VETERAN VICTORY HOUSE
LAUNDRY ROOM AHU
REPLACEMENTS

SOUTH CAROLINA DEPARTMENT OF VETERANS' AFFAIRS

2461 SIDNEYS RD, WALTERBORO, SC 29488

SSOE PROJECT NUMBER: 0210044302

SCDVA PROJECT NUMBER: E26-N003-AT

PROFESSIONAL SEALS:

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION SSOE, Inc. No. 746

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 25455 JEFFREY G. BROWN

7/17/26

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
	08.17.2026	BIDDING DOCUMENTS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

SCDVA

SC DEPARTMENT OF VETERANS' AFFAIRS

LEAD ★ SERVE ★ REMEMBER

11800 SAINT JULIAN PLACE, SUITE 305
COLUMBIA, SC
29204

SCDVA PROJECT #: E26-N003-AT

PROJECT INFORMATION:

VETERANS VICTORY HOUSE LAUNDRY ROOM AHU REPLACEMENTS

2461 SIDNEYS RD
WALTERBORO,SC
29488

SSOE PROJECT #: 0210044302

SSOE MANAGER: ERIC KELLERHALS

1501 MAIN STREET, SUITE 730
COLUMBIA, SC 29201
T. (803) 765-0320

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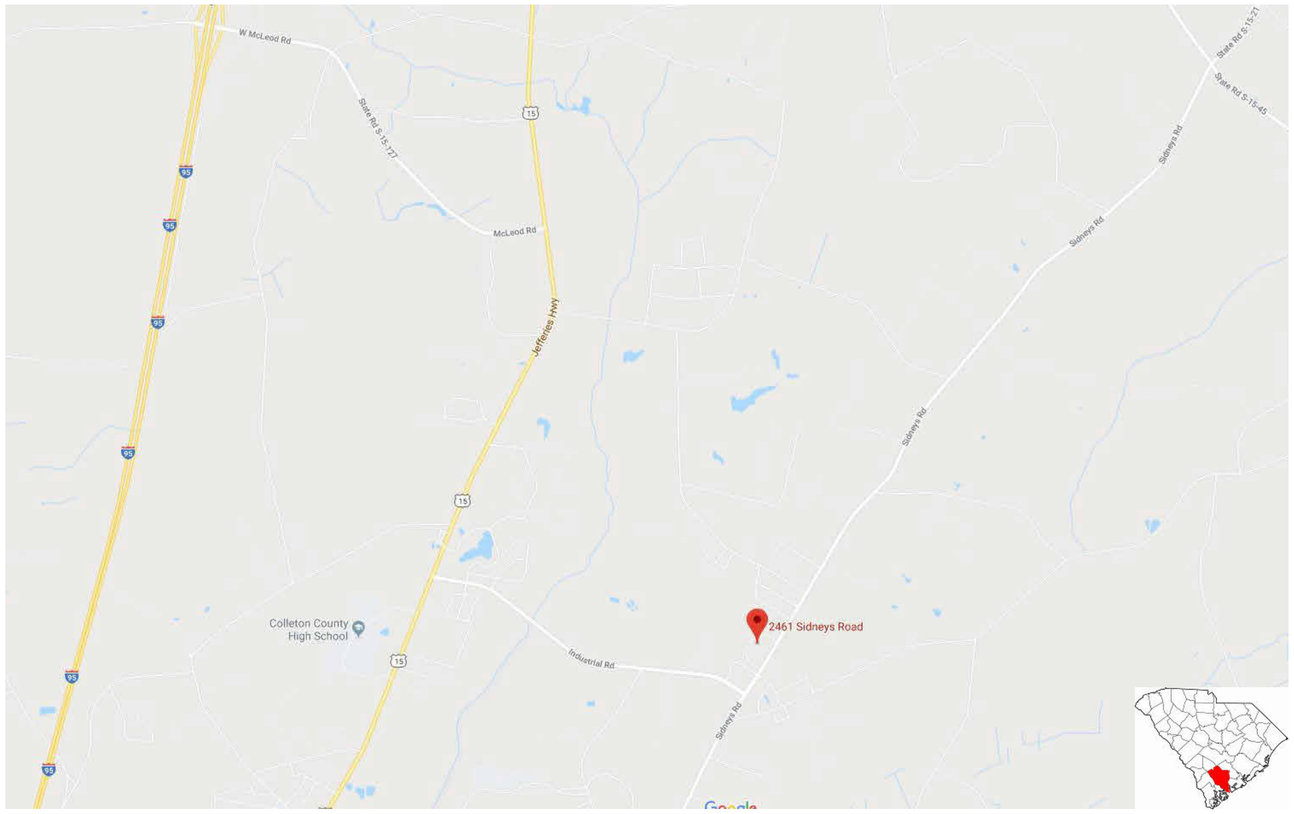
COVER SHEET

G-000



1 SITE LOCATION MAP
NOT TO SCALE

OSE CURRENTLY ADOPTED CODES

A. International Building Code (IBC), 2021 Edition with SCBC modifications
B. International Existing Building Code (IEBC), 2021 Edition
C. International Fire Code (IFC), 2021 Edition with SCBC modifications
D. International Energy Conservation Code (IECC), 2009 Edition
E. International Fuel Gas Code (IFGC), 2021 Edition with SCBC modifications
F. International Mechanical Code (IMC), 2021 Edition with SCBC modifications
G. International Plumbing Code (IPC), 2021 Edition with SCBC modifications, and the following insertions:
1. Section 305.4.1, insert "18" and insert "18"
2. Section 903.1, insert "8"
H. International Private Sewage Disposal Code (IPSDC), 2021 Edition
I. International Property Maintenance Code (IPMC), 2021 Edition
J. International Residential Code for One- and Two-Family Dwellings (IRC), 2021 Edition with SCBC modifications, and the following insertions:
1. P2603.5.1, insert "12" and insert "24"
K. International Wildland – Urban Interface Code (IWUIC), 2021 Edition
Note: The IWUIC does not supersede existing statutory requirements.
L. International Code Council Performance Code (ICCPC), 2021 Edition, upon State Engineer 's approval
M. International Swimming Pool and Spa Code (ISPSC), 2021 Edition
N. Standard for Bleachers, Folding and Telescopic Seating, and Grandstands, ICC 300-2017 Edition
O. National Electrical Code (NEC) [NFPA-70], 2020 Edition with SCBC modifications
P. National Electrical Safety Code (NESC), IEEE-C2-2017 Edition
Q. Accessible and Useable Buildings and Facilities, ICC A117.1 (latest edition). Note, this is the standard adopted by the South Carolina Accessibility Act, but this requirement does not relieve the Agency or the design professional from the Federal Statutory requirements that design, and construction comply with the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities. See http://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards.
R. State Fire Marshal rules, regulations, and policies. See http://statefire.llr.sc.gov/osfm/index.aspx.
S. South Carolina Elevator, Code, & Regulations. The SC Elevator Code references the American Society of Mechanical Engineers Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Walks, and supplements thereto, ASME A17.1-2019. See http://www.llr.sc.gov/elevators/ .
T. State of SC Telephone Equipment Room and Communications/Data Systems Policies as formulated by the Office of Technology and Information Services (OTIS).
U. State of SC Building Standards in Floodplain Areas.
V. The South Carolina Modular Buildings Construction Act.

INDEX OF DRAWINGS

SHEET #	SHEET NAME
G-000	COVER SHEET
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M-001	HVAC GENERAL
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M-210	LEVEL 1 HYDRONIC PIPING
M-501	HVAC DETAILS
M-502	HVAC DETAILS
M-601	HVAC SCHEDULES
MD-110	LEVEL 1 HVAC DEMOLITION
E-001	ELECTRICAL SPECIFICATIONS
E-110	LEVEL 1 ELECTRICAL

SSOE

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SITE LOCATION, APPLICABLE CODES AND DRAWING INDEX

G-001

SEISMIC AND WIND REQUIREMENTS FOR MECHANICAL SYSTEMS

INFORMATION FOR IBC-2021 /ASCE 7-16

A. PER SECTION 301.15 OF THE 2021 EDITION OF THE INTERNATIONAL MECHANICAL CODE, MECHANICAL EQUIPMENT, APPLIANCES AND SUPPORTS (INLCUDING ROOF CURBS & ROOF RAILS) EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. WHERE SEISMIC RESTRAINT IS REQUIRED, THE MORE DEMANDING FORCE OF WIND AND SEISMIC MUST BE USED. SEE SEISMIC INFORMATION CONTAINED IN THE STRUCTURAL DRAWINGS FOR SITE SPECIFIC INFORMATION ON SEISMIC DESIGN CATEGORY.
B. USE APPLICABLE TABLE BELOW FOR SPECIFIC COMPONENTS IMPORTANCE FACTOR DESIGNATIONS.
C. USE APPLICABLE TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH MECHANICAL COMPONENT.
D. FOR ALL COMPONENTS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL.
E. WHERE SEISMIC RESTRAINT IS REQUIRED, HOUSEKEEPING PADS NEEDED FOR THE INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT MUST BE DESIGNED BY THE SEISMIC ENGINEER. DO NOT POUR ANY HOUSEKEEPING PADS PRIOR TO THE THE RECEIPT OF THE SEISMIC SUBMITTAL.
F. SEISMIC RESTRAINTS FOR PIPING AND DUCTWORK MUST BE SHOWN ON LAYOUT DRAWINGS SHOWING SPECIFIC RESTRAINT LOCATIONS ALONG WITH ACCOMPANYING DETAILS AND CALCULATIONS.
G. SEISMIC CATEGORY "D".

PIPING COMPONENT IMPORTANCE FACTOR (Ip) DESIGNATION	
Ip = 1.0	Ip = 1.5
• SUSPENDED & FLOOR MOUNTED EQUIPMENT • PIPING SYSTEMS • DUCTWORK SYSTEMS	

SEISMIC DESIGN CATEGORIES D,E,F

		COMPONENT IMPORTANCE FACTOR (Ip)	
		1.0	1.5
COMPONENT IDENTIFICATION		SEISMIC RESTRAINT REQUIREMENT	SEISMIC RESTRAINT REQUIREMENT
ROOF MOUNTED		RESTRAIN ALL (SEE NOTE 1)	RESTRAIN ALL
FLOOR MOUNTED		RESTRAIN ALL (SEE NOTES 1,2)	RESTRAIN ALL
WALL MOUNTED		RESTRAIN ALL (SEE NOTE 1,2)	RESTRAIN ALL
COMPONENT SUPPORTS		RESTRAIN ALL (SEE NOTE 1)	RESTRAIN ALL
SUSPENDED EQUIPMENT	INLINE W/ DUCT	RESTRAIN IF >75 LBS PROVIDE FLEX. CONN. (SEE NOTE 3)	RESTRAIN IF >75 LBS PROVIDE FLEX. CONN. (SEE NOTE 3)
	NOT INLINE W/ DUCT/PIPE	RESTRAIN ALL (SEE NOTE 1)	RESTRAIN ALL
SUSPENDED DUCTILE PIPING (STEEL, ALUMINUM, COPPER, ETC.)		>3" (SEE NOTE 4)	>1" (SEE NOTE 4)
SUSPENDED NON DUCTILE PIPING (CAST IRON, PLASTIC, CERAMIC)		RESTRAIN ALL (SEE NOTE 4)	RESTRAIN ALL (SEE NOTE 4)
SUSPENDED PIPE ON TRAPEZE		RESTRAIN IF ANY PIPE ON TRAPEZE > 3" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE > 10 LBS/FT (SEE NOTE 4)	RESTRAIN IF ANY PIPE ON TRAPEZE > 1" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE > 10 LBS/FT (SEE NOTE 4)
DUCTWORK		6 SQ.FT. AND LARGER	6 SQ.FT. AND LARGER (SEE NOTE 5)
MULTIPLE DUCTS ON TRAPEZE		RESTRAIN IF TOTAL WEIGHT OF DUCTS ON TRAPEZE > 10 LBS/FT (SEE NOTES 4)	RESTRAIN IF TOTAL WEIGHT OF DUCTS ON TRAPEZE > 10 LBS/FT (SEE NOTES 4,5)
COMPONENT CERTIFICATION (SEE NOTE 6)		NOT REQUIRED	REQUIRED

NOTES:
1. EQUIPMENT 20 LBS. OR LESS IS EXEMPT IF FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.
2. RESTRAINTS ARE NOT REQUIRED IF THE COMPONENT WEIGHS 400 LBS. OR LESS, IS MOUNTED AT 4 FT. OR LESS ABOVE A FLOOR, AND HAS FLEXIBLE CONNECTIONS BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.
3. FLEXIBLE CONNECTIONS REQUIRED FOR PIPE CONNECTIONS ONLY.
4. RESTRAINT IS NOT REQUIRED IF THE PIPING / DUCTWORK IS SUPPORTED BY HANGERS AND EACH HANGER IN THE PIPING RUN IS 12 IN. OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON A TRAPEZE, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 IN. OR LESS. WHERE ROD HANGERS ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS, EYE NUTS OR OTHER DEVICES TO PREVENT BENDING IN THE ROD.
5. ALL DUCTWORK , REGARDLESS OF SIZE, DESIGNED TO CARRY TOXIC, HIGHLY TOXIC, OR EXPLOSIVE GASES OR USED FOR SMOKE CONTROL MUST BE RESTRAINED.
6. COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY ENGINEER OF RECORD.

DEMOLITION NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING PLANS. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF DEMOLITION AREAS. THE CONTRACTOR SHALL THOROUGHLY INVESTIGATE THE EXISTING CONDITIONS PRIOR TO BID.

2. THE PURPOSE AND INTENT OF DEMOLITION SHEET IS TO SHOW THE CONTRACTOR ITEMS REQUIRED TO BE REMOVED, BUT IS IN NO WAY LIMITED TO THE ITEMS SHOWN. ALL BIDDERS ARE REQUIRED TO MAKE AN ON-SITE VISIT AND INSPECT EXISTING MECHANICAL CONDITIONS BEFORE FINAL BID DATE.

3. ON-SITE INSPECTIONS ARE REQUIRED TO OCCUR PRIOR TO FINAL BID DATE TO DETERMINE ALL EXISTING CONDITIONS AND COORDINATE POWER DOWN TIMES. BIDDING CONTRACTORS ARE REQUIRED TO SURVEY ALL AREAS OF THE BUILDING PRIOR TO BIDDING TO VIEW THE EXISTING CONDITIONS. ANY ADDITIONAL WORK REQUIRED OR CLARIFICATIONS TO THE WORK SHOWN THAT COULD HAVE BEEN REASONABLY VERIFIED BY THE SURVEY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

4. PERFORM ALL CUTTING AND DRILLING REQUIRED. PATCH ALL HOLES, PAINT AND OTHERWISE REPAIR ALL DAMAGES TO THE BUILDING STRUCTURE AND SURFACES WHICH OCCUR AS A RESULT OF THIS PROJECT. REPAIRS SHALL RESTORE THE STRUCTURE TO THE SAME CONDITION EXISTING PRIOR TO BEGINNING WORK.

5. ANY DAMAGE TO EXISTING CONDITIONS CAUSED BY DEMOLITION AND/OR NEW WORK SHALL BE REPAIRED BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.

6. ANY NEW OR EXISTING PIPING PASSING THROUGH A NEW OR EXISTING WALL CARRYING A FIRE RATING SHALL BE SEALED TIGHT TO THE WALL WITH A UL APPROVED METHOD .

