/Electrical Equipment Rooms

Summer: 55°F – 85°F DB, 0% - 90% RH

Winter: 55°F – 85°F DB, 0% - 90% RH

Critical Spaces

Summer: 73°F ± 3°F DB, 35% - 60% RH

Winter: 73°F ± 3°F DB, 35% - 60% RH

(e) Facility Controls

Due to the small size of the facility, the control system shall be by individual thermostats which control each air handler as a stand-alone system or zone.

(f) Zones

Due to the size of the facility, zones should be designed by space type keeping areas such as Office and conference spaces separate from the break rooms and restrooms. Critical and workshop areas such as data rooms and others should be individually separate.

(g) Plumbing

Domestic waste and water systems shall be provided per the 2012 UPC.

(3) Electrical

(a) General

All materials and equipment provided under this contract shall be new and shall be listed, labeled or certified by a Nationally Recognized Testing Laboratory (NRTL) to

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meet Underwriters Laboratories, Inc. (UL), standards where test standards have been established.

During construction, the contractor shall at all times maintain electrical utilities of the building without interruption. Should it be necessary to interrupt any electrical service or utility, the contractor shall secure permission in writing from the RE or PM seven (7) calendar days ahead of any power interruption.

Demolish and remove existing electrical materials and equipment only to the extent required by new construction. Removal of equipment shall not interfere with existing operations.

(b) Codes and References

All electrical design and work shall comply with the National Electrical Code (NEC 2014), International Energy Conservation Code (IECC) 2012, local codes and FAA building standards and orders as well. The design shall be coordinated with other trades and FAA before construction.

Designs will comply with the following FAA Specifications and Standards.

- FAA-C-STD-002H
- FAA-C-STD-019F
- FAA-C-STD-1217H
- FAA-C-STD-1391D
- FAA AEManual (Latest edition)
- 1053.1C Energy and Water Management Program for FAA Facilities
- FAA Standards for Specifying Construction at Airports

(c) Power Distribution

Design-Build Contractor will perform a complete survey of existing conditions within the building for the purpose of determining the location of building power. The service routing and coordinating design with the lessor through the Parsons RE is required.

Primary power for the suite will be obtained from within the building. Confirm feasibility of adding new service to the suite. Power will be controlled from within the suite.

New Power service shall be 120/240V, 1-phase, and 3-wire system. The size of service based on preliminary calculation noted on the basis of design is 400 Amp. Final service size is to be determined by the Design-Build and electrical demand load calculation shall be provided for the engineer's review.

Design-Build Contractor will provide a new meter box (as required by utility company) and service disconnect for new electrical service at existing pole mounted meter location. The connection of the new service to the new building will be provided through underground conduit (SCH 40/SCH 80) encased in concrete below 24" grade with the stubbing-up conduit in the new building and terminating it in the electrical panelboard.

Design-Build Contractor will design and provide two (2) panelboards with the required branch circuit breakers and 20% additional spare circuit breakers.

- 400 Amp, 240V, 1-phase panel-board to serve the administration area
- 150 Amp, 240V, 1-phase sub-panel which will be fed from the 400 Amp panel and will serve the workshop area.

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(d) Panel-boards

Panel-boards shall be suitable for 240 VAC maximum, with bolt-on, branch circuit breakers, and copper bus, copper neutral and a copper ground. Panelboards shall be mounted in a steel cabinet and shall be surface mounted. Cabinets shall be built of material not thinner than no. 12 gauge sheet steel and large enough to contain the panels and allow a minimum of 4" gutter space all around. Provide a typewritten directory inside each panel indicating the function and location of outlets serving each circuit. Circuit breakers shall be molded case, thermal-magnetic quick-make, quick-break, bolt-on type with manually operated insulated trip-free handle. Provide 20% additional spare circuit breaker in each panel-board.

All equipment provided on the project, including panel-boards and disconnect switches, shall have manufacturer terminations rated at 75° C.

(e) Disconnect Switches

Provide service rated disconnect switch at incoming service. Provide disconnect switch at all mechanical/plumbing equipment. All disconnect switches shall be heavy-duty, enclosed safety switches. Disconnect switches shall be of the quick-make, quick-break type with interlocking covers and steel boxes of the type enclosure suitable for each location.

(f) Wiring

All wiring shall be copper and shall comply with NEMA WC 70. Use of MC or AC cable is not permitted under any Circumstances. Conductor Insulation shall comply with NEMA WC 70 for Types THHN, THWN, THWN-2. The voltage rating of all wiring shall be 600 Volts for 120/240 V.

- All feeders: Soft annealed Copper stranded, class B compressed.

- Branch Circuits: Copper. Stranded for No. 12 AWG and larger.

- Minimum Wire Size: #12 AWG for power and lighting circuits, #14 AWG for control circuits. In the case of "home-runs" over 125 feet in length, no conductor smaller than a No. 10 wire shall be used. Each 120-volt phase conductor shall have a neutral conductor of the same size.

All conductors shall be run in metallic conduits (conduit size per NEC) behind walls or on the surface. All surface metal raceway shall be run in a neat, orderly manner and shall have clips on 5'-0" centers. All surface metal raceway shall be run in a straight line and shall have uniform turns.

(g) Grounding

The design-build contractor will design and provide grounding and bonding at Utility Company's metering equipment in accordance with Utility Company's requirements. Building grounding should be provided per NEC requirements.

Grounding for all non-current carrying metal parts of the electrical system will be provided as well as a separate green insulated equipment grounding conductor with all feeders and branch circuits, sized in accordance with the overprotective device serving that feeder or branch circuit.

At main electrical panel and in main telecommunication room, provide and install grounding bus on insulated spacers 2 inches minimum from the wall, 12 inches above finished floor unless otherwise indicated. Grounding Bus shall be Pre-drilled rectangular bars of annealed copper, 1/4 by 4 inches in cross-section, with 9/32-inch holes spaced 1-

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1/8 inches apart.

A UL master label lightning protection system will be provided as required by the FAA. Confirm and coordinate with the FAA. Concealed down conductors will be routed in corners of the building down to the ground ring.

(h) Lighting

The design-build contractor will design the space lighting layout and provide LED lighting fixtures to meet the FAA required foot-candles in administration and workshop spaces. The basis of design lighting level is 40 foot-candle at desk level in office spaces and 30 foot-candles in workshop spaces. The basis of design lighting fixture is 2x2/2x4 fixtures in office space spaces. The design-build contractor will confirm and coordinate the required lighting level and lighting fixture types with the FAA during design. Provide all frames, supplementary support structures, hangers, spacers, stems, aligner canopies, auxiliary junction boxes, and other hardware as required for a complete and proper installation.

All luminaires shall comply with IES LM-79-08 Approved Method for measuring lumen maintenance of LED light sources, IES LM-80-08 Approved Method for electrical and photometric measurement of SSL product, In-Situ testing for more reliable results. LED arrays shall be sealed, high performance, long life type; minimum 70% rated output at 50,000 hours. LED luminaires shall deliver a minimum of 60 lumens per watt. Drivers shall be solid state and accept 120 through 277 VAC at 60 Hz input. The LED light source shall be fully dimmable with use of compatible dimmer switches designated for low voltage loads. The LED color temperature shall be as specified by the FAA. Luminaires shall have internal thermal protection. Luminaires shall not draw power in the off state. Indoor luminaires shall have a minimum CRI of 85. Luminaires shall be fully accessible from below ceiling plane for changing drivers, power supplies, and arrays.

Emergency lighting within the building will be typical battery packs suitable for 90-minute discharge. Average lighting level on the floor will be 1.0 foot candles. Exit signs will be a single face LED type with battery backup.

Exterior lighting will be building mounted wall-packs and shall be provided with built-in/external photo-sensor and timer control.

(i) Wiring Devices

All devices shall be mounted in a junction box (recessed/surface) and shall be the product of the same manufacturer, coordinate with the FAA for specification of device color and cover plate.

Lighting switches shall be 20-Amp, 1-pole quiet operating type. Lighting switches used with vacancy sensors shall be of low voltage override type. Dual-technology ceiling mounted occupancy sensors shall be provided adjusted such that either PIR or ultrasonic sensing will de-energize lights, and either will maintain power to lights. All occupancy sensors shall be set to a minimum of 15-minute time delay, adjustable sensitivity. All occupancy sensors shall be set for automatic off and manual on.

Receptacles shall be 20 Amp, grounding type, specification grade. Special receptacles shall be 250 volts rated 20 Amp or more shall be simplex outlets, specification grade, of the same manufacturer as the other devices. All receptacles shall be with a grounding conductor wired through and connected to all receptacles. Provide pigtails from the ground conductor, one to ground connector on the receptacle and one to the back box.

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Telephone/data outlets/devices shall be provided with recessed/surface device box. The design-build contractor will provide conduits and pull-strings to telephone/data outlets as required by the FAA. Coordinate with the FAA additional required conduits/sleeves etc.

(4) Local Area Network

(a) General

The scope includes the design and installation methods of cabling distributions systems, work area outlet locations, cable specifications, testing, documentation, and administration. It shall be the minimum standard of reference to furnishing all labor, material, equipment, and transportation to provide LAN service for permanent space to be used for office space, Training space, Conference Room space, and Multi-Office spaces.

(b) Code references

The following codes and standards contain provisions that, through reference in this text, constitute provisions of the Document. All codes and standards are subject to revision; parties to agreements based on this Document shall apply the most recent editions of the standards of the code indicated. All personnel involved with the design or installation of networking must have access to the following documents. All equipment, construction practices, design principles, and installations must conform to the latest version of any or all of the following standards and codes, published by the following organizations, where applicable;

- Federal Communications Commission (FCC)
- Institute of Electrical and Electronics Engineers, Inc (IEEE)
- National Fire Protection Association (NFPA)
- National Electrical Safety Code (NESC)
- American National Standards Institute (ANSI)
- Telecommunications Industry Association (TIA)
- Electronic Industries Alliance (EIA)
- Building Industry Consulting Service International (BICSI)

All equipment and cable are to conform to the Telecommunications Industry Association (TIA), Electronic Industries Association (EIA), Category 6 Standards, along with Fiber Standards as published in the following documents:

- The 568-C family of Standards (all parts 568-C.0 thru 568-C.3)
- 606 Administration Standards for the Telecommunication Infrastructure.
- 607-A Commercial Building Grounding and Bonding

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- TDMM Telecommunication Distribution Methods Manual
- NECA/FOA – 301 Standard for Installing and Testing Fiber Optics

(c) Equipment Room (LAN Rack/Telco Room)

Provide material and labor to install new 400 MHz or better CAT 6 Plenum wiring and 1 new floor mounted cabinet (see the location on the drawing) in the FAA LAN Room.

- A total of 42 CAT6 runs from 31 locations should be terminated in the newly installed New 48 port Leviton Quick Connect Patch Panel located in the IT Rack in the Equipment Room (review drawing for exact locations).
- Use single/dual port face plate (Leviton P/N 41080-xTP) for the data jack location as detailed in the drawing. Face plates will be light almond color.
- All drops will be fished down existing walls to new outlets except where noted on the drawing. If unable to fish down inside of the wall (see additional details).
- Surface mount boxes with 2 port face plates will be placed on the walls using Panduit cable channel. Panduit, face plates and boxes will be light almond color if needed.
- All cables will be terminated on CAT 6 QuickPort patch panels (Leviton P/N 69270-U48) in the rack.
- All cables will be run in the path way provided or using new cable support devices.

(d) Additional details:

- Data cable between the data cabinets and workstations is to be blue in color unless otherwise specified or required. Data jacks will also be blue in color.
- 4 pairs CAT 6 cables will be used for each data jacks.
- All data jacks will be Leviton eXtreme 6+ CAT 6 QuickPort Connector (P/N 61110-xL6)
- All patch panels will be 48 port Leviton CAT 6 Flat Metal QuickPort Patch Panel and eXtreme 6+ CAT 6 QuickPort Connectors.
- Except where prohibitive, all wires will be run inside the walls. If not inside the wall, the cable will be run in color coordinated conduit and terminated in surface mount boxes (Leviton P/N 42777-1IA)
- All required raceway and faceplates will have a color matching scheme to be coordinated with FAA personnel.
- All jacks will be securely mounted to a face plate. (average of 170 ft. should be used for an estimate for each run)
- All LAN connections shall be terminated with EIA/TIA 568B termination
- All 8 conductors will be punched down.
- Minimum 12" cable slack at the wall terminations.
- Sufficient service loops at cabinet locations as per code and to allow access to cabinets and racks.
- All terminations and patch panels should be sequentially labeled in a mutually agreed to manner.

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- Site survey, if required, is to be performed by a representative of the contracting company that will be performing the actual work.
- If required, the contractor will provide and install 3/4" plywood backboard for wall mount IDF locations.
- All terminations and cabling shall adhere to local electrical/Telco/Fire Codes (i.e.: IEEE, NEC, TDMM, etc.).
- All equipment connections should adhere to proper grounding requirements as specified in NEC, section 250.

Cuts/penetrations shall be protected with rubber/plastic guards and piping to prevent cuts and tears on the cables. Fire stop shall be applied where is necessary by code. All penetrations by 1-9 cables through walls should be done using metal conduit sleeves.

These sleeves should be fire caulked in place on both sides of the wall at the sheetrock. The ends of the sleeves should be sealed with fire putty.

All penetrations by bundles of 10 or more cables through walls will be done using Specified Technologies, Inc. EZ-Path® fire-rated pathway devices or equivalent product.

(e) Provide cable management system

- All cables shall be professionally terminated and neatly secured to the designate area on the rack.
- For above ceiling and along the designated cable pathways.

All cables should be run in overhead trays or use J-hooks depending upon the number of runs and per local codes.

The contractor will provide self-supported cable trays and/or J-hooks where none exist.

(f) Provide hard copy and soft copy of the following:

- Test results and certification of all cable terminations. All terminations must be tested and certified.
- All cables should be certified with a Fluke DTX-1800 or equivalent device.
- Annotate drawing with drop numbers at required locations.

(g) Patch cords for data

- Provide CAT 6 550 MHz blue patch cords Exact length and quantity will be defined during the design.

(h) Equipment Inventory

Project Supplied Equipment	Quantity
Leviton CAT 6 Flat Metal QuickPort Patch Panels 48 ports	1
Leviton eXtreme 6+ CAT 6 QuickPort Connectors	As Needed
1 Foot CAT 6 Patch Cords Blue	50

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7 Foot CAT 6 Patch Cords Blue	50
10 Foot CAT 6 Patch Cords Blue	As Needed
APC Smart-UPS 1500VA 2U Rack Mounted	1
Cisco WS-3560CX-8PC	0
Cisco WS-3850-48U-S and stacking cables	1
Cisco WS-3850-24U-S and stacking cables	0
Cisco GLC-SXMMD=	0
GLC-T=	1
Other parts	As needed
Seismic Frame Two-Post Rack 13855-x03	1
Concrete Floor Anchor Kit 13703-001	1
Floor Drilling Template, Black	1
#12-24 Rack Screws, a pack of 50, black	1

(i) Equipment Inventory

Area/room	Description	Single Drops	Dual Drops	Total
Tech Repair	Tech Repair Bench	1		
Break Room	Break Room Area	1		
Lobby	Receptionist	2		
13 Work Station	4 Work Stations		0	
Office 96sf	Office 96sf	4		
Office 144sf	Office 144sf	4		
Copy Room	Copy Area		1	
CBI Lab	CBI Room	4		
Training Room	Training Room	4		
Conference Room	Conference Room		4	
Total Locations		0	0	0
Total Runs		0	0	0

(5) Furniture and Kitchen Appliances

(a) Furniture – [NOT USED]

The Design-Build subcontractor will design and install the system and freestanding furniture for both the office and technical areas of the building per provided typical design in the Attachment E. The basis of design for the furniture is Herman Miller Office Furniture (www.hermanmiller.com) and the list of furniture is provided below:

Area/room	Description	Quantity
Work Stations	Typical Systems Furniture	13 units + 13 chairs
Break Room	Table and Chairs, Kitchen Cabinets	1 Table + 4 chairs

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Break Room	Kitchen Cabinets and Counter-top	10 LF
CBI Lab	Small Office Furniture Set	1set + 1 chair
Conference Room	Meeting Table and Chairs, White Board	1 Table + 8 chairs
Copy Room	Storage Cabinet	1 cabinet
Lobby	Receptionist Desk and Chairs	1 desk + 1 chair
Office (144 sf)	Large Office Furniture Set and Chairs	1 set + 3 chairs
Office (96 sf)	Medium Office Furniture Set and Chairs	1 set + 3 chairs
Tech Repair	Work Benches and chairs	6 benches + 6 chairs
Training Room	Desks and Chairs, White Board	6 desks + 12 chairs
Tech Shop	Work Benches and chairs	3 benches + 3 chairs
Tech Shop	Lockers	6 lockers
Storage	Storage Shelves	2 Storage Shelves

(b) Kitchen Appliances

The design of kitchen appliances should include the following items:

- Refrigerator
- Microwave
- Dishwasher

C. Major Items of Work:

The following items are a brief summary of the project and are provided solely for the purpose of revealing the general nature of the work involved. These also provide instructions, clarifications and highlights to the basic scope of work. The Subcontractor is responsible for accomplishing all items of work in accordance with the applicable drawings, specifications and conditions of the subcontract. Any additional labor, materials, equipment, and/or appurtenances not specifically detailed or specified, but required to complete the project, must be provided by the Subcontractor as an integral part of the scope of work specified.

