

## **Project**

SOF Battalion Operations Facility  
Fort Bragg, North Carolina  
Contract No: W91278-12-D-0039 DQ03

### **General Contractor:**



**Subcontractor / Supplier:  
Humphrey Mechanical Inc.**

### **Specification Section / Submittal Number:**

**DRAWING M-601 HEATING & VENTILATING UNITS FOR TEMF**

**Submittal #23**

I certify that I have reviewed the materials being proposed and they comply with all contract, specification, and drawings including the provisions of FAR 52.225-11 "Buy American Act – Construction Materials under Trade Agreements (Nov 2013)" as applicable. I have submitted a "Deviation/Waiver" request and/or a "Request for Determination of Inapplicability of the Buy American Act" for each non-compliant submittal items.

**Certified by Subcontractor / Supplier Submittal**

**Preparer:** Nael Dahir

**Date:** 8/23/2017

**Certified by Subcontractor / Supplier Submittal Quality Control**

**Manager:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**SUBMITTAL DATA**  
**SOF BATTALION OPERATIONS FACILITY**  
**FORT BRAGG, NC**

**SECTION: DRAWING M-601 HEATING & VENTILATING UNITS FOR  
TEMF**

**SUPPLIED BY: THERMAL RESOURCE SALES**  
**POC: DAVID HALL**  
**PH: 910-686-2487**

**"I hereby certify that the (material) (equipment) (article) marked and shown in this submittal is in compliance with the Contract drawings and specifications, and can be installed in the allocated spaces and is submitted for approval.**

**Certified by Submittal Reviewer** *Lisa Neagle*, **Date** **8/23/17**  
(Signature when applicable)

**Humphrey Mechanical, Inc.**  
**2421-A N. Marine Blvd**  
**Jacksonville, NC 28546**  
**PH (910) 455-1418 Fax (910) 455-2215**



**Thermal Resource Sales, Inc.**

7215 Ogden Business Lane, Suite 109  
Wilmington, NC 28411  
Phone: (910) 686-2487 Fax: (910) 686-2488

**Submittal Data  
For  
Heating and Ventilating Unit**

**TEMF BUILDING - HEATING & VENTILATING UNITS  
PER TEMF DRAWING M-601**

**Date:** August 1, 2017  
**Project:** SOF Battallion Operations Complex and TEMF  
**Location:** Ft. Bragg, NC  
**Contract:** W91278-12-D-0039-DQ03  
**Contractor:** Humphrey Mechanical, Inc.  
**Engineer:** US Army Corps of Engineers- Wilmington  
**Manufacturer:** CaptiveAire

TRS Job#: 21-00858  
es Contact: David Hall  
[daivd.hall@trs-sesco.com](mailto:daivd.hall@trs-sesco.com)

THE FOLLOWING SUBMITTAL IS PROVIDED FOR APPROVAL

Notes:

- 1 Unit is provided 208/3.
- 2 Unit is provided with 3HP fan as scheudled.
- 3 To stay 3hp, unit includes 2" MERV13 throw-away filters only , NO pre filter.
- 4 Controls by Controls Contractor NOT Included

**MUA FAN INFORMATION - Job#3099406**

FAN UNIT NO.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	DESIGN CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	WEIGHT (LBS.)	SONES	BURNER EFFICIENCY(%)
1	MAU-1,2	A2-D.250-G15	G15-PB	A2-D.250	4500	0.450	987	3.000	2.9030	3	208	9.5	897	17.9	92

**GAS FIRED MAKE-UP AIR UNIT(S)**

FAN UNIT NO.	TAG	INPUT BTUs	OUTPUT BTUs	TEMP. RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE
1	MAU-1,2	185596	170748	34 deg F	7 in. w.c. - 14 in. w.c.	Natural

**FAN OPTIONS**

FAN UNIT NO.	TAG	OPTION (Qty. - Descr.)
1	MAU-1,2	1 - Inlet Pressure Gauge, 0-35"
		1 - Manifold Pressure Gauge, -5 to 15' wc
		1 - High Pressure Gas Switch
		1 - Low Pressure Gas Switch
		1 - DF 2 Indoor Hanging Option - Includes 2 HSA125 Hanging Spring Isolators per Uni-Strut
		1 - Insulation Option for VBank filter section

