



**Alabama State Port Authority**  
**Requisition and Proposal**

**Project Name** MMBP Pier Electrical Refurbishment – Switchgear & Transformer Refurb.  
 Project No. 11173 Task No. 02

**To:** Prospective Bidders

**Date:** May 2023

Please procure the following and deliver to the address below:

<p><u>Delivery of Proposal:</u>          Alabama State Port Authority (ASPA)          Location identified below in Note #1</p>	<p><u>Delivery of Performance of Work:</u>          Alabama State Port Authority          Middle Bay Port Facility          Lake Rd S #7611          Mobile, AL 36605</p>
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<b>Description of Work</b>
<p>This Requisition solicits proposals for the inspection and refurbishment/replacement of electrical high voltage and medium voltage switchgear and transformers at the ASPA Middle Bay Port pier electrical supply as specified in the attached scope of work. The work shall include, but is not limited to, performing cleaning, testing and maintenance on the main 15kV switchgear and switches, high voltage supply lines, 12.47kV/480V transformers and 480V MCCs. Work will be in accordance with the requirements stated herein; attached Construction Specifications, reference documents and drawings, Insurance Requirements; and applicable State of Alabama Laws.</p> <p>The work consists principally of providing bonds, labor, materials, equipment, insurance, and supervision necessary for refurbishment of the electrical equipment as indicated in the contract documents. It is the Contractor’s responsibility to field verify all dimensions and site conditions essential for the successful completion of the work. The Contractor shall not be entitled to any additional compensation for any work or expense resulting from the neglect of verifying all existing site conditions.</p> <p>A Pre-Bid Meeting is Scheduled for 10:00 A.M. on Tuesday, May 23, 2023 at the Middle Bay Port Administration offices followed by a site visit. Attendance at the pre-bid meeting is MANDATORY to submit a bid.</p> <p>The services proposed must be provided by a Contractor having a minimum of ten years of experience in the service, maintenance and refurbishment of similar high voltage and medium voltage electrical equipment including transformers, switchgear, etc.</p> <p>All Contractors submitting bids are to carefully examine the site of the proposed work and thoroughly review the contract requirements prior to submission of a bid proposal. Each Bidder shall satisfy oneself as to the character, quality, and quantities of work to be performed, and as to the requirements of the proposed contract. The submission of a proposal shall be proof that the bidding Contractor has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the proposed Contract. The bidding Contractor must hold a current license from the State Licensing Board for General Contractors, Montgomery, AL, with the classification being Specialty Construction, (E) Electrical.</p> <p>The work performed under this contract shall not commence until the Contractor has submitted a Performance Bond, Labor &amp; Material Bond, and Certificate of Insurance in an acceptable form.</p>



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Performance Bond and Labor & Material Bonds shall be in an amount equal to 100% of the contract price; Certificate of Insurance shall be as per the attached requirements and countersigned by a licensed resident agent in the State of Alabama.

The Contractor shall comply with all Federal and State laws, local ordinances and regulations, and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work.

The Contractor shall place a competent superintendent on the Project who shall have experience in the work being performed under the Contract. The assigned superintendent shall have responsibility for the day-to-day operations of the work and shall remain on the Project site while the work under the Contract is being performed.

The Contractor will agree to comply with the safety rules, standards and regulations of the Federal Occupational Safety and Health Administration (OSHA) applicable to each of its operations, and to those established and recommended safety standards inherent in the industry; and to comply with U.S. Coast Guard regulations applicable to waterfront facilities and the policies of the Alabama State Port Authority while occupying any property of the Alabama State Port Authority.

The Middle Bay Port is a full-time operating facility; operating 24 hours a day, 365 days a year, including nights, weekends and holidays. The successful Contractor will be required to familiarize itself with and conform to all Port safety requirements and procedures.

The Contractor will be required to complete the work under the Contract within 120 calendar days after receipt of a "Notice to Proceed". Work will start within 20 calendar days after receipt of notice to proceed. The work will have to be scheduled and performed in a manner that will not interfere with the operations of the facility ongoing in the immediate and adjacent areas.

Time is an essential element in the contract. As the prosecution of the work will inconvenience the tenant and interfere with business, it is important that the work be pressed vigorously to completion. Also, the cost to the Alabama State Port Authority of the administration of the contract, supervision, inspection and engineering will be increased as the time occupied in the work is lengthened. Therefore, exclusive of Sundays and national holidays, for each day that the work remains incomplete after the time specified, an amount of \$200.00 shall be paid by the contractor to the Alabama State Port Authority as liquidated damages for the loss sustained by the State because of failure of the contractor to complete the work within the specified time.

### **IMPORTANT NOTICE TO BIDDERS REGARDING ACCESS TO ASPA RESTRICTED FACILITIES:**

The ASPA Access Policy is provided on the ASPA website at the link below:

<https://www.alports.com/port-access/>

ALL persons working on this project are REQUIRED to have valid access credentials to include: 1) A TWIC Card, 2) ASPA Badge, and 3) ASPA Vehicle Decal.



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### **IMPORTANT NOTICE TO BIDDERS REGARDING EMPLOYMENT PRACTICES:**

Effective October 1, 2011, the Beason-Hammon Alabama Taxpayer and Citizen Protection Act (“the Act”) requires that any business entity contracting with or providing any grant or incentives to the state, including the Alabama State Port Authority, certify compliance with the Act. All Bidders must certify such compliance by executing the enclosed Certificate of Compliance and returning it to the Alabama State Port Authority with your bid package along with proof of the contractor’s enrollment in the e-verify program. The following E-Verify website link is provided for convenience:

[http://www.dhs.gov/files/programs/gc\\_1185221678150.shtm](http://www.dhs.gov/files/programs/gc_1185221678150.shtm).



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<b>Middle Bay Port Switchgear and Transformer Refurbishment Contractor's Proposal</b>				
The Contractor hereby agrees to perform the specified work for the prices outlined in the following schedule. All items listed shall be performed in accordance with this requisition and proposal and all referenced documents.				
Description	Est Qty	UOM	Unit Price	Value
1.a Testing and maintenance of two 15kV Switchgear Incoming Line Sections in the Primary Switchgear Building.	1	EA	LS	\$ _____
1.b Testing and maintenance of main 15kV switchgear Bus Tie Breaker in the Primary Switchgear Building.	1	EA	LS	\$ _____
1.c Testing and maintenance of three main 15kV switchgear in Primary Switchgear Building.	1	EA	LS	\$ _____
2. Replacement Siemens Lift Truck for 15kV breakers	1	EA	LS	\$ _____
3. Perform megger test on the four 15kV cables	1	EA	LS	\$ _____
4. Perform testing and maintenance on six 15kV switches in two 12.47kV switchgears	1	EA	LS	\$ _____
5. Perform testing and maintenance on four 12.47kV/480V transformers.	1	EA	LS	\$ _____
6. Perform testing and maintenance on the 480V MCC 4 breakers.	1	EA	LS	\$ _____
7. Recondition one spare Siemens RLF-1600 480v breaker.	1	EA	LS	\$ _____
<b><u>TOTAL BID</u></b>				\$ _____

**NOTES:**

1. Sealed bid proposals will be received via courier to the Alabama State Port Authority, 1400 Alabama State Docks Blvd, Suite 216, Administration Building, Mobile, AL 36602 by 1:30 P.M. on Thursday, June 8, 2023. Sealed bid proposals can also be hand delivered to the Killian Room starting at 15 minutes prior to the official bid opening at 2:00 PM on Thursday, June 8, 2023, at the Alabama State Port Authority in the International Trade Center building, 250 North Water Street, 1<sup>st</sup> floor—Killian Room, Mobile, AL. No bids will be accepted after 2:00 P.M. No faxed or electronic bids will be accepted. Conditional bids will not be accepted.
2. Bid proposals must be submitted in sealed envelopes with the words “Bid Document Enclosed” clearly marked on the outside of the envelope. Sealed bids shall have the bidder’s name, contractor’s license number, project name, and time and date of bid opening shown on the outside of the envelope.



