

ORDER

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

6850.7

10/21/74

SUBJ: VISUAL GUIDANCE LIGHTING SYSTEMS STANDARD DRAWINGS

1. PURPOSE. This order directs the use of the following revised standard drawings for the establishment of 4 and 6 Box VASI systems utilizing components furnished under Contract DOT-FA-73WAI-406.

<u>Number</u>	<u>Revision</u>	<u>Date</u>	<u>Title</u>
D-6043-1	A	9-19-74	4 and 6 Box Visual Approach Slope Indicator System Typical Site Layout Runway No., Airport Name, City, State.
D-6043-2	A	9-19-74	Visual Approach Slope Indicator System Standard Lamp Housing Assembly Details and Foundation Plans, Western Technical Associates Contract DOT-FA73WAI-406.
D-6043-3	A	9-19-74	4 Box Visual Approach Slope Indicator System Standard Power and Control Assembly Installation Details and Wiring Diagrams, Western Technical Associates Contract DOT-FA73-WAI-406.
D-6043-4	A	9-19-74	6 Box Visual Approach Slope Indicator System Standard Power and Control Assembly Installation Details and Wiring Diagrams, Western Technical Associates Contract DOT-FA73-WAI-406.
D-6044	A	9-19-74	Standard Low Voltage Terminal Pole 120/240 Volt Service Overhead to Underground with Pad-Mount Transformer.

2. DISTRIBUTION. This order is distributed to branch level in Airway Facilities Service, and to Division level in Systems Research & Development and Airport Services in FAA headquarters; branch level in regional Airway Facilities and Airports Divisions (except AEU); and to the Director, NAFEC

Distribution: WAF-3; WRD/AS-2
RAF/AS-3 (except AEU); NC-1

Initiated By: AAF-560

and the Aeronautical Center.

3. CANCELLATIONS. This order cancels ORDER 6850.6 dated 7/31/74.
4. BACKGROUND. Drawings D-6043-1, D-6043-2, D-6043-3, D-6043-4 and D-6044 are issued to provide the proper installation of VASI equipment manufactured by Western Technical Associates under Contract DOT-FA73-WAI-406.
5. APPLICATION. Drawing 6043-1 shows typical site layouts and details for 4 and 6 Box VASI system. This drawing is to be used as a guide and check list for information that is required on the project site plan drawings. Actual siting of the system shall be in accordance with FAA Handbook 6850.2, Visual Guidance Lighting System. Drawings 6043-2 thru 4 have been developed as standard construction and electrical installation drawings. The foundation design for the lamp housing and the supports for the power and control assembly are based on a minimum safe soil bearing pressure of 3,000 psf and lateral soil pressure of 200 psf per foot. Depth of foundations footing shall be a minimum of 2'6" or one foot below local frost depth. Frost depth shall be noted on project site plan. Where the actual site soil bearing strength is less than 3,000 psf and/or the local frost depth is greater than 6'0", the foundation and support designs as shown on these drawings shall be modified as required to suit actual site conditions. Drawing 6044 shows typical low voltage terminal pole and pad-mounted transformer and is provided for use as a standard drawing when existing power source or actual site conditions dictate. Power source configurations are site determined; therefore, each service extension shall be set forth on the site layout and an appropriate service extension detailed drawing developed. These drawings shall be used for all future establishment, relocation and current construction projects for Western Technical Associates type equipment. Inquiries or comments regarding these drawings shall be directed to the Chief, Environmental Systems Division, AAF-500.
6. DISTRIBUTION OF DRAWINGS. A reproducible copy of each drawing is being forwarded to NAFEC; each region (except AEU), Attention: Airway Facilities Division; and two copies of each drawing to the Aeronautical Center, Attention: Chief, FAA Depot. Additional copies may be obtained from the Environmental Systems Division, Attention: AAF-510.


J. W. COCHRAN
Director, Airway Facilities Service

UPWARD LIGHT CENTER ELEV *
MIDDLE LIGHT CENTER ELEV *
DOWNWARD LIGHT CENTER ELEV *

SEE NOTE 6

UPWARD LIGHT CENTER ELEV *
MIDDLE LIGHT CENTER ELEV *
DOWNWARD LIGHT CENTER ELEV *

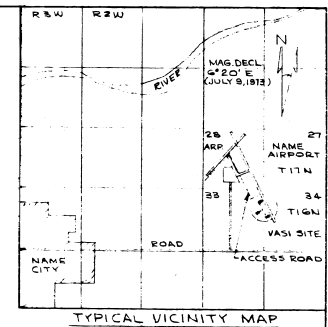
UPWARD ELEV *
MIDDLE ELEV *
DOWNWARD ELEV *

UPWARD BAR BASE ELEV *
MIDDLE BAR BASE ELEV *
DOWNWARD BAR BASE ELEV *

ELEVATION TYPICAL
4 OR 6 BOX VASI

BORING LOG (FROST DEPTH 34")

SOIL SYMBOLS	SOIL DESCRIPTION	ELEV *	SOIL SYMBOLS	SOIL DESCRIPTION	ELEV *	SOIL SYMBOLS	SOIL DESCRIPTION	ELEV *
0		0	0		0	0		0
1		1	1		1	1		1
2		2	2		2	2		2
3		3	3		3	3		3
4		4	4		4	4		4



