BID DOCUMENTS
1. Building fire alarm systems and additions to such systems shall be designed in accordance with program requirements, latest industry standards, and applicable codes including NEC, NFPA, IBC, IFC, IMC, and these guidelines. All equipment shall be U.L. listed.
2. The audible and visual signal levels shall comply with the ADA requirements and these guidelines.
3. Locate an audio or audio/visual in stairwells at every other level starting at 1st floor.
4. Heat detectors shall be located in all storage areas, mechanical rooms, laboratories, and janitors’ closets. Smoke detectors may be located in clean storage areas in lieu of heat detectors.
5. Smoke detectors shall be located in all corridors, computer rooms, fire alarm control panel area, electrical closets, communications closets and top of stairs (at 5th and 10th floors where applicable). Use the latest NFPA code for spacing requirements.
6. Smoke detectors shall be located in the elevator lobby, machine room and top of shaft if sprinkled for the recall functions.
7. Carbon monoxide alarms (detectors) shall be installed where required by DSPS and IBC chapter 12.
8. All Fire Alarm Control Panels (FACP)s, except for very small buildings, shall include voice communications systems.
9. The new FACP shall be located where directed by the building manager at the review meeting. The new Fire Alarm Annunciator Panel (FAAP) shall be located at the Fire Department's designated entrance.
10. In retrofit projects; new duct detectors shall be specified in lab and research facilities to meet current NFPA-90 standards. Selective fan shutdown shall be provided where applicable.
11. Class B shall be specified unless otherwise specifically directed by the State Engineer.
12. Manual pull stations shall be double action in dorms and single action everywhere else, and utilize a key to reset. Special installations will be considered when requested by Owner and determined justifiable.
13. Candela ratings of visual appliances shall be indicated on the drawings.
14. Free air wiring may be specified if the Owner and DFD are in agreement. Architect/Engineer shall explore this option at the kick-off meeting.
15. Speakers shall be specified inside each resident room in all dormitory settings.
16. Central monitoring shall be included in the program statement.
17. Initiating and audio/visual fire alarm circuits shall have 10% spare capacity.
18. One way voice circuits in the fire alarm system shall have 10% spare wattage, and one spare amplifier in each group/location to automatically replace any failed active amplifier.
19. All speakers shall be set at 1 watt for amplifier sizing.
20. All strobes shall be synchronized.
21. Horn type Loudspeakers (102 dB rating) shall be specified in mechanical areas.
22. All FACP's shall include UL approved alarm verification features for the smoke detector circuits. Other initiating devices shall report alarms within 4 seconds from activation, regardless of system size.

23. Specify fire pump monitoring (3 points) and all tamper and flow switches.

24. Specify control and monitor modules for elevator recall as follows:
   a) (3) Control modules for main level, alternate level and fireman hat.
   b) (1) Control module for shunt-trip where applicable
   c) (1) Control module for battery lowering circuit where applicable in hydraulic elevators
   d) (1) Monitor module for shunt-trip where applicable.

25. Architect/Engineer shall include an edited version of the unit price list included hereafter in every project that involves fire alarm work.

INSTALLATION

26. The Fire Alarm Control Panel (FACP) shall be connected to a 120 VAC, 20 AMP dedicated circuit from an emergency panel. The breaker for this circuit shall be painted red; cap locked and marked "FIRE ALARM". The FACP shall also include sufficient (see specifications for sizing) battery back-up power with an automatic float charger.

27. The operable part of the manual stations shall be installed not less than 3 ½ ft. (42") and not more than 4 ½ ft. (54") above finished floor. All pull stations shall be installed at the same height throughout the facility.

28. Fire alarm visual (strobe) and audible (horn or speaker) signals shall be on separate circuits if the fire alarm control panel cannot control them separately.

29. Speakers shall be set at midrange tap and provide the specified dB sound level at 10 feet.

30. Fire alarm wiring shall be in ½" conduit minimum, unless otherwise specified. This conduit system shall be dedicated to the fire alarm system.

31. Speakers and exposed boxes installed in dorms shall have pinned “torx” head type tamper proof screws.

32. The bottom of wall mounted audio/visual devices shall be installed at not less than 6 2/3 ft. (80") and not more than 8 ft. (96") above finished floor. Ceiling mounted audio/visual devices shall comply with the latest NFPA 72 Standard. All audio/visual devices shall be installed at the same height throughout the facility.

33. Surface mounted devices shall be on factory supplied back or Wiremold boxes (no galvanized boxes).

34. Trim plates shall be used to cover imperfections around flush mounted devices.

35. Junctions and pull boxes in the fire alarm system conduit shall be identified by red covers with F.A. stenciled in black.

36. Smoke detectors located in ducts shall have test switches. Where duct detectors are in locations difficult to reach such switches shall be remotely mounted.

37. Wires shall be terminated at the device by the use of screws or wire nuts. No crimp type nuts or wire twisting/taping are allowed.
UNIT PRICES (listed below are for additions to or deductions from amount of work required under the contract. See Instructions to Bidders ‘Article 19 Unit Prices’ for detailed instructions.)  (Applicable to Base Bid No. 5).

