SPECIFICATIONS FOR
EQUIPMENT/ENGINE GENERATOR BUILDING
FOR THE NEW ALSF-2
TO SERVE RUNWAY 7R
AT THE
ANCHORAGE INTERNATIONAL AIRPORT
IN ANCHORAGE, AK

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GENERAL SPECIFICATION

PART 1 GENERAL

1.1 STATEMENT OF WORK

This specification, together with the referenced specifications, standards, and drawings, cover the requirements for the work associated with the design, fabrication, and delivery of an ALSF-2/SSALR (Dual Mode High Intensity Approach Lighting System) Equipment and EG (Engine Generator) building. The building will become part of a new Approach Lighting System being installed to serve runway 7R at the Anchorage International Airport at Anchorage, AK.

Work includes (but is not limited to):

- Design and Fabrication of a 32'x32' single outdoor metal building to accommodate the ALSF equipment, engine generator equipment, and work room functions.
- Procurement of an EG, Automatic Transfer Switch and Load Bank w/ Controller.
- Installation of the (GFM) ALSF and EG equipment inside of and on the outside of the building.
- Delivery of the building to the site and off-loading the building at the site.
- Supervising the installation of the shelter on the foundation and checking that all equipment works inside the building after installation.

Note: All fabrication, equipment installation, and initial testing shall be done indoors at the contractor's shop. The contractor shall allow open access to the FAA while fabrication and equipment installation is taking place.

The contractor is required to furnish all labor, materials (except Government furnished), services, equipment, insurance, bonds, security notifications, licenses, permits, and fees in accordance with applicable federal, state and local regulatory requirements to complete the specified work. Any miscellaneous labor, equipment and/or materials not specifically detailed or specified, but required to complete the project, shall be provided as an integral part of the work.

THIS IS A <u>DESIGN/BUILD</u> PROJECT. THE SALIENT FEATURES LISTED BELOW ARE MINIMUM REQUIREMENTS. THE ATTCHED DRAWINGS ARE PROVIDED TO GIVE THE CONTRACTOR A CONCEPTUAL IDEA OF A TYPICAL ALSF EQUIPMENT BUILDING. THE CONTRACTOR IS ENCOURAGED TO PROVIDE A NEW AND UNIQUE PROPOSAL THAT WOULD BEST BENEFIT THE FAA.

1.1.1 Design and Fabrication - Salient Features (minimum requirements)

Building shall be steel framed and have steel exterior walls, factory assembled, self-contained, and portable.
Separate areas shall be provided for the ALSF Equipment, Engine Generator, and Workshop Area. All necessary material not otherwise indicated to be Government furnished, shall be provided by the shelter manufacturer. Contractor furnished material shall be integrated with the Government furnished material and made totally operational.

All work shall be in compliance with FAA Specification FAA-C-1217f, FAA Standard FAA-STD-019e, and the National Electric Code.

Structural:

- Dimensions: 32' wide x 32' long x 10'-10" high (exterior dimensions)
- Loadings: 250 psf floor, as required to support the generator, 85 psf roof (live load), 125 mph sustained wind, and seismic conditions for Anchorage, AK.
- Exterior walls shall be 12-gauge paint quality steel. Interior walls shall accommodate 400 lbs. Per linear ft and be finished with ¾" gypsum textured and painted fireproof A/C plywood. Ceiling shall be finished with ½" gypsum textured and painted fireproof A/C plywood.
- Floors shall be epoxy painted steel same color as exterior.
- Insulation: LTTR* R-Value 25.0 for Roof; LTTR* R-Value 18.5 for walls and floor.
  * Long Term Thermal Resistance values provide a 15 year time-weighted average in accordance with CAN/ULC-S770.
- Roof: Slope shall be ¼" per foot and waterproofed with an elastomeric roof membrane or approved equal.
- Floor beams shall be hot dipped galvanized.
- The building shall be designed and fabricated to prevent the entry of rain, snow, and other moisture. The building shall also be impervious to rodents. Welded threaded couplings (1/2 length) shall be used at exterior entry points.
- All doors will be metal with appropriate rating for exterior and interior doors. Exterior doors will be metal and have weather stripping to provide a watertight seal.
- Roof gutters and downspouts shall be attached to the roof to allow proper drainage
- Manufacturer shall provide the total weight of finished building (with equip), and the weight of individual components to be assembled.