7. ALL DEMOLITION SHALL BE PERFORMED TO PREVENT THE ARBITRARY DESTRUCTION OR INTERRUPTION OF CONCEALED UTILITIES WHICH ARE INTENDED TO REMAIN IN USE AND THE ROUTING OF WHICH CAN NOT BE PREDETERMINED UNTIL DEMOLITION IS STARTED. ALL SUCH DISCOVERIES OF UTILITIES WHICH ARE IN A DIFFERENT LOCATION FROM THAT INDICATED, CHANGE DIRECTION FROM FLOOR-TO-FLOOR, ETC. OR ARE UNIDENTIFIED, SHALL BE REPORTED TO THE ARCHITECT BEFORE REMOVAL OR DISTURBANCE.

8. REMOVE, STORE, CLEAN, REINSTALL, RECONNECT, AND MAKE OPERATIONAL EQUIPMENT INDICATED FOR RELOCATION.

9. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING BUILDING SERVICES DURING DEMOLITION INCLUDING ALL TESTING, SERVICE FEES, RENTAL OF TEMPORARY EQUIPMENT OR INSTALLATION AND CONNECTION OF TEMPORARY SERVICES.

10. WHERE WALLS, FLOORS OR CEILINGS ARE CUT, REMOVED OR DAMAGED FOR INVESTIGATING EXISTING CONDITIONS, DEMOLISHING SERVICES, INSTALLING NEW SERVICES, ETC. THE CONTRACTORS SHALL COORDINATE THE PATCHING OF THE WALLS, FLOORS & CEILINGS TO MATCH EXISTING WITH THE BUILDING FINISHES CONTRACTOR AND/OR GENERAL CONTRACTOR.

11. NEW WORK SHOWN IS SUGGESTED ROUTING. CONTRACTOR SHALL FIELD INVESTIGATE EXISTING SERVICES AVAILABLE. BASED ON THE CONTRACTORS DISCOVERIES, THEY MAY SUGGEST ALTERNATE ROUTINGS. THE ENGINEER OF RECORD SHALL MAKE THE FINAL DETERMINATION ON WHETHER THE SERVICES SHALL BE INSTALLED AS SHOWN OR AS SUGGESTED BY THE CONTRACTOR.

12. WHERE PIPE, INSULATION, OR EQUIPMENT TO REMAIN IS DAMAGED OR DISTURBED, REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL CAPACITY AND QUALITY.

SYMBOLS

- 16"x8" — SQUARE DUCT SIZE TAG (WIDTH x HEIGHT)
- 16"/8" — OVAL DUCT SIZE TAG (WIDTH / HEIGHT)
- 16"Ø — ROUND DUCT SIZE TAG (DIAMETER)
- (E) — EXISTING DUCT TAG
- DUCT OR EQUIPMENT BEING DEMOLISHED
- S/A — SUPPLY AIR
- O/A — OUTSIDE AIR
- R/A — RETURN AIR
- T/A — TRANSFER AIR
- E/A — EXHAUST AIR
- L/A — RELIEF AIR
- FLUE — E/A_Exhaust Gas Flue
- C/A — S/A_Combustion Air
- DROP — RECTANGULAR SUPPLY/OUTSIDE AIR DUCT RISE
- DROP — ROUND SUPPLY/OUTSIDE AIR DUCT RISE
- DROP — RECTANGULAR RETURN/TRANSFER AIR DUCT RISE
- DROP — ROUND RETURN/TRANSFER AIR DUCT RISE
- DROP — RECTANGULAR EXHAUST/RELIEF AIR DUCT RISE
- DROP — ROUND EXHAUST/RELIEF AIR DUCT RISE
- SUPPLY OUTLET — RETURN/EXHAUST INLET
- A, 8", 150, (0' - 0"AFF): INLET/OUTLET SIZE; GRILLES, REGISTERS, AND DIFFUSERS TAG; CFM; ELEVATION (CENTER OF DIFFUSER FACE); TYPE (SEE SCHEDULE)
- LINEAR DIFFUSER
- G, 12"-48"-2, 500, (0' - 0"AFF): NECK SIZE; SLOT LENGTH; NUMBER OF SLOTS; LINEAR DIFFUSER TAG; CFM; ELEVATION (CENTER OF DIFFUSER FACE); TYPE (SEE SCHEDULE)
- MECHANICAL EQUIPMENT; XXX-X — MECHANICAL EQUIPMENT TAG
- EXISTING MECHANICAL EQUIPMENT; (E)XXX-X — EXISTING MECHANICAL EQUIPMENT TAG (TYPICAL FOR ALL EXISTING TAGS)
- MECHANICAL EQUIPMENT FOR REFERENCE; XXX-X — MECHANICAL EQUIPMENT TAG (REFER TO OTHER DISCIPLINE FOR ADDITIONAL INFORMATION)
- CARBON DIOXIDE SENSOR — CO2; TH — TEMPERATURE & HUMIDITY SENSOR
- CARBON MONOXIDE SENSOR — CO; TS — TEMPERATURE SENSOR
- NITROGEN DIOXIDE SENSOR — NO2; T — THERMOSTAT
- HUMIDITY SENSOR — HS; SW — MANUAL SWITCH
- HUMIDISTAT — H; S — SENSOR
- F — FIRE DAMPER
- S — SMOKE DAMPER
- M — MOTORIZED DAMPER
- B — MANUAL BALANCING DAMPER
- D — BACKDRAFT DAMPER
- C — COMBINATION FIRE/SMOKE DAMPER

HVAC SYMBOLS

- REVISION NUMBER - SHOWN ON PLANS — 1
- POINT WHERE NEW CONNECTS TO EXISTING
- NUMBER OF DETAIL ON SHEET / NUMBER OF SHEET WHERE DETAIL APPEARS — - / ---
- KEYNOTE — 1
- CONTINUATION SYMBOL
- ROOM NAME AND NUMBER — Room 1
- ITEM TO BE DEMOLISHED
- AREA NOT IN CONTRACT

ABBREVIATIONS

&	AND	HYD	HYDRANT
Ø	ROUND	ID	INDIRECT
A	AIR	IN	INCH
AB	ABOVE BASE	INL	INLET
ABV	ABOVE	INSUL	INSULATION
AC	AIR CONDITIONING	INT	INTERIOR
ACOUS	ACOUSTICAL	INV	INVERT
AD	AREA DRAIN	INWG	INCHES WATER GAUGE
ADD	ADDENDUM	JST SPC	JOIST SPACE
ADDL	ADDITIONAL	JT	JOINT
AFF	ABOVE FINISHED FLOOR	LAB	LABORATORY
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	LB	POUND
AG	ABOVE GROUND	LB/HR	POUNDS PER HOUR
ALT	ALTERNATE	LAT	LEAVING AIR TEMPERATURE
ALUM	ALUMINUM	LF	LINEAL FOOT
AP	ACCESS PANEL	LOC	LOCATION
APPROX	APPROXIMATE	LP	LOW PRESSURE
ARCH	ARCHITECT/ARCHITECTURAL	LPG	LIQUEFIED PETROLEUM GAS
AV	ACID RESISTANT VENT	LR	LIQUID REFRIGERANT
AW	ACID RESISTANT WASTE	LS	LAWN SPRINKLER
AUTO	AUTOMATIC	LVR	LOUVER
BFF	BELOW FINISHED FLOOR	LWT	LEAVING WATER TEMPERATURE
BLDG	BUILDING	M/A	MIXED AIR
BLW	BELOW	MAN	MANUAL
BM	BEAM	MATL	MATERIAL
BO	BY OTHER	MAV	MANUAL AIR VENT
BOT	BOTTOM	MAX	MAXIMUM
BSMT	BASEMENT	MBD	MOTORIZED BYPASS DAMPER
BTU	BRITISH THERMAL UNITS	MBH	ONE THOUSAND BTU PER HOUR
BTUH	BRITISH THERMAL UNITS PER HOUR	MCF	ONE THOUSAND CUBIC FEET
BTWN	BETWEEN	MCW	MAKE-UP COLD WATER
CAP	CAPACITY	MD	MOTORIZED DAMPER
CB	CATCH BASIN	MECH	MECHANICAL
CCW	COUNTER CLOCKWISE	MFR	MANUFACTURER
CFCV	CONSTANT FLOW CONTROL VALVE	MH	MANHOLE
CFM	CUBIC FEET PER MINUTE	MIN	MINIMUM
CHW	CIRCULATING HOT WATER	MISC	MISCELLANEOUS
CI	CAST IRON	MTR	MOTOR
CLG	CEILING	MU/A	MAKE-UP/AIR
CLG	COOLING	N	NECK
CO	CLEAN OUT	NC	NOISE CRITERIA
COL	COLUMN	NC	NORMALLY CLOSED
COMB	COMBINATION	NIC	NOT IN CONTRACT
CONC	CONCRETE	NO	NUMBER
COND	CONDENSATE	NO	NORMALLY OPEN
CONF	CONFERENCE	NOM	NOMINAL
CONN	CONNECT	NTS	NOT TO SCALE
CONST	CONSTRUCTION	O	OXYGEN
CONT	CONTINUE/CONTINUATION	O/A	OUTSIDE AIR
CONTR	CONTRACT/CONTRACTOR	OC	ON CENTER
COORD	COORDINATE	OF	OVERFLOW
CTR	CENTER	OPNG	OPENING
CUFT	CUBIC FEET	ORD	OVERFLOW ROOF DRAIN
CV	CHECK VALVE	PD	PRESSURE DROP
CW	COLD WATER	PIV	POST INDICATOR VALVE
CW	CLOCKWISE	PLBG	PLUMBING
D	DEGREE	PR	PAIR
DB	DRY BULB	PREL	PRELIMINARY
DET	DETAIL	PRESS	PRESSURE
DIA	DIAMETER	PRIM	PRIMARY
DIAG	DIAGONAL	PRV	PRESSURE REDUCING VALVE
DISCH	DISCHARGE	PSI	POUNDS PER SQUARE INCH
DIV	DIVISION	PSIG	POUNDS PER SQUARE INCH GAUGE
DI	DEIONIZED WATER	PW	POTABLE WATER
DMPR	DAMPER	PWR	POWER
DN	DOWN	R	DUCT RISER
DWG	DRAWING	R/A	RETURN AIR
DW	DISTILLED WATER	RCP	RADIANT CEILING PANEL
EA	EACH	RD	ROOF DRAIN
EAT	ENTERING AIR TEMPERATURE	REC	RECESSED
EL	ELBOW	RED	REDUCER
ELEC	ELECTRICAL	REFR	REFRIGERATION
ELEV	ELEVATION	RH	RELATIVE HUMIDITY
EP	EXPLOSION PROOF	REQD	REQUIRED
EQ	EQUAL	REV	REVERSE
EQUIP	EQUIPMENT	RL/A	RELIEF AIR
EWC	ELECTRIC WATER COOLER	RM	ROOM
EWT	ENTERING WATER TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
E/A	EXHAUST AIR	RW	RAIN WATER
EAH	EXHAUST HOOD	SF	SQUARE FOOT
EXIST	EXISTING	S/A	SUPPLY AIR
EXP	EXPANSION	SAN	SANITARY
EXPJT	EXPANSION JOINT	SCHED	SCHEDULE
EXT	EXTERIOR	SECT	SECTION
F	DEGREES FAHRENHEIT	SF	SQUARE FOOT
FCO	FLOOR CLEAN OUT	SD	SMOKE DAMPER
FD	FLOOR DRAIN	SHT	SHEET
FD	FIRE DAMPER	SIM	SIMILAR
FDV	FIRE DEPARTMENT VALVE	SLV	SLEEVE
FHC	FIRE HOSE CABINET	SM	SURFACE MOUNT
FL	FLOOR	SP	STANDPIPE
FLEX	FLEXIBLE	SP	STATIC PRESSURE
FLG	FLANGE	SPEC	SPECIFICATION
FO	FUEL OIL	SPS	STATIC PRESSURE STATION
FOV	FUEL OIL VENT	SQ	SQUARE
FOR	FUEL OIL RETURN	SR	SUCTION REFRIGERANT
FOS	FUEL OIL SUPPLY	SSD	SOIL SUBDRAIN
FPM	FEET PER MINUTE	SS	STAINLESS STEEL
FRP	FIBERGLASS REINFORCED PIPE	STD	STANDARD
FS	FULL SIZE	STM	STEAM
FS	FLOOR SINK	STRUCT	STRUCTURAL
FT	FOOT/FEET	SUCT	SUCTION
FTG	FOOTING	SUSP	SUSPENDED
FTR	FIN TUBE RADIATION	T	THERMOSTAT
FUT	FUTURE	TCP	TEMPERATURE CONTROL PANEL
GA	GAGE/GAUGE	TD	TEMPERATURE DROP
GAL	GALLON	TDR	TRENCH DRAIN
GALV	GALVANIZED	TEFC	TOTALLY ENCLOSED FAN COOLED
GC	GENERAL CONTRACTOR	TEMP	TEMPERATURE
GEN	GENERATOR	TYP	TYPICAL
GENL	GENERAL	UFD	UNDER FLOOR DUCT
GPH	GALLONS PER MINUTE	UG	UNDERGROUND
GR	GRADE	VAC	VACUUM
GW	GREASE WASTE	V	VENT
HB	HOSE BIB	VAV	VARIABLE AIR VOLUME
HD	HEAD	VEL	VELOCITY
HHWR	HYDRONIC HOT WATER RETURN	VENT	VENTILATION
HHWS	HYDRONIC HOT WATER SUPPLY	VERT	VERTICAL
HORZ	HORIZONTAL	VOL	VOLUME
HP	HORSE POWER	VTR	VENT THROUGH ROOF
HP	HIGH PRESSURE	W	WASTE
HTG	HEATING	WB	WET BULB
HTR	HEATER	WCO	WALL CLEAN OUT
HW	HOT WATER	WH	WALL HYDRANT

EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT	FP	FIRE PUMP
ACC	AIR COOLED CONDENSER	GI	GREASE INTERCEPTOR
ACCU	AIR COOLING CONDENSING UNIT	GRV	GRAVITY ROOF VENTILATOR
AFMS	AIR FLOW MEASURING STATION	H	HUMIDIFIER
AHU	AIR HANDLING UNIT	HWP	HEATING WATER PUMP
AS	AIR SEPARATOR	HX	HEAT EXCHANGER
B	BOILER	HPU	HEAT PUMP UNIT
CF	CABINET FAN	HRU	HEAT RECOVERY UNIT
CF	CHEMICAL FEEDER	ILC	INLINE CENTRIFUGAL
CFP	CHEMICAL FEEDER PUMP	PF	PROPELLER FAN
CH	CHILLER	PRV	POWER ROOF VENTILATOR
CRU	CONDENSATE RETURN UNIT	PWF	POWER WALL FAN
CT	COOLING TOWER	RE	RETURN/EXHAUST FAN
CUH	CABINET UNIT HEATER	RTU	ROOFTOP UNIT
CWP	CONDENSER WATER PUMP	SA	SHOCK ABSORBER
CHWP	CHILLED WATER PUMP	SAT	SOUND ATTENUATOR
DBP	DOMESTIC WATER BOOSTER PUMP	SEP	SEWAGE EJECTOR PUMP
DC	DUCT MOUNTED COIL	SF	SUPPLY FAN
DCP	DOMESTIC WATER CIRCULATING PUMP	SP	SUMP PUMP
EF	EXHAUST FAN	UH	UNIT HEATER
EDC	ELECTRIC DUCT COIL	US	UTILITY SET
ET	EXPANSION TANK	UV	UNIT VENTILATOR
EWH	ELECTRIC WATER HEATER	WFMS	WATER FLOW MEASURING STATION
FCU	FAN COIL UNIT	WH	WATER HEATER

NOTES

1. THE SPECIFICATIONS AND ACCOMPANYING DRAWINGS DESCRIBE APPROVED MANUFACTURERS AND THE SCOPE OF WORK OF THIS PROJECT. ALL LABOR, MATERIAL, EQUIPMENT, MACHINERY, SUPERVISION, MANAGEMENT AND OTHER ITEMS NECESSARY TO PROVIDE A COMPLETE INSTALLATION OF ALL SYSTEMS SHOWN ON DRAWINGS AND/OR SPECIFICATIONS TO BE PROVIDED BY THE CONTRACTOR.

