AIR DISTRIBUTION, GENERAL SYMBOLS & NOMENCLATURE

- TRANSFER DUCT, SEE DETAIL
- TRANSFER DUCT, SEE DETAIL W/RETURN/TRANSFER GRILLE
- TRANSFER DUCT, SEE DETAIL W/RETURN/TRANSFER GRILLE
- AIR CUSHION, 12" LONG MIN.
- AIR CUSHION, 12" LONG MIN.
- VOLUME DAMPER
- DAMPER (TYPE AS INDICATED; BD, BDD, MOD, FD, SD/FD, VD, ETC.)
- Ø DIAMETER
- DOOR LOUVER (FREE AREA IN SQ. FEET)
- DOOR UNDERCUT
- D DUCT DROP (SLOPING)
- DUCT DROP (90°)
- R DUCT RISE (SLOPING)
- DUCT RISE (90°) (RISE AND DROP IN DIRECTION OF AIR FLOW)
- TRANSFER AIR
- D DUCT MOUNTED SMOKE DETECTOR
- FLEXIBLE CONNECTION
- FLEXIBLE DUCTWORK
- FLEXIBLE DUCTWORK
- HUMIDIFIER (DUCT MOUNTED)
- HUMIDIFIER (DUCT MOUNTED)
- ES EMERGENCY SWITCH
- H HUMIDISTAT
- OS OCCUPANCY SENSOR
- T THERMOSTAT
- TS TEMPERATURE SENSOR
- DUCT TRASITION (RECTANGULAR TO RECTANGULAR)
- DUCT TRASITION (RECTANGULAR TO ROUND)
- AFS AIRFLOW MEASURING STATION
- AFS AIRFLOW MEASURING STATION
- SUPPLY DIFFUSER
- SUPPLY SWIRL DIFFUSER
- REGISTER OR GRILLE (EXHAUST, RETURN, TRANSFER)

- 22 x 10 RECTANGULAR DUCT (FIRST NUMBER INDICATES PLAN DIMENSION, SECOND NUMBER INDICATES DEPTH)
- 22 x 10 FLAT OVAL DUCT
- 12" Ø ROUND DUCT (12" Ø DIAMETER)
- RADIUS ELBOW (NO TURNING VANES)
- HARD ELBOW (WITH TURNING VANES)
- DUCT TRANSITION (RECTANGULAR TO RECTANGULAR)
- DUCT TRANSITION (RECTANGULAR TO ROUND)
- RECTANGULAR SUPPLY DUCT UP
- RECTANGULAR SUPPLY DUCT DOWN
- 22x10 B / 14x10 T DUCT INDICATION FOR STACKING T= TOP; B= BOTTOM
- 22x10 T / 14x10 B DUCT INDICATION FOR STACKING T= TOP; B= BOTTOM
- VOLUME DAMPER
- DAMPER (TYPE AS INDICATED; BD, BDD, MOD, FD, SD/FD, ETC.)
- SPLITTER DAMPER
- T/H TEMP / HUMID SENSOR (DUCT MOUNTED)
- AV AUDIO VISUAL ALARM
- 8X14 / LFD-1 / 300 FLEXIBLE BRANCH DUCT CONNECTION TO DIFFUSER. CONICAL BELL MOUTH OR SQUARE/ROUND BOOT FITTING WITH VOLUME DAMPER. ROUND INLET CONNECTION TO LAMINAR FLOW DIFFUSER (CFM INDICATED)
- 14X10 BRANCH DUCT CONNECTION TO DIFFUSER WITH VOLUME DAMPER.
- SQUARE INLET CONNECTION TO DIFFUSER
- M MOTOR OPERATED DAMPER

ALTERATION/DEMOLITION SYMBOLS

- POINT OF CONNECTION, NEW TO EXISTING
- TERMINATION OF DEMOLITION, REMOVAL
- EXISTING TO BE REMOVED
- EXISTING TO BE REMOVED

BRANCH CONNECTIONS IN DOUBLE-LINE DUCTWORK

- RECTANGULAR PROPORTIONAL SPLIT
- BRANCH OFF BOTTOM 45° BOOT CONNECTION
- BRANCH OFF TOP 45° BOOT CONNECTION
- BRANCH OFF SIDE 45° BOOT CONNECTION
- BRANCH OFF SIDE CONICAL BELL MOUTH

BRANCH CONNECTIONS IN SINGLE-LINE DUCTWORK

- BRANCH OFF SIDE
- BRANCH OFF TOP
- BRANCH OFF BOTTOM
- RECTANGULAR PROPORTIONAL SPLIT

EQUIPMENT IDENTIFICATION

XX / X
- TYPE (SEE SCHEDULE)
- MARK NUMBER (SEE SCHEDULE)

AIR TERMINAL IDENTIFICATION

XX-X | XXX / X Ø
- TYPE (SEE SCHEDULE)
- CFM
- NECK SIZE (IN)

GENERAL ABBREVIATIONS

A	----------	E	----------	I	----------	S	----------
AD	ACCESS DOOR	EA	EXHAUST AIR	INF	INFILTRATION	SA	SUPPLY AIR
AFF	ABOVE FINISHED FLOOR	EAC	EXHAUST AIR CONTROLLER			SAC	SUPPLY AIR CONTROLLER
AFS	AIR FLOW MEASURING STATION	EAT	ENTERING AIR TEMPERATURE	L	----------	SAT	SOUND ATTENUATOR
AHU	AIR HANDLING UNIT	EF	EXHAUST FAN	LAT	LEAVING AIR TEMPERATURE	SD	SMOKE DAMPER WITH ACCESS DOOR
AL	ACOUSTIC LINING	EG	EXHAUST GRILLE	LB	POUND	SD/FD	COMBINATION SMOKE/FIRE DAMPER
AP	ACCESS PANEL	EJ	EXPANSION JOINT	LF	LINEAR FEET		WITH ACCESS DOOR
ATC	AUTOMATIC TEMPERATURE CONTROL	EJB	EXPANSION JOINT, BELLOWS TYPE	LFD	LAMINAR AIRFLOW DIFFUSER	SG	SUPPLY GRILLE
AVB	AIR VOLUME CONTROL BOX	EJO	EXPANSION JOINT, OFFSET TYPE	LWT	LEAVING WATER TEMPERATURE	SP	STATIC PRESSURE
AWT	AVERAGE WATER TEMPERATURE	EL	ELEVATION			SR	STATIC REGISTER
		ER	EXHAUST REGISTER	M	----------	SS	STAINLESS STEEL
B	----------	ERV	EXHAUST ROOF VENTILATOR	MBH	THOUSAND BTU'S PER HOUR	SV	STEAM VENT
BD	BAROMETRIC DAMPER	ESP	EXTERNAL STATIC PRESSURE	M	MOTOR OPERATED DAMPER		
BDD	BACKDRAFT DAMPER	EWT	ENTERING WATER TEMPERATURE			T	----------
BFP	BACKFLOW PREVENTER	EXF	EXFILTRATION	N	----------	TG	TRANSFER GRILLE
BHP	BRAKE HORSEPOWER	EXH	EXHAUST	(N)	NEW	TOD	TOP OF DUCT
BOD	BOTTOM OF DUCT			NC	NORMALLY CLOSED	TOP	TOP OF PIPE
BTU	BRITISH THERMAL UNITS	F	----------	NIC	NOT IN CONTRACT	TSP	TOTAL STATIC PRESSURE
BTUH	BTU'S PER HOUR	°F	DEGREE FAHRENHEIT	NO	NORMALLY OPEN	TT	THERMOSTATIC TRAP
		FC	FLEXIBILE CONNECTION	NTS	NOT TO SCALE	TYP	TYPICAL
C	----------	FCU	FAN COIL UNIT				
CC	COOLING COIL	F.D.	FLOOR DRAIN	O	----------	U	----------
CD	CEILING DIFFUSER	FD	FIRE DAMPER WITH ACCESS DOOR	OA	OUTSIDE AIR	UH	UNIT HEATER
CDR	CEILING DIFFUSER, ROUND	FOB	FLAT ON BOTTOM	OAI	OUTSIDE AIR INTAKE	UTR	UP THRU ROOF
CFM	CUBIC FEET PER MINUTE	FOT	FLAT ON TOP	OBD	OPPOSED BLADE DAMPER		
CL	CENTERLINE	FPM	FEET PER MINUTE			V	----------
CUH	CABINET UNIT HEATER	FTR	FINNED TUBE RADIATION	P	----------	V	VENT
CVE	CONSTANT VOLUME EXHAUST	FZP	FREEZE PROTECTION PUMP	PD	PANEL DIFFUSER	VAV	VARIABLE AIR VOLUME
CVR	CONSTANT VOLUME RETURN			PFD	PERFORATED FACE DIFFUSER	VD	VOLUME DAMPER
CVS	CONSTANT VOLUME SUPPLY	G	----------	PFG	PERFORATED FACE GRILLE	VI	VIBRATION ISOLATOR
		GAL	GALLONS	PHC	PREHEAT COIL	VVE	VARIABLE VOLUME EXHAUST
D	----------	GPH	GALLONS PER HOUR	PRV	PRESSURE REDUCING VALVE	VVF	VARIABLE VOLUME FAN POWERED
D	DEAERATOR	GPM	GALLONS PER MINUTE	PSI	POUNDS PER SQUARE INCH	VVR	VARIABLE VOLUME RETURN
DB	DRY BULB	GR	GRILLE			VVS	VARIABLE VOLUME SUPPLY
DIA	DIAMETER	GRV	GRAVITY ROOF VENT	R	----------		
DFD	DYNAMIC FIRE DAMPER WITH ACCESS DOOR	H	----------	RA	RETURN AIR	W	----------
		HC	HEATING COIL	RG	RETURN GRILLE	WB	WET BULB
DN	DOWN	HP	HORSEPOWER	RFG	RECTANGULAR FILTER GRILLE	WG	WATER GAUGE
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	HX	HEAT EXCHANGER	RH	RELATIVE HUMIDITY		
				RHC	REHEAT COIL		
				RPM	REVOLUTIONS PER MINUTE		
				RR	RETURN REGISTER		

GENERAL NOTES - MECHANICAL

1. DUE TO THE SMALL SCALE OF THE DRAWINGS, CERTAIN REQUIRED WORK IS NOT SHOWN ON THE FLOOR PLANS AND IS SHOWN ON RISER DIAGRAMS AND DETAILS. INCLUDE REQUIRED WORK SHOWN ON PLANS, RISER DIAGRAMS, AND DETAILS.
2. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING TYPES, AND FOR EXACT LOCATIONS OF CEILING DIFFUSERS, GRILLES, REGISTERS, AND OTHER DEVICES. PROVIDE BORDER STYLES SUITABLE FOR CEILING TYPE IN WHICH DEVICE IS INSTALLED.
3. DUCTWORK, PIPING, AND EQUIPMENT SHALL ONLY PENETRATE ELECTRICAL, TELEPHONE, DATA, AND ELEVATOR MACHINE ROOMS TO SERVE THOSE SPACES. SERVICES NOT SERVING THOSE SPACES SHALL NOT TRANSIT THROUGH THE SPACES.
4. PROVIDE CABLE OPERATED VOLUME DAMPERS IN BRANCH RUNOUTS TO EACH AIR DEVICE ABOVE INACCESSIBLE CEILING. LOCATE VOLUME DAMPER AS CLOSE TO MAIN AS POSSIBLE.
5. DUCTWORK DRAWINGS ARE DIAGRAMMATIC AND MAY NOT ENTIRELY INDICATE REQUIRED OFFSETS, TRANSITIONS, AND FITTINGS. PROVIDE ADDITIONAL OFFSETS, TRANSITIONS, AND FITTINGS AS REQUIRED TO COORDINATE WITH OTHER TRADES.
6. FOR DUCT PENETRATIONS THROUGH INTERIOR NON-RATED FULL HEIGHT PARTITIONS (PARTITIONS EXTENDING TO STRUCTURE), EXTEND INSULATION THROUGH PENETRATION. MAINTAIN COMPLETE VAPOR SEAL.
7. EQUIPMENT LAYOUTS ARE BASED ON EQUIPMENT BASIS OF DESIGN MANUFACTURER. OTHER ACCEPTABLE MANUFACTURERS LISTED IN THE SPECIFICATIONS MAYBE PROVIDED AS LONG AS THEIR PHYSICAL DIMENSIONS DO NOT IMPACT THE EQUIPMENT LAYOUT AS SHOWN. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE LAYOUT TO ENSURE THAT PROPER ACCESS FOR MAINTENANCE AND EQUIPMENT REMOVAL CAN BE MAINTAINED. MAKE NECESSARY DUCTWORK MODIFICATIONS AS REQUIRED AT NO COST TO OWNER.
8. PROVIDE DUCT ACCESS DOORS UPSTREAM OF DUCT MOUNTED EQUIPMENT SUCH AS AIRFLOW STATIONS, HUMIDIFIERS, REHEAT COILS, FILTERS, ETC.
9. PROVIDE DUCT SUPPORTS IN ACCORDANCE WITH SMACNA UNLESS OTHERWISE MODIFIED HEREIN.
10. PROVIDE PIPE SUPPORTS IN ACCORDANCE WITH ANSI/MSS SP-58 UNLESS OTHERWISE MODIFIED HEREIN.

GENERAL NOTES - DEMOLITION

1. FIELD VERIFY EXACT LOCATION AND SIZES OF ELEMENTS RELATED TO THE WORK. ASCERTAIN THAT INTERFERENCES WILL NOT BE ENCOUNTERED, PREVENTING THE DISASSEMBLY OF PARTIALLY OR COMPLETELY ERECTED SYSTEMS FOR RE-ROUTING TO CLEAR OBSTRUCTIONS WHICH MAY EXIST.
2. REMOVE HANGERS, SUPPORTS, MISCELLANEOUS STRUCTURAL STEEL, CONTROLS AND INSTRUMENTATION, CONTROL WIRES AND TUBING, SPECIALTIES, VENTS AND DRAINS, ELECTRICAL POWER, AND OTHER ASSOCIATED ACCESSORIES IN THE PROCESS OF DUCTWORK AND EQUIPMENT DEMOLITION. SUPPORTS FOR DUCTWORK SHOWN TO BE DEMOLISHED THAT PENETRATE THROUGH THE INTERIOR ROOF INSULATION SHALL BE CUT 3" ABOVE INSULATION AND COVERED WITH A PROTECTIVE PLASTIC CAP (BRIGHT ORANGE). EXISTING DUCTWORK SHOWN TO BE DEMOLISHED SHALL BE DISCONNECTED AND REMOVED BACK TO SERVICE MAINS, UNLESS OTHERWISE INDICATED ON THE DRAWINGS. CONTROL WIRING SHALL BE REMOVED BACK TO TERMINATION POINT AT SOURCE PANEL. POWER WIRING SHALL BE REMOVED BACK TO BREAKER AT SOURCE POWER PANEL.
3. PATCH, SEAL, AND FINISH HOLES WHERE DUCTS, LOUVERS, OR OTHER MECHANICAL EQUIPMENT HAS BEEN REMOVED TO MATCH EXISTING WALL MATERIALS AND COLOR.

