

DIVISION 12**SECURITY, CLOSED CIRCUIT TV,
AND AUTOMATED ACCESS CONTROL SYSTEM**

12.1 General Information - This division defines general design criteria that applies to the design of security systems at DFW Airport.

12.2 Security Alarm Control Panel - Each building security system shall have an alarm system control panel. The control panel shall meet the following requirements:

12.2.1 The panel shall be totally solid state, using digital technology to ensure reliable operation, long life, and low maintenance.

12.2.2 The panel shall be standard with the equipment manufacturer to ensure ongoing parts availability and technical support.

12.2.3 The panel shall be capable of monitoring and controlling security system devices. Space within the panel shall be provided to allow for installation of equipment to accommodate system expansion by twenty (20%) percent.

12.2.4 The panel shall be powered by a 120 VAC dedicated circuit. A lockable circuit breaker shall be provided for the control of this circuit.

12.2.5 The panel shall contain batteries to provide emergency power sized to maintain the local security alarm system upon loss of primary power. The batteries shall be of sufficient capacity to operate the system under standby power for up to twenty four (24) hours. The transfer from primary to battery power shall be automatic. When a transfer occurs, the panel shall annunciate a power fail alarm.

12.2.6 The panel shall be Underwriters Labs approved, and meet the requirements of the UL 864 Standard.

12.3 System Installation - The Contractor installing the security alarm system shall be licensed for the installation of such systems by the State of Texas, and shall present proof of such license to the DFW Department of Public Safety.

12.4 Security System Zoning - Each facility shall be divided into an appropriate number of geographical zones, as determined by the building size and specific system requirements. Each zone shall be sized to provide a reasonably exact location of the source of the alarm condition for personnel responding to an alarm.

12.5 Wiring - The security system wiring shall be of the type and size specified by the security equipment Manufacturer. All wiring shall be installed in conduit.

12.5.1 The connection between the Security System panel and the building fire alarm control panel shall be a two wire circuit. The wiring shall be #14 AWG THHN stranded wire. The wire shall be terminated with spade type wire lugs, sized to fit both the wire and panel screw terminal.

12.5.2 The security panel shall report to the Fire Alarm control panel via means of a dry contact closure. A terminating resistor shall be installed in the Security System panel for proper supervision.

12.6 Terminal Security Monitor System - Preboard screening locations are equipped with color closed circuit television (CCTV) camera(s), metal detectors, X-ray machines, panic button, microphone and intercom station. Activity is monitored at each terminal by DPS personnel, and centrally monitored at the DFW Business Center.

12.6.1 Hallway cameras shall be installed as directed by Airport Contact.

12.6.2 CCTV cameras, microphones and intercoms are connected to appropriate monitor room within the Terminal building.

12.6.3 Monitor rooms shall be equipped with a separate air conditioning system to provide twenty-four (24) hour operation in case terminal HVAC system is shut off after normal operation hours for energy conservation.

12.6.4 Monitor system shall remain in operation during construction. Provisions shall be made to provide continuous electrical service in case interruption of normal service is necessary for construction.

12.6.5 Monitor rooms are equipped with one (1) monitor for each camera, one (1) monitor used for recording through one (1) of two (2) video recorders, one (1) monitor for viewing output of video recorder, two (2) sequential monitors for backup of camera monitors, in-house telephone line, outside telephone line, audio amplifier for screening location microphones, control station radio for operation on Department of Public Safety frequencies, and intercom station.

12.6.6 Intercom station is hard-wired between monitor room and each associated pre-board screening location and provides two-way communication. Push-button selector panel in monitor room is used to access individual stations.

12.6.7 Microphones are hard-wired between monitor room and each associated pre-board screening location and provides audio from screening location to the monitor room. Push-button or automatic selection of audio is made in the monitor room.

12.6.8 There are no as-built drawings available for the existing security monitor system. The Designer shall verify type of cable being used (fiber optic, control and microphone) and coordinate all new installations and modifications to existing systems with the Airport Contact.

12.6.9 Installation of Security System Cables - In the following, destination refers to the pre-board screening location and/or the camera location.

12.6.9.1 All cables will be run in building cable trays.

12.6.9.2 Upon exiting from cable trays, all fiber optic cables will be run in a conduit to destination.

12.6.9.3 At each end, all cable will have a minimum of ten (10) feet of excess cable left for termination, testing, et cetera.

12.6.9.4 Upon completion of testing, all excess fiber optic cable will be pulled back through conduit to cable tray where it will be coiled neatly and taped.

12.6.9.5 All cabling will be a continuous run from monitor room to terminating device. It will be identified at each end and every fifty (50) feet with a unique identifier.

12.6.9.6 All cabling will be terminated with connectors compatible to the Airport's Security System.

12.6.9.7 At destination, control and microphone cables will be run under the floor and will penetrate the floor in conduit terminated on the upper side with a "Tombstone" style fixture. Cables will exit the side of the fixture and be clamped on exit. A minimum of ten (10) feet of cable will be available for use after clamping. Both cables will be encased in a single piece of protective flexible tubing which will be clamped at the fixture end and at the terminating connector.

12.7 Inspection Criteria and Termination Specifications for Fiber Optic Cables - The Contractor

shall, prior to installation of any unterminated fiber cables, notify Airport Contact for pre-installation test of cable. Cable will be tested for any shipping damage and will be documented.

12.7.1 The Contractor shall, upon termination of cable, notify Airport Contact for inspection and testing. Fiber Optic cables will be terminated at each end with stainless steel connectors.

12.7.2 Buffer and fiber shall be epoxied to the inside of the connector with optical epoxy, making sure to apply a bead of epoxy to the tip of the connector to ensure "wicking" of epoxy into tip of connector. "Kevlar" strength members shall be epoxied to the outside of the barrel of the connector and the sleeve shall be crimped onto assembly. After assembly, strength members shall be trimmed so that none are visible.

12.7.3 The finished connection shall have the epoxy bead polished off and the end of the glass fiber polished smooth even with end of the connector, with no evidence of scratches, chips, or cracks on fiber or connector visible under thirty (30) power magnification.

12.7.4 Attenuation of each connector shall not exceed 0.5 dbm measured with a Photodyne Model 5500 OTDR.

12.7.5 Each cable run will be identified as to cable reel from which it was taken. Attenuation of the cable due to installation damage, i.e., microbends, et cetera, shall not exceed 1.0 dbm measured with a Photodyne Model 5500 OTDR.

12.7.6 After inspection and approval of the cable and connectors, heat shrink tubing will be installed on the rear of each connector for additional strength support. Contractors installing pre-terminated cables shall be required to request inspection of their cables through Planning and Engineering as above. Connectors shall be inspected for damage, and cable damage due to installation will not exceed 1.0 dbm measured with a Photodyne Model 5500 OTDR.

12.8 Automated Access Control System (AACS) - The Automated Access Control System (AACS) requirements are specified in DFW Airport's "Design Guide for the Automated Access Control System (AACS)".

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