



WORK ORDER NO. 46010.1

CONSTRUCTION CONTRACT  
No.: N69450-xx-x-xxxx

APPROPRIATION:

**AV600 Hangar Floor, Rails and Beams,  
and Beacon Tower Refurbishment**

At the

**U. S. Naval Station Guantanamo Bay, Cuba**

**SUBMITTED BY:**

FEAD PWD Guantanamo Bay, Cuba

**PREPARED BY:**

Design Manager: Chantelle Parker

Date: January 8, 2015

**APPROVED BY:**

For Commander, NAVFAC{Insert Command}:  
Date: {Month, Day, Year}

## **Small Project Part 2, Attachment A Project-Specific General Requirements**

05/11

The following requirements are project specific and may either supplement and/or modify those requirements contained in the body of Part 2, General Requirements, for Small Projects. Paragraph numbers in Part 2 correspond to paragraph numbers used in Part 2, Attachment A.

### **Paragraph 3 - POST AWARD KICKOFF MEETING (PAK)**

Post Award Kickoff Meeting shall be as described in Part 2 – Small Project General Requirements of Job Order Contract Award.

### **Paragraph 4 - DESIGN**

Submit Consolidated RFP Documents for Government review as necessary.

Submit sketches, calculations and manufacturer's data to demonstrate compliance with contract requirements. The Contractor is encouraged to prepare drawings more like shop drawings to minimize construction submittals.

1. Construction submittals are to be Contractor-approved, except those listed below:  
Government Approval required for:

Thin Film Flooring System  
Grounding System

2. Submit the following construction submittals, approved by the DOR, to the Government for surveillance:

Plumbing components  
Grounding system components  
Paints and Finishes

### **Paragraph 5 - FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS**

Not Used

### **Paragraph 6 - QUALITY CONTROL**

The Superintendent may not serve also as the Quality Control Manager on this project. However, Quality Control Manager may serve as Site Safety Health Officer provided individual has required qualifications.

### **Paragraph 7 - SUBMITTAL PROCESSING**

	<b>SUBMITTAL/BENCHMARK</b>	<b>DURATION</b>	<b>BENCHMARK</b>	<b>RECEIVED</b>	<b>STATUS</b>
1	Quality Control Plan				
2	Material Safety Data Sheets				
3	Construction Schedule				
4	Waste Management Plan				

5	Safety and Health Plan				
6	Schedule of Prices				
7	Budget Management Summary				
8	Record Drawings				
9	Operation and Maintenance Information				
10	Licenses and Permits				
11	Badge Requests				
12	Statement of Acknowledgement SF 1413				
13	Demolition and Work Plan				
14	Submittal Register				
15	Performance/Payment Bonds				
16	Environmental Protection Plan				
17	Certificates of Insurance				
18	DD Form 1354				

**Paragraph 8 – SUPERVISION**

The Superintendent may not serve also as the Site Safety and Health Officer on this project.

**Paragraph 9 – Schedule**

Total procurement and construction period shall not exceed 175 days from the date of the award of the Task Order. Award of the Task Order shall constitute the notice to proceed. Contractor is reminded that no construction may start until after the approval of submittals, approval of bonds and receipt by the Government of an acceptable insurance certificate for the Prime and any subcontractors.

**Paragraph 10 - BUDGET MANAGEMENT**

**Paragraph 14 - SCHEDULE OF PRICES**

**Paragraph 15 - INVOICES**

**Paragraph 17 - EXISTING UNDERGROUND UTILITIES**

**Paragraph 19 - CONTRACTOR WORK SITE**

**Paragraph 20 - TEMPORARY UTILITIES**

Refer to Specification 00 73 01 SPECIAL CONDITIONS FOR GUANTANAMO BAY PROJECTS.

**Paragraph 21 - ENVIRONMENTAL CONTROLS AND PROTECTION**

All work shall be conducted in conformance with UFGS Specification 01 57 19 01 25. The Contractor is required to complete and submit evidence of completion of the Environmental Compliance Assessment Training and Tracking (ECATTS) program.

**Paragraph 22 - WASTE MANAGEMENT**

Refer to Specification 00 73 01 SPECIAL CONDITIONS FOR GUANTANAMO BAY PROJECTS.

**Paragraph 23 - RECORD DRAWINGS AND OPERATION & MAINTENANCE (O&M) DATA**

Provide the Contracting Officer with two copies of half size as-built drawings, one copy of full-size as-built drawings, and two CDs containing drawings (in both .pdf and Autocad formats), and all construction submittals.

**Paragraph 24 – WARRANTY**

**Paragraph 25 - PERFORMANCE EVALUATIONS**

**Paragraph 26 - WORK HOURS, ACCESS AND PASSES**

Refer to Specification 00 73 01 and Small Project Part 2 General Requirements, Paragraph 26 WORK HOURS, ACCESS AND PASSES, Section D

**Paragraph 27 - SECURITY REQUIREMENTS**

Refer to Specification 00 73 01 and Small Project Part 2 General Requirements, Paragraph 27 Security Requirements.

**Paragraph 28 - REQUIRED INSURANCE**

**Paragraph 30 - GOVERNMENT FURNISHED MATERIAL AND EQUIPMENT**

**Paragraph 34 - SAFETY AND OCCUPATIONAL HEALTH**

All work shall be conducted in conformance with UFGS Specification 01 35 26.05 25.

*\*\*End of PART 2 Attachment A\*\**

# PART THREE - PROJECT PROGRAM TABLE OF CONTENTS

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Part 3 contains the project description, functional and performance requirements, scope items, and expected quality levels that exceed Part 4. Part 4 identifies design criteria, verification requirements, and performance and quality requirements of products. See "Order of Precedence" paragraph in Part 2 for relationships between all parts of this RFP.

See attached document(s), 'part\_three\_master\_document.doc,' in the 'attachments' directory.

## 1.0 PROJECT DESCRIPTION

It is the intent of this project for the contractor to provide all labor, materials, tools, transportation, equipment, incidental engineering and supervision required to refurbish AV600 hangar bay floor, crane rails and overhead beams throughout the hangar area, and beacon tower repairs.

## 2.0 PROJECT OBJECTIVES

### 2.1 Mission Statement

Building AV 600 was built in 1954. The primary function of this facility is to provide storage and maintenance and repair space for military aircraft and other mission support aircraft. This facility is essential for mission success.

The hangar floor slab joints have deteriorated and allow water, fuel, or oil to run under the slabs when servicing aircraft. Several cracks in the foundation need to be repaired. The floor drains have loose or broken covers that need to be replaced with secure anti-tilt covers to allow aircraft to move safely inside the hangar. Several of the grounding points throughout the hangar have failed and must be replaced. All floor paint must be removed from the slab and repaired and leveled before recoating the entire hangar floor using a flooring system that meets or exceeds UFC spec 4-211-01N and 09 67 23.15. Interior metal overhead crane and roof beams and structural supports in the hangar bay must be cleaned, primed and painted to prevent corrosion. The beacon tower located on the building roof must be repaired, cleaned, primed, and painted to prevent corrosion.

### 2.2 Facility Function

Building AV 600 was built in 1954 and has a floor area of 106,602 sq ft. The building is currently used as an aircraft hangar. Building construction is two story permanent concrete and steel structure, CMU and concrete siding rolled and coated sheet metal roofing and concrete-on slab-foundation.

Floor slab joint sealant needs to be removed, repaired and resealed, drain covers need to be replaced, grounding points and loop need to be replaced, repaired, and repainted, several slab cracks need varying levels of repair and entire floor needs mechanical removal of old paint, and high spots ground down to restore a level floor. Caution areas need to be repainted around the perimeter. The entire hangar bay floor will be recoated per Unified Facilities Criteria 4-211-01 N using a thin film flooring system that meets Master Painters Institute specification 212 and Unified Facilities Guide Specification 09 67 23.15 using either white or very light gray for coloring. Remove all rust, prep, prime, and paint crane rails and beams throughout the hangar area. Remove all rust, repair structural steel as needed, and prep, prime, and paint the beacon tower in accordance with contract requirements.

The work shall include any incidentals required to provide a complete, useable and finished product.

- a. Remove and replace sealant and backer rods in all hangar floor joints.
- b. Remove all paint from hangar floor.
- c. Repair and seal chipped, pitted, broken and cracked areas of hangar floor.
- d. Level and prepare all areas of hangar floor to not allow standing water and accept a Thin Film Flooring System in accordance with UFC spec 4-211-01N, MPI Spec 212 and UFGS 09 67 23.15
- e. Resurface entire hangar floor using a Thin Film Flooring Systems that meets or exceeds UFC spec 4-211-01N, MPI Spec 212 and UFGS 09 67 23.15. Color of hangar floor must be white or light gray.
- f. Paint caution markings along perimeter of Hangar and at door openings.

- g. Remove all floor drains and covers and install new heavy duty drains with anti-tilt covers.
- h. Replace ground points on hangar floor in accordance with UFC 4-211-01N. Grounding points shall be identified with paint in accordance with UFC 3-575-01.
- i. Remove all rust, prep, prime and paint frames of tower for rotating beacon.
- j. Replace supporting frames on tower of rotation beacon as needed.
- k. Remove all rust, prep, prime and paint crane rails and beams throughout Hangar area of Building AV600.
- l. All exposed structural steel shall be coated with a high performance coating system consisting of an epoxy primer, a high solids polyurethane intermediate coat and a high solids polyurethane top coat.
- m. Provide detailed drawings of completed construction for review and approval by the government.
- n. All materials shall be installed in accordance with manufacture's requirements.
- o. All waste materials shall become the property of the Contractor and shall be transported, disposed of or recycled in accordance with base regulations.

## 2.3 Project Specific Priorities

### 2.3.1 Sustainable Design

Integrate sustainable strategies and features into the design to minimize the energy consumption of the facilities; conserve resources; minimize adverse effects to the environment; and improve occupant productivity, health, and comfort to reduce the total cost of ownership of the project using a whole building, life-cycle approach. The facility and all site features shall be designed and constructed to comply with the UFC 1-200-02, *High Performance and Sustainable Building Requirements* and the *Guiding Principles for Federal Leadership in High Performance and Sustainable Building Requirements*

## 2.4 Appropriate Design

Comply with UFC 3-575-01, Lightning and static Electricity Protection Systems, UFC 4-211-01N, Aircraft Maintenance Hangars, and UFGS 09 67 23.15, Fuel Resistive Resinous Flooring for requirements for this project.

### 2.4.1 APPLICABLE CODES AND STANDARDS:

The design and construction shall be in accordance with the latest revision/edition of the codes and standards referenced in this RFP. The term "Latest Revision/Edition" is defined as the version as of the project award date. The design and installation of windows and blinds shall be in accordance with the UFC design guides. UFC Guides and Manuals can be viewed and downloaded at <http://www.wbdg.org/ccb/http> .

## 2.5 Workflow Process

Work under this contract requires special attention to the scheduling and must be conducted in Phases. Buildings must remain in operations during the entire construction period. Performance of work and Scheduling will comply with facility tenants' availability.

## 3.0 SITE ANALYSIS

### 3.1 Existing Site Conditions

3.1.1 Site Location – Building AV600 is located on the leeward side of US Naval Base, Guantanamo Bay, Cuba. The site is adjacent to aircraft movement areas but work is inside and on top of the facility. It is a restricted access area and all access routes, vehicle parking, and lay down areas will be coordinated with the Airfield Manager.

3.1.2 Wildlife – A profusion of wildlife abounds and regulations prohibit hunting, capturing or harming local inhabitants. Base regulations shall be enforced; any issue with nuisance wildlife shall be reported to the base environmental office.

Adjacent areas are used by sea turtles for nesting. Also, various species of concern are present like Cuban boas (*Epicrates angulifer*) and Cuban rock iguanas (*Cyclura nubila*). During the construction special care is required to prevent the incidental harassment of any wildlife, especially protected species. (Refer to attached Environmental Checklist and Record of Negative Decision.)

3.1.3 Climatologic Conditions – The climate of Guantanamo Bay area can be described as a semi-arid desert. With predominantly dry, sunny days ranging temperatures of 80-90 degrees Fahrenheit and nearly one-fourth of Guantanamo’s total average annual rainfall occurring in the month of October. Guantanamo Bay is situated in the belt of the Caribbean trade winds; it receives sea breezes from the southeast during the day and shortly after sunset, the wind changes to a northerly direction and becomes a land breeze. However, the mountains that surround the bay to the west, north and east shelter the base from various cloud systems, thus producing less precipitation and creating the land’s aridity.

3.1.4 Site Utilities - Existing utilities include water lines, sanitary gravity sewer, and aboveground and underground electric.

## **3.2 Site Development Requirements**

3.2.1 Building AV 600 was built in 1954 and has a floor area of 106,602 sq ft. The building is currently used as an aircraft hangar. Building construction is two story permanent concrete and steel structure, CMU and concrete siding rolled and coated sheet metal roofing and concrete-on slab-foundation.

3.2.2 Lay down Area – Contractor access routes, vehicle parking, and lay down areas shall be determined during the Pre-construction conference and coordinated will be coordinated with the Airfield Manager. Fencing and security of the Contractor Lay down area shall be the responsibility of the Contractor.

--End of Section--

## **6.0 ENGINEERING SYSTEM REQUIREMENTS**

### **C30 INTERIOR FINISHES**

#### **SYSTEM DESCRIPTION**

Interior finishes include floor finishes and overhead crane and structural steel member finishes.

The entire hangar bay floor will be recoated per Unified Facilities Criteria 4-211-01 N using a thin film flooring system that meets Master Painters Institute specification 212 and Unified Facilities Guide Specification 09 67 23.15 using either white or very light gray for color. Caution areas shall be repainted around the perimeter. Submit pattern drawings of the floor paint design with the interior design submittal.

#### **GENERAL SYSTEMS REQUIREMENTS**

See C3040 for specific requirements on "Interior Finishes."

#### **C30 SSPC QP 1 CERTIFICATION**

The Project requires industrial coatings on the floor and all painted metal surfaces. All contractors and subcontractors that perform surface preparation or coating application shall be certified by the Society for Protective Coatings (formerly Steel Structures Painting Council - SSPC) to the requirements of SSPC QP 1 prior to contract award, and shall remain certified while accomplishing any surface preparation or coating application.

#### **C3010 WALL FINISHES**

Not used

#### **C3020 FLOOR FINISHES**

Provide floor finish materials to meet the following requirements;

a. Carpet Requirements

Not used

b. Concrete Floor Requirements

Finish concrete surface smooth enough to meet the minimum requirements of this RFP or the floor finish manufacturer's smoothness requirements, whichever is the most restrictive. Exposed concrete floors that are not required to have an applied floor finish, shall receive a minimum of 3 coats of the manufacturer's approved sealer.

#### **C3030 CEILING FINISHES**

Not used

#### **C3040 INTERIOR COATINGS AND SPECIAL FINISHES**

Provide a Thin Film Flooring System that complies with MPI (Master Painters Institute) Specification 212. This coating consists of a primer, a mid coat and a top coat. Application of the top coat shall be in accordance with Specification Section UFGS 09 67 23.15 Fuel Resistive Resinous Flooring, 3-Coat System, but in no case may the application be less than recommended by the manufacturer. Color shall be white or very light gray.