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

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US ARMY CORPS OF ENGINEERS

JACOBS / EWING COLE *A Joint Venture*

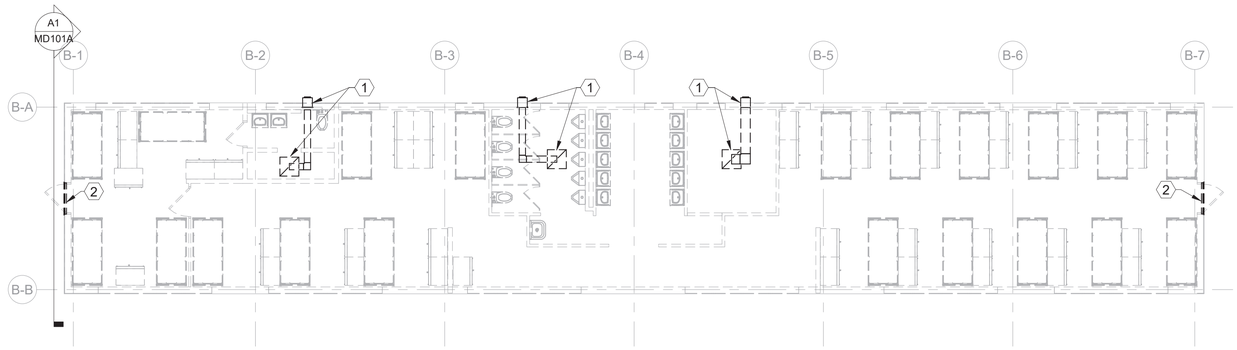
WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

MECHANICAL LEGEND AND GENERAL NOTES

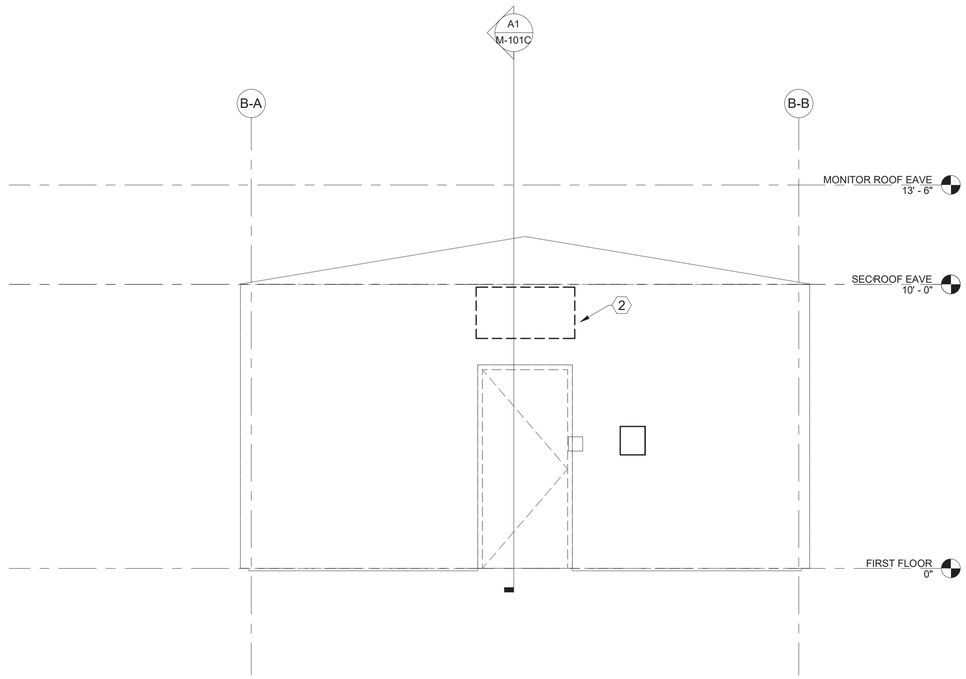
SHEET ID

M-001

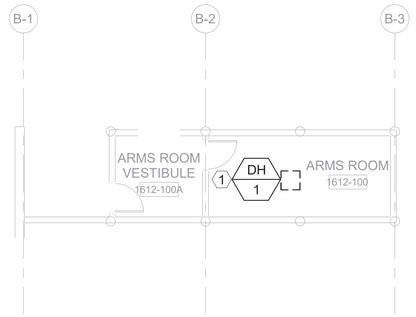
RTA SUBMISSION



E1 TYPICAL BARRACK DEMOLITION PLAN - DUCTWORK
SCALE: 1/8" = 1'-0"



A1 ENLARGED SECTION - TYPICAL BARRACK DEMOLITION PLAN
SCALE: 3/8" = 1'-0"



A8 TYPICAL ARMORY DEMOLITION PLAN - DUCTWORK
SCALE: 1/8" = 1'-0"

DEMOLITION NOTES

1. INFORMATION SHOWN ON THE CONTRACT DOCUMENTS ARE BASED ON EXISTING AS-BUILT DOCUMENTATION AND FIELD OBSERVATIONS. CONTRACTOR SHALL FIELD VERIFY INFORMATION SHOWN. DISCREPANCIES AFFECTING WORK UNDER THIS CONTRACT SHALL BE BROUGHT TO THE ATTENTION OF THE COR (CONTRACTING OFFICER'S REPRESENTATIVE) BEFORE PROCEEDING.
2. THIS PROJECT IS A RENOVATION OF AN EXISTING FACILITY. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF NEW EQUIPMENT TO BE INSTALLED WITH ITEMS TO REMAIN IN PLACE BEFORE BEGINNING WORK OR PURCHASING OF DIMENSIONAL CRITICAL EQUIPMENT, MATERIALS, OR ASSEMBLIES. THERE MAY BE EXISTING CONDITIONS NOT ACCESSIBLE DURING DESIGN WHICH DIFFER FROM THOSE SHOWN ON THE CONTRACT DRAWINGS. SUCH DEVIATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE COR FOR RESOLUTION BEFORE PROCEEDING.
3. SCHEDULE, ARRANGE AND COORDINATE UTILITY SHUTDOWNS, OUTAGES AND/OR INTERRUPTIONS WITH THE OWNER, OR COR, PRIOR TO THE START OF WORK.
4. WALL PENETRATIONS THAT WILL NOT BE REUSED FOR NEW WORK SHALL BE PATCHED & SEALED TO MATCH EXISTING WALL.

KEYED DEMOLITION NOTES

1. DEMO TOILET EXHAUST FANS, CEILING GRILLES, DUCTWORK, DEHUMIDIFIERS, AND ASSOCIATED CONTROL DEVICES (LOCATION VARIES).
2. ARCHITECTURE TO REMOVE LOUVER AND REPAIR BUILDING ENVELOPE.

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US ARMY CORPS OF ENGINEERS

JACOBS / EWING COLE *A Joint Venture*

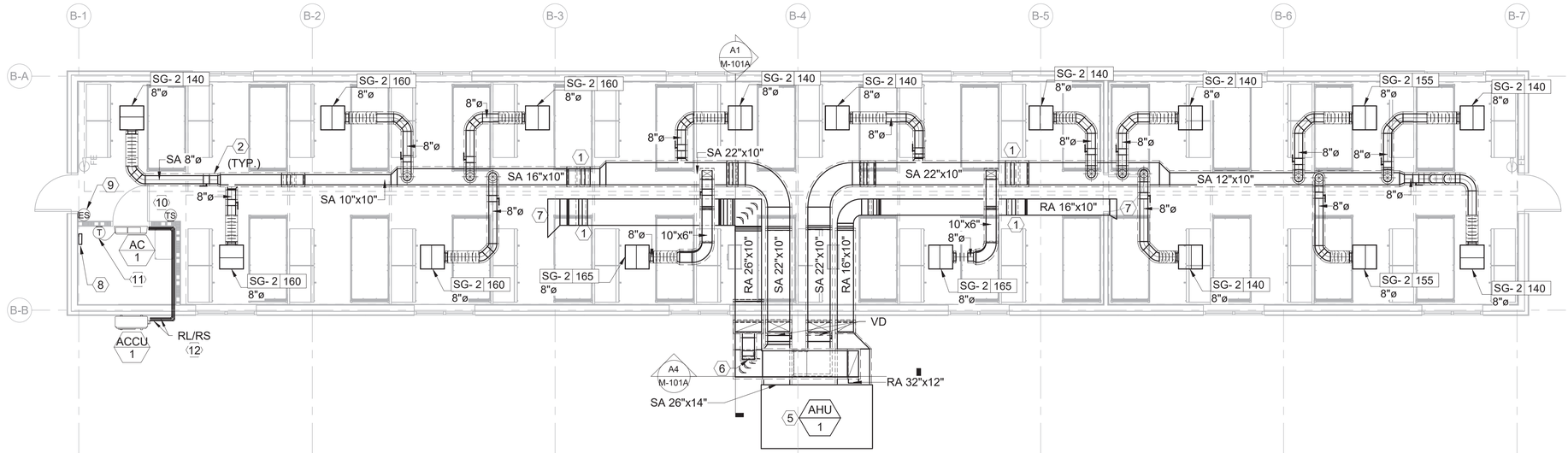
WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

TYPICAL BARRACK DEMOLITION PLAN - DUCTWORK

SHEET ID

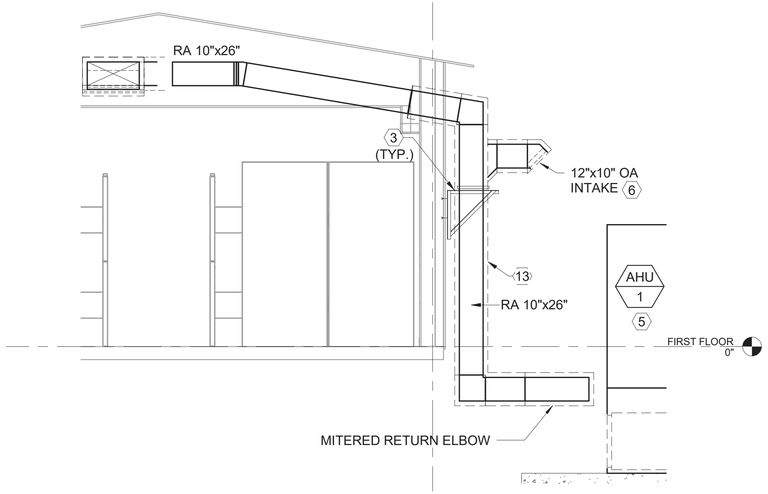
MD101A

RTA SUBMISSION



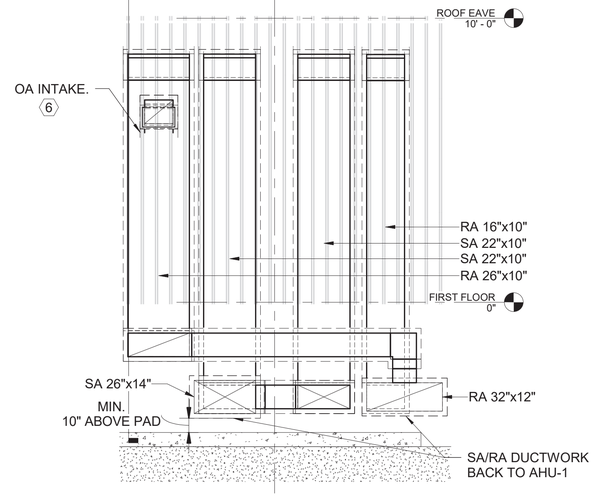
E1 TYPICAL SLEEPING BARRACK PLAN - DUCTWORK

SCALE: 3/16" = 1'-0"



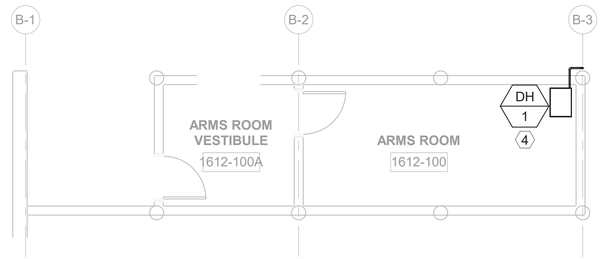
A1 ENLARGED TYPICAL SLEEPING BARRACK

SCALE: 3/8" = 1'-0"



A4 ENLARGED SLEEPING BARRACK

SCALE: 3/8" = 1'-0"



A7 TYPICAL ARMORY PLAN - DUCTWORK

SCALE: 3/16" = 1'-0"

KEYED NOTES

1. DUCTWORK SHALL DROP BELOW CEILING AND CONTINUE EXPOSED UNTIL TRANSITIONING ABOVE CEILING TO CONNECT TO LAST RADIAL DIFFUSER.
2. INSTALL CABLE OPERATED DAMPERS AT EACH BRANCH DUCT. ALL DAMPER CABLES TERMINATE IN ASSOCIATED AIR TERMINAL. REFER TO E8/M-501.
3. PROVIDE DUCTWORK SUPPORT. REFER TO D3/M-503.
4. FIELD COORDINATE DEHUMIDIFIER LOCATION. ROUTE CONDENSATE FROM DEHUMIDIFIER OUTSIDE TO GRADE. PROVIDE RODENT SCREEN ON CONDENSATE PIPE. REFER TO A2/M-502.
5. AHU-1 SERVICES ONE SLEEPING BARRACK, AHU-3 SERVICES TWO SLEEPING BARRACKS. REFER TO CIVIL PLANS FOR UNIT LOCATIONS. TERRAIN DOES NOT PERMIT THE AHU TO BE LOCATED ADJACENT TO THE ENTRY POINT OF BUILDING IN SEVERAL LOCATIONS. ROUTE THE REQUIRED HORIZONTAL DUCTWORK OFFSET BENEATH THE BUILDING AND SUPPORT FROM THE ELEVATED FLOOR SLAB WHERE POSSIBLE. WHERE CLEARANCE DOES NOT PERMIT, SUPPORT THE DUCTWORK A MINIMUM OF 6' ABOVE GRADE AND SUPPORT FROM GRADE. REFER TO D1/M-503 & D3/M-503.
6. 12"x12" OA INTAKE WITH LOUVER. BOTTOM OF OPENING A MIN. OF 10' ABOVE GRADE. REFER TO A6/M-502 & C1/M-501.
7. OPEN BELLMOUTH RETURN OPENING WITH WIRE MESH SCREEN. 38x10 OPENING LOCATED IN SQ-100 MEN & 20x10 OPENING LOCATED IN SQ-101 WOMEN.
8. PROVIDE REMOTE LCD DISPLAY PANEL FOR AHU-1.
9. HVAC EMERGENCY AIR DISTRIBUTION SHUTOFF.
10. SPACE TEMPERATURE SENSOR WITH OCCUPANCY OVERRIDE BUTTON.
11. AC UNIT ROOM THERMOSTAT.
12. REFRIGERANT PIPING FOR ACCU-1 AND AC-1. REFER TO C2/M-502 & E4/M-502. DRAIN CONDENSATE FROM AC-1 TO GRADE. PROVIDE RODENT SCREEN ON CONDENSATE PIPE.
13. PROVIDE MIN. 0.03" THICK WHITE PVC WITH LAMINATED SELF-ADHESIVE WEATHER PROOFING JACKET & FLEXIBLE ELASTOMERIC CELLULAR INSULATION.

