

February 18, 2019
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA
Addendum No. 1, IFB Y19-723-RC
KELLY PARK RESTROOM

Bid Opening Date: February 26, 2019

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to, and shall take precedence over, the original documents. Underlining indicates additions, deletions are indicated by ~~strikethrough~~.

A. The bid opening date: February 26, 2019 at 2:00 P.M.

B. Additions, Revisions, Deletions, Clarifications, Questions and Answers:

1. The following specifications have been revised in their entirety.

- Specification Section 28 31 11

2. Question: Specifications call for lighting protection but there are no lighting protection plans. Should we follow the specification book or the plans?

Answer: Contractor to provide a lighting protection system in accordance with the specifications. This is a performance specification to which the contractor is to design and install a system in accordance with the Underwriters Laboratory (UL) and provide a label for the system installed.

3. Question: On the finished floor plan all have finished color TBD by the owner for resinous floor, walls and wet wall. Is the owner going to perform the finishing paint for these projects?

Answer: No, all finishes to be provided by the bidder.

4. Question: On the finished floor plan do not reference where the finishes are per the finish legend. Is there a page missing or is it on another page?

Answer: Finishes are as follows:

- Paint: Sherwin Williams 6231 "Repose Gray"
- Wall Tile: 12"x12" Dal-Tile Volume 1.0 VL72 "Reverb Ash"
- Wall Tile Grout: Custom Building Products "Oyster Gray" #09"
- Resinous Flooring and Base: Key Urecon SLT Quartz "Slate"
- 2-Station Lavatory Countertop: Commercial Washroom Innovation "Taupe Organic"
- Toilet Partitions: Scranton Products Solid Plastic HDPE "Paisley"

5. Question: Can you confirm what the ceiling material is made of? The legend states gypsum board, the detail on page A301 calls for cement board ceiling.

Answer: Interior ceiling is to be moisture resistant Gypsum Board painted and exterior to be Fiber Cement Board painted.

- 6. Question:** Regarding the tile, one detail on page A-001, the tile is supposed to go to 6'0 above finished floor. Page, A101, it states tile is to go to 5', and then on page A301, there is a section cut through showing the shower head at 6'4" with tile going above that.
Answer: 6" Resinous base with 6' of tile capped with a bullnose tile. See sheet A-502 for additional information.
- 7. Question:** At the pre-bid it was discussed that Pavilion #4 could be used for storage of materials, etc.
Answer: This is correct. This pavilion will be closed for the duration of the construction project and can be used for storage or materials, etc. However, it is strongly advised that the successful bidder take extensive photographic/video footage to document the condition of this pavilion prior to construction as any and all damage to the pavilion will be the responsibility of the successful bidder, and this documentation will be the successful bidders only means of proof showing that any such damage was not of their doing, but an existing condition.
- 8. Question:** Drawing P501 shows a detail for the thermostatic mixing valve. Please provide specs for the mixing valve and pipe sizes for manifold
Answer: TMV-1 shall be as follows: Tempering/Mixing Valve: Water mixing valve with minimum flow of 5.0 GPH, maximum flow of 21 GPH, dial type thermometer, adjustable high temperature limit stop, integral inlet check stops, strainers, outlet ball valve, locking temperature regulator, bronze body and cap with stainless steel piston & liner. Furnish with wall mounting bracket, 3/4" inlets, 1" outlet. Bradley S59-2045-T or equal.
- 9. Question:** Drawing P001 - WC-1/WC-2 shows floor mounted carriers. Please confirm horizontal floor mounted carriers can be used?
Answer: The Sanitary Riser Diagram shows floor mounted carriers with individual vertical sanitary drops. The Contractor may use floor mounted carriers with a horizontal sanitary configuration in order to connect more than one water closet above slab and combine them. In addition, horizontal carriers can be used per Project Manual Specification 22 40 00 - 2.7.
- 10. Question:** The specs call for a glass block with aluminum frames, will acrylic block with vinyl frames be a suitable replacement?
Answer: No, provide what is specified.
- 11. Question:** Plans are missing the signage plan.
Answer: See the attachment titled "Orange County Parks Signage" Dated 2/6/19
- 12. Question:** The area planned for construction and the existing restroom to be demolished are surrounded by pine and young oak trees. Please identify which trees in the vicinity of the existing restrooms that Orange County intends to be removed during the demolition of the existing restroom and construction of the new restroom.