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3. A Bid Bond or Certified Check made payable to the Alabama State Port Authority and equal to five percent (5%) of the amount bid, not to exceed \$10,000, must accompany the Bid Proposal.
4. The proposals shall be filled in ink on the form provided herein and all blank spaces in the form shall be fully filled. The Contractor's signature shall be in long hand and the complete form shall be without interlineations, alteration or erasure.
5. Authority reserves the right to refuse to issue a proposal form or a contract to a prospective bidder for any of the following reasons:
  - a) Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contract in force with the Authority.
  - b) Contractor default under previous Contract with the Authority.
  - c) Proposal withdrawal or Bid Bond forfeiture on previous project with the Authority.
  - d) Unsatisfactory work on previous contract with the Authority.
  - e) Lack of competency, past experience, adequate machinery or lack of personnel.
6. Authority may make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish all such information and data for this purpose as the Authority may request. The Authority reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Authority that such bidder is properly qualified to carry out the obligations of the Contract.
7. The Owner may terminate the contract, or any portion thereof, for just cause by written notice to the Contractor. If the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed or started. No claims for loss of anticipated profits will be considered.
8. If the Contractor to whom this contract is awarded does not provide adequate service or workmanship, ASPA reserves the right to cancel the contract and re-bid this work excluding that Contractor from consideration.
9. Any questions regarding the procurement should be directed to Tom Alvarez, Project Manager, at phone number (251) 441-7534 or email [tom.alvarez@alports.com](mailto:tom.alvarez@alports.com).
10. All questions about the meaning or intent of the Contract documents shall be submitted to the Project Manager in writing. Replies will be issued by Addenda to all parties recorded as having received the bidding documents. All addenda so issued shall become part of the Contract documents. Only questions answered by formal written addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
11. The right is reserved, as the interest of the Alabama State Port Authority may require, to reject any and all bids and to waive informalities in bids received.
12. The cost of all items ancillary to the project shall be absorbed into the cost of the bid items. No separate payment shall be made for these items.





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### **CONSTRUCTION SPECIFICATIONS**

#### **Current Design**

The 15kV SWGR, at the Electrical Switchgear Building, is currently feeding four 15kV to 480V Substations that are in the two vaults (2 Substations per vault) on the Berthing Pier through four 15kV cables.

#### **Existing Condition**

- The shore power requirements for the pier are not in service but may be needed in the future.
- The existing loads that are in service consist of lighting, exhaust fans, and sump pumps.

#### **Project Scope**

1. Perform testing and maintenance on the main 15kV switchgear in the Primary Switchgear Building. This includes the a) two Incoming Line sections, b) Bus Tie Breaker, and c) Pier Feeder Line 1 Breaker, Pier Feeder Line 2 Breaker, and Spare breaker. Clean, inspect and test all the breakers, relays, etc. Replace any parts for continued service.
2. Siemens Lift Truck for 15kV breakers. The current lift truck on site is old and may be inoperable. A replacement may be needed.
3. Perform megger test on the four 15kV cables from the Electrical Switchgear Building to the two vault substations.
4. Perform testing and maintenance on the six 15kV switches in the two 12.47kV switchgears. There is a 12.47kV switchgear in each vault but Vault 2 switchgear is the only one in operation that feeds both vaults. Vault 1 switchgear is not in service due to missing parts. Clean, inspect, test, and replace any parts to be in or for continued service.
5. Perform testing and maintenance on the four 12.47kV/480V transformers, two in each vault. Oil sample, Transformer Turns Ratio (TTR) test, Polarization Index (PI) test, Winding Resistance, etc. Replace any parts for continued service.
6. Perform testing and maintenance on the 480V MCC. Clean, inspect and test the two breakers for Power Panel PPA and the two breakers for Power Panel PPB. Evaluate and recondition with replacement parts for continued service.
7. Recondition one spare Siemens RLF-1600 480v breaker. Clean, inspect, test, and replace any parts to be used on site as a Spare. This may or may not include a retrofit kit.

State of \_\_\_\_\_

County of \_\_\_\_\_

**CERTIFICATE OF COMPLIANCE WITH THE BEASON-HAMMON ALABAMA TAXPAYER AND CITIZEN PROTECTION ACT (ACT 2011-535, as amended by Act 2012-491)**

DATE: \_\_\_\_\_

RE Contract/Grant/Incentive (describe by number or subject):

\_\_\_\_\_ by and between  
\_\_\_\_\_ (Contractor/Grantee) and  
\_\_\_\_\_ (State Agency, Department or Public Entity)

The undersigned hereby certifies to the State of Alabama as follows:

1. The undersigned holds the position of \_\_\_\_\_ with the Contractor/Grantee named above, and is authorized to provide representations set out in this Certificate as the official and binding act of that entity, and has knowledge of the provisions of THE BEASON-HAMMON ALABAMA TAXPAYER AND CITIZEN PROTECTION ACT (ACT 2011-535 of the Alabama Legislature, as amended by Act 2012-491) which is described herein as "the Act".
2. Using the following definitions from Section 3 of the Act, select and initial either (a) or (b), below, to describe the Contractor/Grantee's business structure.

BUSINESS ENTITY. Any person or group of persons employing one or more persons performing or engaging in any activity, enterprise, profession, or occupation for gain, benefit, advantage, or livelihood, whether for profit or not for profit. "Business entity" shall include, but not be limited to the following:

a. Self-employed individuals, business entities filing articles of incorporation, partnerships, limited partnerships, limited liability companies, foreign corporations, foreign limited partnerships, foreign limited liability companies authorized to transact business in this state, business trusts, and any business entity that registers with the Secretary of State.

b. Any business entity that possesses a business license, permit, certificate, approval, registration, charter, or similar form of authorization issued by the state, any business entity that is exempt by law from obtaining such a business license and any business entity that is operating unlawfully without a business license.

EMPLOYER. Any person, firm, corporation, partnership, joint stock association, agent, manager, representative, foreman, or other person having control or custody of any employment, place of employment, or of any employee, including any person or entity employing any person for hire within the State of Alabama, including a public employer. This term shall not include the occupant of a household contracting with another person to perform casual domestic labor within the household.

- \_\_\_\_ (a) The Contractor/Grantee is a business entity or employer as those terms are defined in Section 3 of the Act.  
 \_\_\_\_ (b) The Contractor/Grantee is not a business entity or employer as those terms are defined in Section 3 of the Act.

3. As of the date of this Certificate, Contractor/Grantee does not knowingly employ an unauthorized alien within the State of Alabama and hereafter it will not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama;
4. Contractor/Grantee is enrolled in E-Verify unless it is not eligible to enroll because of the rules of that program or other factors beyond its control.

Certified this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_

\_\_\_\_\_  
Name of Contractor/Grantee/Recipient

By: \_\_\_\_\_

Its \_\_\_\_\_

The above Certification was signed in my presence by the person whose name appears above, on

this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_.

WITNESS: \_\_\_\_\_

\_\_\_\_\_  
Printed Name of Witness



## **ALABAMA STATE PORT AUTHORITY** **INSURANCE REQUIREMENTS FOR CONTRACT WORK**

### **INDEMNIFICATION**

The Contractor shall assume all liability for and shall indemnify and save harmless the State of Alabama and the Alabama State Port Authority, and its officers and employees from all damages and liability for injury to any person or persons, and injury to or destruction of property, including the loss of use thereof, by reason of an accident or occurrence arising from operations under the contract, whether such operations are performed by himself or by any subcontractor or by anyone directly or indirectly employed by either of them occurring on or about the premises, or the ways and means adjacent during the term of the contract, or any extension thereof, and shall also assume the liability for injury and/or damages to adjacent or neighboring property by reason of work done under the contract.

### **INSURANCE REQUIREMENTS**

The Contractor shall not commence work under the contract until he has obtained all insurance required under the following paragraphs and until such insurance has been approved by Alabama Sate Port Authority, nor shall the Contractor allow any subcontractor to commence work until all similar applicable insurance has been obtained by the subcontractor or the Contractor has provided coverage for the subcontractor. The Contractor shall provide, at his expense, insurance in accordance with the following:

#### **General Requirements (applicable to all policies)**

All policies of insurance must be written with companies acceptable to Alabama state port authority. The Contractor shall furnish to Alabama state port authority certificates of insurance, signed by the licensed agent, evidencing required coverages. Alabama state port authority reserves the right to require certified copies of any and all policies. Each policy of insurance shall provide, either in body of the policy or by endorsement, that such policy cannot be substantially altered or cancelled without thirty (30) days' written notice to Alabama state port authority and to the insured. **Except for Workers Compensation, said policies will identify Alabama State Port Authority, its officers, officials, agents, servants and employees as Primary and Non-contributory Additional Insureds in connection with work performed for, on behalf of, or on the property of Alabama state port authority.**

#### **Commercial General Liability**

The Contractor shall take out and maintain during the life of the contract Commercial General Liability insurance, including Blanket Contractual and Completed Operations coverages, in an amount not less than \$3,000,000 for any one occurrence for bodily injury, including death, and property damage liability.

#### **Business Automobile Liability**

The Contractor shall take out and maintain during the life of the contract Business Automobile Liability insurance covering any auto in an amount not less than \$1,000,000 for any one occurrence for bodily injury, including death, and property damage liability.

