Prefabricated U.S. Customs and Border Protection Federal Inspection Services 10’ x 24’ Booth Specification

PART 1 - GENERAL

1.1 SUMMARY

A. Furnish, for installation by others, prefabricated and assembled Federal Inspection Service (FIS) booth for use by U.S. Customs and Border Protection (CBP) Officers. The booth shall be manufactured to meet Buyer specifications as described in this document and as further defined by reference drawing (Section 1.2). No deviations from the specified requirements are allowed without prior approval from Buyer. The booth shall be built to comply with all federal, state, and local codes and requirements.

B. The booth will include the following features:

1. Envelope:
   a. 10 ft by 24 ft prefabricated, self-supporting, welded galvanized steel structure furnished for installation by others on existing asphalt or concrete pavement, with an elevated steel structure.
   b. By location, the substructure shall elevate the booth to the U.S. Federal Emergency Management Agency (FEMA) 100-year flood level, +12 in., or a minimum of 24 in. from grade, whichever is greater. The substructure will consist of an elevated hot-dipped galvanized steel supporting structure that directly attaches and supports the booth. A steel substructure will be capable of being disassembled for ease of transport and will include all necessary hardware for assembly.
   c. The steel substructure will have extended legs with a foot plate that can be mounted to either a concrete slab or mini-pier footing with a minimum diameter of 12 in.
   d. The steel substructure shall be provided with a galvanized steel skirt that encloses the substructure. The skirted substructure shall be treated as a crawl-space for all relevant construction requirements, including but not limited to required venting. The skirting shall be provided in as few pieces as possible for field installation, along with instructions.
   e. Attachable stairs will be provided with appropriate landings that meet all applicable codes. Stairs shall be made of hot-dipped galvanized steel.
   f. Highly insulated booth envelope (See Sections 2.2 C, D, and E for full detail).
   g. Hip roof with 24 in. overhang on the side with exterior doors.
   h. Perimeter roof gutters with downspouts routed to avoid doorways, stairs, exterior mounted cameras, or landings.
   i. Exterior site lighting at all exterior doors.
j. Exterior accessible restroom with sink and on-demand hot water supply, roughed in plumbing, stubbed out to connect with supply and waste water utilities.

2. Power Service:
   a. Electrical service: Attached 100 A or 200 A main service disconnect, interior mounted 100 A or 200 A power panel with breakers and circuits sufficient to supply all booth systems, an integrated manual transfer switch, and prewired interior and exterior lighting switches and power receptacles. Service panel size will be determined by location.
   b. A manual transfer switch integrated into the main service panel with an exterior mounted generator power receptacle for temporary power service. Transfer switch and power receptacle are sized to provide power for all booth and radiation portal monitor (RPM) needs except heating, ventilation, and air conditioning (HVAC) systems.

3. Occupancy Operations/Efficiency:
   a. Workstation amenities are supplied by others; however, booth should be able to accommodate for four officers in a common work area with capacity to configure the following:
      1) Four (4) desks with two (2) desk-height casework work surfaces.
      2) One (1) file cabinet.
      3) Off the floor computer CPUs.
      4) Four (4) under-counter file pedestals or one (1) under-counter lateral file cabinet.
   b. Sufficient interior lighting, with independent switches for common area (see Section 2.2.L for full detail).
   c. Installed interior venetian blinds on all booth windows.
   d. HVAC:
      1) Electric heating integrated with the HVAC system; baseboard heating is explicitly not allowed
      2) Exterior mounted air conditioning unit with air-handler, ducting and louvered vents. Unit shall be capable of recirculating air without cooling.
   e. Primary power integrated smoke detector/alarm, and installed fire extinguishers per all applicable codes.

4. Security:
   a. Full booth shell and glazing hardening to meet a minimum of UL752 Level 3 bullet resistance.
b. Motion-activated exterior lighting.

d. Closed circuit camera mounts on each of the four corners under the eaves with conduit from the mounts to inside the booth.