2. ALL WORK IS TO BE PERFORMED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL MECHANICAL CODE AND BUILDING CODE, NFPA CODES, AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES. OBTAIN ALL PERMITS REQUIRED, GIVE ALL LEGAL NOTICES, AND HAVE ALL WORK INSPECTED AS REQUIRED BY LOCAL OR STATE LAW.

3. DRAWINGS SHOULD BE INTERPRETED AS GENERAL LAYOUT AND ARRANGEMENT DRAWINGS. THE DRAWINGS ARE NOT INTENDED TO SHOW AND CANNOT SHOW COMPLETE OR PRECISE MEASUREMENTS AND DETAILS OF THE BUILDING AND INSTALLATION IN EVERY RESPECT, AND THEY DO NOT INCLUDE ALL DETAILS OF MANUFACTURED EQUIPMENT, CONSTRUCTION, PIPING, DUCT WORK, ETC. MEASUREMENT FIGURES WRITTEN UPON THE DRAWING ARE TO BE RELIED UPON AS A DIMENSION FOR INSTALLATION PURPOSES, EXACT LOCATIONS AND MEASUREMENTS ARE TO BE DEFINED IN THE FIELD AND THE CONTRACTOR IS RESPONSIBLE FOR THEIR ACCURACY AND USE IN CONSTRUCTION OF THE WORK. COORDINATE CLOSELY WITH OWNER & OTHER TRADES.

4. TRANSITION RECTANGULAR DUCTWORK ON BOTTOM AND SIDES. MAINTAIN TOP OF DUCTWORK LEVEL AND AS HIGH AS POSSIBLE UNLESS NOTED OTHERWISE.

5. FLEXIBLE DUCT RUN OUTS TO CEILING DIFFUSERS SHALL BE FREE OF 90 DEG. TURNS, SAGS AND KINKS AND SHALL BE THE SAME SIZE AS THE DIFFUSER INLET. MAXIMUM LENGTH= 6 FEET.

6. ALL DUCT TRANSITIONS FROM SQUARE TO ROUND ARE TO BE SMOOTH AND TAPERED SQUARE TO ROUND TRANSITIONS. SPIN-IN FITTINGS AT THE END OF CAPPED DUCTS ARE NOT ACCEPTABLE.

7. DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSION.

8. USE 45° ENTRY, LOW LOSS TAP/FITTING WITH QUADRANT AND EXTRACTOR IN ALL DUCT TAKE-OFFS. PROVIDE WITH 2" BUILD-OUT FOR LOCKING QUADRANT ON INSULATED DUCT.

9. PROVIDE A MANUAL DAMPER IN ALL RUNOUTS TO EACH DIFFUSER, GRILLE, AND DEDICATED OUTDOOR AIR DUCT RUNOUTS. ADD MANUAL VOLUME DAMPERS AS RECOMMENDED BY T&B INITIAL SURVEY. (OBD AT DIFFUSER NOT ALLOWED)

10. ALL SUPPLY, RETURN, OR EXHAUST DUCT RUNOUTS TO GRILLES AND DIFFUSERS ARE TO BE THE SAME SIZE AS GRILLE NECK UNLESS NOTED OTHERWISE.

11. ALL SLOT DIFFUSERS TO HAVE 2-WAY AIR FLOW PATTERNS & 24"x24" DIFFUSERS TO HAVE 4-WAY AIR FLOW PATTERNS UNLESS INDICATED OTHERWISE ON DRAWINGS.

12. VERIFY LOCATION OF ALL THERMOSTAT AND FAN SWITCH LOCATIONS WITH THE ARCHITECT. MOUNT BOTTOM OF ALL THERMOSTATS 3' 4" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE. SPACES WITH CO2 SENSORS SHALL MOUNT THE CO2 SENSOR ABOVE THE THERMOSTAT.

13. CONDENSATE LINES ARE TO BE TRAPPED AND SLOPED 1/8" PER FOOT IN HORIZONTAL RUNS, AND TERMINATE ABOVE A DRAIN OR RECEPTOR.

14 .COORDINATE VOLTAGE AND PHASE OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL CONTRACTOR BEFORE SUBMITTING SHOP DRAWINGS OR ORDERING EQUIPMENT.

15. COORDINATE LOCATION & PROVIDE ALL ACCESS DOORS OR PANELS FOR VALVES, DAMPERS, OR ANY OTHER EQUIPMENT REQUIRING SERVICE ACCESS.

16. ALL ELECTRICAL DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT ARE TO BE PROVIDED AND INSTALLED BY DIVISION 23. THIS INFORMATION SHALL BE INDICATED ON SHOP DRAWINGS.

17. ON SQUARE & RECTANGULAR DUCTWORK, ALL MITERED ELBOWS AND BULL HEAD TEES ARE TO BE CONSTRUCTED WITH SINGLE-THICKNESS VANES (1.5" VANE SPACING) WITH A FITTING LOSS COEFFICIENT OF 0.11 OR LESS.

18. REFER TO ARCHITECTURAL PLANS AND REFLECTED CEILING PLANS TO COORDINATE ACTUAL LOCATIONS OF MECHANICAL EQUIPMENT WITH LAYOUT OF WALLS, PARTITIONS AND LOCATIONS OF CEILING MOUNTED DEVICES.

19. FOLLOW MANUFACTURER'S RECOMMENDATIONS AND WRITTEN INSTRUCTIONS FOR THE INSTALLATION OF ALL EQUIPMENT, MATERIALS AND ASSEMBLIES INDICATED ON THESE CONTRACT DOCUMENTS. SHOULD CONFLICTS ARISE BETWEEN THESE DOCUMENTS, CODE REQUIREMENTS AND MANUFACTURER'S INSTRUCTIONS, THE MORE STRINGENT REQUIREMENT ARE TO GOVERN.

20. COORDINATE WORK WITH THAT OF ALL OTHER TRADES TO ELIMINATE INTERFERENCE'S. EXAMINE IN ADVANCE THE LOCATION OF ELECTRICAL SYSTEMS, DUCTS, PIPING, STRUCTURES, CONDUITS AND OTHER EQUIPMENT AND COMPONENTS TO BE INSTALLED AND PROPERLY COORDINATE THE INSTALLATION OF MECHANICAL WORK TO AVOID INTERFERENCE'S BEFORE FABRICATING AND INSTALLING WORK. DETERMINE ALL DIMENSIONS BY ACTUAL FIELD CONDITIONS, MEASUREMENTS FROM MANUFACTURER'S CERTIFIED PRINTS AND COORDINATION WITH OTHER TRADES AND TO MODIFY, OFFSET OR OTHERWISE ACCOMMODATE ALL EQUIPMENT TO THE STRUCTURE, UTILITIES AND OTHER EQUIPMENT.

21. SUPPORT AND FASTEN ALL DUCTWORK, EQUIPMENT, ETC. SECURELY IN PLACE. SPACE, SECURE AND ADJUST HANGERS AND DUCTS, WITHOUT DEFLECTION OR SAG. CHAIN, STRAP, PERFORATED STRAP, WIRE HANGERS, OR WOOD PLUGS ARE PROHIBITED.

22. ITEMS SPECIFIED HEREIN BY MANUFACTURER AND MODEL NUMBER ARE TO BE CONSIDERED THE MINIMUM QUALITY ACCEPTABLE FOR THE SPECIFIED APPLICATION AND ESTABLISH A STANDARD OF REQUIRED FUNCTION, DIMENSION, APPEARANCE, SERVICEABILITY, AVAILABILITY OF SPARE PARTS AND QUALITY TO BE MET BY ANY PROPOSED SUBSTITUTION. FOR SUBSTITUTIONS, IT IS TO BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SUFFICIENT INFORMATION TO ESTABLISH "OR EQUAL" STATUS, IN THE DESIGN ENGINEER'S OPINION AND TO COORDINATE INSTALLATION OF THE AVAILABLE SPACE. INCREASED COSTS TO THE PROJECT ASSOCIATED WITH CONTRACTOR SUBSTITUTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

23. MAKE ALL NECESSARY TESTS, TRIAL OPERATIONS, ETC. REQUIRED TO PROVE THAT ALL SYSTEMS ARE IN COMPLETE SERVICEABLE CONDITION AND WILL FUNCTION AS INTENDED. ALL COSTS OF TEST SHALL BE BORNE BY THIS CONTRACTOR. SHOULD TEST REVEAL ANY DEFECTIVE MATERIAL OR WORKMANSHIP, SUCH WORK SHALL BE REPLACED AND TESTS REPEATED. ALL CORRECTIONS SHALL BE MADE USING NEW MATERIALS.

24. OPERATING AND MAINTENANCE MANUALS FOR ALL EQUIPMENT SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING: INCLUDING NECESSARY CUT SHEETS, CHARTS, WRITTEN INSTRUCTIONS, WIRING DIAGRAMS, FINAL AS-BUILT DRAWINGS WITH BALANCED AIR FLOWS INDICATED ETC. THESE MAINTENANCE INSTRUCTIONS SHALL BE BOUND IN SUITABLE HARD BACK RING BIDDERS, PROPERLY INDEXED, AND DELIVERED TO THE OWNER AND ARCHITECT.

25. MAINTAIN AN ACCURATE SET OF RECORD DRAWINGS ON-SITE AT ALL TIMES DURING CONSTRUCTION WHICH SHALL BE AVAILABLE FOR EXAMINATION BY THE OWNER'S REPRESENTATIVE UPON REQUEST. PROVIDE THE OWNER WITH A COMPLETE MARKED-UP SET OF THE CONTRACT DRAWINGS AT PROJECT COMPLETION.

26. ALL EQUIPMENT FURNISHED SHALL BE UL APPROVED AND SHALL BE LABELED OR LISTED BY UL.

27. REESTABLISH THE INTEGRITY OF ALL RATED ASSEMBLIES IN WHICH WORK REQUIRES ALTERATION OR MODIFICATION.

28. FRAME AND SEAL ALL DUCT PENETRATIONS THROUGH WALLS AND FLOORS AND ROOF.

29. MATERIAL SHALL BE NEW AND MADE BY AN APPROVED MANUFACTURER. PIPING SHALL BE INSTALLED SO THAT IT CAN BE COMPLETELY DRAINED. EQUIPMENT AND MATERIALS SHALL BE INSTALLED, ERECTED OR APPLIED WITH THE BEST ENGINEERING OR CONSTRUCTION PRACTICE. MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE OBSERVED, AS WELL AS ANY SPECIFIC INSTRUCTIONS GIVEN BY THE OWNER. ALL SUBSTANDARD WORK INSTALLED BY THIS CONTRACTOR SHALL BE REPLACED BY THIS CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. IF THIS CONTRACTOR DAMAGES EXISTING WORK, HE SHALL PAY THE COST OF REPLACEMENT OF THE DAMAGED WORK AT NO ADDITIONAL EXPENSE TO THE OWNER.

30. CLEANING AGENTS SHALL BE COMPATIBLE WITH THE SYSTEM BEING CLEANED. PRIOR TO ERECTION, INSPECT AND CLEAN AS REQUIRED TO REMOVE SAND, DIRT AND SCALE. PRIOR TO FLUSHING SYSTEM, CONTROL VALVES, RUPTURE DISCS, ETC. THAT MAY BE DAMAGED BY CLEANING SHALL BE REMOVED AND REPLACED WITH SPOOL PIECES, PLUGS, ETC. REMOVED ITEMS SHALL BE CLEANED SEPARATELY. NEW PIPE SHALL BE VALVED OFF FROM EXISTING, THEN FILLED AS REQUIRED. ALLOW SYSTEM TO BE FILLED COMPLETELY. THEN DRAIN COMPLETELY. CONTRACTOR SHALL INSTALL DRAINS AS REQUIRED TO ENSURE COMPLETE DRAINAGE OF SYSTEM. ALL DAMAGE OR DISCOLORATION OF EQUIPMENT OR THE BUILDING DUE TO FAILURE TO CLEAN UP THOROUGHLY OR FLUSH OUT PIPING PROPERLY SHALL BE CORRECTED WITHOUT ADDITIONAL COST TO THE OWNER. DOMESTIC WATER LINES SHALL BE DISINFECTED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.

31. SHUT-DOWN OF EXISTING SERVICES WHICH AFFECTS THE OPERATION WITHIN THE FACILITY REQUIRED TO ACCOMMODATE CONSTRUCTION ACTIVITIES DESCRIBED HEREIN, SHALL BE SCHEDULED WITH THE OWNER'S REPRESENTATIVE AND APPROVED IN WRITING. ALL SERVICES SHALL REMAIN OPERATIONAL DURING NORMAL BUSINESS HOURS UNLESS SPECIFICALLY APPROVED OTHERWISE.

32. PIPING INSTALLATIONS SHALL BE PER CURRENT MODERN INDUSTRY METHODS. PROVIDE PIPE SLEEVE LARGE ENOUGH FOR PIPE AND INSULATION WHERE PIPE PASSES THROUGH FLOORS OR WALLS. PIPE PASSING THROUGH FIRE WALLS SHALL BE PROVIDED WITH A LISTED FIRE PENETRATION SYSTEM. INSTALL EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS IN EXPOSED INTERIOR SPACES, EXCEPT WHERE OTHERWISE INDICATED.

33. CONTRACTOR IS RESPONSIBLE FOR ANY CUTTING AND PATCHING REQUIRED WHICH IS INCIDENTAL TO THE INSTALLATION OF HIS WORK. CUT, CHANNEL, CHASE AND DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, AND OTHER SURFACES NECESSARY FOR PIPING INSTALLATIONS AFTER COORDINATING w/ OTHER TRADES. PERFORM CUTTING BY SKILLED MECHANICS OF THE TRADES INVOLVED. REPAIR CUT SURFACES USING MATERIALS MATCHING SPECIFIED MATERIALS AND METHODS REQUIRED FOR SURFACE. REFER TO STRUCTURAL DRAWINGS FOR DETAILS ON CONCRETE SLAB OPENINGS.

34. REFER TO ARCHITECTURAL PLANS TO VERIFY RATINGS (FIRE, FIRE/SMOKE, SMOKE) OF ALL WALLS AND FLOORS BEING PENETRATED.

35. COORDINATE ALL VOLTAGES, PHASES AND CAPACITIES WITH ELECTRICAL PLANS

36. THE INSTALLATION OF DUCT MOUNTED SMOKE DETECTORS THAT ARE NOT PART OF A LISTED SMOKE DAMPER OR FIRE SMOKE DAMPER ARE TO BE FURNISHED BY THE FIRE ALARM CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR. THESE SHALL BE WIRED TO THE FIE ALARM SYSTEM BY THE FIRE ALARM CONTRACTOR. TO DETERMINE IF SMOKE DETECTORS ARE REQUIRED, REFER TO THE ELECTRICAL FIRE ALARM PLANS.

37. THE INSTALLATION OF DUCT MOUNTED SMOKE DETECTORS THAT ARE PART OF A LISTED SMOKE DAMPER OR FIRE SMOKE DAMPER ARE TO BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. THESE SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM VIA ADDRESSABLE INPUT MODULES AND CONNECTED TO THE AUXILIARY CONTACTS FURNISHED WITH THE DAMPER ASSEMBLY. TO DETERMINE IF SMOKE DETECTORS ARE REQUIRED, REFER TO THE ELECTRICAL FIRE ALARM PLANS.

