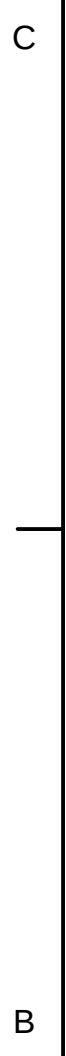


A vertical number line with tick marks labeled A, B, C, and D from bottom to top. The distance between A and B is 1 unit, between B and C is 2 units, and between C and D is 1 unit.



NOT TO SCALE

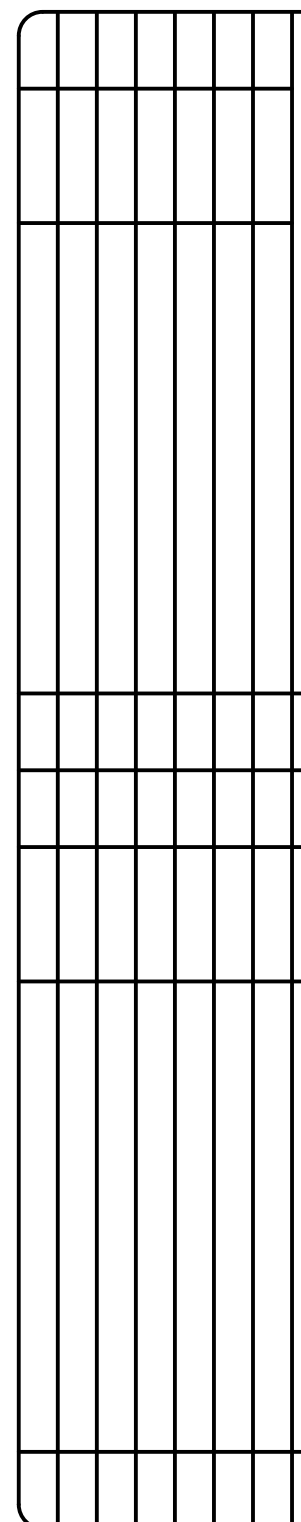


DRAWINGS

- | | |
|-------|--|
| G-001 | TITLE SHEET |
| G-002 | CONSTRUCTION NOTES |
| M-001 | MECHANICAL LEGEND AND GENERAL NOTES |
| MD101 | MECHANICAL DEMOLITION PLANS |
| M-101 | MECHANICAL NEW WORK PLANS |
| M-501 | MECHANICAL DETAILS AND SCHEDULES |
| E-001 | ELECTRICAL LEGEND AND GENERAL NOTES |
| ED101 | ELECTRICAL DEMOLITION FLOOR PLANS |
| ED102 | ELECTRICAL ROOF DEMOLITION PLANS |
| E-101 | ELECTRICAL NEW WORK PLANS |
| E-102 | ELECTRICAL POWER AND LIGHTNING PROTECTION |
| E-201 | ELECTRICAL DETAILS AND ELEVATIONS DEMOLITION |
| E-202 | ELECTRICAL DETAILS AND ELEVATIONS NEW WORK |
| E-203 | ELECTRICAL ONE LINE DIAGRAMS |



NOT TO SCALE



AIR FORCE SPACE COMMAND SCHRIEVER AIR FORCE BASE COLORADO	DESIGNED BY:	DATE:
	MAH	09 NOV 2017
	DRAWN BY:	SOLICITATION NO.:
	JTM	LWH
505 CISCENM 500 O'MALLEY AVENUE, Ste 149 SCHRIEVER AFB, CO 80912-5019	SUBMITTED BY:	CONTRACT NO.:
	PERKINS ENGINEERING, INC	FA565-17F-0002
	PILOT SCALE:	FILE NUMBER:
	1:1	
	SHEET:	FILE NAME:
	11	

TITLE SHEET
GLEN 16-2601

SHEET
IDENTIFICATION
G-001
SHEET 01 OF 14

ANTICIPATED LEAD TIMES

THE FOLLOWING ANTICIPATED PLANNING LEAD TIMES ARE PROVIDED TO ASSIST THE CONTRACTOR WITH PLANNING AND SCHEDULING. (LEAD TIMES ARE APPROXIMATE AND MAY VARY)

