



## **Shelby County Airport Mass Storage Hangar T**

### **ADDENDUM NO. 2**

Date: September 15, 2023

RE: Shelby County Airport Mass Storage Hangar T

BID DATE AND TIME:

Thursday, October 5, 2023 at 2:00 p.m.

Location for the bid opening remains the Shelby County Manager's Office, located at 200 West College Street, Room 123, Columbiana, Alabama, 35051

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#### **General:**

- A Mandatory Pre-Bid Conference is required for this project and will be held at 2:00 PM CST on September 21, 2023, at the Shelby County Airport at 265 Weathervane Road, Calera, AL 35040.

#### **Project Manual, Plans and Specifications:**

- See attached revised Sheet ED-1.01
  - Additional details and requirements have been included for the exhaust fan and intake louvers
  - The wire size feeding the hangar has been updated to a 4/0 cable
  - The breaker and wire size for the exhaust fan circuits have been updated to the manufacturer recommendation for the exhaust fan shown in the equipment schedule
- See attached revised Sheet ED-1.03
  - The equipment schedule has been added for the exhaust fan and louvers used in the design
  - Additional details and requirements have been included for the exhaust fan and intake louvers.
  - The panel schedule has been revised to show the specific load information and size of the exhaust fans

**Substitution Request:**

- SS-295 Pre-Engineered Metal Hangars – 1.2 – Schulte Building Systems – APPROVED
- SS-295 Pre-Engineered Metal Hangars – 1.2 – Inland Buildings – APPROVED
- SS-295 Pre-Engineered Metal Hangars – 1.2 – Ascent Buildings, LLC – APPROVED

**Questions and Clarifications:**

Q1 – The Bid Form shows “Line Item #15 – P101-5.3 – Pavement Repair - 377 SY”. Can you provide a narrative of this scope of work? I don’t see this referenced on the drawings.

A1 – Line Item #15, P-101-5.3 Pavement Repair is intended to make repairs to the existing pavement to remain that is damaged during construction. This will only be used to pay for damages that are deemed unavoidable. This item will include full depth pavement removal and replacement, as well as all saw cuts necessary to establish clean joints. This item will be underrun and/or eliminated from the job if not necessary during construction.

Q1 – Can the Civil Design CAD file be provided to bidders for use in performing takeoffs on earthwork quantities?

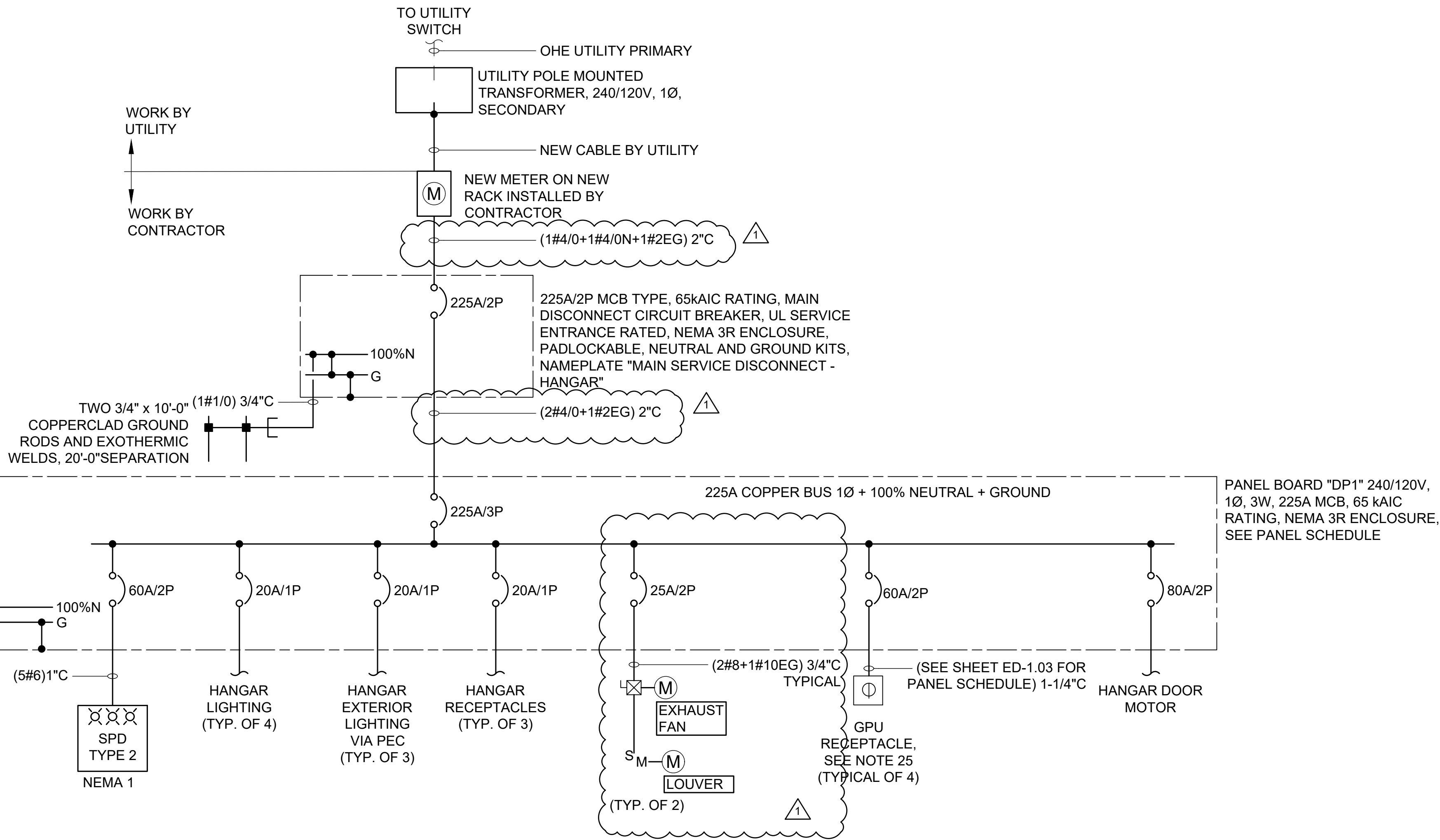
A1 – Yes, the CAD file is available upon request. Please contact Jennifer Harp with Garver at [JHHarp@Garverusa.com](mailto:JHHarp@Garverusa.com) to request the file and obtain and sign a File Transfer Agreement.