US Army Corps of Engineers ®

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US ARMY CORPS OF ENGINEERS

JACOBS / EWING COLE *A Joint Venture*

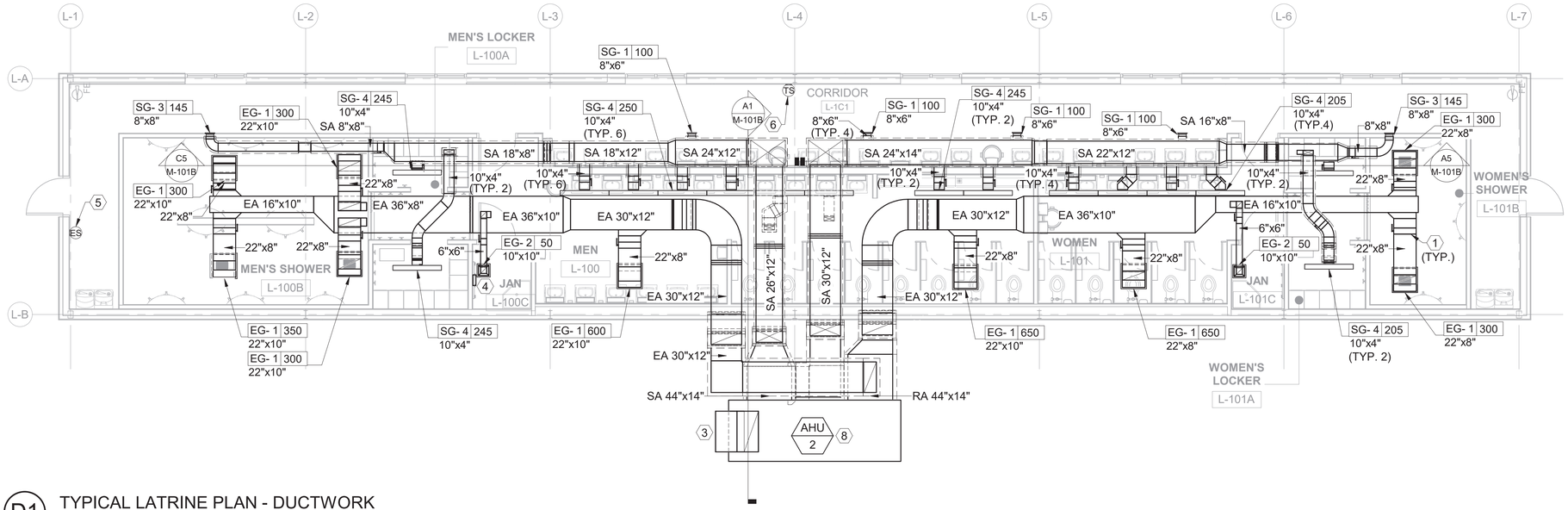
WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

TYPICAL SLEEPING BARRACK PLAN - DUCTWORK

SHEET ID

M-101A

RTA SUBMISSION

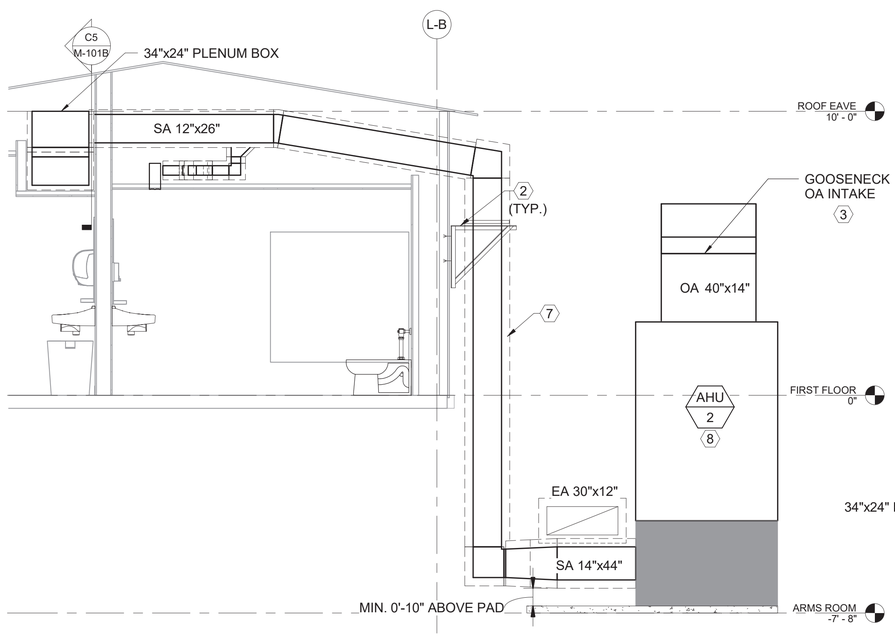


D1 TYPICAL LATRINE PLAN - DUCTWORK

SCALE: 3/16" = 1'-0"

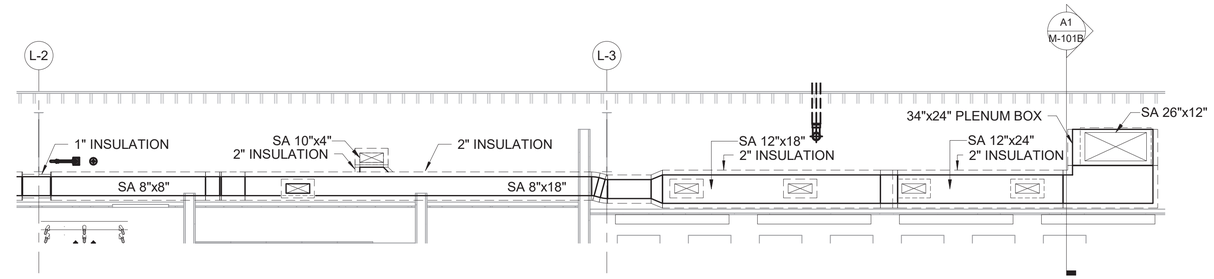
KEYED NOTES

1. INSTALL CABLE OPERATED DAMPERS AT EACH BRANCH DUCT. DAMPER CABLE TERMINATES IN ASSOCIATED AIR TERMINAL DEVICE. REFER TO E8/M-501.
2. PROVIDE DUCTWORK SUPPORT. REFER TO D3/M-503.
3. GOOSENECK OA INTAKE DUCTWORK. REFER TO C1/M-501.
4. PROVIDE REMOTE LCD DISPLAY PANEL FOR AHU-2.
5. HVAC EMERGENCY AIR DISTRIBUTION SHUTOFF.
6. SPACE TEMPERATURE SENSOR WITH OCCUPANCY OVERRIDE BUTTON.
7. PROVIDE MIN. 0.03" THICK WHITE PVC WITH LAMINATED SELF-ADHESIVE WEATHER PROOFING JACKET & FLEXIBLE ELASTOMERIC CELLULAR INSULATION.
8. REFER TO CIVIL PLANS FOR UNIT LOCATIONS. TERRAIN DOES NOT PERMIT THE AHU TO BE LOCATED ADJACENT TO THE ENTRY POINT OF BUILDING IN SEVERAL LOCATIONS. ROUTE THE REQUIRED HORIZONTAL DUCTWORK OFFSET BENEATH THE BUILDING AND SUPPORT FROM THE ELEVATED FLOOR SLAB WHERE POSSIBLE. WHERE CLEARANCE DOES NOT PERMIT, SUPPORT THE DUCTWORK A MINIMUM OF 6' ABOVE GRADE AND SUPPORT FROM GRADE. REFER TO D1/M-503 AND D3/M-503.



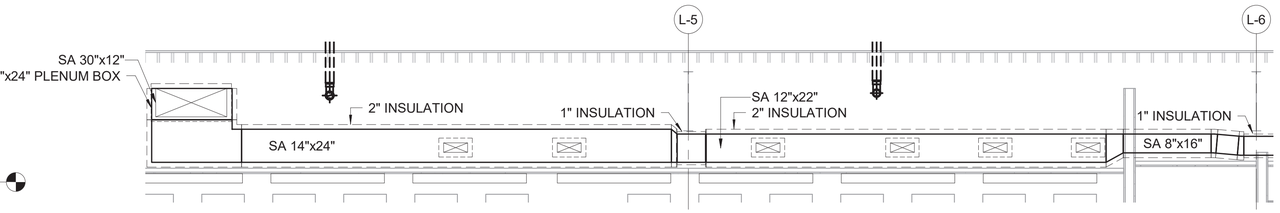
A1 ENLARGED SECTION - TYPICAL LATRINE PLAN

SCALE: 3/8" = 1'-0"



C5 ENLARGED SECTION - LATRINE SUPPLY - PLAN WEST

SCALE: 3/8" = 1'-0"



A5 ENLARGED SECTION - LATRINE SUPPLY - PLAN EAST

SCALE: 3/8" = 1'-0"

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WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

TYPICAL LATRINE PLAN - DUCTWORK

SHEET ID

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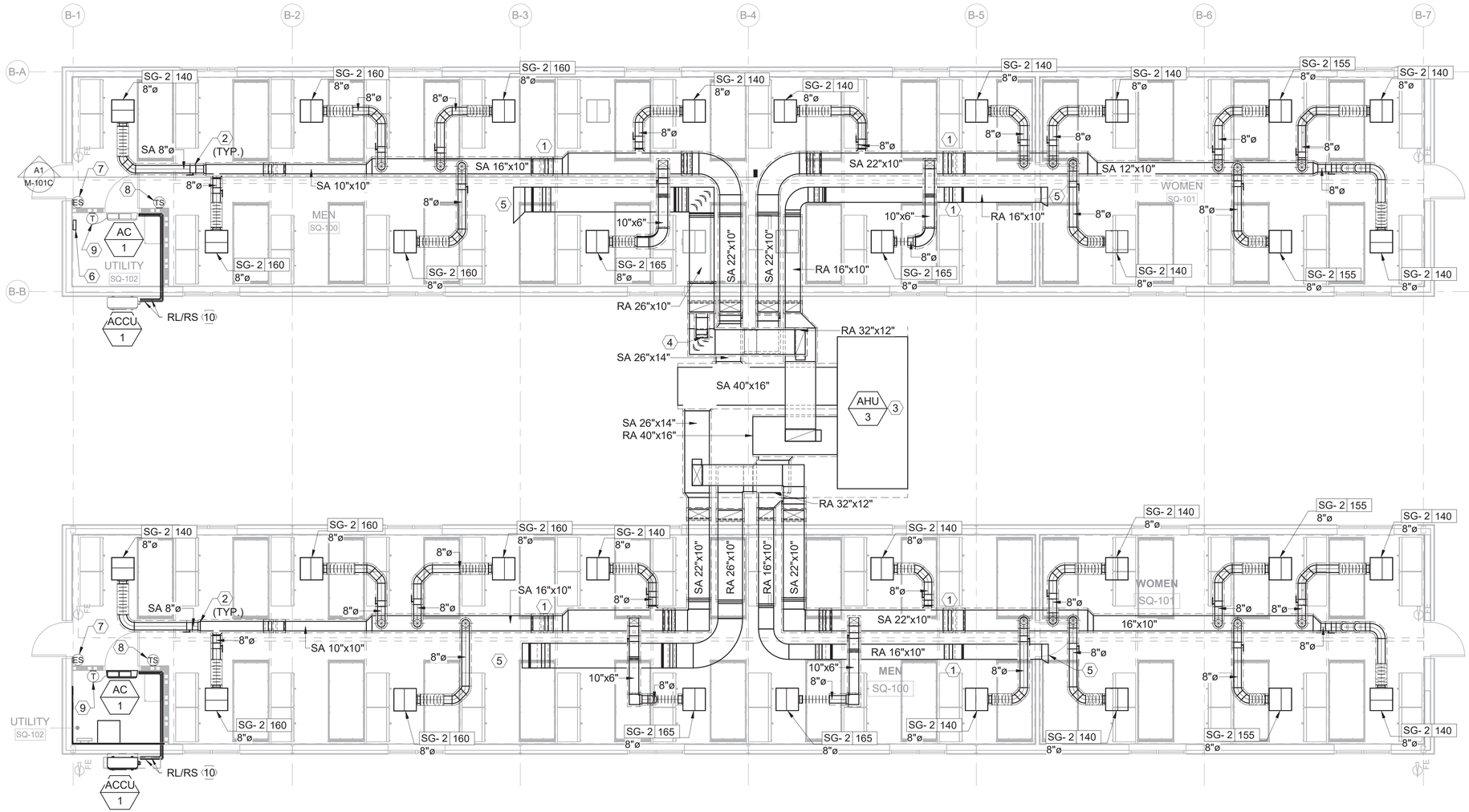
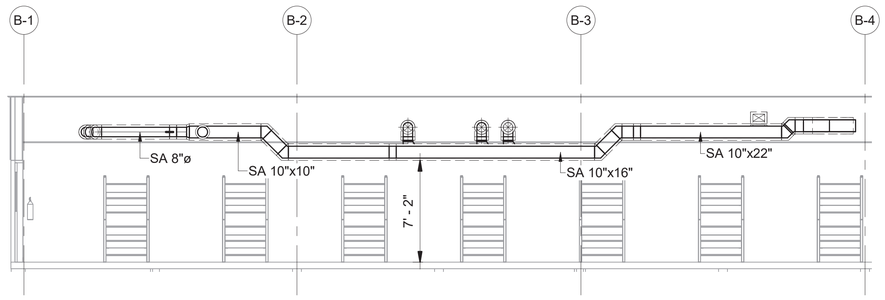


C1 TYPICAL AHU-3 SLEEPING BARRACK PLAN - DUCTWORK

SCALE: 3/16" = 1'-0"



A1 TYPICAL BARRACK - DUCTWORK BELOW CEILING

SCALE: 3/16" = 1'-0"

KEYED NOTES

1. DUCTWORK SHALL DROP BELOW CEILING AND CONTINUE EXPOSED UNTIL TRANSITIONING ABOVE CEILNG TO CONNECT TO LAST RADIAL DIFFUSER.
2. INSTALL CABLE OPERATED DAMPERS AT EACH BRANCH DUCT. ALL DAMPER CABLES TERMINATE IN ASSOCIATED AIR TERMINAL. REFER TO E8/M-501.
3. AHU-1 SERVICES ONE SLEEPING BARRACK (SHOWN ON M-101A), AHU-3 SERVICES TWO SLEEPING BARRACKS. REFER TO CIVIL PLANS FOR UNIT LOCATIONS. TERRAIN DOES NOT PERMIT THE AHU TO BE LOCATED ADJACENT TO THE ENTRY POINT OF BUILDING IN SEVERAL LOCATIONS. ROUTE THE REQUIRED HORIZONTAL DUCTWORK OFFSET BENEATH THE BUILDING AND SUPPORT FROM THE ELEVATED FLOOR SLAB WHERE POSSIBLE. WHERE CLEARANCE DOES NOT PERMIT, SUPPORT THE DUCTWORK A MINIMUM OF 6' ABOVE GRADE AND SUPPORT FROM GRADE. REFER TO D1/M-503 AND D3/M-503.
4. 20"x12" OA INTAKE WITH LOUVER. BOTTOM OF OPENING A MIN. OF 10' ABOVE GRADE. REFER TO C1/M-501 & A6/M-502.
5. OPEN BELLMOUTH RETURN OPENING WITH WIRE MESH SCREEN. 38x10 OPENING LOCATED IN SQ-100 MEN & 20x10 OPENING LOCATED IN SQ-101 WOMEN.
6. PROVIDE REMOTE LCD DISPLAY PANEL FOR AHU-3.
7. HVAC EMERGENCY AIR DISTRIBUTION SHUTOFF.
8. SPACE TEMPERATURE SENSOR WITH OCCUPANCY OVERRIDE BUTTON.
9. AC UNIT ROOM THERMOSTAT.
10. REFRIGERANT PIPING FOR ACCU-1 AND AC-1. REFER TO C2/M-502 & E4/M-502. DRAIN CONDENSATE FROM AC-1 TO GRADE. PROVIDE RODENT SCREEN ON CONDENSATE PIPE.