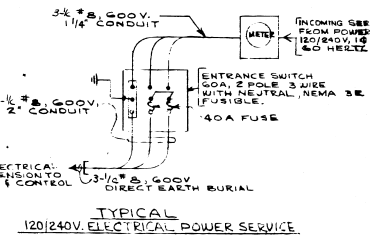
OWNER: NAME
ADDRESS

LOCATION: QUARTER, QUARTER SECTION
TOWNSHIP, RANGE, P.M.
COUNTY, STATE

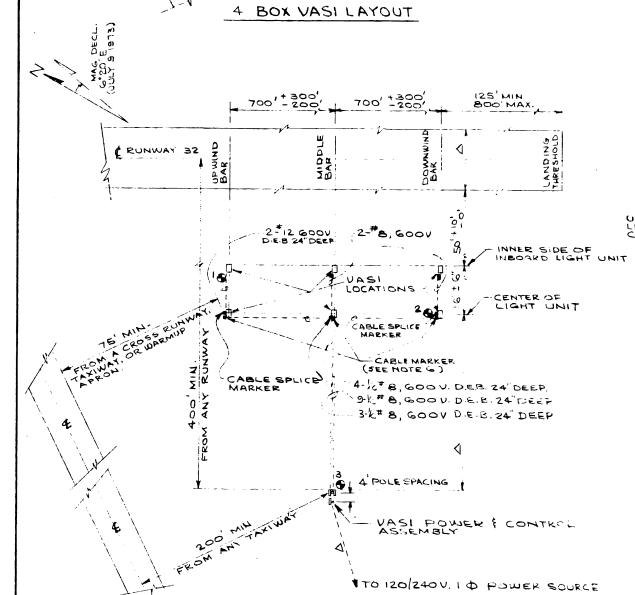
POWER: COMPANY
ADDRESS

AIRPORT REF. PT. ELEV: * MSL

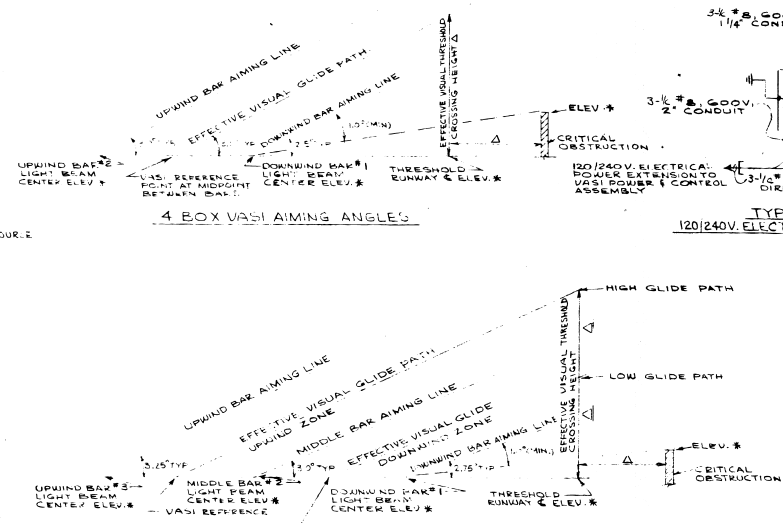
- NOTES:
- REGION TO PROVIDE: ELEVATIONS NOTED * DISTANCES NOTED *
 - FROST DEPTH BELOW GRADE IS 34" BY REGION.
 - ALL UNITS IN A BAR SHALL BE LOCATED ON A LINE PERPENDICULAR TO THE RUNWAY CENTERLINE. FRONT FACES OF EACH LIGHT UNIT TO BE 16" FROM THE PERPENDICULAR LINE.
 - ALL LIGHT BEAM CENTERS OF ALL UNITS IN BAR SHALL BE IN A HORIZONTAL PLANE. ELEVATION ABOVE OR BELOW THE RUNWAY ELEVATION IS ± 1 FOOT.
 - SHOW EXISTING D.B. CABLE IN VASI CONSTRUCTION AREA.
 - INSTALL CABLE MARKERS AT 200 FT. SPACING ON RUNS OVER 200 FT. IN LENGTH, AT LOCATION OF CHANGE OF DIRECTION ON CABLE RUN AND AT SPLICES AS REQUIRED BY SPECIFICATION FAA-1351.
 - CONSTRUCT WALK AREAS BY REMOVING 2" OF VEGETATION, SPREADING VEGETATION CONTROL AND PLACE 4" OF GRAVEL SURFACING. NO COMPACTION IS REQUIRED.



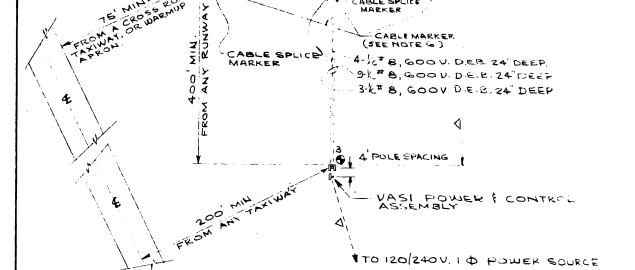
4 BOX VASI LAYOUT



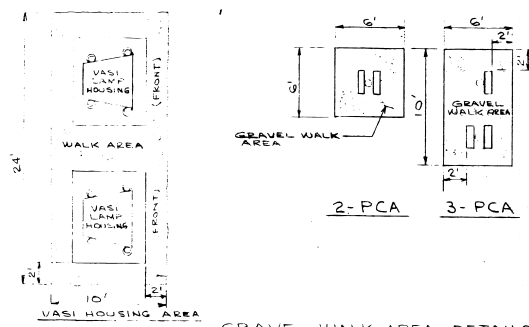
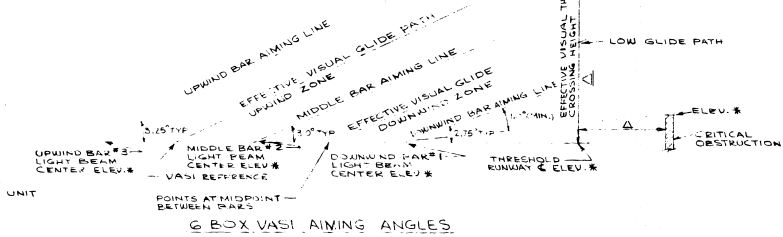
4 BOX VASI AIMING ANGLES