38. ACCESSORIES FOR EQUIPMENT THAT ARE LISTED ON SCHEDULE DRAWINGS ARE TO BE PROVIDED BY THE CONTRACTOR. THE ACCESSORIES ARE TO BE FURNISHED AND INSTALLED AS A COMPLETED OPERATING SYSTEM.

39. SEE STRUCTURAL PLANS FOR LINTEL REQUIREMENTS FOR PENETRATIONS THROUGH WALLS.

40. PROVIDE DUCT LINER FOR THE FIRST 25' DOWNSTREAM OF EACH AIR HANDLING UNIT AND FIRST 5' DOWNSTREAM OF EACH TERMINAL UNIT (SINGLE DUCT AND FAN-POWERED).

41. WHERE BMS IS PRESENT OR BEING PROVIDED SPACES SERVED BY DUCTED AND DUCTLESS SPLIT SYSTEMS THAT DON'T HAVE BACNET CONTROLS, SHALL BE PROVIDED WITHOUT WALL-MOUNTED BACNET SENSOR TO MONITOR/ALARM TERMPERATURE OF SPACE.

42. SLEEVE AND SLEEVE SEALS ARE REQUIRED FOR MECHANICAL PIPING PENETRATIONS THROUGH EXTERIOR CONCRETE WALLS ABOVE GRADE, EXTERIOR CONCRETE WALLS BELOW GRADE, CONCRETE SLABS ON GRADE, CONCRETE SLABS ABOVE GRADE AND INTERIOR PARTITIONS. REFER TO PROJECT SPECIFICATIONS.

43. CONTRACTOR SHALL PROVIDE 1/4-INCH SCALE PROJECT SPECIFIC COORDINATION DRAWINGS. COORDINATION DRAWINGS AND PLANS AND OTHER DETAILS SHALL BE DRAWN TO SCALE, ON WHICH THE FOLLOWING ITEMS ARE SHOWN AND COORDINATED WITH EACH OTHER, USING INPUT FROM INSTALLERS OF THE ITEMS INVOLVED INCLUDING BUT NOT LIMITED TO: MECHANICAL EQUIPMENT, DUCTWORK, INSULATION, ALL PIPING, ELECTRICAL DISCONNECTS, ETC. COORDINATION DRAWINGS SHALL INCLUDE ALL MANUFACTURER'S REQUIRED CLEARANCES AS WELL AS CODE REQUIRED CLEARANCES.

44. CORRECT ANY DEFECTS IN WORKMANSHIP AND/OR MATERIAL WHICH OCCUR DURING THE FIRST YEAR OF OPERATION. CERTIFICATE WILL COMMENCE ON THE DATE OF ACCEPTANCE OF WORK BY OWNER. SUBMIT WRITTEN CERTIFICATE WITH MAINTENANCE DATA. THE CONTRACTOR SHALL PROVIDE A WRITTEN MANUFACTURER'S WARRANTY ON ALL PARTS AND LABOR FOR A PERIOD OF 1 YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. WHERE INDICATED, PROVIDE EXTENDED WARRANTIES FOR PERIODS INDICATED.

45. SUBMITTALS SHALL COMPLY WITH THE REQUIREMENTS OF SPECIFICATION SECTION 013300. SUBMITTAL'S SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

PRODUCT DATA -
PERFORMANCE DATA AT DESIGN CONDITIONS, PUMP CURVES, FAN CURVES, WEIGHT, MATERIALS OF CONSTRUCTION, GAUGES, OPTIONS AND ACCESSORIES.

SHOP DRAWINGS -
DIMENSIONS, WEIGHT DISTRIBUTION, REQUIRED CLEARANCES, METHOD OF ASSEMBLY, LOCATION SIZES AND UTILITY REQUIREMENTS OF ALL CONNECTIONS.

WIRING DIAGRAMS -
ELECTRICAL POWER REQUIREMENTS AND ASSOCIATED ELECTRICAL LOADS, LADDER DIAGRAMS INDICATING CONTROL LOGIC, DIFFERENTIATE BETWEEN FACTORY AND FIELD WIRING.

46. FURNISH ALL NECESSARY ASSISTANCE AS DIRECTED BY THE OWNER WHICH MAY BE REQUIRED TO PROPERLY INSTRUCT THE OWNER IN THE OPERATION OF ALL EQUIPMENT. THIS SHALL INCLUDE PERSONAL INSTRUCTION COVERING ROUTINE MAINTENANCE AND OPERATION OF EQUIPMENT.

ssoe

PROFESSIONAL SEALS:

SOUTH CAROLINA SSOE, Inc. No. 746 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 25453 WESLEY G. BROWN 7/17/26

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
	08.17.2026	BIDDING DOCUMENTS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

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29204

SCDVA PROJECT #: E26-N003-AT

PROJECT INFORMATION:

VETERANS VICTORY HOUSE LAUNDRY ROOM AHU REPLACEMENTS

2461 SIDNEYS RD
WALTERBORO,SC
29488

SSOE PROJECT #: 0210044302
SSOE MANAGER: ERIC KELLERHALS

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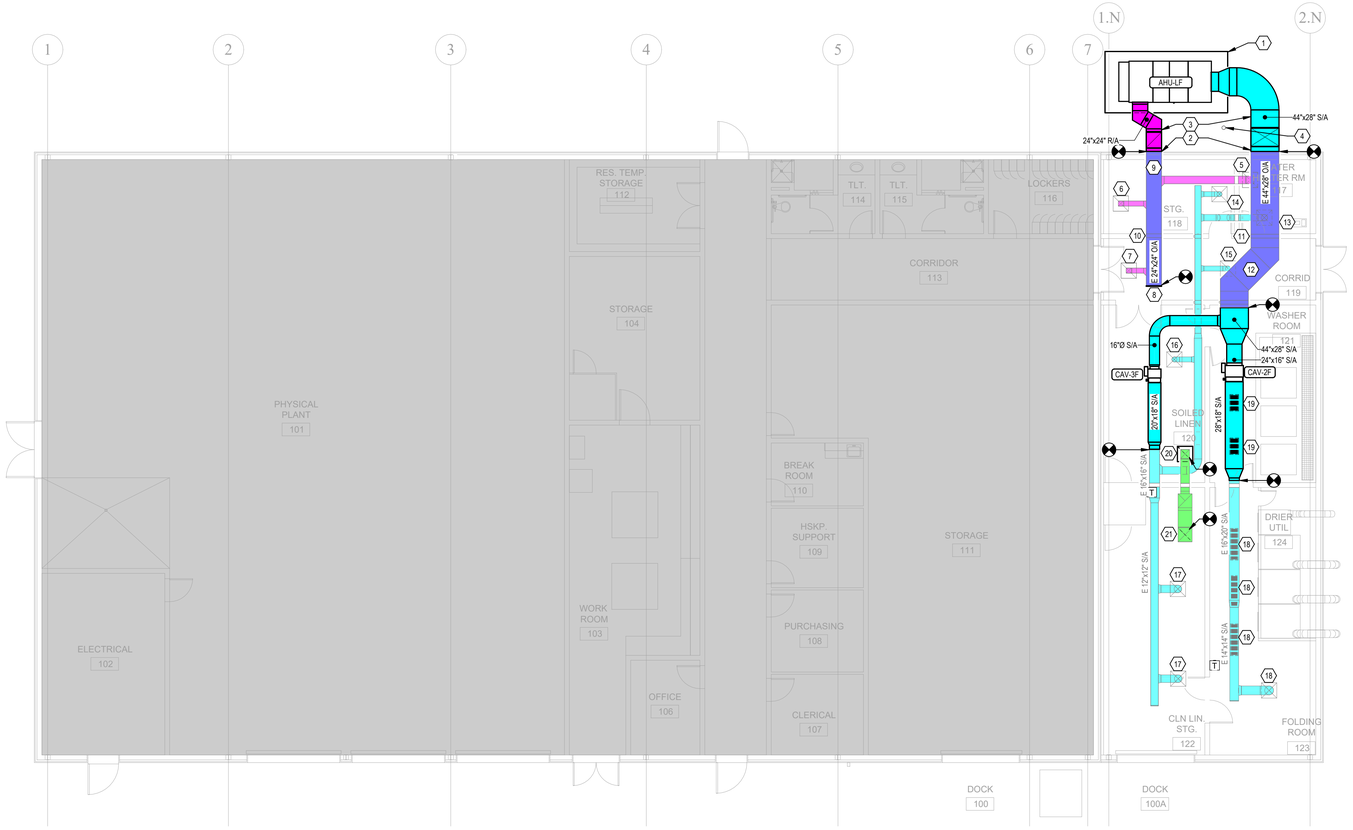
HVAC GENERAL

M-001



1 LEVEL 1 HVAC
1/8" = 1'-0"
0 4' 8' 16'

KEYNOTES

1	6" THICK REINFORCED CONCRETE EQUIPMENT PAD. SEE SPECIFICATIONS FOR REQUIREMENTS.
2	PROVIDE WEATHERPROOF FLASHING AROUND DUCT PENETRATION THROUGH EXTERIOR WALL. SEE DETAIL 4/M501 FOR ADDITIONAL REQUIREMENTS.
3	PROVIDE DOUBLE WALL DUCTWORK FOR ALL OUTDOOR EXPOSED DUCTWORK. OUTER SHELL TO BE G-90 CONSTRUCTION. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. DIMENSIONS INDICATED ARE CLEAR INSIDE DIMENSIONS.
4	MAINTAIN ACCESS TO EXISTING YARD CLEAN OUT.
5	BALANCE EXISTING RETURN GRILLE TO 300 CFM.
6	BALANCE EXISTING RETURN GRILLE TO 160 CFM.
7	BALANCE EXISTING RETURN GRILLE TO 170 CFM.
8	CAP EXISTING OUTSIDE AIR DUCT.
9	EXISTING OUTSIDE AIR DUCT TO BE CONVERTED TO RETURN DUCT. CLEAN EXISTING OUTSIDE AIR DUCT PER SPECIFICATIONS.
10	RECONFIGURE EXISTING COMBINATION FIRE SMOKE DAMPER FOR NEW AIRFLOW DIRECTION. EXISTING COMBINATION FIRE SMOKE DAMPER TO BE USED FOR AHU-LF SHUTDOWN. HARIS CONTROLS TO PROVIDE INTERFACE ON AHU-LF TO RECEIVE SIGNAL FROM EXISTING FIRE ALARM SYSTEM. EXISTING FIRE ALARM SYSTEM TO BE WIRED AND PROGRAMMED TO SEND SIGNAL FOR AHU-LF SHUTDOWN.
11	EXISTING SUPPLY COMBINATION FIRE SMOKE DAMPER TO BE USED FOR AHU-LF SHUTDOWN. HARIS CONTROLS TO PROVIDE INTERFACE ON AHU-LF TO RECEIVE SIGNAL FROM EXISTING FIRE ALARM SYSTEM. EXISTING FIRE ALARM SYSTEM TO BE WIRED AND PROGRAMMED TO SEND SIGNAL FOR AHU-LF SHUTDOWN.
12	EXISTING OUTSIDE AIR DUCT TO BE CONVERTED TO SUPPLY DUCT. CLEAN EXISTING OUTSIDE AIR DUCT PER SPECIFICATIONS. INSULATE ALL SUPPLY DUCTWORK PER SPECIFICATIONS.
13	BALANCE EXISTING SUPPLY DIFFUSER TO 300 CFM.
14	BALANCE EXISTING SUPPLY DIFFUSER TO 160 CFM.
15	BALANCE EXISTING SUPPLY DIFFUSER TO 170 CFM.
16	BALANCE EXISTING SUPPLY DIFFUSER TO 190 CFM.
17	BALANCE EXISTING SUPPLY DIFFUSER TO 390 CFM.
18	BALANCE EXISTING SUPPLY DIFFUSER TO 560 CFM.
19	PROVIDE NEW 24X12 PRICE MODEL 510 DUCT MOUNTED SUPPLY GRILLE. BALANCE NEW SUPPLY GRILLE TO 580 CFM.
20	PROVIDE NEW 24X24 PRICE MODEL 80 EGG CRATE/CUBE CORE EXHAUST GRILLE. EGG CRATE/CUBE CORE TO BE FULL FACE 24X24 WITH BACK PAN TRANSITION TO 14X14 EXHAUST DUCT. BALANCE NEW EXHAUST GRILLE TO 420 CFM.
21	PROVIDE NEW 24X24 PRICE MODEL 80 EGG CRATE/CUBE CORE EXHAUST GRILLE. EGG CRATE/CUBE CORE TO BE FULL FACE 24X24 WITH BACK PAN TRANSITION TO 22X22 EXHAUST DUCT. BALANCE NEW EXHAUST GRILLE TO 780 CFM.

SSOE

PROFESSIONAL SEALS:

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION SSOE, Inc. No. 746

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 25455 JEFFREY G. BROWN 7/17/26

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
	08.17.2026	BIDDING DOCUMENTS

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□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

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29204

SCDVA PROJECT #: E26-N003-AT

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VETERANS VICTORY HOUSE LAUNDRY ROOM AHU REPLACEMENTS

2461 SIDNEYS RD
WALTERBORO,SC
29488

SSOE PROJECT #: 0210044302
SSOE MANAGER: ERIC KELLERHALS

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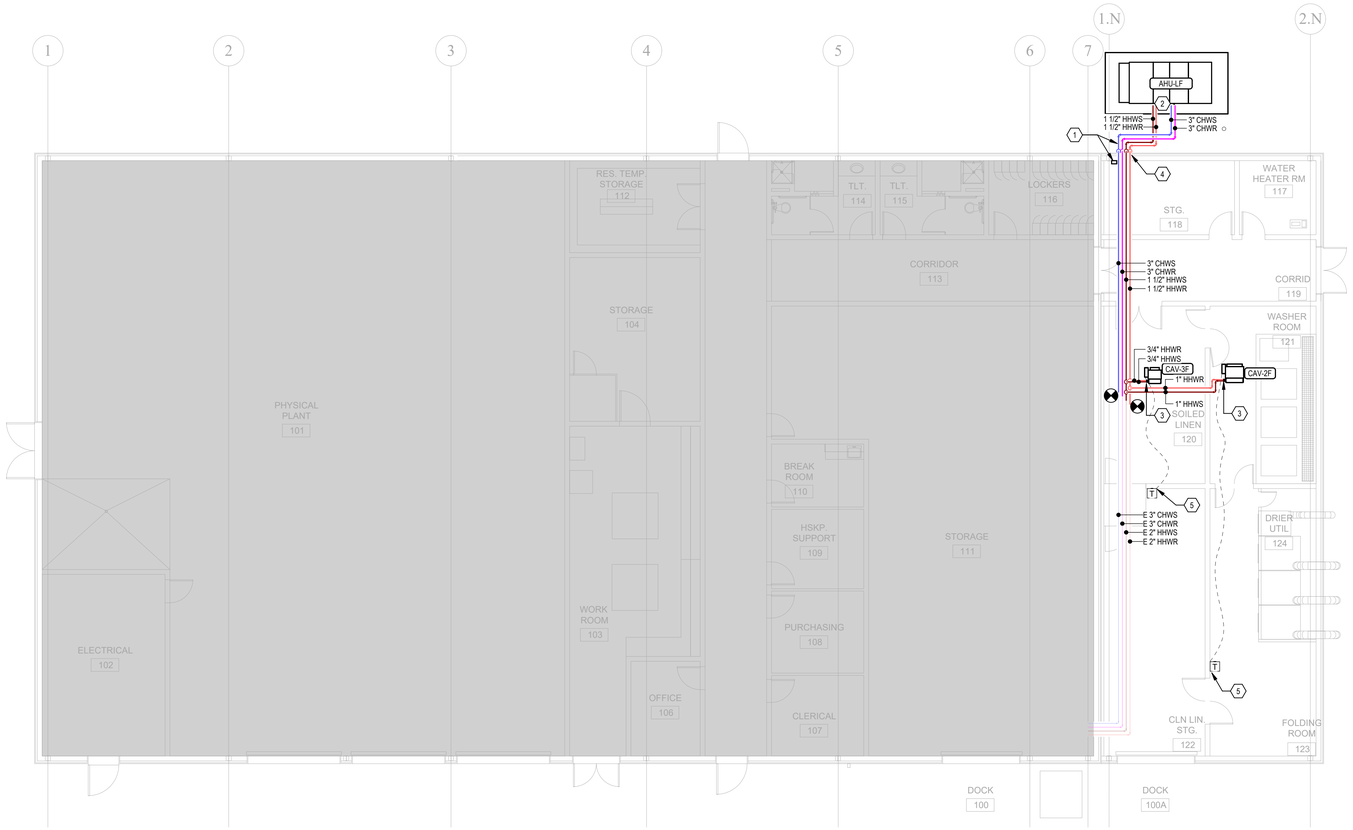
LEVEL 1 HVAC