1. Design will be completed and submitted for review and approval in two (2) phases; 70% Design Drawings, Narrative and Specifications and 100% Design Drawings, Narrative and Specifications. Reference the attached Design Requirement Documents for more information regarding each design submittal.
2. Review and comply with subcontract requirements prior to mobilization at the work site. Some subcontract requirements are referenced in the following list in order to present a basic scope of work (SOW) for the project. In the event of any conflicts, ambiguities, or discrepancies among the SOW and subcontract documents, subcontract documents shall prevail.
3. As member of the OSHA recognized Voluntary Protection Programs (VPP), Parsons places special emphasis on the documentation and implementation of general site safety measures such as site organization, cleanliness, fall protection, handling of hazardous materials, protection from falling objects, etc. It is a mandatory requirement that the subcontractor prepare various management plans on the topics of safety, quality control, site logistics and organization, some of which are based on templates provided by Parsons (i.e. risk management plan, fall protection plan, hazardous materials, traffic control, protection plans, etc.).
4. The Subcontractor will conduct orientations for each new employee/visitor, prior to that employee/visitor starting work at or visiting the site (subcontractor employees, all lower tier employees, and all visitors to active work areas). The Subcontractor will maintain a log to document these orientations.

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5. Before the beginning of the project, the Subcontractor will provide a register (a.k.a. "Submittal Register") listing submittals from all categories of material, product and equipment for review as per the project specifications (see spec section 01 33 00). The Subcontractor will then provide his submittals electronically by uploading them on Parsons' designated sharepoint site (KSN). After the review and approval period (allow 10 working days), the Subcontractor is advised electronically to collect his reviewed submittals through the same depository medium of communication. All submittals must be approved before work starts and no preparatory meeting for a Definable Feature of Work (DFOW) shall take place without all pertinent submittals being reviewed and approved.
6. Before commencing the work, the Subcontractor will provide a detailed project logistics plan detailing items such as temporary power, storage of materials, heavy loading & lifting equipment, hazmat handling & storage, access roads & traffic control, protection measures, noise control, office trailers and other associated items.
7. After issuance of the Notice to Proceed (NTP) and prior to beginning work, the Subcontractor will conduct joint inspections of the job site with Parsons' Resident Engineer to survey existing conditions and take photographs and video of the existing job conditions within and around the area of the proposed work (see spec section 01 32 10).
8. Along with Parsons' Resident Engineer, the Subcontractor will conduct a review the project logistics plan as per the approved work plans: Mobilization, lift plans, protection & safety measures, path of access for construction traffic, material storage, consult with appropriate facility personnel, etc.
9. The Subcontractor will take all necessary precautions to protect existing facilities, equipment, buildings, and personnel (contractor, subcontractor, lowered tier, facility employees, and others) in the work areas. This shall include, but not be limited to, the provision of a detailed Risk Management Plan for the project, a template of which will be provided by Parsons before beginning the work. This includes the provision of 100% Fall Protection for all personnel in the work areas, approved safety systems to protect all personnel and facilities in areas below or near overhead work areas and conformance to subcontract and OSHA requirements for all construction works (excavation/trenching, concrete & structural work. etc.).
10. As specified in Parsons' Risk Management Plan, the Subcontractor will conduct 4-phase inspections for each definable feature of work (DFOW) and for each separate work area, conduct pre-work/installation meetings before starting each DFOW for each separate work area or when a new shift or crew arrives on site, or other similar change in work conditions.
11. The Subcontractor will maintain sufficient suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain or other unexpected occurrence throughout the entire project duration.
12. Provide warranty documentation, inspection test results and operations & maintenance manuals for all systems as required by specifications. Submit documentation at Project closeout.
13. Off hours work may be necessary due to noise level and other restrictions. Any additional costs arising out of night work shall not be a basis for additional compensation.

Preliminary Listing of Subcontractor Work Activities

The following items are meant to provide a quick reference guide of the major works and activities to be performed on this project. The complete scope of work is found in the contract documents (i.e. addendums, plans & specifications) referenced above. These activities do not follow a prescribed order. The Subcontractor will provide his own sequence of activities in the project schedule.

A. Design

- 70% Design Submittal for Parsons and FAA review and approval

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- 100% Design Submittal for Parsons and FAA review and approval

B. Mobilization

- Site survey for building location, lay down area and limits of disturbance
- Mobilize heavy equipment (excavators, backhoe loaders, trenchers, compactors, etc.)
- Site organization (construction limits, security perimeter, enclosures, fencing, warning signs)
- Bring in temporary facilities, trailers and set up offices for FAA & RE
- Connect utilities (temporary power, water)

C. Architectural

- Install Walls and Ceiling per plans.
- Install Flooring per plans
- Install Casework/Millwork per plans

D. Doors

- Install exterior doors & locksets
- Install garage doors

E. Mechanical

- Install mechanical systems per approved design.

F. Electrical

- Install electrical systems per approved design

G. Testing

- Mechanical testing & balancing of equipment

H. Conduct CAI (Contractor Acceptance Inspection)

I. Conduct JAI (Joint Acceptance Inspection)

J. Complete JAI exceptions

K. Demobilization

1.5 Risk Management Plan

- A. Subcontractor must develop and submit a RMP for approval as set out in Part I Section H within 5 days from Subcontract Award. Construction must not commence until the RMP has been approved by the Risk Specialist. The Subcontractor must comply with all safety, health, and emergency response provisions of this Subcontract.

1.6 Project Schedule

- A. Subcontractor must develop and submit to the Contractor a preliminary Construction Progress Schedule (Schedule) and a preliminary Schedule of Values for approval within 5 business days from Subcontract award. The Subcontractor's approved Schedule of Values and Schedule are conditions for payment. The Subcontractor's Schedule must comply with the requirements of Section 01320, Construction Schedules and Reports. The Subcontractor must provide the following information with the Schedule:

Time of Performance -- Number of Calendar Days: 109 days. Work Schedule/Work Hours: Work schedule and hours TBD on site access.

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1.8 Pre-Construction Meeting

- A. The SA will schedule a pre-construction meeting after Notice of Award. Required attendance includes Subcontractor, Subcontractor's Superintendent, and major lower tier subcontractors. An agenda will be provided but must include at a minimum the review of the RMP, Schedule, and Schedule of Values. The Subcontractor must submit other items identified in Section G.3 Progress payments or Payment Procedures at the Pre-Construction Conference for review at the meeting. Acknowledgements of all the reviews made at the session will be noted in the meeting minutes.

1.9 Access Requirements

- A. General Access and Use. Access to the work site must be with approval of the RE. Access to the work site will be thoroughly discussed prior to the start of actual construction. Only vehicles essential to the construction effort will be permitted in the construction area. All construction equipment and materials must be removed from the site at the end of each work day as directed by the RE.
- B. Access to certain locations for the project may be restricted due to facility operations. Subcontractor may be required at various times to yield to facility operations that may require use of the Site. Upon receiving such a notice, Subcontractor must vacate the subject area. Unless otherwise indicated, Subcontractor will have complete and exclusive use of the premises within the construction staging area limits for the execution of the Work.

1.10 Subcontractor and Government Furnished Property

- A. These Specifications identify labor, materials, plant and equipment to perform the Work. All material not specifically indicated as furnished by Contractor must be furnished by Subcontractor.
- B. Government Furnished Equipment/Government Furnished Property provided by the Contractor. The Subcontractor must be accountable for all GFE/GFP or equipment/property acquired under this Subcontract. The Subcontractor must not accept any GFE/GFP without documentation signed by both the Subcontractor and Contractor indicating actual items and quantities received/transferred. GFE/GFP furnished but not installed will be returned to the Contractor with documentation signed by both the Subcontractor and Contractor indicating actual items and quantities received/transferred. The Subcontractor must adequately control, preserve, protect and maintain all GFE/GFP and subcontractor acquired property.
- C. GFE/GFP includes the following:
Telephone PBX System including desk phones (See C.1.5 for details)

1.11 Compliance with Local and Other Codes

- A. The Subcontractor will be responsible for coordination of all work at the Works site, and for obtaining local permits. The Subcontractor must obtain and comply with any necessary licenses/permits that comply with applicable Federal, State, and Municipal regulations in connection with the scope of the work. The Contractor will not be required to pay any amount for any action taken by a state or political subdivision.

1.12 FAA Right of Access

- A. The FAA reserves the right to enter the premises during the term of the Subcontract for quality assurance work inspections and/or maintenance of existing navigational and communication facilities.

1.13 Site Inspection

- A. After NTP and prior to initiating Work, Subcontractor and RE must conduct joint inspections of the jobsite to determine the existing conditions and note any existing damage or defects. Existing damage or defects will be used as the basis for determination of damages caused by the Subcontractor's operations.

1.14 Site Damage

- A. Subcontractor will be responsible for the cost of any repair caused by Subcontractor's operations or the operations of its lower tier subcontractors. All damage to the existing Site including, but not limited to,

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existing utilities and cables, facilities, equipment, buildings, and vegetation must be repaired. All such repairs must match the original finish and must be made utilizing materials, equal to or greater than the original materials, as approved by RE. All repairs must be made with no additional cost to Contractor.

1.15 Layout of work

- A. The Subcontractor must layout its work from established base lines and bench marks indicated on the drawings, and will be responsible for all measurements in connection with the layout. The Subcontractor should furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. The Subcontractor will be responsible for the execution of the Work to the lines and grades that may be established or indicated by the RE. The Subcontractor will also be responsible for maintaining and preserving all stakes and other marks established by the Contractor until authorized to remove them. If such marks are destroyed by the Subcontractor or through its negligence before their removal is authorized, the Contractor may replace them and deduct the expense of the replacement from any amounts due or to become due to the Subcontractor.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.1. Special Scheduling Requirements

- A. Protect existing facilities and equipment from physical or electrical damage as a result of accidental or incidental negligence, such as, but not limited to, disruption of standby power to the facility or equipment.
- B. All preparatory work must be completed by the Subcontractor prior to shutdown/cut-over to minimize downtime. The requested time and date of shutdown and cut-over must be approved by the RE a minimum of two working days in advance of the requested shutdown or cut-over. FAA personnel will perform the actual shutdown/cut-over of systems that affect operations.
- C. In the event any services are interrupted, restore services with a full crew available to restore such services on a 24-hour basis, including Work during holidays and weekends, at no additional cost to Contractor or delay in the Schedule.
- D. Request any utility interruptions in writing five business days before the scheduled interruption, unless otherwise specified. RE review is required before interruption. In this notification, the Subcontractor must certify that all equipment, materials, and personnel necessary to conduct such testing will be available on the scheduled date and that the systems have been pre-checked by personnel and are ready for performance and acceptance testing.
- E. Subcontractor must also confirm that all operations and maintenance manuals have been submitted and approved. No performance and acceptance testing will be permitted until the operations and maintenance manuals have been approved.
- F. At the option of Contractor, Contractor and FAA personnel will travel to the site to witness testing. If the testing must be postponed or canceled for whatever reason not the fault of the Contractor, the Subcontractor must provide Contractor not less than three working days advance notice of this postponement or cancellation.
- G. Coordinate all required outages with Contractor through the RE. The Subcontractor must determine quantity and duration of outages required to complete the Work. The Subcontractor may have to schedule work and outages at a time when air traffic is at a minimum. This could mean late night or early morning hours.
- H. Do not interrupt services outside of permitted, scheduled outage periods.

3.2. Inspection of Work

- A. Contractor retains the right to inspect all Work on the project, but has no obligation to do so. Contractor's inspections and tests are for the sole benefit of Contractor and do not:

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1. Relieve the Subcontractor or its lower tier subcontractors of the responsibility to provide adequate quality control measures.
 2. Relieve the Subcontractor or its lower tier contractors of the responsibility for damage to or loss of material before acceptance.
 3. Constitute or imply acceptance.
- B. The presence or absence of the RE does not relieve the Subcontractor or its lower tier contractors from any Subcontract requirement, nor is the RE authorized to change any requirement of the Subcontract.

3.3. Submittals

- A. Subcontractor must submit document, data, and/or material submittals in accordance with Section 01330, Submittal Procedures, and/or as specified elsewhere in the Technical Specifications.

3.4. Contract Closeout

- A. The Subcontractor is responsible for Subcontract closeout in accordance with Section 01770, Closeout Procedures.

3.5. Project Specific Work Plans

- A. Required Work Plans. The Subcontractor shall be required to submit written work plans in accordance with the submittal requirements set out in *Section 01330 Division 1, General Requirements*, for critical items of work set out in this Section, in the Technical Specifications, or elsewhere in the Contract Documents. Work associated with the required work plans shall not commence until approval has been provided.
- B. Work Plan -- Underground Utility Damage Prevention. The Subcontractor is responsible for complying with all OSHA regulations related to underground utility damage prevention. The Subcontractor shall take all reasonable steps necessary to make certain that all active, abandoned, or unknown utilities are identified. Such steps are to include the utilization of an individual or firm acceptable to the Contractor and knowledgeable in Subsurface Utility Engineering (SUE) techniques, and competent to perform utility designation in conformance with the National Utility Locating Contractors Association (NULCA) Standard 101 for Professions Competence Standards for Locating Technicians or other written standard acceptable to the Contractor.
1. Preparation
 - a. All existing underground utilities depicted on the drawings, (which include but are not limited to: power, control, and communications cables; telephone, water and sewer lines; and other utilities) are shown in their approximate locations only. Other utility lines may exist but not be depicted. It is the Subcontractor's responsibility to ensure that locations of all underground FAA, public, and/or private utilities are established prior to work in the area.
 - b. The Subcontractor shall at its expense satisfactorily repair and/or pay the cost of repair for all damages to underground utilities that result from the Subcontractor's or its lower tier subcontractors' operations during the period of the Subcontract. The Subcontractor is responsible for completing any required repair work to any underground utility that is damaged by its workers, equipment, work, or subcontractors immediately, and with equal material approved by the RE.
 - c. If the Subcontractor damages a cable that has been previously located, then the Subcontractor shall be required to repair the cable and, at its expense, install either a pull box or manhole depending on the type and/or size of the cable. The RE will determine whether a pull box or manhole is required. All costs related to the repair of the damaged cable shall be the responsibility of the Subcontractor.
 - d. Do not interrupt existing utilities serving facilities occupied by the Government or others except when permitted in writing by the RE and then only after acceptable temporary utility services have been provided. Provide a minimum 48-hours notice to the RE. Do not proceed with the interruption of any utility without written notice from the RE.
 - e. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork

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- operations.
- f. Protect subgrade and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary. Protect subgrade and foundation soils from softening and damage by rain or water accumulation.
 - g. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
2. Pre-excavation Requirements for Underground Utility Installations.
- a. Prior to any excavation, the Subcontractor shall layout in the field the centerline of all proposed utilities. In addition the Subcontractor shall white line (by white spray paint or other means acceptable to the RE) the limits of construction including the area(s) to be excavated. The Subcontractor must also identify the proposed placement of grounding rods and cathodic protection.
 - b. The Subcontractor shall identify the location of existing underground utilities on as-built drawings, including any unknown or abandoned utility found during construction. The Subcontractor shall ensure that all FAA facility officials, FAA technicians, other utility owners/operators, and any One-Call System performing utility designation/location services designate/mark existing utilities within the construction limits as well as the entire path of excavation, including five feet to either side of proposed utilities. The Subcontractor shall be solely responsible for notifying relevant utility owners/operators and One-Call System sufficiently in advance to ensure that delays to construction do not occur.
 - c. After completion of the utility designation described above, the Subcontractor shall hire a professional Subsurface Utility Engineering (SUE) or utility designation/locating company, to designate and sweep the entire excavation area, including five feet to either side of proposed utilities, to confirm the locations of the marked utilities and identify and mark any additional unidentified utilities that may be within the limits of excavation.
 - d. The Subcontractor, in accordance with Section 01310, shall notify the RE of the preferred date and time for a pre-work meeting for all excavation work. The RE will coordinate the pre-work meeting with utility owners, FAA facility officials, the Subcontractor, and others as applicable to walk the excavation area and review applicable documentation. The subcontractor shall arrange to have its excavator and SUE (or designation firm) at the pre-work meeting. The Subcontractor shall provide a written excavation work plan that includes a contingency plan to restore to service all utilities including cables that may be placed out of service or damaged during performance of the work. The work plan at a minimum must include:
 - i. A list of qualified subcontractors such as plumber, electrician, fiber optical cable splicer, and others as applicable for emergency repair purposes. Due to current FAA/TSA/Airport security requirements, the Subcontractor shall ensure that these subcontractors have passed the required facility security and registration requirement so they can be presented immediately at the job site when emergency repair is warranted.
 - ii. The Subcontractor shall coordinate with the RE to request an Emergency Procedures Plan from the facility manager. This plan will outline special procedures during emergencies, disasters, accidents and injuries. The Subcontractor shall review the Emergency Procedures Plan with all its personnel prior to construction and every quarter thereafter.
 - iii. The Subcontractor shall investigate and provide a list of sketches/drawings to all disconnects to electrical circuits, natural gas, and main water sources that feed the services in the project area and its vicinity. All disconnects and shut-off valves shall be noted with special notation and procedures if required by the utility owners/operators.
 - iv. Name of the SUE or utility designation firm including training and experience of the technician who will be performing the utility designation as well as equipment that will be used for sweeping the area to be excavated.
 - v. Name of the excavator including training and experience of the equipment operator who will be doing the work.
 - e. Subcontractor shall expose all utilities that it will be crossing through non-destructive mechanical excavation methods such as vacuum excavation or similar mechanical

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method(s) approved by the RE (“potholing”) or by hand digging. When a cable is located, the Subcontractor shall hand- excavate a trench five (5) feet each side of the exposed cable to verify that another cable is not adjacent to the exposed cable. All critical or high priority facilities must be exposed by potholing or hand digging every 100 feet (or less if on a curve) if the Subcontractor is working on or parallel to a critical or high priority utility. All exposed utilities must be properly supported and protected during construction.

- f. Subcontractor shall continuously maintain utilities, facilities and/or systems that are or may be affected by work associated with the project. The Subcontractor shall provide the RE with written reports on any cable cuts in accordance with Subsection 3.2 C. below.
- g. If the Subcontractor finds an underground utility that was not previously marked, the excavation shall be stopped, the RE shall be notified, and the Subcontractor shall contact the appropriate owner/operator of the utility or make contact with the appropriate owner/operator, using the One- Call System when warranted.
- h. Every attempt shall be made to preserve the location markings during excavation. Location markings that are no longer visible shall be refreshed by calling the one-call system and/or the utility owners/operators for remarking.
- i. All existing utilities that have been exposed during exploratory potholing or excavation must be supported to prevent stretching, kinking, or damage to the existing utility.

C. Work Plan - - Crane Work.

At a minimum, the crane company must provide a site specific emergency response plan, pick plan, and certifications for operator and equipment anytime the services of a crane are being utilized. This must be part of the Risk management Plan (RMP) to be provided by the Subcontractor. Highlights of the crane work plan are as follows:

1. Notify the Resident Engineer and the FAA, at least 48 hours prior to the arrival of any crane at the work site.
2. On the day of arrival of the crane at the work site, and every day the crane is at the work site thereafter, notify the Resident Engineer of its presence and location.
3. The following information for each crane must be given to the Resident Engineer:
 - Boom or lead height
 - Weight
2. Crane must be grounded.
3. Crane must have an up-to-date Certificate of Insurance.
4. Crane operator must have an up-to-date Operator License.
5. Crane must have appropriate flags and lights on top.

D. Work Plan -- Fall Protection. 100% Fall Protection.

Whenever activities are to be performed 6 feet or higher above a lower level by subcontractor or lower-tier subcontract personnel, the Subcontractor shall:

- A. Include a detailed Fall Protection Plan as part of the Risk Management Plan submittal. The Fall Protection Plan shall identify specific situations where fall protection is required by all subcontract and lower-tier subcontract personnel who will be engaged in activities at elevations of 6 feet or higher, identify the fall protection system and associated components to be used, and explain the specific methods and procedures to be followed to assure 100% fall protection.
- B. 100% fall protection means that the employee is protected 100% of the time by an approved fall protection system regardless of activity. **100% of the time an employee is engaged in activities at elevations of 6 feet or higher; the employee must be protected - without exception.**

E. Fall Protection Systems

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- 1) Guardrail Systems when used as the means of fall protection on the job shall comply with OSHA 29 CFR 1926.502(b). Additionally, these systems shall:
 - a. Be provided on every open-sided floor or platform 4 feet or more above adjacent floor or ground level on all open sides, except where there is an entrance to a ramp, stairway, or fixed ladder.
 - b. Consist of a top rail, intermediate rail, and posts, and shall have a vertical height of 42 inches nominal from upper surface of top rail to floor, platform, runway, or ramp level. When used mid-rails shall be half the distance between the top rail and to floor, platform, runway, or ramp level.
 - c. Be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge of the top rail, in any outward or downward direction, at any point along the top edge.
 - d. Be capable of withstanding, without failure, a force of at least 150 pounds applied to the mid-rail, in any outward or downward direction.
 - e. Use toeboards or screens when objects could fall to a lower level.

- 2) Safety Net Systems when used as the means of fall protection on the job site shall comply with 29 CFR 1926.502(c). Additionally, these systems shall:
 - a. Be installed as close as practicable under the walking/working surface on which employees are working, but in no case more than 30 feet below such level.
 - b. Extend outward from the outermost projection of the work surface as follows:

<i>Vertical distance from working level to horizontal plane of net:</i>	<i>Minimum required horizontal distance of outer edge of net from the edge of the moving surface:</i>
➤ Up to 5 feet	➤ 8 feet
➤ More than 5 feet up to 10 feet	➤ 10 feet
➤ More than 10 feet	➤ 13 feet

- c. Be capable of absorbing an impact force equal to that produced by the required drop test. The drop-tested shall be performed at the job site after initial installation and before being used as a fall protection system, whenever relocated, after major repair, and at 6-month intervals if left in one place. The drop-test shall consist of a 400 pound bag of sand 30 ± inches in diameter dropped into the net from the highest walking/working surface at which employees are exposed to fall hazards, but not from less than 42 inches above that level.
 - d. Be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to the required drop test.
 - e. Be inspected at least once a week for wear, damage, and other deterioration. Defective nets and components shall be removed from service.
 - f. Be inspected daily, at the beginning and end of each shift, and all materials, scrap pieces, equipment, and tools which have fallen into the safety net must be removed as soon as possible from the net.
 - g. Be inspected after any occurrence that could affect the integrity of the safety net system. Defective nets and components must be removed from service.

- 3) Personal Fall Arrest Systems when used as the means of fall protection on the job site shall comply with 29 CFR 1926.502(d). The subcontractor shall identify, in writing, an observer to be present on the ground at all times when personnel are engaged in activities requiring the use of these systems (this person shall have certification by training and experience as a competent person in fall protection and shall not have any other duties that will encumber the observing duties). Additionally, these systems shall:
 - a. Utilize full body harnesses (which meet ANSI A10.14-1991) to distribute the fall arrest forces as defined in 29 CFR 1926.500(b). **Body belts shall not be used.**
 - b. Utilize shock absorbing lanyards or retractable lifelines with locking type snap hooks to prevent

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“roll-out.”

- c. Limit the free fall distance, as defined in 29 CFR 1926.502(d)(16)(iii), to less than six feet and minimize associated swing hazards.
 - d. Ensure anchor points meet the 5,000-lb. strength requirements outlined in 29 CFR 1926.502(d)(15).
 - e. Ensure that all fall protection systems and components are inspected prior to each use and continue to be inspected by a competent person in accordance to the requirements set forth in 29 CFR 1926.502(d)(21). The Subcontractor shall maintain records of inspection at the job site for review by Parsons RE and/or regulatory agencies.
- 4) Positioning Device Systems must comply with 29 CFR 1926.502(e). The Subcontractor shall identify, in writing, an observer to be present on the ground at all times when personnel are engaged in activities requiring the use of these systems (this person shall have certification by training and experience as a competent person in fall protection and shall not have any other duties that will encumber the observing duties). Additionally, these systems shall:
- a. Utilize full body harnesses (which meet ANSI A10.14-1991). **Body belts shall not be used.**
 - b. Utilize positioning lanyards with locking type snap hooks to prevent "roll-out."
 - c. Limit the free fall distance, as defined in 29 CFR 1926.502(e)(1), to less than two feet.
 - d. Ensure anchor points meet the 3,000-lb. strength requirements outlined in 29 CFR 1926.502(e)(2).
 - e. Ensure that all positioning devices systems and components are inspected prior to each use and continue to be inspected by a competent person in accordance to the requirements set forth in 29 CFR 1926.502(e)(9). The Subcontractor shall maintain records of inspection at the job site for review by Parsons RE and/or regulatory agencies.
- 5) Warning Lines and Controlled Access Zones when used as means of fall protection must comply with the requirements of 29 CFR 1926.502(f & g). Additionally, use of warning lines and controlled access zones must require the designation of a competent person to perform as a safety monitor. The competent person shall be on the same working level as employees, be able to readily observe and communicate orally with employees on the working level, and not have any other duties that will encumber the safety monitoring duties.
- C. Fall Protection training shall be provided as described in 29 CFR 1926.503(a) and 29 CFR 1926.21(b)(2), be conducted by a competent person according to 29 CFR 1926.503(a)(2), and be current within 12 months of issuance of the Notice To Proceed.
- D. A training certification record showing the names of employees trained, the date(s) of the training, training topics, and the signature of the trainer in accordance with 29 CFR 1926.503 (b & c) shall be submitted to Parsons.
- E. A Notice To Proceed will not be issued until written evidence is received by Parsons showing compliance with the fall protection training requirement. All Subcontractor employees will be required to have, on file with Parsons, their training records before they will be permitted on the job site. Delays and related costs associated with the Subcontractor's failure to comply shall be the sole responsibility of the Subcontractor.
- F. Required Forms to be submitted during Design Phase.
- i. **70% Design Submittal, See attached requirements to be submitted to Parsons for review and approval.**
 - ii. **100% Design Submittal, See attached requirements to be submitted to Parsons for review and approval.**
- G. Required Forms to be submitted during the Construction Phase. The following forms must be completed and submitted to the Subcontract Administrator at least five (5) working days prior to the Pre-Construction Conference:
- i. **Subcontractor Site Specific Safety Plan**
 - ii. **Hazard Assessment of the work site (including identification of hazards, protective measures required, and written certification)**

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- iii. **Training documentation (records and certifications) for all subcontractor and lower-tier subcontractor personnel engaged in work at the site:**
- iv. **Competent person training documentation where required by 29 CFR 1910 and 29 CFR 1926 such as for fall protection, excavations over four feet deep, crane and rigging operations, working in confined spaces, lock out/tagout of energy sources and equipment, and working with live electricity.**
- v. **Additional training records may be required on a case-by-case basis.**

END OF SECTION

SECTION 01 31 13

PROJECT COORDINATION

PART 1 GENERAL

1.1 Section Includes

- A. This section specifies requirements for requests for information as well as special and regularly scheduled progress meetings.

1.2 Related Sections

- A. General Conditions of the Contract; Section 01 11 00, Summary of Work; Section 01 32 00, Construction Progress Documentation; and Section 01 33 00, Submittal Procedures.

1.3 Request for Information Procedures

- A. Use Contractor's RFI Form. Contractor will provide sample forms at the Pre-Construction Meeting. Complete the form for any RFI and submit via the KSN construction site.
- B. RFIs must only address technical questions or concerns and/or alternative technical solutions. An RFI that includes discussion regarding specific cost or schedule demands will be rejected.
- C. RFIs identifying a technical question relating to the design or construction of the project must be submitted to the RE for disposition by the PM. Copies of the RFI are to be provided to the PM and SA in accordance with subparagraph 1.3 A. Attach drawings, sketches, and other clarifying documents along with recommended resolution if known. PM will respond and transmit Contractor's response via the KSN construction site.
- C. If Subcontractor determines that Contractor's response to the RFI may impose a cost or a schedule impact on the Work, Subcontractor must inform the PM in writing with copies to the RE and SA within (14) calendar days from receipt. Notification must not include cost or schedule impact. Subcontractor must submit the cost and schedule impact separately only to the SA. Subcontractor is not to proceed with any Work that incurs additional cost or time on the basis of an RFI. If no cost or schedule impact notification is received from Subcontractor within specified time, Subcontractor will be deemed to have accepted Contractor's response and responsibility for Work described therein.
- D. Subcontractor must maintain its own RFI log. The RFI number must be prefixed by Contractor assigned number followed by a dash followed by a sequential number starting at 001.

1.4 Field Instruction Procedures

- A. Contractor may issue an order to the Subcontractor to perform a change in the work. This instruction may be in the form of revised plans or other information that provides the Subcontractor with clarifications or additional information on what work is to be performed.
- B. If Subcontractor determines that Contractor's direction in the Field Instruction may impose a cost or a schedule impact on the Work, Subcontractor must inform the PM in writing with copies to the RE and SA within (14) calendar days from receipt of the field instruction. The notification must not include cost or schedule impacts. The cost or schedule impacts must be submitted separately only to the SA.

1.5 Progress Meetings

- A. Meetings with Subcontractor must be held weekly with date, time and location to be specified by RE. The purpose of these meetings will be to conduct a joint review, review the quality of the on-going Work, and agree on project progress and subsequent submittals of updated and actual progress schedules.
- B. The Subcontractor's Superintendent or representative must meet with the RE and, if directed, with the PM daily for a Play of the Day. The POD is intended as a 24 hour look ahead and should not last more than 15 minutes. The POD must address planned work for the next day, tools, materials, testing services, and equipment needed, and any AHAs needed to review during the morning tool box talk. The purpose of the POD is to ensure adequate planning has been done with regards to safety, security, quality, and schedule.

SECTION 01 31 13

PROJECT COORDINATION

The POD should address availability of proper personnel, equipment, tools, and work plans for the following day. It should be done in the early afternoon or before to allow the subcontractor to acquire any missing assets needed to perform the work.

1.6 Pre-installation/Pre-work Meetings

- A. When required in individual specification sections, convene a pre-installation meeting at Worksite before starting work requiring a written work plan. The purpose of the meeting will be to review the Subcontractor's work plan, determine acceptability of the Subcontractor's work plan, and provide authorization to proceed with the Work if the work plan is acceptable. Require attendance of parties directly affecting, or affected by, work of the specific section and RE. Notify the RE and PM as required by the Facility, but no less than two work days before the meeting.

PART 2 PRODUCTS [Not Used]

PART 3 EXECUTION [Not Used]

END OF SECTION 01 31 13

SECTION 01 32 10

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.1 Summary

- A. This section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work.

1.2 Related Sections

- A. Related Sections include the following: General Conditions of the Contract Part I Section G; Section 01 11 00, Summary of Work; Section 01 31 13, Project Coordination; and Section 01 33 00, Submittal Procedure.

1.3 General Requirements for Construction Schedule

- A. Prescheduling Conference: The Subcontractor and Contractor must conduct a conference to review methods and procedures related to the Subcontractors Proposed Construction Schedule and Contractor's Preliminary Construction Schedule including the following:
 - 1. Review any software limitations and content and format for reports.
 - 2. Discuss constraints including, phasing, long lead items and other factors that may impact the progress of the work.
 - 3. Review schedule for work of any other separate contracts planned for the site.
 - 4. Review time required for review of submittals and resubmittals.
 - 5. Review requirements for tests and inspections by independent testing and inspecting agencies.
 - 6. Review time required for completion and startup procedures.
 - 7. Review and finalize list of construction activities to be included in schedule.
 - 8. Review submittal requirements and procedures.
 - 9. Review process for updating schedule.
- B. Coordination: Coordinate preparation and processing of schedules and reports with performance of construction activities, and scheduling and reporting of separate lower tier subcontractors. Coordinate the Subcontractor's Construction Schedule with the Schedule of Values, List of Lower Tier Subcontractors, Submittals Schedule, Progress Reports, Payment Requests, and any other required schedules and reports.
 - A. Secure time commitments for performing critical elements of the Work from parties involved.
 - B. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.
- C. Submitting Schedule Information: Subcontractor must submit all schedule information electronically on the KSN website established for the project at the following link [<https://ksn2.faa.gov/tssc/CM/WR-Sites/ANT-21-3525/default.aspx>].