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

DESIGNED BY: DL
DRAWN BY: AH
CHECKED BY: DG
ISSUE DATE: DECEMBER 15, 2020
SOLICITATION NO.:
CONTRACT NO.: W912DS-18-D-0010
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS

JACOBS / EWING COLE *A Joint Venture*

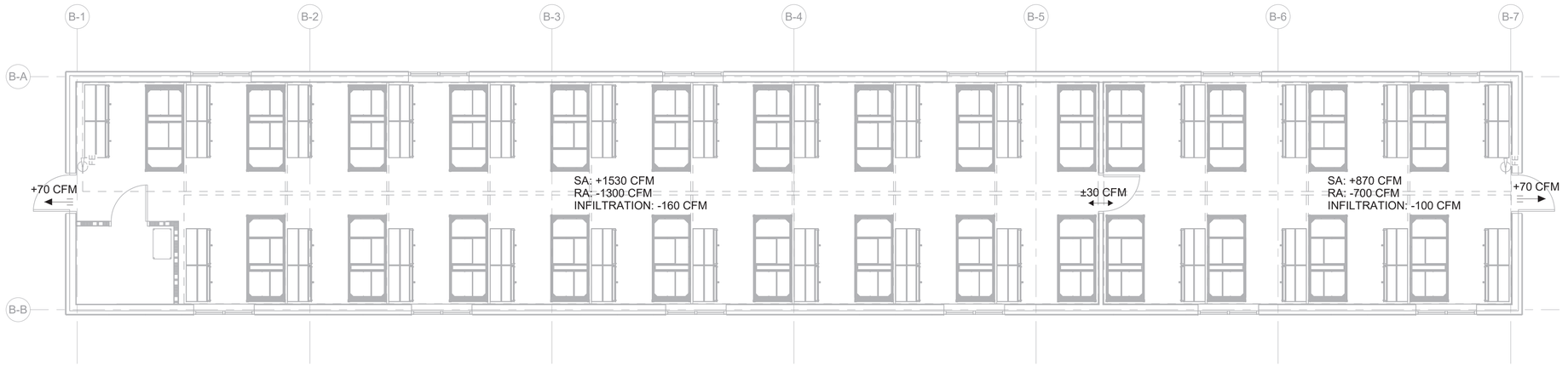
WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

TYPICAL AHU-3 SLEEPING BARRACK PLAN - DUCTWORK

SHEET ID

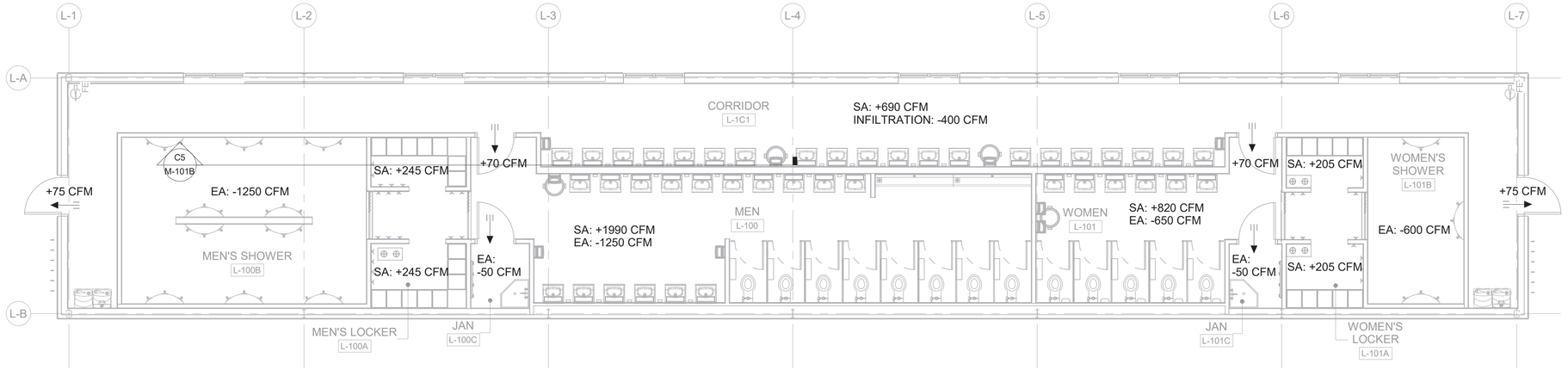
M-101C

RTA SUBMISSION



E1 TYPICAL SLEEPING BARRACK PLAN - PRESSURIZATION

SCALE: 3/16" = 1'-0"



A1 TYPICAL LATRINE PLAN - PRESSURIZATION

SCALE: 3/16" = 1'-0"

US Army Corps of Engineers ®

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US ARMY CORPS OF ENGINEERS

JACOBS / EWING COLE *A Joint Venture*

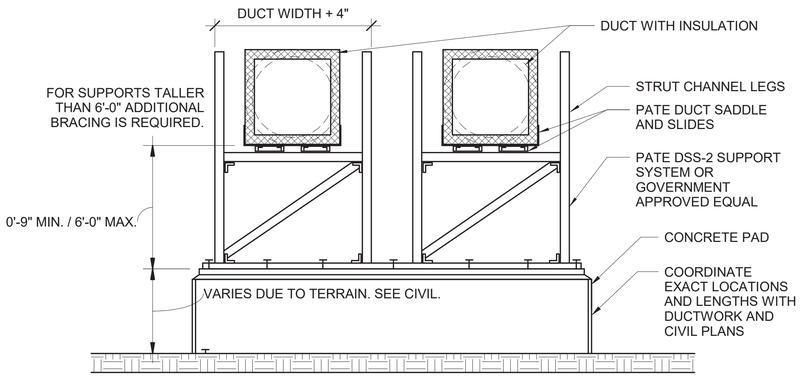
WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

DUCTWORK PRESSURIZATION PLAN

SHEET ID

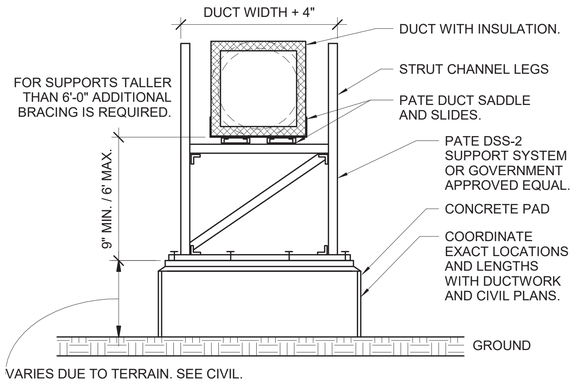
M-101D

RTA SUBMISSION



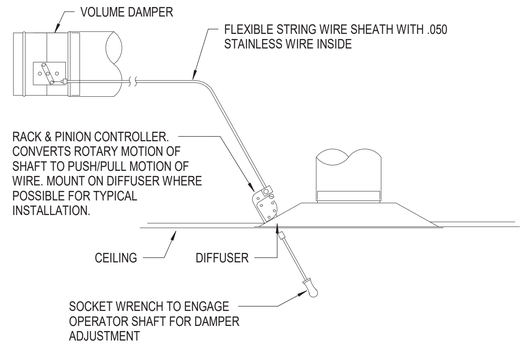
NOTE:
1. COORDINATE HEIGHTS WITH SHEET METAL SHOP DRAWINGS.

E1 MULTIPLE DUCT - CONCRETE PAD SUPPORT DETAIL
NTS



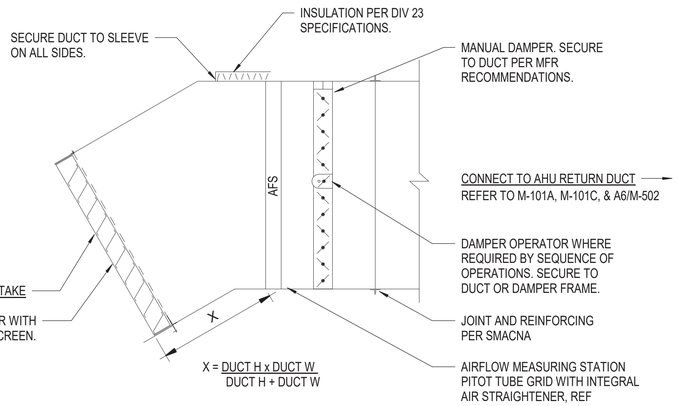
NOTE:
1. COORDINATE HEIGHTS WITH SHEET METAL SHOP DRAWINGS.

E5 SINGLE DUCT - CONCRETE PAD SUPPORT DETAIL
NTS

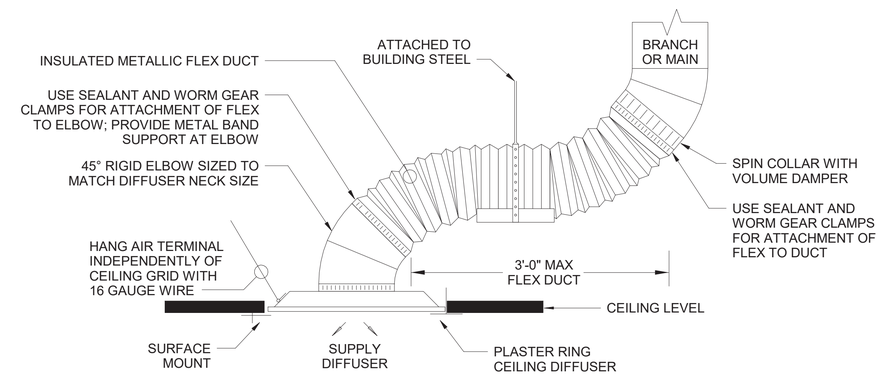


NOTE :
PROVIDE CABLE CONTROL WHEN VOLUME DAMPER IS NOT ACCESSIBLE THROUGH EITHER A T-BAR CEILING OR AN ACCESS PANEL.

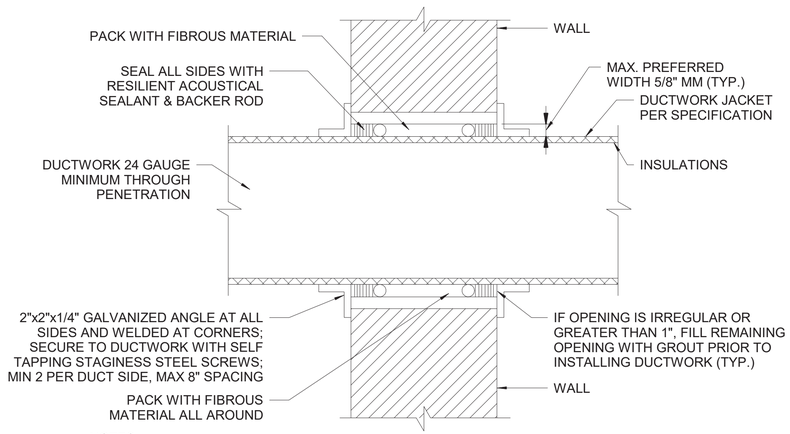
E8 DAMPER REMOTE CABLE CONTROL DETAIL
NTS



C1 AHU-1 & AHU-3 OA LOUVER DETAIL
NTS



C4 TYPICAL SUPPLY DIFFUSER INSTALLATION DETAIL
NTS



NOTES:
1. FOR PENETRATIONS THROUGH PRE-ENGINEERED METAL BUILDING WALLS, COORDINATE WITH CFMF CONTRACTOR TO PROVIDE APPROPRIATE BRACING AND SUPPORT.

A4 DUCT PENETRATION THROUGH EXTERIOR WALL
NTS

NOTE:
1. DUCT SHOULD EXTEND STRAIGHT FOR SEVERAL INCHES FROM A CONNECTION BEFORE BENDING.

FIG. A

NOTE:
1. CLOSER MAXIMUM INTERVALS MAY BE SPECIFIED AS A CONDITION OF UL LISTING. PARTICULARLY IN FIRE RATED FLOOR - CEILING ASSEMBLIES.

FIG. B

A8 ALLOWABLE FLEXIBLE DUCTWORK SAG
NTS

US Army Corps of Engineers ®

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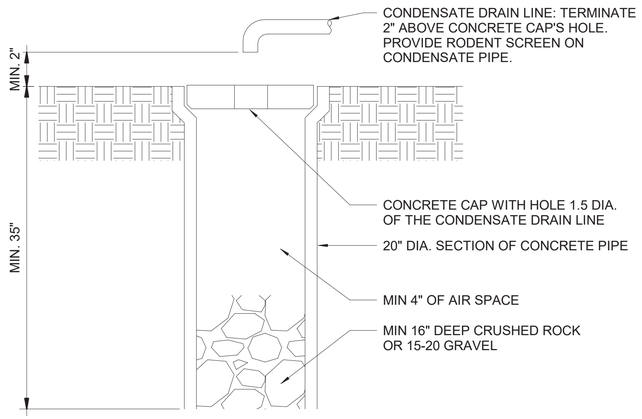
JACOBS / EWING COLE *A Joint Venture*

WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

HVAC DETAILS

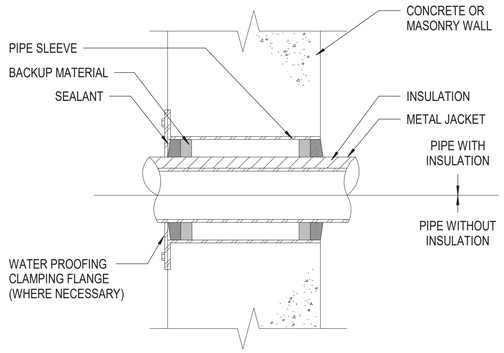
SHEET ID
M-501

RTA SUBMISSION

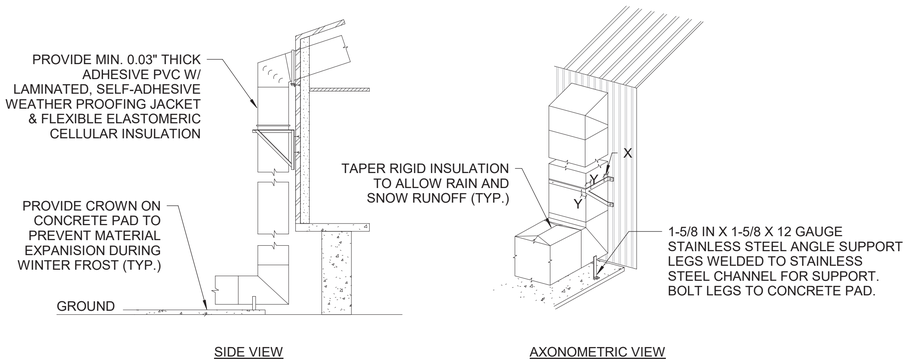


NOTE:
1. PROVIDE DRYWELL WHEREVER AN AIR HANDLING UNIT COOLING COIL CONDENSATE DRAIN PIPE ROUTES TO GRADE.