M-110



1 LEVEL 1 HYDRONIC PIPING
1/8" = 1'-0"
0 4' 8' 16'

KEYNOTES

1	PROVIDE RAYCHEM XL=TRACE EDGE SELF-REGULATING HEAT REACE, 5 W PER FOOT, WITH RAYCHEM C910-460 ELECTRONIC CONTROLLER FOR ALL OUTDOOR HEATING HOT WATER AND CHILLED WATER PIPING. INSTALL ELECTRONIC CONTROLLER ON WALL 48" AFF IN STG 118.
2	HARRIS CONTROLS TO PROVIDE 3 WAY CONTROL VALVE FOR HHW AND CHW. SEE DETAIL 1/M502 FOR COIL CONNECTION REQUIREMENTS.
3	HARRIS CONTROLS TO PROVIDE 2 WAY CONTROL VALVE FOR CAV HHW. SEE DETAIL 9/M501 FOR COIL CONNECTION REQUIREMENTS.
4	PROVIDE WEATHERPROOF FLASHING AROUND CHW AND HHW PIPING THROUGH EXISTING WALL. SEE DETAIL 8/M501 FOR ADDITIONAL REQUIREMENTS.
5	HARRIS CONTROLS TO PROVIDE NEW WALL MOUNTED THERMOSTAT AT THIS LOCATION.

SSOE®

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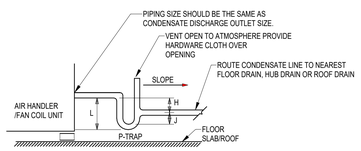
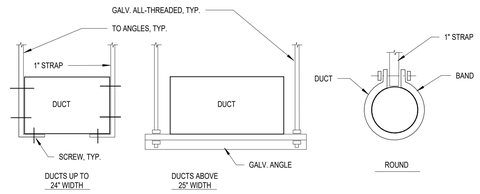
LEVEL 1 HYDRONIC PIPING

M-210

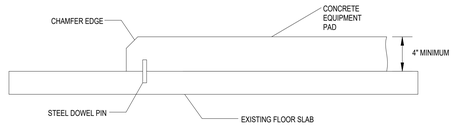
FOR POSITIVE PRESSURE
L= H + J + PIPE DIA. WHERE:
H= 1/2 INCH (MINIMUM)
J= 1/2 INCH PLUS THE UNIT POSITIVE STATIC PRESSURE AT COIL DISCHARGE (LOADED FILTERS)
FOR NEGATIVE PRESSURE
L= H + J + PIPE DIA. WHERE:
H= 1 INCH FOR EACH INCH OF NEGATIVE PRESSURE PLUS 1 INCH.
J= 1/2 H



1 CONDENSATE PIPING
NOT TO SCALE

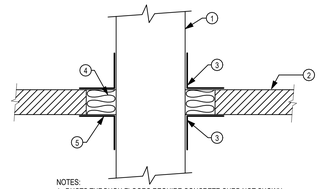


2 LOW PRESSURE DUCTWORK HANGER SUPPORTS
NOT TO SCALE



PAD SIZE TO BE A MINIMUM OF 8" LARGER THAN SIZE OF EQUIPMENT EACH DIRECTION (4" MINIMUM EACH SIDE OF EQUIPMENT TO EDGE OF PAD) WITH EQUIPMENT ANCHORS A MINIMUM OF 6" FROM EDGE OF PAD. ANCHOR CONCRETE EQUIPMENT PAD TO EXISTING SLAB WITH A MINIMUM OF FOUR STEEL DOWEL PINS.

3 CONCRETE EQUIPMENT PAD
NOT TO SCALE

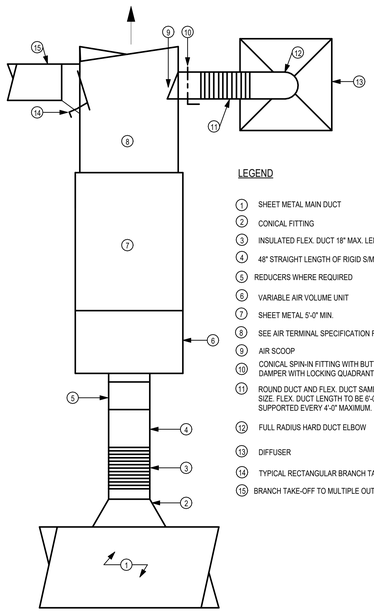


NOTES:
1. DUCTS THROUGH FLOORS REQUIRE CONCRETE CURB NOT SHOWN.
2. FIRE WALL OR FLOOR PENETRATION, SEE SPECIFICATION FOR FIRE STOPPING AND ACCOUTICAL SEALANT.

LEGEND

1. DUCTWORK
2. WALL, FLOOR, PARTITION, ETC.
3. SHEETMETAL ANGLE ALL AROUND
4. VOID SHALL BE PACKED ALL AROUND WITH MINERAL WOOL BATT.
5. SEAL EACH MINERAL WOOL SURFACE WITH NON-HARDENING SEALANT MIN. 1" DEPTH.

4 DUCT THROUGH STRUCTURE
NOT TO SCALE

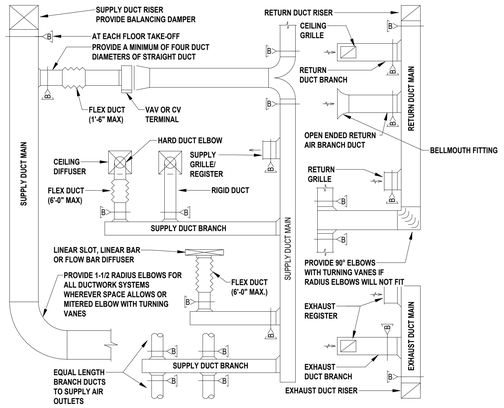


LEGEND

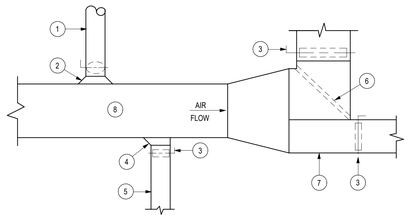
1. SHEET METAL MAIN DUCT
2. CONICAL FITTING
3. INSULATED FLEX. DUCT 18" MAX. LENGTH FOR BRANCH SIZE SEE FLOOR PLAN
4. 48" STRAIGHT LENGTH OF RIGID S/M DUCT
5. REDUCERS WHERE REQUIRED
6. VARIABLE AIR VOLUME UNIT
7. SHEET METAL 5'-0" MIN.
8. SEE AIR TERMINAL SPECIFICATION FOR BOX NOISE CRITERION
9. AIR SCOOP
10. CONICAL SPIN-IN FITTING WITH BUTTERFLY BALANCING DAMPER WITH LOCKING QUADRANT
11. ROUND DUCT AND FLEX. DUCT SAME SIZE AS DIFFUSER NECK OR NEXT LARGER SIZE. FLEX. DUCT LENGTH TO BE 6'-0" MAX. DUCT SHALL BE FULLY EXTENDED AND SUPPORTED EVERY 4'-0" MAXIMUM.
12. FULL RADIUS HARD DUCT ELBOW
13. DIFFUSER
14. TYPICAL RECTANGULAR BRANCH TAKE-OFF WITH SPLITTER DAMPER
15. BRANCH TAKE-OFF TO MULTIPLE OUTLETS

5 DIFFUSER AND VARIABLE AIR VOLUME UNIT CONNECTIONS
NOT TO SCALE

NOTES:
1. REFER TO HVAC FLOOR PLANS FOR DUCT SIZES
2. REFER TO SCHEDULES FOR GRILLES, REGISTERS, DIFFUSERS AND TERMINAL SIZES AND TYPES
3. PROVIDE A MANUAL TYPE BALANCING DAMPER FOR EACH SUPPLY OUTLET AND RETURN INLET
4. ALL DUCT RUNOUTS TO DIFFUSERS SHALL BE THE SAME SIZE AS DIFFUSER NECK SIZE, UNLESS OTHERWISE NOTED
5. FLEX DUCT WILL NOT BE ALLOWED ON RETURN OR EXHAUST DUCTWORK SYSTEMS
6. PROVIDE 12" AIR CUSHION AT THE END OF EACH SUPPLY MAIN AND BRANCH DUCT
7. INDIVIDUAL BRANCH BALANCING DAMPERS NOT REQUIRED FOR SUPPLY OR EXHAUST REGISTERS



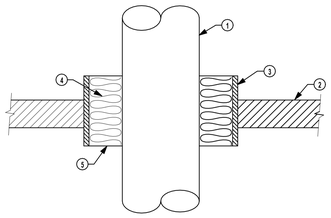
6 DUCTWORK INSTALLATION DIAGRAM
NOT TO SCALE



LEGEND

1. ROUND BRANCH DUCT
2. CONICAL SPIN IN (NO SCOOP)
3. MANUAL DAMPER, ALL BRANCHES
4. 45° THROAT
5. RECTANGULAR BRANCH DUCT
6. TURNING VANES, SEE SPECIFICATIONS
7. TRUNK DUCTWORK

7 TYPICAL BRANCH TAKEOFF
NOT TO SCALE

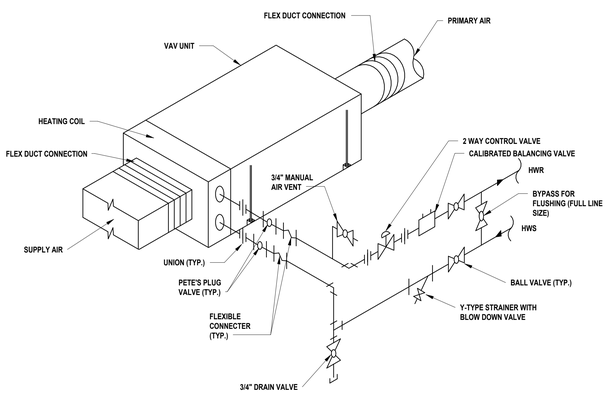


NOTES:
1. PIPES THRU FLOORS REQUIRE CONCRETE CURB NOT SHOWN.
2. FIRE WALL OR FLOOR PENETRATION, SEE SPECIFICATION FOR FIRE STOPPING AND ACOUSTICAL SEALANT.

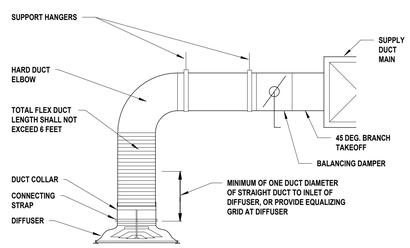
LEGEND

1. PIPE
2. WALL, FLOOR, PARTITION, ETC.
3. STEEL PIPE SLEEVE
4. VOID SHALL BE PACKED ALL AROUND WITH MINERAL WOOL BATT.
5. SEAL EACH MINERAL WOOL SURFACE WITH NON-HARDENING SEALANT MIN. 1" DEPTH.

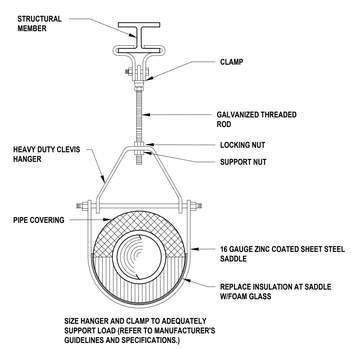
8 PIPE THROUGH STRUCTURE
NOT TO SCALE



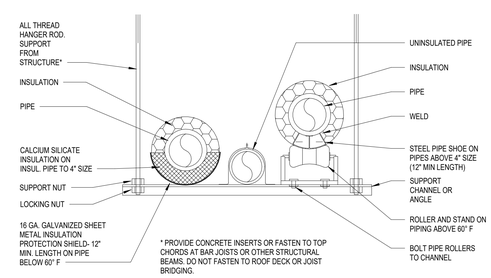
9 VAV UNIT WITH HOT WATER REHEAT COIL
NOT TO SCALE



10 DIFFUSER FLEXIBLE DUCT CONNECTION
NOT TO SCALE



11 PIPE HANGER
NOT TO SCALE



12 TRAPEZE PIPE HANGER
NOT TO SCALE

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PROFESSIONAL SEALS:

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION SSOE, Inc. No. 746

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 25455 JEFFREY G. SHOWALTER
7/17/26

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
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□ NOT APPROVED FOR CONSTRUCTION

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SCDVA PROJECT #: E26-N003-AT

PROJECT INFORMATION:

VETERANS VICTORY HOUSE LAUNDRY ROOM AHU REPLACEMENTS

2461 SIDNEYS RD
WALTERBORO,SC
29488

SSOE PROJECT #: 0210044302
SSOE MANAGER: ERIC KELLERHALS

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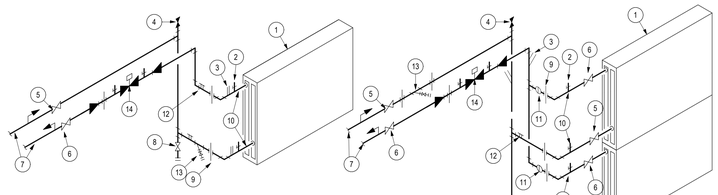
HVAC DETAILS

M-501

NOTE:

SEE TYPICAL DETAILS OF EQUIPMENT FOR CONTINUATION OF PIPING RUNOUTS.
SEE PLANS FOR ALL SIZES, TYPES, AND LOCATIONS.
PROVIDE 3-WAY VALVES AT THE END OF MAINS & 6-WAY PICV'S FOR FCU'S. THESE SHALL BE PIPED IN A SIMILAR MANNER.