PART 2 PRODUCTS

2.1 Submittals

- A. Construction Related Submittals required to create a Construction Progress Schedule include the following:
 - 1. Submittal Schedule.
 - 2. Schedule of Values.
 - 3. Long Lead and Special Order Material and Equipment.
 - 4. List of Products including Test and Inspection.
 - 5. List of Principal Suppliers and Fabricators.
 - 6. Contractor or Government Furnished Property

SECTION 01 32 10

CONSTRUCTION PROGRESS DOCUMENTATION

2.2 Subcontractor's Submittal Register

- A. Submit a Submittal Register, arranged in chronological order by dates required by the Contractor's Preliminary Construction Schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates. Include columns for actual date submitted, disposition, and date of return by the Contractor. The register is intended to be a live tracking document.
- B. Coordinate Submittal Register with list of lower tier subcontractors, the Schedule of Values, and other Construction Related Submittals.
- C. At a minimum, arrange the following information in a tabular form in a format acceptable to the PM:
 1. Scheduled date for each.
 2. Specification Section number and title.
 3. Submittal category (action or informational).
 4. Name of subcontractor.
 5. Description of the Work covered.
 6. Scheduled date for Contractor's final release or approval
- D. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.

2.3 Subcontractor's Construction Schedule

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.
 1. Subcontract completion date must not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Subcontract Modification.
- B. Activities: Treat each area as a separate numbered activity for each principal element of the Work. Comply with the following:
 1. Activity Duration: Define activities so no activity is longer than 10 days, unless specifically allowed by PM.
 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule. Include review and resubmittal times.
 4. Startup and Testing Time: Include not less than two (2) days for startup and testing.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Contractor's administrative procedures necessary for certification of Substantial Completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected
 1. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by FAA: Include a separate activity for each portion of the Work performed by FAA.
 4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date. Delivery dates indicated stipulate the earliest possible delivery date.
 5. Contractor or Government Furnished Property: Include a separate activity for each product. Include delivery date indicated in Section 01 11 00 "Summary of Work." Delivery dates indicated stipulate the earliest possible delivery date.

SECTION 01 32 10

CONSTRUCTION PROGRESS DOCUMENTATION

6. Work Restrictions: Show the effect of the following items on the schedule
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
 - i. Work hour restrictions.
 7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Mockups.
 - e. Fabrication.
 - f. Sample testing.
 - g. Deliveries.
 - h. Installation.
 - i. Tests and inspections.
 - j. Adjusting.
 - k. Curing.
 - l. Startup and placement into final use and operation.
 8. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Structural completion.
 - b. Permanent space enclosure.
 - c. Completion of mechanical installation.
 - d. Completion of electrical installation.
 - e. Substantial Completion
 9. Other Constraints: [Not Used]
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion .
- E. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Subcontractor's Construction Schedule within 10 days of date established for the Notice to Proceed. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of Project. Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
- F. After all Subcontract Work items are complete, and as a condition of final payment, Subcontractor must submit an "As-built Contract Schedule" in same format as the Schedule showing actual start and finish dates for all Work activities and milestones, based on the accepted monthly updates.

2.4 Reports

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 1. List of subcontractors at Project site.

SECTION 01 32 10

CONSTRUCTION PROGRESS DOCUMENTATION

2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions.
 7. Accidents.
 8. Meetings and significant decisions.
 9. Unusual events (refer to special reports).
 10. Stoppages, delays, shortages, and losses.
 11. Meter readings and similar recordings.
 12. Emergency procedures.
 13. Orders and requests of authorities having jurisdiction.
 14. Change Orders received and implemented
 15. Construction Change Directives received and implemented.
 16. Services connected and disconnected.
 17. Equipment or system tests and startups.
 18. Partial Completions and occupancies.
 19. Substantial Completions authorized.
- B. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List must be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
- C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- D. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise in advance when these events are known or predictable.

PART 3 EXECUTION

3.1 Subcontractor's Construction Schedule

- A. Construction Schedule Submission: Subcontractor must update its construction schedule monthly or by request of the SA or PM.
- B. Monthly Reviews: Monthly Schedule updates must be the product of joint review meetings between the RE, PM, Subcontractor, and major active lower-tier subcontractors. The joint review must focus on actual progress for the preceding month and planned progress for the upcoming month supported by a Subcontractor prepared three (3) week Look-ahead Schedule. Impacts to Schedule due to change notices issued, adverse weather, and any other impacts to the construction Schedule including those based on items from paragraph 1.3A.
- C. Monthly Updates: The agreed upon progress and changes must be incorporated in the Schedule update to be submitted. The update must always represent the actual history of accomplishment of all activities. If in the opinion of the Contractor the Subcontractor falls behind the approved Schedule, the Subcontractor must take immediate steps to improve its progress without additional cost to the Contractor.

SECTION 01 32 10

CONSTRUCTION PROGRESS DOCUMENTATION

- D. Progress Payments: The monthly Schedule update must form the basis for the Subcontractor's progress payments. The progress payment for an activity must be based on its agreed upon percentage of completion. On unit priced subcontracts, the approval of the Subcontractor's monthly requisition is contingent on the submittal of a satisfactory monthly Schedule update, however, the basis of payment will be the actual measurement of Contractor accepted in place units of Work.

END OF SECTION 01 32 10

SECTION 01 32 10
CONSTRUCTION PROGRESS DOCUMENTATION

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SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 Section Includes

- A. This section specifies requirements for providing submittals required under the Subcontract.

1.2 Related Sections

- A. General Conditions of the Contract; Section 01 32 00, Construction Progress Documentation; Section 01 45 00, Quality Control.

1.3 Submittal Register

- A. The Subcontractor is solely responsible for creating a Submittal Register identifying whether the submittals are samples, cut sheets, certified test results, and adding additional submittals as required by specifications, drawings or as recommended by a manufacturer. As applicable, the submittal register must state the action required for testing and inspection with the name of the persons authorized to review the submittal. The Subcontractor must submit three copies of the Submittal Register to the PM for approval. The Subcontractor must submit one copy electronically for approval within 10 calendar days of Subcontract award. At a minimum, the following submittal items must be provided to the Contractor for review and approval prior to installation:
 1. Construction Progress Schedule.
 2. Schedule of Values.
 3. Risk Management Plan (RMP)
 4. Inspection and Test Plan (ITP)
 5. Master Submittal List.
 6. Schedule of Material Allowance.
 7. Submittals required by specification sections 02 through 50.
 8. Materials and products identified in the project specifications.
 9. Pre-Installation and Work Plans.
 10. Qualifications of utility designation firm or person.
 11. Qualifications of licensed tradesmen where licensing or certifications are required by State or Local Governments.
 12. Qualifications and Certifications of independent inspections and testing firms.

1.4 Shop Drawings

- A. Shop Drawings must be presented in a clear and thorough manner showing all details, construction sequence, dimensions, materials and work performed by other trades required to complete the construction related to the shop drawing submittal. Shop Drawings must contain the following information:
 1. Date.
 2. Number of the drawing and revision.
 3. Name of project or facility.
 4. Name of Subcontractor and applicable lower tier subcontractor.
 5. Clear identity of contents and location of work.
 6. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
 7. Subcontractor's approval certifying it checked and coordinated the work of other trades.

1.5 Warranties and Guarantees

- A. Subcontractor must provide warranties/guarantees executed by the respective manufacturers, suppliers, and lower tier subcontractors for all installations as required in the Subcontract or as is customarily provided with the particular piece of equipment or system. All warranties are to be executed, in writing, for the benefit of the FAA. Provide all warranties in a 3 ring binder with an index and tabs for each section. Subcontractor must enforce all warranties for the benefit of the FAA if so directed by the FAA or Contractor. In the event the Subcontractor's warranty has expired, the FAA may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty. Subcontractor must provide complete information for each item as follows:

SECTION 01 33 00

SUBMITTAL PROCEDURES

1. Product or work item.
 2. Firm, with name of principal, address and telephone.
 3. Scope.
 4. Date of beginning of warranty.
 5. Duration of warranty.
 6. Proper procedure to evoke the warranty in case of failure.
 7. Instances that might affect the validity of warranty.
 8. Subcontractor name or responsible principal, address and telephone number.
 9. Extended warranties normally provided by manufacturers that are beyond the warranty of construction must be specifically noted.
- B. Equipment Warranty Tags. The Subcontractor must furnish and install equipment warranty tags on all Subcontractor furnished and installed equipment in accordance with the following:
1. Lettering must be Arial bold, upper case, and easily readable.
 2. Tag must be of a durable type material and of a type that can be written on.
 3. The tag must state the following:
 - a. The title "Equipment Warranty".
 - b. Subcontractor's name and Subcontract Number.
 - c. Month-day-year (mm-dd-yy) the warranty expires.
 - d. Point of contact, including name and telephone number.
 - e. Manufacturer.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.1 Submittal Submission Requirements

- A. One (1) electronic copy, of all shop drawings and/or submittal data must be submitted for review and acceptance through the KSN Construction Site for this project.
- B. The Subcontractor must ensure that all submittals are made with adequate time for review and acceptance, including re-submittals, so as not to delay the job. The Contractor will coordinate submittal review and return initial submittals within 14 calendar days and re-submittals within five (5) business days. **Work must not commence prior to acceptance of required submittals by Contractor.**
- C. Subcontractor must check and approve submittals prior to delivery to the Contractor. The Subcontractor is cautioned that the time period stipulated in this section does not include any allowance for re-submittal in cases where the PM determines that the Subcontractor's approval of the submittal is not adequately justified. Any delay caused by inadequacies in the Subcontractor's submittal will not entitle the Subcontractor to an extension of time or additional compensation. Lack of completeness or inadequate description will be justification for disapproval.

3.2 Submittal Evaluation

- A. The Contractor will evaluate all submittals requiring Contractor responsive action. The Subcontractor remains responsible for complying with Subcontract requirements, referenced standards, and regulations. The Contractor's evaluation will not relieve the Subcontractor of the responsibility for any error that may exist. Unsolicited submittals not required by the Contract Documents will be returned with the notation that the submittal is not required by the Subcontract and that the Contractor has not reviewed and has no comment on the submittal. The Contractor's evaluation will result in only one of four responses as follows:
 1. Approved: Work covered by the submittal may proceed provided Subcontractor complies with requirements of the Contract Documents.
 2. Approved as Noted: Work covered by the submittal may proceed contingent upon Subcontractor acceptance of the corrections and/or notations and provided Subcontractor complies with the

SECTION 01 33 00

SUBMITTAL PROCEDURES

- requirements of the Contract Documents.
3. **Revise and Resubmit:** Work covered by the submittal may not proceed until the submittal is revised in accordance with the corrections and/or notations and resubmitted.
 4. **Rejected:** The submittal does not conform to the intent and requirements of the Contract Documents and the Subcontractor must resubmit.

END OF SECTION 01 33 00

SECTION 01 33 00
SUBMITTAL PROCEDURES

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SECTION 01 35 13

SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.1 Section Includes

- A. This section identifies some of the requirements for Subcontractor activity on, and adjacent to, an operating airport.

1.2 Related Sections

- A. General Conditions of the Contract; Section 01 35 29, Health, Safety, and Emergency Response Procedures.

1.3 Safety Coordination

- A. Subcontractor must coordinate all work with the Contractor, The Boise Airport Authority, and local FAA personnel. Basic responsibilities and procedures should be addressed for the Subcontractor's work activities and movement on the airport. The Contractor reserves the right to suspend Subcontractor's operations in the event work activities constitute a danger to aircraft or airport operations. The Subcontractor must comply with all lawful orders of the Airport Authority and Government when working within air operations areas.

1.4 Advisory Circular

- A. As a minimum, the Subcontractor must adhere to all requirements of Advisory Circular AC 150/5370-2E, "Operational Safety on Airports During Construction," and the included reference documents. A copy of this document has been provided in the Information A available to Offerors section of the Solicitation Documents.

1.5 Aircraft Operation

- A. The Subcontractor must use extreme caution to avoid endangering or impeding the movement of any aircraft on runways, taxiways, and aprons or airborne aircraft. During the time that the Subcontractor is performing work activities, the aprons, taxiways, and runways at the airport will remain in use by aircraft.
- B. Aircraft operations, unless otherwise directed by the Contractor, must have priority over all Subcontractor activity. The Subcontractor must not allow employees, subcontractors, material suppliers, or any other personnel under Subcontractor control to enter or remain upon any part of the airport that would be deemed a hazardous location to aircraft. The Contractor, in coordination with the FAA and Airport Authority, reserves the right to determine when Subcontractor's activities constitute a danger to aircraft.
- C. Should aprons, runways, or taxiways be required for use of aircraft, or should the Subcontractor be too close to the portion used by aircraft for safety, the Contractor may deem it necessary to order the Subcontractor to suspend all operations and remove equipment and material until further notice. Normal daytime airport operations may necessitate the Subcontractor performing some work at night. This item must be thoroughly discussed in the Pre-Construction meeting.
- D. Airport Operations Conflicts. There must be no compromise of the safe and timely control of aircraft. In the event of any actual or potential conflict, air traffic activities must have priority over all jobsite activities.

1.6 Airport Operations Rules

- A. The exact details for safety, movement of vehicles, method of control, etc. must be discussed in depth at the Pre-Construction meeting. At a minimum, however, the Subcontractor must observe the rules listed below. The FAA reserves the right to add additional safety rules if deemed necessary by the FAA or the Boise Airport Authority or Air Traffic Personnel.
- B. All persons working at the site will be required to be badged at the airport. The procedure for obtaining a badge will be covered at the Preconstruction conference.

PART 2 PRODUCTS [NOT USED]

SECTION 01 35 13

SPECIAL PROJECT PROCEDURES

PART 3 EXECUTION

3.1 Work Near Runway

- A. The Subcontractor must avoid entering the Runway Safety Area and the Object-Free Area as shown on the plan drawing. Any construction activity that violates the object-free zone will require special considerations, such as obstruction markings, runway closure, threshold displacement, night time operations, and airport approval.
- B. The Subcontractor must not disturb any sub-drains while trenching or boring beneath runways or taxiways. All storm sewers must be kept free of dirt and debris caused by grading operations near runways.
- C. Temporary barricades and traffic safety measures must be provided as required by the Airport Authority. Temporary barricades must have flashers and be weighted or staked down.

3.2 Obstruction Marking

- A. All equipment on the field must be properly marked with orange and white checkered flags of a size not less than 3 square feet during the day. Equipment to be used during night time activity must be furnished with amber flasher electric lights capable of a 360-degree rotation 3.1

3.3 Communications [Not Used]

- A. The Subcontractor must provide all radio communication equipment necessary to control vehicles, construction equipment, and personnel involved with the construction activity. When conducting work activities within the A.O.A. fence, the Subcontractor must have one designated competent person maintaining continuous communication with the FAA Air Traffic, ATCT or other ground control

3.4 Excavations

- A. Trenches and foundation excavations within 250 feet off the runway must not be left open overnight. In lieu of backfilling, the Subcontractor may be permitted to use steel plates to cover the trench or excavation. The steel plates must be of sufficient thickness to handle H-20 loading, and of sufficient weight to prevent displacement due to jet blast. This option is contingent upon approval by the Airport Authority, which approval must be coordinated through the Contractor.
- B. Work that requires trenching or excavation within 250 feet of the runway must be conducted in an expeditious and efficient manner. The only excavation permitted next to a closed runway within 2 hours of the scheduled runway reopening is hand digging and backfilling. All spoils piles are to be 24" or less in height or otherwise in accordance with airport requirements.

3.5 Airport Roads

- A. The Subcontractor must maintain clear routes for all airport roads within the limits of the construction. Subcontractor must not place material, equipment, or vehicles in such an area that would impede fire fighting and rescue operations.