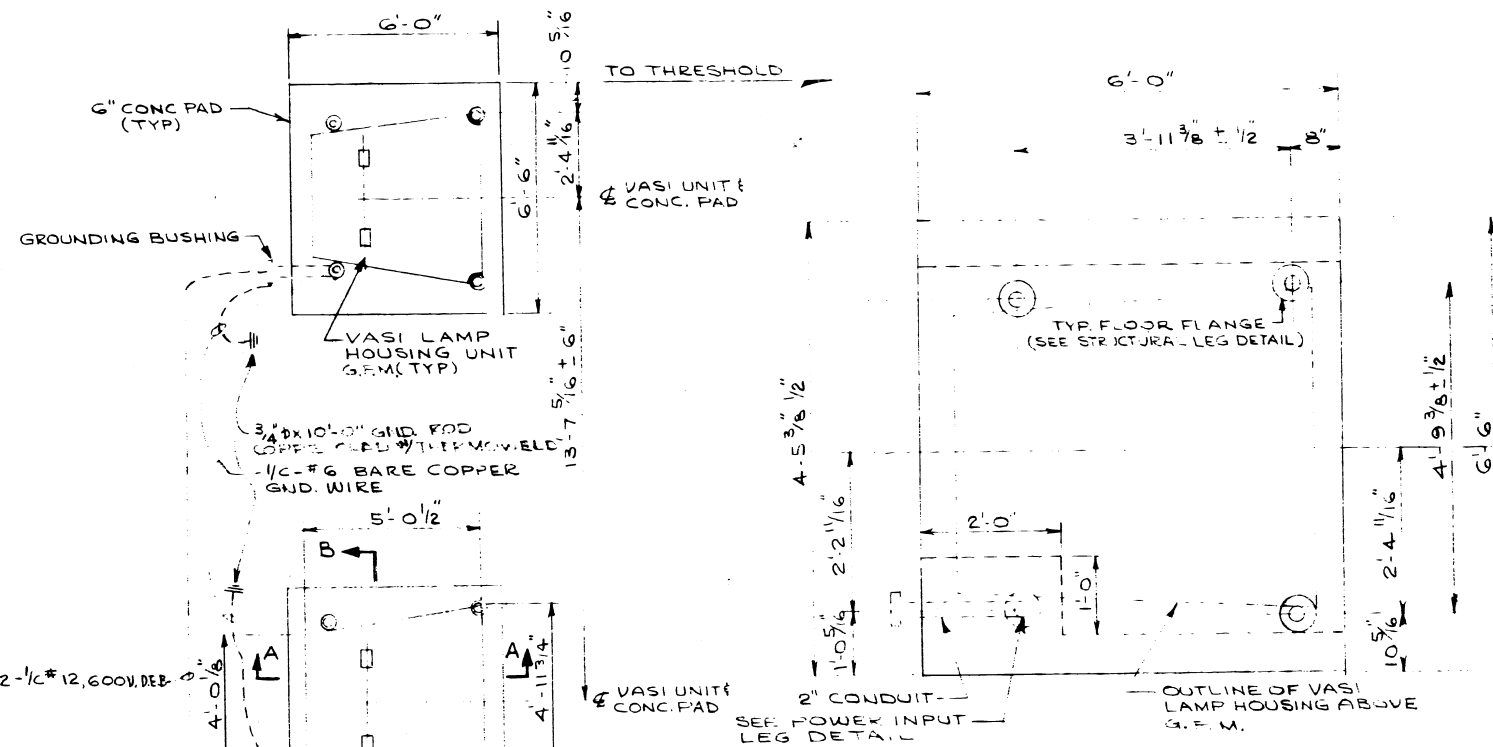
6 BOX VASI LAYOUT



6 BOX VASI AIMING ANGLES

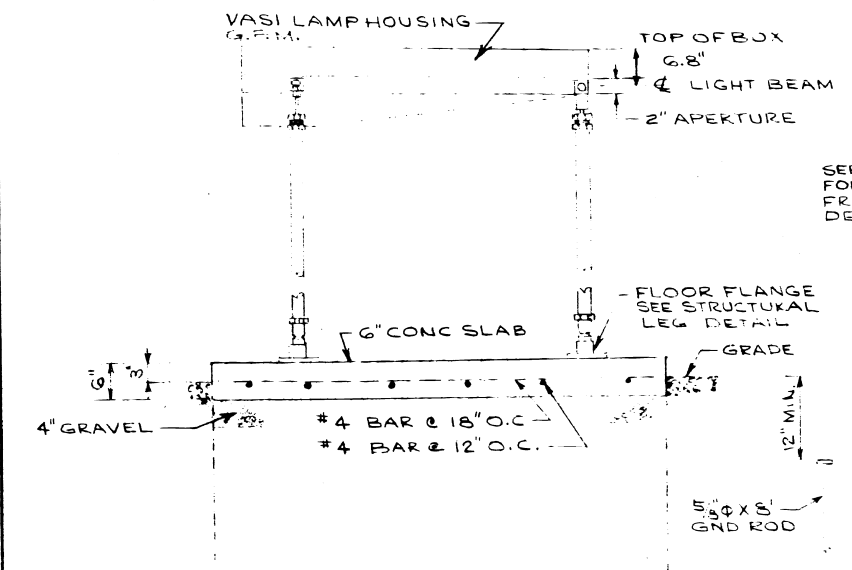
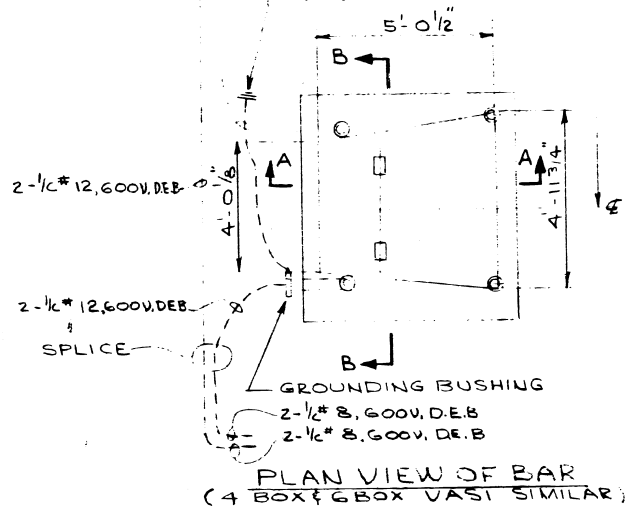


REVISED BY	DATE	DESCRIPTION	CHECKED	APPROVED
A	11/1/74	REVISION		
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WASHINGTON, D.C. 20591 466 BOX-VISUAL APPROACH SLOPE INDICATOR SYS. TYPICAL SITE LAYOUT RUNWAY NO. AIRPORT NAME CITY, STATE.				
DESIGNED BY	DATE	REVISION	DATE	REVISION
D. MULLER	7-11-74			
AIRWAY FACILITIES SERVICE ENVIRONMENTAL ENGINEERING DIVISION D-6043-1 A				