CONNECTIONS TO SINGLE COIL

CONNECTIONS TO MULTIPLE COIL BANKS

LEGEND

1	WATER COIL BANK	8	HOSE END VALVE - FOR BLOW DOWN
2	PRESSURE GAUGE TAPPING, TYP.	9	UNION OR FLANGE LOCATED OUT OF COIL PULL AREA, TYP.
3	THERMOMETER WELL, TYP.	10	LINES FULL SIZE OF COIL CONNECTION
4	3/4" MANUAL AIR VENT	11	BALANCING COCKS EACH RETURN LINE
5	SUPPLY RUNOUT WITH ISOLATION VALVE	12	PETE'S PLUG, TYP.
6	RETURN RUNOUT WITH ISOLATION VALVE	13	STRAINER WITH BLOWDOWN
7	RUNOUTS FULL SIZE INDICATED ON PLANS	14	PRESSURE INDEPENDENT CONTROL VALVE, 3 WAY SEE SCHEDULES FOR CAPACITY

1 COIL CONNECTION
NOT TO SCALE

SSOE

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HVAC DETAILS

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MODULAR AIR HANDLING UNITS

UNIT TAG	MFGR	MODEL	UNIT SIZE	SUPPLY FAN					OUTDOOR AIRFLOW		HOT WATER PREHEAT COIL								CHILLED WATER COOLING COIL									ELECTRICAL	NOTES
				CFM	ESP	TSP	BRAKE HP	MOTOR HP	MAX CFM	MIN CFM	EAT (F)	LAT (F)	COIL (ROWS / FINS PER...	APD (IN. WG)	EWT (F)	LWT (F)	WATER FLOW (GPM)	WATER PD (FT)	EAT (Fdb/ Fwb)	LAT (Fdb/ Fwb)	COIL (ROWS / FINS PER...	FACE VEL. (FPM)	APD (IN. WG)	EWT (F)	LWT (F)	WATER FLOW (GPM)	WATER PD (FT)		
AHU-LF	TRANE	CSAA010	10	5,000	1	3.67	4.73	5.0	4370	4370	25	56.89	80	0.079	180	160	17.27	1.01	94/78	55/54.81	141	514	1.009	45.0	55.0	81.99	15.73	460V/3PH	1,2,3,4,5,6,7,8,9,10

NOTES:

1. MECHANICAL CONTRACTOR TO PROVIDE WEATHERPROOF FUSIBLE ELECTRICAL DISCONNECT SWITCH OR IN-LINE-FUSES AND ELECTRICAL DISCONNECT SWITCH. ELECTRICAL CONTRACTOR TO INSTALL AND WIRE DISCONNECT.
2. AHU OPERATION TO BE CONSTANT VOLUME.
3. HARRIS CONTROLS TO PROVIDE 2-WAY CONTROL VALVES FOR ALL COILS.
4. AHU MANUFACTURER TO PROVIDE UNIT WITH 6" RAILS. CONTRACTOR TO INSTALL ELASTOMERIC ISOLATION BETWEEN UNIT AND EQUIPMENT PAD.
5. HARRIS CONTROLS TO PROVIDE BACNET CONTROLLER AND THE FOLLOWING CONTROLS OPTIONS: LOW TEMP LIMIT SENSOR, DIRTY FILTER SWITCH, FAN STATUS, DISCHARGE AIR TEMP., OA TEMP., AND DUCT STATIC PRESSURE SENSOR.
6. AHU MANUFACTURER TO PROVIDE UNIT WITH STAINLESS STEEL HINGE ACCESS PANELS AT EACH FILTER, COIL, AND FAN SECTION.
7. AHU MANUFACTURER TO PROVIDE UNIT WITH FILTER MIXING BOX SECTION AND 4" MERV 8 PLEATED FILTERS. UNIT SELECTED AT MID LIFE FILTER CONDITION.
8. HARRIS CONTROLS TO PROVIDE WEATHERPROOF MOTOR STARTER. ELECTRICAL CONTRACTOR TO INSTALL AND WIRE MOTOR STARTER.
9. HARRIS CONTROLS TO PROVIDE A SECONDARY FLOAT SWITCH IN CONDENSATE PAN. SHUT UNIT OFF UPON OVERFLOW DETECTION.
10. CONTRACTOR TO PROVIDE 6" TALL REINFORCED EQUIPMENT PAD FOR AHU.

AIR HANDLING UNITS SHALL HAVE: OUTDOOR CONDSTRUCTION WITH STANDING SEAM PITCHED ROOF WITH RAIN GUTTERS , 2" FOAM INJECTED R-13 PANELS WITH THERMAL BREAK, WEATHER PROOF OUTDOOR INTAKE HOOD WITH INSECT SCRENE, WEATHPROOF EXTERNAL JUNCTION BOX, EXTENDED DRAIN AND VENT, MOTOR WIRING IN CONDUIT, DIRECT DRIVE PLENUM FAN, DRAW THROUGH CONFIGURATION, STAINLESS STEEL COIL CASING AND STAINLESS STEEL CONDENSATE DRAIN PAN. CONTRACTOR TO PROVIDE THREE (3) FILTER CHANGES AFTER SUBSTANTIAL COMPLETION. SUBSTITUTION SELECTION SUBMITTAL REQUIRED FOR REVIEW BY SCDVA AND EOR. MANUFACTURER, MODEL, AND OPTIONS SUBSTITUTION...

CONSTANT AIR VOLUME BOX SCHEDULE

TAG	TRANE MODEL	INLET SIZE	COOLING AIRFLOW (CFM)		APD @ MAX COOLING (IN.)	INLET SP (IN.)	DOWN STREAM SP (IN.)	HOT WATER COIL									V/PH	NOTES
			MAX.	MIN.				HEATING AIRFOW (CFM)	GPM	WPD (FT)	ROWS	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	MBH		
CAV-2F	VCWF	24"X16"	3400	3400	0.56	0.75	0.25	3400	4.7	1.2	2	55	90	180	125.23	129.06	120/1	1,2,3
CAV-3F	VCWF	14" ROUND	1600	1600	0.27	0.75	0.25	1600	2.1	0.4	2	55	90	180	122.87	60.73	120/1	1,2,3

NOTES:

1. FACTORY MOUNTED 120V/24V CONTROL TRANSFORMER AND 1" FOIL FACED INSULATION.
2. HARRIS CONTROLS TO PROVIDE FIELD INSTALLED; DDC CONTROLLER, DIFFERENTIAL PRESSURE SENSOR AND ELECTRICAL DISCONNECT.
3. HARRIS CONTROLS TO PROVIDE MODULATING 2 WAY CONTROL VALVE. SEE VAV UNIT WITH HOT WATER HEATING COIL DETAIL FOR PIPING REQUIREMENTS.

DUCT SIZE

AIRFLOW (CFM)	DUCT SIZE (IN.)
0-500	10X10
501-1000	14X14
1001-1500	18X16
1501-2000	20X20

NOTES:

1. RUNOUTS SHALL BE SIZED EQUAL TO THE DIFFUSER/GRILLE'S NECK SIZE (U.N.O.).
2. OTHER SIZE DUCTS MAY BE USED PROVIDED THEY MAINTAIN THE SAME FRICTION LOSS OR VELOCITY. WHICHEVER YEILDS THE LARGER DUCTWORK.
3. ROUND DUCTWORK MAY BE USED PROVIDED IT COMPLIES WITH NOTE #2.
4. MAXIMUM DUCT ASPECT RATIO SHALL BE 2.5:1.
5. FOR AIRFLOWS GREATER THAN THE SCHEDULE, SIZE DUCTWORK FOR A MAXIMUM OF 650 FPM ABOVE CONFERENCE/MEETING ROOMS & 1100 FPM IN OTHER AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY TRANSITIONS, ELBOWS, ETC.

PIPE SIZING

FLOW (GPM)	SIZE (IN.)
0-3.5	3/4
3.6-7.5	1
7.6-13	1 1/4
13.1-21	1 1/2
21.1-45	2
45.1-75	2 1/2
75.1-135	3
135.1-275	4
275.1-800	6
800.1-1700	8

PIPE SIZING IS BASED ON COPPER PIPE FOR 2" & BELOW. ABOVE 2" IS BASED ON IRON PIPE. ALTERNATE MATERIALS, AS ALLOWED BY THE SPECIFICATIONS, SHALL HAVE AN EQUIVALENT FRICTION RATE.

CONDENSATE PIPE SIZING

CONNECTED TONNAGE	PIPE SIZE (IN.)
UP TO 1.5 TONS	3/4"
UP TO 5 TONS	1"
UP TO 30 TONS	1 1/4"
UP TO 50 TONS	1 1/2"
UP TO 150 TONS	2"
UP TO 300 TONS	3"
UP TO 430 TONS	4"

NOTES:

1. IF HORIZONTAL RUN IS SLOPED AT LESS THAN 1" PER 10' INCREASE VALUES BY ONE PIPE SIZE.

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SSOE PROJECT #: 0210044302
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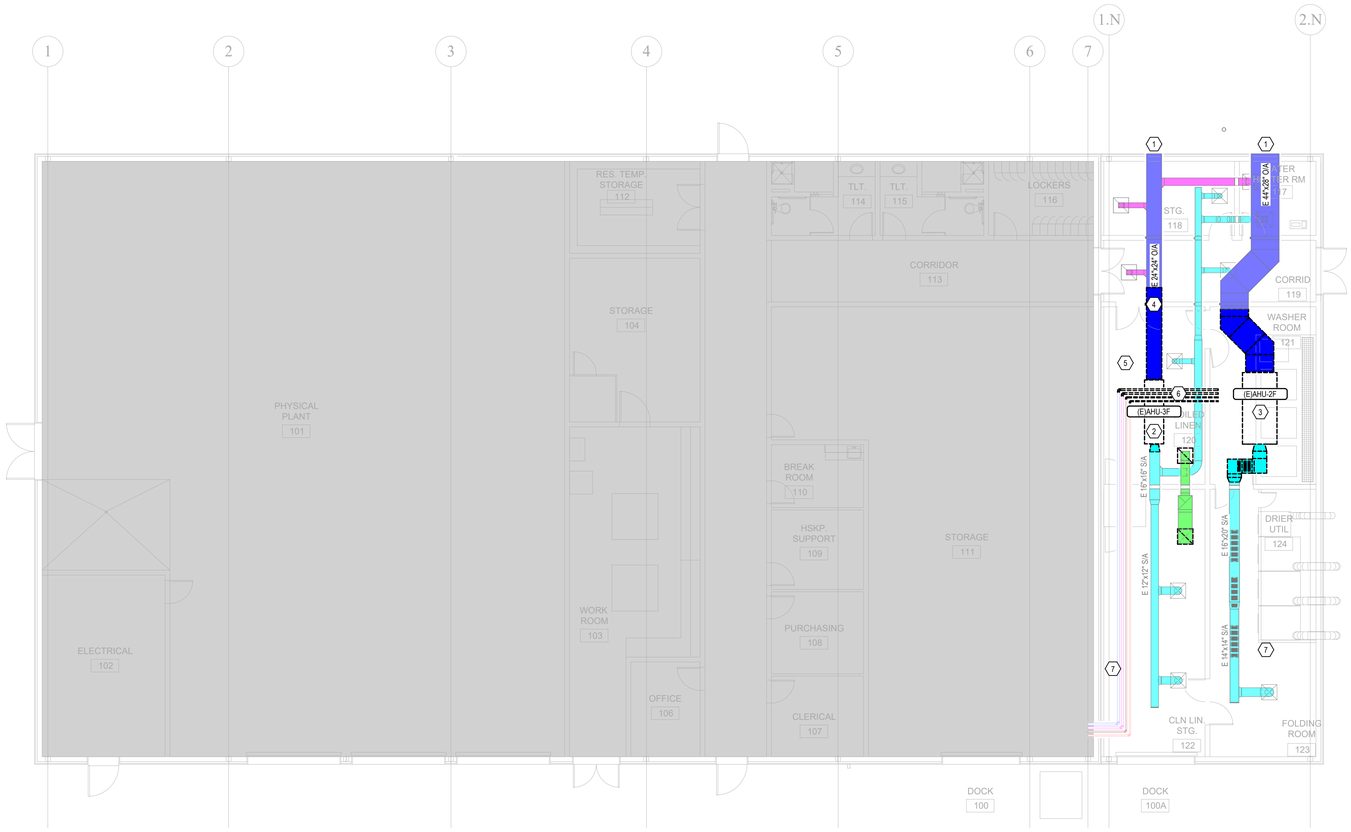
HVAC SCHEDULES

M-601



1 LEVEL 1 HVAC DEMOLITION
1/8" = 1'-0"
0 4 8' 16

KEYNOTES

1	REMOVE EXISTING LOUVER.
2	REMOVE EXISTING AHU-3F AND ALL ASSOCIATED ACCESSORIES INCLUDING: HANGERS, SEISMIC BRACING, AUXILIARY DRAIN PANS, CONDENSATE PIPING FROM AHU TO TERMINATION POINT, CONTROL VALVES, STARTER, ELECTRICAL DISCONNECT. CAP CHILLED WATER SUPPLY AND RETURN PIPING. HEATING HOT WATER PIPING TO BE USED FOR VAV-3F.
3	REMOVE EXISTING AHU-2F AND ALL ASSOCIATED ACCESSORIES INCLUDING: HANGERS, SEISMIC BRACING, AUXILIARY DRAIN PANS, CONDENSATE PIPING FROM AHU TO TERMINATION POINT, CONTROL VALVES, STARTER, ELECTRICAL DISCONNECT. CAP CHILLED WATER SUPPLY AND RETURN PIPING. HEATING HOT WATER PIPING TO BE USED FOR VAV-2F.
4	REMOVE EXISTING DUCT PENETRATION AND EXISTING COMBINATION FIRE SMOKE DAMPER. PATCH WALL TO MAINTAIN 1 HR FIRE SMOKE WALL RATING.
5	REMOVE CEILING TILES AND GRID AS NEEDED FOR DEMOLITION AND RENOVATION WORK IN SOILED LINEN 120. CEILING TILES AND GRID TO BE REINSTALLED WITH ALL SEISMIC RESTRAINTS.
6	DEMOLISH CHILLED WATER AND HEATING HOT WATER PIPING BACK TO MAINS.
7	REMOVE EXISTING THERMOSTAT AT APPROXIMATELY THIS LOCATION. PROVIDE BLANK OFF PLATE TO SEAL WALL OPENING.

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LEVEL 1 HVAC DEMOLITION

MD-110

ELECTRICAL SPECIFICATIONS

GENERAL:

THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL WORK, EQUIPMENT, SERVICES, LABOR, AND MATERIALS FOR THE INSTALLATION OF COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEMS AS SPECIFIED, SHOWN, OR IMPLIED HEREIN AND ON THE ASSOCIATED DRAWINGS. THE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO INCLUDE EVERY DETAIL OF CONSTRUCTION, MATERIALS, AND EQUIPMENT. TAKE FINISH DIMENSIONS AT THE JOB SITE IN PREFERENCE TO SCALING DIMENSIONS.

REVIEW THE CONSTRUCTION DOCUMENTS OF ALL TRADES AND COORDINATE WORK WITH THE OTHER TRADES AS NECESSARY TO AVOID CONFLICTS AND INTERFERENCE. THE CONTRACTOR (HENCE FORTH MEANING THE ELECTRICAL CONTRACTOR) SHALL VISIT THE SITE OF PROPOSED CONSTRUCTION AND SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING FIELD CONDITIONS AND VERIFY ALL ASPECTS OF THE PROPOSED WORK AS DESCRIBED OR IMPLIED BY THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE COMPENSATED OR REIMBURSED FOR WORK NOT NECESSARILY SHOWN ON THE CONTRACT DOCUMENTS THAT COULD HAVE REASONABLY BEEN VERIFIED BY A SITE VISIT.

