# MAINE AIR NATIONAL GUARD BUILDING 486 BOILER REPLACEMENT BANGOR, ME





LOCATION MAP







GENERAL DRAWINGS: GI001 - COVER SHEET

MECHANICAL & ELECTRICAL DRAWINGS: ME001 - MECHANICAL & ELECTRICAL LEGEND ME101 - FIRST FLOOR MECHANICAL & ELECTRICAL PLAN ME401 - ENLARGED MECHANICAL & ELECTRICAL PLANS ME501 - MECHANICAL & ELECTRICAL DETAILS

#### - PROJECT LOCATION

OWNEF ARCHITECT CONTRACTOR

SHEET No. GI001

### PIPING SERVICE LEGEND

PIPING LI	NE DESIGNATIONS
	SERVICE DESIGNA

<u>1 11</u>		
PIPE SIZE	6" HWS	SERVICE DESI

1

2

3

DUCTWORK STANDARDS

ROUND SUPPLY OR OUTSIDE AIR DUCT UP

AIR DUCT UP

AIR DUCT DN

ROUND SUPPLY OR

OUTSIDE AIR DUCT DN

DIRECTION OF AIRFLOW

DUCT PLAN-INCLINED DROP

DUCT PLAN-INCLINED RISE (DOWNSTREAM END HIGHER)

ACCESS DOOR

VOLUME DAMPER

FIRE DAMPER

(OPPOSED BLADE TYP.)

(WITH ACCESS DOORS

**UPSTREAM & DOWN** 

STREAM OF DAMPER)

MOTOR OPERATED DAMPER

DESCRIPTION

-CWS ----- CHILLED WATER SUPPLY

— S — A.C. REF. SUCTION (VAPOR)

<u>NEW</u>

----- HWR----- HOT WATER RETURN

------NG------ NATURAL GAS PIPING

GENERAL ELECTRICAL DEMO NOTES

(SHOWN OR NOT SHOWN).

GENERAL ELECTRICAL NOTES

SPACE OF OTHER EQUIPMENT.

SEALED.

EXISTING SURFACES UNLESS SPECIFICALLY NOTED OTHERWISE.

3. ALL RACEWAYS & CABLES, NO LONGER IN USE, SHALL BE REMOVED.

CONTRACTOR AND MUST BE REMOVED FROM THE SITE.

NFPA 70, 90A, 101 AND DIRECTION OF AUTHORITY HAVING JURISDICTION.

IN THE PANELBOARD DIRECTORY. DO NOT ABANDON BRANCH CIRCUIT WIRING ABOVE CEILINGS OR IN WIREWAYS.

7. ENSURE REMOVAL OF ELECTRICAL DEVICES IN CONSTRUCTION AREA DOES NOT AFFECT ADJACENT AREAS.

5. RUN SEPARATE NEUTRAL WIRE FOR EACH DEDICATED BRANCH CIRCUIT SHOWN ON THE PLANS.

2. EXACT LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRES ELECTRICAL CONNECTION IS SHOWN ON THE MECHANICAL PLANS.

----- CWR----- CHILLED WATER RETURN

-L ----- A.C. REF. LIQUID

(DOWNSTREAM END LOWER)

ROUND RETURN OR EXHAUST

ROUND RETURN OR EXHAUST

4

12"Ø

12x10

12/10

EXISTING TO REMAIN

-----EHWS------

-----EHWR-----

ECWS

-----ECWR-----

— EL ———

—ES——

—ENG———

-

\_\_\_\_\_

-----

FLEXIBLE DUCT

12"Ø 💽 .

30x12

RECTANGULAR SUPPLY OR OUTSIDE AIR DUCT UP

RECTANGULAR RETURN OR

RECTANGULAR RETURN OR

ROUND DUCT DIAMETER

DUCT SECTION-SUPPLY OR

WIDTH SECOND FIGURE IS

OUTSIDE AIR FIRST FIGURE IS

DUCT SECTION-EXHAUST OR

RECTANGULAR DUCT SIZE-

FIRST # IS SIDE SHOWN

OVAL DUCT SIZE- FIRST #

EXISTING TO BE REMOVED

→ → → → - EHWS - ★ -

-X--X--EL--X-

-X - X - - ENG - X - -

IS SIDE SHOWN

RECTANGULAR DUCT TRANSITION

EXHAUST DUCT UP

RECTANGULAR

SUPPLY DUCT DN

EXHAUST DUCT DN

IN INCHES

HEIGHT

**RETURN AIR** 

TO ROUND DUCT

	TING LINE DESI	JNATIONS
PIPE SIZE	$\overline{}$	

PIPING LINE DESIGNATIONS		
PIPE SIZE —		

<u>PIP</u>	ING LINE DESIG	NATIONS
	_	

<u>PIPING LINE DE</u>	<u>ESIGNATIONS</u>
PIPE SIZE	

PIPE SIZE	$\overline{}$	SERVICE DESIG

ווס

6	7	8	9	10	11	

<u>NEW</u>

#### GRILLE, REGISTERS, DIFFUSERS & AIRFLOW

ABBREV.	DESIGNATION	ABBREV.	<b>DESIGNATION</b>	
EG	EXHAUST GRILLE	EA	EXHAUST AIR	
RG	RETURN GRILLE	OA	OUTDOOR AIR	
SD	SUPPLY DIFFUSER	RA	RETURN AIR	_
LSD	LINEAR SUPPLY DIFFUSER	RLA	RELIEF AIR	
SG	SUPPLY GRILLE	SA	SUPPLY AIR	_
TG	TRANSFER GRILLE			
VD	VOLUME DAMPER			_

## EQUIPMENT TAG LEGEND

TAG	DESIGNATION
<u>AHU-1</u>	AIR HANDLING UNIT DESIGNATION
<u>AS-1</u>	AIR SEPARATOR DESIGNATION
<u>B-1</u>	BOILER DESIGNATION
CONV-1	CONVECTOR UNIT DESIGNATION
<u>CUH-1</u>	CABINET UNIT HEATER DESIGNATION
DWH-1	DOMESTIC WATER HEATER DESIGNATION
<u>EF-1</u>	EXHAUST FAN DESIGNATION
<u>FC-1</u>	FAN COIL DESIGNATION
FTR-1	FINNED TUBE RADIATION DESIGNATION
<u>HE-1</u>	HEAT EXCHANGER DESIGNATION
HRU-1	HEAT RECOVERY UNIT DESIGNATION
<u>L-1</u>	LOUVER DESIGNATION
<u>P-1</u>	PUMP DESIGNATION
<u>RF-1</u>	RETURN FAN DESIGNATION
<u>SF-1</u>	SUPPLY FAN DESIGNATION
<u>TSH-1</u>	TOE SPACE HEATER DESIGNATION
<u>UH-1</u>	UNIT HEATER DESIGNATION
VAV-1	VARIABLE AIR VOLUME BOX DESIGNATION
<u>XT-1</u>	EXPANSION TANK DESIGNATION

#### SECTION & DETAIL MARKERS



---\_\_\_\_O\_\_ -----LWC  $\langle 1 \rangle$ <u>UH-1</u> 11.7 MBH

#### HEATING AND VENTING SYMBOLS

	DESCRIPTION	EXISTING TO REMAIN	EXISTING TO BE REM
	BALANCING VALVE	——— (K) <mark>E</mark>	
	CONTROL VALVE	——— E	
	TRIPLE DUTY VALVE	E	<u>- + -</u> ≿⋧ <del>-</del> + -
	SHUT-OFF VALVE	E	
	BACKFLOW PREVENTER	E	
	CHECK VALVE	E 	-×-↓ ^ <sup>R</sup>
	FLOW CONTROL VALVE	Е	– 米 –ତ _ <sup>R</sup> + -
	STRAINER W/DRAIN &	E	- * - <del>    R</del> * -
	CONTROL VALVE (3-WAY)	> 	
	PRESSURE RELIEF VALVE		  
			- * - + - * -
	PRESSURE REDUCING VALVE (WATER)	E	-*-\X-R
	DIFFERENTIAL PRESSURE REGULATING VALVE	P E	
	FLOW SWITCH	E	– * – 🕅 <sup>R</sup> * -
			T/=
	CONTROL GROUP	E	
	THERMOSTAT; H-HEATING, C-COOLII	NG TE	ý P
Э.	DRAIN-OFF VALVE	ED.O.	R D.O.
	UNION		
	INCREASER OR DECREASER		
	CONCENTRIC		
	ECCENTRIC		
	DRIP LEG		
	AUTOMATIC AIR VENT		
	PIPE GUIDE		
	PIPE ANCHOR		
	DIRECTION OF FLOW		
	PIPE CAP		
)	ELBOW UP OR RISE		
)	ELBOW DOWN OR DROP		
	THERMOMETER		
	PRESSURE GAUGE		
20	LOW WATER CUT-OFF		
	TECHNICAL NOTE- APPLIES ONLY TO SHEET IN WHICH IT APPEARS.	)	
	TECHNICAL NOTE- APPLIES ONLY TO SHEET IN WHICH IT APPEARS. HVAC EQUIPMENT TAG IDENTIFICATION	)	

D	SPECIAL PURPOSE OUTLET OR EQUIPMI WITH EQUIPMENT BEING SERVED.
J	JUNCTION BOX WITH COVER
У	MOTOR - SIZE AS INDICATED - COORDIN
М	MANUAL STARTER - COORDINATE WITH
Ъ,	FUSED DISCONNECT SWITCH - NEMA EN
ব	MAGNETIC STARTER - COORDINATE W/ E

1. ELECTRICAL CONTRACTOR SHALL REVIEW ALL TRADE'S DRAWINGS. THIS SHALL INCLUDE ALL ELECTRICAL DEVICES, FIXTURES AND/OR SWITCHGEAR. ALL EXISTING EQUIPMENT SHALL REMAIN ON

2. WIRING FOR EXISTING BRANCH CIRCUIT DEVICES TO BE DEMOLISHED SHALL BE REMOVED BACK TO THE PANELBOARD. THE ASSOCIATED CIRCUIT BREAKER SHALL BE TURNED OFF AND MARKED AS SPARE

4. MAINTAIN, OR RESTORE IF INTERRUPTED BY REMOVALS OR IN PATH OF NEW CONSTRUCTION, ALL CONDUITS, BRANCH CIRCUITS, AND FEEDERS PASSING THROUGH AND SERVING UNDISTURBED AREAS

5. ALL EXISTING CONDUITS STUBBED THROUGH FLOOR SERVING ITEMS TO BE REMOVED (SHOWN OR NOT SHOWN) AND NOT REQUIRED TO BE REUSED SHALL BE CUT OFF FLUSH WITH THE SLAB DECK AND

#### 6. IN ANY AREA REQUIRING THE PERFORMANCE OF ANY TRADES WORK, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY REMOVE AND STORE ANY ELECTRICAL ITEMS IN THE PATH OF WORK, REINSTALLING AND RECONNECTING SAME AS REQUIRED IN ACCORDANCE WITH THE PLANS AND/OR AS DIRECTED AFTER COMPLETION OF OTHER TRADES WORK IN THAT AREA.

8. ALL ELECTRICAL FIXTURES, DEVICES AND EQUIPMENT SHALL BE TURNED OVER TO THE OWNER. IF OWNER DOES NOT WISH TO KEEP ITEMS, THEY BECOME THE PROPERTY OF THE ELECTRICAL

1. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN LIKE MANNER, RECTILINEAR TO BUILDING STRUCTURE, AND IN ACCORDANCE WITH ALL APPLICABLE CODES, INCLUDING, BUT NOT LIMITED TO

3. CONTRACTOR SHALL REVIEW ALL TRADES CONTRACT DOCUMENTS, AND FIELD VERIFY TO DETERMINE SPECIFIC MOUNTING LOCATIONS FOR ELECTRICAL EQUIPMENT AND CONDUITS.