**FAN ACCESSORIES**

FAN UNIT NO.	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	MAU-1,2				YES			



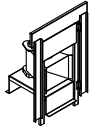
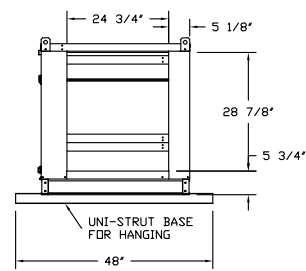
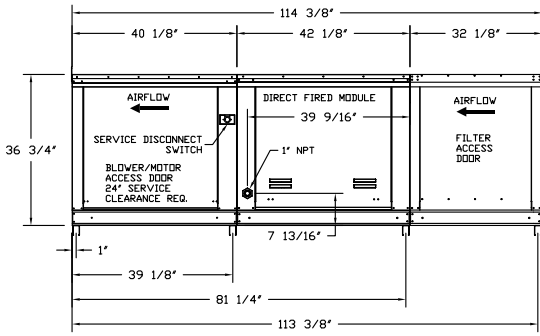
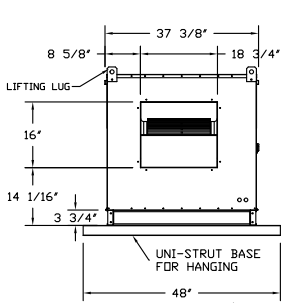
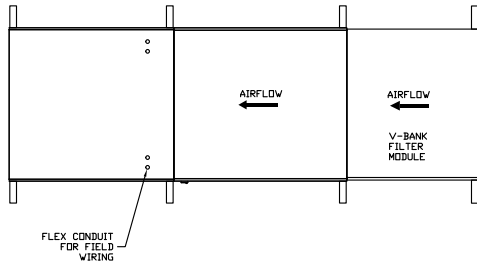
**CAPTIVEAIRE**

JOB SQF Battalion Ops TEMF	
LOCATION Fayetteville, NC,	
DATE 7/31/2017	JOB # 3099406
DWG # 1	DRAWN BY MJN-59
REV.	SCALE 3/8" = 1'-0"

- FAN #1 A2-D.250-G15 - HEATER (MAU-1.2)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 15' BLOWER
  2. V-BANK TA-13 FILTERS - INDOOR
  3. SIDE DISCHARGE - AIR FLOW RIGHT -> LEFT
  4. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
  5. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE
  6. HIGH PRESSURE GAS SWITCH (2" - 16" WC) FACTORY SET AT 2" W.C.
  7. LOW PRESSURE GAS SWITCH (1" - 6" WC) FACTORY SET AT 8" W.C.
  8. INDOOR HANGING CRADLE FOR THE SIZE 2 DIRECT FIRED UNIT. 2 HSA125 HANGING ISOLATORS PER UNI-STRUT INCLUDED.
  9. \*INSULATION\* FOR V-BANK INTAKE OPTION.

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 21°F. TEMP. RISE = 34°F.  
 BTUS CALCULATED OFF ACTUAL AIR DENSITY  
 OUTPUT BTUs AT ALTITUDE OF 0.0 Ft. = 170748  
 INPUT BTUs AT ALTITUDE OF 0.0 Ft. = 185596



Direct Fired GFI Profile Plate Assembly

**Direct Fired Profile Plate Specifications**

**Design:**  
 Direct fired burners shall have patented GS Patent No US6295238E, self-adjusting profile plates designed to ensure proper air velocity and pressure drop across the burner. Profile plates shall allow burners to achieve clean combustion by being pre-projected inside to a minimum of 30% of carbon monoxide (CO) and 50ppm of nitrogen dioxide (NO2).

**Application:**  
 Self-adjusted burner profile plates are engineered to automatically react to the movement of a flame up or down, without the need for manual or automatic adjustment. They are designed to meet the requirements of all 20 units and are designed to meet the requirements of the International Code Council (ICC) requirements.

**Construction:**  
 All profile plate assemblies shall be included in the 20 units ETL listing and comply with combined safety standards ANSI Z83.4 and CSA 2.2 (non-recirculating 20 heaters) and ANSI Z83.18 (recirculating 20 heaters).