1) Exterior field of view: 360°.

e. Gray tinted glazing with a reflective (mirror pane) exterior lite on all windows.

f. Exterior lighting at exterior doors and on all four sidewalls of booth.

g. Fully dimmable interior lighting.

h. Access control system that included at a minimum

a) UL-634, Level II, Balanced Magnetic switch for door

b) Interior mounted lock down button for securing door from outside entry

c) Exterior mounted Illuminated Scramble Key Pad

d) Integrated Access controller

i. Intrusion detection system (IDS) that includes at a minimum:

1) IDS controller that incorporates an enable/disable function for system.

2) UL-634, Level II, Balanced Magnetic Switch for door.

3) Sensors for detecting unauthorized entry (these may be either glass break or passive infrared [PIR] motion detection sensors).

4) Visual beacon and audible alarm (90 dB) that triggers when intrusion is detected, on the exterior of the booth, mounted to the building. Furnish sufficient instruction for transport, handling, positioning, and installation by others.

5) IDS controller/system should be integrated with the access control system and be provided completely programmed and ready for use.

C. Furnish instructions for operating, adjusting, and sealing, as necessary, HVAC systems equipment, doors, operable windows, security roll-down shutters and hardware to operate smoothly and properly.

D. Furnish completely preassembled. Anything not preassembled must be approved by Buyer prior to shipping.

1.2 RELATED DOCUMENTS

A. Reference drawing: WS11086 – PREFABRICATED U.S. CUSTOMS AND BORDER PROTECTION FEDERAL INSPECTION SERVICES 10’ X 24’ BOOTH SPECIFICATION. The layout shown in the reference drawings is conceptual only. Buyer shall specify FIS booth orientation (right- or left-handed orientation). Design requirements are provided in this specification document. Final layout to be provided by manufacturer in Shop Drawings and approved by Buyer.

1.3 PERFORMANCE REQUIREMENTS
A. Structural Performance: FIS booth shall comply with ASCE 7 Minimum Design Loads for Buildings and Other Structures, the international building code, and the building code and regulations enforced by the authority having jurisdiction at the locations the FIS booths will be installed.

B. Structural Design Criteria: The minimum structural design criteria, regardless of the jurisdiction, shall be

1. Importance Factor 1
2. Basic Wind Speed 160 mph, 3-second gust
3. Wind Exposure Surface Roughness Category C
4. Ground Snow Load 50 psf
5. Snow Exposure Terrain Category C
6. Seismic Coefficient (Cs) 0.24 g
7. Floor Live Load 50 psf
8. Access Platform Live Load 100 psf or a concentrated live load of 300 pounds on an area of 4 in.$^2$ at any point along the element

C. Thermal Movements: Provide FIS booths that allow for thermal movements resulting from the following maximum change (delta) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Delta): 120°F (67°C), ambient material surfaces.

D. Forced Entry (FE)/Ballistic Resistant (BR): The booth shall be forced entry (15 minutes) ballistic resistant with an Underwriters Laboratories (UL) 752 Level 3 ballistic rating.

E. Use forced entry-rated glazing meeting ASTM F1233 Class III, or UL-972 burglary resistant glazing material. For FE/BR rated booths, use glazing that is both FE rated and UL-752 Level 3 ballistic rated.

1.4 SUBMITTALS

Note: Submittals marked with an asterisk (*) are required with the bid package; the remaining items shall be submitted after the order is placed.

A. *Product Data: Include construction details, material descriptions, dimensions of individual components and profiles (including pictures, sketches, and/or drawings that illustrate that the construction meets the specification), and finishes for FIS booths.

B. Shop Drawings: Include plans, elevations, sections, details, and anchor rod plans and sizes (.dwg and .pdf format).

1. For installed products that are required to comply with design loads, or efficiency requirements, include analysis data signed and sealed/stamped by the qualified professional
engineer who is recognized to practice in all states and territories where the FIS booth will be located.