#### **Workers Compensation**

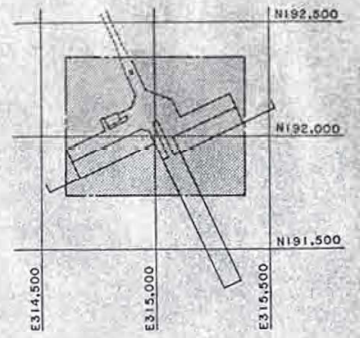
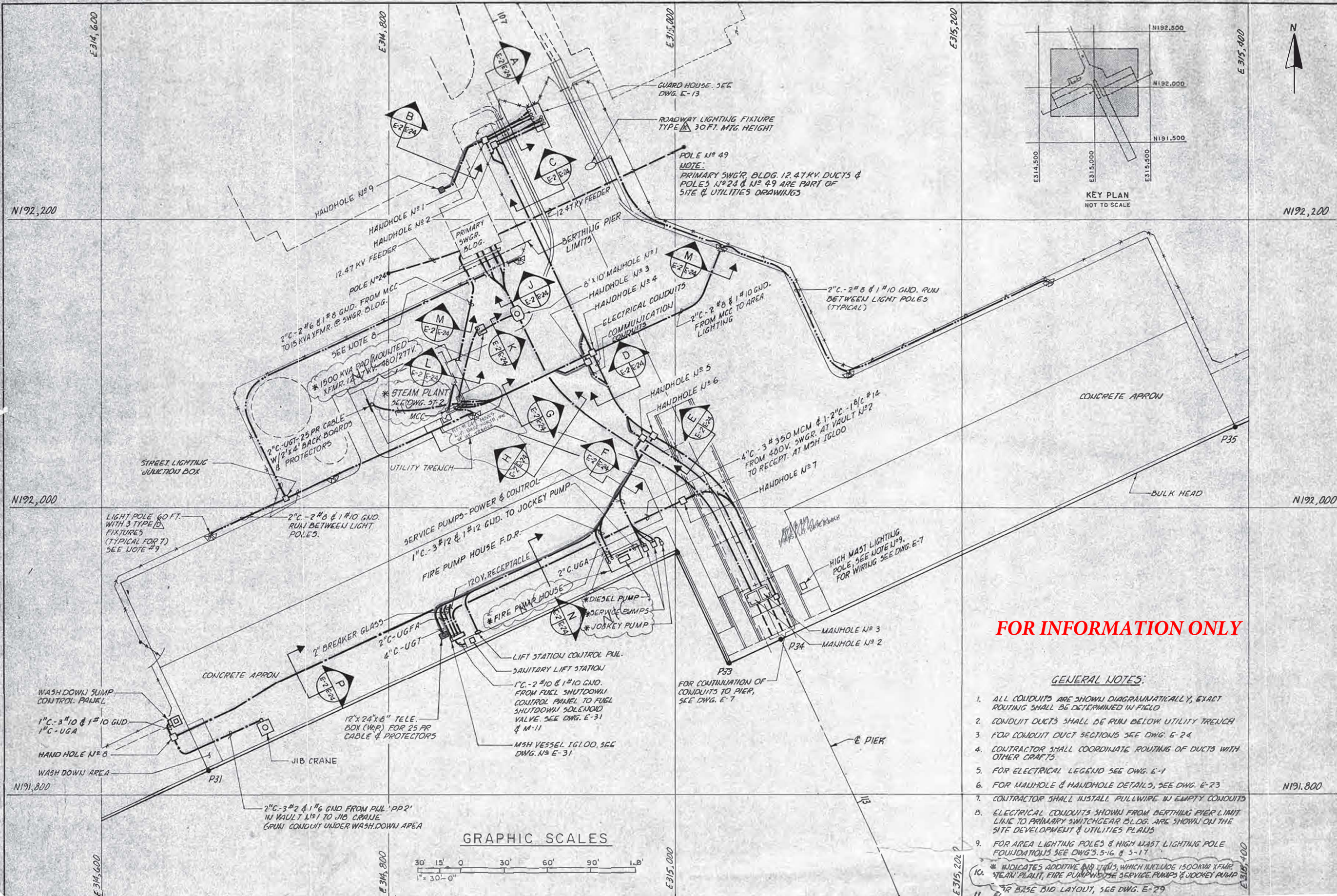
The Contractor shall take out and maintain during the life of the contract Workers Compensation and Employers Liability insurance providing coverage under the Alabama Workers Compensation Act in an amount not less than that required by Alabama law.

Where applicable, Contractor shall take out and maintain during the life of the contract insurance providing coverage as required by Federal statute, including but not limited to U.S. Longshoremen and Harborworkers' Compensation Act (USL&H), Jones Act, and Railroad Federal Employers Liability Act (FELA).









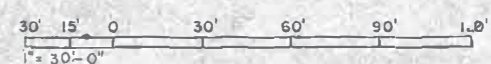
KEY PLAN  
NOT TO SCALE

**FOR INFORMATION ONLY**

GENERAL NOTES:

1. ALL CONDUITS ARE SHOWN DIAGRAMMATICALLY, EXACT ROUTING SHALL BE DETERMINED IN FIELD
2. CONDUIT DUCTS SHALL BE RUN BELOW UTILITY TRENCH
3. FOR CONDUIT DUCT SECTIONS SEE DWG. E-24
4. CONTRACTOR SHALL COORDINATE ROUTING OF DUCTS WITH OTHER CRAFTS.
5. FOR ELECTRICAL LEGEND SEE DWG. E-1
6. FOR MANHOLE & HANDHOLE DETAILS, SEE DWG. E-23
7. CONTRACTOR SHALL INSTALL PULLWIRES IN EMPTY CONDUITS
8. ELECTRICAL CONDUITS SHOWN FROM BERTHING PIER LIMIT LINE TO PRIMARY SWITCHGEAR BLDG. ARE SHOWN ON THE SITE DEVELOPMENT & UTILITIES PLANS
9. FOR AREA LIGHTING POLES & HIGH MAST LIGHTING POLE FOUNDATIONS SEE DWG'S. 5-16 & 5-17
10. \* INDICATES ADDITIVE BID ITEMS, WHICH INCLUDE 1500KVA XFMR, STEAM PLANT, FIRE PUMPS, SERVICE PUMPS & JOCKEY PUMP
11. \* FOR BASE BID LAYOUT, SEE DWG. E-29

GRAPHIC SCALES

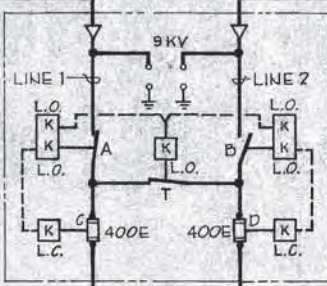


Greiner Engineering Sciences, Inc. 5601 MARKER ST. FLOOR 23646 TAMPA, FLORIDA 33630 PHONE: 813-973-1111 FAX: 813-973-1112 WWW: WWW.GREINER.COM	REV. DESCRIPTION * NIC NOTES	PREP BY: DATE APPROVED: DATE
SOUTHERN DIVISION MOBILE, ALABAMA NAVAL STATION	BERTHING PIER POWER AND LIGHTING LAYOUT SITE (ADDITIVE BID ITEM)	DATE: 9/24/87
RECORD DRAWING DATE CODE: LD-101 DRAWING NO.: 00091 SPEC. NO.: 06-15-0274 CONTROL COPY NO.: 162467-86-C-0274 MAPAC DRAWING NO.: 5176780 SHEET 196 OF	APPROVED: [Signature] DATE: 9/24/87	DATE:



LOOP FEEDER FROM PRIMARY SWGR. BLDG. SEE SITE DEVELOPMENT & UTILITIES PLANS

3/4" 300 MCM, 15 KV. SHIELDED COPPER CABLE (100% INSULATION LEVEL) TYPE MV-EPR & 17/0, 600V. INSUL. NEUTRAL



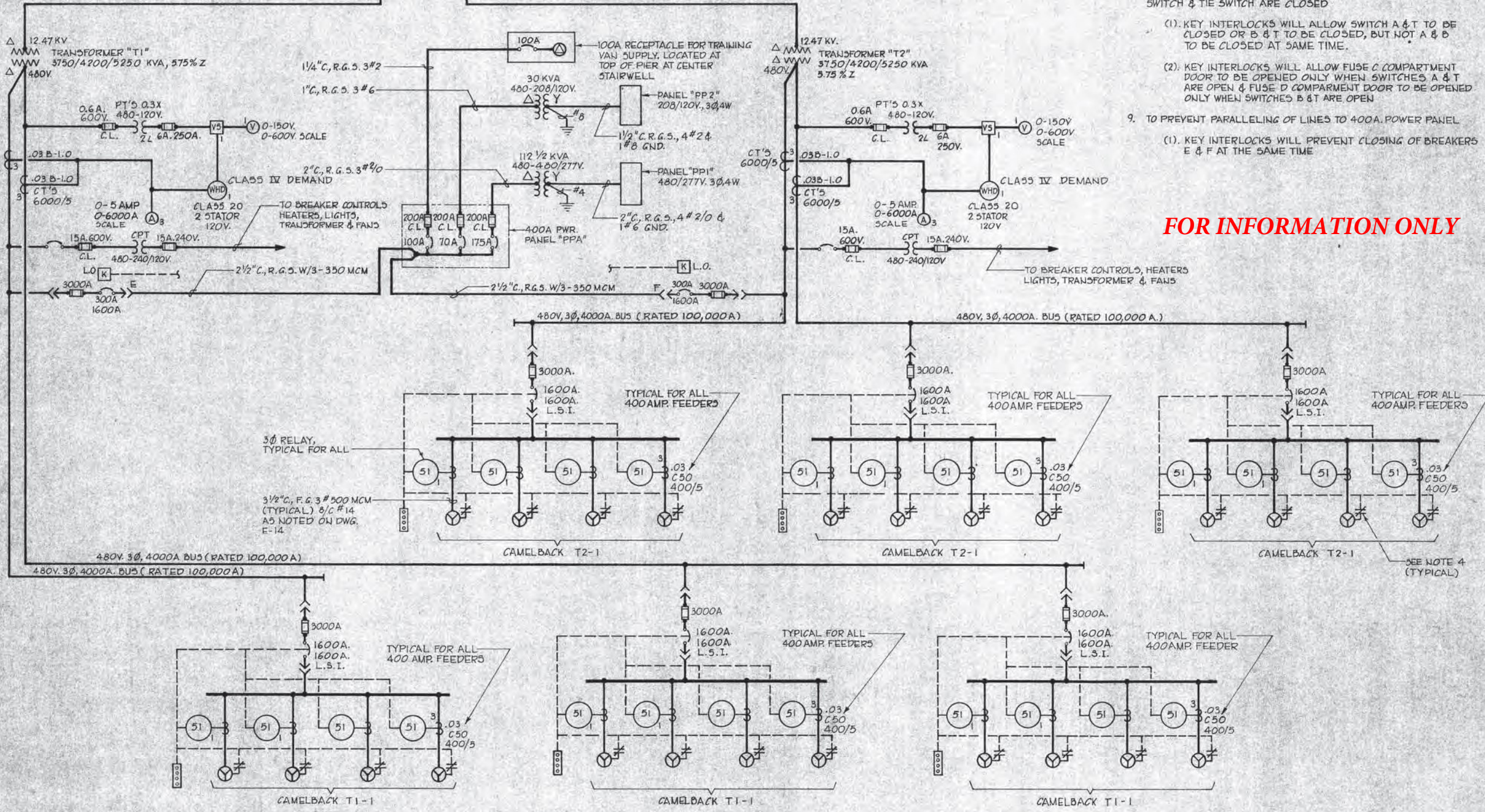
FOR DESCRIPTION OF KEY INTERLOCKING. SEE NOTE 8

TO VAULT N° 2 FOR CONTINUATION SEE DWG. E-4

**GENERAL NOTES**

- FOR LEGEND SEE DWG. N° E-1
- FOR PANEL SCHEDULES SEE DWG. N° E-12
- FOR RECEPTACLE BREAKER CONTROL SCHEMATIC, SEE DWG. N° E-26
- AUXILIARY CONTACT ON 400A RECEPTACLE. THE CONTACT IS HELD OPEN WHEN THE RECEPTACLE COVER IS CLOSED OR A PLUG IS INSERTED IN THE RECEPTACLE. (TYPICAL)
- FOR VAULT N° 2 ONE LINE DIAGRAM SEE N° E-4
- FOR VAULT N° 1 & N° 2 POWER PLAN, SEE DWG. N° E-14
- FOR VAULT MISC. EQUIPMENT PLAN & SECTIONS, SEE DWG. N° E-15
- TO PREVENT PARALLELING OF LINE 1 & 2. TO PREVENT OPENING FUSE COMPARTMENT DOOR WHEN INTERRUPTER SWITCH & TIE SWITCH ARE CLOSED
  - (1). KEY INTERLOCKS WILL ALLOW SWITCH A & T TO BE CLOSED OR B & T TO BE CLOSED, BUT NOT A & B TO BE CLOSED AT SAME TIME.
  - (2). KEY INTERLOCKS WILL ALLOW FUSE C COMPARTMENT DOOR TO BE OPENED ONLY WHEN SWITCHES A & T ARE OPEN & FUSE D COMPARTMENT DOOR TO BE OPENED ONLY WHEN SWITCHES B & T ARE OPEN
- TO PREVENT PARALLELING OF LINES TO 400A. POWER PANEL
  - (1). KEY INTERLOCKS WILL PREVENT CLOSING OF BREAKERS E & F AT THE SAME TIME

**FOR INFORMATION ONLY**

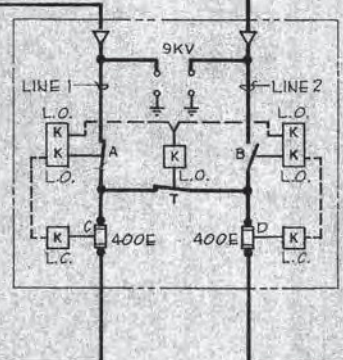


Greiner Engineering Sciences, Inc. 5601 WALKER ST. P.O. BOX 23646 MOBILE, ALABAMA 36688		PREP BY	DATE	APPROVD
DRAWN BY: J. W. WALKER CHECKED BY: J. W. WALKER DATE: 7/24/87		DESCRIPTION	REV.	DATE
SOUTHERN DIVISION MOBILE, ALABAMA		REVISIONS	1	7/24/87
NAVAL STATION BERTHING PIER		REVISIONS	2	7/24/87
DEPARTMENT OF THE NAVY		REVISIONS	3	7/24/87
NAVAL FACILITIES ENGINEERING COMMAND CHARLESTON, S.C.		REVISIONS	4	7/24/87
SEAL: AMMRO CABALLERO NO. 3191 REGISTERED PROFESSIONAL ENGINEER		REVISIONS	5	7/24/87
RECORD DRAWING DATE		REVISIONS	6	7/24/87
CODE ID. NO. 80091		REVISIONS	7	7/24/87
DRAWING SIZE: D		REVISIONS	8	7/24/87
SPEC. NO. 06-86-0274		REVISIONS	9	7/24/87
CONTR. CONT. NO. N62467-86-C-0274		REVISIONS	10	7/24/87
NAVYAC DRAWING NO. 5178781		REVISIONS	11	7/24/87
SHEET 197 OF E-3		REVISIONS	12	7/24/87