Answer: Successful bidder shall stake building corners and at that time, Parks/Capital Projects will determine which trees, if any are to be removed or saved.

13. Question: Does the Orange County expect the area that has been disturbed during construction/around the new restroom facility to be sodded?

Answer: Yes. All disturbed areas shall be sodded with Bahia as noted on sheet C101.

14. Question: It appears as if one of the structural column members for the new restroom building will be in the footprint of the existing restroom building, necessitating the demolition of the existing restroom prior to construction. Does the county intend to keep the existing restroom building active during construction of the new restroom, or is the contractor expected to provide temporary restroom facilities for the campground area?

Answer: As discussed at the pre-bid, the existing restroom is to be demolished prior to construction. The contractor is not required to provide temporary restroom facilities for the campground area.

15. Question: The Utility plan on sheet C301 calls to connect the new 4" sanitary sewer line to the existing sanitary sewer line on-site. Please indicate the size of the existing sanitary sewer line.

Answer: Assume existing sanitary sewer line to be 4".

16. Question: No specifications are provided for exterior cementitious boards. Please provide a specification for the cementitious soffit and frieze detailed on sheets A-401 and A-501.

Answer: See attached Specification Section 07 46 46

17. Question: Detail 4 on page A-501 has a note for 5/8" Gypsum Board pointing at the bond beam in the bulkhead. Does Orange County intend to make the sheath on the bulkhead cement board, like the rest of the ceiling?

Answer: Please make this Cement Board matching the rest of the ceiling.

18. Question: Kelly Park has a concrete bench with masonry under it. Please provide the length of the bench so we can complete our CMU take off.

Answer: The bench is 23' – 0" in length.

19. Question: Reference specification section 28 31 11 – The specification section seems to indicate a combination security / fire alarm system. However, the 3 acceptable manufacturers listed offer only fire alarm specific systems, not combination systems. Please confirm if this project requires a combination security / fire alarm system, and if so, provide the acceptable/ county approved manufacturers. If separate fire alarm and security systems are acceptable, please provide details on the acceptable security system manufacturers.

Answer: The combination Security System and Fire Alarm System called for on specification section 28 31 11 is now going to be reduced to only a Fire Alarm System. The owner will be furnishing and installing the Security System after the

contractor has completed the project. The contractor shall furnish and install raceways, conduits and door contacts as called for on the plans. See attached revised specification section 28 31 11

20. Question: Specification section 10 21 13 and 19-3 calls for integral hinges, plastic pilaster shoes, and plastic stirrup brackets for the toilet partitions. A specialties subcontractor informed us that the majority of manufacturers, including most of the manufacturers in the recommended suppliers list, do not provide these as options anymore. The recommended alternatives would be 8" wrap-around aluminum hinges, aluminum stirrup brackets, and stainless steel pilaster shoes. Will Orange County consider these alternatives to the integral hinges and plastic equipment?

Answer: Provide what is specified, as the question clearly states "the majority of manufacturers, including most of the manufacturers in the recommended suppliers list, do not provide these as options anymore" which means that what is specified is still available. The alternatives noted above would be a substitution request, and shall be handled as per No. 7 of Part C – Instruction to Bidders of the Invitation for Bids (below). Requests for substitutions will not be considered prior to contract award in accordance with the provision.

21. Question: Can Saniflow Hand Dryer Corp's Machflow hand dryer be substituted in lieu of the nine approved manufacturers?

Answer: This is a substitution request and shall be handled as per No. 7 of Part C – Instruction to Bidders of the Invitation for Bids (below). Requests for substitutions will not be considered prior to contract award in accordance with the provision. **NO. 7. PART C – INSTRUCTIONS TO BIDDERS**

SUBSTITUTE MATERIAL AND EQUIPMENT:

The Contract, if awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever materials or equipment or patented processes are specified or described in the Contract Documents by naming a trade name, manufacturer, supplier or proprietary item or catalog number, the naming of the item is intended to establish the type, function and quality required and to establish a basis for bidding.

Substitute materials or equipment may be considered after a Contract for the Work is executed if sufficient information is supplied by Contractor to allow Project Manager to evaluate the proposed substitution, unless the naming of the item is followed by words indicating that no substitution is permitted. The procedure for submittal of any such application by Contractor and consideration by Project Manager is set forth in the General Conditions.