Color and Paint:

- Exterior: Sherwin-Williams *Bronze* (SW4007, flat), as approved. 3 mil epoxy primer and 15 mil electromeric liquid coating.
- Interior Walls: Sherwin Williams *Olympus White* (SW 6253), as approved. Interior primer and latex semi-gloss with light textured finish.
- Interior floors: Sherwin-Williams *Bronze* (SW4007, flat), as approved. 3 mil epoxy primer and 15 mil electromeric liquid coating.
- Interior side of external doors, interior doors, and interior door trim: ANSI 70 Gray, as approved.

- Piping: Gray color for exterior vents, bright yellow for fuel lines, as approved. Epoxy metal primer with aliphatic urethane coating.
- Roof top silencer: Painted "flat-black", as approved.

<u>ALL PRODUCTS MUST BE EQUAL OR BETTER THAN NAME BRAND SPECIFIED</u>
AND MUST BE PRE-APPROVED BY PROJECT ENGINEER

HVAC:
<u>ALSF Equipment Room:</u>
Provide and install two each self contained, single heat/air units with 5 ton air conditioning, 10 kW heating and integrated thermostat. Units shall have scroll compressors.
<u>Work Room:</u>
Provide and install a self contained, single heat/air unit with 3 ton air conditioning, 10 kW heating and integrated thermostat. Unit shall have a scroll compressor.
<u>EG Room:</u>
Provide and install a self-contained, single heat/air unit with 2-ton air conditioning (Using a scroll compressor) and 10 kW heating;
One each 1 ½ HP - 7205 CFM Exhaust Fan with motor-driven louver; One each 5'w x 6'h motorized Supply Louver with filter frame and disposable filters; One each 5'w x 7'h motorized Engine/Generator Exhaust Louver.

- The Supply and Engine Exhaust Louvers shall be such that they are open in the event of a complete electrical failure. The exterior side of the Supply and Engine Exhaust louvers shall be protected with 12-gauge steel fabricated hoods.
- At all times when the E/G is off, the Engine Exhaust Louver shall be closed.
- Both Supply and Engine Exhaust Louvers shall open during E/G run.

A ventilation control panel shall be installed in the EG room and shall provide control for all HVAC systems in this area. A "Hand-Off-Auto" switch shall be installed for Louver and Exhaust Fan control as follows:

- Hand - Manually opens the Supply and Exhaust Fan Louvers and turns the Exhaust Fan on.
- Auto - When the E/G comes on, the Supply and Engine Exhaust Louvers open, the exhaust fan is off with its' louver closed. When the E/G stops, the Engine Exhaust Louver closes, the Supply Louver remains open, the Exhaust Fan Louver opens and the Exhaust Fan runs for a preset time which is field-settable from 0 to 60 min. At the end of this delay, the fan shuts off, and all louvers close.
- Off - The Exhaust Fan is inhibited, its' louver remains closed. The Supply and Engine Exhaust Louvers operate normally based on E/G run as above.
- At all times when the Supply Louver is open (For Exhaust Fan or E/G run), the HVAC unit shall be disabled.
- The thermostat for HVAC control shall be part of this ventilation control panel.

Supplemental Grounding:

Run grounding electrode conductors from the service disconnect, Engine Generator, and 45 kVA XFMR (EG room), the 50kVA XFMR (ALSF Equipment room); and supplemental grounding conductors from the CCR's, Input Cabinet, and Output Cabinet (ALSF Equipment room) - to wall penetrations as approved. Leave at least 20' of slack at the walls (to be connected to the shelter counterpoise by the field contractor