LOOP FEEDER FROM PRIMARY SWGR BLDG. SEE SITE DEVELOPMENT & UTILITIES PLANS

3/4" 500 MCM, 15 KV. SHIELDED COPPER CABLE (100% INSULATION LEVEL) TYPE MV-EPR & #4/0, 600V. INSUL. NEUTRAL

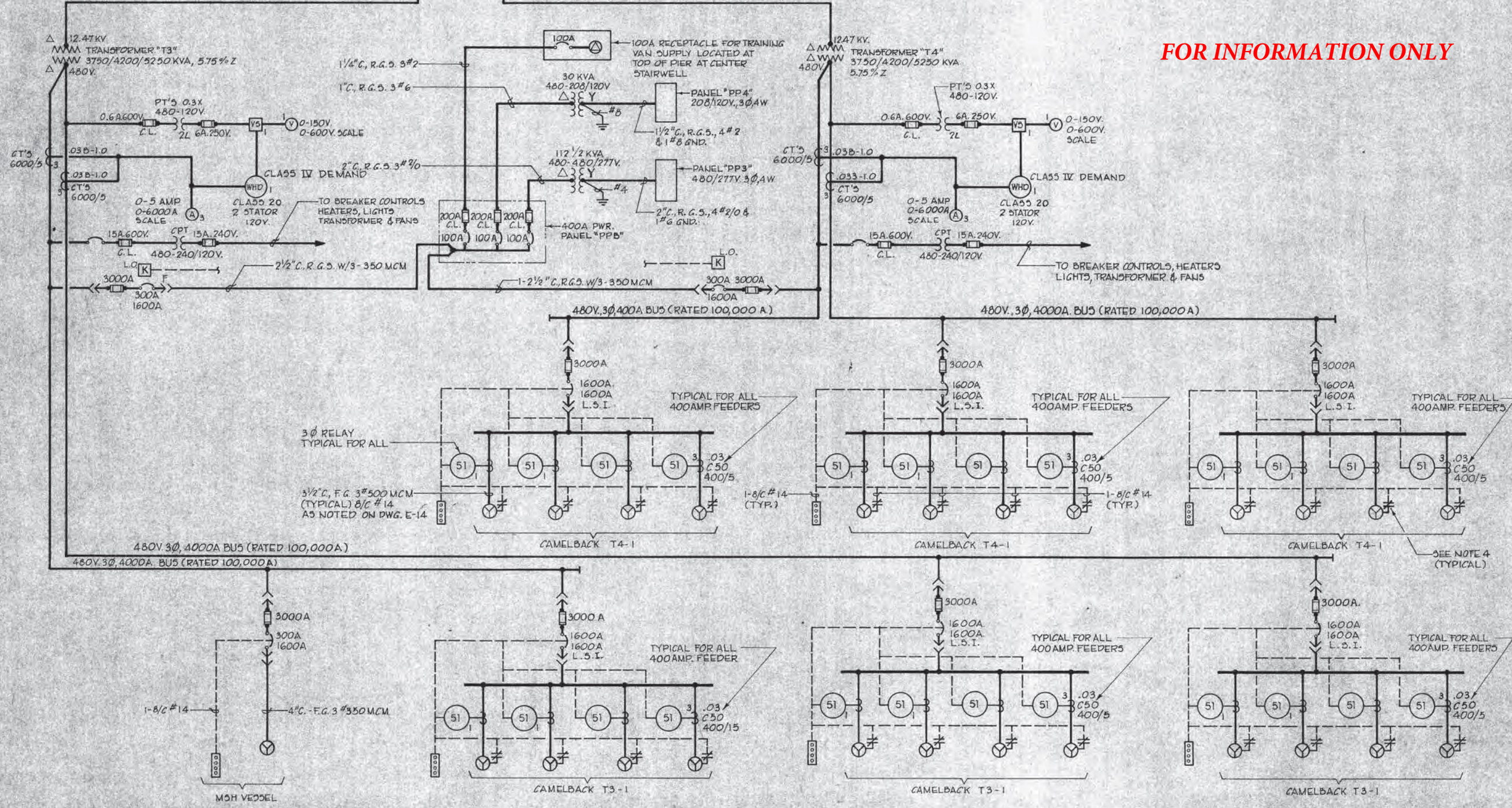


FOR DESCRIPTION OF KEY INTERLOCKING. SEE NOTE 8 ON DWG. E-3

**NOTES:**

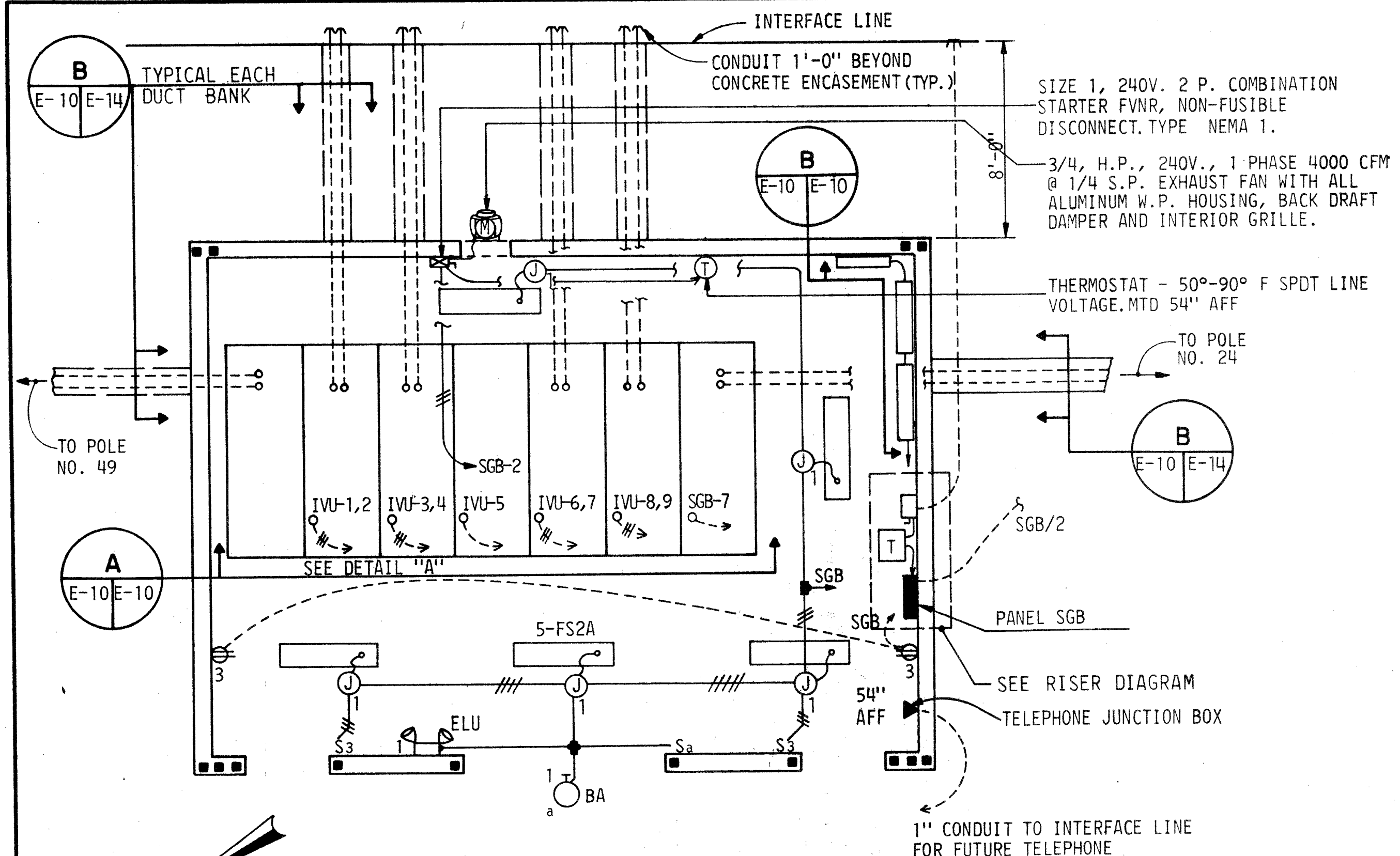
1. FOR GENERAL NOTES SEE DWG. E-3
2. #4/0, 600V. NEUTRALS TO BE TERMINATED ON INCOMING SWITCH GROUND LUGS. AND JUMPED TO GROUND LUG IN TIE SWITCH COMPARTMENT

**FOR INFORMATION ONLY**



Greiner Engineering Sciences, Inc. 6601 MARKER ST., P.O. BOX 23646 TAMPA, FLORIDA 33630		PREP BY	DATE	APPROV
DESIGNED BY: JAC DONOHUE CHECKED BY: WALKER DATE: 10/11/87		DESCRIPTION	REV.	DATE
SOUTHERN DIVISION MOBILE, ALABAMA		NAVAL FACILITIES ENGINEERING COMMAND	MOBILE, ALABAMA	DATE: 9/24/87
NAVAL STATION		BERTHING PIER ONE LINE DIAGRAM - VAULT #P2		
RECORD DRAWING DATE		NO. 3191 REGISTERED ENGINEER		
CODE ID NO. 80091		DRAWING SIZE: D		
SPEC. NO. 06-86-0274		CONTR. CONTR. NO. N62467-86-C-0274		
NAVIFAC DRAWING NO. 517B782		SHEET 198 OF 198		
E-4				