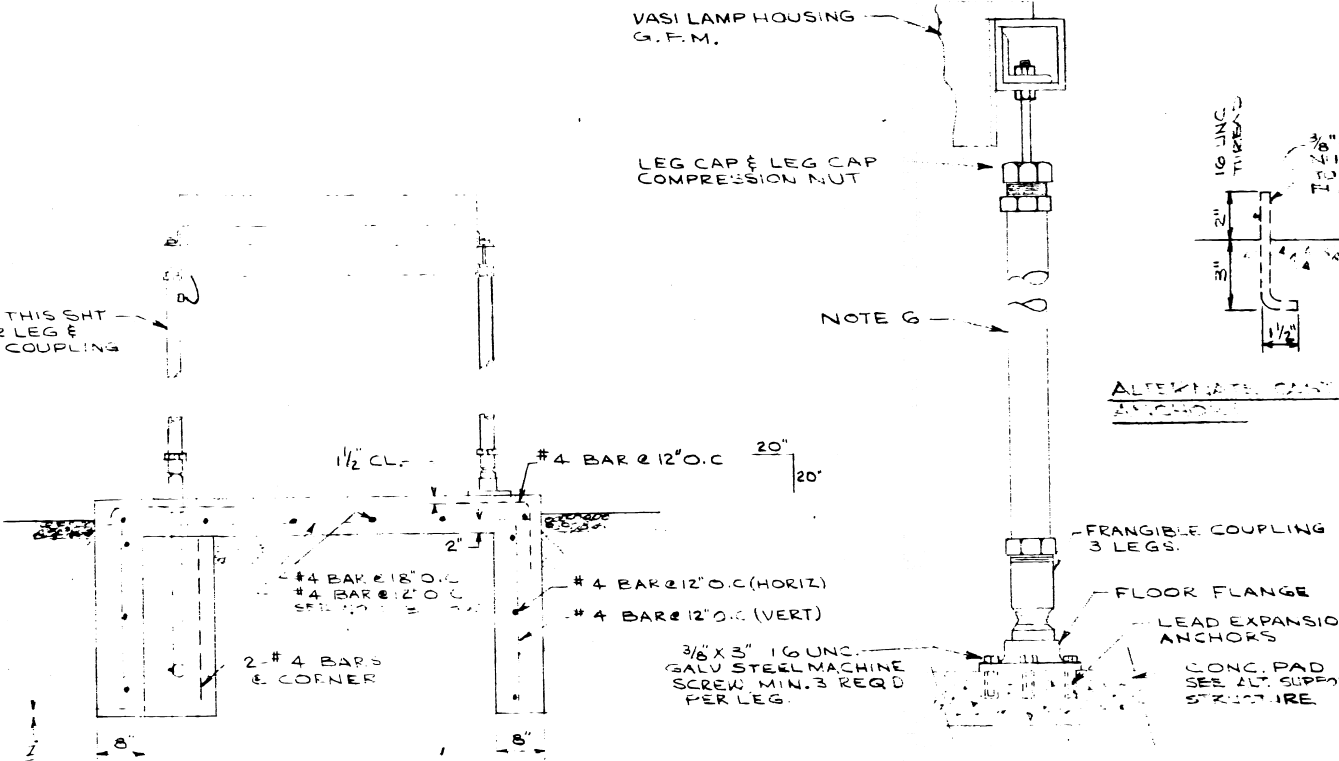


VASI BOX FOUNDATION PLAN

NOTE:
FOR LOCATION & ORIENTATION OF CONC PADS FOR VASI LAMP HOUSING SEE SITE PLAN



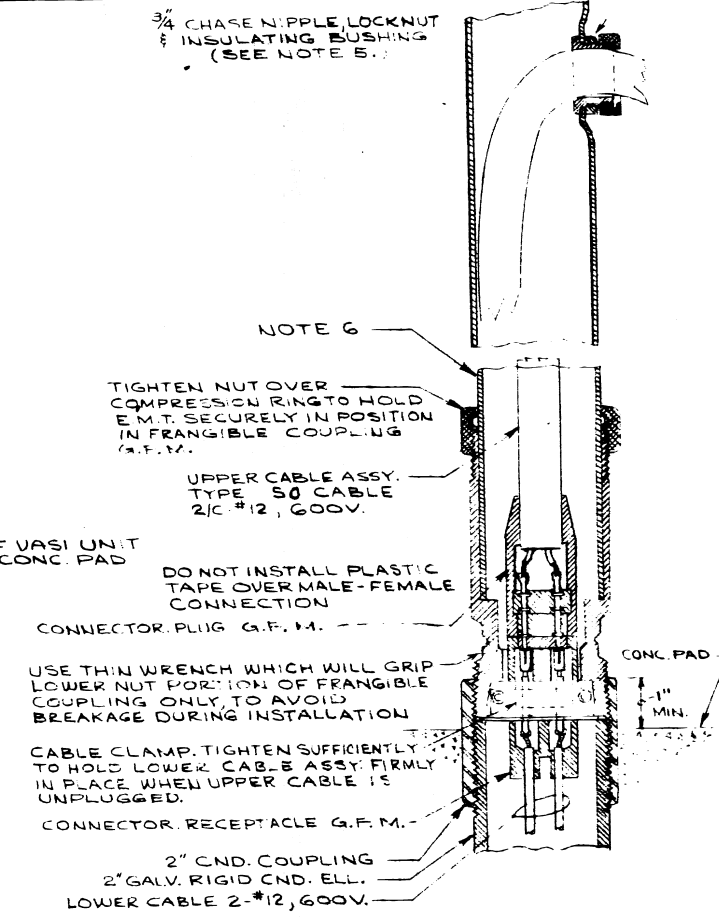
SECTION A-A



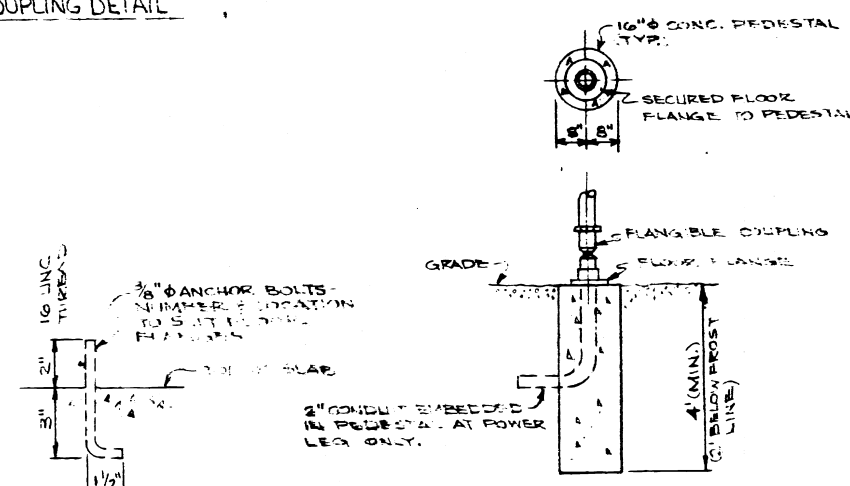
SECTION B-B

NOTE:
V. L. LEG WIRE MESH
X. G. 2/0 CAN BE USED IN LEG
LEG WIRE MESH 2/0 CAN BE USED IN LEG

STRUCTURAL LEG DETAIL



POWER LEG AND FRANGIBLE COUPLING DETAIL

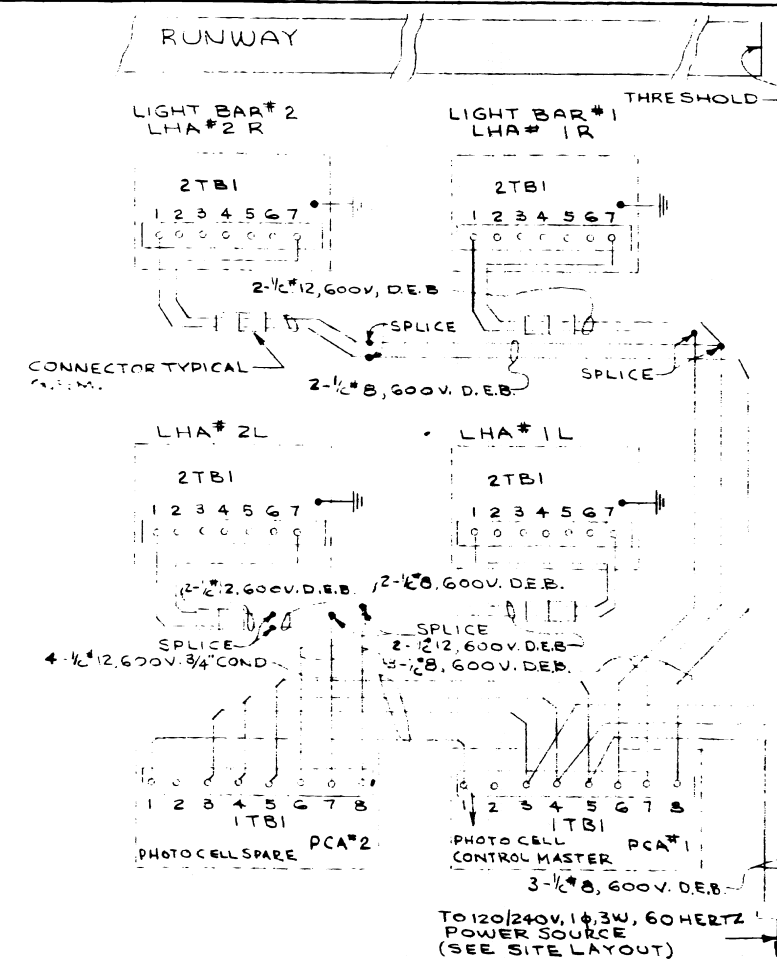
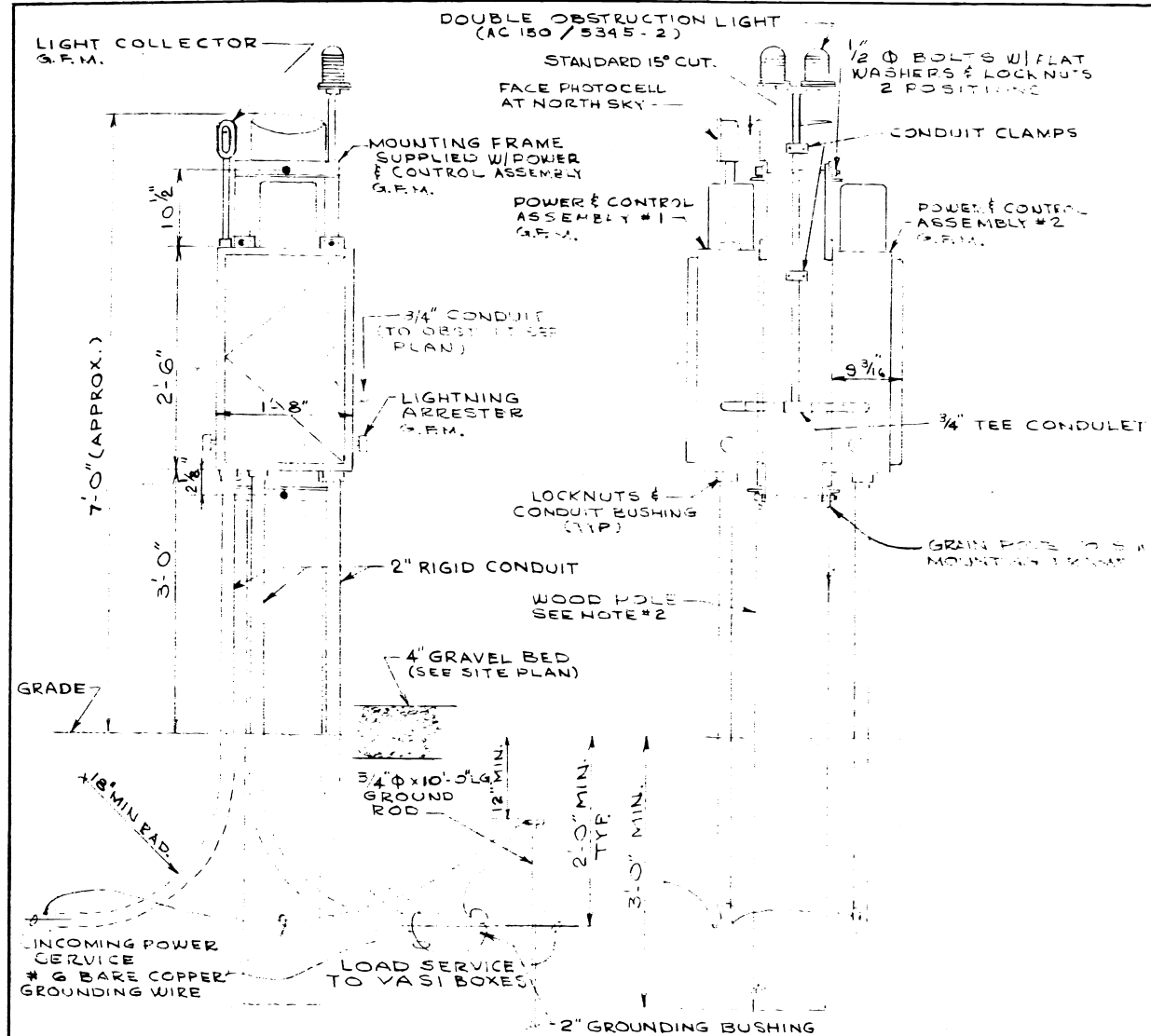


