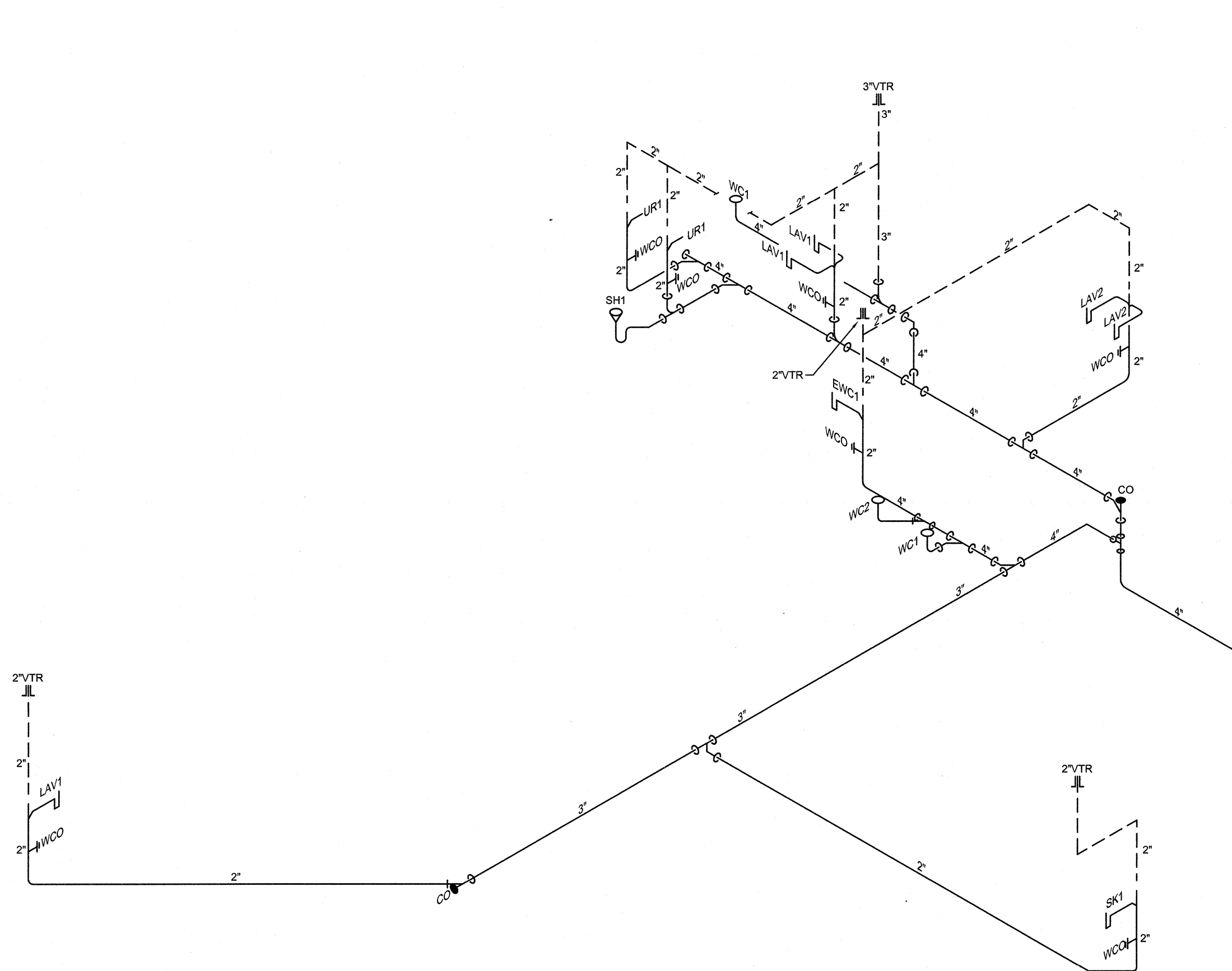
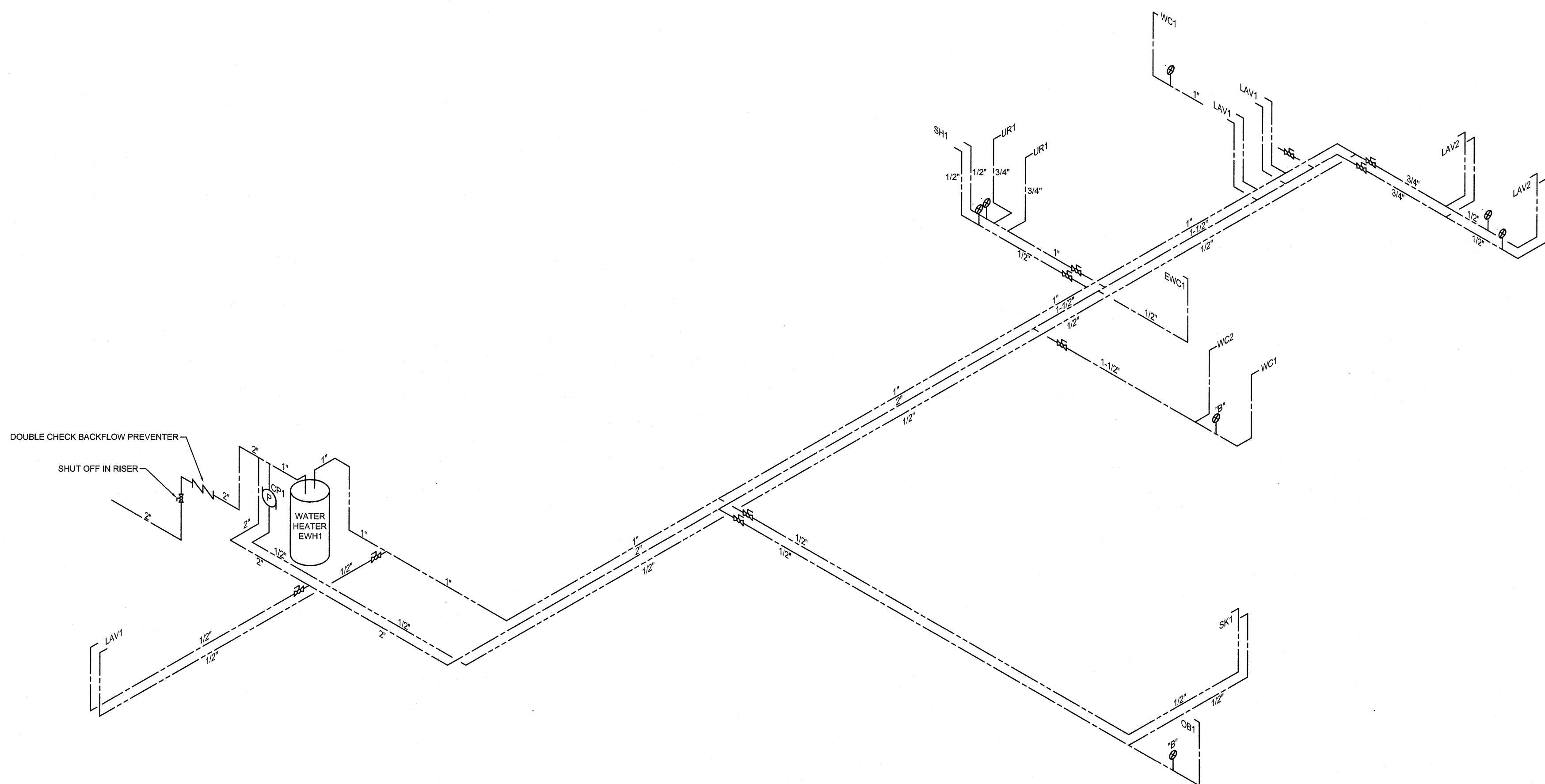


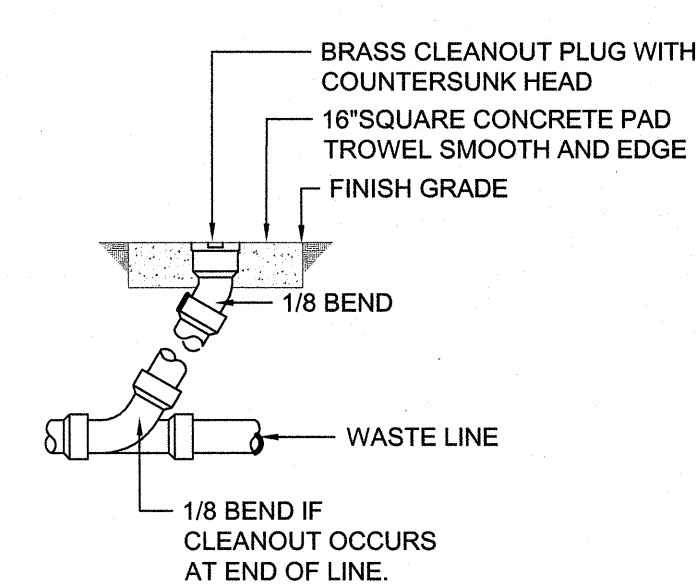
REVISIONS			
SYM.		DATE	APPROVED



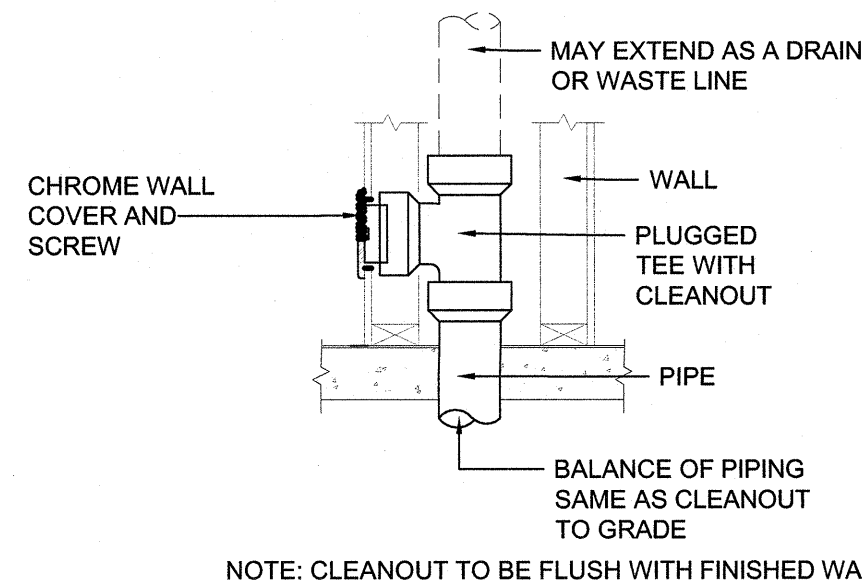
**1 WASTE-VENT RISER DIAGRAM**  
NOT TO SCALE



