
PART 1 GENERAL**1.1 RELATED DOCUMENTS**

- A. The requirements of the General Conditions, Supplementary Conditions and the following Specification sections apply to all Work herein:
1. Section 28 31 10 - FDAC General Requirements
 2. Section 28 31 30 - FDAC System
 3. Section 28 31 40 - FDAC System Testing

1.2 SUMMARY

- A. The FDAC Subcontractor shall provide all labor, materials, tools, scaffolding, machinery, equipment, appliances and services necessary to complete the FDAC Work under this Construction Contract. All systems and equipment shall be complete in every respect and all items of material, equipment and labor shall be furnished and installed for a fully operational system. The FDAC Subcontractor shall coordinate its Work with the Work of the other trades so as to resolve any conflicts without impeding job progress or the Schedule. Provide notice with the bid proposal to the Owner and Contractor with the bid proposal of any concrete Work required by this Division that is not indicated on the Structural, Architectural, HVAC, Plumbing, Fire Suppression, or Electrical Drawings.
- B. The FDAC Subcontractor shall examine all the Architectural, Structural and HVAC, Plumbing, Fire Suppression Drawings and other Divisions and sections of the Specifications in order to determine the complete scope of the Work required to be completed under this Division. Failure to examine all the Contract Documents for this Project will not relieve the FDAC Subcontractor of the responsibility to perform all the Work required for a complete, fully operational and satisfactory FDAC system installation.
- C. The fire management system submittal drawings shall be prepared under the supervision of a Professional Engineer registered in California and submitted drawings and calculations shall bear the Engineer's stamp.
- D. The Contractor shall have in-house engineering and project management capability consistent with the requirements of the project. Qualified representatives of the system manufacturer shall perform the detailed engineering design of central and remote control equipment, and shall produce all panel and equipment drawings, submittals and operating manuals. The Contractor is responsible for detailed system design and documentation, coordination of system installation requirements and final system testing in accordance with these specifications.
- E. Previous system architecture with spare capacity already built in within fire alarm panels for batteries and for amplifiers for an additional 20% increase to quantity of speakers, strobes, and duct smoke detectors. Contractors bid shall include the necessary components for this spare capacity, as well as a total of 5% additional speakers, strobes, and duct smoke detectors.
- F.
- G. The FDAC Work to be performed under this Construction Contract is all in connection with the construction and erection of a Project located in San Francisco, California.

1.3 REFERENCE STANDARDS

- A. All Work required by these Specifications shall comply with the latest applicable standards of the following:
1. Underwriters Laboratories, Inc. (UL)
 2. Electrical Testing Laboratories (ETL)
 3. National Electrical Manufacturers Association (NEMA)
 4. American National Standards Institute (ANSI)
 5. National Fire Protection Association (NFPA)
- B. In addition, all Work required by these Specifications shall comply with the applicable standards listed in the various sections of the Specifications as well as the requirements of the local authorities having jurisdiction.

- C. All equipment and material to be furnished and installed on this Project shall be UL or ETL listed, in accordance with the requirements of the authorities having jurisdiction, and suitable for its intended use on this Project.

1.4 WARRANTY

- A. Comply with the requirements of the General Conditions and Section 28 31 10.

