SECTION 28 08 00

**COMMISSIONING OF ELECTRONIC SAFETY AND SECURITY**

**BASED ON DFD MASTER SPECIFICATION DATED 03/21/22**

***This section has been written to cover most (but not all) situations that you will encounter. Depending on the requirements of your specific project, you may have to add material, delete items, or modify what is currently written. The Division of Facilities Development expects changes and comments from you.***

**PART 1 ‑ GENERAL**

**SCOPE**

This section includes commissioning forms for construction verification and functional performance testing. Included are the following topics:

PART 1 - GENERAL

Scope

Related Work

Reference

Submittals

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

Commissioning When No Forms Are Available

Commissioning Forms

***DO NOT INCLUDE ANY COMMISSIONING FORMS for PRELIMINARY review. Just edit the list below and only submit pages 28 08 00-1 through 28 08 00-2 with strikethroughs.***

CV-28 31 00 Fire Alarm Control Panels

CV-28 31 00 Fire Alarm Wiring and Devices

**RELATED WORK**

Section 01 91 01 or 01 91 02 – Commissioning Process

**REFERENCE**

Applicable provisions of Division 1 shall govern work under this section.

**SUBMITTALS**

Reference the General Conditions of the Contract for submittal requirements.

Reference Section 01 91 01 or 01 91 02 Commissioning Process for Construction Verification Checklist and Functional Performance Test submittal requirements.

**PART 2 – PRODUCTS**

(Not Used)

**PART 3 – EXECUTION**

**COMMISSIONING WHEN NO FORMS ARE AVAILABLE**

Provide written documentation indicating that the installed system has been tested and operates as intended.

Specification sections that do not have commissioning forms include:

Section 28 10 00 – Access Control System

Section 28 23 00 – Video Surveillance System

Section 28 05 37 – Emergency Responder Radio Coverage System

**COMMISSIONING FORMS**

Commissioning forms are to be filled in as work progresses by the individuals responsible for installation and shall be completed for each installation phase.

Provide a description of the work completed since the last entry, the percentage of the total work completed for the system for that area and the step of installation or finalization.

Circle Yes or No for each commissioning form item. If the information requested for an item does not apply to the given stage of installation for the system, list it as “N/A”. Explain all discrepancies, negative responses or N/A responses in the negative responses section.

Once the work is 100% complete and the responses to each item are complete and resolved for a given commissioning forms group, mark as complete, initial and date in the spaces provided.

Provide copies of the commissioning forms to the commissioning agent 2 days prior to construction progress meetings.

***Edit the individual construction verification checklists and provide additional checklists as needed to reflect the verification requirements of assemblies, components, equipment and systems to be commissioned on this project.***

***DO NOT INCLUDE ANY of the following COMMISSIONING FORMS for PRELIMINARY review. Just edit the list in Part I above and only submit pages 28 08 00-1 through 28 08 00-2 with strikethroughs.***

**CV-28 31 00 – Fire Alarm Control Panels**

**Equipment Identification/Tag: \_\_\_\_\_\_\_**

**Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Group/Item** | **Group/Task Description** | | | **Submitted** | **Delivered** |
| *A* | *MODEL VERIFICATION* | | | | |
| 1 | Manufacturer | | |  |  |
| 2 | Model | | |  |  |
| 3 | Serial Number | | |  |  |
| 4 | Voltage / Phase / Frequency (V / - /Hz) | | | **/ /** | **/ /** |
| 5 | # Addressable Points | | |  |  |
| 6 | Total Accessory Load (A @ VDC) | | | **@** | **@** |
| 7 | Battery Type | | |  |  |
| 8 | Battery Capacity (A-hrs.) | | |  |  |
| **❑ CHECKLIST GROUP COMPLETE** | | **INITIALS:** |  | **DATE:** |  |