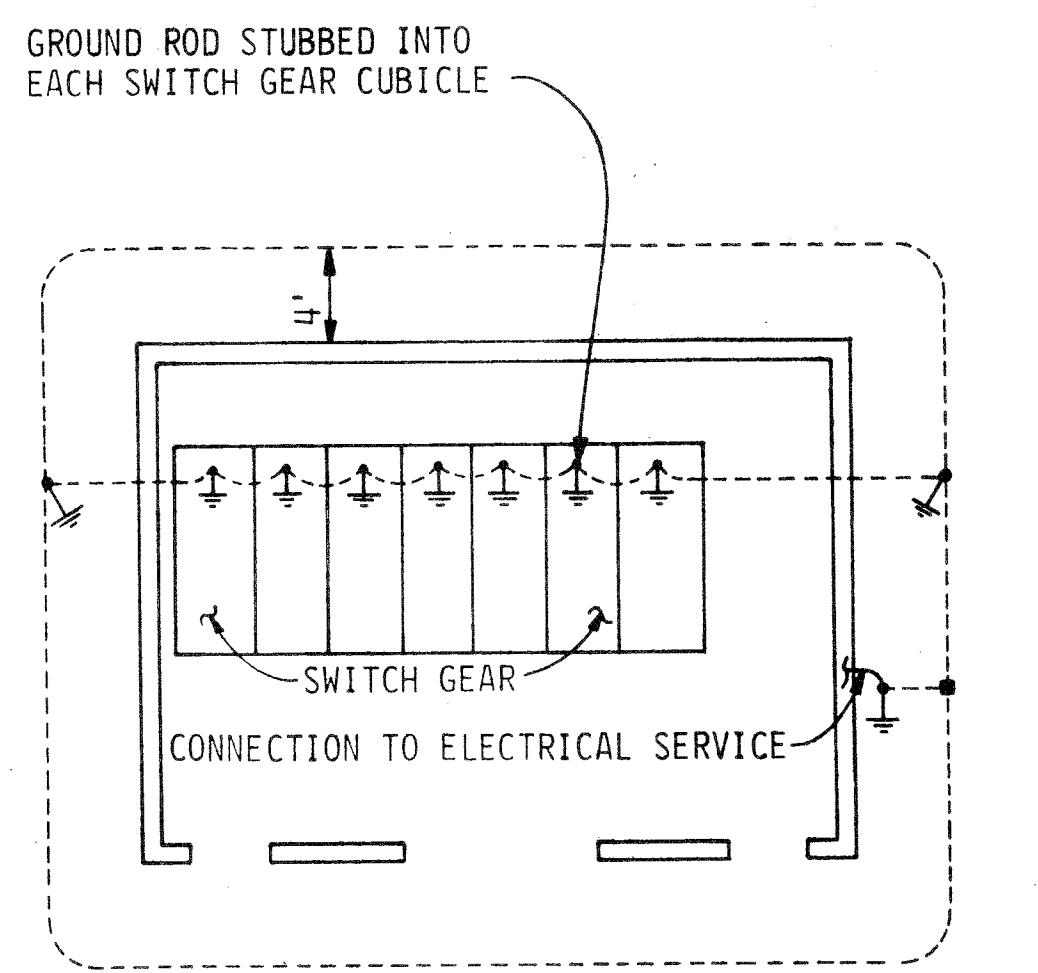
**ELECTRICAL SWITCHGEAR BUILDING**

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



CKT NO.	DESCRIPTION	BREAKERS		KVA		AMPS		DESCRIPTION	LOCATION	TYPE	CKT NO.
		POLE	AMP	AMP	POLE	AMP	POLE				
1	LIGHTS	1	20	0.6	1.2	20	2	MOTORIZED VALVE			2
3	RECEPTACLES	1	20	0.4	1.2						
5	INVERTER UNIT (IVU)	1	40	2.0	0.8	20	2	VENTILATOR			6
7	SPACE HEATERS	1	20	1.75	0.8						
9	SPARE	1	20					SPACE			10
11	SPARE	1	20					SPACE			12
CONNECTED LOAD		8.75 KVA									

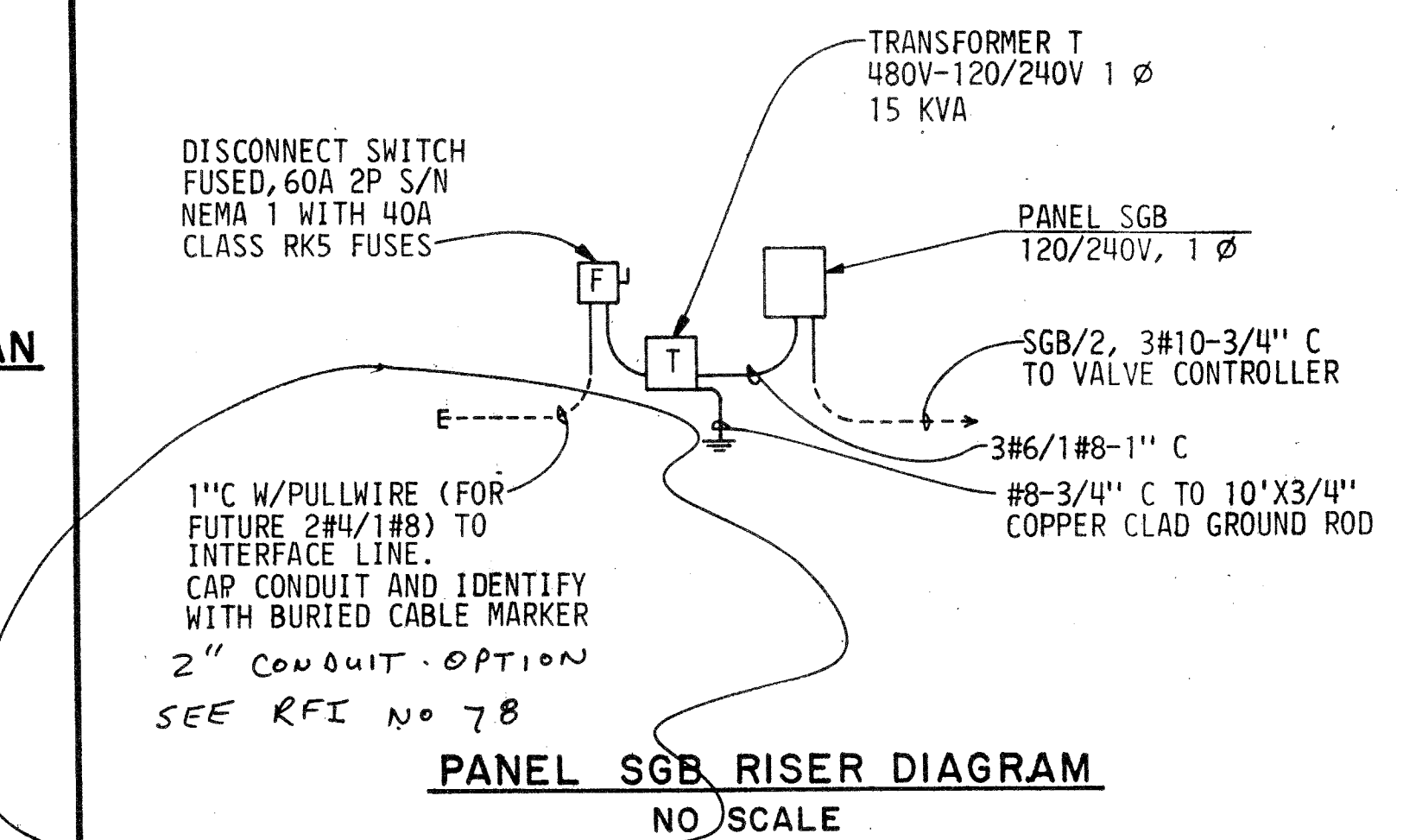
FIX. SYM.	SEE DETAIL ON THIS SHEET	NUMBER AND TYPE LAMP	VOLT.	MOUNTING	REMARKS
FS2A	DETAIL FIXTURE FS2A	2-F40RS/CW	120	CHAIN SUSPENDED TO 9'-0" AFF CORD CONNECT	
BA	DETAIL-FIXTURE BA	1-35W.HPS	120	WALL MTD. 10'-0" AFF	WET LABEL
ELU	DETAIL-FIXTURE ELU	2-8W SEAL BEAM	120	WALL MTD. 9'-0" AFF	



**SWITCHGEAR BUILDING GROUNDING PLAN**  
NO SCALE

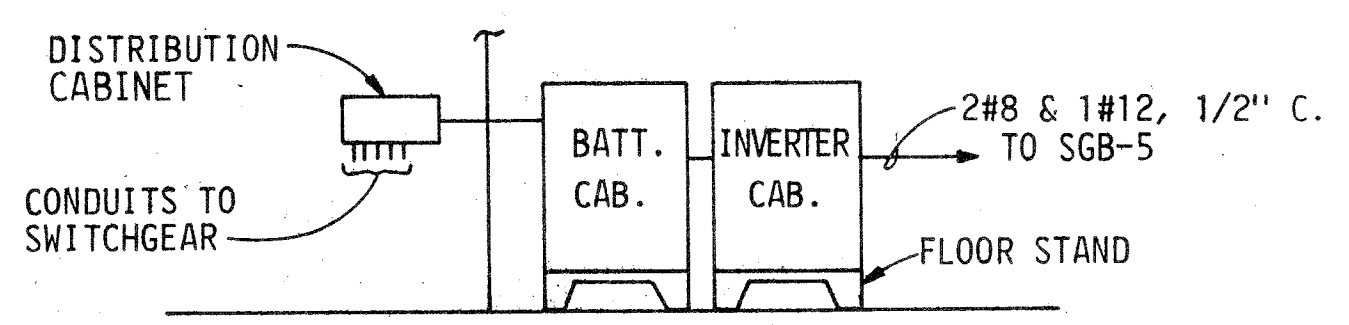
GROUND ROD-10'X3/4" COPPER CLAD STEEL GROUND ROD