2. Fabrication details, engineering calculations, and tests that adequately describe and validate that the product is capable of withstanding structural and other indicated loads, thermally induced movement, and exposure to weather without failure or infiltration of water into booth interior.

C. *Quality Assurance: Submit material certifications, test reports, and checklists (e.g. Fabrication Inspection Plan), in accordance with quality control specified herein.

D. *Past Performance: Submit at least three (3) similar completed projects with addresses of the project location, buyer/owner, and description of the design and/or application. In addition, PNNL may require a pre-award visit at the manufacturing facility to confirm specification conformance.

E. Product Information and Maintenance Instructions: Provide maintenance and installation manuals for FIS booth, HVAC units, Intrusion detection system, Access control system, on-demand water heater, and other mechanical equipment supplied with booth.

F. *Warranties:
   1. Material Warranty: The manufacturer shall warrant that the materials and accessories furnished in accordance with these specifications shall remain free from defects in materials and workmanship for a period of 1 year.
   2. Finish Warranty: The manufacturer shall warrant against fading, chalking, peeling, cracking, checking, chipping, or corrosion to base metal of the exterior panel finish, in accordance with the paint supplier’s standards.
   3. Weathertight Warranty: Manufacturer shall provide a standard weathertight warranty against water penetration of the metal roof panel system, including panel side joint trim conditions, for a period of 5 years from the date of substantial completion.

G. *Cost Itemization of FIS Booth Fabrication Bid: Manufacturer shall provide a proposal for FIS booth, as referenced in Section 1.1.B and further specified herein. The manufacturer shall identify where the bid is based on an alteration to specified performance or materials of the booth; such alterations are subject to Buyer approval.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain FIS booths through one source from a single manufacturer.

B. Product Options: Size, profiles, and dimensional requirements of FIS booth indicated in this document and accompanying reference drawings are based on the specifics needed for its intend use. Do not modify requirements shown on reference drawings without approval of Buyer.

C. Welding: Qualify procedures and personnel according to the following:
   1. AWS D1.1, "Structural Welding Code--Steel."

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
E. Certifications shall be compiled and submitted to the contracting officer, on request, for all materials and assemblies used in the fabrication of the booth. The certifications that may be requested include (but are not limited to) the steel and aluminum materials specifications, the fasteners, and insulating glass specifications.

F. Quality Control Documentation (e.g., Fabrication Inspection Plan): Contractor shall make visual inspections as necessary to ensure compliance with specified requirements. Additionally, verify and provide a checklist for the following:

1. Materials comply with the specified requirements (any exceptions are approved by Buyer prior to use). All materials are properly stored, handled, and protected from damage. Damaged materials are removed from site and not used in the booth manufacture.

2. Overall dimensions and configuration are correct.

3. Panels are installed without buckles, ripples, or waves and in uniform alignment with adjoining modules.

4. Side laps are formed, sealed, fastened, or seam locked as required.

5. Adequate amount of the appropriate sealant is applied.

6. The proper number, type, and spacing of attachment clips and fasteners are installed.

7. Door and windows include all hardware and are weather sealed.

8. Structural member includes anchorage devices.

9. Insulation is provided and of proper rating per specification.

10. Suspended ceiling is included and cut to size.

11. HVAC systems are present and weather-sealant is included.

12. Electrical components are installed and wiring is complete.

13. All penetrations through booth are weather sealed.

14. Rain gutter and downspouts are included.

15. Authorization to prepare for shipping is given.

16. Shipping instructions are included.

17. Authorization to ship (includes appropriate signatures and dates) is given.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum: Alloy and temper recommended by aluminum producer and manufacturer for type of use and finish indicated, and as follows:


2. Extruded Shapes: ASTM B 221 (ASTM B 221M).

3. Rolled Tread Plate: ASTM B 632/B 632M, Alloy 6061-T4, 6061-T6, or 6063-T6 anodized, 204R1 with a ribbed pattern.
B. Hollow Structural Shapes (HSS): ASTM A 500, Grade B, hot-dip galvanized according to ASTM A 123/A 123M.
C. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel, Type B.
D. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, commercial quality, G90 (Z275) coating designation; mill phosphatized.
E. Steel Mechanical Tubing: ASTM A 513, welded steel mechanical tubing, hot-dip galvanized according to ASTM A 123/A 123M.
F. Structural Steel: ASTM A 36 or A 992.
G. Plywood: DOC PS 1, Exterior grade.
H. Marine Grade Plywood: Grade A-A, HDO (see PS 1-09 Section 5.6.1)
I. Ballistic Resistant Glazing: Designed and installed to meet performance criteria specified in Section 1.3. All glazing to be insulated, Low-E, UL 752 Level 3 bullet resistant glass-clad polycarbonate. The polycarbonate is to be gray tinted and the exterior glass is to have a reflective (mirror pane) exterior lite.
J. Sealant: Sealant shall be one part moisture curing, gun grade polyurethane or equivalent. Color to be coordinated with panel.
K. Fasteners: Fasteners for steel panels shall be zinc-coated steel, aluminum, or corrosion-resisting steel. Fasteners for aluminum panels shall be aluminum or stainless steel and matched to prevent galvanic corrosion.

2.2 PREFABRICATED FIS BOOTH ASSEMBLY

A. General:

1. Provide a complete, integrated set of a manufacturer's standard system of either all-aluminum frame and panels or all-galvanized steel frame and panels; mutually dependent components that form a completely assembled, prefabricated FIS booth, ready for installation on project site.

2. FIS booths shall be capable of withstanding the structural and other loads indicated, including thermally induced movement and exposure to weather without failure. Booths shall be weathertight, preventing the infiltration of water into booth interior.

3. Include structural framing, roof and wall panels, door(s), windows, and accessories, complying with the requirements indicated.


b. The base/floor assembly to be fabricated with the ability to support the entire booth structure at the perimeter. Assembly to have integrated tie-ins, mounting brackets, and/or devices to anchor booth to foundation or elevated elements, to attach stairs and platforms as required, and for electrical grounding.

c. Booth transport/handling/placement: Booth shall be equipped with handling features or fastening elements sufficient to allow secure transport either by trailer or on a temporary axle, and be lifted by forklift for on and off loading, and positioning onto its foundation or elevated elements.

d. Building style: Standard square corners, with hip roof.
e. Doors: As indicated on reference drawings and specified herein.

f. Windows: As indicated on reference drawings and specified herein.

B. Structure:

1. FIS booths will be located in a seacoast environment. To the greatest extent possible, furnish a system of one material type. Provide galvanic separation of all materials that are not galvanically compatible. The structure shall comply with the following requirements:

    a. Full booth hardening to meet a minimum of UL752 Level 3 bullet resistance.

    b. Booth and glazing materials to meet the following ballistic resistance:

        1) Ammunition: .44 Magnum lead semi-wadcutter gas checked.

        2) Grains: 240.

        3) Weight: 15.6.

        4) Velocity:

            a) Min/Max (FPS): 1350/1485.

            b) MPS: 411.

        5) Number of shots: 3.

2. Aluminum:

    a. Base/floor assembly: Fabricated from minimum 6 in. high assembly consisting of perimeter frame welded to structural framework of booth. Fabricate frame aluminum tubing, aluminum angles, or C-shaped galvanized steel channels. Include anchor clips fabricated from ¼ in. (6 mm) thick aluminum, predrilled and welded to base exterior.

    b. Wall/ceiling structural framework: Mechanically fastened framework fabricated from minimum 2 in. by 4 in. by 0.125 in. (50 mm by 100 mm by 3.2 mm) aluminum tubing, channel, angle, or tee extrusions; with clear anodic finish.