| **Group/Item** | **Group/Task Description** | | | **Response** | |
| --- | --- | --- | --- | --- | --- |
| *B* | *PHYSICAL CHECKS* | | | | |
| 1 | Unit is free from physical damage. | | | YES | NO |
| 2 | All components/accessories present. | | | YES | NO |
| 3 | Unit tags affixed. | | | YES | NO |
| 4 | Manufacturer’s ratings readable/accurate. | | | YES | NO |
| **❑ CHECKLIST GROUP COMPLETE** | | **INITIALS:** |  | **DATE:** |  |
| *C* | *INSTALLATION* | | | | |
| 1 | Unit secured as required by manufacture and specifications requirements. | | | YES | NO |
| 2 | Unit display located 60” above finished floor level. | | | YES | NO |
| 3 | Adequate clearance around unit for service. | | | YES | NO |
| 4 | Conduit feeds are aligned with openings and accommodate seismic motion. | | | YES | NO |
| 5 | Unit is level, plumb and square. | | | YES | NO |
| 6 | Unit labeled and is easy to see. | | | YES | NO |
| **❑ CHECKLIST GROUP COMPLETE** | | **INITIALS:** |  | **DATE:** |  |
| *D* | *WIRING* | | | | |
| 1 | Unit is adequately grounded for intended use. | | | YES | NO |
| 2 | All connections are terminated properly. | | | YES | NO |
| 3 | Battery capacity does not exceed panel rating, or batteries installed in separate enclosure. | | | YES | NO |
| 4 | Batteries wired in series. | | |  |  |
| 5 | All electrical connections are tight. | | | YES | NO |
| 6 | All cables are permanently labeled relative to use. | | | YES | NO |
| 7 | Distribution breaker for panel labeled and locked out per specification requirements. | | | YES | NO |
| **❑ CHECKLIST GROUP COMPLETE** | | **INITIALS:** |  | **DATE:** |  |
| *E* | *WIRING-ACCESSORY MODULES* | | | | |
| 1 | Conductor length is less than maximum conductor length specified by manufacturer for module. | | | YES | NO |
| 2 | All connections are terminated properly. | | | YES | NO |
| 3 | All electrical connections are tight. | | | YES | NO |
| 4 | All cables are permanently labeled relative to use. | | | YES | NO |
| **❑ CHECKLIST GROUP COMPLETE** | | **INITIALS:** |  | **DATE:** |  |
| *F* | *WIRING-DEVICES* | | | | |
| 1 | Conductor length is less than maximum conductor length specified by manufacturer for device loop. | | | YES | NO |
| 2 | All connections are terminated properly. | | | YES | NO |
| 3 | All electrical connections are tight. | | | YES | NO |
| 4 | All cables are permanently labeled relative to use. | | | YES | NO |
| **❑ CHECKLIST GROUP COMPLETE** | | **INITIALS:** |  | **DATE:** |  |
| *G* | *STARTUP* | | | | |
| 1 | Telephone connection provided and communication verified. | | | YES | NO |
| 2 | Unit programmed in accordance with contract documents and manufacturer instructions. | | | YES | NO |
| 3 | All points given address and list provided in panel. | | | YES | NO |
| 4 | Alarm acknowledge key tested and operational. | | | YES | NO |
| 5 | Trouble acknowledge key tested and operational. | | | YES | NO |
| 6 | Alarm silence key tested and operational. | | | YES | NO |
| 7 | System reset key tested and operational. | | | YES | NO |
| 8 | Device self-test sequence tested and results acceptable, with any defective devices replaced. | | | YES | NO |
| 9 | Manual drill switch and sequence tested and operational. | | | YES | NO |
| 10 | Unit and associated system/devices tested in accordance with NFPA 72 and results are acceptable. | | | YES | NO |
| **❑ CHECKLIST GROUP COMPLETE** | | **INITIALS:** |  | **DATE:** |  |

**Negative Responses**

| **Group/**  **Item** | **Date**  **Found** | **Found**  **By** | **Reason for Negative Response** | **Resolved** | **Date**  **Resolved** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | **YES / NO** |  |  |
|  |  |  |  | **YES / NO** |  |  |
|  |  |  |  | **YES / NO** |  |  |
|  |  |  |  | **YES / NO** |  |  |
|  |  |  |  | **YES / NO** |  |  |

**CV-28 31 00 – Fire Alarm Wiring and Devices**

**Equipment Identification/Tag: \_\_\_\_\_\_\_**

**Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**A) CONDUIT & FITTINGS PRE-INSTALLATION CHECKS**

| **Date** | **Description of Work Performed** | **%**  **Complete** | **Initials** | **Questions (See details below)** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1)** | **2)** |  |  |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |  |  |
| **❑ CHECKLIST GROUP COMPLETE** | | | | **INITIALS:** | |  | | | **DATE:** | |  | | |

**Question Details**

1. Conduit type and material in accordance with specification requirements for given application and location.
2. Conduit sufficiently sized to accommodate cabling and fill requirements of contract document.