4. COORDINATE ARRANGEMENT, MOUNTING, AND SUPPORT OF ELECTRICAL CONDUIT AND EQUIPMENT TO PROVIDE FOR EASE OF DISCONNECTING THE EQUIPMENT WITH MINIMUM INTERFERENCE TO OTHER INSTALLATIONS; TO ALLOW RIGHT OF WAY FOR PIPING INSTALLED AT A REQUIRED SLOPE; AND SO CONNECTING RACEWAYS SHALL BE CLEAR OF OBSTRUCTIONS AND OF THE WORKING AND ACCESS

14

15

16

17

#### MISCELLANEOUS ABBREVIATIONS GENERAL NOTES

ACCED ABBREV. DESIGNATION A ANCHOR A ANCHOR A ANCHOR A ACCESS BOOR AFF AGOVE FINISHED FLOOR AFF AGOVE FINISHED FLOOR AFF AGOVE FINISHED FLOOR AFF AGOVE FINISHED FLOOR CONTINUES HALL CONTINUES HALL ADD AR PRESSURE DROP APD AR PRESSURE DROP AWT AVERACE WATER TEMPERATURE BD BARCMETRIC DAMPER BET BUTERING AR TEMP. BET BUTERING WATER TEMPERATURE FF BUT BUTERING WATER TEMPERATURE FF A FRESH AR INTE FF A FRESH	<u> </u>			$\simeq$	
A     ANCHOR     MOUNTED 40 APR       AD     ACCESS BOOR     2.     EDU/PRENT, DUTY       APD     AR PRESSURE DROR     LOCATIONS SHOULD       ART     ABOVE FINISHED FLOOR     LOCATIONS SHOULD       AWT     AVERAGE WATER TEMPERATURE     3.       BD     BAROMETING DAMPER     5.       BDD     BACKORAFT DAMPER     4.       BDD     BACKORAFT DAMPER     5.       BDD     BACKORAFT DAMPER     1.       BDD     DACKORAFT DAMPER     1.       CFM     CUBIC FEET FER NUTE     1.       D     DRAIN     SUPPORTED FROM       D     DRAIN     SUPPORTED FROM       CFM     CUBIC FEET FER NUTE     1.       D     DRAIN     SUPPORTED FROM       EAT     ENTERING WATER TEMPERATURE     1.       CFM     CUBIC FEET FER NUTE     1.       FA     FRESHAIR     RESALL ER R       FA     FRESHAIR     RESALED WATER       <	MOVED	ABBREV.	DESIGNATION	1.	ALL NEW SPACE THEF
AD     ACCESS DOOR     2. EOUMPMENT, DUCT, ACCENTING, STORER       AFF     ABOVE FINISHED FLOOR     ECCEPT WHERE DU       APD     AR RESSURE OROP     CONTRACTORS TO A       AWT     AVERACE WATER TEMPERATURE     3. FLEXBLE CONNECT       BD     BACKGRAFT DAMPER     4. FLEXBLE CONNECT       BD     BACKGRAFT DAMPER     4. PROVIDE ACCESS TO A       BD     BACKGRAFT DAMPER     4. PROVIDE ACCESS TO A       BD     BACKGRAFT DAMPER     5. PENSIBLE CONNECT       BD     BACKGRAFT DAMPER     6. POVIDE ACCESS TO A       BD     BACKGRAFT DRAINAGE     5. PENSIBLE PARAMINA       CD     COLUMES CONDENSATE DRAINAGE     5. PENSIBLE PARAMINA       CD     DRAIN     SPENSTER, FARAMINA       CD     DRAIN     SPENSTER       ECC     ECCENTRIC <td></td> <td>А</td> <td>ANCHOR</td> <td></td> <td>MOUNTED 4'-0" ABOV</td>		А	ANCHOR		MOUNTED 4'-0" ABOV
AFF     ABOVE FINSHED RECOR     EXCEPT WHERE DI CONTRACTOR TO A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACT	_	AD	ACCESS DOOR	2.	EQUIPMENT, DUCTWO
APD         AIR PRESSURE DROP         LOCATION SHALL           AWT         AVERAGE WATER TEMPERATURE         5. FLEXIBLE CONNECT           BD         BAROMETING DAMPER         5. FLEXIBLE CONNECT           BDD         BACKDRAFT DAMPER         5. FLEXIBLE CONNECT           BDD         BACKDRAFT DAMPER         6. FLEXIBLE CONNECT           BTU         BRITISH THERMAL LINTS         DCOMMETCIONS.           BTU         BRITISH THERMAL LINTS         MCGYMORK FOR AL           CFM         CUBLE FEET FREMINUTE         POSSIBLE PARALL           D         DRAIN         SUPPORTED FROM           FL         CFM         CUBLE FEET FREMINUTE         POINT DRAINS.           BK         DY BRIA         SUPPORTED FROM         FLEXIBLE DRAINES           CFM         CUBLE FEET FREMINUTE         POINT DRAINS.         SUPPORTED FROM           BL         DY DRAIN         SUPPORTED FROM         FLEXIBLE DRAINES         FLEXIBLE CONNECTION         FLEXIBLE DRAINES           FL         ELEVATION         WITTER TERMORANES         FLEXIBLE CONNECTION         FLEXIBLE CONNECTION         FLEXIBLE CONNECTION           FL         FLEXIBLE CONNECTION         FLEXIPERITON DOWNER         FREMATION DOWNER         FREMATION DOWNER           FL         FLEXIBLE CONNECTION <td></td> <td>AFF</td> <td>ABOVE FINISHED FLOOR</td> <td></td> <td>EXCEPT WHERE DIME</td>		AFF	ABOVE FINISHED FLOOR		EXCEPT WHERE DIME
AVT     AVERAGE WATER TEMPERATURE	_	APD	AIR PRESSURE DROP		LOCATIONS SHALL BE
BD         BAROMETRIC DAMPER         5.         PERMIAN LUMBER           BDD         BACKDRAFT DAMPER         CONNECTIONS         CONNECTIONS           BTU         BRITSH THERMAL UNITS         PROVIDE ACCESS I         DUCTWORK FOR A           BTU         BRITSH THERMAL UNITS         POTORS FILL         4.         PROVIDE ACCESS I           CO         COOLING CONDENSATE DRAINAGE         5.         PPING SINLE FARAL           D         DO COLING CONDENSATE DRAINAGE         5.         PPING SINLE FARAL           D         DRAIN         SUPPORTS FILL         4.           D         DRAIN         SUPPORTS FILL         4.           D         DRAIN         SUPPORTS FILL         7.           D         DRAIN         SUPPORTS FILL         4.           D         EAT         ENTRING NATTER         7.           EAT         ENTRING NATTER         7.         ALL EQUIPMENTS           FLA         FILE NAMER         4		AWT	AVERAGE WATER TEMPERATURE	0	
BDD     BACKORAFT DAMPER     CONNECTIONS.       BDS     BOTTOM OF STELL     4.       BTU     BRITISH THERMALLINITS     MOTORS, FLE RAD       BV     BRICK VENT     OF HEATING CONS.       CD     COULID GOUDENSATE DRAINAGE     5.       CPM     CUBIC FEET PER MINUTE     ANGUES TO THE LIN       D     DRAIN     SUPPORTED FROM       CC     CCCCNITIG     6.       LCCATE ALL XAUY     OFERATION DO NO       EAT     ENTERING VATER TEMPERTURE     7.       ALL STRING THERING     ALL STRING WATER TEMPERTURE     7.       EL     ELEVATION     8.       FC     FLEXIBLE CONNECTION     8.       FC     FLEXIBLE CONNECTION     8.       FD     FIRE DAMPER     ALL DUP MENT SH ACDORDING SHALL SK       FD     FIRE DAMPER     ALL DUP MENT SH ACDORDING SHALL SK       FD     FIRE DAMPER     NTERNAL DIMENT SH ACDORDING SHALL SK       FD     FIRE DAMPER     NTERNAL DIMENT SH ACDORDING SHALL SK       FD     FIRE DAMPER     NTERNAL DIMENT SH ACDORDING SHALL SK       FLA     FULL LOAD AMPS     9.       FLA     FULL CONTR	—	BD	BAROMETRIC DAMPER	3.	BETWEEN MOTORIZEI
BOS     BOTTION OF STEEL     4.     PPONDE ACCESES       BTU     BRTISH THERMAL UNITS     MOTORS, FLTERS, MOTORS, FLTERS, DOED COOLING CONDENSATE DRAINAGE     5.     PIPING SHALL BE R MOTORS, FLTERS, DOED PARN       CFM     CUBIC PEET PER MINUTE     MOTORS, FLTERS, DOED PARN     PONSTBILE, PARALL MOTORS, FLTERS, DOED PARN       D     DRAIN     PONSTBILE, PARALL MOTORS, FLTERS, DOED PARN     PONSTBILE, PARALL PONSTBILE, PARALL MOTORS, PLTERS, PONSTBILE, PARALL PONSTBILE, PARALL MOTORS, PLTERS, PONSTBILE, PARALL MOTORS, PLTERS, PONSTBILE, PARALL PONSTBILE, PARALLES, PARALL PONSTBILE, PARALL PONSTBILE, PARALL PONSTBILE, PARALL PONSTBILE, PARALL PONSTBIL		BDD	BACKDRAFT DAMPER		CONNECTIONS.
BTU     BRITISH THERMAL UNITS     DUCTYORK FOR ALL TERM       CD     COOLING CONDENSATE DRAINAGE     5, PIPING SHALL ULES       CFM     CUBIC FEET PER MINUTE     SUPPORTED FROM       DB     DRY BULB     FROM POCKETS & S       CEC     ECCENTRIC     OPERATION, DO NO       EAT     ENTERING AIR TEMP.     1.       EAT     ENTERING AIR TEMP.     1.       ECC     ECCENTRIC     OPERATION, DO NO       VIENT     ENTERING WATER TEMPERATURE     7.       ALL EXTRON     WISTER TEMPERATURE     7.       FA     FRESH AIR     8.       FA     FRESH AIR     8.       FC     FLEXIBLE CONNECTION     8.       FA     FRED AIRER     9.	_	BOS	BOTTOM OF STEEL	4.	PROVIDE ACCESS DO
BV     BRICK VENT     OF HEATING COLE       CD     COOLING CONDENSATE DRAINAGE     5.     PIPING SHALL BE ALL       AND D     D     DRAIN     SUPPORTED FROM       BB     DRY BULB     POINT DRAINS     SUPPORTED FROM       CCC     ECCC     COCCNIRG     6.     LOCATE ALL YAR       CCC     ECCC     ECCC     TOTEL IN     WISTEMS BELOW H       CCC     ECCC     TERING AIR TEMP.     6.     LOCATE ALL YAR       CCC     ECCC     ECCC     TERING WATER TEMPERATURE     7.     ALL EXTENDE WAL       FA     FRESH AIR     BE SEALE WORK     WISTEMS BELOW H       FC     FLEXIBLE CONNECTION     8.     ALL EQUIPMENT SH ACCORNING TO MIN WALS       FA     FRESH AIR     BE SEALE WORK WALL     PECOMMENDATION       FD     FIRE DAMPER     RECOMMENDATION     B.       FLA     FULLION DAMPS     DUCTWORK SHALL       FLA     FULLION DAMPS     DUCTWORK SHALL       FLA     FULLION DAMPS     DUCTWORK SHALL       FLA     FULLING WATER TEMPERATURE     MINETING CONTON ACCOUNT AND SUCCONTON ACCOUNT AND SU		BTU	BRITISH THERMAL UNITS		
CD COOLING CONDENSATE DRAINAGE 5. PIPING SHALL BE R CPM CUBIC FEET PER MINUTE ANGLE PARALLE PER D DRAIN BERNING AND FEET PER MINUTE ANGLE PARALLE ANGLE PARALLE D DB DRY BULB PORT DIAL ANGLE PARALLE ANGLE PARALLE FCM POCKETS AL PORT DATA PER PERATURE 7. ALL EXTERIOR WAT FA FRESH AR 7. BE SEALED WEATH FA FRESH AR 7. ALL EXTERIOR WATER TEMPERATURE 7. ALL EXTERIOR WAT FA FRESH AR 7. ALL EXTERIOR WATER TEMPERATURE 7. ALL EXTERIOR WAT FA FRESH AR 7. BE SEALED WEATH FA FRESH AR 7. ALL EXTERIOR WATER TEMPERATURE 7. ALL EXTERIOR WAT FA FRESH AR 7. BE SEALED WEATH FA FRESH AR 7. BASED TO TO FRESH THE FORMER 7. ANY INT FD FIRE DAMPER 7. ALL DUCT SIZES FRESH 7. SAME. COORDING 70 FM 7. DUCT SIZES FRESH 7. SAME. COORDINATION NOR 7. ANY INT FT LF LINEAR FEET 8. SAME. COORDINATE 7. SAME. COORDINATION NOR 7.	—	BV	BRICK VENT		OF HEATING COILS.
CFM     CUBIC FEET PER MINUTE     POSIBLE PARALLAL       D     DRAIN     SUPPORTED FROM       BAT     ENTERNIS ALL SALVE     POINT DRAINS.       EAT     ENTERNIS ALL SALVE     POINT DRAINS.       ECC     ECCENTRIC     OPERATURE       PIEL     ELEVITON     POINT DRAINS.       FA     FRESH AR     POINT DRAINS.       FA     FRESH AR     POINT DRAINS.       FD     FIRE DAMPER     7.       FD     FIRE DAMPER     RECOMMENDATION       FLA     FULL COLD AMPS     9.       CPPM     GALLONS PER MINUTE     PRIVER TAY INTE       HP     HORSEPOWER     PPINCE, ELECTRICA       HP     HORSEPOWER     PPINCE, ELECTRICA       HP     HORSEPOWER     PPINCE, ELECTRICA       HP     HORSEPOWER     PROVENTION AND       HP     HORSEPOWER     PPINCE, ELECTRICA       HP     HORSEPOWER     POUT DRAINS TO MORK       HP     HORSEPOWER     PPINCE, ELECTRICA		CD	COOLING CONDENSATE DRAINAGE	5	PIPING SHALL BE RUN
D         DRAIN         SUPPORTED FROM SUPPORTED FROM           EAT         ENTERING AIR TEMP.         6.           ECC         ECCENTRIC         6.           ECC         ECCENTRIC         6.           EL         ELEVATION         WSTEMS BELOW H           FA         FRESH AIR         DESTALL VALVE           FA         FRESH AIR         DESTALE WATCH TEMPERATURE         7.           FC         FLEXIBLE CONNECTION         8.         ALL EXTERIOR WATCH TEMPERATURE           FC         FLEXIBLE CONNECTION         8.         ALL EXTERIOR WATCH TEMPERATURE           FD         FIRE DAMPER         RECOMMENDATION         RECOMMENDATION           FLA         FULLIOAD AMPS         9.         DUCTWORK SHALL           FLA         FULLIOAD AMPS         9.         DUCTWORK SHALL           FLA         FULLIOAD SPER MINUTE         PRIVELECTRON           HP         HORSEPOWER         PIPINS, ELECTRON           HVAC         HEATING VENTILATING         WORK           HVAC         HEATING VENTILATING         WORK           HVAC         HEATING VENTILATING         WORK           LAT         LEAVING VENTILATING         WORK           LAT         LEAVING AIR TEMP.	_	CFM	CUBIC FEET PER MINUTE	0.	POSSIBLE, PARALLEL
DB     DRY BULB     FROM POCKETS A: POINT DARMS.       EAT     ENTERING AIR TEMP     6.     LOGATE ALL VALVE OPERATION. DO NO.       EL     ELEVATION     WISTEMS BLOW H       FA     ENTERING WATER TEMPERATURE     7.     ALL EXTERIOR WATER TEMPERATURE     7.       FA     FRESH AIR     8.     ALL EXTERIOR WATER TEMPERATURE     7.     ALL EXTERIOR WATER TEMPERATURE       FC     FLEXIBLE CONNECTION     8.     ALL EXTERIOR WATER TEMPERATURE     7.       FD     FIRE DAMPER     RECOMMENDATION     8.     ALL EXTERIOR WATER TEMPERATURE       FLA     FULL LOAD AMPS     9.     DUCTWORK SHALL       PHP     HORSEPOWER     PRIVELECTION, ARC       HVAC     HEATING, VENTLATING & ARECONDITIONING     WORK       HVAC     HEATING, VENTLATING & ARECONDITIONING     10.       HVAC     HEATING, VENTLATING & ARECONDITIONING     WORK       R     LAT     LEAVING WATER TEMPERATURE     11.       MAX     MAXIMUM     MAX     MAXIMUM       MBH     THOUSAND BRTISH THERMAL UNITS PER HOUR     11.       MD     MANU		D	DRAIN		ANGLES TO THE LINE