**General Construction:**  
 -Profile plates shall be formed from 304 galvanized steel.  
 -Profile plates shall vary in size per unit.  
 -Profile plates shall be mounted along the nose piece as the discharge of the burner.  
 -Design shall incorporate properly torqued, permanently mounted spring hinges.  
 -Spring hinges shall be made from galvanized steel.



JOB SQF Battalion Ops TEMF	
LOCATION Fayetteville, NC,	
DATE 7/31/2017	JOB # 3099406
DWG # 2	DRAWN BY MJN-59
REV.	SCALE 1/4" = 1'-0"

# Direct Fired Heater Wiring

JOB 3099406 - SDF Battalion Ops TEMF

DRAWING NUMBER DF3099406-1

SHIP DATE 7/31/2017

MODEL A2-D.250-G15

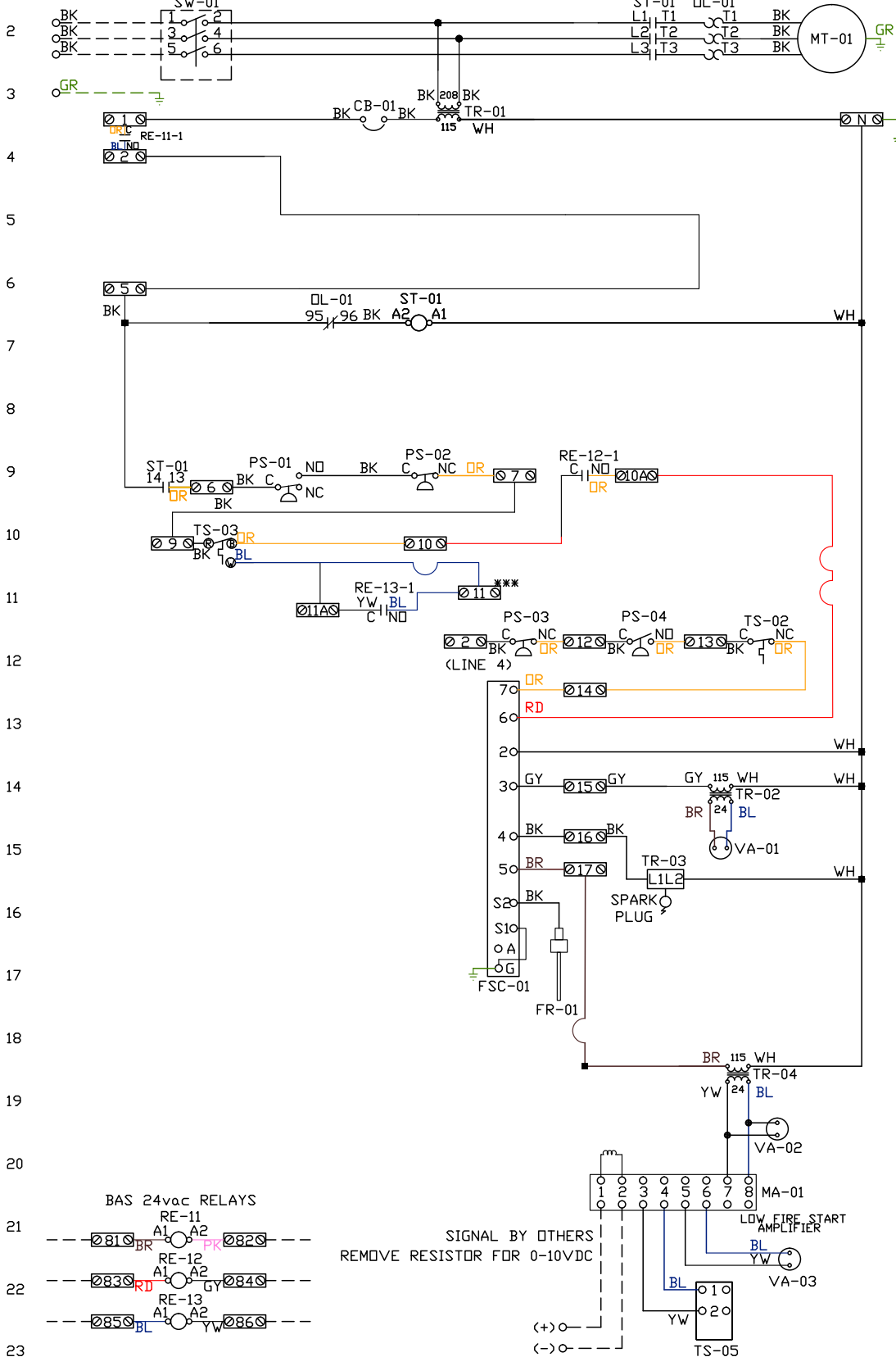
ATTENTION ELECTRICIAN!  
 DROP FOR DISCONNECT CONNECTION  
 IS FACTORY SUPPLIED  
 CONNECT POWER TO THE DROP