All exposed structural steel shall be coated with a high performance coating system consisting of an epoxy primer, a high solids polyurethane intermediate coat and a high solids polyurethane top coat.

--End of Section--

## **D50 ELECTRICAL**

### **SYSTEM DESCRIPTION**

Demolish the existing grounding system established in hangar floor and provide new complete grounding system including all accessories and devices as necessary and required for a complete and usable system in accordance with UFC-3-575-01 and UFC-3-575-01.

### **GENERAL SYSTEM REQUIREMENTS**

Provide an Electrical System complete in place, tested and approved, as specified throughout this RFP, as needed for a complete, usable and proper installation. All equipment shall be installed per the criteria of PTS Section D50 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "shall".

### **D509003 GROUNDING SYSTEMS**

Provide a complete grounding system for the hangar. Demolition of existing grounding system and installation of new complete system is required. Install new ground receptacles, ground rods, clamps, connectors and bonding grid.

All connections between ground rods and ground receptacles shall be mechanically secure and shall be brazed in accordance with MIL-B-7883. All connections between ground rods/receptacles and the bonding grid system shall be made with approved copper allow clamps/connectors and shall be brazed as above.

Provide Ground Resistance Testing and Floor Grounding System testing.

--End of Section--

## **D20 PLUMBING**

Refer to Part 4 Section D20 for performance requirements of the building elements included in the plumbing system.

### **SYSTEM DESCRIPTION**

This project will replace existing floor drains in the hangar bay with heavy duty non-tilt floor drain covers.

### **GENERAL SYSTEM REQUIREMENTS**

Provide all required fittings, connections and accessories required for a complete and usable system. All equipment shall be installed per the criteria of PTS section D20 and the manufacturer's recommendations. Design and installation shall be in accordance with IPC and UFC 3-420-01, *Plumbing Systems*. Where the word "should" is used in the manufacturer's recommendations, substitute the word "shall".

## **D2010 PLUMBING FIXTURES**

Provide quantity and type of plumbing fixtures required for the occupancy, use, and functions described for this facility. Refer to Room Requirements Section for additional specific requirements for spaces with plumbing fixtures. Provide handicapped fixtures in accordance with the referenced criteria in the Project Program.

## **D203003 FLOOR DRAINS**

Provide new floor drains in the hangar bay with heavy duty non-tilt covers.

--End of Section--

## **F20 SELECTIVE BUILDING DEMOLITION**

### **GENERAL SYSTEMS REQUIREMENTS**

Perform all off-site work necessary to meet the requirements of the project, local codes, reference standards, technical specifications and performance criteria.

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. The contractor shall submit complete the "Permits Record of Decision" (PROD) form with the first design submittal package. A blank PROD form is in the UFC 3-200-10N, *Civil Engineering*. Contractor shall determine correct permit fees and pay said fees. Copies of all permits, permit applications, and the completed PROD form shall be forwarded to the EFD Environmental Reviewer.

Coordinate and obtain approval from the Contracting Officer for proposed haul route(s), work site access point(s), employee parking location(s) and material laydown and storage area(s).

Prior to proposal the contractor shall investigate the site and confirm the complete scope of demolition. As-built drawings are provided in Part 6 of this RFP along with photos of existing conditions. Contractor shall field verify, prior to bid, the accuracy of site conditions indicated in the RFP part 6 photographs.

All demolition materials shall be properly disposed of in accordance with all applicable regulations. Maximize the use of deconstruction and recycling services. The Contractor shall obtain approval from the Contracting Officer for the proposed demolition plan and any work/outage scheduled prior to demolition activities.

### **F2010 BUILDING ELEMENTS DEMOLITION**

This project includes the demolition of the following:

- 1 - Joint sealant
- 2 - Interior finishes
- 3 - Grounding System Components
- 4 - Floor drains

## **F2010 1.1 GENERAL DEMOLITION**

Remove concrete as needed for installation of floor drains and grounding system.

## **F2010 1.2 UTILITIES**

Not used

## **F2010 1.3 DUST CONTROL**

Prevent the spread of dust and debris to occupied portions of the building and avoid the creation of a nuisance or hazard in the surrounding area.

## **F2010 1.4 TRAFFIC CONTROL**

Contractor will not interfere with aircraft operations/movement.

## **F2010 1.5 WEATHER PROTECTION**

Not used

## **F2010 1.6 BURNING**

Burning will not be permitted.

## **F201001 SUBSTRUCTURE & SUPERSTRUCTURE**

Not used

## **F201002 EXTERIOR CLOSURE**

Not used

## **F201003 ROOFING**

Not used

## **F201004 INTERIOR CONSTRUCTION & FINISHES**

Joint sealant, Thin Film Flooring System, and steel structure components

## **F201005 CONVEYING SYSTEMS**

Not used

## **F201006 MECHANICAL SYSTEMS**

Not used

## **F201007 ELECTRICAL SYSTEMS**

Existing Grounding system in Hangar floor shall be removed and disposed of in accordance with base regulations.

## **F201008 EQUIPMENT & FURNISHINGS**

Not used

## **F2020 1.4 LEAD BASED PAINT**

For more detailed information regarding concentrations and locations of lead based paint, see the lead based paint report in Part 6 of the RFP.

## **F2020 1.5 PAINT RELATED WORK**

Paint related work includes: removal, surface preparation, and component replacement.

## **F2020 1.11 DISPOSAL**

All waste materials shall become the property of the Contractor and shall be transported, disposed of or recycled in accordance with base regulations.

--End of Section--

## PART SIX - ATTACHMENTS

❖ **Record Drawings –**

08M-1993	Beacon tower details
08M-2047-01	Beacon tower details
08M-2047-02	Beacon tower details
08M-2047-03	Beacon tower details
0545869	Hangar floor plan
4040134	Grounding System
4173145	Hoisting System - Demolition
4173146	Hoisting System – Plan and Details
4496349	Overall Floor Plan – Floor joints and drains
4496358	Floor Plan-Area B – Floor joint detail

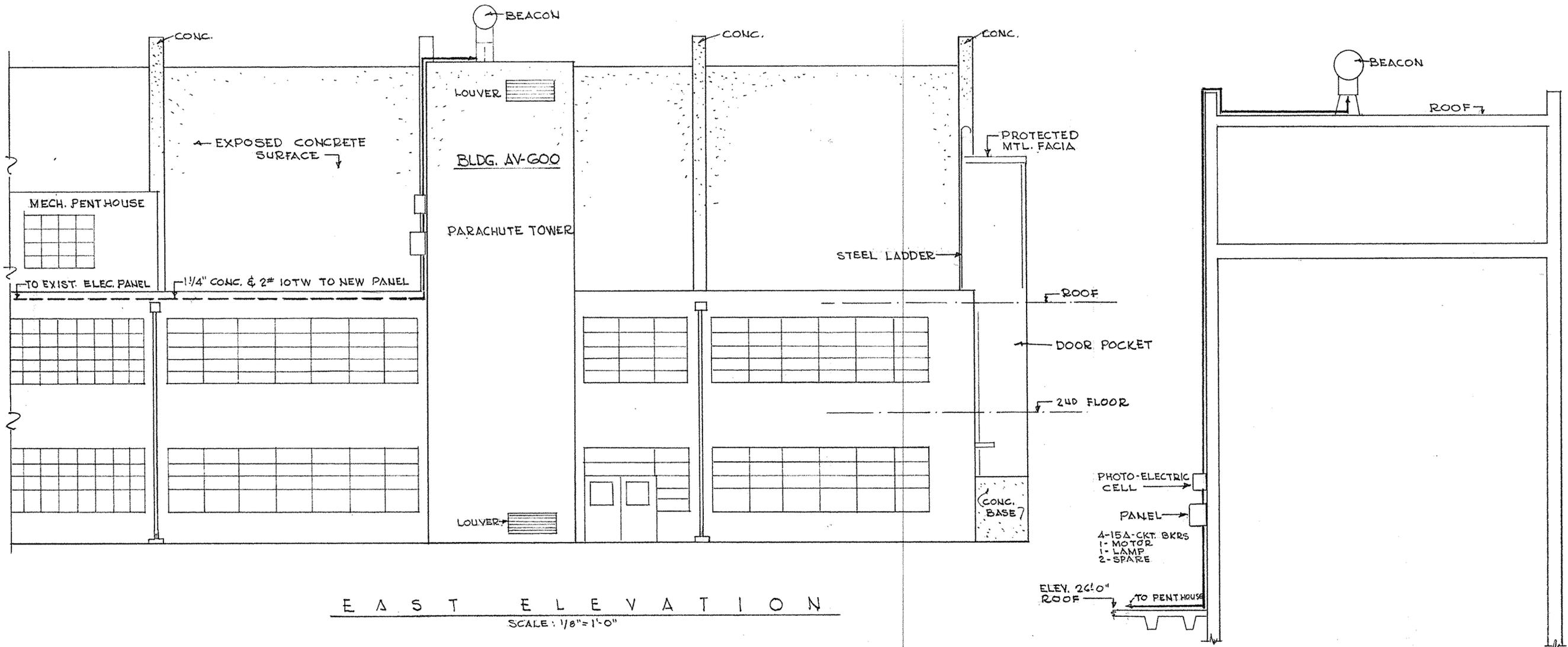
❖ **Photographs—**

Hangar and Beacon Tower Photos

❖ **Documents—**

AV600asb                      Lead and asbestos report

- ❖ Record drawings, photos and concept plans are provided for reference only. The Contractor shall complete a survey of all areas to be affected by the project scope of work and provide plans and specifications for the work to be completed. All new work shall be as described in Part 3 and Part 4 of the RFP.



EAST ELEVATION  
SCALE: 1/8" = 1'-0"

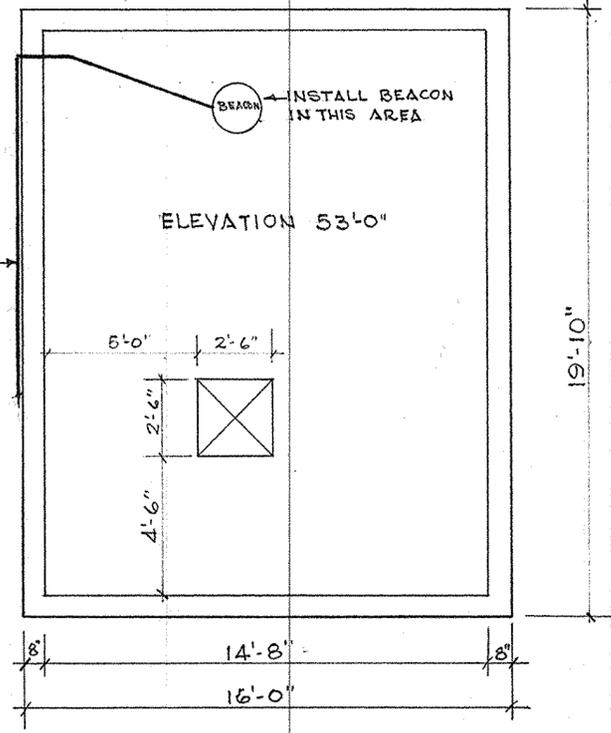
ELEVATION-PARACHUTE LOFT  
SCALE: 1/4" = 1'-0"

LEGEND

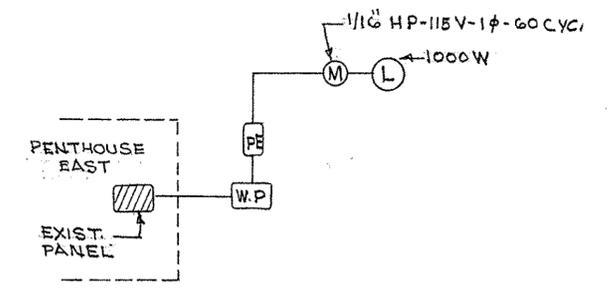
- EXIST. ELECTRIC. PANEL IN EAST PENTHOUSE
- NEW W.P. PANEL W/4-15A BKRS. AVIATION TYPE CH #44239
- NEW W.P. PHOTO ELECTRIC CELL 25A RATING - AVIATION TYPE CH #44870
- NEW ROTATING BEACON AVIATION AIRPORT (GREEN-WHITE) CH #DCB-224 (1000W)
- LAMP 1000 WATT MOGOL BIPIN #T-20
- MOTOR (IN BEACON) 1/6 HP-115V-60 CYC.

NOTES:

1. BEACON TO BE ROTATING, DUPLEX TYPE, ONE GREEN LENS ONE WHITE LENS. CROUSE HINDS AVIATION BEACON #43089-C OR EQUAL. COMPLETE W/LEVELING LEGS.
2. 1/4" CONDUIT & 4 #10 TW WIRES FROM EXISTING PANEL IN PENTHOUSE TO NEW WALL MOUNTING AVIATION PANEL.
3. 1/4" CONDUIT & 4 #12 TW FROM AVIATION PANEL (2 CIRCUITS - 1 MOTOR, 1 LAMP) ON SEPARATE 15A CKT. BKRS.
4. PHOTO CELL TO BE DUAL POLE ONEPOLE FOR MOTOR ONE FOR LAMP. CARRY SEPARATE NEUTRALS.