EAT ENTERING AIR TEMP. ECC ECCENTRIC OPATEALU VALVE OPERATION. DO M EL ELEVATION WISTEMS BELOWH FA FRESHAR FC FLEXIBLE CONNECTION 8. ALL EQUIPMENT SF FC FLEXIBLE CONNECTION 8. ALL EQUIPMENT SF FD FIRE DAMPER 9. DUCTWORK SHALL FREVENT AVY INTE FP HOR GALLONS PER MINUTE 9. PHONG, ELECTRICA HP HORSEPOWER 9. PHONG, ELECTRICA HVBB HOT WATER BASEBOARD 10. ALL DUCT SIZES SF HVBB HOT WATER BASEBOARD 10. ALL DUCT SIZES SF HVBB HOT WATER CHASEBOARD 10. ALL DUCT SIZES SF HVBB HOT WATER CHASEBOARD 10. ALL DUCT SIZES SF HVBB HOT WATER CHASEBOARD 10. ALL DUCT SIZES SF HVBC LEVENT 10000 10. OVER ST RC LF LINEAR FEET 10. DUCT SIZES SF HVBC LOW WATER CUT-OFF LF LINEAR FEET 10. DUCT SIZES SF HVMCO LOW WATER CUT-OFF LVT LEAVING AIR TEMP. 11. CONTRACTOR TO DUCT SIZES PER RC LF LINEAR FEET 10. DUCT SIZES PER MAX MAXIMUM MBH THOUSAND BRITISH THERMAL UNITS PER HOUR MD MANUAL DAMPER MD MANUAL DAMPER MN MANUAL VENT N.C. NORMALLY CLOSED OA OUTSIDE AIR OGV OIL SAFETY VALVE PD PRESSURE DROP RIC RUN IN COVER RPM REVOLUTIONS PER MINUTE SP STATIC PRESSURE TOS TOP OF STELL TV TURNING VANES TVP. TYPICAL V VENT VD VOLUME DAMPER WITH WB WE TBULB ZD ZONE DAMPER WI WITH WB WE TBULB ZD ZONE DAMPER	_	DB	DRY BULB		FROM POCKETS & SA
ECC       ECCENTRIC       OCATE ALL VARIANCE         EL       ELEVATION       OCATE ALL VARIANCE         EMT       ENTERING WATER TEMPERATURE       7.         FA       FRESH AIR       ESCALED WEATH         FC       FLEXIBLE CONNECTION       8.         FD       FIRE DAMPER       RECOMMENDATION         FLA       FULL LOAD AMPS       9.         PD       FIRE DAMPER       PROVER         HP       HORSEPOWER       PIPMENT SMACOMMENDATION         HP       HORSEPOWER       PIPMENT SMACOMMENDATION         HVAC       HEATING, VENTILATING       WORK,         HVBB       HOT WATER BASEBOARD       10.         HVZ       HERTZ       11.       CONTRACTOR TO POPOLIC SIZES, PIPE         R       LAT       LEAVING AR TEMP.       DUCT SIZES, PIPE         R       LAT       LEAVING WATER TEMPERATURE       MAIN MINIMARIANCIANDARY         MD       MAUAL DAMPER       NAIL OCONDINAT       SAME CONDINAT         R       LAT       LEAVING WATER TEMPERATURE       MAIN MINIMARIANCIANDARY         MD       MAUAL DAMPER       NAIL OCONDINAT       SAME CONDINAT         R       LWCO       LOW WATER CUT-OFF       NAIL MAINIMARIANCIANDER		EAT	ENTERING AIR TEMP.		POINT DRAINS.
EL ELEVATION WISTENS BELOWN ELEVATION WISTENS BELOWN FA ENTERING WATER TEMPERATURE 7. ALL EXTERIOR WAI FA FRESH AIR BE SEALED WEATH FC FLEXIBLE CONNECTION 8. ALL EXTERIOR WAI BE SEALED WEATH FC FLEXIBLE CONNECTION 8. ALL EXTERIOR WAI FD FIRE DAMPER RECOMMENDATION FLA FULL LOAD AMPS 9. DUCTWORK SHALL PREVENT ANY INTE HP HORSEPOWER PIPENR, ELECTRICA HVAC HEATING, VOTHLATING & AIR CONDITIONING HVAC HEATING, VOTHLATING & AIR CONDITIONING HVAC HEATING, VOTHLATING & AIR CONDITIONING HVAC HEATING, VOTHLATING WORK, KA AIR CONDITIONING HVAC HEATING, VOTHLATING WORK, LECTRICA HVWBB HOT WATER BASEBOARD 10. ALL DUCT SIZES, PIPE IF LIFA LICAGE REET INCLUDING LOCATI SAME CONDITIONING HVC LEAVING AIR TEMP. DUCTWORK STALL DIMENSION HZ HERTZ IF LIFA LICAGE REET SINCE CONTRACTOR TO FOR LWCD LOW WATER CUT-OFF LWT LEAVING WATER TEMPERATURE MAX MAXIMUM MBH THOUSAND BRITISH THERMAL UWOS ER HOUR MD MANUAL DAMPER MIN MINIMIM MD MANUAL DAMPER MV MANUAL VENT N.C. NORMALLY CLOSED OA OUTSIDE AIR OSV OLI SAFETY VALVE PD PRESSURE DROP RIC RUN IN COVER RPM REVOLUTIONS PER MINUTE SP STATIC PRESSURE TOS TOP OF STELL TV TURNING VANES TYP. TYPICAL V VUENT VO VOLUME DAMPER WITH WB WET BULB ZD ZONE DAMPER RE EXISTING TO REMAIN ER EXISTING TO REMAIN ER EXISTING TO REMAIN ER EXISTING TO REMAIN RE EXISTING TO REMOVED NR NEW TO REPLACE EXISTING IN EXISTING LOCATION R EXISTING TO REPLACE EXISTING IN EXISTING LOCATION	_	ECC	ECCENTRIC	6.	LOCATE ALL VALVES
EWT ENTENING WATER TEMPERATURE 7. ALL EXTERIOR WAL FA FRESH AIR 7. ALL EXTERIOR WAL FA FRESH AIR 7. ALL EXTERIOR WAL FA FRESH AIR 7. ALL EXTERIOR WAL FC FLA FULL COMPECTION 8. ALL ECOUPMENT SH ACCOMMENDATION FLA FULL CAD AMPS 9. DUCTWORK SHALL PREVENT MAY INTE HP HORSEPOWER PIPING. ELECTRICA HVAC HEATING, VENTLATING & AIR CONTINIONING 10. ALL DUCT SIZES SH INVERS HOT WATER BASEBOARD 10. ALL DUCT SIZES SH INTERNAL DIMENSIS FL LAT LEAVING AIR TEMP. 11. CONTRACTOR TO FD DUCT SIZES, PIPES LAT LEAVING AIR TEMP. 11. CONTRACTOR TO FD DUCT SIZES, PIPES LIF LINEAR FEET SING. LINCA REFET SING. CONTRACTOR TO FF LWCO LOW WATER CUT-OFF LWC LOW WATER CUT-OFF LWC LOW WATER CUT-OFF LWT LEAVING WATER TEMPERATURE MAX MAXIMUM MDH THOUSAND BRITISH THERMAL UNITS FER HOUR MD MANUAL DAMPER MIN MINIMM MOD MOTOR OPERATED CONSEL OA OUTSIDE AIR OSV OIL SAFETY VALVE PD PRESSURE DROP RIC RUN IN COVER RPM REVOLUTIONS PER MINUTE SP STATIC PRESSURE TOS TOP OF STEEL TV TURNING VANES TYP. TYPICAL V VENT VD VOLUME DAMPER WI WITH WB WET BULB ZD ZONE DAMPER E EXISTING TO REMAIN ER EXISTING TO REMAIN		EL	FLEVATION		W/STEMS BELOW HOP
FA       FRESH AIR       FRESH AIR       BESEALED WEATH         FA       FRESH AIR       BESEALED WEATH         FC       FLEXIBLE CONNECTION       8.       ALL EOUPWEAT SA         FD       FIRE DAMPER       RECOMMENDATION         FLA       FULL LOAD AMPS       9.       DUCTWORK SHALL         GPM       GALLONS PER MINUTE       PROVER       PROVENT ANY INFE         HP       HORSEPOWER       PROVENT ANY INFE       PROVENT ANY INFE         HP       HORSEPOWER       PROVENT ANY INFE       PROVENT ANY INFE         HVAC       HEATING, VENTLATING       WORK.       WORK.         HVAC       HEATING, VENTLATING       WORK.       WORK.         HVAC       HERTZ       11.       CONTRACTOR TO DUCT SIZES, SENDES         HZ       HERTZ       INTERNAL DIMENSI       SAME. COORDINAT         R       LAT       LEATING VENT CONTRACTOR TO PUCT SIZES, SENDES       DUCT SIZES, SENDES         LAT       LATING VARTER TEMPERATURE       INCONTRACTOR TO PUCT SIZES, SENDES       DUCT SIZES, SENDES         LAT       LAT       LATING VARTER CUT-OFF       LWCO       LWCO       LOW WATER CUT-OFF         LWT       LANING MAXIMUM       MD       MAXIMANUAL DAMPER       MN <t< td=""><td>_</td><td>FWT</td><td></td><td>7</td><td></td></t<>	_	FWT		7	
FC       FLEXBLE CONNECTION       8. ALL EQUIPMENT SMACCORDING TO MACCORDING TO MACCORDINAL DIMENSION TO DEPENDATE DIMENTINAL DIMENSION TO DEPENDATE DIMENTIAL DIMENSION TO DEPENDATE DIMENSION TO DEPENDATE DIMENSION TO DEPENDATE DIMENSION TO DEPENDINCE DIMENSION TO DEPENDINCE DIMENSION TO DEPENDINCE DIMENSION TO DEPENDINCE           PD         PRESSURE DROP         TOS         TOP OF STELL         TV         TURING VANES         TVP.         TYPICAL         TV         TURING VANES         TVP.         TYPICAL         TV         TURING VANES         TVP.         TYPICAL		FA		7.	BE SEALED WEATHER
FD       FIRE DAMPER       ALECOMPARIATION         FD       FIRE DAMPER       ALECORDING TO M         FLA       FULL LOAD AMPS       9.         GPM       GALLONS PER MINUTE       PREVENT ANY INTE         HP       HORSEPOWER       PPIND, ELECTRCA         HVAC       HEATING, VENTLATING       WORK.         HVBB       HOT WATER BASEBOARD       10.       ALL DOUT SIZES SHIPPING, ELECTRCA         HZ       HERTZ       11.       CONTRACTOR TO F         LF       LIRAR LOCKED ROTOR AMPS       EXISTING CONDITIONING CONTRACTOR TO FF         LWCO       LOW WATER TEMPERATURE       SAME.COORDINAT         MAX       MAXIMUM       MAXIMUM       MEH         MD       MANUAL DAMPER       MIN       MINIMUM         MD       MANUAL DAMPER       MIN       MINIMUM         MOD       MOTOR OPERATED DAMPER       MV       MANUAL VENT         N.C.       NORMALLY CLOSED       OA       OUTSIDE AIR         OSV       OIL SAF	_	FC		Q	
FLA FULL LOAD AMPS FLA FULL LOAD AMPS GPM GALLONS PER MINUTE PEVENT ANY INTE HP HORSEPOWER PROTECTION, ARC WORK. HVAC HEATING, VENTLATING WORK. A AR CONDITIONING A AR CONDITIONING HZ HERTZ HZ HERTZ LAT LEAVING AIR TEMP. LF LINEAR FEET NICUUCING LOATING R LWCO LOW WATER CUT-OFF LWT LEAVING WATER TEMPERATURE MAX MAXIMUM MBH THOUGH DEMTRE MAX MAXIMUM MBH THOUGH DEMTRE MOD MOTOR OPERATED DAMPER MIN MINIMUM MOD MOTOR OPERATED DAMPER MV MANUAL VENT N.C. NORMALLY CLOSED OA OUTSIDE AIR OSV OIL SAFETY VALVE PD PRESSURE DROP RIC RUN IN COVER RPM REVOLUTIONS PER MINUTE SP STATIC PRESSURE TOS TOP OF STEEL TV TURNING VANES TYP. TYPICAL V VENT VD VOLUME DAMPER MIN WITH WB WET BULB ZD ZONE DAMPER E EXISTING RELOCATED NR NEW TO REPLACE EXISTING IN EXISTING LOCATION R EXISTING RELOCATED NR NEW TO REPLACE EXISTING IN EXISTING LOCATION R EXISTING RELOCATED R EFMOVE & PELOCATED DAMPER MIN WITH WB WET BULB ZD ZONE DAMPER E EXISTING RELOCATED R EXISTING RELOCATED R EXISTING TO REPLACE EXISTING IN EXISTING LOCATION R EXISTING TO REPLACE EXISTING IN EXISTING LOCATION R EXISTING TO REPLACE EXISTING IN EXISTING LOCATION	_	FD		0.	ACCORDING TO MAN
GPM GALLONS PER MINUTE 9. DUCTWORK SHALL GPM GALLONS PER MINUTE 9. PPING, ELECTRICA HP HORSEPOWER 9. PPING, ELECTRICA HVAC HEATING, VENTILATING WORK. A AR CONDITIONING HVBB HOT WATER BASEBOARD 10. ALL DUCT SIZES SH HZ HERTZ 11. CONTRACTOR TO F LAT LEAVING AIR TEMP. DUCT SIZES, PIPES LAT LEAVING AIR TEMP. DUCT SIZES, SH UNCO LOW WATER CUT-OFF LWCO LOW WATER CUT-OFF LWCO LOW WATER CUT-OFF LWT LEAVING WATER TEMPERATURE MAX MAXIMUM MBH THOUSAND BRITISH THERMAL UNITS PER HOUR MD MANUAL DAMPER MIN MINIMUM MOD MOTOR OPERATED DAMPER MV MANUAL DAMPER MV MANUAL DAMPER MV MANUAL DAMPER MV MANUAL DAMPER MV MANUAL VENT N.C. NORMALLY CLOSED OA OUTSIDE AIR OSV OL SAFETY VALVE PD PRESSURE DROP RIC RUN IN COVER RPM REVOLUTIONS PER MINUTE SP STATIC PRESSURE TOS TOP OF STEEL TV TURNING VANES TYP. TYPICAL V VENT VD VOLUME DAMPER WW WITH WB WET BULB ZD ZONE DAMPER E EXISTING TO REMAIN ER EXISTING RELOCATED NR NEW TO REPLOCE EXISTING IDCATION R EXISTING RELOCATED NR NEW TO REPLOCE EXISTING IDCATION R EXISTING RELOCATED NR NEW TO REPLOCE TE STING OCATION R EXISTING RELOCATED R EXISTING RELOCATED R REPLOCET EXISTING IDCATION R EXISTING RELOCATED R REPLOCET EXISTING ID A REPLOCET EXISTING LOCATION R EXISTING TO REPLOCET EXISTING IDCATION		FL A			RECOMMENDATIONS.
GMM     GALLORS PER MINUTE     PREVENT ANY INTE       HP     HORSEPOWER     PPIPING, ELECTRICA       HVAC     HEATING, VENTILATING     WORK.       HVBB     HOT WATER BASEBOARD     10. ALL DUCT SIZES SF       HZ     HERTZ     11. CONTRACTOR TOP       LAT     LEAVING AIR TEMP.     DUCT SIZES, PIPE S       LAT     LEAVING AIR TEMP.     DUCT SIZES, PIPE S       LF     LINEAR FEET     INCLUDING LOCAT       R     LWCO     LOW WATER CUT-OFF     EXISTING CONDITION       LWCO     LOW WATER CUT-OFF     EXISTING CONDITION     EXISTING CONDITION       MAX     MAXIMUM     MAK     MAXIMUM       MD     MANUAL DAMPER     INTIS PER HOUR       MD     MANUAL DAMPER     MIN       MIN     MINNUM     MOD     MOTOR OPERATED DAMPER       MV     MANUAL VENT     N.C.     NORMALLY CLOSED       OA     OUTSIDE AIR     SP     STATIC PRESSURE       OSV     OIL SAFETY VALVE     PD     PRESSURE DROP       RIC     RUN IN COVER     RPM     REVOLUTIONS PER MINUTE       SP     STATIC PRESSURE     TOF OF STEEL     TV       TV     TURING VANES     TYP.     TYPICAL       V     VENT     VO     VOLUME DAMPER	_	FLA		9.	DUCTWORK SHALL BE
HP     HORSEPOWER     PROTECTION, ARCI       HVAC     HEATING VENTLATING VORK.     WORK.       HWBB     HOT WATER BASEBOARD     10. ALL DUCT SIZES SPI       HZ     HERTZ     11. CONTRACTOR TO F       LAT     LEAVING AIR TEMP.     DUCT SIZES, PIPES       LF     LIRA     LOCKED ROTOR AMPS     EXISTING CONDINAT       R     LWCO     LOW WATER CUT-OFF     SAME. COORDINAT       LWT     LEAVING WATER TEMPERATURE     MAX     MAXIMUM       MBH     THOUSAND BRITISH THERMAL     UNITS FER HOUR       MAX     MAXIMUM     MBH     THOUSAND BRITISH THERMAL       MAX     MAXIMUM     MOD     MOTOR OPERATED DAMPER       MV     MANUAL DAMPER     MIN     MININUM       MOD     MOTOR OPERATED DAMPER     MV       MV     MANUAL VENT     N.C.     NORMALLY CLOSED       OA     OUTSIDE AIR     OSV     OIL SAFETY VALVE       PD     PRESSURE DROP     RIC     RIM       RPM     REVOLUTIONS PER MINUTE     SP     STATIC PRESSURE       SP     STATIC PRESSURE     TOS     TOP OF STEEL       TV     TURNING VANES     TYP.     TYPICAL       VD     VOLUME DAMPER     UNTH       WB     WET BULB     ZD     ZONE DAMPER		GPM	GALLONS PER MINUTE		PREVENT ANY INTERF
HVAC     HEATING, SAUR CONDITIONING     WORK.       AAR CONDITIONING     10. ALL DUCT SIZES SINTERNAL DIMENSINTERNAL DIMENSINTER CUTOFF       LF     LINEAR FEET     INCLUDING LOCATH       LRA     LOCKED ROTOR AMPS     EXISTING CONDITIONING CONDITIONE       R     LWCO     LOW WATER CUT-OFF       LWT     LEAVING WATER TEMPERATURE     MAX       MAX     MAXIMUM     MBH     THOUSAND BRITISH THERMAL       UNITS PER HOUR     UNITS PER HOUR     MIN       MD     MANUAL DAMPER     MIN       MIN     MINIMUM     MOD     MOTOR OPERATED DAMPER       MV     MANUAL DAMPER     MV       MD     MANUAL VENT     N.C.       N.C.     NORMALLY CLOSED     OA       OSV     OIL SAFETY VALVE     PD       PD     PRESSURE DROP     RIC       RIC     RUN IN COVER     RPM       REVOLUTIONS PER MINUTE     SP       SP     STATIC PRESSURE       TVP.     TYPICAL       V     VENT       VD     VOLUME DAMPER       WW     WITH       WB     WET BULB       ZD     ZONE DAMPER <td< td=""><td></td><td>HP</td><td>HORSEPOWER</td><td></td><td>PROTECTION, ARCHIT</td></td<>		HP	HORSEPOWER		PROTECTION, ARCHIT