Installed Options  
 Building Automation System Control

High Gas Pressure Switch  
 Low Gas Pressure Switch

Signal Conditioner

1 MAIN POWER MUST BE CONSTANT  
 FOR USE WITH BUILDING MANAGEMENT SYSTEM



Component Identification

Label	Description	Location
CB-01	Circuit breaker (2amp)	[30]

FR-01	Flame rod	[160]
FSC-01	Fireye FSC	[11-140]

MA-01	SC-1 Signal Conditioner	[190]
MT-01	Supply motor	[20]
OL-01	Supply motor overload	[200/70]

PS-01	Low Airflow Switch	[90]
PS-02	High Airflow Switch	[90]
PS-03	High Gas Pressure Switch	[100]
PS-04	Low Gas Pressure Switch	[100]

RE-11	BAS Blower Relay	[30][210]
RE-12	BAS Burner Relay	[90][220]
RE-13	BAS Cooling Relay	[110][220]

ST-01	Supply motor contactor	[200][70][90]
-------	------------------------	---------------

SV-01	Main disconnect switch	[20]
-------	------------------------	------

TR-01	Power transformer(200va)	[30]
TR-02	Power transformer(20va)	[120]
TR-03	Ignition transformer	[140]
TR-04	Power transformer(20va)	[170]

TS-02	High temp limit switch	[100]
TS-03	Intake Air Sensor	[100]
TS-05	Discharge Air Sensor	[210]

VA-01	Pilot gas valve	[130]
VA-02	Main gas valve	[180]
VA-03	Modulating gas valve	[200]

MOTOR INFO  
 SUPPLY 3HP-208V-3P-9.5FLA  
 CONTACTOR: 100-K12D10  
 OVERLOAD: 193-KC10

ELECTRICAL INFORMATION  
 MOTOR/CTRL CIRCUIT MCA: 13.1A  
 MOTOR/CTRL CIRCUIT MDP: 20A

NOTES  
 - - - - DENOTES FIELD WIRING  
 \_\_\_\_\_ DENOTES INTERNAL WIRING

\*\*\* TERMINAL 11 PROVIDES COOLING CONNECTION

WIRE COLOR		SOCKET STYLE "CLIM" RELAY	
BK-BLACK	YW - YELLOW	RD - RED	NO 4 3
BL-BLUE	GR - GREEN	WH - WHITE	NC 2 1
BR - BROWN	GY - GRAY	PK - PINK	COM 8 7
DR - DRANGE	PR - PURPLE		COM 6 5

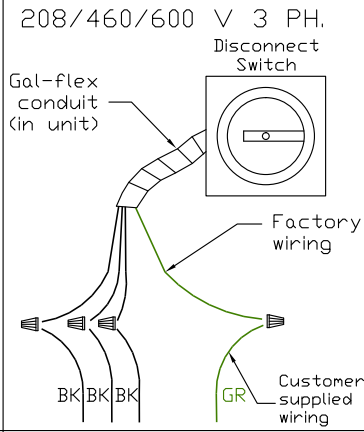
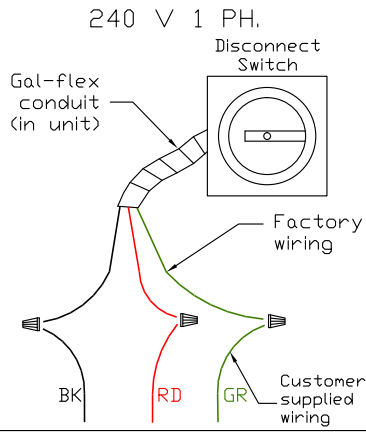
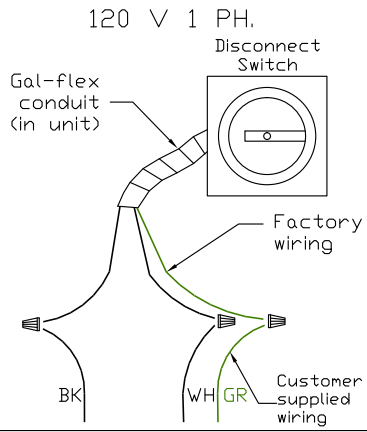
Installation Wiring