1.5 WORK INCLUDED

- A. The Work includes but is not limited to the following systems, equipment and services:
 - 1. Fire detection, alarm and communication system consisting of all items indicated on the Drawings and/or specified herein, such as:
 - a. Fire detection systems.
 - b. Fire alarm systems.
 - c. Fire communication systems.
 - d. The FDAC Subcontractor shall be present and shall participate in the testing of the entire fire safety ventilation system. Refer to Division 23, Section 23 08 13 titled "Testing, Balancing and Adjusting" for additional requirements.
 - e. Furnishing and installing all electric wiring systems for miscellaneous alarms and supervisory switches. See Division 21, 22, 23, 25, and 26 for requirements.
 - 2. Furnishing and installing all control power and interlock wiring associated with the fire detection, alarm and communication system.
 - 3. FDAC system connection of all equipment furnished under other Divisions and/or by the Owner.
 - 4. All Work associated with the FDAC system monitoring and control of the preaction sprinkler systems, dry pipe air compressors, water flow switches, and tamper switches furnished by the Fire Suppression Subcontractor and the airflow or differential pressure switches, damper end switches and all positive indication devices provided by the HVAC Contractor.
 - 5. Furnishing of Coordination Drawings as specified herein.
 - 6. Furnishing of Project Record Documents as specified herein.
 - 7. Furnishing of Shop Drawings, Product Data and Samples.
 - 8. Operation and maintenance books.
 - 9. Miscellaneous items as required for complete and functioning systems as specified herein and indicated on the Drawings.
 - 10. Performance and acceptance testing of FDAC equipment and systems as specified herein and required by the authorities having jurisdiction. Participate in and provide labor for "off hour" testing of equipment and systems as required by working conditions or by the authorities having jurisdiction to obtain the "Temporary Certificate of Occupancy (TCO)".
 - 11. Seals and firestop as specified herein and as required by the authorities having jurisdiction for all sleeves and all floor and wall penetrations for all FDAC System Work. Sleeves are provided and installed by Division 26.
 - 12. Patching or replacement of all firestop if it is damaged or removed during the installation of the Division 28 FDAC System Work.
 - 13. Participate in and provide equipment, materials and labor as required to construct at the Project Site, a complete FDAC "mockup", in or out of sequence, of one (1) typical floor including the associated air handling unit rooms, electrical closets and telephone closets. See Architectural Specification Section 01 for details and construction requirements. The field "mockup" will remain in place for use in the completed building FDAC systems. The "mockup" will be reviewed and will serve as a model for the FDAC installation on other similar typical floors.
 - 14. Power provisions required beyond what is indicated on the Division 26 Electrical Drawings for a complete and functional FDAC System.
 - 15. Supervision and trouble status of power at all fans associated with the smoke control system, Engine generator system, fuel oil system, fire doors and windows, emergency radio amplification (DAS), water chiller refrigeration, leak detection and other equipment associated with the building life safety system.

1.6 PARTIAL LIST OF WORK NOT INCLUDED IN DIVISION 28 FDAC SYSTEM

- A. Installing access doors in General Construction. Provide quantity of access doors being provided in the bid proposal.

- B. Painting except touch up painting and as otherwise specified herein.
- C. All formed concrete Work indicated on the Structural, Architectural, HVAC, Plumbing, Fire Suppression, or Electrical Drawings.
- D. All conduit, raceway, sleeves, outlet boxes, and fittings as required for all fire alarm trunk and device wiring provided by Division 26.
- E. Power provisions as indicated on the Division 26 Electrical Drawings.
- F. Building Control System: Division 25.
- G. Division 28 Building Security System.

1.7 PROPOSALS AND ALTERNATES

- A. See Contractor's or Owner's "Instructions to Bidders" and Section 01 for Allowances, Unit Prices and Alternates.
- B. Compliance Reviews: The FDAC Subcontractor and equipment vendor shall provide a Compliance Review with the bid proposal of the applicable Drawings, Specifications and Addenda for each "Equipment Alternate" listed hereinafter for this Project. The Compliance Review will be a paragraph-by-paragraph review of the Specifications with the following information, "C", "D", or "N/A" marked for each Specification section paragraph in the margin of the Specification and any applicable Addenda.
 - 1. "C": Comply with no exceptions.
 - 2. "D": Deviation. Equipment, product or material does not comply. For each and every deviation, provide a numbered footnote with reasons for the deviation for the Owner's consideration and possible alternatives.
 - 3. "N/A": The Specification paragraph does not apply to the proposed equipment, material, or product. The Compliance Review is intended to be a confirmation that the proposed Equipment Alternate is in complete compliance with the requirements of the Contract Documents. In the event that a listed manufacturer cannot meet the requirements of the Contract Documents because of limitations of their manufacturing process or their equipment, such deviations must be detailed for review by the Owner. Any and all deviations to the requirements of these Specifications must be identified and may impact the Owner's acceptance of the Alternate.
Unless a deviation is specifically noted in the Compliance Review, it is assumed that the Equipment Alternate proposed is in complete compliance with the Contract Documents. Deviations taken in cover letters, subsidiary documents, by omission or by contradiction do not release the Subcontractor from being in complete compliance, unless the deviation has been specifically noted (explicitly, not by implication) in the Compliance Review.
- C. Equipment Alternates:
 - 1. The cost of the following Equipment Alternates shall include the equipment cost, labor and installation costs, sales tax, warranty cost, startup costs, testing, and the Subcontractor's markup and fee. The conduit, raceway, sleeves, outlet boxes, fittings, etc. material and labor installation costs shall be included in the Division 26 Electrical Subcontractor's base bid.
 - 2. Alternate FDAC-1: Furnish and install a EST Intelligent Fire Alarm System, as specified in Section 28 31 30 titled "Fire Detection, Alarm and Communication Systems".
 - a. Alternate FDAC-1A: Provide the MS Package described in Section 28 31 30.
 - 3. Alternate FDAC-2: Furnish and install a Notifier Intelligent Fire Alarm System, as specified in section 28 31 30 titled "Fire Detection, Alarm and Communication Systems".
 - a. Alternate FDAC-2A – Provide the MS Package described in Section 28 31 30.
 - 4. Alternate FDAC-3: Furnish and install a Siemens Intelligent Fire Alarm System, as specified in section 28 31 30 titled "Fire Detection, Alarm and Communication Systems".
 - a. Alternate FDAC-3A – Provide the MS Package described in Section 28 31 30.
 - 5. Alternate FDAC-4: Furnish and install a Simplex Intelligent Fire alarm System, as specified in Section 28 31 30 titled "Fire Detection, Alarm and Communication systems".
 - a. Alternate FDAC-4A – Provide the MS Package described in Section 28 31 30.
 - 6. Alternate FDAC-5: Provide a deduct price for the firefighter's telephone system, firefighter's telephone handsets, and firefighter's telephone jacks.