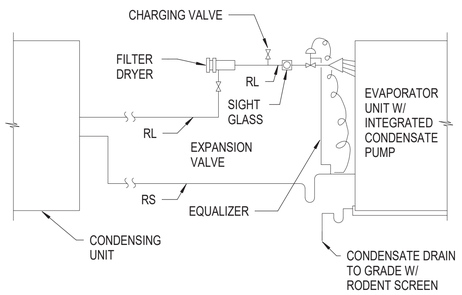
E1 CONDENSATE DRAINAGE WELL
NTS



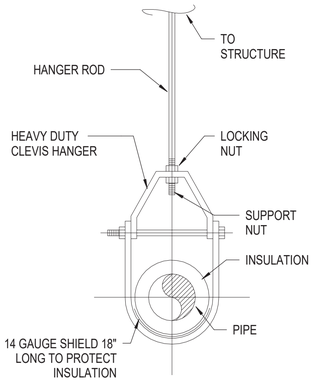
E4 PIPE SLEEVE THRU WALL DETAIL
NTS



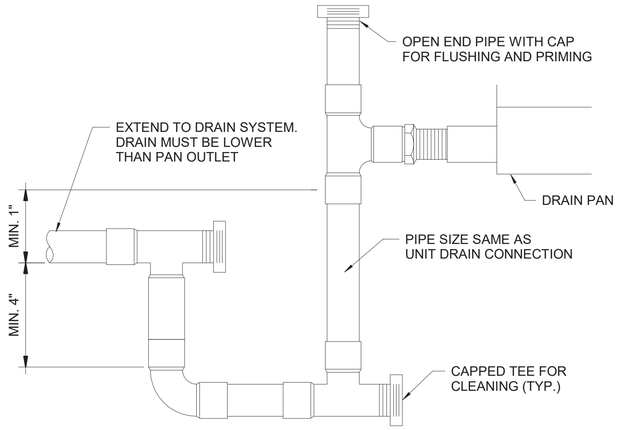
E6 EXTERIOR DUCTWORK INSTALLATION DETAIL
NTS



C2 REFRIGERANT PIPING DETAIL
NTS

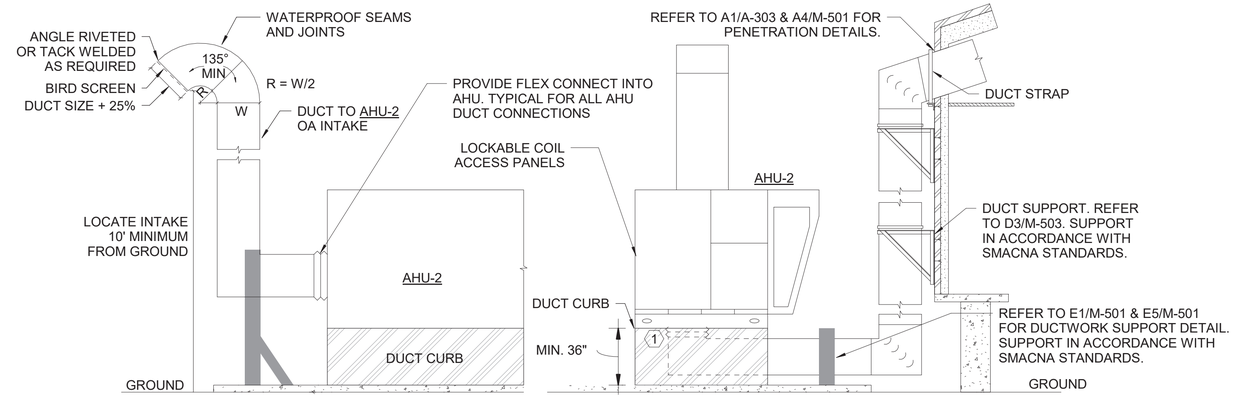


A1 CLEVIS HANGER DETAIL
NTS



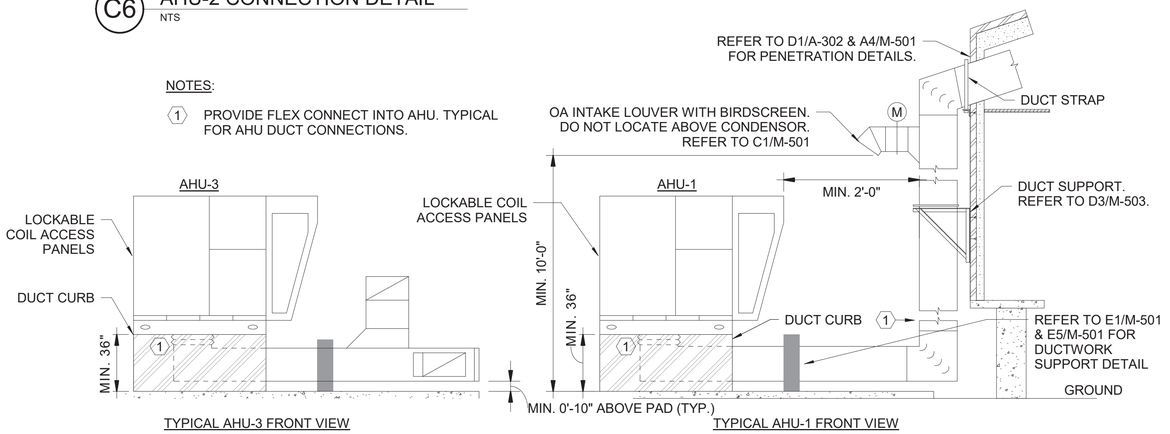
NOTES:
1. ALLOW SUFFICIENT SPACE BELOW DRAIN PAN FOR TRAP.
2. PITCH DRAIN FOR PROPER RUNOFF.
3. MANUALLY PRIME FILL TRAP BEFORE START-UP TO FORM DRAIN SEAL.
4. SUPPORT LENGTHY DRAIN LINES TO PREVENT SAG AND CONDENSATE OVERFLOW.

A2 CONDENSATE DRAIN PIPE DETAIL
NTS



C6 AHU-2 CONNECTION DETAIL
NTS

NOTES:
1. PROVIDE FLEX CONNECT INTO AHU. TYPICAL FOR AHU DUCT CONNECTIONS.



A6 AHU-1,3 CONNECTION DETAIL
NTS

US Army Corps of Engineers ®

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US ARMY CORPS OF ENGINEERS

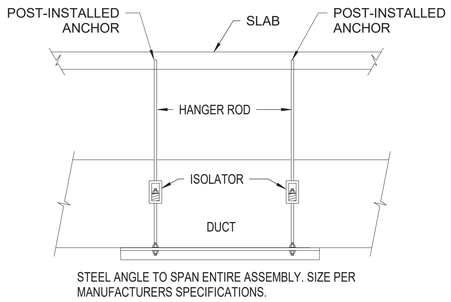
JACOBS / EWING COLE A Joint Venture

WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

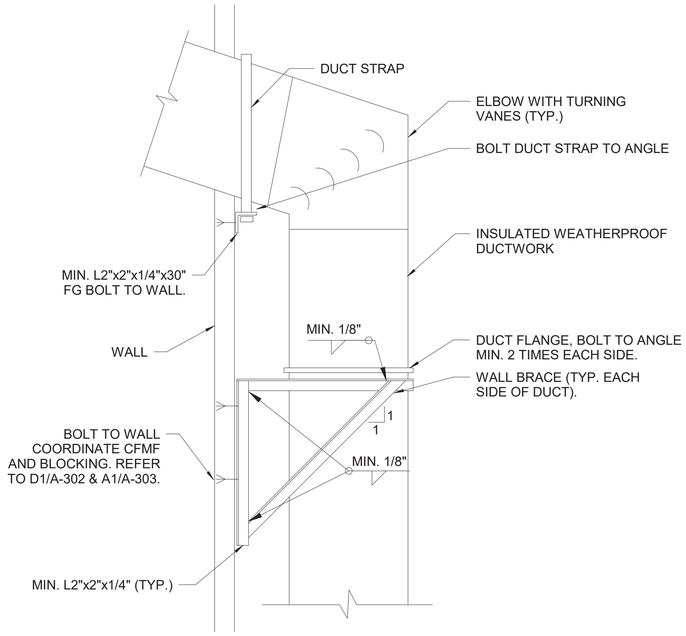
HVAC DETAILS

SHEET ID
M-502

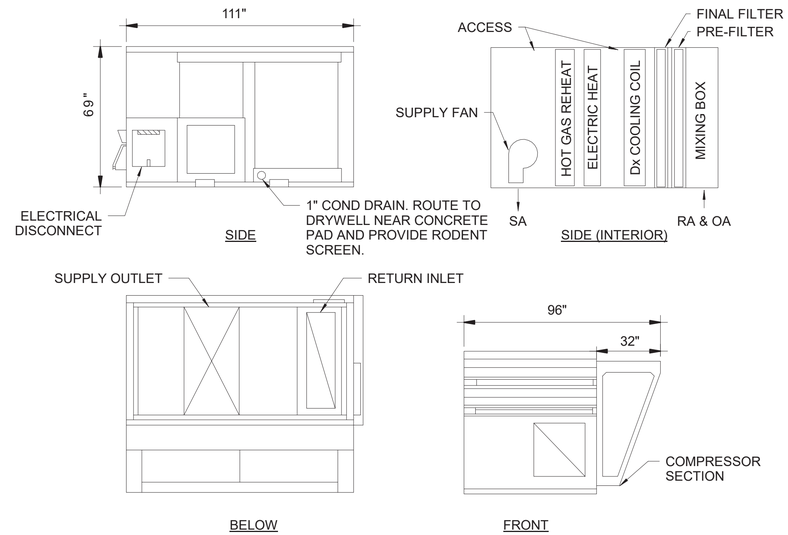
RTA SUBMISSION



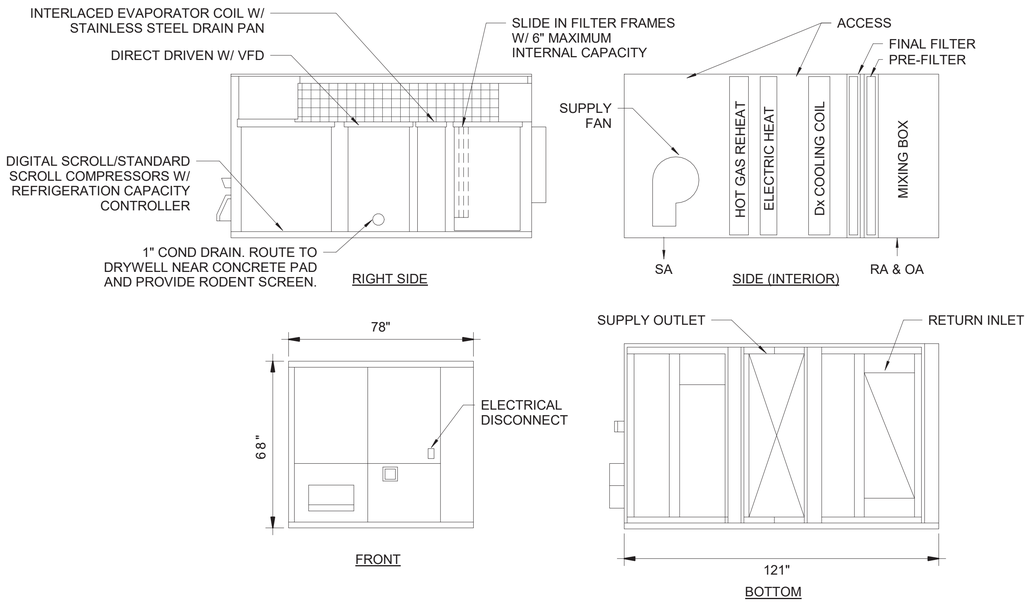
D1 DUCT SUPPORT DETAIL - UNDER SLAB
NTS



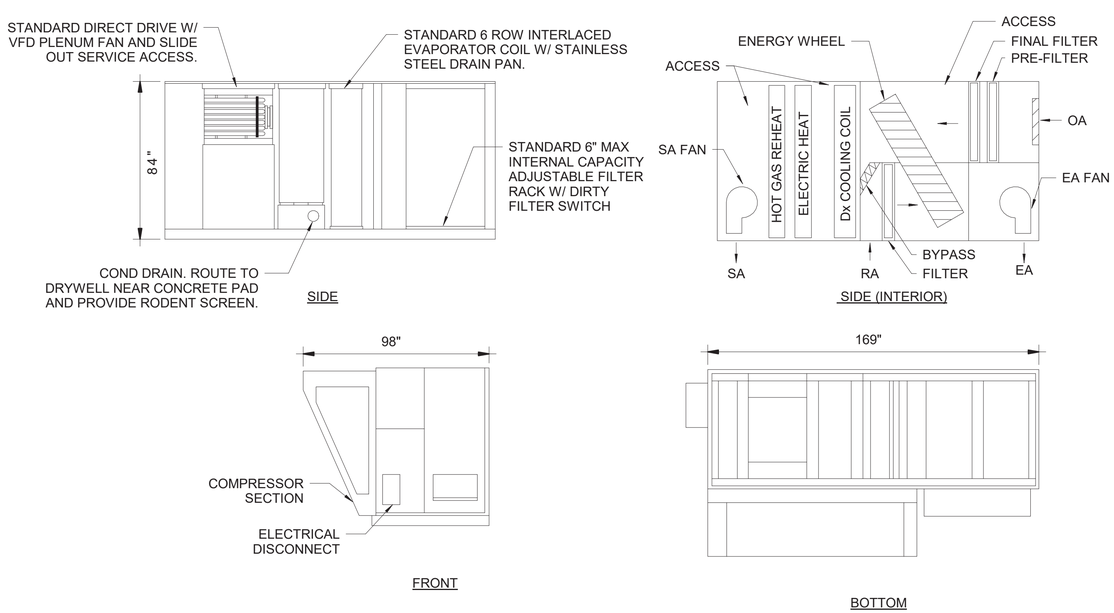
D3 WALL DUCT SUPPORTS
NTS



D7 AHU-1 DIAGRAM
NTS



A1 AHU-3 DIAGRAM
NTS



A5 AHU-2 DIAGRAM
NTS

US Army Corps of Engineers ®

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US ARMY CORPS OF ENGINEERS
JACOBS / EWING COLE A Joint Venture

WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

HVAC DETAILS

SHEET ID
M-503

RTA SUBMISSION

AIR HANDLING UNIT SCHEDULE

TAG	LOCATION	SERVICE	BASIS OF DESIGN		SUPPLY FAN				RETURN FAN		ENERGY RECOVERY		DX COOLING COIL							ELECTRIC HEATING COIL			REHEAT COIL		
			MANUFACTURER	MODEL	SA (CFM)	HP (EA)	OA (CFM)	ESP (IN WG)	RA (CFM)	ESP (IN WG)	TYPE	SUMMER LAT DB/WB	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EAT DB/WB	LAT DB/WB	EER	CONDENSER ROWS	FPI	TOTAL CAPACITY (MBH)	EAT DB	LAT	TYPE	MRC (LB/HR)	LAT DB/WB
AHU - 1	ON GRADE	CADET BARRACK	TRANE	NOTE 15	2400	1.5	400	2.00	2000	1.50	-	-	133.1	87.7	77.8/64.8	44.7/44.7	11.1	2	14	51.0	71	91	HOT GAS	41.38	77/58.6
AHU - 2	ON GRADE	LATRINE	TRANE	NOTE 15	4400	5.0	4400	2.00	3850	1.50	TOTAL ENTHALPY	79.3/66.3	264.4	161.6	79.3/66.3	44.4/44.2	15.3	3	12	82.0	65	82	HOT GAS	185.61	64.4/53.31
AHU - 3	ON GRADE	CADET BARRACK	TRANE	NOTE 15	4800	4.0	800	2.00	4000	1.50	-	-	261.6	172.8	77.8/64.8	45.2/45.2	9.1	2	14	82.0	71	87	HOT GAS	80.17	62.8/53.2

AIR HANDLING UNIT SCHEDULE (CONT.)