**2 DOMESTIC WATER RISER DIAGRAM**  
NOT TO SCALE

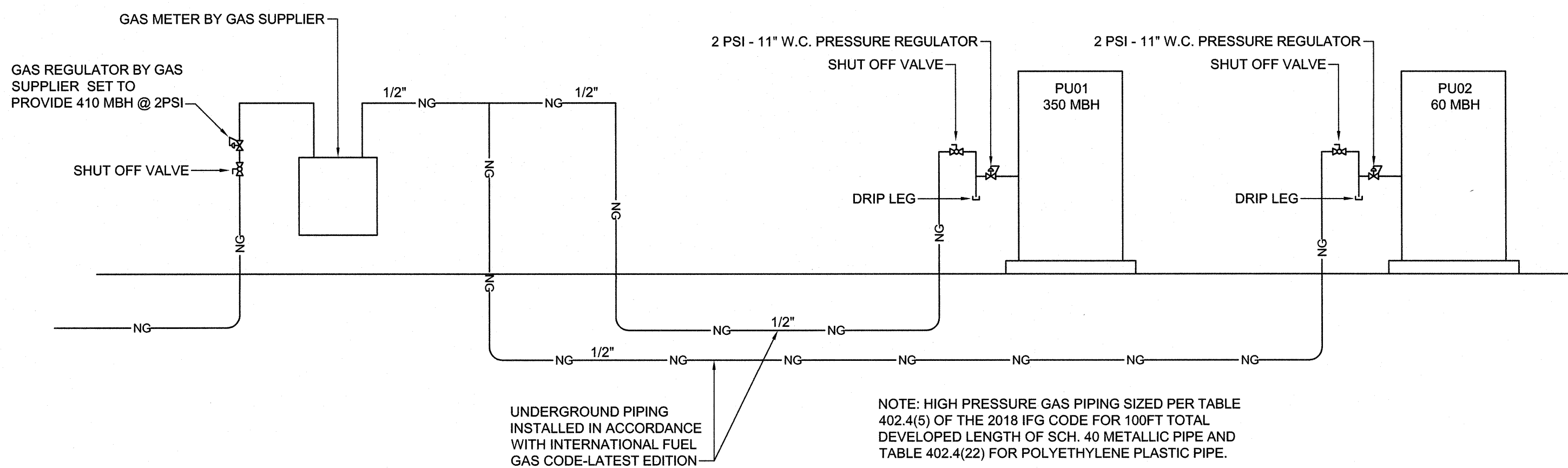


**GRADE CLEANOUT (GCO)**

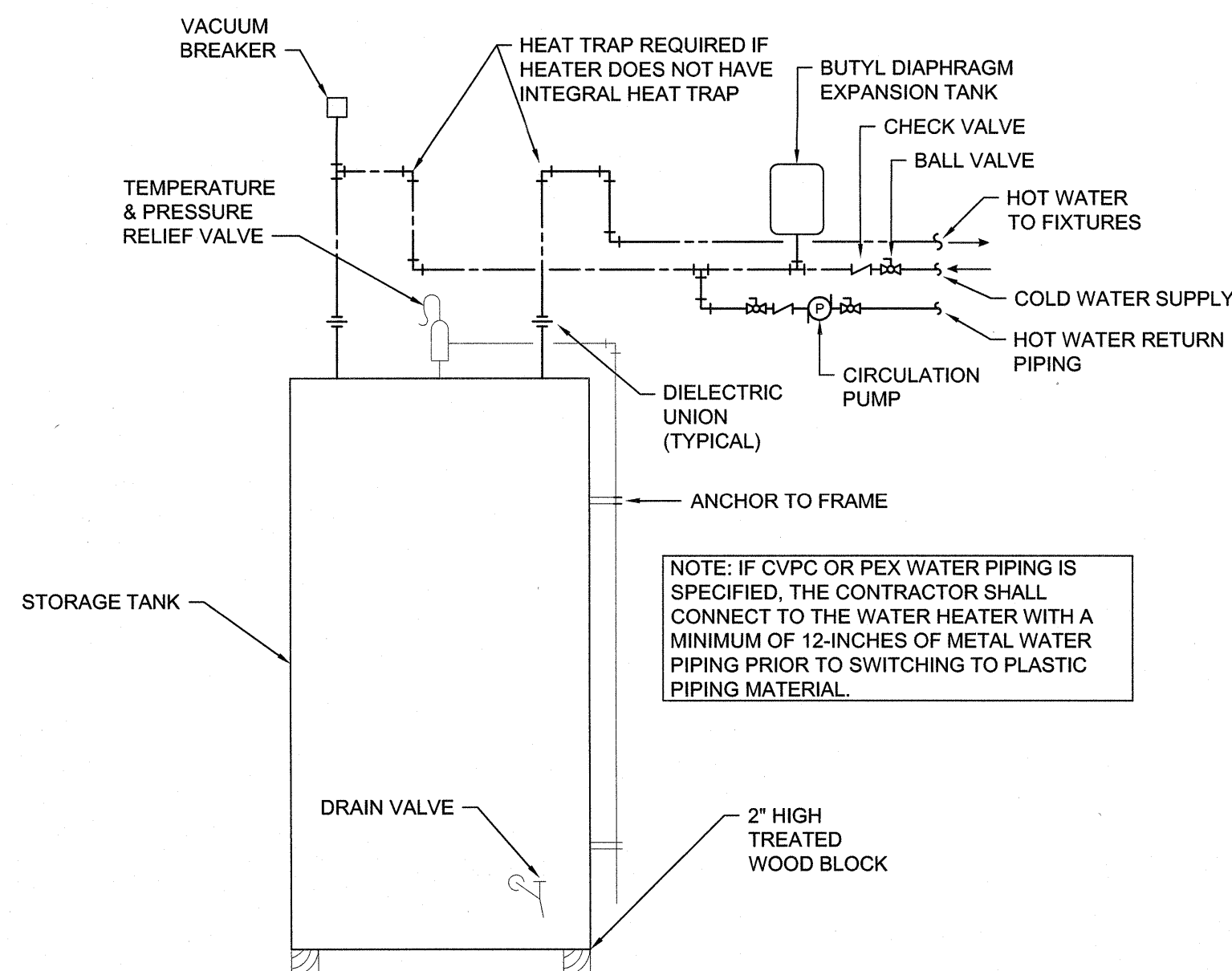


**WALL CLEANOUT (WCO)**

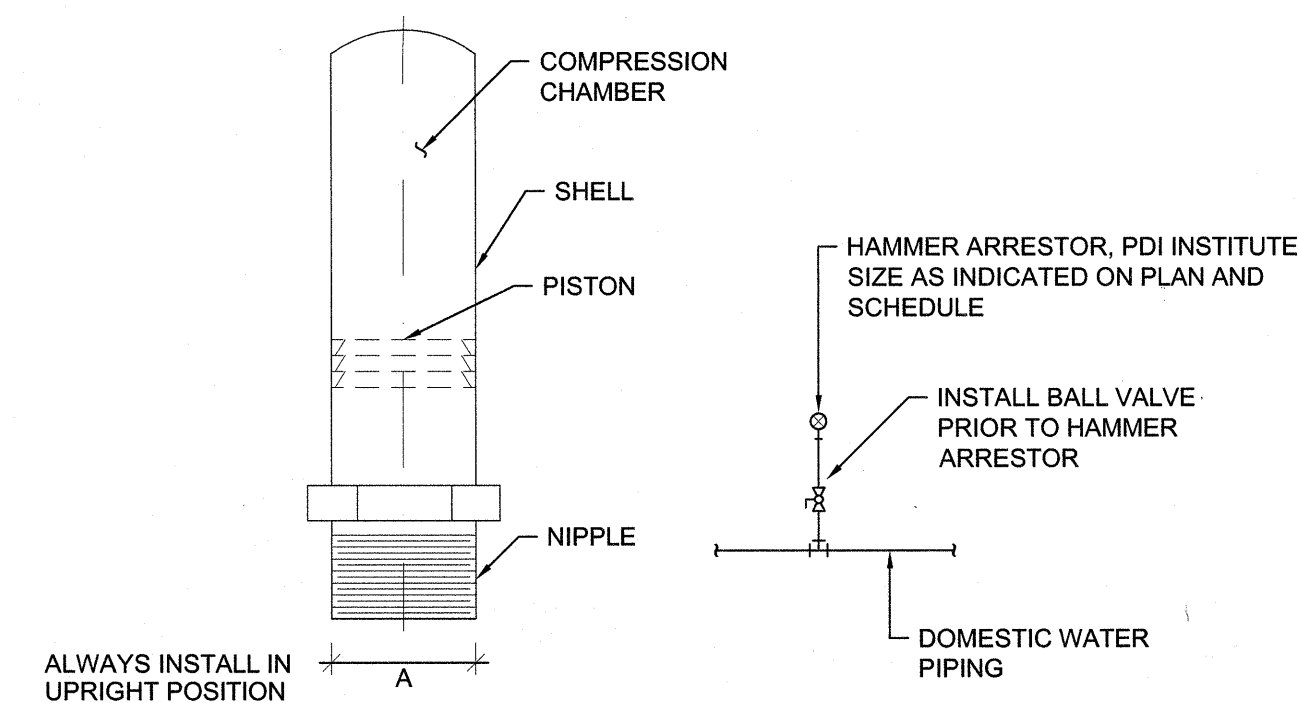
**3 CLEANOUT DETAILS**  
NOT TO SCALE



**6 GAS PIPING RISER DIAGRAM**  
NOT TO SCALE



**4 WATER HEATER DETAIL**  
NOT TO SCALE



JOSAM NO.	P.D.I. SYMBOL	FIXTURE UNIT RATING	A SIZE
7501-S	A	1-11	1/2
7502-S	B	12-32	3/4
7503-S	C	33-60	1
7504-S	D	61-113	1 1/4
7505-S	E	114-154	1 1/2
7506-S	F	155-330	2

**5 HAMMER ARRESTOR DETAIL & SCHEDULE**  
NOT TO SCALE

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET T-1

<b>CBHF</b> Engineers, PLLC 2248 Yaupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfindesigners.com	SHEET TITLE: <b>PLUMBING RISER DIAGRAMS</b>		<b>P-5</b>
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		
	DESIGNER: <b>JBS</b> CHECKER: <b>TOG</b> SUBMITTED BY: DESIGN DR. <b>T H BURTON, PE</b>		DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA
	APPROVED: _____ DATE: _____ SATSFACTORY TO: _____ DATE: _____		<b>INTERIOR AND EXTERIOR REPAIRS BLDG. M116</b> CAMP LEJEUNE, NORTH CAROLINA
	SIZE: <b>F</b> CODE IDENT. NO.: <b>80091</b>	NAVFAC DRAWING NO.: <b>60024592</b> CONST. CONTR. NO.: <b>N40085-18-B-0086</b>	
	SCALE: <b>NOTED</b>	SPEC.: <b>05-18-0086</b>	SHEET <b>30</b> OF <b>50</b>

REVISIONS			
SYN.		DATE	APPROVED

### ABBREVIATIONS

Term	Abbreviation
ABOVE FINISHED FLOOR	AFF
ABOVE SEA LEVEL	ASL
ACROSS THE LINE	ACL
AIR CONDITION(-ING, -ED)	AIR COND
AIR-HANDLING UNIT	AHU
AMBIENT	AMB
AMERICAN NATIONAL STANDARDS INSTITUTE	ANSI
AMPERE (AMP, AMPS)	AMP
APPARATUS DEW POINT	ADP
APPROXIMATE	APPROX
ATMOSPHERE	ATM
AVERAGE	AVG
BRAKE HORSEPOWER	BHP
BROWN & SHARPE WIRE GAGE	B&S
BRITISH THERMAL UNIT	BTU
BUILDING	BLDG
CELSIUS	°C
CHILLED WATER RETURN	CHWR
CHILLED WATER SUPPLY	CHWS
COEFFICIENT, VALVE FLOW	CV
COMPRESSOR	COMP
CONDENSE(-ER, -ING, -ATION)	COND
CONNECTION	CONN
COOLING LOAD	CLG LOAD
CUBIC FEET	CU FT
CUBIC INCH	CU IN
CUBIC FEET PER MINUTE	CFM
CFM, STANDARD CONDITIONS	SCFM
DECIBEL	DB
DEGREE	DEG OR °
DEW-POINT TEMPERATURE	DPT
DIAMETER	DIA
DIAMETER, INSIDE	ID
DIAMETER, OUTSIDE	OD
DIFFERENCE OR DELTA	DIFF
DRY-BULB TEMPERATURE	DBT
ENERGY EFFICIENCY RATING	ERR
EFFICIENCY	EFF
ELEVATION	EL
ENTERING	ENT
ENTERING WATER TEMPERATURE	EWT
ENTERING AIR TEMPERATURE	EAT
EXTERNAL AMBIENT TEMPERATURE	EAT
FACE VELOCITY	FVEL
FAHRENHEIT	°F
FEET PER MINUTE	FPM
FEET PER SECOND	FPS
FOOT OR FEET	FT
GAGE OR GAUGE	GA
GALLONS	GAL
GALLONS PER HOUR	GPH
GALLONS PER MINUTE	GPM
GALLONS PER DAY	GPD
GRAINS	GR
HEAD	HD
HEIGHT	HGT
HIGH-PRESSURE STEAM	HPS
HORSEPOWER	HP
HOURS	HR
HUMIDITY, RELATIVE	RH
INTERGRATED PART LOAD VALUES	IPLV
INCH	IN.
IRON PIPE SIZE	IPS
KILOVOLT-AMP	KVA
KILOWATT	KW
KILOWATT HOUR	KWH
LEAVING AIR TEMPERATURE	LAT
LEAVING WATER TEMPERATURE	LWT
LENGTH	LG
LINEAR FEET	LF
LOW-PRESSURE STEAM	LPS
MAXIMUM	MAX
MEDIUM-PRESSURE STEAM	MPS
MILES PER HOUR	MPH
MINIMUM	MIN
MINUTE	MIN
MANUFACTURER	MFR
NOISE CRITERIA	NC
NON-STANDARD PART LOAD	NPLV
NORMALLY OPEN	NO
NORMALLY CLOSED	NC
NOT APPLICABLE	N/A
NOT IN CONTACT	N I C
NOT TO SCALE	NTS
NUMBER	NO
ON CENTER	OC
OUNCE	OZ
OUTSIDE AIR	OA
PARTS PER MILLION	PPM
PERCENT	%
POUNDS	LBS
POUNDS PER SQUARE FOOT	PSF
PRESSURE	PRESS
QUANTITY	QTY
RATED LOAD AMPS	RLA
RECIRCULATE	RECIRC
REFRIGERANT (12, 22, ETC.)	R12, R22
RELATIVE HUMIDITY	RH
RETURN AIR	RA
REVOLUTIONS PER MINUTE	RPM
REVOLUTIONS PER SECOND	RPS
SAFETY FACTOR	SF
SECOND	S
SHADING COEFFICIENT	SC
SPECIFICATION	SPEC
SQUARE	SQ
STANDARD	STD
STATIC PRESSURE	SP
SUPPLY	SPLY
SUPPLY AIR	SA
TEMPERATURE	TEMP
TEMPERATURE DIFFERENCE	TD
THERMOSTAT	T STAT
TONS OF REFRIGERATION	TONS
TO BE DETERMINED	TBD
TOTAL DYNAMIC HEAD	TDH
U-FACTOR	U
VARIABLE AIR VOLUME	VAV
VELOCITY	VEL
VENTILATION, VENT	VENT
VERTICAL	VERT
VOLT	V
VOLT AMPERE	VA
VOLUME	VOL
WATER PRESSURE DROP	WPD
WATT	W
WATT-HOUR	WH
WEIGHT	WT
WET BULB	WB
YARD	YD
YEAR	YR

NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

### MECHANICAL LEGEND

AH#	AIR HANDLING UNIT NUMBER
HP#	HEAT PUMP UNIT NUMBER
DOAS#	DEDICATED OUTDOOR AIR SYSTEM UNIT NUMBER
EH#	EXHAUST GRILLE NUMBER
PV#	POWER VENTILATOR NUMBER
RH#	ROOF HOOD NUMBER
HP#	HEAT PUMP UNIT NUMBER
LF#	LOUVER NUMBER
R#	RETURN GRILLE NUMBER
S#	SUPPLY DIFFUSER NUMBER
ⓘ	THERMOSTAT
↵	VOLUME DAMPER
Ⓜ	MOTORIZED DAMPER
Ⓜ	SECTION CALL OUT

### MECHANICAL DEMOLITION NOTES

1. THE MECHANICAL CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. REMOVE ALL EQUIPMENT, DUCTWORK, SUPPORTS, CONTROLS, ACCESSORIES, ETC., AND MECHANICAL ITEMS MADE OBSOLETE BY THESE ALTERATIONS AS SHOWN IN THE MECHANICAL DRAWINGS. ALL ITEMS TO BE REMOVED OR MODIFIED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ANY MECHANICAL WORK AS REQUIRED BY THE CONSTRUCTION.
2. PREPARE A DEMOLITION PLAN AND SUBMIT PROPOSED DEMOLITION, AND REMOVAL PROCEDURES FOR APPROVAL BEFORE WORK IS STARTED. PLAN SHALL BE APPROVED BY CONTRACTING OFFICER PRIOR TO WORK BEGINNING. DO NOT BEGIN DEMOLITION UNTIL AUTHORIZATION IS RECEIVED FROM THE CONTRACTING OFFICER.
3. BEFORE BEGINNING ANY DEMOLITION WORK, SURVEY THE SITE AND EXAMINE THE DRAWINGS AND SPECIFICATIONS TO DETERMINE THE EXTENT OF THE WORK. RECORD EXISTING CONDITIONS IN THE PRESENCE OF THE CONTRACTING OFFICER SHOWING THE CONDITION OF STRUCTURES AND OTHER FACILITIES ADJACENT TO AREAS OF ALTERATION OR REMOVAL. PHOTOGRAPHS SIZED 4 INCH WILL BE ACCEPTABLE AS A RECORD OF EXISTING CONDITIONS. INCLUDE IN THE RECORD THE ELEVATION OF THE TOP OF FOUNDATION WALLS, FINISH FLOOR ELEVATIONS, POSSIBLE CONFLICTING ELECTRICAL CONDUITS, PLUMBING LINES, ALARMS SYSTEMS, THE LOCATION AND EXTENT OF EXISTING CRACKS AND OTHER DAMAGE AND DESCRIPTION OF SURFACE CONDITIONS THAT EXIST PRIOR TO BEFORE STARTING WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND DOCUMENT ALL REQUIRED OUTAGES WHICH WILL BE REQUIRED DURING THE COURSE OF WORK, AND TO NOTE THESE OUTAGES ON THE RECORD DOCUMENT. SUBMIT SURVEY RESULTS.
4. EXCEPT FOR SALVAGED ITEMS, AND FOR MATERIALS OR EQUIPMENT SCHEDULED FOR SALVAGE, ALL MATERIALS AND EQUIPMENT REMOVED AND NOT REUSED OR SALVAGED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM GOVERNMENT PROPERTY. TITLE TO MATERIALS RESULTING FROM DEMOLITION AND DECONSTRUCTION, AND MATERIALS AND EQUIPMENT TO BE REMOVED, IS VESTED IN THE CONTRACTOR UPON APPROVAL BY THE CONTRACTING OFFICER OF THE CONTRACTOR'S DEMOLITION, DECONSTRUCTION, AND REMOVAL PROCEDURES, AND AUTHORIZATION BY THE CONTRACTING OFFICER TO BEGIN DEMOLITION AND DECONSTRUCTION. THE GOVERNMENT WILL NOT BE RESPONSIBLE FOR THE CONDITION OR LOSS OF, OR DAMAGE TO, SUCH PROPERTY AFTER CONTRACT AWARD. SHOWING FOR SALE OR SELLING MATERIALS AND EQUIPMENT ON SITE IS PROHIBITED.
5. THESE DRAWINGS ARE COMPILED BY THE ENGINEER FROM THE OWNER'S RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL DUCTWORK, EQUIPMENT LOCATIONS, DIMENSIONS AND ALL FIELD CONDITIONS AFFECTING HIS WORK.
6. WHERE MECHANICAL SYSTEMS PASS THROUGH THE DEMOLITION AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, THEY SHALL REMAIN OR BE SUITABLY RELOCATED AND THE SYSTEM RESTORED TO NORMAL OPERATION. ADVISE THE CONTRACTING OFFICER IMMEDIATELY IF SUCH CONDITIONS ARE UNCOVERED BEFORE PROCEEDING WITH ADDITIONAL WORK.
7. DO NOT INTERRUPT EXISTING UTILITIES SERVING OCCUPIED OR USED FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY THE CONTRACTING OFFICER. DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED AND USED BY THE GOVERNMENT EXCEPT WHEN APPROVED IN WRITING AND THEN ONLY AFTER TEMPORARY UTILITY SERVICES HAVE BEEN APPROVED AND PROVIDED. DO NOT BEGIN DEMOLITION OR DECONSTRUCTION WORK UNTIL ALL UTILITY DISCONNECTIONS HAVE BEEN MADE. SHUT OFF AND CAP UTILITIES FOR FUTURE USE, AS INDICATED. TEMPORARY SERVICES INCLUDING BUILDING HEAT AND HEATING OF DOMESTIC WATER SHALL BE REQUIRED WHEN ANY INTERRUPTION OF SUCH SERVICES EXCEEDS 12 HOURS EXCEPT WHEN AUTHORIZED IN WRITING BY THE CONTRACTOR OFFICER.

### MECHANICAL GENERAL NOTES

1. SCOPE OF WORK: THESE DRAWINGS AND ACCOMPANYING SPECIFICATIONS DESCRIBE THE SCOPE OF WORK REQUIRED FOR PROJECT MECHANICAL HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL REQUIRED FOR COMPLETE, FULLY FUNCTIONING MECHANICAL SYSTEMS COMPLYING WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.
2. DRAWINGS: DRAWINGS ARE DIAGRAMMATIC AND MAY NOT COMPLETELY DESCRIBE EVERY DETAIL OF THE INSTALLATION. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR FURNISHING COMPLETE SYSTEMS INCLUDING ALL REQUIRED EQUIPMENT AND ACCESSORIES TO OBTAIN FULLY FUNCTIONING HVAC SYSTEMS.
3. MANUFACTURER'S RECOMMENDATIONS: - INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. WORKMANSHIP: - UTILIZE SKILLED MECHANICS TO OBTAIN A HIGH QUALITY PROFESSIONAL FINISH INSTALLATION WHEN COMPLETED. WORK OF UNACCEPTABLE QUALITY SHALL BE REMOVED AND REWORKED AT NO ADDITIONAL COST. CONTRACTING OFFICER SHALL BE THE JUDGE OF WORKMANSHIP AND THEIR OPINION WILL BE FINAL. IN ADDITION, ANY EXISTING CONSTRUCTION DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE CONTRACTING OFFICER BY THE CONTRACTOR AT NO ADDITIONAL COST.
5. SUPERVISION: PROVIDE SKILLED SUPERINTENDENTS TO SUPERVISE THE WORK FROM THE BEGINNING TO COMPLETION AND FINAL INSPECTION.
6. PROGRESS OF WORK: PERFORM WORK IN ACCORDANCE WITH SCHEDULE AND REQUIREMENTS OF THE OWNER. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR DELAY THE OVERALL PROJECT SCHEDULE.
7. COORDINATION: COORDINATE MECHANICAL WORK WITH THE WORK OF OTHER TRADES. LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE UNLESS SPECIFICALLY DIMENSIONED. LAYOUT MECHANICAL WORK SO AS NOT TO INTERFERE WITH THE WORK OF OTHER TRADES. VERIFY ACTUAL BUILDING STRUCTURE PRIOR TO DUCT FABRICATION AND ADJUST ARRANGEMENT AS REQUIRED. INCLUDE ALL OFFSETS IN DUCTS, FITTINGS, PIPING, ETC. AS REQUIRED TO PROPERLY INSTALL EQUIPMENT.
8. EQUIPMENT LOCATIONS: DETERMINE EXACT EQUIPMENT AND MATERIALS LOCATIONS TO PROVIDE BEST ARRANGEMENT AND TO FACILITATE PROPER MAINTENANCE AND SERVICING OF EQUIPMENT.
9. LISTING AND LABELING: ALL EQUIPMENT SHALL BE LABELED OR LISTED BY UL OR OTHER APPROVED TESTING AGENCY WHERE REQUIRED.
10. CLEANUP: REMOVE ALL DEBRIS GENERATED IN THE ACCOMPLISHMENT OF WORK UNDER THIS PROJECT. CLEAN, REPLACE OR REPAIR ALL SURFACES SOILED OR DAMAGED DURING THE COURSE OF THE WORK. REMOVE DEBRIS DAILY SO TO MAINTAIN SAFE WORKING CONDITIONS.
11. DEMOLISH EXISTING EQUIPMENT PADS AS REQUIRED TO ACCOMMODATE NEW EQUIPMENT LAYOUT.