ALTERNATE SUPPORT DETAIL

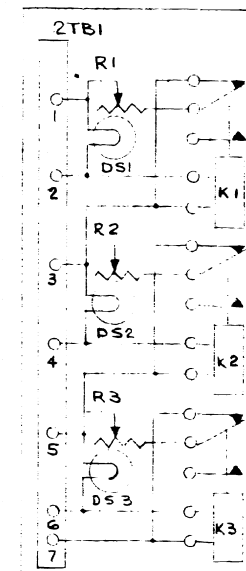
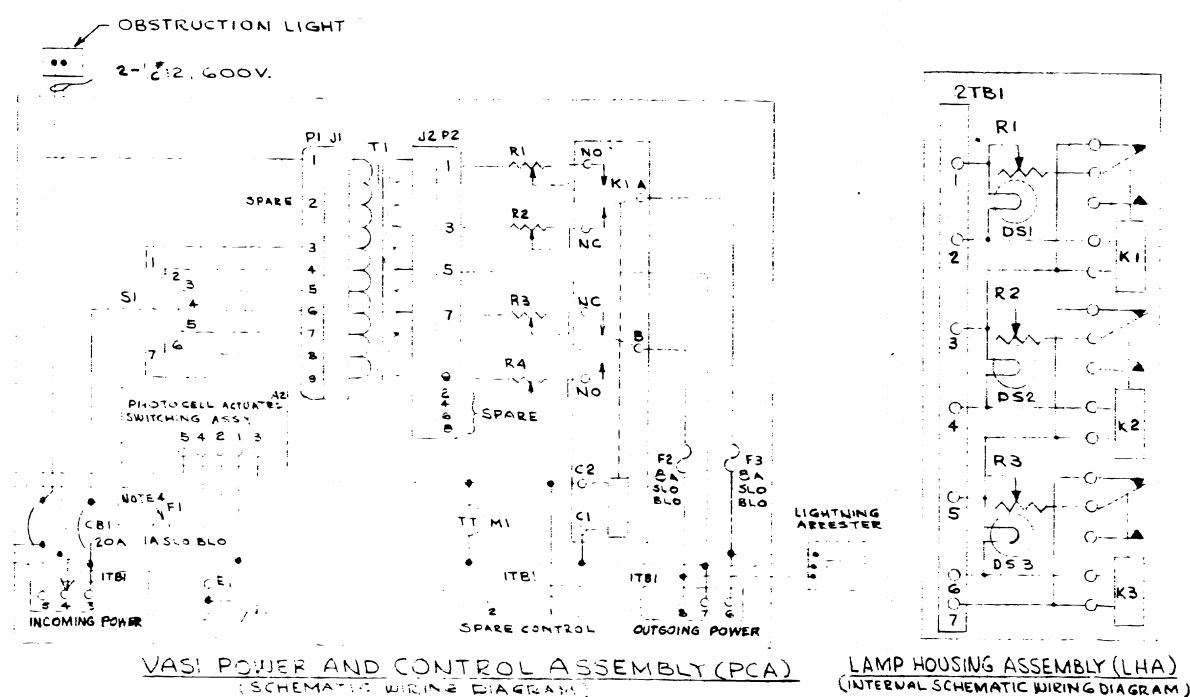
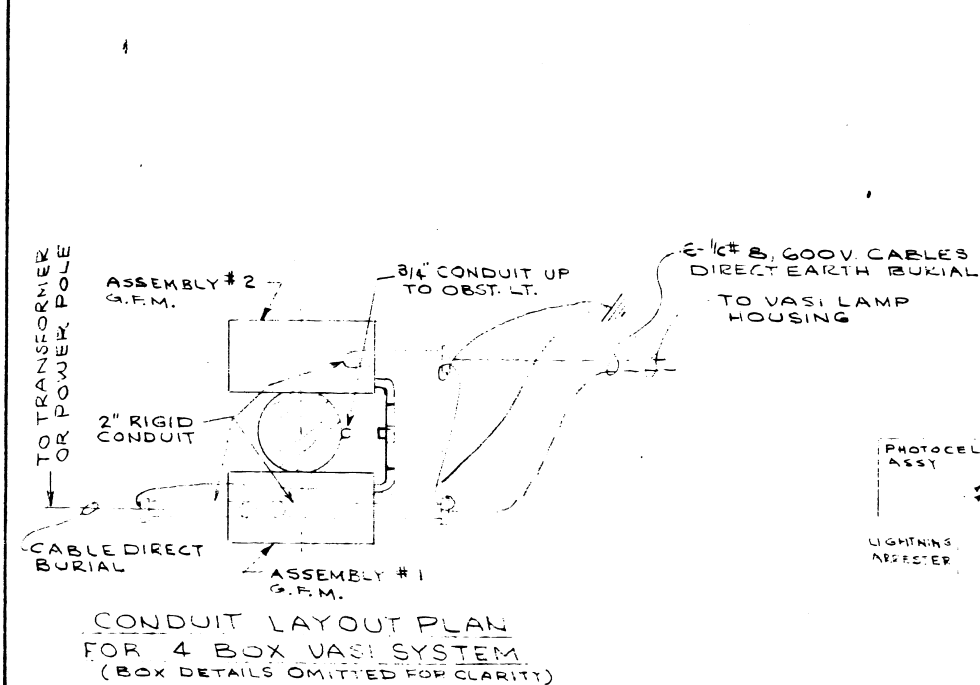
ALTERNATE SUPPORT DETAIL

