1. **280000 – weapons detection system**
	1. **GENERAL**
		1. **SUMMARY**
			1. Contractor Shall Provide and Install
				1. The materials and labor required for the installation of weapons detection systems include, but are not limited to:

Weapons screening poles

iPad Pro Controller Unit

iPad Air Operator Unit

Mounts or Stands

Connectivity (LTE, Ethernet, or Wifi)

* + - * 1. Although such work is not specifically mentioned herein or on the Drawings, the Contractor shall furnish and install all miscellaneous items, accessories, appurtenances, and devices incidental to or necessary for a sound, secure, and complete installation, without claim for additional payment.
			1. Related Sections:
				1. Section 000000 – Procurement and Contracting Requirements
				2. Section 010000 – General Requirements
				3. Section 260526 – Grounding and Bonding for Electrical Systems
				4. Section 260528 – Pathways for Electrical Systems
				5. Section 260539 – Surface Raceway for Electrical Systems
				6. Section 260533.13 – Conduit for Electrical Systems
				7. Section 260533.16 – Boxes for Electrical Systems
				8. Section 271513 – Horizontal Cabling
				9. Section 271619 – Patch Cords
				10. Section 280000 – Common Work Results for Security
				11. Section 281000 – Access Control and Alarm Management System
				12. Section 282000 – Video Surveillance System
			2. References:
				1. National Electrical Code
				2. International Electrical Code
				3. Local Codes
				4. National Institute of Law Enforcement and Criminal Justice

NILECJ-STD-0213.00 FM Repeater Systems

NILEJ-0601 Standard for Walk-Through Metal Detectors for use in Weapons Detection

* + - * 1. Department of Homeland Security

8.2 Testing and Documentation with WDS

8.5 Secondary Screening Procedures

9.2.6 U-Shaped Screening Technique

14.2.1 Illegal Items Notifications Procedures

14.2.2 Prohibited Items Log

15.4.5 Implementing Credentialing Procedures

* + - * 1. IEC 61010-1:2010
				2. European Standards (EN)

45502-2-1:2003 Cardiac pacemakers

45502-2-2:2008 Implantable defibrillators

* + - * 1. International Standards Organization (ISO)

14117:2019. Cardiac pacemakers, cardioverter defibrillators, cardiac resynchronization devices

14708-1:2014 Implants for surgery

14708-2:2019 Cardiac pacemakers

14708-3:2017 Implantable neurostimulators

14708-4:2008 Implantable infusion pumps

14708-5:2020 Circulatory support devices

14708-6:2019 Implantable tachyarrhythmia treatment devices

14708-7:2019 Cochlear implants, auditory brainstem implant systems

* + 1. **SYSTEM DESCRIPTION**
			1. Weapons Detection System (WDS)
				1. System shall combine software, modular hardware components, operating procedures, logistics, and tactics to define and detect threats like metallic items to persons of interest, while allowing high throughput in a weapons screening program without compromising response time.
				2. A weapons detection system will be provided to detect and identify weapons at building entryways. The system will consist of weapons screening poles, LiDAR sensors, iPad, cameras, and control and operator units. Cabling, power, and conduit infrastructure will be provided to support devices.
				3. System will be tested to ensure failures are remediated, and that the system will be turnkey. System sensitivity will be configured to meet facility security requirements.
				4. System will be capable of [non-audible][audible][and visual] alarms. Alarm notifications will be pushed to [remote Security Operations Center][mobile phone application][and/or][web-browser] in real time.
			2. Integration with Access Control and Alarm Management System (ACAMS)
				1. Push and clear weapons detection system notifications within ACAMS via REST API. Notifications shall include location, date/time, and image.
				2. Door operations

Locked or unlocked from WDS.

Remain locked until the operator chooses to unlock after weapon clear alert.

* + - 1. Integration with Video Management System (VMS)
				1. Push and clear weapons detection system notifications within VMS via REST API. Notifications shall include location, date/time, and image. Out-of-the box integrations include, but are not limited to: Avigilon, Milestone XProtect, and Genetec Omnicast.
			2. Integration with Visitor Management System
				1. Integrate via REST API with the visitor management system to flag any previously known “persons of interest” without facial recognition.
		1. **qualifications**
			1. Contractor shall have a proven track record in the field of specified cabling and system installations, with at least (3) previous installations of comparable size and complexity undertaken within the last (5) years.
			2. Contractor shall be a manufacturer’s authorized distributor and warrantee station for the equipment offered, and shall maintain a fully equipped service organization capable of furnishing adequate repair service to the equipment.
			3. Contractor shall engage Athena Security prior to start of work.
		2. **submittals**
			1. Make submittals in accordance with:
				1. Section 00 00 00 – Procurement and Contracting Requirements
				2. Section 01 33 00 – Submittal Procedures.
			2. Action Submittals:
				1. Shop Drawings

Owner will provide electronic files in CAD or Revit format, containing the contract document drawing files, for use in the preparing of the shop drawings, by the RCDD.