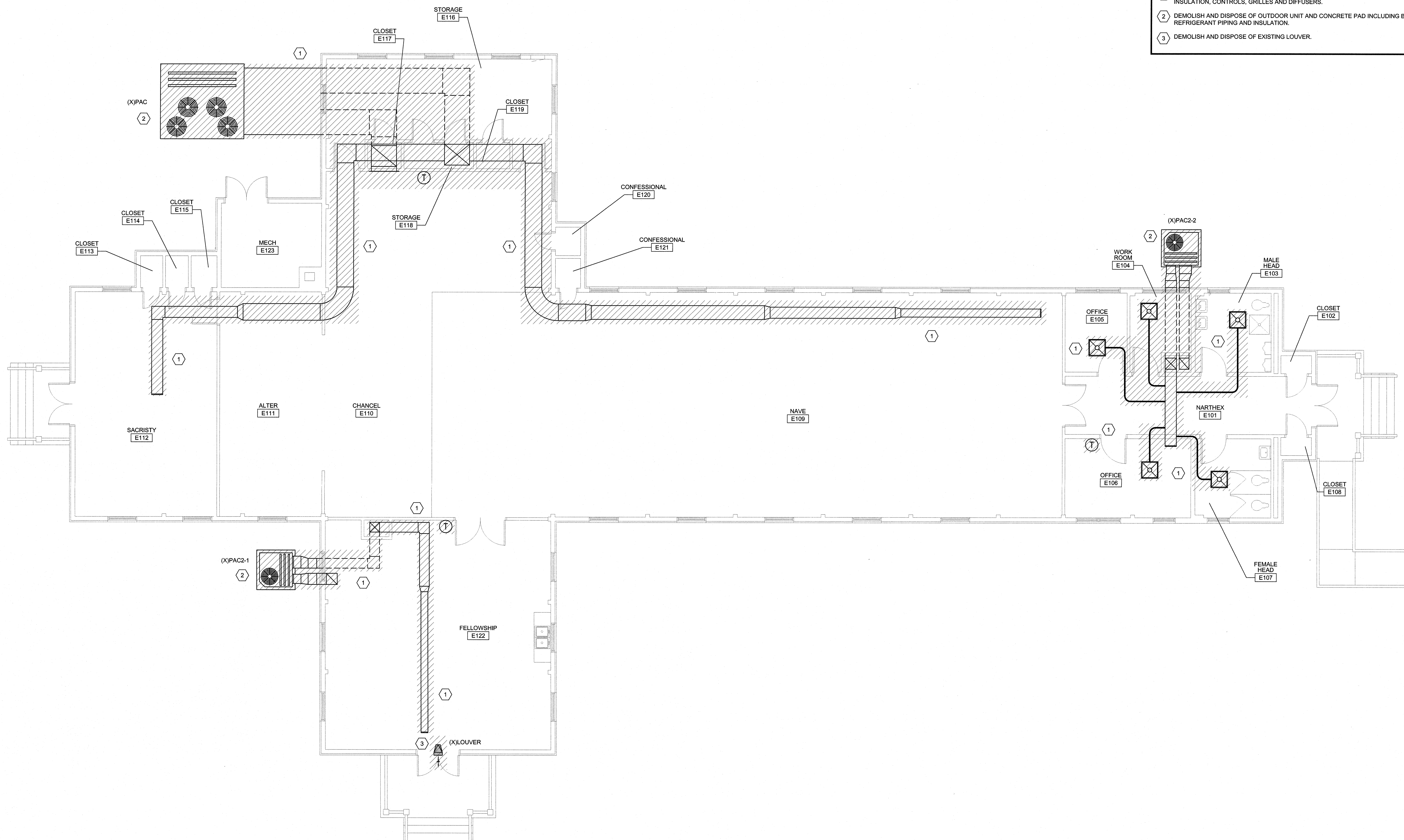
### SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET T-1

<b>CBHF</b> Engineers, PLLC  2248 Taupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5206 www.cbhfindesign.com  © November 2015 CBHF Engineers, PLLC  NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 04380 TROY O. GRAY 6/21/19	SHEET TITLE: <b>MECHANICAL LEGEND AND NOTES</b>		<b>M-1</b>			
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		DEPARTMENT OF THE NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA			
	DES. GAS	INTERIOR AND EXTERIOR REPAIRS BLDG. M116 CAMP LEJEUNE, NORTH CAROLINA				
	DR. GAS					
	CHK. TOG					
SUBMITTED BY:						
DESIGN DIR. T H BURTON, PE						
APPROVED:		DATE	SIZE <b>F</b>	CODE IDENT. NO. <b>80091</b>		
SATISFACTORY TO:		DATE	SCALE: NOTED	NAVFAC DRAWING NO. 60024593 CONST. CONTR. NO. N40085-18-B-0086 SHEET 31 OF 50		



REVISIONS		
SYM.	DATE	APPROVED

DEMOLITION KEYED NOTES	
①	DEMOLISH AND DISPOSE OF ALL SUPPLY AND RETURN DUCTWORK INCLUDING BUT NOT LIMITED TO HANGERS, INSULATION, CONTROLS, GRILLES AND DIFFUSERS.
②	DEMOLISH AND DISPOSE OF OUTDOOR UNIT AND CONCRETE PAD INCLUDING BUT NOT LIMITED TO CONTROLS, REFRIGERANT PIPING AND INSULATION.
③	DEMOLISH AND DISPOSE OF EXISTING LOUVER.



1 FIRST FLOOR PLAN  
3/16" = 1'-0"

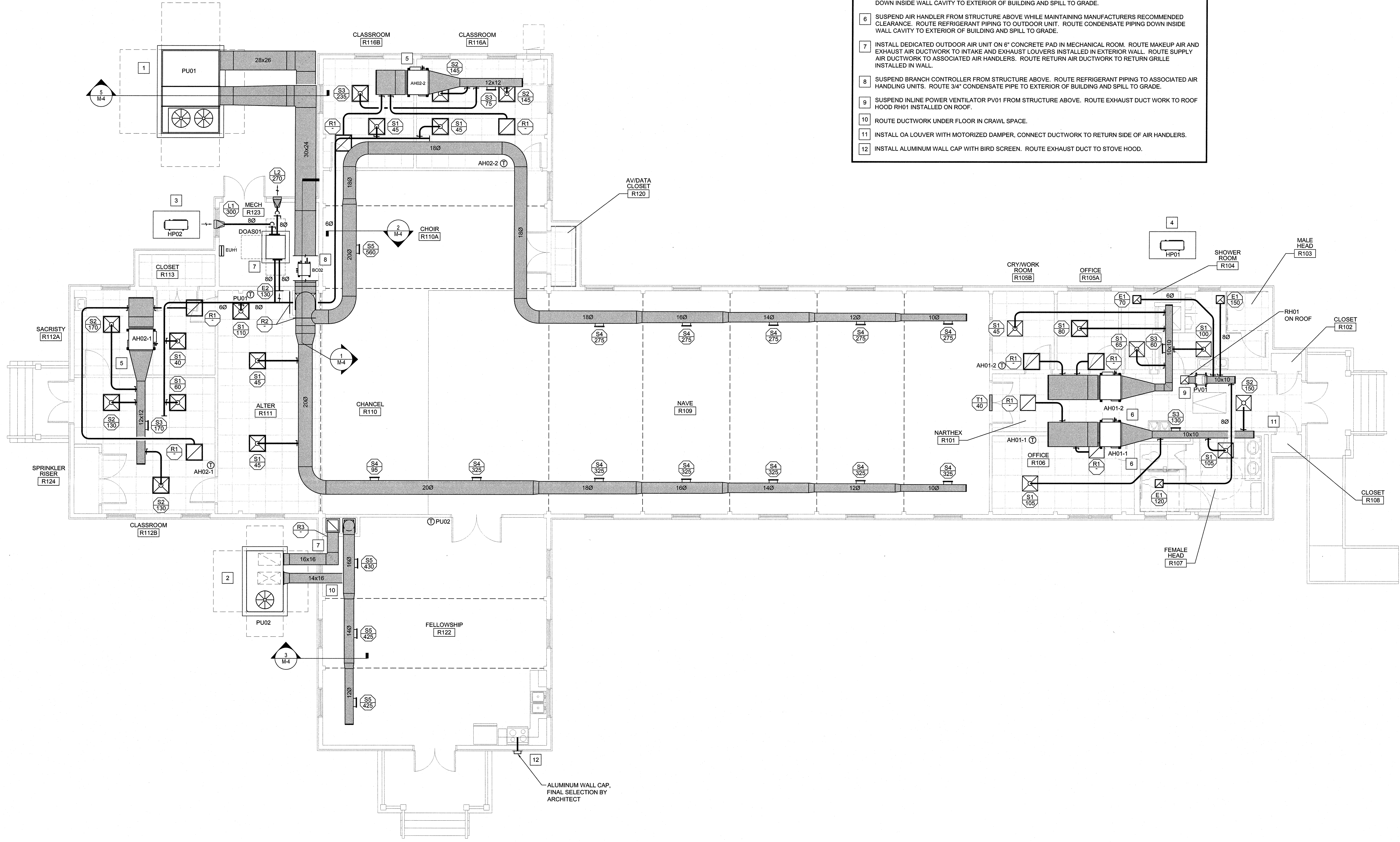
SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET T-1

<b>CBHF</b> Engineers, PLLC 2248 Yaucon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfenr.com	SHEET TITLE: <b>MECHANICAL DEMOLITION FLOOR PLAN</b>		<b>M-2</b>
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		
DESIGN DIR. T H BURTON, PE APPROVED: _____ DATE: _____ SATISFACTORY TO: _____	DES. GAS DR. GAS CHK. TOG SUBMITTED BY: _____		DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA INTERIOR AND EXTERIOR REPAIRS BLDG. M116 CAMP LEJEUNE, NORTH CAROLINA
	CODE IDENT. NO. 80091 NAVFAC DRAWING NO. 60024594 CONST. CONTR. NO. N40085-18-B-0086 SCALE: NOTED SPEC. 05-18-0086 SHEET 32 OF 50		



REVISIONS		
SYM.	DATE	APPROVED

- CONSTRUCTION KEYED NOTES**
1. INSTALL NEW PACKAGED UNIT ON 6" CONCRETE PAD. ROUTE DUCTWORK INTO MECHANICAL ROOM. PENETRATIONS TO BE MADE WEATHER TIGHT.
  2. INSTALL NEW PACKAGED UNIT ON 6" CONCRETE PAD. ROUTE DUCTWORK INTO CRAWL SPACE. PENETRATIONS TO BE MADE WEATHER TIGHT.
  3. INSTALL OUTDOOR UNIT ON 6" CONCRETE PAD. ROUTE REFRIGERANT PIPING INTO MECHANICAL ROOM TO ASSOCIATED BRANCH CIRCUIT CONTROLLER.
  4. INSTALL OUTDOOR UNIT ON 6" CONCRETE PAD. ROUTE REFRIGERANT PIPING INTO CRAWL SPACE AND THEN TO ASSOCIATED AIR HANDLER.
  5. SUSPEND AIR HANDLER FROM STRUCTURE ABOVE WHILE MAINTAINING MANUFACTURERS RECOMMENDED CLEARANCE. ROUTE REFRIGERANT PIPING TO BRANCH CIRCUIT CONTROLLER. ROUTE CONDENSATE PIPING DOWN INSIDE WALL CAVITY TO EXTERIOR OF BUILDING AND SPILL TO GRADE.
  6. SUSPEND AIR HANDLER FROM STRUCTURE ABOVE WHILE MAINTAINING MANUFACTURERS RECOMMENDED CLEARANCE. ROUTE REFRIGERANT PIPING TO OUTDOOR UNIT. ROUTE CONDENSATE PIPING DOWN INSIDE WALL CAVITY TO EXTERIOR OF BUILDING AND SPILL TO GRADE.
  7. INSTALL DEDICATED OUTDOOR AIR UNIT ON 6" CONCRETE PAD IN MECHANICAL ROOM. ROUTE MAKEUP AIR AND EXHAUST AIR DUCTWORK TO INTAKE AND EXHAUST LOUVERS INSTALLED IN EXTERIOR WALL. ROUTE SUPPLY AIR DUCTWORK TO ASSOCIATED AIR HANDLERS. ROUTE RETURN AIR DUCTWORK TO RETURN GRILLE INSTALLED IN WALL.
  8. SUSPEND BRANCH CONTROLLER FROM STRUCTURE ABOVE. ROUTE REFRIGERANT PIPING TO ASSOCIATED AIR HANDLING UNITS. ROUTE 3/4" CONDENSATE PIPE TO EXTERIOR OF BUILDING AND SPILL TO GRADE.
  9. SUSPEND INLINE POWER VENTILATOR PV01 FROM STRUCTURE ABOVE. ROUTE EXHAUST DUCT WORK TO ROOF HOOD RH01 INSTALLED ON ROOF.
  10. ROUTE DUCTWORK UNDER FLOOR IN CRAWL SPACE.
  11. INSTALL OA LOUVER WITH MOTORIZED DAMPER. CONNECT DUCTWORK TO RETURN SIDE OF AIR HANDLERS.
  12. INSTALL ALUMINUM WALL CAP WITH BIRD SCREEN. ROUTE EXHAUST DUCT TO STOVE HOOD.



