

SECTION 28 08 00
SECURITY SYSTEM COMMISSIONING
Construction Specification

PART 1 GENERAL**1.1 PURPOSE:**

- A. General: Furnish all engineering, labor, materials, apparatus, tools, equipment, and transportation required to test a completed security system installation as described in these specifications.
- B. Base Bid Work
 - 1. Full testing of completed security system which includes:
 - a. Complete pretest of the security system
 - b. Submittal of pre-testing documentation reflecting 100% pass or successful operation
 - c. Submittal of As-Built drawings prior to final walk test with Engineer and/or Owner
 - d. Final walk test with the Owner
 - e. Test Results Record Documentation
- C. Related Sections:
 - 1. Consult all other Divisions, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to test a complete and operable system.
 - 2. Section 28 00 00: Basic Security System Requirements.
 - 3. Section 28 05 53: Security System Labeling
 - 4. Section 28 05 13: Security System Cabling
 - 5. Section 28 13 00: Access Control and Alarm Monitoring System (ACAMS)
 - 6. Section 28 23 00: Video Surveillance System

1.2 SUMMARY OF SYSTEM COMMISSIONING ACTIVITIES

- A. Overview
 - 1. The purpose of system commissioning is to ensure the security system operates properly when it is needed most. Security systems are very complex from both equipment and programming standpoint, and thorough testing is necessary to ensure correct operation.
 - 2. Perform testing activities when the system is "quiet" and the building is generally unoccupied. This will minimize the amount of irrelevant activity in the system activity reports that will be used as a record of the pre and final test results.
- B. Pre-Test

1. Perform a 100% pre-test of all system aspects to verify correct operation prior to scheduling the final test. The pre-test will help to make the final test run smoothly when demonstrating the system's operation to the Owner.
 2. Document the results of the pre-test and submit a copy to the Owner along with the system activity reports
- C. Final Test
1. Perform a final test of the system in the presence of the Owner to demonstrate correct operation of the security system.

1.3 SUBMITTALS

- A. Submit in accordance with the requirements of Section 28 00 00: Basic Security System Requirements, the following items:
1. Sample Test forms
 - a. Provide sample test forms that will be used in the pre and final system tests. Furnish the required quantity of each submittal indicated in Division
 2. Operation and Maintenance Manuals: Submit the following for review and comment at the completion of the project and before final testing occurs:
 - a. Functional Design Manual: Includes a detailed explanation of the operation of the system
 - b. Hardware Manual
 - 1) Pictorial parts list and part numbers
 - 2) Pictorial and schematic electrical drawings of wiring systems, including devices, control panels, instrumentation and annunciators
 - 3) Telephone numbers for the authorized parts and service distributors
 - 4) Include service bulletins
 - c. Software Manual which includes
 - 1) Use of system and applications software
 - 2) Initialization, start-up, and shut down procedures
 - 3) Alarm Reports
 - d. Operator's Manual which full explains all procedures and instructions for the operation of the system and includes:
 - 1) Computers and peripherals
 - 2) System start up and shut down procedures
 - 3) Use of system, command, and applications software
 - 4) Recovery and restart procedures
 - 5) System access requirements

- e. Maintenance Manual
 - 1) Instructions for routine maintenance listed for each component, and a multi-page summary of component's routine maintenance requirements.
 - 2) Detailed instructions for repair of the security system.
 - 3) A summary of the software licenses, including license numbers, quantity of clients, summary of the software options provided and database capabilities.
 - f. Test Results Manual, which includes the document results of all tests, required under this Specification, organized by System, Floor, and Door.
 - g. Record Drawings Manual
3. Record Drawings:
- a. Drawings to fully represent installed conditions including actual locations of devices, actual cable and terminal block numbering, and correct wire sizing as well as routing. Record changes in the work during the course of construction on blue or black line prints.
 - b. Include drawings submitted as part of the Shop Drawing package, plus additional information required to accurately document installed conditions.
 - c. Include the following additional information:
 - 1) Device addresses & IP address information.
 - 2) Settings for each camera (lens specs, mm setting, auto shutter setting, and other available camera settings, etc.)
 - d. Final acceptance will not be made until the Engineer approves the record drawings.

1.4 QUALITY ASSURANCE

A. General

- 1. All testing work shall be completed in a neat, high quality manner acceptable to the Owner.