EXHAUST FANS	6-8 WEEKS
MOTOR CONTROL CENTER PARTS	6-8 WEEKS
SAFETY SWITCHES	4-6 WEEKS

GENERAL NOTES

THE CONSTRUCTION EFFORTS SHALL COMPLY WITH THE LATEST VERSIONS OF THE FOLLOWING DOCUMENTS:

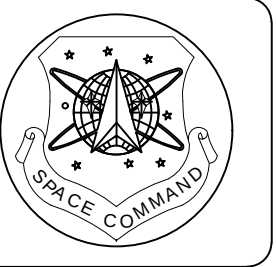
- A. SCHRIEVER AIR FORCE BASE (SAFB) STANDARDS.
 - 1. SAFB ENGINEERING DESIGN GUIDE.
 - 2. SAFB INSTALLATION DEVELOPMENT PLAN.
 - 3. SAFB ENVIRONMENT ENGINEERING DESIGN GUIDE.
 - 4. SAFB FACILITIES EXCELLENCE PLAN.
 - 5. 50SWI33-105, C4 SYSTEMS INSTALLATION GUIDE.
- B. DEPARTMENT OF DEFENSE AND UNIFIED FACILITIES CRITERIA (UFC).
 - 1. UFC 1-200-01, GENERAL BUILDING REQUIREMENTS.
 - 2. UFC 3-410-01, HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS
 - 3. UFC 3-520-01, INTERIOR ELECTRICAL SYSTEMS
 - 4. UFC 3-575-01, LIGHTNING AND STATIC ELECTRICITY PROTECTION SYSTEMS
 - 5. UFC 3-600-01, FIRE PROTECTION ENGINEERING FOR FACILITIES.
 - 6. UFC 4-010-01, DOD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS.
 - 7. ETL 01-18 FIRE PROTECTION ENGINEERING CRITERIA - ELECTRONIC EQUIPMENT INSTALLATIONS.
- C. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). COMPLIANCE WITH ALL NFPA DOCUMENTS IS REQUIRED; THE FOLLOWING LIST IS NOT ALL INCLUSIVE.
 - 1. NFPA 1, CHAPTER 29 - SAFEGUARDS DURING BUILDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS.
 - 2. NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS.
 - 3. NFPA 70, NATIONAL ELECTRICAL CODE.
 - 4. NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE.
 - 5. NFPA 101, LIFE SAFETY CODE.
- D. INTERNATIONAL CODES
 - 1. INTERNATIONAL BUILDING CODE
 - 2. INTERNATIONAL ENERGY CONSERVATION CODE
 - 3. INTERNATIONAL FIRE CODE
 - 4. INTERNATIONAL MECHANICAL CODE
 - 5. INTERNATIONAL PLUMBING CODE
- E. OTHER DOCUMENTS
 - 1. AFI 32-1024 CIVIL ENGINEERING STANDARD FACILITY REQUIREMENTS.
 - 2. AFI 32-1065 GROUNDING SYSTEMS
 - 3. AFMAN 32-1084 CIVIL ENGINEERING FACILITY REQUIREMENTS.
 - 4. ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG) LATEST EDITION
 - 5. ASHRAE HANDBOOKS

CONSTRUCTION PHASING NOTES

1. NOT USED.

RECYCLED MATERIAL NOTES

1. CONTRACTOR SHALL COORDINATE ALL RECYCLING EFFORTS THROUGH 50 CES ENVIRONMENTAL.

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AIR FORCE SPACE BASE SCHRIEVER AIR FORCE BASE COLORADO	DRAWN BY: JTM CHECKED BY: LWH SUBMITTED BY: PARRIS ENGINEERS, INC. 108 500 COLUMBIA AVENUE, STE 149 SCHRIEVER AFB, CO 80912-5019	CONTRACT NO.: PAFS01-17-1-002 FILE NO.: 18 FILE NAME: G-002.DWG	SOLICITATION NO.: 09 NOV. 2017
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Repair by Replacing the Roof
Mounted Exhaust fans,B600