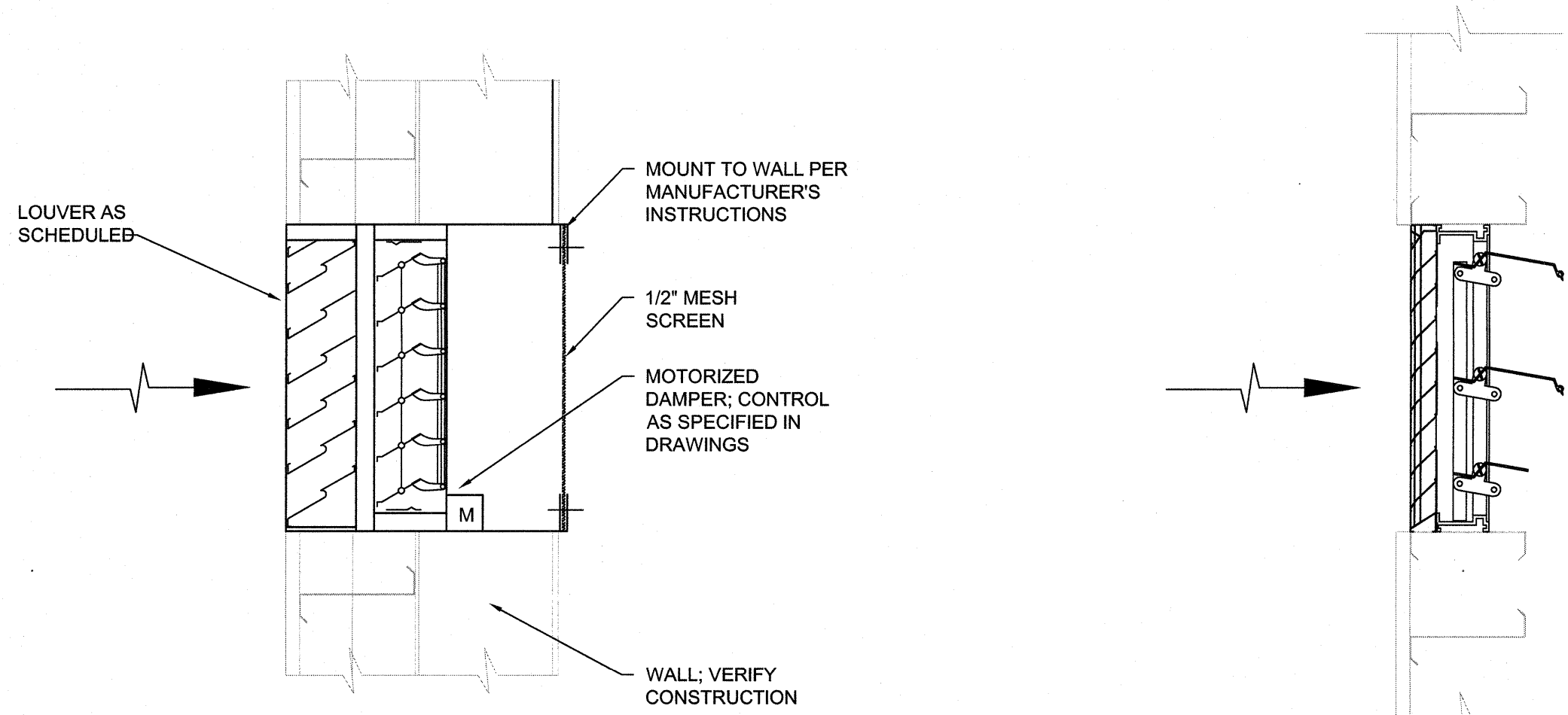
**1 FIRST FLOOR PLAN**  
3/16" = 1'-0"

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET T-1

<b>CBHF</b> Engineers, PLLC 2246 Yaupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfenr.com	SHEET TITLE: <b>MECHANICAL FLOOR PLAN</b>		<b>M-3</b>
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		
	DES. GAS DR. GAS CHK. TOG SUBMITTED BY: DESIGN DR. T H BURTON, PE APPROVED:		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA  <b>INTERIOR AND EXTERIOR REPAIRS BLDG. M116</b> CAMP LEJEUNE, NORTH CAROLINA
	SATISFACTORY TO:		NAVFAC DRAWING NO. 60024595 CONST. CONTR. NO. N40085-18-B-0086
	DATE:		SCALE: NOTED SPEC. 05-18-0086 SHEET 33 OF 50
	DATE:		SIZE: F CODE IDENT. NO. 80091

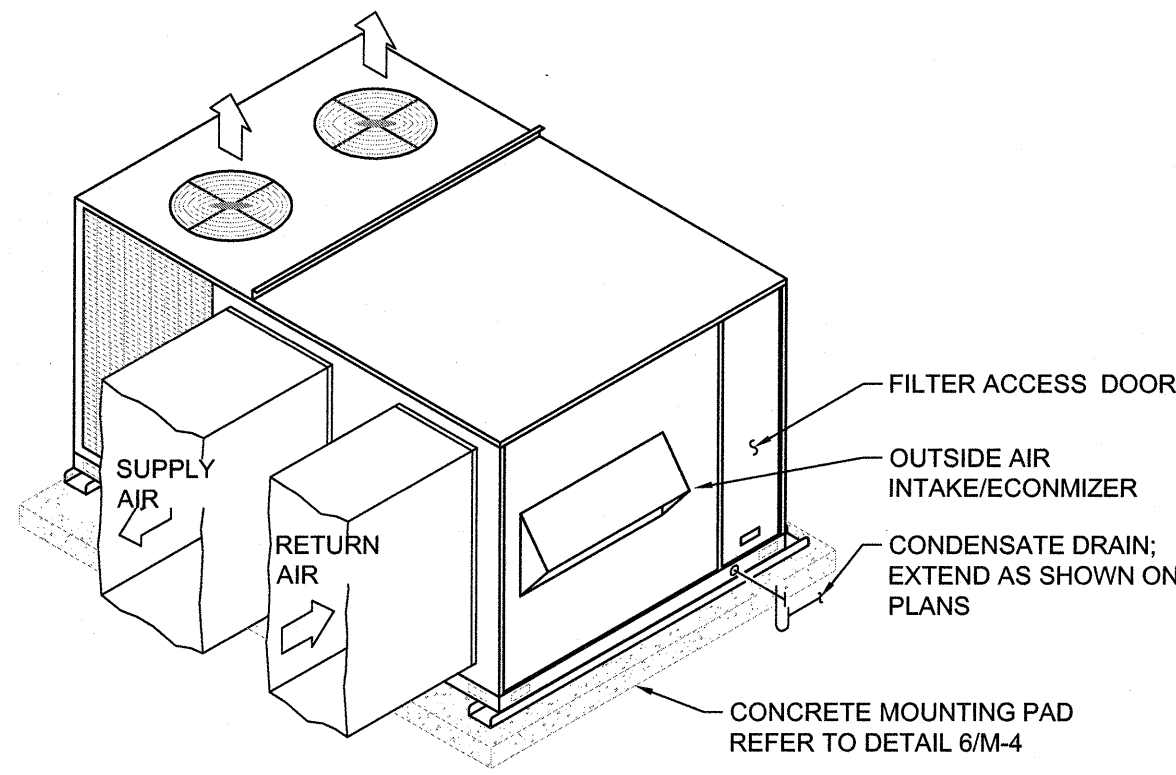


REVISIONS			DATE	APPROVED
SYM.				