ROOF PLAN - PARACHUTE LOFT  
SCALE: 1/4" = 1'-0"



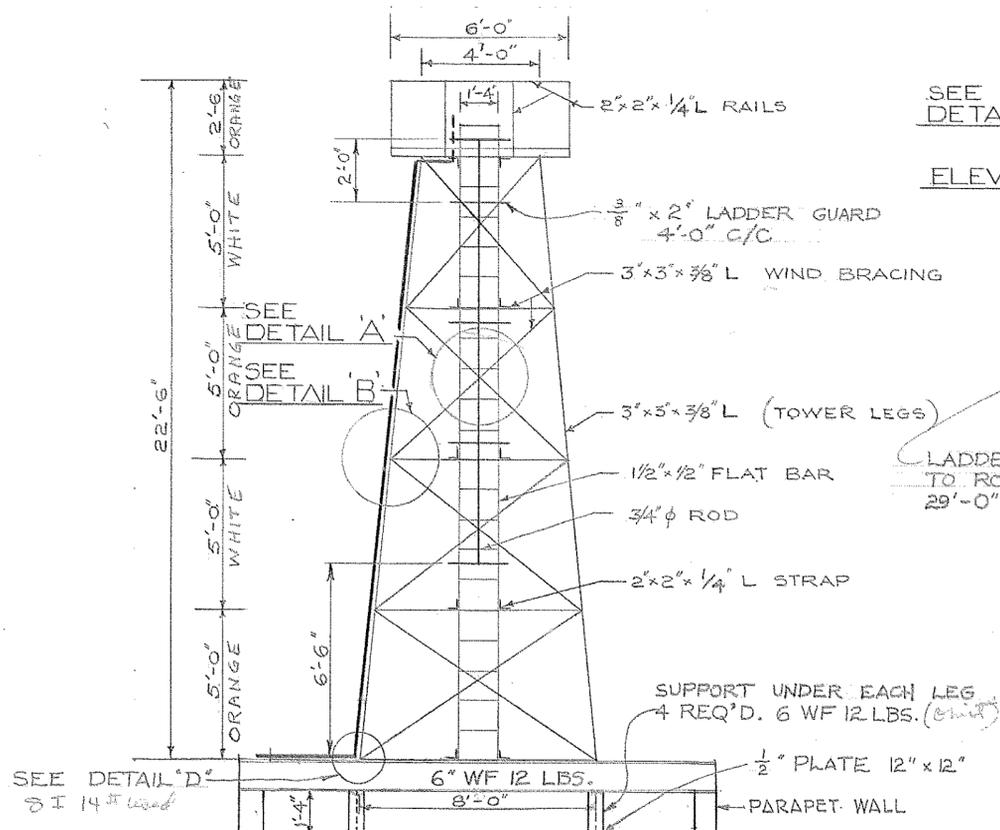
ONE LINE DIAGRAM

For Reference Only

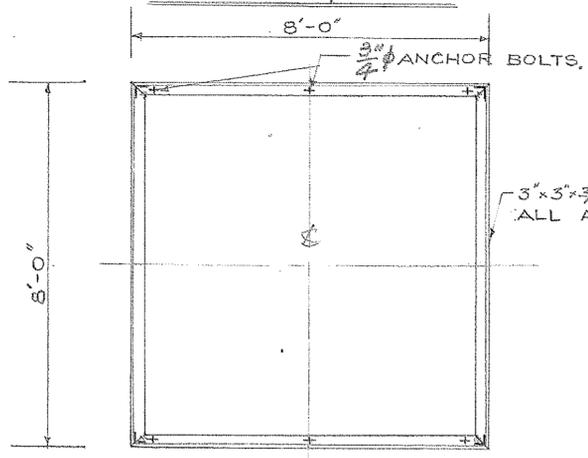
REF. DWG. # Y&D 545856 & Y&D 545888

ESR 2040/5

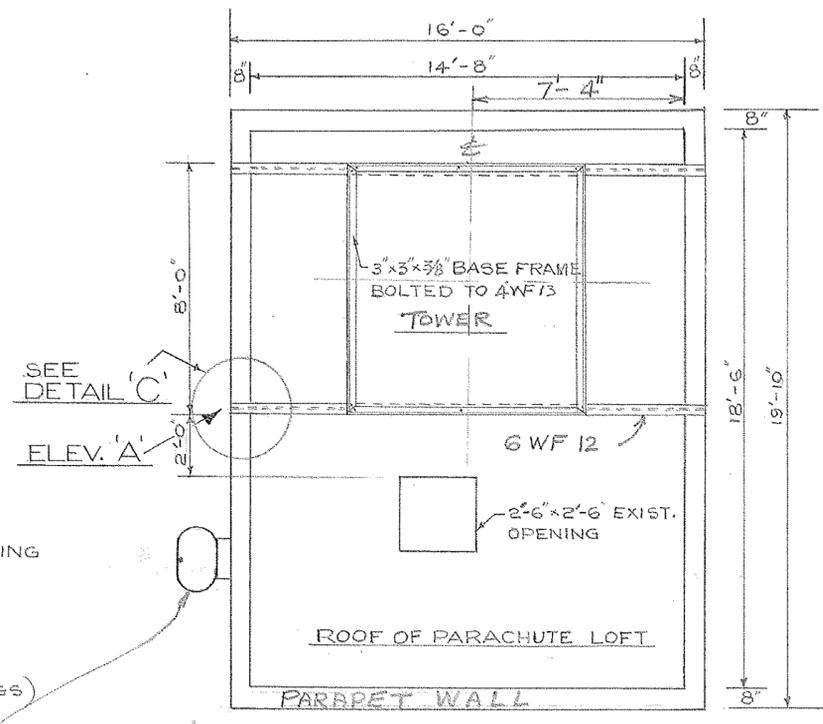
SYMBOL		DESCRIPTION	DATE	APPROV.
REVISIONS				
PWC DRAWING NO.		DEPARTMENT OF THE NAVY	BUREAU OF YARDS & DO	
8M-1993-0964		PUBLIC WORKS CENTER		
		GUANTANAMO BAY, CUBA		
DES	RTP	NAVAL AIR STATION		
DRWN	O. B. E.	LEeward POINT		
TR		INSTALL AIRPORT BEACON		
CHK	RTP	ON ROOF OF BLDG. AV-600.		
SUPV				
IN CHARGE				
REVIEWED BY				
APPROVED		DATE		
SATISFACTORY TO		SCALE AS NOTED SPEC		
C. B. Usher		SHEET 1 OF 1		
DATE 28 SEPTEMBER 1967		Y & D DRAWING NO.		



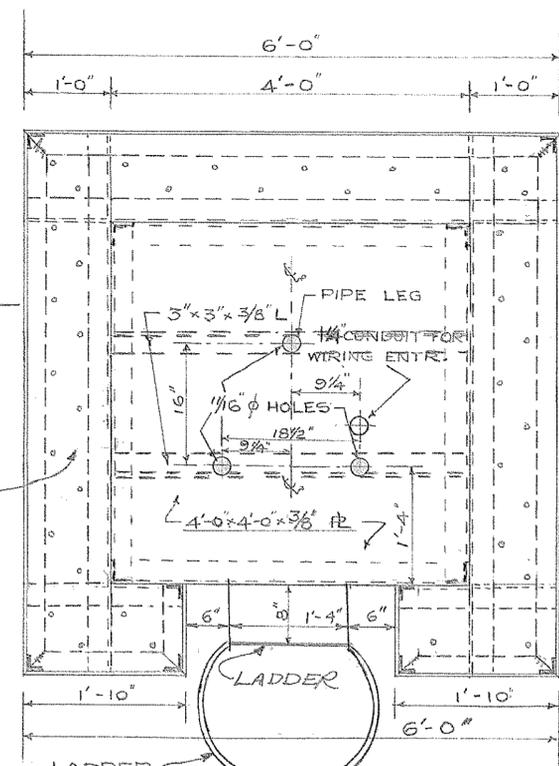
FRONT ELEV. SCALE: 1/4" = 1'-0"



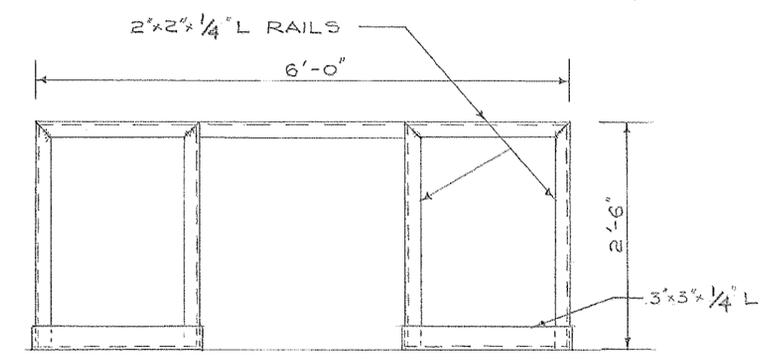
BASE FRAMING PLAN SCALE: 3/8" = 1'-0"



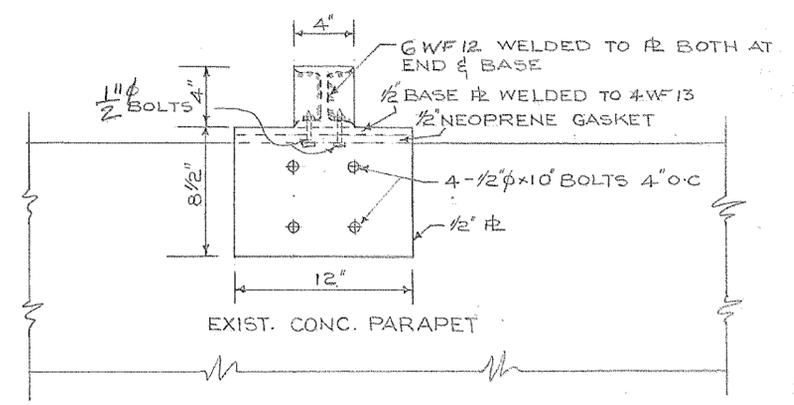
LOCATION PLAN SCALE: 1/4" = 1'-0"



PLATFORM PLAN SCALE: 3/4" = 1'-0"



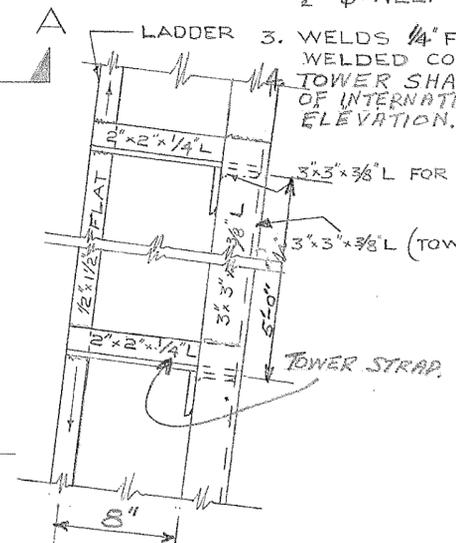
FRONT ELEV. OF RAILING SCALE: 3/4" = 1'-0"



ELEV. 'A' SCALE: 1/2" = 1'-0"

NOTES

1. ALL STEEL SHALL BE TYPE A-36
2. PLATFORM 3/8" STEEL PLATE WITH 1/2" φ WEEP HOLES
3. WELDS 1/4" FILLETS. STEEL TOWER TO BE WELDED CONSTRUCTION & ASSEMBLE IN THE SHOP. TOWER SHALL BE PAINTED ALTERNATE BANDS OF INTERNATIONAL ORANGE AND WHITE. SEE TOWER ELEVATION.

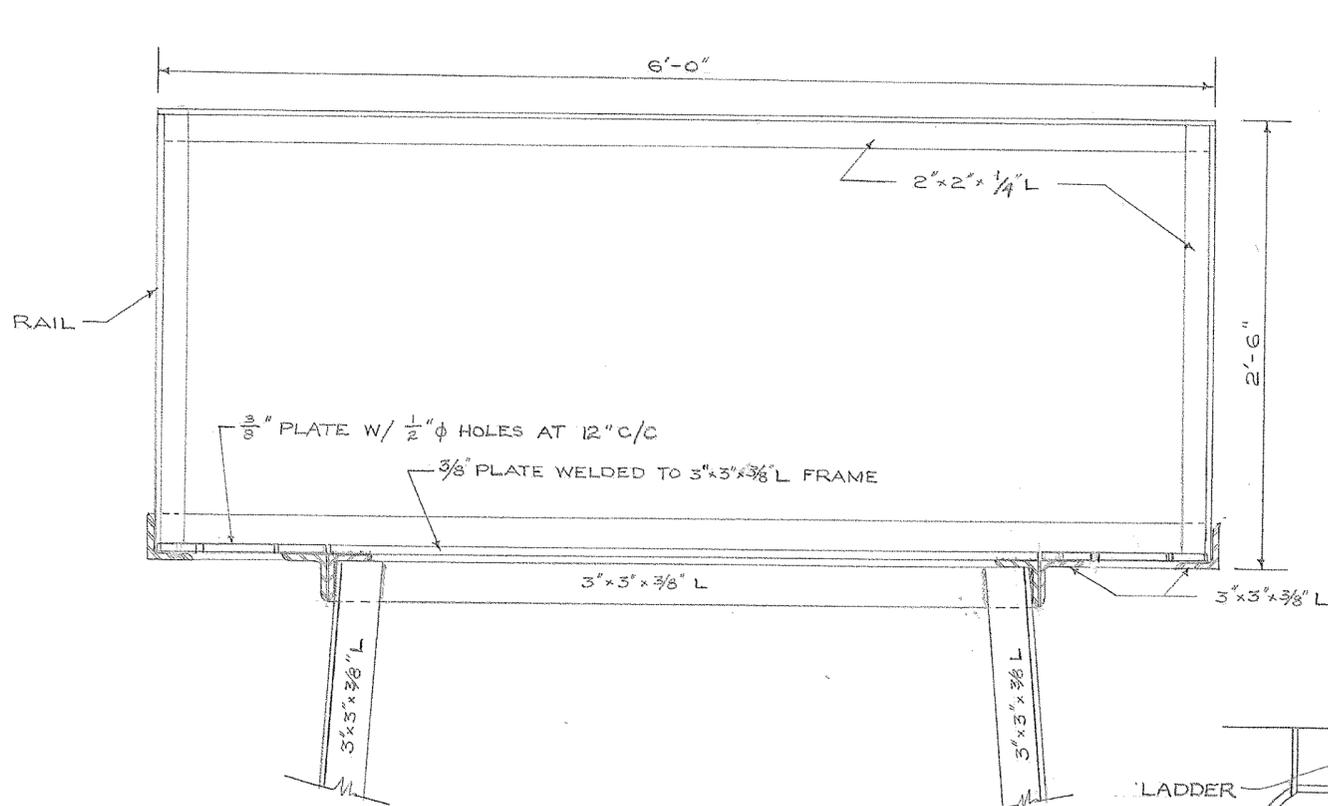


END ELEV. (LADDER) SCALE: 1/2" = 1'-0"

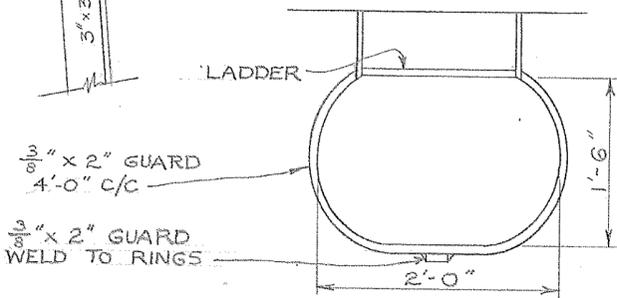
E.S.R. 2368/5

SYMBOL	DESCRIPTION	DATE	APPROVAL
REVISIONS			
PWC DRAWING NO.	DEPARTMENT OF THE NAVY	BUREAU OF YARDS & DOCKS	
3M-2047-0365A	PUBLIC WORKS CENTER GUANTANAMO BAY, CUBA		
DES	U.S. NAVAL AIR STATION		
TR	LEEWARD HANGAR BLDG. AV-600		
CHK	PROPOSED 20FT. STEEL TOWER		
SURV	PLANS & ELEV.		
IN CHARGE	APPROVED: <i>[Signature]</i> DATE: 3/17/65		
REVIEWED BY	COMMANDING OFFICER PUBLIC WORKS CENTER		
SATISFACTORY TO	SCALE AS SHOWN SPEC		
DATE: 12 March 1965	SHEET 1 OF 2		
	Y & D DRAWING NO.		