HWBB       HOT WATER BASEBOARD       10. ALL DUCT SIZES SINTERNAL DIMENSI         HZ       HERTZ       11. CONTRACTOR TO F         LAT       LEAVING AIR TEMP.       11. CONTRACTOR TO F         LF       LINEAR FEET       INCLUDING LOCATING         R       LRA       LOCKED ROTOR AMPS       EXISTING CONDITING CONDITING         LWCO       LOW WATER CUT-OFF       EXISTING CONDITING       EXISTING CONDITING         MAX       MAXIMUM       MBH       THOUSAND BRITISH THERMAL       EXISTING CONDITING         MD       MANUAL DAMPER       MIN       MINIMUM       MOD         MOD       MOTOR OPERATED DAMPER       MV       MANUAL VENT         N.C.       NORMALLY CLOSED       OA       OUTSIDE AIR         OSV       OIL SAFETY VALVE       PD       PRESSURE DROP         RC       RVM       REVOLUTIONS PER MINUTE       SP         SP       STATIC PRESSURE       ISTATIC PRESSURE       ISTATIC PRESSURE         TV       TURNING VANES       ISTATIC PRESSURE       ISTATIC PRESSURE         TV       TURNING VANES       ISTATIC PRESSURE       ISTATIC PRESSURE         TV       TURNING VANES       ISTATIC PRESSURE       ISTATIC PRESSURE         TV       VENT       VO       <		HVAC	HEATING, VENTILATING & AIR CONDITIONING		WORK.
HZ       HERTZ       INTERNAL DIMENSIST         R       LAT       LEAVING AIR TEMP.       INCONTRACTOR TO F         LF       LINEAR FEET       NICLUDING LOCATT         R       LWCO       LOW WATER CUT-OFF         LWCO       LOW WATER CUT-OFF       EXISTING CONDITY         MAX       MAXIMUM       MBH         MBH       THOUSAND BRITISH THERMAL       UNITS PER HOUR         MD       MANUAL DAMPER       MOD         MD       MANUAL DAMPER       MOD         MOD       MOTOR OPERATED DAMPER       MV         MV       MANUAL VENT       N.C.         N.C.       NORMALLY CLOSED       OA         OSV       OIL SAFETY VALVE       PD         PD       PRESSURE DROP       RIC         RIC       RUN IN COVER       RPM         REVOLUTIONS PER MINUTE       SP       STATIC PRESSURE         TOS       TOP OF STEEL       V         TV       TURNING VANES       TYP.         TYP.       TYPICAL       V         VO       VOUME DAMPER       MI         WI       WITH       MB         WB       WET BULB       ZD         ZD       ZONE DAMPER		HWBB	HOT WATER BASEBOARD	10.	ALL DUCT SIZES SHO
LAT       LEAVING AIR TEMP.       11. CONTRACTOR TO P         LF       LINEAR FEET       NCLUDING LOCATI         LRA       LOCKED ROTOR AMPS       EXISTING CONDITING         LWCO       LOW WATER CUT-OFF       EXISTING CONDITING         LWT       LEAVING WATER TEMPERATURE       MAX         MAX       MAXIMUM       MAX         MBH       THOUSAND BRITISH THERMAL       UNITS PER HOUR         MD       MANUAL DAMPER       MIN         MD       MOTOR OPERATED DAMPER       MV         MV       MANUAL VENT       N.C.         N.C.       NORMALLY CLOSED       OA         OAV       OUTSIDE AIR       OSV         OSV       OIL SAFETY VALVE       PD         PD       PRESSURE DROP       RIC         RIC       RUN IN COVER       RPM         REVOLUTIONS PER MINUTE       SP       STATIC PRESSURE         SP       STATIC PRESSURE       TOP OF STEEL         TV       TURNING VANES       TYP.         TYP.       TYPICAL       V         VU       VENT       VD         VD       VOLUME DAMPER       MIN         WITH       WB       WET BULB         ZD	—	HZ	HERTZ		INTERNAL DIMENSION
IF       LINEAR FEET       INCLUDING LOCATING         R       LRA       LOCKED ROTOR AMPS       EXISTING CONDINAT         R       LWCO       LOW WATER CUT-OFF       EXISTING CONDITION         LWT       LEAVING WATER TEMPERATURE       MAX       MAXIMUM         MBH       THOUSAND BRITISH THERMAL       UNITS PER HOUR         MD       MANUAL DAMPER       MIN       MINIMUM         MOD       MOTOR OPERATED DAMPER       MV       MANUAL VENT         N.C.       NORMALLY CLOSED       OA       OUTSIDE AIR         OSV       OIL SAFETY VALVE       PD       PRESSURE DROP         RIC       RUN IN COVER       RPM       REVOLUTIONS PER MINUTE         SP       STATIC PRESSURE       TOS       TOP OF STEEL         TV       TURNING VANES       TYP.       TYPICAL         V       VENT       VD       VOLUME DAMPER         WW       WITH       WB       WET BULB       ZD         ZD       ZONE DAMPER       E       E       EXISTING TO REMAIN         ER       EXISTING TO REMAIN       E       E       EXISTING TO REMAIN         RR       REWOVE A RELOCATE EXISTING IN EXISTING LOCATION       R       EXISTING TO BE REMOVED	_	LAT	LEAVING AIR TEMP.	11.	CONTRACTOR TO FIE
IRA       LOCKED ROTOR AMPS       SAME. COORDINAT         R       LWCO       LOW WATER CUT-OFF         LWT       LEAVING WATER TEMPERATURE         MAX       MAXIMUM         MBH       THOUSAND BRITISH THERMAL         UNITS PER HOUR         MD       MANUAL DAMPER         MIN       MINUM         MOD       MOTOR OPERATED DAMPER         MV       MANUAL VENT         N.C.       NORMALLY CLOSED         OA       OUTSIDE AIR         OSV       OIL SAFETY VALVE         PD       PRESSURE DROP         RIC       RUN IN COVER         RPM       REVOLUTIONS PER MINUTE         SP       STATIC PRESSURE         TOS       TOP OF STEEL         TV       TURNING VANES         TYP.       TYPICAL         V       VENT         VD       VOLUME DAMPER         WB       WET BULB         ZD       ZONE DAMPER         E       EXISTING TO REMAIN         ER       EXISTING TO REMAIN         E       EXISTING TO REMAIN         ER       EXISTING TO REMAIN         ER       EXISTING TO REMAIN         ER       E		LF	LINEAR FEET		INCLUDING LOCATION
R       LONG LOW WATER CUT-OFF         LWT       LEAVING WATER TEMPERATURE         MAX       MAXIMUM         MBH       THOUSAND BRITISH THERMAL UNITS PER HOUR         MD       MANUAL DAMPER         MIN       MINIMUM         MOD       MOTOR OPERATED DAMPER         MV       MANUAL VENT         N.C.       NORMALLY CLOSED         OA       OUTSIDE AIR         OSV       OIL SAFETY VALVE         PD       PRESSURE DROP         RIC       RUN IN COVER         RPM       REVOLUTIONS PER MINUTE         SP       STATIC PRESSURE         TOS       TOP OF STEEL         TV       TURNING VANES         TYP.       TYPICAL         V       VENT         VD       VOLUME DAMPER         WW       WITH         WB       WET BULB         ZD       ZONE DAMPER         E       EXISTING TO REMAIN         ER       EXISTING TO REMAIN         ER       EXISTING TO BE REMOVED         RR       REMOVE & REI OCATE EXISTING IN EXISTING LOCATION	<u></u>	LRA			SAME. COORDINATE N
LWT LEAVING WATER TEMPERATURE MAX MAXIMUM MBH THOUSAND BRITISH THERMAL UNITS PER HOUR MD MANUAL DAMPER MD MANUAL DAMPER MIN MINIMUM MOD MOTOR OPERATED DAMPER MV MANUAL VENT N.C. NORMALLY CLOSED OA OUTSIDE AIR OSV OIL SAFETY VALVE PD PRESSURE DROP RICC RUN IN COVER RPM REVOLUTIONS PER MINUTE SP STATIC PRESSURE TOS TOP OF STEEL TV TURNING VANES TVP. TYPICAL V VENT VD VOLUME DAMPER WW WITH WB WET BULB ZD ZONE DAMPER E EXISTING TO REMAIN ER EXISTING IN EXISTING LOCATION R EXISTING TO BE REMOVED RR EMEMOVE & RELOCATE EXISTING IN EXISTING LOCATION R EXISTING TO BE REMOVED RB REMOVE & RELOCATE EXISTING IN EXISTING LOCATION	R	LWCO			EXISTING CONDITION
MAXMAXIMUMMBHTHOUSAND BRITISH THERMAL UNITS PER HOURMDMANUAL DAMPERMDMINIMUMMODMOTOR OPERATED DAMPERMVMANUAL VENTN.C.NORMALLY CLOSEDOAOUTSIDE AIROSVOIL SAFETY VALVEPDPRESSURE DROPRICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTYP.TYPICALVVENTVDVOLUME DAMPERWMWITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING TO REMAINRREKISTING TO BE REMOVEDRREKING TO BE REMOVEDRRREMOVE & RELOCATE EXISTING IN EXISTING LOCATIONRRREMOVE & RELOCATE EXISTING IN EXISTING LOCATION		LWT			
MBHUNITS PER HOURMDMANUAL DAMPERMDMINIMUMMODMOTOR OPERATED DAMPERMVMANUAL VENTN.C.NORMALLY CLOSEDOAOUTSIDE AIROSVOIL SAFETY VALVEPDPRESSURE DROPRICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTYP.TYPICALVVOLUME DAMPERW/WITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING TO RE REMOVEDRRREMOVE & RELOCATE EXISTING IN EXISTING LOCATIONRRREMOVE & RELOCATE EXISTING		MAX			
MDMANUAL DAMPERMINMINIMUMMODMOTOR OPERATED DAMPERMVMANUAL VENTN.C.NORMALLY CLOSEDOAOUTSIDE AIROSVOIL SAFETY VALVEPDPRESSURE DROPRICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETVTOP OF STEELTVTURNING VANESTYP.TYPICALVDVOLUME DAMPERVDVOLUME DAMPERVDVOLUME DAMPERVDSTATIC TERSURERESUSTING TO REMAINRESUSTING TO REMAINRESUSTING TO REMAINRESUSTING TO REMAINRESUSTING TO REMAINRESUSTING TO REMAINRESUSTING RELOCATEDNRREW TO REPLACE EXISTING IN EXISTING LOCATIONRRREMOVE & RELOCATE EXISTING IN EXISTING LOCATION		MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR		
MINMINIMUMMODMOTOR OPERATED DAMPERMODMANUAL VENTN.C.NORMALLY CLOSEDOAOUTSIDE AIROSVOIL SAFETY VALVEPDPRESSURE DROPRICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTYP.TYPICALVVENTVDVOLUME DAMPERWAWITHWBWET BULBZDZONE DAMPEREREXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONRREMOVE & RELOCATE EXISTING		MD	MANUAL DAMPER		
MODMOTOR OPERATED DAMPERNVMANUAL VENTN.C.NORMALLY CLOSEDOAOUTSIDE AIROSVOIL SAFETY VALVEPDPRESSURE DROPRICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTVP.TYPICALVVOLUME DAMPERVDVOLUME DAMPERVDVOLUME DAMPERVDVOLUME DAMPERVDSTATING TO REMAINEEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONRREMOVE & REI OCATE EXISTING		MIN	MINIMUM		
MVMANUAL VENTN.C.NORMALLY CLOSEDOAOUTSIDE AIROSVOIL SAFETY VALVEPDPRESSURE DROPRICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTYP.TYPICALVDVOLUME DAMPERVDVOLUME DAMPERVDVOLUME DAMPERZDZONE DAMPERESTSTING TO REMAINEREXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONRREMOVE & RELOCATE EXISTING		MOD	MOTOR OPERATED DAMPER		
N.C.NORMALLY CLOSEDOAOUTSIDE AIROSVOIL SAFETY VALVEPDPRESSURE DROPRICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTYP.TYPICALVVENTVDVOLUME DAMPERVVWITHVBZONE DAMPEREEXISTING TO REMAINEREXISTING TO REMAINRRREW OVE & RELOCATEDNRREMOVE & RELOCATE EXISTING IN EXISTING LOCATIONRRBEMOVE & RELOCATE EXISTING		MV	MANUAL VENT		
OAOUTSIDE AIROSVOIL SAFETY VALVEPDPRESSURE DROPPICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTYP.TYPICALVVENTVDVOLUME DAMPERVVWITHVBEXISTING TO REMAINEEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRBEMOVE & RELOCATE EXISTING		N.C.	NORMALLY CLOSED		
OSVOIL SAFETY VALVEPDPRESSURE DROPRICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTYP.TYPICALVVENTVDVOLUME DAMPERVØWITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREMOVE & RELOCATE EXISTINGRREMOVE & RELOCATE EXISTING		OA	OUTSIDE AIR		
PDPRESSURE DROPRICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVURNING VANESTYP.TYPICALVVENTVDVOLUME DAMPERWAWITHVBZONE DAMPERZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRREMOVE & RELOCATE EXISTING		OSV	OIL SAFETY VALVE		
RICRUN IN COVERRPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTYP.TYPICALVVENTVDVOLUME DAMPERVVWITHVBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREMOVE & RELOCATE EXISTING		PD	PRESSURE DROP		
RPMREVOLUTIONS PER MINUTESPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTVP.TYPICALVVENTVDVOLUME DAMPERW/WITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREMOVE & RELOCATE EXISTINGRRBEMOVE & RELOCATE EXISTING		RIC	RUN IN COVER		
SPSTATIC PRESSURETOSTOP OF STEELTVTURNING VANESTYP.TYPICALVVENTVDVOLUME DAMPERW/WITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREMOVE & RELOCATE EXISTING		RPM	REVOLUTIONS PER MINUTE		
TOSTOP OF STEELTVTURNING VANESTYP.TYPICALVVENTVDVOLUME DAMPERW/WITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREEMOVE & RELOCATE EXISTINGRRREMOVE & RELOCATE EXISTING		SP	STATIC PRESSURE		
TVTURNING VANESTYP.TYPICALVVENTVDVOLUME DAMPERW/WITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRREMOVE & RELOCATE EXISTING		TOS			
TYP.TYPICALVVENTVDVOLUME DAMPERW/WITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRBEMOVE & BELOCATE EXISTING		TV			
VVENTVDVOLUME DAMPERW/WITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRREMOVE & RELOCATE EXISTING		TYP			
VENTVDVOLUME DAMPERW/WITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRREMOVE & RELOCATE EXISTING		V			
VOLUME DAMPERW/WITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRREMOVE & RELOCATE EXISTING		VD			
WITHWBWET BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRREMOVE & RELOCATE EXISTING		V//			
WE I BULBZDZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRREMOVE & RELOCATE EXISTING		۷۷/ \/\/R			
ZONE DAMPEREEXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRREMOVE & RELOCATE EXISTING		70 70			
EXISTING TO REMAINEREXISTING RELOCATEDNRNEW TO REPLACE EXISTING IN EXISTING LOCATIONREXISTING TO BE REMOVEDRRREMOVE & RELOCATE EXISTING					
EK       EXISTING RELOCATED         NR       NEW TO REPLACE EXISTING IN EXISTING LOCATION         R       EXISTING TO BE REMOVED         RR       REMOVE & RELOCATE EXISTING		E	EXISTING TO REMAIN		
NR     NEW TO REPLACE EXISTING IN EXISTING LOCATION       R     EXISTING TO BE REMOVED       RR     REMOVE & RELOCATE EXISTING		ER	EXISTING RELOCATED		
K     EXISTING TO BE REMOVED       RR     REMOVE & RELOCATE EXISTING		NR	NEW TO REPLACE EXISTING IN EXISTING LC	CATIO	N
REMOVE & RELOCATE EXISTING		R 	EXISTING TO BE REMOVED		
		RR	REMOVE & RELOCATE EXISTING		