COUNTERPOISE CONDUCTOR-NO. 1/0 COPPER, 190 LBS./1000, BURIED 24" BELOW GRADE

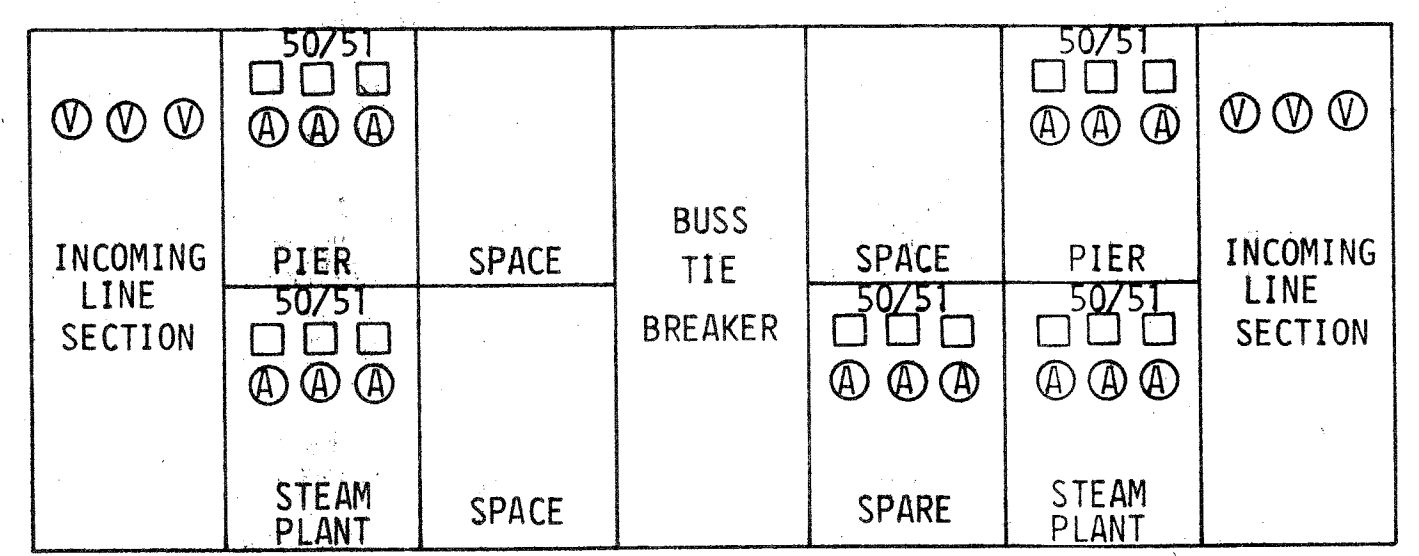


**PANEL SGB RISER DIAGRAM**  
NO SCALE

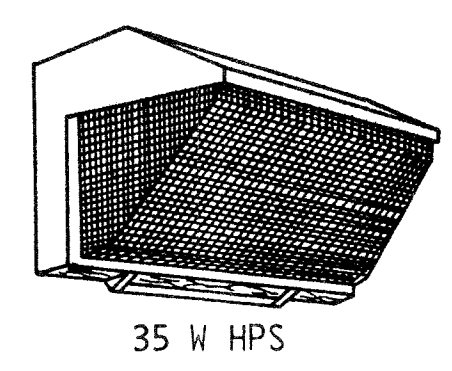
**DETAIL - FIXTURE BA - HID WALL-MOUNTED LUMINAIRE**  
NO SCALE



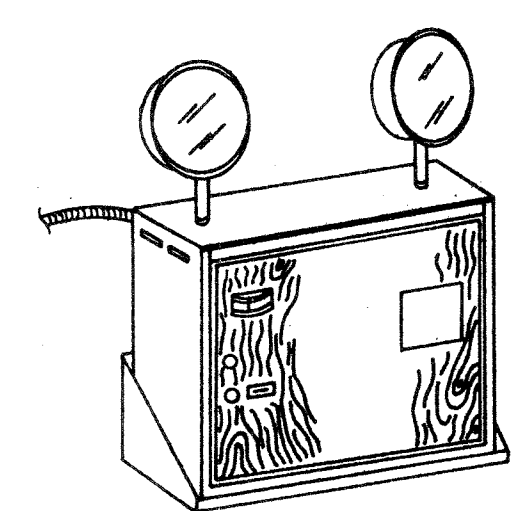
**DETAIL B INVERTER UNIT (IVU)**  
NO SCALE



**DETAIL A FRONT VIEW - PIER FEEDER SWITCHGEAR**  
NO SCALE

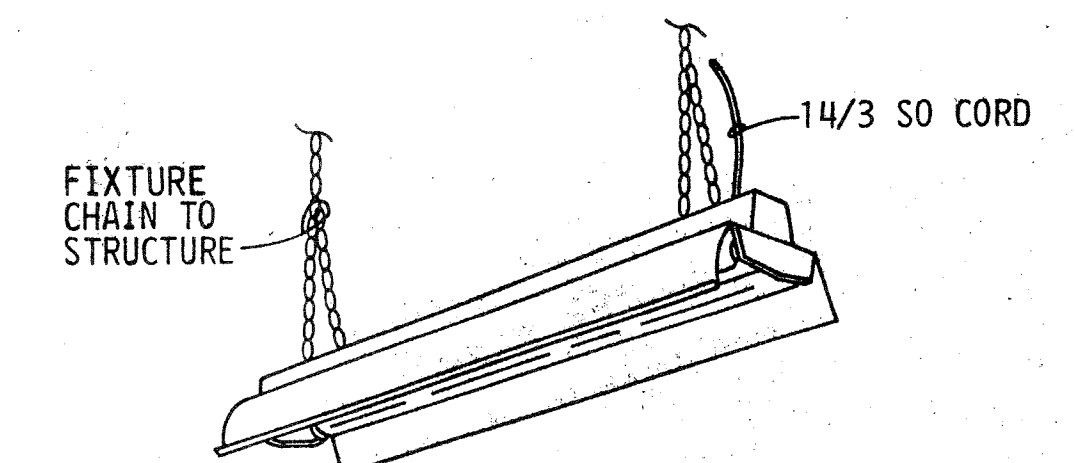


- LUMINAIRE REQUIREMENTS**
- CAST ALUMINUM OR 1/8" MIN. THICKNESS EXTRUDED ALUMINUM HOUSING.
  - HINGED, U.V. STABILIZED POLYCARBONATE LENS OR HINGED TEMPERED GLASS WITH POLYCARBONATE SHIELD.
  - PROVIDE ALUMINUM REFLECTOR.
  - BALLAST SHALL BE HIGH POWER FACTOR TYPE (≥ .85) WITH CHARACTERISTICS AS INDICATED.
  - PROVIDE INTERNAL GROUNDING PROVISIONS.



- LUMINAIRE REQUIREMENTS**
- SEALED BATTERY, SPECIFICALLY DESIGNED FOR EMERGENCY LIGHTING, SOLID STATE FULLY AUTOMATIC - THREE RATE CHARGER FOR NICKEL CADMIUM BATTERY AND TWO RATE HIGH/LOW CHARGER FOR LEAD CALCIUM OR LEAD ACID SEALED BATTERIES.
  - MINIMUM 0.032" THICK STEEL HOUSING WITH BAKED ENAMEL PAINTED FINISH (BROWN OR BEIGE), OR NONMETALLIC PLASTIC HOUSING WITH DECORATIVE WOOD GRAIN FRONT PANEL ON EITHER HOUSING.
  - TEST SWITCH
  - "AC ON" PILOT LIGHT.
  - AUTOMATIC OVERLOAD PROTECTION - FUSE OR CIRCUIT BREAKER.
  - HEADS SHALL BE FULLY ADJUSTABLE VERTICALLY AND HORIZONTALLY.
  - SEALED BEAM HALOGEN LAMPS MINIMUM 8 WATT.
  - VOLTMETER
  - 3/C #16, SO CORD SET - (HARD WIRE TO CIRCUIT).
  - PROVIDE MINIMUM 0.032" THICK STEEL WALL MOUNTING SHELF, OR MOUNTING BRACKETS OR HOLES IN HOUSING FOR MOUNTING UNIT ON WALL.
  - LOW VOLTAGE, DEEP DISCHARGE DISCONNECT.

**DETAIL - FIXTURE ELU - EMERGENCY LIGHTING UNIT**  
NO SCALE



- LUMINAIRE REQUIREMENTS**
- HOUSING SHALL BE 0.032" MINIMUM THICKNESS DIE FORMED COLD ROLLED STEEL, CHEMICALLY TREATED FOR RUST PREVENTION AND FINISHED WITH WHITE BAKED ENAMEL OR POLYESTER FINISH. PROVIDE TOP AND END KNOCKOUTS.
  - HOUSING WELDED OR SECURED BY SCREWS OR RIVETS INTO A SINGLE ASSEMBLY. PROVIDE INTERNAL PROVISIONS FOR GROUNDING.
  - REFLECTOR SHALL BE 0.026" MINIMUM THICKNESS STEEL, 10-25% APERTURED. PROVIDE 30° SHIELDING CENTER VEE. CHEMICALLY TREAT FOR RUST PREVENTION AND FINISH WITH WHITE BAKED ENAMEL, PORCELAIN ENAMEL, OR POLYESTER FINISH. MINIMUM REFLECTANCE SHALL BE 85%.
  - THE LUMINAIRE SHALL NOT PERMANENTLY DISTORT WHEN LIFTED BY ONE CORNER.
  - SPACING TO MOUNTING HEIGHT RATIO = 1.3.
  - LUMINAIRE SHALL BE CAPABLE OF CONTINUOUS ROW AND SINGLE UNIT PLACEMENT WITH PENDANT OR SURFACE MOUNTING.
  - PROVIDE SPRING LOADED PLUNGER TYPE LAMP SOCKETS.
  - BALLAST SHALL BE HIGH POWER FACTOR (≥ .9) ETL, CBM APPROVED CLASS P RAPID START BALLAST WITH A SOUND RATING OF B.
  - MINIMUM COEFFICIENT OF UTILIZATION (CU) WITH THE FOLLOWING CAVITY REFLECTANCE OF: CEILING = 80% WALL = 50% FLOOR = 20% LUMINAIRE USING 3100 LAMP WITH AVG. MAX. RATIO NOT TO EXCEED 1:5

ROOM CAVITY RATIO	CU	AVG. LUMINANCE (FL)
1	0.85	45° - 1350
2	0.73	55° - 1250
3	0.68	65° - 1250
4	0.60	75° - 850

**DETAIL - FIXTURE FS2A - INDUSTRIAL FLOURESCENT**  
48" 2 LAMP 430 MA.  
NO SCALE

**FOR INFORMATION ONLY**

DAVID VOLKERT & ASSOC., INC.  
3809 MOFFAT ROAD,  
MOBILE, ALABAMA 36618

REV. DESCRIPTION PREP BY DATE APPROV

RFI No 78 (10-21-89)

SOUTHERN DIVISION CHARLESTON, S.C.