3. Steel:

    a. Base/floor assembly: Minimum 6 in. high assembly consisting of perimeter frame welded to structural framework of booth. Fabricate frame from galvanized steel structural tubing, C-shaped steel channels, or structural steel angles. Include anchor clips fabricated from ¼ in. (6 mm) thick steel plate, predrilled and welded to base exterior. The steel should be galvanized or coated steel with the coating pre-approved by the Buyer/owner, and the coating is applied on all exposed surfaces.

    b. Wall/ceiling structural framework: Welded framework fabricated from minimum 2 in. by 4 in. by 0.0747 in. (50 mm by 100 mm by 1.9 mm) steel structural or mechanical tubing.
C. Sub-floor and Finished Floor:
   1. Assembly consisting of a minimum of two layers of ¾ in. (19 mm) thick marine grade plywood or equivalent. Finished floor composed of SlipNot Grade 2 Aluminum Grip Plate® slip resistant plates or equivalent per Buyer’s approval.
      b. UL Rating: Class A with a flame spread rating less than 25.

D. Wall Panel Assembly:
   1. Assembly consisting of exterior face panel fabricated from a minimum 0.032 in. (0.8 mm) thick aluminum or 0.079 in. (2.0 mm) thick galvanized steel sheet, pebble-textured embossed with the interior fabricated from a minimum 5/8 in. (15 mm) thick anodized aluminum-covered gypsum board; with nominal 4 in. (100 mm) thick, laminated to polystyrene or polyisocyanurate board insulation in the cavity between exterior and interior face panels.
      a. Hardening (see Section 2.2.B).
      c. UL Rating: Class A with a flame spread rating less than 25.
   2. Panels shall be provided in longest obtainable lengths, with end laps occurring only at grits and structural member, junctions of doorframes, window frames, louver panels, and similar locations. Design shall include closures, flashing, and sealing materials to achieve complete water tightness. However, flashing is not required where approved interlocking, concealed type side joints with concealed fasteners for wall panels, or self-flashing panels are used.
   3. CBP signage/decals shall be applied to aluminum plate that is installed in-field to match Buyer’s specifications and approval.

E. Hip Roof Assembly:
   1. Consisting of exterior insulated roof panels sloped sufficient for snow release (4:12 hip) to drain at booth perimeter.
   2. Exterior Roof Panels: Fabricated from 26 gauge prefinished steel standing seam roof panels over roof truss system and plywood underlayment. The finish shall be Cityscape or other gray color (with Buyer approval) with a minimum SRI of 54 as chosen from manufacturer’s standard Kynar 500, Hylar 5000 color chart.
      b. UL Rating: Class A with a flame spread rating less than 25.
   3. Eaves and Soffit: Of manufacturer's standard design. Provide roof eave over FIS booth door side extending 24 in. beyond exterior face of FIS booth wall.
   4. Gutter: Full-perimeter gutter with downspout(s) included.
5. Downspouts: Integral, extending 3 in. (75 mm) beyond booth walls. Downspout(s) to be located so as to not drain in the vicinity of exterior doors or stairways.

F. Ceiling Assembly:

1. Suspended acoustical ceiling.
   a. Structure: Suspended metal grid (typical 1 in. wide T-sections).
   b. Material: Minimum 2 ft by 4 ft by 5/8 in. thick mineral acoustical white tiles precut to appropriate sizes.
   c. UL Rating: Class A with a flame spread rating less than 25.
   d. Provide support for acoustical ceiling to ensure no transportation damage occurs. This may include an angle with carriage bolts through the roof or similar support element.

2. Support for air conditioner unit and ventilation ducting.
   a. Structure sufficient to support weight of air conditioning unit, condensation drip tray, and drain to exterior, and oriented to allow maintenance access to unit by removal of adjacent suspended ceiling acoustical tile.

G. Fixed Windows:

1. Steel sill tube frames completely overlapped by ballistics-rated steel sheeting. Glass: Low-E coated, reflective (mirror pane) exterior lite, with grey tinted insulating ballistics rated glass-clad polycarbonate (see 2.1.I). Finish: Clear anodic. Prewired and connected to IDS break sensor (see Section 2.2.Q) and IDS system controller.

