
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. Division 21 Specification - All sections

1.2 SUMMARY

- A. The Fire Suppression Subcontractor shall provide all design, labor, materials, tools, scaffolding, machinery, equipment, appliances and services necessary to complete the Fire Suppression 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 Fire Suppression Subcontractor shall coordinate their Work with the Work of the other trades so as to resolve conflicts without impeding job progress or the Schedule. Provide notice with the bid proposal of any concrete Work required by this Division that is not indicated on the Structural, Architectural, HVAC, Plumbing, Fire Suppression, FDAC, or Electrical Drawings.
- B. The Fire Suppression Subcontractor shall examine all the Architectural, Structural, HVAC, Plumbing, FDAC, Fire Suppression, and Electrical Drawings, Division 25 "Building Controls" and other Divisions and sections of the Specifications in order to determine the extent of Work required to be completed under this Division. Failure to examine all the Contract Documents for this Project will not relieve the Fire Suppression Subcontractor of the responsibility to perform all the Work required for a complete, fully operational and satisfactory Fire Suppression installation.
- C. The Fire Suppression 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 Suppression Association (NFPA)
 6. American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
- 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 SUBMITTALS

- A. The following submittal data shall be furnished according to the General Conditions and Section 21 00 20 and shall include, but not be limited to:
1. Refer to specific Specification Sections for all submittal requirements.
 2. Log of all Shop Drawings, Product Data, Samples, Test Procedures, Test Reports, Certifications, and Coordination Drawings.
- B. All items or equipment listed with asterisks (*) shall be certified by the manufacturer using Manufacturer Certification "MCA" as set forth in Section 21 00 20. See Section 21 00 20 for certification requirements.

1.5 WARRANTY

- A. Comply with the requirements of the General Conditions and Section 21 00 10.

1.6 WORK INCLUDED

- A. The Work includes but is not limited to the following systems, equipment and services:
1. Fire suppression system consisting of all items indicated by the Drawings and/or specified herein, such as:
 - a. Fire department connections.
 - b. Fire pumps and controllers.
 - c. Automatic sprinkler systems (wet pipe systems, etc.).
 - d. Alarm tamper and flow switches.
 - e. Standpipes and hose valves.
 - f. Fire Suppression water storage tanks and controls.
 - g. Fire main water service and extension to 5'-0" outside foundation walls.
 2. Building Management and Control System will be provided by Division 25. Division 21 Subcontractor shall install and coordinate devices such as alarm contacts, temperature sensor locations, etc., with Division 25. See the requirements of Divisions 21 and 25 for coordination and installation requirements.
 3. All fire suppression system water services for the building including all required fees except that water access charges are paid by the Owner.
 4. Furnish and install all miscellaneous supports for Division 21 Work and equipment.
 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. Furnishing of Test Procedures, Test Reports, and Certifications as specified and required for all Division 26 Work.
 9. Balancing and adjusting of fire suppression systems as specified herein.
 10. Performance and acceptance testing of equipment and systems as specified herein and as required by authorities having jurisdiction. Refer to Section 21 05 93 titled "Testing" for additional requirements. Participate in and provide labor as required for "off hour" testing of equipment and systems if required by job conditions or by the authorities having jurisdiction and as required to obtain the "Temporary Certificates of Occupancy (TCO)".
 11. Furnishing of operating and maintenance books.
 12. Miscellaneous items as required for complete and functioning systems as specified herein and as indicated on the Drawings.
 13. All systems, equipment and services specified herein shall be furnished and installed complete and ready for use.
 14. Provide all excavation and backfill required for Division 21 Work.
 15. Furnish and install all sleeves for the Fire Suppression Work complete with seals and firestop as specified herein and as required by the authorities having jurisdiction.
 16. Furnish and install insulation for freeze protection, over the cable wrap type heat tracing provided by Division 26, on all piping as indicated on the Drawings or as required for system freeze protection.
 17. Patching or replacement of all fireproofing if it is damaged or removed during the installation of the Division 21 Work.
 18. The Fire Suppression Subcontractors shall participate in and assist in the operation of the fire safety ventilation equipment as required during the performance testing and startup of the Division 28 FDAC Systems. Refer to Division 28 for additional requirements.
 19. Provide software communication interfaces between selected equipment and the BMCS.
 20. Participate in and provide equipment, materials and labor as required to construct at the Project Site a complete fire suppression "mock-up", in or out of sequence, of one (1) typical floor. See Architectural Specification Section 09000 for details and construction requirements. The field "mock-up" will remain in place for use in the completed building systems. The "mock-up" will be reviewed and will serve as a model for the fire suppression installation and other similar typical floors.
 21. Participate in and provide fire suppression equipment, materials and labor as required to construct at the Project Site a toilet room "mockup" in or out of sequence, at the Project Site. See Architectural Specification Section 01 for details and construction requirements. The field "mockup" will remain in place for use in the completed building fire suppression systems. The "mockups" will be reviewed and will serve as a model for the fire suppression installation on other similar typical floor toilet rooms.

1.7 PARTIAL LIST OF WORK NOT INCLUDED IN DIVISION 21

- A. Electrical connections for motors and mounting of loose motors.
- B. Individual motor controllers except motor controllers furnished as integral parts of pieces of equipment.
- C. Motor control centers.
- D. Individual disconnect switches except those furnished as integral parts of equipment.
- E. All concrete Work indicated on the Structural, Architectural, Mechanical or Electrical Drawings.
- F. Concrete equipment pads, concrete thrust blocks and concrete fill for equipment and inertia bases. The Mechanical Subcontractor shall be responsible for providing the Contractor with the correct dimensions, layout, etc. for all equipment.
- G. Metal architectural louvers (except as indicated on the Division 21 Drawings).
- H. Painting, except touch up painting and as otherwise specified herein.
- I. Installing access doors in General Construction.
- J. Wiring for Building Management and Control System and interlocks.
- K. Subsurface and landscape drainage.
- L. Utility mains and piping 5' beyond the foundation walls unless indicated otherwise by the Drawings.
- M. Building Management and Control System: Division 25.