In the event that substitute materials or equipment are used and are less costly than the originally specified material or equipment, then the difference in cost of the item shall benefit the County and Contractor in equal proportions.

Applications for substitute materials and equipment shall only be evaluated after the Contract is executed. The Base Bid and Alternates shall reflect the costs for the materials and equipment named or specified only.

C. ACKNOWLEDGEMENT OF ADDENDA

- a. The Bidder/Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of the bid or proposal.
- b. All other terms and conditions of the IFB remain the same.
- c. **Receipt acknowledged by:**

Authorized Signature

Date Signed

Title

Name of Firm

SECTION 07 46 46 - FIBER-CEMENT SIDING, SOFFITS, AND CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes exterior fiber-cement siding, soffits and ceilings.
- B. Related Requirements:
 - 1. Section 06 10 00 "Rough Carpentry" for wood furring, grounds, nailers, and blocking.
 - 2. Section 07 11 13 "Bituminous Dampproofing" for weather-resistive barriers.

1.3 COORDINATION

- A. Coordinate siding installation with flashings and other adjoining construction to ensure proper sequencing.
- B. Coordinate installation and fastening requirements to meet local wind zone requirements and codes.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Samples for Initial Selection: For fiber-cement siding, soffit and ceiling including related accessories.
- C. Samples for Verification: For each type, color, texture, and pattern required.
 - 1. 12-inch- (300-mm-) long-by-actual-width Sample of siding.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of fiber-cement siding, soffit and ceiling.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for fiber-cement siding.

- C. Research/Evaluation Reports: For each type of fiber-cement siding required, from ICC-ES.
- D. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of product, including related accessories, to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Furnish full lengths of fiber-cement siding and soffit including related accessories, in a quantity equal to 2 percent of amount installed.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with labels intact until time of use.
- B. Store materials on elevated platforms, under cover, and in a dry location.

1.9 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace products that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including cracking and deforming.
 - b. Deterioration of materials beyond normal weathering.
 - 2. Warranty Period: 25 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain products, including related accessories, from single source from single manufacturer.

2.2 FIBER-CEMENT SIDING

- A. General: ASTM C 1186, Type A, Grade II, fiber-cement board, noncombustible when tested according to ASTM E 136; with a flame-spread index of 25 or less when tested according to ASTM E 84.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- a. CertainTeed Corporation.
 - b. GAF Materials Corporation.
 - c. James Hardie Building Products, Inc.
 - d. James Hardie Siding Products.
 - e. MaxiTile, Inc.
 - f. Nichiha Fiber Cement.
 - g. Norandex; Building Materials Distribution, Inc.
- B. Labeling: Provide fiber-cement siding that is tested and labeled according to ASTM C 1186 by a qualified testing agency acceptable to authorities having jurisdiction.
- C. Nominal Thickness: Not less than 5/16 inch (8 mm).
- D. Horizontal Pattern: Boards 8-1/4 to 8-1/2 inches (210 to 216 mm wide in plain style which provided a minimum of a 7" exposure when installed.
1. Texture: Wood grain texture.
- E. Factory Priming: Manufacturer's standard acrylic primer.

2.3 FIBER-CEMENT SOFFIT AND EXTERIOR CEILINGS

- A. General: ASTM C 1186, Type A, Grade II, fiber-cement board, noncombustible when tested according to ASTM E 136; with a flame-spread index of 25 or less when tested according to ASTM E 84.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- a. CertainTeed Corporation.
 - b. James Hardie Building Products, Inc.
 - c. James Hardie Siding Products.
 - d. MaxiTile, Inc.
 - e. Nichiha Fiber Cement.
 - f. Norandex; Building Materials Distribution, Inc.
- B. Nominal Thickness: Not less than 5/16 inch (8 mm).
- C. Pattern: 24-inch- wide sheets wood-grain texture.

- D. Ventilation: Provide unperforated soffit unless otherwise indicated.
- E. Factory Priming: Manufacturer's standard acrylic primer.