Q1 – Can a website or source available to aid in inviting DBE subcontractor participation for this bid?

A1 – DBE contractors should be registered with and certified by ALDOT. Additional DBE contact resources utilized in the past are as follows:

University of Alabama	256-405-3477	Ms. Lindsay Frey	<a href="mailto:lindsay.frey@ua.edu">lindsay.frey@ua.edu</a>
DBE Contract Manager	334-242-6242	Ms. Walter Carr	<a href="mailto:carrw@dot.state.al.us">carrw@dot.state.al.us</a>
State Professional Trainee	334-242-6253	Ms. LeCethia Johnson	<a href="mailto:johnsonl@dot.state.al.us">johnsonl@dot.state.al.us</a>
UAH		Dr. Sampson Gholston	<a href="mailto:gholsts@uah.edu">gholsts@uah.edu</a>
UAH		Ms. Hilary Claybourne	<a href="mailto:Hilary.Claybourne@uah.edu">Hilary.Claybourne@uah.edu</a>
UAH Industrial & Systems Engineering	Huntsville, AL	Ms. Ronica Ondocsin, P.E	<a href="mailto:ronica.ondocsin@uah.edu">ronica.ondocsin@uah.edu</a>
University of Alabama		Mr. Jerry Ellison	<a href="mailto:Jerry.Ellison@ua.edu">Jerry.Ellison@ua.edu</a>
University of Alabama		Ms. Susan Adams	<a href="mailto:Susan.Adams@ua.edu">Susan.Adams@ua.edu</a>

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Last plotted by: Ellis, Dakota L. Plot Style: AECmonochrome.ctb Plot Scale: 1" = 1' Plot Date: 9/14/2023 9:35 AM Plotter Used: AutoCAD PDF (General Documentation).pc3



#### GENERAL NOTES:

- SEE SHEET ED-1.01 FOR ONE-LINE DIAGRAM NOTES AND ARC-FLASH LABELING NOTES.
- ALL RECEPTACLES SHALL BE PIN AND SLEEVE STYLE.

#### CONDUIT NOTES:

- INSTALL ALL CONDUIT AND WIRING IN THE HANGAR IN ACCORDANCE WITH NEC AND LOCAL ELECTRICAL CODE REQUIREMENTS.