H. Exterior Swinging Doors:

1. Main Access Door: ANSI A250.8/SDI 108, Level 3 bullet resistant, heavy duty steel door, 1 ¾ in. (44 mm) thick; 12 gauge door stiffeners; insulated, seamless edges; and glazed glass window in top half of door. Right- or left-handed door swing to be specified by Buyer.
2. Door Frame: Level 3 bullet-resistant steel door frame, ANSI A250.8/SDI 108, seamless-style frame fabricated from material compatible with structure type.
3. Provide anti-pry strip for outward opening doors.
4. Glazing for Main Access Door: Ballistics-resistant polycarbonate (see 2.1.I).

I. Exterior Door Hardware:

1. Main Booth Access Lock:
   a. Provide exit bar devices for access controlled doors.
2. Furnish via BEST Access Systems a Medico Patriot system cylinder (or equivalent) that will enable the door to be locked for transportation and the cylinder replaced in the field with secure CBP master "keyed" cylinder.

3. Provide and install an access control system that incorporates at a minimum
   a. Exit bar device for access controlled doors
   b. UL-634, Level II, Balanced magnetic switch for door
   c. Interior mounted Lock down button that secures door and disallows outside entry
   d. Exterior mounted illuminated scramble key pad for entry
   e. Integrated access control system controller (Hirsch Identiv Products preferred)
   f. Preprogram system prior to shipping or provide in-field technical support (manufacturer/distributor) to program controller system during booth installation. Controller commissioning and programing is the responsibility of the booth manufacturer.

4. Hinges: National Bulletproof part# NBCH-L44 continuous hinge or equivalent on all exterior doors.

5. Weather Stripping: Seals: Hager model # 756S; door bottom sweep; threshold Pemko 1665A.

6. Furnish a door closer similar to LCN 1460 or equivalent, with top jamb, with the push side mounted with a hold-open arm, and an aluminum finish.

J. Electrical Power Service:

1. Power Panel:
   a. NEMA 1 (interior grade) enclosure, 100 A or 200 A main breaker (size determined by location), 120/240 V AC, single-phase, 3-wire service, minimum 20 breaker spaces, with integrated manual transfer switch, UL labeled for service entrance.
   b. Exterior grade 60 A generator plug mounted to exterior of booth and wired to integrated main service transfer switch.
   c. Power panel to be surface mounted to interior wall as shown on the reference drawings and per Buyer approval.
   d. Panel shall come preassembled and preloaded with breakers as required by Buyer. Assume one (1) 2-pole TVSS, one (1) 30 A 2-pole breaker, two (2) 20 A 2-pole breakers, three (3) 30 A 1-pole breakers, and twelve (12) 20 A 1-pole breakers for bidding purposes.
   e. Provide panel schedule with pre-installed circuits and loads labeled (Printed).
   f. Transfer switch shall be integrated into main service panel and provide power to all booth electrical systems except HVAC.
   g. Provide service feed wire from main breaker to exterior mounted disconnect switch.

2. Receptacles:
   a. Locations:
1) Exterior: Provide two exterior duplex receptacles, one on each end of the booth, installed in weatherproof enclosures. Outdoor receptacles shall be fed from ground-fault circuit interrupter (GFCI) breaker.

2) Workstation Area: Provide a minimum of 12 duplex electrical NEMA 5-20R receptacles powered by load center, and a minimum of six orange-colored duplex electrical NEMA 5-20R receptacles, electrical cabling for UPS receptacles to be routed to exterior power gutter for in-field connection to UPS system.

3) Install at locations shown on the reference drawing and per Buyer approval.
   b. All receptacles shall be installed in a metal raceway (such as a Plugmold G2000 and G3000 wiremold). Workstation area load center powered receptacles shall be mounted at 36 in. above finished floor (AFF.) or 6 in. above the desk height as provided by owner (whichever is higher). No more than five receptacles shall be on a single circuit. UPS-powered receptacles shall be installed at 12 in. AFF.
   c. Additional “dedicated” circuits shall be provided.
      1) Provide appropriately sized circuit(s) for the air conditioning unit.
      2) Provide a dedicated 20 A circuit with GFCI receptacles to serve outdoor receptacles.
      3) Two dedicated 20A circuits to be installed for refrigerator and microwave.
      4) Provide dedicated 20A circuit for on-demand hot water heater in restroom.