2.4 ACCESSORIES

- A. Siding Accessories, General: Provide starter strips, edge trim, outside and inside corner caps, and other items as recommended by siding manufacturer for building configuration.
 - 1. Provide accessories matching color and texture of adjacent siding unless otherwise indicated.
- B. Decorative Accessories: Provide the following fiber-cement decorative accessories as indicated:
 - 1. Corner posts.
 - 2. Door and window casings.
 - 3. Fasciae.
 - 4. Moldings and trim.
- C. Fasteners:
 - 1. For fastening to wood, use siding nails of sufficient length to penetrate a minimum of 1 inch (25 mm) into substrate.
 - 2. For fastening to metal, use ribbed bugle-head screws of sufficient length to penetrate a minimum of 1/4 inch (6 mm), or three screw-threads, into substrate.
 - 3. For fastening fiber cement, use hot-dip galvanized fasteners.
- D. Insect Screening for Soffit Vents: Aluminum, 18-by-16 (1.4-by-1.6-mm) mesh.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of fiber-cement siding and soffit and related accessories.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.

3.3 INSTALLATION

- A. General: Comply with manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

1. Do not install damaged components.
 2. Install fasteners no more 24 inches o.c. or as per manufacturer's recommendations.
- B. Install joint sealants as specified in Section 079200 "Joint Sealants" and to produce a weathertight installation and per manufacturer's recommendations.

3.4 ADJUSTING AND CLEANING

- A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.
- B. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction.

END OF SECTION 07 46 46

Refer to the Technical Specification of the Project

Provide SIGNAGE that conforms to the requirements of all regulatory agencies holding jurisdiction.

Comply with all applicable provisions of the Florida Building Code Accessibility. Requirements include, but are not limited to the following:

General Information (FBC Accessibility Section 703 Signs):

1. Signs shall comply with 703. Where both visual and tactile characters are required, either one sign with both visual and tactile character, or two separate signs, one with visual, and one with tactile character, shall be provided.
2. Tactile characters must be all upper case and raised at least 1/32". Tactile characters must be sans serif, not italic, not oblique, script or highly decorative.
3. The stroke width of the upper case "I" has to be 15% of the letter height or less. The character width of the uppercase "O" must be between 55% and 110% of the height of the corresponding uppercase "I".
4. The copy height for tactile information must be between 5/8" and 2". If separate visual characters are provided, raised characters can be 1/2" and need not contrast with the background.
5. The distance between characters on tactile copy must be a minimum of 1/8" and a maximum of 4 times the character stroke width. These distances are measured between the closest points of adjacent characters. Characters shall be separated from raised borders and decorative elements 3/8 inch (9.5 mm) minimum.
6. Spacing between lines of the characters needs to be a minimum of 135% and a maximum of 170% of the corresponding uppercase "I" height (measured from baseline to baseline).
7. Braille shall be Grade II and positioned directly below the corresponding raised characters. If text is multi-lined, Braille is placed below the entire body of text and separated 3/8" from any other tactile characters and 3/8" minimum from raised borders and decorative elements.
8. Visual characters and symbols, and their background, are to have a non-glare finish. The color of raised characters must contrast as much as possible with their background to make sure signs are more legible for persons with low vision.
9. Pictograms, selected from International Standards, are to be located within a 6" vertical void and accompanying text descriptions are to be located directly below the pictogram.

Mounting height for the SIGNAGE (FBC Accessibility Section 703.4.1)

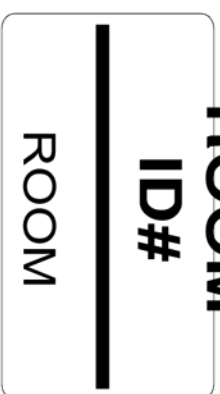
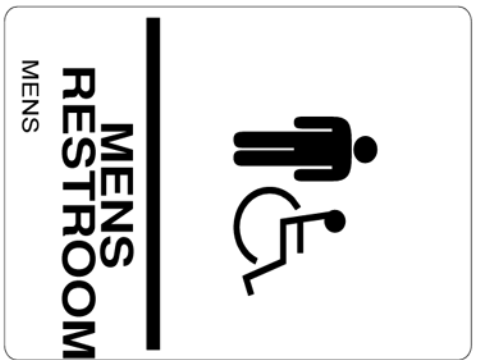
Signs are to be mounted at a height to allow the baselines of raised characters to be located between 48" and 60" above the ground.