Provide and install a "MAIN" ground plate in the ALSF Equipment room and a "SUPPLEMENTAL MAIN" ground plate in the EG room. Also, provide and install a "MULTIPOINT" ground plate in the Workshop room. The two main ground plates shall be interconnected by a #4/0 cable marked green with an orange tracer and encased in 1 ¼" PVC conduit. The Multipoint ground plate in the Office room shall be connected to the Supplemental Main ground plate in the EG room with a #4/0 cable marked green with an orange tracer and encased in 1 ¼" PVC conduit. In the ALSF Equipment room, install multipoint grounding conductors from the Input Cabinet, C&M cabinet, RMS cabinet, and the Output cabinet to the Main ground plate. Secure conductors to the wall using Unistrut one hole clamps (Unistrut P2010, or as approved) on sections of P1000 Unistrut as approved. Connections to the ground plates shall be made with stainless steel bolts, flat washers, disc spring washers, and nuts (do not install washer between bonded members). For the Main and Supplemental Main ground plates, supply a 25ft long 500 kcmil cable with a two stud hole type compression lug, as approved for connection to the EES at the site.

Provide and install rooftop counterpoise, air terminals, and down conductors (per FAA-STD-019e). Leave at least 20' of down conductor slack at the ends (to be connected to the shelter counterpoise by the field contractor).). Provide a ground attached to the rooftop mounted E/G silencer with a #4/0 wire long enough to reach the EES for installation by the field contractor.

Provide and install ground lugs (to accommodate #4/0) on shelter skids at all four corners.

Provide and install grounding for all external hoods and canopies IAW FAA STD 19e, with enough slack to reach the EES for installation by the field contractor.

Provide and install Surge Protection for the main service disconnect in the EG room, the EG room distribution panel, and the ALSF room distribution panel.

- Surge arrestor for the main service disconnect shall be LPC #20708-7.
- Surge arrestor for the EG room distribution panel shall be LPC #2030-3U-G.
- Surge arrestor for the ALSF room distribution panel shall be supplied by the ALSF equipment manufacturer and installed in a 6x6x4 jct box, as approved.

Provide and install at least 40' of slack wiring at the load bank wiring jct box (to be connected to the load bank by the field contractor).

Lighting:

Interior fluorescent lighting shall be mounted with a 1 5/8" offset from the ceiling and have wire guard diffusers, as approved. Additional emergency lighting shall be provided for each room (90 minute backup). A photo electrically controlled exterior high-pressure sodium light (with an override switch labeled "Exterior Light Photocell - ON/OFF") shall be installed at each exterior door (three places), and on the other building faces where there are no doors. Exterior lights shall have shades to prevent light from shining directly upward.

Provide and install all necessary outlets (electrical and telephone), receptacles, switches, junction boxes, terminal boxes, smoke detectors, and door alarms (intrusion switch's), as required. Use clamp backs to provide space between the conduits and the mounting surfaces (walls). Provide an exterior GFI outlet w/ weatherproof lockable enclosure (Hoffman #A-8R86HCR) on each side of the building as approved. The bottom of each GFI enclosure shall have a 2" sealable opening, as approved.

Provide spare fuses for all disconnect switches.

An EG emergency shut off switch shall be installed at each door in the EG room (2 places).

Provide and install an uninterruptible power supply, Powerware model 1925, for the RMS and CTRL & MON Assy in the ALSF room, as approved.

Exterior doors shall be equipped with a lockable panic-type door opener w/ Best construction core, as approved. Provide four keys and one core puller key. Exterior doors shall have a 12" high kick plate, as approved. Doors shall have automatic door closures (with provisions for doors to be held open).

Interior doors shall have lever type handles. Door between the ALSF Equipment room and the Maintenance room shall have a 22"x28" safety glass window. Door between the Workshop room and the EG room shall have a 12"x12" safety glass window.

Provide steel grate stairs and door canopies (with drip edge), as approved. Stairs shall be 8' wide in front of the ALSF and EG rooms and 5" wide in front of the Workshop room. Canopies shall be at least as wide as the stairs. Individual stair treads shall be 12" deep and have a 7.25" rise. Total height of the stairs shall be 30" (or to accommodate the building placed on a foundation that is 18" above grade). Support canopies from the building wall, as approved.