ALL WORK AND MATERIALS SHALL BE IN COMPLIANCE WITH APPLICABLE NATIONAL, STATE, AND LOCAL CODES. COMPLIANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS SHALL SERVE AS THE ABSOLUTE MINIMUM STANDARDS. THE REGULATIONS OF THE LOCAL UTILITY SHALL GOVERN SERVICE CONNECTIONS AND METERING PROVISIONS. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ANY AND ALL REQUIRED, PERMITS, INSPECTIONS, CERTIFICATES OF INSPECTIONS AND APPROVAL, AND THE LIKE, AND DELIVER SUCH CERTIFICATES TO THE ARCHITECT. THE ARCHITECT SHALL BE NOTIFIED OF ALL INSPECTION REQUESTS AT THE SAME TIME AS THE INSPECTION AUTHORITY.

ALL MATERIALS SHALL BE NEW AND SHALL BE LISTED AND LABELED BY THE UNDERWRITER'S LABORATORIES (UL), FOR THE USE INTENDED. PROVIDE NEMA 1 ENCLOSURES FOR ELECTRICAL APPARATUS INSTALLED IN INTERIOR LOCATIONS AND NEMA 3R OR WEATHERPROOF ENCLOSURES FOR ELECTRICAL APPARATUS INSTALLED IN EXTERIOR LOCATIONS OR LOCATIONS OTHERWISE SUBJECT TO WEATHER OR MOISTURE.

A COMPLETE TEST OF ALL EQUIPMENT FURNISHED, INSTALLED, OR PROVIDED UNDER THIS CONTRACT SHALL BE PROVIDED BY THE CONTRACTOR. TESTING SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES. THE CONTRACTOR SHALL WARRANT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP SHOWN OR IMPLIED BY THESE DOCUMENTS TO BE FREE OF DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. IF WITHIN ONE YEAR OF THE DATE OF FINAL ACCEPTANCE ANY WORKMANSHIP, MATERIALS OR EQUIPMENT IS FOUND TO BE FAULTY OR DEFECTIVE THE CONTRACTOR SHALL CORRECT IT PROMPTLY AT NO COST TO THE OWNER. THE CONTRACTOR SHALL OBTAIN A SIGNED AND NOTARIZED INSPECTION CERTIFICATE OF HIS WORK FROM THE LOCAL BUILDING INSPECTOR AND PRESENT IT TO THE ARCHITECT BEFORE WORK WILL BE APPROVED FOR FINAL PAYMENT.

DEMOLITION:

MECHANICALLY AND ELECTRICALLY SECURE ALL ELECTRICAL CONDUIT AND CONDUCTORS WHICH ARE ABANDONED. ABANDONED WIRING SHALL BE REMOVED BACK TO THE OVER CURRENT DEVICE WHICH PROTECTS IT. ABANDONED CONDUIT SHALL BE REMOVED ENTIRELY. EXISTING ELECTRICAL OUTLETS NOT SHOWN AS BEING ABANDONED OR REMOVED SHALL BE RECONNECTED AS REQUIRED. ALL ELECTRICAL DEVICES TO BE REMAIN SHALL INSPECTED, CLEANED AND REPAIRED OR REPLACED AS NECESSARY. MODIFY CIRCUITS TO EXISTING DEVICES, LIGHT FIXTURES AND EQUIPMENT SHOWN TO REMAIN IN ORDER TO MAINTAIN CONTINUITY OF POWER AND GROUNDING. RECONNECT CIRCUITS TO LOADS IN OTHER AREAS OF THE BUILDING OR SITE WHICH ARE AFFECTED BY DEMOLITION WORK.

PROVIDE NEW REVISED, TYPED PANELBOARD DIRECTORIES FOR EXISTING PANELBOARDS TO REFLECT NEW CIRCUIT CONDITIONS AS A RESULT OF CONSTRUCTION AND DEMOLITION. REPLACE ALL EXISTING DEVICES AND THE ASSOCIATED COVER PLATES WITH NEW DEVICES AND COVER PLATES TO MATCH THAT USED FOR RENOVATED AREAS AND NEW CONSTRUCTION. ALSO, WHERE NEW FINISHES ARE PLACED ON OR OVER EXISTING FINISHES EXTEND OUTLET BOXES TO ACCOMMODATE THE NEW FINISHES. EXISTING CONDUIT AND CONDUCTORS MAY BE REUSED WHERE THEY ARE OF THE TYPE SPECIFIED, MEET THE REQUIREMENTS OF NEW CIRCUITS, AND REMAIN IN GOOD CONDITION.

GROUNDING:

GROUNDING SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE NATIONAL ELECTRICAL CODE AND DETAILS SHOWN ON THE PLANS. GROUND ALL CONDUITS, CABINETS, MOTORS, PANELS, AND OTHER EXPOSED NON CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ALL PROVISIONS OF THE NATIONAL ELECTRICAL CODE AND LOCAL CODES. PROVIDE INSULATED GROUNDING CONDUCTORS IN ALL CONDUITS. GROUND WIRE TO BE SIZED IN ACCORDANCE WITH N.E.C. ARTICLE 250.122. GROUNDING CONDUCTORS SHALL BE PROVIDED IN ALL BRANCH CIRCUIT RACEWAYS AND CABLE AND RACEWAY SIZES INCREASED AS REQUIRED BY RACEWAY FILL LIMITATIONS OF THE NATIONAL ELECTRICAL CODE

ALL MOTORS SHALL BE GROUNDED BY DRILLING AND TAPPING THE BOTTOM OF THE MOTOR JUNCTION BOX AND ATTACHING THE GROUNDING CONDUCTOR TO THE BOX WITH A ROUND HEAD BOLT USED FOR NO OTHER PURPOSE. CONDUCTOR ATTACHMENT SHALL BE THRU THE USE OF A LUG ATTACHED TO CONDUCTOR WITH CRIMPING TOOL.

CONDUIT: CONDUIT SHALL BE REPUBLIC OR EQUAL.

CONDUIT SHALL BE MINIMUM 3/4-INCH SIZE AND ZINC-COATED ELECTRICAL METALLIC TUBING (EMT) EXCEPT IN WET, DAMP WASHDOWN AREAS (INCLUDING KITCHENS) WHERE GALVANIZED RIGID STEEL CONDUIT (GRS) OR INTERMEDIATE METAL CONDUIT (IMC) SHALL BE USED. EMT SHALL CONFORM TO UL 1242, NEC 342 AND ANSI C80.3; GRS SHALL BE SCHEDULE 40 STEEL WITH SURFACES PROTECTED BY METALLIC ZINC COATING AND SHALL CONFORM TO ANSI C80.1.

EMT FITTINGS SHALL BE GALVANIZED, STEEL COMPRESSION TYPE. EMT CONNECTORS SHALL HAVE INSULATED THROATS WHICH ARE AN INTEGRAL PART OF THE CONNECTOR. USE OF INSULATING SLEEVES IS NOT PERMITTED. GRS OR IMC CONDUIT ENTERING A BOX OR ENCLOSURE SHALL BE TERMINATED WITH A BUSHING. INSTALL BOND BUSHINGS WHERE REQUIRED BY THE NEC. FLEXIBLE CONDUIT CONNECTORS SHALL BE T&B NYLON INSULATED "TITE-BITE". INSTALL FLEXIBLE METAL CONDUIT FOR ALL FINAL CONNECTIONS TO MOTORS, TRANSFORMERS, AND TO OTHER EQUIPMENT, DEVICES AND APPLIANCES WHERE SUBJECT TO VIBRATION. USE LIQUID-TIGHT FLEXIBLE METAL CONDUIT IN KITCHENS, OUTDOORS AND ANY OTHER LOCATIONS SUBJECT TO MOISTURE.

SECURE CONDUITS WITH STRAPS AND CLAMPS MANUFACTURED FOR THE PURPOSE. TIE WIRE AND TIE WRAPS ARE NOT ALLOWED TO SUPPORT OR SECURE CONDUITS. ACCEPT IN AREAS SPECIFICALLY INDICATED ON THE PLANS, CONDUIT SHALL BE RUN CONCEALED. CONDUITS SHALL BE RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS AND SHALL BE RUN IN GROUPS. WHERE RUN AT THE ROOF OR CEILING, GROUPINGS SHALL BE SINGLE DEPTH AND RUN TIGHT AGAINST THE STRUCTURE. FOR MULTIPLE DEPTH GROUPINGS AND OTHER SITUATIONS, A TRAPEZE ARRANGEMENT USING THREADED RODS OF SUFFICIENT SUPPORTING STRENGTH WILL PERMITTED. ALL CONDUITS SHALL BE KEPT A MINIMUM OF 6-INCHES AWAY FROM PARALLEL RUNS OF STEAM OR HOT WATER PIPES AND FLUES.

PROVIDE APPROVED SEALS FOR ALL WORK INSTALLED IN HAZARDOUS AREAS AS REQUIRED BY NEC. ALL PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS OR PARTITIONS SHALL BE SEALED TO PREVENT THE SPREAD OF SMOKE AND FIRE THROUGH THEM. THE FIRE RATING OF THE PENETRATION SEAL SHALL BE AT LEAST THAT OF THE FLOOR OR WALL INTO WHICH IT IS INSTALLED BY ARTICLE 300.21 OF THE NATIONAL ELECTRICAL CODE. THE FOAM SEALANT SHALL MEET ALL OF THE FIRE TEST AND HOSE STREAM TEST REQUIREMENTS OF ASTM E-119-73 AND SHALL BE U.L. CLASSIFIED AS A WALL OPENING PROTECTIVE DEVICE

PROVIDE ACCESS DOORS IN WALLS AND CEILINGS FOR ACCESS TO PULL BOXES ACCESSORIES, ETC., UNDER THE ELECTRICAL CONTRACT. DOORS SHALL BE SIZED AS REQUIRED (MINIMUM 16-INCHES X 16-INCHES) WITH A FINISH TO MATCH THAT OF THE SURFACE IN WHICH IT IS INSTALLED.

PROVIDE A MINIMUM 100 POUND TEST, NYLON PULL CORD IN ALL EMPTY CONDUITS. CONDUIT PENETRATIONS THROUGH FIRE-RATED WALLS OR FLOOR SLABS SHALL BE SEALED WITH IMPERVIOUS, NON-COMBUSTIBLE MATERIALS IN SUCH A MANNER THAT THE ORIGINAL FIRE RATING IS RESTORED. CONDUIT PENETRATING BLOCK WALLS SHALL BE SLEEVED AND THEN SEALED. ALSO SEAL ALL WALL AND FLOOR PENETRATIONS LEFT ONCE CONDUIT TO BE DEMOLISHED HAS BEEN REMOVED. PROVIDE A UL THROUGH FIRE STOP PENETRATION SYSTEM FOR ALL CONDUITS/RACEWAY THE PENETRATE RATED WALLS AND FLOORS. SEE ARCHITECTURAL PLANS FOR LOCATIONS & RATINGS OF FIRE RATED WALLS AND FLOORS.

OUTLET BOXES SHALL BE STANDARD GALVANIZED SHEET STEEL WITH STAMPED KNOCKOUTS EXCEPT THAT CAST TYPE BOXES SHALL BE USED IN INTERIOR WET LOCATIONS (INCLUDING KITCHENS). ON THE EXTERIOR OF THE BUILDING, AND FOR EXPOSED WORK IN UNFINISHED AREAS. COVERS FOR CAST BOXES IN WET AND EXTERIOR LOCATIONS SHALL BE GASKETED. MULTI-GANG BOXES SHALL BE OF SINGLE PIECE CONSTRUCTION. PULL BOXES SHALL BE CONSTRUCTED OF THE CODE GAUGE GALVANIZED SHEET METAL AND HAVE CONTINUOUS WELDED SEAMS. PULL BOXES SHALL COMPLY WITH NEC ARTICLE 370.

WIRING: POWER WIRING SHALL BE SOUTHWIRE, ENCORE OR APPROVED EQUAL.

CONDUCTORS SHALL BE COPPER, THW, OR THHN/THWN-2, AND INSULATION SHALL COMPLY WITH UL 83. PROVIDE SOLID FOR CONDUCTORS SMALLER THAN #10 AWG AND STRANDED FOR LARGER SIZE CONDUCTORS. POWER FEEDERS ORIGINATING FROM THE DISTRIBUTION SECTION OF MAIN SWITCHGEAR OR PANELBOARD SHALL BE TYPE XHHW-2 OR THHN. TYPE XHHW-2 CONDUCTORS SHALL COMPLY WITH UL 44. ALL 120/208 VOLT ALTERNATING CURRENT (VAC) CONDUCTOR SHALL BE COLOR-CODED BLACK, RED, BLUE, WHITE AND GREEN FOR PHASES A, B, C, NEUTRAL, AND GROUND RESPECTIVELY. ALL 277/480 VOLT ALTERNATING CURRENT (VAC) CONDUCTORS SHALL BE COLOR-CODED BROWN, ORANGE, YELLOW, GRAY AND GREEN FOR PHASES A, B, C, NEUTRAL, AND GROUND RESPECTIVELY. LOW VOLTAGE CONDUCTORS SHALL BE SOLID OR STRANDED AS REQUIRED BY THE EQUIPMENT/SYSTEM MANUFACTURER.

ALL CONDUCTORS AND CABLES SHALL BE INSTALLED IN RACEWAYS EXCEPT AS FURTHER SPECIFIED HEREIN OR ON THE DRAWINGS. CONDUCTOR SIZES INDICATED ON CIRCUIT HOMERUNS OR IN PANELBOARD SCHEDULES SHALL BE INSTALLED OVER THE ENTIRE LENGTH OF THE CIRCUIT UNLESS NOTED OTHERWISE ON THE DRAWINGS. IT SHALL NOT BE PERMISSIBLE TO COMBINE CIRCUIT HOMERUNS INTO A SINGLE RACEWAY UNLESS SPECIFICALLY SHOWN ON PLANS AND NO MORE THAN THREE PHASE CONDUCTORS ARE PERMITTED TO BE INSTALLED IN A SINGLE RACEWAY.

VOLTAGE DROP SHALL NOT EXCEED: 3% MAXIMUM ON BRANCH CIRCUITS AND 2% MAXIMUM OF FEEDERS.

ELECTRICAL CONDUCTORS SHALL BE TESTED FOR CONTINUITY AND GROUNDS BEFORE BEING ENERGIZED. ALL FAULTY CONDUCTORS SHALL BE REPLACED. CONNECT ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS EXCEPT CONTROL CONDUCTORS FOR EQUIPMENT NOT PROVIDED UNDER DIVISION 26. CONTROL CONDUCTOR CONNECTIONS NOT PROVIDED UNDER DIVISION 26 SHALL BE DONE BY THE RESPECTIVE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS. MAKE ALL FINAL POWER CONNECTIONS TO EACH RESPECTIVE LOAD TO ACHIEVE FULL ENERGIZATION OF THE LOAD. THIS SHALL INCLUDE WIRING THROUGH ANY INTEGRAL DISCONNECT DEVICE AND/OR CONTROL CABINET FURNISHED AS PART OF THE RESPECTIVE EQUIPMENT. COORDINATE THE POWER AND CONNECTION REQUIREMENTS FOR EQUIPMENT FURNISHED BY CONTRACTORS OF OTHER DIVISIONS. VERIFY THAT THE CIRCUITRY SHOWN FOR EACH LOAD MATCHES THE LOAD'S ACTUAL REQUIREMENTS SHOWN ON THE NAMEPLATE DATA OR MANUFACTURER'S PUBLISHED CRITERIA. INFORM THE ARCHITECT IF ADJUSTMENTS TO CONDUIT, WIRING, FUSE SIZES, ETC., ARE NEEDED TO MEET THE LOADS ACTUAL REQUIREMENTS. CHANGES TO EQUIPMENT DUE TO AN APPROVED SUBSTITUTION OR OTHERWISE NECESSARY TO SUIT A MANUFACTURERS NEEDS SHALL INCLUDE THE COST BY THE MANUFACTURER FOR MAKING ELECTRICAL CHANGES.