3.6 Night Time Operations

- A. Aircraft activities will require that project activity up near the runway necessitate night time work. This will require with the temporary displacement of the threshold or the temporary closing of the runway. This item must be thoroughly discussed in the Pre-Construction meeting. The Airport Authority through the Contractor reserves the right to determine what safety measures are to be implemented for the intended work.
- B. The Subcontractor must notify the Contractor seven (7) days prior beginning night time operations. A NOTAM will be issued to implement closure of the runway or displacement of the threshold during night time hours. The exact time frame for night time work hours must be coordinated with the airport authority and Contractor. Subcontractor will be responsible for furnishing sufficient lighting to conduct work operations.

END OF SECTION 01 35 13

SECTION 01 35 26

GOVERNMENTAL SAFETY REQUIREMENTS

PART 1 GENERAL

1.1 Section Includes

- A. This section identifies some of the requirements of the OSHA Construction Standard.

1.2 Related Sections

- A. General Conditions of the Contract; Section 01 35 29, Health, Safety, And Emergency Response Procedures.

1.3 Subcontractor Responsibility

- A. General Safety Provisions. The Subcontractor must bear full responsibility to provide safe working conditions for its employees and subcontractors. The Subcontractor must not permit any employee or subcontractor to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to the health and safety of the employee.
- B. Accident Prevention. The Subcontractor must bear the responsibility of maintaining an accident prevention program such that frequent and regular inspections of the job site, materials and equipment are made by a competent person designated by the employer.
- C. Use of Equipment. The Subcontractor must not permit the use of any machinery, tool, material, or equipment that is not in compliance with OSHA regulations. The employer must permit only those employees qualified by training and/or experience to operate equipment and machinery.

1.4 Contractor Responsibility

- A. The Contractor will not be held responsible for safety inspections to assure Subcontractor conformance with the OSHA safety regulations. The Contractor, however, reserves the right to notify the Subcontractor of any deficiencies regarding worker safety.
- B. The Contractor will evaluate the Subcontractor on its safety performance, including that of its subcontractors. The number and severity of safety and security violations will be considered in this evaluation. Subcontractor safety violations are cause for termination for default, may result in notification of the Subcontractor's bonding company, and will affect the Subcontractor's opportunity to propose on future work. Failure to correct such deficiencies will result in the Contractor reporting such deficiencies to the FAA and may impact the Subcontractor's ability to work on future Contractor contracts.

1.5 OSHA Regulations

- A. The Subcontractor must comply with the latest Occupational Safety and Health Administration regulations (CFR 29 Part 1926) regarding safety in the work area.
- B. The Subcontractor must obtain copies of non-FAA referenced documents without additional cost to the FAA. If Subcontractor requests, a copy of FAA directives may be obtained by contacting the Subcontract Administrator.
- C. The Subcontractor is not relieved from adhering to other OSHA requirements not listed herein. The Subcontractor must consult the latest referenced OSHA documents for safety regulations.
- D. Documents.
 - 1. OSHA Documents:
 - CFR 29 Part 1926 Safety and Health Regulations for Construction
 - CFR 29 Part 1910 General Industry Standards Applicable to Construction Industry
 - 2. FAA Documents:
 - FAA Order 3900.49 Control of Hazardous Energy During Maintenance, Servicing and Repair

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.1 CFR 29 Part 1926 -- Safety and Health Regulations for Construction

SECTION 01 35 26

GOVERNMENTAL SAFETY REQUIREMENTS

- A. This section contains a partial listing of the referenced OSHA standards. The Subcontractor is responsible for adhering to all applicable regulations including those not specifically referenced herein.
1. Subpart D (Occupational Health and Environmental Controls). Subcontractor must furnish adequate supply of potable water in containers clearly marked as potable water. Containers containing non-potable water must be clearly marked. Subcontractor must furnish toilet facilities based on the number of employees present on the job-site. A minimum of 1 facility is required for less than 20 employees. See CFR 29 Part 1926 Subpart D for complete requirements.
 2. Subpart E (Personal Protective Equipment). The Subcontractor must provide adequate protection for the head, hearing, and eyes for all employees working in an area where hazards to the head, ear and eyes exist. See CFR 29 Part 1926 Subpart E for complete requirements.
 3. Subpart I (Tools). All hand tools and power tools and similar equipment whether furnished by the Subcontractor or the employee must be maintained and operated in a safe condition. Personal protection must be used when applicable. The use of tools must be limited to the intended use of said tools. See CFR 29 Part 1926 Subpart I for complete requirements.
 4. Subpart K (Electrical). The Subcontractor must furnish ground fault protection for all electrical equipment used on the jobsite. Extension cords must be three wire ground in good shape. Installation of the facilities will require energizing numerous circuits. The Subcontractor must protect against electrical shock by methods such as posting warning signs, supplying insulated gloves, locking out and tagging de-energized circuits, and other similar methods. See CFR 29 Part 1926 Subpart K for complete requirements.
 5. Subpart P (Excavation/Trenching). Prior to commencing trenching or excavation, the Subcontractor must ascertain that the area has been inspected for all utility lines and has been adequately marked. Trenches over four (4) feet in depth must require either adequate bracing or approved slope or bench methods. All trenches and excavations must be regularly checked for stability. In the event of a rain shower, the Subcontractor must suspend work activity within the trench or excavation until the stability of the trench or excavation is ascertained. See CFR 29 Part 1926 Subpart P and Division 2 of the Subcontract Specifications for complete requirements for additional requirements.

3.2 CFR 29 Part 1910 -- General Industry Standards Applicable to Construction Industry

- A. This section contains a partial listing of the referenced OSHA standards. The Subcontractor is responsible for adhering to all applicable regulations including those not specifically referenced herein.
1. Section 1910.147. Subcontractor must maintain a written hazardous energy control procedure in accordance with CFR 29 1910.147. The written procedure must describe contractor's responsibilities regarding shift changes or personnel changes. A specific coordinated lockout/tagout procedure must be recorded in writing and signed by the Subcontractor and Subcontract Administrator with copies to each party.
 2. Section 1910.120. The Subcontractor must develop and implement an Emergency Response and Contingency Plan in accordance with OSHA Standard 29 CFR 1910.120. In the event of an emergency as associated with remedial action, the Subcontractor must, without delay, take diligent action to remove or otherwise minimize the cause of the emergency; alert the Contractor; and institute whatever measures might be necessary to prevent any repetition of the conditions of actions leading to, or resulting in, the emergency. Emergency contact names and telephone numbers must be posted at all project phones and in site-support vehicles as well as included within the plan.

END OF SECTION 01 35 26

HEALTH, SAFETY AND EMERGENCY RESPONSE PROCEDURES

PART 1 GENERAL**1.1 Section Includes**

- A. This section identifies Subcontractor requirements for work place safety and health as generally required by local, state, and Federal regulations.

1.2 Related Sections

- A. General Conditions of the Contract; Section 01 31 00, Project Coordination; Section 01 33 00, Submittal Procedures; Section 01 35 26, Governmental Safety Requirements.

1.3 Subcontractor Responsibility

- A. Subcontractor must comply with safety, health, and emergency response provisions of this Subcontract. The provisions of this section represent minimum requirements and must not supersede additional requirements stated within the Subcontract or local, state, and Federal regulations.

1.4 Personal Protection

- A. The Subcontractor must provide all on-site personnel with appropriate personal safety equipment and protective clothing, and ensure that all safety equipment and protective clothing are kept clean and well maintained. Hard hats must be worn at all times from start to completion of the Subcontract unless a waiver is obtained in writing from the T4 Regional Program Manager. In addition, the following items must be provided to and utilized by all personnel:
 1. Work clothing as dictated by the weather.
 2. Footwear appropriate for the job which may include steel-toe/composite toe work safety boots. Employees must wear appropriate footwear at all times.
 3. Additional items must be provided contingent on the type of hazard encountered and the accepted industry standard for handling the specific type of hazard.

1.5 First Aid and Emergency Response Equipment

- A. The Subcontractor must provide for appropriate emergency equipment including an appropriately sized and type first aid kit, a 2A:20B:C-rated fire extinguisher, spill control/containment equipment, and supplies of sufficient quantity to handle potential accidents/incidents related to the nature of the work being accomplished. A listing of emergency phone numbers and points of contact for fire, hospital, police, ambulance, and other appropriate emergency agencies must be readily available.

1.6 Notification of Spills and Discharges

- A. Subcontractor must notify proper local authorities immediately in the event of a spill or discharge of potentially harmful or hazardous materials. Following notification of the local authorities, the Subcontractor must notify the RE, PM, and Subcontract Administrator immediately. If the spill or discharge is reportable under local, state or Federal regulations, and/or human health or the environment is threatened, the Subcontractor must notify the National Response Center at 1-800-424-8802 and the state's Department of Natural Resources where the spill or discharge occurred.
- B. Decontamination procedures may be required after clean-up to eliminate traces of the substance spill or reduce it to an acceptable level, as determined by the RE. Complete clean-up may require removal and disposal of contaminated soils. Personnel and equipment decontamination must occur as specified in this section. All contaminated materials, including solvents, cloth, soil, and wood, that cannot be decontaminated must be properly containerized, labeled, and properly disposed of as soon as possible.
 Personnel and equipment that have come into contact with contaminated materials must be decontaminated. A detergent that has been shown to be successful and effective for removing the hazardous material must be used as the decontamination solution. Following washing, items must be rinsed with clean water.

1.7 Project-Generated Wastes

- A. The Subcontractor must properly dispose of project-generated wastes that are or may have become contaminated (i.e., PCBs or asbestos). Such wastes include, but are not be limited to, disposable clothing, decontamination solvents, and decontamination wash waters.

HEALTH, SAFETY AND EMERGENCY RESPONSE PROCEDURES

1.8 Confined Space

- A. Definition. A confined space must be defined as a space, which, by design, has limited openings for entry and exit, unfavorable natural ventilation that could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces (as defined by OSHA) include, but are not limited to, storage tanks, compartments of ships, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines.
- B. In general, FAA confined spaces include vaults, lift stations, crawl spaces, small engine generator rooms, sewers, sumps, chillers, pits, boilers, tunnels, manholes, cooling towers, tanks, and watershed.
- C. Applicable Documents. The following publications of the issue in effect on the date of the solicitation form a part of this specification and are applicable to the extent specified herein.
1. American National Standards Institute (ANSI)
2117.1 Safety Requirement for Confined Space
 2. FAA Orders
As referenced.
 3. OSHA Standards
 - 29 CFR 1910.268 Telecommunications
 - 29 CFR 1910.269 Electric Power Transmission, Generation, and Distribution
 - 29 CFR 1910.46 Permit-Required Confined Spaces
 - 29 CFR 1926.956 Underground Lines
- D. Requirements. Prior to any admittance into a confined space as defined in this Section, the Subcontractor must perform a hazard evaluation. The hazard evaluation must include testing the atmosphere for oxygen content, the presence of toxic gases, and the presence of explosive or flammable gases.

1.9 Underground Utility Damage Prevention

- A. The Subcontractor is responsible for complying with all OSHA regulations related to underground utility damage prevention. The Subcontractor should take all reasonable steps necessary to make certain that all active, abandoned, or unknown utilities are identified. Such steps are to include the utilization of a third party individual or firm acceptable to the Contractor and knowledgeable in Subsurface Utility Engineering (SUE) techniques, and competent to perform utility designation in conformance with the National Utility Locating Contractors Association (NULCA) Standard 101 for Professions Competence Standards for Locating Technicians or other written standard acceptable to the Contractor.

1.10 Training, Certificates and Operator Cards

- A. Subcontractor is responsible for providing training records (when required by the Contractor) and competent persons designation for employees who will be overseeing Quality and Safety activities on site.
- B. Crane operators must be certified by an accredited body, such as NCCCO.
- C. Operators must have adequate training for the equipment being used. Where required by state law, equipment operators must be certified.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.1 Accident Reporting

- A. In the event of an accident or incident, the Subcontractor must immediately notify the Contractor in accordance with the Subcontractor's RMP. Within 2 working days of any reportable accident/incident or as otherwise set out within the RMP if an earlier time is specified, the Subcontractor must complete and submit to the Contractor a written Accident Report. This report must include at minimum the following information:
1. Name, telephone, and location of entity.
 2. Project name and description.

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3. Name and title of person reporting.
4. Location of accident/incident.
5. Brief summary of the accident/incident giving pertinent details including type of operation ongoing at the time of the accident/incident.
6. Cause of the accident/incident, if known.
7. Casualties (fatalities, disabling injuries).
8. Details of any existing hazard (chemical, contamination, work place safety).
9. Estimated property damage.
10. Nature of damage, effect on Subcontract schedule.
11. Action taken by Subcontractor to ensure safety and security.
12. Witness information/FAA personnel contacted.

3.2 Spills

- A. In the event of a spill, the Subcontractor must take immediate action to control and contain the spill. This will include, at a minimum, the following actions:
 1. Keep unnecessary people away, isolate hazardous area, and deny entry.
 2. Do not allow anyone to touch spilled material.
 3. Stay upwind; keep out of low areas.
 4. Keep combustibles away from the spilled material.
 5. Use water spray or foam to reduce vapor or dust generation, as needed.
 6. Take samples for analysis to determine that clean-up is adequate. Properly trained personnel should be involved in this action.
 7. Take other appropriate actions as needed.
 8. For solid spills, immediately remove and place contaminated materials into staging piles and cover; identify the pile as contaminated; test the material for treatability; dispose of the contaminate off-site at an approved disposal facility.
 9. For liquid spills, immediately absorb with sand, clean fill, or other absorbent/spill mixture.

3.3 Permit-Required Confined-Space Program

- A. Subcontractor must be required to evaluate all potential confined spaces as contained in this project and must submit a Permit Required Confined Space (PRCS) Program to the PM with a copy to the RE for review. The Contractor considers all confined spaces as permit required and therefore the Subcontractor must submit a PRCS Program for review. The PRCS Program must outline all potential confined spaces and must be made in accordance with the applicable OSHA Standards. The PRCS Program must be sent to the PM as a submittal with a copy to the RE and must be in accordance with Section 01 33 00, Submittal Procedures of the Subcontract.
- B. Permits are required to enter all FAA confined spaces. The Subcontractor must prepare an application for permit that defines all conditions that must be met in order to ensure safety of personnel. Permits must be filled out, submitted, reviewed, and posted prior to any personnel entering the confined space. Subcontractor must be required to permit all confined spaces. Prior to preparing the permit, the Subcontractor must obtain permission to permit the space from the Contractor. The Contractor will coordinate all applications with the FAA Systems Management Office (SMO) Confined Space Coordinator. See applicable OSHA Standards for additional information. At no time will the Subcontractor enter a FAA-owned confined space without first obtaining permission from the FAA through the Contractor.
- C. Copies of all confined space permits must be given to the RE and the SMO Confined Space Coordinator.
- D. Subcontractor must provide all test equipment, personal protective equipment and materials as required for the testing, permitting, monitoring and entering of confined spaces. All equipment must be calibrated within the last 6 months and must be authorized for its intended use. Subcontractor must submit test equipment most recent calibration date to RE and the SMO Confined Space Coordinator on all test equipment used for confined spaces as part of its PRCS.
- E. Subcontractor must provide one set of all test equipment, personnel protective equipment and materials required for the RE. All items must be given to the RE at the beginning of the project. They will be returned when the project is complete. Subcontractors must also include its PRCS Program adequate protection for the RE. The

HEALTH, SAFETY AND EMERGENCY RESPONSE PROCEDURES

PRCS must include all ventilation, testing, monitoring, rescue equipment, ladders, and harnesses as required. All protection and testing for the RE must be as required for all Subcontractor employees.

- F. All manholes and handholes greater than 3'-6" in depth must be considered as permit-required confined spaces. Subcontractor must adhere to all requirements as outlined herein.