Provide and install miscellaneous furnishings, as approved. Items include (but are not limited to):

* 12 ft wide shelving for the ALSF room (bolted to wall), 3 each (Grainger #7E510).
* Exterior Lights, 3 each, 70W High Pressure Sodium (Grainger #5MM59).
* Interior Emergency Lights, 3 each (Grainger #4PH07)
* Fire extinguisher, 3 each -10 lb ABC type, with current expiration dates.
* Extra touch up paint (with mixing instructions if applicable) and 4 each small mixing containers, stir sticks, and 4 each touch up paint brushes (1"), as approved. Provide MSDS data for all touch up paint.

Provide and install two-line phones in each room. The phone in the EG room shall have a ring light, as approved.

Provide non-conductive switchboard matting for the ALSF Equipment room (30,000 volts/AC RMS dielectric strength). Grainger #5T435, as approved.

Engine Generator shall be mounted on spring isolators. Constant Current Regulators (CCRs) shall be mounted on 3" high channels with rubber matting between the CCR and the channel. Penetrations from the floor to the CCR shall be located so that the regulators can be removed and replaced using pallet jacks.

Provide and install a NEMA 4R 30x30x12 hinged cover pull box on the exterior of building, adjacent the high voltage output cabinet.

Provide and install a NEMA 4R 18x24x12 hinged cover pull boxes on the exterior of building adjacent to the Work Room for the FOTS cables.

Provide and install 1 18x24x12 hinged cover pull box on the interior of the Work Room adjacent to the outside FOTS box.

Provide and install 1 NEMA 4R 12x12x8 hinged cover pull box on the exterior of building, adjacent to the Work Room for the telephone line entrance.

Provide and install all necessary fuel piping, valves, and hoses for the EG supply, return and overflow runs inside the shelter. Piping shall be painted bright yellow and marked as approved.

Provide and install a Veeder-Root Fuel Storage Tank Monitoring system, model TLS-300C <u>with</u> integral printer, as approved.

Install "FAA Warning" signs and "Caution - High Noise Area " signs on the outside of each exterior door as approved. Provide and attach 4 (1 on each side of building) FAA Warning Signs (available from Bennett's Decal & Label, Oklahoma City, OK, 405-528-5671, P/N: ATCTWARNINGMETAL), as approved. Provide and install fluorescent glow in the dark "Not an Exit" signs on both sides of all interior doors.

Mount silencer on the rooftop as approved and attach to the lightning protection system IAW FAA-STD-19e.

Provide identification for all panel boards, safety switches, enclosures, junction box's, etc., per FAA-C-1217f, and as approved. Name plates shall be black with white 3/8" high engraved letters.

Provide identification signs on the outside of the building doors as approved (ie, FAA 7R ALSF).

1.1.2 Installation of the ALSF and EG Equipment

The contractor shall install the ALSF and EG equipment inside and on the ALSF buildings and complete the wiring for the equipment per the standard drawings and/or the equipment manufacturer's instruction manual. Installed equipment shall be made totally operational.

1.1.3 Delivery and off-loading the Building

The contractor shall be totally responsible for the delivery of the building to the site at the Anchorage International Airport. This includes the contractor's responsibility for meeting and complying with the Airport's security and access requirements.
The floor of the delivered building shall be covered and protected, as approved.
Any dirt or debris that gets accumulated on the building during delivery shall be cleaned off.
Once at the site, the shelter contractor shall be responsible for off-loading the building and connecting it to the foundation. The building foundation will be installed by others. All items furnished to the contractor as part of the ALSF/EG system, but not installed as part of the shelter (such as the load bank, lamp heads, and ICC's), shall be shipped with the building to the Airport.

1.2 REFERENCES

FAA-C-1217f	Electrical Work, Interior
FAA-STD-019e	Lightning Protection, Grounding, Bonding, and Shielding.
NEC	National Electric Code

1.3 DRAWINGS

ANC-D-ALS-A001 Building Layout
FAA National Standard Drawings:

D-6290-001	System Interconnect Diagram
D-6290-032	System Interconnection, Schematic Diagram Unit 4,13,14,15, and 15A
D-6290-033	Sys. Interconnect., Schematic Diag. Unit 3 (partial), 5 (CCR1 and 2), and 6
D-6290-034	Sys. Interconnect., Schematic Diag. Unit 3 (partial), 5 (CCR3, 4, and 5)
D-6290-035	Sys. Interconnect., Schematic Diag. Unit 12 (partial)
D-6290-036	Sys. Interconnect., Schematic Diag. Unit 1,2,12 (partial), and Reg Subst. T.B.
D-6290-037	Sys. Interconnect., Schematic Diag. Unit 8, 9, and 11
D-6290-038	E/G & Cable Shield Grounding Information
D-6290-041	Regulator Substation General Notes and Schedules
D-6290-042	Regulator Substation Exterior Elevations, Equipment Layout
D-6290-043	Regulator Substation Equipment Layout
D-6290-044	Regulator Substation Equipment Details
D-6290-045	Regulator Substation Exterior Elevations, Lightning Protection
D-6290-046	Regulator Substation Conduit Routing Plan

D-6290-047 Regulator Substation Grounding System
D-6290-048 Regulator Substation Lighting Plan / Power Plan
D-6290-050 Regulator Substation Typical Conduit Entrance and Grounding
D-6290-051 Regulator Substation Equipment Mounting and Conduit Entrance (Unit 3 & 12)
D-6290-052 Regulator Substation Equipment Mounting and Conduit Entrance (Unit 13 &15)
D-6290-053 Regulator Substation Equipment Mounting and Conduit Entrance (Unit 5 & 6)
D-6290-054 Regulator Substation Equipment Mounting and Conduit Entrance (Unit 4 & 14)
D-6290-055 Regulator Substation Environmental Sensors
D-6290-056 ALSF-2 Remote and E/G Start, Single Line Wiring Diagram
ANC-D-ALS-M002 Line Diagram for Above Ground Fuel Tank (conceptual)

The above drawings are provided to show a general configuration and minimum requirements. The contractor is encouraged to submit for approval any improvements and enhancements to the standard drawings.

1.4 SUBMITTALS

1.4.1 Building Design Drawings

Building design drawings shall be provided in hardcopy and electronically in AutoCAD version 2004 format or Microstation XM V8. Text documents shall be provided in hardcopy and electronically in Word 2002 format.

1.4.2 Material

The contractor shall submit catalog data, cut-sheets, samples, and any other required information to the FAA Project Engineer for approval of the following:

- Contractor furnished electrical components including enclosures, cables, connectors, and conduits.
- HVAC components.
- Contractor furnished hardware.
- Labels.
- Misc furnishings including shelves, cabinets, desk, chairs, carts,etc..
- Additional items deemed necessary by the Project Engineer.

1.4.3 Testing

The contractor shall complete (at his own expense) all testing as required by these specifications. The results shall be submitted to the FAA Project Engineer. Required testing includes, but is not limited to, the following:

- Ring out and continuity verification to insure proper termination.
- Cables (see FAA-C-1217f, 5.3.2)
- Load balancing (see FAA-C-1217f, 5.3.3)

- Insulation resistance test (see FAA-C-1217f, 5.3.4)
- Neutral isolation test (see FAA-C-1217f, 5.3.5)

PART 2 PRODUCTS

Reference herein or in the drawings to any specific commercial product, process, or service, any trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the Federal Aviation Administration. The contractor may submit a request for substitution of a product, process, or service specifically called out. Such request shall be through the submittal process.

2.1 GOVERNMENT FURNISHED MATERIAL

See Appendix A attached for list of material that will be provided by the Government.

Note: The GFM (Government Furnished Material) to be shipped to the manufacturers' assembly site from the FAA's Oklahoma City, OK wharehouse. Contact Jim Baggs, FAA Project Engineer, at 425-227-1345 (at least 72 hours in advance) for coordination of shipment. The Contractor is responsible for the unloading of all material.

2.1.1 Inventory and Inspection of GFM

The contractor shall sign a copy of the Government furnished material (GFM) list acknowledging receipt of the furnished material, noting any discrepancies if necessary. When the contractor signs for custody, he acknowledges receipt in good condition and assumes responsibility for any subsequent loss or damage. All of the material associated with the ALSF shall be picked up and secured by the building manufacturer. Material that is not installed in the building shall be delivered with the building.