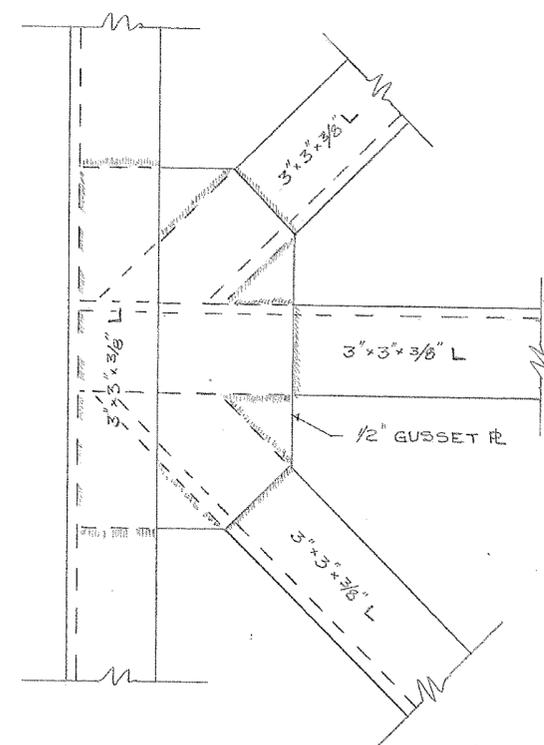
For Reference Only



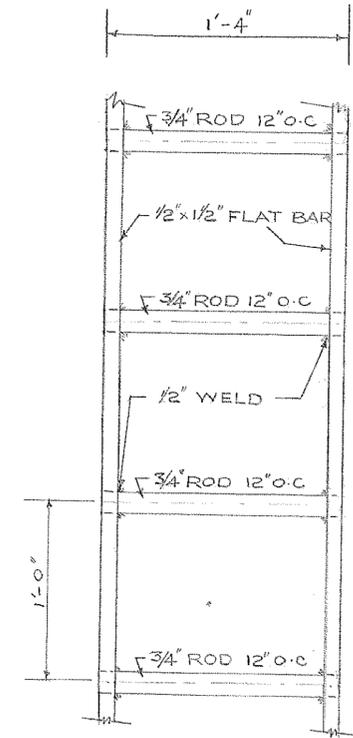
SECTION 'A-A'  
SCALE: 1/2"=1'-0"



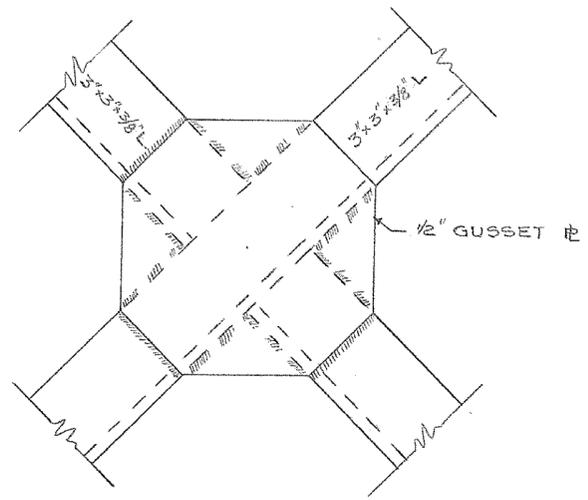
TYP. LADDER GUARD PLAN  
SCALE: 1"=1'-0"



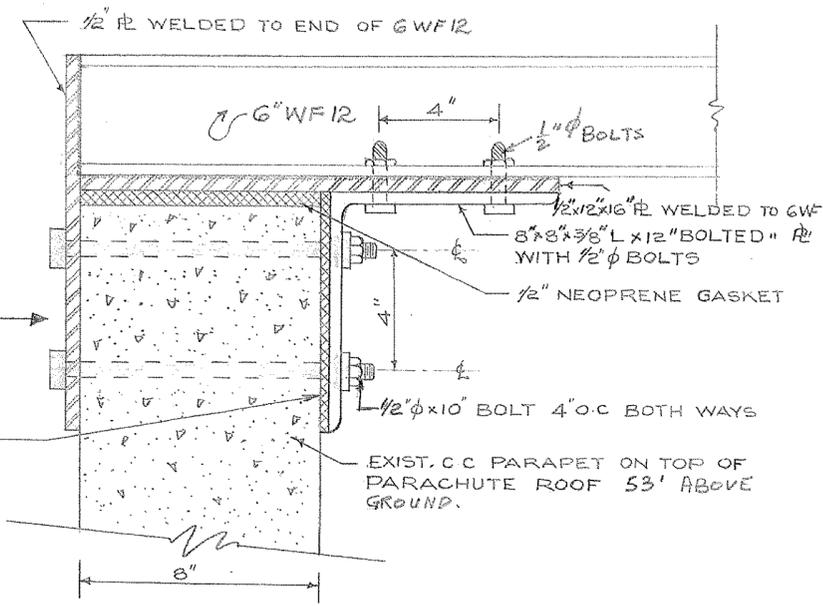
DETAIL 'B'  
SCALE: 3"=1'-0"



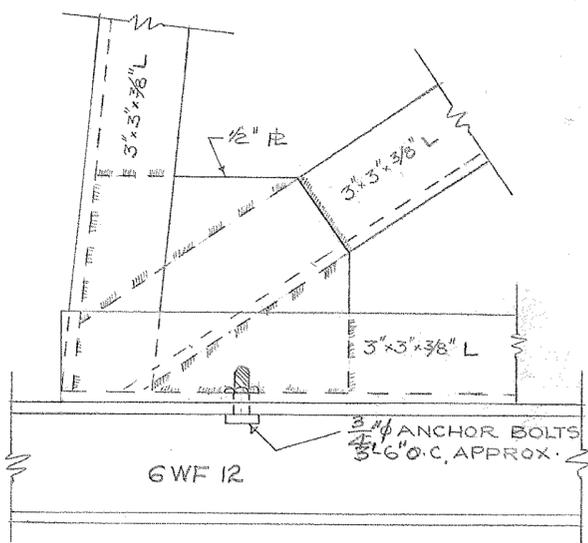
TYP. LADDER DETAIL  
NOT TO SCALE



DETAIL 'A'  
SCALE: 3"=1'-0"



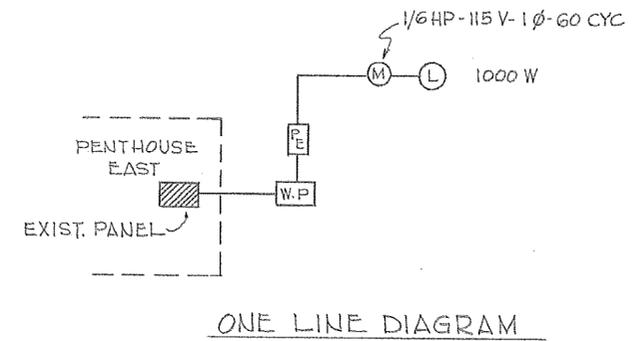
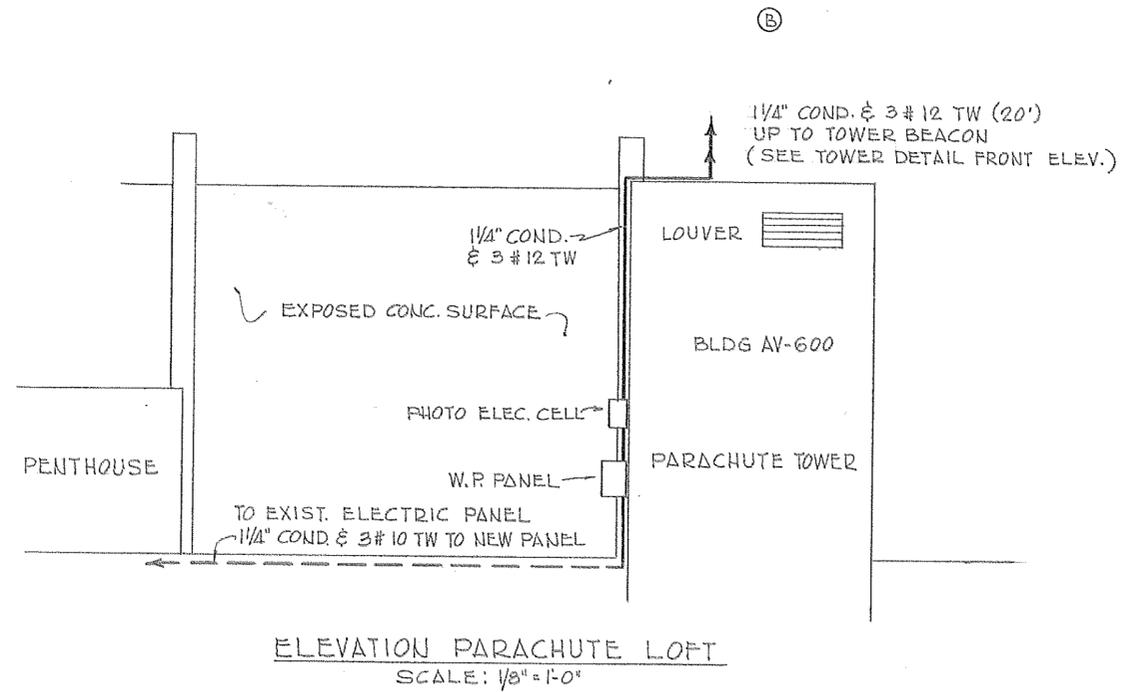
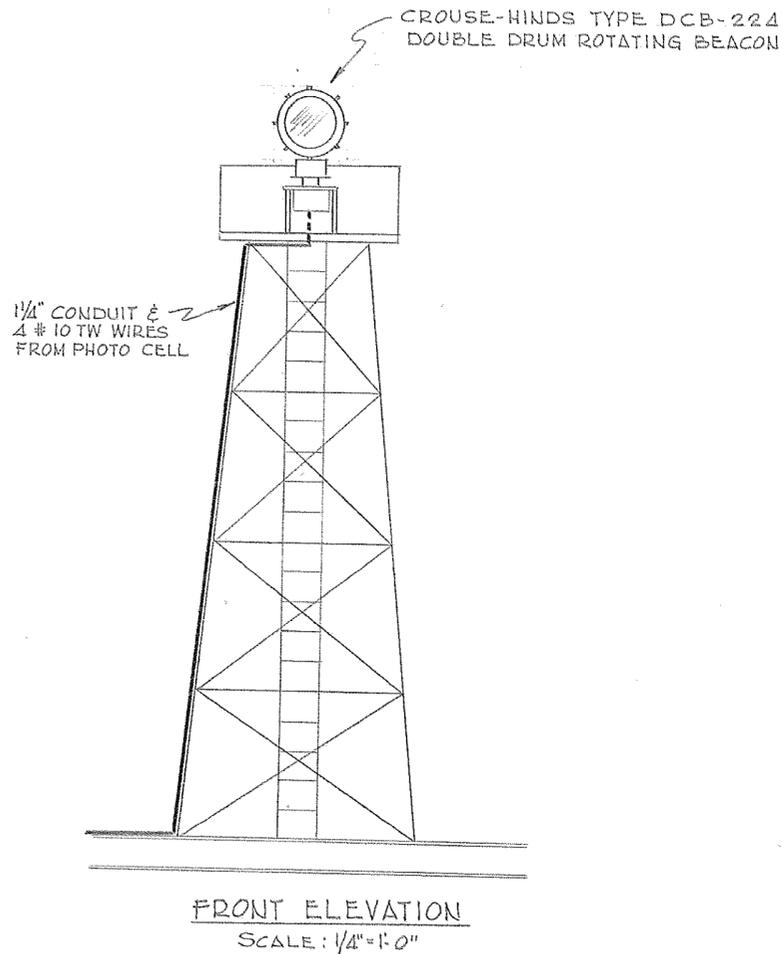
DETAIL 'C'  
SCALE: 3"=1'-0"



DETAIL 'D'  
SCALE: 3"=1'-0"  
ESR 2368/5

SYMBOL	DESCRIPTION	DATE	APPROVAL
REVISIONS			
PWC DRAWING NO. 8M-2047-0365-2		DEPARTMENT OF THE NAVY - BUREAU OF YARDS & DOCKS PUBLIC WORKS CENTER GUANTANAMO BAY, CUBA	
DESIGNED BY	U.S. NAVAL AIR STATION		
DRAWN BY	LEEWARD HANGAR BLDG. AV-600		
CHKD BY	PROPOSED 20FT. STEEL TOWER		
SUPV BY	SECTION & DETAILS		
IN CHARGE			
REVIEWED BY			
APPROVED			
SATISFACTORY TO: B. Ubu		COMMANING OFFICER PUBLIC WORKS CENTER	
DATE: 12 MARCH 1965		SCALE: SHOWN SPEC	
		SHEET 2 OF 2 NBY	
		Y & D DRAWING NO.	

For Reference Only



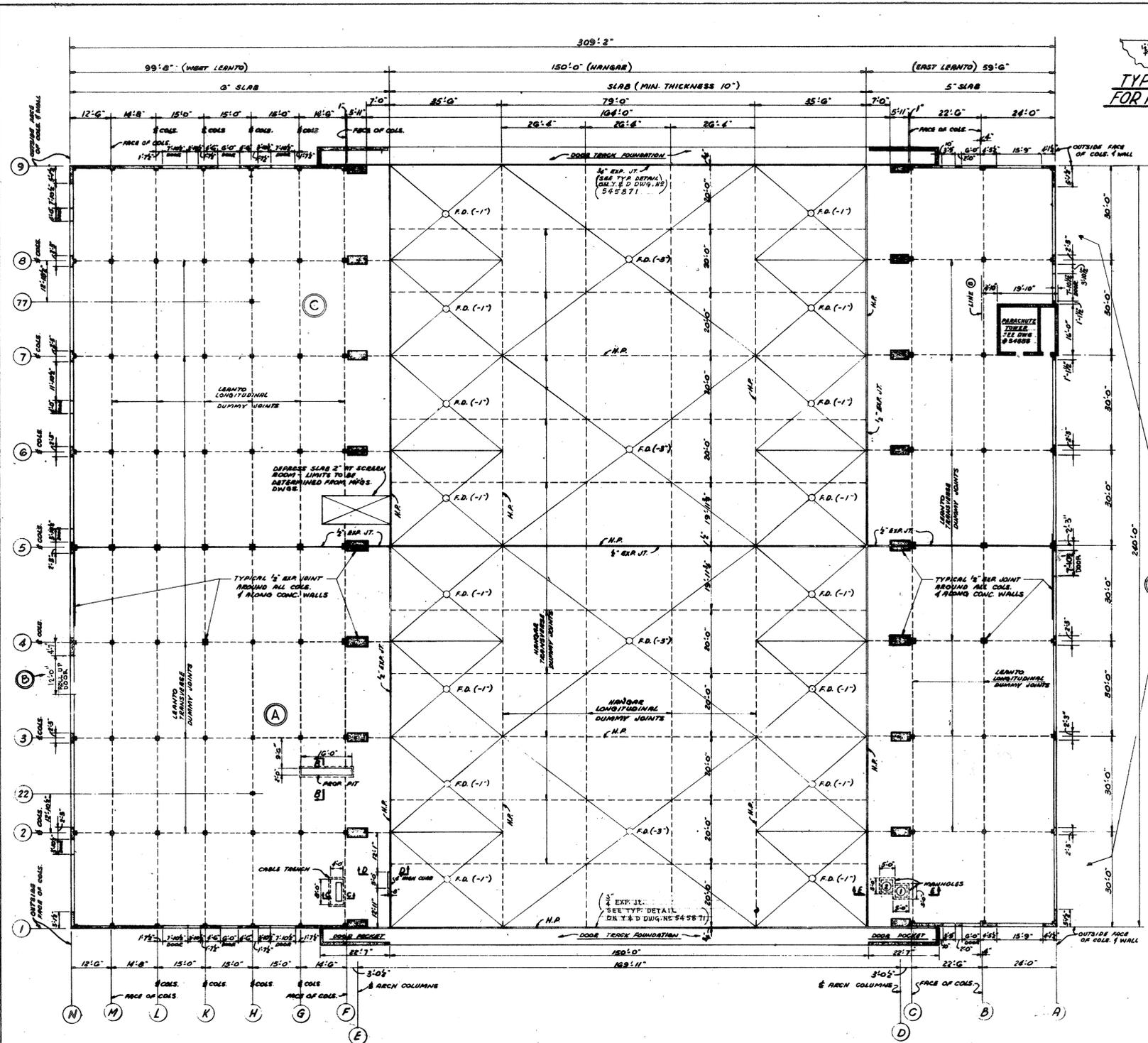
LEGEND-ELECTRICAL

- ▨ EXISTING ELECTRIC PANEL IN EAST PENTHOUSE
- NEW W.P. PANEL W/4-15 A BREAKERS-AVIATION TYPE CH # 44239
- NEW W.P. PHOTO CELL, 25 AMP RATING AVIATION TYPE # 44870
- ⓑ NEW ROTATING BEACON, CH DCB-224 (1000 W)
- Ⓛ LAMP 1000 WATT MOG-OL BIPIN # T-20
- Ⓜ MOTOR (IN BEACON) 1/6 HP-115 V-60 CYC.