3. Provide wire molding to cover all conduit runs in an aesthetic fashion per Buyer’s approval.

4. All interior receptacles shall be labeled with engraved tags that identify the circuit number, UPS receptacles shall be labeled as such, and the dedicated microwave and refrigerator circuits shall be labeled as such.

K. Exterior Lighting Fixtures:

1. Provide one full cutoff LED lighting fixture adjacent to and above the top of each exterior door opening, to provide a minimum uniform lighting of 10 foot-candles (fc) at doorway finished floor. Provide single-pole switch mounted adjacent to the main access door on the interior wall surface to control all exterior lighting fixtures.

2. Provide three additional exterior LED lighting fixtures to illuminate all sides of the booth as required by Buyer.

L. Interior Lighting Fixtures:

1. Provide sufficient number of ceiling-mounted LED light fixtures to provide uniform lighting throughout booth interior.
   a. Main interior space: Provide 30 fc at 3 ft above floor level. Use 48 in. (1200 mm) long LED fixture with acrylic lens. Provide a single-pole switch mounted adjacent to door to control the lighting fixture.
   b. Main interior lighting to be fully dimmable from a single switch.
M. Power and Communications and Data Penetrations, Raceways, and Exterior Equipment Frame:

1. Penetrations and Conduits: Provide watertight penetrations and conduit through exterior wall into raceways for installation of power and communications by others.

2. Raceways:
   a. Provide two (2) side-by-side nominal 8 in. high by 8 in. deep by 30 ft wide, NEMA 4 rated steel raceway on exterior wall as shown on reference drawing. Raceways shall be used for power copper and communications and data copper and fiber cabling to be installed by others.
   b. Provide three empty ¾” rigid conduits from interior mounted electrical panel to the exterior NEMA 4 power raceway. Conduits shall have pull string installed.
   c. Provide nominal 2 in. deep by 4 in. tall, NEMA 1 rated, aluminum or steel, divided metal raceway mounted on the interior wall near to connect from exterior raceways to overhead cable trays and from interior raceways into the workstation area. Raceways shall be used for power and communications and for the data copper and fiber cabling to be installed by others.
   d. Provide nominal 4 in. high by 2 in. deep, NEMA 1 rated, aluminum or steel, divided metal raceway mounted on interior walls of workstation area as shown on reference drawing, at sufficient height AFF to not interfere with UPS-powered and communication RJ-45 receptacles. Raceways may be used for power and communications and for the data copper and fiber cabling.
   e. Provide and terminate a minimum of twelve RJ45 ethernet keystone jacks in the data gutter. Six terminated RJ45 ethernet keystones shall be placed along each 24ft wall. Keystones are to be terminated with the T568B standard inside the booth. The other end of the cabling shall be routed to the exterior of the booth into the data communications gutter and include an additional 25ft of length to be used for in-field termination. All lines are to be appropriately labeled on both the keystone and the spooled end.
   f. Provide and terminate a minimum of 4 RJ11 telephone keystone jacks in the data gutter. Two terminated RJ11 keystones shall be placed along each 24ft wall with locations identified in the drawings. The cabling shall be routed from the keystones to the exterior of the booth into the data communications gutter and include an additional 25ft of length to be used for in-field termination. All lines are to be appropriately labeled on both the keystone end and the spooled end in the gutter.

3. Junction Box: Provide 12 by 6 by 6 in. inside junction box, powder coated gray, to cover the above penetrations and conduit. This will allow for greater space for incoming cables to bend and route into the raceway.