3.4 Protection of Underground Utilities

A. Preparation

1. All existing underground utilities depicted on the drawings, (which include but are not limited to: power, control, and communications cables; telephone, water and sewer lines; and other utilities) are shown in their approximate locations only. Other utility lines may exist but not be depicted. It is the Subcontractor's responsibility to ensure that locations of all underground airport, FAA, public, and/or private utilities are established prior to work in the area.
2. The Subcontractor must at its expense satisfactorily repair and/or pay the cost of repair for all damages to underground utilities that result from the Subcontractor's or its lower tier subcontractors' operations during the period of the Subcontract. The Subcontractor is responsible for completing any required repair work to any underground utility that is damaged by its workers, equipment, work, or subcontractors immediately, and with equal material approved by the RE.
3. If the Subcontractor damages a cable that has been previously located, then the Subcontractor must repair the cable and, at its expense, install either a pull box or manhole depending on the type and/or size of the cable. The RE will determine whether a pull box or manhole is required. All costs related to the repair of the damaged cable will be the responsibility of the Subcontractor.
4. Do not interrupt existing utilities serving facilities occupied by the Government or others except when permitted in writing by the RE and then only after acceptable temporary utility services have been provided. Provide a minimum 48-hours notice to the RE. Do not proceed with the interruption of any utility without written notice from the RE.
5. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
6. Protect subgrade and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary. Protect subgrade and foundation soils from softening and damage by rain or water accumulation.
7. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

B. Pre-excavation Requirements for Underground Utility Installations.

1. Prior to any excavation, the Subcontractor must layout in the field the centerline of all proposed utilities. In addition the Subcontractor must white line (by white spray paint or other means acceptable to the RE) the limits of construction including the area(s) to be excavated. The Subcontractor must also identify the proposed placement of grounding rods and cathodic protection.
2. The Subcontractor must identify the location of existing underground utilities on as-built drawings, including any unknown or abandoned utility found during construction. The Subcontractor must ensure that all Airport officials, FAA technicians, other utility owners/operators, and any One-Call System performing utility designation/location services designate/mark existing utilities within the construction limits as well as the entire path of excavation, including five feet to either side of proposed utilities. The Subcontractor must be solely responsible for notifying relevant utility owners/operators and One-Call Systems sufficiently in advance to ensure that delays to construction does not occur.
3. After completion of the utility designation described above, the Subcontractor must hire a professional underground utility designation/locating company, acceptable to the RE, to designate and sweep the entire excavation area, including five feet to either side of proposed utilities, to confirm the locations of the marked utilities and identify and mark any additional unidentified utilities that may be within the limits of excavation.

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4. The Subcontractor, in accordance with Section 01 31 13, must notify the RE of the preferred date and time for a pre-work meeting for all excavation work. The RE will coordinate the pre-work meeting with utility owners, local Airport Authority, FAA, the Subcontractor, and others as applicable to walk the excavation area and review applicable documentation. The subcontractor must arrange to have its excavator and SUE (or designation firm) at the pre-work meeting. The Subcontractor must provide a written excavation work plan acceptable to the RE that includes a contingency plan to restore to service all utilities including cables that may be placed out of service or damaged during performance of the work. The work plan at a minimum must include:
 - a. A list of qualified subcontractors such as plumber, electrician, fiber optical cable splicer, and others as applicable for emergency repair purposes. Due to current FAA/TSA/Airport security requirements, the Subcontractor must ensure that these subcontractors have passed any airport security and registration requirement so they can be presented immediately at the job site when emergency repair is warranted.
 - b. The Subcontractor must coordinate with the RE to request an Emergency Procedures Plan from the Airport Authority or facility manager. This plan will outline special procedures during emergencies, disasters, accidents and injuries. The Subcontractor is to review the Emergency Procedures Plan with all its personnel prior to construction and every quarter thereafter.
 - c. The Subcontractor must investigate and provide a list of sketches/drawings to all disconnects to electrical circuits, jet fuel lines, natural gas, and main water sources that feed the services in the project area and its vicinity. All disconnects and shut-off valves must be noted with special notation and procedures if required by the utility owners/operators.
 - d. Name of the SUE or utility designation firm including training and experience of the technician who will be performing the utility designation as well as equipment that will be used for sweeping the area to be excavated.
 - e. Name of the excavator including training and experience of the equipment operator who will be doing the work.
 5. Subcontractor must expose all utilities that it will be crossing through non-destructive mechanical excavation methods such as vacuum excavation or similar mechanical method(s) approved by the RE ("potholing") or by hand digging. When a cable is located, the Subcontractor must hand-excavate a trench five (5) feet each side of the exposed cable to verify that another cable is not adjacent to the exposed cable. All critical or high priority facilities must be exposed by potholing or hand digging every 100 feet (or less if on a curve) if the Subcontractor is working on or parallel to a critical or high priority utility. All exposed utilities must be properly supported and protected during construction.
 6. Subcontractor must continuously maintain utilities, facilities and/or systems that are or may be affected by work associated with the project. The Subcontractor must provide the RE with written reports on any cable cuts.
 7. If the Subcontractor does not find an underground utility that was previously marked, the excavation must be stopped, the RE must be notified, and the Subcontractor must contact the appropriate owner/operator of the utility or make contact with the appropriate owner/operator, using the One-Call System when warranted.
 8. Every attempt must be made to preserve the locate markings during excavation. Locate markings that are no longer visible must be refreshed by calling the one-call system and/or the utility owners/operators for remarking.
 9. All existing utilities that have been exposed during exploratory potholing or excavation must be supported to prevent stretching, kinking, or damage to the existing utility.
- C. Excavation
1. Preserve, protect and maintain existing operable drains, sewers, and electrical ducts during grading, excavating and backfilling operations. Keep excavations dry. Locations indicated for existing utility facilities are approximate. Pipes or other manmade obstructions, in addition to those indicated, may be encountered. Movement of construction machinery and equipment over pipes and utilities during construction must be at

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the Subcontractor's risk. Perform all work adjacent to non-Government utilities as indicated in accordance with procedures outlined by utility owner. Excavation made with power driven equipment is not permitted within five feet of any known existing utility. Start hand excavation on each side of the indicated obstruction and continue until the obstruction is uncovered. Support uncovered lines until approval for backfill is granted by the RE. Excavated material must not be disposed of in such a manner as to obstruct the flow of any stream, endanger a partly finished structure, impair the efficiency or appearance of any structure, or be detrimental to the completed work in any way.

2. An observer, acceptable to the RE, must be present to assist the equipment operator when operating equipment around known underground facilities and utilities. Adhere to the following during excavation:
 - a. All mechanized excavation must start with 6 to 10 inches excavation on the surface. The equipment operator must immediately cease operation and notify the RE if utility warning tapes, sand, or bedding material is uncovered at any time during excavation.
 - b. All excavations within 5 feet of any pedestal, closure, riser guard, pole (with riser), meter, or other structure must be performed by hand digging or other means such as vacuum excavating.
 - c. If the Subcontractor discovers damage, causes damage, or even contacts an existing underground utility, the owner/operator of that utility, and RE must be notified immediately. The Subcontractor will be responsible for making necessary repair and/or replacement in accordance with this section and the terms and conditions of the Subcontract.
 - d. If there is a critical or high priority utility line in the dig area, make arrangements for the utility owner/operator to be on the job site during the excavation. If the utility owner/operator refuses to be present, document this response by appending it to the request form.
 - e. Only those subcontractor employees qualified by training, licensed or experienced (as appropriate) are permitted to operate machinery, tools or equipment.
3. The Subcontractor and RE must coordinate on a daily basis with the excavator and the excavating work crew regarding the work to be performed that day with an emphasis on the excavation work plan and anticipated utility crossings.

3.5 Fatigue Management

- A. The subcontractor must develop a Fatigue Risk Management Plan (FRMP) to prevent and manage worker fatigue.
- B. FRMP must address how during continuous operations for seven days a week, a work schedule can be structured to provide the required rest. Documentation must be maintained to show compliance with the FRMP.

The FRMP must, at a minimum contain the following:

1. A mandatory requirement of 2 consecutive days off for every four consecutive weeks worked.
 2. No more than fourteen hours worked total per 24-hour day or extended shift.
 3. Minimum of eight hours off between shifts.
- C. The FRMPs should address worker training, recognizing fatigue symptoms, work scheduling, travel, prolonged or intense mental and/or physical activity.

END OF SECTION 01 35 29

SECTION 01 45 00

QUALITY CONTROL

PART 1 GENERAL

1.1 Section Includes

- A. This section specifies requirements for quality control of the Work including, but not limited to, certificates of compliance, inspections and testing by the Subcontractor, and surveillance by the Contractor.

1.2 Related Sections

- A. General Conditions of the Contract Part I Section E and Section G; Section 01 11 00, Summary of Work; Section 01 32 00, Construction Progress Documentation; Section 01 33 00, Submittal Procedures; and Section 01 77 00, Closeout Procedures.

1.3 Subcontractor's Risk Management Plan

- A. Subcontractor's RMP must identify Subcontract quality requirements for each activity and describe how Subcontractor intends to furnish control testing, certifications, and records in order to provide quality Work. The RMP must include procedures verifying equipment, workmanship, fabrication, construction, operations, and inspections comply with the Contract Documents. Minimum RMP requirements are as follows:
 - 1. Name, resume, authority, and responsibility of QC Representative responsible for monitoring the quality of construction activities.
 - 2. List of outside organizations including testing laboratories, architects, or consulting engineers that will be employed by the Subcontractor. Include a description of services to be provided.
 - 3. List of definable features of work that have distinct and separate control requirements.
 - 4. An inspection and test plan keyed to the construction schedule, following the order of the specification technical sections, indicating which inspections and tests will be performed, the names of persons responsible for the inspection and testing of each segment of work, and the time schedule and frequency for each inspection and test.
 - 7. Subcontractor's procedure by which to identify, segregate, disposition, and correct nonconforming product and services.
 - 8. Subcontractor's procedure for initiating requests, control, and implementation of changes to the Subcontract's scope of work, specifications, or requirements.
- B. The Subcontractor's RMP must address the inspection process for each definable feature of work (DFOW) that includes: hold points, inspections and tests, follow-up inspections, and final inspections. Minimum requirements are as follows:
 - 1. Subcontractor must develop checklists to document inspection and test process for each DFOW. The checklist must cross reference the requirements in the technical specifications.
 - 2. A copy of the completed checklists must be posted on the Contractor provided website on a weekly basis. If no access is available, access will be given to the PM or RE.

1.4 Contractor Quality Monitoring

- A. Contractor may perform such inspections, test, and monitoring as necessary to determine or verify Subcontractor's compliance with Subcontract requirements. Subcontractor must provide such facilities and assistance for Contractor monitoring as may be reasonably required and must ensure that all quality control records and places of Work are open and available to Contractor. Contractor's monitoring activities may consist of review, observation, inspection of Subcontractor personnel, material, equipment, processes, and test results including off-site inspections. Contractor may perform quality audits of records and performance of Subcontractor or its lower tier subcontractor and suppliers. The Subcontractor, lower tier subcontractor or supplier being audited must be available during the audit as required by the Contractor. Testing or inspecting by the Contractor or FAA does not relieve the Subcontractor or its subcontractors from performing Work according to Subcontract requirements.

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QUALITY CONTROL

- B. The PM or RE will notify Subcontractor of any detected non-compliance with the requirements of this Section or other technical specification sections. Such notice, when delivered to Subcontractor at the Work site, must be deemed sufficient for the purpose of notification. Subcontractor must take immediate corrective action after receipt of a non-compliance notice and maintain a detailed record of every non-compliance and corrective action taken. The Subcontractor must make no part of time lost due to non-compliance and/or stop orders the subject of a request for extension of time or compensation. Cost incurred by Contractor or FAA to correct defective work will be deducted from the total amount due the Subcontractor.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.1 Quality Reports

Subcontractor must provide forms to be used in conjunction with RMP reporting. A copy of all forms must be included with the RMP. The following requirements are listed for specific reports:

- A. Test Reports. Subcontractor must be responsible for establishing a system that will record all tests results. Information on test designation, location, date of test, specification requirements, results and retest results, causes for rejection and recommended remedial actions must be documented. A copy of test results must be sent directly from the agency performing the testing services to PM or RE. A copy of any failing report must be sent immediately. All test reports provided by a testing agency must be reviewed and signed by a competent, qualified individual in the related discipline of the test subject matter.
- B. Construction reports. Subcontractor must submit duplicate copies to RE by 9:00 a.m. on the business day following day of report. At a minimum, daily construction reports must include **the following information:**
1. List of subcontractors at the site.
 2. List of separate contractors at the site.
 3. Approximate count of personnel at the site.
 4. High and low temperatures, general weather conditions.
 5. Accidents.
 6. Meetings and significant decisions.
 7. Unusual events.
 8. Stoppages, delays, shortages, losses.
 9. Meter readings and similar recordings.
 10. Emergency procedures.
 11. Orders and requests of governing authorities.
 12. Change Orders received, implemented.
 13. Services connected, disconnected.
 14. Equipment or system tests and start-ups.
 15. Partial Completions/Occupancies.
 16. Substantial Completions authorized.
 17. Number of days used in the Subcontract period to date.

3.2 Record Drawings.

The QC Representative must ensure the Record Drawings required by the Subcontract are scalable, kept current on a daily basis, and marked to show deviations from the Contract drawings. QC Representative

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QUALITY CONTROL

must ensure each deviation has been identified with appropriate modifying documentation such as RFI or FI number, and date.

3.3 Inspections and Testing Laboratory

All inspections and testing on and off Site required by the Subcontract must be performed as specified in individual specification sections by a certified independent firm employed by the Subcontractor at Subcontractor's expense. Inspecting, testing, and source quality control may occur on or off the Site. Subcontractor must submit qualifications and certifications of the independent inspections and testing firm for Contractor approval. Subcontractor must submit testing reports by the independent firm to the PM and RE, in duplicate, indicating observations and results of tests and indicating compliance or noncompliance with Contract Documents. Subcontractor must furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested. Any retesting required because of nonconformance to specified requirements must be performed by the same independent firm at Subcontractor's expense.

END OF SECTION 01 45 00

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QUALITY CONTROL

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SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 Section Includes

- A. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.

1.2 Related Sections

- A. Section 01 10 00, Summary of Work; Section 01 45 00, Quality Control.

1.3 Temporary Utilities and Support Facilities

- A. Temporary utilities required include but are not limited to:
 - 1. Water service and distribution.
 - 2. Electric power and light.
- B. Temporary construction and support facilities required include but are not limited to:
 - 1. Temporary heat and lighting.
 - 2. Field offices and storage sheds.
 - 3. Sanitary facilities, including drinking water.
 - 4. Waste disposal services.
 - 5. Construction aids and miscellaneous services and facilities.
 - 6. RE Trailer.
- C. Security and protection facilities required include but are not limited to:
 - 1. Temporary fire protection.
 - 2. Barricades, warning signs, lights.

1.4 Contractor Responsibilities

- A. Contractor must make all reasonable required amounts of utilities available to the Subcontractor from existing outlets and supplies to the extent allowed by the Government. Unless otherwise provided in the Subcontract, the amount of each utility service consumed must be charged to or paid for by the Subcontractor at prevailing rates charged to the Government or at reasonable rates determined by the Contractor. The Subcontractor must carefully conserve any utilities furnished without charge.
- B. The Subcontractor, at its expense and in a workmanlike manner satisfactory to the Contractor must install and maintain all necessary temporary connections and distribution lines and all meters required to measure the amount of each utility used. Prior to final acceptance of the work by Contractor, the Subcontractor must remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

1.5 Subcontractor Responsibilities

- A. The Subcontractor must confine all operations (including storage of materials) to areas set out in the Subcontract or otherwise authorized or approved by the Contractor.
- B. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Subcontractor only with the approval of the PM, and must be built with labor and materials furnished by the Subcontractor without expense to Contractor. The temporary buildings and utilities must remain the property of the Subcontractor and must be removed by the Subcontractor at its expense upon completion of the Work. With the written consent of the SA, the buildings and utilities may be abandoned and need not be removed.
- C. The Subcontractor must use only established roadways, or when authorized by the Contractor, temporary roadways that may be constructed by the Subcontractor at the Subcontractor expense. When materials are transported in prosecuting the Work, vehicles must not be loaded beyond the loading capacity of the vehicle or as prescribed by any laws or regulation. When it becomes necessary to cross curbs or sidewalks, the Subcontractor must protect them from damage; and must repair or pay for the repair of any damaged curbs, sidewalks, or roads.

1.6 Temporary Utility Installation

- A. The Subcontractor must provide, maintain, and remove temporary electrical power, drinking and project water, and sanitary facilities as necessary for the proper and expeditious execution of work. If these facilities are not available on-site for use by the Subcontractor, then these facilities must be installed and maintained to comply with all federal, state, and local regulations governing such installations.