2.2 CONTRACTOR FURNISHED MATERIAL

The contractor shall furnish all material that is required and not otherwise indicated to be Government furnished. Materials furnished by the contractor shall be new, the standard products of manufacturers regularly engaged in the production of such materials, and of the manufacturer's latest designs that comply with the specification requirements.

The list of contractor furnished material includes, <u>but is not limited to</u>:

- Main Disconnect, spare fuses, and Surge Arrester (EG room)
- 100A Disconnect Switch and spare fuses (EG room)
- 30 KVA Transformer (EG room)
- Building Distribution Panel and Surge Arrester (EG room)
- Load Bank Disconnect Switch (EG room)

- Veeder-Root Fuel Storage Tank Monitoring System (EG room)
- Uninterruptible Power Supply's (ALSF & EG room)
- Terminal Box's (ALSF Room and EG room)
- 1 exterior NEMA 4R Junction Box for ALSF loop cables
- 1 exterior NEMA 4R Junction Box for FOTS
- 1 interior Junction Box for FOTS
- 1 exterior NEMA 4R Junction Box for telephone
- Power, control, and grounding cable
- Air terminals and down conductors
- Ground plates
- Electrical fittings, conduits, and components
- HVAC components and controls
- Labels for electrical components
- Metal stairs and canopies.
- Engine Generator System including:

1 each 180 KVA *AFA)*rated 175 KVA) Engine Generator (mounted inside building)
1 each Automatic Transfer Switch (mounted inside building)
1 each Silencer (to be mounted on the building roof)
1 each 75 Gallon Day Tank (mounted inside building)
1 each Battery Charger (mounted inside building)
1 each Batteries (mounted inside building)
1 each Load Bank Controller (mounted inside building)
1 each Load Bank (shipped with building, to be installed on foundation)

PART 3 EXECUTION

3.1 FABRICATION SCHEDULE

Work shall be completed within 60 calendar days of the start date.

3.2 AS-BUILT DRAWINGS

Provide As-built drawings in AutoCAD version 2002 format.

3.3 INSTALLATION AND WORKMANSHIP

All work shall be performed according to the intent of the contract, and normal and accepted industry and Government standards.

The contractor shall be regularly engaged in the fabrication of shelters with existing plant facilities equipped for year around shelter manufacturing.

The contractor shall be capable and experienced in transporting shelters to active airports and remote sites using specialized trucks, trailers and cranes.

All work shall be accomplished by skilled workers regularly engaged in this type of work. Where required by local regulations, the workers shall be properly licensed. Electrical terminations and splices shall be done by a qualified electrician.

The contractor shall give constant attention to the work to facilitate the progress thereof, and shall cooperate with the FAA Project Engineer in every way possible. The contractor shall have a competent superintendent on the work site at all times who is fully capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the Project Engineer.

3.4 CONTRACTOR'S ACCEPTANCE INSPECTION

Prior to shipping the building to the site, the contractor shall participate in a Contractor's Acceptance Inspection (CAI) with the FAA Project Engineer, or his representative. Items found to be deficient shall be corrected immediately or as directed.

3.5 GUARANTEE

All work shall be guaranteed by the contractor against defects in materials, equipment, or workmanship for one year from the date of final completion of the project.

END OF SECTION

APPENDIX A
LIST OF GOVERNMENT FURNISHED AND OTHER MATERIAL FOR THE ALSF-2

Government furnished items that may be shipped with the ALSF Equipment/Engine Generator Building to be installed in field marked with (Equipment may be shipped directly to Anchorage)*

Government furnished items to be installed in/on the ALSF Equipment/Engine Generator Building at the shelter manufacturer's site marked with **

Additional items to be supplied by the building supplier and installed in/on the ALSF Equipment/Engine Generator Building at the shelter manufacturer's site marked with ***

(See drawing A-1 for locations of items in/on building.