Unit prices shall include labor, material, bond, overhead & profit and any other cost associated with the unit to provide a functional unit integrated into the system being added to or deleted from.

<table>
<thead>
<tr>
<th>Item:</th>
<th>Existing Location</th>
<th>New Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>U01. Addressable Pull Station (semi-flush)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U02. Addressable Pull Station (surface)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U03. Photoelectric Smoke Detector, including Base (surface back box)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U04. Photoelectric Smoke Detector, including Base (concealed back box in existing plaster or drywall ceiling)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U05. Photoelectric Duct Smoke Detector, including Housing and sample tubes</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U06. Demo Existing Duct Smoke Detector</td>
<td>($_________)</td>
<td>per unit</td>
</tr>
<tr>
<td>U07. Dwelling Unit Smoke Detector (surface raceway back box)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U08. Dwelling Unit Smoke Detector (concealed back box in existing plaster or drywall ceiling)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U09. Upgrade U07, or U08 to ADA-type Detector (with built-in Strobe)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U10. Intelligent / Addressable Heat Detector, Including Base (surface back box)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U11. Intelligent / Addressable Heat Detector, Including Base (concealed back box in existing plaster or drywall ceiling)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U12. Non-Addressable Fixed Temp Heat Detector, with Base and mini-monitor module</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U13. Non-Addressable Fixed &amp; Rate of Rise Heat Detector, with Base and mini-monitor module (surface back box)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U14. Non-Addressable Heat Detector, with Base and mini-monitor module (concealed back box in existing plaster or drywall ceiling)</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U15. Non-Addressable Explosion-Proof Heat Detector, with Base and mini-monitor module</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
<tr>
<td>U16. Addressable Monitor Module surface mount</td>
<td>($_________)</td>
<td>($_________) per unit</td>
</tr>
</tbody>
</table>
U17. Addressable Mini-Monitor Module surface mount ($_________) ($_________) per unit

U18. Addressable Control (Relay Output) Module, surface mount ($_________) ($_________) per unit

U19. Addressable Control (Supervised Output) Module surface mount ($_________) ($_________) per unit

U20. Remote Test Switch with Indicating LED For Duct Smoke Detector ($_________) ($_________) per unit

U21. Visual-Only Notification Appliance - surface-mount including surface back box ($_________) ($_________) per unit

U22. Visual-Only Notification Appliance semi-Flush, wall mount (concealed back box in existing plaster or drywall wall or ceiling) ($_________) ($_________) per unit

U23. Audible-Only Notification Appliance - surface-mount ($_________) ($_________) per unit

U24. Audible-Only Notification Appliance – semi-flush, ceiling mount (Semi-Flush shall be interpreted as flush back box) ($_________) ($_________) per unit

U25. Combination Audible / Visual Notification Appliance – (surface-mount, including surface back box) ($_________) ($_________) per unit

U26. Combination Audible / Visual Notification Appliance – (concealed back box in existing plaster or drywall wall or ceiling) ($_________) ($_________) per unit

U27. Mini Horn Notification Appliance - surface-mount ($_________) ($_________) per unit

U28. Mini Horn Notification Appliance - semi-Flush (concealed back box in existing plaster or drywall wall or ceiling) ($_________) ($_________) per unit

U29. Access Panel for Plaster / Gypsum Ceilings or Walls (1-foot by 1-foot size, installed complete and painted) ($_________) ($_________) per unit

U30. Door Hold Open Device ($_________) ($_________) per unit

U31. Access Panel for Plaster / Gypsum Ceilings or Walls (18-inch by 18-inch, installed complete and painted) ($_________) per unit

U32. Access Panel for Plaster / Gypsum Ceilings or Walls (2-foot by 2-foot size, installed complete and painted) ($_________) per unit

U33. 10 linear feet of ¾-inch raceway (non-painted), including any needed wiring & fittings, installed complete ($_________) per unit

U34. 10 linear feet of ¾-inch raceway (painted to match) including any needed wiring & fittings, installed complete ($_________) per unit

U35. 10 linear feet of ½ inch raceway (non-painted), including any needed wiring & fittings, installed complete ($_________) per unit
<table>
<thead>
<tr>
<th>Unit</th>
<th>Description</th>
<th>Cost Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>U36</td>
<td>10 linear feet of ½-inch raceway (painted to match), including any needed wiring &amp; fittings, installed complete</td>
<td>($__________) per unit</td>
</tr>
<tr>
<td>U37</td>
<td>10 linear feet of ½ inch equivalent-size Surface raceway, including needed wiring &amp; fittings, installed complete</td>
<td>($__________) per unit</td>
</tr>
<tr>
<td>U38</td>
<td>10 linear feet of ¾ inch equivalent-size Surface raceway, including needed wiring &amp; fittings, installed complete</td>
<td>($__________) per unit</td>
</tr>
<tr>
<td>U39</td>
<td>Notification Appliance Power Extender</td>
<td>($__________) per unit</td>
</tr>
</tbody>
</table>

Allow a minimum of 50 feet of conduit or surface metal raceway and wire for each unit listed above that requires raceways. Unit prices shall include all required labor, back boxes, fittings, terminations and all other hardware and software modifications to perform the intended operations when added to the system or deleted from it as specified in Section 28 31 00.