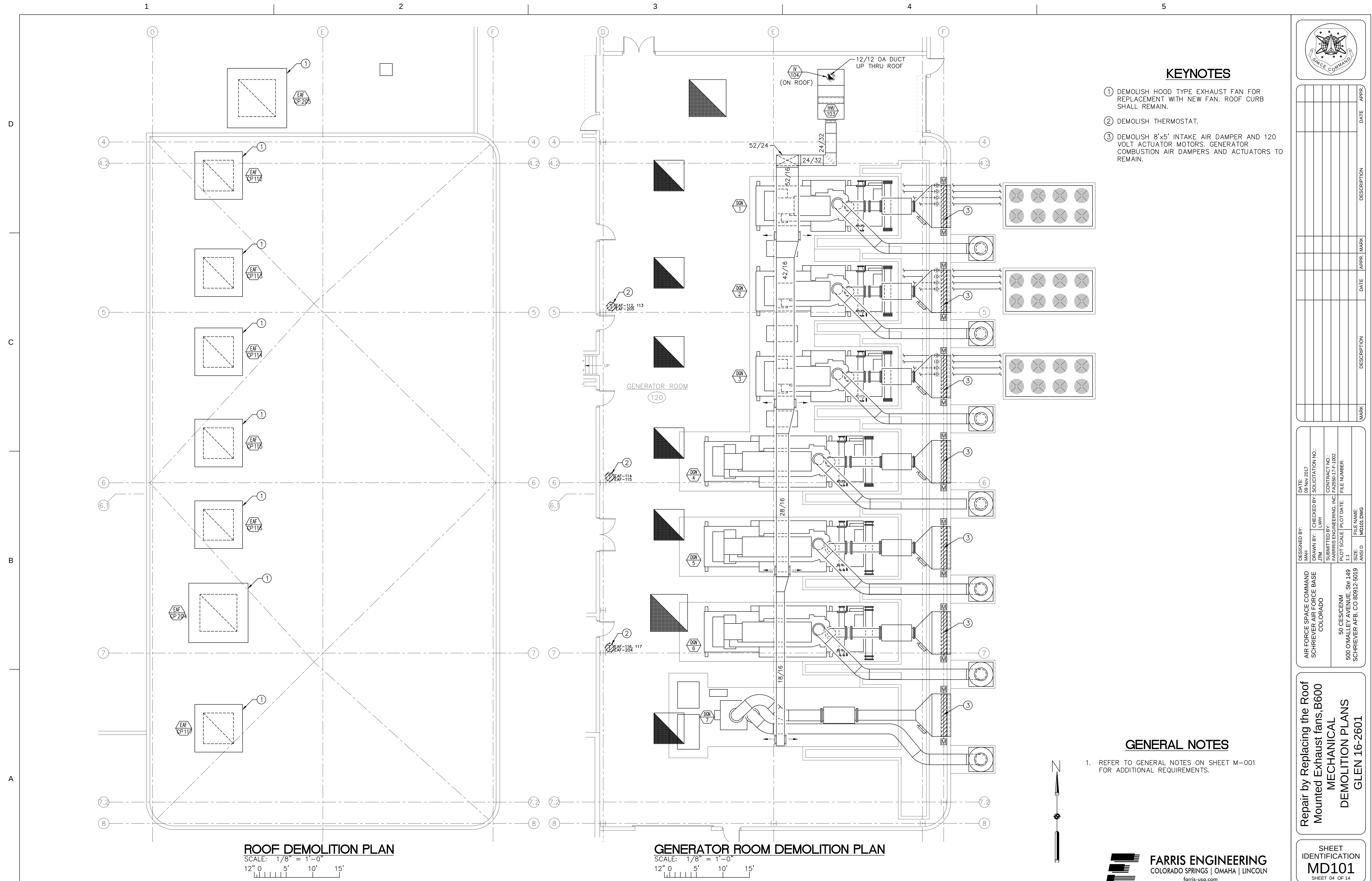
CONSTRUCTION NOTES

GLEN 16-2601

SHEET
IDENTIFICATION
G-002
SHEET 02 OF 14