Minimum Height: Baseline of lowest character mounted no lower than 48" above floor
Maximum Height: Baseline of highest character mounted no higher than 60" above floor

Location of the SIGNAGE (FBC Accessibility Section 703.4.2)

1. Where a tactile sign is provided at a door, the sign shall be located alongside the door at the latch side.
2. Where a tactile sign is provided at double doors with one active leaf, the sign shall be located on the inactive leaf.
3. Where a tactile sign is provided at double doors with two active leaves, the sign shall be located to the right of the right hand door.
4. Where there is no wall space at the latch side of a single door or at the right side of double doors, signs shall be located on the nearest adjacent wall.
5. Signs containing tactile characters shall be located so that a clear floor space of 18 inches (455 mm) minimum by 18 inches (455 mm) minimum, centered on the tactile characters, is provided beyond the arc of any door swing between the closed position and 45 degree open position.

For how Mounting Heights & Horizontal Viewing Distance impact characters size refer to table (703.5.5 Visual Character Height) of the Florida Accessibility Code.



NOTE :
 PICTOGRAMS SHALL HAVE A FIELD HEIGHT OF 6 INCHES
 MINIMUM. CHARACTERS AND BRAILLE SHALL NOT BE LOCATED
 IN THE PICTOGRAM FIELD

SIGNAGE GENERAL NOTES AND REQUIREMENTS:

- Refer to the Technical Specification of the Project
- Provide SIGNAGE that conforms to the requirements of all regulatory agencies holding jurisdiction.
- Comply with all applicable provisions of the Florida Building Code Accessibility. Requirements include, but are not limited to the following:

SECTION 28 31 11 - FIRE ALARM SYSTEM

PART I GENERAL

1.01 RELATED DOCUMENTS

- A. The General Conditions (Division 1) applies to the work specified in this section.

1.02 RESPONSIBILITIES

- A. This section of the specifications includes the provision and installation of the Fire Alarm System hereinafter referred to as the Fire Alarm System, which will be provided by the Electrical Contractor.
- B. All labor and materials unless specifically indicated otherwise shall be provided by the electrical contractor.
- C. All conduit, boxes, fittings, couplings, connectors, straps, supports, pull lines, bushings, etc. shall be provided and installed by the electrical contractor as per the electrical drawings.

1.03 GENERAL

- A. The electrical contractor shall provide, install and program a functionally complete, integrated, microprocessor based Fire Alarm System.
- B. Any reference to “device”, “component”, “unit”, “module”, or “system”, shall be understood to mean the Fire Alarm System, or any associated manufactured part thereof.

1.04 SYSTEM DESCRIPTION

- A. The alarm system shall provide the following features:
 - 1. The Fire Alarm System shall be approved for connection, notification, and signal transmission of Automatic Fire Detection as defined in NFPA 72 and NFPA 101 Life Safety Code.
 - 2. System keypads/annunciators shall be provided as shown on the plans to perform all functions as described herein.
 - 3. Provide fire alarm horn units as shown on the plans
 - 4. Provide fire alarm strobe units as shown on the plans.
 - 5. Provide photoelectric duct smoke detectors with shutdown relays, sampling tubes and remote test/indicator units as shown on the plans.
 - 6. Provide addressable smoke detectors as shown on the plans.
 - 7. Provide addressable manual pull stations as shown on the plans.
 - 8. Provide key lock box for fire department access (where required by local authority having jurisdiction).

1.05 QUALITY ASSURANCE

- A. Equipment
 - 1. The equipment described in this section represents the function and type of some of the material required and herein specified. The equipment indicated in this section does not intend to be a complete list of all components required for a operational and approved system, but only as a guideline from which the system should be designed. Additional equipment not herein specifically indicated but necessary for an operational system shall be provided.

- B. Submittals
 - 1. The electrical contractor shall submit complete documentation of the system equipment showing model numbers, types, ratings, sizes, styles, manufacturer's name, and data sheets for all components.
 - 2. Submittals must reach the engineer not more than thirty- (30) calendar days after the bid has been awarded.

- C. Installation and Equipment Standards
 - 1. All equipment, systems, and materials furnished and installed under this section shall be installed in accordance with all applicable standards of the National Electric Code (NEC), National Fire Protection Association (NFPA), Underwriters Laboratories (UL) and the Americans with Disabilities Act (ADA).