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

- B. Locations of such facilities will be approved by the RE.
- C. Subcontractor must provide and pay for all temporary services and facilities as specified herein and as necessary for the proper and expeditious execution of the Work.
- D. Subcontractor must make, or have made, all connections to existing services and sources of supply as necessary and/or indicated and pay all charges for same.
- E. Subcontractor must provide all labor, materials, equipment and appurtenances necessary for the complete installation, operation and maintenance of all temporary service systems and facilities.
- F. All Work under this Section must comply with applicable laws, rules, regulations, codes, ordinances and orders of all federal, state and local authorities having jurisdiction for the safety of persons, materials, and property.

1.7 Temporary Water

- A. Subcontractor must make arrangements to transport all necessary water for construction and drinking purposes in accordance with CFR 29 Part 1926, Subpart D.

1.8 Temporary Toilets and Sanitation

- A. Subcontractor must provide ample and suitable on-site sanitary conveniences with proper enclosures and hand washing facilities in accordance with CFR Part 1926, Subpart D for the use of the workers employed on the Work. Temporary toilets must be properly maintained and serviced on a regular basis. Secure temporary toilets to prevent possible overturning.

1.9 Temporary Electric Lighting and Power

- A. Subcontractor must provide and maintain a temporary lighting and power system in accordance with CFR 29 Part 1926 Subpart K for construction and inspection purposes.
- B. Subcontractor must make all necessary arrangements for temporary electrical services with the local power company to provide and pay for all temporary work or, at Subcontractor's option, provide an approved temporary engine generator at the project site for construction support.

1.10 Temporary Heat

- A. Provide heating devices and heat as needed to maintain specified conditions for construction operations.
- B. Maintain minimum 50 degree F ambient temperature in enclosed areas where construction is in progress.

1.11 Temporary On-Site Communications

- A. The Subcontractor may provide on-site communications with hand-held radios. Coordinate with the PM or RE and verify frequencies used do not interfere with local operations.

1.12 Temporary Access

- A. The Subcontractor must provide, maintain, and remove temporary roads necessary for access to the Work sites. These access roads must be obliterated at the conclusion of the work and the areas must be protected against erosion and must be reseeded.
- B. Work must be done in accordance with the Project Specifications and drawings.
- C. The Subcontractor must take all precautions necessary to protect the existing facilities, equipment, buildings, vegetation, etc., during construction. Any areas damaged must be repaired or replaced at no additional cost to Owner.
- D. All repairs must match the original finish and be made utilizing materials equal in quality to the existing.
- E. Repairs must be approved by the RE or PM and Airport Authority.
- F. No separate payment will be made for temporary access.

1.13 Barricades, Warning Signs, and Hazard Markings

- A. Subcontractor must furnish, erect and maintain all barricades, warning signs and markings for hazards to protect the Work.
- B. When used during peak periods of darkness, such barricades, warning signs and hazard markings must be suitably illuminated (open flame type lights are not permitted).

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TEMPORARY FACILITIES AND CONTROLS

- C. Once erected, Subcontractor must maintain barricades, warning signs and markings for hazards until their dismantling is directed by the RE or PM.

1.14 Temporary Construction Support Facilities

- A. Provide Contractor Field Office in accordance with this Section. Maintain temporary construction and support facilities until there is no need for them or at project completion. Remove all temporary facilities as directed by the RE.
- B. Provide incombustible construction for offices, shops and sheds located within the construction area, or within 30 feet of building lines. Comply with requirements of NFPA 241.
- C. Temporary HVAC. The Subcontractor must provide and be responsible for all temporary heat and ventilation. Provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy. Where natural ventilation of work in progress is not sufficient for proper workmanship, provide power ventilators in conjunction with openings in work. Provide and operate either exhaust or supply fans/blowers, or both, sufficient to ventilate work adequately.
- D. Heating Facilities. Except where use of the permanent system is authorized, provide vented self-contained LP gas or fuel oil heaters with individual space thermostatic control. Use of gasoline-burning space heaters, open flame, or salamander type heating units is prohibited.
- E. Temporary Buildings. All temporary buildings provided by the Subcontractor must be weather and watertight, and must be maintained in a neat orderly appearance for the duration of the work, and must be provided with raised wood floors, solid-sheathed composition roofs, adequately screened windows for light and ventilation and substantial wood doors with provisions for locking.
- F. Subcontractor Portable Field Camp. Provide and staff a portable field camp capable of sustaining all Subcontractor and lower tier subcontractor personnel and the Contractor's RE for the duration of the project. The camp must also fully sustain two FAA employees for 10 days at the beginning of the project for antennae and cable removal and 21 days following completion of the roof to monitor reinstallation of the VOR antennae, tune and test the equipment, and assist with flight inspection. Camp must be fully self-contained and comply with all applicable codes and regulations. Provide a layout of the proposed field camp for review and approval. Subcontractor to also provide a 150 gallon plastic water container for FAA use during the project. Container must be strapped to a pallet suitable for a forklift. Container to become property of the FAA at the end of the project. Apply for and provide copies of the State permit(s) required to erect and operate the camp. Applications will be required for a State Plan Review and Annual Business Permit. Fees apply and are the responsibility of the Subcontractor. The Annual Permit expires at the end of the calendar year and will need to be renewed for the second construction season.

1.15 RE Field Office Description

- A. This item must consist of furnishing, maintaining and weekly cleaning of a new field office for the exclusive use of the RE, a weather-proof building or buildings hereafter described, at locations approved by the RE. Unless otherwise approved, the buildings must be independent of any buildings used by the Subcontractor and all keys to the buildings must be turned over to the RE. The RE will designate the location of the building and it must remain on the Worksite until released by the RE. (New mobile units may be substituted with the approval of the RE).
- B. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
- C. Field offices must have a ceiling height of not less than seven feet (7'), and a floor space of not less than four hundred (400) square feet. The office must be provided with sufficient heat, natural and artificial light, and air conditioning. Doors and windows must be equipped with locks approved by the RE. Suitable sanitary facilities separate from those for the Subcontractor's personnel meeting Federal, State and Local Health Department requirements must be provided and maintained clean and in good working condition and must be stocked with lavatory and sanitary supplies at all times during the period of the Subcontract.

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

- D. In addition, the following equipment and furniture meeting the approval of the RE must be furnished:
1. 2 desks and chairs.
 2. 1 drafting table and stool.
 3. 2 file cabinets, letter size, 4 drawer with independent locks.
 4. 6 chairs.
 5. 1 equipment cabinet with lock.
 6. 2 computer and printer stands.
 7. 1 carbon dioxide fire extinguisher (10 lb. rated capacity).
 8. 1 electric water cooler dispenser w/water supplied as needed.
 9. 1 Plan rack.
 10. 1 six shelf bookcase.
 11. 1 trash can.
- E. Remove field office when no longer required by the RE, but not prior to 30 days after completion of punchlist item construction work.
- F. The Subcontractor must make arrangements for and pay for, at a minimum, the following utilities:
1. Temporary electric power and light.
 2. Telephone service.
- G. All utilities must be functioning within 15 days of the date established for commencement of the work. The Subcontractor must arrange for the RE to inspect and test each temporary utility before use. Coordinate with the RE requirements for certifications and permits. The Subcontractor must engage the appropriate utility owner to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with the company's recommendation. All work associated with utilities owned by the Government must be performed by the Subcontractor as approved by the Contractor.
- H. This item must be counted as one lump sum for provision of a field office in accordance with this specification. Payment for providing the field office fully equipped as specified must be made at the Subcontract Fixed Price. The Subcontractor must make payment for all long distance phone calls made by its employees and subcontractors.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION [NOT USED]

END OF SECTION 01 50 00

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 Section Includes

- A. This section covers Subcontractor's requirements regarding materials and equipment that are incorporated into the Work.

1.2 Related Sections

- A. General Conditions of the Contract; Section 01 11 00, Summary of Work; Section 01 45 00, Quality Control, and other Specification Sections as may apply to this section.

1.3 Materials and Equipment Incorporated into Work

- A. Material and equipment incorporated into the Work must conform to applicable specifications and standards and must comply with size, make, type and quality specified, or as specifically approved in writing by the PM. Manufactured and fabricated products must be designed, fabricated and assembled in accordance with the best and current engineering and shop practices. Like parts of duplicate units must be manufactured to standard sizes and gauges and must be interchangeable. Two or more items of the same kind must be identical and manufactured by the same manufacturer.
- B. Products must be suitable for service conditions. Equipment capacities, sizes and dimensions shown or specified must be adhered to unless variations are specifically approved in writing. Do not use material or equipment for any purpose other than for which it is designed or specified. Furnish and install products specified. Other makes or brands may be used as outlined under options and conditions for substitution stated in this section.

1.4 Manufacturer's Instructions

- A. When Contract Documents require that installation of Work must comply with manufacturer's printed instructions, copies of such instructions must be distributed to parties involved in the installation including the RE with copies to the PM. The Subcontractor must maintain one set of complete instructions at the Worksite during installation and until completion.
- B. Products must be handled, installed, connected, cleaned and conditioned in strict accordance with such instructions and in conformity with specified requirements. If job conditions or specified requirements conflict with manufacturer's instructions, the Subcontractor must consult with the RE for further instructions. All work must be performed in accordance with manufacturer's instructions. No preparatory step or installation procedure must be omitted unless specifically modified or exempted by contract documents.

1.5 Transportation and Handling

- A. Products must be delivered in undamaged condition, in manufacturer's original containers or packing, with identifying labels intact and legible. Shipments must be inspected to ensure compliance with requirements of the Contract Documents and approved submittals. Ensure that products are properly protected and undamaged immediately on delivery. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packing.
- B. Delivery of Subcontractor-Furnished Materials. The Subcontractor must have personnel at the project site to receive all material being shipped by delivery vehicles. Contractor or FAA personnel are not responsible for signing off on deliveries of Subcontractor-Furnished Material. Delivery of Subcontractor-furnished material must not be accepted by any Federal Government personnel.

1.6 Storage

- A. The Subcontractor is responsible for arranging local storage areas for Government and Subcontractor Furnished Materials. Storage areas on facility property must be coordinated through the Contractor. The Subcontractor is solely responsible for the security of all materials brought to the site. Subcontractor is responsible for adhering to the manufacturer's instructions for all Products with respect to proper storage. All products must be stored in accordance with manufacturer's instructions, with seals and labels intact and legible. Products subject to damage by the elements must be stored in weather-tight enclosures. Temperature and humidity must be maintained within the ranges required by the manufacturer's instructions. Fabricated products must be stored above the ground, on

SECTION 01 60 00

PRODUCT REQUIREMENTS

blocking or skids to prevent soiling or staining. Products that are subject to deterioration must be covered with impervious sheet coverings and adequate ventilation must be provided to avoid condensation. Loose granular materials must be stored in a well-drained area on solid surfaces to prevent mixing with foreign matter.

1.7 Proprietary Names

- A. Whenever proprietary names are used in this specification for material or equipment, such names must be construed as a standard to establish quality and accurately define the material or equipment. Another make or item may be approved provided it is equal or better than the specified manufacturer. All materials and equipment that is Subcontractor furnished material must meet or exceed the specified salient characteristics.

1.8 Substitutions

- A. A separate request for each substitution must be submitted. Each request must be supported with complete data substantiating compliance of proposed substitution with the requirements stated in the Contract documents. Each request must include product identification, manufacturer's literature including address, product description, reference standards and performance, and test data. Samples must be submitted as applicable.
- B. Substitution Information. An itemized comparison of the proposed substitution with the product specified must be included. The following information must also be included: data relating to changes in the construction schedule; list of changes required in other work or products; and accurate cost data.
- C. Substitution Conditions. Substitute products must not be ordered or installed without written acceptance from the Project Manager. In making a formal request for substitution, the Subcontractor represents that it has investigated the proposed product and has determined that it is equal to or superior in all respects to that specified; that they will provide same warranties and/or bonds for substitutions as for product specified, that they will coordinate installation of accepted substitution into work to be complete in all respects, that they waive claims for additional costs caused by substitution that may subsequently become apparent, and that cost data is complete and includes related costs under this Subcontract.
- D. Documentation of the above investigation as it relates to the specified material and the proposed substitution must be included in the request for substitution.
- E. Never provide a substitution request as a submittal or in lieu of a submittal. Acceptance as a substitution does not constitute submittal acceptance. The submittal process is completely separate. Each request for substitution must be clearly marked as such.

1.9 Safety Data Sheets

- A. The Subcontractor must submit Safety Data Sheets (SDS), Department of Labor Form OSHA-174, as prescribed in Federal Standard No. 313, latest edition, for hazardous material five (5) business days before delivery of the material, whether or not listed in Appendix A of the Standard. This obligation applies to all materials delivered under this contract which will involve exposure to hazardous materials or items containing these materials. "Hazardous Materials", as used in this paragraph, is as defined in Federal Standard No. 313, latest edition.
- B. SDS Submittal. The RE, during construction, will routinely check products utilized on site by the Subcontractor to ensure SDSs have been submitted and approved, in accordance with Section 01 33 00, Submittal Procedures. If the Subcontractor does not submit the required information as described herein, the Contractor, at its option, will have a complete project survey performed by a qualified testing firm prior to acceptance of the project from the Subcontractor. The Subcontractor must bear the cost of all surveys and any subsequent removal/replacement of asbestos-containing materials.
- C. Materials requiring specialized PPE. The subcontractor or lower tier subcontractor must provide any specialty PPE needed to handle materials brought on site.

1.10 Asbestos-Free and Lead-Free Materials

- A. The Subcontractor must provide to the SA a signed statement stating that to the best of its knowledge, no asbestos-containing or lead-containing materials were used during the construction of this project. If the Contractor suspects the presence of asbestos, the Contractor will sample the suspect material to verify that no asbestos-containing material was utilized. If asbestos-containing material is subsequently found during

SECTION 01 60 00

PRODUCT REQUIREMENTS

sampling of the materials, the Subcontractor must remove and replace the product or material at its expense. In addition, the Subcontractor must incur the costs of the original testing and/or any retesting that may be necessary.

PART 2 **PRODUCTS** [NOT USED]

PART 3 **EXECUTION** [NOT USED]

END OF SECTION 01 60 00

SECTION 01 60 00
PRODUCT REQUIREMENTS

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SECTION 01 71 23

FIELD ENGINEERING

PART 1 GENERAL

1.1 Section Includes

- A. This section covers the requirements of Subcontractor to provide construction layout resources for all required horizontal and vertical control work related to the Work.

1.2 Related Sections

- A. General Conditions; Section 01 11 00, Summary of Work; Section 01 45 00, Quality Control, and other specification sections apply to this section.

1.3 Types of Layout

- A. The Subcontractor must furnish surveying resources to accomplish the work listed below.
 1. Layout and staking of the facilities.
 2. Layout of all access roads, plots, and miscellaneous foundations in accordance with the Contract drawings.
 3. Survey all cable runs, junctions, and turns.

1.4 Materials, Equipment, and Personnel

- A. All materials used for surveying must be obtained from a dealer regularly engaged in the sale or rental of surveying supplies. Contractor-fabricated hubs and general construction nails must not be used for surveying purposes.
- B. All surveying equipment that is used must be in proper working condition. The date of the last calibration must be provided to the RE upon request. If a surveying tape is used, it must be free of kinks and tears.
- C. The surveying personnel used by the Subcontractor must be experienced and familiar with the type of equipment being used. The Subcontractor must provide resumes of the survey crew party chief and instrument operator if requested by the RE. Failure by the Subcontractor to furnish competent survey personnel may result in the Contractor duplicating the required survey work until acceptable to the RE at no cost to the Contractor.

1.5 Examination

- A. The Contract Documents are based upon information collected by the Contractor from a number of different sources. Such information is available from the RE. Any record furnished is for information only, and does not represent all conditions that may exist. Other construction, of which no records are available, may be encountered. The Subcontractor and each subcontractor must field-verify existing dimensions. The existence and location of underground and other utilities and construction indicated as existing is not guaranteed. Before beginning site work, Subcontractor must investigate and verify the existence and location of underground utilities and other construction.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.1 Conducting Survey Work

- A. The Subcontractor must layout its work from established airport or facility base lines and benchmarks and/or as indicated on the drawings. Subcontractor will be responsible for all measurements in connection with the layout. The Subcontractor must furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to layout any part of the Work. The Subcontractor will be responsible for the execution of the Work to the lines and grades specified in the Contract Documents or as indicated by the RE. The RE reserves the right to determine when a reference hub has been displaced.
- B. The Subcontractor must establish and maintain a minimum of two permanent benchmarks on the Worksite, referenced to data established by survey control points, and record benchmark locations with horizontal and vertical data on project Record Documents.