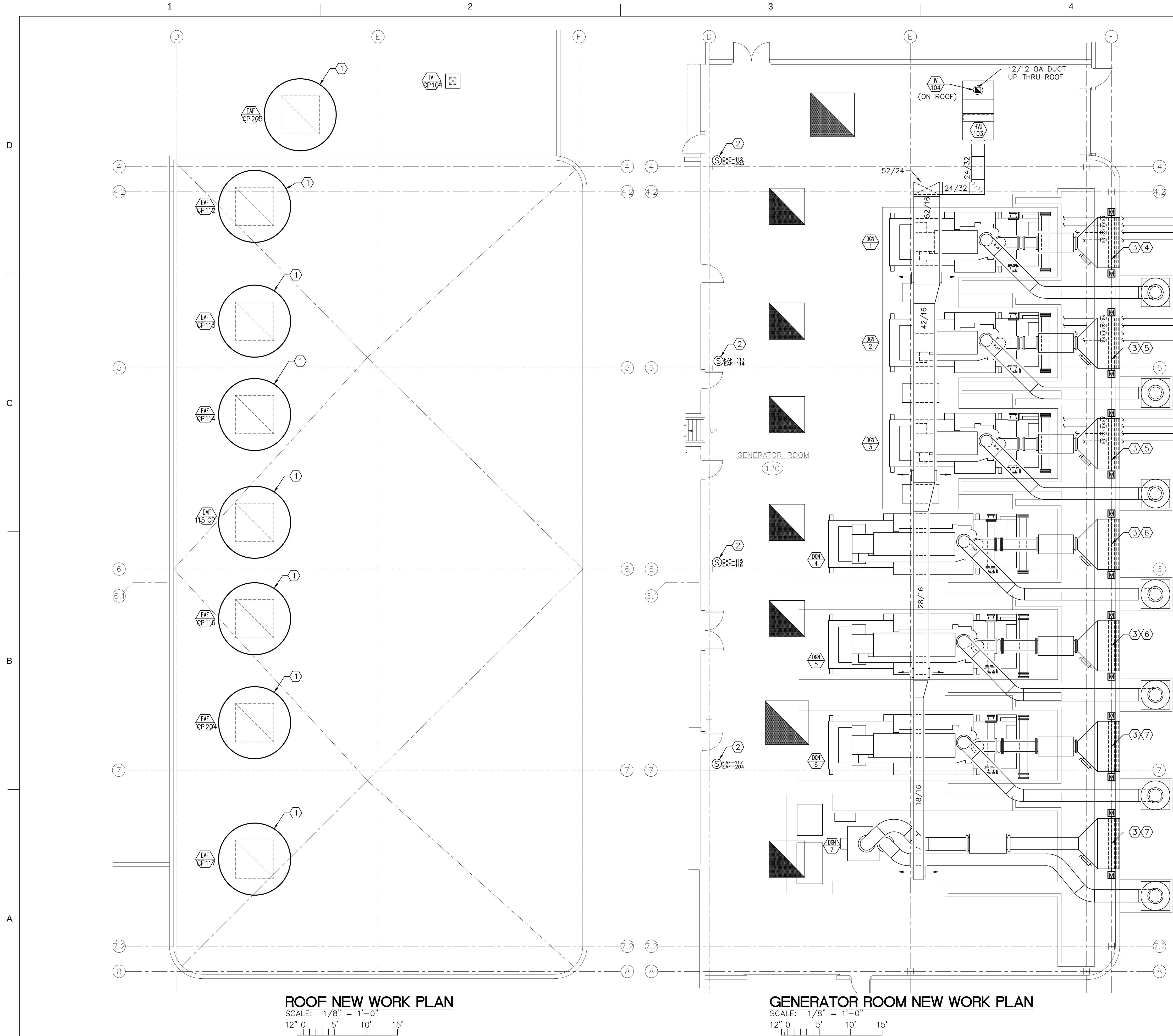
FARRIS ENGINEERING
COLORADO SPRINGS | OMAHA | LINCOLN
farris-usa.com