**Negative Responses**

| **Group/Item** | **Date**  **Found** | **Found**  **By** | **Location** | **Reason for Negative Response** | **Resolved** | **Date**  **Resolved** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |

**B) CONDUIT & FITTINGS INSTALLATION CHECKS**

| **Date** | **Description of Work Performed** | **%**  **Complete** | **Initials** | **Questions (See details below)** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1)** | **2)** | **3)** | **4)** | **5)** | **6)** | **7)** | **8)** | **9)** | **10)** |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |
| **❑ CHECKLIST GROUP COMPLETE** | | | | **INITIALS:** | |  | | | **DATE:** | |  | | |

**Question Details**

1. Conduit support spacing complies with specification requirements.
2. All conduits supported independently of piping, ductwork, equipment, cable tray or other conduit.
3. Bends in conduit minimized with required bends conforming to specification requirements and no more than an equivalent of three 90 degree bends between boxes.
4. Moisture traps are avoided as much as possible. When unavoidable, a junction box is provided with drain fitting at conduit low point.
5. All equipment requiring maintenance is accessible.
6. Minimum 6” clearance between conduit and piping, and 12” clearance between conduit and heat sources such as flues, steam pipes, and heating appliances is provided.
7. No continuous conduit run exceeds 100’ without a junction box.
8. Expansion‑deflection joints installed where conduit crosses building expansion joints.
9. Where conduit passes between areas of differing temperatures, listed conduit seals are provided.
10. At end of work day suitable conduit caps or other approved seals provided for incomplete work to protect installed conduit against entrance of dirt and moisture.

**Negative Responses**

| **Group/Item** | **Date**  **Found** | **Found**  **By** | **Location** | **Reason for Negative Response** | **Resolved** | **Date**  **Resolved** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |

**C) JUNCTION, PULL AND OUTLET BOXES INSTALLATION CHECKS**

| **Date** | **Description of Work Performed** | **%**  **Complete** | **Initials** | **Questions (See details below)** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1)** | **2)** | **3)** | **4)** | **5)** | **6)** | **7)** | **8)** |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |
| **❑ CHECKLIST GROUP COMPLETE** | | | | **INITIALS:** | |  | | | **DATE:** | |  | | |

**Question Details**

1. Boxes provided in locations as per contract documents, Engineer’s direction or as necessary for splicing and terminations.
2. Box type and material in accordance with specification requirements for given application and location.
3. All boxes supported independently of conduit, piping, ductwork, equipment, or cable tray.
4. No outlet boxes installed back‑to‑back in walls, and minimum 6” separation between all boxes, except for installations in acoustic walls where a minimum 24” separation between boxes is provided.
5. All boxes are accessible, and where installation is inaccessible, 18” by 24” access door has been provided.
6. Mounting heights for outlet boxes corresponds with contract document requirements for given device.
7. All recessed outlet boxes in finished areas are mounted to the correct depth to accommodate and be flush to final surface finish.
8. Knockout closures provided for unused openings.

**Negative Responses**

| **Group/Item** | **Date**  **Found** | **Found**  **By** | **Location** | **Reason for Negative Response** | **Resolved** | **Date**  **Resolved** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |

**D) CONDUCTOR AND CABLING CONDUIT INSTALLATION CHECKS**

| **Date** | **Description of Work Performed** | **%**  **Complete** | **Initials** | **Questions (See details below)** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1)** | **2)** | **3)** | **4)** | **5)** | **6)** | **7)** | **8)** | **9)** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
| **❑ CHECKLIST GROUP COMPLETE** | | | | **INITIALS:** | |  | | | **DATE:** | |  | | |

**Question Details**

1. Conductors and cabling coloring match specification requirements for given voltage, wire gauge, and leg of circuit.
2. Conduits swabbed to remove foreign material prior to pulling cables.
3. All cables pulled though conduit at the same time, with pulling lubricant used to ease pulling tensions.
4. 8” wire tail provided at each device termination and 36” wire tail provided at each control panel termination.
5. All conductors and cabling pulled in separate conduits from normal power, emergency power, security and control systems.
6. Cables not to be terminated within 8 hours to be properly sealed and protected from moisture intrusion until termination.
7. Splices made only in accessible junction boxes.
8. All conductors and cables cleaned prior to termination.
9. All bend radii conform to manufacturer recommendations for given wire type and gauge.