THE CONDUIT OF THE ELECTRICAL SYSTEM AND ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR WITH EVERY CIRCUIT AND IN EVERY CONDUIT. THE CONDUIT SYSTEM AND NEUTRAL (GROUNDED CONDUCTOR) SHALL BE BONDED TOGETHER ONLY AT THE SERVICE ENTRANCE EQUIPMENT. GROUNDING AT THE SERVICE ENTRANCE SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250. NO CONDUIT SHALL CONTAIN MORE THAN THREE PHASE CONDUCTORS.

DEVICES: WIRING DEVICES SHALL BE HUBBELL, PASS & SEYMOUR OR ARROW-HART.

ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE. THE COLOR SHALL BE SELECTED BY THE ARCHITECT, FROM THE MANUFACTURER'S STANDARD COLORS DURING SHOP DRAWING REVIEW. COLORS SHALL INCLUDE BROWN, IVORY, GRAY AND WHITE AS A MINIMUM. ALL DEVICES CONNECTED TO THE EMERGENCY POWER SYSTEM SHALL BE RED. DEVICE PLATES FOR FLUSH MOUNTED DEVICES SHALL BE STANDARD SIZE, TYPE 302, SATIN STAINLESS STEEL TYPES EQUAL TO HUBBELL'S "S" SERIES. PROVIDE OVERSIZE PLATES FOR DEVICES INSTALLED IN CONCRETE BLOCK, BRICK OR STONE CONSTRUCTION.

RECEPTACLES, PLUGS, AND PLUG CONNECTORS SHALL BE HEAVY-DUTY, COMMERCIAL, SPECIFICATION GRADE. THE BODY SHALL BE CONSTRUCTED OF THERMOPLASTIC (NYLON, LEXAN) MATERIAL. RECEPTACLES SHALL BE NON-INTERCHANGEABLE TYPES OF STANDARD NEMA CONFIGURATION AS INDICATED ON THE DRAWINGS. COMPLY WITH THE RESPECTIVE ANSI C73 SERIES STANDARD FOR THE NEMA CONFIGURATION USED. RECEPTACLES SHALL BE UL LISTED AND LABELED AND SHALL CONFORM TO NEMA STANDARD NO. WDI-101968. ALL DEVICES SHALL BE LABELED PER DRAWING DETAILS.

DUPLEX RECEPTACLES SHALL BE OF THE GROUNDING TYPE, ARRANGED FOR BACK AND SIDE WIRING WITH SPRING-BACKED LINE TERMINALS AND SEPARATE SINGLE OR DOUBLE GROUNDING TERMINALS. DUPLEX RECEPTACLES SHALL BE RATED FOR 20 AMP 125 VOLT OPERATION AND THE FACE CONFIGURATION SHALL CONFORM TO NEMA STANDARD NO. WDI-101968. A SEPARATE GROUNDING SCREW TERMINAL SHALL BE PROVIDED WITH A DIRECT CONNECTION MADE TO A GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR WHICH IS PART OF THE EQUIPMENT GROUNDING SYSTEM. SELF GROUNDING OR AUTOMATIC GROUNDING TYPE RECEPTACLES ARE NOT ACCEPTABLE.

GROUND FAULT CIRCUIT INTERRUPTING DUPLEX RECEPTACLES SHALL BE SELF-CONTAINED, NEMA 5-20R, HEAVY DUTY, SPECIFICATION GRADE WITH FEED-THRU FEATURE TO PROTECT DOWNSTREAM DEVICES ON THE SAME CIRCUIT. SURGE SUPPRESSOR RECEPTACLES SHALL BE PERMANENTLY CONNECTED. FLUSH MOUNTED TYPE AND PROVIDE PROTECTION OF NOT LESS THAN 80 JOULES IN ALL THREE MODES: HOT TO NEUTRAL, NEUTRAL TO GROUND, AND HOT TO GROUND. EACH MODE SHALL UTILIZE A SEPARATE MOV TO ACCOMPLISH PROTECTION AND AN INTEGRAL INDICATING LIGHT SHALL BE INCLUDED IN EACH DEVICE.

SPECIFICATION GRADE RECEPTACLES SHALL BE RATED FOR THE USE, MEETING ALL UL REQUIREMENTS FOR HEAVY DUTY SPECIFICATION GRADE RECEPTACLES. THEY SHALL ALSO BE IN COMPLIANCE WITH THE LATEST FEDERAL SPECIFICATIONS WC-596-F. THE FACE OF RECEPTABLES CONNECTED TO CRITICAL BRANCH CIRCUITS SHALL BE RED IN COLOR.

SWITCHES PROVIDED FOR CONTROLLING LIGHT FIXTURES SHALL BE THERMOPLASTIC, HEAVY DUTY, SPECIFICATION GRADE. SWITCHES SHALL BE ARRANGED FOR BACK AND SIDE WIRING AND SHALL HAVE A GROUNDING TERMINAL. SWITCHES SHALL BE VIRTUALLY SILENT OPERATING, NONINTERCHANGEABLE, FLUSH MOUNTED TYPES WHICH SHALL COMPLY WITH NEMA WD-1. LIGHT SWITCHES CONTROLLING LIGHT FIXTURES ON EMERGENCY POWER SHALL HAVE HANDLES WHICH ARE ILLUMINATED IN THE "OFF" POSITION. SWITCHES SHALL BE UL LISTED AND LABELED FOR OPERATION AT THE VOLTAGE AND AMPERAGES NECESSARY FOR THE USE INDICATED. NO 120 VOLT OR 277 VOLT SWITCH SHALL BE RATED LESS THAN 20 AMPERES.

POWER EQUIPMENT:
NEW CIRCUIT BREAKERS IN EXISTING PANELBOARDS SHALL MATCH THE AIC RATING OF THE EXISTING BREAKERS. REFURBISHED BREAKERS ARE NOT PERMITTED.

SAFETY SWITCHES SHALL BE HEAVY DUTY, QUICK-MAKE, QUICK-BREAK, TYPES WITH RATINGS AS DENOTED ON THE DRAWINGS. PROVIDE GROUND BUS, SOLID NEUTRAL (WHEN REQUIRED), CLASS RK-5 DUAL ELEMENT, TIME DELAY FUSES, AND NEMA RATED ENCLOSURE.

SAFETY SWITCHES SHALL BE HEAVY DUTY, QUICK-MAKE, QUICK-BREAK, TYPES WITH RATINGS AS DENOTED ON THE DRAWINGS. PROVIDE GROUND BUS, SOLID NEUTRAL (WHEN REQUIRED), CLASS RK-5 DUAL ELEMENT, TIME DELAY FUSES, AND NEMA RATED ENCLOSURE.

FIRE ALARM SYSTEM: SPECIAL SYSTEMS CABLES (FIRE ALARM) SHALL BE BELDEN, ALPHA OR CONSOLIDATED.

MODIFY THE EXISTING CERBERUS PYROTRONICS FIRE ALARM SYSTEM TO ACCOMMODATE THE ADDITION, DELETION, AND RELOCATION OF FIRE ALARM DEVICES AS REQUIRED. NEW DEVICES SHALL MATCH EXISTING DEVICES IN THIS AREA OF THE FACILITY. THE FIRE ALARM SYSTEM INSTALLATION SHALL MEET ALL NFPA 72 & IFC REQUIREMENTS. THE COMPLETE INSTALLATION AND SYSTEM TESTING SHALL BE UNDER THE SUPERVISION OF A FACTORY TRAINED AND AUTHORIZED REPRESENTATIVE OF THE EQUIPMENT MANUFACTURER. NEW NOTIFICATION DEVICES SHALL BE TIED INTO EXISTING NOTIFICATION APPLIANCE CIRCUITS THAT WERE FEEDING AREA PRIOR TO DEMOLITION. VISUAL NOTIFICATION APPLIANCES SHALL BE SYNCHRONIZED. NEW DETECTION DEVICES SHALL BE TIED INTO EXISTING INITIATING DEVICE CIRCUITS THAT WERE FEEDING AREA PRIOR TO DEMOLITION. TEST ALL NEW DEVICES IN ACCORDANCE WITH NFPA 72 AND PROVIDE A CERTIFICATE OF COMPLETION TO THE OWNER.

OTHER REQUIREMENTS:

PROVIDE ENGRAVED, PHENOLIC NAMEPLATES, FOR ALL NEW EQUIPMENT. COORDINATE SIZE AND INFORMATION WITH THE OWNER AND DETAILS ON PLANS. NAMEPLATES SHALL BE PERMANENTLY ATTACHED TO THE EQUIPMENT USING METAL RIVETS. THE CONTRACTOR SHALL FURNISH AND INSTALL ANY MISCELLANEOUS METAL OR WOOD SUPPORTS, FASTENERS, MOUNTS, HANGERS, SIDE BRACES, ETC., WHICH MAY BE REQUIRED TO SECURELY ANCHOR AND SUPPORT ELECTRICAL EQUIPMENT FURNISHED UNDER HIS CONTRACT.

TESTING: THE CONTRACTOR SHALL TEST ALL 'LIFE SAFETY' EQUIPMENT AND SYSTEMS FOR PROPER FUNCTION AND OPERATION. THE CONTRACTOR SHALL PROVIDE WRITTEN CONFIRMATION OF THE TEST TO THE ENGINEER STATING THE TEST PERFORMED, THE RESULTS OF THE TEST, AND THE DATE OF THE TEST. "LIFE SAFETY" EQUIPMENT AND SYSTEMS ARE SPECIFIED IN IBC.

SSOE

PROFESSIONAL SEALS:

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION SSOE, Inc. No. 746

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 25455 JEFFREY G. BROWN 7/17/26

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
	08.17.2026	BIDDING DOCUMENTS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

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SC DEPARTMENT OF VETERANS' AFFAIRS
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SCDVA PROJECT #: E26-N003-AT

PROJECT INFORMATION:

VETERANS VICTORY HOUSE LAUNDRY ROOM AHU REPLACEMENTS

2461 SIDNEYS RD
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29488

SSOE PROJECT #: 0210044302

SSOE MANAGER: ERIC KELLERHALS

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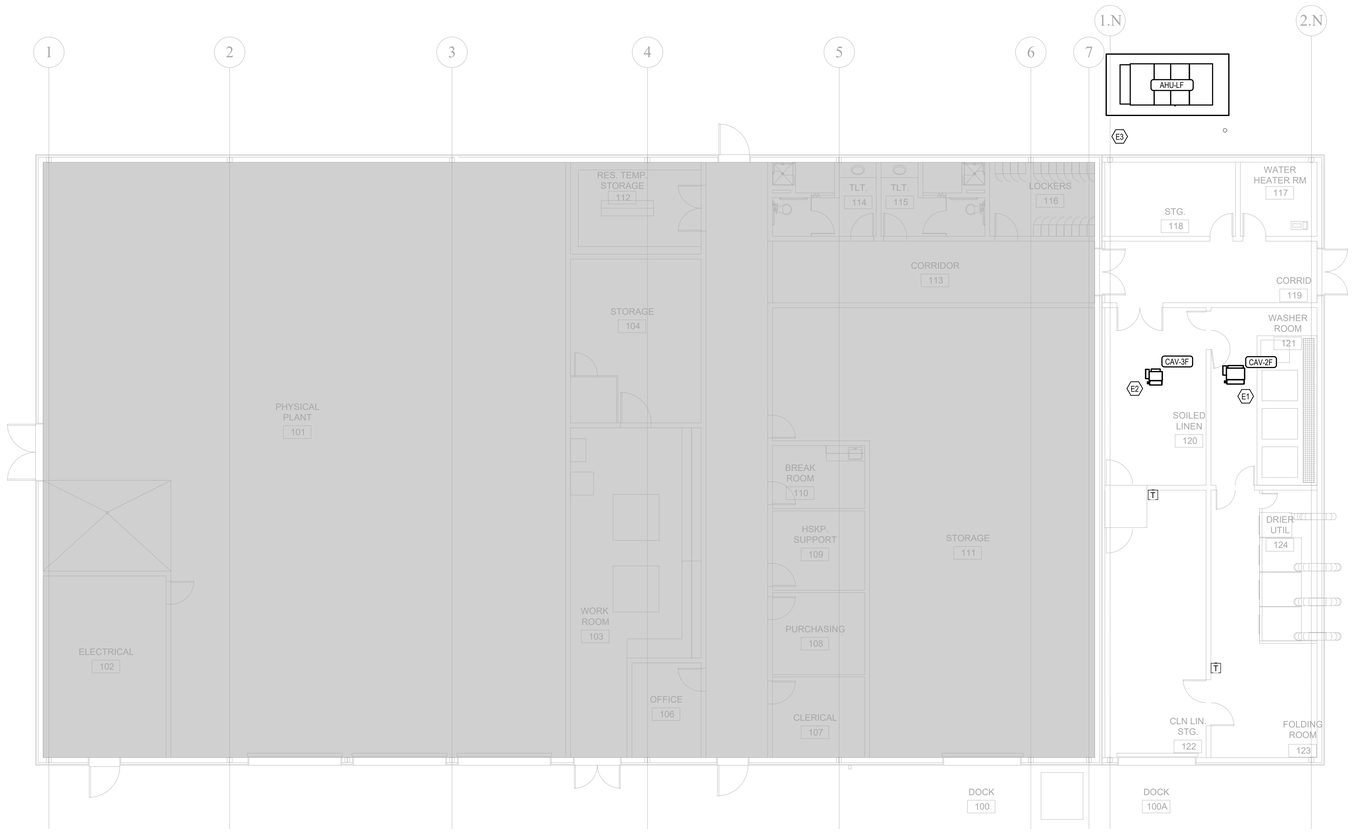
ELECTRICAL SPECIFICATIONS

E-001



1 LEVEL 1 ELECTRICAL
1/8" = 1'-0"
0 4' 8' 16'

KEYNOTES

E1	DISCONNECT EXISTING POWER FEEDER TO UNIT AND CAP CONDUCTORS IN A J-BOX LABELED WITH THE EXISTING CIRCUIT NUMBER. PROVIDE NEW 20A/120V BRANCH CIRCUIT FROM EXISTING 208/120V PANEL TO THE NEW VAV BOX USING 3/4"C, 2#12 & 1#12 GND. PROVIDE NEW 20A/1P CB IN EXISTING SIEMEN'S PANELBOARD IN SPACE 118.
E2	DISCONNECT EXISTING POWER FEEDER TO UNIT AND EXTEND THIS FEEDER TO THE NEW OUTDOOR AHU VIA A WALL MOUNTED, FUSED SAFETY SWITCH, WITH 3#10 & 1#10 GND IN 3/4"C EXTEND THE NEW 20A/120V BRANCH CIRCUIT FROM THE ADJACENT, VAV BOX TO THE NEW VAV BOX AT THIS LOCATION, USING 3/4"C, 2#12 & 1#12 GND.
E3	CONNECT HEAT TRACE TO NEW 20A/120V BRANCH CIRCUIT FED FROM EXISTING 208/120V PANEL. PROVIDE NEW 20A/1P CB IN EXISTING SIEMENS PANEL IN SPACE 118. BRANCH CIRCUIT SHALL BE 3/4"C, WITH 2#12 & 1#12 GND AND SHALL BE ROUTED THRU A WALL MOUNTED GFCI RECEPTACLE W/ WEATHERPROOF WHILE IN USE COVER. FEED HEAT TRACE FROM THE "PROTECTED" TERMINALS OF THE GFCI RECEPTACLE.

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LEVEL 1 ELECTRICAL

E-110