SECTION 01 71 23

FIELD ENGINEERING

- C. The Subcontractor must preserve and maintain all stakes and other marks established by the RE until authorized to remove them. If such marks are destroyed by the Subcontractor or through its negligence before removal is authorized, the Contractor may replace them and deduct the expense of the replacement from any amounts due or to become due to the Subcontractor.
- D. The Subcontractor must establish the horizontal control for the system layout, access roads, facility plot, foundations, and light stations. All cable runs must be marked at a minimum of 200 foot stations, at all turns, and at all junctions or hand holes. The distance from the centerline of any adjacent runway to the cable run must be determined and recorded on the Record Drawings if such dimensioning is shown on the Contract Drawings.
- E. Prior to foundation installation, the Subcontractor must take elevation readings for the existing grade. Following installation of all light stations, the Subcontractor must take elevation readings of the tops of concrete foundations and light elevations, at all light stations. Subcontractor must record all elevation readings on the Record Drawings.

3.2 Quality Assurance

- A. The RE reserves the right to verify all survey work. The Subcontractor must leave all survey hubs in place until work has been verified by the RE. If deemed necessary, the Subcontractor must supply one laborer to assist the RE in verifying all survey work.

END OF SECTION 01 71 23

SECTION 01 71 33

PROTECTION OF ADJACENT CONSTRUCTION

PART 1 GENERAL

1.1 Section Includes

- A. This section the basic care the Subcontractor must use to prevent unnecessary damage to property in or near the Worksite during performance of the Work.

1.2 Related Sections

- A. Section 01 11 00, Summary of Work; 01 71 23, Field Engineering and Section 01 50 00, Temporary Facilities and Controls.

1.3 Protection of Existing Vegetation, Structures, Equipment, and Facilities

- A. The Subcontractor must take all precautions necessary to protect the existing facilities, equipment, buildings, and vegetation during construction. Any areas damaged must be repaired or replaced at no additional cost to owner. Repairs must be approved by the RE. All repairs must match the original finish and be made utilizing materials equal in quality to the existing.
- B. The Subcontractor must preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which is not to be removed and which does not unreasonably interfere with the work required under this contract. The Subcontractor must only remove trees when specifically authorized to do so, and must avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during Subcontract performance, or by the careless operation of equipment, or by workmen, the Subcontractor must trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the RE.
- C. The Subcontractor must protect from damage all existing improvements and utilities at or near the Worksite and on adjacent property of a third party, the locations of which are made known to or should be known by the Subcontractor.
- D. The Subcontractor must repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this Subcontract or failure to exercise reasonable care in performing the Work. If the Subcontractor fails or refuses to repair the damage promptly, the Contractor may have the necessary work performed and charge the cost to the Subcontractor.

1.4 Property Protection

- A. The Subcontractor must construct and maintain such temporary fences, gates and other facilities as must be necessary for preservation of crops, control of livestock, and protection of property. Before cutting a fence, the Subcontractor must take necessary precautions to prevent the straying of livestock and may prevent the loss of tension in or damage to adjacent portions of the fence. The Subcontractor must immediately replace all fencing and gates that it cuts, removes, damages, or destroys with new materials to the original standard, with the exception that undamaged gates may be reused.
- B. The Subcontractor must comply with the request of the property owner relative to leaving gates open or closed.
- C. The Subcontractor must use all necessary precautions to avoid the destruction of surveying markers such as section corners, witness trees, property corners, mining claim markers, bench markers, triangulation stations, and the like. If any such marker must be destroyed, the Subcontractor must first notify the agency responsible for the marker, as well as the RE, and assume all responsibility for replacing markers.
- D. Unnecessary damage is that which can be avoided through efficient and careful performance of the work in a careful manner, taking into account the land rights which have been secured. If the Subcontractor damages any property, the Subcontractor must at once notify the RE and owner or custodian and may make or arrange to make prompt and full restitution.
- E. Maps and specifications provided by Contractor may not give the location of all water supply, drainage, irrigation, and other underground facilities. Prior to entering a tract of land for subcontract purposes, the Subcontractor must ascertain from the property owner or other reasonably available source the location of any irrigation system, domestic water system, source of water, and drainage system existing on the property, whether serving that property or other property. The Subcontractor must report any findings to the RE. The Subcontractor must avoid damaging or obstructing these facilities or polluting water supplies.

SECTION 01 71 33

PROTECTION OF ADJACENT CONSTRUCTION

- F. The Subcontractor must hold Contractor harmless from any and all suits, actions, and claims for damages, including environmental impairment, to property arising from any act or omission of the Subcontractor, its subcontractors, or any employee of the Subcontractor or subcontractors, in any way related to the Work or operations under this Subcontract.
- G. The Subcontractor must indemnify and hold harmless the property owners or parties lawfully in possession against all claims or liabilities asserted by third parties, including all governmental agencies, resulting directly or indirectly from the Subcontractor's wrongful or negligent acts or omissions.
- H. The Subcontractor must maintain all roads used by it, and upon completion of the job must leave them in as good a condition as when first used. A road-grading machine, not a bulldozer, must be used for maintenance and final grading. The Subcontractor must not interfere with the property owner's use of roads existing prior to the Subcontractor's entry.

1.5 Management and Disposal of Hazardous Wastes

- A. The management and disposal of hazardous wastes and materials exposes the Subcontractor, Contractor, and FAA to short and long-term liabilities. In order to reduce these potential liabilities it is critical that the Subcontractor be fully aware of the hazards and regulatory requirements associated with the hazardous materials involved in this project. Only qualified personnel must be used in their handling and transportation. Before commencing work, the Subcontractor must:
 - 1. Perform an environmental assessment of the work required under the contract identifying tasks which involve the use, handling or transportation of hazardous materials or wastes. The following items of work are known to involve such substances: The building owner has provided the space free of known hazards.
 - 2. Submit an environmental management plan identifying and dealing with each specific task involving the wastes. The plan must be specific enough to demonstrate a thorough understanding of the environmental risks and the appropriate methodology for dealing with them. The plan must also list the required permits and reference the relevant regulations which govern the activities involved in dealing with the materials or wastes.
 - 3. Meet with representatives of the Contractor during the preconstruction conference to discuss and to develop a mutual understanding on implementation of the plan.
 - 4. The Contractor may require other tasks to be added to the plan. If planned methodologies for dealing with the risks are deemed insufficient, the PM may require revision. Work involving hazardous materials or wastes must not commence until adequate plans have been submitted and reviewed. Contractor's review of the Subcontractor's plan does not relieve the Subcontractor of its liability for environmental law and regulatory compliance.

1.6 Protection of Installed Work

- A. Protect installed Work. Provide special protection where required in the Specifications and drawings or under manufacturer's warranty.
- B. Provide temporary and removable protection for installed Products. Control activities in immediate Work area to prevent damage.
- C. Protect finished floors and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- D. Prohibit traffic or storage upon completed surfaces. Obtain protection instructions from the manufacturer if traffic or activity is necessary.

PART 2 **PRODUCTS** [NOT USED]

PART 3 **EXECUTION** [NOT USED]

END OF SECTION 01 71 33

SECTION 01 74 00

CLEANING AND WASTE MANAGEMENT

PART 1 GENERAL

1.1 Section Includes

- A. This section sets out the basic Subcontractor requirements for maintaining an orderly and clean Worksite.

1.2 Basic Requirements

- A. The Worksite, including storage areas, must be kept clean and orderly during progress of the work. The Subcontractor will be personally responsible for the storage of tools, equipment and materials. The Subcontractor must require each lower tier subcontractor engaged upon the work to bear full responsibility for cleaning up during and immediately upon completion of their work.
- B. The Subcontractor must provide on-site containers for the collection of waste material, debris and rubbish and periodically remove as required or at the direction of the RE. On site waste containers must be placed in areas coordinated with local site representatives to allow for proper exclusion zones and access. Any spillage on access or haul routes must be cleaned up immediately. All spoil, waste, or debris removed from the work site and not specified for reuse or identified as salvageable items, must become the property of the Subcontractor and must be disposed of off-site in areas authorized by the applicable County, State and/or Local agencies and in accordance with current rules and regulations governing the disposal of such waste. Disposal fees and miscellaneous charges will be paid by the Subcontractor.
- C. Unless specifically set forth in the Subcontract, burning is not permitted for the disposal of refuse and debris. All rubbish, waste, tools, equipment, and other apparatus caused by or used in the execution of the Work must be removed. This will in no way be construed to relieve the Subcontractor of its primary responsibility for maintaining the facilities and the site clean and free of debris, and leaving all work in a clean and proper condition acceptable to the RE.
- D. Immediately after unpacking, all packing material, case lumber, wrappings, or other rubbish, flammable or otherwise, must be collected and removed from the building and the premises.
- E. Subcontractor must contain material and debris to prevent it from entering aircraft operations areas

PART 2 PRODUCT [NOT USED]

PART 3 EXECUTION

3.1 Progress Cleaning and Waste Removal

- A. Remove all rubbish, waste, tools, equipment, and appurtenances used from the worksite at the end of each day to maintain egress, safety, and sanitation.
- B. Remove debris and rubbish from closed or remote spaces before enclosing the space. Collect and remove waste materials, debris, and rubbish from site, and dispose of off-site.
- C. Sweep and vacuum clean interior areas before start of surface finishing and continue cleaning daily to eliminate dust.

3.2 Overall Cleaning

- A. Immediately before the final inspection, the entire exterior and interior of any building and the surrounding areas must be thoroughly cleaned by the Subcontractor, including but not limited to the following:
 - 1. All construction facilities, debris, and rubbish must be removed from any building and the site.
 - 2. All finished surfaces within any building must be swept, dusted, vacuumed, washed, or polished as required.
 - 3. All tools, scaffolding, temporary utility connections or buildings, belonging to the Subcontractor, or used under his/her direction, must be removed from the site.

3.3 Final Cleaning

- A. Thoroughly clean entire worksite and exterior and interior of any building.

SECTION 01 74 00

CLEANING AND WASTE MANAGEMENT

- B. Remove debris and rubbish from any building and the worksite.
- C. Finished surfaces within any building must be swept, dusted, vacuumed, washed, or polished as required.
- D. Remove all tools, scaffolding, temporary utility connections or buildings belonging to the Subcontractor and its lower tier subcontractors from the site.
- E. Reseed disturbed areas. Rake and restore all gravel surfaces.

END OF SECTION 01 74 00

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 Section Includes

- A. This section sets out the requirements for Subcontract closeout at completion of the Work.

1.2 Related Documents

- A. Section 01 11 00, Summary of Work; Section 01 60 00, Product Requirements; Section 01 71 33, Protection of Adjacent Construction; Section 01 74 00, Cleaning and Waste Management.

1.3 Final Submittal requirements

- A. Prior to final acceptance, the Subcontractor must assemble all appropriate warranties, product information, certifications, equipment installation instructions, MSDS sheets, and the results of all tests.

1.4 Completion Certificate

- A. When Subcontractor considers the Work completed, Subcontractor must submit a signed certification in the form provided by the SA certifying the following:
 1. Contract Documents have been reviewed and Work inspected for compliance with Subcontract, including Punchlist Work, and accepted by the FAA.
 2. All materials used in the project are asbestos and lead free.
 3. Record Documents, As-Builts, final project photographs, damage or settlement survey, property survey, Record Drawings and similar final record information as required and acceptable to PM have been submitted by Subcontractor.
 4. Equipment/systems have been tested in the presence of RE and are operational.
 5. Required operational, and maintenance manuals, data and parts list have been submitted and approved.
 6. Spare parts have been provided as required.
 7. Warranties and guarantees have been prepared and found acceptable to SA.
 8. Work is completed, premises cleaned and ready for inspection, temporary facilities and services have been removed, and pre-existing conditions have been restored.
 9. All maintenance personnel have been properly instructed in the use of the facilities and all installed equipment as required by the Contract Documents.
 10. Subcontractor has released all property installed in the performance of the Subcontract and all GFE/GFP not used has been transferred to the Contractor and delivered to place of origin.
 11. Return of all Airport identification badges and keys.

1.5 Contractor Acceptance Inspection (CAI)

- A. The Subcontractor must coordinate with the RE to schedule the CAI. The Subcontractor must notify the SA in writing seven days (or as otherwise agreed to) before an agreed upon CAI date.
- B. The Subcontractor must have the superintendent present at the CAI. The RE will conduct an inspection of the facility to verify all Subcontract conditions are met. Any additional required test results must be submitted to the RE at this time. The RE reserves the right to have local FAA personnel conduct additional tests to verify that operational requirements are met. The FAA reserves the right to have airport personnel present to document any concerns regarding final condition of the Site.

1.6 Punch List

- A. The RE will furnish the Subcontractor with a list of discrepancies in the work, material, and equipment (punch list) that were noted during the CAI. Subcontractor must correct all deficiencies, if any, detected during the CAI before final acceptance. Work showing evidence of substandard performance will not be accepted and must be corrected by the Subcontractor at its expense.

1.7 Final Acceptance of Work

- A. The Subcontractor must correct discrepancies noted on the punch list prior to the final acceptance. The premises must be thoroughly clean prior to final acceptance. Subcontractor must schedule final inspection and notify in writing the PM and RE seven days (or as otherwise agreed to) before the planned inspection date.
- B. Subcontractor must have the superintendent present at the final inspection. The RE will conduct the final inspection of the facility to verify all contract conditions are met.
- C. Upon acceptance by Contractor, Subcontractor may submit Final Application for Payment.

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 2 **PRODUCTS** [NOT USED]

PART 3 **EXECUTION** [NOT USED]

END OF SECTION 01 77 00

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Contract drawings and general provisions of the Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation manuals for systems, subsystems, and equipment.
 - 2. Maintenance manuals for the care and maintenance of products, materials, and finishes systems and equipment.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 SUBMITTALS

- A. Initial Submittal: Submit 3 draft copies of each manual at least 15 days before requesting inspection for Substantial Completion. Include a complete operation and maintenance directory. Contractor or owner representative will return one copy of draft and mark whether general scope and content of manual are acceptable.
- B. Final Submittal: Submit one copy of each manual in final form at least 15 days before final inspection. Contractor project manager will return copy with comments within 15 days after final inspection.
 - 1. Correct or modify each manual to comply with contractor comments. Submit 3 copies of each corrected manual within 15 days of receipt of Construction Manager's comments.

1.5 COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.

- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name, address, and telephone number of Contractor.
 - 6. Name and address of Architect.
 - 7. Cross-reference to related systems in other operation and maintenance manuals.

- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 - 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
 - 1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related

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components. Cross- reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.

- b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes/compact disks for computerized electronic equipment. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 1. System, subsystem, and equipment descriptions.
 2. Performance and design criteria if Contractor is delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams. Precautions against improper use.
 9. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
 1. Product name and model number.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.

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4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.3 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

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1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties: Include copies of warranties and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

2.4 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
1. Standard printed maintenance instructions and bulletins.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.

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4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training videotape, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
- F. Maintenance and Service Record: Include manufacturers' forms for recording maintenance. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties: Include copies of warranties and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.

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2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
1. Do not use original Project Record Documents as part of operation and maintenance manuals.
 2. Comply with requirements of newly prepared Record Drawings in Division 01 Section "Project Record Documents."
- F. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 78 23

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OPERATION AND MAINTENANCE DATA

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SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Contract drawings and general provisions of the Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.

1.3 SUBMITTALS

- A. Instruction Program: Submit two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. At completion of training, submit one complete training manual(s) for Owner's use.

1.4 COORDINATION

- A. Coordinate instruction schedule with the contractor.
- B. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by the contractor.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:
 - 1. HVAC systems, including air-handling equipment, air distribution systems and devices.
- B. Training Modules: Develop a learning objective and teaching outline for each

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module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.

2. Documentation: Review the following items in detail:
 - a. Operations manuals.
 - b. Maintenance manuals.
 - c. Project Record Documents.
 - d. Identification systems.
 - e. Warranties and bonds.
 - f. Maintenance service agreements and similar continuing commitments.

3. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions. Operating procedures for emergencies.
 - i. Operating procedures for system, subsystem, or equipment failure.
 - j. Seasonal and weekend operating instructions.
 - k. Required sequences for electric or electronic systems.
 - l. Special operating instructions and procedures.

4. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.

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5. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
6. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
7. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 1. Schedule training with Owner, through Construction Manager, with at least seven days' advance notice.

END OF SECTION 01 79 00

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