- CE THERMOSTATS SHALL BE " ABOVE FINISHED FLOOR (AFF).
- DUCTWORK AND PIPING HOWN ARE APPROXIMATE RE DIMENSIONED. EXACT HALL BE DETERMINED BY THE R TO AVOID INTERFERENCES.
- NNECTIONS SHALL BE PROVIDED DTORIZED UNITS AND DUCTWORK
- CESS DOORS IN EQUIPMENT AND OR ACCESS TO DAMPERS, TERS, FANS AND ON BOTH SIDES
- BE RUN AS DIRECT AS **ARALLEL TO & FORMING RIGHT** HE LINES OF THE BUILDING, FROM THE STRUCTURE, FREE ETS & SAGS & PITCHED TO LOW
- VALVES FOR EASY ACCESS & DO NOT LOCATE VALVES LOW HORIZONTAL.
- OR WALL PENETRATIONS SHALL VEATHERTIGHT.
- ENT SHALL BE INSTALLED TO MANUFACTURERS DATIONS.
- SHALL BE COORDINATED TO Y INTERFERENCES W/ PLUMBING, TRICAL, STRUCTURAL, FIRE , ARCHITECTURAL AND OTHER
- ES SHOWN ARE CLEAR MENSIONS.
- R TO FIELD VERIFY ALL EXISTING PIPE SIZES, LOUVERS, ETC. OCATIONS & ARRANGEMENTS OF DINATE NEW WORK WITH ONDITIONS.