4. Exterior-mounted Equipment Boxes: Provide 2-gang watertight junction boxes at all four booth corners near the equipment mounting pads as shown on reference drawings. Each box shall include a watertight penetration (minimum 1 in.) into the booth interior and land inside of a metal raceway as shown on reference drawings.

N. Heating /Cooling:
1. Provide heating and cooling service to the booth’s main interior space. Furnish heating and cooling units designed to satisfy the following requirements:

   a. Heating: Electric heating that is integrated into the HVAC system capacity shall be sufficient to maintain an indoor temperature of 70ºF at an outdoor temperature of 14ºF.

   b. Cooling: Thermostatically controlled, plenum-mounted air conditioning unit, with ducted ceiling vents in main interior space. Capacity shall be sufficient to maintain indoor conditions of 78ºF/50% relative humidity at outdoor conditions of 95ºF dry bulb and 87ºF wet bulb.

2. Thermostat Location: The thermostat control unit shall be on a wall a minimum 2 ft away from the exterior door, and not directly under a ceiling cooling vent.

3. Internal Loads: The cooling specification shall consider an internal heat load based on the equipment described in Section 1.1.B.

O. Finish

1. Finish exposed metal surfaces, including structural framework, walls, roof, canopy, and ceiling with a minimum finish protection of industrial air-dry enamel, unless the exposed metal surfaces are anodized aluminum and the appearance is accepted by the Buyer.

2. Color: As selected by Buyer from manufacturer's full range. Roof color shall be Cityscape or other gray color (with Buyer approval) with a minimum SRI of 54 as chosen from manufacturer’s standard Kynar 500, Hylar 5000 color chart.

P. Fire Safety

1. Provide wall-mounted fire extinguisher in main interior of booth, and 110 V powered/battery-backed smoke detector(s)/alarm(s).

Q. Booth Security:

1. Booth windows and door prewired for an IDS that includes

   a. IDS:

      1) IDS controller that incorporates an enable/disable function for system.

      2) UL-634, Level II, Balanced Magnetic Switch for door.

      3) Sensors for detecting unauthorized entry (these may be either glass break or PIR motion detection sensors).

   b. Visual beacon and audible alarm (90 dB) that triggers when intrusion is detected, on the exterior of the booth, mounted to one corner that is elevated at least 2 ft above roofline.

2.3 FABRICATION

A. Fabricate FIS booths completely in factory.
B. Pre-glaze windows and doors at factory, prior to delivery.
C. Prewire FIS booths at factory, prior to delivery, ready for connection to service at project site.
D. Fabricate FIS booths with integral forklift and crane pockets for handling at site. Provide metal closures to be field installed over any openings used for handling and delivery to make the booth a permanent installation.

2.4 FINISHES

A. Comply with National Association of Architectural Metal Manufacturers (NAAMM) “Metal Finishes Manual for Architectural and Metal Products” for recommendations for applying and designating finishes.
B. Aluminum Finishes: Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
   1. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: Nonspecular as fabricated; Chemical Finish: Etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 611.
C. Galvanized Steel Sheet Finishes: Clean surfaces with nonpetroleum solvent so surfaces are free of oil and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified below to comply with ASTM A 780.
   2. Air-dried Enamel Finish: Apply manufacturer's standard enamel finish complying with manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

2.5 DELIVERY/STORAGE AND HANDLING

A. Deliver booth/materials to the site in a dry and undamaged condition.
B. Provide packaging to protect booth/materials during shipment.
C. Notify Buyer at least 24 hours in advance of shipping the booth to the site to allow the Buyer time to coordinate a quality inspection when the booth arrives on the job site.

2.6 CORRECTION OF DEFICIENCIES

A. If any deficiency is found, additional measures shall be taken to determine the extent of the deficiency as deemed necessary by the Buyer. The manufacturer will be solely responsible to take the appropriate corrective actions according to the approval and as directed by the Buyer.

2.7 INSTALLATION REQUIREMENTS

A. Provide anchorage setting blocks and leveling devices needed for installation.

End of Specification.