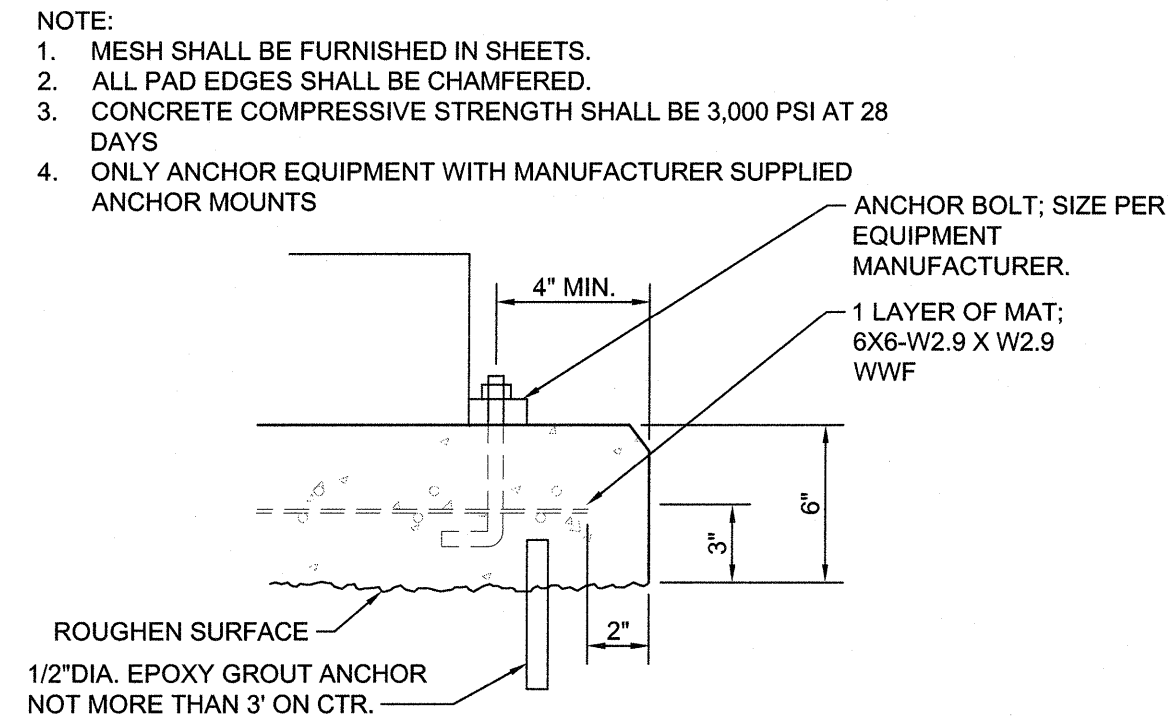


9 INTAKE LOUVER DETAIL WITH MOTORIZED DAMPER  
NOT TO SCALE

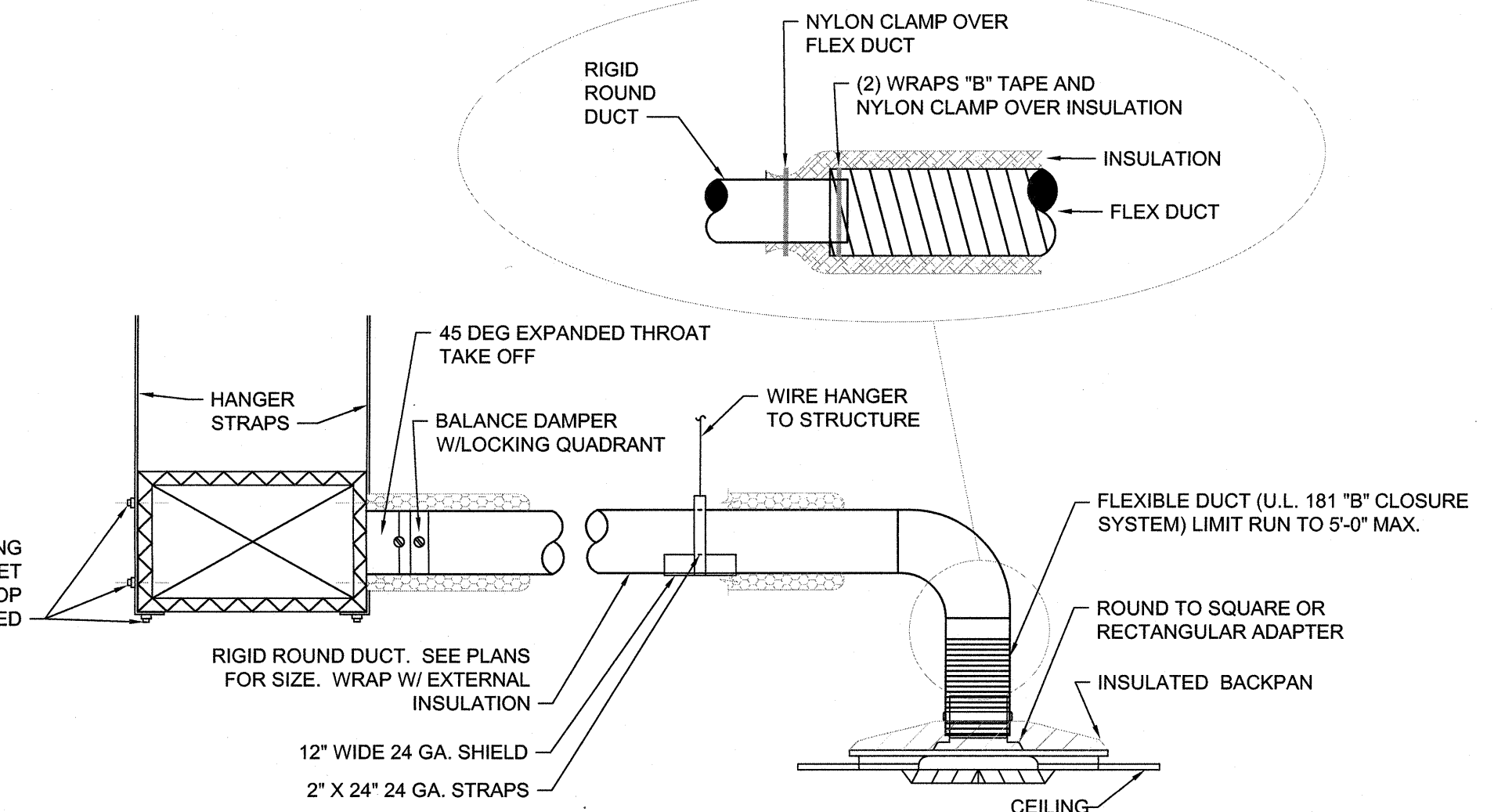
8 INTAKE LOUVER DETAIL  
NOT TO SCALE



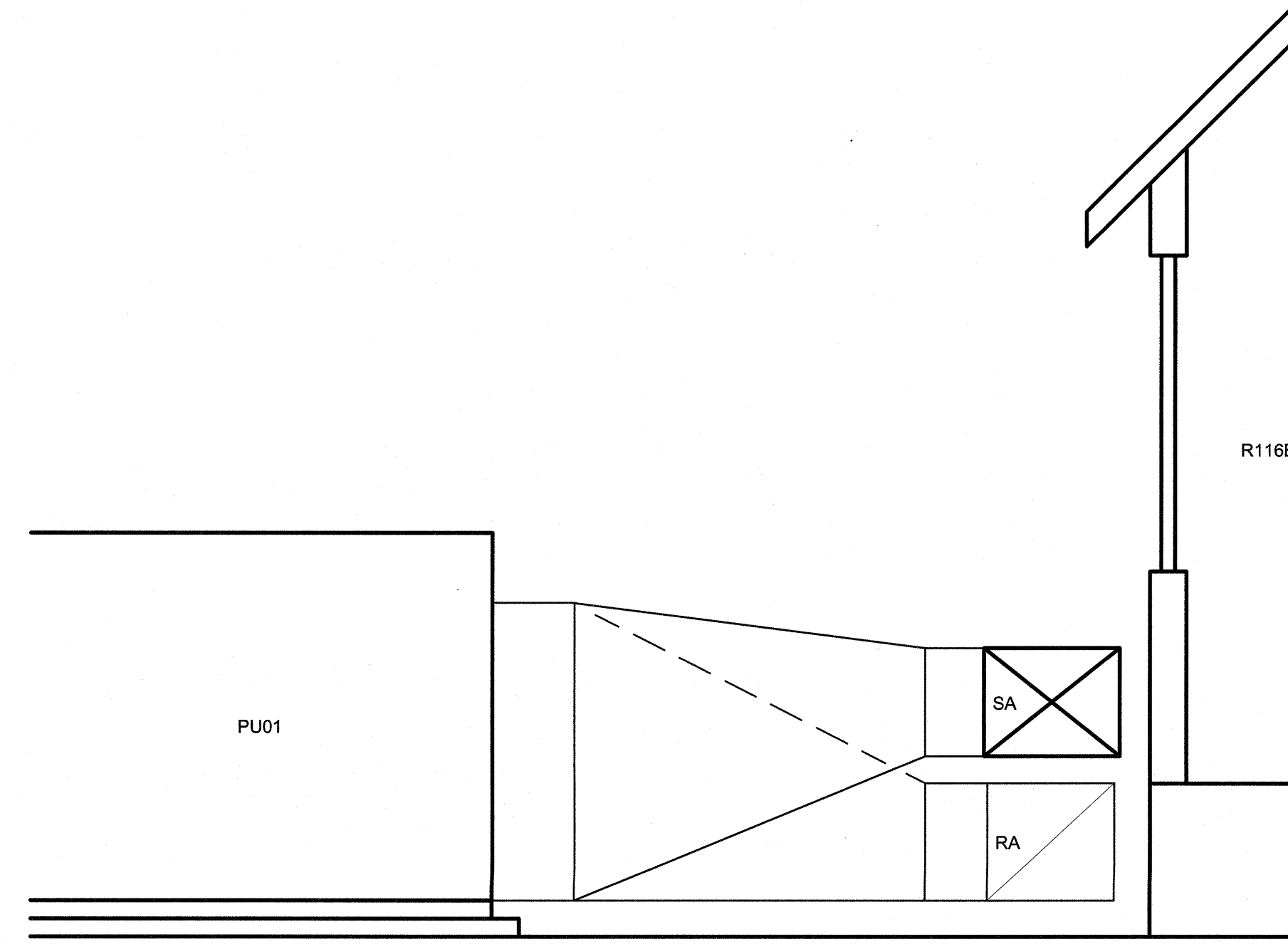
7 PACKAGED HEAT PUMP DETAIL  
NOT TO SCALE