#### ELECTRICAL SYMBOL LEGEND

MENT CONNECTION - COORDINATE LOCATION AND TYPE OF CONNECTION

NATE W/ ACTUAL EQUIPMENT BEING SERVED H EQUIPMENT BEING SERVED SINGLE THROW INCLOSURE AS REQUIRED REMOTE CONTROL / EQUIPMENT BEING SERVED



۱	9	







1	9	





1/4"=1'-0"

6	7	8	9	10	11	12
	- EXISTING WATER HEATER AND VENTING TO REMAIN					
	- EXISTING EXPANSION TANK TO REMAIN					
NG						
M	<ul> <li>EXISTING 2 PSI NATURAL</li> <li>GAS SERVICE, METER AND</li> <li>REGULATOR TO REMAIN</li> </ul>					
ş	- EXISTING EMERGENCY SWITCH TO REMAIN					
TI FR	- REMOVE EXISTING THERMAL CUT OUTS INSTALLED ON BAR JOIST					
23	- REMOVE EXISTING 3-WAY VALVE					
S	- REMOVE EXISTING BOILER SERVICE SWITCHES					
R	- EXISTING LOUVER TO REMAIN. REMOVE COMBUSTION AIR AND VENT AIR DUCTWORK,					EXISTIN
	DAMPERS, AND CONTROLS					EXISTING
	- EXISTING HOT WATER PUMPS TO REMAIN					
				010		
				1/4"=1'-0"		
	- CONCENTRIC BOILER VENT					
	ELEVATION WITH EXISTING. — EXISTING WATER HEATER AND VENTING TO REMAIN					
	- EXISTING EXPANSION TANK TO REMAIN - CAR AND SEAL OUTLET OF					
NG	EXISTING CHIMNEY WITH STAINLESS STEEL CAP					
M	<ul> <li>EXISTING 2 PSI NATURAL</li> <li>GAS SERVICE, METER AND</li> <li>REGULATOR TO REMAIN</li> </ul>					
Ş.	- EXISTING EMERGENCY SWITCH TO REMAIN					
	K5 ME501 & SERVICE CONTROLS					
	G1 BOILER PLANT PIPING					
-3" HWS	- 4" COMB. AIR & 4" VENT TO CONCENTRIC TERMINATION					
	(TYP.)					
	- WALL MOUNTED GAS DETECTOR EQUAL TO AGS MINI-MERLIN CH4CO-50					EXISTING
	POWER – BLANK OFF LOUVER WITH					
	SHEETMETAL - FLASH OVER BOTTOM BLADE. INSULATE WITH 2" RIGID INSULATION AND SEAL.					
	- EXISTING HOT WATER PUMPS TO REMAIN					
				N10		
				1/4"=1'-0"		
				l		





# ISTING CONTROL PANEL (E) (E) (E) (E) PP1G PP1G PP PP 1 F SEC1 SEC2 SEC1 SEC2 ELEC [124]

13

14

15

16

# LECTRICAL REMOVAL PLAN

\_\_\_\_\_



ELECTRICAL GENERAL NOTES:

- ALL ELECTRICAL AND CONTROL WIRING SHALL BE IN 1/2" MINIMUM EMT CONDUIT FOR ALL LOCATIONS, HIDDEN OR EXPOSED.
- AT THE COMPLETION OF THE PROJECT THE CONTRACTOR SHALL PROVIDE A NEW TYPED UPDATED PANEL DIRECTORY IN ANY PANEL THAT WAS ALTERED DURING THIS PROJECT. CONTRACTOR SHALL VERIFY ALL CIRCUIT USED FOR THIS PROJECT, IF THE EXISTING SPARE BREAKER IS IN USE, CONTRACTOR SHALL PROVIDE A NEW BREAKER IN THE PANEL OR AN ADJACENT PANEL AS REQUIRED.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES, REMOVE, RELOCATE, REPLACE, RECONNECT AND CONNECT ANY ELECTRICAL THAT IS REQUIRED FOR THE PROJECT.