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AIR FORCE SPACE COMMAND SCHRIEVER AIR FORCE BASE COLORADO	DESIGNED BY: JTM DRAWN BY: JTM SUBMITTED BY: JTM	CHECKED BY: LWH CONTRACT NO.: FARRIS ENGINEERING, INC. F2550-17-F-1002	DATE: 09/01/2017 FILE NUMBER: 11
	PLOT SCALE: 1" = 50'		
	PLOT DATE: 05/11/2017		
	FILE NAME: 500 O'MALLEY AVENUE, Ste 149 SCHRIEVER AFB, CO 80912-5019		

Repair by Replacing the Roof
Mounted Exhaust fans,B600
MECHANICAL
DEMOLITION PLANS
C/EN 16-2601

SHEET
IDENTIFICATION
MD101
SHEET 04 OF 14



KEYNOTES

- 1 NEW ROOF MOUNTED EXHAUST FAN. PROVIDE CURB ADAPTOR/REDUCER AS REQUIRED TO MOUNT FAN TO EXISTING ROOF CURB. FIELD VERIFY EXISTING CURB DIMENSIONS. REFER TO DETAILS ON SHEET M-501.
- 2 PROVIDE SPACE TEMPERATURE SENSOR FOR FAN CONTROL.
- 3 PROVIDE NEW 96"Wx60"H (FIELD VERIFY) DAMPER AND MOTORIZED DAMPER ACTUATORS. REFER TO GENERAL NOTE 2.
- 4 INTERLOCK WITH EAF-112 AND EAF-205.
- 5 INTERLOCK WITH EAF-113 AND EAF-114.
- 6 INTERLOCK WITH EAF-115 AND EAF-116.
- 7 INTERLOCK WITH EAF-117 AND EAF-204.

CONTROL NOTES

- 1. EXHAUST FAN ON/OFF STATUS SHALL BE CONTROLLED BY THE SIEMENS EMCS. UPON A CALL TO START, THE ASSOCIATED MOTORIZED ACTUATORS SHALL BE ENERGIZED TO OPEN THE INTAKE AIR DAMPER AND THEN THE FAN SHALL BE STARTED IF THE DAMPER END SWITCH IS PROVEN. UPON A STOP SIGNAL FROM EMCS, THE FAN SHALL STOP AND THE INTAKE DAMPERS SHALL CLOSE. PROVIDE FAN STATUS TO EMCS THROUGH A MOTOR CURRENT SENSOR. EXHAUST FANS SHALL CYCLE ON AND OFF AS NECESSARY TO MAINTAIN 75°F SPACE TEMPERATURE SETPOINT (ADJUSTABLE FROM EMCS) AT THE RESPECTIVE SPACE TEMPERATURE SENSOR.
- 2. EACH TEMPERATURE SENSOR SHALL CONTROL TWO FANS IN A LEAD/LAG CONFIGURATION. IF SETPOINT TEMPERATURE CANNOT BE MAINTAINED BY LEAD FAN AFTER 10 MINUTES (ADJUSTABLE), LAG FAN SHALL START. EMCS SHALL ALTERNATE FAN LEAD/LAG DESIGNATION BY RUN-TIME SCHEDULE. UPON FAILURE OF THE LEAD FAN, AN ALARM SHALL BE SENT TO THE EMCS, THE LEAD FAN SHALL BE LOCKED OUT (UNTIL MANUALLY RESET), AND THE LAG FAN DESIGNATION SHALL BE SET TO LEAD.
- 3. EXHAUST FAN SYSTEM RESTART SHALL BE AUTOMATIC AFTER POWER INTERRUPTION.
- 4. PROVIDE ALL NECESSARY MODIFICATIONS AND UPGRADES TO EMCS PROGRAMMING AND MECHANICAL DESIGN GRAPHICS DISPLAY REQUIRED FOR CONTROL WORK ASSOCIATED WITH THIS PROJECT.
- 5. REMOVE ALL DISCONNECTED AND UNUSED CONTROL WIRING. ABANDONING SUCH WIRING IN PLACE IS NOT PERMITTED.
- 6. PROVIDE ALL CONTROL WORK (INCLUDING MATERIALS, EQUIPMENT, INSTALLATION, ENGINEERING, PROGRAMMING, ETC.). COORDINATE WITH ELECTRICAL CONTRACTOR AND SAFB EMCS TECHNICIAN FOR ALL FINAL EMCS TERMINATIONS.
- 7. MECHANICAL CONTRACTOR SHALL PROVIDE WIRING FROM BAS TO HAND-OFF-AUTO SWITCH. EACH STARTER SHALL BE PROVIDED WITH AN AUXILIARY CONTACT AND THE EMCS SHALL MONITOR STATUS OF THE STARTER. IF EQUIPMENT IS CALLED TO BE "ON" BUT IS MONITORED AS "OFF", AN ALARM SHALL BE SENT TO THE EMCS.