TAG	AIR COOLED CONDENSER					ELECTRICAL DATA			NOTES
	FANS			COMPRESSORS					
	QTY.	HP (EA)	FLA (EA)	QTY.	RLA (EA)	RPM	BHP	V/PH/Hz	
AHU - 1	2	1.00	4.20	2	20	1757	1.25	208/3/60	1, 2, 3, 4, 5, 6, 7, 8, 11, 12,13, 15, 16
AHU - 2	3	1.00	4.20	2	48	1231	1.39	208/3/60	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12,14, 15, 16
AHU - 3	3	1.00	4.20	2	48	1718	4.4	208/3/60	1, 2, 3, 4, 5, 6, 7, 8, 11, 12,13, 15, 16

NOTES:
1. COORDINATE DUCT ROUTING AND CONNECTIONS WITH FIELD CONDITIONS.
2. PROVIDE AMCA CLASS 1 LOW LEAKAGE DAMPERS, EACH WITH A DEDICATED/INDEPENDENT MOTORIZED DAMPER ACTUATOR(S).
3. PROVIDE MANUFACTURER'S FACTORY APPLIED COATING ON EQUIPMENT CASING AND COILS.
4. PROVIDE DEDICATED EQUIPMENT CONTROLLER, SOURCE CODE PROGRAMMING, GRAPHICS, AND INTEGRATION AS NECESSARY FOR EACH UNIT.
5. COORDINATE INPUT/OUTPUT SIGNALS BETWEEN EQUIPMENT AND FIELD CONTROL DEVICES.
6. PROVIDE ACCESSORIES AND APPURTENANCES FOR INSTALLING UNITS.
7. PROVIDE SINGLE POINT POWER CONNECTION WITH FACTORY MOUNTED AND WIRED NON-FUSED DISCONNECT SWITCH NEMA 4X RATED SUITABLE FOR OUTSIDE USE.
8. PROVIDE PACKAGED, VARIABLE VOLUME AIR HANDLING UNIT, WITH DIRECT EXPANSION COOLING, ELECTRIC HEATING, MIXING BOX, AND ECONOMIZER CONTROL.
9. PROVIDE PACKAGED, VARIABLE VOLUME DEDICATED OUTSIDE AIR HANDLING UNIT, WITH DIRECT EXPANSION COOLING, ELECTRIC PREHEAT, HOT GAS REHEAT, ELECTRIC BACK-UP HEAT, AND TOTAL ENTHALPY RECOVERY WHEEL.
10. PROVIDE TOTAL ENTHALPY ENERGY RECOVERY WHEEL WITH ALUMINUM FRAME CONSTRUCTION AND VARIABLE SPEED ROTATION CONTROL.
11. PROVIDE MERV 8 PRE-FILTER, MERV 13 FINAL FILTER.
12. PROVIDE 36" CURB WITH SUPPLY AND RETURN DUCT PENETRATIONS.
13. COIL ENTERING AIR TEMPERATURES ARE MIXED AIR TEMPERATURES. OUTSIDE AIR COOLING DESIGN TEMPERATURE OF 92°F DB/75°F WB AND HEATING DESIGN OF 50°F.
14. COIL ENTERING AIR TEMPERATURES ARE AFTER ENERGY RECOVERY WHEEL. OUTSIDE AIR COOLING DESIGN TEMPERATURE OF 92°F DB/75°F WB AND HEATING DESIGN OF 50°F.
15. THE MANUFACTURER LISTED IS THE BASIS OF DESIGN. ALTERNATIVE UNITS SHALL BE APPROVED BY THE GOVERNMENT, HOWEVER, MODIFICATIONS OF THE DESIGN DOCUMENTS TO FIT AN ALTERNATIVE UNIT AND COORDINATION OF DUCTWORK AND ASSOCIATED ELECTRICAL AND CIVIL UTILITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE BASIS OF DESIGN MODEL NUMBERS ARE AS FOLLOWS: AHU-1 IS MODEL OADG012C1-DAB10JC00-C1AE00000-11D00002C-A00C03AA0-AA1B010AA-00AE00000; AHU-2 IS MODEL OAKD300A3-D1B400JN-D3C00AG6JL1B52E3B0C0; AHU-3 IS MODEL OAGD300A3-C1B400CC-D3E00AG9002001E3C1A0.
16. LAT OFF THE COOLING COIL SHALL NOT EXCEED 50°F.

DUCTWORK INSULATION SCHEDULE

SERVICE	INSULATION TYPE	INSULATION THICKNESS (IN)	LOCATION	JACKET	NOTES
SUPPLY AIR - INDOOR	FLEXIBLE ELASTOMERIC	2"	CONCEALED	ALL SERVICE JACKET	
SUPPLY AIR - INDOOR	FLEXIBLE ELASTOMERIC	2"	CONCEALED	PVC JACKET	
SUPPLY AIR - OUTDOOR	FLEXIBLE ELASTOMERIC	2.5"	EXPOSED	PVC OR ALUMINUM JACKET	
RETURN AIR - OUTDOOR	FLEXIBLE ELASTOMERIC	1"	ALL	PVC OR ALUMINUM JACKET	
EXHAUST AIR - OUTDOOR	FLEXIBLE ELASTOMERIC	1"	ALL	PVC OR ALUMINUM JACKET	

AIR DEVICE SCHEDULE

TAG	SERVICE	BASIS OF DESIGN		MAX AIRFLOW (CFM)	MODULE SIZE (IN)	NECK SIZE (IN)	NO. OF SLOTS	SLOT WIDTH (IN)	BORDER TYPE	PATTERN	NOTES
		MANUFACTURER	MODEL								
EG - 1	EXHAUST	PRICE	PDR	700 CFM	24 x 24	22 x 10	-	-	CEILING MOUNTED PLASTER RING	PERFORATED	1, 2, 3, 4, 5
EG - 2	EXHAUST	PRICE	PDR	300 CFM	12 x 12	10 x 10	-	-	CEILING MOUNTED PLASTER RING	PERFORATED	1, 2, 3, 4, 5
RG - 1	OUTDOOR AIR	GREENHECK	ECD-401	900 CFM	VARIES	-	-	-	DUCT MOUNTED	45 DEFLECTION	2, 5, 7
SG - 1	SUPPLY	PRICE	540S	130 CFM	8 x 6	8 x 6	-	-	SIDEWALL	45 DEFLECTION	1, 2, 3, 4, 5, 6
SG - 2	SUPPLY	PRICE	RSD	175 CFM	24 x 24	8"	-	-	CEILING MOUNTED PLASTER RING	SWIRL	1, 2, 3, 4, 5
SG - 3	SUPPLY	PRICE	540S	155 CFM	8 x 8	8 x 8	-	-	SIDEWALL	45 DEFLECTION	1, 2, 3, 4, 5
SG - 4	SUPPLY	PRICE	TBD2	250 CFM	48x6	8"	2	1-1/2	CEILING MOUNTED PLASTER RING	1-WAY	1, 2, 3, 4, 5

NOTES:
1. COORDINATE FRAME STYLE AND TYPE WITH CEILING TYPE.
2. PROVIDE MANUFACTURER'S MOUNTING HARDWARE AND FRAME.
3. PROVIDE ALUMINUM AIR DEVICE.
4. MOUNT RACK & PINION CONTROLLER ON DIFFUSER FOR CABLE OPERATED DAMPER.
5. THE MANUFACTURER LISTED IS THE BASIS OF DESIGN. ALTERNATIVE AIR DEVICES SHALL BE APPROVED BY THE GOVERNMENT.
6. PROVIDE INTEGRAL FACE DAMPER.
7. PROVIDE LOUVER WITH OPERABLE BLADES.

DUCTWORK CONSTRUCTION AND LEAKAGE TESTING SCHEDULE

SYSTEM	DUCT PRESSURE CLASS IN WG.			SUPPLY				RETURN		DUCT TEST PRESSURE (IN WG)	NOTES
				ROUND/OVAL		RECTANGULAR					
	SUPPLY DUCT	RETURN DUCT	EXHAUST DUCT	DUCT SEAL CLASS	DUCT LEAK CLASS	DUCT SEAL CLASS	DUCT LEAK CLASS	DUCT SEAL CLASS	DUCT LEAK CLASS		
DOAS UNITS AND AHUs - DUCTS LOCATED OUTDOORS	+3	-3	-3	A	3	A	6	A	12	3	1
DOAS UNITS AND AHUs - DUCTS LOCATED INDOORS	+2	-2	-2	A	6	A	12	A	12	2	1

NOTES:
1. TEST IN ACCORDANCE WITH UFGS 23 0593 "TESTING, ADJUSTING, AND BALANCING FOR HVAC" AND THE PROCEDURES IN SMACNA HVAC AIR DUCT LEAKAGE TESTING MANUAL.

AIR-COOLED CONDENSING UNIT SCHEDULE

MARK	SERVING	BASIS OF DESIGN		AIRFLOW RATE (CFM)	COOLING CAPACITY (BTUH)	HEATING CAPACITY (BTUH)	CONDENSER						NOTES
		MANUFACTURER	MODEL				AMB TEMP °F	REFRIGERANT	COMPRESSORS			CONDENSER FANS	
									QTY	RLA (EA)	MCA	QTY	FLA (EA)	
ACCU-1	UTILITY ROOM	DAIKIN	RXL09QMVJU	1105	9000	10900.0	95.0	R-410A	1	8.5	9.5	1	0.2	1, 2, 3

NOTES:
1. PROVIDE UNIT DISCONNECT.
2. PROVIDE WITH PRE-CHARGED REFRIGERANT LINE SET AND THERMOSTAT.
3. THE MANUFACTURER LISTED IS THE BASIS OF DESIGN. ALTERNATIVE UNITS SHALL BE APPROVED BY THE GOVERNMENT, HOWEVER, MODIFICATIONS OF THE DESIGN DOCUMENTS TO FIT AN ALTERNATIVE UNIT AND COORDINATION OF ASSOCIATED ELECTRICAL, TELECOM, AND FIRE PROTECTION UTILITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.

DEHUMIDIFIER SCHEDULE

MARK	SERVING	BASIS OF DESIGN			ELECTRICAL DATA			DIMENSIONS (L x W x H)	WEIGHT (LBS)	NOTES
		MANUFACTURER	MODEL	LBS/HR	V	Ph	Hz			
DH-1	ARMORY	FRIGIDAIRE	FFAP7033T1	3	115	1	60	12 x 15 x 24	54	1, 2, 3

NOTES:
1. PROVIDE DRAINAGE PIPE FROM INTEGRATED CONDENSATE PUMP TO GRADE.
2. PROVIDE INTEGRATED HUMIDITY CONTROLS WITH RELATIVE HUMIDITY SETPOINT AND AUTOMATIC SHUTOFF.
3. THE MANUFACTURER LISTED IS THE BASIS OF DESIGN. ALTERNATIVE UNITS SHALL BE APPROVED BY THE GOVERNMENT.

AIR-CONDITIONER SCHEDULE

MARK	SERVING	BASIS OF DESIGN		COOLING CAPACITY						HEATING CAPACITY				ELECTRICAL DATA				WEIGHT (LBS)	NOTES
		MANUFACTURER	MODEL	REFRIGERANT	CFM	TOTAL CAPACITY (BTU/HR)	SENSIBLE CAPACITY (BTU/H)	EAT DB/WB	LAT DB/WB	TYPE	TOTAL CAPACITY (BTU/H)	EAT DB	LAT DB	V	PH	Hz	FLA		
AC-1	UTILITY ROOM	DAIKIN	FTX09NMVJU	R-410A	417	9000.0	8170	95/75	80/67	HEAT PUMP	10900.0	47	70	208	1	60	0.20	18.00	1, 2

NOTES:
1. PROVIDE UNIT DISCONNECT.
2. THE MANUFACTURER LISTED IS THE BASIS OF DESIGN. ALTERNATIVE UNITS SHALL BE APPROVED BY THE GOVERNMENT, HOWEVER, MODIFICATIONS OF THE DESIGN DOCUMENTS TO FIT AN ALTERNATIVE UNIT AND COORDINATION OF ASSOCIATED ELECTRICAL, TELECOM, AND FIRE PROTECTION UTILITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

ISSUE DATE: DECEMBER 15, 2020
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CONTRACT NO.: W912DS-18-D-0010

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CHECKED BY: DG
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS

JACOBS / EWING COLE *A Joint Venture*

WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

HVAC SCHEDULE

SHEET ID
M-601

RTA SUBMISSION

CONTROL SCHEMATIC SYSMBOLS

W-X-Y-Z ##

DEVICE SYMBOL, GENERIC
USED TO REPRESENT SENSORS, INSTRUMENTS SAFETIES, AND OTHER CONTROL DEVICES
W-X-Y-Z (SEE ABBREVIATIONS AND ACRONYMS)
GENERIC USAGE TO SHOW LOCATION OF DEVICE, PROCESS OR DEVICE BEING MEASURED OR CONTROLLED, MODIFIERS AND OTHER APPLICATION INFORMATION

W-X-Y-Z
W-X-Y-Z ##

DEVICE SYMBOL, GENERIC
MULTIPLE OUTPUT DEVICE WHERE AT LEAST 1 OUTPUT IS ALWAYS SAFETY INTERLOCK

DDC ##
DIR
REV

DEVICE SYMBOL, CONTROLLER
DDC : DIRECT DIGITAL CONTROL
: DEVICE NUMBER
DIR : DIRECT CONTROL ACTION, OR
REV : REVERSE CONTROL ACTION
W-X-Y-Z : (SEE ABBREVIATIONS AND ACRONYMS)
GENERIC USAGE TO SHOW LOCATION OF DEVICE, PROCESS OR DEVICE BEING MEASURED OR CONTROLLED, SIGNAL TYPE, MODIFIERS AND OTHER APPLICATION INFORMATION

ACTUATOR, ELECTRIC

AFMA

AIR FLOW MEASUREMENT ARRAY,
WITH FLOW TRANSMITTER
SEE "DEVICE SYMBOL, GENERIC"

BOILER

CHILLER

C — COIL, COOLING

DX — COIL, COOLING, DIRECT-EXPANSION

EH — COIL, ELECTRIC HEATING

HG — COIL, HOT GAS

H — COIL, HEATING

PC — COIL, PRECOOL

PH — COIL, PREHEAT

ST — COIL, STEAM

CONTACT, PRESSURE, HIGH LIMIT (HL)
SHOWN IN ACTIVATED POSITION
CLOSED WHEN PRESSURE IS ABOVE SETPOINT
OPEN WHEN PRESSURE IS BELOW SETPOINT

CONTACT, PRESSURE, HIGH LIMIT (HL)
SHOWN IN ACTIVATED POSITION
OPEN WHEN PRESSURE IS ABOVE SETPOINT
CLOSED WHEN PRESSURE IS BELOW SETPOINT

CONTACT, PRESSURE, LOW LIMIT (LL)
SHOWN IN ACTIVATED POSITION
CLOSED WHEN PRESSURE IS BELOW SETPOINT
OPEN WHEN PRESSURE IS ABOVE SETPOINT

CONTACT, PRESSURE, LOW LIMIT (LL)
SHOWN IN INACTIVATED POSITION
OPEN WHEN PRESSURE IS ABOVE SETPOINT
CLOSED WHEN PRESSURE IS BELOW SETPOINT

CONTACT, TEMPERATURE, HIGH LIMIT (HL)
SHOWN IN ACTIVATED POSITION
CLOSED WHEN TEMPERATURE IS ABOVE SETPOINT
OPEN WHEN TEMPERATURE IS BELOW SETPOINT

CONTACT, TEMPERATURE, LOW LIMIT (HL)
SHOWN IN INACTIVATED POSITION
OPEN WHEN TEMPERATURE IS BELOW SETPOINT
CLOSED WHEN TEMPERATURE IS ABOVE SETPOINT

CONTACT, TEMPERATURE, LOW LIMIT (LL)
SHOWN IN ACTIVATED POSITION
CLOSED WHEN TEMPERATURE IS BELOW SETPOINT
OPEN WHEN TEMPERATURE IS ABOVE SETPOINT

CONTACT, TEMPERATURE, LOW LIMIT (LL)
SHOWN IN INACTIVATED POSITION
OPEN WHEN TEMPERATURE IS ABOVE SETPOINT
CLOSED WHEN TEMPERATURE IS BELOW SETPOINT

CONTROL SIGNAL LINE, LOW VOLTAGE

CURRENT TRANSFORMER/SWITCH

DAMPER, BALANCING

D-# #
DAMPER, PARALLEL BLADE
NORMALLY OPEN OR CLOSED AS SHOWN
= DAMPER NUMBER AS SHOWN
IN DAMPER SCHEDULE

D-# #
DAMPER, OPPOSED BLADE
NORMALLY OPEN OR CLOSED AS SHOWN
= DAMPER NUMBER AS SHOWN
IN DAMPER SCHEDULE

MAIN AIR
MAIN AIR

M #
MOTOR

MS-#
MOTOR STARTER

Rxx
RELAY COIL
XX = SEQUENTIAL RELAY (SOLENOID) NUMBER

Rxx-YY
REAL COIL CONTACT
NORMALLY OPEN
XX = RELAY COIL NUMBER
YY = CONTACT NUMBER

Rxx-YY
REAL COIL CONTACT
NORMALLY OPEN
XX = RELAY COIL NUMBER
YY = CONTACT NUMBER

FAN

FILTER

LDP ##
LOCAL DISPLAY PANEL
= SEQUENTIAL NUMBER (WHEN MORE THAN 1 LDP)

P
PRESSURE GAGE

FLOW METER

P
PRESSURE WITCH, DIFFERENTIAL, WITH GAGE
H = HIGH PRESSURE TAP
L = LOW PRESSURE TAP
SEE "DEVICE SYMBOL, GENERIC"