# ELECTRICAL NUMBERED NOTES

- CONTRACTOR SHALL REUSE THE EXISTING BOILER CIRCUIT FOR THE NEW BOILER, COORDINATE CONNECTIONS WITH THE MECHANICAL CONTRACTOR.
- CONTRACTOR SHALL PROVIDE A NEW 1P20 AMP BREAKER IN THE EXISTING PANEL FOR THE NEW BOILER POWER.
- ③ CONTRACTOR SHALL REUSE THE EXISTING SPARE BREAKER IN THE EXISTING PANEL FOR THE NEW LOAD. CONTRACTOR SHALL RE-USE THE EMERGENCY SHUT-OFF SWITCH AT THE EXIT DOOR TO TURN POWER OFF TO ALL OF THE FOSSIL FUEL BURNING DEVICES IN THE ROOM. CONTRACTOR SHALL PROVIDE A RELAY AT EACH THERMAL CUTOUT/BOILER FOR SHALL PROVIDE A DUFFOL OF DOWING DEVICES DOWING
- THE SINGLE SWITCH TO CONTROL ALL OF THE POWER. CONTRACTOR SHALL PROVIDE RELOCATE THE EXISTING THERMAL CUT OUT OVER THE FOSSIL FUEL BURNING DEVICE TO REMOVE POWER WHEN THE THERMAL CUT-OUT IS ACTIVATED.
- CONTRACTOR SHALL PROVIDE A NEW THERMAL CUT OUT OVER THE FOSSIL FUEL BURNING DEVICE TO REMOVE POWER WHEN THE THERMAL CUT-OUT IS ACTIVATED.
- PROVIDE A JUNCTION BOX FOR THE EXISTING DAMPER POWER WITH A BLACK COVER AND MARKED WITH PANEL NAME, CIRCUIT NUMBER AND SPARE.
- CONTRACTOR SHALL CONNECT THE POWER FOR THE NEW GAS DETECTOR, PROVIDED BY THE MECHANICAL CONTRACTOR, TO THE EXISTING RECEPTACLE CIRCUIT.





file

18

17

#### ELECTRICAL GENERAL DEMO NOTES: WIRING FOR EXISTING BRANCH CIRCUIT DEVICES TO BE DEMOLISHED

- WINING FOR EASTING BRANCH CIRCUIT DEVICES TO BE DEMOLTSHED SHALL BE REMOVED BACK TO THE PANEL BOARD. THE ASSOCIATED CIRCUIT BREAKER SHALL BE TURNED OFF AND MARKED AS SPARE IN THE PANEL BOARD DIRECTORY. DO NOT ABANDON BRANCH CIRCUIT WIRING ABOVE CEILINGS OR IN WIREWAYS.
- MAINTAIN, OR RESTORE IF INTERRUPTED BY REMOVALS OR IN PATH OF NEW CONSTRUCTION, ALL CONDUITS, BRANCH CIRCUITS, AND FEEDERS PASSING THROUGH AND SERVING UNDISTURBED AREAS (SHOWN OR NOT SHOWN).
- 3. IN ANY AREA REQUIRING THE PERFORMANCE OF ANY TRADES WORK, THIS CONTRACTOR SHALL CAREFULLY REMOVE AND STORE ANY ELECTRICAL ITEMS IN THE PATH OF WORK, REINSTALLING AND RECONNECTING SAME AS REQUIRED IN ACCORDANCE WITH THE DAMA AND AND ADDISTRED FOR ACCORDANCE AND ADDISTRED AND AND ADDISTRED ADDISTRED FOR ACCORDANCE AND ADDISTRED AND AND ADDISTRED ADDISTRED AND ADDISTRED AND ADDISTRED AND AND ADDISTRED ADDISTRED ADDISTRED AND ADDISTRED ADDISTRED ADDISTRED AND ADDISTRED ADDISTRED AND ADDISTRED ADDISTRED AND ADDISTRED AND ADDISTRED AND ADDISTRED AND ADDISTRED ADDISTRED AND ADDISTRED A PLANS AND/OR AS DIRECTED AFTER COMPLETION OF OTHER TRADES WORK IN THAT AREA.
- 4. ALL EXISTING FIXTURES AND ELECTRICAL DEVICES TO BE REMOVED AND NOT RELOCATED SHALL BE TURNED OVER TO OWNER. IF OWNER DECIDES THEY DO NOT WISH TO KEEP REMOVED FIXTURE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE FROM STATE SITE.
- THE CONTRACTOR SHALL DISCONNECT AND REMOVE ALL ELECTRICAL WIRING AND EQUIPMENT AS REQUIRED WITH IN ALL AREAS TO BE RENOVATED. THIS SHALL INCLUDE, BUT NOT LIMITED TO, FIXTURES, DEVICES, OUTLETS, SWITCHES, RECEPTACLES, STATERS, DEVICES, DANELS, EEEDERS, ETC. STARTERS, DISCONNECTS, PANELS, FEEDERS, ETC.
- ALL ELECTRICAL INFORMATION SHOWN IS FROM EXISTING DRAWINGS AND FIELD NOTES AND IS TO BE USED AS A GUIDE FOR EQUIPMENT LOCATIONS. CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS PRIOR TO SUBMISSION OF BID. NO ADDITIONAL COMPENSATION VILL BE CONSIDERED FOR FAILURE TO OBSERVE THIS REQUIREMENT.

# ELECTRICAL DEMO NOTES:

- EXISTING POWER FOR BOILERS TO BE REMOVED. DISCONNECT THE POWER AND PREPARE THE CIRCUIT FOR THE NEW BOILER IN THE EXISTING, AND NEW LOCATION.
- (2) EXISTING FIRE ALARM HEAT DETECTOR TO REMAIN, TYPICAL OF 2. EXISTING POWER FOR DAMPER TO BE REMOVED BACK TO A JUNCTION BOX AND MARK WITH PANEL, CIRCUIT # AND SPARE ON THE BLANK COVER.
- CONTRACTOR SHALL REMOVE THE EXISTING THERMAL CUTOUT AND RELOCATE IT FOR THE NEW BOILER LAYOUT.
- EXISTING EMERGENCY SWITCH TO REMAIN AND CONNECTED TO THE NEW BOILER CIRCUITS TO SHUT OFF ALL FOSSIL FUEL BURNING EQUIPMENT.



1	9	









PANEL				PP	SEC	C 1				EXISTING
VOLTAGE: 120/208V		PHASES: 3		WIRE	:4	TYPE				LOCATION: ELECTRICAL ROOM
225A MCB			FED F	ROM:	PANEL L	P VIA	XFRM	Г04		MOUNTING: SURFACE
SERVICE	KW	BRKR	NOTE	NO	PHASE	NO	NOTE	BRKR	KW	SERVICE
BOILER #1		1P20	1	1	A	2	1	1P20		BOILER #2
DOMESTIC WATER PUMP #1		1P20	E	3	В	4	E	1P20		EF-2, EF-3, EF-4
SAWDUST FILTER SHAKER		1P20	E	5	С	6	3	1P20		PUMP P-1
ATC#2		1P20	E	7	А	8	3	1P20		PUMP P-2
CUH-1, CUH-2, EF-1		1P20	E	9	В	10	3	1P20		PUMP P-3
ATC #1		1P20	E	11	С	12	E	1P20		LIGHTING
JGHTING		1P20	E	13	А	14	E	1P20		LIGHTING
RECEPTACLES		1P20	Е	15	В	16	E	1P20		RECEPTACLES
RECEPTACLES		1P20	Е	17	С	18	Е	1P20		RECEPTACLES
RECEPTACLES		1P20	Е	19	А	20	Е	1P20		RECEPTACLES
RECEPTACLES		1P20	Е	21	В	22	Е	1P20		RECEPTACLES
RECEPTACLES		1P20	Е	23	С	24	Е	1P20		RECEPTACLES
RECEPTACLES		1P20	E	25	А	26	E	1P20		RECEPTACLES
RECEPTACLES		1P20	E	27	В	28	E	1P20		RECEPTACLES
RECEPTACLES		1P20	Е	29	С	30	E	1P20		RECEPTACLES
RECEPTACLES		1P20	Е	31	A	32	E	1P20		RECEPTACLES
RECEPTACLES		1P20	E	33	В	34	E	1P20		DRAWING COPIER
CADD PLOTTER		1P20	E	35	С	36	E	1P20		RECEPTACLES
/ENDING MACHINE		1P20	E	37	А	38	E	1P20		VENDING MACHINE
/ENDING MACHINE		1P20	E	39	В	40	E	1P20		REFRIGERATOR
RECEPTACLES		1P20	E	41	С	42	2	1P20		BOILER #3

11

1 = EXISTING BREAKER FOR NEW LOAD. 2 = EXISTING SPARE BREAKER FOR NEW LOAD.

3 = NEW BREAKER IN THE EXISTING PANEL FOR NEW LOAD

					BOILER	SCHEDU	LE					
TAG	MODEL	DEL NG GAS NET I-B-R AFUE TUP		NAT. GAS TURNDOWN PRESSURE		VENT AIR CONNECTION	COMB. AIR CONNECTION		NOTES			
		(MBH)	(MBH)	70		(IN-WC)	(IN)	(IN)	MOCP	VOLT	PHASE	
B-1	PFC-460	460	381	95.2	5 : 1	4 - 13	4	4	20A	120	1	1, 2, 3, 4
B-2	PFC-460	460	381	95.2	5 : 1	4 - 13	4	4	20A	120	1	1, 2, 3, 4
B-3	PFC-460	460	381	95.2	5 : 1	4 - 13	4	4	20A	120	1	1, 2, 3, 4
BOILER SCH	EDULE NOTES:											
1. BASED O	N PEERLESS											

2. BUILT-IN CONDENSATE NEUTRALIZATION SYSTEM

3. PROVIDE CPVC CONCENTRIC WALL TERMINATION

4. INTEGRAL CONTROLS WITH LED SCREEN INCL. SYSTEM SENSORS, PUMP CONTROL, BOILER CASCADE CONTROL AND BMS INTEGRATION

	PUMP SCHEDULE											
			MODEL	TVDE	0014			MOTOR		ELECTRICA	Ĺ	NOTES
IAG	LOCATION	SERVES	WODEL	TIFE	GFIVI	HEAD FT	EFF 70	RPM	BHP	HP	POWER	NOTES
P-1E	MECH ROOM	BUILDING HEATING LOOP	EXTG 1641	INLINE	110					3	208/3	3, 4
P-2E	MECH ROOM	BUILDING HEATING LOOP	EXTG 1641	INLINE	110					3	208/3	3, 4
P-3	MECH ROOM	BOILER B-1 INJECTION	1935	INLINE	29	20	52	1760	0.28	1/3	120/1	1, 2
P-4	MECH ROOM	BOILER B-2 INJECTION	1935	INLINE	29	20	52	1760	0.28	1/3	120/1	1, 2
P-5	MECH ROOM	BOILER B-3 INJECTION	1935	INLINE	29	20	52	1760	0.28	1/3	120/1	1, 2
PUMP SCH	HEDULE NOTES:											
1. BASED	ON TACO											

BASED ON 30°F THROUGH BOILER.