- D. Acceptable Manufacturers
 - 1. Silent Knight
 - 2. Gamewell
 - 3. Notifier

- E. Warranty
 - 1. All components, parts, and assemblies supplied and installed by the Contractor shall be warranted against defects in material and workmanship for a period of at least 12 months (parts & labor), commencing upon date of acceptance by the owner.

- F. Service/Maintenance
 - 1. System maintenance and repair of system or workmanship defects during the warranty period shall be provided by the Contractor free of charge (parts & labor).
 - 2. Contractor shall provide testing and monitoring for the duration of the one year warranty period, with the Owner providing monitoring after warranty period expires.
 - 3. The installer shall respond to any request for service from the Owner within 24 hours of receipt of call from the owner.
 - 4. Extended service/maintenance contract shall be offered by the installer to the Owner to become effective after the expiration of the warranty.

PART 2 - PRODUCTS

2.01 MATERIALS

A. System Components

1. The Fire Alarm System specified herein shall include a Control Unit with digital alarm communicator, built-in telephone line monitor, 512 event history log, real time clock, help screens, test timer, battery charging/voltage supervision circuitry, battery lead supervision, diagnostic displays, time/event based scheduling system, lightning/EMI protection circuits, contact ID reporting, printer support, point ID bypass, keypad programmable and downloadable. In addition the system shall be capable of segregating the points (i.e. a device or group of devices zoned together).
2. Manual Pull Stations shall be addressable and UL Listed, dual action, single stage w/key reset.
3. Fire Alarm signals shall be combination horn/light units or individual strobe light units, UL Listed and of the required intensity to comply with NFPA.
4. Ceiling Mounted Smoke Detectors shall be surface mounted photoelectric type, addressable and UL Listed as located as noted on the drawings.

- B. Upon a general fire alarm signal from the alarm control panel, all air-handling units, as scheduled, shall be shutdown via relays provided by the alarm contractor. Connection between these relays and the air handling equipment shall be the responsibility of the mechanical contractor.

2.02 SYSTEM INTERFACE REQUIREMENTS

- A. Grounding: The electrical contractor shall properly earth ground the Fire Alarm System to prevent electrostatic charges and other transient electrical surges for damaging the alarm system panel.
- B. All signal cables provided for the Fire Alarm System shall be Class II plenum rated cable where required. Where subject to mechanical damage wiring shall be enclosed in metallic conduit.
1. Data Wires shall not be enclosed in conduit or raceways containing AC power wiring.
 2. Where EMI may interfere with proper operation of the Fire Alarm System circuits, twisted/shielded cable shall be used.
 3. All conduit shall be concealed in ceiling space, partition walls or load bearing walls (where approved by structural engineer) or under slab.
 4. All Alarm Fire System junction boxes shall be labeled "Alarm System" with decal or other approved markings.
- C. Telephone Interface: The system shall be equipped with a phone line monitor and shall interface with the Owners phone lines via RJ-31X jacks for supervision of the telephone line connection to the Fire Alarm System Control panel. The RJ-31X telephone jacks shall be the responsibility of the Owner.
- D. The system shall have wireless connection capability.

PART 3 - INSTALLATION

3.01 EXECUTION

A. General

1. Installation of the Fire Alarm System shall be in strict compliance with the manufacturer's recommendations.
2. Fastening and supports of all equipment shall be adequate to support the required load and provide a safety factor of five.

3.02 FINAL SYSTEM ACCEPTANCE

- A. The Fire Alarm System will be accepted only after a satisfactory test of the entire system has been completed by the Authority Having Jurisdiction, a factory trained technician in the presence of the Owner or Owners representative.
- B. Upon completion of the installation, the Fire Alarm System contractor will provide the Owner "As-Built" drawings of the system, a minimum of two (2) hours of training and one (1) set of operating manuals explaining operation of the system.
- C. The Fire Alarm System Contractor shall provide to the Owner a contract for periodic system testing, maintenance as well as monitoring services. A contract for monitoring services shall be executed with the Owner prior to completion of the alarm system.

3.03 ON-SITE SERVICES

- A. The Fire Alarm System Contractor shall provide the on-site services of an authorized, factory trained technical representative to supervise all connections and fully test all devices and components of the Alarm System during installation.
- B. The Fire Alarm System Contractor shall provide training on the operation, proper use and testing of the installed Fire Alarm System to the Owners Representative.

END OF SECTION