#### LEGEND:

---	EXISTING
—	NEW
FDS	FUSED DISCONNECT SWITCH
GRSC	GALVANIZED RIGID STEEL CONDUIT
HOA	HAND-OFF-AUTO
IBT	INTERSYSTEM BONDING TERMINAL
LSI	LONG SHORT INSTANTANEOUS
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
NFDS	NON-FUSED DISCONNECT SWITCH
PEC	PHOTOELECTRIC CELL
PVC	POLYVINYL CHLORIDE
SDBC	SOFT DRAWN BARE COPPER
SPD	SURGE PROTECTIVE DEVICES

1  
ED-1.01

## ONE-LINE DIAGRAM

SCALE: NONE

#### ONE-LINE DIAGRAM NOTES:

- ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2023) NATIONAL ELECTRICAL CODE, NFPA 101 (2021) LIFE SAFETY CODE, STATE ELECTRICAL CODE, AND LOCAL ELECTRICAL CODE.
- COORDINATE ELECTRICAL POWER SUPPLY WITH EQUIPMENT SUPPLIED.
- COORDINATE ALL ELECTRICAL WORK AND POWER OUTAGES WITH OWNER, FAA, AND POWER UTILITY.
- FOR ELECTRICAL WORK OF 600V OR LESS, ALL CONDUCTORS, TERMINATIONS, TERMINAL BLOCKS, LUGS, CONNECTORS, DEVICES, AND EQUIPMENT SHALL BE LISTED, MARKED, AND RATED 75 DEGREES C MINIMUM UNLESS OTHERWISE NOTED.
- ALL WIRING SHALL BE MINIMUM TYPE THHN/THWN-2 UNLESS OTHERWISE NOTED.
- ALL WIRING SHALL BE COPPER, UNLESS OTHERWISE NOTED.
- EQUIPMENT SHORT CIRCUIT CURRENT RATINGS AND AVAILABLE INTERRUPTING CURRENT RATINGS SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT CURRENT AVAILABLE AT TERMINALS. SERIES RATED SYSTEMS SHALL NOT BE USED.
- PHASE AND NEUTRAL BUSES SHALL BE COPPER 100% RATED UNLESS OTHERWISE NOTED.
- GROUND BUSES SHALL BE COPPER UNLESS OTHERWISE NOTED.
- INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDER AND BRANCH CIRCUITS.
- INSTALL ALL CONDUCTORS AND CABLES IN CONDUIT UNLESS OTHERWISE NOTED.
- INSTALL LUGS AND JUNCTION BOXES AS REQUIRED TO FIT WIRING.
- MAINTAIN INTEGRITY OF ALL FIRE RATED WALLS DUE TO CONDUIT WALL PENETRATIONS.
- FUSIBLE AND NONFUSIBLE DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE.
- INSTALL NEW TYPED PANEL SCHEDULES IN ALL ELECTRICAL PANELS INDICATING WORK PERFORMED.
- MAKE ELECTRICAL CONNECTIONS TO EVERYTHING FURNISHED OR INSTALLED BY THIS CONTRACT, WHETHER INDICATED OR NOT ON THE ELECTRICAL DRAWINGS.
- TRACE AND IDENTIFY ALL EXISTING CIRCUITS AND CABLES TO REMAIN PRIOR TO ANY WORK.
- INSTALL NEW PERMANENT LABELS ON PANELBOARDS AND REGULATORS INDICATING WORK PERFORMED.
- INSTALL NEW ENGRAVED NAME PLATES ON ALL REGULATORS.
- PROTECT ANY OTHER EXISTING CABLES WITHIN THE DUCT AND MANHOLE SYSTEM. TYPICAL FOR ALL MANHOLES, HANDHOLES, AND PULLBOXES.
- COORDINATE EXACT CIRCUIT BREAKER SIZE WITH REGULATOR MANUFACTURER PRIOR TO WORK.
- PERFORM LOCK-OUT / TAG-OUT PROCEDURES ON REGULATORS PRIOR TO WORKING ON AIRFIELD SERIES CIRCUITS.
- THE POWER UTILITY POINT OF CONTACT IS ALABAMA POWER, PHONE 205-316-0074
- DOOR MOTORS SHALL BE 240 VOLT, SINGLE PHASE. SUBMIT COMPLETE POWER AND CONTROL DIAGRAMS FOR DOOR MOTORS, DISCONNECTS, STARTERS, AND OPEN/STOP/CLOSE CONTROL STATIONS.
- ONLY ONE GPU SHALL BE USED AT A TIME INSIDE HANGAR. EACH GPU RECEPTACLE SHOULD HAVE INFORMATION SIGN READING "ONLY ONE GPU IS PERMITTED FOR USE AT A TIME".