. EXISTING TACO 4. FLOWRATE BASED ON EXISTING EQUIPMENT SELECTION PARAMETERS 12

14

17

## PLUMBING SYSTEM PERFORMANCE SPECIFICATIONS:

15

- 1. <u>CODES AND GENERAL REQUIREMENTS</u>: DESIGN AND CONSTRUCT ALL PLUMBING SYSTEMS IN ACCORDANCE WITH THE 2015 UNIFORM PLUMBING CODE AS ADOPTED BY THE STATE OF MAINE, ADA, AND ASHRAE 90.1. PLUMBING SHOWN ON DRAWINGS IS GENERALLY SCHEMATIC AND ACTUAL LOCATIONS OF PIPING SHALL BE FULLY COORDINATED WITH ALL TRADES. ALL PIPING SHALL BE CONCEALED UNLESS NOTED OTHERWISE. ALL PIPING SHALL BE INSTALLED TO ALLOW FOR EXPANSION USING OFFSETS, SWING JOINTS, EXPANSION FITTINGS OR JOINTS, TO PREVENT UNDUE STRAIN ON PIPING AND EQUIPMENT. NO WATER PIPING SHALL BE INSTALLED IN EXTERIOR WALLS OR OTHER SPACES WHERE SUSCEPTIBLE TO FREEZING.
- 2. <u>DOMESTIC WATER PIPING</u>: ALL INTERIOR DOMESTIC WATER PIPING SHALL BE TYPE "L" COPPER WITH LEAD FREE SOLDERED FITTINGS TO MATCH EXISTING. INSULATE ALL INTERIOR DOMESTIC WATER PIPING FOR CONDENSATION PROTECTION IN ACCORDANCE WITH ASHRAE 90.1.
- 3. NATURAL GAS PIPING: ALL NATURAL GAS PIPING SHALL BE SCHEDULE 40 BLACK IRON PIPE WITH THREADED OR WELDED CAST FITTINGS. ALL PIPING SHALL BE FINISHED WITH YELLOW EPOXY PAINT MATCHING EXISTING. COMPLETED PIPING SYSTEM SHALL BE LEAK TESTED AND REPORT SUBMITTED TO THE OWNER.
- 4. INSPECT AND PRESSURE TEST ALL NATURAL GAS PIPING PER NFPA 54. ISOLATE PIPING FROM METER TO EQUIPMENT. TEST AT 50 PSI FOR 12 HOURS. PIPING WILL BE CONSIDERED ACCEPTABLE WITH LESS THAN 5 PSI DROP OVER TEST DURATION. 5. CONDENSATE PIPING: ALL BOILER CONDENSATE PIPING SHALL BE SCHEDULE 40 SOLID WALL PVC OR TYPE "L" COPPER WITH
- LEAD FREE SOLDERED FITTINGS. CONDENSATE SHALL BE PIPED TO A SECONDARY NEUTRALIZATION STATION BEFORE DISCHARGING TO EXISTING FLOOR DRAIN WITH DOWNTURN ELBOW. 6. <u>LABELING</u>: PROVIDE PIPE LABELS AND FLOW ARROWS ON ALL NEW DOMESTIC WATER PIPING AND NATURAL GAS PIPING AT 20' INTERVALS.

#### MECHANICAL SYSTEM PERFORMANCE SPECIFICATIONS:

- 1. CODES & GENERAL REQUIREMENTS: DESIGN AND CONSTRUCT ALL HVAC SYSTEMS IN ACCORDANCE WITH UFC-3-410-01, UFC-3-430-11, NFPA 54, ASHRAE 62 & 90.1, ADA, STATE OF MAINE REGULATORY REQUIREMENTS. REFRIGERANT PIPING SHOWN ON DRAWINGS IS GENERALLY SCHEMATIC AND ACTUAL LOCATIONS OF PIPING SHALL BE FULLY COORDINATED WITH ALL TRADES. ALL PIPING SHALL BE INSTALLED TO ALLOW FOR EXPANSION USING OFFSETS. SWING JOINTS. EXPANSION FITTINGS OR JOINTS, TO PREVENT UNDUE STRAIN ON PIPING AND EQUIPMENT. NO WATER PIPING SHALL BE INSTALLED IN EXTERIOR WALLS, ATTICS, OR OTHER SPACES WHERE SUSCEPTIBLE TO FREEZING.
- 2. PHASING OF WORK: CONTRACTOR SHALL PERFORM WORK IN COORDINATION WITH THE OWNER. BOILER PLANT SHALL BE SHUT DOWN ONCE HEATING IS NOT LONGER NEEDED. REVISED BUILDING LOOP PIPING SHALL BE COMPLETED FIRST WITH TEES AND VALVES INSTALLED FOR CONNECTION OF BOILER INJECTION PIPING. THE BOILER INJECTION LOOP SHALL BE CONSTRUCTED NEXT WITH ALL BOILER BRANCHES WITH ISOLATION VALVES TO PERMIT BOILERS TO BE CONNECTED AS WORK IS COMPLETED TO PROVIDE HEAT TO THE BUILDING. BOILER PLANT MUST BE TESTED AND FUNCTIONAL BY THE START OF THE HEATING SEASON.
- . LABELING: PROVIDE PIPE LABELS AND FLOW ARROWS ON ALL NEW AND EXISTING HOT WATER PIPING. PROVIDE ENGRAVED PLASTIC EQUIPMENT LABELS ON ALL NEW EQUIPMENT. FASTEN LABELS TO EQUIPMENT WITH FOAM TAPE OR RIVETS. MINIMUM TEXT SIZE 1/2" LETTER HEIGHT. APPLY EQUIPMENT LABELS ABOVE CEILING WHERE EXPOSED IN FINISHED SPACE.
- 4. HOT WATER PIPING SYSTEMS: ALL INTERIOR HOT WATER PIPING SHALL BE EITHER TYPE L COPPER TUBING WITH SOLDERED FITTINGS OR SCH. 40 BLACK IRON PIPE WITH THREADED OR WELDED FITTINGS. MECHANICAL CRIMP OR GROOVED JOINT FITTINGS ARE NOT ACCEPTABLE. INSULATE ALL HOT WATER PIPING INCLUDING VALVES AND FITTINGS WITH 1" THICK PREFORMED MINERAL FIBER PIPE INSULATION FOR PIPING 1-1/4" AND SMALLER. PIPING 1-1/2" AND LARGER SHALL BE INSULATED WITH 2" THICK MINERAL FIBER.
- LEAVE ALL VALVE HANDLES AND REMOVABLE CAPS VISIBLE AND ACCESSIBLE. SUPPORT HOT WATER PIPING WITH INSULATION SADDLES AND CLEVIS HANGERS OR UNISTRUT AND PIPE CLAMPS SIZED FOR OD OF INSULATION. SUPPORT PIPING AT 60" ON CENTER AND WITHIN 12" OF CHANGE IN DIRECTIONS.
- 5. HOT WATER PUMPS: INLINE HOT WATER PUMPS SHALL BE CLOSE COUPLED WITH CONSTANT SPEED MOTORS. PUMP BODY SHALL BE CAST IRON WITH A STAINLESS STEEL OR REINFORCED NYLON IMPELLER AND STAINLESS STEEL SHAFT. MOTOR ORIENTATION SHALL BE FIELD ADJUSTABLE FROM PUMP BODY. SUPPORT PUMP INDEPENDENTLY OF PIPING FOR PUMPS WITH MOTORS LARGER THAN 1/2 HP.
- . HOT WATER BOILERS: FLOOR MOUNTED HIGH-EFFICIENCY GAS-FIRED CONDENSING BOILERS SHALL BE PEERLESS ONLY AS SCHEDULED PER OWNER'S PROJECT REQUIREMENTS. BOILERS SHALL HAVE STAINLESS STEEL BURNER AND HEAT EXCHANGER, 5:1 TURN DOWN MODULATING BURNER, PRESSURE & TEMPERATURE RELIEF VALVE, AND INTEGRAL CONDENSATE NEUTRALIZATION. PROVIDE SECONDARY EXTERNAL CONDENSATE NEUTRALIZATION OF BOILERS PRIOR TO DISCHARGE TO FLOOR DRAIN. FACTORY CONTROLS SHALL INCLUDE OUTDOOR RESET, CASCADE CONTROL OF MULTIPLE BOILERS, OUTPUTS FOR INJECTION AND HW SYSTEM PUMP, DIGITAL DISPLAY FOR USER ADJUSTMENT AND MONITORING OF BOILER.
- BOILER VENTING: COMBUSTION AIR PIPING SHALL BE 4" SCHEDULE 40 SOLID CORE PVC WITH CEMENTED JOINTS. BOILER VENT PIPING SHALL BE EITHER 4" SCHEDULE 40 CPVC OR POLYPROPYLENE PIPING WITH CEMENTED OR FUSED JOINTS. COMBUSTION AIR AND VENT PIPING SHALL CONNECT TO A CONCENTRIC WALL TERMINATION.
- 8. <u>TESTING, ADJUSTING & BALANCING</u>: ALL SYSTEMS AND EQUIPMENT SHALL BE TESTED, ADJUSTED, AND BALANCED AT PROJECT COMPLETION TO OBTAIN AND VERIFY PERFORMANCE INDICATED ON DRAWINGS. ALL TAB WORK SHALL BE PERFORMED BY AN INDEPENDENT CONTRACTOR WITHIN THE CONTRACT.

#### MECHANICAL SYSTEM SEQUENCE OF CONTROL

GENERAL: EXISTING BUILDING IS SERVED BY A HONEYWELL BUILDING MANAGEMENT SYSTEM. THIS SYSTEM SHALL REMAIN AND BE MODIFIED AND/OR EXPANDED FOR THE NEW WORK. COMBUSTION & VENT AIR DAMPERS: COMBUSTION AIR & VENT DAMPERS ARE NOT BE REQUIRED WITH DIRECT VENT

BOILERS. REMOVE EXISTING DAMPER ACTUATOR CONTROL PROGRAMMING FROM BMS SYSTEM. P-1E & P-2E: EXISTING CONSTANT SPEED HOT WATER PUMPS SHALL CONTINUE TO OPERATE WITH EXISTING CONTROL SEQUENCES. BOILER PLANT:

- 1. BOILERS SHALL HAVE FACTORY INSTALLED, WIRED CONTROLS CAPABLE OF INJECTION PUMP CONTROL, STAGING OF BOILERS, OUTDOOR RESET AND MODULATING FIRING.
- 2. MOVE EXISTING BMS CONTROLS ENABLE SIGNAL TO MASTER BOILER (B-1). 3. FACTORY PROVIDED OUTDOOR AIR TEMPERATURE SENSOR SHALL BE LOCATED ON THE NORTH SIDE OF BUILDING.
- LOCATE AWAY FROM DIRECT SUN OR POTENTIAL HEAT SOURCES.
- 4. PRIOR TO BOILER FIRING, ASSOCIATED INJECTION PUMP (P-3, P-4 OR P-5) SHOULD START AND PROVE FLOW.
- 5. BOILERS SHALL MODULATE AND STAGE AS NECESSARY TO MAINTAIN HOT WATER SUPPLY SETPOINT BASED ON THE RESET SCHEDULE AS FOLLOWS (ADJUSTABLE): HOT WATER TEMPERATURE: OUTDOOR TEMPERATURE:
- 0°F OR LESS 180°F 50°F OR HIGHER 140°F
- 6. ALARMS SHALL BE GENERATED ON BOILER CONTROLLER FOR HIGH TEMP CUT OFF, LOW WATER TEMP, FLAME FAILURE, AND PUMP START FAILURE.



۱	9	