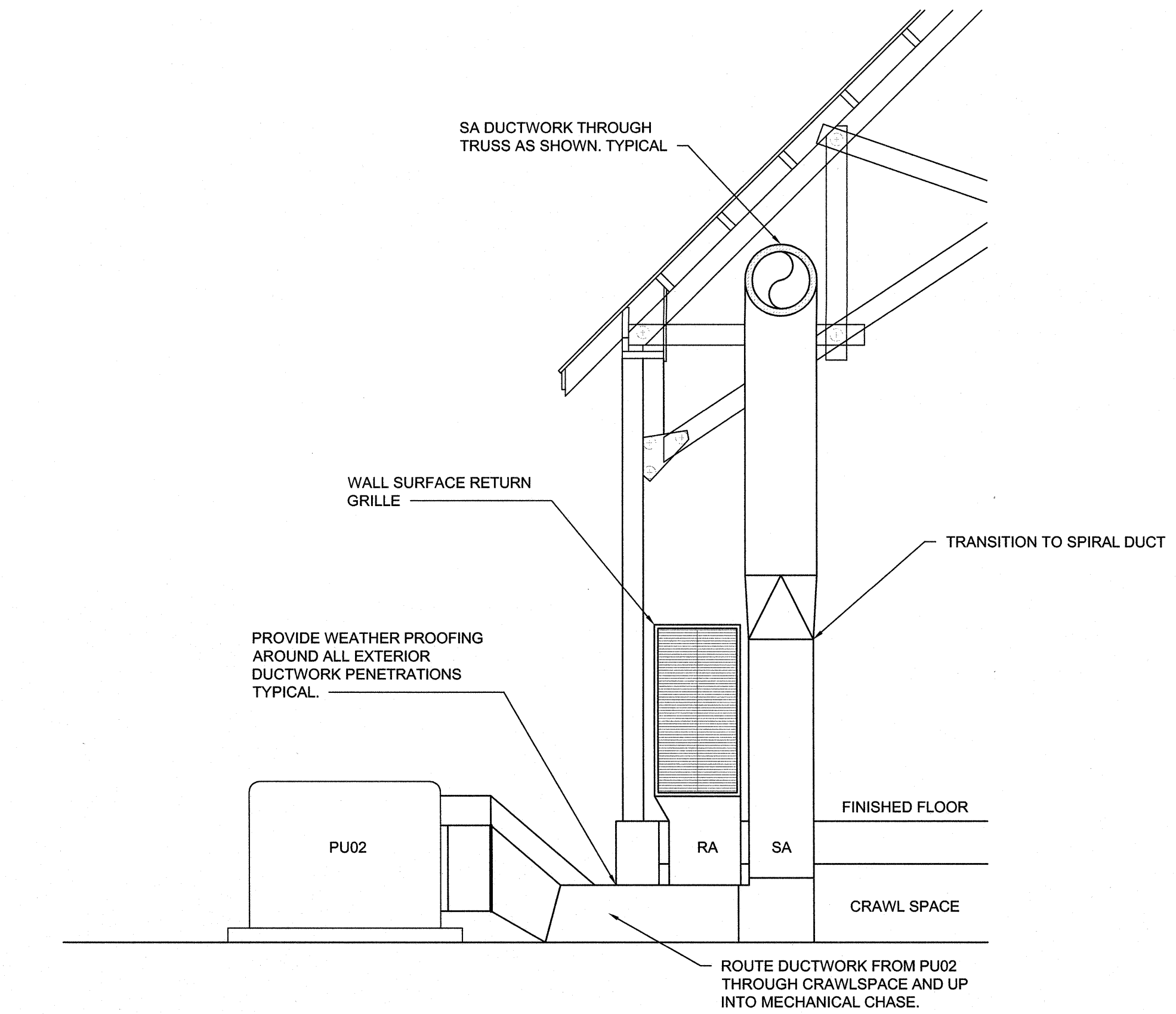
6 EQUIPMENT PAD DETAIL  
NOT TO SCALE



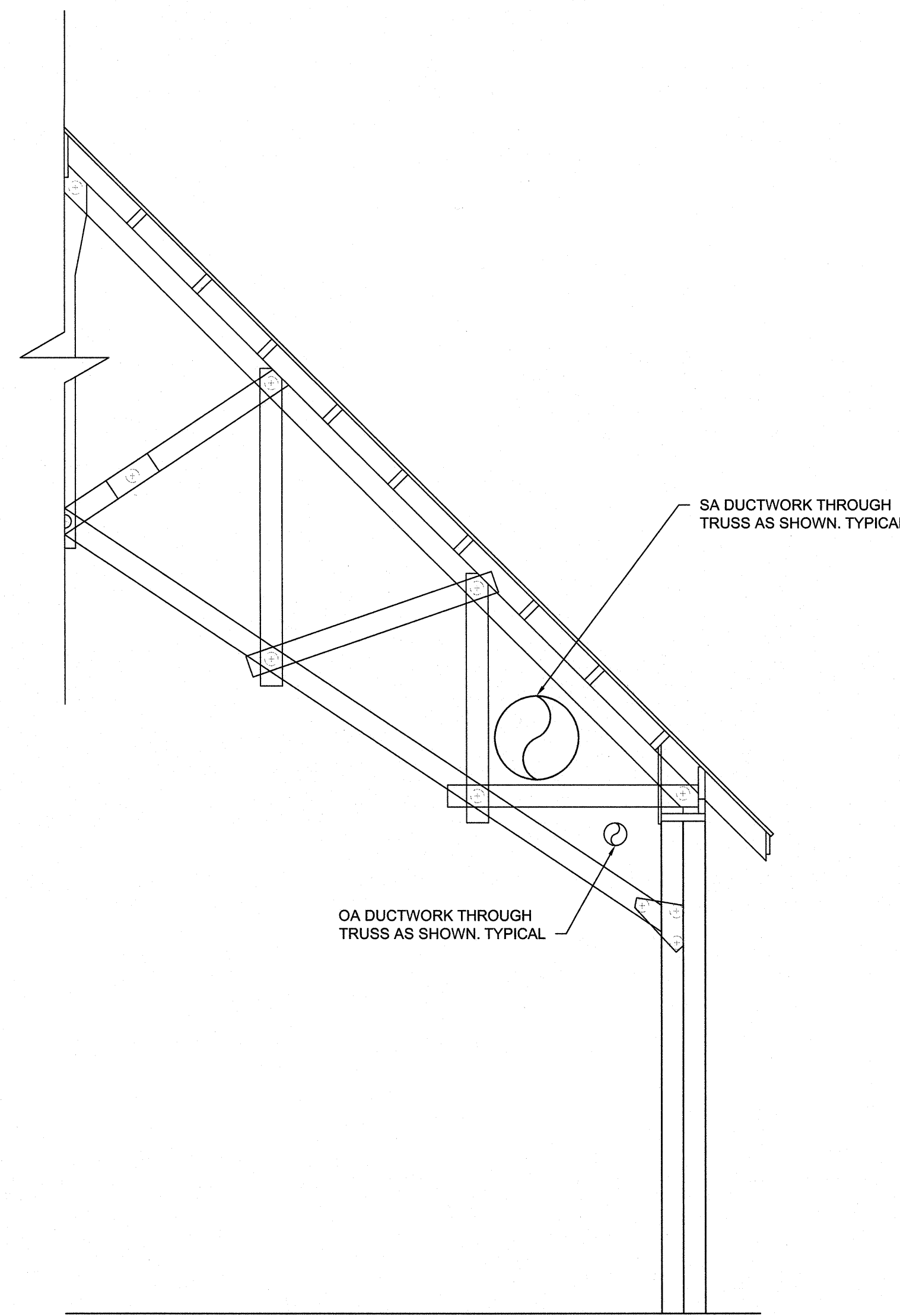
4 TYPICAL DIFFUSER CONNECTION DETAIL  
NOT TO SCALE



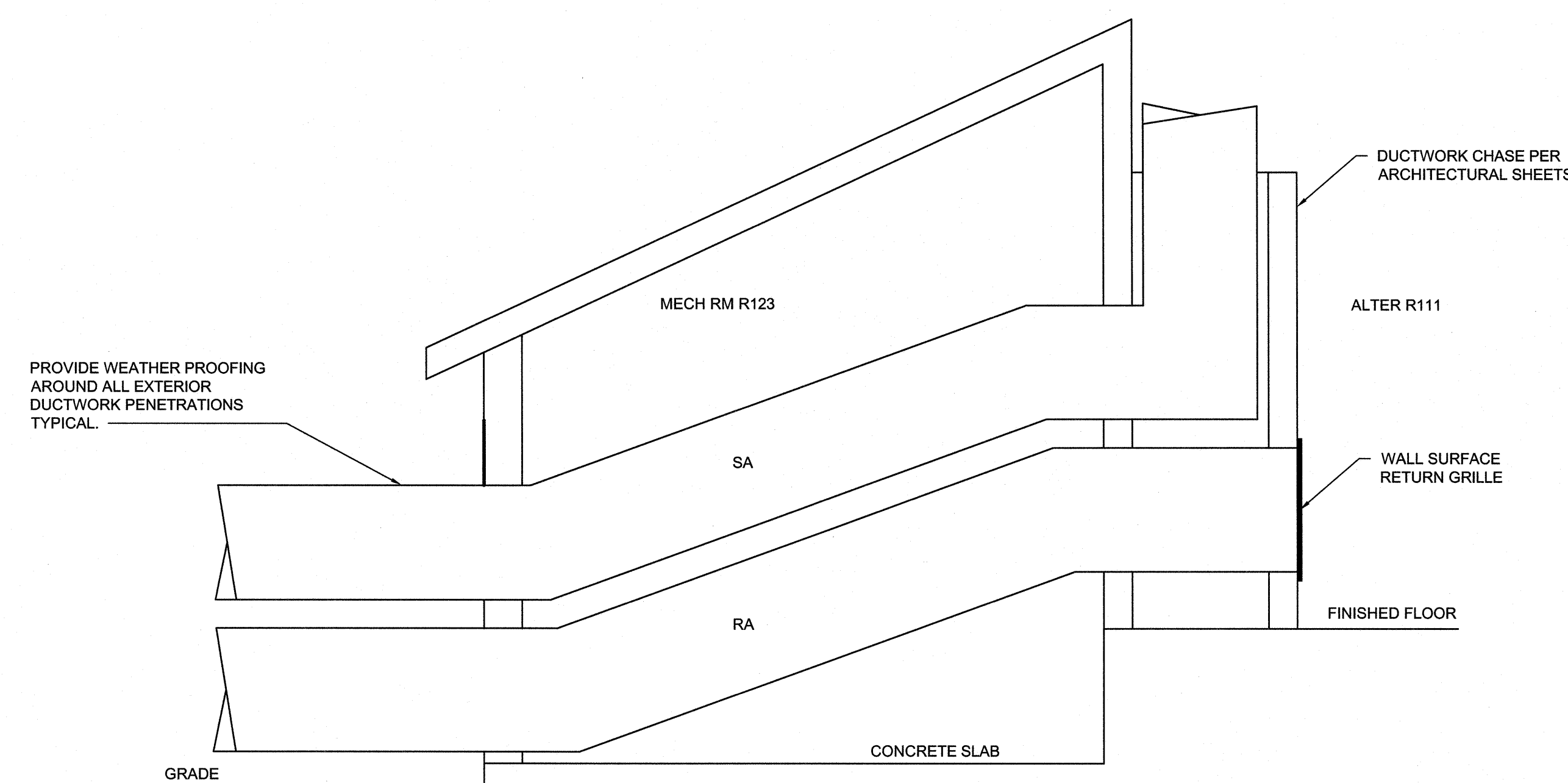
5 MECHANICAL DUCTWORK SECTION DETAIL  
NOT TO SCALE



3 MECHANICAL DUCTWORK SECTION DETAIL  
NOT TO SCALE



2 MECHANICAL DUCTWORK TRUSS DETAIL  
NOT TO SCALE



1 MECHANICAL DUCTWORK SECTION DETAIL  
NOT TO SCALE

SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET T-1

<b>CBHF</b> Engineers, PLLC 2248 Yaupon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfenr.com		SHEET TITLE: <b>MECHANICAL DETAILS</b>		<b>M-4</b>
TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		
DES. GAS DR. GAS CHK. TOG SUBMITTED BY: DESIGN DIR. T H BURTON, PE		INTERIOR AND EXTERIOR REPAIRS BLDG. M116 CAMP LEJEUNE, NORTH CAROLINA		
APPROVED: [Signature] SATISFACTORY TO:		DATE	SIZE F	CODE IDENT. NO. 80091
SCALE: NOTED		DATE	SPEC.	NAVAC DRAWING NO. 60024596
				CONST. CONTR. NO. N40085-18-B-0086
				SHEET 34 OF 50



REVISIONS			
SYN.		DATE	APPROVED

#### POWER VENTILATOR SCHEDULE

DRAWING CODE	FAN TYPE	SERVICE	CAPACITIES			ELECTRICAL							SONES	WEIGHT (LBS.)	NOTES	ACCESSORIES
			AIRFLOW (CFM)	ESP (IN. WG.)	DRIVE ARRANGEMENT	FAN RPM	MOTOR RPM	MOTOR TYPE	MOTOR SIZE (HP)	V/PH/Hz	MCA	MOCP				
PV01	IN-LINE CENTRIFUGAL FANS	EXHAUST	340	0.25	DIRECT	1656	1725	ECM	1/10	115V/1/60	1	15	-	-	1,2	A,B,C
NOTES: 1. REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATION, AND COOLING SYSTEM FOR FURTHER REQUIREMENTS. 2. REUSE EXISTING CURBS. PROVIDE CURB ADAPTOR AS REQUIRED.																
ACCESSORIES: A. BIRDSCREEN. B. GRAVITY DAMPER. C. ON/OFF SWITCH LOCATED PER ELECTRICAL PLANS																

#### LOUVER SCHEDULE

DRAWING CODE	TYPE	FRAME	DESCRIPTION	MATERIAL	LOUVER DEPTH (IN.)	SIZE (W x H) (IN.)	SERVICE	AIRFLOW (CFM)	PERFORMANCE RATINGS			NOTES	ACCESSORIES
									FREE AREA (SF)	S.P. LOSS (IN.H2O)	WATER PENETRATION (OZ./SF)		
L1	FIXED	EXTERIOR FLANGE	HORIZONTAL, WIND-DRIVEN-RAIN-RESISTANT	ALUMINUM	6	15 x 12	INTAKE	300	0.40	1	-	1,2	A
L2	FIXED	EXTERIOR FLANGE	HORIZONTAL, WIND-DRIVEN-RAIN-RESISTANT	ALUMINUM	6	12 x 12	EXHAUST	270	0.40	1	-	1,2	A
NOTES: 1. REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATION, AND COOLING SYSTEM FOR FURTHER REQUIREMENTS. 2. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLOR AND GLOSS.													
ACCESSORIES: A. BIRD SCREENING (MATERIAL TO MATCH LOUVER MATERIAL) B. DAMPER													

#### PACKAGED UNIT SCHEDULE

DRAWING CODE	SYSTEM TYPE	COOLING (AHRI STANDARD)			HOT GAS REHEAT		NATURAL GAS HEATING			EVAPORATOR FAN		ELECTRICAL			WEIGHT (LBS.)	NOTES	ACCESSORIES		
		TOTAL (MBH)	SENSIBLE (MBH)	EFFICIENCY	REHEAT CAPACITY (MBH)	COOLING LDB W/ REHEAT (°F)	GAS INPUT (MBH)	GAS OUTPUT (MBH)	STAGES	SUPPLY AIRFLOW MAXIMUM(CFM)	OUTSIDE AIRFLOW (CFM)	ESP (IN. WG.)	POWER SUPPLY (V/PH/Hz)	MCA				MOCP	
PV01	GAS-PACK	167	97	EER	12.0	115.0	83.0	350	283	MODULATING	4,000	815	0.75	208/3/60	73.0	90	2101	1,2	A,B,C,D,E,F,H
PV02	GAS-PACK	43	31	EER	13.0	28.0	72.0	60	49	MODULATING	1,280	165	0.75	208/3/60	30.0	40	1667	1,2	A,B,C,D,E,G,I
NOTES:																			
1. REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATION, AND COOLING SYSTEM FOR FURTHER REQUIREMENTS.																			
2. CONDENSER COILS TO BE COATED FOR EXPOSURE TO ASTM B117-90 3000 HOUR SALT SPRAY RESISTANCE TEST WITH NO DEGRADATION.																			
ACCESSORIES:																			
A. PROVIDE WITH HOT GAS RE-HEAT FOR DEHUMIDIFICATION CYCLE.																			
B. STAINLESS STEEL GAS HEAT EXCHANGER.																			
C. PROVIDE BACNET MSTP INTERFACE AND WALL MOUNTED ZONE TEMPERATURE AND HUMIDITY SENSOR																			
D. COIL GUARDS.																			
E. PROVIDE UNIT WITH RETURN AIR CO2 SENSOR AND MOTORIZED MODULATING RETURN/OUTSIDE AIR DAMPERS FOR DEMAND CONTROL VENTILATION.																			
F. PROVIDE VARIABLE SPEED SUPPLY AIR FAN VIA VARIABLE FREQUENCY DRIVE.																			
G. PROVIDE VARIABLE SPEED SUPPLY AIR FAN VIA ECM MOTOR.																			
H. PROVIDE UNIT WITH TWO COMPRESSORS.																			
I. PROVIDE UNIT WITH A TWO STAGE COMPRESSOR.																			