PUMP

RADIATOR

RST-BUT
RESET BUTTON FOR SAFETY RESET

SMOKE DETECTOR, DUCT-MOUNTED
SEE "DEVICE SYMBOL, GENERIC"

SWITCH, MANUAL

T
TEMPERATURE GAGE

TEMPERATURE SENSOR, AVERAGE
or TEMPERATURE LOW LIMIT / FREEZESTAT
SEE "DEVICE SYMBOL, GENERIC"

TEMPERATURE SENSOR, POINT
SEE "DEVICE SYMBOL, GENERIC"

STAT
THERMOSTAT WITH SPECIFIED I/O FUNCTIONS

THERMOWELL IN PIPE

VALVE, BALANCING

V- # #
NC
VALVE, NORMALLY CLOSED
WITH SPRING RETURN FAILSAFE
= VALVE NUMBER A SHOWN
IN VALVE SCHEDULE

V- # #
NO
VALVE, NORMALLY OPEN
WITH SPRING RETURN FAILSAFE
= VALVE NUMBER A SHOWN
IN VALVE SCHEDULE

COM V- # # NO
VALVE, 3-WAY DIVERTING WITH
SPRING RETURN FAILSAFE
NO = NORMALLY OPEN
NC = NORMALLY CLOSED
COM = COMMON PORT
# # = VALVE NUMBER AS SHOWN
IN VALVE SCHEDULE

NO V- # # COM
VALVE, 3-WAY MIXING WITH
SPRING RETURN FAILSAFE
NO = NORMALLY OPEN
NC = NORMALLY CLOSED
COM = COMMON PORT
# # = VALVE NUMBER AS SHOWN
IN VALVE SCHEDULE

VFD
XX-C XX-SS XX-S
VARIABLE FREQUENCY DRIVE
XX = PROCESS/DEVICE BEING CONTROLLED

SS = START/STOP COMMAND
S = STATUS FEEDBACK (ON/OFF)
C = 4 - 20 mA, VDC

ABBREVIATIONS AND ACRONYMS

2P	TWO - POSITION (CONTROL)
ADJ	ADJUSTABLE
AFMA	AIR FLOW MEASUREMENT ARRAY
AI	ANALOG INPUT
ALM	ALARM
AO	ANALOG OUTPUT
BI	BINARY INPUT
BLDG	BUILDING
BLR	BOILER
BO	BINARY OUTPUT
BYP	BYPASS
C	COMMAND (MODULATING CONTROL SIGNAL)
CDO	CONDENSATE OVERFLOW
CF	CONDENSER FAN
CHLR	CHILLER
CLG	COOLING
CO2	CARBON DIOXIDE
COM	COMMON
COMP	COMPRESSOR
CR	CONDENSER/CONDENSATE WATER RETURN
CS	CONDENSER/CONDENSATE WATER SUPPLY
CSR	CURRENT SENSING RELAY
CT	CURRENT TRANSFORMER /SWITCH
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHW	CHILLED WATER
D	DAMPER
DA	DISCHARGE AIR
DDC	DIRECT DIGITAL CONTROL(LER)
DIFF	DIFFERENCE
DIS	DISABLE
DISP	DISPLAY
DX	DIRECT EXPANSION (UNIT)
EA	EXHAUST AIR
ECM	ELECTRONICALLY COMMUTATED MOTOR
ECO	ECONOMIZER
EF	EXHAUST FAN
EH	ELECTRIC HEAT
EMCS	ENERGY MONITORING AND CONTROL SYSTEM
ENA	ENABLE
ERW	ENERGY RECOVERY WHEEL
ES	END SWITCH
F	FLOW
FAP	FIRE ALARM PANEL
FLT	FILTER
FM	FLOW METER
FZ	FREEZE STAT
FS	FLOW SWITCH
H	HIGH
HG	HOT GAS
HL	HIGH LIMIT
HTG	HEATING
HUM	HUMIDIFIER
HW	HOT WATER
HHWR	HOT WATER RETURN
HHWS	HOT WATER SUPPLY
L	LOW
LDR	LOCAL DISPLAY PANEL
LL	LOW LIMIT
M	MOTOR or MAIN
M&C	MONITORING & CONTROL (SOFTWARE)
MA	MIXED AIR
MINOA	MINIMUM OUTSIDE AIR
MS	MOTOR STARTER
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NVI	NETWORK VIRTUAL INPUT
NVO	NETWORK VIRTUAL OUTPUT
OA	OUTSIDE AIR
OCC	OCCUPIED
ODT	ON DELAY TIMER
OWS	OPERATOR WORKSTATION
P	POSITION
PC	PRE-COOLING
PCW	PRIMARY CHILLER WATER
PCWR	PRIMARY CHILLER WATER RETURN
PCWS	PRIMARY CHILLER WATER SUPPLY
PH	PREHEAT
PMP	PUMP
RA	RETURN AIR
REV	REVERSE (CONTROL ACTION)
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RLA	RELIEF AIR
RM	ROOM
RTN	RETURN
S	STATUS
SA	SUPPLY AIR
SF	SUPPLY FAN
SMK	SMOKE
SP	SETPOINT
SS	START/STOP COMMAND
STAT	THERMOSTAT
STM	STEAM
SW	SWITCH
SYS	SYSTEM
T	TEMPERATURE
TAP	TAP PRESSURE
TS	TEMPERATURE SENSOR
VFD	VARIABLE FREQUENCY DRIVE

US Army Corps of Engineers ®

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SIZE: ANSI D

US ARMY CORPS OF ENGINEERS

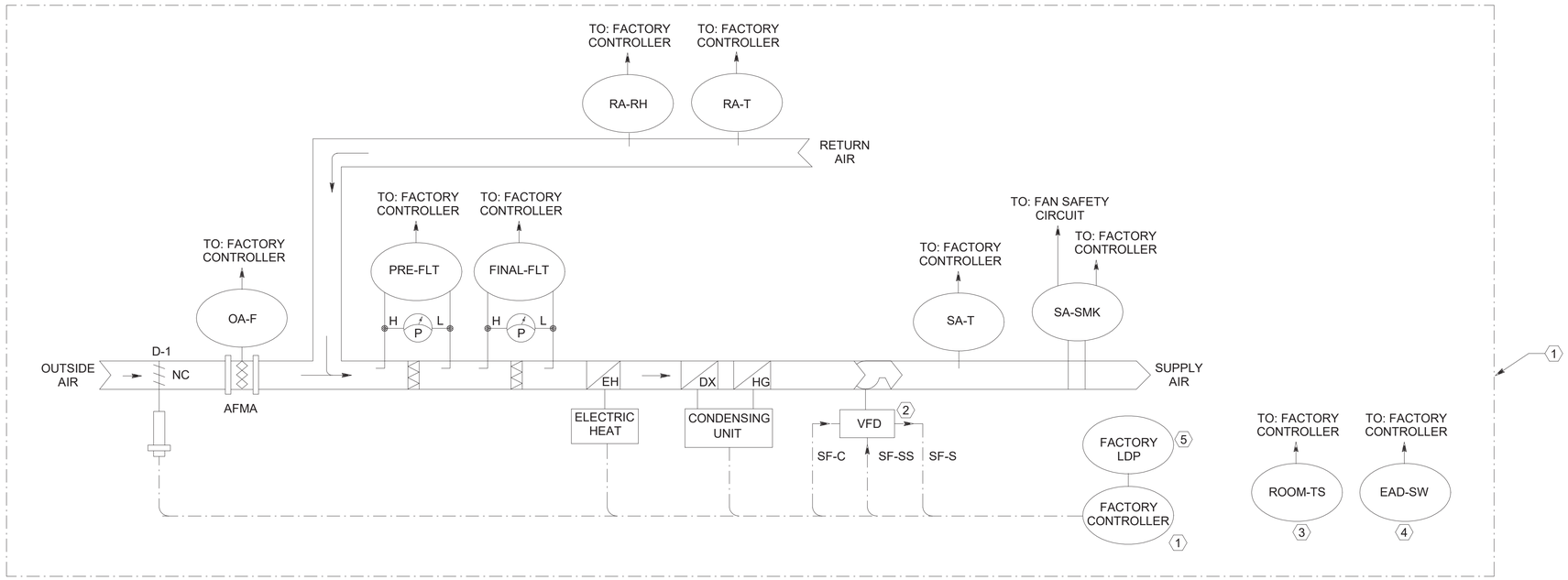
JACOBS / EWING COLE *A Joint Venture*

WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

CONTROLS LEGEND

SHEET ID
M-701

RTA SUBMISSION



AHU-1 SEQUENCE OF OPERATION:

GENERAL: THE UNIT MUST BE CONTROLLED BY SELF-CONTAINED, PACKAGED CONTROLS PROVIDED BY UNIT MANUFACTURER/SUPPLIER INCLUDING ALL NECESSARY CONTROLLER, DISPLAY, FIELD/CONTROL DEVICES, WIRING AND OTHER NECESSARY COMPONENTS.

UNIT OPERATION: THE UNIT CONTROLLER MUST HAVE ABILITY TO PLACE THE UNIT IN OCCUPIED AND UNOCCUPIED MODES BASED ON TIME SCHEDULE THAT IS USER RE-PROGRAMMABLE. PROVIDE A TIME SCHEDULE FOR FOUR SEPARATE TEMPERATURES PER DAY, EVERY DAY OF WEEK, FOR BOTH HEATING AND COOLING SET POINTS. SPACE TEMPERATURE SENSOR MUST HAVE ABILITY TO OVERRIDE AND PLACE THE UNIT IN THE OCCUPIED MODE FOR A CERTAIN TIME PERIOD, INITIALLY SET FOR 2 HOURS, ADJUSTABLE.

TEMPERATURE CONTROL: THE UNIT CONTROLLER SHALL OPERATE THE UNIT SUPPLY FAN, DX COOLING AND ELECTRIC HEATING COILS, AND OUTDOOR AIR DAMPER TO MAINTAIN THE SPACE TEMPERATURE AS REQUIRED. PROVIDE OCCUPIED/UNOCCUPIED COOLING AND HEATING SET POINTS AS SHOWN BELOW AND ALL SET POINTS MUST BE ADJUSTABLE. OUTDOOR AIR DAMPER MUST BE CLOSED DURING THE UNOCCUPIED MODE OF OPERATION:

- OCCUPIED COOLING: 78°F
- OCCUPIED HEATING: 70°F
- UNOCCUPIED COOLING: 82°F
- UNOCCUPIED HEATING: 62°F

DEHUMIDIFICATION CONTROL: WHEN THE SPACE HUMIDITY RISES ABOVE THE SET POINT, INITIALLY SET AT 60% (ADJUSTABLE), THE UNIT CONTROLLER SHALL OVERRIDE AND OPERATE THE DX COOLING COIL TO MAINTAIN THE SPACE HUMIDITY AT OR BELOW THE SET POINT, AND MODULATE THE HOT GAS REHEAT AS REQUIRED TO AVOID OVER COOLING.

ALARMS: IF ANY OF THE FOLLOWING CONDITIONS OCCUR, AN ALARM MUST BE GENERATED AND DISPLAYED AT THE UNIT CONTROLLER: UNIT GENERAL ALARM/FAULT, UNIT FAILURE; FAN FAILURE; FILTER ALARM, LOW/HIGH SPACE TEMPERATURE ALARM; AND HIGH SPACE HUMIDITY ALARM.

SAFETY/EMERGENCY SHUTDOWN: WHEN PARTICLES OF COMBUSTION ARE SENSED BY THE SUPPLY SMOKE DETECTOR OR EMERGENCY UNIT SHUTDOWN SWITCH IS ACTIVATED, THE UNIT MUST BE SHUT DOWN VIA HARDWIRE INTERLOCK TO SUPPLY FAN SAFETY CIRCUIT. ONCE THE SMOKE/ALARM CONDITION IS CLEARED AND RESET, THE UNIT MUST RETURN TO NORMAL OPERATION.

1 AHU-1 UNIT - CONTROL DIAGRAM1
NTS

GENERAL NOTES

1. REFER TO SHEET M-001 AND M-701 FOR ABBREVIATION, SYMBOLS, AND GENERAL NOTES.

KEYED NOTES

1. SELF-CONTAINED, PACKAGED CONTROLS INCLUDING CONTROLLER, FIELD/CONTROL DEVICES, WIRING AND OTHER COMPONENTS PROVIDED BY UNIT MANUFACTURER/SUPPLIER.
2. VARIABLE FREQUENCY DRIVE (VFD).
3. SPACE TEMPERATURE SENSOR WITH OCCUPANCY OVERRIDE BUTTON. SEE MECHANICAL FLOOR PLAN M-101A FOR LOCATION.
4. PROVIDE EMERGENCY SHUTDOWN SWITCH WITH HINGED COVER AND WARNING SIGN. WHEN ACTIVATED, THE AHU MUST BE SHUT DOWN AND OUTDOOR AIR DAMPER MUST BE CLOSED. SEE MECHANICAL FLOOR PLAN M-101A FOR LOCATION.
5. LOCAL DISPLAY PANEL (LDP) PROVIDED BY UNIT MANUFACTURER. THE MAINTENANCE PERSONNEL MUST BE ABLE TO VIEW OPERATING STATUS, MANAGE ALARM NOTIFICATIONS, CONFIGURE TIME SCHEDULE AND ADJUST SET POINTS VIA LDP.

US Army Corps of Engineers ®

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US ARMY CORPS OF ENGINEERS

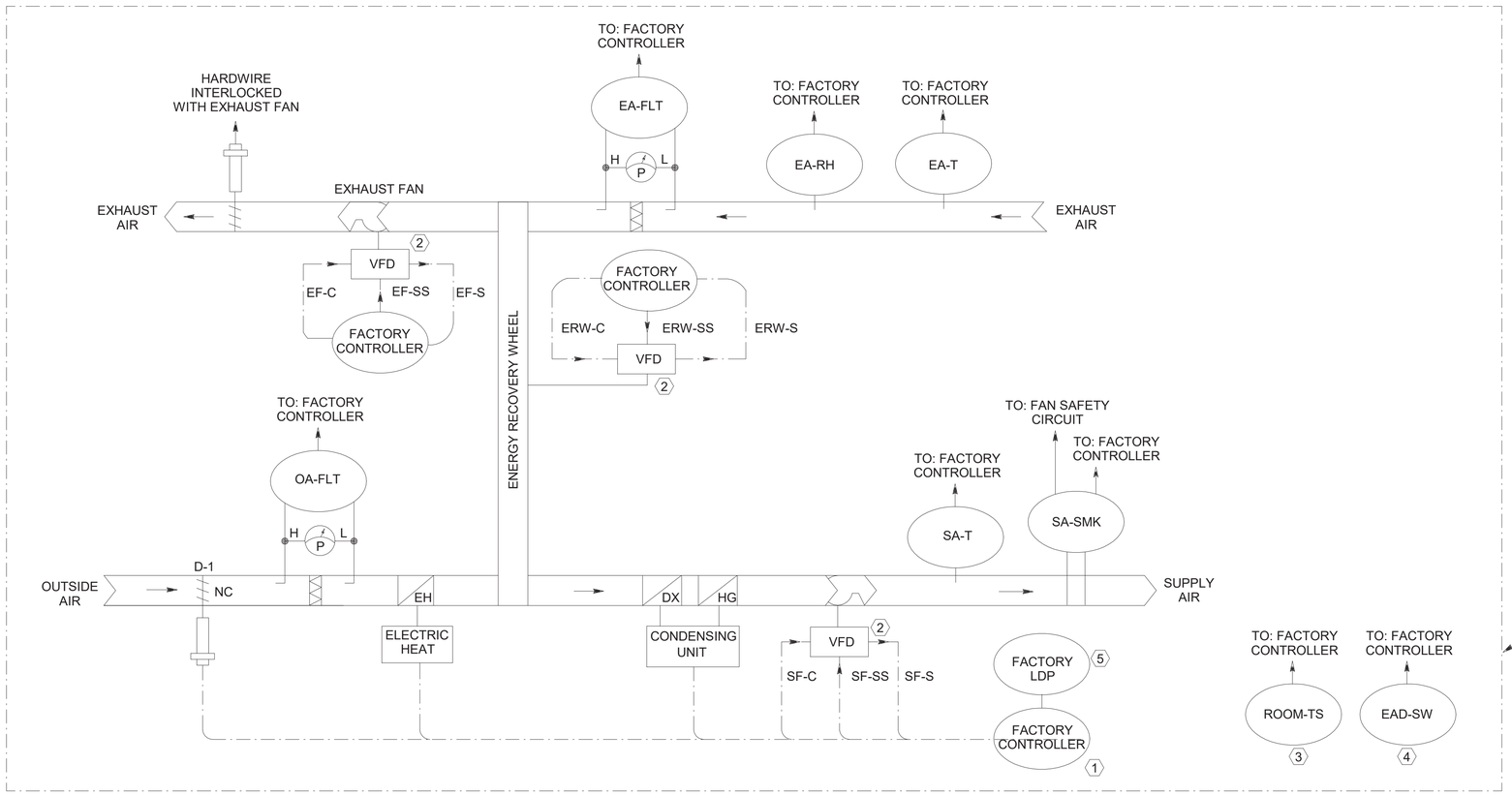
JACOBS / EWING COLE *A Joint Venture*

WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

HVAC CONTROL DIAGRAM

SHEET ID
M-702

RTA SUBMISSION



AHU-2 SEQUENCE OF OPERATION:

GENERAL: THE UNIT MUST BE CONTROLLED BY SELF-CONTAINED, PACKAGED CONTROLS PROVIDED BY UNIT MANUFACTURER/SUPPLIER INCLUDING ALL NECESSARY CONTROLLER, DISPLAY, FIELD/CONTROL DEVICES, WIRING AND OTHER NECESSARY COMPONENTS.