For Reference Only

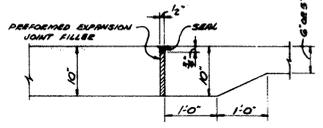
SYMBOL	DESCRIPTION	DATE	APPROVAL
REVISIONS			
P.W.C. DRAWING NO. 0M-2047-03653		DEPARTMENT OF THE NAVY BUREAU OF YARDS & DOCKS PUBLIC WORKS CENTER GUANTANAMO BAY, CUBA	
DES	DRWN <i>S. Sica</i>	U.S. NAVAL AIR STATION LEEWARD PT. BLDG AV-600	
TR	CHK <i>N.T.B.</i>	PROPOSED 20 FT STL. TOWER ROTATING BEACON-ELEC. DETAILS	
SUPV	IN CHARGE <i>J.L.M.</i>	REVIEWED BY	
APPROVED		DATE	
COMMANDING OFFICER PUBLIC WORKS CENTER			
SATISFACTORY TO <i>C.B. Wm</i>		SCALE AS NOTED	SPEC
DATE 12 MARCH 1965		SHEET 3 OF 3	Y & D DRAWING NO.

ESR 2368/5

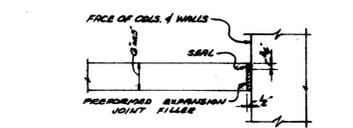


CONSTRUCTION JOINT DETAIL  
MAY BE SUBSTITUTED FOR DUMMY JOINTS WHERE NECESSARY  
SCALE 3/4" = 1'-0"

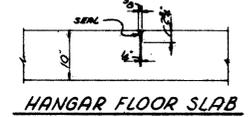
EXPANSION JOINT DETAIL FOR LEANTO FLOOR SLABS  
SCALE 3/4" = 1'-0"



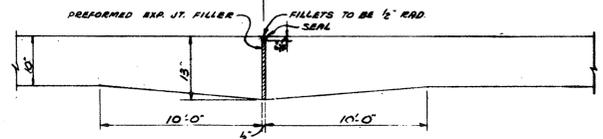
EXPANSION JOINT DETAIL (AT JUNCTURE OF HANGAR & LEANTO SLABS)  
SCALE 3/4" = 1'-0"



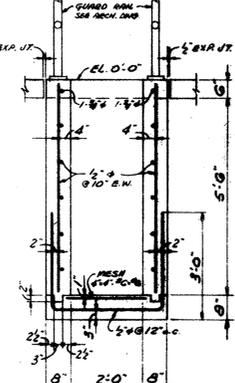
EXPANSION JOINT DETAIL (AT COLS. & WALLS)  
SCALE 3/4" = 1'-0"



HANGAR FLOOR SLAB LEANTO FLOOR SLABS  
DUMMY JOINT DETAILS  
SCALE 3/4" = 1'-0"



EXPANSION JOINT DETAIL FOR HANGAR FLOOR SLAB - ON LINE 5  
SCALE 3/4" = 1'-0"



SECTION 'B-B' (DROP PIT)  
SCALE 1/2" = 1'-0"

GROUND FLOOR PLAN  
SCALE 1/16" = 1'-0"  
HIGH POINT OF FIN. FL. DATUM - 0'-0"  
H.P. DESIGNATES HIGH POINT  
F.R. DESIGNATES FLOOR DRAIN



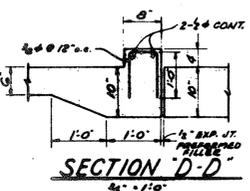
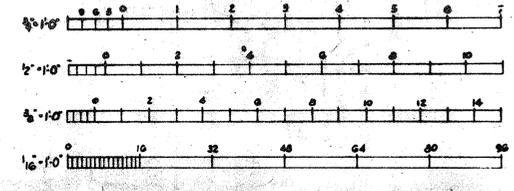
NOTES:

- 1-1" INTEGRAL FINISH ON HANGAR FLOOR & LEANTO FLOORS SHOWN ON THIS DWG. IS INCLUDED IN THICKNESS SHOWN.
- 2- CONCRETE SLAB ON FILL IS NOT REINFORCED.
- 3- FLOOR TO BE POURED IN ALTERNATE SECTIONS TO MINIMIZE EFFECTS OF SHRINKAGE.

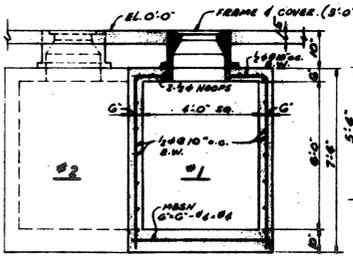
RECORD DRAWING

SHEET OF  
SEE LETTER NOY DATED

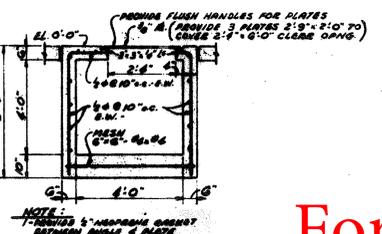
GRAPHIC SCALES



SECTION 'D-D'  
SCALE 3/4" = 1'-0"



SECTION 'E-E' (MANHOLE DETAIL)  
SCALE 3/4" = 1'-0"



SECTION 'C-C' (CABLE PENETRATION)  
SCALE 3/4" = 1'-0"

For Reference Only

NO.	DESCRIPTION	DATE	APP'D.
D	AS BUILT CONDITIONS	1955	
C	SAND BLASTING	3 NOV 1953	
B	GROUND FLOOR LEANTO REVERSED		
A	LOOK ON WEST WALL ON WEST	4 SEP 1953	
	CHANGED		
	SAND BLASTING		
	PIT ADDED		
A	BRIDGE PIT ELIMINATED	4 AUG 1953	BAK
I	REVISED Y & D DIM. NO TO 545869	32	MJM

DEPARTMENT OF THE NAVY  
BUREAU OF YARDS & DOCKS  
WASHINGTON, D. C.

ROBERTS & SCHAEFER CO.  
NEW YORK, N. Y.  
CONSULTING ENGINEERS

KARSHUIS WELER & GODCH  
WASHINGTON, D. C.  
MECHANICAL ENGINEERS

DRAWN BY E.C.H.  
CHECKED BY P.E.  
DESIGNED BY [Signature]  
R.O. IN C.C.  
APPROVED [Signature] DATE SEP 11 1952  
OFFICER IN CHARGE

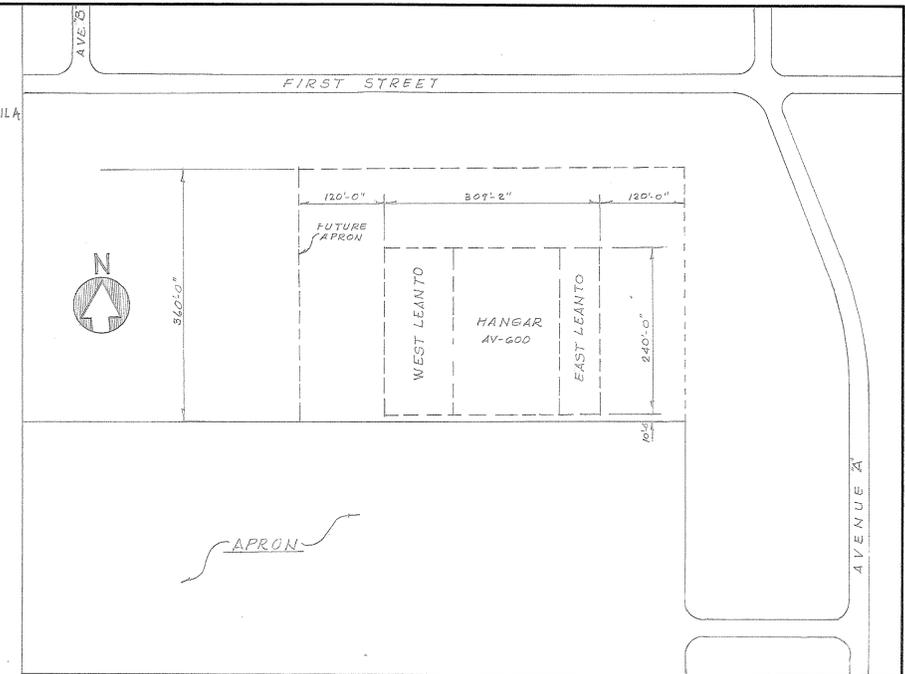
APPROVED FOR BUREAU OF YARDS & DOCKS  
SCALE AS NOTED  
STD. SPEC. NO. 58474

DATE SEP 22 1952  
SHEET 26 OF 61  
Y. & D. DRAWING NO. 54-5869

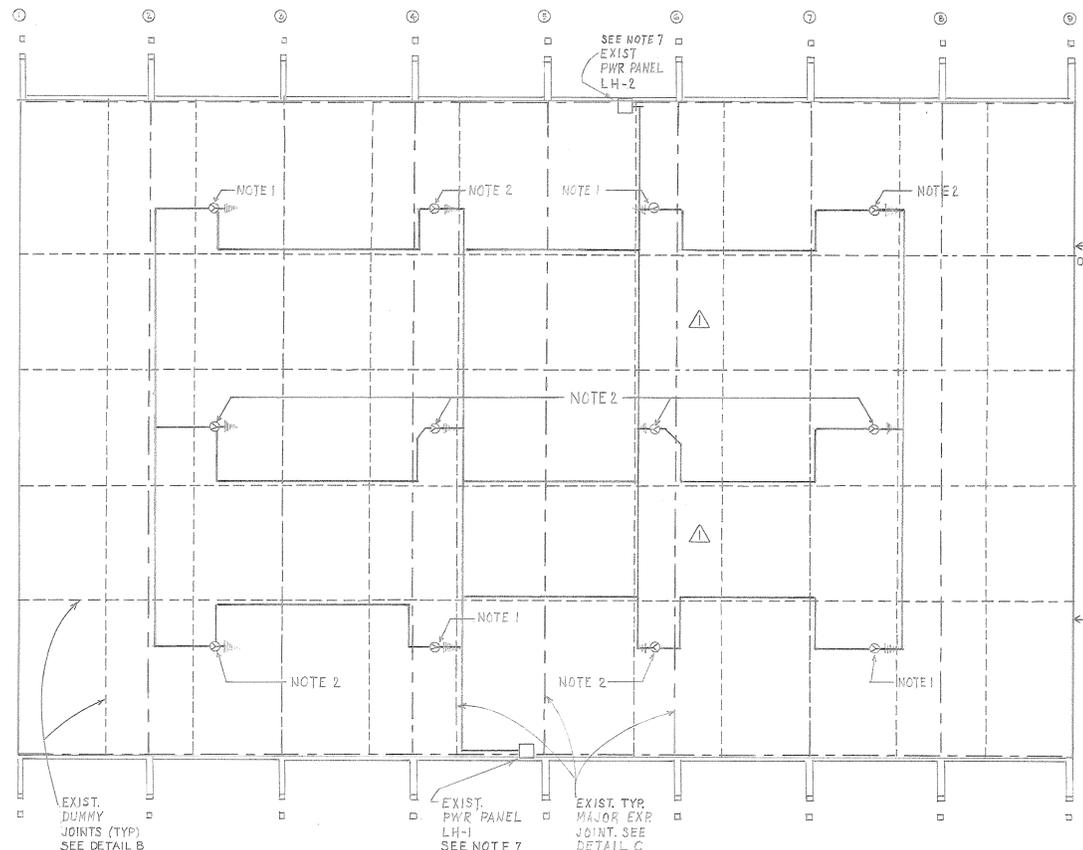
LAND PLANE HANGAR  
N. A. S. LEWARD POINT  
GUANTANAMO, CUBA  
FIRST FLOOR PLAN

**LEGEND**

- EXIST. 1/2" x 8' COPPER GROUND ROD WITH GROUND RECEPTACLE. SEE DETAIL A
- EXIST. DUMMY JOINT. SEE DETAIL B
- EXIST. EXPANSION JOINT. SEE DETAIL C
- AWG #4 BARE STRANDED COPPER BONDING WIRE GRID SYSTEM



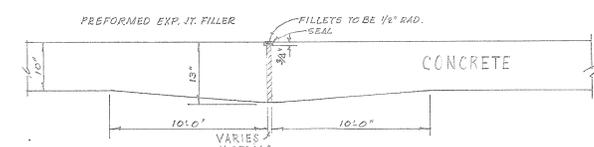
**PLOT PLAN**  
SCALE: 1" = 100'



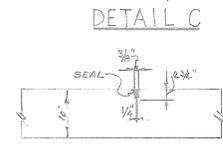
**HANGAR FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