REV. 1	DATE	DESCRIPTION	CHECKED	APPROVED
1	9-11-74	MINOR		
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WASHINGTON, D.C. 20591 VISUAL APPROACH SLOPE INDICATOR SYS STANDARD LAMP HOUSING ASSEMBLY DETAILS AND FOUNDATION PLANS WESTERN TECHNICAL ASSOCIATES CONTRACT DOT-FATS WAI-406				
REVIEWED BY	SUBMITTED BY	APPROVED BY		
COM	U.S.N.	D. MILLER		
CH. MAINT./RADAR FACILITIES BR. AAF-860		CH. ENVIRONMENTAL SYS. DIV. AAF-800		
DATE	ISSUED BY	DATE	REV	LT
7-11-74	AIRWAY FACILITIES SERVICE	7-11-74	D-6043-2	A
ENVIRONMENTAL ENGINEERING DIVISION				

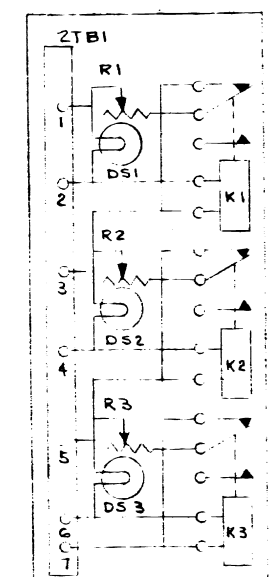
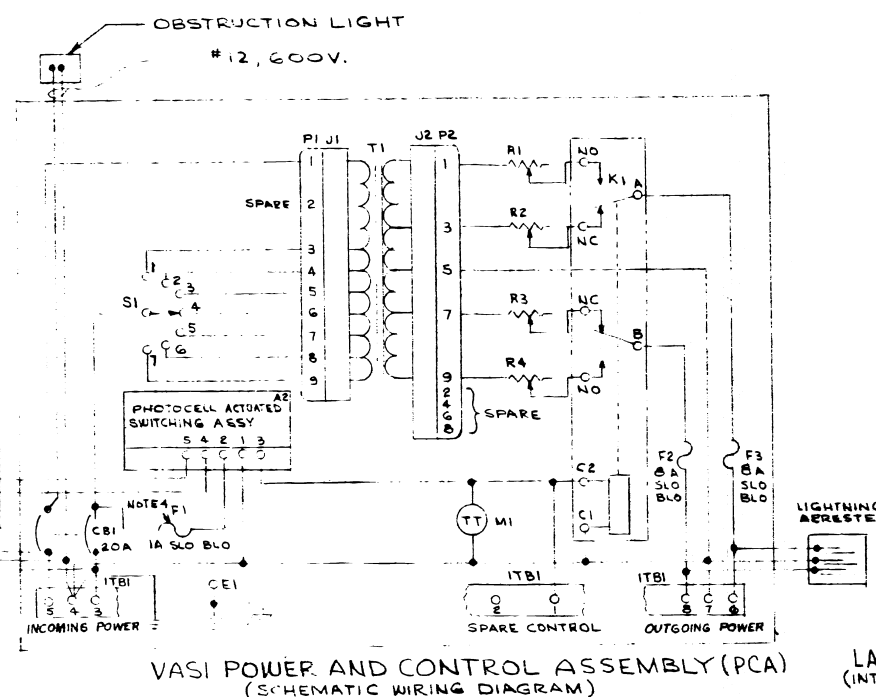
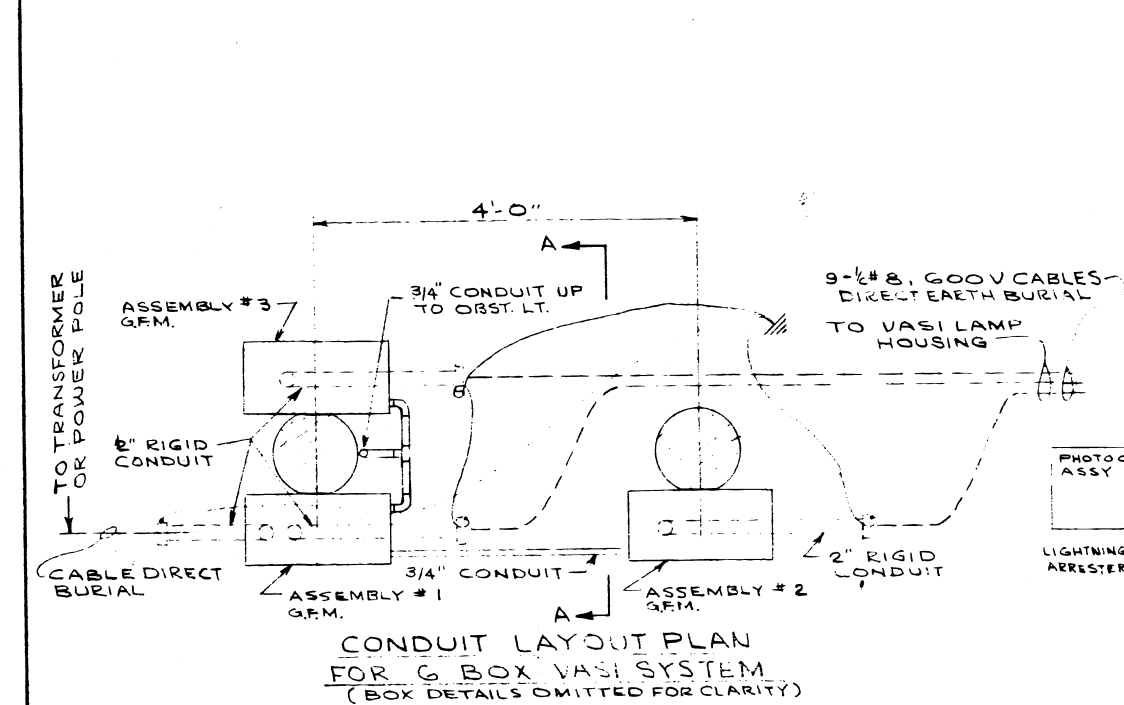
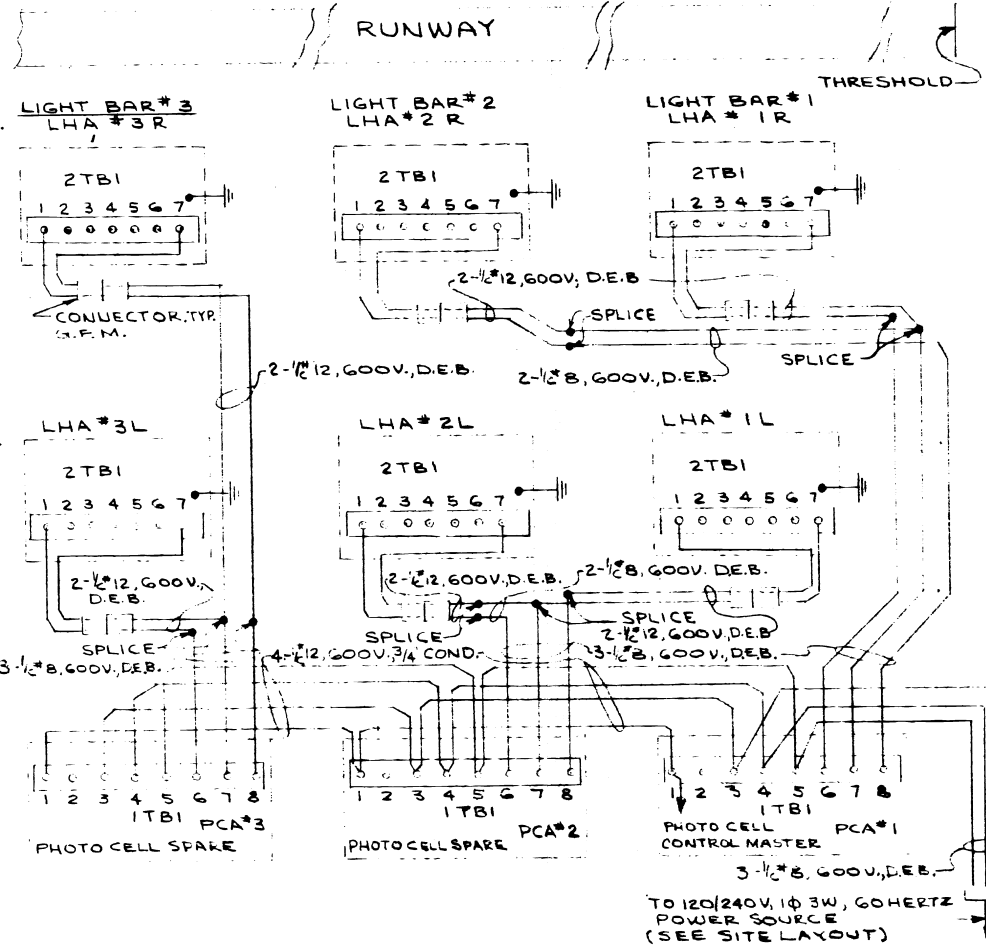
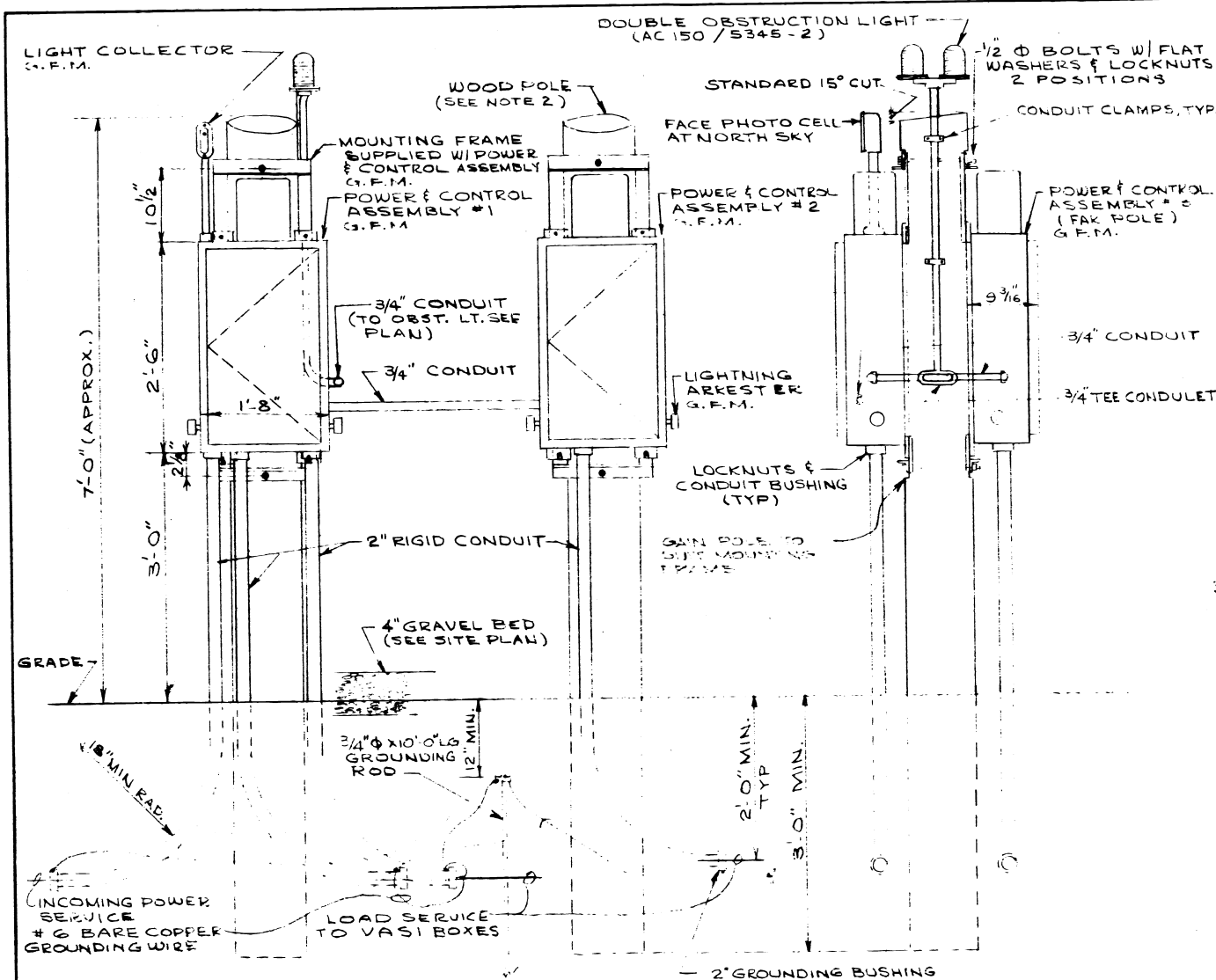
1. REINFORCING STEEL SPICE SHALL HAVE A MINIMUM LAP OF 12 INCHES.
2. THE ORIGINAL SUB-SOIL UNDER THE SLAB SHALL BE REMOVED TO A DEPTH WHICH WILL PROVIDE A SUB-BASE FREE OF GRASS, ROOTS, ORGANIC LOAM, WOOD OR OTHER DEBRIS IN ORDER TO ALLOW THE FILL TO REST ON TOP OF FIRM SUB-SOIL. THE FILL SHALL BE BUILT UP IN LAYERS NOT EXCEEDING 6 INCHES AND EACH LAYER SHALL BE