UNIT OPERATION: THE UNIT CONTROLLER MUST HAVE ABILITY TO PLACE THE UNIT IN OCCUPIED AND UNOCCUPIED MODES BASED ON TIME SCHEDULE THAT IS USER RE-PROGRAMMABLE. PROVIDE A TIME SCHEDULE FOR FOUR SEPARATE TEMPERATURES PER DAY, EVERY DAY OF WEEK, FOR BOTH HEATING AND COOLING SET POINTS. SPACE TEMPERATURE SENSOR MUST HAVE ABILITY TO OVERRIDE AND PLACE THE UNIT IN THE OCCUPIED MODE FOR A CERTAIN TIME PERIOD, INITIALLY SET FOR 2 HOURS, ADJUSTABLE.

TEMPERATURE CONTROL: THE UNIT CONTROLLER SHALL OPERATE THE UNIT SUPPLY FAN, ENERGY RECOVERY WHEEL, DX COOLING AND ELECTRIC HEATING COILS, AND OUTDOOR AIR DAMPER TO MAINTAIN THE SPACE TEMPERATURE AS REQUIRED. PROVIDE OCCUPIED/UNOCCUPIED COOLING AND HEATING SET POINTS AS SHOWN BELOW AND ALL SET POINTS MUST BE ADJUSTABLE:

- OCCUPIED COOLING: 78°F
- OCCUPIED HEATING: 70°F
- UNOCCUPIED COOLING: 82°F
- UNOCCUPIED HEATING: 62°F

DEHUMIDIFICATION CONTROL: WHEN THE SPACE HUMIDITY RISES ABOVE THE SET POINT, INITIALLY SET AT 60% (ADJUSTABLE), THE UNIT CONTROLLER SHALL OVERRIDE AND OPERATE THE DX COOLING COIL TO MAINTAIN THE SPACE HUMIDITY AT OR BELOW THE SET POINT, AND MODULATE THE HOT GAS REHEAT AS REQUIRED TO AVOID OVER COOLING.

ALARMS: IF ANY OF THE FOLLOWING CONDITIONS OCCUR, AN ALARM MUST BE GENERATED AND DISPLAYED AT THE UNIT CONTROLLER: UNIT GENERAL ALARM/FAULT, UNIT FAILURE; FAN FAILURE; FILTER ALARM, LOW/HIGH SPACE TEMPERATURE ALARM; AND HIGH SPACE HUMIDITY ALARM.

SAFETY/EMERGENCY SHUTDOWN: WHEN PARTICLES OF COMBUSTION ARE SENSED BY THE SUPPLY SMOKE DETECTOR OR EMERGENCY UNIT SHUTDOWN SWITCH IS ACTIVATED, THE UNIT MUST BE SHUT DOWN VIA HARDWIRE INTERLOCK TO SUPPLY FAN SAFETY CIRCUIT. ONCE THE SMOKE/ALARM CONDITION IS CLEARED AND RESET, THE UNIT MUST RETURN TO NORMAL OPERATION.

1 AHU-2 UNIT - CONTROL DIAGRAM1
NTS

GENERAL NOTES

1. REFER TO SHEET M-001 AND M-701 FOR ABBREVIATION, SYMBOLS, AND GENERAL NOTES.

KEYED NOTES

1. SELF-CONTAINED, PACKAGED CONTROLS INCLUDING CONTROLLER, FIELD/CONTROL DEVICES, WIRING AND OTHER COMPONENTS PROVIDED BY UNIT MANUFACTURER/SUPPLIER.
2. VARIABLE FREQUENCY DRIVE (VFD).
3. SPACE TEMPERATURE SENSOR WITH OCCUPANCY OVERRIDE BUTTON. SEE MECHANICAL FLOOR PLAN M-101B FOR LOCATION.
4. PROVIDE EMERGENCY SHUTDOWN SWITCH WITH HINGED COVER AND WARNING SIGN. WHEN ACTIVATED, THE AHU MUST BE SHUT DOWN AND OUTDOOR AIR DAMPER MUST BE CLOSED. SEE MECHANICAL FLOOR PLAN M-101B FOR LOCATION.
5. LOCAL DISPLAY PANEL (LDP) PROVIDED BY UNIT MANUFACTURER. THE MAINTENANCE PERSONNEL MUST BE ABLE TO VIEW OPERATING STATUS, MANAGE ALARM NOTIFICATIONS, CONFIGURE TIME SCHEDULE AND ADJUST SET POINTS VIA LDP.

US Army Corps of Engineers ®

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US ARMY CORPS OF ENGINEERS

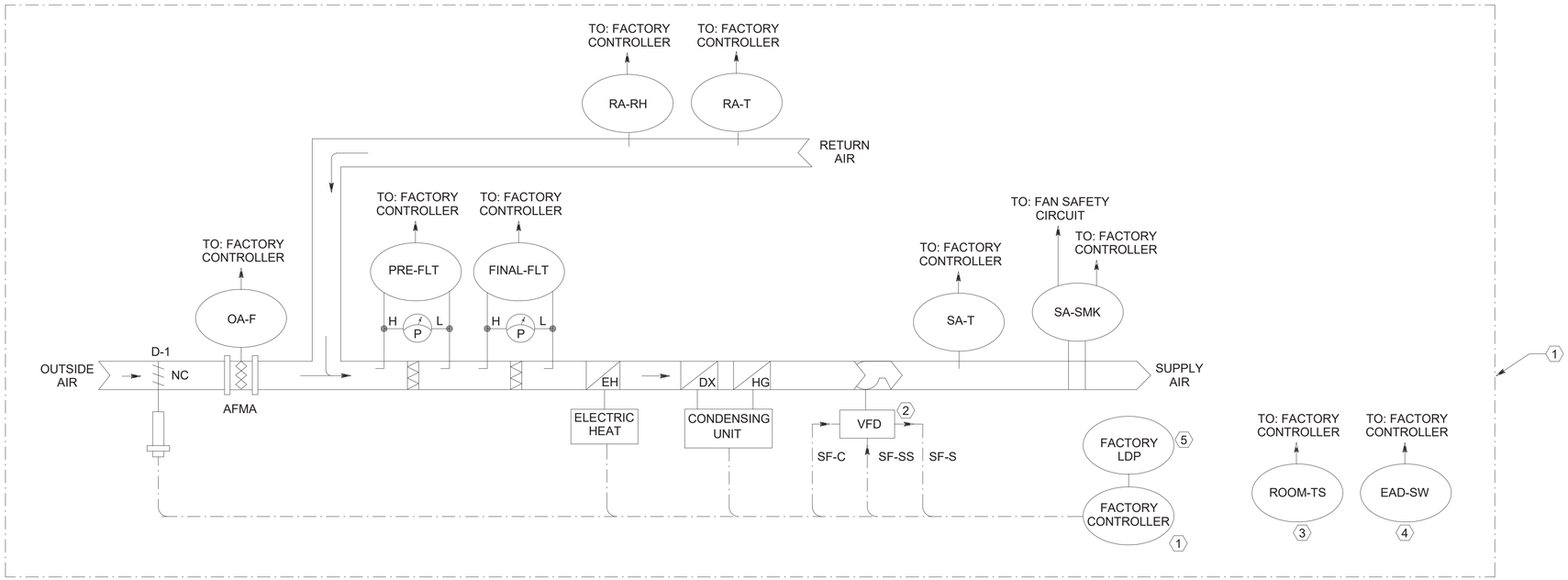
JACOBS / EWING COLE *A Joint Venture*

WEST POINT, NY
REVITALIZATION OF CAMP BUCKNER

HVAC CONTROL DIAGRAM

SHEET ID
M-703

RTA SUBMISSION



AHU-3 SEQUENCE OF OPERATION:

GENERAL: THE UNIT MUST BE CONTROLLED BY SELF-CONTAINED, PACKAGED CONTROLS PROVIDED BY UNIT MANUFACTURER/SUPPLIER INCLUDING ALL NECESSARY CONTROLLER, DISPLAY, FIELD/CONTROL DEVICES, WIRING AND OTHER NECESSARY COMPONENTS.

UNIT OPERATION: THE UNIT CONTROLLER MUST HAVE ABILITY TO PLACE THE UNIT IN OCCUPIED AND UNOCCUPIED MODES BASED ON TIME SCHEDULE THAT IS USER RE-PROGRAMMABLE. PROVIDE A TIME SCHEDULE FOR FOUR SEPARATE TEMPERATURES PER DAY, EVERY DAY OF WEEK, FOR BOTH HEATING AND COOLING SET POINTS. SPACE TEMPERATURE SENSOR MUST HAVE ABILITY TO OVERRIDE AND PLACE THE UNIT IN THE OCCUPIED MODE FOR A CERTAIN TIME PERIOD, INITIALLY SET FOR 2 HOURS, ADJUSTABLE.

TEMPERATURE CONTROL: THE UNIT CONTROLLER SHALL OPERATE THE UNIT SUPPLY FAN, DX COOLING AND ELECTRIC HEATING COILS, AND OUTDOOR AIR DAMPER TO MAINTAIN THE AVERAGE SPACE TEMPERATURE AS REQUIRED. PROVIDE OCCUPIED/UNOCCUPIED COOLING AND HEATING SET POINTS AS SHOWN BELOW AND ALL SET POINTS MUST BE ADJUSTABLE. OUTDOOR AIR DAMPER MUST BE CLOSED DURING THE UNOCCUPIED MODE OF OPERATION:

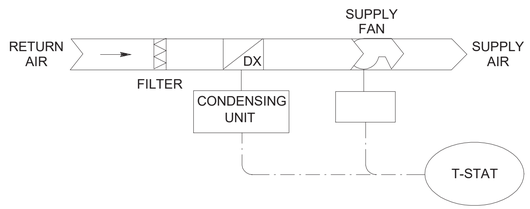
- OCCUPIED COOLING: 78°F
- OCCUPIED HEATING: 70°F
- UNOCCUPIED COOLING: 82°F
- UNOCCUPIED HEATING: 62°F

DEHUMIDIFICATION CONTROL: WHEN THE SPACE HUMIDITY RISES ABOVE THE SET POINT, INITIALLY SET AT 60% (ADJUSTABLE), THE UNIT CONTROLLER SHALL OVERRIDE AND OPERATE THE DX COOLING COIL TO MAINTAIN THE SPACE HUMIDITY AT OR BELOW THE SET POINT, AND MODULATE THE HOT GAS REHEAT AS REQUIRED TO AVOID OVER COOLING.

ALARMS: IF ANY OF THE FOLLOWING CONDITIONS OCCUR, AN ALARM MUST BE GENERATED AND DISPLAYED AT THE UNIT CONTROLLER: UNIT GENERAL ALARM/FAULT, UNIT FAILURE; FAN FAILURE; FILTER ALARM, LOW/HIGH SPACE TEMPERATURE ALARM; AND HIGH SPACE HUMIDITY ALARM.

SAFETY/EMERGENCY SHUTDOWN: WHEN PARTICLES OF COMBUSTION ARE SENSED BY THE SUPPLY SMOKE DETECTOR OR EMERGENCY UNIT SHUTDOWN SWITCH IS ACTIVATED, THE UNIT MUST BE SHUT DOWN VIA HARDWIRE INTERLOCK TO SUPPLY FAN SAFETY CIRCUIT. ONCE THE SMOKE/ALARM CONDITION IS CLEARED AND RESET, THE UNIT MUST RETURN TO NORMAL OPERATION.

1 AHU-3 UNIT - CONTROL DIAGRAM1
NTS



SPLIT SYSTEM HP UNIT SEQUENCE OF OPERATION (TYPICAL):

GENERAL: THE UNIT MUST BE CONTROLLED BY WALL MOUNTED THERMOSTAT PROVIDED BY UNIT MANUFACTURER/SUPPLIER INCLUDING ALL NECESSARY FIELD/CONTROL DEVICES, WIRING AND OTHER NECESSARY COMPONENTS.

UNIT OPERATION: THE THERMOSTAT MUST CYCLE ON AND OFF THE FAN AND DX COOLING/REVERSING VALVE AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE AT COOLING AND HEATING SET POINTS AS SHOWN BELOW. ALL SET POINTS MUST BE AJUSTABLE:

- COOLING: 74°F
- HEATING: 65°F

2 SPLIT SYSTEM HP UNIT - CONTROL DIAGRAM
NTS

GENERAL NOTES

1. REFER TO SHEET M-001 AND M-701 FOR ABBREVIATION, SYMBOLS, AND GENERAL NOTES.

KEYED NOTES

1. SELF-CONTAINED, PACKAGED CONTROLS INCLUDING CONTROLLER, FIELD/CONTROL DEVICES, WIRING AND OTHER COMPONENTS PROVIDED BY UNIT MANUFACTURER/SUPPLIER.
2. VARIABLE FREQUENCY DRIVE (VFD).
3. TYPICAL FOR TWO (2) SPACE TEMPERATURE SENSORS, ONE (1) IN EACH BARRACK, WITH OCCUPANCY OVERRIDE BUTTON. THE UNIT MUST MAINTAIN THE AVERAGE SPACE TEMPERATURE IN THE BARRACKS. SEE MECHANICAL FLOOR PLAN M-101C FOR LOCATIONS.
4. PROVIDE TWO (2) EMERGENCY SHUTDOWN SWITCHES, ONE (1) IN EACH BARRACK, WITH HINGED COVER AND WARNING SIGN. WHEN EITHER SWITCH IS ACTIVATED, THE AHU MUST BE SHUT DOWN AND OUTDOOR AIR DAMPER MUST BE CLOSED. SEE MECHANICAL FLOOR PLAN M-101C FOR LOCATIONS.
5. LOCAL DISPLAY PANEL (LDP) PROVIDED BY UNIT MANUFACTURER. THE MAINTENANCE PERSONNEL MUST BE ABLE TO VIEW OPERATING STATUS, MANAGE ALARM NOTIFICATIONS, CONFIGURE TIME SCHEDULE AND ADJUST SET POINTS VIA LDP.

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