**CONSTRUCTION NOTES**

1. Remove existing ground receptacles. Provide new 3/4" x 20' sectional threaded ground rod of copper clad steel and new Crouse Hinds GCR grounding receptacle (or equivalent) flush-mounted level with finished floor. Drive new ground rod adjacent to existing rod and bond rods together with ground clamps and brazed connections. Fill in excavation with epoxy concrete.
2. Remove existing ground receptacle. Provide new ground receptacle on existing 1/2" ground rod. Ground receptacle shall be equivalent to Thompson Lightning Protection, Inc., St. Paul, Minn., Model No. 632X, for 1/2" ground rod, set screw fastener type with side clamp for grid bonding, complete with cover. New ground receptacle shall be brazed to existing ground rod; clamp/wire connections shall be brazed and approved prior to filling in excavation with epoxy concrete.
3. Exercise care in removing ground receptacles so that ground rods are not damaged. Replacement rods required as a result of careless excavation shall be driven at no cost to the Government. Existing ground receptacles shall be turned over to ROTIC.
4. All connections between ground rods and ground receptacles shall be mechanically secure and additionally shall be brazed in accordance with MIL-B-7883. All connections between ground rods/receptacles and the bonding grid system shall be made with approved copper alloy clamps/connectors and, additionally, shall be brazed as above.
5. Joints in the bonding grid system other than those specified above shall be made by one of the following:
  - a. Welding Process-Exothermic type, joining all strands, and the completed connection or joint shall be equal or larger in size than the conductors joined.
  - b. Brazing Process-In accordance with MIL-B-7883
  - c. Crimping Process-Hydraulic crimping tool, 10,000 psi compression and system has stamp of approval for nuclear-grade connections. Example manufacturers are T & B and Burndy.
6. The routing of the grid bonding system has been arranged to minimize saw-cutting of the concrete floor. Saw cutting shall be as necessary to provide a slot of 1/2" wide by 1 1/4" deep to install the grid system. Where the slot coincides with expansion or dummy joints, install per Detail F. Otherwise, install per Detail C. Provide slack in the wire across expansion joints to permit as much movement as practical.
7. The conduit feeding the hangar power panels shall be effectively bonded to the hangar floor grounding system by couplings/clamps approved for the purpose.
8. Ground Resistance Test-The contractor shall be responsible for testing the new driven ground rods prior to connection of the new rods into the floor grounding system. The method used shall be the fall-of-potential method using a Megger Ground Tester. Existing driven ground rods may be used as the auxiliary rods required in performing the test. See Detail H. Test values shall be provided to ROTIC prior to installing ground receptacles on the new ground rods.
9. Floor Grounding System Test-The contractor shall be responsible for measuring the resistance of the completed floor grounding system using the method shown in Detail H with reference grounds to be driven off the north end of the hangar apron.

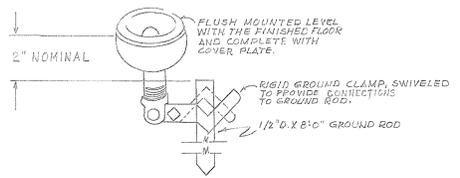


**EXPANSION JOINT DETAIL FOR HANGAR FLOOR SLAB**  
SCALE: 3/4" = 1'-0"



**HANGAR FLOOR SLAB DUMMY JOINT DETAILS**  
SCALE: 3/4" = 1'-0"

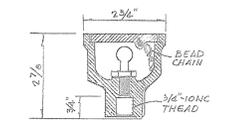
**DETAIL B**



**HANGAR STATIC EXIST. GROUND RECEPTACLE**  
**DETAIL A**

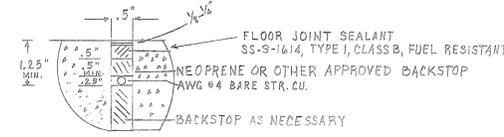


**GCR RECEPTACLES**

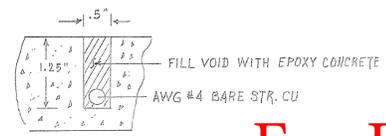


**NEW GROUND RECEPTACLE CROUSE HINDS**  
MODEL GCR - GROUNDING RECEPTACLE (OR EQUIVALENT)

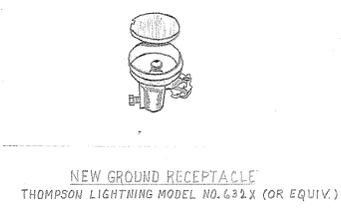
**DETAIL D**



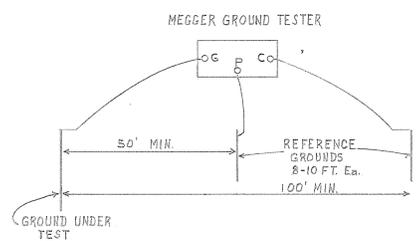
**DETAIL F**



**DETAIL G**



**DETAIL E**  
NOT TO SCALE



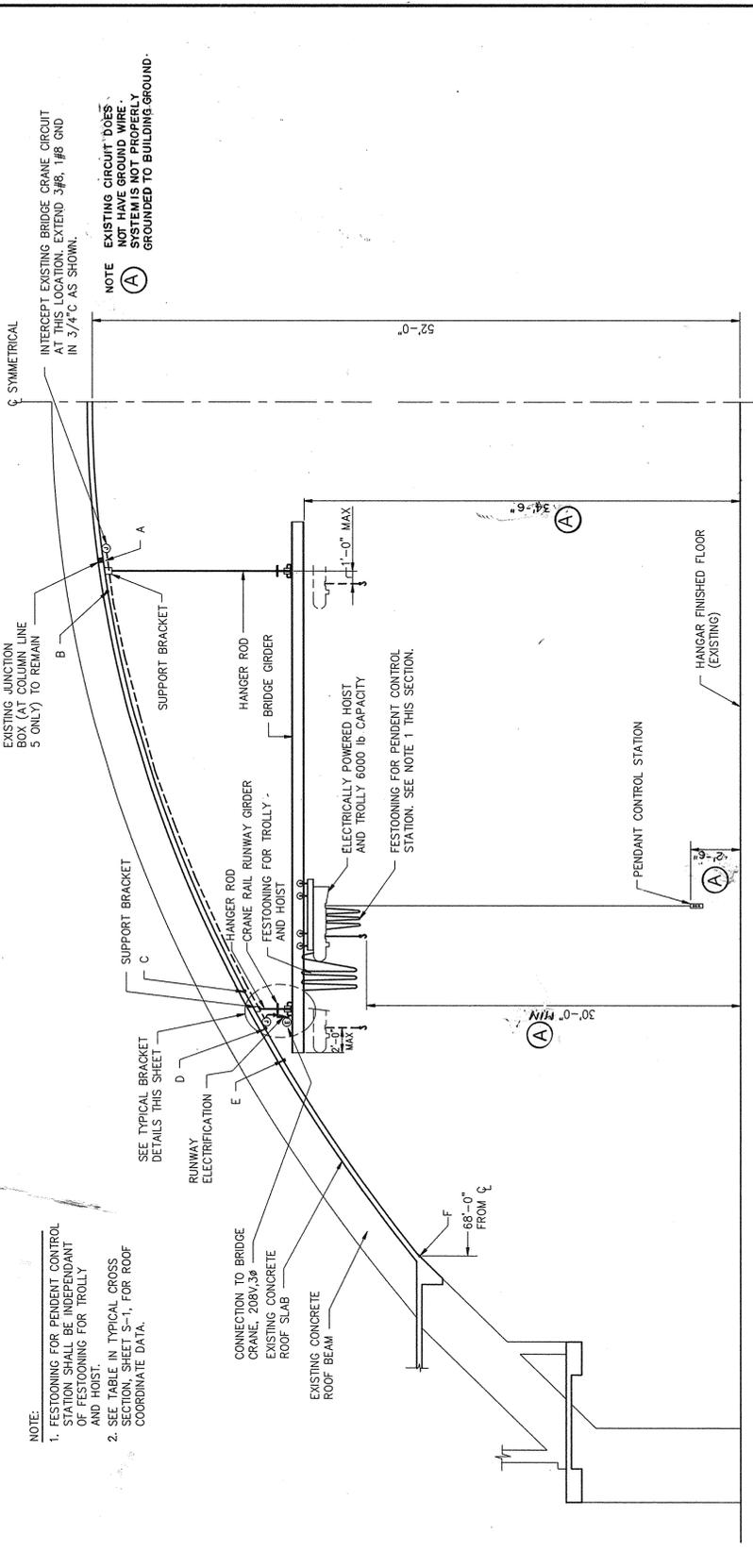
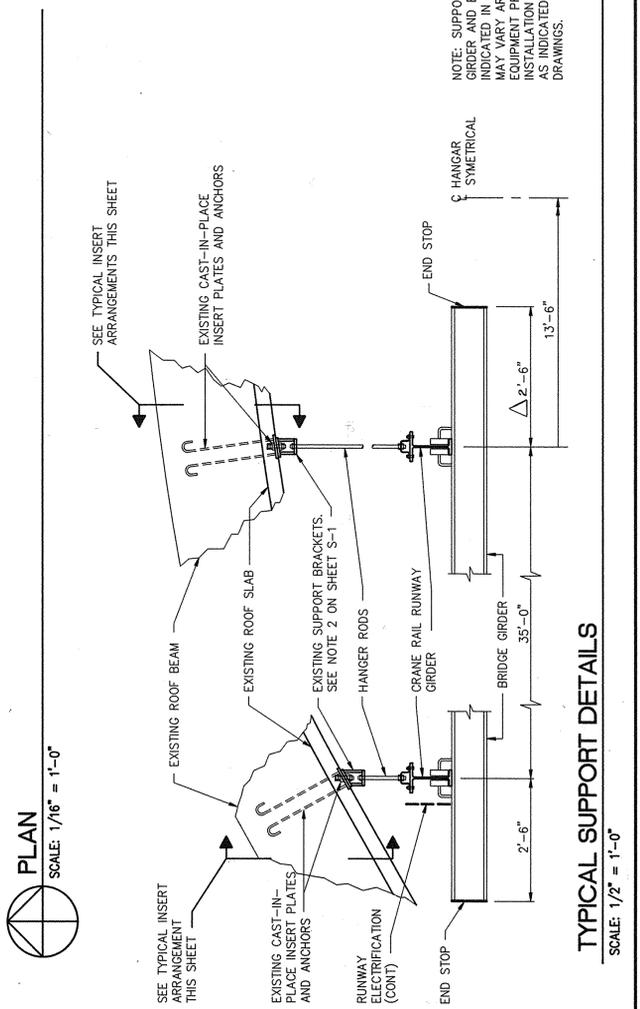
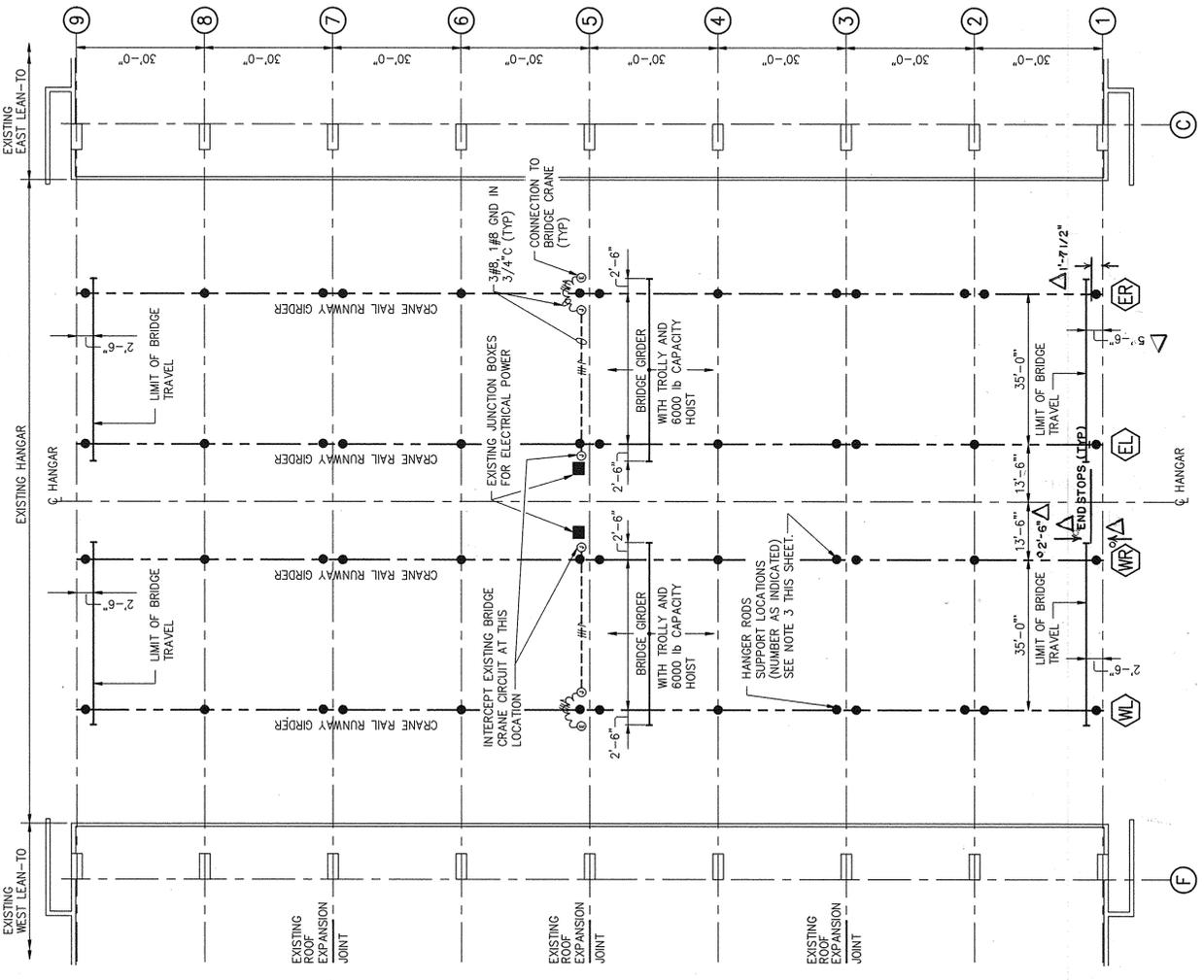
**DETAIL H**