Drawings will be to scale.

Submit the following sheets:

Title Sheet and Cover Page: indicate project name and location; include sheet index

Site Plan

Overall Floor Plans: floor plans showing the locations of devices and cable routing paths with cable types, quantity called out, and device IDs; headend locations; cable routes; new pathways/conduits/boxes/etc.

Enlarged Plans: Headend rooms with equipment types and quantity called out; coordinated wall elevations; rack elevations; CFCI and OFCI equipment called out.

Panel schedules or risers: Show all devices connected to headend equipment ports; devices IDs; interconnections between all boards, power supplies, batteries, relays, etc.

Rough-in and wiring details.

Calculations: longest cable voltage drop per headend location; battery storage calculations; video storage calculations; power calculations per circuit per headend location for peak and average power; pixel density calculations for expected camera field of view where specified

* + - * 1. Product submittal

Contractor shall furnish products for a complete, turnkey system. Submit major components and ancillary accessories required for complete system. Minor accessories like screws and nuts are not required for submission, unless specified in other Specifications sections.

Product submittal shall be a single complete submittal. Incomplete submittals will be rejected without review.

Catalog cut sheets and data sheets containing physical and dimensional information, performance data, electrical characteristics, materials used in fabrication, material finish, and licenses. Clearly indicate on each sheet what is being submitted on.

Qualification Data: Submit at least three references for telecommunications cabling jobs already completed, similar in scope to the project described herein. Include, for each customer reference, the following information: Company name, address, phone number, name and email address of contact and type of job completed.

Provide copies of the Contractor’s certification.

Provide written guarantees from manufacturers of major equipment that a service representative has been assigned.

Provide copies of technician training certificates.

* + - * 1. Acceptance testing submittal

Contractor shall provide a test plan including system acceptance inspections and test demonstrations to be jointly performed by Contractor and Owner. Owner shall designate personnel to observe and/or perform test steps as agreed with the Contractor.

Include the following verifications in the test plan:

Security System Operator Permissions: Operator permissions have been established per operator job and task requirements, and that all system operator actions can be performed per assigned duties – for Owner technical and administrative personnel, contracted security officer personnel, and security system services provider technicians – per Owner preferences.

Object detections testing for all objects in prohibited items list.

Integrations: All integrations are working fully as expected. Checklists shall include rough-in inspections, installation/quality checks, functional reviews, and configuration inspections.

Changed default passwords and logins.

* + 1. **acceptance testing**
			1. The Contractor is required to notify the System Designer and Owner of a proposed appointment for Final Inspection at least 72 hours before the appointment.
			2. Owners may visit the site during construction to ensure installation is in compliance with their requirements. Punch items discovered by Owner shall be resolved within 10 days of discovery.
			3. System acceptance shall be defined as that point in time when the following requirements have been fulfilled:
				1. All submittals and documentation have been submitted, reviewed, and approved.
				2. The complete system has successfully completed all testing requirements.
				3. All punch list items have been corrected and accepted.
		2. **Closeout documents**
			1. Final close out documents including, but not limited to, test results on in digital PDF and physical CD–ROM or USB drive, in native tester format, project manual that includes manufacturer and contractor warranties, product cut sheets, material submittals, etc. Also, include the following:
				1. Provide ''As–Built'' Drawings in AutoCAD or Revit.

''As–Built'' drawings indicating location of all equipment including but not limited to devices, headend equipment locations, wall elevations, cable routes, identification/labels, custom wiring, etc.

Red-lined shop drawings submitted as As-built drawings will be rejected without review.

(1) printed, hard copy of final approved as-built drawings in native sheet size will be provided to Owner. Unapproved sheet sizes will be rejected.