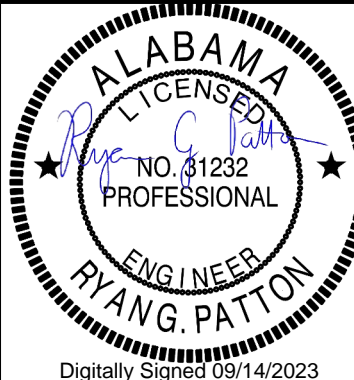
#### ARC FLASH LABELING NOTES:

- SUBMIT TO THE ENGINEER THE COMPLETE ONE-LINE INFORMATION FOR THE EXISTING AND NEW VAULT BUILDING ON AS-BUILT DRAWINGS. THIS INFORMATION SHALL INCLUDE ALL NEW AND EXISTING EQUIPMENT WITHIN THE POWER DISTRIBUTION SYSTEM INCLUDING:
  - PANELBOARD NAMEPLATE DATA
  - TRANSFORMERS NAMEPLATE DATA
  - CIRCUIT BREAKER / FUSE RATINGS AND MODEL NUMBERS
  - CONDUCTOR SIZES, LENGTHS, AND TYPES
  - CONDUIT SIZES AND TYPES
  - OTHER INFORMATION AS REQUESTED
- TRACE EXISTING CIRCUITS AS REQUIRED TO COMPLETE THE AS BUILT DRAWINGS.
- CONTRACTOR WILL COMPLETE ARC FLASH STUDY. CONTRACTOR SHALL SUBMIT CALCULATED ARC FLASH VALUES PROVIDED BY LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF ALABAMA FOR APPROVAL PRIOR TO INSTALLATION.
- SUBMIT LABEL TYPE, STYLE, AND APPEARANCE TO ENGINEER FOR APPROVAL PRIOR TO PURCHASING LABELS.
- PROCURE LABELS AND INSTALL ON EQUIPMENT.
- ALL WORK REQUIRED TO COMPLETE ARC FLASH LABELING SHALL BE CONSIDERED SUBSIDIARY TO THE T-HANGAR PAY ITEMS.



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5125A Research Drive NW  
Huntsville, AL 35805  
(256) 534-5512



Digitally Signed 09/14/2023

BY	DESCRIPTION	DATE	REV.
DLE	ELECTRICAL REVISIONS	09/14/23	1

SHELBY COUNTY AIRPORT  
SHELBY COUNTY, ALABAMA

MASS HANGAR T

#### ELECTRICAL DETAILS

JOB NO.: 22A01080  
DATE: AUG 2023  
DESIGNED BY: RGP  
DRAWN BY: ABC

BAR IS ONE INCH ON ORIGINAL DRAWING 1"  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER  
**ED-1.01**



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Last plotted by: Ellis, Dakota L. Plot Style: AEOnono.ctb Plot Scale: 1:1 Plot Date: 9/14/2023 9:55 AM Plotter Used: AutoCAD PDF (General Documentation).pc3

EXHAUST FAN SCHEDULE	
MARK	EF-1, EF-2
MANUFACTURER	GREENHECK
MODEL	SBE-2H42
VOLTAGE/PHASE	230/60/1
TYPE	WALL
DRIVE	BELT
CFM	15,000
MOTOR	2 HP
S.P. (IN. W.G.)	0.35
MOUNTING HT. (AFF TO BOTTOM)	18'-0"
REMARKS	PROVIDE HAND-OFF-AUTO (HOA) DISCONNECT SWITCH, OSHA GUARD, WEATHER HOOD, MOTORIZED DAMPER, THERMOSTAT WITH ON-OFF-AUTO SWITCHING, BIRD SCREEN, INTERLOCK WITH LOUVER

LOUVER SCHEDULE	
MARK	L-1, L-2
MANUFACTURER	GREENHECK
MODEL	EAD-635-60X78
SIZE (W"XH")	60X78
MAX P.D. (IN. W.C.)	0.1
AIRFLOW (CFM)	15,000
MOUNTING HEIGHT (AFF TO BOTTOM)	APPROX. 18'-0"
ACCESSORIES	ELECTRIC ACTUATOR, INSECT SCREEN
REMARKS	NORMALLY CLOSED, POWER OPEN ACTUATOR, INTERLOCK WITH EXHAUST FAN.