THOROUGHLY TAMPED AND COMPACTED. A 4 INCH LAYER OF WELL GRADED GRAVEL SHALL BE PLACED SO AS TO BE DIRECTLY BELOW THE CONCRETE SLAB. FORMS USED SHALL BE REMOVED BEFORE BACKFILLING AROUND THE SIDES OF THE SLAB.
3. THE TOP SURFACE OF THE SLAB SHALL RECEIVE A ROUGH WOOD TROWEL OR BROOM TYPE FINISH.
4. WHEN VASI UNITS ARE ACCURATELY LOCATED ON PADS, ANCHOR HOLES SHALL BE DRILLED AND LEAD EXPANSION TYPE ANCHORS INSTALLED.
5. FORM FLAT AREA ON 2" E.M.T. AND INSTALL CHASE NIPPLE USING 'GREENLEE' KNOCKOUT CUTTERS AS FOLLOWS:
 - a. PUNCH 1/2" KNOCKOUT HOLE 3" FROM TOP.
 - b. FLATTEN AND REFORM TUBING WALL BY PLACING REVERSED 1" MALE PUNCH INSIDE, W/ FLAT TO WALL, AND REVERSED 1" FEMALE DIE OUTSIDE, FLAT TO WALL. TIGHTEN DRAW BOLT UNTIL AREA IS FLAT. THEN REMOVE TOOL.
 - c. CENTER 3/4" KNOCKOUT CUTTERS IN FLAT AREA AND COMPLETE PUNCHING OPERATION.
 - d. INSTALL 3/4" CHASE NIPPLE, LOCKNUT AND BUSHING AS SHOWN.
 - e. LUBRICATE CABLE W/ PULLING COMPOUND DURING INSTALLATION.
6. 2" E.M.T. LENGTH AS REQUIRED TO HOLD VASI APERTURE SLOT LEVEL WITH RUNWAY CROWN.
7. G.F.M. - A GOVERNMENT FURNISHED CONTRACTOR INSTALLED MATERIAL.