7. Alternate FDAC-6: Provide a separate price for Emergency Responder Distributed Antenna System.

PART 2 PRODUCTS

2.1 GENERAL

- A. Refer to Section 28 31 30 of the Specifications for equipment requirements.

PART 3 EXECUTION

3.1 GENERAL

- A. Installation shall be in accordance with the Specification section pertaining to the individual equipment.

3.2 SUBCONTRACTOR SCHEDULING PROCEDURES

- A. The following is a summary of the scheduling described in the text of the Specifications.
 1. Immediately after Notice to Commence, the Contractor, together with the major Subcontractors, shall have a preconstruction meeting with the Architect, Engineer, and Owner.
 2. It is expected that an expedited submittal review process will be utilized on this Project. The Subcontractor shall prepare the following upon receiving Notice to Commence.
 - a. On or before two (2) weeks after Notice to Commence, the major Subcontractors shall submit a complete, typed list of the manufacturers and suppliers for the equipment they intend to furnish on this Project to the Engineer for the expedited submittal review.
 - b. Approximately four (4) to six (6) weeks after Notice to Commence, the expedited submittal review meeting will be conducted with the Owner, Architect, Engineer, Contractor, and all major Subcontractors. Subcontractors shall provide complete, certified, documented, and coordinated Product Data for all equipment and material they intend to be processed at the expedited submittal review.
 3. Shop Drawings, Product Data and Coordination Drawings not included in the expedited submittal review process will follow a normal sequential review by the Engineer as detailed in Section 28 31 10.
 4. On or before two (2) months after Notice to Commence, the Subcontractor shall prepare an index of all remaining Division 28 FDAC Shop Drawings and Product Data for the Project that weren't reviewed at the expedited submittal review.
 5. On or before four (4) months after Notice to Commence, the Division 21, 22, 23 and 26 Subcontractors shall furnish interlock wiring diagrams for use in preparing the Composite Wiring Diagrams to the Division 25 and Division 28 FDAC Subcontractors.
 6. The Division 25 and Division 28 FDAC Subcontractors shall complete their Work on the Composite Wiring Diagrams and shall return them within two (2) months after receiving them from the Division 21, 22, 23 and 26 Subcontractors.
 7. On or before four (4) months after Notice to Commence, the Contractor shall submit Coordination Drawings to the Architect and Engineer for review.
 8. On or before two (2) months after Notice to Commence, the Division 28 FDAC Subcontractor shall submit a complete and detailed fire detection and alarm system point schedule Shop Drawing to the engineer and the Division 25 Subcontractor for review.
 9. On or before six (6) months after Notice to Commence, the Subcontractor shall provide a detailed schedule of completion, when each system is to be completed and outlining when tests will be performed.
 10. Submit two (2) initial copies of the operation and maintenance books to the Owner on or before six (6) months prior to Substantial Completion.
 11. Submit proposed test procedures, recording forms and test equipment for review, six (6) months prior to execution of testing.
 12. Submit four (4) final copies of the Operation and Maintenance books to the Engineer for review at least ten (10) weeks before Final Review of the Project.
 13. Submit testing reports for each individual system within two (2) weeks after completion of the testing.

END OF SECTION