#### ROOF HOOD SCHEDULE

DRAWING CODE	TYPE	AIRFLOW (CFM)	CONSTRUCTION MATERIAL	ROOF CURB		SCREENING		FINISH	CAPACITIES AND CHARACTERISTICS					NOTES	ACCESSORIES
				CONFIGURATION	HEIGHT (IN.)	TYPE	MATERIAL		HEIGHT (IN.)	DIAMETER (IN.)	BASE (IN.)	THROAT AREA (SQ. FT.)	PRESSURE DROP (IN. WG.)		
RH01	EXHAUST	340	ALUMINUM	FLAT		BIRD	GALVANIZED	ANODIZED	9.75	35.5	30.0	1.83	0.07	1, 2	A, B
NOTES:															
1. REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATION, AND COOLING SYSTEM FOR FURTHER REQUIREMENTS.															
2. REFER TO ARCHITECTURAL DETAIL FOR MOUNTING LOCATION.															
ACCESSORIES: A. BIRD SCREEN - MATCH VENTILATOR MATERIAL.															

#### SINGLE PACKAGE DEDICATED OUTSIDE AIR UNIT SCHEDULE

DRAWING CODE	SYSTEM TYPE	OUTSIDE AIR FAN			EXHAUST AIR FAN			ENTHALPY PLATE & WHEEL - DRY DAY				ENTHALPY PLATE & WHEEL - HUMID DAY				DX COOLING & HRE REHEAT		DX HEATING		ELECTRICAL			NOTES	ACCESSORIES	
		OUTSIDE AIR (CFM)	ESP (IN H2O)	MOTOR (KW)	EXHAUST AIR (CFM)	TSP (IN H2O)	ESP (IN H2O)	MOTOR (KW)	SUMMER LAT (°F DB)	WINTER LAT (°F WB)	SUMMER LAT (°F DB)	WINTER LAT (°F WB)	TOT CAP (MBH)	SENS CAP (MBH)	TOT CAP (MBH)	SENS CAP (MBH)	TOT CAP (MBH)	SENS CAP (MBH)	VOLTAGE (V/PH/Hz)	MCA (AMPS)	MOCP (AMPS)				
DOAS01	HEAT PUMP	300	1.00	0.4	270	1.00	0.4	0.4	77.4	60.7	47.2	75.7	68.3	19.9	4.1	22.6	20.3	208/1/60	10.4	15.0	1.2,3,4,5,6		A,B,C		
NOTES:																									
1. REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATION, AND COOLING SYSTEM FOR FURTHER REQUIREMENTS.																									
2. OUTDOOR DESIGN CONDITIONS: 81.0F / 77.0F 1%DBMCBWB AND 140 GRAINS/LB WITH AN 84.0F MCBDB COOLING/DEHUMIDIFYING CONDITIONS. 26.0F 99% AND 22.0F 99.6% HEATING CONDITIONS. EQUIPMENT SELECTION SHALL MEET ALL CONDITIONS.																									
3. PERFORMANCE DATA BASED UPON MAXIMUM AIR QUANTITIES SCHEDULED.																									
4. EFFICIENCY RATED IN ACCORDANCE WITH ANSI/AHRI STANDARD 340/360.																									
5. CONTROLS CONTRACTOR SHALL PROVIDE ON/OFF SIGNAL TO UNIT BASED ON OCCUPANCY SCHEDULE.																									
6. FIELD INSTALL THE FOLLOWING MONITORING SENSORS: OUTSIDE AIR TEMPERATURE AND HUMIDITY, SUPPLY AIR TEMPERATURE AND HUMIDITY, RETURN AIR TEMPERATURE, SUPPLY FAN STATUS AND EXHAUST FAN STATUS. SENSORS SHALL BE SUPPLIED AND INSTALLED BY CONTROLS CONTRACTOR.																									
ACCESSORIES:																									
A. ECM FAN MOTORS																									
B. CONDENSER, EVAPORATOR AND REHEAT COILS TO BE COATED FOR EXPOSURE TO ASTM B117-90 3000 HOUR SALT SPRAY RESISTANCE TEST WITH NO DEGRADATION.																									
C. SINGLE POINT ELECTRICAL CONNECTION.																									

#### DIFFUSERS, REGISTERS AND GRILLES SCHEDULE

DRAWING CODE	TYPE	SERVICE	NECK SIZE (IN.)	BRANCH CONN. SIZE (IN.)	MODULE SIZE (IN.)	MATERIAL	FINISH	MOUNTING	NOTES	ACCESSORIES
S1	SQUARE CEILING DIFFUSER	SUPPLY	60	6	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	A
S2	SQUARE CEILING DIFFUSER	SUPPLY	80	8	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	A
S3	SQUARE CEILING DIFFUSER	SUPPLY	-	-	12 X 6	ALUMINUM	WHITE	DUCT SURFACE	1	
S4	SPIRAL DUCT GRILLE	SUPPLY	-	-	14 X 6	ALUMINUM	WHITE	DUCT SURFACE	1	B
S5	SPIRAL DUCT GRILLE	SUPPLY	-	-	24 X 8	ALUMINUM	WHITE	DUCT SURFACE	1	B
R1	FIXED FACE GRILLE	RETURN	20 X 20		24 X 24	ALUMINUM	WHITE	T-BAR	1,2	
R2	FIXED FACE GRILLE	RETURN	20 X 20		32 X 30	ALUMINUM	WHITE	WALL SURFACE	1,2	
R3	FIXED FACE GRILLE	RETURN	20 X 20		48 X 20	ALUMINUM	WHITE	WALL SURFACE	1,2	
E1	FIXED FACE GRILLE	EXHAUST	20 X 20		24 X 24	ALUMINUM	WHITE	T-BAR	1,2	
E2	FIXED FACE GRILLE	EXHAUST	10 X 10		12 X 12	ALUMINUM	WHITE	WALL SURFACE	1,2	
T1	FIXED FACE GRILLE	TRANSFER	-	-	24 X 5	ALUMINUM	WHITE	WALL SURFACE	1	
NOTES: 1. REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATION, AND COOLING SYSTEM FOR FURTHER REQUIREMENTS. 2. DUCT BRANCH CONNECTION SIZE TO BE EQUAL TO THE NECK SIZE OF DIFFUSER UNLESS NOTED OTHERWISE ON PLANS.										
ACCESSORIES: A. VOLUME DAMPER. B. AIR SCOOP.										

#### DUCTLESS SPLIT SYSTEM SCHEDULE

DRAWING CODE (INDOOR)	DRAWING CODE (OUTDOOR)	INDOOR UNIT		OUTDOOR UNIT		MIN SEER	MIN COP	INDOOR UNIT			OUTDOOR UNIT			NOTES	ACCESSORIES			
		ARI COOLING 80/67/85	ARI HEATING 70/47	COOLING CAPACITY	HEATING CAPACITY			FAN SA MIN-MAX (CFM)	ELECTRICAL VOLTAGE (V/PH/Hz)	MCA (AMPS)	WEIGHT (LBS)	ELECTRICAL VOLTAGE (V/PH/Hz)	MCA (AMPS)			MCCP (AMPS)	WEIGHT (LBS)	
		TOTAL	SENSIBLE	TOTAL														
		(MBH)	(MBH)	(MBH)	(MBH)													
AH01-1	HP01	14.0	10.08	14.0	20.0	25.0	16.0	3.6	353-494	208/1/60	1.45	58	208/1/60	17.2	20	126	1	A,B,C,D
AH01-2		9.0	8.1	11.4					282-353	208/1/60	1.45	58					1	A,B,C,D
AH02-1	HP02	18.0	14.4	19.0	48.0	54.0	14.7	3.2	424-600	208/1/60	1.69	62	208/1/60	37	40	269	1,2	A,B,C,D
AH02-2		18.0	14.4	19.0					424-600	208/1/60	1.69	62					1,2	A,B,C,D
NOTES:																		
1. REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATION, AND COOLING SYSTEM FOR FURTHER REQUIREMENTS.																		
2. ROUTE REFRIGERANT PIPING FROM OUTDOOR UNIT TO ASSOCIATED BRANCH CONTROLLER BC02 AND FROM BRANCH CONTROLLER TO INDOOR UNITS.																		
ACCESSORIES:																		
A. SEACOAST COATING PROTECTION ON OUTDOOR UNIT.																		
B. BACNET MSTP INTERFACE.																		
C. ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT AND CONDUCTOR FROM OUTDOOR UNIT TO INDOOR UNIT.																		
D. WIRED WALL-MOUNTED REMOTE CONTROLLER.																		

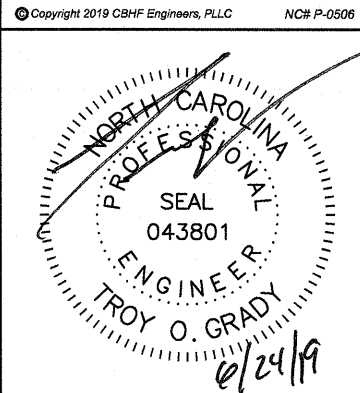
#### ELECTRIC HEATER SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	DESCRIPTION			ELECTRIC COIL		SUPPLY AIR		FAN MOTOR		ELECTRICAL			WEIGHT (LBS)	MOUNTING HEIGHT (FT)	NOTES	ACCESSORIES	
				TYPE	FAN	DISCHARGE	CAPACITY (KW)	STEPS	AIRFLOW (CFM)	THROW (FT)	SPEED (RPM)	MOTOR (HP)	POWER (V/PH/Hz)	FLA	MCA					MOCP
EUH1	QMARK	E3323TD-RP	QMARK, MARKEL	WALL HEATER	PROPELLER	HORIZONTAL	1.5	1	175.0	-	600.0	-	120/1/60	12.5	12.5	20	26	3.5	1	A,B
NOTES:																				
1. REFER TO SPECIFICATION SECTION 23 83 39 - ELECTRIC SPACE HEATING EQUIPMENT FOR FURTHER INFORMATION.																				
ACCESSORIES: A. FACTORY INSTALLED THERMOSTAT.																				
B. WALL MOUNT BRACKET																				

#### BRANCH CIRCUIT CONTROLLER SCHEDULE

DRAWING CODE	POWER INPUT (RATED) COOLING (kW)	POWER INPUT (RATED) HEATING (kW)	ELECTRICAL VOLTAGE (V/PH/Hz)	MCA (A)	MOCP (A)	WEIGHT (LBS)	NOTES	ACCESSORIES
BC02	0.003	0.003	208/1/60	10.5	15	15	1,2	A
NOTES: 1. REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATION, AND COOLING SYSTEM FOR FURTHER REQUIREMENTS. 2. PROVIDE GRAVITY DRAIN CONDENSATE PIPING AS INDICATED.								
ACCESSORIES: A. SUCTION AND LIQUID LINES SERVICE ISOLATION VALVES FOR ALL PORTS.								

#### SEE DISCLOSURE OF INFORMATION STATEMENT ON SHEET T-1

<b>CBHF</b> Engineers, PLLC 2246 Yaucoon Drive Wilmington, NC 28401 Phone: 910.791.4000 Fax: 910.791.5266 www.cbhfengineers.com 	SHEET TITLE:		<b>MECHANICAL SCHEDULES</b>		<b>M-5</b>	
	TALLEY & SMITH ARCHITECTURE INC. P.O. BOX 518 SHELBY, NC 28151-0518 409 EAST MARION ST. SHELBY, NC 28150		DEPARTMENT OF THE NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		NAVAL FACILITIES ENGINEERING COMMAND <b>INTERIOR AND EXTERIOR REPAIRS BLDG. M116</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. GAS		DR. GAS		CHK. TOG		DESIGN DR. T H BURTON, PE
SUBMITTED BY:		APPROVED:		DATE		
SATISFACTORY TO:		DATE		SIZE F		CODE IDENT. NO. 80091
SCALE: NOTED		SPEC. 05-18-0086		SHEET 35 OF 50		NAVJAC DRAWING NO. 60024597 CONST. CONTR. NO. N40085-18-B-0086