GENERAL NOTES

- 1. REFER TO GENERAL NOTES ON SHEET M-001 FOR ADDITIONAL REQUIREMENTS.
- 2. GREENHECK MODEL VCD-33 OR EQUAL PARALLEL BLADE ACTION DAMPER WITH CLASS 1 AT UP TO 8 IN. WG. LEAKAGE RATING IN ACCORDANCE WITH AMCA PUBLICATION 511, END SWITCHES AND 120 VOLT TWO POSITION, SPRING RETURN (FAIL CLOSED) ACTUATORS.



Repair by Replacing the Roof Mounted Exhaust Fans, B600
MECHANICAL
NEW WORK PLANS
GLEN 16-2601

SHEET IDENTIFICATION
M-101
SHEET 05 OF 14

DESIGNED BY: MAH	CHECKED BY: CWH	DATE: 06 Nov 2017	SOLICITATION NO.:	APPR. DATE
DRAWN BY: SUBMITTED BY:	DATE: FARRIS ENGINEERING, INC.	CONTRACT NO.:	DESCRIPTION	DATE
PLOT SCALE:	FILE NAME:	FILE NUMBER:	MARK	DATE
1:1	M-101.DWG			
AIR FORCE SPACE COMMAND SCHRIEVER AIR FORCE BASE COLORADO				
50 CESCENM 500 O'MALLEY AVENUE, Ste 149 SCHRIEVER AFB, CO 80912-5019				