MOBILE, ALABAMA

NAVAL STATION.

SITE DEVELOPMENT & UTILITIES

ELECTRICAL SWITCHGEAR LAYOUT & DETAILS

NO. 10327

ENGINEER

SEAL AREA

RECORD DRAWING DATE

CODE ID. NO. 80081

DRAWING SIZE: D

SPEC. NO. 06-86-0276

CONST. CONTR. NO. N62467-B6-C-0274

NAVFAC DRAWING NO. 5175034

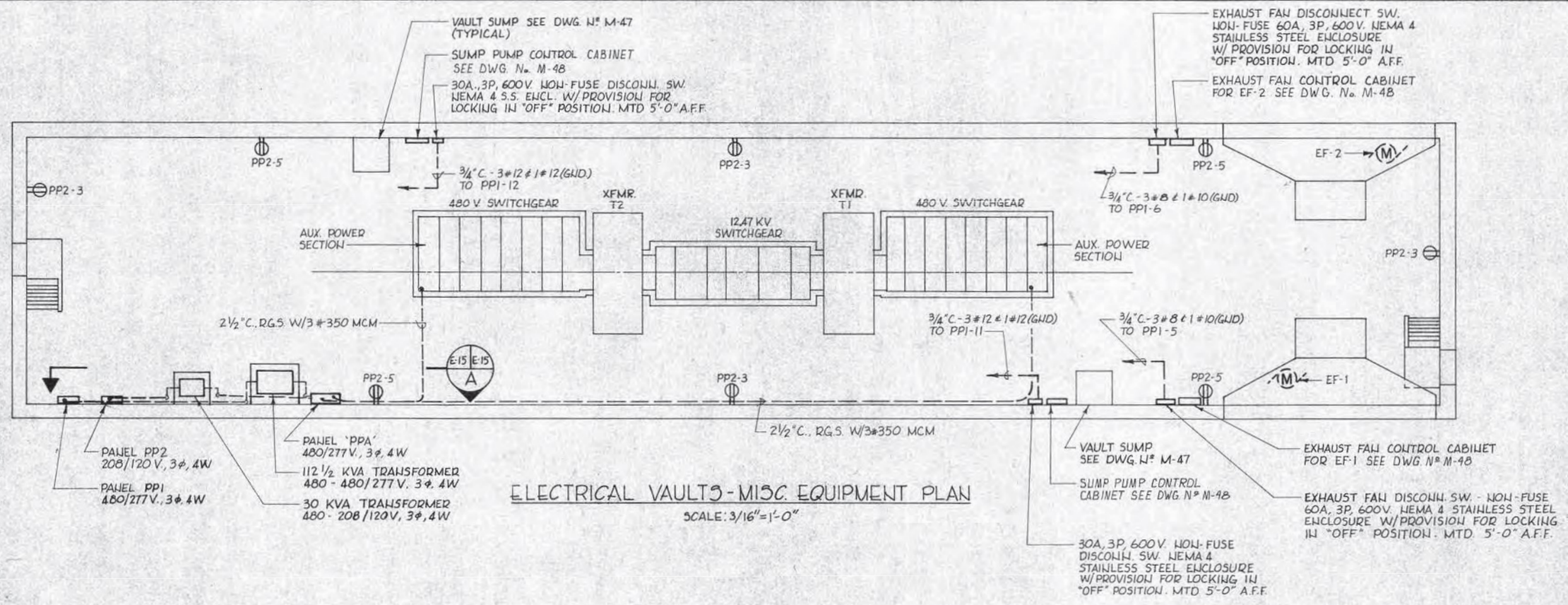
SHEET 105 OF 113

E - 10



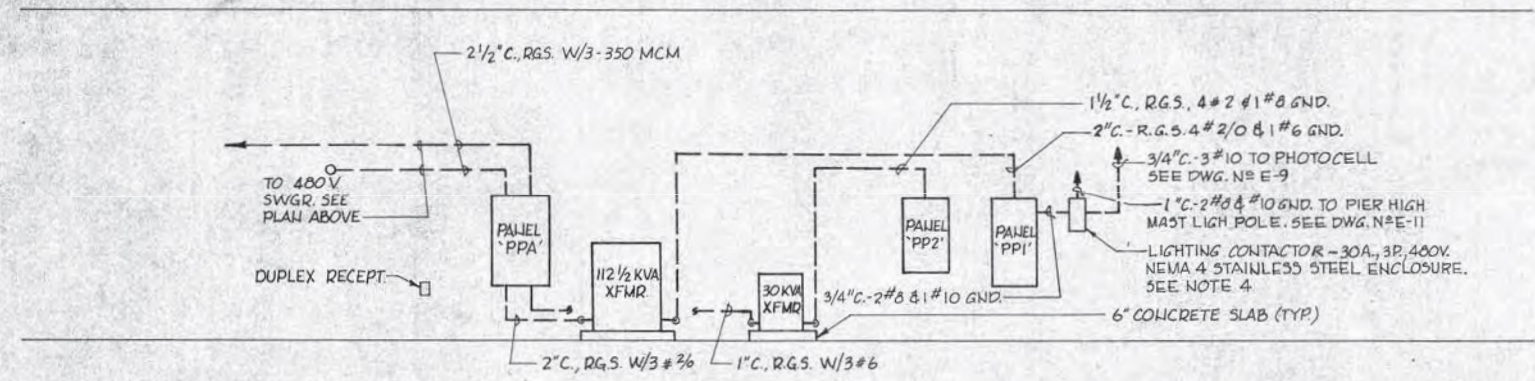






ELECTRICAL VAULTS-MISC. EQUIPMENT PLAN  
SCALE: 3/16"=1'-0"

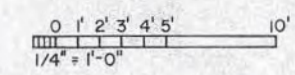
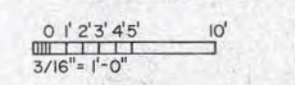
- NOTES:
1. THIS LAYOUT SHOWS MISC. EQUIPMENT FOR VAULT N°1. LAYOUT FOR VAULT N°2 SIMILAR & SHALL BE IN CONFORMANCE WITH SINGLE LINE.
  2. VAULT N°2 SUMP PUMPS SHALL BE CONNECTED TO PP3-11 & PP3-12.
  3. VAULT N°2 VENTILATION FANS SHALL BE CONNECTED TO PP3-5 & PP3-6.
  4. VAULT N°2-CONNECT LIGHTING CONTACTOR TO PANEL 'PP3'. SEE DWG. N° E-28.



ELEVATION A  
SCALE: 1/4"=1'-0"

**FOR INFORMATION ONLY**

GRAPHIC SCALES



Greiner Engineering Sciences, Inc. 5601 MARKER ST., P.O. BOX 23646 TAMPA, FLORIDA 33630	
DESIGNED BY: WALKER	CHECKED BY: MILITELLO
DATE: 9/2/87	BY: [Signature]
REV. DESCRIPTION	PREP BY DATE APPROV
SOUTHERN DIVISION CHARLESTON, S.C.	MOBILE, ALABAMA
NAVAL STATION	BERTHING PIER
ELECT. VAULTS MISC. EQUIP. PLAN B SECTION	
APPROVED: [Signature]	DATE: 9/2/87
SEAL: ARMANDO CABALLEDO REGISTERED PROFESSIONAL ENGINEER NO. 3111	
RECORD DRAWING DATE	CODE ID. NO. 80091
DRAWING SIZE: D	SPEC. NO. 06-86-0274
CONSTR. CONTR. NO. NE2467-86-C-0274	NAVIFAC DRAWING NO. 5178793
SHEET 209 OF	E-15