1.8 PROPOSALS AND ALTERNATES

- A. See Contractor's or Owner's "Instructions to Bidders" and Section 01 for additional proposal requirements and for additional information related to Allowances, Unit Prices and Alternates.
- B. Compliance Reviews: The 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.
 - 4. The compliance review is intended to be a confirmation that the proposed equipment is in complete compliance with the requirements of the Contract Documents. In the event that a listed manufacturer can not 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.
 - 5. Unless a deviation is specifically noted in the Compliance Review, it is assumed that the equipment 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. Fire Suppression Alternates: The Alternate cost shall include only the equipment cost, sales tax, warranty cost, startup costs and the Subcontractor's markup and fee. The complete material and labor installation costs including testing and service shall be included in the Subcontractor's base bid proposal.
1. Alternate FS-1: (Customized Sprinkler System Alternate) - The Fire Suppression Subcontractor shall deliver to the Contractor and the Owner a schedule of completion ("Schedule of Completion") within sixty (60) days after Notice to Commence. This Schedule of Completion shall detail the Fire Suppression Subcontractor's design, shop fabrication and installation dates for each floor in detail indicating the installation dates for risers, loop, branch lines and drops on each floor. The Schedule of Completion shall include a specific date by which Tenant Interior Drawings may be delivered to Fire Suppression Subcontractor. The Fire Suppression Subcontractor will then design and install a customized sprinkler head layout as required by the Tenant partition layout and code requirements and fabricate and install a complete fire suppression system in accordance with the requirements of the Tenant Interior Drawings if the Tenant Interior Drawings are delivered prior to the Subcontractor's Schedule of Completion for a particular floor. Include all required system drain downs and refills and all required engineering, design and documentation. Sprinkler heads are to be installed at the base building ceiling tile or drywall ceiling elevations as determined by actual field measurement at the Project Site. The customized sprinkler system is to be designed and installed only one time for a particular Tenant floor. Architectural placement of sprinkler heads in patterns or centered in ceiling tiles, tenant heads added in excess of code requirement, sprinkler heads installed in non-base building ceilings such as wood, metal and glass or heads installed at other than base building ceiling elevation shall be considered as an additional cost to the Tenant and shall not be included in this alternate. If Tenant Interior Drawings have not been delivered to the Fire Suppression Subcontractor by the date defined in the Subcontractor's Schedule of Completion then the area shall be completed as per the base building documents and the requirements of the local authorities having jurisdiction for non-occupied shell and core space and placed into service. At the time of Project substantial completion all Tenant areas of the Project shall be complete and placed into service thus ending the Fire Suppression Subcontractor's obligations for Tenant floors. As part of this Alternate the Fire Suppression Subcontractor shall breakdown the cost of this Alternate for each tenant floor level. [It should be anticipated that the Tenant Interior Drawings will call for thirty percent (30%) of the Tenant area to be partitioned offices and seventy (70%) open office space.]

PART 2 PRODUCTS

2.1 GENERAL

- A. Refer to the specific sections 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. An expedited submittal review process shall 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 to the Engineer a complete, typed list of the manufacturers and suppliers for the equipment and materials intended to be furnished on this Project that will be provided for review at the expedited submittal review meetings.
 - b. Approximately six (6) to eight (8) weeks after Notice to Commence, the expedited submittal review meetings will be conducted with the Owner, Architect, Engineer, Contractor, and all major Subcontractors. Subcontractors shall provide complete, certified, documented, and coordinated Product Data submittals for the equipment and material intended to be reviewed and processed at the expedited submittal review meetings. It is anticipated that the majority, if not all, of the

equipment and material submittals that will be furnished on this Project will be processed at these meetings.

3. Shop Drawings, Product Data, Samples, Test Procedures, Test Reports, Certifications, Composite Wiring Diagrams, and Coordination Drawing submissions not included in the expedited submittal review process will follow a normal sequential review by the Engineer as detailed in Section 21 00 10.
4. On or before two (2) months after Notice to Commence, the Subcontractor shall submit a Log of all Division 21 Shop Drawings, Product Data, Samples, Test Procedures, Test Reports, Certifications, Composite Wiring Diagrams, and Coordination Drawings for the Project including all that were processed at the expedited Submittal review meetings.
5. On or before two (2) months after Notice to Commence, the Division 21 Subcontractor shall furnish Composite Wiring Diagrams to the Division 25 and Division 28 Subcontractor.
6. The Division 25 and Division 28 Subcontractor shall complete its Work on the Composite Wiring Diagrams and shall return them within [one (1)] month after receiving them from the Division 21 Subcontractor.
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 six (6) months after Notice to Commence, the Subcontractor shall provide a detailed schedule of completion indicating when each system is to be completed and outlining when tests will be performed.
9. Submit two (2) initial copies of the operation and maintenance books to the Owner on or before six (6) months after Notice to Commence.
10. Submit proposed test procedures, recording forms, test equipment, and personnel and qualifications for review six (6) months prior to execution of testing.
11. Submit balancing and performance testing procedures and recording forms for all testing at least six (6) months prior to commencing any air and/or water balance Work.
12. Submit air and water testing and balance reports for each individual system within two (2) weeks after completion of the testing and balancing.
13. Submit a proposed schedule of Owner instruction and training as required in specific specification sections for review by the Architect and Engineer six (6) months before Substantial Completion.
14. 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.
15. Submit testing reports for each individual system within two (2) weeks after completion of the testing.

END OF SECTION