**For Reference Only**

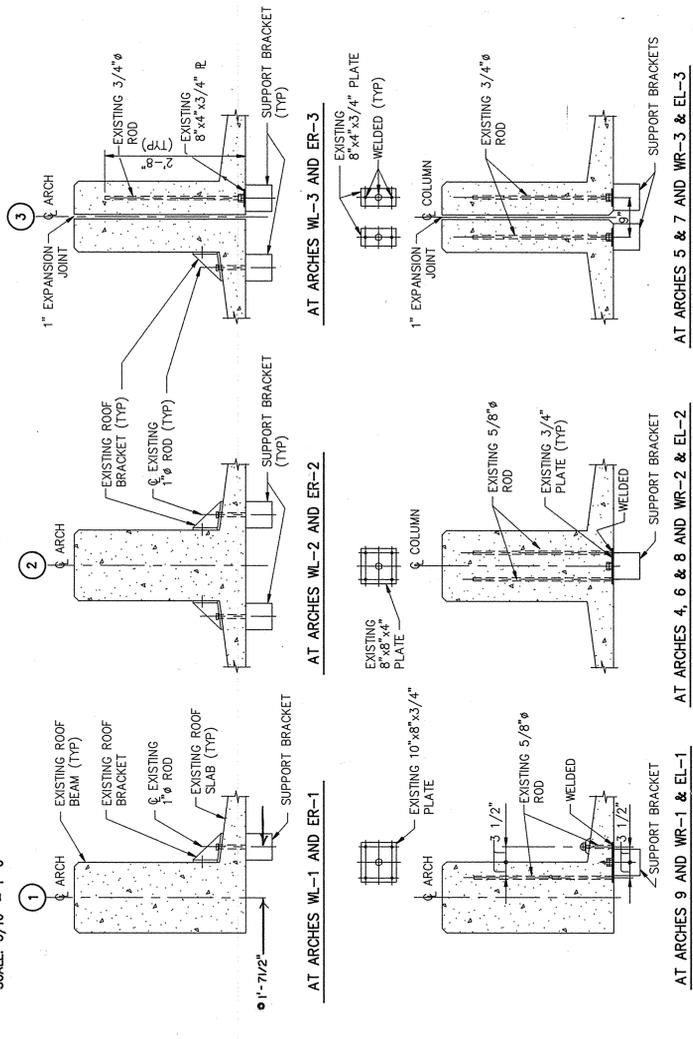
AS-BUILT NOV 80

SYMBOL	DESCRIPTION	REV BY	DATE	APPROVED
Δ	ADDED LINE SEGMENTS TO GRID	LRF	12 SEP 80	[Signature]
REVISIONS				
DES	L.R. FISK	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND		
DRWN	S.O. E. SOTO	PUBLIC WORKS DEPARTMENT		
CHK	[Signature]	U. S. NAVAL STATION GUANTANAMO BAY, CUBA		
SUPV	[Signature]	IMPROVEMENTS TO HANGAR FLOOR		
ENG OFF	[Signature]	GROUNDING SYSTEM AV-600		
SATISFACTORY TO [Signature]				
DATE	7/1/80	SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
APPROVED	[Signature]	F		4040134
PUBLIC WORKS OFFICER		SCALE: AS SHOWN		SHEET 1 OF 1





TYPICAL CROSS SECTION  
SCALE: 3/16" = 1'-0"



TYPICAL INSERT ARRANGEMENTS  
SCALE: 3/4" = 1'-0"

**NOTES:**

1. HOISTING SYSTEM INCLUDING BUT NOT LIMITED TO THE HOIST, TROLLEY, BRIDGE, TRACK AND SUPPORTING SYSTEM SHALL HAVE A MINIMUM RATED CAPACITY OF 6000 POUNDS.
2. HOISTING SYSTEM SHALL BE DESIGNED AND MANUFACTURED TO OPERATE IN AN OUTDOOR MARINE ENVIRONMENT SUBJECT TO SALT AIR CORROSION HAVING AN AVERAGE TEMPERATURE RANGE OF 70 TO 120 DEGREES F.
3. NUMBER, SIZE AND LOCATION OF HANGER ROD SUPPORT LOCATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTAL OF CRANE RAIL SHOP DRAWINGS.

**LEGEND**

- ① JUNCTION BOX
- CONDUIT RUN EXPOSED
- ⊕ EQUIPMENT CONNECTION
- ⊖ FLEXIBLE LIQUID TIGHT CONDUIT

**NOTE:**  
ONE HOISTING SYSTEM MUST BE INSTALLED AND FULLY TESTED PRIOR TO ANY WORK STARTING ON THE SECOND UNIT, ALSO AT NO TIME DURING CONSTRUCTION MUST THE HANGER BAY BE PUT INTO A CONDITION THAT WOULD WARRANT TOTAL SHUTDOWN OF USE. ONE SIDE MUST ALWAYS BE AVAILABLE FOR USE.

For Reference Only

ERO-107		S-2	
DES	D.A.C.	REVISIONS	
DRWN	F.M.N.	DEPARTMENT OF THE NAVY	
CHK	G.O.S.	PUBLIC WORKS DEPARTMENT	
ENGR	J. D. GLENN	U.S. NAVAL STATION	
DATE	7/20/90	HOISTING SYSTEMS REPLACEMENT	
		BUILDING AY600	
		PLAN, SECTION & DETAILS	
APPROVED	DATE	SIZE	CODE IDENT. NO.
J. D. GLENN	7/20/90	F	417346
			SCALE AS NOTED
			SHEET 3 OF 3

**GRAPHIC SCALES**

3/4" = 1'-0"

1/16" = 1'-0"

3/16" = 1'-0"

1/2" = 1'-0"

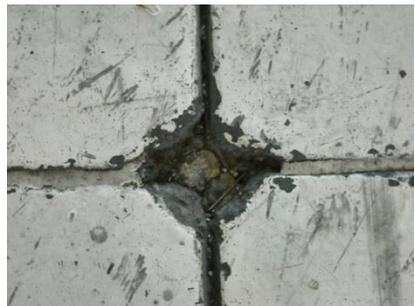
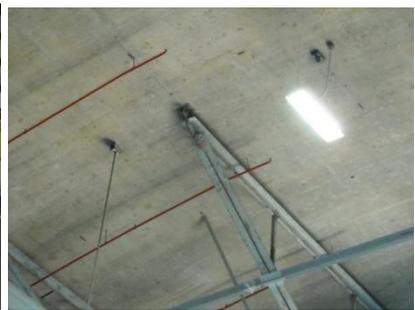
NOTE: SUPPORT ARRANGEMENT RUNWAY GIRDER AND BRIDGE GIRDER SHOWN ARE INDICATED IN SCHEMATIC. CONTRACTOR MAY VARY ARRANGEMENT TO SUIT EQUIPMENT PROVIDED. COMPLETED INSTALLATION SHALL REFLECT ARRANGEMENT AS INDICATED ON THE APPROVED SHOP DRAWINGS.

TYPICAL SUPPORT DETAILS  
SCALE: 1/2" = 1'-0"





# Hangar and Beacon Tower Photos









## **Building AV600 Asbestos & Lead Survey Summary**

Building AV600 was built in 1954 and has a floor area of 106,602 sq ft. The building is currently used as an aircraft hanger. Building construction is two story permanent concrete and steel structure, CMU and concrete siding rolled and coated sheet metal roofing and concrete-on slab-foundation.

The following suspect ACM was sampled for this report. Corrugated siding and concrete, both of which were found to be negative for asbestos. Based on the Harmon & Mactec surveys, building AV600 contains asbestos in various locations throughout the structure. See attached Harmon and Mactec surveys.

**All other suspected ACM not identified in this report should be assumed ACM until other wise proven through analytical testing.**

One painted surface on the exterior of AV600 was tested with a field test kit to determine the presence of lead. Results were positive (pink) for LBP. (See report and sample locations).

**All other painted surfaces not included in this report should be assumed to contain lead unless other wise proven through analytical testing.**

 2/10/03  
Kenny Hendl

PWD Environmental  
Environmental Protection Specialists



October 29, 2002

Mr. Daniel C. Dills  
Dills Ainscough Duff Architects  
1432 Great Neck Road, Suite 204  
Virginia Beach, Virginia 23454

**Subject: Report of Asbestos, and Lead Surveys  
Naval Air Station, Hangar AV 600  
Guantanamo Bay, Cuba  
MACTEC Project 20400-2-1211**

Dear Mr. Dills:

MACTEC Engineering and Consulting of Georgia, Inc (MACTEC) is pleased to present the results of our asbestos and lead surveys conducted at the Naval Air Station Hangar AV 600, Guantanamo Bay, Cuba. This work was performed pursuant to MACTEC's Proposal 20400-2-6022, dated August 8, 2002.

#### **BACKGROUND**

MACTEC conducted asbestos and lead surveys at Hangar AV 600, Guantanamo Bay, Cuba. Hangar AV 600, at Guantanamo Bay was constructed in 1954. We understand that the Hangar AV 600 is being considered for renovations. The results of the asbestos, and lead surveys are contained herein.

#### **ASBESTOS SURVEY**

MACTEC performed surveys for asbestos-containing materials (ACM) and lead-based paint (LBP) at Hangar AV 600 from October 1, 2002 to October 10, 2002. The surveys involved sampling materials suspected of containing asbestos or lead-based paint at Hangar AV 600, Guantanamo Bay, Cuba.

MACTEC Engineering and Consulting of Georgia, Inc.  
f/k/a Law Engineering and Environmental Services, Inc.  
1606 Ownby Lane, Richmond, Virginia 23220  
804-358-7111 - 804-358-6646 Fax

*Dills Ainscough Duff Architects  
Report of ACM and Lead Surveys  
MACTEC Project 20400-2-1211*

*October 29, 2002*

One hundred and forty-seven suspect ACM were collected for analysis. Samples of the suspect ACM materials were collected and placed into plastic reclosable bags, labeled, sealed and transported under chain-of-custody protocol to Schneider Laboratories (AIHA/ELLAP #100527, NVLAP #1150, NYELAP #11413, CAELAP #2078, NC #593, SC #93003) in Richmond, Virginia for analysis. Convenience sampling was used when possible, which consists of collecting samples at locations where building materials are exposed or damaged. The suspect ACM samples were analyzed for asbestos using the U.S. Environmental Protection Agency (EPA) Method No. EPA-600/R-93/116 method of polarized light microscopy (PLM) with dispersion staining. Laboratory Analysis Reports are attached to this report.

Ninety-nine of the one hundred and forty-seven bulk suspected ACM samples contained greater than one-percent asbestos. The ACMs consisted of thermal system insulation, bituminous exterior wall insulation, floor tiles and floor tile mastics. Based on these results, thermal system insulation, bituminous exterior wall insulation, floor tile and floor tile mastics are considered ACM. Tabulated results of the ACM analysis for Hangar AV 600 Guantanamo Bay, Cuba are included in Table I. The roof materials of the East Lean To of Hangar AV 600 were considered to be a homogenous surface of the roof materials on the hangar and the West Lean To.

Based on the confirmed presence of ACM, appropriate state and federal regulations must be followed for abatement of the material. The Environmental Protection Agency (EPA) National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulation (40 CFR 61 Subpart M, Section 61.145) requires that friable ACM and nonfriable ACM that may become friable (e.g., mastic), be properly removed prior to renovation and/or demolition activities.

Nonfriable materials typically do not release fibers when broken or damaged whereas friable materials are more likely to release fibers when broken, sawed or otherwise damaged during renovations or demolition.

Dills Ainscough Duff Architects  
 Report of ACM and Lead Surveys  
 MACTEC Project 30400-2-1211

October 29, 2002

**Table 1**  
**Summary of ACM Analytical Results**  
**Guantanamo Bay, Cuba**  
**Hangar AV 600**

Sample Number	Sample Type	Sample Location	Analytical Results of PLM Analysis
GBC-1A, 1B, 1C	12" X 12" Floor Tile Mastic	2 <sup>nd</sup> floor hall East	7% Chrysotile
GBC-2A, 2B, 2C	9" X 9" Floor Tile and Mastic	E203	6% Chrysotile-Tile 10% Chrysotile-Mastic
GBC-3A, 3B, 3C	9" X 9" Floor Tile	E234	4% Chrysotile
GBC-6A, 6B, 6C	Mastic under Carpet	E201	10% Chrysotile
GBC-10A, 10B, 10C	12" X 12" Floor Tile and Mastic	E221	5% Chrysotile-Tile 5% Chrysotile-Mastic
GBC-13A, 13B, 13C	12" X 12" Floor Tile and Mastic	W106	2% Chrysotile-Tile 3% Chrysotile-Mastic
GBC-14A, 14B, 14C	Pipe Insulation Wrap	E113	30% Chrysotile
GBC-15A, 15B, 15C	Pipe Insulation Wrap	1 <sup>st</sup> Hall East	30% Chrysotile
GBC-16A, 16B, 16C	9" X 9" Floor Tile	W107	12% Chrysotile
GBC-17A, 17B, 17C	9" X 9" Floor Tile	W107	4% Chrysotile
GBC-18A, 18B, 18C	9" X 9" Floor Tile	W106	4% Chrysotile
GBC-19A, 19B, 19C	Pipe Insulation Wrap	E109	30% Chrysotile
GBC-20A, 20B, 20C	Elbow Insulation	E113	43% Chrysotile
GBC-21A, 21B, 21C	9" X 9" Floor Tile and Mastic	W147	8% Chrysotile-Tile 10% Chrysotile-Mastic
GBC-22A, 22B, 22C, 22D, 22E, 22F	9" X 9" Floor Tile	W140	10% Chrysotile
GBC-23A, 23B, 23C	9" X 9" Floor Tile	W124	4% Chrysotile
GBC-26A, 26B, 26C	Sprayed Bituminous Insulation	Hangar Door Pockets	2% Chrysotile
GBC-27A, 27B, 27C	Sprayed Bituminous Insulation	Hangar Door Pockets	2% Chrysotile
GBC-30A, 30B, 30C	12" X 12" Floor Tile and Mastic	W106	5% Chrysotile
GBC-35A, 35B, 35C	12" X 12" Floor Tile and Mastic	W106	5% Chrysotile-Tile 15% Chrysotile-Mastic
GBC-36A, 36B, 36C	12" X 12" Floor Tile and Mastic	W229	4% Chrysotile-Tile 10% Chrysotile-Mastic
GBC-37A, 37B, 37C	12" X 12" Floor Tile and Mastic	W225	8% Chrysotile-Tile 3% Chrysotile-Mastic
GBC-38A, 38B, 38C	9" X 9" Floor Tile	W189	3% Chrysotile
GBC-39A, 39B, 39C	9" X 9" Floor Tile and Mastic	W136 and W143	4% Chrysotile-Tile 10% Chrysotile-Mastic
GBC-40A, 40B, 40C	9" X 9" Floor Tile and Mastic	W136 and W143	7% Chrysotile-Tile 10% Chrysotile-Mastic
GBC-41A, 41B, 41C	9" X 9" Floor Tile and Mastic	W231	10% Chrysotile-Tile 12% Chrysotile-Mastic
GBC-42A, 42B, 42C	9" X 9" Floor Tile and Mastic	W255	8% Chrysotile-Tile 12% Chrysotile-Mastic

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Sample Number	Sample Type	Sample Location	Analytical Results of PLM Analysis
GBC-43A, 43B, 43C	9" X 9" Floor Tile	W237	5% Chrysotile
GBC-44A, 44B, 44C	9" X 9" Floor Tile and Mastic	W203	10% Chrysotile-Tile 8% Chrysotile-Mastic
GBC-45A, 45B, 45C	9" X 9" Floor Tile and Mastic	W201	4% Chrysotile-Tile 5% Chrysotile-Mastic
GBC-46A, 46B, 46C	9" X 9" Floor Tile Mastic	W211	15% Chrysotile
GBC-47A, 47B, 47C	9" X 9" Floor Tile	W217	2% Chrysotile

### LEAD BASED PAINT SURVEY

MACTEC personnel collected 27 samples of suspect LBP from ceilings, walls and doors of the buildings. Convenience sampling was used when possible, which consists of collecting samples at locations where building materials are exposed or damaged. Samples of the suspect LBP materials were collected and placed into 50 milliliter (ml) centrifugal bottles, labeled, sealed and transported under chain-of-custody protocol to Schneider Laboratories (AIHA/ELLAP #100527, NVLAP #1150, NYELAP #11413, CAELAP #2078, NC #593, SC #93003) in Richmond, Virginia for analysis. The suspect LBP chip samples were analyzed by EPA Method 6010 for lead percent by weight. For work involving The Department of Housing and Urban Development (HUD), child-occupied building and other residential units, the Federal Lead Standard is 0.5% lead by weight. The requirements of the Occupational Safety and Health Administration (OSHA) Lead in Construction Standard, 29 CFR 1926.62 are invoked if any lead is present in the sample; there is no minimum concentration.