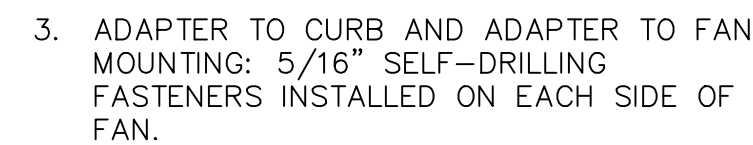
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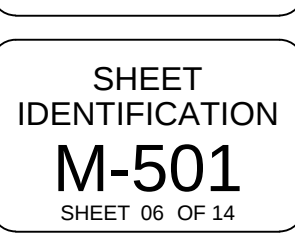
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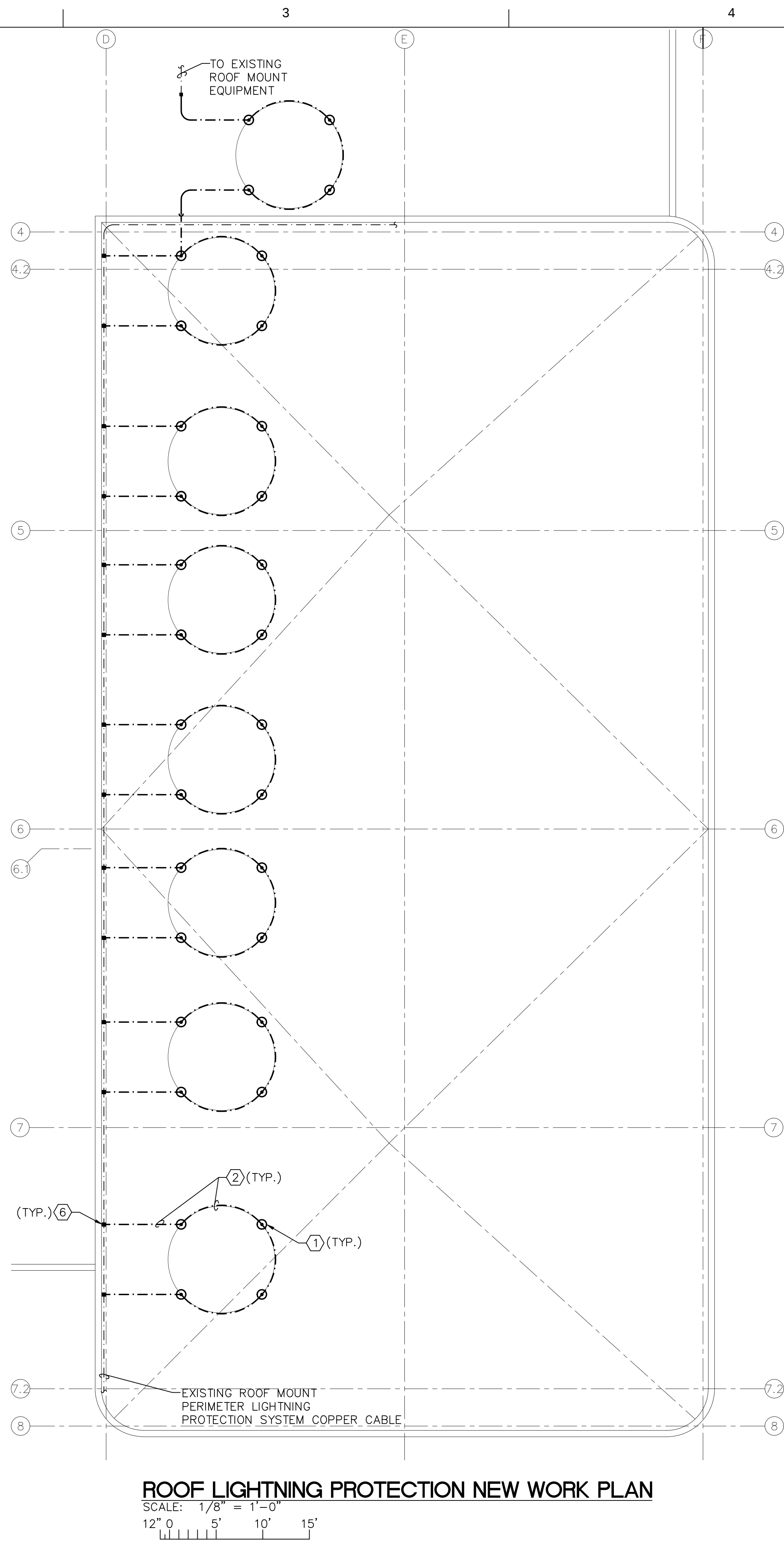


NO SCALE

1. SITE ELEVATION 6,300 FT, STARTUP TEMPERATURE 70°F, OPERATING TEMPERATURE 95°F.
2. PROVIDE DIRECT DRIVE, UPBLAST-TYPE DISCHARGE FAN WITH: MANUFACTURER'S STANDARD FINISH, UL-705, GALVANIZED STEEL CURB CAP REDUCER FOR EXISTING CURB, STEEL BUTTERFLY DAMPER ASSEMBLY, OUTLET GUARD, TEFC MOTOR WITH NEMA CLASS F ELECTRICAL INSULATION, AND EXTENDED LUBE LINES.
3. REFER TO ELECTRICAL DRAWINGS FOR STARTER AND DISCONNECT REQUIREMENTS.
4. INTERLOCK WITH ASSOCIATED INTAKE DAMPER (SEE PLANS).