JOB 3099406 - SDF Battalion Ops TEMF

DRAWING NUMBER RP3099406-1

SHIP DATE 7/31/2017

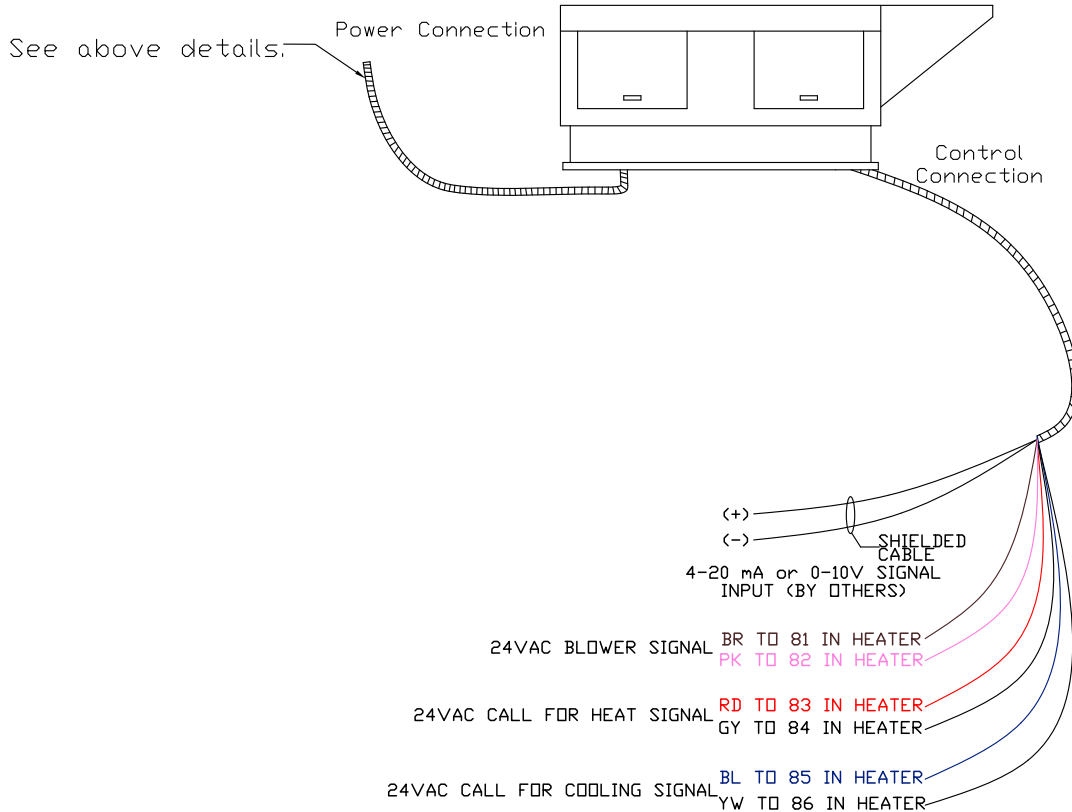
MODEL A2-D.250-G15



Installed Options

Signal Conditioner

MAIN POWER MUST BE CONSTANT FOR BUILDING MANAGEMENT SYSTEM



NOTES

WIRE COLOR

BK - BLACK	YW - YELLOW
BL - BLUE	GR - GREEN
BR - BROWN	GY - GRAY
OR - ORANGE	PR - PURPLE
RD - RED	PK - PINK
WH - WHITE	