"ALSF SYSTEM"

1 each *	Remote Control Panel, unit 1, FA-I0701 (installed in ATCT by FAA)
1 each *	Remote Electronic Chassis, unit 2, FA-I0702 (installed in ATCT by FAA)
1 each**	Control & Monitor ASSY, unit 3, FA-10703 (mounted inside building)
1 each**	480 VAC Input Cabinet, unit 4, Fa-I 0704 (mounted inside building)
5 each**	Constant Current Regulator, unit 5, F A-I 0705 (mounted inside building)
1 each**	High Voltage Output Cabinet, unit 6, FA-I0706 (mounted inside building)
1 each**	Remote Monitoring Subsystem, unit 12, FA-I0714 (mounted inside bldg)
1 each**	Distribution Panel, unit 13, FA-10716 (mounted inside building)
1 each**	50 KVA Transformer, unit 14, FA-I07l7 (mounted inside building)
1 each**	Safety Disconnect Switch, unit 15, FA-I07l8 (mounted inside building)
1 each**	Input Surge Assy, unit 15A, FA-I0719 (mounted inside building)
1 each *	Aiming Device, FA-I0707 (used to aim lights) (installed by field construction contractor)
16 each *	Individual Control Cabinet, unit 8, FA-I0709 (installed by field construction contractor)
16 each *	Flasher Light Assy, unit 9, FA-I0710 (installed by field construction contractor)
270 each *	PAR-56 Lampholder; unit 10, FA-I07l1 (installed by field construction contractor)
270 each *	Lamp Transceiver & Shorting Device, unit lOA, FA-10715 (installed by field construction contractor)
15 each *	Junction Box, unit 11, FA-10712 10712 WILL NOT BE USED
1 each *	Flasher Tester, unit 16,.FA-I0713(used to test system) (installed by field construction contractor)
1 each*	Installation Kit (used to install system) (installed by field construction contractor)
1 each*	ALSF site Spares (to be stored in building) (installed by field construction contractor)
154 each*	300 Watt PAR-56 Lamps (NSN 6240-01-432-3996-1) (installed by field construction contractor)
110 each*	500 Watt PAR-56 Lamps (NSN 6240-01-217-0894-1) (installed by field construction contractor)
53 each*	Green Filters for PAR-56 Lamps (NSN 6210-00-633-6887-1) (installed by field construction contractor)
57 each*	Red Filters for PAR-56 Lamps (NSN 6210-00-633-6886-1) (installed by field construction contractor)
22 each*	300 Watt Isolation Transformers (NSN 5950-00-873-5257-1) (installed by field construction contractor)
77 each*	500 Watt Isolation Transformers (NSN 5950-00-133-8946-1) (installed by field construction contractor)
44 each*	1500 Watt Isolation Transformers (NSN 5950-01-082-2810-1) (installed by field construction contractor)

Additional items for the ALSF system (Supplied by Shelter Manufacturer)

1 each*** UPS (mounted inside building)
1 each*** Terminal Box mounted inside building)
1 each*** 30x30x12 NEMA 4R Hinged Cover Jct Box mounted outside of building)
1 each*** 24x18x8 NEMA 4R Hinged Cover FOTS Jct Box (mounted outside of building)
1 each*** 24x18x8 Hinged Cover FOTS Jct Box (mounted inside building)
1 each*** 18x18x8 NEMA 4R Hinged Cover Telephone Jct Box (mounted outside of building)

Additional items for the EG system (Supplied and installed by Shelter Manufacturer)

1 each*** 180 KVA *AFA)*rated 175 KVA) Engine Generator (mounted inside building)
1 each*** Automatic Power Transfer Unit (mounted inside building)
1 each*** Silencer (to be mounted on the building roof)
1 each*** 75 Gallon Day Tank (mounted inside building)
1 each*** Battery Charger (mounted inside building)
1 each*** Batteries (will come inside building)
1 each*** Load Bank Controller (mounted inside building)
1 each*** Load Bank (shipped with building, installed on foundation)
2 each *** Surge Arrestor (mounted on building)
1 each *** Main Disconnect (mounted on building)
1 each *** 60A, 3 phase, Disconnect (mounted inside building)
1 each *** 30 KVA Transformer (mounted inside building)
1 each *** Building Distribution Panel (mounted inside building)
1 each *** Load Bank Disconnect Switch (mounted inside building)
1 each *** Terminal Box (mounted inside building)
1 each *** Veeder-Root Fuel Tank Monitoring Console (TLS-300C)