PANEL NAME:		VOLTAGE		PHASE:		WIRE:		NEUTRAL RATING:		PANEL DESCRIPTION:					
DP1		240/120		1		3		100%		MASS HANGAR T PANEL					
MAINS:		MOUNTING:		MAX. NO. OF CIRCUITS:		MANUFACTURER:		PANEL A.I.C. RATING:		LOCATION:					
225A MCB		Surface		30		N/A		65 000 A		EXTERIOR OF MASS HANGAR T					
NO	DESCRIPTION	BRANCH POLES	BKR	WIRE (AWG)	VA A B		Load Type	Load Type	VA A B		WIRE (AWG)	BRANCH BKR	POLES	DESCRIPTION	NO.
1	DOOR MOTOR	2	80	2	7200		E	L	1300		8	20	1	INTERIOR LIGHTING 1	2
3	DOOR MOTOR	-	80	2	7200		E	L	1300		8	20	1	INTERIOR LIGHTING 2	4
5	GPU 1	2	80	6	6000		E	L	1300		8	20	1	INTERIOR LIGHTING 3	6
7	GPU 1	-	80	6	6000		E	L	1300		8	20	1	INTERIOR LIGHTING 4	8
9	GPU 2	2	80	6	*		E	L	296		12	20	1	NORTH EXTERIOR LIGHTING	10
11	GPU 2	-	80	6	*		E	L	272		12	20	1	SOUTH EXTERIOR LIGHTING	12
13	GPU 3	2	80	4	*		E	L	412		10	20	1	WEST EXTERIOR LIGHTING	14
15	GPU 3	-	80	4	*		E	R	720		10	20	1	RECEPTACLES 1	16
17	GPU 4	2	80	2	*		E	R	1260		8	20	1	RECEPTACLES 2	18
19	GPU 4	-	80	2	*		E	R	720		8	20	1	RECEPTACLES 3	20
21	EXHAUST FAN 1	2	25	8	1440		H				-	20	1	SPARE	22
23	EXHAUST FAN 1	-	25	8	1440		H				-	20	1	SPARE	24
25	EXHAUST FAN 2	2	25	8	1440		H				-	20	1	SPARE	26
27	EXHAUST FAN 2	-	25	8	1440		H				6	60	2	SPD	28
29	SPARE	1	20	-							6	60	-	SPD	30

		Total			
Description	Code	A	B	SUM	%
LIGHTING	L	3308	2872	6180	15
RECEPT	R	1260	1440	2700	7
EQUIP.	E	13200	13200	26400	64
OTHER		0	0	0	0
HVAC	H	2880	2880	5760	14
CUSTOM	HS	0	0	0	0
ADDITIONAL		0	0	0	0
TOTAL		20648	20392	41040	
DEMAND		20648	20392	41040	100
%		50	50		

Design Load (kVA)
7.73
2.70
26.40
0.00
7.20
0.00
0.00
44.03
Spare 15%

Total Connected Load	
171.0 Amps	41.04 kVA

Total Design Load *	
215.8 Amps	51.79 kVA

\* Total Design Load includes calculated Design Loads per NEC Demand Factors and the stated Spare Capacity.


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ED-1.03

MASS HANGAR T-HANGAR PANEL SCHEDULE

SCALE: NONE


PANEL SCHEDULE NOTES:

- COORDINATE ALL EQUIPMENT, LOADS, CIRCUIT BREAKER SIZING, AND WIRE SIZING WITH HANGAR MANUFACTURER AND EQUIPMENT PROVIDED. CONTRACTOR SHALL MAKE ANY ADJUSTMENTS TO UPSIZE WIRES, CIRCUIT BREAKERS, OR PANEL AS NECESSARY.
- ONLY ONE GPU SHALL BE USED AT A TIME INSIDE HANGAR. EACH GPU RECEPTACLE SHOULD HAVE INFORMATION SIGN READING "ONLY ONE GPU IS PERMITTED FOR USE AT A TIME".




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5125A Research Drive NW  
Huntsville, AL 35805  
(256) 534-5512



Shelby County  
Alabama



ALABAMA  
LICENSED  
NO. 81232  
PROFESSIONAL  
ENGINEER  
HYUNG G. PATTON  
Digitally Signed: 09/14/2023

BY	DLE			
DESCRIPTION	ELECTRICAL REVISIONS			
REV.	DATE			
1	09/14/23			

SHELBY COUNTY AIRPORT  
SHELBY COUNTY, ALABAMA

MASS HANGAR T

ELECTRICAL DETAILS

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