SHEET
IDENTIFICATION
E-101
SHEET 11 OF 14



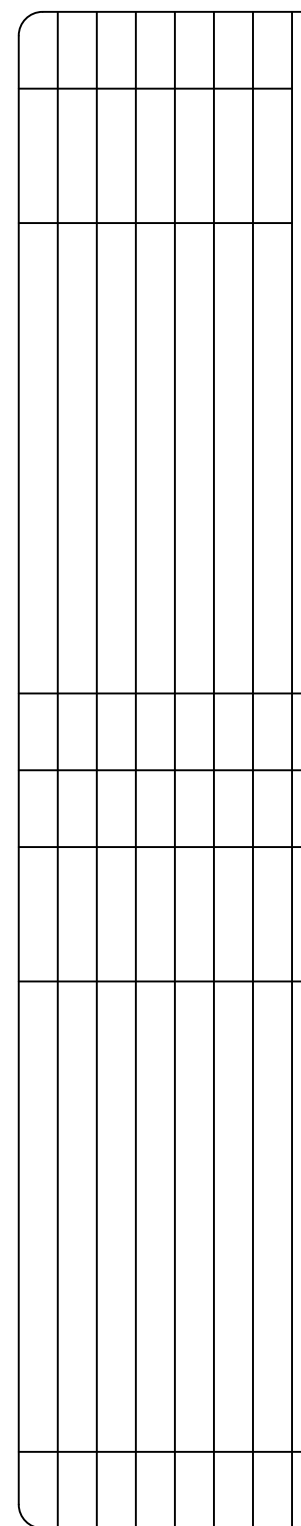
SHEET
IDENTIFICATION
E-102
SHEET 12 OF 14



NOTES:

1. MOTORS ARE PROVIDED WITH THERMAL OVERLOAD PROTECTION (W/ T.O.), PROVIDE MOTOR CIRCUIT PROTECTION (MCP) IN MCC STARTER BUCKET FOR FLA AS INDICATED.
2. THE HORSEPOWER AND WATTAGE RATINGS OF MOTOR LOADS AND OTHER EQUIPMENT ARE APPROXIMATE. IF MOTORS AND/OR EQUIPMENT ARE FURNISHED IN SIZES OTHER THAN THE DESIGN SIZE INDICATED, IT IS THE RESPONSIBILITY OF THE E.C. TO ADJUST THE SIZES OF BRANCH CIRCUITS, DISCONNECTS, BREAKERS, ETC. TO ADJUST AND RE-CIRCUIT IF NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
3. INDUSTRIAL CONTROL PANELS AS DEFINED BY NEC ARTICLE 409, MOTOR CONTROLLERS AND HERMETIC REFRIGERANT MOTOR COMPRESSORS AND EQUIPMENT SHALL BE MARKED WITH INFORMATION AS REQUIRED BY THE NATIONAL ELECTRICAL CODE (NEC). MARK IN ACCORDANCE WITH NEC ARTICLE 409.110 FOR INDUSTRIAL CONTROL PANELS, NEC ARTICLE 430.8 FOR CONTROLLERS AND NEC ARTICLE 440.4(B) FOR HERMETIC REFRIGERANT MOTOR COMPRESSORS AND EQUIPMENT. THE MARKED SHORT CIRCUIT CURRENT RATING (SCCR) SHALL BE NO LESS THAN THE VALUE INDICATED ABOVE.
4. PROVIDE FUSED SAFETY DISCONNECT SWITCH.
5. PROVIDE NON-FUSED SAFETY DISCONNECT SWITCH.
6. EQUIPMENT SHALL BE PROVIDED IN NEMA 1 ENCLOSURE.
7. DISCONNECT SWITCH ON ROOF SHALL BE PROVIDED IN NEMA 3R ENCLOSURE.

- ① PROVIDE SIEMENS 3RW40 25HP (SIZE 2) SOFT STARTER, CLASS 1, TYPE B, WITH INTEGRAL OVERLOAD RELAY. PROVIDE AN 18" HIGH BUCKET WITH 22mm HON. A/O HAND-OFF-AUTO SWITCH, CONTROL TRANSFORMER, 22mm RED "RUN" AND GREEN "STOP" PILOT LIGHTS, AND SAFETY DISCONNECT. PROVIDE A 4NO, 4NC "3RH" RELAY TO RUN THE STARTER.
- ② PROVIDE BLANK FILLER PLATE OVER NEW SPACE. COORDINATE WITH ALL NEW BUCKETS AND PROVIDE BLANK FILLER PLATES AS REQUIRED.



AIR FORCE SPACE COMMAND
SCHRIEVER AIR FORCE BASE
COLORADO
50 CES/CENM
500 O'MALLEY AVENUE, Ste 149
SCHRIEVER AFB, CO 80912-5019

GLEN 16-2601