Using the HUD guideline, LBP was found at Hangar AV 600 on the metal baseboards of the East Lean To (black paint), the interior walls of rooms (E233, blue paint; W130, blue paint; W137, beige paint; W140, white paint; W229, yellow paint), the interior door of E221 (green paint) and the exterior of the north hangar door pocket. The remaining samples also contained lead, but were below the HUD guideline of 0.5% by weight limit. Paint containing any amount of lead, however, could result in exposure levels in excess of the published OSHA Permissible Exposure Limit if disturbed during renovation or demolition. Tabulated results of the lead analysis for Hangar AV 600 are included in Table 2.

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**Table 2**  
**Summary of Lead Paint Analytical Results**  
**Guantanamo Bay, Cuba**  
**Hangar AV 600**

Sample ID	Building Number	Sample Type	Pb (% by wt)
GBC6L	East	2 <sup>nd</sup> floor East/Baseboard/Metal/Black	1.231
GBC11L	East	E233/Wall/Concrete/Blue	1.252
GBC13L	East	E221/Door/Wood/Green	5.374
GBC18L	West	W137/Wall/Concrete/Beige	1.832
GBC20L	West	W140/Wall/Concrete/White	0.790
GBC22L	Hangar	North Hangar Door/Pocket/Concrete/Red	10.380
GBC25L	West	W130/Wall/Concrete/Blue	1.680
GBC26L	West	W229/Wall/Concrete/Yellow	0.518

## CONCLUSIONS

### Asbestos Containing Material (ACM)

ACM was identified in the thermal system insulation (TSI) of the East Lean To, 12" x 12" floor tile and mastic, 9" X 9" floor tile and mastic and the sprayed bituminous insulation on the exterior of the hangar door pockets. The Environmental Protection Agency (EPA) National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulation (40 CFR 61 Subpart M, Section 61.145) requires that friable ACM and non-friable ACM which may become friable be properly removed prior to renovation and/or demolition activities.

### Lead Based Paint (LBP)

LBP was identified in the black metallic baseboards of the East Lean To, on the walls of rooms E233, W130, W137, W140 and W229, on the exterior of the hangar door pockets and on the door of room E221. Paint containing lead at levels below the HUD guidelines was found throughout Hangar AV 600. This paint could result in exposure levels exceeding OSHA limits if disturbed.

## RECOMMENDATIONS

We recommend that the floor tile, floor tile mastic, bituminous hangar door pocket insulation and thermal system insulation ACM that will be affected by the proposed renovation be removed and

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disposed of by a qualified abatement contractor. Additionally, the contractor should follow all appropriate federal regulations that apply to such abatement.

Prior to any renovation or demolition activities that may disturb lead-based paint, worker safety should be addressed. The federal Occupational Safety and Health Administration (OSHA) has issued construction safety standards for lead-based paint disturbance (29 CFR 1926.62). If the disturbance of surfaces that contain lead-based paint is part of the demolition, a contractor with site-specific health and safety and disposal plans should address the removal of paints and/or their components.

#### **ASBESTOS ABATEMENT COST ESTIMATES**

##### **Naval Air Station, Hangar AV 600 East Lean To**

1) ACM Mastic below non-ACM floor tile – 3,500 square feet.	\$ 7875.00
2) ACM Floor tile and mastic – 1,800 square feet.	\$ 4500.00
3) ACM Floor tile – 360 linear feet.	\$810.00
4) ACM Mastic below carpet – 900 linear feet.	\$ 2025.00
5) ACM TSI 6" pipe insulation – 1,170 linear feet.	\$17550.00

##### **Naval Air Station, Hangar AV 600 West Lean To**

1) ACM Mastic below non-ACM floor tile – 100 square feet.	\$225.00
2) ACM Floor tile and mastic – 5,500 square feet.	\$13750.00
3) ACM Floor tile – 5,800 linear feet.	\$11600.00

##### **Naval Air Station, Hangar AV 600**

1) ACM hangar door pocket insulation – 5,000 square feet.	\$12500.00
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#### **QUALIFICATIONS**

This report summarizes our evaluation of the conditions observed at Hangar AV 600 Guantanamo Bay identified in LAW Proposal 20400-1-6022, dated August 8, 2002. Our findings are based on observations at the site and analyses of the samples obtained at the time of the survey. Additional

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hazardous materials may exist (undetected) in other portions of the facility due to inaccessibility, an undetectable change in materials, or exclusion from our scope of services. Any condition discovered which deviates from the data contained in this report should be presented to us for evaluation.

MACTEC appreciates the opportunity to be of service to you on this project. We welcome the opportunity to discuss any of the results contained in this report at your convenience. MACTEC can also offer consultation services to assist you in developing plans and selecting qualified contractors for abatement services. Please contact us if you have any questions or if we may be of further service.

Sincerely,

**MACTEC ENGINEERING AND CONSULTING OF GEORGIA, INC.**

Michael Hays  
Senior Geologist  
VA Asbestos Inspector # 3303 002600  
VA Lead Inspector Technician # 3355 000267

Dan D. Blair, Jr.  
Principal

ALVARO SOTO P.O.BOX 87 FPO, AE 09589 FAX# 011539972174

**NAVAL HOSPITAL**

# Fax

<b>To:</b>	KEENY, HENDL PWD	<b>From:</b>	HM1 SOTO, PREVENTIVE MEDICINE
<b>Fax:</b>	4011	<b>Pages:</b>	2
<b>TEL:</b>	4662 EXT 216	<b>Date:</b>	22 January, 2003
<b>Re:</b>	ASBESTOS ANALYSIS	<b>CC:</b>	Telephone: 7-2990

**Urgent**     **For Review**     **Please Comment**     **Please Reply**     **Please Recycle**

● **Comments:** .

1. The following samples of material were taken 01-21-03 from project AV600 (AV600-1A, AV600-2A) to be tested for the presence of asbestos fibers.

2. The following laboratory procedures and determination method was utilized:

(a) A dissection stereo microscope was used to examine the samples and extract fibers for analysis.

(b) Polarized Light Microscopy (PLM) was used to identify the fiber samples.

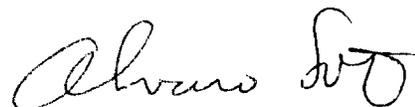
3. **NON ASBESTOS** containing materials were present in the collected samples :

For further information or clarification, please call 7-2990

HM1 SOTO

E-mail: asoto@gtmo.med.navy.mil

HM1 SOTO, ALVARO (fax: 0115399-72174)





# ASBESTOS AND LEAD SURVEY FOR BUILDING AV600

Inspection conducted on: 1/21/03

Inspection time: 900

Inspected by: Kenny Hendl

The following samples were collected:

Sample Number	Location	Material	Date collected	Analyte	Results
	AV600-1A	CORRUGATED SIDING	1/21/03	ASBESTOS	NAD
	AV600-2A	CONCRETE	1/21/03	ASBESTOS	NAD

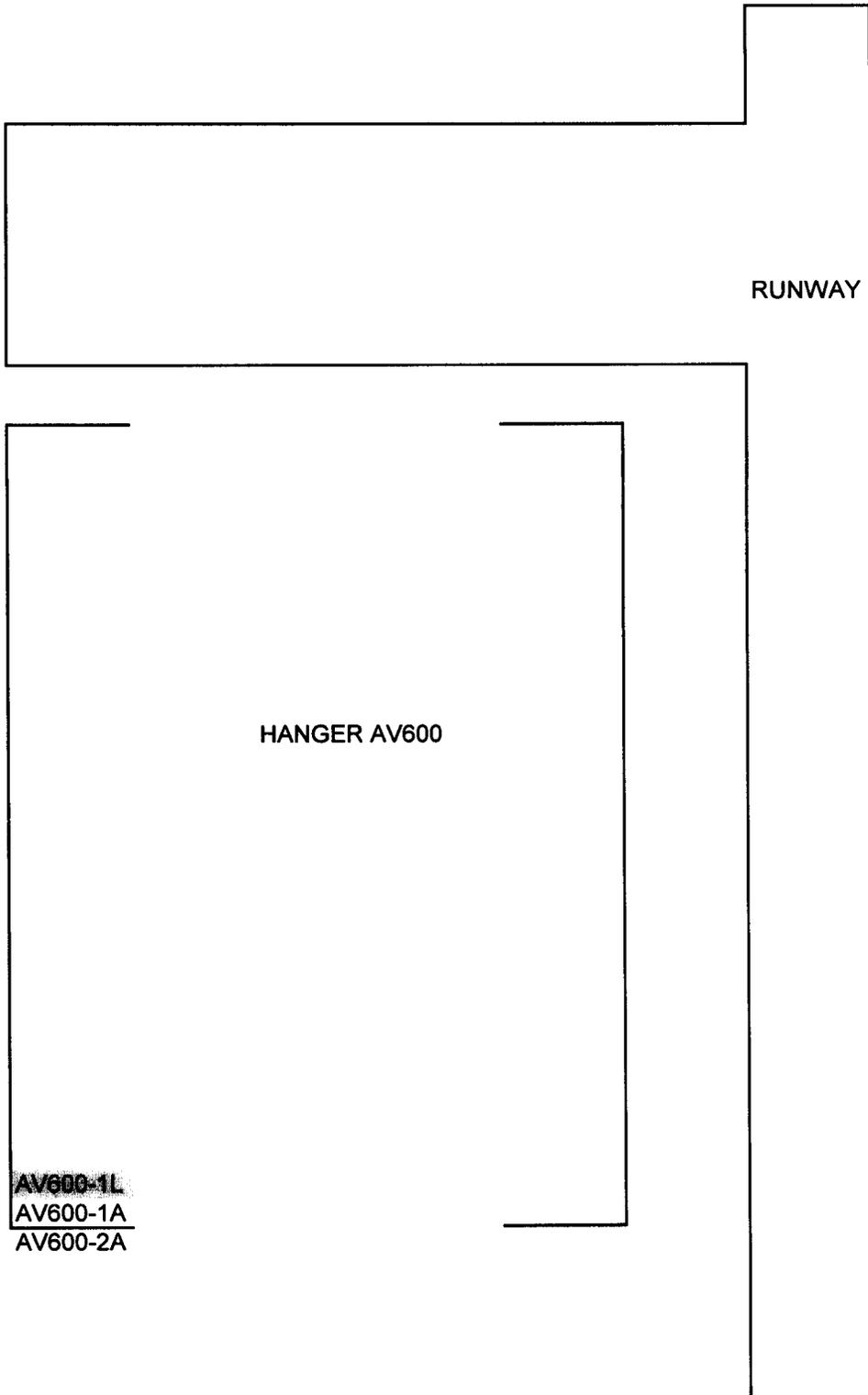
*All other suspected ACM not identified in this report should be assumed ACM until proven otherwise through analytical testing prior to disturbing.*

Paint in the following areas was tested with a field kit to determine the presence of lead:

Location	Date Tested	Color	Results
AV600-1L	1/21/03	PINK	POSITIVE

*All other painted surfaces not included in this report should be assumed to contain lead unless otherwise proven by analytical testing prior to disturbing.*

**ASBESTOS AND LEAD SAMPLE LOCATIONS FOR AV600**



HANGER AV600

RUNWAY

AV600-1L  
AV600-1A  
AV600-2A

3.2.74 Building AV 528

Building 528 is an air cargo building built in 1948 and has a floor area of 5,400 square feet. Building construction is steel frame structure, metal siding, slab-on-grade foundation, and metal roof.

Floor paint was sampled and found to contain less than one percent asbestos. This low percentage does not require a response according to EPA regulations. However, the employee or worker must be protected as required by OSHA regulation 29 CFR 1926.58.

Wallboard, ceiling board, and window caulk were sampled and found not to contain asbestos.

3.2.75 Building AV 530

Building AV 530 was built in 1950 and has a floor area of 10,979 square feet. The building is currently being used as a civilian barracks. Building construction is slab-on-grade foundation, wood frame structure, metal siding, and pitched shingled roof.

Asphalt roof shingles were not sampled to protect the integrity of the roof. The shingles are suspect material and should be assumed ACM until testing determines otherwise. HARMON recommends all ACM be placed under an O&M plan until renovation or demolition.

Wallboard, ceiling tile, ceiling board, and floor tile were sampled and found not to be ACM.

3.2.76 Building AV 600

Building AV 600 was built in 1954 and has a floor area of 106,602 square feet. The building is currently used as an aircraft hangar. Building construction is two-level permanent concrete and steel structure, CMU and concrete siding, rolled and coated sheet metal roofing, and concrete slab-on-grade foundation.

Ceiling tile (1'x1'), steam pipe insulation, and steam pipe fitting insulation were sampled and found to contain asbestos. All are friable and damaged. HARMON recommends these materials be isolated and removed as soon

as possible. Mastic and sink undercoating were sampled and found to contain asbestos. The materials are nonfriable. HARMON recommends these materials be placed under an O&M plan until removal.

In order to protect their integrity, sampling of the following materials was deferred: wallboard, floor tile, rolled roofing, roof sealant, roof coating, and vinyl threshold. All are considered suspect materials and should be assumed ACM until testing determines otherwise. HARMON recommends all ACM be placed under an O&M plan until renovation or demolition.

The following materials were sampled and found not to contain asbestos: 2'x4' ceiling tile, vinyl base, carpet glue, tar coating, vinyl step tread, A/C unit sealant, gypsum board, wallboard, floor paint, vinyl base, and 1'x1' ceiling tile.

### **3.2.77 Building AV 601**

Building AV 601 was built in 1966 and has a floor area of 6,344 square feet. The building is used as a power plant. Building construction is steel frame structure, metal siding, slab-on-grade foundation, and metal roof.

Window caulk and floor paint were sampled and found to contain less than one percent asbestos. This low percentage does not require a response according to EPA regulations. However, the employee or worker must be protected as required by OSHA regulation 29 CFR 1926.58.

Floor tile was not sampled to protect its integrity. The tile is a suspect material and should be assumed ACM until testing determines otherwise. HARMON recommends all ACM be placed under an O&M plan until renovation or demolition.

Ceiling board and wallboard were sampled and found not to contain asbestos.

### **3.2.78 Building AV 620**

Building AV 620 was built in 1953 and has a floor area of 13,320 square feet. The building is currently used as a BEQ. Building construction is slab-on-grade foundation, permanent concrete structure, and rolled roofing.