- ### NOTES:
1. FOR LOCATION OF POWER AND CONTROL ASSEMBLY SEE SITE LAYOUT DRAWING
 2. WOOD POLE SHALL BE 10 INCH MIN. DIAMETER AND SHALL CONFORM TO SPECIFICATION FAA-E-113 FOR PENTACHLOROPHENOL TREATED, TYPE II, CLASS 1, DOUGLAS FIR OR EQUAL.
 3. ONLY ONE PHOTO ELECTRIC CONTROL IS USED TO CONTROL THE VASI SYSTEM.
 4. REMOVE FUSE FI IN SLAVE AND CONNECT ALL ITB-I TOGETHER FI IN THE MASTER WILL ACCOMMODATE ONE ADDITIONAL SLAVE.
 5. G.F.M. - A GOVERNMENT FURNISHED CONTRACTOR INSTALLED MATERIAL.



A 9-19-64 MINOR REV.		V	SW
REVLT	DATE	DESCRIPTION	CHECKED APPROVE
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WASHINGTON, D.C. 20591 4 BOX VISUAL APPROACH SLOPE INDICATOR SYS. STANDARD POWER AND CONTROL ASSEMBLY INSTALLATION DETAILS & WIRING DIAGRAMS WESTERN TECHNICAL ASSOCIATES CONTRACT DOT-FA73-WAI-406			
REVIEWED BY	SUBMITTED BY	APPROVED BY	
DCM	6/17/74 D. MULLER	1 M. R. J. L. W. DYSON	
CH. HANDS/RADAR FACILITIES BR. AAF-660 CH. ENVIRONMENTAL SYS. DIV. AAF-600			
DESIGNED BY	DRAWN BY	DATE	REV
	GE	7-11-74	LT
CHECKED BY	AIRWAY FACILITIES SERVICE		
	ENVIRONMENTAL ENGINEERING DIVISION		
		DRAWING NO.	
		D-6043-3	A



- ## NOTES:
1. FOR LOCATION OF POWER AND CONTROL ASSEMBLY STATIONS SEE SITE LAYOUT DRAWINGS.
 2. DIAMETER OF WOOD POLE SHALL BE 10 INCHES MIN. AND SHALL CONFORM TO SPECIFICATION FAA-E-113 FOR PENTACHLOROPHENOL TREATED TYPE II, CLASS 1 DOUGLAS FIR OR EQUAL.
 3. ONLY ONE PHOTO ELECTRIC CONTROL IS USED TO CONTROL THE VASI SYSTEM.
 4. TO SLAVE ANY NUMBER OF CONTROL BOXES TO ONE MASTER, REMOVE FUSE FI IN EACH SLAVE AND CONNECT IT TO FI-15 TOGETHER. FI IN THE MASTER WILL ACCOMMODATE ONE ADDITIONAL SLAVE. FUSE FI RATING WILL HAVE TO BE INCREASED BY 5 AMPERE FOR EACH ADDITIONAL SLAVE IN EXCESS OF ONE.
 5. G.F.M. - A GOVERNMENT FURNISHED CONTRACTOR. INSTALLED MATERIAL.

A 9-1974		MINOR REV.			
REV/LTR	DATE	DESCRIPTION		CHECKED	APPROVED
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WASHINGTON, D.C. 20591					
6 BOX VISUAL APPROACH SLOPE INDICATOR SYS STANDARD POWER AND CONTROL ASSEMBLY INSTALLATION DETAILS & WIRING DIAGRAMS					
WESTERN TECHNICAL ASSOCIATES CONTRACT DOT-FA73-WAI-406					
PREPARED BY	SUBMITTED BY	APPROVED BY			
C.M. 4/6/74		D. MULLER		L. MEDSYAN	
CH. BRVAIDS/RADAR FACILITIES BR. AAF-580			CH. ENVIRONMENTAL SYS. DIV. AAF-580		
DESIGNED BY	ISSUED BY	DATE		REV.	
GR		7-11-74		TR	
CHECKED BY	AIRWAY FACILITIES SERVICE		DRAWING NO.		
	ENVIRONMENTAL ENGINEERING DIVISION		D-6043-4		A

1. POLE: MINIMUM 25 FOOT, CLASS 5, TYPE 2.
(BORED AND ROOFED BEFORE TREATMENT).
2. HARDWARE: ALL STANDARD GALVANIZED POLE
LINE HARDWARE.
3. LOCKWASHER OR LOCKNUTS ON ALL BOLTS.
4. POLE LINE WORK: IN ACCORDANCE WITH STANDARD
POLE LINE PRACTICE, N.E.C. AND N.E.
SAFETY CODE.
5. GUY CLAMPS AND SERVING SLEEVES MAY BE
USED IN LIEU OF THE "PREFORMED GUY-GRIP"
IF APPROVED BY FAA ENGINEER.
6. WIRING SHALL CONFORM TO UTILITY COMPANY
REQUIREMENTS IN CASE OF CONFLICT WITH
THIS DWG.
7. SERVICE EXTENSION AS SHOWN ON SITE PLAN
CONTRACTOR FURNISHED AND INSTALLED.