**Negative Responses**

| **Group/Item** | **Date**  **Found** | **Found**  **By** | **Location** | **Reason for Negative Response** | **Resolved** | **Date**  **Resolved** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |

**E) CONDUCTOR AND CABLING FREE AIR INSTALLATION CHECKS**

| **Date** | **Description of Work Performed** | **%**  **Complete** | **Initials** | **Questions (See details below)** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1)** | **2)** | **3)** | **4)** | **5)** | **6)** | **7)** | **8)** | **9)** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
| **❑ CHECKLIST GROUP COMPLETE** | | | | **INITIALS:** | |  | | | **DATE:** | |  | | |

**Question Details**

1. Conductors and cabling coloring match specification requirements for given voltage, wire gauge, and leg of circuit.
2. Cabling supported via “bridal-type” supports at spacing defined within specifications.
3. All cabling supported independently of piping, ductwork, equipment, cable tray or other conduit.
4. 2’ of service wired looped at 100% to 200% of recommended minimum bend radii at each device termination.
5. 8” wire tail provided at each device termination and 36” wire tail provided at each control panel termination.
6. Minimum separations provided for cabling per specifications to minimize EMI.
7. Cables not to be terminated within 8 hours to be properly sealed and protected from moisture intrusion until termination.
8. All conductors and cables cleaned prior to termination.
9. All bend radii conform to manufacturer recommendations for given wire type and gauge.

**Negative Responses**

| **Group/Item** | **Date**  **Found** | **Found**  **By** | **Location** | **Reason for Negative Response** | **Resolved** | **Date**  **Resolved** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |

**F) DEVICE INSTALLATION CHECKS**

| **Date** | **Description of Work Performed** | **%**  **Complete** | **Initials** | **Questions (See details below)** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1)** | **2)** | **3)** | **4)** |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |  |  |  |  |  |
| **❑ CHECKLIST GROUP COMPLETE** | | | | **INITIALS:** | |  | | | **DATE:** | |  | | |

**Question Details**

1. Devices installed at locations and heights specified in contract documents for given device type.
2. All devices are flush to finished surface.
3. All devices mounted at same height for given device type throughout facility.
4. All horn and strobe circuits wired independently.

**Negative Responses**

| **Group/Item** | **Date**  **Found** | **Found**  **By** | **Location** | **Reason for Negative Response** | **Resolved** | **Date**  **Resolved** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |

**G) FINALIZATION CHECKS**

| **Date** | **Description of Work Performed** | **%**  **Complete** | **Initials** | **Questions (See details below)** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1)** | **2)** | **3)** | **4)** | **5)** | **6)** | **7)** | **8)** | **9)** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
|  |  |  |  | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** | **YES**  **NO** |  |
| **❑ CHECKLIST GROUP COMPLETE** | | | | **INITIALS:** | |  | | | **DATE:** | |  | | |

**Question Details**

1. All exposed conductors and cabling has been visually inspected for physical damage and any damaged conductors and cabling has been replaced.
2. Conductors and cabling jacket and insulation are in good condition.
3. All cable terminations have been checked for proper tightness and clearances per specification and manufacturer recommendations and any adjustments necessary have been made.
4. All penetrations through fire rated wall assemblies have been sealed per specification requirements.
5. All penetrations through non-rated wall assemblies have been sealed per specification requirements for given space type.
6. Conduits that penetrate the building envelope are sealed to prevent intrusion of air and moisture and are accessible.
7. All conduit junction boxes are painted and tagged in accordance with specification requirements.
8. All wiring is properly labeled with control ID number of circuit within ½” of device and terminal connection.
9. All devices labeled with permanent printed labels that correspond to as-built drawings.

**Negative Responses**

| **Group/Item** | **Date**  **Found** | **Found**  **By** | **Location** | **Reason for Negative Response** | **Resolved** | **Date**  **Resolved** | **Resolution** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |
|  |  |  |  |  | **YES / NO** |  |  |