* + - * 1. Owner’s written acceptance of installed systems.
				2. Print (2) printed copies of acceptance test reports.
				3. Print (2) printed copies of full-sized as-built drawings, and submit to Owner.
				4. Provide pricing and contact information for emergency service work not covered by warranty.
				5. Support tickets shall be sent to Athena as a part of the closeout process at https://support.athena-security.com/support/tickets/new.
		1. **warranty & support**
			1. Warranty shall meet the following criteria:
				1. This warranty will cover all cables, terminations, and components provided by the Contractor.
				2. Minimum 4-year written warranty covering workmanship and materials from the date of project completion. All repairs shall be made at no cost to the Owner during the warranty period.
				3. Corrections shall start within 48-hours of notification from Owner.
			2. If the warranty is needed by the Owner within the warranted period and the original installer is no longer in business, system manufacturer shall find a substitute certified contractor and assume costs to fulfill the obligations of the warranty.
			3. Upon acceptance of the warranty paperwork and test results from the Contractor, the system manufacturer will mail a notification letter to the installer and a notification letter with warranty certificate to Owner.
			4. The warranty period shall commence following the final acceptance of the project by the Owner and written confirmation of warranty from the system manufacturer.
			5. Provide a 4-year software service agreement. Include associated licenses and renewal fees for the agreement’s duration. Agreement and licenses shall commence following the project’s substantial completion, and not the Contract’s purchase date.
				1. Support tickets shall be sent to Athena at https://support.athena-security.com/support/tickets/new.
	1. **products**
		1. **weapons detections system**
			1. System shall:
				1. Have a [browser-based][mobile] interface with dashboards to visualize data. Dashboards shall be fully customizable with BI export capabilities.
				2. Graphical user interface and access within interface shall be permissions-based. Settings shall be able to be modified locally or remotely.
				3. Have native integrations and additional integrations via SDK/API.
				4. Be capable of detecting previously known “persons of interest. Also detect minors, expired identification, from 3rd party database.
				5. Alarms shall be capable of being muted from detection of recognized persons. System shall also be capable of privacy features (i.e. image blurring, no image, or image based on alerts/rules).
				6. Detects ferrous and non-ferrous metals, identity mass casualty weapons, discriminate against everyday items like keys and phones.
				7. Have built-in calibration and auditing features. Auditing features shall include security staff location, time, and primary/secondary screening procedures are followed correctly if not alert on such actions with reporting of each type of event.
				8. Push object detected and weapons clear alerts to monitoring station(s) in real time.
				9. Have options to track body movements or faces.
				10. Be able to cross-reference driver licenses against external child predator databases .
				11. Be able to detect a person trying to evade the system and screening area. Utilize rule based LiDAR and video analytics.
				12. Have prohibited items log viewable from within the user interface and include the following fields: name, address, phone number, option to sms, upload image of prohibited item.
				13. Have real-time image transmission of alerts, with alert type to Operator Tablet, a browser, mobile app, and other 3rd party integrations in accordance with DHS 14.2.1.
				14. Have real-time alert resolution. Alerts can be confirmed, which can trigger another action, be marked false, and be customized.
				15. Have a turnaround button. Document voluntary avoidance of contraband and self-disclosed admission of weapons.
				16. Have a volunteer button. Documents voluntary handover of contraband or weapon.
				17. Logged weapons are collected with photo and signature.
				18. Have customizable reports that can be exported to PDF.
				19. Be able to support single sign-on via SAML2 Support/Entra SS and enterprise user management. Admins shall be able to add, delete, and manage user access.
				20. Have automatic diagnostics to proactively send alerts (i.e. low battery, power loss, no network.)
				21. Have data security, and be SOC 2 Type II compliant with end-to-ed encryption. System shall also be capable of user-defined deletion rules.
				22. Be able to document and:

Track visitors who admit to having a weapon but were not scanned by the WDS

Permit visitors who give up weapon voluntarily

Open prohibited items log at the workstation after the item is detected.

* + - * 1. Be turnkey and require minimal setup and training for use. ( 15 min or less)
			1. Weapons screening pole shall:
				1. Be powered via [100-277VAC power][18V, 12A-h Battery power].

[Have up to 14 hours of battery-powered operating time with battery management.]

* + - * 1. Have 10.8” depth x 7.2” height x 3.6” wide pole dimensions.
				2. Have red, green, yellow, and blue LED alarm indicators.
				3. Have an integrated audible buzzer that can be turned on or off.
				4. Have 1 person per second throughput.
				5. Not interfere with medical device equipment or magnetic media, and be compliant with European standards for electrical safety and electromagnetic compatibility (EMC).
				6. Operating temperature: -0.4°F to 122°F [-18°C to 50°C]
				7. Storage temperature: -34°F to 122°F [-37°C to 50°C]
				8. Relative humidity: 0-95% without condensation
				9. Operating altitude: up to 9800’ [3000m]
				10. IEC61010-1 installation category: II
				11. IEC61010-1 pollution rating: 2
				12. Maximum magnetic field intensity: 40dB µA/m at 10m
				13. [Have a branded cloth sleeve.]
				14. Manufacturer:

CEIA PMD2 or OPENGATE

* + - 1. iPad shall:
				1. Provide visual overview of area of interest, and be capable of video analytics to generate metadata for weapons detection systems. Analytics shall include evasion detection, person of interest, object detected, clear, wrong way, voluntary hand-over tracking, turnaround accountability, and officer check-in.
				2. Be powered via [120VAC power][ Battery power].
				3. Manufacturer:

Apple

* + - 1. Control unit shall:
				1. Be powered via [120VAC power with a USB transformer][250W-h battery power, or better].
				2. Controller tablet shall consist of an iPad Pro [ and thermal camera].
				3. Operator tablet shall consist of an [iPad Air][workstation].
				4. iPad shall:

Be 11 Pro/Air series, or newer.

Be iPadOS 17, or newer.

Be [manufacturer-provided][OFCI].

Have [USB-C] charging adapter.

Be able to communicate via WiFi and cellular.

Be capable of contactless payment.

Have multiple device management software.

Have built-in LiDAR.

[Manufacturer:

Apple]

* + - * 1. iPad mount shall:

Be a [free-standing pole][desk-mount kit][wall-mount kit].

[Include C-clip for mounting thermal camera.]

[Be vandal-resistant.]

Manufacturer: Athena

Counter mount kit, #84975 and #84962

Counter mount base, #82722, #84976, and #82718

Swivel wall mount kit, #84941 and #84940

* 1. **execution**
		1. **GENERAL**
			1. Provide any required screws, anchors, clamps, hook and loop, miscellaneous grounding and support hardware, etc. needed to facilitate the installation of the system.
			2. Furnish any special installation equipment or tools necessary to properly complete the installation.
			3. Failure to follow the appropriate guidelines may require the installer to provide additional material and labor required to properly rectify the situation. This shall also apply to any and all damages caused to the cables by the installer during the implementation.
			4. All techniques and fixtures used in the installation must minimize complexity and must allow for easy maintenance of, and ready access to, all components for test measurements.
			5. All materials used in installation shall be resistant to fungus growth and moisture deterioration.
			6. All of the pathways shown on the drawings are suggested routes for the Contractor to use as guidelines. Prior to construction, the Contractor shall coordinate in the field with other trades to determine the exact feeder, tie, and riser backbone cabling pathways.
		2. **Weapons detections system**
			1. Refer to manufacturer’s guidelines and documentation for installation.
			2. Coordinate locations of weapons screening poles, LiDAR sensors, cameras, control units, and monitoring stations with Architect and Owner.
			3. Weapons screening poles shall be within 6’ of electrical outlets. Ensure sufficient breakers are provided. Transit side marks shall face each other. Maintain minimum 58” clearance from any source of electromagnetic interference, including electrical motors.
			4. Controller tablet shall be within 4’-12’ of the corresponding weapons screening pole. Operator tablet shall be within 4’-10’ of the controller tablet.
			5. Set LiDAR sensors and camera coverage to the intended area of interest.
			6. Upon completion of installation, perform weapons testing of all weapons detection systems installed, and submit an audit log to the system designer for record.
			7. Ensure integrations with other systems are operating as intended. Submit proof of integration with screenshots indicating location, date/time, and photo.
			8. Ensure application is viewable from Owner-selected workstation. Coordinate system application, programming, notifications, GUI configuration, and access levels with Owner.
			9. Coordinate change of default passwords with Owner.
			10. System shall be certified by both CEIA and Athena Security.
			11. Submit final report as a New Ticket to Athena Support: https://support.athena-security.com/support/tickets/new
		3. **CABLING**
			1. All cable runs must be continuous from the panel to the device location.
			2. Group and bundle all cabling. Do not bundle with other systems.
			3. Device wiring shall be consistent and documented. Color codes shall be uniform.
			4. Cabling shall not be visible when walking through the facility. Cabling shall be in conduits, in cable tray, or in j-hooks above accessible ceiling.
			5. Cables shall be dressed, bundled, and neatly arranged.
			6. Do not use cable ties or hook and latch tape to secure cable runs to other building systems (such as electrical conduit, EMT, sprinkler pipes, ceiling suspension members, etc.). Staples and drive rings are not allowed.
			7. In areas considered environment air-handling spaces, only use appropriately-listed materials.
		4. **training**
			1. Provide a minimum of (1) 4-hour training session with a minimum of (4) Owner’s staff at the project site (or other location designated by the Owner) by a qualified instructor who is factory certified (presence of equipment necessary because trainees must successfully demonstrate knowledge on a working system). Topics shall include system usage, operation and maintenance, and minor modifications.

**\*\*\*END OF SECTION\*\*\***