B. Project Management and Coordination Services

- 1. Provide a project manager to coordinate the security system commissioning work with all other trades.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SCHEDULING

- A. Prepare a construction schedule based on the schedule developed in Section 28 00 00 for the testing activities. Prepare updated schedules whenever there are modifications.

3.2 TESTING REQUIREMENTS

A. Site Tests

1. Perform a 100% pretest of the system prior to final testing by the Owner. Provide the Owner with a minimum of a 5-day notice prior to scheduling testing.
2. At the conclusion of the work on a floor, test the system on that floor to verify proper operation and reporting of devices.
3. Work with the door hardware supplier to resolve any electric hardware failures and door alignment/closure problems.
4. At the completion of all work, test the entire system to verify proper operation. These tests shall include:
 - a. Card Reader Door Test: Test doors to ensure alarm contact provide alarm activation and relock when closed, rex shunts door and command card reader bypasses alarm inputs for area when applicable.
 - b. Card Reader/ADA Test: Test doors according to card reader test above. In addition, test ADA push plate interlocking function to ensure door does not operate when locked. Test that interior ADA actuator always functions.
 - c. Card Reader/ Holder Test: Test doors according to card reader test above. In addition test magnetic holder interlock function to ensure doors cannot be propped when locked
 - d. Elevator In-Cab Reader Test: Enable after hours scheduled securing of elevator floor select buttons. Program a card for each floor with only one-floor privileges. Present card 1 and select floor each floor one at a time. Floor 1 shall function while other floors should not. Repeat test with other cards and floors.
 - e. Elevator Hall-Call Reader Test Enable after hours scheduled securing of elevator. Program single card with privileges to all hall select buttons. Present card at floor 1 and press hall select button. Hall select button should function. Have second technician attempt to use hall button on other floors at same time to ensure independent operation.
 - f. In/Out Card Reader Test: Test door according to card reader test above. In addition test door management alarm for instant alarm on forced exit/entry, remote reset recycle upon card presentation for authorized passing through door. Door held function post authorized card presentation.
 - g. Access Control: Test the software for correct programming and setup to activate door schedules, elevator interface and test cards. Review programming and loading of security devices on system map for each building by floor.
 - h. VSS Recording System Test: Test the recording system for correct programming, scheduled alarm recording, and event retrieval. Test and verify CCTV system viewable from workstations.
 - i. VSS Camera Test: Review cameras for proper coverage, quality of video, focus, etc. Verify proper installation and mounting.
 - j. VSS Workstation Test: Test existing workstation ability to view live and recorded video on each campus. Verify workstation can view cameras on associated campus. Verify District office can view cameras from each of the three campuses.

- k. Security Equipment Room Test: Inspect all system panels, power supplies, and other related security equipment located in these areas.

B. Test Preparation

1. Provide device identification numbers that differ from or were not included on the original contract drawing set.
2. Provide a complete systems point list.
3. Provide paper and toner for the printer so that an event log can be printed out and attached to the test reports as verification of test sequence and systems response.
4. During testing, provide a minimum of two technicians familiar with the installation to assist with the test. Stage the technicians as follows: one at the host and one at the device being tested.
5. Furnish radios for use by the Owner during testing.
6. Furnish pre-programmed access cards for use during testing. One card shall be provided for each access level.

3.3 TEST PROCEDURES

- A. Prepare and issue for review test forms for each door and device type.

3.4 DOCUMENTATION

- A. Provide a full-sized blueline drawing containing a detailed wiring diagram (layout of equipment/elevation, complete parts list, and a complete wiring diagram for each ACU & I/O Board) for each SEC. Fold the diagram and place it inside a clear plastic pocket affixed to the inside door of the SEC.
- B. Provide a service log on the inside door of each SEC. Service log shall include columns for the following information: date of service, description of work performed, service technician(s), and service company. Place the service log inside a separate clear plastic pocket affixed to the inside door of the SEC.

3.5 DEMONSTRATION

- A. On completion of the acceptance test and Owner programming, provide the Owner instruction in the operation and testing of the system, at a time convenient to them.
- B. Utilize the database for the project during training to give the users a project specific example to learn from.
- C. Provide a minimum of 8 hours, per security system, of on-site training for the both the ACAMS and Video Surveillance System by a factory-trained representative. Conduct separate training sessions for system administrator, system supervisor, and operator level users.
 1. Maintain a sign in sheet with names and dates of all persons trained and forward to Owner upon completion of training.

END OF SECTION

